

Network Safeworking Rules and Procedures

Working around Electrical Infrastructure

Rule Number: 2017



Brookfield
Rail

Working around Electrical Infrastructure

Rule Number: 2017

Document Control Identification

Document title	Number	Version	Date
2017 – Working around Electrical Infrastructure		1.0	31 March 2016

Document History

Publication version	Effective date	Page(s) affected	Reasons for and extent of change(s)
2017 – Working around Electrical Infrastructure	4 May 2016		

Authorisation



Adam Sidebottom
Rail Safety Manager
Brookfield Rail
31 March 2016



DISTRIBUTION AND CHANGE: Brookfield Rail maintains the master for this document and publishes the current version of the Brookfield Rail website. Any changes to the content of this publication require the version number to be updated. Changes to this publication must be approved according to the procedure for developing Brookfield Rail products.

To view the latest version of this document visit www.brookfieldrail.com

Table of Contents

Glossary of this Rule	4
1. Purpose	5
2. General	5
2.1 Public Transport Authority’s (PTA) Electric Control Officer (ECO)	5
3. Electrical Infrastructure	5
4. Working Near Electrical Equipment	6
4.1 Working within the Brookfield Rail Network	6
4.2 Working within the PTA Electrified Area	6
4.2.1 Work above overhead line.....	6
4.2.2 Work tools and equipment	6
5. Underground Services	7
6. Faults in Electrical Infrastructure	7
7. Illustrations of Typical Overhead Structures within the PTA	8
8. Reference.....	11
9. Effective Date	11

Glossary of this Rule

<i>Brookfield Rail</i>	Brookfield Rail Pty. Ltd.
<i>Electric Control Officer (ECO)</i>	A Public Transport Authority (PTA) employee responsible for managing the PTA's Overhead Traction Wiring system and the authorising the removal and restoration of the overhead supply.
<i>Civil Infrastructure</i>	The track, track formation and drainage, and fixed structures beside, over or under the track. The term includes supports for overhead electric traction equipment and supports for signalling and telecommunications equipment, but not the equipment itself.
<i>Electrical Infrastructure</i>	may include: Equipment and systems for supplying and distributing electricity Wires, cables, electrical equipment, electrical switch rooms, signalling and substations.
<i>Emergency</i>	Incident requiring urgent action. The incident might involve death or serious injury, health or safety effects, significant damage to property or infrastructure.
<i>Infrastructure</i>	See civil infrastructure; electrical infrastructure; signalling infrastructure and telecommunications infrastructure.
<i>Location</i>	A place in the Network with a designated name, identification number, or signalling reference.
<i>Network</i>	A combination of track and other associated infrastructure controlled by Brookfield Rail.
<i>Network Controller</i>	A Competent Worker who authorises and issues Occupancy Authorities, and works points, signals and other signalling equipment to manage routes for safe and efficient transit of rail traffic in the Network.
<i>Rail Corridor</i>	The land on which a railway is built; comprising all property between property fences, or from the nearest rail in each direction for the distance defined under the Brookfield Rail lease.
<i>Signalling And Communications Infrastructure</i>	Signalling equipment and telecommunications equipment used as part of the safeworking and operating systems of the Network.

1. Purpose

The purpose of this Rule is to prescribe the rules for workers working around *Electrical Infrastructure* in the *Network*.

2. General



WARNING: Workers must keep themselves, tools, equipment and materials at a safe distance from exposed electrical equipment and wires.

There are *Locations* within the *Brookfield Rail Network* where the Public Transport Authority's Overhead Traction Wiring Equipment Network runs parallel and workers must be aware of this hazard and plan their work accordingly.

Workers in the vicinity of exposed electrical equipment and wires in the *Rail Corridor* must keep or be kept at safe distance and must treat all the following as live:

- electrical equipment.
- cables and fallen electrical wires.
- vehicles, equipment or objects in contact with overhead wires or fallen wires.
- water or fires in contact with *Electrical Infrastructure*.

2.1 Public Transport Authority's (PTA) Electric Control Officer (ECO)

The *ECO's* responsibilities, within the PTA, include:

- controlling power for the Traction Distribution System.
- determining safe distances for workers and equipment: and
- co-ordinating planned and *Emergency* de-energisation/isolation procedures.

3. Electrical Infrastructure

Electrical Infrastructure includes:

- high-voltage and low-voltage wires and cables, and electrical equipment on structures.
- overhead wiring and associated equipment.
- electrical conductors carried in above ground troughs or buried.
- low-voltage and high voltage electrical switchrooms.
- substations.

4. Working Near Electrical Equipment

4.1 Working within the Brookfield Rail Network

Workers undertaking works around or under overhead wiring must be vigilant. Machinery and equipment must not be allowed to make contact with the overhead structures or wiring. Observers must be used when using machinery in close proximity to the overhead structures and wiring.

Any contact or damage to the overhead structures and wiring must be immediately reported to the *Network Controller*.

Any contact or damage to the on-ground or below ground wiring must be immediately reported to the *Network Controller*.

The *Network Controller* must advise the Regional Signal Superintendent for the area immediately a report is received and, if necessary, apply Rule 2009 Reporting and Responding to a Condition Affecting the Network.



NOTE: Workers must take extra care when handling long objects near overhead equipment.

When carrying long pipes or long objects in the Electrified Area they should be carried horizontally at or below shoulder height by at least two people.

4.2 Working within the PTA Electrified Area

Unless authorised in accordance with the requirements specified in the Public Transport Authority's (PTA) Procedure 9030 Safety Instructions for the Electrified Area, workers must not climb on top of *Rail Traffic* in the electrified area.

4.2.1 Work above overhead line

Workers must not cause water or debris to fall onto overhead line equipment.

4.2.2 Work tools and equipment

Workers must not use metal or metal-reinforced ladders within the safe distance of overhead line equipment or associated equipment.

Steel tapes, metal-reinforced linen tapes and long steel rules may only be used in accordance with the PTA's Procedure 9030 Safety Instructions for the Electrified Area.

5. Underground Services

Workers must not dig, break the ground or drive anything into the ground before the whereabouts of buried services and underground cables are located.

6. Faults in Electrical Infrastructure



WARNING: Untrained workers must not try to extinguish fires near *Electrical Infrastructure* and signalling *Locations*.

Workers who see or suspect faults, fallen wires or fires in the *Electrical Infrastructure* must immediately tell the *Network Controller*.

The *Network Controller* must advise the Regional Signal Superintendent for the area immediately a report is received and, if necessary, apply Rule 2009 Reporting and Responding to a Condition Affecting the Network.

The *Network Controller* must tell the PTA's *ECO* if the report is for Overhead traction wiring equipment within the PTA Electrified Area.

7. Illustrations of Typical Overhead Structures within the PTA

If possible, refer to these diagrams to report faults, fallen overhead line equipment or fires in overhead line equipment.

Figure 2017-1 Typical Single Track Cantilever Arrangement in PTA Electrified Area.

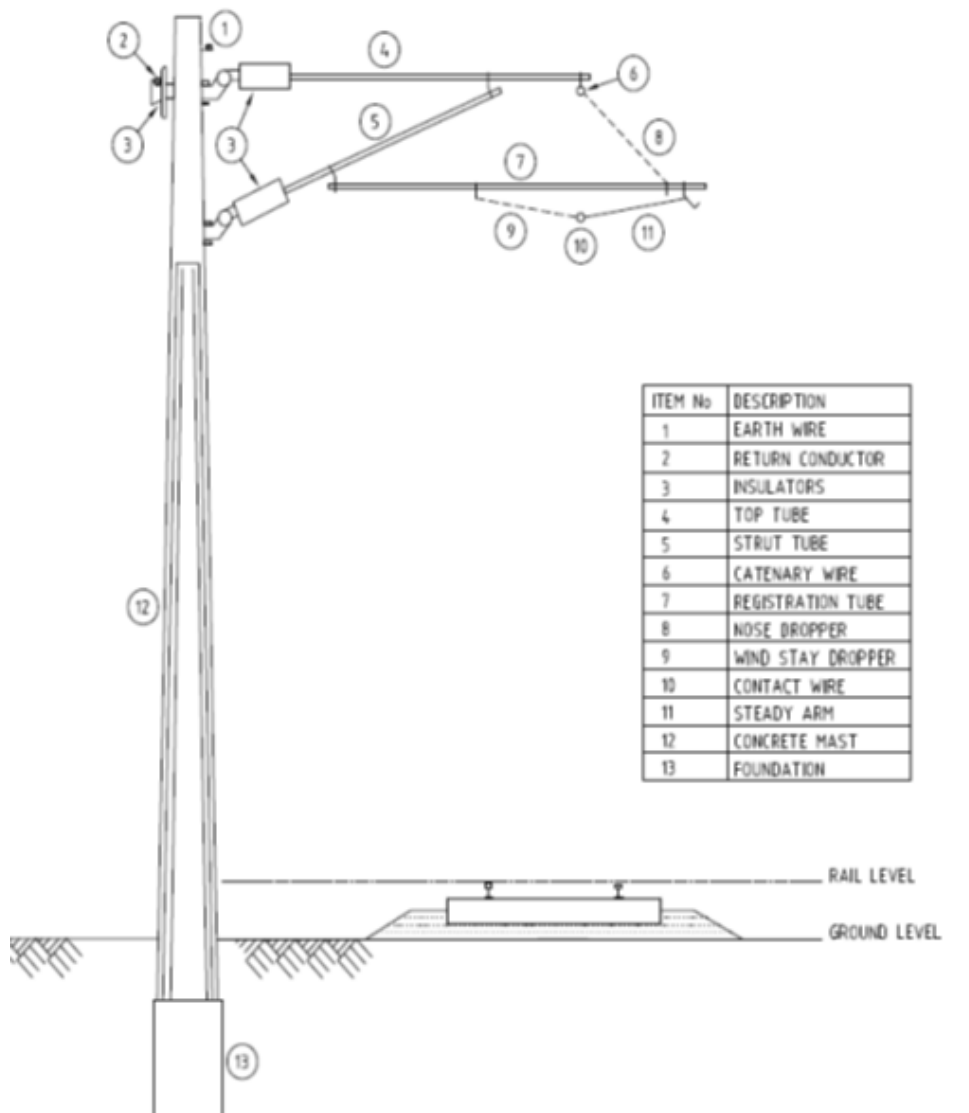
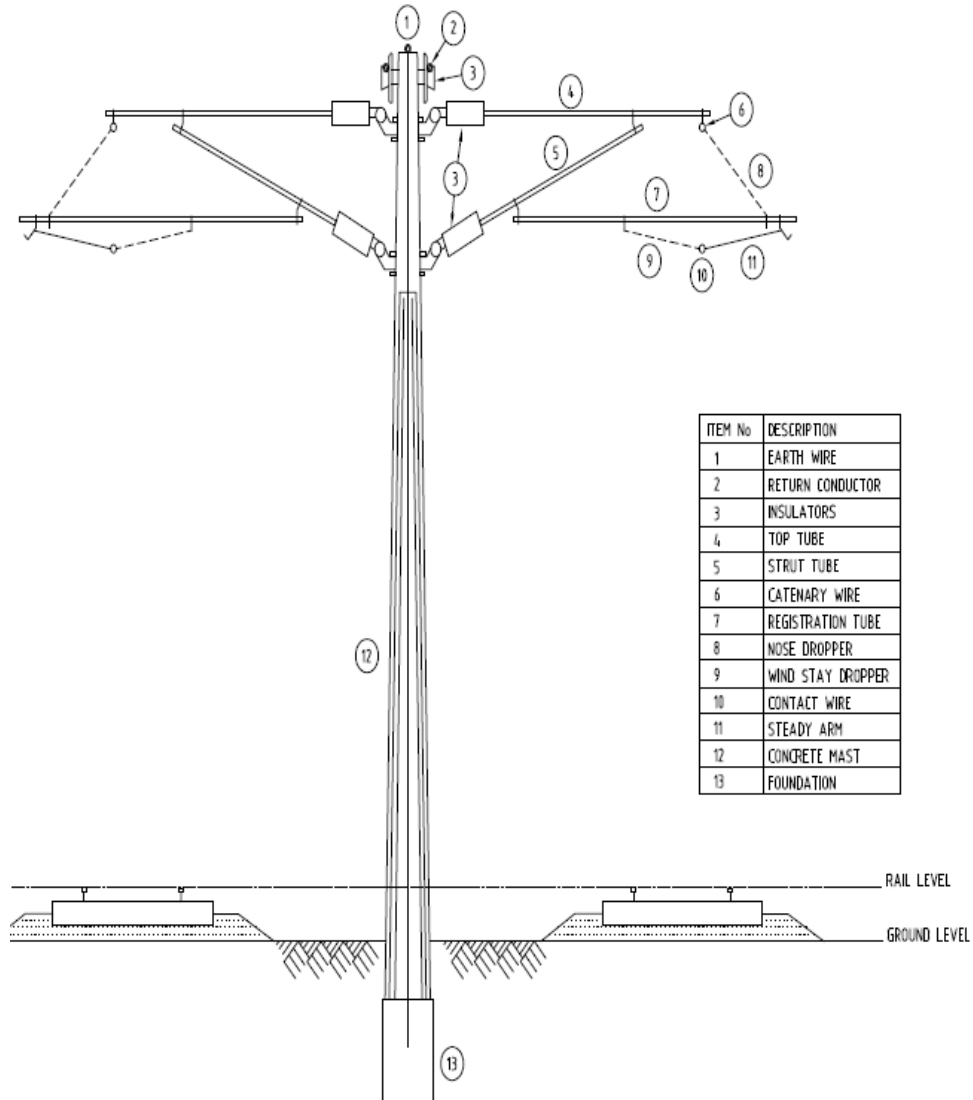


Figure 2017-2 Typical Back to Back Cantilever Arrangement in PTA Electrified Area.

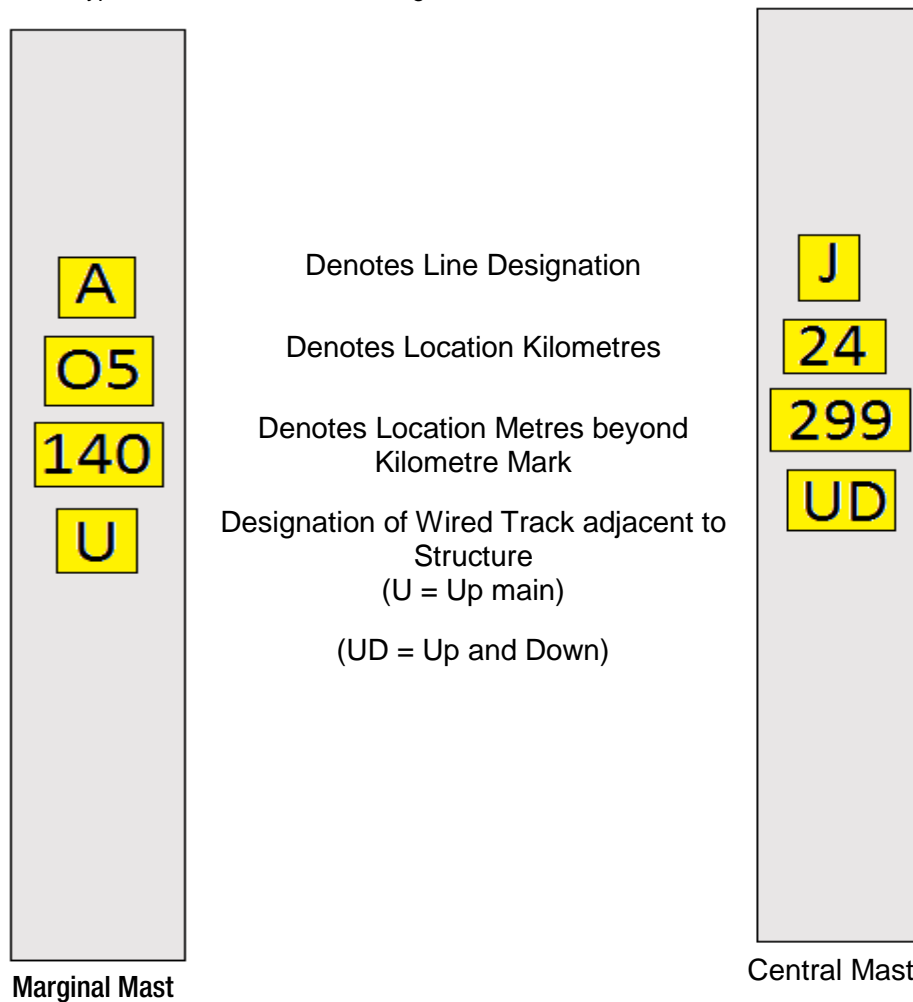


PTA Structure numbers are placed on every mast in line with a specific numbering format.

Figure 2017-3 Line names and directions .

Line Name		Direction/Location	
A	Armadale line	D	Down
F	Fremantle line	P	Platform
J	Joondalup line	S	Siding
M	Midland line	U	Up
R	Rockingham line	UD	Up/Down
T	Thornlie line		

Figure 2017-4 Typical PTA Structure numbering.



8. Reference

2009 Reporting and Responding to a Condition Affecting the Network

9030 Safety Instruction for the Electrified Area. (PTA document)

9. Effective Date

4 May 2016