

# Network Information Book

## Coast B

### Kempsey (inc) to Acacia Ridge (exc)

OGW-30-22

#### Applicability

Interstate Network

#### Publication Requirement

Internal / External

#### Primary Source

Local Appendices North Volume 2

Route Access Standard – Defined Interstate Network Section Pages D33

#### Document Status

Version #	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
2.3	18 Oct 2023	Configuration Management Administrator	Corridor Assets & Operational Representatives	Configuration Manager	Head of Operations Standards

#### Amendment Record

Amendment Version #	Date Reviewed	Clause	Description of Amendment
1.0	14 Nov 2016		Initial issue
1.1	12 Oct 2017	Various	Intermodal terminal and quarry siding details added at Bromelton and Tamrookum. Half pilot staff information updated at Bonville, Boambee Beach & Landrigans. Diagram legend updated & interface agreement details added. Level crossing updates Fry St Grafton & Woodenbong

© Australian Rail Track Corporation Limited (ARTC)

#### Disclaimer

This document has been prepared by ARTC for internal use and may not be relied on by any other party without ARTC's prior written consent. Use of this document shall be subject to the terms of the relevant contract with ARTC.

ARTC and its employees shall have no liability to unauthorised users of the information for any loss, damage, cost or expense incurred or arising by reason of an unauthorised user using or relying upon the information in this document, whether caused by error, negligence, omission or misrepresentation in this document.

**This document is uncontrolled when printed.**

Authorised users of this document should visit ARTC's intranet or extranet ([www.artc.com.au](http://www.artc.com.au)) to access the latest version of this document.

**CONFIDENTIAL**

Page 1 of 104

			Rd Kyogle. Maintenance siding lengths updated at Kyogle & Tamrookum.
1.2	30 Jan 2018	1.1, 1.4, 2.1, 2.3, 2.27	Coast C network control board reference removed. Queensland Rail contact details added to adjacent train control centres information. Kempsey diagram updated to remove redundant infrastructure, Pacific Highway underpass added to Eungai - Macksville diagram and ARTC / QR interface added to Greenbank - Acacia Ridge diagram.
2.0	12 Feb 2020	Various	Train control contact details and section operating equipment updated. Level crossing details updated. North Coast Remote Control Signalling details updated. Lookout Working Hazardous Areas section 1.17 added. All locations and corresponding diagrams updated.
2.1	16 Apr 2021	1.13, 2.2, 2.13 & 2.14, 2.23	Communications text in section 1.13 updated. Tambar - Eungai, Braunstone, Grafton City, Grafton, Grafton - Koolkhan & Loadstone - Glenapp diagrams updated.
2.2	5 Aug 2021	1.5.3, 1.7, 1.8, 1.17, 1.19, 2.7, 2.8, 2.9 2.15	Boambee Beach & Coramba text and diagrams updated. Landrigans location removed and diagram renamed. Grafton text and diagram updated. Interlockings & Sidings, Tunnel Locations, Level Crossings, Lookout Working section and Drawing Legend updated. Diagrams note moved to bottom left corner.
2.3	18 Oct 2023	1.1, 1.8, 2.11, 2.14, 2.18, 2.19	Board Extent & Level Crossings table updated. Grafton telephone reference removed. Casino location updated. Kungala & Rappville - Casino diagrams updated.

## Table of Contents

<b>Table of Contents .....</b>	<b>3</b>
<b>1 General Information .....</b>	<b>5</b>
1.1 Board Extent .....	5
1.2 Safe Working System.....	5
1.3 Applicable Rules .....	5
1.4 Adjacent Train Control Boards / Centres .....	5
1.5 Section Operating Equipment .....	5
1.5.1 Motorised Point Machines .....	5
1.5.2 Operation of Power-operated Points in an Emergency.....	5
1.5.3 Interlockings and Sidings.....	6
1.6 Train Braking Requirements .....	7
1.7 Tunnel Locations.....	8
1.8 Level Crossings.....	9
1.9 Emergency Local Releases .....	16
1.10 Maximum Permanent Speeds and Permanent Speed Restrictions.....	16
1.11 Maximum Train Length .....	17
1.12 Structure Clearances .....	17
1.13 Communications .....	17
1.14 Wayside Monitoring Systems.....	18
1.15 Ruling Gradients .....	18
1.16 Curve and Gradient Data .....	18
1.17 Lookout Working Hazardous Areas .....	18
1.18 Telarah – Acacia Ridge Corridor Remote Control Signalling.....	19
1.19 Drawing Legend .....	21
<b>2 Locations and Sections Information .....</b>	<b>22</b>
2.1 Kempsey (KEM) .....	22
2.2 Tamban (TAN) .....	26
2.3 Eungai (ENG).....	29
2.4 Nambucca Heads (NBH).....	34
2.5 Raleigh (RLH) .....	38
2.6 Bonville (BVK) .....	40
2.7 Boambee Beach (BBE) .....	42

2.8	Coramba (CRM)	47
2.9	Nana Glen (NAN)	49
2.10	Glenreagh (GLN)	51
2.11	Kungala (KNG)	53
2.12	Braunstone (BAU)	55
2.13	Grafton City (SOG)	57
2.14	Grafton (GTN)	60
2.15	Koolkhan (KRC)	65
2.16	Kyarran (KYA)	67
2.17	Lawrence Road (LWR)	70
2.18	Rappville (RPV)	73
2.19	Casino (CSO)	77
2.20	Nammoona (NMO)	80
2.20.1	Nammoona Ballast Siding	80
2.21	Kyogle (KYO)	84
2.22	Loadstone (LOD)	87
2.23	Glenapp (GLP)	90
2.24	Tamrookum (TMK)	93
2.25	Bromelton Quarry Siding (922.567km)	95
2.26	Bromelton (BEV)	98
2.26.1	SCT Intermodal Facility (925.366km)	98
2.27	Greenbank (GRK)	102

## 1 General Information

*Note: All kilometre references in this document are based on the ARTC KM App and are only to be used as a guide.*

### 1.1 Board Extent

Kempsey Signal 30-1 at 500.863km to Acacia Ridge AR 1 Signal at 971.136km

This area is controlled by the Coast B Network Controller, Network Control Centre South (NCCS).

Contact Numbers:

Normal: (02) 6924 9812

Priority: (02) 6924 9842

Emergency: (02) 6924 9872

Train Transit Manager: (02) 6930 5311 or (02) 6924 9809

### 1.2 Safe Working System

Rail Vehicle Detection (RVD)

### 1.3 Applicable Rules

The ARTC Network Rules and Procedures apply to the sections covered by this Information Book

### 1.4 Adjacent Train Control Boards / Centres

ARTC Coast A Normal: (02) 6924 9811

ARTC Coast A Priority (02) 6924 9841

ARTC Coast A Emergency: (02) 6924 9871

Queensland Rail Acacia Ridge Signal Cabin (07) 3019 4205

### 1.5 Section Operating Equipment

#### 1.5.1 Motorised Point Machines

Nippon, Westinghouse, Vossloh Cogifer

#### 1.5.2 Operation of Power-operated Points in an Emergency

Main line points worked from NCCS are electrically power-operated.

If these points fail to operate correctly, a transit alarm will show on the Phoenix screen and the Network Controller must try to restore the points to their previous position to allow trains to continue running. However, if it is necessary to alter the route, the points may be manually operated.

The Signals maintenance representative must be promptly advised of the circumstances.

### 1.5.3 Interlockings and Sidings

Km	Interlocking, Station, Platform or Siding	Length of Passenger Platform in Metres
504.219	Kempsey	Main No. 1, 182
520.547	Tamban	
535.107	Eungai	Main No. 1, 55
552.420	Macksville	Main No. 1, 181
564.676	Nambucca Heads	Main No. 1, 198
580.581	Urunga	Main No. 1, 122
586.463	Raleigh	
596.379	Bonville	
600.668	Sawtell	Main No. 1, 76
605.952	Boambee Beach	
607.814	Coffs Harbour	Main No. 1, 182
627.775	Coramba	
641.060	Nana Glen	
652.062	Glenreagh	
663.786	Kungala	
683.422	Braunstone	
695.721	Grafton City	Main No. 1, 230
699.362	Grafton	
706.750	Rocla Concrete siding, Koolkhan	
712.986	Kyarran	
738.656	Lawrence Road	
777.268	Rappville	
805.590	Casino	Main No. 1, 182
809.987	Nammoona ballast siding	
833.798	Kyogle	Main No. 1, 75
837.110	Kyogle Loop	
863.527	Loadstone	
875.988	Queensland Border (for distance only)	
887.707	Glenapp	
908.861	Tamrookum	
922.567	Bromelton Quarry	
925.366	SCT Bromelton	

931.752	Bromelton Loop
956.124	Greenbank
971.136	Acacia Ridge AR1 Signal

*NOTE: On track signage displays the entry and exit speeds through main line turnouts. Where there is no signage displayed the entry/exit speed through a mainline turnout defaults to 25km/hr*

## 1.6 Train Braking Requirements

### Brake Holding Tests for the Rearmost Vehicles (retention tests)

The following apply:

1. The operator **shall** put into place systems for conducting brake holding tests.
2. The number of vehicles (or for articulated or permanently coupled vehicles the number of triple valve control units) required to conform to the requirements of this sub-section shall be:
  - a. Three (3) for freight trains operated in New South Wales;
  - b. Two (2) for freight trains not entering New South Wales; and
  - c. One (1) for all passenger trains where a guard is provided or three (3) for passenger trains without guards.
3. The vehicle operator shall ensure that air and hand brakes operate correctly.
4. The air brakes on the vehicles **shall** remain effectively applied for a period of time, based on train length, considered sufficient for a member of the train (locomotive) crew to reach the vehicles and secure handbrakes in the event of a breakaway en route.
5. This time **shall** be ten (10) minutes plus three (3) minutes for each 100 metres or part thereof of train length. For example, a train 1240 metres long will require a holding (retention) time of  $13 \times 3 + 10 = 49$  minutes.
6. If any of the required number of vehicles (as specified in item (2) above) fail the above test (as specified in item (5) above), generally known as a holding or retention test, the faulty vehicle(s) **shall** be repaired or the train remarshalled to ensure compliance with the requirements of items (3) and (4) above.
7. Brake holding tests successfully completed will remain valid for the departure within a period of 24 hours from completion of the test. After that period, the vehicles **shall** be re-tested.

### Freight Trains

On freight trains, the maximum number of inoperative or isolated brakes permitted on a train **shall** be either of the following:

1. One conventional two-bogie vehicle for every ten (10) vehicles in the train where the vehicle is isolated as a unit.

2. One bogie for every ten (10) bogies in the train where individual bogies can be isolated or the isolation of triple valve control units affects more than two (2) bogies. This applies, only on the proviso that the total un-braked mass of the train **shall not** exceed 10% of the total train mass (excluding the mass of the hauling locomotives).

Item (1) above applies where the only vehicles isolated are conventional two-bogie vehicles. In all other cases, the requirements of item (2) **shall** be followed.

For the purposes of this clause, a four-wheel (two-axle) vehicle **shall** be counted as one bogie, and locomotives under power **shall not** be counted as train vehicles.

## 1.7 Tunnel Locations

Section / location	Name of Tunnel	Length of tunnel in metres	km from Sydney
Raleigh – Bonville	Repton	110	588.577 - 588.687
Boambee Beach – Coramba	Red Hill No. 1	92	615.397 - 615.489
Boambee Beach – Coramba	Red Hill No. 2	208	616.953 - 617.161
Boambee Beach – Coramba	Red Hill No. 3	261	617.569 - 617.830
Boambee Beach – Coramba	Red Hill No. 4	121	618.094 - 618.215
Boambee Beach – Coramba	Red Hill No. 5	274	618.599 - 618.873
Loadstone – Glenapp	Spiral No. 1	192	871.947 - 872.139
Loadstone – Glenapp	Spiral No. 2	177	872.661 - 872.838
Loadstone – Glenapp	Border	1161	875.481 - 876.642
Loadstone – Glenapp	Running Creek No. 1	423	880.031 - 880.454
Loadstone – Glenapp	Running Creek No. 2	208	881.555 - 881.763



## 1.8 Level Crossings

*NOTE: All active level crossings on the Telarah – Acacia Ridge Corridor have Cerberus Remote Monitoring.*

*A manual operation switch has been provided on the side of the level crossing locations. The Manual Operation Switch is to be used by a Competent Worker in accordance with Network Rule ANGE 218 for operating the level crossing warning equipment in an emergency or for the movement of track vehicles over the level crossing.*

ALCAM ID is the number allocated from the Australian Level Crossing Assessment Model used by rail and road managers across Australia. It's a national database for assessing risk which is overseen by a National Committee and supported by the Rail Industry Safety Standards Board (RISSB).

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
832	Belgrave Street Kempsey	North Coast	503.302	Road	Public	Half Boom Flashing Lights
832	Belgrave Street Ped Xing Kempsey	North Coast	503.302	Road	Public	Pedestrian Maze
	Off First Lane, Kempsey	North Coast	504.570	Road	Public	Stop Signs
	Private Accommodation	North Coast	505.254	Road	Private	Stop Signs
	Private Accommodation	North Coast	505.630	Road	Private	Stop Signs
833	North Street Kempsey	North Coast	506.290	Road	Public	Half Boom Flashing Lights
834	Collombatti Road Kempsey	North Coast	515.875	Road	Public	Half Boom Flashing Lights
4131	Tamban Lxing	North Coast	531.506	Road	Private	Stop Signs
836	South Bank Road Eungai	North Coast	534.282	Road	Public	Half Boom Flashing Lights
837	Brown's Crossing Road Eungai	North Coast	538.525	Road	Public	Half Boom Flashing Lights
838	Public Road Eungai	North Coast	544.180	Road	Public	Stop Signs
839	Holme's Lxing Eungai	North Coast	545.024	Road	Public	Stop Signs
4319	Eungai Lxing	North Coast	546.614	Road	Private	Stop Signs
840	Tilly Willy Street Ped Xing Macksville	North Coast	552.750	Road	Public	Pedestrian Maze
840	Tilly Willy Street Macksville	North Coast	552.750	Road	Public	Half Boom Flashing Lights
4132	Macksville Lxing	North Coast	553.091	Road	Private	Stop Signs
4133	Macksville Lxing	North Coast	554.218	Road	Private	Stop Signs
4134	Macksville Lxing	North Coast	554.258	Road	Private	Stop Signs

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
4135	Macksville Lxing	North Coast	554.761	Road	Private	Stop Signs
4320	Macksville Lxing	North Coast	556.310	Road	Private	Stop Signs
4321	Nambucca Heads Take Off (off loop)	North Coast	565.077	Take-off	Service	
841	Peterkins Gate Road Nambucca Heads	North Coast	569.020	Road	Public	Primary Flashing Lights
842	Schnapper Beach Road Urunga	North Coast	576.075	Road	Public	Half Boom Flashing Lights
843	Yellow Rock Road Urunga	North Coast	582.820	Road	Public	Primary Flashing Lights
843	Yellow Rock Road Ped Xing Urunga	North Coast	582.820	Road	Public	Pedestrian Maze
4136	Urunga Lxing	North Coast	583.327	Road	Private	Stop Signs
4137	Urunga Lxing	North Coast	583.669	Road	Private	Stop Signs
4138	Raleigh Lxing	North Coast	585.620	Road	Private	Stop Signs
844	Yellow Rock Road Raleigh	North Coast	586.908	Road	Public	Stop Signs
1818	Old Ferry Road Raleigh	North Coast	587.571	Road	Public	Stop Signs
845	Archville Road Raleigh	North Coast	594.532	Road	Public	Stop Signs
846	Bonville Station Road	North Coast	596.322	Road	Public	Stop Signs
4322	Bonville Take off (off loop)	North Coast	596.500	Take-off	Service	
847	Hulberts Road Bonville	North Coast	600.889	Road	Public	Half Boom Flashing Lights
847	Hulberts Road Ped Xing Bonville	North Coast	600.889	Road	Public	Pedestrian Maze
4323	Boambee Take Off (off loop)	North Coast	605.982	Take-off	Service	
848	Marina Drive Coffs Harbour	North Coast	608.221	Road	Public	Half Boom Flashing Lights
848	Marina Drive Ped Xing Coffs Harbour	North Coast	608.221	Road	Public	Pedestrian Maze
849	Mackays Road Coffs Harbour	North Coast	613.590	Road	Public	Half Boom Flashing Lights
4324	Karangi Take Off	North Coast	619.600	Take-off	Service	
4140	Karangi Lxing	North Coast	624.727	Road	Private	Stop Signs
4325	Coramba Take Off (off loop)	North Coast	627.970	Take-off	Service	

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
4141	Leusings Private Road Coramba	North Coast	628.650	Road	Private	Primary Flashing Lights
4142	Coramba Lxing	North Coast	629.097	Road	Private	Stop Signs
850	Bakers (Off East Bank Road) Coramba	North Coast	631.265	Road	Private	Stop Signs
4144	Nana Glen Lxing	North Coast	633.900	Road	Private	Stop Signs
4145	Nana Glen Lxing	North Coast	634.544	Road	Private	Stop Signs
4146	Nana Glen Lxing	North Coast	635.751	Road	Private	Stop Signs
851	Eastbank Road Nana Glen	North Coast	636.858	Road	Public	Half Boom Flashing Lights
4147	Nana Glen Lxing	North Coast	637.501	Road	Private	Stop Signs
4148	Nana Glen Lxing	North Coast	638.729	Road	Private	Stop Signs
852	Palimino Drive Nana Glen	North Coast	641.867	Road	Public	Half Boom Flashing Lights
4149	Nana Glen Lxing	North Coast	642.590	Road	Private	Stop Signs
4150	Nana Glen Lxing	North Coast	643.339	Road	Private	Stop Signs
4151	Nana Glen Lxing	North Coast	644.477	Road	Private	Stop Signs
1820	Public Road Nana Glen	North Coast	644.764	Road	Public	Stop Signs
853	Towell's Road Nana Glen	North Coast	645.689	Road	Public	Stop Signs
4152	Glenreagh Lxing	North Coast	649.088	Road	Private	Stop Signs
854	Sherwood Creek Road Glenreagh	North Coast	651.600	Road	Public	Half Boom Flashing Lights
4153	Glenreagh Lxing	North Coast	652.770	Road	Private	Stop Signs
4154	Glenreagh Lxing	North Coast	654.158	Road	Private	Stop Signs
855	Brennans Lxing Glenreagh	North Coast	661.722	Road	Public	Stop Signs
856	Kungala Road Kungala	North Coast	664.669	Road	Public	Half Boom Flashing Lights
857	East Lanitza Road Kungala	North Coast	671.961	Road	Public	Stop Signs
858	Maloneys (off Poley House Road) Kungala	North Coast	679.625	Road	Public	Stop Signs
859	Poley House Road Kungala	North Coast	682.520	Road	Public	Stop Signs
4155	Braunstone Lxing	North Coast	684.520	Road	Private	Primary Flashing Lights
1499	Grafton Station	North Coast	695.840	Pedestrian	Public	Path

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
Pedestrian Crossing						
862	Fry Street Grafton	North Coast	700.407	Road	Public	Half Boom Flashing Lights
863	Carr Street Grafton	North Coast	701.045	Road	Public	Stop Signs
864	Barker Street Grafton	North Coast	701.853	Road	Public	Stop Signs
865	Drake Street Grafton	North Coast	702.460	Road	Public	Stop Signs
866	Broad Street Grafton	North Coast	702.901	Road	Public	Stop Signs
867	Pine Street Grafton	North Coast	703.449	Road	Public	Stop Signs
4156	Grafton Yard Lxing	North Coast	703.789	Road	Private	Stop Signs
868	Carrs Peninsular Road Koolkhan	North Coast	704.326	Road	Public	Half Boom Flashing Lights
4157	Koolkhan Lxing	North Coast	704.880	Road	Private	Stop Signs
4158	Koolkhan Lxing	North Coast	705.130	Road	Private	Stop Signs
869	Summerland Way Koolkhan	North Coast	706.310	Road	Public	Half Boom Flashing Lights
870	Red Lane Koolkhan	North Coast	708.038	Road	Public	Half Boom Flashing Lights
4326	Kyarran Take Off	North Coast	713.730	Take-off	Service	
4327	Kyarran Service Lxing	North Coast	713.885	Road	Service	Stop Signs
4328	Kyarran Service Lxing	North Coast	714.340	Road	Service	Stop Signs
871	Malah Road Kyarran	North Coast	717.284	Road	Public	Stop Signs
4159	Kyarran Lxing	North Coast	719.362	Road	Private	Stop Signs
872	Dilkoon Road Gurranang	North Coast	724.231	Road	Public	Stop Signs
873	Station Yard Kyarran	North Coast	727.564	Road	Public	Stop Signs
874	Old Casino Road Kyarran	North Coast	731.130	Road	Public	Stop Signs
4160	Lawrence Road Lxing	North Coast	733.970	Road	Private	Stop Signs
4329	Lawrence Road Service Lxing	North Coast	739.075	Road	Private	Stop Signs
875	Railway Station Road Banyabba	North Coast	743.014	Road	Public	Stop Signs
876	Mt Marsh Road Banyabba	North Coast	750.900	Road	Public	Stop Signs
4161	Banyabba Lxing	North Coast	754.950	Road	Private	Stop Signs
877	Camira Creek Yard	North Coast	756.686	Road	Public	Stop Signs
878	Old Tenterfield Road Camira Creek	North Coast	757.156	Road	Public	Half Boom Flashing Lights
4162	Camira Creek Lxing	North Coast	759.939	Road	Private	Stop Signs

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
879	Ampdale Lxing Camira Creek	North Coast	761.894	Road	Public	Stop Signs
880	Clearfield Road Camira Creek	North Coast	769.651	Road	Public	Stop Signs
881	Myrtle Creek Road Camira Creek	North Coast	773.214	Road	Public	Stop Signs
882	Whian Whian Road Camira Creek	North Coast	774.996	Road	Public	Stop Signs
883	Nandabah Street Rappville	North Coast	776.468	Road	Public	Primary Flashing Lights
4163	Rappville Lxing	North Coast	781.110	Road	Private	Stop Signs
884	Coombell Road Rappville	North Coast	785.360	Road	Public	Stop Signs
4164	Rappville Lxing	North Coast	787.291	Road	Private	Stop Signs
885	Amarina Yard Rappville	North Coast	789.006	Road	Public	Stop Signs
4330	Leeville Take Off	North Coast	793.665	Take-off	Service	
886	Leeville Station Road	North Coast	793.889	Road	Public	Stop Signs
887	Mongogarrie Road Leeville	North Coast	794.855	Road	Public	Primary Flashing Lights
888	Shannonbrook Road Leeville	North Coast	796.324	Road	Public	Primary Flashing Lights
889	Brooker Road Leeville	North Coast	797.410	Road	Public	Stop Signs
4165	Shannon Brook Lxing	North Coast	798.056	Road	Private	Stop Signs
890	Vouts Road Shannon Brook	North Coast	798.769	Road	Public	Stop Signs
4166	Shannon Brook Lxing	North Coast	799.170	Road	Private	Stop Signs
4167	Shannon Brook Lxing	North Coast	799.608	Road	Private	Stop Signs
4168	Shannon Brook Lxing	North Coast	800.754	Road	Private	Stop Signs
892	Bruxner Highway South Casino	North Coast	804.028	Road	Public	Half Boom Flashing Lights
4331	Casino take off (off main)	North Coast	805.190	Take-off	Service	
893	Hotham Street Casino	North Coast	806.281	Road	Public	Primary Flashing Lights
894	Summerland Way Nammoona	North Coast	809.017	Road	Public	Half Boom Flashing Lights
4169	Nammoona Lxing	North Coast	812.001	Road	Private	Stop Signs
4170	Casino Lxing	North Coast	815.755	Road	Private	Stop Signs
895	Fairy Hill Station Road Fairy Hill	North Coast	815.937	Road	Public	Primary Flashing Lights

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
4171	Fairy Hill Lxing	North Coast	816.601	Road	Private	Stop Signs
4172	Fairy Hill Lxing	North Coast	817.486	Road	Private	Stop Signs
896	Public (off Backmead Road) Fairy Hill	North Coast	818.653	Road	Public	Stop Signs
897	Baraimal Lane Fairy Hill	North Coast	821.731	Road	Public	Primary Flashing Lights
898	Studders Lane Fairy Hill	North Coast	824.024	Road	Public	Stop Signs
899	Bentley Road Cedar Point	North Coast	826.026	Road	Public	Primary Flashing Lights
900	Hillyard Road Cedar Point	North Coast	826.482	Road	Public	Stop Signs
901	Webbs Road Cedar Point	North Coast	828.270	Road	Public	Stop Signs
902	Runnymede Road Kyogle	North Coast	829.939	Road	Public	Half Boom Flashing Lights
4173	Kyogle Lxing	North Coast	830.723	Road	Private	Stop Signs
903	Andrew Street Kyogle	North Coast	831.528	Road	Public	Stop Signs
904	Golf Club Lxing Kyogle	North Coast	834.948	Road	Public	Stop Signs
4332	Kyogle Take Off (off loop)	North Coast	837.050	Take-off	Service	
4174	Kyogle North Lxing	North Coast	838.891	Road	Private	Stop Signs
4176	Kyogle North Lxing	North Coast	839.778	Road	Private	Stop Signs
4177	Kyogle North Lxing	North Coast	840.279	Road	Private	Stop Signs
4178	Kyogle North Lxing	North Coast	841.365	Road	Private	Stop Signs
4179	Kyogle North Lxing	North Coast	843.236	Road	Private	Stop Signs
4180	Kyogle North Lxing	North Coast	843.980	Road	Private	Stop Signs
4181	Kyogle North Lxing	North Coast	844.664	Road	Private	Stop Signs
4182	Kyogle North Lxing	North Coast	844.865	Road	Private	Stop Signs
4183	Kyogle North Lxing	North Coast	845.590	Road	Private	Stop Signs
905	Summerland Way Wiangaree	North Coast	846.213	Road	Public	Half Boom Flashing Lights
4333	The Risk Take Off	North Coast	853.000	Take-off	Service	
4184	The Risk Lxing	North Coast	853.375	Road	Private	Stop Signs
4185	The Risk Lxing	North Coast	853.898	Road	Private	Stop Signs
4187	The Risk Lxing	North Coast	855.547	Road	Private	Stop Signs
4188	The Risk Lxing	North Coast	856.091	Road	Private	Stop Signs
4189	Mt Lion Lxing	North Coast	858.122	Road	Private	Stop Signs
4190	Mt Lion Lxing	North Coast	858.585	Road	Private	Stop Signs
906	Cedargetters Road	North Coast	859.410	Road	Public	Stop Signs

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
	Mt Lion					
4334	Loadstone Take Off (off loop)	North Coast	863.580	Take-off	Service	
4335	Loadstone ARTC Lxing	North Coast	864.560	Road	Service	
4191	Loadstone Lxing	North Coast	865.002	Road	Private	Stop Signs
4192	Loadstone Lxing	North Coast	865.827	Road	Private	Stop Signs
4336	Loadstone ARTC Lxing	North Coast	868.320	Road	Service	Stop Signs
4337	Loadstone ARTC Lxing	North Coast	868.500	Road	Service	Stop Signs
4193	Loadstone Lxing	North Coast	870.615	Road	Private	Stop Signs
4194	Loadstone Lxing	North Coast	870.856	Road	Private	Stop Signs
4195	Loadstone Lxing	North Coast	871.460	Road	Private	Stop Signs
4338	Border Loop ARTC Lxing	North Coast	871.910	Road	Private	Stop Signs
908	Border Spiral Road	North Coast	872.592	Road	Public	Stop Signs
4196	Border Loop Lxing	North Coast	873.531	Road	Private	Stop Signs
4339	Border Loop Service Xing	North Coast	873.970	Road	Service	Stop Signs
4340	Border Loop Service Xing	North Coast	874.070	Road	Service	Stop Signs
4341	Border Loop Take Off	North Coast	875.120	Take-off	Service	Stop Signs
5720	Property Access Road Border Tunnel	North Coast	878.581	Road	Private	Stop Signs
5721	Private Access Road Border Tunnel	North Coast	880.653	Road	Private	Stop Signs
6525	Property Access Road Border Tunnel	North Coast	883.655	Road	Private	Stop Signs
5723	Property Access Road Border Tunnel	North Coast	886.688	Road	Private	Stop Signs
5724	Camp Creek Road Glenapp	North Coast	888.764	Road	Public	Stop Signs
5726	Property Access Road Glenapp	North Coast	890.250	Road	Private	Stop Signs
5727	Tartar Creek Road Glenapp	North Coast	892.480	Road	Public	Stop Signs
5728	Property Access Road Glenapp	North Coast	893.650	Road	Private	Stop Signs
5729	Property Access Road Glenapp	North Coast	894.310	Road	Private	Stop Signs
5730	Property Access Road Glenapp	North Coast	895.220	Road	Private	Stop Signs
5731	Property Access Road Tamrookum	North Coast	902.380	Road	Private	Stop Signs

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
5732	Property Access Road Tamrookum	North Coast	905.050	Road	Private	Stop Signs
	Peacefield Private Road Tamrookum	North Coast	905.430	Road	Private	Primary Flashing Lights
5734	Property Access Road Tamrookum	North Coast	905.900	Road	Private	Stop Signs
5735	Tamrookum Take off (off loop)	North Coast	908.924	Take-off	Service	
5736	Property Access Road Tamrookum	North Coast	913.826	Road	Private	Stop Signs
5737	Property Access Road Tamrookum	North Coast	915.490	Road	Private	Stop Signs
5738	Property Access Road Tamrookum	North Coast	916.260	Road	Private	Stop Signs
5739	Property Access Road Tamrookum	North Coast	916.840	Road	Private	Stop Signs
	Bromelton Take-Off	North Coast	926.020	Take-off	Service	
5740	Private Access Road	North Coast	931.388	Road	Private	Stop Signs
5741	Barnes Road	North Coast	932.890	Road	Public	Stop Signs
5742	Saville Road Bromelton	North Coast	934.530	Road	Public	Stop Signs
5743	Property Access Road Bromelton	North Coast	935.810	Road	Private	Stop Signs
5744	Property Access Road Kagaru	North Coast	939.355	Road	Private	Stop Signs
5745	Property Access Road	North Coast	944.905	Road	Private	Stop Signs
5746	New Beith Road	North Coast	945.650	Road	Public	Stop Signs
5748	Property Access Road	North Coast	947.682	Road	Private	Stop Signs
	Greenbank Take off (off main)	North Coast	955.380	Take-off	Service	
7177	QR Maintenance Road Greenbank	North Coast	965.600	Road	Service	Stop Signs
	Acacia Ridge Take-Off	North Coast	966.390	Take-off	Service	
	Acacia Ridge Take-Off	North Coast	971.050	Take-off	Service	

## 1.9 Emergency Local Releases

Nil

## 1.10 Maximum Permanent Speeds and Permanent Speed Restrictions

Refer the Route Access Standard - Defined Interstate Rail Network Section Pages D51 for all speed information.



### 1.11 Maximum Train Length

Maximum train length is 1500 metres

### 1.12 Structure Clearances

Refer Route Access Standards for Rolling Stock Outlines

### 1.13 Communications

The National Train Communications System (NTCS) In-Cab Equipment (ICE) unit provides the mandatory communications functionality for operations across the ARTC controlled rail network. A standard ICE unit is installed with the following components

- Telstra NextG™ transceiver
- Iridium satellite transceiver
- UHF Radio
- GSMR module
- GPS

The ICE unit primary communications is via the Telstra NextG™ and backup communications is provided via the Iridium Satellite network. The ICE unit will automatically call Network Control Centre South (NCCS) when the routine and emergency buttons are pressed.

The UHF radio is used for local train-to-train and train-to-track side voice communications, referred to as “WB radio” across the ARTC controlled rail network excluding the Unanderra to Moss Vale branch line. For the ARTC controlled rail network, the below “WB radio” frequency set shall be used and must automatically or manually be selected on ICE excluding the Unanderra – Moss Vale branch line.

WB - UHF Local Train Radio (LTR) frequency details

- Frequency: 450.050 MHz
- (UHF), Bandwidth: 12.5 KHz
- EIRP: 41W (remote/low density areas), 8.3W (medium and high density areas)
- Tx CTCSS: 173.8 Hz
- Rx CTCSS: Nil
- Selcall: disabled.

Inside and immediately in the vicinity of Spiral No. 1 and Spiral No.2 tunnels in the Loadstone to Glenapp section, Telstra NextG™ coverage is provided for rail traffic and track workers for voice communications. In the event of a Telstra NextG™ failure inside these tunnels when voice communications are initiated, ICE will attempt a satellite call to Network Control Centre South.

Inside the Border, Running Creek 1 and Running Creek 2 tunnels in the Loadstone to Glenapp section, “WB Radio” is functioning and is the only method of communication with the Coast B Network Controller, identified by portal signs stating, “WB RADIO ONLY IN TUNNEL”. Rail Traffic Crews and Track Vehicle Operators approaching Border, Running Creek 1 and Running Creek 2 tunnels must have their ICE radios or other communication device for track vehicles switched on and configured to WB – UHF Local Train Radio (LTR) frequency details.

Alternate Communication for this section is by mobile or satellite phones.

## 1.14 Wayside Monitoring Systems

There are no Wayside devices in this section.

## 1.15 Ruling Gradients

Kempsey to Grafton	1 in 80
Grafton to Acacia Ridge	1 in 66

## 1.16 Curve and Gradient Data

For all Curve and Gradient data, refer to the ARTC Internet.

[https://extranet.artc.com.au/eng\\_network-config\\_cd.html](https://extranet.artc.com.au/eng_network-config_cd.html)

## 1.17 Lookout Working Hazardous Areas

The below list of locations are hazardous for Lookout Working and may require an additional Lookout or a higher level of protection to undertake work in these areas.

The Protection Officer is responsible for conducting a safety assessment and confirming that Lookout Working is suitable for the work to be performed at the location. This may require the use of an additional Lookout to ensure adequate minimum warning time to easily reach a Safe Place. If the safety assessment determines that Lookout Working is not suitable a higher level of protection must be applied.

Area	KM From	KM To	Line	Line Direction	Up/Down	Reason Unsuitable
Kundabung - Kempsey	29-4 signal	511 down signal	Single Main	Bi-directional	Both	Tight radius curves and bridge structures.
Tamban - Eungai	515.000	544.100	Single Main	Bi-directional	Both	Tight radius curves with minimal sighting distances.
Macksville – Nambucca Heads	552.418	576 Distant Signal	Single Main	Bi-directional	Both	Tight radius curves.
Raleigh - Bonville	35-4 Signal	36-3 Signal	Single Main	Bi-directional	Both	Tight radius curves, transom bridge and tunnel.
Boambee - Coramba	37-2 Signal	39-3 Signal	Single Main	Bi-directional	Both	Tight radius curves and steep grade along with 5 tunnels.
Coramba – Nana Glen	39-4 Distant Signal	40-3 Signal	Single Main	Bi-directional	Both	Tight radius curves.
Braunstone - Grafton	44-1 Signal	45-3 Signal	Single Main	Bi-directional	Both	Tight radius curves and bridge across the Clarence river and no real safe place across the viaduct from Grafton City to Grafton Yard.
Loadstone - Glenapp	LE1 Signal	GP1 Signal	Single Main	Bi-directional	Both	Tight radius curves weaving through mountains along with 5 tunnels.

## 1.18 Telarah – Acacia Ridge Corridor Remote Control Signalling

### Introduction

Rail Vehicle Detection System is in operation on all Main Line and Crossing Loops between Maitland (Telarah) and Acacia Ridge.

The points, signals and electric releases at all locations from Maitland (Telarah) to Acacia Ridge (signal AR1 at 971.136km) are remotely operated from Network Control Centre South (NCCS).

### Local Control Panels

All local control panels in the Telarah – Acacia Ridge Corridor are booked out of use and are not to be used.

### Locking

Type	Provided
Approach	Yes
Route	Yes

### Operation of Points and Signals

Colour light signals are of the single light type.

A low speed indication (a small green light) and a shunting signal (a yellow light) with a route indication applicable to both, are provided beneath the main head of the Down home signal and the Up home signal at certain locations.

Entry to the Loop line is on the authority of the low speed signal with route indication for a running movement, or on the authority of the yellow light in the subsidiary shunting signal with route indication for a shunting movement, where provided.

At certain locations entry into the loop line is on the authority of a pulsating yellow light on the Distant signal and a Band of lights below the main head signal on the Home signal.

Entry to the crossing location on the main line will be on the authority of the green light of the main running signal when the starting signal is clear.

When the starting signal is at stop, entry to the main line of the crossing location can be on the authority of the low speed signal with route indication, or on the authority of the yellow light in the subsidiary shunting signal with route indication, where provided.

At certain locations when the starting signal is at stop, entry to the main line of the crossing location can be on the authority of a steady yellow light in the main head of the home signal

The distant signals show a green indication automatically in response to a proceed indication being displayed by the main line signals in advance.

At locations where the Goods siding connection from the Loop line occurs near the starting signal, trains are permitted to depart from the Goods sidings directly to the main line on the authority of the starting signal being cleared.

### Network Control Centre South (NCCS)

Each Network Control Board for the Telarah – Acacia Ridge Corridor (Coast A and B boards) comprises a Phoenix Control System which allows the Network Controller to manage all train movements.

### Ground Frame Releases

The ground frames operating the points between the main line or the loop line and any siding within a location are unlocked by a key from a releasing switch located next to the ground frame.

Releasing switches are released electrically by the Network Controller at NCCS.

A steady light inscribed "Release normal" is displayed in the indicator diagram next to the ground frame points when the releasing switch is normal. When the release is taken, the "Release normal" light will be extinguished.

When required to give the release for a particular releasing switch, the Network Controller at NCCS must:

- normalise all conflicting routes
- where required, admit the train to the line to which the siding is connected by setting the shunting route
- when the light on the indicator diagram next to the ground frame flashes, the Competent Worker must operate the release and work the ground frame points operated, as required.

---

**NOTE:** *As far as possible, shunting of sidings should always be done from the loop line as this does not involve altering the setting of the main to the loop line points during the shunt. Shunting of sidings from the main line involves delay in obtaining time releases of approach locking whenever the setting of the main to the loop points has to be altered.*

---

## 1.19 Drawing Legend

	Standard gauge track		Dual gauge track
	Advisory Sign or Location Sign		Speed sign
	Pedestrian Crossing		Passive Protection Level Crossing
	Active Protection Level Crossing – Flashing Lights		Active Protection Level Crossing – Lights and Boom
	Bridge or Overpass		Underpass
	River/Creek or Significant river bridge or Viaduct		Station or Platform
	Tunnel		Crossover
	Turnout		Catchpoint
	Derail		Points Operating Mechanism
	Point Indicator		Mechanical Frame
	Automatic Signals		Controlled Signals
	Dwarf Signals		Signal number reference
	Distant Signal		Repeater Signal
	Overheight Detectors		Wayside Equipment

## 2 Locations and Sections Information

### 2.1 Kempsey (KEM)

#### General Arrangements

Loop length 1777m

Siding No 1 421m

Siding No 2 372m

The Goods sidings are currently leased to Pacific National and are not to be used without the permission of Pacific National. Refer safety interface agreement IA1802 for further details.

Signallers must ensure that signal No. 30-12M is not cleared until passenger trains are ready to depart the platform.

#### Emergency Operation of Points

An ESML is located in the Telephone Cabin North of the Points at the Sydney end of the loop.

An EOL is located in the Telephone Cabin South of the Points at the Country end of the loop.

#### Ground Frames

##### Frame C

Frame C is located on the Up side of the Loop line adjacent to the crossovers and provides access to the Goods sidings.

Frame C is unlocked by a key from releasing switch C, which is electrically released by No. 81 release at Network Control Centre South (NCCS).

A signal pushbutton unit is provided near frame C to control the shunting signals for movements between the main line or the Loop line and the Goods sidings. Red and green repeater lights are also provided in the pushbutton unit.

When a shunting movement is required to enter or depart the sidings, the Qualified Worker controlling the shunting movement must contact the Network Controller and request the Network Controller to set the route and give the release for the ground frame.

The Qualified Worker must then operate the ground frame and push the button to clear the shunting signal (the green repeater light will be displayed). The Qualified Worker must hold the pushbutton in until the train passes the signal (this will be indicated when the red repeater light is displayed).

##### Frame G

Frame G is located on the Up side of the Loop line adjacent to the crossovers and provides access to the Transit and Stock sidings.

Frame G is unlocked by a key from releasing switch G, which is electrically released by No. 86 release at NCCS.

The emergency release keys for both ground frames are located inside the telephone cabin situated at the station, along with the local control panel, which can be accessed by contacting station staff during staffed hours and via an SL lock after hours.

**Belgrave Street level crossing**

Type F flashing lights, bells and half boom gates are provided at Belgrave Street level crossing 503.302km. The level crossing is activated by conventional track circuits for Down and Up trains, subject to the clearance of the signals on either side of the crossing. The strike points are located at 501.900km in the Down direction and 505.028km in the Up direction and are indicated with crossing approach warning boards.

The warning equipment is automatically controlled by track circuit for Up or Down trains on the main line or the Loop line, subject to the clearance of the signals on each side of the crossing, and manually controlled by the signal pushbutton unit for trains shunting the Goods sidings.

If a train closely approaches Down Home or Up Starting signals at stop, the setting of the applicable signal route will cause the level crossing warning equipment to operate but clearing of the signals will be delayed for 15 seconds.

If it becomes necessary to hold a train at signal No. 30-3 or No. 30-12M or 30-12L after the signal has been cleared, the level crossing warning equipment will continue to operate for a period of 120 seconds after the signal is returned to stop and will then cancel automatically.

**Working of Up Passenger Trains**

Signallers must ensure that signal No. 30-12M is not cleared until passenger trains are ready to depart the platform.

**North Street Level Crossing**

Type F flashing lights and bells are provided at North Street level crossing at 506.290km. The level crossing is activated by conventional track circuits. The strike points are located at 505.500km in the Down direction and 507.894km in the Up direction and are indicated with crossing approach warning boards.

**Collombatti Link Road Level Crossing**

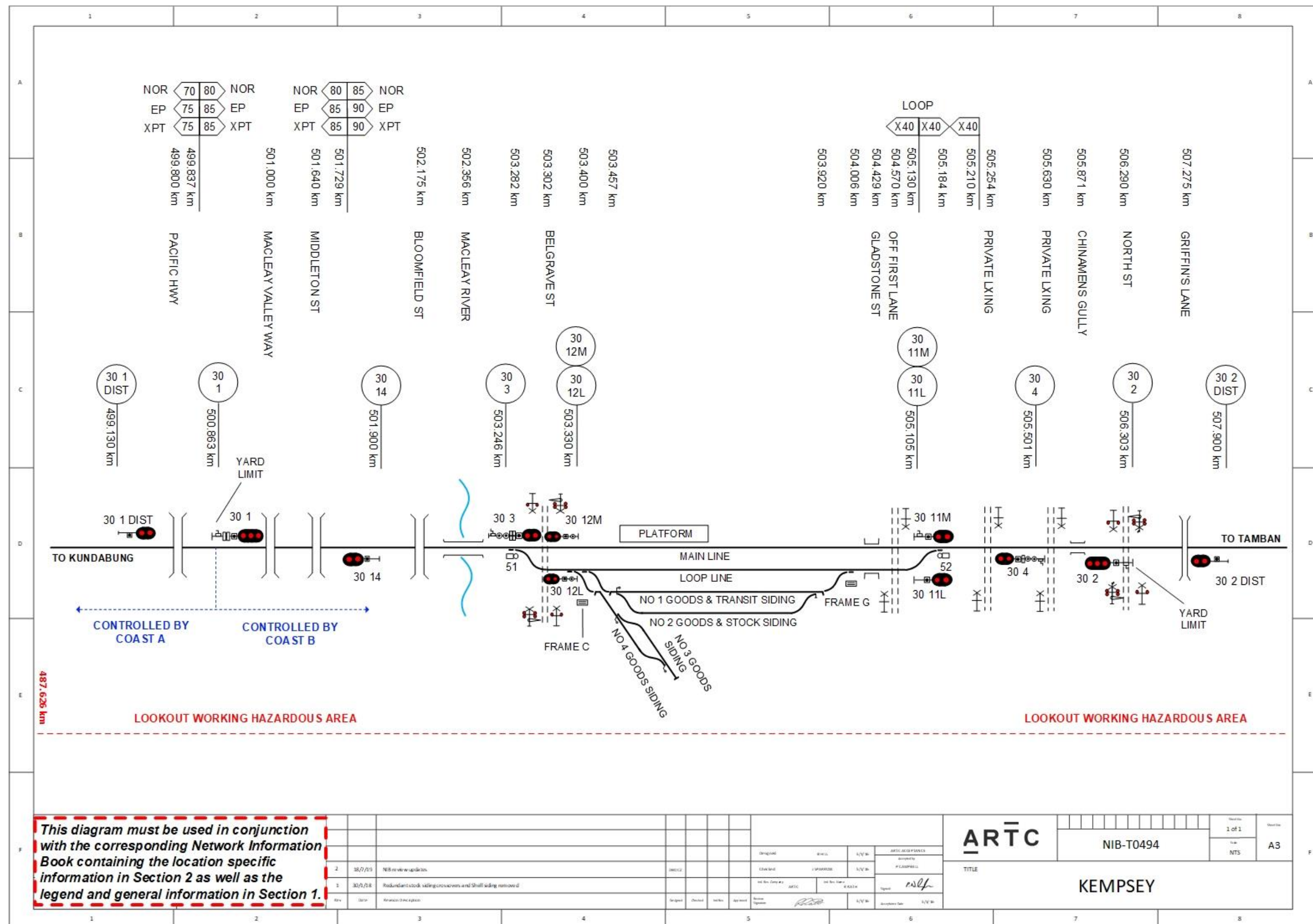
Type F flashing lights, bells and automatic boom gates are provided at Collombatti Link Road level crossing 515.875km. The level crossing is activated by conventional track circuits. The strike points are located at 514.725km in the Down direction and 516.955km in the Up direction and are indicated with crossing approach warning boards.

**Half Pilot Staffs**

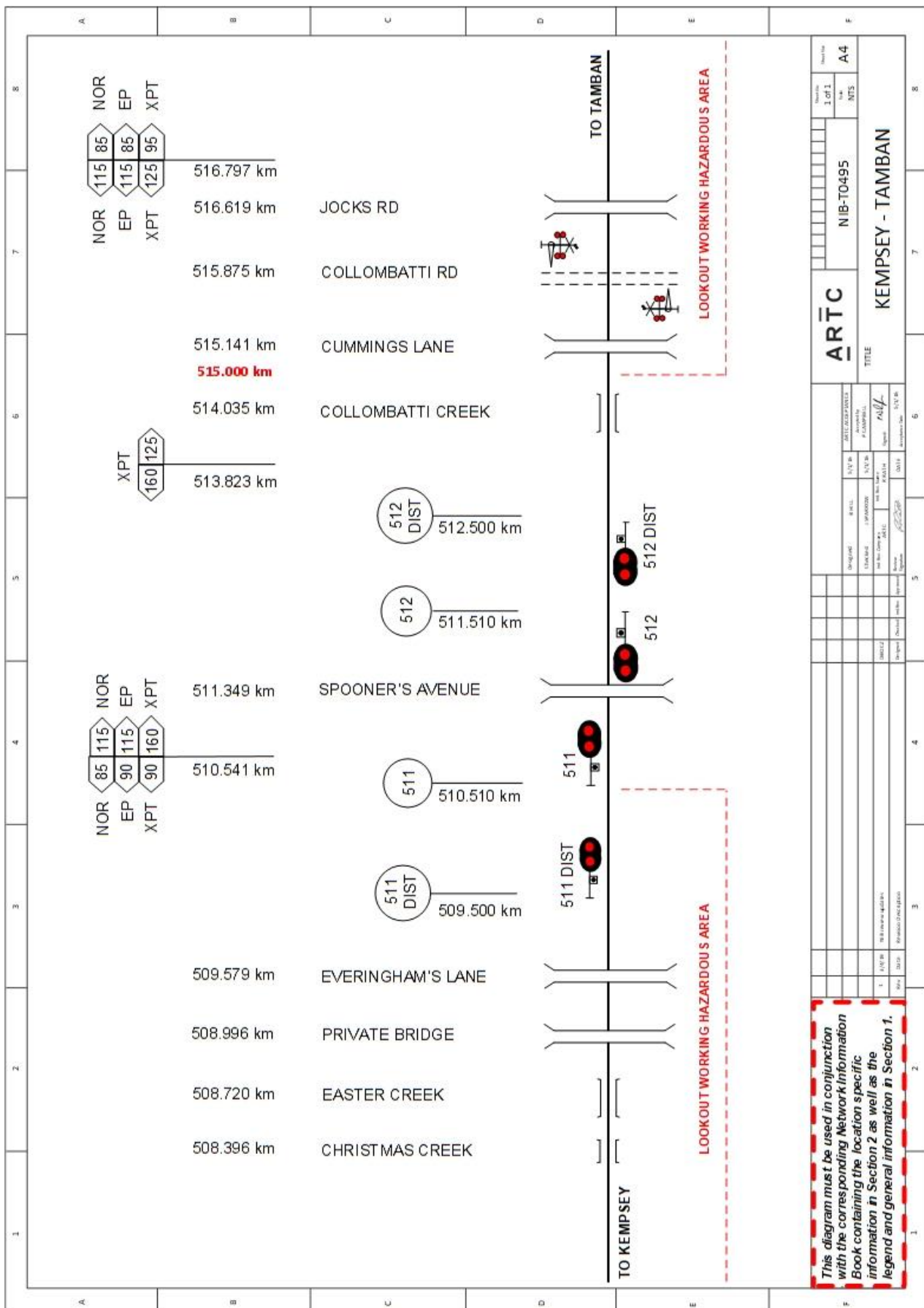
The half pilot staff for the section Kundabung - Kempsey is inscribed "Kempsey 30-14" and is held in the telephone cabin near signal 30-12M.

The half pilot staff for the section Kempsey – Tamboon is inscribed "Kempsey 30-11M" and held in a box mounted on signal 30-11M.









## **2.2 Tamban (TAN)**

### **General Arrangements**

Loop length 404m

### **Emergency Operation of Points**

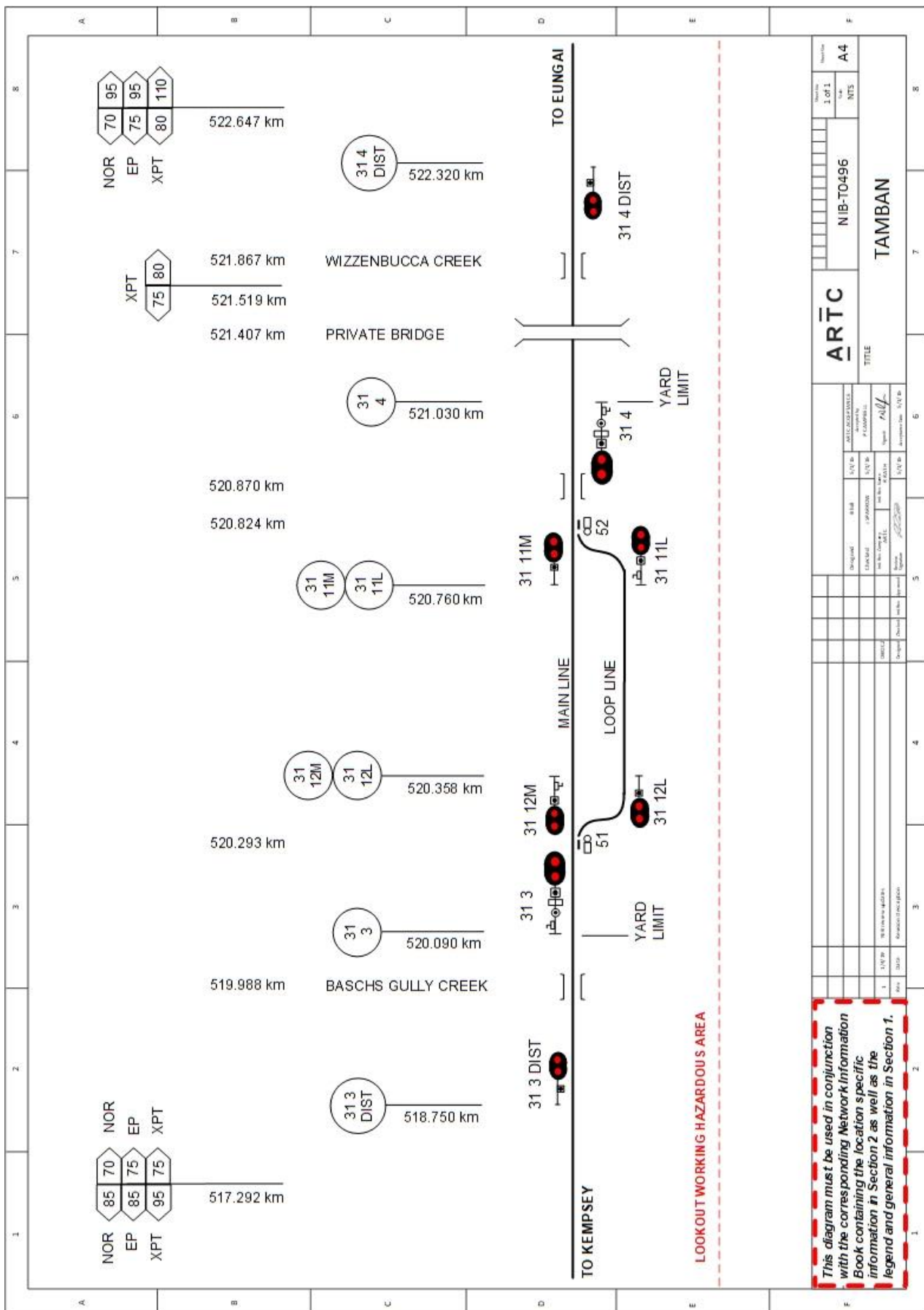
ESMLs are located in the Telephone Cabins on the Sydney and Country ends for 51 and 52 points.

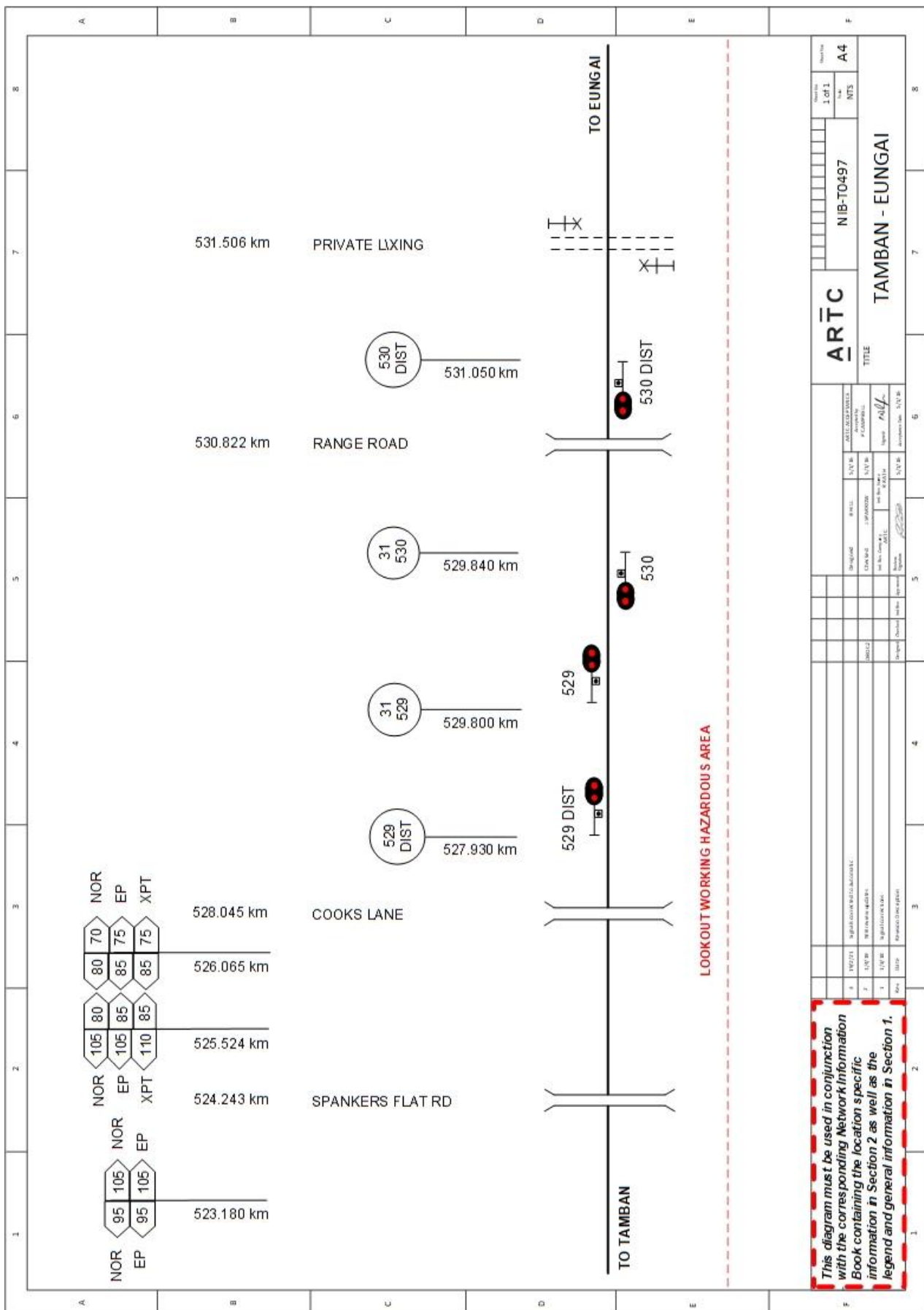
### **Half Pilot Staffs**

The half pilot staff for the section Kempsey - Tamban is inscribed "Tamban 31-12M".

The half pilot staff for the section Tamban – Eungai is inscribed "Tamban 31-11M".

## Locations and Sections Information





## 2.3 Eungai (ENG)

### General Arrangements

Loop length 1535m

Goods siding 220m

Signallers must ensure that signal No. 32-12M is not cleared until passenger trains are ready to depart the platform in the Up direction.

### Emergency Operation of Points

ESMLs are located in the Telephone Cabins on the Sydney and Country ends for 51 and 52 points.

### Ground Frame

Frame C is located on the Down side of the loop line adjacent to the points and provides access to the Goods siding.

Frame C is unlocked by a key from releasing switch C, which is electrically released by No. 82 release at NCCS.

Emergency release key is provided to release frame C in the event of a failure of releasing switch C. The key is located in release locks in the traffic room.

When the key is taken from its release lock it will place or maintain all signals at Eungai at stop.

### South Bank Road Level Crossing

Type F flashing lights, bells and boom gates are provided at South Bank Road level crossing 534.282km. The level crossing is activated by conventional track circuits for Down and Up trains, subject to the clearance of the signals on either side of the crossing. The strike points are located at 533.645km in the Down direction (on the Down Main) and 534.935km in the Up direction (on the Up Main) and 534.555km (on the Up Loop) and are indicated with crossing approach warning boards.

Signallers must ensure that signal No. 32-12M is not cleared until passenger trains are ready to depart the platform in the Up direction.

If a train closely approaches Down starting signal No. 32-11L or No. 32-11M, or Up home signal No. 32-04 at stop, the setting of the applicable signal route will cause the level crossing warning equipment to operate but clearing of the signals will be delayed for 15 seconds.

If it becomes necessary to hold a train at signal No. 32-11L, No. 32-11M or No. 32-04 after the signal has been cleared, the level crossing warning equipment will continue to operate for a period of 120 seconds after the signal is returned to stop and will then cancel automatically.

### Browns Crossing Road Level Crossing

Type F flashing lights, bells and half boom gates are provided at Browns Crossing Road level crossing at 538.525km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 537.240km in the Down direction and 539.370km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

**Tilly Willy Street Level Crossing (Macksville)**

Type F flashing lights, bells and half boom gates are provided at Tilly Willy Street level crossing at 552.750km. The Up direction approach is controlled by conventional track circuits with a strike point located at 554.420km and is indicated with a crossing approach warning board. The Down direction approach is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The GCP crossing approach warning board is located at 551.900km in the Down direction. This board is blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

Pedestrian gates, warning lights, bells and emergency exits are located on the Sydney side of the road crossing.

A pushbutton unit is provided on the up signal 554 at 552.940km for rail traffic to proceed through the level crossing if signal 554 is at stop. The pushbutton unit must be kept closed and secured by an SL Lock when not in use.

When rail traffic is required to proceed past signal 554 at stop, a Qualified Worker must:

- Unlock the pushbutton unit
- Depress the START pushbutton in the pushbutton unit for one second to cause the warning equipment to operate, and
- Follow the relevant Network Rules and Procedures for proceeding over the level crossing.

**Half Pilot Staffs**

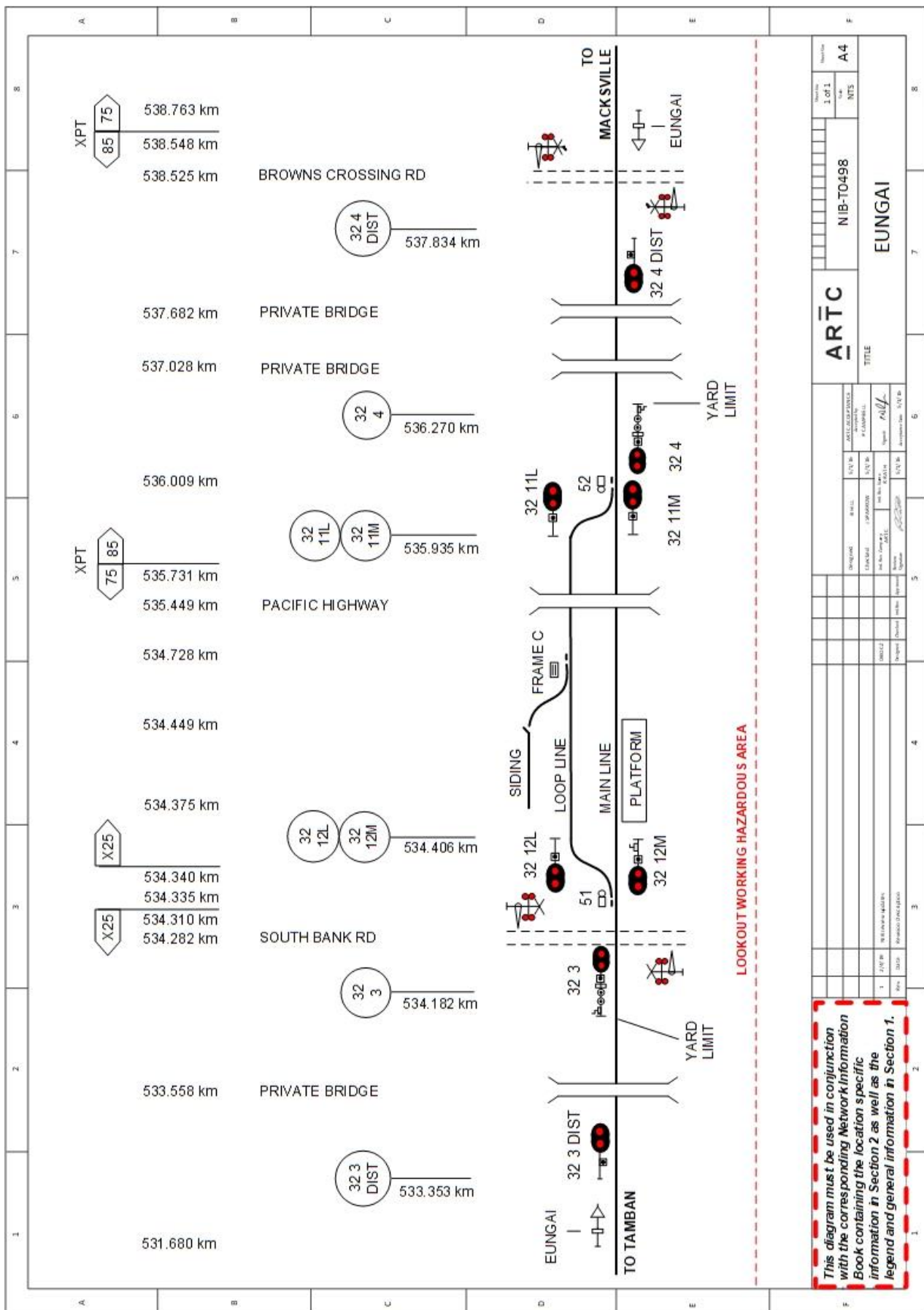
The half pilot staff for the section Tambo - Eungai is located on 32-12M Signal and inscribed "Eungai 32-12M".

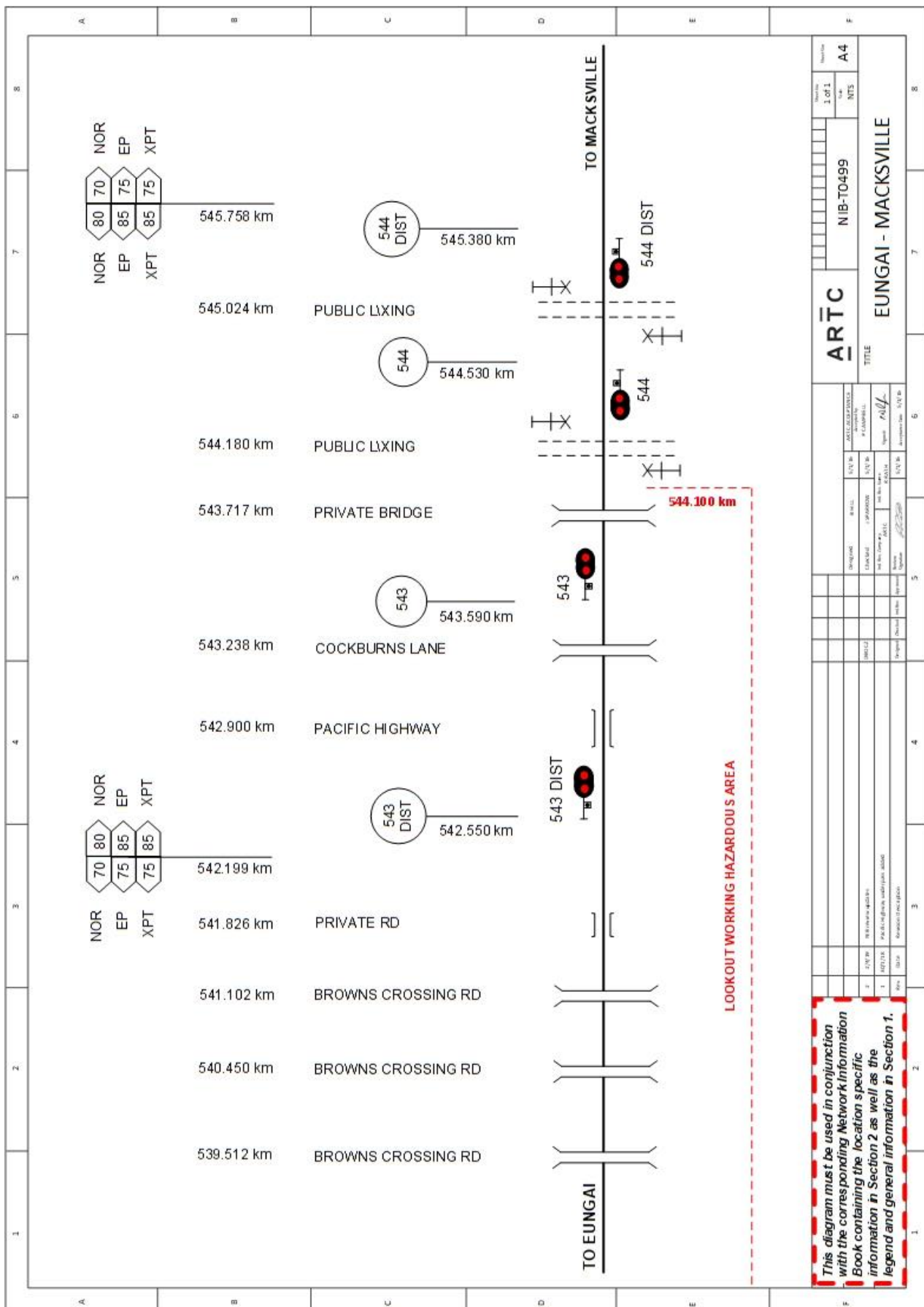
---

*NOTE: There is no half pilot staff for Eungai – Nambucca section following the removal of Macksville Loop.*

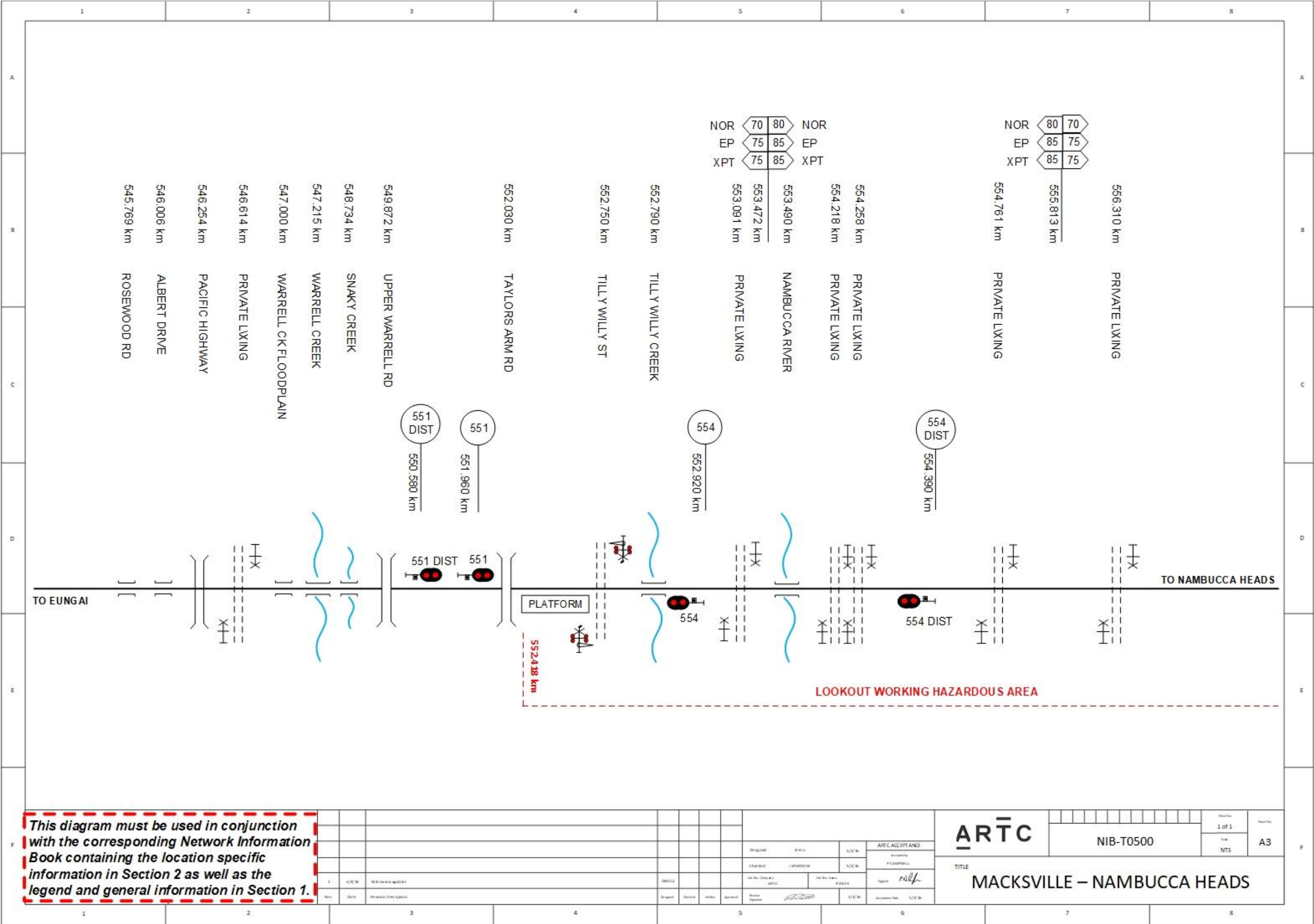
---











## 2.4 Nambucca Heads (NBH)

### General Arrangements

Loop length 1943m

Siding 100m

### Emergency Operation of Points

EOLs are located in the Telephone Cabins at the Sydney and Country ends for 51 and 52 points.

### Ground Frame

Frame B is located on the Down side of the Loop line and provides access to the Goods siding.

Frame B is unlocked by a key from releasing switch B, which is electrically released by No. 81 release at NCCS.

Emergency release key is provided to release frame B in the event of a failure of releasing switch B. The key is located in release locks in the traffic room.

When the key is taken from its release lock it will place or maintain all signals at Nambucca Heads at stop.

### Peterkins Gate Road Level Crossing

Type F flashing lights and bells are provided at Peterkins Gate Road level crossing 569.020km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 568.187km in the Down direction and 569.881km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

### Schnapper Beach Road Level Crossing

Type F flashing lights, bells and half boom gates are provided at Schnapper Beach Road level crossing 576.075km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 574.742km in the Down direction and 577.338km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

### Yellow Rock Road Level Crossing

Type F flashing lights and bells are provided at Yellow Rock Road level crossing 582.820km. The level crossing is activated by conventional track circuits. The strike points are located at 582.820km in the Down direction and 583.698km in the Up direction and are indicated with crossing approach warning boards.

### Half Pilot Staffs

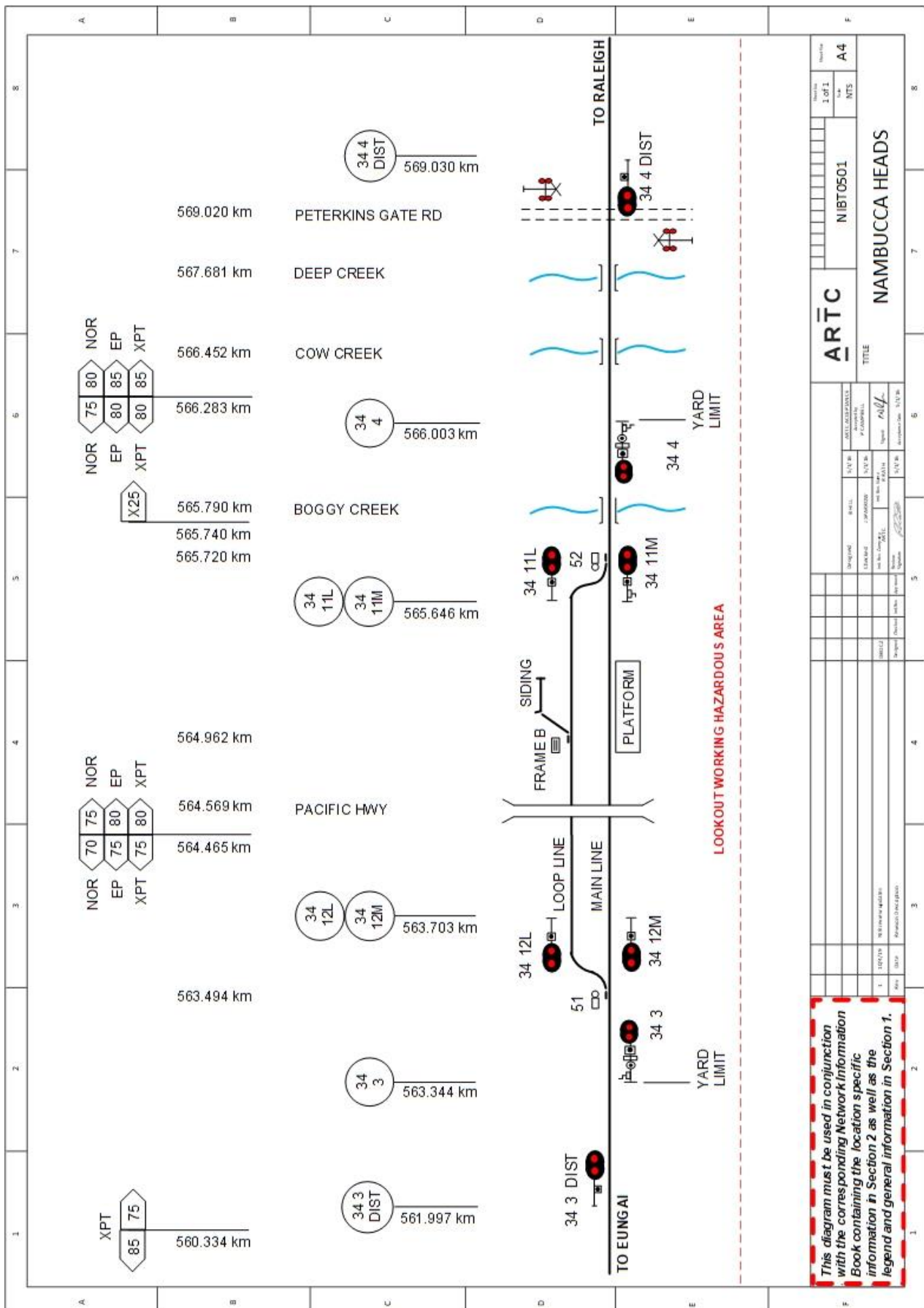
The half pilot staff for the section Nambucca Heads – Raleigh is located on 34-11M Signal and inscribed "Nambucca Heads 34-11M".

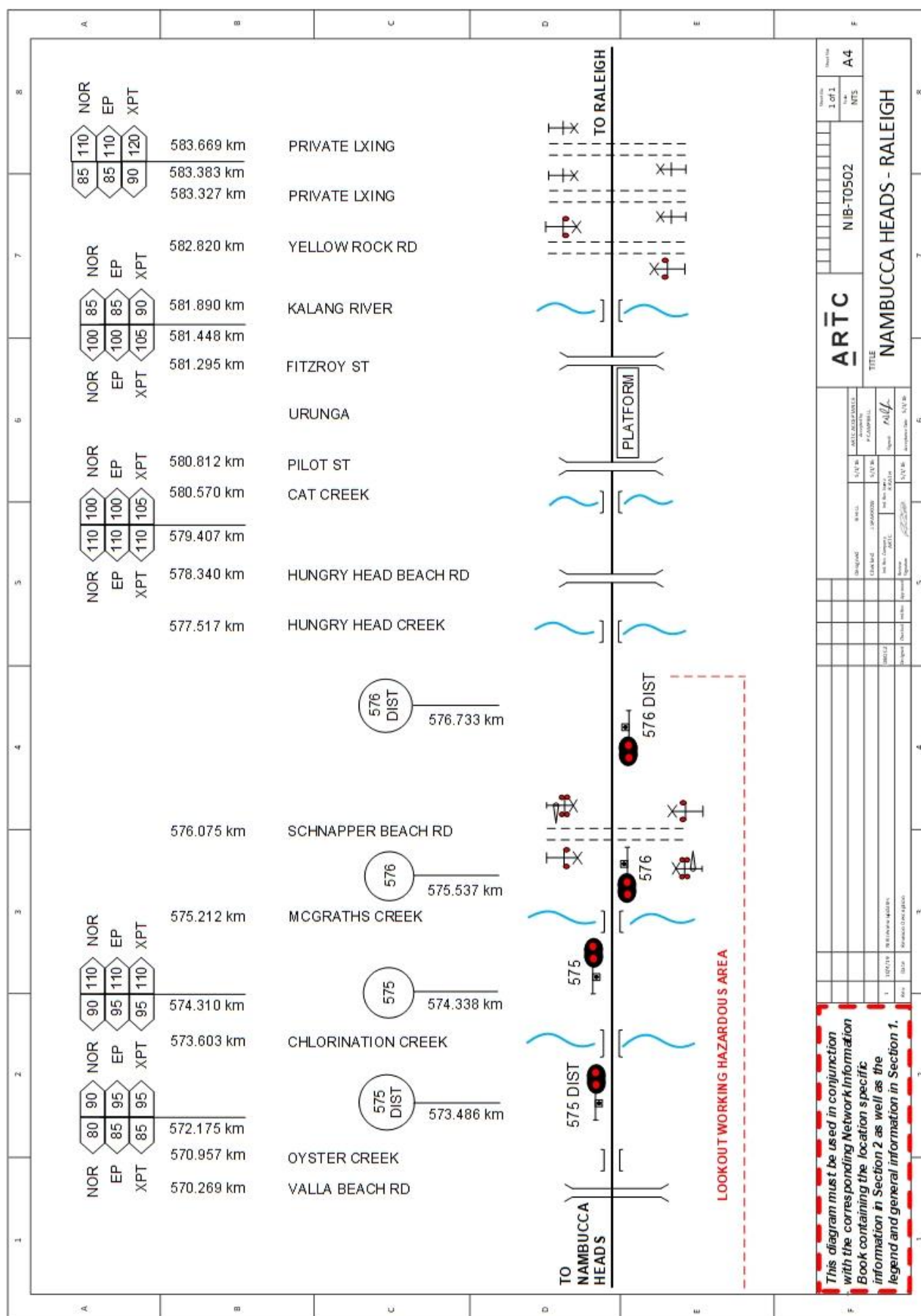
---

*NOTE: There is no half pilot staff for Nambucca - Eungai section following the removal of Macksville Loop.*

---

## Locations and Sections Information







## **2.5 Raleigh (RLH)**

### **General Arrangements**

Loop length 385m

Goods siding 295m

### **Emergency Operation of Points**

ESMLs are located in the Telephone Cabins on the Sydney and Country ends for 51 and 52 points

### **Ground Frames**

Frames B and C are located on the Down side of the Loop line adjacent to the crossovers and provide access to the Goods siding.

Frame B is unlocked by a key from releasing switch B, which is electrically released by No. 81 release at NCCS.

Frame C is unlocked by a key from releasing switch C, which is electrically released by No. 82 release at NCCS.

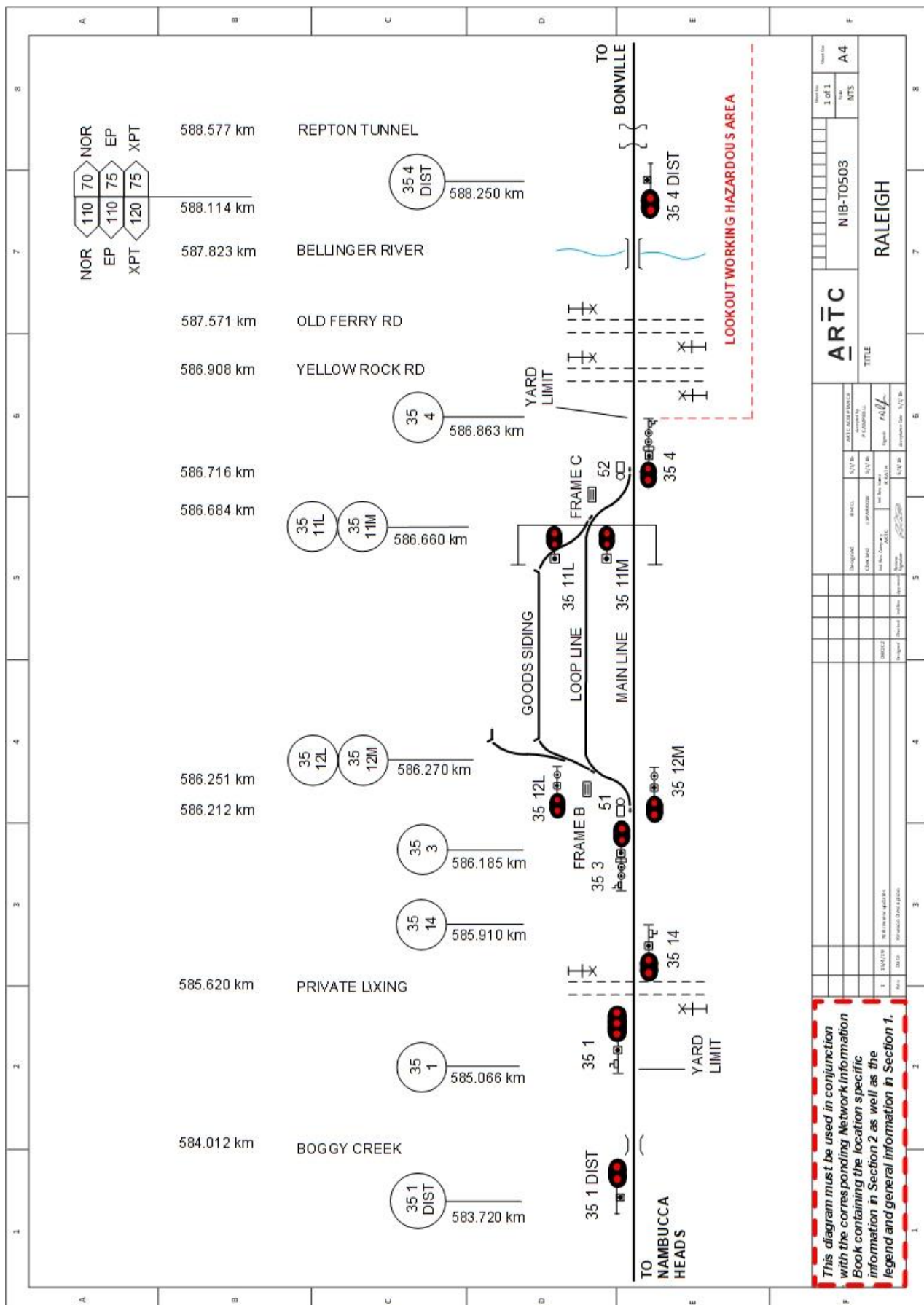
Emergency release keys are provided to release frames B and C in the event of a failure of releasing switches B and C. The keys are located in release locks in the traffic room.

When the keys are taken from their release locks it will place or maintain all signals at Raleigh at stop.

### **Half Pilot Staffs**

The half pilot staff for the section Nambucca Heads - Raleigh is located in Telephone Cabin at the Sydney end of loop and inscribed "Raleigh 35-14M".

The half pilot staff for the section Raleigh – Bonville is located on 35-11M Signal and inscribed "Raleigh 35-11M".



## **2.6 Bonville (BVK)**

### **General Arrangements**

Loop length 731m

### **Emergency Operation of Points**

The EOL key is located in the Telephone Cabin at the Sydney end of the loop for 51 points.

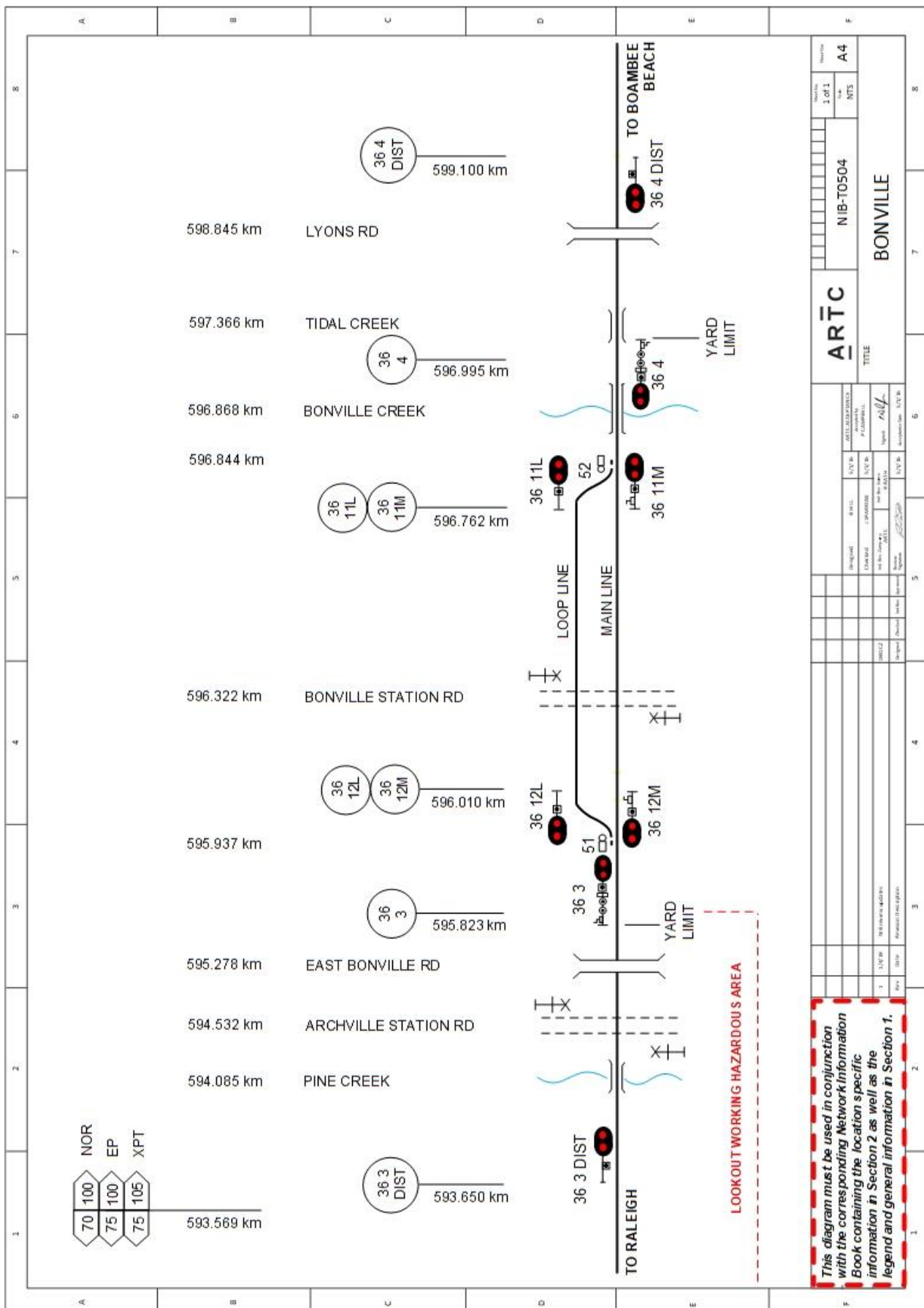
The ESML is located adjacent to the points on the Country end for 52 points.

### **Half Pilot Staffs**

The half pilot staff for the section Raleigh - Bonville is located on 36-12M and inscribed "Bonville 36-12M".

The half pilot staff for the section Bonville – Boambee Beach is located on 36-11M Signal and inscribed "Bonville 36-11M".





## 2.7 Boambee Beach (BBE)

### General Arrangements

Loop length 1537m

Goods siding 500m (Refer interface agreement IA1819 for further details)

Engineering siding 138m

Signallers must ensure that Down signal No. 37-13 is not cleared until passenger trains are ready to depart the platform.

### Emergency Operation of Points

ESMLs are located in the Telephone Cabin at the Sydney and Country ends of the loop for 51 and 52 points.

### Ground Frames

Frames B and C are located on the Down side of the Loop line adjacent to the crossovers and provide access to the Goods siding.

Frame B is unlocked by a key from releasing switch B, which is electrically released by No. 81 release at NCCS.

Frame C is unlocked by a key from releasing switch C, which is electrically released by No. 82 release at NCCS.

Emergency release keys are provided to release frames B and C in the event of a failure of releasing switch B or C. The keys are located in release locks in the traffic room.

When either of the keys is taken from its release lock, it will place or maintain all signals at Boambee Beach at stop.

### Notice Plate

A notice plate is fitted to the back wall of the North end telephone cabin and is inscribed:

"Employees must ensure before removing the half pilot staff for possession purposes that No 11 Down home signal displays a green (clear) indication".

### Hulberts Road Level Crossing (Sawtell)

Type F flashing lights, bells and half boom gates are provided at Hulberts Road level crossing at Sawtell 600.889km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 599.858km in the Down direction and 601.920km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

### Marina Drive Level Crossing

Type F flashing lights, bells, half boom gates and pedestrian swing gates are provided at Marina Drive level crossing at Coffs Harbour Jetty 608.221km. The level crossing is activated by conventional track circuits for Down and Up trains, subject to the clearance of the signals on either side of the crossing. The strike points are located a 607.292km in the Down direction and 609.165km in the Up direction and are indicated with crossing approach warning boards.

**Mackays Road Level Crossing**

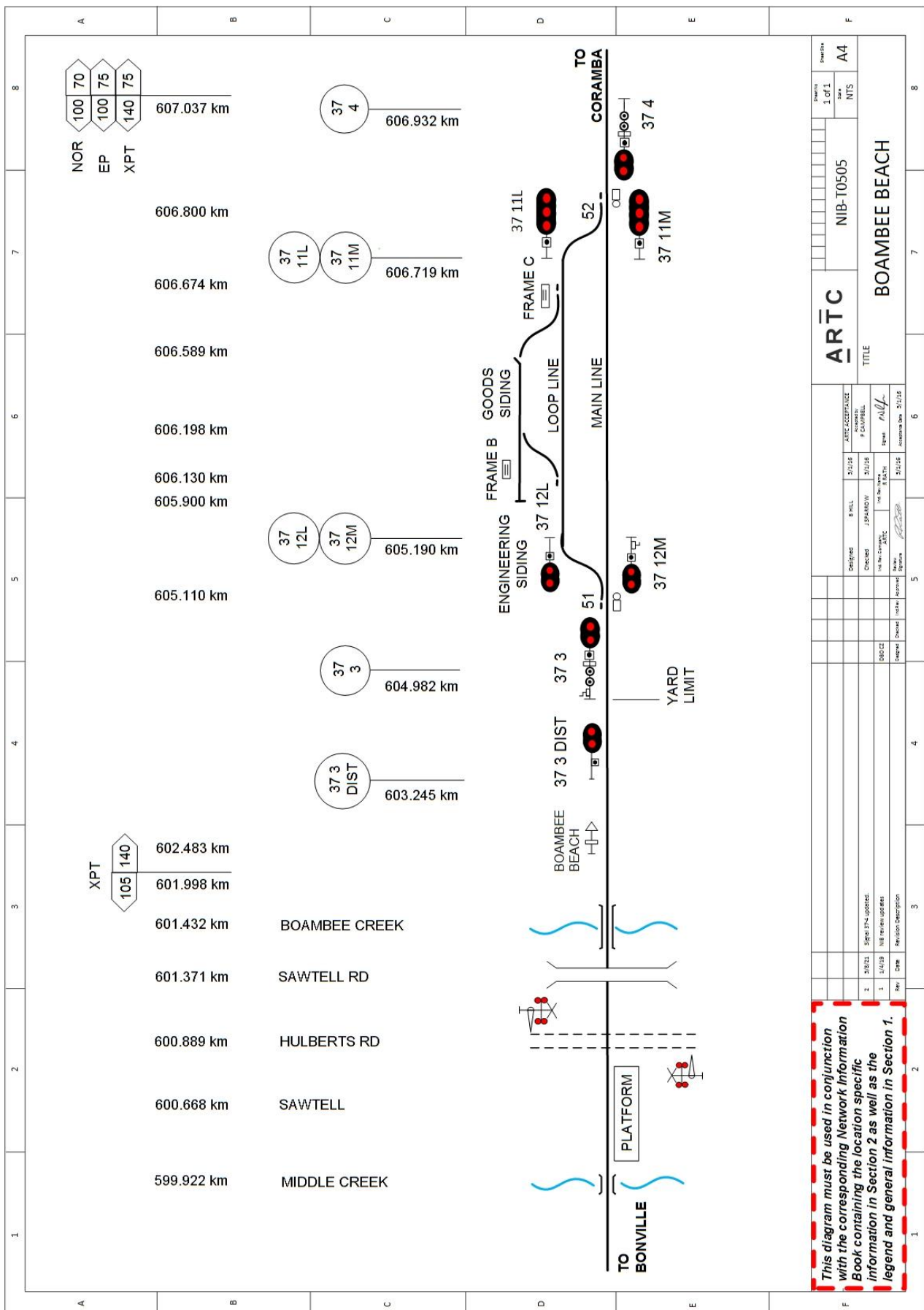
Type F flashing lights and bells are provided at Mackays Road level crossing 613.590km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 612.744km in the Down direction and 614.452km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

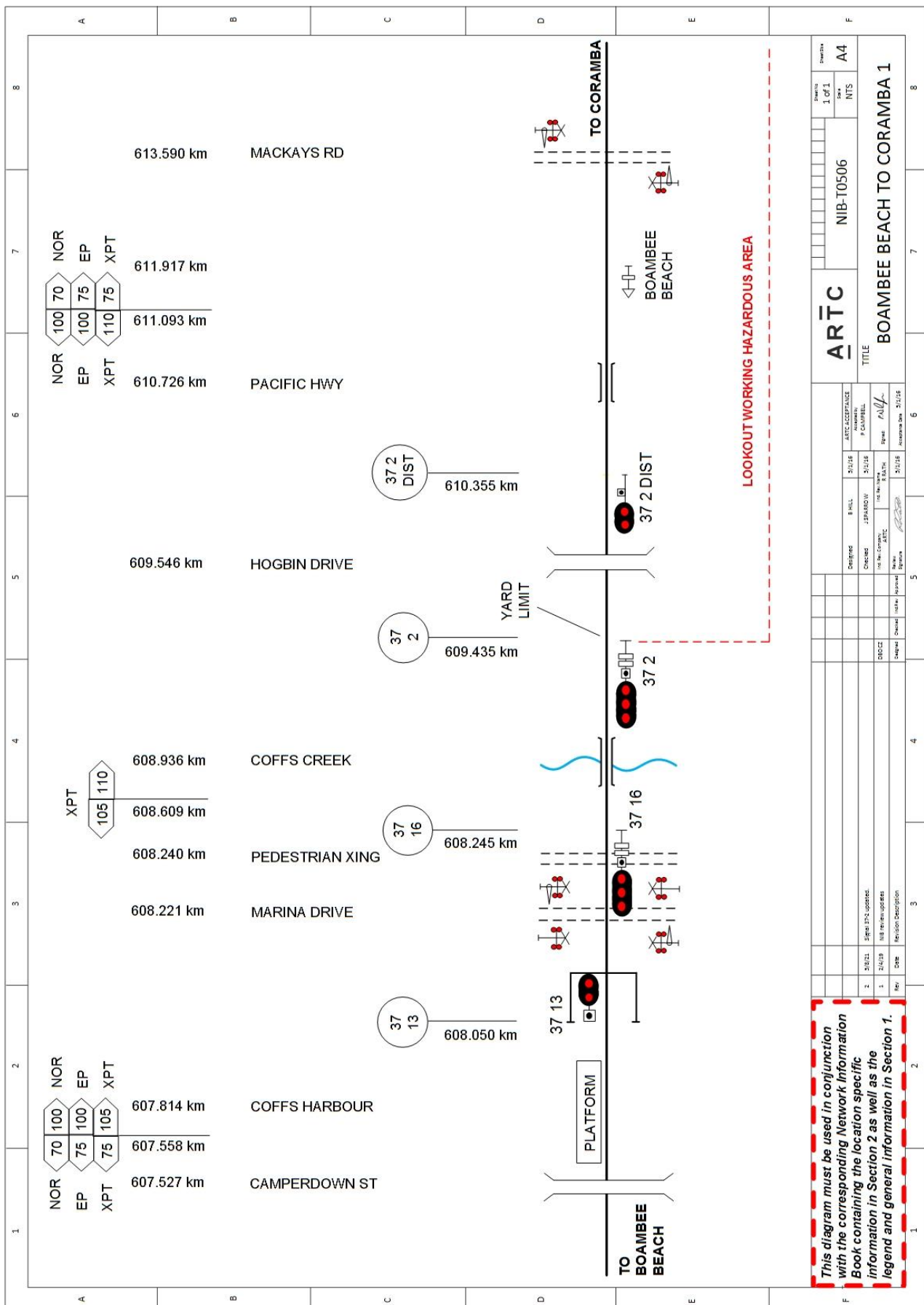
**Working of Down Passenger Trains**

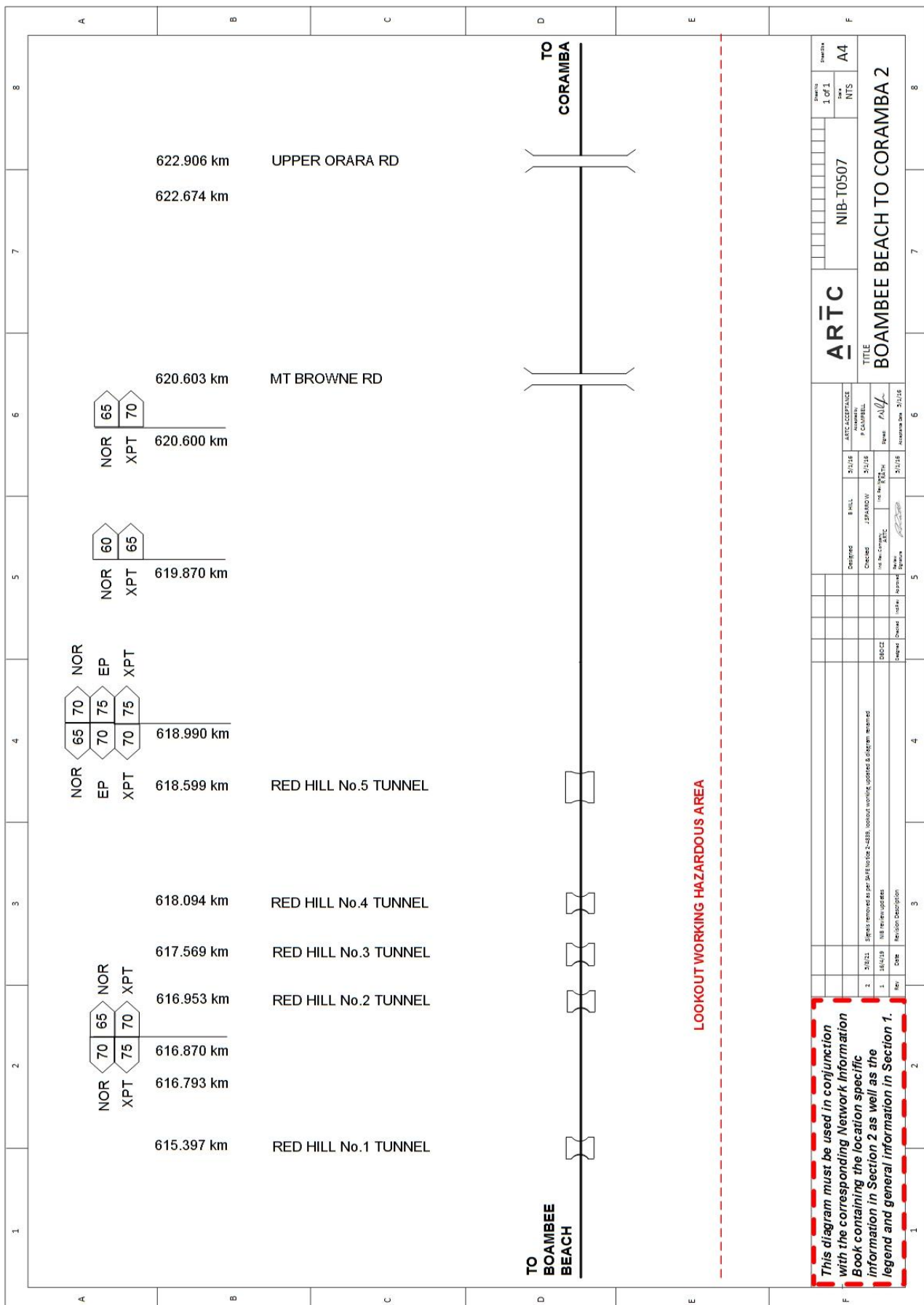
Signallers must ensure that Down signal No. 37-13 is not cleared until passenger trains are ready to depart the platform.

**Half Pilot Staff**

The half pilot staff for the section Bonville – Boambee Beach is located on 37-12M Signal and inscribed "Boambee Beach 37-12M".







## **2.8 Coramba (CRM)**

### **General Arrangements**

Loop length 763m

Maintenance Siding 150m

### **Emergency Operation of Points**

The EOL key is located in the Telephone Cabin at the Sydney end for 51 points.

The ESML is located in the Telephone Cabin at the Country end for 52 points.

### **Ground Frames**

The maintenance siding is operated by No 53 points released by the Network Controller NCCS.

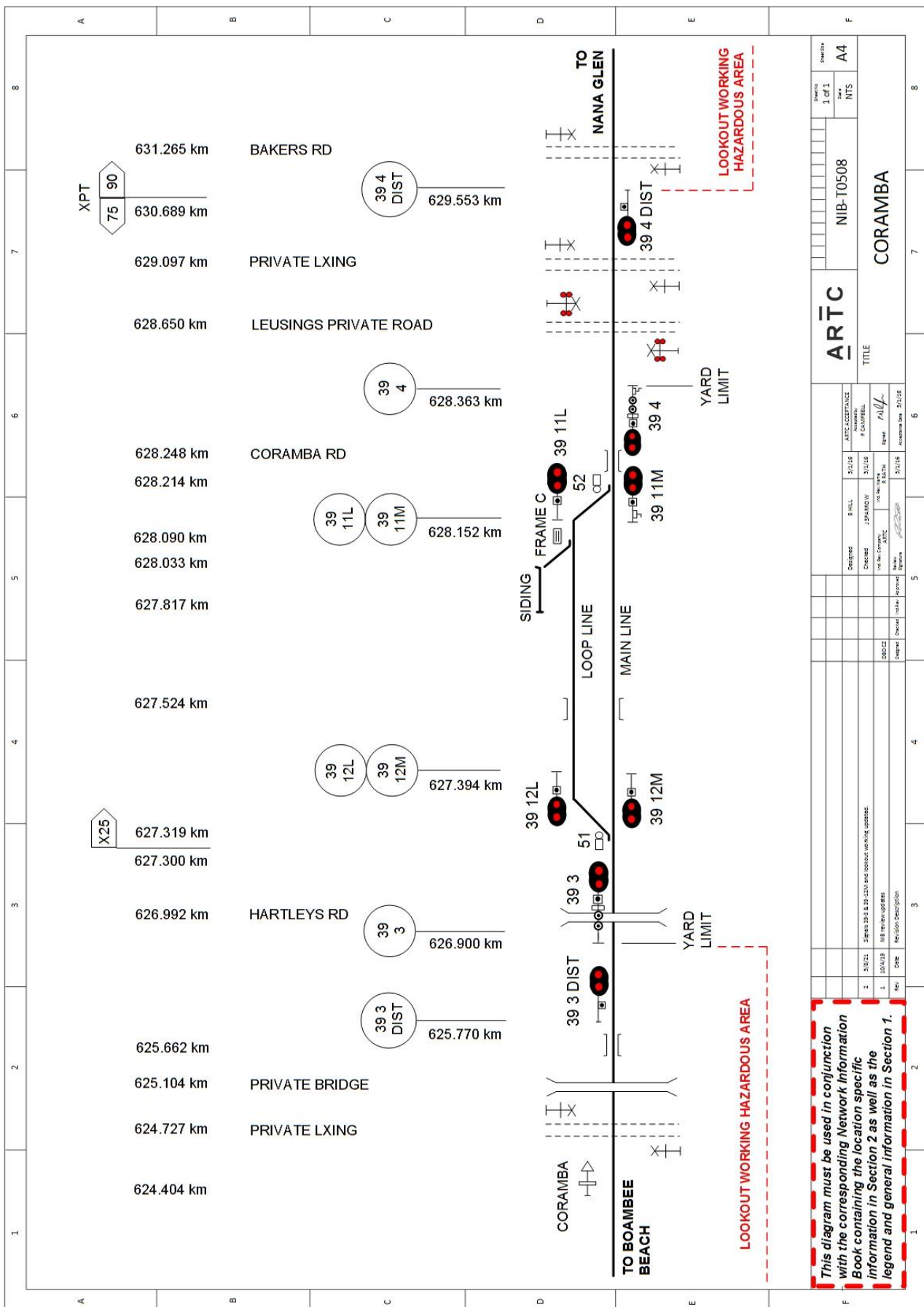
### **Leusings Road Level Crossing**

Type F flashing lights and bells are provided at Leusings Road level crossing at Coramba 628.650km. The level crossing is activated by conventional track circuits for Down and Up trains, subject to the clearance of the signals on either side of the crossing. The strike points are located at 628.906km in the Down direction and 629.557km in the Up direction and are indicated with crossing approach warning boards.

### **Half Pilot Staff**

The half pilot staff for the section Coramba – Nana Glen is located on 39-11M Signal and inscribed "Coramba 39-11M".





## 2.9 Nana Glen (NAN)

### General Arrangements

Loop length 1588m

### Emergency Operation of Points

The EOL for 51 points is located externally on NN9 location cupboard.

The EOL for 52 points is located externally on NN13 location building.

### Eastbank Road Level Crossing

Type F flashing lights, bells and boom gates are provided at Eastbank Road level crossing 636.858km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 636.013km in the Down direction and 637.703km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

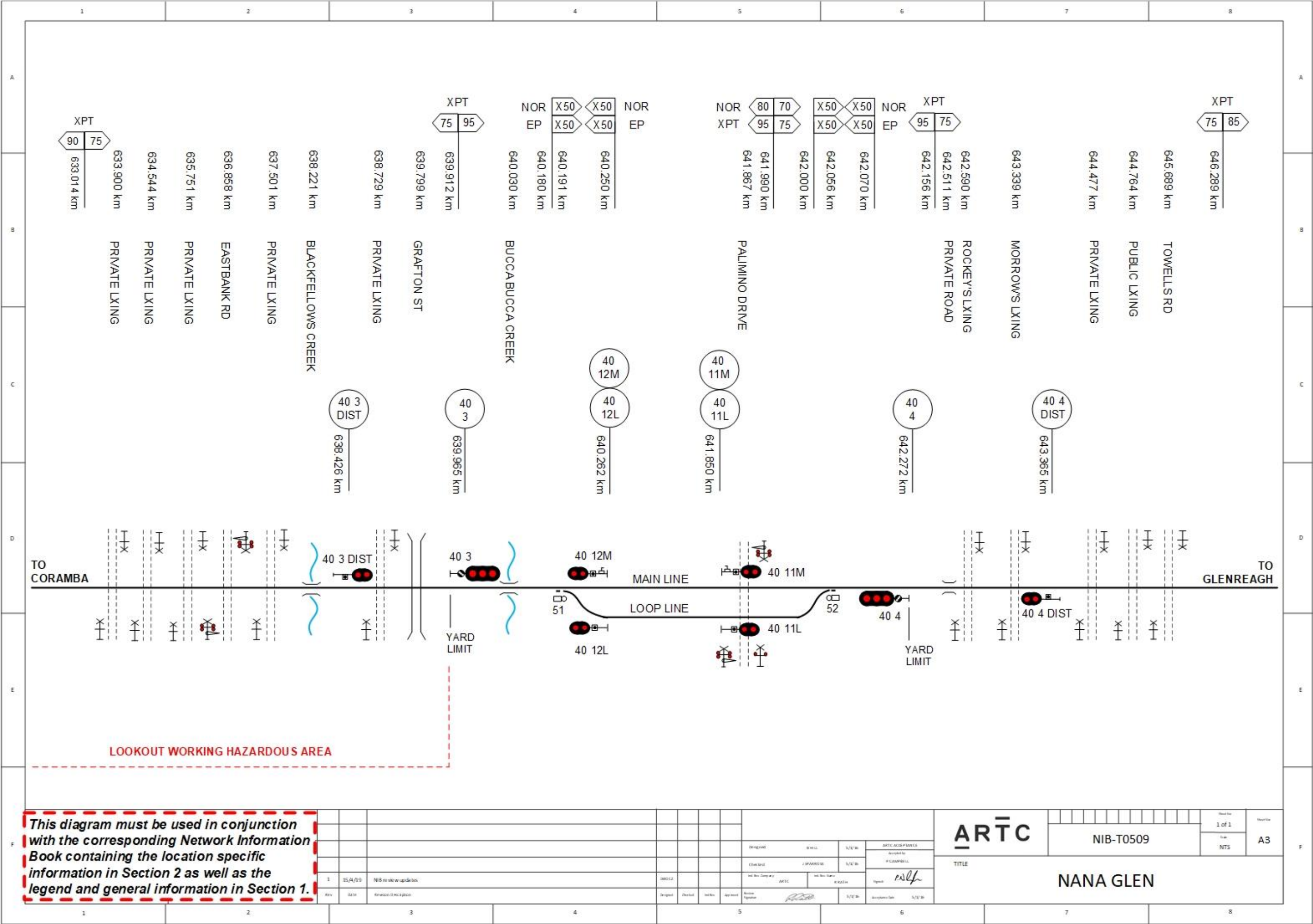
### Palimino Drive Level Crossing

Type F flashing lights, bells and boom gates are provided at Palimino Drive level crossing 641.867km. The level crossing is activated by conventional track circuits. The strike points are located at 641.607km in the Down direction and 642.667km in the Up direction and are indicated with crossing approach warning boards.

### Half Pilot Staffs

The half pilot staff for the section Coramba - Nana Glen is located on 40-12M Signal and inscribed "Nana Glen 40-12M"

The half pilot staff for the section Nana Glen - Glenreagh Section is located on 40-11M Signal and inscribed "Nana Glen 40-11M"



## 2.10 Glenreagh (GLN)

### General Arrangements

Loop length 767m

### Emergency Operation of Points

The ESML is located in the Telephone Cabin at the Sydney end for 51 points.

The EOL Key is located in the Telephone Cabin at the Country end for 52 points.

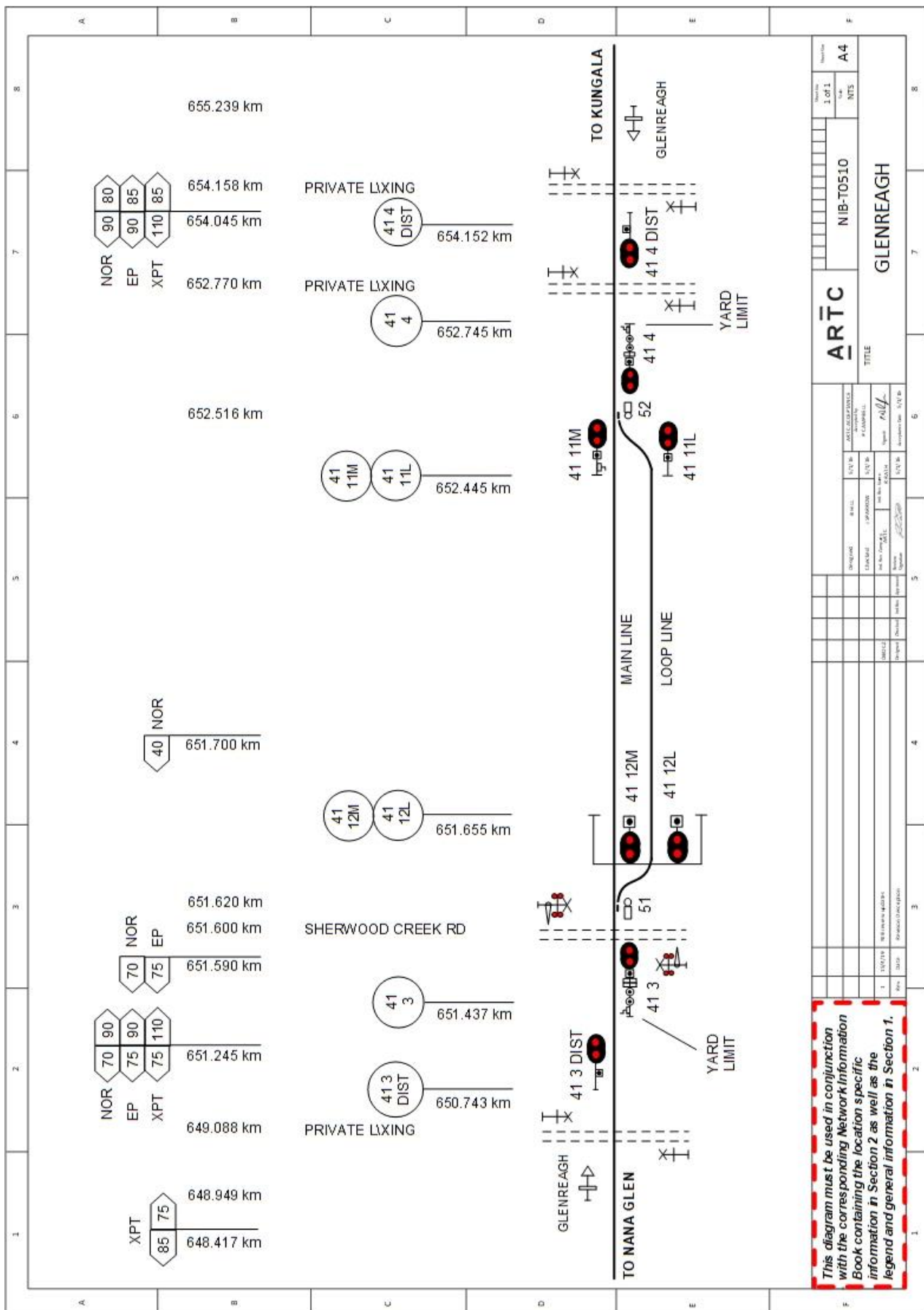
### Sherwood Creek Road Level Crossing

Type F flashing lights, bells and half boom gates are provided at Sherwood Creek Road level crossing 651.600km. The level crossing is activated by conventional track circuits. The strike points are located at 650.751km in the Down direction and 652.739km in the Up direction and are indicated with crossing approach warning boards.

### Half Pilot Staffs

The half pilot staff for the section Nana Glen – Glenreagh is located on 41-12M Signal and inscribed "Glenreagh 41-12M"

The half pilot staff for the section Glenreagh - Kungala is located on 41-11M Signal and inscribed "Glenreagh 41-11M"



## **2.11 Kungala (KNG)**

### **General Arrangements**

Loop length 1561m

### **Emergency Operation of Points**

EOLs are located in the Telephone Cabin at the Sydney and Country ends for 51 and 52 points.

### **Kungala Road Level Crossing**

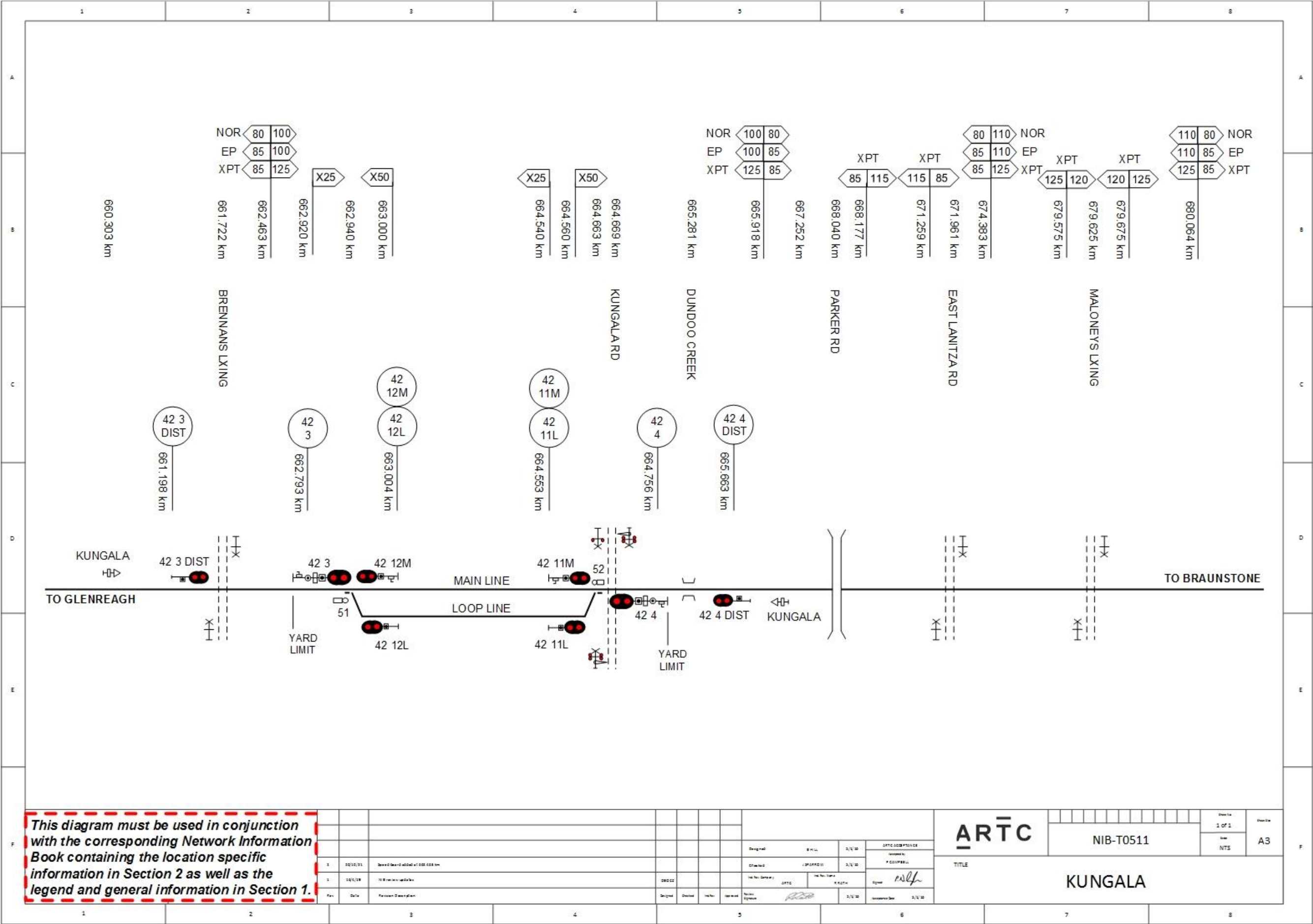
Type F flashing lights, bells and half boom gates are provided at Kungala Road level crossing 664.669km. The level crossing is activated by conventional track circuits. The strike points are located at 663.404km in the Down direction and 665.653km in the Up direction and are indicated with crossing approach warning boards.

### **Half Pilot Staffs**

The half pilot staff for the section Glenreagh - Kungala is located on 42-12M Signal and inscribed "Kungala 42-12M"

The half pilot staff for the section Kungala - Braunstone is located on 42-11M Signal and inscribed "Kungala 42-11M"







## **2.12 Braunstone (BAU)**

### **General Arrangements**

Loop length 1672m

Maintenance Siding length 180m

### **Emergency Operation of Points**

The ESML is located in the Telephone Cabin at the Sydney end for 51 points.

The ESML is located on the external wall of the Telephone Cabin at the Country end for 52 points.

### **Ground Frame**

Frame C is located on the Down side of the Loop line adjacent to the crossovers and provides access to the Goods siding.

Frame C is unlocked by a key which is released by No. 82 release at NCCS.

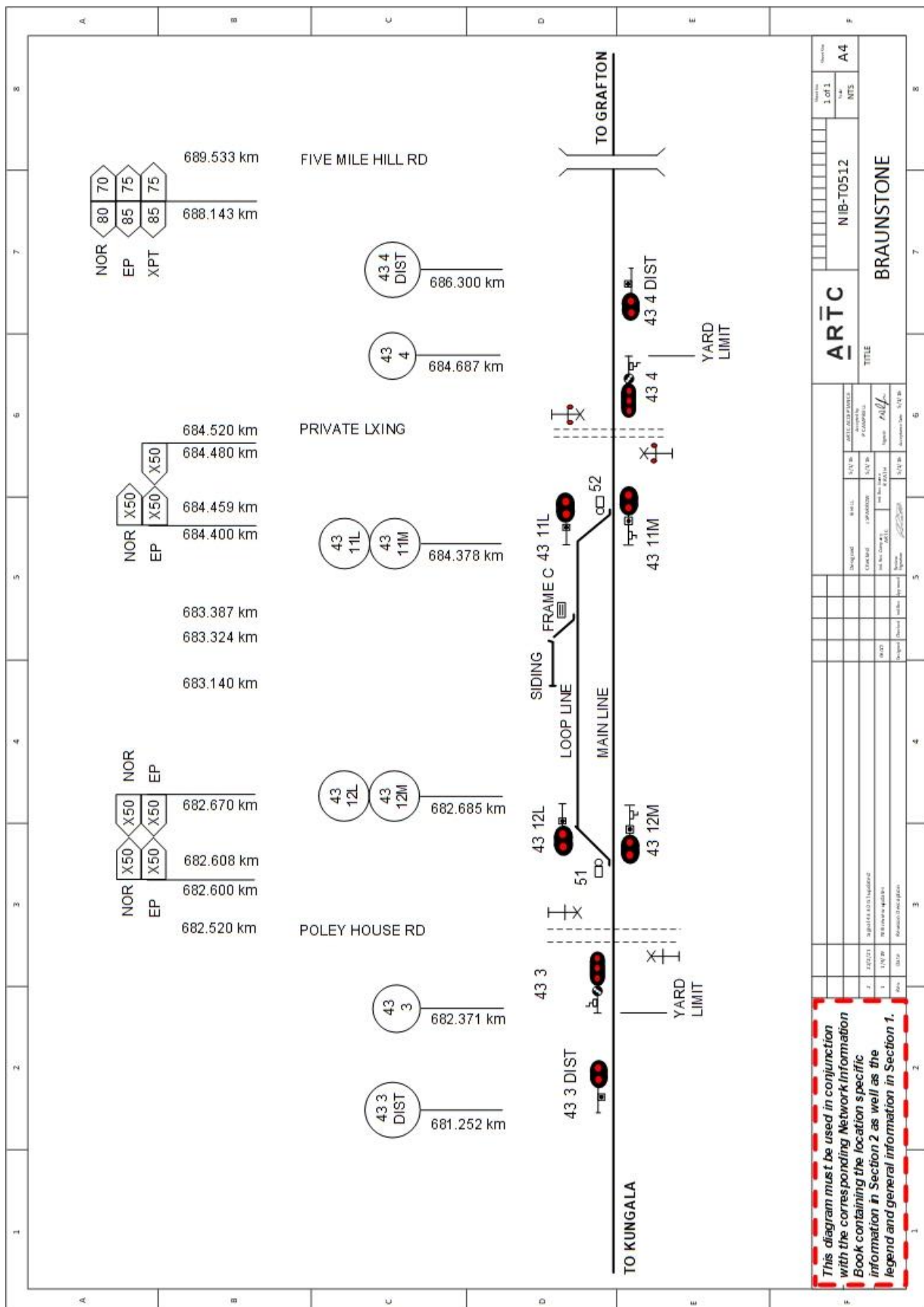
Emergency release key is provided to release frame C in the event of a failure of releasing switch C. The keys are located in release locks in the traffic room.

When the key is taken from its release lock, it will place or maintain all signals at Braunstone at stop.

### **Half Pilot Staffs**

The half pilot staff for the section Kungala – Braunstone is located on 43-12M Signal and inscribed "Braunstone 43-12M".

The half pilot staff for the section Braunstone – Grafton City is located on 43-11M Signal and inscribed "Braunstone 43-11M".



## 2.13 Grafton City (SOG)

### General Arrangements

Loop length	426m
Siding No 2	Currently leased to NSW Trains
Sidings 4 & 6	Currently booked out of use
Siding 5	Currently leased to Manildra

Where there are interfaces with the ARTC network, the requirements are detailed in the interface agreements IA5026, IA1920, IA1803 & IA1804.

The road vehicle entrance to the yard is off Spring Street, on the Up side of the main line and crosses over the Wharf road, the Turntable siding and the Manildra/Harwood siding.

When shunting movements are to be made, the Qualified Worker in charge of the movements must ensure that the instructions for shunting over level crossings as shown in the Network Rules and Procedures are carried out.

A locomotive refuelling facility is provided from the country end of the platform. An emergency stop pushbutton is provided near the refuelling facility.

### Emergency Operation of Points

ESMLs are located in the Telephone Cabins at the Sydney and Country ends for 51 and 52 points.

### Ground Frames

Frame F is located on the Up side of the Loop line adjacent to the crossovers and provides access to the XPT siding.

Frame F is unlocked by a key from releasing switch F, which is electrically released by No. 81 release at NCCS.

Frame G is located on the Up side of the Loop line adjacent to the crossovers and provides access to the Wharf road, Arrival road, Turntable road and Manildra sugar siding.

Frame G is unlocked by a key from releasing switch G, which is electrically released by No. 82 release at NCCS.

Operator's pushbutton control units are provided adjacent to ground frame F to operate, in conjunction with the Network Controller, the shunting signal applicable to the siding concerned for a movement direct from the main line.

A red and a green repeater light for the shunting signal concerned is also provided in the operator's pushbutton control unit.

The Qualified Worker in charge of the shunting movement must depress and hold in the pushbutton until the shunting movement has passed the signal concerned, i.e. when the shunting signal green repeater light is extinguished and the red repeater light is displayed.

The emergency keys are located in release locks in the telephone cabin.

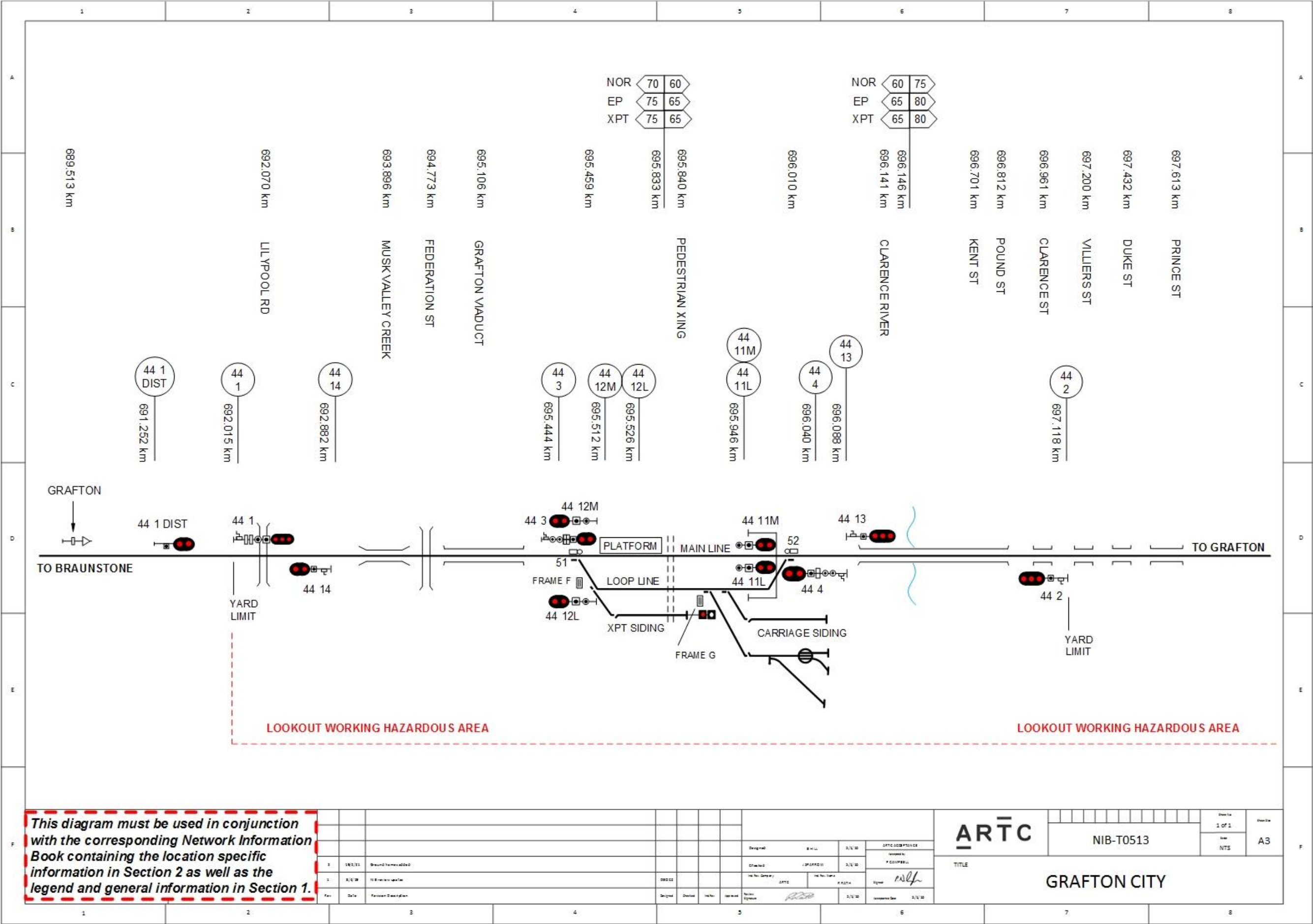
### Notice Board

A notice board, inscribed "Stop. No shunting past this point unless authorised by facility staff", is provided near the entrance to the Manildra sugar shed.

**Half Pilot Staffs**

The half pilot staff for the section Braunstone - Grafton City is located in the telephone cabin at the Sydney end of the loop and inscribed "Grafton City 44-14".

The half pilot staff for the section Grafton City – Grafton is located in the telephone cabin at the Country end of the loop and inscribed "Grafton City 44-13".



## 2.14 Grafton (GTN)

### General Arrangements

Up Loop length	922m
Down Loop length	927m
No 1 Down Reception Siding	308m
No 2 Down Reception Siding	421m
No 4 Down Reception Siding	currently booked out of service
No 5 Down Reception Siding	currently booked out of service
No 1 Goods Siding	Leased by Pacific National
No 2 Good siding	Leased by Pacific National
Loco Siding Up	139m
No 1 Up Siding	468m
No 2 Up Siding	393m
No 3 Up Siding	354m
No 4 Up Siding	323m
No 1 Repair Siding	Leased by Pacific National
No 2 Repair Siding	Leased by Pacific National

Where there are interfaces with the ARTC network, the requirements are detailed in the interface agreement IA1804

### Emergency Operation of Points

51 Points – The ESML is located North of the points in the telephone cabin

52 Points – The EOL is located South of the points on the external wall of the telephone cabin

53 Points – The EOL is located in a free-standing box adjacent to the points

54 Points – The EOL is located in a free-standing box adjacent to the Sydney end of the points of the cross over.

55 Points – The ESML is located adjacent to signal 45-11M in a free-standing box

### Ground Frames

#### Frame B

Frame B is located on the Up side of the main line adjacent to the crossovers and provides access to No.1 Down reception siding.

Frame B is unlocked by a key from releasing switch B, which is electrically released by No. 81 release at NCCS.

#### Frame C

Frame C is located on the Up side of the Up Loop line adjacent to the crossovers and provides access to the Up sidings.

Frame C is unlocked by a key from releasing switch C, which is electrically released by No. 85 release at NCCS.

#### Frame D

Frame D is located on the Up side of the Up Loop line adjacent to the crossovers and provides access to the Down Loop line.

Frame D is unlocked by a key from releasing switch D, which is electrically released by No. 83 release at NCCS.

#### Frame E

Frame E is located on the Down side of the Down Loop line adjacent to the crossovers and provides access to No. 2 Down reception sidings.

Frame E is unlocked by a key from releasing switch E, which is electrically released by No. 82 release at NCCS.

#### Frame G

Frame G is located on the Down side of the Down Loop line adjacent to the crossovers and provides access to the Down shunting neck.

Frame G is unlocked by a key from releasing switch G, which is electrically released by No. 84 release at NCCS.

Operator's pushbutton control units are provided adjacent to ground frames C and D to operate, in conjunction with the Network Controller, the shunting signal applicable to the siding concerned for a movement direct from the main line.

A red and a green repeater light for the shunting signal concerned is also provided in the Operator's pushbutton control unit.

The Qualified Worker in charge of the shunting movement must depress and hold in the pushbutton until the shunting movement has passed the signal concerned, i.e. when the shunting signal green repeater light is extinguished and the red repeater light is displayed.

The emergency keys are located in release locks in the telephone cabin.

### Notice Boards

A notice board inscribed "Trains to stand clear of level crossing when signal No. 45.4 is at Stop", has been provided at Howe Street level crossing at 700.407km on the Up side of the main line on the country side of this level crossing.

A notice board inscribed "Trains to stand clear of level crossing when signal No. 45.2 is at Stop", has been provided on the Up side of the main line on the country side of the level crossing at 701.825km.

### Fry St Level Crossing

Type F flashing lights, bells and half boom gates are provided at Fry St level crossing 700.407km. The level crossing is activated by conventional track circuits. The strike points are located at 699.055km (main) / 699.690km (loop) in the Down direction and 701.733km (main) / 701.009km (up storage siding) in the Up direction and are indicated with crossing approach warning boards.



**Carrs Peninsula Road Level Crossing**

Type F flashing lights, bells and boom gates are provided at Carrs Peninsula Road level crossing 704.326km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 702.871km in the Down direction and 705.781km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

**Half Pilot Staffs**

The half pilot staff for the section Grafton City – Grafton is located in the telephone cabin at the Sydney end of the loop and inscribed "Grafton 45-14".

The half pilot staff for the section Grafton – Kyarran is located in the telephone cabin at the country end of the down loop and inscribed "Grafton 45-13".





## 2.15 Koolkhan (KRC)

### General Arrangements

Rocla Siding 300m (refer safety interface agreement IA1813)

---

**NOTE:** *Under no circumstances is Rocla siding to be used for crossing purposes.*

---

It will be permissible for the Network Controller to permit trains to return from Rocla siding to either end of the section after shunting arrangements have been completed. However, these arrangements must be made before the train enters the section to shunt Rocla siding.

### Ground Frames

Frames B and C are located on the Up side of the main line adjacent to the crossovers and provide access to the Rocla Concrete sleeper siding.

Frames B and C are unlocked by 82 Release. Releases are given by Network Control once train has come to a stand in front of facing points on the main line Grafton – Kyarran section.

A sign is placed at both Frame B and C advising “After Shunting Rocla Siding Up Trains Must Not Exceed 15kph Before Summerland Way Level Crossing”.

A shunt limit board is installed in the Up direction at 706.500km.

Emergency release keys are provided to release frames B and C at Rocla siding in the event of a failure of releasing switch B or C. The keys are located in release locks in the traffic room.

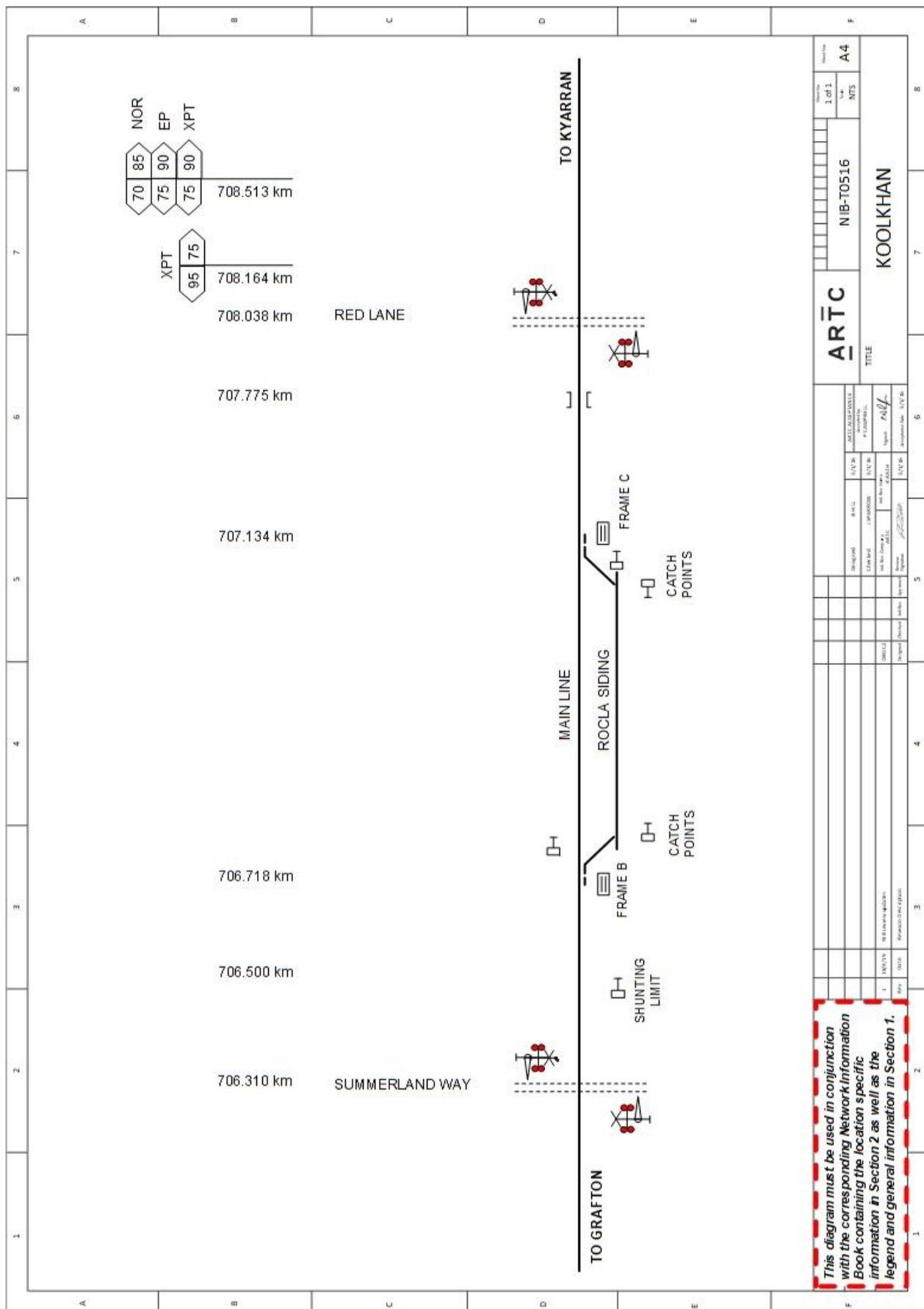
### Summerland Way (Koolkhan) Level Crossing

Type F flashing lights, bells and boom gates are provided at Summerland Way (Koolkhan) level crossing 706.310km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 705.263km in the Down direction and 707.361km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

### Red Lane Level Crossing

Type F flashing lights, bells and boom gates are provided at Red Lane level crossing 708.038km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 706.985km in the Down direction and 709.103km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

## Locations and Sections Information



## **2.16 Kyarran (KYA)**

### **General Arrangements**

Loop length 1566m

Maintenance Siding 173m

### **Emergency Operation of Points**

ESMLs are located adjacent to the points on the outside of the telephone cabins at the Sydney and Country ends of the crossing loop.

### **Ground Frame**

The maintenance siding is operated by No 53 point machine released by the Network Controller NCCS. Driver's push button for the operation of 53 points is located adjacent 53 points.

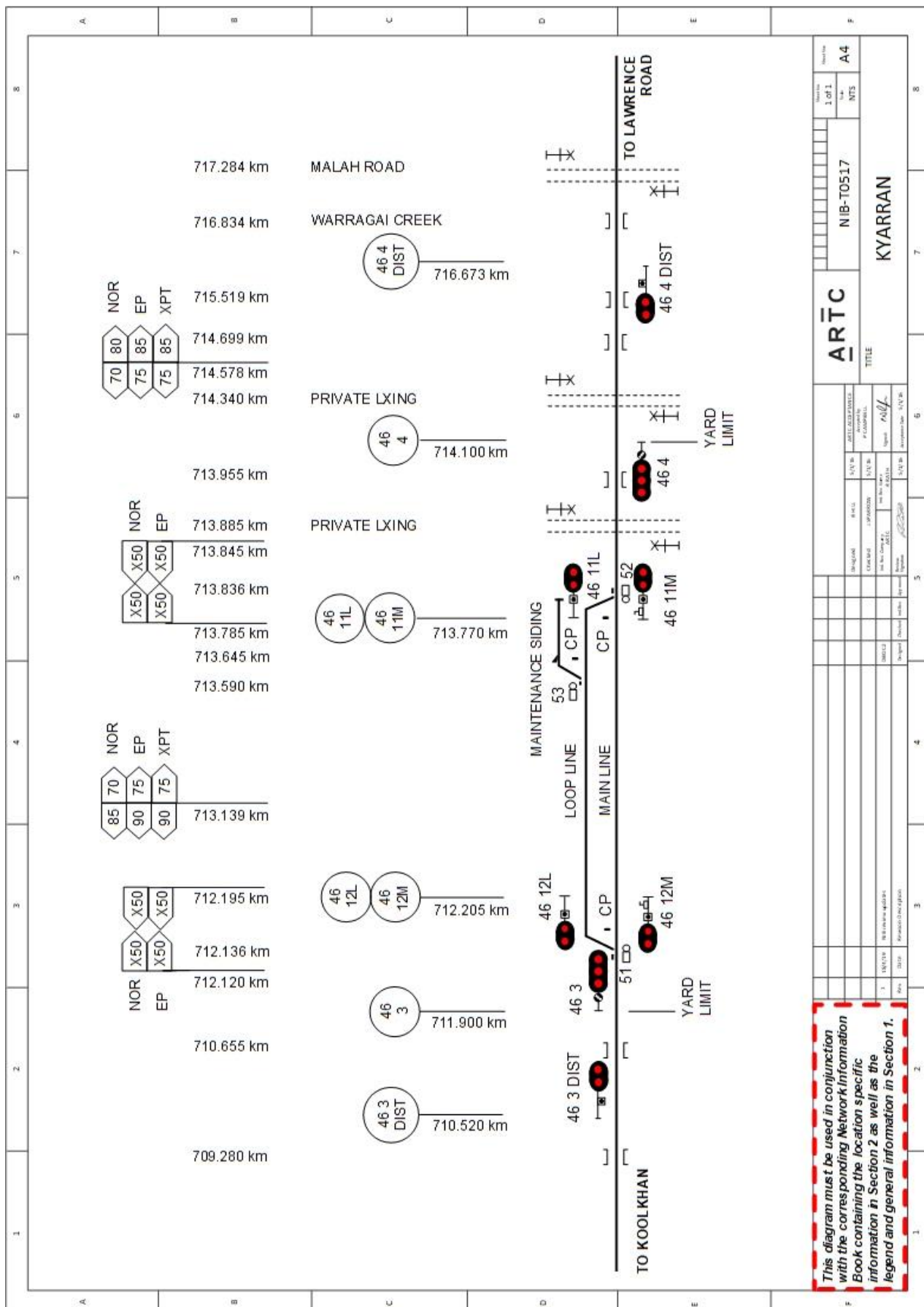
Emergency release key is provided within the Traffic Hut in the event of a failure of the releasing switch for 53 points

### **Half pilot staffs**

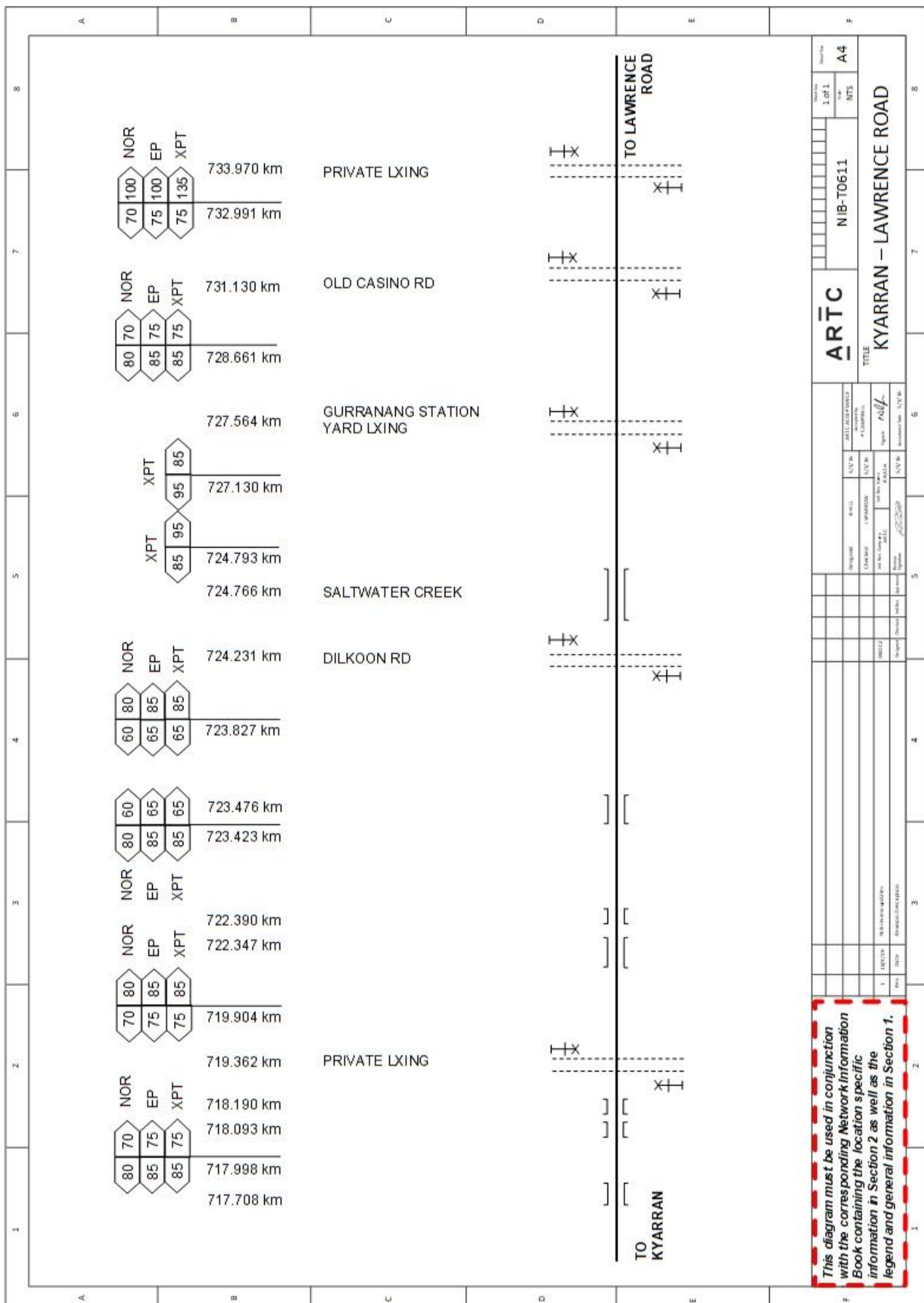
The half pilot staff for the Grafton - Kyarran section is located on 46-12M Signal and inscribed Kyarran 46-12M.

The half pilot staff for the Kyarran – Lawrence Rd section is located on 46-11M Signal and inscribed Kyarran 46-11M.









## 2.17 Lawrence Road (LWR)

### General Arrangements

Loop length 1766m

---

*NOTE: Due to a previous main line deviation between 733km and 741km a short kilometre exists in the field. The short km change point is at 739.940km – which also equals 740.500km.*

---

### Emergency Operation of Points

ESMLs are located adjacent to the points inside the telephone cabins at the Sydney and Country ends for 51 and 52 points.

### Old Tenterfield Road Level Crossing

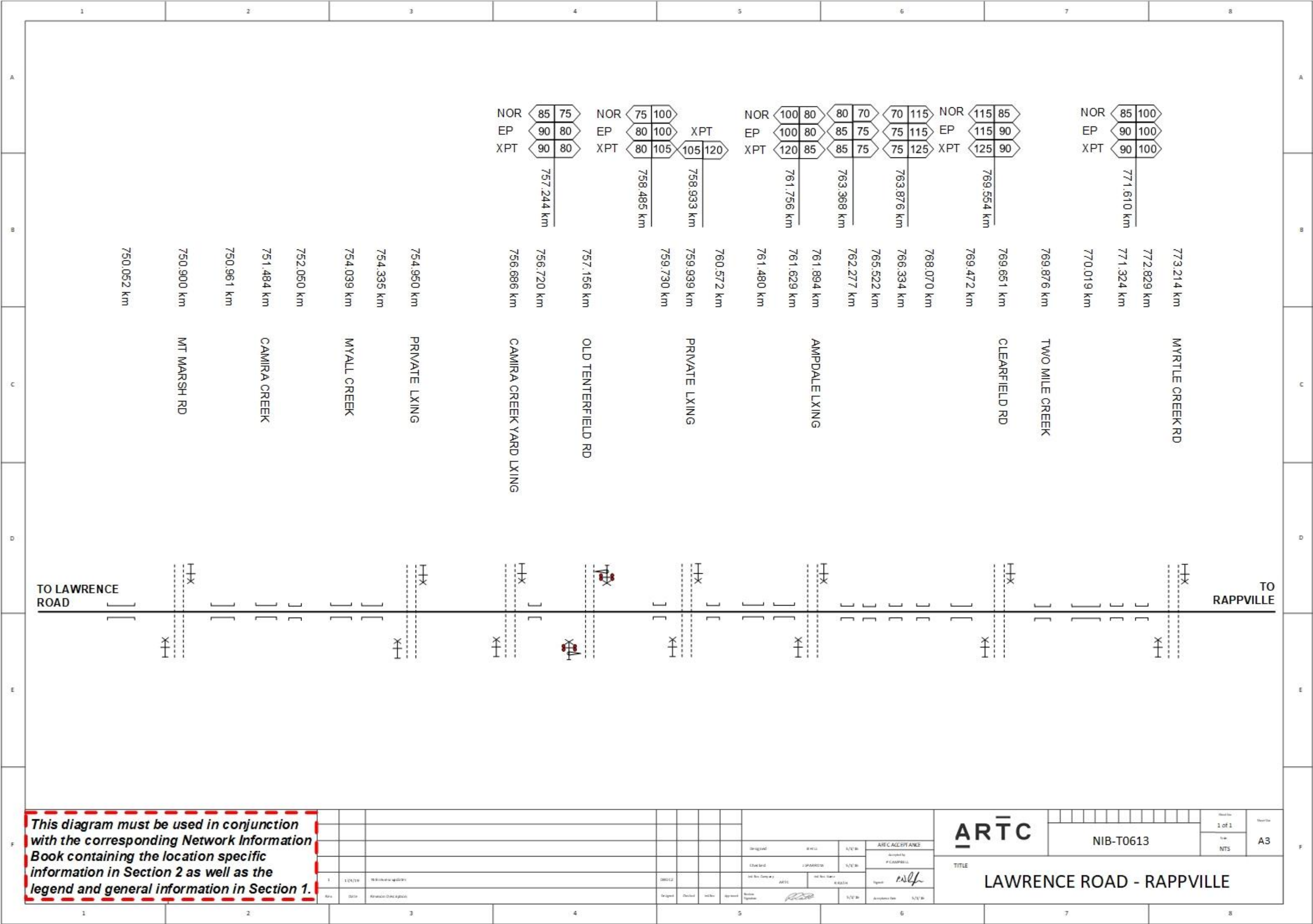
Type F flashing lights, bells and boom gates are provided at Old Tenterfield Road level crossing at 757.156km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 756.148km in the Down direction and 758.188km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

### Half Pilot Staffs

The half pilot staff for the Kyarran – Lawrence Road section is located on 47-12M Signal inscribed "Lawrence Road 47-12M".

The half pilot staff for the Lawrence Road – Rappville section is located on 47-11M Signal inscribed "Lawrence Road 47-11M".





## 2.18 Rappville (RPV)

### General Arrangements

Loop length 1536m

Maintenance Siding 175m

### Emergency Operation of Points

ESMLs are located North of the points on the outside of the telephone cabin at the Sydney end of crossing loop and South of the points in the telephone cabin at the Country end of the crossing.

The ESML for 53 points is located at RE9A signalling location cupboard.

### Ground Frame

The maintenance siding is operated by No 53 point machine released by the Network Controller NCCS. Driver's push button for the operation of 53 points is located adjacent 53 points.

### Nandabah Street Level Crossing

Type F flashing lights and bells are provided at Nandabah Street level crossing 776.468km. The level crossing is activated by conventional track circuits for Down and Up trains, subject to the clearance of the protecting signal. The strike points are located at 775.654km in the Down direction and 777.373km in the Up direction and are indicated with crossing approach warning boards.

If a train is closely approaching Up starting signals or Down home signal at stop, the setting of the applicable signal route by the Signaller will cause the level crossing warning equipment to operate but clearing of signal No. 50-11M, No. 50-11L or No. RE-3 will be delayed for 15 seconds.

If it becomes necessary to hold a train at Down starting signals or Up home signal after the signal has been cleared, the level crossing warning equipment will continue to operate for a period of 120 seconds after the signal is returned to stop and will then cancel automatically.

### Mongogarrie Road Level Crossing

Type F flashing lights, bells and boom gates are provided at Mongogarrie Road level crossing at 794.855km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 793.494km in the Down direction and 796.160km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

### Shannonbrook Road Level Crossing (Leeville)

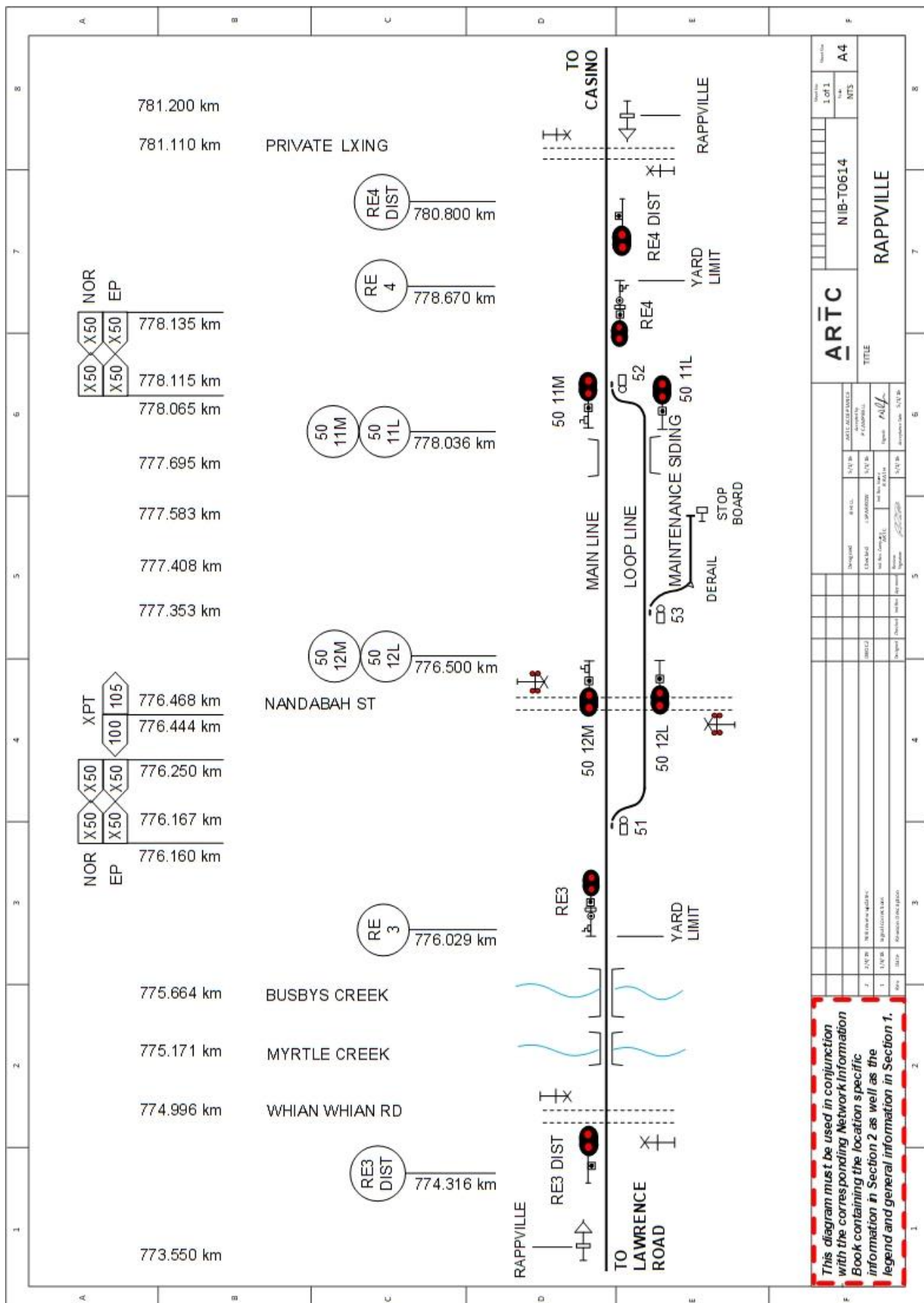
Type F flashing lights, bells and boom gates are provided at Shannonbrook Road level crossing 796.324km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 795.056km in the Down direction and 797.602km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

**Half Pilot Staffs**

The half pilot staff for the Lawrence Road – Rappville section is located on 50-12M Signal inscribed "Rappville 50-12M".

The half pilot staff for the Rappville – Casino section is located on 50-11M Signal inscribed "Rappville 50-11M".









## 2.19 Casino (CSO)

### General Arrangements

Down Loop	1207m
No 1 Down Siding	1014m
No 2 Down Siding	470m
Old Casino Branch Line Main	359m
Old Casino Up Siding	239m
Old Casino Goods Siding	236m

Nammoon is part of the Casino Yard Limits.

### Emergency Operation of Points

EOLs are located at the following locations:

- 51 points - outside the traffic hut at C07 signalling location at the Sydney end of the loop.
- 52 points - Inside the traffic hut at CO10 signalling location at the Country end of loop.
- 53 points - on EOL post in the vicinity of 53 points.

ESMLs are located at the following locations:

- 52 points - Inside the traffic hut at CO10 signalling location at the Country end of loop.

### Ground Frames

Frames C and E are located on the Down side of the Loop line adjacent to the crossovers and provide access to No. 1 and 2 Goods siding.

Frame C is unlocked by a key from releasing switch C, which is electrically released by the Network Controller NCCS.

Frame E is unlocked by a key from releasing switch E, which is electrically released by the Network Controller NCCS.

### Siding (Old Casino)

The siding ends on the countryside of Frame G and various private sidings are located between the main line and the end of the siding. Yard working over this site is in operation up to 52-18 signal.

### Bruxner Highway Level Crossing

Type F flashing lights, bells and boom gates are provided at Bruxner Highway level crossing 804.028km. The footpath on the northern side of the road has a pedestrian maze fence.

The level crossing is controlled by conventional track circuits. The crossing approach warning boards are located at 803.180km in the Down direction and 804.720km in the Up direction.

**Hotham Street Level Crossing**

Type F flashing lights and bells are provided at Hotham Street level crossing 806.281km. The level crossing is activated by conventional track circuits. The strike points are located at 805.531km in the Down direction and 806.842km in the Up direction and are indicated with crossing approach warning boards.

**West Street Level Crossing (Old Casino)**

Type F flashing lights and bells are provided at West Street level crossing at 806.281km. The level crossing is operated by a driver's push button located on the Countryside of the level crossing adjacent to the crossing hut.

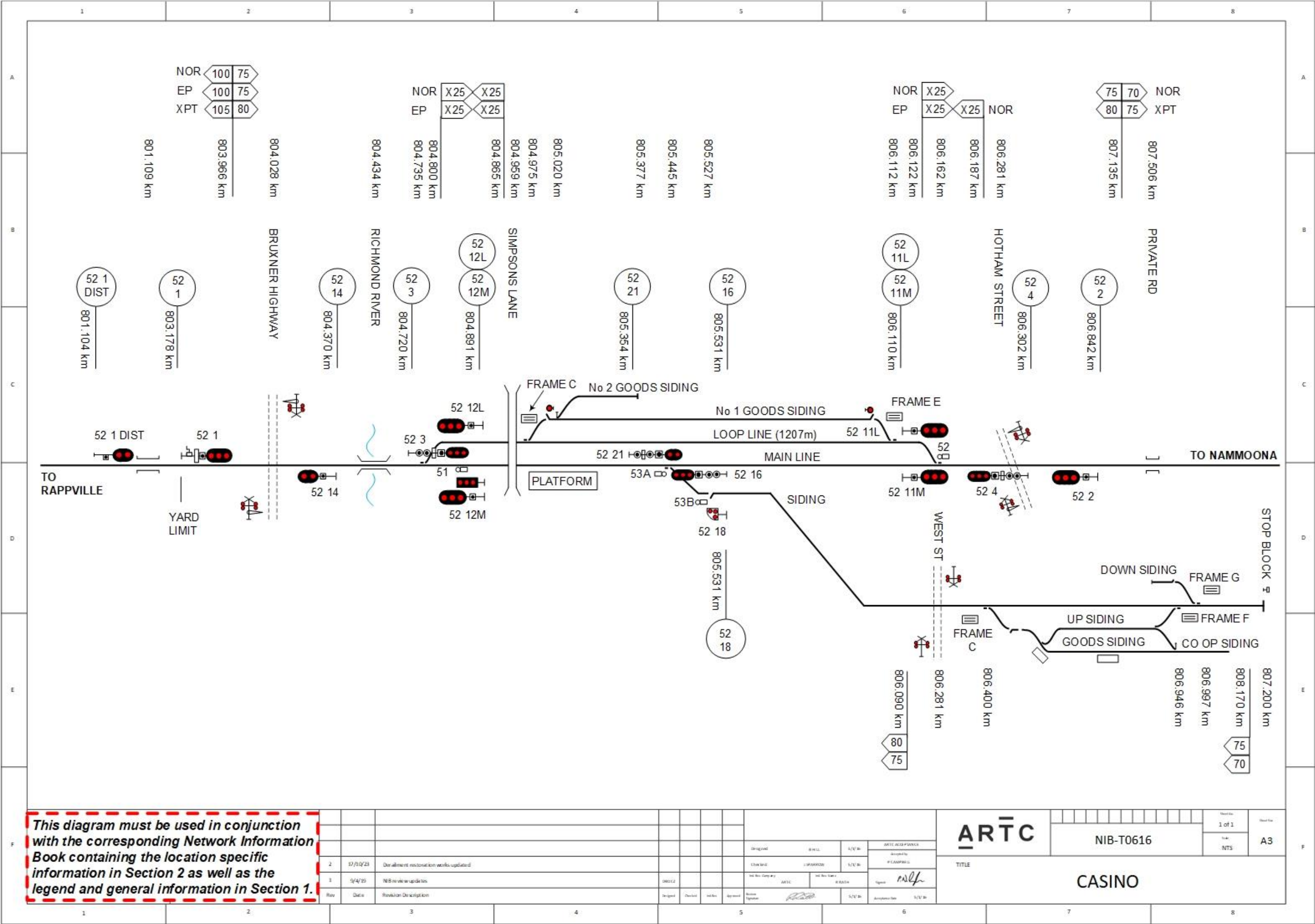
**Half Pilot Staff**

The half pilot staff for the Rappville – Casino section is located in the pilot staff lock inside a locked box in the telephone cabin at CO7 location.

---

*NOTE: There is no half pilot staff for the Casino – Nammoona section as Nammoona is now incorporated into the Casino Yard Limits*

---



## 2.20 Nammoona (NMO)

### General Arrangements

Loop length 1656m

Ballast Siding 635m

Nammoona is part of the Casino Yard Limits.

### Emergency Operation of Points

ESMLs are located adjacent to the points on the outside of the telephone cabins at the Sydney and Country ends of the crossing loop.

### Ground Frames

The ballast siding is on the Up side of the loop and is accessed from South and North ends via A and B frames.

Frame A is located on the Up side of the Loop line adjacent to the crossovers and provides access to the Ballast siding from the Sydney end.

Frame A is unlocked by a key from 85 release, which is electrically released by the Network Controller at NCCS.

Frame B is located on the Up side of the Loop line adjacent to the points and provides access to the Ballast siding from the country end.

Frame B is unlocked by a key from 86 release, which is electrically released by the Network Controller at NCCS.

### 2.20.1 Nammoona Ballast Siding

#### Securing of Vehicles left in Siding

A number of manual handbrake locking devices are provided at the country end of the ballast siding to prevent handbrakes being released by vandals.

The handbrake locking device fits over the handbrake spider wheel of the vehicle when the handbrake is fully applied. A chain and an SL lock are attached to the locking device. A second chain is attached to a rail plate that is secured permanently to the sleeper.

The handbrake locking device is applied by placing it over one spline of the spider wheel and then wrapping the attached chain around the spider wheel shaft, leaving a sufficient length to ensure that the SL lock can be attached to the second chain with all the slack taken up.

The chain should be wrapped around the spider wheel shaft so that it prevents the handbrake from releasing if the release latch is lifted.

A minimum of three handbrake locking devices (or one per vehicle, if less than three vehicles) must be applied at all times when vehicles are stowed in the siding and left unattended.

During shunting, train crews must ensure that all handbrake locking devices are clear of the line.

#### Terminating Trains

It is permissible for a train to terminate at Nammoona ballast siding and shunt as required.



**Summerland Way (Nammoona) Level Crossing**

Type F flashing lights, bells and half boom gates are provided at Summerland Way (Nammoona) level crossing 809.017km. The level crossing is activated by conventional track circuits for Down and Up trains, subject to the clearance of the signals on either side of the crossing. The strike points are located at 808.201km in the Down direction and 809.835km in the Up direction and are indicated with crossing approach warning boards.

**Fairy Hill Station Level Crossing**

Type F flashing lights and bells are provided at Fairy Hill Station level crossing 815.937km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 814.564km in the Down direction and 817.310km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

**Baraimal Lane Level Crossing**

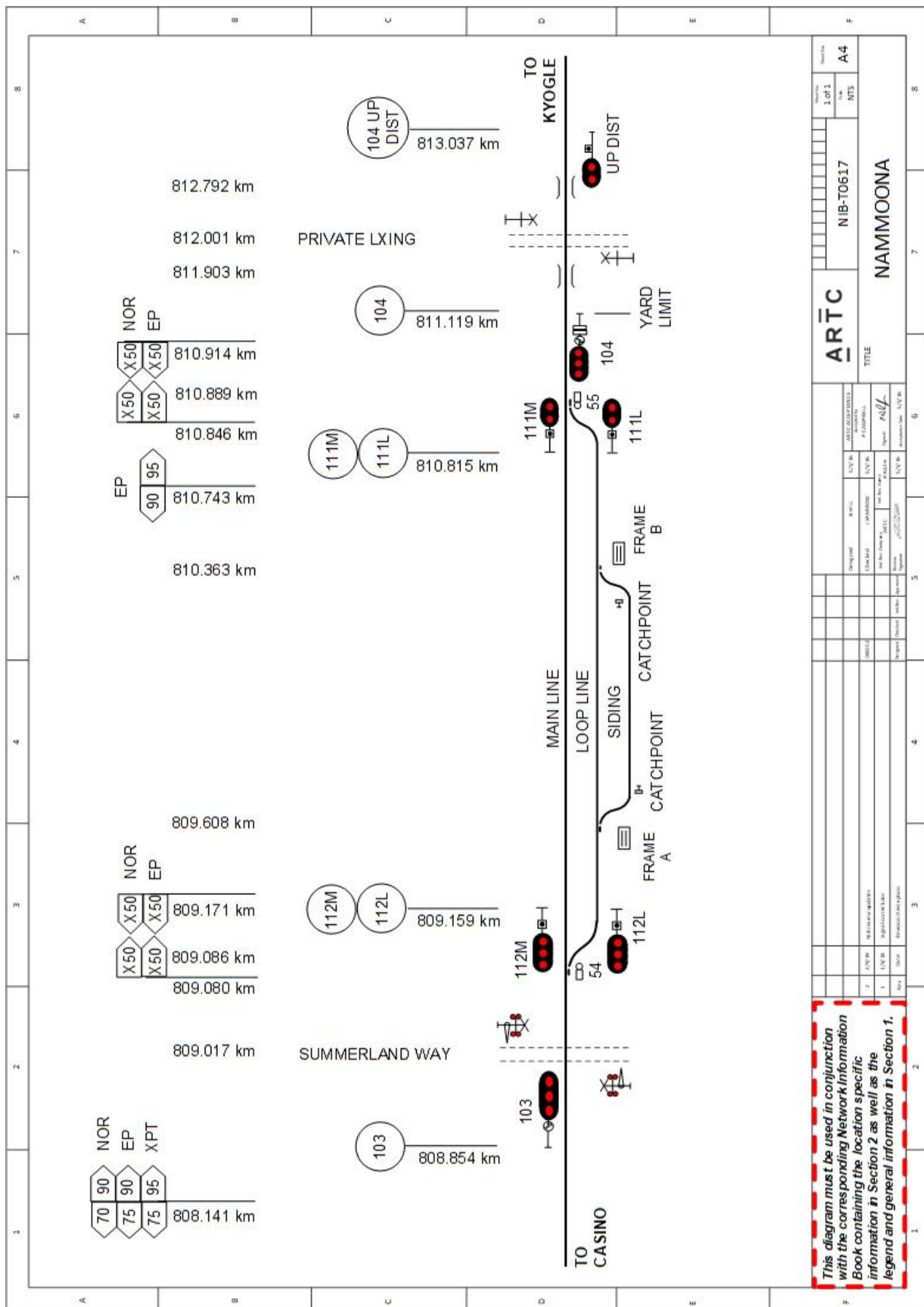
Type F flashing lights and bells are provided at Baraimal Lane level crossing 821.731km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 820.426km in the Down direction and 823.036km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

**Bentley Road Level Crossing**

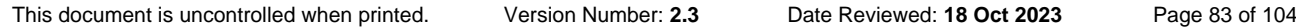
Type F flashing lights and bells are provided at Bentley Road level crossing 826.026km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 824.463km in the Down direction and 827.478km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

**Runnymede Road Level Crossing**

Type F flashing lights, bells and half boom gates are provided at Runnymede Road level crossing 829.939km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 829.195km in the Down direction and 830.685km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.







## 2.21 Kyogle (KYO)

### General Arrangements

Loop length 1530m

Maintenance Siding 216m

### Emergency Operation of Points

EOLs are located adjacent to the points on the outside of the signal location cupboards at the Sydney and Country ends of the crossing loop. The ESML for 54 points is located at KE54 signalling location.

### Ground Frame

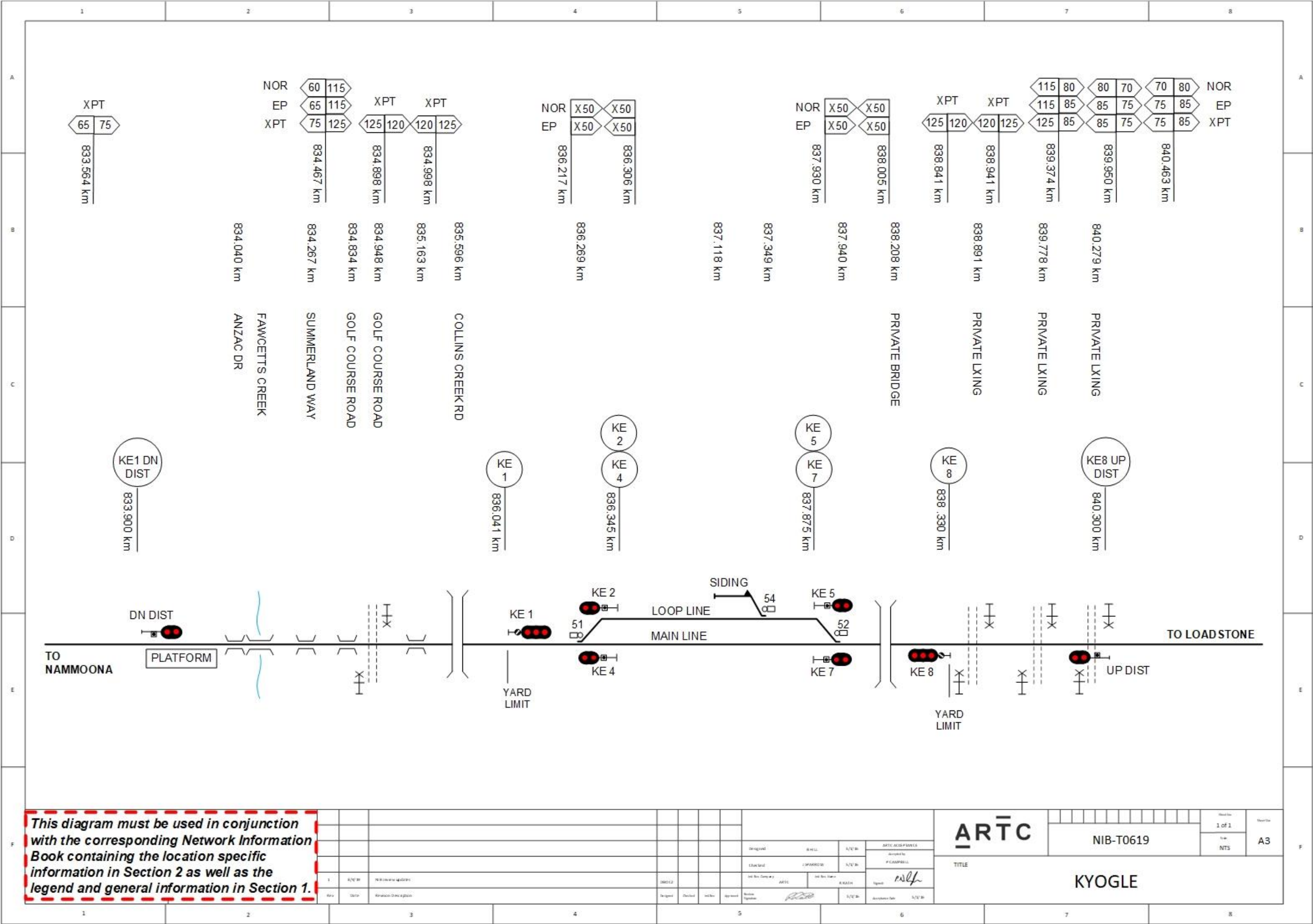
No 54 points on the maintenance siding are released by No 82 release from the Network Controller at NCCS.

### Summerland Way Level Crossing (Wiangaree)

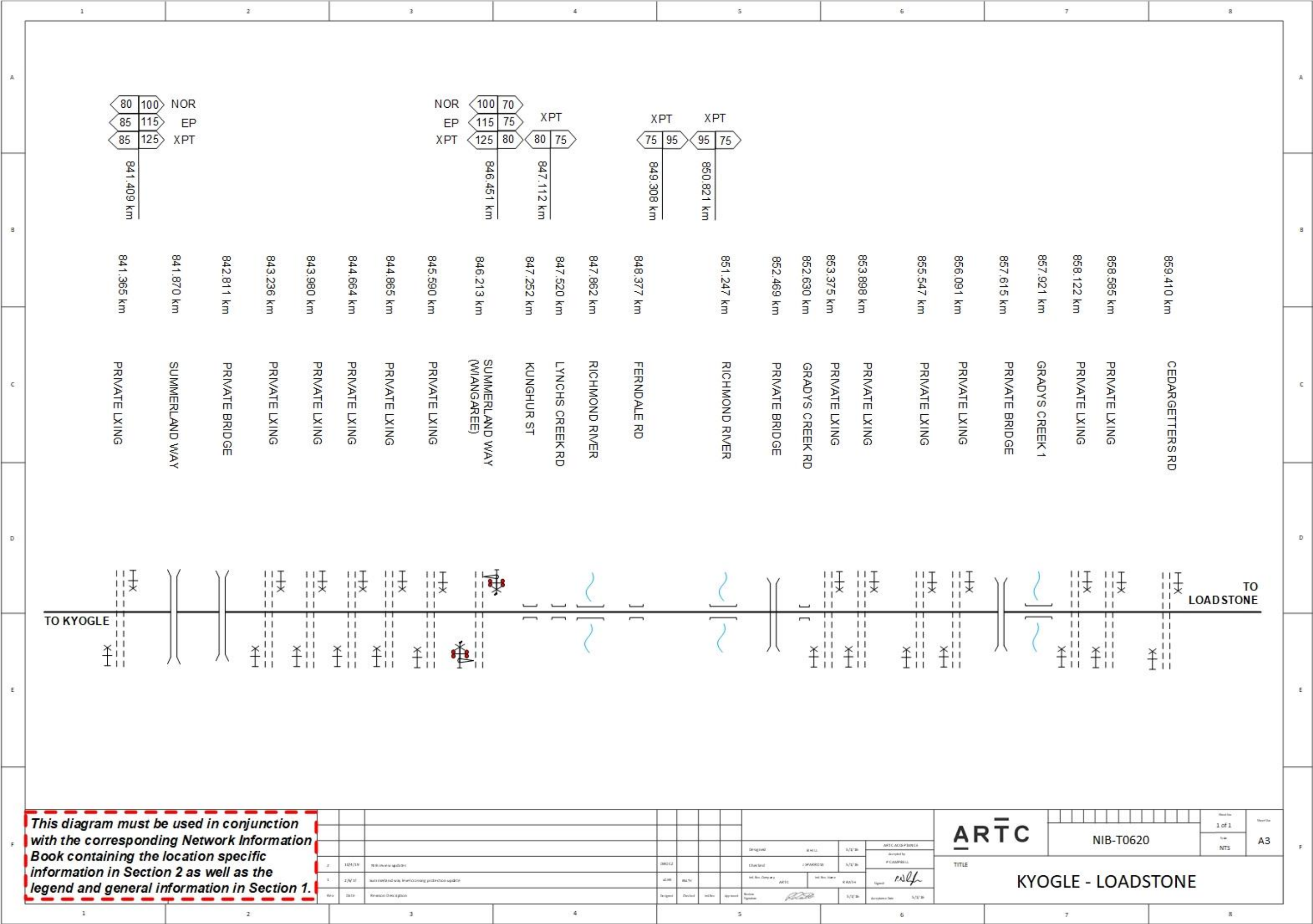
Type F lights, bells and half boom gates are provided at Summerland Way level crossing 846.213km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 844.797km in the Down direction and 847.629km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

### Half Pilot Staff

There are no half pilot staffs at Kyogle.







## **2.22 Loadstone (LOD)**

### **General Arrangements**

Loop length 1555m

### **Emergency Operation of Points**

EOLs are located adjacent to the points on the outside of the signal location cupboards at the Sydney and Country ends of the crossing loop.

### **Half Pilot Staff**

There are no half pilot staffs at Loadstone.







## **2.23 Glenapp (GLP)**

### **General Arrangements**

Loop length 1537m

Siding 110m

### **Emergency Operation of Points**

EOLs are located adjacent to the points on the outside of the signal location cupboards at the Sydney and Country ends of the crossing loop.

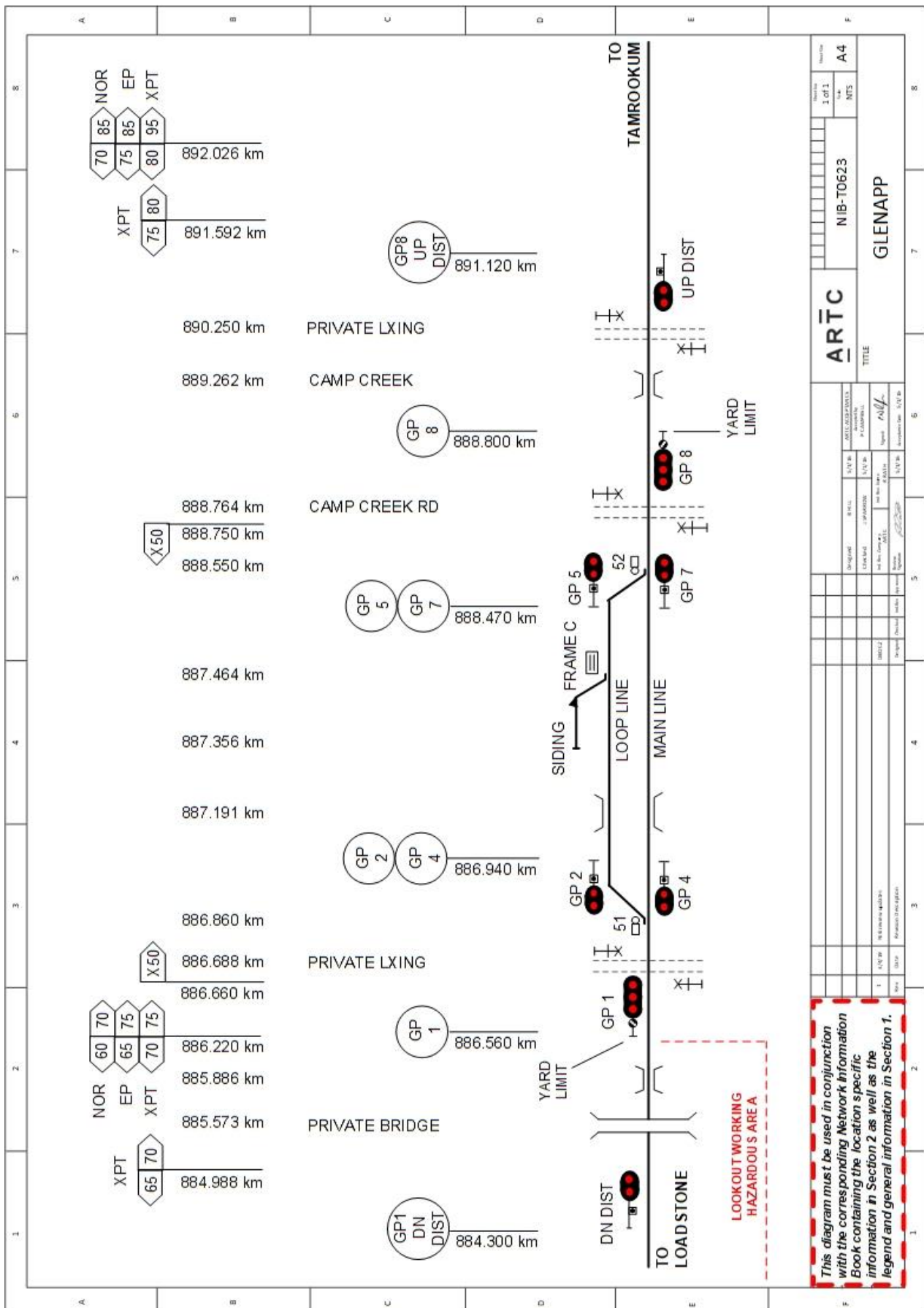
### **Ground Frame**

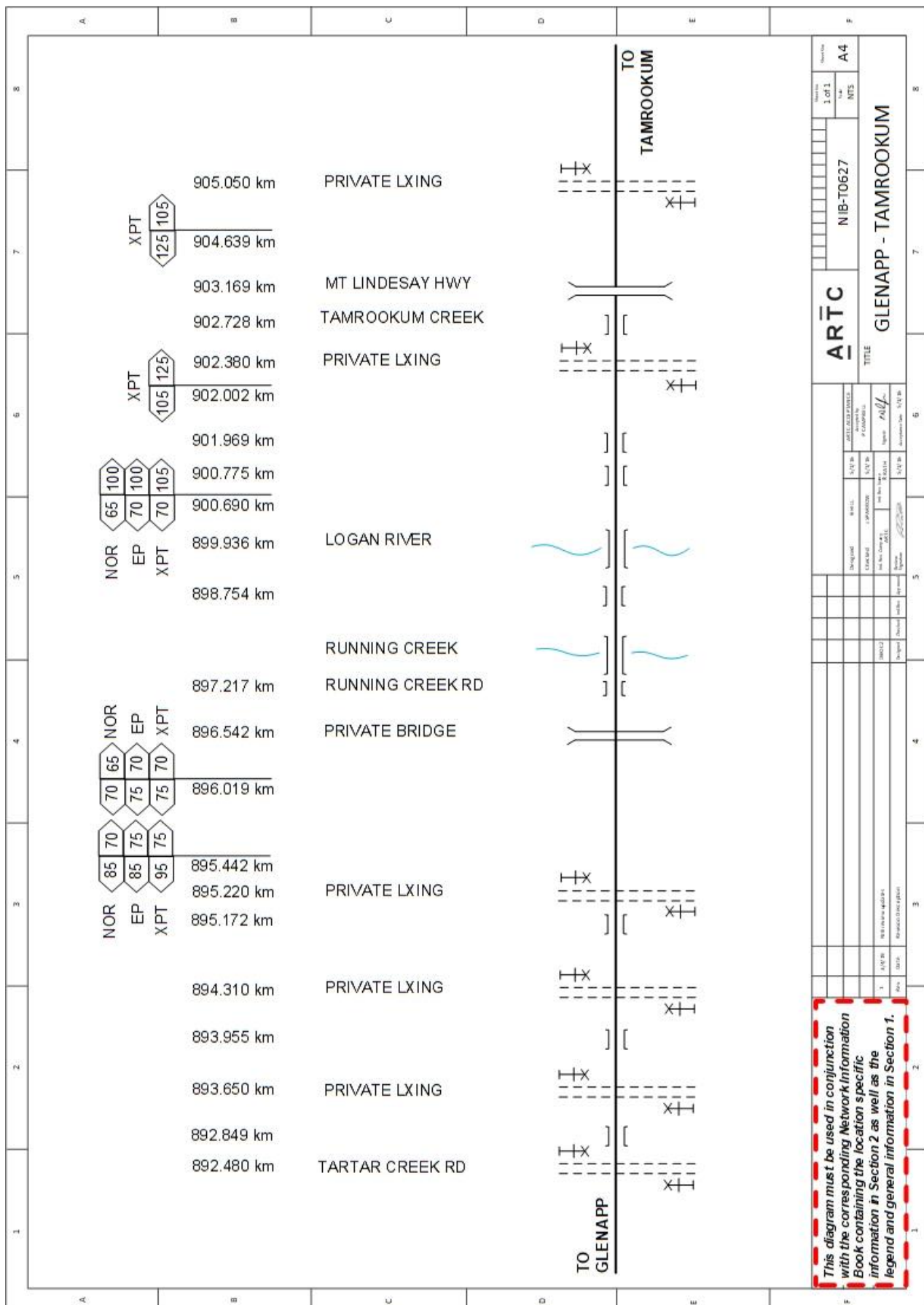
Frame C is located on the Down side of the loop line adjacent to the crossovers and provides access to the Maintenance siding.

Frame C is released by No 81 release from the Network Controller at NCCS.

### **Half Pilot Staff**

There are no half pilot staffs at Glenapp.





## 2.24 Tamrookum (TMK)

Loop length 1556m

Siding 220m

### Emergency Operation of Points

EOLs are located North of the points on the outside of the signal location cupboard at the Sydney end of crossing loop and adjacent to the points on the outside of the signal location cupboard at the Country end of the crossing loop.

The ESML for 53 points is located at TM53 signalling location cupboard.

### Ground Frame

No 53 points on the maintenance siding are released by No 53 release from the Network Controller at NCCN.

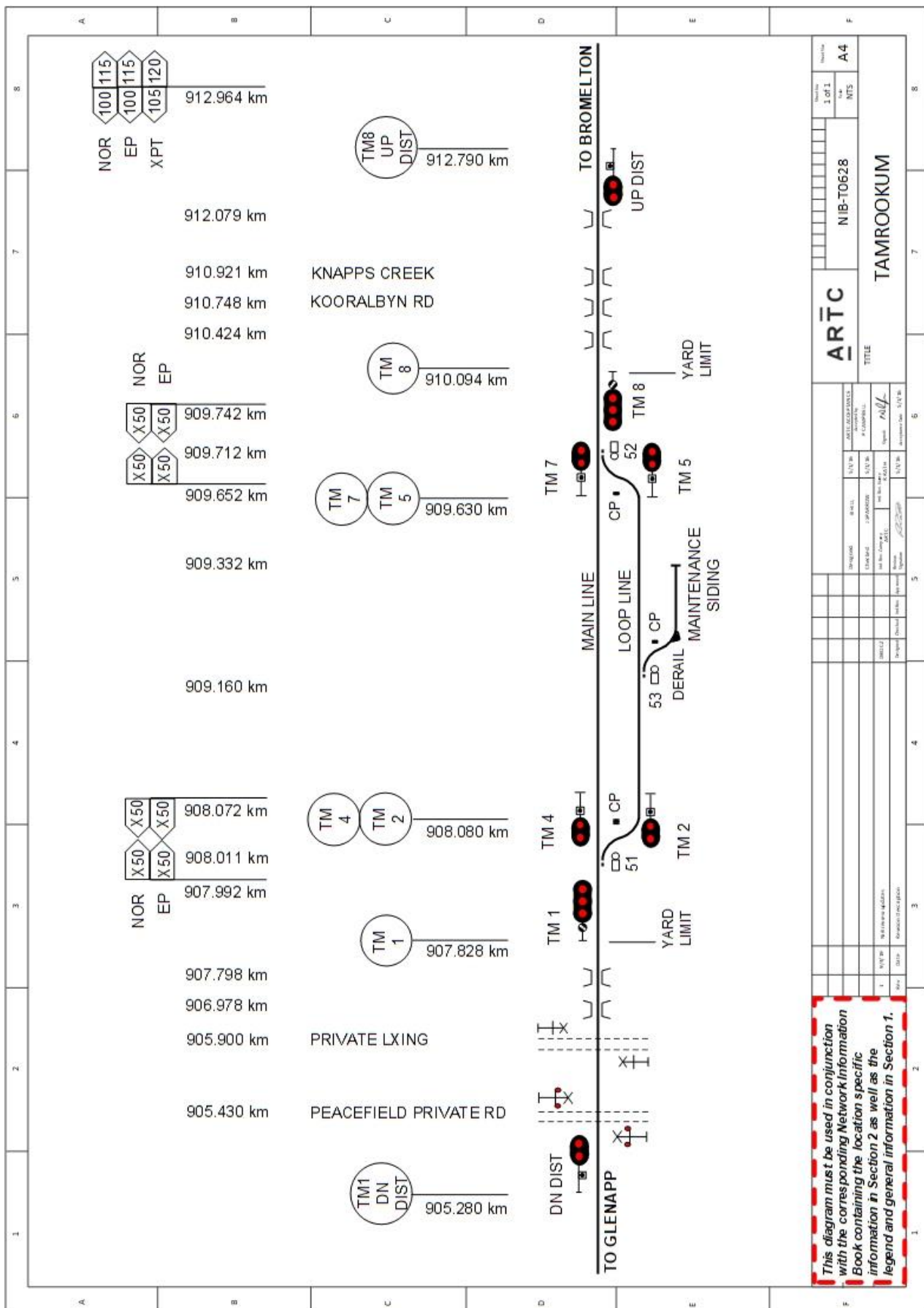
### Peacefield Private Road Level Crossing

Type F lights and bells are provided at Peacefield Private Road level crossing 905.430km. The level crossing is controlled by a Grade Crossing Predictor (GCP) and is designed for a set warning period. Train operators must not accelerate train speed from the trackside sign indicating predictor circuitry on approach to the crossing. The crossing approach warning boards are located at 904.037km in the Down direction and 906.601km in the Up direction. These boards are blue edged to indicate an approach to an electronically controlled (predictor) level crossing.

### Half Pilot Staff

There are no half pilot staffs at Tamrookum.

## Locations and Sections Information



## 2.25 Bromelton Quarry Siding (922.567km)

The Quarry Siding is a private siding located in the Tamrookum to Bromelton Section. The interface agreement no is IA 1820

Ground Frame A is located on the Up side of the Main line adjacent to the turnout points and provides access to the quarry sidings. Ground Frame A is unlocked by a key from releasing switch A, which is electrically released by No. 81 release at NCCS.

### Siding Arrangements

The driver of the Rail Traffic movement that requires access to the Quarry Site must obtain permission from the Quarry Terminal Co Ordinator prior to the rail movement departing Tamrookum / Bromelton

Should the Quarry Terminal Co Ordinator be unable to accept the Rail Traffic it is to be held at Tamrookum / Bromelton until the driver advises that the rail movement can be accepted into the quarry.

Current line speed on the ARTC main lines past the Quarry Site is 100km/h.

Rail Traffic will arrive into the Quarry Site at a speed no greater than 15km/h.

### Sidings Entry Procedures

- Rail Traffic is to be propelled into the Quarry Sidings from the main line unless the Rail Traffic consist is a push/pull combination.
- Head end Rail Traffic originating from the north must travel to Tamrookum and run-around it's consist.
- When the Rail Traffic is clear of the siding points a competent safeworking person will obtain a release key from the releasing switch (after obtaining permission from the Network Controller)
- Insert the releasing key into the lock on the No 1 lever to unlock the frame
- Reverse the Facing Lock lever (Lever 2)
- Reverse the points and close the Catch Points (Lever 3)
- Normalise Lever 2 to lock points
- Pilot Rail Traffic into sidings
- When Rail Traffic in clear of the main line place all levers back to the normal position and restore release key back into the releasing switch
- Contact Network Controller to ensure release has been returned.

### Sidings Exit Procedures

- Competent Safeworking person contacts Network Control and requests release and approval for the train to depart.
- Remove release key from the releasing switch and insert into Lever 1 to unlock frame by reversing lever 1.
- Reverse Lever 2 to unlock points
- Reverse Lever 3 to place points into reverse position.



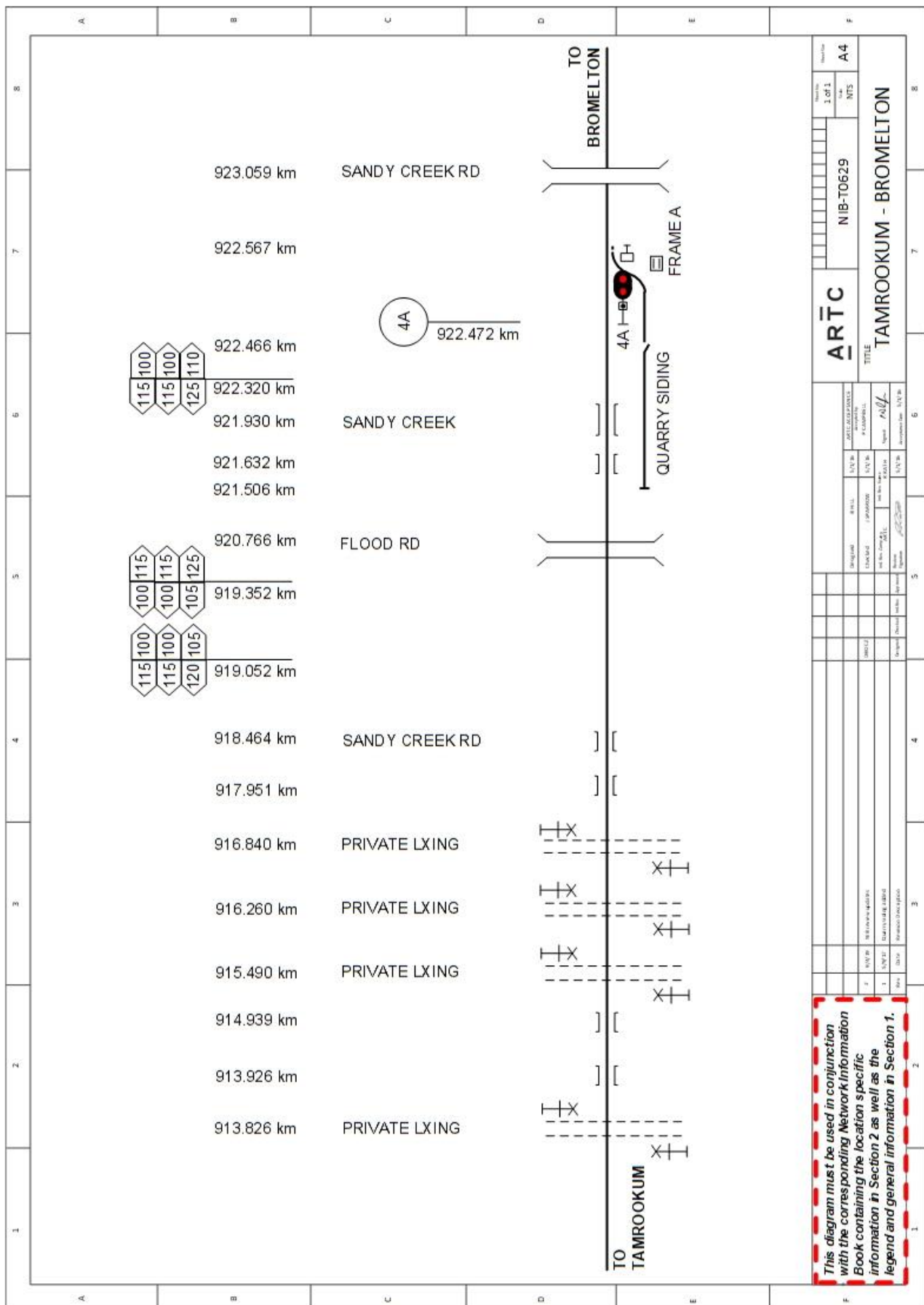
- Normalise Lever 2 to lock points (facing point lock).
- Reverse Lever 4 to operate signal
- When Signal 4A has cleared authorise Rail Traffic to depart.

**Rail Traffic Clear of Sidings**

- Once Rail Traffic has been confirmed clear of main line points normalise Lever 4
- Reverse Lever 2 to unlock points.
- Normalise Lever 3 to place points into normal position.
- Normalise Lever 2 to lock points.
- Normalise Lever 1 to lock frame and release key.
- Release key returned to releasing switch and returned to normal.
- Competent Safeworker contacts Network Control to confirm release was successfully normalised.
- If the competent safeworker is part of the rail traffic crew, they are to be transported back to the locomotives by a representative from the Quarry sidings.

**Competent Safeworker**

- A competent safeworker can be independent from the rail traffic crew but must always have voice communication with the driver of the rail traffic being propelled into the Quarry sidings.
- If the competent safeworker is part of the rail traffic crew, they can compete all the safeworking required for the safe operation of the rail traffic into/out of the Quarry sidings.



## 2.26 Bromelton (BEV)

### General Arrangements

Bromelton yard limits are between signals BF27 and BN8.

Loop length 1614m

Siding 127m

### Emergency Operation of Points

EOLs are located adjacent to the points on the outside of signal location cupboards at the Sydney and Country ends of the crossing loop.

### Maintenance Siding (currently spiked and locked)

Access to and exit from the Maintenance siding is via 53 Points. The points machine is not operational. The siding may be used however points are to be manually operated and clipped and locked in position prior to traversing.

### Half Pilot Staff

There are no half pilot staffs at Bromelton.

### 2.26.1 SCT Intermodal Facility (925.366km)

The SCT Intermodal Facility is located within the Bromelton Yard Limits.

The interface agreement no is IA 1817

### Emergency Operation of Points

EOLs for number 45 points and derail are located adjacent to number 45 points on the BF27 signalling location hut (925.320km).

### Maintenance Isolation Switch

To prevent access to the SCT Intermodal siding during maintenance work within the intermodal facility, a special key-locked isolating switch is provided in a locked box on BF28 signal at 925.580km, to enable the power for No.45 points to be isolated preventing access from the Main line.

The key for the isolating switch box is held by the SCT Intermodal Facility Representative.

The isolating switch has two positions, "Normal" and "Siding Isolated". When the switch is in the "Normal" position, the points can be operated from the Network Controller's workstation at the NCCS. When the switch is locked in the "Siding Isolated" position, the power supply will be isolated and the points cannot be operated by the Network Controller.

### Method of Operation

Before the work commences, the Qualified Worker must inform the Network Controller of the details of the work to be carried out and obtain permission to operate the maintenance isolating switch. Before giving permission for the switch to be operated, the Network Controller must ensure that the points are in the normal position and apply blocking facilities to the points.

After permission has been given, the Qualified Worker must:

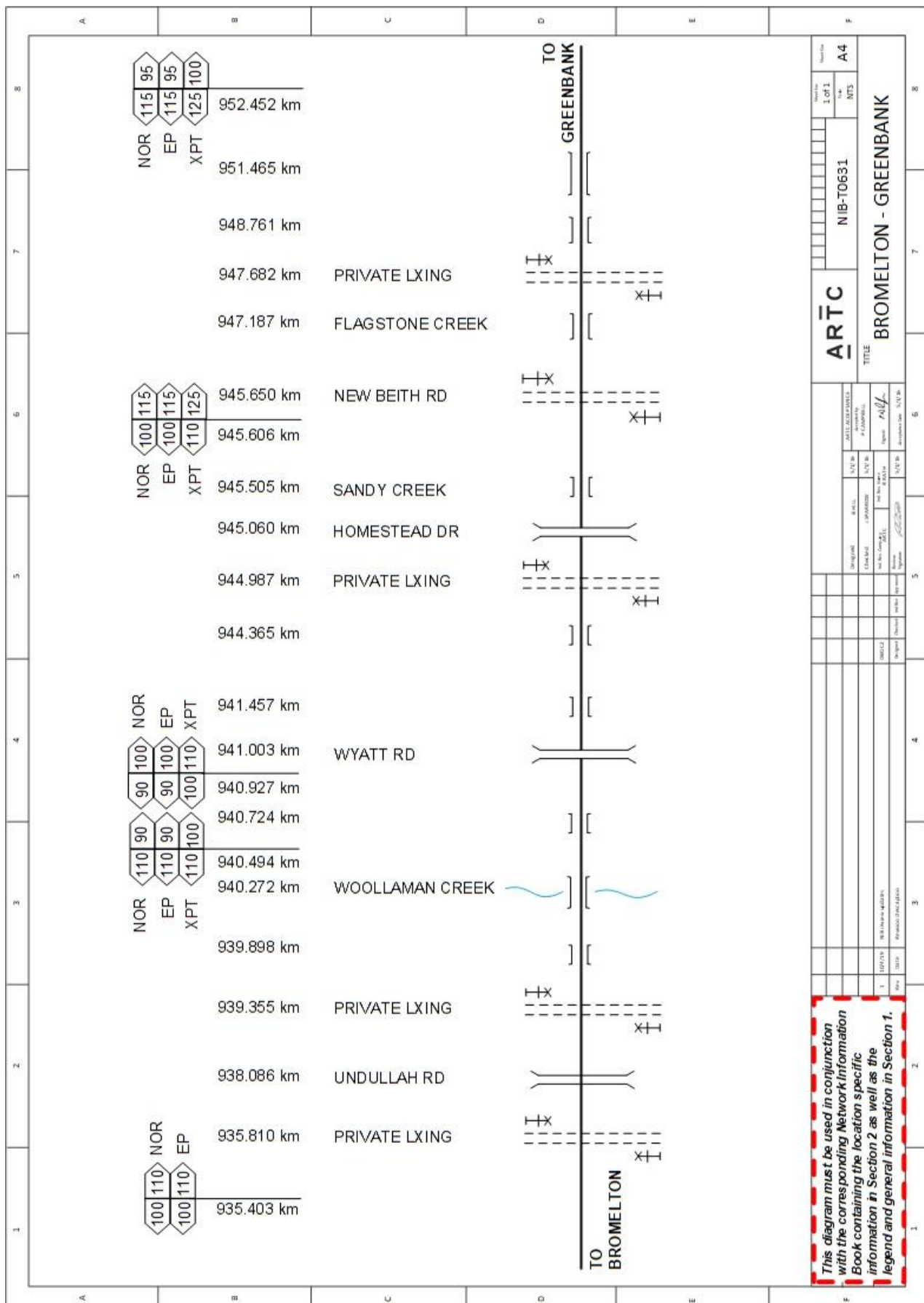
- Unlock the isolating switch box

- Ensure that the points are in the normal position and the white “Maintenance Key Free” light is illuminated
- Depress the push button and turn the switch to the “Siding Isolated” position and then remove the key
- Ensure the green “Isolated & Detected Normal” light is illuminated and the white “Maintenance Key Free” light is extinguished
- Inform the Network Controller that the switch is in the “Siding Isolated” position and retain the key for the duration of the work.

When the work is completed, the Qualified Worker must inform the Network Controller and obtain permission to restore the isolating switch to the “Normal” position. When permission is given, the Qualified Worker must unlock the box, insert the key and turn it to the “Normal Operating” position, ensure the green “Isolated and Detected Normal” light is extinguished and the white “Maintenance Key Free” light is illuminated, lock the box, and then inform the Network Controller.

When informed that the switch has been restored to the “Normal” position, the Network Controller must test the points to ensure that they operate correctly to the normal and reverse positions.







## **2.27 Greenbank (GRK)**

### **General Arrangements**

Loop length 1528m

### **Emergency Operation of Points**

EOLs are located adjacent to the points on the outside of the signal location cupboards at the Sydney end of crossing loop and North of the points on the outside of the signal location cupboards at the Country end of loop.

### **Half Pilot Staff**

There are no half pilot staffs at Greenbank.

### **Acacia Ridge – Greenbank section**

The Acacia Ridge – Greenbank section is operated under the Rail Vehicle Detection system.

All train control and safe working issues / incidents between Greenbank starting signals GK7 and GK5 (956.88km) and Acacia Ridge AR1 Down Outer Home Signal (971.246km) and from AR14 Acacia Ridge Up Starting Signal (971.741km) to Greenbank will be the responsibility of the Network Controller NCCS.

All rail traffic movements Greenbank Starting Signals GK5 and GK7 and Acacia Ridge Down Outer Home signal AR1 will be carried out in accordance with ARTC rules and regulations.

The Interface agreement with QR for this operation is IA 1816.

