



Transnet Freight Rail, a division of

TRANSNET SOC LTD

Registration Number 1990/000900/30

[hereinafter referred to as **Transnet**]

REQUEST FOR QUOTATION [RFQ] No BFX/52953

FOR THE SUPPLY OF: SUPPLY, INSTALL, TEST & COMMISSIONING OF DC CONTROL PANELS AT ALLEMAN, HARMONIE, HOUTNECK AND WHITES TIE STATION

FOR DELIVERY TO: RAIL NETWORK

ISSUE DATE: 14 MAY 2014

CLOSING DATE: 10 JUNE 2014

CLOSING TIME: 10:00

COMPULSARY SITE MEETING

DATE : 28 MAY 2014

VENUE : ALLEMAN (NEAR BRANDFORT)

TIME : 10H00

ANNEXURE (A) B-BBEE PREFERANCE POINTS CLAIM FORM

ANNEXURE (B) SPECIFICATIONS

ANNEXURE (C) SAFETY ARRANGEMENTS (E4E)

ANNEXURE (D) SPECIFICATIONS WORKS UNDER OR ADJACENT TO RAILWAY LINES OR NEAR HIGH VOLTAGE EQUIPMENT

Section 1
NOTICE TO BIDDERS

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

METHOD: COURIER OR BY HAND

CLOSING VENUE: The Secretariat
Acquisition council
Admin Support Office
Tender Box
Office no 2
Real Estate Management Building
Austen Street
Beaconsfield
Kimberley
Contact Person Maggie Pain 083 – 838 3341

A compulsory information briefing session and site visit will be conducted on 03 October 2013. Attendance is compulsory and failure to attend will disqualify submissions from evaluation.

NO RFQ DOCUMENTS WILL BE ISSUED AFTER 27 MAY 2014 AT 13H00

1 Responses to RFP

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

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

Transnet fully endorses and supports the Government's Broad-Based Black Economic Empowerment Programme and it would therefore prefer to do business with local business enterprises who share these same values. Transnet will accordingly allow a "preference" to companies who provide a valid B-BBEE Verification Certificate. All procurement transactions will be evaluated accordingly.

2.1 B-BBEE Scorecard and Rating

As prescribed in terms of the Preferential Procurement Policy Framework Act (PPPFA), Act 5 of 2000 and its Regulations, Respondents are to note that the following preference point system is applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R1 000 000 (all applicable taxes included).

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Respondent's Signature

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Date & Company Stamp

- Bidders are to note that if the 80/20 preference point system is stipulated in this RFP and all Bids received exceed R1 000 000.00, the RFP must be cancelled.

The value of this bid is estimated to be **below R1000 000** (all applicable taxes included) and therefore the **80/20** system shall be applicable.

When Transnet invites prospective suppliers to submit Proposals for its various expenditure programmes, it requires Respondents to have their B-BBEE status verified in compliance with the Codes of Good Practice issued in terms of the Broad Based Black Economic Empowerment Act No. 53 of 2003.

The Department of Trade and Industry recently revised the Codes of Good Practice on 11 October 2013 [Government Gazette No. 36928]. The Revised Codes will replace the Black Economic Empowerment Codes of Good Practice issued on 9 February 2007. The Revised Codes provide for a one year transitional period starting 11 October 2013. During the transitional period, companies may elect to be measured in terms of the Revised Codes or the 2007 version of the Codes. After the first year of the implementation of the Revised Codes, B-BBEE compliance will be measured in terms of the Revised Codes without any discretion. Companies which are governed by Sector-specific Codes will be measured in terms of those Sector Codes.

As such, Transnet will accept B-BBEE certificates issued based on the Revised Codes. Transnet will also continue to accept B-BBEE certificates issued in terms of the 2007 version of the Codes provided it was issued before 11 October 2014. Thereafter, Transnet will only accept B-BBEE certificates issued based on the Revised Codes.

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

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

[refer clause 20 below for Returnable Documents required]

Note: Should a JV be envisaged the principal Respondent is required to submit the required responses as indicated above.

3 Communication

- Respondents are warned that a response will be liable for disqualification should any attempt be made by a Respondent either directly or indirectly to canvass any officer(s) or employee of Transnet in respect of this RFQ between the closing date and the date of the award of the business.
- A Respondent may, however, before the closing date and time, direct any written enquiries relating to the RFQ to the following Transnet employee:
Name: Jakkie Kotze Email: Jakkie.kotze@transnet.net
- Respondents may also, at any time after the closing date of the RFQ, communicate with Maggie Pain on any matter relating to its RFQ response:
Telephone 053 – 828 3341 Email Maggie.pain@transnet.net

4 Tax Clearance

The Respondent's original and valid Tax Clearance Certificate must accompany the Quotation. Note that no business shall be awarded to any Respondent whose tax matters have not been declared by SARS to be in order.

5 VAT Registration

The valid VAT registration number must be stated here: *[if applicable]*.

6 Legal Compliance

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

7 Changes to Quotations

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

8 Pricing

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

9 Prices Subject to Confirmation

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

10 Negotiations

Transnet reserves the right to undertake post-tender negotiations with selected Respondents or any number of short-listed Respondents.

11 Binding Offer

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

12 Disclaimers

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

- modify the RFQ's goods / service(s) and request Respondents to re-bid on any changes;
- reject any Quotation which does not conform to instructions and specifications which are detailed herein;
- disqualify Quotations submitted after the stated submission deadline;
- not necessarily accept the lowest priced Quotation;
- reject all Quotations, if it so decides;
- place an order in connection with this Quotation at any time after the RFQ's closing date;
- award only a portion of the proposed goods / service/s which are reflected in the scope of this RFQ;
- split the award of the order/s between more than one Supplier/Service Provider; or

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Respondent's Signature

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Date & Company Stamp

- make no award at all. Transnet reserves the right to award business to the highest scoring bidder/s unless objective criteria justify the award to another bidder.

13 Transnet’s supplier integrity pact

Transnet’s Integrity Pact requires a commitment from suppliers and Transnet that they will not engage in any corrupt and fraudulent practices, anti-competitive practices; and act in bad faith towards each other. The Integrity Pact also serves to communicate Transnet’s Gift Policy as well as the remedies available to Transnet where a Respondent contravenes any provision of the Integrity Pact.

Respondents are required to familiarise themselves with the contents of the Integrity Pact which is available on the Transnet Internet site [www.transnet.net/Tenders/Pages/default.aspx] or on request. Furthermore, Respondents are required to certify that they have acquainted themselves with all the documentation comprising the Transnet Integrity Pact and that they fully comply with all the terms and conditions stipulated in the Transnet Supplier Integrity Pact as follows:

YES	NO
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Should a Respondent need to declare previous transgressions or a serious breach of law in the preceding 5 years as required by Annexure A to the Integrity Pact, such declaration must accompany the Respondent’s bid submission.

14 Evaluation Criteria

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

Criterion/Criteria	Explanation
Administrative responsiveness	Completeness of response and returnable documents
Substantive responsiveness	Prequalification criteria, if any, must be met and whether the Bid materially complies with the scope and/or specification given.
Final weighted evaluation based on 80/20 preference point system as indicated in paragraph 2	<ul style="list-style-type: none"> • Pricing and price basis [firm] - whilst not the sole factor for consideration, competitive pricing and overall level of unconditional discounts¹ 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.

¹ Only unconditional discounts will be taken into account during evaluation. A discount which has been offered conditionally will, despite not being taken into account for evaluation purposes, be implemented when payment is effected.

16 Validity Period

Transnet desires a validity period of 90 [ninety] days from the closing date of this RFQ.
This RFQ is valid until

17 Banking Details

BANK:
BRANCH NAME / CODE:
ACCOUNT HOLDER:
ACCOUNT NUMBER:

18 Company Registration

Registration number of company / C.C.
Registered name of company / C.C.

19 Disclosure of Prices Quoted

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

YES NO

20 Returnable Documents

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

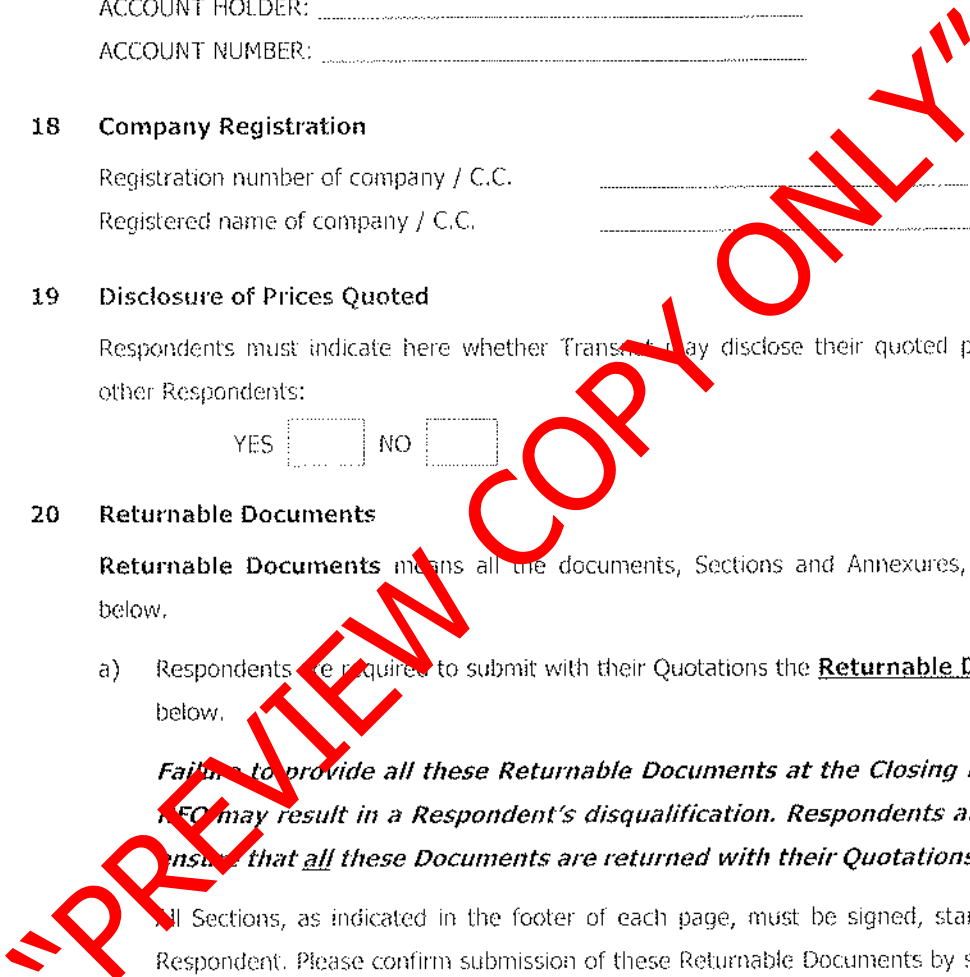
a) Respondents are required to submit with their Quotations the **Returnable Documents**, as detailed below.

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

All Sections, as indicated in the footer of each page, must be signed, stamped and dated by the Respondent. Please confirm submission of these Returnable Documents by so indicating [Yes or No] in the table below:

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Respondent's Signature

.....
Date & Company Stamp



Returnable Documents	Submitted [Yes or No]
SECTION 1 : Notice to Bidders	
<ul style="list-style-type: none"> - Valid and original B-BBEE Verification Certificate or certified copy thereof [Large Enterprises and QSEs] Note: failure to provide a valid B-BBEE Verification Certificate at the closing date and time of the RFQ will result in an automatic score of zero for preference 	
<ul style="list-style-type: none"> - Valid and original B-BBEE certificate/sworn affidavit or certified copy thereof from auditor, accounting officer or SANAS accredited Verification Agency [EMEs] Note: failure to provide a valid B-BBEE Verification Certificate at the closing date and time of the RFQ will result in an automatic score of zero being allocated for preference 	
<ul style="list-style-type: none"> - In the case of Joint Ventures, a copy of the Joint Venture Agreement or written confirmation of the intention to enter into a Joint Venture Agreement 	
<ul style="list-style-type: none"> - Original valid Tax Clearance Certificate [Consortia / Joint Ventures must submit a separate Tax Clearance Certificate for each party] 	
SECTION 2 : Quotation Form	
SECTION 3: Vendor Application Form	
<ul style="list-style-type: none"> • Original cancelled cheque or bank verification of banking details 	
<ul style="list-style-type: none"> • Certified copies of IDs of shareholder/directors/members [as applicable] 	
<ul style="list-style-type: none"> • Certified copies of the relevant company registration documents from Companies and Intellectual Property Commission (CIPC) 	
<ul style="list-style-type: none"> • Certified copies of the company's shareholding/director's portfolio 	
<ul style="list-style-type: none"> • Entity's letterhead 	
<ul style="list-style-type: none"> • Certified copy of VAT Registration Certificate [RSA entities only] 	
<ul style="list-style-type: none"> • Certified copy of valid Company Registration Certificate [if applicable] 	
ANNEXURE A - BBEE PREFERENCE CLAIM FORM	
ANNEXURE B - SPECIFICATIONS	
ANNEXURE C - SAFETY ARRANGEMENTS (E4E)	
ANNEXURE D - SPECIFICATIONS (E7/1)	

b) In addition to the requirements of paragraph a) above, Respondents are further requested to submit with their Proposals the following **additional documents** as detailed below.

Please confirm submission of these additional documents by so indicating [Yes or No] in the table below:

Additional Documents	SUBMITTED [Yes or No]
Valid Letter of Goods Standing	

Respondent's Signature

Date & Company Stamp

**Section 2
QUOTATION FORM**

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

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

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

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

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

Price Schedule

I/We quote as follows for the goods required, on a "delivered nominated destination" basis, excluding VAT:

Item	Description	Unit	Qty	Rate	Price
A	Alleman Tie Station				
1	Supply and install AC/DC Distribution Panel Complete with 100V Socket outlet for calibration	ea	1		
2	Supply and install controlling cables complete	sum	1		
3	Supply and install indoor earthing complete	sum	2		
4	Supply and install DC earth leakage Relay	ea	1		
5	Supply and install telecontrol multicore cable	sum	1		
16	P's & G's	sum	1		
17	Installation, Testing and Pre-commissioning	sum	1		
18	Security	sum	1		
A	Total Price for Alleman Tie Station=			R	

Delivery Lead-Time from date of purchase order : _____ [days/weeks]

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Respondent's Signature

.....
Date & Company Stamp

Ite	Description	Unit	Qty	Rate	Price
B	Houtneck Tie Station				
1	Supply and install AC/DC Distribution Panel Complete with 400V Socket outlet for calibration	ea	1		
2	Supply and install controlling cables complete	sum	1		
3	Supply and install indoor earthing complete	sum	2		
4	Supply and install DC earth leakage Relay	ea	1		
5	Supply and install telecontrol multicore cable	sum	1		
16	P's & G's	sum	1		
17	Installation, Testing and Pre-commissioning	sum	1		
18	Security	sum	1		
B	Total Price for Houtneck Tie Station=		R		

Delivery Lead-Time from date of purchase order : _____ [days/weeks]

Item	Description	Unit	Qty	Rate	Price
C	Harmony Tie Station				
1	Supply and install AC/DC Distribution Panel Complete with 400V Socket outlet for calibration	ea	1		
2	Supply and install controlling cables complete	sum	1		
3	Supply and install indoor earthing complete	sum	2		
4	Supply and install DC earth leakage Relay	ea	1		
5	Supply and install telecontrol multicore cable	sum	1		
16	P's & G's	sum	1		
17	Installation, Testing and Pre-commissioning	sum	1		
18	Security	sum	1		
C	Total Price for Harmony Tie Station=		R		

Delivery Lead-Time from date of purchase order : _____ [days/weeks]

Respondent's Signature

Date & Company Stamp

Ite	Description	U	Q	Rate	Price
D	Whites Tie Station				
1	Supply and install AC/DC Distribution Panel Complete with 400V Socket outlet for calibration	ea	1		
2	Supply and install controlling cables complete	sum	1		
3	Supply and install indoor earthing complete	sum	2		
4	Supply and install DC earth leakage Relay	ea	1		
5	Supply and install telecontrol multicore cable	sum	1		
16	P's & G's	sum	1		
17	Installation, Testing and Pre-commissioning	sum	1		
18	Security	sum	1		
D	Total Price for Whites Tie Station=			R	
E	Total Price for (A + B + C + D)=			R	
F	VAT (14% of E) =			R	
G	Gross Total (E+F) =			R	

Delivery Lead Time from date of purchase order : _____ [days/weeks]

Notes to Pricing:

- a) All prices must be quoted in South African Rand, exclusive of VAT
- b) To facilitate like-for-like comparison bidders must submit pricing strictly in accordance with this price schedule and not utilise a different format. Deviation from this pricing schedule could result in a bid being disqualified.
- c) Please note that should you have offered a discounted price(s), Transnet will only consider such price discount(s) in the final evaluation stage if offered on an unconditional basis.

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Respondent's Signature

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Date & Company Stamp

Section 3

VENDOR APPLICATION FORM

Transnet Supplier Declaration/Application

The Financial Director or Company Secretary

Transnet Vendor Management has received a request to load your company on to the Transnet vendor database. Please furnish us with the following to enable us to process this request:

1. Complete the "Supplier Declaration Form" (SDF) on page 2 of this letter
2. **Original** cancelled cheque **OR** letter from the bank verifying banking details **(with bank stamp)**
3. **Certified** copy of Identity document of Shareholders/Directors/Members (where applicable)
4. **Certified** copy of certificate of incorporation, CM29 / CM9 (name change)
5. **Certified** copy of share Certificates of Shareholders, CK1 / CK2 (if CC)
6. A letter with the company's letterhead confirming physical and postal addresses
7. **Original** or **certified** copy of SARS Tax Clearance certificate and VAT registration certificate
8. A signed letter from the Auditor / Accountant confirming most recent annual turnover and percentage black ownership in the company **AND/OR** BBBEE certificate and detailed scorecard from an accredited rating agency (SANAS member).

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- Failure to submit the above documentation will delay the vendor creation process.
- Where applicable, the respective Transnet business unit processing your application may request further information from you. E.g. proof of an existence of a Service/Business contract between your business and the respective Transnet business unit etc.

IMPORTANT NOTES:

- a) If your annual turnover is less than R5 million, then in terms of the DTI codes, you are classified as an Exempted Micro Enterprise (EME). If your company is classified as an EME, please include in your submission, a signed letter from your Auditor / Accountant confirming your company's most recent annual turnover is less than R5 million and percentage of black ownership and black female ownership in the company **AND/OR** BBBEE certificate and detailed scorecard from an accredited rating agency (e.g. permanent SANAS Member), should you feel you will be able to attain a better BBBEE score.
- b) If your annual turnover is between R5 million and R35million, then in terms of the DTI codes, you are classified as a Qualifying Small Enterprise (QSE) and you claim a specific BBBEE level based on any 4 of the 7 elements of the BBBEE score-card, please include your BEE certificate in your submission as confirmation of your status.
NB: BBBEE certificate and detailed scorecard should be obtained from an accredited rating agency (e.g. permanent SANAS Member).
- c) If your annual turnover is in excess of R35million, then in terms of the DTI codes, you are classified as a Large Enterprise and you claim a specific BEE level based on all seven elements of the BBBEE generic score-card. Please include your BEE certificate in your submission as confirmation of your status.
NB: BBBEE certificate and detailed scorecard should be obtained from an accredited rating agency (permanent SANAS Member).
- d) To avoid PAYE tax being automatically deducted from any invoices received from you, you must also contact the Transnet person who lodged this request on your behalf, so as to be correctly classified in terms of Tax legislation.
- e) Unfortunately, No payments can be made to a vendor until the vendor has been registered, and no vendor can be registered until the vendor application form, together with its supporting documentation, has been received and processed.
- f) Please return the completed Supplier Declaration Form (SDF) together with the required supporting documents mentioned above to the Transnet Official who is intending to procure your company's services/products in order that he/she should complete and internal Transnet Departmental Questionnaire before referring the matter to the appropriate Transnet Vendor Master Office.

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Respondent's Signature

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Date & Company Stamp

Supplier Declaration Form

Company Trading Name							
Company Registered Name							
Company Registration Number Or ID Number If A Sole Proprietor							
Form of entity	CC	Trust	Pty Ltd	Limited	Partnership	Sole Proprietor	
VAT number (if registered)							
Company Telephone Number							
Company Fax Number							
Company E-Mail Address							
Company Website Address							
Bank Name			Bank Account Number				
Postal Address						Code	
Physical Address						Code	
Contact Person							
Designation							
Telephone							
Email							
Annual Turnover Range (Last Financial Year)		< R5 million	R5-35 million	> R35 million			
Does Your Company Provide		Products	Services	Both			
Area Of Delivery		National	Provincial	Local			
Is Your Company A Public Or Private Entity		Public		Private			
Does Your Company Have A Tax Directive Or IRP30 Certificate		Yes		No			
Main Product Or Service Supplied (E.G.: Stationery/Consulting)							
BEE Ownership Detail							
% Black Ownership		% Black women ownership		% Disabled person/s ownership			
Does your company have a BEE certificate		Yes		No			
What is your broad based BEE status (Level 1 to 9 / Unknown)							
How many personnel does the firm employ		Permanent		Part time			
Transnet Contact Person							
Contact number							
Transnet operating division							
Duly Authorised To Sign For And On Behalf Of Firm / Organisation							
Name		Designation					
Signature		Date					
Stamp And Signature Of Commissioner Of Oath							
Name		Date					
Signature		Telephone No.					

Respondent's Signature

Date & Company Stamp

RFQ FOR INSTALL TEST AND COMMISSION OF DC CONTROL PANELS

ANNEXURE (A)

B-BBEE PREFERENCE POINTS CLAIM FORM

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

1. INTRODUCTION

- 1.1 A total of twenty preference points shall be awarded for B-BBEE Status Level of Contribution.
- 1.2 Failure on the part of a Bidder to fill in and/or to sign this form and submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System [SANAS] or a Registered Auditor approved by the Independent Regulatory Board of Auditors [IRBA] or an Accounting Officer as contemplated in the Close Corporation Act [CCA] together with the bid will be interpreted to mean that preference points for B-BBEE Status Level of Contribution are not claimed.
- 1.3 Transnet reserves the right to require of a Bidder, either before a Bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by Transnet.

2. GENERAL DEFINITIONS

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

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

3. ADJUDICATION USING A POINT SYSTEM

- 3.1 The Bidder obtaining the highest number of total points for the evaluation criteria as enumerated in Section 2 of the RFP will be awarded the contract, unless objective criteria justifies the award to another bidder.
- 3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts.
- 3.3 Points scored will be rounded off to 2 [two] decimal places.

- 3.4 In the event of equal points scored, the Bid will be awarded to the Bidder scoring the highest number of preference points for B-BBEE.
- 3.5 However, when functionality is part of the evaluation process and two or more Bids have scored equal points including equal preference points for B-BBEE, the successful Bid will be the one scoring the highest score for functionality.
- 3.6 Should two or more Bids be equal in all respect, the award shall be decided by the drawing of lots.

"PREVIEW COPY ONLY"

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

- 4.1 In terms of the Preferential Procurement Regulations, 2011, preference points shall be awarded to a Bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of Points [Maximum 20]
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

- 4.2 Bidders who qualify as EMEs in terms of the 2007 version of the Codes of Good Practice must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EME's with B-BBEE Status Level Certificates.
- 4.3 Bidders who qualify as EMEs in terms of the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928 are only required to obtain a sworn affidavit on an annual basis confirming that the entity has an Annual Total Revenue of R10 million or less and the entity's Level of Black ownership.
- 4.4 In terms of the 2007 version of the Codes of Good Practice, Bidders other than EMEs must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.
- 4.5 In terms of the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928, Bidders who qualify as QSEs are only required to obtain a sworn affidavit on an annual basis confirming that the entity has an Annual Total Revenue of R50 million or less and the entity's Level of Black ownership. Large enterprises must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.
- 4.6 A trust, consortium or joint venture will qualify for points for its B-BBEE status level as a legal entity, provided that the entity submits its B-BBEE status level certificate.
- 4.7 A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.
- 4.8 Tertiary institutions and public entities will be required to submit their B-BBEE status level

certificates in terms of the specialised scorecard contained in the B-BBEE Codes of Good Practice.

- 4.9 A person will not be awarded points for B-BBEE status level if it is indicated in the Bid documents that such a Bidder intends subcontracting more than 25% [twenty-five per cent] of the value of the contract to any other enterprise that does not qualify for at least the same number of points that such a Bidder qualifies for, unless the intended subcontractor is an EME that has the capability and ability to execute the subcontract.
- 4.10 A person awarded a contract may not subcontract more than 25% [twenty-five per cent] of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is subcontracted to an EME that has the capability and ability to execute the subcontract.
- 4.11 Bidders are to note that in terms of paragraph 2.6 of Statement 000 of the Revised Codes of Good Practice issued on 11 October 2013 in terms of Government Gazette No. 36928, any representation made by an entity about its B-BBEE compliance must be supported by suitable evidence or documentation. As such, Transnet reserves the right to request such evidence or documentation from Bidders in order to verify any B-BBEE recognition claimed.

5. B-BBEE STATUS AND SUBCONTRACTING

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

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

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

5.2 Subcontracting:

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

If YES, indicate:

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

5.3 Declaration with regard to Company/Firm

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

Partnership/Joint Venture/Consortium

One person business/sole propriety

Close Corporations

Company (Pty) Ltd

(v) Describe Principal Business Activities

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

(vi) Company Classification [TICK APPLICABLE BOX]

Manufacturer

Supplier

Professional Service Provider

Other Service Providers, e.g Transporter, etc

(vii) Total number of years the company/firm has been in business.....

BID DECLARATION

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

- (i) The information furnished is true and correct.
- (ii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 6 above, the contractor may be required to furnish documentary proof to the satisfaction of Transnet that the claims are correct.
- (iii) If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, Transnet may, in addition to any other remedy it may have:
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) restrict the Bidder or contractor, its shareholders and directors, and/or associated entities, or only the shareholders and directors who acted in a fraudulent manner, from obtaining business from Transnet for a period not exceeding 10 years, after the *audi alteram partem* [hear the other side] rule has been applied; and/or
 - (e) forward the matter for criminal prosecution.

WITNESSES:

1.

2.

SIGNATURE OF BIDDER

DATE:.....

COMPANY NAME:

ADDRESS:.....

ANNEXURE (B)

SPECIFICATIONS

The delay damages are **R1000.00**..... per day
The retention is **10** %

1.0 CONTRACTUAL OBLIGATIONS

A:

- 1.1 This project specification covers Transnet freight rail's requirements for the supply, install, test and commission of DC control panel and associated equipment at ALLENDALE, HOUTNECK, HARMONY AND WHITES 3kV Tie Stations under the control of Depot Engineer, Bloemfontein.
- 1.2 Tenders must be enclosed in a sealed envelope bearing the tender number on the outside and the closing venue address
- 1.3 Tenderers must duly fill in the Tender Form E4 and its Annexure and submit the same with their offers.
- 1.1 The Contractor shall not make use of any sub-Contractor to perform the works or parts thereof without prior permission from the Project Manager.
- 1.2 The Contractor shall ensure that a safety representative is at site at all times.
- 1.3 The Contractor shall comply with all applicable legislation and Transnet safety requirements adopted from time to time and instructed by the Project Manager / Supervisor. Such compliance shall be entirely at his own cost, and shall be deemed to have been allowed for in the rates and prices in the contract.
- 1.4 The Contractor shall, in particular, comply with the following Acts and Transnet Specifications:-
 - 1.4.1 The Compensation for Occupational Injuries and Diseases Act, No. 130 of 1993. The Contractor shall produce proof of his registration and good standing with the Compensation Commissioner in terms of the Act.
 - 1.4.2 The Occupational Health and Safety Act (Act 85 of 1993).
 - 1.4.3 The explosive Act No. 26 of 1956 (as amended). The Contractor shall, when applicable, furnish the Project Manager / Supervisor with copies of the permits authorising him or his employees, to establish an explosives magazine on or near the site and to undertake blasting operations in compliance with the Act.
 - 1.4.4 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 site establishment and delivery of plant, equipment or materials, submit to the Project Manager / Supervisor.
 - 1.4.5 The Contractor shall comply with the current 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 in close proximity to a railway line during track occupations as well as under normal operational conditions.
- 1.5 The Contractor's Health and Safety Programme shall be subject to agreement by the Project Manager / 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.

- 1.6 In addition to compliance with clause 1.4 hereof, the Contractor shall report all incidents in writing to the Project Manager / Supervisor. Any incident resulting in the death of 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.
- 1.7 The Contractor shall make necessary arrangements for sanitation, water and electricity at these relevant sites during the installation of the equipments.
- 1.8 A penalty charge of **R1000.00** per day will be levied for late completion.
- 1.9 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.
- 1.10 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.
- 1.11 Both books mentioned in 1.9 and 1.10 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.
- 1.12 All processes or the manufacture and assembly of the product components must be subjected to a quality assurance system.
- 1.13 The Contractor will assume full responsibility for assuring that the products purchased meet the requirements of Transnet Freight Rail for function, performance, and reliability, including purchased products from 3rd party suppliers/Manufacturers.
- 1.14 The Contractor shall prove to Transnet Freight Rail that his equipment or those supplied from 3rd party suppliers/manufacturers conforms to Transnet freight rail specifications.
- 1.15 The Contractor will remain liable for contractual delivery dates irrespective of deficiencies discovered during workshop inspections.

2.0 TENDERING PROCEDURE

- 2.1 An addendum reflecting changes to the project specification and 'Bill of Quantities' shall be forwarded to Contractors after the site meeting and Contractors shall quote accordingly, failure of which will result in disqualification.
- 2.2 Contractors shall duly fill in the attached 'Bill of Quantities'. Items not reflected in the 'Bill of Quantities', but covered in the project specification or agreed at site meetings, shall be added to the 'Bill of Quantities' by the Contractor and quoted for accordingly.
- 2.3 Contractors shall submit qualifications of staff that will be performing the works. Only qualified technical personnel shall perform the works on the electrical equipment or installations thereof.
- 2.4 During the duration of the contract, the successful Contractor shall be required to inform the Supervisor of any staff changes and provide the qualifications of the replacement staff for approval.
- 2.5 Contractors shall indicate clause-by-clause compliance with the specifications. This shall take the form of a separate document listing all the specifications clause numbers indicating the individual statement of compliance or non-compliance.
- 2.6 Contractors shall motivate a statement of non-compliance.
- 2.7 The successful Contractor shall provide a Gantt or a similar chart showing when the works will be done and energised. This chart shall be submitted to the Project Manager or Supervisor within 14 days after the award of the contract has been made to the successful Contractor.

- 2.8 Where equipment offered does not comply with standards or publications referred to in the specification, Contractors shall state which standards apply and submit a copy in English or certified translation.
- 2.9 Contractors shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.
- 2.10 During the duration of the contract period, the successful Contractor shall be required to inform the Project Manager / Supervisor of any changes to equipment offered and submit detailed information on replacement equipment for approval prior to it being used on this contract.
- 2.11 Contractors shall submit equipment type test certificates as specified on the contract. These shall be in English or certified translation.

3.0 SERVICE CONDITIONS

3.1 Control Panel shall be designed and rated for continuous operation under the following conditions:

3.2 Atmospheric Conditions

- Altitude 0 to 1800m above sea level
- Ambient Temperature -5 to +45 Degree Celsius
- Relative Humidity 10% to 90%
- Lighting Conditions 12 ground flashes per square kilometre per annum
- Pollution Heavily salt laden or polluted with smoke from industrial sources

3.3 Mechanical

The substation in which the panels will be installed is situated next to railway line and the equipment will therefore be subjected to vibrations. The design must take appropriate counter measure to ensure reliability of equipment that are sensitive.

3.4 Electrical

- Nominal DC control voltage 110V (Minimum being 88V and maximum 128V)
- Nominal AC auxiliary 400 V / 230 V, 50HZ

3.5 GENERAL REQUIREMENT OF CONTROL/DISTRIBUTION PANEL

The successful supplier shall be responsible for the design, the ratings of all, cabling, wiring protection circuitry, sizing of contactors, relays, moulded circuit breakers, (MCB's) Isolators, fused isolators, fuse ratings, terminations and any other equipment and circuitry used. In the event of a dispute, Transnet Freight Rail staff's shall make the final decision on technical matters

The construction of the control/distribution panel shall be either two separate panels or a combination of both into one panel with the AC and DC circuitry separated.

The control/distribution panels shall be so designed that the control switches are accessible and indicating lights, flag indicators, volt and ammeters are visible without opening the doors.

All circuit shall be wired in the fail to safe mode i.e. relays and contactors must be de-energised under fault conditions.

All relays, control switches, indicating lights and control push buttons, etc. which are mounted on panel door shall be suitably labelled to clearly indicate their function. The labels shall be engraved with white lettering on a black background and permanently fixed with miniature screws, rivets or high adhesive.

Laminated plastised labels shall be used for labelling inside the panel and panel door. The lettering shall be either engraved or etched.

3.6 DC EARTH LEAKAGE PROTECTION RELAY

- 3.6.1 The DC earth leakage relay shall not be fitted in the control panel but on the outside of the control panel. In the case of space constraints (single unit substations) the relay may be mounted on the wall or other locations, which shall be decided after consultation with Transnet Freight Rail staff.
- 3.6.2 The steelwork of all 3kV DC equipment installed in traction substation is connected to a DC earth leakage busbar which is mounted on insulators. This busbar is connected to the substation negative (which is near potential) through the DC earth leakage relay by means of two 95mm squared PVC insulated copper cables. In the event of a failure of the 3KV DC insulation, the fault current flows to rail by way of the relay causing its operation at the calibrated current setting.
- 3.6.3 The DC earth leakage busbar shall be installed so that it passes through the aperture of the DC earth leakage relay. The one side of the busbar is connected to the substation negative and the steelwork of the electrical equipment is connected on the other side.
- 3.6.4 A suitable DC earth leakage relay shall be provided that will trip at a predetermined value in the event of failure of the 3KV insulation.
- 3.6.5 The DC earth leakage copper busbar dimensions minimum 50X10 mm squared shall be provided for provisions to be made for a minimum of ten 95 square mm conductor lugs.
- 3.6.6 The connection between the DC earth leakage primary busbar and the steelwork of the equipment inside the substation shall be made by means of 95 square mm PVC insulated conductors. (Drawing CEE-TBD-7 which shows a typical layout of the interconnections between the steelwork of the equipment and the DC earth leakage busbar)
- 3.6.7 The DC earth leakage relay shall be robustly constructed and protected against the ingress of dust dirt and moisture.
- 3.6.8 The DC earth leakage relay shall have provision for lead and wire sealing to prevent unauthorised tampering with calibration.
- 3.6.9 The operation of the DC earth leakage relay shall be instantaneous.
- 3.6.10 The DC earth leakage relay shall be provided with flag indicator and facilities for electrical remote flag indication.
- 3.6.11 The DC earth leakage relay shall incorporate sufficient auxiliary contacts to enable the correct operation of the circuit. The contacts shall be continuously rated to carry and make or break a 5 A/110V inductive circuit.
- 3.6.12 The aperture of the magnetic core of the DC earth leakage relay shall be large enough to accommodate two 95mm squared PVC insulated copper conductors, which connect the DC earth leakage busbar to substation negative.(See Engineering Instruction S.013 Issue)
- 3.6.13 The DC earth leakage relay shall be capable of operating under short circuit conditions where the fault current could be in the order of 50 kA DC and the possible rate of rise between 3 and 6kA per second.
- 3.6.14 The trip settings of the DC earth leakage relay shall be easily adjustable in the range 10-200Amp. The trip setting shall be indicated on dial and pointer to facilitate calibration.
- 3.6.15 The calibration must be stable and accurate to plus minus 10% of the trip setting of the DC earth leakage relay.
- 3.6.16 The DC earth leakage relay shall be protected from accidental damage or contact by a sturdy enclosure manufactured from a suitable transparent non-conductive material.
- 3.6.17 Copper busbar shall be insulated from the mounting surface by means of suitable insulators etc. and provision shall be for the termination of the earthing conductors.

4.0 AC/DC DISTRIBUTION PANEL

- The panel shall make provision for:
- AC Distribution (400V,3 phase)
- DC Distribution (110 V DC)
- DC Control and supervisory circuitry and track breaker control

5.0 AC DISTRIBUTION. (400V, 3 PHASE)

- 3 phase 15 kA short circuit rated, 415 V moulded case circuit breaker / fused isolator for the protection of the three phase auxiliary transformer supply. The fused isolator shall be the AEG or equivalent type that has been approved by Technology Management.
- Bus bar protected by clear Perspex barriers shall be marked with a danger sign and 400V.
- Current Transformers in the control panel for the measurement of the low voltage currents for each phase of the 400V supply.
- Ammeter and voltmeter for the measurement of the 3 phase currents and voltages.
- Suitable four way rotary selector switches for the measurement of the 3 phase current and voltages.

5.2 400V 3 Phase Distribution Supply

The following 3 phase supplies are normally required but could vary for each substation. These supplies shall be individually protected by moulded case circuit breakers.

- 60A calibration set supply
- Substation distribution board
- Battery room fan including overload protection

5.3 230 V SINGLE PHASE DISTRIBUTION SUPPLY

The following single phase supplies are normally required but vary for each substation. These supplies shall be individually protected by moulded cased circuit breakers.

- Telecontrol supply
- 3 pin 230V, 15 A socket outlet protected by earth leakage unit accordance with SANS 10142.
- Battery charger supply
- Substations distribution board and lights

6.0 INDICATING INSTRUMENT FOR THE 400V AC DISTRIBUTION

The panel shall be fitted with the following indicating instrument for the AC distribution auxiliary supply

- One 0 to 400V voltmeter with its own selector switch. The instrument shall be labelled AC VOLTS
- One 0 to 100 A ampere meter with its own selector switch. The instrument shall be labelled "AC AMPERES"

7.0 110 DC VOLTS DISTRIBUTION

- The 110 V DC supply shall be obtained from the substation battery bank, which is charged by a freestanding battery charger unit. Refer to Transnet Freight Rail's specification BBB 2502 latest version. The installation of battery charger in the AC/DC distribution panel is not acceptable.

8.0 PANEL CONSTRUCTION

- AC/DC distribution panel shall be constructed in accordance to BBB2721 version 10 Transnet Freight Rail specification for compatibility of Tie Station standard of works, with exclusive of none required functionalities clauses 13.3,13.5,13.8 from BBB 2721 version 10.
- Refer: 9.3 to 22.0 of BBB 2721 version 10

9.0 AC/DC DISTRIBUTION PANEL

- 9.1 The design supply and installation of panels for controlling electrical circuitry equipment shall be the responsibility of the Contractor. This shall be in accordance with Transnet freight rail specification BBB2721 Version 10 pertaining to Tie Station compatibility.
- 9.2 The manufacture of panels shall not take place prior to the approval of the design drawings by the Supervisor/ Electrical Officer.
- 9.3 Transnet Freight Rail shall inspect the panels at the manufacturers works prior to dispatch.
- 9.4 All fasteners (nuts & bolts) shall be secured using flat and spring washers where necessary.
- 9.5 All steelwork shall be galvanized in accordance with SANS 121 and, where required painted in accordance with specification CEE 045 of 2002/1.

10.0 INSTALLATION

- 10.1 The Contractor shall be responsible for the transport to site, off-loading, handling, storage and security of all material required for the construction/execution of the works.
- 10.2 Contractor shall supply multi core cable and connect the tele-control. The substation shall not be switched on unless the tele-control is fully operational.
- 10.3 Contractor shall supply and install 3kV copper bus bars at the 3kV Chamber and earthing
- 10.4 Contractor shall supply and install wall bushings of appropriate voltage capacity
- 10.5 Contractor shall supply and install 3kV positive cable from the wall bushing to the bus bar chamber bus connections laid in cable tray

11.0 INTERCONNECTION OF EQUIPMENT

- 11.1 High conductive silicon grease shall be liberally applied to all the connections.
- 11.2 All dissimilar metal connections (Cu to Al) shall be made using bi-metallic clamps that are specifically designed and manufactured to make that particular connection (ad hoc fabricated clamps are not acceptable).

12.0 SITE TESTS

- 12.1 The equipment shall be inspected / tested and approved by Transnet Freight Rail Quality Assurance at the Contractor's workshop prior to it being taken to site. Only once the approval has been granted can the equipment be taken to site for installation.
- 12.2 The Contractor shall be responsible for carrying out of on-site tests and commissioning of all equipment supplied and installed in terms of this specification and the contractual agreement.
- 12.3 Functional on-site tests shall be conducted on all items of equipment and circuitry to prove the proper functioning and installation thereof.
- 12.4 The Contractor shall submit a detailed list of on-site tests for the approval of the Project Manager or Supervisor.
- 12.5 The Contractor shall arrange for the Supervisor or his representative to be present to witness the on-site tests.
- 12.6 The on-site tests and subsequent commissioning **will not commence until ALL CONSTRUCTION** work has been completed. Construction staff, material and equipment shall be removed from site

prior to the commencement of testing. Testing and commissioning of the power plants equipment will not be allowed to take place in a construction site environment.

12.7 The on-site tests shall include the following:

13.0 Test for the functionality of all electrical circuitry.

14.0 Trip tests on relays.

15.0 Test on equipment as per manufacturer's instructions.

16.0 Insulation tests.

16.1 At the completion of the on-site tests, the Project Manager or Supervisor or his representative shall either sign the tests sheets (supplied by the Contractor) as having witnessed the satisfactory completion thereof, or hand to the Contractor a list of defects requiring rectification.

16.2 Upon rectification of defects, the Contractor shall arrange for the Project Manager or Supervisor or his representative to certify satisfactory completion of on-site tests.

16.3 Acceptance by the Project Manager or Supervisor of satisfactory completion of on-site tests in no way relieves the Contractor of his obligation to rectify defects which may have been overlooked or become evident at a later stage.

17.0 COMMISSIONING OF EQUIPMENT

17.1 Commissioning will only take place after all defects have been rectified to the satisfaction of the Project Manager or Supervisor.

17.2 On completion of commissioning, the Contractor will hand the equipment over to the Project Manager or Supervisor in terms of the relevant instruction.

17.3 The commissioning of protection equipment by Transnet Freight Rail will in no way absolve the Contractor from any of his responsibilities during the guarantee period.

17.4 It is the Contractor's responsibility to satisfy himself or herself that the commissioning of the protection equipment has been carried out in a satisfactory manner, and in no way compromises the proper operation of the equipment supplied in terms of the contract.

17.5 The Contractor shall be present during the testing and setting of the protection to rectify any faults found.

18.0 GUARANTEE AND DEFECTS

18.1 The Contractor shall guarantee the satisfactory operation of the complete electrical installation supplied and erected by him and accept liability for maker's defects that may appear in design, materials and workmanship.

18.2 The Contractor shall be issued with a completion certificate with the list of all defects to be repaired within 14 working days after commissioning.

18.3 The guarantee period for these standby plants shall expire after a period of 12 months commencing on the date of completion of the contract or the date the standby plant was handed over to Transnet Freight Rail.

18.4 Any defects that may become apparent during the guarantee period shall be rectified to the satisfaction of Transnet Freight Rail, and to the account of the Contractor.

18.5 The Contractor shall undertake work on the rectification of any defects that may arise during the guarantee period within 7-days of him being notified by Transnet Freight Rail of such defects.

18.6 Should the Contractor fail to comply with the requirements stipulated above, Transnet Freight Rail shall be entitled to undertake the necessary repair work or effect replacement of defective apparatus or materials, and the Contractor shall reimburse Transnet Freight Rail the total cost of such repair or replacements, including the labour costs incurred in replacing defective material.

18.7 Any specific type of fault occurring three times within the guarantee period and which cannot be proven to be due to other faulty equipment not forming part of this contract e.g., faulty locomotive or overhead track equipment, etc., shall automatically be deemed an inherent defect. Such inherent

defect shall be fully rectified to the satisfaction of the Project Manager or Supervisor and at the cost of the Contractor.

- 18.8 If urgent repairs have to be carried out by Transnet Freight Rail staff to maintain supply during the guarantee period, the Contractor shall inspect such repairs to ensure that the guarantee period is not affected and should they be covered by the guarantee, reimburse Transnet Freight Rail the cost of material and labour.

19.0 QUALITY AND INSPECTION

- 19.1 Transnet Freight Rail shall inspect the equipment under contract on the premises of the Manufacturer or successful Contractor.
- 19.2 The Contractor shall notify Transnet Freight Rail 14 days in advance of such an inspection date.
- 19.3 The Contractor shall apply 14 days in advance for the date of energizing and ensure that all work is completed before any commissioning can take place.
- 19.4 The Contractor shall be responsible to issue a compliance certificate in terms of SANS 0142 for each site before energizing of the equipment shall take place.

20.0 Specifications

20.1 South African National Standards:

- | | | |
|--------|------------|---|
| 21.0 | SANS 1091 | National colour standard. |
| 22.0 | SANS 763 | Hot dip galvanised zinc coating. |
| 22.1.1 | SANS 121 | Hot Dip Galvanised Coating for Fabricated Iron or Steel Article. |
| 22.1.2 | SANS 8528 | Reciprocating internal combustion engine driven alternating current generating set. |
| 22.1.3 | SANS 10142 | Wiring Code. |

NOTE: Any other specifications referenced in the above mentioned specification, will be for information purposes and may be provided on request.

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

23.0 Constraints on how the Contractor Provides the Works

- 23.1 The constraints shall be as specified in the specifications of the particular equipment.

24.0 Requirements for the programme

- | | | |
|------|-----------------------|--|
| 24.1 | Programme of work | : To be submitted by successful Contractor |
| 24.2 | CIDB rating | : 1EPPE OR 2EP and above |
| 24.3 | Format | : Bar chart |
| 24.4 | Information | : How work is going to be executed and commissioned |
| 24.5 | Submission | : Not Applicable |
| 24.6 | Site diary | : Successful Contractor to supply in triplicates carbon copies |
| 24.7 | Site instruction book | : Successful Contractor to supply in triplicates carbon copies |

25.0 Services and other things provided by the Employer

- 25.1 Transnet Freight Rail shall have an electrician available for isolation and the erection of barriers to live electrical equipment and issuing of work permits.
- 25.2 Upon successful completion of the works to the satisfaction of Transnet Freight Rail, Transnet Freight Rail shall perform necessary protection tests and commission the equipment.

26.0 Safety information

26.1 The Contractor shall comply with requirements of safety legislation and regulations in all respects.

26.2 Security of all of the Contractor's staff, vehicles, machinery, equipment and materials shall remain the responsibility of the Contractor. The Contractor may use Transnet Freight Rail premises from time to time but the responsibility and cost to provide security, which may be required, shall be for the Contractor's account.

26.3 No separate payment shall be made and the cost thereof shall be deemed to be included in the rates tendered. Transnet Freight Rail shall entertain no claims whatsoever in this regard.

26.4 The Contractor shall prepare and submit to Transnet Freight Rail at the start of the contract, a comprehensive safety plan which shall also cover the following headings:

26.5 Transportation of flammable / explosive materials and / or equipment on the same road or rail vehicle as personnel.

26.6 Storing flammable/explosive materials and/or equipment:

Fire prevention and fire fighting plan.

Safety procedures for staff when working on double line sections.

Safe working procedure for all aspects of the operation, inclusive of all moving of machinery by rail if required by the Contractor.

26.7 The method of work shall be such that at all times it shall comply with Transnet Freight Rail Specification E7/1.

26.8 Normal protection measures in accordance with the Transnet Freight Rail Protection Manual shall apply.

26.9 All protection arrangements shall at all times remain under the supervision and responsibility of a Transnet Freight Rail Traction Linesman. No work is permitted if an occupation is not approved.

The Contractor shall not allow any persons on the work site to venture within the structure gauge of any adjacent line when this warning procedure is not operating effectively.

26.10 An effective safety procedure to be followed by all personnel on any work site in the case of approaching rail traffic shall be compiled by the Contractor and implemented before any work commences. This procedure shall be updated whenever the need arises and any changes shall be communicated to all employees on a work site before work proceeds.

26.11 All reasonable steps to effectively prevent the occurrence of veld fires shall be required from the Contractor. Such fire fighting equipment and resources deemed necessary to effectively fight any veld fire, which may occur as a result of the work, shall be required at each relay site and shall form part of this contract. The cost to provide such fire fighting equipment and resources shall be deemed to be included in the rates tendered and no separate payment shall be made for this.

26.12 No separate payment shall be made for the safety measures and the costs hereof will be deemed to be included in the rates tendered.

Training

General

The Contractor shall ensure that all staff working on or with the contract is adequately trained, so as to comply

with any relevant safety and quality requirements.

It is the Contractor's responsibility to ensure that his personnel are trained. At the commencement of the contract, Transnet Freight Rail shall assist the contractor with the initial on-the-job training of the staff as specified below, so as to assist the Contractor to qualify the workers / staff. The Contractor shall ensure that he has a core group of workers with sufficient previous experience to take the lead in undertaking maintenance tasks.

Where the Contractor requires training and Transnet Freight Rail is committed to provide this training, the contractor shall quantify in his tender as to what and how many staff, training will be required. After award of the contract, the contractor shall then arrange with the appropriate Transnet Freight Rail Production Manager (OHTE), through the Technical Officer, for this training / testing.

The Contractor's Supervisor shall take full charge of the Contractor's resources on the work site. An employee / agent appointed by the contractor, will not act as, or be allowed to take on any responsibility as, the *person-in-charge-of-the-occupation*. The function of *person-in-charge-of-the-occupation* is restricted to competent Transnet Freight Rail employees only.

The *person-in-charge-of-the-occupation* shall be a competent Transnet Freight Rail employee, reporting to the Transnet Freight Rail Depot Engineer. This person shall be responsible for the following on a work site:

- Taking occupations
- Cancelling the occupation
- Communication with Control with regard to occupation matters.

The Transnet Freight Rail Depot Engineer remains ultimately responsible in terms of the requirements of Act 85 for the safe working environment of his own personnel as well as contractor's personnel within the track maintenance environment on his depot.

The Depot Engineer is therefore also responsible for ensuring that any changes in the Protection Procedures that may occur over time are effectively communicated his own personnel as well as contractor's personnel within the track maintenance environment on his depot

Electrical awareness, Educational and competency training

The following training shall be arranged for the following Contractors staff:

The electrical awareness training must be arranged for beforehand on-the-job.

a)

The electrical, educational and competency training may be arranged for at either a depot's lecture room (Transnet Freight Rail property), or at a venue of the Contractors choice (Contractors cost).

Transnet Freight Rail will provide the Accredited Electrical Trainer, from Transnet Freight Rail, at Transnet Freight Rail cost, provided that an arrangement for the training session required, is done beforehand and will fit in with the Trainers training program for the year.

Course	Objective	Duration & trainer	Grade to attend
A) Awareness (Electrical)	To inform all contractors staff working near a machine and on the line on electrified sections of the dangerous situations of high voltage OHTE and substations.	Two-hour on-the-job lecture and training. Accredited Electrical Trainer / Depot's Electrical technical officer.	• All workers and staff working on the contract
B)	For the safe working	Lecture room training = 1,25 d	• Workers working

PWC (Electrical)	Educational	on and with On-track machinery in the vicinity or near exposed High voltage OHTE and substations.	On-the-job training = 0,25 d Criterion test = 0,5 d Total = 2 days Accredited Electrical trainer	on a machine (High risk area's) • Operators • Machine fitters • Area supervisors Contract supervisors
C) COM Competency (Electrical) (To follow A) (PWC)		Work permits safe working procedures under the direct supervision of a responsible representative.	Lecture room training = 0,25 d On-the-job training = 0,25 d Criterion test = 0,5 days Total = 1 day Accredited Electrical trainer	Supervisor (Responsible person in charge at machine working)

Contract Data
Site Information

The works shall be performed at the **ALLEMAN, HOUTNECK, HARMONY AND WHITES TIE STATIONS**

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ANNEXURE (C)

TRANSNET SOC LIMITED

(Registration no. 1990/000900//30)

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

1. General

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

2. Definition

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

- 2.4 **"contractor"** means principal contractor and "subcontractor" means contractor as defined by the Construction Regulations, 2003.
- 2.5 **"fall protection plan"** means a documented plan, of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods applied to eliminate the risk;
- 2.6 **"health and safety file"** means a file, or other record in permanent form, containing the information required to be kept on site in accordance with the Act and applicable Regulations;
- 2.7 **"Health and Safety Plan "** means a documented plan which addresses the hazards identified and include safe work procedures to mitigate, reduce or control the hazards identified;
- 2.8 **"Risk Assessment"** means a programme to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard;
- 2.9 **"the Act"** means the Occupational Health and Safety Act No. 85 of 1993.

3. Procedural Compliance

- 3.1 The Contractor who intends to carry out any construction work shall, before carrying out such work, notify the Provincial Director in writing if the construction work:-
- (a) includes the demolition of a structure exceeding a height of 3 metres; or
 - (b) includes the use of explosives to perform construction work; or
 - (c) includes the dismantling of fixed plant at a height greater than 3m,
- and shall also notify the Provincial Director in writing when the construction work exceeds 30 days or will involve more than 360 person days of construction work and if the construction work:-
- (a) includes excavation work deeper than 1m; or
 - (b) includes working at a height greater than 3 metres above ground or a landing.
- 3.2 The notification to the Provincial Director shall be on a form similar to Annexure A of the Construction Regulations, 2003, also shown in Annexure 1 of this Specification. The Contractor shall ensure that a copy of the completed notification form is kept on site for inspection by an inspector, Technical Officer or employee.
- 3.3 The Contractor shall, in accordance with the Act and applicable Regulations, make all the necessary appointments of competent persons in writing on a form similar to Annexure 2 of this Specification and deliver copies thereof to the Technical Officer. Copies should also be retained on the health and safety file.
- 3.4 Subcontractors shall also make the above written appointments and the Contractor shall deliver copies thereof to the Technical Officer.
- 3.5 In the case of a self-employed Contractor or any subcontractor who has the appropriate competencies and supervises the work himself, the appointment of a construction supervisor in terms of regulation 6.1 of the Construction Regulations, 2003 will not be necessary. The Contractor shall in such a case execute and sign a declaration, as in Annexure 3, by which he personally undertakes the duties and obligations of the "Chief Executive Officer" in terms of section 16(1) of the Act.
- 3.6 The Contractor shall, before commencing any work, obtain from the Technical Officer an access certificate as in Annexure 4 executed and signed by him, permitting and limiting access to the designated site or place of work by the Contractor and any subcontractors under his control.
- 3.7 Procedural compliance with Act and Regulations, as above, shall also apply to any subcontractors as employers in their own right. The Contractor shall furnish the Technical Officer with full particulars of such subcontractors and shall ensure that they comply with the Act and Regulations and Transnet's safety requirements and procedures.

4. Special Permits

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

5. Health and Safety Programme

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

- (i) The provision, as far as is reasonably practical, of a working environment that is safe and without risk to the health of his employees and subcontractors in terms of section 8 of the Act;
- (ii) the execution of the contract work in such a manner as to ensure in terms of section 9 of the Act that persons other than those in the Contractor's employment, who may be directly affected by the contract work are not thereby exposed to hazards to their health and safety;
- (iii) ensuring, as far as is reasonably practical, in terms of section 27 of the Act that no employee or subcontractor of the Contractor does or omits to do any act which would be an offence for the Contractor to do or omit to do.

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

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

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

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

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

- 5.4 The Health and Safety programme shall be subject to the Technical Officer's approval and he may, in consultation with the Contractor, order that additional and/or supplementary practical arrangements and procedures be implemented and maintained by the Contractor or that different working methods or safety equipment be used or safety clothes be issued which, in the Technical Officer's opinion, are necessary to ensure full compliance by the Contractor with his obligations as an employer in terms of the Act and Regulations. The Technical Officer or his deputy shall be allowed to attend meetings of the Contractor's safety committee as an observer.
- 5.5 The Contractor shall take reasonable steps to ensure that each subcontractor's Health and Safety Plan is implemented and maintained on the construction site: Provided that the steps taken, shall include periodic audits at intervals mutually agreed to between the them, but at least once every month.
- 5.6 The Contractor shall stop any subcontractor from executing any construction work, which is not in accordance with the Contractor's, and/or subcontractor's Health and Safety Plan for the site, or which poses a threat to the health and safety of persons.
- 5.7 The Contractor shall ensure that a copy of the Health and Safety Plan is available on site for inspection by an inspector, Technical Officer, agent, subcontractor, employee, registered employee organisation, health and safety representative or any member of the health and safety committee.
- 5.8 The Contractor shall consult with the health and safety committee or, if no health and safety committee exists, with a representative group of employees, on the development, monitoring and review of the Risk Assessment.
- 5.9 The Contractor shall ensure that all employees under his control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the Risk Assessment.
- 5.10 The Contractor shall ensure that all subcontractors are informed regarding any hazard as stipulated in the Risk Assessment before any work commences, and thereafter at such times as may be determined in the Risk Assessment.
- 5.11 The Contractor shall ensure that all visitors to a construction site undergoes health and safety induction pertaining to the hazards prevalent on the site and shall be provided with the necessary personal protective equipment.
- 6. Fall Protection Plan**
- 6.1.1 In the event of the risk and hazard identification, as required in terms of clause 5.3 of this Specification, revealing risks relating to working from an elevated position the contractor shall cause the designation of a competent person, responsible for the preparation of a fall protection plan;
- 6.2 The Contractor shall implement, maintain and monitor the fall protection plan for the duration of Contract. The Contractor shall also take such steps to ensure the continued adherence to the fall protection plan.
- 6.3 The fall protection plan shall include:-

- (a) A Risk Assessment of all work carried out from an elevated position;
- (b) the procedures and methods to address all the identified risks per location;
- (c) the evaluation of the employees physical and psychological fitness necessary to work at elevated positions;
- (d) the training of employees working from elevated positions; and
- (e) the procedure addressing the inspection, testing and maintenance of all fall protection equipment.

7. Hazards and Potential Hazardous Situations

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

8. Health and Safety File

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

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ANNEXURE 1**OCCUPATIONAL HEALTH AND SAFETY ACT, 1993****Regulation 3(1) of the Construction Regulations****NOTIFICATION OF CONSTRUCTION WORK**

-
-
- 1(a) Name and postal address of principal contractor:
.....
- (b) Name and tel. no of principal contractor's contact person:
.....
2. Principal contractor's compensation registration number:
- 3.(a) Name and postal address of client:
.....
- (b) Name and tel no of client's contact person or agent:
.....
- 4.(a) Name and postal address of designer(s) for the project:
.....
- (b) Name and tel. no of designer(s) contact person:
.....
5. Name and telephone number of principal contractor's construction supervisor on site appointed in terms of regulation 6(1).
.....
6. Name/s of principal contractor's construction sub-ordinate supervisors on site appointed in terms of regulation 6(2).
.....
7. Exact physical address of the construction site or site office:
.....
8. Nature of the construction work:
.....
.....
.....
9. Expected commencement date:
10. Expected completion date:

11. Estimated maximum number of persons on the construction site: _____

12. Planned number of contractors on the construction site accountable to the principle contractor:

13. Name(s) of contractors already chosen.

Principal Contractor

Date

Client

Date

* THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR **PRIOR TO COMMENCEMENT** OF WORK ON SITE.

* **ALL PRINCIPAL CONTRACTORS** THAT QUALIFY TO NOTIFY MUST DO SO EVEN IF ANOTHER PRINCIPAL CONTRACTOR ON THE SAME SITE HAD DONE SO PRIOR TO THE COMMENCEMENT OF WORK.

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ANNEXURE 2

(COMPANY LETTER HEAD)

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 OF 1993) :

SECTION/REGULATION: _____

REQUIRED COMPETENCY: _____

In terms of _____ I, _____

representing the Employer) do hereby appoint _____

As the Competent Person on the premises at _____

(physical address) to assist in compliance with the Act and the applicable Regulations.

Your designated area/s is/are as follows :-

Date : _____

Signature :- _____

Designation :- _____

ACCEPTANCE OF DESIGNATION

I, _____ do hereby accept this Designation and acknowledge
that I
understand the requirements of this appointment.

Date : _____

Signature :- _____

Designation :- _____



ANNEXURE 3**(COMPANY LETTER HEAD)****OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 OF 1993) :****DECLARATION**

In terms of the above Act I, _____ am personally assuming the duties and obligations as Chief Executive Officer, defined in Section 1 of the Act and in terms of Section 16(1), I will, as far as is reasonably practicable, ensure that the duties and obligations of the Employer as contemplated in the above Act are properly discharged.

Signature :- _____

Date : _____

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ANNEXURE 4**(LETTER HEAD OF BUSINESS DIVISION OR UNIT OF TRANSNET LIMITED)****SITE ACCESS CERTIFICATE**

Access to : _____ (Area)
 Name of Contractor/Builder :- _____
 Contract/Order No.: _____

The contract works site/area described above are made available to you for the carrying out of associated works

In terms of your contract/order with
 (company) _____

Kindly note that you are at all times responsible for the control and safety of the Works Site, and for persons under your control having access to the site.

As from the date hereof you will be responsible for compliance with the requirements of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended, and all conditions of the Contract pertaining to the site of the works as defined and demarcated in the contract documents, including the plans of the site or work areas forming part thereof.

Signed : _____ Date : _____
TECHNICAL OFFICER

ACKNOWLEDGEMENT OF RECEIPT

Name of Contractor/Builder _____ I,
 :- _____
 do hereby acknowledge and accept the
 duties
 and obligations in respect of the Safety of the site/area of Work in terms of the Occupational
 Health and Safety Act; Act 85 of 1993.

Name : _____ Designation : _____

Signature : _____ Date : _____

ANNEXURE D

E7/1 (July 1998)

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

(This Specification shall be used in Transnet Contracts)

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ANNEXES

1. Horizontal clearances 1 065 mm gauge

2. Vertical clearances 1 065 mm gauge
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1 DEFINITIONS

The following definitions shall apply :

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

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

Bond. A short conductor installed to provide electrical continuity.

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

Dead. Isolated and earthed.

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

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

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

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

Near. To be in such a position that a person's body or the tools he is using or any equipment he is handling may come within 2 metres of live exposed high-voltage electrical equipment.

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

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

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

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

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

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

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

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

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PART A - GENERAL SPECIFICATION

2. AUTHORITY OF OFFICERS OF TRANSNET

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

3. CONTRACTOR'S REPRESENTATIVES

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

4. OCCUPATIONS AND WORK PERMITS

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

- 4.6 When the Contractor is notified less than 2 hours before the scheduled starting time that the occupation or work permit is cancelled, he may claim reimbursement of his direct financial losses caused by the loss of working time up to the time his labour and plant are employed on other work, but not exceeding the period of the cancelled occupation or work permit.
- 4.7 When the Contractor is notified less than 2 hours before the schedule starting time, or during an occupation or work permit, that the duration of the occupation or work permit is reduced, he may claim reimbursement of his direct financial losses caused by the loss of working time due to the reduced duration of the occupation or work permit.
- 4.8 Reimbursement the Contractor for any loss of working time in terms of 4.6 and 4.7, shall be subject to his claims being submitted within 14 days of the event with full details of labour and plant involved, and provided that the Technical Officer certifies that no other work on which the labour and plant could be employed was immediately available.
- 4.9 Before starting any work for which an occupation has been arranged, the Contractor shall obtain from the Technical Officer written confirmation of the date, time and duration of the occupation.
- 4.10 Before starting any work for which a work permit has been arranged, the Responsible Representative shall read and sign portion C of form No. T.1276 signifying that he is aware of the limits within which work may be undertaken. After the work for which the permit was granted has been completed, or when the work permit is due to be terminated, or if the permit is cancelled after the start, the same person who signed portion C shall sign portion D of the T.1276 form, thereby acknowledging that he is aware that the electrical equipment is to be made "live". The Contractor shall advise all his workmen accordingly.

5. SPEED RESTRICTIONS AND PROTECTION

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

6. ROADS ON TRANSNET PROPERTY

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

7. CLEARANCES

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

8. STACKING OF MATERIAL

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

9. EXCAVATION, SHORING, DEWATERING AND DRAINAGE

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

9.2 The Contractor shall provide at his own cost any shoring, dewatering or drainage of any excavation unless otherwise stipulated elsewhere in the Contract.

9.3 Where required by the Technical Officer drawings of shoring for any excavation under or adjacent to a railway line shall be submitted and permission to proceed obtained, before the excavation is commenced.

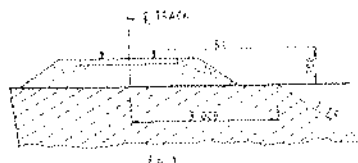
9.4 The Contractor shall prevent ingress of water to the excavation but where water does enter, he shall dispose of it as directed by the Technical Officer.

9.5 The Contractor shall not block, obstruct or damage any existing drains either above or below ground level unless he has made adequate prior arrangements to deal with drainage.

10. FALSEWORK FOR STRUCTURES

10.1 Drawings of falsework for the construction of any structure over, under or adjacent to any railway line shall be submitted to the Technical Officer and his permission to proceed obtained before the falsework is erected. Each drawing shall be given a title and a distinguishing number and shall be signed by a registered professional engineer certifying that he has checked the design of the falsework and that the drawings are correct and in accordance with the design.

10.2 After the falsework has been erected and before any load is applied, the Contractor shall submit to the Technical Officer a certificate signed by a registered professional engineer certifying that he has checked the falsework and that it has been erected in accordance with the drawings. Titles and numbers of the drawings shall be stated in the certificate. Notwithstanding permission given by the Technical Officer to proceed, the Contractor shall be entirely responsible for the safety and



adequacy of the falsework.

11. PILING

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

12. UNDERGROUND SERVICES

12.1 No pegs or stakes shall be driven or any excavation made before the Contractor has established that there are no underground services, which may be damaged thereby.

12.2 Any damage shall be reported immediately to the Technical Officer, or to the official in charge at the nearest station, or to the traffic controller in the case of centralised traffic control.

13. BLASTING

13.1 The provisions of clause 23 of the E.5, General Conditions of Contract or clause 21 of the E.5 (MW), General Conditions of Contract for Maintenance Work, shall apply to all blasting operations undertaken in terms of the Contract.

13.2 The Contractor shall provide proof that he has complied with the provisions of clauses 10.17.1 to 10.17.4 of the Explosives Regulations (Act 26 of 1956 as amended).

13.3 Blasting within 500m of a railway line will only be permitted during intervals between trains. A person appointed by the Technical Officer, assisted by flagmen with the necessary protective equipment, will be in communication with the controlling railway station. Only this person will be authorised to give the Contractor permission to blast, and the Contractor shall obey his instructions implicitly regarding the time during which blasting may take place.

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

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

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

13.6 Before each blast the Contractor shall record in the same book, the details of the blast to be carried out. The person appointed by the Technical Officer and the person who will do the

blasting shall both sign the book whenever an entry described in 13.5 is made.

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

14. **RAIL TROLLEYS**

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

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

15. **SIGNAL TRACK CIRCUITS**

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

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

16. **PENALTY FOR DELAYS TO TRAINS**

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

"PREVIEW COPY ONLY"

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

17. **GENERAL**

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

18. **WORK ON BUILDINGS OR FIXED STRUCTURES**

Before any work is carried out or measurements are taken on any part of a building, fixed structure or earthworks of any kind above ground level situated within 3 metres of live high-voltage equipment, the Electrical Officer (Contracts) shall be consulted to ascertain the conditions under which the work may be carried out.

- 18.2 No barrier erected to comply with the requirements of the Electrical Officer (Contracts) shall be used as temporary staging or shuttering for any part of the Works.
- 18.3 The shuttering for bridge piers, abutments, retaining walls or parapets adjacent to or over any

track may be permitted to serve as a barrier, provided that it extends at least 2,5 metres above any working level in the case of piers, abutments and retaining walls and 1,5 metres above any working level in the case of parapets.

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

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

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

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

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

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

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

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

20. **USE OF EQUIPMENT**

20.1 Measuring Tapes and Devices

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

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

- 20.1.3 Special measuring devices longer than 2 metres such as survey staves and rods may be used if these are of non-conducting material and approved by the responsible Electrical Engineer in Transnet, but these devices must not be used within 3 metres of live high-voltage equipment in rainy or wet conditions.
- 20.1.4 The assistance of the Electrical Officer (Contracts) shall be requested when measurements within the limits defined in 20.1.1 to 20.1.3 are required.
- 20.1.5 The restrictions described in 20.1.1 to 20.1.3 do not apply on a bridge deck between permanent parapets nor in other situations where a barrier effectively prevents contact with the live high-voltage equipment.
- 20.2 Portable Ladders
- 20.2.1 Any type of portable ladder longer than 2 metres may only be used near live high-voltage equipment under the direct supervision of the Responsible Representative. He shall ensure that the ladder is always used in such a manner that the distance from the base of the ladder to any live high-voltage equipment is greater than the fully extended length of the ladder plus 3 metres. Where these conditions cannot be observed, the Electrical Officer (Contracts) shall be advised, and he will arrange for suitable safety measures to be taken.

21. CARRYING AND HANDLING MATERIAL AND EQUIPMENT

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

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

- 22.1 A pole may be handled for the purpose of erection or removal near high-voltage equipment under the following conditions:
- (i) If the distance between the point at which the pole is to be erected or removed and the nearest live high-voltage equipment is more than the length of the pole plus 3 metres, the work shall be supervised by the Responsible Representative.

- (ii) If the distance described in (i) is less than the length of the pole plus 3 metres, the Electrical Officer (Contracts) shall be consulted to arrange for an Authorised Person to supervise the work and to ensure that the pole is earthed where possible. The pole shall be kept in contact with the point of erection, and adequate precautions shall be taken to prevent contact with live high-voltage equipment.

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

22.3 The provisions of clauses 22.1 and 22.2 shall also apply to the erection or removal of columns, antennae, trees, posts, etc.

23. USE OF WATER

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

24. USE OF CONSTRUCTION PLANT

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

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

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

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

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

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

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

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

- (i) before commencement of work ensure that the limits within which work may be carried out

have been explained to him by the Authorised Person who issued the permit to him, and that he fully understands these limits.

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

26. **TRACTION RETURN CIRCUITS IN RAILS**

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

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

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

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

27. **BLASTING**

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

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

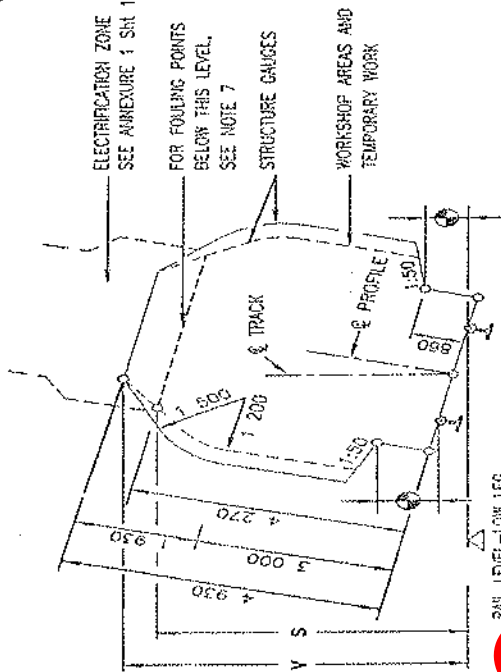
27.3 The terms of clause 13 hereof shall be strictly adhered to.



RADIUS (m)	WITH CANT		NO CANT		WITH CANT	
	H (mm)	L (mm)	H & L	B (mm)	C (mm)	C (mm)
90	2 730	3 090	2 780	1 130	2 100	2 100
100	2 700	3 030	2 750	1 140	2 050	2 050
120	2 650	2 970	2 700	1 160	2 010	2 010
140	2 620	2 940	2 660	1 175	1 990	1 990
170	2 590	2 910	2 630	1 190	1 970	1 970
200	2 570	2 890	2 600	1 205	1 950	1 950
250	2 550	2 870	2 570	1 230	1 920	1 920
300	2 540	2 860	2 550	1 250	1 900	1 900
350	2 530	2 850	2 540	1 270	1 890	1 890
400	2 520	2 840	2 530	1 290	1 875	1 875
500	2 510	2 830	2 520	1 320	1 850	1 850
600	2 500	2 820	2 510	1 340	1 830	1 830
800	2 490	2 810	2 500	1 365	1 790	1 790
1 000	2 480	2 800	2 490	1 380	1 760	1 760
1 200	2 480	2 800	2 490	1 200	1 730	1 730
1 500	2 480	2 800	2 480	1 415	1 700	1 700
2 000	2 480	2 800	2 480	1 440	1 600	1 600
3 000	2 470	2 790	2 470	1 500	1 600	1 600
>5 000	2 460	2 780	2 460	1 600	1 600	1 600

REMARKS:

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



LOCATION	NOT ELECTRIFIED	ELECTRIFIED (PRESENT OR FUTURE)	
		3kV & 25kV	50kV
RADIUS (mm)	S (mm)	V (mm)	V (mm)
100	4 470	5 050	5 400
150	4 410	5 020	5 370
200	4 370	5 000	5 350
300	4 350	4 980	5 340
400	4 310	4 960	5 310
500	4 290	4 940	5 290
> 3 000	4 270	4 900	5 270
		5 650	6 000

ALL AREAS OTHER THAN THOSE INDICATED BY * BELOW

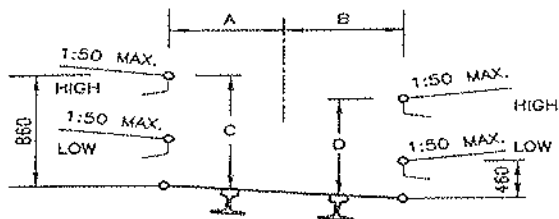
* OVER OR NEAR POINTS AND CROSSING IF REQUIRED BY ELECTRICAL PERSPECTIVE OF RADII

REMARKS:

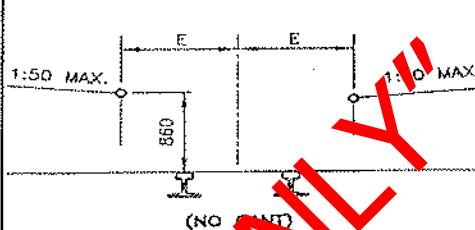
1. V IS THE REQUIRED VERTICAL CLEARANCE EXCEPT WHERE REDUCED CLEARANCE S APPLIES.
2. S IS THE MINIMUM VERTICAL CLEARANCE FOR STRUCTURES AND TEMPORARY WORK OVER NON-ELECTRIFIED LINES.
3. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
4. FOR APPLICATION AT CURVES
 - 4.1 APPLY INCREASED CLEARANCES FOR CURVES TO POINTS 3m BEYOND THE END OF THE CIRCULAR CURVE.
 - 4.2 REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - 4.3 FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 15m FROM STRAIGHTS.
5. NEW STRUCTURES: SEE BRIDGE CODE.
6. TUNNELS: SEE DRAWING BE 82-35.
7. FOULING POINTS: SEE CLAUSE 8.1.
8. CLEARANCES ARE BASED ON 15m BOGIE CENTRES AND 21.2m VEHICLE BODY LENGTH.
9. SEE ANNEXURE 1 SHEET 3 FOR PLATFORM CLEARANCES.

PLATFORMS : TRACK GAUGE 1 065mm

PASSENGERS



GOODS

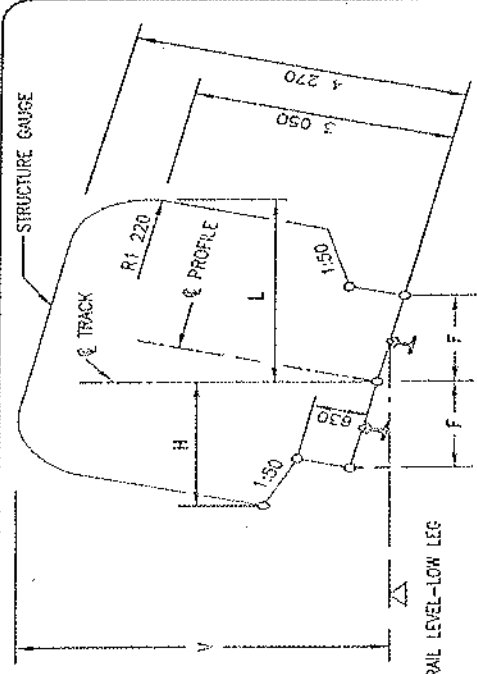


RADIUS (m)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
90	1 590	1 820	890	810	1 840
100	1 650	1 790	890	810	1 810
120	1 810	1 740	890	810	1 770
140	1 580	1 700	890	810	1 730
170	1 550	1 660	890	810	1 690
200	1 530	1 630	890	820	1 660
250	1 520	1 600	890	820	1 640
300	1 520	1 580	890	830	1 620
350	1 520	1 560	880	830	1 600
400	1 520	1 550	880	840	1 590
500	1 520	1 540	880	850	1 580
600	1 520	1 530	870	850	1 570
800	1 520	1 520	860	860	1 560
1 200	1 520	1 520	860	860	1 550
2 000	1 520	1 520	860	860	1 540
3 000	1 520	1 520	860	860	1 530
STRAIGHT	1 520	1 520	860	860	1 520

- REMARKS:
1. NO POINT TO BE APPLIED EXCEPT WHEN THE GOODS PLATFORM IS ON A RUNNING LINE.
 2. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
 3. 8m TO MAIN STATION-BUILDINGS AND 3m TO ALL OTHER STRUCTURES...
 4. TOLERANCES : SEE CLAUSE 8.0.10.

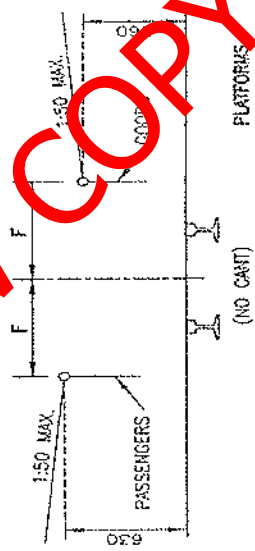
STRUCTURES ON PLATFORMS : 1 065mm AND 610mm TRACK GAUGE





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

RADIUS (m)	WITH CANT		NO CANT	
	H (mm)	L (mm)	H & L (mm)	V (mm)
50	2 370	2 490	2 400	4 320
60	2 310	2 420	2 330	4 310
100	2 280	2 370	2 280	4 310
140	2 270	2 340	2 250	4 310
200	2 260	2 300	2 220	4 300
300	2 190	2 260	2 200	4 300
500	2 180	2 230	2 190	4 290
700	2 170	2 200	2 200	4 270
1 000	2 170	2 170	2 170	2 750
>2 000	2 160	2 160	2 160	4 270



REMARKS:

- H IS THE MINIMUM HORIZONTAL CLEARANCE ON THE OUTSIDE OF THE CURVE BASED ON MINIMUM CANT.
- L IS THE MINIMUM HORIZONTAL CLEARANCE ON THE INSIDE OF THE CURVE BASED ON MAXIMUM CANT.
- V IS THE MINIMUM VERTICAL CLEARANCE.
- FOR APPLICATION AT CURVES:
 - APPLY INCREASED CLEARANCES FOR CURVES TO POINTS 2m BEYOND THE ENDS OF THE CURVE.
 - REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 10m ALONG STRAIGHTS.
- INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
- ALSO REFER TO REMARKS 5, 6 AND 7 OF ANNEXURE 1 SHEET 2.
- CLEARANCES ARE BASED ON 9 700mm BOGIE CENTRES AND 15 700mm VEHICLE BODY LENGTH.
- SEE ANNEXURE 1 SHEET 3 FOR STRUCTURES ON PLATFORMS.