

Annexure 2.6:
Particular Technical Requirements
Isipingo to Kelso

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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 Isipingo to Kelso 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) Isipingo to Kelso.
 - 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) 12 Crossing places.
 - b) 6 Halts.
 - c) 2 Interfaces to the Transnet Freight Rail (“TFR”) Network.
 - d) 3 Substations.
 - e) 11 Global System for Mobile Communications – Railway (“GSM-R”) Sites.
 - f) 7 Level Crossings (“LX”).

1.3.3 Figure 1.3.1 below shows the section Isipingo to Kelso:

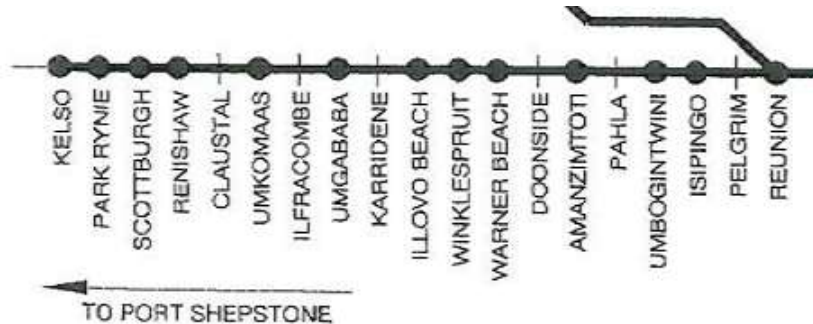


Figure 1.3.1: Reunion to Umlazi

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

- a) Isipingo.
- b) Umbogintwini.
- c) Amanzimtoti.
- d) Warner Beach.
- e) Winkelspruit.
- f) Illovo Beach.
- g) Umgababa.
- h) Umkomaas.
- i) Renishaw.
- j) Scottburgh.
- k) Park Rynie.
- l) Kelso.

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

- a) Pelgrim.
- b) Pahl.
- c) Doonside.
- d) Karridene.
- e) Ilfracombe.
- f) Claustal.

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

- a) Pennington.
- b) SDG289.

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

- a) Winkelspruit.
- b) Claustal.
- c) Kelso.

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

- a) Umbogintwini.
- b) Amanzimtoti.
- c) Winkelspruit.
- d) Illovo Beach.
- e) Umgababa.
- f) Renishaw.
- g) Park Rynie.
- h) Kelso.
- i) Pelgrim.
- j) Ilfracombe.
- k) Claustal.

1.3.9 The Site includes at least the following LXs:

- a) Umgababa.
- b) Park Rynie.
- c) Kelso (Rocky Bay)
- d) Kelso (Abrahams RD)
- e) Kelso (Happy Wanderers)
- f) Claustal
- g) Ilfracombe

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 Isipingo to Kelso

2.1.1 Signals:

- a) Implement 2.5-minute headways according to the requirements and specifications provided throughout the RFP. The 2.5-minute headways will only be applicable on the double line section of the line between Isipingo and Kelso.

2.1.2 Electrical:

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

2.2 Isipingo

2.2.1 Signals:

- a) A Third Party installed points 4923W and 4933W 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.

2.2.2 Perway:

- a) A Third Party installed turnouts 4923W and 4933W according to the approved Designs. The Bidder may re-use the turnouts, proving the complete offered solution is still compliant with requirements and specifications provided throughout the RFP.

2.2.3 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.

2.3 Umbogintwini

2.3.1 Perway:

- a) Disconnect the Loop 1 and siding from the main line.
- b) Remove turnout 8341W.
- c) Redesign layout to remove scissors or replace scissors with a new concrete layout if geometry does not allow.

2.4 Amanzimtoti

2.4.1 Perway:

- a) Disconnect the sidings from the loop.
- b) Remove derailleurs 311W and 721W.
- c) Provide drainage solution to address flooding of trackside Equipment.

2.5 Warner Beach

2.5.1 Signals:

- a) The Bidder shall not make use of the existing signal gantries and shall install new signal gantries at the appropriate positions as required by the Design.
- b) Decommission and remove all old signal gantries.

2.5.2 Perway:

- a) Rebuilt Track and formation on loop 2 (Washed away).
- b) Provide drainage solution to address flooding of trackside Equipment and wash-aways.

2.5.3 Civils:

- a) Existing MER building has significant drainage problems. The Bidder shall either Design a permanent solution to fix the drainage or construct a new building at a suitable location.

2.6 Winkelspruit

2.6.1 Perway:

- a) Remove turnout(s) to disconnect sidings from the loop.
- b) Remove derailer 413W and run-away 623W.

2.7 Illovo Beach

2.7.1 Perway:

- a) Remove turnout(s) to disconnect sidings from the loop.
- b) Remove derailleurs 311W and 721W.

2.7.2 Civils:

- a) Provide sand-containment structures to prevent sand fouling the Track.

2.8 Umgababa

2.8.1 General:

- a) Classify and upgrade the LX's at Umgababa and Ilfracombe.

2.8.2 Perway:

- a) Remove run-away 609W.

2.9 Umkomaas

2.9.1 Perway:

- a) Disconnect the sidings from loop 4.
- b) Remove derailleurs 337W, 607W and 723W.
- c) Disconnect the “Bridge line” dead-end from the main line.

2.10 Claustal

2.10.1 General:

- b) Classify and upgrade the LX.

2.10.2 Electrical:

- a) Provide for an additional unit of the same size with all the associated Equipment to convert the substation into a fully functional double unit traction substation.

2.11 Renishaw

2.11.1 Perway:

- a) Disconnect the sidings from the loop.
- b) Remove derailer 721W and run-away ~~334W~~.311W

2.11.2 Civils:

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

2.12 Scottburgh

2.12.1 Perway:

- a) Disconnect the sidings from the loop.
- b) Remove run-away 721W and derailer ~~334W~~.311W
- c) Provide a new fully functional platform

2.13 Park Rynie

2.13.1 General:

- a) Classify and upgrade the LX.
- b) .

2.13.2 Perway:

- a) Disconnect the sidings from the loop.
- b) Remove derailleurs 721W and ~~334W~~.311W

2.14 Kelso

2.14.1 General:

- a) Interface to the TFR Network at Pennington.
- b) Classify and upgrade the 3 LX's.

2.14.2 Perway:

- a) Disconnect the sidings from loop 2.
- b) Remove derailer 211W.

2.14.3 Electrical:

- a) Provide a new 6.6/11kV Supply point, which shall feed into the existing 6.6kV transmission line. The Bidder shall determine the capacities of this Supply point based on the Network requirement.
- b) Provide for an additional unit of the same size with all the associated Equipment to convert the substation into a fully functional double unit traction substation.