

## 1.0 CONTRACTUAL OBLIGATIONS

### A:

- 1.1 The Contractor shall not make use of any sub-Contractor to perform the works or parts thereof without prior permission from the Project Manager.
- 1.2 The Contractor shall ensure that a safety representative is at site at all times.
- 1.3 The Contractor shall comply with all applicable legislation and Transnet safety requirements adopted from time to time and instructed by the Project Manager / Supervisor. Such compliance shall be entirely at his own cost, and shall be deemed to have been allowed for in the rates and prices in the contract.
- 1.4 The Contractor shall, in particular, comply with the following Acts and Transnet Specifications:-
  - 1.4.1 The Compensation for Occupational Injuries and Diseases Act, No. 130 of 1993. The Contractor shall produce proof of his registration and good standing with the Compensation Commissioner in terms of the Act.
  - 1.4.2 The Occupational Health and Safety Act (Act 85 of 1993).
  - 1.4.3 The explosive Act No. 26 of 1956 (as amended). The Contractor shall, when applicable, furnish the Project Manager / Supervisor with copies of the permits authorising him or his employees, to establish an explosives magazine on or near the site and to undertake blasting operations in compliance with the Act.
  - 1.4.4 The Contractor shall comply with the current Transnet Specification E.4E, Safety Arrangements and Procedural Compliance with the Occupational Health and Safety Act, Act 85 of 1993 and Regulations and shall before commencement with the execution of the contract, which shall include site establishment and delivery of plant, equipment or materials, submit to the Project Manager / Supervisor.
  - 1.4.5 The Contractor shall comply with the current Specification for Works On, Over, Under or Adjacent to Railway Lines and near High Voltage Equipment – E7/1, if applicable, and shall take particular care of the safety of his employees on or in close proximity to a railway line during track occupations as well as under normal operational conditions.
- 1.5 The Contractor's Health and Safety Programme shall be subject to agreement by the Project Manager / Supervisor, who may, in consultation with the Contractor, order supplementary and/or additional safety arrangements and/or different safe working methods to ensure full compliance by the Contractor with his obligations as an employer in terms of the Act.
- 1.6 In addition to compliance with clause 1.4 hereof, the Contractor shall report all incidents in writing to the Project Manager / Supervisor. Any incident resulting in the death of or injury to any person on the works shall be reported within 24 hours of its occurrence and any other incident shall be reported within 48 hours of its occurrence.
- 1.7 The Contractor shall make necessary arrangements for sanitation, water and electricity at these relevant sites during the installation of the equipments.
- 1.8 A penalty charge of **R2,000.00** per day will be levied for late completion.
- 1.9 The Contractor shall supply a **site diary** (with triplicate pages). This book shall be used to record any unusual events during the period of the work. Any delays to the work shall also be recorded such as delays caused by poor weather conditions, delays caused by permits being cancelled etc. The appointed Project Manager or Supervisor must countersign such delays. Other delays such as non-availability of equipment from 3<sup>rd</sup> party suppliers must be communicated to the Project Manager or Supervisor in writing.
- 1.10 The Contractor shall supply a **site instruction book** (with triplicate pages). This book shall be used to record any instructions to the Contractor regarding problems encountered on site – for example the quality of work or the placement of equipment. This book shall be filled in by the Project Manager or Supervisor and must be countersigned by the Contractor.

- 1.11 Both books mentioned in 1.10 and 1.11 shall be the property of Transnet Freight Rail and shall be handed over to the Project Manager or Supervisor on the day of energising or handing over.
- 1.12 All processes or the manufacture and assembly of the product components must be subjected to a quality assurance system.
- 1.13 The Contractor will assume full responsibility for assuring that the products purchased meet the requirements of Transnet Freight Rail for function, performance, and reliability, including purchased products from 3<sup>rd</sup> part suppliers/Manufacturers.
- 1.14 The Contractor shall prove to Transnet Freight Rail that his equipment or those supplied from 3<sup>rd</sup> party suppliers/manufacturers confirms to Transnet freight rail specifications.
- 1.15 The Contractor will remain liable for contractual delivery dates irrespective of deficiencies discovered during workshop inspections.

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## **WORKS INFORMATION**

### **PART A : GENERAL**

- A1 Scope of Work**
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## **PART A : GENERAL**

### **A1 SCOPE OF WORK**

This document covers the re-painting of the Vet River Bridge. This will include the following:

Grit blasting,  
Rehabilitation of corroded members,  
Provision of guard rails  
Remedial work to existing hand railing and  
Painting

The bridge is situated over the Vet River near Tierfontein Station.  
Lat. S 28.02287 degrees and Lon. E026.29045 degrees

The line is not electrified.

### **A2 BUSINESS NAME**

The work will be undertaken for Transnet Freight Rail, a business unit of Transnet Limited

### **A3 EXECUTIVE OFFICER AND PROJECT MANAGER**

For the purpose of this contract the Executive Officer will be Mr. Sam van der Walt or his duly authorised delegate and the Project Manager will be Mr. Dylan Mcleod or his duly authorised delegate.

### **A4 DURATION OF THE CONTRACT**

The duration for this contract will be six months calculated from the date of notification to the successful tenderer, to the full completion of the entire works.

Should the Contractor envisage a longer duration, this shall be included in the tender submission.

No working after hours will be permitted without the approval of the Technical Officer.

### **A5 CONSTRUCTION PROGRAMME**

A preliminary construction programme together with a projected cash flow shall be submitted with the tender. The programme shall be in the form of a simplified bar chart with sufficient detail to show clearly how the works will be performed. A detailed construction programme must be submitted before work commences.

### **A6 START DATE**

The specific start date shall be determined depending on the arrangement of occupations. The Contractor should arrange this with Transnet Freight Rail as soon as possible after receiving the notification in order not to delay the project. The duration of the contract as specified in Clause A4 shall not be affected by the start date.

### **A7 COMPLETION OF WORK**

The work will only be completed after the Technical Officer is satisfied that the contractor has met his liabilities as specified in this document. The completion date is fixed and according to the letter of appointment.

A Penalty of R2 000 per day will be applicable if the completion date is later than the date specified in the letter of appointment.

If the tenderer cannot comply with the six months required, he/she must bring it to the attention of the Project Manager during the compulsory site meeting or state it in his tender and indicate the time needed to complete the Project.

## **A8 SITE MEETINGS**

Site meetings will be held once a month. Dates will be decided during the first site meeting. All minutes and/or site instructions will be recorded in the *Site Instruction Book*.

## **A9 ENVIRONMENTAL ISSUES**

The Contractor shall construct his/her scaffold in such a manner as to retain the maximum amount of blast medium on the scaffold for recovery and disposal off site.

Dumping or pollution of any kind will not be permitted. This stipulation is also applicable to the washing out of containers and equipment containing harmful substances and pollutants.

The allocated site around the bridge must be kept in an orderly manner with no littering.

The Contractor shall ensure that his employees at all times exercise care and consideration for the Fauna and Flora and no foliage shall be stripped from site without the written permission of the Technical Officer.

The Contractor shall not leave around any chemicals, explosives, and inflammables, highly volatile or corrosive materials which may damage crops, vegetation or property or be hazardous to humans or animals.

No open fires are allowed on Transnet Freight Rail property.

Private property around the allocated site must be respected.

The compressors and generators or similar equipment must be equipped with the necessary tools to prevent pollution or high noise volumes.

The Contractor shall institute and maintain procedures for the safe disposal of all substances and residual materials originating from the execution of the works.

## **A10 PERSONNEL TO BE PROVIDED BY TRANSNET FREIGHT RAIL**

No personnel will be provided for the execution of the works itself.  
Also see Clause A11.1 and A11.7

## **A11 TO BE ARRANGED BY THE CONTRACTOR**

### **A11.1 OCCUPATIONS: ARRANGEMENT, CANCELLATION AND PENALTIES**

The organising of total occupations, overhead traction dead orders and switching shall be the responsibility of the Contractor and must be applied for, through the Technical Officer, 6 weeks in advance. It should be noted that occupations must tie in with Transnet Freight Rail's programme for occupations. This programme might lengthen the 6 weeks. Personnel for the protection of the line (not the works) during occupations will be provided by TFR and must be arranged in time by the Contractor

The basic hours for occupations shall be from 08h00 to 16h00.

The Contractor shall advise the Technical Officer in writing 48 hours prior to the cancellation of an occupation for whatever reason. Should the Contractor fail to do so he shall be liable for all costs incurred by the client.

The Contractor will be penalised if the track is not handed back in a fully operational condition at the appointed time. The following rates will apply:

For each train delayed: R500.00  
For each train cancelled: R2500.00

The Technical Officer to contact will be ???????  
Land line 000 123 4567

#### **A11.2 ACCESS TO SITE**

There is limited road access to the site. Tenderers should familiarise themselves with these conditions in order to make their own arrangements to transport staff, equipment and materials safely to site.

The Contactor shall not cross any private property or Transnet Freight Rail tracks without prior written approval from the legal owner of that property. No unauthorised level crossings shall be permitted.

#### **A11.3 ACCOMMODATION**

The Contractor shall provide suitable accommodation for his employees and will only be permitted on TFR property if authorised by the local Depot Engineer.

#### **A11.4 SECURITY**

It is recommended that the Contractor arranges on his own account for 24 hour security due to the risk of theft.

Transnet Freight Rail cannot be held responsible for any criminal deeds, injuries and hospitalisation or loss of life while the project is in progress. Insurance to cover for these should be taken out.

#### **A11.5 WATER AND SANITATION**

No water is available on site. The Contractor shall make his/her own arrangements. Chemical toilets shall be provided by the Contractor.

#### **A11.6 POWER**

No power is available on site. The Contractor shall make his/her own arrangements.

#### **A11.7 FLAGMEN**

The majority of this contract will be carried out whilst the track is operational and protection in the form of flagmen at either end of the structure will be required.

The Contractor shall make available 4 employees to be trained by Transnet Freight Rail, certificated and used as lookouts/flagmen when requested.

The Contractor's flagmen will be under the control of an authorised Transnet Freight Rail employee. Flagmen will be tested on site for competency.

The Contractor may not proceed working without these flagmen while within the track boundaries.

For more info about training personnel see Table 1 under clause A11.8

#### **A11.8 SAFETY PRECAUTIONS**

The personnel of the Contractor shall at all times follow the stipulations laid down in their own safety case submitted to Transnet Freight Rail.

The personnel of the Contractor shall at all times during sandblasting and painting wear their Personal Protective Equipment (PPE) which includes but not limited to Safety harness, reflective safety jackets etc. These reflective jackets must either be yellow or light blue or preferably bear the name of the Contractor's company. Should the Contractor wish to use another colour this must first be cleared out with the Technical Officer or his/her deputy.

An effective safety procedure, approved by the Technical Officer, must be followed by all personnel on any work site in the case of approaching rail traffic and shall be compiled by the Contractor and

implemented before any work commences. The procedure shall be updated whenever the need arises and any changes shall be communicated to all employees on a work site before work proceeds.

The Contractor shall appoint at each work site personnel whose sole task shall be to be on the lookout for approaching rail traffic. These employees shall operate an audible warning device to timeously warn all people on the work site of approaching rail traffic.

The Contractor must ensure that all machinery, equipment and tools are placed to clear the track with at least 3 metres.

The Contractor shall provide safe and secure storage facilities for all materials and equipment brought onto and in use on the site. Such facilities shall be capable of ensuring that unauthorised persons or animals cannot gain access.

The Contractor shall provide at his/her own cost any security measures he/she may deem necessary for safe and effective execution of the work within the contract area.

The Contractor will ensure not to cause field fires due to welding etc.

The Contractor must be on the lookout for bee-hives on the bridge and must take steps to remove it safely, prior to grit blasting.

The Contractor shall make available personnel to be trained on his own cost for the safety related course as stated in the table below as required in the E4E and E7/1.

Table 1: Safety Course

Course	Reason	Duration	Venue	Attendee	Valid period
Flagmen	Protection: oncoming trains	1 day	Nearest Transnet Freight Rail Depot	4 literate workers per site	2 years

No certificate will be given to personnel doing the General Safety Awareness Course.

#### A11.9 QUALITY ASSURANCE

The Contractor shall make use of modern equipment to determine paint thicknesses (wet and dry). The Technical Officer will do his own measurements on a regular basis.

The Contractor shall provide an A4 triplicate Site Calculation Book. The blast profile and paint thickness per coat for each member shall be recorded in this book. See Part B (Technical Specification) for detail.

This book shall provide a full record of all remedial work performed on the structure including measurements for payment due to the Contractor.

The cost for this item shall be deemed to be included in the Contractor's rate for supervision.

#### A11.10 SITE DIARY AND SITE INSTRUCTION BOOK

Two more similar books are required on site. The A4 triplicate Site Diary will record all daily activities and minutes of meetings etc. The A4 triplicate Site Instruction book shall be used to confirm any verbal communication, fax, letters or e-mails, properly referenced with a serial number for easy cross referencing. Under no circumstances at all will any other form of communication be acceptable.

All three books shall be handed in to the Project Manager after completion of the works and will become the property of Transnet Freight Rail.

#### A11.11 LABOUR, TOOLS, EQUIPMENT AND MATERIALS

The Contractor shall supply all necessary labour, tools, equipment and materials.

#### **A11.12 CONTRACTOR'S SUPERVISION**

The Contractor shall exercise supervision over the Works at all times during hours of work, or shall be represented by an agent having full power and authority to act on his behalf.

#### **A11.13 INSURANCE OF THE WORKS AND RELATED RISKS**

(i) The Contractor shall take every precaution to protect the Works against damage of any kind and not to cause damage to property or injury to any person as a result of his execution of the Work.

(ii) The Contractor shall, in his own interests, obtain insurance of his own site establishment, materials, plant, equipment and tools and of insurance of his motor vehicles and the common law liabilities of the Contractor as an employer.

#### **A12 INCLEMENT WEATHER**

The Contractor shall allow for days where the following weather condition may occur:

- High winds, which may hinder painting
- Rain, which shall prevent any painting of the structure.

The number of days per month, on which work is expected not to be possible as a result of normal rainfall, shall be made provision for by the Contractor in his tendered rates, prices and programme. Only the number of days lost as a result of adverse weather conditions exceeding the number of normal days as determined by the Weather Bureau of South Africa will qualify for consideration of extension of time. For such an application the relevant rain fall statistics as determined by the Weather Bureau must be included.

#### **A13 FLUCTUATION OF PRICES**

All prices will be firm and fixed. Received tender documents not conforming to this clause will be rejected except if a deviation from this clause was proposed as an alternative.

#### **A14 MEASUREMENT, INTERIM AND FINAL PAYMENT**

Monthly payment will be based on an actual field measurement.

This measurement will be determined from the percentage square metres painted with reference to the total paint area. This should take place on request of the contractor. Tax Invoices shall be submitted together with a month-end statement. Payment against such month-end statement shall be made by Transnet within 30(thirty) days after date of receipt by Transnet of the statement together with all undisputed Tax Invoices and supporting documentation signed by the Project Manager or his duly authorised representative.

All measurements, calculations of quantities, records of material supplied and calculations of payments due to the Contractor must be kept in the Calculation book. (See clause A11.9)

#### **A15 DEFECTS LIABILITY AND MAINTENANCE PERIOD**

The period will be six months. It will commence after the certificate of completion has been given to the Contractor.

The Contractor is required during this period, at his cost, to make good any signs of corrosion or any other defective materials and workmanship which may become apparent.

#### **A16 RELEASE OF RETENTION MONEY / DEED OF SURETYSHIP**

Transnet retains 5% or 10%, as the case may be, of all money due to the Contractor and may hold all such retention money until the completion of the contract and the expiry of the defects liability and maintenance period.

## **PART B : TECHNICAL SPECIFICATION**

### **B1 MATERIAL TO BE SUPPLIED BY TRANSNET FREIGHT RAIL**

Transnet Freight Rail will supply no material.

Transnet Freight Rail will supply all the sleepers and holding down material if replacement is necessary.

### **B2 REMOVAL OF VEGETATION**

#### **B2.1 Trees:**

Trees as pointed out during the compulsory site meeting must be removed or trimmed.

#### **B2.2 Grass/weeds etc.**

Excessive grass/weeds/reeds etc. immediately around and under the structure must be removed.

### **B3 SCAFFOLDING AND FALSEWORK**

The contractor shall erect scaffolding on the outside of the bridge at such a manner so as to give access to both sides of the bridge, the soffit and the top.

The scaffold's safety and design shall be the responsibility of the Contractor and he shall provide a full design with approval from a professional engineer or competent person.

The scaffolding shall be inspected by the Technical Officer prior to any works.

The Contractor may construct a mobile scaffold to be used during the occupation stage. Chipping, blasting and painting may be performed off this platform.

This mobile scaffold must be removable from track not to delay trains

### **B4 GRIT BLASTING (or SIMILAR)**

For surface preparation see clause B11.

Records of all blast profiles shall be kept by the Contractor.

Primary and secondary blasting might be required to most areas. The primary blast shall be intense and can be used in conjunction with the chipping to provide the required cleanliness.

The Technical Officer must be informed when the surface area is ready for inspection. Should there be a time delay between welding/remedial work and painting, further secondary blasting shall be required.

Measurement and payment for grit blasting shall be per m<sup>2</sup> and shall include all items, plant and material required.

### **B5 INSPECTION OF STEEL SECTIONS**

This will be done by the Technical Officer after grit blasting.

#### **B5.1 Corroded Members:**

The Technical Officer will identify all steel members that might need to be replaced or repaired. New plates might be required to be added to the existing steel structure. Measurement and payment shall be per ton including material and installation and will be paid separately.

**B5.2 Damaged members:**

The Contractor shall replace/repair these members as might be instructed by the Technical Officer. It might be necessary to replace the existing member with a similar profile. Measurement and payment shall be per ton including material and installation and will be paid separately.

**B5.3 Welding:**

Any welding due to the reasons mentioned in B4.1 and B4.2 must be done by a coded welder.

**B5.4 Rivet repair:**

The Technical Officer will identify any rivet heads that might need to be replaced or welded up. All rivet heads with a metal loss of more than 70 % must be welded up around full circumference of rivet head/parent plate interface by means of a 6mm weld. The welded rivet head shall be left for a minimum of seven days before re-grit blasting and painting.

**B6 REPAIR OF HANDRAILS**

A small length of Handrailing is missing and must be replaced with a similar section.

The Handrails shall be painted identical to the same specification as the balance of the bridge.

Measurement and payment of the Handrails shall be per metre length.

**B7 REPAIR OF FOOTWAY**

Some parts of the Footway might be loose and damaged. They will be identified during the compulsory site meeting and shall be repaired to match the existing.

The Footway shall be painted identical to the same specification as the balance of the bridge.

Measurement and payment of the Footway shall be per metre length inclusive of the removal of any existing parts of a footway, supply and fixing of any new footway material and painting.

**B8 REPLACEMENT OF SLEEPERS**

There are a number of wooden sleepers that might require replacement. They will be pointed out during the compulsory site meeting.

The Contractor shall replace them with sleepers and holding down material provided by Transnet Freight Rail under supervision of Transnet Freight Rail Track personnel appointed by the local Depot.

The contractor shall drill two 22mm dia holes through the sleeper in order to place it in position. The steelwork is pre-drilled. The pre-drilled hole shall be inspected by the Technical Officer for elongation. If the hole is not acceptable, new holes must be drilled and the sleeper repositioned. Alternatively, the hole can be welded up to reduce the diameter and reamed to dia 22mm.

The holding down material shall consist of the following:

- M20 bolt, 230mm long
- 75 x 75 x 6 mm Neoprene washer with 22 mm diameter hole
- 75 x 75 x 6 mm flat steel washer with 22 mm diameter hole
- Double coil spring for M20 bolt
- Self-locking nut

Payment will be per sleeper including removal of the old one. Payment to repair elongated holes will be per hole and paid separately.

**B9 INSTALATION OF 'ARMCO' BARRIERS**

The Contractor shall install a pair of 'Armco' barrier sections according to plan BE 83-231. These sections (galvanised) need not to be painted.

## **B10 OTHER SERVICES ( WATER PIPES ETC.)**

All attachments to the bridge shall be removed

## **B11 PAINTING**

**B11.1 Paint Specification:**

### **SURFACE PREPARATION**

Remove all oil and grease by washing with a water emulsifiable solvent degreaser that will leave no residue that may be incompatible with the paint coating and high pressure wash (300bar with potable water.

Followed either by:

a) Abrasive blast with a fine to medium dry grit (mineral slag grade B90 or similar) to a cleanliness of Swedish Standard Sa 2 according to ISO 8501-1: 1988 to obtain a surface profile not exceeding 60 microns,

Or by:

b) Mechanical spot cleaning of affected areas that can include abrasive blast cleaning, depending on the condition of the existing coats.

### **SEALING OF GAPS AND CREVICES BETWEEN STRUCTURAL MEMBERS**

The Technical Officer will point out all gaps and crevices between structural members where painting is not accessible. These places must be filled with a suitable acrylic sealer after applying the first coat. For gaps and crevices wider than 5mm, backing cord should be used. Apply the next coat according to the sealer manufacturer's specification.

### **PAINT SYSTEMS**

There are only two approved paint systems and no other system is allowed. The Contractor must allow both suppliers to quote and the preferred supplier must be selected. Once the supplier is selected a detailed specification, based on a preliminary site inspection by the paint supplier and the table below, must be obtained from the relevant supplier which is suitable for the environmental and service conditions at the site and include equipment to be used, surface preparation, quality control and monitoring of the painting operation. The supplier must monitor the preparation and application procedures and submit reports. The supplier must also guarantee the performance of the paint system after completion of the project and monitor such performance up to TEN YEARS AFTER COMPLETION OF THE PROJECT and submit written reports to the client. Contrasting colours are required for each coat. The final coat must be SANS 1091 G 22 Dove Grey (Battleship Grey / Buff) or D 30 French grey (Mill Green / Grey green) (or similar)

Paint System	Coats	Film Thickness (microns)
OptiRustBusta® OR Noxyde #	One coat with a stripe coat * in between coats	175 microns minimum dry
OptiMetalCoat or Peganox.	Top coat of specified colour	75 microns minimum dry

**Total dry film thickness: 250 microns minimum**

\* To be applied to all sharp edges, rivets, bolts and nuts.

# Noxyde and Peganox are supplied by:

**Stoncor Africa, 8 Cresset Road, Midrand Industrial Park,  
P.O. Box 2205, Halfway House, tel. 011 254 5500.**

**# OptiRustbusta and OptiMetalCoat are supplied by:  
Optima Coatings, 23 E Calder Road, Mayville, Durban.  
P.O. Box 866, Westville, 3630**

**Please note that the full quantity of paint might not always be available ex stock as it is imported from Belgium. The lead time might be approximately six weeks from date of order.**

**Payment might be required with order. Price might be subjected to the Euro -/Rand exchange rate and must be allowed for in the Schedule of quantities and prices.**

#### **B11.2 Painting under sleepers:**

**This action shall be done under supervision of the local Depot's Track personnel and may commence between trains.**

**In order to blast and paint the top of the flanges under the sleepers, every 2<sup>nd</sup> sleeper must be loosened and moved without affecting the standard track gauge, leaving the other sleepers on either side of the loose one still attached to the bridge steelwork.**

**The loosened sleeper shall only be moved back to its original position after 24 hours after applying the final coat. The process shall then repeat itself by loosening and moving the other alternative sleepers. Special care must be taken not to damage the painted area when moving the sleepers back.**

#### **B11.3 Painting of under clearance markers/areas:**

**This bridge is under clearance. The face of the steelwork when approaching the bridge by rail, on both sides and both ends shall be painted with black and yellow alternating stripes, 200mm wide, at an angle of 45 degrees by using an approved single pack water based acrylic polyurethane coating that is compatible with the rest of the coating system. This will apply to a height of between 1 metre and 3 metre above rail level measured vertically and is meant to warn the train driver of limited clearance. It shall be applied after the full paint system has been applied.**

#### **B12 CLEARING OF SITE**

**The Contractor shall clear the site of all scrap material, vegetation as described in clause B4 and general rubble on completion of the works. This is also applicable after any work done during the maintenance period.**

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## 2.0 Specifications

### 2.1 South African National Standards:

2.1.1	SANS 1091	National colour standard.
2.1.2	SANS 763	Hot dip galvanised zinc coating.
2.1.3	SANS 121	Hot Dip Galvanised Coating for Fabricated Iron or Steel Article.
2.1.4	SANS 8528	Reciprocating internal combustion engine driven alternating current generating set.
2.1.5	SANS 10142	Wiring Code.

### 10.2 Transnet Freight Rail:

10.2.1	BBB 0496 version 12	3 kV rectifier for traction substations.
10.2.2	BBB 3620 version 4	3kV DC earthing arrangement – Traction Substation.
10.2.3	BBB 5452 version 3	Transnet freight rail requirements for installation of electrical equipment for 3 kV DC substations.
10.2.4	BBB 2721 version 10	AC Primary Circuit Breaker Control Panel and AC/DC Distribution Panel for 3kV DC Traction substation.
10.2.5	CEE-TBD-0007	Earthing arrangement for traction substations.
10.2.6	CEE TBK 0027	Control circuit diagrams – NO volt operation.
10.2.7	CEE TBK 0028	Trip, lockout and indication circuit diagram.
10.2.8	BBB 4724 version 4	Positive Isolator switch for 3 kV DC Traction substations.
10.2.9	BBB 3005 version 1	3 kV DC under voltage relay manufacturing specification.
10.2.10	BBC 0198 version 1	Specifications for the supply of cables.
10.2.11	CEE.0023.90	Specifications for installation of cables.
10.2.12	CEE.0045.2002/1	Painting of steel Components of Electrical Equipment.
10.2.13	CEE.0183.2002	Hot dip galvanising and painting of electrical equipment.
10.2.14	CEE.0224.2002	Drawings, catalogues, instruction manuals and spares list for electrical equipment supplied under contract

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

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

### 3.0 Constraints on how the Contractor Provides the Works

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

#### 4.0 Requirements for the programme

- 4.1 Programme of work : To be submitted by successful Contractor
- 4.2 CIDB rating : 2EPPE OR 3EP and above
- 4.3 Format : Bar chart
- 4.4 Information : How work is going to be executed and commissioned
- 4.5 Submission : Not Applicable
- 4.6 Site diary : Successful Contractor to supply in triplicates carbon copies
- 4.7 Site instruction book : Successful Contractor to supply in triplicates carbon copies

#### 5.0 Services and other things provided by the *Employer*

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

Contract Data

Site Information

The works shall be performed at the **Vet river bridge near Tierfontein Station.**

“PREVIEW COPY ONLY”