

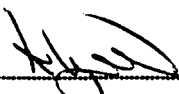
Ref	NR/GN/ELP/27309
Issue	3
Date	April 2006

Business Process Document

D.C. electric track equipment drawings index

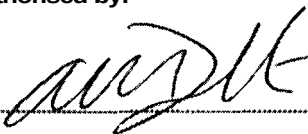
Endorsement & Authorisation

Endorsed by:



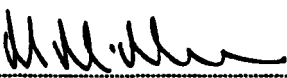
K. Lydford, Head of Electrification & Plant Engineering

Authorised by:



A. McNaughton, Chief Engineer

Accepted for issue by:

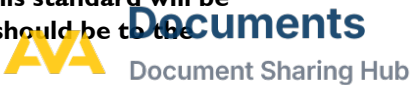


M. McManus, National Standards Manager

This document is the property of Network Rail. It shall not be reproduced in whole or part nor disclosed to a third party without the written permission of the Standard Owner.
© Copyright 2006 Network Rail
Uncontrolled copy once printed from its electronic source.
Published & Issued by: Network Rail 40 Melton Street, London NW1 2EE



This standard should only be used for reference to ensure 'The Control of Risk' until the compliance date of its replacement standard is reached, upon which this standard will be withdrawn. The development of all new processes and procedures should be to the replacement standard.



Ref:	NR/GN/ELP/27309
Issue:	3
Date:	April 2006

Issue record

Issue	Date	Comments
3	April 2006	Re-issued as a SAF3 Business Process Document (<i>formerly RT/ETE/INDEX</i>)

Disclaimer

In issuing this document for its stated purpose, Network Rail makes no warranties, express or implied, that compliance with all or any documents it issues is sufficient on its own to ensure safe systems of work or operation. Users are reminded of their own duties under health and safety legislation.

Supply

Copies of documents are available electronically, within Network Rail's organisation. Hard copies of this document will be available to Network Rail employees on request to the document controller and to other organisations from IHS Technical Indexes (01344 404409)

This standard should only be used for reference to ensure 'The Control of Risk' until the compliance date of its replacement standard is reached, upon which this standard will be withdrawn. The development of all new processes and procedures should be to the replacement standard.

Ref:	NR/GN/ELP/27309
Issue:	3
Date:	April 2006

Contents

I	Conductor rails	5
1.1	Cross section profiles	5
1.2	Ramps	5
1.3	Fish plates and attachment points	6
1.4	Welding and repairs	7
1/A	Archive	7
2	Insulator assemblies and fixings	8
2.1	Insulator arrangements	8
2.2	Anchor insulators	10
2.3	Insulator fixings and fittings	10
2/A	Archive	11
3	Cables, accessories and route materials	12
3.1	Cables	12
3.2	Bonds and running rail drilling	12
3.3	Cable lugs and connectors	13
3.4	Fixings and joint moulds	13
3.5	Troughing and ducting	13
3.6	High current railway requirements	14
3.A	Archive	14
4	Isolating switches	15
4.1	Hook switches and accessories	15
4.2	Track isolating switches	15
4.3	Multiple connectors	16
4.4	Switch identification	16
4.A	Archive	17

This standard should only be used for reference to ensure 'The Control of Risk' until the compliance date of its replacement standard is reached, upon which this standard will be withdrawn. The development of all new processes and procedures should be to the replacement standard.

Ref:	NR/GN/ELP/27309
Issue:	3
Date:	April 2006

5	ETE layout design	17
5.1	Conductor rail design and installation data	17
5.2	Conductor rail layout	18
5.3	Negative bonding layout	19
5.4	Negative bonding installation details	20
5.5	High current railway layout and installation details	21
5/A	Archive	21
6	Shed trolley wire systems	22
6.1	Bare wire system	22
6.2	Shrouded bar systems	22
6.3	Trolley droppers	22
6/A	Archive	22
7	Protective equipment	22
7.1	Guard boarding and shrouding	22
7.2	Arc shields	23
7.3	Conductor rail shields	23
7.4	Voltage indicators	23
7.5	Short circuiting devices	23
7.6	Protective/guard boarding	23
7/A	Archive	24

This standard should only be used for reference to ensure 'The Control of Risk' until the compliance date of its replacement standard is reached, upon which this standard will be withdrawn. The development of all new processes and procedures should be to the replacement standard.

Ref:	NR/GN/ELP/27309
Issue:	3
Date:	April 2006

Drawing Number	Title	Superseded drawings
I Conductor rails		
I.1 Cross section profiles		
RT/ETE/1/1/1	150 lb/yd Wide head & No. 75FB (75,17 Kg/m) Section Steel Conductor Rails	E/A3/C/1/1
RT/ETE/1/1/2	106 lb/yd (52/6kg/m), 100 lb/yd (49.6 kg/m) & 150 lb/yd (74.4 kg/m) Steel Conductor Rails. Section and Details	E/A3/C/1/2
RT/ETE/1/1/3	No 6 Section Brecknell Willis ASC Conductor Rail Cross Section High Conductivity	N/A
I.2 Ramps		
RT/ETE/1/2/1	Arrangement of Single Gradient Conductor Rail End Ramps Formed from Standard Steel Conductor Rail	E/A3/C/2/4
RT/ETE/1/2/2	Arrangement of single Gradient Steel conductor Rail End Ramp Prefabricated-Horizontal Base (Flood Ramp)	E/A3/C/2/5
RT/ETE/1/2/3	Arrangement of 74.8 kg/m (150 lb/yd) Steel Conductor Rail End Ramp Horizontal Base (Flood Ramp)	E/A3/C/2/6
RT/ETE/1/2/4	Arrangement and Details of Conductor Rail (Adjustable) Side Ramps for Steel conductor Rail	E/A3/C/2/9
RT/ETE/1/2/5	Location of Steel conductor rail Side Ramps	E/A3/C/2/10
RT/ETE/1/2/6	Brecknell Willis Section Preformed Low Speed Ramp Drilled to Accommodate 500 mm Sq. Aluminium Cable Connections ASC Conductor Rail	N/A

This standard should only be used for reference to ensure 'The Control of Risk' until the compliance date of its replacement standard is reached, upon which this standard will be withdrawn. The development of all new processes and procedures should be to the replacement standard.

Ref:	NR/GN/ELP/27309
Issue:	3
Date:	April 2006

Drawing Number	Title	Superseded drawings
RT/ETE/1/2/7	Brecknell Willis Section Preformed High Speed Ramp Drilled to Accommodate 1000 mm Sq	N/A
RT/ETE/1/2/8	Brecknell Willis Section Preformed Low Speed Ramp Drilled to Accommodate 1000 mm Sq. Aluminium Cable Connections ASC Conductor Rail	N/A
RT/ETE/1/2/9	Brecknell Willis Section Preformed High Speed Ramp Drilled to Accommodate 1000 mm Sq. Aluminium Cable Connections ASC Conductor Rail	N/A

1.3 Fish plates and attachment points

RT/ETE/1/3/1	Recommended Position of Cable Lugs & Hookswitches on Steel conductor Rails	E/A3/C/1/3
RT/ETE/1/3/2	Arrangement of Tapped Holes in Steel Conductor Rails for Fastenings 1000 mm Sq. Aluminium Cable Lugs	E/A3/C/1/5
RT/ETE/1/3/3	Arrangement for Terminating 1000 mm Sq. Aluminium Feeder Cable & Jumper Connections. Steel Conductor Rails	E/A3/C/1/6
RT/ETE/1/3/4	Arrangement of Holes in Steel Conductor Rail for Fastening Mark VII Hookswitch & Mark II Multijumper Attachment	E/A3/C/1/10
RT/ETE/1/3/5	Brecknell Willis No 6 Section Conductor Rail, Fishplate Joint Assembly	N/A
RT/ETE/1/3/8	Brecknell Willis Hookswitch Installation Parameters on ASC Conductor Rail	N/A
RT/ETE/1/3/9	Brecknell Willis Mk VII Hookswitch Installed Arrangement ASC Conductor Rail	N/A

This standard should only be used for reference to ensure 'The Control of Risk' until the compliance date of its replacement standard is reached, upon which this standard will be withdrawn. The development of all new processes and procedures should be to the replacement standard.

Ref:	NR/GN/ELP/27309
Issue:	3
Date:	April 2006

Drawing Number	Title	Superseded drawings
----------------	-------	---------------------

I.4 Welding and repairs

RT/ETE/1/4/1	Preparation of Steel 150 lb/yd Conductor Rail for on Site Welding of new Rail	E/A3/C/1/11
RT/ETE/1/4/2	Arrangement of Emergency Temporary Bonding of Defective Existing Steel Conductor Rail Joint Bonds with Jumper Cable	E/A3/C/1/15

I/A Archive

RT/ETE/1/A/1	Arrangement of Tapped Holes in Steel Conductor Rail for Fastening Brass Cable Lugs & Brass Angle Bracket	E/A3/C/1/4
RT/ETE/1/A/10	Alusingen ASC Conductor Rail Cross Section Detail High Conductivity Section	N/A
RT/ETE/1/A/11	Third Rail Standard Design Arrangement of Standard Expansion Gap Bond (L.M. Region Derby)	LZ/TRD/1.9
RT/ETE/1/A/12	General Arrangement of Conductor Rail Side Ramp	LZ/TRD/1.7
RT/ETE/1/A/13	Location of Conductor Rail Side Ramps for Vertical Planed Switches	LZ/TRD/56
RT/ETE/1/A/14	Adjusting Block for Side Ramp (L.M. Region Derby)	LZ/TRD/1.29
RT/ETE/1/A/2	Arrangement of Holes in Steel Conductor Rail for Fastening Mark IV Hookswitch & MkI Double Jumper Cable Attachment	E/A3/C/19
RT/ETE/1/A/3	Permanent Welded Repairs to Defective Steel Conductor Rail Fishplated Joint	E/A3/C/1/12
RT/ETE/1/A/4	Arrangement of Bonding 100 lb & (49.6 kg/m & 52.6 kg/m) Steel Conductor Rail Fishplated Joints	E/A3/C/1/13

This standard should only be used for reference to ensure 'The Control of Risk' until the compliance date of its replacement standard is reached, upon which this standard will be withdrawn. The development of all new processes and procedures should be to the replacement standard.

Ref:	NR/GN/ELP/27309
Issue:	3
Date:	April 2006

Drawing Number	Title	Superseded drawings
RT/ETE/1/A/5	Arrangement of Bonding 74 kg/m (150 lb) Steel Conductor Rail Fishplated Joints	E/A3/C/1/14
RT/ETE/1/A/6	Steel Conductor Rail Repair Joint with Welded 300 mm Fishplates	E/A3/C/1/16
RT/ETE/1/A/7	Arrangement of Preformed Conductor Rail End Ramps formed from Standard Steel Conductor Rail	E/A3/C/2/7
RT/ETE/1/A/8	Arrangement of Double Gradient Conductor Rail End Ramp Prefabricated Horizontal Base	E/A3/C/2/8
RT/ETE/1/A/9	Arrangement and Details of Conductor Rail (Adjustable) Side Ramps for Steel Conductor Rail	E/A3/C/2/9

2 Insulator assemblies and fixings

2.1 Insulator arrangements

RT/ETE/2/1/1	Arrangement of 150 lb/yd (74.4 kg/m) Steel Conductor Rail Supported on 'C' ('100') Type Insulators on Concrete Sleepers	E/A3/C/3/3
RT/ETE/2/1/10	Brecknell Willis Typical Arrangement Support Insulator and Support Assembly , Assembly ASC Conductor Rail	
RT/ETE/2/1/11	Brecknell Willis Ramp End Insulator ASC Conductor Rail	
RT/ETE/2/1/12	Brecknell Willis Malleable Cast Iron Base plate for Standard Support Insulator Concrete Sleeper, ASC Conductor Rail	
RT/ETE/2/1/13	Brecknell Willis Malleable Cast Iron Baseplate for Standard Support Insulator F10 Concrete Sleeper, ASC Conductor Rail	

This standard should only be used for reference to ensure 'The Control of Risk' until the compliance date of its replacement standard is reached, upon which this standard will be withdrawn. The development of all new processes and procedures should be to the replacement standard.