Patcol Group Pty Ltd
ABN 98 620 245 598
www.patcol.com.au

11 Barnes Street, Port Curtis

Flood Hazard Assessment

Project Name:	Proposed Container Tie-Down
Patcol Reference Number:	25-513
Project Address:	11 Barnes Street, Port Curtis, QLD (Lot 1 on RP613483)
Client:	John & Diana Ritter

Issue Date	Version	Description	Approved
08.10.25	0	Original Issue	Scott Thomas
13.02.26	1	Fitzroy Flood Study Year Revision	Scott Thomas

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Preliminary Approval No.: D/182-2025

Dated: 18 March 2026

1. INTRODUCTION

Patcol has been engaged to prepare a Flood Impact Assessment (FIA) to support the Development Application (DA) of 11 Barnes Street, Port Curtis Wandal. The site covers an area of 1287.92m^2 and is bounded by Barnes Street to the West, and the existing residential lot to the East, South and North, as shown in Figure 1.

The site is subject to flooding from the Fitzroy River, and hence the site DA must address the requirements of the Council's Flood Hazard Overlay Code, as detailed herein, with code responses provided in Appendix C.

Currently, the site features a single residential building, with tree cover throughout the property and filled soil finish in the remainder. The front portion of the site, spanning 20.2m, is relatively level, with elevations ranging from 6.24m to 7.04m Australian Height Datum (mAHD). Towards the rear, the land gradually slopes downwards, reaching approximately 6.24mAHD.

The proposed development involves the construction of concrete piers for the proposed container at the front portion of the site. This development will provide an additional workspace within the container.

Figure 1 - Site Location with Flood Hazard overlay map (Rocky e Plan)

2. FLOOD ASSESSMENT

Based on the data obtained from the council, it has been determined that the property is susceptible to flooding, which has prompted a thorough evaluation of all planning and development activities. Special attention has been given to the potential risks to both individuals and property, as well as the natural floodplain characteristics and the potential impact of a river flood event.

In particular, the provisions outlined in the report address the Annual Exceedance Probability (AEP) 1% data, providing a comprehensive framework to manage and mitigate the risks associated with flooding in the area.

3. EXECUTIVE SUMMARY

This proposed development to the site will lead to a minor loss of flood storage. The proposed container will be constructed over a concrete pier at a height of 0.1m from the ground using a tie-down connection, as per engineering drawings, refer to Appendix B.

The proposed container is approximately 12.2m in length and 2.44m in width. The Finished Floor Level (FFLs) of the proposed development is 7.47mAHD. This development does not affect the overall effects of flood on the neighbouring properties.

4. EXISTING SITE CONDITIONS

The Aurecon 2014 Flood Study, Flood Hazard Overlay (Figure 2), shows the depth of flood as 1.5m – 2.0m high, and the following Figure 3, Lower Fitzroy River Floodplain 2019 by AECOM, shows the increase in flood heights at this property is by >0.3m.

As per the figure below, the whole site is affected by riverine catchment flow.

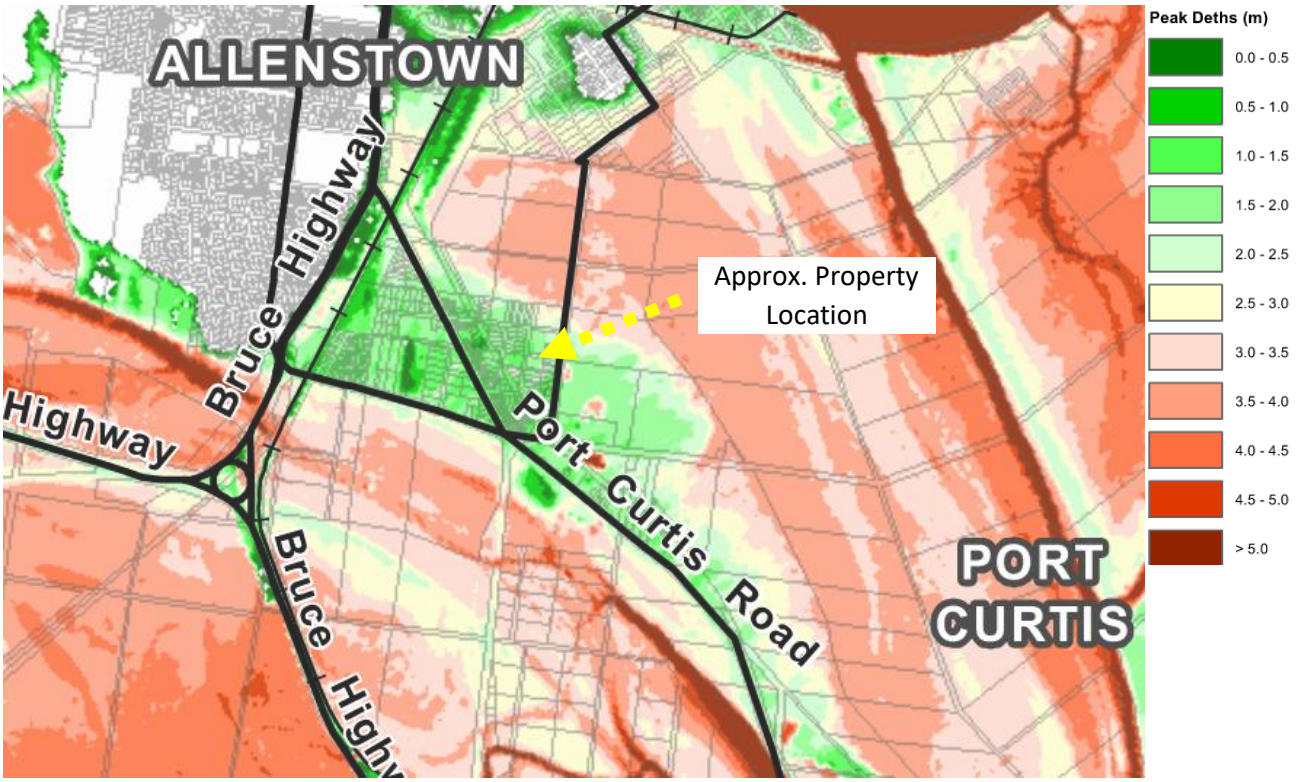


Figure 2: Excerpt from Aurecon 1% AEP Flood Study 2014

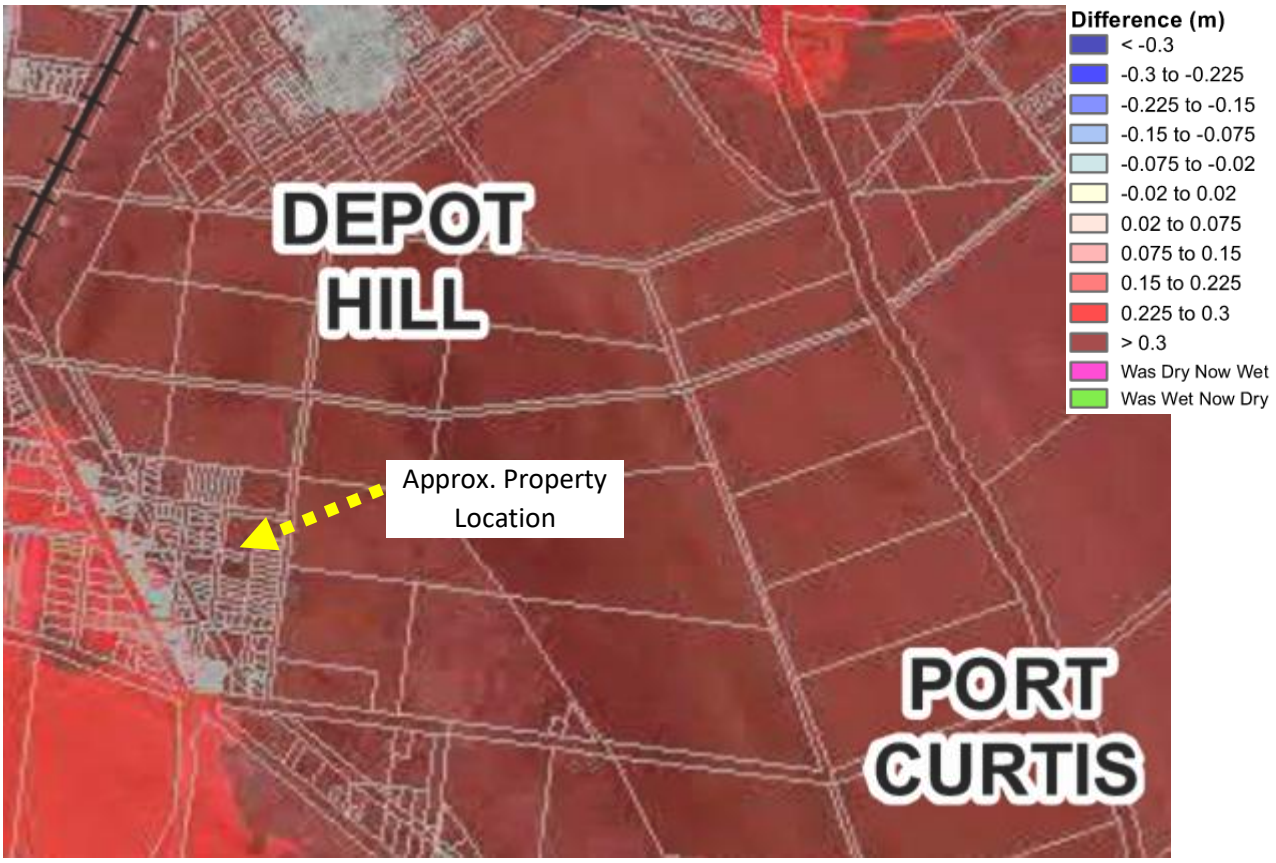


Figure 3: Excerpt from AECOM Flood Study,1% Flood Depth Difference Overlay

The report indicates that the peak flood water elevation for a 100-Year Average Recurrence Interval (ARI) is 8.28m. Additionally, the report states that the water velocity flowing through the site during a 100-Year ARI event is 0.64m/s.

The following are the observed points to be considered:

1. Any further habitable development at the property should be developed considering the riverine flow. This is to be considered to achieve no material change to existing hydraulic parameters and no loss of storage.
2. As there will be no change to depth or velocity, there will be no increase to the site's Flood Hazard Category. As the proposed container will be installed over the concrete piers, it allows the free flow of flood water through the container.
3. All electrical infrastructure must be installed at a minimum height of 1200mm above FFL.
4. The site has no proposed development outside the proposed container.
5. There were no proposed earthworks aside from minor levelling of the ground under the container.
6. The standard notice period for previous Riverine Flooding events has been two weeks, and we expect this to remain unchanged in the future. If the temporary flood barrier fails, the following measures should be considered:
    a) Removal of loose material and potential debris.
    b) Relocation of all furniture or electrical equipment off-site.
    c) Relocation of all animals off-site.
    d) Open all doors to allow ingress of flood waters.

5. FLOODWATER HEIGHTS

An application was made to the Rockhampton Regional Council to gain a flood report that had stormwater data within it. The following information was used from the RRC-supplied Flood Report (attached in full as Appendix A).

Based on the report received from the council, it is evident that the whole property is affected severely by riverine flow, the 1% AEP Riverine Water Surface Level (WSL) maximum 8.28m AHD. Therefore, in the event of any high overland flow during a storm event, it could be managed using the same provisions nominated to mitigate the riverine flooding. The below suggests that the property is likely to experience significant flood risk if not managed under the Rockhampton Flood Management Area, and appropriate measures should be put in place to manage any potential flooding that may occur.

Table 1 – Excerpts from RRC Flood Data

Levels	Riverine		Local Catchment	
	Water Surface Level	Velocity	Water Surface Level	Velocity
1% AEP	8.28	0.64	N/A	N/A
5% AEP	7.28	0.37	N/A	N/A
10% AEP	6.58	0.32	N/A	N/A

6. CONCLUSION

Flood water will reach the site in the event of a flood. Mitigation efforts and planning will reduce the risk of impact from flood waters. The outcome of the analysis is that in the event of flooding, the proposed structure will not result in a material increase in flood level or flood hazard on upstream, downstream or adjacent properties. The recommendation is that the structure conforms to the acceptable outcomes as set out by the RRC planning scheme.

Refer to Appendix C for a site plan with the location of the proposed container and board piers.

Yours sincerely,

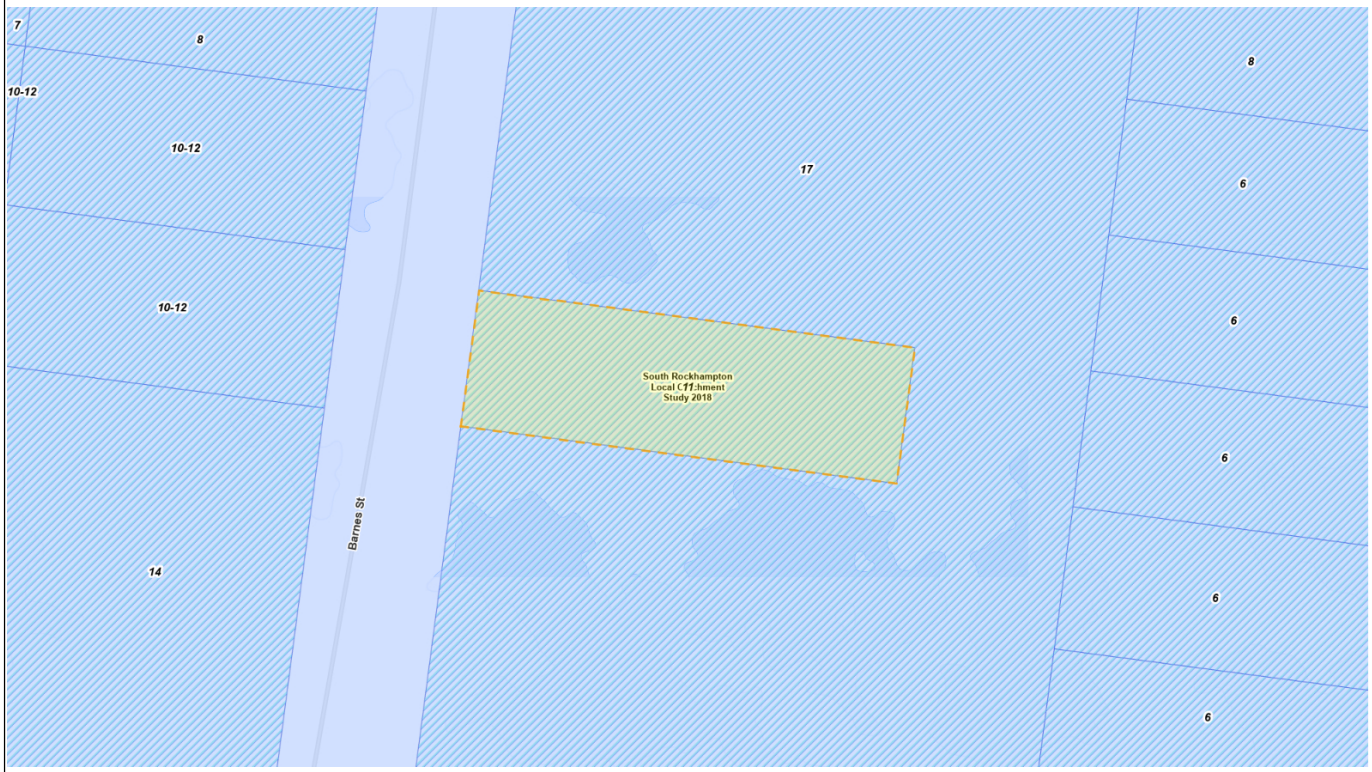
Scott Thomas
Manager – B. Eng (Civil/Structural) RPEQ 16203, RPEV PE0002624
scott@patcol.com.au

Appendix A: RRC Supplied Flood Report
Appendix B: RRC Fitzroy Flood Overlay Code
Appendix C: Proposed Development Structural Plan
Appendix D: Pre and Post Development Flood Maps

APPENDIX A: RRC SUPPLIED FLOOD REPORT

This page has been intentionally left blank

Flood Report
RP613483/1 - 11 Barnes Street Port Curtis QLD 4700



REPORT DATE **25 September 2025**

PROPERTY DETAILS	
Address	11 Barnes Street Port Curtis QLD 4700
Parcel ID	RP613483/1
Land use	Single Dwelling
Riverine catchment	Fitzroy River Flood Study
Creek Catchment	South Rockhampton Local Catchment Study 2018
Mitigation Area	N/A
Horizontal Datum	MGA Z56, GDA 2020
Elevation / WSL	mAHD
Velocity	m/sec
Ground elevation (min)	6.24
Ground Elevation (max)	7.04
No additional comments for this property.	

RIVERINE		
	WATER SURFACE LEVEL	VELOCITY
LEVELS	**MAX**	**MAX**
1% AEP	*8.28*	*0.64*
5% AEP	*7.28*	*0.37*
10% AEP	*6.58*	*0.32*

CREEK \ LOCAL CATCHMENT		
	WATER SURFACE LEVEL	VELOCITY
LEVELS	**MAX**	**MAX**
1% AEP	*N/A*	*N/A*
5% AEP	*N/A*	*N/A*
10% AEP	*N/A*	*N/A*

APPENDIX C: PROPOSED DEVELOPMENT STRUCTURAL PLAN

This page has been intentionally left blank

GENERAL NOTES

1. LOCATION OF EXISTING SERVICES TO BE CONFIRMED AS NO EXISTING SERVICES SHOULD BE REFERENCED FROM THESE PLANS.
2. DO NOT SCALE OFF DRAWINGS – IF IN DOUBT, ASK.
3. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT BUILDING CODES OF QUEENSLAND, AUSTRALIA AND RELEVANT AUSTRALIAN STANDARDS. ALL CONTRACTORS SHALL BE LICENCED WHERE REQUIRED BY QBCC.
4. ALL SET OUT SHALL BE RELATED TO ROAD CENTRE LINE AND EDGE OF ROAD LANE AS SPECIFIED.
5. ALL DIMENSIONS AND RADII ARE EXPRESSED IN METERS UNLESS NOTED OTHERWISE.
6. EXISTING CONTOURS, LEVELS AND FEATURES SHOWN ON THE DRAWINGS ARE INDICATIVE ONLY AND ARE BASED ON AERIAL SURVEY PROVIDED BY THE MINE.
7. THE CONTRACTOR SHALL ENSURE THAT ALL WORKS ARE MAINTAINED IN A SAFE AND STABLE CONDITION AND THAT ADEQUATE PROTECTION AGAINST EROSION AND SILTATION IS IN PLACE.
8. WORKMANSHIP AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RELEVANT CURRENT SAA STANDARDS AND THE REQUIREMENTS OF MILLENNIUM MINE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION PROTECTION AND SEDIMENT CONTROL FOR WORKS.
10. PRIOR TO COMMENCING WORKS THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO CLASHES BETWEEN ANY CROSSING SERVICE OR PIPELINE. ANY CLASHES TO BE NOTIFIED TO THE ENGINEERING PRIOR TO WORKS COMMENCING.
11. THESE DRAWINGS AND NOTES SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS.
12. REFERENCES TO PROPRIETARY PRODUCTS IN DRAWINGS INFERS THAT PRODUCT IS TO BE USED, APPLIED AND/OR INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.

DESIGN DATA

1. SOUND STRUCTURAL ENGINEERING JUDGEMENT, APPLICATION OF ACCEPTED STRUCTURAL ENGINEERING PRINCIPLES AND THE RELEVANT SECTIONS OF THE QUEENSLAND BUILDING ACT, NATIONAL CONSTRUCTION CODE, AUSTRALIAN STANDARDS AND MANUFACTURER'S PUBLICATIONS HAVE BEEN CONSIDERED IN THE PREPARATION OF THESE STRUCTURAL DRAWINGS.

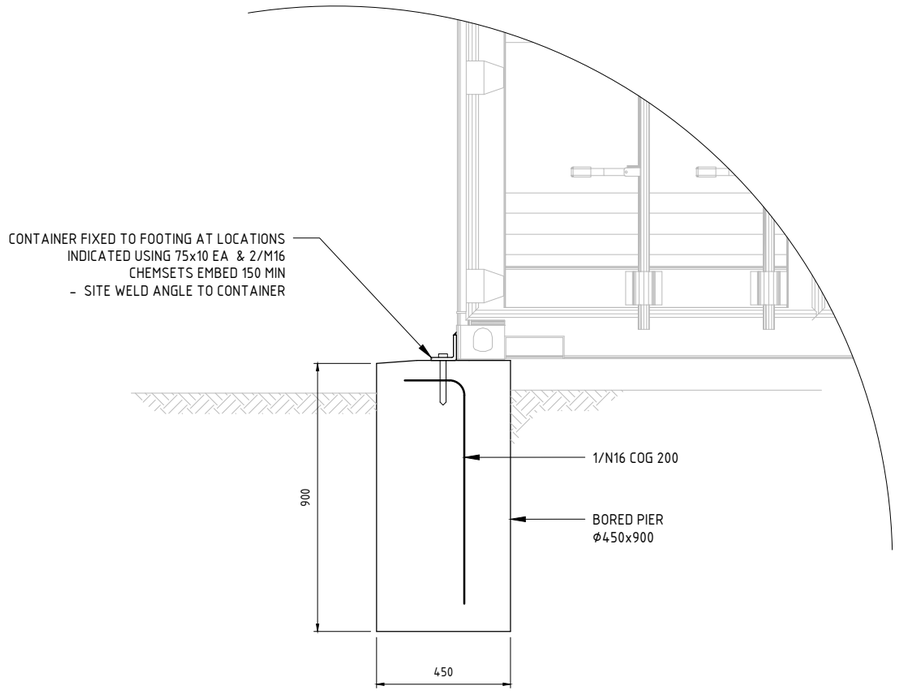
1.1. WIND LOADS

- 1.1.1. STRUCTURAL IMPORTANCE LEVEL 1
- 1.1.2. REGION C
- 1.1.3. TERRAIN CATEGORY 2.5
- 1.1.4. WIND DIRECTION MULTIPLIER (M_d) 0.95/1.0
- 1.1.5. TERRAIN HEIGHT MULTIPLIER ($M_{z,cat}$) 0.95
- 1.1.6. SHIELDING MULTIPLIER (M_s) 1.0
- 1.1.7. TOPOGRAPHICAL MULTIPLIER (M_t) 1.0
- 1.1.8. INTERNAL PRESSURE COEFFICIENTS +0.7/-0.65
- 1.1.9. FREE ROOFS ARE NOT BLOCKED UNDER
- 1.1.10. EQUIVALENT AS4055 WIND CLASSIFICATION C2

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WELDING SHALL COMPLY WITH AS 1554-2004 UNLESS NOTED OTHERWISE AND SHALL BE COMPLETED BY A EXPERIENCED GP WELDER. ELECTRODE SHALL BE E48XX.
2. ALL SHOP FABRICATED JOINTS FOR STRUCTURAL STEEL SHALL BE 6mm CONTINUOUS FILLET WELD.
3. BUTT WELDS SHALL BE PRE-QUALIFIED FULL PENETRATION.
4. CORROSION PROTECTION SHALL BE TO AS 2312-2002 UNLESS NOTED OTHERWISE.
5. ALL STEEL TO BE ABRASIVE BLAST CLEANED TO CLASS 2.5 AND PRIMED IN ZINC PRIMER IN ACCORDANCE WITH AS 3750.9-1994. INTERMEDIATE AND TOP COATS TO ARCHITECT'S SPECIFICATION.
6. HOLD DOWN BOLTS SHALL BE SUPPLIED WITH LEVELING NUTS, NUTS & WASHERS.
7. ALL PLATES, GUSSETS ETC. SHALL HAVE SHARP EDGES AND CORNERS GROUND DOWN.
8. REGULAR INSPECTIONS BY COMPETENT AND AUTHORISED PERSONNEL FOR DAMAGE TO ENSURE INTEGRITY IS MAINTAINED THROUGH ITS INTENDED PERIOD OF USE
9. CONFIRMATION OF THE MASS TO BE SUPPORTED
10. KEEP THE LOAD CENTRALLY LOCATED AND AS LOW AS POSSIBLE.
11. SHOULD ONLY BE USED FOR THIS INTENDED PURPOSE AND SUPPORTED IN AREAS OF THE UNITS AS PRESCRIBED BY THE OEM.
12. PERMANENT PLAQUES SHOULD BE INSTALLED ONTO THE PIECE OF EQUIPMENT NOMINATING THE MAXIMUM WEIGHT. REFER BELOW FOR REQUIRED CONTENT.

SITE PLAN
N.T.S.



BP1 DETAIL
SCALE 1:10

CONTAINER TIE DOWN - BORED PIER
SCALE 1:20

REGISTERED PROFESSIONAL ENGINEER QUEENSLAND

RPEQ NO: 16203
SCOTT MATTHEW THOMAS

SIGNATURE: ..... DATE: 07.11.25

REV	DESCRIPTION	DRWN	DSN'D	APP'D	DATE
0	ISSUED FOR CONSTRUCTION	L.S.A.	S.S.J.	S.M.T.	06.11.25

REVISIONS

PATCOL GROUP
info@patcol.com.au
www.patcol.com.au
186 Denham Street,
Rockhampton QLD 4700

JOHN RITTER - 11 BARNES ST, PORT CURTIS QLD 4700
CONTAINER TIE DOWN & FOOTING
GENERAL NOTES, SITE PLAN, TIE DOWN & FOOTING PLAN, & DETAILS

SCALE: (A1)	DRAWING No. 25-513/01	ISSUED FOR APPROVAL	REV. 0

APPENDIX D: PRE AND POST DEVELOPMENT FLOOD MAPS

This page has been intentionally left blank

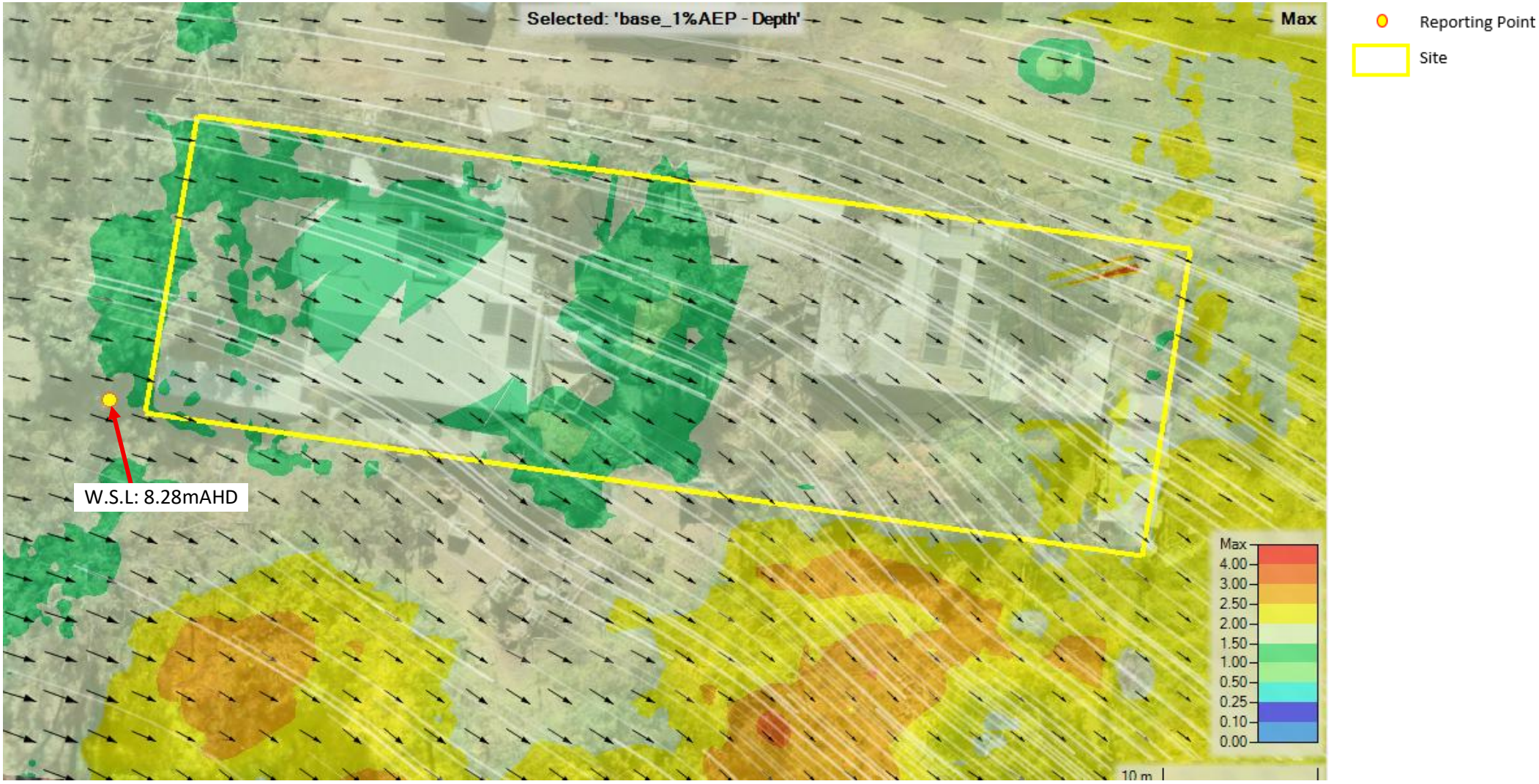


Figure 4: Fitzroy River 1% AEP Flood Depth- Pre Case

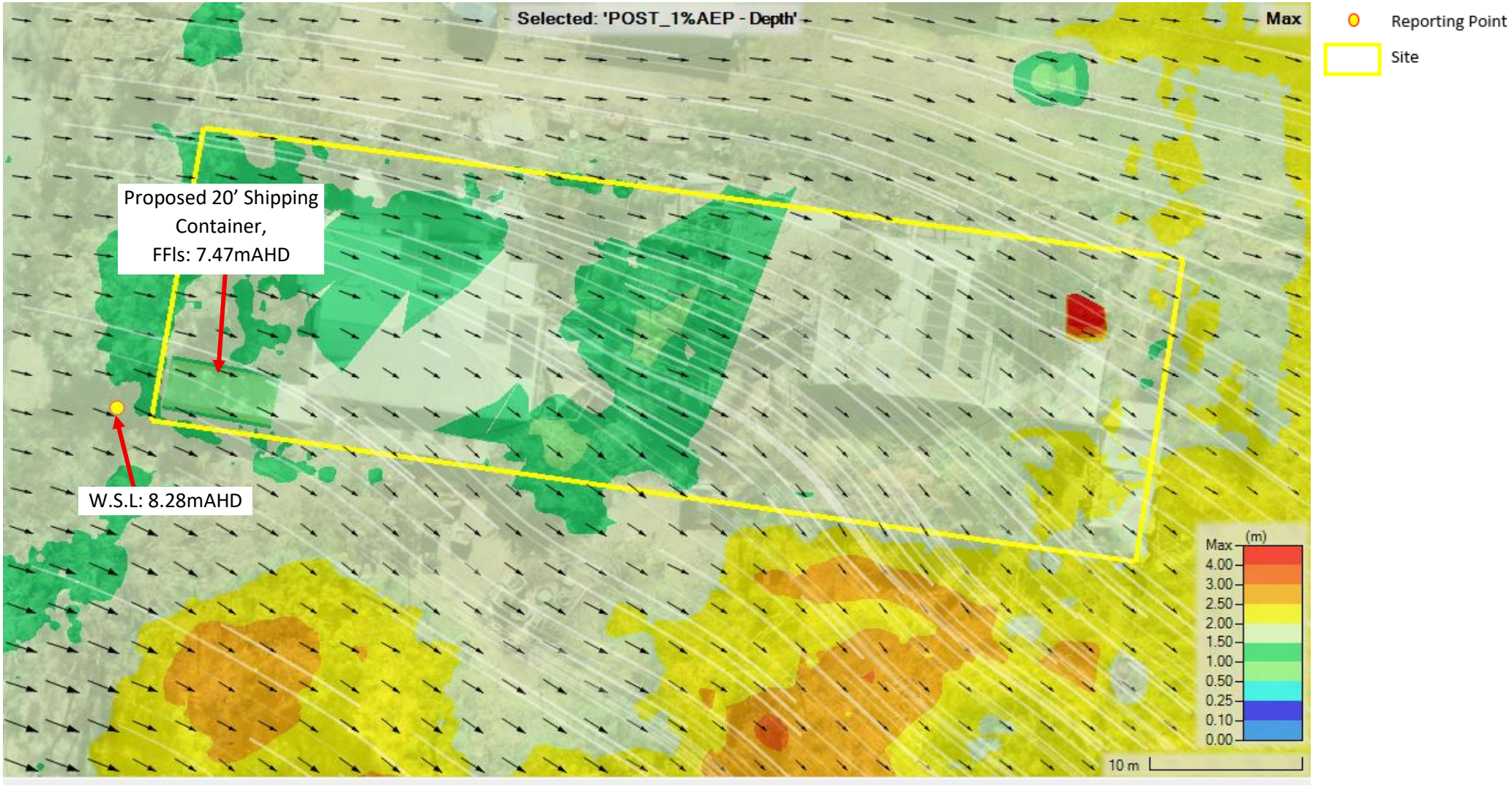


Figure 5: Fitzroy River 1% AEP Flood Depth- Post Case