

TO	ARTC Business Units (NSW & QLD effectivity)
FROM	General Manager Technical Standards
DATE	11 June 2020
SUBJECT	ETN-16-01 Sighting Distances for Road-Trains at Private Level Crossings – Technical Note for ETD-16-02 Level Crossings – Design and Installation
Amendment	First Issue

References

Track and Civil Standard ETD-16-02 Level Crossings – Design and Installation

Issue

A Technical note is required to support the use of a modified sighting distance derivation methods where Road-Train vehicles up to 36.5m length are permitted to use private level crossings.

Background

The Inland Rail (IR) Basis of Design for level crossings (sighting distances) notes that there is no applicable Australian standard for private level crossings or service level crossings. Unless advised otherwise, sighting distance tables contained within ARTC Standard ETD-16-02 are to be applied (minimum standard) at private crossing assessments.

During the design process it was identified that in several areas, the gazettal of public roads to allow road trains is becoming increasingly common. e.g. on the Narrabri to North Star (N2NS) section of the Inland Rail project. The use of 36.5m Double Road Trains as the largest gazetted vehicle on the public road (e.g. the Newell Highway) has had a flow-on effect to private crossings with many landholders advising during IR consultation that they use or intend to use that vehicle type.

The gap identified was that ETD-16-02 does not cover Double road trains at private crossings and only goes up as far as providing S3 requirements for B Doubles. ETD-16-02 does cover road trains for public crossings.

In order to ensure that adequate sighting distances are available for the design vehicle, IR has undertaken an exercise to develop S3 requirements for road trains based on extrapolating the private crossing tables in ETD-16-02.

Sighting distances for road trains will in all cases be in excess for what it is for B-Doubles.

This Technical Note was requested by the Inland Rail Business Unit and was subject to risk assessment with participation from Inland Rail, Interstate, Hunter Valley Business Units and Corporate Services and Safety Division.

Status and Applicability of this Technical Note

This Technical note has the status of an ARTC Standard and shall remain in force until the ETD-16-02 Level Crossings – Design and Installation standard is updated to incorporate the technical note contents. This technical note provides;

- Guidance for assessing sighting distances for road trains at private crossings within NSW and Queensland;
- A methodology for the purpose of new and upgraded level crossing designs and assessment of existing crossings.

Inserted paragraphs into ETD-16-02 Level Crossings – Design and Installation

12.2 5A — Minimum Standard Sight Distances for Stop Signs at Private Level Crossings (continued)

ROAD TRAIN (Minimum Standard)	Sight Distance S3 (m)						
	Level				Humped		
Train Speed Km/h	Sealed/ Concrete/ Rubber	Formed	Timber/ Steel	Ballast	Formed	Timber/ Steel	Ballast
20	146	159	176	197	291	324	366
40	292	319	351	394	581	647	732
60	438	478	527	590	872	971	1098
80	584	637	703	787	1163	1294	1463
100	731	796	878	984	1454	1618	1829
120	877	959	1054	1181	1744	1942	2195
140	1023	1115	1230	1378	2035	2265	2561
160	1169	1274	1406	1575	2326	2589	2927

Table 5.A.5 — Private Level Crossings: Standard S3 values for Road Trains

Notes:

- i. The S3 distances shown in the Sealed/Concrete/Rubber column reflect S3 distances for Road Trains at public crossings as per existing Table 3A of ETD-16-02.
- ii. Road Train – defined length 36.5 metres
- iii. Humped crossings (typically greater than 6 % road grade) should not be designed on new or upgraded level crossings.
- iv. Where sighting distance values are above 750m in table 5.A.5 the crossing design shall take guidance from section D3 of AS1742.7-2016 and undertake risk assessment to determine if further controls are required. Control examples may include; activated crossing, permanent track speed restrictions, upgrade of crossing surface type, road prohibition of road trains etc.
- v. If the private level crossing design is being undertaken on a track section with passenger trains more frequent than 4 trains per day, the design shall be risk assessed to determine if further controls are required to mitigate any train speed factors (related to the perception of estimating the speed of an approaching train)

Deleted or altered paragraphs

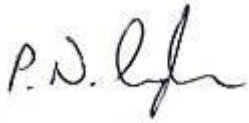
Nil

Effectivity

This technical note shall apply to all private level crossings used by road trains on ARTC tracks in NSW and Queensland following its publication and until ETD-16-02 Level Crossings – Design and Installation is updated, and this Technical Note is withdrawn.

Updates to this Technical Note

Nil

A handwritten signature in black ink, appearing to read 'P. D. Campbell', written in a cursive style.

Phillip Campbell OAM

General Manager Technical Standards