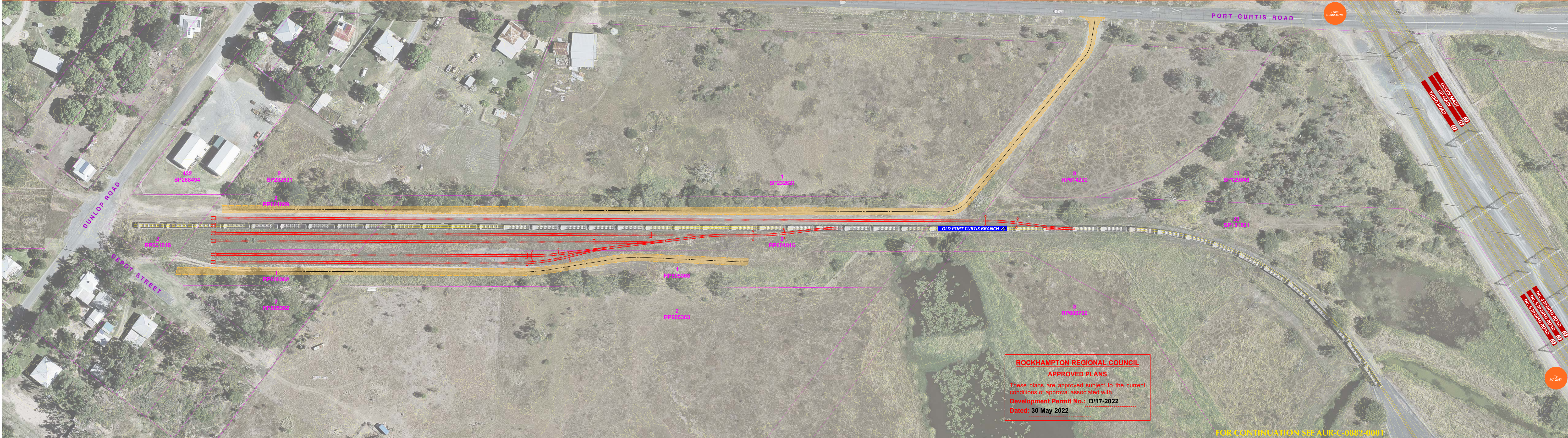


ROCKHAMPTON YARD - ASSET RENEWALS / REMOVALS - AURIZON OPERATIONS



REVISION				
REV.	DESCRIPTION	DES.	CHK.	APPR.
4	ISSUED FOR DISCUSSION PURPOSES ONLY	JLN	-	20.05.22
3	ISSUED FOR DISCUSSION PURPOSES ONLY	JLN	-	05.04.22
2	ISSUED FOR DISCUSSION PURPOSES ONLY	JLN	-	04.06.22
1	ISSUED FOR DISCUSSION PURPOSES ONLY	JLN	-	14.06.21



DESIGNED		REVIEWED	
CHECKED		DRAWN	JMLON
CHECKED		DESIGN LEADER	
APPROVED		AUTHORISED	
RPEQ No.		DATE	

AURIZON APPROVALS	
DESIGNED	
CHECKED	
APPROVED	
DATE	



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DRAWING TITLE
GLADSTONE TO ROCKHAMPTON
ROCKHAMPTON YARD
ASSET RENEWALS
AURIZON OPERATIONS
SITE PLAN - SHEET 2 OF 2

STATUS	PRELIMINARY ISSUE NOT FOR CONSTRUCTION
PROJECT No.	
DRAWING NUMBER	AUR-C-0882-0002
REVISION	4

TECHNICAL MEMORANDUM

To: Aurizon
From: Laurence Allan
McMurtrie Consulting Engineers
Date: 21 January 2022
Project No: J21204/Lt01/v2
Re: Old Port Curtis Branch Railway Siding – Flood Statement

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/17-2022

Dated: 30 May 2022

1. Introduction

McMurtrie Consulting Engineers (MCE) have been engaged by Aurizon to provide flood advice in relation to the Old Port Curtis Branch Railway Siding, the Area of Interest (AOI), to support a Material Change of Use (MCU) Development Application (DA). The AOI is situated between Railway Lane and Dunlop Street in Port Curtis approximately 3km south of the Rockhampton CBD, as shown on Figure 1.

The AOI is described as Lot 1 RP605363, Lot 1 RP6011014, Lot 2 RP6011015, Lot 241 SP129865, Lot 1 RP605362, Lot 2 RP601029 and Lot 244 SP129865.

2. Site Description

Pre-Developed

The AOI is currently owned by Queensland Rail (QR) and is located immediately south of the Rockhampton Rail Yard (owned by Aurizon). Historically the AOI was used for the stabling of rollingstock when not operating on the rail network. The AOI previously had two rail lines connecting from the north to the Rockhampton Rail Yard along with six rail sidings within the AOI.

The site is relatively flat longitudinally, with minor batters to the east and west. Levels along the former track infrastructure are typically between 6.2 to 6.5 mAHD.

Between July and November 2014, the western most railway line and siding were removed from the AOI, leaving a single rail line access from the north and five rail sidings within the AOI.

QR ceased stabling operations within the AOI in around 2017, after which the remaining rail infrastructure was to be progressively removed. However, a review of current high resolution aerial imagery indicates that not all of the track infrastructure was removed after QR stabling operations ceased.

Post-Developed

It is proposed to reinstate the removed track infrastructure (rails, sleepers and ballast) within the AOI in order to recommence the stabling of rollingstock. Generally, the track infrastructure will be reinstated like-for-like, on the existing railway formation.

3. Flood Hazard

Site flooding from the Fitzroy River generally occurs as backwater flooding from flood waters entering the mouth of Gavial Creek near Port Curtis approximately 3 km north-east of the AOI. In larger Fitzroy River flood events, flood waters also overtop from Scrubby Creek south-west of the AOI.

Peak flood levels, depths and velocities for the site are detailed in Table 3-1. The AOI exhibits H4 and H5 flood hazard category, primarily as a result of Fitzroy River flood depths, rather than velocity.

Table 3-1 Peak Flood Levels - Fitzroy River Regional Flooding

AEP (%)	Peak Flood Level (mAHD)	Peak Flood Depth (m)	Peak Flood Velocity (m/s)
1	8.20	2.02	0.67
2	7.82	1.65	0.57
5	7.24	0.69	0.39
10	6.58	0.42	0.07
18	5.94	0.15	0.08
39	-	-	-

The results in Table 3-1 identify that the site does not provide Fitzroy River flood conveyance rather provides flood storage only.

Local creek flooding from the South Rockhampton catchment is conveyed through the AOI to the Fitzroy River, via culverts near Railway Lane. The South Rockhampton local 1% AEP flood levels only affect the batters and low-lying areas within the AOI and do not influence the higher ground levels where the track infrastructure is to be reinstated, as illustrated on Figure 3.

Flood Impact

The site is not situated within a flood conveyance area of the Fitzroy River, demonstrated by maximum velocities below 1 m/s within the AOI.

The proposed development, being the reinstatement of previously existing track infrastructure will result in negligible impact to flood characteristics within and external to the AOI.

To minimise damage and recovery post flood, it is recommended during times of flood, where time permits, to relocate rollingstock stabled within the AOI to less flood affected areas.

4. Data Sources

The report is based on the following information provided by others:

- 2015 Rockhampton LiDAR (provided by Queensland Department of Natural Resources, Mines and Energy (DNRME);
- Council Planning Scheme 2015 (v2.1);
- Council's Fitzroy River Flood Study (2018);
- Council's South Rockhampton Flood Study (2018); and
- NearMap aerial imagery (2021).

The accuracy of the report is dependent upon the accuracy of this information.

5. Conclusion & Qualifications

This flood statement has been prepared by MCE to support a MCU DA.

The analysis and overall approach was specifically catered for the particular project requirements, and may not be applicable beyond this scope. For this reason, any other third parties are not authorised to utilise this report without further input and advice from MCE.

The report is based on the aforementioned information provided by others. The accuracy of the report is dependent upon the accuracy of this information.

Yours sincerely,



RPEQ 17118
2022.01.21 13:32:19 +10'00'

Laurence Allan
Principal Civil Engineer

Enclosed: Figures

References

- AECOM. (2014). *2014 Tufflow Model Results (Fitzroy River)*. Rockhampton: AECOM Australia Pty Ltd.
- AECOM. (2018). *South Rockhampton Local Catchment Study - Baseline Flooding and Hazard Assessment*.
- AIDR. (2017). *Australian Disaster Resilience Guideline 7-3 Flood Hazard*. Australian Institute for Disaster Resilience, Commonwealth of Australia Attorney-General's Department. Australian Institute for Disaster Resilience, on behalf of the Australian Government Attorney-General's Department.
- Aurecon. (2011). *Flood Study Report Fitzroy River Flood Study*. Brisbane: Aurecon Australia Pty Ltd.

FIGURES

- | | |
|----------|------------------------------|
| FIGURE 1 | SITE LOCATION |
| FIGURE 2 | FITZROY RIVER FLOOD MAPS |
| FIGURE 3 | SOUTH ROCKHAMPTON FLOOD MAPS |



SITE LOCATION
Old Port Curtis Branch Railway Siding
Flood Advice
Aurizon

DATE
17 January 2022

SCALE 0 200 400 600 800 1,000 m
1:10,000

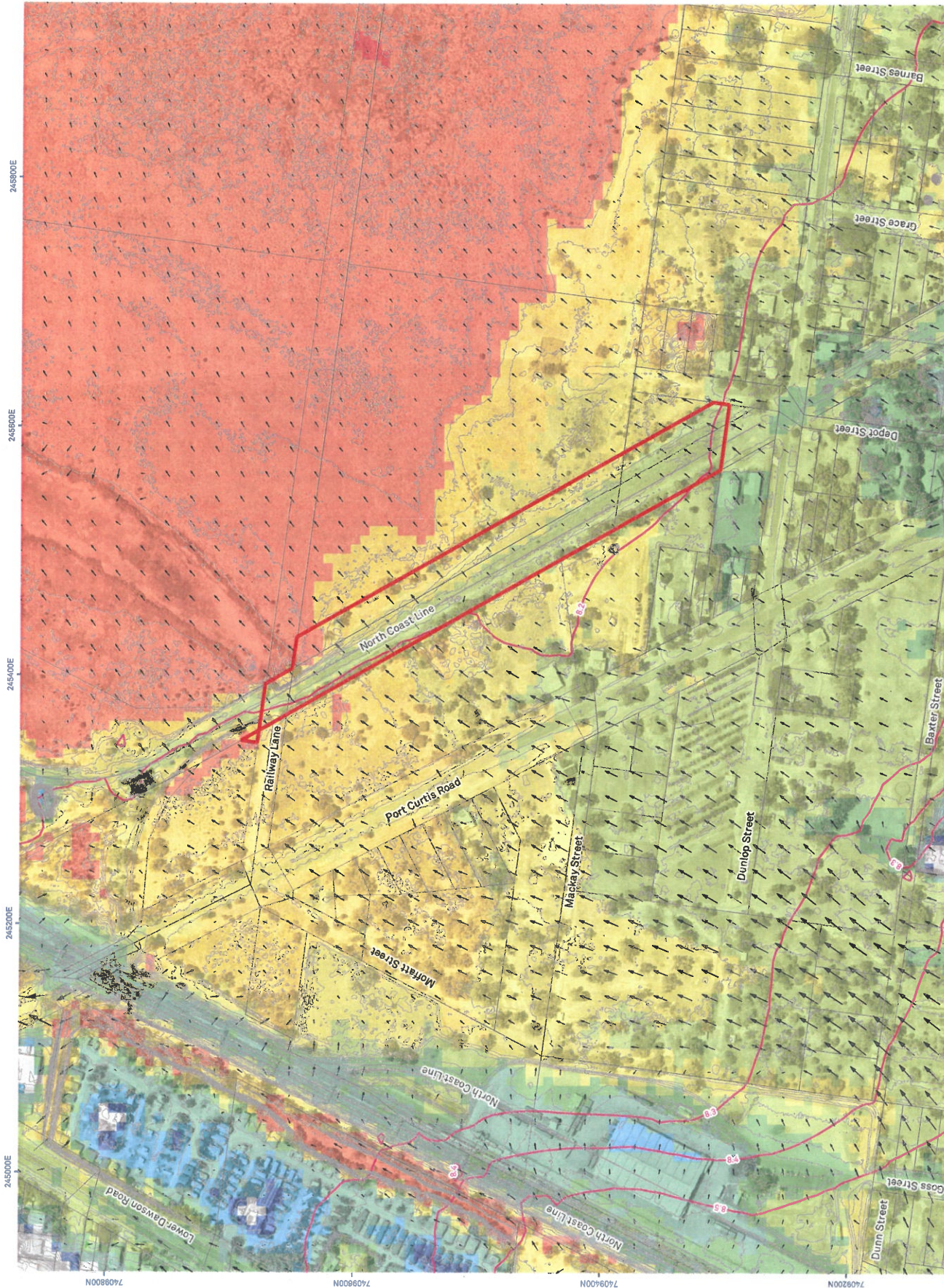
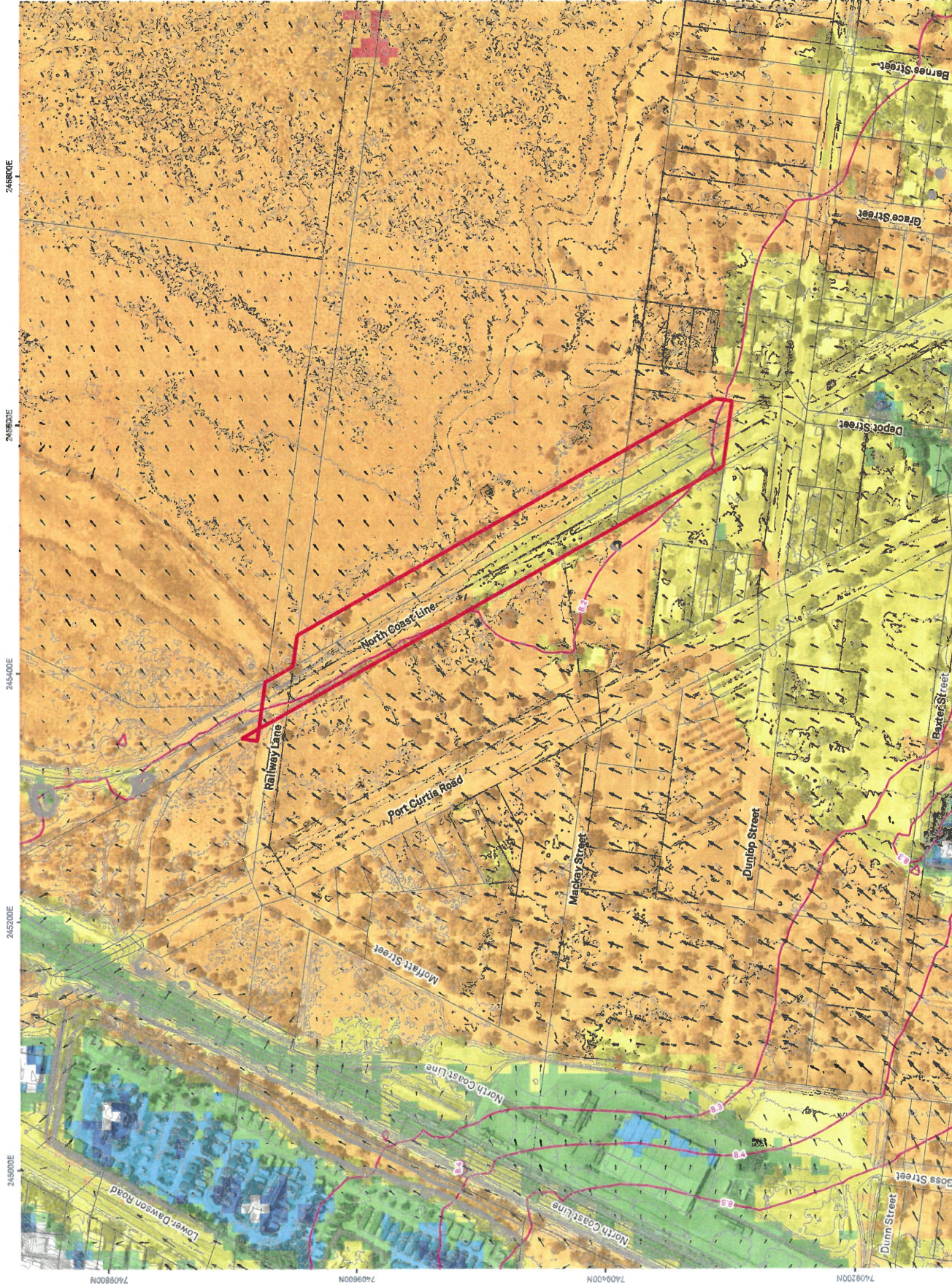


FIGURE 2.A
FITZROY RIVER - 1% AEP PEAK FLOOD DEPTH
Old Port Curtis Branch Railway Siding
Flood Advice
Aurizon

DATE 17 January 2022
REFERENCE J21204
SIZE A3
SCALE 1:3,000



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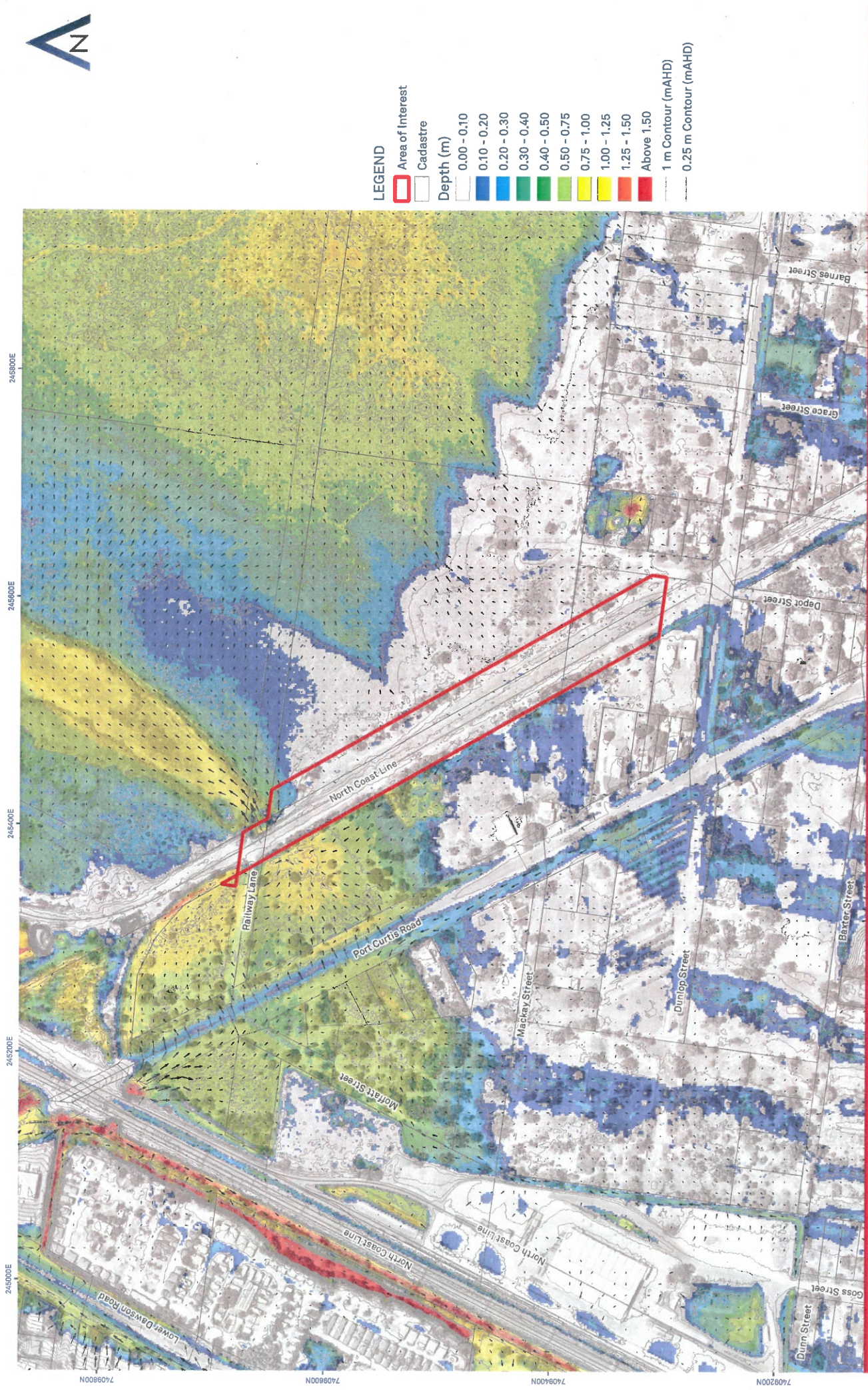
- LEGEND**
- Area of Interest
 - Cadastral
 - Hazard (AIDR, 2017)
 - H1
 - H2
 - H3
 - H4
 - H5
 - H6
 - 1 m Contour (mAHD)
 - 0.25 m Contour (mAHD)

FIGURE 2.B
FITZROY RIVER - 1% AEP PEAK FLOOD HAZARD
Old Port Curtis Branch Railway Siding
Flood Advice
Aurizon

DATE 17 January 2022
REFERENCE J21204
SCALE 1:3,000
SIZE A3



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LEGEND

Area of Interest
 Cadastre

Depth (m)

0.00 - 0.10
0.10 - 0.20
0.20 - 0.30
0.30 - 0.40
0.40 - 0.50
0.50 - 0.75
0.75 - 1.00
1.00 - 1.25
1.25 - 1.50
Above 1.50

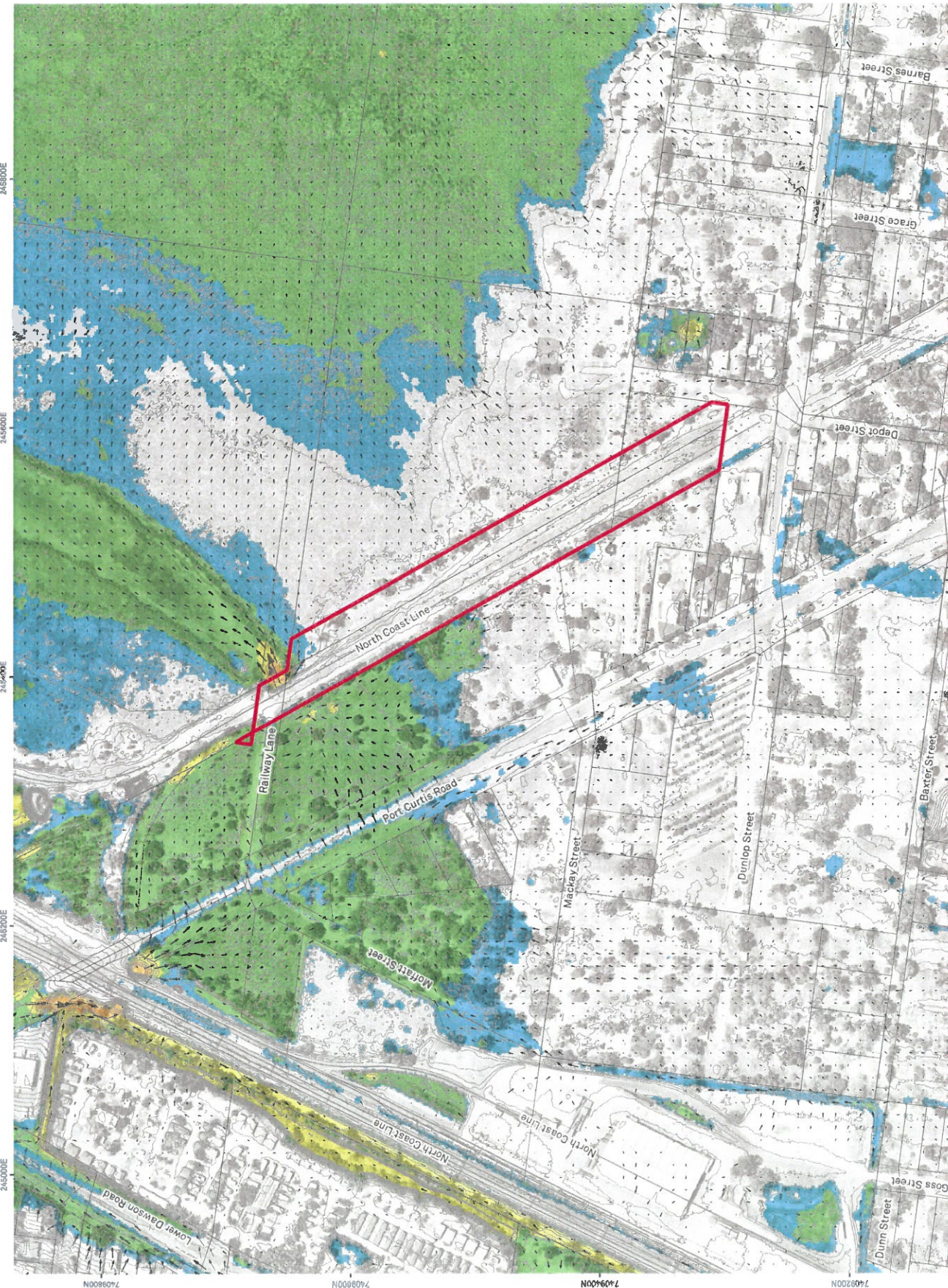
1 m Contour (mAHD)
 0.25 m Contour (mAHD)

FIGURE 3.A
 SOUTH ROCKHAMPTON LOCAL CREEK - 1% AEP PEAK FLOOD DEPTH
 Old Port Curtis Branch Railway Siding
 Flood Advice
 Aurizon

DATE 17 January 2022
REFERENCE J21204

SIZE A3
SCALE 1:3,000

0 70 140 210 280 350 m



- LEGEND**
- Area of Interest
 - Cadastral
 - Hazard (AIDR, 2017)
 - H1
 - H2
 - H3
 - H4
 - H5
 - H6
 - 1 m Contour (mAHD)
 - 0.25 m Contour (mAHD)

FIGURE 3.B

SOUTH ROCKHAMPTON LOCAL CREEK - 1% AEP PEAK FLOOD HAZARD
Old Port Curtis Branch Railway Siding
Flood Advice
Aurizon

DATE 17 January 2022
REFERENCE J21204
SIZE A3
SCALE 1:3,000



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