ROCKHAMPTON REGIONAL COUNCIL

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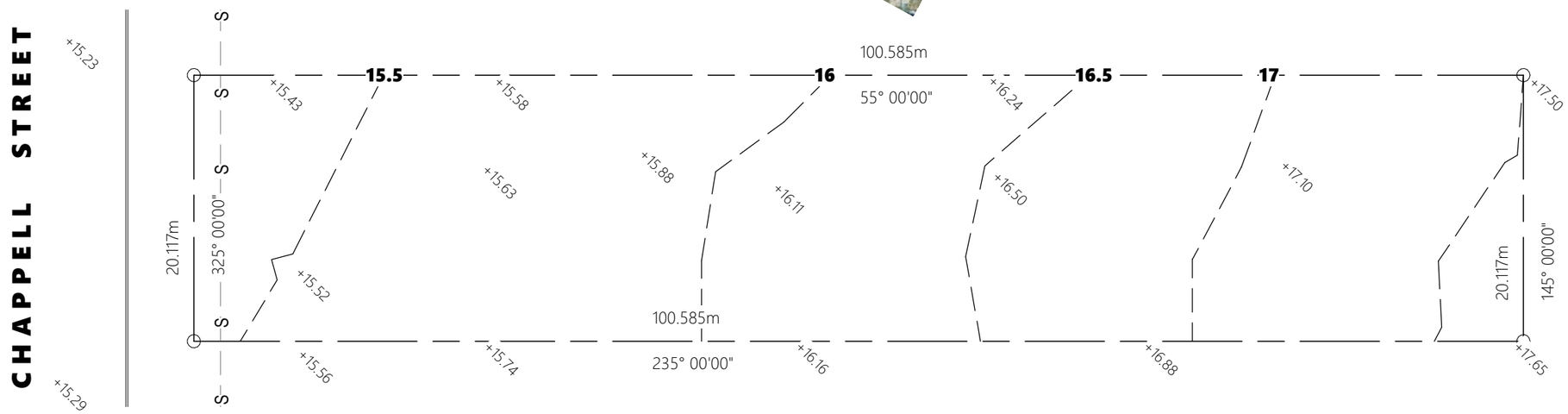
Dated: 31 July 2024



Site Plan - Levels

1 : 400

DO NOT SCALE DRAWING

ALL DIMENSION IN MILLIMETERS

REVISIONS

No:	Description:	Date:
-	-	-

ISSUED FOR

PRELIMINARY

Project:

PROPOSED DEVELOPMENT

Address:

10 CHAPPELL STREET, KAWANA

Drawing Title:

EXISTING SITE PLAN

dezignelements BUILDING DESIGNERS

0407 271 336 **M**

info@dezignelements.com.au **E**

QBCC No: 1247120 BDAQ No: 0001677

Scale:	1 : 400	Rev:	-
Date:	FEB 2024		
Drawn:	NJB		
Project No:	24_011	Drawing No:	S-03

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AREA LEGEND	2,023 m²
BUILDING	776 m²
CONCRETE PARKING / DRIVEWAYS	785 m²
CONCRETE PATHS	33 m²
GRASS / VEGITATION	360 m²
PLANTING	69 m²

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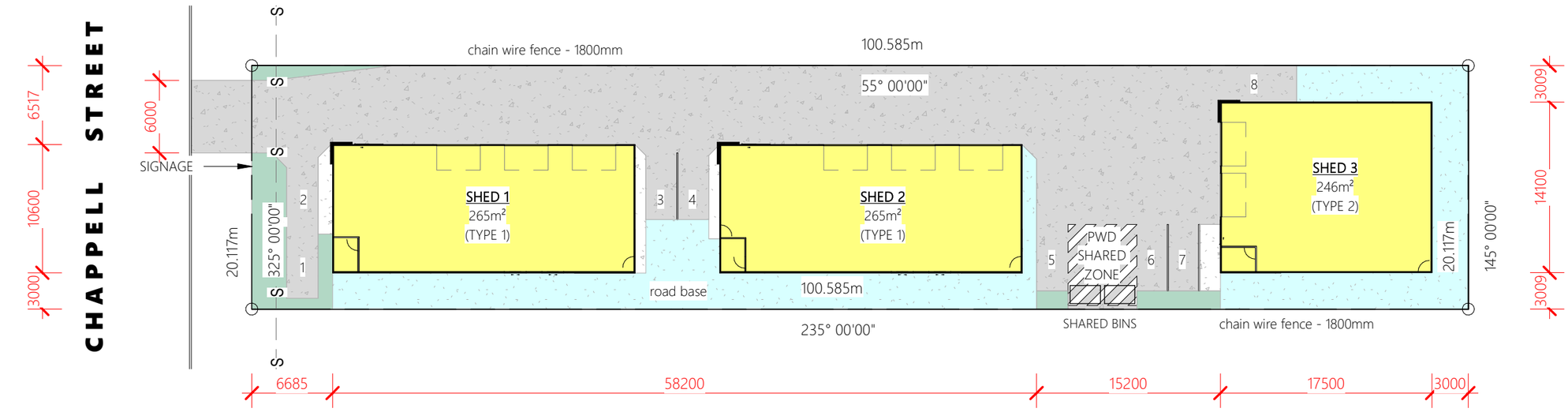

Proposed Site Plan

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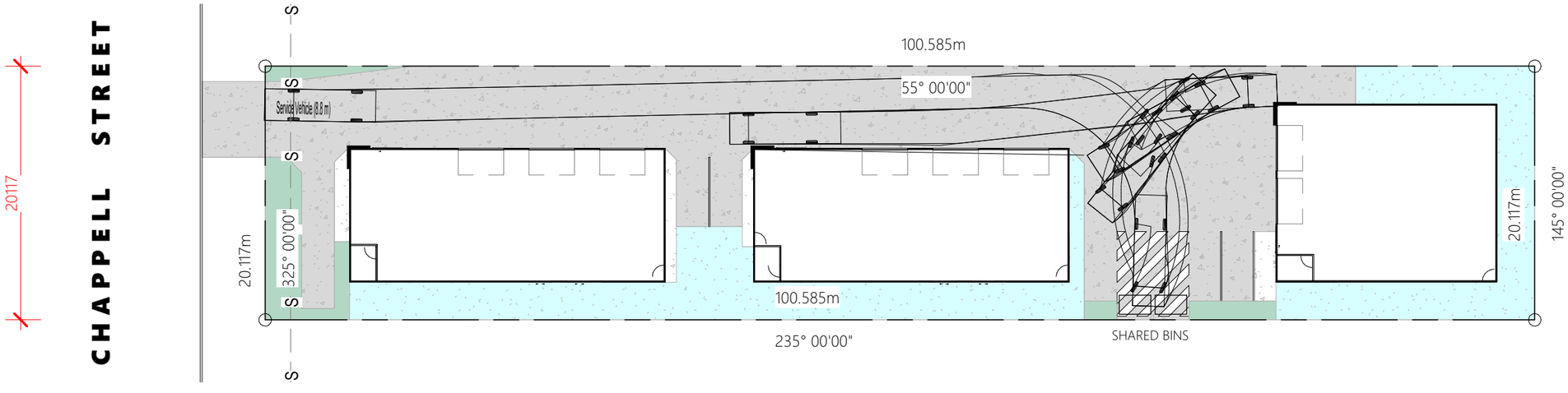

Proposed Site Plan - Rusbish Collection

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DO NOT SCALE DRAWING

ALL DIMENSION IN MILLIMETERS

No:	Description:	Date:
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REVISIONS

ISSUED FOR

PRELIMINARY

Project:

PROPOSED DEVELOPMENT

Address:

10 CHAPPELL STREET, KAWANA

Drawing Title:

PROPOSED SITE PLANS

dezignelements BUILDING DESIGNERS

0407 271 336 **M**

info@dezignelements.com.au **E**

QBCC No: 1247120 BDAQ No: 0001677

Scale:	1 : 400	Rev:
Date:	FEB 2024	-
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Project No:	Drawing No:
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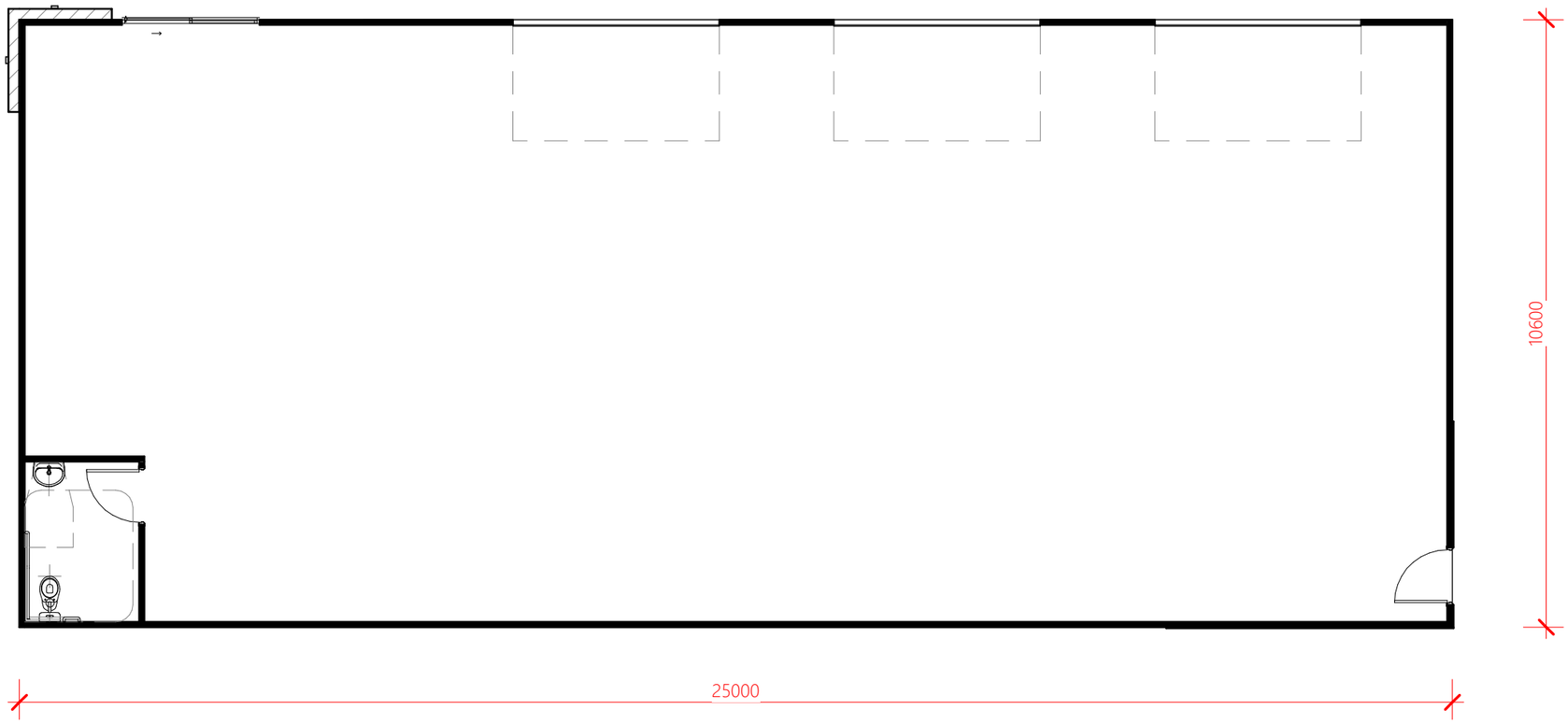

_Proposed Ground Floor - TYPE 1

1 : 100

DO NOT SCALE DRAWING

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No:	Description:	Date:
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REVISIONS

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Project:

PROPOSED DEVELOPMENT

Address:

10 CHAPPELL STREET, KAWANA

Drawing Title:

SHED FLOOR PLAN - TYPE 1

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Development Permit No.: D/14-2024

Dated: 31 July 2024

_Proposed Ground Floor - TYPE 2

1 : 100

DO NOT SCALE DRAWING

ALL DIMENSION IN MILLIMETERS

No:	Description:	Date:
-	-	-

REVISIONS

ISSUED FOR

PRELIMINARY

Project:

PROPOSED DEVELOPMENT

Address:

10 CHAPPELL STREET, KAWANA

Drawing Title:

SHED FLOOR PLAN - TYPE 2

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Date:	FEB 2024	-
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24_011	**S-06**

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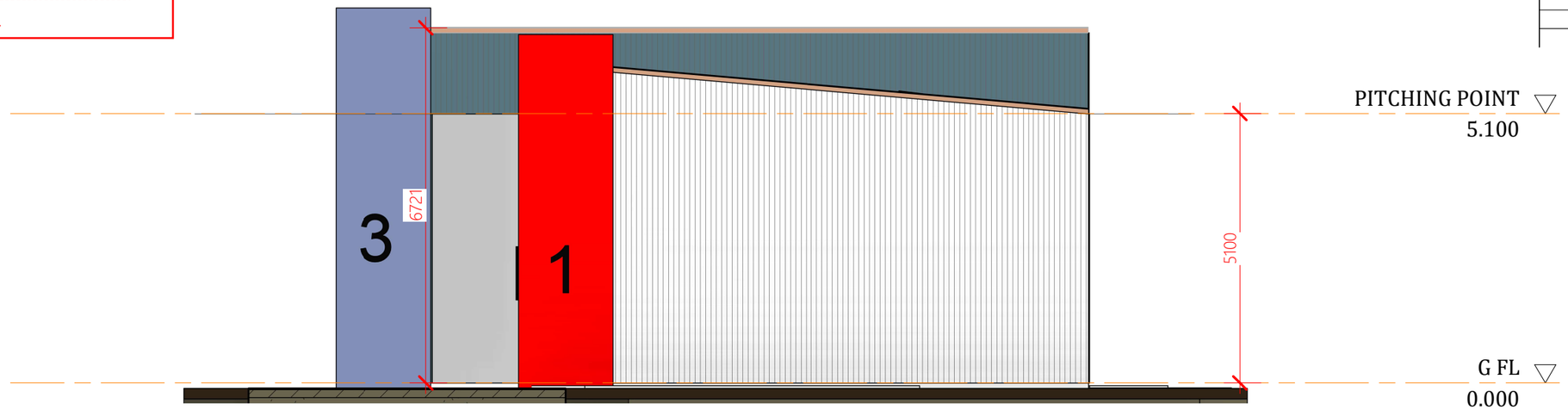

Elevation 1

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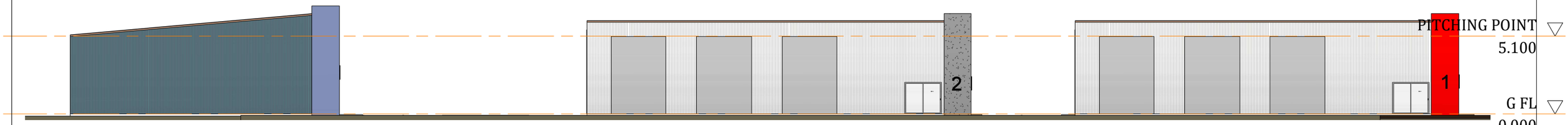

Elevation 2

1 : 250

ISSUED FOR

PRELIMINARY

Project:	Drawing Title:
PROPOSED DEVELOPMENT	**ELEVATIONS**
Address:	
10 CHAPPELL STREET, KAWANA	

dezignelements BUILDING DESIGNERS

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info@dezignelements.com.au E

QBCC No: 1247120 BDAQ No: 0001677

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Date:	FEB 2024	
Drawn:	Author	
Project No:	Drawing No:	
24_011	**S-07**	

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Development Permit No.: D/14-2024

Dated: 31 July 2024

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ALL DIMENSION IN MILLIMETERS

REVISIONS

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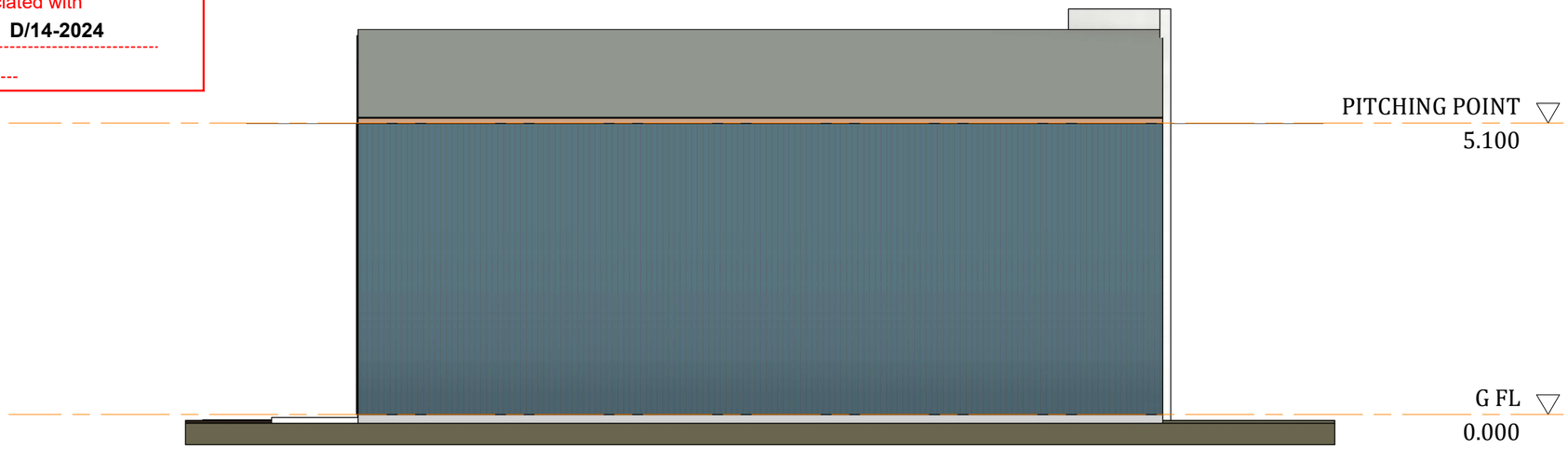

Elevation 3

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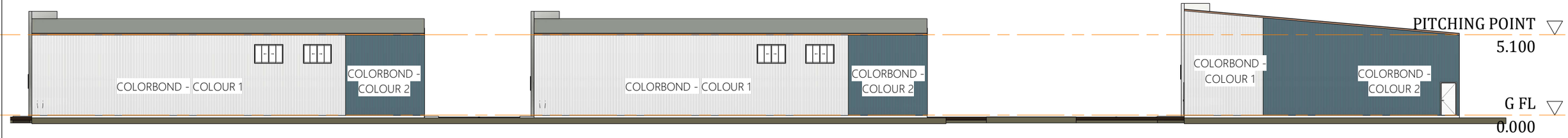

Elevation 4

1 : 250

ISSUED FOR

PRELIMINARY

Project: **PROPOSED DEVELOPMENT** Address: **10 CHAPPELL STREET, KAWANA**	Drawing Title: **ELEVATIONS**

dezignelements BUILDING DESIGNERS

0407 271 336 M

info@dezignelements.com.au E

QBCC No: 1247120 BDAQ No: 0001677

Scale:	As indicated	Rev:	
Date:	FEB 2024		
Drawn:	NJB		
Project No:	Drawing No:		
24_011	S-08		

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STORMWATER REPORT – Proposed Site Development Stormwater Management Report

Project Number:	24-245
Client:	Pavscorp
Site:	10 Chappell Street, Kawana QLD
Scope:	Stormwater Management Plan

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/14-2024

Dated: 31 July 2024

Rev No.	Revision	Author	RPEQ	Issue Date
A	Original Issue	Utkarsh Singh	Scott Thomas	13.05.2024
B	Revised Issue	Utkarsh Singh	Scott Thomas	31.05.2024
C	Council Revision	Utkarsh Singh	Scott Thomas	08.07.2024

Figure 1: Location of the Study Area at 10 Chappell Street Kawana QLD, Coordinates: 245345.33 m E, 7416787.71 m S, Zone- 56K

CONTENTS

1 INTRODUCTION

1.1 PROJECT OVERVIEW

Patcol Group Pty Ltd. has been engaged by Pavscorp to undertake a site-based Stormwater Management Plan (SMP) for a proposed shed. The site is located at 10 Chappell Street, Kawana QLD on Lot 69 on RP603516.

The aim of this SMP is to demonstrate that the proposed development will comply with Capricorn Municipal Development Guidelines (CMDG), Queensland Urban Drainage Manual (QUDM 2016), Australian Rainfall and Runoff 2016 (ARR'16) and State Planning Policy (SPP 2017).

1.2 METHODOLOGY

The assessment methodology adopted for this SMP is summarised below.

- Identify Lawful Point of Discharge (LPOD) for the site stormwater runoff.
- Identify the critical storm events.
- Estimate peak discharge runoff for pre-development and post-development scenarios.
- Identify potential mitigation and management strategies to ensure no worsening to downstream catchments and infrastructure.
- Assess the stormwater quality treatment requirements for the project.

1.3 DATA SOURCES

The background data used to undertake this assessment were collected from the following sources:

- ARR'16 data hub
    - Rainfall data
    - Design storm ensemble temporal patterns
- Rockhampton Council GIS data
    - 2016 LiDAR
    - Infrastructure GIS mapping
- Preliminary overall layout plan (completed by Dezign Elements)

2 SITE CHARACTERISTICS

2.1 LOCATION AND SITE TOPOGRAPHY

The site is located at 10 Chappell Street, Kawana QLD, described as Lot 31 RP812632 which falls under the medium impact industry and is bounded by Chappell Street to the southwest and existing industry lot to the southern side and eastern side and an empty parcel to the north, as illustrated in Figure 2.

Figure 2: Site Plan Showing Existing Site Conditions

Figure 2 shows the existing site having a major part as a grass cover. The existing grassed area is mostly sloped, generally falling from the northeastern corner to the southwestern corner at approximately 2.3%, and approximately levels ranging from RL17.5m to RL15.52m. The site is approximately 0.202 ha or 2023 m^2 in size.

2.2 CURRENT LAND USE AND STORMWATER DISCHARGE

The development site is currently unoccupied and consists of vegetation and open space grassed areas. According to the detailed survey stormwater runoff sheet flows across the site and discharges to Chappell Street. Based on the Council records and detailed survey there is a stormwater kerb infrastructure located within Chappell Street.

The current land use catchment area consists of the following areas (Refer to the table below);

Table 1 : Pre-Development Catchment Details

Pre- Development Areas (2,023 m^2)		
Impervious Area	0	0 %
Pervious Area	2,023 m^2	100 %

2.3 Proposed Land Use

The project consists of a warehouse development with associated hardstand and landscape areas. Refer to Appendix A of this report for the Architectural Layout. For catchment properties refer to the table below.

Table 2 : Post-Development Catchment Details

Post- Development Areas (2,023 m^2)		
Impervious Area	1,594 m^2	79 %
Pervious Area	429 m^2	21 %

2.4 Proposed Stormwater Discharge

It is proposed that development is split into two sub-catchments as shown in the Concept Stormwater Drainage Catchment Plan in Appendix C.

Catchment 1/A

Catchment 1/A consists of the warehouse roof area. The proposed roof area is to be captured by a series of gutters and downpipes and directed to the proposed above ground detention tanks. Flows over from the detention tanks will be conveyed to the kerb in Chappell Street.

Catchment 2/A

Catchment 2/A consists of the carpark, external upstream catchment, landscaping and concrete paths access around the warehouse. Flows from the catchment will be directed to a series of field inlet pits. All field inlets located on the site are to be fitted with SPEL Storm sack trash bag pre-treatment devices. The carpark area will act as a sheet flow overland to the kerb in Chappell Street.

Due to the absence of subsurface stormwater infrastructure, flows from both catchments will ultimately discharge to the site's lawful point of discharge, which is the kerb on Chappell Street as per the existing condition. Two discharge points are proposed within the kerb and channel to reduce the concentration of flows.

Refer to Appendix C for the Concept Stormwater Drainage Plan and Concept Stormwater Catchment Plan.

The stormwater management plan involves using ø100, ø150, and ø225 stormwater pipes to gather overflow from the above-ground detention tanks and sheet flow from the vegetation cover. The collected water will then be directed to the existing kerb (LPOD) separately located in a group of two 150mm x 100mm Rectangular Hollow Section (RHS) stormwater pipes from the stormwater pit number (7 and 8). Refer to Appendix C.

Figure 3: Proposed Development Plan & External Catchment Inflow

2.5 TOPOGRAPHY

A site survey data has been taken from the ELVIS website with existing contours of 0.2m & 1m.

2.6 EXTERNAL CATCHMENT

Based on the analysis of the surrounding area, it has been determined that there is an external catchment affecting the proposed development site. The external catchment only receives water from the existing grass cover at the back of the commercial building, as shown in Figure 3. The external catchment covers an area of approximately 0.032 hectares (ha) and is fed by overland flow along the eastern boundary of the site. However, there is a spoon drain in between the proposed site and the upstream catchment. This design has been taken considering the upstream catchment flow to the proposed site.

3 HYDROLOGY ASSESSMENT

3.1 LAWFUL POINT OF DISCHARGE (LPOD)

The proposed LPOD for the lot is to the existing kerb located at the front side of the property, with all discharge to the front of the lot into the kerb, which is under the lawful control of the local government and satisfies the requirements in accordance with QUDM.

3.2 HYDROLOGIC MODELLING APPROACH

Hydrologic calculations have been undertaken using EPASWMM 5.2 for pre and post-development scenarios. The modelling within the EPASWMM has been undertaken to estimate the peak discharge for storms up to 1% AEP with a 15% climate change factor. Hydrologic modelling has been undertaken using the Laurenson Runoff Routing Method. Laurenson's Method is a widely used hydrologic routing method that can be used for catchments ranging between $10m^2$ up to $20,000km^2$. The information required to apply Laurenson's Method include:

- Rainfall Intensity Data (obtained from the Bureau of Meteorology 2016 IFD utility)
- Rainfall Temporal Patterns (obtained from the ARR'16 Data Hub)
- Catchment Area (ha)
- Catchment Slope
- Initial and Continuing Infiltration Data
- Catchment Roughness (Manning's Coefficient)

Given the relatively limited scope of this hydraulic impact assessment, a lumped catchment approach as defined by ARR'16 and shown in Figure 4 below, was applied to the hydrologic review of the site. The lumped approach is suitable for this site given the relative consistency in land use and the ultimate purpose of the model.

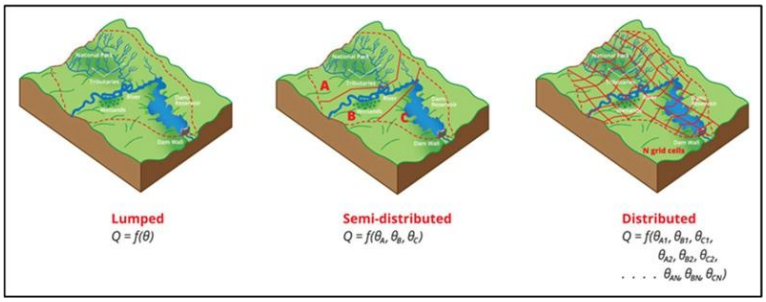

Figure 4: Lumped vs distributed catchment analysis options

Table 3 and Table 4 present the input data for the development site in pre-development and post-development conditions.

Table 3: Pre-development model parameters (EPA SWMM)

Pre-development sub-catchment parameters			
		Pervious	Impervious
Area (ha)		0.202	0
Percentage Impervious (%)		0	100
Manning's Coefficient		0.025	0.016
Paved area and Depression storage (mm)		0	1
Grassed area and Depression Storage (mm)		5	0
Storm Losses	Initial Losses (mm/hr)	0.005	0
	Continuing Losses (mm/hr)	0	0

Table 4: Post-development model parameters (EPA SWMM)

Post-development sub-catchment parameters			
		Pervious	Impervious
Area (ha)		0.0429	0.1594
Total Roof Area (ha)		0	0.0776
Concrete Driveway / Carpark + Concrete Path		0	0.0818
Percentage Impervious (%)		0	100
Manning's Coefficient		0.025	0.016
Paved area and Depression storage (mm)		0	1
Grassed area and Depression Storage (mm)		5	0
Storm Losses	Initial Losses (mm/hr)	0.005	0
	Continuing Losses (mm/hr)	0	0

3.3 Model Calibration

Rational Method calculations (refer to Appendix D) have been undertaken to provide peak flow rates to compare against the EPASWMM model which has been utilised to calculate the unmitigated post-development peak flow rates for the catchment.

The unmitigated post-development peak flows for the Catchments for both EPASWMM and the Rational Method are summarised in Table 3 following.

Table 5: Comparison between EPASWMM and Rational Method

Comparison between EPASWMM Model and Rational Method peak discharges			
	EPASWMM 15 minutes Flow (m3/s)	Rational Method 15 minutes Flow (m3/s)	Change (m3/s)
10% AEP (m3/s)	0.095	0.097	-0.002
1% AEP (m3/s)	0.178	0.177	+0.001

As demonstrated by Table 5 above, the Rational Method calculations and EPASWMM model yield net similar values and are considered comparable. As such, the EPASWMM values shall be adopted as the peak flow rates for the undeveloped site condition for the purposes of the subsequent analysis.

3.4 Pre-Development Information

Sub-catchment area (ha): 0.202

Hydrological Model: Horton

Time of Concentration (Impervious) 15 mins. (QUDM – Section 4.6)

Time of Concentration (Pervious) 15 mins. (QUDM – Section 4.6)

Table 6: Pre-Development Hydrological Model

	Paved	Grassed
Percentage of area (%)	0	100
Time of Concentration (mins)	15	15

3.5 Post-Development Information

Sub-catchment area (ha): 0.202

Hydrological Model: Horton

Time of Concentration (Impervious) 6 mins. (QUDM – Section 4.6)

Time of Concentration (Pervious) 6 mins. (QUDM – Section 4.6)

Table 7 : Post-Development Hydrological Model

	Paved	Grassed
Percentage of area (%)	79	21
Time of Concentration (mins)	6	6

3.6 Pre vs Post-Development Unmitigated Discharge

The pre-development and post-development results produced within "EPASWMM" using the Horton hydrological model have been compared in the table below:

Table 8: Pre vs Post-Development Unmitigated Discharge

Storm Event ARI (AEP)	Pre-Development Runoff (m^3/s)	Post-Development Unmitigated Runoff (m^3/s)	Peak Discharge Difference (m^3/s)
Q10 (10%) 10 min	0.0311	0.0691	+0.038
Q20 (5%) 10 min	0.0371	0.0822	+0.045
Q50 (2%) 10 min	0.0511	0.1171	+0.066
Q100 (1%) 10 min	0.0583	0.1295	+0.071

The above table demonstrates an increase in post-development peak discharge. A detention tank will be required to mitigate flows.

3.7 PRE VS POST-DEVELOPMENT MITIGATED DISCHARGE

Storm Event ARI (AEP)	Pre-Development Runoff (m^3/s)	Total Post-Development Mitigated Runoff (m^3/s) – including external catchment	Peak Discharge Difference – Mitigated (m^3/s)	Peak Discharge Difference-Unmitigated (m^3/s)	Post Development Unmitigated Flow Reduction
Q10 (10%) 10 min	0.0311	0.0386	+0.0075	+0.038	19%
Q20 (5%) 10 min	0.0371	0.0475	+0.0104	+0.045	23%
Q50 (2%) 10 min	0.0511	0.0693	+0.0182	+0.066	27%
Q100 (1%) 10 min	0.0583	0.0809	+0.0226	+0.071	31%

As demonstrated in the above table flows have been reduced in the post-development scenario. Whilst there is an increase in post-development the absence of Council underground infrastructure makes it difficult to capture and mitigate the ground level. Therefore, the implementation of the above-ground tank to mitigate flows from the roof is proposed to provide some reduction in the vicinity of 19-31%. The above table is based on a detention tank with the following characteristics to achieve the reduction of discharge.

Table 9: Detention Tank Parameters

Detention Tank Parameters	
Volume	$33m^3$ (11 x $3m^3$ Above Ground Tanks)
Outlet 1	100mm PVC Orifice IL = Base + 1850mm

4 HYDRAULICS

4.1 HYDRAULIC MODELLING APPROACH

The hydraulic assessment for the site has been carried out using EPASWMM 5.2. The aim of the hydraulic modelling is to demonstrate the post-development minor and major storm peak discharge at the LPOD.

The suggested stormwater management approach involves the implementation of a 4 x Ø 100 stormwater pipe, 1 x Ø 150 and 4x Ø 225 stormwater pipes that collect the shed's roof and proposed vegetation that also includes the external catchment runoff and deliver it to the LPOD. Refer to Appendix C for the site's general arrangement, which displays the planned strategy for stormwater management on the site.

The minimum of 1% downward slope towards the kerb's invert throughout uPVC stormwater pipes. The flow was simulated to facilitate the maximum discharge of 0.0614 Cubic Meters per Second (CMS) at an average velocity of 0.71m/s in 150mm x 100mm RHS stormwater pipes in a 1%AEP event.

The runoff from the driveway and carpark area will discharge to the existing kerb (I.L 15.25mAHD) as an overland sheet flow with a maximum discharge of 0.030 CMS at an average velocity of 0.65m/s in 1%AEP event.

The remaining grass cover area at the front of the property will drain into the existing kerb through 150mm x 100mm RHS stormwater pipes kerb.

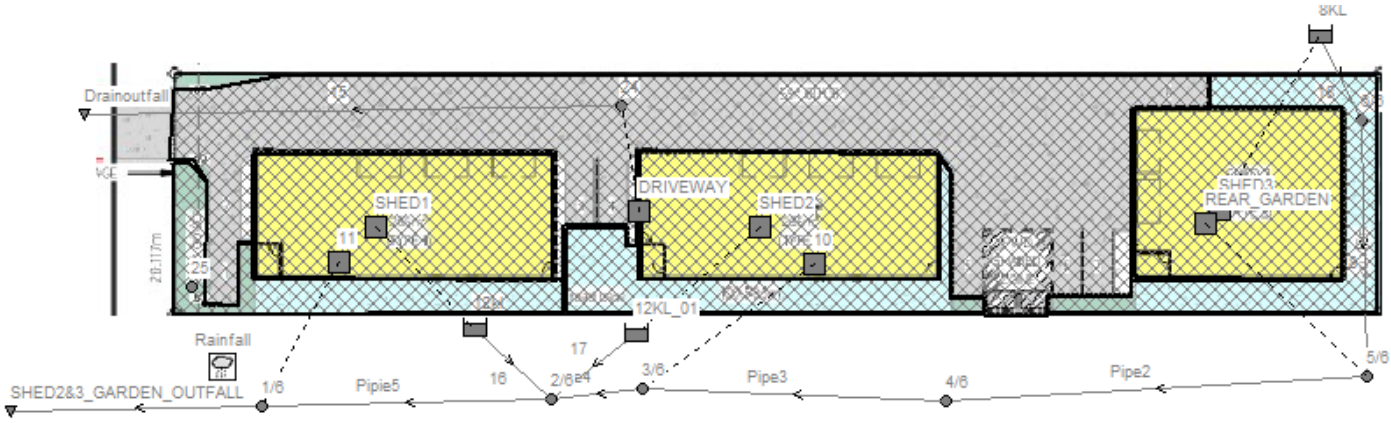

Figure 5: Stormwater management plan layout in EPA_SWMM_5.2

The following figures show the performance of the proposed stormwater management strategy relative to the post-development cases.

The proposed system results in a net increase of minor and major flows of 22.6L/s, effectively of stormwater quantity discharge from the site.

Furthermore, the proposed discharge from the kerb weir does not present any actionable nuisance with regards to velocity criteria. Due to being discharged over the kerb through RHS pipes with approximately 1.01m/s velocity in the major 1% AEP event and depth of 0.1m, which is the equivalent depth/velocity product rating of H1 per the Australian Emergency Management Institute guidelines which is generally safe for people, vehicles and buildings.

5 STORMWATER QUALITY

5.1 SCOPE

The development being not bigger than 2500m^2 does not trigger the need to address the stormwater quality provisions of the State Planning Policy 2017 (SPP 2017). This section aims to provide a high-level guide on measures to address the potential for an increase in pollutant loads during operational works.

5.2 DURING OPERATIONAL WORKS

The main risk of increased pollutant loads during construction is likely to be from erosion and sediment loss from disturbing the site. The following are the key pollutants that must be addressed during construction.

Table 10: Key Pollutants During Construction

Pollutant	Sources
Litter	Paper, construction packaging, food packaging, cement bags, material offcuts etc.
Sediment	Exposed soil and stockpiled soil/gravel.
Hydrocarbons	Fuel and oils.
Toxic Materials	Cement, asphaltic materials, solvents, cleaning agents etc.
Acids or Alkaline Materials	Acid sulphate soils, cement.

Erosion and sediment control devices will be the main hard controls to lower pollutant loads during construction. At the operational works design stage an Erosion & Sediment Control Plan (ESCP) will be provided detailing the controls required, however, the below provides high-level measures that will be implemented.

Pre-Construction:

- Site personnel are to be informed and made aware of the ESCP and its implementation, maintenance, and decommissioning requirements.
- Sediment fences to be located along the contour lines downstream of disturbed areas.
- Educate site personnel on the requirements of the Sediment and Erosion Control Plan.
- Diversion drains to divert clean runoff around the construction site.
- Sediment fences in all areas requiring bulk earthworks will be installed.
- Major flow paths (kerb and channel, formalised drains etc.) will have erosion & sediment control devices installed upstream.
- The site access/s will have rumble pads installed to limit soil material tracked off-site by vehicles.
- Topsoil (if any) will be stripped and stockpiled to be reinstated after construction. Stockpiled topsoil will be bundled off.

During Construction:

- All bulk earthworks must be maintained in a tidy manner, with slopes and stockpiles levelled to reduce erosion caused by wind and rain.
- Areas of bulk filling to be bunded off during construction.
- Erosion and sediment control devices are to be monitored and maintained for the duration of construction.

- Appropriate waste disposal facilities are to be provided onsite – e.g., skip bins.

Post-Construction:

- Areas to be revegetated to have topsoil reinstated prior to placement of turf or hydro mulching.
- Sediment fencing to remain in place until revegetation has occurred.

6 CONCLUSION

The aim of this report was to identify a suitable strategy to facilitate the development of 10 Chappell Street, Kawana QLD from an existing vacant block to a proposed commercial complex, with regards to providing acceptable stormwater management post-development outcomes.

The development plan includes the proposed development as per Appendix B, and the impact of development on stormwater runoff was modelled for a range of events. It was found that the post-development discharge is greater than the existing stormwater discharge.

Stormwater flows from the development will discharge to the sites lawful point of discharge being the kerb and channel in Chappell Street as per existing conditions. Three discharge points are proposed within the kerb and site to reduce the concentration of flows.

An assessment of the pre vs post-development flows has been undertaken and it is determined that on-site detention is required to mitigate the post-development flows from the development. Stormwater detention is provided by an above-ground detention tank with a volume of 33kL. Whilst there is an increase post-development, the absence of Council underground infrastructure makes it difficult to capture and mitigate the ground level. Therefore, the implementation of the above-ground tank to mitigate flows from the roof is proposed to provide some reduction.

SETOUT POINTS			
POINT #	EASTING	NORTHING	LEVEL
1	245333.236	7416791.771	15.423
2	245339.641	7416795.151	15.752
3	245347.086	7416800.547	15.806
4	245412.596	7416835.608	17.484
5	245413.970	7416832.912	17.483
6	245408.501	7416829.945	17.361
7	245415.797	7416816.467	17.510
8	245409.707	7416813.155	17.319
9	245410.412	7416811.947	17.319
10	245405.445	7416809.318	17.294
11	245404.797	7416810.406	17.294
12	245402.384	7416809.228	17.281
13	245397.418	7416818.820	16.950
14	245395.874	7416819.241	16.930
15	245374.029	7416807.523	16.398
16	245377.540	7416800.760	16.362
17	245376.917	7416800.417	16.362
18	245376.163	7416801.784	16.362
19	245371.618	7416799.400	16.310
20	245373.626	7416795.507	16.310
21	245367.933	7416804.380	16.276
22	245346.189	7416792.627	15.789
23	245349.482	7416786.255	15.823
24	245348.441	7416785.689	15.823
25	245350.930	7416781.039	15.838
26	245348.635	7416779.836	15.837
27	245343.726	7416789.199	15.757
28	245342.216	7416789.793	15.739
29	245336.013	7416786.530	15.411

GENERAL ARRANGEMENT & STORMWATER PLAN
SCALE 1:200

LEGEND:

- PLANTING & GRASS (429m2) BY OTHERS
- PARKING / DRIVEWAYS (785m2) BY OTHERS
- PROPOSED BUILDING (776m2) BY OTHERS
- PROPOSED CONTOURS (0.2 & 1m)
- EXISTING CONTOURS (0.2 & 1m)
- PROPOSED STORMWATER PIPES
- PROPERTY CADASTRE LINE
- EXISTING SEWER LINE
- EXISTING WATER LINE ø100 ASBESTOS CEMENT PIPE
- PROPOSED ROOF DOWN STORMWATER PIPES (ROOF DWP1)
- ROAD KERB & CHANNEL
- WATER FLOW DIRECTION
- DETENTION POLY TANKS ABOVE GROUND
  11 X 3kL (OR APPROVED EQUIVALENT SLIMLINE WATER TANKS)
- CONTROLLED OUTLET ORIFICES
  ø100mm @ BASE + 1.85m

NOTE: ALL FIELD INLETS TO BE FITTED WITH SPEL STORMSACK TRASH BAGS OR APPROVED EQUIVALENT (TYP.)

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/14-2024
Dated: 31 July 2024

REF. DRG. No.	REFERENCE DRAWING TITLE	REV		DRWN	DSN'D	APP'D	DATE
		B	ISSUED FOR APPROVAL	U.S.	U.S.	S.M.T.	24.06.24
		A	ISSUED FOR APPROVAL	U.S.	U.S.	S.M.T.	28.05.24

REGISTERED PROFESSIONAL ENGINEER QUEENSLAND
RPEQ NO: 16203
SCOTT MATTHEW THOMAS
SIGNATURE: ..... DATE: 24.06.2024

SCALE (A1)
IF IN DOUBT ASK
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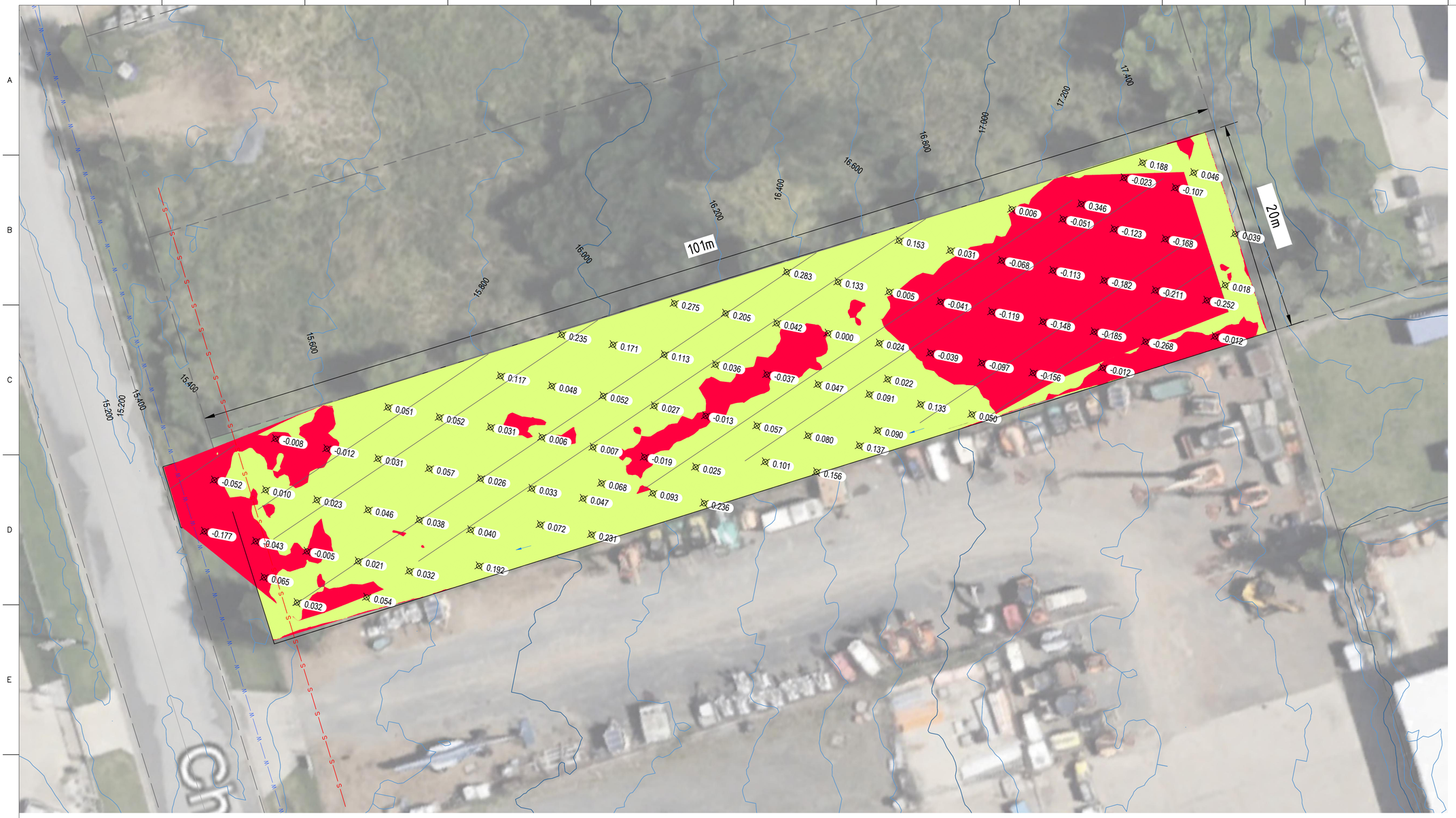
Rockhampton QLD 4700

PAVSCORP – STORMWATER MANAGEMENT PLAN
GENERAL ARRANGEMENT & STORMWATER PLAN
10 CHAPPELL STREET, KAWANA, QLD

DRAWING No. 24-245/SK100 | ISSUED FOR APPROVAL | REV. B



EARTHWORKS VOLUMES FOR DRIVEWAY/CARPARK		
CUT	m^3	65.00
GENERAL FILL	m^3	77.17

EARTHWORKS VOLUMES FOR VEGETATION AREA		
CUT	m^3	1.44
FILL	m^3	41.49

LEGEND:

- −0.20m TO 0.0m CUT
- 0.0m TO 0.40m FILL
- EXISTING CONTOURS 0.2 &1m
- PROPERTY CADASTRE LINE
- EXISTING SEWER LINE
- EXISTING WATER LINE 100 DIA ASBESTOS CEMENT PIPE
- 0.171 / -0.485 EARTHWORKS DEPTH TO SUBGRADE LEVELS
- PROPOSED CARPARK

EARTHWORKS PLAN
SCALE 1:200

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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NOTES:
1. 150mm TOPSOIL TO BE STRIPPED.
2. 150mm GST SUBGRADE— EXISTING SUBGRADE TO BE SCARIFIED, MOISTURE CONDITIONED & RECOMPACTED TO 95% COMPACTION.
3. ACHIEVE 98% COMPACTION AS PER SUBGRADE NOTE 3.

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		B	ISSUED FOR APPROVAL	U.S.	U.S.	S.M.T.	24.06.24
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PAVSCORP - STORMWATER MANAGEMENT PLAN

EARTHWORKS PLAN

10 CHAPPELL STREET, KAWANA, QLD

DRAWING No. 24-245/SK101

ISSUED FOR APPROVAL

REV. B

TRAFFIC SWEPT PLAN
SCALE 1:200

LEGEND:

- PLANTING & GRASS (429m2) BY OTHERS
- PARKING / DRIVEWAYS (785m2) BY OTHERS
- PROPOSED BUILDING (776m2) BY OTHERS
- PROPOSED CONTOURS (0.2 & 1m)
- EXISTING CONTOURS (0.2 & 1m)
- PROPERTY CADASTRE LINE
- EXISTING SEWER LINE
- EXISTING WATER LINE ø100 ASBESTOS CEMENT PIPE

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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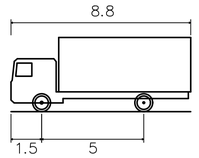

MRV – Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

REF. DRG. No.	REFERENCE DRAWING TITLE	REV		DRWN	DSN'D	APP'D	DATE
		A	ISSUED FOR APPROVAL	U.S.	U.S.	S.M.T.	28.05.24

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PAVSCORP - STORMWATER MANAGEMENT PLAN

TRAFFIC SWEPT PLAN

10 CHAPPELL STREET, KAWANA, QLD

DRAWING No. 24-245/SK102

ISSUED FOR APPROVAL

REV. A