

Annexure 2.2:

Particular Technical Requirements

KwaMashu to Temple

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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 KwaMashu to Temple 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) KwaMashu to Temple.
 - 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) 6 Crossing places.
 - b) 1 Halt.
 - c) 1 Interface to the Transnet Freight Rail ("TFR") Network.
 - d) 1 Substation.
 - e) 6 Global System for Mobile Communications – Railway ("GSM-R") Sites.
 - f) 1 Level Crossing

1.3.3 Figure 1.3.1 below shows the section KwaMashu to Temple:

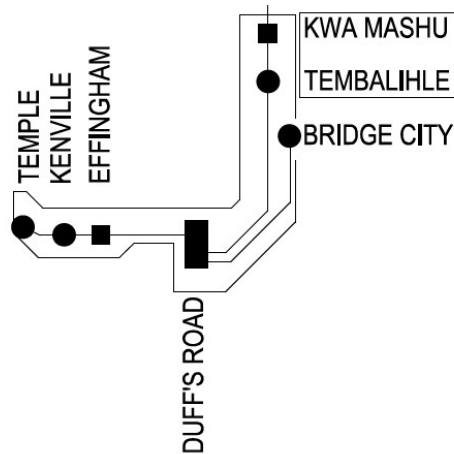


Figure 1.3.1: KwaMashu to Temple

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

- a) KwaMashu.
- b) Tembalihle.
- c) Duff's Road.
- d) Effingham.
- e) Kenville.
- f) Bridge City.

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

- a) Temple.

1.3.6 The Site(s) includes at least the following interfaces to the TFR Network:

- a) Phoenix.

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

- a) Duff's Road.

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

- a) Duffs_T_North.
- b) Effingham.
- c) Kenville_T_North.
- d) Bridge City.
- e) Tembalihle.
- f) Temple_T_North.

1.3.9 The site includes at least the following level crossings:

- a) Duffs Road

- 1.3.10 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 KwaMashu to Temple

2.1.1 Signals:

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

2.2 KwaMashu

2.2.1 Electrical:

- a) Convert the tie-station into a double traction substation in accordance with the required Network capacities.
- b) Provide a new 6.6/11kV Supply in-feed point, which shall feed into the existing 6.6kV transmission line. The Successful Bidder shall determine the capacities of this Supply point based on the Network requirement.

2.3 Tembalihle

2.3.1 Civils:

- a) The existing SER building has significant drainage problems. The Bidder shall Design and implement a permanent solution to fix the drainage or construct a new building at a suitable location.
- b) Provide drainage solution to address flooding of trackside Equipment.

2.3.2 Signals:

- a) A Third Party installed points 2009W and 2019W according to the approved line plan. The points are clamped, spiked and detected through the Track circuit. The Bidder shall incorporate and align any Design and project plans accordingly.

2.3.3 Perway:

- a) A Third Party installed turnouts 2009W and 2019W according to the approved designs. The Bidder may re-use the turnouts, providing the complete offered solution is still compliant all requirements and specifications stated throughout the RFP.

2.4 Duff's Road

2.4.1 General:

- a) Interface to the TFR Network at Phoenix.

2.4.2 Signals:

- a) A Third Party installed points 5001W and 5011W according to the approved line plan. The points are clamped, spiked and detected through the Track circuit. The Bidder shall incorporate and align any Design and project plans accordingly.

2.4.3 Perway:

- a) A Third Party installed turnouts 5001W and 5011W according to the approved designs. The Bidder may re-use the turnouts, providing the complete offered solution is still compliant with all requirements and specifications stated throughout the RFP.
- b) ~~Replace double slips with crossover or replace double slips with new concrete layout if geometry does not allow.~~

2.4.4 Electrical:

- a) Convert the 6.6kV switching station into a new in-feed point.

2.5 Kenville

2.5.1 Signals:

- a) A Third Party installed points 7201W, 7231W, 7211W and 7221W according to the approved line plan. The points are clamped, spiked and detected through the Track circuit. The Bidder shall incorporate and align any Design and project plans accordingly.

2.5.2 Perway:

- a) A Third Party installed turnouts 7201W, 7231W, 7211W and 7221W according to the approved designs. The Bidder may re-use the turnouts, providing the complete offered solution is still compliant with all requirements and specifications stated throughout the RFP.