North Coast Line System South Information Pack

Nambour to Parana

Version Information

Version 3.0: 05/10/2016

- Removed Aurizon Network Sections
- Removed closed lines/systems
- Updated References Queensland Rail Network to Queensland Rail
- Updated References Queensland Transport to DTMR
- Removed references 2005 Access Undertaking
- EPA changed to Department
- Updated Standards references
- Updated Line Diagrams
- Updated Climate Information
- Updated Rail System Electrification
- Updated Track Grade
- Updated Network Control Regions & Singalling Centres
- Updated Safeworking Systems
- Update Noise Management System

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Introduction

The detail provided in this pack relates to infrastructure and operational information necessary to develop a conceptual operating plan/Access Application. It is envisaged that Access Seekers will liaise closely with Queensland Rail to formulate a detailed operating specification as part of a full access agreement negotiation. Operational parameters outlined in this pack may be varied by mutual agreement with **Queensland Rail**.

All railway operators, wishing to operate in Queensland, require Accreditation under the Transport Infrastructure Act 1994 (Qld) and need to consider, but not limited to, the following aspects of typical rail operations:-

- Provisioning, stabling or stowing areas for rollingstock
- Train crewing
- Safeworking
- Training
- Route knowledge
- Environmental requirements
- Track standards
- Signalling and traction systems standards and constraints
- Safety training
- Management of risk
- Rollingstock registration and Train authorisation
- Legal issues as contained in Queensland Rail's Access Undertaking, Access Agreements and information contained in this pack.

Operators will be required to have accreditation with the Department of Transport and Main Roads, hold an Access Agreement with **Queensland Rail** and meet any conditions and precedents specified in the Access Agreement prior to commencing operations.

Accreditation means an applicant has confirmed that they are able to meet the requirements to carry out railway operations in Queensland. The Director-General, the Department of Transport and Main Roads, must be satisfied that the applicant has demonstrated:

- Effective management and control of rolling stock
- Competence and capacity to manage risks to safety associated with railway operations
- Competence and capacity to implement the required safety management system and has met the legislative requirements
- Financial capacity, or public risk insurance arrangements for potential liabilities.

Contact details are:

Customer Services, Safety and Regulation Division:
Ph: 07 3066 2689
Email: rsr@tmr.qld.gov.au
Post: PO Box 673
Fortitude Valley QLD 4006
Web: www.tmr.qld.gov.au

Operators need to be aware of and comply with other general legislation such as but not limited to Workplace Health & Safety, Environmental legislation and Heritage legislation.

This package is issued to railway operators as an UNCONTROLLED DOCUMENT and is reviewed annually. It is the onus of railway operators to ensure they are using the current version of this document.

This Information Pack is provided for information purposes only and Queensland Rail does not make any representation or warranty, express or implied, as to the accuracy, suitability or completeness of the information. To the extent that any inconsistency arises between this Information Pack and the Access Agreement or Queensland Rail's Access Undertaking, the provisions of the Access Agreement and Queensland Rail's Access Undertaking shall prevail.

General Information

The North Coast Line System is located the length of Coastal Queensland between Cairns (16°55' S - 145°46' E) in the north and Brisbane (27°27' S - 153°01' E) in the south. The line extends over approximately 1400km excluding sections of Aurizon network between Parana and Rocklands in central Queensland and Kaili and Durroburra in north Queensland.

Due to the length of this System there will be two information packs, **SOUTH** - Roma Street to Parana and **NORTH** - Rockhampton to Cairns.

South

The North Coast line (South) system carries the following:

- various freight products, including containerised and industrial freight, minerals, livestock and bulk commodities including sugar and grain
- containerised freight services operate between Brisbane and major centres in central and north Queensland, including Rockhampton, Mackay, Townsville and Cairns
- sugar traffic is hauled from sugar mills to the Ports of Mackay and Townsville

Long distance passenger and high speed Tilt Train services also operate on the line servicing central and north Queensland.

The North Coast line (South) adjoins three other major rail systems, the Aurizon Blackwater System between Parana and Rocklands (in Central Queensland) and the Brisbane Metropolitan System between Roma Street and Nambour).

The entire length between Roma Street and Rockhampton is electrified with the section Caboolture to Rocklands electrified by an autotransformer system with the overhead line equipment operating at 25,000 volts, 50 Hertz, alternating supply (25 kV, 50 Hz, ac).

The section Caboolture to Roma Street is electrified by a booster transformer system energised with 25 kV AC (alternating current) power.

Descriptive distances within this document (unless otherwise stated) are based on physical kilometre posts in the field and are to be used only as location descriptors ie they do not compensate for equalities resulting from deviations. Access charges and performance statistics are generated using actual through distances derived from relevant Working Plan and Sections and reflected on Line Code Diagrams. Generally distances originate from the junction of the branch and commence at 0 km.

General Climate - Queensland Wide

The system is generally in a warm to hot temperature climate.

The following sub-sections specify general climatic parameters. For latest and more specific information potential railway operators should consult The Australian Bureau of Meteorology at its Internet Website: http://www.bom.gov.au/climate

Cyclones

Tropical lows, which develop from November to April, occasionally deepen to cause tropical cyclones. Tropical cyclones show great variation in behaviour. They foster high winds, heavy, flood-producing rainfall (especially when a cyclone moves over high ground), and coastal storm surges.

The high wind risk does not usually extend further inland than 50 km. Inland movement reduces the inflow of moisture and cyclone intensity declines, often within a few hours.

Not all cyclones are severe.

Cyclones may impact on this System. Cyclones have the capability of affecting the entire North Coast Line due to “knock on” affects.

Humidity

This region could experience prolonged periods of high humidity and potential railway operators should consider this when planning / designing rollingstock and machinery to operate on this rail system.

Rainfall

The wettest places in Queensland are located on the tropical coast between Innisfail and Cairns.

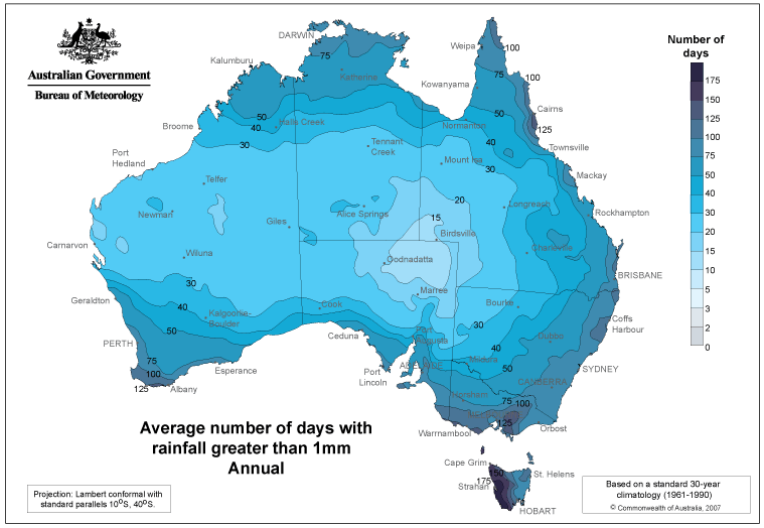
Highest rainfall occurs on the seaward side of the Great Divide.

However, at times in summer the inland extension of low-level moist airflow, in combination with intense surface heating, produces significant thunderstorm activity. Rainfall is mostly confined to summer months in the northern tropics, where in excess of 90% of the annual total is recorded between November and April.

In the north, rain is mostly associated with monsoonal troughs.

The wet season in Queensland is predominantly from January to April when monthly rain falls of 400 mm or more can occur.

Flooding of low lying areas is likely to occur as a direct result of cyclones and heavy coastal rains. In these instances, floodwaters can affect this System on average closing the line for one day every year.


Australian Government
Bureau of Meteorology
Number of days
175
150
125
100
75
50
40
30
20
15
10
5
3
2
0
DARWIN
Kalumburu
Katherine
Weipa
Kowanyama
Cairns
Halls Creek
Normanton
Broome
Tennant Creek
Townsville
Port Hedland
Mount Isa
Mackay
Telfer
Newman
Giles
Alice Springs
Longreach
Rockhampton
Carnarvon
Wiluna
Birdsville
Charleville
Oodnadatta
BRISBANE
Marree
Geraldton
Cook
Bourke
Kalgoorlie-Boulder
Coffs Harbour
PERTH
Ceduna
Port Augusta
Dubbo
Esperance
Mildura
SYDNEY
Port Lincoln
ADELAIDE
CANBERRA
Albany
Horsham
MELBOURNE
Warrnambool
Orbost
Cape Grim
St. Helens
Strahan
HOBART
Average number of days with rainfall greater than 1mm
Annual
Projection: Lambert conformal with standard parallels 10°S, 40°S.
Based on a standard 30-year climatology (1961-1990)
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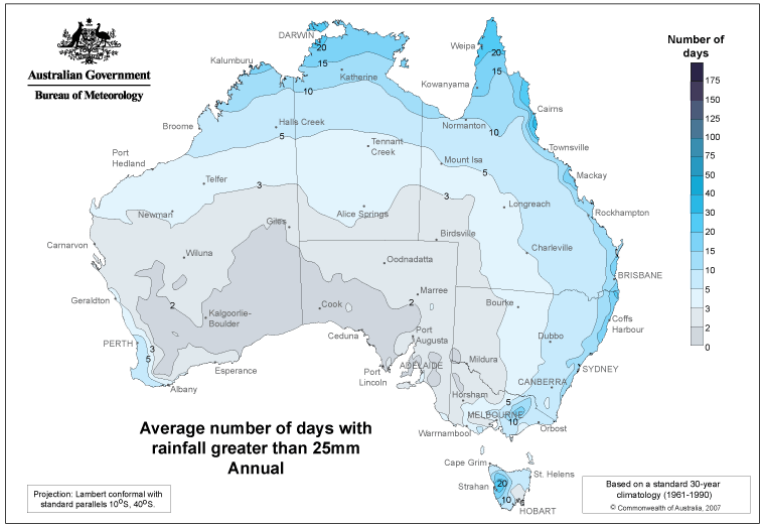
Australian Government
Bureau of Meteorology
Number of days
175
150
125
100
75
50
40
30
20
15
10
5
3
2
0
DARWIN
Kalumburu
Katherine
Weipa
Kowanyama
Cairns
Halls Creek
Normanton
Broome
Tennant Creek
Townsville
Port Hedland
Mount Isa
Mackay
Telfer
Newman
Giles
Alice Springs
Longreach
Rockhampton
Carnarvon
Wiluna
Birdsville
Charleville
Oodnadatta
BRISBANE
Marree
Geraldton
Cook
Bourke
Kalgoorlie-Boulder
Coffs Harbour
PERTH
Ceduna
Port Augusta
Dubbo
Esperance
Mildura
SYDNEY
Port Lincoln
ADELAIDE
CANBERRA
Albany
Horsham
MELBOURNE
Warrnambool
Orbost
Cape Grim
St. Helens
Strahan
HOBART
Average number of days with rainfall greater than 25mm
Annual
Projection: Lambert conformal with standard parallels 10°S, 40°S.
Based on a standard 30-year climatology (1961-1990)
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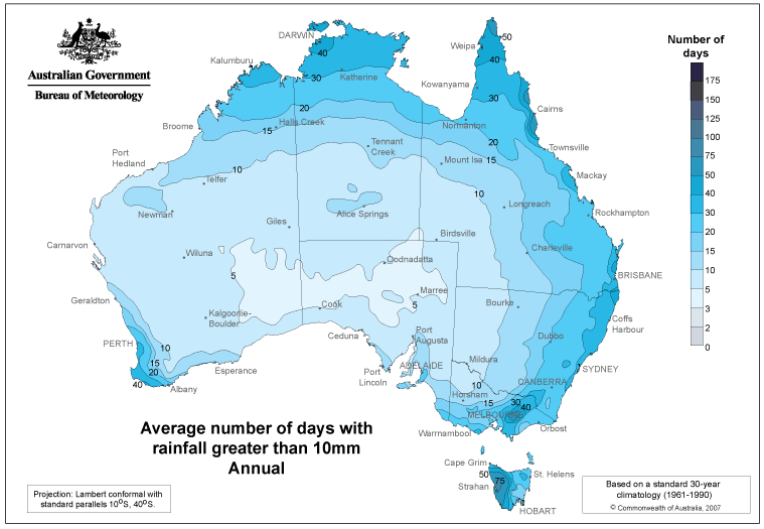
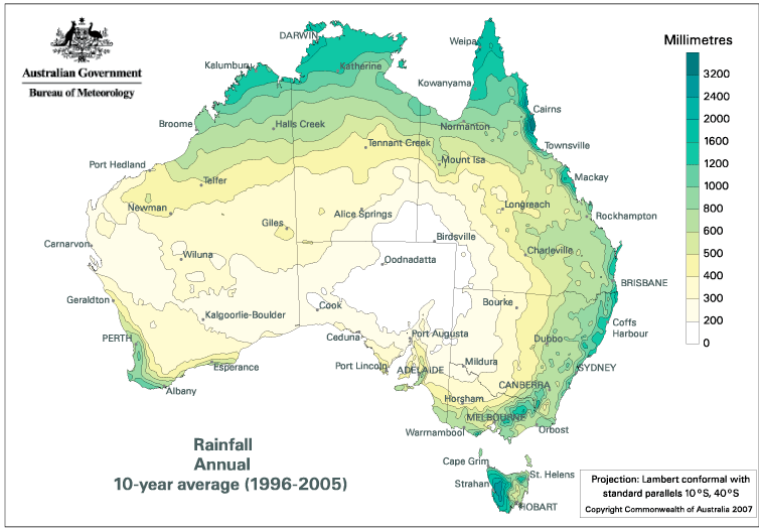
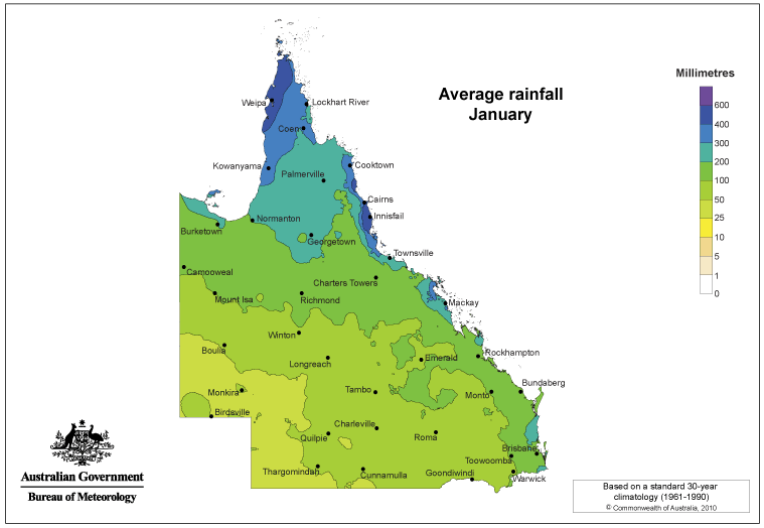
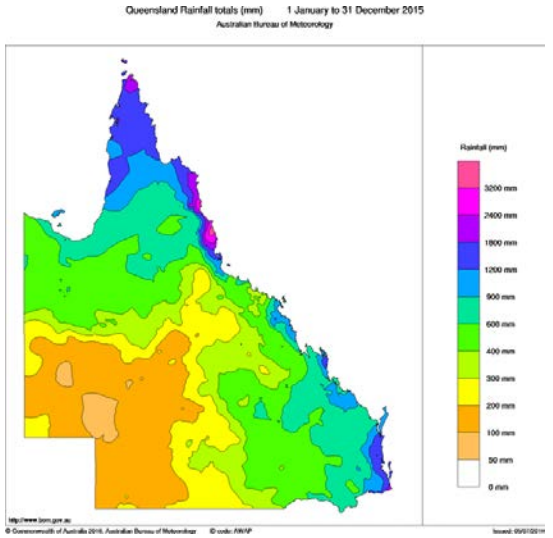
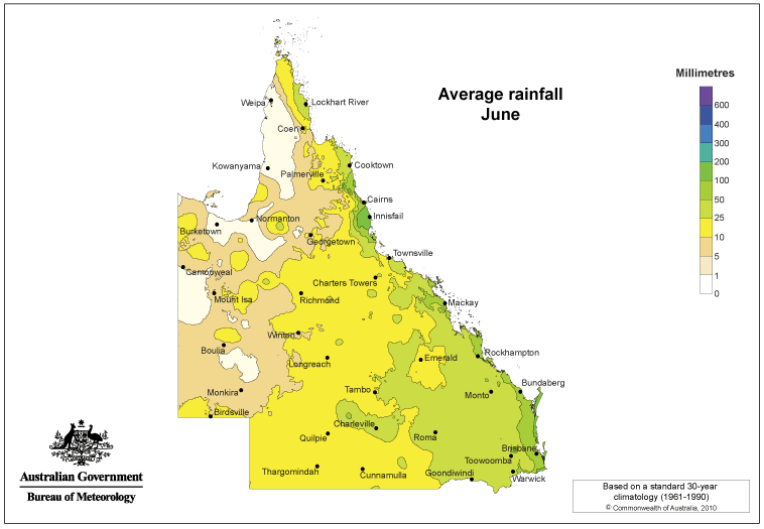
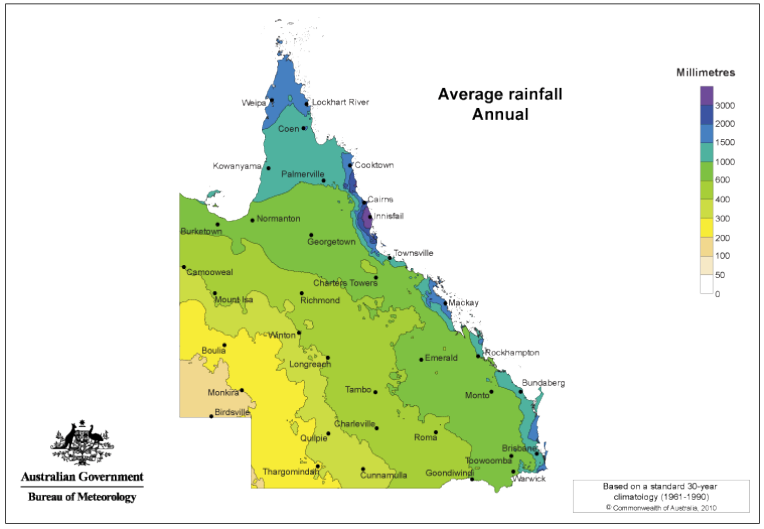

Australian Government
Bureau of Meteorology
Number of days
175
150
125
100
75
50
40
30
20
15
10
5
3
2
0
DARWIN
Kalumburu
Katherine
Weipa
Kowanyama
Cairns
Halls Creek
Normanton
Broome
Tennant Creek
Townsville
Port Hedland
Mount Isa
Mackay
Telfer
Newman
Giles
Alice Springs
Longreach
Rockhampton
Carnarvon
Wiluna
Birdsville
Charleville
Oodnadatta
BRISBANE
Marree
Geraldton
Cook
Bourke
Kalgoorlie-Boulder
Coffs Harbour
PERTH
Ceduna
Port Augusta
Dubbo
Esperance
Mildura
SYDNEY
Port Lincoln
ADELAIDE
CANBERRA
Albany
Horsham
MELBOURNE
Warrnambool
Orbost
Cape Grim
St. Helens
Strahan
HOBART
Average number of days with rainfall greater than 10mm
Annual
Projection: Lambert conformal with standard parallels 10°S, 40°S.
Based on a standard 30-year climatology (1961-1990)
© Commonwealth of Australia, 2007


Australian Government
Bureau of Meteorology
Millimetres
3200
2400
2000
1600
1200
1000
800
600
500
400
300
200
0
DARWIN
Kalumburu
Katherine
Weipa
Kowanyama
Cairns
Halls Creek
Normanton
Broome
Tennant Creek
Townsville
Port Hedland
Mount Isa
Mackay
Telfer
Newman
Giles
Alice Springs
Longreach
Rockhampton
Carnarvon
Wiluna
Birdsville
Charleville
Oodnadatta
BRISBANE
Geraldton
Cook
Bourke
Kalgoorlie-Boulder
Coffs Harbour
PERTH
Ceduna
Port Augusta
Dubbo
Esperance
Mildura
SYDNEY
Port Lincoln
ADELAIDE
CANBERRA
Albany
Horsham
MELBOURNE
Warrnambool
Orbost
Cape Grim
St. Helens
Strahan
HOBART
Rainfall
Annual
10-year average (1996-2005)
Projection: Lambert conformal with standard parallels 10°S, 40°S
Copyright Commonwealth of Australia 2007


Average rainfall
January
Millimetres
600
400
300
200
100
50
25
10
5
1
0
Weipa
Lockhart River
Coen
Kowanyama
Palmerville
Cooktown
Cairns
Innisfail
Normanton
Burketown
Georgetown
Townsville
Camooweal
Charters Towers
Mount Isa
Richmond
Mackay
Winton
Boulia
Longreach
Emerald
Rockhampton
Bundaberg
Monkira
Tambo
Monto
Birdsville
Charleville
Quilpie
Roma
Brisbane
Toowoomba
Thargomindah
Cunnamulla
Goondiwindi
Warwick
Australian Government
Bureau of Meteorology
Based on a standard 30-year climatology (1961-1990)
© Commonwealth of Australia, 2010


Queensland Rainfall totals (mm) 1 January to 31 December 2015
Australian Bureau of Meteorology
Rainfall (mm)
3200 mm
2400 mm
1800 mm
1200 mm
900 mm
600 mm
400 mm
300 mm
200 mm
100 mm
50 mm
0 mm

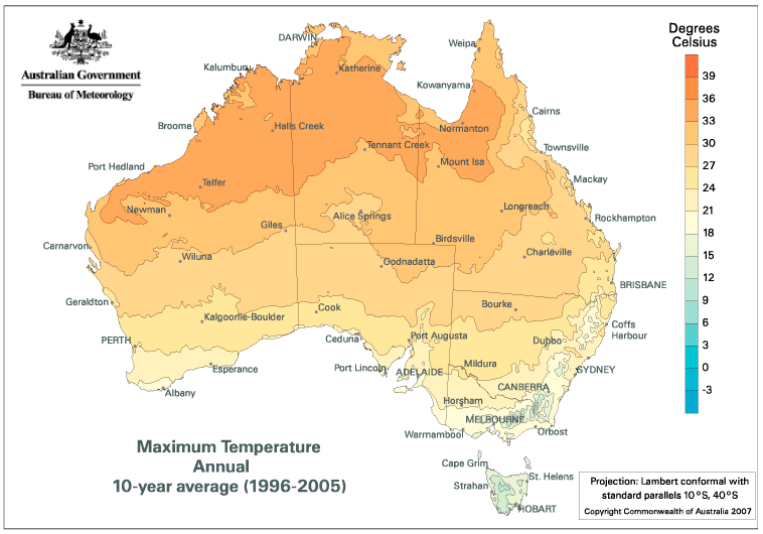

Average rainfall
June
Millimetres
600
400
300
200
100
50
25
10
5
1
0
Weipa
Lockhart River
Coen
Kowanyama
Palmerville
Cooktown
Cairns
Innisfail
Normanton
Burketown
Georgetown
Townsville
Camooweal
Charters Towers
Mount Isa
Richmond
Mackay
Winton
Boulia
Longreach
Emerald
Rockhampton
Bundaberg
Monkira
Tambo
Monto
Birdsville
Charleville
Quilpie
Roma
Brisbane
Toowoomba
Thargomindah
Cunnamulla
Goondiwindi
Warwick
Australian Government
Bureau of Meteorology
Based on a standard 30-year climatology (1961-1990)
© Commonwealth of Australia, 2010

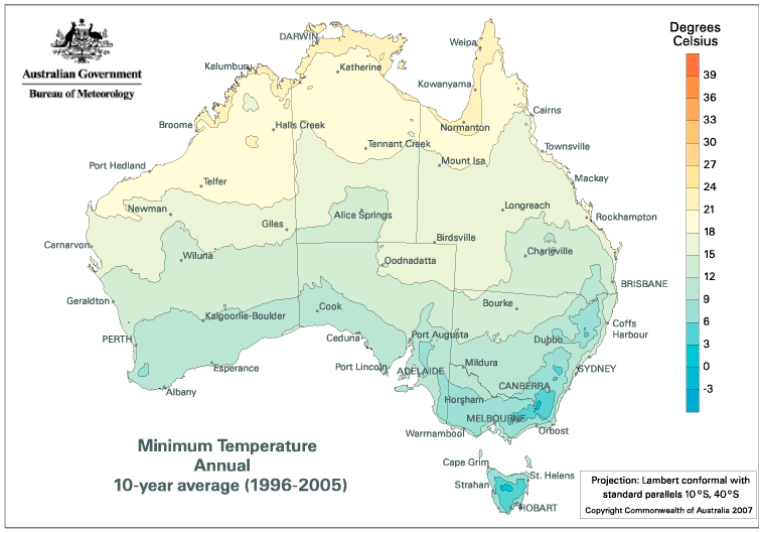

Average rainfall
Annual
Millimetres
3000
2000
1500
1000
600
400
300
200
100
50
0
Weipa
Lockhart River
Coen
Kowanyama
Palmerville
Cooktown
Cairns
Innisfail
Normanton
Burketown
Georgetown
Townsville
Camooweal
Charters Towers
Mount Isa
Richmond
Mackay
Winton
Boulia
Longreach
Emerald
Rockhampton
Bundaberg
Monkira
Tambo
Monto
Birdsville
Charleville
Quilpie
Roma
Brisbane
Toowoomba
Thargomindah
Cunnamulla
Goondiwindi
Warwick
Australian Government
Bureau of Meteorology
Based on a standard 30-year climatology (1961-1990)
© Commonwealth of Australia, 2010

Temperatures

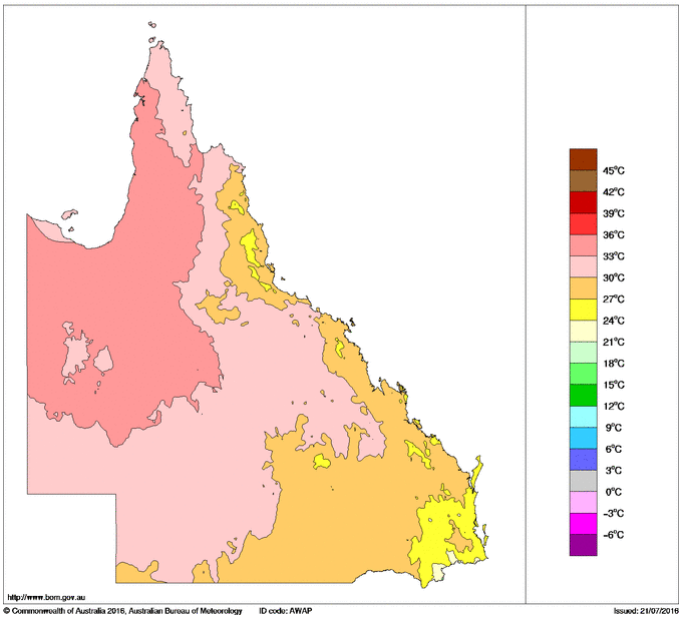
The average annual values of the daytime maximum of the hottest (January) and night- time minimum of the coldest (July) months are indicated on the climatic maps.

During the period of peak temperature, it may be an operational requirement that Line Speed be reduced to minimise the risk of incident (refer Operational Constraints).

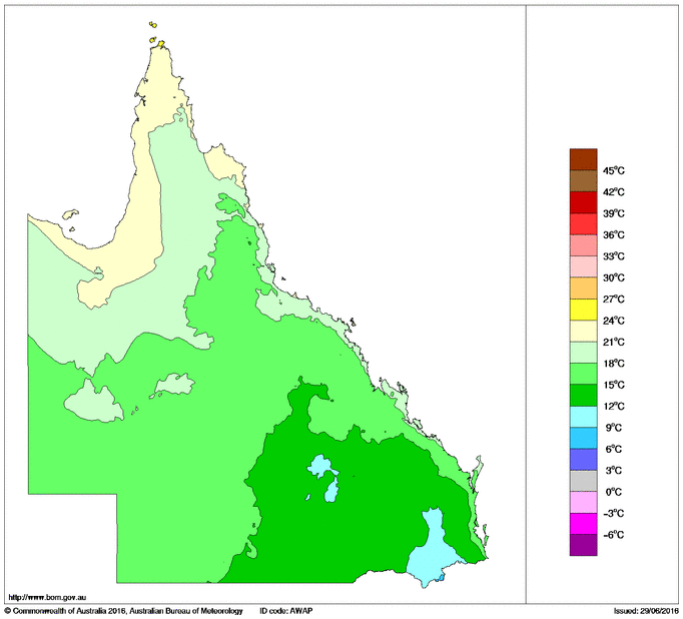




Maximum Temperature (°C) 1 July 2015 to 30 June 2016
Australian Bureau of Meteorology



Minimum Temperature (°C) 1 January to 31 December 2015
Australian Bureau of Meteorology



Description of the Railway

The track (1067 mm gauge) on the North Coast Line System is a mix of nominal 20, 30, 41, 47, 50, 53 and 60 kg/m rail on timber, steel and concrete sleepers.

Information on track, rollingstock, train operations, container operations and special train operations for the safe operation of trains on this System are contained in the MD-10-533 - Operational Route Manual.

Axle Loadings

Maximum axle loads used throughout this document have been determined by either the track configuration or the railway structures below rail. Railway structures were designed for axle loads, axle spacings and vehicle lengths that produce bending moments roughly equivalent to the moments for metric Cooper's loadings as follows :-

Maximum axle load	Metric Cooper's Loading
26 tal	M 220
20 tal	M 160
15.75 tal	M 130

For rollingstock of different configuration, e.g. in respect of axle spacing and vehicle lengths, lesser axle loads and/or speed restrictions may be required before rollingstock may be authorised to operate.

Basic Track Configuration

Basic track configuration is detailed on **APPENDIX B - SCHEMATIC LAYOUTS.**

Nambour to Bundaberg

Nambour (elevation 16 m) defines the northern extent of the Metropolitan System. From Nambour the North Coast Line heads north along the coastal plain to Cooroy (elevation 110 m), continuing on through Maryborough West (junction for Maryborough Branch), Colton (elevation 39 m and junction for the Takura Branch) before heading north west to Bundaberg (elevation 11 m).

There are thirty-one passing loops on this section namely Yandina, North Arm, Sunrise, Cooroy, Pomona, Cooran, Traveston, Woondum, Glanmire, Gympie North, Tamaree, Harvey's Siding, Curra, Theebine, Paterson, Gundiah, Netherby, Tiaro, Owanyilla, Mungar, Yengarie, Maryborough West, Colton, Torbanlea, Howard, Wokka, Isis Junction, Goodwood, Kinkuna, Elliott and Bundaberg.

Track structure is a mix of nominal 47, 50, 53 and 60 kg/m rail on steel and concrete sleepers.

The maximum allowable axle load is 20 tal.

The maximum allowable speed for locomotive hauled stock is 100 km/h, Intercity Express train is 120 km/h and Tilt trains 160 km/h.

The maximum grade (not compensated for horizontal alignment) that a northbound (Down) train will encounter is 1 in 44 near Gundiah whilst for an southbound (Up) train the maximum grade is 1 in 44 near Theebine.

Existing minimum nominal horizontal curve radii are as follows :-

running line 161 m

Fencing along this corridor complements adjacent land usage and is at the following standard, poor (25 %) and good (75 %). Fencing will be maintained at its current standard.

Corridor			Nambour to Bundaberg
Line Section Code			NC 401, 724, 725, 726, 727, 728, 729, 105, 446, 419, 122
System			North Coast
No. of Tracks			1
Route Km			233.97
Track Km			233.97
Electrified			Yes
Safeworking System			RCS
Control Centre			5th Floor RC1
Crossing Loops	No.		31
	Location and length		Yandina (723pp), North Arm (710pp), Sunrise (857pp), Cooroy (905pp), Pomona (682pp), Cooran (921pp), Traveston (804pp), Woodum (734pp), Glanmire (700pp), Gympie North (681pp), Tamaree (756pp), Harvey's Siding (862pp), Curra (733pp), Theebine (697pp), Paterson (694pp), Gundiah (878pp), Netherby (706pp), Tiaro - Loop (471pp), Tiaro - Main (532pp), Owanyilla (715pp), Mungar - Loop (726pp), Mungar - Main (647pp), Yengarie (596pp), Maryborough West (700pp), Colton - Loop (723pp), Colton - Main (691pp), Torbanlea (699pp), Howard (712pp), Wokka (694pp), Isis Jct (711pp), Goodwood (704pp), Kinkuna (754pp), Elliott (723pp), Bundaberg Main & Loop (1305pp)
Bridges (no of spans.)/Length (m)	Timber	No. of Bridges	8
		No. of Spans	119
		Length (m)	782.4
	Steel	No. of Bridges	7
		No. of Spans	55
		Length (m)	786.6
	Concrete	No. of Bridges	47
		No. of Spans	194
		Length (m)	3011.6
Overbridges (No. of Bridges)		Timber	4
		Steel	0
		Concrete	12
Tunnels (no.)/	Length (m)	Number	1
		Length (m)	175
Curves (% of total track)	<80km/h		10
	<60km/h		3
Level Crossings	Public (incl. Pedestrian)		38
	Occupation		50
	Fl. Lights		10
	Boom gte		21
	Drawbridge		1
Track Structure	Rail Mass		47/50/53/60kg
	Jointed		CWR
	Sleeper Type		C, S
Maximum Allowable Axle Load		(tal)	20
Route Speed km/h	Pass		160 (Tilt)/120(ICE)
	Frt		100
	Block		100
Max Container Height - (m)			3.05
Allowable Gross Tonnes p.a.("000")			10,000

Bundaberg to Parana

From Bundaberg (elevation 11 m), on the banks of the Burnett River, the North Coast Line heads north west to Parana (elevation 7m), the network ownership transfer point for Aurizon, south of Gladstone. From Parana it is a short journey into Gladstone (elevation 4 m) passing through South Gladstone via the Aurizon Network.

There are fourteen passing loops on this section namely North Bundaberg, Meadowvale, Avondale, Littabella, Flinders, Berajondo, Baffle, Irkanda, Netley, Miriam Vale, Bororen, Iveragh, Benaraby and Parana.

Track structure is a mix of nominal 47, 50, 53 and 60 kg/m rail on timber, concrete and steel sleepers.

The maximum allowable axle load is 20 tal.

The maximum allowable speed for locomotive hauled stock is 100 km/h, Intercity Express trains is 120 km/h and Tilt trains 160 km/h.

The maximum grade (not compensated for horizontal alignment) that a southbound (Up) train will encounter is 1 in 50 whilst for an northbound (Down) train the maximum grade is 1 in 50, both at a number of locations along the route.

Existing minimum nominal horizontal curve radii are as follows :-

running line 160 m

Fencing along this corridor complements adjacent land usage and is at the following standard, poor (25 %) and good (75 %). Fencing will be maintained at its current standard.

Corridor			Bundaberg to Parana	Parana to Gladstone Station
Line Section Code			NC 730, 733, 592	NC 751
System			North Coast	Blackwater
No. of Tracks			1	1
Route Km			171.605	4.359
Track Km			171.605	4.359
Electrified			Yes	Yes
Safeworking System			RCS	RCS
Control Centre			5th Floor RC1	Rockhampton
Crossing Loops	No.		14	0
	Location and length		North Bundaberg (512pp), Meadowvale - Main (708pp), Meadowvale Loop (708pp), Avondale (701pp), Littabella (698pp), Flinders Loop (823pp), Flinders Main (795pp), Berajondo (744pp), Baffle (824pp), Irkanda (734pp), Netley (716pp), Miriam Vale (695pp), Bororen (724pp), Iveragh (903pp), Bernaraby (698pp), Parana (908pp)	-
Bridges (no of spans.)/Length (m)	Timber	No. of Bridges	6	0
		No. of Spans	116	0
		Length (m)	744.8	0
	Steel	No. of Bridges	9	0
		No. of Spans	105	0
		Length (m)	1505.4	0
	Concrete	No. of Bridges	31	0
		No. of Spans	105	0
		Length (m)	1664.3	0
Overbridges (No. of Bridges)		Timber	3	0
		Steel	0	0
		Concrete	2	0
Tunnels (no.)/	Length (m)	Number	0	0
		Length (m)	0	0
Curves (% of total track)	<80km/h		4	28
	<60km/h		1	7
Level Crossings	Public (incl. Pedestrian)		24	0
	Occupation		9	1
	Fl. Lights		5	0
	Boom gte		18	0
	Drawbridge		1	0
Track Structure	Rail Mass		47/50/53/60kg	60 kg
	Jointed		CWR	CWR
	Sleeper Type		C, S	C
Maximum Allowable Axle Load		(tal)	20	20
Route Speed km/h	Pass		160 (Tilt)/120(ICE)	160 (Tilt)/120(ICE)
	Frt		100	100
	Block		100	100
Max Container Height - (m)			3.05	3.05
Allowable Gross Tonnes p.a.("000")			10,000	11,000

Description of the Track

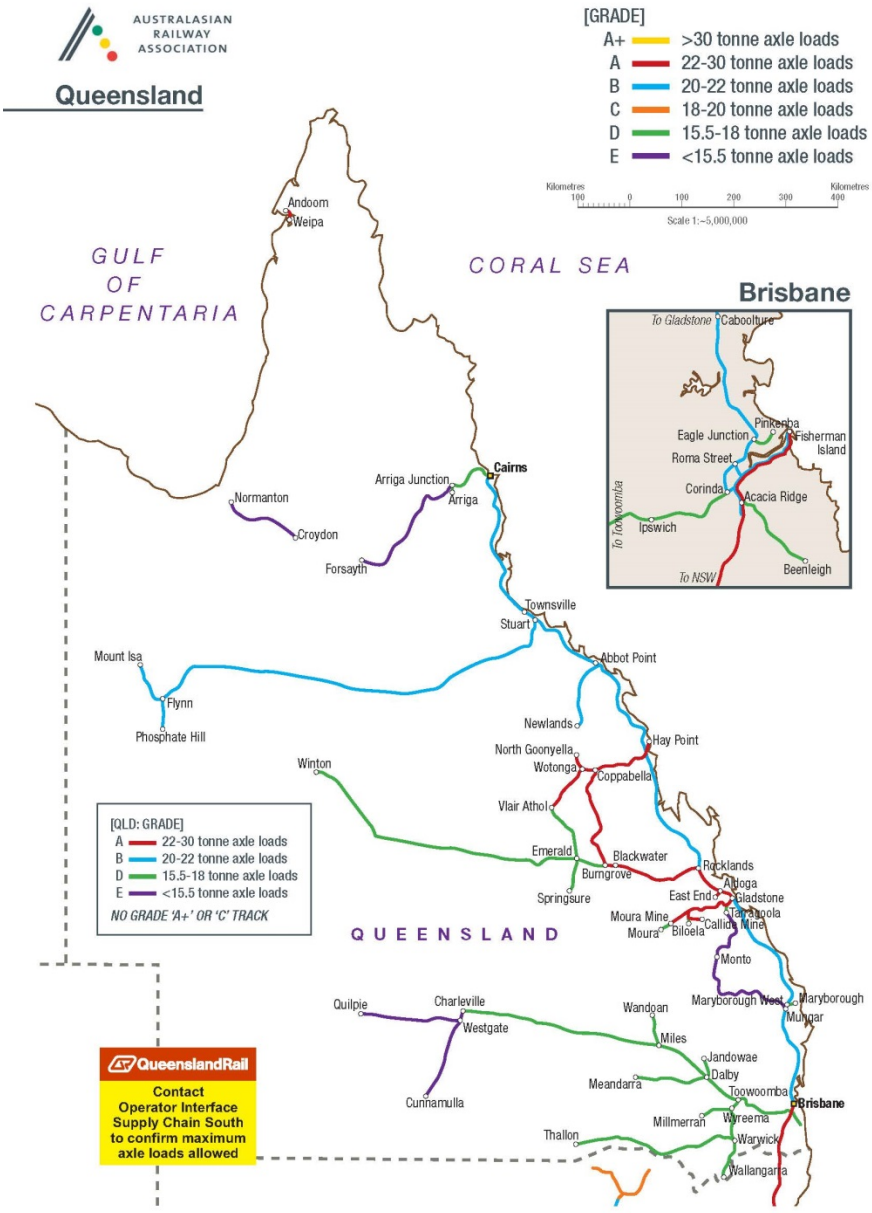
The track on this system is a mix of nominal 60 kg/m, 53 kg/m, 50 kg/m, 47 kg/m, 41 kg/m and 31 kg/m rail and timber, steel and concrete sleepers on crushed rock ballast.

Speeds through the curved leg of turnouts are governed by the angle of that turnout ie.

1 in 12	25 km/h
1 in 16	50 km/h
1 in 25	80 km/h

In general, curves (with the exception of turnout curves) are transitioned.

Preliminary Track Data and Grade Diagrams for the following major route are included in Appendix E.



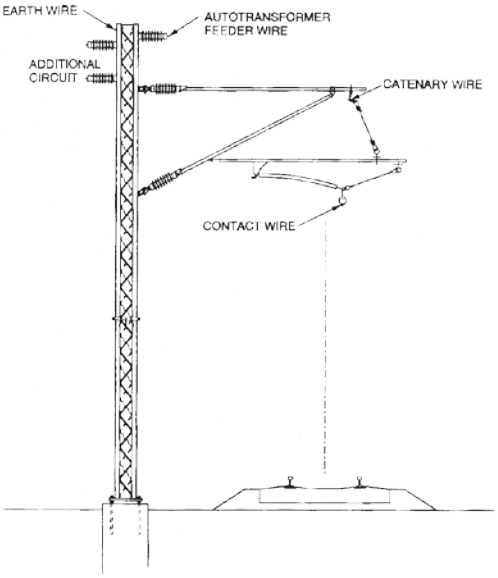
Overhead Line Equipment

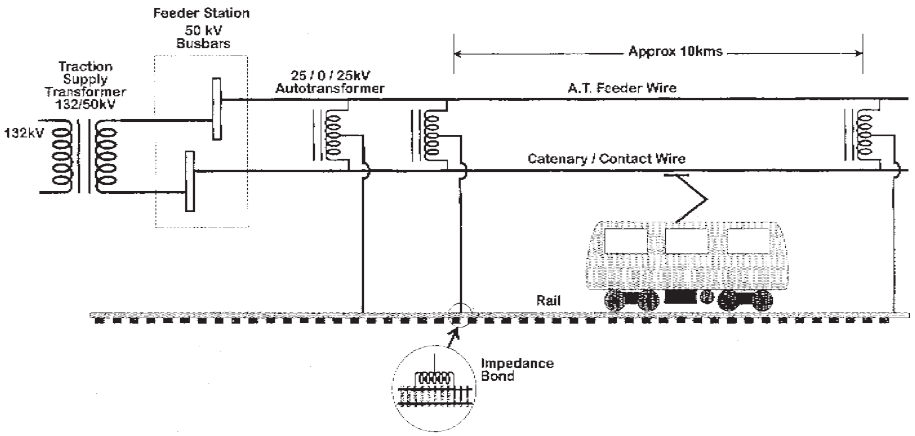
The North Coast Line System between Nambour and Rockhampton is electrified by an autotransformer system with the overhead line equipment operating at 25 000 volts, 50 Hertz, alternating supply (25 kV, 50 Hz, ac). Distribution is via a contact wire suspended from a catenary wire and these two wires are held in place by supporting structures to maintain ideal pantograph/contact wire interaction.

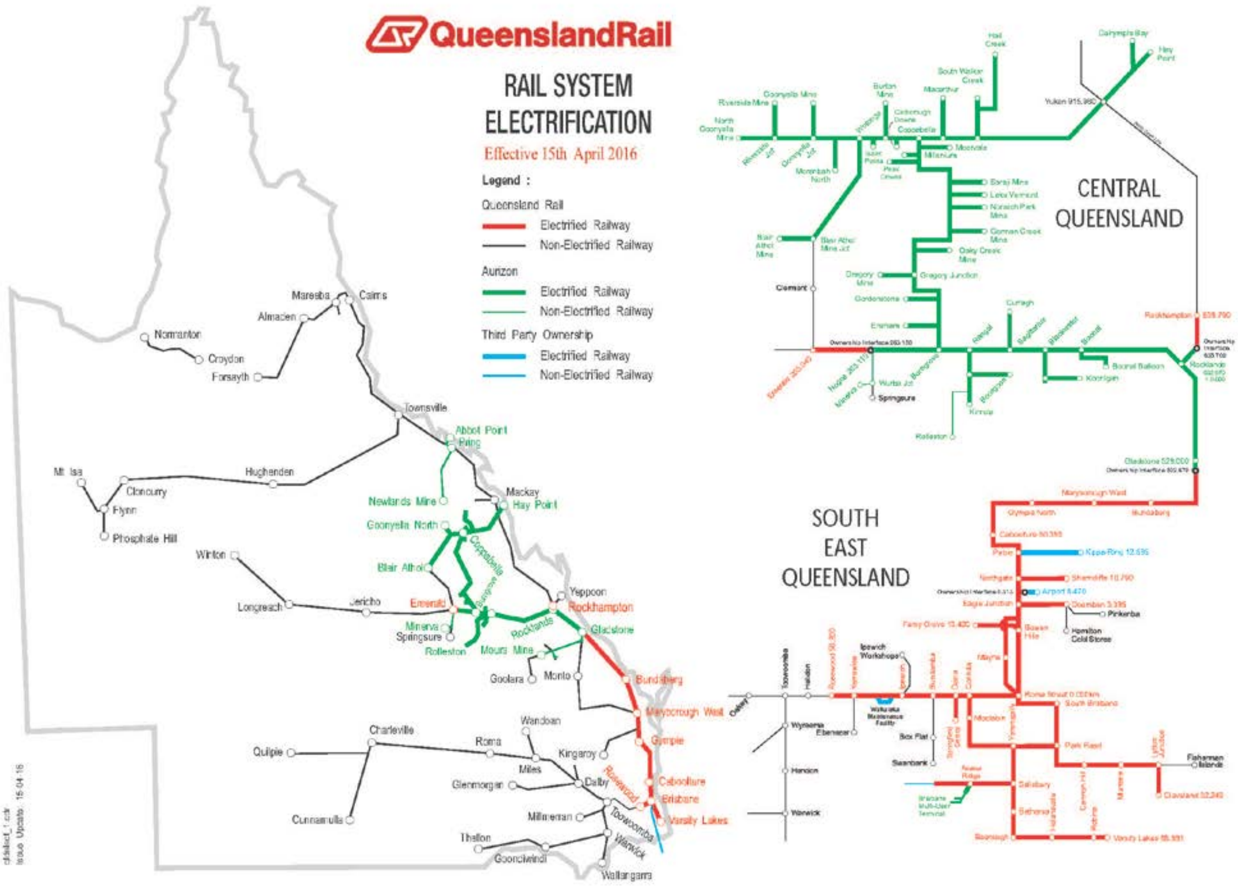
Typically, the autotransformer system also uses a 25 kV AC feeder wire run on the back of the supporting structure which is used for voltage support throughout the electrified network.

The dual wire distribution system is automatically tensioned to maintain a constant wire tension and requires a pantograph uplift force of 80 N ± 10 N for smooth sparkless current collection.

Typically on the North Coast Line, the traction system uses both rails for return current.






QueenslandRail
RAIL SYSTEM
ELECTRIFICATION
Effective 15th April 2016
Legend :
Queensland Rail
Electrified Railway
Non-Electrified Railway
Aurizon
Electrified Railway
Non-Electrified Railway
Third Party Ownership
Electrified Railway
Non-Electrified Railway
CENTRAL
QUEENSLAND
SOUTH
EAST
QUEENSLAND
Mareeba
Cairns
Almaden
Normanton
Croydon
Forsayth
Townsville
Abbot Point
Mt Isa
Cloncurry
Flynn
Phosphate Hill
Hughenden
Winton
Longreach
Jericho
Newlands Mine
Mackay
Hay Point
Goonyella North
Blair Athol
Emerald
Minerva
Springsure
Rolleston
Moura Mine
Yeppoon
Rockhampton
Gladstone
Goolara
Monto
Bundaberg
Maryborough West
Gympie
Caboolture
Brisbane
Varsity Lakes
Wandoan
Charleville
Quilpie
Roma
Kingaroy
Miles
Glenmorgan
Dalby
Cunnamulla
Millmerran
Toowoomba
Warwick
Thallon
Goondiwindi
Wallangarra

Operational Constraints - Infrastructure

During the summer months of high temperatures, hot weather precautions for track stability are observed to reduce the risk of incident in accordance with Safety Management Standard **MD-10-143 Hot Weather Precautions for Track Stability**, namely :-

Air Temperature 38°C and above	-	On timber sleepered track, restrict trains to 60 km/h (#)
		On concrete sleepered track, restrict all trains to 120 km/h
Air Temperature 40°C and above	-	On timber sleepered track, restrict trains to 40 km/h (#)
		On concrete sleepered track, restrict all trains to 60 km/h

(#) Steel sleepered track and timber sleepered track with interspersed steel sleepers shall be regarded as equivalent to timber sleepered track for track stability.

Speed restrictions may also be put in place after maintenance activities in accordance with Queensland Rail Safety Standards.

The extent of restriction will depend upon the type of maintenance activity and risk of track misalignments.

Force Majeure Events will also see the imposition of speed restrictions, the extent and severity of the restrictions being dependent on the event.

Trackside Detection Equipment

Trackside detection equipment is installed on this system to protect below rail infrastructure and rollingstock from incident.

A summary of locations / equipment type / reporting functions can be found in Appendix I.

Track circuits and axle counters are used for train detection within this System.

Weighbridges

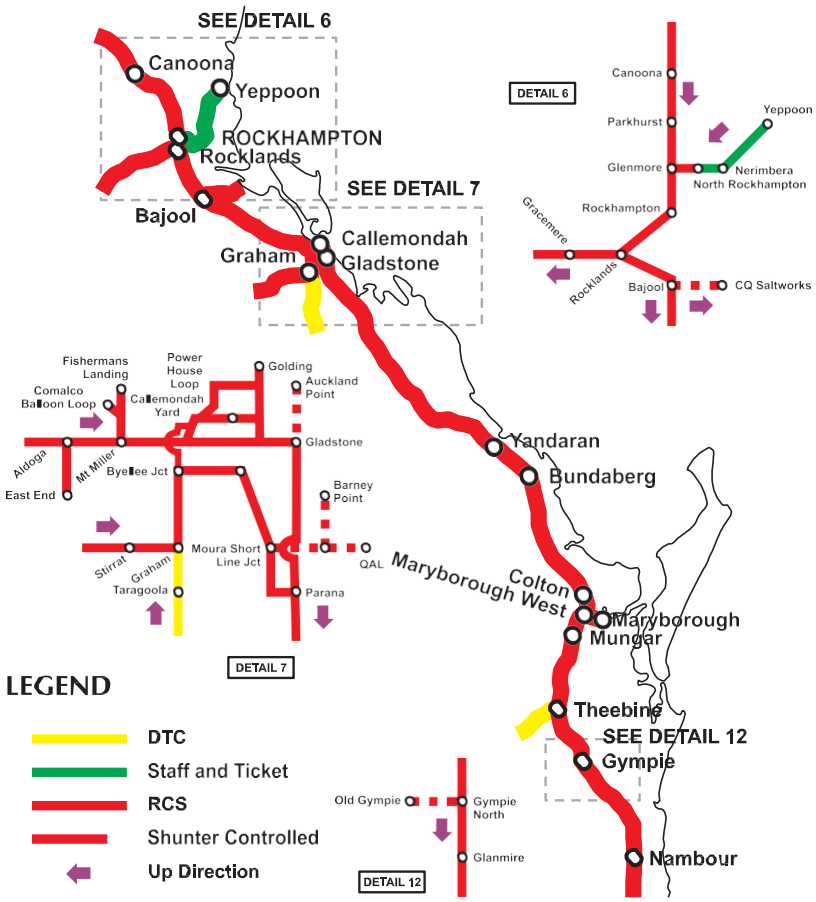
There are no weighbridges on this System as described herein.

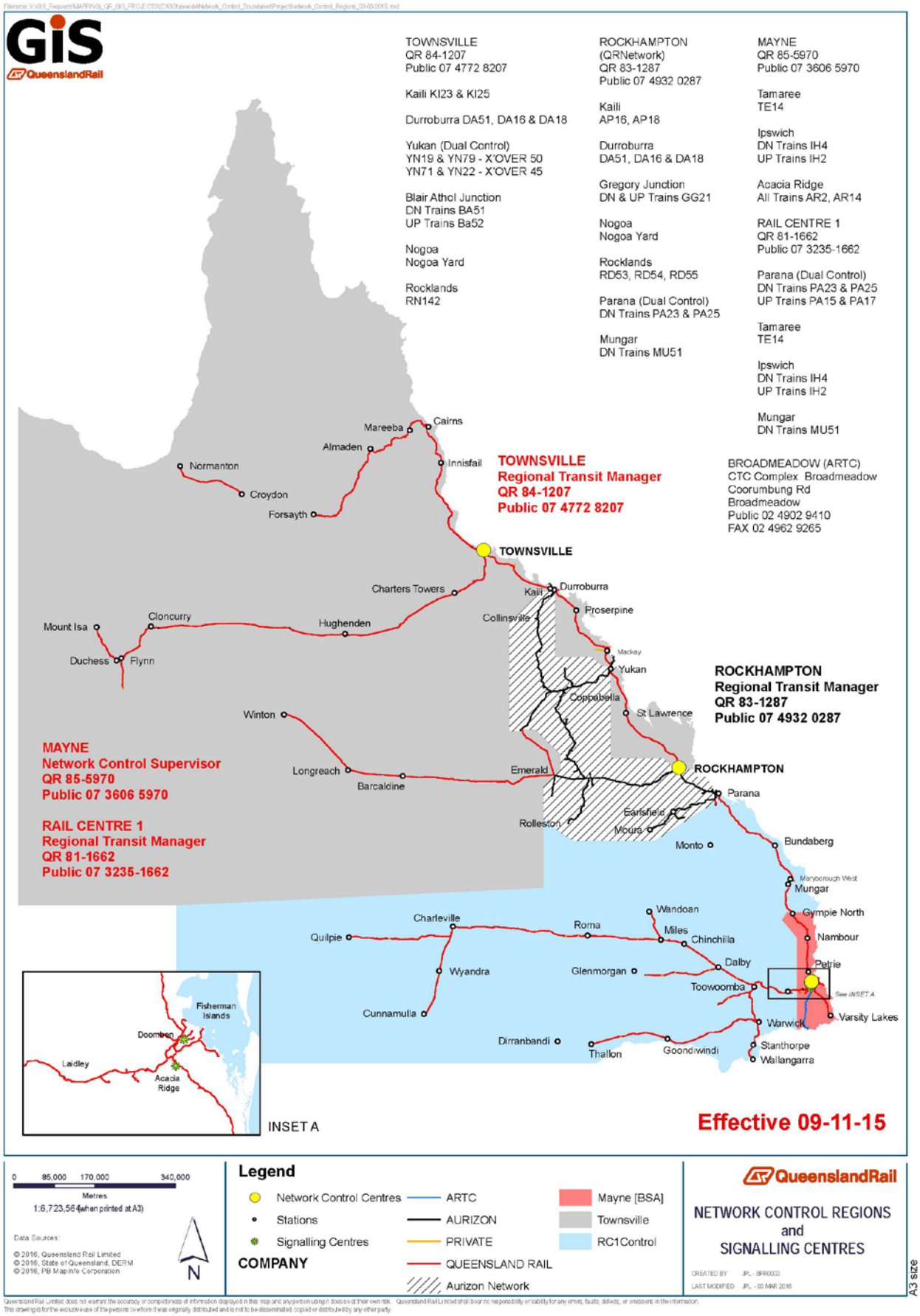
Operational Systems & Train Control

The North Coast Line System is operated by Remote Control Signalling (RCS), Automatic Train

Control (ATC) and Automatic Train Protection (ATP).

Train Control for the North Coast Line, from Nambour to Parana is located in Brisbane.




GIS
QueenslandRail
TOWNSVILLE
QR 84-1207
Public 07 4772 8207
Kaili KI23 & KI25
Durroburra DA51, DA16 & DA18
Yukan (Dual Control)
YN19 & YN79 - X'OVER 50
YN71 & YN22 - X'OVER 45
Blair Athol Junction
DN Trains BA51
UP Trains Ba52
Nogoa
Nogoa Yard
Rocklands
RN142
ROCKHAMPTON
(QRNetwork)
QR 83-1287
Public 07 4932 0287
Kaili
AP16, AP18
Durroburra
DA51, DA16 & DA18
Gregory Junction
DN & UP Trains GG21
Nogoa
Nogoa Yard
Rocklands
RD53, RD54, RD55
Parana (Dual Control)
DN Trains PA23 & PA25
Mungar
DN Trains MU51
MAYNE
QR 85-5970
Public 07 3606 5970
Tamaree
TE14
Ipswich
DN Trains IH4
UP Trains IH2
Acacia Ridge
All Trains AR2, AR14
RAIL CENTRE 1
QR 81-1662
Public 07 3235-1662
Parana (Dual Control)
DN Trains PA23 & PA25
UP Trains PA15 & PA17
Tamaree
TE14
Ipswich
DN Trains IH4
UP Trains IH2
Mungar
DN Trains MU51
TOWNSVILLE
Regional Transit Manager
QR 84-1207
Public 07 4772 8207
BROADMEADOW (ARTC)
CTC Complex Broadmeadow
Coorumbung Rd
Broadmeadow
Public 02 4902 9410
FAX 02 4962 9265
ROCKHAMPTON
Regional Transit Manager
QR 83-1287
Public 07 4932 0287
MAYNE
Network Control Supervisor
QR 85-5970
Public 07 3606 5970
RAIL CENTRE 1
Regional Transit Manager
QR 81-1662
Public 07 3235-1662
Mareeba
Cairns
Almaden
Innisfail
Normanton
Croydon
Forsayth
Charters Towers
Kaili
Durroburra
Proserpine
Collinsville
Mount Isa
Cloncurry
Hughenden
Duchess
Flynn
Mackay
Yukan
Coppabella
St Lawrence
Winton
Longreach
Barcaldine
Emerald
Rolleston
Earlsfield
Moura
Parana
Monto
Bundaberg
Maryborough West
Mungar
Gympie North
Nambour
Wandoan
Roma
Miles
Chinchilla
Charleville
Quilpie
Wyandra
Glenmorgan
Dalby
Petrie
Toowoomba
Cunnamulla
Warwick
Varsity Lakes
Dirranbandi
Thallon
Goondiwindi
Stanthorpe
Wallangarra
Fisherman Islands
Doomben
Laidley
Acacia Ridge
INSET A
Effective 09-11-15
0 85,000 170,000 340,000
Metres
1:6,723,564 (when printed at A3)
Data Sources:
© 2016, Queensland Rail Limited
© 2016, State of Queensland, DERM
© 2016, PB MapInfo Corporation
N
Legend
Network Control Centres
Stations
Signalling Centres
COMPANY
ARTC
AURIZON
PRIVATE
QUEENSLAND RAIL
Aurizon Network
Mayne [BSA]
Townsville
RC1Control
QueenslandRail
NETWORK CONTROL REGIONS
and
SIGNALLING CENTRES
A3 size

Information Systems

ViziRail is the key software system designed as a tool for use in integrated scheduling, possession planning, monitoring and reporting on the Queensland Rail network.

Functionality includes modules:

- Train notices
- Actual train running (ATR)
- Incidents
- Train consists (Train Builder)
- Speed restrictions
- Rollingstock allocations
- Rollingstock maintenance
- Fresh turnouts
- Planning graphs
- Scheduling enhancements
- Possession enhancements
- OTIS (Operational to Information Systems) - which converts train steps to actual arrival and departure train information.

Operational Constraints - Rollingstock

All new rollingstock requires to be accepted via the Rollingstock Authorisation Process, rollingstock which conforms with Drawing Nos. 2236, 2237 and 2238 may operate in an unrestricted manner on main lines.

For rollingstock to conform with Drawing Nos. 2236, 2237 and 2238 the static rollingstock profile must be within the diagram, refer **APPENDIX H - Rollingstock Gauges**. As well as the static component, dynamic effects need to be considered and these effects are contained within Rollingstock Interface Standards.

Rollingstock not conforming to these drawings may be accepted via the Rollingstock Authorisation Process and may be operated subject to constraints / limitations imposed as a result of the Authorisation Process.

Potential railway operators should ensure that they have the latest revision of these drawings before the planning and construction of rollingstock.

Communications

Communications on the North Coast Line between Driver and Controller is via a UHF radio system (Train Control Radio - TCR) utilising a number of Queensland Rail channels and frequencies. Tranceivers “auto” switch channels to suit geographical location. Frequency specification and coverage details are available as part of the “Access Enquiry Process”. Control phones are located at Staff Stations only.

Access to the Maintenance Supervisory Radio System (MSR) can be gained by using Queensland Rail telephone extensions depending on location or UHF radio system utilising Queensland Rail channels.

In addition, all current locomotives (including Multiple Units and Miscellaneous Vehicles such as Rail Motors) carry and all units new to the system will be required to carry a UHF radio operating on Queensland Rail Channel 1. This provides on-board and wayside communications including end to end, train to train and train to track gangs over a distance on average of 8 - 10 km.

Communications on board locomotives must conform to Queensland Rail's Safety and Security Standard MD-10-86 - Mobile Voice Radio Communications Systems.

Sectional Running Times

The sectional running times, expressed as minutes, for various types of trains currently operating on the system are contained in **APPENDIX F**.

The sectional running times are "Pass to Pass" times for a running move and do not reflect acceleration and deceleration characteristics of trains.

Sectional running times are provided for two (2) types of locomotive-hauled trains - passenger and container (inter-modal).

Proposed train configurations would need to be confirmed by the relevant operator against the infrastructure constraints to determine if the sectional running times can be achieved. If the sectional running times cannot be achieved then different arrangements, including for access charges, may need to be negotiated as part of the access agreement negotiations.

Changes to the sectional running times for the system are also possible over time. Any changes would be confirmed as part of the access agreement negotiations.

Trains travelling south to Brisbane are travelling in the Up Direction whilst trains travelling north to Cairns are travelling in the Down Direction.

Incident Recovery Time and Management

Historically it is anticipated that on the North Coast Line System a minor incident could result in disruption to services for 6 hours and a major incident for 2 days.

Incident recovery is dependent on the nature, severity and location of each unique incident that may occur on this system.

To enable quick response in case of emergency, latitudes and longitudes of some passing loops, generally direction change, are detailed below :

Location	Latitude	Longitude
Roma Street	27° 27’ S	153° 01’ E
Northgate	27° 23’ S	153° 04’ E
Lawnton	27° 16’ S	152° 58’ E
Caboolture	27° 04’ S	152° 57’ E
Landsborough	26° 48’ S	152° 58’ E
Nambour	26° 37’ S	152° 57’ E
Cooroy	26° 25’ S	152° 54’ E
Gympie North	26° 09’ S	152° 41’ E
Theebine	25° 56’ S	152° 32’ E
Mungar	25° 36’ S	152° 35’ E
Maryborough West	25° 30’ S	152° 38’ E
Colton	25° 25’ S	152° 39’ E
Wokka	25° 16’ S	152° 30’ E
Bundaberg	24° 52’ S	152° 20’ E
Berajondo	24° 37’ S	151° 50’ E
Miriam Vale	24° 19’ S	151° 33’ E
Gladstone	23° 50’ S	151° 15’ E
Rocklands	23° 26’ S	150° 31’ E

Rail / Road Interfaces

Operators on this section of the North Coast Line System (ie Nambour to Parana) will encounter 126 Rail / Road Interfaces and 2 Rail/ Tram Interfaces (see Appendix C for details) categorised as follows:-

Public (Active with Flashing Light/Boom Gate Protection)	-	54
Public (with Passive Protection - Signs)	-	10
Occupation (Active with Flashing Light)	-	2
Occupation (Private Access - Signs)	-	47
Occupation (Private Access - No signs)	-	13

Rail Operations and the Environment

All railway operators are required to comply with all relevant State, Federal and Local Legislation and Laws, current at the time, relating to the management and protection of the Environment.

Queensland Rail currently has a number of licences and/or approvals for activities undertaken at either Queensland Rail facilities or on the Queensland Rail corridor. Queensland Rail’s licences and approvals fall under two main areas:

1. **Fixed Locations;**

Queensland Rail has a number of licences for activities managed by its operational Business Groups in particular locations, such as refuelling locations.

2. **Itinerant or Varied Locations**;

Queensland Rail also has a number of licences for activities that occur at more than one location, such as maintenance activities.

Railway operators will need to ascertain with the Department of Environment and Heritage Protection or Other Regulatory Body their responsibilities in regard to obtaining an Environmental Authority(ies) for the type of operation proposed.

Copies of all Environmental Authorities administered by the Department within Queensland are available upon request from the Department. he Department of Environment and Heritage Protection contact details can be found via the web at

https://www.ehp.qld.gov.au/

Environmental Noise

The Environmental Protection (Noise) Policy (EPP Noise) recognises a railway as a beneficial asset, which is necessary for the community's environmental, social and economic well-being. The Environmental Protection (Noise) Policy is available from the Government Printers (GoPrint) or via the Office of the Queensland Parliamentary Council website at

http://www.legislation.qld.gov.au/OQPChome.htm

The EPP Noise nominates "planning levels" for railway noise which may be used as a guide in deciding a reasonable noise level for the activity. The EPP Noise recognises, however, those levels may not be appropriate for an existing railway. It envisages that it may be reasonable to apply the levels only in the long term to allow time to progressively reduce any significantly adverse effects on the environmental values from its operation. The long term planning levels are:

L_{Aeq} (24 hour)	65dBA
L_{Amax}	87dBA

They are to be assessed one (1) metre in front of the most exposed part of the building facade of an affected noise sensitive place.

Noise Management

While noise from the operation of a railway is exempt from environmental nuisance provisions under the Queensland Environment Protection Act 1994, Queensland Rail strives to manage noise associated with both its rail operations and network wherever reasonable and practical.

As the rail manager, Queensland Rail works closely with customers regarding environmental issues, and provides feedback to Rail Operators to allow them to investigate and address as applicable, noise related issues that may be associated with their locomotives and wagons.

There are various sources of noise from a railway and to aid efficient and effective noise reduction, a range of noise management measures are utilised by Queensland Rail. These are detailed at:

http://www.queenslandrail.com.au/inthecommunity/environment/noisemanagement

Wheel Squeal & Flanging

Wheel Squeal is caused by friction forces between the top of rail and wheel interface. Whereas, flanging noise is predominantly caused by friction forces between the side of rail and wheel interface. Continuous or sustained wheel squeal produced primarily on the low rail side, is distinct from discontinuous "flanging noise" that is produced on the high rail side. Continuous wheel squeal is of a high level, and Queensland Rail's experience is that it may cause significant community reaction, while flanging noise is of a lower level and is more accepted by the community.

Generally, tighter radius curves (i.e. under 300 metre radius) when associated with a number of rollingstock factors that promote wheel squeal, may result in squeal being produced. Rollingstock factors that may promote wheel squeal include:

- Higher wheel hardness
- Stiff primary suspensions
- High centre plate friction
- Worn wheel treads
- Misaligned axles
- Unmatched wheel tread diameters, and
- Incorrectly adjusted sidebearers

Noise Complaints

Queensland Rail is corporately committed to act towards its neighbours in a considerable and reasonable manner. This good neighbour commitment assumes a reasonable degree of tolerance from neighbours and a commitment by Queensland Rail to take action where appropriate.

Where Queensland Rail receives complaints about noise from railway activities for which Queensland Rail may be responsible, Queensland Rail responds to those complaints and maintains records of those complaints in accordance with its Environmental Management System (EMS).

Where available, generic data will be supplied on request to a third party operator who is proposing operations within a defined network. That data will indicate those areas where Queensland Rail has received prior complaints relating to its train operations. It will be made available when a third party operator is undertaking the development of its Environmental Investigation and Risk Management Report as part of its Access Agreement conditions.

Third Party Requirements

Any railway operator obtaining access to Queensland Rail's Network shall be required to commission an environmental investigation of the proposed operations. This investigation will be conducted by a suitably qualified person, reasonably acceptable to both parties.

In response to the findings of such an investigation, the operator shall produce an Environmental Investigation and Risk Management Report that identifies the risks of Environmental Harm associated with the operation and provides proposed controls to address the risks. This shall be reviewed by, and agreed with, Queensland Rail.

In addition, the operator shall have in place an EMS, which, amongst other things, has regard for the issues, risk and control measures identified in the Environmental Investigation and Risk Management Report. Further details on requirements for environmental issues can be found in Queensland Rail's Access Undertaking.

Queensland Rail has determined that it holds no EMS documentation that, without disclosure to a third party operator, would either:

- Compromise or restrict a third party's operations or increase or place at risk the environmental performance of the third party operator or itself, and

- Limit or restrict the abilities of a third party operator to develop such documentation that would not be reasonably expected of the operator to develop on its own behalf, commensurate with the size and subsequent environmental risks of the proposed operations and the organisational resources available to it, to undertake such operations.

Any EMS documentation (wholly or partially) identified as specifically relating to the control of corridor infrastructure (below rail) environmental issues, will be made available to the operator to assist in formulating appropriate and consistent operational (above rail) controls within their Environmental Investigation and Risk Management Report and EMS.

Maximum Train Length

The maximum length of trains is determined by:

- requirements for crossing/passing other trains
- requirements for braking performance of the train
- capacity of the route
- drawgear capacity
- train handling
- requirements for road/pedestrian access across the track

Where it is necessary for a train to cross, pass or be passed by another train, the maximum train length allowable shall be such that the comparison train length (including allowance for stretching and train handling) is not longer than the crossing loop length.

Variations of train length for a particular train configuration are possible and would need to be negotiated as part of access agreement negotiations.

Rollingstock Braking Rate

The signalling system and flashing light protection at rail / road interfaces has been designed to cater for the variety of trains that currently use this system.

Signal design parameters and train braking characteristics will be compared during the development of the Interface Risk Management Plan.

Future Infrastructure Improvements

Capacity Enhancements

Queensland Rail welcomes opportunities to work with customers with a view to transporting additional tonnages on this System.

We encourage Rail Operators, mining companies and/or processors to engage with Queensland Rail at the earliest possible opportunity. This will allow sufficient time to work through detailed capacity analysis and to determine the network upgrades necessary and negotiate appropriate commercial arrangements.

Capacity enhancements will continue to be delivered for future projects provided that contracted tonnages:

- Are sufficient to justify the necessary capital investment on commercial terms; and
- Adequate notice is given from the time of contracting capacity to deliver the required enhancements.

Infrastructure Management and Access

APPENDIX B - SCHEMATIC LAYOUT is colour coded to indicate Management of Infrastructure and Access.

Third party access to non-Queensland Rail managed infrastructure is by commercial arrangement with the relevant party.

The initial point of contact for Queensland Rail managed below rail assets is:

General Manager Access Revenue

Level 9 | 305 Edward Street
Brisbane Qld 4001
Telephone 61 07 3072 1145
Facsimile 61 07 3072 8248
Email: aarf@qr.com.au

APPENDIX A

Definitions (Statewide)

Access Agreement

Access Agreement means an agreement between Queensland Rail and an Access Holder for the provision of Access.

Access Undertaking

A document approved by the Queensland Competition Authority (QCA) in accordance with the QCA Act 1997 (Q) that sets out principles for negotiating access to Queensland Rail's declared services.

Accreditation

Accreditation in accordance with part 4, Chapter 6 of the Transport Infrastructure Act 1994 (Qld) and "Accredited" has a similar meaning.

ATP (Automatic Train Protection)

Automatic Train Protection is a computer controlled system designed to make sure the train

- does not exceed the current speed limit
- does not exceed the limit of authority generated by the interlocking (and usually indicated by a signal at STOP)
- does not make unreasonable train movements during shunting, when stationary, or at startup

AWS (Automatic Warning System)

Automatic Warning System is designed to

- provide an in-cab visible and audible indication of the aspect displayed in the next signal
- prompt and warn the train driver of a RESTRICTED signal aspect displayed in the next signal
- stop the train if the driver fails to acknowledge the AWS alarm of a RESTRICTED signal aspect

Axle Counters

At some locations in Remote Controlled Signalling (RCS) Territory an axle counter system has been provided to detect occupancy of a section of track.

An axle counter at each end of a section determines whether an axle is entering or leaving the section and counts the number of axles passing the counter in each direction. By keeping an accurate count of axles into the section, then the number of axles out of the section, the system can determine if the section is occupied or not.

Block Train

A train consisting entirely of similar classes of wagons of axle loads over 12.2 tonnes marshalled together for a certain class of traffic. The definition is also extended to cover trains in which 12 or more such wagons loaded to more than 12.2 tonnes gross per axle are included within a length of 315 metres or less of the train.

Crossing Loop Length

The maximum length in metres of the train which can be accommodated in the loop to allow normal operation of the signalling systems for crossing or passing movements.

Daily Train Plan (DTP)

Collectively, the scheduled times for all Train Services operating on Queensland Rail's Rail Infrastructure and any Planned Possession on a particular day.

Declared Services

Services declared as available for access by third party operators in accordance with the QCA Act 1997 (Q).

Declared Infrastructure

Infrastructure declared as available for access by third party operators in accordance with the QCA Act 1997 (Q).

Design Neutral Temperature

The rail temperature at which the track is designed to be stress free as defined in Queensland Rail's Civil Engineering Publication #26 "Rail Stressing Manual".

Direct Traffic Control (DTC)

Direct Traffic Control (DTC) is an absolute block safeworking system used to control the movement of trains in non-signalled territory.

Central to DTC is an on-board DTC computer which displays authorities stored in its database. The relevant authority is activated by the train crew following an exchange of codes between the crew and the controller. Codes are exchanged verbally using the train control radio.

The procedures governing the operation of DTC are detailed in Queensland Rail's Standard MD-10-113 "Direct Traffic Control Manual".

Dragging Equipment Detectors (DED)

A mechanism positioned on sections of track to detect any dragging equipment on train.

Dragging Equipment Detectors Alarm (DED Alarm)

Part of the Queensland Rail System which advises the Train Controller either by a computer prompt message that a D.E.D. has been activated and the train driver by a recorded voice message.

Electromagnetic Compatibility (EMC)

The ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.

Electric Train Staff

A 'token' system of train working between Interlockings on single lines in non track- circuited areas, where release of a token is controlled by electrically connected and interlocked instruments.

EPP (Noise)

Environmental Protection (Noise) Policy 1997; Subordinate Legislation to the Queensland Environmental Protection Act 1994.

Force Majeure Event

Means any cause, event or circumstance, or combination of causes, events or circumstances, which is beyond the reasonable control of the Party affected thereby and which by the exercise of due diligence such Party is not reasonably able to prevent or overcome, including but not limited to, results of abnormal weather conditions, act of God, breakdown of any facilities or machinery or unavailability of essential equipment, strikes or other industrial dispute.

Hot Wheel & Bearing Detectors (HWD/HBD)

Heat sensors located at strategic locations on the system that identify abnormal temperatures in wheels and wheel bearings as the train passes over, transmits a signal to the train control panel that necessitates an inspection of the suspect wagon and remedial action

Line Code

Line Code, a unique alpha-numeric identifier applied to a section of track on Queensland Rail's network and usually run from junction point to junction point. Each numeric identifier is unique and can be further rolled up into Corridors using the alpha identifier.

LWR

Long welded rail. Rail that has mechanical rail joints spaced at intervals between 110m and 220m.

LSC

Line Section Code, a unique alpha-numeric identifier applied to a section of Queensland Rail's network.

Master Train Plan (MTP)

Collectively, the scheduled times as advised by Queensland Rail from time to time for all Train Services operating on Queensland Rail's Rail Infrastructure where such scheduled times remain unchanged from week to week, and any Planned Possessions.

Nominal Rail Size

Rail sizes 20, 31 and 41 kg/m are all nominal rail sizes used to group together a range of rail types and sizes originally designated in the imperial unit "lb/yd". The term "nominal" is used in recognition of the variation in the dimensions, mass and engineering properties of the rails in this category.

Ordinary Staff and Ticket Working

A token based system of safeworking where the movement of trains on bi-directional single lines is on possession of a staff token or ticket. Each section of single line has a unique token.

Staff & Ticket

The Staff and Ticket System allows for the movement of trains over a bidirectional track.

The Staff and Ticket System operates (in accordance with Queensland Rail's Standard MD-10-114) on the principle of absolute block working, which provides that only one train will be authorised to be on any one section at any one time.

Railway Operator

A person who has, or is seeking, Access from Queensland Rail to operate Train Services on the Rail Infrastructure and who is, or who will become, Accredited in respect of those Train Services.

Remote Controlled Signalling (RCS)

A system of Safeworking where train movements are governed by aspects displayed in Colour Light Signals which are controlled from a remote location and by the passage of trains. Some colour light signals and points may be released by the Train Controller to be operated from a local area by using:

- a local control panel;
- an electrically released shunting frame;
- a zone released shunting system, or
- emergency push buttons.

Railway Operators trains are expected to meet existing signalling standards to ensure track circuits and other signalling equipment operate safely and effectively - in particular Queensland Rail's Standard MD-10-76 "Principles for the Signalling of Trains" must be complied with.

Rollingstock Authorisation Process

The process for determining and validating rollingstock compliance and registration as detailed in Queensland Rail's Standard MD-10-140 - Rollingstock Validation, Acceptance and Registration

Remote Train Overview Application (RTOA)

A PC based system providing real time operational information, gathering information on train running and rail network status for immediate and continuously updated display and historical analysis.

Being a multi-tier client-server application, different levels of access/security ensure confidentiality of an Operator's train performance statistics.

SN Speed Boards

Speed Normal Boards are speed boards that place the onus on the Driver of a train to travel at speeds considered safe for that section of track being travelled over. These boards are gradually being phased out in accordance with Queensland Rail's Civil Standard MD-10-87 - SPEED BOARDS

Standard Train

The predominant type of train operating on the line/system.

SWR

Short welded rail. Rail that has mechanical rail joints spaced at intervals less than 110m.

Train Authorisation

The process for acceptance of a train configuration whose rollingstock is registered under Queensland Rail's Standard MD-10-140 - Rollingstock Validation, Acceptance and Registration.

Train Length

The total length in metres of a train including the locomotives. For the purposes of comparison with the length of crossing loops, an addition of 1% (1 metre for every 100 metres) shall be allowed to the calculated length of the train to allow for train stretching.

Unit Train

A train composed entirely of the one class and one drawgear classification of rollingstock.

Universal Traffic Control (UTC)

A PC based train control supervisory system that provides the means to remotely control train movements over a large area and provide management and train users with real time train related information.

ViziRail

A fully integrated scheduling, possession planning, monitoring and reporting tool for managing the Queensland Rail below-rail network.

ViziRail also supports the provision of all QCA and the Department of Transport and Main Roads reporting requirements.

Weather Monitoring System (WMS)

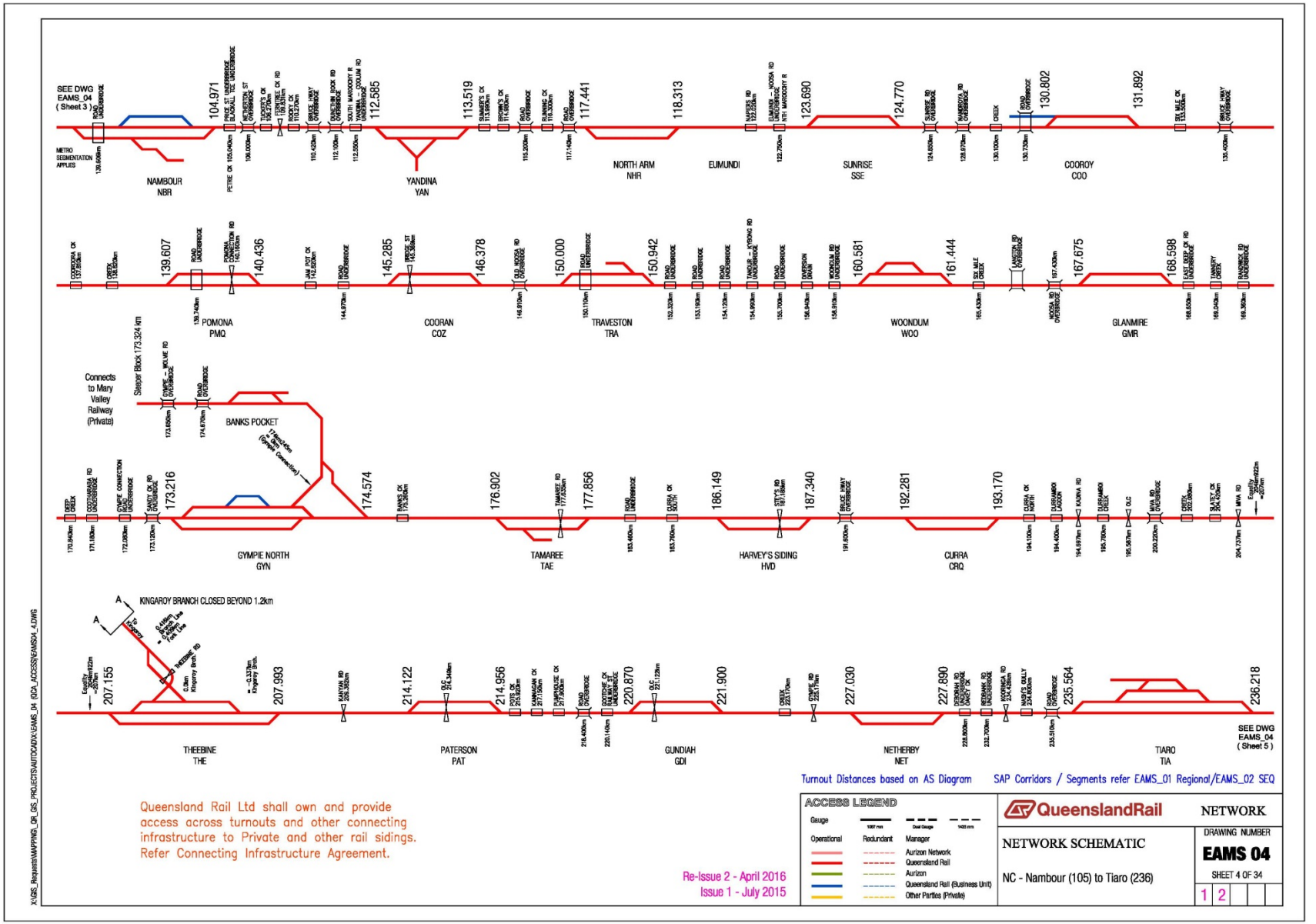
Remote weather monitoring stations providing critical information regarding temperature, rainfall and stream levels.

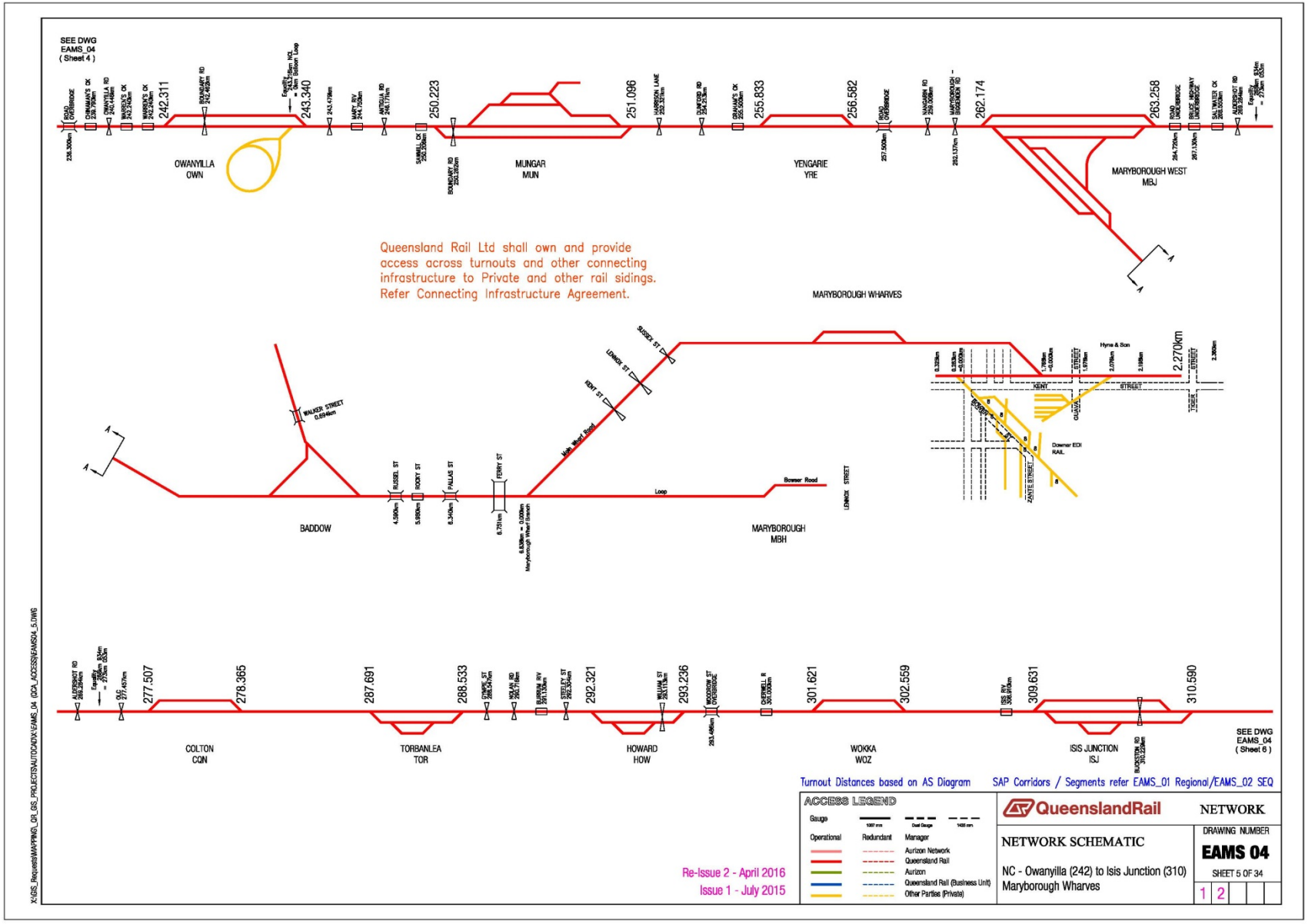
Wheel Impact Load Detector (WILD)

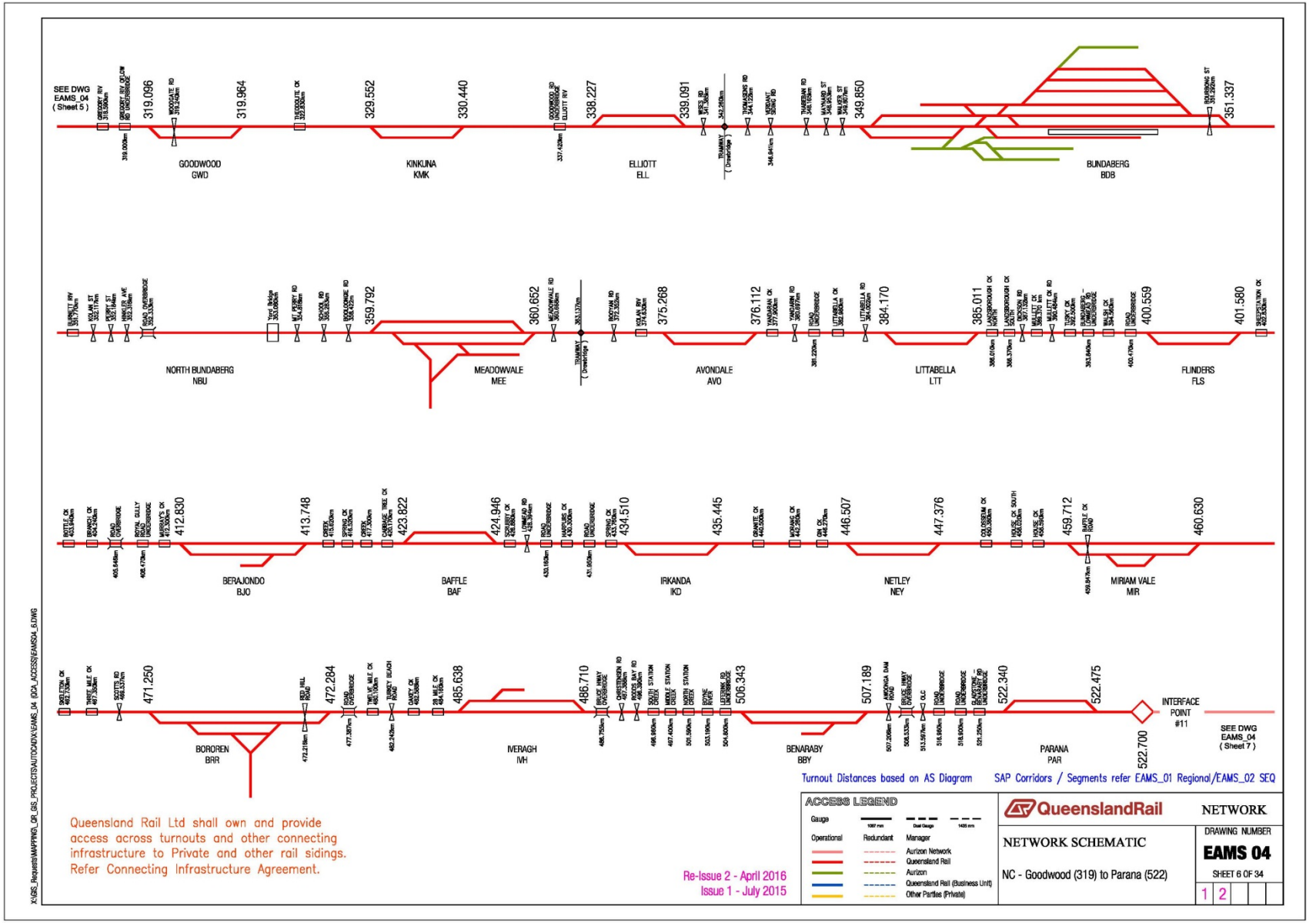
In track monitoring system to identify wheel flats.

APPENDIX B

Schematic Layout

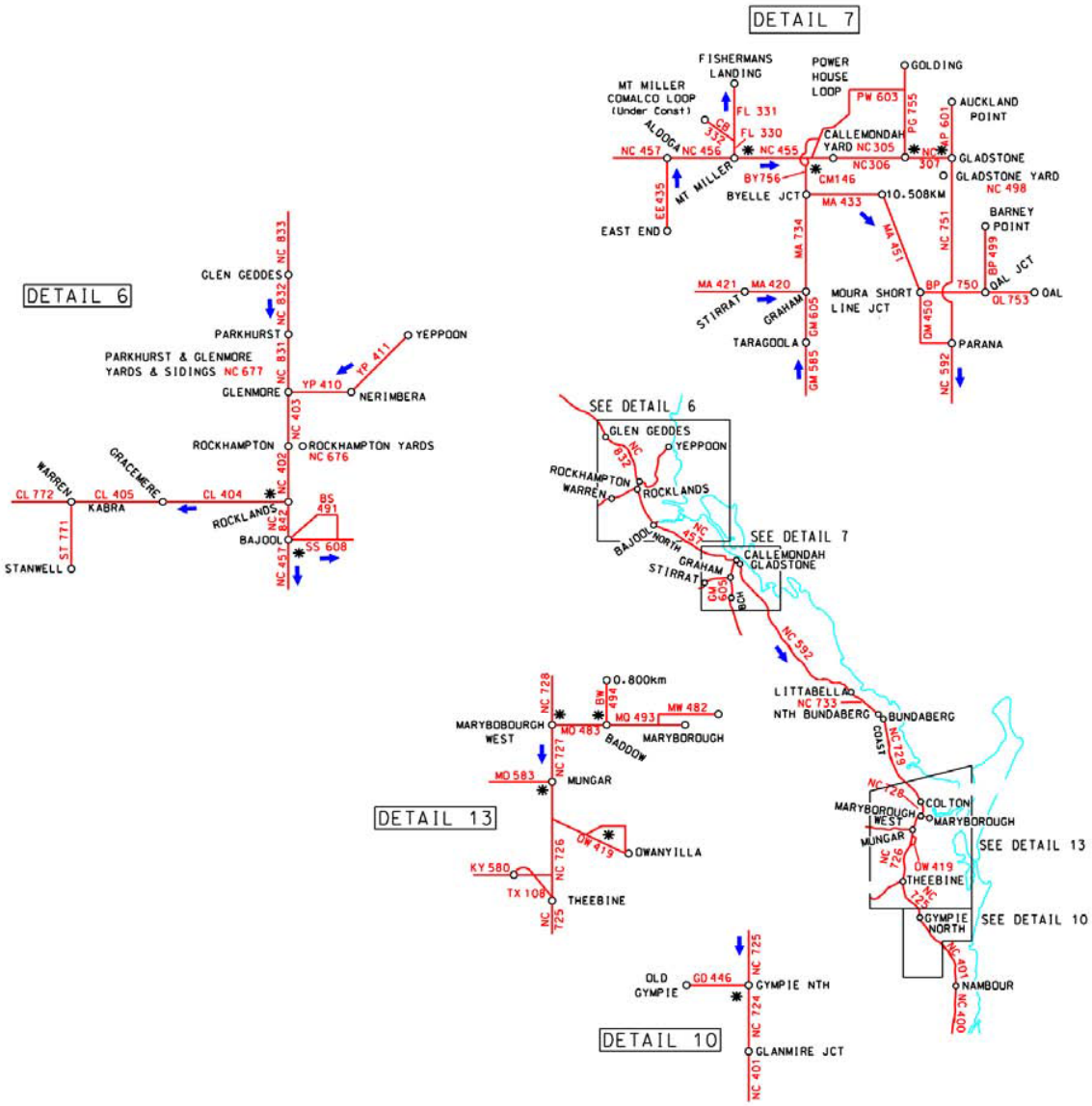

NAMBOUR NBR
YANDINA YAN
NORTH ARM NHR
EUMUNDI
SUNRISE SSE
COOROY COO
POMONA PMQ
COORAN COZ
TRAVESTON TRA
WOONDUM WOO
GLANMIRE GMR
Connects to Mary Valley Railway (Private)
BANKS POCKET
GYMPIE NORTH GYN
TAMAREE TAE
HARVEY'S SIDING HVD
CURRA CRQ
KINGAROY BRANCH CLOSED BEYOND 1.2km
THEEBINE THE
PATERSON PAT
GUNDIAH GDI
NETHERBY NET
TIARO TIA
SEE DWG EAMS_04 (Sheet 5)
Queensland Rail Ltd shall own and provide access across turnouts and other connecting infrastructure to Private and other rail sidings. Refer Connecting Infrastructure Agreement.
Re-Issue 2 - April 2016
Issue 1 - July 2015
Turnout Distances based on AS Diagram
SAP Corridors / Segments refer EAMS_01 Regional/EAMS_02 SEQ
ACCESS LEGEND
Operational
Redundant
Manager
Aurizon Network
Queensland Rail
Aurizon
Queensland Rail (Business Unit)
Other Parties (Private)
QueenslandRail NETWORK
NETWORK SCHEMATIC
NC - Nambour (105) to Tiaro (236)
DRAWING NUMBER
EAMS 04
SHEET 4 OF 34


SEE DWG EAMS_04 (Sheet 4)
OWANYILLA OWN
MUNGAR MUN
YENGARIE YRE
MARYBOROUGH WEST MBJ
Queensland Rail Ltd shall own and provide access across turnouts and other connecting infrastructure to Private and other rail sidings. Refer Connecting Infrastructure Agreement.
MARYBOROUGH WHARVES
BADDOW
MARYBOROUGH MBH
COLTON CQN
TORBANLEA TOR
HOWARD HOW
WOKKA WOZ
ISIS JUNCTION ISJ
SEE DWG EAMS_04 (Sheet 6)
Turnout Distances based on AS Diagram
SAP Corridors / Segments refer EAMS_01 Regional/EAMS_02 SEQ
ACCESS LEGEND
Operational
Redundant
Manager
Aurizon Network
Queensland Rail
Aurizon
Queensland Rail (Business Unit)
Other Parties (Private)
QueenslandRail NETWORK
NETWORK SCHEMATIC
NC - Owanyilla (242) to Isis Junction (310)
Maryborough Wharves
DRAWING NUMBER
EAMS 04
SHEET 5 OF 34
Re-Issue 2 - April 2016
Issue 1 - July 2015


SEE DWG EAMS_04 (Sheet 5)
319.096
319.964
329.552
330.440
338.227
339.091
349.850
351.337
GOODWOOD GWD
KINKUNA KMK
ELLIOTT ELL
BUNDABERG BDB
359.792
360.652
375.268
376.112
384.170
385.011
400.559
401.580
NORTH BUNDABERG NBU
MEADOWVALE MEE
AVONDALE AVO
LITTABELLA LTT
FLINDERS FLS
412.830
413.748
423.822
424.946
434.510
435.445
446.507
447.376
459.712
460.630
BERAJONDO BJO
BAFFLE BAF
IRKANDA IKD
NETLEY NEY
MIRIAM VALE MIR
471.250
472.284
485.638
486.710
506.343
507.189
522.340
522.475
522.700
BORORREN BRR
IVERAGH IVH
BENARABY BBY
PARANA PAR
INTERFACE POINT #11
SEE DWG EAMS_04 (Sheet 7)
Turnout Distances based on AS Diagram
SAP Corridors / Segments refer EAMS_01 Regional/EAMS_02 SEQ
Queensland Rail Ltd shall own and provide access across turnouts and other connecting infrastructure to Private and other rail sidings. Refer Connecting Infrastructure Agreement.
Re-Issue 2 - April 2016
Issue 1 - July 2015
ACCESS LEGEND
Gauge
Operational
Redundant
Manager
Aurizon Network
Queensland Rail
Aurizon
Queensland Rail (Business Unit)
Other Parties (Private)
QueenslandRail
NETWORK
NETWORK SCHEMATIC
NC - Goodwood (319) to Parana (522)
DRAWING NUMBER
EAMS 04
SHEET 6 OF 34
1 2
X:\GIS_Requests\MAPPING_QR_GIS_PROJECTS\AUTOCAD\X\EAMS_04 (QCA_ACCESS)\EAMS04_6.DWG

APPENDIX C

Rail/Road Interface Details



CROSSINGS BY LINE AND KILOMETRAGE

SURVEY SECTION

Description of Signage Types

G	Giveway	PWB	Pedestrian Warning	T	Triangle
N	New Signage Type	S	Stop	U	Unknown
O	Other	SC	School Crossing	X	Crossbuck

Line Section Code	Km	Road Name	Type	Vehicular Protection	Signs	Open Status	Responsible Authority
NORTH COAST LINE							
401	107.885	QR Maintenance Road	QR	Signs	S	Open	QR
401	108.661	Access Road	Occupation	Flashing Lights		Open	PRI
401	109.304	Designated QR Maintenance Road	QR	Signs	S	Open	QR
401	109.831	Ferntree Creek Road	Public Level	Half Boomgates		Open	LGA
401	110.885	QR Maintenance Road	QR	Signs	S	Open	QR
401	111.837		QR	Signs	S	Open	
401	112.325	QR Maintenance Road	QR	Signs	S	Open	QR
401	114.880	QR Maintenance Road	QR	Signs	S	Open	QR
401	115.794		QR	Signs	S	Open	
401	116.415		QR	Nil		Open	
401	119.630	QR Maintenance Road	QR	Signs	S	Open	QR
401	120.700	QR Maintenance Road	QR	Signs	S	Open	QR
401	121.908	Temporary Eumundi Platform Access Road	QR	Nil		Proposed	QR
401	124.630	QR Maintenance Road	QR	Nil		Open	QR
401	128.992		QR	Signs	S	Open	
401	129.998	(129km1062m)	QR	Signs	S	Open	
401	129.999	(129km1521m)	QR	Signs	S	Open	
401	131.070	Maple Street	Public Level	Nil		Open	
401	136.382		QR	Nil		Open	
401	138.685	QR Maintenance Road	QR	Signs	S	Open	QR
401	139.985	Pomona Station Pedestrian Access	Pedestrian			Open	LGA
401	140.160	Reserve Street - Pomona Connection Road	Public Level	Half Boomgates		Open	MRD
401	141.000		QR	Nil		Open	
401	141.170		QR	Nil		Open	
401	142.310		QR	Signs	S	Open	
401	142.612		QR	Nil		Open	
401	143.095		QR	Signs	S	Open	
401	144.059	Private Access Road	Occupation	Signs	X S	Open	PRI
401	144.322	QR Maintenance Road	QR	Signs	S	Open	QR
401	145.369	Bridge Street (King Street)	Public Level	Flashing Lights	PWB	Open	LGA
401	146.325		QR	Nil		Open	
401	146.507		QR	Signs	S	Open	
401	147.237		QR	Signs	S	Open	
401	149.091		QR	Signs	S	Open	
401	149.985		QR	Signs	S	Open	
401	150.334	Traveston Station Illegal Pedestrian Access	Pedestrian			Open	QR

Line Section Code	Km	Road Name	Type	Vehicular Protection	Signs	Open Status	Responsible Authority
401	151.040		QR	Signs	S	Open	
401	151.919		QR	Signs	S	Open	
401	156.395		QR	Signs	S	Open	
401	164.935		QR	Signs	S	Open	
724	168.725		QR	Signs	S	Open	
725	177.635	Tamaree Road	Public Level	Half Boomgates		Open	LGA
725	182.115		QR	Signs	S	Open	
725	186.039		QR	Signs	S	Open	
725	187.185	Stey's Road	Public Level	Half Boomgates		Open	LGA
725	191.322	QR Maintenance Road	QR	Signs	S	Open	QR
725	193.844	QR Maintenance Road	QR	Nil		Open	QR
725	194.697	Scotchy Pocket Road	Public Level	Flashing Lights		Open	LGA
725	195.506		QR	Signs	X S	Open	
725	196.587	Hermans Road	Public Level	Half Boomgates		Open	LGA
725	204.737	Cooloola Street / Scrub Road	Public Level	Half Boomgates		Open	LGA
726	207.430	QR Maintenance Road	QR	Signs	X S	Open	QR
726	209.382	Kanyan Road	Public Level	Half Boomgates		Open	LGA
726	211.610		Occupation	Signs	X S	Open	
726	214.349	Paterson Road	Occupation	Signs	X S	Open	LGA
726	221.155	Main Street	Public Level	Signs	X S	Open	LGA
726	225.171	Bongmollow Road	Public Level	Half Boomgates		Open	LGA
726	234.426	Kooringa Road	Public Level	Half Boomgates		Open	LGA
726	238.172	Sheppards Road	Public Level	Signs	X S	Open	LGA
726	238.928	Pigeon Road	Occupation	Signs	X S	Open	
726	240.446	Owanyilla Road	Public Level	Flashing Lights		Open	LGA
726	241.433	Property Access Road	Occupation	Signs	X S	Open	PRI
726	242.452	Owanyilla Boundary Road	Public Level	Flashing Lights	X	Open	LGA
726	243.488	Unnamed Road	Public Level	Signs	X S	Open	LGA
726	246.171	Antigua Road	Public Level	Flashing Lights	X	Open	LGA
726	250.262	Boundary Road	Public Level	Flashing Lights		Open	LGA
727	254.213	Dunford Road	Public Level	Flashing Lights		Open	LGA
727	259.008	Nangarin Road	Public Level	Half Boomgates		Open	LGA
727	262.137	Maryborough / Biggenden Road (Gayndah Road Xing)	Public Level	Half Boomgates		Open	MRD
728	269.284	Aldershot Road	Public Level	Half Boomgates		Open	LGA
728	277.457	Dirt/gravel Access Road	Public Level	Signs	X S	Open	LGA
729	288.547	Torbanlea / Plaiba Road	Public Level	Double Boomgates		Open	LGA
729	290.716	Burrum River Road / Nolans Road	Public Level	Half Boomgates	X	Open	LGA
729	292.304	Steley Street (Old Bruce Highway)	Public Level	Flashing Lights		Open	LGA
729	293.113	William Street	Public Level	Flashing Lights		Open	LGA
729	294.202	Property Access Road	Occupation	Signs	X S	Open	PRI
729	310.229	Buxton Road (Isis Junction Road)	Public Level	Half Boomgates		Open	LGA
729	319.240	Woodgate Road	Public Level	Half Boomgates		Open	MRD
729	329.709	QR Maintenance Road	QR	Signs	S	Open	QR
729	341.385	Wises Road	Public Level	Double Boomgates		Open	LGA
729	342.260		Drawbridge			Open	
729	342.928	Sub-Station Access Road	Occupation	Signs	X S	Open	PRI
729	344.122	Thomasen Road	Public Level	Double Boomgates		Open	LGA
729	346.941	Verdant Siding Road	Public Level	Double Boomgates		Open	LGA

Line Section Code	Km	Road Name	Type	Vehicular Protection	Signs	Open Status	Responsible Authority
729	348.165	Thabeban Street	Public Level	Half Boomgates	X	Open	LGA
729	348.953	Maynard Street	Public Level	Half Boomgates	X	Open	LGA
730	349.807	Walker Street (Bundaberg-Port Road)	Public Level	Half Boomgates	X	Open	MRD
730	351.292	Bourbong Street - Isis Highway	Public Level	Double Boomgates		Open	MRD
730	352.117	Kolan Street	Public Level	Signs	X S	Open	LGA
730	352.184	Perry Street	Public Level	Flashing Lights		Open	LGA
730	352.316	Hinkler / Perry Street	Public Level	Flashing Lights		Open	LGA
733	354.818	Bundaberg / Gin Gin Road	Public Level	Double Boomgates		Open	MRD
733	356.283	School Road	Public Level	Half Boomgates	X	Open	LGA
733	358.422	Booloongie Road	Public Level	Half Boomgates	X	Open	LGA
733	359.720	Property Access Road	Occupation	Flashing Lights		Open	PRI
733	360.285	QR Maintenance Road (on turning angle)	QR	Signs	X S	Open	QR
733	360.668	Meadowvale Road	Public Level	Half Boomgates	X	Open	LGA
733	363.135		Drawbridge	Nil		Open	PRI
733	365.465		Occupation	Signs	X S	Open	PRI
733	367.063	Private Access Road	Occupation	Signs	X S	Open	PRI
733	372.352	Moorland Road	Public Level	Half Boomgates	X	Open	LGA
733	375.206	Blackall Street Pedestrian Access	Pedestrian		T	Open	LGA
733	380.697	Yandaran Road	Public Level	Half Boomgates	X	Open	LGA
733	384.002	Littabella Road	Public Level	Half Boomgates	X	Open	LGA
592	387.132	Dickson Road	Public Level	Half Boomgates	X	Open	LGA
592	390.484	Mullet Creek Road	Public Level	Flashing Lights	X	Open	LGA
592	414.102	Property Access Road	Occupation	Signs	X S	Open	PRI
592	428.100	John Clifford Road	Public Level	Half Boomgates		Open	LGA
592	440.260	CAPELEC Sub Station Access Road	QR	Signs	X S	Open	QR
592	443.824	Property Access Road	Occupation	Signs	X S	Open	PRI
592	447.100		QR	Signs	S	Open	
592	459.800	Baffle Creek Road	Public Level	Half Boomgates		Open	MRD
592	465.055	Property Access Road	Occupation	Signs	X S	Open	PRI
592	469.537	Scotts Road	Public Level	Half Boomgates		Open	LGA
592	472.216	Red Hill Road	Public Level	Half Boomgates		Open	LGA
592	482.242	Turkey Beach Road	Public Level	Half Boomgates		Open	LGA
592	487.388	Christensen Road	Public Level	Flashing Lights		Open	LGA
592	496.390	Rodds Bay Road	Public Level	Half Boomgates		Open	LGA
592	507.206	Awoonga Dam Road	Public Level	Double Boomgates		Open	LGA
592	513.597	Hughes Road	Public Level	Half Boomgates		Open	LGA
751	523.110		QR	Nil		Open	
402	636.805	Jellicoe Street	Public Level	Half Boomgates	PWB	Open	LGA
402	637.600	Port Curtis Road	Public Level	Half Boomgates	PWB	Open	MRD
402	639.014	Pedestrian	QR			Open	QR
402	639.225	Diesel Shed Access	QR	Signs	X S	Open	
OWANYILLA BALLOON LOOP							
419	0.107	Heath Road	Public Level	Signs	X S	Open	LGA
419	0.843	Private Access Road	QR	Nil		Open	PRI
419	1.150	Private Access Road	QR	Nil		Open	PRI

APPENDIX D

Speed Boards

NAMBOUR to GLADSTONE

(# Down Train - Track Recording Car Feb 2007 Verified DVD Desktop Audit) (* Up Train - Not Verified)

Location	Up Train * to Roma Street	Down Train # to Cairns
104.975 km	70, 25	70
105.315 km	70	50
107.020 km	50 ,***T60***	40* ,***T50***
107.245 km	40* ,***T50***	50* ,***T60***
107.535 km	50* ,***T60***	60* ,***T75***
109.380 km	60* ,***T75***	90* ,***T110***
110.490 km	90*,***T110***	100* ,***T125***
112.595 km	100* ,***T125***	90 ,50R
112.991 km		120
113.545 km	120 ,50L	120 ,***T150***
115.012 km	120 ,***T150***	120
115.329 km	120 ,***T130***	120 ,***T150***
117.407 km	120 ,***T150***	80 ,50R
118.215 km		20 (Loop)
118.353 km	80 ,25L	100* ,***T125***
121.453 km	100* ,***T125***	120 ,***T150***
122.315 km	120 ,***T150***	90* ,***T110***
123.685 km	90* ,***T110***	80* ,50L ,***T100***
124.770 km	80* ,50R ,***T100***	120 ,***T150***
128.839 km	120 ,***T150***	100* ,***T125***
129.1280m	100* ,***T125***	90*
130.548 km	90	50
130.765 km	50 ,***T60***	60 ,25L
131.892 km	60 ,25R	80 ,***T100***
132.550 km	80 ,***T100***	90* ,***T110***
133.315 km	90* ,***T110***	100* ,***T125***
134.330 km	100* ,***T125***	70 ,***T85***
135.695 km	70	60* ,***T75***
137.370 km	60* ,***T75***	70* ,***T85***
138.194 km	70* ,***T85***	120 ,***T150***
139.200 km	120 ,***T150***	60*
139.605 km	60* ,***T75***	60* ,25L
140.439 km	60* ,25R ,***T70***	40 ,***T50***
140.838 km	40* ,***T50***	60* ,***T75***
142.007 km	60* ,***T75***	80* ,***T100***
142.785 km	80* ,***T100***	60 , ***T75***
143.078 km	60	40* ,***T50***
143.402 km	40* ,***T50***	70* ,***T85***
144.398 km	70* ,***T85***	50* ,***T60***
144.855 km	50* ,***T60***	70
145.252 km	70	70 ,25L

145.585 km	70	50* ,***T60***
145.957 km	50* ,***T60***	60 ,***T75***
146.398 km	60 ,25R ,***T75***	60*
146.727 km	60	40*
147.732 km	40 ,***T50***	50* ,***T60***
148.357 km	50* ,***T60***	70* ,***T85***
149.134 km	70* ,***T85***	60* ,***T75***
149.710 km	60* ,***T75***	40* ,***T50***
149.922 km	40* ,***T50***	70
149.1000m	70	70 ,25L
150.960 km	70 ,25R	70
151.260 km	70 ,***T85***	90
152.328 km	90 ,***T105***	120 ,***T160***
159.575 km	120 ,***T160***	70 ,25L
161.168 km	70	60* ,***T75***
161.445 km	60* ,25R ,***T75***	40* ,***T50***
163.110 km	40* ,***T50***	50* ,***T60***
163.570 km	50* ,***T60***	80* ,***T100***
164.505 km	80* ,***T100***	100* ,***T125***
166.085 km	100* ,***T125***	60* ,***T75***
166.415 km	60* ,***T75***	80* ,***T100***
166.950 km	80* ,***T100***	100 ,***T125***
167.655 km	100 ,***T120***	120 ,50L
168.616 km	120 ,50R	120 ,***T150***
173.170 km	120 ,***T150***	120 ,50LR
174.251 km	120 ,50L	80
174.592 km	80 ,25R	100* ,***T125***
176.563 km	100* ,***T125***	80* ,T100
176.882 km	80* ,***T100***	80* ,50R ,***T100***
177.605 km	80* ,***T100***	60*
177.755 km	60* ,***T70***	80
177.875 km	80 ,25L	80* ,***T100***
182.550 km	80* ,***T100***	100* ,***T125***
185.273 km	100* ,***T125***	80* ,***T100***
186.130 km	80* ,***T100***	90* ,50R ,***T110***
187.360 km	90* ,50L ,***T110***	90* ,***T110***
187.640 km	90* ,***T110***	70* ,***T85***
188.337 km	70* ,***T85***	80* ,***T100***
189.814 km	80* ,***T100***	100* ,***T125***
191.010 km	100* ,***T125***	90* ,***T110***
192.265 km	90* ,***T110***	80 ,25R
193.185 km	80 ,25L	100
194.280 km	100	120
196.300 km	120	100
196.890 km	100	120 ,***T160***
207.140 km	120 ,***T160***	80 ,25LR
208.010 km	80 ,25L	120
210.990 km	120 ,***T150***	70* ,***T85***

211.325 km		90* ,***T110***
212.460 km		120 , ***T150***
213.785 km		60* , ***T75***
214.105 km		25R, 80* , ***T100***
214.880 km	80* ,***T100***	70 ,***T80***
215.015 km	70 ,25R ,***T80***	90
216.225 km	90	60 ,***T75***
216.515 km	60 ,***T75***	90
217.800 km	90	40
218.462 km	40*	120 , ***T150***
218.925 km	80	
220.695 km	120*	80 ,25L
221.930 km	80 ,25R	120 ,***T150***
225.040 km	120 ,***T150***	80* ,***T100***
225.640 km	80 ,***T100***	100* ,***T125***
225.852 km	100 ,***T125***	120 ,***T150***
227.010 km	120 ,***T150***	120 ,25R
227.912 km	120 ,25L	120 ,***T150***
231.819 km	120 ,***T150***	60* ,***T75***
232.070 km	60 ,***T75***	80
232.790 km	80	60* ,***T75***
233.110 km	60 ,***T75***	90
234.990 km	90	50
235.552 km	60	50 ,25L
236.230 km	50 ,25R ,***T60***	50 ,***T60***
236.285 km		90* ,***T110***
238.135 km		60* ,***T75***
238.490 km		80* ,***T100***
239.330 km		60* , ***T75***
240.740 km		90* ,***T110***
241.730 km	90 ,***T110***	60
242.300 km	60	60 ,25L ,***T75***
242.935 km	60* ,***T75***	80
243.350 km	80 ,25R	80
243.905 km	80	60* ,***T75***
244.165 km	60* ,***T75***	80* ,***T100***
245.585 km	80* ,***T100***	60* ,***T75***
246.585 km	60* ,***T75***	40* ,***T50***
247.435 km	40* ,***T50***	50* ,***T60***
248.090 km	50* ,***T60***	40* ,***T50***
248.495 km	40* ,***T50***	60* ,***T75***
249.899 km	60* ,***T75***	40
250.055 km	40	60 ,25L
250.210 km	60* ,***T75***	80 ,25LR
251.100 km	80 ,25LR ,***T80***	60* ,***T75***
251.370 km	60* ,***T75***	80* ,***T100***
252.180 km	80* ,***T100***	120 ,***T150***
253.535 km	120 ,***T150***	60* ,***T75***
253.775 km	60* ,***T75***	70* ,***T85***

254.595 km	70* ,***T85***	60* ,***T75***
254.830 km	60* ,***T75***	80
255.560 km	80	60* ,***T75***
255.830 km	60* ,***T75***	60 ,25L
256.595 km	60 ,25R	60* ,***T75***
256.930 km	60* ,***T75***	120 ,***T150***
258.685 km	120 ,***T150***	90* ,***T110***
259.180 km	90* ,***T110***	70* ,***T85***
259.860 km	70* ,***T85***	80* ,***T100***
260.600 km	80* ,***T100***	60* ,***T75***
261.785 km	60* ,***T75***	80
262.160 km	80	80 ,25LR
263.282 km	80 ,25LR	120 ,***T150***
266.745 km	120 ,***T150***	110* ,***T135***
268.935 km	110* ,***T135***	120 ,***T150***
277.331 km	120 ,***T150***	80
277.485 km	80	80 ,25L
278.380 km	80 ,25R	120 ,***T150***
280.462 km	120 ,***T150***	***T160***
287.011 km	***T160***	***T120***
287.676 km	120 ,***T150***	80 ,25R
288.582 km	80 ,25L	120 ,***T150***
290.449 km	120 ,***T150***	90* ,***T110***
290.710 km	90* ,***T110***	100* ,***T125***
292.284 km	100* ,***T125***	70 ,25R
293.260 km	70 ,25L ,***T70***	90* ,***T110***
294.360 km	90* ,***T110***	80* ,***T100***
294.732 km	80* ,***T100***	90* ,***T110***
296.211 km	90* ,***T110***	100* ,***T125***
296.551 km	100* ,***T125***	120 ,***T150***
297.727 km	120 ,***T150***	90* ,***T110***
298.170 km	90* ,***T110***	120 ,***T150***
299.498 km	120 ,***T150***	80* ,***T100***
299.858 km	80* ,***T100***	120 ,***T150***
301.600 km	120 ,***T150***	120 ,50L ,***T150***
302.500 km	120 ,***T150***	***T120***
302.585 km	120 ,25R	120 ,***T160***
309.613 km	120 ,***T160***	80 ,25L
309.660 km		50R
310.385 km	80 ,25R ,***T80***	120
310.605 km	120 ,50L	120 ,***T160***
314.728 km	120 ,***T160***	90
315.401 km	90	80
315.832 km	80	60* ,***T75***
316.044 km	60* ,***T75***	90* ,***T110***
316.718 km	90* ,***T110***	120 ,***T150***
317.835 km	120 ,***T150***	90

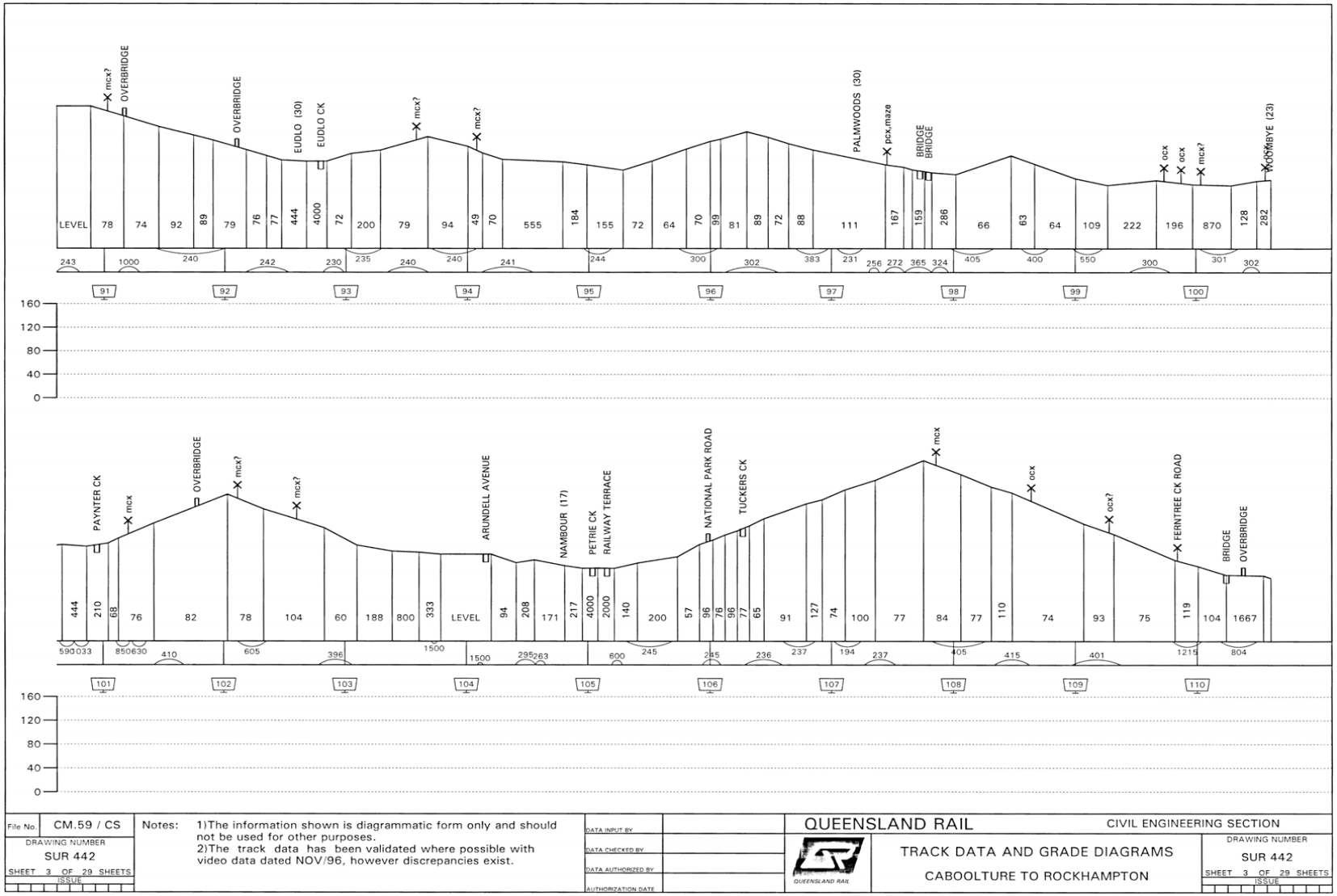
319.080 km	90	70 ,25R
319.579 km	70	80
319.980 km	80 ,25L	120 ,***T150***
329.537 km	120 ,***T150***	120 ,25R
330.457 km	120 ,25L	120 ,***T160***
335.442 km	120 ,***T160***	***T150***
337.622 km	120 ,***T150***	90* ,***T110***
337.918 km	90* ,***T110***	60* ,***T75***
338.213 km	60* ,***T75***	80 ,***25L***
338.335 km	80	120
339.106 km	120 ,25R	120 ,***T160***
345.810 km	120 ,***T160***	90* ,***T110***
346.058 km	90* ,***T110***	120 ,***T150***
347.823 km	120 ,***T150***	80
348.190 km	80	
348.507 km	80 ,25R	80* ,***T100***
349.750 km	80 ,***T100***	80 ,25LR
350.650 km	80	
351.255 km	25	15
352.333 km	15 ,***T25***	40 ,15R
352.637 km		40
352.940 km	15L	
352.960 km		40
353.046 km	40	70
353.353 km	70	120 ,***T160***
359.745 km	120 ,***T160***	120 ,25L ,***T160***
359.960 km		25R
360.559 km	***T160***	
360.690 km		120, ***T150***
371.181 km	120 ,***T160***	***T150***
374.400 km	120 ,***T150***	80
374.876 km	80	50* ,***T60***
375.250 km	50* ,***T60***	90* ,25L ,***T110***
375.872 km	90* ,***T110***	120 ,***T150***
376.130 km	120 ,25R ,***T150***	120 ,***T150***
379.691 km	120 ,***T150***	60* ,***T75***
379.973 km	60* ,***T75***	90* ,***T110***
381.461 km	90* ,***T110***	60* ,***T75***
381.791 km	60* ,***T75***	120
382.648 km	120 ,***T150***	60* ,***T75***
382.840 km	60* ,***T75***	120 ,***T150***
384.150 km	120 ,***T150***	120 ,25R
385.030 km	120 ,25L	120
386.060 km	120	90* ,***T110***
386.400 km	90* ,***T110***	120 ,***T150***
389.101 km	120 ,***T150***	60* ,***T75***
391.043 km	60* ,***T75***	120 ,***T160***
400.535 km	120 ,***T160***	120 ,50R ,***T160***

401.605 km	120 ,50L ,***T160***	120 ,***T160***
405.220 km	120 ,***T160***	90,***T110***
405.542 km	90* ,***T110***	120 ,***T160***
410.352 km	120 ,***T160***	***T150***
412.010 km	120 ,***T150***	90* ,***T110***
412.810 km	90* ,***T110***	90* ,25R ,***T110***
413.700 km	90* ,***T110***	60* ,***T75***
413.750 km	60* ,25L ,***T75***	60* ,***T75***
414.290 km	60* ,***T75***	50* ,***T60***
414.651 km	50* ,***T60***	60* ,***T75***
415.126 km	60* ,***T75***	80
415.663 km	***T80***	
416.480 km	***T100***	***T80***
417.380 km	80	90* ,***T110***
417.783 km	90* ,***T110***	120 ,***T150***
419.410 km	120 ,***T150***	50* ,***T60***
420.068 km	50* ,***T60***	70
420.252 km	***T70***	***T85***
420.854 km	70* ,***T85***	120 ,***T150***
422.343 km	120 ,***T150***	90* ,***T110***
422.846 km	90* ,***T110***	120 ,***T160***
423.802 km	120 ,***T160***	120 ,50L ,***T160***
424.947 km	120 ,50R ,***T160***	120 ,***T160***
434.490 km	120 ,***T160***	120 ,50R ,***T160***
435.465 km	120 ,50L ,***T160***	120 ,***T160***
444.1008 km	120 ,***T160***	90* ,***T110***
445.415 km	90* ,***T110***	120 ,***T150***
446.485 km	120 ,***T150***	120 ,25R,***T150***
447.394 km	120 ,25L ,***T150***	80* ,***T100***
447.829 km	80* ,***T100***	120 ,***T160***
455.143 km	120 ,***T160***	90* ,***T110***
455.405 km	90* ,***T110***	100* ,***T125***
456.044 km	100* ,***T125***	120 ,***T160***
459.690 km	120 ,***T160***	120 ,25R ,***T160***
460.650 km	120 ,25L ,***T160***	120 ,***T160***
461.213 km	120 ,***T160***	100* ,***T125***
461.646 km	100* ,***T125***	120 ,***T150***
463.474 km	120 ,***T150***	100* ,***T125***
464.007 km	100* ,***T125***	120 ,***T150***
466.649 km	120 ,***T150***	90* ,***T110***
467.170 km	90* ,***T110***	80
467.600 km	80	120 ,***T160***
471.230 km	120 ,***T160***	120 ,25R ,***T160***
472.303 km	120 ,25L ,***T160***	120 ,***T160***
474.253 km	120 ,***T160***	120 ,***T150***
476.437 km	120 ,***T150***	80* ,***T100***
477.018 km	80* ,***T100***	60
477.957 km	60	50* ,***T60***

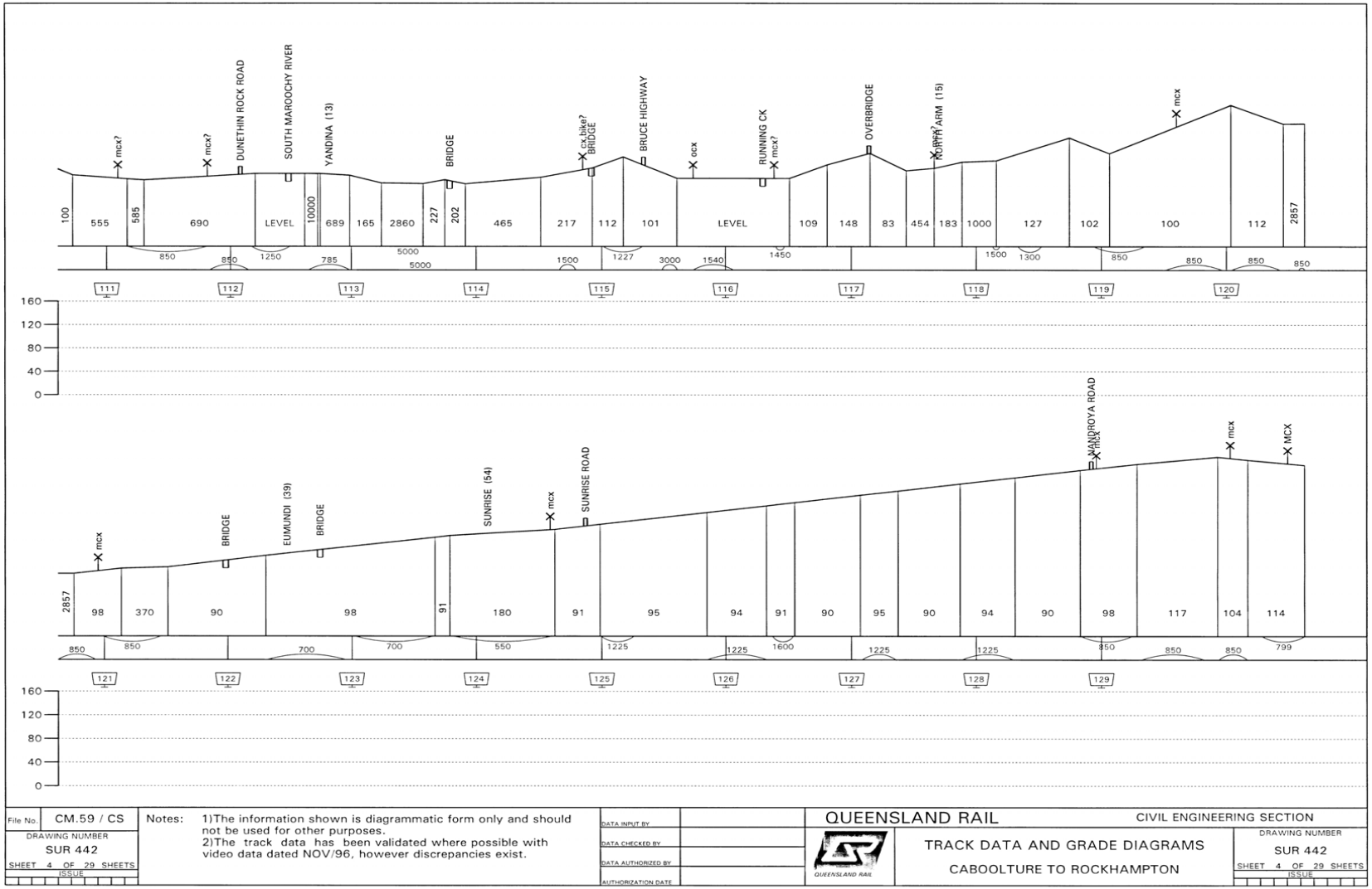
Location	Up Train * to Roma Street	Down Train # to Cairns
478.110 km	50* ,***T60***	60* ,***T75***
478.880 km	60* ,***T75***	80* ,***T100***
479.714 km	80* ,***T100***	50* ,***T60***
479.999 km	50* ,***T60***	60
480.494 km	60	120 ,***T150***
484.760 km	120 ,***T150***	90* ,***T110***
485.620 km	90* ,***T110***	60 ,25L
486.753 km	60 ,25R	60* ,***T75***
487.148 km	60* ,***T75***	120 ,***T160***
498.874 km	120 ,***T160***	***T150***
499.829 km	120 ,***T150***	80*,***T100***
500.100 km	80* ,***T100***	120 ,***T150***
506.320 km	120 ,***T150***	100* ,25R ,***T125***
507.220 km	100 ,25L ,***T125***	100* ,***T125***
507.638 km	100* ,***T125***	120 ,***T150***
512.220 km		***T120***
515.168 km	120 ,***T150***	100* ,***T125***
518.880 km	100* ,***T125***	120 ,***T150***
521.340 km	120 ,***T150***	120 ,50L ,***T150***
522.410 km	120 ,***T150***	100 ,***T120***
522.495 km	50R ,***T120***	100
522.841 km	100	80 ,50L
523.042 km	100	50* ,***T60***
523.937 km	50* ,***T60***	80* ,***T100***
527.740 km	80* ,***T100***	80 ,25R

APPENDIX E

Track Data & Grade Diagrams



File No. CM.59 / CS	Notes: 1)The information shown is diagrammatic form only and should not be used for other purposes. 2)The track data has been validated where possible with video data dated NOV/96, however discrepancies exist.	DATA INPUT BY	QUEENSLAND RAIL — CIVIL ENGINEERING SECTION
DRAWING NUMBER SUR 442		DATA CHECKED BY	TRACK DATA AND GRADE DIAGRAMS
SHEET 3 OF 29 SHEETS ISSUE		DATA AUTHORIZED BY	CABOOLTURE TO ROCKHAMPTON
		AUTHORIZATION DATE	DRAWING NUMBER SUR 442 SHEET 3 OF 29 SHEETS ISSUE



File No. CM.59 / CS	Notes: 1)The information shown is diagrammatic form only and should not be used for other purposes. 2)The track data has been validated where possible with video data dated NOV/96, however discrepancies exist.	DATA INPUT BY	QUEENSLAND RAIL	CIVIL ENGINEERING SECTION	
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SHEET 4 OF 29 SHEETS		DATA AUTHORIZED BY			SHEET 4 OF 29 SHEETS
ISSUE		AUTHORIZATION DATE			ISSUE

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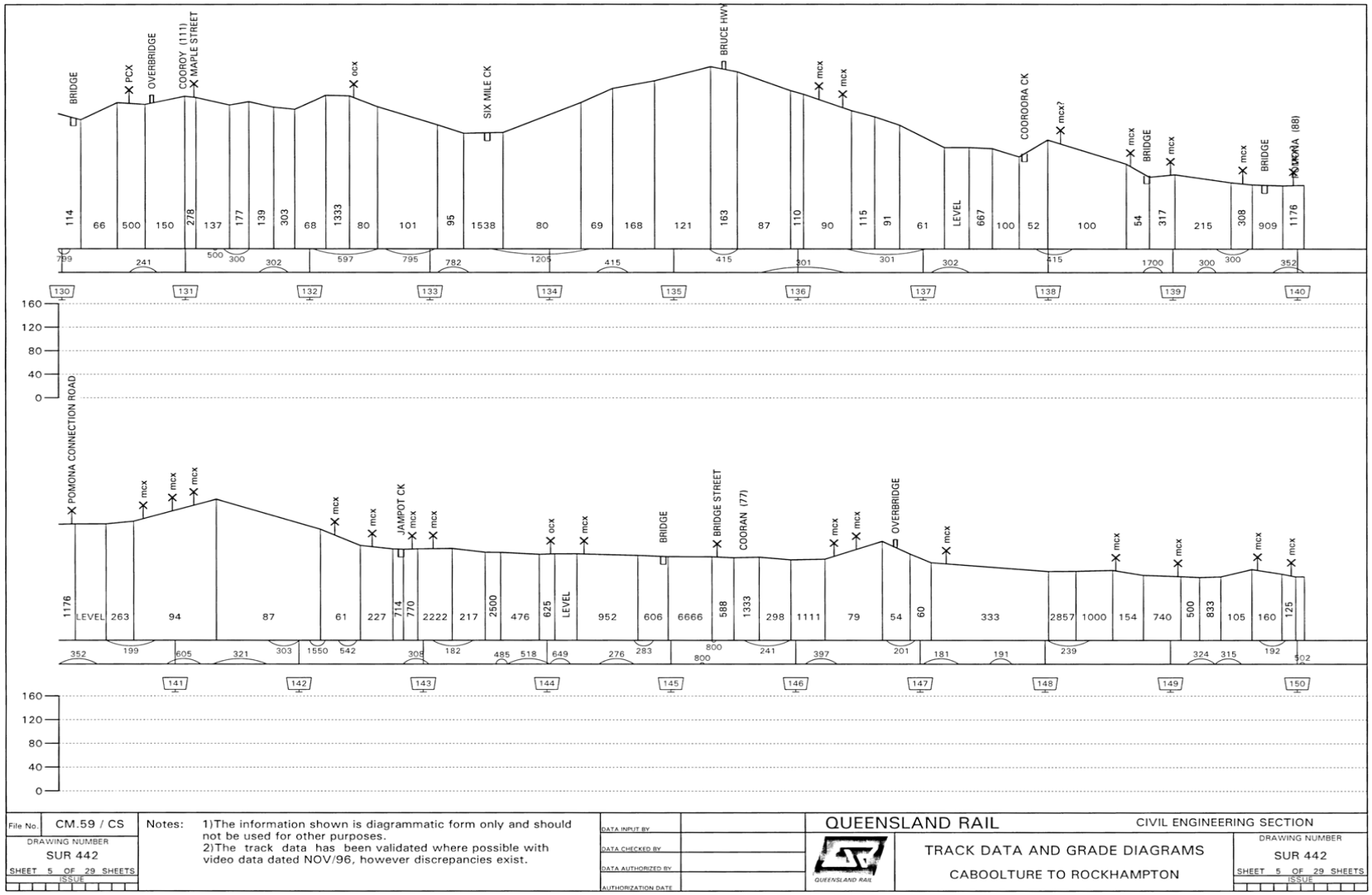
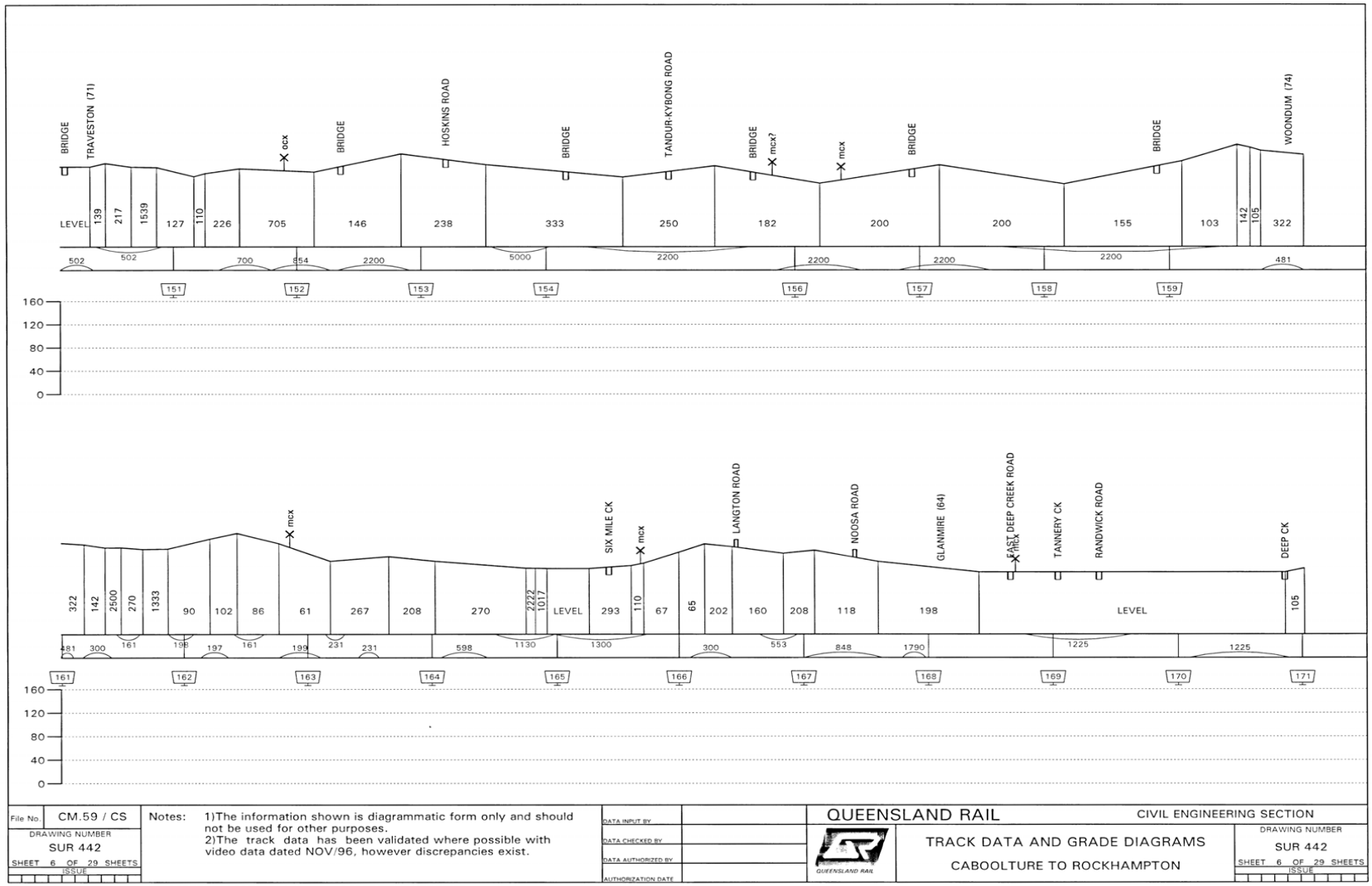
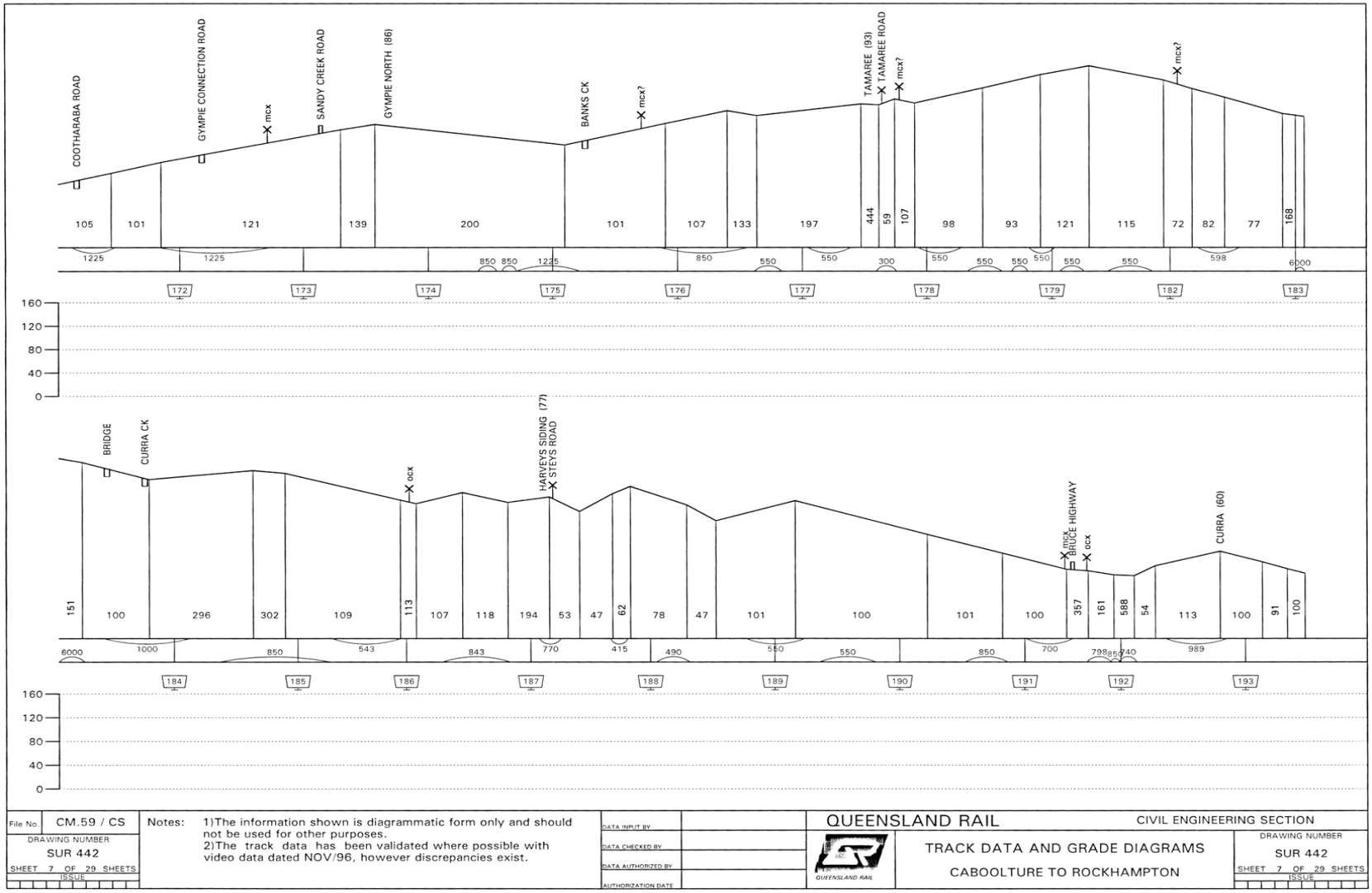


File No. CM.59 / CS DRAWING NUMBER SUR 442 SHEET 5 OF 29 SHEETS ISSUE	Notes: 1)The information shown is diagrammatic form only and should not be used for other purposes. 2)The track data has been validated where possible with video data dated NOV/96, however discrepancies exist.	DATA INPUT BY DATA CHECKED BY DATA AUTHORIZED BY AUTHORIZATION DATE	QUEENSLAND RAIL QUEENSLAND RAIL	CIVIL ENGINEERING SECTION TRACK DATA AND GRADE DIAGRAMS CABOOLTURE TO ROCKHAMPTON	DRAWING NUMBER SUR 442 SHEET 5 OF 29 SHEETS ISSUE



File No. CM.59 / CS	Notes: 1)The information shown is diagrammatic form only and should not be used for other purposes. 2)The track data has been validated where possible with video data dated NOV/96, however discrepancies exist.	DATA INPUT BY	QUEENSLAND RAIL — CIVIL ENGINEERING SECTION
DRAWING NUMBER SUR 442		DATA CHECKED BY	TRACK DATA AND GRADE DIAGRAMS CABOOLTURE TO ROCKHAMPTON
SHEET 6 OF 29 SHEETS ISSUE		DATA AUTHORIZED BY	DRAWING NUMBER SUR 442
		AUTHORIZATION DATE	SHEET 6 OF 29 SHEETS ISSUE


COOTHARABA ROAD
GYMPIE CONNECTION ROAD
mcx
SANDY CREEK ROAD
GYMPIE NORTH (86)
BANKS CK
mcx?
TAMAREE (93)
TAMAREE ROAD
mcx?
mcx?
105 101 121 139 200 101 107 133 197 444 59 107 98 93 121 115 72 82 77 168
1225 1225 850 850 1225 850 550 550 300 550 550 550 550 550 550 598 6000
172 173 174 175 176 177 178 179 182 183
160 120 80 40 0
BRIDGE
CURRA CK
dcx
HARVEYS SIDING (77)
STEYS ROAD
mcx
BRUCE HIGHWAY
dcx
CURRA (60)
151 100 296 302 109 113 107 118 194 53 47 62 78 47 101 100 101 100 357 161 588 54 113 100 91 100
6000 1000 850 543 843 770 415 490 550 550 850 700 798 850 740 989
184 185 186 187 188 189 190 191 192 193
160 120 80 40 0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 7 OF 29 SHEETS
ISSUE
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DATA INPUT BY
DATA CHECKED BY
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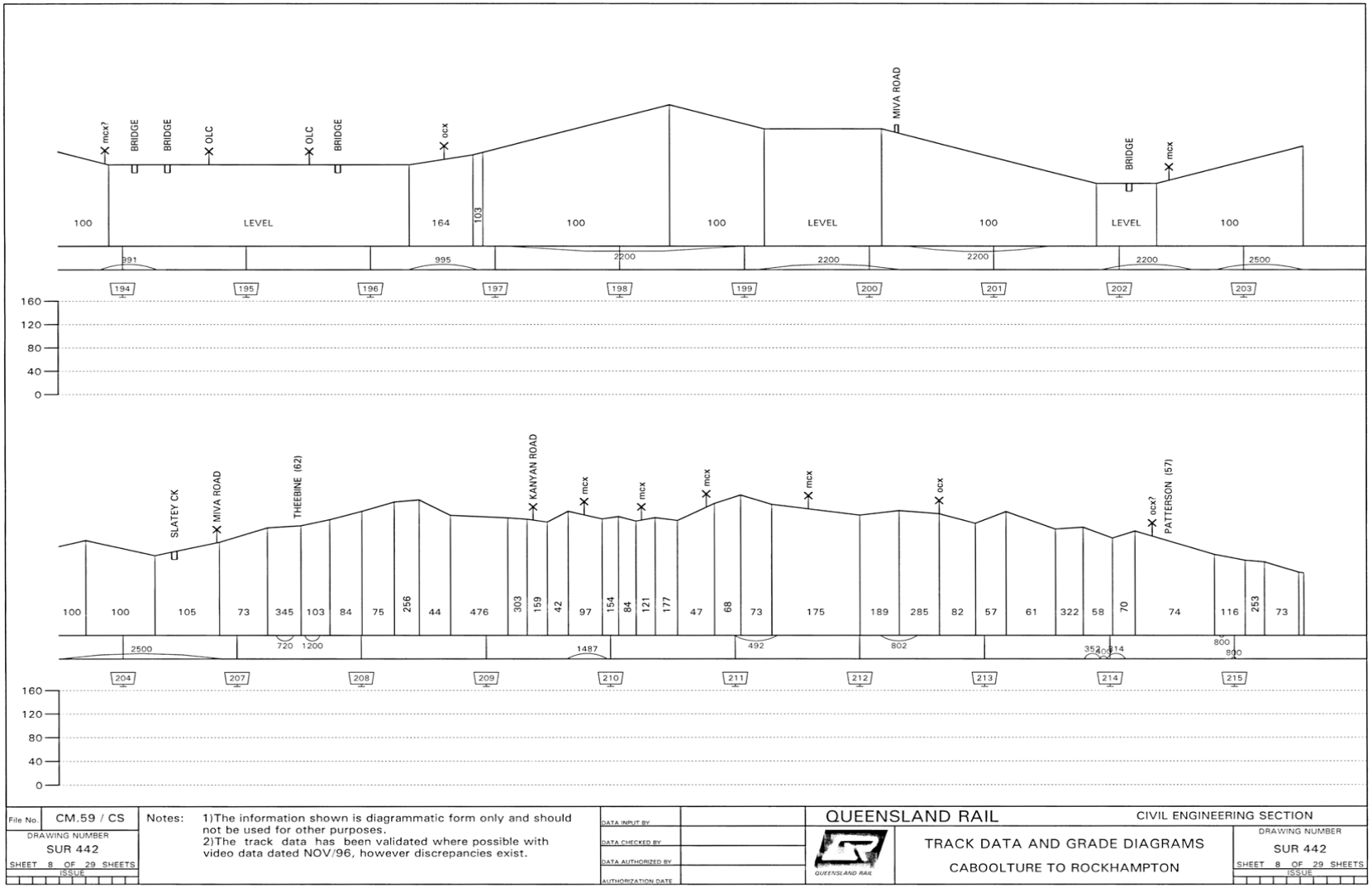
QUEENSLAND RAIL
TRACK DATA AND GRADE DIAGRAMS
CABOOLTURE TO ROCKHAMPTON
DRAWING NUMBER SUR 442
SHEET 7 OF 29 SHEETS
ISSUE


mcx?
BRIDGE
BRIDGE
OLC
OLC
BRIDGE
ocx
MIVA ROAD
BRIDGE
mcx
100
LEVEL
164
103
100
100
LEVEL
100
LEVEL
100
991
995
2200
2200
2200
2200
2500
194
195
196
197
198
199
200
201
202
203
160
120
80
40
0
SLATEY CK
MIVA ROAD
THEEBINE (62)
KANYAN ROAD
mcx
mcx
mcx
mcx
ocx
ocx?
PATTERSON (57)
100
100
105
73
345
103
84
75
256
44
476
303
159
42
97
154
84
121
177
47
68
73
175
189
285
82
57
61
322
58
70
74
116
253
73
2500
720
1200
1487
492
802
352
414
800
800
204
207
208
209
210
211
212
213
214
215
160
120
80
40
0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 8 OF 29 SHEETS
ISSUE
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AUTHORIZATION DATE
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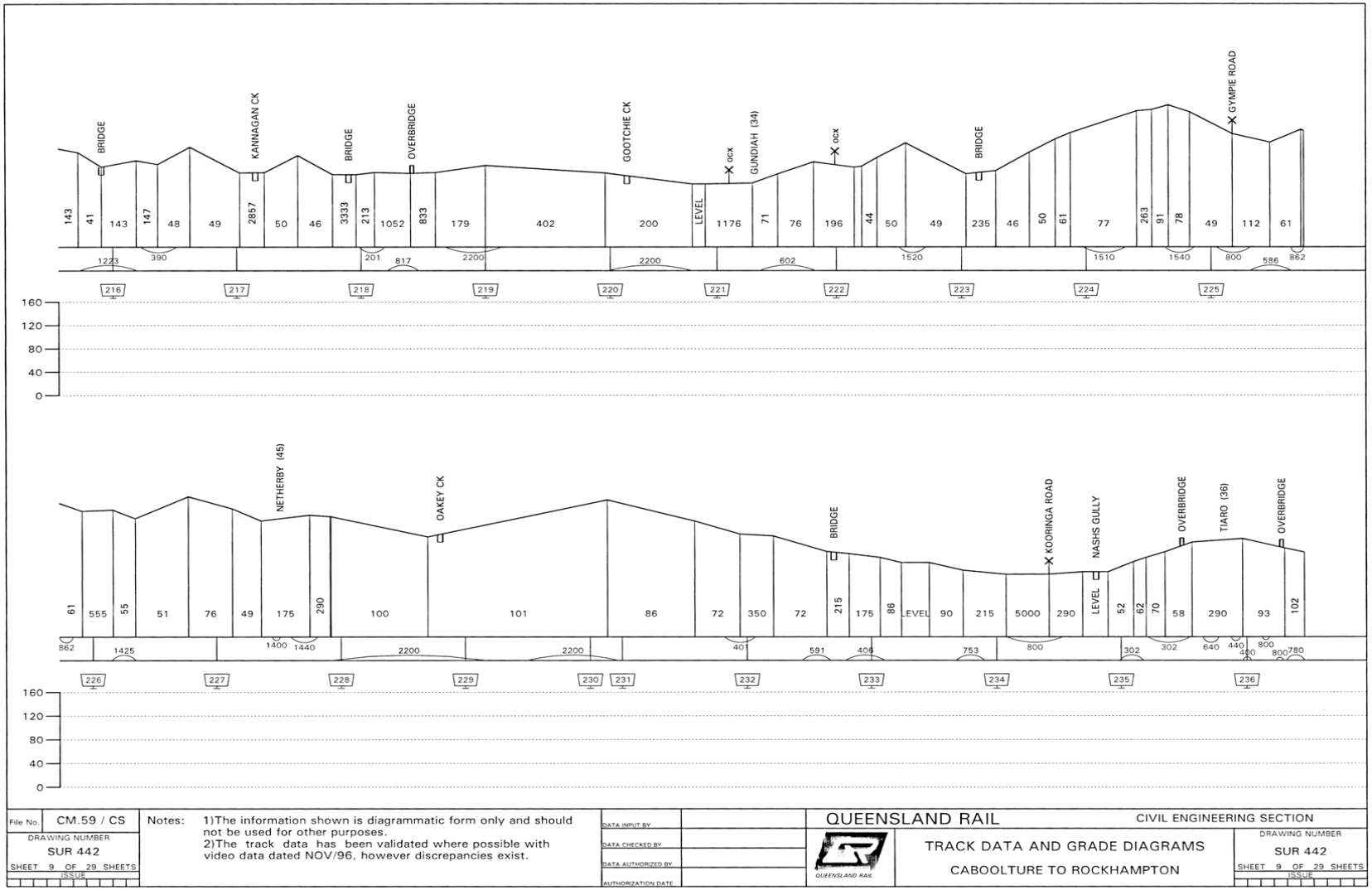
QUEENSLAND RAIL
TRACK DATA AND GRADE DIAGRAMS
CABOOLTURE TO ROCKHAMPTON
DRAWING NUMBER SUR 442
SHEET 8 OF 29 SHEETS
ISSUE


BRIDGE
KANNAGAN CK
BRIDGE
OVERBRIDGE
GOOTCHIE CK
GUNDIAH (34)
BRIDGE
GYMPIE ROAD
NETHERBY (45)
OAKEY CK
BRIDGE
KOORINGA ROAD
NASHS GULLY
OVERBRIDGE
TIARO (36)
OVERBRIDGE
160
120
80
40
0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 9 OF 29 SHEETS
ISSUE
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AUTHORIZATION DATE
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CABOOLTURE TO ROCKHAMPTON
DRAWING NUMBER SUR 442
SHEET 9 OF 29 SHEETS
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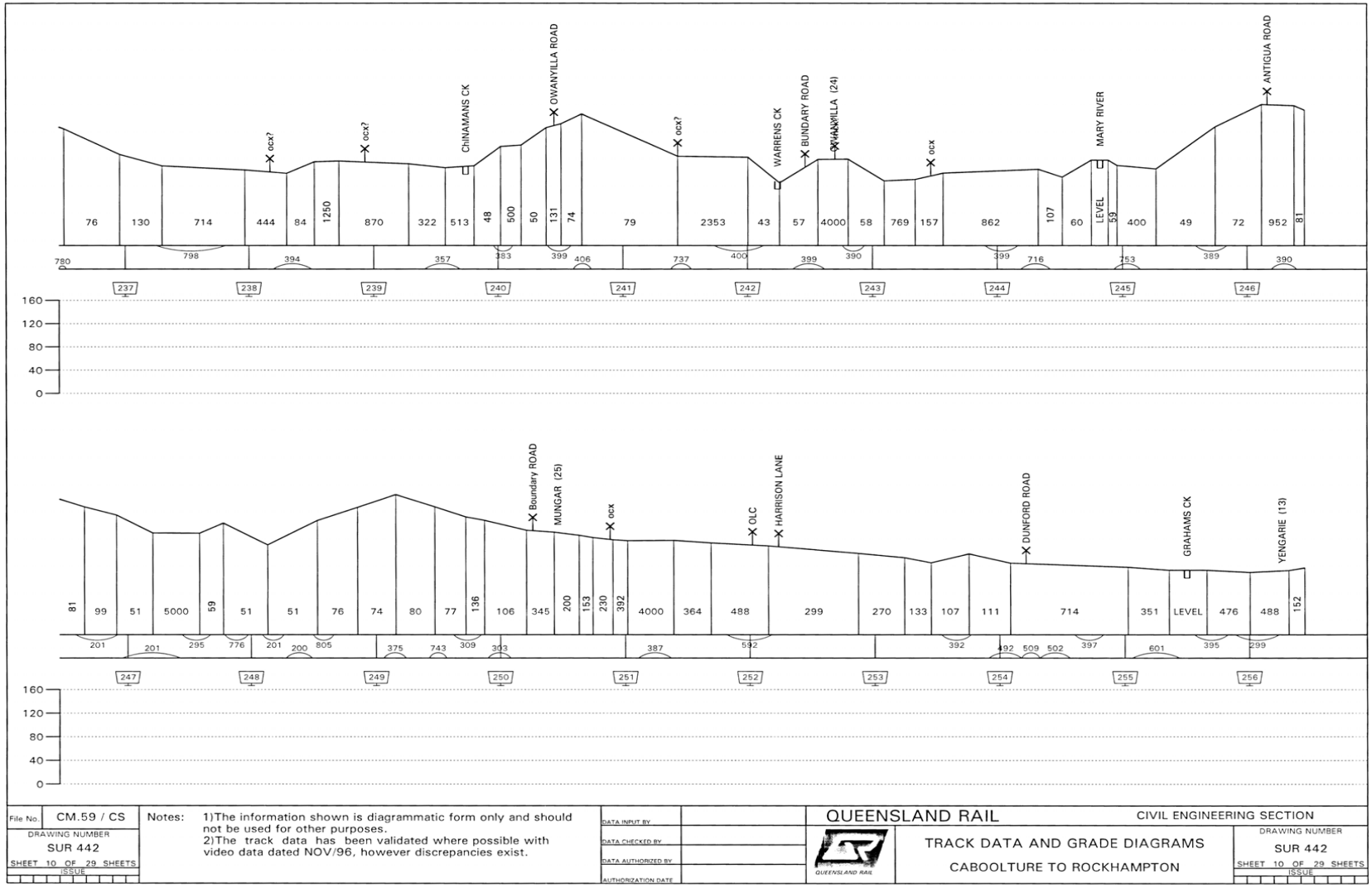

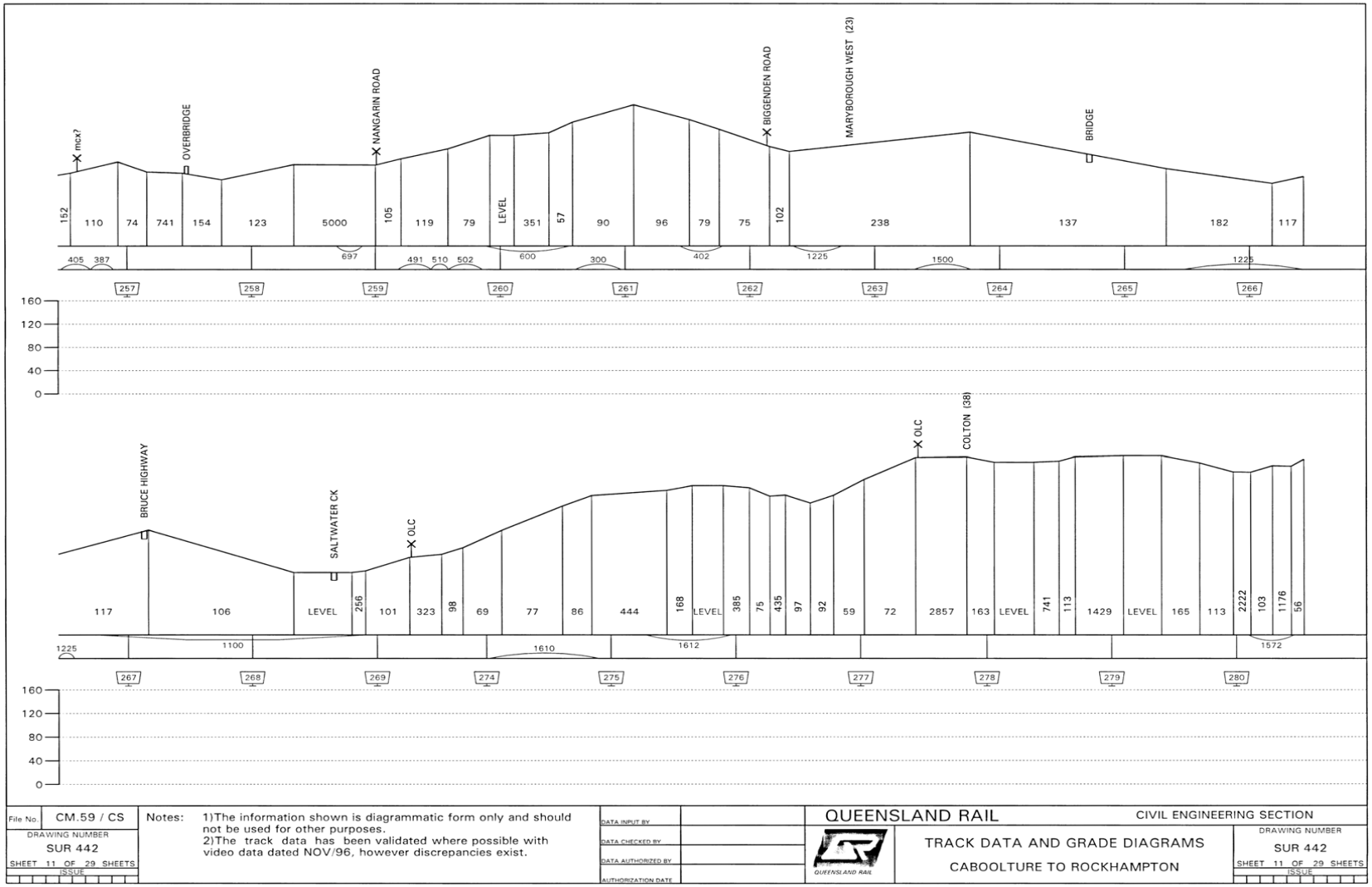
mcx?
OVERBRIDGE
NANGARIN ROAD
BIGGENDEN ROAD
MARYBOROUGH WEST (23)
BRIDGE
152 110 74 741 154 123 5000 105 119 79 LEVEL 351 57 90 96 79 75 102 238 137 182 117
405 387 697 491 510 502 600 300 402 1225 1500 1225
257 258 259 260 261 262 263 264 265 266
160 120 80 40 0
BRUCE HIGHWAY
SALTWATER CK
OLC
OLC
COLTON (38)
117 106 LEVEL 256 101 323 98 69 77 86 444 168 LEVEL 385 75 435 97 92 59 72 2857 163 LEVEL 741 113 1429 LEVEL 165 113 2222 103 1176 56
1225 1100 1610 1612 1572
267 268 269 274 275 276 277 278 279 280
160 120 80 40 0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 11 OF 29 SHEETS
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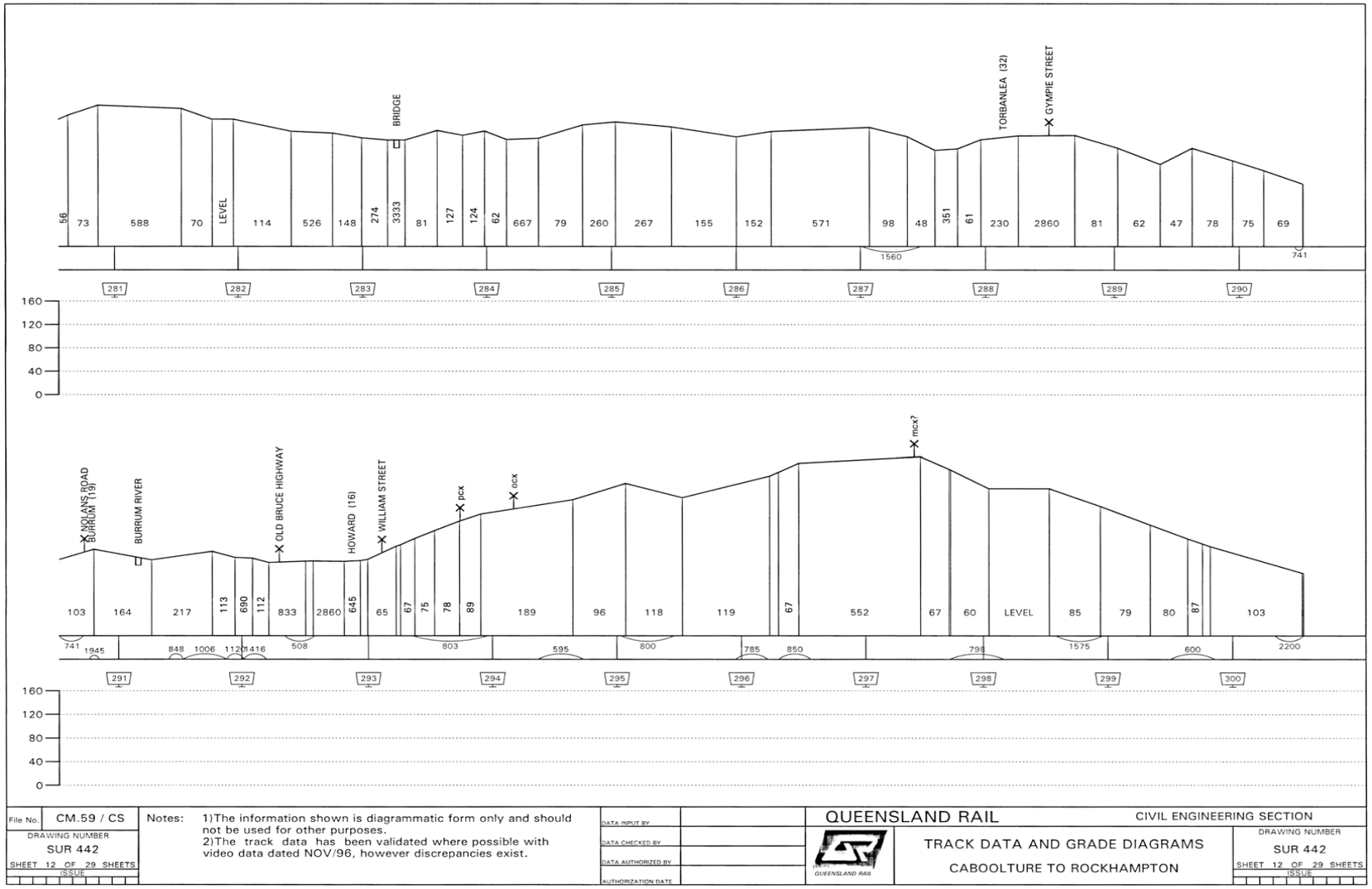
CABOOLTURE TO ROCKHAMPTON
DRAWING NUMBER SUR 442
SHEET 11 OF 29 SHEETS
ISSUE


BRIDGE
TORBANLEA (32)
GYMPIE STREET
LEVEL
NOLANS ROAD
BURRUM (19)
BURRUM RIVER
OLD BRUCE HIGHWAY
HOWARD (16)
WILLIAM STREET
mcx
mcx?
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
160
120
80
40
0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 12 OF 29 SHEETS
ISSUE
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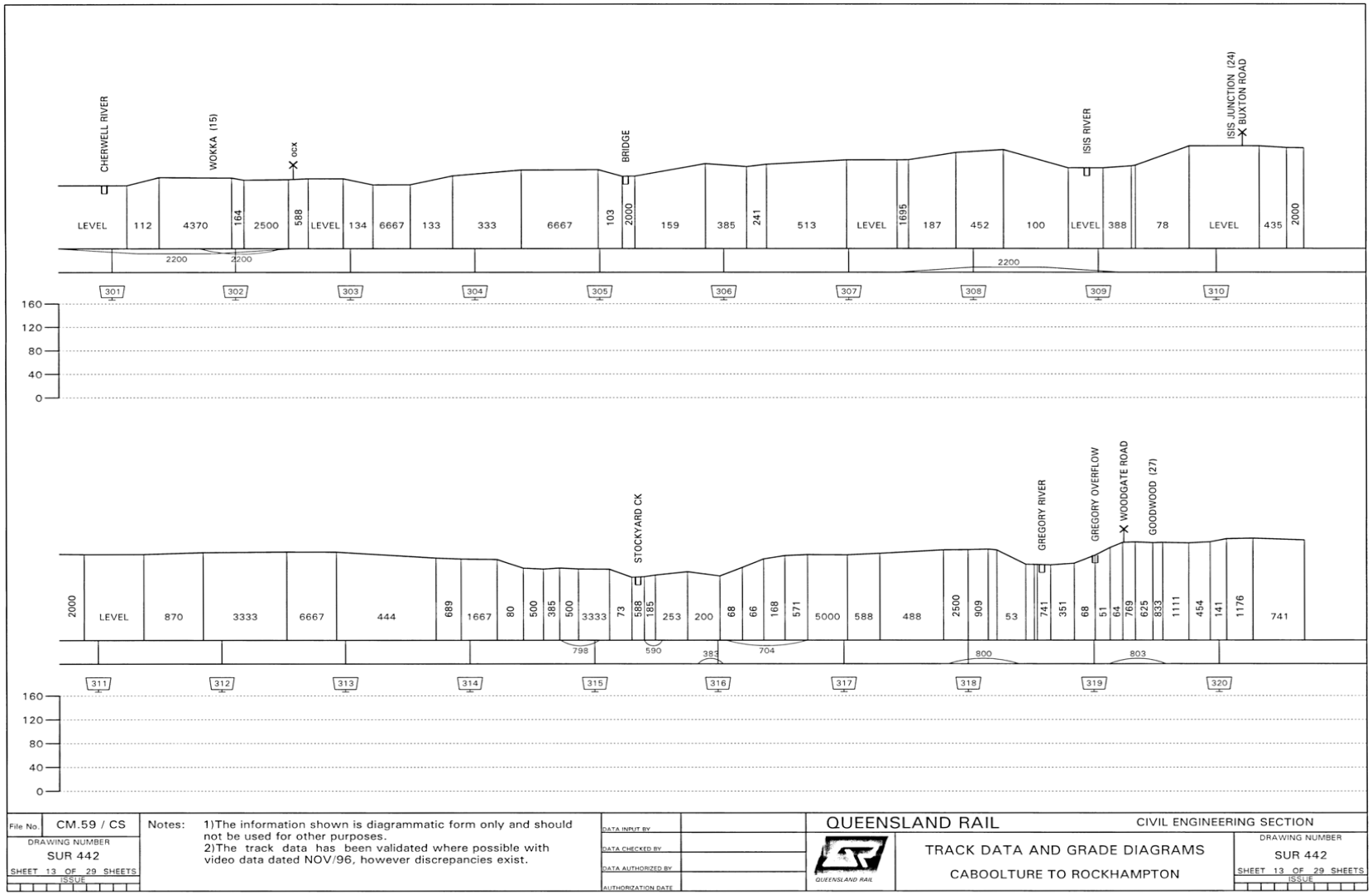
DRAWING NUMBER SUR 442
SHEET 12 OF 29 SHEETS
ISSUE



File No. CM.59 / CS	Notes: 1)The information shown is diagrammatic form only and should not be used for other purposes. 2)The track data has been validated where possible with video data dated NOV/96, however discrepancies exist.	DATA INPUT BY	QUEENSLAND RAIL — CIVIL ENGINEERING SECTION
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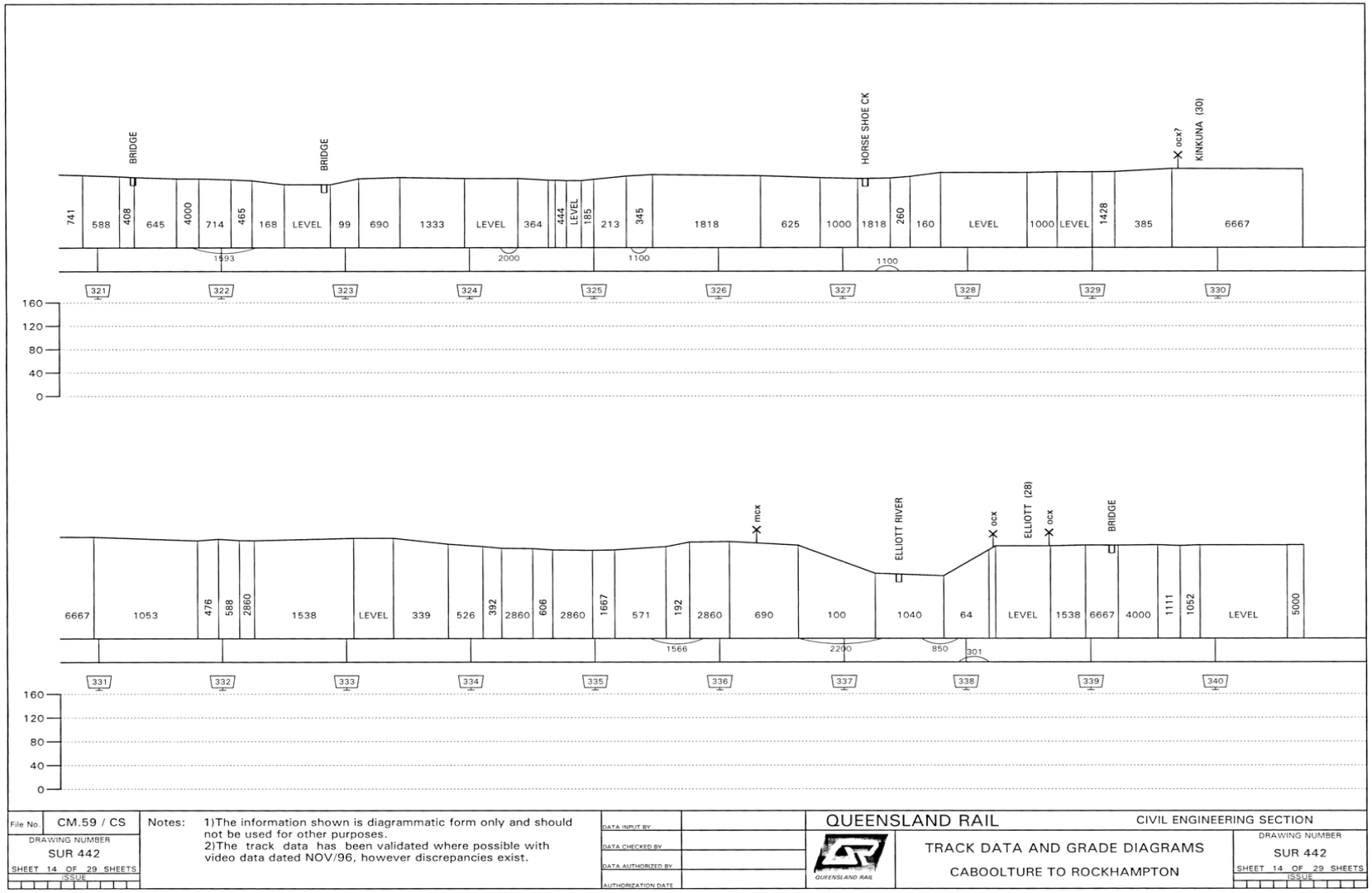
SHEET 13 OF 29 SHEETS		DATA AUTHORIZED BY	CABOOLTURE TO ROCKHAMPTON
ISSUE		AUTHORIZATION DATE	DRAWING NUMBER SUR 442 SHEET 13 OF 29 SHEETS ISSUE


BRIDGE
BRIDGE
HORSE SHOE CK
ocx?
KINKUNA (30)
741 588 408 645 4000 714 465 168 LEVEL 99 690 1333 LEVEL 364 444 LEVEL 185 213 345 1818 625 1000 1818 260 160 LEVEL 1000 LEVEL 1428 385 6667
1593 2000 1100 1100
321 322 323 324 325 326 327 328 329 330
160 120 80 40 0
mcx
ELLIOTT RIVER
ocx
ELLIOTT (28)
ocx
BRIDGE
6667 1053 476 588 2860 1538 LEVEL 339 526 392 2860 606 2860 1667 571 192 2860 690 100 1040 64 LEVEL 1538 6667 4000 1111 1052 LEVEL 5000
1566 2200 850 301
331 332 333 334 335 336 337 338 339 340
160 120 80 40 0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 14 OF 29 SHEETS
ISSUE
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DRAWING NUMBER SUR 442
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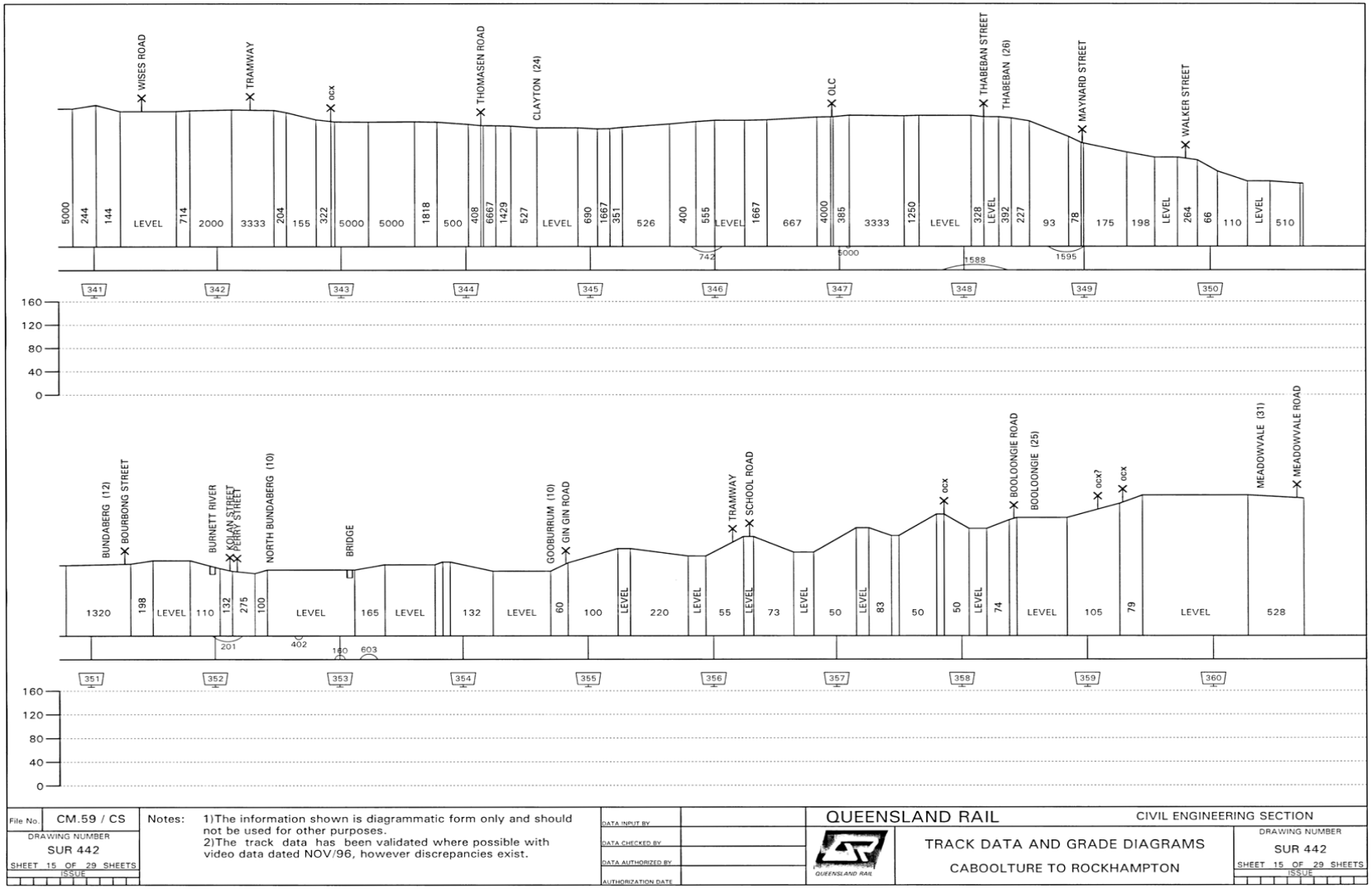
WISES ROAD
TRAMWAY
ocx
THOMASEN ROAD
CLAYTON (24)
OLC
THABEBAN STREET
THABEBAN (26)
MAYNARD STREET
WALKER STREET
BUNDABERG (12)
BOURBONG STREET
BURNETT RIVER
KOLAN STREET
PERRY STREET
NORTH BUNDABERG (10)
BRIDGE
GOOBURRUM (10)
GIN GIN ROAD
TRAMWAY
SCHOOL ROAD
ocx
BOOLOONGIE ROAD
BOOLOONGIE (25)
ocx?
ocx
MEADOWVALE (31)
MEADOWVALE ROAD
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
160
120
80
40
0
File No. CM.59 / CS
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SHEET 15 OF 29 SHEETS
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SHEET 15 OF 29 SHEETS
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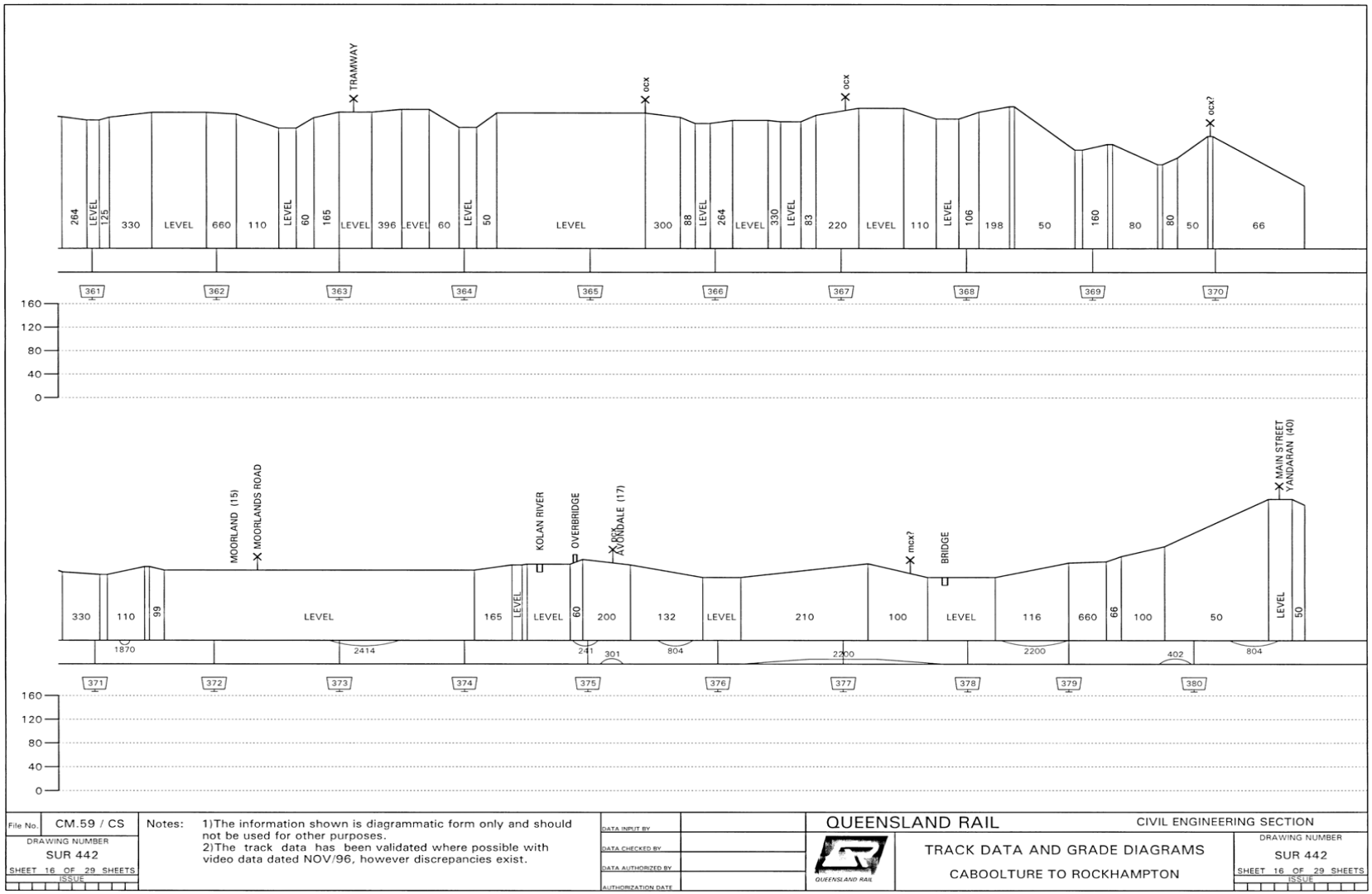
TRAMWAY
ocx
ocx
ocx?
264 LEVEL 125 330 LEVEL 660 110 LEVEL 60 165 LEVEL 396 LEVEL 60 LEVEL 50 LEVEL 300 88 LEVEL 264 LEVEL 330 LEVEL 83 220 LEVEL 110 LEVEL 106 198 50 160 80 80 50 66
361 362 363 364 365 366 367 368 369 370
160 120 80 40 0
MOORLAND (15)
MOORLANDS ROAD
KOLAN RIVER
OVERBRIDGE
AVONDALE (17)
mcx?
BRIDGE
MAIN STREET YANDARAN (40)
330 110 99 LEVEL 165 LEVEL LEVEL 60 200 132 LEVEL 210 100 LEVEL 116 660 66 100 50 LEVEL 50
1870 2414 241 301 804 2200 2200 402 804
371 372 373 374 375 376 377 378 379 380
160 120 80 40 0
File No. CM.59 / CS
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SHEET 16 OF 29 SHEETS
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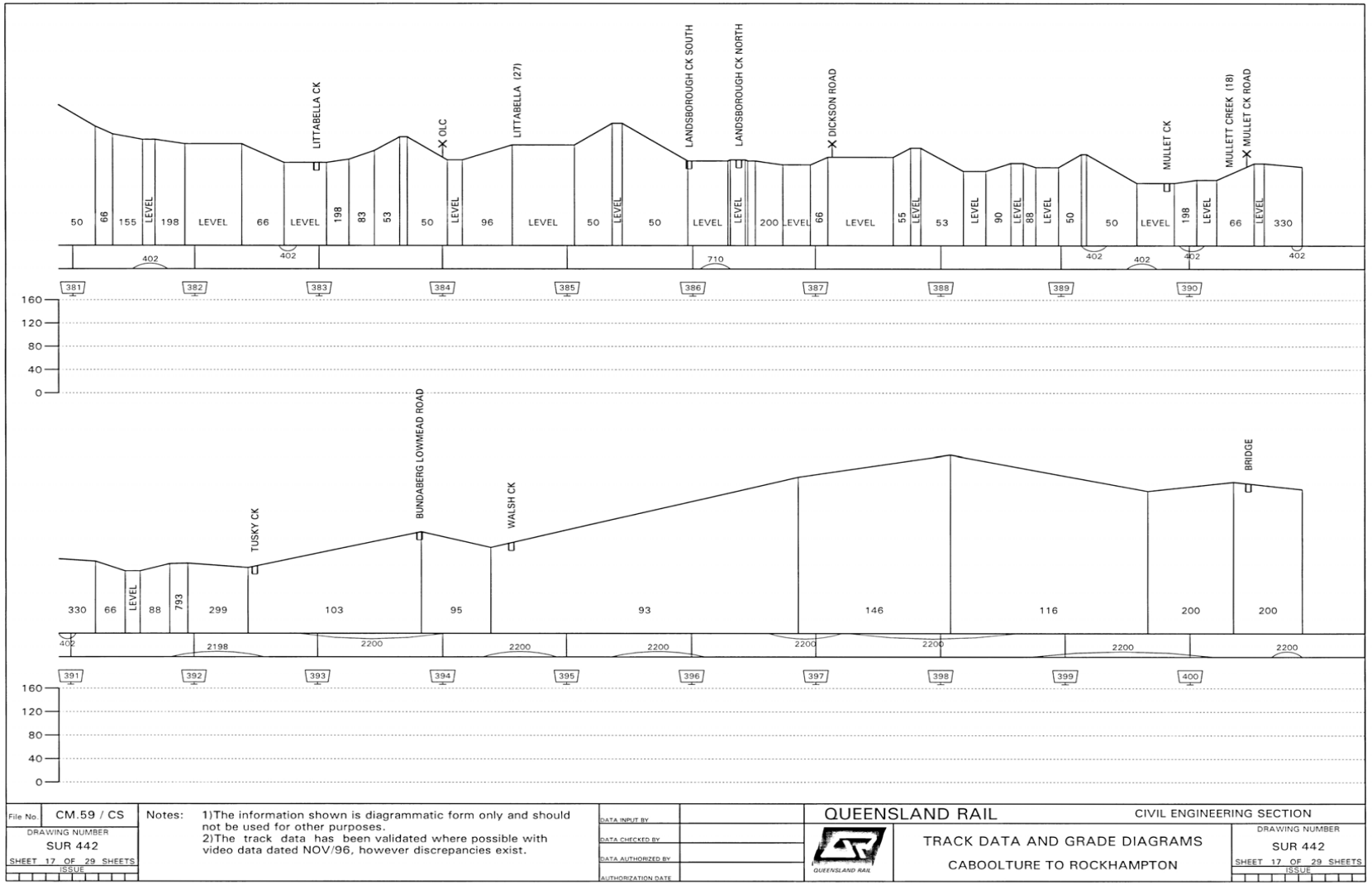
SHEET 16 OF 29 SHEETS
ISSUE


LITTABELLA CK
OLC
LITTABELLA (27)
LANDSBOROUGH CK SOUTH
LANDSBOROUGH CK NORTH
DICKSON ROAD
MULLET CK
MULLETT CREEK (18)
MULLET CK ROAD
50 66 155 LEVEL 198 LEVEL 66 LEVEL 198 83 53 50 LEVEL 96 LEVEL 50 LEVEL 50 LEVEL LEVEL 200 LEVEL 66 LEVEL 55 LEVEL 53 LEVEL 90 LEVEL 88 LEVEL 50 50 LEVEL 198 LEVEL 66 LEVEL 330
402 402 710 402 402 402 402
381 382 383 384 385 386 387 388 389 390
160 120 80 40 0
TUSKY CK
BUNDABERG LOWMEAD ROAD
WALSH CK
BRIDGE
330 66 LEVEL 88 793 299 103 95 93 146 116 200 200
402 2198 2200 2200 2200 2200 2200 2200 2200 2200
391 392 393 394 395 396 397 398 399 400
160 120 80 40 0
File No. CM.59 / CS
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SHEET 17 OF 29 SHEETS
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CABOOLTURE TO ROCKHAMPTON
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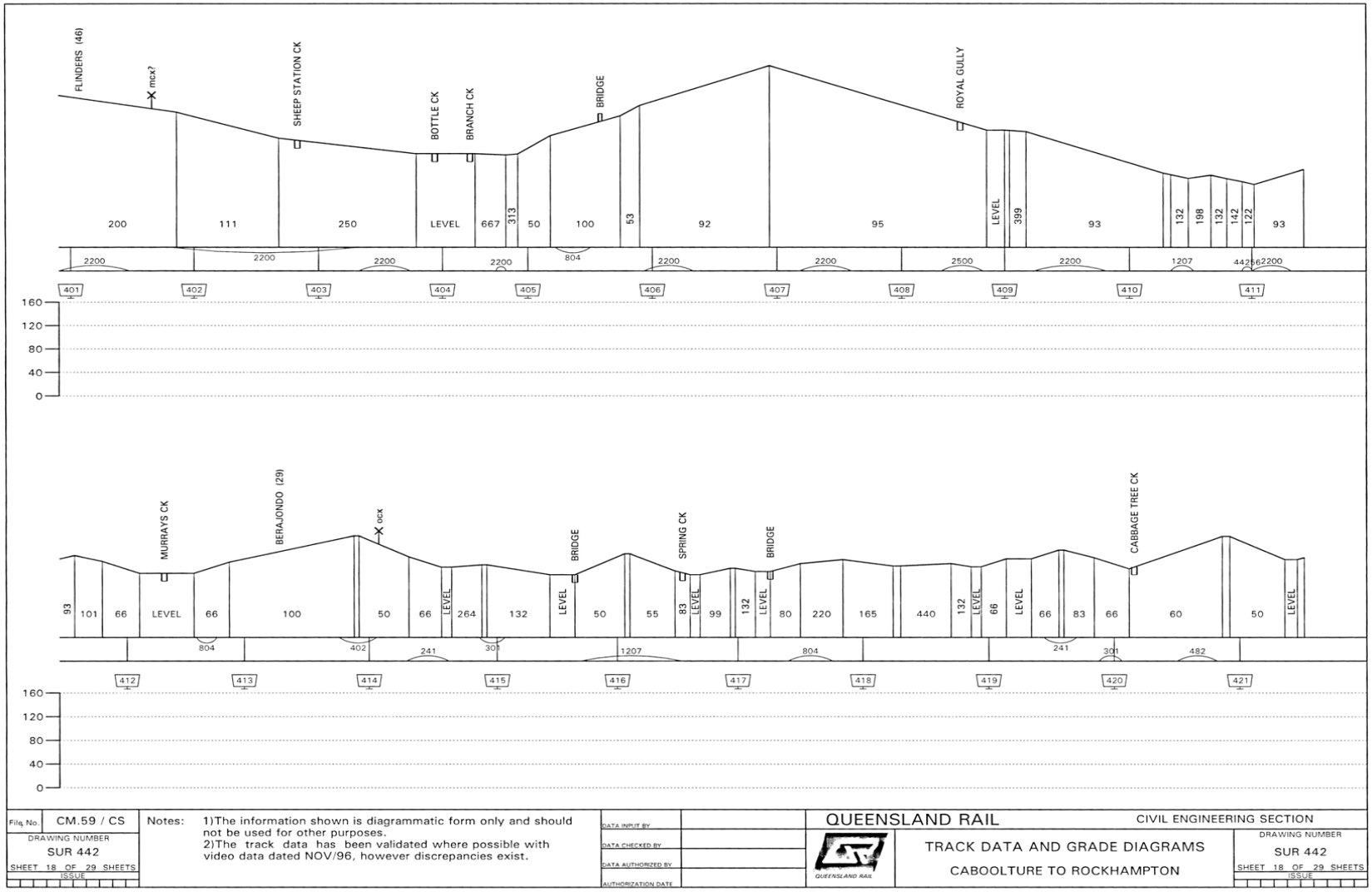
FLINDERS (46)
mcx?
SHEEP STATION CK
BOTTLE CK
BRANCH CK
BRIDGE
ROYAL GULLY
200
111
250
LEVEL
667
313
50
100
53
92
95
LEVEL
399
93
132
198
132
142
122
93
2200
2200
2200
2200
804
2200
2200
2500
2200
1207
442
562
2200
401
402
403
404
405
406
407
408
409
410
411
160
120
80
40
0
MURRAYS CK
BERAJONDO (29)
mcx
BRIDGE
SPRING CK
BRIDGE
CABBAGE TREE CK
93
101
66
LEVEL
66
100
50
66
LEVEL
264
132
LEVEL
50
55
83
LEVEL
99
132
LEVEL
80
220
165
440
132
LEVEL
66
LEVEL
66
83
66
60
50
LEVEL
804
402
241
301
1207
804
241
301
482
412
413
414
415
416
417
418
419
420
421
160
120
80
40
0
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DRAWING NUMBER SUR 442
SHEET 18 OF 29 SHEETS
ISSUE
DATA INPUT BY
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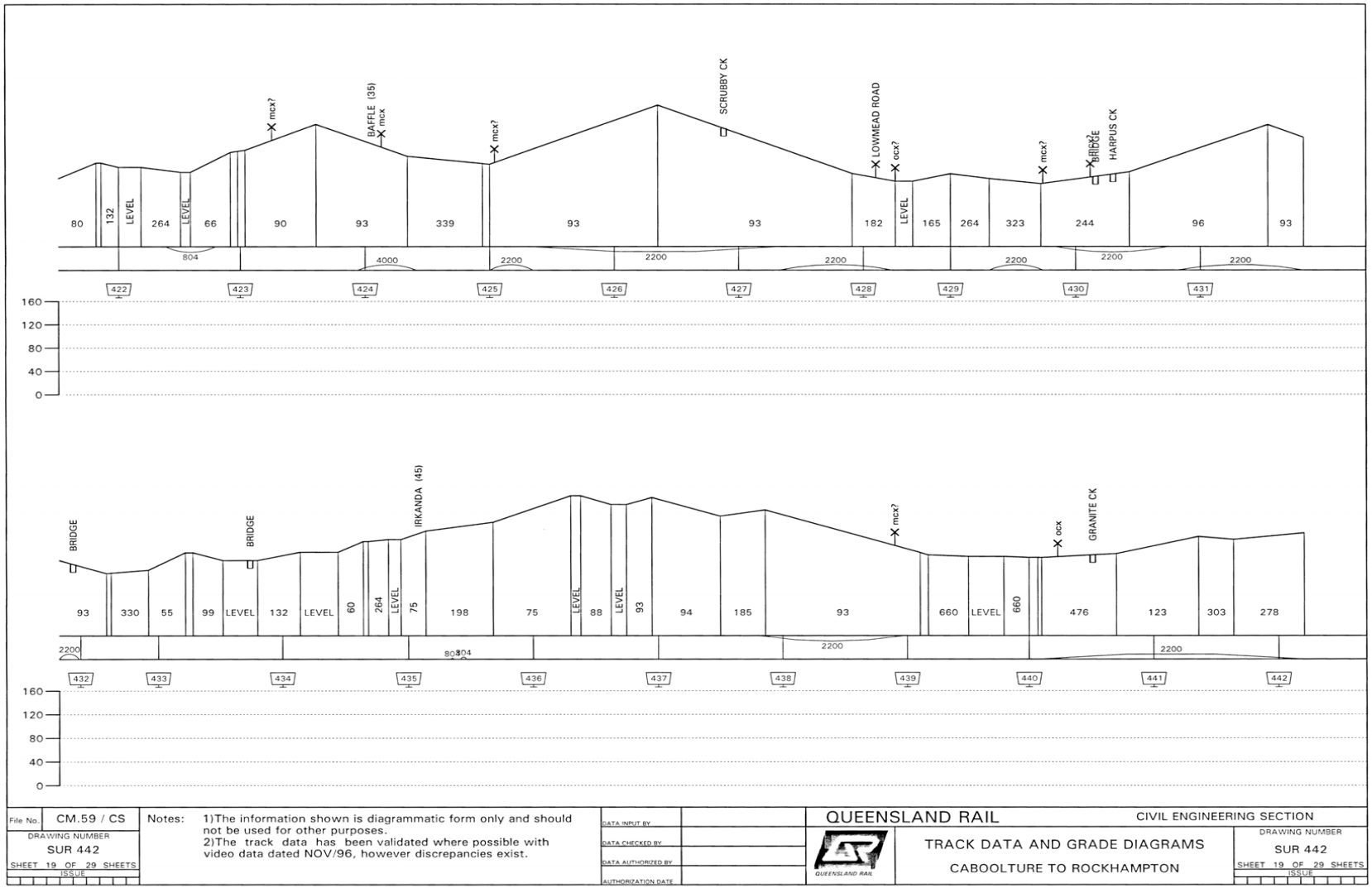
CIVIL ENGINEERING SECTION
QUEENSLAND RAIL
TRACK DATA AND GRADE DIAGRAMS
CABOOLTURE TO ROCKHAMPTON
DRAWING NUMBER SUR 442
SHEET 18 OF 29 SHEETS
ISSUE


mcx?
BAFFLE (35)
mcx
SCRUBBY CK
LOWMEAD ROAD
ocx?
BRIDGE
HARPUS CK
80
132
LEVEL
264
LEVEL
66
90
93
339
93
93
182
LEVEL
165
264
323
244
96
93
804
4000
2200
2200
2200
2200
2200
422
423
424
425
426
427
428
429
430
431
160
120
80
40
0
BRIDGE
BRIDGE
IRKANDA (45)
mcx?
ocx
GRANITE CK
93
330
55
99
LEVEL
132
LEVEL
60
264
LEVEL
75
198
75
LEVEL
88
LEVEL
93
94
185
93
660
LEVEL
660
476
123
303
278
2200
804
2200
2200
432
433
434
435
436
437
438
439
440
441
442
160
120
80
40
0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 19 OF 29 SHEETS
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TRACK DATA AND GRADE DIAGRAMS
CABOOLTURE TO ROCKHAMPTON
DRAWING NUMBER SUR 442
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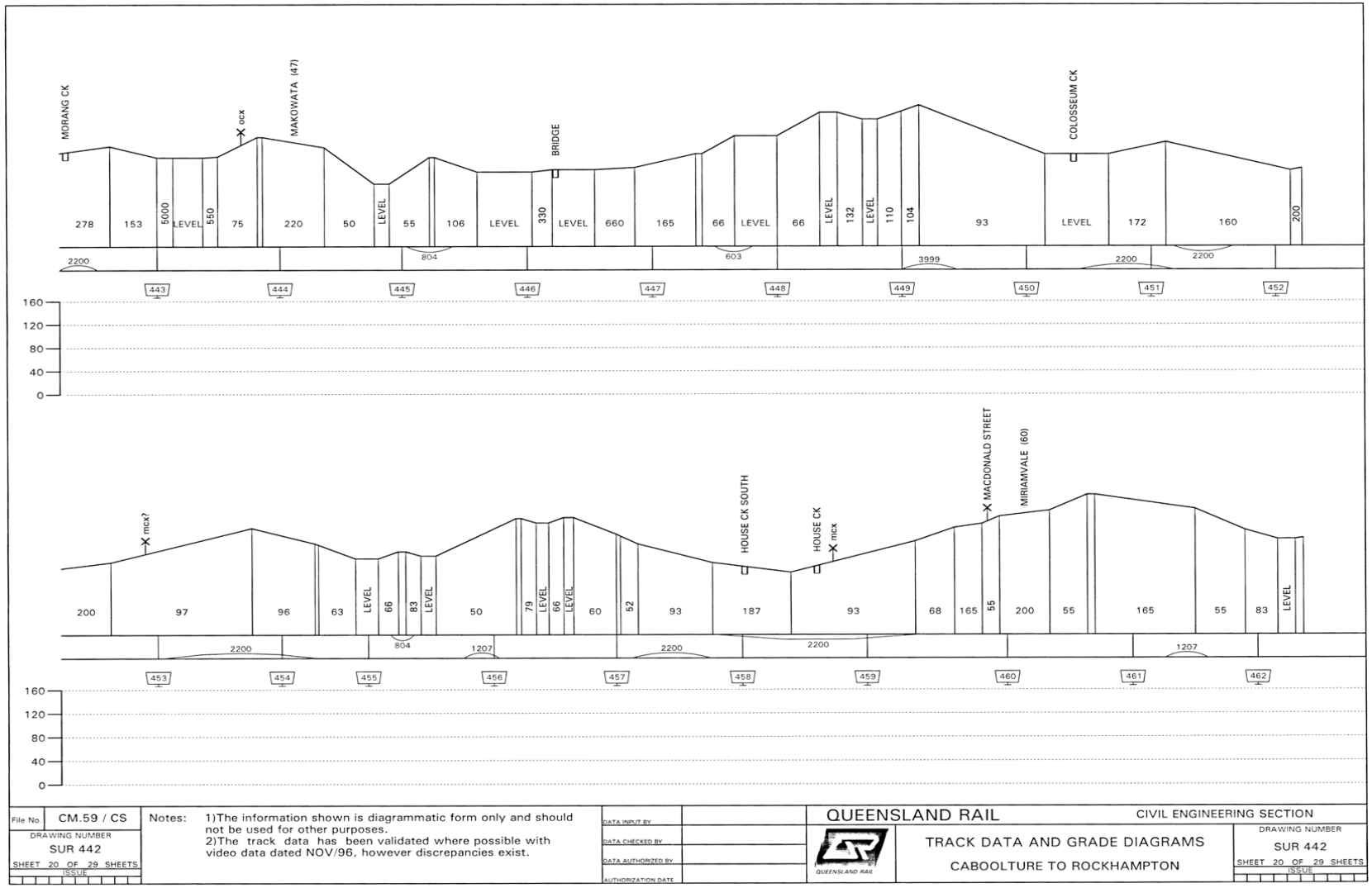
ISSUE


MORANG CK
OCX
MAKOWATA (47)
BRIDGE
COLOSSEUM CK
278 153 5000 LEVEL 550 75 220 50 LEVEL 55 106 LEVEL 330 LEVEL 660 165 66 LEVEL 66 LEVEL 132 LEVEL 110 104 93 LEVEL 172 160 200
2200 804 603 3999 2200 2200
443 444 445 446 447 448 449 450 451 452
160 120 80 40 0
MCX?
HOUSE CK SOUTH
HOUSE CK
MCX
MACDONALD STREET
MIRIAMVALE (60)
200 97 96 63 LEVEL 66 83 LEVEL 50 79 LEVEL 66 LEVEL 60 52 93 187 93 68 165 55 200 55 165 55 83 LEVEL
2200 804 1207 2200 2200 1207
453 454 455 456 457 458 459 460 461 462
160 120 80 40 0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 20 OF 29 SHEETS
ISSUE
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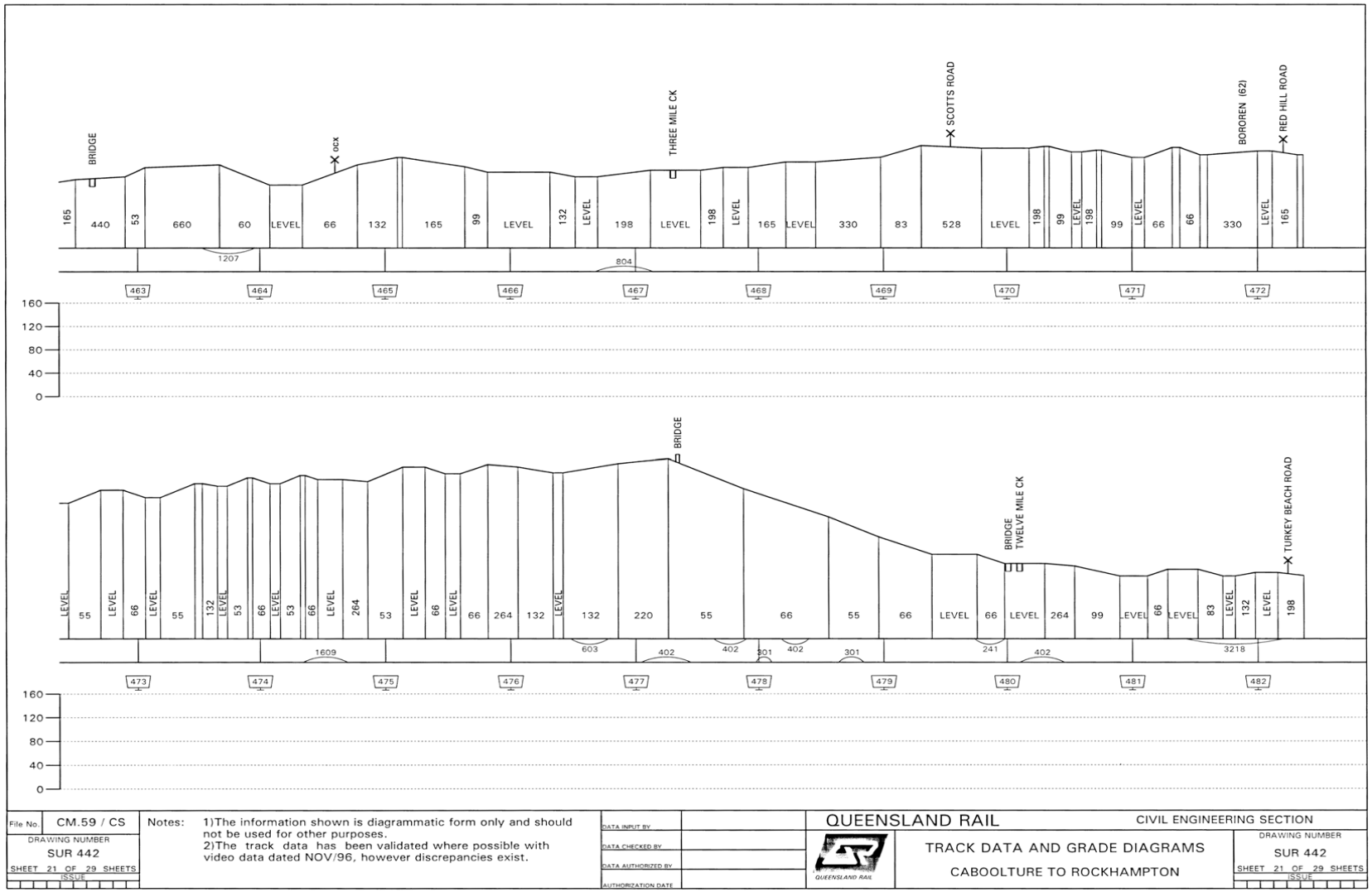
CABOOLTURE TO ROCKHAMPTON
DRAWING NUMBER SUR 442
SHEET 20 OF 29 SHEETS
ISSUE


BRIDGE
OCX
THREE MILE CK
SCOTTS ROAD
BORDREN (62)
RED HILL ROAD
165 440 53 660 60 LEVEL 66 132 165 99 LEVEL 132 LEVEL 198 LEVEL 198 LEVEL 165 LEVEL 330 83 528 LEVEL 198 99 LEVEL 198 99 LEVEL 66 66 330 LEVEL 165
1207
804
463 464 465 466 467 468 469 470 471 472
160 120 80 40 0
LEVEL 55 LEVEL 66 LEVEL 55 132 LEVEL 53 66 LEVEL 53 66 LEVEL 264 53 LEVEL 66 LEVEL 66 264 132 LEVEL 132 220 BRIDGE 55 66 55 66 LEVEL 66 BRIDGE TWELVE MILE CK LEVEL 264 99 LEVEL 66 LEVEL 83 LEVEL 132 LEVEL 198 TURKEY BEACH ROAD
1609
603
402
402
301
402
301
241
402
3218
473 474 475 476 477 478 479 480 481 482
160 120 80 40 0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 21 OF 29 SHEETS
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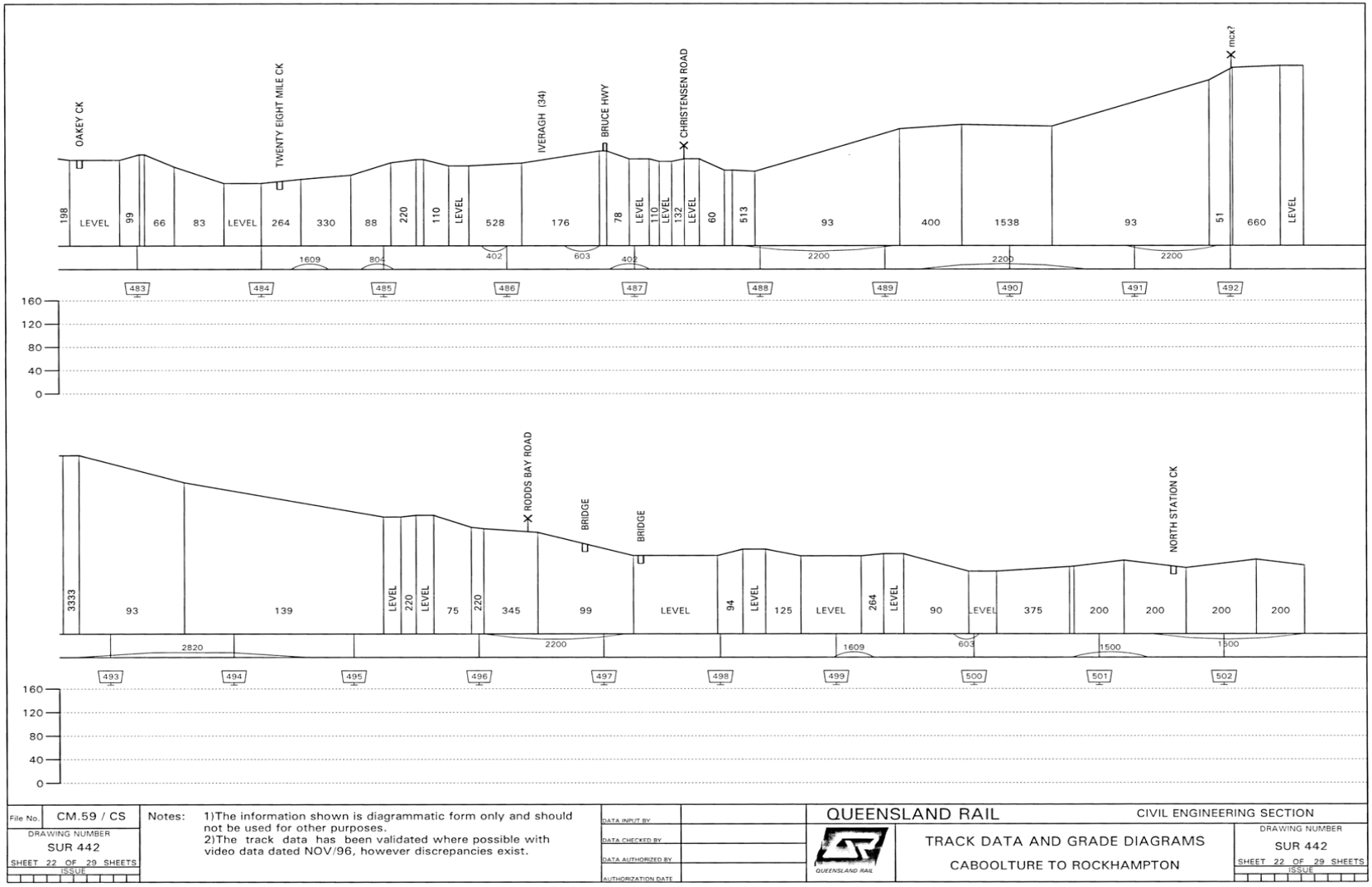
CABOOLTURE TO ROCKHAMPTON
DRAWING NUMBER SUR 442
SHEET 21 OF 29 SHEETS
ISSUE


OAKEY CK
TWENTY EIGHT MILE CK
IVERAGH (34)
BRUCE HWY
CHRISTENSEN ROAD
mcx?
198 LEVEL 99 66 83 LEVEL 264 330 88 220 110 LEVEL 528 176 78 LEVEL 110 LEVEL 132 LEVEL 60 513 93 400 1538 93 51 660 LEVEL
1609 804 402 603 402 2200 2200 2200
483 484 485 486 487 488 489 490 491 492
160 120 80 40 0
RODDS BAY ROAD
BRIDGE
BRIDGE
NORTH STATION CK
3333 93 139 LEVEL 220 LEVEL 75 220 345 99 LEVEL 94 LEVEL 125 LEVEL 264 LEVEL 90 LEVEL 375 200 200 200 200
2820 2200 1609 603 1500 1500
493 494 495 496 497 498 499 500 501 502
160 120 80 40 0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 22 OF 29 SHEETS
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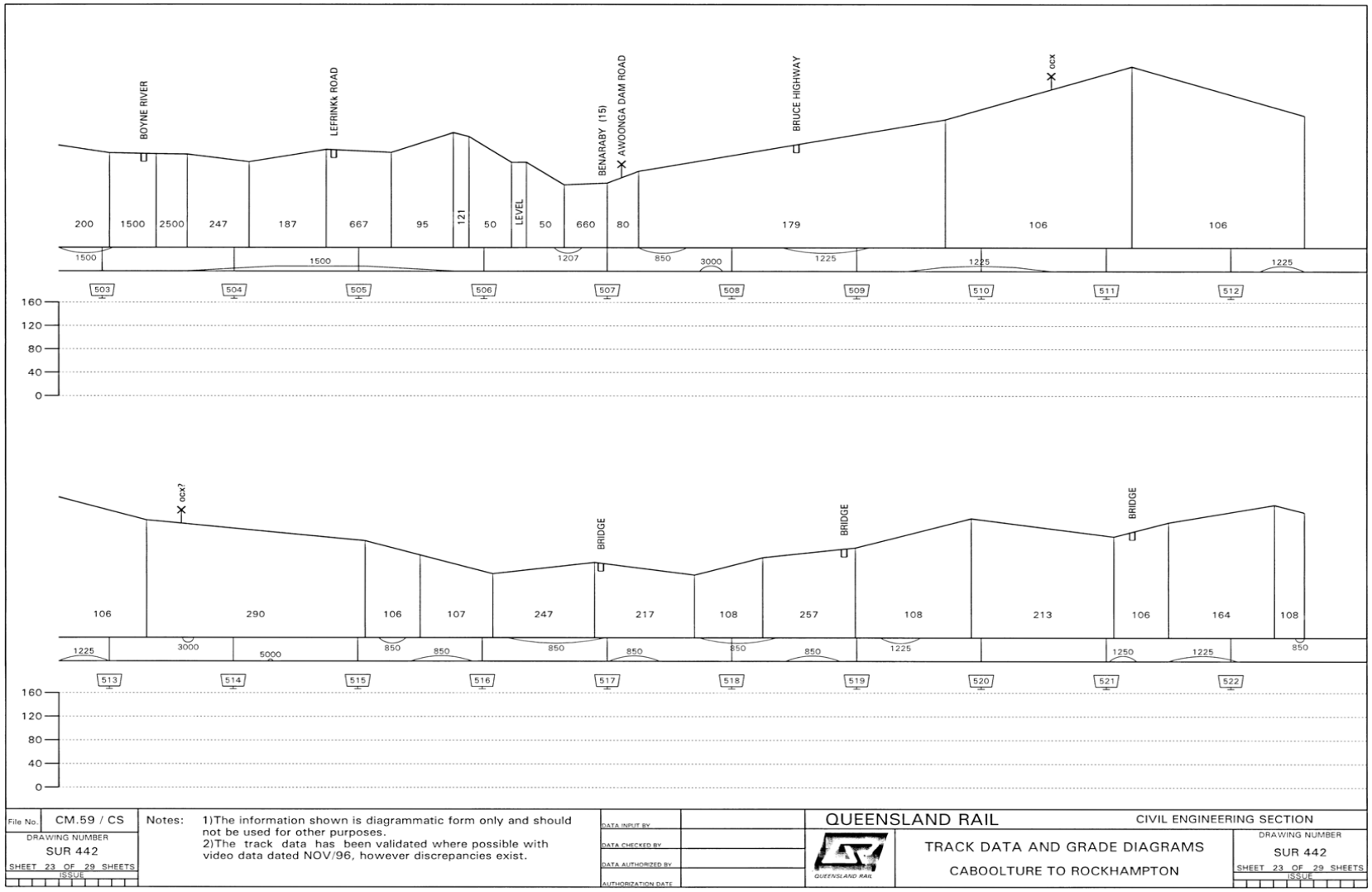
SHEET 22 OF 29 SHEETS
ISSUE


BOYNE RIVER
LEFRINKk ROAD
BENARABY (15)
AWOONGA DAM ROAD
BRUCE HIGHWAY
ocx
LEVEL
200 1500 2500 247 187 667 95 121 50 50 660 80 179 106 106
1500 1500 1207 850 3000 1225 1225 1225
503 504 505 506 507 508 509 510 511 512
160 120 80 40 0
ocx?
BRIDGE
BRIDGE
BRIDGE
106 290 106 107 247 217 108 257 108 213 106 164 108
1225 3000 5000 850 850 850 850 850 850 1225 1250 1225 850
513 514 515 516 517 518 519 520 521 522
160 120 80 40 0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 23 OF 29 SHEETS
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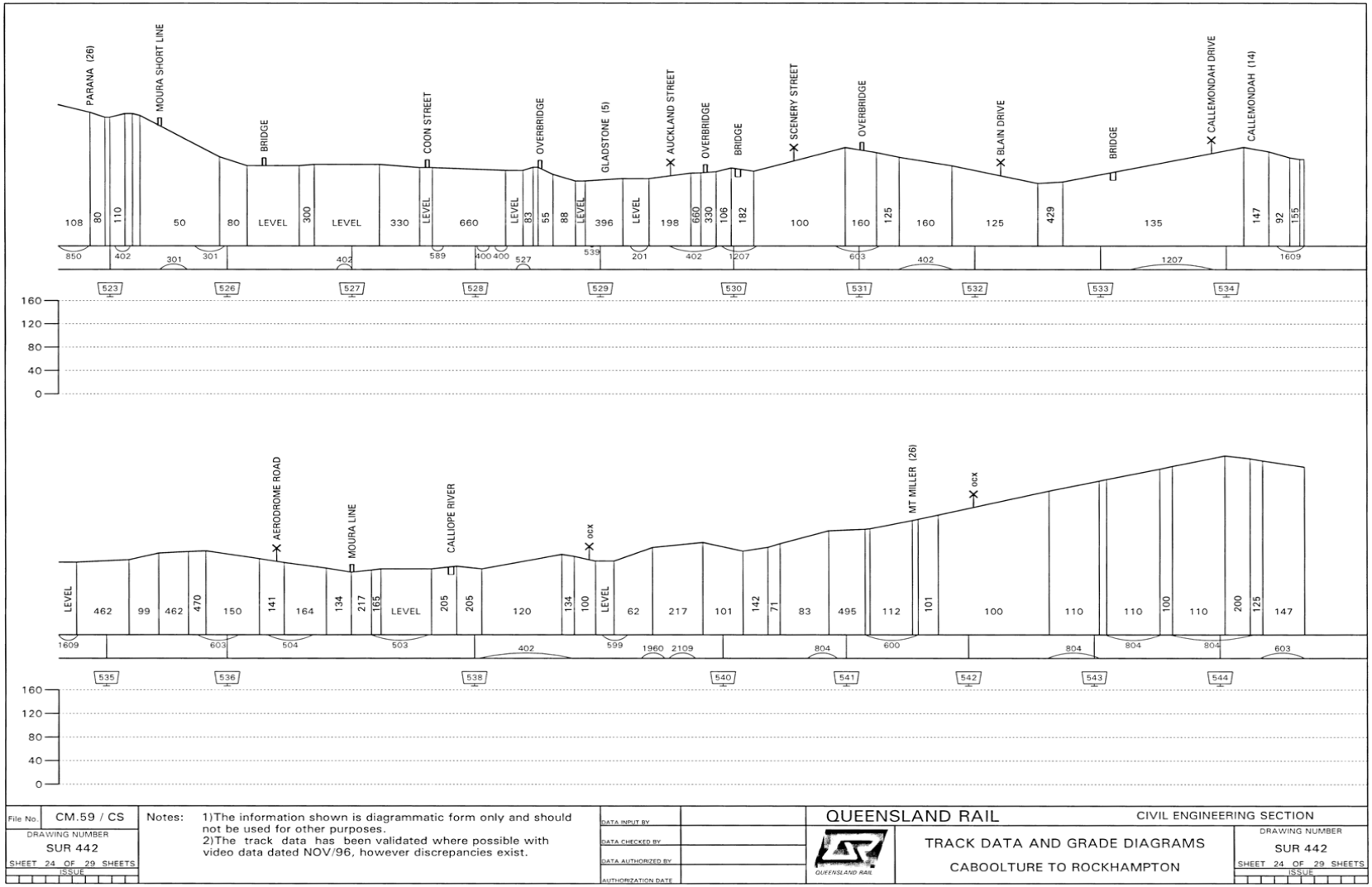
PARANA (26)
MOURA SHORT LINE
BRIDGE
COON STREET
OVERBRIDGE
GLADSTONE (5)
AUCKLAND STREET
OVERBRIDGE
BRIDGE
SCENERY STREET
OVERBRIDGE
BLAIN DRIVE
BRIDGE
CALLEMONDAH DRIVE
CALLEMONDAH (14)
AERODROME ROAD
MOURA LINE
CALLIOPE RIVER
OCX
MT MILLER (26)
OCX
160
120
80
40
0
File No. CM.59 / CS
DRAWING NUMBER SUR 442
SHEET 24 OF 29 SHEETS
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APPENDIX F

Sectional Running Times

		PASSENGER		80_FRT	
		UP	DOWN	UP	DOWN
Location	Location	P/P	P/P	P/P	P/P
Nambour	Yandina	8	9	8	8
Yandina	North Arm	4	3	3	3
North Arm	Eumundi	3	3	2	3
Eumundi	Sunrise	2	1	2	2
Sunrise	Cooroy	8	4	6	6
Cooroy	Pomona	7	9	9	8
Pomona	Cooran	8	8	7	6
Cooran	Traveston	7	7	6	6
Traveston	Woondum	7	8	6	7
Woondum	Glanmire	8	8	8	7
Glanmire	Gympie North	5	2	4	4
Gympie North	Tamaree	1	4	3	3
Tamaree	Harveys Siding	6	6	6	6
Harveys Siding	Curra	5	5	5	5
Curra	Theebine	9	8	8	8
Theebine	Paterson	6	6	6	6
Paterson	Gundiah	7	7	6	6
Gundiah	Netherby	5	5	4	5
Netherby	Tiaro	7	8	7	6
Tiaro	Owanyilla	7	7	7	7
Owanyilla	Mungar	11	10	8	8
Mungar	Yengarie	6	6	6	6
Yengarie	Maryborough West	8	5	6	7
Maryborough West	Colton	6	8	7	7
Colton	Torbanlea	7	7	7	8
Torbanlea	Howard	4	3	4	4
Howard	Wokka	7	7	7	8
Wokka	Isis Junction	5	5	5	5
Isis Junction	Goodwood	8	8	7	7
Goodwood	Kinkuna	7	7	7	7
Kinkuna	Elliott	6	6	7	6
Elliott	Bundaberg	11	9	10	10
Bundaberg	North Bundaberg	3	6	6	6
North Bundaberg	Meadowvale	6	7	7	7
Meadowvale	Avondale	11	11	10	11
Avondale	Littabella	8	8	8	8
Littabella	Flinders	12	13	13	13
Flinders	Berajondo	8	8	9	10
Berajondo	Baffle	11	11	9	10
Baffle	Irkanda	6	6	7	6
Irkanda	Netley	8	8	8	8
Netley	Miriam Vale	8	6	9	9
Miriam Vale	Bororen	6	8	8	8
Bororen	Iveragh	13	12	12	12
Iveragh	Benaraby	14	15	15	14
Benaraby	Parana	9	10	9	10
Parana	Gladstone	8	3	9	9

Rocklands	Rockhampton	7	8	10	11
Gympie North	Gympie			10	10
Maryborough West	Maryborough	10	10	10	10

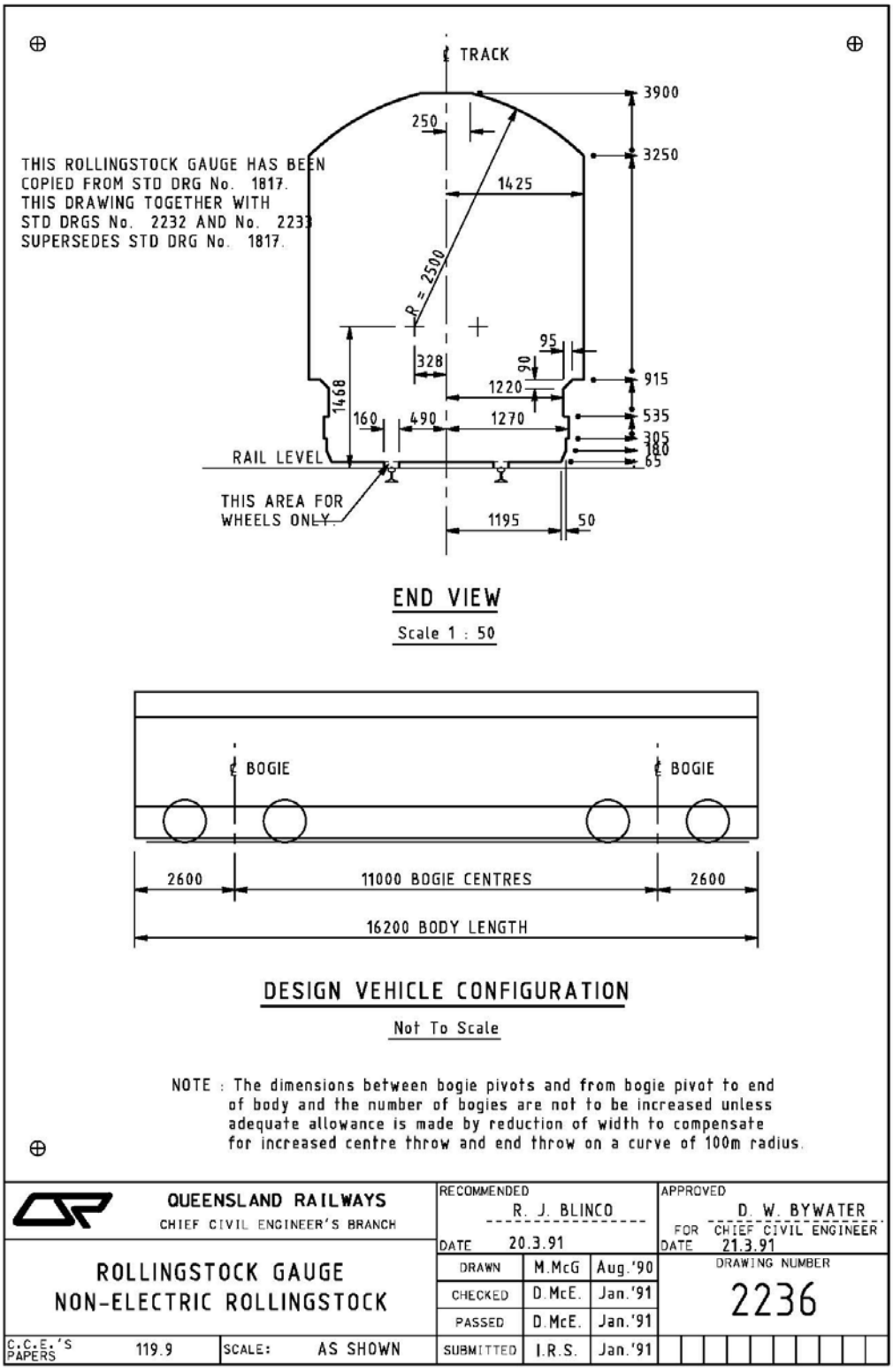
APPENDIX G

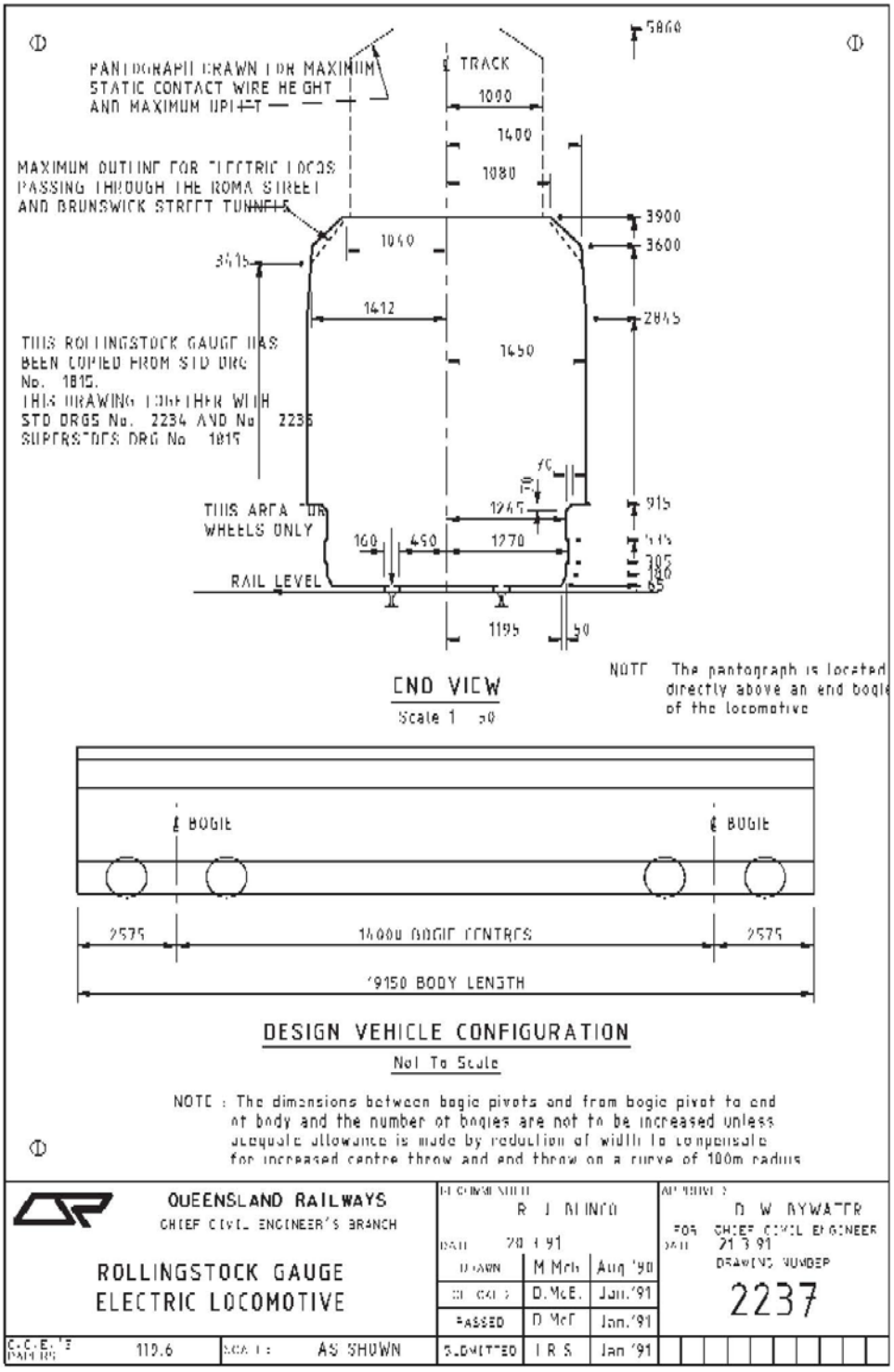
Altitudes

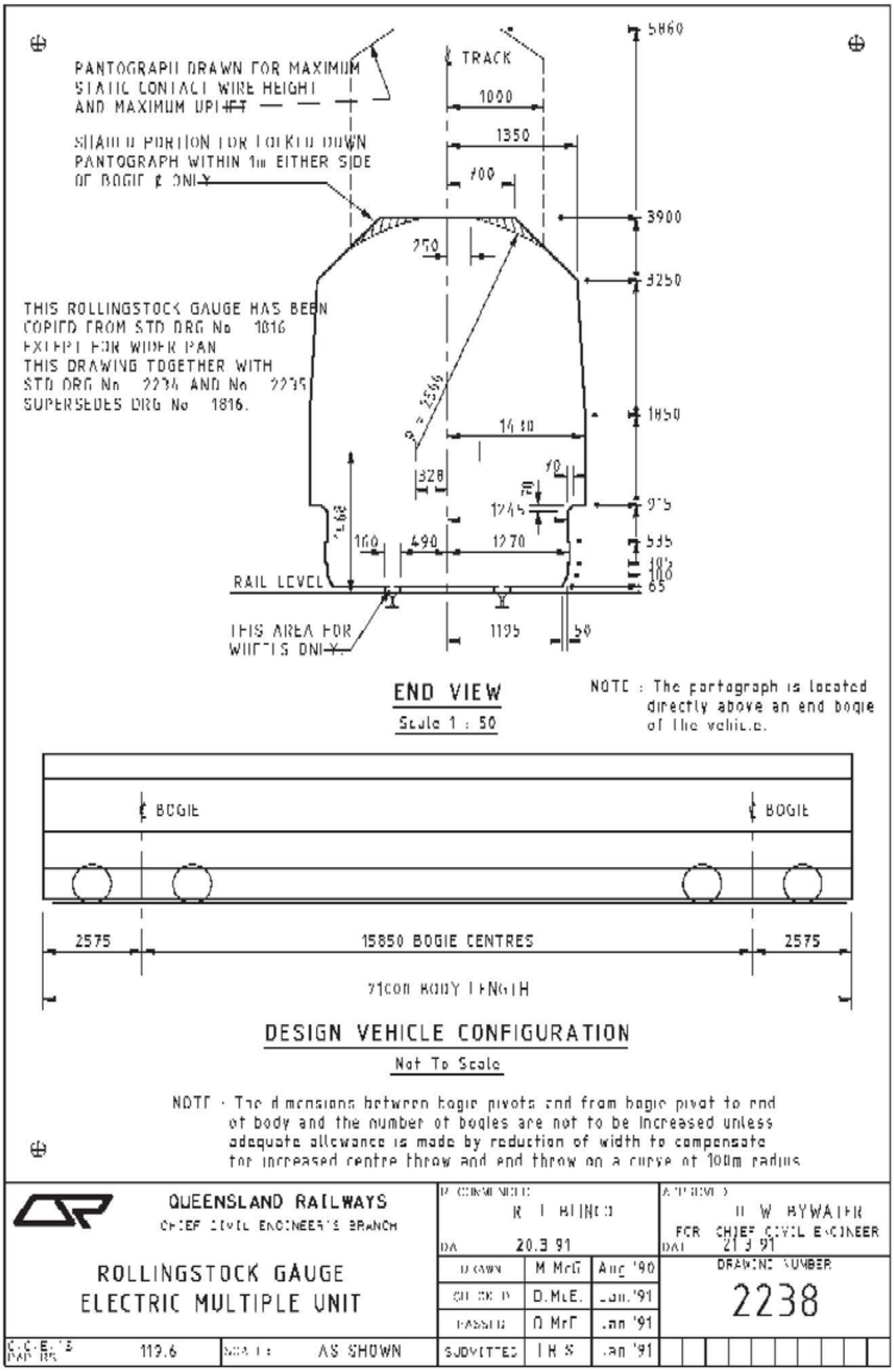
Location	Altitude in metres
Nambour	16
Yandina	11
North Arm	14
Sunrise	53
Cooroy	110
Pomona	88
Cooran	77
Traveston	71
Woondum	74
Glanmire	64
Gympie North	86
Tamaree	92
Harvey's Siding	76
Curra	60
Theebine	61
Paterson	58
Gundiah	32
Netherby	45
Tiaro	34
Owanyilla	22
Mungar	22
Yengarie	12
Maryborough West	23
Colton	39
Torbanlea	32
Howard	16
Wokka	15
Isis Junction	23
Goodwood	26
Kinkuna	29
Elliott	27
Bundaberg	11
North Bundaberg	9
Meadowvale	28
Avondale	14
Littabella	19
Flinders	46
Berajondo	27
Baffle	27
Irkanda	43
Netley	41
Miriam Vale	55
Bororen	58
Iveragh	30
Benaraby	11
Parana	7

APPENDIX H

Rollingstock Gauges




PANTOGRAPH DRAWN FOR MAXIMUM STATIC CONTACT WIRE HEIGHT AND MAXIMUM UPLIFT
℄ TRACK
MAXIMUM OUTLINE FOR ELECTRIC LOCOS PASSING THROUGH THE ROMA STREET AND BRUNSWICK STREET TUNNELS
THIS ROLLINGSTOCK GAUGE HAS BEEN COPIED FROM STD DRG No. 1815.
THIS DRAWING TOGETHER WITH STD DRGS No. 2234 AND No 2235
SUPERSEDES DRG No 1815
THIS AREA FOR WHEELS ONLY
RAIL LEVEL
5860
1000
1400
1080
3900
3600
1040
3415
1412
2845
1450
915
1245
160
450
1270
1195
END VIEW
Scale 1 :50
NOTE The pantograph is located directly above an end bogie of the locomotive
℄ BOGIE
℄ BOGIE
2575
14000 BOGIE CENTRES
2575
19150 BODY LENGTH
DESIGN VEHICLE CONFIGURATION
Not To Scale
NOTE : The dimensions between bogie pivots and from bogie pivot to end of body and the number of bogies are not to be increased unless adequate allowance is made by reduction of width to compensate for increased centre throw and end throw on a curve of 100m radius
QUEENSLAND RAILWAYS
CHIEF CIVIL ENGINEER'S BRANCH
ROLLINGSTOCK GAUGE
ELECTRIC LOCOMOTIVE
R J MINCO
20 4 91
D W BYWATER
FOR CHIEF CIVIL ENGINEER
21 3 91
DRAWN M McN Aug '90
D.McE. Jan.'91
PASSED D McT Jan.'91
SUBMITTED I R S Jan '91
C.C.E.'S DRAWING 119.6
SCALE : AS SHOWN
DRAWING NUMBER
2237


PANTOGRAPH DRAWN FOR MAXIMUM STATIC CONTACT WIRE HEIGHT AND MAXIMUM UPLIFT
SHADED PORTION FOR LOCKED DOWN PANTOGRAPH WITHIN 1m EITHER SIDE OF BOGIE ℄ ONLY
THIS ROLLINGSTOCK GAUGE HAS BEEN COPIED FROM STD DRG No 1816 EXCEPT FOR WIDER PAN
THIS DRAWING TOGETHER WITH STD DRG No 2234 AND No 2235 SUPERSEDES DRG No 1816.
℄ TRACK
RAIL LEVEL
THIS AREA FOR WHEELS ONLY
END VIEW
Scale 1 : 50
NOTE : The pantograph is located directly above an end bogie of the vehicle.
℄ BOGIE
15850 BOGIE CENTRES
2575
DESIGN VEHICLE CONFIGURATION
Not To Scale
NOTE : The dimensions between bogie pivots and from bogie pivot to end of body and the number of bogies are not to be increased unless adequate allowance is made by reduction of width to compensate for increased centre throw and end throw on a curve of 100m radius
QUEENSLAND RAILWAYS
CHIEF CIVIL ENGINEER'S BRANCH
ROLLINGSTOCK GAUGE
ELECTRIC MULTIPLE UNIT
AS SHOWN
DRAWING NUMBER
2238

APPENDIX I

Trackside Detection Equipment

DRAGGING EQUIPMENT DETECTOR (DED)

Section	km
Benaraby - Parana	513.580 km

HOT BOX / HOT WHEEL DETECTORS (HBD/HWD) - NIL

AXLE COUNTERS - NIL

WHEEL IMPACT LOAD DETECTORS (WILD) - NIL

WEATHER STATIONS

Station	Monitors
Elimbah (53.940 km)	Flood Heights
Glasshouse Mountains (71.690 km)	Flood Heights
Traveston (149.010 km)	Rainfall / Flood Heights
Netley (447.000 km)	Flood Heights / Temperature*
Bororen (467.350 km)	Flood Heights
Iveragh (481.000 km)	Flood Heights

(*) refer Operational Constraints - Infrastructure