

Transnet Freight Rail

an Operating Division **TRANSNET SOC LTD**

[Registration Number 1990/000900/30]

REQUEST FOR QUOTATION (RFQ)

SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION

RFQ NUMBER	: WRAC-BLQ-41752
ISSUE DATE	: 13 November 2023
COMPULSORY BRIEFING	: 21 November 2023
CLOSING DATE	: 29 November 2023
CLOSING TIME	: 11h00am
TENDER VALIDITY PERIOD	: 12 weeks from closing date

Note to the Bidders:

Bidders are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Please do not wait for the last hour to submit. A Bidder can upload 30mb per upload and multiple uploads are permitted

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T1.1 TENDER NOTICE AND INVITATION TO TENDER

SECTION 1: NOTICE TO TENDERERS

1. INVITATION TO TENDER

Responses to this Tender [hereinafter referred to as a **Tender**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as a Tenderer].

DESCRIPTION	SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION
TENDER DOWNLOADING	This Tender may be downloaded directly from the National Treasury eTender Publication Portal at www.etenders.gov.za and the Transnet website at https://transnetetenders.azurewebsites.net (please use Google Chrome to access Transnet link) FREE OF CHARGE.
COMPULSORY TENDER CLARIFICATION MEETING	<p>A Compulsory Tender Clarification Meeting will be conducted at Kraaifontein Substation (Co-ordinates -33.845082, 18.725906), on 21st November 2023 at 10h00 am [10:00 O'clock] for a period of ± 2 (two) hours. [Tenderers to provide own transportation and accommodation].</p> <p>The Compulsory Tender Clarification Meeting will start punctually and information will not be repeated for the benefit of Tenderers arriving late.</p> <p>A Site visit/walk will take place, tenderers are to note:</p> <ul style="list-style-type: none"> • Tenderers are required to wear safety shoes, goggles, long sleeve shirts, high visibility vests and hard hats. • Tenderers without the recommended PPE will not be allowed on the site walk. • Tenderers and their employees, visitors, clients and customers entering Transnet Offices, Depots, Workshops and Stores will have to undergo breathalyser testing. • All forms of firearms are prohibited on Transnet properties and premises. • The relevant persons attending the meeting must ensure that their identity documents, passports or drivers licences are on them for inspection at the access control gates. <p>Certificate of Attendance in the form set out in the Returnable Schedule T2.2-02 hereto must be completed and submitted with your Tender as proof of attendance is required for a compulsory site meeting and/or tender briefing.</p>

	<p>Tenderers are required to bring this Returnable Schedule T2.2-02 to the Compulsory Tender Clarification Meeting to be signed by the <i>Employer's</i> Representative.</p> <p>Tenderers failing to attend the compulsory tender briefing will be disqualified.</p>
CLOSING DATE	<p>11:00am on Wednesday, 29 November 2023</p> <p>Tenderers must ensure that tenders are uploaded timeously onto the system. If a tender is late, it will not be accepted for consideration.</p>

2. TENDER SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to bids and upload their bid proposals/responses on to the system.

a) The Transnet e-Tender Submission Portal can be accessed as follows:

Log on to the Transnet eTenders management platform website (<https://transnetetenders.azurewebsites.net>);

- Click on "ADVERTISED TENDERS" to view advertised tenders;
- Click on "SIGN IN/REGISTER – for bidder to register their information (must fill in all mandatory information);
- Click on "SIGN IN/REGISTER" - to sign in if already registered;
- Toggle (click to switch) the "Log an Intent" button to submit a bid;
- Submit bid documents by uploading them into the system against each tender selected.
- **Tenderers are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by bidders as a result of the technical challenges. Please do not wait for the last hour to submit. A Tenderer can upload 30mb per upload and multiple uploads are permitted.**

b) The tender offers to this tender will be opened as soon as possible after the closing date and time. Transnet shall not, at the opening of tenders, disclose to any other company any confidential details pertaining to the Tender Offers / information received, i.e. pricing,

delivery, etc. The names and locations of the Tenderers will be divulged to other Tenderers upon request.

- c) Submissions must not contain documents relating to any Tender other than that shown on the submission.

3. CONFIDENTIALITY

All information related to this RFP is to be treated with strict confidentiality. In this regard Tenderers are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to divulge any information gleaned from provision of the Works, which is either directly or indirectly related to Transnet's business, written approval to divulge such information must be obtained from Transnet.

4. DISCLAIMERS

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

- 4.1. Award the business to the highest scoring Tenderer/s unless objective criteria justify the award to another tenderer.
- 4.2. Not necessarily accept the lowest priced tender or an alternative Tender;
- 4.3. Go to the open market if the quoted rates (for award of work) are deemed unreasonable;
- 4.4. Should the Tenderers be awarded business on strength of information furnished by the Tenderer, which after conclusion of the contract is proved to have been incorrect, Transnet reserves the right to terminate the contract;
- 4.5. Request audited financial statements or other documentation for the purposes of a due diligence exercise;
- 4.6. Not accept any changes or purported changes by the Tenderer to the tender rates after the closing date;
- 4.7. Verify any information supplied by a Tenderer by submitting a tender, the Tenderer/s hereby irrevocably grant the necessary consent to the Transnet to do so;

- 4.8. Conduct the evaluation process in parallel. The evaluation of Tenderers at any given stage must therefore not be interpreted to mean that Tenderers have necessarily passed any previous stage(s);
- 4.9. Unless otherwise expressly stated, each tender lodged in response to the invitation to tender shall be deemed to be an offer by the Tenderer. The Employer has the right in its sole and unfettered discretion not to accept any offer.
- 4.10. Not be held liable if tenderers do not provide the correct contact details during the clarification session and do not receive the latest information regarding this RFP with the possible consequence of being disadvantaged or disqualified as a result thereof.
- 4.11. Transnet reserves the right to exclude any Tenderers from the tender 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, as amended. Tenderers are required to indicate in tender returnable on T2.2-22, **[Breach of Law]** whether or not they have been found guilty of a serious breach of law during the past 5 [five] years.
- 4.12. Transnet reserves the right to perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:
- *unduly high or unduly low tendered rates or amounts in the tender offer;*
 - *contract data of contract provided by the tenderer; or*
 - *the contents of the tender returnables which are to be included in the contract.*

5. Transnet will not reimburse any Tenderer for any preparatory costs or other work performed in connection with this Tender, whether or not the Tenderer is awarded a contract.

6. NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Tenderer are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. The CSD can be accessed at <https://secure.csd.gov.za/>. Tenderer are required to provide the following to Transnet in order to enable it to verify information on the CSD:

Supplier Number..... and Unique registration reference number.....(**Tender Data**)

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

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts. The Standard for Uniformity in Construction Procurement was first published in Board Notice 62 of 2004 in Government Gazette No 26427 of 9 June 2004. It was subsequently amended in Board Notice 67 of 2005 in Government Gazette No 28127 of 14 October 2005, Board Notice 93 of 2006 in Government Gazette No 29138 of 18 August 2006, Board Notice No 9 of 2008 in Government Gazette No 31823 of 30 January 2009, Board Notice 86 of 2010 in Government Gazette No 33239 of 28 May 2010, Board Notice 136 of 2015 in Government Gazette 38960 of 10 July 2015 and Board Notice 423 of 2019 in Government Gazette No 42622 of 8 August 2019.

This edition incorporates the amendments made in Board Notice 423 of 2019 in Government Gazette 42622 of 8 August 2019. (see www.cidb.org.za).

The Standard Conditions of Tender make several references to Tender data for detail 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 in the left-hand column to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause	Data
C.1.1 The <i>Employer</i> is	Transnet SOC Ltd (Reg No. 1990/000900/30)
C.1.2 The tender documents issued by the <i>Employer</i> comprise:	
Part T: The Tender	
Part T1: Tendering procedures	T1.1 Tender notice and invitation to tender T1.2 Tender data
Part T2 : Returnable documents	T2.1 List of returnable documents T2.2 Returnable schedules
Part C: The contract	
Part C1: Agreements and contract data	C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2)
Part C2: Pricing data	C2.1 Pricing instructions C2.2 Price List

	Part C3: Scope of work	C3.1 Service Information
	Part C4: Affected Property	C4.1 Affected Property
C.1.4	The Employer's agent is:	Contract Assistant
	Name:	Celeste Jacobs
	Address:	Transnet Park Building, 1st Floor, Robert Sobukwe Road, Bellville
	Tel No.	021 940 1887 / 083 501 6338
	E – mail	Celeste.jacobs@transnet.net
C.2.1	Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:	
	1. Stage One - Eligibility with regards to attendance at the compulsory clarification meeting: An authorised representative of the tendering entity or a representative of a tendering entity that intends to form a Joint Venture (JV) must attend the compulsory clarification meeting in terms C2.7	
	<i>Any tenderer that fails to meet the stipulated eligibility criteria will be regarded as an unacceptable tender.</i>	
	2. Stage Two - Eligibility in terms of the Construction Industry Development Board:	
	a) Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, designation of 2 EP or higher class of construction work, are eligible to have their tenders evaluated.	
	b) Joint Venture (JV) Joint ventures are eligible to submit tenders subject to the following: <ol style="list-style-type: none"> every member of the joint venture is registered with the CIDB; The tenderer shall provide a certified copy of its signed joint venture agreement. 	

3. Stage Three - Functionality:

Only those tenderers who obtain the minimum qualifying score for functionality will be evaluated further in terms of price and the applicable preference point system. The minimum qualifying for score for functionality is 60 points.

The evaluation criteria for measuring functionality and the points for each criteria and, if any, each sub-criterion are as stated in C.3.11.3 below.

Any tenderer that fails to meet the stipulated eligibility criteria will be regarded as an unacceptable tender.

C.2.7 The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. **Tenderers must complete and sign the attendance register.** Addenda will be issued to and tenders will only be received from those tendering entities including those entities that intends forming a joint venture appearing on the attendance register.

Tenderers are also **required to bring their RFQ document to the briefing session and have their returnable document T2.2-02 certificate of attendance** signed off by the Employer's authorised representative.

C.2.12 No alternative tender offers will be considered.

C.2.13.3 Each tender offer shall be in the **English Language**.

C.2.13.5 The *Employer's* details and identification details that are to be shown on each tender offer package are as follows:

Identification details:	<p>The tender documents must be uploaded with:</p> <ul style="list-style-type: none"> ▪ Name of Tenderer: ▪ Contact person and details: ▪ The Tender Number: WRAC-BLQ-41752 ▪ The Tender Description: SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION
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Documents must be marked for the attention of:
Employer's Agent: Celeste Jacobs

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

C.2.15 The closing time for submission of tender offers is:
Time: **11:00am** on the **29 November 2023**
Location: The Transnet e-Tender Submission Portal:
(<https://transnetetenders.azurewebsites.net>);

NO LATE TENDERS WILL BE ACCEPTED

- C.2.16 The tender offer validity period is **12 weeks** after the closing date. Tenderers are to note that they may be requested to extend the validity period of their tender, on the same terms and conditions, if Transnet's internal evaluation and governance approval processes has not been finalised within the validity period.
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- C.2.23 The tenderer is required to submit with his tender:
1. A valid Tax Clearance Certificate issued by the South African Revenue Services.
Tenderers also to provide Transnet with a TCS PIN to verify Tenderers compliance status.
 2. A **valid B-BBEE Certificate** from a Verification Agency accredited by the South African Accreditation System [**SANAS**], or a **sworn affidavit** confirming annual turnover and level of black ownership, in line with the code of good practice, together with the tender;
 3. A valid CIDB certificate in the correct designated grading;
 4. Proof of registration on the Central Supplier Database;
 5. Letter of Good Standing with the Workmen's compensation fund by the tendering entity or separate Letters of Good Standing from all members of a newly constituted JV.

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

- C3.11 The minimum number of evaluation points for functionality is: **60**
- The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:

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

Functionality Criteria

The functionality criteria and maximum score in respect of each of the criteria are as follows:

Functionality criteria	Sub-criteria points	Maximum number of points
T2.2-04 Plan Works program indicating: start date, end date, key milestones and duration of the installation	35	35
T2.2-08 Previous Experience Contactable references relevant to this RFQ with either a completion certificate, written reference or in execution (company name, contact person, contact no. and value of work).	30	30
T2.2-09 Project Organigram and CV's <ul style="list-style-type: none"> An organisation chart showing on-site and off-site management (including the key people you have identified in the Contract Data Part two and identify the required legal appointments.) CV's and proof of qualifications attached for the Project Team including Safety Officer and Quality Assurance Representative. The Individual CV's from the Project Team to indicate level of general experience and qualifications of key staff within the organization National Diploma in Electrical Engineering / N3 – N6 / S1 – S4 Details of the location (and functions) of offices from which the <i>works</i> will be managed An explanation of how you propose to allocate adequate resources to enable you to comply with the requirements and prohibitions imposed on you by or under the statutory provisions relating to health and safety. 	35	35

Functionality shall be scored independently by not less than 3 (three) evaluators and averaged in accordance with the following schedules:

- T2.2-04 Plan
- T2.2-08 Previous Experience
- T2.2-09 Project Organogram, Management & CVs of Key Persons

Each evaluation criteria will be assessed in terms of scores of 0, 40, 70, 90 or 100. The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality, unless scored collectively. (See CIDB Inform Practice Note #9).

Note: Any tender not complying with the above-mentioned requirements, will be regarded as non-responsive and will therefore not be considered for further evaluation. This note must be read in conjunction with Clause C.2.1.

- C.3.11. Only tenders that achieve the minimum qualifying score for functionality will be evaluated further in accordance with the 80/20 preference points systems as described in Preferential Procurement Regulations.

80 where the financial value of one or more responsive tenders received have a value equal to or below R50 million, inclusive of all applicable taxes,

Thresholds	Minimum Threshold
Technical / functionality	60

Evaluation Criteria	Final Weighted Scores
Price	80
Specific goals - Scorecard	20
TOTAL SCORE:	100

Up to 100 minus W_1 tender evaluation points will be awarded to tenderers who complete the preferencing schedule and who are found to be eligible for the preference claimed. **Should the evidence required for any of the Specific Goals applicable in this tender not be provided, a tenderer will score zero preference points for that particular "Specific Goal".**

In terms of Transnet Preferential Procurement Policy (TPPP) and Procurement Manuals, the following preference points must be awarded to a bidder who provides the relevant required evidence for claiming points

Selected Specific Goal	Number of points allocated (80/20)
B-BBEE Level of contributor (1 or 2)	5
+ 50% Black Youth Owned Entities	5
30% Black women Owned entities	5
Entities Owned by People with Disability (PWD)	5
Non-Compliant and/or B-BBEE Level 3-8 contributors	0

The following Table represents the evidence to be submitted for claiming preference points for applicable specific goals in a particular tender:

Specific Goals	Acceptable Evidence
B-BBEE	B-BBEE Certificate / Sworn-Affidavit B-BBEE Certificate (in case of JV, a consolidate scorecard will be accept) as per DTIC guidelines
30% Black Women Owned Entities	B-BBEE Certificate / Sworn-Affidavit / CIPC B-BBEE Certificate (in case of JV, a consolidate scorecard will be accept) as per guidelines
+ 50% Black Youth Owned Entities	Certified copy of ID Documents of the Owners and B-BBEE Certificate / Affidavit (in case of JV, a consolidate scorecard will be accept)
Entities Owned by People with Disability (PWD)	Certified copy of ID Documents of the Owners and Doctor's Certificate confirming the disability and/or Employment Equity Act 1998 form.

The maximum points for this bid are allocated as follows:

DISCRIPTION	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTION (1 or 2) + 50% Black Youth Owned Entities 30% Black women Owned entities Entities Owned by People with Disability (PWD)	20
Total points for Price and Specific Goals must not exceed	100

Note: Transnet reserves the right to carry out an independent audit of the tenderers scorecard components at any stage from the date of close of the tenders until completion of the contract.

C.3.13 Tender offers will only be accepted if:

1. The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
2. the tenderer does not appear on Transnet's list for restricted tenderers and National Treasury's list of Tender Defaulters;
3. the tenderer has fully and properly completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the

tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state.

4. Transnet reserves the right to award the tender to the tenderer who scores the highest number of points overall, unless there are **objective criteria** which will justify the award of the tender to another tenderer. Objective criteria include but are not limited to the outcome of a due diligence exercise to be conducted. The due diligence exercise may take the following factors into account inter alia;

the tenderer:

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- b) is not undergoing a process of being restricted by Transnet or other state institution that Transnet may be aware of,
- c) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- d) has the legal capacity to enter into the contract,
- e) is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- f) complies with the legal requirements, if any, stated in the tender data and
- g) is able, in the option of the employer to perform the contract free of conflicts of interest.

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

C.1 General

C.1.1 Actions

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

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

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

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

C.1.2 Tender Documents

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

C.1.3 Interpretation

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

C.1.3.2 These conditions of tender, the tender data and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender.

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

- a) **conflict of interest** means any situation in which:
 - i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfill his or her duties impartially;
 - ii) an individual or tenderer is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - iii) incompatibility or contradictory interests exist between an employee and the tenderer who employs that employee.
- b) **comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;
- c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;

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

C.1.4 Communication and employer's agent

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

C.1.5 Cancellation and Re-Invitation of Tenders

C.1.5.1 An employer may, prior to the award of the tender, cancel a tender if-

- a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation;
- b) funds are no longer available to cover the total envisaged expenditure; or
- c) no acceptable tenders are received.
- d) there is a material irregularity in the tender process.

C.1.5.2 The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised

C.1.5.3 An employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

C.1.6 Procurement procedures

C.1.6.1 General

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

C.1.6.2 Competitive negotiation procedure

C.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

C.1.6.2.2 All responsive tenderers or at least a minimum of not less than three responsive tenderers that are highest ranked in terms of the evaluation criteria stated in the tender data shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information.

Notwithstanding the provisions of C.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

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

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

C.1.6.3 Proposal procedure using the two stage-system

C.1.6.3.1 Option 1

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

C.1.6.3.2 Option 2

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

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

C.2 Tenderer's obligations

C.2.1 Eligibility

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

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

C.2.2 Cost of tendering

C.2.2.1 Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer complies with requirements.

C.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

C.2.3 Check documents

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

C.2.4 Confidentiality and copyright of documents

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

C.2.5 Reference documents

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

C.2.6 Acknowledge addenda

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

C.2.7 Clarification meeting

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

C.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the tender data.

C.2.9 Insurance

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

C.2.10 Pricing the tender offer

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

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

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

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

C.2.11 Alterations to documents

Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations.

C.2.12 Alternative tender offers

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

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

C.2.12.3 An alternative tender offer must only be considered if the main tender offer is the winning tender.

C.2.13 Submitting a tender offer

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

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

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

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

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

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

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

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

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

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

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

C.2.15 Closing time

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

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

C.2.16 Tender offer validity

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

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

C.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period stated in C.2.16 lapses before the employer evaluating tender, the contractor reserves the right to review the price based on Consumer Price Index (CPI).

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

C.2.17 Clarification of tender offer after submission

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

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

C.2.18 Provide other material

C.2.18.1 Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment.

Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.

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

C.2.19 Inspections, tests and analysis

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

C.2.20 Submit securities, bonds and policies

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

C.2.21 Check final draft

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

C.2.22 Return of other tender documents

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

C.2.23 Certificates

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

C.3 The employer's undertakings

C.3.1 Respond to requests from the tenderer

C.3.1.1 Unless otherwise stated in the tender Data, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the Tender Data and notify all tenderers who collected tender documents.

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

- a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;
- b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or
- c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

C.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three (3) working days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who collected tender documents.

C.3.3 Return late tender offers

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

C.3.4 Opening of tender submissions

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

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

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

C.3.5 Two-envelope system

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

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

C.3.6 Non-disclosure

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

C.3.7 Grounds for rejection and disqualification

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

C.3.8 Test for responsiveness

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

- a) complies with the requirements of these Conditions of Tender,
- b) has been properly and fully completed and signed, and
- c) is responsive to the other requirements of the tender documents.

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

- a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,
- b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or
- c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

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

C.3.9 Arithmetical errors, omissions and discrepancies

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

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

- a) the gross misplacement of the decimal point in any unit rate;
- b) omissions made in completing the pricing schedule or bills of quantities; or
- c) arithmetic errors in:

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

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

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

- a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.
- b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

C.3.10 Clarification of a tender offer

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

C.3.11 Evaluation of tender offers

The Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of tender are by definition the document that establishes a tenderer's obligations in submitting a tender and the employer's undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require employers to conduct the process of offer and acceptance in terms of a set of standard procedures.

The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:	
Requirement	Qualitative interpretation of goal
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.
Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.

The activities associated with evaluating tender offers are as follows:

- a) Open and record tender offers received
- b) Determine whether or not tender offers are complete
- c) Determine whether or not tender offers are responsive
- d) Evaluate tender offers
- e) Determine if there are any grounds for disqualification
- f) Determine acceptability of preferred tenderer
- g) Prepare a tender evaluation report
- h) Confirm the recommendation contained in the tender evaluation report

C.3.11.1 General

The employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive tender offer using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

C.3.12 Insurance provided by the employer

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

C.3.13 Acceptance of tender offer

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

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement;
- b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract;
- c) has the legal capacity to enter into the contract;
- d) is not; insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her business activities or is subject to legal proceedings in respect of any of the foregoing;
- e) complies with the legal requirements, if any, stated in the tender data; and
- f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest.

C.3.14 Prepare contract documents

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

- a) addenda issued during the tender period,
- b) inclusion of some of the returnable documents and
- c) other revisions agreed between the employer and the successful tenderer.

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

C.3.15 Complete adjudicator's contract

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

C.3.16 Registration of the award

An employer must, within twenty-one (21) working days from the date on which a contractor's offer to perform a construction works contract is accepted in writing by the employer, register and publish the award on the cidb Register of Projects.

C.3.17 Provide copies of the contracts

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

C.3.18 Provide written reasons for actions taken

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

T2.1 List of Returnable Documents

2.1.1 T2.2-01: Agreement in terms of Protection of Personal Information Act, 4 of 2013 ("POPIA")

2.1.2 These schedules are required for eligibility and functionality purposes

T2.2-02 **Stage One: Eligibility Criteria Schedule** - Certificate of attendance at Compulsory Tender Clarification Meeting

T2.2-03 **Stage Two: Eligibility Criteria Schedule** - CIDB Registration

2.1.3: These schedules will be utilised for evaluation purposes:

T2.2-04 Evaluation Schedule: Plan

T2.2-08 Evaluation Schedule: Previous experience

T2.2-09 Evaluation Schedule: Project Organogram, Management & CV's

Returnable Schedules

2.1.4 General:

T2.2-05 Quality Management

T2.2-06 Health and Safety Management

T2.2-07 Health and Safety Questionnaire

T2.2-10 Method Statement

T2.2-11 Environmental Management

T2.2-12 Authority to submit tender

T2.2-13 Record of addenda to tender documents

T2.2-14 Letter of Good Standing

T2.2-15 Risk Elements

T2.2-16 Availability of equipment and other resources

T2.2-17 Schedule of proposed Subcontractors

T2.2-18 Affected Property Establishment requirements

Agreement and Commitment by Tenderer:

T2.2-19: CIDB SFU ANNEX G Compulsory Enterprise Questionnaire. Valid proof of Respondent's compliance to Specific Goals evidence (Preference Claim Form) requirements stipulated in SBD6.1.

T2.2-20 Non-Disclosure Agreement

T2.2-21 RFQ Declaration Form

T2.2-22 RFQ – Breach of Law

T2.2-23 Certificate of Acquaintance with Tender Document

T2.2-24 Service Provider Integrity Pact

T2.2-25 Supplier Code of Conduct

2.1.4 Insurance:

T2.2-26 Insurance provided by the Contractor

2.1.5 Transnet Vendor Registration:

T2.2-27 Supplier Declaration Form

2.2 C1.1 Offer portion of Form of Offer & Acceptance

2.3 C1.2 Contract Data Part Two (Data by Contractor)

2.4 C2.2 Price List

T2.2-01: Agreement in terms of Protection of Personal Information Act, 4 of 2013 ("POPIA")

1. PREAMBLE AND INTRODUCTION

- 1.1. The rights and obligation of the Parties in terms of the Protection of Personal Information Act, 4 of 2013 ("POPIA") are included as forming part of the terms and conditions of this contract.

2. PROTECTION OF PERSONAL INFORMATION

- 2.1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No. of 2013 "(POPIA)":
consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.
- 2.2. The Operator will process all information by the Transnet in terms of the requirements contemplated in Section 4(1) of the POPIA:
Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.
- 2.3. The Parties acknowledge and agree that, in relation to personal information of Transnet and the information of a third party that will be processed pursuant to this Agreement , the Operator is (_____ insert name of Tenderer/Contractor) hereinafter Operator and the Data subject is "Transnet". Operator will process personal information only with the knowledge and authorisation of Transnet and will treat personal information and the information of a third party which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.
- 2.4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this Agreement and the Operator is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.
- 2.5. In terms of this Agreement, the Operator acknowledges that it will obtain and have access to personal information of Transnet and the information of a third party and agrees that it shall only process the information disclosed by Transnet in terms of this Agreement and only for the purposes as detailed in this Agreement and in accordance with any applicable law.
- 2.6. Should there be a need for the Operator to process the personal information and the information of a third party in a way that is not agreed to in this Agreement, the Operator must request consent from Transnet to the processing of its personal information or and the information of a third party in a manner other than that it was collected for, which consent cannot be unreasonably withheld.

- 2.7. Furthermore, the Operator will not otherwise modify, amend or alter any personal information and the information of a third party submitted by Transnet or disclose or permit the disclosure of any personal information and the information of a third party to any third party without prior written consent from Transnet.
- 2.8. The Operator shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to the services offered to Transnet in terms of this Agreement (physically, through a computer or any other form of electronic communication).
- 2.9. The Operator shall notify Transnet in writing of any unauthorised access to personal information and the information of a third party, cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Operator must inform Transnet of the breach as soon as it has occurred to allow Transnet to take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and the information of a third party and to restore the integrity of the affected personal information as quickly as is possible.
- 2.10. Transnet may, in writing, request the Operator to confirm and/or make available any personal information and the information of a third party in its possession in relation to Transnet and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA.
- 2.11. Transnet may further request that the Operator correct, delete, destroy, withdraw consent or object to the processing of any personal information and the information of a third party relating to the Transnet or a third party in the Operator's possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations.
- 2.12. In signing this addendum that is in terms of the POPIA, the Operator hereby agrees that it has adequate measures in place to provide protection of the personal information and the information of a third party given to it by Transnet in line with the 8 conditions of the POPIA and that it will provide to Transnet satisfactory evidence of these measures whenever called upon to do so by Transnet.

The Operator is required to provide confirmation that all measures in terms of the POPIA are in place when processing personal information and the information of a third party received from Transnet:

YES	
-----	--

NO	
----	--

2.13. Further, the Operator acknowledges that it will be held liable by Transnet should it fail to process personal information in line with the requirements of the POPIA. The Operator will be subject to any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that Transnet submitted to it.

2.14. Should a Tenderer have any complaints or objections to processing of its personal information, by Transnet, the Tenderer can submit a complaint to the Information Regulator on <https://www.justice.gov.za/inforeg/>, click on contact us, click on complaints.IR@justice.gov.za

3. SOLE AGREEMENT

3.1. The Agreement, constitute the sole agreement between the parties relating to the subject matter referred to in paragraph 1.1 of this and no amendment/variation/change shall be of any force and effect unless reduced to writing and signed by or on behalf of both parties.

Signed at _____ on this _____ day of _____ 2021

Name: _____

Title: _____

Signature: _____

Tenderer / Contractor _____

(Operator)

Authorised signatory for and on behalf of Tenderer / Contractor _____ who warrants that he/she is duly authorised to sign this Agreement.

AS WITNESSES:

1. Name: _____ Signature: _____

2. Name: _____ Signature: _____

T2.2-02: Eligibility Criteria Schedule -

Certificate of Attendance at Tender Clarification Meeting

This is to certify that

(Company Name)

Represented
by:

(Name and
Surname)

Was represented at the compulsory tender clarification meeting

Held at:	Kraaifontein Substation (Co-ordinates -33.845082, 18.725906)	
On (date)	21 st November 2023	Starting time: 10:00

Particulars of person(s) attending the meeting:

Name

Signature

Capacity

Attendance of the above company at the meeting was confirmed:

Name

Signature

**For and on Behalf of the
Employers Agent.**

Date

T2.2-03: Eligibility Criteria Schedule - CIDB Grading Designation

Note to tenderers:

Tenderers are to indicate their CIDB Grading by filling in the table below. **Attach a copy of the CIDB Grading Designation or evidence of being capable of being so registered.**

CRS Number	Status	Grading	Expiry Date

1. Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **2 EP or higher** class of construction work, are eligible to have their tenders evaluated.

2. Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

1. every member of the joint venture is registered with the CIDB;
2. The tenderer shall provide a certified copy of its signed joint venture agreement.

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

Signed Date

Name Position

Tenderer

T2.2-04: Evaluation Schedule: Plan

The Tenderer details the plan for evaluation and attaches it to this schedule.

The Tenderer's attention is drawn to core clause 21 of the NEC3 Term Service Contract regarding the items to be shown on a plan.

Please provide your proposed plan, inclusive but not limited to the following:

The duration of the contract work is 6 weeks.

The Plan should indicate the following columns as a minimum:

Activity Number	Activity description	Start date	Finish date	Successor	Time risk allowances (TRA)

The table below is for information purposes only to indicate the method of scoring that will be followed to evaluate the Plan submitted by the Tenderer:

	Plan
No Response (score 0)	The tenderer did not submit the plan
Poor (score 40)	> 10 weeks to complete the project
Satisfactory (score 70)	≥ 8 – < 9 weeks to complete the project
Good (score 90)	> 7 – < 8 weeks to complete the project
Very Good (score 100)	≤ 6 weeks to complete the project

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

Signed Date

Name Position

Tenderer

T2.2-05: Quality Management

The tenderer is to note that if successful, and awarded the contract, shall execute and complete the contract as per the Quality Management stated in the Works Information and should include but not be limited to the following.

1. Project Quality Plan which satisfies the technical and quality requirements of the *works*, identifying all procedures, reviews, audits, controls and records used to control and verify compliance with the Works Information.
2. Check list of procedures and method statements to be used during the contract.
3. A signed Quality Policy

Attached submissions to this schedule:

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.....

.....

.....

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-06: Health and Safety Management

Submit the following documents as a minimum with your tender:

1. A safety plan to be submitted in accordance with the OHSA1993 and Transnet Freight Rail's health and Safety Specification TFR-ISM-RN-R&C-FM009.
2. Risk assessment.
3. Construction Safety File (Index)
4. Construction Safety Work Method Statement
5. Health and Safety Appointments with certificates

Attached submissions to this schedule:

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

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

Signed Date

Name Position

Tenderer

T2.2-07: Health and Safety Questionnaire

1. SAFE WORK PERFORMANCE													
1A. Injury Experience / Historical Performance - Alberta													
Use the previous three years injury and illness records to complete the following:													
Year													
Number of medical treatment cases													
Number of restricted work day cases													
Number of lost time injury cases													
Number of fatal injuries													
Total recordable frequency													
Lost time injury frequency													
Number of worker manhours													
<table border="1"> <tr> <td>1 - Medical Treatment Case</td> <td>Any occupational injury or illness requiring treatment provided by a physician or treatment provided under the direction of a physician</td> </tr> <tr> <td>2 - Restricted Work Day Case</td> <td>Any occupational injury or illness that prevents a worker from performing any of his/her craft jurisdiction duties</td> </tr> <tr> <td>3 - Lost Time injury Cases</td> <td>Any occupational injury that prevents the worker from performing any work for at least one day</td> </tr> <tr> <td>4 - Total Recordable Frequency</td> <td>Total number of Medical Treatment, Restricted Work and Lost Time Injury cases multiplied by 200,000 then divided by total manhours</td> </tr> <tr> <td>5- Lost Time Injury Frequency</td> <td>Total number of Lost Time Injury cases multiplied by 200,000 then divide by total manhours</td> </tr> </table>				1 - Medical Treatment Case	Any occupational injury or illness requiring treatment provided by a physician or treatment provided under the direction of a physician	2 - Restricted Work Day Case	Any occupational injury or illness that prevents a worker from performing any of his/her craft jurisdiction duties	3 - Lost Time injury Cases	Any occupational injury that prevents the worker from performing any work for at least one day	4 - Total Recordable Frequency	Total number of Medical Treatment, Restricted Work and Lost Time Injury cases multiplied by 200,000 then divided by total manhours	5- Lost Time Injury Frequency	Total number of Lost Time Injury cases multiplied by 200,000 then divide by total manhours
1 - Medical Treatment Case	Any occupational injury or illness requiring treatment provided by a physician or treatment provided under the direction of a physician												
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3 - Lost Time injury Cases	Any occupational injury that prevents the worker from performing any work for at least one day												
4 - Total Recordable Frequency	Total number of Medical Treatment, Restricted Work and Lost Time Injury cases multiplied by 200,000 then divided by total manhours												
5- Lost Time Injury Frequency	Total number of Lost Time Injury cases multiplied by 200,000 then divide by total manhours												
1B. Workers' Compensation Experience													
Use the previous three years injury and illness records to complete the following (if applicable):													
Industry Code:		Industry Classification:											
Year													
Industry Rate													
Contractor Rate													
% Discount or Surcharge													
Is your Workers' Compensation account in good standing? (Please provide letter of confirmation)		<input type="checkbox"/> Yes <input type="checkbox"/> No											
2. CITATIONS													
2A.	Has your company been cited, charged or prosecuted under Health, Safety and/or Environmental Legislation in the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide details:												
2B.	Has your company been cited, charged or prosecuted under the above Legislation in another Country, Region or State? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, provide details:												

3. CERTIFICATE OF RECOGNITION

Does your company have a Certificate of Recognition?

☐ Yes ☐ No If Yes, what is the Certificate No. _____ Issue Date _____

4. SAFETY PROGRAM

Do you have a written safety program manual?

☐ Yes ☐ No

If Yes, provide a copy for review

Do you have a pocket safety booklet for field distribution?

☐ Yes ☐ No

If Yes, provide a copy for review

Does your safety program contain the following elements:

	YES	NO		YES	NO
CORPORATE SAFETY POLICY	<input type="checkbox"/>	<input type="checkbox"/>	EQUIPMENT MAINTENANCE	<input type="checkbox"/>	<input type="checkbox"/>
INCIDENT NOTIFICATION POLICY	<input type="checkbox"/>	<input type="checkbox"/>	EMERGENCY RESPONSE	<input type="checkbox"/>	<input type="checkbox"/>
RECORDKEEPING & STATISTICS	<input type="checkbox"/>	<input type="checkbox"/>	HAZARD ASSESSMENT	<input type="checkbox"/>	<input type="checkbox"/>
REFERENCE TO LEGISLATION	<input type="checkbox"/>	<input type="checkbox"/>	SAFE WORK PRACTICES	<input type="checkbox"/>	<input type="checkbox"/>
GENERAL RULES & REGULATIONS	<input type="checkbox"/>	<input type="checkbox"/>	SAFE WORK PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>
PROGRESSIVE DISCIPLINE POLICY	<input type="checkbox"/>	<input type="checkbox"/>	WORKPLACE INSPECTIONS	<input type="checkbox"/>	<input type="checkbox"/>
RESPONSIBILITIES	<input type="checkbox"/>	<input type="checkbox"/>	INVESTIGATION PROCESS	<input type="checkbox"/>	<input type="checkbox"/>
PPE STANDARDS	<input type="checkbox"/>	<input type="checkbox"/>	TRAINING POLICY & PROGRAM	<input type="checkbox"/>	<input type="checkbox"/>
ENVIRONMENTAL STANDARDS	<input type="checkbox"/>	<input type="checkbox"/>	COMMUNICATION PROCESSES	<input type="checkbox"/>	<input type="checkbox"/>
MODIFIED WORK PROGRAM	<input type="checkbox"/>	<input type="checkbox"/>			

5. TRAINING PROGRAM

5A. Do you have an orientation program for new hire employees? ☐ Yes ☐ No

If Yes, include a course outline. Does it include any of the following:

	YES	NO		YES	NO
GENERAL RULES & REGULATIONS	<input type="checkbox"/>	<input type="checkbox"/>	CONFINED SPACE ENTRY	<input type="checkbox"/>	<input type="checkbox"/>
EMERGENCY REPORTING	<input type="checkbox"/>	<input type="checkbox"/>	TRENCHING & EXCAVATION	<input type="checkbox"/>	<input type="checkbox"/>
INJURY REPORTING	<input type="checkbox"/>	<input type="checkbox"/>	SIGNS & BARRICADES	<input type="checkbox"/>	<input type="checkbox"/>
LEGISLATION	<input type="checkbox"/>	<input type="checkbox"/>	DANGEROUS HOLES & OPENINGS	<input type="checkbox"/>	<input type="checkbox"/>
RIGHT TO REFUSE WORK	<input type="checkbox"/>	<input type="checkbox"/>	RIGGING & CRANES	<input type="checkbox"/>	<input type="checkbox"/>
PERSONAL PROTECTIVE EQUIPMENT	<input type="checkbox"/>	<input type="checkbox"/>	MOBILE VEHICLES	<input type="checkbox"/>	<input type="checkbox"/>
EMERGENCY PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>	PREVENTATIVE MAINTENANCE	<input type="checkbox"/>	<input type="checkbox"/>
PROJECT SAFETY COMMITTEE	<input type="checkbox"/>	<input type="checkbox"/>	HAND & POWER TOOLS	<input type="checkbox"/>	<input type="checkbox"/>
HOUSEKEEPING	<input type="checkbox"/>	<input type="checkbox"/>	FIRE PREVENTION & PROTECTION	<input type="checkbox"/>	<input type="checkbox"/>
LADDERS & SCAFFOLDS	<input type="checkbox"/>	<input type="checkbox"/>	ELECTRICAL SAFETY	<input type="checkbox"/>	<input type="checkbox"/>
FALL ARREST STANDARDS	<input type="checkbox"/>	<input type="checkbox"/>	COMPRESSED GAS CYLINDERS	<input type="checkbox"/>	<input type="checkbox"/>
AERIAL WORK PLATFORMS	<input type="checkbox"/>	<input type="checkbox"/>	WEATHER EXTREMES	<input type="checkbox"/>	<input type="checkbox"/>

5B. Do you have a program for training newly hired or promoted supervisors? ☐ Yes ☐ No

(If Yes, submit an outline for evaluation. Does it include instruction on the following:

	Yes	No		Yes	No
EMPLOYER RESPONSIBILITIES	<input type="checkbox"/>	<input type="checkbox"/>	SAFETY COMMUNICATION	<input type="checkbox"/>	<input type="checkbox"/>
EMPLOYEE RESPONSIBILITIES	<input type="checkbox"/>	<input type="checkbox"/>	FIRST AID/MEDICAL PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>
DUE DILIGENCE	<input type="checkbox"/>	<input type="checkbox"/>	NEW WORKER TRAINING	<input type="checkbox"/>	<input type="checkbox"/>
SAFETY LEADERSHIP	<input type="checkbox"/>	<input type="checkbox"/>	ENVIRONMENTAL REQUIREMENTS	<input type="checkbox"/>	<input type="checkbox"/>
WORK REFUSALS	<input type="checkbox"/>	<input type="checkbox"/>	HAZARD ASSESSMENT	<input type="checkbox"/>	<input type="checkbox"/>
INSPECTION PROCESSES	<input type="checkbox"/>	<input type="checkbox"/>	PRE-JOB SAFETY INSTRUCTION	<input type="checkbox"/>	<input type="checkbox"/>
EMERGENCY PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>	DRUG & ALCOHOL POLICY	<input type="checkbox"/>	<input type="checkbox"/>
INCIDENT INVESTIGATION	<input type="checkbox"/>	<input type="checkbox"/>	PROGRESSIVE DISCIPLINARY POLICY	<input type="checkbox"/>	<input type="checkbox"/>
SAFE WORK PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>	SAFE WORK PRACTICES	<input type="checkbox"/>	<input type="checkbox"/>
SAFETY MEETINGS	<input type="checkbox"/>	<input type="checkbox"/>	NOTIFICATION REQUIREMENTS	<input type="checkbox"/>	<input type="checkbox"/>

6. SAFETY ACTIVITIES

Do you conduct safety inspections?

Yes No Weekly Monthly Quarterly
☐ ☐ ☐ ☐ ☐

Describe your safety inspection process (include participation, documentation requirements, follow-up, report distribution).

Who follows up on inspection action items? _____

Do you hold site safety meetings for field employees? If Yes, how often?

Yes No Daily Weekly Biweekly
☐ ☐ ☐ ☐ ☐

Do you hold site meetings where safety is addressed with management and field supervisors?

Yes No Weekly Biweekly Monthly
☐ ☐ ☐ ☐ ☐

Is pre-job safety instruction provided before to each new task? ☐ Yes ☐ No

Is the process documented? ☐ Yes ☐ No

Who leads the discussion? _____

Do you have a hazard assessment process? ☐ Yes ☐ No

- Are hazard assessments documented? If yes, how are hazard assessments communicated and implemented on each project? Who is responsible for leading the hazard assessment process?

Does your company have policies and procedures for environmental protection, spill clean-up, reporting, waste disposal, and recycling as part of the Health & Safety Program?

☐ Yes ☐ No

How does your company measure its H&S success?

- Attach separate sheet to explain

7. SAFETY STEWARDSHIP

7A Are incident reports and report summaries sent to the following and how often?

	Yes	No	Monthly	Quarterly	Annually
Project/Site Manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Managing Director	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety Director/Manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
/Chief Executive Officer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7B How are incident records and summaries kept? How often are they reported internally?

	Yes	No	Monthly	Quarterly	Annually
Incidents totaled for the entire company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incidents totaled by project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Subtotaled by superintendent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Subtotaled by foreman	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7C How are the costs of individual incidents kept? How often are they reported internally?

	Yes	No	Monthly	Quarterly	Annually
Costs totaled for the entire company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Costs totaled by project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Subtotaled by superintendent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Subtotaled by foreman/general foreman	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7D Does your company track non-injury incidents?

	Yes	No	Monthly	Quarterly	Annually
Near Miss	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Property Damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8 PERSONNEL

List key health and safety officers planned for this project. Attach resume.

Name	Position/Title	Designation

Supply name, address and phone number of your company's corporate health and safety representative. Does this individual have responsibilities other than health, safety and environment?

Name	Address	Telephone Number

Other responsibilities:

9 REFERENCES

List the last three company's your form has worked for that could verify the quality and management commitment to your occupational Health & Safety program

Name and Company	Address	Phone Number

T2.2-08: Evaluation Schedule: Previous Experience

Note to tenderers:

Tenderers are required to demonstrate performance in comparable projects of similar size and nature by supplying the following:

- Contactable references relevant to this RFQ with a completion certificate, written reference or in execution (company name, contact person, contact no. and value of work).

Index of documentation attached to this schedule:

.....

.....

.....

.....

The evaluation and scoring of the previous experience will be as follows:

	Previous Experience
No Response (score 0)	Tenderer has submitted no information
Poor (score 40)	1 contactable references relevant to this RFQ with a completion certificate, written reference or in execution (company name, contact person, contact no. and value of work).
Satisfactory (score 70)	2 – 3 contactable references relevant to this RFQ with a completion certificate, written reference or in execution (company name, contact person, contact no. and value of work).
Good (score 90)	4 - 5 contactable references relevant to this RFQ with a completion certificate, written reference or in execution (company name, contact person, contact no. and value of work).
Very Good (score 100)	> 6 contactable references relevant to this RFQ with a completion certificate, written reference or in execution (company name, contact person, contact no. and value of work).

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

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-09: Evaluation Schedule: Project Organogram, Management & CV's

The tender must be able to demonstrate that the project personnel have sufficient knowledge, experience and qualifications to provide the required services and submit the following documents as a minimum with the tender:

1. An organisation chart showing on-site and off-site management (including the key people you have identified in the Contract Data Part two and identify the required legal appointments.)
2. **CV's and proof of qualifications** attached for the Project Team including Safety Officer and Quality Assurance Representative. The Individual CV's from the Project Team to indicate level of general experience and qualifications of key staff within the organization.
3. National Diploma in Electrical Engineering / N3 – N6 / S1 – S4
4. Details of the location (and functions) of offices from which the *works* will be managed.
5. Details of the experience of the staff who will be working on the *works* with respect to:
Working with the NEC3 Term Service Contract Option chosen for this contract. If staff experience of these matters is limited, an indication of relevant training that they have attended would be helpful.

Index of documentation attached to this schedule:

.....
.....

The table below is for information purposes only to indicate the method of scoring that will be followed to evaluate the Project Organogram, Management & CV's submitted by the Tenderer:

Scoring will be as follows:

	Project Organogram, Management & CV's
No Response (score 0)	Tenderer submitted no information
Poor (score 40)	1 – 2 of the items as specified above are addressed
Satisfactory (score 70)	3 of the items as specified above are addressed
Good (score 90)	4 of the items as specified above are addressed
Very Good (score 100)	All of the items as specified above are addressed

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

Signed

Date

Name

Position

Tenderer

T2.2-10: Method Statement

Note to tenderers:

Method statement - The tenderers must sufficiently demonstrate the approach/methodology that will be employed to cover the scope of the project.

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

- A detailed method statement describing exactly how each aspect of the work will be executed and this will also include by what means the material will be delivered to site and stored to cause the least damage to material. Be aware the buildings will be occupied during execution of the works.

Attached submissions to this schedule:

.....

.....

.....

Signed

Date

Name

Position

Tenderer

T2.2-11: Environmental Management

The Tenderer must review the following documents for context to meet the environmental requirements, namely:

- Transnet SOC Limited – TFR Standard Environmental Specification (TFR / EMS (SES) – 001);
 1. The tenderer must provide evidence of how their Environmental Management System (EMS) will ensure conformance to the abovementioned requirements
 2. The tenderer must provide an environmental policy signed by Top Management which, as a minimum:
 - Details the Managements commitment to preventing and controlling environmental impacts.
 3. The tenderer must provide specific Environmental Management Plan which describes relevant roles and responsibilities, and how potential environmental impacts will be identified and managed including the monitoring and recording thereof.

NB: By signing this Tender Schedule, the tenderer confirms that they will comply with the above requirements and in particular Transnet policy statements and environmental specifications.

Signed	_____	Date	_____
Name	_____	Position	_____
Tenderer	_____		

T2.2-12: Authority to submit a Tender

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

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

A. Certificate for Company

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

Signed

Date

Name

Position

Chairman of the Board of Directors

B. Certificate for Partnership

We, the undersigned, being the **key partners** in the business trading as _____

_____ hereby authorise Mr/Ms _____

acting in the capacity of _____, to sign all documents in
connection with the tender offer for Contract _____ and any
contract resulting from it on our behalf.

Name	Address	Signature	Date

NOTE: This certificate is to be completed and signed by the full number of Partners necessary
to commit the Partnership. Attach additional pages if more space is required.

C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise

Mr/Ms _____, an authorised signatory of the company

_____, acting in the capacity of lead

partner, to sign all documents in connection with the tender offer for Contract _____

_____ and any contract resulting from it on our behalf.

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

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

Name of firm	Address	Authorising signature, name (in caps) and capacity

D. Certificate for Sole Proprietor

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

Signed

Date

Name

Position

Sole Proprietor

T2.2-13: Record of Addenda to Tender Documents

This schedule as submitted confirms 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 specific tender offer:

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

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-14 Letter/s of Good Standing with the Workmen's Compensation Fund

Attached to this schedule is the Letter/s of Good Standing.

Name of Company/Members of Joint Venture:

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

Signed	Date
--------	-------	------	-------

Name	Position
------	-------	----------	-------

Tenderer
----------	-------

T2.2-15: Risk Elements

Tenderers to identify and evaluate the potential risk elements associated with the Works and possible mitigation thereof. The risk elements and the mitigation as identified thereof by the Tenderer are to be submitted.

If No Risks are identified "No Risks" must be stated on this schedule.

Tenderers are also to evaluate any risk/s stated by the *Employer* in Contract Data Part C1, and provide possible mitigation thereof.

Tenders to note: Notwithstanding this information, all costs related to risk elements which are at the Contractor's risk are deemed to be included in the tenderer's offered total of the Prices.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

T2.2-17: Schedule of Proposed Subcontractors

The tenderer is required to provide details of all the sub-contractors that will be utilised in the execution of the *service*

Tenderer to note that after award, any deviations from this list of proposed sub-contractors will be subject to acceptance by the *Service Manager* in terms of the Conditions of Contract.

Provide information of the Sub-contractors below:

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work	
% Black Owned	EME	QSE	Youth	Women	Disabilities		Rural/ Underdeveloped areas/ Townships		Military Veterans
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work	
% Black Owned	EME	QSE	Youth	Women	Disabilities		Rural/ Underdeveloped areas/ Townships		Military Veterans
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work	
% Black Owned	EME	QSE	Youth	Women	Disabilities		Rural/ Underdeveloped areas/ Townships		Military Veterans
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

TRANSNET FREIGHT RAIL
TENDER NUMBER: WRAC-BLQ-41752
DESCRIPTION OF THE SERVICE: SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER
CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document.

Tenderer

T2.2-19: ANNEX G Compulsory Enterprise Questionnaire

The following particulars hereunder must be furnished.

In the case of a Joint Venture, separate enterprise questionnaires in respect of each partner/member 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: CSD number: _____

Section 5: 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 6: Particulars of companies and close corporations

Company registration number _____

Close corporation number _____

Tax reference number: _____

Section 7: The attached SBD4 must be completed for each tender and be attached as a tender requirement.

Section 8: The attached SBD 6 must be completed for each tender and be attached as a requirement.

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

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) 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;
- iii) 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;
- iv) 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
- v) 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	_____		

SBD 6.1

PREFERENCE POINTS CLAIM FORM

This preference form must form part of all bids invited. It contains general information and serves as a claim for preference points for Specific Goals contribution. Transnet will award preference points to companies who provide valid proof of evidence as per the table of evidence in paragraph 4.1 below.

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable. Despite the stipulated preference point system, Transnet shall use the lowest acceptable bid to determine the applicable preference point system in a situation where all received acceptable bids are received outside the stated preference point system.

1.3 Preference points for this bid shall be awarded for:

- (a) Price;
- (b) B-BBEE Status Level of Contribution; and
- (c) Any other specific goal determined in the Transnet preferential procurement policy

1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTION Level 1 or 2 +50% Black Youth Owned Entities 30% Black women Owned entities Entities Owned by People with Disability (PWD)	20
Total points for Price and B-BBEE must not exceed	100

1.5 Failure on the part of a bidder to submit proof of evidence required for any of the specific goals together with the bid will be interpreted to mean that preference points for that specific goal are not claimed.

1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated

or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **"all applicable taxes"** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- (b) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (c) **"B-BBEE status level 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;
- (d) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the supply/provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- (e) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (f) **"EME"** means an Exempted Micro Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (g) **"functionality"** means the ability of a bidder to provide goods or services in accordance with specification as set out in the bid documents
- (h) **"Price"** includes all applicable taxes less all unconditional discounts.
- (i) **"Proof of B-BBEE Status Level of Contributor"**
 - i) the B-BBBEE status level certificate issued by an authorised body or person;
 - ii) a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
 - iii) any other requirement prescribed in terms of the B-BBEE Act.
- (j) **"QSE"** means a Qualifying Small Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (k) **"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.
- (l) **"Specific goals"** means targeted advancement areas or categories of persons or groups either previously disadvantaged or falling within the scope of the Reconstruction and Development Programme identified by Transnet to be given preference in allocation of procurement contracts in line with section 2(1) of the PPPFA.

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:
80/20

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

P_s = Points scored for comparative price of bid under consideration

P_t = Comparative price of bid under consideration

P_{\min} = Comparative price of lowest acceptable bid

4. EVIDENCE REQUIRED FOR CLAIMING SPECIFIC GOALS

4.1 In terms of Transnet Preferential Procurement Policy (TPPP) and Procurement Manuals, preference points must be awarded to a bidder for providing evidence in accordance with the table below::

Specific Goals	Acceptable Evidence
B-BBEE Status contributor	B-BBEE Certificate / Sworn- Affidavit / B-BBEE CIPC Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guideline
30% Black Women Owned Entities	B-BBEE Certificate / Sworn- Affidavit / B-BBEE CIPC Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guideline
+50% Black Youth Owned Entities	Certified copy of ID Documents of the Owners and B-BBEE Certificate / Sworn- Affidavit / B-BBEE CIPC Certificate (in case of JV, a consolidated scorecard will be accepted) as per DTIC guideline
Entities Owned by People with Disability (PWD)	Certified copy of ID Documents of the Owners / Doctor's note and /or EEA1 form confirming the disability

4.2 The table below indicates the required proof of B-BBEE status depending on the category of enterprises:

Enterprise	B-BBEE Certificate & Sworn Affidavit
Large	Certificate issued by SANAS accredited verification agency

QSE	Certificate issued by SANAS accredited verification agency Sworn Affidavit signed by the authorised QSE representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership (only black-owned QSEs - 51% to 100% Black owned) [Sworn affidavits must substantially comply with the format that can be obtained on the DTI's website at www.dti.gov.za/economic_empowerment/bee_codes.jsp .]
-----	--

EME	<p>Sworn Affidavit signed by the authorised EME representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership</p> <p>Certificate issued by CIPC (formerly CIPRO) confirming annual turnover and black ownership</p> <p>Certificate issued by SANAS accredited verification agency only if the EME is being measured on the QSE scorecard</p>
------------	--

- 4.3 A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE Status Level verification certificate for every separate bid.
- 4.4 Tertiary Institutions and Public Entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.
- 4.5 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 sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.
- 4.6 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.
- 4.7 Bidders are to note that the rules pertaining to B-BBEE verification and other B-BBEE requirements may be changed from time to time by regulatory bodies such as National Treasury or the DTI. It is the Bidder's responsibility to ensure that his/her bid complies fully with all B-BBEE requirements at the time of the submission of the bid.

5. BID DECLARATION

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

6. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 6.1

- 6.1 B-BBEE Status Level of Contribution: . = 20 (maximum of 20 points)
- (Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

- 7.1 Will any portion of the contract be sub-contracted?
- (***Tick applicable box***)

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

7.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE.

(Tick applicable box)

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

8. DECLARATION WITH REGARD TO COMPANY/FIRM

- 8.1 Name of company/firm:.....
- 8.2 VAT registration number:.....
- 8.3 Company registration number:.....
- 8.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

8.6 COMPANY CLASSIFICATION

- ☐ Manufacturer

- ☐ Supplier
 - ☐ Professional Service provider
 - ☐ Other Service providers, e.g. transporter, etc.
- [*TICK APPLICABLE BOX*]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If a bidder submitted false information regarding its B-BBEE status level of contributor,, which will affect or has affected the evaluation of a bid, or where a bidder has failed to declare any subcontracting arrangements or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) if the successful bidder subcontracted a portion of the bid to another person without disclosing it, Transnet reserves the right to penalise the bidder up to 10 percent of the value of the contract;
 - (e) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and
 - (f) forward the matter for criminal prosecution.

<p>WITNESSES</p> <p>1.</p> <p>2.</p>	<p>.....</p> <p>SIGNATURE(S) OF BIDDERS(S)</p> <p>DATE:</p>
--	---

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

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

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

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest¹ in the enterprise, employed by the state? **YES/NO**

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

Full Name	Identity Number	Name of State institution

¹ the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

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

2.2.1 If so, furnish particulars:

.....
.....

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

2.3.1 If so, furnish particulars:

.....
.....

3 DECLARATION

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

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

² Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

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

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

.....
Signature	Date
.....
Position	Name of bidder

T2.2-20 NON-DISCLOSURE AGREEMENT

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

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

TRANSNET SOC LTD

(Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at Transnet Corporate Centre 138 Eloff Street , Braamfontein , Johannesburg 2000

And

.....

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

- 1.3.1 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
- 1.3.2 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
- 1.3.3 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 machine-readable medium.

2 CONFIDENTIAL INFORMATION

- 2.3 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 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.
- 2.4 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 Tender or for the subsequent performance of any contract between the parties in relation to the Tender.
- 2.5 Notwithstanding clause 2.3 above, the Receiving Party may disclose Confidential Information:
 - 2.5.2 to those of its Agents who strictly need to know the Confidential Information for the sole purpose set out in clause 2.4 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
 - 2.5.3 to the extent required by law or the rules of any applicable regulatory authority, subject to clause 2.6 below.
- 2.6 In the event that the Receiving Party is required to disclose any Confidential Information in accordance with clause 2.5.3 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.

- 2.7 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.
- 2.8 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

- 3.3 The Receiving Party agrees to ensure proper and secure storage of all Information and any copies thereof.
- 3.4 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.
- 3.5 The Company shall, within 7 [seven] days of receipt of a written demand from Transnet:
- 3.5.2 return all written Confidential Information [including all copies]; and
- 3.5.3 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.
- 3.6 The Company shall on request supply a certificate signed by a director as to its full compliance with the requirements of clause 3.5.3 above.

4 ANNOUNCEMENTS

- 4.3 Neither party will make or permit to be made any announcement or disclosure of its prospective interest in the Tender without the prior written consent of the other party.
- 4.4 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 Tender 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 Tender 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

- 8.3 The Receiving Party undertakes to comply with South Africa's general privacy protection in terms Section 14 of the Bill of Rights in connection with this Tender 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.
- 8.4 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 Tender and against accidental loss or destruction of, or damage to such data held or processed by them.

9 GENERAL

- 9.3 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.
- 9.4 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.
- 9.5 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.
- 9.6 This Agreement may only be modified by a written agreement duly signed by persons authorised on behalf of each party.
- 9.7 Nothing in this Agreement shall constitute the creation of a partnership, joint venture or agency between the parties.
- 9.8 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.

Signed

Date

Name

Position

Tenderer

T2.2-21: RFQ DECLARATION FORM

NAME OF COMPANY: _____

We _____ do hereby certify that:

1. Transnet has supplied and we have received appropriate tender offers to any/all questions (as applicable) which were submitted by ourselves for tender clarification purposes;
2. we have received all information we deemed necessary for the completion of this Tender;
3. at no stage have we received additional information relating to the subject matter of this tender from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the tender documents;
4. we are satisfied, insofar as our company is concerned, that the processes and procedures adopted by Transnet in issuing this tender and the requirements requested from tenderers in responding to this tender have been conducted in a fair and transparent manner; and
5. furthermore, we acknowledge that a direct relationship exists between a family member and/or an owner / member / director / partner / shareholder (unlisted companies) of our company and an employee or board member of the Transnet Group as indicated below: *[Respondent to indicate if this section is not applicable]*

FULL NAME OF OWNER/MEMBER/DIRECTOR/

PARTNER/SHAREHOLDER:

ADDRESS:

Indicate nature of relationship with Transnet:

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

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

6. We accept that any dispute pertaining to this tender 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" below).
7. We further accept that Transnet reserves the right to reverse a tender award or decision based on the recommendations of the Ombudsman without having to follow a formal court process to have such award or decision set aside.
8. We have acquainted ourselves and agree with the content of T2.2-24 "Service Provider Integrity Pact".

For and on behalf of duly authorised thereto
Name:
Signature:
Date:

IMPORTANT NOTICE TO TENDERERS

- Transnet has appointed a Procurement Ombudsman to investigate any material complaint in respect of tenders exceeding R5,000,000.00 (five million S.A. Rand) in value. Should a Tenderer have any material concern regarding an tender process which meets this value threshold, a complaint may be lodged with Transnet's Procurement Ombudsman for further investigation.
- It is incumbent on the Tenderer 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 R5,000,000.00 (five million S.A. Rand) threshold, a complaint may be lodged with the Chief Procurement Officer of the relevant Transnet Operating Division.
- All Tenderers 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 tenderer on its List of Excluded Bidders.

T2.2-22: REQUEST FOR QUOTATION – BREACH OF LAW

NAME OF COMPANY: _____

I / We _____ do hereby certify that ***I/we have/have not been*** found guilty during the preceding 5 (five) years of a serious breach of law, including but not limited to a breach of the Competition Act, 89 of 1998, by a court of law, tribunal or other administrative body. The type of breach that the Tenderer 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 Tenderer from the tendering process, should that person or company have been found guilty of a serious breach of law, tribunal or regulatory obligation.

Signed on this _____ day of _____ 20____

SIGNATURE OF TENDER

T2.2-23: Certificate of Acquaintance with Tender Documents

NAME OF TENDERING ENTITY:

1. By signing this certificate I/we acknowledge that I/we have made myself/ourselves thoroughly familiar with, and agree with all the conditions governing this RFP. This includes those terms and conditions of the Contract, the Supplier Integrity Pact, Non-Disclosure Agreement etc. contained in any printed form stated to form part of the documents thereof, but not limited to those listed in this clause.
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 tender/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 Tender 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 Tender, I/we understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
 - a) has been requested to submit a Tender in response to this Tender invitation;
 - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
 - c) provides the same Services as the Tenderer and/or is in the same line of business as the Tenderer
5. The Tenderer has arrived at the accompanying Tender 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 Tendering.
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 Tender;
 - e) the submission of a tender which does not meet the specifications and conditions of the tender; or
 - f) Tendering with the intention not winning the tender.
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 tender relates.
8. The terms of the accompanying tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender 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 tenders and contracts, tenders 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. In addition, Tenderers that submit suspicious tenders 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 on this _____ day of _____ 20____

SIGNATURE OF TENDERER

T2.2-24 Service Provider Integrity Pact

Important Note: All potential tenderers must read this document and certify in the RFP Declaration Form that that have acquainted themselves with, and agree with the content.

The contract with the successful tenderer will automatically incorporate this Integrity Pact and shall be deemed as part of the final concluded contract.

INTEGRITY PACT

Between

TRANSNET SOC LTD

Registration Number: 1990/000900/30

("Transnet")

and

The Contractor (hereinafter referred to as the "Tenderer/Service Providers/Contractor")

PREAMBLE

Transnet values full compliance with all relevant laws and regulations, ethical standards and the principles of economical use of resources, fairness and transparency in its relations with its Tenderers / Service Providers/Contractors.

In order to achieve these goals, Transnet and the Tenderer / Service Provider hereby enter into this agreement hereinafter referred to as the "Integrity Pact" which will form part of the Tenderer's / Service Provider's / Contractor's application for registration with Transnet as a vendor.

The general purpose of this Integrity Pact is to agree on avoiding all forms of dishonesty, fraud and corruption by following a system that is fair, transparent and free from any undue influence prior to, during and subsequent to the currency of any procurement and / or reverse logistics event and any further contract to be entered into between the Parties, relating to such event.

All Tenderers / Service Providers / Contractor's will be required to sign and comply with undertakings contained in this Integrity Pact, should they want to be registered as a Transnet vendor.

1 OBJECTIVES

- 1.1 Transnet and the Tenderer / Service Provider / Contractor agree to enter into this Integrity Pact, to avoid all forms of dishonesty, fraud and corruption including practices that are anti-competitive in nature, negotiations made in bad faith and under-pricing by following a system that is fair, transparent and free from any influence / unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:
 - a) Enable Transnet to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works, goods and services; and
 - b) Enable Tenderers / Service Providers / Contractors to abstain from bribing or participating in any corrupt practice in order to secure the contract.

2 COMMITMENTS OF TRANSNET

Transnet commits to take all measures necessary to prevent dishonesty, fraud and corruption and to observe the following principles:

- 2.1 Transnet hereby undertakes that no employee of Transnet connected directly or indirectly with the sourcing event and ensuing contract, will demand, take a promise for or accept directly or through intermediaries any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the Tenderer, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the tendering process, Tender evaluation, contracting or implementation process related to any contract.
- 2.2 Transnet will, during the registration and tendering process treat all Tenderers / Service Providers with equity, transparency and fairness. Transnet will in particular, before and during the registration process, provide to all Tenderers / Service Providers the same information and will not provide to any Tenderers / Service Providers / Contractors

confidential / additional information through which the Tenderers / Service Providers / Contractors could obtain an advantage in relation to any tendering process.

- 2.3 Transnet further confirms that its employees will not favour any prospective Tenderer in any form that could afford an undue advantage to a particular Tenderer during the tendering stage, and will further treat all Tenderers / Service Providers / Contractors participating in the tendering process.
- 2.4 Transnet will exclude from the tender process such employees who have any personal interest in the Tenderers / Service Providers / Contractors participating in the tendering process.

3 OBLIGATIONS OF THE TENDERER / SERVICE PROVIDER

- 3.1 The Tenderer / Service Provider / Contractor commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its Tender or during any ensuing contract stage in order to secure the contract or in furtherance to secure it and in particular the Tenderer / Service Provider / Contractor commits to the following:
 - a) The Tenderer / Service Provider / Contractor will not, directly or through any other person or firm, offer, promise or give to Transnet or to any of Transnet's employees involved in the tendering process or to any third person any material or other benefit or payment, in order to obtain in exchange an advantage during the tendering process; and
 - b) The Tenderer / Service Provider / Contractor will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any employee of Transnet, connected directly or indirectly with the tendering process, or to any person, organisation or third party related to the contract in exchange for any advantage in the tendering, evaluation, contracting and implementation of the contract.
- 3.2 The acceptance and giving of gifts may be permitted provided that:
 - a) the gift does not exceed R1 000 (one thousand Rand) in retail value;
 - b) many low retail value gifts do not exceed R 1 000 within a 12 month period;
 - c) hospitality packages do not exceed R5 000 in value or many low value hospitality packages do not cumulatively exceed R5 000;
 - d) a Tenderer / Service Provider does not give a Transnet employee more than 2 (two) gifts within a 12 (twelve) month period, irrespective of value;
 - e) a Tenderer / Service Provider does not accept more than 1 (one) gift in excess of R750 (seven hundred and fifty Rand) from a Transnet employee within a 12 (twelve) month period, irrespective of value;
 - f) a Tenderer / Service Provider may under no circumstances, accept from or give to, a Transnet employee any gift, business courtesy, including an invitation to a business meal and /or drinks, or hospitality package, irrespective of value, during any Tender evaluation process, including a period of 12 (twelve) months after such tender has been awarded, as it may be perceived as undue and improper

influence on the evaluation process or reward for the contract that has been awarded; and

- g) a Tenderer / Service Provider may not offer gifts, goods or services to a Transnet employee at artificially low prices, which are not available to the public at those prices.
- 3.3 The Tenderer / Service Provider / Contractor will not collude with other parties interested in the contract to preclude a competitive Tender price, impair the transparency, fairness and progress of the tendering process, Tender evaluation, contracting and implementation of the contract. The Tenderer / Service Provider further commits itself to delivering against all agreed upon conditions as stipulated within the contract.
- 3.4 The Tenderer / Service Provider / Contractor will not enter into any illegal or dishonest agreement or understanding, whether formal or informal with other Tenderers / Service Providers / Contractors. This applies in particular to certifications, submissions or non-submission of documents or actions that are restrictive or to introduce cartels into the tendering process.
- 3.5 The Tenderer / Service Provider / Contractor will not commit any criminal offence under the relevant anti-corruption laws of South Africa or any other country. Furthermore, the Tenderer / Service Provider will not use for illegitimate purposes or for restrictive purposes or personal gain, or pass on to others, any information provided by Transnet as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 3.6 A Tenderer / Service Provider / Contractor of foreign origin shall disclose the name and address of its agents or representatives in South Africa, if any, involved directly or indirectly in the registration or tendering process. Similarly, the Tenderer / Service Provider / Contractor of South African nationality shall furnish the name and address of the foreign principals, if any, involved directly or indirectly in the registration or tendering process.
- 3.7 The Tenderer / Service Provider / Contractor will not misrepresent facts or furnish false or forged documents or information in order to influence the tendering process to the advantage of the Tenderer / Service Provider or detriment of Transnet or other competitors.
- 3.8 The Tenderer / Service Provider / Contractor shall furnish Transnet with a copy of its code of conduct, which code of conduct shall reject the use of bribes and other dishonest and unethical conduct, as well as compliance programme for the implementation of the code of conduct.
- 3.9 The Tenderer / Service Provider / Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.

4 INDEPENDENT TENDERING

- 4.1 For the purposes of that Certificate in relation to any submitted Tender, the Tenderer declares to fully understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:

- a) has been requested to submit a Tender in response to this Tender invitation;
 - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
 - c) provides the same Goods and Services as the Tenderer and/or is in the same line of business as the Tenderer.
- 4.2 The Tenderer has arrived at his submitted Tender 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 tendering.
- 4.3 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 Goods or 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 Tender;
 - e) the submission of a Tender which does not meet the specifications and conditions of the RFP; or
 - f) tendering with the intention of not winning the Tender.
- 4.4 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 Goods or Services to which his/her tender relates.
- 4.5 The terms of the Tender as submitted have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.
- 4.6 Tenderers are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders 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.
- 4.7 Should the Tenderer find any terms or conditions stipulated in any of the relevant documents quoted in the Tender unacceptable, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Tender. Any such submission shall be subject to review by Transnet's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be.

5 DISQUALIFICATION FROM TENDERING PROCESS

- 5.1 If the Tenderer / Service Provider / Contractor has committed a transgression through a violation of section 3 of this Integrity Pact or in any other form such as to put its reliability or credibility as a Tenderer / Service Provider into question, Transnet may reject the Tenderer's / Service Provider's / Contractor's application from the registration or tendering process and remove the Tenderer / Service Provider from its database, if already registered.
- 5.2 If the Tenderer / Service Provider / Contractor has committed a transgression through a violation of section 3, or any material violation, such as to put its reliability or credibility into question. Transnet may after following due procedures and at its own discretion also exclude the Tenderer / Service Provider / Contractor from future tendering processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, which will include amongst others the number of transgressions, the position of the transgressors within the company hierarchy of the Tenderer / Service Provider / Contractor and the amount of the damage. The exclusion will be imposed for up to a maximum of 10 (ten) years. However, Transnet reserves the right to impose a longer period of exclusion, depending on the gravity of the misconduct.
- 5.3 If the Tenderer / Service Provider / Contractor can prove that it has restored the damage caused by it and has installed a suitable corruption prevention system, or taken other remedial measures as the circumstances of the case may require, Transnet may at its own discretion revoke the exclusion or suspend the imposed penalty.

6 TRANSNET'S LIST OF EXCLUDED TENDERERS (BLACKLIST)

- 6.1 All the stipulations around Transnet's blacklisting process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual are included herein by way of reference. Below follows a condensed summary of this blacklisting procedure.
- 6.2 Blacklisting is a mechanism used to exclude a company/person from future business with Transnet for a specified period. The decision to blacklist is based on one of the grounds for blacklisting. The standard of proof to commence the blacklisting process is whether a "*prima facie*" (i.e. on the face of it) case has been established.
- 6.3 Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to blacklisting a company/person from future business, Transnet may decide to terminate some or all existing contracts with the company/person as well.
- 6.4 A Service Provider or Contractor to Transnet may not subcontract any portion of the contract to a blacklisted company.
- 6.5 Grounds for blacklisting include: If any person/Enterprise which has submitted a Tender, concluded a contract, or, in the capacity of agent or subcontractor, has been associated with such Tender or contract:
 - a) Has, in bad faith, withdrawn such Tender after the advertised closing date and time for the receipt of Tenders;

- b) has, after being notified of the acceptance of his Tender, failed or refused to sign a contract when called upon to do so in terms of any condition forming part of the Tender documents;
 - c) has carried out any contract resulting from such Tender in an unsatisfactory manner or has breached any condition of the contract;
 - d) has offered, promised or given a bribe in relation to the obtaining or execution of the contract;
 - e) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise or person;
 - f) has made any incorrect statement in a certificate or other communication with regard to the Local Content of his Goods or his B-BBEE status and is unable to prove to the satisfaction of Transnet that:
 - (i) he made the statement in good faith honestly believing it to be correct; and
 - (ii) before making such statement he took all reasonable steps to satisfy himself of its correctness;
 - g) caused Transnet damage, or to incur costs in order to meet the contractor's requirements and which could not be recovered from the contractor;
 - h) has litigated against Transnet in bad faith.
- 6.6 Grounds for blacklisting include a company/person recorded as being a company or person prohibited from doing business with the public sector on National Treasury's database of Restricted Service Providers or Register of Tender Defaulters.
- 6.7 Companies associated with the person/s guilty of misconduct (i.e. entities owned, controlled or managed by such persons), any companies subsequently formed by the person(s) guilty of the misconduct and/or an existing company where such person(s) acquires a controlling stake may be considered for blacklisting. The decision to extend the blacklist to associated companies will be at the sole discretion of Transnet.

7 PREVIOUS TRANSGRESSIONS

- 7.1 The Tenderer / Service Provider /Contractor hereby declares that no previous transgressions resulting in a serious breach of any law, including but not limited to, corruption, fraud, theft, extortion and contraventions of the Competition Act 89 of 1998, which occurred in the last 5 (five) years with any other public sector undertaking, government department or private sector company that could justify its exclusion from its registration on the Tenderer's / Service Provider's / Contractor's database or any tendering process.
- 7.2 If it is found to be that the Tenderer / Service Provider /Contractor made an incorrect statement on this subject, the Tenderer / Service Provider / Contractor can be rejected from the registration process or removed from the Tenderer / Service Provider / Contractor database, if already registered, for such reason (refer to the Breach of Law Form contained in the applicable RFX document.)

8 SANCTIONS FOR VIOLATIONS

8.1 Transnet shall also take all or any one of the following actions, wherever required to:

- a) Immediately exclude the Tenderer / Service Provider / Contractor from the tendering process or call off the pre-contract negotiations without giving any compensation the Tenderer / Service Provider / Contractor. However, the proceedings with the other Tenderer / Service Provider / Contractor may continue;
- b) Immediately cancel the contract, if already awarded or signed, without giving any compensation to the Tenderer / Service Provider / Contractor;
- c) Recover all sums already paid by Transnet;
- d) Encash the advance bank guarantee and performance bond or warranty bond, if furnished by the Tenderer / Service Provider / Contractor, in order to recover the payments, already made by Transnet, along with interest;
- e) Cancel all or any other contracts with the Tenderer / Service Provider; and
- f) Exclude the Tenderer / Service Provider / Contractor from entering into any Tender with Transnet in future.

9 CONFLICTS OF INTEREST

9.1 A conflict of interest includes, inter alia, a situation in which:

- a) A Transnet employee has a personal financial interest in a tendering / supplying entity; and
- b) A Transnet employee has private interests or personal considerations or has an affiliation or a relationship which affects, or may affect, or may be perceived to affect his / her judgment in action in the best interest of Transnet, or could affect the employee's motivations for acting in a particular manner, or which could result in, or be perceived as favouritism or nepotism.

9.2 A Transnet employee uses his / her position, or privileges or information obtained while acting in the capacity as an employee for:

- a) Private gain or advancement; or
- b) The expectation of private gain, or advancement, or any other advantage accruing to the employee must be declared in a prescribed form.

Thus, conflicts of interest of any Tender committee member or any person involved in the sourcing process must be declared in a prescribed form.

9.3 If a Tenderer / Service Provider / Contractor has or becomes aware of a conflict of interest i.e. a family, business and / or social relationship between its owner(s) / member(s) / director(s) / partner(s) / shareholder(s) and a Transnet employee / member of Transnet's Board of Directors in respect of a Tender which will be considered for the Tender process, the Tenderer / Service Provider / Contractor:

- a) must disclose the interest and its general nature, in the Request for Proposal ("RFX") declaration form; or
- b) must notify Transnet immediately in writing once the circumstances has arisen.

9.4 The Tenderer / Service Provider / Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any committee member or any person involved in the sourcing process, where this is done,

Transnet shall be entitled forthwith to rescind the contract and all other contracts with the Tenderer / Service Provider / Contractor.

10 MONITORING

10.1 Transnet will be responsible for appointing an independent Monitor to:

- a) Conduct random monitoring of compliance to the provisions of this Integrity Pact for contracts entered into between Transnet and the Tenderer / Service Provider / Contractor for less than R100,000.000 (one hundred million Rand) in value;
- b) Monitor compliance to the provisions of this Integrity Pact for contracts entered into between Transnet and the Tenderer / Service Provider / Contractor for greater than R100,000.000 (one hundred million Rand) in value; and
- c) Investigate any allegation of violation of any provisions of this Integrity Pact for contracts entered into between Transnet and the Tenderer / Service Provider / Contractor, irrespective of value.

10.2 The Monitor will be subjected to Transnet's Terms of Conditions of Contract for the Provision of Services to Transnet, as well as to Transnet's Service Provider Code of Conduct.

11 EXAMINATION OF FINANCIAL RECORDS, DOCUMENTATION AND/OR ELECTRONIC DATA

For the purpose of Monitoring, as stipulated above, the Monitor shall be entitled to:

- a) Examine the financial records, documentation and or electronic data of Tenderer / Service Provider / Contractor / Transnet. The Tenderer / Service Provider / Transnet shall provide all requested information / documentation / data to the Monitor and shall extend all help possible for the purpose of such examination.

12 DISPUTE RESOLUTION

12.1 Transnet recognises that trust and good faith are pivotal to its relationship with its Tenderer / Service Provider / Contractor. When a dispute arises between Transnet and its Tenderer / Service Provider / Contractor, the parties should use their best endeavours to resolve the dispute in an amicable manner, whenever possible. Litigation in bad faith negates the principles of trust and good faith on which commercial relationships are based. Accordingly, following a blacklisting process as mentioned in paragraph 6 above, Transnet will not do business with a company that litigates against it in bad faith or is involved in any action that reflects bad faith on its part. Litigation in bad faith includes, but is not limited to the following instances:

- a) **Vexatious proceedings:** these are frivolous proceedings which have been instituted without proper grounds;
- b) **Perjury:** where a Tenderer / Service Provider / Contractor make a false statement either in giving evidence or on an affidavit;
- c) **Scurrilous allegations:** where a Tenderer / Service Provider / Contractor makes allegations regarding a senior Transnet employee which are without proper foundation, scandalous, abusive or defamatory; and
- d) **Abuse of court process:** when a Tenderer / Service Provider / Contractor abuses the court process in order to gain a competitive advantage during a Tender process.

13 GENERAL

- 13.1 This Integrity Pact is governed by and interpreted in accordance with the laws of the Republic of South Africa.
- 13.2 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the law relating to any civil or criminal proceedings.
- 13.3 The validity of this Integrity Pact shall cover all the tendering processes and will be valid for an indefinite period unless cancelled by either Party.
- 13.4 Should one or several provisions of this Integrity Pact turn out to be invalid the remainder of this Integrity Pact remains valid.
- 13.5 Should a Tenderer / Service Provider / Contractor be confronted with dishonest, fraudulent or corruptive behaviour of one or more Transnet employees, Transnet expects its Tenderer / Service Provider / Contractor to report this behaviour directly to a senior Transnet official / employee or alternatively by using Transnet's "Tip-Off Anonymous" hotline number 0800 003 056, whereby your confidentiality is guaranteed.

The Parties hereby declare that each of them has read and understood the clauses of this Integrity Pact and shall a Tenderer by it. To the best of the Parties' knowledge and belief, the information provided in this Integrity Pact is true and correct.

T2.2-25 : Supplier Code of Conduct

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

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

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

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

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

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

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

- Gain an improper advantage.

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

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

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

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

- Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
 - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
 - Collusion;
 - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, 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 is conducted and the supplier is expected to participate in an honest and straight forward manner.
- Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

Conflicts of Interest

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

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

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

I, _____ of _____
(insert name of Director or as per Authority (insert name of Company)
Resolution from Board of Directors)

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

Signed this on day _____ at _____

Signature

T2.2-26: Insurance provided by the *Contractor*

Clause 83.1 in NEC3 Term Service Contract (June 2005)(amended June 2006 and April 2013) requires that the *Contractor* provides the insurance stated in the insurance table except any insurance which the *Employer* is to provide as stated in the Contract Data.

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

Insurance against (See clause 83.1 of the TSC)	Name of Insurance Company	Cover	Premium
Liability for death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract			
Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R5 000 000.			
Insurance in respect of loss of or damage to own property and equipment.			

Signed

Date

Name

Position

Tenderer

T2.2-27 SUPPLIER DECLARATION FORM

Transnet Vendor Management has received a request to load / change your company details onto the Transnet vendor master database. Please return the completed Supplier Declaration Form (SDF) together with the required supporting documents as per Appendix A to the Transnet Official who is intending to procure your company's services / products, to enable us to process this request. Please only submit the documentation relevant to your request.

Please Note: all organisations, institutions and individuals who wish to provide goods and/or services to organs of the State must be registered on the National Treasury's Central Supplier Database (CSD). This needs to be done via their portal at <https://secure.csd.gov.za/> **before applying to Transnet.**

General Terms and Conditions:

Please Note: Failure to submit the relevant documentation will delay the vendor creation / change process.

Where applicable, the respective Transnet Operating Division processing your application may request further or additional information from your company.

The Service Provider warrants that the details of its bank account ("the nominated account") provided herein, are correct and acknowledges that payments due to the Supplier will be made into the nominated account. If details of the nominated account should change, the Service Provider must notify Transnet in writing of such change, failing which any payments made by Transnet into the nominated account will constitute a full discharge of the indebtedness of Transnet to the Supplier in respect of the payment so made. Transnet will incur no liability for any payments made to the incorrect account or any costs associated therewith. In such an event, the Service Provider indemnifies and holds Transnet harmless in respect of any payments made to an incorrect bank account and will, on demand, pay Transnet any costs associated herewith.

Transnet expects its suppliers to timeously renew their Tax Clearance and B-BBEE certificates (Large Enterprises and QSEs less than 51% black owned) as well as sworn affidavits in the case of EMEs and QSEs with more than 51% black ownership as per Appendices C and D.

In addition, please take note of the following very important information:

1. If your annual turnover is R10 million or less, then in terms of the DTI Generic Codes of Good Practice, you are classified as an Exempted Micro Enterprise (EME). If your company is classified as an EME, please include in your submission a sworn affidavit confirming your company's most recent annual turnover is less than R10 million and percentage of black ownership and black female ownership in the company (Appendix C) OR B-BBEE certificate issued by a verification agency accredited by SANAS in terms of the EME scorecard should you feel you will be able to attain a better B-BBEE score. It is only in this context that an EME may submit a B-BBEE verification certificate. These EME sworn affidavits must be accepted by the . Government introduced this mechanism specifically to reduce the cost of doing business and regulatory burden for these entities and the template for the sworn affidavit is available at no cost on the website www.thedti.gov.za or EME certificates at CIPC from www.cipic.co.za.

The B-BBEE Commission said "that only time an EME can be verified by a SANAS accredited verification professional is when it wishes to maximise its B-BBEE points and move to a higher B-BBEE recognition level, and that must be done use the QSE Scorecard".

2. If your annual turnover is between R10 million and R50 million, then in terms of the DTI codes, you are classified as a Qualifying Small Enterprise (QSE). A QSE which is at least 51% black owned, is required to submit a sworn affidavit confirming their annual total revenue of between R10 million and R50 million and level of black ownership (Appendix D). QSE that does not qualify for 51% of black ownership, are required to submit a B-BBEE verification certificate issued by a verification agency accredited by SANAS their QSEs are required to submit a B-BBEE verification certificate issued by a verification agency accredited by SANAS.

Please Note: B-BBEE certificate and detailed scorecard should be obtained from an accredited rating agency (e.g. SANAS Member).

3. If your annual turnover exceeds R50 million, then in terms of the DTI codes, you are classified as a Large Enterprise. Large Enterprises are required to submit a B-BBEE level verification certificate issued by a verification agency accredited by SANAS.

Please Note: B-BBEE certificate and detailed scorecard should be obtained from an accredited rating agency (e.g. SANAS Member).

4. The supplier to furnish proof to the procurement department as required in the Fourth Schedule of the Income Tax Act. 58 of 1962 whether a supplier of service is to be classified as an "employee", "personal service provider" or "labour broker". Failure to do so will result in the supplier being subject to employee's tax.

5. **No payments can be made to a vendor until the** vendor has been registered / updated, and no vendor can be registered / updated until the vendor application form, together with its supporting documentation, has been received and processed. No payments can be made to a vendor until the vendor has met / comply with the procurement requirements.

6. It is in line with PPPFA Regulations, only valid B-BBEE status level certificate issued by an unauthorised body or person OR a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice, OR any other requirement prescribed in terms of the Broad- Based Black Economic Empowerment Act.

7. The B-BBEE Commission advises entities and organs of state to reject B-BBEE certificates that have been issued by verification agencies or professionals who are not accredited by South African National Accreditation Systems ("SANAS") as such B-BBEE certificates are invalid for lack of authority and mandate to issue them. A list of SANAS Accredited agencies is available on the SANAS website at www.sanas.co.za.

8. Presenting banking details. Please note: Banks have decided to enable the customers and provide the ability for customers to generate Account Confirmation/Bank Account letters via their online platform; this is a digital approach to the authentication of banking details.

TRANSNET FREIGHT RAIL

TENDER NUMBER: WRAC-BLQ-41752

DESCRIPTION OF THE SERVICE: SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION

SUPPLIER DECLARATION FORM

Supplier Declaration Form

Important Notice: all organisations, institutions and individuals who wish to provide goods and/or services to organs of the State must be registered on the National Treasury Central Supplier Database (CSD). This needs to be done via their portal at <https://secure.csd.gov.za/> **before applying to Transnet.**

CSD Number (MAAA xxxxxxx):

Company Trading Name						
Company Registered Name						
Company Registration No Or ID No If a Sole Proprietor						
Company Income Tax Number						
Form of Entity	CC	Trust	Pty Ltd	Limited	Partnership	Sole Proprietor
	Non-profit (NPO's or NPC)	Personal Liability Co	State Owned Co	National Govt	Provincial Govt	Local Govt
	Educational Institution	Specialised Profession	Financial Institution	Joint Venture	Foreign International	Foreign Branch Office

Did your company previously operate under another name?				Yes		No	
If YES state the previous details below:							
Trading Name							
Registered Name							
Company Registration No Or ID No If a Sole Proprietor							
Form of Entity	CC	Trust	Pty Ltd	Limited	Partnership	Sole Proprietor	
	Non-profit (NPO's or NPC)	Personal Liability Co	State Owned Co	National Govt	Provincial Govt	Local Govt	
	Educational Institution	Specialised Profession	Financial Institution	Joint Venture	Foreign International	Foreign Branch Office	

TRANSNET FREIGHT RAIL

TENDER NUMBER: WRAC-BLQ-41752

DESCRIPTION OF THE SERVICE: SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION

Your Current Company's VAT Registration Status	
VAT Registration Number	
If Exempted from VAT registration , state reason and submit proof from SARS in confirming the exemption status	
If your business entity is not VAT Registered, please submit a current original sworn affidavit (see example in Appendix I). Your Non VAT Registration must be confirmed annually.	

Company Banking Details	Bank Name	
Universal Branch Code	Bank Account Number	

Company Physical Address		Code	
Company Postal Address		Code	
Company Telephone number			
Company Fax Number			
Company E-Mail Address			
Company Website Address			

Company Contact Person Name	
Designation	
Telephone	
Email	

Is your company a Labour Broker?	Yes		No	
Main Product / Service Supplied e.g. Stationery / Consulting / Labour etc.				
How many personnel does the business employ?	Full Time		Part Time	
Please Note: Should your business employ more than 2 full time employees who are not connected persons as defined in the Income Tax Act, please submit a sworn affidavit, as per Appendix II.				

Most recent Financial Year's Annual Turnover	<R10Million EME	>R10Million <R50Million QSE	>R50Million Large Enterprise
--	---------------------------	--	--

Does your company have a valid proof of B-BBEE status?	Yes		No						
Please indicate your Broad Based BEE status (Level 1 to 9)	1	2	3	4	5	6	7	8	9

TRANSNET FREIGHT RAIL

TENDER NUMBER: WRAC-BLQ-41752

DESCRIPTION OF THE SERVICE: SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION

Majority Race of Ownership							
% Black Ownership		% Black Women Ownership		% Black Disabled person(s) Ownership		% Black Youth Ownership	
% Black Unemployed		% Black People Living in Rural Areas		% Black Military Veterans			

Please Note: Please provide proof of B-BBEE status as per Appendix C and D:

- Large Enterprise and QSEs with less than 51% black ownership need to obtain a B-BBEE certificate and detailed scorecard from an accredited rating agency;
- EMEs and QSEs with at least 51% black ownership may provide an affidavit using the templates provided in Appendix C and D respectively;
- Black Disabled person(s) ownership will only be accepted if accompanied with a certified letter signed by a physician on the physician's letterhead confirming the disability;
- A certified South African identification document will be required for all Black Youth Ownership.

Supplier Development Information Required	
<p>EMPOWERING SUPPLIER</p> <p>An Empowering Supplier is a B-BBEE compliant Entity which complies with at least three criteria if it is a large Entity, or one criterion if it is a Qualifying Small Enterprise ("QSE"), as detailed in Statement 400 of the New Codes.</p> <p>In terms of the requirements of an Empowering Supplier, numerous companies found it challenging to meet the target of 25% transformation of raw materials or beneficiation including local manufacturing, particularly so, if these companies imported goods or products from offshore. The matter was further compounded by the requirement for 25% of Cost of Sales, excluding labour cost and depreciation, to be procured from local producers or suppliers.</p>	<p>YES <input type="radio"/> NO <input type="radio"/></p>
<p>FIRST TIME SUPPLIER</p> <p>A supplier that we haven't as yet Traded within Transnet and will be registered via our database for the 1st time.</p>	<p>YES <input type="radio"/> NO <input type="radio"/></p>

SUPPLIER DEVELOPMENT PLAN Supplier Development Plan is a plan that when we as Transnet award a supplier a long term contract depending on the complexity of the Transaction. We will negotiate supplier development obligations that they must meet throughout the contract duration. e.g. we might request that they (create jobs or do skills development or encourage procurement from designated groups. (BWO, BYO & BDO etc.).	YES <input type="radio"/> NO <input type="radio"/>
DEVELOPMENT PLAN DOCUMENT Agreed plan that will be crafted with the supplier in regards to their development (It could be for ED OR SD in terms of their developmental needs they may require with the company.	YES <input type="radio"/> NO <input type="radio"/> *If Yes- Attach supporting documents
ENTERPRISE DEVELOPMENT BENEFICIARY A supplier that is not as yet in our value chain that we are assisting in their developmental area.	YES <input type="radio"/> NO <input type="radio"/>
SUPPLIER DEVELOPMENT BENEFICIARY A supplier that we are already doing business with or transacting with and we are also assisting them assisting them in their developmental area e.g. (They might require training or financial assistance etc.)	YES <input type="radio"/> NO <input type="radio"/>
GRADUATION FROM ED TO SD BENEFICIARY When a supplier that we assisted with as an ED beneficiary then gets awarded a business and we start Transacting with.	YES <input type="radio"/> NO <input type="radio"/>
ENTERPRISE DEVELOPMENT RECIPIENT A supplier that isn't in our value chain as yet but we have assisted them with an ED intervention	YES <input type="radio"/> NO <input type="radio"/>

By signing below, I hereby verify that I am duly authorised to sign for and on behalf of firm / organisation and that all information contained herein and attached herewith are true and correct

Name and Surname		Designation	
Signature		Date	

TRANSNET FREIGHT RAIL

TENDER NUMBER: WRAC-BLQ-41752

DESCRIPTION OF THE SERVICE: SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION

APPENDIX B

Affidavit or Solemn Declaration as to VAT registration status

Affidavit or Solemn Declaration

I, _____ solemnly swear/declare
that _____ is not a registered VAT
vendor and is not required to register as a VAT vendor because the combined value of taxable
supplies made by the provider in any 12 month period has not exceeded or is not expected to
exceed R1million threshold, as required in terms of the Value Added Tax Act.

Signature: _____

Designation: _____

Date: _____

Commissioner of Oaths

Thus signed and sworn to before me at _____ on this the _____
day of _____ 20_____,

the Deponent having knowledge that he/she knows and understands the contents of this Affidavit,
and that he/she has no objection to taking the prescribed oath, which he/she regards binding on
his/her conscience and that the allegations herein contained are all true and correct.

Commissioner of Oaths

VENDOR REGISTRATION DOCUMENTS CHECKLIST

Please note that you will have to provide the first two documents on the list (highlighted in red) and the rest will be provided by the supplier:

	Yes	No
1. Complete the "Supplier Declaration Form" (SDF) (commissioned). See attachment.		
2. Complete the "Supplier Code of Conduct" (SCC). See attachment.		
3. Copy of cancelled cheque OR letter from the bank verifying banking details (with bank stamp not older than 3 Months & sign by Bank Teller).		
4. Certified (Not Older than 3 Months) copy of Identity document of Shareholders/Directors/Members (where applicable).		
5. Certified copy of certificate of incorporation, CM29 / CM9 (name change).		
6. Certified copy of share Certificates of Shareholders, CK1 / CK2 (if CC).		
7. A letter with the company's letterhead confirming both Physical and Postal address.		
8. Original or certified copy of SARS Tax Clearance certificate and Vat registration certificate.		
9. BBBEE certificate and detailed scorecard from a SANAS Accredited Verification Agency and/or Sworn Certified Affidavit.		
10. Central Supplier Database (CSD) Summary Registration Report.		

SWORN AFFIDAVIT – B-BBEE EXEMPTED MICRO ENTERPRISE - GENERAL

I, the undersigned,

Full name & Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a Member / Director / Owner (**Select one**) of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name:	
Trading Name (If Applicable):	
Registration Number:	
Vat Number (If applicable)	
Enterprise Physical Address:	
Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):	
Nature of Business:	
Definition of "Black People"	<p>As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 "Black People" is a generic term which means Africans, Coloureds and Indians –</p> <ul style="list-style-type: none">(a) who are citizens of the Republic of South Africa by birth or descent; or(b) who became citizens of the Republic of South Africa by naturalisation-<ul style="list-style-type: none">i. before 27 April 1994; orii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"
Definition of "Black Designated Groups"	<p>"Black Designated Groups means:</p> <ul style="list-style-type: none">(a) unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution;(b) Black people who are youth as defined in the National Youth Commission Act of 1996;(c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act;(d) Black people living in rural and under developed areas;(e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;"

3. I hereby declare under Oath that:

- The Enterprise is _____% Black Owned using the flow-through principle as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is _____% Black Female Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is _____% Black Designated Group Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- Black Designated Group Owned % Breakdown as per the definition stated above:
 - Black Youth % = _____%
 - Black Disabled % = _____%
 - Black Unemployed % = _____%
 - Black People living in Rural areas % = _____%
 - Black Military Veterans % = _____%
- Based on the Audited Financial Statements/Financial Statements and other information available on the latest financial year-end of _____ (DD/MM/YYYY), the annual Total Revenue was R10,000,000.00 (Ten Million Rands) or less
- Please Confirm on the below table the B-BBEE Level Contributor, **by ticking the applicable box.**

100% Black Owned	Level One (135% B-BBEE procurement recognition level)	
At least 51% Black Owned	Level Two (125% B-BBEE procurement recognition level)	
Less than 51% Black Owned	Level Four (100% B-BBEE procurement recognition level)	

4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the Owners of the Enterprise which I represent in this matter.
5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Deponent Signature: _____

Date : _____

Commissioner of Oaths

Signature & stamp

Date:

**SWORN AFFIDAVIT – B-BBEE EXEMPTED MICRO ENTERPRISE – SPECIALISED ENTITY ONLY –
GENERAL - which include (Not Limited to) Non-Profit Organisations, Non-Profit Companies,
Public Benefit Organisations etc.**

I, the undersigned,

Full name & Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a Director of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name:	
Trading Name (If Applicable):	
Registration Number:	
Vat Number (If applicable)	
Enterprise Physical Address:	
Type of Entity (NPO, PBO etc.):	
Nature of Business:	
Definition of “Black People”	<p>As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 “Black People” is a generic term which means Africans, Coloureds and Indians –</p> <ul style="list-style-type: none"> (a) who are citizens of the Republic of South Africa by birth or descent; or (b) who became citizens of the Republic of South Africa by naturalisation- <ul style="list-style-type: none"> i. before 27 April 1994; or ii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;”
Definition of “Black Designated Groups”	<p>“Black Designated Groups means:</p> <ul style="list-style-type: none"> (a) unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution; (b) Black people who are youth as defined in the National Youth Commission Act of 1996; (c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act; (d) Black people living in rural and under developed areas; (e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;”

3. I hereby declare under Oath that:

- The Enterprise has _____% Black Beneficiaries as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise has _____% Black Female Beneficiaries as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise has _____% Black Designated Group Beneficiaries as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- Black Designated Group Beneficiary % Breakdown as per the definition stated above:
 - Black Youth % = _____%
 - Black Disabled % = _____%
 - Black Unemployed % = _____%
 - Black People living in Rural areas % = _____%
 - Black Military Veterans % = _____%
- Based on the Audited Financial Statements/ Financial Statements and other information available on the latest financial year-end of _____ (DD/MM/YYYY), the annual Total Revenue/Allocated Budget/Gross Receipts was R10,000,000.00 (Ten Million Rands) or less
- Please Confirm on the below table the B-BBEE Level Contributor, **by ticking the applicable box.**

At Least 75% Black Beneficiaries	Level One (135% B-BBEE procurement recognition level)	
At Least 51% Black Beneficiaries	Level Two (125% B-BBEE procurement recognition level)	
Less than 51% Black Beneficiaries	Level Four (100% B-BBEE procurement recognition level)	

- 4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the Owners of the Enterprise which I represent in this matter.
- 5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Deponent Signature: _____

Date: _____

Commissioner of Oaths

Signature & stamp

Date:

SWORN AFFIDAVIT – B-BBEE QUALIFYING SMALL ENTERPRISE - GENERAL

I, the undersigned,

Full name & Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a Member / Director / Owner (**Select one**) of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name:	
Trading Name (If Applicable):	
Registration Number:	
Vat Number (If applicable)	
Enterprise Physical Address:	
Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):	
Nature of Business:	
Definition of "Black People"	<p>As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 "Black People" is a generic term which means Africans, Coloureds and Indians –</p> <ul style="list-style-type: none">(a) who are citizens of the Republic of South Africa by birth or descent; or(b) who became citizens of the Republic of South Africa by naturalisation-<ul style="list-style-type: none">i. before 27 April 1994; orii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"
Definition of "Black Designated Groups"	<p>"Black Designated Groups means:</p> <ul style="list-style-type: none">(a) unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution;(b) Black people who are youth as defined in the National Youth Commission Act of 1996;(c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act;(d) Black people living in rural and under developed areas;(e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;"

3. I hereby declare under Oath that:

- The Enterprise is _____% Black Owned using the flow-through principle as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is _____% Black Female Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise is _____% Black Designated Group Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- Black Designated Group Owned % Breakdown as per the definition stated above:
 - Black Youth % = _____%
 - Black Disabled % = _____%
 - Black Unemployed % = _____%
 - Black People living in Rural areas % = _____%
 - Black Military Veterans % = _____%
- Based on the Audited Financial Statements/ Financial Statements and other information available on the latest financial year-end of _____ (DD/MM/YYYY), the annual Total Revenue was between R10,000,000.00 (Ten Million Rands) and R50,000,000.00 (Fifty Million Rands),
- Please confirm on the table below the B-BBEE level contributor, **by ticking the applicable box.**

100% Black Owned	Level One (135% B-BBEE procurement recognition level)	
At Least 51% black owned	Level Two (125% B-BBEE procurement recognition level)	

4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the owners of the enterprise which I represent in this matter.
5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Deponent Signature: _____

Date: _____

Commissioner of Oaths

Signature & stamp

Date:

**SWORN AFFIDAVIT – B-BBEE QUALIFYING SMALL ENTERPRISE – SPECIALISED ENTITY -
GENERAL - which include (Not Limited to) Non-Profit Organisations, Non-Profit Companies,
Public Benefit Organisations etc.**

I, the undersigned,

Full name & Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a Director of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name:	
Trading Name (If Applicable):	
Registration Number:	
Vat Number (If applicable)	
Enterprise Physical Address:	
Type of Entity (NPO, PBO etc.):	
Nature of Business:	
Definition of “Black People”	<p>As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 “Black People” is a generic term which means Africans, Coloureds and Indians –</p> <ul style="list-style-type: none"> (a) who are citizens of the Republic of South Africa by birth or descent; or (b) who became citizens of the Republic of South Africa by naturalisation- <ul style="list-style-type: none"> i. before 27 April 1994; or ii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;”
Definition of “Black Designated Groups”	<p>“Black Designated Groups means:</p> <ul style="list-style-type: none"> (a) unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution; (b) Black people who are youth as defined in the National Youth Commission Act of 1996; (c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act; (d) Black people living in rural and under developed areas; (e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;”

3. I hereby declare under Oath that:

- The Enterprise has _____% Black Beneficiaries as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise has _____% Black Female Beneficiaries as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise has _____% Black Designated Group Beneficiaries as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- Black Designated Group Beneficiary % Breakdown as per the definition stated above:
 - Black Youth % = _____%
 - Black Disabled % = _____%
 - Black Unemployed % = _____%
 - Black People living in Rural areas % = _____%
 - Black Military Veterans % = _____%
- Based on the Audited Financial Statements/ Financial Statements and other information available on the latest financial year-end of _____(DD/MM/YYYY), the annual Total Revenue/Allocated Budget/Gross Receipts was between R10,000,000.00 (Ten Million Rands) and R50,000,000.00 (Fifty Million Rands)
- Please confirm on the table below the B-BBEE level contributor, **by ticking the applicable box.**

At Least 75% Black Beneficiaries	Level One (135% B-BBEE procurement recognition level)	
At Least 51% Black Beneficiaries	Level Two (125% B-BBEE procurement recognition level)	

4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the owners of the enterprise which I represent in this matter.
5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Deponent Signature: _____

Date: _____

Commissioner of Oaths

Signature & stamp

Date:

C1.1: Form of Offer & Acceptance

Offer

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

SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION

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

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

The offered total of the Prices exclusive of VAT is	R
Value Added Tax @ 15% is	R
The offered total of the Prices inclusive of VAT is	R
(in words)	

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

Signature(s)

Name(s)

Capacity

**For the
tenderer:**

Name &
signature of
witness

(Insert name and address of
organisation)

Date

Tenderer's CIDB registration number:

Acceptance

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

The terms of the contract, are contained in:

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

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

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

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

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

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

Signature(s)

Name(s)

Capacity

**for the
Employer**

Transnet SOC Ltd
Transnet Park Building
Robert Sobukwe Rd, Bellville

Name &
signature of
witness

(Insert name and address of
organisation)

Date

Schedule of Deviations

Note:

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

No.	Subject	Details
1		
2		
3		
4		

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

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

For the tenderer:

For the Employer

Signature

Name

Capacity

On behalf of *(Insert name and address of organisation)*

Name &
signature
of witness

Date

Transnet SOC Ltd
Transnet Park Building
Robert Sobukwe Rd, Bellville

C1.2 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option:	
	dispute resolution Option	A: Priced contract with price list
	and secondary Options	W1: Dispute resolution procedure
		X2: Changes in the law
		Z: Additional conditions of contract
	of the NEC3 Term Service Contract (June 2005) (and amended June 2006 and April 2013)	
10.1	The <i>Employer</i> is:	Transnet SOC Ltd
	Address	Registered address: Transnet Corporate Centre 138 Eloff Street Braamfontein Johannesburg 2000
	Having elected its Contractual Address for the purposes of this contract as:	Transnet Freight Rail Transnet Park Building Robert Sobukwe Road Bellville
	Tel No.	021 940 1887 /083 501 6338
10.1	The <i>Service Manager</i> is (name):	Rosco Campbell
	Address	Transnet Freight Rail INFRA, Bellville
	Tel	083 781 7355/021 940 2706
	e-mail	Rosco.campbell@transnet.net
11.2(2)	The Affected Property is	Kraaifontein Substation

11.2(13)	The <i>service</i> is	SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION
11.2(14)	The following matters will be included in the Risk Register	1. Working at heights 2. Contamination of environment due to spillage of Transformer oil 3. Electrocution
11.2(15)	The Service Information is in	The Scope of Services
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.
13.1	The <i>language of this contract</i> is	English
13.3	The <i>period for reply</i> is	2 weeks
2	The <i>Contractor's</i> main responsibilities	No additional data is required for this section of the <i>conditions of contract</i>.
3	Time	
30.1	The <i>starting date</i> is.	01 February 2024
30.1	The <i>service period</i> is	6 (six) weeks
4	Testing and defects	No additional data is required for this section of the <i>conditions of contract</i>.
5	Payment	
50.1	The <i>assessment interval</i> is	25th (twenty fifth) day of each successive month.
51.1	The <i>currency of this contract</i> is the	South African Rand.
51.2	The period within which payments are made is	Payment will be effected on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received.
51.4	The <i>interest rate</i> is	The prime lending rate of the Standard Bank South Africa.
6	Compensation events	No additional data is required for this section of the <i>conditions of contract</i>.
7	Use of Equipment Plant and Materials	No additional data is required for this section of the <i>conditions of contract</i>.
8	Risks and insurance	
80.1	These are additional Employers risks	None

83.1	The minimum limit of indemnity for insurance in respect of loss and damage to property (except goods, plant and materials and equipment) and liability for bodily injury or death of a person (not an employee of the <i>Contractor</i>) caused by activity in connection with this contract for any one event is:	Whatever <i>Contractor</i> deems necessary as the <i>Employer</i> is not carrying this indemnity.
83.1	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the <i>Contractor</i> arising out of and in the course of their employment in connection with this contract for any one event is:	As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the <i>Contractor's</i> common law liability for people falling outside the scope of the Act.
83.1	Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R 5 000 000	
83.1	The <i>Contractor</i> liability to the <i>Employer</i> for indirect or consequential loss including loss of profit, revenue and goodwill, is limited to:	The Total of the Prices.
83.1	For any one event, the <i>Contractor</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employers</i> property is limited to:	The Total of the Prices.
83.1	The <i>Contractor</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than the excluded matters, is limited to:	The Total of the Prices.
9	Termination	There is no Contract Data required for this section of the <i>conditions of contract</i>.
10	Data for main Option clause	
A	Priced contract with price list	
20.5	The <i>Contractor</i> prepares forecasts of the final total of the Prices for the whole of the service at intervals no longer than	4 Weeks
11	Data for Option W1	
W1.1	The <i>Adjudicator</i> is (Name)	Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the <i>Adjudicator</i>, the chairman of the Association of Arbitrators will appoint an <i>Adjudicator</i>.
W1.2(3)	The <i>Adjudicator</i> nominating body is:	

If no <i>Adjudicator nominating body</i> is entered, it is		The Association of Arbitrators (Southern Africa)
W1.4(2)	The <i>tribunal</i> is:	Arbitration
W1.4(5)	The <i>arbitration procedure</i> is	The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)
	The place where arbitration is to be held is	Cape Town
	The person or organisation who will choose an arbitrator	The Chairman of the Association of Arbitrators (Southern Africa)
	- if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	
12	Data for secondary Option clauses	
X2	Changes in the law	No additional data is required for this Option
Z	<i>Additional conditions of contract</i>	
Z1	<i>Obligations in respect of Termination</i>	
Z1.1		<p>The following will be included under core clause 91.1:</p> <p>In the second main bullet, after the word 'partnership' add 'joint venture whether incorporated or otherwise (including any constituent of the joint venture)'; and</p> <p>Under the second main bullet, insert the following additional bullets after the last sub-bullet:</p> <ul style="list-style-type: none"> • commenced business rescue proceedings (R22) • repudiated this Contract (R23)
Z1.2	Termination Table	<p>The following will be included under core clause 90.2 Termination Table as follows:</p> <p>Amend "A reason other than R1 – R21" to "A reason other than R1 – R23"</p>
Z1.3		Amend "R1 – R15 or R18" to "R1 – R15, R18, R22 or R23."
Z2	Right Reserved by Transnet to Conduct Vetting through SSA	

Z2.1	<p>Transnet reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any Contractor who has access to National Key Points for the following without limitations:</p> <ol style="list-style-type: none"> 1. Confidential – this clearance is based on any information which may be used by malicious, opposing or hostile elements to harm the objectives and functions of an organ of state 2. Secret – clearance is based on any information which may be used by malicious, opposing or hostile elements to disrupt the objectives and functions of an organ of state. 3. Top Secret – this clearance is based on information which may be used by malicious, opposing or hostile elements to neutralise the objectives and functions of an organ of state.
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Z3 Additional clause relating to Collusion in the Construction Industry

Z3.1	The contract award is made without prejudice to any rights Transnet may have to take appropriate action later with regard to any declared bid rigging including blacklisting.
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Z4 Protection of Personal Information Act

Z4.1	The <i>Employer</i> and the <i>Contractor</i> are required to process information obtained for the duration of the Agreement in a manner that is aligned to the Protection of Personal Information Act
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C1.2 Contract Data

Part two - Data provided by the *Contractor*

The tendering contractor is advised to read both the NEC3 Term Service Contract (June 2005) and the relevant parts of its Guidance Notes (TSC3-GN) in order to understand the implications of this Data which the tenderer is required to complete.

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

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name): Address Tel No. Fax No.	
11.2(8)	The <i>direct fee percentage</i> is The <i>subcontracted fee percentage</i> is%%
11.2(14)	The following matters will be included in the Risk Register	T2.2-15
24.1	The key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job: Responsibilities: Qualifications: Experience:	
CV's (and further key person's data including CVs) are in T2.2-09		



TRANSNET FREIGHT RAIL

CONTRACT NUMBER: WRAC-BLQ-41752

DESCRIPTION OF THE SERVICE: SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR
TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION

A Priced contract with price list		
11.2(12)	The price list is in	C2.2
11.2(19)	The tendered total of the Prices is	R _____

PART C2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing instructions: Option A	2
C2.2	Price List	1

C2.1 Pricing instructions: Option A

1.1 The *conditions of contract*

1.2 How the contract prices work and assesses it for progress payments

Clause 11 in NEC3 Term Services Contract (TSC), June 2005 (with amendments June 2006 and April 2013) Option A states:

Identified 11
and defined
terms

11.2 (17) The Price for Services Provided to Date is the total of

- the Price for each lump sum item in the Price List which the *Contractor* has completed and
- where a quantity is stated for an item in the Price List, an amount calculated by multiplying the quantity which the *Contractor* has completed by the rate.

(19) The Prices are the amounts stated in the Price column of the Price List, where a quantity is stated for an item in the Price List, the Price is calculated by multiplying the quantity by the rate.

1.3 Measurement and Payment

1.3.1 The Price List provides the basis of all valuations of the Price for Services Provided to Date, payments in multiple currencies and general progress monitoring.

1.3.2 The amount due at each assessment date is based on activities and/or milestones completed as indicated on the Price List.

1.3.3 The activities listed by the *Employer* are the activities acceptable and identifies the specific activities which are required to achieve Completion. The Price List work breakdown structure is compiled to the satisfaction of the *Employer* with any additions and/or amendments deemed necessary.

1.3.4 The *Price list* by the *Employer* is sufficient detail to monitor completion of activities related to the operations on the Accepted Plan submitted by the Contractor in order that payment of completed activities may be assessed.

1.3.5 The Prices are obtained from the Price List. The Prices includes for all direct and indirect costs, overheads, profits, risks, liabilities, obligations, etc. relative to the contract.

C2.2 Price List

Item	Description	Unit	Qty		
1	Preliminary & General	Sum	1		
2	Dismantle, remove, scrap and transport old equipment from site to Bellville scrap bank	Sum	1		
3	Supply and Install of Disconnects AC Outdoor High Voltage with Earth switch 3 phase rated at 66kV complete with lattice structure. As per BBB7842 specification	Sum	1		
4	Supply and install Crusher Yard stones at Kraaifontein Substation (15mX20m)	Sum	1		
5	Supply and Install Oil gauge on 5MVA/3kV DC Transformer Conservator tank for substation as per specification BBB8205 specification	Each	1		
6	Supply and install Mechanical/Electrical interlocks	Set	1		
7	Supply and refill 400 litre of virgin oil on transformers	Lt	400		
8	Supply drawings, catalogues and schematic wiring diagrams in hard copy and electronic format.	Sum	1		
	Total (Excl. VAT) Carried to C1.1 Form of Offer and Acceptance				R

PART C3: SERVICE INFORMATION

Document reference	Title	No of pages
	This cover page	1
C3.1	<i>Service Information</i>	13
Annexure A	Health and Safety Specification TFR-ISM-RN-R&C-FM009	15
Annexure B	Baseline Risk Assessment	6
Annexure C	Environmental Specification	22
Annexure D	E7/1 - works on, over, under or adjacent to railway lines and near high voltage equipment	17
Annexure E	E7/2 - works on, over, under or adjacent to railway lines and near high voltage equipment	27
Annexure F	CEE 224.2002 - Drawings, catalogues, instruction manuals and spares list for electrical equipment supplied under contract	14
Annexure G	BBB7842 - 66kV AC Disconnects	10
Annexure H	BBB8205 - 3kV/5MVA Traction Transformer	13
Annexure I	BBB3059 - 3kV DC Traction Earthing Systems	8
Annexure J	BBB5452 - Requirements for the installation of electrical equipment in 3kV DC traction substations	27
	Total number of pages	173



C3.1 Service Information

1 Description of the service

1.1 Background

This scope of services covers the Supply and Installation of AC Disconnects, Transformer Conservator Tank Oil Gauge and yard stones at Kraaifontein 3kV Substation.

1.2 Executive overview

The service that the Contractor is to perform shall include all design, supply, installation and testing of all equipment listed where applicable.

1.3 Employers Objective

The Employer's current objective is to achieve the completion for Supply and Installation of AC Disconnects, Transformer Conservator Tank Oil Gauge and yard stones at Kraaifontein 3kV Substation as soon as possible whilst still maintaining the highest quality and safety standards, without interfering with the normal day to day operations at Kraaifontein

2 SERVICE

2.1 Temporary service, Affected Property & constraints on how the *Contractor* Provides the Service

2.1.1 *Employer's* Site entry and security control, permits, and Site regulations

The work to be carried out is at Kraaifontein substations.

2.1.2 The *Contractor* shall ensure the safe passage of traffic to and around the working areas at all times.

2.1.3 Restrictions to access on Affected Property, roads, walkways and barricades:

2.1.3.1 The *Contractor* is specifically excluded from entering the *Employer's* Operational Areas which are adjacent to the Affected Property. The *Contractor* plans and organises his work in such a manner so as to cause the least possible disruption to the *Employer's* operations.

2.1.3.2 The *Contractor* ensures safe passage of his team, to traffic and around the Affected Property working areas at all times which includes providing flagmen.

2.1.3.3 The *Contractor* ensures that any of his staff, labour and Equipment moving outside of his allocated Affected Property and Service Areas does not obstruct the operations of the *Employer*. To this end, access routes are allocated and coordinated by the *Service Manager*.

2.1.3.4 The *Contractor* ensures that all his staff, labour and Equipment remains within his allocated and fenced off working Area.

2.1.3.5 All *Contractor's* staff and labour working within the service area complies with Transnet Freight Rail (TFR) operational safety requirements and are equipped with all necessary personnel protective equipment (PPE).

2.1.4 People restrictions on Affected Property; hours of work, conduct and records:

2.1.4.1 The working hours shall be in accordance with the requirements of the Department of Labour or with the agreement of the relevant trade unions. This information relating to working hours shall be supplied to the *Service Manager* prior to commencement of the proposed working hours

2.1.4.2 The *Contractor* keeps daily records of his people engaged on the Affected Property with access to such daily records available for inspection by the *Service Manager* at all reasonable times.

**2.1.5 Cooperating with and obtaining acceptance of others**

- 2.1.5.1 The *Contractor* shall not commit or permit any act that may interfere with the performance of the other parties operating in the area and shall carry out work in close liaison with the *Service Manager*.

2.1.6 Publicity and progress photographs

- 2.1.6.1 The *Contractor* shall obtain the permission and approval of the *Employer* before erecting any notice boards or using the details of the contract in any advertising media.
- 2.1.6.2 The *Contractor* does not advertise the contract or the project to any third party, nor communicate directly with the media (in any jurisdiction) whatsoever without the express written notification and consent of the *Service Manager*.

2.1.7 Equipment provided by the Employer

- 2.1.7.1 None

2.1.8 Site Services and Facilities

- 2.1.8.1 The *Contractor* shall make his own arrangements for the supply of services such as electricity, potable water, ablutions, fire protection, lighting and all other services required for undertaking the *works*. The *Contractor* shall provide, maintain and finally remove proper portable latrines of sufficient number at his cost. Latrines shall be properly constructed and placed in suitable positions and maintained in a clean and sanitary working condition
- 2.1.8.2 Where any of the above services can be made available by the *Employer*, the cost of meters, connections, reticulation and all other usage costs associated with the provision of services shall be to the *Contractor's* account. The applicable tariffs will be those that the Local Authority charges Transnet Freight Rail and shall be obtained by the *Contractor*.

2.1.9 The Employer provides the following facilities for the Contractor:

- 2.1.9.1 A Suitable construction site will be made available free of charge to the *Contractor* for the duration of the contract.
- 2.1.9.2 The site shall be clearly sign posted as being a construction site and shall be compliant with the relevant prevailing safety regulations and restrictions that might be in place until the *Contractor* has de-established from site and has been approved by the *Service Manager* or his duly appointed representative.
- 2.1.9.3 The layout of any construction site, if required, shall be submitted to the *Service Manager* for his approval before the *Contractor* starts erecting his camp. The layout of any construction site, if required, shall be submitted to the *Service Manager* for his approval before the *Contractor* starts erecting his camp.



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2.1.10 Facilities provided by the *Contractor*

- 2.1.10.1 The *Contractor* shall make his own arrangements for the accommodation of all labour and comply with the requirements of the respective authorities.
- 2.1.10.2 No accommodation for the *Contractor's* and/or sub-contractor's employees will be available on site. No employee, with the exception of security watchmen, may, without written approval from the *Service Manager*, be accommodated on site.
- 2.1.10.3 The *Contractor* shall, at his own expense, provide for security and access to his construction sites as he may require. Control of access for construction plant onto public roads shall be in accordance with the requirements of the relevant roads authority and *Service Manager*.

2.1.11 The *Contractor* provides the following facilities for the *Service Manager*.

- 2.1.11.1 The *Contractor* will not be required to provide any facilities for the use of the *Service Manager*.

2.1.12 Existing premises, inspection of adjoining properties and checking work of Others

- 2.1.12.1 The *Contractor* and the *Service Manager* will inspect the immediate surroundings and record any damage before work is started.
- 2.1.12.2 The *Contractor* shall ensure that no damage occurs to adjoining property. The *Contractor* shall negotiate with the property owner(s) for permission to work on their land for the purpose of carrying out the work (if necessary). The *Contractor* shall ensure that his workmen do not abuse any permissions granted by adjoining property owners allowing them on to their property for the execution of the work

2.1.13 To be provided by the *Contractor*

- 2.1.13.1 The *Contractor* shall supply all labour, vehicles, machinery, small plant and any mechanised equipment for the proper execution of the works.
- 2.1.13.2 All tools and labour required to perform the work as stipulated in the Price List shall be provided by the *Contractor* and included in his tendered rates.
- 2.1.13.3 The maintenance, leasing, hiring and insurance of this equipment will solely rest with the *Contractor*.
- 2.1.13.4 The *Contractor* shall be responsible for his own arrangements with regards to the transport and safe keeping of this equipment and materials.
- 2.1.13.5 No liability will be accepted by Transnet for the safekeeping of the *Contractor's* materials.
- 2.1.13.6 The making of fires, for whatever purpose, on Transnet property is strictly prohibited



2.1.14 Restoring of work site

2.1.14.1 The *Contractor* shall always keep the site tidy and remove all old material such as rubble, off cuts, demolished material, surplus material and carry away and dump or store onto or at an approved site. The *Service Manager* may order the *Contractor* to stop all work, until such time as, in his opinion, this condition has been met.

2.1.15 Existing Services

2.1.15.1 The *Contractor* shall take all reasonable precautions to protect existing services during the execution of the work and during relocation of such services.

2.1.15.2 Any pipe, cable, conduit or other services of any nature whatsoever indicated to the *Contractor* and subsequently damaged as a result of the *Contractor's* operations, shall be repaired and reinstated forthwith by the *Contractor* or by the Authority concerned, all at the expense of the *Contractor* and to the satisfaction of the *Service Manager*.

2.1.15.3 Whenever unknown services are encountered which interfere with the execution of the work and which require to be moved and relocated, the *Contractor* shall advise the *Service Manager*, in writing within 24 hours of such encounter, and the *Service Manager* will determine the extent of the work, if any, to be undertaken by the *Contractor* in removing, relocating, and reinstating such services.

2.1.15.4 Any work required to be undertaken by the *Contractor* in the moving and relocation of unknown services for which no provision is made in the contract document, or for which no applicable tender rates exist, will be dealt with according to the NEC TSC compensation events procedure.

2.2 Completion, testing, commissioning and correction of defects

2.2.1 The work to be done by the Completion Date

2.2.1.1 On or before the Completion Date the *Contractor* shall have done everything required to provide the *Service* before the Completion Date. The *Service Manager* cannot certify Completion until all the work has been done and is also free of Defects, which would have, in his opinion, prevented the *Employer* from using the works and others from doing their work.

2.2.1.2 The *Service Manager* arranges for the *Employer* to allow the *Contractor* access to and use of part of the *works* which he has taken over if they are needed for correcting a Defect. In this case the *defect correction period* begins when the necessary access and use have been provided.

2.3 Plant and Materials Standards and Workmanship

2.3.1 SUPPORTING SPECIFICATIONS AND REGULATIONS

a) Standard Specifications

The Contractor shall comply with all applicable legislation, Codes of Practice and Local, Regional or Provincial Authority regulations. The Contractor shall in particular, comply with the following Instructions, Acts etc;

- SANS 1019 Standard voltage, current and insulating level for electrical supply
- The compensation for Occupational Injuries and Diseases Act (Act 130 of 1993)

b) Drawings and specifications issued by the Employer

Drawing/Specification No.	Revision	Title
2532350-E-01		3kV DC Electrification layout
T-T6E-4		Specification for 3kV DC electrification overhead track equipment
TFR-ISM-RN-R&C-FM009		Health and Safety Specification TFR-ISM-RN-R&C-FM009
TFR / EMS (SES) - 001		Environmental Specification
E7/1 (May 2011)		Specification for works on, over, under or adjacent to railway lines and near high voltage equipment
E7/2 (April 2017)		Specification for works on, over, under or adjacent to railway lines and near high voltage equipment
CEE 0224.2002		Drawings, catalogues, instruction manuals and spares list for electrical equipment supplied under contract
BBB7842		66kV AC Disconnects
BBB8205		3kV/5MVA Traction Transformer
BBB 3059		3kV DC Traction Earthing Systems
BBB5452		Requirements for the installation of electrical equipment in 3kV DC traction substations

2.3.2 General

2.3.2.1 A site access certificate will be issued to the *Contractor* and must be displayed to any person on request thereof.

2.3.2.2 In the event the *Service Manager* is dissatisfied for whatever reason with any or all of the work performed by the *Contractor*, the *Service Manager* shall notify the *Contractor* thereof. The *Contractor* shall then correct and or redo the *works* at his own expense to the satisfaction of the *Service Manager*.

2.3.2.3 No advancement of any money will be considered.



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2.3.2.4 The *Contractor* will issue all workers employed by him with the necessary protection clothing.

TECHNICAL REQUIREMENTS

2.3.3 Supply and Install of Disconnects AC Outdoor High Voltage with Earth switch 3 phase rated at 66kV complete with lattice structure. As per BBB7842 specification.

2.3.4 Supply and Install Oil gauge on 5MVA/3kV DC Transformer Conservator tank for substation as per specification BBB8205 specification.

2.3.5 Supply and refill 400 litre of virgin oil in transformer conservator tank.

2.3.6 Supply and install Mechanical/Electrical interlocks.

2.3.7 The contractor shall remove all stones on areas that are contaminated with oil and sand whilst care is taken not to damage or disturb the earthing system.

2.3.8 After treatment with the weed killer, a 100mm layer of 25mm to 37mm crusher stone shall be laid over the whole area of the Transnet Freight Rail high voltage outdoor yard (within the apron) BBB 3059 specification.

2.3.9 This specification covers the technical part for the excavating and backfill of 3 different types of trenches and 2 different types of holes.

2.3.10 Before any trenching commences the contractor shall consult with Transnet staff for approval with regards to routing of the trenches in the outdoor yard. All busbar connections shall be greased by means of silicon substance.

2.3.11 Before the trenches are closed a representative from Transnet shall inspect for damage to earth system.

2.3.12 Supply drawings, catalogues and schematic wiring diagrams in hard copy and electronic format.



2.4 Guarantee and defects

- 2.4.1 The *Contractor* shall guarantee the satisfactory operation of the complete electrical installation supplied and erected by him and accept liability for maker's defects that may appear in design, materials and workmanship.
- 2.4.2 The *Contractor* shall be issued with a completion certificate with the list of all defects to be repaired within 14 working days after commissioning.
- 2.4.3 The guarantee period for these standby plants shall expire after: A period of 12 months commencing on the date of completion of the contract or the date the standby plant was handed over to Transnet Freight Rail.
- 2.4.4 Any defects that may become apparent during the guarantee period shall be rectified to the satisfaction of Transnet Freight Rail, and to the account of the *Contractor*.
- 2.4.5 The *Contractor* shall undertake work on the rectification of any defects that may arise during the guarantee period within 7-days of him being notified by Transnet Freight Rail of such defects.
- 2.4.6 Should the *Contractor* fail to comply with the requirements stipulated above, Transnet Freight Rail shall be entitled to undertake the necessary repair work or effect replacement of defective apparatus or materials, and the *Contractor* shall reimburse Transnet Freight Rail the total cost of such repair or replacements, including the labour costs incurred in replacing defective material.
- 2.4.7 Any specific type of fault occurring three times within the guarantee period and which cannot be proven to be due to other faulty equipment not forming part of this contract e.g., faulty locomotive or overhead track equipment, etc., shall automatically be deemed an inherent defect. Such inherent defect shall be fully rectified to the satisfaction of the *Service Manager* and at the cost of the *Contractor*.
- 2.4.8 If urgent repairs have to be carried out by Transnet Freight Rail staff to maintain supply during the guarantee period, the *Contractor* shall inspect such repairs to ensure that the guarantee period is not affected and should they be covered by the guarantee, reimburse Transnet Freight Rail the cost of material and labour.

2.5 Guarantee and Inspection

- 2.5.1 Transnet Freight Rail shall inspect the equipment under contract on the premises of the Manufacturer or successful *Contractor*.
- 2.5.2 The *Contractor* shall notify Transnet Freight Rail 14 days in advance of such an inspection date.
- 2.5.3 The *Contractor* shall apply 14 days in advance for the date of energizing and ensure that all work is completed before any commissioning can take place.



2.6 Safe Working Access

2.6.1 The *Contractor* shall specify and submit the type and quality of safe access to be provided for approval by the *Service Manager*.

2.7 Risks Assessed

- Working with stepladders.
- Working with electric tools
- Working on heights of more than 2 metres.
- Travelling/Transporting staff and material.
- Noises
- Hire plant and machinery
- Fire-fighting equipment
- Occupational health
- Personal protective clothing, equipment (PPE)
- Potential hazard situations (Dust masks)

2.8 Information obtained from Site

Prospective *Contractors* shall visit the site of the proposed *Works* and acquaint themselves with the nature of the *Works*, the conditions under which the work is to be performed, the means of access, any limitations or other authorities and in general with all matters that influence or affect the completion of the works required.

2.9 Daily site Diary and inspection book

- 2.9.1 The *Contractor* shall provide an A4 size triplicate book to be used as a Daily Diary for the duration of the Contract. The *Service Manager* shall retain the original copy and the *Contractor* shall retain the first and second copy. The diary shall be completed on a daily basis.
- 2.9.2 In addition to this the *Contractor* shall provide an A4 size triplicate book to act as Site Instruction Book. The *Service Manager* shall retain the original copy and the *Contractor* shall retain the first and second copy. The diary shall be completed on a daily basis. Only the *Service Manager* will have the authority to issue site instructions to the *Contractor*

2.10 Penalties

- 2.10.1 Failing the completion of the work within the period as stipulated, the *Contractor* shall pay to Transnet as a penalty the sum of R 1 000.00 (One thousand Rand) per day or part thereof during which the *works* remain incomplete.

2.11 Retention

- 2.11.1 The retention percentage is 10% on all payments certified. After practical completion and snags are completed, 5 % retention will be released. After 26 (twenty six) weeks maintenance period the remaining 5% will be released.



3 Health and Safety Information

3.1 General

The *Contractor's* attention is directed to the Health and Safety Specification TFR-ISM-RN-R&C-FM009, and in particular to his Health & Safety Program, which must be submitted with his tender, as well as the requirements of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended and

Regulations issued in terms thereof or un-repealed regulations issued in terms of the former Act no. 6 of 1983, in their entirety.

Without derogating from the Act or any un-repealed regulations issued in terms of legislation, or without purporting to limit the Contractor's responsibilities, the following are brought to the Contractor's attention:

- 3.1.1 For the purpose of the Act the site/s, to be demarcated as agreed to between the *Contractor* and the *Service Manager* before the works start, will be transferred to the control of the *Contractor* for the duration of the contract.
- 3.1.2 The *Contractor* shall appoint a health and safety coordinator to liaise at least fortnightly with the *Service Manager* on matters pertaining to occupational health and safety.
- 3.1.3 The *Contractor* is an 'employer' in his own right as defined in Section 1 of the Act 85 of 1993 and he shall fulfil all his obligations as an employer in terms of the Act.
- 3.1.4 The *Contractor* shall furnish the *Service Manager* with full particulars of any Sub-Contractor which he may involve in the contract and the Sub-Contractor shall be made aware of all the clauses in this contract pertaining to health and safety.
- 3.1.5 The *Contractor* shall advise the *Service Manager* of any hazardous or potentially hazardous situation, which may arise from, work being performed either by the *Contractor* or Sub-Contractor.
- 3.1.6 A letter of good standing in terms of Section 80 (*Employer* to register with the Compensation Commissioner) of the Compensation for Occupational Injuries and Deceases Act 1993 (Act 130 of 1993), must also be furnished.
- 3.1.7 The *Contractor* shall comply with the current Transnet Specification TFR-ISM-RN-R&C-FM009, Safety Arrangements and Procedural Compliance with the Occupational Health and Safety Act, Act 85 of 1993 and Regulations, and shall, before commencement with the execution of the Contract, which shall include site establishment and delivery of construction plant, equipment or materials, submit to the *Service Manager*:
 - documentary proof of his procedural compliance with the Act, and
 - particulars of the Health and Safety Program to be implemented on the site in accordance with the Transnet Specification TFR-ISM-RN-R&C-FM009.
 - The *Contractor's* Health and Safety Program will be subject to agreement by the *Service Manager*, who may order supplementary and/or additional safety arrangements and/or different safe working methods to ensure full compliance by the *Contractor* with his obligations as an employer in terms of the Act.



3.1.8 All clauses in this contract pertaining to health and safety form an integral part of this contract and if not complied with may be construed as breach of contract entitling the *Employer* to the appropriate remedies.

NB: The *Contractor* and his employees shall have valid safety inductions and medical certificates when accessing or working on site. Copies of which shall be submitted to the *Service Manager*. This will be at a time and location Transnet will arrange.

3.2 Hazard identification and risk assessment

The *Contractor's* appointed Site Representative and the *Service Manager* shall finalize a site-specific HIRA (Hazard Identification and Risk Assessment) document, on the day of site handover to the *Contractor*. This site-specific HIRA document, based on a continuous HIRA, must cover site-specific hazards and the safe management of these hazards. The HIRA document must be signed by the abovementioned representatives, and be accepted by the *Service Manager*, before any construction work can commence.

3.3 Substance abuse

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

3.4 Safety Meetings

The *Contractor* shall ensure that a safety representative is appointed and regular safety meetings are held. Written minutes of these safety meetings shall be forwarded to the *Service Manager*. All costs related to the safety aspects required under this contract will be carried by the *Contractor's* and therefore be covered under the rates tendered.

NB: The tendered amount shall include for all costs to confirm to the Health and Safety requirements.

4 Quality Assurance requirements

4.1 The onus rests on the *Contractor* to produce work which will conform in quality and accuracy of detail to the requirements of the Specifications and Drawings, and the *Contractor* must, at his own expense, institute a quality control system and provide experienced technical staff together with all transport, instruments and equipment to ensure adequate supervision and positive control of the works at all times.

4.2 The *Contractor* submits his Quality Management System documents to the *Service Manager* as part of his programme to include details of:

- Quality Plan for the contract;
- Quality Policy



- Index of Procedures to be used
- 4.3 The *Contractor* develops and maintains a comprehensive register of documents that will be generated throughout the contract including all quality related documents as part of its Quality Plan.
- 4.4 The *Service Manager* indicates those documents required to be submitted for either information, review or acceptance and the *Contractor* indicates such requirements within his register of documents. The register shall indicate the dates of issue of the documents with the *Service Manager* responding to documents submitted by the *Contractor* for review or acceptance within the *period for reply* prior to such documents being used by the *Contractor*.
- 4.5 The Quality Plan means the *Contractor's* statement, which outlines strategy, methodology, resources allocation, QA and Quality Control co-ordination activities to ensure that the *works* meet the standards stated in the *Works Information*.

5 Planning Constraints

- 5.1 The plan, progress reports, subsequent updates, revisions and supplementary plans as detailed in this section are an essential part of the project control system used by the *Employer* for managing the *Works* and in monitoring the progress of the work under the Contract. The information and data provided by the *Contractor* pursuant to this procedure must therefore be reliable, accurate and timely in presentation.
- 5.2 A plan is to be submitted with the tender. This plan shall comply with the requirements as indicated in the Service Information.
- 5.3 The *Contractor* shows on his Accepted Plan and all subsequently revised plan schedules showing the critical path or paths and all necessary logic diagrams demonstrating sequence of operations.
- 5.4 The *Contractor's* plan shows duration of operations in working days, the work week will be Monday's – Fridays 07:30 – 16:00.
- 5.5 The *Contractor* shows on each revised plan he submits to the *Service Manager* a resource histogram showing planned progress versus actual, deviations from the Accepted Plan and any remedial actions proposed by the *Contractor*.

6 Contractor's management, supervision and key people

- 6.1 The *Contractor* shall provide an organogram showing his key people and their lines of authority and communication.
- 6.2 The *Contractor* shall not change the project team as detailed in the organogram submitted by the *Contractor* and accepted by the *Service Manager* without the prior written approval of the *Service Manager*, which approval will not unreasonably be withheld by the *Service Manager*



6.3 The *Works* must conform to current professional engineering practices, standards and specifications and the *works* must be completed to the satisfaction of the *Service Manager*.

6.4 The *Contractor* and his sub-contractors, if any shall have suitably qualified Supervisors in charge

of the project. The names and qualifications of the Supervisors together with full details of their experience in this field of work must be furnished. The tenderer must furnish the names and addresses of all proposed sub-contractors, which is subject to approval.

7 Insurance Provided by the Employer

7.1 Insurance provided by the *Employer* is contained in the Contract Data – Part 1.

7.2 Procedures for making insurance claims can be obtained from the *Service Manager*

8 Contract Change Management

8.1 The standard reporting forms that shall be used will be provided to the *Contractor*

8.2 No additional requirements apply to TSC Clause 60 series

9 Procurement

9.1 The *Contractor's* Invoices

9.1.1 The invoice states the following:

- Invoice addressed to Transnet SOC Limited;
- Transnet Limited's VAT No: 4720103177;
- Invoice number;
- The *Contractor's* VAT Number; and

9.1.2 The invoice is presented either by post or by hand delivery.

Invoices submitted by hand are presented to:

Transnet Freight Rail
Transnet Park Building
Robert Sobukwe Road
Bellville South
7530

For the attention of Rosco Campbell, *Service Manager*

The invoice is presented as an original.

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PROJECT NAME	SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION		
PROJECT NUMBER	WRAC-BLQ-41752		
PROJECT LOCATION	KRAAIFONTEIN		
PROJECT SCOPE	SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION		
PROJECT DURATION	6 WEEKS		
COMPILED BY			
APPROVED BY			
RESPONSIBLE SEGMENT			
CONTRACT SPECIALIST	CELESTE JACOBS		

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1. Purpose

The purposes of this Health, Safety and Environmental Specification is to outline the Health, Safety and Environmental requirements pertaining to Rehabilitation and Construction projects. Also to ensure:

- Compliance with the requirements of Construction Regulations and HSE Legislation as well as Transnet Freight Rail.
- HSE requirements are budgeted for.
- Continuous improvement of HSE.

2. Scope

This specification applies to all Rehabilitation and Construction contractors and vendors.

3. Abbreviations

HSEP – Health, Safety and Environmental Plan

RC – Rehabilitation and Construction

RN – Rail Network

SOP – Standard Operating Procedure

TFR – Transnet Freight Rail

COID – Compensation for Occupational Injuries and Diseases

EMP – Environmental Management Plan

DOL – Department of Labour

HCS – Hazardous Chemical Substances

MSDS – Material Safety Data Sheet

OHS – Occupational Health and Safety

PPE – Personal Protective Equipment

HSE – Health, Safety and Environment

KZN – KwaZulu Natal

4. Definitions

Contractors, vendors and any other person is advised to consult the Construction Regulations, OHS Act, Act 85 of 1993 and Environmental Management Act regarding the clarification of certain words used in this specification.

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5. Policies

The contractor shall develop and implement health, safety and environmental policies regarding protection of the employees and environment.

6. HSE Budget

The contractor shall make provision for the cost of HSE measures in order to ensure safe execution of construction work.

7. Health, Safety and Environmental Plan (HSEP)

The Contractor shall develop and implement a health, safety and environmental plan in accordance with this health, safety and environmental specification. The health, safety and environmental plan must provide a systematic method of managing hazards according to the risk priority, and must include all mobilization and site set-up activities. The HSEP must be in writing and project specific.

The HSEP shall be accepted by the Regional RC safety department i.e. Gauteng, KZN and Cape prior to mobilization to the construction site.

Any proposed amendments or revisions to the approved HSEP shall be submitted to RC for consideration and acceptance.

8. Legal and Other Appointments

The contractor shall appoint in writing all employees as per project requirements. The duties of appointed employees shall be clearly stated in the appointment letter.

9. Project Organogram

The appointed contractor shall draw up an organogram detailing all the key role players and their contact details for the construction project.

10. Training and Competency

The Contractor shall ensure that all employees working in the construction site are adequately trained and competent in the type of work to be performed. The contractor shall provide valid documentation (e.g. certificate, licence etc.) to verify that employees are competent and have appropriate qualifications, job skills and training as required by applicable legislation.

Proof of the following minimum health and safety training is required before construction work commences:

- Management and Supervisory Appointees

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- IRCON
- Legal Liability
- HIRA (Hazard Identification and Risk Assessment)
- Incident Investigation
- Safety Officer
 - SAMTRAC
 - Incident Investigation/Root Cause Analysis Technique
 - IRCON
 - HIRA
 - National Diploma in Safety Management or other relevant national diploma (if possible)
- SHE Representative
 - SHE representative course 3/5 days
 - Level 1 incident Investigation
- First Aider
 - First Aid Level 1
- Employees
 - Basic health and safety training

The contractor's employees shall, were required by legislation be in position of relevant certificates or permits where operation being performed requires such certification, for example welder, crane operator, erectors, flagmen etc. The contractor shall develop a training matrix and implement it accordingly.

8.1 Induction Training

- **Project Induction**

The contractor shall ensure that all employees undergo RC induction prior to commencement of construction work. This RC induction training shall be conducted by Line Representative to ensure that contractor's employees are aware of and conversant with the requirements of this HSE Specification, Site Rules, Environmental Requirements and other requirements. The contractor shall ensure that all employees present a certificate of fitness to the trainer or safety officer prior to induction training. Failure to present a certificate of fitness will result to an employee not being allowed to partake in the induction training. The contractor shall keep records of all inducted employees.

- **Site specific induction**

The contractor shall ensure that all employees undergo site specific induction focusing on applicable legislative rules, site rules and requirements, existing hazards/risks and SOP's including emergency procedures etc. This induction training is the responsibility of the

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contractor. Whenever there is change in a scope of work or major incident or new method of doing work, employees must be re-inducted.

- **Visitors induction**

The contractor shall ensure visitors undergo site induction training prior to being allowed access to construction site. The contractor shall make proof of induction training available in the form of attendance register and/or induction badge.

- **Refresher induction**

The contractor shall ensure that all employees undergo refresher induction training after an absence of seven (7) consecutive days from the project site.

11. Letter of Good Standing & Tax Clearance

Prior to commencement of Construction work, a contractor shall submit valid Letter of Good Standing issued by the Compensation Fund or any other licensed insurer. On expiry of the said letter, the contractor shall resubmit the updated/ valid one for the duration of the construction project. No construction work shall be done without a valid letter of good standing.

A copy of valid Tax Certificate shall be submitted together with the Letter of Good Standing.

12. Notification of Construction Work to Dept. of Labour

A contractor shall notify the Provincial Director of the Department of Labour in writing before carrying out any construction work within 7 days. The contractor shall ensure that a copy of notification is kept safe on site for inspection by Department of Labour inspector or TFR representative.

13. Client Health, Safety and Environmental Specification

A principal contractor or contractor shall provide Client's HSE Specification to other contractors working for the principal contractor or contractor. The HSE Specification shall be kept in the contractor's safety file for reference. Before a contractor can appoint another contractor, the appointing contractor shall furnish R&C Regional Safety Office with the HSE File of the contractor to be appointed for approval.

14. Mandatory Agreement (37.2)

R & C Project Manager and the appointed Contractor Representative shall sign the 37(2) agreement prior to commencement of construction work. The agreement will confirm that the appointed person of any company shall remain responsible and accountable for his own employees, including any labour hire employees.

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15. Site Access Certificate

R & C Project Manager shall issue site access certificate prior to commencement of construction work to all appointed contractors after the approval of the HSE File.

16. Site Establishment

Site establishment shall commence as soon as the Site Access certificate has been granted. In addition, the appointed contractor shall develop a traffic plan for the site to ensure the safe movement of pedestrians, vehicles and all construction mobile plant.

This traffic plan shall be reviewed when necessary. Contractors shall ensure that established sites are adequately secured to protect material, plant, equipment and people.

17. Medical Certificate Of Fitness

Prior to commencement of work, the contractor shall demonstrate or confirm in writing that his/her employees have been declared medically fit by the Registered Occupational Health Practitioner. A contractor shall conduct periodic risk based medical examinations as prescribed by the Occupational Health and Safety (OHS) Legislation. For projects longer than 12 months, the contractor shall ensure that employees undergo medical examinations at least once a year. Records of such must be kept in safe place and made available on request.

18. Health, Safety and Environmental Meeting

The Contractor shall conduct monthly project safety meetings with his employees to address HSE related issues and promote safe practices. Records of such meetings including the attendance registers shall be made available to employees and for inspections or audits purposes.

19. Risk Management

19.1 Hazard Identification and Risk Assessment (HIRA)

The contractor shall conduct an initial Hazard Identification and Risk Assessment prior to commencement of construction work. Thereafter the contractor shall review the HIRA when there is an incident/accident and/or changes in the scope of work, plant, machinery, equipment, etc.

The contractor shall implement identified control measures to ensure that the risk(s) is/are kept as low as reasonably practicable. A contractor shall appoint a competent risk assessor to facilitate the HIRA process. This HIRA shall be signed and approved by contractor's management.

The approved HIRA shall be communicated and appropriate training shall be provided to employees. The records of communication and training shall be kept on site for inspections and audits purposes.

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19.2 Safe Work Procedures (SWPs) and Other Procedures

The contractor shall develop and implement safe work and other procedures, to ensure that the construction activities are carried out in a safe manner and without risk to the health and safety of employees and the environment. These procedures shall be signed and approved by the contractor's management.

The approved procedures shall be communicated and appropriate training shall be provided to employees. The records of communication and training shall be kept on site for inspections and audits purposes.

19.3 Planned Task Observations (PTOs)

The contractor shall identify critical tasks/activities and develop a schedule for task observations. The Contractor shall then conduct PTOs as per the task schedule. When sub-standard practices are identified they shall be discussed with the employee concerned and rectified immediately.

The PTOs shall be conducted by the following persons:

- Manager at least once a month
- Supervisor at least four a month, and
- Other

The records shall be kept on site for inspections and audits purposes.

19.4 Method Statements

The contractor shall compile method statements detailing the key activities to be performed in order to reduce as reasonable practicable the hazards identified in their risk assessment.

The method statement shall be signed and approved by the contractor's management.

The approved method statement shall be communicated and appropriate training shall be provided to employees. The records of communication and training shall be kept on site for inspections and audits purposes.

19.5 Daily Safety Task Instructions (DSTI)

R & C shall provide contractors with the DSTI template for implementation.

The contractor shall conduct DSTI on a daily basis before work commences and/or when the scope of work changes.

The contractor shall complete the DSTI regarding tasks for the shift, specific hazards and specific precautions and also refer to and discuss the precautions and controls of the relevant Risk Assessments with his/her team. The Supervisor and his team shall then sign the DSTI acknowledging communication thereof.

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19.6 Daily Safety Toolbox Talks

The contractor shall conduct a toolbox talk daily. One topic shall be discussed per week based on the risks associated with the construction projects or on the requirements of Transnet. The contractor shall develop a one page toolbox talk that will be discussed on construction site.

The records of communication shall be kept on site for inspections and audits purposes. It should be short (5 – 10 minutes) and to the point with a specific safety message.

20. Incident Management

20.1 Incident Reporting

The contractor shall report any work related incidents including “near misses” that have occurred on a construction site. The incident shall be reported immediately to R&C Management including HSE Department using the following mechanisms:

- verbally
- telephonically or
- via sms

Thereafter, the contractor shall submit a detailed incident notification to R&C Representative who will in turn complete a flash report within 24 hours of the occurrence.

20.2 Incident Investigation

The contractor shall investigate an incident in conjunction with R&C Representative(s) within seven (7) days of the occurrence. A detailed investigation report shall be submitted to R&C Representatives with seven (7) days of the occurrence.

20.3 Incident Record Keeping

The contractor shall keep all incident records as stipulated in the OHS and Environmental Legislation.

20.4 Incident Close Out

The contractor shall ensure that incident recommendations are implemented and closed out. The proof of incident close out shall be submitted to R&C Representative for capturing.

21. Project Health, Safety and Environmental (HSE) Inspection Records

The contractor shall conduct monthly HSE inspections to ensure compliance with R & C requirements and records of such inspections shall be kept on site for scrutiny by either R & C HSE department or Department Of Labour Inspectors.

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22. First Aid Services

The Contractor shall ensure that he/she implements and complies with OH&S Act - General Safety Regulation 3. The Contractor shall provide a person qualified to give First Aid attention on the Site at all times. The competency certificate must be valid for three (3) years and provided by an accredited service provider. The Contractor shall provide and maintain First Aid equipment on site. The equipment is up to standard as prescribed by the Statutory Regulations.

- **First Aid Boxes**

The contractor shall provide first boxes/kits with contents as per minimum legal requirements. Boxes shall be provided in all working areas and kept locked. Records of such are to be kept in an appropriate register of all treatment done.

- **Smoking**

The contractor shall not permit smoking on site except within designated smoking areas selected in accordance with applicable Laws, Rules, Regulations, and Policies.

- **Sun Protection**

The contractor shall ensure that all employees are protected in sunlight by the use of long sleeve shirts, long trousers, sun brims on safety helmets, UV factored sunscreen and shade structures.

The contractor shall conduct Training and Awareness Sessions with his/her employees, advising on the risks of working in the heat and dehydration and the precautions to be taken including an acceptable fluid intake depending on conditions. The contractor shall ensure that adequate water is made available to his/her employees.

23. Project Health, Safety and Environmental Audits

The HSE Department will conduct internal HSE audits to ensure compliance with R & C requirements. The audit schedule will be determined by the HSE department and will be communicated to the contractor. Contractor's line management shall form part of the HSE audits conducted by R & C HSE department. Findings of the audit will be communicated to the contractor after the audit has taken place on site. Thereafter a detailed report will be forwarded to the contractor within seven (7) days of post audit.

24. Contingency/Emergency Plan, Procedure & Contact Numbers

The contractor shall prepare an emergency procedure which will address any emergency situation that is likely to occur on a project site. The procedure must, in particular, emphasise the importance of the contractor's role in communicating the procedure to all of their site personnel and clearly define the steps and actions the person reporting the emergency is responsible for.

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The Emergency Preparedness Plan deals with the emergency situation as fast and efficiently as possible, to minimise loss of life, the protection of property and the maintenance of services necessary for the wellbeing of employees. The plan shall include valid local emergency contact numbers and must be easily accessible.

25. Mobile Plant and/or Construction Vehicles Inspection and Maintenance Records

The contractor shall ensure that all the construction vehicles and mobile plants are of an acceptable design and construction, maintained in a good working order, are on daily basis inspected prior to use, by competent person who has been appointed in writing and the findings of such are recorded in the register. Before the contractor's plant and machinery could be allowed on site, the R & C representative will conduct inspection on them and when compliant they will be given access to R & C sites.

26. Registers

The contractor shall ensure that the registers for example tool, plant, machinery, etc. are kept up to date on site for inspection and audit purposes.

27. Checklists

The contractor shall cause that monthly inspections are conducted and that all relevant checklists are used. These should be kept on site for inspection and audit purposes.

28. Substance Abuse Management

The contractor shall develop and implement substance abuse management policy. The policy shall include the frequency of testing and steps to address issues relating to substance abuse and work wellness. The testing of substance shall be conducted by competent person. The results of such tests shall be kept safe and made available during inspection and audits.

29. Material Safety Data Sheets(MSDS)

The contractor whom the scope of work requires him/her to make use of any chemicals, shall be in a possession of a relevant MSDS/s. The MSDS/s shall then be communicated to the employees and be kept on site as a record.

30. Health, Safety and Environmental Statistics

The contractor shall complete and submit consolidated HSE stats to R & C representative on the last day of every month.

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31. Copy of the OHSACT Act (85 of 1993) & Other Statutory Legislations

The contractor shall keep a copy of the Occupational Health and Safety Act 85 of 1993 with the regulations and any other statutory legislation on site at all times.

32. Welfare Facilities

The Contractor shall provide at or within reasonable access of every construction site, the following clean, hygienic and maintained facilities:

- At least one sanitary facility (Toilets) for each sex and for every 30 workers, changing facilities for each sex; and sheltered eating areas.

33. Hygiene

The Contractor shall ensure that its personnel maintain high standards of hygiene in connection with the performance of work. All work areas shall be maintained in a clean and tidy state and must promptly and appropriately dispose of all waste material.

34. Contractor Health, Safety & Environmental File Contents

The contractor shall prepare an HSE file and submit it to R & C representative for approval and the files shall contain but not limited to the following documentations:

- Notification of Construction
- Valid Letter of Good standing with the Compensation Commissioner
- Tax Clearance Certificate
- Policies
- All legal appointment letters
- List of Contractor's Employee,
- Site specific SHE Plan
- Hazard identification & Risks Assessments (Issue base)
- Method Statements
- SHE Induction Training
- Certificates of medical fitness
- Equipment maintenance and inspection
- PPE Issue control sheet
- Training Records
- Standard Operating Procedures (SOP's)
- Safe Working Procedures
- Daily Safety Talks

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- Project Audit Records
- Incident Management
- Contingency/ Emergency Plan, Procedure & Contact Numbers
- Project Registers/Forms
- Checklists
- RC HSE Specification
- Substance Abuse Management
- HSE Stats
- Material Safety Data Sheet (MSDS)
- Copy of the OHS Act & Regulations and Other Statutory Legislation
- Inspection records
- Project related procedures
- Planned Task Observations
- Environmental Management Plan
- Additional Task Controls and requirements

The contractor shall keep the file on site for inspection and audit purposes.

35. Environmental Management

The contractor shall ensure that his/her site complies with the requirements of the National Environmental Management Act (NEMA), 107 of 1998, (duty of care principles) and is committed to the care of the environment and therefore making an effort in implementing best practices in this regard. The contractor working or operating on R & C premises are therefore obliged to operate in an environmental friendly manner and put measures in place to prevent pollution and damage to the environment.

36. Waste Management

The contractor shall institute on-site waste management general duties and take all reasonable measures to:

- Dispose in a responsible manner according to waste manifesto and on approved waste disposal site. Record should be kept of waste disposed according to safe disposal certificates. These certificates should be kept by contractor and copies with R & C HSE Department. Daily waste disposal should be captured in site diary.
- Not endanger health/environment/cause nuisance-noise, odour or visual impact
- Prevent any employee/any person under supervision from contravening this Act
- Prevent the waste used for unauthorized purpose

The waste management program will address, but is not limited to, the following:

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- An inventory of expected wastes and their categories;
- Categories of waste;
- Plan of dealing with waste (Waste Management Plan)
- Compliance with local authority requirements;

37. Handling of Waste on Sites

The contractor shall have an Environmental Control Plan, which shall be approved by R & C representative. This control plan which must be kept on site at all times must include but not limited to the following:

- Dust control measures
- Noise Control (e.g. source of noise, levels and abatement measures)
- Water Management
- Waste Water/effluent Management
- Sewer treatment/disposal plan
- Waste Management Plan (Identify types of waste to be generated)
- Pollution control
- Spill response plan
- Rehabilitation and re-vegetation of site

38. Other Records

The contractor shall keep any other records required in terms of Occupational Health and Safety Act 85 of 1993 and Regulations to ensure safe execution of the construction project including good practices.

39. Additional requirements

None



IMS RISK ASSESSMENT REGISTER-ELECTRICAL DEPARTMENT

NAME RISK OWNER: NABEEL NAIDOO/KOLILE DAMBA
TITLE OF RISK OWNER: ELECTRICAL MANAGERS
TRN-IMS-GRP-REG 004.3

Date of Compilation:

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Operational Division	Business Unit	Functional Area	Operational Area/ Depot	Sub Depot	Work Area	Main Process	Activity / Service	1 = Routine/Normal 2 = Non-routine/Abnormal 3 = Emergency	Hazard (Causes, Aspects,...)	Change in Risk Rating (1-25)	Risk Classification	Risk (Something occurs...)	Impact (Leading to...)	Is there an Opportunity for the Identified Risk/Impact?	Inherent Risk Assessment					Existing Control (Mitigation)	Residual Risk Assessment										Management Action (Recommended Additional Controls)	Responsible Person	Action Due Date	Action Status
															Frequency	Probability	Consequence	Inherent Risk Value	Risk Classification		Substitution	Engineering Controls	Administrative Controls	Last Resort	Control Effectiveness	Residual Risk Value	Control Effectiveness Classification	Desired Control Effectiveness (DCE)	Risk Classification					
																														30%				
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	RPM/ MICA Inspections - All indoor & outdoor Equipm.	Visual inspection	1	Uneven walking surface	5	LOW	Tripping/falling	Injury	No	6	3	7	126	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Controls: compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training and Qualification 6.Task observations of SWP Last Resort: 1. Safety Shoes/Boots	1.Statutory	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	82	Unsatisfactory	90%	LOW				
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	RPM/ MICA Inspections - All indoor & outdoor Equipm.	Visual inspection	1	Contact with exposed Live equipment	5	HIGH	Electrocution	Fatality and Injuries	No	6	2	100	1200	HIGH	Substitution: 1. Not Practicable Engineering Control: 1. Lockout system Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training and Qualification 6.Task observations of SWP Last Resort: 1. Safety Barriers 2. Work Permit		Not Practicable	Satisfactory	Satisfactory	Satisfactory	60.0%	480	Requires improvements	90%	LOW	1. All Lock Systems to be as per prescribed standard	Kolile Damba		
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of AC disconnects	Cleaning and lubricating of AC disconnects	2	Working at heights	5	LOW	Falling from height	Fatality or Injuries	No	3	2	100	600	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7.Fall Protection Plan 8. Quarterly inspection and signed off harness Fall arrest by LM Inspector Last Resort: 1. Safety Harness 2. Safety Helmet		Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	360	Unsatisfactory	90%	LOW	Fall Protection Plan training to be conducted. FRP to be finalized.	Nabeel Naidoo/Wabisa Bungane		
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of AC disconnects	Cleaning and lubricating of AC disconnects	2	Contact with Live current	5	LOW	Electrocution	Fatality or Electric Burns	No	3	1	100	300	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Lock out System Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7.Approved Outage/Work Permit Last Resort: 1. De-energise Substation		Not Practicable	Satisfactory	Satisfactory	Satisfactory	60.0%	120	Requires improvements	90%	LOW				
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Primary Circuit Breaker	Cleaning & Inspection of Insulators	2	Working at heights	5	LOW	Falling from height	Fatality and Injuries	No	3	2	100	600	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7.Fall Protection Plan 8. Quarterly inspection and signed off harness Fall arrest by LM Inspector Last Resort: 1. Safety Harness 2. Safety Helmet 3. Mobile Cherry pickers to be used		Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	360	Unsatisfactory	90%	LOW	Fall Protection Plan training to be conducted. FRP to be finalized.	Nabeel Naidoo/Wabisa Bungane		
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Primary Circuit Breaker	Cleaning & Inspection of Insulators	2	Contact with Live current	5	LOW	Electrocution	Fatality or Electric Burns	No	3	1	100	300	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Lock out System Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7.Approved Outage/Work Permit Last Resort: 1. De-energise Substation		Not Practicable	Satisfactory	Satisfactory	Satisfactory	60.0%	120	Requires improvements	90%	LOW				

Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Primary Circuit Breaker	Cleaning and lubricating of Mechanical mechanism	2	Moving mechanical mechanism/gears	5	Hand or limb caught in mechanical mechanism/gears	Injury to or loss of limb	No	3	1	100	300	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Lock out System Administrative Control: 1.Subsotary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7. Approved Outage/Work Permit Last Resort: 1. De-energise Substation	Not Practicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	60.0%	120	Requires improvement	90%	LOW	
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Main Transformer	Cleaning, inspecting and testing of main transformer	2	Working at heights	5	Falling from height	Fatality and Injuries	No	3	2	100	600	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1.Subsotary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7.Fall Protection Plan 8. Quarterly inspection and signed off harness Fall arrest by LM Inspector Last Resort: 1. Safety Harness 2. Safety Net 3. Double Check system to be used	Not Practicable	Not Practicable	Satisfactory	Satisfactory	Satisfactory	35.0%	360	Unsatisfactory	90%	LOW	Rail Protection Plan training to be conducted. FPE to be finalised.
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Main Transformer	Cleaning, inspecting and testing of main transformer	2	Contact with Live current	5	Electrocution	Fatality or Electric Burns	No	3	1	100	300	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Lock out System Administrative Control: 1.Subsotary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7. Approved Outage/Work Permit Last Resort: 1. De-energise Substation	Not Practicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	60.0%	120	Requires improvement	90%	LOW	
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Auxiliary Disconnectors	Inspect, clean, lubricate, and repair/replace defective components	2	Contact with Live current	5	Electrocution	Fatality or Electric Burns	No	3	1	100	300	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Lock out System Administrative Control: 1.Subsotary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7. Approved Outage/Work Permit Last Resort: 1. De-energise Substation	Not Practicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	60.0%	120	Requires improvement	90%	LOW	
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance in 3kV DC Busbar Chamber	Cleaning and inspection of busbar	2	Contact with Live current	5	Electrocution	Fatality or Electric Burns	No	3	2	100	600	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Lock out System Administrative Control: 1.Subsotary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7. Approved Outage/Work Permit Last Resort: 1. De-energise Substation	Not Practicable	Satisfactory	Satisfactory	Satisfactory	Satisfactory	60.0%	340	Requires improvement	90%	LOW	
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Batteries	Cleaning and taking SG Reading	1	Battery acid	5	Contact with battery acid	Burns	No	5	2	40	400	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1.Subsotary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP Last Resort: 1.Safety Shoes/ Boots 2.Overall/ Acid Proof Gloves Safety Glasses	Not Practicable	Not Practicable	Satisfactory	Requires Improvement	Satisfactory	27.0%	260	Unsatisfactory	90%	LOW	Acid Proof PPE to be purchased
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Batteries	Replacing lead acid cells	2	Weight of battery	5	Over exertion /incorrect lifting technique	Back Injury	No	2	2	15	60	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1.Subsotary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP Last Resort: 1.Sufficient resources	Not Practicable	Not Practicable	Satisfactory	Satisfactory	Satisfactory	35.0%	39	Unsatisfactory	90%	LOW	

Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Control Panel	Clearing of control panel	1	Contact with Live current	S	Electrocution	Fatality or Electric Burns	No	4	2	100	800	MEDIUM	Substitution: 1. Not Practicable Engineering Control: 1. Lock out System Administrative Control: 1.Substantary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7.Approved Outage/Work Permit Last Report: 1. Insulated gloves 2. De-energise Substation	Not Practicable	Satisfactory	Satisfactory	Satisfactory	60.0%	320	Requires Improvements	90%	LOW	Gloves to be purchased	Nabeel Naidoo			
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Control Panel	Clearing of control panel	1	Dust	H	Inhalation	Respiratory Irritation/Infection	No	4	1	7	28	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1.Substantary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP Last Report: 1. Dust mask	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	18	Unsatisfactory	90%	LOW					
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Maintenance of Tele-control	Remote control testing of High Voltage switchgear	2	Incorrect Actuation	OP	Equipment Damage	Impact to Network availability	No	4	2	100	800	MEDIUM	Substitution: 1. Not Practicable Engineering Control: 1. Lock out System Administrative Control: 1.Substantary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7.Approved Outage/Work Permit Last Report: 1. De-energise Substation	Not Practicable	Satisfactory	Satisfactory	Satisfactory	60.0%	320	Requires Improvements	90%	LOW					
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Managing Contractors	Contractor compliance and audits	2	Non compliance to standards, procedures and specifications as per Contract Safety File	Q	Poor Workmanship	Impact to Network availability	No	3	4	100	1200	HIGH	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1.Substantary compliance and authorisation 2.Approved Specifications 3.Training 4. Reputable Contractor Appointed 5. Contract Management TMS 04 6. Quality control 7. Non-conformance reported Daily site diary signed Last Report: 1. Contractor Blacklisted 2. Specialist Sign Off	Not Practicable	Not Practicable	Requires Improvement	Satisfactory	25.0%	900	Unsatisfactory	90%	MEDIUM					
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Managing Contractors	Contractor compliance and audits	2	Non compliance to standards, procedures and specifications as per Contract Safety File	S	Contractor personnel injured on TR property	Fatality and Injuries	No	3	1	100	300	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1.Substantary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI /Site diary 5.Training 6.Task observations of SWP 7.Contractors Base Line Risk assessment 8. Contractors Management TMS procedure 014 9. Audited Safety file Last Report: 1. Mandatory PPE	Not Practicable	Not Practicable	Requires Improvement	Satisfactory	25.0%	225	Unsatisfactory	90%	LOW					
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Substation	Track Breaker (HSCB) Maintenance (Mechanical device)	Removal and replacement of HSCB in and out of service	1	Difficulty due to weight of HSCB	S	Over exertion	Back Injury	No	5	2	7	70	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1.Substantary compliance and authorisation 2.Yearly medical 3.Daily Fit for duty declaration 4.DSTI 5.Training 6.Task observations of SWP Last Report: 1.Sufficient resources	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	46	Unsatisfactory	90%	LOW					

Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Replacing/ Cutting in of contact wire	Working on Ladder/On Track Machine	2	Working at heights	5	Falling from height	Fatality and Injuries	No	4	2	100	800	MEDIUM	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily FFE for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7.Fall Protection Plan 8. Quarterly inspection and signed off harness Fall arrest by LM Inspector 9. Tools & Equipment Inspections Last Review: 1. Safety Harness 2. Safety Helmet	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	620	Unsatisfactory	90%	LOW	Fall Protection Plan training to be conducted. FPP to be finalized.	Nabeel Naidoo/Nwabisa Bungane			
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Replacing/ Cutting in of contact wire	Working near 'Live' OHTE	2	Contact with live OHTE	5	Electrocution	Fatality and Injuries	No	3	2	100	600	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily FFE for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7. Approved Outage/Work Permit Last Review: 1. De-energise all OHTE	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	390	Unsatisfactory	90%	LOW					
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Replacing/ Cutting in of contact wire	Working in an operational section	2	Moving trains	5	Struck by moving train	Fatality and Injuries	No	3	1	100	300	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily FFE for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7. Approved Outage/Work Permit Last Review: 1. Total Occupation of all lines, no train movements	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	195	Unsatisfactory	90%	LOW					
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Replacing of Insulators	Working on Ladder/On Track Machine	2	Working at heights	5	Falling from height	Fatality and Injuries	No	3	2	100	600	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily FFE for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7.Fall Protection Plan 8. Quarterly inspection and signed off harness Fall arrest by LM Inspector Equipment inspections Last Review: 1. Safety Harness 2. Safety Helmet	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	390	Unsatisfactory	90%	LOW					
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Replacing of Insulators	Working near 'Live' OHTE	2	Contact with live OHTE	5	Electrocution	Fatality and Injuries	No	3	2	100	600	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily FFE for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7. Approved Outage/Work Permit Last Review: 1. De-energise all OHTE	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	390	Unsatisfactory	90%	LOW					
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Replacing of Insulators	Working in an operational section	2	Moving trains	5	Struck by moving train	Fatality and Injuries	No	3	2	100	600	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Controls: 1.Statutory compliance and authorisation 2.Yearly medical 3.Daily FFE for duty declaration 4.DSTI 5.Training 6.Task observations of SWP 7. Approved Outage/Work Permit Last Review: 1. Total Occupation of all lines, no train movements	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	390	Unsatisfactory	90%	LOW					

Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Alignment of overlap and striking point	Working on Ladder/On Track Machine	2	Working at heights	S	Falling from height	Fatality and injuries	No	2	1	100	200	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. Statutory compliance and authorisation 2. Yearly medical 3. Daily Fit for duty declaration 4. DDTI 5. Training 6. Task observations of SWP 7. Fall Protection Plan 8. Quarterly inspection and signed off harness 9. Tools & Equipment inspections Last Report: 1. Safety Harness 2. Safety Harness	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	130	Unsatisfactory	90%	LOW				
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Alignment of overlap and striking point	Working near 'Live' OHTE	2	Contact with live OHTE	S	Electrocution	Fatality and injuries	No	2	1	100	200	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. Statutory compliance and authorisation 2. Yearly medical 3. Daily Fit for duty declaration 4. DDTI 5. Training 6. Task observations of SWP 7. Approved Outage/Work Permit Report: 1. De-energise all OHTE Last	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	130	Unsatisfactory	90%	LOW				
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Alignment of overlap and striking point	Working in an operational section	2	Moving trains	S	Struck by moving train	Fatality and injuries	No	2	1	100	200	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. Statutory compliance and authorisation 2. Yearly medical 3. Daily Fit for duty declaration 4. DDTI 5. Training 6. Task observations of SWP 7. Approved Outage/Work Permit Report: 1. Total Occupation of all lines, no train movements Last	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	130	Unsatisfactory	90%	LOW				
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Dropper Replacement	Working on Ladder/On Track Machine/Trolley	1	Working at heights	S	Falling from height	Fatality and injuries	No	5	1	100	500	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. Statutory compliance and authorisation 2. Yearly medical 3. Daily Fit for duty declaration 4. DDTI 5. Training 6. Task observations of SWP 7. Fall Protection Plan 8. Quarterly inspection and signed off harness 9. Tools & Equipment inspections Last Report: 1. Safety Harness	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	325	Unsatisfactory	90%	LOW				
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Dropper Replacement	Working near 'Live' OHTE	1	Contact with live OHTE	S	Electrocution	Fatality and injuries	No	5	1	100	500	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. Statutory compliance and authorisation 2. Yearly medical 3. Daily Fit for duty declaration 4. DDTI 5. Training 6. Task observations of SWP 7. Approved Outage/Work Permit Report: 1. De-energise all OHTE Last	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	325	Unsatisfactory	90%	LOW				
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	OHTE	Dropper Replacement	Working in an operational section	1	Moving trains	S	Struck by moving train	Fatality and injuries	No	5	1	100	500	LOW	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. Statutory compliance and authorisation 2. Yearly medical 3. Daily Fit for duty declaration 4. DDTI 5. Training 6. Task observations of SWP 7. Approved Outage/Work Permit Report: 1. Total Occupation of all lines, no train movements Last	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	325	Unsatisfactory	90%	LOW				
Transnet Freight Rail	Cape Corridor	Electrical	Belville	N/A	Roady/Service roads	Driving	Transporting between work pieces	1	Flooding of low lying bridges	S	Vehicle get washaway by flood stream	Injuries/ Fatality	No	7	2	100	1400	VERY HIGH	Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. Weather monitoring notification warning 2. Driver must be in possession of the following: TRS Permit, Valid driver's license, Trip authority, Vehicle logbook, Tag 3. Warning signage installed 4. Rubber Wheel training Last Report:	Not Practicable	Not Practicable	Satisfactory	Satisfactory	35.0%	910	Unsatisfactory	90%	MEDIUM				

Transnet Freight Rail	Cape Corridor	Electrical	Beilville	N/A	Roads/Service roads	Driving	Transporting between work places	1	Vehicle Drivers not adhering to TFR Vehicle Policy and/or Road Traffic Regulations whilst driving TFR vehicles. E.g speeding	5	Accidents and incidents	Injuries/Fatality	No	7	3	100	2100	VERY HIGH Substitution: 1. Not Practicable Engineering Control: 1. Speed governors installed in vehicles Administrative Control: 1. Roadworthy vehicle 2. Licensed driver Tag 3. Driver must be in possession of the following: TFR Permit, Valid driver's license, Trip authority, Vehicle logbook 4. Monitoring of speeding and vehicle usage violations 5. Rubber Wheel driving course attended by drivers as and when required 6. Disciplinary Actions as per Tracking Speeding Report for speed violations Last Report: Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. Fleet Management Policy 2. Valid driver's license 3. Trip authority 4. Vehicle logbook 5. Rubber wheel training 6. Licensing and authorization 7. Route planning 8. Pre trip plan to ensure vehicle is road worthy 9. Anti-theft and tracking devices installed 10. Road Traffic Act (Act 93 of 1996) 11. Compliance Variation Agreement 12. Fatigue Management 13. Over night accommodation Last Report: 5. <i>Non-practicable measures</i>	Not Practicable	Satisfactory	Satisfactory	Satisfactory	80.0%	840	Requires improvement	90%	MEDIUM				
Transnet Freight Rail	Cape Corridor	Electrical	Beilville	N/A	Roads/Service roads	Driving	Transporting between work places	1	Fatigue due to driving long distances	5	Fall asleep whilst driving	Injuries/Fatality	No	7	1	100	700	MEDIUM Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. Fleet Management Policy 2. Valid driver's license 3. Trip authority 4. Vehicle logbook 5. Rubber wheel training 6. Licensing and authorization 7. Route planning 8. Pre trip plan to ensure vehicle is road worthy 9. Anti-theft and tracking devices installed 10. Road Traffic Act (Act 93 of 1996) 11. Compliance Variation Agreement 12. Fatigue Management 13. Over night accommodation Last Report: 5. <i>Non-practicable measures</i>	Not Practicable	Not Practicable	Satisfactory	Satisfactory	85.0%	455	Unsatisfactory	90%	LOW				
Transnet Freight Rail	Cape Corridor	Electrical	Beilville	N/A	Roads/Service roads	Driving	Transporting between work places	1	Hi-jacking	5	Assault of employees	Injuries/Fatality	No	7	3	100	2100	VERY HIGH Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. TFR Permit 2. Valid driver's license 3. Trip authority 4. Vehicle logbook 5. Rubber wheel training 6. Licensing and authorization 7. Route planning 8. Pre trip plan to ensure vehicle is road worthy 9. Anti-theft and tracking devices installed Last Report: 6. <i>Not Practicable</i>	Not Practicable	Not Practicable	Satisfactory	Requires Improvement	37.5%	1523	Unsatisfactory	90%	VERY HIGH	Security escort plan	Nabeel Nadeem/Ronald Waterboer		
Transnet Freight Rail	Cape Corridor	Electrical	Beilville	N/A	Roads/Service roads	Driving	Transporting between work places	1	Poor service road condition (potholes, overgrown vegetation)	5	Vehicle Accident	Injuries/Fatality	No	7	1	100	700	MEDIUM Substitution: 1. Not Practicable Engineering Control: 1. Not Practicable Administrative Control: 1. TFR Permit 2. Valid driver's license 3. Trip authority 4. Vehicle logbook 5. Rubber wheel training 6. Licensing and authorization 7. Route planning 8. Pre trip plan to ensure vehicle is road worthy 9. Service Road maintenance Last Report: 1. Alternative routes	Not Practicable	Not Practicable	Satisfactory	Requires Improvement	37.5%	508	Unsatisfactory	90%	LOW				



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



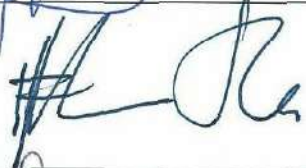
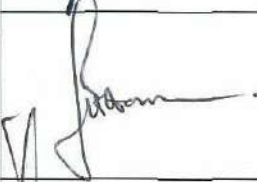




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SPECIFICATION FOR GENERAL WORK AND WORKS ON, OVER, UNDER OR ADJACENT TO RAILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT

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"	Principal Engineer Infra Engineering (Structures)	J. Homan	
"	Principal Engineer Infra Engineering (Electrical)	J. Vosloo	
"	Principal Engineer Technology Management (Electrical)	W. Coetzee	
"	Chief Engineer Transport Telecoms	D. Botha	 17 June 11
Authorised:	Chief Engineer Infrastructure Engineering	J. van Aardt	 2011/06/30

Date: May 2011

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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' 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.

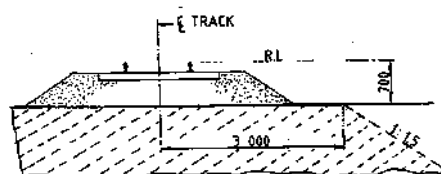


Fig. 1.

- 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 500m 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.

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

E.7/2 (Amended April 2016 and
April 2017)



(1990/000900/30)

E7/2 (Amended April 2016 and April 2017)

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

(This Specification shall be used in Transnet Contracts)



TRANSNET SOC LTD
(1990/000900/30)

ACTING THROUGH ITS OPERATING DIVISION TRANSNET FREIGHT RAIL

**AGREEMENT FOR
WORK ON, OVER, UNDER OR ADJACENT TO
RAILWAY LINES AND NEAR HIGH VOLTAGE
EQUIPMENT**

NO. E.7/2

AGREEMENT made and entered into by and between Transnet SOC Ltd, registration number 1990/000900/30 a state-owned company with limited liability and incorporated in terms of the company laws of the Republic of South Africa (hereinafter referred to as "Transnet"), acting through its operating division Transnet Freight Rail with its address at Inyanda House 3, 11 Girton Road, Parktown, 2193, of the one part, and

_____ hereinafter referred to as the "Grantee" and represented by _____ in his capacity as _____ of the other part.

WHEREAS the Grantee intends to construct or perform or cause to be constructed or performed Works consisting of _____ on a site situated at _____ and which will be *on, *over, *under or *adjacent to a railway line *and near high voltage electrical equipment.

Reference numbers:

NOW, THEREFORE, IT IS HEREBY AGREED AS FOLLOWS:-

1. Transnet hereby grants to the Grantee, which the Grantee hereby accepts, authority to perform work on, over, under or adjacent to a railway line on the defined site and subject to the conditions and requirements stipulated herein and in the General Conditions and Specification for Works On, Over, Under or Adjacent to a Railway Line and near High Voltage Equipment (E.7/2), which document forms part of this Agreement.
2. The Grantee undertakes to ensure that the conditions and requirements set out in the E7/2 are observed and complied with in all respects by himself, his employees and any contractor and subcontractors and their employees that may be appointed by the Grantee for the construction or performance of the Works.
3. The Grantee undertakes also to provide the indemnities, safeguards and insurances required in terms of the said General Conditions and Specifications.
4. Failure by the Grantee or any Contractor, subcontractor or their employees to observe and comply with these requirements of Transnet, may result in the cancellation of this Agreement and the authorisation granted in terms hereof being withdrawn.
5. The domicili citandi at executandi of the parties to this agreement are :-
 - (i) TRANSNET:
Inyanda House 3
11 Girton Road
Parktown
2193
 - (ii) THE GRANTEE :

Signed by _____ on behalf of the Grantee at
_____ on this _____ day of _____ 20_____
in the presence of the undersigned witnesses.

AS WITNESSES: _____ p.p. GRANTEE

1. _____

2. _____

Signed by _____ on behalf of Transnet at
_____ on this _____ day of _____ 20_____
in the presence of the undersigned witnesses.

_____ TRANSNET SOC LTD

AS WITNESSES :

1. _____

2. _____

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1. **DEFINITIONS**

PART A : GENERAL CONDITIONS

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

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

Bond. A short conductor installed to provide electrical continuity.

Contractor. The person or organisation appointed by the Grantee to carry out work on his/its behalf.

Dead. Isolated and earthed.

Duly Authorised Representative of Transnet. Any Transnet employee whose responsibilities include the safety of trains, persons and Transnet property in the area in which the work is being undertaken.

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

Grantee. A person or organisation to whom authorisation has been granted by Transnet to perform work on, over, under or adjacent to a railway line.

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

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

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

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

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

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

Site. The land and other place on, over, under, in or through which the Works are to be executed or carried out and any other land or place made available by Transnet in connection with the Works.

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

Transnet. Transnet SOC Ltd, registration number 1990/000900/30 a state-owned company with limited liability and incorporated in terms of the company laws of the Republic of South Africa

(hereinafter referred to as "Transnet"), acting through its operating division Transnet Freight Rail with its address at Inyanda House 3, 11 Girton Road, Parktown, 2193.

Transnet Freight Rail An operating division of Transnet SOC Ltd, registration number 990/000900/30.

Transnet Technical Officer's Deputy. Any person appointed by the Transnet Technical Officer to act on his behalf.

Transnet Technical Officer. The engineering officer appointed by Transnet to liaise with the Grantee and his Contractor to ensure that Transnet's interests are safeguarded.

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 works, on, over, under or adjacent to a railway line to be executed by the Grantee or Contractor and for which permission has been obtained from Transnet.

PART A : GENERAL CONDITIONS

2. ADVERTISING AND NOTICE BOARDS ON TRANSNET PROPERTY

- 2.1 Transnet reserves all advertising rights on its property.
- 2.2 No advertisement or notice board may be erected on Transnet property by the Grantee or Contractor unless the written approval of Transnet has first been obtained.
- 2.3 All information on notice boards shall be in one official language and the proposed wording shall be submitted for approval by the Transnet Technical Officer.

3. TRADING ON TRANSNET PROPERTY

- 3.1 The Grantee or Contractor shall not trade on Transnet property without the prior approval of the Transnet Technical Officer.

4. ENTRY ON TRANSNET PROPERTY

- 4.1 Entry on, over or under Transnet property is restricted. Permission to enter will be given by the Transnet Technical Officer only for the purpose of carrying out the Works and will be subject to terms and conditions laid down by Transnet.
- 4.2 Permission to enter will be considered on condition that no act or omission on the part of the Grantee, the Contractor or their employees shall affect the safe and uninterrupted passage of trains or the safety of persons or Transnet property, and may be withdrawn at the discretion of the Transnet Technical Officer.

5. INSTALLATIONS AND SERVICES ON TRANSNET PROPERTY

- 5.1 Should it be necessary to maintain, discontinue, disconnect, remove or relocate any installation or service on Transnet property, the Grantee shall, with the prior approval of the Transnet Technical Officer, cause it to be maintained, discontinued, disconnected, removed or relocated as the case may be, in such a manner as may be required either by the

Transnet operating division, the owner of a private installation or service or by the local or statutory authority in the case of a public utility installation or service. The Grantee shall be responsible for sending all requisite notices to the authorities or persons concerned and for making arrangements for the maintenance, discontinuance, disconnection, removal or relocation of the said installations or services as the case may be. He shall be responsible for the payment of all fees or charges that may become payable to the local or statutory authority or persons concerned in connection with any of the above-mentioned matters or

arrangements. Any alterations required to installations or services controlled by Transnet or Telkom SA SOC Ltd will be arranged by Transnet at the cost of the Grantee.

- 5.2 The Contractor shall, before commencing work, ascertain from the Transnet Technical Officer or any local or other authority whether overhead or underground electrical conductors are affected by the Works, and the Contractor shall ensure that any precautionary measures required are strictly observed.

6. ACCESS, FENCING AND GATES ON TRANSNET PROPERTY

- 6.1 The Grantee shall arrange, at his own expense, for access to Transnet property. The Grantee 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 Transnet Technical Officer, the Grantee shall not cut, lower, damage or remove or otherwise interfere with any fence or gate which is either on the Transnet boundary or which restricts access to Transnet property. Where such approval has been given, the Grantee shall prevent entry on to Transnet property by animals or unauthorised persons and shall make the fences safe against trespass at the close of each day's work.
- 6.2 When access is no longer required and before completion of the Works, the Grantee shall, at his own expense, repair, restore or replace fences and gates to the satisfaction of the Transnet Technical Officer.

7. FOSSILS AND ANTIQUITIES ON TRANSNET PROPERTY

- 7.1 All fossils, coins, articles of value or antiquity, and structures and other remains or things of geological or archaeological interest discovered on the site shall be deemed to be the absolute property of Transnet. The Grantee shall take reasonable precautions to, prevent his workmen or any other person from removing or damaging any such article or thing, and shall immediately upon discovery thereof and before removal, inform the Transnet Technical Officer of such discovery, and carry out his orders as to the disposal thereof.

8. AREA NOT TO BE POLLUTED

- 8.1 Pollution of the area inside or adjacent to the Transnet boundaries shall be prevented.

9. COMPLIANCE WITH STATUTES

- 9.1 The Grantee and his Contractor shall comply with:
- 9.1.1 the local, Provincial or South African Government laws in force at the time;
 - 9.1.2 South African National Standards and Codes of Practices;
 - 9.1.3 the provisions of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993). For the purpose of this Act, the site occupied by the Grantee or Contractor is transferred, for the duration of the contract, to the control of the Grantee. As an employer in his own right he is in every respect responsible for the compliance with the provisions of this Act.

- 9.2 Where the Works are situated within the borders of a neighbouring independent state and South African legislation referred to in these conditions is not applicable in such place, the Grantee shall be bound by the provisions of the corresponding legislation applicable there.

10. SITE BOOK

- 10.1 The Grantee shall supply and have available on the site at all times an A5 size triplicate carbon copy book with detachable sheets for receiving and recording instructions by the Transnet Technical Officer or other officers of Transnet. The Grantee shall request the person concerned to write the instruction in the site book, to sign it and to record his official designation. The instruction shall be countersigned by the Grantee or his agent. The original sheet of the site book will be removed and retained by the Transnet Technical Officer and carbon copies retained by the Grantee.

11. GRANTEE'S REPRESENTATIVES

- 11.1 The Grantee shall exercise supervision over the Works at all times during working hours, or shall be represented by an agent having full power and authority to act on his behalf. 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 Grantee. The Transnet Technical Officer shall be notified in writing of such appointment.
- 11.2 The Grantee or his Contractor shall be available on the site at all times while the Works are in progress to receive the instructions of the Transnet Technical Officer.
- 11.3 The Grantee shall nominate Responsible Representatives of whom at least one shall be available at any hour for call-out in cases of emergency. The Grantee shall provide the Transnet Technical Officer with the names, addresses and telephone numbers of the representatives.
- 11.4 The Grantee 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.

12. FACILITIES TO TRANSNET OR OTHER CONTRACTORS

- 12.1 The Grantee shall, in accordance with the requirements of the Transnet Technical Officer, afford all reasonable facilities to any of the Transnet workmen or other contractors who may be required by Transnet to perform duties or carry out work on or contiguous to the Works. Any dispute arising in this connection between the Grantee and Transnet workmen or other contractors will be settled by the Transnet Technical Officer who will convey his decision to the Grantee and other parties concerned.

13. CARE OF THE WORKS

- 13.1 The Grantee shall take full responsibility for the care of the Works and any temporary works, and shall be liable for any damage caused by him in the course of any of his operations.

14. TEMPORARY LEVEL CROSSINGS

- 14.1 The Transnet Technical Officer may permit the construction of a temporary level crossing over the railway line at any site approved by him. Applications for temporary level crossings shall be submitted in writing by the Grantee. The period for which the level crossing is permitted will be at the discretion of the Transnet Technical Officer.

- 14.2 Transnet, at the cost of the Grantee, will construct the roadway over the railway line and for a distance of 3m beyond the outermost rails, supply and erect all level crossing signs and height gauges and alter any communication or signal wire route for an approved temporary level crossing. All other work required by the Transnet Technical Officer to establish the level crossing, such as drainage in particular, shall be carried out by the Grantee at his own cost.
- 14.3 The Grantee shall, at his own cost, take all necessary steps including the provision of gates, locks and, where necessary, watchmen to restrict the use of the level crossing to himself and his employees, his contractors and their employees, the staff of Transnet and to such other persons as the Transnet Technical Officer may permit, of whose identity the Grantee will be advised.
- If ordered by the Transnet Technical Officer, the Grantee shall, at his own cost, appoint persons to control road traffic using any temporary level crossing.

Such persons shall stop all road traffic when any approaching train is within 750m of the level crossing and shall not allow the road traffic to proceed over the level crossing until the lines are clear.

15. **BLASTING**

- 15.1 No blasting in the vicinity of railway lines shall be carried out except with the prior written permission of the Transnet Technical Officer.
- 15.2 The Grantee shall advise the Transnet Technical Officer of his intention to blast at least 14 days prior to the commencement of any blasting operation.
- 15.3 The Grantee shall have labour, tools and plant, to the satisfaction of the Transnet Technical Officer, available on the site to immediately clear any stone 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 Transnet.
- 15.4 Before any blasting is undertaken, the Grantee and the Transnet Technical Officer shall jointly examine any buildings, houses or structures on Transnet land in the vicinity of the proposed blasting and record the extent of any cracking or damage that exists. The Grantee shall, at his own expense, make good any deterioration of such buildings, houses, or structures which, in the opinion of the Transnet Technical Officer, is a direct result of the blasting. The Grantee shall provide proof that he has complied with the provisions of clauses 10.17.1 to 10.17.4 of the Explosives Regulations issued under the Explosives Act, 1956 (Act No. 26 of 1956).
- 15.5 Blasting within 500m of a railway line will be permitted only during intervals between trains. A person appointed by the Transnet Technical Officer, assisted by flagmen with the necessary protective equipment, will be in communication with the controlling railway station or Train Control Officer. Only this appointed person will be authorised to give the Grantee or his Contractor permission to blast and the Grantee shall obey his instructions implicitly regarding the time during which blasting may take place.
- 15.6 The flagmen described in clause 15.5 are provided for the protection of trains and Transnet property only, and their presence does not relieve the Grantee in any manner of any of his responsibilities in terms of the Explosives Act, 1956 (Act No. 26 of 1956) or regulations issued thereunder, or any obligation in terms of these general conditions and specifications.

15.7 The person described in clause 15.5 will record in a book supplied and retained by Transnet, the dates and times:-

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

15.8 Before each blast the Grantee shall record in the same book, the details of the blast to be carried out. The person appointed by the Transnet Technical Officer and the person who will do the blasting shall both sign the book whenever an entry described in clause 15.7 is made.

15.9 The cost of all control and protection services provided by Transnet for blasting shall be borne by the Grantee.

15.10 The terms of clause 45 hereof shall be strictly adhered to.

16. WATCHING AND LIGHTING

16.1 The Grantee shall provide and maintain at his own cost, all lights, guards, barriers, fencing and watchmen when and where necessary or as required by the Transnet Technical Officer 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, and red, yellow, green or white flags shall not be used by the Grantee in such a position where they can be mistaken for railway signals. The grantee shall obtain the permission of the Port Captain before installing any light in a harbour area.

17. PROTECTION

17.1 The Grantee, at his own cost, 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 Transnet and the Grantee;
- (iii) avoid damage to and prevent trespass on adjoining properties; and
- (iv) ensure compliance with any instruction issued by the Transnet Technical Officer or by any person appointed by him, or any instruction embodied in these conditions which affects the safety of any person or thing.

17.2 Transnet will, at the cost of the Grantee, provide protection for the safe working of trains during such operations as the Transnet Technical Officer may consider necessary. Protection by Transnet for any purpose whatsoever does not absolve the Grantee from his responsibilities in terms of these conditions.

17.3 The Grantee 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 site of the Works and for the preservation of the peace and protection of persons and property in the neighbourhood of the Works. Any relocation of camps on account of disorder shall be at the Grantee's expense.

18. ROADS ON TRANSNET PROPERTY

- 18.1 The Grantee shall not restrict the free use of any road, right-of-way or path on Transnet property without approval of the Transnet Technical Officer.
- 18.2 The Grantee shall make good or bear the cost of making good any damage caused by him to any road or path on Transnet property.
- 18.3 The Grantee shall construct and maintain any temporary roads which he may require after the Transnet Technical Officer has agreed to such roads and to the details of their construction.

19. INTERFERENCE WITH TRANSNET ASSETS AND WORK ON OPEN LINES

- 19.1 The Grantee shall not interfere in any manner whatsoever with a railway line, nor shall he carry out any work or perform any act which affects the security, use and safety of a railway line or Transnet property except with the authority of the Transnet Technical Officer and in the presence of a duly authorised representative of Transnet.
- 19.2 The Grantee shall not carry out any work, or operate any plant, or place any materials nearer than 3m from the centre line of any railway line except with the written permission of the Transnet Technical Officer and subject to such conditions as he may impose. The cost of implementing such conditions shall be borne by the Grantee.
- 19.3 Care shall be taken not to interfere with or damage any services such as overhead wire routes, cables or pipes on Transnet property except as provided for in 5.1. The Grantee will be held responsible for any damage to or interruption of such services caused by the Grantee or any of his employees or persons engaged by him on the Works. The cost of repairing, replacing or restoring the services, shall be borne by and will be recovered from the Grantee.

20. INDEMNITIES AND INSURANCE

- 20.1 The Grantee indemnifies Transnet against all claims made by third parties against either Transnet or the Grantee or both consequent upon the death of or bodily injury to or illness of any person or loss of or damage to any property and against any other claims, proceedings, damages, costs and expenses arising out of or by reason of the execution of the Works by the Grantee, his employees or any of his contractors or subcontractors or their employees.
- 20.2 The Grantee shall insure in the joint names of the Grantee and Transnet, with a company registered in the Republic of South Africa, against all claims legally enforceable against the Grantee or Transnet by any third party, arising out of any act or omission on the part of the Grantee or Transnet or any of their employees, contractors or subcontractors in the course of and as a consequence of executing the Works.
- 20.3 The limit of indemnity provided by the policy shall be the amount of R15 000 000,00 (the fifteen million rand) in respect of any one occurrence or a series of occurrences arising out of one event inclusive of all costs and expenses of litigation but unlimited in respect of the number of events during the period of insurance. The Grantee shall be responsible for all amounts payable as deductibles in terms of the Policy.

- 20.4 The insurance to be provided in terms clause 20.2, shall have a cross liabilities cover in respect of which Transnet and the Grantee shall be separately indemnified in respect of claims made by any one of them against the other as though a separate policy has been issued to each of them.
- 20.5 The insurance coverage shall be obtained from an insurer in terms of an insurance policy approved by Transnet. The Grantee shall, before commencing work, submit to the Transnet Technical Officer the policy of insurance together with a certificate from the insurer or insurance broker concerned, confirming that the policy provides the full coverage referred to in clauses 20.2, 20.3 and 20.4, Grantee shall furthermore submit to the Transnet Technical Officer, at 3-monthly intervals, proof that premiums have been fully paid up. Under no circumstances shall the policy be cancelled while the Works are in progress without the written consent of the Transnet Technical Officer.
- 20.6 Before payment as settlement of any claim is made by the insurer, the claimant(s) shall certify in writing that such payment releases Transnet of all obligations resulting from any act or omission giving rise to such claim.

Transnet must be advised that the claim has been paid out directly to the claimant(s) concerned.

21. AUTHORITY OF OFFICERS OF TRANSNET

- 21.1 The Grantee, his contractors and subcontractors and their employees shall co-operate with the officers of Transnet and shall comply with all instructions issued and restrictions imposed with respect to the works which bear on the existence and operation of Transnet's railway lines and high voltage equipment.
- 21.2 Without limiting the generality of the provisions of clause 21.1, any duly authorised representative of Transnet, having identified himself, may stop the work if, in his opinion, the safe passage of trains or the safety of Transnet assets or of any person is affected. CONSIDERATIONS OF SAFETY SHALL TAKE PRECEDENCE OVER ALL OTHER CONSIDERATIONS.

22. AUTHORITY OF TRANSNET TECHNICAL OFFICER

- 22.1 The Transnet Technical Officer may direct the Grantee in regard to any measures which he may require for the operations of Transnet, the safety of trains, property and workmen of Transnet. The instructions issued by the Transnet Technical Officer shall not relieve the Grantee of any of his duties and liabilities in terms of these conditions, and shall not imply any assumption by Transnet or by the Transnet Technical Officer of the legal and other duties of the Grantee.
- 22.2 The Transnet Technical Officer may delegate to any deputy or other person any of his powers or functions in terms of these conditions and, on receiving notice in writing of such delegation, the Grantee shall recognise and obey the deputy or person to whom any such powers or functions have been delegated as if he were the Transnet Technical Officer.

23. OCCUPATIONS AND WORK PERMITS

- 23.1 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 Transnet Technical Officer and

at times to suit Transnet requirements.

- 23.2 The Grantee shall organise the Works in a manner which will minimise the number and duration of occupations and work permits required.
- 23.3 Transnet shall not be liable for any financial or other loss suffered by the Grantee his contractors or subcontractors arising from his/their failure to complete any work scheduled during the period of an occupation or work permit.
- 23.4 The Grantee shall submit to the Transnet Technical Officer, in writing, requests for occupations or work permits together with details of the work to be undertaken at least 14 days before they are required. Transnet does not undertake to grant an occupation or work permit for any particular date, time or duration.
- 23.5 Transnet reserves the right to cancel any occupation or work permit at any time before or during the period of occupation or work permit. If due to cancellation or change in date or time the Grantee is not permitted to start work under conditions of total occupation or work permit at the time arranged, all costs shall be for the Grantee's account.
- 23.6 Before starting any work for which an occupation has been arranged, the Grantee shall obtain from the Transnet Technical Officer written confirmation of the date, time and duration of the occupation.
- 23.7 Before starting any work for which a work permit has been arranged, the Responsible Representative shall read and sign portion C of form No. T.1276 signifying that he is aware of the limits within which work may be undertaken. After the work for which the permit was granted has been completed, or when the work permit is due to be terminated, or if the permit is cancelled after the start, the same person who signed portion C shall sign portion D of the T.2376 form, thereby acknowledging that he is aware that the electrical equipment is to be made "live". The Grantee shall advise all his workmen, Contractors or subcontractors accordingly.

24. SPEED RESTRICTIONS AND PROTECTION

- 24.1 When speed restrictions are imposed by Transnet because of the Grantee's activities, the Grantee shall organise and carry out his work so as to permit the removal of the restrictions as soon as possible.
- 24.2 When the Transnet Technical Officer deems protection necessary Transnet will provide, at the cost of the Grantee, personnel and equipment for the protection of trains. The Grantee shall consult the Transnet Technical Officer whenever he considers that protection will be necessary, taking into account the minimum permissible clearances set out in Appendixes 1 to 4.
- 24.3 The Grantee shall appoint a Responsible Representative to receive and transmit any instruction which may be given by Transnet personnel providing protection.
- 24.4 The Grantee shall provide all protection other than the protection of trains.

25. CLEARANCES

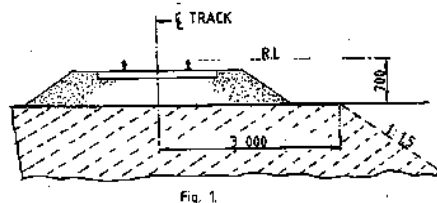
- 25.1 No temporary works shall encroach on the appropriate minimum clearances set out in Appendixes 1 to 4.

26. **STACKING OF MATERIAL**

- 26.1 The Grantee shall not stack or cause material to be stacked closer than 3m from the centre line of any railway line without prior approval of the Transnet Technical Officer.

27. **EXCAVATION, SHORING, DEWATERING AND DRAINAGE**

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



- 27.2 Where required by the Transnet Technical Officer, drawings of shoring for any excavation under or adjacent to a railway line shall be submitted and permission to proceed obtained before the excavation is commenced.
- 27.3 The Grantee shall prevent ingress of water to the excavation and where water does enter, he shall dispose of it as directed by the Transnet Technical Officer.
- 27.4 The Grantee 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.

28. **FALSEWORK FOR STRUCTURES**

- 28.1 Drawings of falsework for the construction of any structure over, under or adjacent to any railway line shall be submitted and permission obtained to proceed 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.

- 28.2 After the falsework has been erected and before any load is applied, the Grantee shall submit to the Transnet Technical Officer a certificate signed by a registered professional engineer certifying that he has checked the falsework and that it has been erected in accordance with the drawings. Titles and numbers of drawings shall be quoted in the certificate. Notwithstanding permission given by the Transnet Technical Officer to

proceed, the Grantee shall be entirely responsible for the safety and adequacy of the falsework.

29. PILING

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

30. UNDERGROUND SERVICES

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

31. RAIL TROLLEYS

- 31.1 The use of rail or trestle trolleys on a railway line will be permitted only if approved by the Transnet Technical Officer and under the conditions stipulated by him.
- 31.2 All costs in connection with rail trolley working requested by the Grantee shall be borne by the Grantee.

32. SIGNAL TRACK CIRCUITS

- 32.1 Where signal track circuits are installed, the Grantee shall ensure that no material capable of conducting an electric current makes contact between rails of a railway line/lines.
- 32.2 No signal connections on track-circuited tracks shall be severed without the Transnet Technical Officer's knowledge and consent.

33. PENALTY FOR DELAYS TO TRAINS

- 33.1 If any trains are delayed by the Grantee a penalty will be imposed on the Grantee of R10 000 per hour or part thereof for the period of delay, irrespective of the number of trains delayed.

34. PAYMENT FOR SERVICES OF THE TRANSNET TECHNICAL OFFICER & OTHERS

- 34.1 The Grantee shall pay Transnet for the services and time of the Transnet Technical Officer, his deputy the Electrical Officer (Contracts) and any authorised persons and representatives of Transnet on an hourly basis and at the scales of fees recommended by the South African Association of Consulting Engineers or as otherwise agreed. The Grantee shall, in addition, pay all costs and expenses in respect of accommodation, travelling and other disburseable amounts incurred by the Transnet representatives, as a consequence of such services provided.

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

35. GENERAL

- 35.1 This specification is based on the contents of Transnet Freight Rail's publication SAFETY INSTRUCTIONS, HIGH-VOLTAGE ELECTRICAL EQUIPMENT as amended, a copy of which will be made available on loan to the Grantee or his Contractor for the duration of the Work. These instructions apply to all work near live high-voltage equipment maintained and/or operated by Transnet, and the onus rests on the Grantee to ensure that he obtains a copy.
- 35.2 The Grantee's attention is drawn in particular to the contents of Part I, Sections 1 and 2 of the Safety Instructions : High-Voltage Electrical Equipment.
- 35.3 The Safety Instructions : High-Voltage Electrical Equipment cover the minimum safety precautions which must be taken to ensure safe working on or near high-voltage electrical equipment, and must be observed at all times. Should additional safety measures be considered necessary because of peculiar local conditions, these may be ordered by and at the discretion of the Electrical Officer (Contracts).
- 35.4 This specification must be read in conjunction with and not in lieu of the Safety Instructions : High-Voltage Electrical Equipment.
- 35.5 The Grantee 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.
- 35.6 The Grantee shall regard all high-voltage equipment as live unless a work permit is in force.
- 35.7 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 Grantee. The Grantee shall, unless otherwise agreed, bear the cost of the provision of the barriers and other safety precautions required, including the attendance of Transnet staff where this is necessary.
- 35.8 No barrier shall be removed unless authorised by the Electrical Officer (Contracts).

36. WORK ON BUILDINGS OR FIXED STRUCTURES

- 36.1 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.
- 36.2 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.
- 36.3 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.

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

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

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

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

37.2 In cases where the Grantee 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.

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

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

37.5 Where the conditions in 37.1 to 37.3 cannot be observed the Electrical Officer (Contracts), shall be notified. He will arrange for suitable safety measures to be taken. The Electrical Officer (Contracts), may in his discretion and in appropriate circumstances, arrange for a suitable employee of the Grantee or his Contractor to be specially trained by Transnet Freight Rail and at the Grantee's costs, as an Authorised Person to work closer than 3 metres from live overhead conductors and under such conditions as may be imposed by the Senior responsible Electrical Engineer in Transnet.

38. USE OF EQUIPMENT

38.1 Measuring Tapes and Devices

38.1.1 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.

38.1.2 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.

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

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

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

38.2 Portable Ladders

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.

39. CARRYING AND HANDLING MATERIAL AND EQUIPMENT

39.1 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.

39.2 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.

39.3 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.

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

40.1 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.

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

40.3 The provisions of clauses 40.1 and 40.2 shall also apply to the erection or removal of columns, antennae, trees, posts, etc.

41. USE OF WATER

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.

42. USE OF CONSTRUCTION PLANT

42.1 "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.

42.2 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.

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

42.4 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.

42.5 Clauses 42.1 to 42.4 shall apply mutatis mutandis to the use of maintenance machines of any nature.

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

43.1 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.

43.2 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.

44. TRACTION RETURN CIRCUITS IN RAILS

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

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

rendered safe by Transnet personnel.

- 44.3 The Grantee shall not break any permanent bonds between rails or between rails and any structure. He shall give the Technical Officer at least 7 days written notice when removal of such bonds is necessary.
- 44.4 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.

45. BLASTING

- 45.1 The Grantee shall obtain the permission of the Electrical Officer (Contracts) before blasting, and shall give at least 14 days notice of his intention to blast.
- 45.2 No blasting shall be done in the vicinity of electrified lines unless a member of Transnet's electrical personnel is present.
- 45.3 The terms of clause 13 hereof shall be strictly adhered to.

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

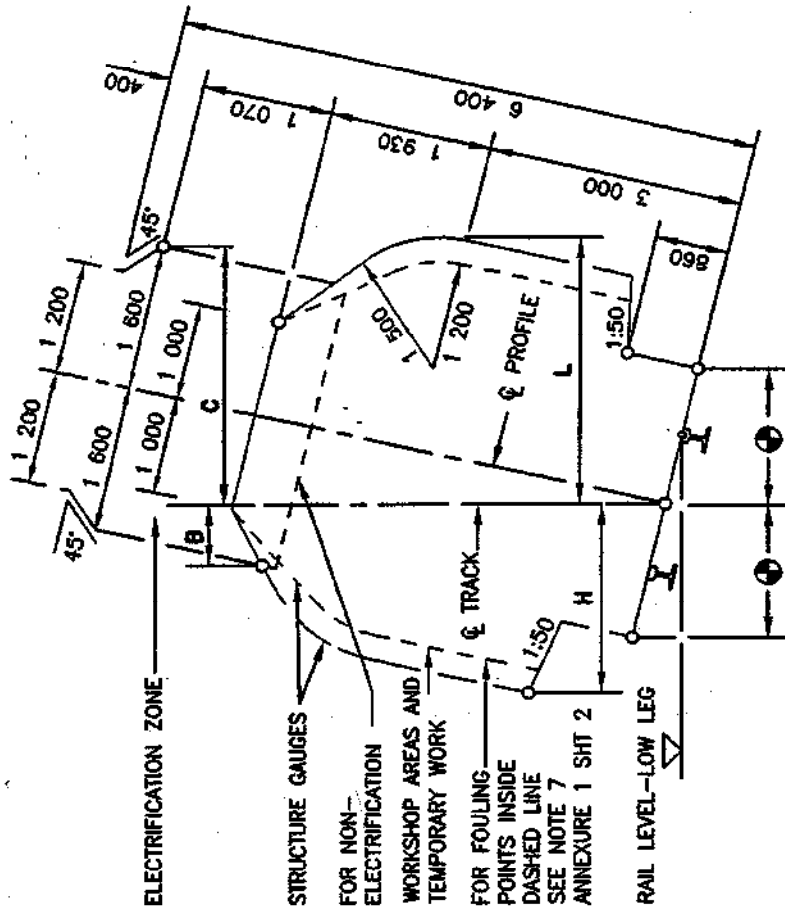
Where the work is undertaken on or near high-voltage electrical equipment on or in close proximity to Transnet Property, which is not maintained and/or operated by Transnet, the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), and Regulations and Instructions issued thereunder shall apply, together with the Safety Instructions (Regulations of the Owner of the Equipment).

Such equipment includes :-

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

ANNEXURE 1
SHEET 1 of 5
AMENDMENT

HORIZONTAL CLEARANCES :
1 065mm TRACK GAUGE



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.

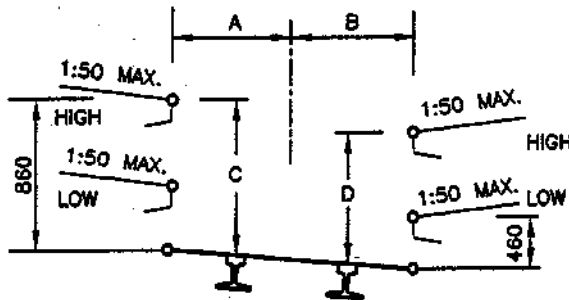
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April 2017)

ANNEXURE 1
SHEET 3 of 5
AMENDMENT

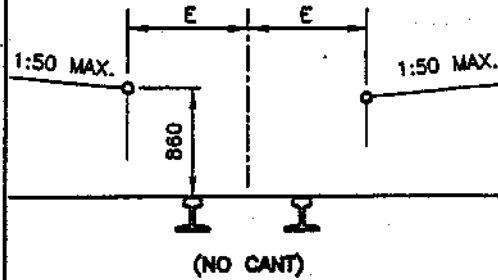
CLEARANCES : PLATFORMS

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:

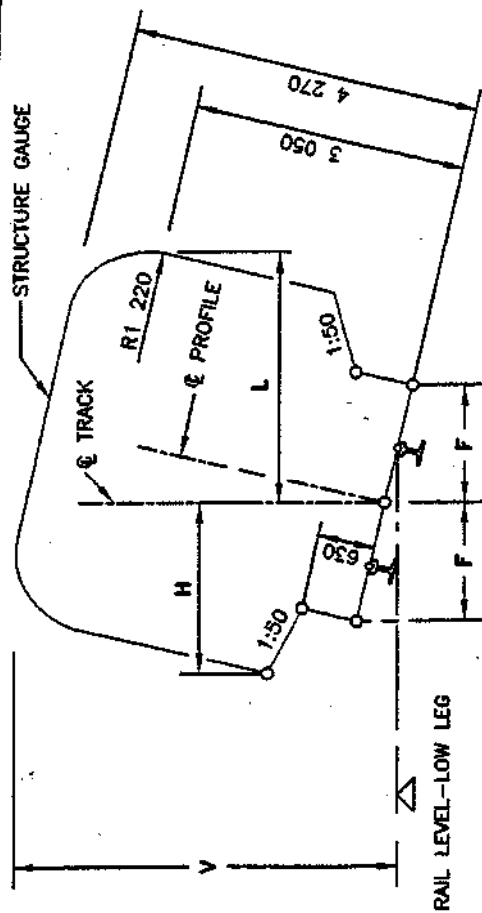
1. NO CANT TO BE APPLIED EXCEPT WHEN THE GOODS PLATFORM IS ON A RUNNING LINE.
2. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
3. 8m TO MAIN STATION-BUILDINGS AND 3m TO ALL OTHER STRUCTURES.
4. TOLERANCES : SEE CLAUSE 8.0.10.

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



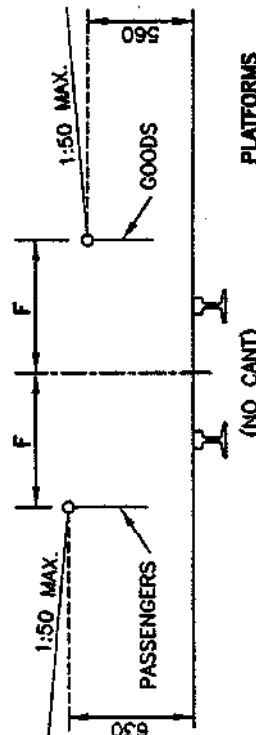
ANNEXURE 1
SHEET 5 of 5
AMENDMENT

CLEARANCES : 610mm TRACK GAUGE



RADIUS (m)	F (mm)
50	1 550
60	1 510
80	1 480
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

(NO CANT)

RADIUS (m)	WITH CANT		NO CANT	
	H (mm)	L (mm)	H & L (mm)	V (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:

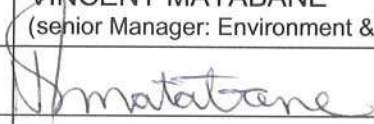
1. H IS THE MINIMUM HORIZONTAL CLEARANCE ON THE OUTSIDE OF THE CURVE BASED ON MINIMUM CANT.
2. L IS THE MINIMUM HORIZONTAL CLEARANCE ON THE INSIDE OF THE CURVE BASED ON MAXIMUM CANT.
3. V IS THE MINIMUM VERTICAL CLEARANCE.
4. FOR APPLICATION AT CURVES:
 - 4.1 APPLY INCREASED CLEARANCES FOR CURVES TO 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.

RISK MANAGEMENT: ENVIRONMENT AND SUSTAINABILITY

NAME OF DOCUMENT:

TFR STANDARD ENVIRONMENTAL SPECIFICATIONS (SES)



Document number	EMS - WI – JHB - 001
File reference number	TFR/EMS (SES) – 001
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Approver Signature	
Approval Date	16/09/2014

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SUMMARY REVISION CONTROL

REVISION NO.	NATURE OF AMENDMENT	DOC. NO.	PAGE NO.	DATE REVISED

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1. DEPARTMENT CODES

Description	Code
Corporate Safety Office	CSO
Environment and Sustainability	E&S
Enterprise Risk Management	ERM
Finance	FIN
Human Capital Management	HCM
Information and Communications Technology	ICTM
TFR Operations	OPS
School-of-Rail	SoR

2. MANAGEMENT SYSTEM CODES

Description	Code
Environmental Management System	EMS
Integrated Management System	IMS
Occupational Health and Safety Management System	OHSA
Quality Management System	QMS
Safety Management System	SMS

3. DOCUMENTATION TYPE CODES

Description	Code
Certificate	CR
Contract	CT
Form	FM
Guideline	GU
Learner Guide	LG
List	LI
Manual	ML
Memorandum	MM
Policy	P
Policy Manual	PM
Procedure	PR
Process	PS
Work Instruction	WI
Standard Operation Procedure	SOP

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4. PURPOSE

This standard describes the minimum environmental management standards to which TFR project managers, contractors and sub-contractors must conform to while undertaking construction work on construction site. It is a generic standard for use across all construction works within Transnet Freight Rail.

Construction works have the potential to adversely impact the environment. The purpose is to assess, rectify and manage the activities that have potential to cause environment degradation.

One of Transnet Freight Rail (hereinafter referred to as “TFR”) environmental strategies is the establishment and maintenance of an Environmental Management System, aligned to the International Standard, ISO 14001. Linked to this is a commitment to the development and implementation of Environmental Management Plans (EMP) for TFR construction activities. The purpose therefore can be summarised as follows:

The main purpose of this standard is to foster environmental due diligence and sustainability into contractor’s activities which can be achieved by:

Managing potential negative environmental impacts of activities,
Identifying management plans to mitigate these impacts,
Allocating responsibilities and resources to implement identified plans,
Monitoring the effectiveness of these measures.

5. SCOPE AND APPLICABILITY

This standard applies to all contractors that perform construction, maintenance and renovations works on Transnet Freight Rail (TFR) properties.

6. LEGISLATIVE REQUIREMENTS

A numbers of environmental laws and regulations present TFR with an obligation to monitor, interpret and implement systems to comply with legal requirements.

The list of environmental legislation below was compiled to ensure that contractors working on TFR land properties are aware of legal responsibilities and liabilities. Complying with these laws and regulations will assist in minimising the risks, both legal and financial (claims).

Non-compliance to environmental law is a criminal offence and if prosecuted offenders will be liable for any environmental damage incurred. Moreover, TFR subscribes to polluter-pays and duty of care principles.

ASPECT	REFERENCE/LEGISLATION
Socio cultural issues & Environmental Management	<ul style="list-style-type: none"> Constitution of the republic of South Africa 108 of 1996 Occupational Health and Safety Act No. 85 of 1993
Environmental Authorizations – applicable to the project	National Environmental Management Act (Act 107 of 1998)
Dust Management	<ul style="list-style-type: none"> National Environmental Management Act – Air

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	<p>Quality (Act 39 of 2004)</p> <ul style="list-style-type: none"> Atmospheric Prevention Pollution Act No. 45 of 1965
Work close to protected areas	National Environmental Management Act – Protected Areas Act (Act 57 of 2003)
Work along coastline	National Environmental Management Act – Integrated coastal management Act (Act 24 of 2008)
Fire Hazards	National Veld and Forest Fires Act No. 101 of 1998
Applicable Minimum Standards	<ul style="list-style-type: none"> Standard Acts No. 29 of 1993 ISO 14001-2004 ISO 9001 – 2008 OHSAS 18001 – 2007 SANS 10103:2004
Site establishment and Access	<ul style="list-style-type: none"> Fencing Act No. 31 of 1963 <ul style="list-style-type: none"> ⇒ Prohibition of damage to a property owner's gate and fences ⇒ Climbing or crawling over or through fences without permission ⇒ Closing of gates. Conservation of Agricultural Resources Act No. 43 of 1983 <ul style="list-style-type: none"> ⇒ Soil conservation Atmospheric Pollution Prevention Act No. 45 of 1965 <ul style="list-style-type: none"> ⇒ Control all forms of air pollution – dust, vehicle fumes
Water Management	<ul style="list-style-type: none"> National Water Act No. 36 of 1998 <ul style="list-style-type: none"> ⇒ All aspects relating to pollution of surface and ground water. National Water Services Act No. 108 of 1997 <ul style="list-style-type: none"> ⇒ Permits required for use of water and disposal of water effluent.
Flora & Fauna	<ul style="list-style-type: none"> National Environmental Management Act – Biodiversity Act (Act 10 of 2004) Sea Shore Act No. 21 of 1995 National Forest Act No. 84 of 1998 <ul style="list-style-type: none"> ⇒ Control of veld, forest and mountain fires ⇒ The protection of biota and ecosystems ⇒ Protected trees ⇒ Fire control areas. Conservation of Agricultural Resources Act No. 43 of 1983 <ul style="list-style-type: none"> ⇒ Control of alien invasive

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	<ul style="list-style-type: none"> • Environment Conservation Act No. 73 of 1989 ⇒ Protected natural environment. • National Environmental Management Act No. 107 of 1998 ⇒ Duty of care & remediation of environmental damage.
Waste Management	<ul style="list-style-type: none"> • National Environmental Management Act – Waste Act (Act 59 of 2008) • Dumping at Sea Control Act No. 73 of 1980 • Marine Living Resources Act 18 of 1998 • National Water Act No. 36 of 1998 ⇒ All aspects relating to pollution of surface and ground water. • Advertising on Roads and Ribbon Development Act No. 21 of 1940 ⇒ Prohibition of depositing or leaving of certain articles or material near certain roads. ⇒ Waste near roads. • Environmental Conservation Act No. 73 of 1989 ⇒ Controls for the effective protection and utilisation of the environment ⇒ Littering, waste disposal, noise and various other activities which may have a detrimental effect on the environment. • Occupational Health and Safety Act No. 85 of 1993 ⇒ Exposure of workers to waste products. ⇒ Transportation and disposal of hazardous chemical substances. • Health Act No. 63 of 1977 ⇒ Control of health aspects of waste disposal and water treatment.
Spillages of Hazardous Substances	<ul style="list-style-type: none"> • Hazardous Substances Act No. 15 of 1973
Protection of heritage resources	<ul style="list-style-type: none"> • National Heritage Resources Act 25 of 1999 • Environmental Conservation Act No. 73 of 1989
	<ul style="list-style-type: none"> • Transnet Freight Rail Safety, Health and Environmental Policy
	<ul style="list-style-type: none"> • Transnet Freight Rail Construction Environmental Management Plan (CEMP)

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7. STANDARDS FOR ENVIRONMENTAL MANAGEMENT

The contractor shall identify the potential environmental impacts that may occur as a result of their activities and accordingly prepare method statement describing how each of the impacts will be managed or prevented so that the standards set out in this document are achieved.

7.1 SITE ESTABLISHMENT AND ACCESS

7.1.1. Objective

To ensure that environmental issues are taken into account during the establishment of site offices and all other facilities on site.

7.1.2. Scope

This standard applies to all activities relating to the planning, site establishment, operation and closure of the site.

7.1.3. Site plan

The contractor shall establish his construction camps, offices, workshops, staff accommodation and any other facilities on site in a manner that does not adversely affect the environment. However, before construction can commence, the contractor shall submit to the Construction Manager for his approval; plans of the exact location extend and construction details of these facilities and the impact mitigation measures the contractor proposes to put in place to remedy any effects.

The plans shall detail the locality as well as the layout of all waste management facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas. It is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course. Regardless of the chosen site, the contractor's intended mitigation measures shall be indicated in the plan. Such a site plan shall be submitted for Construction Manager's approval.

7.1.4. Provision of sanitary facilities

Particular reference in the site establishment plan shall be given to any need for handling of sewage to be generated at the site offices, staff accommodation and at all localities on the site, where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the Environmental Manager.

Safe and effective sewage treatment will require one of the following sewage handling methods: Septic tanks and soak – away, dry-composting toilets such as “enviro loos”, or the use of chemical toilets which are supplied and maintained by a subcontractor. The type of sewage facility will depend on the location of the site and the surrounding land uses, the duration of the contract and proximity (availability) of providers of chemical toilets. The location shall be decided with input from Environmental Manager. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system. The waste material generated from these facilities shall be serviced on a regular basis.

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Toilet and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of open areas (i.e. the veld) shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from being blown. The toilets shall also be placed outside areas susceptible to flooding. The contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such facilities in a clean, orderly and hygienic condition to the satisfaction of the construction manager.

7.1.5. Access

If private property has to be crossed in order to access the construction site, the landowner(s) should be approached to request access.

No fences or gates that provide access to the construction sites may be cut, lowered, removed or damaged in any way. Private gates should be left as they are found (open or closed). Any irregularities caused by the construction team concerning fences and gates (e.g. an open gate or lowered fence) should be investigated.

7.1.6 Water supply for human use

7.1.6.1. Objective

To ensure that there is adequate, safe water supply for all personnel on site.

7.1.6.2. Scope

Managing the water supply on site and controlling the abstraction of water from natural resources in the area.

7.1.6.3 Water Management

Oil, petrol, diesel, herbicides, cleaning solvents, etc. must not be allowed to contaminate any surface water, ground water and / or drainage systems. Storm water shall be managed to ensure that it does not become polluted. If the substation site is located close to a river, stream, dam, borehole, or the water table is high; contingency plans must be in place to minimise the impact of accidental oil or toxic spillages. All water contaminated by oil or toxic spills must be reported to the Department of Water Affairs and Forestry, via approved reporting procedures.

Storm water run-off must be efficiently managed and must not cause erosion or damage to surrounding property. Guidance on methods to improve drainage of the site erosion should be directed to TFR Infra for Civil Engineering inputs.

Drainage systems must be kept clean and clear of any debris at all times.

7.1.7 Collection of water from natural resources

No water for domestic use (drinking water, for bathing or washing) shall be abstracted from any water resource (stream, river, or dam) without the express permission of the TFR Project Manager. Such permission shall only be granted once it can be shown that the water is safe for use, that there is sufficient water in the resource to meet the demand, and once permission has obtained from the Department of Water Affairs in accordance with the requirements of the National Water Act (Act 36 of 1998).

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7.1.8 Provision of drinking water

Water for human consumption shall be available at the site offices and at other convenient locations on-site. The generally acceptable standard is that a supply of drinking water shall be available within 200m of any point on the construction site.

7.1.9 Provision of energy for camp site

7.1.9.1. Objective

To prevent illegal and unauthorized collection of firewood.

7.1.9.2. Scope

This is applicable to all activities that may require collection of firewood.

7.1.9.3. Collection of firewood

The contractor shall provide adequate facilities for all staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The contractor shall ensure that energy sources are available at all times for construction heating and cooking purposes. No open fires shall be allowed.

7.2. WASTE MANAGEMENT.

7.2.1. Objective

To ensure that all waste generated during construction and commissioning of the facilities is properly disposed of.

7.2.2. Scope

This standard applies to all construction, commissioning and site activities that may lead to the generation of waste.

7.2.3. Approach

Waste is grouped into general or hazardous depending on its characteristics. The classification determines handling methods and the ultimate disposal of the material.

General waste to be expected during construction includes the following:

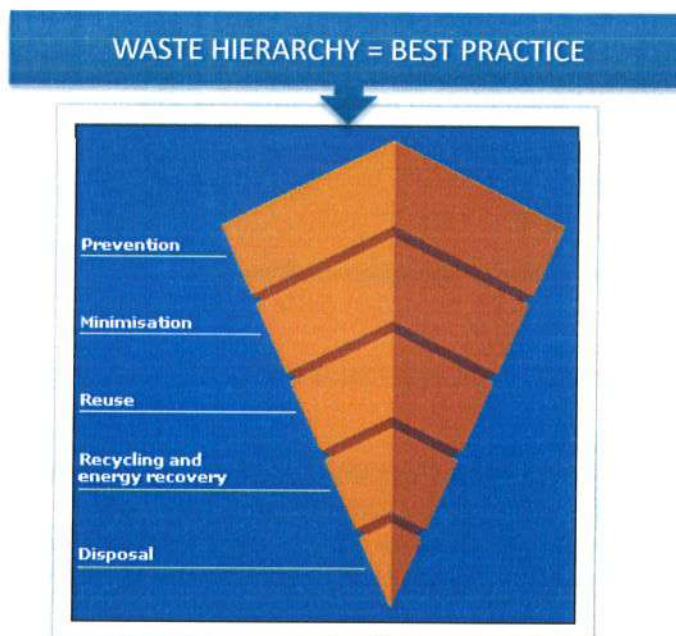
- Trash (waste paper, plastics, cardboard, etc.) and food waste from offices, warehouses and construction personnel.
- Uncontaminated construction debris such as used wood and scrap metal.
- Uncontaminated soil and non-hazardous rubble from excavation or demolition.

Hazardous waste means any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical characteristics, such as toxic, ignitable, corrosive, carcinogenic or other properties or toxicological characteristics of that waste, have a detrimental impact on health and the environment.

7.2.4. Waste Hierarchy

A hierarchical control approach to waste management is encouraged. Waste should preferably be managed in the following order:

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Prevent: waste avoidance and minimisation during production

Recycle: waste recycling, recovery and utilisation

Treat: waste treatment in order to reduce toxicity and to minimise the quantities of waste

Disposal: waste disposal, probably by incineration, destruction or landfill.

7.2.5. Waste management

Littering is prohibited at all times. The contractor is responsible for the removal of all waste from site generated through the contractor's activities. The construction works site should have a proper waste collection facility and a disposal system in place. Waste should only be disposed of at a registered facility – this refers to municipal dumps. The latest list of waste sites in the region is available from the Department of Water Affairs, Department of Environmental Affairs and www.sawic.org.za.

The classification of waste determines handling methods and ultimate disposal of the material. The contractor shall manage hazardous wastes that are anticipated to be generated by his operations as follows:

- Characterise the waste to determine it is general or hazardous
- Obtain and provide an acceptable container with label
- Place hazardous waste material in container
- Inspect the container on a regular basis as prescribed by the contractor's waste management plan
- Track the accumulation time for the waste
- Haul the full container to the disposal site
- Provide documentary evidence of proper disposal of the waste to TFR Environmental Management.

The contractor's Environmental Officer must work in conjunction with the contractor's Safety and Industrial Hygiene personnel to create a hazardous materials management program.

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This program will establish the necessary protocol for proper handling and removal of hazardous material on site.

Information on each hazardous substance must be available to all persons on site in the form of Material Safety Data Sheets (MSDS). Training and education about proper use of MSDS, handling, and disposal of the waste must be provided to all workers handling the waste. The contractor's environmental officer must be informed of all activities that involve the use of hazardous substances to facilitate prompt response in the event of a spill or release.

All hazardous waste must be suitably enclosed, labelled and stored. The storage area must be properly demarcated and cordoned-off as per legislation. General and hazardous waste must be stored in separate bins. Recycling and re-use is mandatory. Under no circumstances is waste, including cleared vegetation, is to be burnt at the construction work site.

The contractor is obliged to control waste generating activities of both Hazardous and non-Hazardous waste by:

- Eliminating waste generation or reducing the total volume,
- Reducing the degree of contamination of waste generated,
- Reclaiming materials otherwise considered waste.

The contractor shall recycle general waste that is anticipated to be generated by its operations as follows:

- Obtain and label recycling containers for:
 - Office waste
 - Aluminium
 - Steel
 - Glass
 - Ferrous metals
 - Non Ferrous metals
 - Waste timber
 - And locate them within temporary office building and trailers
- Establish recycled material collection schedule
- Arrange for full bins to be hauled away

7.2.6. Effluent management

All effluent water from the camp/office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water courses (streams, rivers, pans dams etc.). Only domestic type waste water shall be allowed to enter the designated system. Any release of contaminated waste water shall be in accordance with applicable water release standards and permits.

7.3. VEHICLE & EQUIPMENT REFUELLING

7.3.1. Objective

To eliminate or control fuel and oil spillage at refuelling facilities

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7.3.2. Scope

This standard applies to all refuelling, lubrication and oil changing requirements on all vehicles and machinery.

7.3.3. Refuelling

The use of engine driven compressors, pumps, air conditioners and arc welders could generate leaks (usually oil) that can accumulate to become spills, which require clean-up. These leaks become more evident if the equipment remains in the same place for an extended period of time. Damaged fuel tanks, fuel hoses, and fuel pumps can be sources of significant fuel leaks. Hydraulic systems can blow gaskets or hoses resulting in large quantities of hydraulic fluid spilled to the ground.

7.3.3.1. Control

No vehicles or machines shall be serviced or refuelled on site except at designated servicing or refuelling locations. No oil or lubricant changes shall be made except at designate locations, unless in case of breakdown or emergency repair. As part of the method statement, the contractor shall submit to TFR, a standard operating procedure for fuelling.

The contractor shall store fuel and oil at a designated area, which shall be banded to contain 110% of the total volume, the bund wall shall be designed or constructed with an impervious layer or liner or paved surface to prevent spillage from entering the ground.

As part of the method statement, the contractor shall provide details of its proposed fuel storage and fuelling facility to the TFR Environmental Officer for approval. The design shall comply with the regulations of the National Water Act No. 36 of 1998. The Hazardous Substances Act No. 15 of 1973, the Environmental Conservation Act No. 73 of 1989 and the Occupational Health and Safety Act No. 85 of 1993, with special reference to the requirements of the Hazardous Chemical Substances Regulations.

7.3.3.2. Spill Response

The contractor shall comply with the regulations of the National Water Act No. 36 of 1998, the Hazardous Substances Act No. 15 of 1973, the Environmental Conservation Act No. 73 of 1989 and the Occupational Health and safety Act No. 85 of 1993, when responding to spillage incidences.

The contractor shall provide details for approval by the TFR Environment, Fire and Hazmat Manager of its spill response plan prior to commencing work on site. The plan will show measures to be taken to remove contaminated soils from site and demonstrate complete removal of contamination in the event of spills.

The contractor shall instruct own personnel on the following spill prevention and containment responsibilities:

- Immediately repair all leaks of hydrocarbons or chemicals,
- Take all reasonable means to prevent spills or leaks,
- Do not allow sumps receiving oil or oily water to overflow,
- Prevent storm water runoff from contamination by leaking or spilled drums of oil or chemicals,
- Do not discharge oil or contaminants into storm water or sewer systems.

If the spill occurs on land, the contractor must:

- Immediately stop or reduce the spill,

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- Contain the spill,
- Recover the spilled product,
- Remediate the site,
- Implement actions necessary to prevent the spill from contaminating groundwater or off-site surface water,
- Dispose of contaminated material to a location designated thereto and submit disposal certificate to TFR Environment, Fire and Hazmat Manager.

Any spill to water has the potential to disperse quickly; therefore, the spill must be contained immediately using appropriate containment equipment.

If a spill to water occurs, the contractor must:

- Take immediate action to stop or reduce the spill and contain it,
- Complete section 30 Report and Notify the appropriate on-site authorities,
- Implement actions necessary to prevent the spread of the contamination by deploying booms and/or absorbent material,
- Recovery of the spilled product,
- Proper disposal of spilled material.

7.4. SPRAY PAINTING & SAND BLASTING

7.4.1. Objective

To ensure that all the spray painting and sand blasting on site is conducted in a controlled manner where appropriate measures are taken to prevent paint contamination of the soil and to ensure that sandblasting grit/media is properly contained and disposed of.

7.4.2. Scope

Applicable to all spray painting and sandblasting on site.

7.4.3. Spray Painting and Sand Blasting

Spray painting and sand blasting should be kept to a minimum. All painting should, as far as practicable, be done before equipment and material is brought on site. Touch-up painting is to be done by hand painting or by an approved procedure. This should form part of the method statement to be submitted to the TFR Environmental Manager for approval.

The relevant contractor will inform his Environmental Officer of when and where the spray painting or sand blasting is to be carried out prior to commencement of work. The Environmental Officer will monitor these activities to ensure that adequate measures are taken to prevent contamination of the soil.

NB: if the area is in confined or high (elevated) areas, a protection plan must be issued for approval.

7.5. DUST MANAGEMENT

4.5.1. Objective

To prevent/control the generation of dust on the construction site and access roads.

4.5.2. Scope

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Contractors (associated with activities such as earthworks, geotechnical surveys, pilling storm water drainage, construction of roads and railways, foundations, brick building, operation workshops, fencing, erecting construction camps and batch plant activities, etc.) shall submit a dust control plan for approval by the TFR Environmental Manager.

7.5.3. Management of Dust

Material in transit should be loaded and contained within the load bin of the vehicle in such a way as to prevent any spillage onto the roads and the creation of dust clouds. If necessary, the load bin of the vehicle shall be covered with a tarpaulin to prevent dust.

Dust is to be controlled on unpaved access roads and site roads using sprayed water contractors are responsible for managing dust generated as a result of their activities. The contractor will be responsible for dust control of the entire construction area.

Some dust control measures which are normally applied during construction are presented in this section for inclusion by the contractor in his dust control method statement.

The dust mitigating procedures include the following:

- Limit vehicle speeds on unpaved roads to 20km/h
- Wash paved surfaces within the construction area twice a week
- Minimise haulage distances
- Apply water to gravel roads with a spraying truck when required
- Environmentally friendly soil stabilisers may be used as additional measures to control dust on gravel roads and construction areas
- Construction material being transported by trucks must be suitably moistened or covered to prevent dust generation.
- Strip and store topsoil in separate stockpiles with mounds not exceeding 2meters in height to, among other things, prevent wind-blown dust.
- Minimise disturbances of natural vegetation during right of way construction (e.g. erection of fences) to reduce potential erosion, runoff and air-borne dust.
- Implement a system of reporting excessive dust conditions by construction personnel (as instructed through Environmental Awareness Training)

Water for dust control shall be taken ONLY from approved sources.

7.6. STORM WATER & DEWATERING MANAGEMENT

7.6.1. Objective

To ensure that storm water and dewatering drainage across the site occurs in a manner that will negate contamination by oils, fuels, litter and other waste to prevent erosion of the construction terrace.

7.6.2. Scope

All runoff and dewatering activities.

7.6.3. Storm Water and dewatering management

Water is a valuable resource. Both the quality and quantity of the water used by the contractor should be considered in making resource conservation plans.

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Construction activities that may potentially impact on surface water and groundwater are: runoff and percolation; dewatering activities; and miscellaneous liquid wastes associated with construction activities.

In general, construction activities may affect water quality and/or quantity of groundwater and/or surface water of the area.

The contractor shall be aware that, apart from runoff from overburden emplacements and stockpiles, storm water can also be contaminated from batch plants, workshops, vehicle wash-down pads, etc., and that contaminants during construction may include hydrocarbons from fuels and lubricants, sewerage from employee ablutions and excess fertilizer and rehabilitated areas, etc.

The contractor shall take note that discharges to controlled waters such as sea, rivers, and groundwater or to sewerage systems are controlled under South African water Legislation.

7.6.3.1 Surface runoff

Construction activities such as surface grading and excavation will disturb surface areas on site. This will increase the potential for soil erosion and subsequent sediment transport during periods of precipitation runoff or when excavation dewatering is required. Construction activities have a potential to change local surface drainage and sediment transport patterns, site floodplain delineation, and percolation rates into soil.

7.6.3.2 Dewatering

Dewatering during groundwork produces a surface water discharge that will require collection and sedimentation. Dewatering also has a potential to affect groundwater quality and quantity.

7.6.3.3 Management Requirements

Temporary drainage must be established on site during construction period until permanent drainage is in place. Contractors are responsible for maintaining the temporary drainage in their areas. Contractors must provide secondary drainage that prevents erosion.

Contractors must employ good housekeeping in their areas to prevent contamination of drainage water.

The contractor shall clear stagnant water.

Specific water management measures (surface and groundwater) for incorporation by Civil/Earthworks contractors into their EMP's include the following:

The Contractor shall ensure that no contaminated surface water shall flow off-site as a result of Contractor operations. Silt traps shall be constructed to ensure retention of slit on site and cut-off ditches shall be constructed to ensure runoff from the site except at point where silt traps are provided.

If applicable, the Contractor shall be responsible for collection, management and containment within the site boundaries of all the dewatering from all general site preparation activities. The dewatering water shall be contained within the site boundaries by subsequently pumping or routing water to and from sub-areas within the site as the

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construction activities precede. No discharge/dewatering to off-site land or surface water bodies will be allowed.

On-site drainage shall be accomplished through gravity flow. The surface drainage system shall consist of mild overland slopes, ditches and culverts. The graded areas adjacent to buildings shall be sloped away with a 5% slope. Other areas shall have a minimum slope of 0.2% or otherwise indicated.

Ditches shall be designed to carry a 25-year storm event with velocities in accordance to minimise erosion. Erosion protection shall consist of suitable stabilising surfaces in all ditches.

Culverts shall be designed to ensure passage of the 25-year storm peak runoff flow.

Both structural and non-structural (vegetation) erosion control measures will be designed, Implemented, and properly maintained in accordance with best management practices which will include the following:

Scheduling of activities to minimise the amount of disturbed areas at any one time.

Implementation of re-vegetation as early as feasible.

Limiting construction traffic and/or avoidance thereof on access roads and areas to be graded to the extend feasible at drainage ditches.

Compacting loose soil as soon as possible after excavation, grading and filling.

Using silt fences, geo-textiles, temporary rip-rap, soil stabilisation with gravel, diversionary beams and swales, small sedimentation basins, and gravelled roads to minimise transport of sediment.

Implementing the erosion and sedimentation control plan and ensuring that the construction personnel are familiar with and adhere to.

Managing runoff during construction

The contractor shall be responsible for checking and maintaining all erosion and sedimentation control.

7.7. NOISE MANAGEMENT

7.7.1. Objective

To maintain construction noise at the site within legal limits

7.7.2. Scope

Any noise generated at the construction site.

7.7.3. Noise Management

Keep all equipment in good working order.

Operate equipment within specifications and capacity and don't overload the machines.

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Apply regular maintenance, particularly with regards to lubrication

Operate equipment with appropriate noise abatement accessories, such as sound hoods and ear plugs.

Noise control measures for incorporation by the contractor in its noise control plan shall include the following:

Ensure that the potential noise source will conform to the South African Bureau of Standards recommended code of practice, *SANS 10103:2004*, so that it will not produce excessive and undesirable noise when released.

The entire Contractor's equipment shall be fitted with effective exhaust silencers and shall comply with the South African Bureau of Standards recommended code of practice, *SANS 10103:2004*, for construction plant noise generation.

All the Contractor's vehicles shall be fitted with effective exhaust silencers and shall comply with the Road Traffic Act, (Act 29 of 1989) when any such vehicle is operated on a public road.

If on-site noise control is not effective, protect the victims of noise (e.g. ear-plugs) by ensuring that all noise-related occupational health provisions are met. (Occupational Health and Safety Act, (Act 85 of 1993))

7.8. PROTECTION OF HERITAGE RESOURCES

7.8.1. Objective

To ensure the protection of archaeological, historical artefacts, or heritage resources discovered during construction activities.

7.8.2. Scope

Archaeological, Historical Artefacts, or Heritage resources discovered on or near the site.

7.8.3. Archaeological sites

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the engineer of such a discovery. The South African Heritage Resources Agency (SAHRA) is to be contacted and will appoint an archaeological Consultant. Work may only resume once clearance given in writing by the Archaeologist.

7.8.4 Graves and Middens

If a grave or midden is uncovered on site, or discovered before commencement of work, all work in the immediate vicinity of the graves/middens shall be stopped and the engineer be informed of the discovery. The National Monuments council should be contacted and in the cases of graves, arrangements made for an undertaker to carry out an exhumation and reburial. The undertaker will, together with the National Monuments Council, be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred.

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7.9. PROTECTION OF LIVESTOCK & GAME

7.9.1. Objective

To prevent illegal activities potentially perpetrated by staff and to prevent the killing of any animals trapped in the construction works or discovered on the construction site or surroundings.

7.9.2. Scope

Managing the activities of site staff during work and after hours.

7.9.3. Poaching of Livestock or Game

On no account shall any hunting or fishing activity of any kind be allowed. This includes setting of traps, or the killing of any animal caught in the construction works.

7.9.4 Killing of animals

On no account shall any animal, reptile or bird of any sort be killed, this specifically includes snakes or other creatures considered potentially dangerous discovered on site. If such an animal is discovered on site an appropriately skilled person should be summoned to remove the creature from the site. Consideration should be given to selection and nomination of such person prior to site establishment. If no-one is available, training should be provided to at least two site staff members.

7.10. FIRE PREVENTION

7.10.1. Objective

To minimise the risk of uncontrolled fires.

7.10.2. Scope

All activities on or near the site that could initiate and uncontrolled fire.

7.10.3. Fire Control

Fires shall only be allowed in facilities or equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office sites. All conditions incorporated in the requirements of the Occupational Health and Safety Act shall be implemented.

7.11. SPILLAGE OF HAZARDOUS SUBSTANCES

7.11.1. Hazardous Spillages Reporting & Records Keeping

In the event of a spillage, the incident will be reported (according to the TFR Occurrence Procedure: IMS PR 014). The investigation report should be copied to the Environmental Manager for record keeping.

Mobile oil clean-up kits must be available for accidental spills. The mobile kit should be available on any vehicle transporting oil containing materials.

In the event of an oil spill, the first priority is to contain the spill. The emergency programme for oil spills, as developed during the Method statement must then be followed. It is preferred that spillages and contaminated areas are treated on site. However, circumstances may necessitate the removal of contaminated soil for treatment – this area must be clearly demarcated and cordoned off.

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Bund walls should be secure from leaks and damage. Oil traps must be pumped out regularly and remain free of debris. Oil taps should be securely closed unless it is necessary for water to be drained from the bund area.

7.12. HANDLING & BATCHING OF CONCRETE AND CEMENT

7.12.1. Objective

To control cement and concrete batching activities so as to prevent the spillage of cement waste water and potential contamination of soil, groundwater and marine environment (where applicable). To avoid or substantially reduce dust emissions caused by cement and concrete activities on site ensure that no noise nuisance results from batching activities.

7.12.2. Scope

Cement and concrete batching activities commonly produce cement-laden (contaminated) runoff, mainly from washing of mixing equipment. The contaminated runoff is alkaline and contains high levels of chromium, which causes leachate that may ultimately contaminate groundwater. Cement contaminated water can also increase the pH level of marine waters and cause detrimental damage to aquatic life.

Fine dust particles containing cement and concrete are pollutants and can cause damage to neighbouring amenities when allowed to spread. Excessive noise during batching may cause stress to employees on site and other people within the construction vicinity.

This standard applies to all cement and concrete batching activities, delivery of ready mix concrete and small scale mechanical & hand mixing of concrete and cement, as well as the washing of equipment used in these activities on construction sites managed by TFR.

7.12.3. Handling and batching of concrete and cement

7.12.3.1. Siting

Concrete batching shall only be conducted in demarcated areas which have been approved by the TFR Project Manager. Such areas shall be fitted with a contaminated facility for the collection of cement laden water. This facility shall be bunded and have an impermeable surface protection so as to prevent soil and groundwater contamination.

Drainage of the collection facility will be separated from any infrastructure that contains clean surface runoff. The batching facility will not be placed in areas prone to floods or the generation of stagnant water. Access to the facility will be controlled so as to minimise potential environmental impacts.

7.12.3.2. Handling and Storage

Hand mixing of cement and concrete shall be done on a mortarboard and/or within the bunded area with impermeable surface or concrete slab.

Bulk and bagged cement & concrete additives will be stored in an appropriate facility at least 10meters away from any watercourses, gullies and drains.

Waste water collected in the containment facility shall be left to evaporate. The contractor shall monitor water levels to prevent overflows from the facility. Water can be pumped into sealed drums for temporary storage and must be disposed of as liquid hazardous waste.

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All concrete washing equipment, such as shovels, mixer drums, concrete chutes, etc. shall be done within the washout facility. Water used for washing shall be restricted as far as practically possible.

The contractor shall periodically clean-out hardened concrete from the wash-out facility or concrete mixer, which can either be reused or disposed of as per accepted waste management practices and procedures.

Empty cement and concrete bags, if temporarily stored on site, will be secured with adequate binding material.

Sand and aggregates containing cement will be kept damp to prevent the generation of dust.

7.12.3.3. Disposal

Concrete or Cement or any solid waste materials containing concrete and cement will be disposed of at a registered disposal facility. Where disposal facilities for general waste are utilised, written consent from the relevant municipality must be obtained.

7.13. EROSION PREVENTION

7.13.1. Objective

To prevent Soil Erosion

7.13.2. Scope

All bare soil ground areas susceptible to erosion including gravel roads.

7.13.3. Erosion Prevention

All vehicle movements must be along existing roads and tracks. Vehicles should be driven at moderate speeds and within legal limits. Special care should be taken (especially in wet weather) to avoid eroding tracks. A single access track / road is to be used and multiple tracks are to be avoided at all times. In urban areas, access roads should be treated, where necessary, to avoid dust pollution.

Erosion of the access road, which cannot be remedied by simple compaction methods, should be referred to the TFR Infra for further assessment and recommendations. Soil binding agents and gabions are frequent methods used to combat erosion.

7.14. REHABILITATION

7.14.1. Objective

To ensure that all areas affected by the project are appropriately rehabilitated and re-vegetated in a manner congruent with the surrounding biophysical environment. The prevention of spread of alien invasive species.

7.14.2. Scope

All areas affected by the project including lay down areas.

7.14.3. Rehabilitation

Contractors shall rehabilitate their lay-down area/s upon completion of work on site. A rehabilitation plan will be submitted to the Construction Manager for approval at least six weeks before completion. The following are critical issues to be included in the rehabilitation plan:

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Details of soil preparation procedures including proposed fertilizers or other chemicals being considered for use.

A list of plant species that will be used in the rehabilitation process. Note these should be indigenous species, and preferably species that are endemic to the area. The assistance of an appropriately qualified Botanist should be sought in developing the list.

Procedures for watering the planted areas (frequency of watering, methodology proposed etc.)

An indication of the monitoring procedures that will be put in place to ensure the successful establishment of the plants (duration and frequency of monitoring, proposed criteria for declaring rehabilitation as being successful)

Procedures for the prevention of establishment and spread of alien invasive species.

7.15. SOCIO CULTURAL ISSUES

In the event that private property is damaged, it must be reported immediately to TFR and the landowner(s). Damage must be repaired to the satisfaction of the landowner (written proof of satisfaction must be obtained). Records of any complaints should be kept.

Local communities must be treated with the utmost respect and courtesy at all times. Infringement of their rights is strictly forbidden.

Stock, crops or activities on the surrounding private property should not be interfered with or disturbed. Wandering around the properties is not permissible (remain within the permitted working areas).

A list of the property owner's names, addresses and telephone numbers must be established and kept updated. A plan of action should be drawn up with the property owners. In case of an emergency (veld fire, vegetation problems etc.) The Contractor's contact names and telephone numbers must be given to these landowners.

The culture and lifestyles of the communities living in close proximity to the work sites must be respected.

Removal (pilfering) of agricultural products (sugar cane, fruit, vegetables, stock, firewood, poaching etc.) is prohibited. Receipts must be obtained for any merchandise purchased or received from land- owners (i.e. for meat, vegetables, wood).

Vehicles must be driven carefully in hazardous road conditions (sharp bends, narrow roads, bad weather, children playing on or near the road, domestic animals on or near the road etc.). Vehicle movement should be kept to a minimum during rain to avoid damage to access and farm roads.

Tribal graves, archaeological sites and sites of historical interest in close proximity to work sites are to be treated with respect and protected.

No firewood is to be collected except with the written consent of the landowner.

A register must be maintained of all complaints or queries received as well as action taken.

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Insure that affected property owners are informed of planned TFR activities on their land.

No off-road travelling is permitted in environmentally sensitive areas (Karoo, fynbos, coastal dunes, vleis and wetlands etc.).

7.16. ENVIRONMENTAL AWARENESS TRAINING

7.16.1. Objective

Environmental Management – Protecting the environment from the effects of construction by making personnel aware of sensitive environmental resources.

Regulatory Compliance – complying with requirements contained in project – specific permit conditions, also complying with requirements in the regional and local regulations.

Problem recognition and communication – training personnel to recognise potential environmental, i.e. spills, and communicate the problem to the proper person for solution.

Liability control – non-compliance with regulatory requirements can lead to personal and corporate liability.

7.16.2. Scope

All Personnel on the construction site.

7.16.3. Environmental Awareness training

An Environmental Awareness Program is considered a necessary part of Construction Environmental Management Plan for the project. Training of the appropriate construction personnel will help ensure that all environmental regulations and requirements are followed to be defined in the relevant Method Statement to be prepared by the Contractor.

All individuals on the Project Construction site will need to have a minimum awareness of environmental requirements and responsibilities. However, not all need to have a degree of awareness. The required degree of knowledge is greatest for personnel in the Safety, Health, and Environmental sections and the least for the manual personnel.

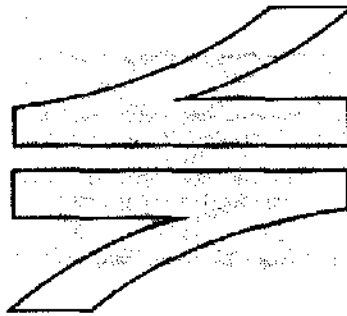
The Contractor shall keep a record of all the environmental related training of the personnel.

8. DOCUMENTATION

The Contractor must produce a method statement.

9. RECORDS

All documents generated in terms of this standard will be classes as records and retained for the life of the project.

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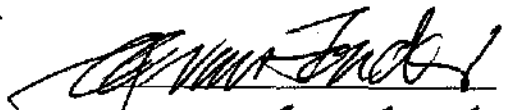

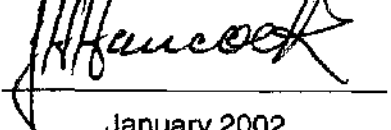
TECHNICAL
CONFIGURATION MANAGEMENT
SPECIFICATION CONTROL PAGE

**DRAWINGS, CATALOGUES, INSTRUCTION MANUALS
AND SPARES LISTS FOR ELECTRICAL EQUIPMENT
SUPPLIED UNDER CONTRACT**

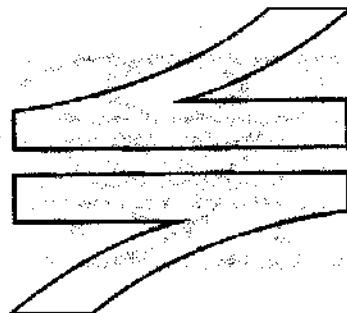
Statement of authorisation:

There is no SABS specification available for similar material / equipment and as far as can be ascertained no other specification / standard suitably covers SpoorNet requirements. The specification has been compiled in a manner which shall favour / encourage local manufacture of material / equipment to a maximum degree.

Author:	Chief Engineering Technician Documentation management	J C van Tonder
Approved:	Senior Engineer Railway Engineering	L O Borchard
Authorised:	Senior Technologist Configuration Management	J H Hancock

Date: 

 January 2002

This page is for control purposes only and shall not be issued with the specification.



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**TECHNICAL
CONFIGURATION MANAGEMENT
SPECIFICATION**

**DRAWINGS, CATALOGUES, INSTRUCTION MANUALS
AND SPARES LISTS FOR ELECTRICAL EQUIPMENT
SUPPLIED UNDER CONTRACT**

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Technical

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1.0 SCOPE

This specification covers Spoornet's requirements for drawings, catalogues, and instruction manuals and spares lists of electrical equipment supplied under contract.

2.0 DEFINITIONS

- 2.1 "Design drawings for approval" defines those drawings, which have to be submitted to Spoornet for approval prior to manufacture of equipment.
- 2.2 "Installation drawings" defines those drawings, which are required for the installation of the equipment.
- 2.3 "As Built drawings" defines those drawings, which reflect all the various approved designs, layouts, etc., of the actual final accepted state of the equipment.

3.0 STANDARDS AND SPECIFICATIONS

- 3.1 The following standards and specifications are referred to:

CEE.0012: Method of Tendering

SABS 0111: Engineering Drawings.

BS 308: Engineering Drawing Practice.

NRS 002: Graphical Symbols for Electrical Diagrams.

IEC 617: Graphical Symbols for Diagrams.

ASHRAE: American Society of Heating Refrigeration Air-conditioning Engineers Standard.

- 3.1.1 The following Spoornet standard (Electrical) symbol drawings are listed for reference:

CEE-PA-19: Symbols for Electrical Installations.

CEE-PA-42: Symbols for Distribution and Transmission Layout.

CEE-PA-101: Symbols for Air-conditioning installations.

CEE-TA-62: Standard Electrification Symbols.

- 3.2 Tenderers and contractors shall ensure that they work to the latest issues and amendments of the above standards and specifications.

4.0 APPENDIX

The following appendix forms an integral part of this specification:

Appendix 1: SCHEDULE OF REQUIREMENTS

This appendix calls for specific requirements applicable to the contract.

5.0 METHOD OF TENDERING

- 5.1 Tendering shall be in accordance with Spoornet (Electrical) specification CEE.0012.

- 5.2 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.
- 5.3 The Schedule of Requirements, Quantities and Prices, Appendix 1 to this specification shall be fully completed by Tenderers. Failure to submit a fully completed sheet may preclude a tender from further consideration.
- 6.0 LANGUAGE AND UNITS OF MEASURE**
- Drawings and documents shall be prepared in English and the ISO unit of measure. Other offers will be considered on merit.
- 7.0 DRAWINGS**
- 7.1 Drawings shall be generated in either Microstation or any CAD format, which can be read by Microstation, but offers on other media will be considered on merit.
- 7.2 Drawings shall be prepared in such a manner that they fully comply with the requirements of SABS 0111 and/or BS 308.
- 7.3 Symbols, with their explanations used on the drawings but not covered by the NRS 002, IEC 617, ASHRAE or Spoornet's symbol drawings shall be furnished i.e. then included on the drawing or supplied on a separate symbol list which is to be cross referenced to the drawing.
- 7.4 Where the publications referred to in clause 3.1 are at variance, the practice detailed in SABS 0111 shall take preference.
- 7.5 Drawings shall be prepared for ISO; "A" series size sheets and shall not be greater than A1 size except as detailed below.
- 7.5.1 Where under exceptional circumstances the nature of the work is such that a size A1 is impractical, then the A0 size may be used.
- 7.5.2 Long drawings, where necessary for wiring/circuit diagrams, cable run diagrams, track layouts, etc., shall be prepared with widths equal to the widths of the "A" series sheets as required, but preferably not exceeding the length of an A0 sheet.
- 7.6 All interrelated drawings shall be clearly and adequately cross-referenced.
- 7.7 The Contractor hereby grants to Transnet a non-exclusive licence, in accordance with the provisions of section 22 of the Copyright Act, 1978;
- 7.7.1 to copy any plan, diagram, drawing, specification, bill of quantities, design calculation or other similar document made by the Contractor, other than under the direction or control of Transnet, in connection with the extent of work;
- 7.7.2 to make free and unrestricted use thereof for its own purposes;
- 7.7.3 to provide copies thereof to consultants to Transnet to be used by them for the purpose of such consultations and consulting services and-
- 7.7.4 to provide other parties with copies thereof for the purpose of tenders invited by Transnet.

-
- 7.7.5 Such non-exclusive licence shall apply *mutatis mutandis* to any plan, diagram, drawing, specification, bill and/or schedule of quantities, design calculation or other similar document made, other than under the direction or control of Transnet, by any principal or sub-contractor of the Contractor. The provisions of this clause shall not apply to documents made, in the case of plant or equipment to be supplied, for the manufacturing process of such equipment, but only to the equipment supplied itself.
- 7.7.6 Transnet shall make no separate or extra payment in respect of any non-exclusive licence granted in terms hereof.
- 8.0 INFORMATION REQUIRED ON DRAWINGS**
- 8.1 A title block shall be provided in the lower right hand corner of each drawing, indicating:
- 8.1.1 Descriptive title.
 - 8.1.2 Contractor's drawing number.
 - 8.1.3 Space for Spoornet's drawing number (as requested in clause 7.7).
 - 8.1.4 Place of installation.
 - 8.1.5 Contract / Order number.
 - 8.1.6 Contractor's name.
 - 8.1.7 Signature or name of approving officer (as requested in clause 8.0).
 - 8.1.8 Approval date.
 - 8.1.9 Issue number.
 - 8.1.10 Projection symbol for multi-view drawings, if required.
- 8.2 Successful Tenderers can obtain a copy of Spoornet's standard title block (Microstation or DXF formats) free of charge by contacting the Documentation Management section.
- 8.3 On wiring and circuit diagrams, the following shall be specified:
- 8.3.1 Cable and wire sizes.
 - 8.3.2 Values of resistance.
 - 8.3.3 Breaking capacity of switches.
 - 8.3.4 Ratings of equipment.
- 8.4 On each assembly or sub-assembly drawing, the following shall be given:
- 8.4.1 Description of item.
 - 8.4.2 Quantity required for assembly depicted.
 - 8.4.3 Material manufactured from.
 - 8.4.4 The classification of the material according to the relevant SABS specification or other specifications referred to herein.
-

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- 8.4.5 The class or process of finish and/or coating.
 - 8.4.6 Where special parts are specified, the name of the manufacturer, the size, capacity and the name or catalogue number of each part shall be furnished.
 - 8.4.7 The mass of finished item depicted on the drawing.
 - 8.4.8 Dimensions from a proper reference surface.
 - 8.4.9 Dimension tolerances.
 - 8.5 *On electrification drawings, the following shall be specified:*
 - 8.5.1 Kilometre distances.
 - 8.5.1.1 Kilometre distances of all new and existing masts measured from the preceding kilometre post.
 - 8.5.2 Civil
 - 8.5.2.1 The following civil information shall be shown:
 - 8.5.2.1.1 Bridges.
 - 8.5.2.1.2 Tunnels.
 - 8.5.2.1.3 Pipes.
 - 8.5.2.1.4 *Culverts.*
 - 8.5.2.1.5 Subways.
 - 8.5.2.1.6 Manholes.
 - 8.5.2.1.7 Off track platforms.
 - 8.5.2.1.8 Water-furrows along track.
 - 8.5.2.1.9 Service roads that may influence electrification.
 - 8.5.2.1.10 Level crossings.
 - 8.5.2.1.11 All banks and cuttings.
 - 8.5.2.1.12 Retaining walls.
 - 8.5.2.1.13 Gradient markers and gradients.
 - 8.5.2.1.14 Boundary fences (where relevant).
 - 8.5.2.1.15 The beginning and ending of transition and circular curves and the radius.
 - 8.5.2.3 On all station plans the beginning and ending of the platforms to be indicated, as well as all buildings and structures on the platform which may effect electrification. All secondary platforms/structures/obstacles, which may effect electrification, must also be shown.
 - 8.5.2.4 All points with stock rail joints, intersection of centre lines and all ends of point positions to be shown, as well as the type of point, e.g. 1:9 LH (left hand).
-

- 8.5.3 Electrical
 - 8.5.3.1 The following electrical information shall be shown:
 - 8.5.3.1.1 New and existing masts and structures with appropriate sizes.
 - 8.5.3.1.2 Span lengths.
 - 8.5.3.1.3 Tension lengths.
 - 8.5.3.1.4 Mast to track centres.
 - 8.5.3.1.5 Tension type (spring or weight).
 - 8.5.3.1.6 Transmission lines, Transnet and Eskom (Showing crossing heights above rail level).
 - 8.5.3.1.7 Telkom lines.
 - 8.5.3.1.8 Height gauges.
 - 8.5.3.1.9 Power and Lighting kiosks.
 - 8.5.3.1.10 Electrical cables nearer than 3,2m from track centre, as well as cables crossing the track.
 - 8.5.3.2 Wire profiles showing clearances/wire heights for all transmission and telecommunication lines that cross the tracks shall be shown on the drawing at the point of crossing, in either tabular or graphic format.
 - 8.5.3.3 *Wire profile for all bridges and tunnels shall be shown on separate drawings.*
 - 8.5.3.4 Important information that shall be noted are:
 - 8.5.3.4.1 Basic span.
 - 8.5.3.4.2 Ruling contact wire height.
 - 8.5.3.4.3 Reference to bonding drawings.
 - 8.5.3.4.4 Wire sizes.
 - 8.5.3.4.5 Types of structures and foundations.
 - 8.5.3.4.6 Tables for traction and transmission line (Showing wire heights).
 - 8.5.3.4.7 Dropper chart.
 - 8.5.3.4.8 Overlaps.
 - 8.5.3.4.9 Jumpers.
 - 8.5.3.4.10 Staggering.
 - 8.5.3.4.11 References to switching diagram drawings.
 - 8.5.3.4.12 Any other relevant information.
- 8.5.4 Signal.
 - 8.5.4.1 The following signal information shall be shown:

- 8.5.4.1.1 Signal gantries (showing direction of aim).
- 8.5.4.1.2 Independent signals (showing direction of aim).
- 8.5.4.1.3 Signal kiosks.
- 8.5.4.1.4 Telephones.
- 8.5.4.1.5 Signal relay rooms.
- 8.5.4.1.6 Radio repeater rooms.
- 8.5.4.1.7 Signal cables nearer than 3,2m from track centre, as well as cables crossing the track.
- 8.5.5 Electrification information must be clearly indicated on drawings (see also drg no CEE-TA-62 for Standard Electrification Symbols).
- 8.7 The successful tenderer shall obtain Spoornet's drawing numbers from the Documentation Management section of Spoornet well in advance in writing, wherein details of all relevant drawings, i.e. titles and makers numbers are quoted. Against this information Spoornet will allocate its own numbers for inclusion by the Contractor on the original drawings.

9.0 CERTIFICATION OF DRAWINGS

The contractor against a date to certify that the drawing has been checked and is correct in all respects shall approve each drawing. This also includes changes.

10.0 CHANGES TO DRAWINGS

Any drawing returned to the Contractor for changes shall be re-submitted to Spoornet within 21 days with the appropriate changes endorsed thereon.

11.0 SUBMISSION OF TENDER DRAWINGS

The Tenderer shall submit drawings of all major items of equipment with the tender. The drawings shall be sufficiently detailed (e.g. safety factors) to enable suitability of the design to be judged and to enable Spoornet to prepare a reasonably accurate estimate of the cost of maintenance.

12.0 DRAWINGS TO BE SUPPLIED BY SUCCESSFUL TENDERER

- 12.1 Two prints of each design drawing for approval to be submitted prior to commencement of work or manufacture of any equipment to Spoornet. This includes drawings of general layouts, cable routes, schematic diagrams, foundations, equipment etc.
- 12.2 Two prints of each installation and/or erection drawing to be submitted to Spoornet. This includes drawings of modular steel buildings, structures etc. and shall be delivered at the same time the delivery of the equipment commences.
- 12.3 The successful tenderer shall supply one complete set of approved (signed) "As Built" working drawings as well as the electronic files thereof. Drawings shall be fully dimensioned, fully detailed, clear and neat. The set shall comprise all electrical and mechanical drawings considered necessary by Spoornet and shall include drawings of all renewable parts or items. "As Built" drawings of all enclosures, structures and foundations shall also be supplied.

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- 12.4 All relevant "As Built" drawings required shall be delivered to SpoorNet within 90 days of completion of the installation and delivery of equipment.
- 12.5 Until all relevant drawings called for in the contract are delivered, the contract will be considered incomplete.
- 13.0 CATALOGUES**
- 13.1 Tenderers shall submit a separate quotation for the supply of the itemised part catalogues when specified in the Schedule of Requirements. The size shall be A4 (297 mm x 210 mm). Consideration shall be given on merit of the supply of these catalogues electronically (PDF format).
- 13.2 The information contained in the catalogues shall be classified into convenient sectors and be indexed. Thumb tabs shall be provided for quick reference to sections. All apparatus shall be illustrated by means of photographs or detailed sketches on which both the parts and the catalogue numbers of the parts are clearly shown. Catalogues shall have exploded views of components for clarity where needed.
- 13.3 The following information shall be given in tabular form:
- 13.3.1 Designation of apparatus or item of equipment.
- 13.3.2 Description of part including information such as dimensions, sizes, resistance values, stranding, material, current ratings, etc.
- 13.3.3 Catalogue number.
- 13.3.4 Manufacturer's name.
- 13.3.5 "As Built" drawing and item number where applicable.
- 13.3.6 Quantity of parts required for each piece of apparatus.
- 13.3.7 Illustrating photographs or sketch number.
- 13.3.8 Nato registration where applicable.
- 13.4 In a suitable section of the catalogue the following information shall be given:
- 13.4.1 Index to "As Built" Drawings.
- 13.4.1.1 "As Built" drawing number.
- 13.4.1.2 Heading.
- 13.4.1.3 Parts shown on drawing.
- 13.4.2 Index to catalogue numbers.
- 13.4.2.1 Catalogue numbers in numerical order.
- 13.4.2.2 Catalogue volume number, where applicable.
- 13.4.2.3 Section in which part is listed.
- 13.4.2.4 Page number.
-

-
- 13.4.3 Special tools.
- 13.4.3.1 Designation and description of special tools.
- 13.4.3.2 Catalogue number.
- 13.5 Each volume shall be neatly bound in hard serviceable cover on which the contract numbers volume number and titles are printed. All the information in the catalogues shall be given in a clear legible manner. The catalogues shall include all items of equipment to be supplied by the successful tenderer.
- 13.6 Catalogues shall be delivered before date of completion of the contract.
- 14.0 INSTRUCTION MANUALS**
- 14.1 Tenderers shall submit a separate quotation for the supply of the number of copies of instruction manuals specified in the Schedule of Requirements. The size shall be A4 (297 mm x 210 mm). Consideration shall be given on merit of the supply of these catalogues electronically (PDF format).
- 14.2 The successful tenderer shall submit draft instruction manuals for approval prior to final printing/compiling and delivery.
- 14.3 The approved instruction manuals shall be delivered before commissioning the equipment. If this cannot be met, the successful tenderer shall furnish at least three copies of preliminary instruction manuals, suitable for the use of maintenance staff, until the final instruction manuals are to hand (which shall be before the date of completion of the contract).
- 14.4 The construction, method of operation and purpose of all items of equipment shall be fully explained by means of descriptions and photographs, sketches, drawings or circuit diagrams showing all details.
- 14.5 The information contained in the instruction manuals shall be classified into convenient sections and indexed. Where multiple models are produced each model shall be described in a separate section in such a manner that models not applicable can be omitted. Where possible the sections shall be subdivided as follows:
- 14.5.1 Installation and commissioning.
- 14.5.2 General description and method of operation.
- 14.5.3 Maintenance and inspection.
- 14.5.4 Overhaul and repair of equipment.
- 14.5.5 Technical and maintenance data.
- 14.5.6 Test procedure flow charts.
- 14.5.7 Fault finding and trouble shooting.
- 14.6 The method of calibrating, setting or adjusting all equipment requiring such attention shall be described and where necessary illustrated. The necessary data shall be given in each case to enable the equipment to be checked by measurement if required.
-

14.7 Full step-by-step instructions regarding the servicing and repair of the equipment shall be given together with all the necessary data such as dismantling and assembling procedures, working clearances, tolerances, limits, fits, maximum permissible wear, recommended lubricants, use of special tools, insulation and winding data, spring pressures and tensions, brush data, fuse data, etc. Recommended servicing/rework/replacement of parts frequencies shall also be included in the maintenance and inspection section of the instruction manual.

14.8 Any delay in delivery of the complete supply of satisfactory instruction manuals/preliminary manuals as provided for in this clause, will subject the Contractors to a deduction from the contract sum, of a penalty as defined in the tender, counting from the specified delivery time until such time as the said manuals are delivered.

15.0 COMBINED DOCUMENTS

If desired the catalogues and instruction manuals specified in clauses 12.0 and 13.0 may be combined into single volumes. Tenderers shall state whether or not it is their intention to do so. In this case the delivery shall be as specified in clause 13.3, alternatively the conditions described in clause 13.8 applies.

16.0 SPARES LIST

16.1 To enable Spoornet to catalogue and timeously acquire all spares required, the following information shall be submitted before commissioning of equipment:

16.1.1 An itemised schedule of the spares (with reference to alternatives) which are recommended for normal maintenance purposes.

16.1.2 The quantity recommended to be held against each item on the spares list and where sets are supplied, the types and quantity per type to make up a set.

16.1.3 A full and complete ordering description and number of each individual spare with drawing number if relevant.

16.1.4 Where the ordering description and number differs from that of the original manufacturer's catalogue, description and number, the original manufacturer's name, description, type and ordering number shall be listed as well as all other relevant data available.

16.1.5 The national stock number - Nato - number of each spare where the particular spare was imported from a Nato country and where a national stock number was allocated.

16.2 Initially the spares list containing the above information will suffice, but this list shall not in any way replace or supersede the spare parts catalogue mentioned in clause 12.0.

17.0 PACKING OF DRAWINGS, CATALOGUES, INSTRUCTION MANUALS AND SPARES LISTS

All items shall be packed in such a way that they are received in good condition.

18.0 SUBSTITUTION

This specification replaces specification CEE.0224.94

TENDERER'S SIGNATURE: _____

DATE: _____

FOR SPOORNET: _____

GRADE: _____

END

SCHEDULE OF REQUIREMENTS

FOR SPOORNET: _____

GRADE: _____

END



A Division of Transnet SOC Limited

TECHNOLOGY MANAGEMENT

SPECIFICATION

OUTDOOR, HIGH VOLTAGE, ALTERNATING CURRENT DISCONNECTORS COMBINED WITH EARTHING SWITCHES

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Authorised:	Chief Engineer Technology Management	N. Gobhozi

Date: 07 November 2021

Circulation Restricted To:

Transnet and Relevant Third Parties

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LIST OF AMENDMENTS TO THE SPECIFICATION

Version No.	Date Issued	Clause No.	Page No.	Remarks
1	18 th Oct 2004	All	All	Original Document.
2	2021	All	All	Document template changed.
				All the Clauses re-arranged and background added.

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1.0 SCOPE

- 1.1 This specification details Transnet's requirements for the supply of outdoor, 2 or 3 phase, 50 hertz AC disconnects combined with automatic earthing switches for high voltage supplies.
- 1.2 Equipment is required for installation at the end of overhead transmission lines to control the power supply to traction substations and step- down points and shall consist of a 2 pole for 25kV AC or 3 pole for 3kV DC substations. Disconnects to be connected to the line and provided with facilities to earth the "load" side of the circuit.
- 1.3 This specification contains schedule of requirements (Appendix A) which must be completed by the relevant Transnet Representative.
- 1.4 This specification contains technical datasheet (Annexure B) which must be completed by the tenderer and must be submitted as part of the tender documents.

2.0 BACKGROUND

- 2.1 Traction substations are supplied via transmission lines from Eskom and in some areas, the local municipality. The supply point is connected to the high voltage yard of Transnet traction substations via AC disconnecting switches.

AC disconnect switches are used for isolating the Eskom/Municipal supply from the traction substation in order to conduct maintenance on the load side. This AC disconnects are electrical interlocked with primary circuit breakers and are provided with automatic earthing contacts blades that operate during opening. AC disconnects should be operated under no-load (off-load) condition.

3.0 NORMATIVE REFERENCES

Unless otherwise specified all materials used, equipment developed and supplied shall comply with the latest edition of the relevant International Organization for Standardization (ISO), South African National Standards (SANS) or Transnet publications.

3.1 ISO STANDARD:

- 3.1.1 ISO 9001 Quality Management systems.

3.2 SANS STANDARD:

- | | |
|-----------------|--|
| SANS 121: | Hot dip galvanized coatings on fabricated iron and steel articles. |
| SANS 10280: | Overhead power lines for conditions prevailing in South Africa
Part 1: Safety. |
| SANS 60273: | Characteristics of indoor and outdoor post insulators for systems with nominal voltages greater than 1000 V. |
| SANS 60529: | Degrees of protection provided by enclosures (IP Code). |
| SANS 60815: | Selection and dimensioning of high-voltage insulators intended for use in polluted conditions. |
| SANS 62271-102: | High voltage switchgear and controlgear part 102: Alternating Current disconnectors and earthing switches. |

3.3 TRANSNET'S PUBLICATIONS

- | | |
|-----------|--|
| BBF3690 | Electrical Safety Instructions. |
| CEE.0224: | Drawings, catalogues, instruction manuals, spares list for electrical equipment supplied under contract. |

4.0 SERVICE CONDITIONS

4.1 ENVIRONMENTAL CONDITIONS

Altitude:	0 - 1800 m above sea level
Relative humidity:	10% to 90%
Ambient temperature:	-10° C to +55°C
Wind pressure:	750 Pa
Lightning conditions:	20 ground flashes/km ² per annum
Pollution:	Heavily salt laden with industrial pollutants including diesel- electric locomotive emissions.

4.2 MECHANICAL SERVICE CONDITIONS

- 4.2.1 Traction substations are situated next to railway lines and the equipment will therefore be subjected to vibration. The design must take appropriate counter measures to ensure reliability of equipment that is sensitive to vibration.

4.3 ELECTRICAL SERVICE CONDITIONS

- 4.3.1 The incoming high voltage supply to the traction substations shall be 44/66/88/132KV or 220kV AC depending on the electrical supply from Eskom and Municipality at a frequency of 50 ± 2.5 Hz.
- 4.3.2 The AC supply voltage can vary within $\pm 5\%$ of the nominal system r.m.s voltage. Under crippled conditions the supply voltage can drop to as low as minus 15% of the nominal r.m.s voltage.

5.0 TECHNICAL REQUIREMENTS

5.1 DISCONNECTS COMBINED WITH EARTHING SWITCHES

- 5.1.1 The combined disconnectors and earthing switches shall be designed, manufactured and tested in accordance with SANS 62271-102.
- 5.1.2 Disconnectors and earthing switches shall have been type tested to verify performance and safety. Proof of these tests in the form of type test certificates shall be included in the tender documents.
- 5.1.3 The disconnectors shall be provided with a means for earthing the "load" side of the circuit, either by means of a separate earthing switch interlocked with its operating mechanism or contacts so placed that when the disconnect is in the "open" position, the "load" side is earthed.
- 5.1.4 The disconnectors shall be of the air-break type with the blades operating in a horizontal plane.
- 5.1.5 The operation mechanism of the disconnectors shall either be manual for DC traction substations or motor operated for AC traction substations.
- 5.1.6 The operating mechanism shall be constructed of anti-corrosive material to prevent sticking due to rust. All ferrous material shall be galvanised.
- 5.1.7 The operating handle shall be provided with suitable attachments to enable it to be locked in the up (closed) position and in the down (open and earthed) position by standard locks, supplied by Transnet maintenance manager (Electrical).
- 5.1.8 The operating assembly shall be fixed at a satisfactory operating height of approximately 1m from the bottom of the structure.

- 5.1.9 A mechanism shall be provided to mechanically (Only required for DC subs) and electrically interlock (All substations) the operating handle with the associated primary circuit breaker to ensure that operation is only possible when the circuit breaker is in the "open" position. It must, however be possible to close the primary circuit breaker when the earthing switch is in the "earthed" position.
- 5.1.10 Electrical contacts shall be fitted to interlock the operating handle with the associated primary circuit breaker. In the event of accidental operation or movement of the operating handle the primary circuit breaker shall be tripped before the main contacts of the AC disconnects start opening.
- 5.1.11 A notice with the following inscription shall be mounted next to the operating mechanism:
"DO NOT OPERATE UNDER LOAD".
- 5.1.12 For disconnectors operated only by motor operating mechanism in AC traction substations, the motor shall be able to be operated by supply voltage of 48/110V DC from the substation batteries.
- 5.1.12.1 The motor shall be easy to operate, light in weight and able to be housed in a compact enclosure.
- 5.1.12.2 The motor shall be energy efficient and able to be operated for several times without draining the existing battery supply power.
- 5.1.12.3 The complete unit shall able to perform interlocking functions and be manual operated.
- 5.1.12.4 The motor enclosure shall have a protection degree of IP65 in accordance to SANS 60529.

5.2 SUPPORT STRUCTURES

- 5.2.1 The combined AC disconnects and earthing switches shall be rigidly mounted on robust, hot-dipped galvanised supporting steel structures or pedestals in accordance with SANS 121.
- 5.2.2 The supporting steel structures or pedestals shall provide a minimum clearance of 3,6 metres (up to 88 kV) or 4,1 metres (above 88 kV) from the lowest "live" high voltage connection to finished yard level. Outline drawings submitted with tenders must indicate the actual clearances proposed.

5.3 CONNECTIONS

- 5.3.1 All high voltage connections must be of the solderless, concentric grip, or other approved solderless type, and must be of adequate cross-sectional area to suit both electrical and mechanical requirements. All connections to the disconnects must be flexible so as not to affect smooth operation of the blade mechanism.

5.4 POST INSULATORS

- 5.4.1 All post insulators shall be designed, manufactured and tested in accordance with SANS 60273.
- 5.4.2 Creepage distances for heavy polluted atmospheres shall be in accordance with SANS 60815

5.5 CLEARANCES

- 5.5.1 The following minimum safety clearances shall be maintained between any live conductor and earthed metal as stated in SANS 10280: -

Table 1: Safety clearances

Nominal phase to phase r.m.s system voltage	44kV	66kV	88kV	132kV	220kV
Highest phase-to-phase r.m.s voltage for equipment.	48kV	72kV	100kV	145kV	245kV
Safety clearance	540mm	770mm	1000mm	1450mm	2100mm

6.0 TESTING AND INSPECTIONS

- 6.1 The tests shall be done in accordance with SANS 62271-102.
- 6.2 Transnet reserves the right to be present at all tests and inspections as called for in this clause.
- 6.3 The responsibility of arranging the tests called for in this clause rests with the successful tenderer.
- 6.4 Transnet reserves the right by prior arrangement to inspect the equipment at any stage during manufacture.
- 6.5 A Transnet Freight Rail, Technology Management (Electrical Technology) department representative may request any additional test deemed necessary to ensure compliance.

7.0 RATING PLATE AND INSTRUCTION LABELS

- 7.1 All nameplates and labels shall be in English.
- 7.2 Screws or rivets shall fix labels other than interchangeable labels.
- 7.3 All labels shall be made of composite sandwich type plastic material of the following colour combinations:
 - 7.3.1 Identification labels: White lettering on Black background. Letters must be of sufficient size to be clearly legible from a distance of 3m.
 - 7.3.2 Danger labels: White lettering on Red background. Letters must be of sufficient size to be clearly legible from a distance of 3m.
- 7.4 The following is the list of labels to be used:
 - On (1)
 - Off (0)
 - Open (Verb.)
 - Close (Verb.)

8.0 DOCUMENTATION REQUIREMENTS

- 8.1 The following technical documentations shall be submitted with tender:
 - 8.1.1 One hard copy of the technical specification and detailed drawings.
 - 8.1.2 One hard copy of the method of installation.
 - 8.1.3 One hard copy of maintenance manual.
 - 8.1.4 One hard copy of design and type test certificates to verify conformance to the requirements.
- 8.2 Supplier shall advise on how to dispose the equipment at the end of its operating life, taking into consideration environmental requirements and regulations.

9.0 QUALITY ASSURANCE

- 9.1 The successful tenderer shall maintain a Quality Management System (QMS) based on or certified to ISO 9001.

10.0 PACKAGING, STORAGE AND HANDLING

- 10.1 The equipment shall be packed in such a manner that it will be adequately protected during handling and transportation.

11.0 GUARANTEE AND DEFECTS

- 11.1 The appointed tenderer shall guarantee that the supplied AC disconnects with earthing switch conforms to Transnet's requirements.
- 11.2 The appointed tenderer shall accept liability for makers' defects, which may appear in design, material and workmanship.
- 11.3 The appointed tenderer shall provide all information regarding guarantees and warranties in writing

12.0 METHOD OF TENDERING

- 12.1 Tenderers shall indicate clause-by-clause compliance document with the specification. This shall take the form of a separate document listing each of the specification's clause and sub-clause numbers, indicating the individual statements of compliance or non-compliance.
- 12.2 The tenderer shall motivate statement of non-compliance, as per 12.1.
- 12.3 Tenderers shall submit comprehensive literature consisting of detailed technical specifications, general constructional details and principal dimensions, maintenance schedules, datasheets, together with clear illustrations of the equipment offered.
- 12.4 Any items offered in accordance with other standards will be considered at the sole discretion of Transnet. The tenderer shall supply full details stating where the item differs from these specifications as well as supplying a copy (in English) of the recognized standard specification(s) with which it complies. Any deviations must be approved by Transnet Freight Rail, Technology Management (Electrical Technology) department in writing.
- 12.5 Failure to comply with clauses 12.1, 12.2, 12.3 and 12.4 could preclude a tenderer from consideration.
- 12.6 In the event of any conflict between the various submitted relevant documents, the order of precedence shall be, and in consultation with Transnet Freight Rail, Technology Management (Electrical Technology) department:
 - a) Legal and safety requirements.
 - b) This Specification.

END

APPENDIX A: SCHEDULE OF REQUIREMENTS

(To be completed by Transnet Representative)

- 1.0 Required for..... (AC/DC) traction substation
- 2.0 Number of sets required.....
- 3.0 Supply system Voltage:..... kV, 50 Hz, (3 phase/2 phase)

AC DISCONNECTS WITH EARTHING SWITCH

- 4.0 Rated voltage:.....kV
- 5.0 Rated frequency: 50 Hz

- 6.0 Special requirements:
-
-
-
-
-

Completed by:

Capacity

Signature

Date

"I acknowledge that this document contains personal information as defined in the Protection of Personal Information Act, 2013 (the "Act"). By accessing/using this document, I consent to the processing of personal information in accordance with the requirements of the Act. Personal information contained herein will only be used for purposes of this document."

ANNEXURE B: TECHNICAL DATA SHEET

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

AC DISCONNECTS WITH EARTHING SWITCH

1. Name of manufacturer:.....
2. Type number:.....
3. Number of poles:.....
4. Outdoor (Yes/No):.....
5. Rated voltage:.....
6. Rated insulation level:.....
7. Rated 1 minute power frequency withstand voltage:.....
8. Rated lightning impulse withstand voltage:.....
9. Rated frequency:.....
10. Rated normal current:.....
11. Rated short circuit making current:.....
12. Rated short time withstand current:.....
13. Mass of complete unit:.....
14. Minimum clearance in air:
 - 14.1 Between poles:.....
 - 14.2 To earth:.....
 - 14.3 For isolating distance:.....
15. Type of closing mechanism:.....
16. Height above ground:.....
17. Length of insulator (taut string measurement):.....
18. Insulators type test certificate:.....

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TECHNOLOGY MANAGEMENT

SPECIFICATION

HIGH VOLTAGE SUPPLY TRANSFORMERS IN ACCORDANCE WITH IEC 60076 AND BS 171. (For nominal system voltages 33 kV up to 132 kV)

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Three handwritten signatures in black ink, each followed by a dotted line for a name, corresponding to the names listed in the table.

Date: 25 June 2018

Circulation Restricted To:

Transnet Freight Rail – Chief Engineer Infrastructure
- Technology Management

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1.0 SCOPE

This specification covers Transnet freight rail's requirements for the design, manufacture, testing and delivery of three phase supply transformers with ratings up to 3MVA and the HV windings rated for nominal system voltages from 33kV up to 132 kV.

2.0 BACKGROUND

2.1 Supply transformers are used on Transnet freight rail as step down transformers for power distribution of the 11kV and 6,6 kV Transnet freight rail reticulation systems and the 11 kV and 6,6 kV transmission line network.

3.0 STANDARDS AND PUBLICATIONS

The transformer shall comply with all relevant requirements of the latest edition of the following specifications unless otherwise specified. The standards used in this specification are as follows.

3.1 INTERNATIONAL ELECTROTECHNICAL COMMISSION

IEC 60076-1:	Power Transformer. Part 1 General
IEC 60137:	Insulated bushings for alternating voltages above 1000V
IEC 60354:	Loading guide for oil immersed power transformers.

3.2 BRITISH STANDARDS

BS 171:	Power Transformers
---------	--------------------

3.3 SOUTH AFRICAN NATIONAL STANDARDS

SANS 121:	Hot-dip Galvanized coatings for fabricated iron or steel articles.
SANS 555:	Unused and reclaimed mineral Insulating Oil for Transformers and Switchgear.
SANS 1019:	Standard voltages, currents and insulation levels for electricity supply.
SANS 1091:	National colour standard
SANS 9001:	Quality Management systems - Requirements

3.4 TRANSNET FREIGHT RAIL

CEE.0224:	Drawings, Catalogues, Instruction Manuals and Spares list for Electrical Equipment supplied under contract.
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4.0 APPENDICES

The following appendices form an integral part of this specification:

- Appendix 1: Schedule of requirements.
- Appendix 2: Information provided by the tenderers.

5.0 TENDERING PROCEDURE

- 5.1 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.
- 5.2 The tenderer shall motivate a statement of non-compliance.
- 5.3 Tenderers shall complete Appendix 2. "Information to be provided by tenderers"

5.4 Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.

5.5 Failure to comply with clauses 5.1, 5.2, 5.3 and 5.4 could preclude a tender from consideration.

6.0 SERVICE CONDITIONS.

The transformers shall be designed to operate under the following conditions.

6.1 ATMOSPHERIC 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.

6.2 ELECTRICAL CONDITIONS

Frequency: The AC high voltage supply will normally be supplied by Eskom. The frequency will be 50 ± 2.5 Hz.

Nominal Supply voltage: As specified in Appendix B

No of Phases: Three phase systems.

Fault Levels: A three-phase short circuit on the supply will be limited to the following levels.

Nominal Supply Voltage	Fault level
Up to 66kV	20kA
88kV	25kA
132kV	40Ka

Harmonics: For the supply transformers installed at the traction substations to supply power to the 11 kV and 6,6 kV transmission lines systems, it can be expected that the low voltage winding of such transformers shall be subjected to the total voltage harmonic distortion of up to 27%.

7.0 SUPPLY TRANSFORMERS

7.1 GENERAL

7.1.1 Unless specified the transformers shall be for outdoor use and of the oil natural air natural (ONAN) cooled type and shall comply with all relevant requirements of specifications IEC 60076-1 and BS 171.

7.1.2 All components used in the supply transformer shall be free from polychlorinated biphenyls. (PCB free)

7.2 TRANSFORMER TANK CONSTRUCTURAL REQUIREMENTS.

7.2.1 The transformer tank shall be of welded construction type and shall be designed for the fitting of radiators.

7.2.2 The transformer tank shall be constructed of steel plate not less than 6 mm thick.

7.2.3 The transformer shall be free breathing.

- 7.2.4 The transformer main tank cover joint shall be welded on all transformers with a ranking below 1MVA
- 7.2.5 All transformers with a rating of 1MVA and higher shall be fitted with O-Rings on the main tank cover, inspection covers and all flanges.
- 7.2.6 The welded joint of the main tank cover shall be designed to permit removal of the weld with the minimum damage to the mating flanges so that they will be suitable for rewelding.
- 7.2.7 The tank cover shall be fitted with lifting lugs for the fitting or removal.
- 7.2.8 Inspection covers or manholes on the transformer tank shall be bolted and shall be provided with gasket seals. Sturdy handles shall be provided for removal of inspection or manhole covers.
- 7.2.9 Transformers shall not be fitted with rollers, but be provided with a substantial base, which will enable it to be supported on steel skid rails, which are embedded in a concrete plinth. The spacing between centers of the skid rails is 1000 mm.
- 7.2.10 Provision shall be made on the transformer base for the attachment of a tackle for the purpose of hauling the transformer.
- 7.2.11 Four jacking pads and lifting lugs shall be provided for the jacking and lifting the transformer complete with oil.
- 7.2.12 Provision shall be made for the fitting of filtration and main drain valves on the transformer tank.
- 7.2.13 Tenderers shall submit dimensioned drawings showing details of the tank and base construction.
- 7.2.14 Valves shall be steel fittings and NOT brass.
- 7.2.15 Drain valves shall be lockable.

7.3 TRANSFORMER FITTINGS REQUIRED

RADIATORS

- 7.3.1 The transformer shall be fitted with detachable radiators with drain and filling plugs.
- 7.3.2 The design of the cooling radiators shall ensure sufficient circulation of cooling oil.
- 7.3.3 Provision shall be made for radiator shut off valves to allow the removal of the radiators without having to drain the oil from the transformer tank.
- 7.3.4 The radiators shall be provided with lifting lugs for fitting or removal.
- 7.3.5 The radiators shall be hot dipped galvanized for coastal areas.

CONSERVATOR TANK AND BREATHER

- 7.3.6 The transformer shall be fitted with a conservator tank with its oil level gauge and drain cock.
- 7.3.7 The connecting pipe to the conservator shall extend at least 50 mm into it. All pipe connections shall have flange joints.
- 7.3.8 A silica gel dehydrating breather shall be provided with the conservator.
- 7.3.9 Where specified in Appendix 1 the conservator shall be provide with a sealed oil preservation bag.
 - 7.3.9.1 The bag shall not restrict the normal draining of the conservator or the flow of oil to the transformer.
 - 7.3.9.2 The bag shall allow for expansion without any increase in pressure or the causing of a partial vacuum over the specified temperature range.
- 7.3.10 Lifting lugs shall be fitted to the conservator.

OIL AND WINDING TEMPERATURE RELAYS

- 7.3.11 Provision shall be made for thermometer pockets on the transformer tank.
- 7.3.12 The transformer shall be fitted with a weatherproof dial type thermometer graduated in °C for registering "top oil" temperature. The instrument shall be fitted with a resettable maximum temperature indicator.
- 7.3.12.1 Adjustable contacts shall be fitted to the thermometer. The contacts shall normally be set to operate at a temperature of 90°C. The trip contacts shall be liberally rated and adequate for closing 110 volt, 6 Ampere DC circuits. If not suitable, auxiliary relays may be provided.
- 7.3.13 A thermal type overload relay to protect the transformer windings against sustained overloads. This relay shall have a load—temperature characteristic approximately the same as the transformer winding hot spot. Suitable means for compensation for variation of ambient air temperature shall be provided. Full details shall be submitted.
- 7.3.13.1 The relay shall be provided with trip contacts. The tenderer is to recommend the temperature setting for these contacts which are normally set at 115 °C. The trip contacts shall be liberally rated and adequate for closing 110 volt, 6 Ampere DC circuits. If not suitable, auxiliary relays shall be provided.

GAS AND OIL OPERATED RELAY (BUCHOLZ)

- 7.3.14 A single—float Buchholz relay fitted with contacts for alarm and trip conditions.
- 7.3.14.1 The relay shall be fitted with accessible test and sample valves.

PRESSURE RELIEF DEVICE

- 7.3.15 A suitable pressure relief device shall be fitted on the main tank, the provision of the pressure relief device shall not affect the efficiency of the Bucholz relay in the event of a transformer fault.

MARSHALLING BOX

- 7.3.16 A marshalling box shall be fitted to the transformer tank. The degree of protection shall be IP55 and shall be corrosion protected.
- 7.3.17 All terminals in the marshalling box shall be clearly labeled.

8.0 TERMINALS AND BUSHINGS

- 8.1 All terminals shall be extended to the top of the transformer tank through suitable outdoor type bushings.
- 8.2 These bushings shall conform to the insulation levels as specified in IEC 60137 for the system nominal supply voltage at which the equipment must operate.
- 8.3 All bushings, stems and terminals shall be of sufficient size to ensure sufficient mechanical strength of attaching and supporting external connections and shall not be smaller than
 - a) 19 mm diameter for primary and secondary connections
 - b) 12 mm diameter for auxiliary supply connections.
- 8.4 Where cable boxes are required, bushings shall be provided for the termination of the cables in the cable box.
- 8.5 Provision shall be made for earthing terminals fitted on the outside of the transformer tank for the connection of a 95 mm² cable.

9.0 TRANSFORMER WINDINGS

- 9.1 The AC supply system can have a fault capacity specified in clause 6.2.3.
- 9.2 The transformer windings shall be able to withstand the electromagnetic and mechanical stresses caused by high fault currents.
- 9.3 Tenderers shall submit details of the construction of the windings and clamping arrangements.

10.0 TEMPERATURE RISE AND RATING.

- 10.1 The temperature rise of the transformer windings after thermal equilibrium and a steady temperature has been reached on continuous full load, shall not exceed 65°C.
- 10.2 The temperature rise of the windings shall be measured by the increase of resistance method. Standard correction for cooling during the measurement of resistance shall be applied.

11.0 VOLTAGE RATIO AND TAPPINGS

- 11.1 The transformer shall be designed to operate at the nominal system voltage as specified in the schedule of requirements.
- 11.2 Tappings shall be provided on the primary windings. (5 tap position).
- 11.3 The tap range shall be $\pm 2,5\%$ and $\pm 5\%$ of the nominal voltages.
- 11.4 The transformers shall supply full load output at all tappings.
- 11.5 The full load regulation of the transformer shall not be more than 5%. Refer to "Appendix 2". Clause 20.5.
- 11.6 The tap changing gear must be:
- External
 - Manually operated
 - Positively locking
 - Single off load type and shall operate all 3 phases.
 - Rotary type having high-pressure type contacts

The arrangement shall be such that excessive backlash will not affect the making of proper contact when the tap changing gear is operated in either direction.

- 11.7 The tap changing switch shall be lockable with provision for a padlock.
- 11.8 The positions of the tap changing switch shall be clearly marked.

12.0 INSULATION LEVELS.

- 12.1 Transformer bushings shall comply with IEC 60137.
- 12.2 Test voltages and minimum creepage distances for normal and polluted atmospheres shall be in accordance with IEC 60137.

13.0 CORROSION PROTECTION AND PAINTING**13.1 PREPARATION OF TRANSFORMER TANK**

- 13.1.1 Rust and millscale shall be removed by shot blasting or acid cleaning. Welds which are not ground smooth shall be shot blasted or otherwise descaled and cleaned.

13.2 PAINTING

- 13.2.1 The outer surface of the transformer tank shall be painted Grey to the colour code G12 in accordance with SANS 1091. The conservator shall be painted white. The total paint thickness shall be at least 75 microns. For coastal or heavily polluted conditions it shall be at least 125 microns.
- 13.2.2 Internal surfaces of the conservator above oil level shall be cleaned and painted with one coat of oil resistant rust inhibiting etch primer.
- 13.2.3 The radiators shall be hot dipped galvanized. It is recommended that galvanized radiators used at heavily polluted areas be painted.

14.0 TRANSFORMER OIL

- 14.1 The tendered prices shall include the first filling of oil. The oil shall comply with SANS 555.
- 14.2 The oil shall be readily miscible with the oil supplied in conformity with the above mentioned specification by the major oil companies in South Africa, without detriment to the chemical, physical and electrical properties of the oil.

15.0 RATING PLATES

A non—corrosive metal plate shall be fixed to each transformer tank (not cooling tubes), giving the following information:

- Maker's name
- Maker's serial No.
- Transnet freight rail's serial No. (Left blank)
- Rated output in MVA
- Frequency
- Secondary voltage and current
- Primary voltage and current
- Primary voltage tapplings
- Transformer reactance (%)
- Transformer impedance (%)
- Vector diagram
- Diagram of connections
- Quantity of oil in litres
- Conservator fitted with bag.
- Total mass of transformer inclusive of oil in kg
- Transport mass of transformer in kg.
- Year of manufacture.

16.0 TESTS AND DATA TO BE SUBMITTED BY SUCCESSFUL TENDERERS

- 16.1 Manufacturer's type and routine tests as well as impulse voltage withstand including chopped—wave type tests shall be carried out on the transformers in accordance with the current edition of IEC 60076 and BS 171.
- 16.2 Heat runs shall be carried on the first transformers of a new or different design.
- 16.3 Transnet freight rail shall be provided with type test certificates and two copies of test sheets, which record the values of the routine tests, or special tests that are carried out on the transformers.
- 16.4 Transnet freight rail reserves the right to be present/witness all routine including type tests were required.
- 16.5 Type tests including impulse tests must be quoted for separately.
- 16.6 The Senior Engineer, Technology Management must be notified timeously for routine or impulse test to be witnessed.

17.0 DRAWINGS AND MAINTENANCE MANUALS

- 17.1 Drawings, instruction manuals and spares lists shall be supplied in accordance with Transnet freight rail's specification CEE.0224.
- 17.2 Three copies of each of the following drawings shall be submitted to the responsible project manager for approval within 7 days of the order being placed.
- 17.2.1 Dimension drawings showing external arrangements of transformer.
- 17.2.2 External wiring diagrams for the transformer.
- 17.2.3 Vector diagram and rating plate.

18.0 GUARANTEE AND DEFECTS

- 18.1 The contractor shall guarantee the transformer and accept liability for maker's defects, which may appear in design, materials and workmanship.
- 18.2 The guarantee period for the transformer shall expire after a period of 12 months commencing on the date of commissioning of the equipment.

19.0 QUALITY ASSURANCE

- 19.1 Tenderers must indicate what steps have been taken to implement a Quality Assurance system in terms of the ISO 9000 series of recommendations.

END

SCHEDULE OF REQUIREMENTS**To be filled by client (depot) tick the correct box****SYSTEM DETAIL**

1.0 Transformer required for : _____ substation/location

2.0 Nominal system voltage: _____ kV

3.0 Number of phases: _____

4.0 Frequency: _____ Hz

5.0 Neutral point effectively earthed :

yes		no	
-----	--	----	--

TRANSFORMER DETAIL

1.0 Type of transformer: Outdoor: _____ Indoor: _____

2.0 Number of phases: Single phase: _____ Three phase: _____

3.0 Rated power: _____ kVA

4.0 Impedance percentage %: _____

5.0 Primary voltage rating: _____ kV

6.0 Secondary voltage rating: _____ kV

7.0 Vector group: _____

8.0 Off circuit tap switch

8.1 Number of tap positions: _____

10.0 Bushings Required

High voltage side

Low voltage side

11.0 Cable box required

High voltage side: _____

Low voltage side: _____

12.0 Neutral required

High voltage side

Low voltage side

13.0 Dimensions (if critical)

Length: _____ mm. Breadth: _____ mm. Height: _____ mm

14.0 Special requirements:

1.0 Conservator to be fitted with oil preservation bag.

2.0 Radiators galvanised.

yes		no	
yes		no	
yes		no	

yes		no	
yes		no	

yes		no	
yes		no	

3.0 Other special requirements: _____

INFORMATION TO BE PROVIDED BY TENDERERS

1.0 GENERAL

1.1 Manufacturers name: _____

2.0 TRANSFORMER DETAIL

1.0 Type of transformer: Outdoor: _____ Indoor: _____

2.0 Number of phases: Single phase: _____ Three phase: _____

3.0 Rated power: _____ kVA

4.0 Impedance (percentage) %: _____

5.0 Primary voltage rating: _____ kV

6.0 Secondary voltage rating: _____ kV

7.0 Tapping Switch.

No of positions: _____ %Steps: _____

8.0 Vector group: _____

9.0 Free Breathing

yes		no	
-----	--	----	--

10.0 Method of Cooling: _____

11.0 Overall dimensions: Length _____ mm. Breadth _____ mm. Height _____ mm

12.0 Winding material: HV _____ LV _____

13.0 Mass of core and windings: _____ kg

14.0 Oil capacity: _____ (Litres)

15.0 Mass of transformer complete with oil: _____ kg

16.0 HV end turns insulation reinforced

yes		no	
-----	--	----	--

17.0 Type of breather and dehydrating agent: _____

18.0 The following information refers to the transformer when connected on the principal tapping and appropriate reference temperature for the class of insulation used.

18.1 Iron loss (Watts): _____

18.2 Copper loss at full load: _____ at _____ °C

18.3 Total load losses (Watts): _____ at _____ °C

18.4 Impedance at full load (percentage) _____ Z _____ X

18.5 Regulation at full load at: 1.0 PF _____ Percent, 0.8 PF _____ Percent at _____ °C

18.6 Efficiency at full load at: 1.0 PF _____ Percent, 0.8 PF _____ Percent at

18.7 Temperature rise at rated voltage and power of:

Windings: _____ ° Top oil: _____ °C



TRANSNET
freight rail

A Division of Transnet Limited

TECHNOLOGY MANAGEMENT

SPECIFICATION

3 KV DC TRACTION SUBSTATION EARTHING SYSYTEM FOR HIGH VOLTAGE OUTDOOR YARDS

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Transnet and Relevant Third Parties

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1.0 SCOPE

- 1.1 This specification specifies Transnet freight rail's requirements for the design, supply, installation and testing of the earthing systems for new and existing 3kV DC traction substations.
- 1.2 This specification must be read in conjunction with Transnet freight rail's drawings BBB 3620 and CEE-TBD-7.

2.0 STANDARDS AND PUBLICATIONS

- 2.1 Unless otherwise specified all materials and equipment supplied shall comply with the applicable and latest editions of SANS and Transnet Freight Rail's publications.
- 2.2 The following publications (latest editions) are referred to in this specification:

2.2.1 SOUTH AFRICAN NATIONAL STANDARDS

- SANS 1063 Earth rods, couplers and connections.
- SANS 1507 -1-3 Electric cables with extruded solid dielectric insulation for fixed installations. (300/500V to 1900/3300V).
- SANS 2063 Thermal spraying - Metallic and other inorganic coatings - Zinc, aluminium and their alloys.
- SANS 10199 The design and installation of earth electrodes.

2.2.2 TRANSNET FREIGHT RAIL

- CEE.0177 Code of Practice:
Earth systems for electric light and power and traction installations.

TRANSNET FREIGHT RAIL'S DRAWINGS.

- BBB 3620 3kV DC earthing arrangement system for high voltage outdoor yards.
- CEE-TBD-7 3kV DC earthing arrangement system of traction substation.

3.0 METHOD OF TENDERING

- 3.1 Tenderers shall indicate clause by clause compliance with the specification. This shall take the form of a separate document listing all the specification's clause numbers indicating the individual statement of compliance or non-compliance.
- 3.2 A statement of non-compliance shall be motivated by the tenderer.
- 3.3 Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.
- 3.4 Failure to comply with clauses 3.1, 3.2, 3.3 could preclude a tender from consideration.

4.0 DEFINITIONS

Definitions are in accordance with SANS 10199.

4.1 EARTH ELECTRODE

One or more conductive parts embedded in the earth for the purpose of making effective electrical contact with the general mass of the earth, and to act as a path for the discharge of either lightning currents or fault currents.

4.2 EARTHED

So connected to the general mass of earth as to ensure at all times an immediate discharge of electrical energy without danger.

4.3 EARTHING SYSTEM

A system intended to provide at all times, by means of one or more earth electrodes, a low impedance path for the immediate discharge of electrical energy without danger into the general mass of earth.

5.0 EARTHING SYSTEMS OF TRACTION SUBSTATIONS

The earth leakage protection consists of an AC earth leakage and a DC earth leakage system as described below:

5.1 AC EARTH LEAKAGE SYSTEM

The AC earth leakage system is used to detect flashovers on high voltage HV outdoor yard equipment. The equipment in the outdoor yard is insulated from the substation earth mat and connected in parallel through a current transformer to earth mat. (Minimum resistance to earth mat is 10 Ohms). The output of the current transformer feeds to an earth leakage relay, which will trip and lock out the primary circuit breaker when operated.

5.2 DC EARTH LEAKAGE SYSTEM

The DC earth leakage system is used to detect 3kV DC and 380V AC insulation failures. The steelwork and panels inside the traction substation are bonded to a DC earth leakage busbar, which is insulated from earth mat. (Minimum resistance to earth mat is 25 Ohms). The DC earth leakage busbar is connected to the substation negative busbar through a DC earth leakage relay.

Operation of this relay will isolate the complete substation from all sources of supply and lock out the primary circuit breaker and all the 3kV DC high speed circuit breakers.

6.0 SERVICE CONDITIONS

6.1 ATMOSPHERIC CONDITIONS:

Altitude	:	0 to 1800m above sea level.
Ambient temperature	:	-10% to +50 °C.
Relative humidity	:	10% to 90% percent
Lightning Conditions	:	12 ground flashes per square kilometre per annum.
Pollution	:	Heavily salt laden or polluted with smoke from industrial sources.

6.2 SOIL CONDITION:

The soil resistivity can vary from 10 Ohmmeter to more than 5,000 Ohmmeter. Earth value enhancement methods will have to be used, where necessary to obtain the desired value of 5 Ohms or less.

6.3 CORROSION:

Buried conductors will be exposed to both severe galvanic and chemical corrosion. There is a high level of stray current in the vicinity of 3kV DC traction substations which will reduce the life of the earthing system.

7.0 TECHNICAL REQUIREMENTS

7.1 The design and installation of Transnet Freight Rail's earthing system for outdoor yards shall be in accordance with Transnet Freight Rail's drawings BBB 3620 and CEE-TBD-7.

7.2 A 5-second fault current duration shall be used for the rating of the earthing system. The earth down conductors and earth tails shall be able to withstand 6,2 kA for 5 seconds when exothermically welded. The rated AC fault level for 3kV DC traction substations shall be taken to be 16kA.

7.3 Deviation of the design shall be submitted to the project manager for approval.

8.0 EARTHING LAYOUT

8.1 The following electrical equipment in the outdoor yard shall be bonded directly to earth mat.

- The support steel structures for the surge arresters at the Eskom supply side.
- All high voltage surge arresters.
- The high voltage AC disconnects.
- Voltage transformer steel structures where applicable.
- Main Current transformers on Eskom side of primary circuit breaker in high voltage (HV) yard.
- The perimeter fence posts and gates.
- Substation metal roof.

8.2 The following electrical equipment forms part of the AC earth leakage system and shall be connected via a current transformer to earth.

- Main traction transformer.
- Primary circuit breaker.
- Main current transformers between primary circuit breaker and main traction transformer.
- The Auxiliary transformer's barrier screen.

8.3 The following electrical equipment is connected directly to the substation negative busbar.

- The auxiliary transformer tank.
- All spark gaps.

8.4 The following outdoor electrical equipment is connected directly to the DC earth leakage relay busbar.

- The Anode wall plate (Wall Bushings).
- The auxiliary transformer neutral point.
- AC / DC motorised link framework and structure where fitted.
- The auxiliary transformer short circuiting switch fitted on substation wall in the outdoor yard.

9.0 MATERIALS TO BE USED.

EARTHING

9.1 Only copper rods of at least 70 mm² shall be used for earth electrodes in accordance to SANS 1063.

The length of the rods will be dependant on the application:

- Earth electrodes (earth spikes). Minimum length of 1.5 meters shall be used.
- Down conductors, earth tails and interconnecting conductors. Rods of varying lengths may be used.

9.2 The minimum size of cable/conductor used for the earthing system shall be 95 mm² copper.

9.3 For the installation or replacement of the main earth mat/earth electrode, Copper conductor of at least 16mm diameter shall be used and shall be buried at least 1,5 meters below the ground. The earth mat shall cover an area of at least 1,5 square metre.

9.4 The earth mat shall be provided with a test point connection for test purposes. This test point shall protrude a minimum of 100mm above ground level and shall be protected by means of a metal pipe or metal housing.

9.5 The location of the earth mat/earth spike shall be as close as possible to the main surge arresters support structures.

AC EARTH LEAKAGE SYSTEM

9.6 PVC insulated 95 mm² copper cable shall be used where insulated earthing conductors are required for the interconnecting of the high voltage equipment on the AC earth leakage system.

9.7 The resistance between the outdoor yard steelwork connected to AC earth leakage system and main earth electrode shall be a minimum of 10 Ohms.

10.0 INSTALLATION OF EARTHING SYSTEM.

10.1 EARTHING SURVEY

10.1.1 For new installations the contractor shall carry out an earthing survey in accordance with the method as described in specification CEE.0177 or SANS 10199 to determine the type of earthing system required. The contractor shall be required to submit a separate quotation for the survey.

10.1.2 For existing substations the contractor shall carry out earth resistance tests to establish the condition of the existing earth mat/earth spike and shall replace such earth mat/earth spike where required.

10.2 TRENCHING

10.2.1 Before any trenching commences the contractor shall consult with Transnet Freight Rail staff for approval with regard to the routing of the trenches in the outdoor yard.

10.2.2 Trenching shall include all trenches required for the installation of the earthing system.

10.2.3 The perimeter fence trenching shall be as close as possible to the perimeter fence on the inside of the HV yard.

- 10.2.4 The depth of trenches shall be at least 700 millimetres. Care must be taken not to damage existing cables in the high voltage outdoor yard during trenching operations.
- 10.2.5 Before the trenches are closed a representative from Transnet Freight Rail shall inspect the earthing system for correct installation procedure.

10.3 INSTALLATION PROCEDURES

- 10.3.1 Earth electrodes shall be driven into the ground in the perimeter fence trench at the corners of the outdoor yard and in between the corners.
- 10.3.2 In the case of double unit substations the number of earth electrodes between the corner electrodes shall be determined in consultation with Transnet Freight Rail.
- 10.3.3 The depth of the earth electrodes driven into the ground shall be such that the top of the earth electrode shall be a minimum of 700 mm below the surface of the ground.
- 10.3.4 The earthing of the support steel structures for the surge arresters, AC disconnects, voltage transformers (where installed) and current transformers shall be in accordance with Transnet Freight Rail's drawing BBB 3620.
- 10.3.5 The surge arresters base shall be connected directly to earth mat/spike.
- 10.3.6 Where surge arresters are fitted on the main transformer provision shall be made to install an earth electrode in close proximity to the transformer. The earth electrode shall be connected directly to the earth system as shown in drawing BBB3620.
- 10.3.7 All underground connections which include connections to the earth electrodes, the joints in the copper plated steel rods, connections to the perimeter fence posts, support steel structures and the connection to the new or existing earth mat shall be exothermic welded or crimped by means of tinned lugs or by means of brass clamping system.
- 10.3.8 Where exothermic welding cannot be carried out, galvanised or stainless steel grade S304 studs, nuts, tinned cable lugs and any other approved means may be used for the termination of the earthing conductors to the fence posts, surge arresters down leads, metal structure and other electrical equipment.
- 10.3.9 Exothermic welded joints and steel components exposed to corrosion shall be sealed with a durable waterproofing compound i.e. Bitumen, Denso tape or Noxide.
- 10.3.10 All crimped connections that are above ground level must be filled with an anti corrosive compound.
- 10.3.11 Where the exothermic welding is carried out on galvanised surfaces of the support steel structures, the galvanising must be removed and the surface cleaned. After completion of the exothermic weld, the surface area on the support steel structure where the galvanising was removed shall be treated in accordance with the requirements of SANS 2063.
- 10.3.12 Exothermic joints shall be hammer tested on recommendation of the manufacturer to ensure that the mechanical strength of the joints are adequate. The exothermic weld is tapped by a hammer and by sound it is determined whether the joints are solid or that there are voids in the joint.
- 10.3.13 Where two earthing conductors run parallel to each other, exothermic parallel joints shall be installed every 1,5 metres on all straight sections between these conductors.

10.4 CERTIFICATION OF CONTRACTORS (EXOTHERMIC WELDING)

- 10.4.1 Only Contractors who are certified and accredited by the exothermic welding industry shall be used for the installation.

10.5 CRUSHER STONE**NEW SUBSTATIONS**

- 10.5.1 After completion of construction, installation of equipment, the laying of all cables and earthing conductors, a suitable weed killer approved by Transnet Freight Rail's Project Manager shall be applied in the outdoor yard unless otherwise specified.
- 10.5.2 The successful tenderer shall exercise the greatest care to avoid contaminating private property.
- 10.5.3 After treatment with the weed killer, a 100mm layer of 25mm to 37mm crusher stone shall be laid over the whole area of the Transnet Freight Rail high voltage outdoor yard (within the apron).

EXISTING SUBSTATIONS

- 10.5.4 The contractor shall remove the necessary crusher stone before any excavation commences.
- 10.5.5 The contractor shall restore the crusher stone to its original condition once the installation work has been completed.
- 10.5.6 The contractor shall supply any additional crusher stone required to restore the trenched areas to original condition.

11.0 SPECIAL TOOLS (OPTIONAL)

- 11.1 Tenderers shall furnish quotations for the special bending equipment, crimping tools and exothermic welding moulds required for the installation of the earthing system.
- 11.2 The price shall form a separate part of the quotation.

12.0 TESTS AND ACCEPTANCE

- 12.1 The contractor shall perform resistance measurement tests, which shall be witnessed by a representative of Transnet Freight Rail. The resistance measurements shall be entered into the substation station log book.
- 12.2 In the event of any dispute, Transnet Freight Rail reserves the right to make the final decision on the acceptance of the earthing system.

END



A Division of Transnet SOC Limited

TECHNOLOGY MANAGEMENT

SPECIFICATION

TRANSNET FREIGHT RAIL'S REQUIREMENTS FOR THE INSTALLATION OF ELECTRICAL EQUIPMENT FOR 3kV DC TRACTION SUBSTATIONS

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Three handwritten signatures in black ink, each followed by a horizontal dotted line, representing the signatures of B.L. Ngobeni, L.O. Borchard, and S.E. Sibande.

Date: 02 August 2016

Circulation Restricted To:

Transnet Freight Rail – Chief Engineer Infrastructure
- Technology Management

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SECTION 1: SUBSTATION DESIGN INFORMATION
1.0 SCOPE

- 1.1 This specification covers Transnet Freight Rail's requirements for the installation of electrical equipment in 3kV DC traction substations.
- 1.2 This specification should be read with the Scope of Work specification for each site/project and the applicable equipment specifications.
- 1.3 This specification also covers the requirements for the supply of security fencing, preparation of the High Voltage (HV) outdoor yard and the erection of all structural steelwork.

2.0 STANDARDS, PUBLICATIONS AND DRAWINGS

Unless otherwise specified this specification must be read in conjunction with the current edition of the relevant SANS, and Transnet Freight Rail's specifications.

2.1 SOUTH AFRICAN NATIONAL STANDARDS (SANS)

SANS 121:	Hot dip galvanized coatings for fabricated iron or steel articles. Specifications and test methods.
SANS 156:	Moulded-case Circuit Breakers.
SANS 780:	Distribution Transformers.
SANS 1019:	Standard voltages, currents and insulation levels for electricity supply.
SANS 1091:	National Colour Standard.
SANS 1222:	Enclosures for Electrical Equipment.
SANS 1339:	Cross-Linked Polyethylene (XLPE) - Insulated Electric cables for rated voltages (3,8/6,6kV to 19/33kV)
SANS 1431:	Weldable structural steels.
SANS 1507:	Electric cables with extruded solid dielectric insulation for fixed installations. (300/500V to 1900/3,300V) Part 1
SANS 10142-1:	The wiring of premises. Part 1
SANS 61869-2:	Instrument Transformers Part 2. Current Transformers.

2.2 TRANSNET FREIGHT RAIL SPECIFICATIONS/ ENGINEERING INSTRUCTIONS

CEE.0023:	Transnet Freight Rail's requirement for the installation of low and medium voltage cables.
CEE.0045:	Painting of steel components of electrical equipment.
CEE.0099:	Specification for 3kV DC high speed circuit breakers for traction substations.
CEE.0227:	The manufacture of 3kV DC breaker cells and trucks.
BBB 0496:	3kV rectifier for traction substations.
BBB 0845:	Requirements for metal oxide surge arresters in accordance with SANS 60099-4.
BBB 1267:	Specification for Outdoor High Voltage Alternating Current Circuit Breaker in Accordance with SANS 62271-100.
BBB 1616:	450 Volt gas arrester spark gap for traction power supplies.
BBB 2502:	Requirements for battery charger for 3kV DC traction substations.

BBB 2721:	AC primary circuit breaker control panel and AC/DC distribution panel for 3kV traction substation.
BBB 3005:	3kV DC under voltage relay manufacturing specification.
BBB 3139:	Wave filters capacitors for 3kV DC traction substations.
BBB 3162:	Wave filter inductors for 3 kV DC traction substations.
BBB 3890:	Requirements for 1.8 milli Henry DC reactor for 3kV DC traction substations.
BBB4724:	Requirement for positive isolator for 3kV DC traction substations
BBB 5019:	Requirements for traction transformers for 3kV DC traction substations in accordance with SANS 60076
BBB 7842	Outdoor, High Voltage, Alternating Current Disconnectors combined with earthing switch.
BBC 0198:	Requirements for the supply of cables.
BBC 0330:	Isolation transformer.
BBD5994:	Technical Documentation Management Policy.

2.3 STATUTORY REQUIREMENTS

Occupational Health and Safety Act and Regulations, Act 85,1993

3.0 TENDERING PROCEDURES

- 3.1 Tenderers shall indicate clause-by-clause compliance with the specification as well as the relevant equipment specifications. This shall take the form of a separate document listing all the specifications clause numbers indicating the individual statement of compliance or non-compliance.
- 3.2 The tenderer shall motivate a statement of non-compliance.
- 3.3 Tenderers shall submit descriptive literature consisting of detailed technical specifications, general constructional details and principal dimensions, together with clear illustrations of the equipment offered.
- 3.4 Failure to comply with clauses 3.1, 3.2, and 3.3 could preclude a tender from consideration.

4.0 SERVICE CONDITIONS

The equipment shall be designed and rated for installation and continuous operation under the following conditions:

Altitude:	0 to 1800m above sea level.
Ambient temperature:	-10°C to +55 °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.

5.0 ELECTRICAL SERVICE CONDITIONS

- 5.1 The incoming AC voltage can vary $\pm 5\%$ of the nominal system r.m.s voltage. Under crippled conditions the supply voltage can drop to as low as minus 15% of the nominal r.m.s voltage.
- 5.2 Frequency of the supply voltage is 50 ± 2.5 Hz.
- 5.3 The AC high voltage system shall be treated as effectively earthed unless otherwise specified.
- 5.4 The traction DC supply voltage is 3,15 kV DC nominal but can vary between 2,4kV and 3,9kV for sustained periods.
- 5.5 The 3kV DC equipment may be subjected to fault currents up to 30kA for 200 milli seconds.

6.0 GENERAL REQUIREMENTS

- 6.1 Equipment/Installations supplied shall be in terms of this specification. Deviations from the specification will not be allowed without the written consent of the Project Manager/Engineer.
- 6.2 Transnet Freight Rail reserves the right to subject material and equipment offered to test or inspection to verify compliance with the clauses of this specification, prior to adjudication or at any stage during manufacture.
- 6.3 The tenderer shall submit the layout drawings of equipment, electrical wiring schematics, and constructional designs to Transnet Freight Rail for design review.
- 6.4 The successful tenderer will be responsible for all costs caused by modifying or replacing equipment accepted by Transnet Freight Rail on the grounds of his statement of compliance and found by Transnet Freight Rail not to comply.
- 6.5 All equipment shall be adequately earthed, insulated, enclosed and interlocked to ensure the safety of staff as well as equipment.
- 6.6 The general design and layout of all equipment shall provide for easy access to all parts.
- 6.7 The equipment shall be installed in such a manner so as to limit fire damage, which may be caused by equipment failure, overheating or flashovers.
- 6.8 The substation control and protection circuits shall be designed and wired according to the fail-safe principle. Control equipment, contactors and relays shall de-energise under fault, power failure or alarm (flag) conditions.
- 6.9 No high voltage cables shall be laid in the same trench or duct as low voltage cables.

7.0 GENERAL DESIGN OF EQUIPMENT

- 7.1 This section covers substation equipment with electrical capacities between 3,0 MW and 6,0 MW.
- 7.2 The overload ratings of the rectifier units shall be:
 - 2 times full load for thirty minutes.
 - 3 times full load for one minute.
 - 3 ½ times full load for ten seconds.
- 7.3 The substation can either be a single unit or double unit substation. Each unit comprises of one set of high voltage AC switchgear, one rectifier transformer, and one rectifier assembly, connected for 6 or 12 pulse operation and protected by a AC primary circuit breaker.
- 7.4 For a double unit substation each unit shall have the overload rating as specified in clause 7.2.
- 7.5 Each substation unit shall be capable of operating independently to allow for maintenance, fault finding and servicing of the equipment.

8.0 INSULATION AND CLEARANCES FOR 3kV DC EQUIPMENT

- 8.1 All indoor equipment, which may be energised at a potential of more than 1,0kV shall be protected by, metal barriers, mesh type screens or panels.
- 8.2 The minimum clearance in air between the rectifier unit and any metal barriers, mesh type screens or panels shall not be less than 450mm.
- 8.3 All exposed electrical equipment and busbars connected between the rectifier transformer secondary and the rectifier cubicle(s), or between the rectifier cubicle(s), positive isolators, DC smoothing equipment or track breakers, which is at a potential above 1,0kV, shall be arranged so that there is a minimum clearance of 2,7 m from the lowest "live" high voltage connections and ground or the floor of the access way, unless suitably screened, or otherwise protected.
- 8.4 All nominal 1,5kV and 3kV insulation to earth shall be designed such that the complete rectifier assembly, when installed on site ready for commissioning, will successfully withstand a test voltage of 10,5kV, 50 Hz AC for one minute.
- 8.5 Where the equipment or subassemblies of the rectifier assembly is enclosed and insulated from the outer framework, the insulation between the equipment and outer framework shall withstand the test voltage of 10,5kV 50 Hz for one minute.

- 8.6 The clearance between the reactor and any metal frame shall not be less 100mm. The reactor must successfully withstand a test voltage of 10,5kV AC 50 Hz for one minute
- 8.7 The successful tenderer shall advise what precautions must be taken before undertaking the withstand insulation level voltage tests to avoid damage to the equipment.
- 8.8 Creepage distance of insulation and the required air clearances shall be as large as possible. The latter shall not be less than:
- Outdoors: 150mm between the transformer secondary busbars and any steelwork such as wall plates, screening etc.
 - Indoors: 100mm between the equipment at nominal 1,5kV or 3kV DC and negative busbars and panel steelwork, between the high voltage AC supply to the rectifier cubicles and panel steelwork, the equipment at nominal 3kV DC and negative busbars.

9.0 OUTDOOR CLEARANCES AND INSULATION LEVELS

- 9.1 The minimum safety outdoor earth clearances which shall be maintained between any live conductor or metal and earthed metal and the minimum clearances of power lines above ground are in accordance with the statutory requirements of clause 15.1 of the "Electrical Machinery Regulations" of the "Occupational Health and Safety Act and Regulations, Act 85,1993", and are tabled below: -

TABLE 1:

Highest phase-to-phase r.m.s voltage for equipment. (U_m)	24kV	36kV	48kV	72kV	100kV	145kV
Nominal system r.m.s. voltage. (U_n)	22kV	33kV	44kV	66kV	88kV	132kV
Minimum safety outdoor clearance	320mm	430mm	540mm	770mm	1000mm	1450mm
Minimum clearance of power lines above ground						
Outside security fence but within Transnet Freight Rail's reserve	5200mm	5300mm	5400mm	5700mm	5900mm	6300mm
Outside Transnet Freight Rail's reserve	5500mm	5500mm	5500mm	5700mm	5900mm	6300mm

- 9.2 In terms of Transnet Freight Rail's Electrical Safety Instructions the clearances between the nearest exposed electrical equipment and a restricted access way are tabled below: -

TABLE 2:

Highest phase-to-phase r.m.s voltage for equipment. (U_m)	24kV	36kV	48kV	72.5kV	100kV	145kV
Nominal system r.m.s. voltage. (U_n)	22kV	33kV	44kV	66kV	88kV	132kV
Restricted access way (Vertical height) *	2820mm	2930mm	3040mm	3270mm	3500mm	3950mm

*See clause 903.1.3 of "Transnet Freight Rail's Electrical Safety Instructions"

(The vertical heights in restricted access ways for the various system voltages are calculated by adding 2,5metres to the normal outdoor earth clearance for the different system voltages. Refer to Annexure 9.4 of Transnet Freight Rail's Electrical safety Instructions).

INSULATION LEVELS

- 9.2 For the medium and high voltage nominal r.m.s voltage systems on Transnet Freight Rail the recommended Insulation levels in accordance with SANS 1019 is tabled in table 3.

TABLE 3

Highest phase-to-phase r.m.s voltage for equipment. (U_m)	Nominal system r.m.s. voltage. (U_n)	Rated lightning impulse withstand voltage peak.	Rated short duration power- frequency withstand r.m.s voltage.
7,2 kV	6,6 kV	75 kV	22 kV
12 kV	11 kV	95 kV	28 kV
24 kV	22 kV	150kV	50 kV
36 kV	33 kV	200 kV	70 kV
52 kV	44 kV	250 kV	95 kV
72,5 kV	66 kV	350 kV	140 kV
100 kV	88kV	380 kV 450 kV	150 kV 185 kV
145 kV	132 kV	550 kV 650 kV	230 kV 275 kV
245 kV	220 kV	850 kV 950 kV	360 kV 395 kV
Insulation levels for highest voltage for equipment $U_m < 100$ kV are based on an earth fault factor equal to $\sqrt{3}$ and for $U_m > 100$ kV an earth fault factor equal to $0,8\sqrt{3}$. Where more than one insulation level is given per voltage system, the higher level is appropriate for equipment where the earth fault factor is greater than 1,4.			

TABLE 3: Standard Voltages and insulation levels in accordance with SANS 1019:2008 [1]**SECTION 2: TRACTION SUBSTATION EQUIPMENT OUTDOOR YARD EQUIPMENT****10.0 METAL OXIDE SURGE ARRESTERS**

- 10.0 The contractor shall supply and install metal oxide gapless surge arresters in accordance with Transnet Freight Rail's specification BBB 0845.
- 10.1 The surge arresters shall be connected between each phase of the high voltage supply and substation main earth electrode/earth mat
- 10.2 The maximum protected distance from the main transformer bushing terminal to the surge arrester terminal shall be as indicated in table 4.

TABLE 4:

NOMINAL SYSTEM R.M.S VOLTAGE (kV)	MAXIMUM DISTANCE (Metres)
44kV	5
66kV	6
88kV	6
132kV	7

- 10.3 The neutrals of high voltage supplies are to be treated as effectively earthed unless otherwise specified.
- 10.4 For the installation of high voltage surge arresters on the main transformer, refer to Transnet Freight Rail's drawing BBB 0938
- 11.0 HIGH VOLTAGE AC DISCONNECTOR**
- The contractor shall supply and install the high voltage AC disconnecting switch in accordance with Transnet Freight Rail's specification BBB 7842.
- 12.0 HIGH VOLTAGE PRIMARY CIRCUIT BREAKER**
- The contractor shall supply and install the high voltage AC primary circuit breaker in accordance with Transnet Freight Rail's specification BBB 1267.
- 13.0 MAIN CURRENT TRANSFORMERS**
- 13.0 The main current transformers shall comply with the requirements of Transnet Freight Rail specification BBB 0937.
- 13.1 The main current transformers shall either be fitted in the high voltage bushings of the main traction transformer or shall be the freestanding post type current transformers install on the line side of the main traction transformer.
- 13.2 In the event of Eskom or Local Utility requiring three current transformers for metering purposes the successful contractor shall supply and install the additional current transformer.
- 13.3 The ratios, accuracy and burdens of the current transformers shall be in accordance with Transnet Freight Rail's Specification BBB 0937.
- 14.0 MAIN TRACTION TRANSFORMER**
- 14.1 The contractor shall be responsible for the delivery, assembling, filling of transformer oil and installation on site of the main traction transformer in accordance with Transnet Freight Rail's Specification BBB 5019.
- 15.0 AUXILIARY TRANSFORMER**
- 15.1 The contractor shall make provision for the supply of an auxiliary transformer which shall comply with the requirements of SANS.780
- 15.1.1 The auxiliary transformer shall be three phase with a minimum rating of 50kVA or higher depending on the substation requirements.
- 15.1.2 The 3 phase auxiliary transformer shall be supplied from the tertiary winding of the main traction transformer
- 15.1.3 The auxiliary transformer shall be the sealed unit type suitable for outdoor installation. Full details of the transformer shall be submitted.
- 15.2 In the case of a double unit substation one auxiliary transformer may be provided unless otherwise specified.
- 15.3 The secondary winding of the auxiliary transformer shall be star-connected.

- 15.4 The auxiliary transformer shall supply the required kVA rating without exceeding the permissible temperature rise laid down in SANS 780.
- 15.5 The nominal no-load secondary voltage of the auxiliary transformer shall be 400V three phase.
- 15.6 Off-load, externally operated tap changing gear shall be provided on the transformer, with tapplings to compensate for any change in the main transformer tapping.
- 15.7 All primary and secondary terminals, including the secondary neutral, shall be brought out through the transformer tank by means of bushing type terminals and shall be arranged for busbar/cable connections.

16.0 AUXILIARY TRANSFORMER PROTECTION

PRIMARY WINDING

- 16.0 The contractor shall make provision for overload protection of the primary winding. Refer to clause 8.8 of specification No BBB 2721.
- 16.1 The protection system shall consist of an approved type of overload relay with its associated current transformers.

16.2 SECONDARY WINDING

- 16.3 The contractor shall supply and install a three phase isolating and earthing switch for the secondary supply of the auxiliary transformer to the substation.
- 16.4 The isolating and earthing switch shall be fitted with mechanical interlocking of the key exchange type, which shall form part of the interlocking procedure for the substation. Refer to clauses 31.0 and 32.0 of this specification.

17.0 AC EARTH LEAKAGE CURRENT TRANSFORMER.

- 17.1 The contractor shall supply and install a bar primary current transformer for the AC earth leakage protection. The current transformer shall be installed on the support steel structure of the primary circuit breaker.
- 17.2 One terminal of the primary winding shall be connected to the primary circuit breaker frame and the other terminal shall be connected to the substation main earth electrode/mat. (Refer to drawing CEE-TBD-7 and BBB 3620).
- 17.3 The current transformer shall be class 10P10, ratio 50/5 or 100/5.
- 17.4 The current transformer shall be designed to withstand a test voltage of 2kV for 1 minute.

INDOOR EQUIPMENT

18.0 3kV DC RECTIFIER EQUIPMENT

- 18.1 The contractor shall supply and install 3kV DC rectifiers in accordance with Transnet Freight Rail's Specification BBB 0496.
- 18.2 Each rectifier unit and its associated control equipment shall be designed to form an independent unit.
- 18.3 The rectifier equipment shall be installed in screened bays fitted with gates.
- 18.4 The gates shall be fitted with mechanical interlocks of the key exchange type in accordance with clauses 31 and 32 of the specification.
- 18.5 The bay screens shall be constructed of approximately 25mm woven wire mesh or expanded metal fixed to tubular or angle iron frames complete with doors, pillars, gates etc.
- 18.6 The height of the screens and gates shall be similar to the height of the control panels but shall be not be less than 1,8 m.
- 18.7 In a double unit substation the rectifier units are referred to as the "A" and "B" units and shall be labelled as such.

- 18.8 It is required that each rectifier unit in a double unit substation can be isolated independently and earthed without shutting down the whole substation.
- 18.9 Individual rectifier units shall be screened from each other and from any other live common equipment. A mechanical key exchange interlocking system type in accordance with clauses 31 and 32 shall be fitted to ensure the safety of personnel working on the isolated rectifier equipment.
- 18.10 The rectifier units and bay screens shall be insulated from the floor.

19.0 3kV DC REACTOR

- 19.1 The contractor shall supply and install a 1.8 milli Henry 3kV DC air core reactor for each rectifier unit. The installation shall include the supply of all the required insulators, foundations, foundation bolts and fasteners.
- 19.2 The 3kV DC reactor shall be in accordance with Transnet Freight Rail's Specification BBB 3890.
- 19.3 The reactor shall be insulated from the substation floor by means of insulators.
- 19.4 Sufficient space shall be allowed for access to the reactor for maintenance and inspection purposes.

20.0 WAVE FILTER

- 20.1 The contractor shall supply and install the wave filter equipment in accordance with Transnet Freight Rail's specification BBB 3139 for wave filter capacitors and BBB 3162 for inductor coils.
- 20.2 A wave filter is connected in parallel with the rectifier output. The filter unit is a capacitive inductive circuit, which is tuned to resonate at specific harmonic frequencies.
- 20.3 The filter equipment shall be so designed that no individual harmonic voltage is greater than 2% of the output voltage.
- 20.4 The inductor coils shall have sufficient adjustment to compensate for change in the capacitance values due to ageing. Refer to Transnet Freight Rail's drawing BBB 3483 for assembly.
- 20.5 A 100 Ampere High Rupturing Capacity (H.R.C) fuse shall be fitted to protect the wave filter equipment.
- 20.6 The fuse holder shall be mounted on insulators.
- 20.7 The insulators shall be so designed that the flashover path is not less than 100mm and shall support the fuse at a distance of not less than 100mm from the bolts securing the base plate. The insulators shall have a minimum dry flashover value of 20kV.
- 20.8 Access to the wave filter equipment shall only be possible once the wave filter capacitors have been connected to rail, discharged and the primary circuit breaker tripped.
A 75 kilo Ohm resistor consisting of two 150 Kilo Ohm, 150 watt vitreous enamel resistors connected in parallel shall be provided for the discharging of the wave filter capacitors when the equipment is isolated and earthed.
- 20.9 The discharge resistors shall be mounted on a suitable insulation panel or bar, which shall be insulated for 3kV DC. A minimum clearance of 75mm must be provided between the terminals, and 100mm between any 3kV live portion of the equipment and earth.
- 20.10 The wave filter capacitors shall be earthed with 95mm² PVC insulated copper cables to the DC earth leakage system.
- 20.11 The wave filter equipment shall be housed in a separate explosion proof room or cubicle.

21.0 3kV DC POSITIVE ISOLATOR

- 21.1 The contractor shall supply and install the 3kV DC positive isolator in accordance with Transnet Freight Rail's specification BBB 4724.
- 21.2 The DC positive isolator metal cubicle/housing shall be insulated from the substation floor.

22.0 CONTROL PANELS

- 22.1 The contractor shall supply and install the AC primary circuit breaker control panel and the AC/DC distribution panel in accordance with Transnet Freight Rail's specification BBB 2721.

22.2 The control panels shall be insulated from the substation floor.

ELECTRONIC EQUIPMENT

22.3 The tenderer must be aware that high voltage surges and transient voltages can be induced in low voltage and control wiring due to switching and lightning. Special care shall be taken in the design and layout of the equipment to limit these voltages.

22.4 Electronic equipment shall suitably be protected against over voltages, surges and transients. Dehn type surge protection units or equivalent shall be used. Liberal use of metal oxide varistors is also encouraged.

23.0 BATTERIES

23.1 The contractor shall supply, install and commission a 53 cell 110 Volt Planté lead acid battery bank. The capacity of the battery can either be 100 Ampere hour rating, 200 Ampere hour rating or capacity dependant on the substation requirements.

The standard for the batteries shall be the 10-hour rate at 20°C. The battery shall be capable of delivering a minimum of 10 Amperes for 10 hours.

23.2 Batteries are installed in traction substations for control and protection purposes. The battery is used for the following functions:

- Tripping and closing of primary circuit breakers.
- Supply to protection relays.
- Closing and holding coil supply to DC high speed circuit breakers.
- 110 Volt supply to control panel.

24.0 BATTERY CHARGER

24.1 The contractor shall supply and install the battery charger in accordance with Transnet Freight Rail's specification BBB 2502.

24.2 The battery charger shall be insulated from the substation floor by means of "Marley" or "Lino" floor covering not less than 2mm thickness.

25.0 TRACK FEEDER HIGH SPEED CIRCUIT BREAKERS

25.1 The successful tenderer shall supply and install the required 3kV DC high speed circuit breakers in accordance with Transnet Freight Rail's specification CEE.0099 as well as with the following additional requirements:

25.2 The high-speed circuit breakers shall be of the conventional truck mounted type as commonly used by Transnet Freight Rail in the 3kV DC traction substations.

25.3 High-speed circuit breakers shall be fitted with an automatic reclosing feature, which provides for 1 (one) reclosure at 20 to 35 seconds interval. Refer to drawings CEE-TBP-35. "Connection diagram for the high speed circuit breaker and electronic control relay".
CEE-TBP-39. "Circuit diagram for auto reclosure for the high speed circuit breaker.

25.4 Transnet Freight Rail shall provide the auto reclosure relays. The relays shall be wired by the contractor in accordance with the requirements of clause 25.3.

25.5 The high speed circuit breakers shall be complete in all respects. This shall include housings, rack out trucks, base rails, main and auxiliary contacts and flapper gear and any other fittings or equipment required for the correct operation of the high-speed circuit breakers.

25.6 The high-speed circuit breakers shall be racked into breaker cells, each having two fixed contacts mounted at the rear of the breaker cell. One contact is connected to the substation positive busbar and the other to a wall bushing mounted in the building outer wall.

25.7 All other items of material such as cell slabs, main busbars, earthing connections, wall bushing plates or blanking-off plates, control cables etc, shall be included in the tenderer's offer.

25.8 Transnet Freight Rail shall provide details of the wall plate frame and standard cell slabs where applicable.

- 25.9 Where access is possible to the rear of the high-speed circuit breakers (busbar chamber) access barriers shall be installed.
- 25.9.1 The barriers shall be fixed to angle iron frames with fasteners which only be removed with tools. Warning signs shall be fitted to the barriers.

26.0 MODULAR TYPE STEEL HOUSED HIGH SPEED CIRCUIT BREAKERS

- 26.1 Where tenderers offer modular type high-speed circuit breakers they shall submit full information, construction and dimensional drawings with their offer.
- 26.2 Transnet Freight Rail specification CEE.0227 shall be used as a guideline.
- 26.3 The tenderers must be fully aware that the requirements of Transnet Freight Rail's specification CEE.0099 are relevant.
- 26.4 Transnet Freight Rail reserves the right to accept or reject offers for equipment after consultation with tenderers. Transnet Freight Rail's Senior Engineer, Technology Management, shall approve all designs.
- 26.5 The modular type steel housings shall be insulated from the substation floor.

27.0 REGENERATIVE HIGH SPEED CIRCUIT BREAKER

- 27.1 At certain substations Transnet Freight Rail will require 3kV DC regenerative braking energy absorption equipment. If required the successful contractor shall supply the high speed circuit breaker for the protection of the regenerative braking equipment in accordance with Transnet Freight Rail's specification CEE.0099.

28.0 3kV DC UNDERVOLTAGE RELAY

- 28.1 The contractor shall supply and install a 3kV DC under-voltage relay with a high voltage potential divider in accordance with Transnet Freight Rail Specification BBB 3005 and shall provide the following:
- 28.2 Fibre optic technology must be used to provide galvanic isolation between the potential divider and the undervoltage relay.
- 28.3 The potential divider shall be mounted in the 3kV busbar chamber or in the high voltage compartment of the positive isolator cubicle in accordance with Transnet Freight Rail's Specification BBB 4724.
- 28.4 The potential divider shall be protected by an H.R.C fuse connected between the positive side of the 3kV DC supply and the input of the potential divider.
- 28.5 Insulation clearance shall be not less than 100mm. All normally live equipment on the potential divider shall withstand a test voltage of 10,5kV AC RMS 50 Hz for one minute to earth without breakdown.
- 28.6 If the undervoltage relay is wall mounted, an engraved warning label shall be fixed to the front of the undervoltage relay panel with the following warning:

WARNING

THE POSITIVE BUSBAR MUST BE ISOLATED AND EARTHED BEFORE WORK IS UNDERTAKEN ON THE UNDERVOLTAGE RELAY

- 28.7 The following connections shall consist of 95mm² cross-sectional area copper or copper equivalent conductors.
- Potential divider to negative busbar.
 - Resistor base plate to DC earth leakage busbar.
 - Relay metal case to DC earth leakage busbar.

SECTION 3: INSTALLATION**SUBSTATION EARTHING****29.0 INDOOR EARTHING****(REFER TO DRAWING CEE-TBD-0007)**

The successful contractor shall supply, install and comply with the following:

- 29.1. The supply and installation in the substation building of all earthing conductors for the earthing of all metal work which includes supporting frames, control panels, battery charger, positive isolator panel, track breaker cells, rectifier bay screens, chequer plates and metal bases of insulators mounted directly on the walls or floor etc.
- 29.2. The frames and bases of all items associated with the 3kV DC including the track feeder wall plates, shall be connected through the DC earth leakage relay to the negative busbar in accordance with Transnet Freight Rail's drawing CEE-TBD-0007.
- 29.3. The DC earth leakage relay and the installation thereof shall comply with the requirements specified in clause 8.6 of Transnet Freight Rail's specification BBB2721.
- 29.4. Earthing conductors which could be subjected to 3 kV DC faults caused by insulation breakdown, etc., shall be not less than 70mm² copper strap cross-sectional area or 95mm cross-sectional area PVC insulated stranded copper cable. Other earth conductors must have a minimum of 16mm² copper cross-sectional area.
- 29.5. The earthing system for the 3kV DC positive busbar chamber shall be supplied by the successful tenderer. The design of the system shall be in conjunction with Transnet Freight Rail staff.
- 29.6. The successful tenderer shall supply the portable earthing device and cables according to Transnet Freight Rail's requirements.
- 29.7. All connections to the DC earth leakage relay shall form part of a ring circuit for safety when part of the circuit is disconnected. Refer to drawing CEE-TBD-0007.
- 29.8. The earth conductors shall not be installed in such a manner as to bridge out the earth leakage relay.
- 29.9. The resistance between the DC earth leakage busbar and the substation main earth electrode/mat shall be not less than 25 ohms.
- 29.10. Holding-down bolts grouted in the floor shall not be in direct contact with reinforcing or in with the earth under the concrete floor in the substation.
- 29.11. Where mounting bolts are used for securing electrical equipment to the floor, these bolts must be insulated to prevent electrical contact with any reinforcing or floor.
- 29.11.1 The indoor substation equipment shall be earthed in groups as shown in Transnet Freight Rail's drawing CEE-TBD-0007.

30.0 OUTDOOR EARTHING**(DRAWING NO CEE-TBD-7 AND BBB 3620)**

The successful tenderer shall supply, install and comply with the following:

- 30.1 Outdoor yard earthing which includes earth spikes, trench earths, earth connections to the support steel structures and fence posts. The material used shall comply with Transnet Freight Rail's specification BBB 3059 and drawing BBB3620.
- 30.2 A rail-earth switch mounted on the gate that provides access to the outdoor yard and where applicable to the 3kV DC overhead feeder security area and provides all connections thereto.
- 30.3 In Transnet Freight Rail switchyards where the supply from the Electrical Utility is terminated on portal structures or where a flying busbar is provided the contractor shall earth these structures.
- 30.3.1 Install two 50mm² galvanised steel earth conductors, one each between the outside portal structure or flying busbar support and the gable of the substation building.

- 30.3.2 The earth conductor shall be suitably terminated and connected to the portal or flying busbar structures. A suitable bracket shall be supplied and mounted on the gable of the substation building. The earth conductors shall directly be terminated on the bracket and connected to the main earth electrode/mat.

Insulating of structures and electrical equipment.

- 30.3.3 The tenderer shall make provision for the insulating of the support steel structures for i.e. the primary circuit breaker, main current transformers and any other structure that is connected to the AC earth leakage system from the concrete foundation.
- 30.3.3.1 The insulating material shall be either the same material used for the insulating of the mast bases for the overhead track equipment or other insulating material that has been approved by Technology Management.
- 30.4. The tenderer shall make provision for the insulating of the base of the main traction transformer from the concrete plinth. Malthoid or any other approved insulation shall be used.

31.0 INTERLOCKING

GENERAL

- 31.1 The equipment for each substation shall include a mechanical interlocking system; preferably the "Castell" or other approved key type. Full details of the type offered instead of the "Castell" type shall be submitted with the tender.
- 31.2 The mechanical interlocking system must be designed to prevent access to the high voltage equipment whilst "live" and ensure that switching and isolating operations are carried out in the correct sequence.
- 31.3 All equipment shall be delivered with the necessary interlocks fitted.
- 31.4 It shall not be possible to operate the locks and release the keys in any but the correct sequence or in any position of the switches or gates, other than the fully "closed" or fully "open" position, as the case may be.
- 31.5 When a unit is switched to local condition and isolated, no remote switching from the control office shall be possible. Tenderers shall furnish full explanatory details of the arrangement whereby the foregoing provisions are met.
- 31.6 The track feeder breakers shall remain closed throughout the isolation procedure.

32.0 ISOLATING PROCEDURE

Sequence to isolate a single unit substation rectifier unit.

- 32.1 Trip high voltage AC circuit breaker.
- 32.2 Open high voltage AC disconnecting switch-key "1" released.
- 32.3 Remove key "1"- AC disconnecting switch locked in open and earthed position.
- 32.4 Use key "1" to operate auxiliary supply's three phase isolating and earthing switch - key "1" trapped - key "2" released.
- 32.5 Use key "2" to unlock DC positive isolating and earthing switch.
- 32.6 Open DC positive isolating and earthing - key "2" trapped - key "3" released. Remove key "3". DC positive isolating and earthing switch locked in open position.
- 32.7 Use key "3" to open rectifier unit bay gate (and DC smoothing reactor screen if required).
- 32.8 If a number of keys are required to open the rectifier cubicles, a key exchange system may be used.
- 32.9 Procedure is reversed to switch the rectifier unit back on load.
- 32.10 The number indicated for the keys are for single unit substations only. Where there are two units in one substation the numbers of keys for the two units shall be A1 and B1, A2, and B2, etc. It shall not be possible to exchange keys between any equipment on different units.

- 32.11 The foregoing sequence is given as a guide and may be altered to suit tenderer's equipment. The design shall be approved by Transnet Freight Rail.
- 32.12 Where the wave filter equipment is not located in the rectifier bay, the access to the equipment shall be mechanically interlocked and form part of the interlocking procedure.
- 32.13 Access to the wave filter shall only be possible once the positive isolator is earthed and the primary circuit breaker is tripped. Refer to clause 20.8
- 32.14 Any deviation from the above guideline must be approved by Transnet Freight Rail.
- 33.0 INDOOR CABLING, BUSBARS AND ASSOCIATED EQUIPMENT**
- The contractor shall supply and install the following:
- 33.1 All low voltage PVC insulated supply and control cables.
- 33.2 3kV DC copper cables and copper busbars from the Anode wall plate to the rectifier and from the rectifier equipment to the DC positive isolating switches, DC smoothing reactors, and main DC negative busbar. In the event of aluminium (grade 6063) being used the minimum size shall be 50mm x 25mm busbar.
- 33.3 Where required, the supply and fitting of hot dip galvanised anode wall plates in the wall of the substation building, at the rectifier bays. The wall plate galvanising shall comply with SANS 121.
- 33.3.1 Wall plates shall be fitted with wall bushings, one for each phase and the neutral.
- 33.3.2 Designs and drawings of the wall plate arrangement must be submitted for approval after adjudication of the tender.
- 33.4 The interconnecting busbars from the anode wall plate to the rectifier.
- 33.5 The main 3kV DC positive and negative copper busbars. Minimum dimension of busbars shall be 100mm X 10mm copper or 127mm X 12,5mm aluminium (grade 6063) busbar.
- 33.6 The 3kV DC output positive busbar system, which includes high-speed circuit breaker busbars, and where required the outgoing feeder cables between the high speed circuit breaker busbars and wall bushings.
- 33.7 Barriers in accordance with clause 8.0 where exposed busbars exist between the positive isolator and the DC track breaker positive, busbar.
- 33.8 Cables from the DC smoothing reactor or main positive busbar to the wave-filter equipment.
- 33.9 Control cables from the rectifier cubicles to their respective control panels.
- 33.10 Cables from the auxiliary equipment to the substation control panels.
- 33.11 Connections and cabling between control panels.
- 33.12 Cables between the 110V substation battery and the auxiliary DC panel (2 core, minimum 16mm²).
- 33.13 Cables (95mm² stranded copper) to the wave-filter room(s) for rail (negative) and DC earth leakage connections to wave-filter equipment.
- 33.14 Earthing cables (95mm² stranded copper) between the DC earth leakage busbar and substation negative busbar.
- 33.15 Two core 16mm² and multicore 2,5mm² cables between panel and high-speed 3kV DC circuit breakers.
- 33.16 Two core 6mm² cables between the 25A circuit breakers on the DC panel and the Electrical Supply Utility meter room. Make-off and connect at the DC panel only.
- 33.17 All other busbars and cables required for the interconnection of the substation indoor equipment.
- 33.18 Cable glands for the termination of the cables at the control panels and other equipment. Neoprene shrouds shall be fitted over the cable glands.

- 33.19 The maximum current density per square mm for open conductors shall not exceed 1.55 Ampere for copper and 1.0 Ampere for aluminium.
- 33.20 Low voltage cables for indoor use may be unarmoured.
- 33.21 All high voltage cables shall be armoured XLPE insulated and shall comply with SANS 1339 and Transnet Freight Rail specification BBC 0198. All wiring used on the 3kV DC equipment shall have nominal 3kV insulation unless the clearances comply with those laid down in clause 8.9.
- 33.22 All negative connections and terminals associated with high voltage circuits and which are accessible without first having to isolate and earth such high voltage circuits e.g. the main negative busbar, DC earth leakage relay, etc., shall be of 95mm², copper or copper equivalent cross-section. The terminals shall be painted red.
- 33.23 Notwithstanding the above clauses the contractor shall supply and install any other cables, conductors or busbars required for the successful operation of the substation.

33.24.0 BLOCK JOINTS

- 33.24.1 The contractor shall make block joints in the armouring of all the low voltage supply and control cables, which are connected between the indoor control equipment and the outdoor yard equipment.
- 33.24.2 The block joints shall be clearly visible and shall be not less than 200mm from the cable glands terminating at the outdoor equipment.
- 33.24.3 The block joints shall be sealed with a heat shrink covering to prevent the ingress of moisture.

33.25.0 CHEQUER PLATES

- 33.25.1 The contractor shall be responsible for the supply of all metal chequer plates required for covering of cable trenches inside the substation.
- 33.25.2 Earthing studs suitable for the fitting of 95mm² copper cable shall be welded to each chequer plate.

34.0 CABLES, BUSBARS AND CONNECTIONS (OUTDOOR)

The Contractor shall supply and install the following:

- 34.1 The Inter-connections cables or conductors in the High Voltage yard.
- 34.2 The high voltage AC connections which shall be solderless, concentric grip, or other approved solderless type. The connections must have adequate cross-sectional area to suit both electrical and mechanical requirements.
- 34.3 Copper busbars between separately mounted outdoor equipment. The busbars shall incorporate a degree of flexibility to avoid any overstressing of connections due to foundation movement and expansion or contraction.
- 34.4 All negative connections and terminals associated with high voltage circuits and which are accessible without first having to isolate and earth such high voltage circuits e.g. the main negative busbar shall be of 95mm², copper or copper equivalent cross-section. The terminals shall be painted red.
- 34.5 Copper busbars with removable flexible connections or “all aluminium” stranded conductor may be used interconnection conductors between the main traction transformer secondary bushings and the anode wall bushings which are fixed to the anode wall plate of the substation building.
- 34.5.1 Where “all aluminium conductors are to be installed the following sizes and number of conductors shall be installed:
- 2 X 800 mm² “all aluminium” stranded conductor per each phase for 6 MW substations, or 50mm X 25mm aluminium (grade 6063) busbar in accordance to Transnet freight rail drawing BBF1615
 - 2 X 800 mm² “all aluminium” stranded conductor per each phase for 4,5 MW substations, or 50mm X 25mm aluminium (grade 6063) busbar in accordance to Transnet freight rail drawing BBF1615.

- 2 X 500 mm² “all aluminium” stranded conductor per each phase for 3 MW substations, or 50mm X 25mm aluminium (grade 6063) busbar in accordance to Transnet freight rail drawing BBF1615.

- 34.5.2 Where two different conductor material joints are used, the Bi-Metallic plates shall be applied.
- 34.6 Conductors from the high voltage AC line aerial conductors and between the surge arresters, AC disconnecting switch, high voltage AC circuit breaker, current transformers, rectifier transformer and rectifier.
- 34.7 Cables or busbars from the rectifier transformer to the auxiliary transformer.
- 34.7.1 The auxiliary transformer shall be connected directly to the tertiary winding of the traction transformer for new installations or existing installations where tertiary windings are employed on the main traction transformer.
- 34.8 Cable from the auxiliary transformer secondary to the short-circuiting switch.
- 34.9 Control cables from the high voltage AC disconnecter, AC circuit breaker and main and auxiliary transformers to the substation control panels.
- 34.10 A multi-core 4mm² cable between the current transformers and the Electrical Supply Utility meter room. Make-off and connect at the current transformer only.
- 34.11 In the case of the Electrical Supply Utility Tee-supplies a multi-core 4mm² cable between the voltage transformers and the Electrical Supply Utility. The Electrical Supply Utility will do the cable connection.
- 34.12 In the case of the Electrical Supply Utility Duplicate Supplies one multi-core 4mm² cable between Transnet Freight Rail's high voltage AC circuit breaker and the Electrical Supply Utility meter room. (For interlocking Electrical Supply Utility M.O.D's). The cable shall have 10% spare cores.
- 34.13 A multi-core 2,5mm² cable between the tele-control remote terminals on the control panel and the electrical supply utility meter room. (For tele-control of the Electrical Supply Utility equipment). The cable shall have 10% spare cores.
- 34.14 All other cables as specified. e.g. security lighting and alarms.
- 34.15 All control cables, security and alarm cables shall be armoured cables.
- 34.16 Notwithstanding the clauses above the contractor shall be responsible for all cables, busbars and connections required for the successful operation of the 3kV DC traction substation.

35.0 LABELS AND TERMINALS

- 35.1 All labels shall be in English. All lettering shall be white on a black background. Lettering shall be a minimum of 6mm in height.
- 35.2 All labels shall be neatly secured by rivets or screws.
- 35.3 All conductors and cables shall be provided with identification tags at terminals.
- 35.4 All terminals and equipment such as switches and relays shall be suitably numbered according to the substation schematic and wiring diagrams. All terminal blocks and groups of terminal blocks shall be suitably numbered.

36.0 SUBSTATION NEGATIVE RETURN

The substations negative return system which can be in the form of the following:

- Buried XLPE insulated copper cable.
- Rail on sleepers.
- Aerial conductors.

36.1 BURIED XLPE INSULATED COPPER CABLE

- 36.1.1 The contractor shall install 2 x 500mm² single core XLPE copper cables from the substation negative busbar to the negative manhole situated near the railway line.
- 36.1.2 Transnet Freight Rail's staff will undertake the provision of the bare conductors from the negative manhole to track, as well as the rail connections.
- 36.1.3 The negative manhole to drawing CEE-TU-41 is to be supplied and installed by the contractor.
- 36.1.4 The negative return cables shall be laid, in 150mm of soft soil in a trench, at a depth of not less than 1000mm below ground level and spaced not less than 300mm between centres.
- 36.1.5 Where cables are likely to be damaged they shall be protected by concrete slabs. Refer to Transnet Freight Rail specification CEE.0023.
- 36.1.6 The cable route shall be provided with cable warning tape. Refer to Transnet Freight Rail specification CEE.0023.
- 36.1.7 The cable runs shall be marked by cable markers painted signal red. (Stores Item No 9/1503)

36.2 RAIL NEGATIVE RETURN.

- 36.2.1 Where rail is used for the negative return system Transnet Freight Rail shall supply and install the rail from the inside of the substation building to the railway track.
- 36.2.2 The rail shall be insulated from ground by means of concrete sleepers supplied by Transnet Freight Rail.
- 36.2.3 Where the rail enters the substation building it must be insulated from all concrete and brickwork to prevent stray current damage to building reinforcing or other metal. After installation the hole in the wall shall be sealed and made good by Transnet Freight Rail.
- 36.2.4 The rail shall be connected to negative output of the rectifier by means of a suitably rated busbar/cable supplied by the contractor. Transnet Freight Rail will make provision for terminations on the rail.
- 36.2.5 Transnet Freight Rail shall connect the negative return rail to the track by means of PVC insulated steel conductors.

36.3 NEGATIVE FEEDER MONITORING SYSTEM.

- 36.3.1 The contractor shall design supply and install a negative feeder monitoring system in accordance with Transnet Freight Rail specification BBB1843.
- 36.3.2 The negative feeder monitoring system shall be designed to trip the 3 kV DC track breakers in the event of the traction substation negative return circuit becoming open circuited due to cable theft of the negative return cables or other cause of failure of the negative return circuit.

36.4 AERIAL CONDUCTORS

- 36.4.1 Where aluminium conductors are installed; 2 X 800 mm² size for both 4.5 MW and 6 MW shall be used and 2 X 500 mm² for 3 MW substations.
- 36.4.2 Where aerial conductors are used for the negative return, the contractor shall provide the wall plates and wall bushings where required.
- 36.4.3 In the case of aerial conductors used for the negative return, Transnet Freight Rail shall provide the conductors and the installation.

37.0 3kV DC POSITIVE FEEDER CABLES

The positive feeder cables shall be either:

- Buried armoured medium voltage XLPE insulated cable.
- Aerial aluminium conductor

37.1 BURIED XLPE INSULATED CABLE

- 37.1.1 The contractor shall install two single core 6,6kV, 500mm² armoured medium voltage XLPE insulated cables with stranded copper conductors. The cables shall be manufactured with copper tape screen, armour and sheath in accordance with SANS 1339 and Transnet Freight Rail specification BBC 0198. The cables shall run from the high-speed circuit breaker busbar chamber to the associated track switch structure.
- 37.1.2 Tenderers are to allow for making off the cables with suitable terminations. Sufficient length of cable must be left buried at the base of the track switch structure for erection and connection to the track switch. Transnet Freight Rail will do connection to the track switch.
- 37.1.3 The medium voltage cables shall be laid in 150mm of soft soil, in a trench at a depth of not less than 1000mm below ground level and spaced not less than 300mm between centres.
- 37.1.4 Where cables are likely to be damaged they shall be protected by concrete slabs. Refer to Transnet Freight Rail specification CEE.0023.
- 37.1.5 The cable route shall be provided with cable warning tape. Refer to Transnet Freight Rail specification CEE.0023.
- 37.1.6 The cable runs shall be marked by cable markers painted white (Stores Item No 9/1539).
- 37.1.7 Should it be necessary for the cables to pass under the tracks suitable pipes will be installed by Transnet Freight Rail.
- 37.1.8 Where required, the contractor shall supply the necessary wall bushings for positive feeder cables.

37.2 AERIAL CONDUCTOR

- 37.2.1 In the case of aerial conductors used for the positive feeders, Transnet Freight Rail shall make provision for conductors and installation.
- 37.2.2 Where aerial conductors are used for the 3kV DC positive, the contractor shall provide the wall plates and wall bushings.

38.0 TRENCHING FOR OUTDOOR YARD EARTHING CONDUCTORS AND CONTROL CABLES

- 38.1 Before any trenching commences the contractor shall consult with Transnet Freight Rail staff for approval of the routing of the trenches in the outdoor yard.
- 38.2 In existing substation outdoor yards the contractor shall remove the necessary crusher stone in the outdoor yard before any excavation commences. The contractor shall restore the crusher stone after the completion of the work.
- 38.3 Trenching includes all trenches required for the installation of the earthing system and control cables.
- 38.4 The depth of trenches shall not be less than 700 millimetres.
- 38.5 With the installation of new earthing conductors and control cables at existing substations, care must be taken not to damage existing cables in the high voltage outdoor yard during trenching operations.
- 38.6 The Contractor and Transnet Freight Rail staff shall inspect the trenches before and during the installation of the earthing system and control cables.
- 38.7 Before the trenches are closed a representative from Transnet Freight Rail shall inspect the earthing system and other cabling for damage.

39.0 FOUNDATIONS.

- 39.1 The successful tenderer shall be responsible for the design and casting of foundations for the portal and support structures in the traction substation high voltage outdoor yard.
- 39.2 Notwithstanding the supply arrangements (single or double) at any particular substation, tenderers shall clearly understand that all foundations and steelwork to accommodate the supply and to cater for the traction yard are to be provided and erected by the successful tenderer.

- 39.3 Wherever there is a combined traction and 11kV/6,6kV distribution yard, a flying busbar is to be provided in Transnet Freight Rail's yard. All foundations and steelworks required to suit this arrangement, including the erection and earthing thereof shall be included in tenderer's offers.
- 39.4 The foundations in the high voltage outdoor yard shall include the following:
- Voltage Transformers if applicable.
 - Surge arresters.
 - AC disconnectors.
 - Current transformers. (If applicable)
 - Primary circuit breakers.
 - Main traction transformer.
 - Auxiliary transformers.
 - Portal lattice structures as required.
 - Any other foundations as specified.
- 39.5 The successful tenderer shall carry out his own survey in regard to soil types and their load bearing capabilities.
- 39.6 Equipment support foundations shall be finished off 200mm above the finished earth level of the yard. The design must be such as to prevent standing water.
- 39.7 All foundation edges shall be bevelled, and the surfaces must be float finished.
- 39.8 All support foundations shall be at the same level.
- 39.9 The design of the concrete plinth for the main traction transformer shall include a concrete gutter around the perimeter of the plinth to contain any spillage of transformer oil.
- 39.10 Provision shall be made on the plinth for skid rails. The spacing of the rails between centres shall be a minimum of 1meter. Details of the design and load bearing parameters of the skid rail system, plinth and rail shall be submitted to Transnet Freight Rail for approval.
- 39.11 The auxiliary transformer if separate shall be provided with its own concrete plinth with a concrete gutter, or may be installed on the same plinth as the main traction transformer.
- 39.12 The 28-day strength of all concrete used shall be a minimum of 20Mpa.
- 39.13 Hand mixed concrete is not acceptable, it must be mechanically mixed.
- 40.0 SUPPORT STRUCTURES**
- 40.1 The design, supply and installation of all steel structures for the support of equipment and tensioning of conductors shall be the responsibility of the successful tenderer.
- 40.2 Special attention shall be taken for the prevention of corrosion of all metallic parts.
- 40.3 The bases of insulators, studs, bolts, support structures and other parts made of ferrous material associated with the electrical connections outdoors, shall be hot-dip galvanised, in accordance with SANS 121.
- 40.4 Steelwork for outdoor installation in coastal areas, i.e., within 50km of the coast, shall first be hot-dip galvanised in accordance with SANS 121, followed immediately at the galvanising plant by the application of the Sterling paint system in accordance with specification CEE.0045.
- 40.5 Steelwork for outdoor installation in inland areas, i.e., at a distance greater than 50km from the coast, shall be hot-dip galvanised to SANS 121.
- 40.6 All high voltage equipment shall be provided with hot-dipped galvanised support structures or pedestals to provide a minimum clearance of 3,6 m (up to 88kV) or 4,1 m (above 88kV) from the lowest "live" high voltage connection to finished ground level.

40.7	Structural steel shall comply with SANS 1431.
40.8	All welded joints shall be seal welded with no gaps or blowholes.
40.9	All fasteners, nuts and bolts used for the installation of substation steelwork and equipment shall be hot dipped galvanized to prevent corrosion.
41.0	FENCING
41.1	The successful tenderer shall supply and install new perimeter fencing as specified.
41.2	The successful tenderer shall make provision for the levelling of outdoor yard if required.
41.3	The fencing shall be either of the following: <ul style="list-style-type: none"> • Concrete palisade fencing in accordance to drawing CEE-TDF- 0016. • Hot dipped galvanised steel palisade fencing with the minimum requirements of: Height 2,4 metres Size and thickness of pales 40mm x 40mm x 3mm thick. Corner and intermediate posts 100mm x100mm x 3mm. Horizontal cross bars 40mmx5mm.
41.3.1	The successful tenderer shall make provision for the installation of safety barriers in the high voltage yard in accordance with Transnet Freight Rail's requirements. (Refer to Transnet Freight Rail's Engineering instruction S.016)
41.3.2	The successful tenderer shall make provision for a metal barrier screen of 25mm-wire mesh or expanded metal to be constructed around the auxiliary transformer to prevent accidental contact.
41.3.3	The successful tenderer shall cast a concrete apron of 150mm wide x 300mm under the perimeter fences of the substation. The top of the apron shall be a minimum of 100 mm above the ground level.
42.0	GATES
42.1	The contractor shall supply and install two 4.6 metre wide X 2,4 metres minimum height lockable gates in the perimeter fence to allow for: <ul style="list-style-type: none"> • Entrance to substation building and yard. • Entrance to the high voltage outdoor yard adjacent to the main transformer (s).
42.2	The frame of the substation gate shall be 80 x 60 x 5mm
42.3	Where access to the HV outdoor yard is gained between the substation building and perimeter fence, a fence the same height as the perimeter fence shall be installed. A 1000mm wide lockable gate shall form part of the fence.
42.4	Provision must be made for the fitting of a spark gaps and rail earth switch on the HV yard small gate. Refer to drawings CEE-TBD-7 and BBB3620. The spark gaps shall be provided by Transnet Freight Rail on request.
42.5	Where steel palisade fencing is used the gates shall be connected to the fence support post by means of a flexible connection to prevent electrolytic corrosion of gate hinges.
42.6	Warning notices and danger signs in accordance with Transnet Freight Rail's Electrical Safety Instructions shall be fitted to the perimeter fencing and gates. This shall be provided by Transnet Freight Rail.
43.0	CRUSHER STONE AND WEED KILLER
43.1	After completion of construction, installation of equipment, the laying of all cables and earthing conductors, a suitable weed killer approved by the Technical Officer shall be applied in HV outdoor yard.
43.2	Great care shall be exercised to avoid contaminating private property and water supplies.
43.3	After treatment with the weed killer, a 100mm layer of 25mm crusher stone shall be laid over the whole area of the Transnet Freight Rail high voltage outdoor yard (within the apron).

44.0 PAINTING

44.1 All indoor and outdoor steelwork, metal screens and barriers shall be painted in accordance with Transnet Freight Rail's Specification CEE.0045.

44.2 The finishing coats for indoor equipment shall be in accordance with SANS 1091.

Metal Bay Screens - Eau-de-Nil (H43).

Support frameworks (indoor) - Eau-de-Nil (H43).

45.0 DISTRIBUTION, LIGHTING OF SUBSTATION BUILDING AND STANDBY 400V AUXILIARY SUPPLIES

45.1 The successful tenderer shall supply and install all light fittings, plugs, conduits, distribution boards, switches, cables and other material in accordance with SANS 10142-1. Galvanised, alternatively PVC conduit and galvanised fittings shall be provided at all substations within 50km of the coast.

45.2 The contractor shall furnish a certificate of compliance for the 400V/220V AC distribution and lighting of the traction substation signed by the accredited person in terms of SANS 10142-1 and who is registered with "Electrical Contracting Board".

45.3 Complete Layout drawing showing the position/type of light fittings, position of plugs, distribution board and switches to be submitted to Transnet Freight Rail for approval.

45.4 220V AC fluorescent light fittings shall be provided. The minimum lighting requirement shall be 100 lux in terms of the "Occupational Health and Safety Act".

11KV / 6,6KV TO 400V AUXILIARY SUPPLY AND CHANGE OVER SYSTEM.

45.5 Where specified a 11kV/6,6kV to 400V distribution transformer will be installed to supply the traction substation in the event of substation failure or when the substation is taken off load.

45.5.1 The 3 phase 400V supply from the above transformer shall be connected to the control circuitry via a automatic change over switching system.

45.5.2 The change over switching system shall be mechanically and electrically interlocked.

45.5.3 Transnet Freight Rail shall supply and install a suitably rated 4core armoured cable from the 11kV/6,6kV to 400V distribution transformer to the change over switching unit.

45.5.4 A 1:1 ratio isolation transformer shall be installed between the 11kV/6.6kV to 400V distribution transformer and change over switching system.

45.5.5 The isolation transformer shall comply with specification BBC 0330.

45.5.6 The successful tenderer shall supply the isolation transformer unless otherwise specified.

EMERGENCY LIGHTING.

45.6 Fluorescent light fittings with its own battery back up supply shall be supplied for emergency lighting.

45.6.1 A minimum of three fittings shall be installed in a single unit substation and four in a double unit substation.

45.6.2 The light fittings shall be installed at the following locations:

- In single unit substations two in the main walkway between the control panels and rectifier unit. One flameproof fitting in the battery room
- In a double unit substation three in the main walkway and one flameproof fitting in the battery room.
- In additional locations where requested by the Project Manager/Engineer.

45.6.3 The light switch shall be clearly labelled "EMERGENCY LIGHTNING".

MOULDED CASE CIRCUIT BREAKERS

- 45.7 All low voltage circuits and equipment shall be protected by moulded case circuit breakers, which comply with specification SANS 156.
- SECURITY LIGHTS**
- 45.8 Where outdoor security lights are specified 400W high-pressure sodium fittings shall be installed at locations specified by the "Scope of Work".
- 46.0 COOLING AND VENTILATION**
- 46.1 Where specified, 3 phase cooling fans shall be supplied and installed in the substation building.
- 46.2 The required filters, louvres and guards shall be provided and installed.
- 47.0 BATTERY ROOM**
- 47.1 A three/single phase non-sparking extraction fan shall be installed for the battery room.
- 47.2 Only Ex non-sparking light fittings shall be installed in the battery room.
- 47.3 Light switches and plug sockets shall not be installed in the battery room.
- 47.4 No-smoking, naked flames and hand protection warning signs shall be fitted to the battery room doors.
- 47.5 A wooden stand treated with acid proof paint shall be provided for the batteries.
- 47.6 A hydrometer and logbook shall be supplied by the contractor for each installation.
- 47.7 The floor of the battery room shall be painted with acid proof paint.
- 48.0 CLEARING OF SITE**
- 48.1 All rubble which is left over as a direct result of work performed by the Contractor shall be removed from the substation building and yard and disposed of by the Contractor. The substation floors and walls shall be left in a clean condition. All cable, wire and conductor cut-offs and surplus material shall be removed from site.
- SECTION 4: SITE TESTING AND COMMISSIONING**
- 49.0 SITE TESTS AND COMMISSIONING**
- The successful tenderer shall be responsible for carrying out on-site tests and commissioning of all equipment supplied and installed in terms of this specification and the contractual agreement.
- 49.1 ON-SITE TESTS**
- 49.1.1 Functional on-site tests shall be conducted on all items of equipment, circuitry and interlocking to prove the proper functioning and installation thereof.
- 49.1.2 The successful tenderer shall submit a detailed list of on-site tests for the approval of the Project Manager/Engineer at least six weeks before tests are due to commence at the first substation.
- 49.1.3 The successful tenderer shall arrange for the Project Manager/Engineer or his representative to be present to witness the on-site tests at each substation.
- 49.1.4 On-site tests and subsequent commissioning shall not commence until all construction work has been completed. Construction staff, material and equipment shall be removed from site prior to the commencement of testing. Testing and commissioning of the substation equipment will not be allowed to take place in a construction site environment.
- 49.1.5 On-site tests shall include the following;
- Polarity tests on all CT's.
 - Ratio tests on all CT's.
 - Magnetising current of all CT's.
 - Secondary injection of all relays.
 - Trip testing, all relays must be checked for correct operation.

- The functionality of all electrical circuitry must be tested.
- The operation of both mechanical and electrical interlocking.
- Tests on primary circuit breakers and other primary equipment in accordance with manufacturer's instructions.

- 49.1.6 At the completion of the on-site tests the Project Manager/Engineer or his representative, shall either sign the test sheets (supplied by the successful tenderer) as having witnessed the satisfactory completion thereof, or hand to the successful tenderer a list of defects requiring rectification.
- 49.1.7 Upon rectification of defects the successful tenderer shall arrange for the Project manager/Engineer or his representative to certify satisfactory completion of on-site tests for that particular substation.
- 49.1.8 Acceptance by the Project Manager/Engineer 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.

49.2 COMMISSIONING OF EQUIPMENT

- 49.2.1 Commissioning will include the energising of equipment from the AC disconnects to the OHTE track feeder switches. The successful tenderer must prove the satisfactory operation of all equipment under live conditions.
- 49.2.2 On completion of commissioning the successful tenderer will hand the substation over to the Project Manager/Engineer in terms of the relevant instructions.
- 49.2.3 Tenderers shall allow a period of at least three days per substation between satisfactory completion of on-site tests and commissioning of equipment.
- 49.2.4 During this period the Transnet Freight Rail's Test staff will test the operation of all protective relays and circuits and set the protection relays at each substation.
- 49.2.5 The contractor shall rectify any faults found during the testing and setting of the protection relays.
- 49.2.6 The final testing of the substation must commence at least three days ahead of the contract completion date.
- 49.2.7 The commissioning of the protection equipment by Transnet Freight Rail will in no way absolve the successful tenderer from any of his responsibilities during the guarantee period. It is the successful tenderers responsibility to satisfy himself that the commissioning of the protection equipment has been carried out in a satisfactory manner and in no way compromises the proper operation of the equipment supplied in terms of the contract.
- 49.2.8 The commissioning dates for the substations will be dependent on the availability of power supplies from the supply utility as well as Transnet Freight Rail's electrification program and will be defined by the Project Manager/Engineer.

50.0 SECTION 5: GENERAL QUALITY ASSURANCE

- 50.1 Transnet Freight Rail reserves the right to carry out inspection and tests on the equipment at the works of the supplier/manufacturer.
- 50.2 Arrangements must be made timeously for such inspections and type/routine tests in accordance with the equipment specifications are carried out before delivery of the equipment to the site.

- 50.3 Type/routine test sheets of the equipment shall be forwarded to the Project Manager.

51.0 GUARANTEE AND DEFECTS

- 51.1 The contractor shall guarantee the satisfactory operation of the complete electrical installation supplied and installed by him and accept liability for maker's defects, which may appear in design, materials and workmanship.
- 51.2 The guarantee period shall commence from the date of successful commissioning of the substation.
- 51.3 The guarantee period for all substations shall expire after a period of 12 months commencing from the date of successful completion of the contract or the date the equipment is handed over to Transnet Freight Rail whichever is the later.

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

51.5 The cost of training shall be included in the tenderers quotation.

52.0 DRAWINGS, INSTRUCTION MANUALS AND SPARES LISTS

52.1 Drawings, instruction manuals and catalogues shall be supplied in accordance with Transnet Freight Rail specification CEE.0224.

52.2 The tenderer shall supply three copies of an instruction/maintenance manuals, schematic and wiring diagram.

52.3 The contractor shall submit details of spares required in accordance with Transnet Freight Rail's specification no. CEE.0224.

52.4 All spares recommended for normal maintenance purposes that are not available locally (requires importation) must be highlighted.

53.0 SPECIAL TOOLS AND/OR SERVICING AIDS

Special tools or servicing aids necessary for the efficient maintenance, repair or calibration of the equipment shall be quoted for separately.

54.0 TRAINING

54.1 The contractor shall submit details with the tender of the training courses which will be conducted by the 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. The date and venue of this training course shall be arranged with the Maintenance manager.

55.0 PACKAGING AND TRANSPORT.

55.1 The contractor shall ensure that the equipment be packed in such a manner that it will be protected during handling and transport.

55.2 The contractor shall provide transport for the delivery of the equipment to the site where required.

56.0 BIBLIOGRAPHY

[1] SANS 1019: 2008 Edition 2.5 Standard voltages, currents and insulation levels for electricity supply

APPENDIX 1: LIST OF RELEVANT DRAWINGS
DRAWINGS ISSUED WITH THIS SPECIFICATION

DRAWING NUMBER	DESCRIPTION.
CEE-TDF-0016	Concrete fencing
CEE-TBD-7	Earthing Arrangements Traction Substations.
CEE-TU-41	Negative Return Cable Terminating Box.
CEE-TCK-1	Reactor 1,84mH, 1 500 A. (For reference purposes only)
CEE-TBP-1	Wiring diagram for auto reclosure for HSCB.
CEE-TBP-39	Circuit diagram for auto reclosure for HSCB
CEE-TBP-35	Connection diagram for HSCB and electronic control relay
CEE-TBP-38	Schematic Diagram of 3kV HV Protection.
CEE-TCL-63	3kV Busbar Chamber Arrangement: Cable Feeders.
CEE-TCQ-208	DC High Speed Circuit Breaker Cell Panel (Cell slabs) (sheets 1 to 10)
CEE-TBP-33	DC Track Breaker and Truck Wiring Diagram.
BBB 0938	Surge arresters mounted on traction transformer.
BBB 3620	3kV Earthing arrangement for traction substation
BBF 1615	Busbar connection assembly

PART 4: AFFECTED PROPERTY

Core clause 11.2(2) states

"Affected Property is property which

- Is affected by the work of the *Contractor* or used by the *Contractor* in Providing the Service
- is in the documents which the Contract Data states it is in."

In Contract Data, reference has been made to this Part 4 of the contract for the location of the Affected Property.

1. Description of the Affected Property and its surroundings

1.1. General description

The work to be carried out at Kraaifontein Traction Substation (Co-ordinates -33.845082, 18.725906),

1.2. Existing buildings, structures, and plant & machinery on the Site

n/a

1.3. Subsoil information

Not applicable

1.4. Hidden services

Not Applicable

1.5. Other reports and publicly available information

ITEM	DETAILS
Main site Activity	SUPPLY AND INSTALLATION OF AC DISCONNECTS, TRANSFORMER CONSERVATOR TANK OIL GAUGE AND YARD STONES AT KRAAIFONTEIN 3KV SUBSTATION