



**prasa**

PASSENGER RAIL AGENCY  
OF SOUTH AFRICA

## REQUEST FOR QUOTATION (RFQ)

**RFQ NUMBER: KZN/RAIL/08/05/2022/015/Q**

**REQUEST FOR QUOTATION (RFQ) FOR: SUPPLY AND MAINTENANCE OF  
ULTRASONIC MEASURING VEHICLE(FOR A PERIOD OF 24 MONTHS) FOR  
PRASA KZN REGION**



**SECTION 1: SBD1**  
**PART A INVITATION TO BID**

**YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF PASSENGER RAIL AGENCY (PRASA)**

BID NUMBER:	KZN/RAIL/08/05/2022/ 015/Q	CLOSING DATE:	15 August 2022	CLOSING TIME:	12:00
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DESCRIPTION SUPPLY AND MAINTENANCE OF ULTRASONIC MEASURING VEHICLE(FOR A PERIOD OF 24 MONTHS) FOR PRASA KZN REGION

**BID RESPONSE DOCUMENTS SHALL BE ADDRESSED AS FOLLOWS:**

TENDER BOX NO. 04

The Bid envelopes must be deposited in the PRASA **tender box No. 04** which is located at the main entrance of:

PRASA, METRORAIL KZN, 65 MASABALALA YENGWA AVENUE, GREYVILLE, DURBAN STATION, ROOF LEVEL ENTRANCE, 4001,

ON OR BEFORE CLOSING DATE AND TIME

PLEASE ENSURE YOU SIGN THE SUBMISSION REGISTER

**BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO**

CONTACT PERSON	Rani Padayachee
TELEPHONE NUMBER	031 8130138
E-MAIL ADDRESS	rani.padayachee@prasa.com

**SUPPLIER INFORMATION**

NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE No:	MAAA.....
B-BBEE STATUS LEVEL	TICK APPLICABLE BOX]	B-BBEE STATUS LEVEL		[TICK APPLICABLE BOX]	

VERIFICATION CERTIFICATE	<input type="checkbox"/> Yes <input type="checkbox"/> No	SWORN AFFIDAVIT	<input type="checkbox"/> Yes <input type="checkbox"/> No
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**[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]**

2.1 ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No  [IF YES ENCLOSE PROOF]	2.2 ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No  [IF YES, ANSWER THE QUESTIONNAIRE BELOW ]
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**QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS**

IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?  YES  NO

DOES THE ENTITY HAVE A BRANCH IN THE RSA?  YES  NO

DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?  YES  NO

DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?  YES  NO

IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?  YES  NO

**IF THE ANSWER IS “NO” TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.**

**PART B: TERMS AND CONDITIONS FOR BIDDING**

- 1. BID SUBMISSION:**
- 1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
- 1.2. **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR IN THE MANNER**
- 1.3. **PRESCRIBED IN THE BID DOCUMENT.**
- 1.4. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.

1.5. THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).

## 2. TAX COMPLIANCE REQUIREMENTS

- 2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
- 2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
- 2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
- 2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
- 2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
- 2.6 WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
- 2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

**NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID NVALID.**

SIGNATURE OF BIDDER: .....

CAPACITY UNDER WHICH THIS BID IS SIGNED: .....

(Proof of authority must be submitted e.g. company resolution)

DATE: .....

**NB:**

- ***Quotation(s) must be addressed to PRASA before the closing date and time shown above.***
- ***PRASA General Conditions of Purchase shall apply.***

## SECTION 2

### NOTICE TO BIDDERS

#### 1. RESPONSES TO RFQ

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

Proposals must reach the PRASA before the closing hour on the date shown on SBD1 above, and must be enclosed in a sealed envelope.

#### 2. PREQUALIFICATION / ELIGIBILITY CRITERIA

- 2.1 Only those Respondents who satisfy the following pre-qualification or eligibility criteria are eligible to submit quotations as per section 3.

#### 3. COMMUNICATION

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

#### 4. LEGAL COMPLIANCE

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

#### 5. CHANGES TO QUOTATIONS

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

#### 6. PRICING

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

#### 7. BINDING OFFER

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

## **8 DISCLAIMERS**

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

- Modify the RFQ's goods / service(s) and request Respondents to re-bid on any changes;
- Reject any Quotation which does not conform to instructions and specifications which are detailed herein;
- Disqualify Quotations submitted after the stated submission deadline;
- Not necessarily accept the lowest priced Quotation or an alternative bid;
- Bids lodged at the incorrect venue that reach the correct venue late will be regarded as late.
- Reject all Quotations, if it so decides;
- Place an order in connection with this Quotation at any time after the RFQ's closing date;
- Make no award at all.
- Award only a portion of the proposed goods / service/s which are reflected in the scope of this RFQ;
- split the award of the order/s between more than one Supplier/Service Provider should it at PRASA's discretion be more advantageous in terms of, amongst others, cost or developmental consideration; or

Should a contract be awarded on the strength of information furnished by the Respondent, which after conclusion of the contract, is proved to have been incorrect, PRASA reserves the right to cancel the contract. PRASA reserves the right to award business to the highest scoring bidder/s unless objective criteria justify the award to another Respondent.

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

## **9 LEGAL REVIEW**

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

## **10 NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE**

Respondents 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. PRASA is required to ensure that price quotations are invited and accepted from prospective bidders listed on the CSD. Business may not be awarded to a respondent who has failed to

register on the CSD. Only foreign suppliers with no local registered entity need not register on the CSD. The CSD can be accessed at <https://secure.csd.gov.za/>.

## 11 PROTECTION OF PERSONAL DATA

In responding to this bid, PRASA acknowledges that it may obtain and have access to personal data of the Respondents. PRASA agrees that it shall only process the information disclosed by Respondents in their response to this bid for the purpose of evaluating and subsequent award of business and in accordance with any applicable law.

Furthermore, PRASA will not otherwise modify, amend or alter any personal data submitted by Respondents or disclose or permit the disclosure of any personal data to any Third Party without the prior written consent from the Respondents. Similarly, PRASA requires Respondents to process any personal information disclosed by PRASA in the bidding process in the same manner.

## 12 EVALUATION METHODOLOGY

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

## 13 ADMINISTRATIVE RESPONSIVENESS

The test for administrative responsiveness will include completeness of response and whether all returnable and/or required documents, certificates; verify completeness of warranties and other bid requirements and formalities have been complied with. Incomplete Bids will be disqualified.

## 14 VALIDITY PERIOD

- 14.1 PRASA requires a validity period of **90 Business Days** from the closing date.
- 14.2 Respondents are to note that they may be requested to extend the validity period of their response, on the same terms and conditions, if the internal processes are not finalized within the validity period. However, once the adjudication body has approved the process and award of the business to the

successful respondent(s), the validity of the successful respondent(s)' response will be deemed to remain valid until a final contract has been concluded.

## 15 DISCLOSURE OF PRICES QUOTED

Respondents are to note that, on award of business, PRASA is required to publish the prices and preferences claimed of the successful and unsuccessful Respondents *inter alia* on the National Treasury e-Tender Publication Portal, ([www.etenders.gov.za](http://www.etenders.gov.za)), on CIDB website for construction related RFQ's.

## 16 RETURNABLE DOCUMENTS

**Returnable Documents** means all the documents, Sections and Annexures, as listed in the tables below. There are three types of returnable documents as indicated below and Respondents are urged to ensure that these documents are returned with the quotation based on the consequences of non-submission as indicated below:

### 17 Mandatory Returnable Documents

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

## SECTION 3

### 1 EVALUATION CRITERIA:

**NB:** Compliance Checklist Requirements **for all Services/Goods and works**

**If you do not submit the following mandatory documents your Proposal/Quote will be disqualified automatically:**

No.	Description of requirement	
a)	Price Schedule / Pricing form	
b)	Completion of ALL RFQ documentation	
c)	Completed, Signed and Stamped Commissioner of Oaths	
g)	Joint Venture / Consortium agreement / Trust Deed (if applicable)	
h)	Contractors must quote on all items listed on the BOQ	
i)	Bidders to complete submission register when dropping off bids into the tender-box	
j)	Contractor shall submit, with their tenders, full particulars of the labour task crews, allowed for in the rates tendered in respect of clause 22.3.1 and 22.3.2, to undertake the tasks and functions specified in the Special Conditions and Specifications. Such particulars shall include the details of crew strengths i.e. numbers of labourers and supervisors, etc.	

The following documents are non-mandatory and where not submitted, Prasa may request the documents and must be made available at the time of request:

No.	Description of requirement	
a)	Company Registration Documents	
b)	Copies of Directors' ID documents;	
c)	Valid BBBEE Certificate from a SANAS accredited rating agency (Original or Certified) or affidavit signed by the Commissioner of Oath	
d)	Valid Tax Clearance Certificate (must be valid on closing date of submission of the proposal) and SARS Issued Pin	
e)	CSD report / CSD reference number	

## 2.1 Stage4- Price and B-BBEE

Evaluation criteria	Weighting
BBBEE	20
Price	80
<b>TOTAL</b>	<b>100</b>

$$PS = 80 \left( 1 - \frac{Pt - Pmin}{Pmin} \right)$$

Where:

$P_s$  = Score for the Bid under consideration

$P_t$  = Price of Bid under consideration

$P_{min}$  = Price of lowest acceptable Bid

### Evaluation of Preference

Evaluation and final weighted scoring

- a) Broad-Based Black Economic Empowerment criteria [weighted score 20 points] Preference Points will be awarded to a bidder for attaining the B-BBEE status level contribution in accordance with the table indicated in Section 8 B-BBEE claim form.

### SECTION 3

#### PRICING AND DELIVERY SCHEDULE

Respondents are required to complete the attached Pricing Schedule **Annexure:** .....

- 1 Prices must be quoted in South African Rand, inclusive of VAT.
- 2 Price offer is firm and clearly indicate the basis thereof.
- 3 Pricing Bill of Quantity is completed in line with schedule if applicable.
- 4 Cost breakdown must be indicated.
- 5 Price escalation basis and formula must be indicated.
- 6 To facilitate like-for like comparison bidders must submit pricing strictly in accordance with this price schedule and not utilise a different format. Deviation from this pricing schedule could result in a bid being declared non-responsive.
- 7 Please note that should you have offered a discounted price(s), PRASA will only consider such price discount(s) in the final evaluation stage on an unconditional basis.
- 8 Respondents are to note that if price offered by the highest scoring bidder is not market related, PRASA may not award the contract to the Respondent. PRASA may:
  - 9 negotiate a market-related price with the Respondent scoring the highest points or cancel the RFQ;
  - 10 if that Respondent does not agree to a market-related price, negotiate a market-related price with the Respondent scoring the second highest points or cancel the RFQ;
  - 11 If a market-related price is not agreed with the Respondent scoring the third highest points, PRASA must cancel the RFQ.
  - 12 if the Respondent scoring the second highest points does not agree to a market-related price, negotiate a market-related price with the Respondent scoring the third highest points or cancel the RFQ.

I / We \_\_\_\_\_ (Insert Name of Bidding Entity)  
of \_\_\_\_\_  
\_\_\_\_\_ code \_\_\_\_\_

(Full address) conducting business under the style or title of: \_\_\_\_\_

represented by: \_\_\_\_\_ in my capacity as:  
\_\_\_\_\_ being duly authorised, hereby

offer to undertake and complete the above-mentioned work/services at the prices quoted in the bills of quantities /  
schedule of quantities or, where these do not form part of the contract, at a lumpsum, of  
R \_\_\_\_\_ (amount in numbers);

\_\_\_\_\_ (amount in words) Incl. VAT.

**DELIVERY PERIOD:** Suppliers are requested to offer their earliest delivery period possible.

Delivery will be effected within ..... working days from date of order. (To be completed by Service provider)

## SECTION 4

### PRASA GENERAL CONDITIONS OF PURCHASE

#### **General**

PRASA and the Supplier enter into an order/contract on these conditions to supply the items (goods/services/works) as described in the order/contract.

#### **Conditions**

These conditions form the basis of the contract between PRASA and the Supplier. Notwithstanding anything to the contrary in any document issued or sent by the Supplier, these conditions apply except as expressly agreed in writing by PRASA.

No servant or agent of PRASA has authority to vary these conditions orally. These general conditions of purchase are subject to such further special conditions as may be prescribed in writing by PRASA in the order/contract.

#### **Local Content Obligations**

Respondents are to note that the Local Content commitments made by the successful Respondent(s) will be incorporated as a term of the contract and monitored for compliance. Should the successful Respondent fail to meet its Local obligations, non-compliance penalties shall be applicable. Breach of Local Content obligations also provide PRASA cause to terminate the contract in certain cases where material non-compliance with Local Content requirements are not achieved.

#### **Price and payment**

The price or rates for the items stated in the order/contract may include an amount for price adjustment, which is calculated in accordance with the formula stated in the order/contract.

The Supplier may be paid in one currency other than South African Rand. Only one exchange rate is used to convert from this currency to South African Rand. Payment to the Supplier in this currency other than South African Rand, does not exceed the amounts stated in the order/contract. PRASA pays for the item within 30 days of receipt of the Suppliers correct tax invoice.

#### **Delivery and documents**

The Supplier's obligation is to deliver the items on or before the date stated in the order/contract. Late deliveries or late completion of the items may be subject to a penalty if this is imposed in the order/contract. No payment is made if the Supplier does not provide the item as stated in order/contract.

Where items are to be delivered the Supplier:



Clearly marks the outside of each consignment or package with the Supplier's name and full details of the destination in accordance with the order and includes a packing note stating the contents thereof; On dispatch of each consignment, sends to PRASA at the address for delivery of the items, an advice note specifying the means of transport, weight, number of volume as appropriate and the point and date of dispatch; Sends to PRASA a detailed priced invoice as soon as is reasonably practical after dispatch of the items, and states on all communications in respect of the order the order number and code number (if any).

### **Containers / packing material**

Unless otherwise stated in the order/contract, no payment is made for containers or packing materials or return to the Supplier.

### **Title and risk**

Without prejudice to rights of rejection under these conditions, title to and risk in the items passes to PRASA when accepted by PRASA.

### **Rejection**

If the Supplier fails to comply with his obligations under the order/contract, PRASA may reject any part of the items by giving written notice to the Supplier specifying the reason for rejection and whether and within what period replacement of items or re-work are required.

In the case of items delivered, PRASA may return the rejected items to the Supplier at the Supplier's risk and expense. Any money paid to the Supplier in respect of the items not replaced within the time required, together with the costs of returning rejected items to the Supplier and obtaining replacement items from a third party, are paid by the Supplier to PRASA.

In the case of service, the Supplier corrects non-conformances as indicated by PRASA.

### **Warranty**

Without prejudice to any other rights of PRASA under these conditions, the Supplier warrants that the items are in accordance with PRASA's requirements, and fit for the purpose for which they are intended, and will remain free from defects for a period of one year (unless another period is stated in the Order) from acceptance of the items by PRASA.

### **Indemnity**

The Supplier indemnifies PRASA against all actions, suits, claims, demands, costs, charges and expenses arising in connection therewith arising from the negligence, infringement of intellectual or legal rights or breach of statutory duty of the Supplier, his subcontractors, agents or servants, or from the Supplier's defective design, materials or workmanship.



The Supplier indemnifies PRASA against claims, proceedings, compensation and costs payable arising out of infringement by the Supplier of the rights of others, except an infringement which arose out of the use by the Supplier of things provided by PRASA.

### **Assignment and sub-contracting**

The Supplier may not assign or subcontract any part of this order/contract without the written consent of PRASA.

### **Termination**

PRASA may terminate the order/contract at any time (without prejudice to any right of action or remedy which has accrued or thereafter accrues to PRASA):

If the Supplier defaults in due performance of the order/contract, or if the Supplier becomes bankrupt or otherwise is, in the opinion of PRASA, in such financial circumstances as to prejudice the proper performance of the order/contract, or for any other reason in which case the Supplier will be compensated for all costs incurred.

### **Governing law**

The order/contract is governed by the law of the Republic of South Africa and the parties hereby submit to the non-exclusive jurisdiction of the South African courts.

## SECTION 5

### DECLARATION OF INTEREST

SBD4

1. Any legal person, including persons employed by the state\*, or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest, where-

- the bidder is employed by the state; and/or
- the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

2. **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

2.1 Full Name of bidder or his or her representative:

.....

2.2 Identity Number:

.....

2.3 Position occupied in the Company (director, shareholder etc):

.....

2.4 Company Registration Number:

.....

2.5 Tax Reference Number:

.....

2.6 VAT Registration Number:

.....

\* "State" means –

- (a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
- (b) any municipality or municipal entity;
- (c) Provincial legislature;
- (d) National Assembly or the national Council of provinces; or
- (e) Parliament.

2.7 Are you or any person connected with the bidder presently employed by the state? **YES / NO**

2.7.1 If so, furnish the following particulars:

Name of person / director / shareholder/ member: .....

Name of state institution to which the person is connected: .....

Position occupied in the state institution: .....

Any other particulars:

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

2.8 Did you or your spouse, or any of the company's directors **YES / NO**  
shareholders / members or their spouses conduct business  
with the state in the previous twelve months?

**DECLARATION**

I, THE UNDERSIGNED (NAME).....

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2.1 TO 2.11.1 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY ACT AGAINST ME IN TERMS OF PRASA'S GENERAL CONDITIONS OF TENDER AS STIPULATED IN THE RFQ SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....  
SIGNATURE

.....  
DATE

.....  
POSITION

.....  
NAME OF BIDDER

**B-BBEE 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 Broad-Based Black Economic Empowerment [B-BBEE] Status Level of Contribution.

**NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.**

**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

1.2 The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the ..... preference point system shall be applicable.

1.3 Either the **80/20** preference point system shall be applicable to this bid.

1.4 Preference points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contribution.

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

	<b>POINTS</b>
<b>PRICE</b>	<b>80</b>
<b>B-BBEE STATUS LEVEL OF CONTRIBUTION</b>	<b>20</b>
<b>Total points for Price and B-BBEE must not exceed</b>	<b>100</b>

1.5.1 Failure on the part of a bidder to submit a B-BBEE Verification 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 case of all EMEs and QSEs with 51% black ownership or more together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

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

subsequently, to substantiate any claim concerning preferences, in any manner required by the purchaser.

## 2. DEFINITIONS

- 2.1 “**all applicable taxes**” includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- 2.2 “**B-BBEE**” means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- 2.3 “**B-BBEE status 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;
- 2.4 “**bid**” means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- 2.5 “**Black designated group**” has meaning assigned to it in codes of good practice issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act.
- 2.6 “**Black People**” meaning assigned to in Section 1 of Broad-Based Black Economic Empowerment Act.
- 2.7 “**Broad-Based Black Economic Empowerment Act**” means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- 2.8 “**CIPC**” means the Companies and Intellectual Property Commission, formerly known as CIPRO, the Companies and Intellectual Property Registration Office.
- 2.9 “**comparative price**” means the price after the factors of a non-firm price and all unconditional discounts that can be utilized have been taken into consideration;
- 2.10 “**consortium or joint venture**” 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;
- 2.11 “**contract**” means the agreement that results from the acceptance of a bid by an organ of state;
- 2.12 “**co-operative**” means a co-operative registered in terms of section 7 of Cooperatives Act, 2005 (Act No. 14 of 2005)
- 2.13 “**Designated Group**” means - i) Black designated groups; ii) Black People; iii) Women; iv) people with

- disabilities or v) Small enterprise, as defined in Section 1 of National Small Enterprise Act, (102 of 1996)
- 2.14 “**Designated Sector**” means, sub-sector or industry or product designated in terms of regulation 8(1)(a)
- 2.15 “**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);
- 2.16 “**firm price**” means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;
- 2.17 “**functionality**” means the ability of a bidder to provide goods or services in accordance with specification as set out in the bid documents;
- 2.18 “**Military Veteran**” has meaning assigned to it in Section 1 of Military Veterans Act, 2011 (Act No. 18 of 2011);
- 2.19 “**National Treasury**” has meaning assigned to it in Section 1 of Public Finance Management Act, 1999 (Act No. 1 of 1999);
- 2.20 “**non-firm prices**” means all prices other than “firm” prices;
- 2.21 “**person**” includes a juristic person;
- 2.22 “**People with disabilities**” meaning assigned to it in terms of Section 1 of Employment Equity Act, 1998 (Act No. 55 of 1998)
- 2.23 “**Price**” includes all applicable taxes less all unconditional discounts.
- 2.24 “**Proof of B-BBEE Status Level of Contributor**” i) the B-BBEE status level certificate issued by an unauthorised 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 Broad- Based Black Economic Empowerment Act.
- 2.25 “**Rural Area**” i) a sparsely populated area in which people farm or depend on natural resources, including villages and small towns that are dispersed through the area; or ii) an area including a large settlement which depends on migratory labour and remittances and government social grants for survival, and may have traditional land tenure system.
- 2.26 “**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);

- 2.27 “**rand value**” means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties;
- 2.28 “**sub-contract**” means the primary contractor’s assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract;
- 2.29 “**total revenue**” bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act and promulgated in the *Government Gazette* on 9 February 2007;
- 2.30 “**Township**” means an urban living area that any time from the late 19<sup>th</sup> century until 27 April 1994, was reserved for black people, including areas developed for historically disadvantaged individuals post 27 April 1994
- 2.31 “**Treasury**” meaning assigned to it in Section 1 of the Public Finance Management Act, 1999 (Act No. 1 of 1999)
- 2.32 “**trust**” means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and
- 2.33 “**trustee**” means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.
- 2.34 “**Youth**” meaning assigned to it in terms of Section 1 of National youth Development Agency Act, 2008 (Act No. 54 of 2008).

### 3. **ADJUDICATION USING A POINT SYSTEM**

- 3.1 The bidder obtaining the highest number of total points will be awarded the contract.
- 3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts.
- 3.3 Points scored must be rounded off to the nearest 2 decimal places.
- 3.4 In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of preference points for B-BBEE.
- 3.5 However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the

highest score for functionality.

3.6 Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

**4. POINTS AWARDED FOR PRICE**

**4.1 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

Ps = Points scored for comparative price of bid under consideration

Pt = Comparative price of bid under consideration

Pmin = Comparative price of lowest acceptable bid

**5. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION**

5.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

<b>B-BBEE Status Level of Contributor</b>	<b>Number of points (80/20 system)</b>
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

5.2 A bidder who qualifies as an EME in terms of the B-BBEE Act must submit a sworn affidavit confirming Annual Total Revenue and Level of Black Ownership. Furthermore, EMEs may also obtain a sworn

affidavit from CIPC (formerly CIPRO) Self Service Terminals when registering business or filing annual returns. In these instances, PRASA would require proof of turnover as well as proof of ownership. 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](http://www.dti.gov.za/economic_empowerment/bee_codes.jsp).

- 5.3 QSEs that are at least 51% Black owned or higher are only required to obtain a sworn affidavit on an annual basis confirming that the entity has an Annual Total Revenue of R50 million or less and the entity's Level of Black ownership.
- 5.4 A Bidder other than EME or a QSE that is at least 51% Black owned must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating a Verification Agency accredited by SANAS.
- 5.5 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.
- 5.6 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.
- 5.7 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.
- 5.8 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.
- 5.9 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.

## 6. **BID DECLARATION**

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

### 6.1.1 **B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 5.**

6.2 B-BBEE Status Level of Contribution:           .       =       .....(maximum of 20 points)

(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 5.1 and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by SANAS or a Registered Auditor approved by IRBA or a sworn affidavit.

**7. SUB-CONTRACTING**

7.1 Will any portion of the contract be sub-contracted?

*(Tick applicable box)*

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

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.

*(Tick applicable box)*

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations,2017:

Designated Group: An EME or QSE which is at last 51% owned by:	EME <input checked="" type="checkbox"/>	QSE <input checked="" type="checkbox"/>
Black people	<input type="checkbox"/>	<input type="checkbox"/>
Black people who are youth	<input type="checkbox"/>	<input type="checkbox"/>
Black people who are women	<input type="checkbox"/>	<input type="checkbox"/>
Black people with disabilities	<input type="checkbox"/>	<input type="checkbox"/>
Black people living in rural or underdeveloped areas or townships	<input type="checkbox"/>	<input type="checkbox"/>
Cooperative owned by black people	<input type="checkbox"/>	<input type="checkbox"/>
Black people who are military veterans	<input type="checkbox"/>	<input type="checkbox"/>

OR		
Any EME		
Any QSE		

**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:.....

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 paragraph 7 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 7, the contractor may be required to furnish documentary proof to the satisfaction of the
- iv) purchaser that the claims are correct;
- v) If a bidder submitted false information regarding its B-BBEE status level of contributor, local production and content, or any other matter required in terms of the Preferential Procurement Regulations, 2017 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 bidder to another person without disclosing it, PRASA 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> <p>ADDRESS .....</p> <p>.....</p> <p>.....</p>
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### DECLARATION OF COMPANY’S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Standard Company Document must form part of all RFQs invited.
- 2 It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The RFQ of any Company may be disregarded if that Company, or any of its directors have-
  - a. abused the institution’s supply chain management system;
  - b. committed fraud or any other improper conduct in relation to such system; or
  - c. failed to perform on any previous contract.
- 4 **In order to give effect to the above, the following questionnaire must be completed and submitted with the RFQ.**

Item	Question	Yes	No
4.1	<p>Is the Company or any of its directors listed on the National Treasury’s Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?</p> <p>(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied).</p> <p><b><i>The Database of Restricted Suppliers now resides on the National Treasury’s website (<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) and can be accessed by clicking on its link at the bottom of the home page.</i></b></p>	Yes  <input type="checkbox"/>	No  <input type="checkbox"/>
4.1.1	If so, furnish particulars:		

.2	<p>Is the Company or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?</p> <p><i>The Register for Tender Defaulters can be accessed on the National Treasury's website (<a href="http://www.treasury.gov.za">www.treasury.gov.za</a>) by clicking on its link at the bottom of the home page.</i></p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.2.1	If so, furnish particulars:		
4.3	<p>Was the Company or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.3.1	If so, furnish particulars:		
4.4	<p>Was any contract between the Company and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?</p>	<p>Yes</p> <input type="checkbox"/>	<p>No</p> <input type="checkbox"/>
4.4.1	If so, furnish particulars:		

**CERTIFICATION**

I, THE UNDERSIGNED (FULL NAME) ..... CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....

**Signature**

.....

**Date**

.....

**Position**

.....

**Name of Company**

**SECTION 8****SBD 9****CERTIFICATE OF INDEPENDENT RFQ DETERMINATION**

1. This Standard Company Document (SBD) must form part of all RFQs<sup>1</sup> invited.
2. Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive Company (or RFQ rigging).<sup>2</sup> Collusive Company is a *pe se* prohibition meaning that it cannot be justified under any grounds.
3. Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
  - a. disregard the RFQ of any Company if that Company, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.
  - b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the Company process or the execution of that contract.
4. This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when RFQs are considered, reasonable steps are taken to prevent any form of RFQ-rigging.
5. In order to give effect to the above, the attached Certificate of RFQ Determination (SBD 9) must be completed and submitted with the RFQ:

<sup>1</sup> Includes price quotations, advertised competitive RFQs, limited RFQs and proposals.

<sup>2</sup> RFQ rigging (or collusive Company) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a Company process. RFQ rigging is, therefore, an agreement between competitors not to compete.

## CERTIFICATE OF INDEPENDENT RFQ DETERMINATION

I, the undersigned, in submitting the accompanying RFQ: \_\_\_\_\_ (Quotation Number and Description) in response to the invitation for the RFQ made by: \_\_\_\_\_  
\_\_\_\_\_ (Name of Institution) do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: \_\_\_\_\_ (Name of Company) that:

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying RFQ will be disqualified if this Certificate is found not to be true and complete in every respect; I am authorized by the Company to sign this Certificate, and to submit the accompanying RFQ, on behalf of the Company;
3. Each person whose signature appears on the accompanying RFQ has been authorized by the Company to determine the terms of, and to sign the RFQ, on behalf of the Company;
4. For the purposes of this Certificate and the accompanying RFQ, I understand that the word "competitor" shall include any individual or organization, other than the Company, whether or not affiliated with the Company, who:
  - a. has been requested to submit a RFQ in response to this RFQ invitation;
  - b. could potentially submit a RFQ in response to this RFQ invitation, based on their qualifications, abilities or experience; and
  - c. provides the same goods and services as the Company and/or is in the same line of business as the Company
5. The Company has arrived at the accompanying RFQ independently from, and without consultation, communication, agreement or arrangement with any competitor.
6. However communication between partners in a joint venture or consortium<sup>3</sup> will not be construed as collusive Company.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
  - a. prices;
  - b. geographical area where product or service 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 RFQ;
  - e. the submission of a RFQ which does not meet the specifications and conditions of the RFQ; or

f. Company with the intention not to win the RFQ.

8. 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 products or services to which this RFQ invitation relates.
9. The terms of the accompanying RFQ have not been, and will not be, disclosed by the Company, directly or indirectly, to any competitor, prior to the date and time of the official RFQ opening or of the awarding of the contract.
10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to RFQs and contracts, RFQs 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.

.....

Signature

.....

Date

.....

Position

.....

Name of Company

<sup>3</sup> 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.

## SECTION 9

### COMMISSIONER OF OATH

*I certify that the above has acknowledged that he/she knows and understands the contents of this document, that he/she does not have any objection to taking the oath, and that he/she considers it to be binding on his/her conscience, and which was sworn to and signed before me at \_\_\_\_\_ on this the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, and that the administering oath complied with the regulations contained in Government Gazette No. R 1258 of 21 July 1972, as amended.*

\_\_\_\_\_ (Sign – SERVICE PROVIDER)

\_\_\_\_\_ (Name – SERVICE PROVIDER)

COMMISSIONER OF OATHS STAMP AND DETAILS OF PERSON

STAMP :

NAME & SURNAME:

DESIGNATION/RANK :

PERSAL/EMPLOYEE NO:

PLACE/DATE:

## SECTION 10

### PART A: PROJECT SPECIFICATION FOR MAINTENANCE OF RAILWAY TRACK WITH ON-TRACK MACHINERY

#### 1. DEFINITIONS AND INTERPRETATION

In this Contract, unless inconsistent with the context: -

**ACTUAL PREPARATION TIME (Tp)** means the period between the actual commencement of the track occupation and the actual commencement of the work by the machinery, plus the period between the actual end of the work by the machinery and the actual time when the machinery is secured at its staging point, clear of the occupied track. Preparation time excludes all periods of delay by PRASA KZN.

**ANNUAL HOLIDAYS** means the annual holiday with a duration of 15 consecutive working days plus statutory public holidays, Saturdays and Sundays that may fall within in this period, when no Work will be performed by the Contractor.

**AVAILABLE** means when required to do work, a machine can produce work to the standards specified.

**BREAKDOWN TIME (Tb)** means all periods during which the machinery is non-available.

**CANT** means the difference in elevation between the running surfaces of the two rails.

**CURVE LOCATION POINTS** means the four points, which locate the transitions of the curve, or the two points, which locate the circular curve, where no transitions are provided.

**DAY** shall mean a calendar day. Where a specific number of days is allowed in the Contract for the performance of any act or is stipulated for the extinction of any right or the duration of any event or circumstance the days between the commencement and last day of the Annual Holidays (both days included) and the day from which the period is stated or agreed to commence, shall be excluded from the calculation of the number of days concerned.

**DOUBLE SHIFT WORKING** means the working of two consecutive shifts of 8 hours, which may each be non-continuous and scheduled at any times during a 24-hour day.

**IDLE TIME (Ti)** means all periods of 15 consecutive days or longer during which PRASA KZN does not require work to be performed by the machinery (see clause 14.4). This excludes the stoppage of work during the annual holiday.

**JOINT ASSEMBLIES** means all types of joints, including flash-butt and thermit welded, fishplate and block-joints.

**LINE** means the maximum rate of deviation of the running edge of one rail from a straight line between two points on the same rail of tangent track. Measurements will be taken 15mm below the top of the rail, against the gauge side of the rail used by the machine as a datum for aligning.

**MACHINERY** means the on-track machinery provided complete with all fittings, accessories and ancillary equipment including trailers, caravans and spare parts, as may be required to comply with the requirements of the specifications.

**MAXIMUM OCCUPATION TIME (Tom)** means the total occupation time, non-continuous, on a normal working day, not exceeding a total net period stated in the Special Conditions and Specifications.

**MONTH** means the continuous period from the first day to the last day of any calendar month, both days included.

**MONTHLY WORKING TIME (Twm)** means the targeted average monthly working time.

**MOVING TIME (T<sub>m</sub>)** means the period required to move the machinery from work site to work site as a train, as part of or on a train. Moving time will commence at the announced time of departure and will end when the staging point at the new work site is reached. Periods of overnight stops when the machinery is travelling as a train, as part of or on a train will be excluded from moving time. Moving time will be included in occupation time for payment purposes.

**NIGHT SHIFT ALLOWANCE** means an allowance paid for any time worked between 19h00 and 05h00 (Night shift allowance is additional to either overtime or normal shift time, if applicable)

**NON-AVAILABLE** means when required to do work, the machinery or the operation thereof is unsafe, or the machinery is not able to produce work to the standards specified, due to any reason other than a stoppage of work caused by PRASA KZN.

**NORMAL WORKING DAY** means a total shift of 8 hours, which may be non-continuous, out of every 24 hours for 5 consecutive days out of every 7 days, or for 10 consecutive days out of every 14 days. The Technical Officer will determine the daily starting time, which may vary to suit seasonal changes or train timetables.

The Technical officer shall decide when 10/14-day work shifts will be worked. When a machine works further than 600 km away from the machine's base depot, the contractor may request working a 10/14-day shift if occupation conditions allow. PRASA KZN will consider such working shifts and the additional Saturday and Sunday shift payments will then apply.

**OCCUPATION** means a closure of the line on which work is to be performed for a specified period.

**OCCUPATION DAY (To-day)** means any day that the machinery will be required by the Technical Officer to be available.

**OCCUPATION TIME (T<sub>o</sub>)** means the period(s) between the announced commencement time of an occupation and the time when the machinery is secured at its staging point for the last time.

**OVERTIME** means any time worked in excess of the hours of a normal working day and any time worked on Saturdays, Sundays and statutory public holidays in excess of 5 consecutive days out of 7 days or in excess of 10 consecutive days out of 14 days, all on the written instruction of, or as approved by the Technical Officer.

**PLAIN TRACK** means all track excluding sets and restricted track.

**QUOTED PREPARATION TIME (T<sub>q</sub>)** means the combined period, as quoted by the Contractor in the Schedule of Machinery (for one complete cycle), to move the machinery from its staging point, travel to the point of work, to prepare it for work, and on completion of the work to return and secure it at the staging point, clear of the occupied track.

**RESTRICTED TRACK** means that portion of plain track where locking bars, guard rails and check rails are not removed prior to working or where sleepers are skewed by more than 75mm (measured at the rail's centre line) or where Dowty retarders and boosters are fitted which prevent the machine from producing work at the scheduled rates as defined in the Special Conditions and Specifications.

**SETS** mean all types of turnouts, including crossings, single and double slips.

**SHIFT ALLOWANCE (normal)** means an allowance paid for time worked on a Saturday, Sunday or statutory paid public holiday when working 5 consecutive days out of 7 days or 10 consecutive days out of 14 days (Payment for shift allowance ceases when overtime is paid)

**SPLICE JOINT** means a prefabricated rail expansion device. The thermit welds at either end demarcate the extremities of the splice joint.

**SPLIT OCCUPATION** means an occupation on any one-day, divided into 2 periods, the sum of which does not exceed 9 hours, with a 2 hour break in between and the total period not exceeding 11 hours.

**STANDING TIME (T<sub>s</sub>)** means a stoppage of work caused by PRASA KZN.

**TIME WORKED IN (Twi)** means any day a machine is agreed to be available and works outside of and in lieu of a normal working day. Such Twi as well as production statistics and all relevant times must be reflected against the day for which the time was worked in.

**TOP** means a change of gradient of one or both rails.

**TRACK** means and includes plain track, restricted track, sets, splice joints and all joint assemblies.

**TRAVELLING TIME (Tt)** means the time for the machinery to travel between work site and staging point.

**TWIST** means the algebraic difference between adjacent cant measurements.

**VERSINE** means the offset measurement at midpoint of a 10m chord taken at any location on curved track. Measurements will be taken 15 mm below the top of the rail, against the gauge side of the rail used by the machine as a datum for aligning.

**WORK** means the work to be carried out in terms of the Contract.

**WORKING TIME (Tw)** means the periods during which the machinery is engaged on the operation or function for which it was provided.

## 2 THE CONTRACTOR'S GENERAL OBLIGATIONS

2.1 The Contractor's general obligations under the Contract comprise: -

2.1.1 the maintenance of railway track and the provision of on-track maintenance machinery and all accessory tools and equipment of the types and nature stipulated in the Project Specification and

2.1.2 the provision of all labour, supervisory personnel and specialised tradesman required to undertake the duties and functions required in terms of the Contract and everything, whether of a temporary or permanent nature, required for performance of the Work and services to be provided in terms of the Contract.

2.2 PRASA KZN shall, in the case of a breach of contract by the Contractor in terms of clause 35 (GCC), have a lien over the Contractor's machines and accessory tools and equipment and all temporary buildings of the Contractor used for carrying out the Work.

## 3 WORKMEN

3.1 The Contractor shall ensure that all staff transported on on-track machines and PRASA KZN wagons or coaches, shall at all times be transported in a safe and responsible way. Only authorised staff shall be transported

The attention of the Contractor is directed to the requirements of safety legislation and regulations with regard to storage and transport of dangerous substances, accommodation and transport of people.

Staff shall only be allowed to travel on a train or machine in approved accommodation or cabin facilities

## 4 HOURS OF WORK

4.1 The Contractor shall conform to the hours of duty laid down by the Technical Officer.

4.2 When required, the Contractor shall work either overtime or shifts, on paid public holidays, Saturdays or Sundays. The machinery will not be required to work more than 6 shifts in any 7-day period or 11 shifts in any 14-day period.

4.3 Work shall not be suspended for rain or inclement weather unless otherwise agreed by the Technical Officer.

- 4.4 Before the end of each day's work the Contractor will be advised in writing of the commencement time and duration of the following day's occupation(s). The duration of the occupation will be subject to train operating conditions.
- 4.5 The Contractor may be required to work SPLIT occupations as defined in clause 1, when a 2 hours period will be allowed between occupation periods for servicing of the machines.
- 4.6 The Contractor will be allowed sufficient time on-track to calibrate and adjust the machine as part of the preventive maintenance of the machine. This time will be outside the scheduled occupation periods and will not be included in any of the contract measurements.

## 5 COMPLIANCE WITH STATUTES AND SAFETY RULES

Add the following sub-clause to clause 28 of the GCC

- 5.1 The term "safety rules" in clauses 28.1 and 28.5 is used in a generic sense and refers to all PRASA KZN arrangements, procedures, and requirements, pertaining to safety, specified, or incorporated by reference in the contract documents, such as the **Specification for Work On, Over, Under or Adjacent to Railway Lines and near High Voltage Equipment, E7/1, the Electrical Safety Instructions - High Voltage Equipment**. (Copies of these documents are available for inspection at the offices of PRASA KZN.)

## 6 PLACE OF WORK

- 6.1 The Technical Officer shall determine where the Work shall be performed. The Technical Officer shall make the necessary arrangements to move the machinery by rail from one work site to another and shall give the Contractor written notice of the date and time of departure. Major movements will be planned, and the time allowed should be a minimum of 14 days or such shorter period as agreed.
- 6.2 Any delay to an announced move caused by the Contractor will render the machinery non-available for the period of such delay, excluding overnight stops.

## 7 RECORDS AND INSTRUCTION BOOKS

The Contractor shall submit such returns as may be required by the Technical Officer. He shall also provide and keep on each machine a duplicate carbon copy book, A4 size, the Workbook, in which instructions and events concerning the contract work shall be recorded, signed, and dated by the Technical Officer or his deputy, and the Contractor.

## A.8. MACHINERY AND EQUIPMENT REQUIRED

- 8.1 Mechanical and motive aspects
- 8.1.1 All machinery provided by the Contractor shall be in good mechanical condition and he shall maintain the machinery in good mechanical condition for the duration of the Contract.
- 8.1.2 Axle loads shall not exceed 20 tons.
- 8.1.3 The machine shall be self-propelled.
- 8.1.4 The machine shall have service brakes and independent emergency brakes capable of providing minimum retardation of 12, 5% and 6% of gravitational acceleration respectively, on dry rail.
- 8.1.5 At the start of each occupation the Contractor shall, in the presence of the Technical Officer's deputy, perform the daily tests laid down by the Technical Officer. The brakes shall be briefly applied at low speed when travelling on level track or upgrade. If in the opinion of the Technical Officer's deputy the brakes do not function satisfactorily, the machinery shall be removed immediately to a staging point. Machinery staged due to defective brakes will be regarded as non-available.

At approximately one-month intervals the Technical Officer's deputy will test the brakes with a brake efficiency test meter and record the results in the workbook.

- 8.1.6 The machine shall actuate all signalling equipment used by PRASA KZN for traffic control.
- 8.1.7 Regular checks shall be made for pressure loss on brake cylinders and circuits, wear and set of brake shoes, proper functioning of sirens and mechanical locks on hydraulic components.
- 8.1.8 The machine shall have an adequate lighting system for operation at night. Lights shall be provided for travelling in both forward and reverse directions. The trailing end headlights and leading end red lights shall not be switched on during motion.
- 8.1.9 The machine shall be capable of being hauled as the last vehicle of a train if required to clear the section after breakdown. The Contractor shall provide towing equipment.
- 8.1.10 Where specified, machinery shall have off-tracking equipment suitable for use on either of the off-track stand types shown in Annexure D. Should these stands not be suitable, PRASA KZN will construct stands to the Contractor's requirements and at his cost, subject to the particulars of such requirements being submitted with his tender.

## 8.2 Wheel flanges, tyres and axles

- 8.2.1 The condition of the flanges and treads of wheels of all machines shall be carefully examined. Should any appear to be excessively worn, they shall be tested by means of the wheel flange thickness and skid limit gauge and the tyre-wear limit gauge.
- 8.2.2 Wheels shall comply with the following requirements:
  - . The thickness of a flange shall not be less than the minimum indicated by the wheel flange thickness gauge.
  - . Hollow wear on the tread shall not exceed 6mm.
  - . The flange height shall not exceed 35mm.
  - . The angle of the flange shall not be less than 15° and the radius at the tip of the flange not less than 6mm.
- 8.2.3 Axles shall comply with the following requirements:
  - . Ultrasonic testing: to specifications laid down by PRASA KZN, done for new axles and every time an axle is replaced after fitting new wheels.
  - . Distance between wheel flanges: 988mm ± 2mm.

## 8.3 Fuelling and maintenance

- 8.3.1 The Contractor shall not re-fuel, service or repair the machinery, during occupations, save as provided in 13.2.2.
- 8.3.2 The Contractor may repair and adjust the machinery during stoppages caused by PRASA KZN. The machinery will be regarded as available during such repairs or adjustments, provided that the required working of the machine is not delayed thereby.

## 8.4 Recording instruments

- 8.4.1 Each machine shall be fitted with an approved mechanically operated event recorder and a speedometer.
- 8.4.2 The Contractor shall be responsible for synchronising these instruments.
- 8.4.3 The Technical Officer's deputy will be responsible for setting the event recorder.
- 8.4.4 The Technical Officer's deputy will test the event recorders at least once a week in the presence of the Contractor. The Contractor shall either repair or replace any device, which is inaccurate by more than 1 %. Failure to repair or replace an inaccurate device within 72 hours of the test will render the machinery non-available.

8.4.5 Should the event recorder break down; the Technical Officer's deputy will keep a complete written record of the starting and ending times of all events occurring during a track occupation. The Contractor shall sign this record if he agrees, and if he disagrees, he shall indicate on the record the reasons for the disagreement and then sign the document. Such disagreement shall be settled by negotiation between the Technical Officer and the Contractor.

## 8.5 Radio equipment

8.5.1 During track occupations the Contractor shall provide a cellular telephone for communication between the Work place and the controlling office on either side of the Work place or the area CTC office.

The cellular phone for the official use of PRASA KZN shall be provided with a talk time contract of not less than 500 talk minutes per month. If this allowed talk time is exceeded, PRASA KZN shall pay the excess. This excess shall only be paid after all previous monthly account credits have been brought into consideration. The Technical officer shall certify detail account excess.

This cellular phone shall also be available for the use of the PRASA KZN signal's or electrical technician involved if required for work directly related to the tamping work. Use of this phone by any other PRASA KZN official than the Track inspector with the machine may only be with his permission. The Track inspector with the machine shall be responsible for controlling the number of calls on this phone.

8.5.2 The Contractor shall provide and maintain walkie-talkie radio transceivers with a minimum range of 5 km in open country.

The Technical Officer, in consultation with the Contractor, will allocate suitable frequencies within the 450 MHz to 470 MHz band for configuration of the radio equipment.

The Contractor will be given seven day's written notice when additional radios are required.

8.5.3 All of the above-mentioned radio equipment shall operate on 12,5 kHz channel spacing, and shall comply with specification SABS-1069.

8.5.4 The Contractor may operate the radio equipment only for trackside protection. The use of the allocated frequencies must be terminated when the contract expires.

8.5.5 When walkie-talkie communication fails due to faulty equipment, the machinery will be deemed as non-available.

8.5.6 When radio and or cellular telephone communication between the place of Work and the controlling stations or the protection flagmen fails, the Contractor shall remove the machinery from the track as soon as possible.

8.5.7 PRASA KZN will provide, install and maintain a radio in the cab of the machine for train control purposes. The Contractor shall indicate the position in which the radio shall be installed and provide a suitable power supply point for the radio equipment when requested. The machine will not be allowed to operate without this radio.

## 8.6 Warning devices

8.6.1 The machine shall be fitted with a hooter for use during travelling.

8.6.2 The machine shall be fitted with a separate warning system used solely for and on the approach of a train. The pitch and intensity shall make it discernible from other sounding devices and easily heard above the working of the machine anywhere within 100m from the machine. The warning system shall be activated by an appointed employee of the Contractor.

The Contractor's appointed employee shall be in continuous radio communication with PRASA KZN's protection flagmen who will warn the Contractor's employee of approaching trains on adjacent lines

8.6.3 A rotating amber flashing light shall be fitted to the top of the machine's cab, for use during travel.

## 8.7 Machinery Specifications

Machinery shall be suitable for use under the following conditions and dimensional limitations: -

- 8.7.1 Vehicle gauge: 1 065mm gauge track shown in Annexure 2 (Sheet 1 of 2). Should the machinery exceed the vehicle gauge in any respect, this shall be clearly indicated by the Contractor by means of suitable drawings.
- 8.7.2 Track gauge: nominal 1 065mm, with a range of - 10mm to + 45mm.
- 8.7.3 Minimum structure gauges: as shown in Annexure 1 (Sheet 1, 2 and 5 of 5).
- 8.7.4 Single lines or multiple lines with a minimum distance of 4m between track centres.
- 8.7.5 Maximum track gradient: 1 in 30.
- 8.7.6 Minimum curve radius: 125m.
- 8.7.7 Work place altitude range: 0 to 2 000m above sea level.
- 8.7.8 Ambient temperature range: - 5°C to + 50°C.
- 8.7.9 Mass of rail: 60 kg/m, 57 kg/m, 48 kg/m, 40 kg/m, 30 kg/m or 22 kg/m.
- 8.7.10 Maximum mass per sleeper: Sets - 750 kg; other - 300 kg.
- 8.7.11 Types of sleepers in track: timber, steel, monolithic or tie-bar concrete.
- 8.7.12 Sleeper spacing: 500mm to 900mm.

## 8.8 Unknown / Alternative / Substitute Machines

PRASA KZN will, in the case where alternative or substitute machines or machines with characteristics which are unknown to PRASA KZN are offered by Tenderers or the Contractor, require that such machines, before they are accepted, be subjected to trials under the prevailing working conditions of the contract area(s) to demonstrate their compliance with the contract specifications. Machines that do not comply with the specifications will not be accepted.

## 9. AVAILABILITY

- 9.1 The machinery shall be available, warmed up and at the place of Work on the date and at the time indicated by the Technical Officer's deputy.
- 9.2 Machinery will be regarded as available when moving from one Work place to another.
- 9.3 Moving to effect initial delivery, and final removal after completion of the Work, as well as moving requested by the Contractor (i.e. for maintenance or temporary storage of the machine at locations other than the Work place) will not be included when determining availability.
- 9.4 The Technical Officer shall give the Contractor a minimum of 14 days written notice to stop work temporarily for a period exceeding 14 consecutive days and a minimum of 14 days written notice to resume work after such temporary stoppage. Such idle time shall not be included in measurements for availability.

## 10. NON-AVAILABILITY

- 10.1 The Contractor shall advise the Technical Officer as soon as possible when any machinery is not available for work at its appointed place of Work and shall indicate the estimated time when it will be available for work.
- 10.2 Should any of the specified components or functions of the machine be non-available, the machine will be regarded as non-available.
- 10.3 Machinery will be regarded as available after breakdown when it is declared available and placed on the track for the purpose of testing, resetting or working, unless after the period of testing and resetting the machinery is still non-available. In the latter case, breakdown time will commence from the time that the machinery previously became non-available.
- 10.4 The provisions regarding productivity and standards of workmanship and accuracy shall apply during periods of testing or resetting.
- 10.5 When the machine is not available at all for Work on a day because of a breakdown on the previous day, occupation time and non-availability will both be equal to Tom hours.
- 10.6 Should a single stoppage of Work due to a breakdown of a machine exceed or be likely to exceed 60 minutes, the Technical Officer's deputy may require the machine to be removed to a staging point as soon as possible. Such travelling, whether from or returning to the point of breakdown, will not be included in Tt, but will be included in Tb.
- 10.7 If the Contractor is instructed to work either overtime or more than Twm, non-availability due to breakdown occurring in such time will not be penalised. Occupation time will also not be measured during such breakdown.

## 11. PROVIDED BY PRASA KZN

PRASA KZN will provide the following free of charge: -

- 11.1 Water to operate the machinery, where available. The quality of water cannot be guaranteed.
- 11.2 Where available, at campsites as in clause 8.2, water for drinking and domestic purposes and hot water for ablutions.
- 11.3 Free traffic consignment notes for the conveyance by rail from one area of operation to another or from the Contractor's workshop or depot to the area of operation and vice versa will be issued for the machine (whether under own power, coupled to a train or loaded onto a railway truck), spares, caravans used with the machine and either of one spares trailer or one light delivery vehicle.
- 11.4 PRASA KZN will be responsible for the safety of the machinery in so far as train working is concerned and will provide a qualified employee for each machine or group of machines, who will be in charge and who will travel in the cab of the machinery whenever it moves as a train outside occupation areas.
- . Arrange protection for and supervise the operation of the machinery within the zone of protection, whether it is working, moving or standing idle.
  - . Supervise all on-tracking and off-tracking operations and ensure that the machinery is made secure when parked at the staging point.
- 11.5 Before work is commenced, the Technical Officer's deputy will enter in the work book the approximate positions of underground or hidden electrical conductors that may affect, or be affected by, the Work to be done under the Contract, or alternatively, endorse in the work book that no such conductors exist.
- 11.6 Nothing contained herein shall detract from the Contractor's obligation to exercise care in all respects in carrying out his duties under the Contract.

11.7 PRASA KZN will provide two or more DZ type rail wagons for use under all ballast screening and ballast tamping operations. The number of wagons required can be agreed upon between the Technical Officer and the Contractor and it depends on availability of the wagons and the reasons for requesting it. These wagons will also be moved free on rail.

## 12. TO BE PROVIDED BY THE CONTRACTOR

12.1 Except where otherwise specified the Contractor shall at his own cost provide all machinery, labour, transport, consumable stores, equipment, tools, services, materials, spare parts and ingredients of every description required for the performance and completion of his contractual obligations.

12.2 The Contractor shall provide and deliver to the place of Work all fuels and water required for the machine operations.

12.3 The Contractor shall maintain and operate the machinery, direct his own personnel, and perform all work required.

12.4 During track occupations, the Contractor shall ensure that sufficient mechanics, operators, and labour are present to ensure efficient operation of the machinery.

12.5 At least one qualified and experienced mechanic shall be in attendance at all times during track occupations and when the machinery travels as a train.

12.6 The Contractor shall appoint one suitably qualified person as his representative at each occupation.

12.7 The Contractor and the Technical Officer shall notify each other in writing of the names of their representatives who will be present during track occupations. These, as well as any changes in the personnel, shall be recorded in the workbook.

12.8 Failure to comply with the provisions of 12.2 to 12.7 shall render the machinery non-available.

## 13. MACHINE MOVEMENTS

13.1 The Contractor shall deliver the machinery in full operational condition, with all operatives, to the initial place of Work, as directed by the Technical Officer.

13.2 The Contractor shall not place the machinery onto the track or remove it there from, or use it in any way, except when authorised to do so by the Technical Officer or his deputy.

13.3 The Contractor is responsible for movement of his machines in the occupation area.

13.4 Machinery shall not be operated as a train unless a representative of PRASA KZN, appointed by the Technical Officer, who is authorised to give instructions regarding the movement of the machinery, travels on the machinery to its destination. The Contractor shall, subject to the provisions of clause 10, assist PRASA KZN in all matters concerning the safety of trains, persons and the machinery.

13.5 The Contractor shall ensure that the off-tracking rails are correctly placed and fastened before lowering or moving the machinery onto them.

13.6 The Contractor shall point out to the Technical Officer any part of the track or off-track stand where conditions may constitute a danger to the machinery and its ancillary equipment, and record this in the work book. The Contractor shall however repair off-track platforms where work can reasonably be expected to be done by the labour provided with the machine as per the schedule of labour.

13.7 The Contractor shall load and unload all machinery to be transported by rail truck (see clause 16.3) and shall be responsible to properly secure all machinery to be so transported.

#### 14. CARE OF MATERIAL SUPPLIED BY PRASA KZN

Any material supplied by PRASA KZN shall be used in the most economical way, and the Contractor shall take all reasonable care to prevent loss or damage thereof. Any material lost or damaged through negligence on the part of the Contractor or his employees shall either be made good by the Contractor or PRASA KZN will replace it. The value of the material replaced by PRASA KZN, including the cost of transport at normal tariffs applicable to the public, will be deducted from any money due to the Contractor or recovered in any other way.

#### 15. COMPLIANCE WITH STANDARDS OF WORKMANSHIP AND ACCURACY

15.1 The Contractor shall work to the track dimensions required by the Technical Officer. These dimensions will be given in writing to the Contractor or indicated by means of chalk marks on the sleepers.

15.2 The Contractor shall continuously monitor and evaluate measurements of the track and shall ensure compliance with the specified standards of workmanship and accuracy.

15.3 Where, in the opinion of the Contractor, the condition of the track or any site condition is such that the specified performance standards cannot be achieved, he should record all relevant information before and after working in conjunction with the Technical Officer's deputy. The Technical Officer may, if he concurs with the Contractor's contentions, adapt the specified standards of workmanship and conformance to suit the track and/or site conditions.

#### 16. UNSATISFACTORY PERFORMANCE OF THE MACHINERY

16.1 The Technical Officer may terminate the Work and/or order the machinery to be moved to another place of Work and/or order the removal of mechanic(s) and/or operator(s), and/or order the temporary or permanent removal and replacement of a machine under the following conditions:

When the output of the machinery is less than 70% of the required minimum **productivity** for a period of two consecutive months, or when the percentage **availability** of the machinery (as described in the Special Conditions of Contract and Specifications) is less than 75% for a period of two consecutive months.

16.2 The Contractor may substitute, either temporarily or for the duration of the Contract, other machinery in place of that listed in the Schedule of Machinery offered. The substitute machinery shall be subject to all the terms and conditions of the Contract and shall in no way be inferior to the original machinery. (See clause 13.8). The Technical Officer shall be advised of any proposed substitution, which shall be subject to his approval.

16.3 Should the Technical Officer, at any time, be of the opinion that the machinery provided by the Contractor is performing defectively or is incapable of achieving the specified output and availability the Technical Officer may notify the Contractor in writing, but the Contractor shall not be relieved of any of his contractual obligations if such notification is not given? The Contractor shall there-upon take steps to improve the output and availability of the machinery to specified performance levels or to replace the machinery with machinery capable of achieving the specified performance, failing which the Executive Officer may act in terms of Clause 29.

#### 17. MEASUREMENT AND PAYMENT

17.1 The quantities in the Schedule of Quantities and/or Prices are estimated and may be more or less than stated. The Technical Officer will measure all the work done and certify payment therefore in accordance with the Schedule of Quantities and/or Prices. The absence of stated quantities is no guarantee that none will be required.

17.2 Payment for establishment of a machine at the commencement of the Contract will only be made after the machine has attained the required minimum availability over a period of one month.

Should the Contract not be completed for any reason whatsoever, due to the Contractor, he shall refund to PRASA KZN a percentage of the establishment cost. The refund shall be proportional to the uncompleted period of the Contract.

In the case of unknown, alternative or substitute machines, establishment payments will only be made after successful completion of the trials (see clause 13.8) and only for the initial machine establishment.

- 17.3 Measurement and payment for the hire and operation of the machinery will be made as specified in the Project Specification. The following general payment provisions shall apply.
- 17.3.1 A machine-hire rate per day for each production machine that is available and operational. The rate shall include for all accessory labour, tools, equipment, etc., and everything whatsoever pertaining to the operation and maintenance of the machine.
- 17.3.2 A production-rate for each unit of time worked or work produced by the machine during actual working time. The rate shall include for all labour, fuels, consumables, materials, etc. and everything whatsoever, pertaining to the production output of the machine. The rate shall apply to all work performed on a "normal working day" as defined and to all Double-Shift working.
- 17.3.3 An extra-over payment will be made for overtime worked or production units produced during overtime working, i.e. time worked in excess of the maximum daily occupation time (Tom) on a normal working day and on Saturdays, Sundays and statutory public holidays. The overtime payment will not apply to Double Shift working.
- 17.3.4 Contractor shall submit, with their tenders, full particulars of the labour task crews, allowed for in the rates tendered in respect of clause 22.3.1 and 22.3.2, to undertake the tasks and functions specified in the Special Conditions and Specifications. Such particulars shall include the details of crew strengths i.e. numbers of labourers and supervisors, etc.
- 17.4 Additional payment will be made when the machine is required to work outside the contract area described in the Special Conditions and Specifications.
- 17.5 No payment whatsoever will be made for periods of non-availability.
- 17.6 No payment will be made if a machine is unable to work as a result of an accident to the machine, regardless of the cause of such accident.
- 17.7 When two or more machines work in tandem and as an interdependent production system, the entire group of machines will be deemed to be non-available if the non-availability of one or more machines renders the entire production system substantially unproductive.
- 17.8 The Contractor shall be paid at the hourly rates in the Labour Payment Schedule when the Technical Officer approves a temporary increase in labour to perform the tasks and functions specified in the Special Conditions and Specification, at particular workplaces.

## **18 INCREASE OR DECREASE IN COSTS**

No increase or decrease in costs for this contract will be applicable, costs to remain fixed for the whole duration of the contract period.

## **19 FOREIGN EXCHANGE RATE FLUCTUATIONS**

- 19.1 The contract price payable to the Contractor will be adjusted for increases and decreases in costs of imported materials, machines, and spare parts, due to fluctuations in foreign currency exchange rates after the conclusion of the Contract and for the duration thereof. Tenderers shall, by furnishing the particulars in the appendix to the Schedule of Quantities and/or Prices, indicate whether or not their tenders or part(s) thereof are subject to variation on account of exchange rate fluctuations.

Where no particulars are furnished, such tenders will be deemed to be not subject to variation on account of exchange rate fluctuations.

- 19.2 The contract price adjustments will be made in the monthly payment certificates in respect of the progress payments for that month and are to be based on the Standard Bank of South Africa's "TT sell" rate at the close of business on the last banker's day of the month for which measurement is being made.
- 19.3 The percentages quoted in the appendix shall indicate the proportion of the scheduled rate or price that are subject to exchange rate fluctuations and the adjustments on account of exchange rate fluctuations shall only be made in respect of those proportions of the tendered rates and/or prices. The percentages quoted shall not be subject to variation on account of the actual quantities measured being more or less than the estimated quantities stated in the tender schedule of quantities and/or prices.
- 19.4 The rate of exchange to be used by Tenderers in the computation of their tender rates and/or prices and which is to be quoted in the appendix are the rate of exchange on the day 7 days prior to the date on which tenders close.
- 19.5 The adjustments of the tendered rates and prices will be made in respect of percentages quoted to be affected by fluctuations in the rate of exchange of the stated currency, between the rate stated in the appendix and the ruling rate determined in accordance with clause 24.2 hereof.
- 19.6 The contract price adjustments stipulated in clause 23 hereof shall not apply to the portions of the contract payments that are subject to adjustments for exchange rate fluctuations in terms hereof and the following formula shall apply instead.
- 19.6.1 The foreign exchange rate adjustment formula shall read:

$$(1-x)\left[\frac{C_t}{C_o} - 1\right]$$

Where  $x$  = the percentage not applicable to foreign exchange

- 19.6.2  $C_o$  shall be the rate as prescribed in clause 24.4 hereof.  
 $C_t$  shall be the rate as prescribed in clause 24.2 hereof.  
The indices to be used will be those that the Contractor proposed in his tender. These indices shall be from an official series, published by the generally accepted institution of the country to which the foreign currency is to be remitted. The tender shall furthermore show the trend of the indices over a period of at least two years.
- 19.7 The Contractor shall, when requested by the Technical Officer, furnish documentary proof of remittance to another country of the contract payments made in terms of this clause.
20. **PAYMENT CERTIFICATES**
- 20.1 On or about the last day of each month, the Technical Officer's deputy will make a progress measurement of the work done in conjunction with the Contractor.
- 20.2 Thereafter the Project Manager will issue a certificate authorising payment of such sum of money as he may consider represents the value of the work referred to in 25.1.
- 20.3 The Contractor shall be entitled to receive payment of the amount authorised in the said certificate within 30 days from the date of measurement or receipt of the Contractor's VAT-invoice, whichever is the later. Such payment will be regarded as an open payment, and both the certificate and payment will be subject to revision and adjustment by the Project Manager if at any time he is of the opinion that the certificate does not represent accurately the value of work completed or to correct previous over or under payments.
- 20.4 In the event of failure by PRASA KZN to make payment within the time stipulated in clause 25.3, he shall pay to the Contractor interest at prime overdraft rate as certified by the Contractor's bankers upon all overdue payments of such certified amounts, from the date on which such payments should have been made. Interest payments shall not be applicable to corrections made in respect of previous over- or underpayments.

- 20.5 The Project Manager shall, within 28 days after completion of the Contract, authorise the release of surety, and submit for approval by the Executive Officer a Final Certificate which, after approval by the latter, shall be issued to the Contractor, thereby certifying both the final completion of the Contract Work and the amount due to the Contractor. The Project Manager may deduct from the Final Payment Certificate any money then due by the Contractor to PRASA KZN under the Contract, and for such provisions for the resolution of any disputes which may at the time exist between the Contractor and PRASA KZN, as is deemed necessary by him.
- 20.6 The Project Manager shall, within 14 days after approval by the Executive Officer, and subject to clause 25.5, send the Final Certificate to the Contractor who, by countersigning thereof, shall certify his acceptance of the amount shown due to him as being full and final payment, subject only to the resolution of outstanding disputes.
- 20.7 Within 30 days after the receipt of the Contractor's certification, PRASA KZN will remit to the Contractor the balance of all money so due under the Contract in terms of the Final Certificate.
- 20.8 Where the Contractor fails to certify the Final Certificate or has not disputed the correctness thereof within three months after its receipt by him, PRASA KZN will deem the Contractor to be in agreement with the Final Certificate and will effect payment in terms thereof.

PRASA KZN will not consider or admit any claim arising from the Final Certificate or in connection with the Contract, which has not been lodged with the Project Manager within a period of three months after receipt by the Contractor of the Final Certificate, and the Contractor accepts and acknowledges that by his failure to lodge a claim within the above-stipulated period of three months, he waives such claim and relieves PRASA KZN of responsibility for such claim.

- 20.9 Neither the issue of the Final Certificate nor any payment made there under shall release the Contractor from any liability to indemnify PRASA KZN against, and to reimburse it in respect of, any claim made or to be made against it by a third party for damage or loss sustained by such third party in consequence of any wrongful act or omission of the Contractor, or his employees or agents.

## 21. **GUARANTEE FROM WINNING BIDDER**

PRASA KZN requires a Bank Guarantee or Deed of Surety ship of 5% of the total value of the Contract as security for the due and faithful performance by the Contractor of all the duties and obligations resting upon and assumed by him in terms of the Contract.

The bank guarantee or Deed of Suretyship is to be returned to the Contractor upon completion of the contract after certification from the Project Manager that all contract requirements have been met.

## 22. **ANNEXURES**

The following annexures are applicable to this contract:

Annexure 1 (Sheet 1 of 5); Horizontal clearances: 1065mm track gauge

Annexure 1(Sheet 2 of 5); Vertical clearances: 1065mm track gauge

Annexure 2 (Sheet 1 of 2); Vehicle gauge: 1065mm track gauge

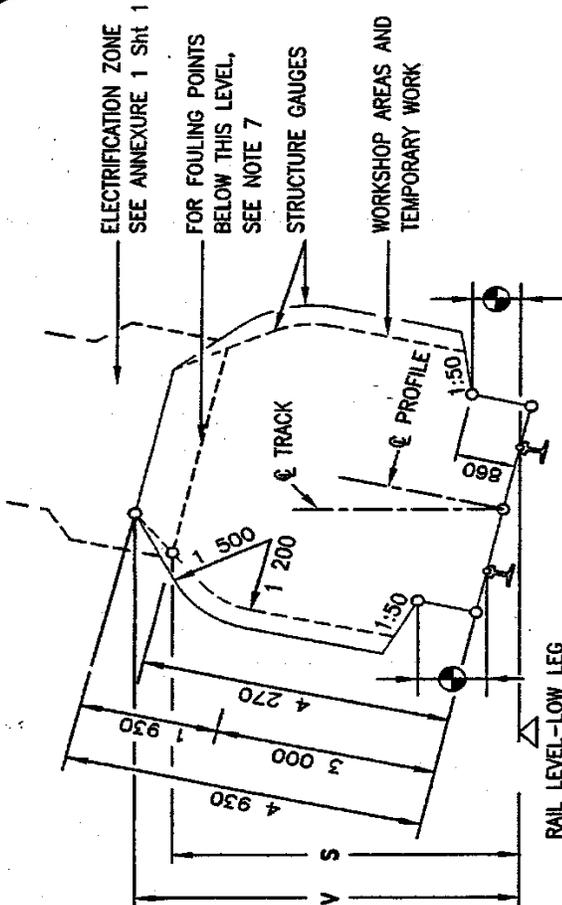
Annexure 4 (Sheet 1 of 1); Formation and Ballast minimum requirements

Annexure 16 (Sheet 3 to 5 of 5); De-stressing and working temperature ranges



ANNEXURE 1  
SHEET 2 of 5  
AMENDMENT

VERTICAL CLEARANCES :  
1 065mm TRACK GAUGE



LOCATION	NOT ELECTRIFIED	ELECTRIFIED (PRESENT OR FUTURE)	
		3kV & 25kV	50kV
RADIUS (mm)	S (mm)	V (mm)	V (mm)
100	4 470	5 050	5 400
300	4 410	5 020	5 370
600	4 370	5 000	5 350
1 000	4 350	4 990	5 340
1 500	4 310	4 960	5 310
2 000	4 290	4 940	5 290
>3 000	4 270	4 930	5 280
* OVER OR NEAR POINTS AND CROSSING IF REQUIRED BY ELECTRICAL IRRESPECTIVE OF RADIUS			

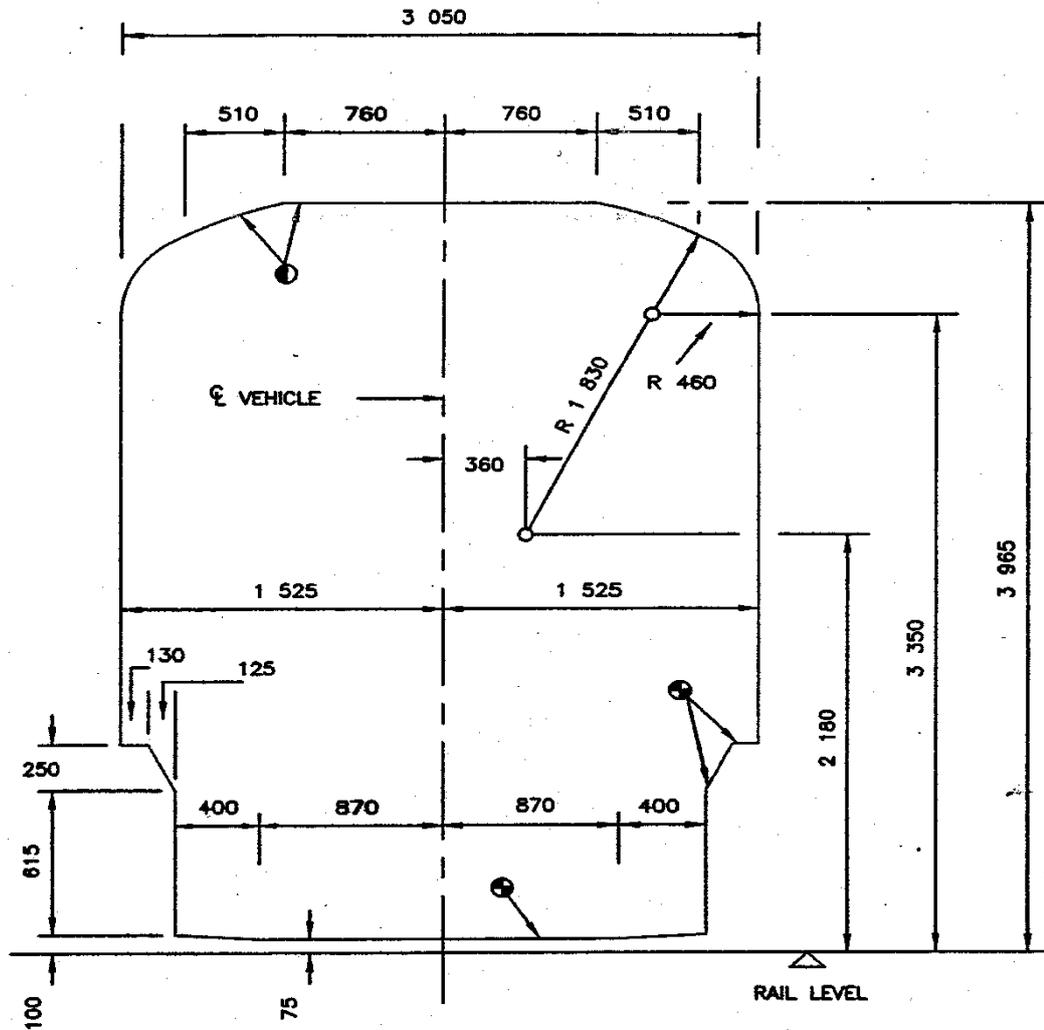
ALL AREAS OTHER THAN THOSE INDICATED BY \* BELOW

REMARKS:

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

ANNEXURE 2  
SHEET 1 of 2  
AMENDMENT

VEHICLE GAUGE :  
1 065mm TRACK GAUGE

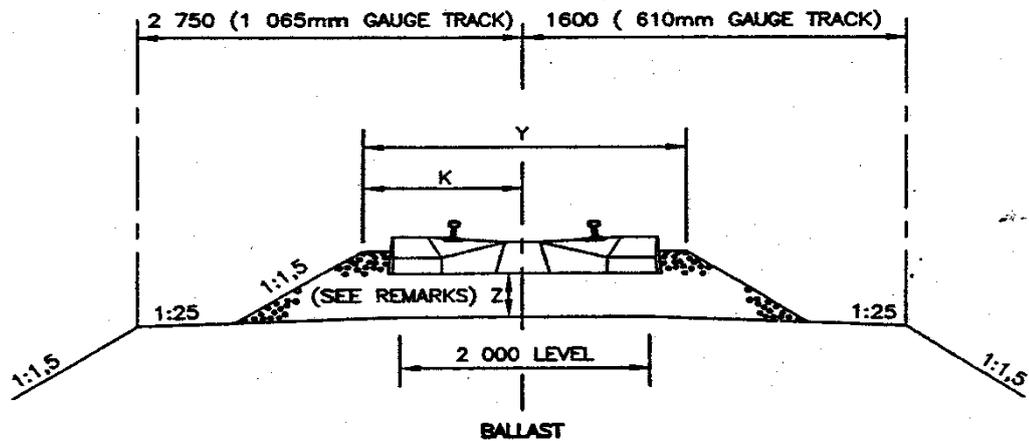
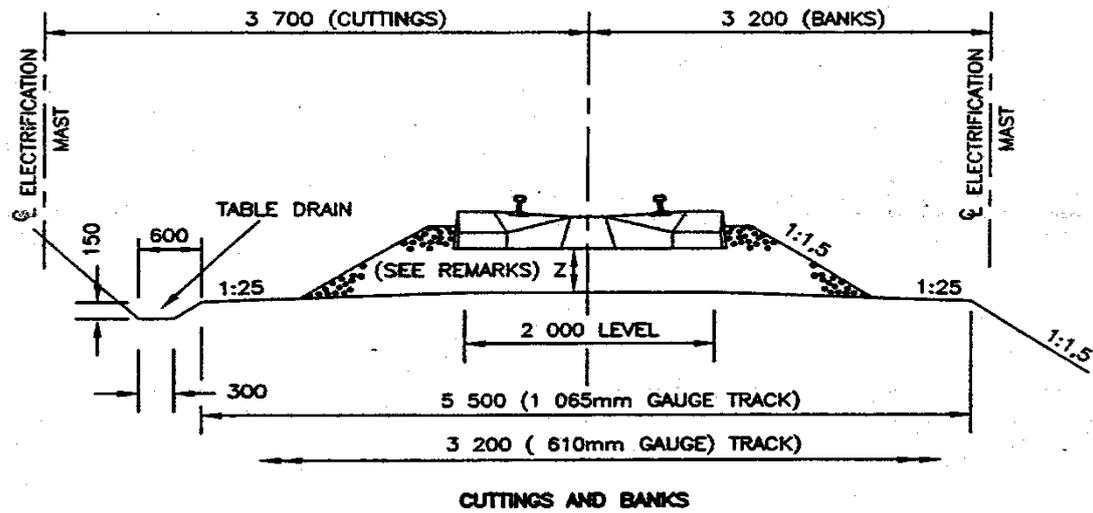


REMARKS:

1. ⚙ WITHOUT LOAD AND WITH NEW TYRES, VEHICLE MUST NOT BE HIGHER THAN THIS OUTLINE.
2. ⚙ WITH FULL LOAD AND WORN TYRES, VEHICLE MUST NOT BE LOWER THAN THIS OUTLINE.

ANNEXURE 4  
SHEET 1 of 1  
AMENDMENT

FORMATION AND BALLAST :  
MINIMUM REQUIREMENTS



CLASS OF LINE	Z (mm)	Y (mm)	K (mm)	QUANTITY (m <sup>3</sup> /km)		
				PY/FY	P2/F4	WOOD
S	300	2 800	1 400	1 600	-	-
N1	280	2 700	1 350	1 500	1 400	-
N2	200	2 700	1 350	-	1 200	1 100

REMARKS:

1. Z TO BE MEASURED UNDER THE LOW LEG RAIL ON CURVES.
2. DEPTH OF BALLAST (Z) ARE TO BE MEASURED IN THE CONSOLIDATED STATE, THAT IS AFTER 100 000 GROSS TON TRAIN TRAFFIC.

ANNEXURE 16  
SHEET 3 of 5  
AMENDMENT

DESTRESSING AND WORKING  
TEMPERATURE RANGES

SECTION	DESTRESSING RANGES		WORKING RANGES FOR RAIL LAYING	
	THROUGH LINES	YARD TRACKS	B	C
CAPE TOWN - BELLVILLE	20 - 50	25 - 45	15 - 55	15 - 60
* BELLVILLE - WORCESTER	25 - 45	30 - 40	20 - 50	20 - 60
* WORCESTER - DE AAR	25 - 40	25 - 35	20 - 50	20 - 55
HUTCHINSON - CALVINIA	25 - 35	25 - 30	20 - 40	20 - 50
KOOTJIESKOLK - SAKRMER	25 - 35	25 - 30	20 - 40	20 - 50
KRAAIFONTEIN - BITTERFONTEIN	25 - 45	30 - 40	20 - 50	20 - 60
KALBASKRAAL - SALDANHA	25 - 45	30 - 40	20 - 50	20 - 60
HERMON - PORTERVILLE	25 - 45	30 - 40	20 - 50	20 - 60
WOLSELEY - PRINCE ALFRED HAMLET	25 - 45	30 - 40	20 - 50	20 - 60
PAARL - FRANCHHOEK	25 - 45	30 - 40	20 - 50	20 - 60
EERSTERMER - BREDASDORP	25 - 45	30 - 40	20 - 50	20 - 60
VAN DER STEL - STRAND	25 - 45	30 - 40	20 - 50	20 - 60
KLIPDALE - PROTEM	25 - 45	30 - 40	20 - 50	20 - 60
EERSTERMER - MULDERSVLEI	25 - 45	30 - 40	20 - 50	20 - 60
* WORCESTER - RIVERSDALE	25 - 40	30 - 35	20 - 45	20 - 55
KENTEMADE - ATLANTIS	25 - 45	30 - 40	20 - 50	20 - 60
TABLE BAY HARBOUR - SIMONSTOWN	20 - 50	25 - 45	15 - 55	15 - 60
CAPE TOWN CENTRAL METRO AREA	20 - 50	25 - 45	15 - 55	15 - 60
* DE AAR - * KIMBERLEY	25 - 35	25 - 30	20 - 40	20 - 50
* KIMBERLEY - MAKWASSIE	25 - 40	30 - 40	20 - 50	20 - 55
* MAKWASSIE - * KLERKSDORP	20 - 40	25 - 35	15 - 50	15 - 55
* KIMBERLEY - * POSTMASBURG	25 - 35	25 - 30	20 - 40	20 - 50
POSTMASBURG - HOTAZEL	25 - 40	30 - 35	20 - 45	20 - 55
DE AAR - NAKOP	25 - 40	30 - 35	25 - 45	25 - 55
GROVEPUT - COPPERTON	25 - 40	30 - 35	25 - 45	20 - 55
UPINGTON - KAKEMAS	25 - 40	30 - 35	25 - 45	20 - 55
BELMONT - DOUGLAS	25 - 40	30 - 35	20 - 45	20 - 55
VEERTIENSTROME - MAFIKENG	25 - 40	30 - 35	20 - 45	20 - 55
PUDIMOE - COLIGNE	25 - 40	30 - 35	20 - 45	20 - 55
* MAKWASSIE - VERMAAS	20 - 40	25 - 35	15 - 45	15 - 55
OTTOSDAL - * KLERKSDORP	20 - 40	25 - 35	15 - 45	15 - 55
LICHTENBURG - WELVERDIEND	20 - 40	25 - 35	15 - 45	15 - 55
PORT ELIZABETH - ALICEDALE	25 - 45	30 - 40	20 - 50	20 - 60
* ALICEDALE - NOUPOORT	25 - 40	30 - 35	20 - 45	20 - 55
NOUPOORT - DE AAR	25 - 40	30 - 35	20 - 45	20 - 55
SWARTKOPS - KLIPPLAAT	25 - 45	30 - 40	20 - 50	20 - 60
KLIPPLAAT - ROSMEAD	25 - 45	30 - 40	20 - 50	20 - 60
ADDO - KIRKWOOD	25 - 45	30 - 40	20 - 50	20 - 60
RIVERSDALE - * MOSSELBAAI	25 - 45	30 - 40	20 - 50	20 - 60
MOSSELBAAI - GEORGE	20 - 45	25 - 40	15 - 50	15 - 60
* GEORGE - OUDTSHOORN	25 - 45	30 - 40	20 - 50	20 - 60
* OUDTSHOORN - * KLIPPLAAT	25 - 40	30 - 35	20 - 45	20 - 55
OUDTSHOORN - CALTZDORP	25 - 45	30 - 40	20 - 50	20 - 60
* GEORGE - KNYSNA	25 - 45	30 - 40	20 - 50	20 - 60
* PORT ELIZABETH - AVONTUUR	25 - 40	30 - 35	20 - 45	20 - 55
GAMTOOS - PATENSIE	25 - 45	30 - 40	20 - 50	20 - 60
COOKHOUSE - SOMERSET EAST	25 - 40	30 - 35	20 - 45	20 - 55
* ALICEDALE - PORT ALFRED	30 - 40	30 - 35	25 - 45	25 - 55
BARKLEY BRIDGE - ALEXANDRIA	25 - 45	30 - 40	20 - 50	20 - 60
EAST LONDON - DOHNE	20 - 45	25 - 40	15 - 50	15 - 60
* DOHNE - QUEENSTOWN	25 - 40	30 - 35	20 - 50	20 - 55
* QUEENSTOWN - BURGERSDORP	20 - 35	25 - 30	15 - 45	15 - 50
* BURGERSDORP - SPRINGFONTEIN	20 - 40	25 - 40	15 - 50	15 - 55
COOKHOUSE - BLANEY	25 - 40	30 - 35	20 - 45	20 - 55
AMABELE - UMTATA	25 - 40	30 - 35	20 - 45	20 - 55
IMVANI - QAMATA	25 - 40	30 - 35	20 - 45	20 - 55
* ROSMEAD - STORMBERG	20 - 30	20 - 25	15 - 35	15 - 45
SCHOOMBEE - HOFMEYR	20 - 30	20 - 25	15 - 35	15 - 45
STERKSTROOM - MACLAER	20 - 30	20 - 25	15 - 35	15 - 45
MOLTENO - JAMESTOWN	20 - 30	20 - 25	15 - 35	15 - 45
BURGERSDORP - BARKLEY EAST	20 - 35	25 - 30	15 - 40	15 - 50

REMARKS:

- FOR REMARKS SEE ANNEXURE 16 SHEET 5.

ANNEXURE 16  
SHEET 4 of 5  
AMENDMENT

DESTRESSING AND WORKING  
TEMPERATURE RANGES

SECTION	DESTRESSING RANGES		WORKING RANGES FOR RAIL LAYING	
	THROUGH LINES	YARD TRACKS	B	C
	A	D		
NOUPOORT – SPRINGFONTEIN	20 – 40	25 – 35	15 – 45	15 – 55
* SPRINGFONTEIN – BLOEMFONTEIN	20 – 35	25 – 30	15 – 40	15 – 50
BLOEMFONTEIN – THEUNISSEN	20 – 35	25 – 30	15 – 40	15 – 50
* THEUNISSEN – KROONSTAD	20 – 40	25 – 35	15 – 45	15 – 55
KROONSTAD – VEREENIGING	20 – 40	25 – 35	15 – 45	15 – 55
BETHLEHEM – ARLINGTON	15 – 35	20 – 30	10 – 40	10 – 50
* ARLINGTON – * KROONSTAD	15 – 40	20 – 35	10 – 45	10 – 55
KIMBERLEY – EMMAUS	25 – 40	25 – 35	20 – 45	20 – 55
* EMMAUS – BLOEMFONTEIN	20 – 35	25 – 30	15 – 40	15 – 50
SPRINGFONTEIN – KOFFIEFONTEIN	25 – 40	30 – 35	20 – 45	20 – 55
ALI WAL NORTH – SANNASPOS	20 – 40	25 – 35	15 – 45	15 – 55
GROOTVLEI – * BETHLEHEM	20 – 35	25 – 30	15 – 40	15 – 50
* BETHLEHEM – BLOEMFONTEIN	20 – 35	25 – 30	15 – 40	15 – 50
HARRISMITH – BETHLEHEM	15 – 35	20 – 30	10 – 40	10 – 50
VREDEFORT – DOVER	20 – 40	25 – 35	15 – 45	15 – 55
WOLWEHOEK – ARLINGTON	20 – 40	25 – 35	15 – 45	15 – 55
* ARLINGTON – MARQUARD	20 – 40	25 – 35	15 – 45	15 – 55
ORKNEY – WESLEIGH	20 – 40	25 – 35	15 – 45	15 – 55
VIJFONTEIN – BULTFONTEIN	20 – 40	25 – 35	15 – 45	15 – 55
ANCONA – WHITES	20 – 40	25 – 35	15 – 45	15 – 55
THEUNISSEN – WINBURG	20 – 40	25 – 35	15 – 45	15 – 55
WARDEN – * HARRISMITH	20 – 40	25 – 35	15 – 45	15 – 55
MASERU – MARSAILLES	20 – 40	25 – 35	15 – 45	15 – 55
LADYBRAND – MODDERPOORT	20 – 40	25 – 35	15 – 45	15 – 55
VIRGINIA – GLEN HARMONY	20 – 40	25 – 35	15 – 45	15 – 55
WONDERFONTEIN – BROODSNYERSPLAAS	15 – 40	20 – 35	10 – 45	10 – 55
ERMELO – MACHADODORP	20 – 40	25 – 35	15 – 45	15 – 55
BUHRMANSKOP – LOTHAIR	15 – 35	20 – 30	10 – 40	10 – 50
ROSSBURG – * DASSENHOEK	20 – 45	25 – 40	15 – 50	15 – 60
DASSENHOEK – CATO RIDGE	25 – 40	30 – 35	20 – 45	20 – 55
CATO RIDGE – PIETERMARITZBURG	25 – 40	30 – 35	20 – 45	20 – 55
* PIETERMARITZBURG – * VOLKSRUST	20 – 40	25 – 35	15 – 45	15 – 55
ROSSBURG – HILLCREST	20 – 45	25 – 40	15 – 50	15 – 60
* HILLCREST – CATO RIDGE	25 – 40	30 – 35	20 – 45	20 – 55
DURBAN – PORT SHEPSTONE	20 – 50	25 – 45	15 – 60	15 – 65
KELSO – UMZINTO	20 – 50	25 – 45	15 – 60	15 – 65
DURBAN – HLUHLUWE	20 – 50	25 – 45	15 – 60	15 – 65
* HLUHLUWE – GOLELA	25 – 45	30 – 40	20 – 55	20 – 60
EMPANGENI – NKWALINI	25 – 50	30 – 45	20 – 55	20 – 60
DUFFSROAD – KWAMASHU	25 – 50	30 – 45	20 – 55	20 – 60
THORNVILLE – RICHMOND	25 – 40	30 – 35	20 – 45	20 – 55
THORNVILLE – PENTRICH	25 – 40	30 – 35	20 – 45	20 – 55
* PIETERMARITZBURG – KOKSTAD	25 – 35	25 – 30	20 – 40	20 – 50
DONNYBROOK – UNDERBERG	20 – 35	25 – 30	15 – 40	15 – 50
FRANKLIN – MATATELE	20 – 35	25 – 30	15 – 40	15 – 50
PIETERMARITZBURG – DALTON	25 – 40	30 – 35	20 – 45	20 – 55
* DALTON – KRANSKOP	20 – 40	25 – 35	15 – 45	15 – 55
SCHROEDERS – BRUYNSHILL	25 – 40	30 – 35	20 – 45	20 – 55
* DALTON – GLENSIDE	20 – 40	25 – 35	15 – 45	15 – 55
GREYTOWN – MOUNT ALIDA	20 – 40	25 – 35	15 – 45	15 – 55
ENNERSDALE – BERGVILLE	25 – 40	30 – 35	20 – 45	20 – 55
GLENCOE – VRYHEID	20 – 40	20 – 35	15 – 50	15 – 55
NEWCASTLE – UTRECHT	20 – 40	25 – 35	15 – 45	15 – 55
LADYSMITH – HARRISMITH	20 – 40	25 – 35	15 – 45	15 – 55

REMARKS:

1. FOR REMARKS SEE ANNEXURE 16 SHEET 5.

ANNEXURE 16  
SHEET 5 of 5  
AMENDMENT

DESTRESSING AND WORKING  
TEMPERATURE RANGES

SECTION	DESTRESSING RANGES		WORKING RANGES FOR RAIL LAYING	
	THROUGH LINES	YARD TRACKS	B	C
	A	D		
KLERKSDORP - * POTCHEFSTROOM	20 - 35	25 - 30	20 - 40	15 - 50
POTCHEFSTROOM - * KRUGERSDORP	20 - 40	25 - 35	15 - 45	15 - 55
KRUGERSDORP - JOHANNESBURG	15 - 40	20 - 35	10 - 45	10 - 55
JOHANNESBURG - OLIFANTSFONTEIN	15 - 40	20 - 35	10 - 45	10 - 55
POTCHEFSTROOM - VEREENIGING	20 - 40	25 - 35	15 - 45	15 - 55
VEREENIGING - GERMISTON	20 - 40	25 - 35	15 - 45	15 - 55
VOLKSRUST - * STANDERTON	15 - 35	20 - 30	10 - 40	10 - 50
STANDERTON - * HEIDELBERG	20 - 35	25 - 30	15 - 40	15 - 50
HEIDELBERG - GERMISTON	20 - 40	25 - 35	15 - 45	15 - 55
BALFOUR NORTH - * GROOTVLEI	20 - 35	25 - 30	15 - 40	15 - 50
GROOTVLEI - REDAN	20 - 40	25 - 35	15 - 45	15 - 55
FIRHAM - VREDE	20 - 35	25 - 30	15 - 40	15 - 50
VOLKSRUST - BREYTEN	15 - 40	20 - 35	10 - 45	10 - 55
BETHAL - SPRINGS	20 - 40	25 - 35	15 - 45	15 - 55
SPRINGS - KAYDALE	20 - 40	25 - 35	15 - 45	15 - 55
MIDWAY - HOUTHELMEL	20 - 35	25 - 30	15 - 40	15 - 50
BANK - LANGLAAGTE	20 - 35	25 - 30	15 - 40	15 - 50
MAFIKENG - * KRUGERSDORP	25 - 40	30 - 35	20 - 45	20 - 55
APEX - WITBANK	20 - 35	25 - 30	15 - 40	15 - 50
DELMAS - HAWEKLIIP	20 - 35	25 - 30	15 - 40	15 - 50
SENTRARAND AREA	15 - 35	20 - 30	10 - 40	10 - 50
JOHANNESBURG CENTRAL METRO AREA	15 - 40	20 - 35	10 - 45	10 - 55
OLIFANTSFONTEIN - * IRENE	15 - 40	20 - 35	10 - 45	10 - 55
IRENE - PRETORIA	20 - 40	25 - 35	15 - 45	15 - 55
PRETORIA - * WARBATHS	20 - 40	25 - 35	15 - 45	15 - 55
WARBATHS - * POTGIETERSRUS	20 - 45	25 - 40	15 - 55	15 - 60
POTGIETERSRUS - BEITBRIDGE	20 - 45	25 - 40	15 - 50	15 - 50
* PRETORIA - * WATERVAL BOVEN	20 - 40	25 - 35	15 - 50	15 - 55
WATERVAL BOVEN - * NELSPRUIT	20 - 45	25 - 40	15 - 55	15 - 60
NELSPRUIT - KOMATIPOORT	25 - 45	30 - 40	20 - 55	20 - 60
HERCULES - MAGALIESBURG	20 - 40	25 - 35	15 - 45	15 - 55
PRETORIA - BRITS	20 - 40	20 - 35	15 - 45	15 - 55
BRITS - RUSTENBURG	20 - 40	25 - 35	15 - 45	15 - 55
RUSTENBURG - * THABAZIMBI	20 - 40	25 - 35	15 - 45	15 - 55
THABAZIMBI - ELLISRAS	25 - 40	30 - 35	20 - 45	20 - 55
BRITS - ATLANTA	20 - 40	25 - 35	15 - 45	15 - 55
NYLSTROOM - VAALWATER	20 - 40	25 - 35	15 - 45	15 - 55
NABOOMSPRUIT - ZEBEDIELA	20 - 40	25 - 35	15 - 45	15 - 55
PIENAARSRIVER - MARBLE HALL	25 - 40	30 - 35	20 - 45	20 - 55
RAYTON - CULLINAN	20 - 40	25 - 35	15 - 45	15 - 55
GROENBULT - KAAPMUIDEN	25 - 45	30 - 40	20 - 50	20 - 60
HOEDSPRUIT - PHALABORWA	25 - 45	30 - 40	20 - 50	20 - 60
* KAAPMUIDEN - BARBERTON	20 - 45	25 - 40	15 - 50	15 - 60
* NELSPRUIT - GRASKOP	20 - 35	25 - 30	15 - 40	15 - 50
CITRUS - PLASTON	20 - 45	25 - 40	15 - 50	15 - 60
BELFAST - STEELPOORT	20 - 40	25 - 35	15 - 45	15 - 55
DERWENT - ROOSSENEKAL	20 - 40	25 - 35	15 - 45	15 - 55
PRETORIA CENTRAL METRO AREA	20 - 40	25 - 35	15 - 45	15 - 55
SALDANHA - BAMBOESBAAI	20 - 50	25 - 45	15 - 55	15 - 60
* BAMBOESBAAI - SISHEN	25 - 40	30 - 35	20 - 45	20 - 55
RICHARDSBAY - ULUNDI	20 - 45	-	20 - 55	-
* ULUNDI - PIET RETIEF	20 - 40	25 - 35	20 - 50	15 - 55
PIET RETIEF - * SHEEPMORE	20 - 40	25 - 35	20 - 50	15 - 55
SHEEPMORE - ERMELO	15 - 35	20 - 30	15 - 45	10 - 50
* ERMELO - BROODSNYERSPLAAS	15 - 40	20 - 35	15 - 50	10 - 55
BROODSNYERSPLAAS - OGIES	15 - 40	20 - 35	15 - 50	10 - 55

REMARKS:

1. RAIL TEMPERATURES IN DEGREE CELSIUS.
2. USE A RAIL TENSOR WHEN THE DIFFERENCE IN THE 'A' RANGE IS 10° CELSIUS OR SMALLER.
3. \* DENOTES "EXCLUDED".

**PART B: PARTICULAR (PROJECT) CONDITIONS AND SPECIFICATIONS FOR THE ULTRASONIC RAIL FLAW DETECTION  
AND MEASUREMENT  
CONTENTS**

1. SCOPE
2. DEFINITIONS
3. CONTRACT AREA
4. DURATION OF CONTRACT
  - 4.1 STAGE ONE
  - 4.2 STAGE TWO
5. PLACE OF WORK
6. SUFFICIENCY OF TENDER
7. ULTRASONIC MEASURING CAR SYSTEM REQUIREMENT
8. SYSTEM OUTPUTS
9. TOLERANCES AND QUALITY CONTROL
10. TRAINING
11. UNSATISFACTORY PERFORMANCE OF THE MACHINERY
12. MEASUREMENT AND PAYMENT
13. PENALTIES
14. ADDITIONAL PAYMENT FOR WORK PERFORMED OUTSIDE CONTRACT AREA
15. QUALITY CONTROL OF DEFECTS LOCATED
16. SUMMARY OF INFORMATION TO BE SUPPLIED WITH TENDER

## 1. SCOPE

- 1.1 The contract covers the detection of internal and external rail flaws by ultrasonic sound or other approved technique by the Contractor with equipment installed on a road rail vehicle (RRV), which he shall provide, maintain and operate subject to the terms of the succeeding clauses, and the specifications and schedules embodied in the contract. The measuring shall be done with one road rail vehicle that will do the detection, verification and sizing of defects found.
- 1.2 Alternative methods of measurements offered will be considered.
- 1.3 The measurements shall cover the following:
  - 1.3.1 In situ ultrasonic rail flaw detection of plain track and turnouts, both rails simultaneously.
  - 1.3.2 Data processing.
  - 1.3.3 Analysis and reporting of measurements for rail maintenance purposes.

## 2. DEFINITIONS

- 2.1 **AQL** means acceptable quality level.
- 2.2 **GCC** means the Conditions of Contract and General Specifications for Maintenance of Railway Track with On Track Machinery.
- 2.3 **GPS** means Global Positioning System.
- 2.4 **DGPS** means Differential Global Positioning System.
- 2.5 EMPAC database (PRASA KZN Maintenance planning System).
- 2.6 **On- or off tracking facility** means a place where the machine could be put on the track or removed from the track. It will exclude an off-track platform constructed of rails or other material that is used for the off tracking of tamping machines.
- 2.7 **Road-rail vehicle (RRV)** means a vehicle capable of traveling by any road and on the railway track as required.
- 2.8 **ULTRASONIC MEASURING CAR (UMC)** means the RRV that is used for the ultrasonic detection of rail flaws.

## 3. CONTRACT AREA

- 3.1 The contract will cover track owned and/or maintained by PRASA KZN/PRASA.
- 3.2 The expected annual workload will be an estimated 915 km (i.e. 305 km per cycle). Payment will only be for actual kilometres measured.

## 4. DURATION OF CONTRACT

The contract will commence on the date of acceptance of the tender and run for a period of twenty-four months (24).

PRASA KZN requires three campaigns per annum for the Region, the first to be during first run will be April to May, second run will be September to October, and the third January to February. The measurement program will vary with time and is dependent upon traffic volume and cumulative traffic carried. The estimated annual workload could be greater than:

REGION	ESTIMATED ANNUAL KM
KZN (1 <sup>st</sup> )	301
KZN (2 <sup>nd</sup> )	301
KZN (3 <sup>rd</sup> )	301
<b>TOTAL</b>	<b>915</b>

- 4.2.3 The expected average daily measuring time ( $T_w + T_b$ ) will be 210 minutes.
- 4.2.4 A campaign with a rail/road vehicle is expected to take approximately 21 days each for the KZN, when measuring at an average speed of 5km/h. The guaranteed detection, measuring and reporting distance per annum is 610km, see item 2.1 of the Bill of Quantities and Prices.
- 4.2.5 The contractor will be required to contract the utility to any other railway company during the periods not utilized by PRASA KZN.
- 4.2.6 PRASA KZN reserves the right with the consent of the contractor to extend the contract for another 12 months under the same terms and conditions.

## **5. PLACE OF WORK**

- 5.1 All movements between work sites shall be by road. Where this might not be practical, the Technical Officer or his deputy will authorize movement by rail. Movements by road will be the responsibility of the contractor. The contractor shall give the Technical Officer written notice of the date and time of arrival at a new work site.
- 5.2 Any delay to the date and time of arrival after movement by road will render the machinery non-available for the period of such delay, excluding overnight stops.
- 5.3 Access to the railway track will be at an on or off tracking facility.
- 5.4 An on- or off-tracking facility could be any of the following:
  - 5.4.1 A level crossing with the following surface:
    - 5.4.1.1 Concrete;
    - 5.4.1.2 Bitumen;
    - 5.4.1.3 Concrete blocks or
    - 5.1.4.4 Gravel.

When a level crossing is used as an on or off tracking facility, there shall be no interference with road traffic.

- 5.4.2 In a yard.
- 5.4.3 In a yard where the ground surface is level or almost level with the crown of the rail.
- 5.4.4 Wooden blocks placed temporarily between and adjacent to the rails.
- 5.5 It is the contractor's responsibility to ensure that a facility used for on- or off tracking conforms to his requirements and that is safe at all times for the machine as well as trains. Any temporary facility shall be removed before and after the machine has on- or off-tracked.
- 5.6 The Contractor shall point out to the Technical Officer any part of the track or off-tracking facility where conditions may constitute a danger to the machinery and its ancillary equipment, and record this in the workbook. The Contractor shall however repair the off-track facility under supervision of the licensed PRASA KZN employee, where work can reasonably be expected to be done by the labour provided with the machine as per the schedule of labour.
- 5.7 The machine may only be placed on the track when authorized by a licensed PRASA KZN employee.

## **6. SUFFICIENCY OF THE TENDER**

- 6.1 The contractor will ensure that he has fully taken into account the condition of rails to be inspected. No claims for the non-execution of the work will be accepted where any rail - or other condition related to the rails are given as a reason for non-execution. Some of these rail or rail related conditions are inter alia:
  - 6.1.1 Rail lubrication.

- 6.1.2 Pitting, cracking, spalling, shelling or corrosion of the rail crown.
- 6.1.3 Other rail surface defects.
- 6.1.4 Rails with side and or crown wear on the gauge and or field side or any combination thereof.
- 6.2 The contractor shall make adequate allowance in the tender for wear and tear to his equipment due any abnormal conditions being encountered.
- 6.3 Exceptions to the above will be where the contractor can prove that the testing could not be done due to limitations to ultrasonic sound generation and reception.
- 6.4 Any exceptions where the contractor's equipment cannot test rails shall be submitted with the tender.

## **7. ULTRASONIC MEASURING CAR SYSTEM REQUIREMENT**

### **7.1 TEST VEHICLE**

Over and above the conditions in the S160 the vehicle shall comply with the following requirements:

- 7.1.1 A road rail vehicle capable of on/off tracking at an on or off tracking facility. **The size and dimensions of the area required to on/off track shall be supplied when the tender is submitted.**
- 7.1.2 Fuel range of not less than 300 km.
- 7.1.3 Water coolant range of not less than 150 km of testing.
- 7.1.4 Speed
  - 7.1.4.1 Running free – not less than 60 km/hr - on track.
  - 7.1.4.2 Measuring – not less than 10 km/hr.
- 7.1.5 Must be capable of testing in reverse directions for limited distances.
- 7.1.6 Be of sufficient size and capacity to carry all necessary staff, equipment, spares and consumables to work in remote areas.
- 7.1.7 Over and above the contractors staff complement the vehicle shall be capable of carrying two PRASA KZN employees: a licensed PRASA KZN employee (usually referred to as the Pilot) inside the vehicle with an unobstructed view of the track, wayside instructions and signaling in front of the vehicle and another employee inside the vehicle. If these requirements are not met, the machine will be non-available. Access in and from the machine will be with a minimum of effort.
- 7.1.8 All machinery and equipment shall be track worthy when moving on the track.
- 7.1.9 A plan of the floor layout of the measuring vehicle must be submitted with the tender. This plan must show all dimensions of compartments and will form part of the contract document.
- 7.1.10 The UMC shall be a self-propelled road-rail vehicle able to record and travel in either direction.
- 7.1.11 A rotating amber flashing light shall be fitted to the top of the vehicle for use when traveling on the track.
- 7.1.12 When the equipment installed on the machine locates a defect and manual verification does not agree with the result, the machine shall retest the section and the most dangerous scenario shall be reported with a comment on the report describing the situation.

### **7.2 ULTRASONIC FLAW DETECTION EQUIPMENT**

The detection equipment shall comply with the following requirements:

- 7.2.1 Real time measurement shall be carried out on both rails simultaneously by ultrasonic probes on the running surface of the rail. The area of the rail to be covered is indicated in appendix 2. The flaw types to be detected are indicated in annexure 17, Manual for Track Maintenance (extract attached to this specification). The blades and frogs of sets and crossovers between multiple lines shall be tested as far as possible with the equipment installed on the machine.
- 7.2.2 Wheel probes with the following transducers (minimum), per rail, are considered necessary:
- 7.2.2.1 1 x 0° transducer.
  - 7.2.2.2 6 x 70° transducers (Three forward and three reverse).
  - 7.2.2.3 2 x 37° transducers (One forward and one reverse).
  - 7.2.2.4 Alternative configurations will also be considered. The tender must give a clear description of any alternative configurations.
- 7.2.3 Each probe shall perform a complete test at least every 5-mm of vehicle travel, independent of testing speed.
- 7.2.4 “A scan” presentation for calibration & operational checking of ultrasonic channels. At least one for each rail is required, although multiple presentations are preferred.
- 7.2.5 The system and equipment shall have the flexibility to quickly and easily change probes without additional payment.
- 7.2.6 High-resolution graphic video monitors shall indicate all probe parameters, status information and events.
- 7.2.7 The system shall allow the operator to enter messages and comments to record events and positions.
- 7.2.8 The system shall have multiple levels of detection logic and must be able to recognize defect signatures.
- 7.2.9 Amplification and detection levels of each probe shall be easily controllable.
- 7.2.10 All equipment shall be modular for ease of maintenance and replacement.
- 7.2.11 The system shall be capable of working in inclement weather conditions.
- 7.2.12 The contractor should take note of the fact that rubber, plastic or similar wheel probes are subject to damage by rail surface deficiencies and should allow for the replacement of these without any additional cost.
- 7.3 OPERATIONAL ENVIRONMENT**
- 7.3.1 The machine and associated equipment shall be capable of working over any track condition except on the frog of a switch and on components cast in 14% Mn-steel.
- 7.3.2 All ultrasonic probes shall remain fully functional on any rail and rail surface condition, inter alia: side worn, skidded, corrugated or corroded rail.
- 7.3.3 Detection shall be done between rail temperatures of – 10°C to 70°C.
- 7.3.4 DC traction is used on the PRASA KZN system with running rails used as the return conductors.
- 7.3.5 The signalling system also uses the rail for current at various frequencies.
- 7.3.6 The rails of all lines are lubricated. The tender shall make provision for the effect that lubrication will have on the measurements and the equipment. No allowances will be made when problems with the lubrication are experienced. Ample provision shall be made in cost and time estimates for the cleaning of equipment. No additional payment will be made for this. If any cleaning is carried out during occupation time, the machine will be taken as broken down (T<sub>b</sub>) for payment purposes.

## 7.4 OPERATOR REQUIREMENTS

- 7.4.1 The contractor shall provide the necessary drivers and operators for the machine.
- 7.4.2 Drivers and/or operators of machines shall be alert and vigilant at all times and any one may not operate the machine for more than 10 hours continuously in a day when travelling by road and/or on track. The total time for road and/or track travelling shall not exceed 10 hours. Any driver and/or operator shall have at least a 10-hour rest between shifts.
- 7.4.3 The rail-testing operator must have a minimum of 2 years in track rail testing experience. Operators must be in possession of the South African Ultrasonic Examination (Level 2) Certificate or equivalent.

## 8. SYSTEM OUTPUTS

- 8.1 Marking of the rail defect location by means of paint, both plain track and turnouts.
- 8.2 The results of the measurement campaign shall be provided as follows:
  - 8.2.1 All data shall be logged in a database. This database shall be kept for the full period of the contract. A backup of the database shall be kept by the contractor and updated on an interval not exceeding one week.
  - 8.2.2 The database shall be supplied to PRASA KZN as and when required.
  - 8.2.3 In report format using the data in the database.
    - 8.2.3.1 A hard copy report at the end of every day referred to as the **Daily Report**. This report shall be handed over to the PRASA KZN representative and a signature obtained.
    - 8.2.3.2 An electronic report at the end of the day referred to as the **Daily Database Report**. This shall be provided to the PRASA KZN representative, will be e-mailed to the Regional Engineer or his nominated representative not later than 12h00 on the day following the measuring campaign.
    - 8.2.3.3 An electronic report at the end of every Regional Campaign referred to as the **Regional Campaign Report**. This shall be handed over to the PRASA KZN Project Manager, as well as to the Regional Engineer.
- If reports are not received on time a penalty will be applied as stated in clause 13..  
PRASA KZN may change the formats and requirements of the reports during the contract period. If it requires a substantial change, the work should be done against the item for development in the Bill of Quantities.
- 8.3 The system shall log the following measured parameters in the database and it shall be reported in the Daily Report and the Daily Database Report:

### 8.3.1 The Daily Report:

- 8.3.1.1 Date measured.
- 8.3.1.2 Infrastructure Region/depot name.
- 8.3.1.3 A daily report number. This shall be a unique number per report that will contain the date as the last six characters, e.g. \*\*\*\*\*ddmmyy.
- 8.3.1.4 The route km name. This will be provided before each measuring campaign or shall be taken from the table that will be provided to the contractor electronically in a *Windows Excel* spreadsheet. Route km names shall always be stated in the order shown in the table. This is in the increasing kilometre direction.
- 8.3.1.5 The track section number.
- 8.3.1.6 The line number, i.e. 1, 2, 3, up, down, avoiding, etc.
- 8.3.1.7 The names of the contractor's operator, assistant and driver.
- 8.3.1.7 The name of the PRASA KZN representative.
- 8.3.1.9 The name of the measuring car.
- 8.3.1.10 The start km and meter point of the campaign.
- 8.3.1.11 The end km and meter point of the campaign.
- 8.3.1.12 The totals of the days contract activities, namely:
  - 8.3.1.12.1 Total occupation time in hours -To.
  - 8.3.1.12.2 Total break down time in hours – Tb.
  - 8.3.1.12.3 Total standing time due to PRASA KZN – Ts.

- 8.3.1.12.4 Total time worked – Tw.
- 8.3.1.12.5 The speed of measurement – V.
- 8.3.1.12.6 The calculated average speed of measurement - Vc.
- 8.3.1.12.7 Number of defects recorded during the campaign.
- 8.3.1.13 List the activities for the day showing the following per activity:
  - 8.3.1.13.1 Type of activity, e.g. To, Tb, Tw, Ts, etc.
  - 8.3.1.13.2 The exact start time of the activity.
  - 8.3.1.13.3 The exact end time of the activity.
  - 8.3.1.13.4 The total time taken by the activity.
  - 8.3.1.13.5 The line on which the activity took place.
  - 8.3.1.13.6 The direction of measurement, e.g. up, down, increase in km, etc.
  - 8.3.1.13.7 The start km plus meter of the activity where applicable.
  - 8.3.1.13.8 The end km plus meter of the activity where applicable.
  - 8.3.1.13.9 The total km for the activity where applicable. (Ts does not have a km distance.)
  - 8.3.1.13.10 Any relevant comments.
- 8.3.1.14 A table of defects located showing the following per defect:
  - 8.3.1.14.1 The track section number (line code).
  - 8.3.1.14.2 Flaw type according to the PRASA KZN classification. (See Annexure 17, Manual for Track Maintenance 2000 - attached to this specification).
  - 8.3.1.14.3 Size and position of the defect. Four measurements are required:
    - 8.3.1.14.3.1 A transverse defect:
      - 8.3.1.14.3.1.1 The head size.
      - 8.3.1.14.3.1.2 The web size.
    - 8.3.1.14.3.2 A horizontal/vertical defect:
      - 8.3.1.14.3.2.1 The length of the defect.
      - 8.3.1.14.3.2.2 The depth of the top of the defect below the rail surface.
  - 8.3.1.14.4 Threshold levels. (See Annexure 17, sheet 5, Manual for Track Maintenance attached to this specification).
  - 8.3.1.14.5 Amplification settings on detection levels.
  - 8.3.1.14.6 Rail mass (kg/m).
  - 8.3.1.14.7 The km plus meter location.
  - 8.3.1.14.8 GPS coordinates of the flaw as measured with a GPS receiver with sub meter accuracy. The tender shall clearly specify the model and make of GPS tendered for. The contractor must supply these instruments for his own use.

***It is important to note that DGPS data must be updated on a daily basis from an applicable web site to ensure continuous accuracy.***
  - 8.3.1.14.9 High/Low legs in curves.
  - 8.3.1.14.10 Left/Right rail.
  - 8.3.1.14.11 Vehicle speed.
  - 8.3.1.14.12 Areas not tested.
  - 8.3.1.14.13 Tracks not tested due to ultrasonic sound limitations
  - 8.3.1.14.14 Events - Level crossing, sets, splice joint, bridges, stations.
  - 8.3.1.15.15 The type of weld where a defect was located in the weld. There shall be a clear distinction between faulty and fault free exothermic (TW), flash-butt (FB) and surface welds. Sound welds shall not be recorded.
  - 8.3.1.14.16 Whether the defect was located during a previous campaign or by any other means of detection, e.g. handheld probe or visual.
  - 8.3.1.14.17 A summary showing the total number of defects per type of defect located.

### 8.3.2 The Daily Database Report.

- 8.3.2.1 It shall contain all the outputs as described for the Daily Report.
- 8.3.2.2 It shall be in electronic format in approved software.
- 8.3.2.3 The report will be in the form of a database with records representing each defect located and the parameters as field names.

	Fields representing the report parameters				
One record per defect located					

8.3.2.4 It shall be compatible with the Empac system and in a format that the data may be imported directly into the Empac system.

8.3.3 Regional Campaign Report.

8.3.3.1 A detailed report shall be submitted in electronic format to PRASA KZN head office containing all outputs as described in the daily report.

8.3.3.2 Data must be compared to at least three previous campaigns to-

8.3.3.2.1 Indicate reoccurrences,

8.3.3.2.2 Growth in defect size.

8.4 There shall be a clear distinction between faulty and fault free bolt holes in assemblies such as fishplate joints, insulated joints, sets, bonds and splice joints. Sound bolt-holes shall not be recorded.

8.5 Daily exception report as agreed with the Technical Officer.

8.6 All data shall be provided in a format compatible to software used by PRASA KZN at the time of tendering.

8.7 Any hard copies shall be verified, accepted and signed by the Technical Officer or his deputy before payment will be authorized.

8.8 Penalties for the late submission of reports will be as specified under clause 13.

8.9 The defect data listed in the daily report shall be cut and a new page started at the following points:

8.9.1 Where a new km route is measured.

8.9.2 Where there is a change in track section measured.

8.9.3 At a zero km point.

8.10 Where a Region/depot boundary is crossed, a separate report will be produced per Region/depot. The defect numbering will however continue sequentially across the depot border. Defect numbering will only be allowed to change where the km starts at zero.

## 9. TOLERANCES AND QUALITY CONTROL

### 9.1 TOLERANCES

#### 9.1.1 Rail Defect Sizing

The size and position of all defects shall be reported with a resolution of at least 2 mm in the longitudinal direction and 2 mm in depth.

9.1.2 The system shall be capable of correct distance location measurement accurate to one percent, e.g.  $\pm 10$  m over 1000 m. If this is not achieved, the machine will be rendered Tb for the day until it is proved by the contractor that the required accuracy can be achieved.

9.1.3 Void.

9.1.4 Marking the exact location of the defect. Any defect detected shall be marked with yellow oil-based paint as per annexure 17, sheet 5, Manual for Track Maintenance (attached to this specification). The paint mark shall be of a permanent nature and not easily eroded by weather. The contractor shall ensure that the rail is clean so that

the paint will adhere to the rail. The marking will be on the inside of the rail between the two rails and not on the field side of the rail.

## **9.2 QUALITY CONTROL**

Calibration shall ensure that no ambiguity of signals can occur. Testing and calibration by the contractor during occupations will render the machine non-available for that time.

On-line testing of all recording functions by simulated impulse signals similar to those generated by the probes shall be possible.

- 9.2.1 Calibration with jigs and test pieces shall be carried out daily or as and when required by the contractor. All calibrating jigs, test pieces etc. shall be provided with and carried on the vehicle.
- 9.2.2 When the contractor is instructed, acceptance tests shall be made by recording over sections of track with known rail flaws. The equipment will be required to record all of these to within the stated degree of accuracy.
- 9.2.5 The accuracy of longitudinal paint marking of rail defects shall be verified during the calibration process.
- 9.2.6 Any time taken to do calibration of the machine will render the machine non-available.

## **10. TRAINING**

Provision shall be made for the training of PRASA KZN personnel in the operation, calibration, and interpretation of results prior to the commencement of the works and as required thereafter for the duration of the contract. No additional payment will be made for training.

## **11. UNSATISFACTORY PERFORMANCE OF THE MACHINERY**

- 11.1 Refer to clause 21 of the S160, which is applicable.
- 11.2 Should a single stoppage of work due to a breakdown of a machine exceed or is likely to exceed 30 minutes, the Technical Officer's deputy may require the machine to off track as soon as possible. Such travelling, whether from or returning to the point of breakdown, will render the machine non-available.

## **12. MEASUREMENT AND PAYMENT**

### **12.1 GENERAL**

- 12.1.1 No payment will be made for periods of non-availability of the machine.
- 12.1.2 No payment will be made if the machine is unable to work as a result of an accident to the machine regardless of what the cause of the accident might have been.
- 12.1.3 If the machine is available but unable to work on a day due to any reason caused by PRASA KZN, that day will count as a day worked. The day's announced occupation time will however not be counted towards the monthly availability.

### **12.2 ESTABLISHMENT.**

- 12.2.1 The unit of measurement is the item. No time related payments would be made. Item 1 of the Bill of Quantities refers.
- 12.2.2 Refer to clause 22.2 of the S160.

### **12.3 MONTHLY PAYMENT**

- 12.3.1 The unit of measurement will be the month.
- 12.3.2 The rate shall cover the maintenance and operation of the machine and shall be sufficient to cover fixed costs.

## 12.4 PRODUCTION RATE.

**12.4.1 Monthly Payment (MP)** will be based on the **Monthly Payment Rate (MPR)** quoted in item 2 in the Bill of Quantities. *Foreign exchange, if applicable, will be applied ONLY to this item in the Bill of Quantities. The tender shall clearly indicate the percentages to be applied and also the allocation of these percentages to the relevant countries.*

**12.4.2 Productivity (P)** will be the actual average speed of measurement (**V**) divided by the calculated average speed (**V<sub>q</sub>**) of measurement in km per hour.

$$P = \frac{V}{V_q}$$

V<sub>q</sub> is derived from the following table:

Number of defects per km (k)	Average speed of measurement	
	V <sub>q</sub>	Value to be supplied when tender is submitted in km per hour
0 < k ≤ 0,80	V <sub>1</sub>	
0,8 < k ≤ 1,25	V <sub>2</sub>	
1,25 < k ≤ 1,50	V <sub>3</sub>	
1,50 < k ≤ 2,00	V <sub>4</sub>	
2,00 < k ≤ 2,50	V <sub>5</sub>	
2,50 < k ≤ 3,00	V <sub>6</sub>	
3,00 < k ≤ 4,00	V <sub>7</sub>	
k > 4,00	V <sub>8</sub>	

n is the number of defects detected and

$$k = \frac{\sum n}{\sum km_{measured}}$$

All values will be calculated per month.

**12.4.3 Availability (A)** is defined as follows:

$$A = \frac{(T_o - T_b)}{T_o}$$

All values shall be rounded off to 2 decimal figures.

**12.4.4 Monthly payment factor (MPF) = A x P**

Where **P** shall be limited to a maximum value of 1,15.

**12.4.5** The monthly payment shall be: **MP = MPF x MPR**. MP shall be rounded off to 2 decimal figures.

## 12.5 EXTRA-OVER PAYMENT.

**12.5.1** Machine overtime payment will be made for occupation time during week days (Monday to Friday) in excess of the hours of maximum occupation time (**T<sub>OM</sub>**) per day. Item 3.1 in the Bill of Quantities refers.

**12.5.2** Overtime payment will be made for work performed on a Saturday when in excess of 5 consecutive days out of every 7 days or in excess of 10 consecutive days out of every 14 days. Item 3.2 in the Bill of Quantities refers.

**12.5.3** Overtime payment will be made for work performed on a Sunday or Paid Public Holiday when in excess of 5 consecutive days out of every 7 days or in excess of 10 consecutive days out of every 14 days. Item 3.3 in the Bill of Quantities refers.

**12.5.4** When repeated processing of any measured data is required as a result of additional requests by the Technical Officer, payment will be made per man-hour as per item 3.4 in the Bill of Quantities. For this payment to be

effected, prior written approval must be obtained from the Technical Officer. No additional payment will be made for the re-processing of data not conforming to the specification.

- 12.5.5 A shift allowance payment will be made for work performed on a Saturday when working five days out of every seven days or ten days out of every fourteen days. Item 4.1 in the Bill of Quantities refers.
- 12.5.6 A shift allowance payment will be made for work performed on a Sunday or Paid Public Holiday when working five days out of every seven days or ten days out of every fourteen days. Item 4.2 in the Bill of Quantities refers.
- 12.5.7 A night shift allowance payment will be made when an 8-hour occupation or part thereof falls between 19h00 and 05h00, and will be paid in addition to any other shift or overtime payments. Item 4.3 of the Bill of Quantities refers.
- 12.5.8 Payment for planned temporary stoppage, idle time  $T_i$ , as described in the S160, Clause 14.4 will be made for each calendar day. Item 5.1 of the Bill of Quantities refers.
- 12.5.9 Only when the machine cannot work due to adverse inclement weather, will payment be made under item 5.2, "inclement weather".
- 12.5.10 When technological advances dictate that development of computer programs on or off the machine should be done an assessment of the time and cost of the development shall be submitted to the Technical Officer. Work shall only be done on a written instruction from the Technical Officer. Item 6 in the Bill of Quantities refers.
- 12.5.11 When action or neglect of PRASA KZN staff cause minor damage to a machine, an assessment of the time and cost of repairs shall be submitted to the Technical Officer. Work shall only be done on instruction of the Technical Officer. Item 7 in the Bill of Quantities refers.
- 12.5.11.1 The labour rates shall apply to repairs in the field.
- 12.5.11.2 The mark-up on landed prices of imported parts or the delivered prices of locally manufactured parts will be 75% and will be excluded from price adjustment described in clause 24 of the S160.
- 12.5.12 No additional payment or adjustment in the calculated average speed of measurement will be made when testing track with deficiencies as described in clause 0.
- 12.6 PAYMENT FOR MOVEMENT BY ROAD.**
- 12.6.1 Movement by road will be paid for per km traveled along the shortest route between work sites.
- 12.6.2 Movement by road will be paid when the distance between two worksites is greater than or equal to 100km. The distance used in the payment calculation will be the total distance including the first 100km.
- 12.6.3 The movement to the first work site and from the last work site at the start and end of the contract period respectively is excluded from this payment.
- 12.6.4 The payment by road will be a separate item and will not form part of the payments for on track production.
- 12.6.5 The quoted average road speed in km per hour shall be supplied in the Bill of Quantities item 8.1 and this will be used to determine the time allowed for travel by road between any two points. The maximum time available for travel by road per day will be 10 hours. This time will be used in the calculation of the payment by road.
- 12.6.6 Any late arrival at a work site will render the machinery non-available.
- 12.6.7 Payment by road = (Km traveled along the shortest route between two work sites) x (Rate quoted in the Bill of Quantities for travel by road Bill of Quantities item 8.2).**

### 13 PENALTIES

- 13.1 A penalty of R1000 (one thousand rand) per calendar day per report will be payable for the late submission of any report, hard copy or electronic.
- 13.2 The monthly payment (MP) will be reduced by 50% when it is proved that a derailment was caused by a defect not located during a measurement campaign due to negligence by the contractor.
- 13.3 Void.

### 14 ADDITIONAL PAYMENT FOR WORK PERFORMED OUTSIDE THE CONTRACT AREA.

For work outside the contract area, rates will be negotiated.

### 15. QUALITY CONTROL OF DEFECTS LOCATED

- 15.1 The purpose of this quality control is to verify the accuracy and reliability of the flaws detected by the contractor. Quality control will be done on the number of defects found per day. The method used is the “Military Standard Sampling Procedure and Tables for inspection by Attribute” known as MIL-STD-105D and used by the USA department of defence. It is internationally known as ISO/DIS2859.
- 15.2 The AQL will be:
  - 15.2.1 2,5% (two and a half percent) for defects verified by PRASA KZN ultrasonic testing and
  - 15.2.2 1,0% (one percent) for defects verified in a testing centre or laboratory.
  - 15.2.3 The maximum number of rejected defects for the various numbers of defects found per day will be as in the following sampling table:

Number of defects found per day	Verification in a test centre or laboratory (AQL 1,0%)			Verification when testing with ultrasonic equipment (AQL 2,5%)		
	Sample size	Number of defects for acceptance	Number of defects for rejection	Sample size	Number of defects for acceptance	Number of defects for rejection
2 - 8	2	0	1	2	0	1
9 - 15	2	0	1	2	0	1
16 - 25	2	0	1	3	0	1
26 - 50	2	0	1	5	0	1
51 - 90	3	0	1	5	0	1
91 - 150	3	0	1	8	0	1
151 - 280	3	0	1	13	1	2
281 - 500	3	0	1	20	1	2
501 - 1200	5	0	1	32	2	3

- 15.2.4 If the number of defects rejected as a result of the verification is equal or greater than the value in the table,  $T_b$  will be equal to  $T_w$  for the day and the contractor will on approval of the Technical Officer be allowed to re-measure the section or sections.
- 15.2.5 The number of defects to be verified will be selected at random by the Technical Officer.

### 16. SUMMARY OF INFORMATION TO BE SUPPLIED WITH TENDER

- 16.1 Specification and layout of the testing vehicle.
- 16.2 Specification of the ultrasonic flaw detection equipment.

16.3 Limitations and exceptions where the contractor's equipment cannot test PRASA KZN rails.

16.4 Specification of the hardware and software for recording and logging and analysing data.

16.5 References of rail testing previously performed including dates.

16.6 Access requirements for on/off tracking. The dimensions of the area must be supplied.

16.7 A commissioning program.

16.8 Tolerance capabilities in respect of flaw detection.

Example of output reports.

16.9 A complete technical specification of the measuring equipment shall be supplied with the tender and these will form part of the contract document.

16.10 The distribution of foreign exchange percentages applicable to item 2 in the Bill of Quantities.

## 17.1 MEASUREMENT AND PAYMENT

## 17.2 BILL OF QUANTITIES AND PRICES

- i) The Bills of Quantities have been drawn up in accordance with the Standard System of Measuring Building Work (as amended) published and issued by the Association of South African Quantity Surveyors (Sixth Edition (Revised)), 1999. Where applicable the:
  - a) **Civil engineering work** has been drawn up in accordance with the provisions of the latest edition of SABS 1200 Standardised Specifications for Civil Engineering Works.
  - b) **Mechanical work** has been drawn up in accordance with the provisions of the Model Bills of Quantities for Mechanical Work, published by the South African Association of Quantity Surveyors, July 2005).
  - c) **Electrical work** has been drawn up in accordance with the provisions of the Model Bills of Quantities for Electrical Work, published by the South African Association of Quantity Surveyors, (July, 2005).
- ii) The quantities in the bill are estimated and may be more or less than stated. The contractor shall submit with his tender a complete and detailed priced bill (prepared in black ink) for the Works. All work covered by the bill including work resulting from modifications or alterations to drawings shall be measured and paid for according to the completed bill.
- iii) The absence of stated quantities in the bill is no guarantee that none will be required. Reasonable and sufficient rates and/or prices shall therefore be inserted to every item, as such prices will be considered when awarding the contract
- iv) In the event that a tenderer leaves any item/s blank which are materially important for the award of the contract/business or fails to tender in an amount expressed or calculable in Rands and cents (e.g. total amount, unit price, and hourly rate), PRASA KZN reserves the right to disqualify such a tender.
- v) It will be assumed that prices included in the Bills of Quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to [www.statssa.gov.za](http://www.statssa.gov.za) for information on standards).
- vi) The Bills of Quantities is not intended for the ordering of materials. Any ordering of materials, based on the Bills of Quantities, is at the Contractor's risk.
  - vi) Reference to any particular trademark, name, patent, design, type, specific origin or producer is purely to establish a standard for requirements. Products or articles of an equivalent standard may be substituted with the project manager's written approval.

**17.3. Advance payment for material and/or plant and/or equipment supplied by the contractor.**

No advance payment for material and/or plant and/or equipment supplied by the contractor for the purpose of incorporation/installation as part of the Works, will be made by PRASA KZN.

**TECHNICAL EVALUATION ULTRASONIC MEASURING VEHICLE**

No	EVALUATION CRITERIA	TOTAL POINTS
1	<b>1. Capacity to deliver the Project (30)</b> 1.1 Availability to commence Project implementation (30 calendar days from the date of award) = 30	<b>30</b>
2	<b>Technical Specifications as per requirements : (Machine Specifications)</b> 2.1 Machine capabilities for the detection of rail defects. 2.2 Self-propelled 2.3 Conforms to moving structure and track gauge	<b>40</b>
3	<b>Relevant experience: provide client list including letter of reference with contactable details in last 10 years a minimum of 3 similar projects(30)</b> 3.1 > 3 similar works with contactable details submitted = 30 3.2 3 similar works with contactable details submitted = 20 NB!! Provide letters of reference from the previous clients on completed projects.	<b>30</b>
	<b>TOTAL</b>	<b>100</b>
	<b>Minimum of 80% must be achieved to qualify to next evaluation stage (Price 80 and 20 BBBEE)</b>	

**ULTRASONIC TESTING OF RAILS  
SCHEDULE OF QUANTITIES AND PRICES**

ITEM	DESCRIPTION	QUANTIT Y	UNIT	RATE		AMOUNT	
				R	c	R	c
<b>1</b>	<b>ESTABLISHMENT COST</b>	1	Sum				
<b>2</b>	<b>PRODUCTION RELATED ITEMS</b>						
2.1	Detection, measuring, and reporting of track defects ( $\pm 602\text{km/a}$ )	1204	km				
<b>3</b>	<b>OVERTIME (Provisional)</b>						
3.1	Overtime hours outside Tom of 8 hours per day	75	Hr				
3.2	Overtime payment for Saturdays when in excess of 5 out of 7 days or 10 out of 14 days are worked consecutively	75	Hr				
3.3	Overtime payment for Sundays and PPH when in excess of 5 out of 7 days or 10 out of 14 days are worked consecutively	75	Hr				
<b>4</b>	<b>SHIFT ALLOWANCE (Provisional)</b>						
4.1	Shift payment for Saturdays when working 10 out of 14 days	150	Hr				
4.2	Shift payment for Sundays and PPH when working 10 out of 14 days	150	Hr				
4.3	Night shift payment for night shifts between 19:00 and 05:00 (This payment is in addition to shift payments in items 4.1 and 4.2, and 3.1 – 3.3)	1300	Hr				
<b>5</b>	<b>LOST TIME (During campaigns) (Provisional)</b>						
5.1	Cancelled occupations	20	days				
5.2	Inclement Weather	40	days				
<b>6</b>	<b>LABOUR RATES (Provisional, Rates Only)</b>						
6.1	Senior Operator	-	Hr				
6.2	Operator	-	Hr				
6.3	Skilled labour	-	Hr				
6.4	Un-skilled labour	-	Hr				
<b>7</b>	<b>Enhancement for overtime (Extra-over for items 6.1-6.2)</b>						
7.1	Weekends and Saturdays		%				
7.2	Sundays and PPH		%				
<b>8</b>	<b>MOVEMENT BY ROAD (Provisional)</b>	10800	km				
				<b>TOTAL (VAT excl.)</b>			
				<b>VAT @ 15%</b>			
				<b>TOTAL (VAT Incl.)</b>			

