

Annexure 2.3:

Particular Technical Requirements

Avoca to Springfield

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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 Avoca to Springfield 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) Avoca to Springfield.
 - 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) 3 Crossing places.
 - b) 3 Halts.
 - c) 1 Substation.
 - d) 1 Global System for Mobile Communications – Railway (“GSM-R”) Sites.

1.3.3 Figure 1.3.1 below shows the section Avoca to Springfield:

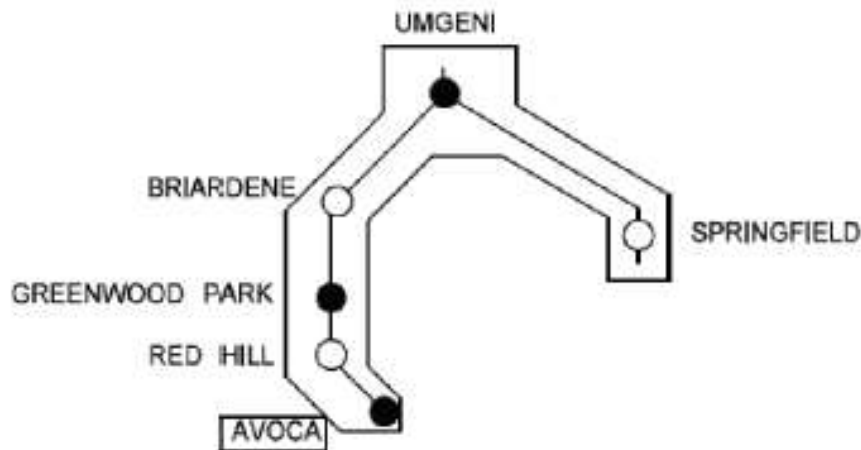


Figure 1.3.1: Avoca to Springfield

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

- a) Avoca.
- b) Greenwood Park.
- c) Umgeni.

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

- a) Red Hill.
- b) Briardene.
- c) Springfield.

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

- a) Springfield.

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

- a) Avoca.
- b) Greenwood Park.
- c) Umgeni.
- d) Red Hill_T.

1.3.8 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 Avoca to Springfield

2.1.1 Signals:

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

2.1.2 Electrical:

- a) Provide and/or update the 6.6kV line Design between Umgeni (Springfield) and Duff's Road via Greenwood Park.
- b) Complete new 6.6kV line according to updated Design.

2.2 Avoca

2.2.1 General:

- a) Provide a new fully functional platform.

2.2.2 Perway:

- a) Review and update the approved Track Design to ensure the clearances meets the standards. Refer to AVOCA Conceptual Design, drawing no PER_AVA_RNH_EN10_RA_0001
- b) Implement Perway work according to the updated Design.

2.2.3 Civils:

- a) ~~Review~~ Provide and/or update the ~~approved~~ designs for the new platform and for the extension of the existing platform to ensure it complies with all requirements and specifications provided throughout the RFP.
- b) Complete Construction of platforms according to the updated designs.
- c) Provide graded gravel road access to existing MER if it shall be used.

2.2.4 Electrical:

- a) Review the current platform facilities backup power Supply capacity and upgrade if required.

2.3 Umgeni

2.3.1 General:

- a) Provide a new fully functional platform.

2.3.2 Signals:

- a) Special attention should be given to the space constraints at Umgeni Bridge in terms of signal placements.

- b) A Third Party installed new points 9733W according to the approved Perway Design. The set is clamped, spiked and detected through the Track circuit. The Bidder shall incorporate and align any Design and project plans accordingly.

2.3.3 Civils:

- a) Review and update the approved designs for the new platform and for the extension of the existing platform to ensure it complies with all requirements and specifications provided throughout the RFP.
- b) Complete Construction of platforms according to the updated designs.
- c) There are signal apparatus cases in the way of the new platform and platform cannot be completed until apparatus cases are moved or decommissioned. Works should thus be planned accordingly.

2.4 Springfield

2.4.1 General:

- a) Provide a new fully functional platform as shown in Figure 2.4.1

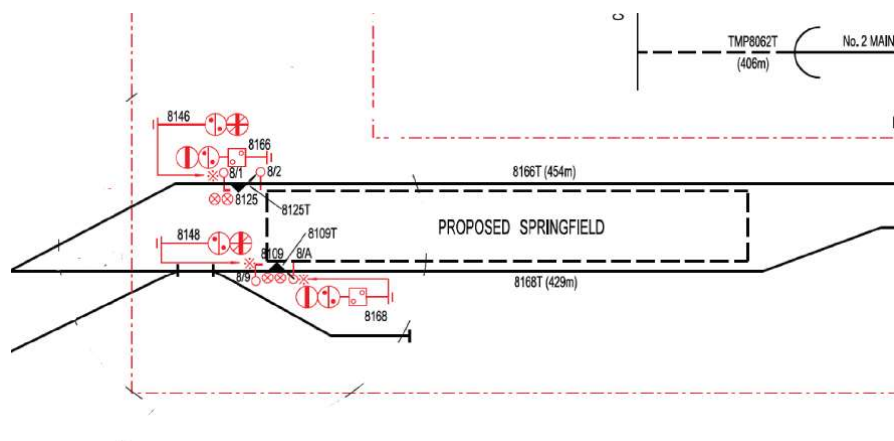


Figure 2.4.1: New Springfield platform

2.4.2 Electrical:

- a) Provide a new transformer bay for the 6.6kV line termination.