



freight rail

Transnet Freight Rail a Division of Transnet SOC Ltd. (Reg. No. 1990/000900/30), invites all interested parties to respond to a request for quotation (RFQ) as indicated below:

All tenders should be submitted on the appropriate tender forms in a sealed envelope. The envelope must indicate the RFQ number, full description and closing date and should be deposited in the tender box before 10h00 on the closing date of the tender/s.

If delivered by hand, the Tender submissions must be addressed to Supply Chain Services, Admin Support, Tender Box, Office No. 2, Real Estate Management Building, Austen Street, Beaconsfield, Kimberley.

ISSUE OF DOCUMENTS - RFQ document will only be available from **1 June 2015** until **10 June 2015 [15:00]** at Transnet Freight Rail, Supply Chain Services, Office No. 2, Real Estate Management Building, Austen Street, Beaconsfield, Kimberley. **Please note that RFQ document can be e-mailed or physically collected on request / arrangement prior to cut off time from Ms. Leonie Visagie.**

Tenders can be viewed on the website (<http://www.transnetfreightrail.tfr.net/Supplier/Page.aspx>)

***Tenderers are advised to confirm their attendance beforehand with Leonie Visagie Tel: 053 838 3119 or E-mail: Leonie.Visagie@transnet.net respectively.**

RFQ NUMBER	KBY/53606
SCOPE OF WORK	As & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment for a period of twenty four (24) months.
REQUIRED AT	Various buildings, De Aar region.
BRIEFING DATE	A <u>COMPULSORY</u> INFORMATION MEETING WILL BE HELD AT: The Boardroom of the Operation's Manager's Building, De Aar Railway Yard, De Aar. DATE: <u>11/06/2015 at 11:00</u> (Companies not attending the compulsory tender briefing / site meeting will be overlooked during the award process.)
TENDER FEE	NO CHARGE
COMPULSORY	CIDB grading of 1EB, Proof of De Aar Business Address (Municipality/Telcom account), SAQCC Gas Practitioner Registration
CLOSING DATE	Tuesday, 23 June 2015 at Kimberley
CLOSING TIME	10:00
For technical queries contact:	Mr. Johan van Tonder, Tel: 053-838 3349 / 083 269 7556

Ref. HJC

Transnet Freight Rail urges Clients & Suppliers to report fraud/corruption at Transnet to TIPOFFS ANONYMOUS: 0800 003 056

TRANSNET



freight rail

A Division of Transnet SOC Limited Registration number 1990/00900/30

REQUEST FOR QUOTATION

KBY/53606

KBC_17517

Senior Buyer
Supply Chain Services
TRANSNET FREIGHT RAIL
Austen Street
KIMBERLEY
8301



Transnet Freight Rail, a division of

TRANSNET SOC LTD

Registration Number 1990/000900/30

[hereinafter referred to as **Transnet**]

REQUEST FOR QUOTATION [RFQ] No KBY/53606

**FOR THE PROVISION OF: FOR THE AS & WHEN MAINTENANCE /
BREAKDOWNS & NEW INSTALLATIONS TO
ELECTRICAL INSTALLATIONS / AIR-
CONDITIONING PLANT AS WELL AS ROUTINE
SERVICE OF AIR-CONDITIONING PLANT AND
ASSOCIATED EQUIPMENT SERVING THE VARIOUS
BUILDINGS IN THE DE AAR REGION FOR A PERIOD
OF 24 MONTHS.**

FOR DELIVERY TO: THE REAL ESTATE MANAGER KIMBERLEY

ISSUE DATE: 01 JUNE 2015

CLOSING DATE: 23 JUNE 2015

CLOSING TIME: 10:00

SITE MEETING: 11 JUNE 2015 AT 11:00

**VENUE: IN THE BOARDROOM OF THE OPERATIONS MANAGER'S
BUILDING, DE AAR RAILWAY YARD, DE AAR.**

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

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Section 1
NOTICE TO BIDDERS

Quotations which must be completed as indicated in Section 2 of this RFQ are to be submitted as follows:

METHOD: Tender Box

CLOSING VENUE: Transnet Freight Rail, Real Estate Management Building, Office no. 2,
Austen Street, Beaconsfield

1 Responses to RFQ

Responses to this RFQ [**Quotations**] must not include documents or reference relating to any other quotation or proposal. Any additional conditions must be embodied in an accompanying letter.

2 Broad-Based Black Economic Empowerment [B-BBEE]

Transnet fully endorses and supports the Government's Broad-Based Black Economic Empowerment Programme and it would therefore prefer to do business with local business enterprises who share these same values. As described in more detail in the attached B-BBEE Claim Form Transnet will allow a "preference" to companies who provide a valid B-BBEE Verification Certificate.

The value of this bid is estimated to be below R1 000 000 (all applicable taxes included); and therefore the **80/20** system shall be applicable.

Respondents are required to complete Annexure A [the B-BBEE Preference Point Claim Form] and submit it together with proof of their B-BBEE Status as stipulated in the Claim Form in order to obtain preference points for their B-BBEE status.

Note: Failure to submit a valid and original B-BBEE certificate or a certified copy thereof at the Closing Date of this RFQ will result in a score of zero being allocated for B-BBEE.

3 Communication

Respondents are warned that a response will be liable for disqualification should any attempt be made by a Respondent either directly or indirectly to canvass any officer(s) or employee of Transnet in respect of this RFQ between the closing date and the date of the award of the business.

A Respondent may, however, before the closing date and time, direct any written enquiries relating to the RFQ to the following Transnet employee:

Name: Herman Conradie

Email: Herman.Conradie@transnet.net

Telephone: 053-8383483

Respondents may also, at any time after the closing date of the RFQ, communicate with the Chief Administrator at the Admin Support Office on any matter relating to its RFQ response:

Telephone 053-8383341

Email: Maggie.Pain@transnet.net

4 Legal Compliance

The successful Respondent shall be in full and complete compliance with any and all applicable national and local laws and regulations.

5 Changes to Quotations

Changes by the Respondent to its submission will not be considered after the closing date and time.

6 Pricing

All prices must be quoted in South African Rand on a fixed price basis, excluding VAT.

7 Prices Subject to Confirmation

Prices quoted which are subject to confirmation will not be considered.

8 Binding Offer

Any Quotation furnished pursuant to this Request shall be deemed to be an offer. Any exceptions to this statement must be clearly and specifically indicated.

9 Disclaimers

Transnet is not committed to any course of action as a result of its issuance of this RFQ and/or its receipt of a Quotation in response to it. Please note that Transnet reserves the right to:

- modify the RFQ's goods / service(s) and request Respondents to re-bid on any changes;
- reject any Quotation which does not conform to instructions and specifications which are detailed herein;
- disqualify Quotations submitted after the stated submission deadline;
- not necessarily accept the lowest priced Quotation or an alternative bid;
- reject all Quotations, if it so decides;
- place an order in connection with this Quotation at any time after the RFQ's closing date;
- award only a portion of the proposed goods / service/s which are reflected in the scope of this RFQ;
- split the award of the order/s between more than one Supplier/Service Provider should it at Transnet's discretion be more advantageous in terms of, amongst others, cost or developmental considerations ; or
- make no award at all.

Should a contract be awarded on the strength of information furnished by the Respondent, which after conclusion of the contract, is proved to have been incorrect, Transnet reserves the right to cancel the contract.

Transnet reserves the right to award business to the highest scoring bidder/s unless objective criteria justify the award to another bidder.

Transnet reserves the right to conduct Post Tender Negotiations (PTN) with selected Respondents or any number of short-listed Respondents, such PTN to include, at Transnet's discretion, any evaluation criteria listed in the RFQ document.

Should the preferred bidder fail to sign or commence with the contract within a reasonable period after being requested to do so, Transnet reserves the right to award the business to the next highest ranked bidder, provided that he/she is still prepared to provide the required goods at the quoted price.

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Safety Arrangements – Act 85 of 1993 and Regulations E4E

**SAFETY ARRANGEMENTS AND PROCEDURAL COMPLIANCE
WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT
(ACT 85 OF 1993) AND APPLICABLE REGULATIONS**

1 General

- 1.1 The Contractor and Transnet Limited (hereinafter referred to as "Transnet") are individual employers, each in its own right, with their respective duties and obligations set out in the Occupational Health and Safety Act, Act 85 of 1993 (the Act) and applicable Regulations.
- 1.2 The Contractor accepts, in terms of the General Conditions of Contract and in terms of the Act, his obligations as an employer in respect of all persons in his employ, other persons on the premises or the Site or place of work or on the work to be executed by him, and under his control. He shall, before commencement with the execution of the contract work, comply with the provisions set out in the Act, and shall implement and maintain a Health and Safety Plan as described in the Construction Regulations, 2003 and as approved by Transnet, on the Site and place of work for the duration of the Contract.
- 1.3 The Contractor accepts his obligation to complying fully with the Act and applicable Regulations notwithstanding the omission of some of the provisions of the Act and the Regulations from this document.
- 1.4 Transnet accepts, in terms of the Act, its obligations as an employer of its own employees working on or associated with the site or place of work, and the Contractor and Technical Officer or his deputy shall at all times, co-operate in respect of the health and safety management of the site, and shall agree on the practical arrangements and procedures to be implemented and maintained during execution of the Works.
- 1.5 In the event of any discrepancies between any legislation and this specification, the applicable legislation will take precedence.

2 Definitions

- 2.1 In this Specification any word or expression to which a meaning has been assigned in the Construction Regulations, shall have the meaning so assigned to it, unless the context otherwise indicates: -
- 2.2 The work included in this Contract shall for the purposes of compliance with the Act be deemed to be "Construction Work", which, in terms of the Construction Regulations, 2003 means any work in connection with: -
 - (a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
 - (b) the installation, erection, dismantling or maintenance of fixed plant where such work includes the risk of a person falling;
 - (c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
 - (d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;
- 2.3 "competent person" in relation to construction work, means any person having the knowledge, training and experience specific to the work or task being performed: Provided that where appropriate qualifications and training are registered as per the South African Qualifications Authority Act, 1995 these qualifications and training shall be deemed to be the required qualifications and training;
- 2.4 "contractor" means principal contractor and "subcontractor" means contractor as defined by the Construction Regulations, 2003.

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- 2.5 **"fall protection plan"** means a documented plan, of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods applied to eliminate the risk;
- 2.6 **"health and safety file"** means a file, or other record in permanent form, containing the information required to be kept on site in accordance with the Act and applicable Regulations;
- 2.7 **"Health and Safety Plan "** means a documented plan which addresses the hazards identified and include safe work procedures to mitigate, reduce or control the hazards identified;
- 2.8 **"Risk Assessment"** means a programme to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard;
- 2.9 **"the Act"** means the Occupational Health and Safety Act No. 85 of 1993.

3 Procedural Compliance

- 3.1 The Contractor who intends to carry out any construction work shall, before carrying out such work, notify the Provincial Director in writing if the construction work:

- (a) includes the demolition of a structure exceeding a height of 3 meters; or
- (b) includes the use of explosives to perform construction work; or
- (c) includes the dismantling of fixed plant at a height greater than 3m, and shall also notify the Provincial Director in writing when the construction work exceeds 30 days or will involve more than 300 person days of construction work and if the construction work:-
- (d) includes excavation work deeper than 1m; or
- (e) Includes working at a height greater than 3 meters above ground or a landing.

The notification to the Provincial Director shall be on a form similar to Annexure A of the Construction Regulations, 2003 also shown in Annexure 1 of this Specification. The Contractor shall ensure that a copy of the completed notification form is kept on site for inspection by an inspector, Technical Officer or employee.

The Contractor shall, in accordance with the Act and applicable Regulations, make all the necessary appointments of competent persons in writing on a form similar to Annexure 2 of this Specification and deliver copies thereof to the Technical Officer. Copies should also be retained on the health and safety file.

Subcontractors shall also make the above written appointments and the Contractor shall deliver copies thereof to the Technical Officer.

In the case of a self-employed Contractor or any subcontractor who has the appropriate competencies and supervises the work himself, the appointment of a construction supervisor in terms of regulation 6.1 of the Construction Regulations, 2003 will not be necessary. The Contractor shall in such a case execute and sign a declaration, as in Annexure 3, by which he personally undertakes the duties and obligations of the "Chief Executive Officer" in terms of section 16(1) of the Act.

The Contractor shall, before commencing any work, obtain from the Technical Officer an access certificate as in Annexure 4 executed and signed by him, permitting and limiting access to the designated site or place of work by the Contractor and any subcontractors under his control.

Procedural compliance with Act and Regulations, as above, shall also apply to any subcontractors as employers in their own right. The Contractor shall furnish the Technical Officer with full particulars of such subcontractors and shall ensure that they comply with the Act and Regulations and Protekon's safety requirements and procedures.

4 Special Permits

Where special permits are required before work may be carried out such as for hot work, isolation permits, work permits and occupations, the Contractor shall apply to the Technical Officer or the relevant authority for such permits to be issued. The Contractor shall strictly comply with the conditions and requirements pertaining to the issue of such permits.

5 Health and Safety Programme

5.1 The Tenderer shall, with his tender, submit a Health and Safety Programme setting out the practical arrangements and procedures to be implemented by him to ensure compliance by him with the Act and Regulations and particularly in respect of: -

- (i) The provision, as far as is reasonably practical, of a working environment that is safe and without risk to the health of his employees and subcontractors in terms of section 8 of the Act;
- (ii) the execution of the contract work in such a manner as to ensure in terms of section 9 of the Act that persons other than those in the Contractor's employment, who may be directly affected by the contract work are not thereby exposed to hazards to their health and safety;
- (iii) ensuring, as far as is reasonably practical, in terms of section 37 of the Act that no employee or subcontractor of the Contractor does or omits to do any act which would be an offence for the Contractor to do or omit to do.

5.2 The Contractor's Health and Safety Programme shall be based on a risk assessment in respect of the hazards to health and safety of his employees and other persons under his control that are associated with or directly affected by the Contractor's activities in performing the contract work and shall establish precautionary measures as are reasonable and practical in protecting the safety and health of such employees and persons.

5.3 The Contractor shall cause a risk assessment contemplated in clause 5.2 above to be performed by a competent person, appointed in writing, before commencement of any Construction Work and reviewed during construction. The Risk Assessments shall form part of the Health and Safety programme to be applied on the site and shall include at least the following:

- (a) The identification of the risks and hazards that persons may be exposed to;
- (b) the analysis and evaluation of the hazards identified;
- (c) a documented Health and Safety Plan, including safe work procedures to mitigate, reduce or control the risks identified;
- (d) a monitoring and review plan.

5.4 The Health and Safety Plan shall include full particulars in respect of: -

- (a) The safety management structure to be instituted on site or place of work and the names of the Contractor's health and safety representatives and members of safety committees where applicable;
- (b) the safe working methods and procedures to be implemented to ensure the work is performed in compliance with the Act and Regulations;
- (c) the safety equipment, devices and clothing to be made available by the Contractor to his employees;
- (d) the site access control measures pertaining to health and safety to be implemented;
- (e) the arrangements in respect of communication of health and safety related matters and incidents between the Contractor, his employees, subcontractors and the Technical Officer with particular reference to the reporting of incidents in compliance with Section 24 and General Administrative Regulation 8 of the Act and with the pertinent clause of the General Conditions of Contract forming part of the Contract and

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- (f) the introduction of control measures for ensuring that the Safety Plan is maintained and monitored for the duration of the Contract.
- 5.5 The Health and Safety programme shall be subject to the Technical Officer's approval and he may, in consultation with the Contractor, order that additional and/or supplementary practical arrangements and procedures be implemented and maintained by the Contractor or that different working methods or safety equipment be used or safety clothes be issued which, in the Technical Officer's opinion, are necessary to ensure full compliance by the Contractor with his obligations as an employer in terms of the Act and Regulations. The Technical Officer or his deputy shall be allowed to attend meetings of the Contractor's safety committee as an observer.
- 5.6 The Contractor shall take reasonable steps to ensure that each subcontractor's Health and Safety Plan is implemented and maintained on the construction site: Provided that the steps taken shall include periodic audits at intervals mutually agreed to between them, but at least once every month.
- 5.7 The Contractor shall stop any subcontractor from executing any construction work, which is not in accordance with the Contractor's, and/or subcontractor's Health and Safety Plan for the site or which poses a threat to the health and safety of persons.
- 5.8 The Contractor shall ensure that a copy of the Health and Safety Plan is available on site for inspection by an inspector, Technical Officer, agent, subcontractor, employee, registered employee organization, health and safety representative or any member of the health and safety committee.
- 5.9 The Contractor shall consult with the health and safety committee or, if no health and safety committee exists, with a representative group of employees, on the development, monitoring and review of the Risk Assessment.
- 5.10 The Contractor shall ensure that all employees under his control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the Risk Assessment.
- 5.11 The Contractor shall ensure that all subcontractors are informed regarding any hazard as stipulated in the Risk Assessment before any work commences, and thereafter at such times as may be determined in the Risk Assessment.
- 5.12 The Contractor shall ensure that all visitors to a construction site undergoes health and safety induction pertaining to the hazards prevalent on the site and shall be provided with the necessary personal protective equipment.

6 Fall Protection Plan

- 6.1 In the event of the risk and hazard identification, as required in terms of clause 5.3 of this Specification, revealing risks relating to working from an elevated position the contractor shall cause the designation of a competent person, responsible for the preparation of a fall protection plan;
- 6.2 The Contractor shall implement, maintain and monitor the fall protection plan for the duration of Contract. The Contractor shall also take such steps to ensure the continued adherence to the fall protection plan.
- 6.3 The fall protection plan shall include:-
- (a) A Risk Assessment of all work carried out from an elevated position;
 - (b) the procedures and methods to address all the identified risks per location;
 - (c) the evaluation of the employees physical and psychological fitness necessary to work at elevated positions;

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- (d) the training of employees working from elevated positions; and
- (e) the procedure addressing the inspection, testing and maintenance of all fall protection equipment.

7 Hazards and Potential Hazardous Situations

The Contractor and the Technical Officer shall immediately notify one another of any hazardous or potentially hazardous situations which may arise during performance of the Contract by the Contractor or any subcontractor and, in particular, of such hazards as may be caused by the design, execution and/or location and any other aspect pertaining to the contract work.

8 Health and Safety File

- 8.1 The Contractor shall ensure that a health and safety file is opened and kept on site and shall include all documentation required as per the Act and applicable regulations, and made available to an inspector, the Technical Officer, or subcontractor upon request.
- 8.2 The Contractor shall ensure that a copy of the both his Health and Safety Plan as well as any subcontractor's Health and Safety Plan is available on request to an employee, inspector, contractor or the Technical Officer.
- 8.3 The Contractor shall hand over a consolidated health and safety file to the Technical Officer upon completion of the Construction Work and shall in addition to documentation mentioned in the Act and applicable Regulations include a record of all drawings, designs, materials used and other similar information concerning the completed structure.

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CONTRACTORS "HEALTH & SAFETY FILE" CHECKLIST

Contractor's Name:

**Contract
Number:**

CONTENTS OF THE HEALTH & SAFETY FILE

The safety file shall at least contain "but not limited to" the following documentation/copies on site.		YES	NO
1.	Notice of construction work to Dept. of Labour (where applicable) .		
2.	Letter of good standing – Compensation.		
3.	Section 37(2) agreements. (Written defined responsibilities by mandataries)		
4.	Safety plan "which shall contain": -		
	Appointments letters i.e. copies.		
	- Applicable Written Safe Work Procedures (WSWP's) and Job Observations (J.O's).		
	- Fall protection plan (where applicable).		
	Your Health and Safety structure on site .		
	- i.e. Organigram "also depicting sub-contractors on site (In the event of large contracts).		
6.	Appointments letters i.e. copies.		
	- Safety Reps (E4E). (Health and Safety structure for large contracts) .		
	- Sub-contractors.		
7.	Emergency equipment and procedures e.g. First Aid box, Fire Extinguishers, tele nos. etc.		
8.	Competency certificates "i.e. copies" .		
	- "Competent persons" as required by the Regulations (Construction Regs.).		
	- Machine operators (Large & Small plant) .		
	- Lifting Equipment operators .		
9.	Health and Safety induction records.		
10.	Copies of medical surveillance records.		
	- Fitness certificates "e.g. working at heights .		
11.	Inspect Plant and Equipment (Includes all electrical equipment) and checklist.		
12.	Test certificates (e.g. Gases, hours etc. in confined spaces) .		
13.	Minutes of safety meetings held on site.		
14.	Daily Safety talks by Contractor, etc, including attendance register (Green Areas etc.)		
	Copies of hazardous waste removal and disposal certificates.		
16.	Copies of audit reports. (Contractor's & Spoornet)		
17.	Copies of site inspections. (Contractor's) (Initial and daily)		
18.	Incident investigation records.		
19.	Permits / occupation certificates		
20.	Notices served by Dept. of Labour.		
21.			
22.			
23.			

* If the response to any of the above questions was negative, what actions were taken to rectify it?

Technical Officer of Contract

Site Supervisor

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

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Railway Lines and High Voltage Equipment E7/1

E7/1 (July 1998)

SPECIFICATION FOR WORKS ON, OVER, UNDER OR ADJACENT TO RAILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT

(This Specification shall be used in Transnet Contracts)

CONTENTS

<u>CLAUSE</u>	<u>DESCRIPTION</u>
1.	<u>DEFINITIONS</u>
	<u>PART A - GENERAL SPECIFICATION</u>
2.	Authority of officers of Transnet
3.	Contractor's representatives
4.	Occupations and work permits
5.	Speed restrictions and protection
6.	Roads on Transnet property
7.	Clearances
8.	Stacking of material
9.	Excavation, shoring, dewatering and drainage
10.	Falsework for structures
11.	Piling
12.	Underground services
13.	Blasting
14.	Rail trolleys
15.	Signal track circuits
16.	Penalty for delays to trains

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Returnable Document**PART B - ADDITIONAL SPECIFICATION FOR WORK NEAR HIGH-VOLTAGE ELECTRICAL EQUIPMENT**

17. General
18. Work on buildings of fixed structures
19. Work done on or outside of rolling stock, including loading and unloading
20. Use of equipment
21. Carrying and handling material and equipment
22. Precautions to be taken when erecting or removing poles, antennae and trees
23. Use of water
24. Use of construction plant
25. Work performed under dead conditions under cover of a work permit
26. Traction return circuits in rails
27. Blasting
28. High-voltage electrical equipment not maintained and/or operated by Transnet

ANNEXES

1. Horizontal clearances 1 065 mm gauge
2. Vertical clearances 1 065 mm gauge
3. Clearances 610 mm gauge
4. Platform clearances

1 **DEFINITIONS**

The following definitions shall apply :

Authorised Person. A person whether an employee of Transnet or not, who has been specially authorised to undertake specific duties in terms of Transnet's publication SAFETY INSTRUCTIONS: HIGH-VOLTAGE ELECTRICAL EQUIPMENT, and who holds a certificate or letter of authority to that effect.

Barrier. Any device designed to restrict access to "live" high-voltage electrical equipment.

Bond. A short conductor installed to provide electrical continuity.

Contractor. Any person or organisation appointed by Transnet to carry out work on its behalf.

Dead. Isolated and earthed.

Electrical Officer (Contracts). The person appointed in writing by the responsible Electrical Engineer in Transnet as the person who shall be consulted by the Contractor in all electrical matters to ensure that adequate safety precautions are taken by the Contractor.

Executive Officer. The person appointed by Transnet from time to time as the Executive Officer to act according to the rights and powers held by and obligations placed upon him in terms of the Contract.

High-Voltage. A voltage normally exceeding 1 000 volts.

Live. A conductor is said to be "live" when it is at a potential different from that of the earth or any other conductor of the system of which it forms a part.

Near. To be in such a position that a person's body or the tools he is using or any equipment he is handling may come within 3 metres of live exposed high-voltage electrical equipment.

Occupation. An authorisation granted by Transnet for work to be carried out under specified conditions on, over under or adjacent to railway lines.

Occupation Between Trains. An occupation during an interval between successive trains.

Project Manager. The person or juristic person appointed by Transnet from time to time as the Project Manager, to administer the Contract according to the powers and rights held by and obligations placed upon him in terms of the Contract.

Responsible Representative. The responsible person in charge, appointed by a contractor, who has undergone specific training (and holds a certificate) to supervise staff under his control to work on, over, under or adjacent to railway lines and in the vicinity of high-voltage electrical equipment.

Technical Officer. The person or juristic person appointed by Transnet from time to time as the Technical Officer, to administer the Contractor's performance and execution of the Works according to the powers and rights held by and obligations placed upon the Technical Officer in terms of the Contract.

Total Occupation. An occupation for a period when trains are not to traverse the section of line covered by the occupation.

Work on. Work undertaken on or so close to the equipment that the specified working clearances to the live equipment cannot be maintained.

Work Permit. A combined written application and authority to proceed with work on or near dead electrical equipment.

PART A - GENERAL SPECIFICATION**2. AUTHORITY OF OFFICERS OF TRANSNET**

- 2.1 The Contractor shall co-operate with the officers of Transnet and shall comply with all instructions issued and restrictions imposed with respect to the Works which bear on the existence and operation of Transnet's railway lines and high-voltage equipment.
- 2.2 Without limiting the generality of the provisions of 2.1, any duly authorised representative of Transnet, having identified himself, may stop the work if, in his opinion, the safe passage of trains or the safety of Transnet assets or any person is affected. **CONSIDERATIONS OF SAFETY SHALL TAKE PRECEDENCE OVER ALL OTHER CONSIDERATIONS.**

3. CONTRACTOR'S REPRESENTATIVES

- 3.1 The Contractor shall nominate Responsible Representatives of whom at least one shall be available at any hour for call-out in cases of emergency. The Contractor shall provide the Technical Officer with the names, addresses and telephone numbers of the representatives.
- 3.2 The Contractor guarantees that he has satisfied himself that the Responsible Representative is fully conversant with this specification and that he shall comply with all his obligations in respect thereof.

4. OCCUPATIONS AND WORK PERMITS

- 4.1 Work to be done during total occupation or during an occupation between trains or under a work permit shall be done in a manner decided by the Technical Officer and at times to suit Transnet requirements.
- 4.2 The Contractor shall organise the Works in a manner, which will minimise the number and duration of occupations and work permits required.
- 4.3 Transnet will not be liable for any financial or other loss suffered by the Contractor arising from his failure to complete any work scheduled during the period of an occupation or work permit.
- 4.4 The Contractor shall submit to the Technical Officer, in writing, requests for occupations or work permits together with details of the work to be undertaken, at least 14 days before they are required. Transnet does not undertake to grant an occupation or work permit for any particular date, time or duration.
- 4.5 Transnet reserves the right to cancel any occupation or work permit at any time before or during the period of occupation or work permit. If, due to cancellation or change in date or time, the Contractor is not permitted to start work under conditions of total occupation or work permit at the time arranged, all costs caused by the cancellation shall be born by the Contractor except as provided for in clauses 4.6 to 4.8.
- 4.6 When the Contractor is notified less than 2 hours before the scheduled starting time that the occupation or work permit is cancelled, he may claim reimbursement of his direct financial losses caused by the loss of working time up to the time his labour and plant are employed on other work, but not exceeding the period of the cancelled occupation or work permit.
- 4.7 When the Contractor is notified less than 2 hours before the scheduled starting time, or during an occupation or work permit, that the duration of the occupation or work permit is reduced, he may claim reimbursement of his direct financial losses caused by the loss of working time due to the reduced duration of the occupation or work permit.

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- 4.8 Reimbursement the Contractor for any loss of working time in terms of 4.6 and 4.7, shall be subject to his claims being submitted within 14 days of the event with full details of labour and plant involved, and provided that the Technical Officer certifies that no other work on which the labour and plant could be employed was immediately available.
- 4.9 Before starting any work for which an occupation has been arranged, the Contractor shall obtain from the Technical Officer written confirmation of the date, time and duration of the occupation.
- 4.10 Before starting any work for which a work permit has been arranged, the Responsible Representative shall read and sign portion C of form No. T.1276 signifying that he is aware of the limits within which work may be undertaken. After the work for which the permit was granted has been completed, or when the work permit is due to be terminated, or if the permit is cancelled after the start, the same person who signed portion C shall sign portion D of the T.1276 form, thereby acknowledging that he is aware that the electrical equipment is to be made "live". The Contractor shall advise all his workmen accordingly.

5. SPEED RESTRICTIONS AND PROTECTION

- 5.1 When speed restrictions are imposed by Transnet because of the Contractor's activities, the Contractor shall organise and carry out his work so as to permit the removal of the restrictions as soon as possible.
- 5.2 When the Technical Officer considers protection to be necessary the Contractor shall, unless otherwise agreed, provide all protection including flagmen, other personnel and all equipment for the protection of Transnet's and the Contractor's personnel and assets, the public and including trains. Transnet will provide training free of charge of the Contractor's flagmen and other personnel performing protection duties. The Contractor shall consult with the Technical Officer, whenever he considers that protection will be necessary, taking into account the minimum permissible clearances set out in appendixes 1 to 4.
- 5.3 The Contractor shall appoint a Responsible Representative to receive and transmit any instruction, which may be given by Transnet personnel providing protection.

6. ROADS ON TRANSNET PROPERTY

The provision of clause 25 of the E.5, General Conditions of Contract, or clause 23 of the E.5 (MW), General Conditions of Contract for Maintenance Works, shall apply to the use of existing roads on Transnet's property.

7. CLEARANCES

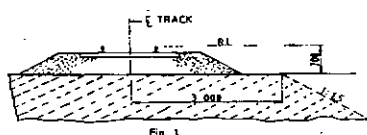
- 7.1 No temporary works shall encroach on the appropriate minimum clearances set out in Annexure 1 BE97-01 Sheets 1,2, 3 and 5 of 5.

8. STACKING OF MATERIAL

- 8.1 The Contractor shall not stack any material closer than 3 m from the centre line of any railway line without prior approval of the Technical Officer.

9. EXCAVATION, SHORING, DEWATERING AND DRAINAGE

- 9.1 Unless otherwise approved by the Technical Officer any excavation adjacent to a railway line shall not encroach on the hatched area shown in Figure 1.



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- 9.2 The Contractor shall provide at his own cost any shoring, dewatering or drainage of any excavation unless otherwise stipulated elsewhere in the Contract.
- 9.3 Where required by the Technical Officer, drawings of shoring for any excavation under or adjacent to a railway line shall be submitted and permission to proceed obtained, before the excavation is commenced.
- 9.4 The Contractor shall prevent ingress of water to the excavation but where water does enter, he shall dispose of it as directed by the Technical Officer.
- 9.5 The Contractor shall not block, obstruct or damage any existing drains either above or below ground level unless he has made adequate prior arrangements to deal with drainage.

10. **FALSEWORK FOR STRUCTURES**

- 10.1 Drawings of falsework for the construction of any structure over, under or adjacent to any railway line shall be submitted to the Technical Officer and his permission to proceed obtained before the falsework is erected. Each drawing shall be given a title and a distinguishing number and shall be signed by a registered professional engineer certifying that he has checked the design of the falsework and that the drawings are correct and in accordance with the design.
- 10.2 After the falsework has been erected and before any load is applied, the Contractor shall submit to the Technical Officer a certificate signed by a registered professional engineer certifying that he has checked the falsework and that it has been erected in accordance with the drawings. Titles and numbers of the drawings shall be stated in the certificate. Notwithstanding permission given by the Technical Officer to proceed, the Contractor shall be entirely responsible for the safety and adequacy of the falsework.

11. **PILING**

- 11.1 The Technical Officer will specify the conditions under which piles may be installed on Transnet property.

12. **UNDERGROUND SERVICES**

- 12.1 No pegs or stakes shall be driven or any excavation made before the Contractor has established that there are no underground services, which may be damaged thereby.
- 12.2 Any damage shall be reported immediately to the Technical Officer, or to the official in charge at the nearest station, or to the traffic controller in the case of centralised traffic control.

13. **BLASTING**

- 13.1 The provisions of clause 23 of the E.5, General Conditions of Contract or clause 21 of the E.5 (MW), General Conditions of Contract for Maintenance Work, shall apply to all blasting operations undertaken in terms of the Contract.
- 13.2 The Contractor shall provide proof that he has complied with the provisions of clauses 10.17.1 to 10.17.4 of the Explosives Regulations (Act 26 of 1956 as amended).
- 13.3 Blasting within 500m of a railway line will only be permitted during intervals between trains. A person appointed by the Technical Officer, assisted by flagmen with the necessary protective equipment, will be in communication with the controlling railway station.
- Only this person will be authorised to give the Contractor permission to blast, and the Contractor shall obey his instructions implicitly regarding the time during which blasting may take place.

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13.4 The flagmen described in 13.3, where provided by Transnet, are for the protection of trains and Transnet property only, and their presence does not relieve the Contractor in any manner of his responsibilities in terms of Explosives Act or Regulations, or any obligation in terms of this Contract.

13.5 The person described in 13.3 will record in a book provided and retained by Transnet the dates and times -

- (i) when each request is made by him to the controlling station for permission to blast;
- (ii) when blasting may take place;
- (iii) when blasting actually takes place; and
- (iv) when he advises the controlling station that the line is safe for the passage of trains.

13.6 Before each blast the Contractor shall record in the same book, the details of the blast to be carried out. The person appointed by the Technical Officer and the person who will do the blasting shall both sign the book whenever an entry described in 13.5 is made.

13.7 The terms of clause 27 hereof shall be strictly adhered to

14. **RAIL TROLLEYS**

14.1 The use of rail trolleys or trestle trolleys on a railway line for working on high voltage equipment will be permitted only if approved by the Technical Officer and under the conditions stipulated by him.

14.2 All costs in connection with such trolley working requested by the Contractor shall, unless otherwise agreed, be borne by the Contractor, excluding the costs of any train protection services normally provided free of charge by Transnet.

15. **SIGNAL TRACK CIRCUITS**

15.1 Where signal track circuits are installed, the Contractor shall ensure that no material capable of conducting an electrical current makes contact between rails of a railway line/lines.

15.2 No signal connections on track-circuited tracks shall be severed without the Technical Officer's knowledge and consent.

16. **PENALTY FOR DELAYS TO TRAINS**

16.1 If any trains are delayed by the Contractor and the Technical Officer is satisfied that the delay was avoidable, a penalty will be imposed on the Contractor of R5 000 per hour or part thereof for the period of delay, irrespective of the number of trains delayed.

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PART B - ADDITIONAL SPECIFICATION FOR WORK NEAR HIGH-VOLTAGE ELECTRICAL EQUIPMENT

17. GENERAL

- 17.1 This specification is based on the contents of Transnet's publication SAFETY INSTRUCTIONS, HIGH-VOLTAGE ELECTRICAL EQUIPMENT, as amended, a copy of which will be made available on loan to the Contractor for the duration of the contract. These instructions apply to all work near live high-voltage equipment maintained and/or operated by Transnet, and the onus rests on the Contractor to ensure that he obtains a copy.
- 17.2 The Contractor's attention is drawn in particular to the contents of Part I, Sections 1 and 2 of the Safety Instructions : High-Voltage Electrical Equipment.
- 17.3 The Safety Instructions : High-Voltage Electrical Equipment cover the minimum safety precautions which must be taken to ensure safe working on or near high-voltage electrical equipment, and must be observed at all times. Should additional safety measures be considered necessary because of peculiar local conditions, these may be ordered by and at the discretion of the Electrical Officer (Contracts).
- 17.4 This specification must be read in conjunction with and not in lieu of the Safety Instructions : High-Voltage Electrical Equipment.
- 17.5 The Contractor shall obtain the approval of the Electrical Officer (Contracts) before any work is done which causes or could cause any portion of a person's body or the tools he is using or any equipment he is handling, to come within 3 metres of any live high-voltage equipment.
- 17.6 The Contractor shall regard all high-voltage equipment as live unless a work permit is in force.
- 17.7 Safety precautions taken or barriers erected shall comply with the requirements of the Electrical Officer (Contracts), and shall be approved by him before the work to be protected is undertaken by the Contractor. The Contractor shall, unless otherwise agreed, bear the cost of the provision of the barriers and other safety precautions required, including the attendance of Transnet staff where this is necessary.
- 17.8 No barrier shall be removed unless authorised by the Electrical Officer (Contracts).

18. WORK ON BUILDINGS OR FIXED STRUCTURES

- Before any work is carried out or measurements are taken on any part of a building, fixed structure or earthworks of any kind above ground level situated within 3 metres of live high-voltage equipment, the Electrical Officer (Contracts) shall be consulted to ascertain the conditions under which the work may be carried out.
- 18.2 No barrier erected to comply with the requirements of the Electrical Officer (Contracts) shall be used as temporary staging or shuttering for any part of the Works.
- 18.3 The shuttering for bridge piers, abutments, retaining walls or parapets adjacent to or over any track may be permitted to serve as a barrier, provided that it extends at least 2,5 metres above any working level in the case of piers, abutments and retaining walls and 1,5 metres above any working level in the case of parapets.

19. **WORK DONE ON OR OUTSIDE OF ROLLING STOCK, INCLUDING LOADING OR UNLOADING**

19.1 No person shall stand, climb or work whilst on any platform, surface or foothold higher than the normal unrestricted places of access, namely -

- (i) the floor level of trucks;
- (ii) external walkways on diesel, steam and electric locomotives, steam heat vans, etc. and
- (iii) walkways between coaches and locomotives.

When in these positions, no person may raise his hands or any equipment or material he is handling above his head.

19.2 In cases where the Contractor operates his own rail mounted equipment, he shall arrange for the walkways on this plant to be inspected by the Electrical Officer (Contracts) and approved, before commencement of work.

19.3 The handling of long lengths of material such as metal pipes, reinforcing bars, etc should be avoided, but if essential they shall be handled as nearly as possible in a horizontal position below head height.

19.4 The Responsible Representative shall warn all persons under his control of the danger of being near live high-voltage equipment, and shall ensure that the warning is fully understood.

19.5 Where the conditions in 19.1 to 19.3 cannot be observed the Electrical Officer (Contracts), shall be notified. He will arrange for suitable Safety measures to be taken. The Electrical Officer (Contracts), may in his discretion and in appropriate circumstances, arrange for a suitable employee of the Contractor to be specially trained by Transnet and at its costs, as an Authorised Person to work closer than 3 metres from live overhead conductors and under such conditions as may be imposed by the Senior responsible Electrical Engineer in Transnet.

20. **USE OF EQUIPMENT**

20.1 Measuring Tapes and Devices

20.1.1 Measuring tapes may be used near live high-voltage equipment provided that no part of any tape or a person's body comes within 3 metres of the live equipment.

20.1.2 In windy conditions the distance shall be increased to ensure that if the tape should fall it will not be blown nearer than 3 metres from the live high-voltage equipment.

20.1.3 Special measuring devices longer than 2 metres such as survey staves and rods may be used if these are of non-conducting material and approved by the responsible Electrical Engineer in Transnet, but these devices must not be used within 3 metres of live high-voltage equipment in rainy or wet conditions.

20.1.4 The assistance of the Electrical Officer (Contracts) shall be requested when measurements within the limits defined in 20.1.1 to 20.1.3 are required.

20.1.5 The restrictions described in 20.1.1 to 20.1.3 do not apply on a bridge deck between permanent parapets nor in other situations where a barrier effectively prevents contact with the live high-voltage equipment.

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Returnable Document**20.2 Portable Ladders**

- 20.2.1 Any type of portable ladder longer than 2 metres may only be used near live high-voltage equipment under the direct supervision of the Responsible Representative. He shall ensure that the ladder is always used in such a manner that the distance from the base of the ladder to any live high-voltage equipment is greater than the fully extended length of the ladder plus 3 metres. Where these conditions cannot be observed, the Electrical Officer (Contracts) shall be advised, and he will arrange for suitable safety measures to be taken.

21. CARRYING AND HANDLING MATERIAL AND EQUIPMENT

- 21.1 Pipes, scaffolding, iron sheets, reinforcing bars and other material, which exceeds 2 metres in length, shall be carried completely below head height near live high-voltage equipment. For maximum safety two or more persons so as to maintain it as nearly as possible in a horizontal position should carry such material. The utmost care must be taken to ensure that no part of the material comes within 3 metres of any live high-voltage equipment.
- 21.2 Long lengths of wire or cable shall never be run out in conditions where a part of a wire or cable can come within 3 metres of any live high-voltage equipment unless the Electrical Officer (Contracts) has been advised and has approved appropriate safety precautions.
- 21.3 The presence of overhead power lines shall always be taken account of especially when communications lines or cables or aerial cables, stay wires, etc. are being erected above ground level.

22. PRECAUTIONS TO BE TAKEN WHEN ERECTING OR REMOVING POLES, ANTENNAE, TREES ETC.

- 22.1 A pole may be handled for the purpose of erection or removal near high-voltage equipment under the following conditions:
- (i) If the distance between the point at which the pole is to be erected or removed and the nearest live high-voltage equipment is more than the length of the pole plus 3 metres, the work shall be supervised by the Responsible Representative.
 - (ii) If the distance described in (i) is less than the length of the pole plus 3 metres, the Electrical Officer (Contracts) shall be consulted to arrange for an Authorised Person to supervise the work and to ensure that the pole is earthed where possible. The pole shall be kept in contact with the point of erection, and adequate precautions shall be taken to prevent contact with live high-voltage equipment.
- 22.2 The cost of supervision by an Authorised Person and the provision of earthing shall, unless otherwise agreed, be borne by the Contractor.
- 22.3 The provisions of clauses 22.1 and 22.2 shall also apply to the erection or removal of columns, antennae, trees, posts, etc.

23. USE OF WATER

- 23.1 No water shall be used in the form of a jet if it can make contact with any live high-voltage equipment or with any person working on such equipment.

24. USE OF CONSTRUCTION PLANT

- 24.1 "Construction plant" entails all types of plant including cranes, piling frames, boring machines, excavators, draglines, dewatering equipment and road vehicles with or without lifting equipment.

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

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24.2 When work is being undertaken in such a position that it is possible for construction plant or its load to come within 3 metres of live high-voltage equipment, the Electrical Officer (Contracts) shall be consulted. He will arrange for an Authorised Person to supervise the work and to ensure that the plant is adequately earthed. The Electrical Officer (Contracts) will decide whether further safety measures are necessary.

24.3 The cost of any supervision by an Authorised Person and the provision of earthing shall, unless otherwise agreed, be borne by the Contractor.

24.4 When loads are handled by cranes, non-metallic rope hand lines shall be used, affixed to such loads so as to prevent their swinging and coming within 3 metres of live high-voltage equipment.

24.5 Clauses 24.1 to 24.4 shall apply mutatis mutandis to the use of maintenance machines of any nature.

25. **WORK PERFORMED UNDER DEAD CONDITIONS UNDER COVER OF A WORK PERMIT**

25.1 If the Responsible Representative finds that the work cannot be done in safety with the high-voltage electrical equipment live, he shall consult the Electrical Officer (Contracts) who will decide on the action to be taken.

25.2 If a work permit is issued the Responsible Representative shall -

- (i) before commencement of work ensure that the limits within which work may be carried out have been explained to him by the Authorised Person who issued the permit to him, and that he fully understands these limits;
- (ii) sign portion C of the permit before commencement of work;
- (iii) explain to all persons under his control the limits within which work may be carried out, and ensure that they fully understand these limits;
- (iv) care for the safety of all persons under his control whilst work is in progress; and
- (v) withdraw all personnel under his control from the equipment on completion of the work before he signs portion D of the work permit.

26. **TRACTION RETURN CIRCUITS IN RAILS**

26.1 DANGEROUS CONDITIONS CAN BE CREATED BY REMOVING OR SEVERING ANY BOND.

26.2 Broken rails with an air gap between the ends, and joints, at which fishplates are removed under "broken bond" conditions, are potentially lethal. The rails on either side of an air gap between rail ends on electrified lines shall not be touched simultaneously until rendered safe by Transnet personnel.

26.3 The Contractor shall not break any permanent bonds between rails or between rails and any structure. He shall give the Technical Officer at least 7 days written notice when removal of such bonds is necessary.

26.4 No work on the track which involves interference with the traction return rail circuit either by cutting or removing the rails, or by removal of bonds shall be done unless the Electrical Officer (Contracts) is consulted. He will take such precautions as may be necessary to ensure continuity of the return circuit before permitting the work to be commenced.

27. **BLASTING**

27.1 The Contractor shall obtain the permission of the Electrical Officer (Contracts) before blasting, and shall give at least 14 days notice of his intention to blast.

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27.2 No blasting shall be done in the vicinity of electrified lines unless a member of Transnet's electrical personnel is present.

27.3 The terms of clause 13 hereof shall be strictly adhered to.

28. **HIGH-VOLTAGE ELECTRICAL EQUIPMENT NOT MAINTAINED AND/OR OPERATED BY TRANSNET**

Where the work is undertaken on or near high-voltage electrical equipment which is not maintained and/or operated by Transnet, the Occupational Health and Safety Act No. 85 of 1993, and Regulations and Instructions, or the Mines Health and Safety Act (Act 29 of 1996), shall apply.

Such equipment includes: -

- (i) Eskom and municipal equipment;
- (ii) the Contractor's own power supplies; and
- (iii) electrical equipment being installed but not yet taken over from the Contractor.

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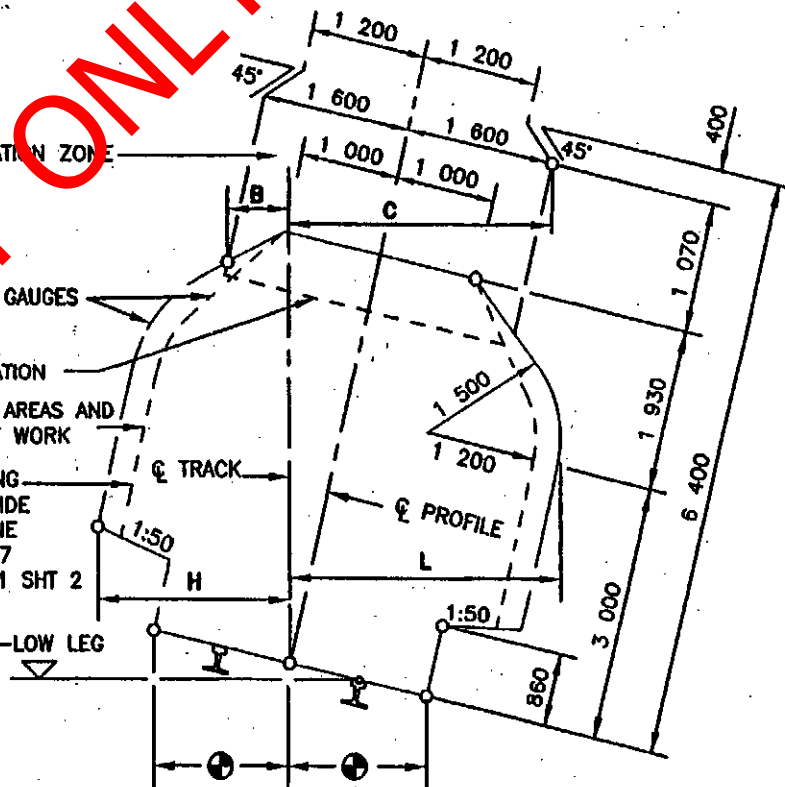
BE 97-01 Sht 1 of 5 DATE : JUNE 2000

RADIUS (m)	WITH CANT		NO CANT	WITH CANT	
	H (mm)	L (mm)	H & L	B (mm)	C (mm)
90	2 730	3 090	2 780	1 130	2 100
100	2 700	3 030	2 750	1 140	2 050
120	2 650	2 970	2 700	1 160	2 010
140	2 620	2 920	2 660	1 175	1 990
170	2 590	2 870	2 630	1 190	1 970
200	2 570	2 820	2 600	1 205	1 950
250	2 550	2 790	2 580	1 230	1 920
300	2 540	2 760	2 560	1 250	1 900
350	2 530	2 730	2 540	1 270	1 890
400	2 520	2 710	2 530	1 290	1 875
500	2 510	2 680	2 520	1 320	1 850
600	2 500	2 660	2 510	1 340	1 830
800	2 490	2 620	2 500	1 365	1 790
1 000	2 480	2 600	2 490	1 380	1 760
1 200	2 480	2 580	2 480	1 200	1 730
1 500	2 480	2 550	2 480	1 415	1 700
2 000	2 480	2 500	2 480	1 440	1 660
3 000	2 470	2 470	2 470	1 500	1 600
>5 000	2 460	2 460	2 460	1 600	1 600

ELECTRIFICATION ZONE

STRUCTURE GAUGES
FOR NON-
ELECTRIFICATIONWORKSHOP AREAS AND
TEMPORARY WORKFOR FOULING
POINTS INSIDE
DASHED LINE
SEE NOTE 7
ANNEXURE 1 SHT 2

RAIL LEVEL-LOW LEG



REMARKS:

1. H AND B IS THE REQUIRED HORIZONTAL CLEARANCE ON THE OUTSIDE OF THE CURVE BASED ON MINIMUM CANT.
2. L AND C IS THE REQUIRED HORIZONTAL CLEARANCE ON THE INSIDE OF THE CURVE BASED ON MAXIMUM CANT.
3. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
4. FOR WORKSHOP AREAS AND TEMPORARY WORK, CLEARANCES H AND L MAY BE REDUCED BY 300mm.
5. Ⓢ SEE ANNEXURE 1 SHEET 3 FOR PLATFORM CLEARANCES.
6. ALSO REFER TO REMARKS 4 TO 8 OF ANNEXURE 1 SHEET 2.

ANNEXURE 1
SHEET 1 of 5
AMENDMENTHORIZONTAL CLEARANCES :
1 065mm TRACK GAUGE

VERTICAL CLEARANCES : 1 065mm TRACK GAUGE

Technical drawing of a bridge structure, likely a girder bridge, showing dimensions and labels. The drawing is oriented diagonally. Key dimensions include:

- Overall length: 4 930
- Span length: 3 000
- Span height: 1 930
- Span width: 270
- Span depth: 1 200
- Span slope: 1:50
- Span width at base: 860
- Span depth at base: 1:50

Labels and notes include:

- ELECTRIFICATION ZONE SEE ANNEXURE 1 Sht 1
- FOR FOULING POINTS BELOW THIS LEVEL, SEE NOTE 7
- STRUCTURE GAUGES
- WORKSHOP AREAS AND TEMPORARY WORK
- € TRACK
- € PROFILE
- RAIL LEVEL-LOW LEG

1. V IS THE REQUIRED VERTICAL CLEARANCE EXCEPT WHERE REDUCED CLEARANCE S APPLIES.
2. S IS THE MINIMUM VERTICAL CLEARANCE FOR STRUCTURES AND TEMPORARY WORK OVER NON-ELECTRIFIED LINES.
3. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
4. FOR APPLICATION AT CURVES
 - 4.1 APPLY INCREASED CLEARANCES FOR CURVES TO POINTS 3m BEYOND THE ENDS OF THE CIRCULAR CURVE.
 - 4.2 REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - 4.3 FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 15m ALONG STRAIGHTS.
5. NEW STRUCTURES: SEE BRIDGE CODE.
6. TUNNELS: SEE DRAWING BE 82-35.
7. FOULING POINTS: SEE CLAUSE 8.1.
8. CLEARANCES ARE BASED ON 15m BOGIE CENTRES AND 21,2m VEHICLE BODY LENGTH.
9. SEE ANNEXURE 1 SHEET 3 FOR PLATFORM CLEARANCES.

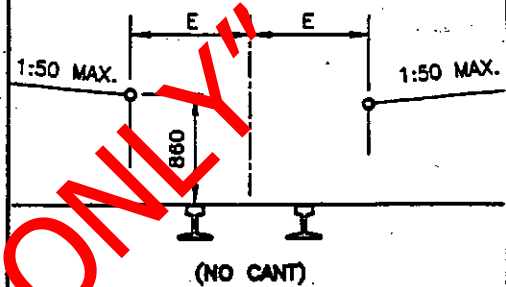
BE 97-01 Sht 2 of 5 DATE : JUNE 2000

23

Date & Company Stamp

CLEARANCES : PLATFORMS

GOODS



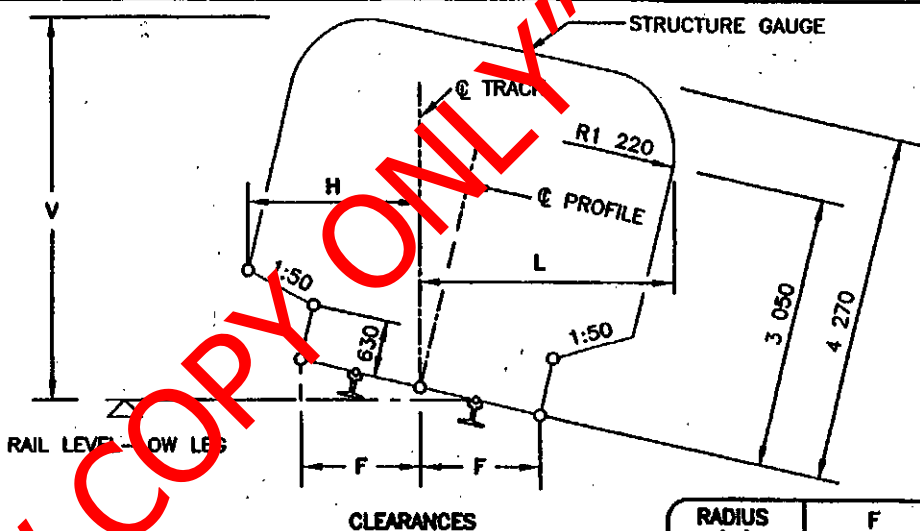
4. TOLERANCES : SEE
CLAUSE 8.0.10. '

- BUILDING/STRUCTURE

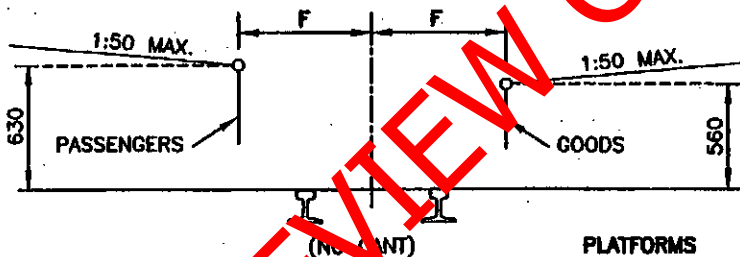
ANNEXURE 1
SHEET 5 of 5
AMENDMENT

CLEARANCES : 610mm TRACK GAUGE

RADIUS (m)	F (mm)
50	1 550
60	1 510
80	1 460
100	1 430
120	1 410
140	1 390
170	1 380
200	1 370
250	1 360
300	1 350
600	1 330
1 000	1 320
>2 000	1 320
STRAIGHT	1 310



RADIUS (m)	WITH CANT		NO CANT	V (mm)
	H (mm)	L (mm)	H & L (mm)	
50	2 370	2 490	2 400	4 320
70	2 310	2 420	2 330	4 310
100	2 260	2 370	2 280	4 310
140	2 220	2 340	2 250	4 310
200	2 200	2 300	2 220	4 300
300	2 190	2 270	2 200	4 300
500	2 180	2 230	2 190	4 290
700	2 170	2 200	2 180	4 270
1 000	2 170	2 170	2 170	4 270
>2 000	2 160	2 160	2 160	4 270



REMARKS:

1. H IS THE MINIMUM HORIZONTAL CLEARANCE ON THE OUTSIDE OF THE CURVE BASED ON MINIMUM CANT.
2. L IS THE MINIMUM HORIZONTAL CLEARANCE ON THE INSIDE OF THE CURVE BASED ON MAXIMUM CANT.
3. V IS THE MINIMUM VERTICAL CLEARANCE.
4. FOR APPLICATION AT CURVES:
 - 4.1 APPLY INCREASED CLEARANCES FOR CURVES TO POINTS 2m BEYOND THE ENDS OF THE CIRCULAR CURVE.
 - 4.2 REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - 4.3 FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 18m ALONG STRAIGHTS.
5. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
6. ALSO REFER TO REMARKS 5, 6 AND 7 OF ANNEXURE 1 SHEET 2.
7. CLEARANCES ARE BASED ON 9 700mm BOGIE CENTRES AND 13 700mm VEHICLE BODY LENGTH.
8. SEE ANNEXURE 1 SHEET 3 FOR STRUCTURES ON PLATFORMS.

BE 97-01 Sht 5 of 5 DATE : JUNE 2000

Respondent's Signature

25

Date & Company Stamp

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

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FOR THE AS & WHEN MAINTENANCE / BREAKDOWNS & NEW INSTALLATIONS TO ELECTRICAL INSTALLATIONS / AIR-CONDITIONING PLANT AS WELL AS ROUTINE SERVICE OF AIR-CONDITIONING PLANT AND ASSOCIATED EQUIPMENT SERVING THE VARIOUS BUILDINGS IN THE DE AAR REGION FOR A PERIOD OF 24 MONTHS.

CLOSING VENUE: TENDER BOX

CLOSING DATE & TIME: 23 JUNE 2015 AT 10:00

VALIDITY PERIOD: 90 Business Days

SECTION 2**EVALUATION CRITERIA AND RETURNABLE DOCUMENTS****1 Evaluation Criteria**

Transnet will utilise the following criteria [not necessarily in this order] in choosing a Supplier/Service Provider, if so required:

Criterion/Criteria	Explanation
Administrative responsiveness	Completeness of response and returnable documents
Substantive responsiveness	Prequalification criteria, if any, must be met and whether the Bid materially complies with the scope and/or specification given.
Final weighted evaluation based on 80/20 preference point	<ul style="list-style-type: none"> Pricing and price basis [firm] B-BBEE status of company - Preference points will be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table indicated in Annexure A: B-BBEE Claim Form.

2 Validity Period

Transnet desires a validity period of 90 [ninety] Business Days from the closing date of this RFQ.

This RFQ is valid until _____.

3 Disclosure of Prices Quoted

Respondents must indicate here whether Transnet may disclose their quoted prices and conditions to other Respondents:

YES ☐ NO ☐

4 Returnable Documents

Returnable Documents means all the documents, Sections and Annexures, as listed in the tables below.

All Returnable Sections, as indicated in the header and footer of the relevant pages, must be signed, stamped and dated by the Respondent.

a) Respondents are required to submit with their Quotations the **mandatory Returnable Documents**, as detailed below.

Respondent's Signature

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Date & Company Stamp

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

Returnable Document

Failure to provide all these Mandatory Returnable Documents at the Closing Date and time of this RFQ will result in a Respondent's disqualification. Respondents are therefore urged to ensure that all these Documents are returned with their Quotations.

Please confirm submission of these mandatory Returnable Documents by so indicating [Yes or No] in the tables below:

Mandatory Returnable Documents	Submitted [Yes or No]
SECTION 3 : Quotation Form	

- b) In addition to the requirements of section (a) above, Respondents are further required to submit with their Quotations the following **essential Returnable Documents** as detailed below.

Failure to provide all these Returnable Documents may result in a Respondent's disqualification. Respondents are therefore urged to ensure that all these documents are returned with their Quotations.

Essential Returnable Documents	Submitted [Yes or No]
SECTION 2 : Evaluation criteria and list of returnable documents	
- SECTION 4 : RFQ Declaration and Breach of Law Form	
- Valid and original, or a certified copy, of your entity's B-BBEE Verification Certification as per the requirements stipulated in Annexure A: B-BBEE Claims Form Note: failure to provide these required documents at the closing date and time of the RFQ will result in an automatic score of zero being allocated for preference	
- Original valid Tax Clearance Certificate [Consortia / Joint Ventures must submit a separate Tax Clearance Certificate for each party]	
ANNEXURE A – B-BBEE Preference Points Claim Form	
ANNEXURE B – Project Specifications (27 Pages)	
CIDB Registration Certificate (1EB)	
Compensation for Occupational Injuries and Diseases Act 1993/Valid Letter of Good Standing	
Proof of De Aar Business Address (Municipality/Telkom Account)	
Occupational Health and Safety Act, 1993 Electrical Installation Regulation Registration 6(4) of electrical Contractor. (At least for any installation, excluding specialized electrical installations.)	
SAQCC Gas Practitioner Reg.	

CONTINUED VALIDITY OF RETURNABLE DOCUMENTS

The successful Respondent will be required to ensure the validity of all returnable documents, including but not limited to its Tax Clearance Certificate and valid B-BBEE Verification Certificate, for the duration of any contract emanating from this RFQ. Should the Respondent be awarded the contract **[the Agreement]** and fail to present Transnet with such renewals as and when they become due, Transnet shall be entitled, in addition to any other rights and remedies that it may have in terms of the eventual Agreement, to terminate such Agreement forthwith without any liability and without prejudice to any claims which Transnet may have for damages against the Respondent.

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

Returnable Document

SECTION 3 QUOTATION FORM

I/We _____
hereby offer to supply the goods/services at the prices quoted in the Price Schedule below, in accordance with the conditions related thereto.

I/We agree to be bound by those terms and conditions in:

- the Standard RFQ Terms and Conditions for the Supply of Goods or Services to Transnet; and
- any other standard or special conditions mentioned and/or embodied in this Request for Quotation.

I/We accept that unless Transnet should otherwise decide and so inform me/us, this Quotation [and, if any, its covering letter and any subsequent exchange of correspondence], together with Transnet's acceptance thereof shall constitute a binding contract between Transnet and me/us.

I/We further agree that if, after I/we have been notified of the acceptance of my/our Quotation, I/we fail to deliver the said goods/service/s within the delivery lead time quoted, Transnet may, without prejudice to any other legal remedy which it may have, cancel the order and recover from me/us any expenses incurred by Transnet in calling for Quotations afresh and/or having to accept any less favourable offer.

Price Schedule

I/We quote as follows for the service required, excluding VAT:

AS AND WHEN RATES

MATERIAL:

Handling costs of material _____ %

NORMAL WORKING HOURS:

LABOUR:

Labour rate per hour for Artisan R _____

Labour rate per hour for labourer R _____

AFTER HOURS, WEEKENDS AND PUBLIC HOLIDAYS:

LABOUR:

Labour rate per hour for Artisan R _____

Labour rate per hour for labourer R _____

SUB TOTAL A R _____

ROUTINE MAINTENANCE RATES:

Window/Wall type Air-Conditioners: R _____ / Service

Split type Air-Conditioners: R _____ / Service

Console type Air-Conditioners: R _____ / Service

Hide Away type Air-Conditioners: R _____ / Service

Coolers/Freezers: R _____ / Service

Evaporative Coolers: R _____ / Service

Heat Pumps R _____ / Service

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

Returnable Document**REFRIGERANT GAS:**

R22 Gas	R _____/Kg
R134A Gas	R _____/Kg
R404 Gas	R _____/Kg
R410A Gas	R _____/Kg
R407C Gas	R _____/Kg
R417A Gas	R _____/Kg

TRAVELLING (AS AND WHEN/ROUTINE SERVICE)

Rate: R _____/km

SUB TOTAL B R _____

NETT PRICE (VAT EXCLUDED)(A+B) R _____

Add 14% VAT. No. _____ R _____

TOTAL TENDER PRICE R _____

TOTAL TENDER PRICE IN WORDS: _____

"PREVIEW COPY ONLY"

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

Returnable Document

By signing this Quotation Form the Respondent is deemed to acknowledge that he/she has made himself/herself thoroughly familiar, and agrees, with all the conditions governing this RFQ, including those contained in any printed form stated to form part hereof, including but not limited to the documents stated below and Transnet SOC Ltd will recognise no claim for relief based on an allegation that the Respondent overlooked any such condition or failed properly to take it into account for the purpose of calculating tendered prices or otherwise:

1. Specifications and drawings included in this RFQ - if applicable; and
2. The following documents all of which are available on Transnet's website or upon request:
 - 2.1. General Bid Conditions;
 - 2.2. Standard RFQ Terms and Conditions for the Supply of Goods or Services to Transnet;
 - 2.3. Supplier Integrity Pact;
 - 2.4. Vendor Application Form and all supporting documents (first time vendor only)

Alternatively, for all existing vendors, please provide vendor number(s) here:

Transnet Operating Division	Unique Vendor Number	Yes / No
Transnet Freight Rail		

In the Yes/No column above, please confirm that all the information e.g. company address and contact details, banking details etc. are still correct as at the time of allocation of the vendor number(s). Alternatively, Respondents are required to provide the updated information with their bid submission.

SIGNED at _____ on this _____ day of _____ 20__

SIGNATURE OF WITNESSES

ADDRESS OF WITNESSES

1 _____
Name _____

2 _____

Name _____

SIGNATURE OF RESPONDENT'S AUTHORISED REPRESENTATIVE: _____

NAME: _____

DESIGNATION: _____

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

Returnable Document**SECTION 4****RFQ DECLARATION AND BREACH OF LAW FORM**

NAME OF ENTITY: _____

We _____ do hereby certify that:

1. Transnet has supplied and we have received appropriate responses to any/all questions [as applicable] which were submitted by ourselves for RFQ Clarification purposes;
2. we have received all information we deemed necessary for the completion of this Request for Quotation [RFQ];
3. we have been provided with sufficient access to the existing Transnet facilities/sites and any and all relevant information relevant to the Supply of the Goods as well as Transnet information and Employees, and has had sufficient time in which to conduct and perform a thorough due diligence of Transnet's operations and business requirements and assets used by Transnet. Transnet will therefore not consider or permit any pre- or post-contract verification or any related adjustment to pricing, service levels or any other provisions/conditions based on any incorrect assumptions made by the Respondent in arriving at his Bid Price.
4. at no stage have we received additional information relating to the subject matter of this RFQ from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the RFQ documents;
5. we are satisfied, insofar as our entity is concerned, that the processes and procedures adopted by Transnet in issuing this RFQ and the requirements requested from Bidders in responding to this RFQ have been conducted in a fair and transparent manner; and
6. furthermore, we declare that a family, business and/or social relationship **exists / does not exist** [delete as applicable] between an owner / member / director / partner / shareholder of our entity and an employee or board member of the Transnet Group including any person who may be involved in the evaluation and/or adjudication of this Bid.
7. In addition, we declare that an owner / member / director / partner / shareholder of our entity **is / is not** [delete as applicable] an employee or board member of the Transnet Group.
8. If such a relationship as indicated in paragraph 6 and/or 7 exists, the Respondent is to complete the following section:

FULL NAME OF OWNER/MEMBER/DIRECTOR/
PARTNER/SHAREHOLDER:

ADDRESS:

Indicate nature of relationship with Transnet:

[Failure to furnish complete and accurate information in this regard will lead to the disqualification of a response and may preclude a Respondent from doing future business with Transnet]

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

Returnable Document

9. We declare, to the extent that we are aware or become aware of any relationship between ourselves and Transnet [other than any existing and appropriate business relationship with Transnet] which could unfairly advantage our entity in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.

BREACH OF LAW

10. We further hereby certify that I/we **have/have not been** [delete as applicable] found guilty during the preceding 5 [five] years of a serious breach of law, including but not limited to a breach of the Competition Act, 89 of 1998, by a court of law, tribunal or other administrative body. The type of breach that the Respondent is required to disclose excludes relatively minor offences or misdemeanours, e.g. traffic offences. This includes the imposition of an administrative fine or penalty.

Where found guilty of such a serious breach, please disclose:

NATURE OF BREACH:

DATE OF BREACH: _____

Furthermore, I/we acknowledge that Transnet SOC Ltd reserves the right to exclude any Respondent from the bidding process, should that person or entity have been found guilty of a serious breach of law, tribunal or regulatory obligation.

SIGNED at _____ on this _____ day of _____ 20____

For and on behalf of _____ duly authorised hereto	AS WITNESS:
Name:	Name:
Position:	Position:
Signature:	Signature:
Date:	Registration No of Company/CC _____
Place:	Registration Name of Company/CC _____

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months

Returnable Document

Supplier Declaration Form

Company Trading Name							
Company Registered Name							
Company Registration Number Or ID Number If A Sole Proprietor							
Form of entity	CC	Trust	Pty Ltd	Limited	Partnership	Sole Proprietor	
VAT number (if registered)							
Company Telephone Number							
Company Fax Number							
Company E-Mail Address							
Company Website Address							
Bank Name		Bank Account Number					
Postal Address						Code	
Physical Address						Code	
Contact Person							
Designation							
Telephone							
Email							
Annual Turnover Range (Last Financial Year)		< R1 million	R5-35 million	> R35 million			
Does Your Company Provide		Products	Services	Both			
Area Of Delivery		National	Provincial	Local			
Is Your Company A Public Or Private Entity		Public		Private			
Does Your Company Have A Tax Directive Or RP30 Certificate		Yes		No			
Main Product Or Service Supplied (E.G.: Stationery/Consulting)							
BEE Ownership Details							
% Black Ownership	% Black women ownership	% Disabled person/s ownership					
Does your company have a BEE certificate		Yes		No			
What is your broad based BEE status (Level 1 to 9 / Unknown)							
How many personnel does the firm employ		Permanent		Part time			
Transnet Contact Person							
Contact number							
Transnet operating division							
Duly Authorised To Sign For And On Behalf Of Firm / Organisation							
Name		Designation					
Signature		Date					
Stamp And Signature Of Commissioner Of Oath							
Name		Date					
Signature		Telephone No.					

**FOR THE AS & WHEN MAINTENANCE / BREAKDOWNS & NEW INSTALLATIONS TO ELECTRICAL
INSTALLATIONS / AIR-CONDITIONING PLANT AS WELL AS ROUTINE SERVICE OF AIR-
CONDITIONING PLANT AND ASSOCIATED EQUIPMENT SERVING THE VARIOUS BUILDINGS IN THE
DE AAR REGION FOR A PERIOD OF 24 MONTHS.**

ANNEXURE A: B-BBEE PREFERENCE POINTS CLAIM FORM

This preference form contains general information and serves as a claim for preference points for Broad-Based Black Economic Empowerment [B-BBEE] Status Level of Contribution.

1. INTRODUCTION

- 1.1 A total of 20 preference points shall be awarded for B-BBEE Status Level of Contribution.
- 1.2 Failure on the part of a Bidder to fill in and/or to sign this form and submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System [SANAS] or a Registered Auditor approved by the Independent Regulatory Board of Auditors [IRBA] or an Accounting Officer as contemplated in the Close Corporation Act [CCA] together with the bid will be interpreted to mean that preference points for B-BBEE Status Level of Contribution are not claimed.
- 1.3 Transnet 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 Transnet.

2. GENERAL DEFINITIONS

- 2.1 **"all applicable taxes"** include value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- 2.2 **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- 2.3 **"B-BBEE status of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- 2.4 **"Bid"** means a written offer in a prescribed or stipulated form in response to an invitation by Transnet for the provision of goods, works or services;
- 2.5 **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 [Act No. 53 of 2003];
- 2.6 **"comparative price"** means the price after the factors of a non-firm price and all unconditional discounts that can be utilised have been taken into consideration;
- 2.7 **"consortium or joint venture"** means an association of persons for the purpose of combining their expertise, property, capital, efforts, skills and knowledge in an activity for the execution of a

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contract;

- 2.8 **"contract"** means the agreement that results from the acceptance of a bid by Transnet;
- 2.9 **"EME"** means any enterprise with an annual total revenue of R5 [five] million or less as per the 2007 version of the B-BBEE Codes of Good Practice and means any enterprise with an annual total revenue of R10 [ten] million or less as per the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928;
- 2.10 **"firm price"** means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs and excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies or the rendering costs of any service, for the execution of the contract;
- 2.11 **"functionality"** means the measurement according to predetermined norms, as set out in the bid documents, of a service or commodity that is designed to be practical and useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder;
- 2.12 **"non-firm prices"** means all prices other than "firm" prices;
- 2.13 **"person"** includes reference to a juristic person;
- 2.14 **"QSE"** means any enterprise with an annual total revenue between R5 [five] million and R35 [thirty five] million as per the 2007 version of the B-BBEE Codes of Good Practice and means any enterprise with an annual total revenue of between R10 [ten] million and R50 [fifty] million as per the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928
- 2.15 **"rand value"** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties;
- 2.16 **"subcontract"** means the primary contractor's assigning or leasing or making out work to, or employing another person to support such primary contractor in the execution of part of a project in terms of the contract;
- 2.17 **"total revenue"** bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Empowerment Act and promulgated in the Government Gazette on 9 February 2007;
- 2.18 **"trust"** means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and
- 2.19 **"trustee"** means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

3. ADJUDICATION USING A POINT SYSTEM

- 3.1 The Bidder obtaining the highest number of total points for the evaluation criteria as enumerated

Respondent's Signature

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in Section 2 of the RFP will be awarded the contract, unless objective criteria justifies the award to another bidder.

- 3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts.
- 3.3 Points scored will be rounded off to 2 [two] decimal places.
- 3.4 In the event of equal points scored, the Bid will be awarded to the Bidder scoring the highest number of preference points for B-BBEE.
- 3.5 However, when functionality is part of the evaluation process and two or more Bids have scored equal points including equal preference points for B-BBEE, the successful Bid will be the one scoring the highest score for functionality.
- 3.6 Should two or more Bids be equal in all respect, the award shall be decided by the drawing of lots.

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

- 4.1 In terms of the Preferential Procurement Regulations, 2011, preference points shall 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 [Maximum 20]
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

- 4.2 Bidders who qualify as EMEs in terms of the 2007 version of the Codes of Good Practice must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EME's with B-BBEE Status Level Certificates.
- 4.3 Bidders who qualify as EMEs in terms of the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928 are only required to obtain a sworn affidavit on an annual basis confirming that the entity has an Annual Total Revenue of R10 million or less and the entity's Level of Black ownership.
- 4.4 In terms of the 2007 version of the Codes of Good Practice, Bidders other than EMEs must submit

Respondent's Signature

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their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.

- 4.5 The Department of Trade and Industry recently revised the Codes of Good Practice on 11 October 2013 [Government Gazette No. 36928]. The Revised Codes will replace the Black Economic Empowerment Codes of Good Practice issued on 9 February 2007. The Revised Codes provide for a transitional period ending 30 April 2015. During the transitional period, companies may elect to be measured in terms of the Revised Codes or the 2007 version of the Codes. Companies which are governed by Sector-specific Codes will be measured in terms of those Sector Codes.
- 4.6 As such, Transnet will accept B-BBEE certificates issued based on the Revised Codes. Transnet will also continue to accept B-BBEE certificates issued in terms of the 2007 version of the Codes provided it was issued before 1 May 2015. Thereafter, Transnet will only accept B-BBEE certificates issued based on the Revised Codes.
- 4.7 In terms of the Revised Codes of Good Practice, Bidders who qualify as QSEs must comply with all the elements of B-BBEE for the purposes of measurement. QSEs that are at least 51% or 100% Black owned are only required to obtain a sworn affidavit on an annual basis confirming that the entity has an Annual Total Revenue of R50 million or less and the entity's Level of Black ownership. Large enterprises must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.
- 4.8 A trust, consortium or joint venture will qualify for points for its B-BBEE status level as a legal entity, provided that the entity submits its B-BBEE status level certificate.
- 4.9 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 bid.
- 4.10 Tertiary institutions and public entities will be required to submit their B-BBEE status level certificate in terms of the specialised scorecard contained in the B-BBEE Codes of Good Practice.
- 4.11 A person will not be awarded points for B-BBEE status level if it is indicated in the Bid documents that such a Bidder intends subcontracting more than 25% [twenty-five per cent] of the value of the contract to any other enterprise that does not qualify for at least the same number of points that such a Bidder qualifies for, unless the intended subcontractor is an EME that has the capability and ability to execute the subcontract.
- 4.12 A person awarded a contract may not subcontract more than 25% [twenty-five per cent] 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 subcontracted to an EME that has the capability and ability to execute the subcontract.
- 4.13 Bidders are to note that in terms of paragraph 2.6 of Statement 000 of the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928, any

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representation made by an entity about its B-BBEE compliance must be supported by suitable evidence or documentation. As such, Transnet reserves the right to request such evidence or documentation from Bidders in order to verify any B-BBEE recognition claimed.

5. B-BBEE STATUS AND SUBCONTRACTING

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

B-BBEE Status Level of Contributor _____ = _____ [maximum of 20 points]

Note: Points claimed in respect of this paragraph 5.1 must be in accordance with the table reflected in paragraph 4.1 above and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by SANAS or a Registered Auditor approved by IRBA or a sworn affidavit in the case of an EME or QSE.

5.2 Subcontracting:

Will any portion of the contract be subcontracted? YES/NO [delete which is not applicable]

If YES, indicate:

- (i) What percentage of the contract will be subcontracted?%
- (ii) The name of the subcontractor
- (iii) The B-BBEE status level of the subcontractor
- (iv) Is the subcontractor an EME? YES/NO

5.3 Declaration with regard to Company/Firm

- (i) Name of Company/Firm.....
- (ii) VAT registration number.....
- (iii) Company registration number.....
- (iv) Type of Company / Firm [TICK APPLICABLE BOX]

☐ Partnership/Joint Venture/Consortium

☐ One person business/sole propriety

☐ Close Corporations

☐ Company (Pty) Ltd

- (v) Describe Principal Business Activities

.....
.....

- (vi) Company Classification [TICK APPLICABLE BOX]

☐ Manufacturer

☐ Supplier

☐ Professional Service Provider

Respondent's Signature

Date & Company Stamp

- ☐ Other Service Providers, e.g Transporter, etc
(vii) Total number of years the company/firm has been in business.....

BID DECLARATION

I/we, the undersigned, who warrants that he/she is duly authorised to do so on behalf of the company/firm, certify that points claimed, based on the B-BBEE status level of contribution indicated in paragraph 4 above, qualifies the company/firm for the preference(s) shown and I / we acknowledge that:

- (i) The information furnished is true and correct.
- (ii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 6 above, the contractor may be required to furnish documentary proof to the satisfaction of Transnet that the claims are correct.
- (iii) If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, Transnet 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) restrict the Bidder or contractor, its shareholders and directors, and/or associated entities, or only the shareholders and directors who acted in a fraudulent manner, from obtaining business from Transnet for a period not exceeding 10 years, after the *audi alteram partem* [hear the other side] rule has been applied; and/or
 - (e) forward the matter for criminal prosecution.

WITNESSES:

1.
2.

SIGNATURE OF BIDDER

DATE:.....

COMPANY NAME:

ADDRESS:.....

Respondent's Signature

Date & Company Stamp

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months.

ANNEXURE B

PROJECT SPECIFICATIONS

FOR THE PROVISION OF MAINTENANCE/ BREAKDOWNS AND NEW INSTALLATIONS TO ELECTRICAL INSTALLATIONS/ AIR-CONDITIONING PLANT AS WELL AS THE ROUTINE SERVICE OF AIR-CONDITIONING PLANT AND ASSOCIATED EQUIPMENT SERVING VARIOUS BUILDINGS, AS AND WHEN REQUIRED, DE AAR REGION FOR A PERIOD OF 24 MONTHS.

SPECIAL CONDITIONS PART A

1. SCOPE OF WORK

This contract covers the **maintenance/breakdowns and new installations to Electrical Installations/Air – Conditioning plant as well as Routine Service of Air-Conditioning Plant and associated equipment serving the various buildings, As and When required, De Aar Region**, or other work arising out of or incidental to the above, or required of the contractor for the proper completion of the works in accordance to the true meaning and intent of the contract documents.

2. TO BE SUPPLIED BY THE CONTRACTOR

Except where otherwise specified, the Contractor shall supply all labour, transport, plant, equipment, tools, services required for the carrying out and completion of the work included in this contract.

3. ELECTRICITY AND WATER

Water and electricity will be supplied free of charge by Transnet. A continuous supply of water and electricity can however not be guaranteed. The Contractor shall at his own cost arrange for connections and extensions (if necessary) to existing supplies and for the removal of these connections and extensions on completion of the contract.

4. CONSTRUCTION SITE

The Contractor must view the site and attend the compulsory site inspection before tendering.

5. DURATION OF CONTRACT

The contract values will not exceed **R980 000.00 (Nine Hundred and Eighty Thousand Rand)** and the duration will not exceed **24months**, whichever occurs first.

The period commences from the date when approval was granted to the Contractor to proceed with the work and includes all weekends and public holidays.

Should the cumulative amount spent approach the **R980 000.00** limit, the issue of work will be curtailed.

Transnet reserves the right to terminate the contract at any time should the use of the contract no longer be required.

6. MAINTENANCE PERIOD (GUARANTEE)

The contractor must, at his own expense, make good to the satisfaction of the Maintenance Supervisor all defective materials and workmanship which may manifest itself within a period of **three months** after completion of work.

7. PENALTIES

Transnet retains the right to cancel any order and have work, which is not attended to as in the specification, executed by others, without prior notice and recover the difference in cost, if any, from the contractor.

for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months.

8. LABOUR

The sole responsibility for the work as specified in the particular specification shall rest entirely with the Contractor, who shall be required to undertake rectification of any defects, which become apparent within the period as defined above. The Contractor shall make good to the satisfaction of Transnet any defects which may arise during inspection.

9. PAYMENT

When making a claim for payment, the Contractor shall submit an informal claim for the consideration of the Manager. Only upon agreement being reached on the amount to be included in the payment certificate, will the Contractor be required to submit a complete and correct VAT invoice. Payment will be effected on or before the end of the calendar month following the calendar month in which the work was performed.

Please note: A maximum of 23 interim payments (based on work completed on a monthly basis, after the receipt of a VAT invoice) The Contractor must indicate on his Tax Invoice Transnet's reference number, description of the work, Labour amount, material amount, kilometers travelled and the amount claimed), and a final payment will be made.

10. VAT

Rates shall be quoted exclusive of Value Added Tax. Provision is made in the Summary of Prices for the lump-sum addition of Value Added Tax.

11. SUMMARY OF PRICES

Tenderers must complete the Summary of Prices for the work in ink.

12. SAFETY ON WORK SITE (ACT NUMBER 85 OF 1993) ENVIRONMENT CONSERVATION ACT.(ACT No.73 OF 1989)

For the purposes of the Occupational Health and Safety Act, (Act Number 85 of 1993) and the Environment Conservation Act, (Act No.73 of 1989) the site is transferred, for the duration of the contract, to the control of the Contractor as if it is his property. As employer, he is in every respect responsible for the compliance with the provisions of these Acts, as well as the application of General Administrative Regulation 13 to the employees of Transnet who visit the site.

13. DAMAGE TO PROPERTY AND/OR SERVICES

The contractor shall take adequate precaution against damage to existing assets and injury to persons during the course of the contract. The successful tenderer will be responsible for the repairs and/or the costs incurred in such repairs to any damages caused to Transnet's property by the successful tenderer's staff while carrying out the required work.

14. SUPERVISION

The Manager will provide overall superintendence of the work and may direct the Contractor in terms of the provisions of the contract.

Transnet will notify the successful contractor, in writing, of the name of the Maintenance Supervisor/s who will supervise and take charge of the contract. The Contractor must at all times, only take instructions from the appointed Maintenance Supervisor/s and (Manager) and nobody else.

The Contractor must be in possession of or have access to a cellular phone and a facsimile machine.

15. MATERIALS

Only materials of the best quality (SANS/SABS approved) are to be used in the execution of the contract and the work is to be performed in a proper workmanlike manner to the full satisfaction of Transnet.

16. CANCELLATION OF CONTRACT

In the event of non-performance and/or non-adherence to the specifications by the Contractor, Transnet reserves the right to terminate the contract immediately.

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17. AMENDMENTS AND/OR ADDITIONS

Transnet reserves the right to add or withdraw any part of the work specified at any time. No amendments, variations and/or additions to the contract shall, however, be of any force or effect unless reduced to writing and signed by both parties.

18. HOUSING OF EMPLOYEES

Accommodation of the Contractor's employees on site will not be permitted and the Contractor shall make his own arrangements.

19. TOILET FACILITIES

Use of existing toilet facilities will be permitted.

20. ESCALATION OF COST

This contract will not be subject to cost escalation.

21. WAGE REGULATING MEASURES

The Contractor shall acquaint himself with any relevant wage regulating measure and/or statutory enactment which may be in force or may be contemplated, and which will affect conditions of employment during the progress of the contract, and he shall give effect to the provisions of such wage regulating measure and/or statutory enactment as they come into force.

22. SUBLETTING OF THE CONTRACT

The successful tenderer shall not be permitted to sublet the contract. Only persons directly employed by the contractor shall carry out the work.

23. SUBSTANCE ABUSE TESTING

The OHSAct (Act 85 of 1993) clearly states in the Safety Regulations no. 2A "INTOXICATION" An employer or user, as the case may be, shall not permit any person who appears to be under the influence of intoxicating liquor or drugs to enter or remain at a workplace". Transnet Freight Rail enforces this legislation by means of its Substance Abuse Policy, and therefore reserves the right to do substance abuse testing on anyone who enters their premises.

24. GENERAL

All activities between Contractors and Transnet personnel will be co-ordinated through the Manager in charge.

For more information contact Mr. J van Tonder at telephone (053) 838-3349.

The lowest only tender will not necessarily be accepted.

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PARTICULAR SPECIFICATION PART B

WORK TO BE DONE

1. DEFINITIONS:

- 1.1 **Emergency Work** – means unforeseen maintenance work that needs to be repaired urgently.
- 1.2 **Day to Day work** – means any work (Planned/ Unplanned and New Installations), which unlike emergency work, is not classified as urgent
- 1.1 **Routine work** – means work that needs to be done on a regular basis.
- 1.3 The contractor must commence **Emergency Work** within two hours of notification.
- 1.4 The Contractor must commence **Day to Day work** within twenty-four hours of notification.
- 1.2 The contractor must do **Routine work** as per service program

2. EXTENT OF WORK:

The following conditions shall apply:

NB: THE CONTRACTOR TO BE STATIONED IN DE AAR

The Contractor must be competent in all the following work disciplines:

- 2.1 Electrical light and heavy current as well as Air Conditioning and Refrigeration.
- 2.2 And the following sub disciplines: brick laying, plastering and painting.

3. MAINTENANCE AND BREAKDOWNS.

- 3.1 The Maintenance Supervisor will issue a written instruction to the Contractor before work can commence. Where work is of an emergency nature, the Maintenance Supervisor may give a verbal instruction that must be confirmed in writing. No work must be performed without a reference number.

4. PLEASE NOTE:

Proceedure after fault finding:

- 4.1 Complete fault list and submit with quotation/authority form (Annexure 2).
- 4.2 Two/Three quotations from supplier's required and submit with quotation/authority form (Annexure 2).
- 4.3 Complete quotation/authority form (Annexure 2) and hand it to the Project co-ordinator to acquire authority before commencing any repair work or additional work.
- 4.4 Hours worked and distances travelled indicated on the quotation/authority form by the Contractor, will be negotiable between the Maintenance Supervisor and the Contractor.
- 4.5 No labour rates will be paid for time spent travelling. Only rates per kilometre, as tendered and accepted in contract.
- 4.6 Labour rates will only be paid for actual time worked.

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- 4.7 No labour or travelling rates will be paid for kilometre's travelled/Time spent/Telephone calls for quotations or collection of material, only handling fees will be paid as tendered and accepted in contract.

3. ROUTINE SERVICE (MAYOR SERVICES: 3 X YEAR/MACHINE)

- 3.1 Isolate the supply to the air conditioner unit, make sure there are no open live or possible live wires. Close the isolator so that no live wires are exposed.
- 3.2 In the case of a window unit, withdraw.
- 3.3 Check air filter for cuts and damages.
- 3.4 Clean the air filter.
- 3.5 Clean condensor coil
- 3.6 Clean evaporator coil
- 3.7 Check fans for alignment, corrosion, chips, dents and that they are secured to the shaft.
- 3.8 Check fan motor/s to ensure they are running freely and that the bearings show no sign of wear, oil were necessary.
- 3.9 Check the compressor for unusual noise and that the mounting bushes are in a good state.
- 3.10 Check thermostats, switches, contactors and the wiring thereof to ensure that all the connections tight and clean.
- 3.11 Check the refrigerant system pressure and leaks.
- 3.12 Clean equipment using approved cleaning agents.
- 3.13 Check the operation currents and evaluate with nameplate data.
- 3.14 For split units check and tighten flair nuts were necessary.
- 3.15 Check condensate drip trays
- 3.16 Check the draining system.
- 3.17 Rust proof where applicable
- 3.18 Reconnect to the supply and test.
- 3.19 Place all the covers and make neat.

4. NUMBERING OF MACHINES

- 4.1 All machines to be numbered with Aluminium strips in the following manner. Building Asset number/number etc. for each building separately.

5. SERVICE REPORT

- 5.1 The Contractor shall hand to the Maintenance Supervisor after each service a detailed report (Annexure 3) of all the work carried out. Air-conditioning plant and associated plant shall be serviced according to the specification and the work program

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6. GENERAL

- 6.1 The Contractor must not turn off any Electrical or water supply without obtaining permission from the Depot Manager.
- 6.2 The Contractor must be in possession of or have access to a cellular phone and a facsimile machine.
- 6.3 The Contractor will be responsible for his own measurements.
- 6.4 Left over material, rubble and electrical equipment stripped by the contractor are to be removed from site by the Contractor as his property.
- 6.5 The premises shall be left perfectly clean after completion of the work, before payment will be made.
- 6.6 Contractor will supply all equipment and material.
- 6.7 The contractor shall include for the proper completion of the work as described and shall allow for all cost incurred.
- 6.8 Contract specifications is to be read in conjunction with the minutes. The Contractors attention is drawn to the possibility of items being required varying from those on the specification. The cost of the requirements in the minutes are to be allowed for in the tender price.
- 6.9 The Contractor will be responsible for obtaining the minutes of said meeting before specified closing date.

"PREVIEW COPY ONLY"

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QUALITY SPECIFICATION PART B

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3.	METHOD OF TENDERING
4.	APPENDICES
5.	SERVICE CONDITIONS
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7.	STANDARDS OF WORK, EQUIPMENT AND MATERIALS
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9.	LUMINAIRES FOR FLUORESCENT LAMPS
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28.	BALANCING OF LOAD
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30.	INSPECTION AND TESTS
31.	AIR-CONDITIONING UNITS
32.	GUARANTEE
1.	SCOPE
1.1	This specification covers the requirements for the manufacture, supply, delivery to site and the complete installation of material and equipment.
2.	STANDARDS AND REFERENCES
2.1	<u>Standards</u>
2.1.1	All equipment and material offered shall comply with the requirements of the relevant SANS (SABS) specifications, if published, otherwise with the relevant BS specifications in force at the time of tendering.
2.1.2	Where equipment or material offered complies with the recognized standards of the country of manufacture and not specifically with the requirements of clause 2.1.1 above, such equipment or material will be considered at the discretion of the Technical Advisor. In this case tenderers shall state fully all respects in which the equipment or material offered departs from the requirements of clause 2.1.1 above.

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2.2 Reference list

The following publications (latest edition and amendment) are referred to herein:

2.2.1 South African National Standards (South African Bureau of Standards).

- | | | |
|---------------------|---|-------------------------------------------------------------------------------------------------------------------------------------|
| SANS (SABS) 0003 | - | Code of Practice for the protection of buildings against lightning. |
| SANS (SABS) 086 | - | Code of practice for installation and maintenance of electrical equipment used in explosive atmospheres. |
| SANS (SABS) 0108 | - | Code of practice for the classification of hazardous locations and the selection of electrical apparatus for use in such locations. |
| SANS (SABS)141 | - | Glass Reinforced Polyester (GRP) Laminated Products. |
| SANS (SABS)10142 | - | Code of practice for the wiring of premises. |
| SANS (SABS)156 | - | Moulded-case circuit-breakers. |
| SANS (SABS)162 | - | Screwed metal conduit and fittings for electrical wiring. |
| SANS (SABS)160 | - | Electric air heaters. |
| SANS (SABS)163 | - | Wall and appliance switches. |
| SANS (SABS)164 | - | Two pole and earthing pin plugs and socket outlets. |
| SANS (SABS)165 | - | Lamp holders. |
| SANS (SABS)314 | - | Flame-proof enclosures for electrical apparatus. |
| SANS (SABS)-IEC-400 | - | Lamp holders for tubular fluorescent lamps and starter holders. |
| SANS (SABS)763 | - | Hot-dip (galvanized) zinc coatings (other than on continuously zinc-coated sheet and wire). |
| SANS (SABS)767 | - | Core balance earth leakage protection units. |
| SANS (SABS)950 | - | Non-metallic conduit and fittings for electrical wiring. |
| SANS (SABS)1041 | - | Tubular fluorescent lamps for general service. |
| SANS (SABS)1065 | - | Metal conduit and fittings for electrical wiring. |
| SANS (SABS)1085 | - | Wall outlet boxes for the enclosure of electrical accessories |
| SANS (SABS)1092 | - | Contactors. |
| SANS (SABS)1180 | - | Electrical distribution boards. |
| SANS (SABS)1239 | - | Plugs, socket-outlets, and couplers intended for non-domestic use. |

2.3 Occupational Safety and Health Act, Act No. 85 of 1993.

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3. METHOD OF TENDERING

- 3.1 The Tenderer shall submit his main offer in terms of clause 3.1 up to clause 3.10.
- 3.2 A broad statement to the effect that the equipment is in accordance with the specifications is not acceptable.
- 3.3 If in the tenderer's opinion justification exists for the submission of one or more alternative offers, such offers shall, as in the case of the main offer, be complete in every respect including a statement of compliance and completed relevant appendices. Any alternative offer shall be clearly distinguishable from the main offer and stands on its own.
- 3.4 Offers which include deviations of minor nature, not departing greatly from the specification, will be considered at the Manager's discretion.
- 3.5 The onus to prove compliance of the equipment offered against any clause shall rest solely with the tenderer should he be awarded the contract.
- 3.6 Should the tenderer wish to elaborate on their reply to the clause, a reference to page and paragraph of a covering letter shall be given next to the clause concerned, in addition to the statement of compliance.
- 3.7 A tenderer's statement of compliance shall overrule any conflicting documentation submitted.
- 3.8 The successful tenderer will be responsible for all costs incurred in modifying or replacing equipment accepted by the Client on the grounds of the tenderer's statement of compliance with the specification and found by the Engineer not to comply.
- 3.9 In the event of discrepancies between the Manager's specification and any publication referred to, the specification shall take precedence.
- 3.10 Failure to comply with the requirements of this specification may preclude a tender for consideration.

4. ANNEXURES

The following annexures form an integral part of these specifications.

- 4.1 **Annexure No. 1** - Technical Data Sheet. Specific technical information to be submitted with tenders. Failure to comply with the above requirements may preclude consideration of a tender.
- 4.2 **Annexure No. 2** - Quotation/Authority form. Complete to acquire authority before commencing with the repair work or additional work

5. SERVICE CONDITIONS

- 5.1 The lighting may be installed in areas where high humidity, high temperature, high wind, heavy rain, severe hail and lightning conditions are encountered and where corrosive conditions including the presence of sulphur dioxide, prevail. All equipment installed shall be suitable for successful operation under these conditions.

6. ELECTRICITY SUPPLY SYSTEM

- 6.1 The system of power supply will be three phase, 4 wire or single phase 2 wire alternating current (50Hz) with earthed neutral at a nominal voltage of 400/230 V.
- 6.2 The voltage may vary within the range of 95% to 105% of the nominal voltage and all equipment installed shall be suitable for successful operation at any voltage within this range.

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7. STANDARD OF WORK, EQUIPMENT AND MATERIALS

- 7.1 All work shall be carried out in a neat and orderly manner to the satisfaction of the Manager and the Client. Electrical works shall conform to the requirements of the latest edition and amendments of the Code of Practice for the Wiring of Premises issued by the South African National of Standards, SANS 10142-1 (SABS 0142) and any additional requirements thereto, described in this specification.
- 7.2 All equipment and materials used shall be new and of the best quality.
- 7.3 Every reasonable precaution and provision shall be incorporated in the design of the equipment for the safety and security of the system and of those concerned with its operation and maintenance.
- 7.4 Where lightning protection is required it shall be in accordance with SANS (SABS) 03 and the requirements of the Local Authority.

8. PHOTOMETRIC PERFORMANCE

- 8.1 The Tenderer shall submit full photometric data, including iso-candela diagrams, issued by the SANS (SABS), if an alternative type of luminaire is offered, with his tender documents.

9. LUMINAIRES FOR FLUORESCENT LAMPS

9.1 Construction

- 9.1.1 Luminaires shall comply with the requirements of SANS (SABS) 1119.

- 9.1.2 Commercial open type luminaires shall be fully integral units each consisting of a 0,8 mm sheet steel body channel accommodating the ballast, terminal block, earthing terminal, lamp holders and internal wiring.

- 9.1.2.1 The body channel shall be constructed in accordance with SANS (SABS) 1119.

- 9.1.2.2 The earthing terminal shall be welded or brazed to the luminaire channel.

- 9.1.2.3 Suitable knockouts shall be provided in the rear of the luminaire body for wiring entry.

- 9.1.3 Industrial type luminaires shall meet the requirements of clause 9.1.2 above.

- 9.1.4 Decorative type luminaires shall meet the requirements of clause 9.1.2 above and shall be enclosed by a wrap around translucent cover of impact resistant acrylic material, securely retained in two steel end covers rigidly fixed to the body channel.

- 9.1.4.1 All ferrous parts of the luminaire shall be white, including ballasts in decorative type luminaires where internal reflectors are not supplied.

- 9.1.5 Flame-proof type luminaires shall comply with SANS (SABS) 314 for installation in hazardous areas, as defined in SANS (SABS) 0108.

- 9.1.6 Anti-corrosive type luminaires shall have a body channel constructed of glass-fibre reinforced polyester or other suitable non-corrosive material with a translucent cover of ultra high impact acrylic.

- 9.1.6.1 The translucent cover shall have a smooth outer surface and be attached to the body channel by captive type stainless steel latches. At least two of the latches on either side of the cover shall be reinforced by captive type screws which can only be removed by the use of a tool.

- 9.1.6.2 Control gear shall be mounted on the back of a white sheet steel reflector. The reflector shall be held in position by suitable catches and secured to the body by nylon safety straps.

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9.1.6.3 Luminaires offered shall have a minimum degree of protection of IP 54.

9.1.6.4 Luminaires shall be designed for use with both 26mm and 38mm diameter lamps.

9.2 Control Gear

9.2.1 Luminaires shall incorporate "switch-start" control gear

9.2.2 Glow starters shall comply fully with SANS (SABS) 1479 and safety specification VC 8039 and shall bear the mark of the aforementioned standards.

Ballasts shall bear the mark of SANS (SABS).

9.2.4 Ballast shall further be suitable for the particular luminaire to ensure that the thermal limits specified in of SANS (SABS) 1119 are not exceeded.

9.3 Capacitors

9.1.2 Capacitors shall comply with SANS (SABS) 1250. The power factor of each complete luminaire shall be corrected to at least 0.85 lagging.

9.4 Lamp Holders

9.4.1 Lamp holders shall be of the "Rotolock" type, manufactured from polycarbonate or equal approved material. The lamp holders shall comply with SANS (SABS) – IEC – 400 and shall provide for an air gap between the lamp holder and lamp cap.

9.5 Lamps

9.5.1 Fluorescent lamps shall be suitable for the control circuit used. Lamps shall comply with SANS (SABS) 1041 and bear the mark of the SANS (SABS).

9.5.2 The light colour of the fluorescent lamps shall be cool white.

9.5.3 Lamps of the same colour shall be provided for an entire installation unless specified to the contrary.

9.5.4 There shall be no visible flicker in the lamps and the lamps shall readily strike when switched on. Faulty lamps or ballasts shall be replaced at no cost to the client.

9.6 Internal Wiring

9.6.1 Luminaires shall be completely wired internally.

9.6.2 The wiring shall be totally enclosed to prevent any possible contact with live components while changing lamps.

9.6.3 The conductor insulation shall be rated to withstand the temperature inside the luminaire body without deterioration.

9.6.4 The wiring shall terminate on a suitable terminal block. There shall be no joints in the internal wiring.

10. LUMINAIRES FOR INCANDESCENT LAMPS

10.1 Luminaires shall be suitable for accommodating 100-watt lamps. Lamp holders shall be of the ES type and shall comply with SANS (SABS) 0165.

10.2 The insulation of internal wiring shall be heat-resistant.

10.3 Bulkhead luminaires shall comply with CKS 199.

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- 10.4 Bowl type luminaires shall have porcelain or acrylic galleries with white opal, high impact acrylic screw in type bowls.
- 10.5 Well glass luminaires shall consist of a body of non-corrosive material with a top entry of 20 mm conduit, have a clear glass cover and be completely weather-proof.

11. PVC INSULATED LOW VOLTAGE CABLE

11.1 General

- 11.1.1 Polyvinylchloride (PVC) Cables shall be manufactured in accordance with SABS 507 and shall come only from fresh stocks.
- 11.1.2 The conductors shall be of high conductivity annealed stranded copper and the cores may be shaped or circular.
- 11.1.3 The insulation shall be general purpose PVC, 600/1000 Volt Grade.

11.2 Armouring

- 11.2.1 Where armouring is specified it shall consist of one layer of galvanized steel wire in the case of multi-core cables and non-magnetic metallic wire in the case of single core cables. Aluminum strips or tape armouring is not acceptable.
- 11.2.2 If ECC cable is not specified PVC insulated hard drawn copper earth continuity conductors shall be installed with all underground cables constituting part of the low voltage distribution system. The earth conductors shall be tied to the cables at intervals not exceeding 1 meter.
- 11.2.3 Cable shall be manufactured and supplied in one length to the lengths specified, unless these lengths exceed a standard drum length to which a ruling shall be obtained from the Engineer.

12. CABLE TERMINATIONS

- 12.1 All cables shall be terminated and connected to the respective equipment, whether provided by the Contractor or by others.
- 12.2 All cut ends of cables are to be sealed with suitable tape, or other approved means until they are ready to be terminated.

13. CABLE JOINTS

- 13.1 Joints in cable runs shall not be allowed unless specified or authorized in writing by the Engineer.
- 13.2 Where cable joints are specified they shall be made by means of approved epoxy resin pressure type jointing kits such as "Scotchcast".
- 13.3 The cores of cables shall be jointed number to number or colour to colour.
- 13.4 The joints shall not impair the anti-electrolysis characteristics of the cable.
- 13.5 The conductor bridging the armouring shall be adequate to carry the prospective earth fault current.

14. GLANDS FOR PVC INSULATED CABLES

- 14.1 Glands to be used for terminating PVC/PVC/SWA/ECC/PVC cables shall be of the adjustable type.
- 14.2 The glands shall be made of brass or nickel plated bronze.

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14.3 Glands shall be supplied complete with neoprene shrouds.

14.4 Flameproof glands shall comply with SANS (SABS) 808, Groups 1, 2a and 2b.

15. CABLE TRAYS

15.1 Cable trays shall be protected against corrosion and galvanised in accordance with SANS (SABS) 0763.

15.2 Cable trays shall be adequately supported so that when fully loaded the deflection does not exceed 10 mm and be wide enough to accommodate the power cables in a single layer.

16. WIRING

16.1 All wiring shall be carried out in wire ways.

16.2 Open wiring is not acceptable.

16.3 Only one circuit per conduit will be permitted.

16.4 Only the loop-in of wiring shall be accepted.

16.5 Joints in the wiring will not be permitted.

16.6 Colour identification of conductors shall be used.

16.7 Sizes of conductors to be drawn into conduits such as feeders to distribution boards, power points etc, shall be as specified elsewhere in this specification or as indicated on the drawings. Sizes of conductors not specified must be in accordance with the "Wiring Code".

16.8 All wiring shall be done in PVC insulated 300/500 Volt grade cable to SANS (SABS) 1507.

16.9 Where cable ends connect into switches, fittings, etc the end strands shall be neatly and tightly twisted together and firmly secured. Cutting away of wire strands of any cable will not be allowed.

16.10 No wiring shall be drawn into conduit until the conduit installation has been completed and all conduit ends provided with bushings. All conduits to be clear of moisture and debris before wiring are commenced.

17. WIRE WAYS (CONDUIT), ACCESSORIES AND POWER SKIRTING.

17.1 All conduit shall bear the SANS (SABS) mark of approval.

17.2 Screwed metallic conduit and fittings shall comply with SANS (SABS) 162.

17.3 All metallic conduits shall be heavy gauge, welded or solid drawn, hot dip galvanized or black enameled, screwed tube.

17.4 Galvanized conduit shall be hot dipped inside and outside in accordance with SANS (SABS) 0763.

17.5 Where conduit is exposed to the elements only galvanized conduit shall be used

17.6 Threads of metallic conduit and associated fittings exposed to moisture or the elements shall be effectively protected with anti-rust paint or be cold galvanized.

17.7 Conduits are to be concealed and chased into plastered brick walls or cast into concrete work as the building operations progress.

17.8 Under no circumstances will chases be permitted through structural members of the building.

17.9 Chasing of face brick walls will not be permitted. Conduits and outlet boxes shall be built into walls.

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17.10 Conduit which cannot be concealed shall be neatly installed on the surface.

17.11 The metal conduit installation shall provide a continuous earth.

17.12 Bushes on metal conduit shall be of brass only.

17.13 **Metal conduit accessories**

17.13.1 All metal conduit accessories shall be malleable cast iron or pressed steel with brass bushes in accordance with SANS (SABS) 0162.

17.13.2 Accessories must be hot dip galvanized to SANS (SABS) 0763.

17.13.3 Blank cover plates on round outlet boxes shall be fixed with flat head screws and a gasket to seal the box.

17.13.4 Blank cover plates on 100 x 100 mm outlet boxes shall be fixed with countersunk chrome screws.

17.13.5 Where outlet boxes or draw boxes are installed on finished surface the Electrical Contractor shall take care that such outlets are installed symmetrically.

17.14 **Switch boxes and socket outlet boxes**

17.14.1 All switch boxes and socket outlet boxes shall be manufactured of pressed galvanized steel of at least 1 mm thickness. All boxes shall be fitted with the necessary lugs to suit standard flush mounted switches and socket outlets manufactured in accordance with SANS (SABS) 0518 and SANS (SABS) 1085.

17.14.2 Light switch boxes shall be 100 x 50 x 50 mm with 20 mm knock outs on the sides and a single knock out on the top, bottom and back.

17.14.3 Socket outlet boxes shall be 100 x 100 x 50 mm with 20 mm knock outs each on the top, bottom, sides and back.

17.14.4 Switch and socket outlet cover plates shall comply with SABS 1084.

17.15 **Flexible conduit**

17.15.1 Flexible steel conduit and adaptors shall comply with BS 731, Part 1 where applicable. Flexible conduit shall be of galvanized steel construction and plastic sheathed. Flexible conduit shall only be used as specified and shall then be installed in accordance with SANS 10142 (SABS) 0142.

17.16 **Wire ways**

17.16.1 Wire ways shall be in accordance with the requirements as laid down in SANS (SABS) 1197, part 1 and be galvanized, wire way shall comprise a single compartment exclusively for electrical power cables, with a steel cover.

17.17 **Non-metallic conduit**

17.17.1 Non-metallic conduit and fittings shall comply with SANS (SABS) 0950.

17.17.2 PVC conduit shall be supported at 1 000 mm intervals maximum.

17.18 **Non-metallic Power skirting**

17.18.1 PVC Power skirting shall be light weight, all insulated, non corrosive and easily cleanable.

17.18.2 PVC Power skirting shall be manufactured from white, high impact resistant, rigid PVC in lengths not shorter than 3m.

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17.18.3 PVC Power skirting shall be easily cuttable by using standard hand tools.

17.18.4 Only Power skirting with an extensive range of service outlets and accessories shall be used if not specified.

18. DISTRIBUTION BOARDS AND KIOSKS

18.1 Flush mounted

18.1.1 Where distribution boards are to be built into 115 mm thick walls, expanded metal shall be spot welded to the rear of the bonding trays. The expanded metal shall protrude at least 75 mm on each side of the tray to prevent plaster from cracking.

18.2 Knock-outs

18.2.1 Knock outs shall be provided in the top and bottom ends of each distribution board tray to allow for the installation of conduits for the specified as well as future circuits. Knock outs shall to be removed or bend without the use of a tool.

18.3 Front panels

18.3.1 Front panels shall be machine punched slots for housing the specified and future flush mounted switch gear.

18.3.2 The front panel shall be secured to the architrave frame by means of captive fasteners similar to "DZUS" or "CAMLOC". Alternatively the panel may be secured to the architrave frame by means of two pins at the bottom and a latch or lock at the top of the panel.

18.4 Doors and handles

18.4.1 Distribution board doors shall be equipped with handles and catches.

18.4.2 Handles consisting of a push button and handle combination with spring loaded catch or rotary handle and catch combination shall be installed.

18.4.3 An electrical danger sign must be fitted to each door of distribution boards and kiosks.

18.5 Construction

18.5.1 Surface mounted Distribution boards shall be equipped with a sheet steel reinforced tray of not less than 1,6 mm thickness, suitably braced and stiffened to carry the chassis, door and equipment. Lugs to secure the switchboard to a vertical surface shall be provided.

18.5.2 All joints shall be welded or securely bolted. The tray shall be square and neatly finished without protrusions. The front tray sides shall be rounded with an edge of at least 20 mm to accommodate flush doors.

18.6 Chassis

18.6.1 A sheet steel chassis for the mounting of equipment shall be bolted to the tray and shall comply with SANS (SABS) 1180. Space for wiring shall be provided between the chassis and the tray.

18.7 Front panel and door

18.7.1 The front panel and door shall comply with the above. Doors shall fit flush in the tray when closed.

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18.8 **Mounting of circuit breakers**

- 18.8.1 All moulded case circuit breakers shall be flush mounted with only the toggles protruding. Miniature circuit breakers may be installed on clip-in trays mounted on the frame. All other circuit breakers shall be bolted to the chassis. Special provision shall be made for large switches when designing the framework.
- 18.8.2 Where earth leakage units are required, the associated circuit breakers shall be installed adjacent to the unit

18.9 **Instrumentation**

- 18.9.1 All metering instruments shall be flush mounted in the front panel or door. The rear terminal of instruments mounted on doors shall be covered with an insulating material to prevent accidental contact. Current transformers for metering shall be mounted so that the rating plate is clearly visible. Fuses for instrumentation shall be mounted in an easily accessible position and shall be clearly marked.

18.10 **Cabling**

- 18.10.1 Cables connected to incoming or outgoing circuits shall be terminated on a gland plate.
- 18.10.2 All cable entries shall be from the bottom of the board unless stated otherwise. Glands shall not be less than 300mm above floor level.

18.11 **Wiring**

- 18.11.1 Wiring shall be arranged in horizontal and vertical rows and shall be bound with suitable plastic straps or installed in PVC wiring channels. Under no circumstances may PVC adhesive tape be used for the bunching of conductors or for color identification of conductors.
- 18.11.2 Wiring shall be kept away from exposed metal edges or shall be protected where they cross metal edges.
- 18.11.3 A substantial earthing terminal shall be firmly fixed to the steelwork of all distribution boards and shall be connected to the earthing bar.
- 18.11.4 A neutral bar associated with each bank of MCCB's shall be provided below each bank of mccb's and shall be wired in the same sequence as the mccb's. Not more than one conductor per connector will be accepted.
- 18.11.5 The minimum conductor size between lightning arrestors and earth shall be 6 mm².

18.12 **Labelling**

- 18.12.1 All circuits shall be labeled and clearly designated.
- 18.12.2 Labels indicating the supply point and size of the supply cable shall be provided on each distribution board.
- 18.12.3 Labels shall be of the fabricated type and shall be permanently secured. Embossed tape is not acceptable.
- 18.12.4 When labeling by means of numerals, a legend shall be inserted behind a clear plastic window on the inside of the door.

18.13 **Material for labels**

- 18.13.1 Engraved plastic or ivory sandwiches strips shall be used throughout. The strips shall bear black lettering on white background for normal labels and red letters on a white background for danger notices.

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18.14 **Fixing of labels**

- 18.13.1 Labels shall not be fixed to components or trunking but to doors, panels, chassis or other permanent structures of the switchboard.

18.15 **Busbars**

- 18.15.1 Kiosks shall be equipped with a set of 3 phase and neutral copper bus bars continuously rated for the full load of the incoming supply switch.
- 18.15.2 Inter-connectors between the bus bars and control units shall be by means of fully insulated, adequately rated conductors firmly bolted to the bus bar and secured to the appropriate terminals of the control units using crimped-on terminal lugs.

18.16 **Test**

- 18.16.1 The Manager shall be notified when the mechanical construction of the switchboard, i.e. frame, panels and base frame, is complete in order that it may be inspected at the factory.

19. **MOULDED CASE CIRCUIT BREAKERS**

General

- 19.1 This section cover single or multi-pole moulded case circuit breakers for use in power distribution systems, suitable for panel mounting, for ratings up to 1000A, 600 V, 50 Hz.
- 19.2 The circuit breakers shall comply with SANS (SABS) 0156.
- 19.3 The continuous current rating, tripping and rupturing capacity shall be as specified.
- 19.4 The contacts shall be silver alloy and shall close with a high pressure wiping action.
- 19.5 The operating handles shall provide clear indication of "ON", "OFF" positions.
- 19.6 The mechanism shall be of the TRIP FREE type preventing the unit from being held in the ON position under overload conditions.
- 19.7 All moulded case circuit breakers in a particular installation shall as far as is practical be supplied by a single manufacturer.
- 19.8 The incoming terminals of single pole miniature circuit breakers shall be suitable for connecting to a common bus bar.
- 19.9 The circuit breaker shall have a rating plate indicating the current rating, voltage and breaking capacity.
- 19.10 Extension type operating handles shall be provided for units of 600A rating and above.
- 19.11 All circuit breakers feeding fire detection and protection equipment shall have red toggles and be labelled "Do Not Switch Off".

20. **EARTH LEAKAGE PROTECTION UNITS**

General

- 20.1 Earth leakage relays shall be single or three phase units with a sensitivity of 30 mA, with associated circuit breaker or on load switch for use on 220/250 Volt single phase or 380/400 Volt three phase, 50 Hz, supplies.
- 20.2 The units shall be suitable for installation in switchboards on clip-in trays or bolted to the chassis.

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- 20.3 The earth leakage relay shall comply with SANS (SABS) 0767 as amended, and shall bear the SANS (SABS) mark. Integral test facilities shall be incorporated in the unit.
- 20.4 Circuit breakers with trip coils used integrally with earth leakage units (two pole for single phase units and three pole for three phase units) shall comply with SANS (SABS) 0156.
- 20.5 On load switches used integrally with earth leakage units (two pole for single phase units and three pole for three phase units) shall comply with SANS (SABS) 152.
- 20.6 The fault current rating of the unit shall be 2,5 kA or 5 kA as required, when tested in accordance with SANS (SABS) 0156.

21. SWITCH DISCONNECTORS (ISOLATING SWITCHES)

- 21.1 Isolating switches shall comply with SANS (SABS) 0152.
- 21.2 Isolating switches for machines shall be lockable in the open position.
- 21.3 The switches shall have a high speed closing and opening feature.
- 21.4 The switches shall be suitable rated for the continuous carrying, making and breaking of the rated current specified as well as the through fault current capacity as specified.
- 21.5 To distinguish the switches from circuit breakers the operating handles shall have a distinctive colour and/or the switch shall be clearly and indelibly labelled "ISOLATOR".

22. SOCKET OUTLETS

- 22.1 Switch sockets of one manufacture only (or to match existing), will be accepted.

22.2 Flush and surface mounted switched sockets

- 22.2.1 All switched socket outlets shall be suitable for mounting in 100 x 100 x 50mm boxes(or to match existing boxes), shall comply with SANS (SABS) 0164 and shall bear the SANS(SABS) mark.
- 22.2.2 Switches shall be of the tumbler operating micro-gap type rated at 16A 220/250V
- 22.2.3 Terminals shall be enclosed for safe wiring.
- 22.2.4 Safety shutters shall be provided on live and neutral openings.
- 22.2.5 The covers of surface mounted switched sockets shall have toggle protectors.
- 22.2.6 Miniature circuit breakers shall be used in lieu of a switch where specified.
- 22.2.7 Where 13 Amp flat pin switch socket outlets are specified, these shall comply with SANS (SABS) 1363.

22.3 Watertight switched sockets

- 22.3.1 The housing of watertight switched sockets shall be of galvanized cast iron or die cast aluminium with watertight machined joints.
- 22.3.2 The switch shall have a porcelain base and a quick acting spring mechanism and shall be rated at 16 Amp 220/250 Volt.
- 22.3.3 The ON/OFF positions shall be clearly marked on the switch housing.

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22.3.4 The socket openings shall be rendered watertight by means of a gasket and cover plate which is screwed onto the body of the unit.

22.4 **Welding socket outlets**

22.4.1 Welding socket outlets shall comply with SANS (SABS) 1239.

22.4.2 Socket outlets shall be rated for 63 Amp and be of the 5-pin, 7-h configuration type.

22.4.3 Socket outlets shall be mounted 1500mm above floor level when mounted on walls.

23. **LIGHT SWITCHES**

23.1 Light switches of one manufacturer only (or to match existing), will be accepted for project.

23.2 **Flush and surface mounted switches**

23.2.1 All switches shall be suitable for mounting in 100 x 50 x 50mm boxes (or to match existing boxes), shall comply with SANS (SABS) 0163 and shall bear the SANS (SABS) mark.

23.2.2 Switches shall be of the tumbler operating micro-gap type rated at 16 Amp, 220/250 Volt.

23.2.3 Switches shall have protected terminals for safe wiring.

23.2.4 On multi-lever switches, it shall be possible to individually change any of its switches.

23.2.5 The covers of surface mounted switches shall have toggle protectors.

23.3 **Watertight switches**

23.3.1 Watertight switches shall be of the micro-gap type suitable for surface mounting and shall bear the SANS (SABS) mark.

23.3.2 The housing shall be of galvanized cast iron or die cast aluminium with water tight cover plate and toggle.

23.3.3 The switch shall have a porcelain base and a quick acting spring mechanism and shall be rated at 16 Amp, 220/250 Volt.

23.3.4 The ON/OFF positions shall be clearly marked on the switch housing.

23.4 **Cover plates**

23.4.1 Cover plates shall be finished in ivory coloured baked enamel (or to match existing).

23.4.2 Cover plates shall overlap the outlet to cover wall imperfections.

23.4.3 Cover plates shall comply with SANS (SABS) 1084.

24. **LIGHT SENSITIVE CONTROL UNITS**

24.1 The complete unit shall be of the solid-state type and housed in a sealed weather-proof casing, suitable for mounting in any position.

24.2 The unit shall be supplied complete with a suitable mounting bracket.

24.3 The unit shall not operate to light fluctuations shorter than 5 minutes duration.

24.4 The unit shall incorporate main contacts rated at not less than 10 Amps.

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24.5 The unit shall be mounted at a height not less than 2400mm and in a position giving coverage of the north-west hemisphere.

24.6 An override switch shall be provided.

25. CONTACTORS

25.1 Contactors shall comply with SANS (SABS) 1092 and shall be suitable rated for the current and duty cycle.

26. EARTHING AND BONDING

26.1 The complete electrical installation shall be earthed and bonded in accordance with the requirements of SANS 10142 (SABS 0142).

27. PAINTING OF ELECTRICAL EQUIPMENT

27.1 Finish required

27.1.1 Metalwork of electrical equipment such as distribution boards, equipment enclosures, sheet steel luminaire components, purpose-made boxes, etc shall be finished with a high quality paint applied according to the best available method. Baked enamel, electro statically applied powder coating or similar proven methods shall be used.

27.2 Colours

27.2.1 The colour of low voltage switchboards and equipment enclosures in buildings shall be "White" colour G80 or "Orange" B64 of SANS (SABS) 1091.

27.2.2 The colour of low voltage distribution kiosks and miniature sub-stations shall be Orange of SANS (SABS) 1091.

28. BALANCING OF LOAD

28.1 The electrical contractor is required to balance the load as equally as possible over the multi-phase supply.

29. HAZARDOUS AREAS

29.1 Flame-proof equipment shall comply with SANS (SABS) 314 for installation in hazardous areas, as defined in SANS (SABS) 0108.

29.2 Equipment in hazardous areas shall be installed in accordance with SANS (SABS) 086.

30. INSPECTION AND TESTS

30.1 Insulation, continuity, earthing etc. tests in the accordance with SANS 10142 (SABS) 0142 shall be carried out to the satisfaction and in the presence of the Manager, or his authorized deputy, as and when required during the progress and on completion of the contract work.

30.2 The Contractor shall provide on site the necessary approved instruments for the execution of the tests mentioned in the above clause. The client reserves the right to use its own instruments, should this be considered necessary.

30.3 After completion of the electrical installation, the Electrical Contractor shall complete the Certificate of Compliance for Electrical Installations and hand it to the Manager.

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31. AIR-CONDITIONING UNITS

- 31.1 As stipulated in the Driven Machinery Regulation 15 all air-conditioning equipment offered shall comply with the SANS Code of Practice 10147 (Code of Practice for refrigeration and air-conditioning installations).
- 31.2 Refrigerant piping for each system shall be installed by a qualified refrigeration technician observing the rules of good refrigeration practice regarding pipe sizing, support, installation, system cleaning, drying, evacuating, charging and leak testing. All joints shall be high temperature brazed and all pipe runs shall be laid taking due consideration of oil return to the compressor.
- 31.3 All pipe work shall be arranged to present a neat appearance and where possible to be parallel to each other and the building structure.
- 31.4 All refrigerant piping between indoor and outdoor units shall be covered with suitable insulation.
- 31.5 A workshop manual shall be provided before the installation is accepted by Transnet.
- 31.6 After completion of the installation, the whole of the installation will be inspected by Transnet and commissioned by the air-conditioning contractor.
- 31.7 The air-conditioning contractor shall make good to the satisfaction of Transnet any deficiencies which may arise during the inspection and commissioning.
- 31.8 After the whole of the installation has been tested and commissioned by the air-conditioning contractor and passed as satisfactory, the installation will be accepted by Transnet.
- 31.9 Notwithstanding any requirements to the contrary which may be embodied in the contract documents, the air-conditioning contractor will be required to guarantee the complete installation for a period of 12 (twelve) months after date of acceptance of the installation and shall make good any defects, due to inferior failures or stoppages of any of the plant be so frequent as to become objectionable, or should the equipment prove otherwise unsatisfactory during the above-mentioned period of twelve months, the air-conditioning contractor shall, at his expense if called on by Transnet, replace the whole plant or such part thereof as may be deemed necessary, with equipment to be specified by Transnet.

32. GUARANTEE

- 32.1 The Contractor shall undertake to repair all faults or defects to bad workmanship and/or faulty materials, and to replace all defective equipment or materials during the guarantee period.
- 32.2 Any defects that may become apparent during the guarantee period shall be rectified to the satisfaction of a free of cost to the Client.

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WRITTEN INSTRUCTION FORM PART B

FOR THE MAINTENANCE/BREAKDOWNS AND NEW INSTALLATIONS TO ELECTRICAL INSTALLATIONS/AIR – CONDITIONING PLANT AS WELL AS ROUTINE SERVICE OF AIR-CONDITIONING PLANT AND ASSOCIATED EQUIPMENT SERVING THE VARIOUS BUILDINGS, AS AND WHEN REQUIRED, DE AAR REGION.

FAULTS/ETC.

REFERENCE	PLACE	DESCRIPTION	ASSET NO.

PLEASE NOTE: Should the cumulative amount spent approach the **R980 000.00** limit, the issue of work will be curtailed.

**MAINTENANCE SUPERVISOR
(REAL ESTATE MANAGEMENT)**

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TECHNICAL DATA SHEET PART B

(To be completed by tenderers and submitted as part of their tender)

ANNEXURE 1

1.	Distribution Boards	Manufacturer	-	Type
1.1	Indoor	.....	
1.2	Outdoor	.....	
2.	Moulded Case Circuit Breakers	.....	
3.	Earth Leakage Units	.....	
4.	Contactors	.....	
5.	Light Switches	.....	
6.	Socket Outlets	.....	
7.	Wire Ways	.....	
7.1	Metallic	.....	
7.2	Non Metallic	.....	
8.	Cable Glands	.....	
9.	PVC Cable	.....	
10.	Cable Joints	.....	
11.	Switch-disconnectors	.....	
11.1	Isolator for fixed appliances	.....	
11.2	Lockable Isolators	.....	
12.	Light sensitive control units	.....	
13.	Air-conditioning units		

TENDERER SIGNATURE

DATE

Respondent's Signature

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ANNEXURE 2: QUOTATION/AUTHORITY FORM:				
PART B : RFQ No. KBY/				
FROM:		TO:		
DISCRIPTION	QTY	UNIT	UNIT PRICE	RATE
Material				R
				R
				R
				R
				R
				R
				R
				R
				R
				R
				R
				R
				R
				R
				R
				R
				R
Material costs				R
			Plus handling costs %	R
Sub-Total (A)				R
TOTAL CARRIED FORWARD				

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TOTAL BROUGHT FORWARD				
Maintenance/breakdowns/fault finding	QTY	UNIT	UNIT PRICE	RATE
Normal hours				
Labour/Hour/Artisan		Hour		R
Labour/Hour/Labarour		Hour		R
Rate/Km		Km		R
Sub-Total (B)				R
Repairs	QTY	UNIT	UNIT PRICE	RATE
Normal hours				
Labour/Hour/Artisan		Hour		R
Labour/Hour/Labarour		Hour		R
Rate/Km		Km		R
Sub-Total (C)				R
Sub-Totals (A+B+C)				R
Add 14% VAT				R
TOTAL:-				R

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for the as & when maintenance / breakdowns & new installations to electrical installations / air-conditioning plant as well as routine service of air-conditioning plant and associated equipment serving the various buildings in the De Aar region for a period of 24 months.

TOTAL BROUGHT FORWARD				
Maintenance/breakdowns/fault finding	QTY	UNIT	UNIT PRICE	RATE
After hours, weekends, Public holidays				
Labour/Hour/Artisan		Hour		R
Labour/Hour/Labourer		Hour		R
Rate/Km		Km		R
Sub-Total (B)				R
Repairs	QTY	UNIT	UNIT PRICE	RATE
After hours, weekends, Public holidays				
Labour/Hour/Artisan		Hour		R
Labour/Hour/Labourer		Hour		R
Rate/Km		Km		R
Sub-Total (C)				R
Sub-Totals (A+B+C)				R
Add 14% VAT				R
TOTAL:-				R

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Station/Suburb: _____

Depot: _____

**SERVICE REPORT
ANNEXURE 3**

Building Asset No: _____

Description of maintenance RFQ No. KBY/

(To be completed for each Air – Conditioner serviced before any payment will be made.)

- ☐ Isolate the supply to the air conditioner unit, make sure there are no open live or possible live wires. Close the isolator so that no live wires are exposed.
- ☐ In the case of a window unit, withdraw.
- ☐ Check air filter for cuts and damages.
- ☐ Clean the air filter.
- ☐ Clean condensor coil
- ☐ Clean evaporator coil
- ☐ Check fans for alignment, corrosion, chips, dents and that they are secured to the shaft.
- ☐ Check fan motor/s to ensure they are running freely and that the bearings show no sign of wear, oil were necessary.
- ☐ Check thermostats, switches, contactors and the wiring thereof to ensure that all the connections tight and clean.
- ☐ Clean equipment using approved cleaning agents.
- ☐ For split units check and tighten flair nuts were necessary.
- ☐ Check condensate drip trays
- ☐ Check the draining system.
- ☐ Rust- proof where applicable
- ☐ Reconnect to the supply and test.
- ☐ Check the refrigerant system pressure and leaks.
- ☐ Check the operation currents and evaluate with nameplate data.
- ☐ Check the compressor for unusual noise and that the mounting bushes are in a good state.
- ☐ Place all the covers and make neat.

Comments _____

Air – Conditioner Type and Fabricate _____

Client name in Blockletters _____

Model No. _____

Client Signature _____

Capacity in BTU'S _____

Client Telephone number _____

Machine Number _____

Date _____

Artisan name in Blockletters _____

Artisan Signature _____

Respondent's Signature _____

Date and Company Stamp _____