

Annexure 2.5:
Particular Technical Requirements
Reunion to Umlazi

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1 GENERAL

1.1 Purpose of the Document

- 1.1.1 The purpose of this document is to provide the Particular Technical Requirements ("PTR") which form part of the minimum Requirements of the Passenger Rail Agency of South Africa ("PRASA") for the Umlazi to Reunion related Works that form part of the planning, design, supply, construction, installation, testing, commissioning and maintenance of a new fully integrated, functional, complete and future-proofed PRASA Train Control System ("PTCS") in PRASA's KwaZulu-Natal ("KZN") service region ("the Project") that the Bidder shall meet and deliver at the Bidder's cost therefore within the Bid Price.

1.2 Executive Overview

- 1.2.1 Notwithstanding any other PRASA Requirements stated throughout the RFP, the Bidder shall uncompromisingly deliver the whole of the Works required to achieve successful delivery of the Project.

1.3 Location and Minimum Extent of the Works

- 1.3.1 The boundaries of the Site are the Durban region rail servitude for the section:
- a) Reunion to Umlazi.
 - b) Durban Centralised Train Control ("CTCC").
 - c) Rosburgh CTCC.
- 1.3.2 The extent of the Site is approximately 30km and includes at least:
- a) 5 Crossing places.
 - b) 2 Substations.
 - c) 4 Global System for Mobile Communications – Railway ("GSM-R") Sites.

1.3.3 Figure 1.3.1 below shows the section Reunion to Umlazi:

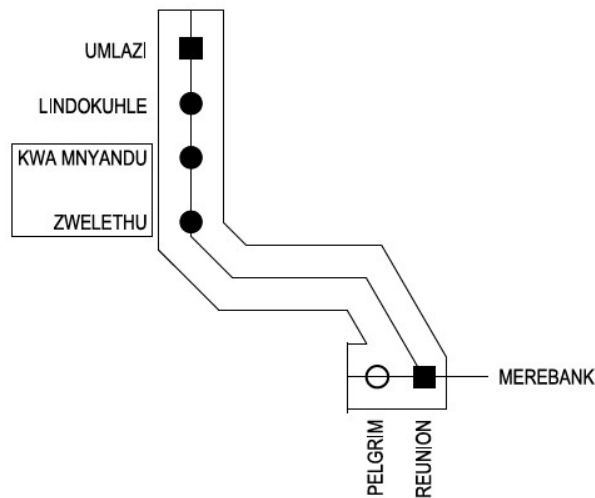


Figure 1.3.1: Reunion to Umlazi

1.3.4 The Site(s) includes at least the following crossing places:

- a) Reunion.
- b) Zwelethu.
- c) Kwa Mnyandu.
- d) Lindokuhle.
- e) Umlazi.

1.3.5 The Site(s) includes at least the following substations:

- a) Reunion.
- b) Umlazi.

1.3.6 The Site(s) includes at least the following GSM-R sites:

- a) Zwelethu_T.
- b) Kwa Mnyandu.
- c) Lindokuhle_T.
- d) Umlazi_T.

1.3.7 Any other Site(s) and Works, activities and resources required to achieve a fully integrated, functional, complete and future-proofed PTCS and meet any other requirements and specifications as requested throughout the RFP or as otherwise instructed in writing by PRASA.

2 MINIMUM REQUIREMENTS

2.1 Reunion to Umlazi

2.1.1 Signals:

- a) Implement 2.5-minute headways according to the requirements and specifications provided throughout the RFP.

2.1.2 Electrical:

- a) Provide a new 6.6 kV/11Kv Supply point, feeding into the existing transmission line.

2.2 Reunion

2.2.1 Perway:

- a) Add another cross-over in the reverse direction at 1435W and 1427W.
- b) Review Perway Design and implement changes, to:
 - Disconnect stage lines at 2129W and 2107W
 - Remove link line to stage line from 2015W
 - Build through the line from 2005W to 2159W
- c) Remove scissor crossing and replace with two independent crossovers to retain the functionality.

2.2.2 Civils:

- a) Provide a suitable service road providing access to all Equipment Rooms and sites as defined in the GTR, by either upgrading the existing service road or constructing a new service road.

2.2.3 Electrical:

- a) ~~Review~~ Provide and/or update ~~approved~~ designs for the provision of a new 6.6/11kV Supply point with a transmission line rated at 11kV from Reunion to Springfield 6.6/11kV ring feed Supply.

2.3 Zwelethu

2.3.1 Perway:

- a) Replace scissor crossing with new concrete layout. Simplify the layout by replacing scissors crossings with two individual crossovers. If the design shows that this is not geometrically possible, the scissors crossing (4 x turnouts and the crossing section) on wood shall be removed and replaced with a new scissors crossing on concrete sleepers.

2.3.2 Civils:

- a) Provide drainage solution to address flooding of trackside Equipment.

2.4 KwaMnyanda

2.4.1 Civils:

- a) Improve access to MER if MER is going to be used.
- b) Provide a suitable service road providing access to all Equipment Rooms and sites as defined in the GTR, by either upgrading the existing service road or constructing a new service road.

2.5 Lindokuhle

2.5.1 Perway:

- a) Replace scissor crossing with new concrete layout. Simplify the layout by replacing scissors crossings with two individual crossovers. If the design shows that this is not geometrically possible, the scissors crossing (4 x turnouts and the crossing section) on wood shall be removed and replaced with a new scissors crossing on concrete sleepers.

2.6 Umlazi

2.6.1 Perway:

- a) Install 2 new stop blocks on main lines at the end of the platform.
- b) Replace scissor crossing with new concrete layout. Simplify the layout by replacing scissors crossings with two individual crossovers. If the design shows that this is not geometrically possible, the scissors crossing (4 x turnouts and the crossing section) on wood shall be removed and replaced with a new scissors crossing on concrete sleepers.

2.6.2 Civils:

- a) Provide a suitable service road providing access to all Equipment Rooms and sites as defined in the GTR, by either upgrading the existing service road or constructing a new service road.