

TRANSNET



NEC3 Engineering & Construction Contract (ECC3)

Transnet SOC Ltd

(REGISTRATION NO.1990/000900/30)

trading as

Transnet Freight Rail

Tender No. SIE13015CIDB

Replacement of old / obsolete Switchgear at various 6.6/11 kV
Distribution Substations Countrywide – Phase 2 Stage 2

Issue Date: Tue, 10 March 2014

Closing Date: Tue, 15 April 2014 at 10:00

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PART T1: TENDERING PROCEDURES

"PREVIEW COPY ONLY"

PART T1: TENDERING PROCEDURES

T1.1 TENDER NOTICE AND INVITATION TO TENDER

RFP No SIE13015CIDB

1. PROPOSAL REQUEST

Responses to this RFP [hereinafter referred to as a **Bid** or a **Proposal**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as an **entity**, **Respondent** or **Bidder**] for the Replacement of old / obsolete Switchgear at various 6.6 / 11kV Distribution Substations Countrywide – Phase 2 stage 2 (6 areas) for Transnet.

Tenderers should have a CIDB contractor grading designation of **7EP** or higher for 3 areas or **8EP** or higher for all 6 areas. Potentially emerging enterprises (**6EPPE** or **7EPPE** respectively) who satisfy criteria stated in the Tender Data may submit tender offers. Only Tenderers, who are registered with the CIDB, are eligible to submit tenders.

On or after 10 March 2014, the RFP documents may be inspected at, and are obtainable from the office of the Secretariat, Transnet Freight Rail, Tender Advice Centre, Ground Floor, Inyanda House 1, 21 Wellington Road, Parktown, on payment of an amount of R 750-00 [inclusive of VAT] per set. Payment is to be made as follows:

Bank: Standard Bank
Account Number: 203158598
Branch: Braamfontein
Branch code: 004805
Account Name: Transnet Freight Rail
Reference: SIE13015CIDB

NOTES –

- This amount is not refundable.
- A receipt for such payment made must be presented when collecting the RFP documents and submitted thereafter with your Proposal.

RFP documents will only be available for collection between 09:00 and 15:00 from 10 March 2014 until 19 March 2014. Therefore payment must be effected prior to the deadline for collection.

N.B: Pursuant to note (b) above, should a third party [such as a courier] be instructed to collect RFP documents on behalf of a Respondent, please ensure that this person [the third party] has a "proof of payment" receipt for presentation to Transnet when collecting the RFP documents.

Any additional information or clarification will be faxed or emailed to all Respondents, if necessary.

Queries relating to the administrative issues of these documents may be addressed to:

Mr. Neill Mitchell

Tel No. 011 584 0627

Fax no. 011 774 9836

E mail: Nico.swart3@transnet.net

Or

Mrs. Sarah Assegaai

Tel. No. 011 5840668

E-mail: Sarah.assegaai@transnet.net

2 FORMAL BRIEFING

A compulsory pre-proposal RFP briefing will be conducted at **Barongwa Boardroom, Ground Floor, Inyanda House 2, 15 Girton Road, Parktown, Johannesburg on Thursday, 120 March 2014 starting at 11h00.** (Followed by a compulsory Site Visit within driving distance) [Respondents to provide own transportation].

- a) A Certificate of Attendance must be completed and submitted with your Proposal as proof of attendance is required for a compulsory site meeting and/or RFP briefing.
- b) Transnet will not be held responsible if any Bidder who did not attend the non-compulsory session subsequently feels disadvantaged as a result thereof.
- c) Respondents failing to attend the compulsory RFP briefing will be disqualified.
- d) Respondents without a valid RFP document in their possession will not be allowed to attend the RFP briefing.
- e) The briefing session will start punctually at 11am and information will not be repeated for the benefit of Respondents arriving late.

This tender closes punctually at 10:00 hrs on Tuesday, 15 April 2014.

If responses are not delivered as stipulated herein, such responses will not be considered and will be treated as "NON-RESPONSIVE" and will be disqualified.

The responses to this RFP will be opened as soon as practicable after the expiry of the time advertised for receiving them.

Transnet shall not, at the opening of responses, disclose to any other company any confidential details pertaining to the Proposals / information received, i.e. pricing, delivery, etc. The names and locations of the Respondents will be divulged to other Respondents upon request.

Envelopes must not contain documents relating to any RFP other than that shown on the envelope.

No slips are to be attached to the response documents. Any additional conditions must be embodied in an accompanying letter. Alterations, additions or deletions should not be made by the Respondent to RFP documents. Any alterations must be initialed by the person who signs the Bid Documents

Tenders may only be submitted on the tender documentation that is issued. Telegraphic, telephonic, facsimile, email and late tenders will not be accepted.

Tenders submitted by Tenderers must be neatly bound and the inclusion of loose documents must be avoided.

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

Compliance of tender(s) with Transnet's requirements is the sole responsibility of the Tenderer and any costs incurred in subsequent modifications to or replacement of equipment accepted by Transnet SOC Ltd in good faith on the grounds of certified compliance with specified standards by the contractor and in fact found to be inadequate in such respects, will be to the relevant Tenderer's account.

3 BROAD-BASED BLACK ECONOMIC EMPOWERMENT AND SOCIO-ECONOMIC OBLIGATIONS

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

Transnet would therefore prefer to do business with enterprises who share these same values and who are prepared to contribute to meaningful B-BBEE initiatives [including, but not limited to subcontracting and Joint Ventures] as part of their tendered responses. All procurement transactions will be evaluated accordingly.

The Department of Trade and Industry [DTI] is currently in the process of reviewing the B-BBEE Codes of Good Practice [Code Series 000]. Transnet reserves the right to amend this RFP in line with such reviews and/or amendments once they have come into effect. Transnet furthermore reserves the right to adjust the thresholds and evaluation processes to be aligned with such changes which may be issued by the DTI after the issue date of this RFP.

3.1 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 the following:

- Proposals will be evaluated on price which will be allocated 80 or 90 points and preference which will be allocated 20 or 10 points, dependent on the value of the Services.
- The 80/20 preference point system applies where the acquisition of the Services will be less than R 1,000,000.00. However, if the 80/20 preference point system is stipulated in this RFP and all Bids received exceed R 1,000,000.00, the RFP will be cancelled.
- The 90/10 preference point system applies where the acquisition of the Services will exceed R 1,000,000.00. However, if the 90/10 preference point system is stipulated in this RFP and all Bids received are equal to or below R 1,000,000.00, the RFP will be cancelled.

The 90/10 preference point system is applicable to this RFP.

When Transnet invites prospective service providers to submit Proposals for its various expenditure programmes, it requires Respondents [Large Enterprises and QSE's - see below] to have their B-BBEE status verified in compliance with the Government Gazette No 34612, Notice No. 754 dated 23 September 2011. Valid B-BBEE Verification Certificates must be issued by:

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

A Verification Certificate issued must reflect the weighted points attained by the measured entity for each element of the scorecard as well as the overall B-BBEE rating. Enterprises will be rated by Verification Agencies or Registered Auditors based on the following:

- a) **Large Enterprises** [i.e. annual turnover greater than R35 million]:
 - Rating level based on all seven elements of the B-BBEE scorecard
- b) **Qualifying Small Enterprises – QSE** [i.e. annual turnover between R5 million and R35 million]:
 - Rating based on any four of the elements of the B-BBEE scorecard
- c) **Exempted Micro Enterprises – EME** [i.e. annual turnover less than R5 million]:

In accordance with B-BBEE Codes of Good Practice, any enterprise with an annual total revenue of R 5 million or less qualifies as an EME.

 - Automatic rating of B-BBEE Level 4 irrespective of race or ownership
 - Black¹ ownership greater than 50% or Black Women ownership greater than 50% automatically qualifies as B-BBEE Level 3

Sufficient evidence to qualify as an EME would be a certificate [which may be in the form of a letter] from an auditor, accounting officer or a Verification Agency accredited by SANAS. The certificate must confirm the company's turnover, Black ownership / Black female ownership and B-BBEE status level.

Respondents are required to furnish proof of the above to Transnet. [i.e. a detailed scorecard as stipulated above in respect of Large Enterprises and QSEs, or a certificate in respect of EMEs].

In this RFP Transnet will accordingly allocate a maximum of **10 [ten] points** in accordance with the **90/10** preference point system prescribed in the Preferential Procurement Policy Framework Act (PPPFA), Act 5 of 2000 and its Regulations to the Respondent's final score based on an entity's B-BBEE scorecard rating.

N.B. Failure to submit a B-BBEE certificate, which is valid as at the Closing Date of this RFP, will result in a score of zero being allocated for B-BBEE.

Turnover: Kindly indicate your entity's annual turnover for the past year:

R _____

¹ **Black** means South African Blacks, Coloureds and Indians, as defined in the B-BBEE Act, 53 of 2003

All Respondents must complete and return the B-BBEE Preference Points Claim Form attached hereto.

3.2 B-BBEE Joint Ventures, Consortiums and/or Subcontractors

In addition to the above, Respondents who would wish to enter into a Joint Venture [JV] or consortium with, or subcontract portions of the contract to, B-BBEE entities, must state in their RFPs the percentage of the total contract value that would be allocated to such B-BBEE entities, should they be successful in being awarded any business. A valid B-BBEE Verification Certificate in respect of such B-BBEE JV or consortium partners and/or subcontractor(s), as well as a breakdown of the distribution of the aforementioned percentage must also be furnished with the RFP Bid to enable Transnet to evaluate in accordance with the processes outlined in the B-BBEE Preference Points Claim Form appended hereto.

a) JVs or Consortiums

If contemplating a JV or consortium, Respondents should also submit a signed JV or consortium agreement between the parties clearly stating the percentage [%] split of business and the associated responsibilities of each party. If such a JV or consortium agreement is unavailable, the partners must submit confirmation in writing of their intention to enter into a JV or consortium agreement should they be awarded business by Transnet through this RFP process. This written confirmation must clearly indicate the percentage [%] split of business and the responsibilities of each party. In such cases, award of business will only take place once a signed copy of a JV or consortium agreement is submitted to Transnet.

(i) Incorporated JVs/Consortiums

As part of an incorporated JV/consortium's Bid response, the incorporated JV/consortium must submit a valid B-BBEE Verification Certificate in its registered name.

(ii) Unincorporated JVs/Consortiums

As part of an unincorporated JV/consortium's tendered response, the unincorporated JV/consortium must submit a consolidated B-BBEE certificate as if it was a group structure and such scorecard must have been prepared for this RFP in particular.

N.B. Failure to submit a B-BBEE certificate in respect of the JV or Consortium, which is valid as at the Closing Date of this RFP, will result in a score of zero being allocated for B-BBEE.

b) Subcontracting

If contemplating subcontracting, please note that a Respondent will not be awarded points for B-BBEE if it is indicated in its Proposal that such Respondent intends subcontracting more than 25% [twenty-five per cent] of the value of the contract to an entity that does not qualify for at least the same points that the Respondent qualifies for, unless the intended subcontractor is an EME with the capability to execute the contract.

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.

3.3 B-BBEE Registration

In addition to the Verification Certificate, Transnet recommends that Respondents register their B-BBEE compliance and supporting documentation on the Department of Trade and Industry's [DTI] National B-BBEE IT Portal and Opportunities Network and provide Transnet with proof of registration in the form of an official B-BBEE Profile issued by the DTI.

Transnet would wish to use the DTI B-BBEE IT Portal as a data source for tracking B-BBEE compliance.

For instructions to register and obtain a DTI B-BBEE Profile go to <http://bee.thedti.gov.za>.

4 COMMUNICATION

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

4.1 For specific queries relating to this RFP, an RFP Clarification Request Form should be submitted before **12:00 on 09 April 2014**, substantially in the form set out hereto. In the interest of fairness and transparency Transnet's response to such a query will then be made available to the other Respondents who have collected RFP documents. For this purpose Transnet will communicate with Respondents using the contact details provided to the Secretariat on issue of the bid documentation to the Respondent. Kindly ensure that you provide the Secretariat with the correct contact details, as Transnet will not accept responsibility for being unable to contact a bidder who provided incorrect contact details.

4.2 After the closing date of the RFP, a Respondent may only communicate with the Secretariat of the Transnet Freight Rail Acquisition Council, at telephone no. 011 544 9486 on any matter relating to its RFP Proposal.

Respondents found to be in collusion with one another will be automatically disqualified and restricted from doing business with Transnet in the future.

5 INSTRUCTIONS FOR COMPLETING THE RFP

- 5.1 Sign one set of original documents. This set will serve as the legal and binding copy. A duplicate set of documents is required. This second set must be an exact copy of the original signed Proposal.
- 5.2 Both sets of documents are to be submitted to the address specified in Tender Data.
- 5.3 All returnable documents tabled in the Proposal Form must be returned with your Proposal.

6 COMPLIANCE

The successful Respondent [hereinafter referred to as the **Service Provider**] shall be in full and complete compliance with any and all applicable laws and regulations.

7 ADDITIONAL NOTES

- 7.1 Changes by the Respondent to its submission will not be considered after the closing date.
- 7.2 The person or persons signing the Proposal must be legally authorised by the Respondent to do so. A list of those person(s) authorised to negotiate on behalf of the Respondent [if not the authorised signatories] must also be submitted along with the Proposal together with their contact details.
- 7.3 Bidders who fail to submit a duly completed and signed RFP Declaration Form will not be considered.
- 7.4 Transnet will not do business with companies involved in B-BBEE fronting practices.
- 7.5 Transnet may wish to visit the Respondent's place of business during this RFP process.
- 7.6 Transnet reserves the right to undertake post-tender negotiations [PTN] with selected Respondents or any number of short-listed Respondents, such PTN to include, at Transnet's option, any evaluation criteria listed in this RFP document.
- 7.7 Unless otherwise expressly stated, all Proposals furnished pursuant to this RFP shall be deemed to be offers. Any exceptions to this statement must be clearly and specifically indicated.

**FAILURE TO OBSERVE ANY OF THE AFOREMENTIONED REQUIREMENTS
MAY RESULT IN A PROPOSAL BEING REJECTED**

8 DISCLAIMERS

Respondents are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this RFP and/or its receipt of Proposals. In particular, please note that Transnet reserves the right to:

- 8.1 Modify the RFP's Services and request Respondents to re-bid on any such changes;
- 8.2 Reject any Proposal which does not conform to instructions and specifications which are detailed herein;
- 8.3 Disqualify Proposals submitted after the stated submission deadline [Closing Date];
- 8.4 Not necessarily accept the lowest priced Proposal or an alternative bid;
- 8.5 Reject all Proposals, if it so decides;
- 8.6 Withdraw the RFP on good cause shown;
- 8.7 Award a contract in connection with this Proposal at any time after the RFP's closing date;
- 8.8 Award a contract for only a portion of the proposed Services which are reflected in the scope of this RFP;
- 8.9 Split the award of the contract between more than one Service Provider; or
- 8.10 Make no award of a contract.

In addition, Transnet reserves the right to exclude any Respondent from the bidding process who has been convicted of a serious breach of law during the preceding 5 [five] years, including but not limited to breaches of the Competition Act 89 of 1998. Respondents are required to indicate whether or not they have been found guilty of a serious breach of law during the past 5 [five] years.

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

Kindly note that Transnet will not reimburse any Respondent for any preparatory costs or other work performed in connection with its Proposal, whether or not the Respondent is awarded a contract.

9 LEGAL REVIEW

A Proposal submitted by a Respondent will be subjected to review and acceptance or rejection of its proposed contractual terms and conditions by Transnet's Legal Counsel, prior to consideration for an award of business.

**Transnet urges its clients, suppliers and the general public
to report any fraud or corruption to
TIP-OFFS ANONYMOUS : 0800 003 056**

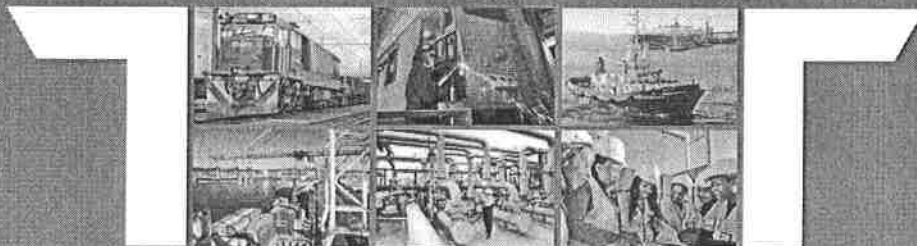
TRANSNET



delivering on our commitment *to you*

Suppliers Code of Conduct

"PREVIEW COPY ONLY"



Suppliers Code of Conduct

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

These are:

- » Transnet Procurement Policy - A guide for tenderers;
- » Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- » The Public Finance Management Act (PFMA);
- » The Broad Based Black Economic Empowerment Act (BBBEE); and
- » The Anti-Corruption Act.

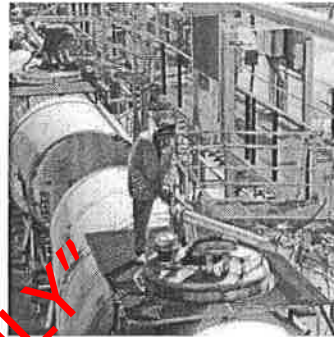
This code of conduct has been compiled to formally apprise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

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

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

Transnet will not participate in corrupt practices. Therefore, it expects its suppliers to act in a similar manner.

- » Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with, and payments to, our suppliers.



- » Employees must not accept or request money or anything of value, directly or indirectly, from suppliers.

Employees may not receive anything that is calculated to:

- Illegally influence their judgement or conduct or to influence the outcome of a sourcing activity;
- Win or retain business or to influence any act or decision of any person involved in sourcing decisions; gain an improper advantage.

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

Transnet is firmly committed to free and competitive enterprise.

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

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

- » Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities.



These include, but are not limited to:

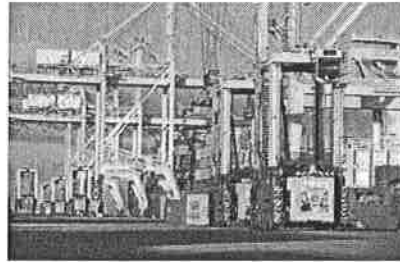
- Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
- Collusion;
- Failure to disclose accurate information required during the sourcing activity (ownership financial situation, BBBEE status, etc);
- Corrupt activities listed above; and harassment, intimidation or other aggressive actions towards Transnet employees.

- >> Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence must be conducted and the supplier is expected to participate in an honest and straight forward manner.
- >> Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

Conflict of Interest

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

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



Show that you support good business practice by logging onto
www.transnet-suppliers.net and completing the form.

This will allow us to confirm that you have received, and agree to, the terms and conditions set out in our Suppliers Code of Conduct.

TIP-OFFS ANONYMOUS HOTLINE
0800 003 056

PART T1.2 TENDER DATA

"PREVIEW COPY ONLY"

PART T1: TENDERING PROCEDURES

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of the CIDB Standard for Uniformity in Construction Procurement. (See www.cidb.org.za).

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

F.1.1 The employer is Transnet SOC Ltd trading as Transnet Freight Rail

F.1.2 The tender documents issued by the employer comprise:

Part T1: Tendering procedures

T1.1 Tender notice and invitation to tender

T1.2 Tender data

Part T2: Returnable documents

T2.1 List of returnable documents

T2.2 Returnable schedules

Part C1: Agreements and contract data

C1.1 Form of offer and acceptance

C1.2 Contract data

C1.3 Forms of Security

C1.4 Adjudicator's Contract Data

Part C2: Pricing data

C2.1 Pricing instructions

C2.2 Bill of Quantities/ Activity Schedule

Part C3: Scope of work

C3 Scope of work

Part C4: Site information

C4 Site information

F.1.4 The employer's agent is:

Name : Mr. Malibongwe Mlonzi

Tenderers must sign the attendance list in the name of the tendering entity. Addenda will be issued to and tenders will be received only from those tendering entities appearing on the attendance list.

F.2.1.1 The following Tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, are eligible to submit tenders:

- a) contractors who have a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **EP** class of construction work; and
- b) contractors registered as potentially emerging enterprises with the CIDB who are registered in one contractor grading designation lower than that required in terms of a) above and who satisfy the following criteria:
 - ☐ **Has technical qualifications and competence.**
 - ☐ **Has managerial capacity, reliability and experience.**
 - ☐ **Has good reputation.**
 - ☐ **Has equipment.**

Joint ventures are eligible to submit tenders provided that:

1. every member of the joint venture is registered with the CIDB;
2. the lead partner has a contractor grading designation in the **EP** class of construction work; and
3. the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **EP** class of construction work.

F.2.7 The arrangements for a compulsory clarification meeting are: **as stated in the Tender Notice and Invitation to Tender**

Confirmation of attendance to be notified at least one full working day in advance to:

Name : Mr. Neill Mitchell

Tel : 011 584 0627

Fax : 011 774 9836

E-mail : Neill.mitchell@transnet.net

F.2.12 If a Tenderer wishes to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer's Agent.

Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions.

Pricing Data must reflect all assumptions in the development of the pricing proposal.

Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the Tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements.

The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed.

F.2.13.3 Parts of each tender offer communicated on paper shall be submitted as an original, plus one copy.

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

If delivered by hand, the envelope is to be deposited in the Transnet Freight Rail Acquisition Council tender box which is located in the foyer on the ground floor, Inyanda House 1, 21 Wellington Road, Parktown, Johannesburg and addressed as follows:

The Chairperson
Transnet Freight Rail Acquisition Council
Inyanda House 1
21 Wellington Road
Parktown
Johannesburg
2001

It should also be noted that the above tender box is accessible to the public 24 hours per day, 7 days a week. The measurements of the "tender slot" are 500mm long x 100mm wide, and Tenderers must please ensure that tender documents/files are not larger than the above dimensions. Tenders which are too bulky (i.e. more than 100mm thick) must be split into two or more files, and placed in separate envelopes, each addressed as above.

If dispatched by courier, the envelope must also be addressed as above and delivered to the Office of The Secretariat, Transnet Freight Rail Acquisition Council and a signature obtained from that Office.

Identification details

Tenders must be submitted before the closing hour on the date as shown in F2.15 below, and must be enclosed in a sealed envelope which must have inscribed on the outside:

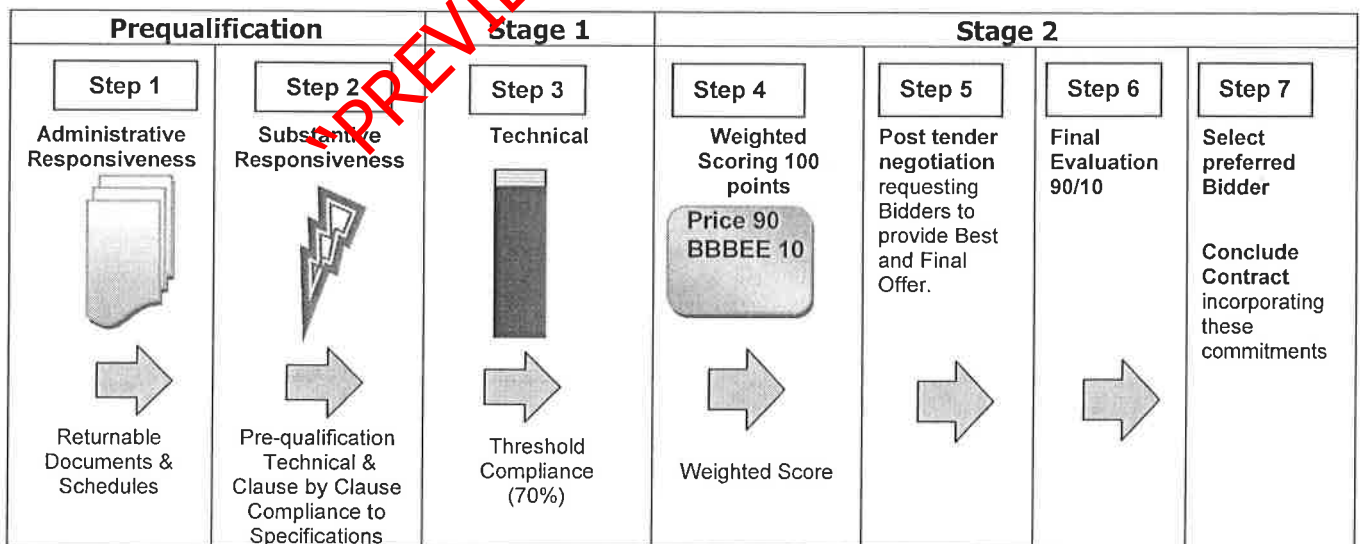
- (a) Tender No:
- (b) Description of work:
- (c) Closing date and Time:
- (d) Closing Address:

All envelopes must reflect the return address of the Respondent on the reverse side.

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

- F.2.15 The closing time for submission of tender offers is **as stated in the Tender Notice and Invitation to Tender.**
- F.2.15 Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted.
- F.2.16 The tender offer validity period is **12 weeks**
- F.2.19 Access shall be provided for inspections, tests and analysis:
All sites as stated in the Scope of Work (Description of the Work)
- F.2.23 The Tenderer is required to submit the following certificates with his tender:
- 1.) An original valid Tax Clearance Certificate issued by the South African Revenue Services. **Failure to provide this document with the tender submission will result in disqualification.**
 - 2) BBBEE evaluation certificate done by an accredited company.
 - 3) Where a Tenderer satisfies CIDB contractor grading designation requirements through joint venture formation, such Tenderers must submit the Certificates of Contractor Registration in respect of each partner.
- F.3.4 The time and location for opening of the tender offers are:
Time **10:15 on the closing date of tender.**
Location: **Table G66 & 69, West Wing, Ground Floor, Inyanda House, 21 Wellington Road, Parktown, Johannesburg**

F3.11.1 EVALUATION CRITERIA



Pre-Qualification

Step 1: Administrative Responsiveness: All Returnable Documents/Schedules provided: Mandatory and Essential. (Mandatory: Valid CIDB Certificate; Completed Bill of Quantities; Completed Form of Offer; Clause by Clause compliance to specifications)

Step 2: Substantive Responsiveness: All Mandatory documents complete and correct and acceptable response to any clarification on Essential documentation.

PRE-QUALIFICATION	WEIGHT	EFFECTIVE WEIGHT
CATEGORY: TECHNICAL (SCORING MATRIX)	100%	
• Compliance to all Specification as required		80%

Stage 1:

Step 3: Technical Evaluation Criteria: Test minimum threshold of **70%** for Technical (Quality) Criteria:

(Points are NOT carried over to Stage 2)

TECHNICAL DESCRIPTION	WEIGHT	EFFECTIVE WEIGHT
CATEGORY: TECHNICAL / PRACTICAL		
• Approach paper which responds to the scope of work and outlines proposed methodology and work plan complete with time frames <ul style="list-style-type: none"> Technical Approach Work Plan with time frames 	100%	35%
• Experience of key staff <ul style="list-style-type: none"> General Qualifications Adequacy for assignment 		25%
• Comparable Projects		20%
• Health and Safety Compliance (Part T2.2 TFR Tender Safety clauses and Questionnaire of tender document)		10%
• Comprehensive Environmental Management Plan, Risk Register and Business Continuity Plan		10%
TOTAL		100%

Min threshold for Step 3 must be met to progress to Stage 2 for final evaluation.

Transnet reserves the right to lower the threshold for Technical to 60% [sixty percent] if no Bidders pass the predetermined minimum threshold. This right will be exercised in Transnet's sole discretion.

Stage 2:

Step 4: Financial offer and Preference

F3.11.3 The procedure for the evaluation of responsive tenders is Method 2

The score for financial offer is calculated using Formula 2 (option 1) of SANS 294,

F3.11.7 Score the financial offers of remaining responsive offers using the following formula:

$$N_{Fo} = W_1 \times A$$

Where: N_{Fo} is the number of tender evaluation points awarded for the financial offer.

W_1 is the maximum possible number of tender evaluation points awarded for the financial offer as stated in the Tender Data.

A is a number calculated using the formula and option described in Table F.1 as below:

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

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

Up to 100 minus T_{EV} tender evaluation points will be awarded to Tenderers for SD.

Description of quality criteria and sub criteria			Max no of points
Commercial	Competitive Pricing	100	90
BBBEE	Points scored: Step 3	100	10
Total evaluation points			100

F.3.13.1 Tender offers will only be accepted if:

- The Tenderer has completed and returned all returnable documents and schedules.
- The Tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation;
- The Tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector.
- The Tenderer has not:
 - abused the Employer's Supply Chain Management System; or
 - failed to perform on any previous contract and has been given a written notice to this effect; and
- has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the Tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process.

Tender will be disqualified if all returnable documents and schedules are not returned.

F.3.18 The number of electronic copies of the signed contract to be provided by the employer is **one**.

The additional conditions of tender are:

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

- 2 **NO PRICING is to be reflected / listed in any tender document other than in the Form of Offer and Bill of Quantities / Price List**
- 3 The tenders shall be completed in black ink only.
- 4 Tenderers shall give a clause by clause comment as to whether or not their tender complies. If not, how it differs from the specification(s). Failure to do so may preclude a tender from consideration.
- 5 Notwithstanding what is stated in Pricing Data, Tenderers are required to tender for all the areas quoted in the Bill of Quantities, if possible.
- 6 Transnet Freight Rail may conclude one or more contracts as a result of this tender.

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PART T2: RETURNABLE DOCUMENTS

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PART T2: RETURNABLE DOCUMENTS

T2.1 LIST OF RETURNABLE DOCUMENTS

The Tenderer must complete the following returnable documents:
(Tender will be disqualified if all returnable documents and schedules are not returned)

1 Returnable Schedules required for tender evaluation purposes

No	Returnable schedules (All are to be submitted)
1	Record of Addenda to Tender documents
2	Certificate of authority for Joint Ventures (where applicable)
3	Labour Payment Schedule
4	Proposed amendments and qualifications
5	Contractual Safety Clauses and Questionnaire
6	RFP Declaration Form
7	Bond - Retention Percentage Choice
8	Annexure B - Non-Disclosure Agreement
9	BBBEE Preference Points Claim Form
10	Certificate of Acquaintance with RFP Documents
11	Curriculum Vitae of key personnel
12	Certificate of Attendance at Site/Clarification Meeting
13	Compulsory Enterprise Questionnaire
14	Schedule of Subcontractors
15	Schedule of Plant and Equipment
16	Schedule of the Tenderer's Experience
17	Supplier Declaration form (version 7)
18	Breach of Law Form
19	RFP Clarification Form
20	SD Appendix (iii) - SD Guidelines
21	Supplier Code of Conduct

2 Other documents required for tender evaluation purposes

No	Returnable Documents (All are to be submitted)
1	Safety Plan [and Fall Protection Plan] in accordance with the Construction Regulations of 2003 and Transnet's E4E (See Draft)
2	Comprehensive Environmental Management Plan, Risk Register and Business Continuity Plan. Risk register to cover identified risks associated with this project and accompanying risk mitigation measures
3	Form of Intent to provide performance bond
4	Certificate of Authority for Signatory (Resolution by Board)
5	Approach paper and work plan (Programme and Method statements)
6	Statement of compliance with requirements of the Scope of work (Clause by Clause statement in a separate document)
7	Letter of Good Standing with the Compensation Commissioner
8	Quality Assurance Plan
9	Proposed Organization and Staffing including quantity of personnel to be trained in aspects of safety
10	BBBEE rating certificate with detailed scorecard
11	Certified Copy of CIDB certification
12	Certified Copy of Financial Statements (for the past 3 years) including Balance sheets
13	Certified Copies: Share Certificates; CK1; CK2
14	Certified copies: Certificate of Incorporation; CM29; CM9
15	Certified Copies: Identity Documents Shareholders/ Directors/ Members
16	Cancelled Cheque
17	Current and original Tax clearance certificate
18	Vat registration certificate
19	Copy of BEE Policy/BEE Plan/Employment Policy/Procurement Policy

3 Other documents that will be incorporated into the contract

- 3.1 C1.1 Form of Offer and Acceptance
- 3.2 C1.2 Contract Data (Part 1 and 2)
- 3.3 C2.2 Bill of Quantities

T2.2 RETURNABLE SCHEDULES

- Record of Addenda to Tender documents
- Certificate of authority for joint ventures
- Labour Payment Schedule
- Proposed amendments and qualifications
- Contractual Safety Clauses and Questionnaire
- RFP Declaration Form
- Bond - Retention Percentage Choice
- Annexure B - Non-Disclosure Agreement
- BBBEE Preference Points Claim Form
- Certificate of Acquaintance with RFP Documents
- Curriculum Vitae of key personnel
- Certificate of Attendance at Site/Clarification Meeting
- Compulsory Enterprise Questionnaire
- Schedule of Subcontractors
- Schedule of Plant and Equipment
- Schedule of the Tenderer's Experience
- Supplier Declaration form (version 7)
- Breach of Law Form
- RFP Clarification Form
- SD Appendix (iii) - SD Guidelines
- Supplier Code of Conduct

Record of Addenda to Tender Documents

We confirm that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:		
	Date	Title or Details
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Attach additional pages if more space is required.

Signed

Date

Name

Position

Tenderer

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Certificate of Authority for Joint Ventures

This Returnable Schedule is to be completed by joint venture.

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms....., authorised signatory of the company, acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

NAME OF FIRM	ADDRESS	DULY AUTHORIZED SIGNATURE
<u>Lead partner:</u>		Signature..... Name..... Designation
		Signature..... Name..... Designation
		Signature..... Name..... Designation

TRANSNET SOC LTD
(REGISTRATION No. 1990/000900/30)
TRADING AS TRANSNET FREIGHT RAIL

LABOUR PAYMENT SCHEDULE

TENDERERS ARE REQUIRED TO COMPLETE THE FOLLOWING SCHEDULE:

DAY LABOUR (IF REQUIRED)

Skilled	Hour _____
Unskilled	Hour _____
Labourer	Hour _____
Driver/Operator	Hour _____
% Profit on Material	_____

TRANSPORT AND MACHINERY

1. Light vehicle up to 1 ton
 2. 5 Ton vehicle
 3. 10 Ton vehicle with crane
 4. Crane
 5. Scaffolding
 6. Generator
 7. Other equipment:
- _____
- _____
- _____

RUNNING

R _____ /hr

R _____ /hr

R _____ /hr

R _____ /hr

R _____ /hr

R _____ /hr

STANDING

R _____ /hr

R _____ /hr

R _____ /hr

R _____ /hr

R _____ /hr

R _____ /hr

Full details of any other charges:

TENDERER: _____

DATE: _____

Proposed Amendments and Qualifications

The Tenderer should record any deviations or qualifications he may wish to make to the tender documents in this Returnable Schedule. Alternatively, a Tenderer may state such deviations and qualifications in a covering letter to his tender and reference such letter in this schedule.

The Tenderer's attention is drawn to clause F.3.8 of the Standard Conditions of Tender referenced in the Tender Data regarding the employer's handling of material deviations and qualifications.

Page	Clause or item	Proposal

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Signed

Date

Name

Position

Tenderer

TRANSNET SOC LTD / CONTRACTORS / SUB-CONTRACTORS

CONTRACTUAL SAFETY CLAUSES WHICH WILL FORM PART OF ANY RESULTING CONTRACT

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

- 1) That the contractor is an "employer" in his own right as defined in section 1 of Act 85 of 1993 and that he must fulfil all his obligations as an employer in terms of the Act.
- 2) The contractor shall comply with the requirements of Act 85 of 1993 in its entirety.
- 3) Where special permits are required, such as electrical switching, hot work permits, etc. the contractor shall obtain them from a person designated by Transnet SOC Ltd for this purpose, and all requirements of the contractor must rigidly comply with the permit.
- 4) The contractor shall conduct a risk assessment of the work to be performed by a competent person prior to the commencement of work, to identify risks and hazards that persons may be exposed to, analyse and evaluate identified hazards.
- 5) The contractor shall have a documented Health and Safety Plan based on the risks and hazards identified before commencement of work.
- 6) The Health and Safety Plan shall include the following:
 - 6.1 The safety management structure to be instituted with all appointments in terms of the Act and Regulations
 - 6.2 The safe working methods and procedures to be implemented to ensure work are performed in compliance to the Act.
 - 6.3 The safety equipment, devices and clothing to be made available by the contractor to his employees.
 - 6.4 The site access control measures pertaining to health and safety to be implemented.
 - 6.5 Control measures for ensuring that the Health and Safety Plan is maintained and monitored for the duration of the contract.
- 7) The contractor shall ensure that all work is performed under the close supervision of a person trained to understand the hazards associated with the work performed and who has authority to ensure that the necessary precautionary measures are implemented.
- 8) The contractor must appoint a Health and Safety Co-ordinator to liaise with Transnet SOC Ltd on matters pertaining to occupational health and safety.
- 9) The appointed Safety Co-ordinator must liaise at least once a week with the* Health and Safety Section / Risk Manager /Occupational Risk Manager of Transnet SOC Ltd.
- 10) The contractor shall furnish the* Health and Safety Section/ Risk Manager/ Occupational Risk Manager of Transnet SOC Ltd immediately with full particulars of any sub-contractor which he may involve in the contract in order that the sub-contractor himself can be made aware of all the clauses in this contract pertaining to health and safety.

- 11) The contractor shall stop any subcontractor from executing work which is not in accordance with the Health and Safety Plan or which poses a threat to health and safety of persons.
- 12) The contractor shall ensure that all his employees and visitors undergoes health and safety induction pertaining to the hazards prevalent, proof of such training must be kept on file.
- 13) In the event where the risk assessment reveals the risk relating to working from an elevated position the contractor shall cause the designation of a competent person, responsible for the preparation of a Fall Protection Plan.
- 14) The Fall Protection Plan shall include:
 - 14.1 A risk assessment of all work carried out from an elevated position
 - 14.2 Procedures and methods to address all the identified risks per location
 - 14.3 Evaluation of employee's physical and psychological fitness necessary to work at elevated position.
 - 14.4 The training of employees working from an elevated position.
 - 14.5 Procedure addressing the inspection, testing and maintenance of all fall protection equipment.
- 15) The contractor shall advise the * Health and Safety Section / Risk Manager/ Occupational Risk Manager of Transnet SOC Ltd of any hazardous situations which may arise from work being performed either by the contractor or his sub-contractor.
- 16) Copies of all appointments required by the act must be given to * Health and Safety Section / Risk Manager / Occupational Risk Manager of Transnet SOC Ltd.
- 17) The contractor shall ensure that a Health and Safety File is available which shall include all documentation as required by the Act, copy of his and his subcontractors Risk Assessment and Health and Safety Plan.
- 18) All incidents referred to in Section 24 of the Act involving the contractor and his subcontractor on Transnet SOC Ltd premises, shall be reported as prescribed. Transnet SOC Ltd hereby obtains an interest in the issue of any investigation, formal inquiry conducted in terms of Section 31 and 32 of the Act into any incident involving the contractor, his subcontractor, any person or machinery under his control on Transnet SOC Ltd premises.
- 19) No alcohol or any other intoxicating substance shall be allowed on Transnet SOC Ltd premises. The contractor shall not allow anyone under or suspected to be under the influence of alcohol or any other intoxicating substance on Transnet SOC Ltd premises.
- 20) Contractor to ensure its employees undergo medical surveillance as required by legislation
- 21) Contractor will be required to provide monthly safety performance reports and statistics
- 22) A letter of good standing in terms of Section 80 (Employer to register with the Compensation Commissioner) of the Compensation for Occupational Injuries and Disease Act 1993 (Act 130 of 1993) must also be furnished.
- 23) All clauses in the contract pertaining health and safety form an integral part of the contract and if not complied with may be construed as breach of contract.

*As applicable

Tenderer OH & S Management System Questionnaire

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

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

3. OH&S Training		
Describe briefly how health and safety training is conducted in your company:		
<ul style="list-style-type: none"> - Is a record maintained of all training and induction programs undertaken for employees in your company? - If yes provide examples of safety training records 		
4. Health and Safety Workplace Inspection		
<ul style="list-style-type: none"> - Are regular health and safety inspections at worksites undertaken? - If yes provide details 		
<ul style="list-style-type: none"> - Is there a procedure by which employees can report hazards at workplaces? - If yes provide details 		
5. Health and Safety Consultation		
<ul style="list-style-type: none"> - Is there a workplace health and safety committee? 		
<ul style="list-style-type: none"> - Are employees involved in decision making over OH&S matters? - If yes provide details 		
<ul style="list-style-type: none"> - Are there employee elected health and safety representatives? - Comments 		
6. OH&S Performance Monitoring		
<ul style="list-style-type: none"> - Is there a system for recording and analysing health and safety performance statistics including injuries and incidents? - If yes provide details 		
<ul style="list-style-type: none"> - Are employees regularly provided with information on company health and safety performance? - If yes provide details 		
<ul style="list-style-type: none"> - Is company registered with workmen's compensation and up to date? - If yes provide proof of letter of good standing 		
<ul style="list-style-type: none"> - Has the company ever been convicted of an occupational health and safety offence? - If yes provide details 		

Safety Performance Report

Monthly DIFR for previous months

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

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

Signed
(Tenderer)

RFP DECLARATION FORM

NAME OF ENTITY: _____

We _____ do hereby certify that:

1. Transnet has supplied and we have received appropriate responses to any/all questions [as applicable] which were submitted by ourselves for RFP Clarification purposes;
2. We have received all information we deemed necessary for the completion of this Request for Proposal [RFP];
3. At no stage have we received additional information relating to the subject matter of this RFP from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the RFP documents;
4. We are satisfied, insofar as our entity is concerned, that the processes and procedures adopted by Transnet in issuing this RFP and the requirements requested from Bidders in responding to this RFP have been conducted in a fair and transparent manner; and
5. Furthermore, we declare that a family, business and/or social relationship exists / does not exist [delete as applicable] between an owner / member / director / partner / shareholder of our entity and an employee or board member of the Transnet Group.
6. If such a relationship exists, Respondent is to complete the following section:

FULL NAME OF OWNER/MEMBER/DIRECTOR/

PARTNER/SHAREHOLDER:

ADDRESS:

Indicate nature of relationship with Transnet:

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

7. We declare, to the extent that we are aware or become aware of any relationship between ourselves and Transnet [other than any existing and appropriate business relationship with Transnet] which could unfairly advantage our entity in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.
8. We accept that any dispute pertaining to this Bid will be resolved through the Ombudsman process and will be subject to the Terms of Reference of the Ombudsman. The Ombudsman process must first be exhausted before judicial review of a decision is sought. [Refer "Important Notice to Respondents" overleaf].
9. We further accept that Transnet reserves the right to reverse an award of business or decision based on the recommendations of the Ombudsman without having to follow a formal court process to have such award or decision set aside.

SIGNED at _____ on this _____ day of _____ 20____

For and on behalf of _____ duly authorised hereto	AS WITNESS:
Name:	Name:
Position:	Position:
Signature:	Signature:
Date:	
Place:	

IMPORTANT NOTICE TO RESPONDENTS

- Transnet has appointed a Procurement Ombudsman to investigate any material complaint in respect of RFPs exceeding R 5,000,000.00 [five million S.A. Rand] in value. Should a Respondent have any material concern regarding an RFP process which meets this value threshold, a complaint may be lodged with Transnet's Procurement Ombudsman for further investigation.
- It is incumbent on the Respondent to familiarise himself/herself with the Terms of Reference for the Transnet Procurement Ombudsman, details of which are available for review at Transnet's website www.transnet.net.
- An official complaint form may be downloaded from this website and submitted, together with any supporting documentation, within the prescribed period, to procurement.ombud@transnet.net.
- For transactions below the R 5,000,000.00 [five million S.A. Rand] threshold, a complaint may be lodged with the Chief Procurement Officer of the relevant Transnet Operating Division.
- All Respondents should note that a complaint must be made in good faith. If a complaint is made in bad faith, Transnet reserves the right to place such a Bidder on its List of Excluded Bidders.

BOND - RETENTION PERCENTAGE CHOICE

The amount of the Guarantee (Performance Bond / Surety) is to be calculated as **10% or 5%** of the tender price. The Contractor has the option of providing the guarantee of 10% and having retention money of 5% withheld or vice versa

I agree on the following arrangement regarding the above:

1) Guarantee / Bond / Surety: _____ %

2) Retention: _____ %

Signed
(Tenderer)

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Annexure B

NON-DISCLOSURE AGREEMENT

entered into by and between

TRANSNET SOC LTD

Registration Number 1990/000900/30

and

Registration Number _____

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THIS AGREEMENT is made between

Transnet SOC Ltd [Transnet] [Registration No. 1990/000900/30]

whose registered office is at 49th Floor, Carlton Centre, 150 Commissioner Street, Johannesburg 2001,

and

_____ **[the Company]** [Registration No. _____]

whose registered office is at _____

WHEREAS

Transnet and the Company wish to exchange Information [as defined below] and it is envisaged that each party may from time to time receive Information relating to the other in respect thereof. In consideration of each party making available to the other such Information, the parties jointly agree that any dealings between them shall be subject to the terms and conditions of this Agreement which themselves will be subject to the parameters of the Bid Document.

IT IS HEREBY AGREED

1 INTERPRETATION

In this Agreement:

- 1.1 **Agents** mean directors, officers, employees, agents, professional advisers, contractors or sub-contractors, or any Group member;
- 1.2 **Bid** or **Bid Document** means Transnet's Request for Information [**RFI**] Request for Proposal [**RFP**] or Request for Quotation [**RFQ**] as the case may be;
- 1.3 **Confidential Information** means any information or other data relating to one party (the **Disclosing Party**) and/or the business carried on or proposed or intended to be carried on by that party and which is made available for the purposes of the Bid to the other party (the **Receiving Party**) or its Agents by the Disclosing Party or its Agents or recorded in agreed minutes following oral disclosure and any other information otherwise made available by the Disclosing Party or its Agents to the Receiving Party or its Agents, whether before, on or after the date of this Agreement, and whether in writing or otherwise, including any information, analysis or specifications derived from, containing or reflecting such information but excluding information which:
- a) is publicly available at the time of its disclosure or becomes publicly available (other than as a result of disclosure by the Receiving Party or any of its Agents contrary to the terms of this Agreement); or
 - b) was lawfully in the possession of the Receiving Party or its Agents (as can be demonstrated by its written records or other reasonable evidence) free of any restriction as to its use or disclosure prior to its being so disclosed; or
 - c) following such disclosure, becomes available to the Receiving Party or its Agents (as can be demonstrated by its written records or other reasonable evidence) from a source other than the Disclosing Party or its Agents, which source is not bound by any duty of confidentiality owed, directly or indirectly, to the Disclosing Party in relation to such information;
- 1.4 **Group** means any subsidiary, any holding company and any subsidiary of any holding company of either party; and
- 1.5 **Information** means all information in whatever form including, without limitation, any information relating to systems, operations, plans, intentions, market opportunities, know-how, trade secrets and business affairs whether in writing, conveyed orally or by computer-readable medium.

2 CONFIDENTIAL INFORMATION

- 2.1 All Confidential Information given by one party to this Agreement (the **Disclosing Party**) to the other party (the **Receiving Party**) will be treated by the Receiving Party as secret and confidential and such Receiving Party will not, without the Disclosing Party's written consent, directly or indirectly communicate or disclose (whether in writing or orally or in any other manner) Confidential Information to any other person other than in accordance with the terms of this Agreement.
- 2.2 The Receiving Party will only use the Confidential Information for the sole purpose of technical and commercial discussions between the parties in relation to the Bid or for the subsequent performance of any contract between the parties in relation to the Bid.
- 2.3 Notwithstanding clause 2.1 above, the Receiving Party may disclose Confidential Information:
- a) to those of its Agents who strictly need to know the Confidential Information for the sole purpose set out in clause 2.2 above, provided that the Receiving Party shall ensure that such Agents are made aware prior to the disclosure of any part of the Confidential Information that the same is confidential and that they owe a duty of confidence to the Disclosing Party. The Receiving Party shall at all times remain liable for any actions of such Agents that would constitute a breach of this Agreement; or
 - b) to the extent required by law or the rules of any applicable regulatory authority, subject to clause 2.4 below.
- 2.4 In the event that the Receiving Party is required to disclose any Confidential Information in accordance with clause 2.3b) above, it shall promptly notify the Disclosing Party and cooperate with the Disclosing Party regarding the form, nature, content and purpose of such disclosure or any action which the Disclosing Party may reasonably take to challenge the validity of such requirement.
- 2.5 In the event that any Confidential Information shall be copied, disclosed or used otherwise than as permitted under this Agreement then, upon becoming aware of the same, without prejudice to any rights or remedies of the Disclosing Party, the Receiving Party shall as soon as practicable notify the Disclosing Party of such event and if requested take such steps (including the institution of legal proceedings) as shall be necessary to remedy (if capable of remedy) the default and/or to prevent further unauthorised copying, disclosure or use.
- 2.6 All Confidential Information shall remain the property of the Disclosing Party and its disclosure shall not confer on the Receiving Party any rights, including intellectual property rights over the Confidential Information whatsoever, beyond those contained in this Agreement.

3 RECORDS AND RETURN OF INFORMATION

- 3.1 The Receiving Party agrees to ensure proper and secure storage of all Information and any copies thereof.
- 3.2 The Receiving Party shall keep a written record, to be supplied to the Disclosing Party upon request, of the Confidential Information provided and any copies made thereof and, so far as is reasonably practicable, of the location of such Confidential Information and any copies thereof.
- 3.3 The Company shall, within 7 (seven) days of receipt of a written demand from Transnet:
- a) return all written Confidential Information (including all copies); and
 - b) expunge or destroy any Confidential Information from any computer, word processor or other device whatsoever into which it was copied, read or programmed by the Company or on its behalf.
- 3.4 The Company shall on request supply a certificate signed by a director as to its full compliance with the requirements of clause 3.3b) above.

4 ANNOUNCEMENTS

- 4.1 Neither party will make or permit to be made any announcement or disclosure of its prospective interest in the Bid without the prior written consent of the other party.
- 4.2 Neither party shall make use of the other party's name or any information acquired through its dealings with the other party for publicity or marketing purposes without the prior written consent of the other party.

5 DURATION

The obligations of each party and its Agents under this Agreement shall survive the termination of any discussions or negotiations between the parties regarding the Bid and continue thereafter for a period of 5 (five) years.

6 PRINCIPAL

Each party confirms that it is acting as principal and not as nominee, agent or broker for any other person and that it will be responsible for any costs incurred by it or its advisers in considering or pursuing the Bid and in complying with the terms of this Agreement.

7 ADEQUACY OF DAMAGES

Nothing contained in this Agreement shall be construed as prohibiting the Disclosing Party from pursuing any other remedies available to it, either at law or in equity, for any such threatened or actual breach of this Agreement, including specific performance, recovery of damages or otherwise.

8 PRIVACY AND DATA PROTECTION

8.1 The Receiving Party undertakes to comply with South Africa's general privacy protection in terms of the Bill of Rights (Section 14) in connection with this Bid and shall procure that its personnel shall observe the provisions of such Act (as applicable) or any amendments and re-enactments thereof and any regulations made pursuant thereto.

8.2 The Receiving Party warrants that it and its Agents have the appropriate technical and organisational measures in place against unauthorised or unlawful processing of data relating to the Bid and against accidental loss or destruction of, or damage to such data held or processed by them.

9 GENERAL

9.1 Neither party may assign the benefit of this Agreement, or any interest hereunder, except with the prior written consent of the other, save that Transnet may assign this Agreement at any time to any member of the Transnet Group.

9.2 No failure or delay in exercising any right, power or privilege under this Agreement will operate as a waiver of it, nor will any single or partial exercise of it preclude any further exercise or the exercise of any right, power or privilege under this Agreement or otherwise.

9.3 The provisions of this Agreement shall be severable in the event that any of its provisions are held by a court of competent jurisdiction or other applicable authority to be invalid, void or otherwise unenforceable, and the remaining provisions shall remain enforceable to the fullest extent permitted by law.

9.4 This Agreement may only be modified by a written agreement duly signed by persons authorised on behalf of each party.

9.5 Nothing in this Agreement shall constitute the creation of a partnership, joint venture or agency between the parties.

9.6 This Agreement will be governed by and construed in accordance with South African law and the parties irrevocably submit to the exclusive jurisdiction of the South African courts.

WITNESSES:

1. _____

SIGNATURE(S) OF BIDDER(S)

2. _____

DATE: _____

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 10 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;
- 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 **"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;
- 2.15 **"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;
- 2.16 **"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;
- 2.17 **"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
- 2.18 **"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 Tender Data will be awarded the contract, unless objective criteria justifies the award to another bidder.
- 3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts.
- 3.3 Points scored will be rounded off to 2 [two] decimal places.
- 3.4 In the event of equal points scored, the Bid will be awarded to the Bidder scoring the highest number of preference points for B-BBEE.
- 3.5 However, when functionality is part of the evaluation process and two or more Bids have scored equal points including equal preference points for B-BBEE, the successful Bid will be the one scoring the highest score for functionality.
- 3.6 Should two or more Bids be equal in all respect, the award shall be decided by the drawing of lots.

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

- 4.1 In terms of Regulation 5(2) and 6(2) 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:
- 4.2

B-BBEE Status Level of Contributor	Number of Points [Maximum 10]
1	10
2	9
3	8
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

Note: Refer to Section 1 of the RFP document for further information in terms of B-BBEE ratings.

- 4.3 Bidders who qualify as EMEs in terms of the B-BBEE Act 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.

- 4.4 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 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.
- 4.6 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.
- 4.7 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.
- 4.8 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.
- 4.9 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.

5. B-BBEE STATUS AND SUBCONTRACTING

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

B-BBEE Status Level of Contributor _____ = _____ [maximum of 10 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 an Accounting Officer as contemplated in the Close Corporation Act.

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
- ☐ Partnership/Joint Venture/Consortium
- ☐ One person business/sole propriety
- ☐ Close Corporations
- ☐ Company (Pty) Ltd
- [TICK APPLICABLE BOX]

(v) Describe Principal Business Activities

(vi) Company Classification

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional Service Provider
- ☐ Other Service Providers, e.g Transporter, etc

[TICK APPLICABLE BOX]

(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. _____

SIGNATURE(S) OF BIDDER(S)

2. _____

DATE: _____

COMPANY NAME: _____

ADDRESS: _____

CERTIFICATE OF ACQUAINTANCE WITH RFP DOCUMENTS

NAME OF ENTITY: _____

1. I/we _____

do hereby certify that I/we acquainted myself/ourselves with all the documentation comprising this RFP and all conditions contained therein, as laid down by Transnet SOC Ltd for the carrying out of the proposed supply/service/works for which I/we submitted my/our Proposal.

2. I/we furthermore agree that Transnet SOC Ltd shall recognise no claim from me/us for relief based on an allegation that I/we overlooked any RFP/contract condition or failed to take it into account for the purpose of calculating my/our offered prices or otherwise.
3. I/we understand that the accompanying Bid will be disqualified if this Certificate is found not to be true and complete in every respect.
4. For the purposes of this Certificate and the accompanying Bid, I/we understand that the word "competitor" shall include any individual or organisation, other than the Bidder, whether or not affiliated with the Bidder, who:
 - a) has been requested to submit a Bid in response to this Bid invitation;
 - b) could potentially submit a Bid in response to this Bid invitation, based on their qualifications, abilities or experience; and
 - c) provides the same Services as the Bidder and/or is in the same line of business as the Bidder
5. The Bidder has arrived at the accompanying Bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive bidding.
6. In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - a) prices;
 - b) geographical area where Services will be rendered [market allocation]
 - c) methods, factors or formulas used to calculate prices;
 - d) the intention or decision to submit or not to submit, a Bid;
 - e) the submission of a Bid which does not meet the specifications and conditions of the RFP; or
 - f) bidding with the intention of not winning the Bid.
7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Services to which this RFP relates.
8. The terms of the accompanying Bid have not been, and will not be, disclosed by the Bidder, directly or indirectly, to any competitor, prior to the date and time of the official Bid opening or of the awarding of the contract.
9. I/We am/are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, Bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation and/or may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

SIGNED at _____ on this _____ day of _____ 20____

SIGNATURE OF WITNESS

SIGNATURE OF RESPONDENT

Curriculum Vitae of Key Personnel

Name:	Date of birth:
Profession:	Nationality:
Qualifications:	
Professional registration number:	
Name of employer (firm):	
Current Position:	Years with the firm:
Employment record: (list in chronological order starting with earliest work experience)	
A. Experience record pertinent to required service	
Certification:	
I, the undersigned, certify that to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.	
<hr/> [Signature of person named in schedule]	<hr/> Date

Certificate of Attendance at Clarification/Site Meeting/s

This is to certify that

_____ (Tenderer)

of _____ (address)

was represented by the person(s) named below at the compulsory meetings held for all Tenderers on the dates listed below. We acknowledge that the purpose of the meeting was to acquaint ourselves with the Site of the Works and/or matters incidental to doing the work specified in the tender documents in order for us to take account of everything necessary when compiling our rates and prices included in the tender.

Particulars of Company representative(s) attending the **CLARIFICATION MEETING**:

Name: _____ Signature: _____

Capacity: _____ Date and time: _____

Attendance of the above person/s is confirmed by the Employer's representative:

Name: _____ Signature: _____

Capacity: _____ Date and time: _____

Particulars of Company representative(s) attending the **SITE MEETING**:

Name: _____ Signature: _____

Capacity: _____ Date and time: _____

Attendance of the above person/s is confirmed by the Employer's representative:

Name: _____ Signature: _____

Capacity: _____ Date and time: _____

Compulsory Enterprise Questionnaire

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

Section 1: Name of enterprise:

Section 2: VAT registration number, if any:

Section 3: CIDB registration number, if any:

Section 4: Particulars of sole proprietors and partners in partnerships

Name*	Identity number*	Personal income tax number*

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

Section 5: Particulars of companies and close corporations

Company registration number

Close corporation number

Tax reference number

Section 6: Record in the service of the state

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

- | | |
|--|---|
| <input type="checkbox"/> a member of any municipal council | <input type="checkbox"/> an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999) |
| <input type="checkbox"/> a member of any provincial legislature | <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> a member of the National Assembly or the National Council of Province | <input type="checkbox"/> an employee of Parliament or a provincial legislature |
| <input type="checkbox"/> a member of the board of directors of any municipal entity | |
| <input type="checkbox"/> an official of any municipality or municipal entity | |

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

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

*insert separate page if necessary

Section 7: Record of spouses, children and parents in the service of the state

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

- | | |
|--|---|
| <input type="checkbox"/> a member of any municipal council | <input type="checkbox"/> an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999) |
| <input type="checkbox"/> a member of any provincial legislature | |
| <input type="checkbox"/> a member of the National Assembly or the National Council of Province | <input type="checkbox"/> a member of an accounting authority of any national or provincial public entity |
| <input type="checkbox"/> a member of the board of directors of any municipal entity | <input type="checkbox"/> an employee of Parliament or a provincial legislature |
| <input type="checkbox"/> an official of any municipality or municipal entity | |

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

*insert separate page if necessary

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

- authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the Tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Date

Name

Position

Enterprise
name

Schedule of Proposed Subcontractors

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

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

	Name and address of proposed Subcontractor	Nature and extent of work	% of Contract Value	Previous experience with Subcontractor.
1.				
2.				
3.				
4.				
5.				
6.				
7.				

Signed

Date

Name

Position

Tenderer

Schedule of Plant and Equipment

The following are lists of major items of relevant Equipment that I/we presently own or lease and will have available for this contract or will acquire or hire for this contract if my/our tender is accepted.

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

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

(b) Details of major Equipment that will be hired, or acquired for this contract if my/our tender is acceptable.

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

Signed

Date

Name

Position

Tenderer

Schedule of the Tenderer's relevant / similar Experience

The following is a statement of similar work successfully executed by myself/ourselves:

Employer, contact person and telephone number	Description of contract	Value of work Inclusive of VAT (Rand)	Date Completed
"PREVIEW COPY ONLY"			

Signed _____ Date _____

Name _____ Position _____

Tenderer _____





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).

NB:
 • **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.

Regards,

Transnet Vendor/Supplier Management [please substitute this with your relevant Transnet department before sending this document out]



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 Details							
% Black Ownership		% Black women ownership		% Disabled person/s ownership			
Does your company have a BEE certificate		Yes		No			
What is your broad based BEE status (Level 1 to 9 / Unknown)							
How many personnel does the firm employ		Permanent		Part time			
Transnet Contact Person							
Contact number							
Transnet operating division							
Duly Authorised To Sign For And On Behalf Of Firm / Organisation							
Name				Designation			
Signature				Date			
Stamp And Signature Of Commissioner Of Oath							
Name				Date			
Signature				Telephone No.			

NB: 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.



2. VENDOR TYPE OF BUSINESS

(Please tick as applicable)

(* - Minimum requirements)

2.1	Indicate the business sector in which your company is involved/operating:		
Agriculture		Mining and Quarrying	
Manufacturing		Construction	
Electricity, Gas and Water		Finance and Business Services	
Retail, Motor Trade and Repair Services		Wholesale Trade, Commercial Agents and Allied Services	
Catering, accommodation and Other Trade		Transport, Storage and Communications	
Community, Social and Personal Services		Other (Specify)	
Principal Business Activity *			
Types of Services Provided			
Since when has the firm been in business?			

2.2	What is your company's annual turnover (excluding VAT)? *									
<R20k	>R20k <R0.3m	>R0.3m <R1m	>R1m <R5m	>R5m <R10m	>R10m <R15m	>R15m <R25m	>R25m <R30m	>R30m <R34m	>R34m <R35m	>R35m

2.3	Where are your operating/distribution centres situated *	

3. VENDOR OWNERSHIP DETAIL

(Please tick as applicable)

(* - Minimum requirements)

3.1	Did the firm previously operate under another name? *		
YES		NO	
3.2	If Yes state its previous name:*		
Registered Name			
Trading Name			



3.3	Who were its previous owners / partners / directors?*	
SURNAME & INITIALS		ID NUMBERS

3.4	List Details of current partners, proprietors and shareholders by name, identity number, citizenship, status and ownership as relevant: *							
SURNAME & INITIALS	IDENTITY NUMBER	CITI-ZENSHIP	HDI	DIS- ABLED	GENDER	DATE OF OWNERSHIP	% OWNED	% VOTING

3.5	List details of current directors, officers, chairman, secretary etc. of the firm: *					
SURNAME & INITIALS	IDENTITY NUMBER	TITLE	DIS- ABLED	GENDER	% OF TIME DEVOTED TO THE FIRM	CONTACT NUMBER

3.6	List details of firms personnel who have an ownership interest in another firm: *				
SURNAME & INITIALS	IDENTITY NUMBER	NAME & ADDRESS OF OTHER FIRM	TITLE IN OTHER FIRM	% OWNED	TYPE OF BUSINESS OF OTHER FIRM

4. VENDOR DETAIL

(Please tick as applicable) (* - Minimum requirements)

4.1	How many personnel does the firm employ? *					
	BLACK	WHITE	COLOURED	INDIAN	OTHER	TOTAL
Permanent						
Part Time						



4.1.1 In terms of above kindly provide numbers on women and disabled personnel? *

	BLACK	WHITE	COLOURED	INDIAN	OTHER	TOTAL
Women						
Disabled						

4.2 Provide Details of Contact Person/s Responsible for Broad Based Black Economic Empowerment (BBBEE) in the Company *

SURNAME	INITIALS	DESIGNATION	TELEPHONE NO.

4.2.1 Is your company a value adding supplier (i.e. registered as a vendor under the VAT Act of 1991, where NPAT + total labour cost > 25% of total revenue)?

YES		NO	
-----	--	----	--

4.2.2 Is your company a recipient of Enterprise Development Contributions?*

YES		NO	
-----	--	----	--

4.2.3 May the above mentioned information be shared and included in Transnet Supplier Database for future reference? *

YES		NO	
-----	--	----	--

4.2.4 If you are successful in the tender/contract (where applicable) and this is awarded to your company / organisation, will this have a positive impact on your employment plans? *

YES		NO	
-----	--	----	--

4.2.5 If yes (above) kindly provide the following information:

	BLACK	WHITE	COLOURED	INDIAN	OTHER	TOTAL
Permanent						
Part Time						

4.2.6 In terms of above kindly provide numbers on woman and disabled personnel:

	BLACK	WHITE	COLOURED	INDIAN	OTHER	TOTAL
Women						
Disabled						

4.2.7 Are any of your members/shareholders/directors ex employees of Transnet?

YES		NO	
-----	--	----	--

4.2.8 Are any of your family members employees of Transnet?

YES		NO	
-----	--	----	--

4.2.9 If Yes to points 4.2.7 & 4.2.8, list details of employees/ex-employees

SURNAME & INITIALS	IDENTITY NUMBER	NAME & ADDRESS OF OTHER FIRM	TITLE IN OTHER FIRM	% OWNED	TYPE OF BUSINESS OF OTHER FIRM



Internal Transnet Departmental Questionnaire (for office use only)

Section 1: To be completed by the Transnet Requesting / Sourcing Department

TFR		TRE		TPT		TPL		TNPA		TRN	
Create		Amend		Block		Unblock		Once-Off / Emergency			
Extend		Delete		Undele							

Supplier's trading name

Supplier's registered name

Please indicate if the Supplier has a contract with sourcing Transnet OD ☐ Yes ☐ No

If yes please submit a copy of the letter of award

a) What is being procured from the supplier?

i. Products only	Yes		No	
ii. Services only	Yes		No	
iii. Labour only	Yes		No	
iv. Mix of services and products	Yes		No	
v. Mix of services and labour	Yes		No	

b) If your answer is **YES** to questions II, III, IV or V in paragraph a) above, please indicate whether the relevant **PAYE questionnaires** have been forwarded to the appropriate **Transnet Operational Divisions'** decision making bodies / **Strategic Supply Management** team for a directive / decision on tax withholding from payments to this supplier.

Yes

No

c) If your reply to (b) is "**NO**", please furnish reasons :

d) Certification and Approval of proposed Vendor Creation/Unblocking/Other Changes by Transnet Official with Appropriate Delegated Authority :

I HEREBY CERTIFY THAT THE TRANSNET DETAILED PROCUREMENT PROCESS (DPP) / PROCUREMENT MECHANISM HAS IN ALL RESPECTS BEEN ADHERED TO AND I THEREFORE APPROVE THE PROPOSED VENDOR CREATION/APPROVAL/OTHER CHANGES TO BE EFFECTED ON THE VENDOR MASTER

Name	Grade	Date								Signature
		Y	Y	Y	Y	M	M	D	D	

Tel No:		Fax	
---------	--	-----	--

Section 2: To be completed by the BEE Department (this section is for Confirmation/Determining of BEE Status)

NARROW BASED (NB)				BROADBASED (BBBEE)										
BEE O/S	BWBE	DPBE	MR	CONTB. LEVEL	EME: <R5m	QSE: >R5m <R35m		LARGE: >R35m		VALIDITY DATE				
Name				Grade		Date						Signature		
						Y	Y	Y	Y	M	M	D	D	
						Y	Y	Y	Y	M	M	D	D	

BREACH OF LAW FORM

NAME OF ENTITY: _____

I/We _____

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

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

NATURE OF BREACH:

DATE OF BREACH: _____

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

SIGNED at _____ on this _____ day of _____ 20____

SIGNATURE OF WITNESS

SIGNATURE OF RESPONDENT

RFP No: SIE13015CIDB

TO: Transnet SOC Ltd

ATTENTION: The Secretariat, Transnet Freight Rail Acquisition Council [**TFRAC**]

EMAIL Prudence.nkabinde@transnet.net

DATE: _____

FROM: _____

REQUEST FOR RFP CLARIFICATION

SIGNED at _____ on this _____ day of _____ 20_____

SIGNATURE OF WITNESS

SIGNATURE OF RESPONDENT



Appendix (iii)

GUIDELINES FOR COMPLETION OF THE SUPPLIER DEVELOPMENT BID DOCUMENT [April 2013]

"PREVIEW COPY ONLY"

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Note

For the purposes of this document, any reference to a/the "**Supplier/Service Provider**" shall be construed to mean a reference to a Respondent (in terms of this RFP) and/or to a successful Respondent (to whom the business is to be awarded), as so indicated by the context hereinafter.

1 What is Supplier Development?

The Supplier Development (**SD**) Programme is an initiative of the Department of Public Enterprises (**DPE**) supported by Transnet. The aim of SD is to increase the competitiveness, capability and capacity of the South African supply base where there are comparative advantages and potential for local or regional supply. This can be achieved through skills transfer, as well as building new capability and capacity in the South African supply base. In addition, SD has its roots grounded firmly around the transformation of South Africa and the empowerment of previously disadvantaged individuals and enterprises.

2 Background and Guidance on the Supplier Development Objectives for South Africa

As a developing economy with inherent structural and social imbalances, South Africa is facing the significant economic challenge of increasing growth in a manner that includes all South Africans. The historical lack of investment in infrastructure in South Africa has negatively impacted on local industry, resulting in a loss of key skills and a decrease in manufacturing industry capabilities. To respond to this, Government policies have been designed to address these imbalances and to act as a catalyst of change for the benefit of South Africa.

One of these Government policies, the New Growth Path (**NGP**) aims to enhance growth, employment creation and equity by reducing the dependencies of South African industries on imports, and promoting the development of skills and capabilities that are in short supply within the country. It identifies strategies that will enable South Africa to grow in a more equitable and inclusive manner and promotes the development of new industry to attain South Africa's developmental agenda.

Transnet's SD effort is closely aligned to the NGP objectives and as a result we are able to fulfil our commitment to sustainability within South Africa whilst at the same time addressing other corporate objectives including increasing productivity and efficiency, volume growth, capital investment, financial stability, funding, human capital, SHEQ regulatory compliance and improving customer service.

The combined objectives of Transnet and Government will be realised through:

- aggressively implementing capital investment plans which will result in competitive local industries;
- improving operational efficiency;
- using procurement to influence the development of the local supplier industry; and
- ensuring it creates sufficient economic opportunities for the participation of previously disadvantaged groups.

This will lead to Transnet achieving its long-term objective of increasing both shareholder and societal value using its procurement expenditure to ensure local development through the sustainable growth of capability and capacity in South Africa's supply chain and the inclusion of the previously disadvantaged individuals in the economy in a manner that is beneficial to Transnet, South African industry and the people of South Africa. As a result this State Owned Company (**SOC**) is able to fulfil its responsibility as the biggest link in the South African freight logistics chain whilst complementing the objectives of Government.

3 Transnet's Supplier Development Objectives and Framework

To aid its implementation of SD, Transnet has adapted an existing framework from the DPE. This framework allows for a basic set of principles to be applied to appropriately target SD initiatives. Supplier Development initiatives aim to assist local suppliers in developing their competitive advantage through increasing their capability and capacity potential. Hence the framework has been termed the Increased Competitiveness, Capability and Capacity (IC³) Supplier Development Classification Matrix.

This framework encapsulates the types of SD opportunities which Transnet currently considers effective and allows Transnet to move its SD structure away from a dynamic policy environment towards a framework that is designed around general Supplier Development objectives. This enables Transnet to adopt a standard structure but also allows the flexibility to reconsider emphasis on certain aspects as objectives change. The IC³ Matrix (refer to Figure 1 below) categorises SD opportunities in a matrix based on their value, extent of industrial leverage and strategic importance to Transnet. Further categorisation of opportunities into the relevant quadrants is based on supplier-buyer power, industrial complexity, risk and the length of procurement period.

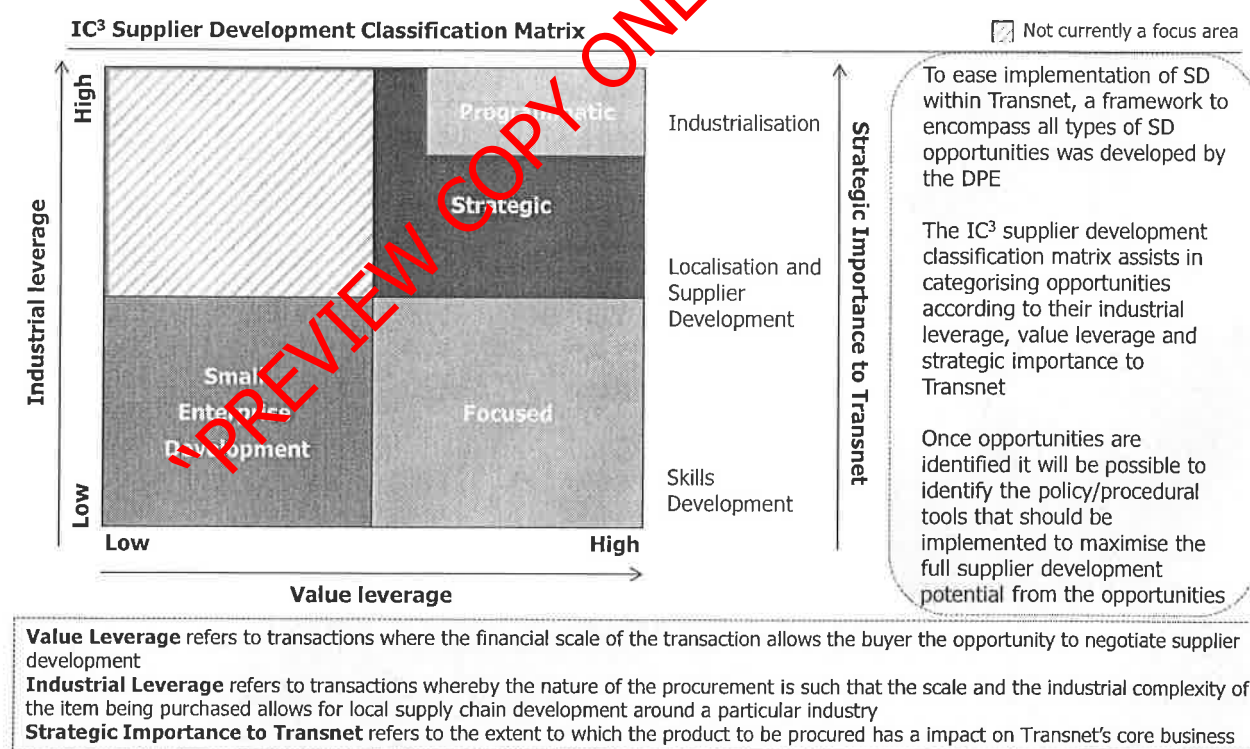


Figure 1: The IC³ Supplier Development Classification Matrix

In order for Suppliers/Service Providers to successfully meet the needs of a particular initiative, a detailed understanding of each quadrant is required.

3.1 Programmatic

Programmatic initiatives follow a longer than normal planning horizon and generally exceed the funding capacity of Transnet's balance sheet. Collaboration between the SOC and Government is achieved through focused task teams whereby infrastructure development and industrialisation is achieved through joint support and in some cases public spending. Investment is focused in plant,

technology and skills in both intermediate and advanced capabilities to develop competitive advantage.

3.2 Strategic

Strategic initiatives follow a three to five year planning horizon, involving investment in at least plant, technology and/or skills in intermediate capabilities. This enforces the need for multinational corporations and Original Equipment Manufacturers (**OEMs**) to develop a certain percentage of their products locally. Strategic initiatives can therefore be used to achieve Transnet's objectives by increasing the competitiveness, capability and efficiency of local suppliers. Strategic initiatives can sometimes focus on advanced capabilities but will in most cases require Government support to develop local capability.

3.3 Focused

Focused initiatives include all high value transactions with limited industrial leverage and medium to low strategic importance. These initiatives address short to medium-term contracts that can be leveraged to encourage Supplier Development, with a focus on investment in technology or skills to enhance existing local capability. Emphasis will largely be placed on benefiting previously disadvantaged individuals. The overall result improves the socio-economic environment by creating competitive local suppliers and furthers objectives of empowerment, transformation and regional development.

3.4 Small Enterprise Development

Small Enterprise Development initiatives are typically of low value and have no industrial leverage as they are characterised by typically low complexity goods and high competition. These initiatives concentrate on increasing the capability of small local suppliers and are targeted toward historically disadvantaged individuals and communities, providing basic skills development and improving local employment and quality job creation. It includes a wide range of non-financial services that help entrepreneurs start new business and grow existing ones.

4 Response based on the IC³ Matrix Quadrants

Based on the supplier-buyer power, industrial complexity, risk and the length of procurement period, the Supplier/Service Provider is expected to formulate a SD Bid Document to identify the opportunities that it will pursue. Ideally the SD Bid Document should address factors that are specific to the applicable quadrant of the IC³ matrix.

Transnet has identified a number of opportunities which may aid a Supplier/Service Provider in formulating its response based on each quadrant. Each of the opportunities identified by the Supplier/Service Provider should have a direct or indirect effect on the value it creates for the country in order to maximise the socio-economic impact.

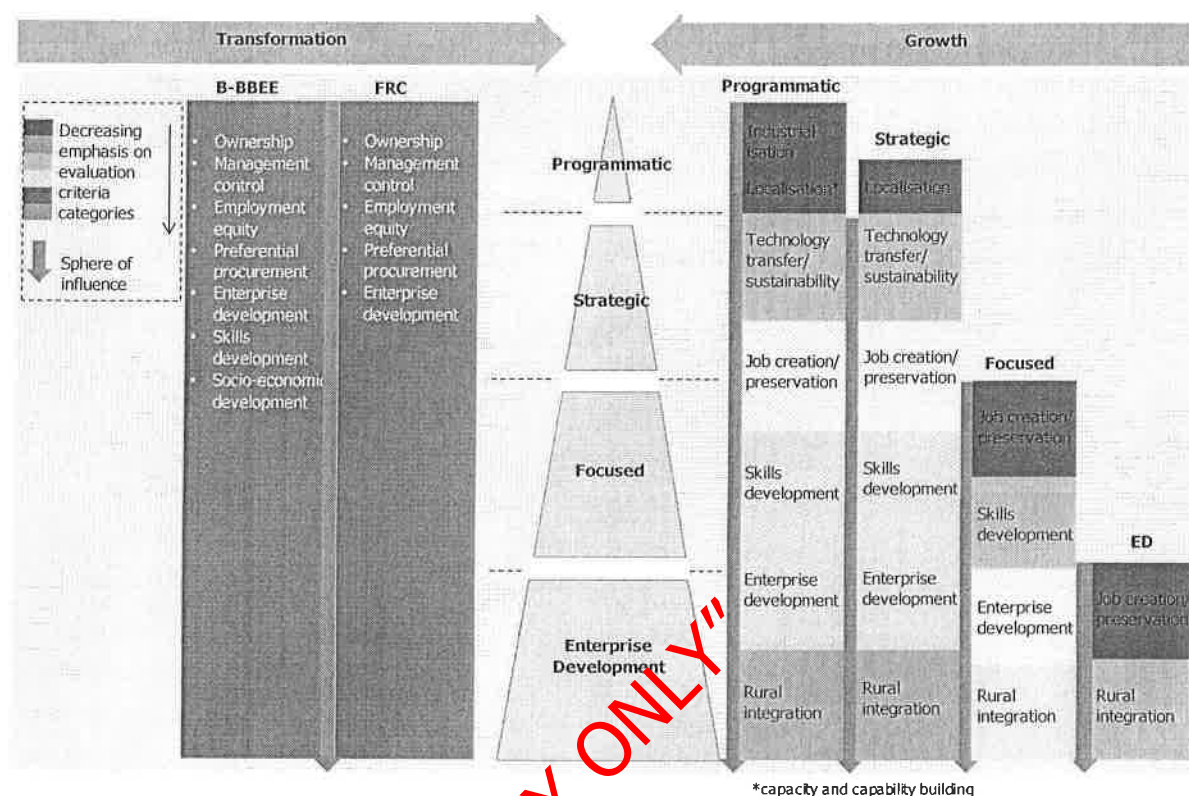


Figure 2: Transnet value capture through supplier influence

4.1 Programmatic

The strategic objective of "Programmatic transactions" is to assist Government to achieve its industrialisation objectives through the development of the local supplier base, in order to increase the cost efficiency of SOC procurement, support and maintenance programmes. In order to satisfy this objective a number of focus areas and key outcomes have been identified:

a) Programmatic Focus Areas -

- Industrialisation
- Capability and capacity building in South Africa
- Technology transfer
- Skills development related to the manufacturing process and the industry
- Development of new technology and innovation
- Investment in plant
- Development of local companies aligned to empowerment objectives

b) Key Outcomes -

- Industrialisation
- Manufacturing capability and capacity building
- Technology transfer
- Skills development

4.2 Strategic

The main objective of Strategic transactions is to leverage local downstream suppliers through large-scale SOC procurement in order to develop a competitive local supplier base. In response to these objectives the following are the specific focus areas and key outcomes applicable:

- a) Strategic Focus Areas -
 - Capability and capacity building in South Africa
 - Transfer of technology and innovation to local suppliers from foreign OEM's
 - Skills development related to the industry
 - Development of local companies aligned to empowerment objectives
- b) Key Outcomes -
 - Increased S.A. manufacturing capability and capacity
 - Increased technology transfer
 - Skills development
 - Job creation/preservation

4.3 Focused

Focused initiatives assist local suppliers to improve their performance, enhance their existing production and skills capabilities with emphasis being placed on benefiting previously disadvantaged individuals and rural development. In order to satisfy these objectives a number of focus areas and key outcomes have been identified:

- a) Focused Focus Areas -
 - Developing a local supplier base that supports preferential procurement outcomes
 - Developing skills within the specific industry
 - Creating opportunity for job preservation
 - Reducing income inequality in specific regions
- b) Key Outcomes -
 - Empowerment
 - Skills development
 - Rural development
 - Job creation/preservation

4.4 Small Business Development

Enterprise Development (ED) objectives are centred around assisting local suppliers to improve their skills by placing increased emphasis on benefiting previously disadvantaged individuals and rural development in line with the Broad-Based Black Economic Empowerment (B-BBEE) strategy. The following focus areas and key outcomes have been identified:

- a) Small Business Development Focus Areas -
 - Providing small businesses with opportunities and preferential trading terms, increased focus on Black woman-owned enterprises, focus on the youth, people with disabilities and region-specific initiatives

- Empowering previously disadvantaged individuals to create their own businesses resulting in quality job creation
- b) Key Outcomes -
 - Empowerment
 - Rural development
 - Skills development
 - Job creation/preservation

Based on these focus areas and key outcomes, a Supplier/Service Provider would need to actively focus on the quadrant-specific requirements in order to maximise the potential commercial benefit for Transnet, South Africa and themselves. In doing so value can be created across all lines of reporting resulting in continued relations.

5 Supplier Development Category Definitions and High Level Descriptions

5.1 Industrialisation

Industrialisation refers specifically to industrial development that will result in globally leading capabilities within South Africa.

Criteria	Description
➤ Value of investment in plant	➤ Quantification of the monetary value invested in machinery, equipment and/or buildings as a result of this RFP
➤ Percentage of the investment of plant purchased in South Africa	➤ Percentage value invested in machinery, equipment and/or buildings that are sourced from local companies
➤ Reduction in import leakage	➤ A percentage indication of the increase in locally supplied products and therefore the resultant decrease in imports as a result of the award of a contract
➤ Potential increase in export content	➤ The percentage increase in exports that will result from increased industrial capability locally in relation to the award of a contract

5.2 South African Capability and Capacity Building

South African capability and capacity building refers specifically to industrial development that focuses on value-added activities for the local industry through manufacturing or service-related functions.

Criteria	Description
➤ Value-added manufacturing activity/activities to be undertaken in South Africa	➤ Description of value-added activities to be performed during the contract period in South Africa
➤ Service-related functions to be undertaken in South Africa	➤ Description of service-related functions to be performed during the contract period in South Africa
➤ Number of local suppliers in the supply chain	➤ Number of South African suppliers that are to be utilised in the fulfilment of a contract

5.3 Technology transfer/sustainability

Technology improvements are intangible assets with significant economic value. The Supplier/Service Provider will be measured on its plan to transfer knowledge and IP to contribute towards capability building of the local supply base, which ultimately leads to improved efficiency and capability. Plans to assist in this by a Supplier/Service Provider must be assessed to enable the local supply base to potentially export its newly-acquired technological know-how, thereby decreasing capital leakage.

Criteria	Description
Technology transfer including:	
➤ Methods of manufacturing	➤ Introduction of a new/improved method of manufacturing
➤ Introduction of new technologies	➤ Provision of new technologies: <ul style="list-style-type: none"> ○ For processes ○ ICT
➤ IP transfer (number and value)	➤ The provision of patents, trademarks and copyrights
➤ Number of local suppliers to be evaluated for integration into the OEM supply chain	➤ An indication of the number of South African suppliers that an OEM/Service Provider plans to evaluate for possible inclusion into its supply chain, should it meet the requirements

5.4 Skills development

Skills development indicates the company's commitment to education and whether that fits in with targeted groups (artisans, technicians, etc.). Consideration needs to be directed towards the adequate quality and value of skills so developed in order to allow for better evaluation in line with Government's objectives.

Criteria	Description
➤ Number of downstream supply chain individuals to be trained including: <ul style="list-style-type: none"> • Number of artisans trained • Number of technicians trained • Number of black people trained • Total number of people trained 	➤ Number of individuals that the Supplier/Service Provider plans to train in the local industry over the contract period; training undertaken in the previous year will be taken into account
➤ Number of company employees to be trained	➤ Number of individuals within the company (in South Africa) that the Supplier/Service Provider plans to train over the contract period; training undertaken in the previous year will not be taken into account as past employee training appears in the skills development pillar of the B-BBEE scorecard; criteria broken down as for industry training above
➤ Certified training (yes/ no)	➤ Compliance with local and/or international skills accreditation

Criteria	Description
➤ Rand value spent on training	➤ Total planned monetary value spend (as a % of contract value) on skills development /training for the contract period within the industry; money spent in the previous year will be included in year 1 to make allowance for Suppliers/Service Providers who have just completed a training drive within the industry
➤ Number of bursaries/ scholarships (specify field of study)	➤ The number of higher education bursaries/scholarships provided in the previous year and planned for the length of the contract
➤ Number of apprentices (sector must be specified)	➤ The number of apprentices that the Supplier/Service Provider plans to enlist during the course of the contract
➤ Investment in Schools in specific sectors e.g. engineering	➤ The monetary value that the Supplier/Service Provider is prepared to invest in the development and running of schools to increase technical skills development

5.5 Job creation/preservation

Job creation and/or preservation allows assessment of Government's objectives to increase labour absorption, focusing on unskilled workers and the youth.

Criteria	Description
➤ Number of jobs preserved	➤ Number of jobs which would be preserved through Award of Contract
➤ Number of jobs created including: <ul style="list-style-type: none"> • New skilled jobs created • New unskilled jobs created 	➤ Number of jobs to be created during the period of the contract <ul style="list-style-type: none"> • Jobs for people in a specialised field of work requiring a defined training path and / or requisite level of experience in order for them to perform that role. These people could be in possession of a certificate, diploma or degree from a higher education institution. • Jobs for people where the field of work does not require extensive formal training or from whom no minimum level of education is required
➤ Number of jobs created for youth	➤ Jobs created for individuals aged 16 – 35 years
➤ Number of jobs created for Black youth	➤ Jobs created for Black individuals aged 16 – 35 years

5.6 Small business promotion

Small business promotion criteria give an indication of the Supplier/Service Provider's commitment to developing small business in line with NGP and B-BBEE requirements.

Criteria	Description
<ul style="list-style-type: none"> ➤ Percentage procurement from: <ul style="list-style-type: none"> • QSEs • EMEs • Start-ups 	<ul style="list-style-type: none"> ➤ Refers to the planned procurement from small business as a % of the total planned procurement spend
<ul style="list-style-type: none"> ➤ Non-financial support provided to small business 	<ul style="list-style-type: none"> ➤ Suppliers/Service Providers will be credited for each non-financial ED support that they are planning to give to small business e.g. Professional support; employee time allocated to assisting small business
<ul style="list-style-type: none"> ➤ Financial support provided to small business 	<ul style="list-style-type: none"> ➤ Suppliers/Service Providers will be credited for each financial ED support initiative that they are planning to undertake during the contract period e.g. Shorter payment terms; interest free loans
<ul style="list-style-type: none"> ➤ Joint ED initiatives with Transnet 	<ul style="list-style-type: none"> ➤ The number of ED initiatives that the Supplier/Service Provider will jointly run with Transnet: <ul style="list-style-type: none"> • That are aligned to Transnet's objectives • That are non-financial in nature

5.7 Rural development/integration

Rural development / integration indicates the Supplier/Service Provider's planned use of local labour and business which will contribute to Governments NGP objectives and result in supply chain efficiencies. Commitment to rural development will result in the alleviation of poverty and thereby contribute to development objectives. The development must be sustainable in order to have a long-term and meaningful impact.

Criteria	Description
<ul style="list-style-type: none"> ➤ Number of local employees 	<ul style="list-style-type: none"> ➤ Number of people employed from within the town/city of operation
<ul style="list-style-type: none"> ➤ Value spent on local business 	<ul style="list-style-type: none"> ➤ Monetary value spent on businesses within the town/city of operation
<ul style="list-style-type: none"> ➤ Proximity of business to operations 	<ul style="list-style-type: none"> ➤ The locality of the business in relation to operations, preference is given for regional (provincial) locality
<ul style="list-style-type: none"> ➤ Number of rural businesses to be developed 	<ul style="list-style-type: none"> ➤ The number of rural businesses that the Supplier/Service Provider plans to develop as a result of the contract
<ul style="list-style-type: none"> ➤ Value of development to local community (sustainable) 	<ul style="list-style-type: none"> ➤ The monetary value spent on rural community development that will result in long-term social improvements

6 Market Intelligence Assistance

Suppliers/Service Providers with limited knowledge of the local market, supply base and its capabilities may require assistance in identifying local suppliers and the development needs in order to develop its SD Bid Document. The United Nations Industrial Development Organisation (UNIDO) supplies a benchmarking service in South Africa which will be able to assist Suppliers/Service Providers in identifying potential local suppliers with which to work. In addition, this service will provide insight as to the type of support that these local suppliers require in order to become more competitive. UNIDO's benchmarking tool gives insight into the performance levels being seen in Supplier/Service Providers' businesses and the practices used to deliver the products or services being offered. The benchmarking tool focuses on:

- 6.1 Performance data relating to -
 - a) Financial performance
 - b) Customer data
 - c) Processes
 - d) Learning & growth
- 6.2 Company's current business situation -
 - a) Plans for the business and capabilities to manage their fulfilment
 - b) Ability to generate business
 - c) Employee relationships
 - d) Developing new markets
 - e) Developing products and services
 - f) Managing money

The UNIDO benchmarking tool provides a basic framework through which an understanding of the South African market can be established. Whilst the list of criteria may not be exhaustive, Suppliers/Service Providers are free to meet with UNIDO to further understand how they can work together to develop a deeper understanding of the market and the SD opportunities available.

7 Government Policy Documents

- NIPP http://www.thedti.gov.za/industrial_development/nipp.jsp
 IPAP2 <http://www.thedti.gov.za/DownloadFileAction?id=561>
 CSDP <http://www.dpe.gov.za/res/transnetCSDP1.pdf>
 NGP <http://www.thepresidency.gov.za/pebble.asp?relid=2323>

8 Other Reference Websites

References	Website
Department of Public Enterprise (DPE)	www.dpe.gov.za
United Nations Industrial Development Organisation (UNIDO)	www.unido.org/spx

GLOSSARY OF WORDS

Broad-Based Black Economic Empowerment (B-BBEE)

A South African legal requirement that require all entities operating in the South African economy to contribute to empowerment and transformation

Enterprise Development (ED)

An element contained within the B-BBEE scorecard whereby a Measured Entity can receive recognition for any Qualifying Enterprise Development Contributions towards Exempted Micro-Enterprises or Qualifying Small Enterprises which are 50% black owned or 30% black woman owned. Enterprise Development Contributions consists of monetary and non-monetary, recoverable and non-recoverable contributions actually initiated in favour of a beneficiary entity by a measured entity with the specific objective of assisting or accelerating the development, sustainability and ultimate financial independence of the beneficiary. This is commonly accomplished through the expansion of a beneficiaries financial and/ or operation capacity.

Industrial Policy Action Plan II (IPAPII)

The implementation plan for the National Industrial Policy Framework (NIPF) which details key action plans (KAPs) and timeframes for the implementation of industrial policy actions in line with the NIPF.

Integrated Supply Chain Management (iSCM)

Refers to an integrated "one supply chain management" strategy within Transnet which has been developed with Centres of Excellence (COEs) with cross-functional teams comprising divisional and corporate task team members, to deliver value through improved efficiencies and compliance with the regulatory environment.

New Growth Path (NGP)

Developed by the Economic Development Department tabled in January 2010 frames a new approach to unlocking economic growth by knitting together the IPAP2 as well as policies and programmes in rural development, agriculture and, sciences & technology, education, skills development, labour, mining and beneficiation, tourism and social development with the aim to target limited capital and capacity at activities that maximise the creation of decent work opportunities. Key indicators include: Quality job creation, Youth employment, Labour intensive growth, and Equity.

Original Equipment Manufacturer (OEM)

Refers to a manufacturing company that owns the intellectual property rights and patents for the equipment it sells and services

Socio-economic Development

Refers to development which addresses social and economic aspects such as job creation, poverty reduction and increased national value add and which not only focuses on the business's financial bottom line.

State Owned Company (SOC)

Refers to Government-owned corporations. They are legal entities created, and owned, by Government to undertake commercial activities on behalf of an owner Government, and are usually considered to be an element or part of the state. They are established to operate on a commercial basis.

Supplier Development (SD)

Improving the socio-economic environment by creating competitive local suppliers via Enterprise Development, CSDP and other initiatives such as Preferential Procurement. This results in a supply base that can eventually be competitive to market its goods on the international market leading to increased exports.

United Nations Industrial Development Organisation (UNIDO)

A specialised agency of the United Nations. Its mandate is to promote and accelerate sustainable industrial development in developing countries and economies in transition, and work towards improving living conditions in the world's poorest countries by drawing on its combined global resources and expertise.

SIGNED at _____ on this _____ day of _____ 20____

SIGNATURE OF WITNESS

SIGNATURE OF RESPONDENT

SUPPLIER CODE OF CONDUCT

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

- The Transnet Supply Chain Policy
- Section 217 of the Constitution - the five pillars of Public PSCM [Procurement and Supply Chain Management]: fairness, equity, transparency, competitiveness and cost effectiveness;
- The Public Finance Management Act [PFMA];
- The Preferential Procurement Policy Framework Act [PPPFA];
- The Broad-Based Black Economic Empowerment Act [B-BBEE]; and
- The Prevention and Combating of Corrupt Activities Act.

This Code of Conduct has been included in this RFP to formally apprise prospective Transnet Suppliers of Transnet's expectations regarding the behaviour and conduct of its Suppliers.

Prohibition of bribes, kickbacks, unlawful payments, and other corrupt practices

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

a) *Transnet will not participate in corrupt practices and therefore expects its Suppliers to act in a similar manner.*

- Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions and payments to our Suppliers.
- Employees must not accept or request money or anything of value, directly or indirectly, to:
 - illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;
 - win or retain business or to influence any act or decision of any decision stakeholders involved in sourcing decisions; or
 - gain an improper advantage.
- There may be an occasion when a Supplier is confronted with fraudulent or corrupt behaviour by a Transnet employee. We expect our Suppliers to use our "Tip-offs Anonymous" Hot line to report these acts [0800 003 056].

b) *Transnet is firmly committed to the ideas of free and competitive enterprise.*

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

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

- Generally, Suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our Suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
 - misrepresentation of their product [e.g. origin of manufacture, specifications, intellectual property rights];
 - collusion;
 - failure to disclose accurate information required during the sourcing activity [e.g. ownership, financial situation, B-BBEE status];
 - corrupt activities listed above; and
 - harassment, intimidation or other aggressive actions towards Transnet employees.
- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the Supplier is expected to participate in an honest and straight forward manner.
- Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

Conflicts of interest

A conflict of interest arises when personal interests or activities influence [or appear to influence] the ability to act in the best interests of Transnet. Examples include, but are not limited to:

- Transnet employees awarding business to entities in which their family members or business associates have an interest
- Transnet employees having a financial interest in a bidding entity

Bidding entities are required to disclose any interest/s which exist between themselves and any employee and/or Transnet Board member.

SIGNED at _____ on this _____ day of _____ 20____

SIGNATURE OF WITNESS

SIGNATURE OF RESPONDENT

PART C1 AGREEMENT AND CONTRACT DATA

"PREVIEW COPY ONLY"

C1.1 FORM OF OFFER AND ACCEPTANCE (TSC)(ECC3)

OFFER

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

REPLACE OLD OIL / OBSOLETE SWITCHGEAR AT VARIOUS 6.6/11KV DISTRIBUTION SUBSTATIONS COUNTRY-WIDE – PHASE 2 STAGE 2

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

By the representative of the tenderer, signing this part of this Form of Offer and Acceptance, the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data. The representative, when signing this part of the Form of Offer and Acceptance, shall be deemed to be duly authorised by a Resolution of the Board of Directors/Certificate of Partners, a certified copy to be included in the Returnable Documents.

The offered total for the (Bellville, Port Elizabeth & East London Depots) exclusive of VAT is	R
The offered total for the (Kimberly North + South & Krugersdorp Depots) exclusive of VAT is	R
The offered total of the whole tender exclusive of VAT is	R
Value Added Tax @ 14% is	R
The offered total of the Prices inclusive of VAT is	R
(in words)	

If Option E or F (Cost reimbursable or management contract) applies, replace table with following sentence: "The offered prices are the Actual Cost plus the fee contained in the Contract Data".

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

Signature(s)

Name(s)

Capacity

**For the
tenderer:**

(Insert name and address of organisation)

Name of
witness

Signature of
witness

Date

Tenderer's CIDB registration number (if any):

ACCEPTANCE

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

The terms of the contract, are contained in:

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

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

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

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

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

Signature(s)

Name(s)

Capacity
for the
Employer

Name of
witness

Signature of
witness

Date

Transnet SOC Ltd trading as Transnet Freight Rail, Carlton Centre, 150 Commissioner Street, Johannesburg, 2000

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

SCHEDULE OF DEVIATIONS

Note:

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

No.	Subject	Details
1		
2		
3		
4		
5		
6		
7		

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

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

C1.2 CONTRACT DATA

The General Conditions of Contract are the NEC3 Engineering and Construction Contract (June 2005) (ECC3), copies of which may be obtained from the South African Institution of Civil Engineering (tel. 011-805 5947) or Engineering Contract Strategies (tel. 011 803-3008).

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

Part One – Data Provided by the *Employer*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

Statements given in all contracts

1 General

(a) The *conditions of contract* are the core clauses and the clauses for Main Option B, dispute resolution Option W1 and secondary Options X1, X3, X7, X13, X16, X18 and Z of the NEC3 Engineering and Construction Contract (June 2005) as amended June 2006.

(b) The *Contractor's Offer* and the *Employer's Acceptance* is in Part C1.1 Form of Offer and Acceptance.

(c) The *works* are:

Replace old oil / obsolete Switchgear at various 6.6/11kV Distribution Substations country-wide – Phase 2 Stage 2

(d) The *Employer* is

Name Transnet SOC Ltd trading as Transnet Freight Rail
Address 49th Floor Carlton Centre
150 Commissioner Street
JOHANNESBURG
2000

The address of the Employers Finance Office is: **To be advised**

(e) The *Project Manager* is

Name Malibongwe Mlonzi
Address TFR, Inyanda 3, Parktown

(f) The *Supervisor* is

Name **To be advised**

Address _____

- (g) The *Adjudicator* **will be appointed if a dispute arises.**
- (h) The Works Information is in **Part C3 - "Scope of Work"**.
- (i) The Site Information is in **Part C4 - "Site Information"**.
- (j) The *boundaries of the site* are including the geographic area covering all Transnet Freight Rail railway lines falling within the jurisdiction and responsibility of the **Infra Zone Managers.**
- (k) The *language of this contract* is **English.**
- (l) The *law of the contract* is the law of **the Republic of South Africa.**
- (m) The *period for reply to a communication* is **2 weeks. (Matters to be referred to Acquisition Council for approval will take longer)**
- (n) The *Adjudicator nominating body* is **the Association of Arbitrators (Southern Africa).**
- (o) The *tribunal* is **Arbitration.**
- (p) The following matters will be included in the Risk Register
- 1 Risk of electrical shock.
 - 2 Adequacy of staffing.
 - 3 Use of safety and protective equipment.
 - 4 Competence of employees.
 - 5 Fitness for duty.
 - 6 Theft and vandalism of material and equipment.
 - 7 Damage to existing services.
 - 8 Delivery of equipment.
 - 9 Site Access.
 - 10 Other faults in the system.
 - 11 Cancellation of working permits.
 - 12 Lack of staff for supervision.
 - 13 Work near live electrical equipment (OHTE and other) holds a danger of electrocution for workers.

3 Time

- (a) The *starting date* is the contract date.
- (b) The *access dates* are
For the duration of the contract
- (c) The *Contractor* submits revised programmes at intervals no longer than **1 (one) month.**

4 Testing and Defects

- (a) The *defects date* is **52** weeks after completion of the whole of the works.
- (b) The *defect correction period* is **N/A** weeks
- (i) The *defect correction period* for **N/A.**
 - (ii) The *defect correction period* for **N/A.**

5 Payment

- (a) The *currency of this contract* is the **South African Rand (ZAR)**.
- (b) The *assessment interval* is **on the 10th of each month**.
- (c) The *interest rate* is **two percent** per annum above the **prime lending rate of the Standard Bank of South Africa Limited as determined from time to time**.

6 Compensation events

- (a) The place where weather is to be recorded is at **each site**.
- (b) The *weather measurements* to be recorded for each calendar month are
 - (i) the cumulative rainfall (mm)
 - (ii) the number of days with rainfall more than **10mm**
 - (iii) the number of days temperature below zero
 - (iv) the number of days snow lying on the ground at 09h00.
- (c) The *weather measurements* are supplied by the **SA Weather Service**.
- (d) The *weather data* are the records of past *weather measurements* for each calendar month which were recorded by **an official weather station nearest to each site** and which are available from **SA Weather Service**.
- (e) Where no recorded data are available

N/A

Assumed values for the ten year return *weather data* for each *weather measurement* for each calendar month are

N/A

7 Title

N/A

8 Risks and insurance

- (a) The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the *works*, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is **whatever the Contractor deems desirable in addition to that provided by the Employer**.
- (b) The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is that **which is prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended**.

Optional statements

(a) If the tribunal is arbitration the arbitration procedure is:

- The Rules for the conduct of Arbitrations issued by the Association of Arbitrators (Southern Africa) by an Arbitrator to be mutually agreed by the Parties, and failing agreement to be appointed by the Association of Arbitrators.
- The place where arbitration is to be held is: **[Johannesburg]**
- The person or organisation who will choose an Arbitrator if the Parties cannot agree a choice is **The Chairman of the Association of Arbitrators (Southern Africa).**

(b) If the **Employer** has decided the completion date for the whole of the **works**

The completion date for the whole of the **works** is **15 Months** if **contracts** are awarded to more than one contractor and **18 Months** if whole of the **works** is awarded to one contractor.

(c) The **Employer** is not willing to take over the **works** before the Completion Date,

(d) If no programme is identified in part two of the Contract Data

The **Contractor** is to submit a first programme for acceptance within **4 weeks** of the Contract Date.

(e) If the **Employer** has identified work, which is to meet a stated condition by a key date.

The *key dates* and *conditions* to be met are:

Not applicable

All work to be completed is as stated in the Scope of Works.

(f) If the period in which payments are made is not three weeks and Y(UK) is not used

The period within which payments are made is **30 days** within receipt of the VAT invoice, based on the progress payment certificate prepared by the Project Manager.

(g) If there are additional compensation events

These are additional compensation events

1 Any change to the Works Information.

2

3

(h) If there are additional **Employer's** risks

These are additional *Employer's* risks

1 Non performance on part of contractor

2 Slow progress

3

(i) If the **Employer** is to provide any of the insurances stated in the Insurance Table

The **Employer** provides these insurances from the Insurance Table

1. Insurance against loss of or damage to the *works*, Plant and Materials is as stated in the insurance policy for contract works and public liability (Principal Controlled Insurance), attached to the tender documents.

Cover/indemnity is to the extent as stated in the insurance policy for contract works and public liability (Principal Controlled Insurance), attached to the tender documents.

The deductibles are as stated in the insurance policy for contract works and public liability (Principal Controlled Insurance), attached to the tender documents.

2. Insurance against loss of or damage to Equipment (**Temporary Works only**) as stated in the insurance policy for contract works and public liability (Principal Controlled Insurance), attached to the tender documents.

Cover/indemnity is to the extent as stated in the insurance policy for contract works and public liability (Principal Controlled Insurance), attached to the tender documents.

The deductibles are as stated in the insurance policy for contract works and public liability (Principal Controlled Insurance), attached to the tender documents.

3. Insurance against loss of or damage to property (except the *works*, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract as stated in the insurance policy for contract works and public liability (Principal Controlled Insurance), attached to the tender documents.

Cover/indemnity is to the extent as stated in the insurance policy for contract works and public liability (Principal Controlled Insurance), attached to the tender documents.

The deductibles are as stated in the insurance policy for contract works and public liability (Principal Controlled Insurance), attached to the tender documents.

(j) If additional insurances are to be provided

The **Employer** provides these additional insurances

1. **Contract Works SASRIA insurance subject to the terms exceptions and conditions of the SASRIA coupon policy.**

Cover/indemnity is to the extent provided by the SASRIA coupon policy.

The deductibles are in respect of each and every theft claim 0,1% of Contract Value subject to a minimum of R 2,500-00 and a maximum of R 25,000-00.

The *Contractor* provides these additional insurances

- 1 Where the Contract requires that design of any part of the *works* shall be provided by the *Contractor*, he shall satisfy the *Employer* that professional indemnity insurance cover in connection therewith has been affected.
- 2 Where the Contract involves manufacture, and/or fabrication of Plant and Materials, components or other goods to be incorporated into the *works*, at premises other than the site, the *Contractor* shall satisfy the *Employer* that such Plant and Materials, components or other goods for incorporation in the *works* are adequately insured during manufacture and/or fabrication.
- 3 Should the *Employer* have an insurable interest in such items during manufacture or fabrication, such interest shall be noted by endorsement to the *Contractor's* policies of insurance as well as those of any subcontractor.
4. The insurance coverage referred to in 1 and 2 above shall be obtained from an insurer in terms of an insurance policy approved by the *Employer*. The *Contractor* shall arrange with the insurer to submit to the *Project Manager* the original and duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the *Contractor*.

Option B:

All clauses will apply with the following amplification:-

- (a) The method of measurement is as indicated in the measurement clauses of SABS 1200.
- (b) The last sentence of Clause 63.13 of Option B states:-
"The *Employer* and the *Contractor* agree, rates and lump sums to be used to assess a compensation event instead of Defined Cost".
- (c) When agreed rates and lump sums are used, Compensation Events are assessed as follows:-
 - (i) Where in the opinion of the *Project Manager* work is of a similar character and executed under similar conditions to work priced in the Bill of Quantities, it is to be valued at such rates and prices (including General Items) contained therein as may be applicable; or
 - (ii) Where work is not of a similar character or is not executed under similar conditions, the rates and prices in the Bill of Quantities are to be used as the basis for valuation as far as may be reasonable; or
 - (iii) Where work cannot reasonably be valued in accordance with Clauses (c)(i) and (c)(ii) above, suitable rates or prices are agreed upon between the *Project Manager* and the *Contractor* after due consultation by the *Project Manager* with the *Employer* and the *Contractor*, or

- (iv) In respect of additional or substituted work, the *Project Manager* may, if in his opinion it is necessary or desirable, issue an instruction that the work be executed in some other appropriate manner.
- (v) If the parties cannot agree, the *Project Manager* notifies the *Contractor* accordingly and makes his own assessment.

OPTION X1:

PRICE ADJUSTMENT FOR INFLATION:

NOT APPLICABLE Tender to be priced inclusive of any adjustment for inflation (Cost breakdown to be provided)

Option X3:

NOT APPLICABLE Tender to be priced inclusive of any foreign portion (Cost breakdown to be provided)

Option X7:

Delay damages is a penalty in South African Law and the word penalty is to replace delayed damages throughout the Contract.

- 1) If the Contractor delays any trains and Transnet Freight Rail (TFR) is satisfied that the delay was avoidable, a penalty will be imposed on the Contractor of R10,000 per hour or part thereof for the period of delay, irrespective of the number of trains delayed.
- 2) **Penalties for late completion of the whole of the works is R 5, 000-00 per day.**

Option X13:

- a) The amount of the Guarantee (Performance Bond) is to be calculated at **5% or 10 %** of the total tender price (Excl VAT).

The Contractor has the option of either providing the guarantee of 5% and having retention money of 10% deducted from each claim, or alternatively, providing a guarantee of 10% and having retention money of 5% deducted from each claim.

- b) The Form of Guarantee (or Performance Bond) is in Clause C 1.3 of Part C1.

Option X16:

Retention

- (a) The retention free amount is **Nil**

The **Retention Percentage** is **5 or 10 %**, depending on the option exercised in option X13 above.

Option X18: Limitation of Liabilities

The *Contractor's* liability to the *Employer* for indirect or consequential loss is limited to 10% of the total contract value or R1,000,000.00 (One million Rand), whichever is the higher amount.

For any one event, the *Contractor's* liability to the *Employer* for loss of or damage to the *Employer's* property is limited to the deductible in terms of the Employers arranged insurance as set out in the contract.

The *Contractor's* liability for Defects due to his design of an item of Equipment is limited to R1,000,000.00 (One million Rand).

The *Contractor's* total liability to the *Employer* for all matters arising under or in connection with this contract, other than the excluded matters, is limited to 10% of the total value of the contract at time of contract award or R1,000,0000 (One million Rand) whichever is the higher amount.

The *end of liability date* is two months after the end of the *service period*.

Option Z Additional conditions of contract

The Additional conditions of contract are

Z1.1 DAY

Day is a calendar day and where a specific number of days is allowed in the Contract for the performance of any act or is stipulated for the extinction of any right or the duration of any event or circumstance, public holidays and the annual Christmas break from 20 December to 4 January (both days included) is excluded from the calculation of the number of days concerned.

Z1.2 ASSIGNMENT & CESSION (See clause Z3)

Z1.3 NON-WAIVER

No grant by the *Employer* or the *Contractor* to the other of any concession, waiver, condonation or allowance is, in respect of any specific event or circumstance other than that in respect of which the grant was made to constitute a waiver of the rights of the grantor in terms of the Contract or an *estoppel* of the grantor's right to enforce the provision of the Contract.

Z1.4 LIMITATION OF THE AUTHORITY OF THE PROJECT MANAGER

The Project Manager is authorised to agree increases to the contract value to a maximum of R 2,000,000.00 or 10% of the contract amount (excluding VAT) whichever is the lesser amount without referring it to the management of the *Employer*. If referral to management is necessary, a period of 8 weeks over and above any times allowed in the Contract is to be provided.

Z1.5 PROJECT MANAGER'S DEPUTY means the person appointed by the Project Manager to administer the Contractor's performance and execution of Works according to the powers and rights held by and obligations placed upon the Project Manager's Deputy in terms of the Contract and the appointment.

Z1.6 BACKGROUND INTELLECTUAL PROPERTY means all Intellectual Property introduced and required by either Party to give effect to their obligations under this Agreement owned in whole or in part by or licensed to either Party or their affiliates prior to the Commencement Date or developed after the Commencement Date otherwise pursuant to this Agreement.

Z1.7 CONFIDENTIAL INFORMATION means any information or other data, whether in written, oral, graphic or in any other form such as in documents, papers, memoranda, correspondence, notebooks, reports, drawings, diagrams, discs, articles, samples, test results, prototypes, designs, plans, formulae, patents, or inventor's certificates, which a Party discloses or provides to the other Party (intentionally or unintentionally, or as a result of one Party permitting the representative of the other Party to visit any of its premises), or which otherwise becomes known to a Party, and which is not in the public domain and includes, without limiting the generality of the term –

- (a) information relating to methods of operation, data and plans of the disclosing Party;
- (b) the contents of this Agreement;
- (c) private and personal details of employees or clients of the disclosing Party or any other person where an onus rests on the disclosing Party to maintain the confidentiality of such information;
- (d) any information disclosed by either Party and which is clearly marked as being confidential or secret;
- (e) information relating to the strategic objectives and planning of the disclosing Party relating to its existing and planned future business activities;
- (f) information relating to the past, present and future research and development of the disclosing Party;

- (g) information relating to the business activities, business relationships, products, services, customers, clients and Subcontractors of the disclosing Party where an onus rests on the disclosing Party to maintain the confidentiality of such information;
- (h) information contained in the software and associated material and documentation belonging to the disclosing Party;
- (i) technical and scientific information, Know-How and trade secrets of a disclosing Party including inventions, applications and processes;
- (j) Copyright works;
- (k) commercial, financial and marketing information;
- (l) data concerning architecture, demonstrations, tools and techniques, processes, machinery and equipment of the disclosing Party;
- m) plans, designs, concepts, drawings, functional and technical requirements and specifications of the disclosing Party;
- (n) information concerning faults or defects in goods, equipment, hardware or software or the incidence of such faults or defects; and information concerning the charges, Fees and / or costs of the disclosing Party or its authorised Subcontractors, or their methods, practices or service performance levels actually achieved;

Z1.8 FOREGROUND INTELLECTUAL PROPERTY means all Intellectual Property developed by either Party pursuant to this Agreement;

Z1.9 "INTELLECTUAL PROPERTY" means Patents, Designs, Know-How, Copyright and Trade Marks and all rights having equivalent or similar effect which may exist anywhere in the world and includes all future additions and improvements to the Intellectual Property. (See Clauses 80.1, 83.1 and 83.2)

Z1.10 "TRADE MARKS" mean registered Trade Marks and trade mark applications and includes any sign or logo, or combination of signs and/or logos capable of distinguishing the goods or services of one undertaking from those of another undertaking.

Z1.11 INTELLECTUAL PROPERTY RIGHTS

Title to Confidential Information

- a) Transnet will retain all right, title and interest in and to its Confidential Information and Background Intellectual Property and the Supplier acknowledges that it has no claim of any nature in and to the Confidential Information and Background Intellectual Property that is proprietary to Transnet. For the avoidance of doubt, all the Supplier's Background Intellectual Property shall remain vested in the Supplier.
- b) Transnet shall grant to the Supplier an irrevocable royalty free non-exclusive license to use Transnet's Background Intellectual Property only for the Permitted Purpose. This license shall not permit the Supplier to sub-license to other parties.
- c) The Supplier shall grant to Transnet an irrevocable, royalty free, non-exclusive license to use the Supplier's Background Intellectual Property for the Permitted Purpose. This license shall not permit Transnet to sub-license to other parties.

The Supplier shall grant Transnet access to the Supplier's Background Intellectual Property on terms which shall be bona fide negotiated between the Parties for the purpose of commercially exploiting the Foreground Intellectual Property, to the extent that such access is required.

Z1.12 TITLE TO INTELLECTUAL PROPERTY

- a) All right, title and interest in and to Foreground Intellectual Property prepared conceived or developed by the Supplier, its researchers, agents and employees shall vest in Transnet and the Supplier acknowledges that it has no claim of any nature in and to the Foreground Intellectual Property. The Supplier shall not at any time during or after the termination or cancellation of this Agreement dispute the validity or enforceability of such Foreground Intellectual Property, or cause to be done any act or anything contesting or in any way impairing or tending to impair any part of that right, title and interest to any of the Foreground Intellectual Property and shall not counsel or assist any person to do so.

- b) Transnet shall be entitled to seek protection in respect of the Foreground Intellectual Property anywhere in the world as it shall decide in its own absolute discretion and the Supplier shall reasonably assist Transnet in attaining and maintaining protection of the Foreground Intellectual Property.
- c) Where the Foreground Intellectual Property was created by the Supplier or its researchers, agents and employees and where Transnet elects not to exercise its option to seek protection or decides to discontinue the financial support of the prosecution or maintenance of any such protection, Transnet shall notify the Supplier who shall have the right of first refusal to file or continue prosecution or maintain any such applications and to maintain any protection issuing on the Foreground Intellectual Property.
- d) No consideration shall be paid by Transnet to the Supplier for the assignment of any Foreground Intellectual Property from the Supplier to Transnet, over and above the sums payable in terms of this Agreement. The Supplier undertakes to sign all documents and do all things as may be necessary to effect, record and perfect the assignment of the Foreground Intellectual Property to Transnet. Subject to anything contrary contained in this Agreement and/or the prior written consent of Transnet (which consent shall not be unreasonably be withheld), the Supplier shall under no circumstances be entitled as of right, or to claim the right, to use Transnet's Background Intellectual Property and/or Foreground intellectual Property.

Z1.13 TITLE TO IMPROVEMENTS

Any improvements, developments, adaptations and/or modifications to the Foreground Intellectual Property, and any and all new inventions or discoveries, based on or resulting from the use of Transnet's Background Intellectual Property and/or Confidential Information shall be exclusively owned by Transnet. The Supplier shall disclose promptly to Transnet all such improvements, developments, adaptations and/or modifications, inventions or discoveries.

The Supplier hereby undertakes to sign all documents and do all things as may be necessary to effect, record and perfect the assignment of such improvements, developments, adaptations and/or modifications, inventions or discoveries to Transnet and the Supplier shall reasonably assist Transnet in attaining, maintaining or documenting ownership and/or protection of the improved Foreground Intellectual Property.

Z1.14 UNAUTHORISED USE OF CONFIDENTIAL INFORMATION

The Supplier shall not authorise any party to act on or use in any way any Confidential Information belonging to Transnet whether or not such party is aware of such Confidential Information, and shall promptly notify Transnet of the information if it becomes aware of an party so acting, and shall provide Transnet the information with such assistance as Transnet reasonably requires, at Transnet's cost and expense, to prevent such third party from so acting

Z1.15 UNAUTHORISED USE OF INTELLECTUAL PROPERTY

The Supplier agrees to notify Transnet in writing of any conflicting uses of, and applications of registrations of Patents, Designs and Trade Marks or any act of infringement, unfair competition or passing off involving the Intellectual Property of Transnet of which the Supplier acquires knowledge and Transnet shall have the right, as its own option, to proceed against any party infringing its Intellectual Property.

- a) It shall be within the discretion of Transnet to determine what steps shall be taken against the infringer and the Supplier shall co-operate fully with Transnet, at Transnet's cost, in whatever measure including legal action to bring any infringement of illegal use to an end.
- b) The Supplier shall cooperate to provide Transnet promptly with all relevant ascertainable facts.
- c) If proceedings are commenced by Transnet alone, Transnet shall be responsible for all expenses but shall be entitled to all damages or other award arising out of such proceedings. If proceedings are commenced by both Parties, both Parties will be responsible for the expenses and both Parties shall be entitled to damages or other award arising out of proceedings.

Z1.16 CONFIDENTIALITY

The Parties hereby undertake the following, with regard to Confidential Information –

- a) not to divulge or disclose to any person whomsoever in any form or manner whatsoever, either directly or indirectly, any Confidential Information of the other, without the prior written consent of such other Party, other than when called upon to do so in accordance with a statute, or by a court having jurisdiction, or by any other duly authorised and empowered authority or official, in which event the Party concerned shall do what is reasonably possible to inform the other of such a demand and each shall assist the other in seeking appropriate relief or the instituting of a defensive action to protect the Confidential Information concerned;
- b) not to use, exploit, permit the use of, directly or indirectly, or in any other manner whatsoever apply the Confidential Information, disclosed to it as a result of this Agreement, for any purpose whatsoever other than for the purpose for which it is disclosed or otherwise than in strict compliance with the provisions in this Agreement;
- c) not to make any notes, sketches, drawings, photographs or copies of any kind of any part of the disclosed Confidential Information, without the prior written consent of such other Party, except when reasonably necessary for the purpose of this Agreement, in which case such copies shall be regarded as Confidential Information;
- d) not to de-compile, disassemble or reverse engineer any composition, compilation, concept application, item, component de-compilation, including software or hardware disclosed and shall not analyze any sample provided by Transnet, or otherwise determine the composition or structure or cause to permit these tasks to be carried out except in the performance of its obligations pursuant to this Agreement:
 - i. not to exercise less care to safeguard Transnet Confidential Information than the Party exercises in safeguarding its own competitive, sensitive or Confidential Information;
 - ii. Confidential Information disclosed by either Party to the other or by either Party to any other party used by such Party in the performance of this Agreement, shall be dealt with as "restricted" or shall be dealt with according to any other appropriate level of confidentiality relevant to the nature of the information concerned, agreed between the Parties concerned and stipulated in writing for such information in such cases;
 - iii. the Parties shall not make or permit to be made by any other person subject to their control, any public statements or issue press releases or disclose Confidential Information with regard to any matter related to this Agreement, unless written authorization to do so has first been obtained from the Party first disclosing such information;
 - iv. each Party shall be entitled to disclose such aspects of Confidential Information as may be relevant to one or more technically qualified employees or consultants of the Party who are required in the course of their duties to receive the Confidential Information for the Permitted Purpose provided that the employee or consultant concerned has a legitimate interest therein, and then only to the extent necessary for the Permitted Purpose, and is informed by the Party of the confidential nature of the Confidential Information and the obligations of the confidentiality to which such disclosure is subject and the Party shall ensure such employees or consultants honour such obligations;
 - v. each Party shall notify the other Party of the name of each person or entity to whom any Confidential Information has been disclosed as soon as practicable after such disclosure;
 - vi. each Party shall ensure that any person or entity to which it discloses Confidential Information shall observe and perform all of the covenants the Party has accepted in this Agreement as if such person or entity has signed this Agreement. The Party disclosing the Confidential Information shall be responsible for any breach of the provisions of this Agreement by the person or entity; and

- vii. Each Party may by written notice to the other Party specify which of the Party's employees, officers or agents are required to sign a non-disclosure undertaking.
 - viii. a Party can demonstrate that such information is already in the public domain or becomes available to the public through no breach of this Agreement by that Party, or its Personnel.
 - ix. was rightfully in a Party's possession prior to receipt from the other Party, as proven by the first-mentioned Party's written records, without an infringement of an obligation or duty of confidentiality; or
 - x. can be proved to have been rightfully received by a Party from a third party without a breach of a duty or obligation of confidentiality; or
 - xi. is independently developed by a Party as proven by its written records.
- e) This clause Z1.16 shall survive termination for any reason of this Agreement and shall remain in force and effect from the Commencement Date of this Agreement and 5 (five) years after the termination of this Agreement. Upon termination of this Agreement, all documentation furnished to the Supplier by Transnet pursuant to this Agreement shall be returned to Transnet including, without limitation all corporate identity equipment including dies, blocks, labels, advertising matter, printing matter and the like.

Z1.17 FORCE MAJEURE

- DRAFT COPY ONLY**
- a) Neither Party shall have any claim against the other Party arising from any failure or delay in the performance of any obligation of either Party under this Agreement caused by an act of force majeure such as acts of God, fire, flood, war, strike, lockout, industrial dispute, government action, laws or regulations, riots, terrorism or civil disturbance, defaults, delays or discontinuance on the part of independent contractors, suppliers, or other circumstances or factors beyond the reasonable control of either Party, and to the extent that the performance of obligations of either Party hereunder is delayed by virtue of the foregoing, any period stipulated for any such performance shall be reasonably extended.
 - b) Each Party will take all reasonable steps by whatever lawful means that are available, to resume full performance as soon as practicable and will seek agreement to modification of the relevant provisions of this Agreement in order to accommodate the new circumstances caused by the act of force majeure. If a Party fails to agree to such modifications proposed by the other Party within 90 (ninety) days of the act of force majeure first occurring, either Party may thereafter terminate this Agreement with immediate notice.

Z1.18 EQUALITY AND DIVERSITY

- a. The Supplier will not victimise, harass or discriminate against any employee of either Party to this Agreement or any applicant for employment with either Party to this Agreement due to their gender, race, disability, age, religious belief, sexual orientation or part-time status. This provision applies, but is not limited to employment, upgrading, work environment, demotion, transfer, recruitment, recruitment advertising, termination of employment, rates of pay or other forms of compensation and selection for training.
- b. Both Parties to this Agreement undertake that they will not, and shall procure that its employees, agents and Subcontractors will not breach any applicable discrimination legislation and any amendments and re-enactments thereof.

Z2 THE CONTRACTOR'S GENERAL OBLIGATIONS

Z2.1 The following information in addition to Core Clause 2 of the Schedule of Options will apply:

Z2.1.1 The Contractor's general obligations under the Contract comprise: -

- Replace old oil / obsolete Switchgear at various 6.6/11kV Distribution Substations country-wide – Phase 2 Stage 2 and

- the provision of all labour, Project Manager's Deputy personnel and specialised tradesman required to undertake the duties and functions required in terms of the Contract and everything, whether of a temporary or permanent nature, required for performance of the Work and services to be provided in terms of the Contract.
- Z2.1.2 Transnet Freight Rail shall, in the case of a breach of contract by the Contractor in terms of clause Z10, have a lien over the Contractor's machines and accessory tools and equipment and all temporary buildings of the Contractor used for carrying out the Work.
- Z2.1.3 The clause headings in these conditions of contract are not deemed to be part thereof and will not be taken into consideration in the interpretation of the Contract.
- Z2.1.4 Any grant by Transnet Freight Rail or the Contractor (the Grantor), or by any of the persons authorised to act on their behalf to the other, of any concession, waiver, condonation or allowance shall not, in respect of any specific event or circumstance other than that in respect of which the grant was made, constitute a waiver of the rights of the grantor in terms of the Contract or an estoppel of the grantor's right to enforce the provisions of the Contract.
- Z2.1.5 Value-added tax in terms of the Value-added Tax Act No. 89 of 1991 shall be dealt with as follows: -
 - In Tendering; Value-added tax shall not be included in the tendered rates and prices. In payment; Value-added tax shall not be reflected on monthly contract payment certificates, but paid separately on the presentation of a tax invoice by the Contractor. The value of the work reflected on the tax-invoice must correspond with the netto amount indicated on the contract payment certificate.
 - Changes to the VAT rate will be dealt with in terms of sections 67 and 67A of the Act.

Z3 CESSION, ASSIGNMENT AND SUBCONTRACTING

- Z3.1 Neither the *Contractor* nor the *Employer* may, without the written consent of the other, cede or assign the Contract or any part thereof or any obligation under the Contract or cede any right or benefit there under.
- Z3.2 **The Contractor shall not enter into any subcontract without the prior written approval of the Project Manager which approval shall not unreasonably be withheld. The subcontractor, in respect of whom approval is so granted and his employees or workmen shall for all the intentions and purposes of the Contract, be deemed to be workmen of the Contractor, as provided in clause Z3.1 hereof.**
- Z3.3 Approval given in terms of clauses Z3.1 and Z3.2 hereof shall not relieve the Contractor of any responsibility, duty or obligation imposed upon him by the Contract, and the Contractor shall in particular be and remain solely liable and responsible for all acts, omissions, negligence or breaches of contract on the part of the assignee or any of his employees, and for all acts, omissions or negligence of any subcontractor or any of his employees.

Z4 SUFFICIENCY OF TENDER

- Z4.1 The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender and of the rates and prices stated in the Price List. These rates shall be sufficient to cover his obligations under the Contract and everything necessary for the proper performance of the Work and services specified here in.

Z5 ACCESS, RIGHTS-OF-WAY AND CAMPSITES

- Z5.1 Where entry onto Transnet Freight Rail's property is restricted, permission to enter will be given only for the performing the Work and services included in the Contract and will be subject to the terms and conditions laid down by Transnet Freight Rail.
- Z5.2 The Contractor shall arrange for campsites, workplaces and access thereto as well as for any right-of-way over private property to the place of the Work, and for access within the boundaries of Transnet Freight Rail's property. The owners of private property to be traversed shall be approached and treated with tact and courtesy by the Contractor, who shall, if necessary, obtain a letter of introduction to such property owners from the Project Manager's Deputy.

- Z5.3 The Contractor shall be responsible for the closing of all gates on roads and tracks used by him or his employees. Except with the prior approval of the Project Manager's Deputy and the owner or occupier of any private land to be traversed, the Contractor shall not cut, lower, damage, remove or otherwise interfere with any fence or gate which is either on Transnet Freight Rail's property or on private property and which restricts access to the Work.
- Z5.4 Where such approval has been given, the Contractor shall prevent entry of animals or unauthorised persons onto Transnet Freight Rail's or private property and shall make the fences safe against trespass at the close of each day's work.
- Z5.5 The Contractor shall take all reasonable steps to confine the movement of vehicles and plant to the approved right-of-way to minimise damage to property, crops and natural vegetation.
- Z5.6 When access is no longer required and before completion of the Work, the Contractor shall repair, restore or replace any fence or gate damaged during execution of the Work and services to the satisfaction of the Project Manager's Deputy.

Z6 WORKMEN

- Z6.1 All persons employed by the Contractor to carry out the Contract shall be competent, responsible and of good character.
- Z6.2 If, in the opinion of the Project Manager's Deputy, any person employed by the Contractor is inefficient, negligent, disrespectful or objectionable, the Project Manager's Deputy may, after consultation with the Contractor, instruct that such person be removed from the Contract Work.
- Z6.3 During the currency of the Contract, the Contractor shall not approach any employee of Transnet Freight Rail with a view to offering him employment in any capacity whatsoever.
- Z6.4 The Contractor shall, upon request, provide the Project Manager's Deputy with a weekly statement of the number of persons employed on the Work each day by the Contractor and any sub-contractor, the capacity in which employed, the total number of hours worked in that week for each grade of staff separately and details of any incentive or bonus payment schemes introduced. The statement shall be supported by documentary evidence when so required by the Project Manager's Deputy.
- Z6.5 The Contractor shall ensure that all staff transported on on-track machines and Transnet Freight Rail wagons or coaches, shall at all times be transported in a safe and responsible way. Only authorised staff shall be transported.
- Z6.6 The attention of the Contractor is directed to the requirements of safety legislation and regulations with regard to storage and transport of dangerous substances, accommodation and transport of people.
- Z6.7 Staff shall only be allowed to travel on a train or machine in approved accommodation or cabin facilities.

Z7 HOUSING OF EMPLOYEES

- Z7.1 The Contractor shall, where necessary, make his own arrangements for suitable housing of his employees. Where temporary housing is permitted by the Project Manager's Deputy on Transnet Freight Rail land the Contractor shall provide suitable sanitation, lighting and portable water supplies.
- Z7.2 The Contractor may, where available and subject to the approval of the Project Manager's Deputy, use Transnet Freight Rail campsites and sanitary services. The Contractor may in such case use Transnet Freight Rail waste disposal service if available at such campsite.

Z7.3 Fouling of the area inside or outside Transnet Freight Rail's boundaries must be prevented. The Contractor may be called upon by the Project Manager's Deputy to dispose of any foul or waste matter generated by the Contractor.

Z8 HOURS OF WORK

Z8.1 The Contractor shall conform to the hours of duty laid down by the Project Manager's Deputy. When required, the Contractor shall work either overtime or shifts, on paid public holidays, Saturdays or Sundays. The machinery will not be required to work more than 6 shifts in any 7-day period or 11 shifts in any 14-day period.

Z8.2 Work shall not be suspended for rain or inclement weather unless otherwise agreed by the Project Manager's Deputy. Before the end of each day's work the Contractor will be advised in writing of the commencement time and duration of the following day's occupation(s). The duration of the occupation will be subject to train operating conditions.

Z8.3 Void.

Z8.4 Void.

Z9 COMPLIANCE WITH STATUTES AND SAFETY RULES

Z9.1 The Contractor shall comply with all applicable legislation and the Transnet safety requirements. The cost of such compliance shall be borne by the Contractor and shall be deemed to have been allowed for in the rates and prices in the Contract.

Z9.2 The Contractor shall, in particular, comply with the following Acts: -
The Compensation for Occupational Injuries and Diseases Act, (Act 130 of 1993); The Contractor shall produce proof of his registration and good standing with the Compensation Commissioner in terms of the Act.

- The Occupational Health and Safety Act (Act 85 of 1993); The Contractor is in terms of section 37(2) of Act 85 of 1993, deemed to be an employer in his own right with duties as prescribed in the Act and agrees to ensure that all work will be performed or machinery and plant used in accordance with the provisions of the Act in respect of all persons in his employ, other persons on the premises or the site or place of the Work or on the Work to be executed by him and under his control in terms of the Contract. The agreements in this Contract and all documents attached or referred to, form an integral part of the arrangements and procedures stipulated in the aforementioned section.
- 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 as applicable, and shall, before commencement with the execution of the Contract, submit to the Project Manager's Deputy, documentary proof of his procedural compliance with the Act and particulars of his Health and Safety Policy and Programme to be implemented on the Work in accordance with Specification E.4E.
- The Contractor's Health and Safety Policy and Programme will be subject to the agreement of the Project Manager's Deputy, who may order supplementary and/or additional safety arrangements and/or different safe working methods to ensure compliance by the Contractor with his obligations as an employer in terms of the Act.
- The Contractor shall comply with the current Specification for Work On, Over, Under or Adjacent to Railway Lines and near High Voltage Equipment - E7/1, where applicable, and shall take particular care of the safety of his employees working on or in close proximity to a railway line during track occupations as well as under normal operational conditions.
- He shall also comply with all other safety requirements, regulations and guidelines of Transnet applicable to the nature of Work carried out under the Contract and shall obtain the particulars thereof from the Project Manager's Deputy.
- In addition to compliance with clause Z9.2 hereof, the Contractor shall report all incidents contemplated by Section 24 of the Act in writing to the Project Manager's Deputy. Any incident resulting in the death of or injury to any person on the WORK shall be reported within 24 hours of its occurrence and any other incident shall be reported within 48 hours of its occurrence.

- The term "safety rules" is used in a generic sense and refers to all Transnet arrangements, procedures and requirements, pertaining to safety, specified or incorporated by reference in the contract documents, such as the Specification for Work On, Over, Under or Adjacent to Railway Lines and near High Voltage Equipment, E7/1, the Electrical Safety Instructions - High Voltage Equipment. (Copies of these documents are available for inspection at the offices of Transnet Freight Rail.

Z10 BREACHES AND REMEDIES

- Z10.1 Should the Contractor commit any breach or default of any kind mentioned in clause Z10.2 hereof, the Employer may exercise, subject to the provisions as stated in Option W1 as well as clause Z10.3, for and on behalf of Transnet, immediately, in whole or in part and consecutively or concurrently, all or any of the options, rights and powers set out in clause Z10.3 hereof.
- Z10.2 Breaches or defaults entitling the Employer to act in terms of clause Z10.3 hereof shall be the following:
- Z10.2.1 insolvency of the Contractor or an act of insolvency comprising inter alia, the following:
- Z10.2.1.1 liquidation or sequestration of the Contractor's estate (provisionally or finally); or
- Z10.2.1.2 the Contractor publishing a notice of surrender of his estate as insolvent; or
- Z10.2.1.3 the Contractor entering into a compromise with the general body of his creditors; or
- Z10.2.1.4 the Contractor having an execution levied on his goods
- Z10.2.2 material breach of the Contract by the Contractor comprising inter alia;
- Z10.2.2.1 the abandonment or repudiation of the Contract;
- Z10.2.2.2 suspension of progress of the Work without contractual cause;
- Z10.2.2.3 assigning of the Contract without the consent in writing of the Employer having first being obtained
- Z10.2.2.4 subcontracting any part of the Contract without the Project Manager's approval;
- Z10.2.2.5 failing to provide the performance bond in terms of option X13 hereof;
- Z10.2.2.6 failing to satisfy any judgment or arbitrator's award entered against him within 7 days after such judgment or award is so entered, or to satisfy any attachment order against property within 3 days of its issue;
- Z10.2.2.7 failure, after he has been notified in terms of Option X17 clause 4.1.3 to achieve the specified output and/or availability of the machinery; or to rectify defective performance; or
- Z10.2.2.8 conviction of the Contractor or any of his employees in a court of law for any offence which adversely affects the interests of Transnet
- Z10.3 In the event of any breach or default mentioned in clause Z10.2 hereof, the Employer may exercise any of the following options, rights and powers: -
- Z10.3.1 To cancel the Contract and to invoke the lien over the Contractor's machines, equipment, tools and temporary buildings and any indemnities or safeguards in favour of Transnet in terms of the Contract.
- Z10.3.2 To take over full possession and control of the whole or any portion of the Work and the Contractor's machinery equipment, tools and material used thereon, and control of any or all of the Contractor's employees (with or without accepting any liability for arrear salaries or wages, or for any contracts of personal service) and to continue and complete the Work, by employment of such of the Contractor's employees and using such of his site establishment, temporary buildings, machinery equipment tools and materials, as is necessary in the discretion of the Project Manager, all for the account of and at the cost and risk of the Contractor.
- Z10.3.3 To remove and dismiss any person employed by the Contractor and, for the account of and at the cost and risk of the Contractor, to engage or appoint any other person under such conditions and to pay him such salary or wage as the Project Manager may deem fit.
- Z10.3.4 To obtain from any source whatsoever, at the cost of the Contractor, tools, equipment and material as are necessary, in the opinion of the Project Manager, for the proper completion of the Contract.

- Z10.3.5 To dismiss the Contractor from any further control of the execution of the Contract, and thereafter to take over full control of and to utilise the whole or any portion of the machinery, equipment, tools and material belonging to the Contractor, and to employ any person other than the Contractor to complete the Contract, in each case for the account of and at the risk and cost of the Contractor, after or without offering such work for tender and without the interference or intervention in any way by the Contractor. After the said work has been completed by such other person and such other person has been paid therefore, the Project Manager shall issue the Final Certificate when so authorised by the Employer.
- Z10.3.6 To reduce, in the case where the Contractor's defective workmanship and/or performance is accepted by Transnet, any one or all of the rates and prices in the Contract by the amounts of Transnet's losses or the costs of rectifying the defective workmanship and/or performance of the Contractor, or by the amounts that the Contract Work is reduced in value as a consequence of the deficiencies.
- Z10.4 Should any money as shown by the final certificate be due by the Contractor to Transnet, the Contractor and/or his guarantor shall forthwith pay such money to Transnet, failing which Transnet may recover the said amount from the Contractor.
- Z10.5 All wages, salaries, costs, expenses and damages paid, incurred or sustained by Transnet for which the Contractor is liable in terms of the Contract, shall be paid by the Contractor on demand or shall be recovered from monies owing to the Contractor or by legal action in a court of appropriate jurisdiction.
- Z10.6 In any action taken or instituted by Transnet in terms of clauses Z10.1 to Z10.4 hereof or any clause of the Contract read alone or in conjunction with these clauses, a certificate issued by the Project Manager shall be deemed to be proof of any amount due by the Contractor to Transnet or by Transnet to the Contractor.
- Z10.7 No action taken or instituted by Transnet in terms of clauses Z10.1 to Z10.4 hereof or any clause of the Contract read alone or in conjunction with these clauses shall prejudice or detract from Transnet's right to recover damages for any other breach or default committed by the Contractor in respect of the Contract. The remedies provided under clauses Z10.3 and Z10.4 hereof are additional to any other rights, claims or remedies that Transnet may have in law or under the Contract against the Contractor.
- Z10.8 Availability during annual builder's holidays
This contract shall include for allowing the normal annual 3-week builder's holiday during December provided that the contractor shall be on standby for normal production if required based on a 48-hour notice period by TFR.
- Z11 Option B – Clause 63.13**
The last sentence of the Clause to be deleted and the following substituted: "The Employer and Contractor agree rates and lump sums to be used to assess a compensation event instead of Defined Cost."

C1.2 CONTRACT DATA

Part Two – Data Provided by the Contractor

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

Statements given in all contracts

(a) The Contractor is

Name

Address

(b) The direct fee percentage is %

(c) The subcontracted fee percentage is %

(d) The working areas are the Site and

(e) The key people are

(1) Name

Job

Responsibilities

Qualifications

Experience

(2) Name
Job
Responsibilities

Qualifications
Experience

(3) Name
Job
Responsibilities

Qualifications
Experience

(4) Name
Job
Responsibilities

Qualifications
Experience

(f) The following matters will be included in the Risk Register

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

Optional statements

(a) If the *Contractor* is to provide Works Information for his design

The Works Information for the *Contractor's* design is in

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

(b) If a programme is to be identified by the Contract Data.

The programme identified in the Contract Data is

(c) If the Contractor is to decide the completion date for the whole of the works

The completion date for the works is:

Depot	Completion Period (Months)
Bellville	
East London	
Port Elizabeth	
Total	

Depot	Completion Period (Months)
Kimberly North	
Kimberly South	
Krugersdorp	
Total	

*The completion period may not exceed 15 Months even if one contract is awarded for the whole works.

If Option A or B is used

Data for SSCC

(a) The percentage for people overheads is%.

(b) The published list of Equipment is the last edition of the list published by

(c) The percentage for adjustment for Equipment in the published list is% (state plus or minus).

(d) The rates for other Equipment are

Equipment	size or capacity	rate
.....
.....
.....

(e) The hourly rates for Defined Cost of design outside the Working Areas are

category of employee	hourly rate
.....
.....
.....

(f) The percentage of design overheads is%

(g) The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are **all of the categories listed above.**

C1.3 FORMS OF SECURITIES

"PREVIEW COPY ONLY"

C1.3 FORMS OF SECURITIES

Pro-formas for Bonds & Guarantees

For use with the NEC3 Engineering & Construction Contract (June 2005) (ECC3)

The *conditions of contract* stated in the Contract Data Part 1 may include one or more of the following Secondary Options:

Option X13: Performance Bond

Each of these Secondary Options requires a bond or guarantee "in the form set out in the Works Information".

Pro forma documents for these bonds and guarantee are provided here for convenience but are to be treated as part of the Works Information.

The organisation providing the bond / guarantee does so by copying the pro forma document onto his letterhead without any change to the text or format and completing the required details. The completed document is then given to the *Employer* within the time stated in the contract.

This pro forma document is available for use by the Surety on the *Employer's* web page at www.transnet.net

Drafting instructions:

1. Select the required pro formas by deleting the ones not required, then complete all the details except that which the bond / guarantee provider is required to complete.
2. There are two pro formas suitable for use with Option X13, but only one of them can be used; the Reducing Value Guarantee is generally used only for building works.
3. Then delete these drafting instructions. Delete this whole Securities section if none of the above secondary Options have been selected by the *conditions of contract*.

Pro forma Performance Bond (for use with Option X13)

(to be reproduced exactly as shown below on the letterhead of the Surety)

Transnet Freight Rail
A Division of Transnet SOC Ltd
P O Box 8617
Johannesburg
2000

Date:

Dear Sirs,

Performance Bond for Contract No. SIE13015CIDB

With reference to the above numbered contract made or to be made between

Transnet Freight Rail, A Division of Transnet SOC Ltd

(the *Employer*) and

{Insert registered name and address of the *Contractor*}

(the *Contractor*), for

Replace old oil / obsolete Switchgear at various 6.6/11kV
Distribution Substations country-wide – Phase 2 Stage 2

(the *works*).

I/We the undersigned

on behalf of the Surety

of physical address

and duly authorised thereto do hereby bind ourselves as Surety and co-principal debtors in *solidum* for the due and faithful performance of all the terms and conditions of the Contract by the *Contractor* and for all losses, damages and expenses that may be suffered or incurred by the *Employer* as a result of non-performance of the Contract by the *Contractor*, subject to the following conditions:

1. The terms *Employer*, *Contractor*, *Project Manager*, *works* and Defects Certificate have the meaning as assigned to them by the *conditions of contract* stated in the Contract Data for the aforesaid Contract.
2. We renounce all benefits from the legal exceptions "Benefit of Execution and Division", "No value received" and all other exceptions which might or could be pleaded against the validity of this bond, with the meaning and effect of which exceptions we declare ourselves to be fully acquainted.
3. The *Employer* has the absolute right to arrange his affairs with the *Contractor* in any manner, which the Employer deems, fit and without being advised thereof the Surety shall not have the right to claim his release on account of any conduct alleged to be prejudicial to the Surety. Without derogating from the foregoing compromise, extension of the construction period, indulgence, release or variation of the *Contractor's* obligation shall not affect the validity of this performance bond.
4. This bond will lapse on the earlier of
 - the date that the Surety receives a notice from the *Project Manager* stating that the last Defects Certificate has been issued, that all amounts due from the *Contractor* as certified in terms of the contract have been received by the *Employer* and that the *Contractor* has fulfilled all his obligations under the Contract, or

- the date that the Surety issues a replacement Performance Bond for such lesser or higher amount as may be required by the *Project Manager*.
5. Always provided that this bond will not lapse in the event the Surety is notified by the *Project Manager*, (before the dates above), of the *Employer's* intention to institute claims and the particulars thereof, in which event this bond shall remain in force until all such claims are paid and settled.
6. The amount of the bond shall be payable to the *Employer* upon the *Employer's* demand and no later than 7 days following the submission to the Surety of a certificate signed by the *Project Manager* stating the amount of the *Employer's* losses, damages and expenses incurred as a result of the non-performance aforesaid. The signed certificate shall be deemed to be conclusive proof of the extent of the *Employer's* loss, damage and expense.
7. Our total liability hereunder shall not exceed the sum of:
- (say) _____
- R _____
8. This Performance Bond is neither negotiable nor transferable and is governed by the laws of the Republic of South Africa, subject to the jurisdiction of the courts of the Republic of South Africa.

Signed at _____ on this _____ day of _____ 2008

Signature(s)

Name(s) (printed)

Position in Surety company

Signature of Witness(s)

Name(s) (printed)

**PART C1.4:
ADJUDICATOR'S CONTRACT DATA**

"PREVIEW COPY ONLY"

CONTRACT DATA

- Statements given in all contracts
- The *contract between the Parties* is **To be advised**.....
 - The *period of retention* is ...**N/A**..... weeks.
 - The *law of the contract* is the law of **the Republic of South Africa**
 - The *language of this contract* is **English**.....
 - The amount of the advanced payment is **N/A**.....
 - The Adjudicator's *fee* is...**To be advised**.....per hour.
 - The *interest rate* is **2%** per annum above the prime lending rate of the **Standard Bank of South Africa Ltd.**
 - The *currency of this contract* is **ZAR**.....
 - The Adjudicator's appointment terminates on **(To be advised)**.....

Optional statements **If the period for payment of invoices is not three weeks**

- The period for payment of invoices is ~~four~~.....weeks.

If additional conditions of contract are required

- The *additional conditions of contract* are

To be advised

.....

.....

.....

PART C2: PRICING DATA

"PREVIEW COPY ONLY"

Part C2

PRICING DATA

INDEX

Section	Description
C2.1	Pricing Instructions
C2.2	Bill of Quantities

"PREVIEW COPY ONLY"

Part C2.1

PRICING INSTRUCTIONS

1. The agreement is based on the NEC Engineering and Construction contract 3.
2. It will be assumed that prices included in the Bill of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders.
3. Reference to any particular trademark, name, patent, design, type, specific origin or producer is purely to establish a standard for requirements. Products or articles of an equivalent standard may be substituted.
4. The Bills of Quantities is not intended for the ordering of materials. Any ordering of materials, based on the Bills of Quantities, is at the Contractor's risk – quantities should thus be confirmed for correctness before ordering. Bill of quantities should be considered as a guide in terms of pricing, not as giving absolute detail of the scope of work. Specifications and inspections to be relied on in comprehensive pricing.
5. The amount of the Preliminaries to be included in each monthly payment certificate shall be assessed as an amount prorated to the value of the work duly executed in the same ratio as the preliminaries bears to the total of prices excluding any contingency sum, the amount of the Preliminaries and any amount in respect of contract price adjustment if provided for in the contract.
6. The prices and rates in these Bills of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work and shall cover liabilities and obligations set forth or implied in the Contract data, as well as profit.
7. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered for such items. The contractor shall provide for all work needed to complete the installation.
8. Where no quantity has been provided against an item in the Bills of Quantities, the Contractor shall use their discretion and provide the quantity. If the contractor does not agree with given units or quantities – the contractor to indicate in a separate note.
9. The quantities set out in these Bills of Quantities are approximate and may not necessarily represent the actual amount of work to be done.
10. The short descriptions of the items of payment given in these Bills of Quantities are only for purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.
11. The Contractor shall provide with information related to imported content i.e equipment to be imported, value and applicable exchange rates – separately.
12. The total in the Bill of Quantities shall be exclusive of VAT, and shall be transferred to form C1.1 (Form of Offer and Acceptance).



SCHEDULE OF REQUIREMENTS AND PRICES (Kimberley N & S; Krugersdorp)

1. The following tables contain the equipment and the quantities required per substation. The panels shall provide protection in accordance with the function allocated to it in column 8 of the table. The details of protection requirements for each panel function are listed in clause 7.5.3 of specification BBC6467.
2. Definitions of the abbreviations used:
 - XFR – Transformer
 - Xmission Line – Transmission Line
 - O/C – Overcurrent
 - E/F – Earth Fault.
 - CB – Circuit Breaker
 - CT – Current Transformer
 - VT – Voltage Transformer
 - E/L – Earth Leakage
 - Intertripping – Primary-Secondary Intertripping of Breakers
 - MV – Medium Voltage
- 2.1. **X** – The item is needed and shall be included in 'pricing'.
3. The tenderers shall fill in the prices for each panel in the columns provided (labour, equipment/material and total). The prices set out against each item in the schedule hereunder shall be the total cost per item for the design, supply, installation and guarantee. Prices must exclude VAT.
4. Tenderers shall ensure that their rate for dismantling and transporting old equipment includes that of draining oil from the old equipment as well as storage in suitable drums at a location to be pointed out by each depot.

APPENDIX 1
BILL OF QUANTITIES
PHASE 2 - SUBSTATIONS
Kimberley North Depot

Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			6X5X3	6.6Kv	Differential Protection	Buchholz & Oil Temp					
Beaconsfield											
CB/Panel number + Designation	kWh Meter	Voltmeter									
42 Kimberley								Transmission Line			
43 Incomer		X						Incomer			
44 Kamfersdam								Transmission Line			
										SUB TOTAL (1)	
											=

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				
TOTAL FOR Beaconsfield Sub (1+2) =				

10/5	Transmissi
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TOTAL FOR Fieldview Sub (1+2) =		
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Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			6X5X3	6.6Kv								
Windsorton Road												
CB/Panel number + Designation	kWh Meter	Voltmeter										
E65 Kareput							10/5		Transmission Line			
E66 Incomer		X					20/5		Incomer			
E67 Macfarlane							10/5		Transmission Line			
											SUB TOTAL (1) =	

	Quantity	Unit	Equipment	Labour	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (2) =	

TOTAL FOR Windsorton Road Sub (1+2) =

Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			6.6Kv		Differential Protection	Buchholz & Oil Temp						
Macfarlane Switch Room	6X5X3											
CB/Panel number + Designation	kWh Meter	Voltmeter										
E78 Windsorton Road							10/5		Transmission Line			
E79 Incomer		X					20/5		Incomer			
E80 Macfarlane							10/5		Transmission Line			
											SUB TOTAL (1) =	

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

TOTAL FOR Macfarlane Switch Room Sub (1+2) =	
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Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		6.6 kV	Differential Protection	Buchholz & Oil Temp								
Veertien Strome	6X4X3											
CB/Panel number + Designation	kWh Meter	Voltmeter										
E31 Honesty		X				10/5			Transmission Line			
E33 Christiana						10/5			Transmission Line			
I35 100kVA Transformer Isolator									Transformer			
I36 100kVA Transformer Isolator									Transformer			
I37 50kVA Transformer Isolator									Transformer			
											SUB TOTAL (1)	=

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
5	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
			SUB TOTAL (2) =	
TOTAL FOR Veertien Strome Sub (1+2) =				

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Substation Name:	Space:	System Voltage		Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		6X4X3	6.6 kV		Differential Protection	Buchholz & Oil Temp							
Warrenton													
CB/Panel number + Designation	kWh Meter		Voltmeter										
E42 Veertienstrome								10/5		Transmission Line			
E45 Kareeput			X					10/5		Transmission Line			
L43 25kVA Isolator										Transformer			
Transformer Cable 30m													
SUB TOTAL (1) =													

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
5	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

TOTAL FOR Warrenton Sub (1+2) =	
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Substation Name:	Space:	System Voltage		Clearance OK							Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		6.6 kV		Differential Protection	Buchholz & Oil Temp	CT Ratio	Voltmeter	kWh Meter							
Kareeput	6X4X3														
CB/Panel number + Designation															
E50 Warrenton									10/5		Transmission Line				
E51 Incomer		X							20/5		Incomer				
E52 Windsorton Road									10/5		Transmission Line				
SUB TOTAL (1) =															

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
4	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

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TOTAL FOR Kareeput Sub (1+2) =

Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp						
Macfarlane	6X4X3	6.6 kV										
CB/Panel number + Designation												
E83 Traction Sub		X					10/5		Transmission Line			
E85 Kamfersdam							10/5		Transmission Line			
E84 Fieldsview							10/5		Transmission Line			
L86 Isolator (20kVA)									Transformer			
L87 Isolator (20kVA)									Transformer			
L88 Isolator (25kVA)									Transformer			
SUB TOTAL (1) =												

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
6	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

TOTAL FOR Macfarlane Sub (1+2) =	
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Substation Name:	Space:	System Voltage		Clearance OK							Functions (refer to clause 7.9.2 of BBC6467)	Other Protection Requirements	CT Ratio	Buchholz & Oil Temp	Differential Protection	Voltmeter	kW/h Meter	Total	
Weir	4X3.7X3		6.6 kV																
CB/Panel number + Designation																			
56 Gong Gong										10/5									
57 Supply Transformer / Incomer			X							20/5									
58 Fieldsview										10/5									
SUB TOTAL (1)																			=

	Quantity	Unit	Equipment	Labour	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
SUB TOTAL (2) =					

TOTAL FOR Weir Sub (1+2) =

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Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp					
Gong Gong	4.7X3.7X3	6.6 kV									
CB/Panel number + Designation											
76 Weir								Transmission Line			
77 Supply		X						Incomer			
78 Ulco								Transmission Line			
SUB TOTAL (1) =											

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

TOTAL FOR Gong Gong Sub (1+2) =

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Substation Name:	Space:	System Voltage		Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		4.7X3.7X3	6.6 kV		Differential Protection	Buchholz & Oil Temp							
CB/Panel number + Designation	kWh Meter		Voltmeter										
93 Gong Gong							10/5			Transmission Line			
94 Supply			X				20/5			Incomer			
95 Nooibos							10/5			Transmission Line			
												SUB TOTAL (1) =	

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				
TOTAL FOR Ulco Sub (1+2) =				

Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			6.6 kV									
Nooibos	4.7X3.7X3											
CB/Panel number + Designation	kWh Meter	Voltmeter										
43 ULCO							10/5		Transmission Line			
44 Supply		X					20/5		Incomer			
45 Plateau							10/5		Transmission Line			
											SUB TOTAL (1) =	

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				
TOTAL FOR Nooibos Sub (1+2) =				

Substation Name:	Space:	System Voltage		Clearance OK							
		4.7X3.7X3	6.6 kV								
CB/Panel number + Designation	kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total	
60 ULCO					10/5		Transmission Line				
59 Supply		X			20/5		Incomer				
58 Plateau					10/5		Transmission Line				
									SUB TOTAL (1)	=	

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				
TOTAL FOR Plateau Sub (1+2) =				

Substation Name:	Space:	System Voltage	Clearance OK					CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			4.7X3.7X3	6.6 kV	kWh Meter	Differential Protection	Buchholz & Oil Temp						
Trewil													
CB/Panel number + Designation													
73 Clifton								10/5		Transmission Line			
72 Supply				X				20/5		Incomer			
71 Plateau								10/5		Transmission Line			
SUB TOTAL (1) =													

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

TOTAL FOR Trewil Sub (1+2) =

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Substation Name:	Space:	System Voltage	Clearance OK			
			kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp
Clifton	4.7X3.7X3	6.6 kV				
CB/Panel number + Designation						
E86 Trewil						
E87 Supply		X				
E88 Plateau						

Functions (refer to clause 7.9.2 of BBC6467)	Other Protection Requirements	CT Ratio	Labour	Equipment	Total
Transmission Line		10/5			
Incomer		20/5			
Transmission Line		10/5			
SUB TOTAL (1) =					

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

TOTAL FOR Clifton Sub (1+2) =

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Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp						
Blinklip	4.7X3.7X3	6.6 kV					10/5		Transmission Line			
CB/Panel number + Designation							20/5		Incomer			
E33 Postmasburg							10/5		Transmission Line			
E32 Supply		X										
E31 Plateau												
											SUB TOTAL (1) =	

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				
TOTAL FOR Blinklip Sub (1+2) =				

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Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			4.7X3.7X3	6.6 kV								
Postmasburg												
CB/Panel number + Designation	kWh Meter	Voltmeter										
E46 Palingspan							10/5		Transmission Line			
E47 Supply		X					20/5		Incomer			
E48 Blinkklip							10/5		Transmission Line			
											SUB TOTAL (1) =	

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

TOTAL FOR Postmasburg Sub (1+2) =

Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			4.7X3.7X3	6.6 kV								
Palingpan												
CB/Panel number + Designation	kWh Meter	Voltmeter										
E61 Lohatla							10/5		Transmission Line			
E60 Supply		X					20/5		Incomer			
E59 Plateau							10/5		Transmission Line			
											SUB TOTAL (1) =	

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				
TOTAL FOR Palingpan Sub (1+2) =				

Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp						
Lohatla	4.7X3.7X3	6.6 kV					10/5		Transmission Line			
CB/Panel number + Designation							20/5		Incomer			
E74 Sishen							10/5		Transmission Line			
E73 Supply		X										
E72 Palingpan												
											SUB TOTAL (1)	

	Quantity	Unit	Equipment	Labour	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (2) =	

TOTAL FOR Lohatla Sub (1+2) =

TRAINING FOR Kimberley North Depot =

TOTAL FOR Kimberley North Depot =

APPENDIX 1
BILL OF QUANTITIES
PHASE 2 - SUBSTATIONS
Kimberley South Depot

Substation Name:	Space:	System Voltage	Clearance OK				Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements				
Beaufort West Station Sub	6X5X3	6.6Kv								
CB/Panel number + Designation	kWh Meter	Voltmeter								
E36 Marshalling Yard					30/5	+IDMT	Ring Cable			
E37 Transformer #1 (500kVA)				X	30/5		Transformer			
E38 Droerivier		X			100/5		Transmission Line			
E39 Municipal Supply		X			100/5		Incomer			
E40 New Loco Sub					75/5	+IDMT	Ring Cable			
Transformer Cable 15m										
SUB TOTAL (1) =										

LV Station

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	800A	1	Various			
3Ø CB	200A	1	Various			
3Ø MCB	100A	6	Various			
3Ø MCB	150A	2	Various			
3Ø MCB	60A	5	Various			
3Ø MCB	80A	1	Various			
1Ø MCB	60A	2	Various			
1Ø MCB	30A	18	Various			
1Ø MCB	15A	3	Various			
Contactor	400V	3	Lights			
Ammeter		1	Indication			
Voltmeter	0-400V	1	Indication			
SUB TOTAL (2) =						

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (3) =				
TOTAL FOR Station Sub (1+2+3) =				

75/5	+IDMT	Ring Cable
30/5		Transformer
15/5	+IDMT	Ring Cable

75/5	+IDMT	Ring Cable
30/5		Transformer
15/5	+IDMT	Ring Cable

SUB TOTAL

Substation Name:						
Beaufort West Works Inspector						
Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	600A	1	Various			
3Ø MCB	100A	5	Various			
1Ø MCB	60A	4	Various			
1Ø MCB	50A	1	Various			
1Ø MCB	150A	2	Various			
1Ø MCB	100A	2	Various			
1Ø MCB	30A	15	Various			
1Ø MCB	15A	6	Various			
1Ø MCB	2A	5	Various			
3 POLE GANGED MCB	60A	1	Various			
Contactors	400V	2	Lights			
Ammeter	400/5	1	Indication			
Voltmeter	0-400V	1	Indication			
					SUB TOTAL (1) =	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Earthing (Complete/sub)	1	Complete			
					SUB TOTAL (2) =

TOTAL FOR Works Inspector Sub (1+2) =

Substation Name:						
Beaufort West Marshalling Yard						
Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	600A	1	Various			
3Ø CB	100A	3	Various			
3Ø CB	150A	3	Various			
3Ø MCB	60A	3	Various			
3Ø MCB	30A	3	Various			
1Ø MCB	30A	17	Various			
1Ø MCB	15A	3	Various			
1Ø MCB	45A	2	Various			
1Ø MCB	60A	1	Various			
1Ø MCB	100A	1	Various			
Contactors	400V	3	Lights			
Ammeter		1	Indication			
Voltmeter	0-400V	1	Indication			
					SUB TOTAL (1) =	

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	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Earthing (Complete/sub)	1	Complete			
				SUB TOTAL (2) =	

TOTAL FOR Marshalling Yard Sub
(1+2) =

TRAINING FOR Kimberley South Depot =

TOTAL FOR Kimberley South Depot =

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APPENDIX 1
BILL OF QUANTITIES
PHASE 2 - SUBSTATIONS
Krugersdorp Depot

Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			Differential Protection	Buchholz & Oil Temp	CT Ratio						
Welverdiend Quarters	6X5X3	11kV									
CB/Panel number + Designation	kWh Meter	Voltmeter									
23 Intake Sub		X			50/5			Transmission Line			
24 Local Transformer 500kVA				X	25/5			Transformer			
26 Welverdiend Exchange		X			50/5			Transmission Line			
Transformer Cable 500kVA 30m											
										SUB TOTAL (I)	
										=	

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	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	4	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
SUB TOTAL (3) =					

TOTAL FOR Welverdiend Quarters Sub (1+2+3) =	
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Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			Differential Protection	Buchholz & Oil Temp	CT Ratio						
Welverdiend Intake	6X5X3	11kV									
CB/Panel number + Designation	kWh Meter	Voltmeter									
15 Dolomiet					50/5			Transmission Line			
17 Supply		X			50/5		Restricted E/F	Incomer			
18 Welverdiend Quarters					50/5			Transmission Line			
										SUB TOTAL (1) =	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	5	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
					SUB TOTAL (2) =

TOTAL FOR Welverdiend Intake Sub (1+2) =
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Substation Name:	Space:	System Voltage	Clearance OK				
Potch EL&P	6X4X3	6.6kV					
CB/Panel number + Designation	kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)
30 Losberg					30/5		Transmission Line
31 Incomer		X			30/5		Incomer
32 Klerksdorp					30/5		Transmission Line
							SUB TOTAL (1) =

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	5	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
					SUB TOTAL (2) =

TOTAL FOR Potch EL & P Sub (1+2) =

Substation Name:	Space:	System Voltage	Clearance OK					CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		11kV	Differential Protection	Buchholz & Oil Temp									
Klerksdorp EL&P	6x4x3	11kV											
CB/Panel number + Designation	kWh Meter	Voltmeter											
01 Mun Supply		X					200/5	Frame Leakage	Incomer				
02 Fuse Isolator (transformer rating?)									Transformer				
03 Bus Coupler	X						200/5		Bus Coupler				
04 Fuse Isolator (transformer rating?)									Transformer				
05 Mun Supply		X					200/5	Frame Leakage	Incomer				
												SUB TOTAL (1)	
												=	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	5	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (2) =	

TOTAL FOR Klerksdorp EL & P Sub (1+2) =	
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Substation Name:	Space:	System Voltage	Clearance OK					Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		6.6 kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements					
Leeudoringstad EL&P	6X5X3										
CB/Panel number + Designation	kWh Meter	Voltmeter									
E32 Harrisburg		X				50/5	Transmission Line				
E33 T/former (10kVA)							Fuse Switch Disconnecter				
E36 Leeudoringstad		X				50/5	Transmission Line				
E34 Transformer (500KVA)				X			Transformer				
Transformer Cable (500KVA) 20m											
										SUB TOTAL (1)	
										=	

LV Leeudoringstad EL & P

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø MCB	150A	1	Various			
3Ø MCB	100A	1	Various			
1Ø MCB	60A	1	Various			
1Ø MCB	30A	1	Various			
1Ø MCB	5A	1	Various			
						SUB TOTAL (2) =

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	5	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (3) =	

TOTAL FOR Leeudoringstad EL & P Sub (1+2+3) =	
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Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		6.6 kV	Differential Protection	Buchholz & Oil Temp								
Leeudoringstad Switch Room	6X4X3	6.6 kV										
CB/Panel number + Designation	kWh Meter	Voltmeter										
E41 Leeudoringstad		X				10/5			Transmission Line			
E42 Supply						20/5			Incomer			
E43 Makwassie		X				N/S			Transmission Line			
											SUB TOTAL (1)	
											=	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	6	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (2) =	

TOTAL FOR Leeudoringstad Switch Room Sub (1+2) =
--

Substation Name:		Space:	System Voltage	Clearance OK					CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
Makwassie EL&P		5x6x3	6.6 kV	Differential Protection	Buchholz & Oil Temp	Voltmeter	kWh Meter							
CB/Panel number + Designation														
E64 Leeudoringstad			X					10/5			Transmission Line			
E65 Transformer 50kVA											Switch-fuse disconnector			
E68 Makwassie			X					10/5			Transmission Line			
Transformer Cable 15m														

LV Makwassie EL & P

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø MCB	150A	1	Various			
3Ø MCB	60A	3	Various			
3Ø MCB	30A	1	Various			
1Ø MCB	60A	1	Various			
1Ø MCB	40A	1	Various			
1Ø MCB	30A	3	Various			
Voltmeter	0-400V	1	Indication			
Ammeter	1200/5	1	Indication			
SUB TOTAL (2) =						

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	5	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (3) =	

TOTAL FOR Makwassie EL & P Sub (1+2+3) =	
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Substation Name:	Space:	System Voltage	Clearance OK					Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total	
		6.6 kV	Differential Protection	Buchholz & Oil Temp	CT Ratio								
Makwassie Switch Room	6X4X3												
CB/Panel number + Designation	kWh Meter	Voltmeter											
E72 Leeudoringstad						10/5			Transmission Line				
E73 Supply	X	X				20/5			Incomer				
E74 Drie Ruiters						10/5			Transmission Line				
												SUB TOTAL (1)	=

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	5	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
					SUB TOTAL (2) =

TOTAL FOR Makwassie Switch Room Sub (1+2) =

Substation Name:		Space:	System Voltage	Clearance OK							Functions (refer to clause 7.9.2 of BBC6467)	Other Protection Requirements	CT Ratio	Buchholz & Oil Temp	Differential Protection	Voltmeter	kWh Meter	Total
Drie Ruiters Switch Room		6X4X3	6.6 kV															
CB/Panel number + Designation																		
E95 Makwassie											10/5							
E96 Supply		X	X								20/5							
E97 Stryders											N/S							
													SUB TOTAL (1)		=			

Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete		
Dismantling and Transporting old equipment	1	Complete		
Checker plates (0.5m ² / panel)	3	Complete		
Remote Control Pendant	1	Complete		
Earthing (Complete/sub)	1	Complete		
Isolation Transformer	1	Complete		
Battery and charger	1	Complete		
			SUB TOTAL (2) =	

TOTAL FOR Drie Ruiters Switch Room Sub (1+2) =	
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Substation Name:	Space:	Clearance OK		Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		System Voltage									
Stryders Switch Room	6X4X3	6.6 kV									
CB/Panel number + Designation	kWh Meter	Voltmeter									
E43 Drie Ruiters						10/5		Transmission Line			
E44 Supply	X	X				20/5		Incomer			
E45 Bloemhof						10/5		Transmission Line			
										SUB TOTAL (1)	
										=	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
					SUB TOTAL (2) =

TOTAL FOR Stryders Switch Room Sub (1+2) =
--

Substation Name:	Space:	System Voltage		Clearance OK										Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total	
		6X4X3	6.6 kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements											
Christiana Switch Room	6X4X3																	
CB/Panel number + Designation	kWh Meter		Voltmeter															
E69 Honesty						10/5							Transmission Line					
E68 Supply	X		X			20/5							Incomer					
E67 Christiana						10/5							Transmission Line					
																	SUB TOTAL (1)	=

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (2) =	

TOTAL FOR Christiana Switch Room Sub (1+2) =	
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Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of ES 6467)	Labour	Equipment	Total
			Differential Protection	Buchholz & Oil Temp	CT Ratio	Voltmeter					
Christiana EL&P	6x5x3	6.6 kV									
CB/Panel number + Designation	kWh Meter										
E54 Sherpheds tree					10/5			Transmission Line			
E56 Christiana		X			10/5			Transmission Line			
E58 100kVA Transformer					10/5			Transformer			
Transformer Cable 15m											
SUB TOTAL (1)										=	

[illegible]

Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete		
Dismantling and Transporting old equipment	1	Complete		
Checker plates (0.5m ² / panel)	5	Complete		
Remote Control Pendant	1	Complete		
Earthing (Complete/sub)	1	Complete		
Battery and charger	1	Complete		
SUB TOTAL			(3) =	

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Substation Name:	Space:	System Voltage	Clearance OK					CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total	
Shepherds Tree Switch Room	6X4X3	6.6 kV												
CB/Panel number + Designation	kWh Meter	Voltmeter												
E31 Wildhoen								10/5		Transmission Line				
E32 Supply	X	X						20/5		Incomer				
E33 Christiana								10/5		Transmission Line				
													SUB TOTAL (1)	
													=	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (2) =	

TOTAL FOR Shepherds Tree Switch Room Sub (1+2+3) =

Substation Name:	Space:	System Voltage	Clearance OK					CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total	
		6.6 kV	Differential Protection	Buchholz & Oil Temp	Voltmeter	kWh Meter								
Klerksdorp Switch Room	6X4X3													
CB/Panel number + Designation														
E32 Potch							10/5			Transmission Line				
E33 Supply	X	X					50/5			Incomer				
E35 Dean							40/5			Transmission Line				
													SUB TOTAL (1)	
													=	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
					SUB TOTAL (2) =

TOTAL FOR Klerksdorp Switch Room Sub (1+2) =
--

Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BPC6467)	Labour	Equipment	Total
			Differential Protection	Buchholz & Oil Temp	CT Ratio	Voltmeter					
Bloemhof Substation	6X4X3	6.6 kV									
CB/Panel number + Designation	kWh Meter										
E58 Stryders					10/5			Transmission Line			
E60 Wildhoen					10/5			Transmission Line			
E62 Local Transformer 100kVA					10/5			Transformer			
E59 Supply	X	X			20/5			Incomer			
Transformer Cable 15m											
SUB TOTAL (1)										=	

Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete		
Dismantling and Transporting old equipment	1	Complete		
Checker plates (0.5m ² / panel)	4	Complete		
Remote Control Pendant	1	Complete		
Earthing (Complete/sub)	1	Complete		
Isolation Transformer	1	Complete		
Battery and charger	1	Complete		
SUBTOTAL (2) =				

TOTAL FOR Bloemhof Switch Room Sub (1+2) =	
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Substation Name:	Space:	System Voltage	Clearance OK					Total
	Wildhoen Switch Room	6X4X3	6.6 kV					
CB/Panel number + Designation	kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Equipment
E77 Bloemhof					10/5		Transmission Line	
E78 Supply	X	X			20/5		Incomer	
E79 Shepherds Tree					10/5		Transmission Line	
SUB TOTAL (1) =								

Quantity	Unit	Labour	Equipment	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

TOTAL FOR Wildhoen Sub (1+2) =

Substation Name:		Space:		System Voltage		Clearance OK					Functions (refer to clause 7.9.2 of BBC6467)	Other Protection Requirements	CT Ratio	Buchholz & Oil Temp	Differential Protection	Labour	Equipment	Total
Honesty Switch Room		6X4X3		6.6 kV														
CB/Panel number + Designation		kWh Meter		Voltmeter														
E88 Christiana											Transmission Line		10/5					
E89 Supply	X			X							Incomer		20/5					
E90 Veertienstrome											Transmission Line		10/5					
																	SUB TOTAL (1)	
																	=	

Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete		
Dismantling and Transporting old equipment	1	Complete		
Checker plates (0.5m ² / panel)	3	Complete		
Remote Control Pendant	1	Complete		
Earthing (Complete/sub)	1	Complete		
Isolation Transformer	1	Complete		
Battery and charger	1	Complete		
			SUB TOTAL (2) =	
TOTAL FOR Honesty Sub (1+2) =				

Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		6.6 kV	Differential Protection	Buchholz & Oil Temp								
Dean Switch Room	6X4X3											
CB/Panel number + Designation	kWh Meter	Voltmeter										
E58 Klerksdorp						10/5			Transmission Line			
E59 Supply	X	X				20/5			Incomer			
E60 Regina						10/5			Transmission Line			
											SUB TOTAL (1)	
											=	

Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete		
Dismantling and Transporting old equipment	1	Complete		
Checker plates (0.5m ² / panel)	3	Complete		
Remote Control Pendant	1	Complete		
Earthing (Complete/sub)	1	Complete		
Isolation Transformer	1	Complete		
Battery and charger	1	Complete		
				SUB TOTAL (2) =
TOTAL FOR Dean Sub (1+2) =				

Substation Name:	Space:	System Voltage	Clearance OK							Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	6X4X3	6.6 kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Voltmeter	kWh Meter							
Harrisburg Switch Room	6X4X3	6.6 kV												
CB/Panel number + Designation	kWh Meter	Voltmeter												
E80 Regina					10/5					Transmission Line				
E81 Supply	X	X			20/5					Incomer				
E82 Leeudoringstad					10/5					Transmission Line				
													SUB TOTAL (1)	=

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Isolation Transformer	1	Complete			
Battery and charger	1	Complete			
					SUB TOTAL (2) =

TOTAL FOR Harrisburg Sub (1+2) =	
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TRAINING FOR Krugersdorp Depot =	
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TOTAL FOR Krugersdorp Depot =	
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IMPORTED CONTENT

IMPORTED CONTENT						
Item No.	Description	Country of Origin	Exchange Rate	Rate	Quantity	Amount/Cost
						TOTAL

APPENDIX 2

Table 1: TOTAL PRICE

Kimberley North	R
Kimberley South	R
Krugersdorp	R
Total=	R

Table 2: UNIT RATE FOR AN ALTERNATIVE SWITCHGEAR PANEL

No.	Panel Function	Unit Price
1.0	Transformer (with Buchholz and Over-Temp)	
2.0	Transmission Line	
3.0	Bus-Section	
4.0	Fuse- Switch Disconnect	
5.0	Ring Cable (with Pilot Wire Differential Relay)	
6.0	Radial Cable (O/C and E/F – IDMT Relay)	

Table 3: RATES

No.	Item	Unit	Rates	
			Labour	Equipment
1.	Auto Re-closing system (per Xmission line panel)	Each		
2.	Primary-Secondary Intertipping of Breakers	Each		
3.	Transformer Cables/Feeders (11kV rated)			
3.1	800 kVA	Metre		
3.2	500 kVA	Metre		
3.3	200 kVA	Metre		
3.4	100 kVA and less	Metre		
4.	Mobile Standby Generator Sets			
4.1	Plant 1			
4.2	Plant 2			
4.3	Plant 3			
5.	Differential Protection	Each		
6.	O/C and E/F – IDMT Relay	Each		
7.	Phase Failure Protection	Each		
8.	Energy Meter	Each		
9.	Voltage Transformers			
9.1	Voltage Transformer– 11kV/110V	Each		
9.2	Voltage Transformer–Dual Ratio(11-6.6kV/110V)	Each		
9.3	Voltage Transformer Selection relay	Each		
10.	Voltmeter	Each		
11.	Trench Earthing	Complete		

-END

SCHEDULE OF REQUIREMENTS AND PRICES (Bellville; Port Elizabeth; East London)

1. The following tables contain the equipment and the quantities required per substation. The panels shall provide protection in accordance with the function allocated to it in column 8 of the table. The details of protection requirements for each panel function are listed in clause 7.5.3 of specification BBC6467.
2. Definitions of the abbreviations used:
 - XFR – Transformer
 - Xmission Line – Transmission Line
 - O/C – Overcurrent
 - E/F – Earth Fault.
 - CB – Circuit Breaker
 - CT – Current Transformer
 - VT – Voltage Transformer
 - E/L – Earth Leakage
 - Intertripping – Primary-Secondary Intertripping of Breakers
 - MV – Medium Voltage
- 2.1. **X** – The item is needed and shall be included in 'pricing'.
3. The tenderers shall fill in the prices for each panel in the columns provided (labour, equipment/material and total). The prices set out against each item in the schedule hereunder shall be the total cost per item for the design, supply, installation and guarantee. Prices must exclude VAT.
4. Tenderers shall ensure that their rate for dismantling and transporting old equipment includes that of draining oil from the old equipment as well as storage in suitable drums at a location to be pointed out by each depot.

APPENDIX 1
BILL OF QUANTITIES
PHASE 2 - SUBSTATIONS
Bellville Depot

Substation Name:	Space:	System Voltage	Clearance OK			Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	8X7X4	11kV	Differential Protection	Buchholz & Oil Temp	VCT Ratio					
CB/Panel number + Designation	kWh Meter	Voltmeter								
E20 Container Sub		X	X		400/5	+IDMT	Ring Cable			
E21 Transformer #2 (1250kVA)				X	100/5		Transformer			
BC-3 Bus Section					200/5		Bus Section			
E22 Transformer#1 (1250kVA)				X	100/5		Transformer			
E23 Road Rail Sub		X	X		400/5	+IDMT	Ring Cable			
Transformer Cable 1250kVA 40m										
SUB TOTAL (I) =										

LV Bellville CAE

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	2000A	3	Various			
3Ø CB	100A	16	Various			
3Ø CB	200A	4	Various			
3Ø CB	630A	3	Various			
Kilowatt-hour meter	-	1	Indication			
Voltmeter	0-400V	2	Indication			
Max demand Ammeters	2000/5	6	Indication			
					SUB TOTAL (2)	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Battery and Charger	1	Complete			
Checker plates (0.5m2 / panel)	5	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
				SUB TOTAL (3)	

TOTAL FOR Bellville CAE Sub (1+2+3) =
--

Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BGC6467)	Labour	Equipment	Total
	7X4X3	11kV	Differential Protection	Buchholz & Oil Temp	CT Ratio						
Belville Goods Admin											
CB/Panel number + Designation	kWh Meter	Voltmeter									
E45 Goods Sub		X	X		400/5		+IDMT	Ring Cable			
E46 Transformer#1 (1250kVA)				X	100/5			Transformer			
BC7 Bus Section					200/5			Bus Section			
E47 Transformer #2 (1250kVA)				X	100/5			Transformer			
E48 Bellville Main		X	X		400/5		+IDMT	Ring Cable			
E49 Goods Shed Mini Sub					25/5		+IDMT	Ring Cable			
Transformer Cable (30 m)											
SUB TOTAL (I) =											

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LV Bellville Goods
Admin

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	1600A	4	Various			
3Ø CB	250A	5	Various			
3Ø CB	400A	4	Various			
3Ø CB	100A	6	Various			
3Ø CB	300A	1	Various			
3Ø MCB	30A	3	Various			
3Ø MCB	20A	1	Various			
3Ø MCB	60A	1	Various			
3Ø MCB	15A	2	Various			
3Ø MCB	25A	2	Various			
1Ø MCB	20A	2	Various			
1Ø MCB	80A	1	Various			
1Ø MCB	30A	2	Various			
1Ø MCB	5A	2	Various			
1Ø MCB	1A	4	Override switch			
Contactors	400V	1	Lights			
Ammeter	300/5	3	Indication			
Kilowatthour meter	-	2	Indication			
Voltmeter	0-400V	4	Indication			
Max demand Ammeters	1200/5	6	Indication			
SUB TOTAL (2)					=	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	6	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and Charger	1	Complete			
			SUB TOTAL =		

TOTAL FOR Bellville Goods Admin Sub (1+2+3) =	
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Substation Name:	Space:	System Voltage	Clearance OK					Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
Bellville Telephone Exchange	6X5X3	11kV	Differential Protection	Buchholz & Oil Temp	CT Ratio							
CB/Panel number + Designation	kWh Meter	Voltmeter										
E51 Bellville Main Sub		X	X		400/5		+IDMT	Ring Cable				
E52 Parcel Building Mini Sub					25/5			Radial Cable				
E53 Transformer #1 (500kVA)				X	40/5			Transformer				
BC 8 Bus Section					200/5			Bus Section				
E54 Transformer #2 (500kVA)				X	40/5			Transformer				
E55 Works Inspector Sub		X	X		400/5		IDMT	Ring Cable				
Transformer Cable (40m)												
SUB TOTAL (1) =												

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LV Belville Telephone Exchange

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	800A	2	Various			
3Ø CB	630A	3	Various			
3Ø CB	400A	4	Various			
1Ø MCB	60A	4	Various			
1Ø MCB	1A	1	Override switch			
1Ø MCB	20A	2	Various			
1Ø MCB	30A	2	Various			
1Ø MCB	15A	1	Various			
Contactors	400V	1	Lights			
Kilowatthour meter	-	2	Indication			
				SUB TOTAL (2)	=	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	5	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and Charger	1	Complete			
				SUB TOTAL (3)	=

TOTAL FOR Belville Telephone Exchange SUB (1+2+3) =	
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Substation Name:	Space:	System Voltage		Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		Differential Protection	Buchholz & Oil Temp	CT Ratio								
Bellville W/I	6X5.7X 3	11kV										
CB/Panel number + Designation	kWh Meter	Voltmeter										
E56 Diesel Depot		X	X			200/5	+IDMT	Ring Cable				
E57 Transformer #1 (500kVA)					X	30/5		Transformer				
E58 Welding Shop Transformer (400kVA)					X	30/5		Transformer				
BC9 Bus Section						200/5		Bus Section				
E59 Transformer#2 (500kVA)					X	30/5		Transformer				
E60 Telephone Exchange		X	X			300/5	+IDMT	Ring Cable				
Transformer Cable 40m												
SUB TOTAL (1) =												

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Quantity	Unit	Labour	Equipment	Totals
1	Complete			
1	Complete			
8	Complete			
1	Complete			
1	Complete			
1	Complete			
			SUB TOTAL (3)	
			=	
TOTAL FOR Bellville Works Inspector Sub (1+2+3) =				

Substation Name:		Space:	System Voltage		Clearance OK							Equipment	Total
Cape Town Alpha		11X5X3	11kV		Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour			
CB/Panel number + Designation		kWh Meter	Voltmeter										
E25 Parcels Sub			X		X		400/5	+IDMT	Ring Cable				
E29 Train Lighting			X		X		400/5	+IDMT	Ring Cable				
E26 Transformer (1600kVA)						X	100/1		Transformer				
Transformer Cable (10m)													
											SUB TOTAL (1) =		

	Quantity	Unit	Labour	Equipment	
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (2)	=

TOTAL FOR Cape Town Alpha Sub (1+2) =

Substation Name: Truck Repairs						
Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	800A	1	Various			
3Ø CB	100A	5	Various			
3Ø CB	60A	2	Various			
3Ø CB	150A	2	Various			
1Ø MCB	10A	1	Various			
1Ø MCB	30A	1	Various			
2 POLE GANGED MCB	60A	1	Various			
Contactor	400V	3	Lights			
SUB TOTAL(1)					=	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Battery and charger	1	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
				SUB TOTAL (2)	=
TOTAL FOR Truck Repairs Sub (1+2)					=

Substation Name:	Space:	System Voltage	Clearance OK					Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	10X6X3	6.6 kV	Differential Protection	Buchholz & Oil Temp	CT Ratio							
CB/Panel number + Designation	kWh Meter	Voltmeter										
E20 Foreshore Main #1		X	X		400/5			Ring Cable				
E23 Transformer #1 (1250kVA)				X	100/5			Transformer				
BC3 Bus Section								Bus Section				
E24 Transformer #2 (1250kVA)				X	100/5			Transformer				
E28 Foreshore Main #2		X	X		400/5			Ring Cable				
E25 welding Transformer								Transformer				
Transformer Cable (50m)												
										SUB TOTAL (1) =		

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TOTAL FOR Blacksmith Sub (1+2+3)	
=	

Substation Name:	Space:	System Voltage	Clearance OK					Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	7X6X4	11 kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements					
CB/Panel number + Designation	kWh Meter	Voltmeter									
E15 Main Sub		X	X		400/5	+IDMT	Ring Cable				
E16 Transformer #2 (500kVA)				X	40/5		Transformer				
BC2 Bus Section					400/5		Bus Section				
E17 Transformer 1 (500kVA)				X	40/5		Transformer				
E18 CAE			X		400/5	+IDMT	Ring Cable				
E19 Reefer Workshop		X	X		400/5	+IDMT	Ring Cable				
Transformer Cable 40m											
SUB TOTAL (I) =											

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LV Bellville Container

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	800A	3	Main Switch			
3Ø CB	400A	2	Undefined			
3Ø CB	300A	1	Various			
3Ø CB	100A	2	Various			
3Ø CB	60A	2	Various			
1Ø MCB	30A	4	Various			
Earth Leakage	30A	1	E/L			
1Ø MCB	80A	1	Various			
1Ø MCB	25A	2	Various			
1Ø MCB	5A	4	Various			
1Ø MCB	1A	4	Override switch			
2 POLE GANGED MCB	60A	1	Various			
3 POLE GANGED MCB	20A	2	Various			
Contactor	400V	1	Lights			
Kilowatt-hour meter	-	2	Indication			
1Ø MCB	30A	1	Undefined			
1Ø MCB	15A	3	Various			
Voltmeter	0-500V	2	Indication			
Ammeter		1	Indication			
SUB TOTAL (2)					=	

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Quantity	Unit	Labour	Equipment	Total
1	Complete			
1	Complete			
6	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB-TOTAL (3)				

TOTAL FOR Bellville Container Sub
(1+2+3) =

Substation Name:	Space:	System Voltage	Clearance OK					Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	7X6X3	11kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Voltmeter						
Bellville Goods												
CB/Panel number + Designation	kWh Meter											
E39 Bellville Admin		X	X		400/5	+IDMT	Bus Cable	Transformer				
E40 Transformer #1 (1000kVA)				X	60/5							
BC6 Bus Section					200/5			Bus Section				
E42 Bellville Main Sub		X	X		400/5	+IDMT	Ring Cable	Transformer				
E41 Transformer #2 (1000kVA)				X	60/5							
E43 Mini Sub					25/5	+IDMT	Ring Cable					
Transformer Cable 40m												
SUB TOTAL (1) =												

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	1600A	3	Various			
3Ø CB	600A	2	Various			
3Ø CB	400A	1	Various			
3Ø MCB	50A	2	Various			
3Ø MCB	30A	2	Various			
1Ø MCB	40A	1	Various			
1Ø MCB	30A	2	Various			
1Ø MCB	20A	1	Various			
1Ø MCB	10A	2	Various			
1Ø MCB	5A	1	Override switch			
3 POLE GANGED MCB	60A	1	Various			
Contactors	400V	1	Lights			
Kilowatthour meter		4	Indication			
SUB TOTAL (2)					=	

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	SUB TOTAL (3)				
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TOTAL FOR Bellville Goods Sub (1+2+3) =	
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Clearance OK

Quantity	Unit	Labour	Equipment	Total
1	Complete			
1	Complete			
5	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2)				

TOTAL FOR Bellville RTS Sub (1+2)	
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Substation Name:	Space:	System Voltage	Clearance OK			Other Protection Requirements	Functions (refer to clause 7.9.2 of PBC 267)	Labour	Equipment	Total
			Differential Protection	Buchholz & Oil Temp	CT Ratio					
Wolseley	6X4X3	11 kV								
CB/Panel number + Designation	kWh Meter	Voltmeter								
E89 Feeder No 1					25/5		Transmission Line			
E90 Incomer		X			25/5		Incomer			
E91 Feeder No 2					25/5		Transmission Line			
SUB TOTAL (1) =										

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Battery and Charger	1	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
SUB TOTAL (1)					=

TOTAL FOR Wolesey Sub (1+2) =	
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Substation Name:	Space:	System Voltage	Clearance OK			
Worcester Main	6X6X3	11 kV				
CB/Panel number + Designation	kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements
BC 1 Municipal Supply		X			200/5	Incomer
E05 Diesel Depot					150/5	Ring Cable
E06 Goods Sub					150/5	Ring Cable
SUB TOTAL (1) =						

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Battery and Charger	1	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
				SUB TOTAL (2)	

TOTAL FOR Worcester Main Sub (1+2) =	
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Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of SBC 267)	Labour	Equipment	Total
	7X7X4	6.6 kV	Differential Protection	Buchholz & Oil Temp	CT Ratio						
CB/Panel number + Designation	kWh Meter	Voltmeter									
E01 Sandhills					50/5			Transmission Line			
E02 Incomer	X	X			50/5			Incomer			
E03 Karoo					50/5			Transmission Line			
										SUB TOTAL (1) =	

Quantity	Unit	Labour	Equipment	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2)				

TOTAL FOR Salbar Sub (1+2) =

Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio						
Karoo	7X7X4	11 kV						Transmission Line			
CB/Panel number + Designation								Incomer			
E05 Salbar					50/5			Transmission Line			
E06 Incomer	X	X			50/5						
E07 Hugo					50/5			Transmission Line			
SUB TOTAL (1) =											

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	CT Ratio	Other Protection Requirements	Functions to clause 7
OK			
SUB-TOTAL (2)			
=			

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[illegible]

Quantity	Unit	Labour	Equipment	Total
1	Complete			
1	Complete			
6	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2)				
=				

TOTAL FOR Hugo Signal Sub (1+2) =

Substation Name:	Space:	System Voltage	Clearance OK			
			Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements
Droerivier	6X6X3	11 kV				Functions (refer to clause 7.9.2 of BCC 6467)
CB/Panel number + Designation	kWh Meter	Voltmeter				
E33 Leeu Gamka					75/5	Transmission Line
E34 Incomer	X	X			75/5	Incomer
E35 Beaufort West					75/5	Transmission Line
SUB TOTAL (1) =						Total

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OK	CT Ratio	Other Protection Requirements	Functions (to clause 7.9)
			BBC666

CT Ratio	Other Protection Requirements	Functions (to clause 7.5)

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TOTAL FOR Gemsbok Sub (1+2) =	
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Substation Name:	Space:	System Voltage	Clearance OK					Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total	
	6X5.7X 3	11 kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Voltmeter							
Leeu Gamka													
CB/Panel number + Designation	kWh Meter												
E29 Gensbok					75/5			Transmission Line					
E30 Supply	X	X			75/5			Incomer					
E31 Droerivier					75/5			Transmission Line					
										SUB TOTAL (1) =			

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Battery and Charger	1	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
				SUB-TOTAL (2)	

TOTAL FOR Leeu Gamka Sub (1+2)	
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TRAINING FOR Bellville Depot =	
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TOTAL FOR Bellville Depot =	
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APPENDIX 1
BILL OF QUANTITIES
PHASE 2 - SUBSTATIONS
East London Depot

Substation Name:	Space:	System Voltage		Clearance OK					Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		6X6X3	11kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements					
CB/Panel number + Designation	kWh Meter		Voltmeter									
21 Diesel Depot			X	X		300/5	+IDMT		Ring Cable			
22 Transformer (500kVA)					X	40/5			Transformer			
23 Goods Depot			X	X		300/5	+IDMT		Ring Cable			
Transformer Cable 15m												
											SUB TOTAL (1) =	

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LV Cambridge RTS

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	1000A	1	Various			
3Ø CB	400A	1	Various			
3Ø MCB	70A	6	Various			
3Ø MCB	150A	2	Various			
3Ø MCB	60A	1	Various			
3Ø MCB	80A	1	Various			
3Ø MCB	200A	1	Various			
3Ø MCB	250A	1	Various			
3Ø MCB	100A	1	Various			
1Ø MCB	30A	4	Various			
1Ø MCB	5A	1	Various			
1Ø MCB	1A	1	Override switch			
3 POLE GANGED MCB	5A	1	Various			
SUB TOTAL (2)					=	

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Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (3) =				

TOTAL FOR Cambridge RTS Sub (1+2+3) =

Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			Differential Protection	Buchholz & Oil Temp								
Cambridge Goods	6X4X3	11kV										
CB/Panel number + Designation	kWh Meter	Voltmeter										
9 RTS Depot		X	X				300/5	+IDMT	Ring Cable			
10 Transformer (500kVA)				X			30/5		Transformer			
11 Bus Section							200/5		Bus Section			
12 Transformer #2 (500kVA)				X			30/5		Transformer			
13 Main Sub		X	X				300/5	+IDMT	Ring Cable			
Transformer Cable 30m (500kVA)												
SUB TOTAL (1) =												

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Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
5	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (3) =				

TOTAL FOR Cambridge Goods Sub (1+2+3) =

Substation Name:	Space:	System Voltage	Clearance OK							
		11kV								
Queenstown Loco	6X6X3									
CB/Panel number + Designation	kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
X14 CTC Sub		X	X		300/5	+IDMT	Ring Cable			
X15 Transformer (500kVA)				X	60/5		Transformer			
X16 Station Sub		X	X		300/5	+IDMT	Ring Cable			
Transformer Cable 30m (500kVA)										
SUB TOTAL (1) =										

[illegible]

						SUB TOTAL OF
						=

about	Total

[illegible][illegible]

Substation Name:	Space:	System Voltage	Clearance OK					Functions (refer to clause 7.9.2 of BBC6467)	Other Protection Requirements	Labour	Equipment	Total
			kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio					
Queenstown Station	4X4X3	11kV										
CB/Panel number + Designation												
X09 Loco Sub		X		X			300/5	Ring Cable	+IDMT			
X10 Transformer (300kVA)							60/5	Transformer				
X11 CTC Sub		X		X			300/5	Ring Cable	+IDMT			
Transformer Cable 10m (300kVA)												
SUB TOTAL (1) =												

Quantity	Unit	Equipment	Labour	Total
1	Complete			
1	Complete			
3	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (2) =				

TOTAL FOR Queenstown Station Sub (1+2) =
--

TRAINING FOR East London Depot =	
TOTAL FOR East London Depot =	

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APPENDIX 1
BILL OF QUANTITIES
PHASE 2 - SUBSTATIONS
Port Elizabeth Depot

Substation Name:	Space:	System Voltage	Clearance OK					Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	6X4X3	6,6kV	Differential Protection	Buchholz & Oil Temp	CT Ratio							
Noupoort Main												
CB/Panel number + Designation	kWh Meter	Voltmeter										
S71 Avenue Sub		X			200/5		+IDMT		Ring Cable			
S72 Power Station					75/5		+IDMT		Ring Cable			
S73 Frans					200/5				Transmission Line			
S74 Incomer		X			200/5				Incomer			
S70 Fuse Link 10kVA									Fuse Switch Disconnecter			
											SUB TOTAL (1) =	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	6	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (2) =	
TOTAL FOR Noupoort Main Sub (1+2) =					

Substation Name:		Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
Noupoort Avenue		6X4X3	6,6kV									
CB/Panel number + Designation		kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio						
S80 Local Transformer (500kVA)		X				50/5			Transformer			
S79 Main Sub						100/5		+IDMT	Ring Cable			
S78 Barededeel			X			100/5			Transmission Line			
S77 Rosmead		X				25/5			Transmission Line			
S76 Noupoort Main		X	X	X		50/5		+IDMT	Ring Cable			
S95 Switch Room North				X		300/5; 100/5		+IDMT	Ring Cable			
											SUB TOTAL (1) =	

LV Noupoort avenue							Description	Rating	QTY	Designation	Equipment	Labour	Total
							3Ø CB	500A	12				
							3Ø CB	800A	1				
							Kilowatt-hour meter		1				
							Ammeter		1				
							Voltmeter	400V	1				
												SUB TOTAL (2) =	

Quantity	Unit	Labour	Equipment	Total
1	Complete			
1	Complete			
6	Complete			
1	Complete			
1	Complete			
1	Complete			
SUB TOTAL (3)				=

TOTAL FOR Noupoot Main Sub (1+2) =

Substation Name:	Space:	System Voltage	Clearance OK				CT Ratio	Other Protection Requirements	Functions (refer to clause 7.9.2 of BGC6467)	Labour	Equipment	Total
			Differential Protection	Buchholz & Oil Temp								
Humewood Sub	6X5X3	6,6kV										
CB/Panel number + Designation	kWh Meter	Voltmeter										
P46 Humewood Road Sub (Sub Vandalised)		X	X				400/5	+IDMT	Ring Cable			
P45 Transformer #2 (500kVA)				X			50/5		Transformer			
P44 Bus Section									Bus Section			
P43 Transformer #1 (500kVA)				X			50/5		Transformer			
P42 Oil Sites Sub		X	X				400/5	+IDMT	Ring Cable			
Transformer Cable X40m												
SUB TOTAL (1) =												

	SUB TOTAL (2)		
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TOTAL FOR Humewood Narrow Gauge Sub (1+2) =	
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Substation Name:		Space:	System Voltage	Clearance OK					Functions (refer to clause 7.9.2 of BBC6467)	Other Protection Requirements	Labour	Equipment	Total
		3X3X3	6,6kV	Differential Protection	Buchholz & Oil Temp	CT Ratio							
PE Station Sub	CB/Panel number + Designation	kWh Meter	Voltmeter										
P25 Main Intake Sub			X	X		400/5; 200/5		+IDMT	Ring Cable				
P26 Sturrock Sub			X	X		100/5		+IDMT	Ring Cable				
P27 Transformer (300kVA)						40/5			Transformer				
P28 Transformer (300kVA)						40/5			Transformer				
Transformer Cable X30m													
											SUB TOTAL (1) =		

LV PE Station

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	150A	12	Various			
3Ø CB	400A	3	Various			
3Ø CB	800A	2	Various			
Ammeter		5	Indication			
Voltmeter	400V	3	Indication			
						SUB TOTAL (2) =

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	4	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (3)	

TOTAL FOR PE Station Sub (1+2+3) =	
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Substation Name:		Space:	System Voltage	Clearance OK					Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
North End		6X10X3	11kV									
CB/Panel number + Designation		kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements					
E38 Green Street Sub			X	X		400/5	+IDMT		Ring Cable			
E37 Transformer #2 (800kVA)					X	50/5			Transformer			
E36 Bus Section						150/5			Bus Section			
E35 Transformer #1 (800kVA)					X	50/5			Transformer			
E34 Main Sub			X	X		400/5	+IDMT		Ring Cable			
Busbar Earthing Switch												
Transformer Cable X40m												
											SUB TOTAL (1) =	

Quantity	Unit	Labour	Equipment	Total
1	Complete			
1	Complete			
6	Complete			
1	Complete			
1	Complete			
1	Complete			
TOTAL FOR North End Sub (1+2) =				SUB TOTAL (2) =

Substation Name:	Space:	System Voltage	Clearance OK					Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	6X10X3	6.6kV	Differential Protection	Buchholz & Oil Temp	CT Ratio							
ELD (PE)												
CB/Panel number + Designation	kWh Meter	Voltmeter										
S17 Diesel Depot		X	X		400/5		+IDMT	Ring Cable				
S16 Transformer #2 (750kVA)				X	75/5			Transformer				
S15 Bus Section					150/5			Bus Section				
S14 Transformer #1 (750kVA)				X	75/5			Transformer				
S13 Road Transport Services		X	X		400/5		+IDMT	Ring Cable				
Busbar Earthing Switch												
Transformer Cable X40m												
											SUB TOTAL (1) =	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	6	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (2) =	

TOTAL FOR PE ELD Sub(1+2) =	
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Substation Name:	Space:	System Voltage		Clearance OK					Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	6X5X3	6.6kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Voltmeter							
Swartkops RTS Depot													
CB/Panel number + Designation	kWh Meter												
S01 Diesel Depot			X	X		400/5		+IDMT	Ring Cable				
S02 Transformer #1 (500kVA)					X	50/5			Transformer				
S03 Municipality #1	X					600/5			Incomer				
S04 Bus Section						150/5			Bus Section				
S05 Municipality #2	X					600/5			Incomer				
S06 Transformer #2 (500kVA)					X	50/5			Transformer				
S07 ELD Sub			X	X		400/5		+IDMT	Ring Cable				
Transformer Cable X30m													
SUB TOTAL (1) =													

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LV Swartkops RTS

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	200A	10	Various			
3Ø CB	400A	4	Various			
3Ø CB	800A	3	Various			
3Ø CB	100A	8	Various			
3Ø CB	60A	2	Various			
Ammeter	800/5	2	Indication			
Voltmeter	400V	2	Indication			
					SUB TOTAL (2)	

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	8	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (3)	

TOTAL FOR Swartkops RTS Sub (1+2+3)	
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Substation Name:	Space:	System Voltage	Clearance OK					Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
	Aloes	6X5X3	6.6kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Other Protection Requirements				
CB/Panel number + Designation	kWh Meter		Voltmeter								
G16 Transformer (200kVA)			X	X		50/5		Transformer			
Transformer Cable X20m											
										SUB TOTAL (1) =	

LV Aloes

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	250A	2	Various			
3Ø CB	400A	1	Various			
3Ø MCB	40A	2	Various			
3Ø MCB	60A	3	Various			
3Ø MCB	45A	1	Various			
1Ø MCB	150A	4	Various			
1Ø MCB	100A	2	Various			
1Ø MCB	30A	6	Various			
1Ø MCB	80A	6	Various			
1Ø MCB	2A	5	Override switch			
2 POLE GANGED MCB	30A	4	Various			
2 POLE GANGED MCB	5A	1	Various			
Ammeter	400/5	1	Indication			
Max demand meter	400/5	1	Indication			
Voltmeter	0-400V	1	Indication			
SUB TOTAL (2) =						

Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete		
Dismantling and Transporting old equipment	1	Complete		
Checker plates (0.5m ² / panel)	1	Complete		
Remote Control Pendant	1	Complete		
Earthing (Complete/sub)	1	Complete		
Battery and charger	1	Complete		
SUB TOTAL (3)				

TOTAL FOR Aloes Sub (1+2+3) =	
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Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (Refer to clause 1.9.2 of BBC6467)	Labour	Equipment	Total
	kWh Meter	Voltmeter	Differential Protection	Buchholz & Oil Temp	CT Ratio						
Craddock Quarry Sub	6X5X3	11 kV									
CB/Panel number + Designation											
S05 Local Transformer (800kVA)				X	60/5			Transformer			
S06 Incomer		X			200/5			Incomer			
S07 Local Transformer (800kVA)				X	60/5			Transformer			
Transformer Cable (30m)											
SUB TOTAL (1) =											

[illegible]

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	3	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
				SUB TOTAL (3)	=

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Substation Name:	Space:	System Voltage	Clearance OK					Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
		11 kV	Differential Protection	Buchholz & Oil Temp	CT Ratio	Voltmeter						
Rosmead	6X5X3											
CB/Panel number + Designation	kWh Meter											
S65 Noupourt							15/5		Transmission Line			
S66 Incomer		X					50/5		Incomer			
S67 V is rivier							15/5		Transmission Line			
S68 Local Transformer						X	25/5	Interlock with Standby Generator.	Transformer			
S69 Signal Transformer (15kVA)									Switch Fuse Disconnecter			
											SUB TOTAL (I) =	

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LV Rosmead

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	250A	3	Various			
3Ø CB	400A	1	Various			
3Ø CB	600A	1	Various			
3Ø CB	100A	4	Various			
3Ø CB	80A	1	Various			
3Ø MCB	60A	2	Various			
1Ø MCB	35A	1	Various			
2 POLE GANGED MCB	50A	1	Various			
2 POLE GANGED MCB	40A	1	Various			
Kilowatthour meter	-	5	Indication			
SUB TOTAL (2)						=

	Quantity	Unit	Labour	Equipment	Total
Preliminary and General	1	Complete			
Dismantling and Transporting old equipment	1	Complete			
Checker plates (0.5m ² / panel)	5	Complete			
Remote Control Pendant	1	Complete			
Earthing (Complete/sub)	1	Complete			
Battery and charger	1	Complete			
SUB TOTAL (3)					=

TOTAL FOR Rosmead Sub (1+2+3) =	
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Substation Name:	Space:	System Voltage	Clearance OK				Other Protection Requirements	Functions (refer to clause 7.9.2 of BBC6467)	Labour	Equipment	Total
			Differential Protection	Buchholz & Oil Temp	CT Ratio	Voltmeter					
George	6X5X3	11 kV									
CB/Panel number + Designation	kWh Meter	Voltmeter									
G21 Local Transformer 500kVA					40/5			Transformer			
G22 Incomer		X			150/5			Incomer			
G23 Local Transformer 500kVA				X	40/5			Transformer			
Transformer Cable X30m											
SUB TOTAL (1) =											

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LV George

Description	Rating	QTY	Designation	Equipment	Labour	Total
3Ø CB	800A	4	Various			
3Ø MCB	63A	3	Various			
3Ø MCB	30A	2	Various			
3Ø MCB	50A	1	Various			
3Ø MCB	16A	1	Various			
3Ø MCB	60A	1	Various			
1Ø MCB	80A	3	Various			
1Ø MCB	20A	5	Various			
1Ø MCB	40A	5	Various			
1Ø MCB	1A	2	Override switch			
2 POLE GANGED MCB	20A	4	Various			
2 POLE GANGED MCB	60A	1	Various			
2 POLE GANGED MCB	30A	2	Various			
2 POLE GANGED MCB	100A	1	Various			
2 POLE GANGED MCB	30A	1	Various			
Contactors	400V	1	Lights			
Ammeter		4	Indication			
Max demand meter		3	Indication			
Voltmeter	0-400V	1	Indication			
					SUB TOTAL (2) =	

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TOTAL FOR Port Elizabeth Depot =

APPENDIX 1

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APPENDIX 2

Table 1: TOTAL PRICE

Bellville	R
East London	R
Port Elizabeth	R
Total=	R

Table 2: UNIT RATE FOR AN ALTERNATIVE SWITCHGEAR PANEL

No.	Panel Function	Unit Price
1.0	Transformer (with Buchholz and Over-Temp)	
2.0	Transmission Line	
3.0	Bus-Section	
4.0	Fuse- Switch Disconnecter	
5.0	Ring Cable (with Pilot Wire Differential Relay)	
6.0	Radial Cable (O/C and E/F – IDMT Relay)	

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Table 3: RATES

No.	Item	Unit	Rates	
			Labour	Equipment
1.	Auto Re-closing system (per Xmission line panel)	Each		
2.	Primary-Secondary Intertripping of Breakers	Each		
3.	Transformer Cables/Feeders (11kV rated)			
3.1	800 kVA	Metre		
3.2	500 kVA	Metre		
3.3	200 kVA	Metre		
3.4	100 kVA and less	Metre		
4.	Mobile Standby Generator Sets			
4.1	Plant 1			
4.2	Plant 2			
4.3	Plant 3			
5.	Differential Protection	Each		
6.	O/C and E/F – IDMT Relay	Each		
7.	Phase Failure Protection	Each		
8.	Energy Meter	Each		
9.	Voltage Transformers			
9.1	Voltage Transformer– 11kV/110V	Each		
9.2	Voltage Transformer–Dual Ratio(11-6.6kV/110V)	Each		
9.3	Voltage Transformer Selection relay	Each		
10.	Voltmeter	Each		
11.	Trench Earthing	Complete		

-END

PART C3: SCOPE OF WORKS

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PART C3
SCOPE OF WORKS
INDEX

Section No.	Description
GENERAL	
C3.1	DESCRIPTION OF THE WORKS
C3.2	ENGINEERING
C3.3	PROCUREMENT
C3.4	GENERAL CONSTRUCTION ASPECTS
C3.5	MANAGEMENT OF THE WORKS
C3.6	ENVIRONMENTAL REQUIREMENTS
C3.7	PARTICULAR SPECIFICATIONS
C3.8	DRAWINGS

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Part C3

Section 1

DESCRIPTION OF THE WORKS

CONTENTS

Item	Description	Page
1.1	EMPLOYER’S OBJECTIVE.....	2
1.2	OVERVIEW OF THE WORKS	2
1.3	EXTENT OF THE WORKS	2
1.4	LOCATION OF THE WORKS	3
1.5	TEMPORARY WORKS.....	3

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Part C3

Section 1

DESCRIPTION OF THE WORKS

1.1 EMPLOYER'S OBJECTIVE

- 1.1.1 The Employer's objective is to replace the existing medium and low voltage switchgear with the new type. This also includes cables and battery chargers.

1.2 OVERVIEW OF THE WORKS

- 1.2.1 The contract covers the design, supply, installation and commissioning of the new equipment at the following depot areas:
- 1.2.1.1 Bellville
 - 1.2.1.2 East London
 - 1.2.1.3 Kimberley North
 - 1.2.1.4 Kimberley South
 - 1.2.1.5 Krugersdorp
 - 1.2.1.6 Port Elizabeth
- 1.2.2 The contract also covers the disconnection and removal from site of the existing equipment, this will be returned to the depot. Any leftover material will also be removed from site prior to handing over.
- 1.2.3 Used oil shall be drained to suitable drums and stored at the relevant depot/ sub depot.
- ##### 1.3 EXTENT OF THE WORKS
- 1.3.1 The Contractor shall do the work listed below as mentioned in the particular specification for each of the distribution substations, as per requirements and as per any other additional requirements that may arise.
- 1.3.2 Dismantle and remove the following equipment inside the buildings as required:
- 1.3.2.1 MV Switchgear
 - 1.3.2.2 LV Switchgear
- 1.3.3 Transport the old equipment, which will not be re-used, to premises identified by Transnet Freight Rail.
- 1.3.4 Design, supply, installation, connection and commissioning of new switchgear panels (MV and LV).
- 1.3.5 Repair the floor screed and red impregnate, and also replace checker plates behind/around the panels where required.
- 1.3.6 Replace high voltage cables (outgoing) from the new switchgear to the transformer with new cables where indicated in the Bill of Quantities.

- 1.3.7 Make provision for telecontrol in all panels (refer to clause 17.6 of Specification No. BBB 4182 Version 2).
- 1.3.8 The equipment layout design within the substations shall take into account the space constraints and position of fixed equipment within substations to ensure compliance with applicable regulations and operating clearances.
- 1.3.9 Relocation of the equipment and trenching inside the substation may be done with the approval of the Transnet Freight Rail Project Manager/ Supervisor.
- 1.3.10 Batteries and chargers shall be replaced/ installed at locations indicated in the Bill of quantities.
- 1.3.11 Design, supply, installation, connection and commissioning of new isolation transformers where applicable.

1.4 LOCATION OF THE WORKS

- 1.4.1 The work spans over Six Depots namely:

- Bellville
- East London
- Kimberly North
- Kimberly South
- Krugersdorp
- Port Elizabeth

- 1.4.2 the sites are listed in the Bill of Quantities

1.5 TEMPORARY WORKS

- 1.5.1 Not applicable

END

Part C3
Section 2
ENGINEERING
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Item	Description	Page
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2.2	EMPLOYER'S DESIGN	2
2.3	DESIGN BRIEF.....	2
2.4	DRAWINGS AND MANUALS	2
2.5	DESIGN PROCEDURES	6

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Part C3

Section 2

ENGINEERING

2.1 DESIGN SERVICES AND ACTIVITY MATRIX

Activity	Responsibility
Design and construction drawings (includes general layouts, cable routes, schematic diagrams, etc)	Contractor
As Built drawings (electrical and mechanical, for substation equipment)	Contractor
Itemised catalogue of parts	Contractor
Preparation of instruction manuals	Contractor

2.2 EMPLOYER'S DESIGN

2.2.1 Employer will issue relevant schematic diagrams

2.3 DESIGN BRIEF

2.3.1 Designs shall be as per requirements specified in Part C3.7 Particular Specification.

2.4 DRAWINGS AND MANUALS

2.4.1 All as built drawings shall be supplied in electronic format (Microstation/ Acad).

2.4.2 The successful Contractor shall be required to submit all drawings (paper prints), within four weeks of award of tender, to the Project Manager or Supervisor for approval. No construction or manufacturing activity will be allowed prior to the associated drawings having been approved.

2.4.3 During the duration of the contract period, the successful Contractor will be required to inform the Project Manager or Supervisor of any changes to these drawings and will have to submit the affected drawings for approval prior to it being used on this contract.

2.4.4 All drawings, catalogues, instruction book and spares lists shall be in accordance with Transnet Freight Rail's specification CEE.0224.2002.

2.4.5 All final as built drawings shall be provided to Transnet Freight Rail within four weeks after commissioning.

2.4.6 Three sets of A3 schematic wiring diagrams shall be supplied in hard copy and electronic format for approval.

2.4.7 DRAWINGS PROVIDED BY THE EMPLOYER

2.4.7.1 The drawings listed below are referred to and will be applicable to this contract.

CEE-PA-13:	Test block for HV Switchgear
CEE-PA-19:	Symbols for Electrical Installations
CEE-PA-23:	Substation Earthing
CEE-PA-42:	Symbols for Distribution and Transmission Layouts
CEE-PA-56:	Protective relays to current transformers.

2.4.7.2 Bellville Depot Substation Drawings

No	Drawing Number	Description
1	BBB4028	Salbar and Karoo
2	BBB4029	Hugo
3	BBB4037	Gemsbok
4	BBB4040	Leeu-gan-ka
5	BBB4043	Droë Rivier
6	CTE-PC-26 Sheet 1	Bellville ring
7	CTE-PC-12 Sheet 14	Cape town ring
8	CTE-PC-79 Sheet 4	Wolseley
9	CTE-PC-83 Sheet 2	Worcester Main
10	CTE-PC-05	Blacksmith LV

2.4.7.3 East London Depot Substation Diagrams

No	Drawing Number	Description
1	BBC5793	Queenstown Station and Yard
2	BBC5795	Cambridge Station and Yard

2.4.7.4 Kimberley North Depot Substation Diagrams

No	Drawing Number	Description
1	KEE-PC-82	Kareeput
2	KEE-PC-83	Windsorton Road
3	KEE-PC-84	Mac Farlane Switch Room
4	KEE-PC-85	Beaconsfield
5	KEE-PC-86	Warrenton
6	KEE-PC-87	Mac Farlane Substation
7	KEE-PC-92	Lohatlha
8	KEE-PC-93	Palingpan
9	KEE-PC-94	Postmasburg
10	KEE-PC-95	Blinkklip
11	KEE-PC-96	Clifton
12	KEE-PC-97	Trewil
13	KEE-PC-98	Plateau
14	KEE-PC-99	Nooibos
15	KEE-PC-100	Ulco
16	KEE-PC-101	Gong Gong
17	KEE-PC-102	Weir
18	KEE-PC-59	Veertien strome
19	BBB3984	Fieldsview

2.4.7.5 Kimberley South Depot Substation Diagrams

No	Drawing Number	Description
1	CTE-PC-31 Sheet 2,4 and 5	Beaufort West Ring Schematic

2.4.7.6 Krugersdorp Depot Substation Diagrams

No	Drawing Number	Description
1	KEE-PC-60	Christiana
2	KEE-PC-61	Bloemhof
3	KEE-PC-62	Makwassie
4	KEE-PC-68	Klerksdorp Substation
5	KEE-PC-72	Dean
6	KEE-PC-73	Harrisburg
7	KEE-PC-74	Leeudoringstad
8	KEE-PC-75	Makwassie Switch Room
9	KEE-PC-76	Drie Ruiters
10	KEE-PC-77	Stryders
11	KEE-PC-79	Shepherds tree
12	KEE-PC-80	Christiana Switch Room
13	KEE-PC-81	Honesty
14	KEE-PC-78	Wildhoen
14	JEE-PC-205 Sheet 88	Welverdiend Intake
15	JEE-PC-205 Sheet 89	Welverdiend Quarters
16	JEE-PC-205 Sheet 45	Potchefstroom

2.4.7.7 Port Elizabeth Depot Substation Diagrams

No	Drawing Number	Description
1	BBB9927	Noupoort Main and Avenue
2	BBB8643	Cradock

2.5 DESIGN PROCEDURES

- 2.5.1 Transnet Freight Rail requires drawings, catalogues, instruction manuals and spares list for electrical equipment supplied as per specification no. CEE.0224 Issue 2002 and it's Appendix - 'Schedule of Requirements'
- 2.5.2 The Contractor shall supply the following drawings:
- 2.5.3 Two prints each of design drawings for approval by Transnet Freight Rail Contract Supervisor, prior to the commencement of work or manufacture of any equipment. This includes equipment layouts showing important dimensions and clearances and proposed circuits.
- 2.5.4 One copy of each of these must be available at the commissioning and handing over of equipment.
- 2.5.5 The term "approved" as used in the various specifications, means that the items so specified, or a fully detailed specification thereof, shall be submitted to the Transnet Freight Rail Contract Supervisor for his approval before such items are ordered or installed.

END

Part C3

Section 3

PROCUREMENT

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Item	Description	Page
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3.2	SUBCONTRACTING	2

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Part C3

Section 3

PROCUREMENT

3.1 PREFERENTIAL PROCUREMENT

- 3.1.1 Transnet fully endorses and supports the Government's Broad Based Black Economic Empowerment (BBBEE) Programme. We are strongly of the opinion that all South African Business Enterprises have an obligation to redress the imbalances of the past and Transnet will therefore prefer to do business with local business enterprises who share these same values.
- 3.1.2 To this end, Transnet will seriously reconsider continued business relationships with such enterprises that do not adhere to the principles of BBBEE. Transnet therefore encourages all suppliers to obtain accreditation from one of the reputable Accreditation Agencies. We would prefer our suppliers to have a BBBEE status of at least a level 5 or higher based on the DTI Scorecard. Transnet therefore urges suppliers to have themselves accredited by one of the various Accreditation Agencies available, who do their BBBEE ratings in accordance with the latest Codes Of Good Practice (released on 20 December 2005 and Gazetted on 9 February 2007).

3.2 SUBCONTRACTING

- 3.2.1 The Contractor will be required to provide a list of work, which they intend carrying out on a subcontracting basis, and work which they intend carrying out with their own permanent employees.
- 3.2.2 The Contractor shall outline their policy with regards to the employment of local 'previously marginalised' subcontractors, and the estimated proportion of the work in the various trades that will be sublet to contractors.
- 3.2.3 The Contractor will be required to provide a list of subcontractors they intend using to Transnet Freight Rail for approval.
- 3.2.4 The Contractor will be required to provide the necessary supervision and quality control for the work undertaken by the subcontractors.
- 3.2.5 The Contractor shall not take advantage of lack of pricing skills of emerging subcontractors, and obvious errors in pricing shall be pointed out and rectified to reflect reasonable prices for the work.

END

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GENERAL CONSTRUCTION ASPECTS
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Part C3

Section 4

GENERAL CONSTRUCTION ASPECTS

4.1 WORKS SPECIFICATIONS

4.1.1 PARTICULAR SPECIFICATION:

BBC 6467: Replacement of Old Oil/Obsolete Switchgear at Various 6.6/11 kV
Distribution Substations Countrywide - Phase 3

4.1.2 GENERIC SPECIFICATIONS

- BBB4182 Version 3: Indoor, high-voltage, alternating-current switchgear and controlgear in accordance with IEC 62271-200.
- CEE.0045.2002/1: Painting of steel components of electrical equipment.
- CEE.0224.2002: Drawings, catalogues, instruction manuals and spares lists for electrical equipment supplied under contract
- CEE 0023.90: Installation of Cables
- CEE 0082: Specification for Low Voltage Distribution Boards
- CEE 0085.90: Self contained battery and charger units for electric light and power
- E4B: Temporary facilities for on-site accommodation.
- S417: Transnet Vegetation Standard.
- Specification E7/1: Specification for works on, over or adjacent to railway lines and near high voltage equipment.
- BBB2007: Environmental guidelines and specifications for electrical construction work.
- BBC0330 Version 2: Requirements for isolation transformers.
- Specification E4/E: Health and Safety requirements.

4.1.3 STANDARD SPECIFICATIONS

- SANS 0400: The application of the National Building
- SANS 10142-2: Code of Practice for the Wiring of Premises Regulations.
- SANS 121: Hot Dip Galvanised Coating for Fabricated Iron or Steel Articles
- SANS 60060: High Voltage Test Techniques.
- SANS 1200: Standardized specification for civil engineering construction
Section A: General
Section C: Site clearance
- SANS 10142 -1: Wiring code
- BS 5207: Sulphur Hexafluoride for Electrical Equipment.

4.2 PLANT AND MATERIAL

- 4.2.1 All material and components used shall be Transnet Freight Rail approved.
- 4.2.2 The Contractor shall provide written certification of compliance with specifications of materials supplied by him.
- 4.2.3 During construction the Contractor shall be responsible for securing equipment, plant and material, up to handover to Transnet Freight Rail.
- 4.2.4 Contractors shall indicate clause-by-clause compliance with specifications BBB4182 Version 3; BBC6467 version 3 and scope of works-Part C3 (section 1-6). This shall take the form of a separate document.

4.3 CONSTRUCTION EQUIPMENT

- 4.3.1 The Contractor shall supply all equipment necessary to perform the work.

4.4 EXISTING SERVICES

- 4.4.1 The Contractor shall be responsible for locating and protecting existing services. The position of existing services (if) shown on the drawings are only approximate. Services other than that shown on the drawings may be pointed out to the Contractor by the Transnet Freight Rail Contract Supervisor and the Contractor shall take responsibility to protect them in the same way as those shown on the drawings. Damage to any service shown on the drawings or pointed out to the Contractor shall immediately be reported to the Transnet Freight Rail Contract Supervisor who will arrange for its repair.
- 4.4.2 The Contractor shall reinstate the services and structures damaged during construction.
- 4.4.3 Any damages caused by the Contractor to Transnet property and services shall be rectified by the Contractor at his own costs and to the full satisfaction of the Supervisor.
- 4.4.4 Permission to connect to any existing Transnet Freight Rail service, on a temporary basis, must be obtained from the Transnet Freight Rail Contract Supervisor.

4.5 SITE ESTABLISHMENT

- 4.5.1 Provision has been made in the Schedule of Quantities and Prices for a predetermined lump sum establishment charge which shall be deemed to provide for the costs of establishing the Contractor, his staff, office accommodation, equipment and materials on the site of the works and for the cost of establishing and maintaining living accommodation and sanitary facilities and services for his staff and labourers in accordance with the requirements of the conditions of contract.
- 4.5.2 The payment of the establishment charge will be made as follows:
 - 4.5.2.1 Thirty percent (30%) of the lump sum will be paid to the Contractor when the Transnet Freight Rail Contract Supervisor is satisfied that the Contractor has provided adequate office accommodation, equipment, staff and materials on the site to proceed with the work in terms of the approved works programme and has provided such living accommodation, sanitary facilities and services as are required in terms of the conditions of contract.
 - 4.5.2.2 For the provision of such extra facilities as may be required during the duration of the contract and for the maintenance of all accommodation, sanitary facilities and services in terms of the contract conditions the Contractor shall be paid the balance of the lump sum as follows:-

- (i) A monthly amount shall be calculated by dividing the balance of the establishment charge by the number of full months from the date of payment under sub clause 4.5.2.1 hereof to the due date of completion of the contract as awarded.
- (ii) This amount shall be paid monthly up to the original completion date provided that all accommodation, sanitary facilities and services have been satisfactorily maintained in terms of the contract conditions during the month concerned and the Transnet Freight Rail Contract Supervisor has issued a certificate to that effect.
- (iii) In the event that accommodation, sanitary facilities and services have not been maintained satisfactorily in terms of the contract conditions during any of the months referred to in sub clause 4.5.2.2 (ii) above, the calculated monthly amount in respect of that particular month shall not be paid and the total contract value shall be reduced accordingly.

4.5.2.3 Any establishment charge claimed by Contractors shall form part of the Contractor's fixed or inosculated cost in the price adjustment formula. The establishment charges will be taken into consideration when the financial evaluation is undertaken prior to acceptance of the tender.

4.6 SITE USAGE

- 4.6.1 The establishment of a site is the responsibility of the successful tenderer and this must be provided for in the quotation.
- 4.6.2 The Contractor shall provide an office for the Transnet Freight Rail Contract Supervisor on site upon request.
- 4.6.3 Housing of Contractor's staff on any Transnet property will not be permitted.
- 4.6.4 The Contractor shall supply portable toilets for the use of his workmen.
- 4.6.5 The Contractor is to make his own arrangements for the distribution of electrical power for his own use on the site. Transnet Freight Rail will not be responsible for any claims whatsoever brought about by any disruption or fluctuations in the supply of any such electrical power to the Contractor.
- 4.6.6 The Contractor shall lay his own temporary water reticulation and make the necessary connection to an existing water main and metering device, if available.
- 4.6.7 The Contractor is to apply to a service provider for a telephone if required.
- 4.6.8 Cost for water, electricity and telephone will be to the account of the Contractor.
- 4.6.9 Contractor's own and supervised site store
 - 4.6.9.1 The Contractor must provide adequate storage, at his own expense to the satisfaction of the Transnet Freight Rail Contract Supervisor. All material must, in addition, be stored or stacked in position that will not interfere with other work in progress in the area.
 - 4.6.9.2 Sites for storage facilities on property of Transnet Freight Rail, if available, must be arranged in conjunction with the parties concerned. Where no sites are available, the Contractor must make his own arrangements at his expense.
 - 4.6.9.3 The Transnet Freight Rail Contract Supervisor shall be advised as early as possible where storage sites will be located.
 - 4.6.9.4 The cost of this store shall be shown separately as an item in the quotation for installation.
 - 4.6.9.5 On completion of the contract, the Contractor shall dismantle and remove the store entirely from the property of Transnet Freight Rail.

4.6.9.6 Off-loading, storage and distribution

- 4.6.9.6.1 The Contractor shall be responsible for off-loading all material, the storage and safe custody thereof and for the distribution on the Works.
- 4.6.9.6.2 The Contractor shall maintain records, to the satisfaction of the Transnet Freight Rail Contract Supervisor, concerning the receipt and issue of all material.
- 4.6.9.6.3 All material must be stored or stacked in positions that will not interfere with other work in progress in the area.
- 4.6.9.7 The Contractor shall be responsible for the site establishment and shall quote for it in the Activity Schedule, part C2.2
- 4.6.9.8 The Contractor shall provide a site office (mobile) where the necessary documentation comprising of design and installation drawings, a copy of the contract, site diary, site instruction book, Risk and Safety file, latest approved programme and all other relevant documents shall be available at all times.
- 4.6.9.9 The Contractor shall provide the necessary facilities (table and chairs) to conduct site meetings in a suitable meeting environment.
- 4.6.9.10 No staff accommodation shall be allowed on site. Only a security guard to be provided by the Contractor to safeguard his equipment and plant will be allowed on site overnight. No consumption of alcohol by staff will be allowed on site.
- 4.6.9.11 Temporary structures such as fencing, carports etc. shall be removed or demolished after completion of the works.

4.7 PERMITS AND WAYLEAVES

- 4.7.1 The Contractor shall be responsible for any water permits (for bulk water extraction) or borrow pit licences if necessary.

4.8 ALTERATIONS, ADDITIONS, EXTENSIONS, AND MODIFICATIONS TO EXISTING WORKS

- 4.8.1 Contractor shall use the information and drawings as a guideline, should the Contractor deem it necessary (appropriate to deviate from the above, he shall inform the Project Manager/Transnet Freight Rail contract Supervisor for approval.
- 4.8.2 Only Transnet Freight Rail Contract Supervisor or his appointed designate shall be allowed to enter Site Instructions. Any instruction that might result in a change in scope or has cost or time implications, shall only be carried out once a Variation Order (VO) has been approved by Transnet Freight Rail. Otherwise the client may refuse to pay for such work.

4.9 INSPECTIONS OF ADJOINING PROPERTIES

- 4.9.1 Inspections shall be done in accordance with Environmental Management Guidelines.
- 4.9.2 Inspection shall also be done to ensure that adjoining properties and facilities are not adversely affected by the new installation.
- 4.9.3 Transnet Freight Rail cannot guarantee the supply of water at the substation. In this regard the Contractor shall check during their pre-installation site visit for the availability. The Contractor shall carry all costs involved for such service should it be unavailable.

4.10 WATER FOR CONSTRUCTION PURPOSES

- 4.10.1 Transnet Freight Rail cannot guarantee the supply of water at the substation. In this regard the Contractor shall check during their pre-installation site visit for the availability. The Contractor shall carry all costs involved for such service should it be unavailable

END

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Section 5

MANAGEMENT OF THE WORKS

5.1 APPLICABLE SANS 1921 STANDARDS

- 5.1.1 The following parts of SANS 1921 and associated specification data is applicable:
- 5.1.2 SANS 1921-1-2004: Part 1: General Engineering and Construction Works.
- 5.1.3 SANS 1921-2-2004: Part 2: Accommodation of traffic on public roads occupied by the Contractor.
- 5.1.4 SANS 1921-1-2004: Part 3: Structural Steelwork.
- 5.1.5 SANS 1921-1-2004: Part 6: HIV/AIDS awareness.

5.2 PARTICULAR/ GENERIC SPECIFICATION

- 5.2.1 Refer to Section 4.1

5.3 PLANNING AND PROGRAMMING

- 5.3.1 One team per depot area will be permitted to do work at any specific time.
- 5.3.2 Under no any circumstances shall two adjacent substations be switched off or worked on at the same time by the Contractor.

5.4 SEQUENCE OF THE WORKS

- 5.4.1 The execution of the works shall be in accordance to the program to be submitted by the Contractor. Transnet Freight Rail shall approve such program.
- 5.4.2 It might however, only be possible to work in some sites over the weekend only, due to business requirements.

5.5 SOFTWARE APPLICATION FOR PROGRAMMING

- 5.5.1 The Manuals and training for programmable components to be provided for.
- 5.5.2 Electronic documentation to be as per specification CEE.0224

5.6 METHODS AND PROCEDURES

- 5.6.1 Hours of work will be from 07h00 to 16h00 Mondays to Fridays, unless business requirements dictate otherwise.
- 5.6.2 On the Contractor's request, work may be performed outside these normal working hours if permitted by the Supervisor.
- 5.6.3 The cost of the Employer's supervision outside normal working hours, when requested by the Contractor, shall be recovered from the Contractor.

5.7 QUALITY PLANS AND CONTROL

- 5.7.1 The Contractor shall submit with his tender his proposed QC plan and procedures. This plan shall indicate how the necessary quality assurance and control will be carried out in order to meet the requirements of the contract documents. The Contractor shall have his Quality Control plan approved by Supervisor prior to the start of any work or ordering of material.

- 5.7.2 The plan shall consist of checklists and measurements sheets to be completed by the Contractor in order to substantiate that the complete work conforms to the specifications with respect to material, quantity, quality, dimensions, methods and other requirements.
- 5.7.3 The entire plan for the contract shall be controlled for comprehensiveness by means of a form referring to the various checklists and measurement sheets.
- 5.7.4 The Contractor may also be required to use standard quality and control forms supplied by the Supervisor.
- 5.7.5 The Contractor shall notify the Supervisor of all inspections at least 21 working days in advance of such inspections. The Contractor shall have the relevant quality control plans available at inspections and tests.
- 5.7.6 Transnet Freight Rail reserves the right to inspect the equipment covered by this specification at any stage during manufacture and to be represented at any tests.
- 5.7.7 Where the contract provides for tests on the premises of the Contractor or of his subcontractor or on site, the Contractor shall provide assistance such as labour, materials, electricity, fuel, stores, apparatus and instruments as may be a requisite and as may be reasonably demanded to carry out such tests efficiently.
- 5.7.8 As and when the equipment has passed these tests, the Supervisor shall furnish the Contractor with a certificate in writing to this effect.
- 5.7.9 If as a result of an inspection, examination or test, the Transnet Freight Rail Contract Supervisor decides that the equipment is defective or not in accordance with the requirements, he shall notify the Contractor accordingly stating in writing his objections and reasons thereof. The Contractor shall timeously make good the defect to ensure that the equipment complies with the requirements.
- 5.7.10 Thereafter, if required by the Transnet Freight Rail Contract Supervisor, the tests shall be repeated under the same terms and conditions save that all reasonable expenses to which Transnet Freight Rail may be put by the repetition of these tests will be deducted from the contract sum.
- 5.7.11 Unless the Transnet Freight Rail Contract Supervisor otherwise directs, no equipment or materials are to be delivered to site until the Transnet Freight Rail Contract Supervisor issues an inspection certificate in respect of such equipment or material. The Contractor shall be responsible for the reception of all equipment and material delivered to site for the purpose of the contract.
- 5.7.12 Transnet Freight Rail reserves the right to conduct a quality assurance audit on the Contractor's quality control system at regular intervals.
- 5.7.13 If at any stage during manufacture, repair, installation or commissioning of equipment or material it becomes evident that the requirements of this specification are not being adhered to, Transnet Freight Rail reserves the right to halt such manufacture, repair, installation or commissioning until such time as the Contractor or his subcontractor conforms to the requirements of this specification.
- 5.7.14 Details of any additional tests or inspections proposed by the Tenderer shall be attached and submitted with his tender.
- 5.7.15 Acceptance by the Transnet Freight Rail Supervisor of satisfactory completion of on-site tests in no way relieves the Contractor of his obligation to rectify defects which

5.8 ENVIRONMENT

- 5.8.1 These requirements are covered in Part C3.6 "Environmental Requirements"

5.9 ACCOMMODATION OF TRAFFIC ON PUBLIC ROADS OCCUPIED BY THE CONTRACTOR

5.9.1 Not applicable

5.10 OTHER CONTRACTORS ON SITE

5.10.1 Planning and sequencing to comply with requirements in 5.3, 5.4 and 5.6. of this section.

5.10.2 Should a Contractor be obstructed in anyway by other Contractors' activities, he shall notify the Project Manager or Supervisor within twenty-four hours, failing which he may be held responsible for any delays resulting therefrom.

5.11 TESTING, COMPLETION, COMMISSIONING AND CORRECTION OF DEFECTS

5.11.1 When, in the opinion of the Supervisor, any part of the work done or any items of material used is not in accordance with the requirements of the Contract, whether or not payment for such work or material has been made, he may order the Contractor in writing to remove any objectionable part, item or component thereof, to replace it with an acceptable part, item or component and to rectify or reconstruct the Works without cost to Transnet.

5.11.2 The equipment shall be inspected/ tested and approved by Transnet Freight Rail Quality Assurance at the Contractors workshop prior to it being taken to site. Only once the approval has been granted can the equipment be taken to site for installation.

5.11.3 Functional on-site tests shall be conducted on all items of equipment and circuitry to prove the proper functioning and installation thereof.

5.11.4 The Contractor shall submit a detailed list of on-site tests for the approval of the Project Manager or Supervisor.

5.11.5 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.

5.11.6 The on-site tests shall include the following:
Test for the functionality of all electrical circuitry.
Trip test on relays.

5.11.7 Test on equipment as per manufacture's instructions.
Insulation test.

5.11.8 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.

5.11.9 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.

5.11.10 The Works will not be accepted by Transnet as complete until all defects of every kind have been made good to the satisfaction of the Supervisor.

5.11.11 Transnet Freight Rail shall be notified at least 14 days prior to performing these tests.

5.11.12 Within a reasonable time after receipt of written instructions from the Project Manager/Supervisor, the Contractor shall make good to the satisfaction of the Supervisor all the defective material and workmanship which are not in accordance with the contract and which may appear within a period of 12 months, or such other period as stipulated in the Contract Data, after the date stated in the CERTIFICATE OF COMPLETION, and shall repair all damage caused thereby.

- 5.11.13 Should the Contractor fail to comply with the above provisions, Transnet may cause the required work to be carried out at the expense of the Contractor and may recover the cost thereof from the Contractor.
- 5.11.14 Testing and commissioning shall be done in accordance with applicable standard, generic and particular specifications.
- 5.11.15 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.
- 5.11.16 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.
- 5.11.17 The Contractor shall be present during the testing and setting of the protection to rectify any faults found.
- 5.11.18 Commissioning will only take place after all defects have been rectified to the satisfaction of the Project Manager or Supervisor.

5.12 RECORDING OF WEATHER

- 5.12.1 These requirements are covered in the contract data.

5.13 FORMAT OF COMMUNICATION

- 5.13.1 The Contractor shall supply and have available ON SITE at all times three A4 size triplicate carbon copy books.
- 5.13.2 In one book, site instructions will be recorded. Only the Project Manager and the Supervisor or their delegated representative will have the authority to issue site instructions to the Contractor. Any instruction that might result in a change in scope or has cost implications shall only be carried out once a Variation Order (VO) has been approved by Transnet Freight Rail, otherwise the client may refuse to pay for such work.
- 5.13.3 The second book will be used as the Risk Register required by the Contract for Engineering and Construction Work, NEC3.
- 5.13.4 The third book will be a site diary. Site diaries shall be forwarded to the Transnet Freight Rail Contract Supervisor during monthly progress meetings. Site activities and information (including weather conditions) shall be entered in a site diary on a daily basis. Amongst others the safety talks shall be entered, and all visitors on site shall sign the Site Diary.
- 5.13.5 The original sheet of each set of three pages will be removed from the books and retained by the Project Manager. The Contractor may remove the second sheet but the third sheet shall be retained on the site until completion of the Works when it shall be handed to the Project Manager.
- 5.13.6 All communication shall be in writing.

5.14 KEY PERSONNEL

- 5.14.1 The Contractor shall provide an Organigram of his key personnel on site, including all relevant contact details within two weeks from the start date.

5.15 MANAGEMENT MEETINGS

- 5.15.1 A Risk reduction meetings: These meetings can form part of the regular/progress site meetings or be held as separate meetings. At these meetings the following issues will be discussed:
- i. Compensation events
 - ii. Early warnings

iii. Contractual claims

iv. Risk register

5.15.2 The Contractor shall attend meetings when convened by the Transnet Freight Rail Contract Supervisor (normally once a month). Such meetings will be for the purpose of discussing progress, delays, materials, conditions and the co-ordination of site activities. The meetings will be chaired by the Project Manager or his deputy and the proceedings shall be minuted and circulated by the Transnet Freight Rail Contract Supervisor.

5.15.3 The Contractor shall attend ad hoc site meetings when convened by the Transnet Freight Rail Contract Supervisor. Such meetings will be for the purpose of discussing specific issues or problems relating to specifications and adherence thereto, quality and contractual matters.

5.15.4 Contractor's representatives at these meetings shall have the necessary delegated authority in respect of aspects such as planning, change management, health and safety.

5.16 FORMS FOR CONTRACT ADMINISTRATION

5.16.1 The following standard forms, will be used for contract administration:

i. Progress Assessment Details

ii. Progress Assessment Certificate

5.17 DAILY RECORDS

5.17.1 The Contractor shall supply a triplicate carbon copy book with a page per day for recording all events affecting the progress of the works such as drawings received on site, arrivals and dispatch of plant, material received or applied for, breakdowns and delays etc. Entries shall be made by the Contractor or his appointed agent and signed by both parties daily. Those days on which no events take place must be ruled out and "NIL" entered. The site diary will be used as documentary proof to establish the validity of any claims.

5.17.2 Site diaries shall be forwarded to the Transnet Freight Rail Contract Supervisor during monthly progress meetings.

5.18 BONDS AND GUARANTEES

5.18.1 Surety in the amount equal to either ten percent or five percent of the contract price, as elected by the Contractor, shall be provided by the Contractor for the due and faithful performance by him in terms of the Contract. Such security shall be in the form of:-

5.18.1.1 Government or approved Municipal stocks in negotiable form, or

5.18.1.2 A deed of suretyship furnished by an approved bank, insurance or guarantee corporation in such form as may be prescribed by Transnet, provided however that the Project Manager may, upon written application by the Contractor, return to the Contractor the whole or part of such security held by Transnet when the retention money has reached an amount which the Project Manager in his sole discretion considers sufficient for the protection of Transnet. Transnet is entitled to hold all or portion of the security until the completion of the contract and expiry of the defects liability and maintenance period.

5.18.2 Either five or ten percent of the value of the work completed, as reflected by the nett monthly amounts certified for payment, will be retained by Transnet for the due and proper fulfilment of the contract, until such retention money is sufficient, in the opinion of Project Manager, for the protection of Transnet. Transnet is entitled to hold all or portion of the retention money until the completion of the contract and the expiry of the maintenance period.

- 5.18.3 Retention money shall be 5 percent when the security referred to hereof is 10 percent, and 10 percent when the said security is 5 percent.

5.19 PAYMENT CERTIFICATE

- 5.19.1 On or after the assessment date, the Supervisor and the Contractor will together assess the quantities of the progress on each item in the Bill of Quantities and complete the Progress Assessment Detail form, where after the Progress Assessment Certificate will be issued.
- 5.19.2 The Contractor shall then submit a VAT invoice and attach the above Progress Certificate for payment by the Employer.
- 5.19.3 Contractor to provide the Employer with the necessary details regarding banking details to enable the Employer to make electronic payments.

5.20 PERMITS

- 5.20.1 All employees of the Contractor shall carry at all times the permits issued by the Employer (if necessary).
- 5.20.2 The Contractor shall manage the permits in such a way that people no longer in his employ should not have these permits in their possession anymore.
- 5.20.3 Employees must in no way be hired at the site.

5.21 INSURANCE PROVIDED BY THE EMPLOYER

- 5.21.1 Details of this are covered in the Contract Data.

5.22 HEALTH AND SAFETY

- 5.22.1 The Contractor shall comply with the requirements of the Transnet Health and Safety specification E4E (August 2006) by compiling a safety plan and completing the applicable Annexure similar to those in the above specification on his company's letterheads.
- 5.22.2 The safety plan shall be based on a risk assessment done by a competent person in accordance with Act 85 of 1993.
- 5.22.3 The requirements of specification E7/1 shall apply.

END

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Section 6

ENVIRONMENTAL REQUIREMENTS

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Section 6

ENVIRONMENTAL REQUIREMENTS

6.1 ENVIRONMENTAL MANAGEMENT

- 6.1.1 All work shall be done in accordance with the Environmental Management Plans and the applicable specifications below

Specification E4B: Temporary Facilities for on site accommodation.

Specification S417: Transnet Vegetation Standard.

Transnet Freight Rail EMP: Civil and Electrical Work

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**TECHNICAL
RAIL NETWORK**

PARTICULAR SPECIFICATION

REPLACEMENT OF OLD OIL/OBSOLETE SWITCHGEAR
AT VARIOUS 6.6/11 kV DISTRIBUTION SUBSTATIONS
COUNTRYWIDE - PHASE 2 STAGE 2

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Part C3

Section 7

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7.1 SCOPE

- 7.1.1 This Specification covers Transnet Freight Rail requirements for the
 - 7.1.1.1 Design, supply, installation, testing and commissioning of 11kV switchgear at various distribution substations countrywide.
 - 7.1.1.2 Design, supply and installation of 380/ 400V distribution panels at Substations indicated in the Bill of Quantities.
 - 7.1.1.3 The dismantling, removal and transportation of old equipment to the respective depot.
- 7.1.2 Details of the substations, their locations and specific electrical equipment required, are specified in the bill of quantities.

7.2 DRAWINGS AND SPECIFICATIONS

- 7.2.1 All work shall be done in accordance with Specifications listed in section 4.1 of the Scope of Works.
- 7.2.2 Drawings, manuals and other documentation shall be supplied in compliance with requirements in section 2.4 of the Scope of Works specification CEE.0224 including its Appendix.

7.3 MATERIALS

- 7.3.1 Only materials which are approved by Transnet Freight Rail shall be used.
- 7.3.2 The material shall be as per applicable drawings, standard, generic and particular specifications.
- 7.3.3 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.
- 7.3.4 Contractors shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.
- 7.3.5 Tenderers shall submit equipment type test certificates for their offers (at tender stage) and routine test certificates for equipment to be supplied (on delivery of equipment) as specified on the contract. These shall be in English or certified translation.

7.4 EQUIPMENT

- 7.4.1 The Contractor shall supply all equipment necessary to perform the work.

7.5 CONSTRUCTION

- 7.5.1 The equipment layout design within the substations shall take into account the space constraints and position of fixed equipment within substations to ensure compliance with applicable regulations and operating clearances.

7.6 MEDIUM VOLTAGE SWITCHGEAR

- 7.6.1 The indoor, medium voltage metal enclosed switchgear shall be in accordance with Specification No. BBB4182.
- 7.6.2 All panels shall be labeled with the 'designation' as reflected in column 1 of the 'Bill of Quantities and Prices'
- 7.6.3 All circuit breakers/ switchgear shall be rated 11kV, 3 phase, 50Hz.
- 7.6.4 The rated continuous current shall not be less than 630A.
- 7.6.5 All incomers and their respective bus couplers on ring fed networks shall be rated at 1250A.
- 7.6.6 The rated short circuit breaking current shall not be less than 20kA.
- 7.6.7 The short time withstand current rating for the medium voltage equipment supplied shall not be less than 20kA for 3s.
- 7.6.8 The contractor shall make provision for making available the Ring Main Unit (for the duration of the contract) in all sites that form part of a distribution ring. This should be included as part of the total tender value (not just a rate).
- 7.6.9 The RMU shall be rated at 630A (continuous current) and have the overcurrent and Earth fault protection features.
- 7.6.10 A minimum clearance of 800mm shall be maintained at the rear of the newly installed panels whenever possible. Where this clearance is not possible, the contractor shall obtain an approving site instruction before commencing with the installation. The front shall have sufficient space for the breakers to be racked out and withdrawn with ease.

7.7 LOW VOLTAGE SWITCHGEAR

- 7.7.1 The indoor low voltage switchgear shall be in accordance with Specification CEE.0082.
- 7.7.2 Circuit breakers are to be provided where fused isolators were used before.
- 7.7.3 The contractor shall ensure that power supplies to the workshops, offices etc. fed from the old LV boards will have to be kept live at all times by making use of a 20 way portable LV board (to be provided by the contractor for the duration of the contract where LV boards are to be replaced).
- 7.7.4 The LV panels shall be constructed from heavy gauge steel with a minimum thickness of 2mm.
- 7.7.5 All removable covers shall require use of a tool for removal. Opening of doors for all MCB groups shall be pad lockable.
- 7.7.6 Doors shall have the following points of hinging:
 - Up to 450mm – 2 hinges
 - Up to 800mm – 3 hinges
 - More than 800mm- 4 hinges

7.7.7 All doors shall be secured by square key latches as follows:

- Up to 450mm – 2 latches
- Up to 800mm – 3 latches
- More than 800mm – 4 hinges

7.7.8 The busbars shall be mounted on insulators made of non-hygroscopic, non inflammable material.

7.7.9 The busbars shall be insulated using suitably graded heat shrink material.

7.7.10 The material above shall be of standard colours for 'live' busbars and black for the neutral.

7.7.11 Labels shall be worded in English

7.7.12 ASSEMBLIES shall be designed to confine internal arcing faults and to direct arcs and gases arising from these away from the possible operator interface points (i.e. back and front).

7.7.13 Provision shall be made to limit pressure build up and/or re-direct gases resulting from an internal arc fault in any section or sub-section.

7.7.14 Each section of the ASSEMBLY shall be equipped with a pressure activated relief flap that shall direct ionised materials and gases away from the operator interface points.

7.7.15 The two main functions of internal arc confinement are to protect the operator in front and also prevent the arc from spreading to any other compartment that might also be energized.

7.8 SWITCHING DEVICES

7.8.1 Switching devices shall be in compliance with Clause 9.0 of Specification No. BBB4182.

7.8.2 The circuit breaker and its control panel shall be supplied from the same supplier/manufacturer.

7.8.3 Suitably rated fuse switch disconnectors shall be supplied where these are required (indicated in Bill of Quantities) for the protection of small transformers.

7.9 PROTECTION REQUIREMENTS

7.9.1 Protection system and relays shall be in compliance with Clause 11.0 of Specification No. BBB4182.

7.9.2 The protection required per panel shall be as specified below and must comply with the requirements of Specification no. BBB 4182 Appendix 1:

7.9.2.1 Incomer:

- Frame Leakage Protection (refer to clause 7.9.2.5 for where a bus- sectionalizer is installed).
- Earth Fault Protection.

- Overcurrent Protection.
- Reverse Power Protection

7.9.2.2 Transformer

- Primary HRC Fuses (transformers <100kVA and/or where specified in Appendix)
- Buchholz Protection (For all transformers not using HRC fuses).
- Oil and winding Over-Temperature Protection (For transformers not using HRC fuses).
- Primary Over-current and Earth Fault Protection.

7.9.2.3 HV Cable:

(a) Supply and Ring:

- Overcurrent Protection.
- Earth Fault Protection.
- Differential Pilot Wire Protection (Where specified in Bill of Quantities).

(b) Radial:

- Earth Fault Protection.
- Overcurrent Protection.

7.9.2.4 HV Transmission Line:

- Overcurrent Protection.
- Earth Fault Protection.
- Sensitive Earth Fault Protection.
- Auto-reclosing.

7.9.2.5 Busbars (With Bus sectionalizer):

- Frame Leakage (Zone) Protection.

7.9.3 Frame Leakage Protection, with current transformer ratio of 100/5 (class 10P), shall be provided for all substations.

7.9.4 The Contractor shall provide reverse power protection, intertripping and phase failure protection/monitoring where stated above and/or specified in Bill of Quantities.

7.10 INDICATING INSTRUMENTS

- 7.10.1 Indicating instruments shall be in compliance with Clause 12.0 of Specification No. BBB4182 Version 3.
- 7.10.2 Ammeters shall be installed in all panels, excluding bus sectionalizer and fuse switch disconnecter panels. The current in all three phases shall be readable.
- 7.10.3 Voltmeters shall be installed where indicated in Bill of Quantities, and must be labeled whether it indicates cable or busbar voltage side.
- 7.10.4 Maximum demand ammeters shall be installed on all transformer panels.

7.11 ENERGY METERS

- 7.11.1 Energy meters shall be in compliance with Clause 13.0 of Specification No. BBB4182 Version 3.
- 7.11.2 Energy meters (kWh meters) shall be installed where indicated in Bill of Quantities.
- 7.11.3 Metering test blocks shall be provided where energy meters are installed.

7.12 CURRENT AND VOLTAGE TRANSFORMERS

- 7.12.1 Current and voltage transformers shall be in compliance with Clauses 14.0 and 15.0 of Specification No. BBB4182 Version 3.
- 7.12.2 The current transformers shall be supplied with ratios as indicated in Bill of Quantities.
- 7.12.3 The CT ratio's given in Bill of Quantities were recorded from the existing old equipment at the distribution substations. The Contractor shall be responsible to verify that the CT ratios and other ratings are suitable for the protection requirements at each substation.
- 7.12.4 Current transformers for 'Differential Protection' shall be of class X, and for other protection these shall be of accuracy class 10P and accuracy limit factor 10.
- 7.12.5 The Contractor shall provide a 10 A rated test winding on protection CT's.
- 7.12.6 Voltage transformers be installed on the cable side.
- 7.12.7 All current transformers shall be suitable for use in both 6.6kV and 11kV circuits.
- 7.12.8 All incomer panels shall be provided with a voltmeter. Where there is no specific incomer (or through-feed) a VT shall be installed on the busbar side and a voltmeter in one of the panels. In instances where a bus-section is installed, the VT's shall be on cable side of incoming breakers.
- 7.12.9 Dual ratio voltage transformers (6.6/11kV) are required for 6.6 kV substations or other substations with other voltage ratings besides 11kV. VT's shall have a secondary output of 110V.
- 7.12.10 A VT selection relay shall be provided where more than one VT is installed in a substation.

7.13 ISOLATION TRANSFORMERS

- 7.13.1 The Contractor shall supply and install an isolation transformer complete with cabling, protection etc. as per specifications BBC0330 Version 2 and BBB5452.
- 7.13.2 Isolation transformer shall be supplied for all distribution substation that have no stand-alone Battery Tripping Units (i.e. uses traction BTU's), with cable armoring block jointed on the side connecting to the 11kV substation. These substations are indicated in the Bill of Quantities.

7.14 CABLING AND WIRING

- 7.14.1 All cabling and wiring shall be in accordance with specification BBC0198 Version 1, CEE0023 and SANS 10142-1.
- 7.14.2 The contractor shall replace the transformer supply cables, from the switchgear, with new cables at all sites.
- 7.14.3 Tenderers shall quote for a XLPE cable for all sites, with the estimated length given in the Bill of Quantities. The cables shall be rated for 11kV with the current rating based on the current/present application (6.6kV or 11kV).
- 7.14.4 The quotation for the transformer cable shall include the necessary termination on both sides.
- 7.14.5 In case where circuit breaker (incoming) cables need replacement, Transnet Freight Rail Supervisor shall communicate the instruction to the Contractor.
- 7.14.6 No joining of cables will be allowed. The Contractor shall provide cables that are long enough for the application. Joining of cables will only be done in exceptional cases on approval by the contract supervisor.
- 7.14.7 All cables shall terminate in compression type glands. These glands shall be fitted with neoprene shrouds.
- 7.14.8 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).
- 7.14.9 All copper connections to steel (galvanized) shall be tinned.

7.15 EARTHING

- 7.15.1 Earthing of the substation shall be done in accordance with drawing no. CEE-PA-23. A 95 mm² Cu cable shall however be used instead of a 10 mm² as indicated on the drawing.
- 7.15.2 A new meter box and earth spike shall be installed at all substations.
- 7.15.3 The earth resistance reading of the earth spike shall be less than 5 ohms. Tenderers shall make provision in their offers for installing trench earthing to achieve the required earth reading, where required. No ground wetting or chemical improvement of ground conductivity will be acceptable.
- 7.15.4 Tenderers shall provide a rate for trench earthing.

7.16 BATTERIES AND BATTERY CHARGERS

- 7.16.1 The contractor shall supply and install batteries and battery charger units in accordance with specification CEE 0085, with all relevant cabling in locations as indicated in the Bill of Quantities.
- 7.16.2 The supply voltage for all control circuits shall be 110V.
- 7.16.3 The Contractor shall install a battery under-voltage relay in all the substations.
- 7.16.4 Batteries supplied under this contract shall be of the Nickel Cadmium type.
- 7.16.5 The capacity of the battery shall be 10AH for up to 4 panels, thereafter 29AH shall be supplied.
- 7.16.6 The contractor will be responsible for disposing of the old battery sets following an environmentally controlled procedure. It should be assumed that all the old batteries are Nickel Cadmium.

7.17 TRAINING

- 7.17.1 The contractor's team of supervisors could be required to attend a Transnet Freight Rail electrical safety course and be authorised to supervise the Contractor's staff whilst working in the substations on this contract. Transnet Freight Rail will organise the course and details will be communicated to the successful tenderer. The contractor shall pay for the training.
- 7.17.2 The tenderers shall submit details of the training courses with the tender.
- 7.17.2.1 These will be conducted by the supplier/Contractor for the training of Transnet Freight Rail maintenance staff in the operation and maintenance of the equipment supplied. The courses shall include theoretical as well as practical tuition.
- 7.17.2.2 This training shall be offered for each Depot area in which equipment will be installed. Training for relay setting/operation may be conducted centrally.

7.18 TESTING AND COMMISSIONING

- 7.18.1 The contractor shall perform all pre-commissioning tests on the switchgear and other related material and components. Transnet Freight Rail reserves the right to witness these tests. The test results shall be recorded and submitted to Transnet Freight Rail.
- 7.18.2 The equipment shall be inspected or tested and approved by Transnet Freight Rail Quality Assurance at the factory or Contractors workshop prior to it being taken to site. Only once the approval has been granted can the equipment be taken to site for installation.
- 7.18.3 The contractor shall perform earth resistance tests at each substation prior to installing new equipment in order to determine whether or not new earthing is required (based on clause 7.15.3 of this specification).
- 7.18.4 The contractor shall supply all test equipment and instruments.
- 7.18.5 Functional on-site tests shall be conducted by the contractor on all items of equipment and circuitry to prove the proper functioning and installation thereof.
- 7.18.6 The contractor shall submit a detailed list of on-site tests for the approval of the Project Manager or Supervisor.
- 7.18.7 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.
- 7.18.8 Transnet Freight Rail shall be notified at least 14 days prior to performing these tests.
- 7.18.9 Transnet Freight Rail shall perform final commissioning tests prior to the equipment being energised on site.
- 7.18.10 Acceptance by the Transnet Freight Rail 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.
- 7.18.11 On completion of commissioning, the Contractor will hand the equipment over to the Project Manager or Supervisor in terms of relevant instruction.

END

LIST OF SECONDARY SPECIFICATIONS AND DRAWINGS

<u>Specifications</u>	<u>Drawings</u>
BBB0041 v 4	JEE-PC-205 Sheet 45
BBB2007	JEE-PC-205 Sheet 88
BBB4182 Version 3	JEE-PC-205 Sheet 89
BBC0198 version 1	KEE-PC-59
BBC0330 Version 2	KEE-PC-60 Sh 1 + 2
CEE 0023.90	KEE-PC-61
CEE.0045.2002/1	KEE-PC-62 Sh 1 + 2
CEE 0082	KEE-PC-68
CEE 0085.90	KEE-PC-72
CEE.0224.2002	KEE-PC-73
S417	KEE-PC-74
<u>Drawings</u>	KEE-PC-75
BBB3900	KEE-PC-76
BBB3944	KEE-PC-77
BBB3952	KEE-PC-78
BBB3984	KEE-PC-79
BBB4028	KEE-PC-80
BBB4029	KEE-PC-81
BBB4037	KEE-PC-82
BBB4040	KEE-PC-83
BBB4043	KEE-PC-84
BBB8643 (Not attached)	KEE-PC-85 Sh 1 + 2
BBB8765	KEE-PC-86
BBB9927 (Not attached)	KEE-PC-87 Sh 1 + 2
BBC5793	KEE-PC-91
BBC5795	KEE-PC-92
BBD8643	KEE-PC-93
BBD9927	KEE-PC-94
BBF3261	KEE-PC-95
CEE-PA-13	KEE-PC-96
CEE-PA-19	KEE-PC-97
CEE-PA-23	KEE-PC-98
CEE-PA-42	KEE-PC-99
CEE-PA-56	KEE-PC-100
CTE-PC-05	KEE-PC-101
CTE-PC-12 Sheet 14	KEE-PC-102
CTE-PC-26 Sheet 1	KEE-PC-104
CTE-PC-31 Sheet 2, 4 and 5	PEE-PHB-17
CTE-PC-79 Sheet 4 & 9	
CTE-PC-83 Sheet 2	

**NOTE: Any other specification / drawing referred to in the above specs,
will be for information purposes and may be provided on request.**



TRANSNET
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TECHNOLOGY MANAGEMENT CONFIGURATION MANAGEMENT SPECIFICATION

PREPARATION OF DRAWINGS FOR TRANSNET FREIGHT RAIL

Author: Chief Engineering Technician
Documentation Management

Approved: Chief Engineering Technician
Central Drawing Office
Manager
Rolling Stock

Authorised: Senior Technologist
Configuration Management

JC van Tonder

KP Moss

S Taylor

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Date:

18 September 2009

Circulation Restricted To:

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1.0 SCOPE

This specification deals with standards and conventions to be used for the preparation of drawings as required by Transnet Freight Rail, Technology Management, Configuration Management; Infrastructure and Rolling Stock.

2.0 ASSOCIATED DOCUMENTS

The following documents are referred to in this specification:

BBB0005: Document Registration Form.

BBB0036: Document Certification Form.

BBB0042: Practice and Conventions Regarding Document Identification.

BBB4354: Preparation of Signal Drawings.

CEE-0224: Drawings, Catalogues, Instruction Manuals and Spares Lists for Electrical Equipment Supplied Under Contract.

RT/TE/SPC/0241: Specification for Supply of Drawings on TFR Locomotive Projects.

SANS 10111: Code of Practice for Engineering Drawing.

BS 308: Engineering Drawing Practise.

3.0 STANDARDS

3.1 **SANS 10111:** Code of Practice for Engineering Drawing, shall be adhered to in every possible way with the exceptions as detailed in this instruction or in the various documents that deal with the conventions for specific types of work.

3.2 **BS 308:** Engineering Drawing Practice can be used as a guideline for specific aspects that are not covered in SANS 10111.

3.3 **BBB4354:** Preparation of Signalling Drawings shall be read in conjunction with this specification and shall take preference when preparing Signalling drawings.

3.4 **CEE-0224:** Drawings, Catalogues, Instruction Manuals and Spares Lists for Electrical Equipment Supplied Under Contract, shall be read in conjunction with this specification and shall take preference when preparing Electrical drawings.

3.5 **RT/TE/SPC/0241:** Specification for Supply of Drawings on TFR Locomotive Projects, shall be read in conjunction with this specification and shall take preference when preparing Rolling Stock drawings

4.0 CAD SOFTWARE

Microstation (and all its specific tools), by Bentley Systems, Inc. is the Transnet Freight Rail standard and shall be used for the preparation of all drawings.

5.0 LANGUAGE AND UNITS OF MEASURE

Drawings shall be prepared in English and the ISO unit of measure.

6.0 STYLE AND APPEARANCE

6.1 Drawings shall be of a uniform standard, with pre-determined settings i.e. frame, title block, font size and line thickness.

6.2 Seed files (with predetermined settings for the creation of new drawings), Font files (with all relevant fonts) and Standard Frame files are available, on request, from Documentation Management via the Transnet Freight Rail Project Manager.

6.2 Drawings shall be prepared for ISO; "A" series size sheets.

6.2.1 The maximum preferred size is A1.

- 6.2.2 In exceptional cases, depending on the circumstances, an A0 size may be considered.
- 6.2.3 Long drawings, where necessary for wiring/circuit diagrams, cable run diagrams, track layouts etc. shall be prepared with widths equal to the widths of "A" series sheets, as required.
- 6.3 Scaled drawings shall be prepared at full size and plotted to the required scale.
- 6.3.1 All drawings shall be prepared using the smallest possible standard sheet size without compromising the quality of the drawing.

7.0 REGISTRATION AND NUMBERING

- 7.1 Applications for registration of drawings should be submitted, via the Transnet Freight Rail Project Manager, to Documentation Management on the appropriate form, BBB0005.
- 7.2 The numbering of drawings and the naming of electronic files shall be in accordance with Policy, BBB0042.

8.0 TEXT CHARACTERISTICS ON DRAWINGS

The following text characteristics shall apply:

Sheet size:	A4	A3	A2	A1	A0
Orientation:	Portrait /Landscape		Landscape		
Standard Text Type:	Arial*				
Drawing number and title:	4 mm		6 mm		
All other text:	2 mm		3 mm**		

*For Signal applications the font shall be Arial with additions.

**For Signal applications the font height on A2 sheets shall be 2.5mm

9.0 COLOUR TABLE

The default Microstation colour table shall be used.

10.0 LINE WEIGHT ALLOCATIONS

The active line thickness or line weight as referred to in Microstation shall be as follows:

Line weight No.	Plotted thickness
0	0,25 mm
1	0,35 mm
2	0,5 mm
3	0,7 mm
4	1,0 mm

11.0 AMENDMENTS TO DRAWINGS

- 11.1 The Enterprise Change Proposal (ECP) reference, supplied by Documentation Management, shall appear against the "CP Ref" prompt in the title block.
- 11.2 A concise description detailing the change shall be noted against the "Version Info" prompt.
- 11.3 The version reference below the drawing number shall be updated.
- 11.4 Where applicable, the previous Central Drawing Office (CDO) reference shall be replaced with the latest reference.
- 11.5 The name of the person who checked the drawing shall be updated.

11.6 In the event of a major drawing and/or design change, the corresponding "Drawn" and "Designed" prompts shall be refreshed to reflect the new appropriator's name.

11.7 The validity of information referred to within a drawing e.g. other documents, etc. shall be checked and updated if necessary.

12.0 MATERIAL LIST AND NOTES FEATURED ON DRAWINGS

12.1 A material list, which forms part of a drawing, shall be appropriately positioned in the bottom right hand corner above the title-block.

12.1.1 The material list shall have a header row consisting of column names in the following order (from the left): Item, Description, Quantity, Stores Item No, and Drawing No.

12.2 All descriptive notes necessary on a drawing shall be grouped together and positioned as close as possible to the drawing number and numbered in ascending order.

13.0 SYMBOLS

13.1 Due to the unique circumstances of applications for signalling and electrical circuitry, existing Transnet Freight Rail symbol charts shall take preference over all other symbol specifications. However, the migration to use uniform national and international standards should be a common practice.

13.2 If it is necessary to use symbols which are not on an approved Transnet Freight Rail symbol chart or are not a standard national or international symbol, the symbol with its description must be tabled on the applicable drawing, after approval by Transnet Freight Rail.

14.0 GLOBAL POSITIONING SYSTEM (GPS) WAYPOINTS ON DRAWINGS

14.1 When GPS waypoints are called for on drawings, the format shall be as follows:

Position format: Decimal degrees (ddd.ddddd°)

Map datum: WGS 84

North reference: True

14.2 A minimum of 5, preferably 8, decimal places shall be shown at position coordinates.

14.3 A note (refer clause 12.2 for position of notes) confirming the GPS settings when waypoints were taken shall be placed on the drawing i.e.:

Note:

GPS settings at time of taking waypoints:

Map datum - WGS 84

North Reference - True.

15.0 COMPLETION OF DRAWINGS

15.1 Drawings will be considered as complete once:

15.1.1 A signed paper print is handed to Documentation Management

15.1.2 The Electronic file has been received and transferred to the documentation management system

15.2 All completed drawings shall be accompanied by a Document Certification Form, BBB0036.

16.0 AMENDMENT

This specification was revised and updated under cover of Enterprise Change Proposal (ECP) No. BBD6406.

END



SPOORNET
(INFRASTRUCTURE)(NETWORK PLANNING)

ENVIRONMENTAL GUIDELINE

**ENVIRONMENTAL GUIDELINES AND SPECIFICATIONS FOR
ELECTRICAL CONSTRUCTION WORK**

Issue 2

November 1997

File Ref: S.RTS/IP/W.13/4/3/1/4/1

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1.0 GENERAL CONDITIONS.

- 1.1 Work shall at all times be approached with due concern for the natural and social environment. Management and site procedures shall be directed towards minimising environmental damage in all aspects of the work.
- 1.2 The engineer may, at his sole discretion, stop any work, activity or process not in accordance with this directive.
- 1.3 Specifications contained herein are divided into various sections. A restriction or condition contained in one section shall *mutatis mutandis* apply to other sections.

2.0 PERSONNEL ARRANGEMENTS - GENERAL.

- 2.1 No accommodation, temporary or otherwise, is allowed at other than approved facilities.
- 2.2 No domestic animals allowed on the site.
- 2.3 No uncontrolled cooking facilities are permitted in the field or working area.
- 2.4 No open fires are permitted in the field, except under strictly controlled conditions and subject to the statutory requirements of local ordinances and the Forest Act (Act 22 of 1984).
- 2.5 No littering or dumping of solid waste of any description is permitted on the site.

3.0 ROADS.

- 3.1 Access to the site shall be by means of permanent access roads only. No unauthorised access or haul roads are permitted.
- 3.2 No vehicular traffic or construction activity is permitted on other than approved haul and access roads.
- 3.3 Approved haul or access roads shall be planned and constructed to follow the natural contours as far as possible.

4.0 IMPORTED CONSTRUCTION MATERIAL AND INVASIVE PLANTS.

- 4.1 Unnecessary movement of soil material from differing vegetation zones/communities must be avoided.
- 4.2 No borrow or soil material is to be obtained from sources displaying growth or the presence of invasive vegetation, noxious weeds or invasive fauna.
- 4.3 No movement of river or stream water between different water sources is permitted.
- 4.4 Soil disturbance of areas infested with noxious weeds or invasive plants shall be avoided wherever possible.
- 4.5 No plant material or vegetative matter may be transported to, on or from the site, without the approval of a competent environmental officer.

5.0 CONSTRUCTION SITE.

- 5.1 No fauna, wild animals, birds or other wild creatures may be deliberately killed, trapped or injured in any way.
- 5.2 No unauthorised activity is permitted off the construction right of way prevailing at any particular area.

- 5.3 No activity of any nature is permitted in areas specifically demarcated as restricted or protected. This includes state and private game reserves.
- 5.4 No site clearing of any nature which entails the destruction of vegetation or disturbance of the soil is permitted.
- 6.0 CONSTRUCTION GUIDELINES AND RESTRICTIONS.**
- 6.1 In addition to what is stated elsewhere in this specification, the pruning, removal or disturbance of natural vegetation shall be approached with the utmost care and shall be done only with the explicit approval of a competent environmental official.
- 6.2 The contractor shall not alter, divert, restrict or in any way influence the surface drainage patterns present prior to construction.
- 6.3 Any blasting required in the area shall be approached in such a manner that environmental damage, noise and dust are minimised. Full use shall be made of blasting mats or similar protective measures.
- 6.4 In areas having a gradient steeper than that which can be traversed by vehicles normally used on the site, the contractor shall employ alternative methods for the conveyance of material and equipment.
- 6.5 Nests, or the terrestrial habitats of fauna, birds, reptiles and any other wild creatures shall be preserved as far as possible. The presence of such nests or habitats, where encountered, shall be reported to the engineer who will decide on further action in consultation with the relevant department of Nature Conservation.
- 6.6 No ropes, cables or guy ropes may be fastened to trees or shrubs without approval.
- 6.7 Natural landmarks or rock formations shall be protected and preserved and shall not be defaced with survey or any other markings.
- 6.8 The final level of the right of way, after construction, excavation and restoration has been completed, shall conform exactly to the contours and ground slope prevailing prior to work commencing.
- 6.9 The contractor shall provide all erosion control measures necessary during execution of the work or for rehabilitation of disturbed areas after completion of the work.
- 6.10 Structures necessary for the prevention of sheet or donga erosion shall be provided in advance of vegetative rehabilitation. The period that the site is exposed to the effects of erosion shall be kept to the minimum.
- 7.0 SITE CONTROLS - RIVER CROSSINGS.**
- 7.1 The extent of the construction site at river or stream crossings shall be kept to the minimum possible and clearly demarcated. Construction activities shall be restricted to the confines of the area so defined.
- 7.2 No plant material, fish or fauna may be removed from the site under any circumstances.
- 7.3 Adequate sediment control measures shall be instituted at all rivers, if necessary. The depositing of silt in streams or rivers shall be avoided. If necessary, sedimentation weirs shall be placed downstream of the crossing and be cleaned of accumulated sediment prior to removal from the river.
- 7.4 Control measures necessary to prevent the transportation or translocation of invasive aquatic life shall be instituted. Vehicles, plant and equipment capable of transporting invasive plants such as *Azolla filiculoides* shall be decontaminated after working at any infected area.

- 7.5 Any form of pollution, littering or damage to natural riverine conditions shall be avoided.
- 7.6 Refuelling of plant, equipment and vehicles shall not be undertaken within the confines of the crossing, but at a safe distance from the river.
- 7.7 The use of soaps or pollutants of any nature is not permitted at a river crossing.
- 7.8 All chemicals brought onto the site shall be in safe containers and used only as recommended by the manufacturers. Handling procedures for fuels and chemicals shall be prescribed so that spillage from routine operations is avoided and accidental spillage is capable of being contained.
- 7.9 Creation, spreading and depositing of dust shall be avoided. Adequate dust control measures shall be instituted and maintained on a continuous basis.
- 7.10 Where there is no information on the quality of the water and indications are that quality is poor, contact with the water shall be avoided.

8.0 REHABILITATION AND MAINTENANCE.

- 8.1 All disturbed areas shall be repaired, revegetated and rehabilitated to the satisfaction of the engineer. The contractor shall use only grasses and vegetation occurring naturally in the area for this purpose.
- 8.2 The Contractor shall construct and/or repair drains, berms, contour banks and grips or any other erosion control structure damaged during progress of the works or which become necessary as a result of execution of the works.
- 8.3 The contractor shall maintain all vegetative work provided as part of, or resulting from his activities until the end of the contract period or until vegetation is properly established, whichever period is the longer.

9.0 ENVIRONMENTAL CONTACT PERSONS.

A list of the Spoornet environmental personnel who can be contacted for guidance in the application of this specification, or any other environmental assistance follows:

Corridor	Contact Person	Telephone	Fax
Natcor Coallink Orex	Mr P. de Klerk (Assistant Manager - Environmental)	07-36540 (011) 773-6540	07-35377 (011) 773-5377
Bopcor Capcor	Mr P. le Roux (Assistant Manager - Environmental)	07-36550 (011) 773-6550	07-35377 (011) 773-5377
Cencor Norcor	Mrs I. Bezuidenhout (Assistant Manager - Environmental)	07-37698 (011) 773-7698	07-35377 (011) 773-5377

Please note :

- The above persons are to be contacted on all matters relating to the environment on the **Network** side only.
- All **Services** related matters are to be referred to the office responsible for that function.



TRANSNET
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ENGINEERING & TECHNOLOGY TECHNOLOGY MANAGEMENT

SPECIFICATION

INDOOR, MEDIUM VOLTAGE METAL ENCLOSED SWITCHGEAR AND CONTROL GEAR IN ACCORDANCE WITH IEC 62271-200

Author: Chief Engineering Technician
Technology Management

S.P. Rikhotso

Approved: Senior Engineer
Technology Management

L.O. Borchard

Authorised: Principal Engineer
Technology Management

W.A. Coetzee

Date:

[Signatures]
31 March 2011

Circulation Restricted To:

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1.0. SCOPE

- 1.1. This specification cover's TFR's requirements for the supply of indoor three phase medium voltage metal enclosed switchgear and controlgear.

2.0. STANDARDS AND PUBLICATIONS

The latest version of the following publications and standards are referred herein.

2.1. INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

IEC 60044-1*	Instrument transformer Part 1: Current Transformer
IEC 60044-2*	Instrument transformer Part 2: Inductive voltage transformer
IEC 60051	Direct acting indicating analogue electrical measuring instruments and their accessories.
IEC 60243-1	Electrical strength of insulating materials – Test methods – Part 1 Tests at power frequencies.
IEC 60255-5	Electrical Relays: Part 5: Insulation coordination for measuring relays and protection equipment – Requirements and tests
IEC 60282-1*	High-voltage – Current limiting fuses
IEC 60529*	Degrees of Protection provided by enclosures (IP code)
IEC 60947-5-1*	Low-voltage switchgear and control gear Part 5-1. Control circuit devices and switching elements. Electromechanical control circuit devices.
IEC 61000-4	Electromagnetic compatibility Part 4:- Testing and measuring techniques
IEC 62053-21	Electricity metering, Part 21
IEC 62271-100*	High Voltage alternating current (AC) circuit breaker.
IEC 62271-102*	Alternating current disconnectors and earthing switches.
IEC 62271-105*	Alternating current (AC) switch-fuse combinations.
IEC 62271-200*	AC metal enclosed switchgear and controlgear for rated voltages above 1kV and up to and including 52kV.

2.2. SOUTH AFRICAN STANDARDS (SANS)

SANS 156	Moulded-case circuit breaker
SANS 1091	National colour standards for paint.
SANS 1274	Coatings applied by powder for paint.
SANS 1507	Electrical cables with extruded solid dielectric insulation for fixed installations. (300V/550V-1,900V/3,300V) Part 1: General

2.3. TRANSNET FREIGHT RAIL (TFR)

BBD 7524 Version1	Switching & Lightning Surges protection system for a low voltage equipment installed in substation.
BBD 8946	Testing, setting and operation of a rogowski coil.
CEE.0224	Drawings, catalogues, instruction manuals and spares list for electrical equipment supplied under contracts.

3.0. APPENDICES

The following appendices form an integral part of this specification and shall be read in conjunction with it.

- 3.1. Appendix 1: "Schedule of requirements" - to be filled in by Transnet Freight Rail (Client).
 3.2. Appendix 2: "Technical Data Sheet" – to be furnish by tenders.
 3.3. Appendix 3: "Tests conducted on the switchgear"

4.0. TENDERING PROCEDURE

- 4.1. Tenderers shall indicate clause by clause compliance with this specification. This shall take the form of a separate document listings all the specification clause numbers the individual statement of compliance or non-compliance.
- 4.2. The tenderer shall motivate a statement of non-compliance.
- 4.3. Tenderers shall complete Appendix 2. "Technical Data Sheet".
- 4.4. Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.
- 4.5. Failure to comply with clauses 4.1, 4.2, 4.3 and 4.4 could preclude a tender from consideration.

5.0. SERVICE CONDITIONS

5.1. ATMOSPHERIC CONDITIONS

The equipment shall be designed and rated for installation and continuous operation under the following conditions:

Altitude	: 0 to 1,8m above sea level
Ambient temperature	; -5°C to +45°C
Relative Humidity	: 10% to 90%
Lightning Conditions	: 12 ground flashes per square kilometre per annum
Pollution	: Heavily salt laden or polluted with smoke from industrial sources

5.2. ELECTRICAL CONDITIONS

The nominal operational conditions are specified in clauses 1.3, 4.1 and 6.0 of Appendix 1.

5.3. MECHANICAL CONDITIONS

The switchgear is installed in close proximity to railway tracks and be subjected to vibration.

6.0. GENERAL REQUIREMENTS OF SWITCHGEAR AND CONTROLGEAR

- 6.1. The switchgear and controlgear shall be designed, manufactured and tested in accordance with IEC 622171-200.
- 6.2. The design of the equipment shall be make provision for the safety of the persons concerned in the normal operation and maintenance of the equipment.
- 6.3. The equipment shall be capable to operate under full load and fault conditions.
- 6.4. It shall not be possible to manually operate the circuit breaker unless it is in the "service" or "earthed" position.
- 6.5. The switchgear and controlgear shall be of the following:
 - Withdrawable vacuum interrupted switchgear and controlgear.
 - Non-withdrawable SF6 gas insulated vacuum interrupted switchgear and controlgear.

7.0. WITHDRAWABLE VACUUM INTERRUPTED SWITCHGEAR AND CONTROLGEAR

- 7.1. It shall not be possible to rack in the circuit breaker unless the truck is properly located in the correct position.
- 7.2. Position indication shall be provided to mechanically/manually indicate the position of the withdrawable circuit breakers, disconnectors and earthing devices, and fuse combinations, i.e. racked-in, racked-out (isolated), earthed, on/off. The indication shall be readily visible from the front of each panel.

- 7.3. Shutters from free fall design shall be provided to cover the "Busbar" and "Circuit" high-voltage sockets into which the contacts of the circuit breaker engages. These shutters shall automatically cover the sockets with a positive action when the switchgear is withdrawn.
- 7.4. Facilities of independently padlocking each shutter in the closed position shall be provided.
- 7.5. Busbar shutters shall be red (colour A11 in SANS 1091) and shall be clearly marked "Busbars".
The "Circuit"
- 7.6. The withdrawable circuit breaker shall be mounted on a transporting truck device, and fitted with wheels.
- 7.7. Flexible test rigs/cables shall be provided for testing the operation of the circuit breaker when fully withdrawn from the panels.

8.0. NON-WITHDRAWABLE SF6 GAS INSULATED VACUUM INTERRUPTED SWITCHGEAR AND CONTROLGEAR.

- 8.1. Live parts, switching functions and vacuum interrupters shall be housed in a completely sealed stainless steel tank.
- 8.2. The steel tanks shall be fitted with gas pressure densimeters provided with alarm contacts for low gas conditions. Low SF6 gas pressure for gas insulated vacuum interrupted switchgear shall trip the switchgear.
- 8.3. Position indication shall be provided to mechanically/manually indicate the position of the non-withdrawable circuit breakers, disconnectors and earthing switches and fuse combinations, i.e. on/off and earthed (isolated). The indication shall be readily visible from the front of each panel.
- 8.4. The sealed stainless tank, housing the live high voltage switching equipment shall be safe to touch.
- 8.5. All components doors giving direct access to high voltage equipment shall be mechanically and electrically interlocked so that the doors cannot be opened whilst the equipment is live.
- 8.6. A visible voltage detection system shall be supplied to verify safe isolation from supply during switching and maintenance operations.

9.0. SWITCHING DEVICES - WITHDRAWABLE AND NON-WITHDRAWABLE

9.1. GENERAL

Switching device shall be ganged triple-pole construction.

- 9.1.1. Motors used for spring charging or other applications shall be protected by thermal overload and low voltage circuit protection.
- 9.1.2. Where motor driven operation is supplied, interlocking shall be provided to prevent three position switch-disconnectors from being switched from the closed position directly to the earthed position.
- 9.1.3. It shall be possible to manually charge the spring-operated mechanism.
- 9.1.4. A mechanical operated device shall indicate whether the spring is charged or free and this shall be visible without opening the operating cubicle doors.
- 9.1.5. The spring release coil shall be suitable for operation from the substation battery supply, which can vary between 80% to 120% of the stated nominal voltage.
- 9.1.6. It shall be possible to control the spring close/open mechanism from local/remote source depending on the position of the "local/remote" selector switch.
- 9.1.7. Tripping shall be by means of shunt trip coils.
- 9.1.8. A minimum of two normally open normally closed auxiliary contacts shall be provided on each switching device. The spare contacts shall be wired to a terminal strip in the panel. For withdrawable switchgear and controlgear auxiliary plugs and sockets shall be used.
- 9.1.9. Each individual switching device panel shall be fitted with "close" and "open" controls.
- 9.1.10. Where "close" and "open" pushbuttons protrude to the outside of the panel they shall be shrouded.

9.2. CIRCUIT BREAKER

- 9.2.1. The circuit breaker shall be designed, manufactured and tested in accordance with IEC 62271-100.
- 9.2.2. Only Vacuum interrupters shall be used.
- 9.2.3. Circuit breakers shall be equipped with trip-free closing mechanisms. An electrical manual closing mechanism shall be provided for maintenance purposes.
- 9.2.4. Presetting and chopping current shall be kept to a minimum. The tenderer shall give full details regarding these characteristics at the time of tendering.
- 9.2.5. The first pole clear factor shall be 1.5.
- 9.2.6. The making time shall not be greater than 100 milliseconds.
- 9.2.7. The breaking time shall not be greater than 40 milliseconds.
- 9.2.8. If a direct means of indicating contact wear and the necessity for replacement is not provided in withdrawable switchgear, a concise description of how this can be determined shall be provided on a label permanently fixed to the switchgear or switch panel.
- 9.2.9. Where remote pendant control system for the opening and closing of the circuit breaker is required, the design of the system shall be in conjunction with TFR staff.

9.3. FUSE-SWITCH COMBINATIONS

- 9.3.1. Fuse-switch combinations shall be designed, manufactured and tested in accordance with IEC 602271-105.
- 9.3.2. The switches shall be of the load break-fault make type.
- 9.3.3. Undervoltage releases shall not be fitted.
- 9.3.4. Fuse-switch combinations shall be fitted with striker pins for automatic tripping purposes.
- 9.3.5. High Rupturing Capacity (HRC) fuses used shall be in accordance with IEC 60282-1.

9.4. DISCONNECTORS (ISOLATORS) AND EARTHING SWITCHES

- 9.4.1. Disconnectors and earthing switches shall be designed, manufactured and tested in accordance with IEC 602271-102.
- 9.4.2. Earthing switches shall be of the fault make type.
- 9.4.3. The operation mechanism shall be positioned on the front of the panel and lockable in all switching positions.
- 9.4.4. The operation of the disconnectors shall be manually operated.
- 9.4.5. Reliable mechanical indication of these positions shall be visible from the front of the panel.
- 9.4.6. A notice with the following inscription shall be provided adjacent to the operating mechanism:-
"DO NOT OPERATE UNDER LOAD CONDITION"

10.0. PROTECTION SYSTEM

- 10.1. The protection relays shall be designed, manufactured and tested in accordance with IEC 60255-5.
- 10.2. The contractor shall be responsible for the design, supply and installation of the protection system. In the event of any discrepancies or disputes concerning the protection, Transnet freight Rail (TFR) reserves the right to final decision. TRF will provide the settings for the protection system.
- 10.3. The protection system shall be submitted to Transnet Freight Rail for approval.
- 10.4. Protection relays shall be supplied as specified in Appendix 1. (Protection schedule).
- 10.5. The protection relays shall be flush mounted and shall be contained in a dust-proof metal case. The degree of protection of the relay enclosure shall be IP 34 in accordance with IEC 60529.
- 10.6. The protection relays shall be capable of being reset without the necessity for opening the case.
- 10.7. It shall not be possible to operate any relay by hand to trip without opening the case.

- 10.8. The protection relays shall unless otherwise approved be provided with double contacts independent of each other, for controlling duplicate tripping circuits if necessary.
- 10.9. High speed tripping relays shall be self-latching and unless otherwise specified, the coil circuit shall be broken by self-contained contacts.
- 10.10. Relays used for master tripping shall be of the electromechanical type which can only be reset manually.
- 10.11. Protection relays used shall be continuously rated for the rated current setting.
- 10.12. The protection relays shall have reset flag indication on each element, save for fuse switch combination protective systems.
- 10.13. The relays shall have an additional set of normally open contacts for remote indication of the relay operation. These contacts shall be capable of handling 50W in the range of 24 to 110V DC, and shall be wired to a terminal strip at the back of the panel.
- 10.14. The protection settings of the relays shall be menu driven and it shall be possible to manually program the protection relays from the front of the panel and by means of computer equipment if required.
- 10.15. Suitable surge protection shall be provided across the relay supply voltage to protect the electronic relays from incoming voltage transients. The surge protection shall be in accordance with BBD 7524.
- 10.16. Where multi-function, micro-processor protection relays are supplied they shall provide protection, measuring, supervisory and basic control functions.
- 10.17. It shall be possible to configure the relays for applications specific for TRF protection systems.
- 10.18. The relays shall comply with IEC 61000-4 for electrostatic discharge tests.

USER INTERFACE

- 10.19. The user interface and menu shall be in English.
- 10.20. A display shall be provided for input data maintenance information and reporting functions.
- 10.21. Alarm indication shall be provided on the front cover of the relay.

DATA COMMUNICATION

- 10.22. Where specified, data communication shall be possible between the protection relay(s) and remote transmission or supervisory equipment. SCADA (Supervisory and Data Acquisition) equipment.
- 10.23. Transnet Freight Rail shall be consulted for a decision on the compatibility of the protocol offered with the existing telecontrol system in the substations.

PROTECTION RELAYS FUNCTIONALITY

The clauses below cover the requirements for multifunction or individual relays.

- 10.24. The protection relays shall function with one-Ampere or five-Ampere secondary (1:5) windings of current transformer or with Rogowski coil sensor in accordance with BBD 8946.
- 10.25. The relays shall be provided with self monitoring "watchdog" facilities. Automatic tests shall be performed on start up and on a cyclic self monitoring process. Both software and hardware shall be monitored for errors.
- 10.26. Access to the relay settings shall be password protected to prevent casual access to the relay control

11.0. PROTECTION RELAYS

11.1. OVERCURRENT AND EARTH FAULT RELAYS

- 11.1.1. Inverse Definite Minimum Time (I.D.M.T) overcurrent and earth fault relays shall be of the microprocessor protection type having adjustable operating settings for standard, very or extreme inverse current/time characteristics. The relays shall incorporate an adjustable high-set element for definite time operation.
- 11.1.2. Sensitive earth fault relays shall be of the microprocessor protection type and have a current setting of 0.5 percent – 8 percent and an operating time adjustable from 1-99 seconds.

11.2. DIFFERENTIAL PILOT WIRE FEEDER PROTECTION

- 11.2.1. Only those systems, which do not require the use of, screened pilot wires and which utilise current transformers with earthed secondary windings will be considered.
- 11.2.2. The relays incorporate for this system shall:-

- 11.2.2.1. have minimum settings not exceeding 90 percent for phase faults and 40 percent for earth faults where 100 percent corresponds to rated secondary current.
- 11.2.2.2. provide "instantaneous" tripping.
- 11.2.2.3. be compensated for any inherent out-of-balance in the current transformer supplied and shall be automatically biased against tripping on through faults.
- 11.2.3. it shall be the responsibility of the tenderer to ensure that the transformer and relays supplied will match exactly the equipment installed at the other end of the cable to be protected and that the whole protection system will be stable on through-faults but will operate satisfactory on feeder faults.

11.2.4.

11.3. AUTO_RECLOSE RELAY

- 11.3.1. This system shall consist of instantaneous and time lag over-current and earth fault relays and auto-reclosing relay.
- 11.3.2. After a preselected number of times if the fault remains the auto-reclosing relay will lock-out.
- 11.3.3. If the fault clears during the reclosing cycle the auto-reclosing relay shall reset to initial condition.
- 11.3.4. The relay shall be provided with the following functions:-
 - 11.3.4.1. the facility to select the number and sequence of the instantaneous and of the delayed trips which form the reclosing cycle, up to at least 4;
 - 11.3.4.2. adjustable setting to set the duration of the time interval between the tripping and reclosing in the range 0-30 seconds,
 - 11.3.4.3. adjustable setting to set the definite minimum time of the delayed tripping between 0-10 seconds.
- 11.3.5. The auto-reclosing system shall be provided with a non resettable cumulative operation counter.
- 11.3.6. The auto-reclosing system shall be inhibited in the event of a sensitive earth fault operation.

11.4. BUSBAR FRAME LEAKAGE PROTECTION

- 11.4.1. Instantaneous earth fault protection for the complete busbar panel.
- 11.4.2. The system shall consist of an instantaneous relay with adjustable current setting from 0 to 100 percent where 100 percent corresponds to the secondary rating of the current transformer associated with the relay.
- 11.4.3. A master trip relay shall be incorporated in circuitry so that when energised by the operation of the frame leakage relay it shall trip all the switching devices and inhibit them from being closed from remote until the manual resetting of the master trip relay.
- 11.4.4. The master trip relay shall be a mechanical latched relay with flags and manual reset.

BUSBAR ZONED FRAME LEAKAGE PROTECTION

- 11.4.5. Instantaneous earth fault protection to isolate only the faulty section of a sectionalised busbar panel.
- 11.4.6. This system shall consist of individual zone relays, which shall trip all switching devices in their respective zones to isolate the fault from all sources of supply.
- 11.4.7. Busbar zoned frame leakage protection master trip shall be in terms of clauses 11.4.3 and 11.4.4 above.
- 11.4.8. The bus-section switching device shall be a separate zone.
- 11.4.9. Insulating material between zones and earth shall be high grade non-deteriorating and non-hygroscopic, at least 2mm thick cut to size and ready for installation.
- 11.4.10. The insulating material shall have an electric strength of not less than 4 kV when tested in accordance with IEC 60243-1 for 1 minute.
- 11.4.11. The insulating material required for the installation of the switchgear, shall be supplied with the switchgear panels.

11.5. TRANSFORMER PROTECTION

(3 phase, 2 winding power transformer)

11.5.1. OVER-CURRENT AND EARTH-FAULT PROTECTION

- 11.5.1.1. The relay shall consist of the following elements:-

- two extremely inverse definite minimum time lag over-current elements,
- two high set instantaneous over-current elements with low transient over each characteristic,
- one extremely inverse definite minimum time lag earth fault element.

11.5.2. RESTRICTED EARTH FAULT PROTECTION

11.5.2.1. The relay shall:-

- be of the high impedance instantaneous type,
- be fitted with low pass filter or be tuned to 50 Hz,
- stability on through fault shall be maintained up to the fault rating of the switchgear,
- sensitivity shall be equal to the rated current of the current transformer.

11.5.2.2. The successful tenderer shall supply the current transformer for installation in the neutral connection of the power transformer.

11.5.2.3. The insulation rating of the neutral current transformer shall be of withstanding the power frequency withstand test specified in IEC 60044-1 for electrical equipment with a rated insulation level for the highest voltage of 12kV.

11.5.2.4. The tenderer shall advise the maximum lead burden.

11.5.2.5. Should the current transformer be installed by others the Contractor shall be responsible for the correct operation of the restricted earth fault protection system.

11.5.3. BIASED DIFFERENTIAL PROTECTION

11.5.3.1. The relay shall:-

- have a high speed characteristic,
- be biased to provide stability during through faults,
- not be operated by normal magnetising inrush current.

11.5.3.2. Current transformer for the high voltage winding of the power transformer will be installed by others but the tenderer shall advise the maximum lead burden.

11.5.4. OVER TEMPERATURE, GAS DETECTION AND OVERPRESSURE PROTECTION

11.5.4.1. Circuit breakers controlling transformers shall be provided with the instantaneous trip auxiliary relays with mechanical flags for indication purposes.

11.5.4.2. The relays for oil /winding temperature shall trip and inhibit the reclosing of the circuit breaker until the oil or winding temperature of the transformer has cooled down sufficiently for the relay to reset by itself.

11.5.4.3. The relays for the transformer Bucholz shall trip and inhibits the reclosing of the circuit breaker until Bucholz relay has been reset manually.

11.5.5. TANK - EARTH PROTECTION

11.5.5.1. The circuit breaker panel shall be provided with an instantaneous type relay.

11.5.5.2. The current transformer associated with the above relay for installation between the transformer tank and earth shall be supplied loose to Transnet Freight Rail when called for in APPENDIX 1.

12.0. INDICATING INSTRUMENTS

12.1. AI, indicating instruments shall be of the analogue type and shall comply with the requirements of IEC 60051.

12.2. All indicating instruments shall:-

- be flush-mounted and dustproof. The degree of protection shall be IP 34 in accordance with IEC 60529,
- have a minimum a scale length of not less than 85mm,

- have a minimum accuracy class of 2.5,
 - be marked with the ratios of the associated current and/or voltage transformers.
- 12.3. The ammeter full-scale deflection shall be the first standard value above the normal primary current rating of the associated current transformers.
- 12.4. Voltmeter full-scale deflection shall indicate nominal voltage at approximately 75 percent of the scale length and shall be marked with a red line.
- 12.5. Maximum demand ammeters shall be of the 15-minute thermal type and shall be integrated with the marking ammeters.

13.0. ENERGY METERS

- 13.1. Energy meters shall comply with the requirements specified in IEC62053-21.
- 13.2. Suitable surge protection shall be provided across the low voltage supplies for the energy meters in accordance with BBD7524 version 1.

14.0. CURRENT TRANSFORMERS

- 14.1. Current transformers shall be designed, manufactured in accordance with IEC 60044-1.
- 14.2. The current transformers shall have the following accuracies:-
- Indicating instruments : Class 3
 - Metering : Class 0.5
 - Protective systems : Class 10P
- 14.3. Ring type current transformers shall have separate insulation between live conductors of the main circuit and inner surface of the current transformers.

15.0. VOLTAGE TRANSFORMER

- 15.1. All voltage transformers shall be designed, manufactured and tested in accordance with IEC 60044-2.
- 15.2. Voltage transformer secondaries shall have the following minimum accuracy:
- Metering : Class 0.5
 - Indicating Instruments : Class 3
 - Protective systems : Class 6P
- 15.3. The secondary winding of the voltage transformer shall be provided with fuses.
- 15.4. Phase or neutral earthing of the secondary winding through a removable link shall be provided. No fuses or miniature circuit breaker shall be fitted in this connection to earth.
- 15.5. The burden shall be suitable for the connected load but shall not be less than 50VA per phase.

16.0. REMOTE CONTROL OF ELECTRICAL SWITCHGEAR

- 16.1. Remote control of electrical switchgear shall be equipped with circuits and wired up for the remote open and close operation and indication from the "Centralised Electrical Control Office".
- 16.2. The circuits shall include the following:-
- A minimum of one set of normally open (N/O) and normally closed (N/C) auxiliary contacts to indicate the "open" or "closed" condition of the switching device and for the closing and tripping operations.
 - All remote circuits shall be wired to a terminal strip at the back of the panel.
 - A selector switch on the front of the panel to select between "local" and "remote" operation.

17.0. CLOSING AND TRIPPING SUPPLIES

- 17.1. Battery voltage closing and tripping shall be utilised unless otherwise specified.
- 17.2. The battery and battery charging unit shall comply with requirements of Transnet Freight Rail's (TFR) specification No.CEE.0085.
- 17.3. The preferred battery supply voltage for the switchboard is 110V DC unless otherwise specified.
- 17.4. A battery undervoltage relay shall be provided. The relay shall be adjustable between 80% and 100% of the nominal battery supply voltage. Hysteresis adjustment shall be incorporated.
- 17.5. In the event of low voltage or no battery voltage, the battery undervoltage relay shall trip and inhibit the reclosing of all the circuit breakers.

18.0. TEST TERMINAL BLOCKS

- 18.1. Readily accessible, suitably enclosed test terminal blocks as shown on drawing CEE-PA-13 shall be provided on the front panel of each switch unit for the purposes of testing all protective systems.
- 18.2. Test terminal blocks need not be provided for the frame protection systems if the associated current transformers are mounted externally.
- 18.3. The test block shall be wired to the protective relays and associated current transformer as indicated in the typical connection drawing CEE-PA-56.

19.0. CONTROL SWITCHES

- 19.1. All control switches shall be designed, manufactured and tested in accordance with IEC 60947-5-1.
- 19.2. Rotary pistol grip switches or push buttons shall be used on electrically operated switching devices.
- 19.3. The electrical and mechanical endurance of the control switches shall be not less than 100 000 operations.

20.0. MOULDED-CASE CIRCUIT BREAKERS

- 20.1. The moulded-case circuit breaker shall be designed, manufactured and tested in accordance with SANS 156.

21.0. LOW VOLTAGE WIRING

- 21.1. Low voltage wiring shall be a stranded copper conductor type and shall comply with SANS 1507.
- 21.2. Wiring shall be:
 - numbered at the terminals using white non-split, PVC ferrule type markers with black lettering,
 - terminated by means of compression lugs or soldering on terminal blocks or strips,
 - of minimum size of 1.5mm² for instrument or control circuits and 2.5mm² for current transformer circuits,
 - heat-resistant from heaters to terminals,
 - suitably strapped and enclosed in flexible conduit when looping from panels to doors,
 - continuous without joints.
- 21.3. Current transformer star point on secondary windings shall be earthed in the immediate vicinity of the transformer as well as onto the main circuit earth.

22.0. NAMEPLATES AND LABELS

- 22.1. All nameplates and labels shall be in English and the lettering, shall be minimum height of 6mm.
- 22.2. Each switchgear and controlgear panel shall be fitted with a nameplate in conspicuous position indicating the following:-

Maker's name

Maker's type number

Maker's serial number

Service voltage

Number of phases

Continuous rating

Rating kA seconds

- 22.3. Identical nameplate as that on all current and voltage transformers shall be mounted in a conspicuous position inside the protection relay compartment. The phase colour with which each current/voltage transformer is associated shall appear beneath each nameplate.
- 22.4. Engraved labels, showing panel designation shall be fitted to the front and rear of the fixed part of each cubicle and associated withdrawable equipment.
- 22.5. All control equipment, relays, terminal strips etc shall clearly marked in accordance with the wiring and schematic drawings.
- 22.6. Voltmeter labels shall state whether busbar or cable voltage is indicated.

23.0. PAINTING AND OTHER PROTECTIVE COATINGS

- 23.1. All equipment shall be power coated in accordance with specification SANS 1274.
- 23.2. The switchboard panels shall be painted light orange colour of B26 in accordance with SANS 1091.

24.0. TESTS

- 24.1. All equipments shall be tested as detailed in Appendix 3.

25.0. INSPECTION

- 25.1. Transnet Freight Rail (TFR) reserves the right to inspect the equipment at any stage during manufacture.

26.0. DRAWINGS AND INSTRUCTIONS

- 26.1. Drawings, instruction manuals and spares lists shall be supplied in accordance with TFR's specification CEE.0224.

27.0. TOOLS AND APPLIANCES

- 27.1. One set of special tools and appliances required for normal operation and maintenance of each installation shall be supplied.

28.0. SPARES

- 28.1. The tenderer shall state whether a complete range of spares is held in stock by their local representatives for subsequent purchase by Transnet Freight Rail, as and when required.
- 28.2. A detailed description of each item including manufacturer's catalogue for maintenance purposes.
- 28.3. The spares list shall be divided into two parts, one covering items likely to be used in a 12-month period and those likely to be used in a 10-year period.

29.0. PACKING

- 29.1. The equipment shall be packed in such a manner that it will be protected during handling and transport. The movement of instruments, meters and relays shall be protected against vibration damage during transit.

30.0. TRAINING

- 30.1. In the event of training or training courses being required the contractor shall submit a training plan for approval by Transnet Freight Rail (TFR).
- 30.2. The cost of training shall be included in the tenderer.

END

"PREVIEW COPY ONLY"

APPENDIX 1

SCHEDULE OF REQUIREMENTS

(To be completed by the client)

A SWITCHGEAR AND CONTROLGEARNumber of switching devices required: *Refer to the Bill of Quantities*System nominal voltage: 11kVolts Phases: 3 Frequency: 50 Hz**1.0. NEUTRAL EARTHING:**1.1. Unearthed: N/A1.2. Solidly earthed: ✓1.3. Reactance earthed: N/A1.4. Resistance earthed: N/A**2.0. BATTERY SUPPLY****2.1. CLOSING SUPPLY**Rated Voltage: 110 Volts DC**2.2. TRIPPING SUPPLY**Rated Voltage: 110 Volts DC**3.0. BUSBARS**3.1. Rated normal current: 630 Amperes

3.2. Dimensions

Width: To match current rating mmThickness: To match current rating mm**4.0. BUSBAR EARTHING**

Required: Yes

5.0. SPECIAL REQUIREMENTS FOR BUSBAR EARTHING

N/A.....

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6.0. REMOTE PENDANT CONTROL SYSTEM

Required: Yes

APPENDIX 1**SCHEDULE OF REQUIREMENTS**

(To be completed by the client)

B	SWITCHING DEVICES	
1.0.	UNIT NUMBER. (Panel No)	<i>Refer to the Bill of Quantities</i>
	Designation or Drawing number	<i>Refer to the Bill of Quantities</i>
	Circuit breaker	<i>Refer to the Bill of Quantities</i>
	Fuse switch combination	<i>Refer to BBC6467 and the Bill of Quantities</i>
	Disconnecter	<i>Refer to BBC6467 and the Bill of Quantities</i>
	Incoming or outgoing	<i>Refer to the Bill of Quantities</i>
	With- or non-withdrawable	W or NW.....
	Rated normal current (A)	630A
	Rated normal circuit breaking current (kA)	20kA
	Rated short time withstand current for disconnector	20kA
	Type and size of cable	<u>11Kv rated cables with suitable current ratings</u>
	Voltage transformer ratio	11kV/110V, 6.6kV-11kV/110
C.	PROTECTION SCHEDULE	
	UNIT NUMBER. (Panel No)	<i>Refer to the Bill of Quantities</i>
1.0.	OVER CURRENT	
	Number of elements	Minimum of two (2)
	IDMT Inverse	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>
	IDMT Extremely Inverse	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>
	High set instantaneous	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>
	Instantaneous	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>
	Definite time	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>
2.0.	EARTH FAULT	
	Number of elements	Minimum of one (1)
	IDMT Inverse	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>
	IDMT Extremely Inverse	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>

High set instantaneous	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>
Instantaneous	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>

APPENDIX 1**SCHEDULE OF REQUIREMENTS**

(To be completed by the client)

	Definite time	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>
	Sensitive earth fault	<i>R (Refer to BBB4182, clause 10.2 and 11)</i>
3.0.	AUTO RECLOSING	<i>R (Refer to BBB4182, clause 11.3)</i>
4.0.	DIFFERENTIAL PILOT WIRE	<i>Refer to the Bill of Quantities</i>
5.0.	FRAME LEAKAGE	<i>Refer to the Bill of Quantities</i>
	Zone number	3 where one bus-sectionaliser is installed. (Refer to BBB4182, clause 11.4 & BBC6467 clause 7.9.2.5)
6.0.	TRANSFORMER PROTECTION	
	Restricted Earth fault	<i>N/R</i>
	Differential	<i>N/R</i>
	Tank earth	<i>N/R</i>
	Gas detection	<i>R (Refer to BBB4182 & BBC6467)</i>
	Over pressure	<i>N/R</i>
	Winding over temperature	<i>R (Refer to BBC6467 clause 7.9.2.2)</i>
	Top oil over temperature	<i>R (Refer to BBB4182 & BBC6467)</i>
7.0.	INTERTRIPPING	<i>R (Refer to BBC6467)</i>
8.0.	OTHER	<i>N/A</i>
9.0.	SPECIAL REQUIREMENTS	<i>N/A</i>

ABBREVIATIONS: REQUIRED = R

APPENDIX 1**SCHEDULE OF REQUIREMENTS**

(To be completed by the client)

D. CURRENT TRANSFORMER**1.0. UNIT NUMBER (Panel No)** *Refer to BBC6467***1.1. Overcurrent and earth fault.**Ratio
.....**1.2. Accuracy**Class of accuracy and
accuracy limit factor *Refer to BBC6467, Appendix 1*
*Refer to BBB4182, clause 14.***1.3. Differential**Pilot wire *Refer to BBC6467,*Feeder ratio. *Refer to BBC6467,*Class X. *Refer to BBC6467,***1.4. Frame leakage.**Ratio. *Refer to BBC6467, Bill of Quantities*Class of accuracy and
Accuracy limit factor. *Refer to BBB4182, clause 14.2***1.5. Transformer restricted earth fault.**

Ratio. N/A

Class of accuracy and
Accuracy limit factor. N/A**1.6 Transformer differential protection.**

..... N/A

Higher voltage winding ratio N/A

Lower voltage winding ratio N/A

Class of accuracy and
accuracy limit factor. N/A**Tank earth protection**

Ratio N/A

Class of accuracy and
Accuracy limit factor. N/A**4.6 SPECIAL REQUIREMENTS** N/A
.....
.....
.....

SCHEDULE OF REQUIREMENTS

(To be completed by the client)

E. INSTRUMENT SCHEDULE

1.0.	UNIT NUMBER (Panel No)	<i>Refer to BBC6467, Bill of Quantities</i>
	Voltmeter	<i>Refer to BBC6467 clause 7.10 and the Bill of Quantities</i>
	Frequency meter	<i>not required.</i>
	Ammeter	<i>Refer to BBC6467</i>
	Ammeter Maximum demand	<i>Refer to BBC6467 clause 7.5.4.4</i>
	Power factor meter	<i>not required</i>
	kWh meter (If required)	<i>Refer to BBC6467 and the Bill of Quantities</i>
	Current transformer ratio	<i>Refer to BBC6467, Bill of Quantities</i>

2.0.	SPECIAL REQUIREMENTS	<i>NA</i>

END

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APPENDIX 2

TECHNICAL DATAD SHEET

(To be completed by Tenderers)

1.0. SWITCHGEAR AND CONTROLGEAR

GENERAL

- 1.1. Makers' Name :
- 1.2. Designation Type :
- 1.3. Rated Voltage :
- 1.4. Rated Peak Withstand Current :
- 1.5. Rated Frequency :
- 1.6. Type of Insulating Medium :
- 1.7. Rated Insulation Level :
- 1.7.1. Impulse Withstand Voltage:
- a) To Earth and Between Phases :
- b) Across the isolating distance :
- 1.7.2. One Minute Power Frequency Withstand Voltage:
- a) To Earth and Between Phases :
- b) Across the isolating distance :
- 1.8. Degree of Protection
- a) For Covers :
- b) For Partitions :
- 1.9. Method of pressure relief :
- 1.10. Type Test Certificate No, and Name of Testing Authority:

2.0. SWITCHING DEVICES
CIRCUIT BREAKER

- 2.1. Interrupting Medium :
- 2.2. Rated Frequency :
- 2.3. Rated Normal Current :
- 2.4. Rated Short Circuit Breaking Current
- a) Root Mean Value (RMS) :
- b) Percent DC Component :
- 2.5. Rated Making Current :
- 2.6. Rated Duration of Short Circuit :
- 2.7. Rated Operating Sequence :
- 2.8. Operating Mechanism
- a) Type of Closing Mechanism :
- b) Rated Supply of Closing Mechanism :
- c) Current required :
- d) Rated Supply Voltage of Shunt Opening release :
- 2.9. Number and Type of spare auxiliary contacts :

APPENDIX 2**TECHNICAL DATAD SHEET** (continues)

(To be completed by Tenderers)

2.10. Type Test Certificate Number and name of Testing Authority:

FUSE SWITCH COMBINATIONS

- 2.11. Rated Voltage :
- 2.12. Rated Insulation Level :
- 2.13. Rated Frequency :
- 2.14. Rated Normal Current :
- 2.15. Rated Short Circuit Breaking Current :
- 2.16. Rated Short Circuit Making Current :
- 2.17. Type Test Certificate Number and Name of Testing Authority:

DISCONNECTORS (ISOLATORS) AND EARTHING SWITCHES

- 2.18. Rated Voltage :
- 2.19. Rated Insulation Level :
- 2.20. Rated Frequency :
- 2.21. Rated Normal Current (disconnectors only) :
- 2.22. Rated Short Time Withstand Current :
- 2.23. Rated Duration of Short Circuit :
- 2.24. Rated Peak Withstand Current :
- 2.25. Rated Short Circuit making Current (earthing switches only):
- 2.26. Type Test Certificate Number and name of Testing Authority:

3.0. BUSBARS

- 3.1. Size of Busbar :
- 3.2. Type of Principal Insulation :
- 3.3. Rated Normal Current :
- 3.4. Rated Short Time Withstand Current :
- 3.5. Rated Short Circuit Duration :

4.0. BUSHINGS

- 4.1. Type Test Certificate Number and name of Testing Authority:

5.0. HIGH VOLTAGE FUSES

- 5.1. Make of Fuse :
- 5.2. Design type Number :
- 5.3. Nominal Current Rating :
- 5.4. Type Test Certificate Number and name of Testing Authority:

APPENDIX 2**TECHNICAL DATAD SHEET** (continues)

(To be completed by Tenderers)

6.0. CURRENT TRANSFORMER

- 6.1. Make :
- 6.2. CT Ratio :
- 6.3. VA Rating :
- 6.4. Class of Accuracy :
- 6.5. Short Time Current and Duration :
- 6.6. Connection Type :
- 6.7. Method of Limiting Partial Discharge :
- 6.8. Maximum Partial Discharge :
- 6.9. Type Test Certificate Number and name of Testing Authority:

7.0. VOLTAGE TRANSFORMER

- 7.1. Make :
- 7.2. Class of Accuracy :
- 7.3. Output :
- 7.4. Method of Limiting Partial Discharge :
- 7.5. Maximum Partial Discharge :
- 7.6. Type Test Certificate Number and name of Testing Authority:

8.0. INDICATING INSTRUMENTS

- | | Accuracy | Scale length (mm) |
|--|----------|-------------------|
| 8.1. Voltmeter | | |
| 8.2. Ammeter | | |
| 8.3. Ammeter/Maximum Demand 15min | | |
| 8.4. Power Factor Meter | | |
| 8.5. Wattmeter | | |
| 8.6. Frequency Meter | | |
| 8.7. Ammeter Overload Rating and Duration | | |
| 8.8. Type Test Certificate Number and name of Testing Authority: | | |

9.0. ENERGY METERS

- 9.1. Make and Type :
- 9.2. kW Rating :
- 9.3. kWh percent error :

10.0. SPARES

- 10.1. Range of Spares held in local stock:
- 10.2. Full description of items not held locally:

APPENDIX 3**TEST REQUIREMENTS****1.0. TYPE TESTS**

- 1.1. Where type tests are specified they shall be carried out in accordance with the recommended standards or specification referred to this specification.
- 1.2. Type tests certificates shall be submitted with tender documents.

2.0. ROUTINE TESTS

- 2.1. The following additional routine tests shall be carried out on the completed switchgear or control gear at the manufacturers works prior to delivery. Test certificate for these tests shall be supplied.
- 2.2. The ratio, polarity and magnetisation curve of each current transformer after their installation in the board.
- 2.3. The characteristic curves of each protection relay where applicable.
- 2.4. The ratio of each voltage transformer.
- 2.5. The errors of all indicating instruments.

3.0. FUNCTIONAL TESTS

- 3.1. A functional test of the complete board including all protective relays by primary injection. Test certificate for these shall be supplied.
- 3.2. Breakers' opening times.
- 3.3. Four copies of all approved routine test certificates shall be supplied, at the date not later than the delivery date of the switchgear or control gear.
- 3.4. All routine testing shall be witnessed and inspection carried out by the Quality Assurance Section of Transnet Freight Rail's Technology Management.



A division of Transnet limited

ENGINEERING AND TECHNOLOGY TECHNOLOGY MANAGEMENT

SPECIFICATION

REQUIREMENTS FOR THE SUPPLY OF ELECTRIC CABLES

(Appendix to b) filled in by client)

Authors: Engineering Technician (level 1) B.L. Ngobeni
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1.0 SCOPE

This specification covers Spoornet's requirements for cables used for:

- Medium voltage reticulation systems, distribution systems, traction substation supplies, and 3 kV DC feeder applications (3,3/3,3 kV to 19/33 kV).
- Cables used for fixed installations (300/500 V to 1900/3300 V).

2.0 STANDARDS

The following publications (latest version) are referred to herein.

2.1 SOUTH AFRICAN NATIONAL STANDARDS

SANS 97	Electric cables - Impregnated paper insulated metal-sheathed cables for rated voltages 3,3/3,3 kV to 19/33 kV (excluding pressure assisted cables).
SANS 1339	Electric cables – Cross-linked polyethylene (XLPE) insulated cables for rated voltages 3,8/6,6 kV to 19/33 kV.
SANS 1507	Electric cables with extruded solid dielectric insulation for fixed installations 300/500 V to 1900/3300 V, Part 1-General, Part 3-PVC Distribution cables, Part 4-XLPE distribution cables, Part 5-Halogen free distribution cables.

3.0 APPENDIX

The following appendix forms an integral part of this specification.

3.1	Appendix 1	Schedule of Requirements: Details of the cable to be supplied.
-----	------------	--

4.0 TENDERING PROCEDURE

4.1 Tenderers shall indicate clause-by-clause compliance with the specification. They shall take the form of a separate document listing all the specifications clause numbers indicating the individual statement of compliance or non-compliance.

4.2 The tenderers shall motivate a statement of non-compliance.

4.3 The tenderer shall submit technical specifications of the cables offered.

4.4 Failure to comply with clauses 4.1, 4.2 and 4.3 could preclude a tender from consideration.

5.0 MEDIUM VOLTAGE CABLES**5.1 IMPREGNATED PAPER INSULATED.**

5.1.1 Paper impregnated lead sheathed (PILC) cables used for reticulation systems and traction power supplies and other applications shall be in accordance with SANS 97.

5.1.2 The voltage range for the cables shall be between 3,3kV and 33kV.

5.1.3 The cables shall be three core with stranded copper conductors.

5.1.4 The cables shall be paper insulated, screened type, lead sheathed provided with an extruded PVC bedding.

- 5.1.5 The armouring shall be galvanised steel wire with outer extruded PVC over sheath over the armouring.
- 5.1.6 The cable shall be so manufactured that it is fully protected against the effect of electrolysis.
- 5.1.7 Single core cables used for 3 kV DC application shall withstand a test voltage of 10,5 kV for one minute.
- 5.1.8 Cables shall be suitable for laying directly in soil and concrete trenches.
- 5.1.9 The cables shall withstand exposure to water, corrosive conditions as well as high ultra violet conditions caused by direct sunlight.
- 5.1.10 The cables shall be tested in accordance with SANS 97. Type test certificates shall be submitted with the cables offered.
- 5.1.11 The packing, marking and sealing of cables and cable drums shall be in accordance with SANS 97.
- 5.2 CROSS – LINKED POLYETHYLENE INSULATED (XLPE).**
- 5.2.1 XLPE cables used for reticulation systems, 3kV DC traction feeders and traction power supplies and other applications shall be in accordance with SANS 1339.
- 5.2.2 The voltage range for the cables shall be between 0,3kV and 33kV.
- 5.2.3 Cables shall be single or three core with stranded copper conductors.
- 5.2.4 The cables shall be type A (armoured) of single and three core cables.
- 5.2.5 Single core type A cable shall be copper tape screened, aluminium wire armoured and provided with a PVC outer sheath.
- 5.2.6 Single core cables shall be rated for 3,8/6,6kV.
- 5.2.7 Single core cables used for 3 kV DC application shall withstand a test voltage of 10,5 kV for one minute.
- 5.2.8 Three core type A cable shall be copper tape screened, galvanised steel wire armoured and provided with a PVC outer sheath.
- 5.2.9 The manufacture of the single and three core cables shall be such that the cables are fully protected against the effect electrolysis.
- 5.2.10 The cables shall be suitable for laying directly in soil and concrete trenches.
- 5.2.11 The cables shall withstand exposure to water, corrosive conditions as well as high ultra violet conditions caused by direct sunlight.
- 5.1.12 The cables shall be tested in accordance with SANS 1339. Type test certificates shall be submitted with the cables offered.
- 5.2.12 Where specified flame-retardant and halogen free cables shall be in accordance with SANS 1339.
- 5.2.13 The packing, marking and sealing of cables and cable drums shall be in accordance with SANS 1339.
- 6.0 CABLES FOR FIXED INSTALLATIONS**
- 6.1 Unless otherwise specified single and multi-core, wire armoured, extruded PVC insulated cables shall be used for fixed installations. The cables shall be in accordance with SANS 1507 part 1 and part 3.
- 6.2 The voltage range is between 300/500 V to 1900/3300 V.
- 6.3 Cables shall have stranded annealed copper conductors.

- 6.4 The cables shall be marked according to SANS 1507 part 3. Core identification shall be by means of colour code or numbering of the insulation.
- 6.5 The cable shall be so manufactured that it is fully protected against the effect of electrolysis.
- 6.6 Where XLPE or halogen free cables are specified the cables shall be in accordance with SANS 1507 parts 4 and 5.
- 6.7 The cables shall be tested in accordance with SANS 1507 parts 3, 4 and 5. Type test certificates shall be submitted with the cables offered.
- 6.8 The packing, marking and sealing of cables and cable drums shall be in accordance with SANS 1507.

7.0 QUALITY ASSURANCE

- 7.1 Spoornet reserves the right to carry out inspection and tests on the equipment at the works of the supplier/manufacturer.
- 7.2 Arrangements must be made timeously for such inspections and type/routine tests in accordance with the cable specifications are carried out before delivery of the cables to the site.

8.0 INSPECTION AND TESTING

- 8.1 Spoornet reserves the right to carry out inspections and any tests on cables at the factory of the supplier/ manufacture.
- 8.2 Arrangements must be made with The Senior Engineer, Technology Management Spoornet for inspections to be carried out before delivery of the equipment.

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SCHEDULE OF REQUIREMENTS

(To be completed by the client)

1.0 MEDIUM VOLTAGE CABLES**1.1 PAPER IMPREGNATED LEAD SHEATHED (PILC)**

1.1.1 Rated Voltage (V):

1.1.2 Number of cores:

1.1.3 Length of cables (m):

1.1.4 Size of conductors (mm²):**1.2 CROSS LINKED POLYETHYLENE INSULATED (XLPE)**

(XLPE is recommended for 3 kV DC Applications)

1.2.2 Rated Voltage (V):

1.2.3 Number of cores:

1.2.4 Length of cables (m):

1.2.5 Size of conductors (mm²):

1.2.6 Flame retardant (required/not required):

2.1 CABLES FOR FIXED INSTALLATIONS

2.1.1 Type of cable required:

- PVC Distribution cables: (Yes/ No):

- XLPE Distribution cables: (Yes/No):

2.1.2 Rated Voltage (V):

2.1.3 Number of cores:

2.1.4 Length of cables (m):

2.1.5 Size of conductors (mm²):

END

**TRANSNET**
freight rail

TECHNOLOGY MANAGEMENT.

SPECIFICATION.

REQUIREMENTS FOR ISOLATION TRANSFORMERS

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Date: 21st September 2009

Circulation Restricted To:

Transnet Freight Rail – Chief Engineer Infrastructure
- Technology Management

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1.0 SCOPE

This specification covers Spoornet's requirements for the design, manufacture and supply of 3 phase 400 Volt isolation transformers for use in 3 kV DC traction substations.

2.0 BACKGROUND

Isolation transformers are used in 3 kV DC traction substations to isolate the 3 phase 400 V AC auxiliary supplies fed from external sources other than that from the auxiliary transformer which is fed of the traction transformer.

The isolation of the external sources via the isolation transformer helps to protect these supplies from any 3kV DC, which may feed accidentally into the auxiliary control equipment and circuits due to flashovers.

3.0 STANDARDS AND PUBLICATIONS

3.1 Unless otherwise specified all materials and equipment supplied shall comply with the current edition of the relevant SANS or Spoornet's publication where applicable.

3.2 The following publications are referred to in this specification:

3.2.1 SOUTH AFRICAN NATIONAL STANDARDS

SANS 780:	Distribution transformers.
SANS 1019:	Standard voltages, currents and insulation levels for electricity supply.
SANS 1037:	Standard Transformer Bushings
SANS 61558 -1:	Safety of power transformers, power supply units and similar. Part 1 - General requirements and tests.
SANS 61558 -2-4:	Safety of power transformers, power supply units and similar. Part 2 - General requirements for isolating transformers and general use.
ISO 9000:	Quality Management Systems - Requirements

3.2.2 SPOORNET SPECIFICATIONS

CEE.0224:	Drawings, catalogues, instruction manuals and spares list for electrical equipment supplied under contract.
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4.0 TENDERING PROCEDURE.

4.1 Tenderers shall indicate clause by clause compliance with the specification. This shall take the form of a separate document listing all the specifications clause numbers indicating the individual statement of compliance or non-compliance.

4.2 The tenderer shall motivate a statement of non-compliance.

4.3 Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the transformers offered.

4.4 Tenderers shall complete Appendix 2

4.5 Failure to comply with clauses 4.1, 4.2, 4.3 and 4.4 could preclude a tender from consideration.

5.0 SERVICE CONDITIONS.**5.1 ATMOSPHERIC SERVICE CONDITIONS**

Altitude:	0 to 1800m above sea level.
Ambient temperature:	-5°C to +45 °C.

Relative humidity:	10% to 90%.
Lightning Conditions:	12 ground flashes per square kilometre per annum.
Pollution:	Heavily salt laden or polluted with smoke from industrial sources.

5.2 ELECTRICAL SERVICE CONDITIONS

5.2.1	Frequency:	The frequency of the AC supply will be 50 ± 2.5 Hz.
5.2.2	No of phases:	The supply will be a three phase system.
5.2.3	Supply voltage:	Under normal conditions the system supply voltage shall be maintained at $\pm 5\%$ of the nominal voltage.

5.3 MECHANICAL CONDITIONS

Isolation transformers are installed at traction substations next to railway lines and will be subjected to vibration.

6.0 TECHNICAL REQUIREMENTS

6.1 GENERAL

The isolation transformers shall be of the oil immersed type or dry type and shall be suitable for indoor use only.

6.2 CONSTRUCTURAL REQUIREMENTS

OIL IMMERSSED TRANSFORMER

- 6.2.1 The design, construction and testing parameters for the oil immersed type isolating transformer shall comply with the requirements of SANS 780.
- 6.2.2 The transformer shall be of the sealed type with a welded tank cover.
- 6.2.3 An oil level gauge shall be fitted to the transformer tank.
- 6.2.4 An earthing terminal suitable for a 95 mm² cable lug shall be welded on the tank.
- 6.2.5 The transformer shall be provided with a flat under base.
- 6.2.6 The interior and exterior surfaces of the transformer tank shall be treated and coated for protection against corrosion.
- 6.2.7 The primary and secondary terminals of the transformer shall be brought out with bushings suitable for cable boxes. The cable boxes shall be provided with a protective cover for the terminals.
- 6.2.8 The bushings shall be suitably rated and shall comply with requirements of SANS 1037.

DRY TYPE TRANSFORMERS

- 6.2.9 The design, construction and testing parameters for the dry type isolating transformer shall comply with the requirements of SANS 61558- 1 and SANS 61558 –2-4.
- 6.2.10 The transformer shall be a stationary / fixed and air cooled (natural) type.
- 6.2.11 The design of the transformer shall incorporate the following features:
 - 6.2.11.1 It shall not cause any danger to persons when used, installed and maintained.
 - 6.2.11.2 It shall be so constructed and enclosed so that there is adequate protection against accidental contact with live parts.
 - 6.2.11.3 The windings of the transformer may be of the encapsulated or non-encapsulated type.
 - 6.2.11.4 The windings shall be so constructed to prevent any displacement of the input and output windings.

- 6.2.11.5 The input and output circuits shall be totally insulated each other and from any metal parts on the transformer.
- 6.2.11.6 Terminals shall be provided for the permanent connection to the external fixed wiring of the input and output circuits.
- 6.2.11.7 The terminals shall form an integral part of the transformer.
- 6.2.11.8 Terminal blocks shall be provided with covers and shall not be accessible without the aid of a tool.
- 6.2.11.9 The accessible metal parts of the transformer shall be provided with an earthing terminal suitable to accommodate a 95 mm² cable lug.
- 6.2.11.10 The transformer shall have adequate mechanical strength.
- 6.2.11.11 The transformer shall be provided with a metal enclosure to protect it from external influences i.e. Moisture, corrosion, mechanical damage etc.

6.3 RATINGS

- 6.3.1 The oil immersed and dry type isolation transformers shall be designed to operate at the following parameters.
- 6.3.2 The kVA ratings of the transformers can vary from 16kVA to 40kVA
- 6.3.3 The input supply voltage shall be 400 volts
- 6.3.4 The output supply voltage shall be 400 volts.
- 6.3.5 The ratio of the transformers shall be 1:1.
- 6.3.6 The input winding shall be three phase delta connected and the output winding, star connected with a neutral point.
- 6.3.7 The vector group of the transformers shall be a Dyn11.
- 6.3.8 The rating of the transformers shall be as specified in Appendix 1.

6.4 INSULATION LEVELS

- 6.4.1 The output winding of the isolating transformer can be subjected to 3 kV DC under fault conditions and requires to be insulated to reduce the risk of damage caused by the over voltages.
- 6.4.2 The insulation between the input winding and the output winding shall be able as to withstand the rated power frequency test of 22kV specified for a system highest voltage of 7,2 kV as specified in SANS 1019.
- 6.4.3 The output winding shall be insulated between windings and the winding to the metal tank or frame and shall be able as to withstand the rated power frequency test of 22kV specified for a system highest voltage of 7,2 kV as specified in SANS 1019.
- 6.4.4 The output winding terminals shall be insulated for high voltage.
- 6.4.5 The transformer shall be able to withstand a test voltage of 22 kV AC as specified in SANS 1019 for applied between the shorted output terminals and the input winding and tank for one minute.

7.0 INSPECTION AND TESTING

- 7.1 Spoornet reserves the right to carry out inspection and any tests on the equipment at the works of the supplier/ manufacture.
- 7.2 Arrangements must be made timeously for such inspections to be carried out before delivery of the equipment to the client.
- 7.3 Routine tests shall be carried out at the supplier's premises and shall be witnessed by Spoornet's Quality Assurance staff.

8.0 DRAWINGS AND MAINTENANCE MANUALS

8.1 3 copies of each of the following drawings shall be submitted to the Project Manager/Engineer for approval within 7 days of the order being placed.

8.2 Dimension drawings showing external and internal arrangements of transformer.

8.3 Diagram and rating plate.

9.0 QUALITY ASSURANCE

9.1 Tenderers must indicate what steps have been taken to implement a Quality Assurance system in terms of the ISO 9000 series of recommendations.

END

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SCHEDULE OF REQUIREMENTS
(To be completed by client)

SYSTEM DETAIL

- 1.0 Transformer required for: _____ substation/location

TRANSFORMER DETAIL

- 1.0 Rated power: _____ KVA
2.0 Impedance %: _____
3.0 Primary voltage rating: _____ Volts
4.0 Secondary voltage rating: _____ Volts

TRANSFORMER CONSTRUCTION

- 1.0 Dry type: Yes / No
2.0 Oil cooled type Yes / No
2.0 Oil cooled transformer tank:
• Sealed Unit: Yes / No
• Free Breathing Yes / No

3.0 SPECIAL REQUIREMENTS

- 1.0 Special requirements: _____

END

INFORMATION TO BE PROVIDED BY TENDERERS

GENERAL

1.0 Manufacturers name _____

TRANSFORMER CONSTRUCTION

1.0 Oil cooled: Yes / No

2.0 Dry type: Yes / No

TRANSFORMER DETAIL

1.0 Primary voltage rating: _____ Volts

2.0 Secondary voltage rating: _____ Volts

3.0 Rated power: _____ kVA

4.0 Impedance %: _____

6.0 Vector group: _____

TANK

1.0 Overall dimensions: Length _____ mm. Breadth _____ mm. Height _____ mm.

2.0 Winding material: HV _____ LV _____

3.0 Mass of core and windings: _____ kg

4.0 Oil capacity: _____ (Litres)

5.0 Mass of transformer complete with oil: _____ kg

6.0 Iron loss (Watts): _____

7.0 Copper loss at full load: _____ at _____ °C

8.0 Total load losses (Watts): _____ at _____ °C

9.0 Impedance at full load (%Z): _____

10.0 Reactance (% X): _____;

11.0 Regulation at full load at: 1.0 PF _____ Percent, 0.8 PF _____ Percent at _____ °C

12.0 Efficiency at full load at: 1.0 PF _____ Percent, 0.8 PF _____ Percent at _____ °C

13.0 Temperature rise at rated voltage and power of:

Windings: _____ °C

Top oil: _____ °C

END

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

**THIS ISSUE CANCELS
SPECIFICATION NO.:
CEE.0023.86**

SPECIFICATION FOR THE INSTALLATION OF CABLES

This specification covers Spoornet's requirements for the installation, laying, terminating, jointing, testing and commissioning of the high and low voltage cables.

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**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

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**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

1.0 SCOPE

- 1.1** This specification covers Spoornet's requirements for the installation, laying, terminating, jointing, testing and commissioning of high and low voltage cables.

2.0 REFERENCE LIST

The following publications, drawings and documents (latest edition) are referred to herein.

2.1 South African Bureau of Standards

SABS 97 - Impregnated paper insulated electric cables.

SABS 0142 - Code of practice for the wiring of premises.

SABS 150 - Polyvinylchloride (PVC) insulated electric cables and flexible cords.

SABS 763 - Hot-dip (galvanised) zinc coating.

SABS 1339 - Cross-linked polyethylene insulation of electric cables.

SABS 1299 - Direct-acting indicating electrical measuring instruments and their accessories.

2.2 British Standard Institution

BS 5467 - Armoured cables with thermosetting insulation for electricity supply.

BS 6480 - Impregnated paper-insulated cables.

2.3 Machinery and Occupational Safety Act, Act No. 6, 1983

2.4 Spoornet

CEE.0012 - Method of Tendering

CEE.0045 - Painting of steel components of electrical equipment.

CEE.0089 - Drawings of electrical equipment supplied under electric light and power contracts.

Safety Instructions - High Voltage Electrical Equipment

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3.0 APPENDICES

The following appendices form an integral part of this specification.

3.1 Appendix 1 - "Scope of Work"

3.1.1 This appendix specifies the extent of the work required and the order of priorities.

3.2 Appendix 2 - "Drawings".

3.2.1 This appendix lists Spoornets drawings applicable to the installation,

3.2.2 Cable routes indicated on these drawings shall only be a general guide to the contractor.

3.3 Appendix 3 - "Schedule of Items, Estimated Quantities, Unit Rates and Prices".

3.3.1 To ensure a uniform basis for tendering purposes, tenders shall be based on the estimated quantities given in this schedule which shall be completed in full and returned as part of the tender.

Complies/Does not comply

3.3.2 The importance of full completion of this schedule cannot be overstressed as this will constitute the tenderer's quotation.

Complies/Does not comply

3.3.3 Rates specified in this schedule will be applicable if any adjustments to requirements become necessary.

Complies/Does not comply

3.3.4 Any additional items considered to be necessary by the tenderer for the satisfactory completion of the installation and fulfilment of his guarantee shall be added by the tenderer on a similar unit price basis to this schedule and included in his total tendered price.

Complies/Does not comply

3.3.5 Actual quantities required will be based on the final survey by the successful contractor, and payment will be based on the actual measurements.

Complies/Does not comply

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4.0 DRAWINGS AND INSTRUCTIONS

- 4.1** All drawings submitted by the tenderer shall be in accordance with Spoornets Specification No. CEE.0089

Complies/Does not comply

- 4.2** Where joints and terminations are to be done by others, the contractor shall submit detailed instructions regarding the procedure recommended by the cable manufacturer.

Complies/Does not comply

5.0 STANDARD OF WORK

- 5.1** The electrical installation shall conform to the requirements of SABS Code of Practice 0142 and shall be to the satisfaction of Spoornet.

Complies/Does not comply

- 5.2** Galvanising, where specified, shall be in accordance with SABS 763.

Complies/Does not comply

6.0 SAFETY INSTRUCTIONS

- 6.1** Work on the high voltage equipment shall be carried out in accordance with the Safety Instructions High Voltage Electrical Equipment of Spoornet.

Complies/Does not comply

- 6.2** All work done must comply with the requirements of the MACHINERY AND OCCUPATIONAL SAFETY ACT, Act No. 6, 1983.

Complies/Does not comply

7.0 SURVEYS

- 7.1** Pre-installation Route Surveys.

- 7.1.1** The Contractor shall within 30 days after being awarded the contract, carry out a pre-installation route survey which shall include digging test holes and, guided by the drawings contained in appendix 2, determine a suitable route.

Complies/Does not comply

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- 7.1.2 The contractor shall determine where cables are liable to be subjected to chemical, electrolytic, mechanical or other damage and shall submit his recommendation to the Engineer for approval.

Complies/Does not comply

- 7.1.3 The Contractor shall submit in triplicate plans of the cable routes selected to the Engineer for approval. Plans may be submitted in sections as the survey progresses.

Complies/Does not comply

- 7.1.4 No excavation of any section of the cable route shall commence before the Contractor is in possession of the relevant approved plans and the Engineer has authorised the commencement of work on the section concerned.

Complies/Does not comply

7.2 Post Installation Surveys

- 7.2.1 After completion of all cable laying and jointing and before commissioning of any cable the Contractor shall carry out a final "as laid" survey of the cable routes and submit plans on transparencies suitable for reproduction.

Complies/Does not comply

- 7.2.2 The cable route plans shall include the following information :

- 7.2.2.1 Overall length, type, size and voltage of each cable.

- 7.2.2.2 Accurate indication of the position of each cable joint by indicating two distances to each joint from permanent structures.

Complies/Does not comply

- 7.2.2.3 Pipes and chambers provided.

8.0 EXCAVATIONS

- 8.1 Excavations shall be carried out in strict compliance with the specification No. E.7 for works on, over, under or adjacent to a railway line.

Complies/Does not comply

- 8.2 Trenching procedure shall be programmed in advance, approved by the Engineer and shall not be departed from except with the consent of the Engineer.

Complies/Does not comply

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- 8.3 The Contractor will be advised of any known buried services such as cables, pipes, etc. in the vicinity of the cable route.
- 8.3.1 When trenching the contractor shall take all necessary precautions to prevent damage to underground services.
- Complies/Does not comply
- 8.3.2 On encountering any uncharted service, the Contractor shall promptly advise the Engineer who will give the necessary instructions. Additional excavations shall be paid for at scheduled rates.
- Complies/Does not comply
- 8.4 Should any underground service, water mains, road pavement, drainage system, building or any other structure be damaged by the Contractor's staff, it shall be reported immediately to the Engineer, who shall arrange for the necessary repairs. The Contractor shall be responsible for the cost of repairs.
- Complies/Does not comply
- 8.5 The removal of obstructions along the cable routes shall be subject to the approval of the Engineer and shall be paid for at the agreed rates.
- Complies/Does not comply
- 8.6 The Contractor shall not trench beneath any railway line without departmental supervision. Should the contractor wish to carry out such work, a minimum of 14 working days notice is required by the Engineer to arrange for the necessary supervision. The cost of such supervision shall not be charged to the Contractor.
- Complies/Does not comply
- 8.7 Excavations crossing oil pipe lines shall not commence until an authorised representative is present on site. The Engineer shall be advised 14 days in advance when such excavations will take place.
- Complies/Does not comply
- 8.7.1 Cable crossings of oil pipe lines shall only be at right angles.
- Complies/Does not comply

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- 8.8 Trenches across roads, access ways or foot-paths shall not be left open. If trenching, cable laying and backfilling cannot be done during the same shift, the portion of trench across the full width of the road, etc., must be temporarily backfilled and consolidated sufficiently to carry the traffic concerned without subsidence. Alternatively, adequately strong cover plates shall be laid across the trench.
- Complies/Does not comply
- 8.9 Power driven mechanical excavators may be used for trenching operations. Spoornet shall not be responsible for any damage to other Services in close proximity when using mechanical excavators.
- Complies/Does not comply
- 8.10 The Contractor shall provide shuttering in places where the danger exists of the trench collapsing and causing damage to formations or other nearby structures.
- 8.10.1 Shuttering shall be paid for at scheduled rates.
- Complies/Does not comply
- 8.11 Trenches shall be as straight as possible and the bottom of each cable trench shall be firm and of smooth contour without sharp dips or rises which may cause tensile forces in the cable during backfilling.
- Complies/Does not comply
- 8.11.1 Trenches shall have no sharp objects which may cause damage to the cable during laying or backfilling.
- Complies/Does not comply
- 8.12 The unfinished depth of trenches unless otherwise stated shall be as follows :
- 8.12.1 HV cables and associated pilot cables = 1 000 mm
- 8.12.2 LV cables and separate pilot cables = 750 mm
- 8.13 The width of the trench unless otherwise stated shall be 500 mm for one or two HV cables and associated pilot cables, and shall increase by 300 mm for each additional HV cable and its associated pilot cable.

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- 8.13.1 The width of the trench at any bend or places where cable slack is required, shall be such that the bending radius of the cables shall not be less than that specified for the particular cable as per specifications SABS 150, SABS 97 and SABS 1339.
Complies/Does not comply
- 8.13.2 Trenching in railway formations shall be in accordance with Spoornet's Chief Civil Engineer's drawing FG 263.
- 8.14 The material excavated from each trench shall be placed in such a manner as to prevent nuisance or damage to adjacent ditches, railway lines, drains, gateways and other properties and shall not interfere with traffic.
Complies/Does not comply
- 8.14.1 Where, owing to certain considerations, this is not possible the excavated materials shall be removed from site and be returned for refilling the trench on completion of laying.
Complies/Does not comply
- 8.15 When excavating close to railway tracks, the ballast must be covered by tarpaulins or other sheeting to prevent soiling.
Complies/Does not comply
- 8.16 Removal of accumulated water or other liquid from trenches shall be done by the Contractor at his expense. The Contractor shall provide all pumps and appliances required to carry out this operation. Water or any other liquid removed shall be disposed of without creating any nuisance or hazard.
Complies/Does not comply
- 8.17 Spoornet reserves the right to alter any cable route or portion thereof prior to cable laying. Payment in respect of any additional work involved shall be at scheduled rates.
Complies/Does not comply
- 9.0 CABLE LAYING
- 9.1 General
- 9.1.1 All possible care shall be exercised in handling cables on site.
Complies/Does not comply

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- 9.1.2 Any drum of cable showing signs of damage shall not be used.
Complies/Does not comply
- 9.1.3 The outer covering of cables shall not be damaged in any way and cables shall not be bent at radii less than allowed by the manufacturer.
Complies/Does not comply
- 9.1.4 When cable is supplied by the contractor, the drums thereof remain the property of the Contractor and shall be removed from the site and disposed of by him.
Complies/Does not comply
- 9.1.5 Cable pulling and laying shall be done manually unless otherwise approved by the Engineer. No cable shall be subjected to a tension exceeding that stipulated by the cable manufacturer.
- 9.2 IN TRENCHES
- 9.2.1 High Voltage cables shall be spaced at a minimum of 300 mm apart (centre to centre).
- 9.2.2 Low Voltage cables shall be spaced at a minimum of 150 mm apart (centre to centre).
- 9.2.3 Pilot cables shall be laid beside the associated power cables.
- 9.2.4 High Voltage and Low Voltage cables (and pilot cables not associated with High Voltage cable) shall be spaced at a minimum of 300 mm apart.
- 9.2.5 Pilot cables, when they are routed separately from their associated power cables, may be run next to one another.
- 9.2.6 Cables shall not be buried on top of each other except where cable runs cross.
- 9.2.7 Where the cable cannot be laid down at the specified depth, prior authority shall be obtained from the Engineer by the Contractor to protect the cable by means of 150 mm diameter half round concrete pipes with 50 mm concrete slab coverings, or other approved methods.
- 9.2.8 Where cables have to be drawn around corners well lubricated skid plates shall be used. The skid plates shall be securely fixed and constantly examined during cable laying operations.
- 9.2.9 Suitable rollers may be used during the laying of cables.

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- 9.2.10 Cables shall be visually inspected for damage during and after laying. Any damage shall be reported immediately to the Engineer who will issue the necessary instructions.
Complies/Does not comply
- 9.3 IN SLEEVE PIPES
- 9.3.1 All cables crossing beneath roads and pavements shall be enclosed in asbestos cement pipes with a minimum internal diameter of 150mm. The Engineer shall be advised timeously of the locations and quantity of pipes to be laid and chambers to be provided by others. Separate lengths of pipe shall be properly jointed.
Complies/Does not comply
- 9.3.2 Pipes shall maintain or exceed the specified cable spacing.
Complies/Does not comply
- 9.3.3 Only one High Voltage cable shall be laid per pipe.
Complies/Does not comply
- 9.3.4 Pipes shall extend at least 1 m on either side of the road- or pavement formations and shall maintain the specified cable depth. All pipes shall be graded for water drainage : the required grade is 1:400.
Complies/Does not comply
- 9.3.5 All cables crossings underneath railway tracks shall be in pipes in accordance with Chief Civil Engineer's drawing FG 263.
- 9.4 IN DUCTS AND BUILDINGS
- 9.4.1 Concrete ducts and pipes within buildings will be provided by others.
- 9.4.2 Before installing cables, the ducts are to be inspected to ensure that they are suitable and clean as not to damage the cables.
Complies/Does not comply
- 9.4.3 The cables are to be neatly positioned and cross overs are to be avoided.
Complies/Does not comply

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- 9.4.4 Steel checker plates over ducts will be supplied by others. The tenderer will however be required to cut all the slots for emerging cables. These slots are to be neatly cut and smoothed to avoid damage to the cable.

Complies/Does not comply

- 9.4.5 The Contractor shall supply all cable trays, racks, wooden cleats or other supports required to adequately support cables not laid in ducts.

Complies/Does not comply

- 9.4.6 Cable trays or racks shall be of reinforced glass fibre or steel suitably treated to prevent corrosion. Steel trays, racks and other supports shall be galvanised in accordance with SABS 763 when used within 50 km of the sea or inland exposed conditions.

Complies/Does not comply

9.5 UNDER BRIDGES AND IN TUNNELS

- 9.5.1 Where a cable route can only be against the concrete wall of a bridge or tunnel the cable shall be supported on :

- 9.5.1.1 suitable brackets at 750 mm intervals.

or

- 9.5.1.2 straining wire secured at maximum 1 200 mm intervals.

Complies/Does not comply

- 9.5.2 Brackets shall be of robust design and shall be galvanised and painted in accordance with specification CEE.0045

Complies/Does not comply

- 9.5.3 The height of the cable route on the brackets or strain wire shall be determined and agreed upon on site.

Complies/Does not comply

- 9.5.4 The brackets or strain wire shall be supplied and installed by the contractor.

Complies/Does not comply

9.6 CROSSING OF PIPELINES AND OTHER CABLES

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- 9.6.1 Cables shall pass beneath pipelines with a 300 mm minimum clearance between the top of any cable and the bottom of any oil pipe.
Complies/Does not comply
- 9.6.1.1 The level of any cable at an oil pipeline crossing shall be maintained for not less than 3 m on either side of the centre line of the pipeline or on either side of the centre line of the outermost pipelines where there is more than one pipeline on the same route.
Complies/Does not comply
- 9.6.2 Where cables cross communication or signal cables, at least 300 mm of fill shall be provided between the two cables. In addition a concrete slab in accordance with Spornets drawing No. CEE 55/027367 shall be placed between the two cables parallel to the lower cable.
Complies/Does not comply
- 9.7 IN RAILWAY FORMATIONS
- 9.7.1 Cables to be accommodated in railway formations shall be laid in accordance with Chief Civil Engineer's drawing No. FG 263.
Complies/Does not comply
- 9.8 SECURED TO POLES
- 9.8.1 Cables to be terminated at disconnectors (isolators) mounted on wood, concrete or steel poles, shall be clamped onto such structures by means of stainless steel straps applied at such a tension that the cable or cable sheath is not damaged. Straps shall be located at intervals of not more than 1,2 m.
Complies/Does not comply
- 9.8.2 Cables shall be protected by a pipe or boxed section of galvanised steel or other approved material for a distance of 250 mm below and 600 mm above ground level, strapped or screwed to the pole at a minimum of two points and connected to the earth connection, if of steel construction.
Complies/Does not comply
- 9.8.3 Straps and pipes shall be supplied and installed by the Contractor.
Complies/Does not comply

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9.9 EXPOSED CONDITIONS

- 9.9.1 Whenever cables enter buildings or tunnels, or where excavations are not permitted down banks or cuts, the exposed portion shall be suitably protected by means of concrete slabs, or suitable steel pipes or boxed sections which shall be galvanised in accordance with SABS 763.

Complies/Does not comply

- 9.9.2 These pipes or boxed sections shall be firmly secured to the bank or cut, at regular intervals.

Complies/Does not comply

- 9.9.3 All such material shall be supplied and installed by the Contractor.

Complies/Does not comply

- 9.9.4 Stake routes shall only be supplied when specifically called for in Appendix 1.

10.0 CABLE TERMINATIONS

10.1 General

- 10.1.1 All cables shall be terminated and connected to the respective equipment, whether provided by the Contractor or by others.

Complies/Does not comply

- 10.1.2 Jumpers between cable end boxes and disconnectors shall either be short enough to be rigidly self supporting, or shall be supported on suitably placed pin insulators.

Complies/Does not comply

- 10.1.3 Termination of cables on outdoor equipment shall not be done during inclement weather conditions.

Complies/Does not comply

- 10.1.4 Both ends of each cable shall be identified by means of embossed stainless steel strips clamped around the cables. The characters shall have a minimum height of 6 mm.

Complies/Does not comply

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- 10.1.5 All materials necessary for cable termination shall be provided by the Contractor.
Complies/Does not comply
- 10.1.6 The contractor shall ensure that correct phase rotation is maintained throughout.
- 10.1.7 Glands of cables terminating on equipment provided with frame leakage protection shall be insulated from the frame by high grade non-deteriorating, non-hygroscopic insulation, at least 2 mm thick, capable of withstanding a test voltage of 1 kV DC for one minute.
Complies/Does not comply
- 10.2 HV Cables
- 10.2.1 The cable armouring shall be bonded with an approved copper bond to the cable end box at one end of the cable only as directed by the Engineer. This bond shall be easily removable for testing purposes.
Complies/Does not comply
- 10.2.2 Where for any reason a cable cannot be terminated, sufficient length of cable shall be left to reach the cable end box position. The cable shall be coiled and buried or otherwise protected. The cable end of paper insulated cables shall be capped immediately with a plumbed lead seal. Other cables shall be sealed with suitable tape.
Complies/Does not comply
- 10.3 LV Cables (and Pilot Cables)
- 10.3.1 All cut ends of cables are to be sealed with suitable tape, or other approved means until they are ready to be terminated.
Complies/Does not comply
- 10.3.2 The cables shall terminate in compression type glands, brass or bronze, suitable for PVC SWA ECC cables.
Complies/Does not comply
- 10.3.2.1 The glands shall be fitted with neoprene shrouds.
Complies/Does not comply
- 11.0 CABLE JOINTS
- 11.1 General

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- 11.1.1 Jointing shall be carried out strictly in accordance with the manufacturer's jointing instructions and by artisans thoroughly experienced and competent in jointing the classes of cables used. They shall be adequately supervised to ensure the highest quality of workmanship.
Complies/Does not comply
- 11.1.2 Jointing shall not be carried out during inclement weather.
Complies/Does not comply
- 11.1.3 The cores of cables shall be jointed number to number or colour to colour.
Complies/Does not comply
- 11.1.4 The joints shall not impair the anti-electrolysis characteristics of the cables.
Complies/Does not comply
- 11.1.5 The conductor bridging the armouring shall be adequate to carry the prospective earth fault current.
Complies/Does not comply
- 11.1.6 A through joint shall only be permitted after every full drum length of cable.
Complies/Does not comply
- 11.1.7 Each cable joint shall be identified by a non-corrodible label fixed securely to the top of the joint. Each label shall have stamped on it, in characters having a minimum height of 10 mm, the identification of equipment at each end of the cable concerned.
Complies/Does not comply
- 11.1.8 Spoornet reserves the right to be present during jointing operations to familiarise themselves with any special techniques.
Complies/Does not comply
- 11.1.9 No joint shall be situated inside a cable pipe.
Complies/Does not comply

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- 12.0 COVERING, BACKFILLING AND REINSTATEMENT
- 12.1 Filling of trenches shall not commence before the Engineer or his authorised representative has inspected and approved the cables and cable joints in situ in the section of trench concerned.
- Complies/Does not comply
- 12.2 Trenches in railway formations shall be backfilled and reinstated in accordance with Spoornet's Chief Civil Engineer's drawing No. FG 263.
- Complies/Does not comply
- 12.3 All other trenches shall be backfilled and reinstated as follows:
- 12.3.1 Two 75 mm thick layers of soil sifted through a 6 mm mesh shall be laid directly under and over the cables respectively and consolidated by hand ramming only.
- Complies/Does not comply
- 12.3.1.1 Only soil with a thermal resistivity of 1,5 degrees C.m/watt, or lower may be used for this purpose.
- Complies/Does not comply
- 12.3.1.2 When necessary imported fill shall be arranged by the Contractor and paid for at scheduled rates.
- Complies/Does not comply
- 12.3.2 HV cables shall, where likely to be mechanically damaged as decided by the engineer, be protected by concrete slabs (to Drawing No. CEE 55/027367) to be supplied and laid by the Contractor on top of the sifted soil. These slabs shall be laid close-butted, convex end to concave end, directly above each HV cable throughout the underground portion except where otherwise protected as by pipes, etc. Only unbroken cable protection slabs may be used, and only slabs actually laid will be paid for.
- Complies/Does not comply
- 12.3.3 The minimum dry densities of backfilling after compaction shall be not less than 1 600 kg/cubic metre.
- Complies/Does not comply

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- 12.3.4 All excavations made (whether for the purpose of cable laying, joint bays or trial holes) shall be back-filled in 150 mm layers, the earth in each layer being well rammed and consolidated and sufficient allowance being made for settlement. The back-filling shall be completed to the satisfaction of the Engineer. If necessary, water shall be used to obtain the specified compacted density. Any cable damaged during backfilling shall be replaced by the Contractor at his own expense.

Complies/Does not comply

- 12.3.4.1 Backfilling at pipe entries shall be such as not to stress or damage the cable during compaction from the top.
- 12.3.5 A continuous plastic cable warning tape, to drawing No. CEE-MA-307 shall be laid directly above each HV cable, 150 mm below the normal surface level and run for the full length of the cable before completing the back-filling.

Complies/Does not comply

- 12.4 The back filled trench shall be maintained in a thoroughly safe condition by the contractor for the duration of the contract.

Complies/Does not comply

- 12.5 All back filling of road crossings shall be mechanically rammed.

Complies/Does not comply

- 12.6 Final surfacing of roads shall be restored by others unless called for under "Scope of Work", Appendix 1.

Complies/Does not comply

- 12.7 Concrete cable route markers shall be provided and installed by the contractor in accordance with drawing CEE-PK-14.

Complies/Does not comply

- 12.8 Pipes shall be filled with a sand/water mixture to also have a thermal resistivity of 1,5 degrees C.m/watt or lower when dry. The sand used in the mixture shall be chemically tested not to be harmful to the cable outer sheath.

Complies/Does not comply

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13.0 MEASUREMENTS

- 13.1 All measurements for payment purposes shall be made jointly by representatives of the Contractor and SpoorNet and shall be agreed upon by both parties. The Contractor shall be responsible for obtaining the Engineer's signed approval of such measurements.

Complies/Does not comply

- 13.2 Measurements of cable length shall be made from centre to centre of cable joints and to the cable ends and will exclude any wastage due to jointing and terminating.

Complies/Does not comply

- 13.3 When cable is drawn through pipes, only the portion remaining in the pipe will be paid for at the rates quoted for "as installed in pipes".

Complies/Does not comply

- 13.4 Determination of trench volume for measurement purposes shall be based on measured length and specified width and depth. No allowance shall be made where trenches have to be widened at the bottom to accommodate cables, cable joints and protection slabs.

Complies/Does not comply

- 13.5 The classification of different types of ground for measurement purposes shall be as follows:

- 13.5.1 Soft rock will be taken as broken or friable rock which can be removed by pick or mechanical excavator or paving breaker. This includes hard clay.

- 13.5.2 Hard rock will be taken as rock which cannot be removed by a mechanical excavator and requires drilling and blasting or splitting. This includes reinforced or plain concrete.

14.0 TESTS

- 14.1 The costs of all post-installation tests shall be borne by the Contractor.

Complies/Does not comply

- 14.2 The Contractor shall be responsible for remedial work necessary due to damages caused during tests.

Complies/Does not comply

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- 14.3 Spoornet reserves the right to carry out any further tests deemed necessary, using either the Contractor's instruments and equipment or its own, or both. The costs of such tests will not be charged to the Contractor.

Complies/Does not comply

- 14.4 Test instruments shall be of the accuracy class 1.0 or better in accordance with SABS 1229. Calibration certificates from a recognised testing authority shall be available for inspection and shall not be older than one year.

Complies/Does not comply

- 14.5 Time measurements shall be carried out using an approved digital timer.

Complies/Does not comply

- 14.6 The final commissioning site tests will be carried out by Spoornet.

Complies/Does not comply

- 14.6.1 A suitably qualified staff member of the Contractor shall assist Spoornet during the tests and shall carry out any remedial work where necessary.

Complies/Does not comply

- 14.7 The contractor shall notify the Engineer in writing 4 weeks before the commissioning date and shall have carried out the following site tests before such date :

Complies/Does not comply

- 14.7.1 Prove the continuity and insulation resistance of the multicore pilot cables.

Complies/Does not comply

- 14.7.2 Verify that the insulation level between frame and earth of switchboards fitted with frame leakage protection is not reduced by the installation of the cables.

Complies/Does not comply

- 14.7.3 The following voltage withstand tests on each completed cable run:

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14.7.3.1 Paper insulated cables:

(i) rating up to 12,7/22 kV : test specified in paragraph D-3 of SABS 97.

Complies/Does not comply

(ii) rating 19/33 kV : test specified in paragraph B-3 of BS 6480, Part 1.

Complies/Does not comply

The extruded PVC impermeable serving shall withstand a test voltage of 10 kV DC between armouring and earth for 1 minute.

Complies/Does not comply

The insulation between armouring and lead sheath shall withstand a test voltage of 10 kV DC for 1 minute.

Complies/Does not comply

14.7.3.2 XLPE Insulated Cables:

All cables rated up to 19/33 kV shall be tested as specified in appendix E, clause 1.4, of SABS 1339, and cables rated up to 1,9/3,3 kV shall be tested as specified in appendix B, clause B.6, of BS 5467.

Complies/Does not comply

Note :

Where a new XLPE cable is to be joined to an existing XLPE Cable, the test shall differ, in that a 4 kV DC test voltage shall be applied for one minute between the brass screens of the cores and the armouring. The outer sheath shall withstand a test voltage of 10 kV DC for 1 minute between the armouring and earth.

Complies/Does not comply

14.7.4 PVC insulated cables shall be tested as specified in paragraph D-3 of SABS 150.

Complies/Does not comply

14.7.5 The Contractor shall submit three copies of certified test reports to the Engineer within three weeks after completion of the tests.

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

15.0 GUARANTEE

15.1 All work undertaken by the Contractor shall be subject to a guarantee for a period of one year against faulty and/or inferior workmanship and material.

Complies/Does not comply

15.2 The guarantee period shall commence the day the installation is formally handed over to and accepted by Spoornet.

Complies/Does not comply

15.3 The Contractor shall undertake to repair all faults or defects due to bad workmanship and/or faulty materials, and to replace all defective equipment or materials during the guarantee period.

Complies/Does not comply

15.4 Any defects that may become apparent during the guarantee period shall be rectified to the satisfaction of, and free of cost to Spoornet.

Complies/Does not comply

15.5 The Contractor shall undertake work on the rectification of any defects that may arise during the guarantee period within 7 days of his being notified by Spoornet of such defects.

Complies/Does not comply

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

Complies/Does not comply

TENDERER'S SIGNATURE

DATE

CHIEF ENGINEER (POWER SUPPLIES)
(INFRASTRUCTURE)

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

APPENDIX 1

PAGE 1 OF 1

SCOPE OF WORK

1.0 Site inspection required/not required.

Date :

Time :

"PREVIEW COPY ONLY"

**CHIEF ENGINEER (POWER SUPPLIES)
(INFRASTRUCTURE)**

REFERENCE :

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

APPENDIX 2

PAGE 1 OF 1

DRAWINGS

DRAWING NO.	TITLE
CEE 55/027367	Concrete slab, cable protection
CEE-PK-14	Route marker, cable, electrical.
CEE-MA-307	Tape, cable warning, underground
FG 263	Accommodation of cables in Railway formations.

**CHIEF ENGINEER (POWER SUPPLIES)
(INFRASTRUCTURE)**

REFERENCE :

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

APPENDIX 3

PAGE 1 OF 7

SCHEDULE OF ESTIMATED QUANTITIES AND UNIT RATES

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT RATE	TOTAL
1.0	Route surveys (clause 7.0)		complete		
2.0	Excavations in				
a)	Hard rock		/cubic metre		
b)	Soft rock		/cubic metre		
c)	Soil		/cubic metre		
3.0	Transportation of soil		/cubic metre		
4.0	Shuttering (clause 8.10)		/m		
5.0	Concrete slabs supplied and installed (clause 12.3.2)		each		
6.0	Plastic cable warning tape supplied and installed (clause 12.3.5)		/m		
7.0	150 mm dia. half round concrete pipes supplied and installed (clause 9.2.7.)		/m		
8.0	150 mm dia. asbestos cement pipes supplied and installed		/m		
9.0	Cutting of checker plates (clause 9.4.4)		/m cut		
10.0	Backfilling of trenches with soil (clause 12.3)		/cubic metre		
11.0	Backfilling of trenches with 10:1 soil/cement mix (clause 12.2)		/cubic metre		

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

APPENDIX 3

PAGE 2 OF 7

SCHEDULE OF ESTIMATED QUANTITIES AND UNIT RATES

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT RATE	TOTAL
12.0	Importation of soil		/cubic metre		
13.0	Concrete cable route markers		each		
14.0	Reinstate tarred surface		/cubic metre		
15.0	Reinstate concrete surface		/cubic metre		
16.0	Installation of cables				
16.1	Installed in trenches (Clause 9.2)				
16.1.1	High Voltage Cables		/m		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				
16.1.2	Low Voltage Cables		/m		
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
16.2	Installed in sleeve pipes (clause 9.3)				
16.2.1	High Voltage Cables		/m		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

APPENDIX 3

PAGE 3 OF 7

SCHEDULE OF ESTIMATED QUANTITIES AND UNIT RATES

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT RATE	TOTAL
16.2.2	Low Voltage Cables		/m		
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
16.3	Installed in ducts (clause 9.4)				
16.3.1	High Voltage Cables		/m		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				
16.3.2	Low Voltage Cables		/m		
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
17.0	Installation of cables (Special conditions)				
17.1	Cable supports (clause 9.4.5 and 9.4.6)				
17.1.1	High Voltage Cables		/m		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

APPENDIX 3

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SCHEDULE OF ESTIMATED QUANTITIES AND UNIT RATES

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT RATE	TOTAL
17.1.2	Low Voltage Cables		/m		
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
17.2	Securing cables to poles (clause 9.8)				
17.2.1	High Voltage Cables		/m		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				
17.2.2	Low Voltage Cables		/m		
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
17.3	Securing cables to concrete/tunnel walls				
17.3.1	High Voltage Cables		/m		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

SPECIFICATION No. CEE.0023.90

APPENDIX 3

PAGE 5 OF 7

SCHEDULE OF ESTIMATED QUANTITIES AND UNIT RATES

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT RATE	TOTAL
17.3.2	Low Voltage Cables		/m		
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
17.4	Installation of cables in track formations				
17.4.1	High Voltage Cables		/m		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				
17.4.2	Low Voltage Cables		/m		
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
18.0	Cable terminations complete (Supply material, terminate and connect up).				
18.1	XLPE cable				
18.1.1	High Voltage terminations		each		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

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APPENDIX 3

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SCHEDULE OF ESTIMATED QUANTITIES AND UNIT RATES

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT RATE	TOTAL
18.1.2	Low Voltage terminations		each		
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
18.2	PILC SWA cable				
18.2.1	High Voltage terminations		each		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				
18.2.2	Low Voltage terminations		each		
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
	..... core mm sq				
19.0	Cable joints complete (Supply material, terminate and connect up)				
19.1	PVC to PVC		each		
	240 mm sq				
	185 mm sq				
	120 mm sq				
	95 mm sq				
	16 mm sq				
	Other sizes				

**SPOORNET
(INFRASTRUCTURE) (POWER SUPPLIES)**

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APPENDIX 3

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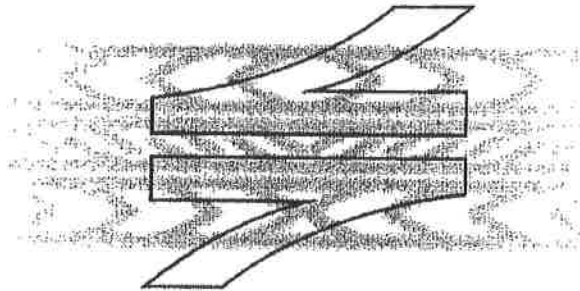
SCHEDULE OF ESTIMATED QUANTITIES AND UNIT RATES

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT RATE	TOTAL
19.2	XLPE to XLPE 240 mm sq 185 mm sq 120 mm sq 95 mm sq 16 mm sq Other sizes		each		
19.3	PILC to PILC 240 mm sq 185 mm sq 120 mm sq 95 mm sq 16 mm sq Other sizes		each		
19.4	XLPE to PILC 240 mm sq 185 mm sq 120 mm sq 95 mm sq 16 mm sq Other sizes		each		

TENDERER'S SIGNATURE

DATE

CHIEF ENGINEER (ELECTRICAL)
(INFRASTRUCTURE)



SPOORNET

A division of Transnet limited

**TECHNICAL
RAILWAY ENGINEERING
SPECIFICATION**

**PAINTING OF STEEL COMPONENTS OF
ELECTRICAL EQUIPMENT**

Circulation restricted to:
Technical: Maintenance (Infrastructure)
Technical: Maintenance

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"PREVIEW COPY ONLY"

1.0 SCOPE

This specification covers the surface preparation, paint systems and painting of steel components of electrical equipment.

2.0 REFERENCES AND GLOSSARY

The following standards and specifications are referred to herein:

2.1 South African Bureau of Standards: -

SABS 064 : Code of Practice for the Preparation of Steel Surfaces for Coating.

SABS 1091 : National Colour Standards for Paint.

2.2 Trade names :

OptiDegreaser

OptiPrime^{Aqua}

Noxyde

2.3 Classification of level of surface degradation:

RE1 – 0.05% of surface rusted

RE2 – 0.5% of surface rusted

RE3 – 1.0% of surface rusted

RE4 – 3.0% of surface rusted

RE5 – 8.0% of surface rusted

3.0 METHOD OF TENDERING

3.1 Tenderers shall indicate clause by clause compliance or non-compliance with the specification. This shall take the form of a separate document listing all the specification clause numbers indicating the individual statement of compliance or non-compliance. Tenderers to elaborate on their response to a clause can use this document.

4.0 SURFACE PREPARATION

4.1 NON-GALVANISED STEELWORK

4.1.1 New Steelwork

SURFACE PREPARATION (Read: NOTES and SPECIAL INSTRUCTIONS)	PRODUCT REQUIREMENTS & APPLICATION (See Variations for Specific Environmental Conditions)
<ul style="list-style-type: none"> ➤ Sandblast to a standard of Sa2 to remove mill scale and/or flash rust ➤ Remove dust with <u>clean</u> compressed air (Check air for oil contamination) 	<ul style="list-style-type: none"> ➤ Apply a stripe coat to edges, bolts, crevices, nuts and rivets. ➤ Apply one thick coat of Noxyde to the entire structure with contrasting color. ➤ Apply a final thick coat of Noxyde at a consumption rate of minimum 400g/m²

4.1.2 Previously Coated Steelwork

4.1.2.1 COATING START FAILING TO A LEVEL OF RE 2

<ul style="list-style-type: none"> ➤ Test for adhesion (refer to supplier) ➤ Degrease thoroughly with OptiDegreaser ➤ Hydro Blast complete substrate using a rotating nozzle and minimum 250 bar at the nozzle 	<ul style="list-style-type: none"> ➤ Apply a stripe coat to edges, bolts, nuts and rivets and fill crevices. ➤ Apply one coat of Noxyde to entire substrate in a contrasting color
---	--

4.1.2.2 COATING FAILURE AND RUSTING TO A LEVEL OF RE 4

<ul style="list-style-type: none"> ➤ Remove all visible traces of rust by mechanical means ST2 (chip/grind/sand) OR shotblasting /spotblasting) ➤ Degrease thoroughly with OptiDegreaser ➤ Hydro Blast complete substrate using a rotating nozzle and minimum 250 bar at the nozzle. 	<ul style="list-style-type: none"> ➤ Apply a thick coat of Noxyde to the de-rusted areas, edges, bolts, nuts and rivets and fill crevices ➤ Apply one coat of Noxyde at a consumption rate of minimum 400g/m² to the entire substrate using a contrasting color.
---	---

4.1.2.3 BITUMEN COATED

<ul style="list-style-type: none"> ➤ Remove all visible rust and loosely adhering bitumen coating by means of chipping and scraping (ST2) ➤ Degrease thoroughly with OptiDegreaser ➤ Hydro Blast complete substrate using a rotating nozzle and minimum 250 bar at the nozzle. 	<ul style="list-style-type: none"> ➤ Apply a thick coat of Noxyde to the de-rusted areas, edges, bolts, nuts and rivets and fill crevices ➤ Apply two coats of Noxyde at a consumption rate of minimum 400g/m² per coat to the complete substrate using contrasting colors
---	---

4.1.2.4 BADLY RUSTED STEEL WITH PITTING & CRUST FORMATION TO RE 5

<ul style="list-style-type: none"> ➤ 1.Degrease thoroughly with OptiDegreaser ➤ 2.Hydro Blast complete substrate using a splinner tip and minimum 250 bar at the nozzle ➤ 3.Shotblast/sandblast complete substrate giving particular attention to bolts nuts rivets and crevices. Sa2 ➤ 4.Dedust 	<ul style="list-style-type: none"> ➤ Apply a first thick coat of Noxyde to the entire substrate ➤ Apply a stripe coat to edges, bolts, nuts and rivets and fill crevices using a contrasting color ➤ Apply a final coat of Noxyde at a consumption rate of minimum 400g/m²
--	--

4.2 GALVANISED STEELWORK

4.2.1 NEW AND WEATHERED GALVANISING WITH A SMOOTH GLOSSY FINISH

<ul style="list-style-type: none"> ➤ Degrease thoroughly with OptiDegreaser ➤ Rinse down with copious quantities of potable water 	<ul style="list-style-type: none"> ➤ Apply one thin coat of OptiPrime^{Aqua} (100 micron wet/35 micron dry) ➤ Apply a stripe coat of Noxyde to edges, bolts, nuts and rivets and fill crevices ➤ Apply two coats of Noxyde at a consumption rate of minimum 400g/m² per coat to the complete substrate using contrasting colors
---	---

4.2.2 WEATHERED GALVANISING

4.2.2.1 White rust (zinc oxide)

<ul style="list-style-type: none"> ➤ Degrease thoroughly using OptiDegreaser – ensure that all traces of "white rust" are removed ➤ Rinse down with copious quantities of potable water 	<ul style="list-style-type: none"> ➤ Apply one thin coat Noxyde ➤ Apply a stripe coat of Noxyde to edges, bolts, nuts and rivets and fill crevices ➤ Apply a final coat of Noxyde at a consumption rate of minimum 400g/m² per coat to the complete substrate using a contrasting color
---	---

4.2.2.2 Combination of red rust (iron oxide) and white rust (zinc oxide)

<ul style="list-style-type: none"> ➤ Remove all traces of red rust ➤ Degrease thoroughly using OptiDegreaser – ensure that all traces of "white rust" are removed ➤ Rinse down with copious quantities of potable water 	<ul style="list-style-type: none"> ➤ Apply a thick coat of Noxyde to the de-rusted areas, edges, bolts, nuts and rivets and fill crevices ➤ Apply a final coat of Noxyde at a consumption rate of minimum 400g/m² per coat to the complete substrate using a contrasting color
--	---

NOTES and SPECIAL INSTRUCTIONS:		
1 Sand or Grit-blasting a) Always use clean, non-recycled grit b) Always use fine or extra fine grit c) Always use oil free air d) Always use a moisture trap e) Dedust	2 Degreasing: a) Use only OptiDegreaser b) Dilute according to instructions – see data sheet c) Always follow up with hydro-blasting to remove all chemical residues	3 Hydro-blasting: a) Always use clean potable water b) Use a rotating nozzle and ensure a pressure of minimum 250 bar at the nozzle c) Remove ALL traces of dirt and any form of salt contamination and residues of the degreasing agent d) Concentrate in crevices and other similar "collection" areas

5. PRODUCT APPLICATION

5.1 METHOD OF APPLICATION

OptiPrime ^{Aqua}	Noxyde
Temperature-Min 5 °C Relative humidity-Max 80% R.H. ➤ Apply by brush, lacquer roller or airless spray using a no. 11 nozzle ➤ Apply one thin coat only - 100 micron wet = 35 micron dry (DFT) ➤ Small parts can be dipped - dilute with 10% water for dipping	Temperature-Min. 8 °C, Max. 55 °C Relative Humidity-Max 80% R.H. ➤ Apply by brush, roller or airless spray ➤ For airless spray applications refer to "Tips for airless spraying of Noxyde"

5.2 DRYING TIME AND OVERCOAT PERIODS

<ul style="list-style-type: none"> ➤ Do not overcoat within 12 hours ➤ Wash down with clean potable water (100 bar) before over coating to remove dust or any other form of intermediate contamination 	<ul style="list-style-type: none"> ➤ Drying time is dependant on ambient conditions and can vary from a few minutes (in dry windy conditions) to a few hours (in humid shaded conditions) ➤ Overcoat as soon as possible to avoid contamination of previous coat ➤ Wash down with clean potable water (100 - 150 bar) before over coating if danger of contamination exists or if left more than 4 hours before over coating
--	---

5.3 CURING TIME

n/a	➤ 7 - 14 days to "full cure". During this period the product is prone to mechanical damage - the longer time it is allowed to cure, the tougher it becomes
-----	--

5.4 DRY FILM THICKNESS (DFT) READINGS

35 micron	➤ Severe coastal & marine environments (in the spray zone) - TWO stripe coats & overall minimum DFT of 400 micron ➤ Normal coastal environment (1.5 km from the coast line) - a single stripe coat & overall minimum DFT of 400 micron ➤ Non coastal high rainfall areas, in the immediate vicinities of rivers, dams, lakes, etc., and in industrial areas with high levels of chemical pollution - a single stripe coat & overall minimum DFT of 400 micron ➤ Dry non aggressive environments - a single stripe coat & overall minimum DFT of 250 micron NOTE: DFT readings can only be taken after 72 hours
-----------	--

5.5 Notwithstanding the above requirements, all surfaces shall be cleaned according to the appropriate method described in SABS 064 for the particular surface to be cleaned, the contamination to be removed and the primer to be applied.

5.6 Blast cleaning of components shall be in accordance with clause 4.3 of SABS 064 to a degree of cleanliness of at least Sa 2 for inland exposure components and Sa 2 ½ for coastal exposure components. See Table 1 of SABS 064 for the appropriate profile.

5.7 Sheet metal that cannot be blast cleaned shall be cleaned by pickling according to clause 4.6 of SABS 064.

5.8 Components that will be powder coated shall be cleaned and prepared by the surface conversion process according to clause 5 of SABS 064 to a medium weight classification of table 2 of that specification.

5.9 Oil and accumulated dirt on steel components where no rusting is present shall be removed according to clause 3 of SABS 064.

6.0 PAINT SYSTEM

A choice of two systems is available to suit the contractors equipment.

6.1 Noxyde paint system

1st coat: OptiPrime^{Aqua}

Wet film thickness: 100 micrometers. Dry film thickness: 35 micrometers.

2nd coat: Noxyde Topcoat

Dry film thickness: 165 micrometers @ 400g/m².

6.1.1 Paint application:

6.1.1.1 The primer and paint is normally applied by brush at supply viscosity (no reducer required).

6.1.1.2 The practical spreading rate of the primer and paint is a function of the ambient temperature, wind velocity and the application technique, but will generally fall in the range of 400g/m² in low to mild corrosive areas, and 500g/m² in severely corrosive areas.

6.1.1.3 Once the applied coat of primer/paint is touch dry, the next coat of paint may be applied.

6.1.1.4 If painted steelwork is to be bolted onto structures, it is imperative that the paint has been allowed to hard dry before the steelwork is bolted onto structures. This is to prevent the soft paint being damaged when tightening the bolts securing the steelwork to the structures.

6.2 Powder Coating System.

The powder-coating process shall be in accordance with SABS 1274 type 4: Corrosion-resistant coatings for interior use and using the thermosetting type high gloss coatings.

7.0 COATINGS AND WORKMANSHIP

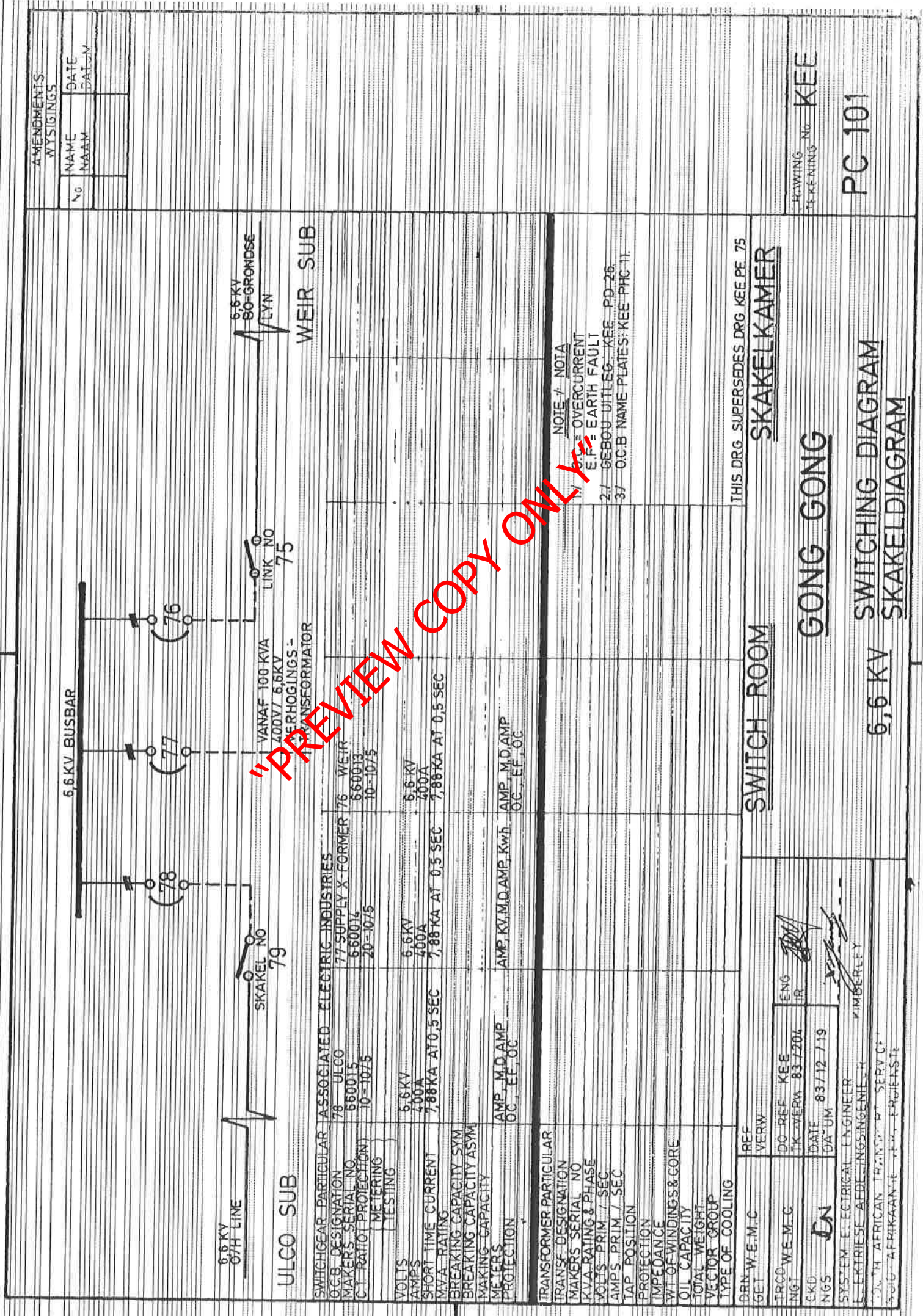
7.1 All specified coatings shall be applied according to the relevant specification and the manufacturer's instructions shall be followed.

7.2 Coatings shall not be applied under conditions that may be detrimental to the effectiveness of the coating or the appearance of the painted surface.

7.3 When examined visually, the finished products shall have a uniform appearance and shall show no sign of damage. Damaged areas shall be repaired coat for coat to obtain the desired finish.

TENDERER'S SIGNATURE.....

DATE.....



AMENDMENTS MYSIGINGS		
No	NAME NAAM	DATE DATUM

DRAWING No KEE
TEKENING

PC 101

THIS DRG SUPERSEDES DRG KEE PE 75
SKAKELKAMER

GONG GONG

**SWITCHING DIAGRAM
SKAKELDIAGRAM**

6,6 KV

SWITCHGEAR PARTICULAR		ASSOCIATED ELECTRIC INDUSTRIES	
OCB DESIGNATION	78 ULCO	77 SUPPLY X-FORMER	76 WEIR
MAKERS SERIAL NO	660015	660014	660013
C.T. RATIO (PROTECTION)	10-10/5	20-10/5	10-10/5
{ METERING (TESTING) }			
VOLTS	6.6KV	6.6KV	6.6KV
AMPS	400A	400A	400A
SHORT TIME CURRENT	7,88 KA AT 0.5 SEC	7,88 KA AT 0.5 SEC	7,88 KA AT 0.5 SEC
MVA RATING			
BREAKING CAPACITY SYM			
BREAKING CAPACITY ASYM			
MAKING CAPACITY			
METERS	AMP, M.D.AMP, Kwh	AMP, M.D.AMP, Kwh	AMP, M.D.AMP
PROTECTION	OC, EF, OC	OC, EF, OC	OC, EF, OC
TRANSFORMER PARTICULAR			
TRANSF. DESIGNATION			
MAKERS SERIAL NO			
KVA RATING & PHASE			
VOLTS PRIM / SEC			
AMPS PRIM / SEC			
TAP POSITION			
PROTECTION			
IMPEDANCE			
WT OF WINDINGS & CORE			
OIL CAPACITY			
TOTAL WEIGHT			
VECTOR GROUP			
TYPE OF COOLING			
DRN W.E.M.C	REF	DRN W.E.M.C	REF
GET	VERW	GET	VERW
TRCO WE M.C	DO REF KEE	ENG	IR
NGT	TK-VERA 83/204		
CKD	DATE 83/12/19		
NGS	DA UM		
SYSTEM ELECTRICAL ENGINEER			
ELECTRIESE AFDELINGSENIENIER			
SOUTH AFRICAN TECHNICAL SERVICE			
SUID-AFRIKAANSE TEKN. DIENST			

SWITCH ROOM

SKAKELKAMER

AMENDMENTS
NY516 NG5

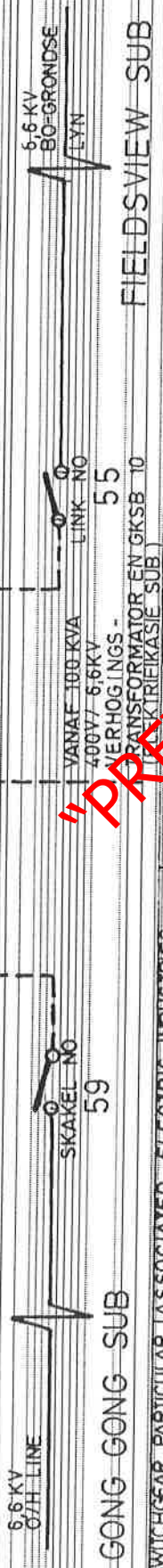
NO	NAME	DATE
1	NAME	DATE

NOTA GKSB 10 BYGEVOEG
TK VERW. KEE 92797B

DRAWING No KEE
TEKENING

PC 102

6,6 KV BUSBAR



FIELDSVIEW SUB

SWITCHGEAR PARTICULAR ASSOCIATED ELECTRIC INDUSTRIES

OCB DESIGNATION	58 GONG GONG
MAKER'S SERIAL NO	660012
C.T. RATIO (PROTECTION)	10-10/5
(METERING)	
(TESTING)	

VOLTS	6.6KV
AMPS	400A
SHORT TIME CURRENT	7,88KA AT 0.5 SEC
MVA RATING	
BREAKING CAPACITY SYM	
BREAKING CAPACITY ASYM	
MAKING CAPACITY	
METERS	AMP, M.D.AMP
PROTECTION	OC, ET, OC

VOLTS	6.6KV
AMPS	400A
SHORT TIME CURRENT	7,88KA AT 0.5 SEC
MVA RATING	
BREAKING CAPACITY SYM	
BREAKING CAPACITY ASYM	
MAKING CAPACITY	
METERS	AMP, M.D.AMP, Kwh
PROTECTION	OC, ET, OC

VOLTS	6.6KV
AMPS	400A
SHORT TIME CURRENT	7,88KA AT 0.5 SEC
MVA RATING	
BREAKING CAPACITY SYM	
BREAKING CAPACITY ASYM	
MAKING CAPACITY	
METERS	AMP, M.D.AMP
PROTECTION	OC, ET, OC

TRANSFORMER PARTICULAR

TRANSF. DESIGNATION	
MAKER'S SERIAL NO	
KVA RATING & PHASE	
VOLTS PRIM / SEC	
AMPS PRIM / SEC	

TAP POSITION	
PROTECTION	
IMPEDANCE	
WT OF WINDINGS & CORE	
OIL CAPACITY	
TOTAL WEIGHT	
VECTOR GROUP	
TYPE OF COOLING	

NOTE 1/ NO1A

2/ O.C. OVERCURRENT

3/ EARTH FAULT

2/ GEBOU UITLEG: KEE PD-26

3/ O.C.B NAME PLATES: KEE PHC12

SWITCH ROOM

SKAKELKAMER

HIERDIE TEK. VERVANG. TEK. KEE PE 67

WEIR

SWITCHING DIAGRAM
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SYSTEM ELECTRICAL ENGINEER
E. EKTRIESE AFDELINGSINGENIEUR
SUID-AFRIKAANSE VERVOERDIENSTE

KIMBERLEY

TO BE SUPPLIED & INSTALLED BY ELECTRICAL CONTRACTOR.



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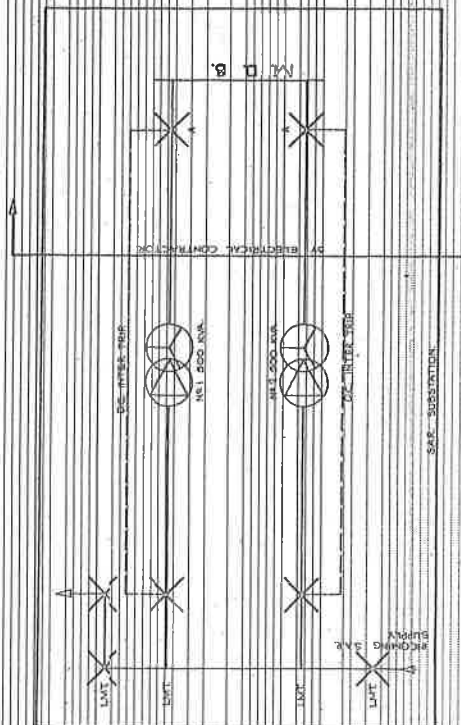
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BY ELECTRICAL CONTRACTOR

FOR "AS BUILT" EXTERNAL SERVICES
SEE MASTER PLAN DWS NO. 705/902

149-BUILT-8630552-4072

W. B. Hancock K.R.P.A.

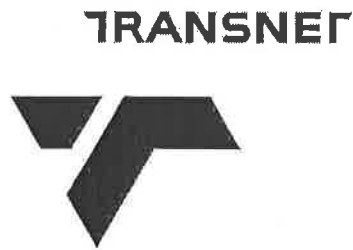
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SAB. NARCISIA GARCIA DIEZEL 05/20/2011

ELECTRICAL INSTALLATION - M.T. & L.T. SUPPLY
SUB-STATION.

date of return	scale of interest	days on last no
OCTOBER '72		

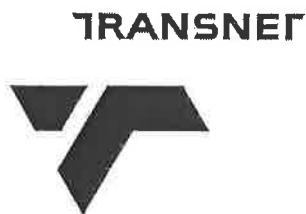
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(REGISTRATION NO.1990/000900/30)
**TRADING AS
TRANSNET FREIGHT RAIL**

**ADDENDUM NO. 1
TO THE
SECONDARY AND GENERAL SPECIFICATIONS
OF THE CONTRACT**

- 1) Where ever the word "Spoornet" appears in these specifications, please replace it with "Transnet Freight Rail".
- 2) Wherever reference is made to the E5(M.W.)(1996), the E5(Nov.1996) or E160 General Conditions of Contract, please refer to the Conditions of Contract of the ECC3 Contract.
- 3) Where ever the words "Technical Officer" appear in these specifications, please replace with "Supervisor".



(REGISTRATION NO.1990/000900/30)
TRADING AS TRANSNET Freight Rail

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

1. CAMPS

- 1.1 Prior to the erection of any camp, the Contractor shall submit to the Technical Officer, for his approval, details of his proposals as to the site, water supply, sanitation, and size and type of buildings. Where the site is on private land, the Contractor shall submit the written approval for the use of the site of the relevant statutory authority and of the owner and occupier of the land (as applicable).
- 1.2 Camps must not be erected on land infested with field rodents.
- 1.3 Adequate drainage shall be provided to carry off storm and waste water.
- 1.4 Buildings shall be built to a neat and orderly pattern.
- 1.5 All buildings shall have smooth, hard, impervious floors, graded to provide effective drainage and to permit washing.
- 1.6 Camps shall be maintained by the Contractor at his own expense in a clean and tidy condition. The Contractor shall take such steps as the Technical Officer and landowner/occupier may demand to prevent the creation of a nuisance.
- 1.7 When so instructed by the Technical Officer, the Contractor shall, at his own expense, erect suitable screens between the camp and any public road, thoroughfare or railway line.
- 1.8 After removal of a camp, the Contractor shall, at his own expense, restore the site to its original condition to the satisfaction of the Technical Officer and of the landowner and occupier where the site is on private land.

2. HOUSING

- 2.1 Every living room shall have cross ventilation, both constant and occasional. Where only one window is provided, it shall not be in the same wall as the door.

- 2.2 Dimensions of living rooms shall be sufficient to allow 3.5 square metres of floor area and 11 cubic metres of air space for each person over the age of 10 years. The floor area of any living room shall not be less than 7,8 square metres.
- 2.3 Flat-roofed quarters shall have a minimum roof height of 3 metres above floor level. For quarters with pitched roofs, the wall height shall be not less than 2,6 metres above the floor with a minimum height above floor of 3 metres at the top of the pitch.
- 2.4 Doors shall not be less than 2m x 0,75m and must be halved.
- 2.5 Windows of each living room shall have an area not less than one twelfth of the floor area and shall be capable of opening to at least half their full area.
- 2.6 In areas where malaria is prevalent, doors and windows must be fitted with gauze screens.
- 2.7 Cooking shelters shall comprise roofed structures, three sides of which shall be enclosed by a weatherproof material, approved by the Technical Officer to a height of at least 1m above ground level.
 - 2.7.1 Sleeping quarters shall not accommodate more than 8 persons per room.
 - 2.7.2 Pegboards shall be carried on metal or concrete supports and shall be separated by partitions not less than 0,4 metres high extending to within 150mm of the end of the bunk. Pegboards shall be removable for cleaning.

3. WATER SUPPLY AND ABLUTION FACILITIES

- 3.1 The Contractor shall ensure that an adequate and conveniently situated supply of potable water is provided.
- 3.2 Separate buildings for ablution facilities shall be provided. Where approval has been obtained for the housing of both males and females, separate facilities for each sex shall be provided. The proportion shall be 1 cubicle for 20 persons.
- 3.3 Waste water shall be hygienically disposed of.

4. SANITATION

- 4.1 Separate buildings for latrine facilities shall be provided. Where housing are provided for both males and females, separate facilities for each sex shall be provided. The proportions shall be at least one squatting seat for every 15 persons or less in the case of pit latrines, or one for every 10 persons or less in case of pail latrines.

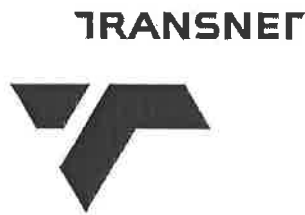
Latrines shall be fly proof and sited at least 10 metres from any other building, and shall not face on any public road, thoroughfare, railway line or residential property. Pits shall not be less than 2,5 metres deep and sited not less than 120 metres from nearest underground water source.

- 4.2 Latrines shall be so constructed, situated and maintained, and night soil so disposed of as to prevent access by animals, breeding of flies, pollution of streams and domestic water supplies, and other nuisances. Where a night soil removal service is operated by a competent authority, use of such service shall be obligatory, and the use of pit latrines and atria pits will not be permitted.
- 4.3 At least one refuse bin of adequate size with close fitting lid shall be provided for each building. Refuse bins shall be emptied and cleaned out daily.
- 4.4 Labour shall be employed on camp sanitation duties on the following basis:-
- 4.4.1 Where the number of persons living at the camp is 20 or less - one unit.
- 4.4.2 For additional numbers over 20 living at the camp - one unit per 100 or part thereof.
- 4.5 Unless refuse is removed by a competent authority, it shall be disposed of in pits and covered over daily with a layer of earth or ash of sufficient thickness to prevent depredations by rodents and the breeding of flies.
- 4.6 Adequate measures shall be taken against all vermin and insects responsible for the spread of disease. Any instructions of a competent health authority shall be carried out promptly and implicitly.
- 4.7 Buildings and bedboards shall be treated whenever necessary with an approved insecticide.
- 4.8 The Contractor shall permit and facilitate inspection of the camp and structures on the site by the staff of Transnet or any other competent authority, and shall comply with any reasonable request by such staff or any other competent authority to eliminate any unsanitary condition.
- 4.9 Any outbreak of infectious disease shall immediately be reported telephonically and confirmed in writing to the Technical Officer.
- 4.10 The keeping of animals of any sort is not permitted.
- 4.11 The Contractor shall have on hand at the camp the necessary tools, disinfectants and cleaning materials to maintain and clean the sanitary facilities.

5. RATIONS

Rations, where supplied by the Contractor, shall be stored in a suitable and rodent proof building with sufficient shelving.

P02b-06 (JLH)



TRANSNET SOC LTD
(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 SOC Ltd (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 Project Manager or his deputy shall at all times, co-operate in respect of the health and safety management of the site, and shall agree on the practical arrangements and procedures to be implemented and maintained during execution of the Works.
- 1.5 In the event of any discrepancies between any legislation and this specification, the applicable legislation will take precedence.

2. Definitions

- 2.1 In this Specification any word or expression to which a meaning has been assigned in the Construction Regulations, shall have the meaning so assigned to it, unless the context otherwise indicates: -

- 2.2 The work included in this Contract shall for the purposes of compliance with the Act be deemed to be "**Construction Work**", which, in terms of the Construction Regulations, 2003 means any work in connection with: -
- (a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
 - (b) the installation, erection, dismantling or maintenance of fixed plant where such work includes the risk of a person falling;
 - (c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
 - (d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;
- 2.3 "**competent person**" in relation to construction work, means any person having the knowledge, training and experience specific to the work or task being performed: Provided that where appropriate qualifications and training are registered as per the South African Qualifications Authority Act, 1995 these qualifications and training shall be deemed to be the required qualifications and training;
- 2.4 "**contractor**" means principal contractor and "subcontractor" means contractor as defined by the Construction Regulations, 2003.
- 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 300 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, Project Manager 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 Project Manager. 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 Project Manager.
- 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 Project Manager 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 Project Manager 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 Project Manager or the relevant authority for such permits to be issued. The Contractor shall strictly comply with the conditions and requirements pertaining to the issue of such permits.

5. Health and Safety Programme

- 5.1 The Tenderer shall, with his tender, submit a Health and Safety Programme setting out the practical arrangements and procedures to be implemented by him to ensure compliance by him with the Act and Regulations and particularly in respect of: -
- (i) The provision, as far as is reasonably practical, of a working environment that is safe and without risk to the health of his employees and subcontractors in terms of section 8 of the Act;
 - (ii) the execution of the contract work in such a manner as to ensure in terms of section 9 of the Act that persons other than those in the Contractor's employment, who may be directly affected by the contract work are not thereby exposed to hazards to their health and safety;
 - (iii) ensuring, as far as is reasonably practical, in terms of section 37 of the Act that no employee or subcontractor of the Contractor does or omits to do any act which would be an offence for the Contractor to do or omit to do.
- 5.2 The Contractor's Health and Safety Programme shall be based on a risk assessment in respect of the hazards to health and safety of his employees and other persons under his control that are associated with or directly affected by the Contractor's activities in performing the contract work and shall establish precautionary measures as are reasonable and practical in protecting the safety and health of such employees and persons.
- 5.3 The Contractor shall cause a risk assessment contemplated in clause 5.2 above to be performed by a competent person, appointed in writing, before commencement of any Construction Work and reviewed during construction. The Risk Assessments shall form part of the Health and Safety programme to be applied on the site and shall include at least the following:
- (a) The identification of the risks and hazards that persons may be exposed to;
 - (b) the analysis and evaluation of the hazards identified;
 - (c) a documented Health and Safety Plan, including safe work procedures to mitigate, reduce or control the risks identified;
 - (d) a monitoring and review plan.
- 5.4 The Health and Safety Plan shall include full particulars in respect of: -
- (a) The safety management structure to be instituted on site or place of work and the names of the Contractor's health and safety representatives and members of safety committees where applicable;
 - (b) the safe working methods and procedures to be implemented to ensure the work is performed in compliance with the Act and Regulations;
 - (c) the safety equipment, devices and clothing to be made available by the Contractor to his employees;

- (d) the site access control measures pertaining to health and safety to be implemented;
 - (e) the arrangements in respect of communication of health and safety related matters and incidents between the Contractor, his employees, subcontractors and the Project Manager 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 Project Manager'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 Project Manager'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 Project Manager 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, Project Manager, 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 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 Project Manager 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 Project Manager, 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 Project Manager.
- 8.3 The Contractor shall hand over a consolidated health and safety file to the Project Manager 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.

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.

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 SOC LTD)

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 : _____
PROJECT MANAGER

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 : _____

Occupational Health and Safety Plan

Company name: _____

Project name: _____

Includes Environmental, Occupational Health and Safety and Quality Management (SHEQ)

CONTENT

1. Project Details
2. Policy Statement
3. Objectives
4. Common Vocabulary
5. Legislation
6. Statutory Obligations
7. Project Management
8. Incident Management
9. Logbooks and Registers
10. Risk Management
11. Education and Training
12. Emergency Planning – Evacuation plan
13. Environment
14. Ergonomics
15. Health and Safety Communications
16. Safe working procedures
17. Personal Protective Equipment and Clothing
18. Project security
19. Implementation Costs

Title.

Occupational Health and Safety Plan

This health and safety plan has been prepared in term of the Occupational Health and Safety Act 1993 (Act No 85 of 1993) and Regulations Construction Regulation 5. (1).

This Health and Safety Plan will be revised as and when additions, alterations etc are communicated to us by the Client, his Agent or the Architect / Designer or the conditions of the contract dictate.

1. PROJECT DETAILS

1.1. Project Name:

Physical address:

Contact Details:

Client name:

Postal address:

P O Box

Contact person - Name:

Contact No:

Telephone –

Facsimile –

Cellular No:

Email

1.2. Agent:

Company name:

Postal address:

Contact person - Name:

Contact No:

Telephone –

Facsimile –

Cellular No:

Email

1.3. Architect.

Company name:

Postal Address:

P O Box

Contact person:

Postal address:

P O Box

Contact No:

Telephone –

Facsimile –

Cellular:

Email:

1.4. Principle Contractor

Company name:

Postal Address:

P O Box

1.4.1. Project Manager.

Name:

Contact No:

Telephone –

Cellular:

Assignee Sect 16(2)

Facsimile

Email

1.4.2. Construction Work Supervisor:

Name:

Contact No:

Telephone

Cellular telephone No:

Construction Regulation 6. (1)

Facsimile

1.5. Scope of work

Doors

Electrical installation – re-wiring

Glazing

Granite tops

Plastering

Plumbing and drainage

Shop fittings

Softs, curtains etc

Tiling

NB Where there is construction work in progress with other personnel in the immediate vicinity activities must be co-ordinated by the Principle Contractor and the other Contractors.

1.6. Duration of contract: Start – Expected completion –

1.7. Emergency Telephone Numbers;

An emergency telephone number list should be prominently displayed adjacent to the telephone
The contents of this list is flexible and the following is given as a guide –

EMERGENCY TELEPHONE NUMBERS

Service	Name	Business	After Hours
i Ambulance:			
ii Doctor:			
iii. Hospital:			
iv. Fire Department:			
v. S.A. Police Services:		10111	
vi. Department of Labour:			
vii. Compensation Insurer			
vii.a COID – Commissioner			
vii.b. FEMA			
Project Manager:			
Safety Advisors:			
Telephone			
Facsimile			
Email			

DEPARTMENT OF LABOUR

Provincial Office
Department of Labour:
Contact No:

OCCUPATIONAL HEALTH AND SAFETY

2. Policy statement

The Company is committed to providing a safe and healthy working environment and this occupational health and safety plan documents the action that will be implemented.

We acknowledge that as the Principle Contractor we have both a legal and moral obligation to as far as is reasonable and practicable to develop a realistic Health and Safety plan making due reference to the Clients Health and Safety Specification.

We further accept that we must ensure that the relevant legislation is complied with and that all reasonable and practicable steps are taken by all Contractors to provide a safe and healthy environment for persons to work in and that the public are adequately protected.

An independent health and safety advisor will conduct a monthly legal compliance audit to ascertain the level of adherence with statutory requirements, company policy and rules including Occupational Health and Safety, Environmental and Quality standards.

3. Objective.

To complete the project within the budget in respect of finance and time, to an acceptable quality and with no injuries to employees or other persons.

The specific purpose is to achieve and maintain realistic and sustainable International and locally acceptable standards. A ZERO tolerance attitude towards incidents and non-compliance of prescribed quality and workmanship will be adopted. Deviations will be investigated and the appropriate corrective action must be implemented.

NB This Specification will be imposed on all Contractors and their employees working on this project.

4. Common Vocabulary (COMVOC)

Terminology

	Abbreviation
4.1. Basic Conditions of Employment Act 1997 (Act No 75 of 1997)	BCEA
4.2. Compensation for Occupational Injuries and Diseases Act 1993 (Act No 130 of 1993)	COIDA
4.3. Department of Labour	DoL
4.4. Department of Labour – Inspection and Enforcement Services	DoL (IES)
4.5. Federated Employers Mutual Assurance Company Limited	FEMA
4.6. National Building Regulations and Standards Act 1997 (Act No 103 of 1997)	NBR&S
4.7. Occupational Health and Safety Act 1993 (Act No 85 of 1993) and Regulations	OH&SA
4.8. Occupational Health & Safety Act 1993 Construction Regulations, 2003	CR
4.9. Provincial Director	PD

5. Legislation

Definitions:

	Legislation
"client" the person for whom any construction work is performed,	CR 4. (1)
"agent" means any person, appointed in writing to represents the Client,	CR 4 (5)
"architect / Designer" a person who prepares, checks, prepares or assists with a design,	CR
"competent person" a person with the knowledge, training, experience and qualification specific to the work or task being performed. Where there is, and he/she has the appropriate SAQA qualification,	CR

"construction Safety Officer" a competent person in relation to occupational health and safety in the construction industry,	CR
"Contractor" an employer who performs construction work,	CR
"ergonomics" the application of scientific information to optimise human well-being and performance,	CR
"fall prevention plan" a documented plan to eliminate or reduce the risk of falling,	CR
"hazard assessment" the analysis of all existing or potential hazard associated with the work being or to be performed,	
"hazard identification" the identification of existing or known hazards that is normally associated with the work being or to be performed,	CR
"health and safety file" a permanent record of the health and safety requirements prescribed in these regulations,	CR
"health and safety plan" a documented plan, including safe work procedures to mitigate, remove, reduce or eliminate the hazards identified,	CR
"health and safety specification" means a documented specification of the health and safety requirements for the tasks to be performed safely,	CR
"medical certificate of fitness" a certificate valid for one year issued by an occupational health practitioner registered with the Health Professional Council of South Africa,	CR
"method statement" the documented procedure to perform the task as reasonably and practicably safe,	CR
"national building regulations" means the regulations made in terms of section 17(1) of the NBR and BS Act, 1997 (Act No 103 of 1997).	
"principle Contractor" an employer who performs construction work appointed in writing by the Client or his appointed Agent,	CR
"professional engineer or professional certificated engineer" means any person holding registration as either a Professional Engineer or Professional certificated Engineer under the Engineering Professions Act, 2000,	CR
"provincial director" means the Provincial Director as defined in Section 1 of the General Administration Regulations under the Act,	CR
"risk assessment" a programme to determine any risks associated with a task and the to identify the steps to remove, reduce or control such hazard,	CR
"SABS – 085" the code of practice – "Design, erection, use and inspection of Access Scaffolding",	CR
"SABS – 0400" the code of practice for the application of National Building Regulations,	CR
"SABS EN 1808 and SABS 1903" the code of practice entitled "safety requirements on suspended access equipment design calculations, stability criteria, construction – tests",	CR

"The Act" means the Occupational Health and Safety Act 1993 (Act No 85 of 1993), CR

"construction Vehicle" a vehicle used for means of conveyance for transporting persons or material or both as the case may be, both on and off the construction site for the purpose of performing construction work, CR

"excavation" means any man – made cavity, trench, pit or depression formed by cutting, digging or scooping, CR

"fall prevention equipment" means equipment used to prevent persons from falling from an elevated position, CR

"roof apex height" means the dimensional height in meters measured from the lowest ground level abutting any part of a building to the highest point of the roof, CR

"scaffold" means any temporary elevated platform and supporting structure used for providing access to and supporting workmen or material or both, CR

"structure" any building, steel or reinforced concrete structure, railway line, or siding, bridge, waterworks, reservoir or pipeline, cable, sewer, sewage works, fixed vessel, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plant, pylon, surface and underground tanks, earth retaining structures or any structure designed to preserve or alter any natural feature, and any other similar structure;

(a) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or

(b) any fixed plant in respect of work, which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk to persons falling 2 metres or more. C R

6. Statutory Obligations

Description

Legislation

6.1. Basic Conditions of Employment Act BCE

The relevant sections are to be complied with special attention to at least the following –

Working hours,

Conditions of employment and Remuneration,

Termination of employment,

Employment of child labour prohibited.

6.2. Compensation for Occupational Injuries and Diseases Act 1993 (Act No 130 of 1993) COIDA

The Act provides for compensation for health conditions, death, diseases and or injuries that arises out of and in the course of an employee's duties. All employers-Principle Contractor and Contractors must register with a compensation insurer – either COIDA or FEMA. They must be in good standing – have proof of having paid their current assessment - in the form of either a receipt of payment or a letter of good standing from their compensation insured prior to commencing work on the project with a copy on Site.

6.3. Occupational Health and Safety Act 1993 (Act No. 85 of 1993) OH&SA

The OH&SA is the primary law regulating occupational health and safety matters. The Act is a framework Act that provides for the development of detailed rules and standards through regulation. As a framework, the Act prescribes that -

(a) the employer must provide and maintain a safe and healthy working environment for his employees and any person, who may enter onto the premises,

(b) the duties of employers to their employees, employees to their employer and suppliers to the employer and

(c) the "reasonable man" approach by the employer in decisions concerning occupational health and safety,

- (d) the management, application and enforcement of the Act and regulations are the responsibility of the employer i.e. be he the appointed agent where applicable, Project Managers, each principle Contractor and Contractor.
- (e) each principle Contractor and Contractor shall have a copy of the Act which must be available on site at all times. Employees are to be allowed reasonable access to the Act during normal working hours.

NB Interpretation

Where there is any question as to the interpretation of any legislation and an agreement cannot be reached the matter is to be escalated from Contractor to Principle Contractor to the client. Should the matter still not be resolved it needs to be referred to the Provincial Director – Department of Labour.

7. Project Management

Description	By whom	Legislation
7.1. Notification of Construction Work.	Principle Contractor	CR 3.1
7.2. Health and Safety Specification The Health and Safety Specification from the Client must be referred to when preparing this Health and Safety Plan.	Client to provide.	CR 4. (1)(a)
7.3. Health and Safety Plan This Health and Safety Plan reflect the procedure that will be implemented to ensure legal compliance during Construction Work.	Contractor	CR 5. (1)
7.4. Health and Safety File All documentation – minutes of health and safety committee meetings, risk Identifications / assessments, legal compliance audits, induction and other training including service records of equipment and machinery etc must be included in the file.	Contractor	CR 5. (7)
7.5. Agreement with Mandatory A written agreement will be entered into between the Client and the Agent, the Agent and each Contractor.	Client / Agent / Principle and Contractor	Act Sec 37(2)
7.6. Appointment of each Contractor by the Agent.		C R 5 (3) (b)
7.7. Organisation chart		
7.7.1. Assignment of Duties Mr _____ is assigned the duty of ensuring that the requirements of the Act and Regulations and this Health and Safety Plan are complied with during the Construction Work.	Contracts Manager	Act Sec 16(2)
7.7.2. Construction Supervisor Mr _____ is appoint, in writing a competent employee to supervise the day-to- day construction work on the project. The supervisor will manage and control all construction activities in the absence of the Sect 16(2) assignee.	Site Agent	CR 6. (1)
7.7.3. Sub-ordinate Construction Supervisor. Mr _____ is appointed to be in control of the project in the absence of the Site agent appointed in terms of Construction Regulation 6. 1. NB Under no circumstances may a Contractor leave employees on the site unless there is a competent construction work supervisor present.		CR 6. (2)
7.7.4. Construction Safety Officer Mr _____ has been appointed a part – time construction safety officer for the duration of the project.	Part-time/Full-time	CR 6. (6)

7.7.5. Contractors

CR 5. (3)(b)

An up dated list of Contractors will be kept and maintained on Site.

Company:

Activity:

Address

Contact person:

Contact numbers:

Telephone –

Cellular –

Facsimile –

Email:

Company:

Activity:

Address:

P O Box

Contact person:

Contact numbers:

Telephone -

Cellular -

Facsimile

Email:

Company:

Activity:

Address:

P O Box

Contact person:

Contact numbers:

Telephone -

Cellular -

Facsimile –

Email:

Company:

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Cellular –

Facsimile

Email:

Company:

Activity:

Address:

P O Box

Contact person:

Contact numbers:

Telephone –

Cellular –

Facsimile –

Email:

Company:

Activity:

Address:

P O Box 1254 –

Contact person:

Contact numbers:

Telephone –

Cellular –

Facsimile

Email:

Every Contractor is responsible to ensure that his employees comply with the applicable legislation and this health and safety plan.

NB: A section 37(2) Agreement with Mandatory must be entered into between the Contractors and the principle Contractor.

NB Contractor who contracts out construction work. Where a Contractor contracts construction work out to another Contractor he becomes the Principle Contractor and a section 37(2) agreement must be entered into.

7.7.6. Designation of the Health and Safety Representative / s Act sect 18

Mr _____ is a designated health and safety representative.

He will perform his prescribed duties in his area of responsibility. Act sect 18(1) (g)

7.7.7. Appointment as the Risk Assessor / Facilitator. C R 7(1)

Mr _____ is appointed to identify and record the risks associated with tasks being or that will be performed. These assessments must be reviewed as and when necessary.

7.7.8. Scaffold Inspector: C R 14(2)

Mr _____ is appointed for this project.

Scaffolds must be inspected as prescribed and the findings reflected in the register provided.

8. Incident Management – Occupational Health and Safety

8.1. Incidents and or injuries

A policy of ZERO tolerance is the target for the project. Every thing reasonable and practicable must be adopted and actively implemented to prevent any incident or injury. Every possible danger or hazard must be identified, documented, analysed and the appropriate action to mitigate and or reduce them implemented. The necessary training of employees must be identified and introduced.

TARGET - NO FATAL OR DISABLING INJURIES

Report to inspector regarding certain incidents

Sect 24

Each incident, which occurs at work or that, arises out of or in the course of his employment that could either result in the employee's death that he loses a limb or part of a limb, becomes unconscious or that he is unable to continue with his normal duties for a period of 14 days must be reported to the relevant Provincial Director of Labour.

8.1.1. no person shall without the permission of an inspector, in the event of an incident described in (1) above disturb the site -

NB Although incidents, which occur on a public road or that, are aviation related must be reported if it arose out of and in the course of the employee's employment.

Domestic incidents are excluded.

Definitions.

Accident

COID Def

Means an accident arising out of and in the course of an employee's employment and resulting in a personal injury, illness or the death of the employee.

Occupational disease

Means any disease contemplated in section 65(1) (a) or (b). NB It includes conditions resulting from exposure to items either used and or exposed to in work place.

Occupational injury

Means any personal injury sustained as a result of an accident.

Classifications.

Fatal - Where the employee dies.

Disabling - When an employee cannot continue to perform the duty he was employed for.

Lost time incident - When an employee does not return to perform the work he was employed for on the next normal working day.

Disabling Lost Time - When an employee sustains an injury on duty and does not return to perform the duties he was employed to do on the next normal working day.

Medical treatment incident - When an employee sustains an injury at work and requires medical – more than first aid treatment i.e. medical, surgical, hospital or skilled nursing services.

First Aid case - Where the wound is treated from the contents of a first aid box

Disabling Lost Time Injury Frequency Rate (DIFR) It is the number of disabling injuries, including a death multiplied by 1 million (1,000,000) divided by the total number of man-hours worked by all employees on the project for a specific month or the project to-date.

$$\text{DIFR} = \frac{\text{No of disabling lost time injuries} \times 1,000,000}{\text{Total man-hours work for the period under review}}$$

8.1.2. Reporting.

COIDA

An incident must be reported to the relevant Provincial Director and on the prescribed W.CL 2(E) document and within the prescribed time frame i.e. when the employer becomes aware of or the incident was reported to him.

8.1.3. Recording.

All incidents must be recorded on a document similar to the injury statistic form provided.

8.1.4 Investigation.

Sect 31 The

severity of the injury will dictate whom and when the investigation must be conducted. Where reasonable and practicable all incidents must be investigated prior to the end of the shift on which it occurred, reported to or his employer became aware thereof.

Fatal and serious injuries must be investigated before the end of the shift on which it occurred or as soon as reasonably practical after the occurrence. A team consisting of the Principle Contractor, the construction safety officer and the health and safety representative in whose area the incident occurred must conduct the incident investigation.

Where an employee of a Contractor is injured the Contractor and the health and safety representative for the area in which it occurred will be part of the team. The client or his agent may if they wish form part of the team. A record of the proceeding including signed statements, the name of the person conducting the investigation and persons assisting team members must be kept. All photographs etc must also be kept in the health and safety file.

NB In the event of a fatal, or potentially fatal incident the relevant DoL and the nearest South African Police Services station must be contacted. The scene of the incident may only be altered or disturbed with permission of an inspector or when it is necessary to rescue a person or lives in danger.

8.1.5. Analysis.

The statistics for the total project, each principle Contractor and Contractor must be analysed to ascertain if there is or if any trends are developing by the construction safety officer or a competent person appointed by the client, his agent, the principle Contractor's and all Contractors.

8.1.6. Statistics.

Comprehensive incident / injury statistics must be kept for the total project i.e. the Principle Contractor and every Contractor. The following information must be recorded and kept on the health and safety file of the principle Contractor / s and the Contractor / s.

The client or where applicable his appointed agent must ensure that the relevant statistics are collected, recorded, analysed and the appropriate action instituted. Where a construction safety officer is appointed it will form part of his duties and responsibilities.

Statistics must be kept in the format, suggested which is attached to this document.

The following incidents must be recorded – Fatal, disabling lost time, days lost, medical and first aid cases and man-hours worked. Statistics for the month under review and for the project to-date must be kept either together on one or more documents.

NB The Compensation Commissioner still refers to and reports the Disabling Injury Frequency Rate (DIFR). It has been decided to use the same formula. Contractors may use 200,000 in the formula. However they need to multiply by 5 to reflect the COIDA statistic rate.

8.1.7. Occupational disease / conditions

These must be reported and recorded as prescribed.

COIDA

8.1.8. Medical certificate of fitness.

A medical certificate of fitness, valid for 1 year must be available on the premises at all times for employee working on or operating the following:

i) *working in an elevated position,*

R

8. (2)(b)

i. *suspended platform,*

CR 15(12) (a)

ii. *Cranes – mobile - tower*

CR 20(g)

iii. *Construction vehicles.*

CR21 (1) (d)(ii)

During the process of task analyses and or risk assessment it is possible that

CR 7. (1)

other tasks may indicate that a medical certificate of fitness is necessary. The prescribed conditions will apply as though it was legislated.

8.2. Health and Safety Committee

Sect 19(4)

8.2.1. *Composition.*

Sect 19

The duly nominated, elected and designated employees, as health and safety representatives will serve on a health and safety committee. The Health and safety representatives will be required to attend the health and safety committee meetings. The Client and his appointed Construction safety officer are ex-officio members.

8.2.2. Meetings.

Meetings will be held on the day, date, time and place as mutually agreed upon by the health and safety representatives and management. The frequency will also be determined by the aforementioned.

Where the Principle Contractor has established a Health and Safety Committee the designated Health and Safety Representative shall serve on the Committee and the formula applied.

8.3. Legal compliance audits

8.3.1. Audit schedule

The attached schedule or a similar one approved by the Client and or the Principle Contractor must be used. The person conducting the assessment must report in writing any major deviations observed and where reasonable, practicable the corrective action recommended, the party responsible to take the action and a date by which such must be implemented.

8.3.2. Audit frequency.

An internal legal compliance audit will be conducted monthly.

CR 4. (1)

A legal compliance audit will be conducted by an external / independent auditor one (1) per month.

8.3.3. Analysis.

Each annual report must be tabled and discussed at the next relevant health and safety committee meeting. The chairman shall make any appropriate comments and or recommendations and sign the minutes. The Client, Principle Agent must receive a copy of the minutes. The audit of the Contractors must be consolidated, analysed and submitted to the principle Contractor and the client. The findings will be documented, analyses and recommendations made. Where necessary the client / agent will be consulted with to ascertain if additional resources and or finances are required. The action agreed on i.e. the responsible man test - and the time scheduling must be implemented. As the project progresses it may become necessary to increase the frequency of audits.

NB The construction safety office will assume and be appointed to perform these functions.

9. Log books and Registers.

9.1. *First aid Equipment*

GSR 3(3)

Mr _____ has been appointed the first aid attendant for the project. The prescribed contents of a first aid box will be available on the project and will be under the control of the first aid attendant.

9.2. Fire fighting appliances,

Mr _____ is appointed to inspect at the prescribed interval and record his CR 27 (g) findings in the appropriate register.

9.3. Access Scaffolding.

Mr _____ has been appointed to inspect access scaffolding as prescribed.

10. Risk Management

The prescribed risk identification, assessment and where necessary a method statement will be completed prior to coming on site where possible. As and when additional information etc is received concerning new or additional tasks the necessary risk identification, assessment must be conducted and approval obtained. Risks assessed that suggest a need for a change in design or other corrective action will be referred to the architect / designer or the client or his agent. Employees must receive, and sign acknowledgment of having received appropriate training, that they understood the requirement and would apply the knowledge.

Mr _____ is appointed the competent person to conduct the risk assessment.

11. Education and Training

11.1. Induction Training

No person will work on this project, or enter or be allowed to remain on the premises unless they have received and acknowledged in writing that they have received, understood and accept the conditions detailed in the induction programme.

A comprehensive list of all induction training given must be kept in the health and safety files and reported on, to management at least monthly. Training sessions must be conducted at least weekly.

NB Occasional visitors, client, agent, architect etc must be re-inducted when significant progress has been made on the project – risk, potential risks become apparent.

11.2. Site-specific training.

Site-specific training requirements will be identified. Where applicable a certificate on competency must be must be available – or a certified copy – on the site.

12. Evacuation procedure

12.1. The Clients or Principle Contractors evacuation procedure will be communicated to all employees.

12.2. All Company employees will report to their assembly point - the site office.

12.3. Definition of an emergency:

An emergency is a major occurrence such as a fire, bomb threat, chemical spillage, explosion, aircraft crash, or a natural disaster i.e. earthquake / cyclone, which could result in injury, loss of life, or extensive damage to property and the environment.

12.4. Alarm

An audible alarm will be sounded to warn employees of an emergency and also when the situation returns too normal.

12.5. Employee response to an alarm.

Stop working,

If you are using an electric or pneumatic tool switch it off place it on the ground and proceed to the assembly point.

Report to your Supervisor

12.6. Employee response to the all-clear signal.

Return to your working area and proceed with the task you were busy with prior to the evacuation.

Fire: _____ 3 Short sharp blasts

Serious Incident : _____ Long – short – long blasts

All clear : _____ 5 seconds

13. Environmental Management.

Pressure on natural resources, including land, has continuously increased, as the population increases and likewise, awareness of the need to lessen the negative impacts of development and construction on the environment will continue to increase.

Every effort must be made to use environmentally friendly paints and where possible water-based. The containers once emptied must be disposed of at an approved disposal site or returned to the supplier.

14. Ergonomics

Ergonomics is "the study of work". Ergonomics therefore is the Profession that studies and analyses people at work, the work systems, and how best they fit together. Much of the work done on Construction Sites is by its very nature an ergonomic problem, because it requires physical work to be done above head height, and below waist level, aggravated by constructions materials being heavy and/or inconveniently sized and shaped, which presents further manual materials handling issues.

15 Health and Safety Communication

Minutes of all health and safety committee meetings shall after acceptance shall be displayed, strategically placed on a site notice board. Where appropriate Newspaper clipping may be used during "tool box" talks and induction training. Any change in company policy or legislation the may affect employees must be communicated to employees as soon as is reasonable and practicable.

16. Safe work procedures.

A programme of safe work procedures is to be embarked on starting with those identified during the risk identification and assessment. Where reasonable and practicable steps have been taken and elements of risk still remain a procedure needs to be developed. The employees required to perform them must receive adequate training. Proof of training must be kept and be available on the premises. All procedures need to be documented.

17. Personal Protective Clothing and equipment.

PPE may only be issued only after all reasonable and practicable steps have been taken Act sec 8(2)
to remove or reduce the hazard and or potential hazards GSR 2(2)

All items issued must be maintained in good working order i.e. serviced and repaired as and when necessary. Items must be issued free of charge and for the personal use of the employee. The employee shall sign acknowledgement of receipt of the items that he will use it, them as prescribed and that he has received the necessary training in the use and care of the items.

The principle Contractor and Contractor must take all reasonable steps to ensure that PPE GSR 2(6) issued is used, worn and maintained as described

18. Project / Site Security.

18.1. Barricading and maintenance

Adequate and suitable solid barricading must be erect and maintained to prevent unauthorised entry as well as to control access onto and off the site. Suitable information signs must be strategically positioned. They will include but not be limited to the following – No unauthorised entry, all visitors must report to the Site office, personal protective clothing / equipment must be worn etc. NB Project / Site management are responsible for all activities taking place on the premises, and people who enter onto or who are allowed to remain on the site.

18.2. Access control

The Client is responsible for the access to and egress from the construction area.

19. Implementation costs.

The cost of implementation should include but are not limited to the following-

19.1. Administration

- Project registration,
- Occupational health and safety plan and file,
- All assignments, appointments and designation,
- Risk identifications and assessments and Logbooks and registers,
- Health and safety committee meetings and minutes.

19.2. Training and Education

- Induction training and badges,
- First aid,
- Health and safety representatives
- Others - specify,

- ## Conclusion

Client

Principle Contractor

~~Principle Contractor~~

TRANSNET



Transnet SOC Limited Registration Number 1990/00900/06

TRANSNET SPECIFICATION

E7/1 - SPECIFICATION FOR GENERAL WORK AND WORKS ON, OVER, UNDER OR ADJACENT TO RAILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT

(This specification shall be used in network operator contracts)

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1.0 SCOPE

- 1.1 This specification covers the network operator's requirements for general work and works on, over, under or adjacent to railway lines and near high voltage equipment.

2.0 DEFINITIONS

The following definitions shall apply:

"Authorised Person" - A person whether an employee of the network operator or not, who has been specially authorised to undertake specific duties in terms of Transnet's publication Electrical Safety Instructions, 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 the network operator to carry out work on its behalf.

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

"Dead" - Isolated and earthed.

"Electrical Officer (Contracts)" - The person appointed in writing by the Project Manager in terms of this specification 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 the network operator 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 1000 volts.

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

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

"Occupation" - An authorisation granted by the network operator for work to be carried out under specified conditions on, over, under or adjacent to railway lines.

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

"Optical Fibre Cable" - Buried or suspended composite cable containing optical fibres used in:

- telecommunication networks for transmission of digital information and
- safety sensitive train operations systems.

"Project Manager" - As defined in the special conditions of the contract. The person or juristic person appointed by the network operator 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 (general or direct) staff under his control who perform general work or to work on, over, under or adjacent to railway lines and in the vicinity of high-voltage electrical equipment.

"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.

"Works" - The contractual intent for the work to be done as defined in the contract at a defined work site.

PART A - GENERAL SPECIFICATION

3.0 AUTHORITY OF OFFICERS OF TRANSNET

- 3.1 The Contractor shall co-operate with the officers of the network operator and shall comply with all instructions issued and restrictions imposed with respect to the Works which bear on the existence and operation of the network operator's railway lines and high-voltage equipment.
- 3.2 Without limiting the generality of the provisions of clause 3.1, any duly authorised representative of the network operator, having identified himself, may stop the work if, in his opinion, the safe passage of trains or the safety of the network operator's assets or any person is affected. **CONSIDERATIONS OF SAFETY SHALL TAKE PRECEDENCE OVER ALL OTHER CONSIDERATIONS.**

4.0 CONTRACTOR'S REPRESENTATIVES AND STAFF

- 4.1 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 Contract Supervisor with the names, addresses and telephone numbers of the representatives.
- 4.2 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.
- 4.3 The Contractor shall ensure that all contractor staff receives relevant awareness, educational and competence training regarding safety as prescribed.

5.0 OCCUPATIONS AND WORK PERMITS

- 5.1 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 Contract Supervisor and at times to suit the network operator requirements.
- 5.2 The Contractor shall organise the Works in a manner which will minimise the number and duration of occupations and work permits required.
- 5.3 The network operator 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.
- 5.4 The Contractor shall submit to the Contract Supervisor, in writing, requests for occupations or work permits together with details of the work to be undertaken, at least 21 days before they are required. The network operator does not undertake to grant an occupation or work permit for any particular date, time or duration.
- 5.5 The network operator 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 5.6 to 5.8.
- 5.6 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.
- 5.7 When the Contractor is notified less than 2 hours before the scheduled starting time, or during an occupation or work permit, that the duration of the occupation or work permit is reduced, he may claim reimbursement of his direct financial losses caused by the loss of working time due to the reduced duration of the occupation or work permit.
- 5.8 Reimbursement of the Contractor for any loss of working time in terms of clause 5.6 and 5.7, 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 Contract Supervisor certifies that no other work on which the labour and plant could be employed was immediately available.
- 5.9 Before starting any work for which an occupation has been arranged, the Contractor shall obtain from the Contract Supervisor written confirmation of the date, time and duration of the occupation.
- 5.10 Before starting any work for which a work permit has been arranged, the Responsible Representative shall read and sign portion C of the Work Permit, signifying that he is aware of the work boundaries 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 Work Permit, thereby acknowledging that he is aware that the electrical equipment is to be made "live". The Contractor shall advise all his workmen accordingly.

6.0 SPEED RESTRICTIONS AND PROTECTION

- 6.1 When speed restrictions are imposed by the network operator 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.
- 6.2 When the Contract Supervisor 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 the network operator's and the Contractor's personnel and assets, the public and including trains.
- 6.2.1 The network operator will provide training free of charge of the Contractor's flagmen and other personnel performing protection duties. The Contractor shall consult with the Contract Supervisor, whenever he considers that protection will be necessary, taking into account the minimum permissible clearances set out in the Manual for Track Maintenance (Document no. BBB0481):
- Drawing no. BE-97 Sheet 1: Horizontal Clearances: 1065mm gauge (Annexure 1 sheet 1)
 - Drawing no. BE-97 Sheet 2: Vertical Clearances: 1065mm gauge (Annexure 1 sheet 2)
 - Drawing no. BE-97 Sheet 3: Clearances: Platform (Annexure 1 sheet 3)
 - Drawing no. BE-97 Sheet 5: Clearances: 610mm Gauge (Annexure 1 sheet 5)
- 6.3 The Contractor shall appoint a Responsible Representative to receive and transmit any instruction which may be given by the network operator personnel providing protection.

7.0 ROADS AND ROADS ON THE NETWORK OPERATOR'S PROPERTY

- 7.1 The Contractor shall take every reasonable precaution to prevent damage to any roads or bridges used to obtain access to the site, and shall select routes, use vehicles, and restrict loads so that any extraordinary traffic as may arise from the moving of plant or material to or from the site shall be limited as far as is reasonably possible.
- 7.2 The Contractor shall not occupy or interfere in any way with the free use of any public or private road, right-of-way, path or street unless the Contract Supervisor has obtained the approval of the road authority concerned.

8.0 CLEARANCES

- 8.1 No temporary works shall encroach on the appropriate minimum clearances set out in the Manual for Track Maintenance (Document no. BBB0481):
- Drawing no. BE-97 Sheet 1: Horizontal Clearances: 1065mm gauge (Annexure 1 sheet 1)
 - Drawing no. BE-97 Sheet 2: Vertical Clearances: 1065mm gauge (Annexure 1 sheet 2)
 - Drawing no. BE-97 Sheet 3: Clearances: Platform (Annexure 1 sheet 3)
 - Drawing no. BE-97 Sheet 5: Clearances: 610mm Gauge (Annexure 1 sheet 5)

9.0 STACKING OF MATERIAL

- 9.1 The Contractor shall not stack any material closer than 3m from the centre line of any railway line without prior approval of the Contract Supervisor.

10.0 EXCAVATION, SHORING, DEWATERING AND DRAINAGE

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

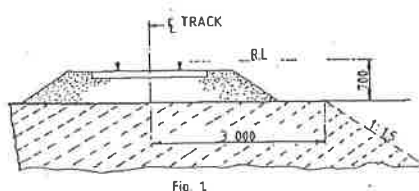


Fig. 1

- 10.2 The Contractor shall provide, at his own cost any shoring, dewatering or drainage of any excavation unless otherwise stipulated elsewhere in the Contract.
- 10.3 Where required by the Contract Supervisor, 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.
- 10.4 The Contractor shall prevent ingress of water to the excavation but where water does enter, he shall dispose of it as directed by the Contract Supervisor.
- 10.5 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.

11.0 FALSEWORK FOR STRUCTURES

- 11.1 Drawings of falsework for the construction of any structure over, under or adjacent to any railway line shall be submitted to the Contract Supervisor 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.
- 11.2 After the falsework has been erected and before any load is applied, the Contractor shall submit to the Contract Supervisor 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 Contract Supervisor to proceed, the Contractor shall be entirely responsible for the safety and adequacy of the falsework.

12.0 PILING

- 12.1 The Contract Supervisor will specify the conditions under which piles may be installed on the network operator's property.

13.0 UNDERGROUND SERVICES

- 13.1 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.
- 13.2 Any damage shall be reported immediately to the Contract Supervisor, or to the official in charge at the nearest station, or to the traffic controller in the case of centralised traffic control.

14.0 BLASTING AND USE OF EXPLOSIVES

- 14.1 When blasting within 50m of a railway line, the Contractor shall observe the requirements stipulated in this specification.
- 14.2 No blasting shall be carried out except with the prior written permission of the Contract Supervisor and under such conditions as he may impose.
- 14.3 On electrified lines the Contractor shall also obtain the permission of the Electrical Officer (Contracts) before blasting, and shall give at least 21 days notice of his intention to blast. No blasting shall be done in the vicinity of electrified lines unless a member of the network operator's electrical personnel is present.
- 14.4 The Contractor shall arrange for the supply, transport storage and use of explosives.
- 14.5 The Contractor shall have labour, tools and plant, to the satisfaction of the Contract Supervisor, available on the site to clear immediately any stones or debris deposited on the track or formation by blasting, and to repair any damage to the track or formation immediately after blasting. Repairs to the track shall be carried out only under the supervision of a duly authorised representative of the network operator.
- 14.6 The Contractor shall notify the Contract Supervisor of his intention to blast at least 21 days before the commencement of any blasting operations.
- 14.7 Before any blasting is undertaken, the Contractor and the Contract Supervisor shall jointly examine and measure up any buildings, houses or structures in the vicinity of the proposed blasting to establish the extent of any existing cracking or damage to such structures, etc. The Contractor, shall, subject to the provisions stipulated in the Contract Insurance Policy, make good any deterioration of such buildings, houses, or structures, which, in the opinion of the Contract Supervisor, was directly caused by the blasting.
- 14.8 After completion of the blasting the Contractor shall obtain a written clearance from each landowner in

the vicinity of the blasting operations to the effect that all claims for compensation in respect of damage caused by the blasting operations to their respective properties, have been settled.

- 14.9 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).

- 14.10 Blasting within 500m of a railway line will only be permitted during intervals between trains. A person appointed by the Contract Supervisor, 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.

- 14.11 The flagmen described in clause 14.10, where provided by the network operator, are for the protection of trains and the network operator's 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.

- 14.12 The person described in clause 14.10 will record in a book provided and retained by the network operator, 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.

- 14.13 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 Contract Supervisor and the person who will do the blasting shall both sign the book whenever an entry described in clause 14.12 is made.

15.0 RAIL TROLLEYS

- 15.1 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 Contract Supervisor and under the conditions stipulated by him.

- 15.2 All costs in connection with trolley working and any train protection services requested by the Contractor shall, be borne by the Contractor, unless otherwise agreed.

16.0 SIGNAL TRACK CIRCUITS

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

- 16.2 No signal connections on track-circuited tracks shall be severed without the Contract Supervisor's knowledge and consent.

17.0 PENALTY FOR DELAYS TO TRAINS

- 17.1 If any trains are delayed by the Contractor and the Contract Supervisor is satisfied that the delay was avoidable, a penalty will be imposed on the Contractor as stipulated in the contract, for the period and number of trains delayed.

18.0 SURVEY BEACONS AND PEGS

- 18.1 The Contractor shall not on any account move or damage any beacon, bench mark, reference mark, signal or trigonometrical station in the execution of the Works without the written approval of the Contract Supervisor.

Should the Contractor be responsible for any such occurrence, he shall report the circumstances to the Contract Supervisor who will arrange with the Director-General of Surveys for replacement of the beacon or mark at the cost of the Contractor.

- 18.2 The Contractor shall not move or damage any cadastral or mining beacon without the written approval of the Contract Supervisor and before it has been referenced by a registered land surveyor. Any old boundary beacon, which becomes an internal beacon on creation of new boundaries, shall not be moved without the written approval of the Contract Supervisor.

Should the Contractor move or damage any cadastral or mining beacon without authority, he shall be responsible for having it replaced, at his cost, by a land surveyor.

- 18.3 The Contractor shall preserve all pegs and bench marks. Such survey points shall not be removed without the written approval of the Contract Supervisor. Should any peg or benchmark be removed without authority, the Contract Supervisor will arrange for its replacement and the cost will be recovered from the Contractor. No claim will be considered for delay in replacing any such peg or bench mark. Each peg replaced shall be checked by the Contractor.
- 18.4 Where a new boundary has been established, beacons on the fence line shall not be disturbed, and fence posts or anchors may not be placed or excavations made within 0,6 m of any beacon without the prior written approval of the Contract Supervisor.

19.0 TEMPORARY LEVEL CROSSINGS

- 19.1 The Contract Supervisor may, on request of the Contractor, and if necessary for the purpose of execution of the Works, permit the construction of a temporary level crossing over a railway a line at a position approved by the Contract Supervisor and at the Contractor's cost. The period for which the temporary level crossing is permitted will be at the discretion of the Contract Supervisor.

- 19.2 The Contractor will provide protection and supervise the construction of the road over the track(s) and within the railway servitude at the level crossing, as well as the erection of all road signs and height gauges. All cost to be borne by the applicant.

The Contractor shall exercise extreme caution in carrying out this work, especially in respect of damage to tracks, services, overhead power and communications routes and prevent contact with "live" overhead electrical equipment.

Unless otherwise agreed, the Contractor will provide the service deviations or alterations to the network operator's track-, structure-, drainage-, electrical-, telecommunications- and train authorisation systems to accommodate the level crossing.

- 19.3 The Contractor shall take all necessary steps including the provision of gates, locks and, where necessary, watchmen to restrict the use of the temporary level crossing to himself and his employees, his subcontractors and their employees, the staff of the network operator and to such other persons as the Contract Supervisor may permit and of whose identity the Contractor will be advised. If so ordered by the Contract Supervisor, the Contractor shall provide persons to control road traffic using the temporary level crossing. Such persons shall stop all road traffic when any approaching train is within seven hundred and fifty (750) metres of the temporary level crossing, and shall not allow road traffic to proceed over it until the lines are clear.
- 19.4 The Contractor shall maintain the temporary level crossing within the railway servitude in good condition for the period it is in use. A temporary agreement with the road authority to be concluded for the maintenance of the level crossing outside the railway servitude.
- 19.5 When the temporary level crossing is no longer required by the Contractor, or permitted by the network operator, the Contractor shall at his own cost remove it and restore the site and the network operator's track-, structure-, drainage-, electrical-, telecommunications- and train authorisation systems to its original condition. Work over the tracks and within the railway servitude will be supervised by the network operator.

20.0 COMPLETION OF THE WORKS

- 20.1 On completion of the works, the Contractor shall remove all the remaining construction plant and material from the site, other than material which is the property of the network operator, and leave the site in a clean, neat and tidy condition. If material and plant is required for the liability and maintenance period the Contract supervisor must authorise it's retention on site.

21.0 PROTECTION OF PERSONS AND PROPERTY

- 21.1 The Contractor shall provide and maintain all lights, guards, barriers, fencing and watchmen when and where necessary or as required by the Contract Supervisor or by any statutory authority, for the protection of the Works and for the safety and convenience of the public.

Red, yellow, green or blue lights may not be used by the Contractor as they can be mistaken for signals. Red, yellow, green or white flags shall only be used for protection by the Contractor. Within the precincts of a port the Contractor shall obtain the permission of the Port Captain before installing any light.

- 21.2 The Contractor shall take all the requisite measures and precautions during the course of the Works to:
- (i) protect the public and property of the public,
 - (ii) protect the property and workmen of both the network operator and the Contractor,
 - (iii) avoid damage to and prevent trespass on adjoining properties, and
 - (iv) ensure compliance with any instruction issued by the Contract Supervisor or other authorised person, and with any stipulation embodied in the contract documents which affects the safety of any person or thing.
- 21.3 The network operator will provide, at its own cost, protection for the safe working of trains during such operations as the Contract Supervisor may consider necessary. Protection by the network operator for any purpose whatsoever, does not absolve the Contractor of his responsibilities in terms of the Contract.
- 21.4 The Contractor shall take all precautions and appoint guards, watchmen and compound managers for prevention of disorder among and misconduct by the persons employed on the Works and by any other persons, whether employees or not, on the work site and for the preservation of the peace and protection of persons and property in the direct neighbourhood. Any relocation of camps because of disorder shall be at the Contractor's expense.
- 21.5 All operations necessary for the execution of the Works, including the provision of any temporary work and camping sites, shall be carried out so as not to cause veldt fires, ground and environmental pollution, soil erosion or restriction of or interference with streams, furrows, drains and water supplies.
- If the original surface of the ground is disturbed in connection with the Works, it shall be made good by the Contractor to the satisfaction of the land owner, occupier or responsible authority.
- 21.6 The Contractor shall take all reasonable steps to minimise noise and disturbance when carrying out the Works, including work permitted outside normal working hours.
- 21.7 Dumping of waste or excess materials by the Contractor shall, in urban areas, be done under the direction and control of, and at sites made available by the local authority. Dumping outside local authority boundaries shall be done only with the express permission and under the direction and control of the Contract Supervisor.
- 21.8 The Contractor shall comply with environmental protection measures and specifications stipulated by the Contract Supervisor and/or local and environmental authorities.
- 22.0 INTERFERENCE WITH THE NETWORK OPERATOR'S ASSETS AND WORK ON OPEN LINES**
- 22.1 The Contractor shall not interfere in any manner whatsoever with an open line, nor shall he carry out any work or perform any act which affects the security, use or safety of an open line except with the authority of the Contract Supervisor and in the presence of a duly authorised representative of the network operator.
- 22.2 The Contractor shall not carry out any work or operate any plant, or place any material whatsoever nearer than three metres from the centre line of any open line except with the written permission of the Contract Supervisor and subject to such conditions as he may impose.
- 22.3 Care must be taken not to interfere with or damage any services such as overhead wire routes, cables or pipes and optical fibre cable, except as provided for the work specified. The Contractor will be held responsible for any damage to or interruption of such services arising from any act or omission on his part or of any of his employees, or persons engaged by him on the Works. The cost of repairing, replacing or restoring the services, as well as all other costs arising from any damage to services, shall be borne by, and will be recovered from the Contractor.
- 22.4 Authority granted by the Contract Supervisor and the presence of an authorised representative of the network operator in terms hereof, shall not relieve the Contractor of his duty to comply with this specification.
- 23.0 ACCESS, RIGHTS-OF-WAY AND CAMPSITES**
- 23.1 Where entry onto the network operator's property is restricted, permission to enter will be given only for the purpose of carrying out the Works and will be subject to the terms and conditions laid down by the network operator.
- 23.2 The Contractor shall arrange for campsites, workplaces and access thereto as well as for any right-of-

way over private property to the site of the Works, and for access within the boundaries of the network operator's property. The owners of private property to be traversed shall be approached and treated with tact and courtesy by the Contractor, who shall, if necessary, obtain a letter of introduction to such property owners from the Contract Supervisor.

The Contractor shall be responsible for the closing of all gates on roads and tracks used by him or his employees. Except with the prior approval of the Contract Supervisor and the owner or occupier of any private land to be traversed, the Contractor shall not cut, lower, damage, remove or otherwise interfere with any fence or gate which is either on the network operator's property or on private property and which restricts access to the Works. Where such approval has been given, the Contractor shall prevent entry of animals or unauthorised persons onto the network operator's or private property, and shall make the fences safe against trespass at the close of each day's work.

- 23.3 The Contractor shall take all reasonable steps to confine the movement of vehicles and plant to the approved right-of-way to minimise damage to property, crops and natural vegetation.
- 23.4 When access is no longer required, and before completion of the Works, the Contractor shall repair, restore or replace any fence or gate damaged during execution of the Works to the satisfaction of the Contract Supervisor and shall furnish the Contract Supervisor with a certificate signed by the owner and occupier of land over which he has gained access to a campsite, workplace and the Works, certifying that the owner and occupier have no claim against the Contractor or the network operator arising from the Contractor's use of the land. Should the Contractor be unable to obtain the required certificate, he shall report the circumstances to the Contract Supervisor.

24.0 SUPERVISION

- 24.1 The Contract Supervisor will provide overall technical superintendence of the Works, and may direct the Contractor in terms of the provisions of the Contract or in respect of any measures which the Contract Supervisor may require for the operations of the network operator, the safety of trains, property and workmen of the network operator, and for the safety of other property and persons. The Contractor shall carry out the directions of the Contract Supervisor. The superintendence exercised by the Contract Supervisor, including any agreement, approval, refusal or withdrawal of any approval given, shall not relieve the Contractor of any of his duties and liabilities under the Contract, and shall not imply any assumption by the network operator or by the Contract Supervisor of the legal and other responsibilities of the Contractor in carrying out the Works.
- 24.2 The Contract Supervisor may delegate to any deputy or other person, any of his duties or functions under the Contract. On receiving notice in writing of such delegation, the Contractor shall recognise and obey the deputy or person to whom any such duties or functions have been delegated as if he were the Contract Supervisor.
- 24.3 The Contractor shall exercise supervision over the Works at all times when work is performed or shall be represented by an agent having full power and authority to act on behalf of the Contractor. Such agent shall be competent and responsible, and have adequate experience in carrying out work of a similar nature to the Works, and shall exercise personal supervision on behalf of the Contractor. The Contract Supervisor shall be notified in writing of such appointment which will be subject to his approval.
- 24.4 The Contractor or his duly authorised agent shall be available on the site at all times while the Works are in progress to receive the orders and directions of the Contract Supervisor.

25.0 HOUSING OF EMPLOYEES

- 25.1 The Contractor shall, where necessary, make his own arrangements for suitable housing of his employees. Where temporary housing is permitted by the Contract Supervisor on any part of the site, the Contractor shall provide suitable sanitation, lighting and potable water supplies in terms of the requirements of the local authority or the current network operator's specification; Minimum Communal Health Requirements in Areas outside the Jurisdiction of a Local Authority - E.4B, as applicable.
- 25.2 Fouling the area inside or outside the network operator's boundaries shall be prevented. The Contractor will be called upon by the Contract Supervisor to dispose of any foul or waste matter generated by the Contractor.

26.0 OPTICAL FIBRE CABLE ROUTES

- 26.1 The Contractor shall not handle, impact, move or deviate any optical fibre cable without prior approval.
- 26.2 Works that in any way affect the optical fibre cable requires prior approval from the Contract Supervisor

who will determine the work method and procedures to be followed.

"PREVIEW COPY ONLY"

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

27.0 GENERAL

- 27.1 This specification is based on the contents of Transnet's publication ELECTRICAL SAFETY INSTRUCTIONS, 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 the network operator, and the onus rests on the Contractor to ensure that he obtains a copy.

- 27.2 This specification must be read in conjunction with and not in lieu of the Electrical Safety Instructions.
- 27.3 The Contractor's attention is drawn in particular to the contents of Part I, Sections 1 and 2 of the Electrical Safety Instructions.
- 27.4 The Electrical Safety Instructions 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).
- 27.5 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.
- 27.6 The Contractor shall regard all high-voltage equipment as "live" unless a work permit is in force.
- 27.7 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 the network operator's staff where this is necessary.
- 27.8 No barrier shall be removed unless authorised by the Electrical Officer (Contracts).

28.0 WORK ON BUILDINGS OR FIXED STRUCTURES

- 28.1 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.
- 28.2 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.
- 28.3 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.

29.0 WORK DONE ON OR OUTSIDE OF ROLLING STOCK, INCLUDING LOADING OR UNLOADING

- 29.1 No person may stand, climb or work, whilst on any platform, surface or foothold:
- 29.1.1 higher than the normal unrestricted access way, namely -
 - 29.1.1.1 external walkways on diesel, steam and electric locomotives, steam heat vans, etc. and
 - 29.1.1.2 walkways between coaches and locomotives.
 - 29.1.2 of restricted access ways in terms of the Electrical Safety Instructions namely -
 - 29.1.2.1 the floor level of open wagons
 - 29.1.2.2 external walkways or decks of road-rail vehicles, on-track maintenance machines and material trains.
 - 29.1.3 Unauthorised staff working on these platforms must be directly supervised by duly authorised persons in terms of clause 607.1.3 of the Electrical Safety Instructions. These persons must attend the relevant electrical safety module training. A letter of training must then be issued by an accredited training authority. A Category C Certificate of Authority must be obtained from the

local depot examining officer.

- 29.2 When in the above positions no person may raise his hands or any equipment he is handling above his head.
- 29.3 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.
- 29.4 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.
- 29.5 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.
- 29.6 Where the conditions in clauses 30.1 to 30.4 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 the network operator and at the Contractor's cost, as an Authorised Person to work closer than 3 metres from "live" overhead conductors and under such conditions as may be imposed by the senior responsible electrical engineer of the network operator.

30.0 USE OF EQUIPMENT

30.1 Measuring Tapes and Devices

- 30.1.1 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.
- 30.1.2 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.
- 30.1.3 Special measuring devices longer than 2 metres such as survey sticks and rods may be used if these are of non-conducting material and approved by the responsible Electrical Engineer of the network operator, but these devices must not be used within 3 metres of "live" high-voltage equipment in rainy or wet conditions.
- 30.1.4 The assistance of the Electrical Officer (Contracts) shall be requested when measurements within the limits defined in clauses 31.1.1 to 31.1.3 are required.
- 30.1.5 The restrictions described in 31.1.1 to 31.1.3 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.

30.2 Portable Ladders

- 30.2.1 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.

31.0 CARRYING AND HANDLING MATERIAL AND EQUIPMENT

- 31.1 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 such material should be carried by two or more persons so as to maintain it as nearly as possible in a horizontal position. The utmost care must be taken to ensure that no part of the material comes within 3 metres of any "live" high-voltage equipment.
- 31.2 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.
- 31.3 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.

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

- 32.1 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.

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

32.3 The provisions of clauses 33.1 and 33.2 shall also apply to the erection or removal of columns, antennae, trees, posts, etc.

33.0 USE OF WATER

33.1 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.

34.0 USE OF CONSTRUCTION PLANT

34.1 "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.

34.2 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.

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

34.4 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.

34.5 Clauses 35.1 to 35.4 shall apply *mutatis mutandis* to the use of maintenance machines of any nature.

35.0 WORK PERFORMED UNDER DEAD CONDITIONS UNDER COVER OF A WORK PERMIT

35.1 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.

35.2 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.

36.0 TRACTION RETURN CIRCUITS IN RAILS

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

36.2 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 the network operator personnel.

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

- 36.4 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.

37.0 HIGH-VOLTAGE ELECTRICAL EQUIPMENT NOT MAINTAINED AND/OR OPERATED BY THE NETWORK OPERATOR

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

Such equipment includes:-

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

END

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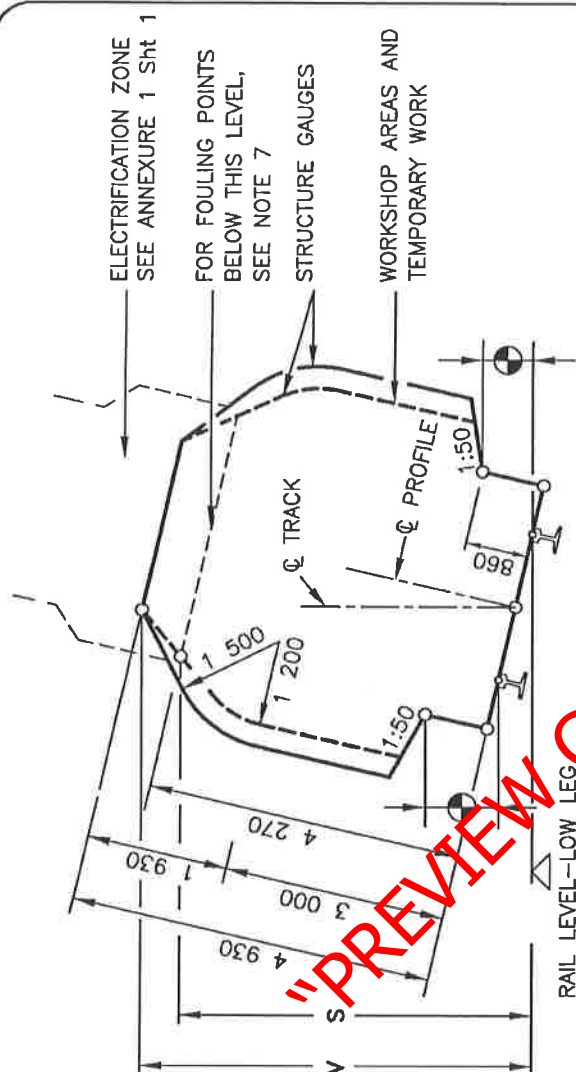


RADIUS (m)	WITH CANT		NO CANT		WITH CANT	
	H (mm)	L (mm)	H & L		B (mm)	C (mm)
90	2 730	3 090	2 780		1 130	2 100
100	2 700	3 030	2 750		1 140	2 050
120	2 650	2 970	2 700		1 160	2 010
140	2 620	2 920	2 660		1 175	1 990
170	2 590	2 870	2 630		1 190	1 970
200	2 570	2 820	2 600		1 205	1 950
250	2 550	2 790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


REMARKS:

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

LOCATION	NOT ELECTRIFIED	ELECTRIFIED (PRESENT OR FUTURE)		
		3kV & 25kV	50kV	
ALL AREAS OTHER THAN THOSE INDICATED BY * BELOW	RADIUS (mm)	S (mm)	V (mm)	V (mm)
	100	4 470	5 050	5 400
	300	4 410	5 020	5 370
	600	4 370	5 000	5 350
	1 000	4 350	4 990	5 340
	1 500	4 310	4 960	5 310
	2 000	4 290	4 940	5 290
>3 000	4 270	4 930	5 280	
* OVER OR NEAR POINTS AND CROSSING IF REQUIRED BY ELECTRICAL IRRESPECTIVE OF RADIUS		5 650	6 000	



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 ENDS OF THE CIRCULAR CURVE.
 - 4.2 REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - 4.3 FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 15m ALONG STRAIGHTS.
5. NEW STRUCTURES: SEE BRIDGE CODE.
6. TUNNELS: SEE DRAWING BE 82-35.
7. FOULING POINTS: SEE CLAUSE 8.1.
8. CLEARANCES ARE BASED ON 15m BOGIE CENTRES AND 21,2m VEHICLE BODY LENGTH.
9.  SEE ANNEXURE 1 SHEET 3 FOR PLATFORM CLEARANCES.

CLEARANCES : PLATFORMS

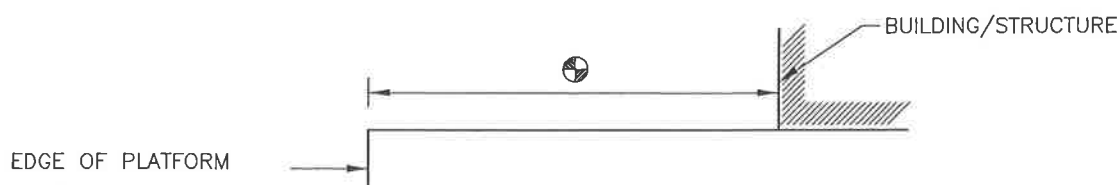
PLATFORMS : TRACK GAUGE 1 065mm

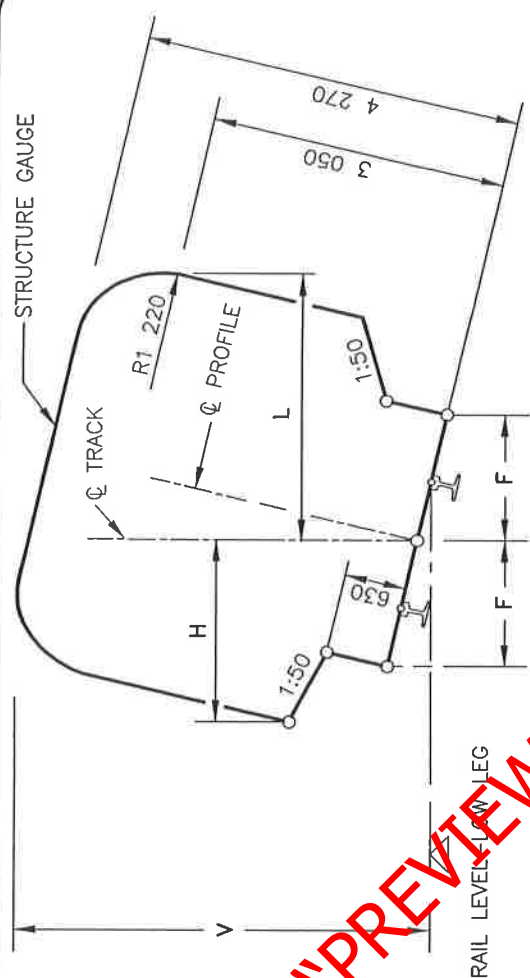
PASSENGERS					GOODS
RADIUS (m)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
90	1 690	1 820	890	810	1 840
100	1 650	1 790	890	810	1 810
120	1 610	1 740	890	810	1 760
140	1 580	1 700	890	810	1 720
170	1 550	1 660	890	810	1 690
200	1 530	1 630	890	820	1 670
250	1 520	1 600	890	820	1 640
300	1 520	1 580	890	830	1 620
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 CANT 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.

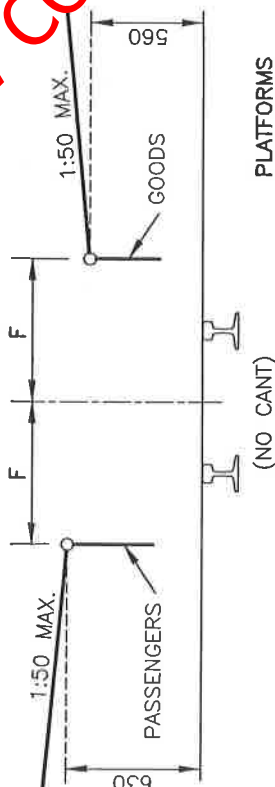
STRUCTURES ON PLATFORMS : 1 065mm AND 610mm TRACK GAUGE





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

CLEARANCES



REMARKS:

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

PART C4: SITE INFORMATION

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Part C4

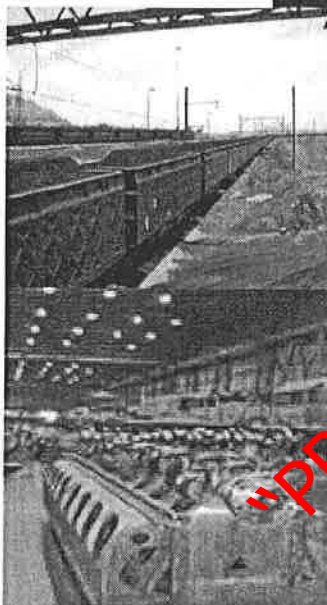
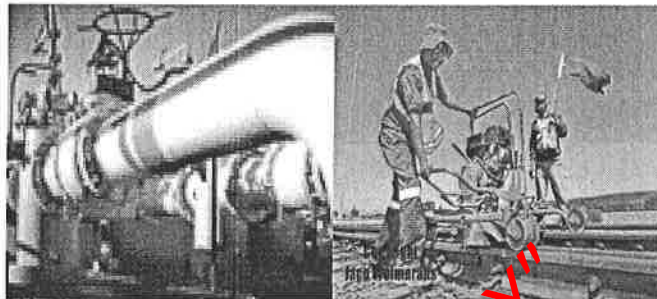
Site Information

4 Site Information

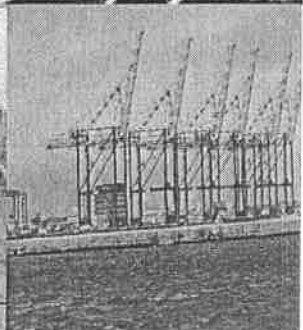
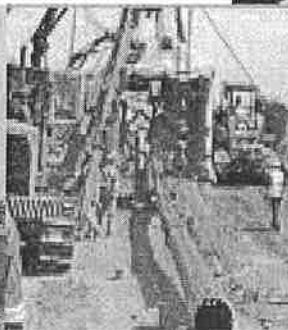
4.1 Location of the works

See Bill of Quantities for all substations / areas where work is to be done

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Transnet
Procedure Manual
Principal Controlled Insurance
Contract Works &
Contractors Public Liability
2013/14 A



General

Please note that this procedure manual is presented as a guide only. Whilst every effort is made to ensure accuracy in summarising the insurance contracts, the policies issued by insurer will prevail as binding documents in the event of a claim.

The contents are confidential and for use by Transnet, its operating divisions and managers only.

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Introduction

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Introduction

TRANSNET SOC LIMITED insures all Projects / Contracts on a Principal Controlled Insurance Programme basis (including the Assembly and/or Erection of Plant and Machinery) in respect of Contract Works and Contractors Public Liability.

Transnet Freight Rail (TFR) as an operating division of Transnet is therefore covered by the overall Transnet policy.

Philosophy of the programme

- Transnet SOC Limited and its Operating Divisions and Specialist Units wish to control the risk exposures in this regard.
- Transnet SOC Limited, as a large organization, bulk-buys - resulting in preferential rates and cover.
- Simplified administration.
- Eliminates potential problems which usually occur when individual Contractors are responsible to arrange separate insurance.
- Includes the Contractor and/or Subcontractors as an insured party.

The Transnet SOC Ltd Principal Controlled Insurance Programme comprises:

- Blanket Principal Controlled Contract Works Insurance hereinafter abbreviated as (PCI) - This policy is specifically designed to provide indemnity for contracts up to **R 100 million VAT exclusive but inclusive of Free Issue Material**.
- Principal Controlled Contractors Liability Insurance hereinafter abbreviated as (PCI LIAB) - This policy provides indemnity for all contracts up to **R 100 million VAT exclusive but inclusive of Free Issue Material**.
- Principal Controlled One Off Insurance hereinafter abbreviated as (PCI One Off) - This policy provides indemnity for all contracts with values in excess of **R 100 million VAT exclusive but inclusive of Free Issue Material**.
- Project Specific Insurance hereinafter abbreviated as (PSI Projects) - This policy will indemnify any project comprising Multiple Packages.*

*NOTE

Insurance cover arrangements for these categories is subject to prior notification and arrangement with TFR Insurance Department (see contact details herein) as specific underwriting information is required for soliciting quotations for cover.

- It is therefore important that Tender and eventual Contract documents reflect the fact that Transnet as the Principal (i.e. the Employer) arranges certain covers which incorporates cover on behalf of Contractor's and / or Subcontractor's.
- The concept does not relieve the contracting parties of their responsibilities for, amongst others, care of the works and liabilities to third parties.

Insurance Responsibilities

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Insurance Responsibilities

1. Cover arranged by Transnet as the Principal (Employer)

1.1 Insurance Cover Applicable to all Contracts

Principal Controlled Insurance Programme	Estimated Contract Values any one Contract inclusive of Free Issue Material
PCI Contract Works (PCI)	Up to R100 million VAT exclusive
SASRIA on Contract Works	Up to R100 million VAT exclusive
PCI Liability (PCI LIAB)	Up to R100 million VAT exclusive
PCI One Off Contract Works & Liability (PCI One Off's)	In excess of R 100 million VAT exclusive
Project Specific Insurance Contract Works & Liability (PSI Projects)	In excess of R 100 million VAT exclusive comprising multiple packages

Note

- **PCI, PCI LIAB and PCI One Off's** are normally arranged for single contracts.
- **PSI Projects** in most instances comprise a multitude number of different packages included in a package plan and is normally managed by Transnet Capital Projects on behalf of the Operating Divisions.

1.1.1 Contract Works Cover Policy No MZAR10060

Covering fortuitous physical loss or damage to the works, temporary works and materials for incorporation into the works whilst in inland transit and whilst at the contract site.

Limited to **R100,000,000** any one contract inclusive of Free Issue Material (**Exclusive of VAT**)

1.1.2 Public Liability Cover Policy No S04089

Covering legal liability arising out of or connection with the performance of the works on the contract site or sites designated by Transnet for purposes of the performance of the contract.

Limited to **R25,000,000** any one occurrence.

1.1.3 Riot / Strike Cover (Contract Works) Coupon CW 9137466/2013

Provided by:
SASRIA (South African Special Risks Insurance Association) in respect of risks with RSA.

1.2 Additional Insurances (Optional)

1.2.1 Marine Transit Cover

Covering imports until delivered and checked on site.

1.2.2 Project Delay Cover

Covering consequential financial exposures due to delays following indemnifiable loss or damage to the works.

The above information (including limits of insurance purchased) should be clearly spelt out in Tender and eventual Contract documentation including the deductible (excess) which are applicable and the fact that Contractor's and/or Subcontractor's are responsible for the deductible.



2. Cover to be arranged by Contractor's/Subcontractor's

All Contractor's/Subcontractor's still remain fully responsible to arrange insurance in respect of the following:

- As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.
- Employers Common Law Liability.
- Own plant, machinery, equipment and tools.
- Motor Vehicle Liability.
- Professional Indemnity (Defective Design).

This should also be clearly spelt out in Tender and eventual Contract documentation.

3. Cover to be arranged by Consulting Engineers, Architects & Other Professionals

Professional Indemnity (defects in Design, Plan or Specification).

Please ensure that Professional Service Providers do not contract out of their liability in this regard. (Please refer to Transnet Group Insurance for recommendation and approved limits).

4. Deviations

In case where there are compelling reasons to deviate from this process, please obtain approval from TFR Insurance Department for the attention of:

Kgomotso Saul

Manager: General Insurance

Tel – (011) 584 0534

Cell – 083 791 0759/083 233 4961

E-mail: Kgomotso.Saul@transnet.net

Summary of Cover - General

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Summary of Cover - General

The Insured Parties

- Transnet SOC Limited and / or its Subsidiary Companies as Principal or Employer.
- All Contractors undertaking work for or on behalf of the Principal in execution of the Contract.
- All Subcontractor's employed by the Contractor and all other Subcontractor's (whether nominated or otherwise) engaged in the fulfillment of the Contractor.
- To the extent required by any Contract or Agreement suppliers manufacturers vendors or other persons engaged on the contract sites but only to the extent of loss damage or liability originating at the Contract Site (other than while the Property Insured is in transit) arising out of the performance of their Contract Site obligations.

Insured Contracts

All contracts undertaken by the Insured involving but not limited to Design Construction, Testing, Commission in respect of new works, geotechnical and exploratory works, capital expenditure, upgrade, modification, maintenance and/or overhaul and/or refurbishment, renovation, retrofitting or alteration and/or additions to existing facilities and/or re-profiling of track, vegetation control, rehabilitation and ballast tamping activities undertaken by the Insured or other Insured Parties acting on their behalf but excluding:

- Contracts where the contract value including the value of Free Issue Material exceeds **R100,000,000** (Exclusive of VAT).
- Contracts where the duration of the contract exceeds **36 months**.
- Contracts where the contractual Defects Liability / Maintenance period exceeds **24 months**.
- Contracts involving harbor wet risks being all work entailing or involving work in or upon water whether partially or fully submerged such as but not limited to quay walls, wharfs, seawalls, caissons, breakwaters, jetties, piers, deepening or widening and dredging of ports and other off-shore risks.
- Contracts involving construction or erection of Petrochemical Manufacturing Plant(s) such as Sasol but this exclusion shall not apply to pipelines and other works undertaken by or on behalf of Transnet Pipelines Limited.
- Contracts outside of the Republic of South Africa.
In territories outside of South Africa it is required in terms of their Insurance Acts that insurance cover be placed with their local markets. It is therefore important that the Insurance Department be advised at feasibility stage (prior to Tender documents being issued) should any contracts, whether as Principal or Contractor, take place in any Territory outside of the Republic of South Africa.

Contract Site

Any location upon which the Insured Contract(s) is to be executed or carried out as more fully defined in the Insured Contract(s) documents together with so much of the surrounding area as may be designated for the performance of the Insured Contract(s) within the Republic of South Africa.

Principal Controlled Insurance Programme	Estimated Contract Values any one Contract inclusive of Free Issue Material
PCI Contract Works (PCI)	Up to R100 million VAT exclusive
SASRIA on Contract Works	Up to R100 million VAT exclusive
PCI Liability (PCI LIAB)	Up to R100 million VAT exclusive
PCI One Off Contract Works & Liability (PCI One Off's)	In excess of R 100 million VAT exclusive
Project Specific Insurance Contract Works & Liability (PSI Projects)	In excess of R 100 million VAT exclusive comprising multiple packages

- To extend the contract period beyond 36 months will attract an additional premium.
(See Administrative Procedures herein).

Declaration Procedure

All Contracts up to **R100m (VAT exclusive)** including the value of Free Issue Material must be declared to **Willis South Africa** (see contact details herein) in terms of the attached declaration form marked as Annexure1 prior to commencement of the Works.

Premium Payment Procedure

The deposit premium for this cover will be paid by the TFR Insurance Department as part of Transnet's blanket cover. There will be a final premium adjustment at the end of the insurance period and TFR Insurance Department reserves the right to recover this additional premium from the various contracts owners as per their respective declarations during the year.

Claims Reporting

- All incidents that could give rise to claim under the Principal Controlled Insurances, **HAVE TO BE** reported to **TFR Insurance Department and Willis South Africa** by means of an Incident Advice Form (Annexure 2).
- All incidents/claims must be captured on **TOMS** by the department involved.
- All incidents/claims must be registered in terms of **TFR Unique Claim Numbering System**.
- All incidents/claims must be reported to Insurers no later than **30-days** after occurrence of the incident which may give rise to a claim under the Contract Works or Liability insurance.

Failing this, all benefits in terms of the Policy shall be voidable from date of occurrence. It is essential that this condition is brought to the attention of Contractors in Tender/Contract Documents.

Summary of Cover

Contract Works Insurance

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Contract Works Insurance

Synopsis of Cover

Accidental physical loss of or damage to the works or materials for incorporation in the works:

- During dismantling of property in connection with the Insured Contracts.
- Whilst in transit, including loading and unloading, or whilst temporarily stored at any premises en route to or from The Contract Site within the Republic of South Africa;
- During the preparation of The Contract Site and thereafter until the Property Insured has been officially accepted by the Employer and becomes his responsibility by means of a Notice of Completion Certificate or similar evidence of legal transfer of risk in the whole or permanent works under the Insured Contract to the Employer;
- Where testing and commissioning of Property Insured is conducted by the Employer "completion" for purposes of this insurance to occur only after successful completion of all testing and commissioning of the whole of the permanent works under the Insured Contract;
- Where the permanent property insurance arranged by the Employer indemnify the Insured for completed portions of the Property Insured prior to completion of the whole of the permanent works under the Insured Contract, this insurance in respect of such completed portions of the Property Insured shall cease except as provided below;
- Work uncompleted or outstanding in terms of any certificate of completion, certificate of handover or similar document shall continue to be insured until its completion and the inception of the Contractual Defects Liability or Maintenance Period (as may be described in the Insured Contract) for such uncompleted or outstanding work where after the provision hereafter shall apply in respect of such work;
- During the Contractual Defects Liability or Maintenance Period (as may be described in the Insured Contract) pertaining to any part of the permanent works but only in respect of loss or damage:
 - i) arising from a cause occurring prior to commencement of such period of maintenance or defects liability period
 - ii) arising from any act or omission of the Insured their Servants, Agents, Suppliers or Subcontractors in pursuance of the Insured's obligations.

for which the Insured Contractor is responsible under the Contract.

Contract Period Limitation

Maximum Contract period	36 months
Maximum Defects Liability / Maintenance Period	24 Months



Limits of indemnity (VAT exclusive)

Contract Works (Any One Contract) including Free Issue Material	R100,000,000
Costs & Expenses (Damage & No Damage)	R10,000,000
Surrounding Property	R50,000,000
Surrounding Property – Worked Upon	R50,000,000
Surrounding Property – Watercraft	R50,000,000
Fire Brigade/Public Authority	R10,000,000
Removal to Gain Access	R10,000,000
Documentation	R500,000
Public Authority Reinstatement	R10,000,000
Claims Preparation Costs	R1,000,000
Road Reserve/Servitude Indemnity	R10,000,000
Leak Search Cost	R1,000,000 in the aggregate
Maximum testing / commissioning period	90 days
Borrowing of Plant	R1,000,000 in the aggregate
Maximum un-sealed / un-primed base course limitation	5,000 metres
Maximum open trench limitation	5,000 metres

Deductibles (VAT exclusive)

The deductible (excess) is the amount which the Contractor and/or Sub-Contractor is responsible for and this obligation must be reflected in the Tender and/or Contract Documents and the responsibility for same made clear. The deductibles apply to each and every occurrence and in respect of all Contracts.

The deductibles are:

Loss or damage due to storm, rain, tempest, wind, flood, theft, malicious damage, subsidence, collapse, earthquake, testing or commissioning	R25,000
Loss or damage arising from any other cause	R15,000
Costs & Expenses (No Damage)	R25,000
Loss or damage to Surrounding Property	R75,000
Loss or damage to Documentation	R5,000
Road Reserve / Servitude	R250,000

All Contracts Entailing Trenching and / or Layer Works

The following additional deductibles apply over and above the aforesaid deductibles: - i.e. in excess of 1,000 metres

Up to a maximum of 3,000metres

20% of loss / minimum R50,000

Up to a maximum of 5,000metres

20% of loss / minimum R100,000

It is essential that this is brought to the attention of Contractor's. Where this restriction is not practical, specific arrangements for cover can be made with underwriters. They will, however, require detailed underwriting information and an additional premium may be charged.



Property Insured

The actual Contract Works and all material intended for incorporation into the Works (*including Free Issue Material* the value of which has to be included in the Contract Value declared*) and Temporary Works.

* **Note:** Where Transnet for the purposes of the Contract issues materials 'free of charge' to the Contractor such materials shall be and remain the property of the Transnet. Free Issue Material shall mean any material provided by or on Transnet's behalf which is to be used in the provision of the Service or incorporated into the Contract.

** **Note:** Temporary Works shall mean all constructional aids, equipment, structures or works (not being part of the permanent works) used or intended for use on the Contract and which :-

- a) do not comprise mobile plant;
- b) are not intended to be removed from The Contract Site on completion of the Contract (other than scaffolding shuttering and formwork as well as construction equipment specially designed and/or constructed for an Insured Contract and which is not intended for immediate re-use on another Contract); or
- c) have no residual value at the completion of the Contract (other than scrap value) solely due to their specialised nature.

Main Exceptions/Exclusions

- ① The amount of the policy deductible.
- ① Loss or damage of money or the like.
- ① Aircraft, waterborne vessels or craft.
- ① Construction plant, tools or equipment.
- ① Losses by disappearance / shortage discovered by taking of routine inventory.
- ① Defective material workmanship design plan or specification (but resultant damage covered).
- ① Cost of re-design, improvement, betterment or alteration.
- ① Consequential loss, liquidated damages or penalties for delay in connection with guarantee or performance or efficiency.
- ① Air transit (unless in territorial limits).
- ① Ocean transit or whilst in storage thereafter (unless immediately inspected by an independent party after offloading from vessel).
- ① During the Contractual Defects Liability or Maintenance Period (as may be described in the Insured Contract) pertaining to any part of the permanent works but only in respect of loss or damage:
 - i) arising from a cause occurring prior to commencement of such period of maintenance or defects liability period
 - ii) arising from any act or omission of the Insured his Servants or Agents, in the course of the work carried out in pursuance of the Insured's obligations with regard to maintenance under the Contract.
- ① Wear, tear, gradual deterioration rust, corrosion or oxidation and normal up-keep.
- ① Electrical or mechanical breakdown or explosion to machinery or plant which has operated under load conditions prior to commencement of the Insured Contract or in respect of new machinery or plant which has occurred after a Testing / Commissioning Period of 90-days.
- ① Damage to any unsealed / unprimed or base course in excess of limitations as stated in the policy.
- ① Damage to any open trench in excess of the limitations as stated in the policy.
- ① War, asbestos and nuclear risks.
- ① Sinking (whether partial or in whole) of any watercraft arising out of or in consequence of any work undertaken below the load line (international load line / plimsoll line).
- ① Loss or damage due to normal actions of the sea (as defined in the policy).

Cover Limitations

Unsealed / Unprimed Base Course

- Unsealed / unprimed base course – cover limited to a maximum of 5,000 metres.

Open Trench

- Open trench – cover limited to a maximum indemnity of 5,000 metres.

It is essential that the above limitations are brought to the attention of Contractor's. Where this restriction is not practical, specific arrangements for cover can be made with Underwriters. They will, however, require detailed underwriting information and an additional premium may be charged.

Used Plant – Basis of Loss Settlement

Insured property which has operated under service conditions prior to attachment of cover:-

- Up to 5 years - cost of repair / reinstatement / replacement.
- In excess of 5 years - agreed value (calculated on basis of each life year (or part thereof) on present day New Replacement Value reduced proportionally over 20 years subject to residual of 20%).

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Summary of Cover

Contractors Public Liability Insurance

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Contractors Public Liability Insurance

Insured Contracts

All contracts undertaken by the Insured involving but not limited to Design Construction, Testing, Commission in respect of new works, geotechnical and exploratory works, capital expenditure, upgrade, modification, maintenance and/or overhaul and/or refurbishment, renovation, retrofitting or alteration and/or additions to existing facilities and/or re-profiling of track, chemical vegetation control, vegetation rehabilitation and ballast tamping activities undertaken by the Insured or other Insured Parties acting on their behalf but excluding:

- Contracts where the contract value including the value of Free Issue Material exceeds **R100,000,000** (Exclusive of VAT).
- Contracts where the duration of the contract exceeds 36 months.
- Contracts where the contractual Defects Liability / Maintenance period exceeds 24 months.
- Contracts involving harbor wet risks being all work entailing or involving work in or upon water whether partially or fully submerged such as but not limited to quay walls, wharfs, seawalls, caissons, breakwaters, jetties, piers, deepening or widening and dredging of ports and other off-shore risks.
- Contracts involving construction or erection of Petrochemical Manufacturing Plant(s) such as Sasol but this exclusion shall not apply to pipelines and other works undertaken by or on behalf of Transnet Pipelines Limited.
- Contracts outside of the Republic of South Africa.
In territories outside of South Africa it is required in terms of their Insurance Acts that insurance cover be placed with their local markets. It is therefore important that the Willis South Africa be advised at feasibility stage (prior to Tender documents being issued) should any contracts, whether as Principal or Contractor, take place in any Territory outside of the Republic of South Africa.
- Limited to a maximum contract period of 36 months followed by a maximum Defects Liability / Maintenance period of 24 months.

Synopsis of Cover

Legal Liability to pay as compensation for and in consequence of:

- Death of or injury to or illness or disease contracted by any person.
- Loss of / or physical damage to tangible property.

Occurring during the period of insurance and arising out of or in connection with the performance of the Insured Contract(s).

Limits of Indemnity

Contractors Public Liability	R25,000,000 any one occurrence / unlimited for the Period of Insurance
Removal of Support	R25,000,000 unlimited for the Period of Insurance
Statutory Legal Defence Costs	R25,000,000 any one occurrence
Arrest / Assault / Defamation	R25,000,000 any one occurrence
Emergency Medical Expenses	R25,000,000 any one occurrence
Prevention of Access	R25,000,000 any one occurrence
Trespass / Nuisance	R25,000,000 any one occurrence
Claims Preparation Costs	R2,500,000 any one occurrence

Deductibles

The deductible (excess) is the amount which the Contractor and/or Sub-Contractor is responsible for and this obligation must be reflected in the Tender and/or Contract Documents and the responsibility for same made clear. The deductibles apply to each and every occurrence and in respect of all Contracts.

The deductibles are:

Loss of or damage to public utilities	R25,000
Spread of fire or burning of fire breaks	R50,000
Loss of or damage to any other property	R25,000
Loss of or damage to property arising from removal of support	R50,000
Loss of or damage arising out of vegetation control including but not limited to the use of pesticides	R50,000

Main Exceptions/Exclusions

- ❶ The amount of the policy deductible.
- ❷ Death or injury to own employees.
- ❸ Motor vehicle liabilities under legislation or as defined in Multi-lateral Motor Vehicles Accident Fund No. 93 of 1989 as amended.
- ❹ Claims in connection with ownership or use of aircraft or watercraft.
- ❺ Property belonging to the Insured or in his care custody and control (as defined in the Policy).
- ❻ Property forming part of Contract Works.
- ❼ Liquidated damages or penalties for delays or in respect of performance or efficiency guarantees.
- ❽ The cost of making good faulty workmanship materials design plan or specification in any part of the Property insured.
- ❾ Gradual pollution and contamination.
- ❿ Sudden unintended and unforeseen seepage, pollution or contamination including the cost of removing, nullifying or cleaning up in respect of both ocean and harbour going watercraft outside of dry dock.
- ⓫ After completion and handover (inclusive of the contractual Defects / Maintenance period).
- ⓬ Punitive damages.
- ⓭ Ownership hiring or leasing of any airport or airstrip.
- ⓮ War, asbestos and nuclear risks.

Cover Limitation

Indemnity for removal of support is limited to **R25,000,000**.

If a higher limit of indemnity is required, TFR Insurance Department and Willis South Africa needs to be advised and underwriting information will need to be provided in advance (i.e. prior to Tender stage) and this will entail an additional premium.



Administrative Procedures

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Administrative Procedures

Arranging Insurance cover – contracts up to R100m

The Operating Divisions and Specialist Units must

Prior to the commencement of each Contract:-

- Complete the Declaration Form per Part A as per Annexure 1 herein. Please note that in terms of SASRIA regulations where the Contract Value exceeds R2 million, the physical address of the Contract is mandatory. Where track is being worked upon, the start and end points are required.
- Date and sign the Declaration Form.
- Submit the Declaration Form to the Broker (Willis South Africa).

Cover will be effective from the date of receipt of the Declaration Form by Willis South Africa who will acknowledge receipt of the same.

An Insurance Certificate and a SASRIA Coupon evidencing cover can be issued on specific request.

Prior to the expiry of each Declarations estimated completion date:-

- Confirm to Willis South Africa that the contract will be completed on time.
 - On completion submit to the Willis South Africa a Declaration of the final contract value per Part B as per Annexure 1 herein.
- NB** If the original completion date is not going to be achieved, the period of insurance on the Declaration document will need to be extended and Willis South Africa needs to be notified **prior to original completion date**.
- The Operating Divisions and Specialist Units (**prior to the expiry date of the certificate period**) has to advise Willis South Africa in writing to extend the period of insurance and provide the new estimated completion date.
- NB** If a completion date needs to be extended and Willis South Africa is not advised prior to the original completion date, all SASRIA cover will cease on the originally declared completion date as there is no hold covered arrangement with SASRIA.

A new SASRIA Coupon will then only be issued for the extension period from the date when the Insurer is advised in writing by the Broker.

Under these circumstances the new SASRIA Coupon will be subject to an additional premium, subject to the minimum premium.

This process needs to be followed by the Operating Divisions and Specialist Units until the time of completion is achieved.

Once the Contract has been completed:-

- The Operating Divisions and Specialist Units have to declare the final contract value to Willis South Africa per Part B as per Annexure 1 herein.
- The deposit premium will then be adjusted accordingly.

Failure by the Operating Divisions and Specialist Units to conform to the above procedure will result in cover being voided.



Contracts that require specific arrangements (i.e. in excess of R100m)

All contracts that fall outside the scope of this Principal Controlled Insurance Programme have to be advised to TFR Insurance Department prior to Tender and specific "One Off" cover will need to be negotiated.

These are:

- Contracts where the contract value including the value of Free Issue Material exceeds **R100,000,000 (Exclusive of VAT)**.
- Contracts where the duration of the contract exceeds **36 months**.
- Contracts where the contractual Defects Liability / Maintenance period exceeds **24 months**.
- Contracts involving **harbor wet risks being all work entailing or involving work in or upon water** whether partially or fully submerged such as but not limited to quay walls, wharfs, seawalls, caissons, breakwaters, jetties, piers, deepening or widening and dredging of ports and other off-shore risks.
- Contracts involving **construction or erection of Petrochemical Manufacturing Plant(s)** such as Sasol but this exclusion shall not apply to pipelines and other works undertaken by or on behalf of Transnet Pipelines Limited.
- Contracts **outside of the Republic of South Africa**.

Contracts where cover limitations will be exceeded or where cover warranties cannot be complied with need to be discussed with the TFR Insurance Department prior to contract award date to enable Willis South Africa to make specific arrangements with Underwriters. This will however require detailed Underwriting Information and an additional premium may be charged.

In order to ensure that Contractor's and site staff are aware of procedures a copy of this Procedure Manual must be supplied to the contract administrators and each Contractor on award of contract



PCI AND PCI PL

BLANKET PRINCIPAL CONTROLLED INSURANCE CONTRACT DECLARATION AND EXTENSION TEMPLATES

Procurement & Depots, on receipt of this attachment please:

This schedule only applies to Contracts max value R 100 million inclusive of Free Issue Material but exclusive of VAT

- a) Save electronic versions of New Contract and Contract Extension templates on computers for future month usage

Create schedules for each month i.e. use "copy function" to create schedules for each month i.e. April 2013 May 2013 June 2013 etc.)

- b) Complete register from the first to last day of month in respect of:

- New contracts declared during the month
- Contracts of which the contract periods have to be extended

- c) Monitor contracts declared/ extended on monthly basis i.e. forward register "as attachment" to Transnetpci@willis.com and Naipr@willis.com

- d) Follow up all discrepancies with **Willis South Africa/ TFR Insurance Department** in order to rectify problems

- e) Follow up outstanding Confirmation of Insurance from Willis South Africa

- f) Submit "Nil Return" Registers in the event of no new contracts declared or where no contract period extensions were required during a specific month i.e. **"APRIL 2013-Nil**



Claims Procedures

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Claims Procedures

In the event of any incident or occurrence, which is likely, to give rise to a claim under the Insurance arranged by Transnet the following procedures shall be adhered to in addition to any statutory or other requirements contained in the Contract.

All incidents that could give rise to claim under the Principal Controlled Insurances, **HAVE TO BE** reported to the local TFR Insurance Manager's office (see contact details herein).by means of an Incident Advice Form (Annexure 2) and the incident must also be captured on TOMS by the department involved. The incident in question must be reported to Insurers as soon as possible but no later than a **30** (thirty) day period from date of incident.

At the same time complete the **Incident Advice Form (Annexure 2 herein)** and submit to Willis South Africa and a copy to TFR Insurance Department, for the attention Lucas Ngwako (see contact details herein).

- Losses involving **theft or malicious damage** must be reported to the police and a police reference number obtained and recorded.
- The Employer, Contactor(s) or Sub-Contractor(s) shall allow free access to Insurers' Loss Adjuster(s) and / or Employer's Insurance Willis South Africa for the purpose of investigation and assessing the loss or damage.
- The Employer, Contractor(s) shall **not** deal direct with the Insurers other than by co-operating with their Loss Adjuster(s) and / or the Employers Insurance Broker (Willis South Africa).
- No **Admission of Liability** shall be made by the Employer, Contractor(s) or Sub-Contractor(s) in the event of damage or loss to third party property or injury or death of third party persons.
- Letters from claimants should be passed on to **TFR Insurance Department** as soon as possible.
- In the event of immediate repairs being necessary in the interest of safety, the Contractors may with the Employer's permission proceed with such repairs.
- TFR Insurance Department shall immediately advise **Willis South Africa** accordingly
- Other than in the circumstances described above the Contractor shall not proceed with the making good of any loss without the prior authorization of the Employer who shall advise the Insurer's appointed Loss Adjuster(s) and Willis South Africa.
- Upon commencement of the making good of any loss, the Contractor shall keep separate records of the costs involved in making good such loss and these records must be authenticated by the Employer for submission to the Insurer's or their Loss Adjuster(s). Such records shall include, inter alia, the entire cost of labour, materials, transport and equipment.
- The basis upon which the Insurers will indemnify loss or damage is the cost of repair or replacement of the loss or damage including, inter alia, transport and overheads.
- On completion of the making good of any loss the records of the costs involved having been authenticated by the Employer shall be sent to the Insurer's via their Loss Adjuster(s) and copied to **Willis South Africa (Pravina Nair)** for processing.
- Upon the amount of the loss or damage being agreed upon by the Insurer's Loss Adjuster(s) and the Contractor, an "Agreement of Loss" form will be signed by the Contractor and Employer.
- The amount agreed upon by the Insurers, the Contractor and the Employer shall be paid by the Insurers to the Employer net of the deductible, who will arrange for the payment to be made to the Contractor as appropriate after deduction of the first amount payable.

All incidents which could give rise to a claim under the insurances arranged by the Principal/Employer must be notified to Willis South Africa and TFR Insurance Department without delay, per the procedures set out above



Contact Details

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Transnet Freight Rail: Corporate Office

Mr Lucas Ngwako General Liability & PCI Insurance Manager	Tel: (011) 5840540 Fax : (011) 774 9173 Email: Lucas.Ngwako@transnet.net
Ms Kgomotso Saul General Insurance Manager	Tel: (011) 584 0534 Fax (011) 773 0899 Cell 083 791 0759 Email: Kgomotso.Saul@transnet.net

Transnet Freight Rail: Other Areas

Pretoria, Empangeni Richardsbay	Thembekile Cubuta (Insurance Manager) Telephone : 012 315 2957 Cell: 083 379 5653 Thembekile.Cubuta@transnet.net
Cape Town, Port Elizabeth East London Free State	Mr Jan Venter (Insurance Manager) Tel : (021) 940 3339 Cell : 083 284 3620 E-mail : Jan.Venter3@transnet.net
Johannesburg, Durban Polokwane	Mr. Jay Ngubane (Insurance Manager) Tel : (031) 361- 5872 Cell : 083 253 7750 E-mail : Jay.Ngubane@transnet.net



Willis South Africa

Willis South Africa personnel are at all times available for advice, please feel free to contact :-

- **Pravina Nair**
Account Advocate
Tel No. (011) 535 5400
Cell 071 850 0534
Fax No. (011) 784 1610
E-Mail nairpr@willis.com

- **Mike Lamb**
Construction Broker
Tel No. (011) 535 5400
Cell 082 454 7983
Fax No. (011) 784 1610
E-Mail lambm@willis.com

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Annexure 1

Transnet Principal Controlled Construction Insurance

Programme Contract Award Declaration (Part A),

Contract Completion Declaration (Part B)

Contract Variation Declaration (Part C)

**Project Specific One Off or Multiple Packages R 100 m
and above (Form A1)**

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**CONTRACT DECLARATION FOR
BPCI and PCI LIABILITY BELOW R100,000,000**

Only complete sections with white background

SEND TO THE BROKER	FROM
Willis South Africa (Pty) Ltd P O Box 55509 Northlands 2116	TRANSNET Postal Address:
Attention: Pravina Nair E-mail: transnetpci@willis.com	Represented by: Email:
Tel No : +27(0) 11 535-5400 Fax No: +27(0) 11 784-1610	Tel No: Fax No:

Please also copy in Lucas.Ngwako@transnet.net at TFR Corporate office.

PART A 1: CONTRACT AWARD INFORMATION

CONTRACT NUMBER		
PURCHASE ORDER		
DECLARATION REGISTER CONTROL NUMBER		
DESCRIPTION OF CONTRACT WORKS:		
CONTRACT VALUE AT AWARD (VAT EXCLUSIVE)		
ESTIMATED VALUE OF FREE ISSUE SUPPLIED TO CONTRACTOR (VAT EXCLUSIVE)		
COVER SELECTION	CONTRACT WORKS & LIABILITY	CONTRACTORS LIABILITY ONLY
INSERT YES /NO UNDER THE SELECTED COVER		
PHYSICAL ADDRESS WHERE CONTRACT IS TAKING PLACE		
CONTRACT AWARD DATE		
CONTRACT COMMENCEMENT DATE		
EXPECTED CONTRACT COMPLETION DATE		
CONSTRUCTION PERIOD(MONTHS)		
MAINTENANCE PERIOD (MONTHS)		



PART A2: OPTIONAL INSURANCE REQUIRED:		INSERT (YES/NO) BELOW
1.	IS REMOVAL OF SUPPORT COVER REQUIRED?	
2.	DOES THIS CONTRACT EVIDENCE AN EXPOSURE WHICH CAN BE COVERED BY PROJECT DELAY INSURANCE?	
3.	WILL TRANSNET/CONTRACTOR/SUB-CONTRACTOR BE IMPORTING MATERIALS/ EQUIPMENT FOR THE CONTRACT THAT REQUIRES MARINE CARGO IMPORT INSURANCE?	
IF REQUIRED, PROVIDE FULL DETAILS TO BROKER		

PART A3: CONTRACTORS LIABILITY COVER ONLY

DOES THIS CONTRACT ENTAIL WORK IN THE FOLLOWING CATEGORIES WHERE THE EXPOSURE TO OWN DAMAGE (DAMAGE TO WORKS) IS NIL OR NEGLIGIBLE. INSERT YES/ NO AS APPLICABLE BELOW

1.	CHEMICAL CONTROL OF VEGETATION	
2.	VEGETATION REHABILITATION	
3.	BALLAST TAMPING	
4.	TRACK RE-PROFILING (including Welding/Grinding)	
5.	BURNING OF FIRE BREAKS	
6.	GEOTECHNICAL AND EXPLORATORY WORKS	

CONTRACTORS DETAILS		
<h3>PART B: CONTRACT COMPLETION DECLARATION</h3> <p>COMPLETION OF THIS SECTION IS COMPULSORY AND MUST BE SUBMITTED TO ARRANGE PREMIUM ADJUSTMENT ON COMPLETION OF WORKS.</p>		
CONTRACT COMPLETION DATE		
ENDORSEMENT/CERTIFICATE NUMBER		
EXPIRY OF MAINTENANCE PERIOD		
FINAL CONTRACT VALUE (VAT EXCLUSIVE)		
ACTUAL VALUE OF FREE ISSUE SUPPLIED TO CONTRACTOR (VAT EXCLUSIVE)		
	ORIGINAL DECLARATION	COMPLETION OF WORKS
ORIGINATOR / SIGNATURE		
DATE		



PART C – CONTRACT VARIATION / EXTENSION DECLARATION

CONTRACT NUMBER

TITLE OF CONTRACT

NEW CONTRACT COMPLETION DATE

ENDORSEMENT/CERTIFICATE NUMBER

EXPIRY OF MAINTENANCE PERIOD

NEW CONTRACT VALUE (VAT Exclusive)

ACTUAL VALUE OF FREE ISSUE SUPPLIED TO CONTRACTOR (VAT Exclusive)

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Project Specific One Off or Multiple Packages R100,000,000 and above Insurance Notification Form

CONTACT DETAILS

Name

Division/Office

Telephone Number

Fax Number

Email Address

PROJECT INFORMATION

Project Title

Project Location

Principal Contractor

Role of Transnet

Joint Venture Partners (%)

Design & Construct

☐

Construct Only

☐

Other?

☐

Please advise details

PROJECT DETAILS

Scope of Works

Project Value (Estimate)

Currency

Contract Value

R

Transnet Supplied Materials

R

Surrounding Property being
worked upon

R

(When Transnet
to insure)

Total Sum Insured

R

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Project Value Breakdown

Type of Works

% of Total Project
Value (Include
Principal Materials)Wharves, Jetties, Piers, Marinas,
Causeways, Breakwaters and Drydocks

Wet Risk Works (other than above)

Tunnel Works

Offshore Works

Pipeline Works

Horizontal Drilling

Dry Civil Works (eg, Earthworks & Bridges)

Building Works

Mechanical Works

Dams

All Other Contracts

Duration (Estimate)

Construction Period

/

to

/

/

Testing Period

Months

Defects Period

Months

INSURANCE

Insurance Arranged By	Transnet	Contractor	Sum Insured/Currency
Construction Risks (Works)	<input type="checkbox"/>	<input type="checkbox"/>	
Public Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Professional Indemnity	<input type="checkbox"/>	<input type="checkbox"/>	
Construction Plant & Equipment	<input type="checkbox"/>	<input type="checkbox"/>	
Marine Hull/Plant/Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Transits (Inland/Overseas)	<input type="checkbox"/>	<input type="checkbox"/>	
Employer's Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Automobile Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Aviation Liability	<input type="checkbox"/>	<input type="checkbox"/>	

TRANSIT RISKS

Please provide details of major transit for which you are responsible

Inland ☐Overseas ☐

Major Journeys

Maximum Value Any One Item

R

Maximum Value Any One Shipment

R

Total Estimated Sendings for the Project

R

Description of Cargo

Method of Conveyance

Road ☐Rail ☐Air ☐Ocean/Sea ☐Inland Waterway ☐

**DESIGN RISKS**

For Design & Construct Contracts:

Will Transnet engage an independent designer? ☐ Yes ☐ No

If yes to the above, please advise name of company _____

Confirm limit of PI Insurance to be carried by independent designer R _____

Does the contract involve any novation of design liability from the Principal? ☐ Yes ☐ No**OFFSITE STORAGE**

Provide details for offsite storage of materials where this exceeds R1,000,000 at any one location

GENERAL RISK INFORMATION

Please provide a copy of the following

- (a) Contract drawings
- (b) General conditions of contract (including any amendments thereto) referring to insurance and indemnity obligations, annexure pages, schedules and defect liability obligations
- (c) Works programme (gant charts, etc)
- (d) Scope of Works

Does the project involve removal and disposal of hazardous materials? Eg, asbestos/PCB

☐ Yes ☐ No (If yes, please provide full details)

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Supplementary Questionnaire Earthworks

TYPE (DEPTH OF TRENCH/EXCAVATION)

DIMENSIONS (EG: LENGTH, HEIGHT, DEPTH, ETC)

CONSTRUCTION METHOD

FOUNDATIONS (TYPE AND DEPTH)

SUPPORT STRUCTURES

BLASTING

Please provide details of the blasting company and their experience

UNDERPINNING

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Supplementary Questionnaire Construction of Wharves & Jetties

DESCRIPTION OF WORKS

Dimensions _____

Type of structure and material of construction _____

Type and dimensions of piling/foundations _____

Height of deck above water level at low tide and high tide _____

Extent of dredging and who is performing the work _____

Maximum value and weight of heaviest lift _____

SUB SOIL CONDITION

Geological strata and/or details of bore logs _____

WAVE, FLOODING AND STORM

Please provide historical data _____

Height of Deck above highest water level recorded _____

Maximum wave height expected _____

LIABILITY

Any underground services? _____

To what extent can construction operation affect adjacent structures and water traffic? _____

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Supplementary Questionnaire Dams

DAM EMBANKMENT

Height _____

Length _____

Width of crown and basement _____

Inclination of slope upstream and downstream _____

DIVERSION DETAILS

Coffer Dams: Upstream height and downstream height _____

Diversion/canal size _____

Discharge capabilities _____

FOUNDATIONS

Maximum depth of excavation _____

Details of ground support _____

BREAK-UP VALUES

Earthworks _____

Concrete works _____

Coffer dams upstream and downstream _____

Diversion piping _____

Access Roads _____

Others as available _____

WATER FLOW DATA

Rainfall _____

River flow _____

BLASTING REQUIRED?

☐ Yes ☐ No (If yes, please provide details) _____

DOCUMENTS REQUIRED

Site plan including contours, location of haul roads and storage areas

Profile of dam

Location map

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Supplementary Questionnaire Bridges

DIMENSIONS

Length _____

Breadth _____

FOUNDATIONS

Details of piles _____

Details of footings breadth _____

SUPERSTRUCTURE

Number of spans _____

Length _____

Girders ☐ Precast ☐ In situ

Girder material _____

Deck ☐ Precast ☐ In situAre any dual lift activities anticipated? ☐ Yes ☐ No

APPROACH WORK REQUIRED?

☐ Yes ☐ No (If yes, please provide details) _____

IS THE BRIDGE OVER A WATER COURSE?

☐ Yes ☐ No (If yes, please provide details) _____

Details of river flow _____

Details of flood exposure _____

Method of protecting works during construction _____

BREAK-UP OF VALUES

Foundations maximum any one precast section R _____

Maximum any one concrete pour R _____

Falsework/Formwork R _____

Earthworks R _____

Water protection systems R _____

DOCUMENTS REQUIRED

Profile of bridge _____

Cross section of bridge _____



Supplementary Questionnaire Road Works

EMBANKMENT

Total length _____
 Average cut _____
 Maximum cut _____
 Fill type _____
 Maximum length of unsealed embankment (in metres) _____

DRAINAGE

Total length _____
 Open trench – maximum open _____
 Average open _____

CULVERTS

Number _____
 Details of major culverts _____

BRIDGES

Number _____

Please provide the following details for each bridge.

- ◆ Number of spans _____
- ◆ Maximum length _____
- ◆ Length and breadth _____
- ◆ Foundation details _____
- ◆ Construction method _____
- ◆ Flow details of any rivers/creeks to be bridged _____
- ◆ Are any dual lift activities anticipated? ☐ Yes ☐ No

BREAK-UP OF VALUES

Drainage culverts	R _____	Bridges	R _____	Earthworks	R _____
Landscaping	R _____	Paving	R _____		
Other (specify)					R _____

DOCUMENTS REQUIRED

Topographical map of area _____
 Profile of the cross section of road. Is the area prone to flooding? ☐ Yes ☐ No
 (If yes, please provide details) _____
 What protection will be implemented to prevent damage occurring due to water?



Supplementary Questionnaire Pipelines

PROJECT DETAILS

Pipeline type (eg, gas, etc) _____

Total length _____

Pipe diameter/s _____

Method of construction/laying _____

PIPE

To be supplied by Principal? ☐ Yes ☐ No

Acceptance point for pipe _____

Where is pipe to be stored? _____

TRENCHES

Depth (metres): maximum and average _____

Open trench (without pipe): _____

♦ Maximum length any one time (number of kilometres) _____

♦ Maximum length any one continuous stretch (number of kilometres) _____

Open trench with pipe laid: maximum length _____

Quotations/cover required for open trench:

☐ Policy limit 15 kilometres (of which 5 kilometres with pipe)

☐ Other limit required (Please specify) _____

TERRAIN

Soil conditions and terrain contour _____

OTHER STRUCTURES (PUMP STATION, ETC)

Description, including dimensions _____

CROSSINGS

Type (river, road, etc). Method of construction _____

TESTING

Type _____

Period _____

Hydrostatic pressure test% of manufacturer's specification _____

Welds – Percentage to be x-rayed _____

BREAK-UP OF VALUES

Pipe R _____

Mechanical R _____

Structures R _____

Trenching R _____

Other (Specify) _____ R _____

FLOOD EXPOSURE

Is there any exposure to flooding?

☐ Yes ☐ No (If yes, please provide details of preventative measures undertaken)

Is water table expected to be encountered during construction period?

☐ Yes ☐ No (If yes, please provide details of preventative measures undertaken)

Horizontal Drilling (HDD)

HDD Contract Value R _____

Details of drills exceeding 1 kilometre in length _____

Details of drills where the pipe diameter is greater than 760mm _____

DOCUMENTS REQUIRED

Route of pipeline

Contour maps

Rainfall details

"PREVIEW COPY ONLY"

Annexure 2

Incident Advice Form

ALL INCIDENTS HAVE TO BE REPORTED WITHIN 30 DAYS OF OCCURRENCE

"PREVIEW COPY ONLY"



TRANSNET PRINCIPAL CONTROLLED INSURANCE PROGRAMME
INCIDENT ADVICE FORM

TRANSNET UNIQUE CLAIM NUMBER

TRANSNET TOMS NUMBER.....

TFR BUSINESS UNIT.....

Send to
Willis South Africa (Pty) Ltd
First Floor,
Eversheds Building,
22 Fredman Drive,
Sandton
2196

Copy to TFR Insurance Department
Attention: Lucas Ngwako
Tel No – (011) 584 0540
Fax – (011) 774 9173
E-mail: Lucas.Ngwako@transnet.net

Attention : Pravina Nair
Tel No. (011) 535 5400
Fax No. (011) 784 1610
E-Mail: nairpr@willis.com

From
Represented by
Tel No.
Fax No.

PRINCIPAL (PER CONTRACT DOCUMENT)

CONTRACT NUMBER

ORIGINAL DECLARATION NO.

TITLE OF CONTRACT

ORIGINAL CONTRACT COMMENCEMENT DATE

DATE OF LOSS OR DAMAGE

DATED REPORTED TO SITE AGENT

REPORTED BY

REPORTED TO BY

DATE

LOCALITY OF INCIDENT

DETAILS OF HOW THE LOSS OR DAMAGE OCCURRED

DETAILS AND NATURE OF LOSS OR DAMAGE TO CONTRACT WORKS / TO THIRD PARTY PROPERTY

DETAILS OF OTHER DEATH OR INJURY TO PARTIES

ESTIMATED COST (SEPARATE RECORDS OF ALL COSTS MUST BE KEPT)

WHO OR WHAT APPEARS TO BE RESPONSIBLE FOR THE CAUSE OF THE LOSS / DAMAGE

PERSON WHOM ASSESSOR SHOULD CONTACT

DESIGNATION:

TELEPHONE (LANDLINE)

CELLPHONE NO.

E-MAIL ADDRESS

ALL INCIDENTS HAVE TO BE REPORTED AS SOON AS POSSIBLE AND WITHIN 30 DAYS
OF OCCURRENCE

SIGNED BY:

SIGNATURE:

COMPANY:

DATE:

Annexure 3

Monthly Contract Register Control Sheets

"PREVIEW COPY ONLY"



TRANSNET: PRINCIPAL CONTROLLED INSURANCE – MONTHLY CONTRACT REGISTER CONTROL SHEET

A) NEW CONTRACTS FIRST DECLARATION OF NEW CONTRACT WORKS FOR COVER UNDER PCI POLICY

DIVISION / SUPPORT UNIT:
CONTACT PERSON:
TELEPHONE / CELL NO'S:

INSURANCE YEAR: 2012/2013
MONTH:
E-MAIL ADDRESS:

CONTRACT NUMBER	CONTRACT DECLARATION CONTROL NUMBER	DESCRIPTION OF CONTRACT WORKS	DATE DECLARED TO WILLIS	ESTIMATED TOTAL CONTRACT VALUE R	COMMENCEMENT DATE OF WORKS	ESTIMATED COMPLETION DATE
Purchase Order No	1					
Purchase Order No	2					
Purchase Order No	3					
Purchase Order No	4					
Purchase Order No	5					
Purchase Order No	6					
		TOTAL DECLARED FOR MONTH				

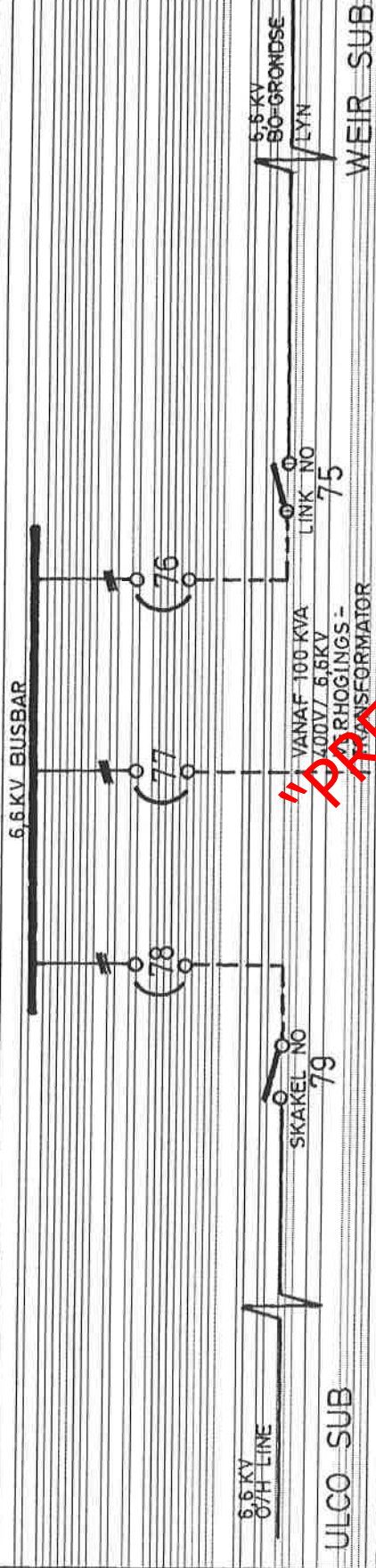
"PREVIEW COPY ONLY"

B) CONTRACT EXTENSIONS

"PREVIEW COPY ONLY"

[illegible]

AMENDMENTS WYSIGINGS		
No	NAME	DATE
	NAAM	DATUM



SWITCHGEAR PARTICULAR		ASSOCIATED ELECTRIC INDUSTRIES	
O.C.B. DESIGNATION	78 ULCO	77 SUPPLY X-FORMER	76 WEIR
MAKERS SERIAL NO	660015	660014	660013
CT RATIO (PROTECTION)	10-10/5	20-10/5	10-10/5
METERING			
TESTING			
VOLTS	6.6KV	6.6KV	6.6KV
AMPS	400A	400A	400A
SHORT TIME CURRENT	7.88KA AT 0.5 SEC	7.88KA AT 0.5 SEC	7.88KA AT 0.5 SEC
MVA RATING			
BREAKING CAPACITY SYM			
BREAKING CAPACITY ASYM			
MAKING CAPACITY			
METERS	AMP, M.D. AMP	AMP, M.D. AMP, Kwh	AMP, M.D. AMP
PROTECTION	OC, EF, OC	OC, EF, OC	OC, EF, OC
TRANSFORMER PARTICULAR			
TRANSF. DESIGNATION			
MAKERS SERIAL NO			
KVA. RATING & PHASE			
VOLTS PRIM / SEC.			
AMPS PRIM / SEC.			
TAP POSITION			
PROTECTION			
IMPEDANCE			
WT OF WINDINGS & CORE			
OIL CAPACITY			
TOTAL WEIGHT			
VECTOR GROUP			
TYPE OF COOLING			
DRN W.E.M.C	REF	VERW	
GET			

THIS DRG SUPERSEDES DRG KEE PE 75

SKAKELKAMER

GONG GONG

6,6 KV

SWITCHING DIAGRAM

SKAKELDIAGRAM

PC 101

DRAWING No KEE

DATE 83/12/19

ENG JR

DRN W.E.M.C

TK-VERW 83/12/19

DATE 83/12/19

DA-UM

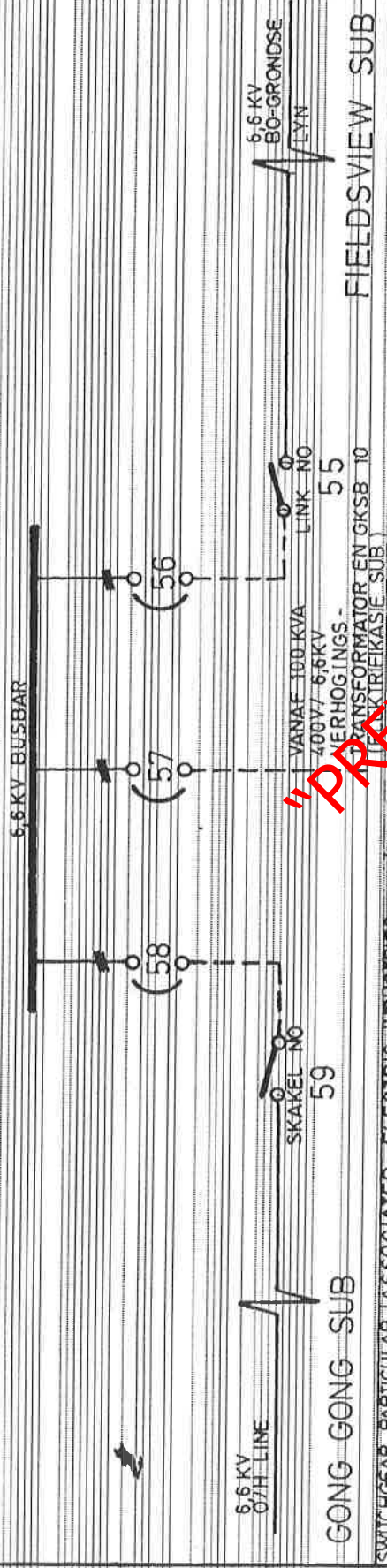
SYSTEM ELECTRICAL ENGINEER

ELEKTRIESE AFDELING

AFRIKAANSE ENGENEERS

AFRIKAANSE ENGENEERS

APPROVED BY	
NAME	DATE
NAME	DATE
1	92-11-20
NOTA: GKSB 10 BYGEVOERD- TK VERW. KEE 92/97B	



SWITCHGEAR PARTICULAR	ASSOCIATED ELECTRIC INDUSTRIES
OCB DESIGNATION	58 GONG GONG
MAKER'S SERIAL NO	660012
CY RATIO (PROTECTION)	10-10/5
(METERING)	
(TESTING)	
VOLTS	6.6KV
AMPS	400A
SHORT TIME CURRENT	7.8KA AT 0.5 SEC
MVA RATING	
BREAKING CAPACITY SYM.	
BREAKING CAPACITY ASM	
MAKING CAPACITY	
METERS	AMP, M.D.AMP
PROTECTION	OC, EF, OC

TRANSFORMER PARTICULAR	ASSOCIATED ELECTRIC INDUSTRIES
TRANSF. DESIGNATION	57 SUPPLY X-FORMER
MAKER'S SERIAL NO	660010
KVA RATING & PHASE	10-10/5
VOLTS PRIM / SEC	
AMPS PRIM / SEC	
TAP POSITION	
PROTECTION	
IMPEDANCE	
WT OF WINDINGS & CORE	
OIL CAPACITY	
TOTAL WEIGHT	
VECTOR GROUP	
TYPE OF COOLING	

DRN W.E.M.C	REF	VERW
IRCD W.E.M.C	DO REF KEE	ENG
NGT	TK-VERW 83/204	IR
CKD	DATE 83/12/19	DATUM
NGS	DN	
SYSTEM ELECTRICAL ENGINEER		
E. EKTRIESE AFDELINGSINGENIEUR		
SOUTH AFRICAN TRANSPORT SERVICE		
SUID-AFRIKAANSE VERVOERDIENSTE		

NOTE: 1/ OC - OVERCURRENT
2/ EARTH FAULT
3/ O.C.B. NAME PLATES KEE PHC 12.

SKAKELKAMER

SWITCH ROOM

WEIR

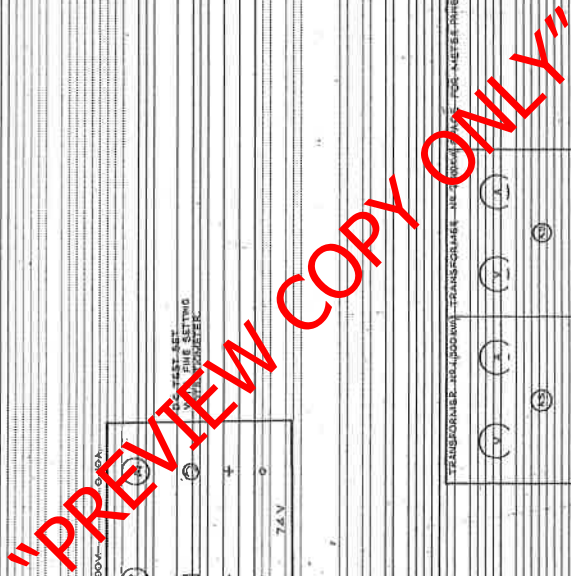
DRAWING No KEE

PC 102

SWITCHING DIAGRAM
SKAKELDIAGRAM

6,6 KV

TO BE SUPPLIED & INSTALLED BY ELECTRICAL CONTRACTOR.



~~BY ELECTRICAL CONTRACTOR~~

AY-8187-057058-1072

1/26-6-71 K.P.B.A.

GALILEI DIESEL, DEPOT.

KANTLEY LOTTERYMAN ANSTAY & POTT'S

CONSULTING
SERVICES
8473963
C HASENBERG & SONS INC.
3582AVERVAU
ROSELLE
ELECTRICAL INSTALLATION
H T & L F SUPPLY

name, addresses, home/office	s. b. 302/303/270	date/datum	year/monat	duration	1000/1000
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02.43/CE-726

TRANSNET



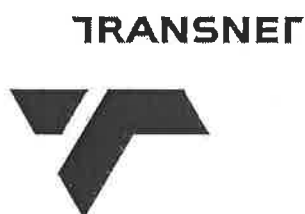
(REGISTRATION NO.1990/000900/30)
**TRADING AS
TRANSNET FREIGHT RAIL**

**ADDENDUM NO. 1
TO THE
SECONDARY AND GENERAL SPECIFICATIONS
OF THE CONTRACT**

- 1) Where ever the word "Spoornet" appears in these specifications, please replace it with "Transnet Freight Rail".
- 2) Wherever reference is made to the E5(M.W.)(1996), the E5(Nov.1996) or E160 General Conditions of Contract, please refer to the Conditions of Contract of the ECC3 Contract.
- 3) Where ever the words "Technical Officer" appear in these specifications, please replace with "Supervisor".

TRANSNET





(REGISTRATION NO.1990/000900/30)
TRADING AS TRANSNET Freight Rail

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

1. CAMPS

- 1.1 Prior to the erection of any camp, the Contractor shall submit to the Technical Officer, for his approval, details of his proposals as to the site, water supply, sanitation, and size and type of buildings. Where the site is on private land, the Contractor shall submit the written approval for the use of the site of the relevant statutory authority and of the owner and occupier of the land (as applicable).
- 1.2 Camps must not be erected on land infested with field rodents.
- 1.3 Adequate drainage shall be provided to carry off storm and waste water.
- 1.4 Buildings shall be built to a neat and orderly pattern.
- 1.5 All buildings shall have smooth, hard, impervious floors, graded to provide effective drainage and to permit washing.
- 1.6 Camps shall be maintained by the Contractor at his own expense in a clean and tidy condition. The Contractor shall take such steps as the Technical Officer and landowner/occupier may demand to prevent the creation of a nuisance.
- 1.7 When so instructed by the Technical Officer, the Contractor shall, at his own expense, erect suitable screens between the camp and any public road, thoroughfare or railway line.
- 1.8 After removal of a camp, the Contractor shall, at his own expense, restore the site to its original condition to the satisfaction of the Technical Officer and of the landowner and occupier where the site is on private land.

2. HOUSING

- 2.1 Every living room shall have cross ventilation, both constant and occasional. Where only one window is provided, it shall not be in the same wall as the door.

- 2.2 Dimensions of living rooms shall be sufficient to allow 3.5 square metres of floor area and 11 cubic metres of air space for each person over the age of 10 years. The floor area of any living room shall not be less than 7,8 square metres.
- 2.3 Flat-roofed quarters shall have a minimum roof height of 3 metres above floor level. For quarters with pitched roofs, the wall height shall be not less than 2,6 metres above the floor with a minimum height above floor of 3 metres at the top of the pitch.
- 2.4 Doors shall not be less than 2m x 0,75m and must be halved.
- 2.5 Windows of each living room shall have an area not less than one twelfth of the floor area and shall be capable of opening to at least half their full area.
- 2.6 In areas where malaria is prevalent, doors and windows must be fitted with gauze screens.
- 2.7 Cooking shelters shall comprise roofed structures, three sides of which shall be enclosed by a weatherproof material, approved by the Technical Officer to a height of at least 1m above ground level.
- 2.7.1 Sleeping quarters shall not accommodate more than 8 persons per room.
- 2.7.2 Pegboards shall be carried on metal or concrete supports and shall be separated by partitions not less than 0,4 metres high extending to within 150mm of the end of the bunk. Pegboards shall be removable for cleaning.

3. WATER SUPPLY AND ABLUTION FACILITIES

- 3.1 The Contractor shall ensure that an adequate and conveniently situated supply of potable water is provided.
- 3.2 Separate buildings for ablution facilities shall be provided. Where approval has been obtained for the housing of both males and females, separate facilities for each sex shall be provided. The proportion shall be 1 cubicle for 20 persons.
- 3.3 Waste water shall be hygienically disposed of.

4. SANITATION

- 4.1 Separate buildings for latrine facilities shall be provided. Where housing are provided for both males and females, separate facilities for each sex shall be provided. The proportions shall be at least one squatting seat for every 15 persons or less in the case of pit latrines, or one for every 10 persons or less in case of pail latrines.

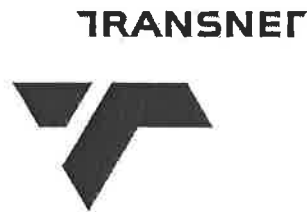
Latrines shall be fly proof and sited at least 10 metres from any other building, and shall not face on any public road, thoroughfare, railway line or residential property. Pits shall not be less than 2,5 metres deep and sited not less than 120 metres from nearest underground water source.

- 4.2 Latrines shall be so constructed, situated and maintained, and night soil so disposed of as to prevent access by animals, breeding of flies, pollution of streams and domestic water supplies, and other nuisances. Where a night soil removal service is operated by a competent authority, use of such service shall be obligatory, and the use of pit latrines and atria pits will not be permitted.
- 4.3 At least one refuse bin of adequate size with close fitting lid shall be provided for each building. Refuse bins shall be emptied and cleaned out daily.
- 4.4 Labour shall be employed on camp sanitation duties on the following basis:-
- 4.4.1 Where the number of persons living at the camp is 20 or less - one unit.
- 4.4.2 For additional numbers over 20 living at the camp - one unit per 100 or part thereof.
- 4.5 Unless refuse is removed by a competent authority, it shall be disposed of in pits and covered over daily with a layer of earth or ash of sufficient thickness to prevent depredations by rodents and the breeding of flies.
- 4.6 Adequate measures shall be taken against all vermin and insects responsible for the spread of disease. Any instructions of a competent health authority shall be carried out promptly and implicitly.
- 4.7 Buildings and bedboards shall be treated whenever necessary with an approved insecticide.
- 4.8 The Contractor shall permit and facilitate inspection of the camp and structures on the site by the staff of Transnet or any other competent authority, and shall comply with any reasonable request by such staff or any other competent authority to eliminate any unsanitary condition.
- 4.9 Any outbreak of infectious disease shall immediately be reported telephonically and confirmed in writing to the Technical Officer.
- 4.10 The keeping of animals of any sort is not permitted.
- 4.11 The Contractor shall have on hand at the camp the necessary tools, disinfectants and cleaning materials to maintain and clean the sanitary facilities.

5. RATIONS

Rations, where supplied by the Contractor, shall be stored in a suitable and rodent proof building with sufficient shelving.

P02b-06 (JLH)



TRANSNET SOC LTD
(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 SOC Ltd (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 Project Manager or his deputy shall at all times, co-operate in respect of the health and safety management of the site, and shall agree on the practical arrangements and procedures to be implemented and maintained during execution of the Works.
- 1.5 In the event of any discrepancies between any legislation and this specification, the applicable legislation will take precedence.

2. Definitions

- 2.1 In this Specification any word or expression to which a meaning has been assigned in the Construction Regulations, shall have the meaning so assigned to it, unless the context otherwise indicates: -

- 2.2 The work included in this Contract shall for the purposes of compliance with the Act be deemed to be "**Construction Work**", which, in terms of the Construction Regulations, 2003 means any work in connection with: -
- (a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
 - (b) the installation, erection, dismantling or maintenance of fixed plant where such work includes the risk of a person falling;
 - (c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
 - (d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;
- 2.3 "**competent person**" in relation to construction work, means any person having the knowledge, training and experience specific to the work or task being performed: Provided that where appropriate qualifications and training are registered as per the South African Qualifications Authority Act, 1995 these qualifications and training shall be deemed to be the required qualifications and training;
- 2.4 "**contractor**" means principal contractor and "subcontractor" means contractor as defined by the Construction Regulations, 2003.
- 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 300 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, Project Manager 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 Project Manager. 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 Project Manager.
- 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 Project Manager 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 Project Manager 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 Project Manager or the relevant authority for such permits to be issued. The Contractor shall strictly comply with the conditions and requirements pertaining to the issue of such permits.

5. Health and Safety Programme

- 5.1 The Tenderer shall, with his tender, submit a Health and Safety Programme setting out the practical arrangements and procedures to be implemented by him to ensure compliance by him with the Act and Regulations and particularly in respect of: -
- (i) The provision, as far as is reasonably practical, of a working environment that is safe and without risk to the health of his employees and subcontractors in terms of section 8 of the Act;
 - (ii) the execution of the contract work in such a manner as to ensure in terms of section 9 of the Act that persons other than those in the Contractor's employment, who may be directly affected by the contract work are not thereby exposed to hazards to their health and safety;
 - (iii) ensuring, as far as is reasonably practical, in terms of section 37 of the Act that no employee or subcontractor of the Contractor does or omits to do any act which would be an offence for the Contractor to do or omit to do.
- 5.2 The Contractor's Health and Safety Programme shall be based on a risk assessment in respect of the hazards to health and safety of his employees and other persons under his control that are associated with or directly affected by the Contractor's activities in performing the contract work and shall establish precautionary measures as are reasonable and practical in protecting the safety and health of such employees and persons.
- 5.3 The Contractor shall cause a risk assessment contemplated in clause 5.2 above to be performed by a competent person, appointed in writing, before commencement of any Construction Work and reviewed during construction. The Risk Assessments shall form part of the Health and Safety programme to be applied on the site and shall include at least the following:
- (a) The identification of the risks and hazards that persons may be exposed to;
 - (b) the analysis and evaluation of the hazards identified;
 - (c) a documented Health and Safety Plan, including safe work procedures to mitigate, reduce or control the risks identified;
 - (d) a monitoring and review plan.
- 5.4 The Health and Safety Plan shall include full particulars in respect of: -
- (a) The safety management structure to be instituted on site or place of work and the names of the Contractor's health and safety representatives and members of safety committees where applicable;
 - (b) the safe working methods and procedures to be implemented to ensure the work is performed in compliance with the Act and Regulations;
 - (c) the safety equipment, devices and clothing to be made available by the Contractor to his employees;

- (d) the site access control measures pertaining to health and safety to be implemented;
 - (e) the arrangements in respect of communication of health and safety related matters and incidents between the Contractor, his employees, subcontractors and the Project Manager 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 Project Manager'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 Project Manager'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 Project Manager 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, Project Manager, 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 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 Project Manager 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 Project Manager, 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 Project Manager.
- 8.3 The Contractor shall hand over a consolidated health and safety file to the Project Manager 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.

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.

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 :

"PREVIEW COPY ONLY"

ANNEXURE 4

(LETTER HEAD OF BUSINESS DIVISION OR UNIT OF TRANSNET SOC LTD)

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 : _____
PROJECT MANAGER

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 : _____

Occupational Health and Safety Plan

Company name: _____

Project name: _____

Includes Environmental, Occupational Health and Safety and Quality Management (SHEQ)

CONTENT

1. Project Details
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13. Environment
14. Ergonomics
15. Health and Safety Communications
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17. Personal Protective Equipment and Clothing
18. Project security
19. Implementation Costs

Title.

Occupational Health and Safety Plan

This health and safety plan has been prepared in term of the Occupational Health and Safety Act 1993 (Act No 85 of 1993) and Regulations Construction Regulation 5. (1).

This Health and Safety Plan will be revised as and when additions, alterations etc are communicated to us by the Client, his Agent or the Architect / Designer or the conditions of the contract dictate.

1. PROJECT DETAILS

1.1. Project Name:

Physical address:

Contact Details:

Client name:

Postal address:

P O Box

Contact person - Name:

Contact No:

Telephone –

Facsimile –

Cellular No:

Email

1.2. Agent:

Company name:

Postal address:

Contact person - Name:

Contact No:

Telephone –

Facsimile –

Cellular No:

Email

1.3. Architect.

Company name:

Postal Address:

P O Box

Contact person:

Postal address:

P O Box

Contact No:

Telephone –

Facsimile –

Cellular:

Email:

1.4. Principle Contractor

Company name:

Postal Address:

P O Box

1.4.1. Project Manager.

Name:

Contact No:

Telephone –

Cellular:

Assignee Sect 16(2)

Facsimile

Email

1.4.2. Construction Work Supervisor:

Name:

Contact No:

Telephone

Cellular telephone No:

Construction Regulation 6. (1)

Facsimile

1.5. Scope of work

Doors

Electrical installation – re-wiring

Glazing

Granite tops

Plastering

Plumbing and drainage

Shop fittings

Softs, curtains etc

Tiling

NB Where there is construction work in progress with other personnel in the immediate vicinity activities must be co-ordinated by the Principle Contractor and the other Contractors.

1.6. Duration of contract: Start – Expected completion –

1.7. Emergency Telephone Numbers:

An emergency telephone number list should be prominently displayed adjacent to the telephone
The contents of this list is flexible and the following is given as a guide –

EMERGENCY TELEPHONE NUMBERS

Service	Name	Business	After Hours
i Ambulance:			
ii Doctor:			
iii. Hospital:			
iv. Fire Department:			
v. S.A. Police Services:		10111	
vi. Department of Labour:			
vii. Compensation Insurer			
vii.a COID – Commissioner			
vii.b. FEMA			
Project Manager:			
Safety Advisors:			
Telephone			
Facsimile			
Email			

DEPARTMENT OF LABOUR

Provincial Office

Department of Labour:

Contact No:

OCCUPATIONAL HEALTH AND SAFETY

2. Policy statement

The Company is committed to providing a safe and healthy working environment and this occupational health and safety plan documents the action that will be implemented.

We acknowledge that as the Principle Contractor we have both a legal and moral obligation to as far as is reasonable and practicable to develop a realistic Health and Safety plan making due reference to the Clients Health and Safety Specification.

We further accept that we must ensure that the relevant legislation is complied with and that all reasonable and practicable steps are taken by all Contractors to provide a safe and healthy environment for persons to work in and that the public are adequately protected.

An independent health and safety advisor will conduct a monthly legal compliance audit to ascertain the level of adherence with statutory requirements, company policy and rules including Occupational Health and Safety, Environmental and Quality standards.

3. Objective.

To complete the project within the budget in respect of finance and time, to an acceptable quality and with no injuries to employees or other persons.

The specific purpose is to achieve and maintain realistic and sustainable International and locally acceptable standards. A ZERO tolerance attitude towards incidents and non-compliance of prescribed quality and workmanship will be adopted. Deviations will be investigated and the appropriate corrective action must be implemented.

NB This Specification will be imposed on all Contractors and their employees working on this project.

4. Common Vocabulary (COMVOC)

Terminology

- | | |
|--|-----------|
| 4.1. Basic Conditions of Employment Act 1997 (Act No 75 of 1997) | BCEA |
| 4.2. Compensation for Occupational Injuries and Diseases Act 1993 (Act No 130 of 1993) | COIDA |
| 4.3. Department of Labour | DoL |
| 4.4. Department of Labour – Inspection and Enforcement Services | DoL (IES) |
| 4.5. Federated Employers Mutual Assurance Company Limited | FEMA |
| 4.6. National Building Regulations and Standards Act 1997 (Act No 103 of 1997) | NBR&S |
| 4.7. Occupational Health and Safety Act 1993 (Act No 85 of 1993) and Regulations | OH&SA |
| 4.8. Occupational Health & Safety Act 1993 Construction Regulations, 2003 | CR |
| 4.9. Provincial Director | PD |

Abbreviation

5. Legislation

Definitions:

“client” the person for whom any construction work is performed,

Legislation

CR 4. (1)

“agent” means any person, appointed in writing to represent the Client,

CR 4 (5)

“architect / Designer” a person who prepares, checks, prepares or assists with a design,

CR

“competent person” a person with the knowledge, training, experience and qualification specific to the work or task being performed. Where there is, and he/she has the appropriate SAQA qualification,

CR

"construction Safety Officer" a competent person in relation to occupational health and safety in the construction industry,	CR
"Contractor" an employer who performs construction work,	CR
"ergonomics" the application of scientific information to optimise human well-being and performance,	CR
"fall prevention plan" a documented plan to eliminate or reduce the risk of falling,	CR
"hazard assessment" the analysis of all existing or potential hazard associated with the work being or to be performed.	
"hazard identification" the identification of existing or known hazards that is normally associated with the work being or to be performed,	CR
"health and safety file" a permanent record of the health and safety requirements prescribed in these regulations,	CR
"health and safety plan" a documented plan, including safe work procedures to mitigate, remove, reduce or eliminate the hazards identified,	CR
"health and safety specification" means a documented specification of the health and safety requirements for the tasks to be performed safely,	CR
"medical certificate of fitness" a certificate valid for one year issued by an occupational health practitioner registered with the Health Professional Council of South Africa,	CR
"method statement" the documented procedure to perform the task as reasonably and practicably safe,	CR
"national building regulations" means the regulations made in terms of section 17(1) of the NBR and BS Act, 1997 (Act No 103 of 1997).	
"principle Contractor" an employer who performs construction work appointed in writing by the Client or his appointed Agent,	CR
"professional engineer or professional certificated engineer" means any person holding registration as either a Professional Engineer or Professional certificated Engineer under the Engineering Professions Act, 2000,	CR
"provincial director" means the Provincial Director as defined in Section 1 of the General Administration Regulations under the Act,	CR
"risk assessment" a programme to determine any risks associated with a task and the to identify the steps to remove, reduce or control such hazard,	CR
"SABS – 085" the code of practice – "Design, erection, use and inspection of Access Scaffolding",	CR
"SABS – 0400" the code of practice for the application of National Building Regulations,	CR
"SABS EN 1808 and SABS 1903" the code of practice entitled "safety requirements on suspended access equipment design calculations, stability criteria, construction – tests",	CR

"The Act" means the Occupational Health and Safety Act 1993 (Act No 85 of 1993), CR

"construction Vehicle" a vehicle used for means of conveyance for transporting persons or material or both as the case may be, both on and off the construction site for the purpose of performing construction work, CR

"excavation" means any man – made cavity, trench, pit or depression formed by cutting, digging or scooping, CR

"fall prevention equipment" means equipment used to prevent persons from falling from an elevated position, CR

"roof apex height" means the dimensional height in meters measured from the lowest ground level abutting any part of a building to the highest point of the roof, CR

"scaffold" means any temporary elevated platform and supporting structure used for providing access to and supporting workmen or material or both, CR

"structure" any building, steel or reinforced concrete structure, railway line, or siding, bridge, waterworks, reservoir or pipeline, cable, sewer, sewage works, fixed vessel, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plant, pylon, surface and underground tanks, earth retaining structures or any structure designed to preserve or alter any natural feature, and any other similar structure;

(a) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or

(b) any fixed plant in respect of work, which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk to persons falling 2 metres or more. C R

6. Statutory Obligations

Description

Legislation

6.1. Basic Conditions of Employment Act BCE

The relevant sections are to be complied with special attention to at least the following –
Working hours,
Conditions of employment and Remuneration,
Termination of employment,
Employment of child labour prohibited.

6.2. Compensation for Occupational Injuries and Diseases Act 1993 (Act No 130 of 1993) COIDA

The Act provides for compensation for health conditions, death, diseases and or injuries that arises out of and in the course of an employee's duties. All employers-Principle Contractor and Contractors must register with a compensation insurer – either COIDA or FEMA. They must be in good standing – have proof of having paid their current assessment - in the form of either a receipt of payment or a letter of good standing from their compensation insured prior to commencing work on the project with a copy on Site.

6.3. Occupational Health and Safety Act 1993 (Act No. 85 of 1993) OH&SA

The OH&SA is the primary law regulating occupational health and safety matters. The Act is a framework Act that provides for the development of detailed rules and standards through regulation. As a framework, the Act prescribes that -

- (a) the employer must provide and maintain a safe and healthy working environment for his employees and any person, who may enter onto the premises,
- (b) the duties of employers to their employees, employees to their employer and suppliers to the employer and
- (c) the "reasonable man" approach by the employer in decisions concerning occupational health and safety,

- (d) the management, application and enforcement of the Act and regulations are the responsibility of the employer i.e. be he the appointed agent where applicable, Project Managers, each principle Contractor and Contractor.
- (e) each principle Contractor and Contractor shall have a copy of the Act which must be available on site at all times. Employees are to be allowed reasonable access to the Act during normal working hours.

NB Interpretation

Where there is any question as to the interpretation of any legislation and an agreement cannot be reached the matter is to be escalated from Contractor to Principle Contractor to the client. Should the matter still not be resolved it needs to be referred to the Provincial Director – Department of Labour.

7. Project Management

Description	By whom	Legislation
7.1. Notification of Construction Work.	Principle Contractor	CR 3.1
7.2. Health and Safety Specification The Health and Safety Specification from the Client must be referred to when preparing this Health and Safety Plan.	Client to provide.	CR 4. (1)(a)
7.3. Health and Safety Plan This Health and Safety Plan reflect the procedure that will be implemented to ensure legal compliance during Construction Work.	Contractor	CR 5. (1)
7.4. Health and Safety File All documentation – minutes of health and safety committee meetings, risk identifications / assessments, legal compliance audits, induction and other training including service records of equipment and machinery etc must be included in the file.	Contractor	CR 5. (7)
7.5. Agreement with Mandatory A written agreement will be entered into between the Client and the Agent, the Agent and each Contractor.	Client / Agent / Principle and Contractor	Act Sec 37(2)
7.6. Appointment of each Contractor by the Agent.		CR 5 (3) (b)
7.7. Organisation chart		
7.7.1. Assignment of Duties Mr _____ is assigned the duty of ensuring that the requirements of the Act and Regulations and this Health and Safety Plan are complied with during the Construction Work.	Contracts Manager	Act Sec 16(2)
7.7.2. Construction Supervisor Mr _____ is appoint, in writing a competent employee to supervise the day-to- day construction work on the project. The supervisor will manage and control all construction activities in the absence of the Sect 16(2) assignee.	Site Agent	CR 6. (1)
7.7.3. Sub-ordinate Construction Supervisor. Mr _____ is appointed to be in control of the project in the absence of the Site agent appointed in terms of Construction Regulation 6. 1. NB Under no circumstances may a Contractor leave employees on the site unless there is a competent construction work supervisor present.		CR 6. (2)
7.7.4. Construction Safety Officer Mr _____ has been appointed a part – time construction safety officer for the duration of the project.	Part-time/Full-time	CR 6. (6)

7.7.5. Contractors

CR 5. (3)(b)

An up dated list of Contractors will be kept and maintained on Site.

Company:

Activity:

Address

Contact person:

Contact numbers:

Telephone –

Cellular –

Facsimile –

Email:

Company:

Activity:

Address:

P O Box

Contact person:

Contact numbers:

Telephone -

Cellular -

Facsimile

Email:

Company:

Activity:

Address:

P O Box

Contact person:

Contact numbers:

Telephone -

Cellular -

Facsimile –

Email:

Company:

Activity:

Address:

P O Box

Contact person:

Contact numbers:

Telephone –

Cellular –

Facsimile –

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Facsimile

Email:

Company:

Activity:

Address:

P O Box

Contact person:

Contact numbers:

Telephone –

Cellular –

Facsimile –

Email:

Company:

Activity:

Address:

P O Box 1254 –

Contact person:

Contact numbers:

Telephone –

Cellular –

Facsimile

Email:

Every Contractor is responsible to ensure that his employees comply with the applicable legislation and this health and safety plan.

NB: A section 37(2) Agreement with Mandatory must be entered into between the Contractors and the principle Contractor.

NB Contractor who contracts out construction work. Where a Contractor contracts construction work out to another Contractor he becomes the Principle Contractor and a section 37(2) agreement must be entered into.

7.7.6. Designation of the Health and Safety Representative / s

Act sect 18

Mr _____ is a designated health and safety representative.

He will perform his prescribed duties in his area of responsibility.

Act sect 18(1) (g)

7.7.7. Appointment as the Risk Assessor / Facilitator.

C R 7(1)

Mr _____ is appointed to identify and record the risks associated with tasks being or that will be performed. These assessments must be reviewed as and when necessary.

7.7.8. Scaffold Inspector:

C R 14(2)

Mr _____ is appointed for this project.

Scaffolds must be inspected as prescribed and the findings reflected in the register provided.

8. Incident Management – Occupational Health and Safety

8.1. Incidents and or injuries

A policy of ZERO tolerance is the target for the project. Every thing reasonable and practicable must be adopted and actively implemented to prevent any incident or injury. Every possible danger or hazard must be identified, documented, analysed and the appropriate action to mitigate and or reduce them implemented. The necessary training of employees must be identified and introduced.

TARGET - NO FATAL OR DISABLING INJURIES

Report to inspector regarding certain incidents

Sect 24

Each incident, which occurs at work or that, arises out of or in the course of his employment that could either result in the employee's death that he loses a limb or part of a limb, becomes unconscious or that he is unable to continue with his normal duties for a period of 14 days must be reported to the relevant Provincial Director of Labour.

8.1.1. no person shall without the permission of an inspector, in the event of an incident described in (1) above disturb the site -

NB Although incidents, which occur on a public road or that, are aviation related must be reported if it arose out of and in the course of the employee's employment.

Domestic incidents are excluded.

Definitions.

Accident

COID Def

Means an accident arising out of and in the course of an employee's employment and resulting in a personal injury, illness or the death of the employee.

Occupational disease

Means any disease contemplated in section 65(1) (a) or (b). NB It includes conditions resulting from exposure to items either used and or exposed to in work place.

Occupational injury

Means any personal injury sustained as a result of an accident.

Classifications.

Fatal - Where the employee dies.

Disabling - When an employee cannot continue to perform the duty he was employed for.

Lost time incident - When an employee does not return to perform the work he was employed for on the next normal working day.

Disabling Lost Time - When an employee sustains an injury on duty and does not return to perform the duties he was employed to do on the next normal working day.

Medical treatment incident - When an employee sustains an injury at work and requires medical – more than first aid treatment i.e. medical, surgical, hospital or skilled nursing services.

First Aid case - Where the wound is treated from the contents of a first aid box

Disabling Lost Time Injury Frequency Rate (DIFR) It is the number of disabling injuries, including a death multiplied by 1 million (1,000,000) divided by the total number of man-hours worked by all employees on the project for a specific month or the project to-date.

$$\text{DIFR} = \frac{\text{No of disabling lost time injuries} \times 1,000,000}{\text{Total man-hours work for the period under review}}$$

8.1.2. Reporting.

COIDA

An incident must be reported to the relevant Provincial Director and on the prescribed W.CL 2(E) document and within the prescribed time frame i.e. when the employer becomes aware of or the incident was reported to him.

8.1.3. Recording.

All incidents must be recorded on a document similar to the injury statistic form provided.

8.1.4 Investigation.

Sect 31 The

severity of the injury will dictate whom and when the investigation must be conducted. Where reasonable and practicable all incidents must be investigated prior to the end of the shift on which it occurred, reported to or his employer became aware thereof.

Fatal and serious injuries must be investigated before the end of the shift on which it occurred or as soon as reasonably practical after the occurrence. A team consisting of the Principle Contractor, the construction safety officer and the health and safety representative in whose area the incident occurred must conduct the incident investigation.

Where an employee of a Contractor is injured the Contractor and the health and safety representative for the area in which it occurred will be part of the team. The client or his agent may if they wish form part of the team. A record of the proceeding including signed statements, the name of the person conducting the investigation and persons assisting team members must be kept. All photographs etc must also be kept in the health and safety file.

NB In the event of a fatal, or potentially fatal incident the relevant DoL and the nearest South African Police Services station must be contacted. The scene of the incident may only be altered or disturbed with permission of an inspector or when it is necessary to rescue a person or lives in danger.

8.1.5. Analysis.

The statistics for the total project, each principle Contractor and Contractor must be analysed to ascertain if there is or if any trends are developing by the construction safety officer or a competent person appointed by the client, his agent, the principle Contractor's and all Contractors.

8.1.6. Statistics.

Comprehensive incident / injury statistics must be kept for the total project i.e. the Principle Contractor and every Contractor. The following information must be recorded and kept on the health and safety file of the principle Contractor / s and the Contractor / s.

The client or where applicable his appointed agent must ensure that the relevant statistics are collected, recorded, analysed and the appropriate action instituted. Where a construction safety officer is appointed it will form part of his duties and responsibilities.

Statistics must be kept in the format, suggested which is attached to this document.

The following incidents must be recorded – Fatal, disabling lost time, days lost, medical and first aid cases and man-hours worked. Statistics for the month under review and for the project to-date must be kept either together on one or more documents.

NB The Compensation Commissioner still refers to and reports the Disabling Injury Frequency Rate (DIFR). It has been decided to use the same formula. Contractors may use 200,000 in the formula. However they need to multiply by 5 to reflect the COIDA statistic rate.

8.1.7. Occupational disease / conditions

These must be reported and recorded as prescribed.

COIDA

8.1.8. Medical certificate of fitness.

A medical certificate of fitness, valid for 1 year must be available on the premises at all times for employee working on or operating the following:

i) *working in an elevated position,*

R

8. (2)(b)

i. *suspended platform,*

CR 15(12) (a)

ii. *Cranes – mobile - tower*

CR 20(g)

iii. *Construction vehicles.*

CR21 (1) (d)(ii)

During the process of task analyses and or risk assessment it is possible that

CR 7. (1)

other tasks may indicate that a medical certificate of fitness is necessary. The prescribed conditions will apply as though it was legislated.

8.2. Health and Safety Committee

Sect 19(4)

8.2.1. *Composition.*

Sect 19

The duly nominated, elected and designated employees, as health and safety representatives will serve on a health and safety committee. The Health and safety representatives will be required to attend the health and safety committee meetings. The Client and his appointed Construction safety officer are ex-officio members.

8.2.2. Meetings.

Meetings will be held on the day, date, time and place as mutually agreed upon by the health and safety representatives and management. The frequency will also be determined by the aforementioned.

Where the Principle Contractor has established a Health and Safety Committee the designated Health and Safety Representative shall serve on the Committee and the formula applied.

8.3. Legal compliance audits

8.3.1. Audit schedule

The attached schedule or a similar one approved by the Client and or the Principle Contractor must be used. The person conducting the assessment must report in writing any major deviations observed and where reasonable, practicable the corrective action recommended, the party responsible to take the action and a date by which such must be implemented.

8.3.2. Audit frequency.

An internal legal compliance audit will be conducted monthly.

CR 4. (1)

A legal compliance audit will be conducted by an external / independent auditor one (1) per month.

8.3.3. Analysis.

Each audit report must be tabled and discussed at the next relevant health and safety committee meeting. The chairman shall make any appropriate comments and or recommendations and sign the minutes. The Client, Principle Agent must receive a copy of the minutes. The audit of the Contractors must be consolidated, analysed and submitted to the principle Contractor and the client. The findings will be documented, analyses and recommendations made. Where necessary the client / agent will be consulted with to ascertain if additional resources and or finances are required. The action agreed on i.e. the responsible man test - and the time scheduling must be implemented. As the project progresses it may become necessary to increase the frequency of audits.

NB The construction safety office will assume and be appointed to perform these functions.

9. Log books and Registers.

9.1. *First aid Equipment*

GSR 3(3)

Mr _____ has been appointed the first aid attendant for the project. The prescribed contents of a first aid box will be available on the project and will be under the control of the first aid attendant.

9.2. Fire fighting appliances,

Mr _____ is appointed to inspect at the prescribed interval and record his CR 27 (g) findings in the appropriate register.

9.3. Access Scaffolding.

Mr _____ has been appointed to inspect access scaffolding as prescribed.

10. Risk Management

The prescribed risk identification, assessment and where necessary a method statement will be completed prior to coming on site where possible. As and when additional information etc is received concerning new or additional tasks the necessary risk identification, assessment must be conducted and approval obtained. Risks assessed that suggest a need for a change in design or other corrective action will be referred to the architect / designer or the client or his agent. Employees must receive, and sign acknowledgment of having received appropriate training, that they understood the requirement and would apply the knowledge.

Mr _____ is appointed the competent person to conduct the risk assessment.

11. Education and Training

11.1. Induction Training

No person will work on this project, or enter or be allowed to remain on the premises unless they have received and acknowledged in writing that they have received, understood and accept the conditions detailed in the induction programme.

A comprehensive list of all induction training given must be kept in the health and safety files and reported on, to management at least monthly. Training sessions must be conducted at least weekly.

NB Occasional visitors, client, agent, architect etc must be re-inducted when significant progress has been made on the project – risk, potential risks become apparent.

11.2. Site-specific training.

Site-specific training requirements will be identified. Where applicable a certificate on competency must be must be available – or a certified copy – on the site.

12. Evacuation procedure

12.1. The Clients or Principle Contractors evacuation procedure will be communicated to all employees.

12.2. All Company employees will report to their assembly point - the site office.

12.3. Definition of an emergency:

An emergency is a major occurrence such as a fire, bomb threat, chemical spillage, explosion, aircraft crash, or a natural disaster i.e. earthquake / cyclone, which could result in injury, loss of life, or extensive damage to property and the environment.

12.4. Alarm

An audible alarm will be sounded to warn employees of an emergency and also when the situation returns too normal.

12.5. Employee response to an alarm.

Stop working,

If you are using an electric or pneumatic tool switch it off place it on the ground and proceed to the assembly point.

Report to your Supervisor

12.6. Employee response to the all-clear signal.

Return to your working area and proceed with the task you were busy with prior to the evacuation.

Fire: _____ 3 Short sharp blasts

Serious Incident : _____ Long – short – long blasts

All clear : _____ 5 seconds

13. Environmental Management.

Pressure on natural resources, including land, has continuously increased, as the population increases and likewise, awareness of the need to lessen the negative impacts of development and construction on the environment will continue to increase.

Every effort must be made to use environmentally friendly paints and where possible water-based. The containers once emptied must be disposed of at an approved disposal site or returned to the supplier.

14. Ergonomics

Ergonomics is "the study of work". Ergonomics therefore is the Profession that studies and analyses people at work, the work systems, and how best they fit together. Much of the work done on Construction Sites is by its very nature an ergonomic problem, because it requires physical work to be done above head height, and below waist level, aggravated by constructions materials being heavy and/or inconveniently sized and shaped, which presents further manual materials handling issues.

15 Health and Safety Communication

Minutes of all health and safety committee meetings shall after acceptance shall be displayed, strategically placed on a site notice board. Where appropriate Newspaper clipping may be used during "tool box" talks and induction training. Any change in company policy or legislation the may affect employees must be communicated to employees as soon as is reasonable and practicable.

16. Safe work procedures.

A programme of safe work procedures is to be embarked on starting with those identified during the risk identification and assessment. Where reasonable and practicable steps have been taken and elements of risk still remain a procedure needs to be developed. The employees required to perform them must receive adequate training. Proof of training must be kept and be available on the premises. All procedures need to be documented.

17. Personal Protective Clothing and equipment.

PPE may only be issued only after all reasonable and practicable steps have been taken to remove or reduce the hazard and or potential hazards Act sec 8(2)
GSR 2(2)

All items issued must be maintained in good working order i.e. serviced and repaired as and when necessary. Items must be issued free of charge and for the personal use of the employee. The employee shall sign acknowledgement of receipt of the items that he will use it, them as prescribed and that he has received the necessary training in the use and care of the items.

The principle Contractor and Contractor must take all reasonable steps to ensure that PPE is used, worn and maintained as described GSR 2(6) issued is

18. Project / Site Security.

18.1. Barricading and maintenance

Adequate and suitable solid barricading must be erect and maintained to prevent unauthorised entry as well as to control access onto and off the site. Suitable information signs must be strategically positioned. They will include but not be limited to the following – No unauthorised entry, all visitors must report to the Site office, personal protective clothing / equipment must be worn etc. NB Project / Site management are responsible for all activities taking place on the premises, and people who enter onto or who are allowed to remain on the site.

18.2. Access control

The Client is responsible for the access to and egress from the construction area.

19. Implementation costs.

The cost of implementation should include but are not limited to the following-

19.1. Administration

- Project registration,
- Occupational health and safety plan and file,
- All assignments, appointments and designation,
- Risk identifications and assessments and Logbooks and registers,
- Health and safety committee meetings and minutes.

19.2. Training and Education

- Induction training and badges,
- First aid,
- Health and safety representatives
- Others - specify,

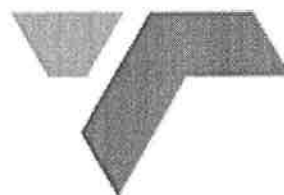
- 19.3. Legal compliance audits and reports.
Monthly or as required by the client.
- 19.4. Personal Protective Equipment and Clothing.
- 19.5. Other.
Site-specific requirements are to be specified.

Conclusion

This Health and Safety Plan has been developed and after negotiation with the Agent accepted. This approved plan will be made available to each Contractor prior to their commencing construction work on the project. We the undersigned do hereby acknowledge receipt of, understand and accept the contents of this Health and Safety Plan.

_____ Name	_____ Signature	_____ Designation	_____ Date
_____ Name	_____ Signature	_____ Designation	_____ Date
_____ Name	_____ Signature	_____ Designation	_____ Date

TRANSNET



Transnet SOC Limited Registration Number 1990/00900/06

TRANSNET SPECIFICATION

E7/1 - SPECIFICATION FOR GENERAL WORK AND WORKS ON, OVER, UNDER OR ADJACENT TO RAILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT

(This specification shall be used in network operator contracts)

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1.0 SCOPE

- 1.1 This specification covers the network operator's requirements for general work and works on, over, under or adjacent to railway lines and near high voltage equipment.

2.0 DEFINITIONS

The following definitions shall apply:

"Authorised Person" - A person whether an employee of the network operator or not, who has been specially authorised to undertake specific duties in terms of Transnet's publication Electrical Safety Instructions, 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 the network operator to carry out work on its behalf.

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

"Dead" - Isolated and earthed.

"Electrical Officer (Contracts)" - The person appointed in writing by the Project Manager in terms of this specification 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 the network operator 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 1000 volts.

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

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

"Occupation" - An authorisation granted by the network operator for work to be carried out under specified conditions on, over, under or adjacent to railway lines.

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

"Optical Fibre Cable" - Buried or suspended composite cable containing optical fibres used in:

- telecommunication networks for transmission of digital information and
- safety sensitive train operations systems.

"Project Manager" - As defined in the special conditions of the contract. The person or juristic person appointed by the network operator 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 (general or direct) staff under his control who perform general work or to work on, over, under or adjacent to railway lines and in the vicinity of high-voltage electrical equipment.

"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.

"Works" - The contractual intent for the work to be done as defined in the contract at a defined work site.

PART A - GENERAL SPECIFICATION

3.0 AUTHORITY OF OFFICERS OF TRANSNET

- 3.1 The Contractor shall co-operate with the officers of the network operator and shall comply with all instructions issued and restrictions imposed with respect to the Works which bear on the existence and operation of the network operator's railway lines and high-voltage equipment.
- 3.2 Without limiting the generality of the provisions of clause 3.1, any duly authorised representative of the network operator, having identified himself, may stop the work if, in his opinion, the safe passage of trains or the safety of the network operator's assets or any person is affected. **CONSIDERATIONS OF SAFETY SHALL TAKE PRECEDENCE OVER ALL OTHER CONSIDERATIONS.**

4.0 CONTRACTOR'S REPRESENTATIVES AND STAFF

- 4.1 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 Contract Supervisor with the names, addresses and telephone numbers of the representatives.
- 4.2 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.
- 4.3 The Contractor shall ensure that all contractor staff receives relevant awareness, educational and competence training regarding safety as prescribed.

5.0 OCCUPATIONS AND WORK PERMITS

- 5.1 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 Contract Supervisor and at times to suit the network operator requirements.
- 5.2 The Contractor shall organise the Works in a manner which will minimise the number and duration of occupations and work permits required.
- 5.3 The network operator 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.
- 5.4 The Contractor shall submit to the Contract Supervisor, in writing, requests for occupations or work permits together with details of the work to be undertaken, at least 21 days before they are required. The network operator does not undertake to grant an occupation or work permit for any particular date, time or duration.
- 5.5 The network operator 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 5.6 to 5.8.
- 5.6 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.
- 5.7 When the Contractor is notified less than 2 hours before the scheduled starting time, or during an occupation or work permit, that the duration of the occupation or work permit is reduced, he may claim reimbursement of his direct financial losses caused by the loss of working time due to the reduced duration of the occupation or work permit.
- 5.8 Reimbursement of the Contractor for any loss of working time in terms of clause 5.6 and 5.7, 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 Contract Supervisor certifies that no other work on which the labour and plant could be employed was immediately available.
- 5.9 Before starting any work for which an occupation has been arranged, the Contractor shall obtain from the Contract Supervisor written confirmation of the date, time and duration of the occupation.
- 5.10 Before starting any work for which a work permit has been arranged, the Responsible Representative shall read and sign portion C of the Work Permit, signifying that he is aware of the work boundaries 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 Work Permit, thereby acknowledging that he is aware that the electrical equipment is to be made "live". The Contractor shall advise all his workmen accordingly.

6.0 SPEED RESTRICTIONS AND PROTECTION

6.1 When speed restrictions are imposed by the network operator 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.

6.2 When the Contract Supervisor 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 the network operator's and the Contractor's personnel and assets, the public and including trains.

6.2.1 The network operator will provide training free of charge of the Contractor's flagmen and other personnel performing protection duties. The Contractor shall consult with the Contract Supervisor, whenever he considers that protection will be necessary, taking into account the minimum permissible clearances set out in the Manual for Track Maintenance (Document no. BBB0481):

- Drawing no. BE-97 Sheet 1: Horizontal Clearances: 1065mm gauge (Annexure 1 sheet 1)
- Drawing no. BE-97 Sheet 2: Vertical Clearances: 1065mm gauge (Annexure 1 sheet 2)
- Drawing no. BE-97 Sheet 3: Clearances: Platform (Annexure 1 sheet 3)
- Drawing no. BE-97 Sheet 5: Clearances: 610mm Gauge (Annexure 1 sheet 5)

6.3 The Contractor shall appoint a Responsible Representative to receive and transmit any instruction which may be given by the network operator personnel providing protection.

7.0 ROADS AND ROADS ON THE NETWORK OPERATOR'S PROPERTY

7.1 The Contractor shall take every reasonable precaution to prevent damage to any roads or bridges used to obtain access to the site, and shall select routes, use vehicles, and restrict loads so that any extraordinary traffic as may arise from the moving of plant or material to or from the site shall be limited as far as is reasonably possible.

7.2 The Contractor shall not occupy or interfere in any way with the free use of any public or private road, right-of-way, path or street unless the Contract Supervisor has obtained the approval of the road authority concerned.

8.0 CLEARANCES

8.1 No temporary works shall encroach on the appropriate minimum clearances set out in the Manual for Track Maintenance (Document no. BBB0481):

- Drawing no. BE-97 Sheet 1: Horizontal Clearances: 1065mm gauge (Annexure 1 sheet 1)
- Drawing no. BE-97 Sheet 2: Vertical Clearances: 1065mm gauge (Annexure 1 sheet 2)
- Drawing no. BE-97 Sheet 3: Clearances: Platform (Annexure 1 sheet 3)
- Drawing no. BE-97 Sheet 5: Clearances: 610mm Gauge (Annexure 1 sheet 5)

9.0 STACKING OF MATERIAL

9.1 The Contractor shall not stack any material closer than 3m from the centre line of any railway line without prior approval of the Contract Supervisor.

10.0 EXCAVATION, SHORING, DEWATERING AND DRAINAGE

10.1 Unless otherwise approved by the Contract Supervisor any excavation adjacent to a railway line shall not encroach on the hatched area shown in Figure 1.

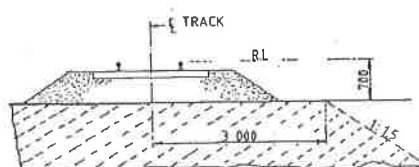


Fig. 1

- 10.2 The Contractor shall provide, at his own cost any shoring, dewatering or drainage of any excavation unless otherwise stipulated elsewhere in the Contract.
- 10.3 Where required by the Contract Supervisor, 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.
- 10.4 The Contractor shall prevent ingress of water to the excavation but where water does enter, he shall dispose of it as directed by the Contract Supervisor.
- 10.5 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.

11.0 FALSEWORK FOR STRUCTURES

- 11.1 Drawings of falsework for the construction of any structure over, under or adjacent to any railway line shall be submitted to the Contract Supervisor 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.
- 11.2 After the falsework has been erected and before any load is applied, the Contractor shall submit to the Contract Supervisor 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 Contract Supervisor to proceed, the Contractor shall be entirely responsible for the safety and adequacy of the falsework.

12.0 PILING

- 12.1 The Contract Supervisor will specify the conditions under which piles may be installed on the network operator's property.

13.0 UNDERGROUND SERVICES

- 13.1 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.
- 13.2 Any damage shall be reported immediately to the Contract Supervisor, or to the official in charge at the nearest station, or to the traffic controller in the case of centralised traffic control.

14.0 BLASTING AND USE OF EXPLOSIVES

- 14.1 When blasting within 50m of a railway line, the Contractor shall observe the requirements stipulated in this specification.
- 14.2 No blasting shall be carried out except with the prior written permission of the Contract Supervisor and under such conditions as he may impose.
- 14.3 On electrified lines the Contractor shall also obtain the permission of the Electrical Officer (Contracts) before blasting, and shall give at least 21 days notice of his intention to blast. No blasting shall be done in the vicinity of electrified lines unless a member of the network operator's electrical personnel is present.
- 14.4 The Contractor shall arrange for the supply, transport storage and use of explosives.
- 14.5 The Contractor shall have labour, tools and plant, to the satisfaction of the Contract Supervisor, available on the site to clear immediately any stones or debris deposited on the track or formation by blasting, and to repair any damage to the track or formation immediately after blasting. Repairs to the track shall be carried out only under the supervision of a duly authorised representative of the network operator.
- 14.6 The Contractor shall notify the Contract Supervisor of his intention to blast at least 21 days before the commencement of any blasting operations.
- 14.7 Before any blasting is undertaken, the Contractor and the Contract Supervisor shall jointly examine and measure up any buildings, houses or structures in the vicinity of the proposed blasting to establish the extent of any existing cracking or damage to such structures, etc. The Contractor, shall, subject to the provisions stipulated in the Contract Insurance Policy, make good any deterioration of such buildings, houses, or structures, which, in the opinion of the Contract Supervisor, was directly caused by the blasting.
- 14.8 After completion of the blasting the Contractor shall obtain a written clearance from each landowner in

the vicinity of the blasting operations to the effect that all claims for compensation in respect of damage caused by the blasting operations to their respective properties, have been settled.

- 14.9 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).
- 14.10 Blasting within 500m of a railway line will only be permitted during intervals between trains. A person appointed by the Contract Supervisor, 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.
- 14.11 The flagmen described in clause 14.10, where provided by the network operator, are for the protection of trains and the network operator's 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.
- 14.12 The person described in clause 14.10 will record in a book provided and retained by the network operator, 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.
- 14.13 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 Contract Supervisor and the person who will do the blasting shall both sign the book whenever an entry described in clause 14.12 is made.

15.0 RAIL TROLLEYS

- 15.1 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 Contract Supervisor and under the conditions stipulated by him.
- 15.2 All costs in connection with trolley working and any train protection services requested by the Contractor shall, be borne by the Contractor, unless otherwise agreed.

16.0 SIGNAL TRACK CIRCUITS

- 16.1 Where signal track circuits are installed, the Contractor shall ensure that no material capable of conducting an electrical current makes contact between rails of railway line/lines.
- 16.2 No signal connections on track-circuited tracks shall be severed without the Contract Supervisor's knowledge and consent.

17.0 PENALTY FOR DELAYS TO TRAINS

- 17.1 If any trains are delayed by the Contractor and the Contract Supervisor is satisfied that the delay was avoidable, a penalty will be imposed on the Contractor as stipulated in the contract, for the period and number of trains delayed.

18.0 SURVEY BEACONS AND PEGS

- 18.1 The Contractor shall not on any account move or damage any beacon, bench mark, reference mark, signal or trigonometrical station in the execution of the Works without the written approval of the Contract Supervisor.

Should the Contractor be responsible for any such occurrence, he shall report the circumstances to the Contract Supervisor who will arrange with the Director-General of Surveys for replacement of the beacon or mark at the cost of the Contractor.

- 18.2 The Contractor shall not move or damage any cadastral or mining beacon without the written approval of the Contract Supervisor and before it has been referenced by a registered land surveyor. Any old boundary beacon, which becomes an internal beacon on creation of new boundaries, shall not be moved without the written approval of the Contract Supervisor.

Should the Contractor move or damage any cadastral or mining beacon without authority, he shall be responsible for having it replaced, at his cost, by a land surveyor.

- 18.3 The Contractor shall preserve all pegs and bench marks. Such survey points shall not be removed without the written approval of the Contract Supervisor. Should any peg or benchmark be removed without authority, the Contract Supervisor will arrange for its replacement and the cost will be recovered from the Contractor. No claim will be considered for delay in replacing any such peg or bench mark. Each peg replaced shall be checked by the Contractor.
- 18.4 Where a new boundary has been established, beacons on the fence line shall not be disturbed, and fence posts or anchors may not be placed or excavations made within 0,6 m of any beacon without the prior written approval of the Contract Supervisor.

19.0 TEMPORARY LEVEL CROSSINGS

- 19.1 The Contract Supervisor may, on request of the Contractor, and if necessary for the purpose of execution of the Works, permit the construction of a temporary level crossing over a railway a line at a position approved by the Contract Supervisor and at the Contractor's cost. The period for which the temporary level crossing is permitted will be at the discretion of the Contract Supervisor.

- 19.2 The Contractor will provide protection and supervise the construction of the road over the track(s) and within the railway servitude at the level crossing, as well as the erection of all road signs and height gauges. All cost to be borne by the applicant.

The Contractor shall exercise extreme caution in carrying out this work, especially in respect of damage to tracks, services, overhead power and communications routes and prevent contact with "live" overhead electrical equipment.

Unless otherwise agreed, the Contractor will provide the service deviations or alterations to the network operator's track-, structure-, drainage-, electrical-, telecommunications- and train authorisation systems to accommodate the level crossing.

- 19.3 The Contractor shall take all necessary steps including the provision of gates, locks and, where necessary, watchmen to restrict the use of the temporary level crossing to himself and his employees, his subcontractors and their employees, the staff of the network operator and to such other persons as the Contract Supervisor may permit and of whose identity the Contractor will be advised. If so ordered by the Contract Supervisor, the Contractor shall provide persons to control road traffic using the temporary level crossing. Such persons shall stop all road traffic when any approaching train is within seven hundred and fifty (750) metres of the temporary level crossing, and shall not allow road traffic to proceed over it until the lines are clear.
- 19.4 The Contractor shall maintain the temporary level crossing within the railway servitude in good condition for the period it is in use. A temporary agreement with the road authority to be concluded for the maintenance of the level crossing outside the railway servitude.
- 19.5 When the temporary level crossing is no longer required by the Contractor, or permitted by the network operator, the Contractor shall at his own cost remove it and restore the site and the network operator's track-, structure-, drainage-, electrical-, telecommunications- and train authorisation systems to its original condition. Work over the tracks and within the railway servitude will be supervised by the network operator.

20.0 COMPLETION OF THE WORKS

- 20.1 On completion of the works, the Contractor shall remove all the remaining construction plant and material from the site, other than material which is the property of the network operator, and leave the site in a clean, neat and tidy condition. If material and plant is required for the liability and maintenance period the Contract supervisor must authorise it's retention on site.

21.0 PROTECTION OF PERSONS AND PROPERTY

- 21.1 The Contractor shall provide and maintain all lights, guards, barriers, fencing and watchmen when and where necessary or as required by the Contract Supervisor or by any statutory authority, for the protection of the Works and for the safety and convenience of the public.

Red, yellow, green or blue lights may not be used by the Contractor as they can be mistaken for signals. Red, yellow, green or white flags shall only be used for protection by the Contractor. Within the precincts of a port the Contractor shall obtain the permission of the Port Captain before installing any light.

- 21.2 The Contractor shall take all the requisite measures and precautions during the course of the Works to:
- (i) protect the public and property of the public,
 - (ii) protect the property and workmen of both the network operator and the Contractor,
 - (iii) avoid damage to and prevent trespass on adjoining properties, and
 - (iv) ensure compliance with any instruction issued by the Contract Supervisor or other authorised person, and with any stipulation embodied in the contract documents which affects the safety of any person or thing.
- 21.3 The network operator will provide, at its own cost, protection for the safe working of trains during such operations as the Contract Supervisor may consider necessary. Protection by the network operator for any purpose whatsoever, does not absolve the Contractor of his responsibilities in terms of the Contract.
- 21.4 The Contractor shall take all precautions and appoint guards, watchmen and compound managers for prevention of disorder among and misconduct by the persons employed on the Works and by any other persons, whether employees or not, on the work site and for the preservation of the peace and protection of persons and property in the direct neighbourhood. Any relocation of camps because of disorder shall be at the Contractor's expense.
- 21.5 All operations necessary for the execution of the Works, including the provision of any temporary work and camping sites, shall be carried out so as not to cause veldt fires, ground and environmental pollution, soil erosion or restriction of or interference with streams, furrows, drains and water supplies.
- If the original surface of the ground is disturbed in connection with the Works, it shall be made good by the Contractor to the satisfaction of the land owner, occupier or responsible authority.
- 21.6 The Contractor shall take all reasonable steps to minimise noise and disturbance when carrying out the Works, including work permitted outside normal working hours.
- 21.7 Dumping of waste or excess materials by the Contractor shall, in urban areas, be done under the direction and control of, and at sites made available by the local authority. Dumping outside local authority boundaries shall be done only with the express permission and under the direction and control of the Contract Supervisor.
- 21.8 The Contractor shall comply with environmental protection measures and specifications stipulated by the Contract Supervisor and/or local and environmental authorities.
- 22.0 INTERFERENCE WITH THE NETWORK OPERATOR'S ASSETS AND WORK ON OPEN LINES**
- 22.1 The Contractor shall not interfere in any manner whatsoever with an open line, nor shall he carry out any work or perform any act which affects the security, use or safety of an open line except with the authority of the Contract Supervisor and in the presence of a duly authorised representative of the network operator.
- 22.2 The Contractor shall not carry out any work or operate any plant, or place any material whatsoever nearer than three metres from the centre line of any open line except with the written permission of the Contract Supervisor and subject to such conditions as he may impose.
- 22.3 Care must be taken not to interfere with or damage any services such as overhead wire routes, cables or pipes and optical fibre cable, except as provided for the work specified. The Contractor will be held responsible for any damage to or interruption of such services arising from any act or omission on his part or of any of his employees, or persons engaged by him on the Works. The cost of repairing, replacing or restoring the services, as well as all other costs arising from any damage to services, shall be borne by, and will be recovered from the Contractor.
- 22.4 Authority granted by the Contract Supervisor and the presence of an authorised representative of the network operator in terms hereof, shall not relieve the Contractor of his duty to comply with this specification.
- 23.0 ACCESS, RIGHTS-OF-WAY AND CAMPSITES**
- 23.1 Where entry onto the network operator's property is restricted, permission to enter will be given only for the purpose of carrying out the Works and will be subject to the terms and conditions laid down by the network operator.
- 23.2 The Contractor shall arrange for campsites, workplaces and access thereto as well as for any right-of-

way over private property to the site of the Works, and for access within the boundaries of the network operator's property. The owners of private property to be traversed shall be approached and treated with tact and courtesy by the Contractor, who shall, if necessary, obtain a letter of introduction to such property owners from the Contract Supervisor.

The Contractor shall be responsible for the closing of all gates on roads and tracks used by him or his employees. Except with the prior approval of the Contract Supervisor and the owner or occupier of any private land to be traversed, the Contractor shall not cut, lower, damage, remove or otherwise interfere with any fence or gate which is either on the network operator's property or on private property and which restricts access to the Works. Where such approval has been given, the Contractor shall prevent entry of animals or unauthorised persons onto the network operator's or private property, and shall make the fences safe against trespass at the close of each day's work.

- 23.3 The Contractor shall take all reasonable steps to confine the movement of vehicles and plant to the approved right-of-way to minimise damage to property, crops and natural vegetation.

- 23.4 When access is no longer required, and before completion of the Works, the Contractor shall repair, restore or replace any fence or gate damaged during execution of the Works to the satisfaction of the Contract Supervisor and shall furnish the Contract Supervisor with a certificate signed by the owner and occupier of land over which he has gained access to a campsite, workplace and the Works, certifying that the owner and occupier have no claim against the Contractor or the network operator arising from the Contractor's use of the land. Should the Contractor be unable to obtain the required certificate, he shall report the circumstances to the Contract Supervisor.

24.0 SUPERVISION

- 24.1 The Contract Supervisor will provide overall technical superintendence of the Works, and may direct the Contractor in terms of the provisions of the Contract or in respect of any measures which the Contract Supervisor may require for the operations of the network operator, the safety of trains, property and workmen of the network operator, and for the safety of other property and persons. The Contractor shall carry out the directions of the Contract Supervisor. The superintendence exercised by the Contract Supervisor, including any agreement, approval, refusal or withdrawal of any approval given, shall not relieve the Contractor of any of his duties and liabilities under the Contract, and shall not imply any assumption by the network operator or by the Contract Supervisor of the legal and other responsibilities of the Contractor in carrying out the Works.

- 24.2 The Contract Supervisor may delegate to any deputy or other person, any of his duties or functions under the Contract. On receiving notice in writing of such delegation, the Contractor shall recognise and obey the deputy or person to whom any such duties or functions have been delegated as if he were the Contract Supervisor.

- 24.3 The Contractor shall exercise supervision over the Works at all times when work is performed or shall be represented by an agent having full power and authority to act on behalf of the Contractor. Such agent shall be competent and responsible, and have adequate experience in carrying out work of a similar nature to the Works, and shall exercise personal supervision on behalf of the Contractor. The Contract Supervisor shall be notified in writing of such appointment which will be subject to his approval.

- 24.4 The Contractor or his duly authorised agent shall be available on the site at all times while the Works are in progress to receive the orders and directions of the Contract Supervisor.

25.0 HOUSING OF EMPLOYEES

- 25.1 The Contractor shall, where necessary, make his own arrangements for suitable housing of his employees. Where temporary housing is permitted by the Contract Supervisor on any part of the site, the Contractor shall provide suitable sanitation, lighting and potable water supplies in terms of the requirements of the local authority or the current network operator's specification; Minimum Communal Health Requirements in Areas outside the Jurisdiction of a Local Authority - E.4B, as applicable.

- 25.2 Fouling the area inside or outside the network operator's boundaries shall be prevented. The Contractor will be called upon by the Contract Supervisor to dispose of any foul or waste matter generated by the Contractor.

26.0 OPTICAL FIBRE CABLE ROUTES

- 26.1 The Contractor shall not handle, impact, move or deviate any optical fibre cable without prior approval.

- 26.2 Works that in any way affect the optical fibre cable requires prior approval from the Contract Supervisor

who will determine the work method and procedures to be followed.

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

27.0 GENERAL

- 27.1 This specification is based on the contents of Transnet's publication ELECTRICAL SAFETY INSTRUCTIONS, 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 the network operator, and the onus rests on the Contractor to ensure that he obtains a copy.
- 27.2 This specification must be read in conjunction with and not in lieu of the Electrical Safety Instructions.
- 27.3 The Contractor's attention is drawn in particular to the contents of Part I, Sections 1 and 2 of the Electrical Safety Instructions.
- 27.4 The Electrical Safety Instructions 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).
- 27.5 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.
- 27.6 The Contractor shall regard all high-voltage equipment as "live" unless a work permit is in force.
- 27.7 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 the network operator's staff where this is necessary.
- 27.8 No barrier shall be removed unless authorised by the Electrical Officer (Contracts).

28.0 WORK ON BUILDINGS OR FIXED STRUCTURES

- 28.1 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.
- 28.2 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.
- 28.3 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.

29.0 WORK DONE ON OR OUTSIDE OF ROLLING STOCK, INCLUDING LOADING OR UNLOADING

- 29.1 No person may stand, climb or work, whilst on any platform, surface or foothold:
- 29.1.1 higher than the normal unrestricted access way, namely -
 - 29.1.1.1 external walkways on diesel, steam and electric locomotives, steam heat vans, etc. and
 - 29.1.1.2 walkways between coaches and locomotives.
 - 29.1.2 of restricted access ways in terms of the Electrical Safety Instructions namely -
 - 29.1.2.1 the floor level of open wagons
 - 29.1.2.2 external walkways or decks of road-rail vehicles, on-track maintenance machines and material trains.
 - 29.1.3 Unauthorised staff working on these platforms must be directly supervised by duly authorised persons in terms of clause 607.1.3 of the Electrical Safety Instructions. These persons must attend the relevant electrical safety module training. A letter of training must then be issued by an accredited training authority. A Category C Certificate of Authority must be obtained from the

local depot examining officer.

- 29.2 When in the above positions no person may raise his hands or any equipment he is handling above his head.
- 29.3 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.
- 29.4 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.
- 29.5 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.
- 29.6 Where the conditions in clauses 30.1 to 30.4 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 the network operator and at the Contractor's cost, as an Authorised Person to work closer than 3 metres from "live" overhead conductors and under such conditions as may be imposed by the senior responsible electrical engineer of the network operator.

30.0 USE OF EQUIPMENT

30.1 Measuring Tapes and Devices

- 30.1.1 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.
- 30.1.2 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.
- 30.1.3 Special measuring devices longer than 2 metres such as survey sticks and rods may be used if these are of non-conducting material and approved by the responsible Electrical Engineer of the network operator, but these devices must not be used within 3 metres of "live" high-voltage equipment in rainy or wet conditions.
- 30.1.4 The assistance of the Electrical Officer (Contracts) shall be requested when measurements within the limits defined in clauses 31.1.1 to 31.1.3 are required.
- 30.1.5 The restrictions described in 31.1.1 to 31.1.3 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.

30.2 Portable Ladders

- 30.2.1 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.

31.0 CARRYING AND HANDLING MATERIAL AND EQUIPMENT

- 31.1 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 such material should be carried by two or more persons so as to maintain it as nearly as possible in a horizontal position. The utmost care must be taken to ensure that no part of the material comes within 3 metres of any "live" high-voltage equipment.
- 31.2 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.
- 31.3 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.

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

- 32.1 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.

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

32.3 The provisions of clauses 33.1 and 33.2 shall also apply to the erection or removal of columns, antennae, trees, posts, etc.

33.0 USE OF WATER

33.1 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.

34.0 USE OF CONSTRUCTION PLANT

34.1 "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.

34.2 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.

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

34.4 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.

34.5 Clauses 35.1 to 35.4 shall apply *mutatis mutandis* to the use of maintenance machines of any nature.

35.0 WORK PERFORMED UNDER DEAD CONDITIONS UNDER COVER OF A WORK PERMIT

35.1 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.

35.2 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.

36.0 TRACTION RETURN CIRCUITS IN RAILS

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

36.2 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 the network operator personnel.

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

- 36.4 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.

37.0 HIGH-VOLTAGE ELECTRICAL EQUIPMENT NOT MAINTAINED AND/OR OPERATED BY THE NETWORK OPERATOR

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

Such equipment includes:-

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


END

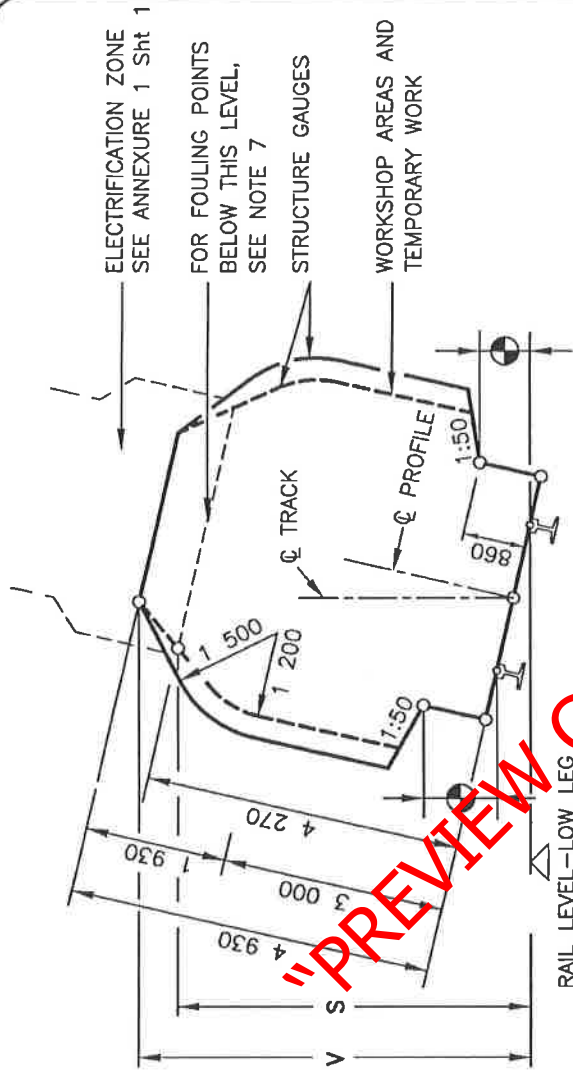
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RADIUS (m)	WITH CANT		NO CANT	WITH CANT	
	H (mm)	L (mm)		B (mm)	C (mm)
90	2 730	3 090	2 780	1 130	2 100
100	2 700	3 030	2 750	1 140	2 050
120	2 650	2 970	2 700	1 160	2 010
140	2 620	2 920	2 660	1 175	1 990
170	2 590	2 870	2 630	1 190	1 970
200	2 570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

REMARKS:

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



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
300	4 410	5 020	5 370
600	4 370	5 000	5 350
1 000	4 350	4 990	5 340
1 500	4 310	4 960	5 310
2 000	4 290	4 940	5 290
>3 000	4 270	4 930	5 280
* OVER OR NEAR POINTS AND CROSSING IF REQUIRED BY ELECTRICAL IRRESPECTIVE OF RADIUS		5 650	6 000

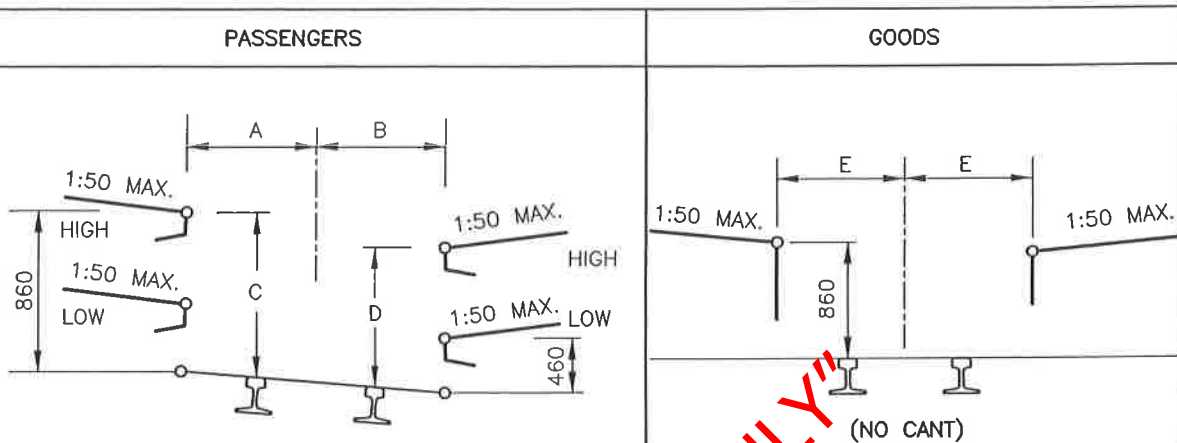
ALL AREAS OTHER THAN THOSE INDICATED BY * BELOW

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 ENDS OF THE CIRCULAR CURVE.
 - 4.2 REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - 4.3 FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 15m ALONG STRAIGHTS.
5. NEW STRUCTURES: SEE BRIDGE CODE.
6. TUNNELS: SEE DRAWING BE 82-35.
7. FOULING POINTS: SEE CLAUSE 8.1.
8. CLEARANCES ARE BASED ON 15m BOGIE CENTRES AND 21.2m VEHICLE BODY LENGTH.
9. SEE ANNEXURE 1 SHEET 3 FOR PLATFORM CLEARANCES.

CLEARANCES : PLATFORMS

PLATFORMS : TRACK GAUGE 1 065mm

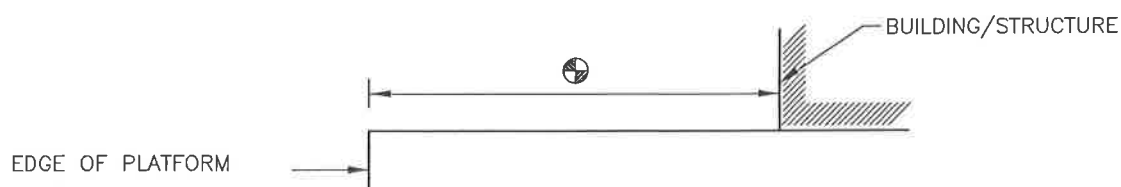


RADIUS (m)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
90	1 690	1 820	890	810	1 840
100	1 650	1 790	890	800	1 810
120	1 610	1 740	890	810	1 760
140	1 580	1 700	890	810	1 720
170	1 550	1 660	890	810	1 690
200	1 530	1 630	890	820	1 670
250	1 520	1 600	890	820	1 640
300	1 520	1 580	890	830	1 620
350	1 520	1 560	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

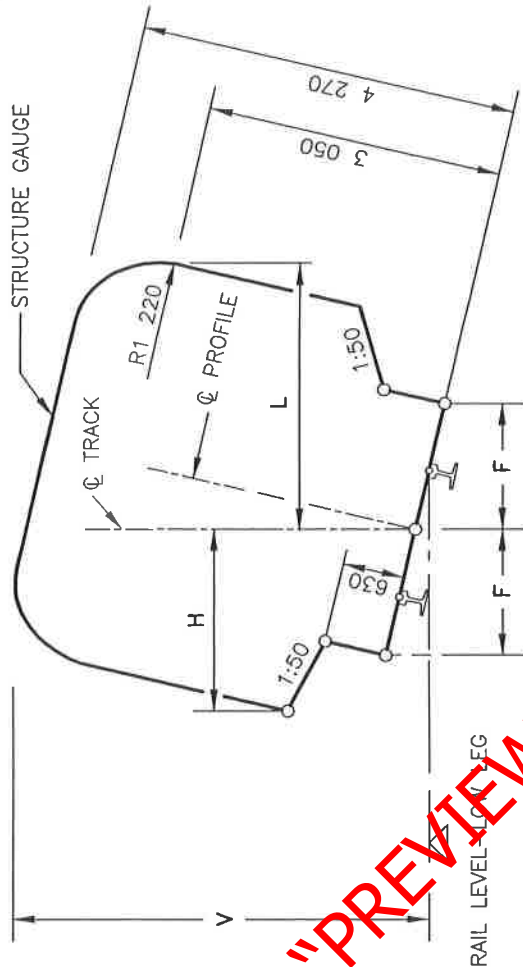
REMARKS:

1. NO CANT 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

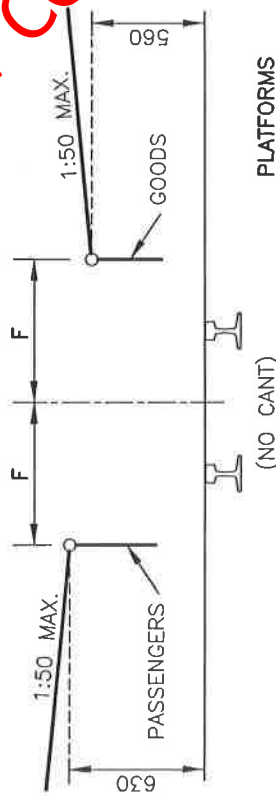


CLEARANCES : 610mm TRACK GAUGE



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

CLEARANCES



PLATFORMS

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

REMARKS:

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

PART C4: SITE INFORMATION

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Part C4

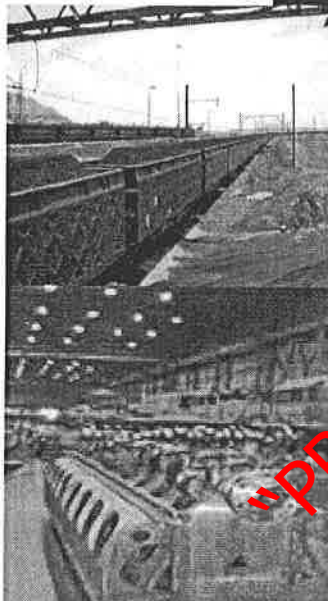
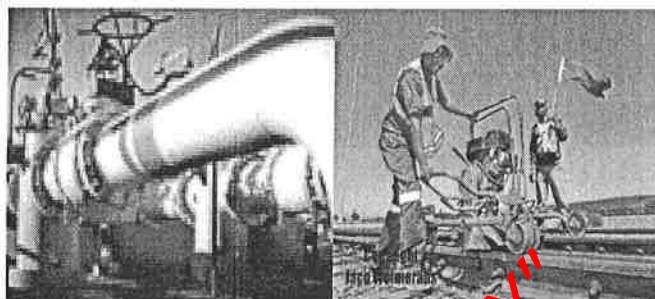
Site Information

4 Site Information

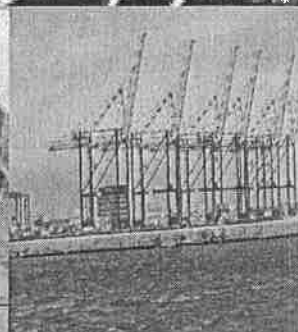
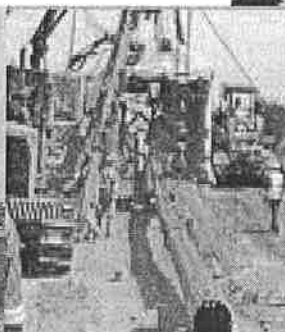
4.1 Location of the works

See Bill of Quantities for all substations / areas where work is to be done

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Transnet
Procedure Manual
Principal Controlled Insurance
Contract Works &
Contractors Public Liability
2013/14 A



General

Please note that this procedure manual is presented as a guide only. Whilst every effort is made to ensure accuracy in summarising the insurance contracts, the policies issued by insurer will prevail as binding documents in the event of a claim.

The contents are confidential and for use by Transnet, its operating divisions and managers only.

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SUMMARY OF COVER - CONTRACTORS PUBLIC LIABILITY INSURANCE	15
ADMINISTRATIVE PROCEDURES	18
CLAIMS PROCEDURE	21
CONTACT DETAILS	23

ANNEXURE 1	
Transnet Principal Controlled Construction Insurance Programme Contract Award Declaration (Part A) Contract Completion Declaration (Part B) Variation Order / Extension Request (Part C) Project Specific, One Off or Multiple Packages R100m and above (Form A1)	
ANNEXURE 2	
Incident Advice Form	
ANNEXURE 3	
Monthly Contract Register Control Sheets	



Introduction

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Introduction

TRANSNET SOC LIMITED insures all Projects / Contracts on a Principal Controlled Insurance Programme basis (including the Assembly and/or Erection of Plant and Machinery) in respect of Contract Works and Contractors Public Liability.

Transnet Freight Rail (TFR) as an operating division of Transnet is therefore covered by the overall Transnet policy.

Philosophy of the programme

- Transnet SOC Limited and its Operating Divisions and Specialist Units wish to control the risk exposures in this regard.
- Transnet SOC Limited, as a large organization, bulk-buys - resulting in preferential rates and cover.
- Simplified administration.
- Eliminates potential problems which usually occur when individual Contractors are responsible to arrange separate insurance.
- Includes the Contractor and/or Subcontractors as an insured party.

The Transnet SOC Ltd Principal Controlled Insurance Programme comprises:

- Blanket Principal Controlled Contract Works Insurance hereinafter abbreviated as (PCI) - This policy is specifically designed to provide indemnity for contracts up to **R 100 million VAT exclusive but inclusive of Free Issue Material**.
- Principal Controlled Contractors Liability Insurance hereinafter abbreviated as (PCI LIAB) - This policy provides indemnity for all contracts up to **R 100 million VAT exclusive but inclusive of Free Issue Material**.
- Principal Controlled One Off Insurance hereinafter abbreviated as (PCI One Off) - This policy provides indemnity for all contracts with values in excess of **R 100 million VAT exclusive but inclusive of Free Issue Material**.
- Project Specific Insurance hereinafter abbreviated as (PSI Projects) - This policy will indemnify any project comprising Multiple Packages.*

*NOTE

Insurance cover arrangements for these categories is subject to prior notification and arrangement with TFR Insurance Department (see contact details herein) as specific underwriting information is required for soliciting quotations for cover.

- It is therefore important that Tender and eventual Contract documents reflect the fact that Transnet as the Principal (i.e. the Employer) arranges certain covers which incorporates cover on behalf of Contractor's and / or Subcontractor's.
- The concept does not relieve the contracting parties of their responsibilities for, amongst others, care of the works and liabilities to third parties.

Insurance Responsibilities

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Insurance Responsibilities

1. Cover arranged by Transnet as the Principal (Employer)

1.1 Insurance Cover Applicable to all Contracts

Principal Controlled Insurance Programme	Estimated Contract Values any one Contract inclusive of Free Issue Material
PCI Contract Works (PCI)	Up to R100 million VAT exclusive
SASRIA on Contract Works	Up to R100 million VAT exclusive
PCI Liability (PCI LIAB)	Up to R100 million VAT exclusive
PCI One Off Contract Works & Liability (PCI One Off's)	In excess of R 100 million VAT exclusive
Project Specific Insurance Contract Works & Liability (PSI Projects)	In excess of R 100 million VAT exclusive comprising multiple packages

Note

- **PCI, PCI LIAB and PCI One Off's** are normally arranged for single contracts.
- **PSI Projects** in most instances comprise a multitude number of different packages included in a package plan and is normally managed by Transnet Capital Projects on behalf of the Operating Divisions.

1.1.1 Contract Works Cover Policy No MZAR10060

Covering fortuitous physical loss or damage to the works, temporary works and materials for incorporation into the works whilst in inland transit and whilst at the contract site.

Limited to **R100,000,000** any one contract inclusive of Free Issue Material (**Exclusive of VAT**)

1.1.2 Public Liability Cover Policy No S04089

Covering legal liability arising out of or connection with the performance of the works on the contract site or sites designated by Transnet for purposes of the performance of the contract.

Limited to **R25,000,000** any one occurrence.

1.1.3 Riot / Strike Cover (Contract Works) Coupon CW 9137466/2013

Provided by:
SASRIA (South African Special Risks Insurance Association) in respect of risks with RSA.

1.2 Additional Insurances (Optional)

1.2.1 Marine Transit Cover

Covering imports until delivered and checked on site.

1.2.2 Project Delay Cover

Covering consequential financial exposures due to delays following indemnifiable loss or damage to the works.

The above information (including limits of insurance purchased) should be clearly spelt out in Tender and eventual Contract documentation including the deductible (excess) which are applicable and the fact that Contractor's and/or Subcontractor's are responsible for the deductible.



2. Cover to be arranged by Contractor's/Subcontractor's

All Contractor's/Subcontractor's still remain fully responsible to arrange insurance in respect of the following:

- As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.
- Employers Common Law Liability.
- Own plant, machinery, equipment and tools.
- Motor Vehicle Liability.
- Professional Indemnity (Defective Design).

This should also be clearly spelt out in Tender and eventual Contract documentation.

3. Cover to be arranged by Consulting Engineers, Architects & Other Professionals

Professional Indemnity (defects in Design, Plan or Specification).

Please ensure that Professional Service Providers do not contract out of their liability in this regard. (Please refer to Transnet Group Insurance for recommendation and approved limits).

4. Deviations

In case where there are compelling reasons to deviate from this process, please obtain approval from TFR Insurance Department for the attention of:

Kgomotso Saul

Manager: General Insurance

Tel – (011) 584 0534

Cell – 083 791 0759/083 233 4961

E-mail: Kgomotso.Saul@transnet.net

Summary of Cover - General

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Summary of Cover - General

The Insured Parties

- Transnet SOC Limited and / or its Subsidiary Companies as Principal or Employer.
- All Contractors undertaking work for or on behalf of the Principal in execution of the Contract.
- All Subcontractor's employed by the Contractor and all other Subcontractor's (whether nominated or otherwise) engaged in the fulfillment of the Contractor.
- To the extent required by any Contract or Agreement suppliers manufacturers vendors or other persons engaged on the contract sites but only to the extent of loss damage or liability originating at the Contract Site (other than while the Property Insured is in transit) arising out of the performance of their Contract Site obligations.

Insured Contracts

All contracts undertaken by the Insured involving but not limited to Design Construction, Testing, Commission in respect of new works, geotechnical and exploratory works, capital expenditure, upgrade, modification, maintenance and/or overhaul and/or refurbishment, renovation, retrofitting or alteration and/or additions to existing facilities and/or re-profiling of track, vegetation control, rehabilitation and ballast tamping activities undertaken by the Insured or other Insured Parties acting on their behalf but excluding:

- Contracts where the contract value including the value of Free Issue Material exceeds **R100,000,000** (Exclusive of VAT).
- Contracts where the duration of the contract exceeds **36 months**.
- Contracts where the contractual Defects Liability / Maintenance period exceeds **24 months**.
- Contracts involving harbor wet risks being all work entailing or involving work in or upon water whether partially or fully submerged such as but not limited to quay walls, wharfs, seawalls, caissons, breakwaters, jetties, piers, deepening or widening and dredging of ports and other off-shore risks.
- Contracts involving construction or erection of Petrochemical Manufacturing Plant(s) such as Sasol but this exclusion shall not apply to pipelines and other works undertaken by or on behalf of Transnet Pipelines Limited.
- Contracts outside of the Republic of South Africa.
In territories outside of South Africa it is required in terms of their Insurance Acts that insurance cover be placed with their local markets. It is therefore important that the Insurance Department be advised at feasibility stage (prior to Tender documents being issued) should any contracts, whether as Principal or Contractor, take place in any Territory outside of the Republic of South Africa.

Contract Site

Any location upon which the Insured Contract(s) is to be executed or carried out as more fully defined in the Insured Contract(s) documents together with so much of the surrounding area as may be designated for the performance of the Insured Contract(s) within the Republic of South Africa.



Principal Controlled Insurance Programme	Estimated Contract Values any one Contract inclusive of Free Issue Material
PCI Contract Works (PCI)	Up to R100 million VAT exclusive
SASRIA on Contract Works	Up to R100 million VAT exclusive
PCI Liability (PCI LIAB)	Up to R100 million VAT exclusive
PCI One Off Contract Works & Liability (PCI One Off's)	In excess of R 100 million VAT exclusive
Project Specific Insurance Contract Works & Liability (PSI Projects)	In excess of R 100 million VAT exclusive comprising multiple packages

To extend the contract period beyond 36 months will attract an additional premium.

(See Administrative Procedures herein).

Declaration Procedure

All Contracts up to **R100m (VAT exclusive)** including the value of Free Issue Material must be declared to **Willis South Africa** (see contact details herein) in terms of the attached declaration form marked as Annexure1 prior to commencement of the Works.

Premium Payment Procedure

The deposit premium for this cover will be paid by the TFR Insurance Department as part of Transnet's blanket cover. There will be a final premium adjustment at the end of the insurance period and TFR Insurance Department reserves the right to recover this additional premium from the various contracts owners as per their respective declarations during the year.

Claims Reporting

- All incidents that could give rise to claim under the Principal Controlled Insurances, **HAVE TO BE** reported to **TFR Insurance Department and Willis South Africa** by means of an Incident Advice Form (Annexure 2).
- All incidents/claims must be captured on **TOMS** by the department involved.
- All incidents/claims must be registered in terms of **TFR Unique Claim Numbering System**.
- All incidents/claims must be reported to Insurers no later than **30-days** after occurrence of the incident which may give rise to a claim under the Contract Works or Liability insurance.

Failing this, all benefits in terms of the Policy shall be voidable from date of occurrence. It is essential that this condition is brought to the attention of Contractors in Tender/Contract Documents.

Summary of Cover

Contract Works Insurance

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Contract Works Insurance

Synopsis of Cover

Accidental physical loss of or damage to the works or materials for incorporation in the works:

- During dismantling of property in connection with the Insured Contracts.
- Whilst in transit, including loading and unloading, or whilst temporarily stored at any premises en route to or from The Contract Site within the Republic of South Africa;
- During the preparation of The Contract Site and thereafter until the Property Insured has been officially accepted by the Employer and becomes his responsibility by means of a Notice of Completion Certificate or similar evidence of legal transfer of risk in the whole or permanent works under the Insured Contract to the Employer;
- Where testing and commissioning of Property Insured is conducted by the Employer "completion" for purposes of this insurance to occur only after successful completion of all testing and commissioning of the whole of the permanent works under the Insured Contract;
- Where the permanent property insurance arranged by the Employer indemnify the Insured for completed portions of the Property Insured prior to completion of the whole of the permanent works under the Insured Contract, this insurance in respect of such completed portions of the Property Insured shall cease except as provided below;
- Work uncompleted or outstanding in terms of any certificate of completion, certificate of handover or similar document shall continue to be insured until its completion and the inception of the Contractual Defects Liability or Maintenance Period (as may be described in the Insured Contract) for such uncompleted or outstanding work where after the provision hereafter shall apply in respect of such work;
- During the Contractual Defects Liability or Maintenance Period (as may be described in the Insured Contract) pertaining to any part of the permanent works but only in respect of loss or damage:
 - i) arising from a cause occurring prior to commencement of such period of maintenance or defects liability period
 - ii) arising from any act or omission of the Insured their Servants, Agents, Suppliers or Subcontractors in pursuance of the Insured's obligations.

for which the Insured Contractor is responsible under the Contract.

Contract Period Limitation

Maximum Contract period	36 months
Maximum Defects Liability / Maintenance Period	24 Months



Limits of indemnity (VAT exclusive)

Contract Works (Any One Contract) including Free Issue Material	R100,000,000
Costs & Expenses (Damage & No Damage)	R10,000,000
Surrounding Property	R50,000,000
Surrounding Property – Worked Upon	R50,000,000
Surrounding Property – Watercraft	R50,000,000
Fire Brigade/Public Authority	R10,000,000
Removal to Gain Access	R10,000,000
Documentation	R500,000
Public Authority Reinstatement	R10,000,000
Claims Preparation Costs	R1,000,000
Road Reserve/Servitude Indemnity	R10,000,000
Leak Search Cost	R1,000,000 in the aggregate
Maximum testing / commissioning period	90 days
Borrowing of Plant	R1,000,000 in the aggregate
Maximum un-sealed / un-primed base course limitation	5,000 metres
Maximum open trench limitation	5,000 metres

Deductibles (VAT exclusive)

The deductible (excess) is the amount which the Contractor and/or Sub-Contractor is responsible for and this obligation must be reflected in the Tender and/or Contract Documents and the responsibility for same made clear. The deductibles apply to each and every occurrence and in respect of all Contracts.

The deductibles are:

Loss or damage due to storm, rain, tempest, wind, flood, theft, malicious damage, subsidence, collapse, earthquake, testing or commissioning	R25,000
Loss or damage arising from any other cause	R15,000
Costs & Expenses (No Damage)	R25,000
Loss or damage to Surrounding Property	R75,000
Loss or damage to Documentation	R5,000
Road Reserve / Servitude	R250,000

All Contracts Entailing Trenching and / or Layer Works

The following additional deductibles apply over and above the aforesaid deductibles: - i.e. in excess of 1,000 metres

Up to a maximum of 3,000metres	20% of loss / minimum R50,000
Up to a maximum of 5,000metres	20% of loss / minimum R100,000

It is essential that this is brought to the attention of Contractor's. Where this restriction is not practical, specific arrangements for cover can be made with underwriters. They will, however, require detailed underwriting information and an additional premium may be charged.



Property Insured

The actual Contract Works and all material intended for incorporation into the Works (*including Free Issue Material* the value of which has to be included in the Contract Value declared*) and Temporary Works.

* **Note:** Where Transnet for the purposes of the Contract issues materials 'free of charge' to the Contractor such materials shall be and remain the property of the Transnet. Free Issue Material shall mean any material provided by or on Transnet's behalf which is to be used in the provision of the Service or incorporated into the Contract.

** **Note:** Temporary Works shall mean all constructional aids, equipment, structures or works (not being part of the permanent works) used or intended for use on the Contract and which :-

- a) do not comprise mobile plant;
- b) are not intended to be removed from The Contract Site on completion of the Contract (other than scaffolding shuttering and formwork as well as construction equipment specially designed and/or constructed for an Insured Contract and which is not intended for immediate re-use on another Contract); or
- c) have no residual value at the completion of the Contract (other than scrap value) solely due to their specialised nature.

Main Exceptions/Exclusions

- The amount of the policy deductible.
- Loss or damage of money or the like.
- Aircraft, waterborne vessels or craft.
- Construction plant, tools or equipment.
- Losses by disappearance / shortage discovered by taking of routine inventory.
- Defective material workmanship design plan or specification (but resultant damage covered).
- Cost of re-design, improvement, betterment or alteration.
- Consequential loss, liquidated damages or penalties for delay in connection with guarantee or performance or efficiency.
- Air transit (unless in territorial limits).
- Ocean transit or whilst in storage thereafter (unless immediately inspected by an independent party after offloading from vessel).
- During the Contractual Defects Liability or Maintenance Period (as may be described in the Insured Contract) pertaining to any part of the permanent works but only in respect of loss or damage:
 - i) arising from a cause occurring prior to commencement of such period of maintenance or defects liability period
 - ii) arising from any act or omission of the Insured his Servants or Agents, in the course of the work carried out in pursuance of the Insured's obligations with regard to maintenance under the Contract.
- Wear, tear, gradual deterioration rust, corrosion or oxidation and normal up-keep.
- Electrical or mechanical breakdown or explosion to machinery or plant which has operated under load conditions prior to commencement of the Insured Contract or in respect of new machinery or plant which has occurred after a Testing / Commissioning Period of 90-days.
- Damage to any unsealed / unprimed or base course in excess of limitations as stated in the policy.
- Damage to any open trench in excess of the limitations as stated in the policy.
- War, asbestos and nuclear risks.
- Sinking (whether partial or in whole) of any watercraft arising out of or in consequence of any work undertaken below the load line (international load line / plimsoll line).
- Loss or damage due to normal actions of the sea (as defined in the policy).

Cover Limitations

Unsealed / Unprimed Base Course

- Unsealed / unprimed base course – cover limited to a maximum of 5,000 metres.

Open Trench

- Open trench – cover limited to a maximum indemnity of 5,000 metres.

It is essential that the above limitations are brought to the attention of Contractor's. Where this restriction is not practical, specific arrangements for cover can be made with Underwriters. They will, however, require detailed underwriting information and an additional premium may be charged.

Used Plant – Basis of Loss Settlement

Insured property which has operated under service conditions prior to attachment of cover:-

- Up to 5 years - cost of repair / reinstatement / replacement.
- In excess of 5 years - agreed value (calculated on basis of each life year (or part thereof) on present day New Replacement Value reduced proportionally over 20 years subject to residual of 10%).

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Summary of Cover

Contractors Public Liability Insurance

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Contractors Public Liability Insurance

Insured Contracts

All contracts undertaken by the Insured involving but not limited to Design Construction, Testing, Commission in respect of new works, geotechnical and exploratory works, capital expenditure, upgrade, modification, maintenance and/or overhaul and/or refurbishment, renovation, retrofitting or alteration and/or additions to existing facilities and/or re-profiling of track, chemical vegetation control, vegetation rehabilitation and ballast tamping activities undertaken by the Insured or other Insured Parties acting on their behalf but excluding:

- Contracts where the contract value including the value of Free Issue Material exceeds **R100,000,000** (Exclusive of VAT).
- Contracts where the duration of the contract exceeds 36 months.
- Contracts where the contractual Defects Liability / Maintenance period exceeds 24 months.
- Contracts involving harbor wet risks being all work entailing or involving work in or upon water whether partially or fully submerged such as but not limited to quay walls, wharfs, seawalls, caissons, breakwaters, jetties, piers, deepening or widening and dredging of ports and other off-shore risks.
- Contracts involving construction or erection of Petrochemical Manufacturing Plant(s) such as Sasol but this exclusion shall not apply to pipelines and other works undertaken by or on behalf of Transnet Pipelines Limited.
- Contracts outside of the Republic of South Africa.
In territories outside of South Africa it is required in terms of their Insurance Acts that insurance cover be placed with their local markets. It is therefore important that the Willis South Africa be advised at feasibility stage (prior to Tender documents being issued) should any contracts, whether as Principal or Contractor, take place in any Territory outside of the Republic of South Africa.
- Limited to a maximum contract period of 36 months followed by a maximum Defects Liability / Maintenance period of 24 months.

Synopsis of Cover

Legal Liability to pay as compensation for and in consequence of:

- Death of or injury to or illness or disease contracted by any person.
- Loss of / or physical damage to tangible property.

Occurring during the period of insurance and arising out of or in connection with the performance of the Insured Contract(s).

Limits of Indemnity

Contractors Public Liability	R25,000,000 any one occurrence / unlimited for the Period of Insurance
Removal of Support	R25,000,000 unlimited for the Period of Insurance
Statutory Legal Defence Costs	R25,000,000 any one occurrence
Arrest / Assault / Defamation	R25,000,000 any one occurrence
Emergency Medical Expenses	R25,000,000 any one occurrence
Prevention of Access	R25,000,000 any one occurrence
Trespass / Nuisance	R25,000,000 any one occurrence
Claims Preparation Costs	R2,500,000 any one occurrence



Deductibles

The deductible (excess) is the amount which the Contractor and/or Sub-Contractor is responsible for and this obligation must be reflected in the Tender and/or Contract Documents and the responsibility for same made clear. The deductibles apply to each and every occurrence and in respect of all Contracts.

The deductibles are:

Loss of or damage to public utilities	R25,000
Spread of fire or burning of fire breaks	R50,000
Loss of or damage to any other property	R25,000
Loss of or damage to property arising from removal of support	R50,000
Loss of or damage arising out of vegetation control including but not limited to the use of pesticides	R50,000

Main Exceptions/Exclusions

- ❶ The amount of the policy deductible.
- ❷ Death or injury to own employees.
- ❸ Motor vehicle liabilities under legislation or as defined in Multi-lateral Motor Vehicles Accident Fund No. 93 of 1989 as amended.
- ❹ Claims in connection with ownership or use of aircraft or watercraft.
- ❺ Property belonging to the Insured or in his care custody and control (as defined in the Policy).
- ❻ Property forming part of Contract Works.
- ❼ Liquidated damages or penalties for delays or in respect of performance or efficiency guarantees.
- ❽ The cost of making good faulty workmanship materials design plan or specification in any part of the Property insured.
- ❾ Gradual pollution and contamination.
- ❿ Sudden unintended and unforeseen seepage, pollution or contamination including the cost of removing, nullifying or cleaning up in respect of both ocean and harbour going watercraft outside of dry dock.
- ⓫ After completion and handover (inclusive of the contractual Defects / Maintenance period).
- ⓬ Punitive damages.
- ⓭ Ownership hiring or leasing of any airport or airstrip.
- ⓮ War, asbestos and nuclear risks.

Cover Limitation

Indemnity for removal of support is limited to **R25,000,000**.

If a higher limit of indemnity is required, TFR Insurance Department and Willis South Africa needs to be advised and underwriting information will need to be provided in advance (i.e. prior to Tender stage) and this will entail an additional premium.



Administrative Procedures

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Administrative Procedures

Arranging Insurance cover – contracts up to R100m

The Operating Divisions and Specialist Units must

Prior to the commencement of each Contract:-

- Complete the Declaration Form per Part A as per Annexure 1 herein. Please note that in terms of SASRIA regulations where the Contract Value exceeds R2 million, the physical address of the Contract is mandatory. Where track is being worked upon, the start and end points are required.
- Date and sign the Declaration Form.
- Submit the Declaration Form to the Broker (Willis South Africa).

Cover will be effective from the date of receipt of the Declaration Form by Willis South Africa who will acknowledge receipt of the same.

An Insurance Certificate and a SASRIA Coupon evidencing cover can be issued on specific request.

Prior to the expiry of each Declarations estimated completion date:-

- Confirm to Willis South Africa that the contract will be completed on time.
 - On completion submit to the Willis South Africa a Declaration of the final contract value per Part B as per Annexure 1 herein.
- NB** If the original completion date is not going to be achieved, the period of insurance on the Declaration document will need to be extended and Willis South Africa needs to be notified **prior to original completion date**.
- The Operating Divisions and Specialist Units (**prior to the expiry date of the certificate period**) has to advise Willis South Africa in writing to extend the period of insurance and provide the new estimated completion date.
- NB** If a completion date needs to be extended and Willis South Africa is not advised prior to the original completion date, all SASRIA cover will cease on the originally declared completion date as there is no hold covered arrangement with SASRIA.

A new SASRIA Coupon will then only be issued for the extension period from the date when the Insurer is advised in writing by the Broker.

Under these circumstances the new SASRIA Coupon will be subject to an additional premium, subject to the minimum premium.

This process needs to be followed by the Operating Divisions and Specialist Units until the time of completion is achieved.

Once the Contract has been completed:-

- The Operating Divisions and Specialist Units have to declare the final contract value to Willis South Africa per Part B as per Annexure 1 herein.
- The deposit premium will then be adjusted accordingly.

Failure by the Operating Divisions and Specialist Units to conform to the above procedure will result in cover being voided.



Contracts that require specific arrangements (i.e. in excess of R100m)

All contracts that fall outside the scope of this Principal Controlled Insurance Programme have to be advised to TFR Insurance Department prior to Tender and specific "One Off" cover will need to be negotiated.

These are:

- Contracts where the contract value including the value of Free Issue Material exceeds **R100,000,000 (Exclusive of VAT)**.
- Contracts where the duration of the contract exceeds **36 months**.
- Contracts where the contractual Defects Liability / Maintenance period exceeds **24 months**.
- Contracts involving **harbor wet risks being all work entailing or involving work in or upon water** whether partially or fully submerged such as but not limited to quay walls, wharfs, seawalls, caissons, breakwaters, jetties, piers, deepening or widening and dredging of ports and other off-shore risks.
- Contracts involving **construction or erection of Petrochemical Manufacturing Plant(s)** such as Sasol but this exclusion shall not apply to pipelines and other works undertaken by or on behalf of Transnet Pipelines Limited.
- Contracts **outside of the Republic of South Africa**.

Contracts where cover limitations will be exceeded or where cover warranties cannot be complied with need to be discussed with the TFR Insurance Department prior to contract award date to enable Willis South Africa to make specific arrangements with Underwriters. This will however require detailed Underwriting Information and an additional premium may be charged.

In order to ensure that Contractor's and site staff are aware of procedures a copy of this Procedure Manual must be supplied to the contract administrators and each Contractor on award of contract

PCI AND PCI PL

BLANKET PRINCIPAL CONTROLLED INSURANCE CONTRACT DECLARATION AND EXTENSION TEMPLATES

Procurement & Depots, on receipt of this attachment please:

This schedule only applies to Contracts max value R 100 million inclusive of Free Issue Material but exclusive of VAT

- a) Save electronic versions of New Contract and Contract Extension templates on computers for future month usage
- Create schedules for each month i.e. use "copy function" to create schedules for each month i.e. April 2013 May 2013 June 2013 etc.)
- b) Complete register from the first to last day of month in respect of:
- New contracts declared during the month
 - Contracts of which the contract periods have to be extended
- c) Monitor contracts declared/ extended on monthly basis i.e. forward register "as attachment" to Transnetpci@willis.com and NairPr@willis.com
- d) Follow up all discrepancies with **Willis South Africa/ TFR Insurance Department** in order to rectify problems
- e) Follow up outstanding Confirmation of Insurance from Willis South Africa
- f) Submit "Nil Return" Registers in the event of no new contracts declared or where no contract period extensions were required during a specific month i.e. **"APRIL 2013-Nil**



Claims Procedures

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Claims Procedures

In the event of any incident or occurrence, which is likely, to give rise to a claim under the Insurance arranged by Transnet the following procedures shall be adhered to in addition to any statutory or other requirements contained in the Contract.

All incidents that could give rise to claim under the Principal Controlled Insurances, **HAVE TO BE** reported to the local TFR Insurance Manager's office (see contact details herein).by means of an Incident Advice Form (Annexure 2) and the incident must also be captured on TOMS by the department involved. The incident in question must be reported to Insurers as soon as possible but no later than a **30** (thirty) day period from date of incident.

At the same time complete the **Incident Advice Form (Annexure 2 herein)** and submit to Willis South Africa and a copy to TFR Insurance Department, for the attention Lucas Ngwako (see contact details herein).

- ☛ Losses involving **theft or malicious damage** must be reported to the police and a police reference number obtained and recorded.
- ☛ The Employer, Contactor(s) or Sub-Contractor(s) shall allow free access to Insurers' Loss Adjuster(s) and / or Employer's Insurance Willis South Africa for the purpose of investigation and assessing the loss or damage.
- ☛ The Employer, Contractor(s) shall **not** deal direct with the Insurers other than by co-operating with their Loss Adjuster(s) and / or the Employers Insurance Broker (Willis South Africa).
- ☛ No **Admission of Liability** shall be made by the Employer, Contractor(s) or Sub-Contractor(s) in the event of damage or loss to third party property or injury or death of third party persons.
- ☛ Letters from claimants should be passed on to **TFR Insurance Department** as soon as possible.
- ☛ In the event of immediate repairs being necessary in the interest of safety, the Contractors may with the Employer's permission proceed with such repairs.
- ☛ TFR Insurance Department shall immediately advise **Willis South Africa** accordingly
- ☛ Other than in the circumstances described above the Contractor shall not proceed with the making good of any loss without the prior authorization of the Employer who shall advise the Insurer's appointed Loss Adjuster(s) and Willis South Africa.
- ☛ Upon commencement of the making good of any loss, the Contractor shall keep separate records of the costs involved in making good such loss and these records must be authenticated by the Employer for submission to the Insurer's or their Loss Adjuster(s). Such records shall include, inter alia, the entire cost of labour, materials, transport and equipment.
- ☛ The basis upon which the Insurers will indemnify loss or damage is the cost of repair or replacement of the loss or damage including, inter alia, transport and overheads.
- ☛ On completion of the making good of any loss the records of the costs involved having been authenticated by the Employer shall be sent to the Insurer's via their Loss Adjuster(s) and copied to **Willis South Africa (Pravina Nair)** for processing.
- ☛ Upon the amount of the loss or damage being agreed upon by the Insurer's Loss Adjuster(s) and the Contractor, an "Agreement of Loss" form will be signed by the Contractor and Employer.
- ☛ The amount agreed upon by the Insurers, the Contractor and the Employer shall be paid by the Insurers to the Employer net of the deductible, who will arrange for the payment to be made to the Contractor as appropriate after deduction of the first amount payable.

All incidents which could give rise to a claim under the insurances arranged by the Principal/Employer must be notified to Willis South Africa and TFR Insurance Department without delay, per the procedures set out above

Contact Details

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Transnet Freight Rail: Corporate Office

Mr Lucas Ngwako General Liability & PCI Insurance Manager	Tel: (011) 5840540 Fax : (011) 774 9173 Email: Lucas.Ngwako@transnet.net
Ms Kgomotso Saul General Insurance Manager	Tel: (011) 584 0534 Fax (011) 773 0899 Cell 083 791 0759 Email: Kgomotso.Saul@transnet.net

Transnet Freight Rail: Other Areas

Pretoria, Empangeni Richardsbay	Thembekile Cubuta (Insurance Manager) Telephone : 012 315 2957 Cell: 083 379 5653 Thembekile.Cubuta@transnet.net
Cape Town, Port Elizabeth East London Free State	Mr Jan Venter (Insurance Manager) Tel : (021) 940 3339 Cell : 083 284 3620 E-mail : Jan.Venter3@transnet.net
Johannesburg, Durban Polokwane	Mr. Jay Ngubane (Insurance Manager) Tel : (031) 361- 5872 Cell : 083 253 7750 E-mail : Jay.Ngubane@transnet.net



Willis South Africa

Willis South Africa personnel are at all times available for advice, please feel free to contact :-

- **Pravina Nair**
Account Advocate
Tel No. (011) 535 5400
Cell 071 850 0534
Fax No. (011) 784 1610
E-Mail nairpr@willis.com

- **Mike Lamb**
Construction Broker
Tel No. (011) 535 5400
Cell 082 454 7983
Fax No. (011) 784 1610
E-Mail lambm@willis.com

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Annexure 1

Transnet Principal Controlled Construction Insurance

Programme Contract Award Declaration (Part A),

Contract Completion Declaration (Part B)

Contract Variation Declaration (Part C)

**Project Specific One Off or Multiple Packages R 100 m
and above (Form A1)**

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CONTRACT DECLARATION FOR BPCI and PCI LIABILITY BELOW R100,000,000

Only complete sections with white background

SEND TO THE BROKER	FROM
Willis South Africa (Pty) Ltd P O Box 55509 Northlands 2116	TRANSNET Postal Address:
Attention: Pravina Nair	Represented by:
E-mail: transnetpci@willis.com	Email:
Tel No : +27(0) 11 535-5400	Tel No:
Fax No: +27(0) 11 784-1610	Fax No:

Please also copy in Lucas.Ngwako@transnet.net at TFR Corporate office.

PART A 1: CONTRACT AWARD INFORMATION

CONTRACT NUMBER		
PURCHASE ORDER		
DECLARATION REGISTER CONTROL NUMBER		
DESCRIPTION OF CONTRACT WORKS:		
CONTRACT VALUE AT AWARD (VAT EXCLUSIVE)		
ESTIMATED VALUE OF FREE ISSUE SUPPLIED TO CONTRACTOR (VAT EXCLUSIVE)		
COVER SELECTION	CONTRACT WORKS & LIABILITY	CONTRACTORS LIABILITY ONLY
INSERT YES /NO UNDER THE SELECTED COVER		
PHYSICAL ADDRESS WHERE CONTRACT IS TAKING PLACE		
CONTRACT AWARD DATE		
CONTRACT COMMENCEMENT DATE		
EXPECTED CONTRACT COMPLETION DATE		
CONSTRUCTION PERIOD(MONTHS)		
MAINTENANCE PERIOD (MONTHS)		



PART A2: OPTIONAL INSURANCE REQUIRED:		INSERT (YES/NO) BELOW
1.	IS REMOVAL OF SUPPORT COVER REQUIRED?	
2.	DOES THIS CONTRACT EVIDENCE AN EXPOSURE WHICH CAN BE COVERED BY PROJECT DELAY INSURANCE?	
3.	WILL TRANSNET/CONTRACTOR/SUB-CONTRACTOR BE IMPORTING MATERIALS/ EQUIPMENT FOR THE CONTRACT THAT REQUIRES MARINE CARGO IMPORT INSURANCE?	
IF REQUIRED, PROVIDE FULL DETAILS TO BROKER		

PART A3: CONTRACTORS LIABILITY COVER ONLY

DOES THIS CONTRACT ENTAIL WORK IN THE FOLLOWING CATEGORIES WHERE THE EXPOSURE TO OWN DAMAGE (DAMAGE TO WORKS) IS NIL OR NEGLIGIBLE. INSERT YES/ NO AS APPLICABLE BELOW

1.	CHEMICAL CONTROL OF VEGETATION	
2.	VEGETATION REHABILITATION	
3.	BALLAST TAMPING	
4.	TRACK RE-PROFILING (including Welding/Grinding)	
5.	BURNING OF FIRE BREAKS	
6.	GEOTECHNICAL AND EXPLORATORY WORKS	

CONTRACTORS DETAILS		
<h3>PART B: CONTRACT COMPLETION DECLARATION</h3> <p>COMPLETION OF THIS SECTION IS COMPULSORY AND MUST BE SUBMITTED TO ARRANGE PREMIUM ADJUSTMENT ON COMPLETION OF WORKS.</p>		
CONTRACT COMPLETION DATE		
ENDORSEMENT/CERTIFICATE NUMBER		
EXPIRY OF MAINTENANCE PERIOD		
FINAL CONTRACT VALUE (VAT EXCLUSIVE)		
ACTUAL VALUE OF FREE ISSUE SUPPLIED TO CONTRACTOR (VAT EXCLUSIVE)		
	ORIGINAL DECLARATION	COMPLETION OF WORKS
ORIGINATOR / SIGNATURE		
DATE		



PART C – CONTRACT VARIATION / EXTENSION DECLARATION

CONTRACT NUMBER

TITLE OF CONTRACT

NEW CONTRACT COMPLETION DATE

ENDORSEMENT/CERTIFICATE NUMBER

EXPIRY OF MAINTENANCE PERIOD

NEW CONTRACT VALUE (VAT Exclusive)

ACTUAL VALUE OF FREE ISSUE SUPPLIED TO CONTRACTOR (VAT Exclusive)

"PREVIEW COPY ONLY"

Project Specific One Off or Multiple Packages R100,000,000 and above Insurance Notification Form

CONTACT DETAILS

Name

Division/Office

Telephone Number

Fax Number

Email Address

PROJECT INFORMATION

Project Title

Project Location

Principal Contractor

Role of Transnet

Joint Venture Partners (%)

Design & Construct

☐

Construct Only

☐

Other?

☐

Please advise details

PROJECT DETAILS

Scope of Works

Project Value (Estimate)

Currency

Contract Value

R

Transnet Supplied Materials

R

Surrounding Property being
worked upon

R

(When Transnet
to Insure)

Total Sum Insured

R



Project Value Breakdown

Type of Works

% of Total Project
Value (Include
Principal Materials)Wharves, Jetties, Piers, Marinas,
Causeways, Breakwaters and Drydocks

Wet Risk Works (other than above)

Tunnel Works

Offshore Works

Pipeline Works

Horizontal Drilling

Dry Civil Works (eg, Earthworks & Bridges)

Building Works

Mechanical Works

Dams

All Other Contracts

Duration (Estimate)

Construction Period

/

to

/

/

Testing Period

Months

Defects Period

Months

INSURANCE

Insurance Arranged By	Transnet	Contractor	Sum Insured/Currency
Construction Risks (Works)	<input type="checkbox"/>	<input type="checkbox"/>	
Public Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Professional Indemnity	<input type="checkbox"/>	<input type="checkbox"/>	
Construction Plant & Equipment	<input type="checkbox"/>	<input type="checkbox"/>	
Marine Hull/Plant/Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Transits (Inland/Overseas)	<input type="checkbox"/>	<input type="checkbox"/>	
Employer's Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Automobile Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Aviation Liability	<input type="checkbox"/>	<input type="checkbox"/>	

TRANSIT RISKS

Please provide details of major transit for which you are responsible

Inland ☐Overseas ☐

Major Journeys

Maximum Value Any One Item

R

Maximum Value Any One Shipment

R

Total Estimated Sendings for the Project

R

Description of Cargo

Method of Conveyance

Road ☐Rail ☐Air ☐Ocean/Sea ☐Inland Waterway ☐

**DESIGN RISKS**

For Design & Construct Contracts:

Will Transnet engage an independent designer? ☐ Yes ☐ No

If yes to the above, please advise name of company _____

Confirm limit of PI Insurance to be carried by independent designer R _____

Does the contract involve any novation of design liability from the Principal? ☐ Yes ☐ No

OFFSITE STORAGE

Provide details for offsite storage of materials where this exceeds R1,000,000 at any one location

GENERAL RISK INFORMATION

Please provide a copy of the following

- (a) Contract drawings
- (b) General conditions of contract (including any amendment thereto) referring to insurance and indemnity obligations, annexure pages, schedules and defect liability obligations
- (c) Works programme (gant charts, etc)
- (d) Scope of Works

Does the project involve removal and disposal of hazardous materials? Eg, asbestos/PCB

☐ Yes ☐ No (If yes, please provide full details)

"PREVIEW COPY ONLY"

Supplementary Questionnaire Earthworks

TYPE (DEPTH OF TRENCH/EXCAVATION) _____

DIMENSIONS (EG: LENGTH, HEIGHT, DEPTH, ETC) _____

CONSTRUCTION METHOD _____

FOUNDATIONS (TYPE AND DEPTH) _____

SUPPORT STRUCTURES _____

BLASTING _____

Please provide details of the blasting company and their experience _____

UNDERPINNING _____

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Supplementary Questionnaire Construction of Wharves & Jetties

DESCRIPTION OF WORKS

Dimensions _____

Type of structure and material of construction _____

Type and dimensions of piling/foundations _____

Height of deck above water level at low tide and high tide _____

Extent of dredging and who is performing the work _____

Maximum value and weight of heaviest lift _____

SUB SOIL CONDITION

Geological strata and/or details of bore logs _____

WAVE, FLOODING AND STORM

Please provide historical data _____

Height of Deck above highest water level recorded _____

Maximum wave height expected _____

LIABILITY

Any underground services? _____

To what extent can construction operation affect adjacent structures and water traffic? _____

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Supplementary Questionnaire Dams

DAM EMBANKMENT

Height _____

Length _____

Width of crown and basement _____

Inclination of slope upstream and downstream _____

DIVERSION DETAILS

Coffer Dams: Upstream height and downstream height _____

Diversion/canal size _____

Discharge capabilities _____

FOUNDATIONS

Maximum depth of excavation _____

Details of ground support _____

BREAK-UP VALUES

Earthworks _____

Concrete works _____

Coffer dams upstream and downstream _____

Diversion piping _____

Access Roads _____

Others as available _____

WATER FLOW DATA

Rainfall _____

River flow _____

BLASTING REQUIRED?

☐ Yes ☐ No (If yes, please provide details) _____

DOCUMENTS REQUIRED

Site plan including contours, location of haul roads and storage areas

Profile of dam

Location map

"PREVIEW COPY ONLY"



Supplementary Questionnaire Bridges

DIMENSIONS

Length _____

Breadth _____

FOUNDATIONS

Details of piles _____

Details of footings breadth _____

SUPERSTRUCTURE

Number of spans _____

Length _____

Girders ☐ Precast ☐ In situ

Girder material _____

Deck ☐ Precast ☐ In situAre any dual lift activities anticipated? ☐ Yes ☐ No

APPROACH WORK REQUIRED?

☐ Yes ☐ No (If yes, please provide details) _____

IS THE BRIDGE OVER A WATER COURSE?

☐ Yes ☐ No (If yes, please provide details) _____

Details of river flow _____

Details of flood exposure _____

Method of protecting works during construction _____

BREAK-UP OF VALUES

Foundations maximum any one precast section

R _____

Maximum any one concrete pour

R _____

Falsework/Formwork

R _____

Earthworks

R _____

Water protection systems

R _____

DOCUMENTS REQUIRED

Profile of bridge

Cross section of bridge



Supplementary Questionnaire Road Works

EMBANKMENT

Total length _____
 Average cut _____
 Maximum cut _____
 Fill type _____
 Maximum length of unsealed embankment (in metres) _____

DRAINAGE

Total length _____
 Open trench – maximum open _____
 Average open _____

CULVERTS

Number _____
 Details of major culverts _____

BRIDGES

Number _____

Please provide the following details for each bridge.

- ◆ Number of spans _____
- ◆ Maximum length _____
- ◆ Length and breadth _____
- ◆ Foundation details _____
- ◆ Construction method _____
- ◆ Flow details of any rivers/creeks to be bridged _____
- ◆ Are any dual lift activities anticipated? ☐ Yes ☐ No

BREAK-UP OF VALUES

Drainage culverts	R _____	Bridges	R _____	Earthworks	R _____
Landscaping	R _____	Paving	R _____		
Other (specify) _____					R _____

DOCUMENTS REQUIRED

Topographical map of area

Profile of the cross section of road. Is the area prone to flooding? ☐ Yes ☐ No

(If yes, please provide details) _____

What protection will be implemented to prevent damage occurring due to water?



Supplementary Questionnaire Pipelines

PROJECT DETAILS

Pipeline type (eg, gas, etc) _____

Total length _____

Pipe diameter/s _____

Method of construction/laying _____

PIPE

To be supplied by Principal? ☐ Yes ☐ No

Acceptance point for pipe _____

Where is pipe to be stored? _____

TRENCHES

Depth (metres): maximum and average _____

Open trench (without pipe): _____

♦ Maximum length any one time (number of kilometres) _____

♦ Maximum length any one continuous stretch (number of kilometres) _____

Open trench with pipe laid: maximum length _____

Quotations/cover required for open trench:

☐ Policy limit 15 kilometres (of which 5 kilometres with pipe)

☐ Other limit required (Please specify) _____

TERRAIN

Soil conditions and terrain contour _____

OTHER STRUCTURES (PUMP STATION, ETC)

Description, including dimensions _____

CROSSINGS

Type (river, road, etc). Method of construction _____

TESTING

Type _____

Period _____

Hydrostatic pressure test% of manufacturer's specification _____

Welds – Percentage to be x-rayed _____

BREAK-UP OF VALUES

Pipe R _____

Mechanical R _____

Structures R _____

Trenching R _____

Other (Specify) _____ R _____

FLOOD EXPOSURE

Is there any exposure to flooding?

☐ Yes ☐ No (If yes, please provide details of preventative measures undertaken)

Is water table expected to be encountered during construction period?

☐ Yes ☐ No (If yes, please provide details of preventative measures undertaken)

Horizontal Drilling (HDD)

HDD Contract Value R _____

Details of drills exceeding 1 kilometre in length _____

Details of drills where the pipe diameter is greater than 760mm _____

DOCUMENTS REQUIRED

Route of pipeline

Contour maps

Rainfall details

"PREVIEW COPY ONLY"

Annexure 2

Incident Advice Form

ALL INCIDENTS HAVE TO BE REPORTED WITHIN 30 DAYS OF OCCURRENCE

"PREVIEW COPY ONLY"



TRANSNET PRINCIPAL CONTROLLED INSURANCE PROGRAMME
INCIDENT ADVICE FORM

TRANSNET UNIQUE CLAIM NUMBER

TRANSNET TOMS NUMBER.....

TFR BUSINESS UNIT.....

Send to
Willis South Africa (Pty) Ltd
First Floor,
Eversheds Building,
22 Fredman Drive,
Sandton
2196

Copy to TFR Insurance Department
Attention: Lucas Ngwako
Tel No – (011) 584 0540
Fax – (011) 774 9173
E-mail: Lucas.Ngwako@transnet.net

Attention : Pravina Nair
Tel No. (011) 535 5400
Fax No. (011) 784 1610
E-Mail: nairpr@willis.com

From
Represented by
Tel No.
Fax No.

PRINCIPAL (PER CONTRACT DOCUMENT)

CONTRACT NUMBER

ORIGINAL DECLARATION NO.

TITLE OF CONTRACT

ORIGINAL CONTRACT COMMENCEMENT DATE

DATE OF LOSS OR DAMAGE

DATED REPORTED TO SITE AGENT

REPORTED BY

REPORTED TO BY

DATE

LOCALITY OF INCIDENT

DETAILS OF HOW THE LOSS OR DAMAGE OCCURRED

DETAILS AND NATURE OF LOSS OR DAMAGE TO CONTRACT WORKS / TO THIRD PARTY PROPERTY

DETAILS OF OTHER DEATH OR INJURY TO PARTIES

ESTIMATED COST (SEPARATE RECORDS OF ALL COSTS MUST BE KEPT)

WHO OR WHAT APPEARS TO BE RESPONSIBLE FOR THE CAUSE OF THE LOSS / DAMAGE

PERSON WHOM ASSESSOR SHOULD CONTACT

DESIGNATION:

TELEPHONE (LANDLINE)

CELLPHONE NO.

E-MAIL ADDRESS

ALL INCIDENTS HAVE TO BE REPORTED AS SOON AS POSSIBLE AND WITHIN 30 DAYS
OF OCCURRENCE

SIGNED BY:

SIGNATURE:

COMPANY:

DATE:

Annexure 3

Monthly Contract Register Control Sheets

"PREVIEW COPY ONLY"



TRANSNET: PRINCIPAL CONTROLLED INSURANCE – MONTHLY CONTRACT REGISTER CONTROL SHEET

A) NEW CONTRACTS FIRST DECLARATION OF NEW CONTRACT WORKS FOR COVER UNDER PCI POLICY

DIVISION / SUPPORT UNIT:
CONTACT PERSON:
TELEPHONE / CELL NO'S:

INSURANCE YEAR: 2012/2013
MONTH:
E-MAIL ADDRESS:

CONTRACT NUMBER	CONTRACT DECLARATION CONTROL NUMBER	DESCRIPTION OF CONTRACT WORKS	DATE DECLARED TO WILLIS	ESTIMATED TOTAL CONTRACT VALUE R	COMMENCEMENT DATE OF WORKS	ESTIMATED COMPLETION DATE
Purchase Order No	1					
Purchase Order No	2					
Purchase Order No	3					
Purchase Order No	4					
Purchase Order No	5					
Purchase Order No	6					
		TOTAL DECLARED FOR MONTH				

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B) CONTACT EXTENSIONS

ONLY APPLICABLE TO CONTRACTS PREVIOUSLY DECLARED WHERE EXTENSION OF CONTRACT PERIOD IS REQUIRED

[illegible]