Division / Business Unit: Engineering & Systems
Function: Operations
Document Type: Guideline

Network Information Book

Lower Hunter

Sandgate (inc) to Allandale (exc) Telarah & Bloomfield Branch Line

OGW-30-15

Applicability

Hunter Valley

Publication Requirement

Internal / External

Primary Source

Local Appendices North Volume 2
Route Access Standard – Heavy Haul Network Section Pages H1

Document Status

Version #	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
2.2	22 Mar 2023	Configuration Management Administrator	Corridor Assets & Operational Representatives	Configuration Manager	Head of Operations Standards

Amendment Record

Amendment Version #	Date Reviewed	Clause	Description of Amendment
1.0	22 Mar 2016		First Issue

1.1	7 Sep 2017	Various	Amendments made to Hexham, Thornton, Metford, Victoria Street, Maitland, Telarah and East Greta Junction diagrams for points upgrades and to align speed signs to match the Route Access Standard Bloomfield Colliery diagram merged with Thornton diagram. Drawing legend updated
1.2	10 Jul 2018	Various	Metford to Maitland resignalling changes updated including Maitland yard limit table added in section 2.12. Diagrams updated
1.3	10 Jan 2019	Various	Sandgate North Forks take offs added to section 1.6 and diagram. Lookout working restrictions added to new section 1.14. Speed board and other corrections to diagrams.
1.4	15 Feb 2019	1.14	Lookout working information amended as detailed in safe notice 2-4164 in section 1.14 text and diagrams
1.5	15 Jan 2020	1.6, 1.11, 1.16, 2.3.4	Shamrock Street level crossing details removed from section 1.6. Maitland wayside equipment added to section 1.11. Drawing legend updated. Hexham service crossings details updated in section 2.3.4. Sandgate, Hexham, Tarro, Beresfield, Metford, Victoria Street, Maitland, Telarah & Lochinvar diagrams updated.
1.6	26 Jun 2020	1.11, 2.4	Metford wayside equipment details updated. Tarro weighbridge details removed. Sandgate, Hexham, Tarro, Thornton & Metford diagrams updated
1.7	17 Dec 2020	1.5.1, 2.12 & 2.13	Motorised points section updated. Maitland and Telarah diagrams updated.
1.8	04 May 2021	1.5.1, 1.6, 1.11, 2.2, 2.10, 2.11, 2.12 & 2.13	Motorised points and Wayside Equipment sections updated. Shamrock Street take off added to section 1.6. Sandgate, East Maitland, High Street, Maitland, Telarah & Lochinvar diagrams updated. Usage note added to diagrams.
1.9	15 Oct 2021	1.15, 2.1, 2.2, 2.6, 2.12	Drawing Legend, Down & Up Coal Lines & Sandgate sections updated. Thornton & Maitland diagrams updated.
2.0	24 Jun 2022	1.1, 1.5.1, 2.2, 2.3.2, 2.5, 2.6, 2.12, 2.13	Board Extent, Motorised Point Machines & Hexham Aurizon facility text updated. Sandgate, Beresfield, Thornton, Maitland, Telarah & East Greta Junction diagrams updated.
2.1	17 Nov 2022	2.2, 2.12, 2.13	Maitland & Telarah shunting yard details added & diagrams updated. Sandgate diagram updated.
2.2	22 Mar 2023	1.6, 2.12.3, 2.13.3	Level Crossing Table updated. Adjacent Local Possession Authority details added to Maitland and Telarah locations text. Maitland and Telarah diagrams updated.

Table of Contents

1 General Information

1.1 Board Extent

Sandgate inclusive Down Coal signal C105.5 (169.818km), exclusive Up Coal signal HJ36 (170.127km), inclusive Down Main signal M106.1 (170.860km), exclusive Up Main signal HJ34 (170.117km)

Kooragang exclusive Down North Fork signal NFD4 (169.221km) and exclusive Up North Fork signal NFU2 (170.047km)

Maitland inclusive Down Main signal D195.3D (195.388km), inclusive Up Main signal MD310UM (197.136km), inclusive Up Relief signal MD312UR (197.116km)

Telarah inclusive Up Home signal MD306NC (195.759km)

This area is controlled by Lower Hunter Network Controller, Network Control Centre North (NCCN).

Contact Numbers:

Phone:	(02) 4902 7909
Train Transit Manager:	(02) 4902 9410
Emergency:	(02) 4902 7969

NOTE: For work between Maitland and Allandale over the up and down mains and up relief, both Lower Hunter and Middle Hunter Network Controllers will be affected between the following signals:

- Down Main between Maitland D195.3D and Allandale AE71DM signal
- Up Main between Maitland MD310UM signal and Allandale AE73UM signal
- Up Relief between Maitland MD312UR signal and Allandale AE88UR signal.

NOTE: For work between Telarah signals MD305NC & MD306NC and Mindaribba 0203 signal, both Lower Hunter and Coast A Network Controllers will be affected.

1.2 Safe Working System

Rail Vehicle Detection (RVD)	ARTC managed lines
Staff and Ticket (Blue Square)	Thornton – Bloomfield Colliery branch line
Bi-Directional signalling	Down Coal - Sandgate NFD1 and Hexham 183 points Up & Down Mains – Maitland to Telarah including platforms 3 & 4 Up and Down Main North - Maitland to Allandale Farley triangle
Uni-Directional signalling	Mains, Coals and Relief Roads, Sandgate to Maitland. Up Relief line - Farley to Allandale

1.3 Applicable Rules

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

1.4 Adjacent Train Control Boards / Centres

ARTC Terminal Co-ordinator	0408 616 692	
ARTC Kooragang	02 4902 7906	Emergency 02 4902 7966
ARTC Port Waratah	02 4902 7907	Emergency 02 4902 7967
ARTC Middle Hunter	02 4902 7908	Emergency 02 4902 7968
Aurizon LTTSF Yard Controller	phone (24 hour)	0488 713 928
South Maitland Railway – East Greta box	02 4932 6552	(0429 688 870)

1.5 Section Operating Equipment

1.5.1 Motorised Point Machines

Some of the motorised points in this area are Swingnose points – EXTREME CAUTION must be exercised if points are being manually operated to ensure both parts of the turnout are wound, and to ensure that the whole route through the turnout is set correctly. Please note if there are 4 keys in EOL box there are 4 sets of points to wind.

Swingnose Points

Sandgate	Hexham	Maitland / Farley
No 181 Points	No 101 Points	No 410 Points
No 183 Points	No 103 Points	No 413 Points
No 184 Points	No 104 Points	No 414 Points
No 185 Points	No 108 Points	No 416 Points
No 186 Points	No 110 Points	No 421 Points
No 187 Points	No 111 Points	No 422 Points
No 188 Points	No 112 Points	No 440 Points
	No 113 Points	No 402 Points
	No 115 Points	No 403 Points (Up Coal only)
	No 116 Points	
	No 117 Points	
	No 118 Points	

Spring Wing Points

Maitland 420 points at Main North end of Farley Triangle are “Spring Wing” points.

The Spring Wing crossing is mechanically driven by the force of the wheel; for this reason the crossing will appear to be set in the “normal” position even when traffic will be passing in the reverse position.

Note: Hi-rail vehicles must not pass though this crossover in the reverse position.

1.5.2 Interlockings and Sidings

Km	Interlocking, Station, Platform or Siding	Length of Passenger Platform in Metres
170.509	Sandgate	Up main No. 1, 85 Down main No. 2, 124
175.530	Hexham	Up main No. 1, 39 Down main No. 2, 39
178.178	Tarro	Up main No. 1, 126 Down main No. 2, 126
179.806	Beresfield	Up main No. 1, 124 Down main No. 2, 124
182.194	Thornton	Up main No. 1, 137 Down main No. 2, 137
182.400 t/out 186.794 loop	Bloomfield Colliery balloon loop	
185.100	Metford	Up main No. 1 Down main No. 2
187.919	Victoria Street	Up main No. 1, 160 Down main No. 2, 160
188.831	East Maitland	Up main No. 1, 159 Down main No. 2, 159
191.409	High Street	Up main No. 1, 158 Down main No. 2, 158
192.548	Maitland	Up North Coast No. 1, 160 Down North Coast No. 2, 160 Up local No. 3, 160 Down local No. 4, 156 Up coal No. 5, 156 Down coal No. 6, 44
202.601	Lochinvar	Up main No. 1, 50 Down main No. 2, 50

1.6 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).

ALCAM ID	Cerberus ID	Road Name	Line Segment	KM	Traffic Type	Access	Control Type
		Down Coal Take Off	Sandgate Down Coal	170.250			
		Up Coal Take Off	Sandgate Up Coal	170.250			
		Up Coal Branch (North Fork) Take Off	Sandgate North Fork	170.264			
		Down Coal Branch (North Fork) Take Off	Sandgate North Fork	170.264			
439		Shamrock Street Take Off		173.290		ARTC	Locked chains
4418		City side ARTC Service Lxing Hexham	Down Coal, Up Refuge Loops departure line	174.188		ARTC	Stop signs and Locked gates
4420		Service Lxing	Aurizon siding	174.425			Stop Signs
4419	558	Country side access Rd Hexham	Down Coal, Refuge Loops arrival line	176.460		Private	Half Boom Flashing Lights
4421		Service Lxing	Aurizon siding	176.675			Stop Signs
		Four Mile Creek Rd	Bloomfield colliery branch	185.500		Private	Stop Signs
4365		Down Coal Take Off	Maitland Down Coal	192.460			No Control
4366		Up Coal Take Off	Maitland Up Coal	192.460			No Control
4373		Down Main Take Off	Telarah Down Main	194.400			No Control
4374		Telarah Take Off	North Coast	194.900			No Control

1.7 Maximum Permitted Speeds and Permanent Speed Restrictions

Refer the Route Access Standard - Heavy Haul Network Section Pages H1 for all speed information.

1.8 Maximum Train Length

The maximum train length is 1550m.

1.9 Structure Clearances

Refer Route Access Standards for Rolling Stock Outlines.

1.10 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 appropriate Network Control Centre (Broadmeadow or Junee) based on GPS location 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

Channel Name WB

Frequency: 450.050 MHz (UHF),

Bandwidth: 12.5 KHz,

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

Tx CTCSS: 173.8 Hz

Rx CTCSS: NA

Selcall: disabled

Channel Name Mountain Radio (WB)

Frequency: 450.050 MHz (UHF),

Bandwidth: 12.5 KHz,

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

Tx CTCSS: 103.5 Hz

Rx CTCSS: NA

Selcall: disabled

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

1.11 Wayside Monitoring Systems

Metford

There is Wheel Condition Monitor (WCM) detection equipment located on all four lines at 185.990km.

RailBAM (Bearing Acoustic Monitor) unit is installed on the two Up lines at 185.990km.

A Train Noise Monitor is also installed at this location.

Maitland

Hot Bearing Detector and Hot Wheel Detector located on the Up Coal line at 192.040km.

Telarah

Dragging Equipment Detector located on the North Coast line at 195.728km.

Lochinvar

Dragging Equipment Detector located on the Up Main line at 200.930km.

1.12 Ruling Gradients

Down	1 in 80
Up	1 in 100

1.13 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

1.14 Lookout Working Hazardous Areas

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

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

Area	KM From	KM To	Line	Line Direction	Up/Down	Reason Unsuitable
Sandgate	170.500	172.000	Down Coal	Multiple track uni-directional	Down	Insufficient sighting distance
Sandgate	170.500	172.400	Up Main	Multiple track uni-directional	Up	Insufficient sighting distance
Sandgate	170.800	172.500	Up Main	Multiple track uni-directional	Up	Insufficient sighting distance
Hexham	174.000	175.000	Down Coal	Multiple track uni-directional	Down	Insufficient sighting distance
Hexham	174.500	180.000	Up Main	Multiple track uni-directional	Up	Insufficient sighting distance
Hexham	175.800	192.740	Up Coal	Multiple track uni-directional	Up	No safe place
Hexham	176.200	180.300	Down Coal	Multiple track uni-directional	Down	Insufficient sighting distance
Thornton	181.000	182.500	Up Main	Multiple track uni-directional	Up	Insufficient sighting distance
Thornton	182.000	183.500	Down Coal	Multiple track uni-directional	Down	Insufficient sighting distance
Thornton	182.500	184.000	Up Main	Multiple track uni-directional	Up	Unsuitable due to vertical grade
Metford	184.000	192.740	Up Main	Multiple track uni-directional	Up	Insufficient sighting distance
Victoria Street	186.400	192.740	Down Coal	Multiple track uni-directional	Down	Insufficient sighting distance
Maitland	192.740	200.000	Down Main	Multiple track uni-directional	Both	Insufficient sighting distance
Maitland	192.740	200.000	Up Main	Multiple track uni-directional	Both	Insufficient sighting distance
Maitland	MD YL	197.316	Up North Coast	Multiple track uni-directional	Both	Insufficient sighting distance
Maitland	MD YL	197.316	Down North Coast	Multiple track uni-directional	Both	Insufficient sighting distance

1.15 Drawing Legend

	Standard gauge track		Dual gauge track
	Broad gauge track		Crossover
	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 Passenger Platform	Station or Platform
	Derail		Points
	Automatic Signals		Controlled Signals
	Dwarf Signals	6 6D 74.592 km 4 109.128 km	Signal number reference
	Repeater Signal		Mechanical Frame
	Point Indicator		Tunnel
	Overheight Detectors	>> <<	Wayside Equipment

2 Locations and Sections Information

2.1 Down & Up Coal Lines between Port Waratah & East Greta Junction

General Arrangements

Down and Up Coal lines are parallel to the Main lines and are located on the Up side from signal No. HJ3 via Islington Junction to Hanbury Junction, where they pass under the Main lines and then are located on the Down side to East Greta Junction via Maitland.

Crossovers are provided between the main lines and the coal lines at Waratah, Hanbury Junction, Sandgate, Thornton and Maitland interlockings.

Freight trains may be run on the Down and Up coal lines, if required, for train working purposes. However, passenger trains should not be run on these lines, except in cases of locomotive failure or other emergency which would cause serious delays to passenger services, or in cases of planned maintenance work when authorised by the operations manager. Care must be taken to ensure passenger services are routed back onto the Main as soon as possible, to minimise missed station stops

Diversion of traffic from the main lines to the coal lines between Hanbury Junction - Thornton – Maitland during emergency or planned maintenance work

Passenger trains may be diverted from the main lines to the coal lines when one or both of the main lines are obstructed, or at times when planned track maintenance work is being carried out. Care must be taken to ensure passenger services are routed back onto the Main as soon as possible, to minimise missed station stops.

Diversion of traffic from the main lines to the coal lines and vice versa between Waratah - Thornton and Thornton - Maitland

Down and Up freight trains which do not require to shunt at intermediate interlockings between Waratah and Maitland inclusive may be diverted to the coal lines to advance them when the main lines are required for more important trains, provided that extensive and/or unprofitable delays will not be caused to the running of coal trains, or when the main lines are obstructed for any reason.

2.2 Sandgate (SAN)

General Arrangements

Sandgate is within Maitland Yard limits. Sandgate is the location name including Sandgate station, Kooragang North Fork, Sandgate Flyover and Tolls siding.

Passenger station is two platforms outside the Main Lines but inside the Coal roads on both sides – access only by overhead bridge.

Yard Limits:

Track	Direction	Km	Signal	Signage
Down Coal	Up	169.820	C105.5	EYL/YL
Down Coal	Down	169.820	C105.5	YL/EYL
Down Main	Up	170.857	M106.1	EYL/YL
Down Main	Down	170.857	M106.1	YL/EYL

There are hi-rail take off points at 170.250km on the Up and Down Coal roads.

Sandgate Flyover

Sandgate Flyover carries the Up and Down Main lines over the coal roads to Kooragang Island. It is located on the country side of Sandgate station.

Crawfords (formerly Tolls) Siding

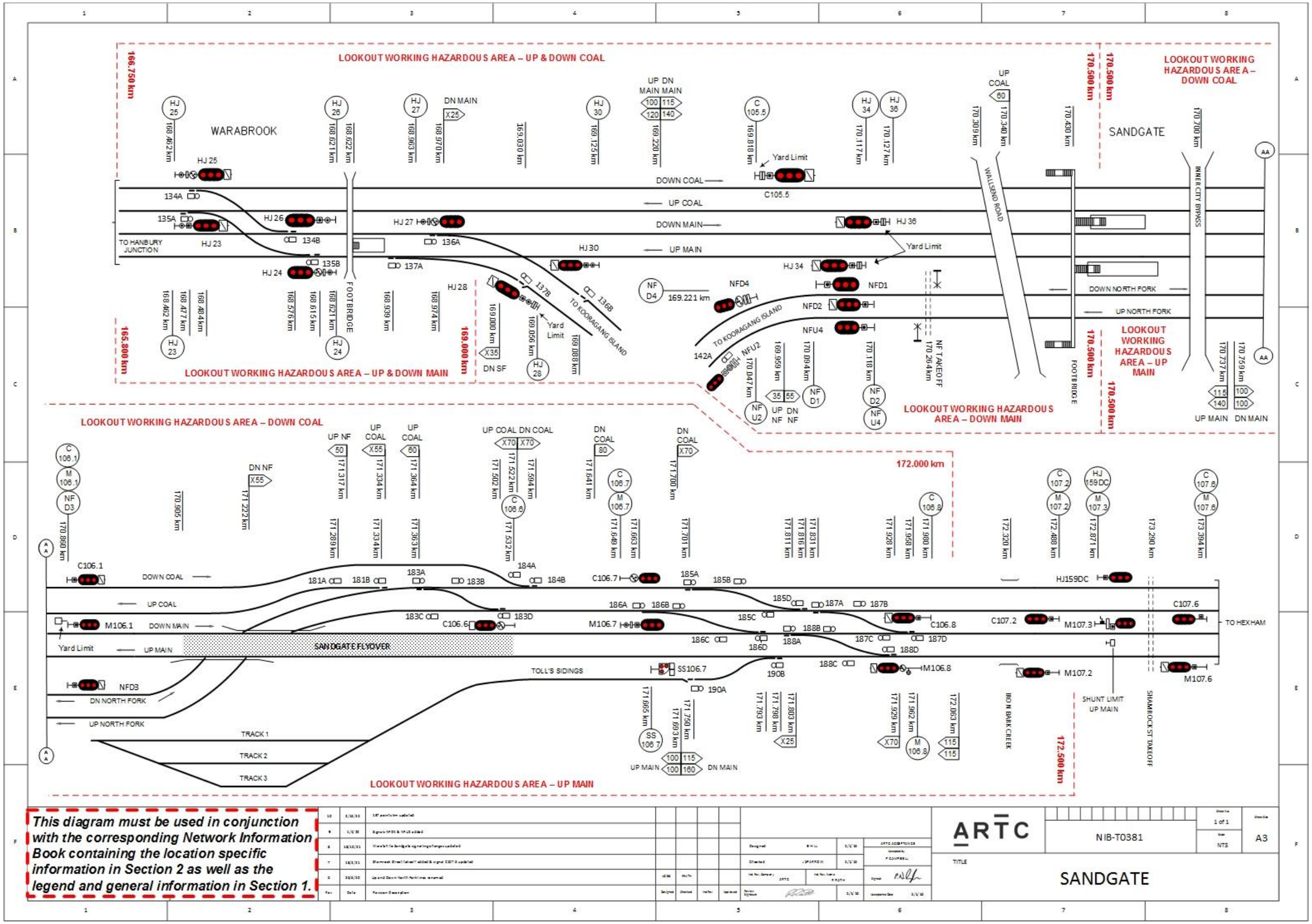
Crawfords siding is a private siding connected to the Up main line, facing Up trains, and a crossover is provided between the Up and the Down main lines on the country side of Sandgate flyover.

The points and signals to enter and exit the siding are controlled by Network Controller, Network Control Centre North. There is a Shunt Limit board on the Up Main at 172.781km.

A Qualified Worker must unlock and open the access gates and pilot the train in/out of the siding, in a timely manner to prevent delays on the Main Line.

An ESML for 190 points and EOL for 188 points are located adjacent to the Up Main near 188 points.

Refer interface agreement IA1506 for further details.


LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN COAL
166.759 km
WARABROOK
HJ 25
HJ 26
HJ 27
DN MAIN
X25
HJ 30
UP DN
MAIN MAIN
100 115
120 140
C 105.5
HJ 34
HJ 36
UP
COAL
60
170.500 km
LOOKOUT WORKING HAZARDOUS AREA – DOWN COAL
SANDGATE
WALLSEND ROAD
INNER CITY BYPASS
DOWN COAL
UP COAL
DOWN MAIN
UP MAIN
Yard Limit
C105.5
TO HANBURY JUNCTION
HJ 23
134A
135A
134B
135B
136A
137A
137B
136B
TO KOORAGANG ISLAND
FOOTBRIDGE
HJ 28
HJ 24
165.800 km
169.000 km
X35
DN SF
LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN MAIN
NF D4
169.221 km
NFD4
NFD1
NFD2
NFU4
NFU2
142A
NF U2
NF D1
NF D2
NF U4
UP DN
NF NF
NF TAKEOFF
DOWN NORTH FORK
UP NORTH FORK
FOOTBRIDGE
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
LOOKOUT WORKING HAZARDOUS AREA – DOWN MAIN
UP MAIN DN MAIN
AA
LOOKOUT WORKING HAZARDOUS AREA – DOWN COAL
UP NF
UP COAL
UP COAL DN COAL
DN COAL
DN NF
X55
X70
C 106.1
M 106.1
NF D3
C 106.7
M 106.7
C 106.6
M 106.6
C 106.8
M 106.8
C 107.2
M 107.2
HJ 159DC
M 107.3
C 107.6
M 107.6
172.000 km
172.500 km
C106.1
DOWN COAL
UP COAL
M106.1
DOWN MAIN
Yard Limit
UP MAIN
SANDGATE FLYOVER
NFD3
DN NORTH FORK
UP NORTH FORK
TRACK 1
TRACK 2
TRACK 3
TOLL'S SIDINGS
SS106.7
SS 106.7
UP MAIN DN MAIN
100 115
100 160
TO HEXHAM
IRO N BARK CREEK
SHUNT LIMIT
UP MAIN
SHAMROCK ST TAKEOFF
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
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.
ARTC
NIB-T0381
TITLE
SANDGATE
1 of 1
NTS
A3

2.3 Hexham (HXM)

2.3.1 General Arrangements

Loop length 1550 metres

Hexham is within Maitland Yard Limits as detailed in section 2.12. Hexham is the location name including Hexham station, Hexham Loop, Up Refuge Roads, Aurizon Long Term Train Support Facility (LTTSF) and Tarro station.

Hexham station is an island platform between the Main Lines – access only by overhead bridge.

2.3.2 Hexham Train Maintenance Facility (HTMF)

HTMF is a private siding with entry and exit controlled by Network Controller Lower Hunter.

The HTMF connects to the ARTC Down Coal road at Hexham via number 103 points at 174.208km and number 108 points at 176.866km. HJ167 controls exit from HTMF to the ARTC network.

NOTE – No 103 A/B and No 108 B/C are swing nose points.

Aurizon will contact the relevant ARTC terminal Network Controller and advise that “Unit ‘X’” is authorised to proceed into the HTMF and that a road is clear. No HTMF bound train is to depart a terminal until Aurizon have advised that HTMF can accept the train.

The HTMF Yard Controller contacts Lower Hunter Network Controller to advise when a train is ready to depart the HTMF. The Network Controller will plan a departure path time.

Special instruction for isolating the points leading to HTMF for Maintenance purposes

To prevent access to the HTMF during maintenance work special key-locked isolating switches are provided in a locked box to enable the power for No 103 points providing access from the main line to HTMF to be isolated.

Number 103 points to the HTMF must be set in the normal position for main line rail traffic movements prior to the maintenance isolation switch being operated.

Refer interface agreement IA1613 for further details.

2.3.3 Up Coal Refuge Roads

The Hexham Up Coal Refuge loops accessed from the Up Coal line have a permanent speed of 45km/h.

An advisory sign, “BEGIN UP REFUGE LOOPS WORKING – 45KMH”, is provided at 176.480km to indicate the entrance to the Up Refuge Loops working area.

An advisory sign, “END UP REFUGE LOOPS WORKING”, is provided at 174.121km to indicate the exit from the Up Refuge Loops working area.

2.3.4 Service Level Crossings

A Type D level crossing is provided at 174.188km on the Down Coal line and departure line of the Up Refuge Loops for the Sydney side access road. The crossing is protected with stop signs and locked gates. Signage states AUTHORISED VEHICLES ONLY. TO BE USED WITH A POSSESSION AUTHORITY OR CSB ONLY. GATES MUST BE SECURED AND LOCKED CLOSED AT ALL TIMES WHEN NOT IN USE.

A Type F level crossing with roadside flashing lights, audible warning devices and half boom barriers is provided at 176.460km on the Down Coal line and Up Refuge Loop arrival line for the Country side access road. This crossing will be remotely monitored from Network Control Centre North.

Due to restricted turning room at this location the following signage is provided “WARNING LIMITED TURNING AREA BEYOND THIS POINT. VEHICLES OVER 6m WILL REQUIRE A POSSESSION AUTHORITY OR CSB TO EXIT”

Failure of Signals Protecting the Level Crossing

In the event of failure of the signals protecting the active level crossing at 176.460km, or if rail traffic is authorised to pass the protecting signals in the STOP position, rail traffic crews will be required to activate the level crossing warning equipment by operating the push buttons before passing the protecting signals in the STOP position. This procedure only applies to rail traffic on the Down Coal Line and Up Coal Line rail traffic entering the Up Refuge Loops via 104 points reverse. Advisory signs are located adjacent to the protecting signals as follows:

Down Coal Line Sign (adjacent to HJ165DC Signal)

‘BEFORE PASSING SIGNAL AT STOP PRESS BUTTON TO ACTIVATE LEVEL CROSSING WARNING. BEFORE PASSING OVER LEVEL CROSSING ENSURE IT IS OPERATING.

Up Coal Line Sign (adjacent to HJ168UC Signal)

‘BEFORE PASSING SIGNAL AT STOP AND ONLY FOR RAIL TRAFFIC ENTERING REFUGE LOOPS, PRESS BUTTON TO ACTIVATE LEVEL CROSSING WARNING. BEFORE PASSING OVER LEVEL CROSSING ENSURE IT IS OPERATING.

Operation of Push Buttons on Protecting Signals

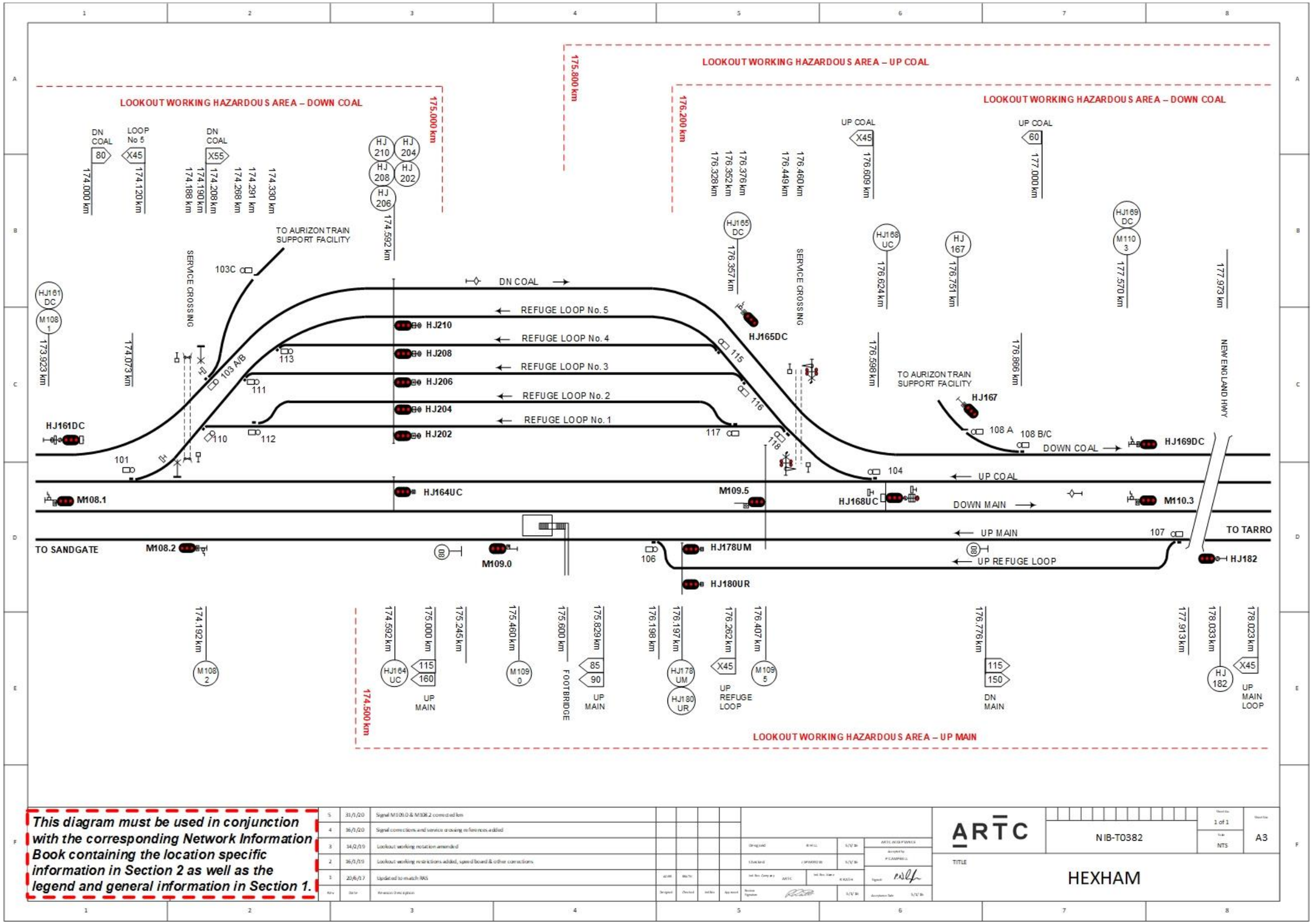
Press the push button for the appropriate signal and provided the operation is successful, a blue light will be displayed in the push button.

Ensure that the level crossing roadside flashing lights, half boom barriers and audible warning devices have activated and the crossing is clear of road and pedestrian traffic.

Proceed past the signal at stop in accordance with ARTC Network Rule ANSG 608 Passing Signals at STOP.

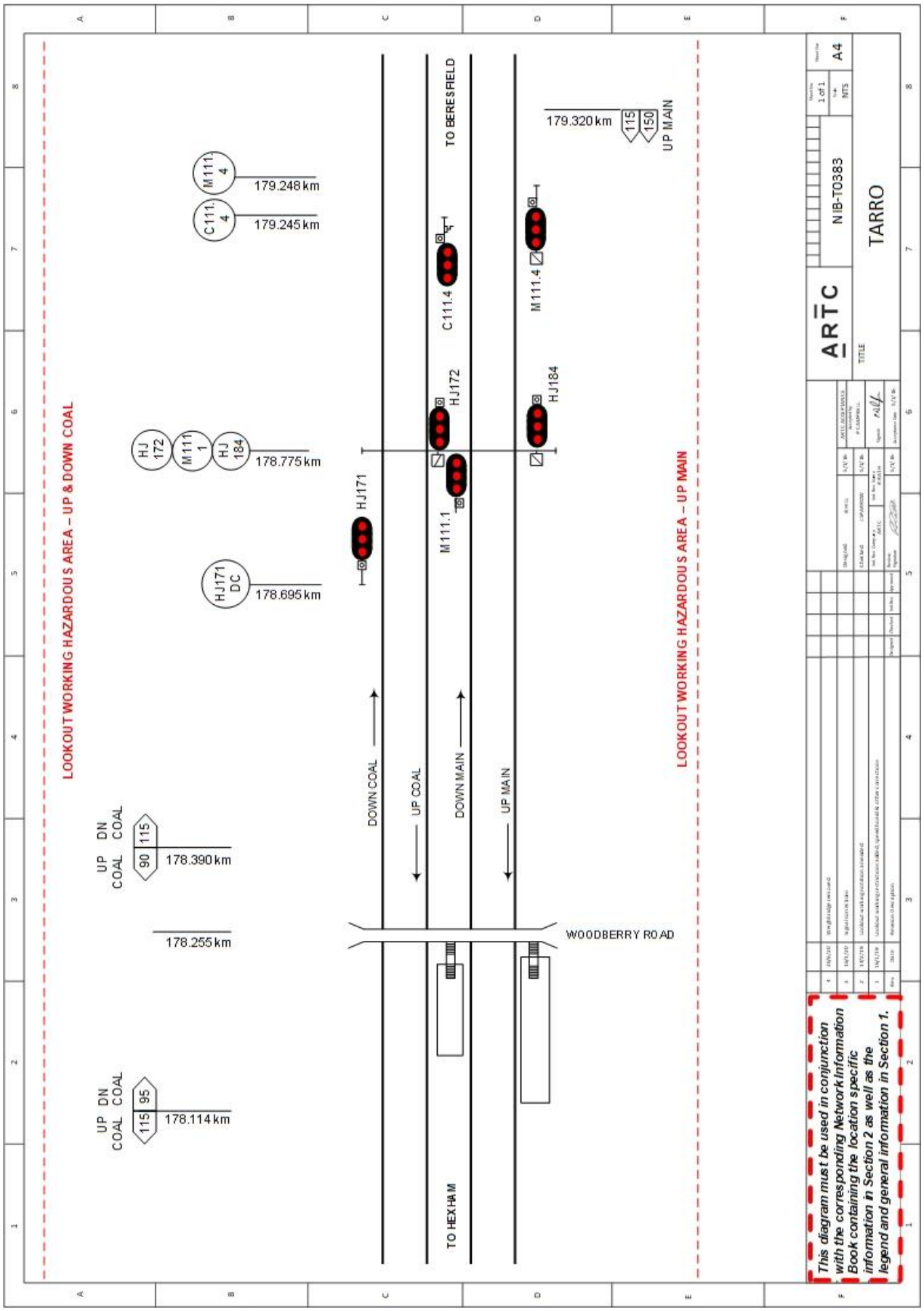
NOTE: Rail traffic crews must obtain the appropriate authority from the relevant Network Controller before passing signals at STOP.

In the event that the level crossing warning equipment does not operate after completing the above procedure, rail traffic crews must act in accordance with ARTC Network Rule ANGE 218 Type F Level Crossing Management, Faulty Level Crossings.


LOOKOUT WORKING HAZARDOUS AREA – DOWN COAL
LOOKOUT WORKING HAZARDOUS AREA – UP COAL
LOOKOUT WORKING HAZARDOUS AREA – DOWN COAL
175.000 km
175.800 km
176.200 km
DN COAL 80
LOOP No 5 X45
DN COAL X55
HJ 210
HJ 204
HJ 208
HJ 202
HJ 206
174.592 km
UP COAL X45
UP COAL 60
HJ165 DC
HJ168 UC
HJ 167
HJ169 DC M110 3
TO AURIZON TRAIN SUPPORT FACILITY
SERVICE CROSSING
103C
DN COAL
REFUGE LOOP No. 5
REFUGE LOOP No. 4
REFUGE LOOP No. 3
REFUGE LOOP No. 2
REFUGE LOOP No. 1
HJ210
HJ208
HJ206
HJ204
HJ202
HJ161 DC M108 1
HJ161DC
HJ165DC
HJ167
HJ169DC
M108.1
M108.2
M109.0
M109.5
M110.3
HJ164UC
HJ168UC
HJ178UM
HJ180UR
HJ182
TO SANDGATE
TO TARRO
DOWN COAL
UP COAL
DOWN MAIN
UP MAIN
UP REFUGE LOOP
NEW ENGLAND HWY
FOOTBRIDGE
UP MAIN
UP REFUGE LOOP
DN MAIN
UP MAIN LOOP
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
174.500 km
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.
NIB-T0382
HEXHAM
A3
NTS
1 of 1

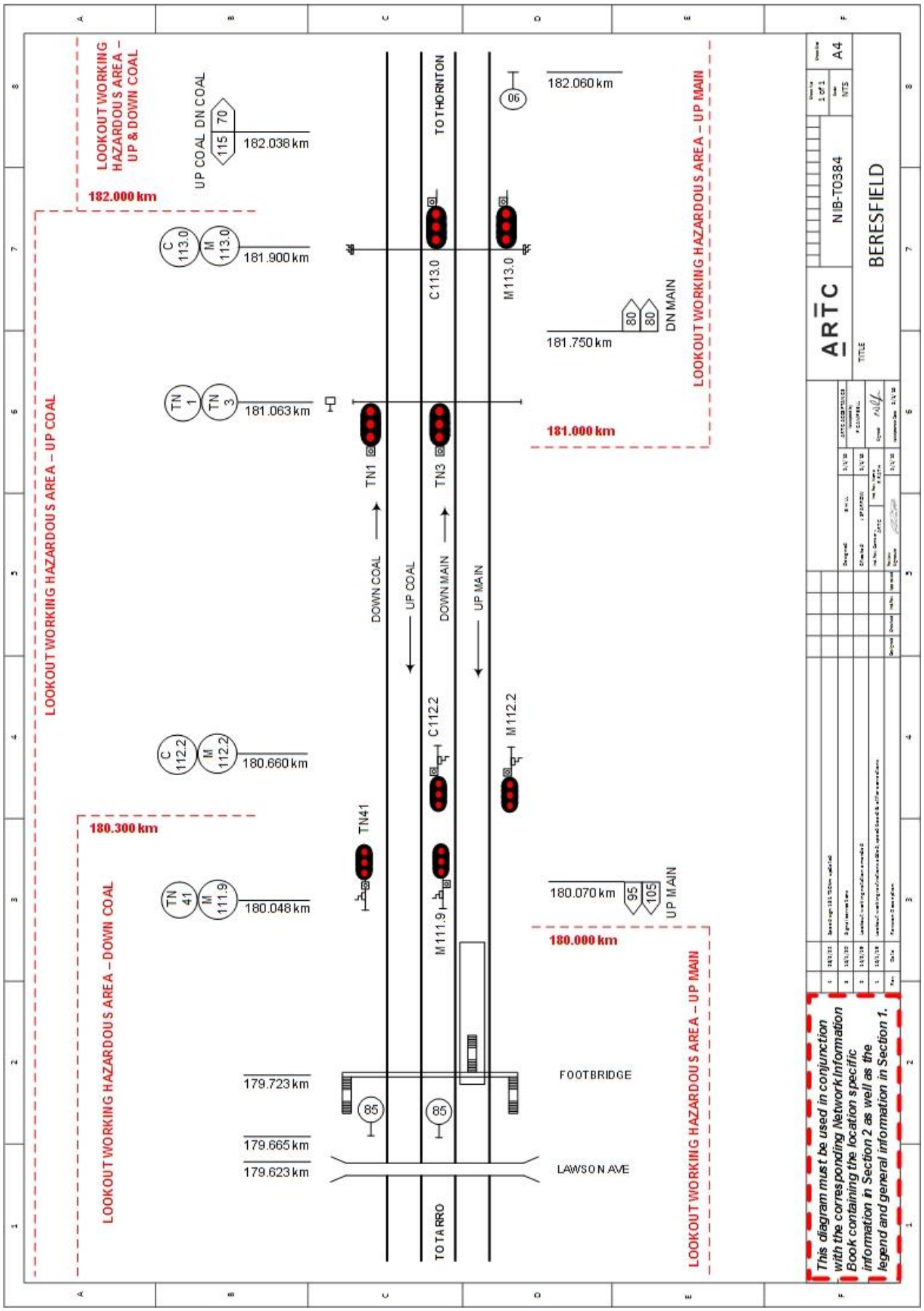
2.4 Tarro (TRO)

Tarro is a passenger station located on the Up and Down main lines.


LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN COAL
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
TO BERESFIELD
TO HEXHAM
DOWN COAL
UP COAL
DOWN MAIN
UP MAIN
WOODBERRY ROAD
179.320 km
115
150
UP MAIN
M111 4
179.248 km
C111 4
179.245 km
C111.4
M111.4
HJ 172
M111 1
HJ 184
178.775 km
HJ172
HJ184
HJ171
M111.1
HJ171 DC
178.695 km
UP DN COAL
90
115
178.390 km
178.255 km
UP DN COAL
115
95
178.114 km
ARTC
NIB-T0383
TARRO
TITLE
A4
MTS
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.

2.5 Beresfield (BSF)

Beresfield is a passenger station located between the Up and Down main lines.


LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN COAL
182.000 km
UP COAL DN COAL
70
115
182.038 km
182.060 km
TO THORNTON
06
C 113.0
M 113.0
181.900 km
C113.0
M113.0
80
80
DN MAIN
181.750 km
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
TN 1
TN 3
181.063 km
TN1
TN3
181.000 km
LOOKOUT WORKING HAZARDOUS AREA – UP COAL
DOWN COAL
UP COAL
DOWN MAIN
UP MAIN
C 112.2
M 112.2
180.660 km
C112.2
M112.2
180.300 km
TN41
TN 41
M 111.9
180.048 km
M111.9
180.070 km
95
105
UP MAIN
180.000 km
LOOKOUT WORKING HAZARDOUS AREA – DOWN COAL
179.723 km
FOOTBRIDGE
85
85
179.665 km
179.623 km
LAWSON AVE
TO TARRO
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
ARTC
TITLE
NIB-T0384
BERESFIELD
A4
NTS
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.

2.6 Thornton (TON)

General Arrangements

Thornton is a Rail Vehicle Detection location within the Maitland Yard limits and controlled from Network Control Centre North. Maitland Yard limit details are provided in section 2.12.

A passenger station is located on the Up and Down Mains.

Operation of Points and Signals

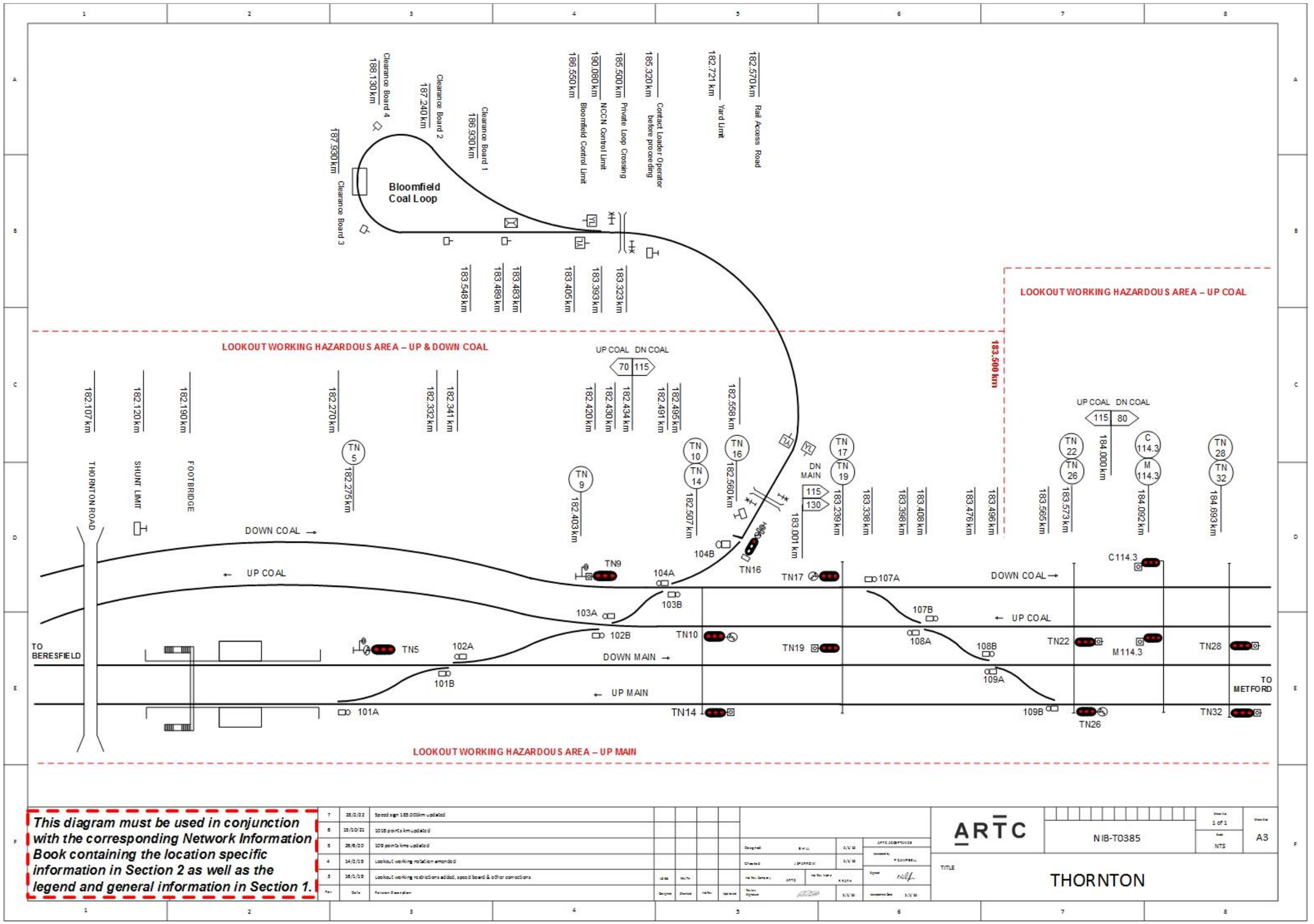
There is no local control panel for Thornton location.

All points worked from Network Control Centre North are controlled by track circuit and cannot be moved unless the track(s) controlling the points is unoccupied.

Shunting limit sign

A shunting limit sign is provided at Thornton. The sign is located on the Down side of the Down Coal line between the Thornton Road overbridge and the platform on the Down Coal line at 182.120km.

The sign is inscribed "SHUNTING LIMIT ON DOWN COAL" and applies to shunting movements in the Up direction from the Bloomfield Colliery line to the Down Coal line.


Clearance Board 4
188.130km
Clearance Board 2
187.240km
Clearance Board 1
186.930km
187.930km
Clearance Board 3
Bloomfield Coal Loop
186.550km
Bloomfield Control Limit
190.080km
NCCN Control Limit
185.500km
Private Loop Crossing
185.320km
Contact Loader Operator before proceeding
182.721km
Yard Limit
182.570km
Rail Access Road
183.548km
183.489km
183.483km
183.405km
183.393km
183.323km
LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN COAL
LOOKOUT WORKING HAZARDOUS AREA – UP COAL
183.500 km
UP COAL DN COAL
70 115
182.107km
182.120km
182.190km
182.270km
182.332km
182.341km
182.420km
182.430km
182.434km
182.491km
182.495km
182.558km
THORNTON ROAD
SHUNT LIMIT
FOOTBRIDGE
TN 5
182.275km
TN 9
182.403km
TN 10
TN 14
182.507km
TN 16
182.560km
DN MAIN
115
130
183.001km
TN 17
TN 19
183.239km
183.338km
183.398km
183.408km
183.476km
183.496km
UP COAL DN COAL
115 80
184.000km
TN 22
TN 26
183.565km
183.573km
C 114.3
M 114.3
184.092km
TN 28
TN 32
184.693km
DOWN COAL →
← UP COAL
104B
TN16
104A
TN9
TN17
107A
C114.3
103A
103B
107B
102B
TN10
TN19
108A
108B
TN22
M114.3
TN28
TO BERESFIELD
TN5
102A
DOWN MAIN →
101B
← UP MAIN
109A
TO METFORD
101A
TN14
109B
TN26
TN32
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
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.
7 28/2/22 Speed sign 183.001km updated
6 15/10/21 1015 points km updated
5 26/8/20 109 points km updated
4 14/2/19 Lookout working notation amended
3 28/1/19 Lookout working restrictions added, speed board & other corrections
ARTC
NIB-T0385
Sheet No 1 of 1
Scale NTS
Sheet Size A3
TITLE
THORNTON

2.7 Bloomfield Colliery Branch Line and Coal Siding (BLM)

2.7.1 General Arrangements

The Bloomfield Colliery branch line is part of the Thornton interlocking and is connected to the Down Coal line. Ordinary Staff and Ticket system of Safeworking applies to the branch.

Trains may enter the branch line from either the Down Main line or the Down Coal line and depart from the branch line to the Up Main line or the Up Coal line.

Refer interface agreement IA1508 for further details.

2.7.2 Working of Trains to and from the Branch Line

Notice signs

Notice signs, inscribed "STOP trains must not proceed without possession of token for section", are provided:

- on the Down side of the branch line approximately 100 metres on the Bloomfield Colliery side of signal No. TN16
- and at Bloomfield coal siding on the Up side facing Up trains departing the sidings.

A notice sign inscribed “TRAINS MUST NOT PASS THIS POINT UNTIL AUTHORISED BY THE LOADER OPERATOR” is located at 185.320km Thornton side of the level crossing.

A notice sign inscribed “END OF STAFF SECTION / LOOP SPEED 10KM/H / YL”, is provided on the Thornton side of the coal siding points at 186.550km.

“Clearance Board 1” is located at the Bloomfield staff hut at 186.930km. Trains under 1330 metres are clear of the level crossing at this sign.

A notice sign inscribed “STOP, end of staff section”, is provided adjacent to the Thornton staff hut facing Up trains.

NOTE: Unless emergency conditions prevail, trains must not come to a stand with any portion of the train fouling the level crossing at 185.500km.

To clear this level crossing, a coal train exceeding 1330 metres must be drawn forward past the staff hut to the “Clearance Board 2” sign provided at 187.240km, which is located beyond the staff hut. In this case, the Qualified Worker must return to the staff hut to perform any safeworking duties.

Section Clearance Signs

Section clearance signs are provided at the following locations:

“Clearance Board 3” for trains under 1360m approximately 30m on arrival side of bin

“Clearance Board 4” for trains over 1360m approximately 170m on departure side of the loading bin.

Train crew must notify the Network Controller when the train is clear of the Thornton to Bloomfield section at the respective clearance board.

2.7.3 Special Instruction for Isolating the Points leading to Bloomfield Branch Line for Maintenance Purposes

To prevent access to the Bloomfield branch line during maintenance work within the branch lines, special key-locked isolating switches are provided in a locked box to enable the power for No 104 points providing access from the main line to Bloomfield branch line to be isolated.

Number 104 points to the Bloomfield branch line must be set in the normal position for main line rail traffic movements prior to the maintenance isolation switch being operated.

2.8 Metford (MET)

General Arrangements

Metford is a Rail Vehicle Detection location within Maitland Yard limits and controlled from Network Control Centre North.

A passenger station is located between the Up and Down main lines.

Operation of Signals

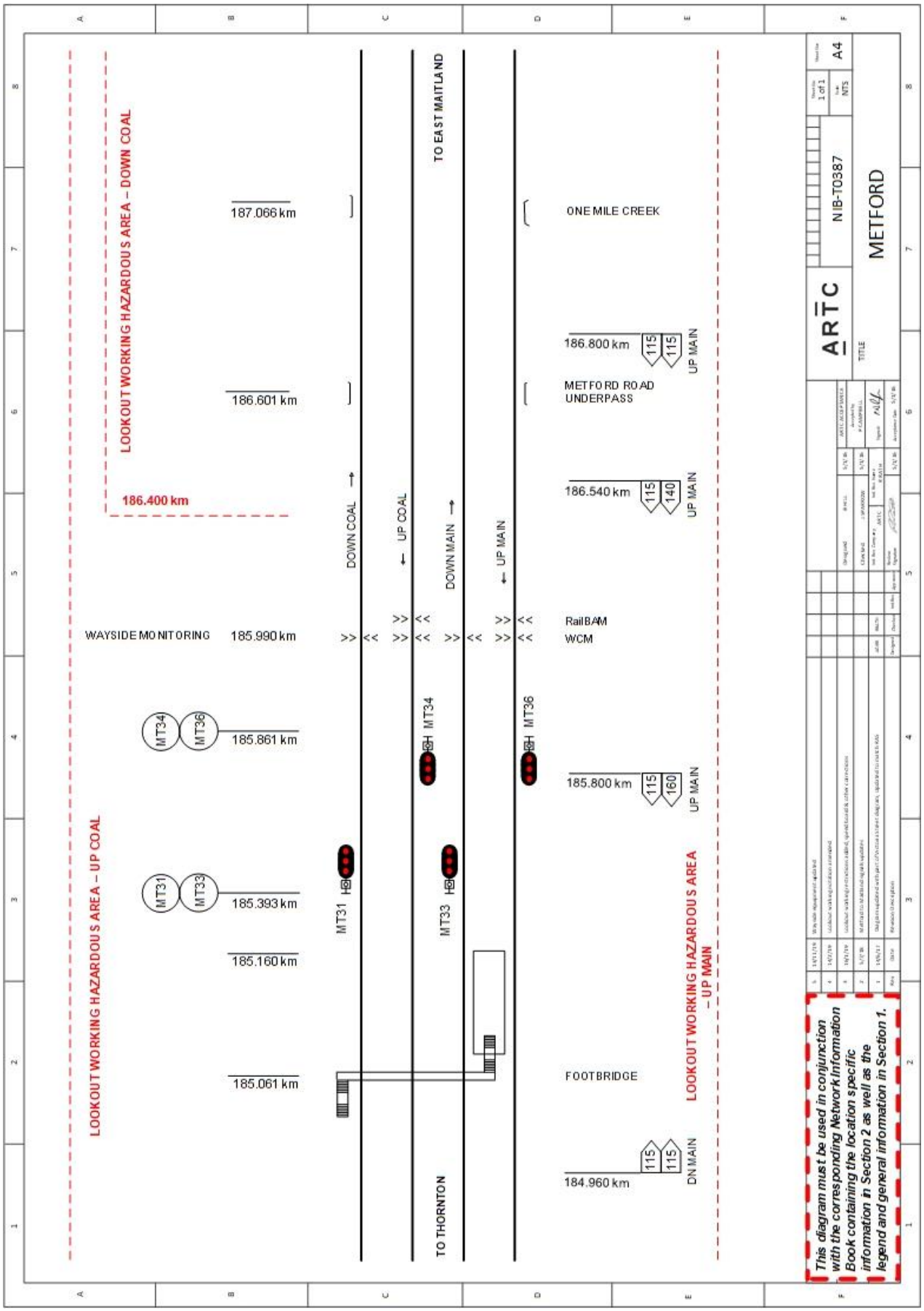
The signals at Metford are operated from Network Control Centre North.

Wayside Equipment 185.990km

Wheel Condition Monitor (WCM) detection equipment is located on all four lines.

RailBAM (Bearing Acoustic Monitor) unit is installed on the two Up lines.

A Train Noise Monitor (TNM) is also installed at this location.


LOOKOUT WORKING HAZARDOUS AREA – DOWN COAL
LOOKOUT WORKING HAZARDOUS AREA – UP COAL
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
187.066 km
186.601 km
186.400 km
185.990 km
185.861 km
185.393 km
185.160 km
185.061 km
184.960 km
186.800 km
186.540 km
185.800 km
WAYSIDE MONITORING
DOWN COAL
UP COAL
DOWN MAIN
UP MAIN
TO EAST MAITLAND
TO THORNTON
ONE MILE CREEK
METFORD ROAD UNDERPASS
FOOTBRIDGE
RailBAM
WCM
MT31
MT33
MT34
MT36
DN MAIN
UP MAIN
NIB-T0387
METFORD
A4
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.

2.9 Victoria Street (VST)

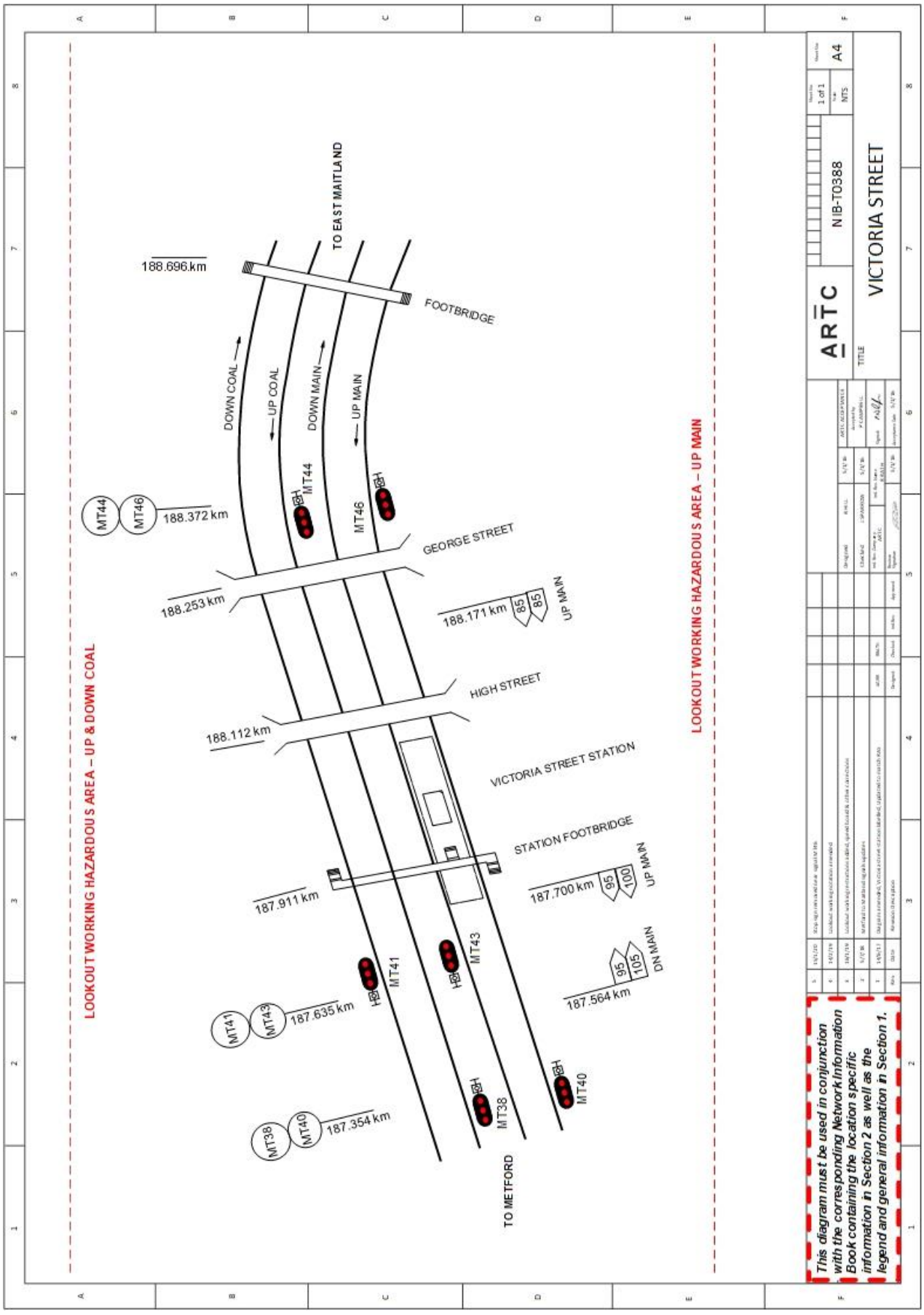
General Arrangements

Victoria Street is a Rail Vehicle Detection location within Maitland Yard limits and controlled from Network Control Centre North.

A passenger station is located between the Up and Down main lines.

Operation of Signals

The signals at Victoria Street are operated from Network Control Centre North.


TO EAST MAITLAND
188.696km
FOOTBRIDGE
DOWN COAL
UP COAL
DOWN MAIN
UP MAIN
MT44
MT46
188.372 km
GEORGE STREET
188.253 km
188.171 km
85
85
UP MAIN
HIGH STREET
188.112 km
VICTORIA STREET STATION
STATION FOOTBRIDGE
187.911 km
187.700 km
95
100
UP MAIN
MT41
MT43
95
105
DN MAIN
187.564 km
187.635 km
MT38
MT40
187.354 km
TO METFORD
LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN COAL
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
ARTC
NIB-T0388
VICTORIA STREET
TITLE
A4
NTS
1 of 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.

2.10 East Maitland (EMD)

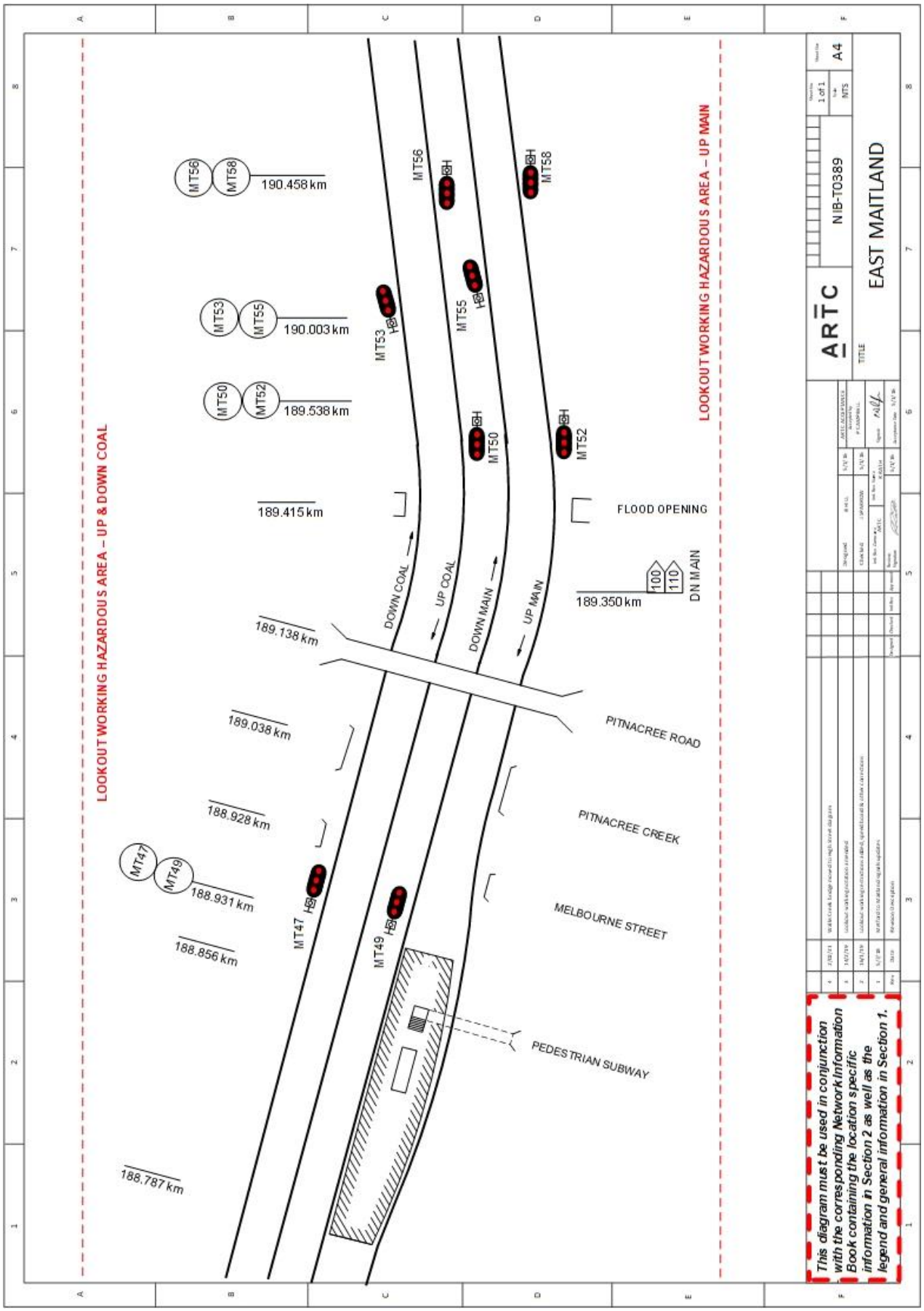
General Arrangements

East Maitland is a Rail Vehicle Detection location within Maitland Yard limits and controlled from Network Control Centre North.

A passenger station is located between the Up and Down main lines.

Operation of Signals

The signals at East Maitland are operated from Network Control Centre North.


LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN COAL
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
MT56
MT58
190.458 km
MT53
MT55
190.003 km
MT50
MT52
189.538 km
189.415 km
FLOOD OPENING
189.350 km
100
110
DN MAIN
189.138 km
DOWN COAL
UP COAL
DOWN MAIN
UP MAIN
PITNACREE ROAD
189.038 km
PITNACREE CREEK
188.928 km
MT47
MT49
188.931 km
188.856 km
MELBOURNE STREET
PEDESTRIAN SUBWAY
188.787 km
ARTC
NIB-T0389
TITLE
EAST MAITLAND
A4
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.

2.11 High Street (HST)

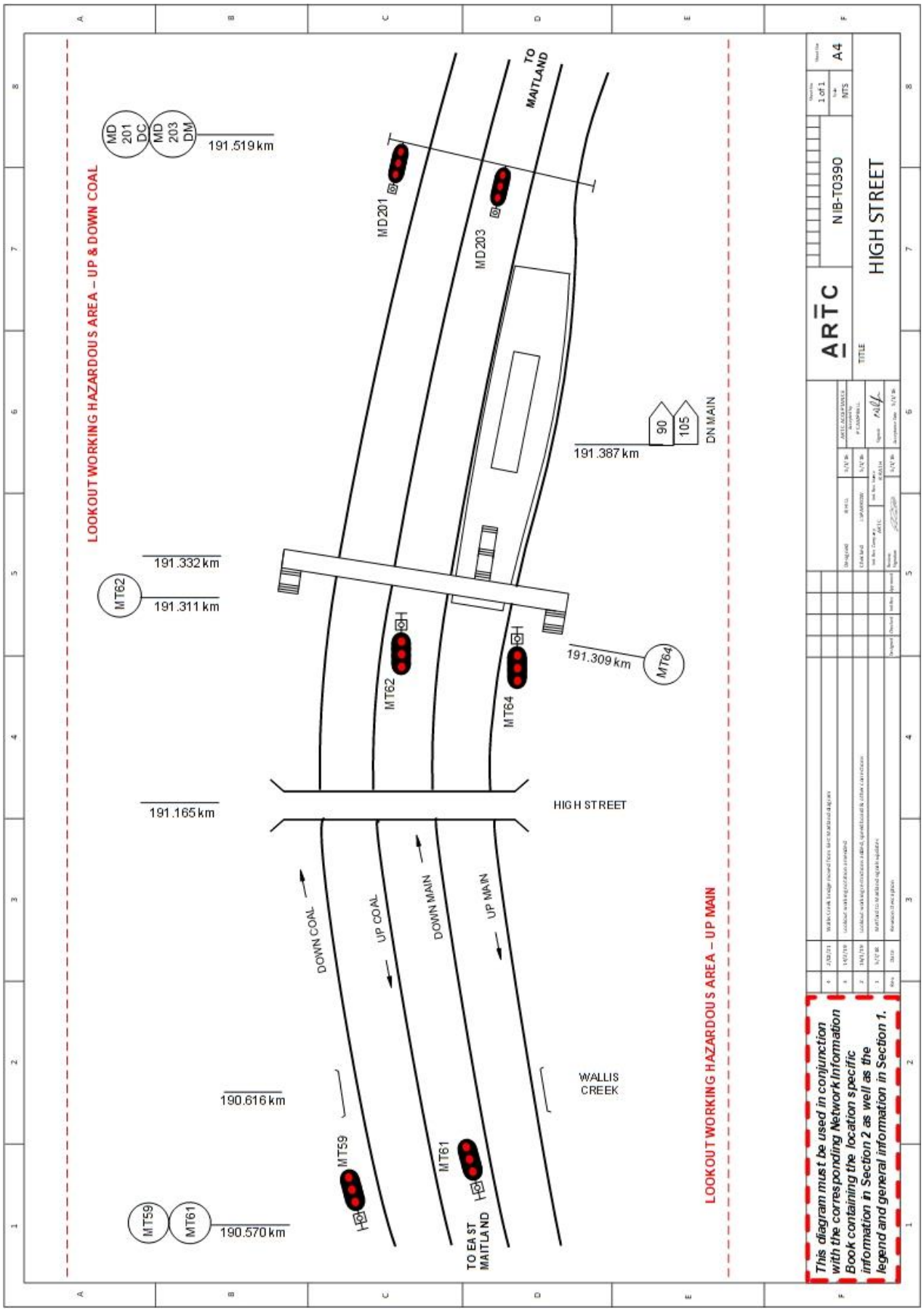
General Arrangements

High Street is a Rail Vehicle Detection location within Maitland Yard limits and controlled from Network Control Centre North.

A passenger station is located between the Up and Down main lines.

Operation of Signals

The signals at High Street are operated from Network Control Centre North.


LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN COAL
MD 201 DC
MD 203 DM
191.519 km
TO MAITLAND
MD201
MD203
191.387 km
90
105
DN MAIN
191.332 km
MT62
191.311 km
191.309 km
MT64
MT62
MT64
191.165 km
HIGH STREET
DOWN COAL
UP COAL
DOWN MAIN
UP MAIN
WALLIS CREEK
190.616 km
MT59
MT61
MT59
MT61
190.570 km
TO EAST MAITLAND
LOOKOUT WORKING HAZARDOUS AREA – UP MAIN
ARTC
NIB-T0390
TITLE
HIGH STREET
A4
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.

2.12 Maitland (MLD)

2.12.1 General Arrangements

Maitland is a Rail Vehicle Detection location controlled from Network Control Centre North. It is a consolidated location, incorporating locations also known as Sandgate, Hexham, Thornton, Metford, High Street, Telarah and Farley. Maitland is the junction between the North Coast line and the Main North line.

Maitland Station has Platform One outside the Up North Coast line, and four more platforms between the Down North Coast and the Up Coal line. A small platform for train crew use is located outside the Down Coal line.

Maitland has a non-track circuited Shunting Yard on the up side of the Up Main line.

Maitland Yard Limits

End	Track	Km	Signal	Signage
City Side	Down Coal	169.818	C105.5	YL & EYL
City Side	Up Coal	170.127	HJ36	YL & EYL
City Side	Down Main	170.860	M106.1	YL & EYL
City Side	Up Main	170.117	HJ34	YL & EYL
City Side	Down Coal Branch (NF)	169.221	NFD4	YL & EYL
City Side	Up Coal Branch (NF)	170.047	NFU2	YL & EYL
Country Side	Down Main	195.417	MD266DM	YL & EYL
Country Side	Up Main	197.136	MD310UM	YL & EYL
Country Side	Up Relief	197.116	MD312UR	YL & EYL
Country Side	Up & Down North Coast	195.759	MD306NC	YL & EYL

Operation of Points and Signals

The points and signals at Maitland and Telarah are operated from Network Control Centre North.

There is no local control panel for Maitland location.

All points worked from Network Control Centre North are controlled by track circuit and cannot be moved unless the track(s) controlling the points is unoccupied.

Operating Power-operated Points in an Emergency

All points worked from Network Control Centre North are electrically power-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 Signals maintenance representative must be promptly advised of the circumstances.

NOTE: Maitland 420 points at Main North end of Farley Triangle are "Spring Wing" points. The Spring Wing crossing is mechanically driven by the force of the wheel; for this reason the crossing will appear to be set in the "normal" position even when traffic will be passing in the reverse position.
Hi-rail vehicles must not pass though this crossover in the reverse position.

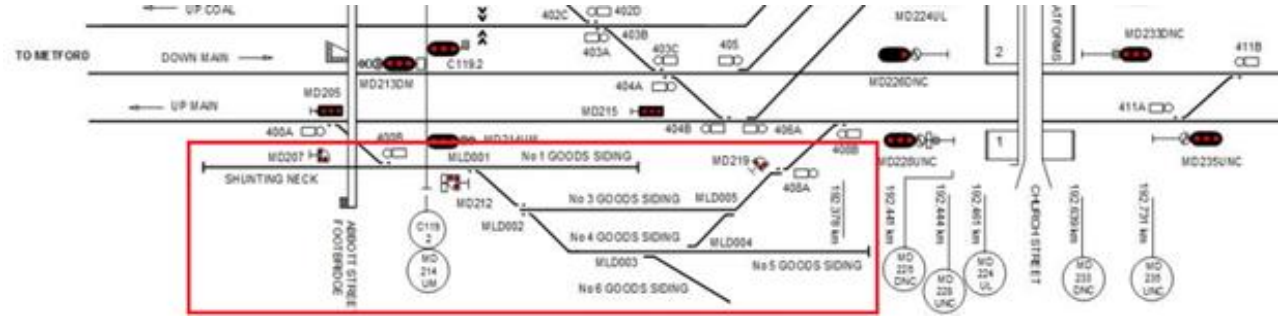
2.12.2 Dual Controlled Signal

MD305 NC is dual controlled with the Coast "A" Network Controller. The Down route from MD305 NC will not clear in the field until the Coast A Controller clicks "Down Accept" on the Phoenix control screen.

2.12.3 Maitland Shunting Yard

Maitland Shunting Yard is accessible from the Up Main line and can be accessed from both the City end and the Country end.

The Maitland Shunting Yard is highlighted below in red:



Maitland Shunting yard comprises of 5 siding roads:

- No 1 Goods siding – 371m / shunting neck – 160m
- No 3 Goods siding – 258m
- No 4 Goods siding – 427m
- No 5 Goods siding – 129m
- No 6 Goods siding – 153m

Entry to the Shunting yard from the city end is via MD205 signal (400 points) remotely controlled from the Network Control Centre North (NCCN)

Entry to the Shunting yard from the country end is via MD228 signal (408 points) remotely controlled from the Network Control Centre North (NCCN)

WORK ON TRACK WITHIN THE MAITLAND SHUNTING YARD

Work on Track as per ANWT 300 Planning work in the Rail Corridor – "Working Safely on Track in Shunting Yards applies."

Before permitting any work on track to commence, the following instructions must be strictly adhered to:

- identify yourself to the ARTC Network Controller
- advise of your location

- give details of the worksite, including limits, utilising the hierarchy of controls regarding protection.

Acceptable protection would be a combination of two or more of these examples;

- Points clipped and SL locked to prevent rail traffic access to the worksite (exclude rail traffic)
- “Tagged” (PO name and contact number) Red flag or STOP sign/light clamped in the four foot at the protection limits
- An adjoining work on track authority that prevents unauthorised rail traffic access to the protection limits if applicable,
- Blocking facilities from Network Control if applicable,
- Three Railway Track Signals placed at the protection limits, or
- Handsignaller/s if applicable

Where rail traffic is within the protection area or has the ability to impact workers or equipment, the Protection Officer must put a control in place to manage this hazard such as:

- Tagged Red flag or STOP sign/light clamped in the four foot in clear display visible for rail traffic in conjunction with the listed protection methods

Adjacent Local Possession Authority

When work is to be undertaken and a Local Possession Authority (LPA) has been authorised on the Up Main Line within Maitland Yard Limits , it will be permissible to use ANWT 300 Planning Work in the Rail Corridor - In Shunting Yards as a method of Working Safely on Track within the Maitland Sidings.

2.12.4 Signalling Power Supply Indicators

Power supply indicators are provided on the Phoenix System at Network Control Centre North for the signalling power supplies in the Maitland – Telarah area.

When a “Warning” or an “Alarm” indicator is displayed following a fault, an audible alarm will sound and a message box will appear which must be acknowledged by the Network Controller.

When there is any alteration or interruption to the AC or DC power supplies to the signalling, the Network Controller must promptly inform the Signals Maintenance representative.

2.12.5 Oakhampton Level Crossing Indicators

Level crossing warning and alarm indicators are provided on the Phoenix System at Network Control Centre North.

A yellow light inscribed "Warning" will be displayed when the battery voltage is becoming low.

General instructions

When a “Warning” or an “Alarm” indicator is displayed following a fault, an audible alarm will sound and a message box will appear which must be acknowledged by the Network Controller.

When there is any alteration or interruption to the AC or DC power supplies to the signalling, the Network Controller must promptly inform the Signals Maintenance representative.

2.12.6 Operation of Floodgates

Floodgates, comprising three paired sets hinged to swing across the Up and Down main lines, the Up and Down local lines, and the Up and Down coal lines, are installed at the Down end of Maitland platforms at 192.638km. When closed, the gates maintain continuity of the levee bank.

When not in use, each gate is secured in the open position to the associated supporting wall by means of an XL lock.

In times of flooding, the State Emergency Service will request the Area Manager Maitland to have the gates closed. This officer is responsible for notifying Network Control Centre North and the Team Manager Structures who will authorise the closure of the gates.

The gates will be operated by Civil engineering staff in addition to State Emergency Service personnel, if required.

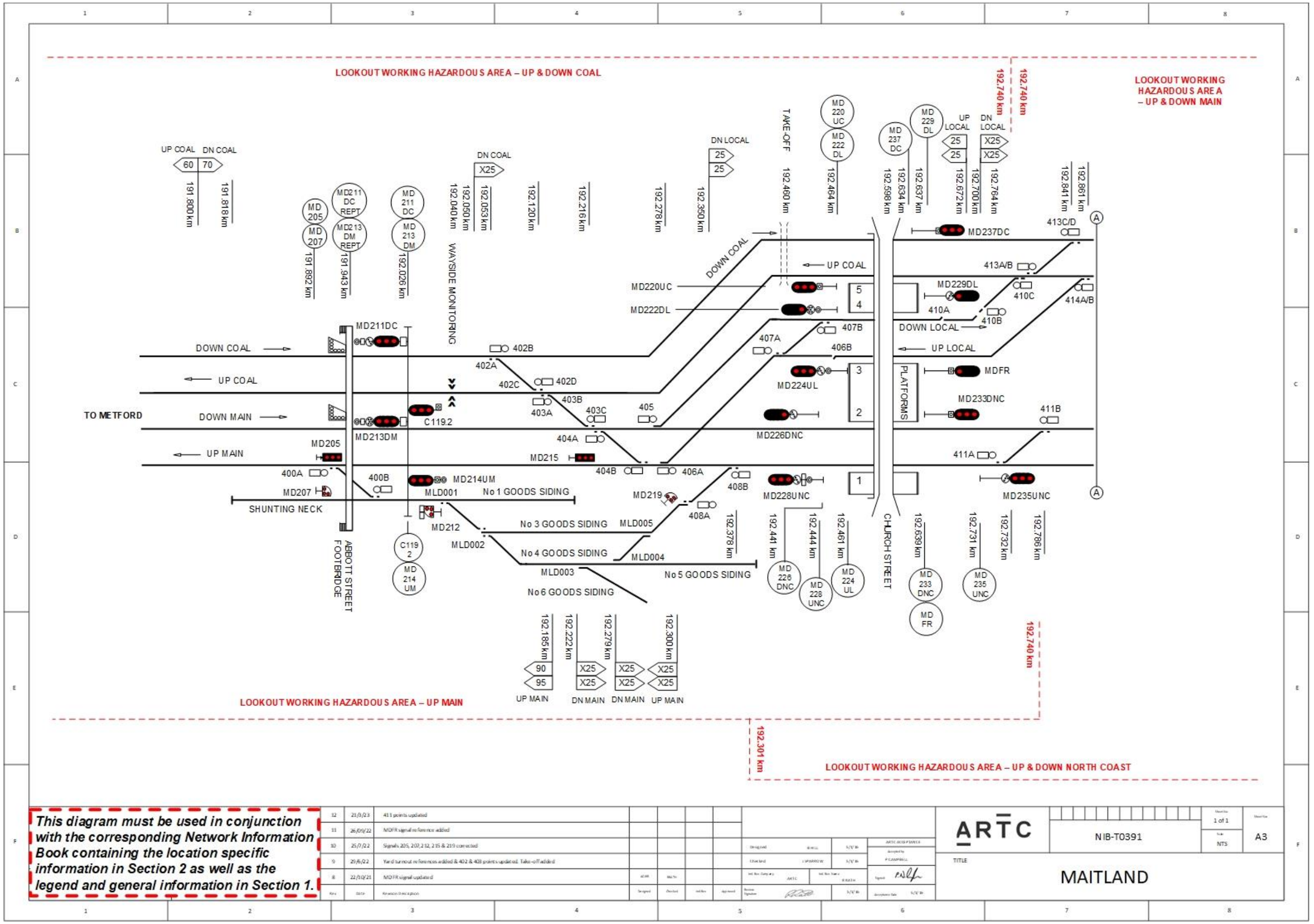
The SES will provide sandbags to ensure sealing where the rails pass under the gates.

Battery-operated gate lamps are on hand at Maitland for attaching to the gates when closed.

Maintenance and Testing

A bi-annual testing and maintenance program, including the closing of the floodgates, is to be carried out each year.

The tests will be conducted by the Team Manager Structures HV and the State Emergency Service Maitland.



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.

12	21/3/23	411 points updated
11	26/09/22	MDFR signal reference added
10	25/7/22	Signals 205, 207, 212, 215 & 219 corrected
9	29/6/22	Yard turnout references added & 402 & 408 points updated. Take-off added
8	22/10/21	MDFR signal updated

ARTC
NIB-T0391
1 of 1
NTS
A3
TITLE
MAITLAND

2.13 Telarah (TLH)

2.13.1 General Arrangements

Telarah is part of the Maitland interlocking, and has a passenger platform on the Up North Coast line.

Telarah has a loop line and a non-track circuited Shunting Yard

Loop length – 622m

Ground Frames

Frame D

Frame D is located on the Down side of the Telarah loop line adjacent to the crossovers and provides access to the Down sidings and the Stock sidings.

Frame D is unlocked by the key from releasing switch D.

Releasing switch D is electrically released by No. 426 release from Network Control Centre North.

Frame E

Frame E is located on the Down side of the Telarah loop line adjacent to the crossovers and provides access to the Down sidings.

Frame E is unlocked by the key from releasing switch E.

Releasing switch E is electrically released by No. 431 release from Network Control Centre North.

Frame F

Frame F is located on the Down side of the Telarah loop line adjacent to the crossovers and provides access to the Stock sidings.

Frame F is unlocked by the key from releasing switch F.

Releasing switch F is electrically released by No. 433 release from Network Control Centre North.

WARNING: The A and B ends of No. 435 points must be in the reverse position before No. 433 release for frame F can be operated.

2.13.2 Farley (Telarah) Triangle

The triangle is bi-directionally signalled, connecting the Down North Coast line at Telarah and the Up Main North line at Farley.

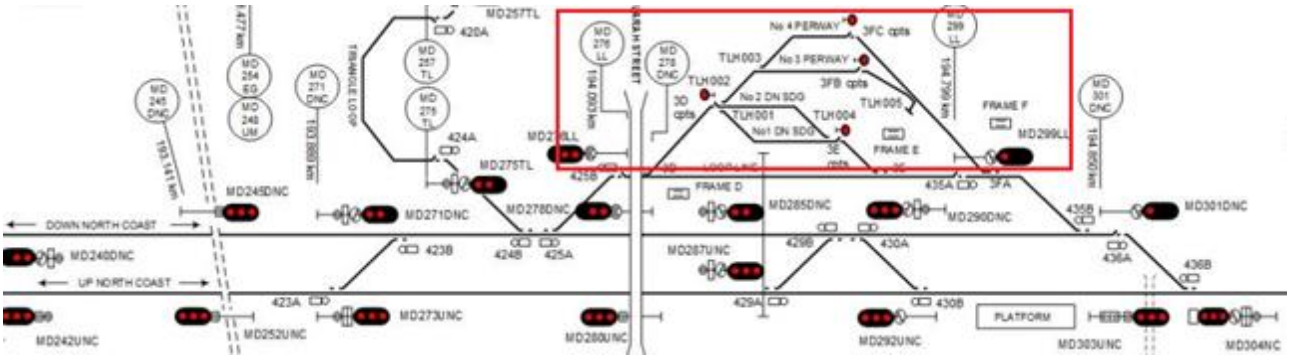
Maitland 420 points at Main North end of Farley Triangle are “Spring Wing” points. The Spring Wing crossing is mechanically driven by the force of the wheel; for this reason the crossing will appear to be set in the “normal” position even when traffic will be passing in the reverse position.

Hi-rail vehicles must not pass though this crossover in the reverse position.

2.13.3 Telarah Shunting Yard

Telarah Shunting Yard is accessible from the Loop line and can be accessed from both the City end and the Country end.

The Telarah Shunting Yard is highlighted below in red



The Telarah Shunting Yard has multiple roads as follows:

- No 1 Down Siding
- No 2 Down Siding
- No 3 Perway Siding
- No 4 Perway Siding

WORK ON TRACK WITHIN THE TELARAH SHUNTING YARD

Work on Track as per ANWT 300 Planning work in the Rail Corridor – “Working Safely on Track in Shunting Yards applies.”

Before permitting any work on track to commence, the following instructions must be strictly adhered to:

- identify yourself to the ARTC Network Controller
- advise of your location
- give details of the worksite, including limits, utilising the hierarchy of controls regarding protection.

Acceptable protection would be a combination of two or more of these examples.

- Points clipped and SL locked to prevent rail traffic access to the worksite (exclude rail traffic)
- “Tagged” (PO name and contact number) Red flag or STOP sign/light clamped in the four foot at the protection limits
- An adjoining work on track authority that prevents unauthorised rail traffic access to the protection limits if applicable,
- Blocking facilities from Network Control if applicable,
- Three Railway Track Signals placed at the protection limits, or
- Handsignaller/s if applicable

Where rail traffic is within the protection area or has the ability to impact workers or equipment, the Protection Officer must put a control in place to manage this hazard such as:

- Tagged Red flag or STOP sign/light clamped in the four foot in clear display visible for rail traffic in conjunction with the listed protection methods

Adjacent Local Possession Authority

When work is to be undertaken and a Local Possession Authority (LPA) has been authorised on the Telarah Loop Line, it will be permissible to use ANWT 300 Planning Work in the Rail Corridor - In Shunting Yards to adjoin the LPA as a method of Working Safely on Track within the Telarah Sidings.

2.13.4 Dragging Equipment Detectors

Dragging equipment detectors are located at 195.728km on the Main North Coast line. They are shown on the Phoenix display as two triangles adjacent to the track at these locations.

When dragging equipment is detected, an alarm window will appear and a tone will sound on the Phoenix system. The red flashing text ‘DED’ will also appear on the track display above the dragging equipment detector symbol.

Responding to a dragging equipment alarm

When the red light is displayed, the Network Controller must:

- cancel the alarm
- 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 to advise the Network Controller of the status of the problem and the action that must be taken to resolve it.

2.13.5 Hot Box Detectors

Hot box detectors are located at Maitland on the Up coal line at 192.040km.

Computerised audio and visual alarms are provided in Network Control Centre North.

With this system, when a hot axle box is detected, the Driver is advised by the Network Controller.

2.13.6 Half pilot staff

A half pilot staff is provided in a pilot staff lock inside the locked box on the post of the starting signal for the Maitland (Telarah) – Mindaribba section.

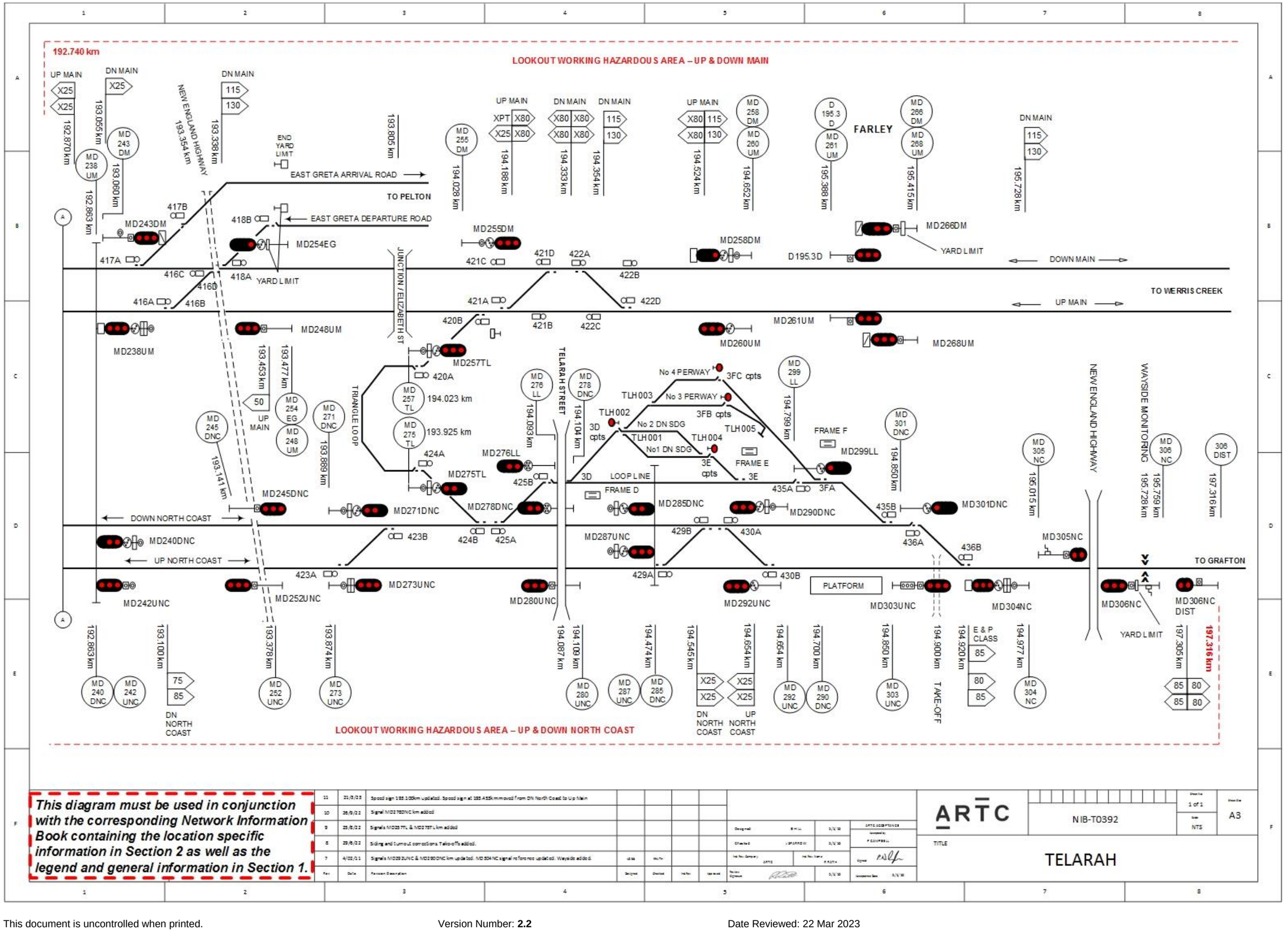
The half pilot staff for the section Maitland (Telarah) – Mindaribba is inscribed "MAITLAND – MD305".

2.13.7 Terminating trains at Maitland

Terminating movements are authorised within Yard Limits.

2.13.8 Terminating trains at Telarah

Terminating movements are authorised within Yard Limits.


192.740 km
LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN MAIN
UP MAIN
DN MAIN
DN MAIN
X25
X25
115
130
193.055km
192.870km
193.338 km
193.354 km
NEW ENGLAND HIGHWAY
MD 243 DM
MD 238 UM
193.060 km
192.863 km
END YARD LIMIT
193.805 km
EAST GRETA ARRIVAL ROAD
TO PELTON
EAST GRETA DEPARTURE ROAD
417B
418B
MD243DM
MD254EG
417A
416C
416D
418A
YARD LIMIT
416A
416B
JUNCTION / ELIZABETH ST
MD248UM
MD238UM
193.453 km
193.477 km
50
UP MAIN
MD 254 EG
MD 248 UM
MD 245 DNC
193.141 km
MD 271 DNC
193.889 km
TRIANGLE LOOP
MD 257 TL
194.023 km
MD 275 TL
193.925 km
420A
424A
MD275TL
MD276LL
425B
MD245DNC
MD271DNC
MD278DNC
DOWN NORTH COAST
MD240DNC
UP NORTH COAST
423B
424B
425A
423A
MD273UNC
MD252UNC
MD242UNC
192.863 km
193.100 km
75
85
DN NORTH COAST
MD 240 DNC
MD 242 UNC
193.378 km
193.874 km
MD 252 UNC
MD 273 UNC
MD 255 DM
194.028 km
UP MAIN
XPT
X25
X80
X80
194.188 km
DN MAIN
DN MAIN
X80
X80
X80
X80
115
130
194.333 km
194.354 km
UP MAIN
X80
X80
115
130
194.524 km
MD 258 DM
MD 260 UM
194.652 km
D 195.3 D
MD 261 UM
195.388 km
FARLEY
MD 266 DM
MD 268 UM
195.415 km
DN MAIN
115
130
195.728 km
MD255DM
421C
421D
422A
422B
MD258DM
D195.3D
MD266DM
YARD LIMIT
DOWN MAIN
TO WERRIS CREEK
UP MAIN
421A
422D
420B
421B
422C
MD261UM
MD260UM
MD268UM
MD257TL
TELARAH STREET
MD 276 LL
194.093 km
MD 278 DNC
194.104 km
No 4 PERWAY
3FC cpts
TLH003
No 3 PERWAY
3FB cpts
TLH002
3D cpts
No 2 DN SDG
TLH005
TLH001
No1 DN SDG
TLH004
3E cpts
FRAME F
FRAME E
3E
MD 299 LL
194.799 km
MD299LL
MD 301 DNC
194.850 km
MD301DNC
MD 305 NC
195.015 km
MD 306 NC
195.759 km
195.728 km
306 DIST
197.316 km
NEW ENGLAND HIGHWAY
WAYSIDE MONITORING
3D
LOOP LINE
FRAME D
MD285DNC
MD290DNC
435A
3FA
435B
MD287UNC
429B
430A
436A
436B
MD305NC
429A
430B
PLATFORM
MD292UNC
MD303UNC
MD304NC
TO GRAFTON
MD306NC
MD306NC DIST
YARD LIMIT
194.087 km
194.109 km
MD 280 UNC
194.474 km
MD 287 UNC
MD 285 DNC
194.545 km
194.654 km
X25
X25
X25
X25
194.654 km
194.700 km
MD 292 UNC
MD 290 DNC
194.850 km
MD 303 UNC
194.900 km
TAKE-OFF
194.920 km
E & P CLASS
85
80
85
194.977 km
MD 304 NC
197.305 km
197.316 km
85
80
85
80
DN NORTH COAST
UP NORTH COAST
LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN NORTH COAST
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.
ARTC
NIB-T0392
Sheet No 1 of 1
Size A3
Scale NTS
TITLE
TELARAH

2.14 East Greta Junction (EGN)

2.14.1 General Arrangements

East Greta Junction is the terminal point of the ARTC Up and Down coal lines and the commencement of the South Maitland Railways Ltd single line.

Yard Working on the SMR Arrival Road between MD243 and EYL at 193.482km.

Yard working on the SMR departure Road begins at MD254 at 193.482km.

Manual Block Working will be maintained between the NC and the East Greta Junction Signaller for all rail traffic movements entering the SMR arrival road.

Manual Block Working will be maintained between the East Greta Junction Signaller and the Rail Traffic Crew for all rail traffic movements departing the SMR departure road.

The working of rail traffic beyond the End Yard Limit sign (EYL) arrival road and Yard Limit sign (YL) departure road, westward will be carried out in accordance with SMR procedures.

2.14.2 Rail Traffic Entering the South Maitland Branch Line

Before rail traffic is admitted to SMR branch line the NC must ensure the East Greta Junction signal box is cut in, before setting the route and clearing MD243 signal.

NC must advise the East Greta Junction Signaller when rail traffic is departing Maitland for the SMR branch line.

East Greta Junction Signaller must advise NC that rail traffic has arrived and is clear and complete beyond East Greta Junction.

Refer interface agreement IA1509 for further details.

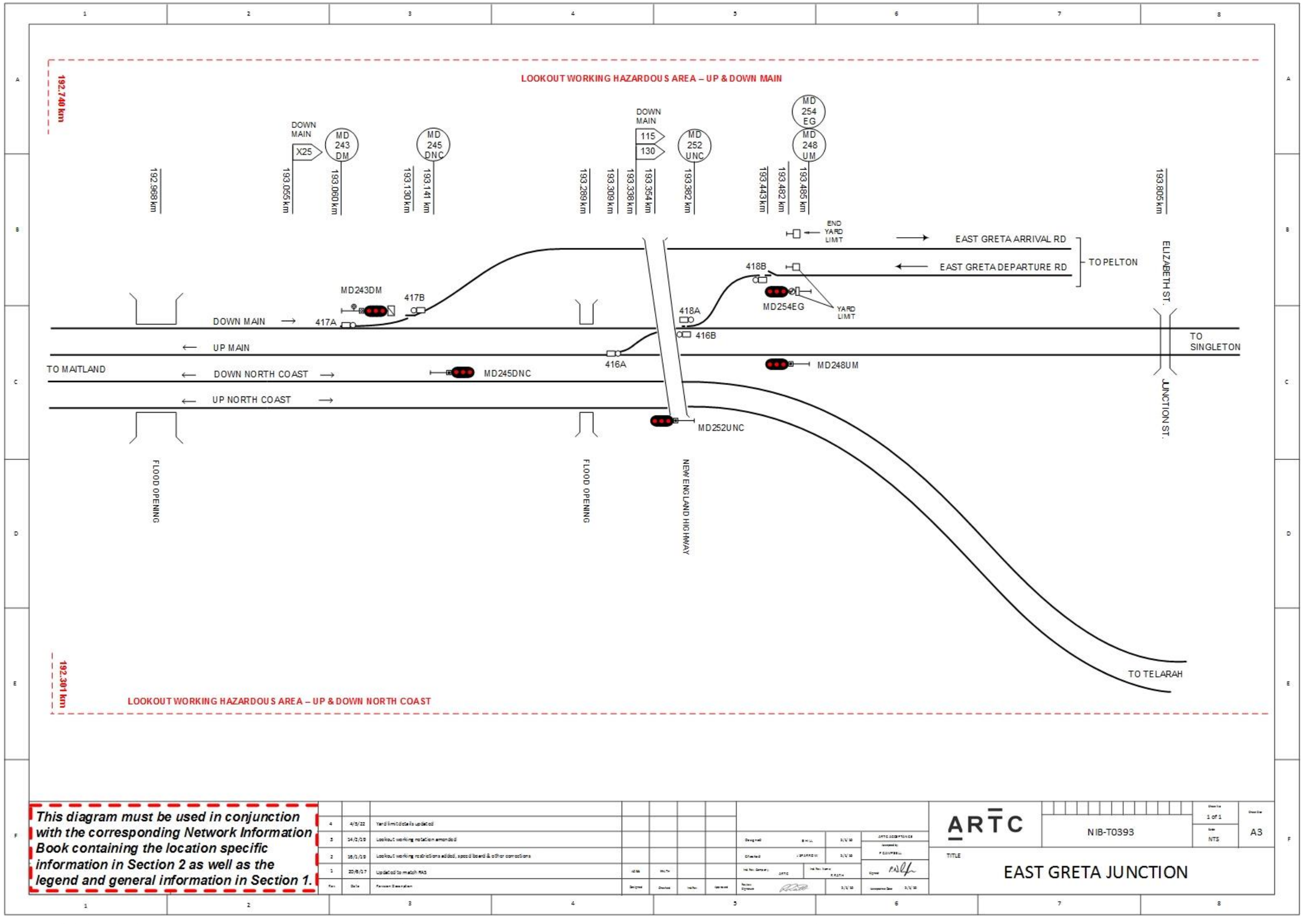
2.14.3 Rail Traffic Departing the South Maitland Branch line

When rail traffic arrives at East Greta Junction number 2 up home signal, the East Greta Junction Signaller must contact the NC. NC will advise when rail traffic is able to be accepted onto the ARTC mainline.

The East Greta Junction Signaller when advised that rail traffic is able to be accepted onto the ARTC main line, the East Greta Junction Signaller can clear number 2 up home and number 6 up starting signal.

When the rail traffic has departed East Greta Junction and the leading locomotive has arrived at the clearance sign located on either number 3 or 5 platform at Maitland (192.620km) for the SMR branch line the rail traffic crew must advise the East Greta Junction Signaller that the rail traffic is clear and complete.

Note: The clearance signs indicate that rail traffic less than 750 metres in length has passed complete beyond MD254 signal and 418 crossover onto the ARTC main line and are located on number 3 and 5 platforms Maitland (192.620km).


LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN MAIN
192.740 km
DOWN MAIN
X25
MD 243 DM
MD 245 DNC
DOWN MAIN
115
130
MD 252 UNC
MD 254 EG
MD 248 UM
192.968 km
193.055 km
193.060 km
193.130 km
193.141 km
193.289 km
193.309 km
193.338 km
193.354 km
193.382 km
193.443 km
193.482 km
193.485 km
193.805 km
END YARD LIMT
EAST GRETA ARRIVAL RD
EAST GRETA DEPARTURE RD
TO PELTON
ELIZABETH ST.
418B
MD254EG
YARD LIMIT
MD243DM
417B
417A
418A
416B
DOWN MAIN
UP MAIN
TO SINGLETON
TO MAITLAND
DOWN NORTH COAST
MD245DNC
416A
MD248UM
UP NORTH COAST
JUNCTION ST.
MD252UNC
FLOOD OPENING
FLOOD OPENING
NEW ENGLAND HIGHWAY
TO TELARAH
192.301 km
LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN NORTH COAST
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.
4 4/5/22 Yard limit details updated
3 14/2/19 Lookout working notation amended
2 16/1/19 Lookout working restrictions added, speed board & other corrections
1 20/6/17 Updated to match RAS
ARTC
NIB-T0393
1 of 1
NTS
A3
TITLE
EAST GRETA JUNCTION

2.15 Up Relief Line

General Arrangements

The Up Relief line extends from Greta 209.820km to Farley 196.100km and is located on the up side of the Up Main.

The Up Relief is uni-directional signalled only.

Yard Limits

Maitland

The Maitland country-end YL/EYL located at:

MD266 (195.415km)

MD310 (197.136km)

MD312 (197.116km)

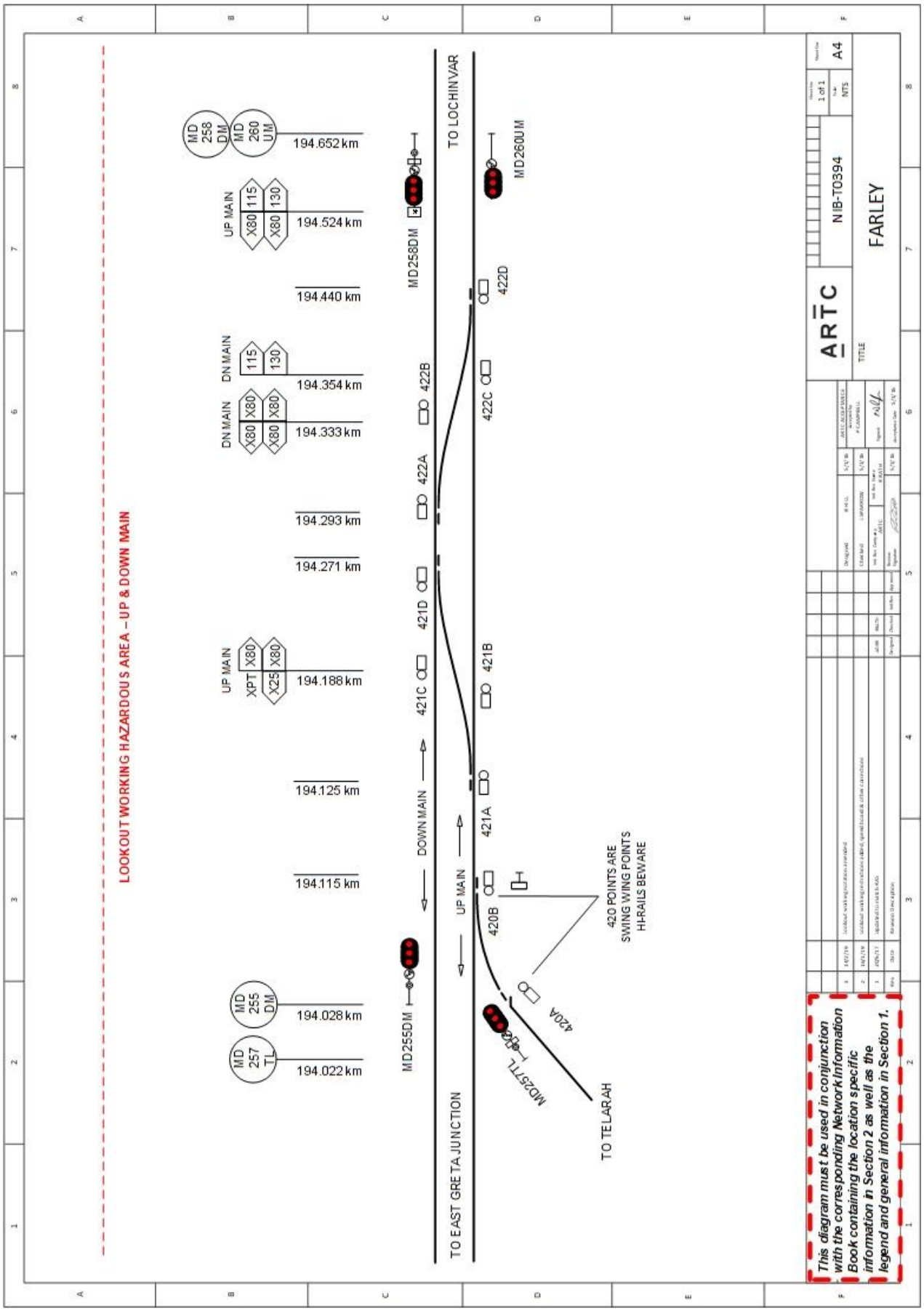
There is a section between the Maitland and Allandale (Singleton) YL on all lines.

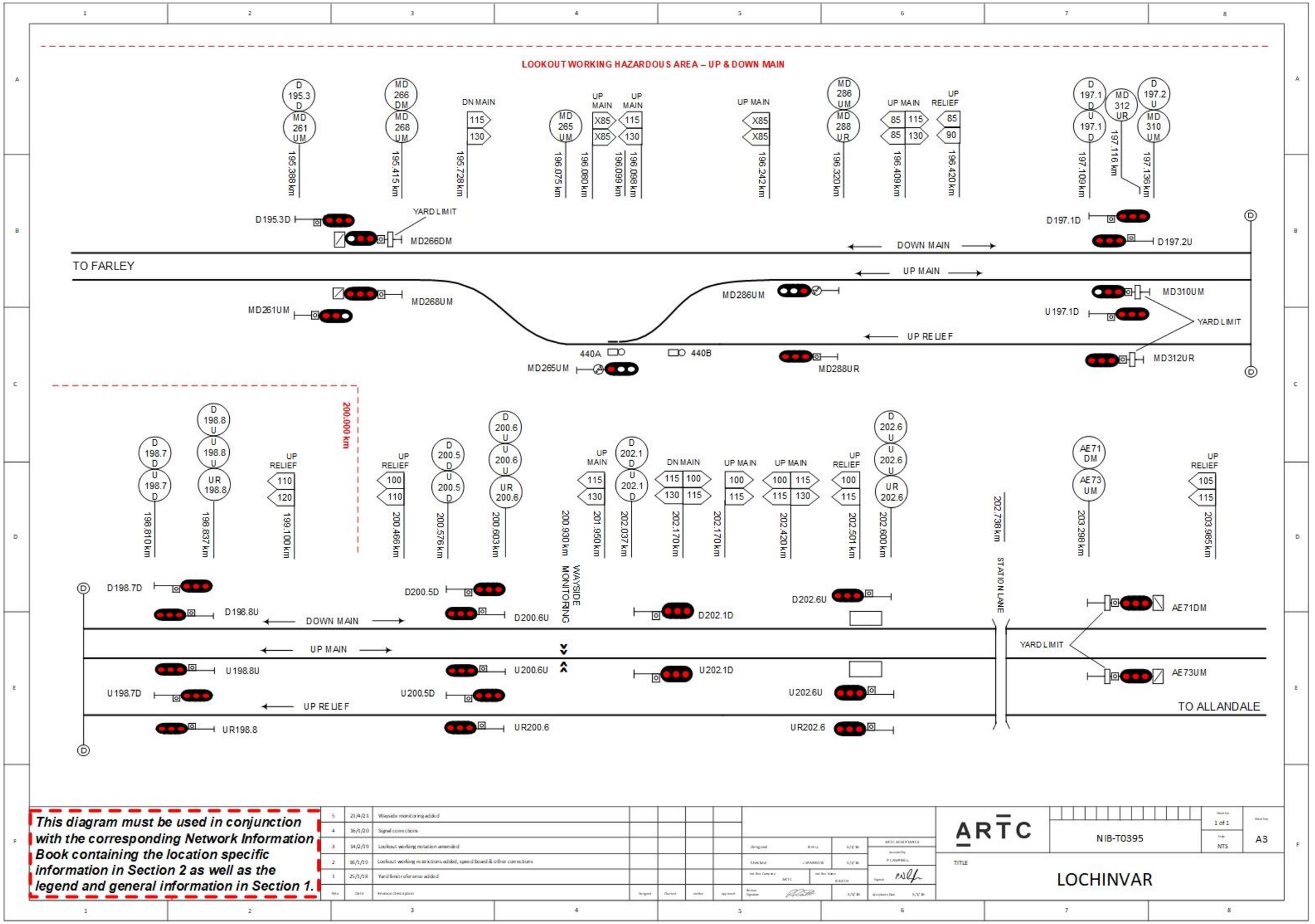
Allandale Yard is part of the Singleton Yard Limits. YL/EYL signs located at

AE71 (203.298km)

AE73 (203.298km)

UR204.2 (204.138km)


LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN MAIN
TO LOCHINVAR
TO EAST GRETA JUNCTION
TO TELARAH
MD 258 DM
MD 260 UM
194.652 km
UP MAIN
X80 115
X80 130
194.524 km
194.440 km
DN MAIN
115
130
194.354 km
DN MAIN
X80 X80
X80 X80
194.333 km
194.293 km
194.271 km
UP MAIN
XPT X80
X25 X80
194.188 km
194.125 km
194.115 km
MD 255 DM
MD 257 TL
194.028 km
194.022 km
MD255DM
MD257TL
MD258DM
MD260UM
DOWN MAIN
UP MAIN
420B
421A
421B
421C
421D
422A
422B
422C
422D
420A
420 POINTS ARE
SWING WING POINTS
HI-RAILS BEWARE
ARTC
NIB-T0394
FARLEY
TITLE
A4
NTS
1 of 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.


LOOKOUT WORKING HAZARDOUS AREA – UP & DOWN MAIN
D 195.3 D
MD 261 UM
195.388 km
MD 266 DM
MD 268 UM
195.415 km
DN MAIN
115
130
195.728 km
MD 265 UM
196.075 km
UP MAIN
X85
X85
196.080 km
UP MAIN
115
130
196.099 km
196.098 km
UP MAIN
X85
X85
196.242 km
MD 286 UM
MD 288 UR
196.320 km
UP MAIN
85
85
115
130
196.409 km
UP RELIEF
85
90
196.420 km
D 197.1 D
U 197.1 D
197.109 km
MD 312 UR
197.116 km
D 197.2 U
MD 310 UM
197.136 km
D195.3D
YARD LIMIT
MD266DM
DOWN MAIN
D197.1D
D197.2U
TO FARLEY
UP MAIN
MD261UM
MD268UM
MD286UM
MD310UM
U197.1D
YARD LIMIT
UP RELIEF
440A
440B
MD265UM
MD288UR
MD312UR
200.000 km
D 198.7 D
U 198.7 D
198.810 km
D 198.8 U
U 198.8 U
UR 198.8
198.837 km
UP RELIEF
110
120
199.100 km
UP RELIEF
100
110
200.466 km
D 200.5 D
U 200.5 D
200.576 km
D 200.6 U
U 200.6 U
UR 200.6
200.603 km
200.930 km
WAYSIDE MONITORING
UP MAIN
115
130
201.950 km
D 202.1 D
U 202.1 D
202.037 km
DN MAIN
115
130
100
130
202.170 km
UP MAIN
100
115
202.170 km
UP MAIN
100
115
115
130
202.420 km
UP RELIEF
100
115
202.501 km
D 202.6 U
U 202.6 U
UR 202.6
202.600 km
202.738 km
STATION LANE
AE71 DM
AE73 UM
203.298 km
UP RELIEF
105
115
203.985 km
D198.7D
D198.8U
DOWN MAIN
D200.5D
D200.6U
D202.1D
D202.6U
AE71DM
YARD LIMIT
UP MAIN
U198.8U
U200.6U
U202.1D
AE73UM
U198.7D
U200.5D
U202.6U
UP RELIEF
TO ALLANDALE
UR198.8
UR200.6
UR202.6
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.
5 21/4/21 Wayside monitoring added
4 16/1/20 Signal corrections
3 14/2/19 Lookout working notation amended
2 16/1/19 Lookout working restrictions added, speed board & other corrections
1 25/1/18 Yard limit reference added
Rev Date Revision Description
Designed
Checked
Issued
Approved
ARTC ACCEPTANCE
Accepted by
P CAMPBELL
Signed
Date
ARTC
NIB-T0395
Sheet No 1 of 1
Scale NTS
Sheet Size A3
TITLE
LOCHINVAR