

Network Information Book

Main South B

Harden (inc) to Albury (exc) & Cootamundra West (inc) to Stockinbingal (inc)

OGW-30-29

Applicability

Interstate Network

Publication Requirement

Internal / External

Primary Source

Local Appendices South Volumes 3 & 4
Route Access Standard – Defined Interstate Network Section Pages D51 & D11

Document Status

Version #	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
2.8	26 Sep 23	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	13 Aug 16		Initial issue
2.0	11 Sep 17	Various	Cunningar location added from Main South A NIB and Stockinbingal location updated. Wayside Monitoring Systems

© 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) to access the latest version of this document.

			information updated. Level crossing table updated. Correction to Illabo references. Formatting corrections including Table of Contents. The Rock-Yerrong St level crossing updated. Diagram legend updated.
2.1	25 Mar 19	Various	Section 1.5.1 Interlockings & Sidings updated. Yankee Road Henty & Baird Street Culcairn level crossings updated. Wagga Wagga & Wagga Wagga – Uranquinty diagrams combined. Corrections to various diagrams.
2.2	21 Apr 20	1.7, 1.16, 2.11, 2.15, 2.18	Dampier Street level crossing at Bomen updated. Old Trunk Road level crossing at The Rock updated. Waterworks Road level crossing at Marinna updated. Drawing legend updated. Various diagrams updated for eTap introduction.
2.3	28 Apr 21	1.2, 1.7, 1.13, 2.4, 2.6, 2.10, 2.13, 2.23 & 2.24	Safe Working, Level Crossings & Wayside Equipment sections updated. Main Road Harefield updated in sections 1.7 & 2.13. Wallendbeen location section 2.4 updated. Cootamundra standing room details added. Bethungra Spiral details added to section 2.10. Table Top location deleted. Ettamogah location updated. Diagrams updated.
2.4	6 Sep 21	1.7, 1.16, 2.6, 2.7, 2.15, 2.20	Cootamundra diagram and Cootamundra South location updated. Bomen location updated with Riverina Freight Terminal details. Henty level crossings Grubben Road and Williams Crossing updated. Drawing legend updated.
2.5	28 Jan 22	1.1, 1.2, 1.4, 1.16, 2.9, 2.12, 2.15, 2.18, 2.23	Board Extent updated. Safeworking System, Adjacent Train Control section, Stockinbingal, Junee & The Rock locations Country Regional Network references updated. Drawing Legend updated. Bomen location updated. Albury 1 diagram added & Stockinbingal & Junee South diagrams updated.
2.6	1 Aug 22	1.7, 2.11, 2.15, 2.16, 2.18, 2.20	Level Crossings table, Illabo location, Bomen diagram and Docker Street level crossing text Wagga Wagga updated. The Avenue level crossing text at The Rock and Sladen Street level crossing text at Henty updated. The Rock diagram updated.
2.7	5 Jan 23	1.5.1, 2.6, 2.15, 2.17, 2.19, 2.21, 2.22	Interlockings & Sidings updated. Cootamundra Down Refuge use added. Bomen, Uranquinty, Yerrong Creek, Culcairn North, Culcairn & Gerogery diagrams updated. CRN Interface Agreement numbers updated.
2.8	26 Sep 23	1.1, 1.7, 2.3, 2.11, 2.20, 2.23	Board Extent and Level Crossings table updated. Demondrille, Illabo, Henty and Albury diagrams updated.

Table of Contents

Table of Contents	3
1 General Information	5
1.1 Board Extent.....	5
1.2 Safeworking System	5
1.3 Applicable Rules	5
1.4 Adjacent Train Control Boards / Centres	5
1.5 Section Operating Equipment	6
1.5.1 Interlockings and Sidings.....	6
1.6 Train Braking Requirements	7
1.7 Level Crossings.....	8
1.8 Tunnel Locations	11
1.9 Maximum Permanent Speeds and Permanent Speed Restrictions.....	12
1.10 Maximum Train Length	12
1.11 Structure Clearances	12
1.12 Communications	12
1.13 Wayside Monitoring Systems.....	12
1.14 Ruling Gradients	13
1.15 Curve and Gradient Data	13
1.16 Drawing Legend	14
2 Locations and Sections Information	15
2.1 Cunnigar (CGR)	15
2.2 Harden (HAR).....	18
2.3 Demondrille (DMD)	20
2.4 Wallendbeen (WBN)	22
2.5 Jindalee (JND).....	24
2.6 Cootamundra (CTA).....	26
2.6.1 Temora Road Level Crossing	26
2.6.2 Stabling in the Down Refuge	27
2.7 Cootamundra South (CSS)	29
2.8 Cootamundra West (CTW).....	32
2.9 Stockinbingal (SKS)	34
2.9.1 Country Regional Network Interface Requirements.....	35

2.10	Bethungra (BET)	39
2.11	Illabo (ILB)	41
2.12	Junee (JUN)	45
2.12.1	Country Regional Network Interface Requirements.....	46
2.13	Harefield (HRF)	50
2.14	Shepherds Siding (SHS)	53
2.15	Bomen (BOM)	55
2.15.1	Riverina Intermodal Freight and Logistics Terminal (RiFL).....	56
2.16	Wagga Wagga (WGA)	60
2.17	Uranquinty (URQ)	63
2.18	The Rock (TGT)	66
2.18.1	General Arrangements	66
2.18.2	Level Crossings	67
2.18.3	Country Regional Network Interface Requirements.....	68
2.19	Yerong Creek (YCK)	71
2.20	Henty (HTY)	74
2.21	Culcairn (CUL) & Culcairn North (CUN).....	77
2.22	Gerogery (GRY)	83
2.23	Ettamogah Rail Hub (ERH)	86

1 General Information

1.1 Board Extent

Harden inclusive signals HN11 (379.070km) & 379.6 (379.600km) to Albury exclusive signal AY166 (644.467km) and
Cootamundra West to Stockinbingal inclusive signal SL22 (455.073km)

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

Contact Numbers:

Phone: (02) 6924 9808

Train Transit Manager: (02) 6930 5311

Emergency: (02) 6924 9868

1.2 Safeworking System

Harden to Junee – Double Line Uni-directional Rail Vehicle Detection

Junee to Albury – Single Line Bi-directional Rail Vehicle Detection

Bi-directional signalling within Harden and Cootamundra yard limits

Cootamundra West to Stockinbingal – Single Line Bi-directional Rail Vehicle Detection

The Rock to Boree Creek – Train Order Working (Country Regional Network Control Area)

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 Main South A	(02) 6924 9807	Emergency	(02) 6924 9867
ARTC Main South C	(02) 6924 9802	Emergency	(02) 6924 9862
Country Regional Network	(02) 4028 9502		

1.5 Section Operating Equipment

1.5.1 Interlockings and Sidings

Km	Interlocking, Station, Platform or Siding	Length of Passenger Platform in Metres
380.921	Cunninggar	
385.637	Harden	Up main No. 1, 215 Down main No. 2, 163
407.825	Wallendbeen	Up and Down main Nos. 1 & 2, 158
428.247	Cootamundra North Junction	
429.650	Cootamundra Station	Up main No. 1, 173 Down main No. 2, 147
428.999	Cootamundra West	159
454.046	Stockinbingal	100
456.037	Bethungra	
468.466	Illabo	
485.670	Junee station	Up main No. 1, 148 Down main No. 2, 275
497.612	Harefield	Main No. 1, 61
504.641	Shepherds	
513.691	Bomen	Main No. 1, 78
521.160	Wagga Wagga	Main No. 1, 198
535.723	Uranquinty	Main No. 1, 81
550.294	The Rock	Main No. 1, 137
565.087	Yerong Creek	Main No. 1, 74
579.845	Henty West	
580.286	Henty	Main No. 1, 112
596.819	Culcairn	Main No. 1, 101
616.373	Gerogery	Main No. 1, 91
632.598	Ettamogah	

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 remmarshalled 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 Level Crossings

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).

Main South

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
592	Cunningar Road (Boorowa Road)	Main South	381.153	Road	Public	Half Boom Flashing Lights
4236	Cunningar Private Lxing	Main South	382.702	Road	Private	No Control
4237	Harden Private Lxing	Main South	383.410	Road	Private	
4238	Harden Private Lxing	Main South	384.864	Road	Private	
593	Nubba Road Nubba	Main South	401.400	Road	Public	Half Boom Flashing Lights
4240	Elringtons Private Lxing Wallendbeen	Main South	418.640	Road	Private	
4241	Smiths Private Lxing Cootamundra	Main South	422.396	Road	Private	
4242	Jemswals Private Lxing Cootamundra	Main South	424.044	Road	Private	
595	Temora Road Cootamundra	Main South	428.956	Road	Public	Half Boom Flashing Lights
596	Gundagai Road Cootamundra	Main South	430.050	Road	Public	Half Boom Flashing Lights
597	Cowcumbra St Cootamundra	Main South	430.749	Road	Public	Half Boom Flashing Lights
598	Back Brawlin Road Cootamundra	Main South	431.934	Road	Public	Half Boom Flashing Lights
4393	Cootamundra Service Lxing	Main South	435.200			
4243	Private Lxing Cootamundra	Main South	436.129	Road	Private	
4244	Mcphail Private Lxing Cootamundra	Main South	436.918	Road	Private	
4394	Cootamundra Service Lxing	Main South	439.486			
599	Ryans Private Lxing Bethungra	Main South	448.294	Road	Private	Stop Signs
600	Olympic Highway Bethungra	Main South	449.872	Road	Public	Half Boom Flashing Lights (duplicated)
4395	Bethungra Service Lxing	Main South	451.678			

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
4396	Bethungra Service Lxing	Main South	452.216			
4397	Bethungra Service Lxing	Main South	452.468			
4398	Bethungra Service Lxing	Main South	452.729			
4414	Bethungra Service Lxing	Main South	454.410			
4415	Bethungra Service Lxing	Main South	455.462			
4416	Bethungra Service Solar Panel Lxing	Main South	456.394			
601	Olympic Highway Bethungra	Main South	456.611	Road	Public	Half Boom Flashing Lights
4246	Bethungra Private Lxing	Main South	460.155	Road	Private	
603	Olympic Highway Illabo	Main South	466.106	Road	Public	Half Boom Flashing Lights - (duplicated)
604	Illabo Road Illabo	Main South	468.903	Road	Public	Half Boom Flashing Lights
605	Shire and Carter Lxing Marinna	Main South	472.829	Road	Private	Stop Signs
4249	Wornes Gate L Lxing Marinna	Main South	474.013	Road	Private	
606	Waterworks Road Marinna	Main South	478.138	Road	Public	Half Boom Flashing Lights
607	Olympic Highway Junee	Main South	485.439	Road	Public	Half Boom Flashing Lights
607	Olympic Highway Pedestrian Xing Junee	Main South	485.446	Road	Public	Half Boom Flashing Lights
4250	Lords Private Lxing Junee	Main South	491.976	Road	Private	
608	Dullator Pastoral Lxing Harefield	Main South	494.765	Road	Private	Stop Signs
609	Old Wagga Road Harefield	Main South	496.020	Road	Public	Stop Signs
610	Main Road Harefield	Main South	496.934	Road	Public	Half Boom Flashing Lights
611	Shepherds Siding Road Shepherds	Main South	504.660	Road	Public	Half Boom Flashing Lights
614	Docker Street Wagga Wagga	Main South	522.393	Road	Public	Primary Flashing Lights (duplicated)
615	Fernleigh Road Wagga Wagga	Main South	524.546	Road	Public	Half Boom Flashing Lights
616	Yarragundry Street Uranquinty	Main South	535.529	Road	Public	Half Boom Flashing Lights

ALCAM ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
618	Burkes Creek Road The Rock	Main South	546.310	Road	Public	Half Boom Flashing Lights
619	Urana Street / The Avenue The Rock	Main South	550.154	Road	Public	Half Boom Flashing Lights
620	Yerong Street The Rock	Main South	551.496	Road	Public	Half Boom Flashing Lights
622	Plunkett Street / Cole Street Yerong Creek	Main South	565.242	Road	Public	Half Boom Flashing Lights
623	Neuhaus Lane Yerong Creek	Main South	571.750	Road	Public	Stop Signs
226	Grubben Road Henty	Main South	578.221	Road	Public	Half Boom Flashing Lights
625	Sladen Street Henty	Main South	580.209	Road	Public	Half Boom Flashing Lights
626	Yankee Road Henty	Main South	581.238	Road	Public	Half Boom Flashing Lights
627	Ashleigh Park Feedlot Culcairn	Main South	592.850	Road	Public	Half Boom Flashing Lights
628	Baird Street Culcairn	Main South	595.725	Road	Public	Half Boom Flashing Lights
629	Balfour Street Culcairn	Main South	596.998	Road	Public	Half Boom Flashing Lights
630	Taylors Road Culcairn	Main South	598.937	Road	Public	Stop Signs
631	Odewahans Road Culcairn	Main South	601.325	Road	Public	Stop Signs
632	Benanbra Road Culcairn	Main South	606.160	Road	Public	Stop Signs
4253	Springfield Co Road Lxing Gerogery	Main South	607.510	Road	Private	
633	East Road Gerogery	Main South	616.160	Road	Public	Primary Flashing Lights
635	Nursery Road Table Top	Main South	624.546	Road	Public	Stop Signs
4255	Patterson Private Lxing Table Top	Main South	627.073	Road	Private	
637	Tynans Road Table Top	Main South	631.176	Road	Public	Half Boom Flashing Lights

Cootamundra - Stockinbingal

LXM Number	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
1528	Yass Road Cootamundra West	Cootamundra - Stockinbingal	428.705	Road	Public	Half Boom Flashing Lights
1529	West Jindalee Road Cootamundra West	Cootamundra - Stockinbingal	430.746	Road	Public	Stop Signs
198	Berthong Road Cootamundra West	Cootamundra - Stockinbingal	431.810	Road	Public	Primary Flashing Lights
1848	Private Road Cootamundra West	Cootamundra - Stockinbingal	433.268	Road	Public	Stop Signs
3739	Cootamundra West Private Lxing	Cootamundra - Stockinbingal	434.037	Road	Private	
3740	Cootamundra West Private Lxing	Cootamundra - Stockinbingal	434.960	Road	Private	
199	Bauloora Lane Cootamundra West	Cootamundra - Stockinbingal	437.547	Road	Public	Stop Signs
1849	Public Road Cootamundra West	Cootamundra - Stockinbingal	440.242	Road	Public	Stop Signs
3741	Halbisch Private Lxing Stockinbingal	Cootamundra - Stockinbingal	445.942	Road	Private	
200	Yeo Yeo Road Stockinbingal	Cootamundra - Stockinbingal	446.803	Road	Public	Stop Signs
201	Gilmores Lane Stockinbingal	Cootamundra - Stockinbingal	451.792	Road	Public	Stop Signs
202	Cootamundra Road Stockinbingal	Cootamundra - Stockinbingal	452.764	Road	Public	Half Boom Flashing Lights
203	Dudauman Street Stockinbingal	Cootamundra - Stockinbingal	453.917	Road	Public	Half Boom Flashing Lights
1530	Stockinbingal Platform Pedestrian Xing	Cootamundra - Stockinbingal	454.103	Pedestrian	Public	Path
204	Temora Road / Burley Griffin Way Stockinbingal	Cootamundra - Stockinbingal	454.696	Road	Public	Half Boom Flashing Lights

1.8 Tunnel Locations

Section / location	Name of Tunnel	Length of tunnel in metres	km from Sydney
Cootamundra South - Illabo	Spiral No. 1	68	454.860 - 454.928
Cootamundra South - Illabo	Spiral No. 2	53	455.034 - 455.087

1.9 Maximum Permanent Speeds and Permanent Speed Restrictions

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

1.10 Maximum Train Length

Maximum train length is 1800 metres

1.11 Structure Clearances

Refer Route Access Standards for Rolling Stock Outlines.

1.12 Communications

The National Train Communications System (NTCS) is the Primary communications system for the ARTC controlled rail network and is mandatory for all operators to operate their locomotives using a NTCS ICE (In-Cabin Equipment) Unit as the primary communications device.

A standard ICE unit is installed with the following components

- Telstra NextG™ transceiver
- Iridium satellite transceiver
- UHF Radio
- 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 the Junee network control centre when the routine and emergency buttons are pressed.

The UHF radio is used for the Local train Radio - Train to Train and train to track Side communications.

UHF Local Train Radio (LTR) frequency details

Frequency: 418.425 MHz (UHF),

Bandwidth: 12.5 KHz,

EIRP: 41W (remote/low density areas), 8.3W (medium & high density areas)

Tx CTCSS: 162.2 Hz

Rx CTCSS: 162.2 Hz

Selcall: disabled

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

1.13 Wayside Monitoring Systems

Jindalee – Up Main 423.840km Dragging Equipment Detector

Junee - 488.609km Dragging Equipment Detector

1.14 Ruling Gradients

Harden to Cootamundra	1 in 55
Cootamundra to Harden	1 in 75
Stockinbingal to Cootamundra	1 in 75
Cootamundra to Stockinbingal	1 in 75
Cootamundra to Junee	1 in 40
Junee to Cootamundra	1 in 50
Junee to Wagga	1 in 40
Wagga to Junee	1 in 40
Wagga to The Rock	1 to 60
The Rock to Wagga	1 in 66
The Rock to Yerong Creek	1 in 80
Yerong Creek to The Rock	1 in 80
Yerong Creek to Henty	1 in 65
Henty to Yerong Creek	1 in 90
Henty to Albury	1 in 80
Albury to Henty	1 in 80

1.15 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

1.16 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 Cunningar (CGR)

Goods Siding 350m

Ground Frame

Ground frame A is provided at Cunningar to operate the points leading to the Goods siding.

Frame A is released by a Fortress Key from the releasing switch A released from NCCS HN121. The key is to be inserted in Lever No 1, the lever reversed after which Lever No 2 may be operated to reverse the points. Lever B points must be kept in reverse until shunting is complete.

Shunting Limit Sign

A "SHUNTING LIMIT" sign is provided at Cunningar approximately 900 metres on the Sydney side of the points leading to the siding.

NOTE: All trains shunting Cunningar that are programmed to return to Harden must be a Push – Pull combination and will return to Harden via the Down Main line under signals.

Method of Working

Working a train to Cunningar

On arrival at Cunningar, the Qualified Worker must contact NCCS and request a release for Releasing Switch HN121.

Train departing Cunningar

The train returning to Harden must be brought to as stand at Signal HN13 and the Qualified Worker must:

"CONTACT NCCS TO REQUEST SIGNAL CLEARANCE. WHEN AUTHORISED, PUSH BUTTON TO ACTIVATE LEVEL CROSSING AND CLEAR SIGNAL."

When Signal HN13 assumes a "Proceed" aspect, the train may return to Harden on the Up line as far as HN103 crossover then via the Down Main line to the next fixed signal.

Boorowa Road Level Crossing

Type F flashing lights, bells and half-boom barriers are provided at Boorowa Road level crossing at 381.153km.

The warning equipment is automatically controlled by track circuit for through Down and Up trains, or manually operated by a pushbutton unit located on Signal HN13 for shunting movements over the level crossing in a Down direction on the Up Main line. A sign placed on the signal mast reads:

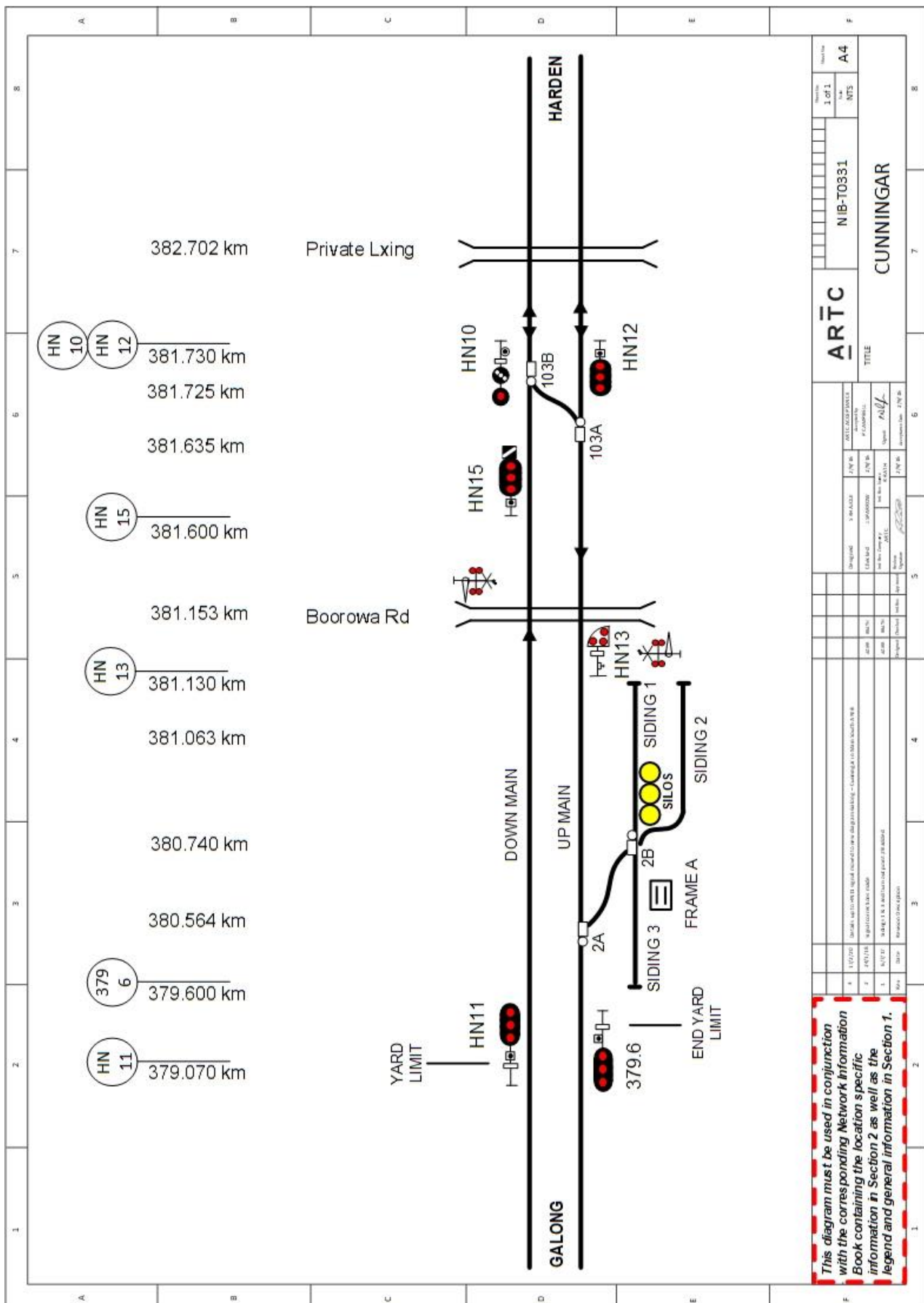
"CONTACT NCCS TO REQUEST SIGNAL CLEARANCE. WHEN AUTHORISED, PUSH BUTTON TO ACTIVATE LEVEL CROSSING AND CLEAR SIGNAL."

When a shunting movement in the Down direction on the Up Main line will be required to obstruct the level crossing, the Qualified Worker must "CONTACT NCCS TO REQUEST SIGNAL CLEARANCE. WHEN AUTHORISED, PUSH BUTTON TO ACTIVATE LEVEL CROSSING AND CLEAR SIGNAL."

The warning indications will be cancelled automatically when the rear of the shunting movement has cleared the level crossing. If the warning indications do not cancel automatically, this may be because of an approaching train on the Down Main line.

If the movement is not to proceed, the warning indications must be cancelled by pressing the "CANCEL" pushbutton unit located on Signal HN13 for one second.

The pushbutton unit must be kept closed and secured by SL lock when not in use.



2.2 Harden (HAR)

Operation of Points and Signals

The points and signals at Harden are controlled from the Network Control Centre South (NCCS).

Operation of power operated points in an emergency will be in accordance with ARTC Network Rules and Procedures.

Ground Frames

Frame B

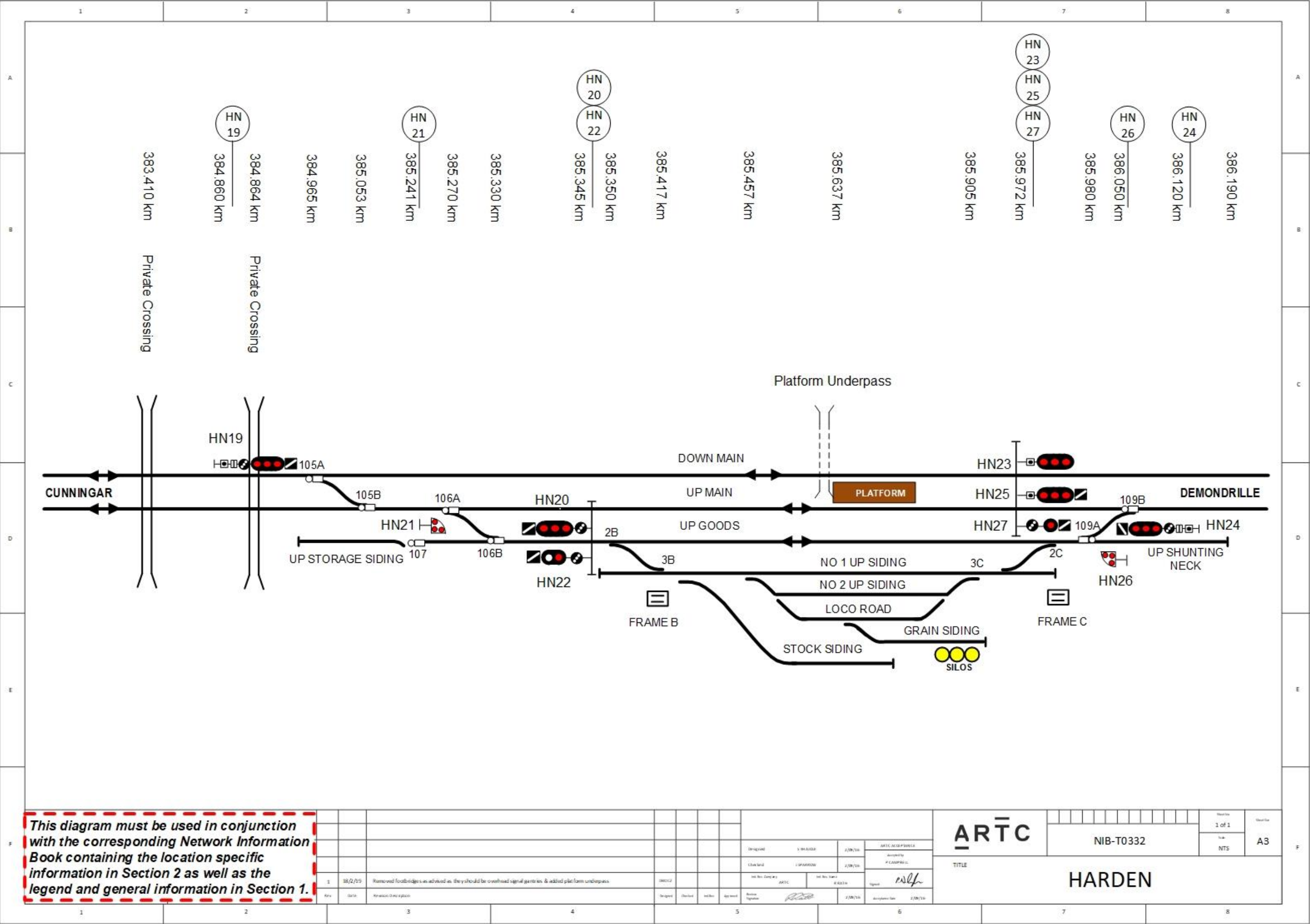
Frame B is located at the up end of the Up Goods line at 385.347km and provides access to the Up Sidings and the Loco Road.

Frame B is released by HN127 from the NCCS.

Frame C

Frame C is located at the down end of the Up Goods line at 385.966km and provides access to the Up Sidings and the Loco Road.

Frame C is released by HN128 from the NCCS.

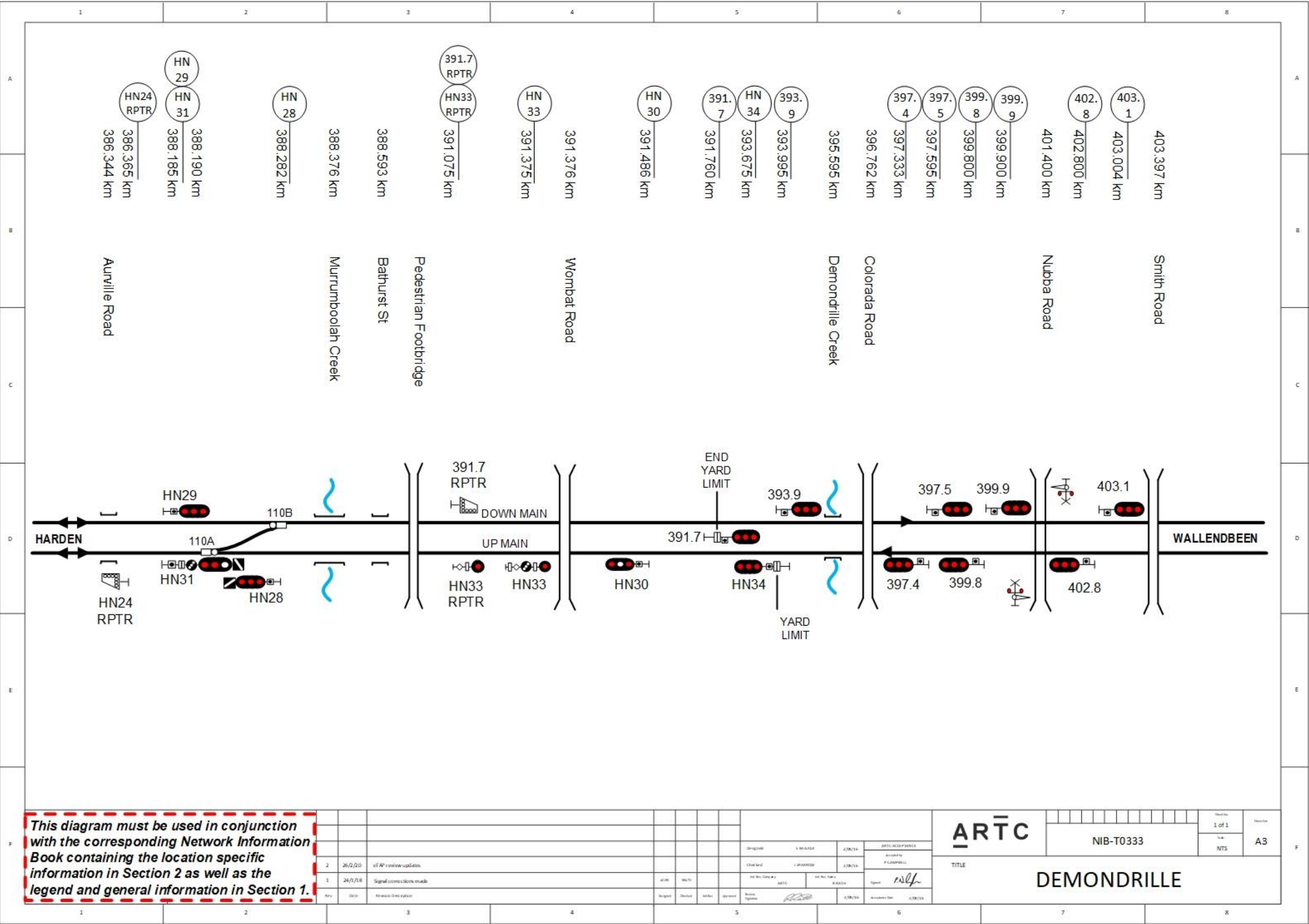


2.3 Demondrille (DMD)

General Arrangements

Demondrille is worked as part of the Yard Limits at Harden. The points and signals are operated from Network Control Centre South as part of the Harden Interlocking.

Operation of power operated points in an emergency will be in accordance with ARTC Network Rules and Procedures.



2.4 Wallendbeen (WBN)

General Arrangements

The signals at Wallendbeen are automatic signals and operate in accordance with track occupancy.

Up Signal 254.6 (409.716km) at Wallendbeen has an "A" Light and sign. The sign reads "WHEN THE A LIGHT IS OUT THIS SIGNAL MUST NOT BE PASSED AT STOP WITHOUT AUTHORITY FROM THE SIGNALLER"

Down Signal 253.3 (407.924km) at Wallendbeen has an "A" Light and sign. The sign reads "WHEN THE A LIGHT IS OUT THIS SIGNAL MUST NOT BE PASSED AT STOP WITHOUT AUTHORITY FROM THE SIGNALLER"

Ground Frames

Frame B

Frame B is located at the down end of the grain sidings and provides access to the grain sidings.

Frame B is released by WN113 from the NCCS.

Emergency Crossover Frame C

Frame C is located on the up side of the Up main line next to the crossover. Frame C operates the facing crossover points between the Up and Down lines. This crossover is for emergency use only and must be clipped and XL locked when not in use.

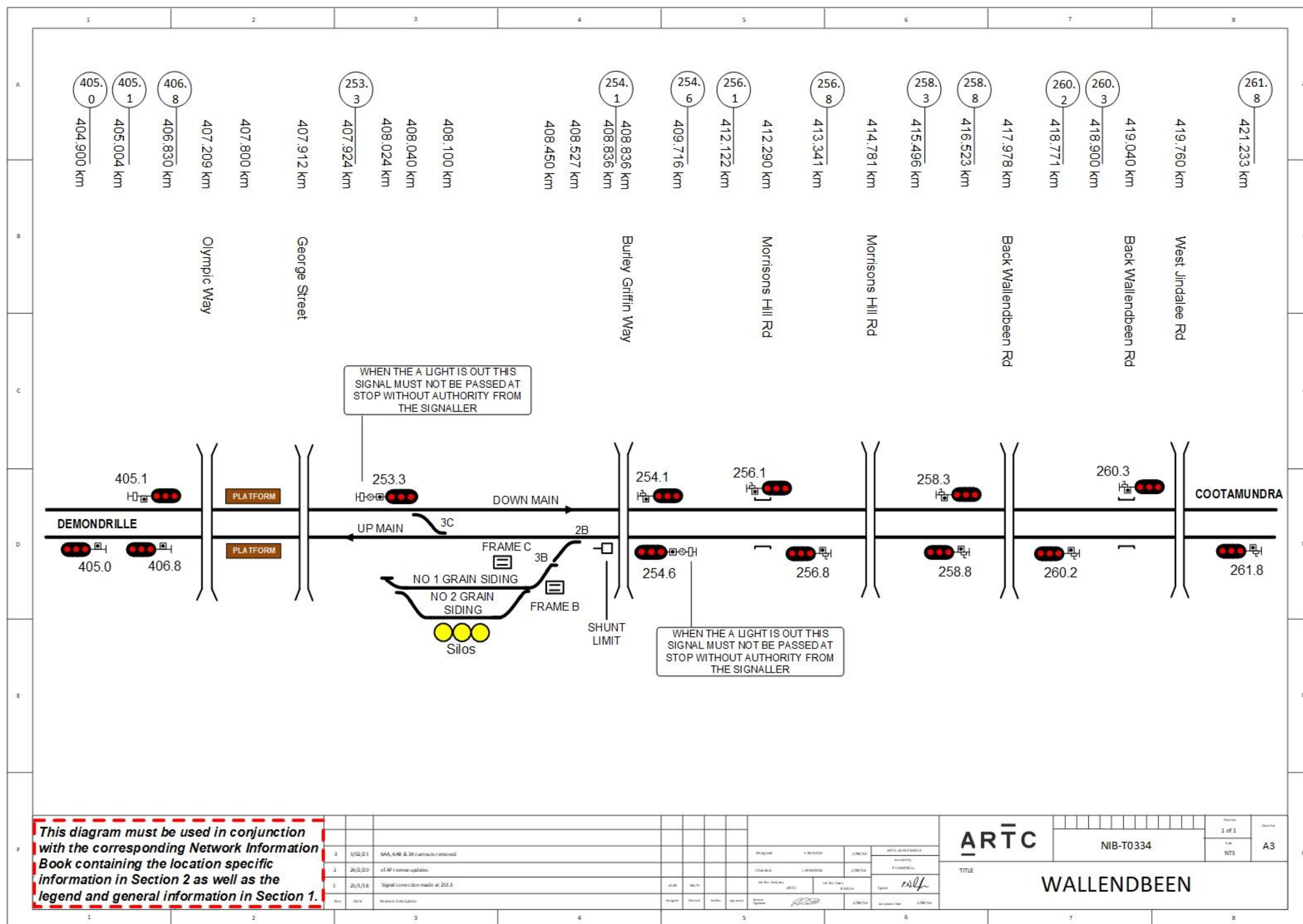
Frame C is released by WN109 from the NCCS.

Facing point locks are provided on the points operated from Frame C and are locked in both the normal and the reverse positions. It is unnecessary to clip and lock points C provided that the facing point lock is in the "Normal position".

Shunting Limit

A shunting limit sign is provided at Wallendbeen. The sign is located on the Up side of the Up main line approximately 200 metres on the Cootamundra side of frame B.

This sign is inscribed "SHUNTING LIMIT ON UP MAIN LINE" and applies to shunting movements in the Down direction on the Up main line.



2.5 Jindalee (JND)

Jindalee is worked as part of the yard limits of Cootamundra.

Crossovers 101 and 102 allow for Bi – directional working over the Up and Down main lines from Cootamundra North to Cootamundra.

The standing room for trains at Jindalee CA06 signal to CA09 signal is 2000m.

ESML's for 101 and 102 points are located adjacent to the crossovers.

Dragging Equipment Detector

A dragging equipment detector is located on the Up Main at 423.840km in the Cootamundra – Harden section.

Responding to a Dragging Equipment Alarm

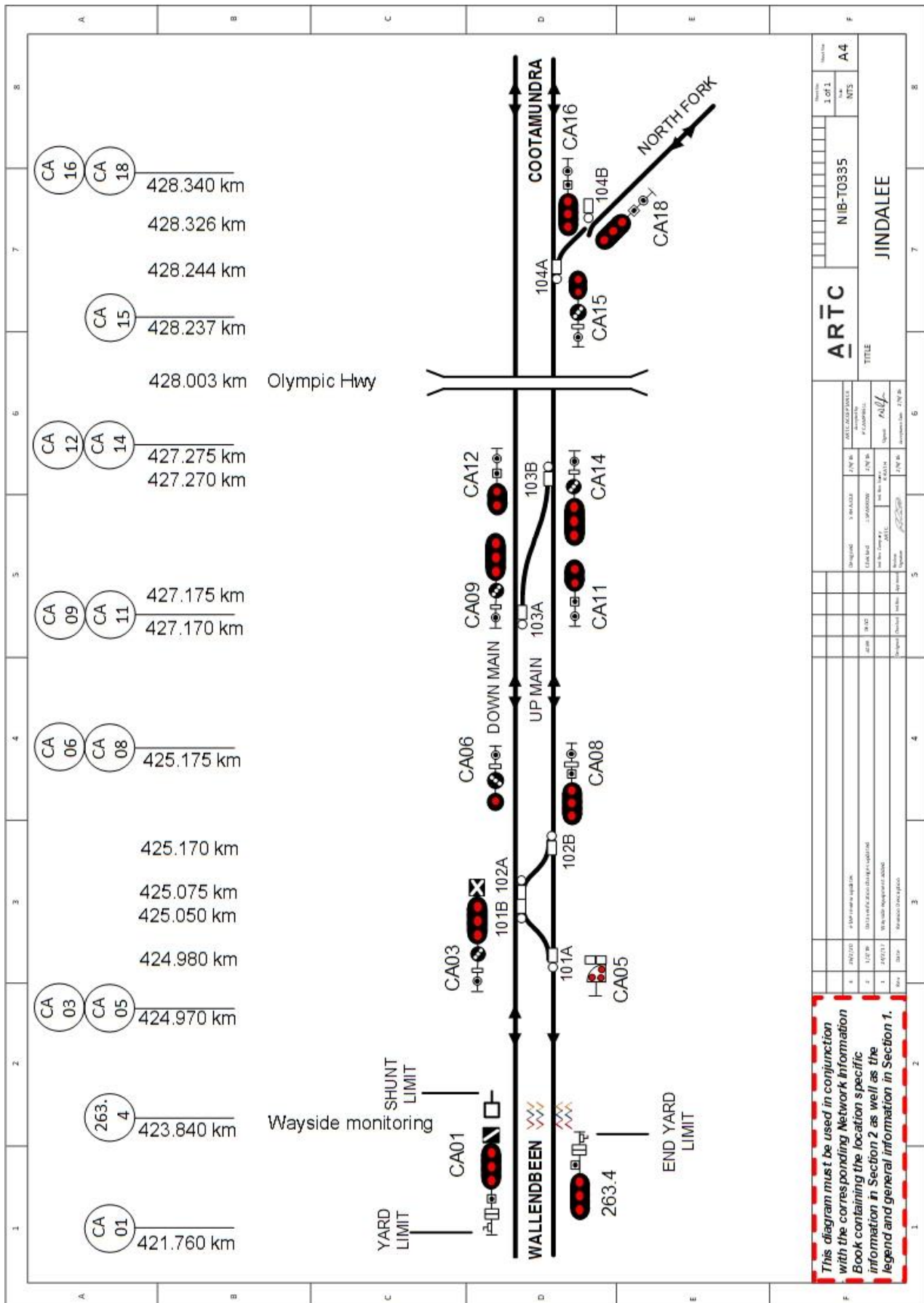
When Alarm conditions are detected an alarm “pop up” screen appears on the Wayside Client Terminal and an audible alarm sounds. The alarm will continue to sound until the Network Controller responds.

The alarm Pop up screen will display the recorded train alarm information relevant to the type of alarm.

Clicking on the Pop up screen “Confirm” icon will suppress the audible alarm but maintain the pop up screen display.

The Network Controller must then:

- Contact the Driver of the train that activated the detector and instruct the Driver to immediately bring the train to a stand, and
- Instruct the Driver to inspect the train to identify the problem and then advise the Network Controller of the status of the problem and the action that must be taken to resolve it.



2.6 Cootamundra (CTA)

Platform Road – Standing Room 765m

Refuge Road – Standing Room 650m

Operation of Points and Signals

The points and signals at Cootamundra are controlled from the Network Control Centre South (NCCS).

NOTE: The storage length / standing room for crossing trains on the Up Main between CA42 and 136 points is 715m.

Operation of Power-operated Points in an Emergency

Operation of power operated points in an emergency will be in accordance with ARTC Network Rules and Procedures.

2.6.1 Temora Road Level Crossing

Temora Road level crossing is located at 428.948km and is fitted with type “F” level crossing protection including flashing red lights, bells and half boom barriers. Pedestrian swing gates, warning lights and siren are also installed at this location.

If signals protecting Temora Road level crossing are displaying Proceed indications, the level crossing protection (including the pedestrian Level crossing) will operate once a train is detected approaching the level crossing. The clearing of a route across the level crossing will initiate the operation of the level crossing protection if a train is already detected on the approach to the crossing. Once the level crossing protection is detected to be in place, the signal for the route called will clear.

Shunter's Push Buttons are provided on both sides of Temora Road in the No.1 Siding/Down Refuge Loop roads to facilitate the operation of the level crossing protection during shunting movements. Train crews must contact NCCS before proceeding across the crossing in the Sidings.

Signs are situated adjacent to the Shunter's Push Buttons on the Up and Down sides of the level crossing. The signs are inscribed:

'DRIVER/SHUNTER TO CONTACT JUNE NCCS BEFORE PROCEEDING OVER TEMORA ROAD LEVEL CROSSING'

Locked cabinets on site contain the Emergency Switches for both the road and pedestrian level crossing as well as the “Test” and Manual Operation switches. The emergency keys are held at the ARTC provisioning centre Cootamundra.

2.6.2 Stabling in the Down Refuge

The stabling of unattended rail traffic in the Down Refuge is permitted in accordance with the following instructions.

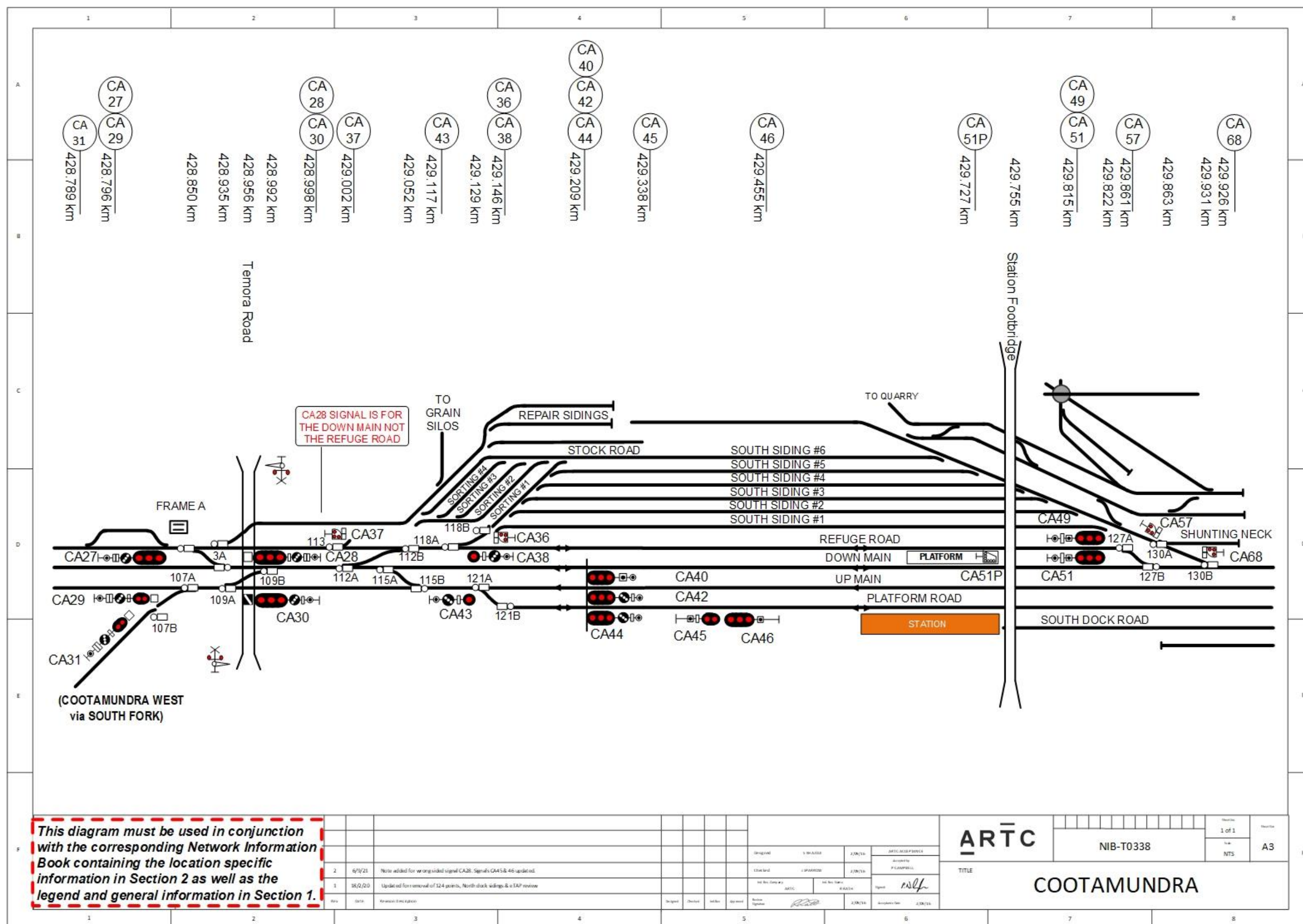
- Maximum total train length to be stabled is 644m, and
- The train path and the use of Cootamundra Down Refuge must be approved by Train Programming at Junee, and
- The use of Cootamundra Down Refuge must be approved by the ARTC Area Asset Manager if the stabling is intended to be over 12 hours.

When stabling the rail traffic, the Rail Traffic Crew must ensure the following is provided:

- 100% of handbrakes are applied to the stabled wagons
- 127 points are restored to the normal position and 118 points are set in the reverse position and are secured with a point clip and SL lock.

When authorising the stabling of unattended rail traffic within the Down Refuge, the Network Controller must:

- Obtain an assurance from the Rail Traffic Crew that they have applied 100% of handbrakes to the stabled wagons, and
- Ensure 118 points are secured with a point clip and SL lock in the reverse position
- Ensure that 127 points are restored to the normal position
- Apply blocking facilities to prevent the operation of points into the Down Refuge
- Record an appropriate entry on the Train Control Graph (to be transferred onto the new graph each day) detailing that wagons have been stabled in the Down Refuge.



2.7 Cootamundra South (CSS)

General Arrangements

Two warning sirens, situated one at each end of the Down platform, are provided for the purpose of warning employees of the approach of Down and Up train movements. The sirens are automatically operated by approaching rail traffic.

Any failure of the sirens to activate on the passage of rail traffic must be promptly reported to the Network Controller.

Ground Frames

Frame A is located on the Down side of the Down main line adjacent to the points and provides access between the Down main line and the shunting neck.

Frame A is unlocked by a Fortress type key electrically released by CA108 at the NCCS.

Shunting Limit Sign

A shunting limit sign is provided at Cootamundra South. The sign is located on the Down side of the Up Main line on the immediate Up side of Cowcumbra Street level crossing. This sign is inscribed 'LIMIT OF SHUNT ON THE UP MAIN LINE' and applies to shunting movements in the Down direction on the Up main line.

Gundagai Road Level Crossing

Gundagai Road level crossing is located at 430.048km and is fitted with type "F" level crossing protection including flashing red lights, bells and half boom barriers. Pedestrian swing gates, warning lights and siren are also installed at this location.

If signals protecting Gundagai Road level crossing are displaying Proceed indications, the level crossing protection (including the pedestrian Level crossing) will operate once a train is detected approaching the level crossing

The clearing of a route across the level crossing will initiate the operation of the level crossing protection if a train is already detected on the approach to the crossing. Once the level crossing protection is detected to be in place, the signal for the route called will clear.

Shunter's Push Buttons are provided on both sides of Gundagai Road at the Up Sidings to facilitate the operation of the level crossing protection during shunting movements. Train crews must contact NCCS before proceeding across the crossing in the Sidings.

Signs are situated adjacent to the Shunter's Push Buttons on the Up and Down sides of the level crossing. The signs are inscribed:

'DRIVER/SHUNTER TO CONTACT JUNEE NCCS BEFORE PROCEEDING OVER GUNDAGAI ROAD LEVEL CROSSING'.

Locked cabinets on site contain the Emergency Switches for both the road and pedestrian level crossing as well as the "Test" and Manual Operation switches. The emergency keys are held at the ARTC provisioning centre Cootamundra.

Cowcumbra Street Level Crossing

Cowcumbra Street level crossing is located at 430.749km and is fitted with type "F" level crossing protection including flashing red lights, bells and half boom barriers.

This level crossing operates automatically on the approach of a train in the Up direction on the Up Main.

If CA75 signal protecting Cowcumbra Street level crossing on the Down Main is displaying a Proceed indication, the level crossing protection will operate once a train is detected approaching the level crossing on the Down Main.

The clearing of the route across the level crossing will initiate the operation of the level crossing protection if a train is already detected on the approach tracks to the crossing. Once the level crossing protection is detected to be in place, CA75 signal will clear.

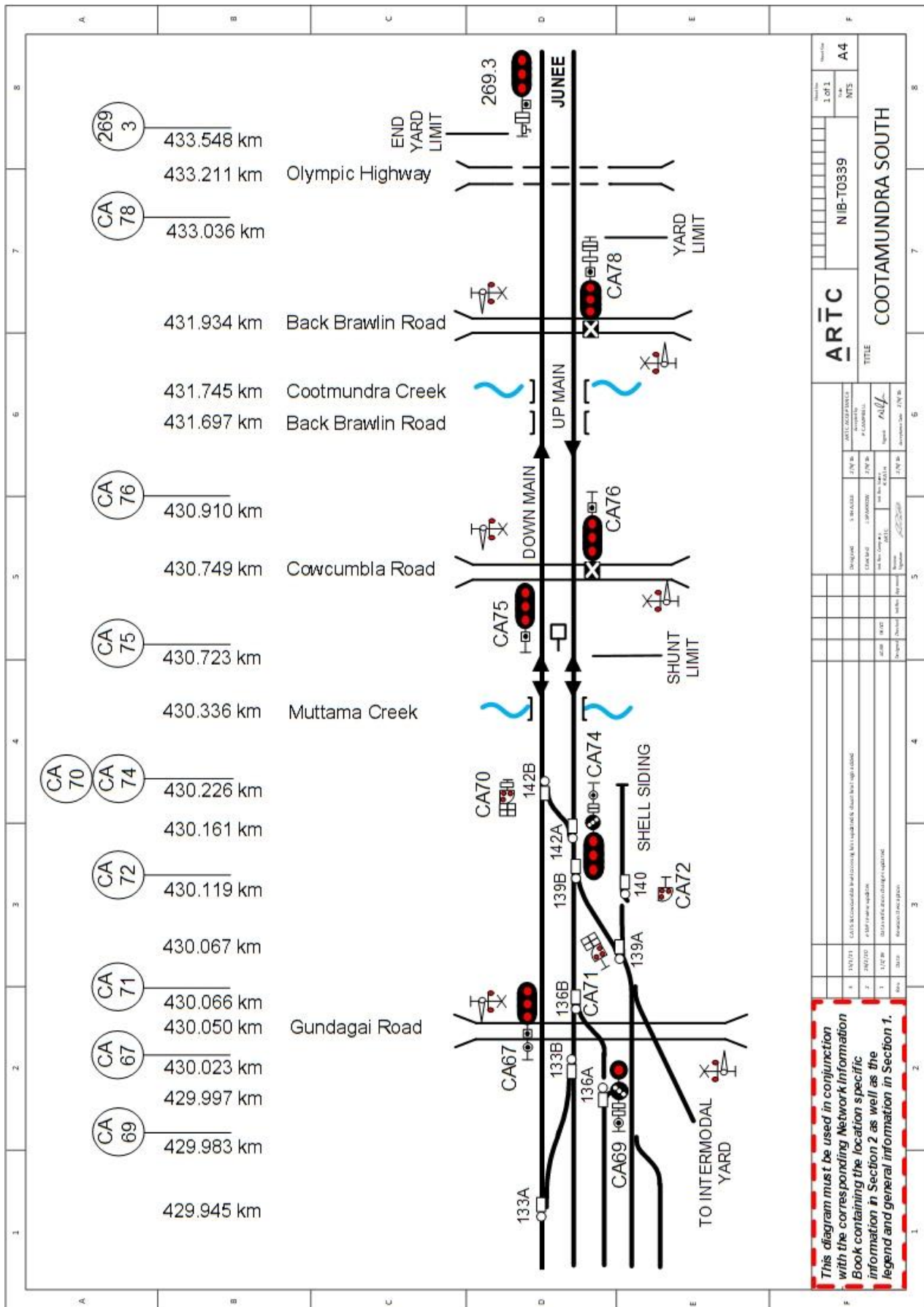
Locked cabinets on site contain the Emergency Switches for the level crossing as well as the "Test" and Manual Operation switches. The emergency keys are held at the ARTC provisioning centre Cootamundra.

Back Brawlin Road Level Crossing

Back Brawlin Road level crossing is located at 431.934km and is fitted with type "F" level crossing protection including flashing red lights, bells and half boom barriers.

This level crossing operates automatically on the approach of a train in the appropriate direction on both Main Lines.

Locked cabinets on site contain the Emergency Switches for the level crossing as well as the "Test" and Manual Operation switches. The emergency keys are held at the ARTC provisioning centre Cootamundra.



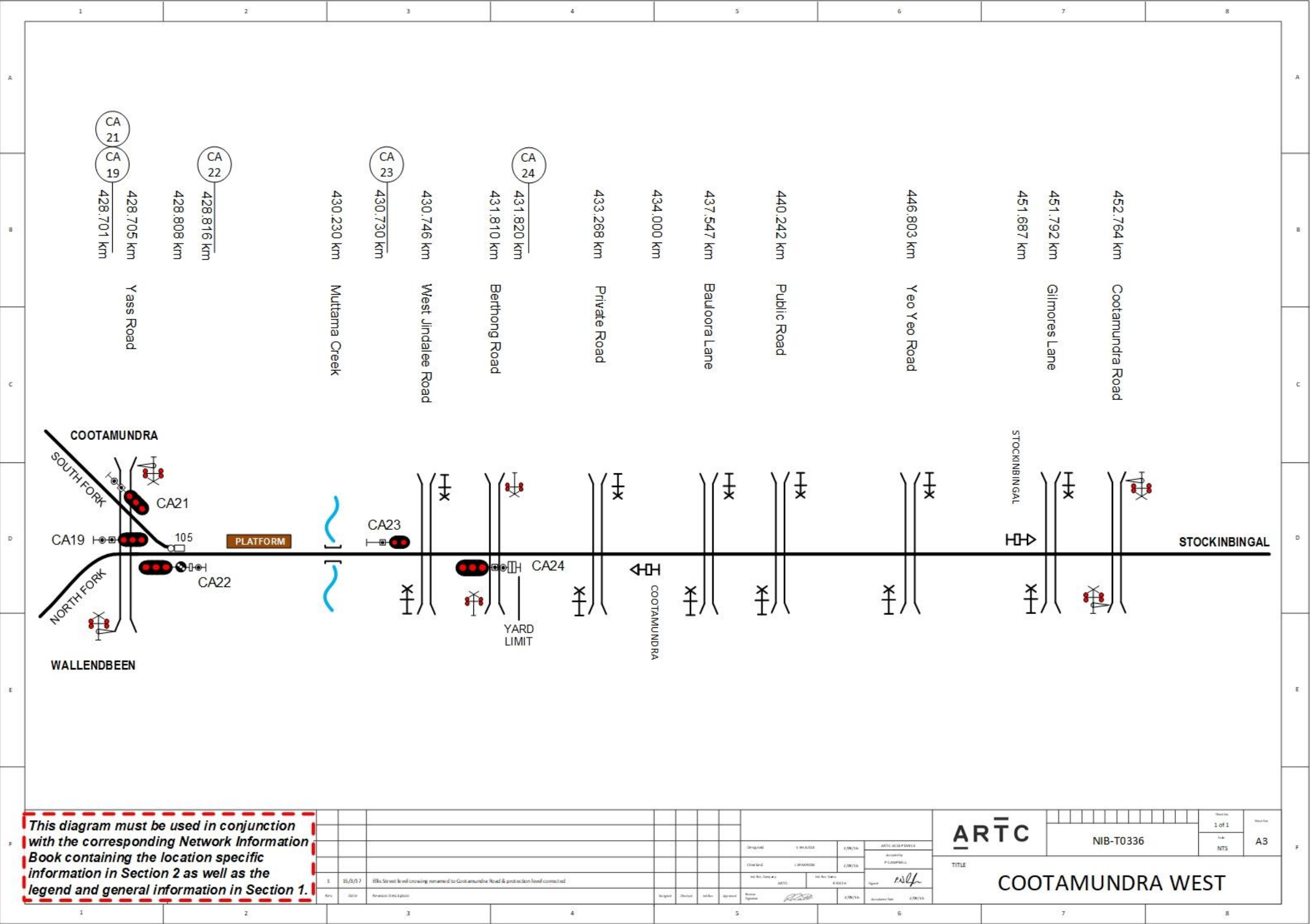
2.8 Cootamundra West (CTW)

Operation of Points and Signals

The points and signals at Cootamundra West are operated from NCCS.

Yass Road Level Crossing

Yass Road level crossing is located at 428.729km and is fitted with type “F” level crossing protection including flashing red lights, bells and half boom barriers.



2.9 Stockinbingal (SKS)

Stockinbingal is the location where the Griffith branch line meets the main line from Goobang Junction to Cootamundra.

The Griffith line past signal SL20 is under the control of the Country Regional Network Control Centre. Refer to interface agreement IA3000.09 for further details.

Operation of Points and Signals

The points and signals are operated from the Network Control Centre South.

Operation of power operated points in an emergency will be in accordance with ARTC Network Rules and Procedures.

Ground Frames

Frame E is located on the down side of the Parkes line and provides access to the Goods and Grain sidings.

Train movements from the sidings to the Griffith line will require SL118 release from NCCS and will only be available when SL122 points are set reverse. A train order issued by Country Regional Network Control must be obtained and Temora Road / Burley Griffin Way level crossing activated via the Shunter's pushbutton prior to departure from the sidings.

Train movements from the sidings to the Parkes line will require SL121 release from NCCS and will only be available when SL122 points are set normal. A train order issued by ARTC NCCS TOCO Board must be obtained and Temora Road / Burley Griffin Way level crossing activated via the Shunter's pushbutton prior to departure from the sidings.

Parkes Line Operations

ARTC NCCS TOCO Board controls the section between Stockinbingal and Goobang Junction.

The method of Safeworking over this section is Train Order Working.

NCCS Network Controller will only clear signal SL17 when informed by Rail Vehicle Operators that they are in the possession of a Train Order issued by ARTC NCCS TOCO Board and have the permission to depart from ARTC NCCS TOCO Board Network Controller.

BEGIN TRAIN ORDER and END TRAIN ORDER signs are provided adjacent to No.SL22 signal located at 455.073km.

Griffith Line Operations

Country Regional Network (CRN) controls the section between Stockinbingal and Temora.

The method of Safe Working over this section is Train Order Working.

NCCS Network Controller will only clear signal SL17 when informed by Rail Vehicle Operators that they are in the possession of the CRN Train Order and have the permission to depart from CRN Controller.

BEGIN TRAIN ORDER and END TRAIN ORDER signs are provided adjacent to No.SL20 signal located at 455.075km.

2.9.1 Country Regional Network Interface Requirements

Work on Track

The following instructions will apply if work on track will be conducted which:

- extends into the UGLRL controlled area, or
- requires protection to be provided by the UGLRL Network Control Officer.

Where any work on track activity within the ARTC Network requires protection from the adjacent CRN Network, the UGLRL Network Control Officer, ARTC Network Controller and the Protection Officer must establish a conference call to agree upon:

- affected rail traffic movements
- location of work
- required protection arrangements
- duration of work.

Local Possession Authorities (LPA)

The limits of an LPA must not extend beyond the Operational Interface. This is the Begin\End Train Order signs at 455.073 km.

Back-to-Back LPAs

Where back-to-back LPAs are implemented, the following instructions will apply:

- Worksites and rail traffic that need to move from CRN territory to ARTC territory are authorised and supervised by the ARTC Possession Protection Officer (PPO).
- Worksites and rail traffic that need to move from ARTC territory to CRN territory are authorised and supervised by the UGLRL PPO.

Where work is being undertaken at or over the interface boundary the following will apply:

- The UGLRL PPO and the ARTC PPO must confer and come to a clear understanding of the worksite protection to be established over the CRN and ARTC interface boundary.
- When the work at or over the interface boundary is completed, the UGLRL PPO and ARTC PPO must ensure that possession protection is removed.

UGLRL only LPA

Where a UGLRL only LPA is to be obtained, the UGLRL Possession Protection Officer must request the ARTC Network Controller to protect the possession limit by applying blocking facilities to exclude rail traffic entry to the CRN for the duration of the possession.

Where work is being undertaken within 500m of the protecting limits, a Work on Track Authority adjoining the entry end limit must be implemented for the duration of the work.

ARTC only LPA

Where work is being undertaken within 500m of the protecting limits, a Work on Track Authority adjoining the entry end limit must be implemented for the duration of the work.

Track Occupancy Authority (TOA)

The UGLRL Network Control Officer is responsible for implementing a TOA when a worksite is established on the CRN Network up to the Operational Interface.

The ARTC Network Controller is responsible for implementing a TOA when a worksite is established on the ARTC Network up to the Operational Interface.

When a TOA worksite extends beyond the Operational Interface or the worksite is located within 500m of the Operational Interface, separate TOA's must be issued by the UGLRL Network Control Officer and the ARTC Network Controller.

Track Work Authorities (TWA)

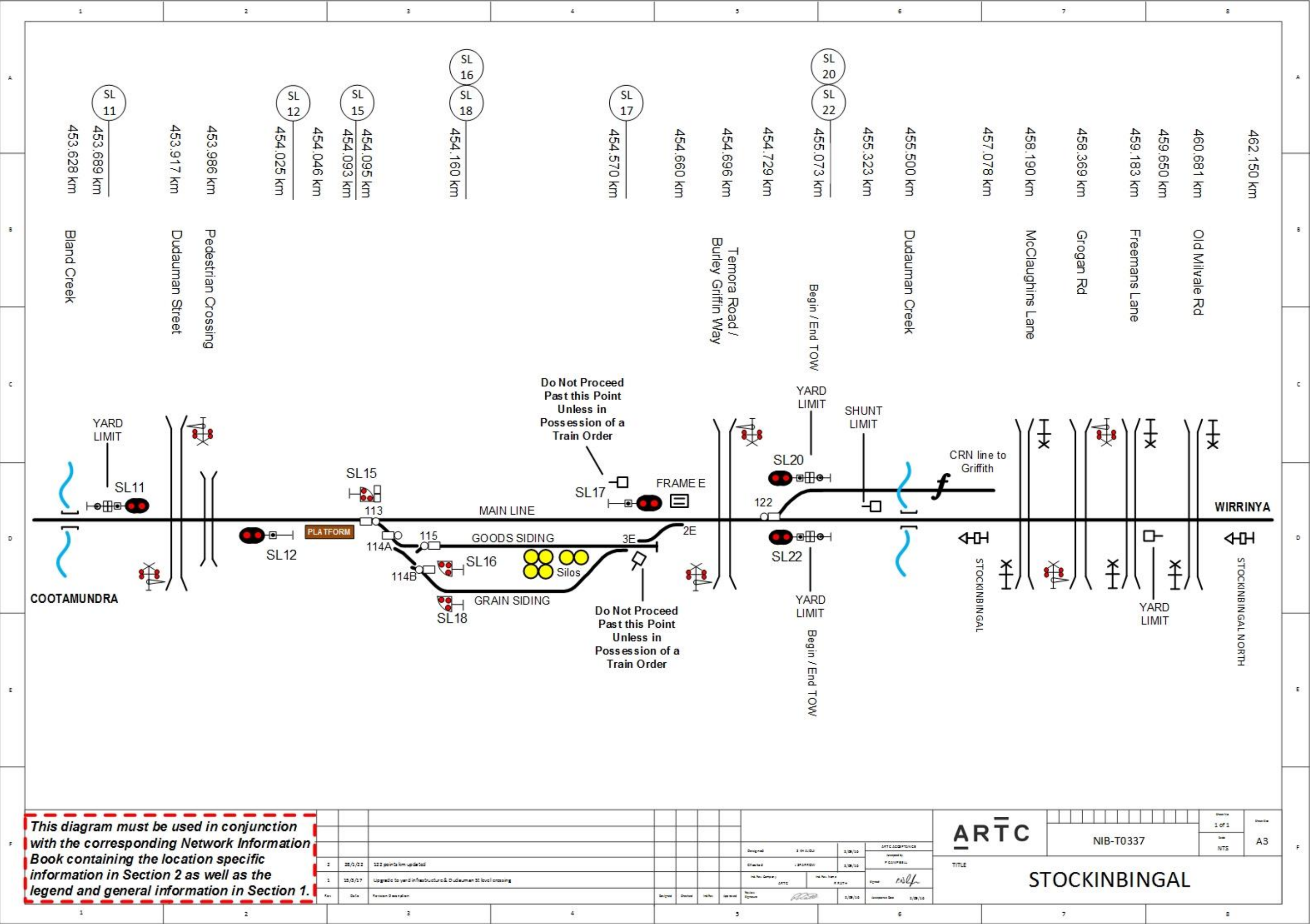
The ARTC Network Controller is responsible for implementing a TWA when a worksite is established on the ARTC Network up to the Operational Interface.

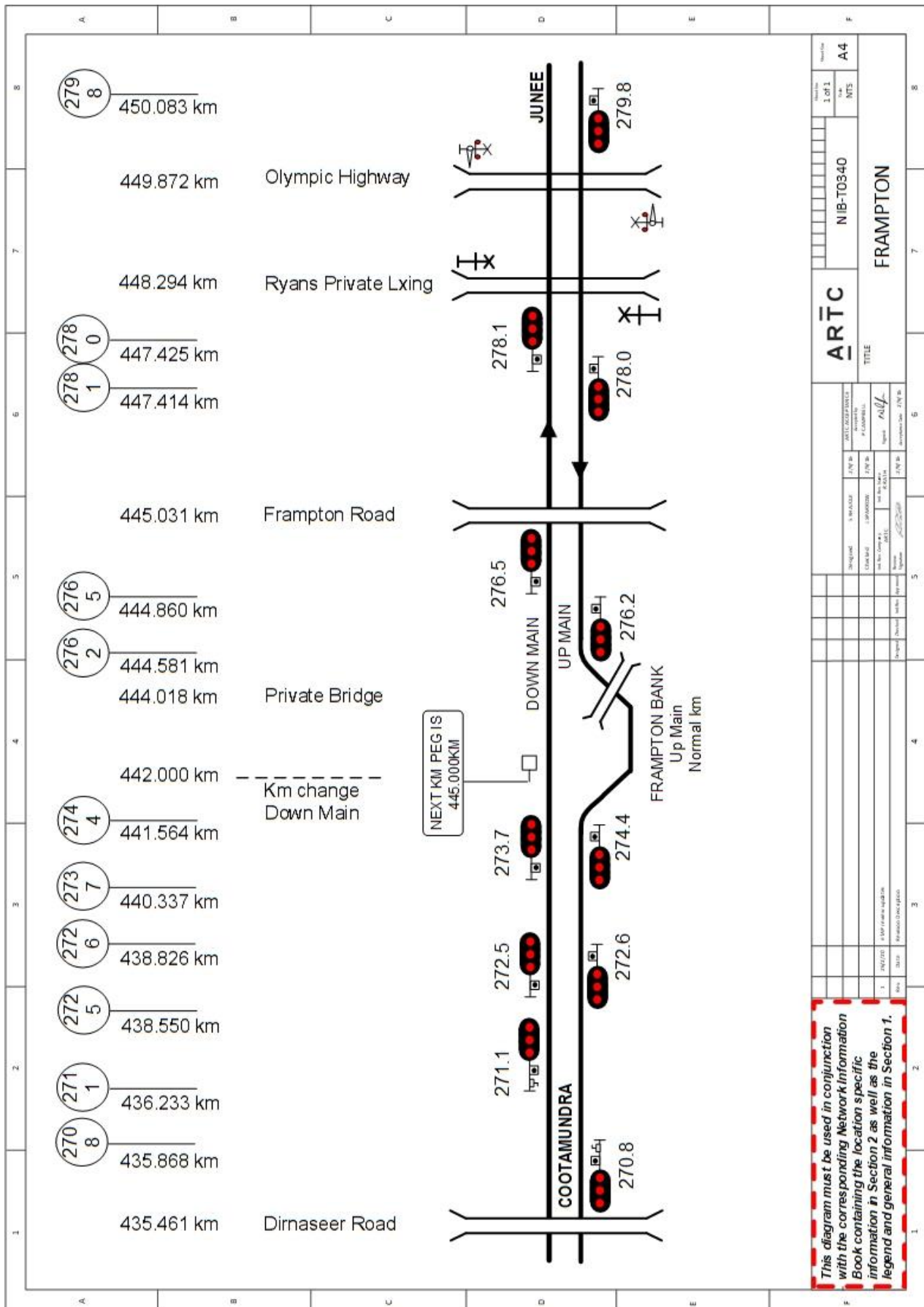
The UGLRL Network Control Officer is responsible for implementing a TWA when a worksite is established on the CRN Network up to the Operational Interface.

TWAs must not extend beyond the operational interface.

Route Control Blocking (RCB)

The use of RCB is not permitted in the ARTC Network.





2.10 Bethungra (BET)

Trailing Crossover (frame B)

A trailing crossover (frame B) is located between the Up main line and the Down main line at the Junee end of the Goods siding.

The crossover is operated by frame B, which is located on the Up side of the Up main line next to the crossover.

When the crossover is not in use, the points at each end of the crossover must be secured by a point clip and XL lock.

Frame B is unlocked by a key from releasing switch B, which is released by tracks.

WARNING: When the key is removed from releasing switch B, the warning equipment for Olympic Way level crossing will fail to operate until the key is restored to the releasing switch.

Facing point locks are provided on the points at both ends of the crossovers and are locked in both the normal and the reverse positions. It is unnecessary to clip and lock the points when using either crossover, provided that the facing point lock lever is in the "Normal" position.

Ground Frames

Frame C is located on the Up side of the Goods siding and frame D is located on the Up side of the Up main line adjacent to the crossovers and both provides access to the Goods siding.

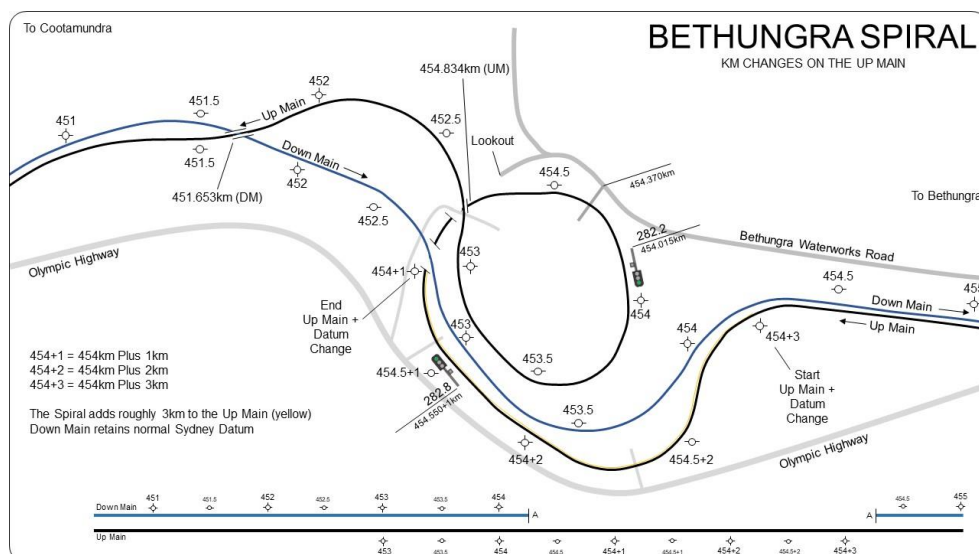
Frame C is unlocked by a key from releasing switch C, which is electrically released when the rail traffic is standing on the "track release circuit" adjacent the frame.

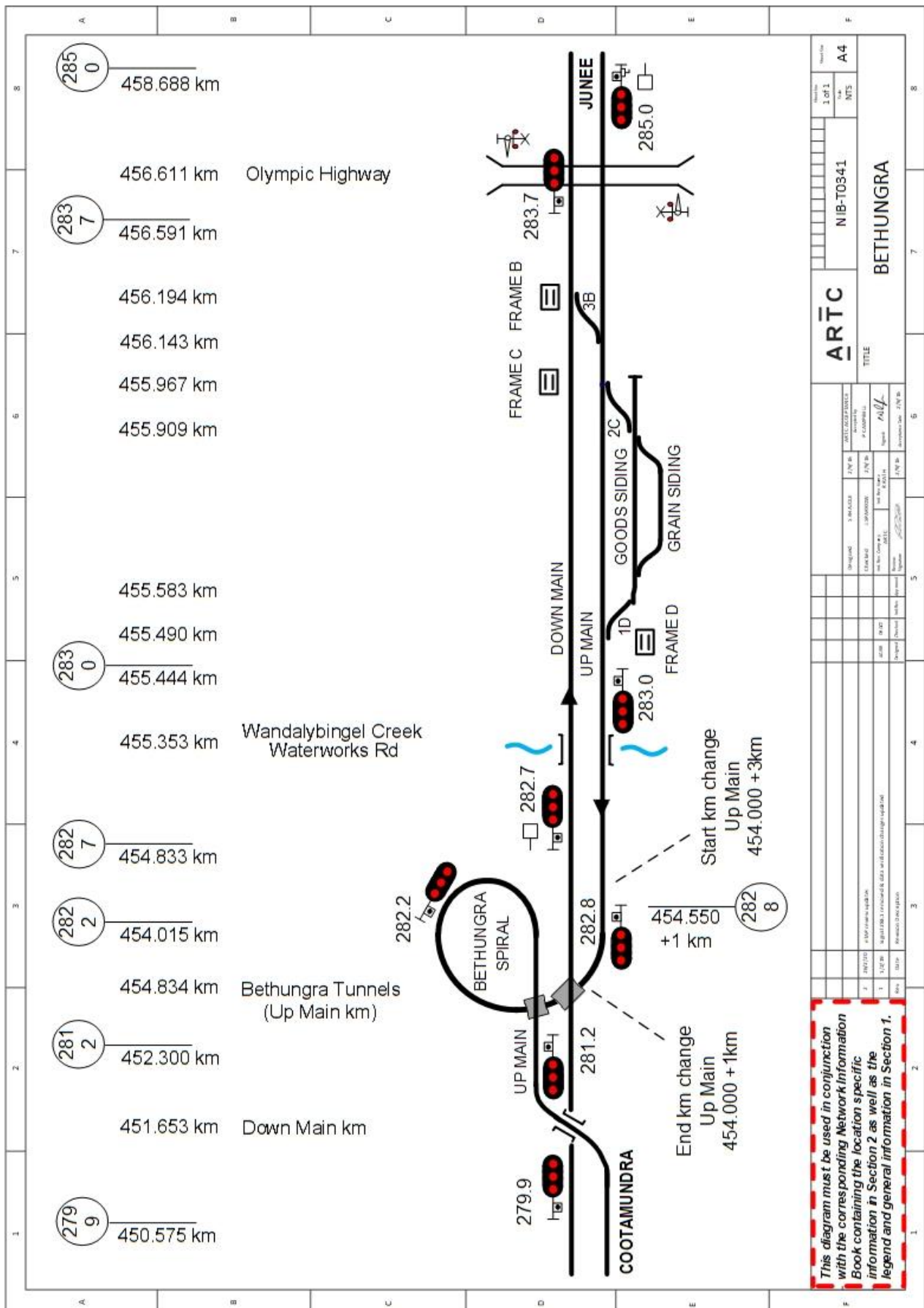
Frame D is unlocked by a key from releasing switch D, which is electrically released when the rail traffic is standing on the "track release circuit" adjacent the frame.

Bethungra Spiral

Due to the layout of the Up Main line at this location, there is a difference in km between the Down and Up Main lines between the tunnels and the 454.500 km point on the Down Main.

The spiral adds approximately 3km to the Up Main while the Down Main retains the km from Sydney.





2.11 Illabo (ILB)

Illabo is a grain siding operated by ground frames.

Ground Frames

Frames D and B are located on the Up side of the Up main line adjacent to the crossovers and provide access to the Grain siding.

Frame D is unlocked by a key from releasing switch D, which is electrically released when the rail traffic is standing on the "track release circuit" adjacent the frame.

Frame B is unlocked by a key from releasing switch B, which is electrically released when the rail traffic is standing on the "track release circuit" adjacent the frame.

Trailing Crossover (frame D)

A trailing emergency crossover (frame D) is located between the Up main line and the Down main line at the Bethunga end of the Grain siding.

The crossover is operated by frame D, which is located on the Up side of the Up main line next to the crossover.

When the crossover is not in use, the points at each end of the crossover must be secured by a point clip and XL lock in the normal position.

Frame D is unlocked by a key from releasing switch D. Releasing switch D is released by tracks.

WARNING: Facing point locks are not provided on the points on either end of lever B crossover, and the Qualified Worker operating the points must ensure that the points are secured in either the normal or the reverse position by a point clip and SL lock.

Illabo Road Level Crossing

Type F flashing lights and bells and half-boom barriers are provided at Illabo Road level crossing at 468.903km.

The warning equipment is automatically controlled by track circuit for through Down and Up trains, or manually controlled by an operator's pushbutton unit for train movements over the level crossing from the Grain siding.

Operator's pushbutton unit for the level crossing

An operator's pushbutton unit is provided in a box inscribed "Shunter's switch", which is attached to a post located near releasing switch B.

When a shunting movement from the Grain siding will be required to obstruct the level crossing, the Qualified Worker must unlock the operator's pushbutton unit and depress the "Start" pushbutton for one second to cause the warning equipment to operate, before hand-signalling the train over the crossing.

The warning indications will be cancelled automatically when the rear of the shunting movement has cleared the crossing.

If the movement is not proceeded with, the warning indications must be cancelled by pressing the "Cancel" pushbutton in either operator's switch for one second.

The operator's pushbutton unit must be kept closed and secured by an SL lock when not in use.

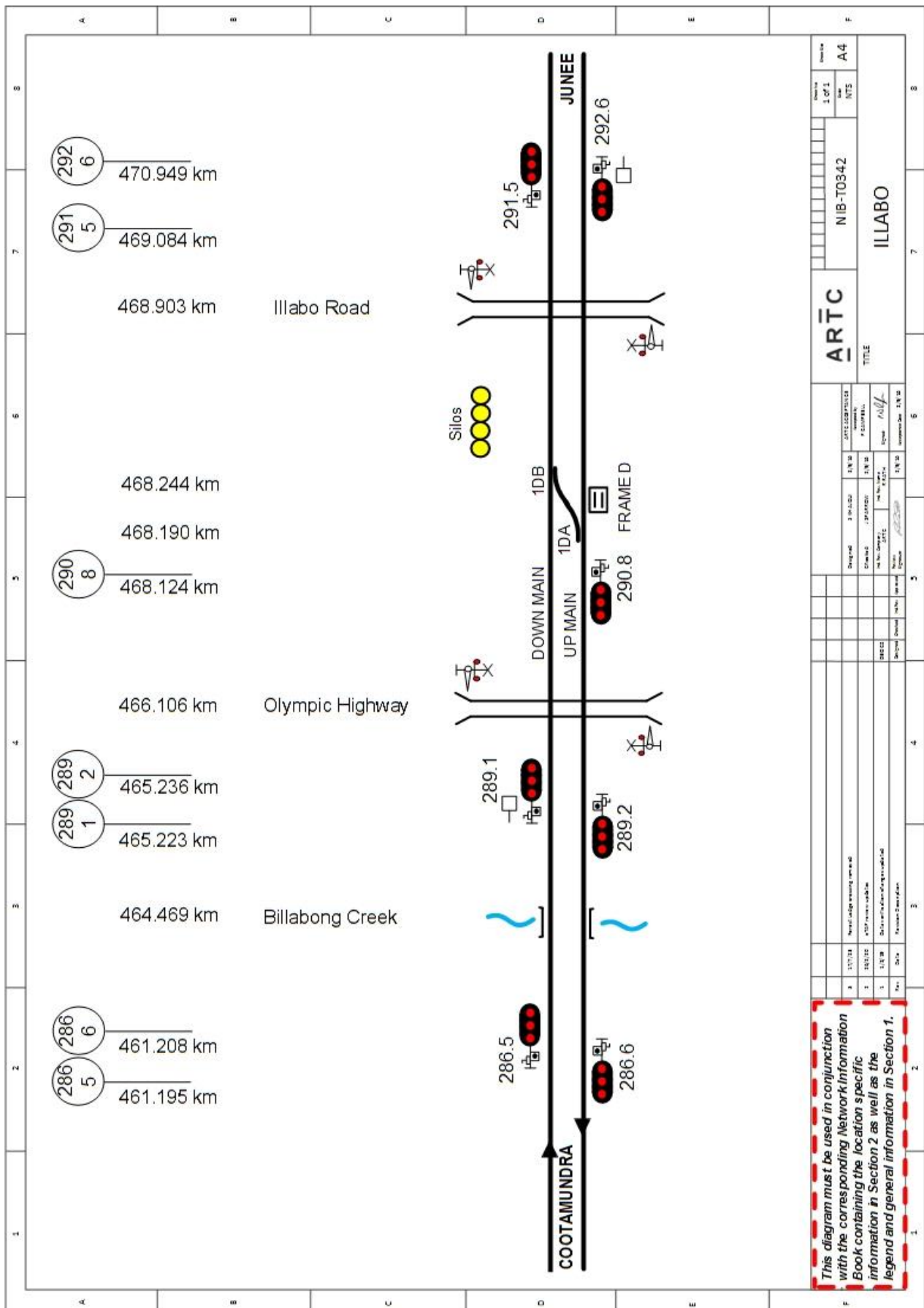
Stop Sign

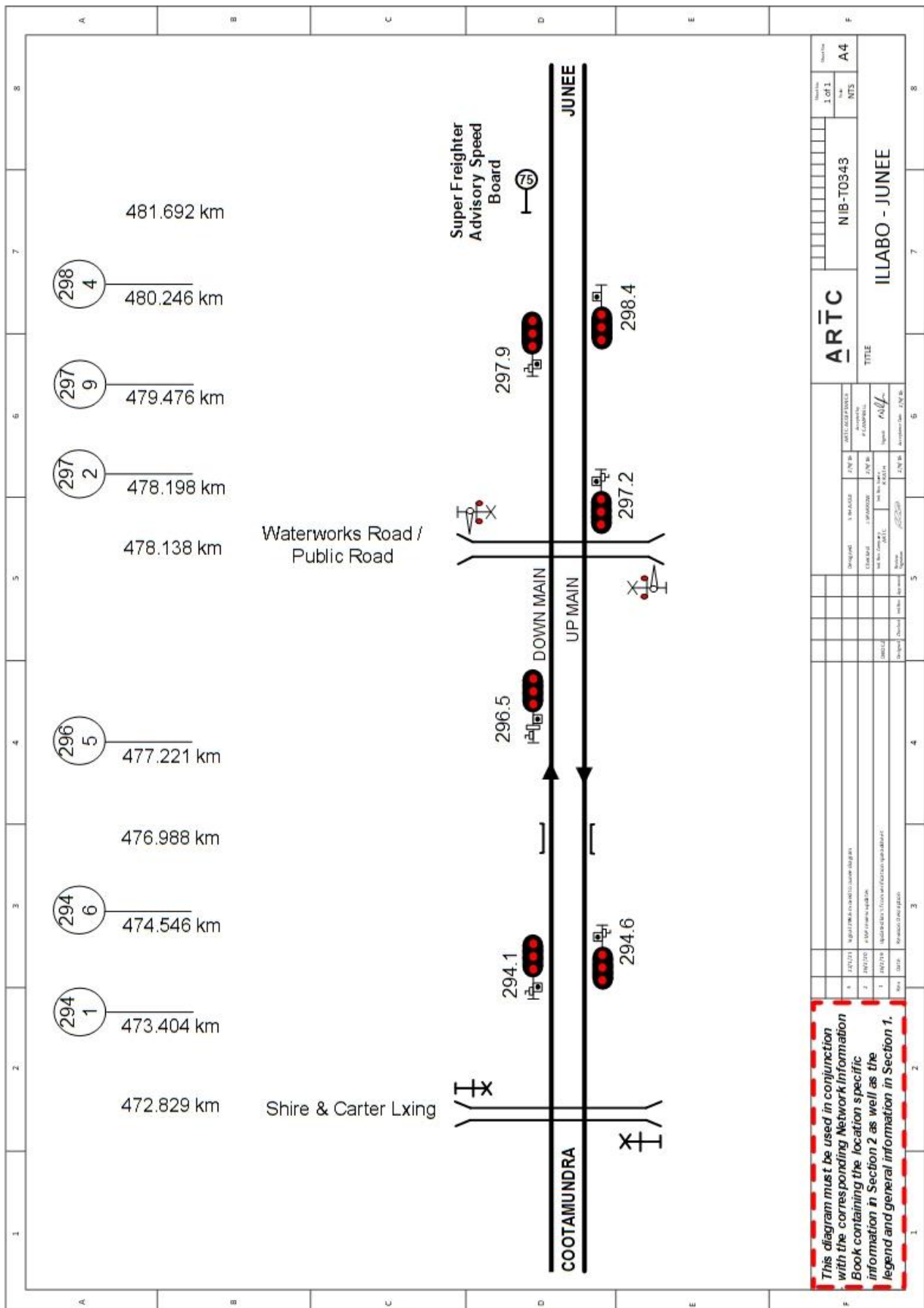
A stop sign is provided on a post, 40 metres on the Bethungra side of the level crossing, on the Down side of the Down main line facing to Down trains. This stop sign is inscribed, "SHUNTING TRAIN STOP, PRESS BUTTON FOR LEVEL CROSSING LIGHTS".

Waterworks Road Level Crossing (Marinna)

Type F flashing lights and bells and half-boom barriers are provided at Waterworks Road level crossing at 478.136km.

Trackside signage is located at 475.789km in the Down direction and 479.983km in the Up direction.





2.12 Junee (JUN)

General Description

Junee is a signalled location. The points and signals at Junee are controlled from the Network Control Centre South (NCCS).

Operation of power operated points in an emergency will be in accordance with ARTC Network Rules and Procedures.

It is also a Begin and End Train Order Location for the Griffith line. Train Order working for the Griffith line commences and ends at the BEGIN TRAIN ORDER and END TRAIN ORDER signs. Train Order Working is in operation between Junee and Junee Sub Terminal sidings. Refer to interface agreement IA3000.11 for further details.

Sidings 6 to 9 are leased to a private operator. Refer to interface agreement IA1104 for further details.

Limits of Authorities

BEGIN TRAIN ORDER and END TRAIN ORDER signs are provided adjacent to No.JE16 signal and No.JE15 Signal located at 485.977km between Junee and Junee Sub.

The BEGIN TRAIN ORDER sign facing DOWN trains is the limit of an authority issued by the ARTC Network Control Officer.

The END TRAIN ORDER sign facing UP trains is the limit of an authority issued by the Country Regional Network Control Officer.

Work on Track Authorities

Each respective Network Control centre will issue work on track authorities up to their end network control boundary location sign.

Train Working between Junee and Junee Sub Terminal Sidings

The Country Regional Network Control Officer may issue a Shunt Order for Train Working between Junee and Junee Sub Terminal sidings.

A Train Order or Train Order with Shunt Access is the authority for Train Working between Junee and Junee Sub Terminal sidings.

The clearing of signal JE16 gives authority to enter the block for which the signal has been cleared, provided that the Driver or track vehicle operator has the appropriate authority for the movement.

Train Crew must be in possession of a Train Order or Train Order with Shunt Access prior to requesting clearance of signal JE16.

Network Control Officers must ensure that trains are in possession of a Train Order or Train Order with Shunt Access prior to clearing signal JE16.

Olympic Highway Level Crossing

Type F flashing lights and bells and half-boom barriers are provided at Olympic Highway level crossing at 485.439km.

The operation of the type F level crossing protection is interlocked with the fixed signals and is operated automatically by track circuits for Up trains and level crossing predictor for Down trains.

A level crossing predictor sign for Down trains is located at 483.770km.

Dragging Equipment Detector

A dragging equipment detector is located at 488.609 km in the Junee – Harefield section.

Responding to a Dragging Equipment Alarm

When Alarm conditions are detected an alarm “pop up” screen appears on the Wayside Client Terminal and an audible alarm sounds. The alarm will continue to sound until the Network Controller responds.

The alarm Pop up screen will display the recorded train alarm information relevant to the type of alarm.

Clicking on the Pop up screen “Confirm” icon will suppress the audible alarm but maintain the pop up screen display.

The Network Controller must then:

- contact the Driver of the train that activated the detector and instruct the Driver to immediately bring the train to a stand
- instruct the Driver to inspect the train to identify the problem and then advise the Signaller Network Controller of the status of the problem and the action that must be taken to resolve it

2.12.1 Country Regional Network Interface Requirements

Work on Track

The following instructions will apply if work on track will be conducted which:

- extends into the UGLRL controlled area, or
- requires protection to be provided by the UGLRL Network Control Officer.

Where any work on track activity within the ARTC Network requires protection from the adjacent CRN Network, the UGLRL Network Control Officer, ARTC Network Controller and the Protection Officer must establish a conference call to agree upon:

- affected rail traffic movements
- location of work
- required protection arrangements
- duration of work.

Local Possession Authorities (LPA)

The limits of an LPA must not extend beyond the Operational Interface. This is the STOP/END TRAIN ORDER sign at signal JE15 (486.025km) in the Down direction, and the BEGIN TRAIN ORDER sign at signal JE16 (486.022km) in the Up direction.

Back-to-Back LPA's

Where back-to-back LPAs are implemented, the following instructions will apply:

- Worksites and rail traffic that need to move from CRN territory to ARTC territory are authorised and supervised by the ARTC Possession Protection Officer (PPO).

- Worksites and rail traffic that need to move from ARTC territory to CRN territory are authorised and supervised by the UGLRL PPO.

Where work is being undertaken at or over the interface boundary the following will apply:

- The UGLRL PPO and the ARTC PPO must confer and come to a clear understanding of the worksite protection to be established over the CRN and ARTC interface boundary.
- When the work at or over the interface boundary is completed, the UGLRL PPO and ARTC PPO must ensure that possession protection is removed.

UGLRL only LPA

Where a UGLRL only LPA is to be obtained, the UGLRL Possession Protection Officer must request the ARTC Network Controller to protect the possession limit by applying blocking facilities to exclude rail traffic entry to the CRN for the duration of the possession.

Where work is being undertaken within 500m of the protecting limits, a Work on Track Authority adjoining the entry end limit must be implemented for the duration of the work.

ARTC only LPA

Where work is being undertaken within 500m of the protecting limits, a Work on Track Authority adjoining the entry end limit must be implemented for the duration of the work.

Track Occupancy Authority (TOA)

The UGLRL Network Control Officer is responsible for implementing a TOA when a worksite is established on the CRN Network up to the Operational Interface.

The ARTC Network Controller is responsible for implementing a TOA when a worksite is established on the ARTC Network up to the Operational Interface.

When a TOA worksite extends beyond the Operational Interface or the worksite is located within 500m of the Operational Interface, separate TOAs must be issued by the UGLRL Network Control Officer and the ARTC Network Controller.

Track Work Authorities (TWA)

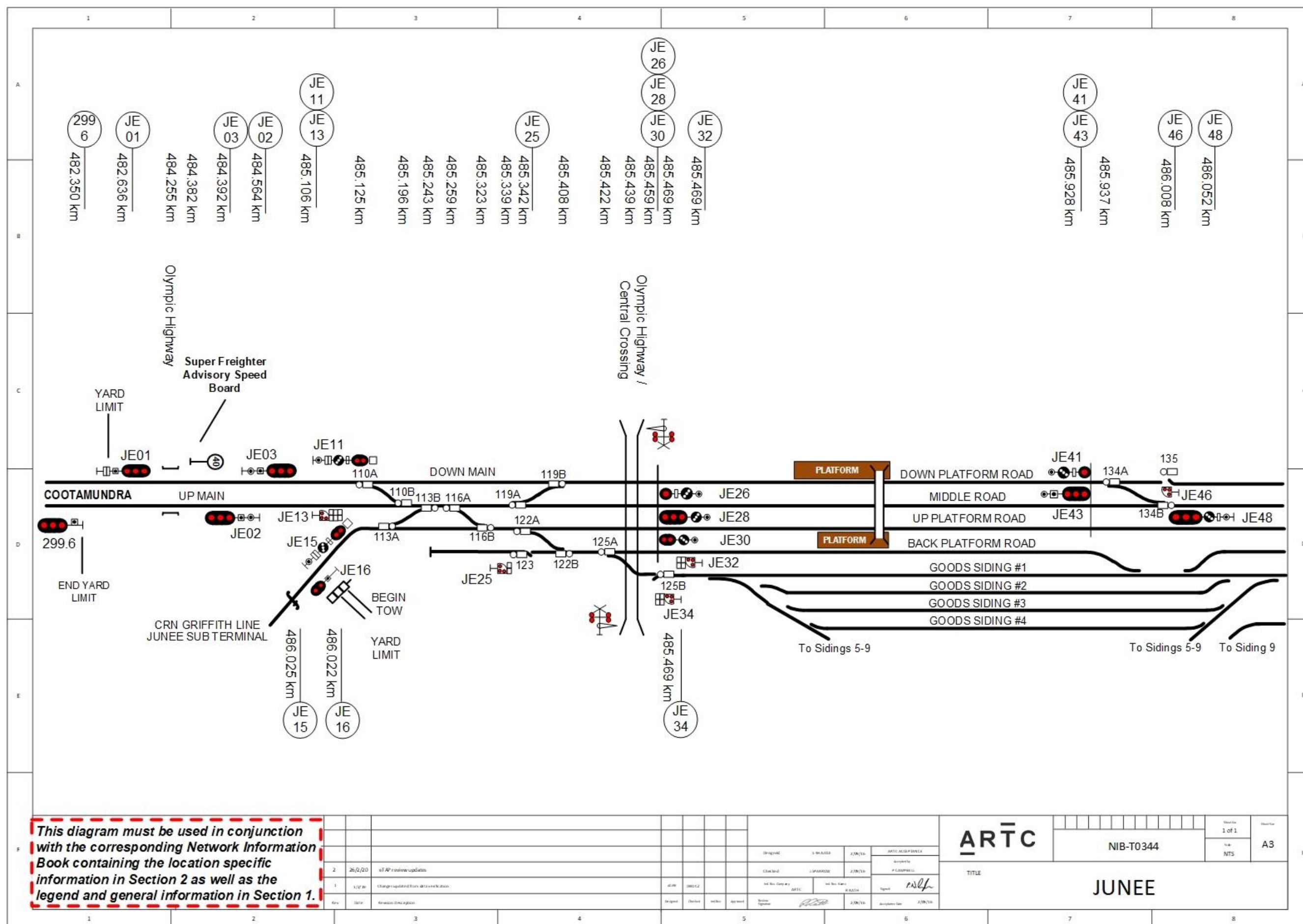
The ARTC Network Controller is responsible for implementing a TWA when a worksite is established on the ARTC Network up to the Operational Interface.

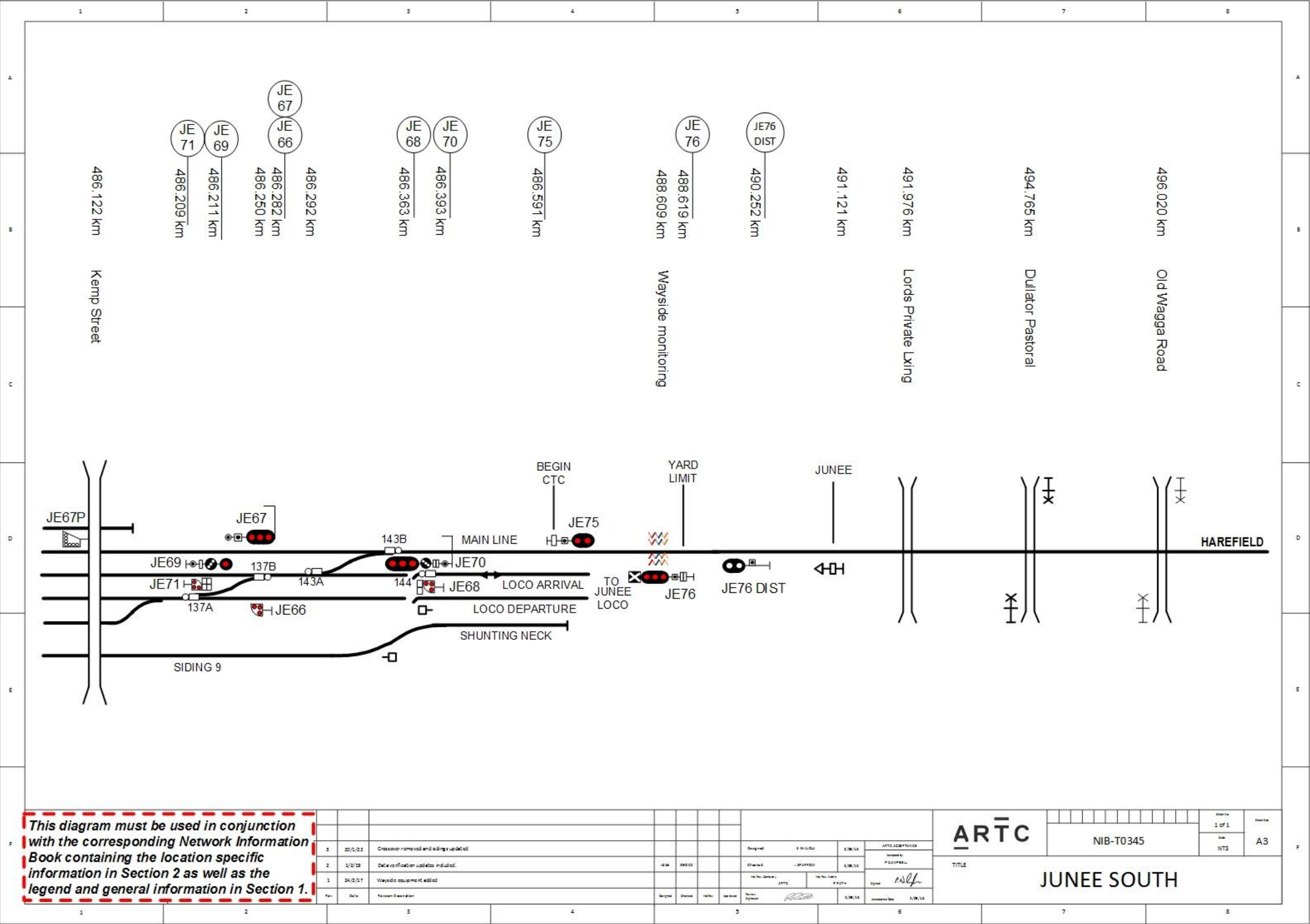
The UGLRL Network Control Officer is responsible for implementing a TWA when a worksite is established on the CRN Network up to the Operational Interface.

TWAs must not extend beyond the operational interface.

Route Control Blocking (RCB)

The use of RCB is not permitted in the ARTC Network.





2.13 Harefield (HRF)

General Arrangements

Harefield is a loop location with a grain siding operated by ground frames.

Loop Length 904m

The grain siding is leased to a private operator. Refer to interface agreement IA1314 for further details.

Operation of Power-operated Points

Nos. 51, and 52 points worked from NCCS are electrically operated.

If these points fail to operate correctly, the Network Control Officer must try to restore the points to their previous position to allow trains to continue running. However, if it is necessary alter the route the points may be manually operated.

Instructions on the manual operation of point machines are contained in ARTC Network Procedure ANPR 743.

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

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 Goods siding.

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

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

Main Road Level Crossing

Type F flashing lights, booms and audible warning devices are provided at Main Road level crossing at 496.934km.

For rail traffic travelling in both the up and down directions, the level crossing will activate following occupation of the approach section, beyond the trackside level crossing approach warning signs.

Trackside approach signage is located at:

Down direction 495.481km on the Main South line

Up direction on the Up Main at 498.427km

Up direction on the Loop line at 497.520km

If rail traffic closely approaches Up Starting signal No. 01/24, No. 01/26 or No. 01/28 at STOP, the setting of the applicable signal route will cause the level crossing warning indicators to be displayed but clearing of the signals will be delayed for 15 seconds.

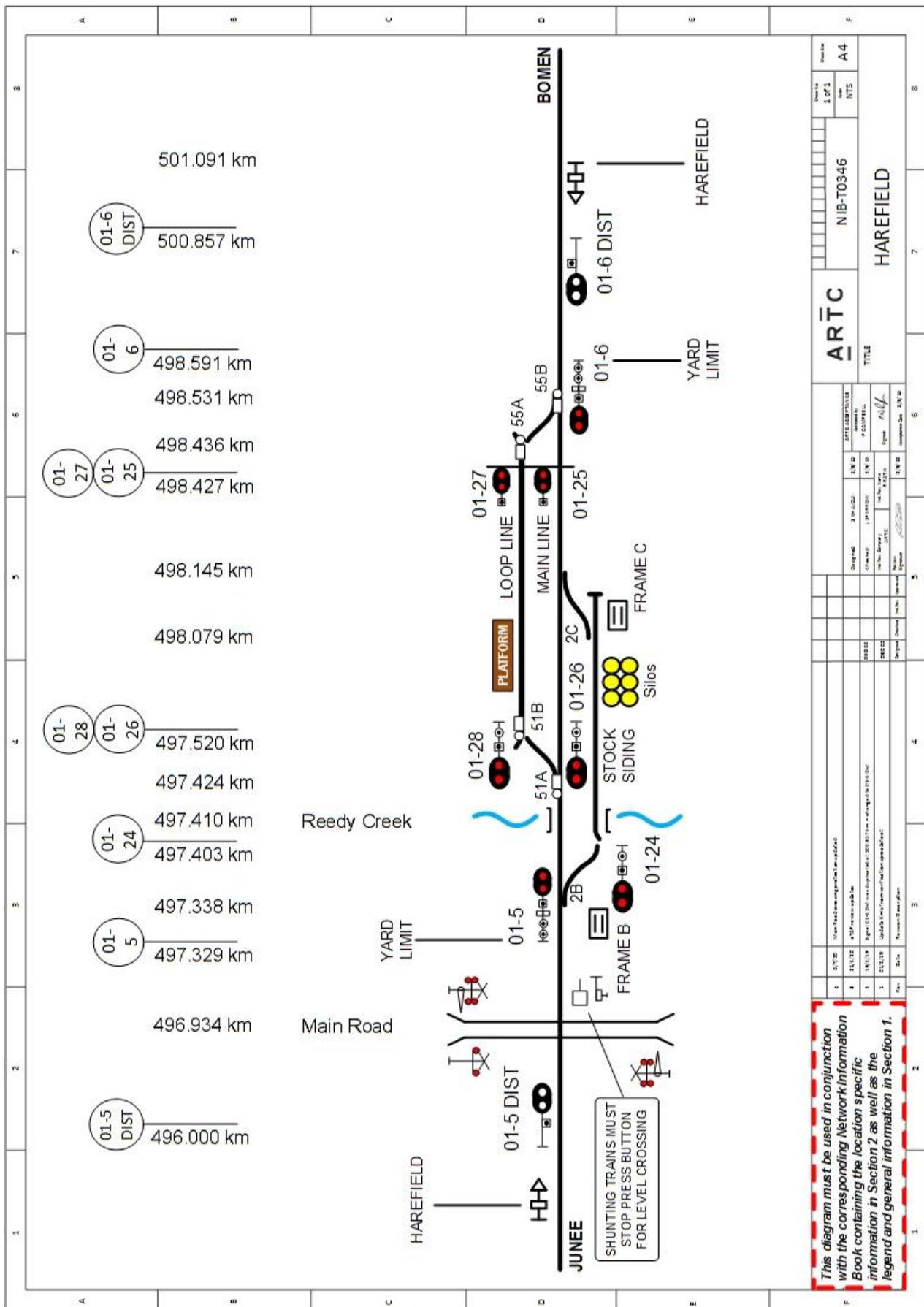
The level crossing will cease to operate when the rail traffic clears the level crossing.

Special arrangements if there is a failure of the signals protecting Main Road level crossing

If Up home/starting signal No. 01/24, No. 01/26 or No. 01/28 fails, the Network Controller at NCCS (or Harefield when switched in) must not authorise a train to pass these signals at stop until either:

- the Network Rules and Procedures for warning trains have been carried out
- or an assurance has been obtained from the Handsignaller(s) at the level crossing that the road traffic is clear of the crossing.

If an Up starting signal fails, the Network Rules and Procedures for special working must be carried out.



2.14 Shepherds Siding (SHS)

General Instructions

A portion of a train must always remain on the main line. Under no circumstance will a whole train be placed in the siding.

Ground Frames

Frames D and E are located on the Up side of the main line adjacent to the crossovers and provide access to the wheat sidings.

Frame D is unlocked by a key from releasing switch D, with is electrically released by No. 91 switch from Network Control Centre South (or Harefield local control panel, when switched in)

Frame E is unlocked by a key from releasing switch E, with is electrically released by No. 91 switch from Network Control Centre South (or Harefield local control panel, when switched in).

Shepherds Level Crossing

Type F flashing lights and bells are provided at Shepherds level crossing at 504.660km.

The warning equipment is automatically controlled by predictor track circuitry for Down and Up main line trains, or manually controlled by an operator's push button unit for shunting movements over the level crossing from the wheat siding.

Operator's pushbutton for the level crossing

An operator's pushbutton unit is provided in a box inscribed "Shunter's switch", which is attached to a post on each side of the level crossing.

When a shunting movement will be required to obstruct the level crossing, the Qualified Working must unlock the operator's pushbutton unit and depress the "Start" pushbutton for one second to cause the warning equipment to operate, before handsignalling the train over the crossing.

The Warning indicators must be cancelled by pressing the "Cancel" in either operator's pushbutton unit for one second when the rear of the shunting movement has cleared the crossing.

If the movement is not proceeded with the warning indicators must be cancelled by pressing the "Cancel" pushbutton in either operator's pushbutton unit for one second

The operator's pushbutton unit must be kept closed and secured by an SL lock when not in use.

Stop Sign

A stop sign is provided on the same post as the operator's pushbutton unit on each side of the level crossing, all trains must not pass either stop sign until:

- handsignalled to proceed by the employee in charge of the movement
- the Highway Signals are operating and the roadway is clear of road vehicles.

BN05 DIST

503.718 km

504.234 km

504.275 km

504.660 km

504.900 km

504.940 km

HAREFIELD

BOMEN

MAIN LINE

WHEAT SIDING

FRAME D

FRAME E

2DA

2DB

2EA

2EB

Shepherds Siding Rd

ARTC		NIB-T0347	Sheet No. 1 OF 1	Scale NTS	Drawn by A4
TITLE SHEPHERDS SIDING					
REV.	DATE	BY	CHECKED BY	APPROVED BY	REVISION DESCRIPTION
1	23/1/22	MJG	JMG	[Signature]	Initial design - see Section 1.

This diagram must be used in conjunction with the corresponding Network Information Book containing the location specific information in Section 2 as well as the legend and general information in Section 1.

2.15 Bomen (BOM)

General Arrangements

The straight track between the up and down ends of Bomen is known as the Main line, whilst the diverging track is known as the Loop line.

Signage is located at each end of the extended loop to reflect which track is the Main line and which track is the Loop line. Signage is also located at intermediate locations along the main and loop line to assist track workers in identifying the individual tracks.

Austrak Private Siding

The Austrak siding is accessed via the goods loop and stock siding.

The points are operated via a single lever ground locked by an Annett lock. The Annett key is held by the Austrak shift manager who authorises access into the siding.

Operation of Power-operated Points

Nos. 51, 52, 55, 56 and 57 points worked from NCCS are electrically operated.

If these points fail to operate correctly, 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 Vossloh Cogifer and Westinghouse D84 point machines have Emergency Operating Lock (EOL) cabinets at the points and contain the key switches for each respective machine.

The Vossloh Cogifer and Westinghouse D84 point machines are provided with a selector switch and points throw lever which, when not being operated, are secured by SL locks.

Operation of the selector switch from MOTOR to HAND will:

- switch the point machine to trackside control,
- set and secure the protecting signals to stop, and
- engage the manual operating handle.

Instructions on the manual operation of point machines are contained in ARTC Network Procedure ANPR 743.

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

Ground Frames

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

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

For Up shunting moves, in order to release Frame B, Signal BN18 must be at STOP, and after giving the release Signal BN18 must be placed to proceed for the rail traffic movement to shunt.

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

Emergency Operation Owing to Control System Failure

In the event of a control system failure and provided the correct interlocking and track occupancy conditions exist, the points and signals will assume automatic operation.

As a down direction rail traffic movement approaches signal BN05, and provided the track ahead is clear, points 51 will assume the normal position and signal BN05 will automatically clear for the movement to proceed onto the Main line.

As an up direction rail traffic movement approaches signal BN06 and provided the track ahead is clear, 55 points automatically set for the Main line and 57 points set for the Loop. Once the points are set and provided 52 points and 56 points are set, locked and detected in the normal positions Signals BN06 and BN16 and BN32 will clear.

The signals will not clear for the arriving movement if there are conflicting movements already on the nominated track and rail traffic movements should then be worked as directed by the Network Controller.

Push button controls are located at signals BN26 and BN28 and at signals BN25 and BN27 to allow control of the signals in the event of a signal control system failure.

The push buttons are applicable to the relevant signals at that location and are provided with clear and cancel push buttons.

When instructed by the Network Controller, the driver must push the applicable push button for the signal to which the rail traffic movement is standing at. Provided the correct interlocking conditions exist, the points will set to the required position and the signal selected will assume a proceed aspect for the rail traffic movement to depart.

If the Network Controller requires the rail traffic movement to proceed onto an alternative track to that described above, the points are to be manually operated and the rail traffic movement authorised to pass the respective signal at stop.

2.15.1 Riverina Intermodal Freight and Logistics Terminal (RiFL)

2.15.1.1 General Arrangements

Entry to the RiFL will be from the Loop line at Bomen, with the signalling equipment operated by the Network Controller Network Control Centre South (NCCS) using remote controlled signals and points.

RiFL entry signal BN20 is fitted with a shunt aspect which allows rail traffic to enter the facility without the need to STOP. The Network Controller must not clear BN20 signal until authority has been received from the RiFL Controller that rail traffic is authorised to enter the RiFL facility.

When accessing the RiFL from the Sydney end, all rail traffic must STOP at the BEGIN YARD WORKING DO NOT PROCEED WITHOUT AUTHORITY FROM RiFL CONTROLLER sign located at 508.960km until authorised to proceed from RiFL Controller.

2.15.1.2 Motor Operated Points

All points motors are 84M type.

Motor points 52A and 52B are located at the Up end (Sydney) entrance to the RiFL.

Motor points 56A and 56B are located at the Down end (Country) entrance to the RiFL.

In the event of a signal system failure, and under the direction of the Network Controller, the points can be manually operated using the EOL keys located:

- between the A and B ends of 56 points for the 56 EOL post
- at BN32 Signal Location hut for 52 points.

2.15.1.3 RIFL Terminal Signage

Down Direction

End Signalled Authority Signs are located at 508.960km (Down Direction) on the RiFL Terminal approach track stating:

STOP END OF SIGNALLED AUTHORITY

BEGIN YARD WORKING

DO NOT PROCEED WITHOUT AUTHORITY FROM RIFL CONTROLLER.

Up Direction

Adjacent to BN20 signal is a sign stating:

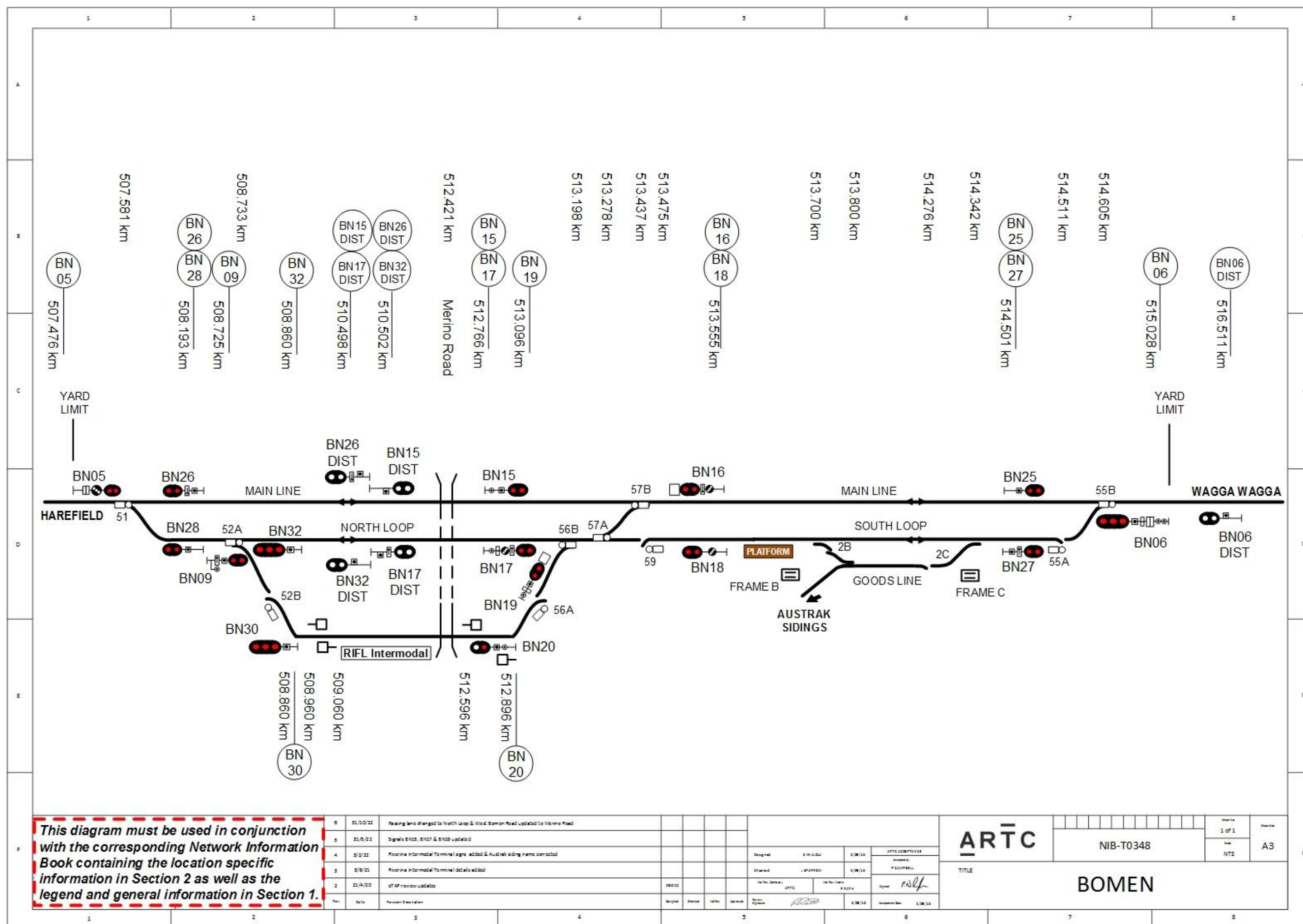
BEGIN YARD WORKING

DO NOT PROCEED WITHOUT AUTHORITY FROM RIFL CONTROLLER

End Yard Working Signs

End Yard Working signs are located on the RiFL Terminal at 512.596km (Down Direction) and 509.060km (Up Direction), the limits of track-circuits stating:

STOP DO NOT PROCEED UNLESS AUTHORISED BY NETWORK CONTROLLER.



This diagram must be used in conjunction with the corresponding Network Information Book containing the location specific information in Section 2 as well as the legend and general information in Section 1.

2.16 Wagga Wagga (WGA)

General Arrangements

Wagga Wagga is a loop location with sidings operated by ground frames.

Loop length 1440m

No 1 siding length 500m

Points are controlled by the ARTC Network Control Centre South (NCCS).

Operation of Power-operated Points

Nos. 50, and 55 points worked from NCCS are electrically operated.

If these points fail to operate correctly, the Network Control Officer must try to restore the points to their previous position to allow trains to continue running. However, if it is necessary alter the route the points may be manually operated.

Instructions on the manual operation of point machines are contained in ARTC Network Procedure ANPR 743.

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

Ground Frames

Frames B and G are located on the Up 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. 71 release from NCCS.

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

Frame C is located on the Down side of No. 1 siding and frame H is located on the Down side of the main line adjacent to the crossovers and both provide access to No.1 siding.

Frame C is unlocked by a key from releasing switch C, which is electrically released by No. 72 release from NCCS.

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

Docker Street Level Crossing

Type F flashing lights, bells and half-boom barriers are provided at Docker Street level crossing at 522.393km.

The warning equipment is automatically controlled by track circuit for Down and Up trains, subject to the clearance of the protecting signals on each side of the level crossing.

If a train closely approaches Down 4th home signal No. 04/25 or Up 2nd home signal No. 04/6 at stop, the setting of the signal route by the Signaller will cause the level crossing warning indicators to be displayed but clearing of the signals will be delayed for 15 seconds.

If it becomes necessary to hold a train at signal No. 04/6 or No. 04/25 after the signal has been cleared, the level crossing warning indicators will continue to be displayed for a period of 120 seconds after the signal is returned to stop and will then cancel automatically.

Trackside approach signage is located at:

Down direction on the Main line at 521.521km

Down direction on the Loop line at 521.521km

Up direction on the Main line at 523.310km

Fernleigh Road Level Crossing

Type F flashing lights and warnings bells, half-boom barriers and pedestrian warning lights and alarms are in use at Fernleigh Road level crossing at 524.546km.

The warning equipment is automatically controlled by track circuit for Down and Up trains.

If a train closely approaches Down starting signal No. 04/29 or Up home signal No. 04/04 at stop, the setting of the signal route by the Signaller will cause the level crossing warning indications to be displayed but clearing of the signals will be delayed for 15 seconds.

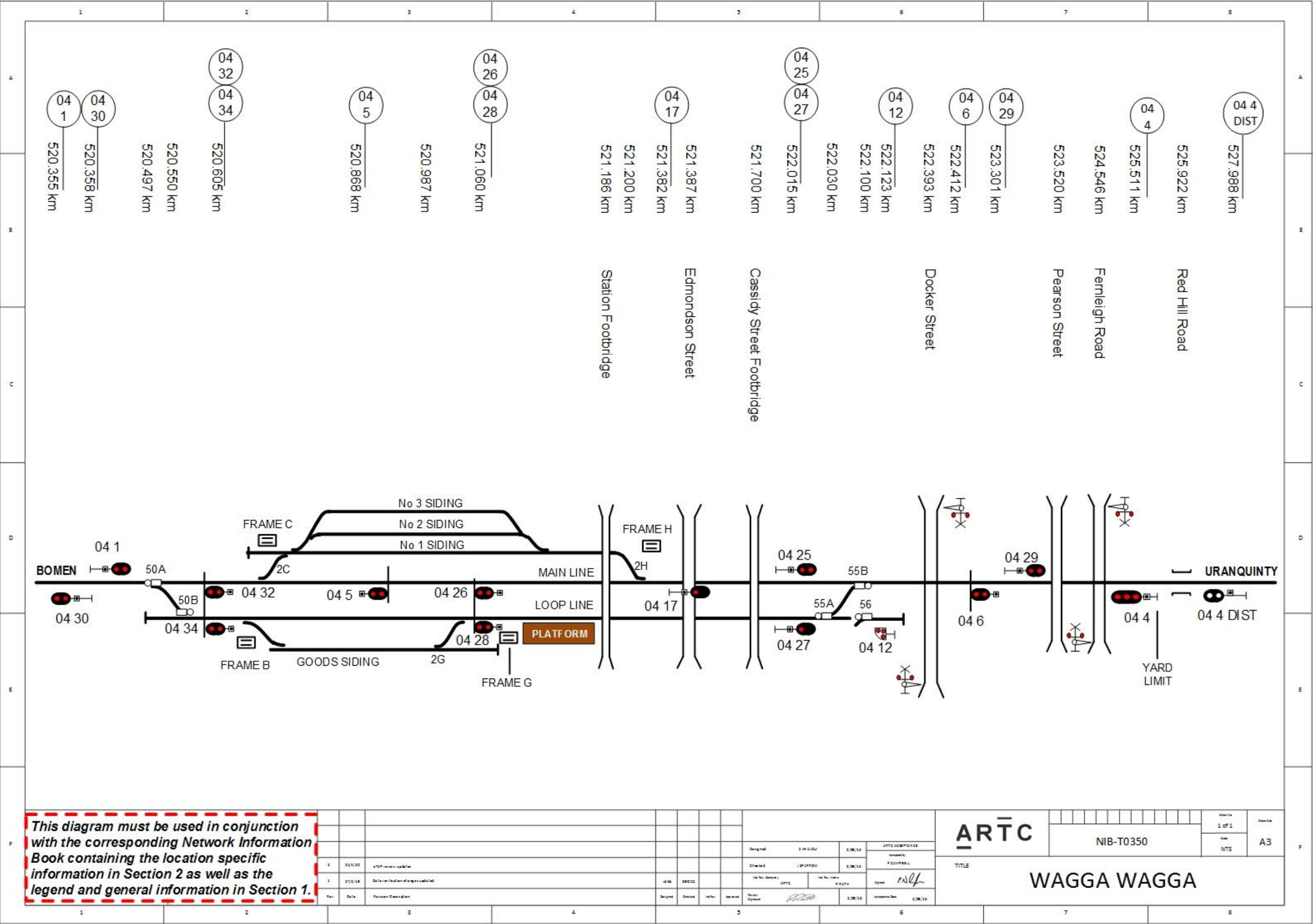
If it becomes necessary to hold a train at signal No. 04/4 or No. 04/29 after the signal has been cleared, the level crossing warning indicators will continue to be displayed for a period of 120 seconds after the signal is returned to stop and will then cancel automatically.

Special arrangements if there is a failure of the signals protecting Docker Street and Fernleigh Road level crossings

If Down 4th home signal No. 04/25, Down starting signal No. 04/29, Up home signal No. 04/4, or Up 2nd home signal No. 04/6 fails, the Network Controller at NCCS (or Wagga Wagga when switched in) must not authorise a train to pass these signals at stop until:

- either the Network Rules and Procedures for warning trains have been carried out
- or an assurance has been obtained from the Handsignaller(s) at the level crossing that the road traffic is clear of the crossing.

If Down starting signal No. 04/29 fails, the Network Rules and Procedures for special working must be carried out.



2.17 Uranquinty (URQ)

General Arrangements

The straight track between the up and down ends of Uranquinty is known as the Main line, whilst the diverging track is known as the Loop line.

Signage is located at each end of the Loop extension to reflect which track is the Main line and which track is the Loop line. Signage is also located at intermediate locations along the lines to assist track force operations in identifying the individual tracks.

Operation of Power-operated Points

Nos. 51 and 55 points are Vossloh Cogifer electric point machines operated by the Network Controller at NCCS.

The Vossloh Cogifer point machines have Emergency Operating Lock (EOL) cabinets at the points and contain the key switches for each respective machine.

The Vossloh Cogifer point machines are provided with a selector switch and points throw lever which, when not being operated, are secured by SL locks.

Operation of the selector switch from MOTOR to HAND will:

- switch the point machine to trackside control,
- set and secure the protecting signals to stop, and
- engage the manual operating handle.

Instructions on the manual operation of the Vossloh Cogifer point machines are contained in ARTC Network Procedure ANPR 743.

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

Ground Frames

Frames B and C are located on the up side of the Loop line and provide access to the Goods and Silo sidings.

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

For up shunting moves, in order to release Frame B, Signal UY28 must be at STOP, and after giving the release Signal UY28 must be placed to proceed which will activate Yarragundry St Level Crossing protection equipment for the rail traffic movement to proceed into the Uranquinty and Wagga section for shunting moves. NCCS must inform rail-vehicle operator that UY 28 is being cleared for shunting purposes only.

For down shunting movements to the sidings, a sign is provided lettered: "SHUNTING TRAINS STOP. PUSH CANCEL BUTTON TO STOP CROSSING OPERATING. PUSH START BUTTON TO START CROSSING OPERATING. DO NOT PROCEED UNTIL LEVEL CROSSING IS OPERATING"

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

When the key is taken from the respective release lock, it will place and secure all signals controlling entrance onto the Loop line to stop.

Yarragundry Street Level Crossing

Type F flashing lights, half booms, bells and motorised pedestrian swing gate are provided.

The warning equipment is automatically controlled by electronic level crossing predictors for all rail traffic movements, subject to the clearance of the protecting signals on each side of the level crossing.

If a train closely approaches the protecting signals at stop, and they are subsequently cleared by the Network Controller as the train approaches or after the train has come to a stand, the level crossing will first operate for a predetermined period prior to the applicable signal assuming a proceed aspect.

Twelve (12) seconds after the train is detected, the gates will start closing. The gates will descend within 12 seconds. Once the rear of the train has cleared the crossing circuitry, all warning lights and bells will be deactivated and the gates will commence opening.

If the controlled signals fail to assume a proceed aspect when operated by the network controller, the network controller must not authorise the train to pass the affected signal at stop until either:

- The Network Rules and Procedures for warning trains has been carried out, or
- An assurance has been obtained from the hand signaller (when provided) that road traffic is clear of the crossing.

Emergency Operation Owing to Control System Failure

In the event of a control system failure and provided the correct interlocking and track occupancy conditions exist, the points and signals will assume automatic operation.

As a Melbourne bound rail traffic movement approaches signal UY/05, and provided the track ahead is clear, points 51 will assume the normal position and signal UY/05 will automatically clear for the movement to proceed onto the Main line.

As a Sydney bound rail traffic movement approaches signal UY/06, and provided the track ahead is clear, points 55 will assume the reverse position and signal UY/06 will automatically clear for the movement to proceed onto the Loop line.

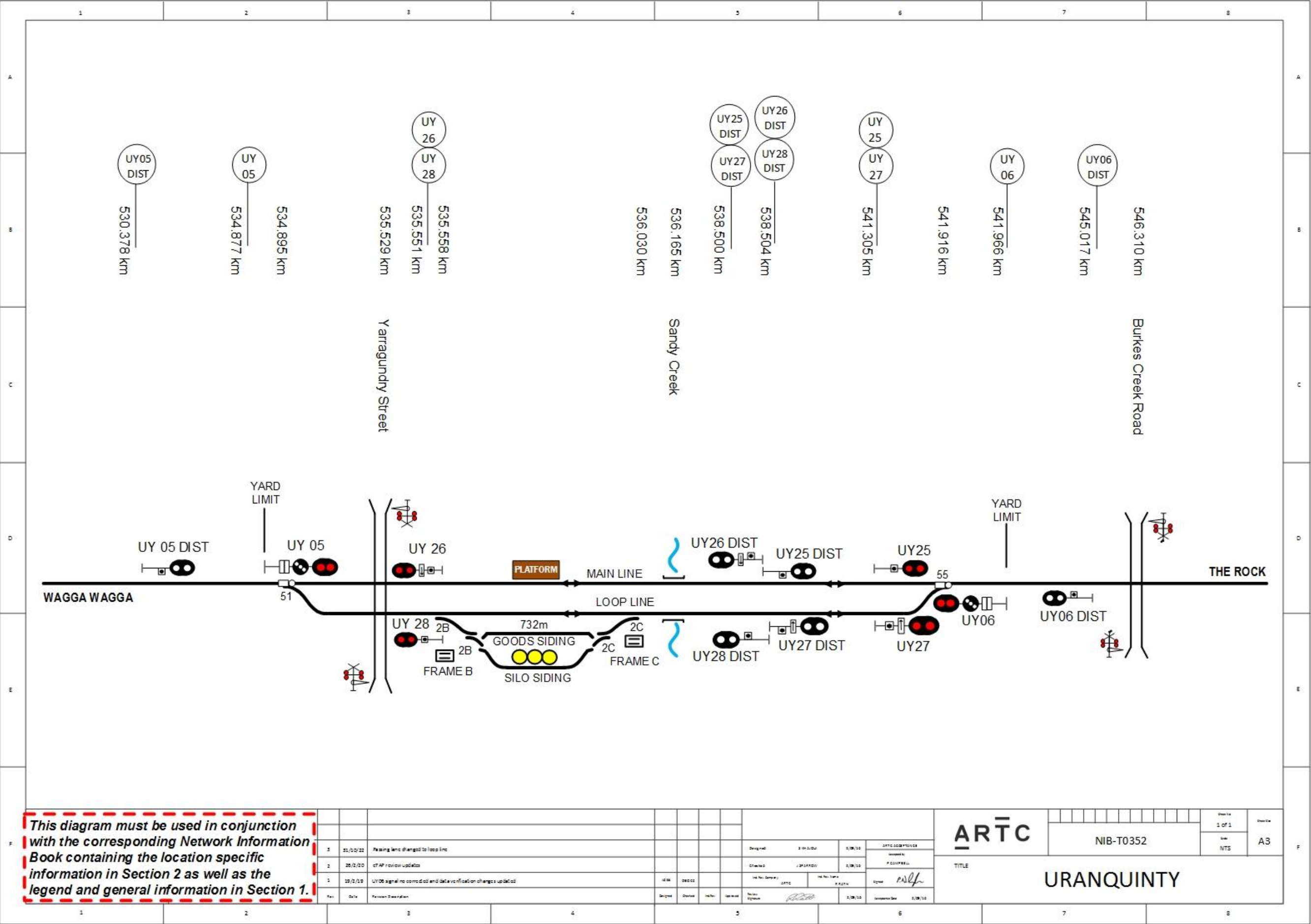
The signals will not clear for the arriving movement if there are conflicting movements already on the nominated track and rail traffic movements should then be worked as directed by the Network Controller.

Push button controls are located at signals UY/26, UY/28, UY/25 and UY/27 to allow control of the signals in the event of a signal control system failure.

The push buttons are applicable to the relevant signals at that location and are provided with clear and cancel push buttons.

When instructed by the Network Controller, the driver must push the applicable push button for the signal to which the rail traffic movement is standing at. Provided the correct interlocking conditions exist, the points will set to the required position and the signal selected will assume a proceed aspect for the rail traffic movement to depart.

If the Network Controller requires the rail traffic movement to proceed onto an alternative track to that described above, the points are to be manually operated and the rail traffic movement authorised to pass the respective signal at stop.



2.18 The Rock (TGT)

2.18.1 General Arrangements

Points at The Rock are controlled by the ARTC Network Control Centre South (NCCS).

The Boree Creek Branch line is an extension from the Up Loop line at the Yerong Creek end of The Rock yard. Refer to interface agreement IA3000.10 for further details.

Train Working between The Rock and Boree Creek Line

A Train Order is the authority for Train Working between The Rock and Boree Creek line (Country Regional Network territory).

Clearing signal 07/17 gives authority to enter the block for which the signal has been cleared, provided that the Driver has the Train Order authority for the movement.

NOTE: Train Crew must be in possession of a Train Order from the Country Regional Network Controller prior to requesting clearance of signal No. 07/17. ARTC Network Controllers must ensure that trains are in possession of a Train Order before clearing signal No. 7/17.

Begin and End Train Order Working

Train Order Working for The Rock to Boree Creek line in the Down direction commences at the BEGIN TRAIN ORDER WORKING sign adjacent to signal 07/12 at 551.094km after signal 07/17. Drivers intending to depart The Rock for Boree Creek must not pass signal 07/17 unless in possession of a train order.

Train Order Working from the Boree Creek line to The Rock ends at the END TRAIN ORDER WORKING sign located adjacent to signal 07/12 on the Boree Creek line.

A DO NOT PROCEED PASS THIS POINT UNLESS IN POSSESSION OF A TRAIN ORDER sign is located on signal 07/17 for The Rock to Boree Creek line.

Limits of Authorities

The BEGIN TRAIN ORDER sign facing DOWN trains is the limit of an authority issued by the ARTC Network Controller.

The END TRAIN ORDER sign facing UP trains is the limit of an authority issued by the Country Regional Network Control Officer.

Work on Track Authorities

Each respective Network Control centre will issue work on track authorities up to their End Network Control Boundary Location sign.

Ground Frames

Frames B, C and D are located on the Up side of the Loop line adjacent to the crossovers and provide access to the Up sidings.

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.

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

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

Frame E is unlocked by a key from releasing switch E, which is electrically released by No. 84 release at NCCS and the Operators Contact Lock E released by Operators Key.

2.18.2 Level Crossings

Old Trunk Road Level Crossing

Type F flashing lights, bells and half-boom barriers are provided at Old Trunk Road level crossing at 546.318km.

Trackside signage is located at 544.475km in the Down direction and 548.161km in the Up direction.

The Avenue Level Crossing

Type F flashing lights, bells, and half-boom barriers and motorised pedestrian swing gate are provided at The Avenue level crossing at 550.154km.

The warning equipment is automatically controlled by track circuit for Down and Up trains, subject to the clearance of the protecting signals on each side of the level crossing.

If a train closely approaches Down home signal No. 07/5, or Up 4th home signal No. 07/26 or No. 07/28 at stop, the setting of the signal route by the Signaller will cause the level crossing warning indicators to be displayed but clearing of the signals will be delayed for 15 seconds.

If it becomes necessary to hold a train at signal No. 07/5, No. 07/26 or No. 07/28 after the signal has been cleared, the level crossing warning indicators will continue to be displayed for a period of 120 seconds after the signal is returned to stop and will then cancel automatically.

Trackside signage is located at 548.229km in the Down direction and 551.555km in the Up direction.

Yerong Street Level Crossing

Type F flashing lights, bells and half-boom barriers are provided at Yerong Street level crossing at 551.496km.

The warning equipment is automatically controlled by track circuit for Down and Up trains, subject to the clearance of the protecting signals on each side of the level crossing.

If a train closely approaches Up home signal No. 07/6, or Down starting signal No. 07/25 or No. 07/27 at stop, the setting of the signal route by the Signaller will cause the level crossing warning indicators to be displayed but clearing of the signals will be delayed for 15 seconds.

If it becomes necessary to hold a train at signal No. 07/6, No. 07/25 or No. 07/27 after the signal has been cleared, the level crossing warning indicators will continue to be displayed for a period of 120 seconds after the signal is returned to stop and will then cancel automatically.

Special arrangements if there is a failure of the signals protecting The Avenue and Yerong Street level crossings

If either Down home signal No. 07/5, Up home signal No. 07/6, Down starting signal No. 07/25 or No. 07/27, or Up 4th home signal No. 07/26 or No. 07/28 fails, the Network Controller at NCCS must not authorise a train to pass these signals at stop until either:

- the Network Rules and Procedures for warning trains have been carried out

- or an assurance has been obtained from the Handsignaller(s) at the level crossing that the road traffic is clear of the crossing.

If either Down starting signal No. 07/25 or No. 07/27, fails, the Network Rules and Procedures for special working must be carried out.

2.18.3 Country Regional Network Interface Requirements

Work on Track

The following instructions will apply if work on track will be conducted which:

- extends into the UGLRL controlled area, or
- requires protection to be provided by the UGLRL Network Control Officer.

Where any work on track activity within the ARTC Network requires protection from the adjacent CRN Network, the UGLRL Network Control Officer, ARTC Network Controller and the Protection Officer must establish a conference call to agree upon:

- affected rail traffic movements
- location of work
- required protection arrangements
- duration of work.

Local Possession Authorities (LPA)

The limits of an LPA must not extend beyond the Operational Interface at 07-12 signal at 551.094 km.

Back-to-Back LPA's

Where back-to-back LPAs are implemented, the following instructions will apply:

- Worksites and rail traffic that need to move from CRN territory to ARTC territory are authorised and supervised by the ARTC Possession Protection Officer (PPO).
- Worksites and rail traffic that need to move from ARTC territory to CRN territory are authorised and supervised by the UGLRL PPO.

Where work is being undertaken at or over the interface boundary the following will apply:

- The UGLRL PPO and the ARTC PPO must confer and come to a clear understanding of the worksite protection to be established over the CRN and ARTC interface boundary.
- When the work at or over the interface boundary is completed, the UGLRL PPO and ARTC PPO must ensure that possession protection is removed.

UGLRL only LPA

Where a UGLRL only LPA is to be obtained, the UGLRL Possession Protection Officer must request the ARTC Network Controller Junee to protect the possession limit by placing blocking facilities to exclude rail traffic entry to the CRN for the duration of the possession.

Where work is being undertaken within 500m of the protecting limits, a Work on Track Authority adjoining the entry end limit must be implemented for the duration of the work.

ARTC only LPA

Where work is being undertaken within 500m of the protecting limits, a Work on Track Authority adjoining the entry end limit must be implemented for the duration of the work.

Track Occupancy Authority (TOA)

The UGLRL Network Control Officer is responsible for implementing a TOA when a worksite is established on the CRN Network up to the Operational Interface.

The ARTC Network Controller Junee is responsible for implementing a TOA when a worksite is established on the ARTC Network up to the Operational Interface.

When a TOA worksite extends beyond the Operational Interface or the worksite is located within 500m of the Operational Interface, separate TOA's must be issued by the UGLRL Network Control Officer and the ARTC Network Controller Junee.

Track Work Authorities (TWA)

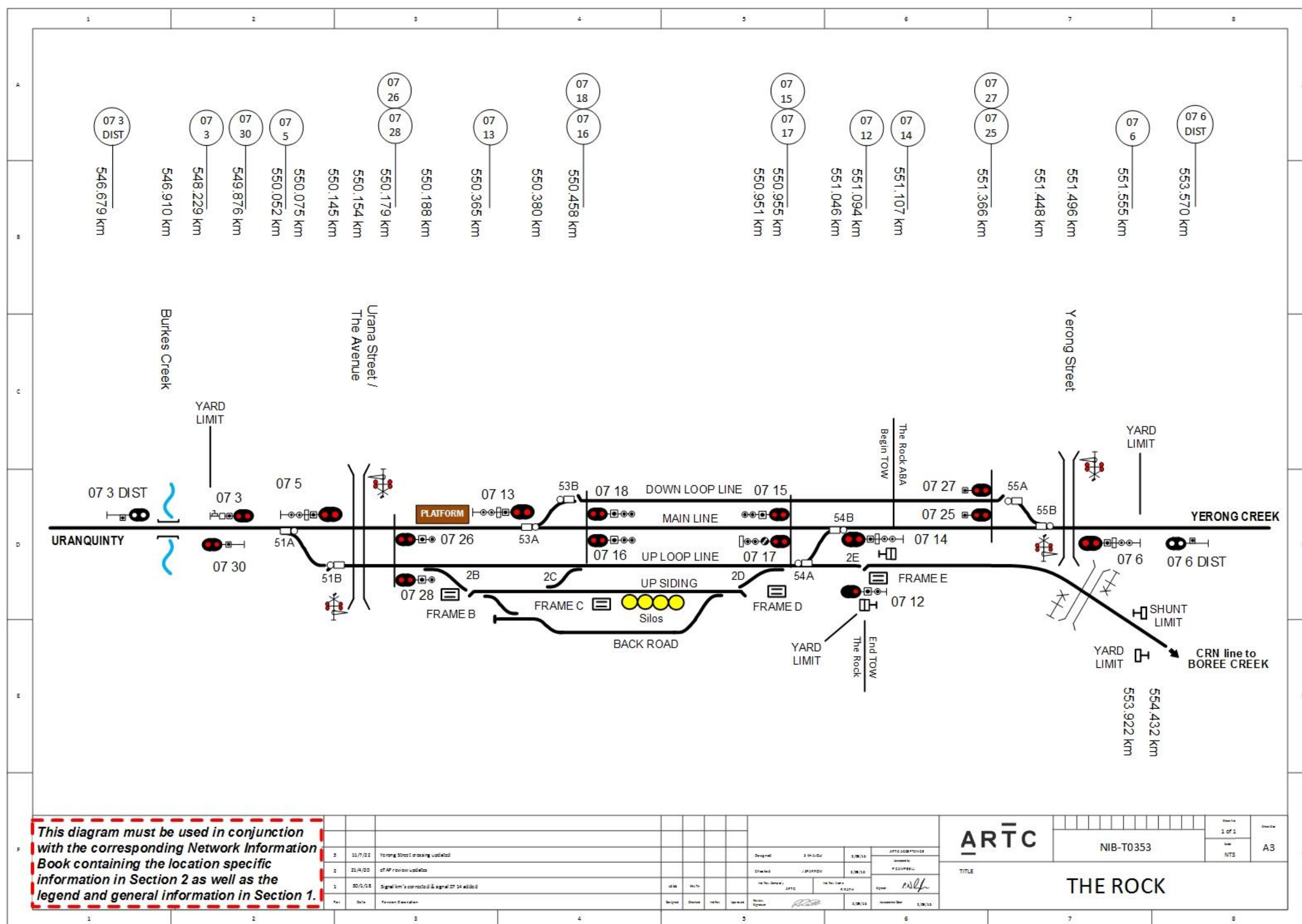
The ARTC Network Controller Junee is responsible for implementing a TWA when a worksite is established on the ARTC Network up to the Operational Interface.

The UGLRL Network Control Officer is responsible for implementing a TWA when a worksite is established on the CRN Network up to the Operational Interface.

TWAs must not extend beyond the operational interface.

Route Control Blocking (RCB)

The use of RCB is not permitted in the ARTC Network.



2.19 Yerong Creek (YCK)

General Arrangements

The straight track between the up and down ends of Yerong Creek is known as the Main line, whilst the diverging track is known as the Loop line.

Signage is located at each end of the extended loop to reflect which track is the Main line and which track is the Loop line. Signage is also located at intermediate locations along the main and loop line to assist track force operations in identifying the individual tracks.

Operation of Power-operated Points

Nos. 51 and 55 points are Vossloh Cogifer electric point machines operated by the Network Controller at NCCS.

The Vossloh Cogifer point machines have Emergency Operating Lock (EOL) cabinets at the points and contain the key switches for each respective machine.

The Vossloh Cogifer point machines are provided with a selector switch and points throw lever which, when not being operated, are secured by SL locks.

Operation of the selector switch from MOTOR to HAND will:

- switch the point machine to trackside control,
- set and secure the protecting signals to stop, and
- engage the manual operating handle.

Instructions on the manual operation of the Vossloh Cogifer point machines are contained in ARTC Network Procedure ANPR 743.

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

Ground Frames

Frames B and D are located on the up side of the Loop line and provide access to the Grain and Silo sidings.

Frame B is unlocked by a key from siding releasing switch YC81, which is electrically released by No YC81 release from NCCS.

Frame D is unlocked by a key from releasing switch YC83, which is electrically released by No YC83 release by the Network Controller at NCCS.

When the key is taken from the respective release lock, it will place and secure all signals controlling entrance onto the Loop line to stop.

For down shunting movements to the sidings, a sign is provided lettered: "SHUNTING TRAINS STOP. PUSH CANCEL BUTTON TO STOP CROSSING OPERATING. PUSH START BUTTON TO START CROSSING OPERATING. DO NOT PROCEED UNTIL LEVEL CROSSING IS OPERATING"

Frame C is located on the up side of the Loop line and provide access to the Goods siding.

Frame C is unlocked by a key from siding releasing switch YC82, which is electrically released by No YC82 release from NCCS.

Plunkett Street Level Crossing

Type F flashing lights, half booms, bells and motorised pedestrian swing gate are provided.

The warning equipment is automatically controlled by electronic level crossing predictors for all rail traffic movements, subject to the clearance of the protecting signals on each side of the level crossing.

If a train closely approaches the protecting signals at stop, and they are subsequently cleared by the Network Controller as the train approaches or after the train has come to a stand, the level crossing will first operate for a predetermined period prior to the applicable signal assuming a proceed aspect.

If the controlled signals fail to assume a proceed aspect when operated by the network controller, the network controller must not authorise the train to pass the affected signal at stop until either:

- The Network Rules and Procedures for warning trains has been carried out, or
- An assurance has been obtained from the hand signaller (when provided) that road traffic is clear of the crossing.

Emergency operation owing to control system failure

In the event of a control system failure and provided the correct interlocking and track occupancy conditions exist, the points and signals will assume automatic operation.

As a Melbourne bound rail traffic movement approaches signal YC05, and provided the track ahead is clear, points 51 will assume the normal position and signal YC05 will automatically clear for the movement to proceed onto the Main line.

As a Sydney bound rail traffic movement approaches signal YC06, and provided the track ahead is clear, points 55 will assume the reverse position and signal YC06 will automatically clear for the movement to proceed onto the Loop line.

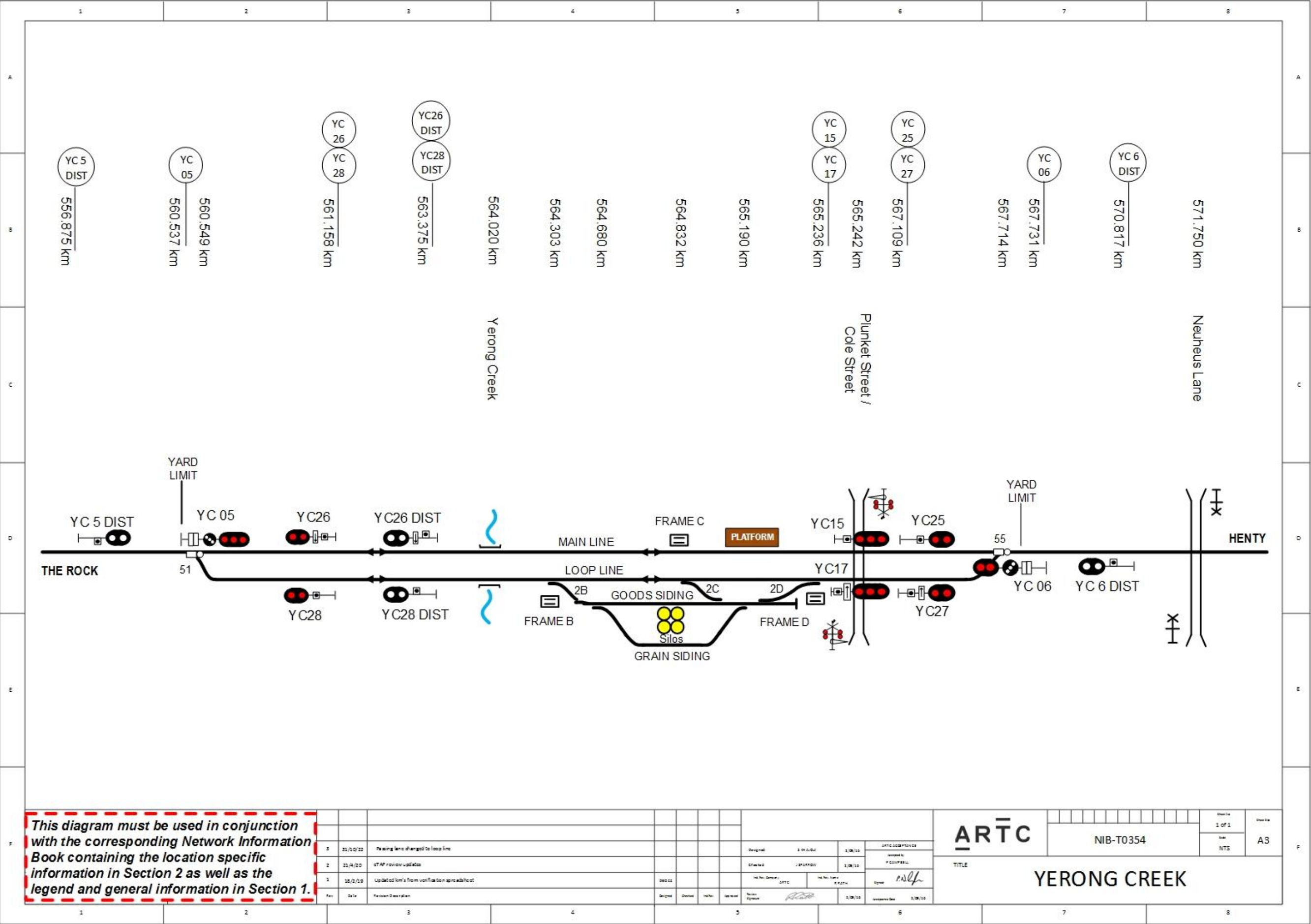
The signals will not clear for the arriving movement if there are conflicting movements already on the nominated track and rail traffic movements should then be worked as directed by the Network Controller.

Push button controls are located at signals YC26 and YC28 and at signals YC25 and YC27 to allow control of the signals in the event of a signal control system failure.

The push buttons are applicable to the relevant signals at that location and are provided with clear and cancel push buttons.

When instructed by the Network Controller, the driver must push the applicable push button for the signal to which the rail traffic movement is standing at. Provided the correct interlocking conditions exist, the points will set to the required position and the signal selected will assume a proceed aspect for the rail traffic movement to depart.

If the Network Controller requires the rail traffic movement to proceed onto an alternative track to that described above, the points are to be manually operated and the rail traffic movement authorised to pass the respective signal at stop.



2.20 Henty (HTY)

General Arrangements

Henty is a loop location with a silo siding on the main line and also on the branch line.

Loop length 912m

Silo siding main line length 555m

Henty West grain siding branch line length 2000m

Points are controlled by the ARTC Network Control Centre South (NCCS).

Ground Frames

Frame B is located on the Down side of the main line and frame E is located on the Up side of the main line adjacent to the points and provide access to the Silo siding.

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

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

Frame C is located on the Up side of the main line adjacent to the points and provides access to the GHA siding.

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

Henty West Grain Siding

This siding extends from the Main Line connection at 579.833km (C Frame) to a fixed Stop Block located at the ARTC boundary (582.500km)

The Wenskes Rd level crossing located at 581.140km on the Henty West Grain Siding is a Type D crossing and has been fitted with STOP roadside warning signs.

A supplementary Notice sign is located on the approach of the Wenskes Road level crossing advising train crews and track vehicle operators not to proceed until authorised by Junee Network Control. The sign is provided to ensure that rail traffic does not obstruct the Wenskes Rd level crossing whilst waiting for the authority onto the Henty main/loop lines via "C" frame.

Grubben Road Level Crossing

Flashing lights, audible warning devices and half-boom barriers are provided at Grubben Road level crossing at 578.221km.

The Level Crossing is configured in Motion Sense Mode in the Down and Up directions, causing the level crossing to operate when rail traffic is detected.

The level crossing will cease to operate when the rail traffic clears the level crossing.

Grubben Road level crossing is located between the Henty Outer Home Signal No.09.3 and Starting Signal No.09.30. Signals 09-3 or 09.30 will not provide a proceed indication until the level crossing warning equipment is fully operational.

Sladen Street Level Crossing

Type F flashing lights, bells and half-boom barriers are provided at Sladen Street level crossing at 580.209km.

The warning equipment is automatically controlled by track circuit for Down and Up trains, subject to the clearance of the protecting signals on each side of the level crossing.

If a train closely approaches Down home signal No. 09/5, or Up 2nd home signal No. 09/26 or No. 09/28 at stop, the setting of the signal route by the Signaller will cause the level crossing warning indicators to be displayed but clearing of the signals will be delayed for 15 seconds.

If it becomes necessary to hold a train at signal No. 09/5, No. 09/26 or No. 09/28 after the signal has been cleared, the level crossing warning indicators will continue to be displayed for a period of 120 seconds after the signal is returned to stop and will then cancel automatically.

Trackside signage is located at 577.730km in the Down direction and 583.936km in the Up direction.

Yankee Road Level Crossing

Type F flashing lights and audible warning devices are provided at Yankee Road level crossing at 581.238km.

The warning equipment is automatically controlled by track circuit for Down and Up rail traffic, subject to the clearance of the protecting signals on each side of the level crossing.

If a rail traffic closely approaches Up Home signal No. 09/6 or Down Starting signal No. 09/25 or No. 09/27 at STOP, the setting of the signal route by the Network Control Officer will cause the level crossing warning indicators to be displayed but clearing of the signals will be delayed until the half-boom barriers are horizontal.

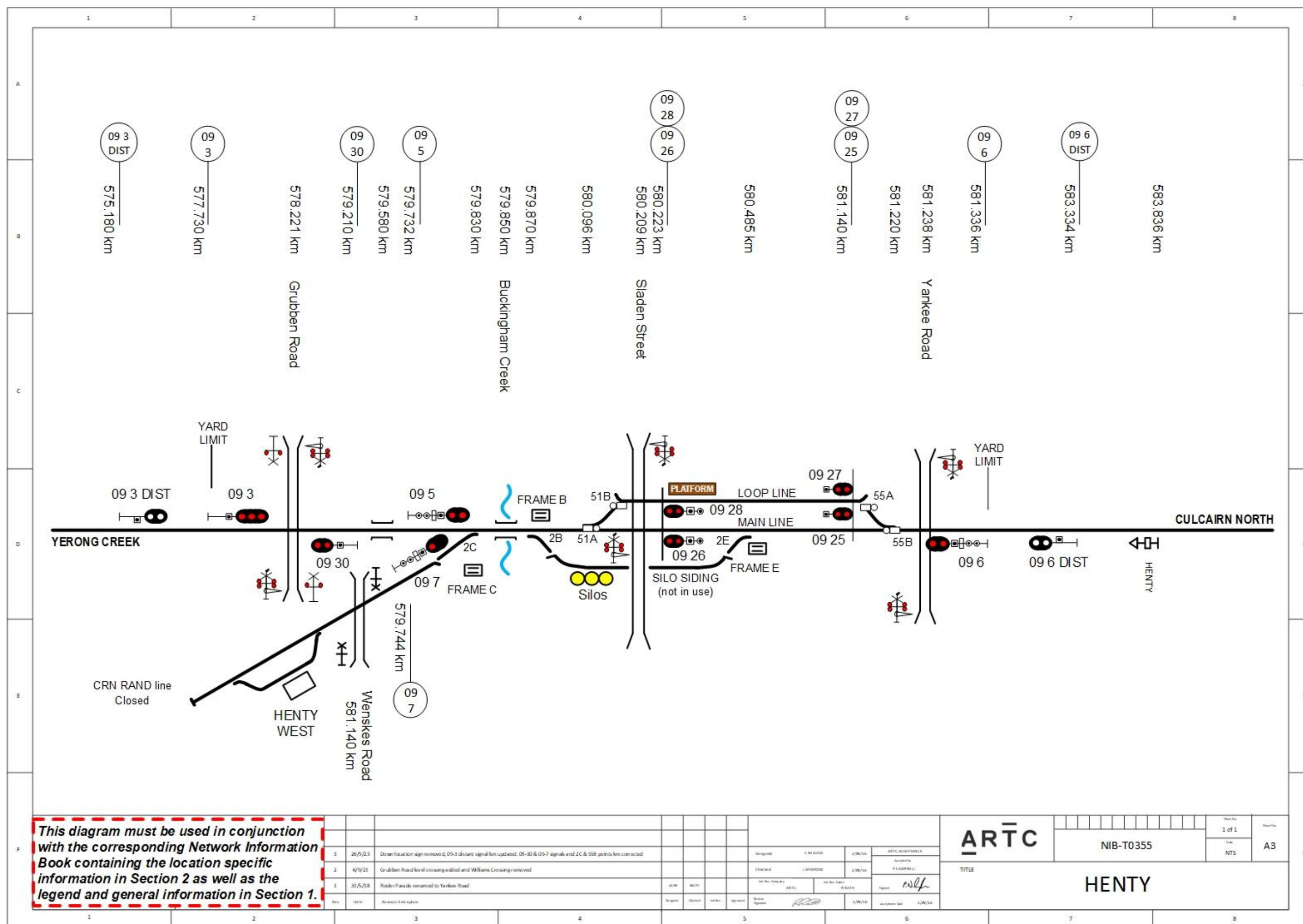
If it becomes necessary to hold a rail traffic at signal No. 09/6, No. 09/25 or No. 09/27 after the signal has been cleared, the level crossing warning indicators will continue to be displayed for a period of 120 seconds after the signal is returned to STOP and will then cancel automatically.

Special arrangements if there is a failure of the signals protecting Sladen Street and Yankee Road level crossings

If Down Home signal No. 09/5, Up Home signal No. 09/6, Down Starting signal No. 09/25 or No. 09/27, or Up 2nd Home signal No. 09/26 or No. 09/28 fails, the Network Controller NCCS (or Henty, when switched in) must not authorise a rail traffic to pass these signals at stop until:

- either the Network Rules and Procedures for warning rail traffic have been carried out
- or an assurance has been obtained from the Handsignaller(s) at the level crossing that the road traffic is clear of the crossing.

If either Down Starting Signal No. 09/25 or No. 09/27 fails, the Network Rules and Procedures for special working must be carried out.



2.21 Culcairn (CUL) & Culcairn North (CUN)

General Arrangements

Culcairn North the straight track is known as the main line, while the diverging track is known as the loop line. Signs are located at intermediate locations along the loop to assist in identifying the individual tracks.

Culcairn is a loop location with sidings operated by ground frames.

Loop length	970m standing room for Up direction
	905m standing room for Down direction
Silo Siding length	320m
Goods Siding length	300m

Ground Frames

Frame B is located on the Up side of the Refuge siding adjacent to the crossovers and provides access to the Silo siding.

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

Frames C and D are located on the Up side of the Refuge siding adjacent to the crossovers and provide 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.

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

Operation of Power-Operated Points

Nos. 51, 52, 57 and 59 points are operated from NCCS.

If the points fail to operate correctly, 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.

Nos. 57 and 59 points are Vossloh Cogifer electric point machines.

EOL cabinets are located adjacent the location of 59 and 57 points.

Ashleigh Park Feedlot Level Crossing

Type F flashing lights and bells are provided.

The warning equipment is automatically controlled by track circuit for all trains.

If a train approaches the protecting signals at 'Stop', and they are subsequently cleared by the Network Controller as the train approaches or after the train has come to a stand, the level crossing will operate for a predetermined period prior to the applicable signal assuming a 'Proceed' aspect.

If the controlled signals either side of these level crossings fail to give a 'Proceed' indication when operated by the Network Controller, the Network Controller must not authorise the train to pass the affected signal at 'Stop' until either:

- The Network Rules and Procedures for warning trains has been carried out, or
- An assurance has been obtained from the hand signaller (when provided) that road and pedestrian traffic is clear of the crossing.

Emergency Operation Owing to Control System Link Failure

In the event of a control system link failure and provided the correct interlocking and track occupancy conditions exist, the points and signals will operate automatically.

As a Down directional train approaches signal CN01, and provided the track ahead is clear, points 57 will automatically set to the reverse position and signal CN01 will automatically clear for the movement to proceed onto the loop line.

The signals will not clear for the arriving movement if there are conflicting movements already on the nominated track and trains should then be worked as directed by the Network Controller.

Push button controls are located at signals CN32 and CN34 to allow the control of the signals in the event of control system link failure.

The push buttons are applicable to the relevant signals at the location and are provided with a clear and cancel push button.

When instructed by the Network Controller, the rail traffic crew member must push the applicable push button for the signal at which the train is standing. Provided the correct interlocking conditions exist, the points will set to the required position and the signal selected will provide a 'Proceed' aspect for the train to depart.

If the Network Controller requires the train to proceed onto an alternative track to that as described above, the points are to be manually operated and the train authorised to pass the respective signal in the 'Stop' position.

Baird Street Level Crossing

Type F flashing lights, audible warning devices and half-boom barriers are provided at Baird St level crossing at 595.725km.

The warning equipment is automatically controlled by track circuit for Down and Up rail traffic, subject to the clearance of the protecting signals on each side of the level crossing.

If rail traffic closely approaches Down Home signal No. 10/5, or Up Starting signal No. 10/26 or No. 10/28 at STOP, the setting of the signal route by the Network Control Officer will cause the level crossing warning indicators to be displayed but clearing of the signals will be delayed until the half-boom barriers are horizontal.

If it becomes necessary to hold rail traffic at signal No. 10/5, No. 10/26 or No. 10/28 after the signal has been cleared, the level crossing warning indicators will continue to be displayed for a period of 120 seconds after the signal is returned to STOP and will then cancel automatically.

Balfour Street Level Crossing

Type F flashing lights, bells and half-boom barriers are provided at Balfour Street level crossing at 596.986km.

The warning equipment is automatically controlled by track circuit for Down and Up trains, subject to the clearance of the protecting signals on each side of the level crossing.

If a train closely approaches Up home signal No. 10/6, or Down 2nd home, refuge to main or branch signal No. 10/23, or Down 2nd home signal No. 10/25 or No. 10/27 at stop, the setting of the signal route by the Signaller will cause the level crossing warning indicators to be displayed but clearing of the signals will be delayed for 15 seconds.

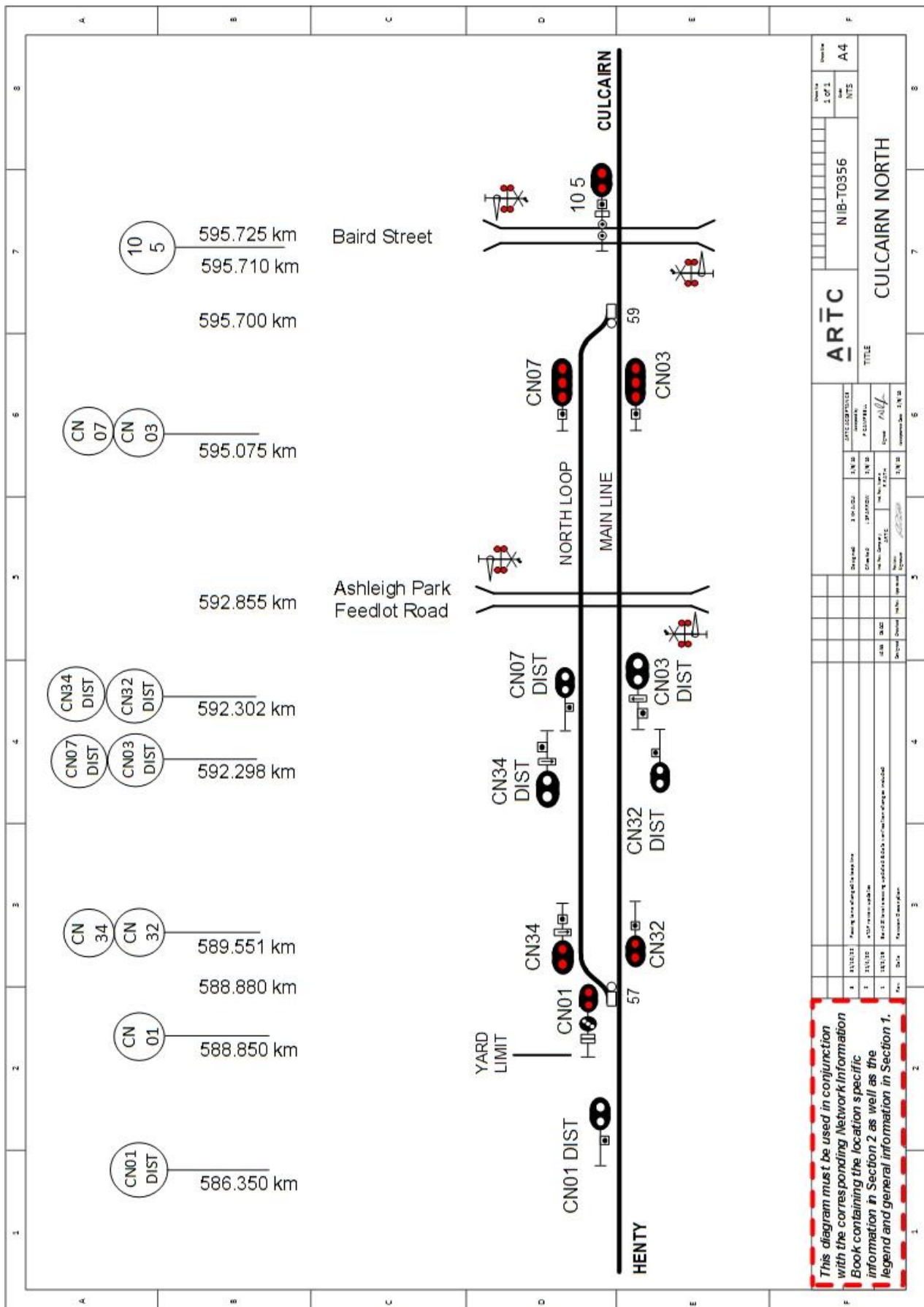
If it becomes necessary to hold a train at signal No. 10/6, No. 10/23, No. 10/25 or No. 10/27 after the signal has been cleared, the level crossing warning indicators will continue to be displayed for a period of 120 seconds after the signal is returned to stop and will then cancel automatically.

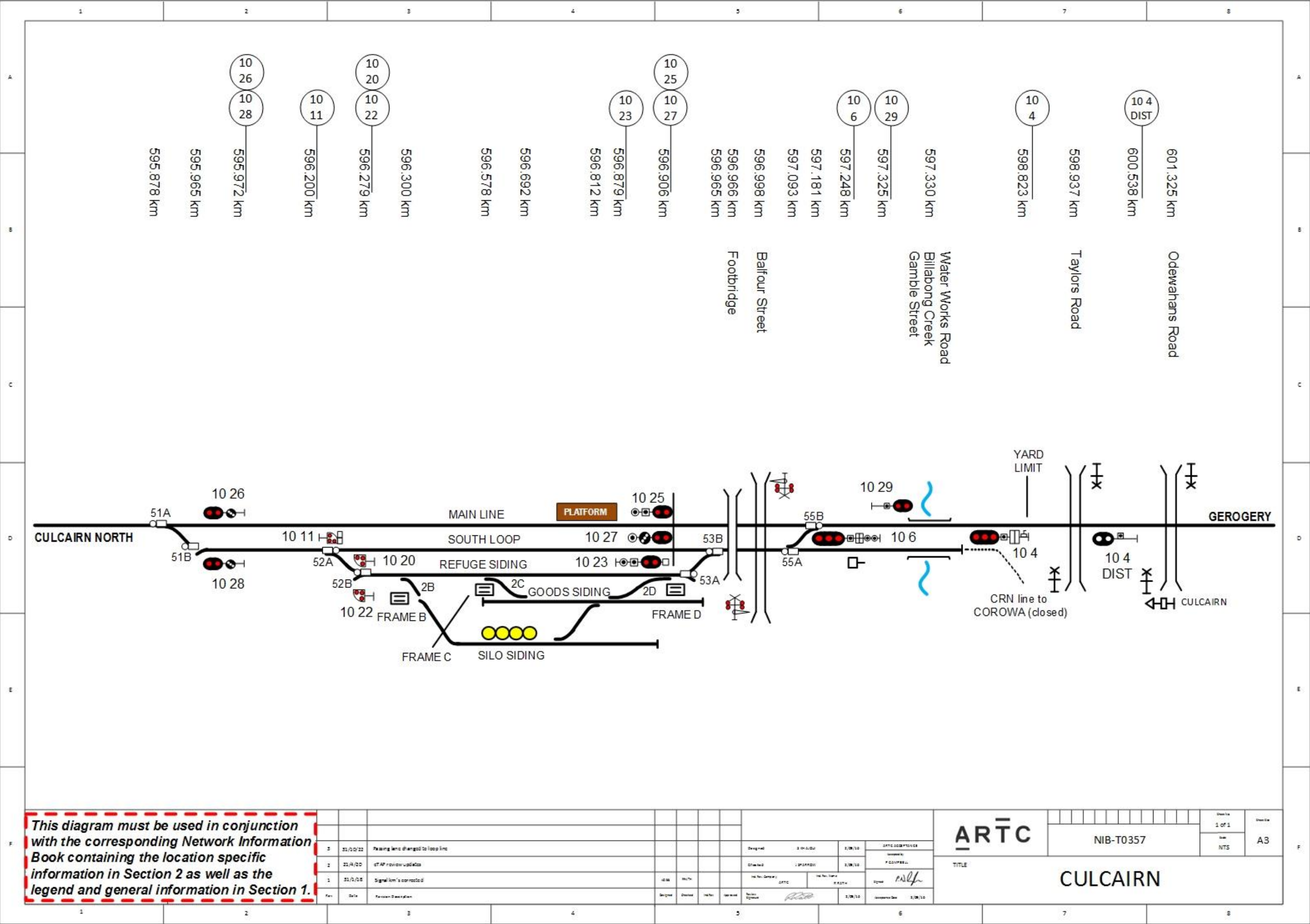
Special arrangements if there is a failure of the signals protecting Baird Street and Balfour Street level crossings

If Down home signal No. 10/5, Up home signal No. 10/6, Down 2nd home, refuge to main or branch signal No. 10/23, or Down starting signal No. 10/25 or No. 10/27, or Up starting signal No. 10/26 or No. 10/28 fails, the Network Controller NCCS (or Culcairn, when switched in) must not authorise a train to pass these signals at stop until:

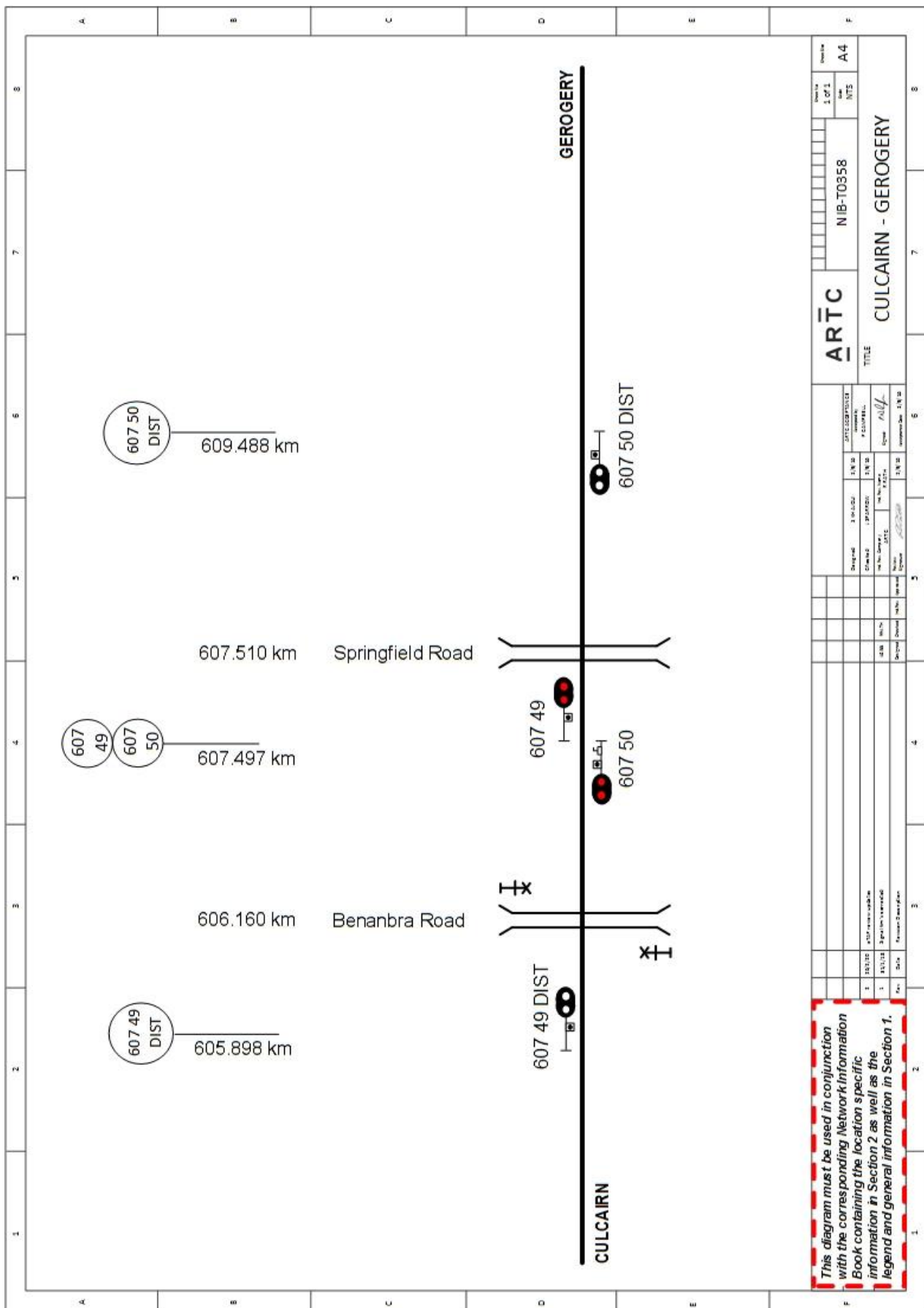
- either the Network Rules and Procedures for warning trains have been carried out
- or an assurance has been obtained from the Handsignaller(s) at the level crossing that the road traffic is clear of the crossing.

If Down starting signal No. 10/25 or No. 10/27, or Up starting signal No. 10/26 or No. 10/28 fails, the Network Rules and Procedures for special working must be carried out.





Locations and Sections Information



2.22 Gerogery (GRY)

General Arrangements

The straight track between the up and down ends of Gerogery is known as the Main line, whilst the diverging track is known as the Loop line.

Signage is located at each end of the loop to reflect which track is the Main line and which track is the Loop line.

Signage is also located at intermediate locations along the main and loop line to assist track workers in identifying the individual tracks.

Operation of Power-operated Points

Nos. 51 and 55 points are Vossloh Cogifer electric point machines operated by the Network Controller at NCCS.

The Vossloh Cogifer point machines have Emergency Operating Lock (EOL) cabinets at the points and contain the key switches for each respective machine.

The Vossloh Cogifer point machines are provided with a selector switch and points throw lever which, when not being operated, are secured by SL locks.

Operation of the selector switch from MOTOR to HAND will:

- switch the point machine to trackside control,
- set and secure the protecting signals to stop, and
- engage the manual operating handle.

Instructions on the manual operation of the Vossloh Cogifer point machines are contained in ARTC Network Procedure ANPR 743.

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

East Road Level Crossing

Type F flashing lights, half booms and bells are provided.

The warning equipment is automatically controlled by electronic level crossing predictors for all rail traffic movements, subject to the clearance of the protecting signals on each side of the level crossing.

If a train closely approaches the protecting signals at stop, and they are subsequently cleared by the Network Controller as the train approaches or after the train has come to a stand, the level crossing will first operate for a predetermined period prior to the applicable signal assuming a proceed aspect.

If the controlled signals fail to assume a proceed aspect when operated by the network controller, the network controller must not authorise the train to pass the affected signal at stop until either:

- The Network Rules and Procedures for warning trains has been carried out, or
- An assurance has been obtained from the hand signaller (when provided) that road traffic is clear of the crossing.

Emergency Operation Owing to Control System Failure

In the event of a control system failure and provided the correct interlocking and track occupancy conditions exist, the points and signals will assume automatic operation.

As a Melbourne bound rail traffic movement approaches signal GY05, and provided the track ahead is clear, points 51 will assume the normal position and signal GY05 will automatically clear for the movement to proceed onto the Main line.

As a Sydney bound rail traffic movement approaches signal GY06, and provided the track ahead is clear, points 55 will assume the reverse position and signal GY06 will automatically clear for the movement to proceed onto the Loop line.

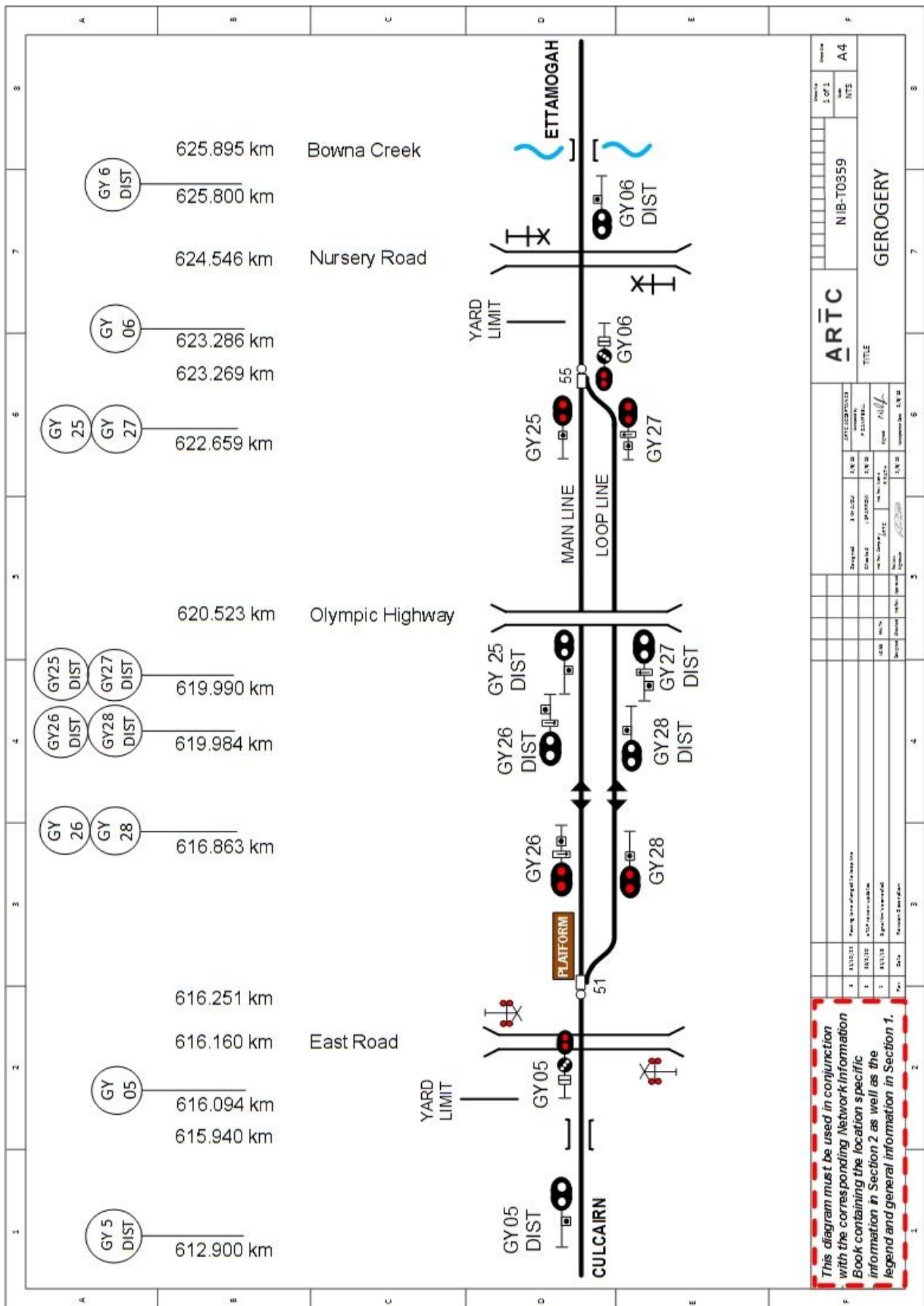
The signals will not clear for the arriving movement if there are conflicting movements already on the nominated track and rail traffic movements should then be worked as directed by the Network Controller.

Push button controls are located at signals GY26 and GY28 to allow control of the signals in the event of a signal control system failure.

The push buttons are applicable to the relevant signals at that location and are provided with clear and cancel push buttons.

When instructed by the Network Controller, the driver must push the applicable push button for the signal to which the rail traffic movement is standing at. Provided the correct interlocking conditions exist, the points will set to the required position and the signal selected will assume a proceed aspect for the rail traffic movement to depart.

If the Network Controller requires the rail traffic movement to proceed onto an alternative track to that described above, the points are to be manually operated and the rail traffic movement authorised to pass the respective signal at stop.



2.23 Ettamogah Rail Hub (ERH)

General Arrangements

Ettamogah is an Arrival Road entrance to a private siding operated by NCCS using remote controlled points and signals.

Arrival Road length is 3200m

Access to the Arrival Road is via Shunt indications on signals EH5 and EH24. Rail Traffic must occupy the track circuit within 100m of the EH5 Signal for 45 seconds or EH24 Signal for 30 seconds to allow the time out to release the shunt route into the Arrival Road.

Arriving rail traffic in the Up direction to the Arrival Road is not available when Down rail traffic is stationary on the Main line between signals EH6 and EH21. Following movements in the same direction is permitted.

Arriving rail traffic in the Down direction to the Arrival Road is not available when Up rail traffic is stationary on the Main line between signals EH6 and EH21. Only following movements in the same direction is permitted.

Departing movements from the Arrival Road in the Down direction are not available when a Down rail traffic movement is stationary on the Main Line between signals EH6 and EH21.

Departing movements from the Arrival Road in the up direction are not available when an Up rail traffic movement is stationary on the Main Line between signals EH6 and EH21.

Departing movements from the Arrival Road in the Up direction using EH8 signal are permitted once a Down movement train has passed EH6 for a normally signalled movement.

Departing movements from the Arrival Road in the Down direction using EH23 signal are permitted once an Up movement train has passed EH21 for a normally signalled movement.

In any event where the track circuit between EH6 and EH21 signals is occupied under a track circuit failure condition, no rail traffic will be permitted to enter or exit the ERH Arrival Road under signalled moves.

NOTE: The Arrival Road is not track circuited.

Motor Operated Points

Motor points 101A and 101B are located at the Up end (Sydney) entrance to the Arrival road.

Motor points 105A and 105B are located at the Down end (Albury) entrance to the Arrival Road.

All points motors are controlled by NCCS.

All points motors are 84M type and will self-normalise after rail traffic has passed over them and a 45 second time delay has expired.

In the event of a signal system failure, and under the direction of the Network Controller, the motors can be manually operated using the EOL keys located at:

- EH24 Signal Location hut for 105 points and
- EH5 Signal Location hut for 101 points.

Yard Limit (YL) and End Yard Limit (EYL) Signage

YL and EYL signs are provided on the following signals and km:

- EH24 (635.065km) Back EYL; Front YL
- EH5 (631.043km) Back EYL; Front YL

Tynan Road Level Crossing

Type F flashing lights, bells and half boom barriers are provided at Tynan Road level crossing at 631.176km.

The warning equipment is automatically controlled by track circuits for Down and Up rail traffic, subject to the clearance of the protecting signals on each side of the level crossing.

If rail traffic approaches Down Home Signal EH5, or Up Home/Starting Signal EH6 at STOP, the setting of the signal route will cause the level crossing warning indicators to be displayed but clearing of the signals will be delayed for 15 seconds.

If rail traffic approaches Up Home/Starting Signal EH8 at STOP, the setting of the signal route will cause the signal to clear and occupation of the track circuit past the signal will cause level crossing warning indicators to be displayed, providing 30 seconds warning time to road vehicles.

Rail traffic must not exceed 25kph when passing signal EH8.

If restraining rail traffic at signals EH5 or EH6 after the signal has been cleared, the level crossing will continuously operate for a period of 240 seconds for main routes and 60 seconds for shunt routes then the signal will return to stop and cancel the level crossing operation automatically.

Approach trackside signs (Type F level crossing) are located:

- in the Down direction at 629.340km
- in the Up direction on the Main line at 633.014km, and
- on the arrival road at 631.397km.

Special arrangements if there is a failure of the signals protecting Tynan Road level crossing

If either Down Home signal EH5, or Up Home/Starting signal EH6 or EH8 fails to clear, the Network Controller must not authorise rail traffic to pass these signals at stop until either:

- The Network Rules and Procedures for warning rail traffic have been carried out, or
- An assurance has been obtained from the Handsignaller(s) at the level crossing that it is safe to cross.

If Up Home/Starting signal EH6 or EH8 fails to clear, the Network Rules and

Procedures for special working must be carried out.

