TRANSNET

NEC3 Engineering and Construction Short Contract (ECSC)

entered into by and between

Transnet SOC Ltd
Registration Number 1990/000900/30
(hereinafter referred to as the *"Employer"*)

and

.....
Registration Number .....
(hereinafter referred to as the "*Contractor*")

DESCRIPTION OF THE WORKS	**Emergency and commissioning testing of various substations under the control of the Depot Engineer, Rail Network, Koedoespoort.**
Enquiry Number	**RFQ No. ERAC NS3061 17582**
Opens on:	**3rd June 2015**
Closes on	**23rd June 2015**

Contents

Number **Heading**

T1.1 Tender Notice and Invitation to Tender

Transnet SOC Limited trading as Transnet Freight Rail invites tenders for the routine and commissioning testing on an as and when required basis of 3kV DC and 25kV AC traction substations, 3kV tie stations, 25kV traction section stations and 11kV signal supply and distribution substations for a period of 14 months under the control of the Depot Engineer, Koedoespoort

On or after Wednesday, 3rd June 2015, the RFQ documents may be inspected at, and are obtainable from the office of the Transnet Freight Rail Advice Centre, Inyanda House 1, Ground Floor, 21 Wellington Road, Parktown, Johannesburg, **free of charge** and will only be available for collection between 09:00 and 15:00 from **Wednesday, 3rd June 2015** until **Tuesday, 9th June 2015**.

The physical address for collection of tender documents is:

Transnet Freight Rail Tender Advice Centre
Inyanda house 1
Ground floor, 21 Wellington Road
Parktown, Johannesburg

Queries relating to the issue of these documents may be addressed to

Mr	Nico Swart
Tel No	012 315 3083
Fax No.	0867666815 / 0866408798 / 012 3152138
Email	nico.swart@transnet.net

A **compulsory clarification meeting/site visit** with representatives of the Employer will take place at on **Wednesday, 10th June 2015, at Jacaranda Boardroom, 3rd floor, Nzasm building, c/o Paul Kruger and Minnaar street, Pretoria starting at 10h00. Contact person: Moreki Matuludi, tel. 012 842 6481 or cell No. 071 889 6525.**

Please note that when visiting a site, safety boots and a safety vest should be worn. As the site visit may be held in an operational area of Transnet, all people entering the premises ***may be subjected to a substance abuse test.*** This is a standard operational requirement for TFR, when entering any operational area in order that TFR may address the risk of injury.

Any person that fails such test will not be permitted to enter the premises and thereby forfeits. Rights to be allowed access to the briefing session and will subsequently not be permitted to submit a bid for the RFQ.

- A Certificate of Attendance in the form set out in Returnable Schedules must be completed.
- Submitted with your Tender as proof of attendance is required for a compulsory site meeting and/or RFQ briefing.
- Respondents failing to attend the compulsory RFQ briefing/site inspection will be disqualified.
- The briefing session will start punctually as indicated above and information will not be repeated for the benefit of Respondents arriving late.

The closing time and date for receipt of tenders is **10:00hrs** on **Tuesday, 2[illegible] June 2015.**

Telegraphic, telephonic, facsimile, e-mail and late tenders will not be accepted.

Tenders may only be submitted on the tender documentation that is issued.

Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the Tender Data.

Transnet urges Clients, Suppliers and Service Providers to report any acts of fraud and/or instances of corruption to Transnet's TIP-OFFS ANONYMOUS on 0800 003 056 or Transnet@tip-offs.com.

ACKNOWLEDGMENT OF RECEIPT OF DOCUMENTS

AND INTENTION TO TENDER

(To be returned within 3 days after receipt)

FAX TO:	Transnet Freight Rail	Project No.:	ERAC NS3061 17582
	Fax No. 0867666815	Tender No.:	ERAC NS3061 17582
	Attention: Nico Swart	Closing Date:	**23rd June 2015**

THE ROUTINE AND COMMISSIONING TESTING ON AN AS AND WHEN REQUIRED BASIS OF 3KV DC AND 25KV AC TRACTION SUBSTATIONS, 3KV TIE STATIONS, 25KV TRACTION SECTION STATIONS AND 11KV SIGNAL SUPPLY AND DISTRIBUTION SUBSTATIONS FOR A PERIOD OF 14 MONTHS UNDER THE CONTROL OF THE DEPOT ENGINEER, KOEDOESPOORT.

We:		Check
	Do wish to tender for the work and shall return our tender by the due date above	**Yes** ☐
	Do not wish to tender on this occasion and herewith return all your documents received	**No** ☐

REASON FOR NOT TENDERING:

_____

_____

_____

_____

_____

COMPANY'S NAME, ADDRESS, CONTACT, PHONE AND TELEFAX NUMBERS

_____

_____

_____

_____

_____

SIGNATURE : _____

TITLE: _____

T1.2 Tender Data (Alternative Method 2)

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement (January 2009) as published in Government Gazette No 31823, Board Notice 12 of 2009 of 30 January 2009, subsequently amended (May 2010) in Board Notice 86 of 2010. (See www.cidb.org.za)

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

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

Clause		Data
F.1.1	The Employer is	**Transnet SOC Ltd (Registration No. 1990/000900/30)**
F.1.2	The tender documents issued by the Employer comprise:	
	Part T1: Tendering procedures	T1.1 Tender notice and invitation to tender T1.2 Tender data
	Part T2: Returnable documents	T2.1 List of returnable documents T2.2 Returnable schedules
	Part C: The contract	
	Part C1: Agreements and contract data	C1.1 Form of Offer and Acceptance C1.2 Contract Data (part 1 & 2) C1.3 Adjudicator's Contract
	Part C2: Pricing data	C2.1 Pricing instructions C2.2 Activity Schedules/Bill of quantities
	Part C3: Scope of work	C3.1 Works Information
	Part C4: Site information	C4.1 Site information
F.1.4	The Employer's agent is:	Regional Procurement Manager / Lead
	Name:	Yvonne Scannell
	Address:	Room 222, Nzasm building, c/o Paul Kruger and Minnaar Streets, Pretoria
	Tel No.	012 315 2059
	Fax No.	012 315 0867666815
	E–mail:	Yvonne.scannell@transnet.net
F1.6	The competitive negotiation procedure may be applied.	

F.2.1 Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:

1. Tender offers will only be considered if:
   - An Authorised representative of the tendering entity attends the compulsory clarification meeting in terms of F.2.7
   - A fully completed clause by clause statement of compliance to the General Conditions of Contract, the Contract Data, the Pricing Data, the Works Information, technical specifications and General Specifications.
   - Whether the bid contains a completed & signed priced offer including the Bill of quantities.
   - Tenderers to submit a signed letter declaring all electrical testing instruments owned.
   - Calibration certificates must be submitted and must not be older than 12 months.
   - Proof of compliance authorising persons in terms of clause 303.1.4.6 or 303.1.7.1 of the electrical Safety Instructions shall be allowed to perform high voltage tests in a substation.
   - A certified copy each of an Electrical trade test with testing of substation protection equipment experience or a National diploma in Electrical engineering with testing of substation protection equipment experience.

2. Pre-qualifying Quality (Functionality) Criteria

Only those tenderers who attain the minimum number of evaluation points for quality (functionality) will be eligible for further evaluation, failure to meet the minimum threshold will result in the tender being disqualified and removed from further consideration.

The pre-qualifying Quality (functionality) criteria and maximum score in respect of each of the criteria are as follows:

Quality criteria	Sub criteria	Maximum number of points
Relevant experience		70
Health, Risk & Safety plan relevant to scope of work		10
Method statement, (including organization, logistics and support services) relevant to scope of work		20
Maximum possible score for pre-qualifying Quality		**100**

Pre-qualifying Quality shall be scored by not less than three evaluators and averaged in accordance with the following schedules:

- T2.2-25 Relevant experience
- T2.2-22 Health, Risk and Safety plan relevant to scope of work
- T2.2-37 Method statement relevant to scope of work

The minimum number of evaluation points for quality is 80.
The persons named in the Schedule of Key Persons of tenderers who satisfy the minimum quality criteria may be invited to an interview. Tenderers who attain a score of less than 60% of the points allocated to the interview will be declared ineligible to tender.

Each evaluation criteria will be assessed in terms of Five indicators – no response, poor, satisfactory, good and very good. Scores of 0, 40, 70, 90 or 100 will be allocated to no response, poor, satisfactory, good and very good, respectively. The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for quality, unless scored collectively.

Note: Any tender not complying with all of the above-mentioned stipulations, numbered 1 to 2, will be regarded as non-responsive and will therefore not be considered for further evaluation.

F.2.7 The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender.
Tenderers must sign the attendance list in the name of the tendering entity. Addenda will be issued and tenders will be received only from those tendering entities appearing on the attendance list.

F.2.12 No alternative tender offers will be considered

F.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing in **black ink**.

F.2.13.3 Parts of each tender offer communicated on paper shall be as **an original, plus 2 (two) copies**.

F.2.13.5 The Employer's details and address for delivery of tender offers and identification details that are to be shown on each tender offer package are:

F2.15.1 **If posted**, the envelope must be addressed to:

The Chairperson
Transnet Freight rail Acquisition council
P O Box 4244
JOHANNESBURG
2000

And must be dispatched in time for sorting by the Post Office to reach the Post Office Box indicated above, before the closing time of the tender.

If delivered by hand, to be deposited to the Transnet Freight Rail Acquisition Council Tender box which is located in the foyer, and to be addressed as follows:

The Chairperson
Transnet Freight Rail Acquisition council
Ground floor, Inyanda House 1
21 Wellington road
Parktown
Johannesburg
2001

It should be noted that the above tender box is accessible to the public 24 hours per day, 7 days a week.

Identification details:
The tender documents must be submitted in a sealed envelope labelled with:

a) Name of Tenderer (Insert Company name).
b) Contact person and details (Insert details).
c) The Tender number (Insert)
d) The Tender description(Insert)
e) Closing date of tender (Insert)

Documents must be marked for the attention of:
The Procurement Lead: Mrs Yvonne Scannell.

Prior arrangement on the submittal of large tender documents should be made with the Procurement Manager.

NO LATE TENDERS WILL BE ACCEPTED

F.2.13.6 A two-envelope procedure will not be followed.

F.2.13.9 Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.

F.2.15 The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

F.2.16 The tender offer validity period is 12 weeks from closing date of tender.

F.2.9 Access shall be provided for the following inspections, tests and analysis:

F.2.22 Return all retained tender documents within 28 days after the expiry of the validity period.

F.2.23 The tenderer is required to submit with his tender:

1. an **original valid** Tax Clearance Certificate issued by the South African Revenue Services;
2. A valid certified SANAS accredited or IRBA approved B-BBEE verification certificate, and
3. A valid letter of good standing with the Compensation Commissioner issued by the Department of Labour relative to the scope of Works

Note: Refer to Section T2.1 for list of Returnable Documents.

F.3.4 The time and location for opening of the tender offers are:
Time 12:00 on the closing date of tender.
Location: TFR Acquisition Council, Ground Floor, Inyanda House 1, 21 Wellington Road, Park Town, Johannesburg.

F.3.11.1 The financial offer will be reduced to a comparative basis using the Tender Assessment Schedule.

F.3.11.3 The procedure for the evaluation of responsive tenders is Method 2.

F.3.11.7 The financial offer will be scored using Formula 2 (option 1) in Table F.1 where the value of W_1 is:

90 where the financial value inclusive of VAT of one or more responsive tenders received have a value in excess of R1,000,000.00, or

80 where the financial value inclusive of VAT of one or more responsive tenders received have a value less than R1,000,000.00

Up to 100 minus W_1 tender evaluation points will be awarded to tenderers who complete the preferencing schedule and who are found to be eligible for the preference claimed.

Should the BBBEE rating not be provided, Transnet reserves the right to award no points and/or declare the tender void. Transnet also reserves the right to carry out an independent audit of the tenderers scorecard components at any stage from the date of close of the tenders until completion of the contract. Tenderers with no accreditation will score zero points for preferencing.

Note :

In the event that, in the application of 80/20 preference point system as stipulated, **all tenders** received exceed the estimated Rand value of R1,000,000 the tender invitation must be cancelled.

In the event that, in the application of 90/10 preference point system as stipulated, **all tenders** received are equal to or below R1,000,000 the tender invitation must be cancelled

F.3.13.1 Tender offers will only be accepted if:

a) the tenderer submits **an original valid** Tax Clearance Certificate issued by the South African Revenue Services or has made arrangements to meet outstanding tax obligations;

b) ~~the tenderer submits a letter of intent from an insurer undertaking to provide the Performance Bond to the format included in Part T2.2 of this procurement document.~~

c) ~~The Tenderer is registered with the Construction Industry Development Board in an appropriate tender grading designation~~

d) the tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;

e) the tenderer does not appear on Transnet list for restricted tenderers.

f) ~~the tenderer has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state are permitted to submit tenders or participate in the contract~~;

g) the tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer;

h) the Employer is reasonably satisfied that the tenderer has in terms of the Construction Regulations, 2003, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely.

F.3.17 The number of paper copies of the signed contract to be provided by the Employer is 1 (one).

The additional tender conditions of tender are:

1 Pre-qualifying 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 mandatory returnable documents: Whether the bid has been lodge on time, Whether all mandatory "Returnable schedules" were completed and returned by the closing date and time, Verify the validity of all Returnable documents", i.e. • A valid letter of Good Standing with the Compensation Commissioner issued by the Department of Labour.
Substantive responsiveness	Prequalification criteria, if any, must be met, i.e. • Whether any technical pre-qualification set by Transnet have been met as follows: • An authorised representative of the tendering entity attends the compulsory briefing session meeting.

	• A fully completed clause by clause statement of compliance to the General Conditions of Contract, Contract Data, Pricing Data, Works Information, Technical specifications and General specifications. • Whether the bid contains a completed & signed priced offer including a completed bill of quantities. • Tenderers to submit a signed letter declaring all electrical testing instruments owned. • Calibration certificates must be submitted and must not be older than 12 months. • Proof of compliance authorizing persons in terms of clause 303.1.4.6 or 303.1.7.1 of the Electrical Safety Instructions shall be allowed to perform high voltage tests in a substation. • A certified copy of an electrical trade test certificate with testing of substation protection equipment experience or a National diploma in Electrical engineering with testing of substation protection equipment experience.
Functionality Threshold	As prescribed in terms of the Preferential Procurement Policy Framework Act (PPPFA), Act 5 of 2000 and its Regulations. Tenderers are to note that functionality is included as threshold with a prescribed percentage threshold of **80%**, i.e.: • Relevant experience • Risk, Health and Safety Plan as well as an environmental plan relevant to scope of work will be considered as part of the technical evaluation. • Method statement, (including organisation, logistics and support resources) relevant to scope of work
Final weighted evaluation based on 80/20 preference point system	• Pricing and price basis [firm] - whilst not the sole factor for consideration, competitive pricing and overall level of unconditional discounts[1] will be critical 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.

2 The Tenderer is deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the *works* and of the prices stated in the priced Activity Schedule in the *works information*. The rates and prices (except in so far as otherwise provided in the Tender) collectively cover full payment for the discharge of all his obligations under the Contract and all matters and things necessary for the proper completion of the *works*.

3 Tender submission

3.1 Tenderers shall duly fill in the attached Bill of Quantities. Items not reflected in the Bill of Quantities, but covered in the particular specification or agreed at site meetings, shall be added to the Bill of Quantities by the Tenderer and quoted for accordingly.

3.2 **Clause by clause statement of compliance to General conditions of Contract, Works Information, Particular specification, technical specifications and General specifications**

- ***Tenderers shall complete the clause-by-clause statement of compliance to the various specifications attached to this tender document.***

- *Tenderers shall motivate a statement of non-compliance. Indicate statement of compliance and motivate (give reasons for not complying)*
- *Indicate other statements which don't require compliance.*

Note: The evaluation committee will take decision to give an average score to companies who indicated their compliance but with short comings.

3.3 The Tenderer shall indicate how the work will be executed and commissioned. (approach paper and method statement).

3.4 During the duration of the contract period, the successful Tenderer shall be required to inform the Employer / Deputy of any changes to equipment offered and submit detailed information on replacement equipment for approval prior to it being used on this contract.

T1.3 CIDB Standard Conditions of Tender

January 2009 Edition

As published in Annexure F of the CIDB Standard for Uniformity in Construction Procurement in Board Notice 12 of 2009 in Government Gazette No 31823 of 30 January 2009

F.1 General

F.1.1 Actions

F.1.1.1 The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In their dealings with each other, they shall discharge their duties and obligations as set out in F.2 and F.3, timeously and with integrity, and behave equitably, honestly and transparently, comply with all legal obligations and not engage in anticompetitive.

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

Note:
1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.
2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

F.1.1.3 The employer shall not seek and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.

F.1.2 Tender Documents

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

F.1.3 Interpretation

F.1.3.1 The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.

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

F.1.3.3 For the purposes of these conditions of tender, the following definitions apply:

a) **conflict of interest** means any situation in which:
   i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfill his or her duties impartially;
   ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
   iii) incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.

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

c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; and

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

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

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

F.1.4 Communication and employer's agent

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

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

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

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

F.1.6 Procurement procedures

F.1.6.1 General

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

F.1.6.2 Competitive negotiation procedure

F.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of F.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

F.1.6.2.2 All responsive tenderers, or not less than three responsive tenderers that are highest ranked in terms of the evaluation method and evaluation criteria stated in the tender data, shall be invited in each round to enter into competitive negotiations, based on the principle of equal treatment and keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of F.2.17, the employer may request that tenderers be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the tender, or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

F.1.6.2.3 At the conclusion of each round of negotiations, tenderers shall be invited by the employer to make a fresh tender offer, based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.

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

F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1 Option 1

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

F.1.6.3.2 Option 2

F.1.6.3.2.1 Tenderers shall submit in the first stage only technical proposals. The employer shall invite all responsive tenderers to submit tender offers in the second stage, following the issuing of procurement documents.

F.1.6.3.2.2 The employer shall evaluate tenders received during the second stage in terms of the method of evaluation stated in the tender data, and award the contract in terms of these conditions of tender.

F.2 Tenderer's obligations

F.2.1 Eligibility

F.2.1.1 Submit a tender offer only if the tenderer satisfies the criteria stated in the tender data and the tenderer or any of his principals, is not under any restriction to do business with employer.

F.2.1.2 Notify the employer of any proposed material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used by the employer as the basis in a prior process to invite the tenderer to submit a tender offer and obtain the employer's written approval to do so prior to the closing time for tenders.

F.2.2 Cost of tendering

Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

F.2.3 Check documents

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

F.2.4 Confidentiality and copyright of documents

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

F.2.5 Reference documents

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

F.2.6 Acknowledge addenda

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

F.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarise themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the tender data.

F.2.8 Seek clarification

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

F.2.9 Insurance

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

F.2.10 Pricing the tender offer

F.2.10.1 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before theclosing time stated in the tender data.

F.2.10.2 Show VAT payable by the employer separately as an addition to the tendered total of the prices.

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

F.2.10.4 State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.

F.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with Instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall Initial all such alterations. Erasures and the use of masking fluid are prohibited.

F.2.12 Alternative tender offers

F.2.12.1 Unless otherwise stated in the tender data, submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted as well as a schedule that compares the requirements of the tender documents with the alternative requirements that are proposed.

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

F.2.13 Submitting a tender offer

F.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

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

F.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.

F.2.13.4 Sign the original and all copies of the tender offer where required in terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.

F.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.

F.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

F.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

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

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

F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.

F.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

F.2.16 Tender offer validity

F.2.16.1 Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.

F.2.16.2 If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.

F.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.

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

F.2.17 Clarification of tender offer after submission

Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No changes in the competitive position of tenderers or substance of the tender offer is sought, offered or permitted.

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

F.2.18 Provide other material

F.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

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

F.2.19 Inspections, tests and analysis

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

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

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

F.2.21 Check final draft

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

F.2.22 Return of other tender documents

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

F.2.23 Certificates

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

F.3 The employer's undertakings

F.3.1 Respond to requests from the tenderer

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

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

a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;

b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or

c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew documents.

F.3.3 Return late tender offers

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

F.3.4 Opening of tender submissions

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

F.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, preferences claimed and time for completion for the main tender offer only.

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

F.3.5 Two-envelope system

F.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

F.3.5.2 Evaluate the quality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the quality evaluation more than the minimum number of points for quality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.

F.3.6 Non-disclosure

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

F.3.7 Grounds for rejection and disqualification

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

F.3.8 Test for responsiveness

F.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

a) complies with the requirements of these Conditions of Tender,

b) has been properly and fully completed and signed, and

c) is responsive to the other requirements of the tender documents.

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

a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,

b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or

c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

F.3.8.3 Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

F.3.9 Arithmetical errors, omissions and discrepancies

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

F.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for:

a) the gross misplacement of the decimal point in any unit rate;

b) omissions made in completing the pricing schedule or bills of quantities; or

c) arithmetic errors in:

i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or

ii) the summation of the prices.

F.3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered or accept the corrected total of prices.

F.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:

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

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

F.3.10 Clarification of tender offer

Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

F.3.11 Evaluation of tender offers

F.3.11.1 **General**

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

F.3.11.2 **Method 1: Financial offer**

In the case of a financial offer:

a) Rank tender offers from the most favourable to the least favourable comparative offer.

b) Recommend the highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so.

c) Re-rank all tenderers should there be compelling and justifiable reasons not to recommend the highest ranked tenderer and recommend the highest ranked tenderer, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.3 Methods 2: Financial offer and preference

In the case of a financial offer and preferences:

a) Score each tender in respect of the financial offer made and preferences claimed, if any, in accordance with the provisions of F.3.11.7 and F.3.11.8.

b) Calculate the total number of tender evaluation points *(TEV)* in accordance with the following formula:

TEV = NFO + NP

where: *NFO* is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;

NP is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points, and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated

F.3.11.4 Method 3: Financial offer and quality

In the case of a financial offer and quality:

a) Score each tender in respect of the financial offer made and the quality offered in accordance with the provisions of F.3.11.7 and F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.

b) Calculate the total number of tender evaluation points *(TEV)* in accordance with the following formula:

TEV = NFO + NQ

where: *NFO* is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;

NQ is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

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

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

a) Score each tender in respect of the financial offer made, preference claimed, if any, and the quality offered in accordance with the provisions of F.3.11.7 to

F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.

b) Calculate the total number of tender evaluation points *(TEV)* in accordance with the following formula, unless otherwise stated in the Tender Data:

$$TEV = NFO + NP + NQ$$

where: *NFO* is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;
NP is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.
NQ is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

c) Rank tender offers from the highest number of tender evaluation points to the lowest.

d) Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

e) Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.6 Decimal places

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

F.3.11.7 Scoring Financial Offers

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

$$NFO = W1 \times A$$

where: *NFO* is the number of tender evaluation points awarded for the financial offer.
W1 is the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.
A is a number calculated using the formula and option described in Table F.1 as stated in the Tender Data.

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

Formula	Comparison aimed at achieving	Option 1[a]	Option 2 [a]
1	Highest price or discount	$A = (1 + (\frac{P - Pm}{Pm}))$	$A = P / Pm$
2	Lowest price or percentage commission / fee	$A = (1 + (\frac{P - Pm}{Pm}))$	$A = Pm / P$

[a] *Pm* is the comparative offer of the most favourable comparative offer.

P is the comparative offer of the tender offer under consideration.

F.3.11.8 Scoring preferences

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

F.3.11.9 Scoring quality

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

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

$NQ = W2 \times SO / MS$

where: *SO* is the score for quality allocated to the submission under consideration;
MS is the maximum possible score for quality in respect of a submission; and
W2 is the maximum possible number of tender evaluation points awarded for the quality as stated in the tender data

F.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.

F.3.13 Acceptance of tender offer

Accept the tender offer, if in the opinion of the employer, it does not present any unacceptable commercial risk and only if the tenderer:

a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,

b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,

c) has the legal capacity to enter into the contract,

d) is not insolvent, in receivership, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,

e) complies with the legal requirements, if any, stated in the tender data, and

f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

F.3.14 Prepare contract documents

F.3.14.1 If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of:

a) addenda issued during the tender period,

b) inclusion of some of the returnable documents, and

c) other revisions agreed between the employer and the successful tenderer.

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

F.3.15 Complete adjudicator's contract

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

F.3.16 Notice to unsuccessful tenderers

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

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

F.3.17 Provide copies of the contracts

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

F.3.18 Provide written reasons for actions taken

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

Part T2.1: Returnable Documents

PART T2: RETURNABLE DOCUMENTS / SCHEDULES

T2.1: LIST OF RETURNABLE DOCUMENTS

The tenderer must complete the following returnable documents:

1.0 Returnable documents required for tender evaluation purposes

No	Returnable Documents
1	Letter of Good Standing with the Compensation Commissioner issued by the Department of Labour.
2	Safety Plan and Fall Protection Plan in accordance with the Construction Regulations of 2003 and Transnet's E4E
3	Quality Assurance/control Plan
4	Environmental Management Plan
5	Proposed Organization and Staffing
6	Certified Copy of Share Certificates CK1 & CK2
7	Certified Copy of Certificate of Incorporation and CM29 and CM9
8	Certified Copy of Identity Documents of Shareholders / Directors / Members (where applicable)
9	Original or certified copy of a cancelled cheque **OR** original or certified letter from the bank verifying banking details (with bank stamp and signature)
10	Current and original or certified Tax Clearance Certificate
11	A certified copy of the VAT registration certificate
12	A signed letter from the Accountant/Auditor confirming most recent annual turnover and percentage black ownership in the company **AND/OR** certified BBBEE certificate and scorecard from an accredited rating agency
13	Method statement and approach paper relevant to scope of work.
14	Risk, health safety plan as well as an environmental plan relevant to the scope of work
15	A certified copy each of an Electrical Trade test with testing of substation protection equipment experience or a National diploma in electrical Engineering with testing of substation protection equipment experience
16	Proof of compliance authorising persons in terms of clause 303.1.4.6 or 303.1.7.1 of the electrical Safety Instructions shall be allowed to perform high voltage tests in a substation

letter

TRANSNET
freight rail

Part T2.2: Returnable Schedules

T2.2 List of Returnable Schedules

1. Returnable Schedules

T2.2-3	Risk Elements
T2.2-4	Availability of equipment and other resources
T2.2-7	Management and CV's of key persons
T2.2-8	Schedule of proposed subcontractors/consultants
T2.2-9	Insurance provided by the Contractor
T2.2-13	*Contractor's* Works Information
T2.2-14	Authority to submit tender
T2.2-15	Certificate of attendance at tender clarification meeting
T2.2-16	Record of addenda to tender documents
T2.2-20	Quality Plan
T2.2-22	Health, Risk assessment and Safety Plan
T2.2-24	Capacity and ability to meet delivery schedule
T2.2-25	Previous experience
T2.2-27	Broad-Based Black Economic Empowerment (BBBEE)
T2.2-31	Supplier Code of Conduct
T2.2-32	Unilateral Non-Disclosure Agreement
T2.2-33	Mutual Non-Disclosure Agreement
T2.2-36	RFP Declaration Form
T2.2-37	Method Statement
T2.2-41	Evaluation Schedule: Approach Paper
T2.2-43	RFQ – Breach of Law
T2.2-49	Transnet Safety Clauses

A clause by clause statement of compliance to the General Conditions of Contract, Contract Data, Pricing Data, Works Information, Technical specifications and General Specifications. Tenderers shall motivate a statement of non-compliance.

2. **C1.1 Offer portion of Form of Offer & Acceptance**
3. **C1.2 Contract Data Part 2: Data by *Contractor***
4. **C2.2 Bill of Quantities**

T2.2-3: Risk Elements

Tenderers to review the potential risk element associated with the Project (Refer to Clause 63.6). The risk elements are to be priced separately in this Schedule. If No Risks are identified "No Risks" must be stated on this schedule.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-4: Availability of Equipment and Other Resources

Tenderers to submit a list of all Equipment and other resources that he proposes to use to execute the work as described in the Works Information, as well as the availability and details of ownership for each item.(Also refer to clause 3.2.7.1 of the Particular specification)

Number of Equipment	Equipment Type – Description	Hourly Rate

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-7: Management & CV's of Key Persons – ECSC[1]

Please describe the management arrangements for the *works*.

Submit the following documents as a minimum with your tender document:

1. An organisation chart showing on-site and off-site management (including the key people and also identify the required legal appointments.)
2. CV's for people proposed for all identified posts including Safety Officer and Quality Assurance Representative.
3. Details of the location (and functions) of offices from which the *works* will be managed.
4. Details of the experience of the staff who will be working on the *works* with respect to:
   - Working with the NEC3 Engineering and Construction Short Contract Option chosen for this contract. If staff experience of these matters is limited an indication of relevant training that they have attended would be helpful.
5. An explanation of how you propose to allocate adequate resources to enable you to comply with the requirements and prohibitions imposed on you by or under the statutory provisions relating to health and safety.

Attached submissions to this schedule:

.....

.....

.....

.....

.....

.....

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

[1]NEC3 Engineering & Construction Short Contract (June 2005).

T2.2-8: Schedule of Proposed Subcontractors

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

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

	Name and address of proposed Subcontractor	Nature and extent of work	Previous experience with Subcontractor.
1.			
2.			
3.			
4.			

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-9: Insurance provided by the *Contractor*

Clause 82.1 in NEC3 Engineering & Construction Short Contract (June 2005) requires that the *Contractor* provides the insurance stated in the insurance table except any insurance which the *Employer* is to provide as stated in the Contract Data.

Please provide the following details for insurance which the *Contractor* is still to provide. Notwithstanding this information all costs related to insurance are deemed included in the tenderer's rates and prices.

Insurance against (See clause 82.1 of the ECSC)	**Name of Insurance Company**	**Cover**	**Premium**
Loss of or damage to the *works*.			
Loss of or damage to Equipment, Plant and Materials.			
The *Contractor's* liability for loss of or damage to property (except the *works*, Plant and Materials and Equipment) and for bodily injury to or death of a person (not an employee of the *Contractor*) arising from or in connection with this *Contractor's* Providing the Works.			
Liability for death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract			
(Other)			

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-13: *Contractor's* Works Information – ECSC[2]

Note to tenderers: Tenderers are required to provide information to make up the *Contractor's* works information in accordance with the following:

Additional requirements in respect of testing and commissioning of electrical equipment in the various types of substations and tie stations:

(Contract Administrator to insert requirements)

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

2 NEC3 Engineering & Construction Contract (June 2005)(amended June 2006).

T2.2-14: Authority to submit a Tender

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for his category of organisation or alternatively attach a certified copy of a company / organisation document which provides the same information for the relevant category as requested here.

A – COMPANY	B - PARTNERSHIP	C - JOINT VENTURE	D - SOLE PROPRIETOR

A. Certificate for Company

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

Signed _____ Date _____

Name _____ Position Chairman of the Board of Directors

T2.2-15: Certificate of Attendance at Tender Clarification Meeting

This is to certify that

_____ (Tenderer)

of _____ (address)

was represented by the person(s) named below at the compulsory tender clarification meeting

Held at:			
On (date)		Starting time:	

As the tenderer we undertake that by said persons attending the clarification meeting we have made it our business to familiarise ourselves with all aspects of the works / service / supply specified in the tender documents in order for us to take account of everything necessary to provide a responsive tender offer and to compile our rates and prices included in the tender offer.

We further understand that in addition to any queries raised on behalf of us at the meeting we may still approach the *Employer* / *Purchaser*'s Representative to request clarification of the tender documents until no later than five working days before the tender closing time stated in the Tender Data.

Particulars of person(s) attending the meeting:

Name _____ Signature _____

Capacity _____

Name _____ Signature _____

Capacity _____

Attendance of the above persons at the meeting was confirmed by the procuring organisation's representative as follows:

Name _____ Signature _____

Capacity _____ Date & time _____

T2.2-16: Record of Addenda to Tender Documents

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

	Date	Title or Details
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Attach additional pages if more space is required.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-20: Quality Plan

Due consideration must be given to the deliverables required to execute and complete the contract as per the Quality Management Standard stated in the Works Information and should include but not be limited to:

1. Project Quality Plan for the contract.
2. The Contractor's Quality Policy.
3. Index of procedures to be used during the contract.
4. Audit Schedule for internal and external audits during the contract.
5. ISO 9001 certification.
6. Typical Quality Manual.
7. Typical Quality Control Plan.
8. Typical data book index.

Attached submissions to this schedule:

.....

.....

.....

.....

.....

.....

.....

.....

.....

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-22: Health, Risk and Safety Plan

Submit the following documents as a minimum with your tender:

1. Valid letter of good standing with insurance body.
2. Roles and responsibilities of legal appointees.
3. Safety Officer role and responsibility.
4. Safety, Health & Environmental Policies.
5. Overview of Tenderer's SHE system for project.
6. Overview of RA process and examples.
7. List of job categories for project and competencies required per category and plan to address and meet outstanding competencies.
8. Six months synopsis of SHE incidents, description, type and action taken.
9. Overview of selection process of subcontractors.
10. SHE challenges envisaged for the project and how they will be addressed and overcome.
11. Signed statement acknowledging receiving and budget provision for SHE pack requirements.
12. Complete and return with tender documentation the Contractor Safety Questionnaire
13. Construction Safety File (Index)
14. Construction Safety Work Method Statement

T2.2-24: Capacity and Ability to meet Delivery Schedule

Note to tenderers:

The Tenderer is required to demonstrate to the *Employer* that he has sufficient current and future capacity to carry out the work as detailed in the Works Information and that he has the capacity and plans in place to meet the required delivery schedule as required. To this end, the following must be provided by the Tenderer:

A schedule detailing the following:

- Maximum quantity of work concurrently performed by the Tenderer in the recent past in order to illustrate his potential capacity to design, fabricate and/or construct work of a similar nature
- Current and future work on his order book, showing quantity and type of equipment
- Quantity of work for which the Tenderer has tenders in the market or is currently tendering on
- The work as covered in this Works Information, planned and scheduled as per the Tenderer's capacities and methods but meeting the required delivery schedule.

Index of documentation attached to this schedule:

.....

.....

.....

.....

.....

.....

.....

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-25: Previous Experience

Note to tenderers:

Tenderers are required to demonstrate their experience in the delivery of similar works, and to this end shall supply a sufficiently detailed reference list with contact details of existing customers and also indicate their previous experience of, their design, installation and commissioning capability.

Employer, contact person and telephone number	Description of contract	Value of work inclusive of VAT (Rand)	Date completed

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-27: Broad-Based Black Economic Empowerment (B-BBEE)

B-BBEE and preferencing scheme:

Transnet fully endorses and supports the Government's Broad-Based Black Economic Empowerment Programme and it is strongly of the opinion that all South African business enterprises have an equal obligation to redress the imbalances of the past.

Transnet would therefore prefer to do business with local business enterprises who share these same values and who are prepared to contribute to meaningful B-BBEE initiatives (including, but not limited to subcontracting and Joint Ventures) as part of their tender responses. Transnet will accordingly allow a "preference" in accordance with the 10% preference system, as per the Preferential Procurement Policy Framework Act 5 of 2000 (as amended), to companies who provide a B-BBEE Accreditation Certificate. All procurement and disposal transactions will be evaluated accordingly.

Consequently, when Transnet invites prospective suppliers to submit tenders for its various capital expenditure programmes, it urges tenderers (Large Enterprises and QSE's - see below) to have themselves accredited by any one of the various Accreditation Agencies approved by SANAS (the South African National Accreditation Systems under the auspices of the Department of Trade and Industry) and IRBA (Independent Regulatory Board for Auditors).

In terms of Government Gazette No 34612, Notice No. 754 dated 23 September 2011, as from 1 October 2011 only B-BBEE Accreditation Certificates issued by SANAS approved Verification Agencies or Registered Auditors approved by IRBA will be valid.

All certificates are to display the BBBEE Verification Agency Body Name and BVA Body number or a Registered Auditor's Body Name and IRBA number.

Enterprises will be rated by such agencies based on the following:

Scorecard Types	Exempted Micro Enterprise	Qualifying Small Enterprise	Generic Construction
Discipline	Parameters are based on annual turnover of the Measured Entity		
Contractor	Annual turnover < R 5 million	Annual turnover > R 5 million and equal to or , < R 35 million	Annual turnover > R 35 million
Built Environment Professionals (BEP)	Annual turnover < R 1,5 million	Annual turnover > R 1,5 million and equal to or , < R 11,5 million	Annual turnover > R 11,5 million

a) **Large Enterprises**

- Rating level based on all seven elements of the B-BBEE scorecard

b) **Qualifying Small Enterprises – QSE**

- Rating level based on any four of the elements of the B-BBEE scorecard

c) **Exempted Micro Enterprises –**

- EMEs are exempted from B-BBEE accreditation as indicated in the DTI Codes, Statement 000 (Page 9)
- Automatic rating of Level 4 B-BBEE irrespective of race or ownership, i.e. 100% B-BBEE recognition
- Black ownership >50% or Black Women ownership >30% automatically qualify as Level 3 B-BBEE, i.e. 110% B-BBEE recognition
- EME's should only provide documentary proof of annual turnover plus proof of Black ownership if Black ownership >50% or Black Women ownership >30%

In addition to the above:

- A trust, consortium or joint venture will qualify for points for their B-BBEE status level as a legal entity, **provided** that the entity submits their B-BBEE status level certificate.
- A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, **provided** that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate tender.
- Tenderers anticipating tendering as a trust, consortium or joint venture must allow sufficient time for obtaining such status level certificate or consolidated B-BBEE scorecard.

Respondents must furnish B-BBEEE certificates for all proposed subcontractors / sub-consultants. A bidder will not be awarded the points claimed for B-BBEE status level of contribution if it is indicated in the bid documents that such a bidder intends subcontracting / sub-consulting more that 25% of the contract value to any other enterprise that does not qualify for at least the same number of points that the bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract. A contractor is not allowed to sub-contract more than 25% of the contract value to another enterprise that does not have an equal or higher B-BBEE status level, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.

Respondents will be required to furnish proof to Transnet (i.e. a detailed scorecard as stipulated above in respect of Large Enterprises and QSEs, or proof of turnover in respect of EMEs). Failure to do so will result in a score of zero being allocated for B-BBEE.

When confirming the validity of a certificate in respect of an EME, the following should be detailed on the face of the certificate:

1. The Accounting Officer's or Registered Auditor's letter head with full contact details;
2. The Accounting Officer's or Registered Auditor's practice numbers;
3. The name and the physical location of the measured entity;
4. The registration number and, where applicable, the VAT number of the measured entity;
5. The date of issue and date of expiry;
6. The B-BBEE Status Level of Contribution obtained by the measured entity; and
7. The total black shareholding and total black female shareholding.

Turnover:

Kindly indicate your company's annual turnover for the past year

ZAR.....

- For Contractors:
  - With an annual turnover >R5m, please attach an status level verification certificate issued by a SANAS Accredited Verification Agency together with all the relevant score sheets pertaining thereto;
  - With an annual turnover <R5m, please attach a verification certificate issued by a Registered Auditor, Accounting Officer or a SANAS Accredited Verification Agency which meets the definition for EME certificates mentioned above.
- For QSEPs:
  - If annual turnover >R1.5m, please attach an accreditation certificate issued by an Accreditation Agency, together with all the relevant score sheets pertaining thereto;
  - If annual turnover < R 1,5 million, please attach an accreditation certificate issued by an Accreditation Agency or Registered Auditor; or an Auditor's certificate or similar certificate issued by an Accounting Officer or Verification Agency which meets the definition for EME certificates mentioned above.

In addition to the status level verification certificate, Transnet also requires that tenderers register their B-BBEE compliance and supporting documentation on the Department of Trade and Industry's

("DTI") National B-BBEE IT Portal and Opportunities Network and **provide Transnet with proof of registration in the form of an official B-BBEE Profile issued by the DTI**.

Transnet will use the DTI B-BBEE IT Portal as a single data source for its B-BBEE supplier selection criteria and procurement improvement programme by tracking compliance, understanding spend and by sourcing future procurement opportunities.

Instructions for registration and obtaining a DTI B-BBEE Profile:

1. Go to http://bee.thedti.gov.za;
2. Click on B-BBEE Registry;
3. Click on *Register or Login;*
4. Click on *Click Here to Register;*
5. Complete the registration page;
6. Once registered, click on *List on Registry;*
7. Follow all 'on-screen' and e-mailed instructions to submit your documentation and obtain your Profile.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-31: Supplier Code of Conduct

Transnet SOC Limited aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- The Transnet Procurement Policy – A guide for Tenderers.
- Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- The Public Finance Management Act (PFMA);
- The Broad Based Black Economic Empowerment Act (B-BBEE);
- The Prevention and Combating of Corrupt Activities Act (PRECCA); and
- The Construction Industry Development Board Act (CIDB Act).

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices

Transnet is in the process of transforming itself into a self-sustaining State Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

1. ***Transnet SOC Limited will not participate in corrupt practices. Therefore, it expects its suppliers to act in a similar manner.***
    - Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with, and payments to, our suppliers.
    - Employees must not accept or request money or anything of value, directly or indirectly, from suppliers.
    - Employees may not receive anything that is calculated to:
        - Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;
        - Win or retain business or to influence any act or decision of any person involved in sourcing decisions; or
        - Gain an improper advantage.

- There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our "Tip-offs Anonymous" Hot line to report these acts. (0800 003 056).

2. ***Transnet SOC Limited is firmly committed to the ideas of free and competitive enterprise.***

- Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust practices.
- Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing B-BBEE spend (fronting).

3. ***Transnet's relationship with suppliers requires us to clearly define requirements, to exchange information and share mutual benefits.***

- Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
  - Misrepresentation of their product (origin of manufacture, specifications, Intellectual property rights, etc.);
  - Collusion;
  - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, B-BBEE status, etc.);
  - Corrupt activities listed above; and
  - Harassment, intimidation or other aggressive actions towards Transnet employees.
- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.

Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

Conflicts of Interest

A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet SOC Limited.

- Doing business with family members.
- Having a financial interest in another company in our industry

Where possible, contracts will be negotiated to include the above in the terms of such contracts. To the extent such terms are not included in contractual obligations and any of the above code is breached, then Transnet reserves its right to review doing business with these suppliers.

I, _____ of _____

(insert name of Director or as per Authority Resolution from Board of Directors)

(insert name of Company)

hereby acknowledge having read, understood and agree to the terms and conditions set out in the "Transnet Supplier Code of Conduct."

Signed this on day _____ at _____

_____

Signature

T2.2-32: Unilateral Non-Disclosure Agreement

Note to tenderers: This Non-Disclosure Agreement is to be completed and signed by an authorised signatory:

THIS AGREEMENT is made effective as of ..... day of ..... 20..... by and between:

Transnet SOC Ltd (Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at Carlton Centre, 150 Commissioner Street, Johannesburg, 2001, Gauteng, Republic of South Africa,

hereinafter referred to as the "**disclosing party**"

and

..... (Registration No. .....) a private company incorporated and existing under the laws of South Africa having its principal place of business at .....

.....,

hereinafter referred to as the "**receiving party.**"

1. Purpose

The parties to this Agreement have a business relationship under which the disclosing party may provide its Confidential Information to the receiving party for the purpose of planning, developing and/or constructing [----------] ('the Purpose"). The receiving party shall treat as confidential all information and know-how which it may receive from the disclosing party in terms of this Agreement (hereinafter referred to as "Confidential Information"), and shall not divulge to any other party in any circumstances any such Confidential Information, and, in particular, any such Confidential Information as is covered by the National Key Points Act (Act No. 102 of 1980), whether during the currency of this Agreement or at any time thereafter, without the prior written consent of the disclosing party.

2. Definition

"Confidential Information" means any information, technical data, or know-how, including, but not limited to, that which relates to research, product plans, products, services, customers, markets,

software, developments, inventions, processes, designs, drawings, engineering, hardware configuration information, marketing or finances.

3. Exclusions

Confidential Information does not include information, technical data or know-how which:

- is in the possession of the receiving party at the time of disclosure as shown by the receiving party's files and records immediately prior to the time of disclosure; prior or after the time of disclosure becomes part of the public knowledge or literature, not as a result of any inaction or action of the receiving party;
- is developed by the receiving party through its independent resources without reference to the disclosing party's Confidential Information;
- is disclosed to the receiving party by a third party without restriction and, to the knowledge of the receiving party, without violation of any obligation of confidentiality; or
- is approved for release by the disclosing party in writing.

4. Non-Disclosure of Confidential Information

4.1. The receiving party to this Agreement agrees not to use the Confidential Information disclosed to it by the disclosing party for its own use or for any purpose except to carry out the Purpose as contained in this Agreement. The receiving party will not disclose any Confidential Information of the disclosing party to third parties except those directors, officers, employees, consultants and agents who are required to have the information in order to carry out the discussions of the contemplated Purpose. The receiving party will notify those directors, officers, employees, consultants and agents to whom Confidential Information of the disclosing party is disclosed or who have access to Confidential Information of the receiving party that they are bound by the obligations of this Non-Disclosure Agreement.

4.2. The receiving party agrees that it will take all reasonable measures to protect the secrecy of and avoid disclosure or use of Confidential Information of the disclosing party in order to prevent it from falling into the public domain or the possession of persons other than those persons authorised hereunder to have any such information. The receiving party agrees to notify the disclosing party in writing of any misuse or misappropriation of such Confidential Information of the disclosing party which may come to its attention.

5. Promotion of Access to Information Act, No.2 of 2000

5.1. All information relating to the disclosing party and which the disclosing party has indicated to the receiving party, in writing, to be Confidential Information, shall be deemed to be Confidential Information.

5.2. No provision of this Agreement shall be construed in such a way that the disclosing party is deemed to have granted its consent to the receiving party to disclose the whole or any part of the Confidential Information in the event that the receiving party receives a request for the whole or any part of the Confidential Information in terms of the provisions of the Promotion of Access to Information Act, No.2 of 2000, as may be amended from time to time ("the Act").

5.3. Subject to the provisions of sub-clause 5.4 below, the disclosure of Confidential Information by the receiving party otherwise than in accordance with the provisions of this Agreement will entitle the disclosing party to institute action for breach of confidence against the receiving party, as envisaged by Section 65 of Act No.2 of 2000.

5.4. The receiving party acknowledges that the provisions of sub-clause 5.3 above shall not be construed in such a manner as to exclude the applicability of any other grounds of refusal contained in Act No.2 of 2000 which may be applicable in the event that the receiving party receives a request for the whole or any part of the Confidential Information in terms of Act No.2 of 2000.

6. Non-Solicitation

During the two-year period following the execution of this Agreement, neither party will solicit for employment, on its own behalf or that of any other person, any officer, director or employee of the other party at the level of director, vice-president or higher with whom the soliciting party became acquainted during the course of the discussions contemplated by this Agreement; provided, that the foregoing shall not be deemed to prohibit either party or a subsidiary of such party from making a general, public solicitation of employment in the ordinary course of such party or subsidiary's business, provided that such solicitation is not directed specifically to employees of the other party.

7. Mandatory Disclosure

In the event that the receiving party or their respective directors, officers, employees, consultants or agents are requested or required by legal process to disclose any of the Confidential Information of the disclosing party, the receiving party shall give prompt notice so that the disclosing party may seek a protective order or other appropriate relief. In the event that such protective order is not obtained, the receiving party shall disclose only that portion of the Confidential Information, which its counsel advises that it is legally required to disclose.

8. Variation, Addition or Cancellation

No variation of, addition to, cancellation or novation of this Agreement in its entirety or of any term or condition thereof shall be of any force or effect unless such amendment or cancellation is reduced to writing and signed by both parties.

9. No License Granted

Nothing in this Agreement is intended to grant any rights to the receiving party under any patent, copyright, trade secret or other intellectual property right nor shall this Agreement grant the receiving party any rights in or to the disclosing party's Confidential Information, except the limited right to review such Confidential Information solely for the purposes of the contemplated business relationship between the parties.

10. No Representations

The disclosing party makes no representation or warranty as to the accurateness or completeness of any Confidential Information provided hereunder and shall have no liability to the receiving party arising from, or related to the use of Confidential Information provided hereunder.

11. Term

The foregoing commitments of the parties in this Agreement shall survive any termination of the business relationship under the contemplated Purpose between the parties, and shall continue relative to any Confidential Information disclosed hereunder for a period of 10 (ten) years following the disclosure of such Confidential Information.

12. Miscellaneous

This Agreement shall be binding upon and for the benefit of the undersigned parties, their successors and assigns, provided that the Confidential Information disclosed under this Confidentiality Agreement may not be assigned without the prior written consent of the disclosing party. Failure to enforce any provision of this Agreement shall not constitute a waiver of any term hereof.

13. Governing Law and Jurisdiction

This Agreement shall be governed by and construed and enforced in accordance with the laws of the Republic of South Africa, and shall be binding upon the parties hereto in South Africa and worldwide.

14. Disputes

Any dispute or difference arising out of or relating to this Confidentiality Agreement shall be referred to arbitration and settled by arbitration according to the rules then in effect of the Arbitration Foundation of Southern Africa. Such arbitration shall be held in Johannesburg, and conducted in the English language before 1 (one) arbitrator appointed in accordance with the said rules. The arbitrator shall apply the law chosen by the parties elsewhere in this Agreement to the merits of the dispute. This Agreement to arbitrate shall be enforceable in, and judgement upon any award may be entered in any court of any country having appropriate jurisdiction.

15. Remedies

The receiving party agrees that its obligations hereunder are necessary and reasonable in order to protect the disclosing party and its business, and expressly agrees that monetary damages may be inadequate to compensate the disclosing party for any breach by the receiving party of any covenants and agreements set forth herein. Accordingly, the receiving party agrees and acknowledges that any such violation or threatened violation may cause irreparable injury to the disclosing party and that, in addition to any other remedies that may be available, in law, in equity or otherwise, the disclosing party shall be entitled to obtain injunctive relief against the threatened breach of this Agreement or the continuation of any such breach, without the necessity of proving actual damages.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-33: Mutual Non-Disclosure Agreement

Note to tenderers: This Non-Disclosure Agreement is to be completed and signed by an authorised signatory:

THIS AGREEMENT is made effective as of ..... day of ..... 20..... by and between:

Transnet SOC Ltd (Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at Carlton Centre, 150 Commissioner Street, Johannesburg, 2001, South Africa,

and

..... (Registration No. .....), a private company incorporated and existing under the laws of South Africa having its principal place of business at .....

.....

Purpose

The parties to this Agreement have a business relationship under which each party may disclose its Confidential Information to the other for the purpose of planning, developing and/or constructing a new [.....] ('the Purpose"). Each party ("the receiving party") shall treat as confidential all information and know-how which it may receive from the other party ("the disclosing party") in terms of this Agreement (hereinafter referred to as "confidential information"), and shall not divulge to any other party in any circumstances any such confidential information, and, in particular, any such confidential information as is covered by the National Key Points Act (Act No. 102 of 1980), whether during the currency of this Agreement or at any time thereafter, without the prior written consent of the disclosing party.

Definition

"**Confidential Information**" means any information, technical data, or know-how, including, but not limited to, that which relates to research, product plans, products, services, customers, markets, software, developments, inventions, processes, designs, drawings, engineering, hardware configuration information, marketing or finances.

Exclusions

Confidential Information does not include information, technical data or know-how which:

- is in the possession of the receiving party at the time of disclosure as shown by the receiving party's files and records immediately prior to the time of disclosure; prior or after the time of disclosure becomes part of the public knowledge or literature, not as a result of any inaction or action of the receiving party;
- is developed by the receiving party through its independent resources without reference to the disclosing party's Confidential Information;
- is disclosed to the receiving party by a third party without restriction and, to the knowledge of the receiving party, without violation of any obligation of confidentiality; or
- is approved for release by the disclosing party in writing.

Non-disclosure of Confidential Information

The parties to this Agreement agree not to use the Confidential Information disclosed to it by the other party for its own use or for any purpose except to carry out the Purpose as contained in this Agreement. Neither party will disclose any Confidential Information of the other party to third parties except those directors, officers, employees, consultants and agents who are required to have the information in order to carry out the discussions of the contemplated Purpose. Each party will notify those directors, officers, employees, consultants and agents to whom Confidential Information of the other party is disclosed or who have access to Confidential Information of the other party that they are bound by the obligations of this Non-Disclosure Agreement.

Each party agrees that it will take all reasonable measures to protect the secrecy of and avoid disclosure or use of Confidential Information of the other party in order to prevent it from falling into the public domain or the possession of persons other than those persons authorised hereunder to have any such information, which measures shall include the highest degree of care that either party utilises to protect its own Confidential Information of a similar nature. Each party agrees to notify the other party in writing of any misuse or misappropriation of such Confidential Information of the other party which may come to its attention.

Promotion of Access to Information Act, No.2 of 2000

All information relating to the disclosing party and which the disclosing party has indicated to the receiving party in writing to be confidential information, shall be deemed to be confidential information.

No provision of this Agreement shall be construed in such a way that the disclosing party is deemed to have granted its consent to the receiving party to disclose the whole or any part of the confidential information in the event that the receiving party receives a request for the whole or any part of the confidential information in terms of the provisions of the Promotion of Access to Information Act, No.2 of 2000, as may be amended from time to time ("the Act").

Subject to the provisions of sub-clause 5.3 below, the disclosure of confidential information by the receiving party otherwise than in accordance with the provisions of this Agreement will entitle the disclosing party to institute action for breach of confidence against the receiving party, as envisaged by Section 65 of Act No.2 of 2000.

The receiving party acknowledges that the provisions of sub-clause 5.2 above shall not be construed in such a manner as to exclude the applicability of any other grounds of refusal contained in Act No.2 of 2000 which may be applicable in the event that the receiving party receives a request for the whole or any part of the confidential information in terms of Act No.2 of 2000.

Non-Solicitation

During the two-year period following the execution of this Agreement, neither party will solicit for employment, on its own behalf or that of any other person, any officer, director or employee of the other party at the level of director, vice-president or higher with whom the soliciting party became acquainted during the course of the discussions contemplated by this Agreement; provided, that the foregoing shall not be deemed to prohibit either party or a subsidiary of such party from making a general, public solicitation of employment in the ordinary course of such party or subsidiary's business, provided that such solicitation is not directed specifically to employees of the other party.

Mandatory Disclosure

In the event that either party or their respective directors, officers, employees, consultants or agents are requested or required by legal process to disclose any of the Confidential Information of

the other party, the party required to make such disclosure shall give prompt notice so that the other party may seek a protective order or other appropriate relief. In the event that such protective order is not obtained, the party required to make such disclosure shall disclose only that portion of the Confidential Information, which its counsel advises that it is legally required to disclose.

Variation, Addition or Cancellation

No variation of, addition to, cancellation or novation of this Agreement in its entirety or of any term or condition thereof shall be of any force or effect unless such amendment or cancellation is reduced to writing and signed by both parties.

No License Granted

Nothing in this Agreement is intended to grant any rights to either party under any patent, copyright, trade secret or other intellectual property right nor shall this Agreement grant either party any rights in or to the other party's Confidential Information, except the limited right to review such Confidential Information solely for the purposes of the contemplated business relationship between the parties.

No Representations

No party makes any representation or warranty as to the accurateness or completeness of any Confidential Information provided hereunder. Neither party shall have any liability to the other arising from, or related to, the other party's use of Confidential Information provided hereunder.

Term

The foregoing commitments of either party in this Agreement shall survive any termination of the business relationship under the contemplated Purpose between the parties, and shall continue relative to any Confidential Information disclosed hereunder for a period of 10 (ten) years following the disclosure of such Confidential Information.

Miscellaneous

This Agreement shall be binding upon and for the benefit of the undersigned parties, their successors and assigns, provided that Confidential Information of either party may not be assigned without the prior written consent of the disclosing party. Failure to enforce any provision of this Agreement shall not constitute a waiver of any term hereof.

Governing Law and Jurisdiction

This Agreement shall be governed by and construed and enforced in accordance with the laws of the Republic of South Africa, and shall be binding upon the parties hereto in South Africa and worldwide.

Disputes

Any dispute or difference arising out of or relating to this Confidentiality Agreement shall be referred to arbitration and settled by arbitration according to the rules then in effect of the Arbitration Foundation of Southern Africa. Such arbitration shall be held in Johannesburg, and conducted in the English language before 1 (one) arbitrator appointed in accordance with the said rules. The arbitrator shall apply the law chosen by the parties elsewhere in this Agreement to the merits of the dispute. This Agreement to arbitrate shall be enforceable in, and judgement upon any award may be entered in any court of any country having appropriate jurisdiction.

Remedies

Each party agrees that its obligations hereunder are necessary and reasonable in order to protect the other party and the other party's business, and expressly agrees that monetary damages may be inadequate to compensate the other party for any breach by either party of any covenants and agreements set forth herein. Accordingly, each party agrees and acknowledges that any such violation or threatened violation may cause irreparable injury to the other party and that, in addition to any other remedies that may be available, in law, in equity or otherwise, the other party shall be entitled to obtain injunctive relief against the threatened breach of this Agreement or the continuation of any such breach, without the necessity of proving actual damages.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-36: RFQ DECLARATION FORM

NAME OF COMPANY: _____

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 bid clarification purposes;
2. we have received all information we deemed necessary for the completion of this Request for Quotation (RFQ);
3. 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;
4. we are satisfied, insofar as our company 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
5. furthermore, we acknowledge that a direct relationship exists between a family member and/or an owner / member / director / partner / shareholder (unlisted companies) of our company and an employee or board member of the Transnet Group as indicated below: *[Respondent to indicate if this section is not applicable]*

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 may lead to the disqualification of your response and may preclude a Respondent from doing future business with Transnet]

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 company in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.

6. We accept that any dispute pertaining to this bid will be resolved through the Ombudsman process and will be subject to the Terms of Reference of the Ombudsman. The Ombudsman process must first be exhausted before judicial review of a decision is sought. (Refer "Important Notice to Respondents" overleaf).

7. We further accept that Transnet reserves the right to reverse a tender award or decision based on the recommendations of the Ombudsman without having to follow a formal court process to have such award or decision set aside.

SIGNED at _____ on this _____ day of _____ 20____

For and on behalf of ..... duly authorised thereto	AS WITNESS:
Name:	Name:
Position:	Position:
Signature:	Signature:
Date:	
Place:	

T2.2-37: Method Statement

Note to tenderers:

Method statement

In addition to general methodology for the project please provide specific information for the following points:

1. Approach paper how to do the testing and commissioning of substations
2. [illegible]

Contract Administrator to Insert required data

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-41: Evaluation Schedule: Approach Paper

The approach paper must respond to the scope of work and outline the proposed approach / methodology including that relating to programme, with specific reference to meeting key dates and method statement in respect of the emergency and commissioning testing of various substations under the control of the Depot engineer, Rail Network, Koedoespoort.

The approach paper should articulate what the tenderer will provide in achieving the stated objectives for the project which should include a high level project schedule and cash flow.

The tenderer must as such explain his / her understanding of the objectives of the works and the *Employer*'s stated and implied requirements, highlight the issues of importance, and explain the technical approach they would adopt to address them. The approach paper should explain the methodologies which are to be adopted and demonstrate its compatibility. The approach should also include and outline processes, procedures and associated resources, to meet the requirements and indicate how risks will be managed.

The tenderer must attach his / her approach paper to this page. <u>The approach paper should not be longer than 8 pages.</u>

The scoring of the approach paper will be as follows:

	Technical approach and methodology
Poor (score 40)	The technical approach and / or methodology is poor / is unlikely to satisfy project objectives or requirements. The tenderer has misunderstood certain aspects of the scope of work and does not deal with the critical aspects of the project.
Satisfactory (score 70)	The approach is generic and not tailored to address the specific project objectives and methodology. The approach does not adequately deal with the critical characteristics of the project. The quality plan, manner in which risk is to be managed etc. is too generic.
Good (score 90)	The approach is specifically tailored to address the specific project objectives and methodology and is sufficiently flexible to accommodate changes that may occur during execution. The quality plan and approach to managing risk etc is specifically tailored to the critical characteristics of the project.

Very good (score 100)	Besides meeting the "good" rating, the important issues are approached in an innovative and efficient way, indicating that the tenderer has outstanding knowledge of state-of-the-art approaches. The approach paper details ways to improve the project outcomes and the quality of the outputs

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

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

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

Tenderer .....

T2.2-43: REQUEST FOR QUOTATION – BREACH OF LAW

NAME OF COMPANY: _____

I / We _____ do hereby certify that ***I/we have/have not been*** 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.

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 company have been found guilty of a serious breach of law, tribunal or regulatory obligation.

SIGNED at _____ on this _____ day of _____ 20____

_____ SIGNATURE OF WITNESS

_____ SIGNATURE OF RESPONDENT

T2.2-49 TRANSNET SOC LIMITED / CONTRACTORS / SUB-CONTRACTORS

CONTRACTUAL SAFETY CLAUSES WHICH WILL FORM PART OF ANY RESULTING CONTRACT

The parties agree on the following arrangements according to section 37 (2) of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) to ensure compliance by the mandatory with provisions of the Act.

1) That the Contractor is an "employer" in his own right as defined in section 1 of Act 85 of 1993 and that he must fulfil all his obligations as an employer in terms of the Act.

2) The Contractor shall comply with the requirements of Act 85 of 1993 in its entirety.

3) Where special permits are required, such as electrical switching, hot work permits, etc. the Contractor shall obtain them from a person designated by Transnet SOC Limited for this purpose, and all requirements of the Contractor must rigidly comply with the permit.

4) The Contractor shall conduct a risk assessment of the work to be performed by a competent person prior to the commencement of work, to identify risks and hazards that persons may be exposed to, analyse and evaluate identified hazards.

5) The Contractor shall have a documented Health and Safety Plan based on the risks and hazards identified before commencement of work.

6) The Health and Safety Plan shall include the following:

   6.1 The safety management structure to be instituted with all appointments in terms of the Act and Regulations
   6.2 The safe working methods and procedures to be implemented to ensure work are performed in compliance to the Act.
   6.3 The safety equipment, devices and clothing to be made available by the Contractor to his employees.
   6.4 The site access control measures pertaining to health and safety to be implemented.
   6.5 Control measures for ensuring that the Health and Safety Plan is maintained and monitored for the duration of the contract.

7) The Contractor shall ensure that all work is performed under the close supervision of a person trained to understand the hazards associated with the work performed and who has authority to ensure that the necessary precautionary measures are implemented.

8) The Contractor must appoint a Health and Safety Co-ordinator to liaise with Transnet SOC Limited on matters pertaining to occupational health and safety.

9) The appointed Safety Co-ordinator must liaise at least once a week with the* Health and Safety Section / Risk Manager /Occupational Risk Manager of Transnet SOC Limited.

10) The Contractor shall furnish the* Health and Safety Section/ Risk Manager/ Occupational Risk Manager of Transnet SOC Limited immediately with full particulars

of any sub-Contractor which he may involve in the contract in order that the sub-Contractor himself can be made aware of all the clauses in this contract pertaining to health and safety.

11) The Contractor shall stop any sub-contractor from executing work which is not in accordance with the Health and Safety Plan or which poses a threat to health and safety of persons.

12) The Contractor shall ensure that all his employees and visitors undergoes health and safety induction pertaining to the hazards prevalent, proof of such training must be kept on file.

13) In the event where the risk assessment reveals the risk 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.

14) **The Fall Protection Plan shall include:**

14.1 A risk assessment of all work carried out from an elevated position
14.2 Procedures and methods to address all the identified risks per location
14.3 Evaluation of employee's physical and psychological fitness necessary to work at elevated position.
14.4 The training of employees working from an elevated position.
14.5 Procedure addressing the inspection, testing and maintenance of all fall protection equipment.

15) The Contractor shall advise the * Health and Safety Section / Risk Manager/ Occupational Risk Manager of Transnet SOC Limited of any hazardous situations which may arise from work being performed either by the Contractor or his sub-Contractor.

16) Copies of all appointments required by the act must be given to * Health and Safety Section / Risk Manager / Occupational Risk Manager of Transnet SOC Limited.

17) The Contractor shall ensure that a Health and Safety File is available which shall include all documentation as required by the Act, copy of his and his Sub-Contractors Risk Assessment and Health and Safety Plan.

18) All incidents referred to in Section 24 of the Act involving the Contractor and his Sub-Contractor on Transnet Ltd premises, shall be reported as prescribed. Transnet Ltd hereby obtains an interest in the issue of any investigation, formal inquiry conducted in terms of Section 31 and 32 of the Act into any incident involving the Contractor, his Sub-Contractor, any person or machinery under his control on Transnet Ltd premises.

19) ***No alcohol or any other intoxicating substance shall be allowed on Transnet Ltd premises. The Contractor shall not allow anyone under or suspected to be under the influence of alcohol or any other intoxicating substance on Transnet Ltd premises.***

20) Contractor to ensure its employees undergo medical surveillance as required by legislation

21) Contractor will be required to provide monthly safety performance reports and statistics

22) ***A letter of good standing in terms of Section 80 (Employer to register with the Compensation Commissioner) of the Compensation for Occupational Injuries and Disease Act 1993 (Act 130 of 1993) must also be furnished.***

23) All clauses in the contract pertaining health and safety form an integral part of the contract and if not complied with may be construed as breach of contract.

*As applicable

Tenderer OH & S Management System Questionnaire

This questionnaire forms part of TFR tender evaluation process and is to be completed by all Tenderer's and submitted with their tender offer. The objective of the questionnaire is to provide an overview of the status of the Tenderer's OH&S management system. Tenderers will be required to verify their responses noted in their questionnaire by providing evidence of their ability and capacity in relevant matters. **TFR will verify accuracy of this information during the physical visit as part of the tender evaluation.**

The information provided in this questionnaire is an accurate summary of the company's occupational health and safety management system.			
Company Name:			
Signed:	Name:		
Position:	Date:		
Tender Description:			
Tender Number:			
Tenderer OH&S Management System Questionnaire		**Yes**	**No**
1. OH&S Policy and Management			
- Is there a written company health and safety policy? - If yes provide a copy of the policy			
- Does the company have an OH&S Management system e.g NOSA, OHSAS, IRCA System etc - If yes provide details			
- Is there a company OH&S Management System, procedures manual or plan? - If yes provide a copy of the content page(s)			
- Are health and safety responsibilities clearly identified for all levels of Management and employees? - If yes provide details			
2. Safe Work Practices and Procedures			
- Are safe operating procedures or specific safety instructions			

relevant to its operations available? - If yes provide a summary listing of procedures or instructions		
- Is there a register of injury document? If yes provide a copy		
- Are Risk Assessments conducted and appropriate techniques used? - If yes provide details		
3. OH&S Training		
Describe briefly how health and safety training is conducted in your company:		
- Is a record maintained of all training and induction programs undertaken for employees in your company? - If yes provide examples of safety training records		
4. Health and Safety Workplace Inspection		
- Are regular health and safety inspections at worksites undertaken? -If yes provide details		
- Is there a procedure by which employees can report hazards at workplaces? - If yes provide details		
5. Health and Safety Consultation		
- Is there a workplace health and safety committee?		
- Are employees involved in decision making over OH&S matters? - If yes provide details		
- Are there employee elected health and safety representatives? - Comments		
6. OH&S Performance Monitoring		
- Is there a system for recording and analysing health and safety performance statistics including injuries and incidents? - If yes provide details		
- Are employees regularly provided with information on company		

health and safety performance? - If yes provide details		
Is company registered with workmen's compensation and up to date? - If yes provide proof of letter of good standing		
- **Has the company ever been convicted of an occupational health and safety offence?** - If yes provide details		

Safety Performance Report

Monthly DIFR for previous months

Previous Year	No of Disabling Injuries	Total Number of employees	DIFR per month
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

DIFR = Number of Disabling injuries x 200000 divided by number of man hours worked for the period

Signed
(Tenderer)

Part C1: Agreement & Contract Data

C1.1 Form of Offer & Acceptance

Offer

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

EMERGENCY AND COMMISSIONING TESTING OF VARIOUS SUBSTATIONS UNDER THE CONTROL OF THE DEPOT ENGINEER, RAIL NETWORK, KOEDOESPOORT

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

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

The offered total of the Prices exclusive of VAT is	R
Value Added Tax @ 14% is	R
The offered total of the Prices inclusive of VAT is	R
(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

For the tenderer:

_____

(Insert name and address of organisation)

Name & signature of witness: Date:

Acceptance

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

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

for the Employer Transnet Freight Rail, A division of Transnet SOC Limited, NZASM building, C/o Paul Kruger and Minnaar Streets, Pretoria.

(Insert name and address of organisation)

Name & signature of witness _____ Date _____

Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

Transnet freight Rail
Enquiry No.: ERAC NS3061 17582
Description of the Works: Emergency and commissioning testing of various substations under the control of the Depot engineer, Rail Network, Koedoespoort

Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		
4		
5		
6		
7		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

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

	For the Tenderer:	For the Employer
Signature		
Name		
Capacity		
	(Insert name and address of organisation)	*(Insert name and address of organisation)*
On behalf of		Transnet Freight Rail, A division of Transnet SOC Limited, C/o Paul Kruger and Minnaar Streets, Nzasm building, Pretoria.
Name & signature of witness		
Date		

C1.2 Contract Data

Data provided by the *Employer*

Please read the relevant clauses in the NEC3 Engineering and Construction Short Contract (June 2005) (ECSC3)[1] before you enter data. The number of the principal clause is shown for most statements however other clauses may also use the same data.

Clause	Statement	Data
	General	
	The *conditions of contract* are the core clauses and the clauses for main Option	**B: Priced contract with a *Bill of Quantities***
	and secondary Options	**X7: Delay damages**
	of the NEC3 Engineering and Construction Contract June 2005 (amended June 2006 and April 2013)[2]	
10.1	The *Employer* is	**Transnet SOC Ltd**
	Address	**Registered address:** **Carlton Centre** **150 Commissioner Street** **Johannesburg**
	Having elected its contractual Address for the purposes of this contract as:	**Transnet Freight Rail** **Cnr Paul Kruger and Minnaar Streets** **Pretoria** **0001** **Postal Address:** **Private Bag X34** **Pretoria** **0001**
	Tel No.	**012 3152059**
	Fax No.	**012 3152134 / 0866408798**
11.2(11)	The *works* are	**Emergency and commissioning testing of various substations under the control of the Depot Engineer, Rail Network, Koedoespoort.**
11.2(13)	The Works Information is in	**The document called 'Works Information' in Part 3 of this contract.**

[1] Available from Engineering Contract Strategies Tel 012 315 2059, Fax 012 3152134.

11.2(12)	The Site Information is in	**The document called 'Site Information' in Part 4 of this contract.**
11.2(12)	The *site* is	**3kV DC, 25kV AC traction substations, 3kV DC tie stations, 25kV AC traction section stations and 11kV signal supply and distribution substations under the control of the Depot Engineer, Rail Network, Koedoespoort.**
30.1	The *starting date* is	**TBA**
11.2(2)	The *completion date* is	**TBA**
13.2	The *period for reply* is	**2 weeks**
14.4	The *Employer's* representative is (name)	**Moreki Matuludi**
	Address	**Depot Engineer, Rail Network, Infrastructure Maintenance, 1 Transnet Road, Koedoespoort**
	Tel No.	**012 842 6481/071 889 6525**
	Fax No.	**012 842 5156**
	The authority of the *Employer's* representative is	**The *Employer's* representative is delegated to carry out all the actions of the *Employer* as stated in this contract with the exception of those required by clause 51.1, 81.1, 90, 91, 92 & 93**
40	The *defects date* is	**52 weeks after Completion.**
41.3	The *defect correction period* is	**2 weeks.**
50.1	The *assessment day* is on the	**13th of each month.**
50.5	The *delay damages* are	**R500.00 per hour.**
50.6	The retention is	**Not applicable.**
51.1	The currency of this *contract* is the	**South African Rand.**
51.2	The period within which payments are made is	**Payment will be effected on or before the last day of the month following the month during which a valid Tax invoice and statement were received.**
51.4	The interest rate on late payment is	**The prime lending rate of the Standard Bank of South Africa.**
82.1	The *Employer* provides this insurance	
	1) **Insurance against**:	**Loss of or damage to the *works*, Plant and Materials is as stated in the PCI insurance policy for Contract Works/ Public Liability.**
	Cover / indemnity:	**to the extent as stated in the PCI insurance policy for Contract Works / Public Liability**
	The deductibles are:	**as stated in the PCI insurance policy for Contract Works / Public Liability (Principal Controlled Insurance)**

	2 **Insurance against**:	**Loss of or damage to property (except the *works*, plant, materials & equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor)* arising out of or in connection with the PCI performance of the Contract as stated in the insurance policy for Contract Works / Public Liability**
	Cover / indemnity	**Is to the extent as stated in the PCI insurance policy for Contract Works / Public Liability**
	The deductibles are	**as stated in the PCI insurance policy for Contract Works / Public Liability**
	3 **Insurance against:**	**Loss of or damage to Equipment (Temporary Works only) as stated in the PCI insurance policy for contract Works and Public Liability**
	Cover / indemnity	**Is to the extent as stated in the PCI insurance policy for Contract Works / Public Liability**
	The deductibles are:	**As stated in the PCI insurance policy for Contract Works / Public Liability**
	4 **Insurance against**:	**Contract Works SASRIA insurance subject to the terms, exceptions and conditions of the SASRIA coupon**
	Cover / indemnity	**Cover / indemnity is to the extent provided by the SASRIA coupon**
	The deductibles are	**As stated in the PCI insurance policy for Contract Works / Public Liability**
82.1	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is	**The *Contractor* must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.**
	The *Contractor* provides these additional Insurances	**1. Where the contract requires that the design of any part of the *works* shall be provided by the *Contractor* he shall satisfy the Employer that professional indemnity insurance cover in connection therewith has been affected** **2. Where the contract involves manufacture, and/or fabrication of Plant & Materials, components or other goods to be incorporated into the *works* at premises other than the site, the *Contractor* shall satisfy the *Employer* that such plant & materials, components or other goods for incorporation in the *works* are adequately insured during manufacture and/or fabrication and transportation to the site.**

3. Should the *Employer* have an insurable interest in such items during manufacture, and/or fabrication, such interest shall be noted by endorsement to the *Contractor's* policies of insurance as well as those of any subcontractor

4. Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R5,000,000

5. The insurance coverage referred to in 1, 2, 3 and 4 above shall be obtained from an insurer(s) in terms of an insurance policy approved by the *Employer*. The *Contractor* shall arrange with the insurer to submit to the *Project Manager* the original and the duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the *Contractor*

93.1	The *Adjudicator* is	Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the *Adjudicator*, the chairman of the Association of Arbitrators will appoint an *Adjudicator.*
93.2(2)	The *Adjudicator nominating body* is:	The Association of Arbitrators (Southern Africa)
93.4	The *tribunal* is:	Arbitration
If the tribunal is arbitration complete this data	The *arbitration procedure* is	The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)
	The place where arbitration is to be held is	Johannesburg
	The person or organisation who will choose an arbitrator - the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	The Chairman of the Association of Arbitrators (Southern Africa)

Data provided by the *Contractor* (the *Contractor*'s Offer)

The tendering contractor is advised to read both the NEC3 Engineering and Construction Short Contract (June 2005) and the relevant parts of its Guidance Notes (ECSC3-GN)[3] in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on page 26 of the ECSC3 Guidance Notes.

Completion of the data in full is essential to create a complete contract.

10.1	The *Contractor* is (Name):	
	Address	
	Tel No.	
	Fax No.	
	E-mail address	

[3] Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009.

PART 2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing instructions: Option [illegible]	4
C2.2	The *Bill of Quantities*	2

C2.1 Pricing instructions: Option B

1. The *conditions of contract*

1.1. How the contract prices work and assesses it for progress payments

Clause 11 in NEC3 Engineering and Construction Contract, June 2005 (ECC) Option B states:

Identified and defined terms

11

11.2 (21) The Bill of Quantities is the *bill of quantities* as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.
(22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events.
(28) The Price for Work Done to Date is the total of

- the quantity of the work which the *Contractor* has completed for each item in the Bill of Quantities multiplied by the rate and
- a proportion of each lump sum which is the proportion of the work covered by the item which the *Contractor* has completed.

Completed work is work without Defects which would either delay or be covered by immediately following work.

(31) The Rates are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.

This confirms that Option B is a re-measurement contract and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

1.2. Function of the Bill of Quantities

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information". This confirms that instructions to do work or how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Works in accordance with the Works Information". Hence the *Contractor* does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

1.3. Guidance before pricing and measuring

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract (June 2005) Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

Historically bill of quantities based contracts in South Africa have been influenced by the different approaches of the civil engineering and building sectors of the industry through their respective discipline based standard forms of contract and methods of measurement. This is particularly apparent in the

approach to the Preliminary and General bill. On the other hand, because ECC caters for a number of disciplines in the same contract, including electrical works, a different approach not currently found in local methods of measurement to the Preliminary & General bill items may have been used.

The NEC approach to the P & G bill assumes use will be made of method related charges for Equipment applied to Providing the Works based on durations shown in the Accepted Programme, fixed charges for the use of Equipment that is required throughout the construction phase, time related charges for people working in a supervisory capacity for the period required, and lump sum charges for other facilities or services not directly related to performing work items typically included in other parts of the bill.

2. Measurement and payment

2.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

Abbreviation	Unit
%	percent
h	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilo Pascal
kW	kilo Watt
l	litre
m	metre
mm	millimetre
m^2	square metre
m^2-pass	square metre pass
m^3	cubic metre
m^3-km	cubic metre-kilometre
MN	mega Newton
MN.m	mega Newton-metre
MPa	mega Pascal
No.	number
Prov sum[1]	provisional sum

[1] Provisional Sums should not be used unless absolutely unavoidable. Rather include specifications and associated bill items for the most likely scope of work, and then change later using the compensation event procedure if necessary. This is because tenderers cannot programme effectively for unknown scopes of work

PC-sum	prime cost sum
R/only	Rate only
sum	Lump sum
t	ton (1000kg)
W/day	Work day
Ea	Each
Set	Set
Day	Work day

2.2. General assumptions

2.2.1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.

2.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.

2.2.3. Clause 63.13 in Option B provides that these rates and Prices may be used as a basis for assessment of compensation events instead of Defined Cost.

2.2.4. Where this contract requires detailed drawings, designs or other information to be provided, and no rates or prices are included in the *bill* specifically for such matters, then the *Contractor* is deemed to have allowed for all costs associated with such requirements within the tendered rates and Prices in the Bill of Quantities.

2.2.5. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*. If a number of items are grouped together for pricing purposes, this will be treated as a single lump sum.

2.2.6. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due and not the quantities given in the Bill of Quantities.

2.2.7. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. More detail regarding the extent of the work entailed under each item is provided in the Works Information.

C2.2 the *bill of quantities*

Item No.	Description of Work	Unit	Qty	Rate	Total Price
	Commissioning and emergency (minor repairs) testing of substations				
1	Test and commission single group 3kV DC traction substations complete	each	2		
2	Test and commission of wave filter equipment – 3kV DC substations	each	2		
3	Test and commission of 3kV DC under voltage relay – 3kV DC traction substations	Each	4		
4	Test and commission of earthing – 3kV DC traction substations	Each	4		
5	Test and commission battery under voltage relay – 3kV DC substations, 25kV AC traction substations, 11kV AC substations	Each	30		
6	Test and commission of earthing of 3kV DC tie stations and 25kV AC TSS	Each	4		
7	Test and commission of 11kV AC substations complete	Each	2		
8	Test and commission of AC/DC control panels at 11kV AC substations	Each	2		
9	Test and commission of earthing of 11kV AC substations and 25kV AC substations	Each	4		
10	Test and commission of primary or secondary surge arresters at 25kV substations and 3kV DC substations.	Each	30		
11	Test and commission of current transformers at 25kV AC substations	Each	4		
12	Test and commission of Primary Circuit Breakers at 25kV AC substations and 3kV DC substations	Each	2		
13	Test and commission of High Voltage AC disconnects at 25kV AC substations, 3kV DC substations and 11kV AC substations.	Each	2		
14	Test and commission of main transformers at 25kV AC substations, 3kV DC substations and 11kV AC substations	Each	20		

15	Test and commission of Primary Circuit Breaker Control Panels at 25kV AC single unit substations	Each	1		
16	Test and commission of an auxiliary transformer at a 3kV DC substation	Each	2		
17	Test and commission of Vacuum Circuit Breaker and Control Panel at a 25kV single unit substation	Each	23		
18	Call outs / minor repairs / fault finding	Hours	20		
19	Accommodation per night	Days	20		
20	Travelling time	Km	6000		
				Total amount (Excl. VAT)	
				VAT @ 14%	
				Total (Incl. VAT)	

C3: Scope of Work

C3.1 Works Information

3.1.1 **Description of the *Works***

3.1.1.1 Where applicable in the attached *bill of quantities*, the *Contractor* shall perform the following:

3.1.1.1.1 This specification covers the requirements for test and commission of the following electrical components at 3kV DC traction substations, 11kV AC traction substations, 3kV DC tie station, 25kV AC TSS, 25kV AC traction substations and 25kV AC single unite substations under the control of the Depot Engineer, Rail Network, Koedoespoort:

- Test and commission of a single group 3kV DC substation complete.
- Test and commission of wave filter equipment of 3kV DC substations
- Test and commission of 3kV DC under voltage relays of 3kV DC substations.
- Test and commission of earthing of 3kV DC substations
- Test and commission of battery under voltage relay of 25kV AC substation, 3kV DC substations and 11kV AC substations.
- Test and commission of earthing of 3kV DC tie stations and 25kV AC TSS.
- Test and commission of 11kV substations complete of 11kV AC substations
- Test and commission of AC/DC control panels of 11kV AC substations
- Test and commission of earthing at 11kV AC substations and 25kV AC substations.
- Test and commission of primary or secondary surge arresters of 3kV Dc substations and 25kV AC substations.
- Test and commission of current transformers at 3kV DC substations and 25kV AC substations.
- Test and commission of primary circuit breakers at 3kV DC substations and 25kV AC substations.
- Test and commission of high voltage AC disconnects at 25kV AC substations and 3kV DC substations.
- Test and commission of main transformers at 25kV AC substations, 3kV DC substations and 11kV AC substations.
- Test and commission of primary circuit breaker control panel of 25kV AC single unit substation.
- Test and commission of auxiliary transformer at 3kV DC substations.
- Test and commission of vacuum circuit breaker and control panel at 25kV single unit substation.
- Call outs / minor repairs / fault finding
- Accommodation per night
- Travelling time

3.1.1.1.2 The ways and means by which the above-mentioned results are obtained are the responsibility of the *Contractor*. Transnet however shall have the right to monitor the materials and activities of the *Contractor* to ascertain that all procedures are in accordance with his/her tender, the

relevant legislation are conducive to the achievement of the contract. Such right of monitoring shall be entirely without prejudice to Transnet and shall in no way relieve the *Contractor* from his/her responsibility.

3.1.2 **Definitions**

3.1.2.1 *Employer's Deputy* means the *Technical Supervisor* or any person appointed by Transnet Freight Rail from time to time and take charge of the contract.

3.1.2.2 *Transnet Freight Rail* is a business unit of Transnet SOC Limited, Registration No. 1990/009000/30, a company registered under the Company Laws of the Republic of south Africa.

3.1.2.3 *Works* means the works to be executed in terms of the contract

3.1.3 **Extent**

3.1.3.1 Commissioning tests: The *Contractor* shall test all electrical protection equipment at all existing or newly built Signal and Distribution Supply, Traction Sub- and Tie Stations in which relevant equipment has been replaced on an emergency repair or newly installed basis as follows:

3.1.3.1.1 Current transformers: Insulation test by 2.5 kV megger. Ratio (by primary injection at either rated current or a percentage thereof) and full magnetisation curve. Polarity tests where applicable.

3.1.3.1.2 Protection relays: Current Injection tests on all phases and to earth at all percentages i.e. at 125%, 200%, 400% and 600% of set value for distribution equipment and at 200% and 400% for traction equipment of secondary rated current noting tripping times and indications as indicated on relevant test sheets. Restricted Earth Fault and Duo Biased protection must be tested by the applicable voltage/current required.

3.1.3.1.3 Where Distribution ring feed systems are protected by Pilot Wire protection the SOLKOR /TRANSLAY relays must be tested by secondary injection to trip at the percentage values in the local and remote substations with a stability test by primary injection on one phase to earth or to a second phase, noting the milliamp current flow in the pilot wires.

3.1.3.1.4 AC, DC Earth and Frame Leakage systems: Insulation values to earth and between separate systems/zones by suitable earth and insulation meggers. Tripping current values by Primary injection for relevant zone/systems to be noted to give required tripping, indications and lockout. Systems shall be tested for possible parallel paths as well.

3.1.3.1.5 Transformer protection: Bucholz relays to be tested by air injection/test trip noting trip level to give lockout and indication. Oil and Winding Temperature Gauges to be tested by dial indication to give trip, indication and lockout as applicable. Where required a calibration test is to be done by heat simulation. Pressure Relief Devices tested by test trip noting trip, lockout and indication. Ratio test at all tap positions is also compulsory.

3.1.3.1.6 Indicating meters: By primary injection of Current and Voltage applicable.

3.1.3.1.7 Insulation levels: Pressure test on complete installation in the case of distribution panels and rectifiers in the case of traction substation.

3.1.3.1.8 Main and auxiliary supplies failures: Phase/AC fail relays to be tested and Battery under voltage relay to be calibrated to trip and lockout all circuit breakers.

3.1.3.1.9 3kV under voltage Protection: To be calibrated by HV DC primary injection.

3.1.3.1.10 Rectifier Protection: Over temperature, diode indication and attenuation circuit protection to be verified by simulation tests.

3.1.3.1.11 Wave filter equipment: To be measured and calibrated.

3.1.3.1.12 Primary Circuit Breaker/Primary disconnects replacement: To be tested strictly according to relevant commissioning sheet.

3.1.3.1.13 Substation earthing: the following test shall be done using a null balance merger with four terminals or a suitable earth resistance tester and insulation resistance tester. Details of the earthing tests are clearly outlined in the manual BBF8128 ver 1

- Earth resistance test
- Insulation resistance test
- Test for deterioration of earth mat at DC substations
- Earth resistivity test

3.1.3.1.14 Routine tests: The *Contractor* shall test all electrical protection equipment at all existing Signal and Distribution Supply, Traction Sub- and Tie Stations as follows:

- Current transformers: Magnetisation curve to be tested at a minimum of two points at knee point voltage as depicted on previous routine or commissioning test reports If not according to commissioning values a full magnetisation curve must be done. If not within tolerances a ratio test must be performed to prove the integrity of the current transformer.

- Protection relays: Current Injection Tests at 200 and 600/800 percent indicated on relevant test sheets of secondary rated current noting tripping times and indications. Where Distribution Ring feed systems are protected by Pilot Wire protection the SOLKOR /TRANSLAY relays must be tested by secondary injection to trip at the percentage values in the local and remote substations with a stability test by primary injection on one phase to earth or to a second phase, noting the milliamp current flow in the pilot wires.
- AC / DC Earth and Frame Leakage systems: Insulation values to earth and between separate systems/zones by suitable earth and insulation meggers. Tripping current values by Primary injection for relevant zone/systems to be noted to give required tripping, indications and lockout. Systems shall be tested for possible parallel paths as well.
- Transformer protection: Bucholz relays to be tested by air injection/test trip noting trip level to give lockout and indication. Oil and Winding Temperature Gauges to be tested by dial indication to give trip, indication and lockout as applicable. Where required a calibration test is to be done by heat simulation. Pressure Relief Devices tested by test trip noting trip, lockout and indication.
- Indicating meters: By secondary injection of Current and Voltage applicable at full scale deflection. By exception the 4 kV DC indicating voltmeter must be tested by primary HV DC injection.
- Insulation levels: Pressure test not required.
- Main and auxiliary supplies failures: Phase/AC fail relays to be tested and Battery under voltage relay to be calibrated to trip and lockout all circuit breakers.
- 3 kV Under voltage Protection: To be calibrated by HV DC primary injection.
- Rectifier Protection: Over temperature, diode indication and attenuation circuit protection to be verified by simulation tests.
- Wave filter equipment: To be measured and calibrated

3.1.4 The *Contractor* shall supply latest copy of calibration certificate of testing equipment.

3.1.5 The *Contractor* shall do testing for minor repair work and re-testing where faulty equipment is identified during the above testing period. (Transnet will supply all material required for these repairs).

3.1.6 The *Contractor* shall do commissioning tests as and when required at any substation under the control of Depot Engineer, Rail Network, Koedoespoort for the next 12 months when major repair/replacement work is conducted (Transnet will supply all material required for these repairs) as well as Routine Testing where required.

3.1.7 The *Contractor* shall complete the test sheet as applicable and defects report as applicable for routine testing and commissioning.

3.1.8 The technician/electrician who will assist during the contract as based in the relevant maintenance depot from where he will depart and accompany the *Contractor* every morning.

3.1.9 A technician/electrician from Transnet will provide access to the substations and will and issue applicable work/test permits to isolate and earth all equipment before handing it over for testing purposes. The *Contractor* shall confirm the isolation and earthing applied as well as the work limits. No work shall be done in any substation without the presence of a Transnet representative.

3.1.10 The *Contractor* shall supply the Employer's Deputy with test sheets and defects report per substation tested.

3.1.11 Transnet shall provide security where necessary for the duration of the contract.

3.1.12 **Escalation**

3.1.12.1 The rates quoted in the bill of quantities are fixed and firm for the duration of the contract period. No claims for escalation in costs will be entertained in this contract.

3.1.13 **Supervision**

3.1.13.1 The *Contractor*, or a responsible person empowered to act on his behalf, shall be present at the work site to supervise the works and to receive the instructions of the *Employer's Deputy*.

3.1.14 **Incompetent Employees**

3.1.14.1 All persons employed by the *Contractor* to carry out the works shall be competent, responsible and of good character.

3.1.14.2 If in the opinion of the *Employer's Deputy*, any person employed by the *Contractor* is in efficient, negligent, disrespectful or objectionable, the *Employer's Deputy* may, after consultation with the *Contractor*, instruct that such a person be removed from the work site.

3.1.15 **Hours of Duty**

3.1.15.1 All work shall be carried out between the hours of 07h00 and 16h30, Monday to Friday unless otherwise arranged with the *Supervisor*.

3.1.16 General Obligations

3.1.16.1 The *Contractor* shall not make use of any sub-*Contractor* to perform the works or parts thereof without the prior permission from the employer's Deputy.

3.1.16.2 The *Contractor* shall ensure that a safety representative is on site at all times.

3.1.16.3 The *Contractor* shall comply with all applicable legislation and Transnet safety requirements adopted from time to time and instructed by the employer's Deputy/Supervisor. Such compliance shall be entirely at his/her own cost, and shall be deemed to have been allowed for in the rates and prices in the contract.

3.1.16.4 The *Contractor* shall, in particular, comply with the following Acts and Transnet specifications: -

- The compensation for Occupational injuries and diseases Act, No. 130 of 1993. The *Contractor* shall produce proof of his or her registration and good standing with the compensation Commissioner in terms of the Act.
- The Occupational Health and Safety Act (Act 85 of 1993).
- The explosive Act No. 26 of 1956 (as amended). The *Contractor* shall, when applicable, furnish the *Employer's Deputy/Supervisor* with copies of the permits authorising him or his employee, to establish an explosive magazine on or near the site and to undertake blasting operations in compliance with the Act.
- The *Contractor* shall comply with the current Transnet specification E.4E, Safety Arrangements and Procedural Compliance with the Occupational Health and Safety Act, Act 85 of 1993 and Regulations and shall before commencement with the execution of the contract which shall include establishment and delivery of plant, equipment or materials, submit to the *Employer's Deputy/Supervisor*.
- The *Contractor* shall comply with the specification for Works On, Over, Under or Adjacent to Railway Lines and near high Voltage Equipment – E7/1, if applicable and shall take particular care of the safety of his employees on or close proximity to a railway line during track occupations as well as under normal operational conditions.
- The *Contractor's* Health and Safety Programme shall be subject to agreement by the *Employer's Deputy / Supervisor*, who may, in consultation with the *Contractor,* order supplementary and/or additional safety arrangements and/or different safe working methods to ensure full compliance by the *Contractor* with his obligations as an employer in terms of the Act.
- In addition to compliance with clause 3.1.16.4 hereof, the *Contractor* shall report all incidents in writing to the *Employer's Deputy / Supervisor*. Any incident resulting in death or injury to any person on the works shall be reported within 24 hours of its occurrence and any other incident shall be reported within 48 hours of its occurrence.

3.1.17 Occupational Health and *Safety Act No. 85 of 1993* (Available at depot for referral.

3.1.18 The Health, risk and Safety plan shall cover the following items:

RISK ASSESMENT, HEALTH AND SAFETY PLAN REQUIRED:
The respondents tendering for this project must make sure that the following points are covered when compiling their risk assessment and safety plan relevant to the scope of works.

Part A: Health, Risk and safety Plan

SHE Management Structure

- Assignment of duties.

SHE Organisation

- Health and safety committee
- Frequency of meetings
- Minutes of meetings

Education and Training

- Induction training (Construction Regulation 7(9)) Safety talk
- Site Specific Training.
- Certificate of competence.

Health and Safety Communications

- Safety/Toolbox talks.
- Incident Recall.

Risk Assessment/Incident management

- Risk identification, Analysis, mitigating steps, Monitoring steps and review plan
- Risk assessment (Construction Regulation 7)
- Competent person with HIRA certificate.

Project Security

- Security risks identified
- Access control.

Emergency Planning – Evacuation Plan

- Site procedure

Safe Working Procedures and Methods

- Method statement
- Risk assessment

a a plan on how risk assessment plan will be conducted

b procedures and methods to address the identified risks

- Safe Operating Procedures.
- Task observations
- Substance abuse testing

Fall Protection plan

- Documented fall protection plan

- Rescue plan
- Training/Certification
- Fall arrest and protection plan.

Personal Protective Equipment and Clothing

- PPE required after all other controls have been considered.

PPE proof of issue

3.2 PARTICULAR SPECIFICATION

3.2.1 South African National Standards:

3.2.1.1 Occupational Health and Safety Act No. 85 of 1993 (Available at depot for referral)

3.2.2 Transnet Freight Rail Specifications:

3.2.2.1	BBB 3620 version 5	3kV DC earthing arrangement – Traction Substation.
3.2.2.2	CEE-TBD-0007	Earthing arrangement for 25kV AC traction substations.
3.2.2.3	BBF 8128 VER 1	Handbook for testing and calibration of railway electrical protection equipment

3.2.3 RELEVANT ELECTRICAL TEST REPORT SHEETS:

3.2.3.1	BBB0342 VER 2	Alternatively	BBF 8999 VER 2 and BBF 9000 VER 2
3.2.3.2	BBB0343 VER 2	Alternatively	BBF 9001 VER 2 and BBF 9295 VER 2
3.2.3.3	BBB0345 VER 2	Alternatively	BBF 9296 VER 2
3.2.3.4	BBB0346 VER 2	Alternatively	BBF 9296 VER 2 and BBF 9297 VER 2
3.2.3.5	BBB0347 VER 2		
3.2.3.6	BBB0348 VER 2		
3.2.3.7	BBC9921 VER 1	In accordance with Engineering Instruction G.018.	

3.2.4 CONSTRAINTS ON HOW THE *CONTRACTOR* PROVIDES THE WORKS:

3.2.4.1 These constraints shall be as specified in the specifications of the particular equipment.

3.2.5 REQUIREMENTS FOR THE PROGRAMME

3.2.5.1	Programme of work:	To be submitted by successful *Contractor*
3.2.5.2	Format:	Gantt chart.
3.2.5.3	Information :	How work is going to be executed.
3.2.5.4	Submission:	Immediately after the award of contract
3.2.5.5	Site diary:	Successful *Contractor* to supply in triplicate carbon copies
3.2.5.6	Site instruction book:	Successful *Contractor* to supply in triplicate carbon copies.

3.2.6 SERVICES AND OTHER THINGS PROVIDED BY THE EMPLOYER.

3.2.6.1 Transnet Freight Rail shall have an electrician/technical assistant available for isolation and the erection of barriers to live electrical equipment and issuing of work permits.

3.2.7 SERVICES AND EQUIPMENT PROVIDED BY THE *CONTRACTOR*:

3.2.7.1 Minimum resources and testing instruments required:

- 3 phase generator, hand tools, extension leads and test leads
- Water container and petrol container
- Null balance digital earth Megger
- 10kV digital Megger
- 4kV DC Hi pot test set
- 25kV AC hi pot test set
- Primary injection test set variable 500/1000 Amps
- AC/DC injection test set, 200A, variable 0 to 25[illegible] Volt
- LCR meter
- Digital millisecond timer, 999 seconds
- Multimeter Analog (A.V.O.)
- 2 x Multimeter digital (R.M.S.)
- DC Milli-volt injection set, 100mV
- Bucholz pump (air compressed pump or bicycle pump)
- Heating Apparatus (Oil Heating)
- Emergency Lighting
- Distance impedance Test set; for Optimho and Protecta relays.
- Laptop computer and software's for different types of relays.

A site inspection will be conducted to verify testing equipment

3.2.7.2 The *Contractor* shall supply a site diary (with triplicate pages). This book shall be used to record any unusual events during the period of the work. Any delays to the work shall also be recorded such as delays caused by poor weather conditions, delays caused by permits being cancelled etc. The appointed *Project Manager* or *Supervisor* must countersign such delays. Other delays such as non-availability of equipment from 3rd party suppliers must be communicated to the *Project Manager* or *Supervisor* in writing.

3.2.7.3 The *Contractor* shall supply a site instruction book (with triplicate pages). This book shall be used to record any instructions to the *Contractor* regarding problems encountered on site – for example the quality of work or the placement of equipment. This book shall be filled in by the *Project Manager* or *Supervisor* and must be countersigned by the *Contractor.*

3.2.7.4 Both books mentioned in 3.2.7.2 and 3.2.7.3 shall be the property of Transnet Freight Rail and shall be handed over to the *Project Manager* or *Supervisor* on the day of energising or handing over.

3.2.7.5 The successful *Contractor* shall provide a Gantt or a similar chart showing when the works will be done. A final chart should be submitted to the *Project Manager* or *Supervisor* within 7 days after the award has been made to the successful *Contractor*.

3.2.8 INSURANCE

3.2.8.1 No insurance is required

Electrical Test Laboratory
Traction Substation
Test Sheet

TRANSNET freight rail

Location / Name:

Date: | Nature: | Unit:

4 kA DC Ammeter			
Shunt:		A	mV
Indication	mV	Amps	% Error
500 A			
1 000 A			
2 000 A			
2 500 A			
3 000 A			

4 kV DC Voltmeter		
Indication	Sub standard	% Error
1000 V		
2 000 V		
2 500 V		
3 000 V		
3 500 V		
4 000 V		

AC Earth leakage	
CT Ratio:	
No	Amp

Main O/L:

CT Ratio:

V	R Amp	Y Amp	B Amp

Relay Make & Type: _____

Full Load: = _____ **A**

Thermal O/L.

Relay was tested by prim. / sec. / Tw.

Injection to operate at:

x (FL) = Amp.

Phase	R	Y	B
Time (sec)			
Current Set.			
Time Set.			

Instantaneous O/L.

Relay was tested by prim. / sec. / Tw.

Injection to operate at:

x (FL) = Amp.

Phase	R	Y	B
Time (sec)			
Current Set.			
Time Setting			
Relay Trip OCB			
Indication			

Bucholz Relay cc

Relay trip, lock-out OCB:

Indication:

Aux. O/L:

CT Ratio:

V	R Amp	Y Amp	B Amp

Relay Make & Type: _____

Full Load: = _____ **A**

Thermal O/L.

Relay was tested by prim. / sec. / Tw.

Injection to operate at:

x (FL) = Amp.

Phase	R	Y	B
Time (sec)			
Current Set.			
Time Set.			

Instantaneous O/L.

Relay was tested by prim. / sec. / Tw.

Injection to operate at:

x (FL) = Amp.

Phase	R	Y	B
Time (sec)			
Current Set.			
Time Setting			
Relay Trip OCB			
Indication			

Bucholz Relay cc

Relay trip, lock-out OCB:

Indication:

Temperature Relay

Oil °C

Relay trip, lock-out OCB: U/B

Indication

Winding °C

Relay trip, lock-out OCB: U/B

Indication

Relay Make & Type:

Relay set at:

Relay setting:

Relay checked for parallel path: Yes / No

Connect to AC E/L:

Main X/F tank:

OCB structure:

CT's structure:

Aux. X/F fence:

Relay trip and lock-out OCB: Yes / No

Indication: Yes / No

Tested By:

Approved By:

Date

Electrical Test Laboratory
Traction Substation
Test Sheet

TRANSNET freight rail

EARTH & INSULATION RESISTANCE		
EARTH RESISTANCE:	Measure	Acceptable
Test spike		<2000 Ω
Test spike - Sub earth		<5 Ω
Test spike - Rail		>5 Ω
Test spike - DC E/L		>25 Ω
Test spike - Neg. busbar		>3000 Ω
Test spike - RUA AC E/L		>10 Ω
Test spike - RUB AC E/L		>10 Ω
Test spike - RUC AC E/L		>10 Ω
Test spike - Track switch earth		<5 Ω
INSULATION RESISTANCE:		
DC. E/L – Sub. Earth		>25 Ω
DC. E/L – Neg. Busbar		>3000 Ω
DC. E/L – Rail		>30 Ω
DC. E/L – RUA AC E/L		>35 Ω
DC. E/L – RUB AC E/L		>35 Ω
DC. E/L – RUC AC E/L		>35 Ω
Sub. Earth – Neg. busbar		>3000 Ω
Sub. Earth - Rail		>5 Ω
Sub. Earth – RUA AC E/L		>10 Ω
Sub. Earth – RUB AC E/L		>10 Ω
Sub. Earth – RUC AC E/L		>10 Ω
Neg. Busbar - Rail		>3000 Ω
Neg. Busbar – RUA AC E/L		>3000 Ω
Neg. Busbar – RUB AC E/L		>3000 Ω
Neg. Busbar – RUC AC E/L		>3000 Ω
Rail – RUA AC E/L		>15 Ω
Rail – RUB AC E/L		>15 Ω
Rail – RUC AC E/L		>15 Ω
RUA AC E/L - RUB AC E/L		>20 Ω

NAME:
DATE:
NATURE:

DC. EARTH LEAKAGE RELAY

Make & Type:

Relay operate at:
Relay Setting:

Checked for parallel path

Connected to DC. E/L	RUA	RUB	RUC
Rectifier fram			
Reactor frame			
Wall bushing plate			
Control panels			
Wavefilter from earth			
Aux. X/F starpoint			
Battery charger			
Telecontrol panel			
Undervoltage relay			
Track breaker cells			
Checker plates			
Tubing in sub.			

Operation of relay results in:

Relay L/O. OCB.			
Relay L/O U/B.			
Relay L/O T/B.			
Fault indication			

3 V DC UNDERVOLTAGE RELAY

RUA		RUB	
Make &Type:		Make &Type:	
Pick-Up:	V	Pick-Up:	V
Drop-Out:	V	Drop-Out:	V
Drop-Out delay:	Sec.	Drop-Out delay:	Sec.
Relay drop-out results:		Relay drop-out results:	
Trip all T/B		Trip all T/B	
Counter operation		Counter operation	
Fault indication		Fault indication	

110 V BATTERY UNDERVOLTAGE

Make &Type:	
Pick-Up:	V
Drop-Out:	V
Relay drop-out results:	
Trip and lock-out of OCB:	
Check zero voltage between:	
Battery positive - earth:	
Battery negative - earth:	

WAVE FILTER

RUA			RUB		
Harmonic	Cap (uf)	Induction(mH)	Harmonic	Cap (uf)	Induction(mH)
6			6		
12			12		
18			18		
24			24		
DISCHARGE RESISTOR :			DISCHARGE RESISTOR :		
SERIES RESISTOR :			SERIES RESISTOR :		
FUSE TESTED :			FUSE TESTED :		

TESTED BY APPROVED BY DATE

Electrical Test Laboratory
Traction Substation (Brown Boveri)
Test sheet

TRANSNET freight rail

Name: _____

Date: _____

Nature: R/C _____

Relay Type: **Red Phase:** _____ **Blue Phase:** _____

Full Load Current: Primary: _____ A Secondary: _____ A

Current Transformer Ratio:

Relay Tested: Prim/ Sec/ TW Injection

Thermal O/L: Red Phase Setting: _____

Preheat Relay At 2 X Full load = _____ A to 22 °C

Inject 3 X Full load = _____A Relay Operate In _____ Seconds

Relay Trip OCB: Yes / No Relay Indication: Yes / No

Instantaneous O/L: Red Phase Setting: _____

Inject 3,75 X Full load = _____ A

Relay Trip OCB: Yes / No Relay Indication: Yes / No

Thermal O/L: Blue Phase Setting: _____

Preheat Relay At 2 X Full load = _____ A to 22 °C

Inject 3 X Full load = _____A Relay Operate In _____ Seconds

Relay Trip OCB: Yes / No Relay Indication: Yes / No

Instantaneous O/L: Blue Phase Setting: _____

Inject 3,75 X Full load = _____ A

Relay Trip OCB: Yes / No Relay Indication: Yes / No

Tested By: _____ Date: _____

Approved By: _____ Date: _____

Infrastructure (Maintenance) BBB0346 VER 2

Electrical Test Laboratory
E L & P Substation
Test Sheet

TRANSNET freight rail

NAME :

DESIGNATION : OCB No. :

PANEL NO. : DATE : NATURE : R/C

D.M.I.T. RELAY.

CT RATIO :

V	R Amp	Y Amp	B Amp

POLARITIES :

O/L SETTING : A/% T.M.S. :

E/L SETTING : A/% T.M.S. :

RELAY TESTED PRIM/ SEC/ TW. INJECTION

MULTIPLE	O/L R ph.		O/L Y ph.		O/L B ph.		E/L	
Of P.C.S.	A	Sec	A	Sec	A	Sec	A	Sec
2								
4								
6								

INSTANTANEOUS RELAY

O/L Setting		E/L Setting	
R ph. Trips at	A		
Y ph. Trips at	A	Relay trips at	A
B ph. Trips at	A		

BUCHOLZ RELAY co

Relay trip & lock-out OCB Give indication.

TEMPERATURE RELAY C

Relay trip OCB Give indication.

EARTH LEAKAGE RELAY:

V	A	2 A	3 A	ZONE	1	2	3
				TYPE			
				PLUG			
				P / Amp			
				TRIPS			
				RATIO			
				TEST SPIKES :		Ohm	
				EARTH MAT :		Ohm	

SOLKOR R/TRANSLAY

CT RATIO :

V	R Amp	Y Amp	B Amp

PILOT CABLE

Loop resistance :

Insulation resistance :

T1 E :

T2 E :

T1 T2 :

OVERALL FAULT SETTING

FAULT	T.W./ Sec. A	A mA	B mA	AC mA	OPERATION %
R – E					
Y – E					
B – E					
R – Y					
B – Y					
R - B					

CURRENT BETWEEN		RELAY OUTPUT
R – E	1.10A	V
Y – E	1.40A	V
B – E	2.00 A	V
R – Y	4.50 A	V
B – Y	4.50 A	V
R - B	2.25 A	V

RELAY TYPE :

SETTING :

RESISTANCE MEASUREMENTS

ZONE	1	2	3
E			
1			
2			

TESTED BY APPROVED BY DATE

Infrastructure (Maintenance) BBB0347 Version 2

Electrical Test Laboratory
SUB DEFECT REPORT

TRANSNET freight rail

GRADE: SENIOR ENGINEERING TECHNICIAN
ADDRESS:

TO: MAINTENANCE MANAGER
DEPOT:
DATE:

OUR REF.:

PROTECTION DEFECT REPORT

The following DEFECTS were found during commissioning / routine testing:

At : E.L.&P. /TRACT. Sub-, Tie-station:

TESTED BY : _____ SIGNATURE : _____

*Please attend to these defects and complete bottom portion of this form within two months after receiving report and send back to **TEST LAB**.*

TO: SENIOR ENGINEERING TECHNICIAN

FROM : MAINTENANCE MANAGER
DEPOT:

YOUR REF:

CORRECTION ACTION REPORT

The following REPAIRS were done for :

At : E.L.&P. / TRACT. Sub-, Tie-station :

These defects were repaired by :

Technician : _____
And reported to TECHNICAL MANAGER/SUPT.

Technical Supt. : _____

Date : _____

Checked by
Chief Eng. Technician : _____

If any assistance is needed to solve or repair a defect and re-testing is necessary, please contact Senior Engineering Technician. Before the Final correction report is sent through.
THANK YOU FOR YOUR CO-OPERATION.

Electrical Test Laboratory
Traction / E L & P Substation
Test Sheet

TRANSNET freight rail

SUBSTATION: _____ **DATE:** _____

TRANSFORMER: _____

MAKE: _____ KVA : _____

SERIAL NO.: _____ VOLTAGE: _____

DATE OF MANUFACTURE: _____ VECTOR: _____

INSULATION RESISTANCE TEST: 2 500 V MEGGER (2 mΩ/kV = Good norm)

EARTH TO HT: _____ HT TO LT1. _____

EARTH TO LT1: _____ HT TO LT2: _____

EARTH TO LT2: _____ HT TO AUX.: _____

EARTH TO AUX.: _____ LT1 TO LT2: _____

LT2 TO AUX.: _____ LT1 TO AUX.: _____

VOLTAGE RATIO TEST: 3 PHASE GENERATOR

SUPPLY VOLTAGE (3 phase) _____ V

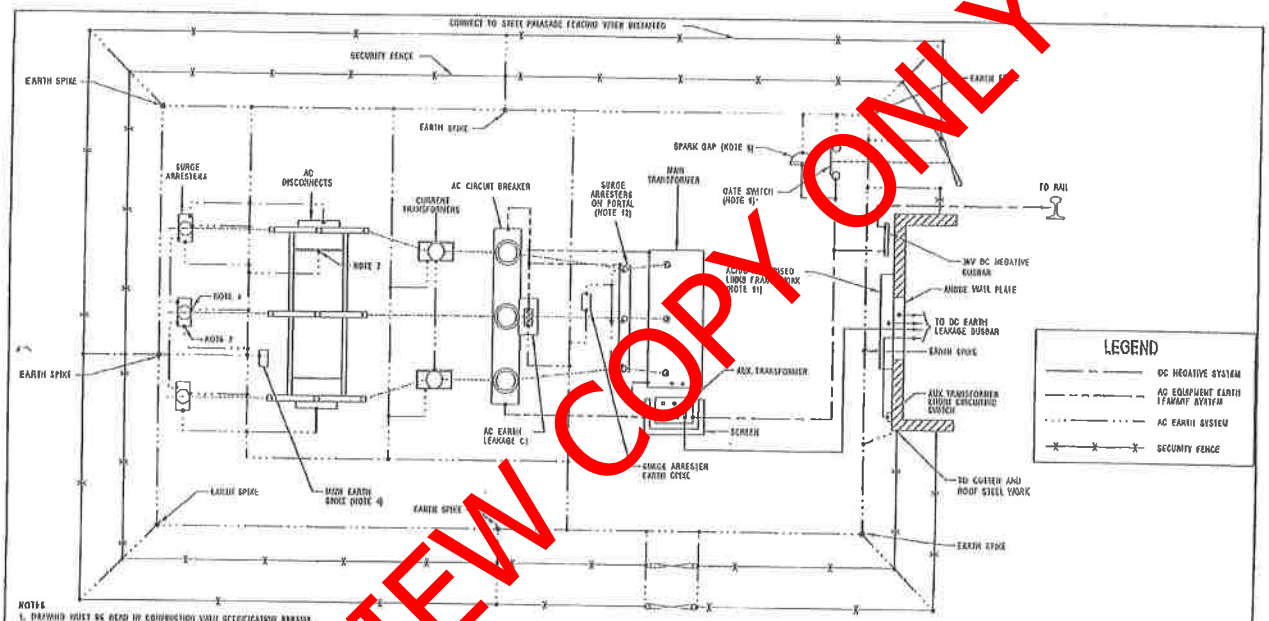
	Primary	Secondary	TAP 1	TAP 2	TAP 3	TAP 4	TAP 5
LT1:			V	V	V	V	V
			V	V	V	V	V
			V	V	V	V	V
LT2:			V	V	V	V	V
			V	V	V	V	V
			V	V	V	V	V
AUXILIARY:			V	V	V	V	V
			V	V	V	V	V
			V	V	V	V	V

AT TAP No. 3: CALCULATED RATIO = HT/LT = _____ / _____ = _____

MEASURED VOLTAGE = SUPPLY V / RATIO = _____ / _____ = _____ V

TESTED BY: _____ DATE: _____

APPROVED BY: _____ DATE: _____



NOTES

1. DRAWING MUST BE READ IN CONJUNCTION WITH SPECIFICATION BBB3620.
2. SABS EARTH OR LIGHTNING SYSTEMS SEE CODE OF PRACTICE SEE ALSO FOR "EARTH SYSTEMS IN ELECTRIFIED AND POWER AND TRACTION INSTALLATIONS".
3. THE OVERALL RESISTANCE OF THE AC EARTH SYSTEM MUST NOT EXCEED 5 OHMS.
4. UNNECESSARY BENDS IN THE DOWN LEADS FROM THE SURGE ARRESTERS TO THE AC EARTH SYSTEM SHALL BE AVOIDED.
5. THE INSTALLATION OF THE MAIN EARTH AND TEST SPIKE SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE INCOMING SUPPLY AC SURGE ARRESTERS.
6. ALL BUNDO CONNECTIONS, CONNECTIONS TO THE SUPPORT STEEL STRUCTURES AND CONNECTIONS TO THE CORNER INTERMEDIATE AND GATE POSTS OF THE SECURITY FENCES SHALL BE EXOTHERMIC WELDED.
7. THE EARTHING TAILS FROM THE SUPPORT STEEL STRUCTURES THE AC DISCONNECTORS AND SURGE ARRESTERS TO THE AC EARTH SYSTEM SHALL BE LOOPED.
8. THE MINIMUM SIZE OF CABLE / CONDUCTOR USED FOR EARTHING SHALL BE 65MM² COPPER CONDUCTOR.
9. THE GATE SWITCH ATTACHED TO THE SUBSTATION GUTTER YARD GATE OF THE 3KV DC FREEDOM SECURITY AREA GATE AND THE MIDDEN RESISTANCE ENCLOSURE ARE TO BE SO MOUNTED THAT THE GATE SWITCH IS OPEN WHEN THE GATE IS CLOSED AND CLOSED WHEN THE GATE IS OPEN.
THE SPARK GAP USED WITH THE GATE SWITCH ASSEMBLY SHALL COMPLY WITH SPECIFICATION BBB3620 AND DRG BBB9004.
10. SUPPORT STEEL STRUCTURES OF CURRENT TRANSFORMERS INSTALLED BETWEEN SUBSTATION CIRCUIT BREAKER AND MAIN TRANSFORMER SHALL BE CONNECTED TO THE AC EARTH LEAKAGE SYSTEM.
11. ACDC INSULATED LINKS FRAME WORK SHALL BE CONNECTED TO THE DC EARTH LEAKAGE BUSBAR
12. FOR CONNECTION OF HIGH VOLTAGE SURGE ARRESTER INSTALLED ON THE ARM SEE DRG. NO. BBB9004.

DIMENSIONS : MM TOLERANCE : LIN ± ANG MATERIAL : -- VERSION INFO : FRAME, TITLE AND REVISIONS ADDED	DO REF : CDDV 3243 ECP REF : BBB0485 & BBB3634 DRAWN : D BATTISTON DESIGNED : -- CHECKED : H VAN VUUREN	Digitally signed by Ludwig Borchard Date: 2011.02.01 12:22:28 +02'00' APPROVED Digitally signed by Ludwig Borchard Date: 2011.02.01 12:23:00 +02'00' AUTHORISED	3KV DC EARTHING ARRANGEMENT SYSTEM FOR HIGH VOLTAGE OUTDOOR YARDS	TRANSNET freightnet BBB3620 VERSION 5

TEST SHEET: TRACTION 3kV DC SUBSTATION

TRANSNET freight rail

COMMISSIONING TESTS BY CONTRACTOR PRIOR TO FINAL COMMISSIONING BY TRANSNET FREIGHT RAIL

CONTRACT NO:

SUBSTATION NAME	DEPOT	DATE

	FUNCTION	COMPLY (YES/NO)	COMMENTS
1.0	**FUNCTIONAL TESTS IN AC YARD**		
1.1	AC Disconnects to trip P.C.B when operating under load conditions		
1.2	Operation of Wave Filter Door switches to trip P.C.B		
1.3	Main Transformer Bucholz Relay to trip and lockout P.C.B giving indication		
1.4	Main Transformer Oil temp Relay to trip P.C.B giving indication		
1.5	Main Transformer Winding temp. Relay to trip and lockout P.C.B giving indication		
1.6	Winding and Oil Temp relays will only trip Unit Breaker if still in use.		
1.7	All lockout circuits will also trip the Unit Breaker with P.C.B if Unit Breakers are still in use		
1.8	Auxiliary Transformer Bucholz Relay to trip and lockout P.C.B giving indication		
1.9	P.C.B operation only when selector switch is in the Local position		
1.10	P.C.B to trip when 110V DC Supply is removed from the No Volt Coil		
1.11	All cables to substation to be block jointed and covered with suitable heat shrink		
1.12	Operation of S.F.6 Low gas to trip and lockout P.C.B giving indication		
2.0	**FUNCTIONAL TESTS INSIDE SUBSTATION**		
2.1	Operation of P.C.B giving indication Spring Charged and Spring Discharged with selector switch in the Local position		
2.2	Check that P.C.B does not operate when Local/Remote switch is in the Remote position		
2.3	Operation of DC Earth Leakage relay to trip P.C.B as well as all Track Breakers giving lockout and Indication		
2.4	Operation of AC Earth Leakage relay to trip P.C.B giving lockout and indication		
2.5	Operation of all Track Breakers in Local position to close and drop out after delay period giving		

	FUNCTION	COMPLY (YES/NO)	COMMENTS
	indication		
2.6	Auxiliary Transformer protection relay operation to trip P.C.B giving indication – all phases		
2.7	Main Transformer protection relay operation to trip P.C.B giving indication – all phases		
2.8	Battery Under Voltage protection to trip G.C.B giving lockout and Indication		
2.9	3kV DC Under Voltage protection to Pick up and Drop out all Track Breakers		
2.10	Check direction of fans on Rectifier unit		
2.11	Operation of attenuation fail protection to trip and lockout P.C.B		
2.12	Operation of fan failure vane switches to trip and lockout P.C.B		
2.13	Operation of Current Monitor relay to start Rectifier fans for cooling		
2.14	Operation of Temp. Sensor to start Rectifier fans at 80 degrees C for cooling		
2.15	Operation of Over Temp. Sensor to Trip and lockout P.C.B giving indication		
2.16	Check that the key interlocking is in place and in the right sequence to enter Rectifier bay		
2.17	When Unit Breaker is still in use – Check intertripping between P.C.B and Unit Breaker		
2.18	Check Main Transformer Oil and Winding Temp to trip Unit Breaker only, and to close again with Temp normal		
2.19	Emergency Stop button to operate and give complete shutdown with latching device giving lockout		
2.20	Where telecontrolled devices have been replaced or repaired, the correct operation and indication must be checked with Control and Telecontrol.		

Contractor: _____

Name: _____

Signature: _____ **Date:** _____

Tests witnessed by: **Transnet Freight Rail**

Name: _____

Signature: _____ **Date:** _____

Rail Network Maintenance

BBF8995 Version 2

25 kV AC Traction Substations Test Sheet: Main Transformer Protection.
Current transformers:Ratio and Magnetisation Curves
Protection Relays Main Overload- and Restricted/Duo Biased Earth Fault Protection.
Buchholtz, Overtemperature & PRD. Battery Undervoltage Relay. Earth Resistance measurement.

TRANSNET freight rail

Substation: Single / A / B Unit **Routine :** **Commissioning:**

;

Main Transformer I_{FL} Primary: A Secondary A

HV Overcurrent		LV Overcurrent		HV REF/Duo Bias Ph 1		HV REF/Duo Bias Ph 2		LV REF/Duo Bias Ph 1		LV REF/Duo Bias Ph 2		Winding Overtemp	

Magnetization curves

HV Overcurrent		LV Overcurrent		HV Restr. E/Fault Ph 1		HV Restr. E/Fault Ph 2		LV Restr. E/F Ph 1		LV Rest. E/F Ph 2		Winding Overtemp	
Volts	m Amps	Volts	m Amps	Volts	m Amps	Volts	mAmps	Volts	mAmps	Volts	mAmps	Volts	Amps

Overcurrent Relay elements **Relay makes and types**

Overcurrent: **Restricted E/F:** **Duo Biased:**

HV IDMTL (NI)		Iset=	xIn	Tset=
Operating time in seconds	Multiple	Amps	Specified	Actual
	1.25 x Iset			
	2.00 X Iset			

HV Instantaneous		Iset=	xIn	Tset= 0
Operating time in seconds	Multiple	Amps	Specified	Actual
	4.00 x Iset			
	6.00 x Iset			

Restricted Earth Fault V/I set =

Operating voltage/current	Phase to N
HV Secondary voltage/current	
LV Seconary voltage/ current	

LV IDMTL (NI)		Iset=	xIn	Tset=
Operating time in seconds	Multiple	Amps	Specified	Actual
	1.25 x Iset			
	2.00 X Iset			

LV Instantaneous		Iset=	xIn	T set
Operating time in seconds	Multiple	Amps	Specified	Actual
	4.00 x Iset			
	6.00 x Iset			

Duo Biased Fault I HV set = I LV set=

Operating current	Phase to N
HV secondary injected current	
LV secondary injected current	

Trip PCB giving indication:	Yes/No		Trip PCB giving indication:	Yes/No		Trip PCB to lockout & indication:	Yes/No

MainTransformer Protection

Buchholtz: Relay trips PCB giving Lockout & Indication with _____cc of air . **Pressure Relief Device:** Simulation trips PCB giving Lockout & Indication. Yes/No

Oil Over temp: Relay trips PCB giving Indication at _____°C dail setting. **Winding Over temp:** Relay trips PCB giving Lockout & Indication at _____°C dail setting.

Battery undervoltage protection: Relay tested to pickup at _____ and dropout at _____ Volts tripping PCB with indication and Lockout

Phase Fail Protection: Relay tested to tr p PCB giving lockout and indication on simulation phase fail. Yes / No

Earth resistance test: Resistance between spikes=_____ohms Resistance from spikes to main earth= _____ ohms

Tested by: Name:	Signature:	Witnessed by: Name:	Signature:	Date:

Rail Network Maintenance			BBF8996 Version 2
25 kV AC Traction Substations Test Sheet Incomer and Track Feeder VCB's: Current Transformer Ratio and Mag. curves. Battery Undervoltage Relays. Protection Relays: IDMT, Reverse power, Thermal Overload and Distance Protection.			TRANSNET freight rail
Substation:	Single / A / B Unit	Routine :	Commissioning:

Panel No								
Designation	Incomer							
CT Winding	P1/1S		P1/1S Dist. Prot		P1/2S Therm O/load		P1/1S Dist. Prot	P1/2S Therm O/load
CT Ratio Marked	1200/1		1200/1		1200/1		1200/1	1200/1
CT Ratio Measured								
Magnetisation curves	Volts	Amps	Volts	Amps	Volts	Amps	Volts / Amps	Volts / Amps
Time delay Overcurrent Protection Relays	IDMTL Relay:		Thermal Relay:				Thermal Relay :	
	(NI) I>set= xIn		t set =	Ith>set= xIn		T set =	Ith>set= xIn	T set =
Operating time in seconds to trip VCB's with indication.	Multiple	Amps	Specified / Actual	Multiple	Amps	Specified / Actual	Multiple / Amps / Specified / Actual	
	2 x Iset			2.00 x Iset			2.00 x Iset	
Instantaneous Overcurrent Protection Relays:	IDMT Relay:			(1)IDMT (2)Backup Relay:			(1)IDMT (2)Backup Relay:	
	(NI) Iinstset= xIn		t set =	(1)IIDMTset= xIn		t set =	(1)IIDMTset= xIn	t set =
				(2) Iinstset= xIn		t set =	(2) Iinstset= xIn	t set =
Operating time in seconds to trip VCB's with indication.	Multiple	Amps	Specified / Actual	Multiple	Amps	Specified / Actual	Multiple / Amps / Specified / Actual	
	4 x Iset			(1)2 x Iset			(1)2 x Iset	
				(2)4 x Iset			(2)4 x Iset	
Reverse power and Distance Protection Relays: Make & Type:	Reverse power:			Distance Protection:			Distance Protection:	
	Current direction	Tripping Amps		Zone / R / X / Specified / Operating			Zone / R / X / Specified / Operating	
Operating values to trip VCB's with indication.	Forward			1			1	
	Reverse			2			2	
	Voltage applied			3			3	
				4			4	
				5			5	
Battery undervoltage protection relays	Set to pickup at_____and dropout at _____volts tripping VCB to lockout		Set to pickup at_____and dropout at _____volts tripping VCB to lockout				Set to pickup at_____and dropout at _____volts tripping VCB to lockout	
Tested by: Name:	Signature:		Witnessed by: Name:		Signature:		Date:	

Rail Network Maintenance							BBF8998 Version 2
AC Traction Supply Substations Test Sheet Primary Circuit Breakers: Contact Resistance and Operational Timing tests. Secondary Circuit Breakers(VCB's): Contact Resistance and Operational Timing tests.							TRANSNET freight rail
Substation:			Commissioning:		Routine:		
Primary Circuit Breakers							
Contact Resistance Test			Red		White		Blue
Test current applied: 100 Amps DC		mVolt Specified	3.5 ± 0.3mV		3.5 ± 0.3mV		3.5 ± 0.3mV
		mVolt Measured					
Operational Timing tests							
Make of Test Instrument applied: _____ Operating Time mSec			Red		White		Blue
		Closing time Specified	56 ± 5mS		56 ± 5mS		56 ± 5mS
		Closing time Actual					
		Opening time Specified	33 ± 3mS		33 ± 3mS		33 ± 3mS
		Opening time Actual					
Secondary Circuit Breakers							
Contact Resistance Test			Incomer VCB No.:		Feeder VCB No.:		Feeder VCB No.:
Test current applied: 100 Amps DC		Contact No	1	2	1	2	1	2
		mVolt Specified	< 6 mV	< 6 mV	< 6 mV	< 6 mV	< 6 mV	< 6 mV
		mVolt Measured						
Operational Timing tests								
Make of Test Instrument applied: _____ Operating Time mSec			Incomer VCB No.:		Feeder VCB No.:		Feeder VCB No.:	
		Contact No	1	2	1	2	1	2
		Closing time Specified	60 ± 5mS	60 ± 5mS	60 ± 5mS	60 ± 5mS	60 ± 5mS	60 ± 5mS
		Closing time Actual						
		Opening time Specified	35 ± 3mS	35 ± 3mS	35 ± 3mS	35 ± 3mS	35 ± 3mS	35 ± 3mS
		Opening time Actual						
Tested by: Name:		Signature:		Witnessed by: Name:		Signature:		Date:

Rail Network Maintenance	BBF8999 Version 1
3 kV DC Traction Substations Test Sheet Auxilliary Xformer: Current Xformers, Overload Relay and Buccholtz relay. Substation DC Earth Leakage Protection.	TRANSNET freight rail

Substation			Routine Testing:	Commissioning:
Aux. .Xformer Full Load Current	CT Primary Current Rating Marked	CT Secondary Current Rating Marked		

CT Mag curve

Volts	Red Amps	White Amps	Blue Amps

Thermal Overload Setting			Tripping time (sec)		
Ia,b,c >=2 xFull load/CT Primary			Red	White	Blue
Ia,b,c >> setting on relay					
Ia,b,c >xt setting from relay curve		Calculated			
Sec. Injected current @110%		Actual			

Instantaneous Overload Setting			Tripping time (sec)		
Ia,b,c >>=3 xFull load/CT Primary			Red	White	Blue
Ia,b,c >> setting on relay					
Ia,b,c >>xt setting min on relay					
Ia,b,c >> xt setting on relay min		Calculated			
Secondary Injected current @110% on relay setting		Actual			

Output Relays	Element No.				Current settings	
	1 Ia> & Ia>>	2 Ib> & Ib>>	3 Ic> & Ic>>	4 Ic>>	Element 1	Pri. Sec.
	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	Disabled	Element 2	Pri. Sec.
Start	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0		Element 3	Pri. Sec.
Trip	1 0 0 0 0	1 0 0 0 0	1 0 0 0 0		Element 4	Disabled

Aux. Xformer Buccholtz: Relay trips PCB giving Lockout & Indication with _____cc of air in relay.

DC Earth Leakage Protection | Tested by DC current injection

Relay operates at _____ amps tripping PCB and HSCB's to lockout with flag indication from the following:

Rectifier Frame	Wave Filter Equip	Reactor Base	Chequer plates	HSCB Cells	Control Panels	UVR Base
Battery charger	Telecontrol Panel	Anode wall Plates	Positive Isolator			

Tested by: Name:_____ Signature:_____ Date: _____

Rail Network Maintenance

BBF9000 Version 3

3 kV DC Traction Substations Test Sheet: Main and Auxilliary Transformer protection.
Current transformers Ratio and Magnetisation Curves. Overload relays:Thermal & Instantaneous.
AC earth Leakage Protection. Buchholtz, Overtemperature, Pressure Relief Device.

TRANSNET freight rail

Substation: Single / A / B Unit **Routine :** **Commissioning:**

CT Ratios

Main Overcurrent/Metering I_{FL}=		Auxilliary Overcurrent I_{FL}=		AC earth Leakage		Winding Overtemp	
Marked	Measured	Marked	Measured	Marked	Measured	Marked	Measured

Magnetization curves

Main Overcurrent				Main Metering			Auxilliary Overcurrent			AC earth Leakage		Winding Overtemp	
Volts	Red	White	Blue	Volts	Red	Blue	Volts	Red	Blue	Volts	Amps	Volts	Amps

Overcurrent Relay elements **Relay makes and types.**

Mains: **Auxilliary :** **AC Earh Leakage:**

Main thermal I_{set}= xIn Tset=

Operating time in seconds	Multiple	Amps	Specified	Actual
	2 x I_{FL}			
	3 x I_{FL}			

Trip PCB giving indication: Yes/No

Main Instantaneous I_{set}= xIn T set= 0

Operating time in seconds	Multiple	Amps	Specified	Actual
	3.5 x I_{FL}			
	4 x I_{FL}			

Trip PCB giving indication: Yes/No

AC Earth Leakage I set Tset

Relay Trips Primary Circuit Breaker to Lockout and indication from PCB & CT bases,Main transformer Tank & Auxilliary Transformer fence.

Primary trip amps

Auxilliary thermal I_{set}= xIn Tset=

Operating time in seconds	Multiple	Amps	Specified	Actual
	2 x I_{FL}			

Trip PCB giving indication: Yes/No

Auxilliary Instantaneous I_{set}= xIn T set= 0

Operating time in seconds	Multiple	Amps	Specified	Actual
	3.5 x I_{FL}			

Trip PCB giving indication: Yes/No

Test for parallel paths to main earth from:

PCB structure	
CT structure	
Main Transformer	
Aux transformer fence	

Main Transformer Protection

Buchholtz: Relay trips PCB giving Lockout & Indication with _____cc of air . **Pressure Relief Device:** Simulation trips PCB giving Lockout & Indication. Yes/No

Oil Over temp: Relay trips PCB giving Indication at _____°C dail setting. **Winding Over temp:** Relay trips PCB giving Lockout & Indication at _____°C dail setting.

Auxilliary Transformer Protection

Buchholtz: Relay trips PCB giving Lockout & Indication with _____cc of air .

Rail Network Maintenance

BBF9001 Version 3

3 kV DC Traction Substations Test Sheet: 3 kV DC Protection
DC Earth Leakage, Metering, Wave Filter Equipment, Diode & Rectifier Overtemperature.
3 kV DC Undervoltage Relay. Battery Undervoltage Relay. Phase Fail relay.

TRANSNET freight rail

Substation: **Routine :** **Commissioning:**

DC Earth Leakage Protection	Tested by DC current injection

Relay operates at _____ amps tripping PCB and HSCB's to lockout with indication from the following:

Control Panels	Rectifier screen	Rectifier Base	Anode Wall Plates	Positive Isolator	LV Distribution board	Wave Filter Room	Checuer plates	HSCB Cells	Battery charger	Telecontrol Panel	3 kV DC UVR Base	3 kV DC Busbar Chamber

4 kV DC Voltmeters					**4 kA DC Ammeters**			**Wave Filter Equipment**				
Substandard	Rectifier	% Error	Pos.Isolator	% Error	Indication	M	% Error	Harmonic	6 th	12 th	18 th	24 th
1000					1000			Frequency	(300 hz)	(600 hz)	(900 hz)	(1200 hz)
2000					2000			Capacitance uF				
3000					3000			Inductance mH				
4000					4000			Coil Spacing mm				
								Discharge Resistor: kOhm				Fuse:

Rectifier Protection			
Rectifier Pressure tested on Commissioning at 10.5 kV AC for 60 sec.	**Passed/Failed**		
Rectifier diode Monitoring	Tested by fibre optic simulation test		
Diode failure indication switch on with PCB trip to lockout with indication: Yes/No			
Rectifier temperature control	Tested by fibre optic simulation test		
Fans switch on at 50 ° C:	Yes/ No	Primary Circuit Breaker trip at 80 ° C with indication:	Yes/No
Fan failure trip Primary Circuit Breaker to lockout with indication :	Yes/No	Fan switch on at 700 amps load current @ _____ mVolt injection	Yes/No
Rectifier Attenuation Protection:	PCB trips to lockout with indication by simulating striker pin fuse operation on both 1.5 kV and 3kV circuits		Yes/No

3kV DC Undervoltage Protection	Tested by applied DC High Voltage

Relay tested to pick up at _____ volts and drop out at _____volts tripping HSCB's with indication.

Battery undervoltage protection: Relay tested to pickup at _____ and dropout at _____ Volts tripping PCB and HSCB's with indication and Lockout.

Phase Fail Protection: Relay tested to trip PCB giving lockout and indication on simulation phase fail. Yes / No

Tested by: Name:	Signature:	Witnessed by: Name:	Signature:	Date:

Tested by: Name:	Signature:	Witnessed by: Name:	Signature:	Date:

Rail Network Maintenance	BBF9001 Version 1
3 kV DC Traction Substations Test Sheet Main transformer Buchholtz & Overtemperature Protection Metering, Rectifier Overtemperature & Diode Protection. Wave Filter Equipment 3 kV DC and Battery Undervoltage Protection	TRANSNET freight rail

Substation		Routine Testing:	Commissioning:

Main Xformer Buccholtz: Relay trips PCB giving Lockout & Indication with _____cc of air in relay.

Main Xformer Oil Over temperature: Relay trips PCB giving Lockout & Indication at _____ °C dail setting.

Main Xformer Winding Over temperature: Relay trips PCB giving Lockout & Indication at _____ °C dail setting.

Metering	4 kA DC Ammeter			4 kV DC Voltmeter		
	Indication	Mv	% Error	Indication	Substandard	% Error
	1000			1000		
	2000			2000		
	3000			3000		
	4000			4000		

Rectifier diode Monitoring	Tested by fibre optic simulation test	
Diode failure indication switch on with PCB trip to lockout with flag indication:	Yes/No	
Rectifier temperature control	Tested by fibre optic simulation test	
Fans switch on at 50 ° C:	Yes/ No	
Primary Circuit Breaker trip at 80 ° C with indication:	Yes/No	
Fan failure trip Primary Circuit Breaker to lockout with flag indication :	Yes/No	
Fan switch on at 700 amps load current	Simulation Test value of injected volts	mv

Wave Filter Equipment

Harmonic	6 th	12 th	18 th	24 th
Frequency	(300 hz)	(600 hz)	(900 hz)	(1200 hz)
Capacitance uF				
Inductance mH				
Coil Spacing mm				
Discharge Resistor	KΩ		Fuse:	

Battery Undervoltage Relay	Tested by applied voltage
Relay tested to pick up at _____ volts and drop out at _____volts tripping PCB and HSCB's with lockout and flag indication	Yes / No
3kV DC Undervoltage Relay	Tested by applied voltage
Relay tested to pick up at _____ volts and drop out at _____volts tripping PCB and HSCB's with lockout and flag indication	Yes / No
Tested by: Name:_____ Signature:_____	Date: _____

Rail Network Maintenance	BBF9294 Version 3
3 kV DC Traction Traction Tie Station Test Sheet 3 kV and Battery Undervoltage Protection. KV Meter DC Earth Leakage Protection. Earth and Insulation Measurements.	TRANSNET freight rail
Substation: Routine : Commissioning:	

3kV DC Undervoltage Relay Tested by applied voltage

Relay tested to pick up at _____ volts and drop out at _____ volts tripping HSCB's with lockout and flag indication.

Battery Undervoltage Relay Tested by applied voltage

Relay tested to pick up at _____ volts and drop out at _____ volts tripping HSCB's with lockout and indication

DC Earth Leakage Protection Tested by DC current injection

Relay operates at _____ amps tripping PCB and HSCB's to lockout with flag indication from the following

Chequer plates	HSCB Cells	Control Panels	UVR	Battery charger	Telecontrol Panel

4 kV DC Voltmeter

Standard	Indication	% Error
1000		
2000		
3000		
4000		

Earth and Insulation Measurements

Soil Condition:	Wet	Dry	Sand	Gravel	Clay	Rock	Filled

Earth Measurements	Measured	Acceptable
Resistance between spikes		>2000 Ω
Test Spike to Tie station Earth		<5 Ω
Test Spike to Tie station Negative		>3000 Ω
Test Spike to Tie station DC Earth Leakage		>25 Ω
Test Spike to Rail		>5 Ω
Test Spike to Track Switch Earth		<5 Ω

Insulation Measurement	Measured	Acceptable
Tie Station Earth to Negative		>3000 Ω
Tie Station Earth to DC Earth Leakage		>25 Ω
Tie Station Earth to Rail		>5 Ω
Negative to DC Earth Leakage		>3000 Ω
Negative to Rail		>3000 Ω
DC Earth Leakage to Rail		>30Ω

Tested by: Name:	Signature:	Witnessed by: Name:	Signature:	Date:

Rail Network Maintenance	BBF9295 Version 3
3 kV DC Traction Traction Substation Test Sheet Earth and Insulation Measurements.	TRANSNET freight rail
Substation: Routine : Commissioning:	

Earth and Insulation Measurements

Soil Condition:	Wet	Dry	Sand	Gravel	Clay	Rock	Filled

Earth Measurements	Measured	Acceptable
Resistance between spikes		<2000 Ω
Test Spike to Substation Earth		<5 Ω
Test Spike to Substation AC Earth Earth Leakage Unit A		>10 Ω
Test Spike to Substation AC Earth Earth Leakage Unit B		>10 Ω
Test Spike to Substation Negative		>3000 Ω
Test Spike to Substation DC Earth Leakage		>25 Ω
Test Spike to Rail		>5 Ω
Test Spike to Track Switch Earth		<5 Ω

Insulation Measurements	Measured	Acceptable
Sub Earth to AC Earth Leakage Unit A		>10 Ω
Sub Earth to AC Earth Leakage Unit B		>10 Ω
Sub Earth to Negative		>3000 Ω
Sub Earth to DC Earth Leakage		>25 Ω
Sub Earth to Rail		>5 Ω
AC Earth Leakage Unit A to Substation Negative		>3000 Ω
AC Earth Leakage Unit A to DC Earth Leakage		>35 Ω
AC Earth Leakage Unit A to Rail		>15 Ω
AC Earth Leakage Unit B to Substation Negative		>3000 Ω
AC Earth Leakage Unit B to DC Earth Leakage		>35 Ω
AC Earth Leakage Unit B to Rail		>15 Ω
Negative to DC Earth Leakage		>3000 Ω
Negative to Rail		>3000 Ω
DC Earth Leakage to Rail		>30 Ω

Tested by: Name:	Signature:	Witnessed by: Name:	Signature:	Date:

Rail Network Maintenance

BBF9296 Version2

Signal and Distibution Substations Test Sheet Bus coupler VCB
Frame Leakage Protection. Current Transformer Ratio and Mag Curves. Zone Relay intertripping.
Insulation Resistance and Pressure Tests. Voltage Transformer and Indication tests.
Battery Undervoltage Protection. Earth Resistance Measurement

TRANSNET freight rail

Substation:	Panel No:	Designation:	Routine : Commissioning:

Current Transformers		Zone 1	Zone 2	Zone 3
CT Ratio	Marked			
	Measured			
Mag curves	Volts	Amps	Amps	Amps

Frame Leakage — Make/Type of relay: _____/_____ Tested by Pri/Sec/TW

Zones	Zone 1	Zone 2	Zone 3
I set =			
I trip (amps)			

Intertripping tests			
Zone 1 tripping	Zone 1	Zone 2	Zone 3
Zone 2 tripping	Zone 1	Zone 2	Zone 3
Zone 3 tripping	Zone 1	Zone 2	Zone 3

Parallel paths test at Iset amps	
Zone 1 to Zone 2	
Zone 1 to Zone 3	
Zone 2 to Zone 3	

Insulation Resistance	
Zone 1 to Main Earth	
Zone 2 to Main Earth	
Zone 3 to Main Earth	
Zone 1 to Zone 2	
Zone 1 to Zone 3	
Zone 2 to Zone 3	

Insulation Resistance Tests

Megger tests at 2500 volts

	Red	Earth			Red	White	
	White	Earth			White	Blue	
	Blue	Earth			Blue	Red	

HiPot test @ 18 kV for 60 sec (VT's out)			VT and KV Meter reading at 11kV		
Red	White+Blue+Earth	mA	Red	White+Blue+Earth	
White	Red+Blue+Earth	mA	White	Red+Blue+Earth	
Blue	White+Red+Earth	mA	Blue	White+Red+Earth	

Battery undervoltage protection: Relay tested to pickup at _____ and dropout at _____ Volts tripping all VCB's with indication and Lockout

Earth Resistance test: Resistance between spikes: _____ohms | Resistance between spikes and Substation Earth _____ohms

General Remarks

Tested by: Name	Signature:	Witnessed by: Name:	Signature:	Date:

Rail Network Maintenance

BBF 9297 Version 2

Signal and Distibution Substations Test Sheet Ring, Transmission Line and Transformer Feeder VCB's Current

Transformers: Ratio, Magnetisation curves and Polarity tests.

Protection Relays: Overload, Earth fault, Sensitive Earth Fault and Cable Protection. Transformer Protection

TRANSNET freight rail

Substation:	Panel No:	Designation:	Routine : Commissioning:

p		Protection Class 10P10			Metering Class 0.5			SOLKOR/TRANSLAY Class X			LED Configuration	
		Red	White	Blue	Red	White	Blue	Red	White	Blue		
CT Ratio	Marked				Marked			Marked			LED 1	
	Measured				Measured			Measured			LED 2	
Mag curves	Volts	Red A	White A	Blue A	Volts	Red A	White A	Blue A	Volts	Red A	White A	Blue A	LED 3	
													LED 4	
													LED 5	
													LED 6	
													LED 7	
													LED 8	
													LED 9	
Polarities														

Protection Relays: Make/Type: _____ / _____

Overcurrent Elements		Tested by Pri/Sec/TW				Tested by Pri/Sec/TW					Output relay Configuration	
IDMT (NI)		I set=		T set=		Instantaneous	I set =		T set =		B01	
Operating time in seconds	Multiple	Amps	R to W	R to B	B to W	Operating times in seconds	Multiple	Amps	R to W	R to B	B to W	B02
	1.25 x Iset						4.00 x Iset					B03
	2.00 x Iset						6.00 x Iset					B04

Earth Fault Elements		Tested by Pri/Sec/TW				Tested by Pri/Sec/TW					Tested by Pri/Sec/TW					
IDMT (NI)		I set=		T set=		Instantaneous	I set=		T set=		Sensitive Earth Fault		I set=		T set=	
Operating time in seconds	Multiple	Amps	R to E	W to E	B to E	Operating times in seconds	Multiple	Amps	R to E	W to E	B to E	Operating times in seconds	Multiple	Amps	R to E	W to E	B to E
	1.25 x Iset						4.00 x Iset						1.00 x Iset				
	2.00 x Iset						6.00 x Iset						1.25 x Iset				

Feeder Protection			Solkor:Overall Fault setting			Tested by Pri/Sec/TW			Translay:Overall Fault setting		Tested by Pri/Sec/TW	
Pilot Cable			Phases	Expected %	Local sub Trip Amps	Local sub. m Amps	Distant sub. Trip Amps	Distant sub. m Amps	Fault	Current	Relay Output	Pilot mAmps
Loop Resistance	T1+T2	Ohm	R-E	22					R-E			
Insulation Resistance	T1-E	MOhm	W-E	27.5					W-E			
	T2-E	MOhm	B-E	37					B-E			
	T1-T2	MOhm	R-W	110					R-W			
			W-B	110					W-B			
			B-R	55					B-R			

Stability test by Primary injection Red to White in Local sub with Short circuit in Distant sub

Current injected: _____ Amps mAmps in pilot wire confirmed to be zero Yes No

Transformer Protection

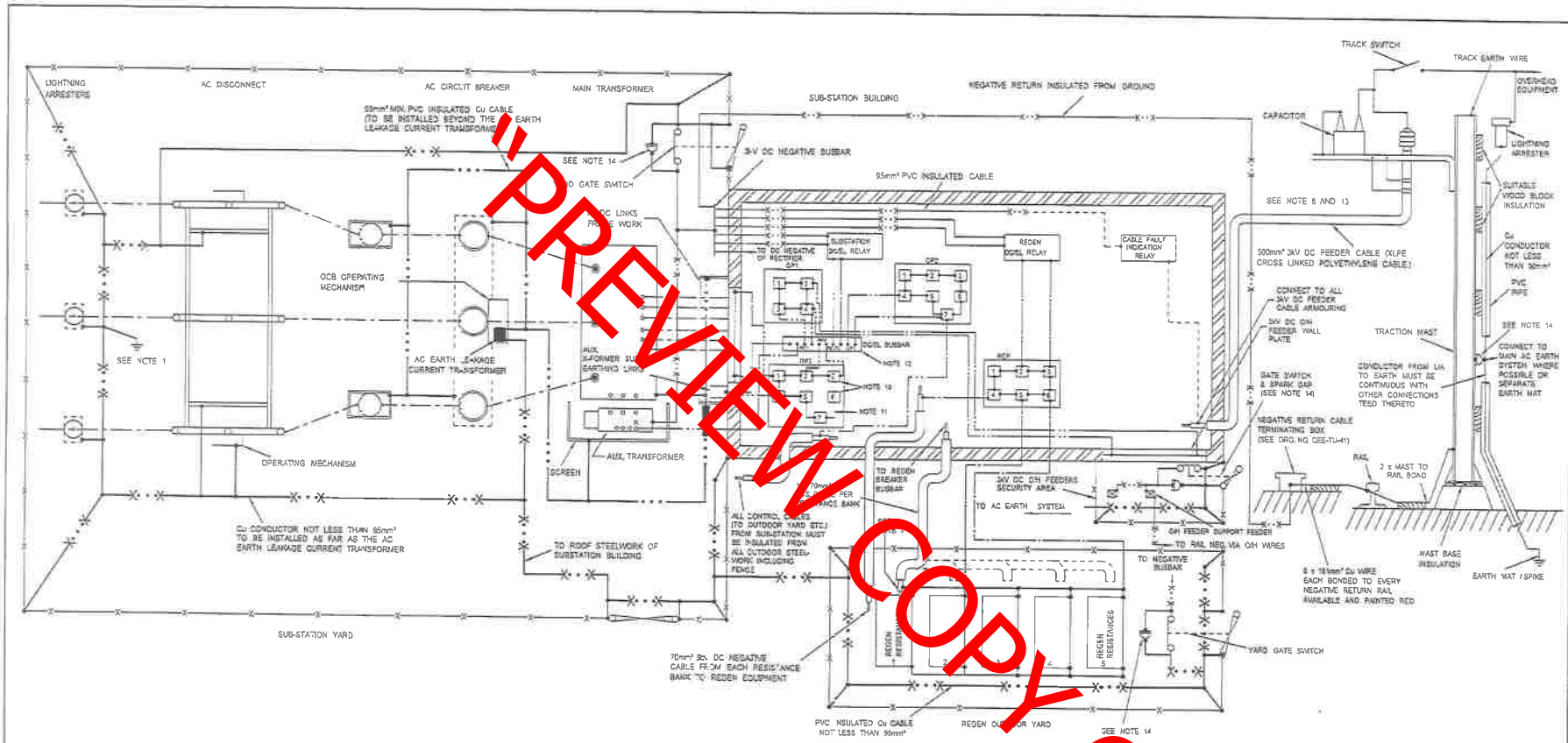
Transformer No:

Buccholtz: Relay trips VCB giving Lockout & Indication with _____ cc of air

Oil Over temperature: Relay trips VCB giving Trip & Indication at _____ °C dail setting.

Winding Over temperature: Relay trips VCB giving Lockout & Indication at _____ °C dail setting.

Tested by: Name	Signature:	Witnessed by: Name:	Signature:	Date:



NOTES

1. DEEP EARTH OR TRENCH SYSTEM. SEE CODE OF PRACTICE EARTH SYSTEMS FOR ELECTRIC LIGHT AND POWER AND TRACTION INSTALLATIONS. ALSO TO BE CONNECTED TO SUPPLY AUTHORITY EARTH SYSTEM.
2. THE OVERALL RESISTANCE OF A LIGHTNING ARRESTER EARTH SYSTEM EITHER AC OR DC WHEN DISCONNECTED FROM THE EQUIPMENT EARTHING CIRCUITS MUST NOT EXCEED 5 OHMS.
3. THE INSTALLED EARTHING SYSTEM SHOULD BE LOCATED DIRECTLY BENEATH THE AC OR DC LIGHTNING ARRESTER OR AS CLOSE TO THIS POSITION AS POSSIBLE. UNNECESSARY BENDS IN THE DOWN LEADS FROM THE LIGHTNING ARRESTERS SHOULD BE AVOIDED.
4. ALL UNDERGROUND EARTHING CONNECTIONS MUST BE EXOTHERMIC WELDED OR CRIMPED TINNED CABLE LUGS OR BRASS CLAMPS IN ACCORDANCE TO SPECIFICATION BB13069.
5. ALL CORNER AND GATE POSTS TO BE DIRECTLY EARTHED.
6. THE SWITCH ATTACHED TO THE SUB-STATION OUTDOOR YARD GATE, THE 3kV DC O/H FEEDER SECURITY AREA GATE AND THE REGEN RESISTANCE ENCLOSURE GATE ARE TO BE SO MOUNTED THAT THE SWITCH IS OPEN WHEN THE GATE IS CLOSED AND IS CLOSED WHEN THE YARD GATE IS OPEN.
7. CABLE ARMOURING TO BE EARTHED TO REGEN DC/EL BUSBAR AT RESISTANCE BANKS.
8. WHERE A CABLE FAULT INDICATION RELAY IS INSTALLED THE ARMOURING OF THE 3kV DC TRACK FEEDER CABLES SHALL BE BLOCK JOINTED AT THE MAST.
9. WHERE NO CABLES FAULT INDICATION RELAY IS INSTALLED THE ARMOURING OF THE 3kV DC FEEDER CABLES SHALL BE BLOCK JOINTED IN THE 3kV DC BUSBAR CHAMBER.
10. CONNECTIONS NEED NOT BE IN THE NUMERICAL ORDER AS SHOWN IN DC/EL (SUBSTATION AND REGEN) GROUPS.
11. ALL INTERCONNECTIONS OF THE EARTH LEAKAGES TO BE 95mm² OR EQUIVALENT PVC INSULATED CABLE.
12. SUBSTATION DC/EL BUSBAR SHALL BE MARKED ACCORDING TO GROUP NUMBERS FOR EASY REFERENCE.
13. FOR END BOX ASSY EARTHING DETAIL SEE DRG NO CEE-TCL-78.
14. THE SPARK GAP ASSEMBLY SHALL COMPLY TO THE ASSEMBLY DRAWING BB80903 AND SPECIFICATION BB81515.

LEGEND (EQUIPMENT)

GP1 - BUSBAR CHAMBER GROUP.
1. BREAKER CELL(S).
2. UNDERVOLTAGE POTENTIAL DEVIDER SUPPORT BRACKET.
3. DC/EL FRAME.
4. CHEQUER PLATES WHERE APPLICABLE.
5. 3kV O/H FEEDER WALL PLATE.

GP2 - SUBSTATION AUXILIARIES GROUP.
1. BATTERY CHARGER.
2. TELECONTROL PANEL.
3. POWER AND LIGHTING DISTRIBUTION BOX AND STEEL TUBING.
4. UNDERVOLTAGE RELAY STEEL BOX.
5. ALL STEEL ENTRY DOORS.
6. CHEQUER PLATES WHERE APPLICABLE.
7. LT CONTROL PANEL.

GP3 - "" BAY GROUP.
1. RECTIFIER STEELWORK.
2. WAVE FILTER STEELWORK.
3. REACTOR STEELWORK.
4. POSITIVE ISOLATOR STEELWORK.
5. BAY FENCES STEELWORK.
6. FAN FRAMEWORK.
7. CHEQUER PLATES WHERE APPLICABLE.
8. ANODE WALL PLATE.

PGP - REGEN GROUP.
1. REGEN CONTROL PANEL.
2. BAY GATE.
3. BAY GATE EARTH LINK.
4. ALL STEEL DOORS AND FRAMES.
5. POTENTIAL DEVIDER SUPPORT BRACKET.
6. CHEQUER PLATES WHERE APPLICABLE.
7. REGEN RESISTANCE BOXES.

LEGEND (SYSTEMS)
- REGENERATIVE DC EARTH LEAKAGE SYSTEM
- SUBSTATION DC EARTH LEAKAGE SYSTEM
- DC NEGATIVE SYSTEM
- AC EQUIPMENT EARTH LEAKAGE SYSTEM
- AC EARTH SYSTEM
- SECURITY FENCE

AMENDMENTS

NO	NAME	DATE
6	FH EYSELAAR	95-04-26
	DRAWING REVISED. DO REF T95/025	
7	FH EYSELAAR	95-08-24
	SUBSTATION DC EARTH LEAKAGE SYSTEM IN BUILDING REVISED. DO REF T95/043	
8	LG BORCHARD	95-11-24
	NOTES REVISED. DO REF T98/004	
9	B D SCHULZ	2001-05-25
	NOTE 14 ADDED. DO REF: CDO/1197	
10	LG BORCHARD	2006-07-31
	NOTE 8 & 9 REVISED. DO REF: CDO/5235 ECP NO: 6304921	
11	Digitally signed by Ludwig Borchard (Date: 2011.02.01 12:25:54 +02'00')	
	TITLE AND NOTE 4 REVISED DO REF: CDO/7245 ECP NO: BB08168 & BB08634	

DO REF: JT1/105	GEN. TOL: Lins. ±	Angs. ±	
DRN: D WEIDEMAN	CHD: E JURGENSEN	DATE: 73-06-06	
ENG: -	T C BROOK	for CHIEF ENG	
CENTRAL DRAWING OFFICE	TRANSNET		

3kV DC EARTHING ARRANGEMENT SYSTEM FOR TRACTION SUBSTATIONS

DIMENSIONS: mm
SCALE: NTS
A1
DRAWING NO CEE-TBD-7
SHEET - OF -

C4: Site Information

C4.1: Information about the *site* at time of tender which may affect the work in this contract

1 The works shall be performed at various substations under the control of the Depot Engineer, Rail Network, Koedoespoort.

2 Access limitations
- All staff to be inducted before entering the site and access permits will be arranged with the client through TFR's Site Agent.

3 Ground conditions in areas affected by work in this contract
- n/a.

4 Hidden and other services within the *site*
- n/a

CLAUSE BY CLAUSE STATEMENT OF COMPLIANCE TO THE NEC3 ECSC GENERAL CONDITIONS OF CONTRACT

Emergency and commissioning testing of various substations under the control of the Depot Engineer, Rail Network, Koedoespoort

ECSC NEC GENERAL CONDITIONS OF CONTRACT

Item	Comply	Doesn't Comply	Comment
Data provided by the employer			
General			
B: Priced contract with Bill of quantities			
X7: Delay damages			
10.1 Employer			
11.2(11) The works are			
11.2(13) The works information is in			
11.2(12) The site information is in			
30.1 The starting date			
11.2(2) The completion date is			
13.2 The period for reply is			
14.4 The employer's representative is			
40 The defect date is			
41.3 The defect correction period is			
50.1 The assessment day is			
50.5 The delay damages are			
50.6 The retention is			
51.1 The currency of the contract is			
he period within which payments are made is			
51.4 The interest rate on late payment i			
82.1 The employer provides this insurance			
imum limit of indemnity in respect of death i			
93.1 The Adjudicator is			
93.2(2) The Adjudicator nominating body is			
9[illegible].4 The Tribunal is			
The Arbitration procedure is			
DATA PROVIDED BY THE CONTRACTOR			
10.1 The contractor is			
PRICING DATE			
es work and assesses it for progress payments			
1.2 Function of the Bill of Quantities			
1.3 Guidance before pricing and measuring			
2Measuring and payment			
2.1 Symbols			
2.2 General Assumptions			
2.2.1			
2.2.2			
2.2.3			
2.2.4			
2.2.5			
2.2.6			
2.2.7			
C2.2: Bill of quantities			

1.00			
2			
3.00			
4.00			
5.00			
6.00			
7.00			
8.00			
9.00			
10.00			
11			
12			
13			
14			
15			
16			
17			
18			
19.0			
20.0			
C3: SCOPE OF WORK			
3.1.1			
3.1.1.1			
3.1.1.1.1			
3.1.1.1.2			
3.1.2			
3.1.2.1			
3.1.2.2			
3.1.2.3			
3.1.3			
3.1.3.1			
3.1.3.1.1			
3.1.3.1.2			
3.1.3.1.3			
3.1.3.1.4			
3.1.3.1.5			
3.1.3.1.6			
3.1.3.1.7			
3.1.3.1.8			
3.1.3.1.9			
3.1.3.1.10			
3.1.3.1.11			
3.1.3.1.12			
3.1.3.1.13			
3.1.3.1.14			
3.1.4			
3.1.5			
3.1.6			
3.1.7			
3.1.8			
3.1.9			
3.1.10			
3.1.11			

3.1.12			
3.1.12.1			
3.1.13			
3.1.13.1			
3.1.14.			
3.1.14.1			
3.1.14.2			
3.1.15			
3.1.15.1			
3.1.16			
3.1.16.1			
3.1.16.2			
3.1.16.3			
3.1.16.4			
3.1.17			
3.2 particular specification			
3.2.1			
3.2.1.1			
3.2.2			
3.2.2.1			
3.2.2.2			
3.2.2.3			
3.2.3			
3.2.3.1			
3.2.3.2			
3.2.3.3			
3.2.3.4			
3.2.3.5			
3.2.3.6			
3.2.3.7			
3.2.4			
3.2.5			
3.2.5.1			
3.2.5.2			
3.2.5.3			
3.2.5.4			
3.2.5.5			
3.2.5.6			
3.2.6			
3.2.6.1			
3.2.7			
3.2.7.1			
3.2.7.2			
3.2.7.3			
3.2.7.4			
3.2.7.5			
3.2.8			
3.2.8.1			
C4: Site Information			
C4.1			
1.0			
2.0			
3.0			

4.0			

CLAUSE BY CLAUSE STATEMENT OF COMPLIANCE TO SPECIFICATION BBD 8210 VERSION 1

SPECIFICATIONS FOR WORKS ON, OVER, UNDER OR ADJUSCENT TO RAILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT (E7/1)

Specification number	BBD 8210 VERSION 1

Item	Comply	Doesn't Comply	Comment
1.0 SCOPE			
1.1			
2.0 DEFINITIONS			
2.1			
3.0 AUTHORITY OF OFICERS OF TRANSNET			
3.1			
3.2			
4.0 CONTRACTOR'S REPRESENTATIVES AND STAFF			
4.1			
4.2			
4.3			
5.0 OCCUPATIONS AND WORK PERMITS			
5.1			
5.2			
5.3			
5.4			
5.5			
5.6			
5.7			
5.8			
5.9			
5.1			
6.0 SPEED RESTRICTIONS AND PROTECTION			
6.1			
6.2			
6.2.1			
6.3			
7.0 ROADS AND ROADS ON THE NETWORK OPERATOR PROPERTY			
7.1			
7.2			
8.0 CLEARANCES			
8.1			
9.0 STACKING OF MATERIAL			
9.1			
10.0 EXCAVATION, TUNNELS, DE-WATERING AND DRAINAGE			
10.1			
10.2			
10.3			
10.4			
10.5			
11.0 FALSEWORK FOR STRUCTURES			
11.1			
11.2			
12.0 PILING			
12.1			
13.0 UNDERGROUND SERVICES			
13.1			
13.2			
14.0 BLASTING AND USE OF EXPLOSIVES			
14.1			
14.2			
14.3			

14.4			
14.5			
14.6			
14.7			
14.8			
14.9			
14.10			
14.11			
14.12			
14.13			
15.0 RAIL TROLLEYS			
15.1			
15.2			
16.0 SIGNAL TRACK CIRCUITS			
16.1			
16.2			
17.0 PENALTY FOR DELAYS TO TRAINS			
17.1			
18.0 SURVEY BEACONS AND PEGS			
18.1			
18.2			
18.3			
18.4			
19.0 TEMPORARY LEVEL CROSSINGS			
19.1			
19.2			
19.3			
19.4			
19.5			
20.0 COMPLETION OF THE WORKS			
20.1			
21.0 PROTECTION OF PERSONS AND PROPERTY			
21.1			
21.2			
21.3			
21.4			
21.5			
21.6			
21.7			
21.8			
22.0 INTERFERENCE WITH THE NETWORK OPERATOR'S ASSETS AND WORK ON OPEN LINES			
22.1			
22.2			
22.3			
22.4			
23.0 ACCESS, RIGHTS-OF-WAY AND CAMPSITES			
23.1			
23.2			
23.3			
23.4			
24.0 SUPERVISION			
24.1			
24.2			
24.3			
24.4			
25.0 HOUSING OF EMPLOYEES			
25.1			
25.2			
26.0 OPTICAL FIBRE CABLE ROUTES			
26.1			
26.2			
PART B: SPECIFICATION FOR WORK NEAR HIGH VOLTAGE ELECTRICAL EQUIPMENT			

27.0 GENERAL			
27.1			
27.2			
27.3			
27.4			
27.5			
27.6			
27.7			
27.8			
28.0 WORK ON BUILDINGS OR FIXED STRUCTURES			
28.1			
28.2			
28.3			
29.0 WORK DONE ON OR OUTSIDE OF ROLLING STOCK, INCLUDING LOADING OR UNLOADING			
29.1			
29.1.1			
29.1.1.1			
29.1.1.2			
29.1.2			
29.1.2.1			
29.1.2.2			
29.1.3			
29.2			
29.3			
29.4			
29.5			
29.6			
30.0 USE OF EQUIPMENT			
30.1			
30.1.1			
30.1.2			
30.1.3			
30.1.4			
30.1.5			
30.2			
30.2			
31.0 CARRYING AND HANDLING MATERIAL AND EQUIPMENT			
31.1			
31.2			
31.3			
32.0 PRECAUTIONS TO BE TAKEN WHEN ERECTING OR REMOVING POLES, ANTENNAE, TREES ETC.			
32.1			
32.2			
32.3			
33.0 USE OF WATER			
33.1			
34.0 USE OF CONSTRUCTION PLANT			
34.1			
34.2			
34.3			
34.4			
34.5			
35.0 WORK PERORMED UNDER DEAD CONDITIONS UNDER COVER OF A WORK PERMIT			
35.1			
35.2			
36.0 TRACTION RETURN CIRCUITS IN RAILS			
36.1			
36.2			
36.3			
36.4			
37.0 HIGH VOLTAGE ELECTRICAL EQUIPMENT NOT MAINTAINED AND/OR OPERATED BY THE NETWORK OPERATOR			
37.1			

CLAUSE BY CLAUSE STATEMENT OF COMPLIANCE TO SPECIFICATION E4.B (NOVEMBER 1996)

MINIMUM COMMUNAL HEALTH REQUIREMENTS IN AREAS OUTSIDE THE JURISDICTION OF A LOCAL AUTHORITY: TEMPORARY FACILITIES FOR CONTRACTOR'S PERSONNEL

Specification number	E4B (NOVEMBER 1996)

Item	Comply	Doesn't Comply	Comment
1.0 CAMPS			
1.1			
1.2			
1.3			
1.4			
1.5			
1.6			
1.7			
1.8			
2.0 HOUSING			
2.1			
2.2			
2.3			
2.4			
2.5			
2.6			
2.7			
2.7.1			
2.7.2			
3 WATER SUPPLY AND ABLUTION FACILITIES			
3.1			
3.2			
3.3			
4. SANITATION			
4.1			
4.2			
4.3			
4.4			
4.4.1			
4.4.2			
4.5			
4.6			
4.7			
4.8			
4.9			
4.10			
4.11			
5. RATIONS			
5.1			

CLAUSE BY CLAUSE STATEMENT OF COMPLIANCE TO SPECIFICATION E4E (AUGUST 2006)

SAFETY ARRANGEMENT AND PROCEDUAL COMPLIANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) AND APPLICABLE REGULATIONS

Specification number	E4E Transnet (August 2006)

Item	Comply	Doesn't Comply	Comment
1.0 General			
1.1			
1.2			
1.3			
1.4			
1.5			
2.0 DEFINITIONS			
2.1			
2.2			
2.3			
2.4			
2.5			
2.6			
2.7			
2.8			
2.9			
3.0 Procedual Compliance			
3.1			
3.2			
3.3			
3.4			
3.5			
3.6			
3.7			
4.0 Special permits			
4.1			
5.0 Health and safety programme			
5.1			
5.2			
5.3			
5.4			
5.5			
5.6			
5.7			
5.8			
5.9			
5.10			
5.11			
6 FALL PROTECTION PLAN			
6.1			
6.2			
6.3			
7.0 Hazards and potential Hazards			
7.1			
8.0 Health and safety file			
8.1			
8.2			
8.3			
Annexure 1			
Annexure 2			
Annexure 3			
Annexure 4			