T2.2-08: Record of Addenda to Tender Documents

This schedule as submitted confirms that the following communications received from the *Employer* before the submission of this tender offer, amending the tender documents, have been taken into account in this specific tender offer:

	Date	Title or Details
	09 June 2025	**The closing date for this tender advert have been extended to 17 June 2025 at 10:00am**
1	09 June 2025	This addendum is issued to correct the functionality evaluation scoring.
2	09 June 2025	Amend the activity schedule.
3	09 June 2025	To correct the scope of work, bidders are to note that there will no longer be a need to demolish the building at Pieters Substation.
4		A detailed scope of work and activity schedule are attached for the attention of the bidders.

FOR THE ATTENTION OF THE BIDDERS:

Company Name:.....

Date:.....

Designation:.....

Signature:.....

EMPLOYER REPRESENTATIVE:

Name: Thembinkosi Ngcobo

Designation: SCS Buyer

Date: 09/06/2025

Signature: tngcobo

Name: Russell Molokoane

Designation: Head of Supply Chain Management

Date: 09/06/2025

Signature:

T1.2 TENDER DATA

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

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

The Standard Conditions of Tender make several references to Tender data for detail that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced in the left-hand column to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause		Data
C.1.1	The *Employer* is	**Transnet SOC Ltd** **(Reg No. 1990/000900/30)**
C.1.2	The tender documents issued by the *Employer* comprise:	
	Part T: The Tender	
	Part T1: Tendering procedures	T1.1 Tender notice and invitation to tender T1.2 Tender data
	Part T2: Returnable documents	T2.1 List of returnable documents T2.2 Returnable schedules
	Part C: The contract	
	Part C1: Agreements and contract data	C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2) C1.3 Form of Securities
	Part C2: Pricing data	C2.1 Pricing instructions C2.2 Activity Schedule

	Part C3: Scope of work	C3.1 Works Information
	Part C4: Site Information	C4.1 Site Information
C.1.4	The Employer's agent is:	Procurement Officer
	Name:	Thembinkosi Ngcobo
	Address:	151 South Coast Road, Loliwe House Bayhead, Durban 4001
	Tel No.	031 361 4023
	E – mail	Thembinkosi. Ngcobo@transnet.net

C.2.1 Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:

1. **Stage One - Eligibility with regards to attendance at the compulsory clarification meeting:**
   An authorised representative of the tendering entity or a representative of a tenderering entity that intends to form a Joint Venture (JV) must attend the compulsory clarification meeting in terms C2.7

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

2. **Stage Two - Eligibility in terms of the Construction Industry Development Board:**

a) Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, designation of **8EP or higher** class of construction work, are eligible to have their tenders evaluated.

b) Joint Venture (JV)
Joint ventures are eligible to submit tenders subject to the following:
   1. every member of the joint venture is registered with the CIDB;
   2. the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **8EP or higher** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations
   3. The tenderer shall provide a certified copy of its signed joint venture agreement.

3. Stage Three - Functionality:

Only those tenderers who obtain the minimum qualifying score for functionality will be evaluated further in terms of price and the applicable preference point system. The minimum qualifying for score for functionality is **70** points.

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

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

C.2.7	The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. **Tenderers must complete and sign the attendance register.** Addenda will be issued to and tenders will only be received from those tendering entities including those entities that intends forming a joint venture appearing on the attendance register. Tenderers are also **required to bring their RFP document to the briefing session and have their returnable document T2.2-01 certificate of attendance** signed off by the Employer's authorised representative.
C.2.12	No alternative tender offers will be considered.
C.2.13.3	Each tender offer shall be in the **English Language.**
C.2.13.5 C2.15.1	The *Employer*'s details and identification details that are to be shown on each tender offer package are as follows: Identification details: The tender documents must be uploaded with: ▪ Name of Tenderer: (insert company name) ▪ Contact person and details: (insert details) ▪ The Tender Number: ▪ The Tender Description Documents must be marked for the attention of: ***Employer*'s Agent:**
C.2.13.9	Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.
C.2.15	The closing time for submission of tender offers is: Time: **10:00am** on the **13 June 2025** Location: The Transnet e-Tender Submission Portal: (https://transnetetenders.azurewebsites.net);

NO LATE TENDERS WILL BE ACCEPTED

C.2.16 The tender offer validity period is **12 weeks** after the closing date. Tenderers are to note that they may be requested to extend the validity period of their tender, on the same terms and conditions, if Transnet's internal evaluation and governance approval processes has not been finalised within the validity period.

C.2.23 The tenderer is required to submit with his tender:

1. A valid Tax Clearance Certificate issued by the South African Revenue Services. **Tenderers also to provide Transnet with a TCS PIN to verify Tenderers compliance status**.
2. A **valid B-BBEE Certificate** from a Verification Agency accredited by the South African Accreditation System [**SANAS**], or a **sworn affidavit** confirming annual turnover and level of black ownership, in line with the code of good practice, together with the tender;
3. A valid CIDB CRS Number to be used to verify the CIDB registration and status in the correct designated grading;
4. Proof of registration on the Central Supplier Database;
5. Letter of Good Standing with the Workmen's compensation fund by the tendering entity or separate Letters of Good Standing from all members of a newly constituted JV.

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

C3.11 The minimum number of evaluation points for functionality is: **70**

The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:

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

Functionality Criteria

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

Functionality criteria	Sub-criteria	Sub-criteria points	Maximum number of points
T2.2-02 Programme **Programme of works/Work plan - The tenderer shall submit realist work plan/Gantt chart, showing all the project activities and milestones when executing the entire scope of works. Completion is to be achieved no later than 6 months, from the day of award.**	No work plan submitted.	0	**20**
	(Score 20%) for a tenderer that submits a detailed work plan - showing all activities & milestones, required resources/equipment/skills, indicating sub-contractors/suppliers of major equipment & quality management plan and overall activities duration of 9 months or more, but less than 10 months.	20	
	(Score 40%) for a tenderer that submits a detailed work plan - showing all activities & milestones, required resources/equipment/skills, indicating sub-contractors/suppliers of major equipment & quality management plan and overall activities duration of 8 months or more, but less than 9 months.	40	
	(Score 60%) for a tenderer that submits a detailed work plan - showing all activities & milestones, required resources/equipment/skills, indicating sub-contractors/suppliers of major equipment & quality management plan and overall activities duration 7 months or more, but less than 8 months.	60	
	(Score 80%) for a tenderer that submits a detailed work plan - showing all activities & milestones, required resources/equipment/skills,	80	

	indicating sub-contractors/suppliers of major equipment & quality management plan and overall activities duration of more than 6 months, but less than 7 months.		
	(Score 100) tenderer that submits a detailed work plan - showing all activities & milestones, required resources/equipment/skills, indicating sub-contractors/suppliers of major equipment & quality management plan and overall activities duration of 6 months or less.	100	
Functionality criteria	**Sub-criteria**	**Sub-criteria points**	**Maximum number of points**
T2.2-03 Previous experience **Previous experience in executing similar scope of work - Proven track record in Design, Supply and Installation of all indoor, outdoor equipment, transformer refurbishment and Associated equipment in 3KV DC traction substations. The tenderer shall submit 4 Award letters, and/or, Purchase Orders and/or, previous Contracts, for similar scope of work executing 3 kV DC substation.**	No submission	0	**20**
	for a tenderer that submits 1 Award letter and/or, Purchase Order and/or, Previous contract & its completion certificate.	20	
	for a tenderer that submits 2 Award letter and/or, Purchase Order and/or, Previous contract & its completion certificates.	40	
	for a tenderer that submits 3 Award letters and/or, Purchase Orders and/or, Previous contracts & their completion certificates.	60	
	for a tenderer that submits 4 Award letters and/or, Purchase Orders and/or, Previous contracts & their completion certificates.	80	
	for a tenderer that submits 5 Award letters and/or, Purchase Orders and/or, Previous contracts & their completion certificates.	100	

Functionality criteria	Sub-criteria	Sub-criteria points	Maximum number of points
T2.2-04 Previous experience (Environmental Rehabilitation)	No submission	**0**	**10**
	for a tenderer that submits 1 Award letter and/or, Purchase Order and/or, Previous contract & its completion certificate.	**20**	
	for a tenderer that submits 2 Award letter and/or, Purchase Order and/or, Previous contract & its completion certificates.	**40**	
	for a tenderer that submits 3 Award letters and/or, Purchase Orders and/or, Previous contracts & their completion certificates.	**60**	
	for a tenderer that submits 4 Award letters and/or, Purchase Orders and/or, Previous contracts & their completion certificates.	**80**	
	for a tenderer that submits 5 Award letters and/or, Purchase Orders and/or, Previous contracts & their completion certificates.	**100**	

Functionality criteria	Sub-criteria	Sub-criteria points	Maximum number of points
T2.2-05 Management & CV's of Key Personnel - Qualifications/Personnel required minimum of: **4 x Electricians (Trade Test and C-Green)** **2 x Engineers/Technicians (BSc/BEng/NDip)**	No submission or for a tenderer that submits a project organogram management and CVs that excludes any of the above personnel.	**0**	**25**
	for a tenderer that submits a project organogram and CVs of: 1 x Electricians (Trade Test and C-Green)	**20**	

1 x Pr. Eng / Pr.Tech (Valid ECSA Accreditation) **1 x Project Manager (NDip or Bachelors Degree in PM)** **2 x First Aiders (Level 1 First Aid Certificate)**	1 x Engineers/Technicians (BSc/BEng/NDip) 1 x Pr. Eng / Pr.Tech (ECSA Accreditation) 1 x Project Manager (NDip or Bachelors Degree in PM) 1 x First Aiders (Level 1 First Aid Certificate)		
	for a tenderer that submits a project organogram and CVs of: 2 x Electricians (Trade Test and C-Green) 1 x Engineers/Technicians (BSc/BEng/NDip) 1 x Pr. Eng / Pr.Tech (ECSA Accreditation) 1 x Project Manager (NDip or Bachelors Degree in PM) 2 x First Aiders (Level 1 First Aid Certificate)	**40**	
	for a tenderer that submits a project organogram and CVs of: 3 x Electricians (Trade Test and C-Green) 2 x Engineers/Technicians (BSc/BEng/NDip) 1 x Pr. Eng / Pr.Tech (ECSA Accreditation) 1 x Project Manager (NDip or Bachelors Degree in PM) 2 x First Aiders (Level 1 First Aid Certificate)	**60**	
	for a tenderer that submits a project organogram and CVs of: 4 x Electricians (Trade Test and C-Green) 2 x Engineers/Technicians (BSc/BEng/NDip) 1 x Pr. Eng / Pr.Tech (ECSA Accreditation) 1 x Project Manager (NDip or Bachelors Degree in PM) 2 x First Aiders (Level 1 First Aid Certificate)	**80**	
	for a tenderer that submits a project organogram and CVs of:	**100**	

	4 x Electricians (Trade Test and C-Green) 3 x Engineers/Technicians (BSc/BEng/NDip) 1 x Pr. Eng / Pr.Tech (ECSA Accreditation) 2 x Project Manager (NDip or Bachelors Degree in PM) 2 x First Aiders (Level 1 First Aid Certificate)		
Functionality criteria	**Sub-criteria**	**Sub-criteria points**	**Maximum number of points**
T2.2-06 Method Statement **The tenderer shall submit a method statement for the specified scope of works.**	The tenderer has submitted no information.	0	**25**
	The contractor did not understand or include certain aspects of the scope and submitted 20% criteria as per the project requirements.	20	
	The contractor did not understand or include certain aspects of the scope and submitted 40% criteria as per the project requirements.	40	
	The approach only covered 60% criteria's and not tailored to cover all project objectives.	60	
	The approach is specifically tailored to address the specific project objectives and requirements and is sufficient and flexible to accommodate changes that may occur during execution and has covered 80% of the above requirements.	80	
	All items have been covered in detail on the methodology and the contractor has a thourough understanding of the project requirements.	100	
Maximum possible score for Functionality			**100**

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

- T2.2-02 Programme
- T2.2-03 Previous Experience
- T2.2-04 Previous experience (Environmental Rehabilitation)
- T2.2-05 Management & VCs of Key Personnel
- T2.2-06 Method Statement

Each evaluation criteria will be assessed in terms of scores of 0, 20, 40, 60, 80 or 100 The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality, unless scored collectively. (See CIDB Inform Practice Note #9).

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

C.3.11. Only tenders that achieve the minimum qualifying score for functionality will be evaluated further in accordance with the 90/10 preference points systems as described in Preferential Procurement Regulations.

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

Thresholds	Minimum Threshold
Functionality	**70**

Evaluation Criteria	Final Weighted Scores
Price	90
Specific goals - Scorecard	10
TOTAL SCORE:	**100**

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

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

Selected Specific Goal	Number of points allocated (90/10)
B-BBEE Level of contributor (1 or 2)	4
Entities that are at least 30% Black Woman Owned	2
Local Content and Production • Electrical cables designated at 90% • Steel products designated at 100% • Transformers and associated equipment designated at 90% • Transformer oil designated at 100% Fully completed, declared, and signed LC Annexures C, D and E score full 4 points (1 point per sector) Incomplete, submitted blank or not submitted LC Annexures score zero points	4

Non-Compliant and/or B-BBEE Level 3-8 contributors	0

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

Specific Goals	Acceptable Evidence
B-BBEE	B-BBEE Certificate / Sworn-Affidavit B-BBEE Certificate (in case of JV, a consolidate scorecard will be accept) as per DTIC guidelines
30% Black Women Owned Entities	B-BBEE Certificate / Sworn-Affidavit / CIPC B-BBEE Certificate (in case of JV, a consolidate scorecard will be accept) as per DTIC guidelines
Local Content and Local Production	Returnable Local Content and production Annexures

The maximum points for this bid are allocated as follows:

DISCRIPTION	POINTS
PRICE	90/10
B-BBEE Level of contributor (1 or 2)	4
Entities that are at least 30% Black Woman Owned	2
Local Content and Production • Electrical cables designated at 90% • Steel products designated at 100% • Transformers and associated equipment designated at 90% • Transformer oil designated at 100% Fully completed, declared, and signed LC Annexures C, D and E score full 4 points (1 point per sector) Incomplete, submitted blank or not submitted LC Annexures score zero points	4
Total points for Price and Specific Goals must not exceed	100

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

C.3.13 Tender offers will only be accepted if:

1. The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;

2. the tenderer does not appear on Transnet's list for restricted tenderers and National Treasury's list of Tender Defaulters;

3. the tenderer has fully and properly completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state.

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

   the tenderer:

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

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

C2.2 Activity Schedule

	Quail (unit A and B) 3 kV DC Traction Substation				
Item no	**Description**	**Unit**	**Quantity**	**Rate**	**Price**
A	**INDOOR WORK**				
A1	Supply and install **AC primary circuit breaker control panel** with all protection relays in accordance with Transnet Freight Rail specification BBB 2721 ver 12.	ea.	2.00		
A2	Supply and install **AC/DC distribution panel** with all protection relays in accordance with Transnet Freight Rail specification BBB 2721 ver 12.	ea.	1.00		
A3	Supply and install **3kV DC Rectifier** with its associated control equipment. Specification: BBB0496 ver 16: 6MW	ea.	2.00		
A4	Supply and install a complete **mechanical interlocking system** with a set of its mechanical keys in accordance with Transnet Freight rail specification BBB5452 ver 7.	set	2.00		
A5	Supply and install a 1.8 mH 3kV DC **Reactor coil.**	ea.	2.00		
A6	Supply and Install battery room **windows.**	ea	2.00		
A7	Supply and install **Wave filter equipment for 6^{th},12^{th},18,24^{th} harmonics** with its cables and busbars. It must be in accordance with Transnet Freight Rail specification BBB 3139 ver 2 for capacitor, and Specification BBB 3162 ver 2 for inductor coil. Additionally: Steel breather doors, lights, and interlocking steel bar system.	set	2.00		
A8	Supply and install **3kV DC Positive isolator** with its cables and busbars with potential divider. Specification: BBB4724 ver 5 including 3kV DC undervoltage relay in accordance with Transnet Freight Rail specification BBB 3005 ver 2.	set	2.00		

A9	**Battery Room:** Supply and install 110V Gel type **battery bank with its cables.** The capacity of the battery should be 100 amperes minimum. Also include Flame proof light, extractor fan, steel safe door to the High-tension yard; standard lockable wooden door to panel room with no smoke-naked flame-hand protection signs on both sides of wooden door, Battery base for battery and supply and install sink. BBH3236Ver2	sum	1.00		

A10	Supply and install 110V **Battery charger** in accordance with Transnet Freight Rail specification BBB 2502 ver 6.	ea.	1.00		
A11	Supply and install **3kV DC high Speed circuit breaker (ECR) with earth switches,including cells** in accordance with Transnet Freight Rail specification BBB 5452 ver 7-CEE-0099&0227.	ea.	6.00		
A12	Supply and install **Telecontrol** system with its associated control cables and cards. Specification: BBB5452 ver 7.	sum	1.00		
A13	Supply and install **3kV DC earth leakage relay** in accordance with Transnet Freight Rail specification BBB 2721 Ver 12 and drawing CEE-TBD-0007.	ea.	1.00		
A14	Supply and install **indoor earthing** with all its **cables** in accordance with Transnet Fright rail drawing CEE-TBD-0007.	sum	1.00		
A15	Supply and install **safety and burglar doors**. Double opening steel door 2.4m by 3m (Garage door)	Sum	1.00		
A16	Supply and install 220V **indoor lights; 110V emergency lightning** conduits and plugs BBB 5452 version 7.	Sum	1.00		
A17	Supply and install two [Unit A&B] **extractor fans** including cables and two outward opening lockable steel extraction/ventilation doors. BBB5452 Ver 7	Sum	1.00		
A18	Remove roof flakes, repaint roof, floor and wall	Sum	1.00		
A19	Supply Metal **Chequer plates** in accordance with Transnet Freight Rail specification BBB 5452 version 7.	Sum	1.00		
A20	Supply and Install **2 x steel standard doors** for office and battery room, **1 x steel double door** and two standard **wooden doors and 1 window**.	Sum	1.00		
				SUB TOTAL FOR QUAIL (Unit A and B) SUBSTATION INDOOR WORK:	

	Quail (Unit A and B) 3 kV DC Traction Substation				
Item no	**Description**	**Unit**	**Quantity**	**Rate**	**Price**
B	**OUTDOOR WORK**				
B1	Supply and install 88kV **Metal Oxide surge arrester** in accordance with Transnet Freight Rail specification BBB 0845. [One primary set at Eskom yard and one set each for Unit A &B secondary], **(Each set consist of 3 x LA's)**	set	4.00		
B2	Supply and install control cables for **Main Current transformer**. [Unit A&B] BBB0937 Ver 5.	set	2.00		
B3	Supply and install complete **High voltage AC primary circuit breaker** in accordance with Transnet specification BBB 0938 ver 9 or BBB 1267 ver 10. Including: including tripping mechanism, control box and all associated cabling.	set	2.00		
B4	Supply and install **Main Current transformer** in accordance with Transnet freight rail specification BBB 0937 ver 5.	ea	6.00		
B5	**Main 88KV Transformer** : • Supply and install traction transformer with all associated equipment in accordance with Transnet freight rail specification BBB 5019 ver 6. • Install and construct bund wall and oil dam (include drainage system).	sum	2.00		
B6	Supply and install a three phase **50kVA Auxiliary Transformer** with its protection system in accordance with Transnet Freight rail specification BBB 2721 ver 12. Including fencing of Auxiliary transformer.	ea.	2.00		
B7	Supply and fill the Main and Auxiliary transformers with **Transformer Oil (Virgin)**.	sum	2.00		
B8	Supply and install the **AC-Earth leakage system** complete in the HT outdoor yard as per Specification no. BBB 3059 ver 2 and drawing no. BBB 3620 Ver 8. [Unit A&B]	ea.	2.00		
B9	Supply and install **outdoor earthing.** All material to complying with Transnet Fright rail specification BBB 3059 ver 2 and drawing no. BBB 3620 Ver 8. [Unit A&B],	set	2.00		

B10	Supply and install **Anti-Climb Clear-Vu Electric Security Lockable with Razer Fence**. BBH 4465 Diameters: 84x38 and 2 x sliding gates.	sum	1.00		
B11	Supply and install new all **outdoor busbars** in accordance with Specification BBB5452 version 7. [Unit A&B]	set	2.00		

B12	Supply and install all **wall bushings** in accordance with Transnet Freight Rail specification BBB 5452.	set	2.00		
B13	Supply yard stones (25mm), layer 1mm thick, as per specification	sum	1.00		
B14	Supply and install **outdoor LED lights.** **Complete with cabling and daylight switch**.	ea	8.00		
B15	Supply and install the following for **back up supply:** • Supply and install a (11kV/380V, 150kVA) transformer and mount it on the universal mast pole outside the substation. • Dig a trench and install 90m- 3 core alu XLPE 380-400Vac cable to AC/DC panel • Supply and install a 40 KVA 400Vac to 400Vac Isolation transformer BBC330 (including all associated cabling and MCBs)	Sum	1.00		
B16	Supply and Install **Positive Cable** from HSCB to track switch structure	m	150		
B17	Supply and install **AC disconnects** (Complete set)	set	2.00		
B18	Supply and install **whirly birds**	ea	3.00		
B19	Remove **and** transport all scrap to Ladysmith depot.	Sum	1.00		
B20	Soil rehabilitation **approximately 35m x 35m = 1225sqm** (Estimation only), 1m deep	Sum	1.00		
B21	**Testing and commissioning.**	Sum	1.00		
B22	**Catalogues, manuals, and drawings.**	sum	1.00		
B23	P's & G's	sum	1.00		

SUB TOTAL FOR QUAIL (Unit A and B) SUBSTATION OUTDOOR WORK:	
	VAT(At 15%):
SUB TOTAL QUAIL (Unit A and B) SUBSTATION (incl. VAT)	

	Pepworth 3 kV DC Traction Substation				
Item no	**Description**	**Unit**	**Quantity**	**Rate**	**Price**
A	**INDOOR WORK**				
A1	Supply and install **AC primary circuit breaker control panel** with all protection relays in accordance with Transnet Freight Rail specification BBB 2721 ver 12.	ea.	1.00		
A2	Supply and install **AC/DC distribution panel** with all protection relays in accordance with Transnet Freight Rail specification BBB 2721 ver 12.	ea.	1.00		
A3	Supply and install **3kV DC Rectifier** with its associated control equipment. Specification: BBB0496 ver 16: 6MW	ea.	1.00		
A4	Supply and install a complete **mechanical interlocking system** with a set of its mechanical keys in accordance with Transnet Freight rail specification BBB5452 ver 7.	set	1.00		
A5	Supply and install a 1.8 mH 3kV DC air **Reactor coil.**	ea.	1.00		
A6	Supply and install **Wave filter equipment for 6^{th},12^{th},18,24^{th} harmonics** with its cables and busbars. It must be in accordance with Transnet Freight Rail specification BBB 3139 ver 2 for capacitor, and Specification BBB 3162 ver 2 for inductor coil. Additionally: Steel breather doors, lights, and interlocking steel bar system.	sum	1.00		
A7	Supply and install **3kV DC Positive isolator** with its cables and busbars with potential divider. Specification: BBB4724 ver 5 including 3kV DC undervoltage relay in accordance with Transnet Freight Rail specification BBB 3005 ver 2.	sum	1.00		
A8	**Battery Room:** Supply and install a 110V Gel type **battery bank with its cables.** The capacity of the battery should be 100 amperes minimum. Also include Flame proof light, extractor fan, steel safe door to the High-tension yard; standard lockable wooden door to panel room with no smoke-naked flame-hand protection signs on both sides of wooden door, Battery base for battery and supply and install sink. BBH3236 ver 2 **Including Extractor fan**	sum	1.00		
A9	Supply and install 110V **Battery charger** in accordance with Transnet Freight Rail specification BBB 2502 ver 6.	ea.	1.00		

A10	Supply and install **3kV DC high Speed circuit breaker (ECR) with earth switches** in accordance with Transnet Freight Rail specification BBB 5452 ver 7-CEE-0099&0227. Break existing breaker cells.	ea.	6.00		
A11	Supply and install **Telecontrol system** with its associated control cables and cards. Specification: BBB5452 ver 7.	sum	1.00		
A12	Supply and install **3kV DC earth leakage relay** in accordance with Transnet Freight Rail specification BBB 2721 Ver 12 and drawing CEE-TBD-0007.	ea.	1.00		
A13	Supply and install **indoor earthing** with all its **cables** in accordance with Transnet Fright rail drawing CEE-TBD-0007.	sum	1.00		
A14	Supply and install **safety and burglar doors** -Double opening steel door 2.4m by 3m	sum	1.00		
A15	Supply and install 220V **indoor lights; 110V emergency lightning** conduits and plugs BBB 5452 version 7.	sum	1.00		
A16	Supply and install two **extractor fans** including cables and two outward opening lockable steel extraction/ventilation doors. BBB5452 Ver 7	sum	1.00		
A17	Supply and install 1m by 1.2m non-see-through window with steel burglar guards.	sum	1.00		
A19	Remove flakes and repaint the walls, roof and floor	sum	1.00		
A20	Supply Metal **Chequer plates** in accordance with Transnet Freight Rail specification BBB 5452 version 7.	sum	1.00		
A21	Supply and Install **steel standard doors** for office and battery room, and two standard **wooden doors and 1 window**.	sum	1.00		
				SUB TOTAL FOR PEPWORTH SUBSTATION INDOOR WORK:	

	PEPWORTH 3 kV DC Traction Substation				
Item no	**Description**	**Unit**	**Quantity**	**Rate**	**Price**
B	**OUTDOOR WORK**				
B1	Supply and install 88kV **Metal Oxide surge arrester** in accordance with Transnet Freight	set	3.00		
	Rail specification BBB 0845. [One primary set at Eskom yard and one set each secondary]				

B2	Supply and install control cables for **Main Current transformer**. BBB0937 Ver 5.	sum	1.00		
B3	Supply and install complete **High voltage AC primary circuit breaker** in accordance with Transnet specification BBB 0938 ver 9 or BBB 1267 ver 10. Including: including tripping mechanism, control box and all associated cabling.	set	2.00		
B4	Supply and install **Main Current transformer** in accordance with Transnet freight rail specification BBB 0937 ver 5. These must be inside the main transformer.	ea	3.00		
B5	**Main 88KV Transformer** : • Supply and install traction transformer (tap changer interlocked) with all associated equipment in accordance with Transnet freight rail specification BBB 5019 ver 6. • CTs included. • Install and construct bund wall and oil dam (include drainage system)	ea	1.00		
B6	Supply and install a three phase **50kVA Auxiliary Transformer including oil** with its protection system in accordance with Transnet Freight rail specification BBB 2721 ver 12. Including fencing of Auxiliary transformer.	ea.	1.00		
B7	Supply and fill the Main and Auxiliary transformers with **Transformer Oil (Virgin)**.	sum	1.00		
B8	Supply and install **outdoor earthing.** All material to complying with Transnet Fright rail specification BBB 3059 ver 2 and drawing no. BBB 3620 Ver 8.	sum	2.00		
B9	Repair **Anti-Climb Clear-Vu Electric Security Lockable with Razer Fence** Diameters: 42x19 and sliding gate: 6m x2.	sum	1.00		
B10	Supply and install all **wall bushings** in accordance with Transnet Freight Rail specification BBB 5452. Including jumper cables.	sum	1.00		
B11	Supply and Install **Positive Cable** from HSCB to track switch structure	m	80.00		
B12	Supply yard stones (25mm), layer 1mm thick, as per specification	sum	1.00		
B13	Supply and install **outdoor LED lights.** **Complete with cabling and daylight switch**.	ea	5.00		

B14	Soil rehabilitation approximately **35m x 35m = 1225sqm** (Estimation only), 1m deep	Sum	1.00		
B15	Supply and install **AC disconnects** (Complete set)	ea	1.00		
B16	Remove all scrap and transport to Ladysmith	Sum	1.00		
B17	**Testing and commissioning.**	Sum	1.00		
B18	**Catalogues, manuals, and drawings.**	sum	1.00		
B19	P's & G's	sum	1.00		
				SUB TOTAL FOR PEPWORTH SUBSTATION OUTDOOR WORK**:**	
					VAT(At 15%):
				SUB TOTAL PEPWORTH (Unit A and B) SUBSTATION (incl. VAT)	

	Pieters 3 kV DC Traction Substation				
Item no	**Description**	**Unit**	**Quantity**	**Rate**	**Price**
A	**INDOOR WORK**				
A1	Supply and install **AC primary circuit breaker control panel** with all protection relays in accordance with Transnet Freight Rail specification BBB 2721 ver 12.	ea.	1.00		
A2	Supply and install **AC/DC distribution panel** with all protection relays in accordance with Transnet Freight Rail specification BBB 2721 ver 12.	ea.	1.00		
A3	Supply and install **3kV DC Rectifier** with its associated control equipment. Specification: BBB0496 ver 16: 6MW	ea.	1.00		

A4	Supply and install a complete **mechanical interlocking system** with a set of its mechanical keys in accordance with Transnet Freight rail specification BBB5452 ver 7.	sum	1.00		
A5	Supply and install **3kV DC Positive isolator** with its cables and busbars with potential divider. Specification: BBB4724 ver 5 including 3kV DC undervoltage relay in accordance with Transnet Freight Rail specification BBB 3005 ver 2.	sum	1.00		
A6	**Battery Room:** Supply and install a 110V Gel Type **battery bank with its cables.** The capacity of the battery should be 100 amperes minimum. Also include Flame proof light, extractor fan, steel safe door to the High-tension yard; standard lockable wooden door to panel room with no smoke-naked flame-hand protection signs on both sides of wooden door, Battery base for battery and supply and install sink. BBH3236Ver2	sum	1.00		
A7	Supply and install 110V **Battery charger** in accordance with Transnet Freight Rail specification BBB 2502 ver 6.	ea.	1.00		
A8	Supply and install **3kV DC high Speed circuit breaker (ECR) with earth switches** in accordance with Transnet Freight Rail specification BBB 5452 ver 7-CEE-0099&0227. Demolish old breaker cells	ea.	6.00		
A9	Supply and install **Telecontrol system** with its associated control cables and cards. Specification: BBB5452 ver 7.	sum	1.00		
A10	Supply and install **Wave filter equipment for 6^{th},12^{th},18,24^{th} harmonics** with its cables and busbars. It must be in accordance with Transnet Freight Rail specification BBB 3139 ver 2 for capacitor, and Specification BBB 3162 ver 2 for inductor coil. Additionally: Steel breather doors, lights, and interlocking steel bar system.	sum	1.00		
A11	Supply and install **3kV DC earth leakage relay** in accordance with Transnet Freight Rail specification BBB 2721 Ver 12 and drawing CEE-TBD-0007.	ea.	1.00		
A12	Supply and install **indoor earthing** with all its **cables** in accordance with Transnet Fright rail drawing CEE-TBD-0007.	sum	1.00		
A13	Supply and install 220V **indoor lights; 110V emergency lightning** conduits and plugs BBB 5452 version 7.	Sum	1.00		
A14	Remove roof flakes and repaint roof	Sum	1.00		
				SUB TOTAL FOR PIETERS SUBSTATION INDOOR WORK:	

	Pieters 3 kV DC Traction Substation				
Item no	**Description**	**Unit**	**Quantity**	**Rate**	**Price**
B	**OUTDOOR WORK**				
B1	**Main 88KV Transformer**: • Supply and install complete transformer bushings for both HV and LV side in accordance with Transnet freight rail specification BBB 5019 ver 6. • Supply and install silica gel. • Refill transformer oil and circulate (1 full cycle)13000 litres. • Re-Gasket transformer. • Re-paint transformer and conservator tank. • Replace busbars to wall bushings. • Re-place wall bushings. • Replace negative bursars and negative cables. • Replace Temperature, winding and oil gauge including cabling. • Oil sampling and DGA • Install and construct bund wall and oil dam (include drainage system)	sum	1.00		
B2	Supply and install a three phase **50kVA Auxiliary Transformer incl oil outside the substation** with its protection system in accordance with Transnet Freight rail specification BBB 5452 ver 7. Including fencing of Auxiliary transformer.	ea.	1.00		
B3	Supply and install **Main Current transformers** in accordance with Transnet freight rail specification BBB 0937 ver 5.	ea.	3.00		
B4	Supply and install secondary 88kV **Metal Oxide surge arrester** in accordance with Transnet Freight	set	3.00		
B5	Supply and install the **AC-Earth leakage system** complete in the HT outdoor yard as per Specification no. BBB 3059 ver 2 and drawing no. BBB 3620 Ver 8.	ea.	1.00		
B6	**Reconnect Electric Security Lockable Fence on the existing Anti-climbing fence.** BBH 4465	m	180.00		

B7	Supply and install **outdoor LED lights.** **Complete with cabling and daylight switch**.	ea	8.00		
B8	Supply and install **back up transformer (11kV/380V, 150kVA)** for 380V and trench and install 90m- 3 core alu XLPE 380-400Vac cable to AC/DC panel; 40 KVA 400Vac to 400Vac Isolation transformer BBC330.	Sum	1.00		

B9	Supply and install PCB no volt coil and motor then refill SF6 gas. (Areva PCB)	Sum	1.00		
B10	Soil rehabilitation around the transformer (6m x 6m)	Sum	1.00		
B11	Remove and transport all scrap material to Ladysmith	Sum	1.00		
B12	**Testing and commissioning.**	Sum	1.00		
B13	**Catalogues, manuals, and drawings.**	sum	1.00		
B14	P's & G's	sum	1.00		
				SUB TOTAL FOR PIETERS SUBSTATION OUTDOOR WORK**:**	
					VAT(At 15%):
				SUB TOTAL PIETERS (Unit A and B) SUBSTATION (incl. VAT)	

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INFRASTRUCTURE

PROJECT SPECIFICATION

DESIGN, SUPPLY, INSTALLATION, PRE-TESTING AND FAULT FINDING OF VARIOUS ASSOCIATED EQUIPMENT AT QUAIL, PIETERS AND PEPWORTH 3KV DC TRACTION SUBSTATIONS UNDER THE CONTROL OF DEPOT ENGINEER, LADYSMITH

INDEX

1. SCOPE

1.1 This project specification covers Transnet's requirements for the supply, installation, pre-testing and pre-commissioning of various associated equipment at Quail, Pepworth and Pieters 3KV DC traction substation under the control of Depot Engineer, Ladysmith.

2. STANDARDS

2.1 Unless otherwise specified all material and equipment supplied shall comply with the current edition of the relevant SANS, BS, IEC or Transnet publication where applicable.

2.2 All below requirements imply to both Quail (unit A and B),Pepworth (Single unit) and Pieters substations.

2.3 The following publications are referred to in this specification:

2.3.1 South African National Standards

2.2.1.1 SANS 121: Hot dip galvanised coatings for fabricated iron or steel articles – Specifications and test methods.

2.2.1.2 SANS 1019: Standard voltages, currents and insulating levels for electrical supply.

2.2.1.3 SANS 1091: National colour standard.

2.2.15 SANS 10142-1: The wiring of premises. Part 1.

2.3.2 Transnet standards

2.3.2.1	BBB 2502 Ver-6:	Requirements for battery charger for 3kV DC traction substations.
2.3.2.2	BBB 4724 Ver-5:	Positive isolator.
2.3.2.3	BBB 3005 Ver-2:	3KV under-voltage relay.
2.3.2.4	BBB 3620 Ver-5:	Drawing: 3kV DC Earthing arrangement.
2.3.2.5	BBB 5452 Ver-6:	Transnet's requirement for the installation of electrical equipment for 3kV DC traction substations.
2.3.2.6	BBC 0198 Ver-1:	Specifications for requirements for the supply of electrical cables.
2.3.2.7	BBB 5019 Ver-6:	Requirements for Traction Transformers for 3KV DC traction substations in accordance with SANS 60076.
2.3.2.8	BBF 8190 Ver-1:	Traction substation electrician handbook.
2.3.2.9	BBB 3890 Ver-3:	Requirements for a 1.8 Milli Henry DC Reactor for 3KV DC traction Substations.
2.3.2.10	BBB 1267 Ver-10:	Requirements for outdoor alternating-current circuit breakers for traction and distribution substations.
2.3.2.11	BBB 0937 Ver-5:	Requirements for outdoor post type current transformers for traction and distribution substations.

2.3.2.12	BBB 0845 Ver-7:	requirements for metal oxide surge arresters without gaps for traction and distribution substations
2.3.2.13	CEE-TBD-0007:	Drawing: 3kV DC Earthing arrangement.
2.3.2.14	CEE.0023.90:	Specifications for the installation of cables.
2.3.2.15	CEE.045:	Painting of steel Components of Electrical Equipment.
2.3.2.16	CEE.0224.2002:	Drawings, catalogues, instruction manuals and spares lists for electrical equipment supplied under contract.
2.3.2.17	BBB 3059 Ver-2:	3kV DC Traction substation earthing system for high voltage outdoor yards.
2.3.2.18	BBB 2127 Ver-12:	ac primary circuit breaker control panel and ac/dc distribution panel for 3kv dc traction substations.
2.3.2.19	BBH 3236 Ver-2:	Requirement for the supply of batteries for 3kV DC traction substation.
2.3.2.20	BBB0496 Ver-16:	3kv rectifier (5mw or 6mw) for traction substations.
2.3.2.21	CEE-0099_ISS_2013 :	3KV DC High speed circuit breakers for traction substations.
2.3.2.22	CEE-0227 ISS 2018:	The manufacture of 3KV DC Breaker cells and trucks.
2.3.2.23	Occupational Health and Safety Act No. 85 of 1993 (Available at depot for referral)	
2.3.2.24	Any items offered in accordance with other standards will be considered at the sole discretion of Transnet. The Contractor shall supply the details stating where the item differs from these specifications as well as supply a copy (in English) of the recognised standard specification(s) with which it complies.	
2.3.2.25	Safety Arrangements and Procedural Compliance with Occupational Health and Safety Act (Act 85 of 1993) and applicable Regulations.	
2.3.2.26	E7/2 – Specification for works on, over, under or adjacent to railway lines and near high voltage equipment.	

3. DESCRIPTION OF WORK

The Contractor shall perform the following:

3.1 Install all equipment in accordance with Transnet specification BBB 5452 version 7.

3.2 Quail(Unit A & B), Pepworth (Single unit) and Pieters (Traction transformer and Indoor Equipment for single unit) 3KV DC Substations

3.2.1 The supplier shall clean and remove all vegetation in the yard.

3.2.2 The supplier shall remove all scrap in the substation and transport it to Ladysmith depot.

3.2.3 The supplier shall remove all old regen equipment, both indoor and outdoor equipment including barrier fence inside the substation.

3.2.4 The supplier shall dismantle old foundations for the regen equipment and backfill/level the yard.

3.2.5 Supply and install traction transformer with tap changer interlocked and all associated equipment in accordance with Transnet freight rail specification BBB 5019 ver 6. Install and construct bund wall and oil dam with drainage system. Transport old transformers to Ladysmith.

3.2.6 Supply and Install 6MW rectifier in accordance with BBB0496 with all associated control cables.

3.2.7 The supplier shall install HSCB with ECR cards in accordance with CEE-0099_ISS_2013 and CEE-0227 ISS 2018 with complete housing bursbars, positive cables to track switching, arc chutes and earth switch.

3.2.8 The supplier shall supply and install PCB and AC/DC panels in accordance with BBB 4724 vr5 clause 6 and BBB 2721 ver 12.

3.2.9 The supplier shall supply and install 53 cells of 107AH batteries in accordance with BBH 3236 vr2 including battery base and associated cabling, lights with IP protection 65 and install sink for battery maintenance.

3.2.10 The supplier shall supply and install complete wavefilter for 6^{th},12^{th} ,18^{th} ,24^{th} harmonics in accordance with BBB 3139 ver 2 for capacitor, and Specification BBB 3162 ver 2 for inductor coil including HRC fuse.

3.2.11 The supplier shall install 50kVA Auxiliary transformer BBB 2721 ver 12.

3.2.12 Supply and install transformer capacitive bushings for HV and LV in accordance to BBB5019 Ver-6. Supply and Install temperature and winding oil gauges with associated cabling. Refill transformer oil. Repaint transformer and conservator tank. Replace silica gel. Supply and install busbars to wall bushings, Contractor to supply any missing wall bushings. Replace negative busbars and negative cables to the rail.

3.2.13 Supply and install 88KV lightning arrestors in accordance with BBB 0845.

3.2.14 Supply and install reactor coil 1.8mH in accordance with BBB 3890.

3.2.15 Supply and install current transformers in accordance with BBB 0937, and associated cabling.

3.2.16 Supply and install complete Primary circuit breaker control box and tripping mechanism including all associated cabling in accordance with BBB 1267.

3.2.17 Contractor shall repair AC disconnects, supply and install where required to.

3.2.18 The supplier shall supply and install telecontrol in accordance with BBB5452 ver 7.

3.2.19 Supply and install aluminium busbars from the wall bushings to the rectifier to the reactor coil to the wave filter to the positive isolator to the DC negative busbar. Barriers shall be provided to all exposed live busbars to prevent access. The 3kV DC output positive busbar system, which includes high-speed circuit breaker

busbars. The Contractor shall cater for any support insulators required for the installation refer to BBB5452 Ver-7 Clause 33.

3.2.20 The equipment for each substation shall include a mechanical interlocking system; preferably the "Castell" or other approved key type. Full details of the type offered instead of the “Castell type shall be submitted with the tender, refer to BBB5452 Ver-7 Clause 31.

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3.2.21 Supply and install indoor and outdoor earthing as per drawing CEE-TBD-0007, BBB 3620 and BBB 3059 including AC earth leakage and DC earth leakage, spark gaps, door switch, chequer plate covers for entire substation and level/backfill HT yard and install crusher stone.

3.2.22 The contractor shall supply and install the battery charger in accordance with Transnet Freight Rail's specification BBB 2502 Ver-6. The battery charger shall be insulated from the substation floor by means of "Marley" or "Lino" floor covering not less than 2mm thickness.

3.2.23 The contractor shall supply and install the 3kV DC positive isolator (second generation) in accordance with Transnet Freight Rail's specification BBB 4724 Ver-5 with undervoltage relay as per BBB3005 Ver-2. The DC positive isolator metal cubicle/housing shall be insulated from the substation floor.

3.2.24 Three/single phase non-sparking extraction fan shall be installed for the battery room in accordance with Transnet Freight Rail's specification BBB 5452 Ver-7.

- Battery room single phase
- Rectifier 3 phase

3.2.25 Supply and Install 25mm^2 DC wires from the batteries in accordance with BBF8190 Ver-1 Clause 12.4.4.

3.2.26 BBH4465 Supply and installation of demarcation and Anti-climb electric fence (Including lockable gate for access to breaker room) around perimeter including 3x Master lock Discus padlock with 8 keys each, safe doors & window burglar guards. Including Barrier fence suited for Double unit substation.

3.2.27 Supply and install High voltage signs WW37 & WW38 for the entire substation.

3.2.28 Clean, Prepare and Repaint Substation wall white, and repaint floor substation red.

3.2.29 Repair damaged HV and yard fence.

3.2.30 Contractor shall do soil rehabilitation at the substation.

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3.2.31 Supply and install indoor AC lights including DC lights refer to BBB5452 Ver-7 Clause 45.

3.2.32 Supply and install outdoor waterproof lights including Floodlights Day night switch refer to BBB5452 Ver-7 Clause 45.

3.2.33 Supply and install Whirly birds

3.2.34 All rubble which is left over as a direct result of work performed by the Contractor shall be removed from the substation building and yard and disposed of by the Contractor. The substation floors and walls shall be left in a clean condition. All

cable, wire and conductor cut-offs and surplus material shall be removed from site refer to BBB5452 Ver-7 Clause 48.

3.2.35 Functional on-site tests shall be conducted on all items of equipment, circuitry and interlocking to prove the proper functioning and installation thereof. Pre-testing and fault finding to be done by contractor including existing faults and replace faulty components found on the pre-testing and fault finding refer to BBB5452 Ver-7 Clause 49.

3.2.36 The contractor shall supply security for the duration of the project.

4 CONTRACTUAL OBLIGATIONS

4.1 Over and above the conditions mentioned in the General Conditions of Contract, the Contractor shall also be responsible for the conditions mentioned hereunder.

4.2 The Contractor shall not make use of any subcontractor to perform the works or parts thereof without prior permission from the Manager or Technical Officer.

4.3 The contractor who wins the tender must provide with a safety file 2 weeks before site establishment.

4.4 The Contractor shall ensure that a safety representative is always on site. All safety measures prescribed by Transnet – Electrical Safety Instructions and the "Occupational Health and Safety Act 1993 (Act 85 of 1993)" associated with working on a project of this nature shall be adhered to.

4.5 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 Manager or Technical Officer must countersign such delays. Other delays such as non-availability of equipment from 3rd party suppliers must be communicated to the Manager or Technical Officer in writing.

4.6 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 Manager or Technical Officer and must be countersigned by the Contractor.

4.7 Both books mentioned in 4.5 and 4.6 including safety file shall be the property of Transnet and shall be handed over to the Manager or Technical Officer on the day of energising or handing over.

4.8 The penalty charge will be 0.15% per day of the total value of the contract.

5 INSTALLATION

5.1 The Contractor shall be responsible for the transport to site, off-loading, handling, storage, and security of all material required for the construction/execution of the works.

5.2 The Contractor shall be responsible for all necessary (as decided by the Transnet Manager or Technical Officer) connections between the equipment supplied and other components in the substation including connections to the earth-mat.

5.3 All fasteners on steelwork, components, and electrical connections (nuts and bolts) shall be secured using flat as well as lock washers.

6 INTERCONNECTION OF EQUIPMENT

6.1 All HT electrical equipment interconnections shall be done using conductors similar to that being used in the existing substation yard.

6.2 Conductors between separately mounted outdoor equipment shall incorporate a degree of flexibility to avoid any over-stressing of these connections due to the foundation movement or conductor expansion/contraction and to facilitate alignment of equipment.

6.3 High conductive silicon grease shall be liberally applied to all the connections.

6.4 All dissimilar metal connections (Cu to Al) shall be made using bi-metallic clamps that are specifically designed and manufactured to make that particular connection (ad hoc fabricated clamps are not acceptable).

7 WORK TO BE DONE BY TRANSNET

7.1 Transnet shall have an electrician available for isolation and the erection of barriers to live electrical equipment and issuing of work permits.

7.2 Upon successful completion of the works to the satisfaction of Transnet, Transnet shall perform necessary protection tests and commission the said equipment.

7.3 The depot staff will be responsible for reconnecting tele-control equipment in the substation.

8 TENDERING PROCEDURE

8.1 Contractors shall duly fill in the attached ‘Schedule of quantities and prices’ Items not reflected in this Schedule, but covered in the project specification, shall be added to the ‘Schedule of quantities and prices’ by the Contractor and quoted for accordingly.

8.2 An addendum reflecting changes to the project specification and ‘Schedule of quantities and prices’ shall be forwarded to Contractors after the site meeting and Contractors should quote accordingly.

8.3 Contractors shall provide a provisional Gantt or a similar chart showing when the substation will be done and energised, when submitting the tender. A final chart should be submitted to the Manager or Technical Officer within 5 days after the award has been made to the successful Contractor.

8.4 Contractors shall submit qualifications of the staff that will be performing the works. Qualified technical personnel shall perform the works on the electrical equipment or installations. During the duration of the contract, the successful Contractor will be required to inform the Technical Officer of any staff changes and provide the qualifications of the replacement staff for approval.

8.5 The Contractor shall comply to all Transnet specifications.

8.6 Contractors shall motivate a statement of non-compliance.

8.7 Where equipment offered does not comply with standards or publications referred to in the specification, Contractors shall state which standards apply and submit a copy in English or certified translation.

8.8 Contractors shall submit descriptive literature consisting of detailed technical specifications, general constructional details, and principal dimensions, together with clear illustrations of the equipment offered. During the duration of the contract period, the successful Contractor will be required to inform the Technical Officer of changes to equipment offered and submit detailed information on replacement equipment for approval prior to it being used on this contract.

8.9 Contractors shall submit equipment type test certificates as specified with the Tender. These shall be in English or certified translation.

9 DRAWINGS, INSTRUCTION MANUALS AND SPARE PART CATALOGUES

9.1 All as built drawings shall be supplied in electronic format (Microstation/Autocad).

9.2 All drawings (paper prints) shall be submitted to the Manager or Technical Officer for approval. No construction or manufacturing activity will be allowed prior to the associated drawings having been approved by the Manager or Technical Officer.

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

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

10 SITE TESTS

10.1 The equipment shall be inspected/tested and approved by Transnet Quality Assurance at the Contractor's workshop prior to it being taken to site. Only once the approval has been granted in writing can the equipment be taken to site for installation. The approval should also be recorded on the site instruction book and countersigned by both parties.

11 COMMISSIONING OF EQUIPMENT

11.1 Commissioning will only take place after all defects have been rectified to the satisfaction of the Manager or Technical Officer.

11.2 Commissioning will include energising of equipment from the primary isolator to the track feeder circuits. The Contractor must prove the satisfactory operation of all equipment under live conditions.

11.3 On completion of commissioning, the Contractor will hand the equipment over to the Manager or Technical Officer in terms of the relevant instruction.

11.4 The commissioning of protection equipment by Transnet will in no way absolve the Contractor from any of his responsibilities during the guarantee period. It is the Contractor's

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

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

12 GUARANTEE AND DEFECTS

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

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

12.3 The guarantee period for these substations shall expire after:

A period of 12 months commencing on the date of completion of the contract or the date the substation is handed over to Transnet whichever is the earliest.

12.4 The specified guarantee period shall only apply to the new equipment installed and from the time of energising the equipment and the acceptance thereof.

12.5 Any specific type of fault occurring three times within the guarantee period, and which cannot be proven to be due to other faulty equipment not forming part of this contract e.g., faulty locomotive or overhead track equipment, etc., shall automatically be deemed an inherent defect. Such inherent defect shall be fully rectified to the satisfaction of the Manager or Technical Officer and at the cost of the Contractor.

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

14: CLAUSE BY CLAUSE COMPLIANCE TO PROJECT SPECIFICATION

RFQ FOR VARIOUS EQUIPMENT UPGRADE SERVICE REQUIRED AT QUAIL, PIETERS AND PEPWORTH.

Section 14: CLAUSE BY CLAUSE COMPLIANCE TO PROJECT SPECIFICATION

Spec	Comply to all clauses	Does Not Comply	Comments
BBB 2502 Ver-6:			

BBB 4724 Ver-7:			
BBB 3005 Ver-2:			
BBB 3620			
BBB 5452 Ver-6:			
BBC 0198 Ver-1:			
BBF 8190 Ver-1:			
CEE-TBD-0007:			
CEE.0023.90:			
CEE.045:			
CEE.0224.2002:			

A) DELIVERY OF WORK

The respondent must state the time it will take to complete the project. The period will include the lead time for the material

State the number of weeks it will take to complete work from day of award: _____

RETURNABLE DOCUMENTS AND SCHEDULES

Respondents are required to submit the following returnable documents and schedules with their responses [see √]. All Sections, as indicated in the footer of each page, must be signed, stamped and dated by the Respondent:

SECTION 13 : Schedule of Quantities and Pricing	√
SECTION 14 : Clause by clause compliance to project specification	√
SECTION 15 : Schedule of Plant and Delivery of work	
Letter of Good standing	√
An original or certified copy of a valid Tax clearance certificate	√
CIDB Certificate	√
Valid Tax Clearence Certificate	√
B-BBEE Accreditation Certificate	√