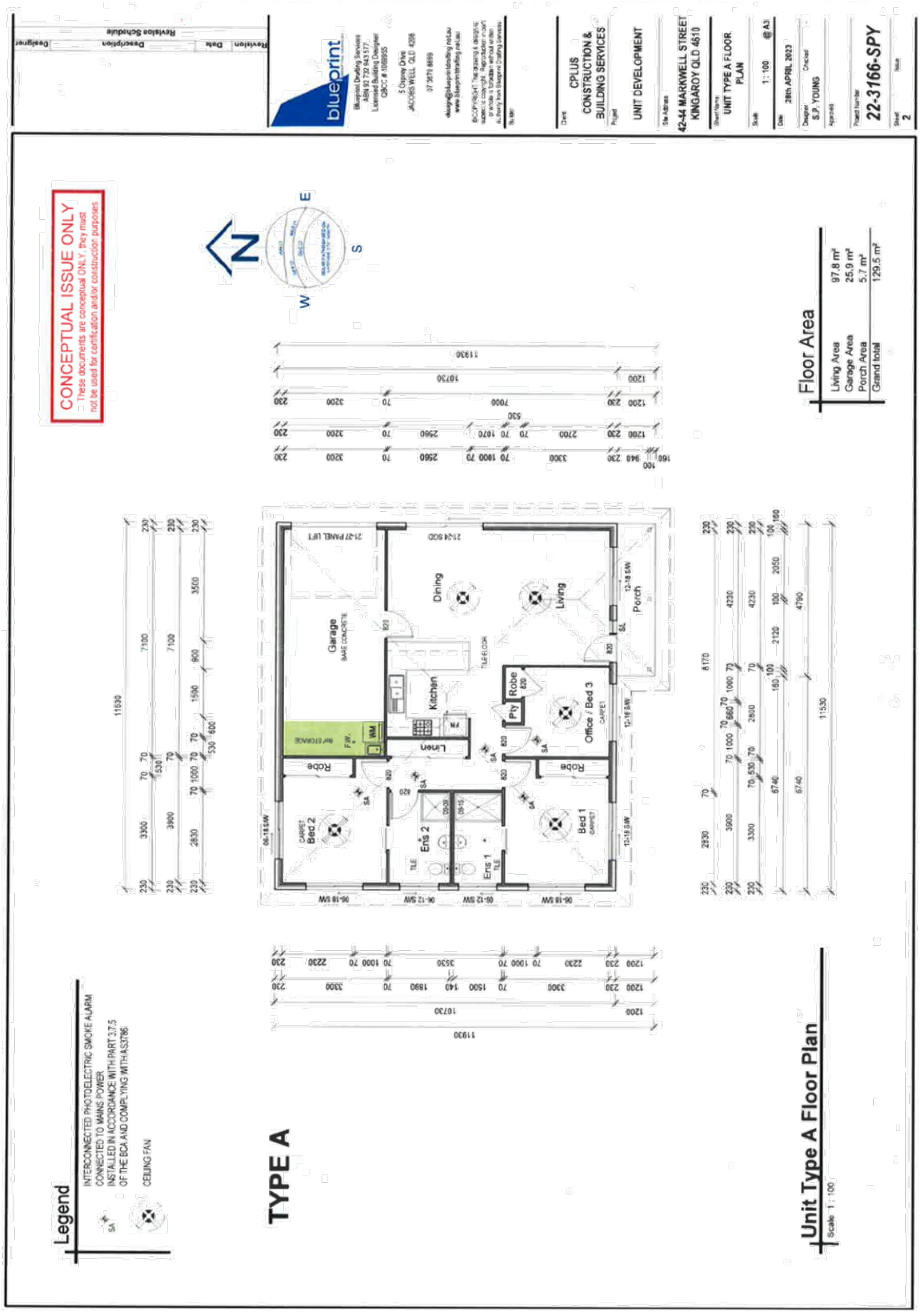
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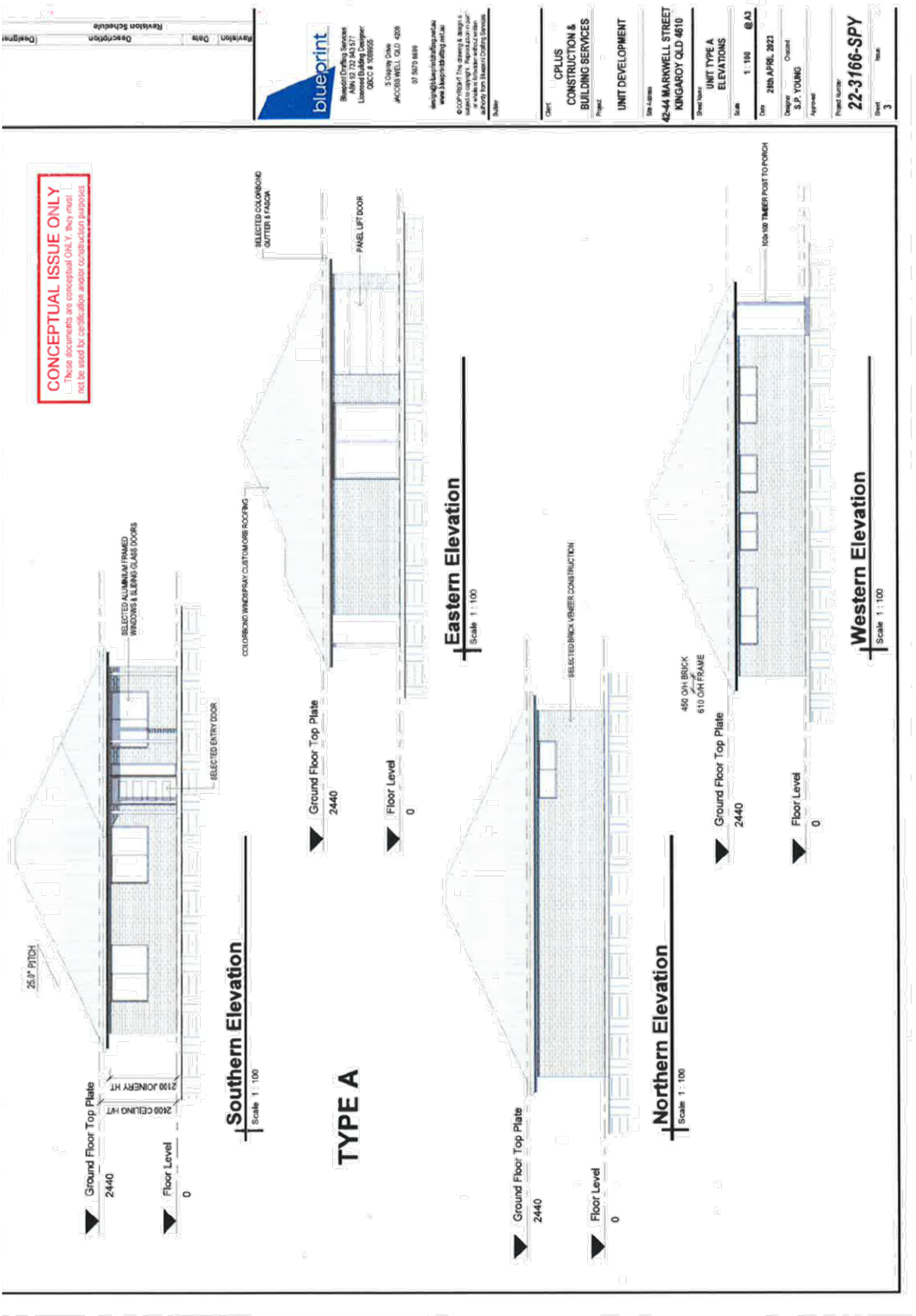
These documents are conceptual ONLY, they must not be used for certification and/or construction purposes
Floor Area
Living Area 97.8 m²
Garage Area 25.9 m²
Porch Area 5.7 m²
Grand total 129.5 m²
Legend
INTERCONNECTED PHOTOELECTRIC SMOKE ALARM CONNECTED TO MAINS POWER INSTALLED IN ACCORDANCE WITH PART 3.7.5 OF THE BCA AND COMPLYING WITH AS3786
CEILING FAN
TYPE A
Unit Type A Floor Plan
Scale 1 : 100
Dining
Living
Porch
Garage
Kitchen
Linen
Ply
Robe
Office / Bed 3
Bed 2
Ens 2
Ens 1
Bed 1
CPLUS CONSTRUCTION & BUILDING SERVICES
UNIT DEVELOPMENT
42-44 MARKWELL STREET KINGAROY QLD 4610
UNIT TYPE A FLOOR PLAN
1 : 100 @ A3
28th APRIL 2023
S.P. YOUNG
22-3166-SPY
2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Southern Elevation
Scale 1 : 100
Eastern Elevation
Scale 1 : 100
Northern Elevation
Scale 1 : 100
Western Elevation
Scale 1 : 100
Ground Floor Top Plate
2440
Floor Level
0
2100 CEILING HT
2100 JOINERY HT
25.0° PITCH
SELECTED ALUMINIUM FRAMED WINDOWS & SLIDING GLASS DOORS
SELECTED ENTRY DOOR
COLORBOND WINDSPRAY CUSTOMORB ROOFING
SELECTED COLORBOND GUTTER & FASCIA
PANEL LIFT DOOR
SELECTED BRICK VENEER CONSTRUCTION
450 O/H BRICK
610 O/H FRAME
100x100 TIMBER POST TO PORCH
Revision Schedule
Revision
Date
Description
Designer
blueprint
CPLUS CONSTRUCTION & BUILDING SERVICES
UNIT DEVELOPMENT
42-44 MARKWELL STREET KINGAROY QLD 4610
UNIT TYPE A ELEVATIONS
1 : 100
@ A3
28th APRIL 2023
S.P. YOUNG
22-3166-SPY
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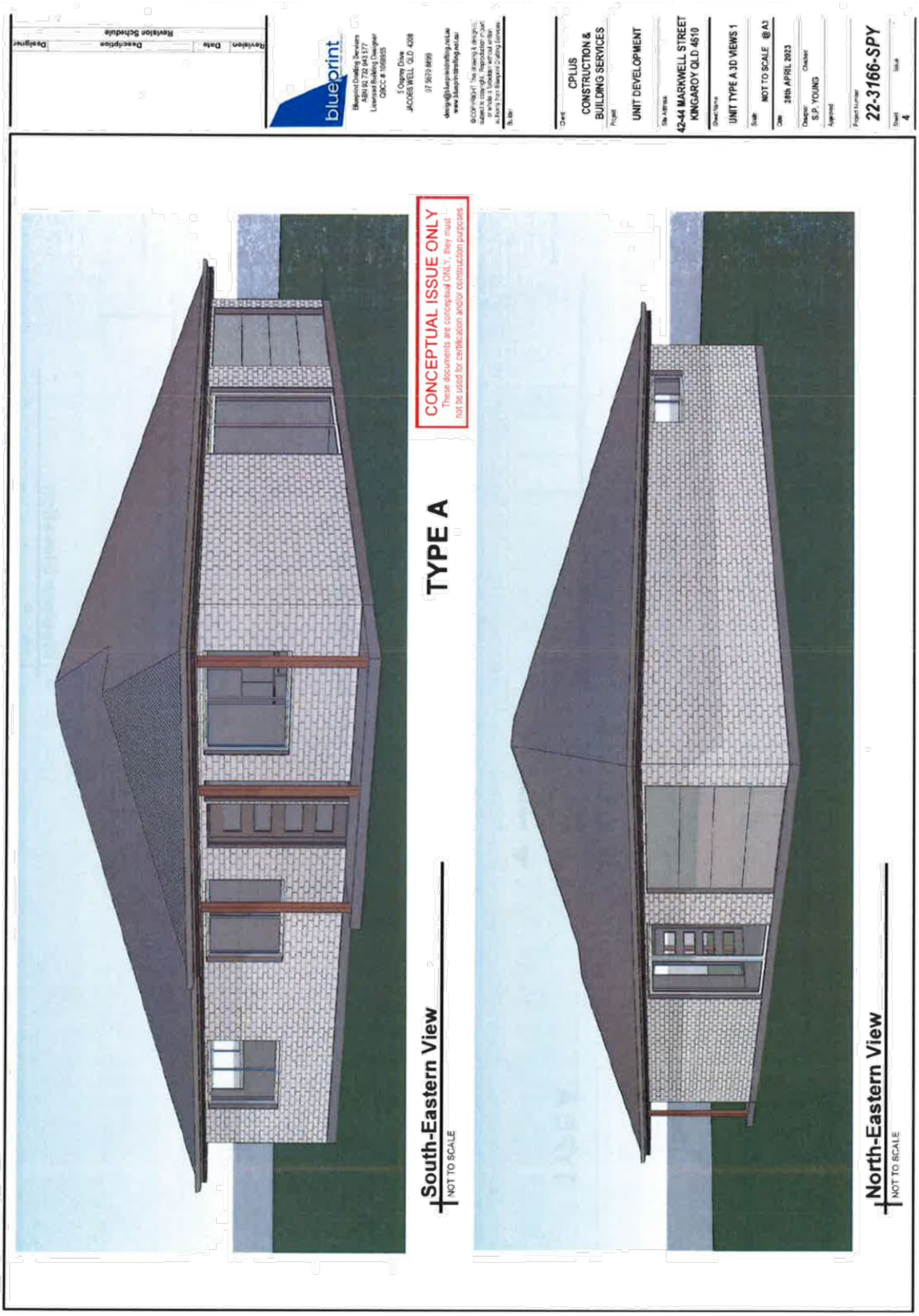
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UNIT DEVELOPMENT
42-44 MARKWELL STREET KINGAROY QLD 4610
UNIT TYPE A 3D VIEWS 1
NOT TO SCALE @A3
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22-3166-SPY
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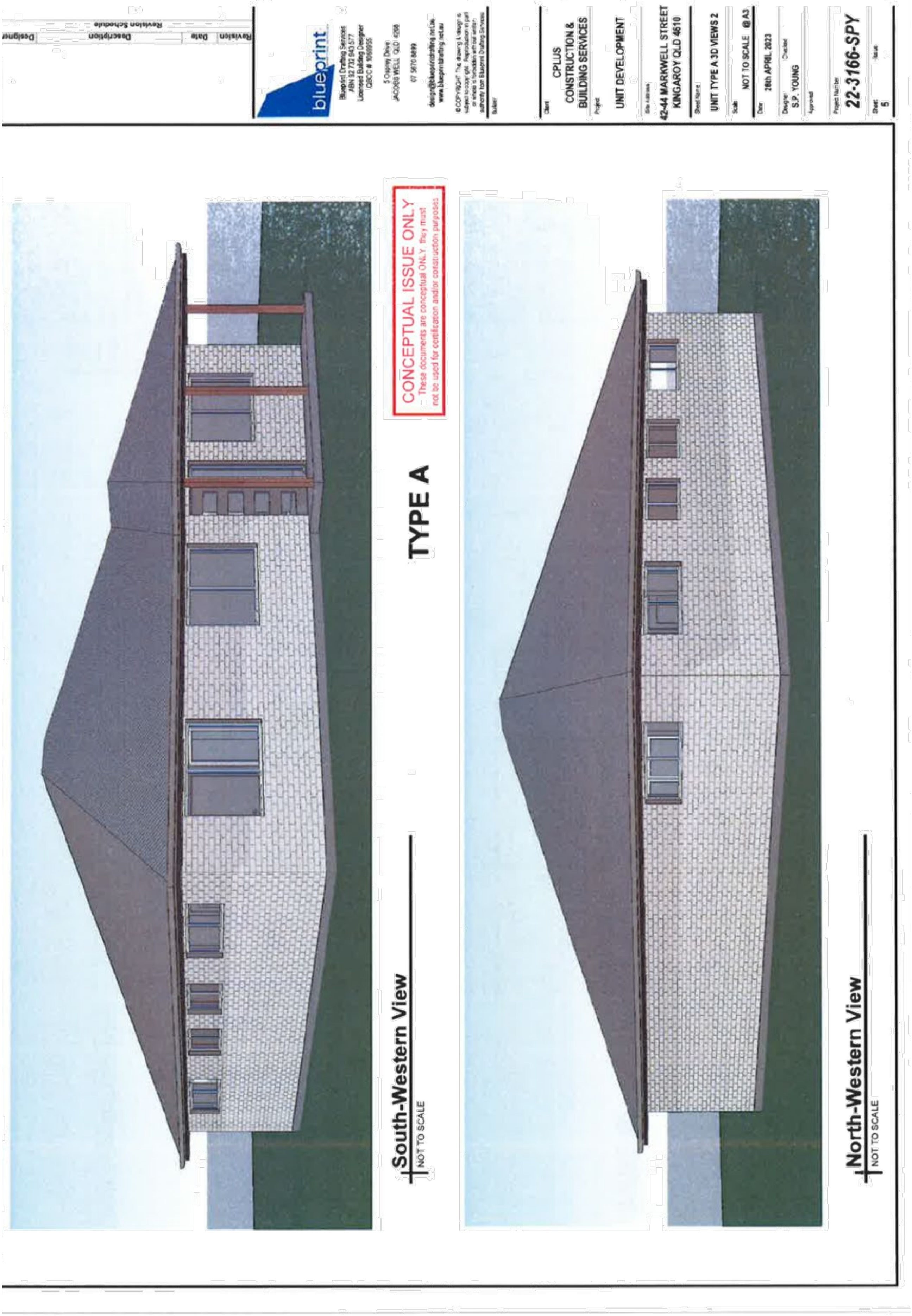
NOT TO SCALE
North-Eastern View
NOT TO SCALE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UNIT DEVELOPMENT
42-44 MARKWELL STREET KINGAROY QLD 4610
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NOT TO SCALE @A3
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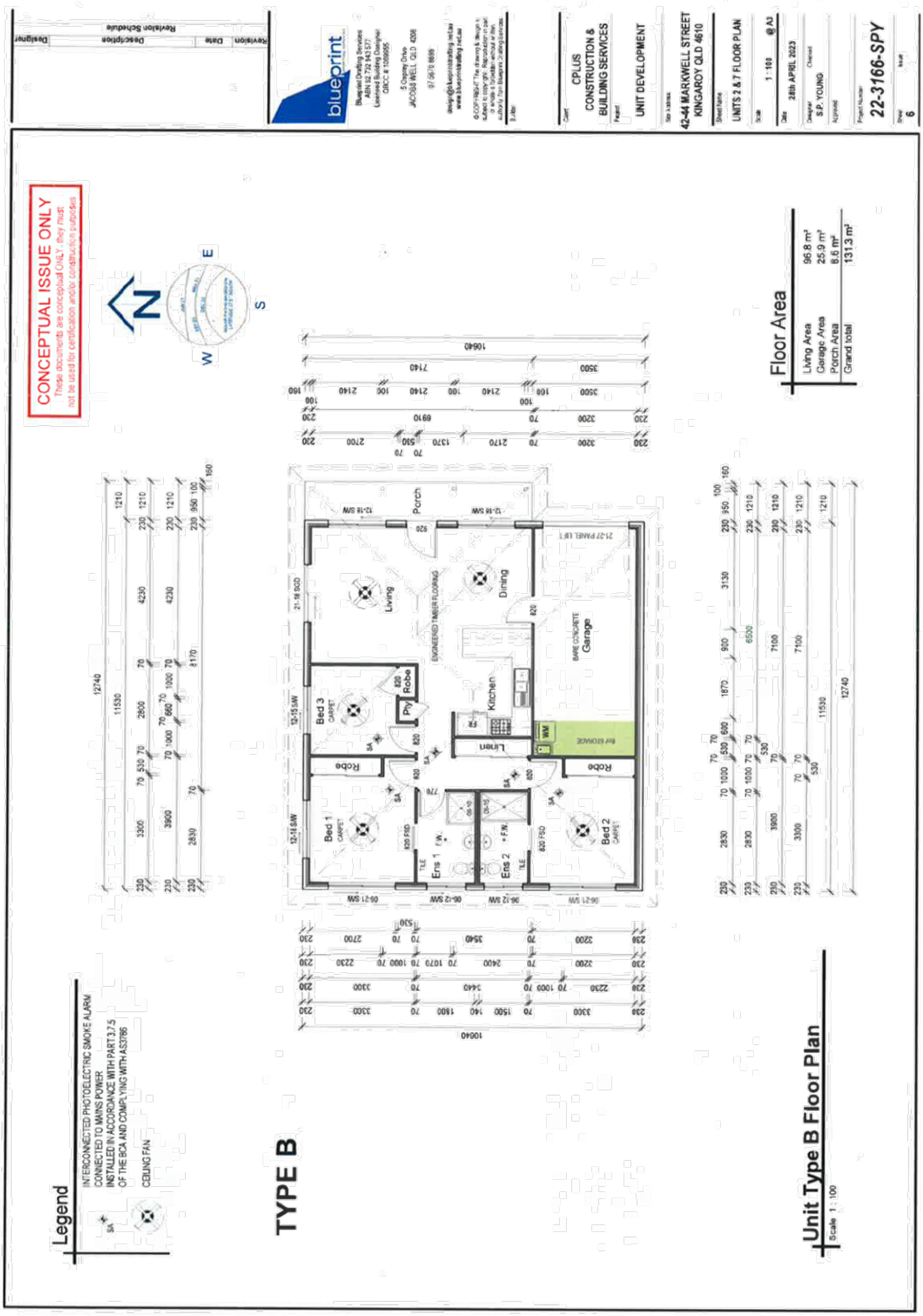
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Unit Type B Floor Plan
Scale 1 : 100
Floor Area
Living Area 96.8 m²
Garage Area 25.9 m²
Porch Area 8.6 m²
Grand total 131.3 m²
Legend
INTERCONNECTED PHOTOELECTRIC SMOKE ALARM CONNECTED TO MAINS POWER INSTALLED IN ACCORDANCE WITH PART 3.7.5 OF THE BCA AND COMPLYING WITH AS3786
CEILING FAN
Living
Dining
Kitchen
Garage
Porch
Bed 1
Bed 2
Bed 3
Robe
Ens 1
Ens 2
Linen
Pty
blueprint
CPLUS CONSTRUCTION & BUILDING SERVICES
UNIT DEVELOPMENT
42-44 MARKWELL STREET KINGAROY QLD 4610
UNITS 2 & 7 FLOOR PLAN
1 : 100 @ A3
28th APRIL 2023
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6

CONCEPTUAL ISSUE ONLY
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TYPE B
Eastern Elevation
Scale 1 : 100
Ground Floor Top Plate
2440
Floor Level
0
PANEL LIFT DOOR
SELECTED ALUMINUM FRAMED WINDOWS & SLIDING GLASS DOORS
SELECTED ENTRY DOOR
Southern Elevation
Scale 1 : 100
SELECTED COLORBOND GUTTER & FASCIA
25.0° PITCH
100x100 TIMBER POST TO PORCH
Ground Floor Top Plate
2440
Floor Level
0
Western Elevation
Scale 1 : 100
610 O/H FRAME
450 O/H BRICK
2100 JOINERY HT
2400 CEILING HT
Ground Floor Top Plate
2440
Floor Level
0
Northern Elevation
Scale 1 : 100
COLORBOND WINDSPRAY CUSTOM ORB ROOFING
SELECTED BRICK VENEER CONSTRUCTION
Ground Floor Top Plate
2440
Floor Level
0
blueprint
Client
CPLUS CONSTRUCTION & BUILDING SERVICES
Project
UNIT DEVELOPMENT
Site Address
42-44 MARKWELL STREET KINGAROY QLD 4610
Sheet Name
UNITS 2 & 7 ELEVATIONS
Scale
1 : 100 @ A3
Date
28th APRIL 2023
Designer
S.P. YOUNG
Project Number
22-3166-SPY
Sheet
7

Revision Schedule
Revision Date Description Designer
blueprint
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design@blueprintdrafting.net.au
www.blueprintdrafting.net.au
Author
Client
CPLUS
CONSTRUCTION &
BUILDING SERVICES
Project
UNIT DEVELOPMENT
Site Address
42-44 MARKWELL STREET
KINGAROY QLD 4610
Sheet Name
UNITS 2 & 7 3D VIEWS 1
Scale
NOT TO SCALE @ A3
Date
28th APRIL 2023
Designer
S.P. YOUNG
Checked
Approved
Project Number
22-3166-SPY
Sheet
8
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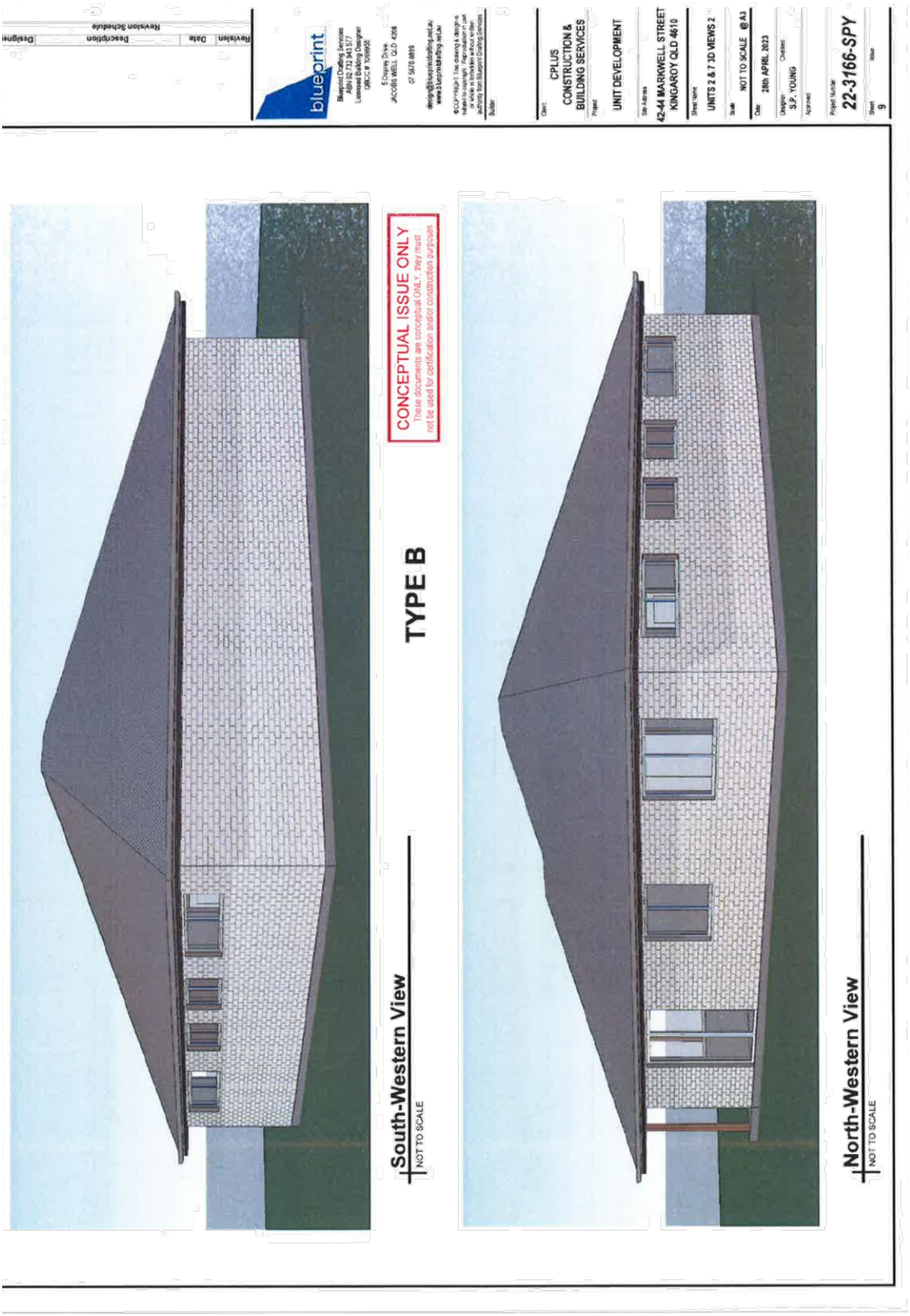
NOT TO SCALE
North-Eastern View
NOT TO SCALE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North-Western View
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These documents are conceptual ONLY, they must not be used for certification and/or construction purposes
blueprint
CPLUS CONSTRUCTION & BUILDING SERVICES
UNIT DEVELOPMENT
42-44 MARKWELL STREET KINGAROY QLD 4610
UNITS 2 & 7 3D VIEWS 2
NOT TO SCALE @A3
28th APRIL 2023
S.P. YOUNG
22-3166-SPY
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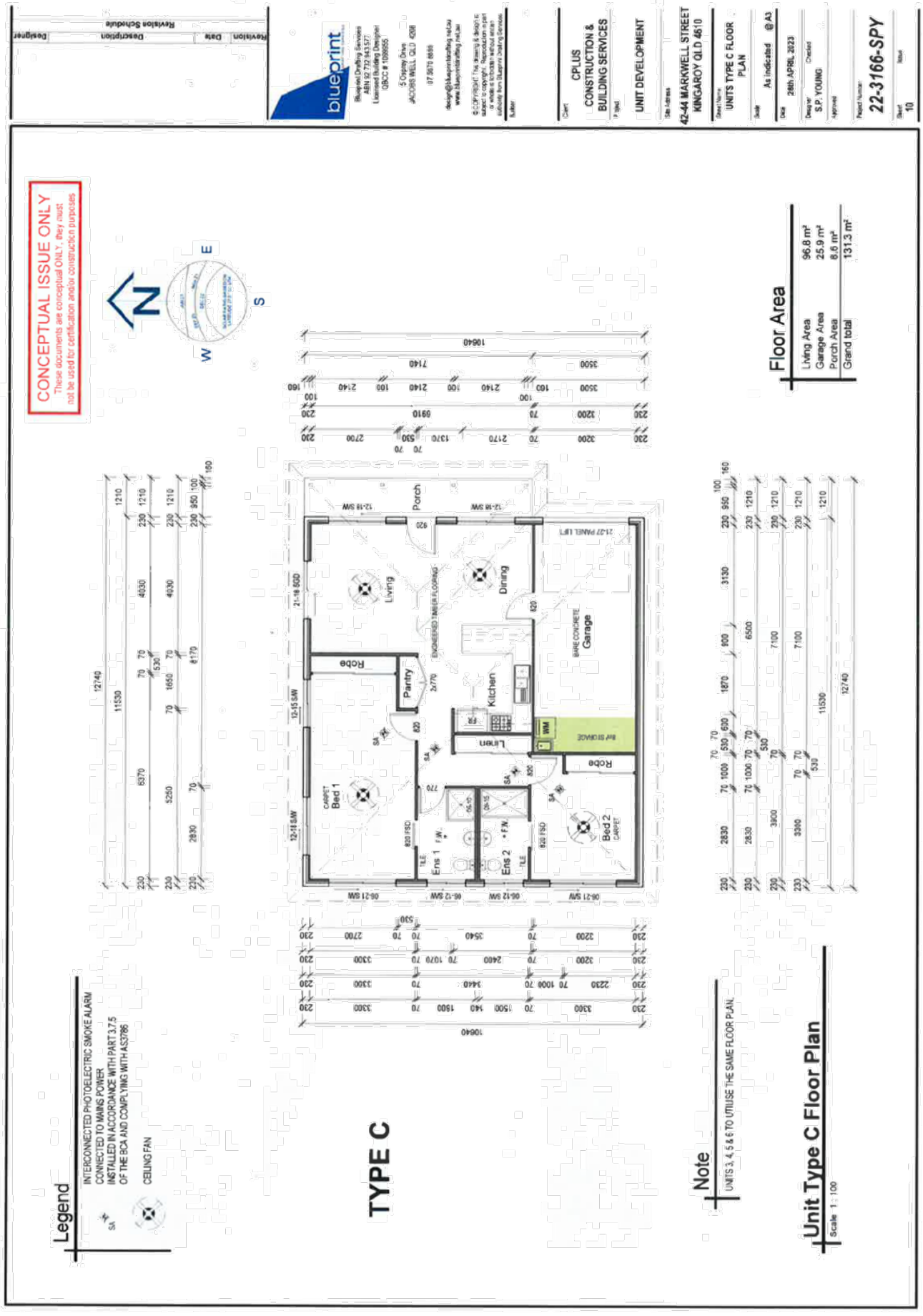
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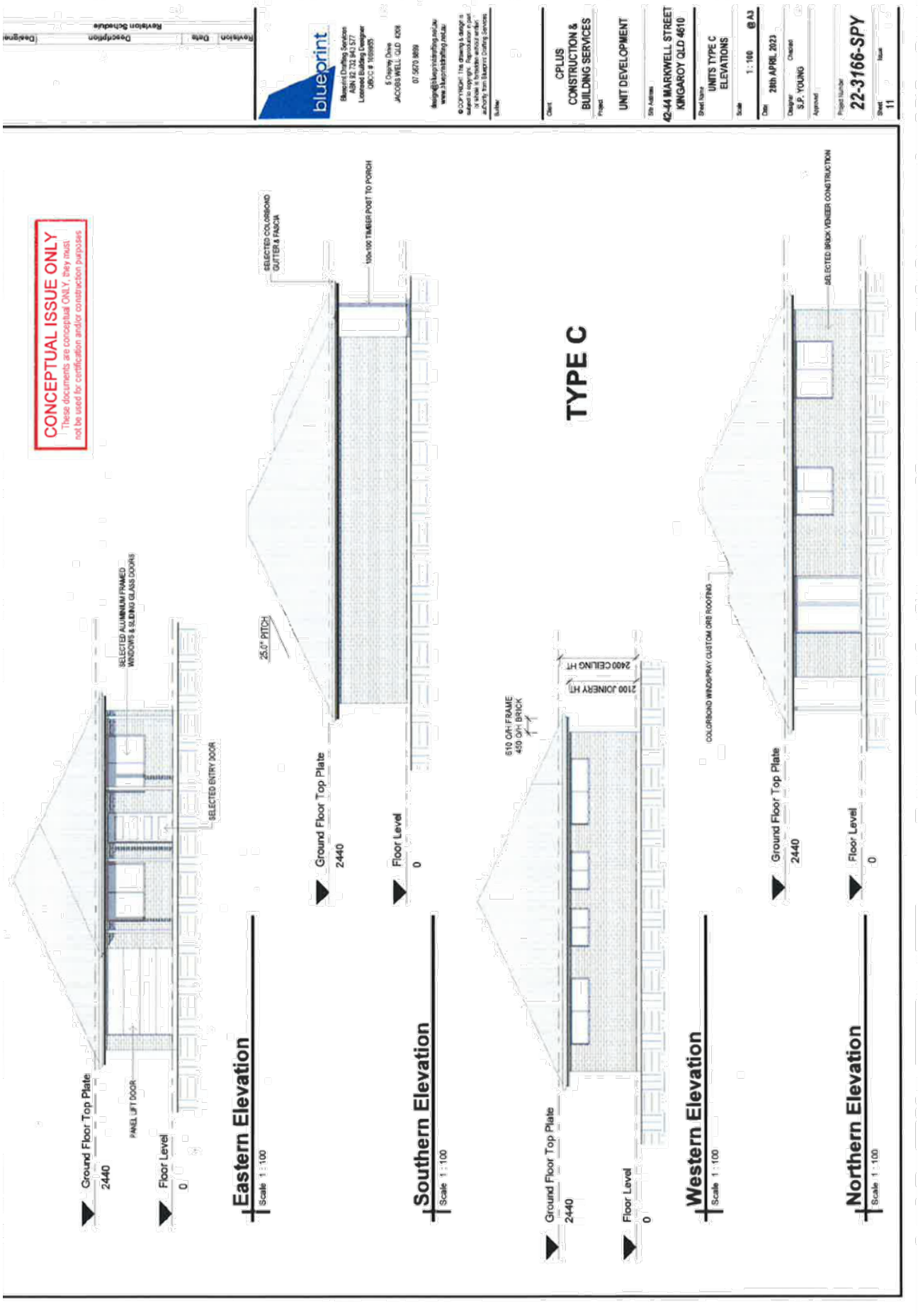
These documents are conceptual ONLY, they must not be used for certification and/or construction purposes
Floor Area
Living Area 96.8 m²
Garage Area 25.9 m²
Porch Area 8.6 m²
Grand total 131.3 m²
Legend
INTERCONNECTED PHOTOELECTRIC SMOKE ALARM CONNECTED TO MAINS POWER INSTALLED IN ACCORDANCE WITH PART 3.7.5 OF THE BCA AND COMPLYING WITH AS3786
CEILING FAN
TYPE C
Note
UNITS 3, 4, 5 & 6 TO UTILISE THE SAME FLOOR PLAN.
Unit Type C Floor Plan
Scale 1 : 100
CP LUS CONSTRUCTION & BUILDING SERVICES
UNIT DEVELOPMENT
42-44 MARKWELL STREET KINGAROY QLD 4610
UNITS TYPE C FLOOR PLAN
As Indicated @ A3
28th APRIL 2023
S.P. YOUNG
22-3166-SPY
10
Porch
Living
Dining
Kitchen
Pantry
Robe
Linen
Garage
Bed 1
Bed 2
Ens 1
Ens 2
Laundry
Robe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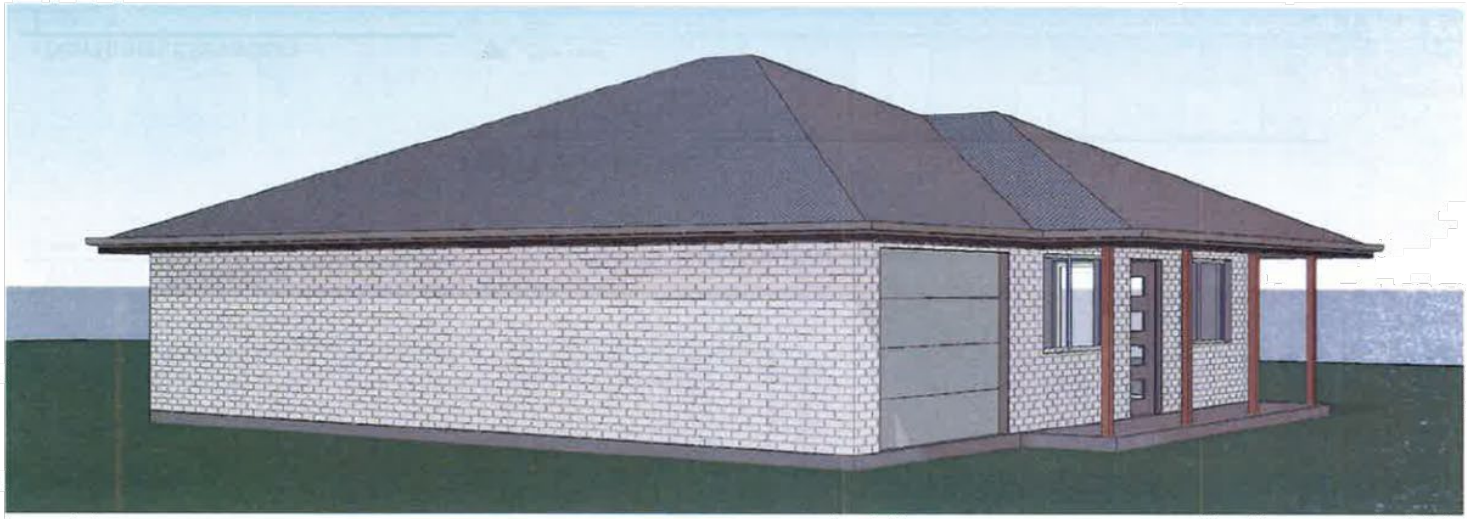
Ground Floor Top Plate
2440
Floor Level
0
PANEL LIFT DOOR
SELECTED ALUMINIUM FRAMED WINDOWS & SLIDING GLASS DOORS
SELECTED ENTRY DOOR
Southern Elevation
Scale 1 : 100
SELECTED COLORBOND GUTTER & FASCIA
25.0° PITCH
100x100 TIMBER POST TO PORCH
Western Elevation
Scale 1 : 100
610 O/H FRAME
450 O/H BRICK
2100 JOINERY HT
2400 CEILING HT
COLORBOND WINDSPRAY CUSTOM ORB ROOFING
Northern Elevation
Scale 1 : 100
SELECTED BRICK VENEER CONSTRUCTION
blueprint
Client CPLUS CONSTRUCTION & BUILDING SERVICES
Project UNIT DEVELOPMENT
Site Address 42-44 MARKWELL STREET KINGAROY QLD 4610
Sheet Name UNITS TYPE C ELEVATIONS
Scale 1 : 100 @ A3
Date 28th APRIL 2023
Designer S.P. YOUNG
Project Number 22-3166-SPY
Sheet 11



South-Eastern View
NOT TO SCALE

TYPE C

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North-Eastern View
NOT TO SCALE

Revision	Date	Description	Designer

Revision Schedule

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Builder

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CPLUS CONSTRUCTION & BUILDING SERVICES

Project
UNIT DEVELOPMENT

Site Address
42-44 MARKWELL STREET KINGAROY QLD 4610

Sheet Name
UNITS TYPE C 3D VIEWS 1

Scale
NOT TO SCALE @ A3

Date
28th APRIL 2023

Designer S.P. YOUNG Checked

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Project Number
22-3166-SPY

Sheet 12 Issue

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www.blueprintdrafting.net.au
Revision Schedule
Revision
Date
Description
Designer
Client
CPLUS
CONSTRUCTION &
BUILDING SERVICES
Project
UNIT DEVELOPMENT
Site Address
42-44 MARKWELL STREET
KINGAROY QLD 4610
Sheet Name
UNITS TYPE C 3D VIEWS 2
Scale
NOT TO SCALE @ A3
Date
28th APRIL 2023
Designer
S.P. YOUNG
Checked
Approved
Project Number
22-3166-SPY
Sheet
13
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These documents are conceptual ONLY, they must not be used for certification and/or construction purposes
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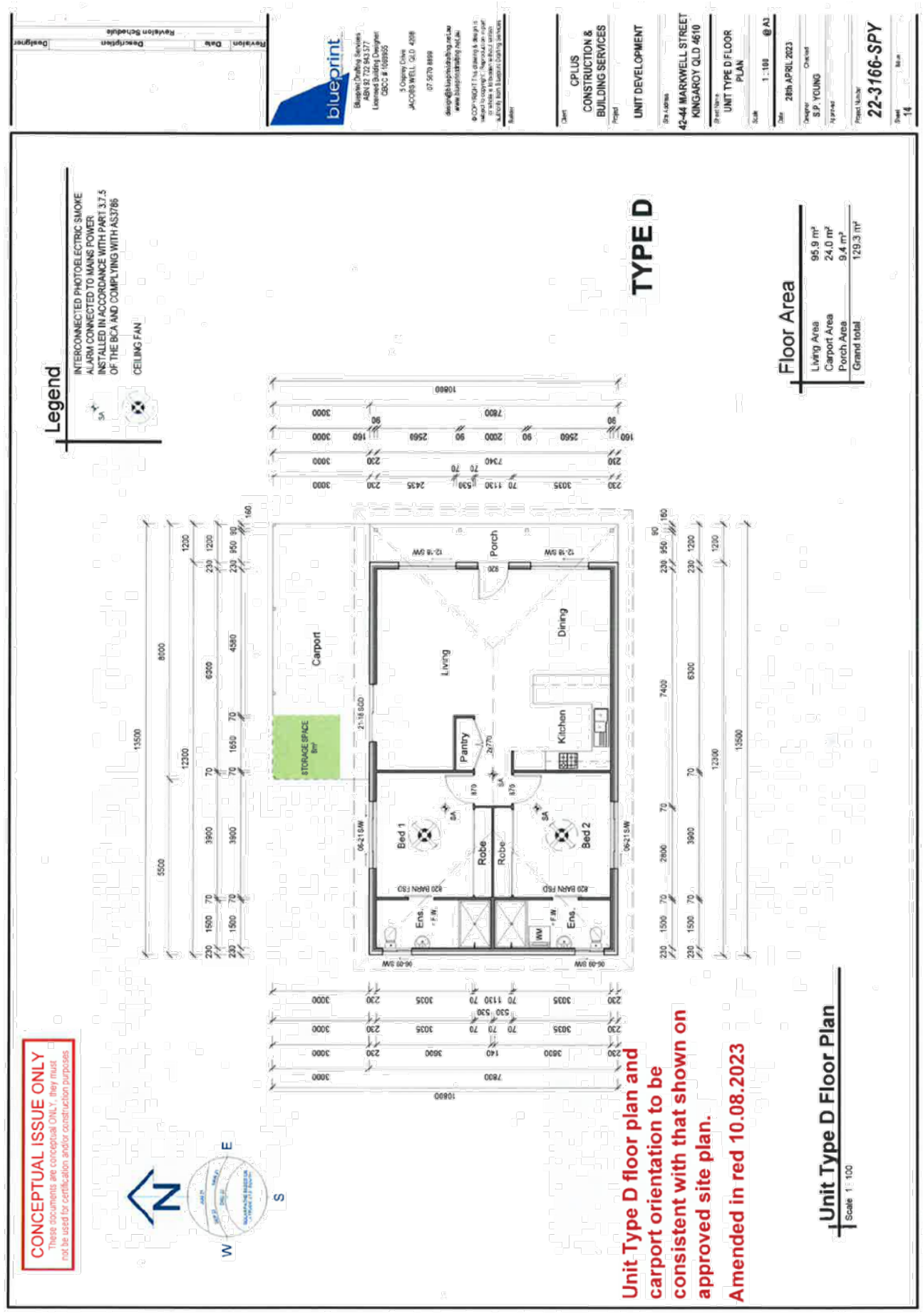
NOT TO SCALE
North-Western View
NOT TO SCALE


TYPE D
Legend
INTERCONNECTED PHOTOELECTRIC SMOKE ALARM CONNECTED TO MAINS POWER INSTALLED IN ACCORDANCE WITH PART 3.7.5 OF THE BCA AND COMPLYING WITH AS3786
CEILING FAN
Floor Area
Living Area 95.9 m²
Carport Area 24.0 m²
Porch Area 9.4 m²
Grand total 129.3 m²
Carport
STORAGE SPACE 8m²
Porch
Living
Dining
Kitchen
Pantry
Bed 1
Bed 2
Robe
Robe
Ens.
Ens.
LAUN
Unit Type D Floor Plan
Scale 1 : 100
CONCEPTUAL ISSUE ONLY
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Unit Type D floor plan and carport orientation to be consistent with that shown on approved site plan.
Amended in red 10.08.2023
blueprint
CPLUS CONSTRUCTION & BUILDING SERVICES
UNIT DEVELOPMENT
42-44 MARKWELL STREET KINGAROY QLD 4610
UNIT TYPE D FLOOR PLAN
28th APRIL 2023
S.P. YOUNG
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CONCEPTUAL ISSUE ONLY
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TYPE D
Eastern Elevation
Scale 1 : 100
Ground Floor Top Plate
2440
Floor Level
0
21.0° PITCH
KIT CARPORT DETAILS BY OTHERS
90x90 TIMBER POSTS
Southern Elevation
Scale 1 : 100
4026 RIDGE HT
2400 CEILING HT
2100 JOINERY HT
Ground Floor Top Plate
2440
Floor Level
0
Northern Elevation
Scale 1 : 100
610 O/H FRAME
450 O/H BRICK
BRICK VENEER CONSTRUCTION
Ground Floor Top Plate
2440
Floor Level
0
Western Elevation
Scale 1 : 100
COLORBOND CUSTOM ORB ROOFING
ALUMINIUM FRAMED WINDOWS & SLIDING GLASS DOORS
Ground Floor Top Plate
2440
Floor Level
0
blueprint
CPLUS CONSTRUCTION & BUILDING SERVICES
UNIT DEVELOPMENT
42-44 MARKWELL STREET KINGAROY QLD 4610
UNIT TYPE D ELEVATIONS
1 : 100 @ A3
28th APRIL 2023
S.P. YOUNG
22-3166-SPY
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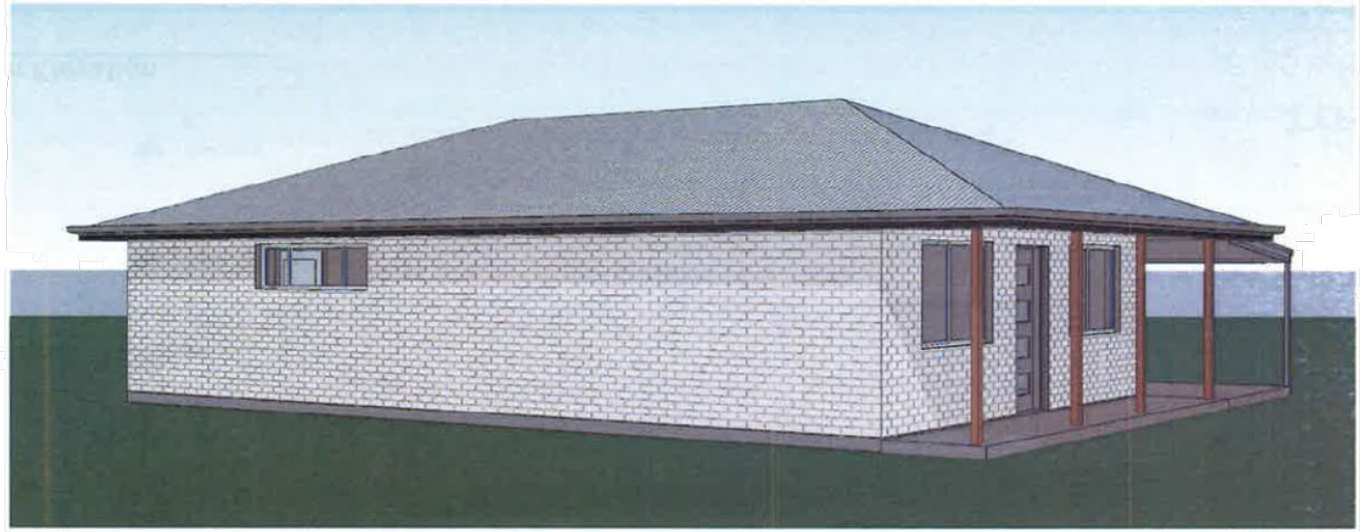

South-Eastern View
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TYPE D

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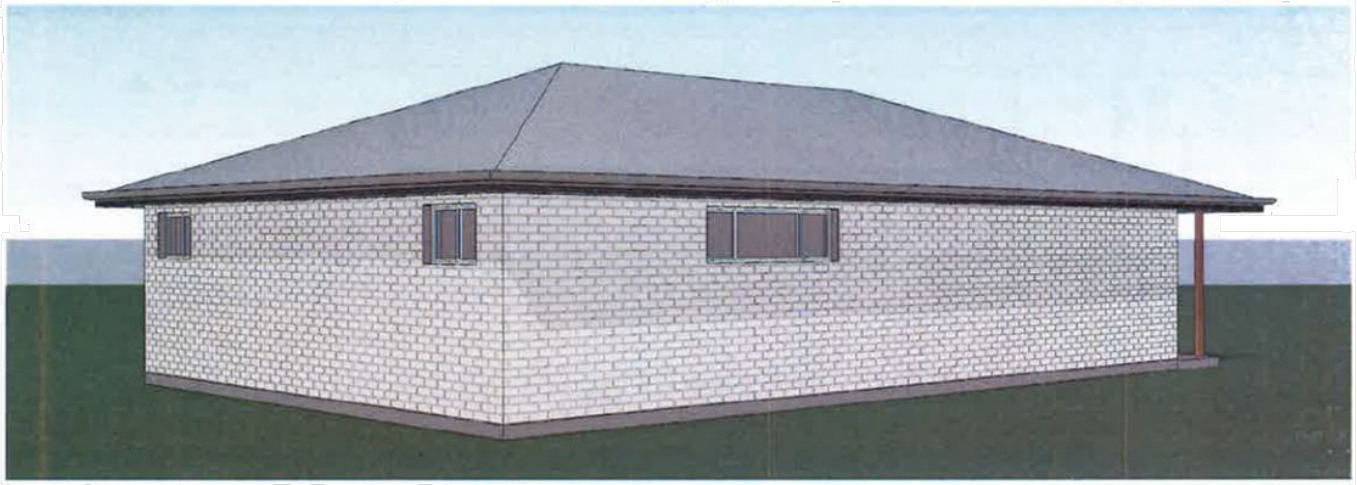

South-Western View
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Revision | Date | Description | Designer
Revision Schedule

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Builder

Client
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Project
UNIT DEVELOPMENT

Site Address
42-44 MARKWELL STREET
KINGAROY QLD 4610

Sheet Name
UNIT TYPE D 3D VIEWS 1

Scale
NOT TO SCALE @ A3

Date
28th APRIL 2023

Designer S.P. YOUNG | Checked

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Project Number
22-3166-SPY

Sheet 15 | Issue

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07 5670 8899
Revision Schedule
Revision
Date
Description
Designer
CPLUS
CONSTRUCTION &
BUILDING SERVICES
UNIT DEVELOPMENT
42-44 MARKWELL STREET
KINGAROY QLD 4610
UNIT TYPE D 3D VIEWS 2
NOT TO SCALE @ A3
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17
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TYPE D
North-Eastern View
NOT TO SCALE
North-Western View
NOT TO SCALE

TSA
Engineering and Design

Bow Development Group P/L

STORMWATER MANAGEMENT REPORT 40,42,44 MARKWELL ST, KINGAROY

QU-0406

Issue Date: 22/06/2023

ADAM DOYLE
TECHNICAL SERVICES AUSTRALIA

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TSA Engineering and Design

ENGINEERING REPORT

Document ID:QU-0406-01

40, 42, 44 Markwell St, Kingaroy Stormwater Management Report

Document Revision & Approval History:

Rev	Date	Description	Prepared	Reviewed	TSA Approved
A	22/06/23	Issued for Review	AD		

Documentum File Name:	44 Markwell St Kingaroy Stormwater Report.docx		
Document Type:	Engineering Report	Effective Date:	
Status:		Printed Date:	22/06/2023 21:59:53
Approved By:		Page:	Page 1 of 46

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TSA Engineering and Design

TABLE OF CONTENTS:

INTRODUCTION

Bow Development Group Pty Ltd has submitted a building application to the South Burnett Regional Council over 40,42 and 44 Markwell Street (Lot 106, 107 and 108 on RP7914) Kingaroy. The application is for the establishment of a Multiple Dwelling Development on the property.

The new development will comprise of the construction of 12 x residential units and associated carparking and driveways.

A concept layout of the proposal in in Attachment A.

TSA have been engaged to assess the stormwater management of the proposed development, on behalf of the applicant and will address the pre and post development stormwater flows, and any attenuation requirements to demonstrate that the post development flows are reduced to at least the predevelopment flows.

The purpose of the report is to demonstrate that the stormwater from the site can be appropriately managed, and that the proposed development will not have any additional impact on other properties or infrastructure including Markwell Street.

Figure 1 - 42 Markwell Street, Kingaroy (Google Earth)

SITE CHARACTERISTICS

Site Description

The site is located at 40-42-44 Markwell Street, Kingaroy as shown in *Figure* 2. A minor portion of lot 106 is within the flood overlay but with the proposed unit layout, this is not expected to cause any significant issues.

Figure 2 - 42-46 Markwell Street, Kingaroy (Image Source: Queensland Globe Flood Layers)

The access for the existing lots and the proposed development is from the Markwell Street frontage.

The existing lot 107 and 108 have dwellings existing but no other significant structures or landforms. The natural slope of the lot runs in a Southerly direction at approximately 1% before entering the Markwell Street kerb and channel.

There was no evidence of scouring or other erosion issues.

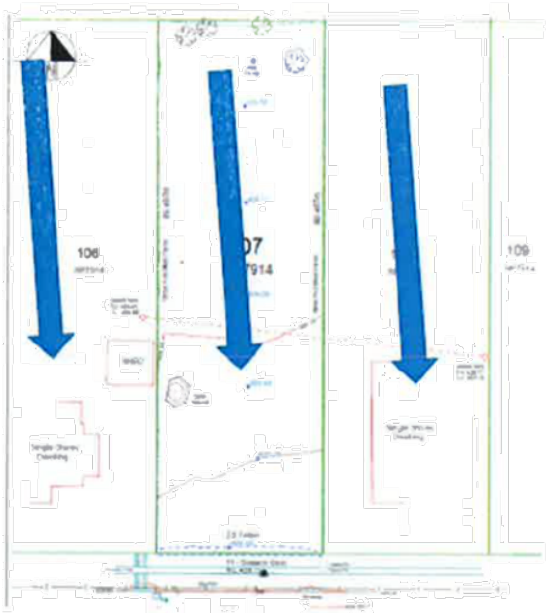

Figure 3 - Pre-Development drainage path through each lot to Markwell St, Kingaroy

Figure 4- Existing Lots with Dwellings

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Document Type:	Engineering Report	Effective Date:	
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Stormwater Arrangements

General

The development is situated within a typical suburban environment with overland flow in the catchment managed by kerb and channel in Markwell Street. There is no underground stormwater network in this area.

STORMWATER ANALYSIS

Lawful Point of Discharge

SBRC has nominated the lawful point of discharge to the Markwell Street kerb and channel at the front of the properties. This aligns with the existing and proposed design.

Hydraulic Design

A hydraulic assessment has been undertaken for the development using the Drains software program (Version 2023.06.8567.18365 (64bit) – 16 Jun 2023). An analysis was carried out to determine the peak runoff flows for the pre and post development conditions, and potential detention requirements, for ARI 2, and 100-year storm events, with storm durations between 5 minutes to 4.5 hours.

Drains Input

The hydrological model inputs used in the Drains model are shown below.

Table 1 - Drains Inputs

Hydrological Model	ILSAX
Paved (impervious) area depression storage (mm)	1
Supplementary area depression storage (mm)	1
Grassed (pervious) area depression storage (mm)	5
Soil Type	3 (Slow Infiltration Rate)
Antecedent Moisture Condition	3 – Rather Wet

Catchment Information

Pre-Development (Existing Dwellings on Lots)

Table 2 – Pre-Dev Catchment Information

Catchment	Area (ha)	% Impervious	% Supp	% Grassed
Lot 106 RP7914 44 Markwell St	0.2023	10	0	90
Lot 107 RP7914 42 Markwell St	0.2023	10	0	90
Lot 108 RP7914 40 Markwell St	0.2023	10	0	90

Table 3 - Post Dev Catchment Information

Catchment	Area (ha)	% Impervious	% Supp	% Grassed
Lot 106 RP7914 44 Markwell St	0.2023	59	0	41
Lot 107 RP7914 42 Markwell St	0.2023	54	0	46
Lot 108 RP7914 40 Markwell St	0.2023	30	0	70

Peak Flows and the Stormwater Management Strategy

The peak flow rates for predevelopment (unattenuated), Post Development (unattenuated) and Post Development Modified (attenuated), are shown below. As can be seen in the table, the flows in the post developed state generally need to be modified in order to comply with the non-worsening impacts of the development code.

A summary of the Pre and Attenuated Peak Flows are shown below in the *Table below*.

Table 4 - Model Summary Results

Discharge Reference	44 Markwell Street	
Storm Event (ARI)	Minor (2)	Major (100)
Pre-Development m^3/s	0.032	0.120
Post Dev – Unmodified m^3/s	0.037	0.108
Modified Post-Development m^3/s	0.032	0.113
Final Difference m^3/s (%)	0.00	-0.007
Discharge Reference	42 Markwell Street	
Storm Event (ARI)	Minor (2)	Major (100)
Pre-Development m^3/s	0.016	0.086
Post Dev – Unmodified m^3/s	0.035	0.106
Modified Post-Development m^3/s	0.020	0.085
Final Difference m^3/s (%)	0.004	-0.001
Discharge Reference	40 Markwell Street	
Storm Event (ARI)	Minor (2)	Major (100)
Pre-Development m^3/s	0.020	0.098
Post Dev – Unmodified m^3/s	0.027	0.094
Modified Post-Development m^3/s	0.019	0.097
Final Difference m^3/s (%)	-0.001	-0.001

The results for the Markwell Street discharge point, show that the post development flows can be adequately attenuated back to approximately predevelopment levels for the critical storm events.

The overall stormwater strategy for the development is to:

- Overland flow from area that will grade to the street frontage and on to the back of the kerb.

- Capture stormwater runoff from the roofed areas of the existing dwelling and divert it to detention tanks.
    - 2 x 3,000L rainwater detention tanks at each Unit collecting 100% of the roof water.
    - 3,000L slimline tanks have been modelled with a usable height of 2.1m.
    - For each unit, the rainwater tanks shall be connected directly to the inter-allotment underground stormwater network.
    - All new dwelling/unit gutters are to be 100% connected to a tank.
    - The low and high flow orifices as well as the peak level overflow from these tanks are to be piped to the back of the roadside kerb and channel.

Lot 106 Option 1 for on-site detention tanks

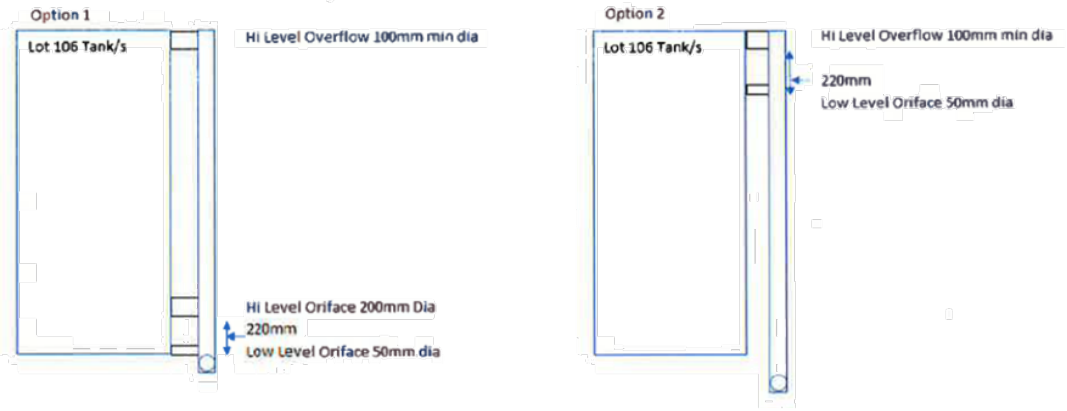
- 1 x 50mm orifice low level discharge at the invert of each tank
- 1 x 200mm orifice high level discharge at 220mm up from the invert of each tank

Lot 106 Option 2 for on-site detention tanks to allow rainwater to be re-used around the unit

- 1 x 50mm orifice low level discharge at 220mm down from the invert of the high level orifice of each tank
- 1 x 200mm orifice high level discharge at the top of the tank at the overflow level of each tank
- Local rainwater reuse plumbing has not been shown on the tank options sketches, but is assumed to be installed at the invert.

These levels have been set so that there is a retained storage for the site re-use, while still maintaining the required attenuation volume.

Figure 5- Lot 106 Tank Options



Lot 107 Option 1 for on-site detention tanks

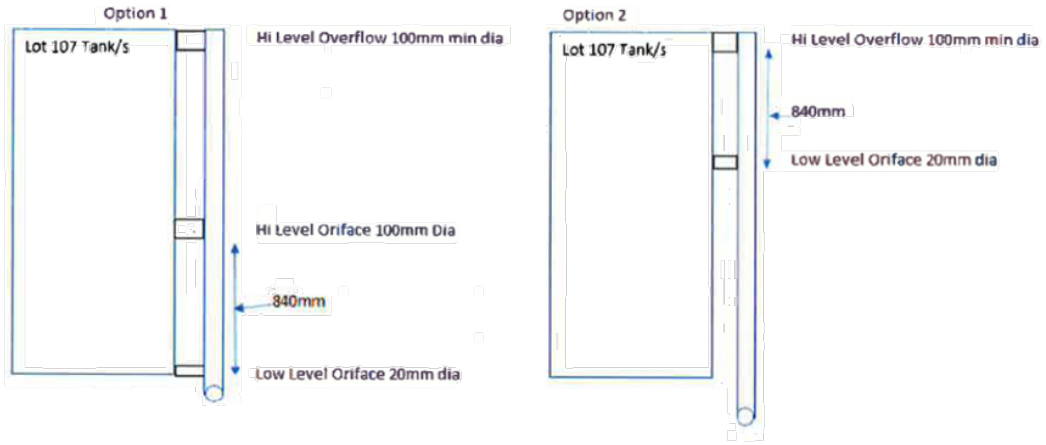
- 1 x 20mm orifice low level discharge at the invert of each tank
- 1 x 100mm orifice high level discharge at 840mm up from the invert of each tank

Lot 107 Option 2 for on-site detention tanks to allow rainwater to be re-used around the unit

- 1 x 20mm orifice low level discharge at 840mm down from the invert of the high level orifice of each tank
- 1 x 100mm orifice high level discharge at the top of the tank at the overflow level of each tank
- Local rainwater reuse plumbing has not been shown on the tank options sketches, but is assumed to be installed at the invert.

These levels have been set so that there is a retained storage for the site re-use, while still maintaining the required attenuation volume.

Figure 6 - Lot 107 Tank Options



Lot 108 Option 1 for on-site detention tanks

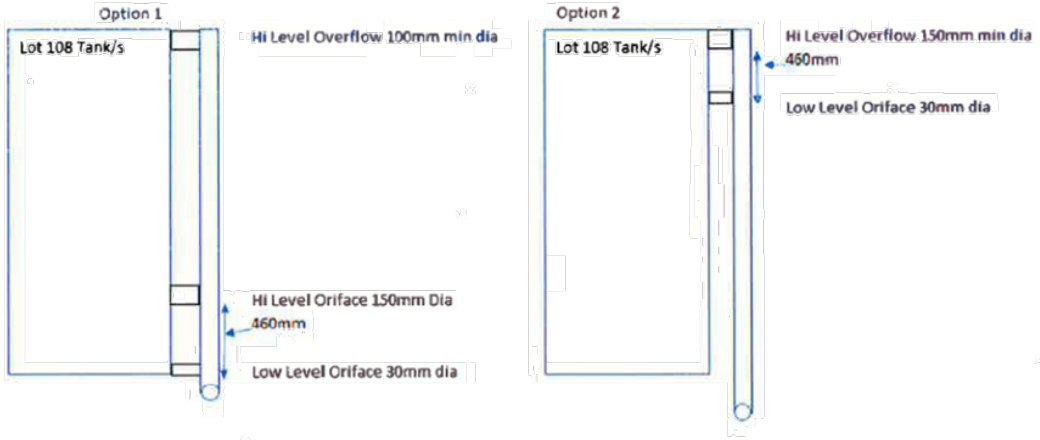
- 1 x 50mm orifice low level discharge at the invert of each tank
- 1 x 200mm orifice high level discharge at 220mm up from the invert of each tank

Lot 108 Option 2 for on-site detention tanks to allow rainwater to be re-used around the unit.

- 1 x 30mm orifice low level discharge at 460mm down from the invert of the high-level orifice of each tank
- 1 x 150mm orifice high level discharge at the top of the tank at the overflow level of each tank
- Local rainwater reuse plumbing has not been shown on the tank options sketches, but is assumed to be installed at the invert.

These levels have been set so that there is a retained storage for the site re-use, while still maintaining the required attenuation volume.

Figure 7 - Lot 108 Tank Options



A copy of the outputs from the Drains Models showing the peak flows is in *Attachments*.

DESIGN ASSUMPTIONS

The assumptions made in calculating the on-site flows are:

1. Guttering will be sized by the plumber so that all roof water up to the Q100 year event falling on the roofs will be directed to the detention tanks,
2. Overflow from the detention tanks will be drained via an adequately sized stormwater drainage pipe, directed to the back of the kerb and channel,
3. All water up to the Q100 event falling on the driveway and carpark area can be diverted to the Markwell Street kerb cross over for each unit complex,
4. Stormwater will act generally in accordance with the assumptions made in the Drains model.

OTHER CONSIDERATIONS

The provision of On-Site Retention (OSR) systems require on-going maintenance to ensure the performance of the systems and minimise the risk of external impacts from increased discharges. Tampering of installations is a significant risk and should be considered when designing the final attenuation system.

CONCLUSIONS

In summary, the proposed development:

- Will not lead to any significant increases in stormwater flow discharging from the site.

- On site rainwater tanks attached to the roof areas (tanks) is an appropriate treatment – subject to detailed design by a suitably qualified plumber or engineer.

I believe that the above response satisfies the requirements of QUDM and Council with respect to the stormwater management, attenuation, and water quality requirements – subject to the application of reasonable and relevant conditions.

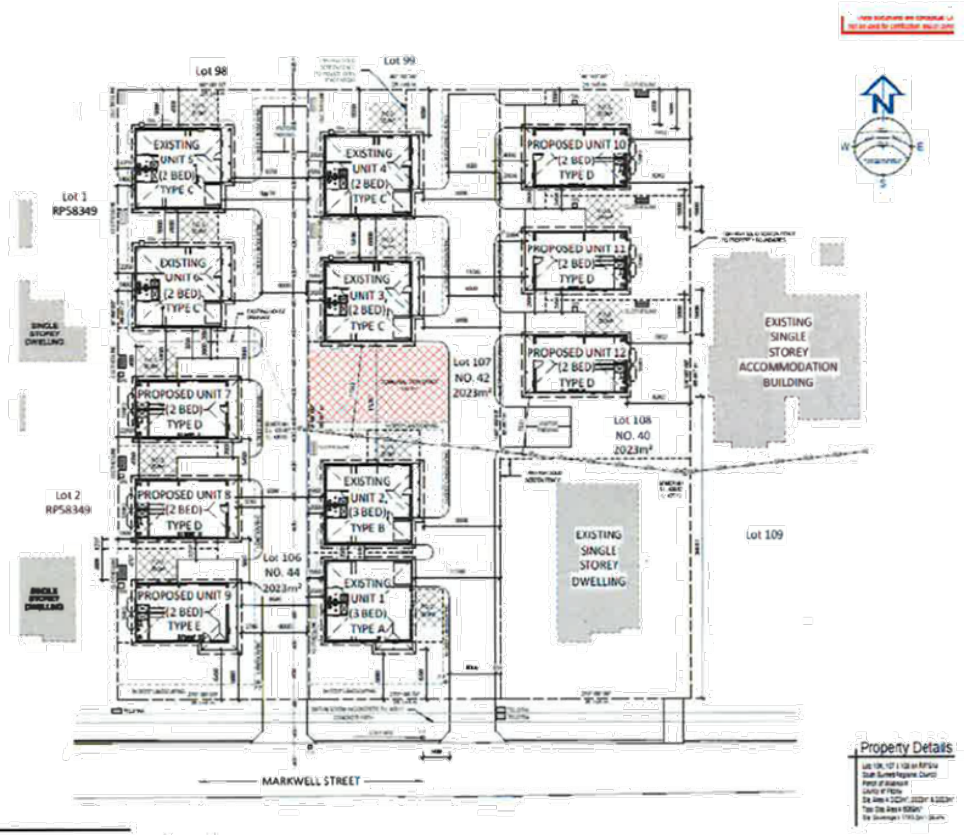
Should you require further assistance or information please feel free to contact me on 0419 251 127 or email at adam@tsapl.com.au.

Regards

Adam Doyle
DIRECTOR
BEng (Civil) RPEQ

TSA Engineering and Design

ATTACHMENT A – CONCEPT LAYOUT



Site Plan

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ATTACHMENT B - DRAINS OUTPUT
Drains Layout 44 Markwell St (Lot 106)
Outlet
Pipe59978
N23474
Grassed Area
Unit 9 Pipe
Pit 9
Tank 9 Low
Tank 9 Hi
Unit 8 Pipe
Tank Unit 9
Unit Tank 8 Low
Pit 8
Unit 7 Pipe
Tank 8 Hi
Tank Unit 8
Unit 8 Tank 7 Low
Pit 7
Tank 7 Hi
Unit 6 Pipe
Tank Unit 7
Unit 7
Tank 6 Low
Unit 5 Pipe
Pit 6
Tank Unit 6
Tank 6 Hi
Unit 6
Tank 5 Low
Pit 5
Tank Unit 5
Tank 5 Hi
Unit 5
Site Pre-dev 44
N1
Site Post Dev 44
Outlet Lot 44
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Drains Results 2 Yr. ARI 44 Markwell St
Results for median storm in critical 50% AEP ensembles
using Full Unsteady hydraulic model.
0.032
0.037
427.63
0.032
427.73
0.021
0.003
428.13
0.002
0.002
0
428.46
0.004
428.20
0.002
0.002
0
428.64
0.004
428.34
0.002
0
428.79
0.004
0.002
0.002
0
428.47
0.002
428.91
0.004
0.002
428.61
0
429.06
0.004
0.002
0
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Drains Results 100 Yr. ARI 44 Markwell St
Results for median storm in critical 1% AEP ensembles
using Full Unsteady hydraulic model.
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Drains Layout 42 Markwell St (Lot 107)
Engineering and Design
Site Pre-dev 42
N1
Site Post Dev 42
Outlet Lot 42
Outlet
Pipe59978
N23774
Grassed Area
Unit 1 Pipe
Pit 1
Tank 1 Low
Tank 1 Hi
Unit 2 Pipe
Tank Unit 1
Unit 1
Tank 2 Low
Tank 2 Hi
Tank Unit 2
Unit 2
Pit 3
Tank 3 Low
Unit 3 Pipe
Tank 3 Hi
Tank Unit 3
Unit 3
Pit 4
Tank 4 Low
Unit 4 Pipe
Tank 4 Hi
Tank Unit 4
Unit 4
Documentum File Name: 44 Markwell St Kingaroy Stormwater Report.docx
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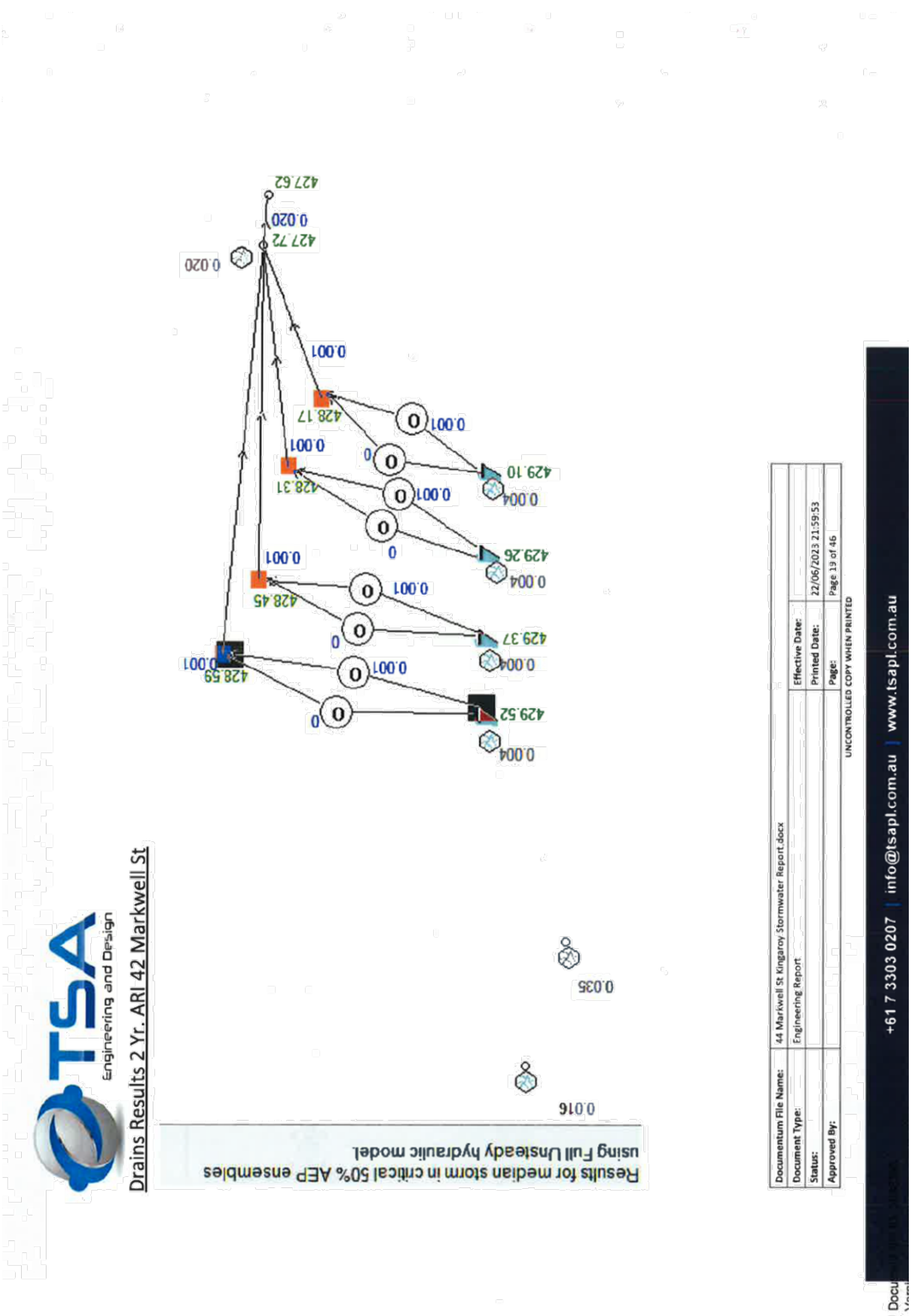
TSA Engineering and Design
Drains Results 2 Yr. ARI 42 Markwell St
Results for median storm in critical 50% AEP ensembles
using Full Unsteady hydraulic model
427.62
0.020
427.72
0.020
0.001
428.17
0.001
428.31
0.001
428.45
0.001
428.59
429.10
0.004
429.26
0.004
429.37
0.004
429.52
0.004
0.035
0.016
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Drains Results 100 Yr. ARI 42 Markwell St
Results for median storm in critical 1% AEP ensembles
using Full Unsteady hydraulic model.
0.086
0.106
0.010
430.02
0.005
0
0.001
428.65
0.006
0.010
429.78
0.006
0
0.001
428.51
0.006
0.010
429.67
0.006
0
0.001
428.37
0.006
0.010
429.51
0.006
0
0.001
428.24
0.006
0.072
427.74
0.085
427.64
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Drains Layout 40 Markwell St (Lot 108)
TSA
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Site Pre-dev 40
N1
Site Post Dev 40
Outlet Lot 40
Unit 10
Tank Unit 10
Tank 10 Hi
Pit 10
Unit 10 Pipe
Tank 10 Low
Unit 11
Tank Unit 11
Tank 11 Hi
Pit 11
Tank 11 Low
Unit 12
Tank Unit 12
Tank 12 Hi
Unit 11 Pipe
Tank 12 Low
Pit 12
Unit 12 Pipe
Existing
N273475
P72051
Grassed Area
N23774
Pipe59978
Outlet
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427.62
0.019
427.72
0.013
0.003
428.33
0.003
0.001
428.32
0.007
0
0.001
429.04
0.004
0.007
428.46
0
429.16
0.004
0.001
428.60
0.007
0
429.31
0.004
0.027
0.020
Results for median storm in critical 50% AEP ensembles
using Full Unsteady hydraulic model.
Drains Results 2 Yr. ARI 40 Markwell St
TSA
Engineering and Design
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Drains Results 100 Yr. ARI 40 Markwell St
Engineering and Design
TSA
Results for median storm in critical 1% AEP ensembles
using Full Unsteady hydraulic model.
0.098
0.094
427.64
0.097
427.74
0.070
0.007
428.36
0.008
0.009
428.63
0.001
0.007
0.007
429.13
0.010
0.007
428.54
0.007
429.25
0.010
0.007
428.66
0.001
0.007
429.40
0.010
Document File Name: 44 Markwell St Kingaroy Stormwater Report.docx
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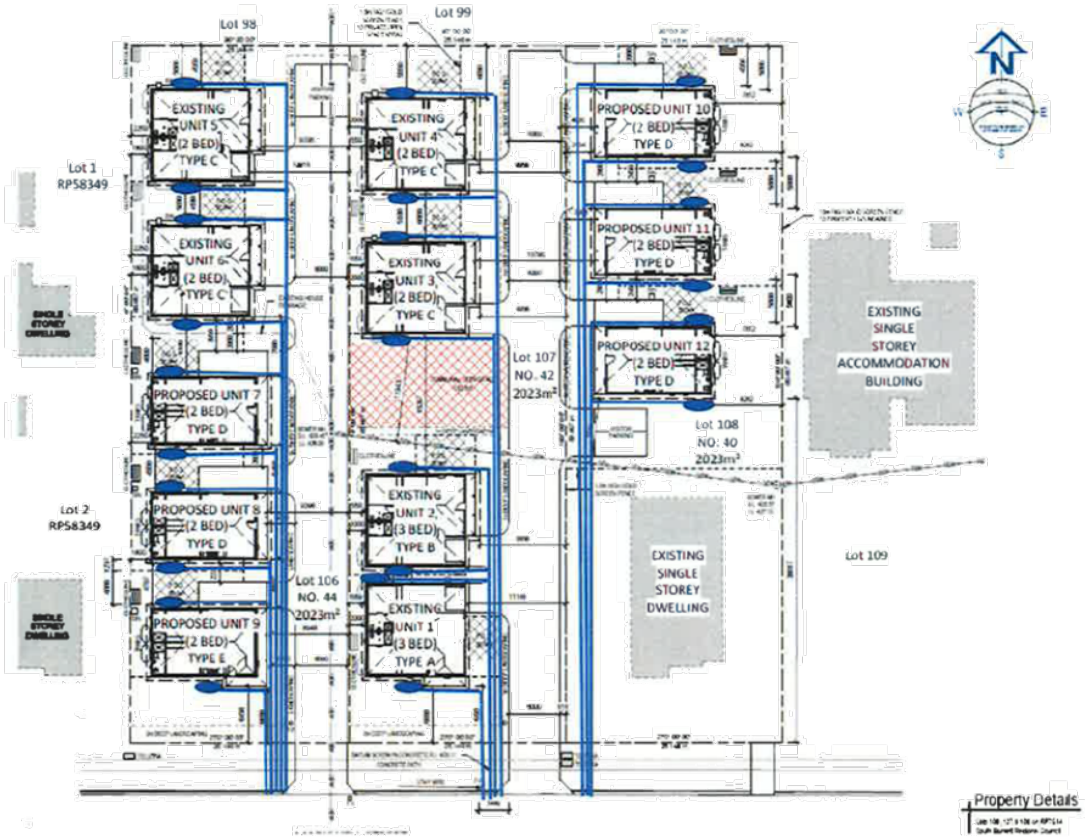
CONCEPT DRAINAGE PIPING ARRANGEMENT



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DETAILED DRAINS OUTPUTS

Drains Output 44 Markwell – Modified Post Dev

Q2 Peak Flows for Outlet to 44 Markwell St		
Storm	Peak Flow (cu.m/s)	
50% AEP, 5 min burst, Storm 1	0.022	Critical Storm for this AEP and Burst Duration
50% AEP, 10 min burst, Storm 1	0.032	Critical Storm for this AEP and Burst Duration
50% AEP, 10 min burst, Storm 2	0.031	
50% AEP, 10 min burst, Storm 3	0.031	
50% AEP, 10 min burst, Storm 4	0.033	
50% AEP, 10 min burst, Storm 5	0.032	
50% AEP, 10 min burst, Storm 6	0.032	
50% AEP, 10 min burst, Storm 7	0.031	
50% AEP, 10 min burst, Storm 8	0.032	
50% AEP, 10 min burst, Storm 9	0.032	
50% AEP, 10 min burst, Storm 10	0.032	
50% AEP, 15 min burst, Storm 1	0.031	
50% AEP, 15 min burst, Storm 2	0.029	
50% AEP, 15 min burst, Storm 3	0.029	
50% AEP, 15 min burst, Storm 4	0.03	
50% AEP, 15 min burst, Storm 5	0.031	
50% AEP, 15 min burst, Storm 6	0.032	Critical Storm for this AEP and Burst Duration
50% AEP, 15 min burst, Storm 7	0.032	
50% AEP, 15 min burst, Storm 8	0.032	
50% AEP, 15 min burst, Storm 9	0.034	
50% AEP, 15 min burst, Storm 10	0.034	
50% AEP, 20 min burst, Storm 1	0.027	
50% AEP, 20 min burst, Storm 2	0.028	
50% AEP, 20 min burst, Storm 3	0.028	
50% AEP, 20 min burst, Storm 4	0.031	
50% AEP, 20 min burst, Storm 5	0.03	Critical Storm for this AEP and Burst Duration
50% AEP, 20 min burst, Storm 6	0.028	
50% AEP, 20 min burst, Storm 7	0.033	
50% AEP, 20 min burst, Storm 8	0.029	

50% AEP, 20 min burst, Storm 9	0.034	
50% AEP, 20 min burst, Storm 10	0.033	
50% AEP, 25 min burst, Storm 1	0.03	Critical Storm for this AEP and Burst Duration
50% AEP, 25 min burst, Storm 2	0.029	
50% AEP, 25 min burst, Storm 3	0.027	
50% AEP, 25 min burst, Storm 4	0.028	
50% AEP, 25 min burst, Storm 5	0.029	
50% AEP, 25 min burst, Storm 6	0.031	
50% AEP, 25 min burst, Storm 7	0.031	
50% AEP, 25 min burst, Storm 8	0.029	
50% AEP, 25 min burst, Storm 9	0.035	
50% AEP, 25 min burst, Storm 10	0.034	
50% AEP, 30 min burst, Storm 1	0.035	
50% AEP, 30 min burst, Storm 2	0.027	
50% AEP, 30 min burst, Storm 3	0.027	
50% AEP, 30 min burst, Storm 4	0.027	
50% AEP, 30 min burst, Storm 5	0.028	
50% AEP, 30 min burst, Storm 6	0.029	Critical Storm for this AEP and Burst Duration
50% AEP, 30 min burst, Storm 7	0.031	
50% AEP, 30 min burst, Storm 8	0.033	
50% AEP, 30 min burst, Storm 9	0.029	
50% AEP, 30 min burst, Storm 10	0.031	
50% AEP, 45 min burst, Storm 1	0.029	
50% AEP, 45 min burst, Storm 2	0.026	Critical Storm for this AEP and Burst Duration
50% AEP, 45 min burst, Storm 3	0.021	
50% AEP, 45 min burst, Storm 4	0.028	
50% AEP, 45 min burst, Storm 5	0.025	
50% AEP, 45 min burst, Storm 6	0.022	
50% AEP, 45 min burst, Storm 7	0.022	
50% AEP, 45 min burst, Storm 8	0.023	
50% AEP, 45 min burst, Storm 9	0.03	
50% AEP, 45 min burst, Storm 10	0.028	
50% AEP, 1 hour burst, Storm 1	0.028	
50% AEP, 1 hour burst, Storm 2	0.019	
50% AEP, 1 hour burst, Storm 3	0.023	
50% AEP, 1 hour burst, Storm 4	0.023	Critical Storm for this AEP and Burst Duration
50% AEP, 1 hour burst, Storm 5	0.023	

50% AEP, 1 hour burst, Storm 6	0.023	
50% AEP, 1 hour burst, Storm 7	0.021	
50% AEP, 1 hour burst, Storm 8	0.019	
50% AEP, 1 hour burst, Storm 9	0.028	
50% AEP, 1 hour burst, Storm 10	0.024	
50% AEP, 1.5 hour burst, Storm 1	0.018	
50% AEP, 1.5 hour burst, Storm 2	0.022	Critical Storm for this AEP and Burst Duration
50% AEP, 1.5 hour burst, Storm 3	0.023	
50% AEP, 1.5 hour burst, Storm 4	0.014	
50% AEP, 1.5 hour burst, Storm 5	0.026	
50% AEP, 1.5 hour burst, Storm 6	0.014	
50% AEP, 1.5 hour burst, Storm 7	0.019	
50% AEP, 1.5 hour burst, Storm 8	0.018	
50% AEP, 1.5 hour burst, Storm 9	0.026	
50% AEP, 1.5 hour burst, Storm 10	0.022	
50% AEP, 2 hour burst, Storm 1	0.017	
50% AEP, 2 hour burst, Storm 2	0.015	
50% AEP, 2 hour burst, Storm 3	0.018	
50% AEP, 2 hour burst, Storm 4	0.015	
50% AEP, 2 hour burst, Storm 5	0.021	
50% AEP, 2 hour burst, Storm 6	0.017	Critical Storm for this AEP and Burst Duration
50% AEP, 2 hour burst, Storm 7	0.023	
50% AEP, 2 hour burst, Storm 8	0.022	
50% AEP, 2 hour burst, Storm 9	0.015	
50% AEP, 2 hour burst, Storm 10	0.017	
50% AEP, 3 hour burst, Storm 1	0.016	
50% AEP, 3 hour burst, Storm 2	0.017	
50% AEP, 3 hour burst, Storm 3	0.022	
50% AEP, 3 hour burst, Storm 4	0.013	Critical Storm for this AEP and Burst Duration
50% AEP, 3 hour burst, Storm 5	0.013	
50% AEP, 3 hour burst, Storm 6	0.012	
50% AEP, 3 hour burst, Storm 7	0.011	
50% AEP, 3 hour burst, Storm 8	0.009	
50% AEP, 3 hour burst, Storm 9	0.012	
50% AEP, 3 hour burst, Storm 10	0.016	
50% AEP, 4.5 hour burst, Storm 1	0.013	
50% AEP, 4.5 hour burst, Storm 2	0.011	

50% AEP, 4.5 hour burst, Storm 3	0.016	
50% AEP, 4.5 hour burst, Storm 4	0.008	
50% AEP, 4.5 hour burst, Storm 5	0.011	
50% AEP, 4.5 hour burst, Storm 6	0.016	
50% AEP, 4.5 hour burst, Storm 7	0.013	Critical Storm for this AEP and Burst Duration
50% AEP, 4.5 hour burst, Storm 8	0.011	
50% AEP, 4.5 hour burst, Storm 9	0.013	
50% AEP, 4.5 hour burst, Storm 10	0.014	

Q100 Peak Flows for Outlet to 44 Markwell St		
Storm	Peak Flow (cu.m/s)	
1% AEP, 5 min burst, Storm 1	0.094	Critical Storm for this AEP and Burst Duration
1% AEP, 10 min burst, Storm 1	0.108	
1% AEP, 10 min burst, Storm 2	0.112	
1% AEP, 10 min burst, Storm 3	0.108	
1% AEP, 10 min burst, Storm 4	0.118	
1% AEP, 10 min burst, Storm 5	0.116	
1% AEP, 10 min burst, Storm 6	0.117	
1% AEP, 10 min burst, Storm 7	0.113	Critical Storm for this AEP and Burst Duration
1% AEP, 10 min burst, Storm 8	0.107	
1% AEP, 10 min burst, Storm 9	0.131	
1% AEP, 10 min burst, Storm 10	0.109	
1% AEP, 15 min burst, Storm 1	0.126	
1% AEP, 15 min burst, Storm 2	0.12	
1% AEP, 15 min burst, Storm 3	0.107	
1% AEP, 15 min burst, Storm 4	0.1	
1% AEP, 15 min burst, Storm 5	0.114	
1% AEP, 15 min burst, Storm 6	0.11	
1% AEP, 15 min burst, Storm 7	0.098	
1% AEP, 15 min burst, Storm 8	0.135	
1% AEP, 15 min burst, Storm 9	0.113	Critical Storm for this AEP and Burst Duration
1% AEP, 15 min burst, Storm 10	0.097	
1% AEP, 20 min burst, Storm 1	0.107	
1% AEP, 20 min burst, Storm 2	0.13	

1% AEP, 20 min burst, Storm 3	0.099	
1% AEP, 20 min burst, Storm 4	0.092	
1% AEP, 20 min burst, Storm 5	0.095	
1% AEP, 20 min burst, Storm 6	0.101	Critical Storm for this AEP and Burst Duration
1% AEP, 20 min burst, Storm 7	0.094	
1% AEP, 20 min burst, Storm 8	0.099	
1% AEP, 20 min burst, Storm 9	0.103	
1% AEP, 20 min burst, Storm 10	0.109	
1% AEP, 25 min burst, Storm 1	0.097	
1% AEP, 25 min burst, Storm 2	0.127	
1% AEP, 25 min burst, Storm 3	0.105	
1% AEP, 25 min burst, Storm 4	0.099	
1% AEP, 25 min burst, Storm 5	0.106	
1% AEP, 25 min burst, Storm 6	0.093	
1% AEP, 25 min burst, Storm 7	0.086	
1% AEP, 25 min burst, Storm 8	0.105	Critical Storm for this AEP and Burst Duration
1% AEP, 25 min burst, Storm 9	0.092	
1% AEP, 25 min burst, Storm 10	0.11	
1% AEP, 30 min burst, Storm 1	0.089	
1% AEP, 30 min burst, Storm 2	0.1	
1% AEP, 30 min burst, Storm 3	0.118	
1% AEP, 30 min burst, Storm 4	0.079	
1% AEP, 30 min burst, Storm 5	0.088	
1% AEP, 30 min burst, Storm 6	0.12	
1% AEP, 30 min burst, Storm 7	0.089	
1% AEP, 30 min burst, Storm 8	0.094	Critical Storm for this AEP and Burst Duration
1% AEP, 30 min burst, Storm 9	0.099	
1% AEP, 30 min burst, Storm 10	0.09	
1% AEP, 45 min burst, Storm 1	0.109	
1% AEP, 45 min burst, Storm 2	0.099	
1% AEP, 45 min burst, Storm 3	0.075	
1% AEP, 45 min burst, Storm 4	0.092	
1% AEP, 45 min burst, Storm 5	0.086	Critical Storm for this AEP and Burst Duration
1% AEP, 45 min burst, Storm 6	0.069	
1% AEP, 45 min burst, Storm 7	0.075	
1% AEP, 45 min burst, Storm 8	0.095	
1% AEP, 45 min burst, Storm 9	0.061	
1% AEP, 45 min burst, Storm 10	0.083	

1% AEP, 1 hour burst, Storm 1	0.097	
1% AEP, 1 hour burst, Storm 2	0.085	
1% AEP, 1 hour burst, Storm 3	0.064	
1% AEP, 1 hour burst, Storm 4	0.071	Critical Storm for this AEP and Burst Duration
1% AEP, 1 hour burst, Storm 5	0.054	
1% AEP, 1 hour burst, Storm 6	0.08	
1% AEP, 1 hour burst, Storm 7	0.059	
1% AEP, 1 hour burst, Storm 8	0.067	
1% AEP, 1 hour burst, Storm 9	0.071	
1% AEP, 1 hour burst, Storm 10	0.063	
1% AEP, 1.5 hour burst, Storm 1	0.051	
1% AEP, 1.5 hour burst, Storm 2	0.062	
1% AEP, 1.5 hour burst, Storm 3	0.061	Critical Storm for this AEP and Burst Duration
1% AEP, 1.5 hour burst, Storm 4	0.05	
1% AEP, 1.5 hour burst, Storm 5	0.059	
1% AEP, 1.5 hour burst, Storm 6	0.062	
1% AEP, 1.5 hour burst, Storm 7	0.056	
1% AEP, 1.5 hour burst, Storm 8	0.067	
1% AEP, 1.5 hour burst, Storm 9	0.059	
1% AEP, 1.5 hour burst, Storm 10	0.063	
1% AEP, 2 hour burst, Storm 1	0.055	
1% AEP, 2 hour burst, Storm 2	0.043	
1% AEP, 2 hour burst, Storm 3	0.045	
1% AEP, 2 hour burst, Storm 4	0.045	
1% AEP, 2 hour burst, Storm 5	0.054	
1% AEP, 2 hour burst, Storm 6	0.051	
1% AEP, 2 hour burst, Storm 7	0.037	
1% AEP, 2 hour burst, Storm 8	0.038	
1% AEP, 2 hour burst, Storm 9	0.047	Critical Storm for this AEP and Burst Duration
1% AEP, 2 hour burst, Storm 10	0.053	
1% AEP, 3 hour burst, Storm 1	0.041	
1% AEP, 3 hour burst, Storm 2	0.036	
1% AEP, 3 hour burst, Storm 3	0.046	
1% AEP, 3 hour burst, Storm 4	0.036	
1% AEP, 3 hour burst, Storm 5	0.029	
1% AEP, 3 hour burst, Storm 6	0.037	Critical Storm for this AEP and Burst Duration
1% AEP, 3 hour burst, Storm 7	0.025	

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1% AEP, 3 hour burst, Storm 8	0.048	
1% AEP, 3 hour burst, Storm 9	0.026	
1% AEP, 3 hour burst, Storm 10	0.053	
1% AEP, 4.5 hour burst, Storm 1	0.033	
1% AEP, 4.5 hour burst, Storm 2	0.025	
1% AEP, 4.5 hour burst, Storm 3	0.027	
1% AEP, 4.5 hour burst, Storm 4	0.028	
1% AEP, 4.5 hour burst, Storm 5	0.029	Critical Storm for this AEP and Burst Duration
1% AEP, 4.5 hour burst, Storm 6	0.033	
1% AEP, 4.5 hour burst, Storm 7	0.027	
1% AEP, 4.5 hour burst, Storm 8	0.024	
1% AEP, 4.5 hour burst, Storm 9	0.032	
1% AEP, 4.5 hour burst, Storm 10	0.033	

TSA Engineering and Design

Drains Output 42 Markwell – Modified Post Dev

Q2 Peak Flows for Outlet to 42 Markwell St		
Storm	Peak Flow (cu.m/s)	
50% AEP, 5 min burst, Storm 1	0.02	Critical Storm for this AEP and Burst Duration
50% AEP, 10 min burst, Storm 1	0.02	
50% AEP, 10 min burst, Storm 2	0.019	
50% AEP, 10 min burst, Storm 3	0.019	
50% AEP, 10 min burst, Storm 4	0.025	
50% AEP, 10 min burst, Storm 5	0.021	
50% AEP, 10 min burst, Storm 6	0.022	
50% AEP, 10 min burst, Storm 7	0.019	
50% AEP, 10 min burst, Storm 8	0.023	
50% AEP, 10 min burst, Storm 9	0.02	
50% AEP, 10 min burst, Storm 10	0.02	Critical Storm for this AEP and Burst Duration
50% AEP, 15 min burst, Storm 1	0.018	
50% AEP, 15 min burst, Storm 2	0.02	Critical Storm for this AEP and Burst Duration
50% AEP, 15 min burst, Storm 3	0.019	
50% AEP, 15 min burst, Storm 4	0.019	
50% AEP, 15 min burst, Storm 5	0.019	
50% AEP, 15 min burst, Storm 6	0.02	
50% AEP, 15 min burst, Storm 7	0.021	
50% AEP, 15 min burst, Storm 8	0.021	
50% AEP, 15 min burst, Storm 9	0.024	
50% AEP, 15 min burst, Storm 10	0.026	
50% AEP, 20 min burst, Storm 1	0.019	
50% AEP, 20 min burst, Storm 2	0.018	
50% AEP, 20 min burst, Storm 3	0.017	
50% AEP, 20 min burst, Storm 4	0.019	
50% AEP, 20 min burst, Storm 5	0.018	
50% AEP, 20 min burst, Storm 6	0.019	Critical Storm for this AEP and Burst Duration
50% AEP, 20 min burst, Storm 7	0.022	
50% AEP, 20 min burst, Storm 8	0.018	
50% AEP, 20 min burst, Storm 9	0.021	
50% AEP, 20 min burst, Storm 10	0.026	

50% AEP, 25 min burst, Storm 1	0.018	
50% AEP, 25 min burst, Storm 2	0.018	
50% AEP, 25 min burst, Storm 3	0.018	
50% AEP, 25 min burst, Storm 4	0.018	
50% AEP, 25 min burst, Storm 5	0.022	
50% AEP, 25 min burst, Storm 6	0.019	
50% AEP, 25 min burst, Storm 7	0.02	Critical Storm for this AEP and Burst Duration
50% AEP, 25 min burst, Storm 8	0.02	
50% AEP, 25 min burst, Storm 9	0.024	
50% AEP, 25 min burst, Storm 10	0.022	
50% AEP, 30 min burst, Storm 1	0.025	
50% AEP, 30 min burst, Storm 2	0.016	
50% AEP, 30 min burst, Storm 3	0.016	
50% AEP, 30 min burst, Storm 4	0.019	
50% AEP, 30 min burst, Storm 5	0.018	
50% AEP, 30 min burst, Storm 6	0.019	
50% AEP, 30 min burst, Storm 7	0.022	
50% AEP, 30 min burst, Storm 8	0.021	
50% AEP, 30 min burst, Storm 9	0.019	Critical Storm for this AEP and Burst Duration
50% AEP, 30 min burst, Storm 10	0.02	
50% AEP, 45 min burst, Storm 1	0.018	
50% AEP, 45 min burst, Storm 2	0.016	
50% AEP, 45 min burst, Storm 3	0.015	
50% AEP, 45 min burst, Storm 4	0.017	Critical Storm for this AEP and Burst Duration
50% AEP, 45 min burst, Storm 5	0.018	
50% AEP, 45 min burst, Storm 6	0.015	
50% AEP, 45 min burst, Storm 7	0.015	
50% AEP, 45 min burst, Storm 8	0.017	
50% AEP, 45 min burst, Storm 9	0.02	
50% AEP, 45 min burst, Storm 10	0.019	
50% AEP, 1 hour burst, Storm 1	0.018	
50% AEP, 1 hour burst, Storm 2	0.012	
50% AEP, 1 hour burst, Storm 3	0.014	
50% AEP, 1 hour burst, Storm 4	0.015	
50% AEP, 1 hour burst, Storm 5	0.016	
50% AEP, 1 hour burst, Storm 6	0.016	
50% AEP, 1 hour burst, Storm 7	0.016	Critical Storm for this AEP and Burst Duration

50% AEP, 1 hour burst, Storm 8	0.013	
50% AEP, 1 hour burst, Storm 9	0.019	
50% AEP, 1 hour burst, Storm 10	0.016	
50% AEP, 1.5 hour burst, Storm 1	0.013	
50% AEP, 1.5 hour burst, Storm 2	0.015	Critical Storm for this AEP and Burst Duration
50% AEP, 1.5 hour burst, Storm 3	0.016	
50% AEP, 1.5 hour burst, Storm 4	0.011	
50% AEP, 1.5 hour burst, Storm 5	0.019	
50% AEP, 1.5 hour burst, Storm 6	0.011	
50% AEP, 1.5 hour burst, Storm 7	0.013	
50% AEP, 1.5 hour burst, Storm 8	0.011	
50% AEP, 1.5 hour burst, Storm 9	0.017	
50% AEP, 1.5 hour burst, Storm 10	0.015	
50% AEP, 2 hour burst, Storm 1	0.011	
50% AEP, 2 hour burst, Storm 2	0.01	
50% AEP, 2 hour burst, Storm 3	0.01	
50% AEP, 2 hour burst, Storm 4	0.01	
50% AEP, 2 hour burst, Storm 5	0.015	
50% AEP, 2 hour burst, Storm 6	0.013	
50% AEP, 2 hour burst, Storm 7	0.014	
50% AEP, 2 hour burst, Storm 8	0.014	
50% AEP, 2 hour burst, Storm 9	0.011	
50% AEP, 2 hour burst, Storm 10	0.012	Critical Storm for this AEP and Burst Duration
50% AEP, 3 hour burst, Storm 1	0.012	
50% AEP, 3 hour burst, Storm 2	0.011	
50% AEP, 3 hour burst, Storm 3	0.015	
50% AEP, 3 hour burst, Storm 4	0.008	
50% AEP, 3 hour burst, Storm 5	0.01	Critical Storm for this AEP and Burst Duration
50% AEP, 3 hour burst, Storm 6	0.009	
50% AEP, 3 hour burst, Storm 7	0.007	
50% AEP, 3 hour burst, Storm 8	0.008	
50% AEP, 3 hour burst, Storm 9	0.01	
50% AEP, 3 hour burst, Storm 10	0.012	
50% AEP, 4.5 hour burst, Storm 1	0.011	
50% AEP, 4.5 hour burst, Storm 2	0.006	
50% AEP, 4.5 hour burst, Storm 3	0.01	
50% AEP, 4.5 hour burst, Storm 4	0.005	

50% AEP, 4.5 hour burst, Storm 5	0.008	
50% AEP, 4.5 hour burst, Storm 6	0.01	
50% AEP, 4.5 hour burst, Storm 7	0.009	Critical Storm for this AEP and Burst Duration
50% AEP, 4.5 hour burst, Storm 8	0.007	
50% AEP, 4.5 hour burst, Storm 9	0.009	
50% AEP, 4.5 hour burst, Storm 10	0.01	

Q100 Peak Flows for Outlet to 42 Markwell St		
Storm	Peak Flow (cu.m/s)	
1% AEP, 5 min burst, Storm 1	0.065	Critical Storm for this AEP and Burst Duration
1% AEP, 10 min burst, Storm 1	0.065	
1% AEP, 10 min burst, Storm 2	0.071	
1% AEP, 10 min burst, Storm 3	0.065	
1% AEP, 10 min burst, Storm 4	0.074	
1% AEP, 10 min burst, Storm 5	0.072	
1% AEP, 10 min burst, Storm 6	0.073	
1% AEP, 10 min burst, Storm 7	0.072	Critical Storm for this AEP and Burst Duration
1% AEP, 10 min burst, Storm 8	0.068	
1% AEP, 10 min burst, Storm 9	0.082	
1% AEP, 10 min burst, Storm 10	0.064	
1% AEP, 15 min burst, Storm 1	0.081	
1% AEP, 15 min burst, Storm 2	0.085	Critical Storm for this AEP and Burst Duration
1% AEP, 15 min burst, Storm 3	0.078	
1% AEP, 15 min burst, Storm 4	0.083	
1% AEP, 15 min burst, Storm 5	0.088	
1% AEP, 15 min burst, Storm 6	0.087	
1% AEP, 15 min burst, Storm 7	0.084	
1% AEP, 15 min burst, Storm 8	0.091	
1% AEP, 15 min burst, Storm 9	0.088	
1% AEP, 15 min burst, Storm 10	0.083	
1% AEP, 20 min burst, Storm 1	0.085	
1% AEP, 20 min burst, Storm 2	0.109	
1% AEP, 20 min burst, Storm 3	0.077	
1% AEP, 20 min burst, Storm 4	0.077	

1% AEP, 20 min burst, Storm 5	0.083	
1% AEP, 20 min burst, Storm 6	0.084	Critical Storm for this AEP and Burst Duration
1% AEP, 20 min burst, Storm 7	0.082	
1% AEP, 20 min burst, Storm 8	0.087	
1% AEP, 20 min burst, Storm 9	0.081	
1% AEP, 20 min burst, Storm 10	0.098	
1% AEP, 25 min burst, Storm 1	0.074	
1% AEP, 25 min burst, Storm 2	0.101	
1% AEP, 25 min burst, Storm 3	0.076	
1% AEP, 25 min burst, Storm 4	0.087	
1% AEP, 25 min burst, Storm 5	0.084	Critical Storm for this AEP and Burst Duration
1% AEP, 25 min burst, Storm 6	0.084	
1% AEP, 25 min burst, Storm 7	0.081	
1% AEP, 25 min burst, Storm 8	0.094	
1% AEP, 25 min burst, Storm 9	0.083	
1% AEP, 25 min burst, Storm 10	0.102	
1% AEP, 30 min burst, Storm 1	0.082	Critical Storm for this AEP and Burst Duration
1% AEP, 30 min burst, Storm 2	0.08	
1% AEP, 30 min burst, Storm 3	0.108	
1% AEP, 30 min burst, Storm 4	0.075	
1% AEP, 30 min burst, Storm 5	0.065	
1% AEP, 30 min burst, Storm 6	0.073	
1% AEP, 30 min burst, Storm 7	0.082	
1% AEP, 30 min burst, Storm 8	0.087	
1% AEP, 30 min burst, Storm 9	0.092	
1% AEP, 30 min burst, Storm 10	0.078	
1% AEP, 45 min burst, Storm 1	0.099	
1% AEP, 45 min burst, Storm 2	0.075	
1% AEP, 45 min burst, Storm 3	0.062	
1% AEP, 45 min burst, Storm 4	0.08	
1% AEP, 45 min burst, Storm 5	0.074	
1% AEP, 45 min burst, Storm 6	0.062	
1% AEP, 45 min burst, Storm 7	0.062	
1% AEP, 45 min burst, Storm 8	0.071	Critical Storm for this AEP and Burst Duration
1% AEP, 45 min burst, Storm 9	0.056	
1% AEP, 45 min burst, Storm 10	0.064	
1% AEP, 1 hour burst, Storm 1	0.09	

1% AEP, 1 hour burst, Storm 2	0.077	
1% AEP, 1 hour burst, Storm 3	0.059	Critical Storm for this AEP and Burst Duration
1% AEP, 1 hour burst, Storm 4	0.057	
1% AEP, 1 hour burst, Storm 5	0.05	
1% AEP, 1 hour burst, Storm 6	0.067	
1% AEP, 1 hour burst, Storm 7	0.053	
1% AEP, 1 hour burst, Storm 8	0.047	
1% AEP, 1 hour burst, Storm 9	0.064	
1% AEP, 1 hour burst, Storm 10	0.053	
1% AEP, 1.5 hour burst, Storm 1	0.039	
1% AEP, 1.5 hour burst, Storm 2	0.057	
1% AEP, 1.5 hour burst, Storm 3	0.057	
1% AEP, 1.5 hour burst, Storm 4	0.046	
1% AEP, 1.5 hour burst, Storm 5	0.054	Critical Storm for this AEP and Burst Duration
1% AEP, 1.5 hour burst, Storm 6	0.052	
1% AEP, 1.5 hour burst, Storm 7	0.036	
1% AEP, 1.5 hour burst, Storm 8	0.048	
1% AEP, 1.5 hour burst, Storm 9	0.056	
1% AEP, 1.5 hour burst, Storm 10	0.058	
1% AEP, 2 hour burst, Storm 1	0.051	
1% AEP, 2 hour burst, Storm 2	0.038	
1% AEP, 2 hour burst, Storm 3	0.042	
1% AEP, 2 hour burst, Storm 4	0.044	
1% AEP, 2 hour burst, Storm 5	0.049	
1% AEP, 2 hour burst, Storm 6	0.048	
1% AEP, 2 hour burst, Storm 7	0.034	
1% AEP, 2 hour burst, Storm 8	0.034	
1% AEP, 2 hour burst, Storm 9	0.044	Critical Storm for this AEP and Burst Duration
1% AEP, 2 hour burst, Storm 10	0.05	
1% AEP, 3 hour burst, Storm 1	0.039	
1% AEP, 3 hour burst, Storm 2	0.03	
1% AEP, 3 hour burst, Storm 3	0.035	
1% AEP, 3 hour burst, Storm 4	0.033	Critical Storm for this AEP and Burst Duration
1% AEP, 3 hour burst, Storm 5	0.026	
1% AEP, 3 hour burst, Storm 6	0.033	
1% AEP, 3 hour burst, Storm 7	0.02	
1% AEP, 3 hour burst, Storm 8	0.044	
1% AEP, 3 hour burst, Storm 9	0.023	

1% AEP, 3 hour burst, Storm 10	0.048	
1% AEP, 4.5 hour burst, Storm 1	0.031	
1% AEP, 4.5 hour burst, Storm 2	0.02	
1% AEP, 4.5 hour burst, Storm 3	0.023	
1% AEP, 4.5 hour burst, Storm 4	0.021	
1% AEP, 4.5 hour burst, Storm 5	0.027	
1% AEP, 4.5 hour burst, Storm 6	0.021	
1% AEP, 4.5 hour burst, Storm 7	0.025	Critical Storm for this AEP and Burst Duration
1% AEP, 4.5 hour burst, Storm 8	0.022	
1% AEP, 4.5 hour burst, Storm 9	0.029	
1% AEP, 4.5 hour burst, Storm 10	0.032	

TSA Engineering and Design

Drains Output 40 Markwell

Q2 Peak Flows for Outlet to 40 Markwell St		
Storm	Peak Flow	
	(cu.m/s)	
50% AEP, 5 min burst, Storm 1	0.012	Critical Storm for this AEP and Burst Duration
50% AEP, 10 min burst, Storm 1	0.017	Critical Storm for this AEP and Burst Duration
50% AEP, 10 min burst, Storm 2	0.017	
50% AEP, 10 min burst, Storm 3	0.017	
50% AEP, 10 min burst, Storm 4	0.019	
50% AEP, 10 min burst, Storm 5	0.017	
50% AEP, 10 min burst, Storm 6	0.018	
50% AEP, 10 min burst, Storm 7	0.017	
50% AEP, 10 min burst, Storm 8	0.018	
50% AEP, 10 min burst, Storm 9	0.016	
50% AEP, 10 min burst, Storm 10	0.017	
50% AEP, 15 min burst, Storm 1	0.017	
50% AEP, 15 min burst, Storm 2	0.018	
50% AEP, 15 min burst, Storm 3	0.018	
50% AEP, 15 min burst, Storm 4	0.018	
50% AEP, 15 min burst, Storm 5	0.018	
50% AEP, 15 min burst, Storm 6	0.019	Critical Storm for this AEP and Burst Duration
50% AEP, 15 min burst, Storm 7	0.019	
50% AEP, 15 min burst, Storm 8	0.019	
50% AEP, 15 min burst, Storm 9	0.021	
50% AEP, 15 min burst, Storm 10	0.021	
50% AEP, 20 min burst, Storm 1	0.018	
50% AEP, 20 min burst, Storm 2	0.017	
50% AEP, 20 min burst, Storm 3	0.018	
50% AEP, 20 min burst, Storm 4	0.019	
50% AEP, 20 min burst, Storm 5	0.018	
50% AEP, 20 min burst, Storm 6	0.019	Critical Storm for this AEP and Burst Duration
50% AEP, 20 min burst, Storm 7	0.019	
50% AEP, 20 min burst, Storm 8	0.018	
50% AEP, 20 min burst, Storm 9	0.02	
50% AEP, 20 min burst, Storm 10	0.022	

50% AEP, 25 min burst, Storm 1	0.018	
50% AEP, 25 min burst, Storm 2	0.018	
50% AEP, 25 min burst, Storm 3	0.018	
50% AEP, 25 min burst, Storm 4	0.018	
50% AEP, 25 min burst, Storm 5	0.02	
50% AEP, 25 min burst, Storm 6	0.018	
50% AEP, 25 min burst, Storm 7	0.019	Critical Storm for this AEP and Burst Duration
50% AEP, 25 min burst, Storm 8	0.02	
50% AEP, 25 min burst, Storm 9	0.022	
50% AEP, 25 min burst, Storm 10	0.021	
50% AEP, 30 min burst, Storm 1	0.023	
50% AEP, 30 min burst, Storm 2	0.017	
50% AEP, 30 min burst, Storm 3	0.017	
50% AEP, 30 min burst, Storm 4	0.018	
50% AEP, 30 min burst, Storm 5	0.018	
50% AEP, 30 min burst, Storm 6	0.017	
50% AEP, 30 min burst, Storm 7	0.02	
50% AEP, 30 min burst, Storm 8	0.019	
50% AEP, 30 min burst, Storm 9	0.019	Critical Storm for this AEP and Burst Duration
50% AEP, 30 min burst, Storm 10	0.02	
50% AEP, 45 min burst, Storm 1	0.017	
50% AEP, 45 min burst, Storm 2	0.014	
50% AEP, 45 min burst, Storm 3	0.015	
50% AEP, 45 min burst, Storm 4	0.016	
50% AEP, 45 min burst, Storm 5	0.017	Critical Storm for this AEP and Burst Duration
50% AEP, 45 min burst, Storm 6	0.016	
50% AEP, 45 min burst, Storm 7	0.016	
50% AEP, 45 min burst, Storm 8	0.018	
50% AEP, 45 min burst, Storm 9	0.019	
50% AEP, 45 min burst, Storm 10	0.019	
50% AEP, 1 hour burst, Storm 1	0.016	Critical Storm for this AEP and Burst Duration
50% AEP, 1 hour burst, Storm 2	0.013	
50% AEP, 1 hour burst, Storm 3	0.014	
50% AEP, 1 hour burst, Storm 4	0.016	
50% AEP, 1 hour burst, Storm 5	0.015	
50% AEP, 1 hour burst, Storm 6	0.017	
50% AEP, 1 hour burst, Storm 7	0.017	

50% AEP, 1 hour burst, Storm 8	0.014	
50% AEP, 1 hour burst, Storm 9	0.018	
50% AEP, 1 hour burst, Storm 10	0.017	
50% AEP, 1.5 hour burst, Storm 1	0.011	
50% AEP, 1.5 hour burst, Storm 2	0.013	
50% AEP, 1.5 hour burst, Storm 3	0.015	
50% AEP, 1.5 hour burst, Storm 4	0.012	
50% AEP, 1.5 hour burst, Storm 5	0.018	
50% AEP, 1.5 hour burst, Storm 6	0.01	
50% AEP, 1.5 hour burst, Storm 7	0.013	Critical Storm for this AEP and Burst Duration
50% AEP, 1.5 hour burst, Storm 8	0.011	
50% AEP, 1.5 hour burst, Storm 9	0.016	
50% AEP, 1.5 hour burst, Storm 10	0.016	
50% AEP, 2 hour burst, Storm 1	0.01	
50% AEP, 2 hour burst, Storm 2	0.007	
50% AEP, 2 hour burst, Storm 3	0.01	
50% AEP, 2 hour burst, Storm 4	0.009	
50% AEP, 2 hour burst, Storm 5	0.014	
50% AEP, 2 hour burst, Storm 6	0.013	
50% AEP, 2 hour burst, Storm 7	0.013	
50% AEP, 2 hour burst, Storm 8	0.011	
50% AEP, 2 hour burst, Storm 9	0.012	Critical Storm for this AEP and Burst Duration
50% AEP, 2 hour burst, Storm 10	0.014	
50% AEP, 3 hour burst, Storm 1	0.012	
50% AEP, 3 hour burst, Storm 2	0.011	
50% AEP, 3 hour burst, Storm 3	0.014	
50% AEP, 3 hour burst, Storm 4	0.008	
50% AEP, 3 hour burst, Storm 5	0.011	Critical Storm for this AEP and Burst Duration
50% AEP, 3 hour burst, Storm 6	0.01	
50% AEP, 3 hour burst, Storm 7	0.006	
50% AEP, 3 hour burst, Storm 8	0.007	
50% AEP, 3 hour burst, Storm 9	0.011	
50% AEP, 3 hour burst, Storm 10	0.013	
50% AEP, 4.5 hour burst, Storm 1	0.011	
50% AEP, 4.5 hour burst, Storm 2	0.005	
50% AEP, 4.5 hour burst, Storm 3	0.009	
50% AEP, 4.5 hour burst, Storm 4	0.004	

50% AEP, 4.5 hour burst, Storm 5	0.008	
50% AEP, 4.5 hour burst, Storm 6	0.009	
50% AEP, 4.5 hour burst, Storm 7	0.01	
50% AEP, 4.5 hour burst, Storm 8	0.007	
50% AEP, 4.5 hour burst, Storm 9	0.009	Critical Storm for this AEP and Burst Duration
50% AEP, 4.5 hour burst, Storm 10	0.009	

Q100 Peak Flows for Outlet to 40 Markwell St		
Storm	Peak Flow (cu.m/s)	
1% AEP, 5 min burst, Storm 1	0.055	Critical Storm for this AEP and Burst Duration
1% AEP, 10 min burst, Storm 1	0.087	
1% AEP, 10 min burst, Storm 2	0.091	
1% AEP, 10 min burst, Storm 3	0.087	
1% AEP, 10 min burst, Storm 4	0.093	
1% AEP, 10 min burst, Storm 5	0.093	
1% AEP, 10 min burst, Storm 6	0.093	
1% AEP, 10 min burst, Storm 7	0.092	Critical Storm for this AEP and Burst Duration
1% AEP, 10 min burst, Storm 8	0.089	
1% AEP, 10 min burst, Storm 9	0.098	
1% AEP, 10 min burst, Storm 10	0.086	
1% AEP, 15 min burst, Storm 1	0.097	Critical Storm for this AEP and Burst Duration
1% AEP, 15 min burst, Storm 2	0.096	
1% AEP, 15 min burst, Storm 3	0.087	
1% AEP, 15 min burst, Storm 4	0.091	
1% AEP, 15 min burst, Storm 5	0.102	
1% AEP, 15 min burst, Storm 6	0.099	
1% AEP, 15 min burst, Storm 7	0.093	
1% AEP, 15 min burst, Storm 8	0.116	
1% AEP, 15 min burst, Storm 9	0.101	
1% AEP, 15 min burst, Storm 10	0.093	
1% AEP, 20 min burst, Storm 1	0.095	
1% AEP, 20 min burst, Storm 2	0.115	
1% AEP, 20 min burst, Storm 3	0.085	
1% AEP, 20 min burst, Storm 4	0.085	

1% AEP, 20 min burst, Storm 5	0.09	
1% AEP, 20 min burst, Storm 6	0.092	Critical Storm for this AEP and Burst Duration
1% AEP, 20 min burst, Storm 7	0.089	
1% AEP, 20 min burst, Storm 8	0.092	
1% AEP, 20 min burst, Storm 9	0.089	
1% AEP, 20 min burst, Storm 10	0.101	
1% AEP, 25 min burst, Storm 1	0.085	
1% AEP, 25 min burst, Storm 2	0.109	
1% AEP, 25 min burst, Storm 3	0.084	
1% AEP, 25 min burst, Storm 4	0.09	
1% AEP, 25 min burst, Storm 5	0.09	Critical Storm for this AEP and Burst Duration
1% AEP, 25 min burst, Storm 6	0.088	
1% AEP, 25 min burst, Storm 7	0.08	
1% AEP, 25 min burst, Storm 8	0.097	
1% AEP, 25 min burst, Storm 9	0.088	
1% AEP, 25 min burst, Storm 10	0.1	
1% AEP, 30 min burst, Storm 1	0.074	
1% AEP, 30 min burst, Storm 2	0.085	Critical Storm for this AEP and Burst Duration
1% AEP, 30 min burst, Storm 3	0.104	
1% AEP, 30 min burst, Storm 4	0.073	
1% AEP, 30 min burst, Storm 5	0.076	
1% AEP, 30 min burst, Storm 6	0.088	
1% AEP, 30 min burst, Storm 7	0.082	
1% AEP, 30 min burst, Storm 8	0.087	
1% AEP, 30 min burst, Storm 9	0.09	
1% AEP, 30 min burst, Storm 10	0.083	
1% AEP, 45 min burst, Storm 1	0.094	
1% AEP, 45 min burst, Storm 2	0.084	
1% AEP, 45 min burst, Storm 3	0.064	
1% AEP, 45 min burst, Storm 4	0.08	
1% AEP, 45 min burst, Storm 5	0.075	Critical Storm for this AEP and Burst Duration
1% AEP, 45 min burst, Storm 6	0.061	
1% AEP, 45 min burst, Storm 7	0.069	
1% AEP, 45 min burst, Storm 8	0.077	
1% AEP, 45 min burst, Storm 9	0.056	
1% AEP, 45 min burst, Storm 10	0.071	
1% AEP, 1 hour burst, Storm 1	0.084	

1% AEP, 1 hour burst, Storm 2	0.076	
1% AEP, 1 hour burst, Storm 3	0.058	
1% AEP, 1 hour burst, Storm 4	0.064	Critical Storm for this AEP and Burst Duration
1% AEP, 1 hour burst, Storm 5	0.05	
1% AEP, 1 hour burst, Storm 6	0.069	
1% AEP, 1 hour burst, Storm 7	0.053	
1% AEP, 1 hour burst, Storm 8	0.054	
1% AEP, 1 hour burst, Storm 9	0.064	
1% AEP, 1 hour burst, Storm 10	0.052	
1% AEP, 1.5 hour burst, Storm 1	0.042	
1% AEP, 1.5 hour burst, Storm 2	0.053	Critical Storm for this AEP and Burst Duration
1% AEP, 1.5 hour burst, Storm 3	0.058	
1% AEP, 1.5 hour burst, Storm 4	0.046	
1% AEP, 1.5 hour burst, Storm 5	0.05	
1% AEP, 1.5 hour burst, Storm 6	0.055	
1% AEP, 1.5 hour burst, Storm 7	0.045	
1% AEP, 1.5 hour burst, Storm 8	0.048	
1% AEP, 1.5 hour burst, Storm 9	0.056	
1% AEP, 1.5 hour burst, Storm 10	0.057	
1% AEP, 2 hour burst, Storm 1	0.046	
1% AEP, 2 hour burst, Storm 2	0.039	
1% AEP, 2 hour burst, Storm 3	0.041	
1% AEP, 2 hour burst, Storm 4	0.04	
1% AEP, 2 hour burst, Storm 5	0.049	
1% AEP, 2 hour burst, Storm 6	0.047	
1% AEP, 2 hour burst, Storm 7	0.033	
1% AEP, 2 hour burst, Storm 8	0.035	
1% AEP, 2 hour burst, Storm 9	0.043	Critical Storm for this AEP and Burst Duration
1% AEP, 2 hour burst, Storm 10	0.049	
1% AEP, 3 hour burst, Storm 1	0.037	
1% AEP, 3 hour burst, Storm 2	0.031	
1% AEP, 3 hour burst, Storm 3	0.039	
1% AEP, 3 hour burst, Storm 4	0.034	Critical Storm for this AEP and Burst Duration
1% AEP, 3 hour burst, Storm 5	0.027	
1% AEP, 3 hour burst, Storm 6	0.033	
1% AEP, 3 hour burst, Storm 7	0.022	
1% AEP, 3 hour burst, Storm 8	0.041	
1% AEP, 3 hour burst, Storm 9	0.024	

1% AEP, 3 hour burst, Storm 10	0.046	
1% AEP, 4.5 hour burst, Storm 1	0.028	
1% AEP, 4.5 hour burst, Storm 2	0.022	
1% AEP, 4.5 hour burst, Storm 3	0.021	
1% AEP, 4.5 hour burst, Storm 4	0.025	Critical Storm for this AEP and Burst Duration
1% AEP, 4.5 hour burst, Storm 5	0.026	
1% AEP, 4.5 hour burst, Storm 6	0.024	
1% AEP, 4.5 hour burst, Storm 7	0.023	
1% AEP, 4.5 hour burst, Storm 8	0.02	
1% AEP, 4.5 hour burst, Storm 9	0.03	
1% AEP, 4.5 hour burst, Storm 10	0.03	

Delegated Authority: Date:

0.0 RECONFIGURATION OF A LOT - SUBDIVISION (1 LOT INTO 5 LOTS) AT D'AGUILAR HIGHWAY & PARSONS ROAD, NANANGO (AND DESCRIBED AS LOT 120 ON SP119862). APPLICANT: G BAILEY & M BAYLIS C/- ONF SU

		DATE
~~MANAGER~~ Coordin	[redacted]	01/09/23
~~GM~~		
CEO		19-2023

File Number: **RAL22/0042**

Author: **Planning Consultant**

Authoriser: **Chief Executive Officer**

PRECIS

Reconfiguration of a Lot – Subdivision (1 Lot into 5 Lots) at D'Aguilar Highway and Parsons Road, Nanango (and described as Lot 120 on SP119862). Applicant: G Bailey & M Baylis C/- ONF Surveyors

SUMMARY

- Initial proposal was for Reconfiguration of a Lot – Subdivision (1 Lot into 10 Lots) at D'Aguilar Highway and Parsons Road.
- Proposed lots determined to be consistent with the Rural Residential Zone's minimum lot size requirements (per SBRC Planning Scheme v1.4).
- Proposal triggered Code level of assessment.
- The subject site is 56.1 hectares in area.
- Council issued an information request on 18 January 2023 seeking clarification on the following:
  - Sight Distances and Access – access via D'Aguilar Hwy inappropriate for newly created allotments, access required comply with SBRC Standard Drawings.
  - Residential Amenity – subdivision plan initially lodged (29 Nov 22) proposed Lots 1 & 2 directly front D'Aguilar Hwy. Initial assessment determined that proposed Lots 1 & 2 may suffer inappropriate amenity outcomes generally expected within the Rural Residential Zone.
  - Bushfire Hazard – report lodged with the initial application required amendments (report to be updated to include building location envelopes).
  - Biodiversity/Protected Vegetation – initial assessment determined that fragmenting protected vegetation (on site) should be minimised. It was Council's preference to retain protected vegetation in a single lot. Matters also raised regarding minimisation of vegetation removal which was likely a cause for significant design amendments.
- On 13 June 2023, applicant provided an information request response addressing Council's issues, correspondence included applicant letter outlining nature of the response and supporting technical documentation.
- Proposed development underwent significant amendments in response to issues raised in Council's information request (10 lots down to 5 lots).
- Pursuant to Schedule 2 of the *Planning Act 2016* applicant claimed changes were technically not minor (to the application). Assessment of the changes identified that contrary to the applicant's claims, proposed changes are minor as follows:
  - respond to compliance matters identified in by Council and Concurrence agency.
  - significantly reduce potential impacts identified in the initial proposal.
  - on basis of preceding two points can continue into the Decision Stage pursuant to the DA Rules.
- Application was referred to State Assessment & Referral Agency (SARA) for concurrence agency assessment for the following:
  - Department of Transport & Main Roads – information request issued regarding inappropriate access to D'Aguilar Hwy & matters relating to noised attenuation for future residential use. On 29 June Department of Transport and Main Roads approved a revised subdivision plan 10550P/3.
  - Ergon Energy – on 15 December 2022 Ergon Energy provided 'advice agency' approval for subdivision drawing 10550P/2. Final subdivision layout was lodged on 13 June 2023 and hence Ergon Energy was notified of changes on 17 July 2023.

Delegated Authority: Date:

- The development application is assessed against the relevant codes of the South Burnett Regional Council Planning Scheme. Relevant codes including:
  - Rural Residential Zone Code.
  - Reconfiguring a Lot Code
  - Services and Works Code
- The application has been assessed and the proposal meets planning scheme assessment benchmarks or has been conditioned to comply (refer to Attachment A - statement of reasons)
- Refer Attachment B – Infrastructure Charged Notice
- Refer Attachment C – Approved Plans
- Refer Attachment D & E – Referral Agency Responses
- Application recommended for approval subject to reasonable and relevant conditions.

OFFICER'S RECOMMENDATION
Application to be approved subject to reasonable and relevant conditions.

GENERAL
GEN1. The development must be completed and maintained in accordance with the approved plans and documents and conditions to this development approval:

Drawing Title	Prepared by	Ref no.	Sheet	Date
Proposed Subdivision	ONF Surveyors	10550P/3	1 of 1	22/03/2023

DEVELOPMENT PERIOD – RAL
GEN2. The currency period for this development approval for reconfiguring a lot is four (4) years after the development approval starts to have effect. The development approval will lapse unless the survey plan for all works and stages required to be given to Council for approval is provided within this period.

GEN3. All lots must provide site access to respective roads as shown on the approved subdivision plan 10550P/3 prepared by ONF Surveyors.

RAL GENERAL
RAL1. Any new earthworks or structures are not to concentrate or impede the natural flow of water across property boundaries and onto any other lots.

RAL2. All conditions of this approval are to be satisfied prior to Council endorsing the Survey Plan, and it is the applicant's responsibility to notify Council to inspect where compliance with conditions is required.

A fee will be charged, with payment required prior to Council's approval of the associated documentation requiring assessment.

RAL3. Building location envelopes are to be shown on the survey plan submitted for plan sealing.

Timing – Prior to survey plan sealing/endorsement.

RAL4. All future owners of Lots 6,7,8, & 9 are to be notified of requirements to locate all future development within the building Location envelopes as shown on the ONF subdivision plan 10550P/3.

Timing – at all times.

RAL5. Development of the site is to generally accord with recommendations set out in the *Range Environmental Consultants* – Bushfire Management Report Version 2 dated 7 June 2023.

Delegated Authority: Date:

Timing – at all times.

RAL6. A suitably qualified professional is to submit confirmation to Council that recommendations in the *Range Environmental Consultants* – Bushfire Management Report Version 2 dated 7 June 2023 are incorporated into the development.

Timing – Prior to survey plan sealing/endorsement.

RAL7. Mapped vegetation identified on the ONF subdivision plan 10550P/3 must be retained at all times unless undertaking required management endorsed by a suitably qualified professional.

Timing – as indicated.

RAL8. At all times provide notification to relevant authorities of intended maintenance within mapped vegetation areas shown on ONF subdivision plan 10550P/3. Notification to be provided by a suitably qualified professional and in accordance with applicable regulatory requirements. Where maintenance relates to Bushfire Management this should be clearly stated.

Timing – as indicated.

RAL9. Future dwellings must be provided with a 45kl potable water tank on approved lots 6, 7, 8, & 9 in accordance with the South Burnett Regional Council Planning Scheme or superseding document in effect at the time of development.

Timing – Prior to the issue of a Building Approval for a future Dwelling on the approved lots.

RAL10. Existing and future dwellings must either retain or provide a 25kl water tank within 10m of any existing or future dwelling.

Timing – Prior to the issue of a Building Approval for a future Dwelling or application to sealing of a survey plan for existing residential use(s).

RAL11. Provide documentary evidence that existing dwelling house on Lot 10 retains water services to an adequate standard. Where deemed to have insufficient services Lot 10 must provide water services in accordance with RAL9 & RAL10.

Timing – Prior to survey plan sealing/endorsement.

RAL12. Prior to survey plan endorsement enter into an agreement with 'electricity' and 'telecommunications' distributor/retailer for provision of services to Lots 6,7,8, & 9 and demonstrate that Lot 10 is provided with adequate electrical and telecommunication services.

Timing – Prior to survey plan sealing/endorsement.

RAL13. Prior to sealing the Plan of Survey the applicant is required to pay the Council all rates and charges or any expenses being charged over the subject land under any Act in accordance with Schedule 18 Section 69 of the *Planning Act Regulation 2017*.

Timing – as indicated.

RAL14. Prior to the sealing of the Plan of Survey the applicant is to provide a certificate signed by a licensed surveyor stating that after the completion of all works associated with the

Delegated Authority: Date:

reconfiguration, survey marks were reinstated where necessary and all survey marks are in their correct position in accordance with the Plan of Survey.

Timing – as indicated.

RAL15. Submit for Council's records an erosion and sediment control plan prepared by a suitably qualified person (required for works associated with RAL and subsequent uses i.e. building pads/earthworks etc).

Timing – Prior to survey plan sealing/endorsement.

LOCATION, PROTECTION AND REPAIR OF DAMAGE TO COUNCIL AND PUBLIC UTILITY SERVICES INFRASTRUCTURE AND ASSETS

ENG1. Be responsible for the location and protection of any Council and public utility services infrastructure and assets that may be impacted on during construction of the development.

Timing – at all times.

ENG2. Repair all damages incurred to Council and public utility services infrastructure and assets, as a result of the proposed development immediately should hazards exist for public health and safety or vehicular safety. Otherwise, repair all damages immediately upon completion of works associated with the development.

Timing – Prior to survey plan sealing/endorsement.

ENG3. Stormwater discharge from the site must not result in ponding, or concentration of water that creates a nuisance, or adversely affects other landowners, or road reserves.

Timing – Ongoing.

ON-SITE WASTEWATER DISPOSAL

ENG4. Future Dwellings must be connected to an on-site wastewater disposal system, in accordance with AS 1547 and the Queensland Plumbing and Wastewater Code.

Timing - Prior to the issue of a Building Approval for a future Dwelling on the proposed lots.

VEHICLE ACCESS

ENG5. Design and construct a crossover in accordance with Council's Standard Drawing SBRC 00049, to access proposed Lots 6,7,8, & 9.

Timing – Prior to survey plan sealing/endorsement.

ENG6. Implement recommendations regarding management of sight distance as outlined in the ATC Consulting Engineers – Sight Distance Report Version 3 dated 9 June 2023. Provide certification from an RPEQ that recommended measures to manage sight distance issues are installed as necessary.

Timing – Prior to survey plan sealing/endorsement.

TELECOMMUNICATION

ENG7. Design and provide telecommunications to all lots within the development.

ELECTRICITY

ENG8. Design and provide electricity supply to all lots within the development to comply with Ergon Energy's requirements.

Delegated Authority: Date:

ENG9. Submit to Council, written confirmation from an electricity provider that an agreement has been made for the supply of electricity, and where staged, written confirmation is required for each stage of the development.

SERVICES - EXISTING CONNECTIONS

ENG10. Ensure that all services provided to the existing house on proposed Lot 15 are wholly located within the lot(s) it serves.

EARTHWORKS - GENERAL

ENG11. Earthworks per site involving cut or fill greater than 1 metre in height and quantity of material greater than 50m^3, requires an Operational Work application.

ENG12. Ensure that each lot is self-draining.

EROSION AND SEDIMENT CONTROL - GENERAL

ENG13. Ensure that all reasonable actions are taken to prevent sediment or sediment laden water from being transported to adjoining properties, roads and/or stormwater drainage systems.

ADVICE

ADV1. This development approval does not authorise any activity that may harm Aboriginal Cultural Heritage. Under the *Aboriginal Cultural Heritage Act 2003* you have a duty of care in relation to such heritage. Section 23(1) provides that "A person who carries out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal Cultural Heritage." Council does not warrant that the approved development avoids affecting Aboriginal Cultural Heritage. It may therefore, be prudent for you to carry out searches, consultation, or a Cultural Heritage assessment to ascertain the presence or otherwise of Aboriginal Cultural Heritage. The Act and the associated duty of care guidelines explain your obligations in more detail and should be consulted before proceeding. A search can be arranged by visiting and filling out the Aboriginal and Torres Strait Islander Cultural Heritage Search Request Form.

APPEAL RIGHTS

ADV2. Attached for your information is a copy of Chapter 6 of the *Planning Act 2016* as regards Appeal Rights.

INFRASTRUCTURE CHARGES

ADV3. Infrastructure charges are now levied by way of an infrastructure charges notice, issued pursuant to section 119 of the *Planning Act 2016*.

DEVELOPMENT INCENTIVE SCHEME

ADV4. Council is offering a reduction infrastructure charges payable through the development incentive scheme which is available between 1 December 2020 and 30 December 2023. Eligible development under this scheme is required to be completed by 30 December 2023.

For further information or application form please refer to the rules and procedures available on Council's website.

VALUATION FEES

ADV5. Payment of *Department of Natural Resources and Mines* valuation fee that will result from the issue of split valuations prior to Council sealing the Survey Plan. The contribution is currently assessed at $260.00 (5 x $52.00); however, the actual amount payable will be based on Council's Register of Regulatory & Cost-Recovery Fees and the rate applicable at the time of payment.

TELECOMMUNICATIONS CONNECTIONS

Delegated Authority: Date:

ADV6. Telecommunication connections can be arranged by logging onto Telstra's website (http://www.telstra.com.au/smart-community/developers/index.htm) and completing the 'Application for Reticulation'.

ELECTRICITY RETICULATION SERVICES

ADV7. Council would encourage you to discuss the development with Ergon Energy upon receipt of this approval to facilitate the timely supply of electricity to the development. Connection of electricity can take up to eight (8) months from the date of application to Ergon Energy.

FINANCIAL AND RESOURCE IMPLICATIONS

No implication can be identified.

LINK TO CORPORATE/OPERATIONAL PLAN

Growing our Region's Economy and Prosperity

- GR8 Support and advocate for appropriate growth and development with responsive planning schemes, process, customer service and other initiatives.

COMMUNICATION/CONSULTATION (INTERNAL/EXTERNAL)

Refer to CONSULTATION in this report.

LEGAL IMPLICATIONS (STATUTORY BASIS, LEGAL RISKS)

No implication identified.

POLICY/LOCAL LAW/DELEGATION IMPLICATIONS

No implication can be identified.

ASSET MANAGEMENT IMPLICATIONS

No implication can be identified.

Delegated Authority: Date:

REPORT

1. APPLICATION DETAILS

Site address	D'Aguilar Highway/Parsons Rd Nanango		
Real property description	Lot 120 on SP119862		
Easements or encumbrances on title	Ergon Energy Power Transmission Corridor		
Area of Site	56.11 hectares		
Current Use	Rural Residential		
Environmental Management Register or Contaminated Land Register	N/A		
Applicant's name	G Bailey & M Baylis C/ONF Surveyors		
Zone	Rural Residential		
Applicable Overlays	OM2 – Bushfire Hazard OM4 – Regional Infrastructure OM5 – Biodiversity Areas		
Proposed use as defined	Rural Residential		
Details of proposal	Reconfiguring a Lot (RALs)		
	• Number of existing lots	1 Lot	
	• Easements or leases proposed	NIL	
	• Number of proposed lots	5 Lots (as amended)	
	• Lot areas in hectares	2.0 (x2), 4.3, 7.5, & 40.3	
	• Access	• Via D'Aguilar Hwy (existing access). • Parsons Rd (New lots 6,7,8, & 9).	
Application type	Aspects of Development	Type of Approval Requested	
		Preliminary Approval	Development Permit
	Material Change of Use (MCU)		
	Reconfiguration of a Lot (RAL)		X
	Building Work (BW)		
	Operational Work (OPW)		
Level of Assessment	Code Assessment		
Pre-lodgement / Consultation history	No Pre-lodgement		
Key planning issues e.g. vegetation, waterway corridors, overland flow	• Access to a State Controlled Road. • Bushfire Hazard. • Biodiversity (protected vegetation).		
Referral agencies	Agency	Concurrence/ Advice	
	Department of Transport & Main Roads (DTMR)	Concurrence Agency	
	Ergon Energy	Advice Agency	

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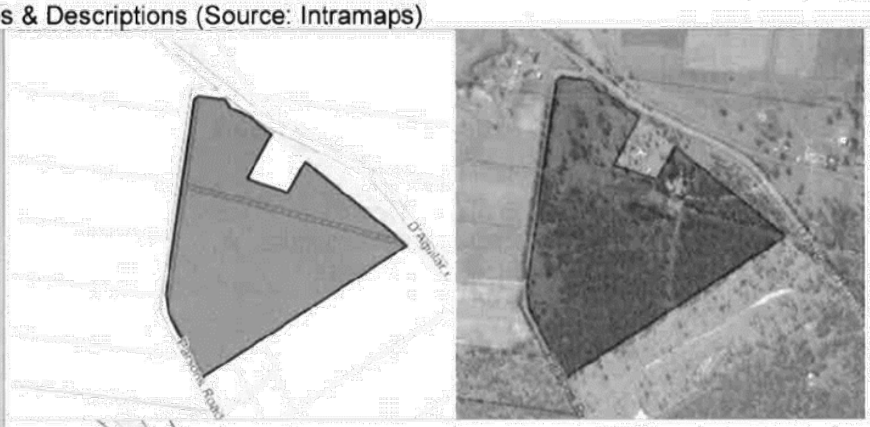
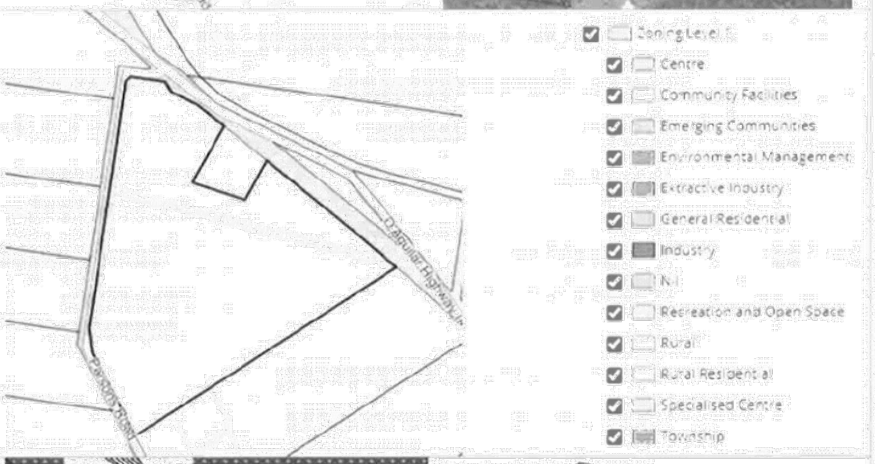
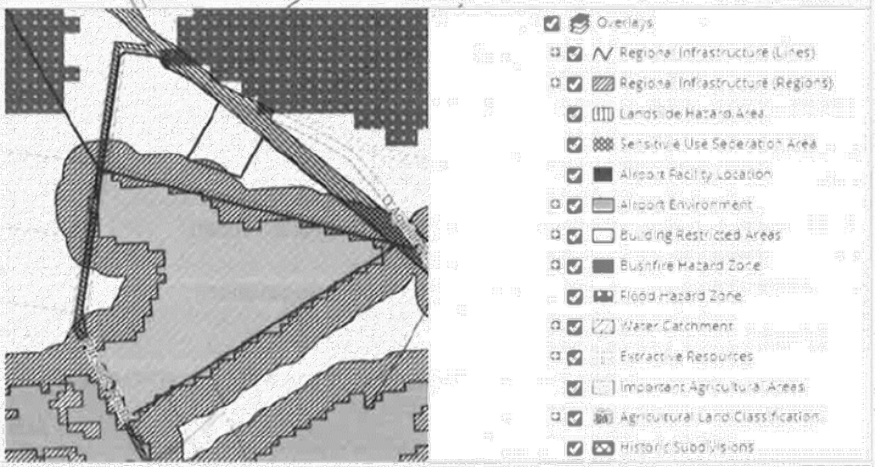
Public notification	N/A
Planning Regulation 2017	N/A

2. THE SITE

This section of the report provides a description of the site, details about the existing use and notable characteristics of the site, the standard of servicing, and the form of development in the immediately locality.

2.1. SITE DESCRIPTION & EXISTING USE

Table 1 – Maps & Descriptions (Source: Intramaps)

Site	
Zoning	
Overlays	

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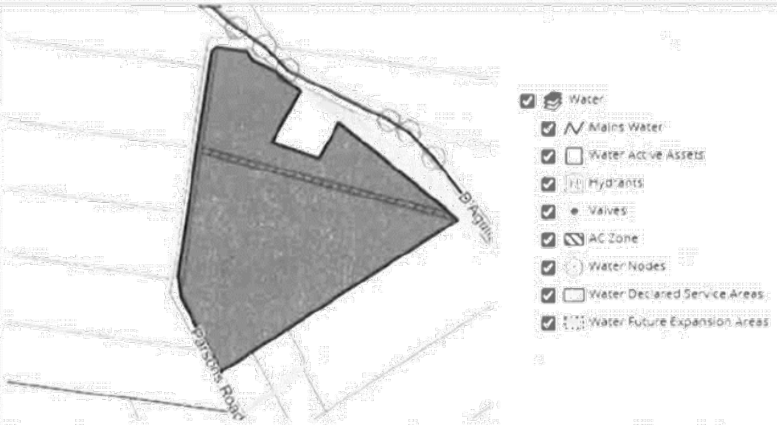
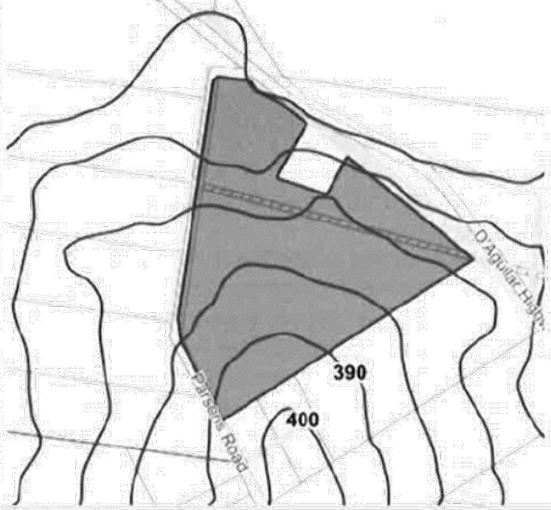
Services	 No reticulated services for Stormwater or Sewerage are available
Topography	

3. PROPOSAL DETAILS

The proposal plans as set out in Table 1 below are included in.

SUMMARY DETAILS

Tenancies	Not Applicable – RAL
Gross Floor Area + Outdoor Storage Area	Not Applicable – RAL
Building height	Not Applicable – RAL
Storeys (height)	Not Applicable – RAL
Site Cover	Not Applicable – RAL
Impervious Area	8,966 sqm based on existing use on the site.
Landscape	Existing protected vegetation stands
Number of parking spaces	Not Applicable – RAL
Access	• Existing access retained off D'Aguilar Hwy. • New lots via Parsons Rd.
Design Vehicle	Anticipated: • Car • Van • MRV

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Setbacks	Not Applicable – RAL
Materials	Not Applicable – RAL

4. ASSESSMENT OF ASSESSMENT BENCHMARKS

Framework for Assessment
Categorising Instruments for Statutory Assessment

For the *Planning Act 2016*, the following Categorising Instruments may contain Assessment Benchmarks applicable to development applications:

- the *Planning Regulation 2017*
- the Planning Scheme for the local government area
- any Temporary Local Planning Instrument
- any Variation Approval

Of these, the planning instruments relevant to this application are discussed in this report.

Planning Act 2016, Section 26 – Assessment Benchmarks generally

(1) For section 45(3)(a) of the Act, the code assessment must be carried out against the assessment benchmarks for the development stated in schedules 9 and 10.

(2) Also, if the prescribed assessment manager is the local government, the code assessment must be carried out against the following assessment benchmarks—

(a) the assessment benchmarks stated in—

(i) the regional plan for a region, to the extent the regional plan is not identified in the planning scheme as being appropriately integrated in the planning scheme; and

(ii) the State Planning Policy, part E, to the extent part E is not identified in the planning scheme as being appropriately integrated in the planning scheme; and

(iii) a temporary State planning policy applying to the premises;

(b) if the local government is an infrastructure provider—the local government's LGIP.

(3) However, an assessment manager may, in assessing development requiring code assessment, consider an assessment benchmark only to the extent the assessment benchmark is relevant to the development.

4.1. PLANNING REGULATION 2017

The Planning Regulation 2017 forms the mechanism by which the provisions of the Act are administered. In particular, the Regulation can regulate and prohibit development and determines the assessment manager and the matters that trigger State interests.

PLANNING REGULATION 2017 DETAILS	
Assessment Benchmarks:	Schedule 12A Walkable Neighbourhoods – considered too broad considering proposal is 'very low density Residential' in nature.
WBB Regional Plan Designation:	Wide Bay Burnett Regional Plan 2011 – Regional Landscape & Rural Production Area (RLRPA) The RLRPA is a representation of: • Land generally considered appropriate for Rural/Agricultural use to which retention of large lots is preferred. • Land possessing other natural/physical features that may need to be retained in larger lots. Notwithstanding RLRPA Area intent the SBRC Planning scheme v1.4 identified this site as Rural Residential hence the subdivision proposed is consistent with relevant assessment benchmarks. Assessment of the application also noted the following:

Delegated Authority: Date:

	• Development site is close to a well-developed Rural Residential neighbourhood (east of site) with recent subdivision approvals on adjoining land. • Given proximity to Residential Use and consequential amenity expectations its likely this site could only support limited activities associated with rural use. • Approximately half of the site retains Native Vegetation – Categories A & B of concern regional ecosystems. The applicant final proposal received 13 June 2023 retains most of this vegetation within a large balance lot (40ha in area). On this basis the development meets RLRPA by retaining regionally significant vegetation which is part of this 'Landscape'.
Adopted Economic Support Instrument	Under section 68E of the Planning Regulation 2017 that on 24 February 2021, South Burnett Regional Council adopted an economic support instrument. The instrument is in effect until 31st December 2023 **Economic support provisions** 4.1. The instrument applies the following provisions in accordance with section 68D(1) of the *Planning Regulation 2017*: 4.1.1. Part 8B, Division 3 – Development that requires code assessment; 4.1.2. Schedule 6, Part 2, Section 7A – Particular material change of use involving an existing building, and 4.1.3. Schedule 6, Part 2, Section 7B – Material change of use for home-based business in particular zones. The adopted instrument does not change the categories of development and assessment in the Planning Scheme v1.4

4.2. REFERRAL AGENCIES

To determine whether the development application requires referral to the State Assessment and Referral Agency (SARA) or 'another entity', an assessment of the proposal against Schedule 10 of the Regulation has been undertaken.

The application does require referral to any referral agencies prescribed under Schedule 10, as demonstrated in Table 3.

Note: Grey shading indicates no provisions.

Table 3 - Matters Prescribed in Schedule 10 of the Planning Regulation

Part	Matter	Applicability to this Development Application	Prohibited Development	Assessable Development	Referral Agency	Assessment Benchmarks / Matters to be assessed against
1	Airport Land	N/A		N/A	N/A	N/A
2	Brothels	N/A	N/A	N/A		N/A
3	Clearing Native Vegetation	N/A	N/A	N/A	N/A	N/A
4	Contaminated Land	N/A		N/A	N/A	N/A
5	Environmentally Relevant Activity	N/A	N/A	N/A	N/A	N/A
6	Fisheries: - Aquaculture - Declared Fish Habitat - Marine Plants - Waterway Barrier works	 N/A N/A N/A N/A		N/A	N/A	N/A

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Table 3 - Matters Prescribed in Schedule 10 of the Planning Regulation						
Part	Matter	Applicability to this Development Application	Prohibited Development	Assessable Development	Referral Agency	Assessment Benchmarks / Matters to be assessed against
7	Hazardous Chemical Facilities	N/A		N/A	N/A	N/A
8	Heritage Place: - Local Heritage Place - Queensland Heritage Place	N/A		N/A	N/A	N/A
9	Infrastructure Related: - Designated Premises - Electricity - Oil and Gas - State Transport Corridors and Future State Transport Corridors - State-controlled transport tunnels and future state-controlled transport tunnels	 N/A N/A **Yes** N/A **Yes**			N/A	N/A
10	Koala Habitat in SEQ region	N/A	N/A			N/A
11	Noise Sensitive Place on Noise Attenuation land	N/A	N/A			
12	Operational Work for Reconfiguring a Lot	N/A		N/A		
12A	Walkable Neighbourhoods – particular reconfiguring a lot	N/A		N/A		N/A
13	Ports: - Brisbane Core Port Land - Within the port limits of the Port of Brisbane - Within the limits of another port - Strategic Port Land	 N/A N/A N/A N/A		N/A	N/A	N/A

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