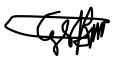
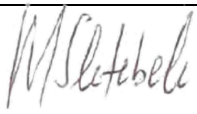
Specification

TE-IMS-PEMM P&E KDS-SPEC- 359

Description: **Specification for designing, manufacturing and installation of new pantograph inspection tower at Thabazimbi Locomotive depot**				
Compiled By:	Sibusiso Bhembe		Date:	19/02/2025
Recommended by:	Joey Le Fleur		Date:	03/03/2025
Approved by:	Makwale Letebele		Date:	26/02/2025
Risk:	Collen Manana		Date:	05-03-2025
Local Business:	PEMM			
Location:	Capital park			

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1. Scope of Work

This specification requirement covers all the requirements that will be needed to inform the supplier/vendor/manufacture to carry out what is expected from him/her: The contract will be awarded as a turnkey project and the contractor will be responsible for all the work specified.

This specification states the minimum requirements relating to the work and in no way absolves the contractor from responsibility for sound engineering practice. Any omissions or sub-standard requirements of this specification must be brought to the attention of Transnet Engineering KOEDOESPOORT at tender stage and optional prices for addressing such omissions must be provided.

The Supplier shall supply all the labour, tools, material, equipment, consumables, facilities, testing and supervision required for the supply of the specified equipment at site during erection, pre-commissioning and commissioning activities.

2. Site Inspection

Tenderers must visit the site to familiarize themselves with all the aspects involved relating to the project that must be done. This must be arranged via the Contract Manager. The site inspection certificate will be counter-signed by the Contract Manager on day of the site visit. The tender documents must only be submitted if the site inspection certificate has been signed.

3. Information Required

Tenders shall be in duplicate and will not be considered if full particulars of all relevant equipment and works requested are not submitted at the tender stage, to ensure an objective assessment of the offer can be made. Tenderers shall confirm that the items that they are offering comply at a standard not less than the minimum required requirement asked for in the specifications. Tenderers must comply to these

specifications, but alternative offers may, in addition, also be submitted. Such alternative offers must be fully motivated and substantiated.

4. Specific Requirements:

- Occupational Health & Safety Act (Act 85 of 1993) and its Regulations, as amended
- Adhere to the Construction Regulation
- Compensation of Occupational Injuries and Diseases Act (Act 130 of 1993) as amended
- Transnet Contractor Management Procedure (TRN-IMS-GRP-PROC 014)
- Transnet Engineering IMS Compliance Policy Statement
- The contractor shall undergo Safety, Health and Environmental **(SHE) Induction**, and be issued with Induction certificate and valid permits authorising him/her to enter Transnet premises for the duration of the contract.
- The contractor is required to produce an approved **Compliance File or SHE File** and **Site Instruction Book** on site at **all times**.
- All measurements and amounts must be stipulated in quote.
- Contractor's name board will at all times be visible.
- A supervisor will be on site at all times.
- Comply with Transnet Engineering Waste Management Standard.
- The correct PPE must be worn at all times. (Harnesses ropes, etc.)
- During and on completion of the project, there will be SHE inspections and Risk assessments done on the site that the supplier/vendor is working on, which will be reported to the project manager.
- Failure to comply will result in a stop certificate being issued and the supplier will be required to leave the site until the situation is rectified.

- All scaffolding used to be SANS approved.
- All employees who will be working at height to have medical fitness certificate and proof of competency training thereof.
- Valid letter of good standing with Compensation commissioner.

5. Technical Requirements:

All equipment and installation whether detailed in this specification or not shall comply with the requirements of the Occupational Health and Safety Act 85 of 1993 as amended. Sudden power losses will not have an adverse effect on equipment and shall not unduly delay return to operation after power is restored.

6. Codes of Practice, Regulations & Standards:

The tenderer shall specify which statutory or industry rules will be applied for the equipment to be working successfully and safely and shall indicate the designed life span.

7. Specific Requirements

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
	Specification for designing, manufacturing and installation of new pantograph inspection tower at Thabazimbi Locomotive depot	
1.	**Scope of Work**	
1.1	Design, manufacture and install the pantograph inspection tower structure.	
1.2	Design and install new foundation for the pantograph inspection tower structure.	
1.3	Supply and install new Pantograph inspection tower lighting.	
1.4	Documentation	
1.5	Testing and commissioning	
2.	**Site establishment**	
2.1	It must be established what must be done in terms of, hiring of equipment on site.	
2.2	Site must be marked with "RED and WHITE DANGER TAPE" taped for safety reasons.	
2.3	Site must be cleaned on daily at end of the day.	
3.	**Pantograph inspection cage, steps and steps guard rail, Support structure and lighting.**	
3.1	**Inspection cage**	
3.1.1	Design, manufacture and install a new pantograph inspection cage.	
3.1.2	Supply and install new platform grating.	
3.2	**Steps structure**	
3.2.1	Design, manufacture and install new pantograph inspection	

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
	tower ascending and descending steps.	
3.2.2	Step dimensions: Depth x Width = 230mm x 600mm.	
3.2.3	All steps shall be fitted with non-slip material (Mentis gratings) same as the 10E inspection towers in Ermelo depot.	
3.2.4	All access ladders shall have a SWL of 250Kg.	
3.2.5	Design and install a new ascending and descending step foundation.	
3.3	**Pantograph inspection tower structure**	
3.3.1	Design, manufacture and install new structure for the pantograph inspection tower.	
3.3.2	Dimensions of structure: L x W = 5400mm x 600mm	
3.3.3	The design and installation of the pantograph inspection tower must also meet the requirements of TFR specification number: E7-2 for structure installed next to railway lines.	
3.3.4	All steel shall be new Grade 350wa to SANS 50025 and structural steelwork shall comply with SANS 1200H: Structural Steelwork. Mild steel bolts shall be new grade 4.8 to SANS 135 and high tensile bolts grade 8.8SU to SANS 1282. ALL BOLTS SHALL BE PRECISION FITTED.	
3.3.5	Structural bolts shall be precision fitted and shall be of the grade stated in the crane design standard and torque accordingly. Tenders shall supply grade and torque values of all bolts that will be used.	
3.3.6	A bolted joint strength shall be at least 1.25 times the strength of the section required at that point.	
3.3.7	Design and install a new foundation for the support structure and step ladder. Foundation must be designed by an ECSA accredited civil engineer. **NB!** The design of the foundation must show the following: • Depth, width and length • Reinforcement sizes and bending schedule • Concrete strength • Ground withstanding pressure	

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
3.4	**Painting**	
3.4.1	Paint the pantograph inspection tower with grey colour paint for steel.	
3.4.2	Surface preparation of steel before painting: • Remove all oil and grease from the steel surface using Plascon Aquasolv degreaser (GR1) followed by clean potable water rinses. Allow to dry. • All dust and abrasion products must be removed prior painting.	
3.5	**Lighting**	
3.5.1	Install new LED (100W) inspection lights on the tower. **NB!** Mount all cable trunking on the support structure of the pantograph inspection tower.	
3.5.2	Supply new detailed pantograph inspection tower drawings	
4.	**Documentation**	
4.1	Documents at tender stage: • ECSA accredited Mechanical/ Structural Engineer • ECSA accredited Civil Engineer for foundation design • Coded welder certificate	
4.2	Documentation at commissioning stage • Structural test certificate • Concrete test results • Compaction test results • All counter design drawings with Geotechnical report for the site • Material delivery Notes • Welding inspection test results	
5.	**General**	
5.1	All material used shall be SANS approved, A-grade first class.	
5.2	All work delivered shall be of a high standard.	
5.3	All rubble shall be removed on a daily base.	
6.	**Guarantee**	
6.1	The supplier shall guarantee for a period 12 months after successful commissioning of the pantograph inspection	

	REQUIRED	DETAILS OF OFFER Comply (Yes) / Do not comply (No)
	tower that all components, plant equipment and material are new and fit for the specific purpose which they are purchased, and free from any defects in design, workmanship and material, and are in strict accordance with the contract, unless otherwise agree in writing.	
6.2	The supplier shall agree to replace at his/her cost any defective items discovered within the guaranteed period.	
6.3	The supplier shall clearly stipulate the nature of the guarantee and how long it will take their maintenance staff to be on site. Transnet Engineering requires a response time of no more than 3 hours.	
6.4	Should the supplier fail, when called upon, to make good or remedy a defect (under guarantee or declared inherent) within a reasonable time, Transnet Engineering may affect the repair and thereafter recover from the supplier all cost and expenses associated with the supplier.	
7.	**Testing and Commissioning**	
7.1	As this project is "Turn-Key" the successful tenderer is responsible for the installations and commissioning. The complete project team and PEMM responsible persons will participate in final commissioning.	

8. References:

Standard operating procedure for specification of contract work

9. Painting:

The supplier shall indicate the code of practice to which painting and surface preparation will conform to.

10. Quality Control:

The contractor shall provide a quality control plan with the tender indicating how quality will be assured.

11. Installation and Commissioning:

A detailed program (project-plan/gantt-chart) shall be submitted with the tender, indicating the main activities and periods necessary up to handover. The bidder shall submit with their tender a detail erection and installation procedure.

The contractor shall be fully responsible for any damage caused to all supplied equipment and to Transnet Engineering's assets during the installation, testing and commissioning. The supplier shall conduct a risk assessment as to identify anything that might hinder the installation of the equipment.

12. Guarantee:

The contractor shall guarantee for a period of 12 months minimum (preferably 24 months or more) after successful commissioning and free from any defects in design, workmanship and material, and are in accordance with the Contract, unless otherwise agreed in writing.

The Contractor shall agree to replace at his cost any defective items discovered within the guaranteed period.