



Engineering Standard

Civil

CRN CS 001

CIVIL SYSTEM

Version 1.2

Issued June, 2016

CRN DMS REFERENCE:

CRN- EST-AMS-034

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Document control

Revision	Date of Approval	Summary of change
1.0	January, 2012	First Issue
1.1	July, 2013	4 - Deletion of Implementation Review date of 31 July 2012. Removal of exemption for use of previously purchased non-complying components until 31 July 2012.
1.2	June, 2016	See Summary of changes below

Summary of changes from previous version

Section	Summary of change
Various	Rewording for consistency and correction of typographical errors
Various	Change "Principal Civil Engineer" to "Principal Track and Civil Engineer"
4	Update requirements for application of standards to reflect mature operation of standards
6.1	Updated reference to listing of standards to reflect deletion of CRN GM 005

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1 Purpose

This Standard explains the context of and provides an introduction to John Holland Rail Country Regional Network (JHR CRN's) Civil Standards.

It explains the architecture for the suite of standards, specifications and engineering manuals that are used for the design, procurement, installation and maintenance of the Country Regional Network (CRN) civil infrastructure.

It also details the requirements of CRN Engineering standards relating to existing and proposed CRN civil infrastructure.

It is applicable to all civil infrastructure designed for and installed on the CRN.

2 Introduction

Civil infrastructure is made up of:

- Track, turnouts and other special trackwork, and track components
- Clearances to structures and other trains
- Bridges (both under and over the track) and culverts
- Structures
- Earthworks and drainage
- Right of way
- Level Crossings
- Fencing

For each of these components requirements exist for design, configuration, procurement, installation and maintenance. The requirements arise variously from Acts of Parliament, Australian and International Standards, and from established good asset management practice.

The requirements applicable to the CRN are detailed in a suite of technical documents developed and approved by the Principal Track and Civil Engineer. The architecture of the suite is explained in Section 5.

3 Use of standards

Design, selection, installation and maintenance of infrastructure documented in the suite of CRN Civil Engineering standards for use on the CRN may only be undertaken by persons who have been granted appropriate Engineering Authority by the Principal Track and Civil Engineer.

4 Application of standards

In any situation where standards have been changed or new standards are introduced, it is necessary to consider the impact of the change on existing infrastructure. In this case, the introduction of a new set of standards for the CRN, the following requirements shall apply:

- The implementation date of the suite of JHR CRN Engineering Standards was 15 January, 2012.
- All **design** undertaken after the implementation date shall comply with the standards.

- All infrastructure installed after the implementation date shall comply with the **configuration** and **installation** requirements documented in the standards.
- All infrastructure, including existing infrastructure, shall comply with the **condition** requirements documented in the standards.
- Unless specifically stated within the standards, existing infrastructure does not need to meet the **configuration** requirements in the standards.
- Where configurations currently exist but are prohibited in the standards they shall be reviewed “by type” (i.e. not individual locations unless there is a difference in risk by location) and appropriate controls adopted to manage the continued safe operation of the CRN network.
- Any non-compliance to configuration standards shall be documented and managed appropriately.
- The extent and risk of non-compliance shall be reviewed at least annually.

5 The architecture

The architecture for civil technical documentation comprises four (4) identifiable categories, each with a distinct purpose, and, generally, a defined audience.

5.1 Engineering Standards (Prefix CRN CS)

These establish functional and design requirements, approved configurations, acceptance standards, damage limits and repair standards for civil assets.

They are addressed to designers and asset managers

5.2 Engineering Manuals (Prefix CRN CM)

These establish procedures for the installation, inspection and maintenance of civil assets, including competency requirements, management requirements and maintenance limits & responses.

They are addressed, primarily, to the person undertaking the activity in the field.

Any “standards” requirements are repeated in the manual, removing the requirement for cross referencing.

5.3 Technical Specifications (Prefix CRN CP)

These establish acceptance requirements for components or processes, suitable for use in procurement, or as model specifications for works.

They are addressed to contractors, manufacturers and suppliers.

5.4 Civil Technical Notes (Prefix CCT)

These provide a controlled means of communicating technical issues to those undertaking activities that affect the civil infrastructure. They communicate urgent information, lessons learnt and reminders. They may also be used to provide interim changes to standards, manuals or specifications until more extensive updates to these documents are promulgated. CCTs generally have a defined life.

The intended audience varies with the topic being addressed and is documented in each Civil Technical Note.

5.5 Engineering Waivers / Concessions (Prefix CCW)

These provide a controlled means for the Principal Track and Civil Engineer to grant and communicate approval of short term variations to standards (waiver) or, in some circumstances, to permanently waive the requirements of a standard (concession). Waivers may be system wide or specific to a location or activity. Concessions are applicable to specific locations only.. CCWs generally have a defined life.

The process for applying for a CCW is documented in CRN Engineering manual CRN CM 002 "Engineering Waivers".

6 Numbering system

The following numbering system applies to the architecture of the suite of documents.

6.1 Numbering of standards, manuals and specifications

Standards	CRN CS XXX
Manuals	CRN CM XXX
Specifications	CRN CP XXX
Civil Combined	000 – 199
Civil System	000 – 099
Technical Maintenance Plans & Service Schedules	100 – 199
Note: Service Schedules are numbered CSS 001 – 550 and documented in CRN Engineering manual CRN CM 101 "Civil Service Schedules"	
Track	200 – 299
System	200 – 209
Whole of track	210 – 219
Rail and Rail Joints	220 – 229
Ties and track support	230 – 239
Ballast	240 – 249
Turnouts and Special Trackwork	250 – 259
Structures	300 – 399
Structures System	300 – 309
Underbridges	310 – 319
Overbridges & footbridges	320 – 329
Miscellaneous structures	330 – 339
Geotechnical	400 – 499
System	400 – 409
Formation & earthworks	410 – 419
Track drainage	420 – 429
Right of Way	500 – 599
System	500 – 509

Fencing	510 – 519
Level crossings	520 – 529
Service crossings	540 – 549
Access Roads	550 – 559

A listing of all current Civil standards manuals, specifications and Technical Notes is included on JHR CRN's internet site www.jhrcrn.com.au.

6.2 Numbering of Civil Technical Notes

CCTs are numbered as follows

CCT YY/NN – where YY is current year (e.g. 12 for 2012)

NN is a sequential number, starting from 01 with the first CCT issued each year. (CCT 12/10 is the tenth CCT issued in 2012).

6.3 Numbering of Engineering Waivers

CCWs are numbered as follows

CCW YY/NN – where YY is current year (e.g. 12 for 2012)

NN is a sequential number, starting from 01 with the first CCW issued each year. (CCW 12/05 is the fifth CCW issued in 2012).