



OBSERVATORY	5.18
MOWBRAY	6.18
ROSEBANK	7.07
RONDEBOSCH	7.90
NUMELAND	9.32
CLAREMONT	10.16
HARFIELD ROAD	11.01
KENILWORTH	11.79
WYNBERG	12.88
WITTEBOME	13.93
PLUMSTEAD	14.83
STEURHOFF	15.59
DEPRIVIER	16.35
HEATHFIELD	17.04
RETRIAT	19.10
STEENBERG	20.97
LAKESIDE	22.28
VALSBAAI	23.96
MUZENBERG	24.78
ST. JAMES	26.19
KALKBAAI	27.28
CLOVELLY	28.60
VISHOEK	29.68
SUNNY COVE	30.79
GLENCAIRN	33.34
SMONGS TOWN	36.05
END OF LINE	36.15

METRORAIL WESTERN CAPE REGION (coloured lines)	
TOTAL LENGTH OF TRAJECTORY/SECTION FENCING (between stations)	295 km
NUMBER OF STATIONS	104

LEGEND
 To allocate codes to structures which span multiple tracks of different line codes, use the code of the line nearest to the left - most mast when facing increasing km. (Away from Cape Town)

CONTRACTOR'S LOGO	SCALE
DRAWN	DO. REF.
DATE	
CHECKED	
FILE	



CMR	100	1
A2	Amend.No.	Sheet

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



CONSTRUCTION METHOD STATEMENT FOR 2km FORMATION REHABILITATION

Document number	Method statement_ PRASA Rehabilitation of Central Line Corridor- Nyanga to Phillipi Station_No1_Rev_00
Version number	00
Compiled by	Lungelo Khumalo
Compiler's signature	
Checked by	Dimitri Vers
Checker's signature	
Approved by	Chrizelle Isaacs
Approver's signature	

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



Summary of Version Control

VERSION number	NATURE OF AMENDMENT	DOCUMENT NUMBER	PAGE NUMBER	DATE REVISED
00	Maintenance of existing track	Method statement_ PRASA Rehabilitation of Central Line Corridor- Nyanga to Phillipi Station_No1_Rev_00		

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



Table of Contents

PURPOSE OF METHOD STATEMENT	3
DESCRIPTION AND SCOPE OF WORK.....	4
REFERENCES	5
APPLICABLE DRAWINGS.....	5
PRE-CONSTRUCTION WORKS REQUIRED ACTIVITIES	6
• PERMITTS AND APPROVALS	6
• DESIGN AND SCOPE APPROVAL.....	6
• REQUIRED DOCUMENTS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS	6
TFR-RNC TEW, LABOUR & COMPETENCY REQUIREMENTS	7
PLANT & EQUIPMENT.....	9
PERWAY TOOLS AND EQUIPMENT	10
TRACK CONSTRUCTION METHOD AND SEQUENCE	11
Method of Track Construction.....	11

PURPOSE OF METHOD STATEMENT

Method statements are documents that detail exactly how to carry out the works safely. The purpose of method statements is to describe the safety precautions to put in place to control risks identified in the risk assessment. They detail the equipment to use during the projects, and the control equipment and PPE required to keep workers and site visitors safe while tasks are ongoing. Method statements are used to demonstrate that the

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



hazards and risks associated with a particular task or series of tasks have been properly considered and evaluated.

It shall be noted that every situation would require a new method statement. Generic method statements cannot be prepared, as every site/situation will differ to a larger or lesser extent.

Method statements shall address all of the major issues whilst avoiding irrelevant material, which is not applicable to the specific situation.

DESCRIPTION AND SCOPE OF WORK

- The length of the formation to be rehabilitated at Central Corridor-Nyanga to Khayelitsha Station is 2km on Line 1 & Line 2.

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



- The existing formation will be excavated to a depth of 900mm from natural ground level and the substandard material will be stockpiled for spoil.
- Construction of the layer works will be done as per the Transnet S410 Earthworks Manual and as per the technical drawing supplied by the TFR-RNC TEW to PRASA.
- Lay ballast bed 280mm thick.
- Construct 150m of skeleton track on top of the ballast bed for both Line 1 & Line 2.
- Offload ballast from AY wagons supplied by the TFR-RNC TEW.
- Box-in ballast and trim ballast by hand once the tamping machine has lifted the line.
- Exothermic welding and final grinding of welded joints.

REFERENCES

- Specifications and Scope supplied by Client for quotation and planning purposes.
- Occupational Health and Safety Act 85 of 1993.
- Constructions Regulations of 2014.
- Welding specifications-BBB8341 version 5.
- Track Maintenance Manual (2012).
- Specifications for Railway - Track Work E10.
- Transnet S410 Earthworks Manual.

APPLICABLE DRAWINGS

TFR-RNC TEW will provide PRASA with the relevant approved construction drawings and the specifications for the works mentioned above, after award of Contract.

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



PRE-CONSTRUCTION WORKS REQUIRED ACTIVITIES

PERMITTS AND APPROVALS

- Site Access Certificate to be issued by Client.
- The water usage certificate for construction works to be obtained by Client.
- Stakeholder engagement.
- Notice of Construction certificate from department of labour.

DESIGN AND SCOPE APPROVAL

- Consultant and Client to be incorporated in the Contract.

REQUIRED DOCUMENTS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS

The following works shall be completed prior to any construction activity:

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



- Site Safety inductions (DSTI).
- Certification of Staff, Plant and Equipment.
- Request free issue material.
- Schedule Program for construction.
- Method Statements.
- Bill of Quantity.
- Drawings and specifications.

TFR-RNC TEW, LABOUR & COMPETENCY REQUIREMENTS

Position	Required Competencies	Source/Comments
Engineering Manager × 1	Degree/Diploma, medicals	TFR-RNC TEW Permanent Employee
Site Agent x 1	CV and Competent letter, medicals	TFR-RNC TEW Permanent Employee
Safety officer x 1	CV and certificates, medicals	TFR-RNC TEW Permanent Employee
Site Supervisor's x 1	CV and certificates, medicals	TFR-RNC TEW Permanent Employee
Driver × 1	Driver's License, medicals	TFR-RNC TEW Permanent Employee

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



Driver × 1	Driver's License, medicals	FTC employees recruited in the area
SHE Rep/First Aider x 1	CV, medicals	FTC employees recruited in the area
Trackman × 1	CV, Safety Induction and Medicals	TFR-RNC TEW Permanent Employee
Track Welder × 2	CV, experience, induction and medicals	TFR-RNC TEW Permanent Employee
Perway Operator × 1	CV, experience, induction and medicals	FTC employees recruited in the area
General Workers × 150	CV, medicals	FTC employees recruited in the area
Flagmen x 3	CV, medicals	FTC employees recruited in the area

Recruitment Process

- Recruitment of Fixed Term Contract Worker (FTC) will be conducted as per the Transnet Policies and Procedures governing the process in close working relationship with the Client and Contract stipulations. Labour will be recruited in the close proximity of the Site.
- TFR-RNC TEW Labour Rates are determined by the Transnet Bargaining Council's Recognition Agreement with the Recognized Unions, and cannot be deviated from.

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



- Recruitment will have to start 6 to 8 weeks before any TFR-RNC TEW Establishment can take place because of the Processes TFR-RNC TEW has to comply.

PLANT & EQUIPMENT

Plant/ Material Item	Source (Supplier)	Details (including required certification)
23 Seater Troop Carriers x 2	TFR-RNC TEW Fleet Department	Safety file and Transnet Fleet specifications
38 Seater Troop Carriers x 1	TFR-RNC TEW Fleet Department	Safety file and Transnet Fleet specifications
LDV x 2	TFR-RNC TEW Fleet Department	Safety file and Transnet Fleet specifications
8 ton Truck with Hi-up x 1	TFR-RNC TEW Fleet Department	Safety file and Transnet Fleet specifications
8 ton Truck with mounted crane x 1	TFR-RNC TEW Fleet Department	Safety file and Transnet Fleet specifications
Excavator 20 ton x 2	TFR-RNC TEW Procurement	Safety file and Plant specification
Watercart tanker x 2	TFR-RNC TEW Procurement	Safety file and Plant specification
Tipper truck (10m ³) X 2	TFR-RNC TEW Procurement	Safety file and Plant specification
Roller (10T) x 2	TFR-RNC TEW Procurement	Safety file and Plant specification

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



Grader 140 x 2	TFR-RNC TEW Procurement	Safety file and Plant specification
TLB (4x4) x 2	TFR-RNC TEW Procurement	Safety file and Plant specification
FEL x 2	TFR-RNC TEW Procurement	Safety file and Plant specification

PERWAY TOOLS AND EQUIPMENT

DESCRIPTION	QUANTITY PER TRACK TEAM (1*TEAM WILL BE ESTABLISHED)
Disc Cutter	4
Electric Drill	0
Rail Drill/Hilti Drill	1
Coach Screw machine	1
De-stress Vortok Rollers (Set of 800)	0
Generator	1
Hydraulic Jim crow	1
HGR Lifting and Slewing Machine	0
Impact Wrench	2
Welding Machine 400 Amps	1
Rail Jack	20
Rail Track Gauge	2
Rail Trolley 4 Wheeler	1

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



Two Way Radios	5
Spreader beam (Lifting Beam)	3
Spot Lights	0
Oxygen Cylinders	2
Hand held Ballast Compactors	12
Hydraulic Rail Stripper	2
MP 12 on-track grinding machine	2
MC 2 on-track grinding machine	2
Petrol Air rail pre-heater	2
Firefighting Unit	1

TRACK CONSTRUCTION METHOD AND SEQUENCE

Method of Track Construction

TFR-RNC TEW will establish fully equipped Construction team with 150 labourers, 1 Site Supervisor, 2 Track welders, 3 Flagmen, 1 She Rep, 2 Drivers, 1 Trackman and 1 Site Agents for construction works.

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



Preparatory Works

- Establishment of plant.
- Clear & grub vegetation.
- Delivery of quarry material at designated stockpile areas (G2 & ballast).
- Mark where rail is to be cut.
- Site establishment (mainly access road)..
- Establishment of pegs by surveyor

Earthworks (Formation rehabilitation)

The following procedure shall be followed for earthwork portion of the project:

- Cut 150m track into Line 1 & Line 2.
- Remove rails, underneath sleepers & ballast.
- Place the cut rails in between rails of the adjacent line for re-use.
- Align the sleepers on the other side of adjacent line for re-use.
- Remove to spoil the ballast as it is fouled.
- The excavated material is to be spoiled and leveled in layers at low surfaces of the area along the line to improve hydrology of the area.
- Compact the in-situ layer to 90 % Mod-AASHTO and use a DCP equipment to determine CBR of In-situ material.
- Lay geotextile material (if available).
- Lay 150m × 10m × 250mm thick B-layer and compact to 93 % Mod-AASHTO (use Troxler machine to determine density achieved onsite).
- Lay 150m × 10m × 200mm A layer and compact to 95% Mod-AASHTO (use Troxler machine to determine density achieved onsite).
- Lay 150m × 10m × 200mm SB layer and compact to 98% Mod-AASHTO (use Troxler machine to

Document Number	TIMS-TFR-RNC TEW-TEW-NFS	RAIL NETWORK CONSTRUCTION
Revision Number	00	CONSTRUCTION METHOD STATEMENT



determine density achieved onsite).

- Lay 150m × 10m × 280mm of bedding ballast and compact it using a roller machine (use Troxler machine to determine density achieved onsite).

Perway (Building back track)

The following procedure shall be followed for Perway portion of the project:

- TFR-RNC TEW to Space the old sleepers (provided sleepers are still in good condition with respect to MICA) at 700 mm spacing.
- TFR-RNC TEW to Lay old rails on top of sleepers (provided rails are still in good condition with respect to MICA) and fasten using pandrols.
- TFR-RNC TEW to Align the track to minimum vertical and horizontal alignment requirements for safe passage of AY train.
- TFR-RNC TEW to Clamp the rail joints using G-clamps.
- TFR-RNC TEW to Offload top ballast using AY train.
- TFR-RNC TEW to use ballast regulator for boxing in ballast.
- TFR-RNC TEW to Tamp the line using tamping machine to A- standard of Manual for Track Maintenance (Rev:2012).
- TFR-RNC TEW to thermit weld the joints using 4 welding operators, which includes grinding of the rail to final level.