



AUSTRALIAN RAIL TRACK CORPORATION LTD

NSW Curve & Gradient Diagrams: Introduction

Primary Source

RAC Infrastructure Engineering Manual TS 0002 TI Version 2.0 July 1999
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Document Status

Version	Date Reviewed	Section	Description of Amendment
1.0	15 May 07		Reformatted to ARTC document and split into sections – Introduction; Section 1 – North & Hunter Valley; Section 2 – South; Section 3 – West; Section 4 – Goods Metro

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Contents

1	Introduction	3
1.1	Interpretation of Diagrams	3
1.2	Diagram Index	6
1.2.1	Section 1 - North and Hunter Valley Corridors.....	6
1.2.2	Section 2 – South Corridor	7
1.2.3	Section 3 – West Corridor	8
1.2.4	Section 4 – Goods Metro.....	8





1 Introduction

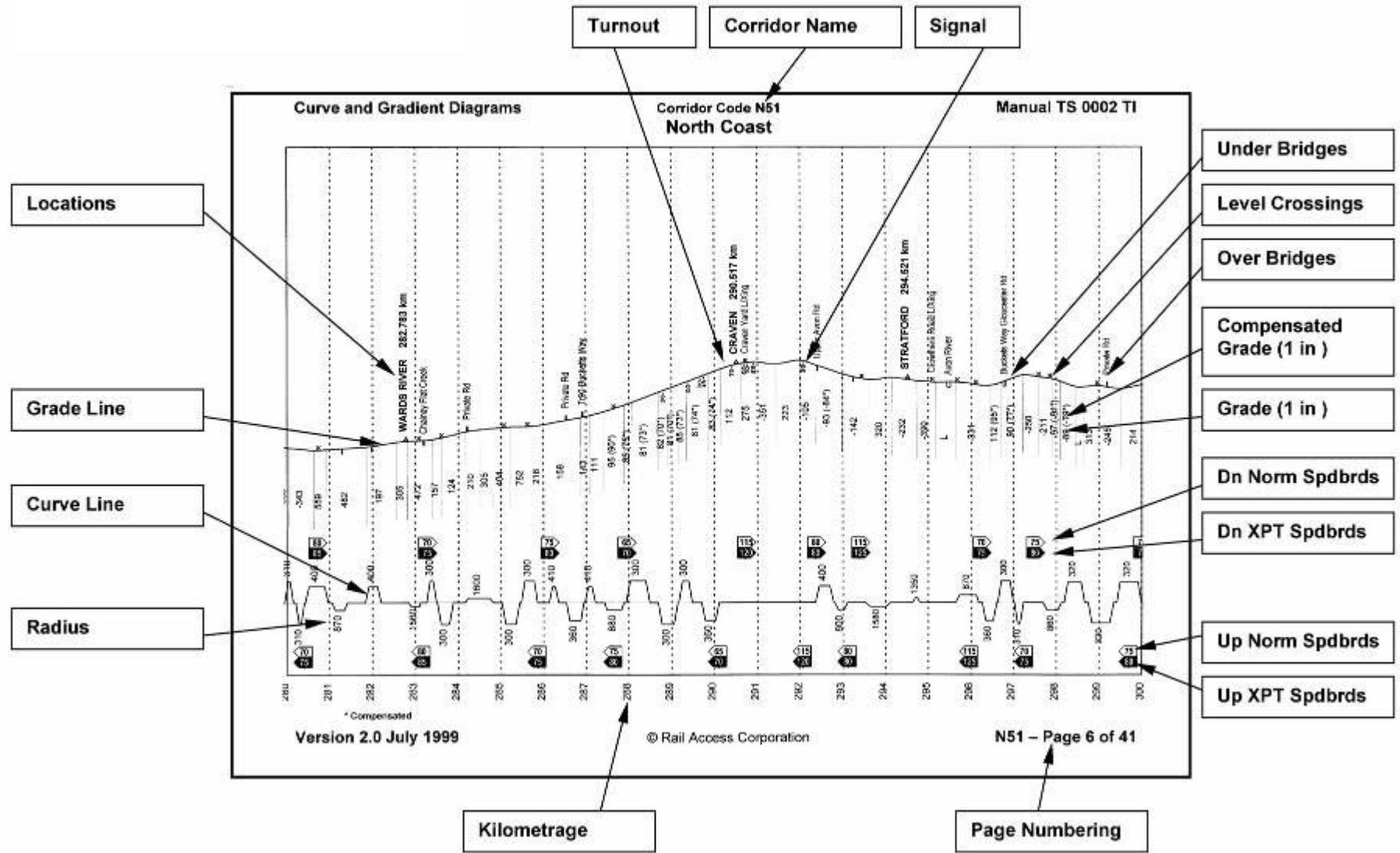
This document was prepared using the Rail Access Corporation Infrastructure Engineering Manual TS 0002 TI Curve and Gradient Diagrams, Volume 1 and 2 as adopted from Rail Infrastructure Corporation in September 2004.

The data represented in this document is to be used as a guide only. It is planned to progressively update the Curve and Gradient Diagrams when current GPS surveys are completed.

1.1 Interpretation of Diagrams

Corridor Name	Includes Corridor Code and Name. On pages containing copies of the old Curve and Gradient Book, the Corridor Name may appear again within the Page.
Page Numbering	Pages are numbered in order of Corridor Code then Page. Corridors made up of both updated pages and pages from the old Curve and Gradient Book, will have the old pages numbered with an "a" suffix to the Corridor Code, and the numbering will restart. On pages containing copies of the old Curve and Gradient Book, the original page number may appear within the Page.
Kilometrage	Kilometrage is shown every kilometre, with 20 kilometres per page. A vertical dashed line aligns the kilometrage for objects appearing on both the Curve Line and the Grade Line.
Grade Line	The Grade Line shows the relative altitude at an exaggerated vertical scale. The vertical scale is consistent on all updated pages. Pages with very large differences in altitude over the 20 kilometre section will have an obvious step in the Grade Line to fit the section on one page.
Grade	Grade is shown as a "1 in" number. In areas of relatively steep grades and tight curves, the equivalent compensated grade (according to TDS 09) is shown and marked with an asterisk (*). A positive grade is "up hill" in the Down direction, and a negative grade is "down hill" in the Down direction. The location of the Intersection Point (the thin vertical line separating different grades) is approximated from a straight line fitting routine. The newly calculated grade does not necessarily match the grades shown in the old Curve and Gradient Book or in longitudinal section plans. This is generally due to the adoption of different Intersection Point locations but the grade between Intersection Points is accurate. Any critical tasks requiring grade information at, or near the ruling grade for a section should refer to longitudinal section plans for the area.
Curve Line	Curves are represented as "inverse radius" about the centre line. This means that straight track appears on the centreline. Very large radius curves deviate only slightly from the centreline. Tight curves deviate greatly from the centreline. Compound curves are stepped. Transitions appear as sloping lines. The sharper the transition, the steeper the slope. Some curves do not have designed in transitions and appear as vertical steps. Curves shown above the centreline are right hand aspect. Curves shown below the line are left hand aspect.
Radius	The radius is shown rounded to the nearest 10 metres. In complex compound curves, only the tightest radius is generally shown. Very large radius curves (greater than 2000m) do not have the radius shown.
Locations	Locations are shown along the Grade Line and are given their kilometrage on the corridor. The name, spelling and kilometrage are obtained from the RAC Location Codes Manual.
Overbridges	Overbridges appear as a step above the Grade Line. The length of the step is the length of the Overbridge. The height of the step is fixed. Where the database has a name for the Bridge, this is given.
Underbridges	Underbridges appear as a step below the Grade Line. The length of the step is the length of the Underbridge. The height of the step is fixed. Where the database has a name for the Bridge, this is given.
Tunnels	Tunnels appear as a step above the Grade Line. The length of the step is the length of the Tunnel. The height of the step is fixed. Where the database has a name for the Tunnel, this is given.

<p>Speedboards</p>	<p>Down Speedboards appear as a  shaped symbol above the Curve Line. Up Speedboards appear as a  shaped symbol below the Curve Line. Speedboards applying to "Normal type" trains appear as black numerals on a white background. Speedboards applying to "XPT type" trains appear as white numerals on a black background. The kilometrage of the Speedboard is the location of the small "leg" at the bottom of the symbol.</p>
<p>Level Crossings</p>	<p>Level Crossings appear as a small x symbol above the Grade Line. Where the database has a name for a Public Level Crossing, this is given.</p>
<p>Turnouts</p>	<p>Turnouts appear as a small  symbol below the Grade Line. These are provided as a guide only. These were obtained from the GPS Rapid Rail Mapping survey of the state, are approximate in location, and not necessarily complete.</p>
<p>Signals</p>	<p>Signals appear as a small  symbol below the Grade Line. These are provided as a guide only. These were obtained from the GPS Rapid Rail Mapping survey of the state, are approximate in location, and not necessarily complete.</p>



1.2 Diagram Index

The following tables detail the Corridor Codes presented in the appropriate Section:

1.2.1 Section 1 - North and Hunter Valley Corridors

Line Name	Code	Corridor	Range	Pages
Port Waratah	C03	Hunter Valley	Port Waratah to Islington Junction	C03 1
Main North	N00	Sydney Metro Hunter Valley North West North West	North Strathfield to Broadmeadow Broadmeadow to Dartbrook Junction Dartbrook Junction to Werris Creek Werris Creek to Wallangarra	N00 1-9 N00 9-15 N00 16-21 N00 21-40
Islington Jct to Newcastle	N35	Hunter Valley	Islington Jct to Newcastle (incl N33 Woodville Jct to Hamilton - Metro)	N35 1
Ulan Line	N40	Hunter Valley	Muswellbrook to Gulgong	N40 1-10
Merriwa Branch	N43	Hunter Valley	Sandy Hollow to Merriwa	N43 1-2
West Tamworth to Barraba	N44	North West	West Tamworth to Westdale	N44 1
			Westdale to Barraba	N44a 1-4
North Coast	N51	Hunter Valley	Telrah to Stratford Junction	N51 1-6
		North Coast	Stratford Junction to Border Tunnel	N51 6-35
		Queensland	Border Tunnel to Roma Street	N51 35-41
Glenreagh to Dorrigo	N61	North Coast	All	N61 1-3
Casino to Murwillumbah	N62	North Coast	All	N62 1-7
Binnaway to Werris Creek	N70	North West	All	N70 1-8
Werris Creek to Mungindi	N73	North West	Werris Creek to Weemelah	N73 1-19
		North West	Weemelah to Mungindi	N73a 1-2
Narrabri Jct to Walgett	N80	North West	All	N80 1-9
Burren to Pokataroo	N82	North West	Burren to Merrywinebone	N82 1-4
			Merrywinebone to Pokataroo	N82a 1-2
Moree to Inverell	N83	North West	All	N83 1-8
Camurra to Boggabilla	N85	North West	All	N85 1-7

1.2.2 Section 2 – South Corridor

Line Name	Code	Corridor	Range	Pages
Main South	S00	Sydney Metro	Lidcombe to MacArthur	S00 1-3
		South	MacArthur to Albury	S00 3-33
Picton to Mittagong Loop	S32	South	All	S32 1-3
Unanderra to Moss Vale	S34	South	All	S34 1-2
Goulburn to Crookwell	S36	South	All	S36 1-2
Yass Junction to Yass Town	S37	South	All	S37 1
Galong to Boorowa	S38	South	All	S38 1
Cootamundra to Tumut	S40	South	All	S40 1-3
Gilmore to Batlow	S42	South	All	S42 1
Wagga Wagga to Tumbarumba	S43	South	All	S43 1-3
Uranquinty to Kywong	S44	South	All	S44 1
The Rock to Oaklands	S45	South	All	S45 1-2
Henty to Rand	S46	South	All	S46 1
Culcairn to Holbrook	S47	South	All	S47 1
Culcairn to Corowa	S48	South	All	S48 1
Joppa Junction to Bombala	S50	South	Joppa Junction to Canberra	S50 1-6
		South	Queanbeyan to Bombala	S50a 1-8
Blayney to Demondrille	S60	South	All	S60 1-10
Koorawatha to Grenfell	S63	South	All	S63 1-4
Cowra to Eugowra	S64	South	All	S64 1-2
Cootamundra to Lake Cargelligo	S70	South	All	S70 1-13
Barmedman to Rankin Springs	S76	South	All	S76 1-2
West Wyalong to Burcher	S77	South	All	S77 1
Ungarie to Naradhan	S78	South	All	S78 1-4
Junee to Hay	S80	South	Junee to Willbriggie	S80 1-9
		South	Willbriggie to Hay	S80a 1-2
Narrandera to Tocumwal	S84	South	All	S84 1-3
Yanco to Griffith	S85	South	All	S85 1-3
Temora to Griffith and Roto	S86	South	All	S86 1-16

1.2.3 Section 3 – West Corridor

Line Name	Code	Corridor	Range	Pages
Main West	W00	Sydney Metro	Granville to Wallerawang	W00 1-8
		West	Wallerawang to Nyngan	W00 8-31
		West	Nyngan to Bourke	W00a 1-4
Byrock to Brewarrina	W14	West	All	W14 1-2
Orange to Broken Hill	W20	West	All	W20 1-41
Molong to Dubbo	W30	West	All	W30 1-3
Bogan Gate to Tottenham	W32	West	All	W32 1-6
Parkes to Narromine	W33	West	Goobang Junction to Narromine	W33 1-6
Stockinbingal to Parkes	W34	West	All	W34 1-10
Tarana to Oberon	W42	West	All	W42 1
Nevertire to Warren	W43	West	All	W43 1-2
Nyngan to Elura	W44	West	All	W44 1-8
Wallerawang to Gwabegar	W50	West	All	W50 1-23
Troy Junction to Merrygoen	W60	West	All	W60 1-6
Dubbo to Coonamble	W61	West	All	W61 1-8
Craboon to Coolah	W65	West	All	W65 1

1.2.4 Section 4 – Goods Metro

Line Name	Code	Corridor	Range	Pages
Botany Line	M50	Goods Metro	All	M50 1
Rozelle Line	M58	Goods Metro	All	M58 1
Chullora Jct to Sefton Pk Jct	M66	Goods Metro	All	M66 1