UGL REGIONAL LINX

TRANSIT SPACE

CRN-MAN-CVL-713026361-715

CRN CM 215

LINKING COMMUNITIES. CONNECTING CUSTOMERS.

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Document Control

Function	Position	Name	Date
Approver	A&E Manager	Lucio Favotto	24/01/2022

Revision	Issue Date	Revision Description
1.1		Baseline Document received from TfNSW
2.0	January 2022	UGLRL Template applied & First approved and issued UGLRL version
3.0	24/01/2022	Issued for publish to intranet and webpage.

Summary of changes made from previous version

Section	Summary of change
All	This document is based on the previous rail infrastructure maintainer (RIM). Full revision history is available on request from UGLRL. Updated Job titles

Chapter 1 General

C1-1 Purpose

This manual provides requirements, processes and guidelines for the management of transit space and the operation of 'out-of-gauge loads on Country Regional Network (CRN) infrastructure.

C1-2 Context

The manual is part of UGLRL CRN's engineering standards and procedures publications. More specifically, it is part of the Civil Engineering suite that comprises standards, installation and maintenance manuals and specifications.

Manuals contain requirements, process and guidelines for the management of track assets and for carrying out examination, construction, installation and maintenance activities.

The manual is written for the persons undertaking installation and maintenance activities.

It also contains management requirements for the District Engineer and Maintenance Superintendents needing to know what they are required to do to manage clearance issues on their area.

C1-3 How to read the manual

The best way to find information in the manual is to look at the Table of Contents starting on page 3. Ask yourself what job you are doing? The Table of Contents is written to reflect work activities.

When you read the information, you will not need to refer to CRN Engineering standards. Any requirements from standards have been included in the sections of the manual and shown like this:

The following requirements are extracted from CRN Engineering Standard CRN CS 215 "Transit Space"

Structure Gauge

All clearances between track and structures, and other tracks, shall meet the requirements of one of the following Structure Gauges:

- **Normal Structure Gauge 1994**
- **General Kinematic Structure Gauge**

Reference is however made to other manuals.

Throughout this manual reference is made to the following levels of Engineering Authority:

- Principal Track and Civil Engineer
- District Engineer
- Superintendent
- Supervisor

These are general descriptors only. For an explanation of the positions in the UGLRL CRN organisation that perform these functions, refer to CRN Engineering Manual CRN CM 001 "Civil Technical Competencies and Engineering Authority"

C1-4 References

C1-4.1 Australian and International Standards

Nil

C1-4.2 CRN Documents

CRN CS 100 – Civil Technical Maintenance Plan

CRN CS 215 – Transit Space

CRN CM 001 – Civil Technical Competencies and Engineering Authority

CRN CM 002 – Engineering Waivers

CRN CM 203 – Track Inspection

CRN RM 001 Train Operating Conditions Manual (TOC Manual)

Chapter 2 Management requirements

C2-1 General accountabilities

C2-1.1 Asset & Engineering Manager

The Asset & Engineering Manager is responsible for the development of a strategy which considers all the business and Infrastructure service requirements for each corridor in the CRN, including:

- Strategic loading requirements to suit business needs for each route.
- Setting limits of special and out-of-gauge loads and trains in accordance with conditions set and routes determined by the Principal Rolling Stock Engineer in accordance with the requirements of Chapter 4.

C2-1.2 Infrastructure Maintenance Manager

The Infrastructure Maintenance Manager is responsible for:

- Ensuring that new and existing track and structures comply with the approved transit space as determined by each corridor strategy.
- Managing any planned or unplanned infringement of transit space.

C2-1.3 Operators

Operators are responsible for:

- Compliance with the authorised rolling stock and loading outlines for the operation of trains in each corridor.
- Advising the Principal Rolling Stock Engineer of requests to infringe the approved transit space.

C2-1.4 Principal Track and Civil Engineer

The Principal Track and Civil Engineer is responsible for:

- Authorising infringements to CRN Engineering Standard CRN CS 215 “Transit Space”.
- Managing the audit of compliance to CRN CS 215.

C2-1.5 Principal Rolling Stock Engineer

The Principal Rolling Stock Engineer is responsible for:

- Ensuring that vehicle design configurations satisfy appropriate rolling stock and loading outlines.
- Ensuring that vehicle designs conform to the requirements for vehicle envelopes detailed in CRN CS 215.
- Managing the operation of special and out-of-gauge loads

C2-2 Maintenance of transit space

C2-2.1 District Engineer

The District Engineer is responsible for:

1. Management of the compliance of the track and structures in the CRN to the current approved structure gauge.
2. Ensuring that there are no alterations to existing clearance that would infringe the structure gauge, without a Transit Space Waiver approved by the Principal Track and Civil Engineer in accordance with the requirements of CRN Engineering Manual CRN CM 002 “Engineering Waivers”.

3. Ensuring that no permanent infringement of Structure Gauge 1994 occurs without specific approval of the Principal Track and Civil Engineer.
4. Ensuring the details of any location where structure gauge is infringed temporarily are maintained on a Temporary Transit Space Infringement Register
5. Ensuring that locations with Temporary Transit Space Infringements are monitored in accordance with the conditions established on the infringement approval, and that records are maintained of the inspections until the infringements have been corrected.

C2-2.2 Principal Track and Civil Engineer

The Principal Track and Civil Engineer is responsible for:

- Review and approval of any application for loads to exceed the Rolling Stock Outline dimensions for NZZA wagons or Out of Gauge Loads or to infringe the Structure Gauge 1994 outline.

C2-2.3 Principal Rolling Stock Engineer

The Principal Rolling Stock Engineer is responsible for:

1. Ensuring that no infringement outside the Rolling Stock Outline dimensions for NZZA wagons or Out of Gauge Loads is permitted to travel.
2. Determining clearance limits for out-of-gauge loads from the information supplied by the District Engineer and for collating details of restrictions on each route.
3. Determining the routes and the conditions under which the special and out-of-gauge loads can run.
4. Managing the operation of special and out-of-gauge loads.

C2-3 Management of track centre clearances in yards

At locations within yard limits where track centres are less than 4000 mm, either between CRN tracks or between a CRN track and an adjacent track a "Narrow Track Centres" sign shall be exhibited.

The number and location of signs within a yard is to be determined during a joint risk assessment with the operator/s. The minimum requirement is 2 signs, one at each end.

The District Engineer shall:

- Determine the locations where signs may be required in accordance with CRN CS 215
- Manage the risk assessment in conjunction with the operator/s
- Document the results of risk assessments
- Arrange for documentation of the location of signs in the applicable track layout diagrams

C2-4 Management of Infringements

The Principal Track and Civil Engineer shall:

- Manage the Register of Transit Space Waivers (CCWs)

The District Engineer shall:

- Review inspection and maintenance systems where safety clearance has been reduced below 200mm but is more than 100mm
- Approve temporary infringements

Chapter 3 Transit space infringements

C3-1 Application of transit space standards

The following requirements are extracted from CRN CRN CS 215

Structure Gauge

All clearances between track and structures, and other tracks, shall meet the requirements of one of the following Structure Gauges:

- **Normal Structure Gauge 1994**
- **General Kinematic Structure Gauge**

In ALL circumstances where these requirements cannot be met, design approval of the Principal Track and Civil Engineer is required. Approval shall be granted by the issuing of a Transit Space Waiver in accordance with the requirements of Section 7.4. (Chapter 3 of this manual)

Infrastructure Service requirements

The Principal Track and Civil Engineer shall specify minimum service requirements for the situations listed in Section 6 based on long term corridor strategies. The Minimum Service Requirements shall not infringe the General Kinematic Structure Gauge.

In the absence of any specific requirements, the default minimum dimensions listed in Section 6 shall be adopted.

Any new work or major reconstruction that results in a structure infringing the Minimum Service Requirements, but complying with the General Kinematic Structure Gauge requires the approval of the District Engineer.

Any existing location or structure, or minor work of a non-permanent nature carried out on or near an existing location or structure, which infringes the Minimum Service Requirements, but complies with the General Kinematic Structure Gauge, requires no authorisation.

Passenger platforms

Platforms are a critical interface with track. By definition they infringe structure gauge. Design of transit space aspects of platforms shall be in accordance with the requirements of Section 12.

Design physical interfaces

Approved trackside structures and items of equipment, such as rail lubricator actuators, automatic wagon door openers, buffer stops, check rails, etc., are essential for system operation and require a physical interface between rolling stock and infrastructure. These items are permitted to be within the structure gauge. Approved items are detailed in Section 12.

Any item of equipment that is required to physically interface with rolling stock, other than those detailed in Section 12, requires the approval of the Principal Track and Civil Engineer.

C3-2 Classification of infringement

C3-2.1 Design Infringements

When existing track or structures are proposed for renewal or major upgrading and for new structures, the design clearances need to meet the requirements of CRN CS 215.

In circumstances where the requirements of General Kinematic Structure Gauge cannot be met, reduced clearances may be approved by the Principal Track and Civil Engineer in accordance with CRN CM 002.

Prior to approval, evidence of the inability to comply will need to be submitted to the Principal Track and Civil Engineer together with appropriate technical and financial supportive documentation. Where approval is given a Transit Space Waiver (CCW) will be issued specifying any special conditions.

C3-2.2 Field infringements

A field infringement may occur when a track is relocated or the geometry altered from its design position.

Infringements identified by the Track Examination System are to be managed in accordance with CRN Engineering Manual CRN CM 203 “Track Inspection”.

Where a field infringement is required to remain, approval may be obtained from the Principal Track and Civil Engineer in accordance with CRN CM 002.

Prior to approval, evidence of the inability to comply will need to be submitted to the Principal Track and Civil Engineer together with appropriate technical and financial supportive documentation. Where approval is given a Transit Space Waiver (CCW) will be issued specifying any special conditions.

C3-3 Severity of infringement

C3-3.1 Infringement of minimum service requirements

Any new work or major reconstruction that results in a structure infringing the Minimum Service Requirements, but complying with the General Kinematic Structure Gauge requires the approval of the Infrastructure Maintenance Manager.

Where any existing location or structure, or minor work of a non-permanent nature carried out on or near an existing location or structure, infringes the Minimum Service Requirements, but complies with the General Kinematic Structure Gauge requires no authorisation.

C3-3.2 Infringement of general kinematic structure gauge

In circumstances where the requirements of General Kinematic Structure Gauge cannot be met, design approval of the Principal Track and Civil Engineer is required. Approval shall be granted by the issuing of a Transit Space Waiver in accordance with the requirements of CRN CM 002.

C3-4 Approval of infringements

Not all infringements of transit space require approval from the Principal Track and Civil Engineer.

Table 1 summarises the various categories of infringement and lists the approval requirements.

Duration	Inside of	Outside of	Infringement Type	Approving Authority
Permanent	Structure Gauge	200mm from Kinematic	Service Corridor Infringement	Infrastructure Maintenance /Manager
	200mm from Kinematic	100mm from Kinematic	Operational Infringement	Principal Track and Civil Engineer
	100mm from Kinematic	Kinematic	Base Operating Infringement	Principal Track and Civil Engineer
Temporary	Structure Gauge	200mm from Kinematic	Service Corridor Infringement	Not Required
	200mm from Kinematic	100mm from Kinematic	Operational Infringement	District Engineer
	100mm from Kinematic	Kinematic	Base Operating Infringement	District Engineer

C3-4.1 Permanent reductions

Permanent reductions in clearances are considered a design change and shall be approved in accordance with the requirements of CRN CS 215.

The following requirements are extracted from CRN CS 215

Transit Space Waivers

General

Any location or track section failing to comply with the General Kinematic Structure Gauge must have a waiver approved by the Principal Track and Civil Engineer.

The kinematic structure gauge requirements of the waiver shall be developed from the rolling stock outline and incorporates site specific track and rolling stock tolerances and a reduced safety clearance margin. It does not include infrastructure service requirements.

The approval by the Principal Track and Civil Engineer may impose special conditions on the waiver, which may include any or all of the following:

- **Tighter maintenance limits**
- **Increased inspection intervals**
- **Limited duration**
- **Restricted speed**

Register the application of the waiver in accordance with the requirements of Section 7.4.2.

A record of the approval and resulting conditions (if any), shall be maintained by the District Engineer.

Transit Space Waiver Register

Application for a Transit Space Waiver must be made to the Principal Track and Civil Engineer, and must provide the details described in Table 2:

Data	Description	Required
Asset	Track Asset as recorded in CRN database, on double lines record both track assets affected	Mandatory.
Kilometre Start	Kilometrage of the start location of the track section, or the kilometrage of the discrete location	Mandatory
Kilometre End	Kilometrage of the end location of the track section	Mandatory for track sections
MGA Coordinates of Start	Easting and Northing coordinates of the start location of the track section or the coordinates of the discrete location	Where available
MGA Coordinates of End	Easting and Northing coordinates of the end location of the track section	Where available
Structure geometry	Horizontal and vertical dimensions of structure from design track centreline	Where appropriate
Track Geometry	Horizontal geometry (i.e. radius, superelevation, location of frame points), track centres, vertical geometry, relative track levels.	Where appropriate
Track Structure	Sleeper type, rail size.	Where appropriate
Operations Description	Rolling stock Outlines, track speed	Where appropriate
Duration for which conditions will apply		Mandatory
Authorised Structure Gauge	The Structure Gauge which is being infringed	Mandatory
Infringement	Magnitude of infringement to Authorised Structure Gauge in mm.	Mandatory

Table 2 - Register of application of Conditional Kinematic Structure Gauge

C3-4.2 Temporary reductions

The District Engineer may approve a reduction in clearance down to 100mm from the kinematic outline without restricting operating conditions. The following conditions apply:

- The reduction is temporary
- Approval does not apply at platforms
- Inspection and maintenance systems should be reviewed and modified where considered necessary by the District Engineer or an authorised representative.

To determine the safety margin at a structure or between adjacent trains, the kinematic envelope as set out in CRN CS 215 shall be derived.

The District Engineer must apply operating restrictions in accordance with CRN CM 203 if any temporary infringement reduces the safety clearance margin below 100mm.

Management of temporary infringements shall include:

1. Action plans to correct the infringement
2. Development of site specific maintenance procedures
3. Operating restrictions as necessary
4. Consultation with the Principal Track and Civil Engineer as necessary
5. Recording of the infringement in the Temporary Transit Space Infringement Register (See Appendix 2).

Chapter 4 Transit space for special loads

This chapter details the requirements for the safe transit of Special and Out-of-Gauge Loads with particular reference to track and structure clearances.

These procedures cover exclusively the safe transit of out-of-gauge loads. They do not in any way supersede the responsibility of the District Engineer to maintain clearances and to provide for the safe running of normal traffic.

The purpose of this procedure is to initiate communication at times, and for locations, where structure clearances cannot be maintained within the specified tolerances for any reason. In particular, platform heights are identified as critical to the operation of special and out-of-gauge loads.

The Maximum Load Diagrams for special loads is shown as the Rolling Stock Outline dimensions for NZZA wagons and Out of Gauge Loads in CRN CS 215.

The authorisation of various vehicle loads and speeds is published in CRN Engineering Manual CRN RM 001 “TOC Manual”, or in TOC Waivers.

C4-1 General

The regular measurement and recording of track centres and clearance to structures is part of the Civil Technical Maintenance Plan in CRN Engineering Standard CRN CS 100, and the detailed procedures in CRN CM 203. The inspections will highlight and provide details of all locations where the structure gauge is infringed.

The District Engineer shall regularly monitor and fully document all locations where special and out-of-gauge loads will infringe existing structures and provide details to the Principal Track and Civil Engineer. Any intended variation, or variations from previous monitoring, should also be nominated.

The Principal Track and Civil Engineer maintains a register of Transit Space Waivers for infringement of the Kinematic Structure Gauge outline, including infringements of the Out-of-Gauge Loading outline on lines where it is permitted to operate.

When a Special or Out-of-Gauge Load is proposed, the Principal Rolling Stock Engineer, in conjunction with the Principal Track and Civil Engineer, will liaise with the District Engineer to establish the location of critical infringements.

This includes infringements in the Transit Space Waiver Register maintained by the Principal Track and Civil Engineer, and the Temporary Transit Space Infringement Register maintained by the District Engineer. It may also include infringements that are not yet registered.

Based on the above information, the Principal Rolling Stock Engineer will in conjunction with the Principal Track and Civil Engineer, establish the viability of the operation. If required, the Principal Rolling Stock Engineer will liaise directly with the District Engineer to arrange any special corrective measures required for the safe transit of these loads.

Operators will liaise directly with the Principal Rolling Stock Engineer to determine whether particular trains can run, and arrange for the issue of TOC Waivers for the operation of these trains.

Special and Out-of-Gauge Loads may only operate by the issue of a TOC Waiver, irrespective of any authority issued in CRN RM 001.

C4-2 Platform Clearances

For the running of special and out-of-gauge loads, the platform height needs to be maintained within tolerance, particularly on curves. Lateral clearances to platforms are at an absolute minimum for passenger services when vehicle allowances of 2° roll and 75mm bogie displacement are included.

The standards for platform clearances are detailed in CRN CS 215. ANY reduction in these clearances is to be treated as a potential infringement and reported accordingly.

Chapter 5 Corridor Strategies

C5-1 Strategy

The strategy for each line section/corridor is 'driven' by the prime user of that section of corridor. The prime user, however, is responsible for seeking a strategy that considers all the business and infrastructure service requirements and safety needs for that corridor.

The current operating outlines are detailed in CRN CS 215 Appendix 1 and is repeated for convenience as Appendix 1 of this manual.

C5-2 Review requirements

The corridor 'owner', in developing alternative strategies to those shown in Appendix 1, must review the impact of any proposal on:

- Other corridor users
- Existing infrastructure
- Current standards

and be in a position to adequately resource required changes.

The following questions need to be addressed during the development process:

- What is the current structure gauge?
- What changes are proposed to rolling stock and/or loading outlines?
- What business advantage is there in changing rolling stock and or loading outlines?
- What is the cost of altering infrastructure to allow changed rolling stock and or loading outlines?
- Is it possible to alter infrastructure?
- Are future rolling stock/loading outline changes confined to specified corridors or parts thereof?
- What is the level of infringement of current structure gauge? (Should rolling stock and loading outlines be reduced for the corridor or line section?)

The corridor 'owner' must notify users of required changes to the corridor strategies.

Chapter 6 Commentary

C6-1 General

This chapter explains the assumptions made in creating the Transit Space Standard CRN CS 215.

A prime component of CRN CS 215 is the Structure Gauge 1994, a gauge that supersedes all previous Structure Gauges including 1937, 1957 and 1987. Unlike these early documents Structure Gauge 1994 reflects the need for business, infrastructure service, and safety strategies to drive the clearance requirements for each corridor.

A strategy has been established for each corridor and has selected Rolling Stock Outlines, Loading Outlines and Structure Gauge clearances to suit.

C6-2 Evolution of structure gauges

Whilst the origins are uncertain, the 1957 and preceding structure gauges were based on a 450mm (1'6") lateral clearance between the train and a fixed structure and 450mm between passing trains, i.e. for wide electric rolling stock this requires 2060mm (6'9") centre line of track to structure and also represents 3660mm (12'0") track centres.

The introduction of the 1987 Structure Gauge series TS 3800, saw an increase in the minimum lateral clearance requirement from 2060mm (6'9") to 2135mm (7'0") (to comply with ROA Commissioners' requirements) as well as the introduction of infrastructure clearance requirements, mainly to provide access for maintenance activities. The track centres in the 1987 document were also increased to 4000mm to minimise the use of widening transitions.

C6-3 Background to 1994 structure gauge

The abovementioned superseded Structure Gauges were reviewed and incorporated into Structure Gauge 1994 issued in the C 2100 series (C2104) in 1995 by analytically validating lateral and vertical clearances based on a safety margin, rolling stock kinematics and track and vehicle tolerances.

C6-3.1 Lateral Clearances

A safety margin of 200mm laterally was adopted, resulting in the new minimum rounded-up lateral clearance requirement again reflecting the 1957 Structure Gauge dimension of 2060mm from centre line of track to structure.

The adopted 200mm safety margin coupled with the kinematic envelope resembles closely the original static clearances of earlier standards. This experience has demonstrated an acceptable level of risk.

The lateral service dimension requirements for 1987 Structure Gauge i.e. those clearances varying from 3000mm to 6200mm for main line and from 2500mm to 3700mm for sidings, remain unaltered except that these clearances will apply under the provision of the Infrastructure Service requirements.

C6-3.2 Vertical Clearances

Vertical clearances have been similarly analytically processed, a significant aspect being that for non-electric corridors applying on the CRN the 4880mm design clearance from graded rail level shown in the 1987 Structure Gauge was reduced to 4520mm. A vertical service dimension requirement of 150mm track lift maintenance allowance also applies under the provisions of C 2102 and this has been included in the vertical clearance dimensions detailed in Section 7 of CRN CS 215.

C6-3.3 Track Centres

The 1957 Structure Gauge specified 3660mm (12'0□) track centres and whilst this has historically provided for incident free train passing, the kinematic tolerances on each track (approximately

240mm) account for the full 450mm clear space with no safety margin. The 4000mm track centres specified in the 1987 Structure Gauge provide tolerances for both tracks plus a safety margin. In adopting this, special consideration may need to be given for small radius curves for transitions and for larger superelevation variations between adjacent tracks. All track centres less than 4000mm are non-conforming and need to be managed.

Appendix 1 Authorised rolling stock outlines

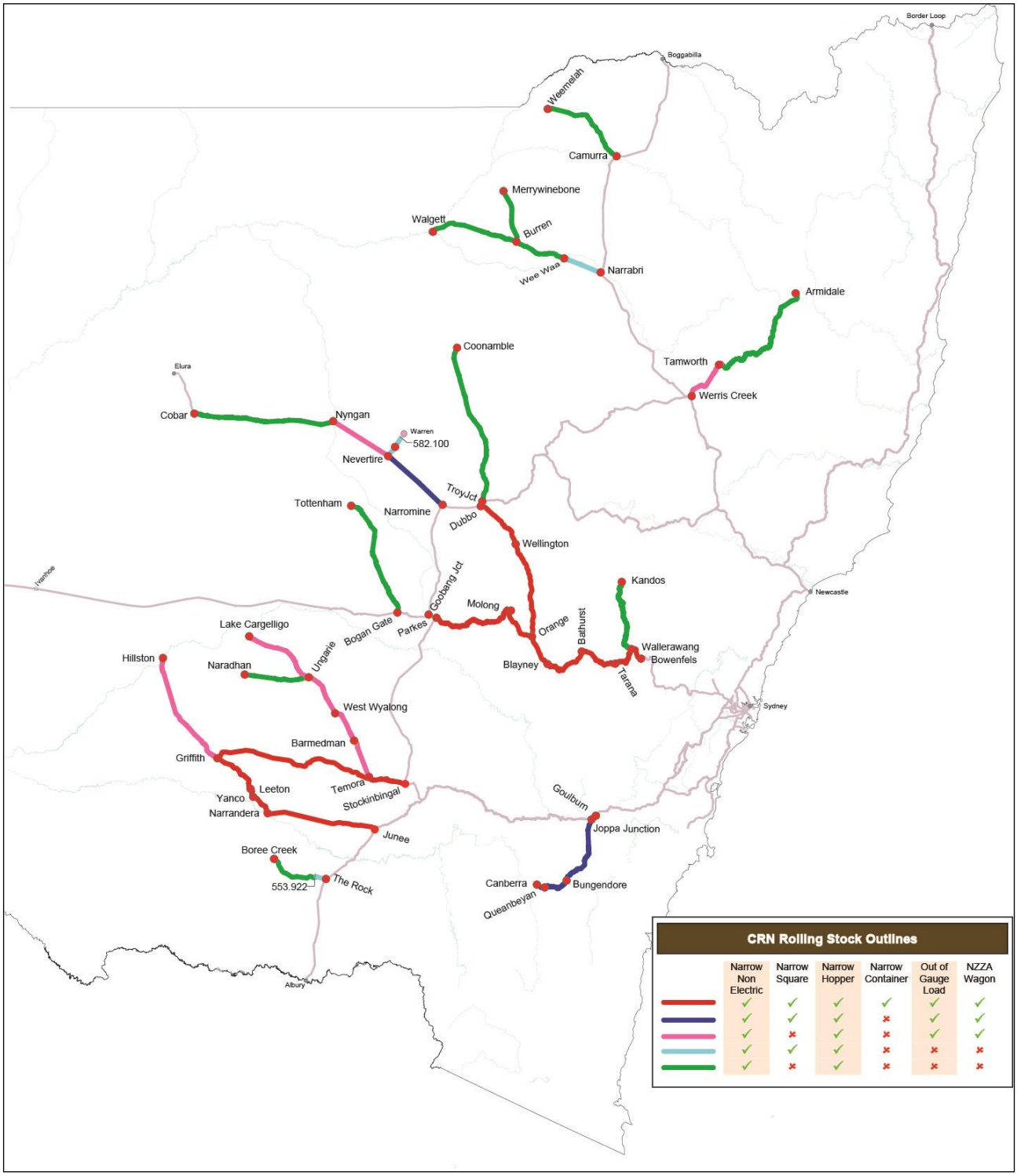

Table 3 - Authorised rolling stock outlines on track sections

Legend			
Y	The Outline is **authorised** to operate, and shall be c**onsidered** when designing or maintaining the Infrastructure.	N	The Outline is **not authorised**, and **does not need to be considered** when designing or maintaining the Infrastructure.
S	The Outline is authorised for **single** line working only. It **does not need to be considered** when designing or maintaining track centres but it shall be c**onsidered** when designing or maintaining all other Infrastructure.		

Base Code	Track Name	From			To			Map Code	Narrow Non-Electric	Narrow Square	Narrow Container	Intersystem	Narrow Hopper	Out of Gauge Load	NZZA Wagon
		km	Track Location	Location Description	km	Track Location	Location Description								
North															
10003	Main North, Single Line	411.201	Werris Creek	CRN boundary	452.700	West Tamworth	Frame C		Y	N	N	N	Y	S	S
10003	Main North, Single Line	452.700	West Tamworth	Frame C	679.300	Armidale	Stop Block		Y	N	N	N	Y	N	N
10021	Narrabri Junction to Walgett, Single Line	564.799	Narrabri South	CRN boundary	600.200	Wee Waa	Frame B		Y	Y	N	N	Y	N	N
10021	Narrabri Junction to Walgett, Single Line	600.200	Wee Waa	Frame B	736.480	Walgett	Dead end		Y	N	N	N	Y	N	N
10018	Werris Creek to Mungindi, Single Line	679.040	Camurra West	CRN boundary	762,836	Weemelah	Stop Block		Y	N	N	N	Y	N	N
10023	Burren Junction to Merrywinebone, Single line	648.500	Burren Junction	Frame C	701.012	Merrywinebone	Stop Block		Y	N	N	N	Y	N	N
South															
10065	Joppa Junction to Bombala, Single Line	230.612	Joppa Junction	CRN boundary	321.662	Queanbeyan	2F Points		Y	Y	N	N	Y	S	S
10067	Queanbeyan to Canberra, Single Line	321.662	Queanbeyan	2F Points	29.614	Canberra	Dead end		Y	Y	N	N	Y	S	S
10071	Cootamundra to Lake Cargelligo, Single Line	454.906	Stockinbingal	CRN boundary	489.550	Temora	2G Points		Y	Y	Y	N	Y	S	S
10077	Temora to Griffith and Roto, Single Line	489.550	Temora	12 Points to Griffith	640.684	Griffith	Frame G		Y	Y	Y	N	Y	S	S
10074	Junee to Hay, Single Line	486.021	Junee	CRN Boundary	606.872	Yanco	Frame G		Y	Y	Y	N	Y	S	S
10076	Yanco to Griffith, Single Line	606.070	Yanco	G Points	660.426	Griffith	Frame D		Y	Y	Y	N	Y	S	S
10077	Temora to Griffith and Roto, Single Line	640.684	Griffith	Frame G	748.500	Hillston	Stop Block		Y	N	N	N	Y	S	S
10071	Cootamundra to Lake Cargelligo, Single Line	489.550	Temora	2G Points	669.191	Lake Cargelligo	Dead end		Y	N	N	N	Y	S	S
10042	Ungarie to Naradhan, Single Line	597.803	Ungarie	Frame C	658.272	Naradhan	Dead End		Y	N	N	N	Y	N	N
10061	The Rock to Oaklands, Single Line	551.075	The Rock	CRN boundary	553.922	The Rock ABA	Shunt limit board		Y	Y	N	N	Y	N	N
10061	The Rock to Oaklands, Single Line	553.922	The Rock ABA	Shunt limit board	607.763	Boree Creek	Stop Block		Y	N	N	N	Y	N	N
West															
10177	Main West, Down	155.800	Bowenfels	CRN Boundary	171.420	Wallerawang	54B Points		Y	Y	Y	N	Y	S	S

Table 3 - Authorised rolling stock outlines on track sections

Legend			
Y	The Outline is **authorised** to operate, and shall be c**onsidered** when designing or maintaining the Infrastructure.	N	The Outline is **not authorised**, and **does not need to be considered** when designing or maintaining the Infrastructure.
S	The Outline is authorised for **single** line working only. It **does not need to be considered** when designing or maintaining track centres but it shall be c**onsidered** when designing or maintaining all other Infrastructure.		

Base Code	Track Name	From			To			Map Code	Narrow Non-Electric	Narrow Square	Narrow Container	Intersystem	Narrow Hopper	Out of Gauge Load	NZZA Wagon
		km	Track Location	Location Description	km	Track Location	Location Description								
10178	Main West, Up	155.800	Bowenfels	CRN Boundary	171.420	Wallerawang	54B Points		Y	Y	Y	N	Y	S	S
10179	Main West, Single Line	171.420	Wallerawang	54B Points	198.350	Tarana	57 Points		Y	Y	Y	N	Y	S	S
10180	Main West, Down	198.350	Tarana	57 Points	238.789	Bathurst	45 Points		Y	Y	Y	N	Y	S	S
10181	Main West, Up	198.350	Tarana	57 Points	238.789	Bathurst	45 Points		Y	Y	Y	N	Y	S	S
10182	Main West, Single Line	238.789	Bathurst	45 Points	273.210	Newbridge	51 Points		Y	Y	Y	N	Y	S	S
10183	Main West, Down	273.210	Newbridge	51 Points	287.300	Murrobo	2 Points		Y	Y	Y	N	Y	S	S
10184	Main West, Up	273.210	Newbridge	51 Points	287.300	Murrobo	2 Points		Y	Y	Y	N	Y	S	S
10185	Main West, Single Line	287.300	Murrobo	2 Points	308.490	Spring Hill	6A Points		Y	Y	Y	N	Y	S	S
10186	Main West, Down	308.490	Spring Hill	6A Points	320.760	Orange East Fork Junction	53 Points		Y	Y	Y	N	Y	S	S
10187	Main West, Up	308.490	Spring Hill	6A Points	320.760	Orange East Fork Junction	53 Points		Y	Y	Y	N	Y	S	S
10045	Main West, Single Line	320.760	Orange East Fork Junction	53 Points	460.090	Dubbo	CRN Boundary		Y	Y	Y	N	Y	S	S
10045	Main West, Single Line	497.809	Narromine West	CRN Boundary	563.950	Nevertire	2C Points		Y	Y	N	N		S	S
10045	Main West, Single Line	563.950	Nevertire	2C Points	621.700	Nyngan	Frame 1H		Y	N	N	N		S	S
10166	Nyngan to Cobar, Single Line	621.700	Nyngan	Frame 1H	754.700	Cobar	CRN Boundary		Y	N	N	N	Y	N	N
10143	Orange to Broken Hill, Single Line	320.760	Orange East Fork Junction	54 Points	446.950	Parkes	CRN Boundary		Y	Y	Y	N	Y	S	S
10147	Dubbo to Coonamble, Single Line	466.231	Troy Junction	CRN boundary	616.050	Coonamble	Dead End		Y	N	N	N	Y	N	N
10164	Bogan Gate to Tottenham, Single Line	486.050	Bogan Gate	CRN boundary	598.454	Tottenham	Dead End		Y	N	N	N	Y	N	N
10165	Nevertire to Warren, Single Line	563.950	Nevertire	2C Points	573.500	Auscott	Frame 1B		Y	Y	N	N	Y	N	N
10165	Nevertire to Warren, Single Line	573.500	Auscott	Frame 1B	582.100	Warren South to Warren	Stop Block		Y	Y	N	N	Y	N	N
10165	Nevertire to Warren, Single Line	573.500	Auscott	Frame 1B	584.000	Warren	Dead End		Y	N	N	N	Y	N	N
10148	Wallerawang to Gwabegar, Single Line	171.900	Wallerawang	55 Points	249.368	Kandos	Stop Block		Y	N	N	N	Y	N	N

Table 3 - Authorised rolling stock outlines on track sections

Legend			
Y	The Outline is **authorised** to operate, and shall be c**onsidered** when designing or maintaining the Infrastructure.	N	The Outline is **not authorised**, and **does not need to be considered** when designing or maintaining the Infrastructure.
S	The Outline is authorised for **single** line working only. It **does not need to be considered** when designing or maintaining track centres but it shall be c**onsidered** when designing or maintaining all other Infrastructure.		

Base Code	Track Name	From			To			Map Code	Narrow Non-Electric	Narrow Square	Narrow Container	Intersystem	Narrow Hopper	Out of Gauge Load	NZZA Wagon
		km	Track Location	Location Description	km	Track Location	Location Description								
	Airley Balloon Loop	212.190	Airley Loop Junction	51A Points	NA	Airley Balloon Loop	NA		Y	N	N	N	Y	N	N
10225	Charbon Balloon Loop	244.600	Charbon Junction	2A Points	248.000	Charbon Balloon Loop	NA		Y	N	N	N	Y	N	N
10226	Baal Bone Balloon Loop	193.800	Baal Bone Junction	251 Points	193.750	Baal Bone Balloon Loop	261 Points		Y	N	N	N	Y	N	N
10228	Lidsdale Colliery, Coal Road	169.840	Wallerawang	52A Points to Colliery	171.590	Lidsdale Colliery	Dead End		Y	N	N	N	Y	N	N

Appendix 2 Temporary transit space infringement register

TEMPORARY TRANSIT SPACE INFRINGEMENT REGISTER																
Line	Location						Nearest Station	Date		Infringement (KE +)				Rolling Stock Profile	Controls	Action required to correct the infringement
	Km From	Km To	MGA Co-ordinates					Found	Remove by	Lateral			Vertical			
			Start Easting	Start Northing	End Easting	End Northing				Down Side	Up side	Track Centres				