

# Specification

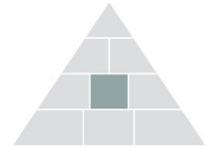
## Civil – Design of Road Overbridges

MD-19-131  
(Previously known as Civil-SR-001)

QUEENSLAND RAIL OFFICIAL

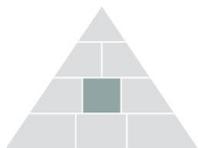
Version: 1.1  
Updated: 18/03/2021  
Policy: Safety Policy





# Table of Contents

<b>1 Purpose</b>	<b>3</b>
1.1 Business or technical need?	3
1.2 Scope	3
<b>2 Requirements of this Specification</b>	<b>3</b>
2.1 Technical requirements	3
2.2 Design documentation	4
2.3 Design considerations	8
2.4 Certification of design and construction	16
2.5 Associated costs incurred by Queensland Rail	16
<b>3 Terms and definitions</b>	<b>17</b>
<b>4 Document history</b>	<b>18</b>
<b>5 Appendices</b>	<b>19</b>
Appendix 1 – Related documents	19



# 1 Purpose

This Specification details the criteria for the design of road bridges that cross Queensland Rail property (Road Overbridges).

## 1.1 Business or technical need?

The Specification addresses the risks associated with the design of road overbridges which pass over Queensland Rail property.

## 1.2 Scope

This Specification applies to the:

- design of new road overbridges, and
- upgrading of existing road overbridges.

This Specification shall be used by:

- any designer employed or engaged by Queensland Rail to undertake design work on a road overbridge,
- any road authority undertaking design work on a road overbridge over Queensland Rail property, and
- any designer engaged by a road authority to undertake design work on a road overbridge over Queensland Rail property.

# 2 Requirements of this Specification

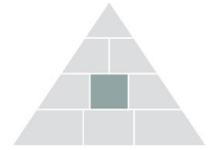
## 2.1 Technical requirements

The Designer shall design road overbridges to comply with:

- the Requirements Definition
- this Specification,
- AS 5100, Bridge Design, for collision protection and collision loads,
- CIVIL-SR-007, Design and Selection Criteria for Road / Rail Interface Barriers,
- CIVIL-SR-008, Protection Screens,
- CIVIL-SR-012, Collision Protection of Supporting Elements Adjacent to Railways, and
- Any other relevant Australian Standards.

The Designer shall design the road overbridge such that it is constructible and maintainable:

- within the available space on the site of the bridge
- with the available access to the site



- with minimal interference to;
  - train operations,
  - passengers,
  - existing railway infrastructure, and
  - railway activities including the maintenance of other railway infrastructure.

The Designer shall design the overbridge such that it integrates with and does not detrimentally impact upon existing railway infrastructure, including, but not limited to:

- rail track structure,
- rail maintenance access roads,
- railway formation drainage,
- sighting requirements for railway signals and level crossings,
- overhead line equipment (OHLE) including switches, transformers, and wiring at turnouts, and
- the proximity of rail geometry / infrastructure features such as curved track, turnouts, and diamond crossings.

Designers shall liaise with Queensland Rail to minimise the impact of construction on train services and to determine whether Queensland Rail will accommodate any speed restrictions, track closures, and/or isolations of the overhead line equipment (OHLE) anticipated during construction.

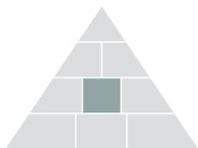
Queensland Rail reserves the right to restrict construction methods to those that minimise interference to train operations, passengers, and other railway activities.

Existing access to Queensland Rail property for maintenance and emergencies shall be maintained at all times during construction work.

## 2.2 Design documentation

At the appropriate stages of the project, the Designer shall submit to Queensland Rail:

- a fixing report,
- 15 % Complete Design documentation,
- 50 % Complete Design documentation,
- 85% Complete Design documentation,
- Final Design documentation, and
- 'As Constructed' drawings



## 2.2.1 Fixing report

The Designer shall submit the fixing report when the location and alignment of the bridge has been determined. The fixing report shall show the location and alignment of the bridge relative to the track/s and rail corridor, required clearance, road geometry, and any other constraints.

The general arrangement drawings for the bridge shall be included with the fixing report.

The Designer should have determined the length of the bridge spans for inclusion in the fixing report.

The drawings of the proposed overbridge shall show the railway clearance outline superimposed on an elevation of the overbridge at 90° to the track alignment.

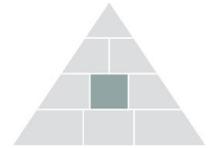
## 2.2.2 15% Complete Design documentation

The 15% Complete Design documentation shall be submitted when:

- all preliminary investigations have been completed,
- the spans, articulation, substructure and superstructure type have been selected, and
- the preliminary founding levels have been established.

The 15% Complete Design documentation shall include:

- Design report;
  - scope, project background and description,
  - references to relevant codes and legislative requirements,
  - preliminary structural design,
  - key design interfaces,
  - draft construction methodology (including potential impacts to Queensland Rail),
  - potential departures and derogations, and
  - statement of resolution items from AS5100.1,
- 15% complete design drawings that include;
  - general arrangement,
  - general notes including design loads,
  - clearances around railway infrastructure, showing clearance outline in relation to key cross sections,
  - bridge drainage,
  - exposure classifications, concrete cover and concrete grade for each element,
  - abutment and pier drawings, and
  - a superstructure cross-section, and
- Investigations;



- geotechnical investigations, and
- traffic barrier performance level.

Potential departures from the Requirements Definition and potential derogations from Queensland Rail's SEMS shall be listed in the design report for Queensland Rail's review.

It is expected that the major design parameters will not change during detailed design and drafting.

If major changes are subsequently made, a supplementary report shall be sent to Queensland Rail as soon as practical.

### **2.2.3 50% Complete Design documentation**

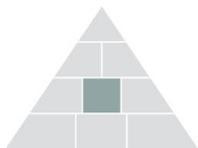
The Designer shall submit a 50% Complete Design documentation package. It is expected that at the 50% design will address the majority of all design considerations and show consideration to the construction methodology and the design specifications for the works. The 50% Complete Design shall include, in addition to the previous package:

- Design report including;
  - proposed design changes from the previously submitted design package,
  - safety in design documentation in accordance with MD-17-12,
  - closed out comments from previous design package, and
  - documentation on collision protection as required, and
- 50% complete design drawings;
  - Progression of drawings from previous package,
  - Collision protection measures,
  - Maintenance access considerations, and
  - Service location and any potential protection or relocations required.

### **2.2.4 85% Complete Design report**

The Designer shall submit an 85% Complete Design documentation package when the design is effectively complete, and a complete set of draft documents and drawings are available for review. The 85% Complete design report shall include:

- Design Report including;
  - proposed design changes from the previously submitted design package,
  - safety in design documentation in accordance with MD-17-12,
  - closed out comments from previous design package, and
  - a list of agreements or instructions issued during the design process, and
- complete set of draft design drawings.



## 2.2.5 Final Design report

The Designer shall submit a Final Design report for approval. The Final Design report shall contain all the previous stage reports and shall include:

- a list of all requests for changes to the design standards and technical specifications,
- a tabulation of the matters for resolution,
- a list of all design codes including date of publications and (any) amendments used,
- a statement for each item in Matters for Resolution by Authority as outlined in AS 5100.1,
- a statement of design loads outlined in AS 5100.2,
- a statement to confirm the design model and analysis approach used,
- any design criteria from other stakeholders / authorities,
- the design methodology, design assumptions, serviceability and ultimate loads,
- a statement of design life of the bridge and each sub-elements,
- a construction methodology,
- a robustness of design statement,
- a 'safety in design' considerations for construction, inspection, maintenance and operation of the bridge, and
- a demolition scheme (see Section 2.3.15).

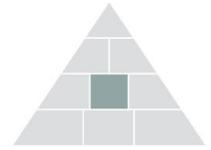
The Final Design report shall demonstrate conformance to the project design brief.

## 2.2.6 As Constructed Drawings

The Constructing Contractor shall provide Queensland Rail a complete set of as constructed drawings of the bridge within six (6) weeks of practical completion of construction.

The drawings shall show:

- design loads, including the heavy load platform used,
- foundation loads,
- any special provisions, for example:
  - structural redundancy,
  - use of precast or prefabricated elements,
  - clearances diagrams.
- railway centrelines in the vicinity of the proposed overbridge,
- distances from overbridge to track and OHLE,
- railway kilometrage at the intersection of railway and road centrelines,
- details of all existing railway infrastructure, including maintenance and emergency access, under and in the vicinity of the proposed overbridge, and
- and site staging and separation of works from operating rail



All structural drawings, including temporary works such as falsework and formwork shall be certified by an RPEQ as having been designed in compliance with the Professional Engineers Act.

## 2.3 Design considerations

The design of the bridge over Queensland rail property / infrastructure should show in their design consideration for the following design components.

### 2.3.1 Clearances

The Designer shall design the bridge to provide safe clearance for the use, function, and maintenance of:

- trackside access roads,
- formation drainage,
- overhead line equipment (OHLE).
- passenger platforms,
- access to clean, inspect and maintain the overbridge, and
- existing and proposed tracks

Clearances shall be in accordance with the design brief. Where clearances requirement are not provided in the design brief, the designer shall design clearances approved by the Rail Infrastructure Manager and endorsed by the Senior Manager Track and Civil Engineering.

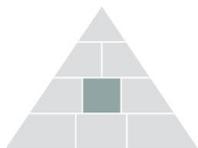
The designer shall design the bridge with clearances for that satisfy the minimum requirements of:

- MD-19-342 – Railway Infrastructure – Structure Clearances Standard
- MD-10-95 – Signalling Positioning Principles, and
- MD-10-115 – Civil – Level Crossing Safety.

The designer shall design the support structure for overbridges that cross existing and future electrified tracks:

- with at least the minimum clearance from the OHLE in accordance with MD-19-342 Railway Infrastructure – Structure Clearances, and
- to include protection screens installed in accordance with CIVIL-SR-008, Protection Screens.

Rail Infrastructure Manager may require clearances in excess of the minimum required by the standards listed above.



Overbridge abutments adjacent to existing tracks shall be located sufficiently clear of the tracks to avoid any delays to train services from speed restrictions, track closures and / or isolations of the OHLE. Where possible, the abutments shall be positioned in a location that will allow for the inspection and maintenance of the bearings without encroachment into the Queensland Rail corridor.

### **2.3.2 Special Trackwork**

Special trackwork includes turnouts, diamond crossings, crossovers, and catchpoints.

The Designer should not position a bridge over, or within 10 m of turnouts, diamond crossings, or crossovers. If a bridge is positioned over, or within 10 m of a turnout, diamond crossing, or crossover the Designer shall undertake a risk assessment to determine the:

- likelihood and consequences of a derailment at the points and crossing,
- likelihood and consequences of derailed rolling stock contacting the bridge, and
- controls to protect the bridge in the case of a derailment

The Designer shall present the risk assessment and an SFAIRP case to the Rail Infrastructure Manager for assessment. The design shall only proceed to construction if the Rail Infrastructure Manager accepts the risks of proceeding with the design.

Refer to Section 2.3.16.1 for further details on SFAIRP.

The Designer shall not position a bridge:

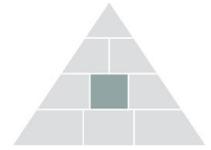
- over, or within 10 m of, catchpoints,
- over the catchpoint runoff area, or
- behind the catchpoint runoff area.

### **2.3.3 Earthquake Protection**

The BEDC classification to AS5100.2, Bridge Design, shall be agreed by both the Road Authority and Rail Infrastructure Manager at project inception. This is to be based on the road and rail traffic volumes at the overpass location. In most instances it is expected that Queensland Rail would require a minimum of BEDC-2.

Overbridges shall be designed to minimise the risk of collapse during earthquakes, with particular attention being given to:

- bearing arrangements,
- widths of bearing shelves, and
- reinforcing steel in piles/columns.



The Queensland Rail Project Manager / Design Manager shall:

- co-ordinate the progress of the agreement between the Road Authority and Queensland Rail,
- include the Rail Infrastructure Manager in the agreement process, and
- provide the Designer with a copy of the agreement, if made.

### **2.3.4 Durability**

The design life of road overbridges shall be a minimum of 100 years.

The designer shall design road overbridges to minimise maintenance requirements (such as maintenance painting of steelwork). The designer shall include features that permit bridge maintenance to have no effect on Queensland Rail's operations (such as means of access to bridge components that are clear of the tracks and OHLE). No permanent access from the railway corridor will be permitted.

To reduce the whole of life disruption to both the road authority and Queensland Rail, the design should use stainless pot bearings or mortar pads wherever possible.

### **2.3.5 Drainage**

The Designer shall design the bridge such that the continuous drainage of the railway formation and corridor is maintained during construction and for the life of the bridge.

Where the design of the footbridge causes changes to the drainage in the corridor the Designer shall design the drainage to:

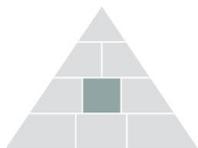
- have sufficient capacity to prevent the rainfall from a 2% AEP (annual exceedance probability) rainfall event accumulating at the base of the ballast.
- be lined,
- be clear of the tracks.

### **2.3.6 Collision protection**

The Designer shall design the bridge with a single clear span between abutments over existing and future railway tracks.

The presence of piers within the rail corridor is undesirable due to the increased safety risk of structure collapse if a derailed train damaged a pier.

Where it is not possible to design a bridge with a single clear span, the Designer shall present the case for an intermediate pier, or piers, and a SFAIRP risk assessment to the Rail



Infrastructure Manager for assessment. The design shall only proceed to construction if the Rail Infrastructure Manager accepts the risks of proceeding with the design.

Refer to Section 2.3.16.1 for further details on SFAIRP.

Where the Rail Infrastructure Manager accepts an intermediate pier, or piers, the Designer shall:

- design a pier layout to the requirements of Rail Infrastructure Manager,
- design the pier/s to meet the requirements of:
  - AS 5100, Bridge Design, and
  - CIVIL-SR-012\*, Collision Protection of Supporting Elements Adjacent to Railways,The Designer shall

Collision protection, deflection walls and collision loads shall be in accordance with AS 5100, Bridge Design, and CIVIL-SR-012\*, Collision Protection of Supporting Elements Adjacent to Railways. Deflection wall lengths shall be determined by SFAIRP risk assessment and submitted to the Rail Infrastructure Manager for assessment. The design shall only proceed to construction if the Rail Infrastructure Manager accepts the risks of proceeding with the design.

Collision protection for Reinforcement Soil Structure (RSS) retaining walls shall be in accordance with Section 10.9.3 of Queensland Department of Transport and Main Roads Manual - Design Criteria for Bridges and Other Structures.

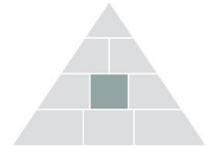
*\*NOTE: The more onerous requirements of the two documents shall be used until such time as CIVIL-SR-012 has been updated to incorporate changes in AS5100-2017 and National Rail Safety Law.*

### **2.3.6.1 Upgrading of Existing Road Overbridges**

Where works are proposed on an existing bridge the Designer shall:

- Prove the exiting piers and columns satisfy the requirements of:
  - AS 5100, Bridge Design, and
  - CIVIL-SR-012, Collision Protection of Supporting Elements Adjacent to Railways, or
- Undertake a SFAIRP risk assessment to determine the level of protection required (refer to Section 2.3.16.1).

Works proposed on an existing bridge may also include operational changes which result in changes in line speed or train counts under the bridge. For such works, a risk assessment should be undertaken to determine the level of protection.



### **2.3.6.2 Design Report**

The measures adopted for collision protection shall be included in a design report and submitted to Queensland Rail. The design assumptions shall be included on the design drawings and submitted to Queensland Rail as required by Section 2.2.

## **2.3.7 Superstructure**

The Designer shall design the bridge superstructures to minimise the time needed for erection, e.g. through the use of precast / prefabricated components. The aim is to minimise any delays to train services during construction from speed restrictions, track closures, and / or isolations of the OHLE.

The connections between the superstructure and substructure shall be designed to minimise the risk of collapse in the event of an earthquake or collision from railway traffic.

### **2.3.7.1 Waterproofing**

Overbridge decks shall be waterproofed to prevent water leaking through to the railway. Details of the material and extent of application shall be shown on the construction drawings.

Transversally stressed deck unit bridges shall not be provided over electrified lines. Where rehabilitated transversely stressed deck unit bridges are proposed, they shall have sufficient proprietary high performance waterproofing membranes added.

## **2.3.8 Substructure - foundations**

The Designer shall design the piers and foundations to:

- be installed with minimum interference to railway operations (also refer to Section 2.3.7),
- allow free drainage along the formation and are not to cause ponding.

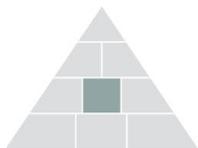
Queensland Rail does not permit the pile types listed in Section 4.4.1 of the Queensland Department of Transport and Main Roads Manual - Design Criteria for Bridges and Other Structures, Transport and Main Roads.

The design of shoring systems for excavations adjacent to operating railway tracks shall be submitted to Queensland Rail for review before construction commences.

## **2.3.9 Deck Drainage**

Overbridge deck drainage shall discharge in a manner which does not adversely affect railway tracks, associated railway facilities or property occupied by Queensland Rail.

The Designer shall design the deck drainage such that it does not:



- discharge via scuppers, and
- discharge onto existing and future;
  - tracks,
  - formation,
  - OHLE,
  - signalling equipment,
  - Station infrastructure, and
  - Access roads.

Deck drainage pipes shall comply with the requirements for services in Section 2.3.12.

### **2.3.10 Traffic barriers**

Traffic barriers shall be provided across the overbridge and on the approaches to prevent vehicles from leaving the roadway and accessing Queensland Rail tracks and property.

Traffic barriers on overbridges shall be designed in accordance with:

- AS 5100 - Bridge Design, and
- CIVIL-SR-007 - Design and Selection Criteria for Road / Rail Interface Barriers.

Designers shall use the barrier performance level shall specified in the Design Brief. Where the Requirements Definition does not specify a performance level the Rail Infrastructure Manager shall specify the barrier performance level with endorsement from Senior Manager Track and Civil.

### **2.3.11 Protection screens**

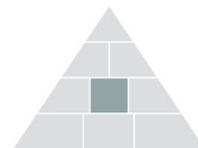
Protection screens may be require to:

- meet the clearance requirements of Electrical Traction Systems Standard (ETSS) MD-10-191, and / or
- address the risk of thrown of objects effecting the safety of trains, OHLE stations, staff, or the public in the railway corridor.

Protection screens shall be in accordance with the Civil Engineering Protection Screens CIVIL-SR-008.

### **2.3.12 Services**

The designer should design the bridge such that the design of the bridge nor the construction of the bridge will disturb Queensland Rail services (signal, telecommunications and OHLE) and other externally-owned services in the rail corridor.



If disturbances of these services are unavoidable, the Designer shall

- seek approval from the service owner/s to relocate the service,
- design a new route for the service that meets the requirements of;
  - MD-10-133 - Civil – Utilities within Railway Reserve Standard,
  - MD-20-173 - Civil - Non-Queensland Rail Underground Services in Queensland Rail Property Specification
  - MD-20-76 - Civil - Queensland Rail Underground Services Specification, and
  - AS4799 - Installation of Underground Utility Services and Pipelines within Railway Boundaries, and
- Seek approval from Rail Infrastructure Manager and the service owner for the new route for the service.

Existing underground services that are to remain in place shall be protected from loads during construction and operation of the structure. The Designer shall submit details of the protection of services during construction for shall be submitted to Queensland Rail and the Service Owner for review.

The Road Authority shall be responsible for the full cost of relocating and protecting the services, including the design.

The Designer should design services, including pipes for deck drainage, such that they are not attached to the sides or undersides of bridges over or adjacent to the railway.

Where it is not possible to design the bridge without services over the railway the Designer shall design services and their attachment to the overbridge:

- with a 100 year design life, or
- to be replaced without affecting railway operations.

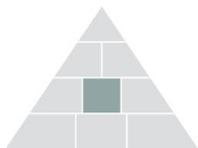
The design and material selection shall be subject to review and approval by Queensland Rail. Drainage systems shall be designed to prevent leakage onto the railway corridor.

### **2.3.13 Anti-graffiti coating**

Except in remote areas, piers, parapets and any other parts of overbridges vulnerable to graffiti shall be protected by an approved non-sacrificial coating.

### **2.3.14 Advertising signs**

Advertising signs and other hoardings shall not be placed on or attached to overbridges, unless approved by Queensland Rail.



If existing advertising signs on Queensland Rail property require removal or relocation due to the proposed works, the Road Authority shall advise Queensland Rail as early as possible. Failure to do so may cause delays in the start of work. All costs associated with the removal and relocation of these signs are to be borne by the Road Authority.

### **2.3.15 Demolition**

The Designer shall design the road overbridge such that it can be demolished progressively without causing interference to train operations, passengers and any railway activities.

The Designer shall include a demolition scheme shall in the drawings and documentation to be submitted to Queensland Rail as required by Section 2.2.

### **2.3.16 Risk Assessment**

The Designer shall undertake Risk Assessment in accordance with Risk Management Procedure MD-11-1340. The Risk assessment shall quantify risks and be to the satisfaction of Rail Infrastructure Manager. Separate to a SFAIRP risk assessment, which is used for rail safety, the designer shall also consider the economic risks of an event. For example, a derailment collision event has an economic consequence of shutting the road and the rail for extended periods of time can be extremely high.

#### **2.3.16.1 SFAIRP**

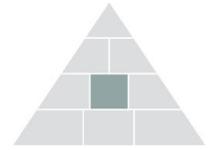
Rail Safety National Law requires elimination or minimisation of risks to safety So Far As Is Reasonably Practicable (SFAIRP). Under this obligation, all possible controls must be adopted unless:

- There is a demonstrated conflict or constraint that renders the possible control impractical in the specific application.
- A Cost Benefit Analysis demonstrates that the cost is Grossly Disproportionate to the benefit.

Rejection of any option should be in consultation with Queensland Rail before it is included in the safety argument to assure that network wide considerations are included in the assessment.

Any cost benefit analysis to demonstrate Gross Disproportionality shall use the values specified by Queensland Rail, as provided in Risk Management Procedure MD-11-1340.

For further information on Rail Safety National Law and SFAIRP refer to the Office of the Nation Rail Safety Regulator (ONRSR) Guideline A390705, Meaning of duty to ensure safety so far a is reasonably practicable (SFAIRP).



## 2.4 Certification of design and construction

The overbridge design shall be carried out in compliance with the Professional Engineers Act (QLD) and National Rail Safety Law (QLD). The Designer shall specify the functional requirements and the standards used for the design.

The design shall include verification by competent professional engineers, not directly involved in the design, that the design complies with the specified functional requirements and related standards.

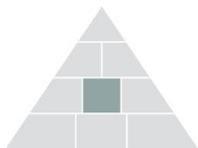
The Designer shall provide formal certification to Queensland Rail that the bridge design and verification requirements have been met. The certification shall include a summary of the specified functional requirements and related standards.

The completed bridge shall be certified as having been constructed in accordance with the drawings and any approved variations. The Certifier shall be a:

- Registered Professional Engineer Queensland, and
- Rail Safety Worker.

## 2.5 Associated costs incurred by Queensland Rail

All of Queensland Rail's costs associated with the review, design and construction of the overbridge and the implementation of Queensland Rail's Technical Requirements shall be charged to the Road Authority or its agent. This includes any remedial work necessary to Queensland Rail property as the result of this work and any accidental damage, as well as costs associated with train delays. Rates will be set by Queensland Rail.

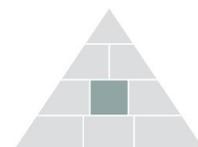


### 3 Terms and definitions

The following key terms and definitions are unique to this Procedure. Please refer to the [Business Glossary](#) for other terms not included in this section.

Term	Definition	Source <sup>1</sup>
<b>BEDC</b>	Bridge Earthquake Design Categories	AS 5100.2
<b>Requirements Definition</b>	The documented and approved specific project requirements which form the basis for the design, construction, and certification activities. Developed by the Project Manager in accordance with the Civil – Project Delivery Standard MD-20-77. May be referred as the “Design Brief”.	
<b>Electrified track</b>	Railway track that includes OHLE for the operation of rolling stock using electric traction	
<b>OHLE</b>	Overhead line equipment, The structures and overhead equipment necessary for the power supply for electric rolling stock.	Corporate Glossary
<b>Rail Infrastructure Manager</b>	In this document Rail Infrastructure Manager, refers to the Queensland Rail, Rail Infrastructure Manager as defined by Rail Safety National Law. It excludes the Rail Infrastructure Manager established for the construction of the bridge or rail project.	
<b>Rail Safety Worker</b>	An individual who has carried out, is carrying out, or is about to carry out, rail safety work	Rail Safety National Law (South Australia) Act 2012
<b>Road Authority</b>	Owner of the bridge. Referred to as road manager in the Act. For a private road — the owner, or other person responsible for the care, control and management, of the road; or For a public road — an authority, person or body responsible for the care, control or management of the road.	Rail Safety National Law (South Australia) Act 2012
<b>Road Overbridge</b>	A road bridge crossing over a railway, railway land, or railway corridor	

<sup>1</sup> Where left blank, Source is not applicable.



## 4 Document history

### Document Information

Current Version	1.1
First Released	15 March 2021
Last Updated	18 March 2021
Review Frequency	Every 3 years
Review Before	18 March 2024
Document Authoriser	Chief Executive Officer (CEO)
Functional Owner	Safety Discipline Head Track & Structures
Document Owner / Approver	Safety Discipline Head Track & Structures
Content Developer*	Senior Standards Engineer
Review Stakeholders	SEQ Assets, Supply Chain North, Network Operations South
Audience	All employees, contractors and consultants

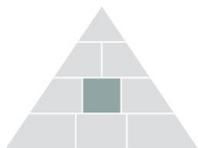
\*Contact for further information

### Document Amendment History

Version	Date	Section(s) Amended	Summary of Amendment
1.1	18/03/2021	Whole document	Further clarification on complex requirements and minor structure changes for a more cohesive read.
1.0	15/03/2021	New	First release – Content from Civil-SR-001 (Rev H) transposed to Policy Centre template

This document contains confidential material relating to the business and financial interests of Queensland Rail. Queensland Rail is to be contacted in accordance with Part 3, Division 3 Section 37 of the Right to Information Act 2009 should any Government Agency receive a Right to Information application for this document. Contents of this document may either be in full or part exempt from disclosure pursuant to the Right to Information Act 2009.

© 2021 Queensland Rail



## 5 Appendices

### Appendix 1 – Related documents

All reference documents, e.g. Australian Standards, codes and Queensland Rail Technical Requirements, are to be the latest version.

#### Queensland Rail documents

Document type	Document title	
<b>Standard</b>	MD-10-95	<a href="#">Signalling Positioning Principles</a>
	MD-10-115	<a href="#">Civil – Level Crossing Safety</a>
	MD-10-133	<a href="#">Civil - Utilities Within Railway Reserve</a>
	MD-19-342	<a href="#">Railway Infrastructure – Structure Clearances</a>
<b>Strategy / Plan</b>	N/A	
<b>Specification / Framework</b>	MD-20-173	<a href="#">Civil - Non-Queensland Rail Underground Services in Queensland Rail Property Specification</a>
	MD-20-76	<a href="#">Civil - Queensland Rail Underground Services Specification</a>
	MD-15-160	<a href="#">Production of Drawings by External Consultants</a>
<b>Procedure</b>	N/A	
<b>Other</b>	CIVIL-SR-007	Design and Selection Criteria for Road / Rail Interface Barriers
	CIVIL-SR-008	Protection Screens
<b>Drawings</b>	QR-C-S3303	Structure Gauges Structure Clearance Non Electrified Lines
	QR-C-S3306	Structure Gauges Structure Clearance Electrified Lines

#### External documents

Document type	Document title	
<b>Legislation</b>	Rail Safety National Law (Queensland) Act 2012	
	Professional Engineers (Queensland) Act 2002	
<b>Standard</b>	AS 1170.4	Structural Design Actions: Part 4 Earthquake Actions in Australia
	AS 1428	Design for Access and Mobility
	AS4799	Installation of Underground Utility Services and Pipelines within Railway Boundaries
	AS 5100	Bridge Design
	Queensland Department of Transport and Main Roads Manual - Design Criteria for Bridges and Other Structures	
	UIC 777-2	Structures Built Over Railway Lines - Construction Requirements In The Track Zone
<b>Specification / Framework</b>	National Construction Code (NCC)	
<b>Guideline</b>	ONRSR Guideline A390705. Meaning of duty to ensure safety so far as is reasonably practicable (SFAIRP)	