

SERVICES DISCLAIMER

While every effort has been made to locate, identify, and where appropriate, indicate the extent & connectivity of all relevant visible and underground infrastructure within the survey area, no guarantee, either explicit or implied, can be given as to the correctness and completeness of such infrastructure shown hereon.

Due to the intrusive, high impact and potentially dangerous nature of exposing underground infrastructure, the risk of serious injury and damage to infrastructure is very high, therefore further investigation by suitably qualified personnel with the relevant skills, techniques and equipment will be required to comprehensively establish and qualify the true state of all infrastructure on site.

Please refer to each of the relevant service providers rules, procedures, guidelines, rights and responsibilities when designing or working in the vicinity of each respective plant or service.

This note is an integral part of this plan, being 1 sheet in total, and all subsequent iterations of this plan. ©

5
SP333392
(Current Lot)

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/23-2024

Dated: 20 August 2024

PRINCIPAL

GCJLT HOLDINGS PTY LTD

DESCRIPTION

**DETAIL SURVEY OF
PROPOSED LOT 1 ON
PROPOSAL PLAN 8621-01-ROL-A
(CURRENTLY PART OF LOT 5 ON SP333392)**

BUSH CRESCENT, PARKHURST

REAL PROPERTY DESCRIPTION

Lot/Plan : Proposed Lot 1 on Plan 8621-01-ROL-A
Area : 6340m2
Locality : Parkhurst
Local Authority : Rockhampton Regional Council

NOTES

This plan was prepared for GCJLT HOLDINGS PTY LTD from field survey for the purpose of designing new constructions on the subject land and should not be used by any other persons for any other purpose.

Property boundaries have not been reinstated or marked at the time of survey and are approximate only, based on appropriate boundary connections.

Where possible underground services have been located by field survey. Some services shown hereon are compiled from local authority and service provider plans and/or plans provided by the client and are noted accordingly on the plan.

Prior to any design, excavation or construction on site, the relevant authorities, and a qualified service locator should be engaged to ensure all services that may be affected by any future works have been located.

These plans have been prepared as verification plots only. Some text RL's have been omitted for clarity. Please refer to the relevant 3D data files for any spatial interrogation requirements.

Any discrepancies should be verified in writing with Capricorn Survey Group (CQ) Pty Ltd.

This note is an integral part of this plan.

LEGEND

LINETYPE LEGEND

- S UG Sewerage Line
- SC UG Sewerage Line (Compiled)
- SW UG Stormwater Line
- SWC UG Stormwater Line (Compiled)
- > Overland Flow/Direction
- E UG Electrical Line
- EC UG Electrical Line (Compiled)
- W UG Water Line
- WC UG Water Line (Compiled)
- T UG Communication Line
- TC UG Communication Line (Compiled)
- W UG Water Line
- WC UG Water Line (Compiled)
- W AG Water Line
- G UG Gas Line
- GC UG Gas Line (Compiled)
- Top of Bank
- Toe of Bank
- CL of Bitumen
- Edge of Bitumen
- Retaining Wall
- Line Marking
- Fence Line
- Road / Guttering
- Eaves

CONTOUR LEGEND

- 0.25m Interval
- 1.00m Interval

GENERAL SYMBOL LEGEND

Comms Conduit Marker	Stormwater MH
Comms Pit	Stormwater Pit
Elec Conduit Marker	Stormwater DP / Outlet
Elec Turret	Stormwater IO
Elec Pit	Water Fire Hydrant
Elec Light Bollard	Water Meter
Elec Light Pole	Water Valve
Elec Power Pole	Water Tap
Elec Power Pole + Light	Water Control Tap
Elec Power Pole + Transformer	Water Tee
Elec Stay Point	Water Conduit Marker
Traffic Lights	Water Tapping Band
Gas Marker	Post
Gas Valve	Bollard
Gas Hot Water System	Guide Sign
Sewerage MH	Flag Pole
Sewerage Vent	Australia Post Box
Sewerage IO	Shrub

DATUM

Vertical Datum : AHD Vide SmartNet Aus
Horizontal Datum : MGA Zone 56 Vide SP333392
Contour Interval : 0.25m, 1.0m Index
Co-ord System : MGA2020 Vide SmartNet Aus

WARNING

LOCATION AND CONNECTIVITY OF UG SERVICES SHOWN HEREON HAVE BEEN DETERMINED BY DIRECT ACCESS OR COMPILED FROM LOCAL AUTHORITY AND SERVICE PROVIDER PLANS ONLY. FURTHER INVESTIGATION MAY BE REQUIRED TO DETERMINE LOCATIONS OF ALL INACCESSIBLE SERVICES.

REVISION	Issue	Date	Details	Authorised
A	16-11-2023	Initial Issue		RJKF

CREATED

capricornsurveygroup
SURVEYING & PLANNING SOLUTIONS

07 4927 5199 | reception@csrgroup.com.au | 132 Victoria Parade, Rockhampton QLD 4700

SCALE

1:300 @ A1

DRAWING NUMBER	ISSUE
8621-20-DTL	(1/1)
	A

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Development Permit No.: D/23-2024

Dated: 20 August 2024

Site Analysis

Existing Floor Area	=	NIL
Proposed Floor Area	=	2478 sqm
Total Building Footprint Area	=	2478 sqm
Total Site Coverage	=	39 %
Total Landscaped Area Required	=	2m to frontage
Total Landscaped Area Provided	=	722.4 sqm
Total Site Area	=	6339.8 sqm

Car Parking

Car parking spaces required	=	25
Total car spaces provided	=	25
Driveways		
Existing concrete driveway area	=	NIL
New concrete driveway area	=	3139.4 sqm
Total driveway area	=	3139.4 sqm

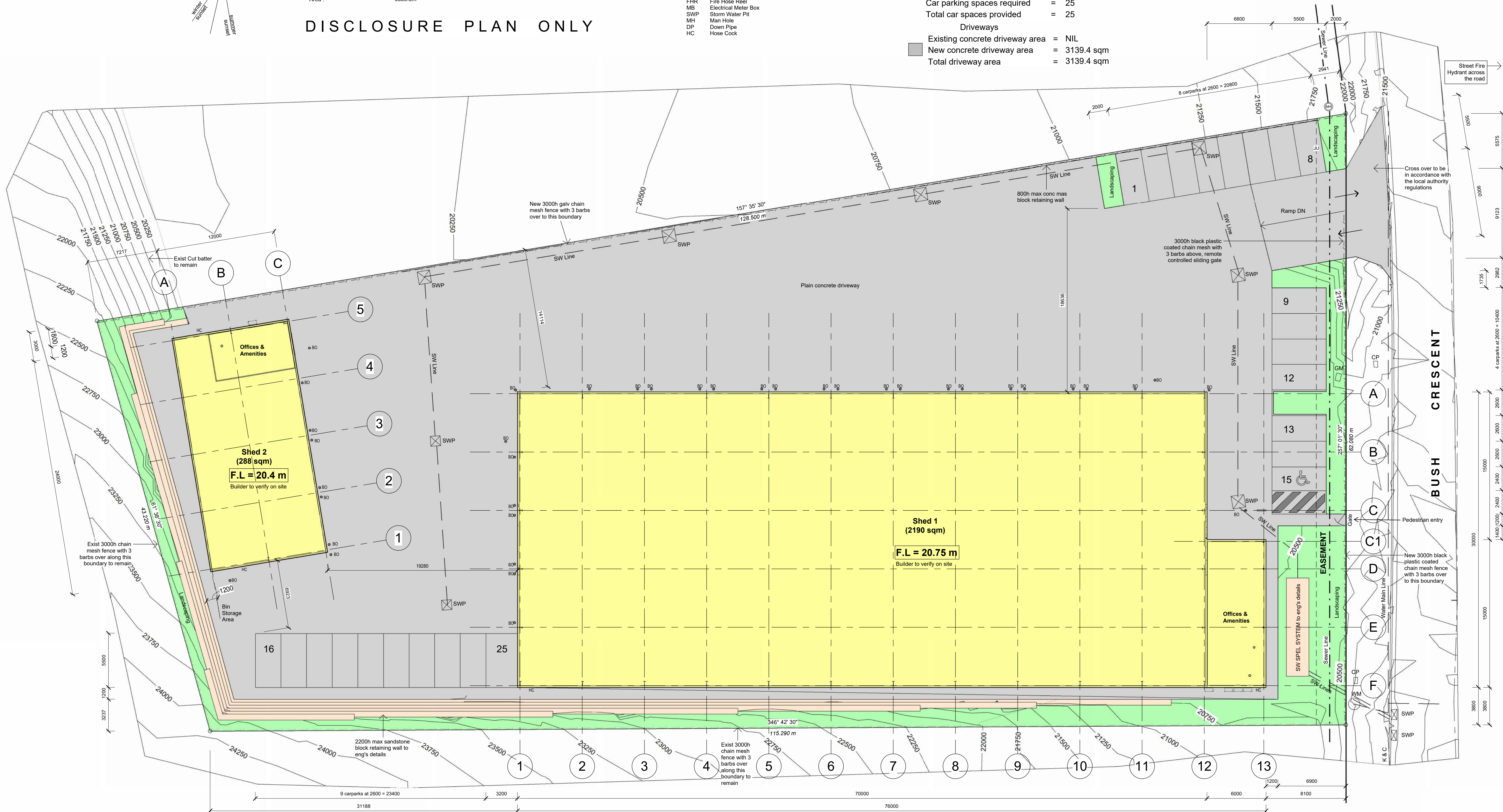
LEGEND

FH	Street Fire hydrant
CP	Communications Pit
ET	Electrical Turret
EP	Electrical Pit
WM	Water Meter
RWT	Rain Water Tank
BO	Bollard to eng's detail
FHR	Fire Hose Reel
MB	Electrical Meter Box
SWP	Storm Water Pit
MH	Man Hole
DP	Down Pipe
HC	Hose Cock

R.P.D.

Lot Number :	1 (Proposed)
Reg./Survey Plan Number :	8621-20-DTL
Locality :	Parkhurst
Local Government :	Rockhampton R.C.
Area :	6339.8m ²

DISCLOSURE PLAN ONLY



1 Site Features Plan
1:200

REVISIONS

NO.	DESCRIPTION	DATE

PROPOSED INDUSTRIAL
DEVELOPMENT FOR GCJLT
HOLDINGS PTY LTD AT LOT 1 BUSH
CRESCENT, PARKHURST

this drawing
Site Features Plan



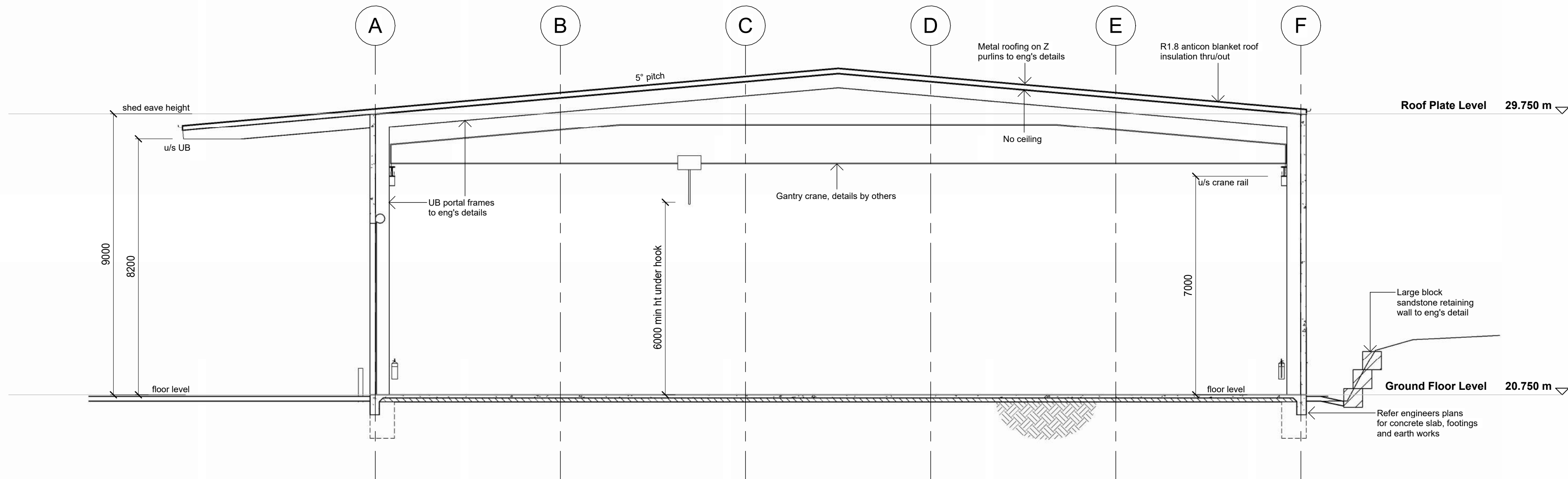
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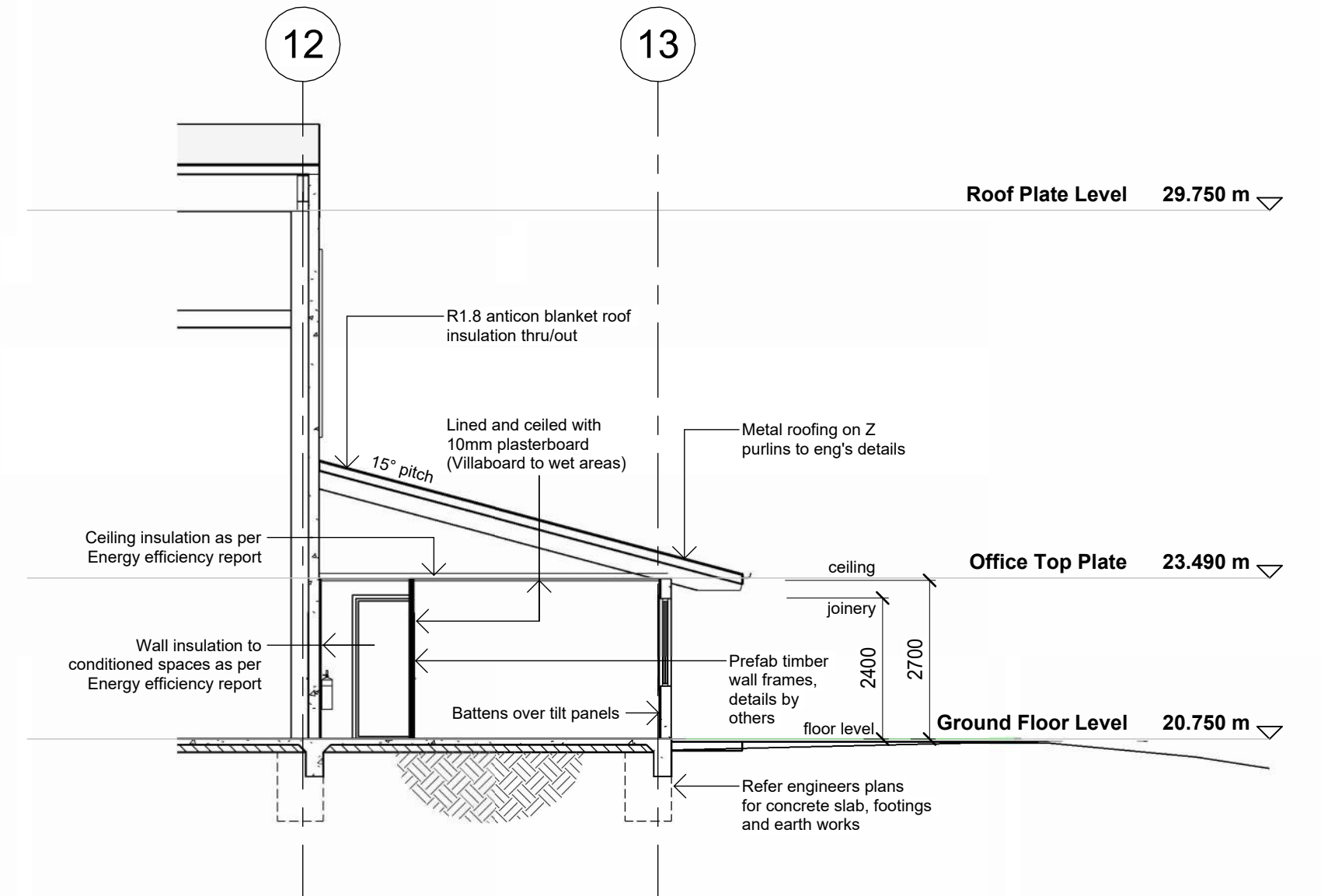
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MANAGER : *D. Webb*
DRAWN : *D. Webb*
CHKD :

WIND
SPEED C2
PLAN
SIZE: A1

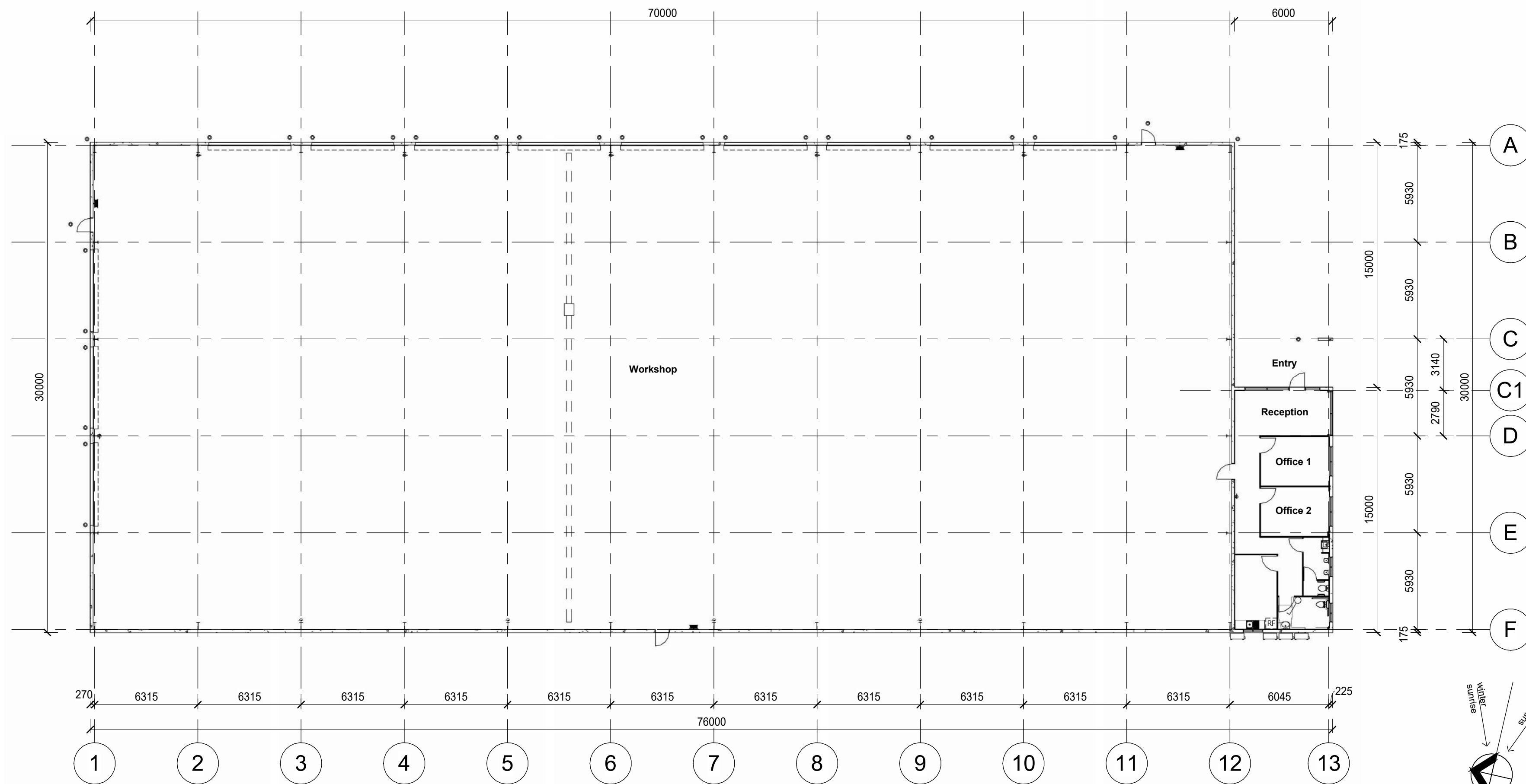
PROJECT NUMBER
231009 - 03
SHEET 03 OF 16 SHEETS
REVISION



L Section L
1 : 100



M Section M
1 : 100



1 Shed 1 Floor Plan - Overall
1 : 200

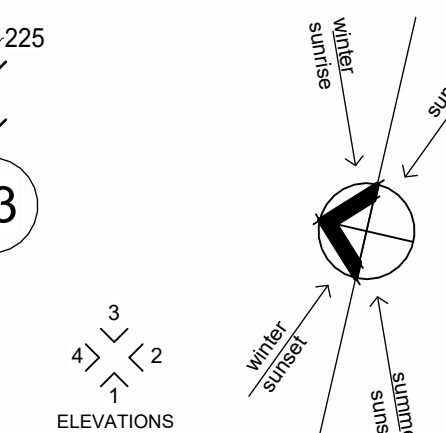
ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

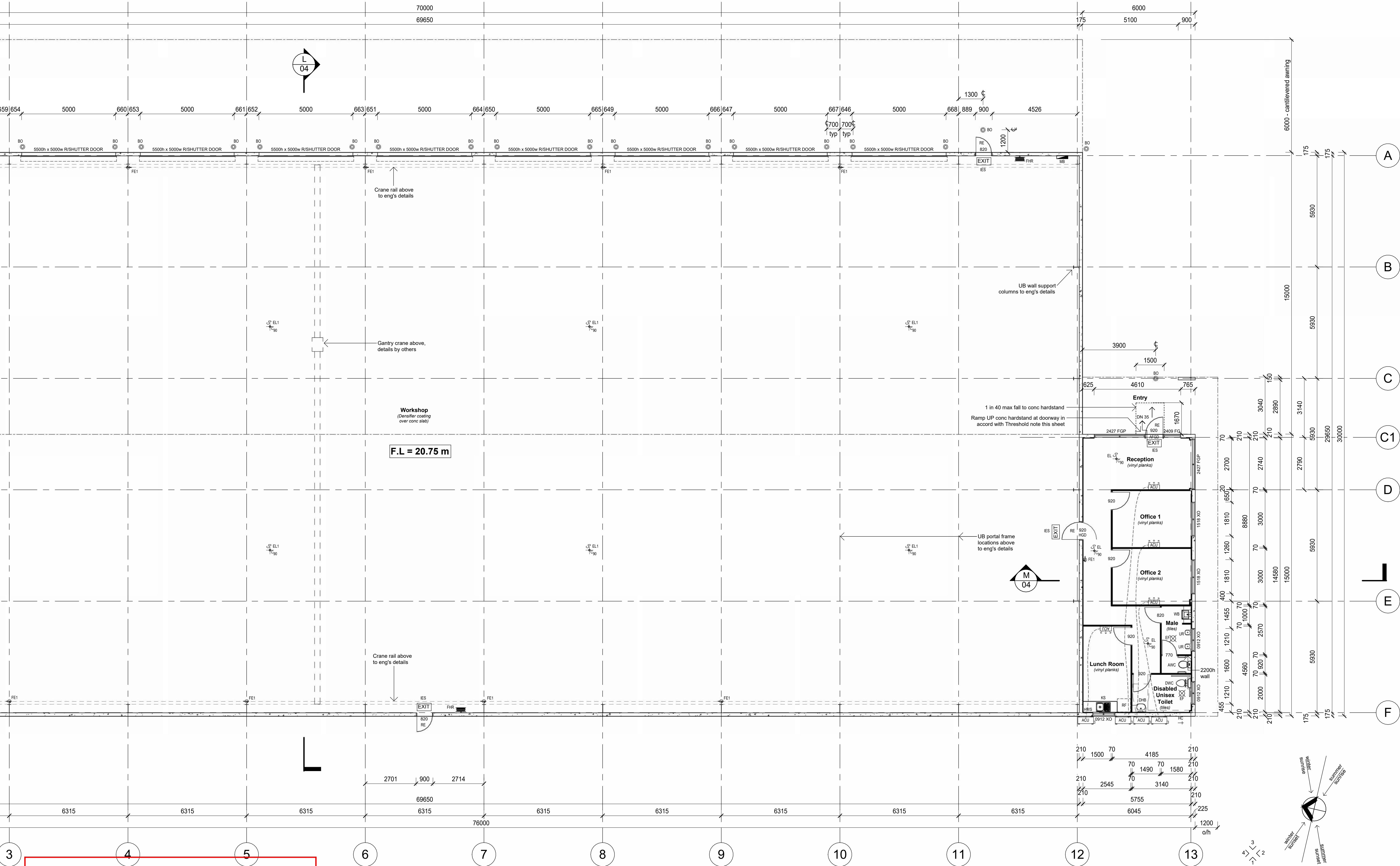
These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/23-2024

Dated: 20 August 2024



REVISIONS	PROPOSED INDUSTRIAL DEVELOPMENT FOR GCJLT HOLDINGS PTY LTD AT LOT 1 BUSH CRESCENT, PARKHURST			this drawing Shed 1 Floor plan - Overall and Shed 1 Sections		 Rufus Design Group STYLE • QUALITY • INNOVATION	PROJECT MANAGER : <i>D Webb</i> DRAWN : <i>D Webb</i> CHKD : Licensed under the QBCC Act Lic No. 1180286 Telephone 61 7 49288011 E-mail mailbox@rufusdesigngroup.com	WIND SPEED C2 PLAN SIZE: A1	PROJECT NUMBER 231009 - 04 SHEET 04 OF 16 SHEETS REVISION
	NO.	DESCRIPTION	DATE						



Window Legend

1218 - 1200 high x 1800 wide
XO - Sliding / Fixed
X - Sliding
O - Fixed
D - Double Hung
A - Awning
CMT - Casement
L - Louvre
FG - Fixed Glass
GSW - Gas Strut Window
Refer to wet areas to be obscure
Refer to EE table for remainder of Glazing

Energy Efficiency Details

Roof Colour	Light
Wall Colour	Medium
Roof Insulation	R1.8 Anticon
Ceiling Insulation	Nil
Wall Insulation	R1.0 Batts
Floor Insulation	Nil
Solar Power	Nil
Hot Water Unit	Electric instantaneous
Glazing	Alum framed, single, tinted
Downlights	Sealed LED
Floor Finishes	Refer to plan

THRESHOLDS :
TO BE IN ACCORDANCE WITH AS 1428.1, "ACCESS FOR THE DISABLED", (MAX. STEP 5mm, THRESHOLD RAMP - MAX SLOPE 1 IN 8 FOR UP TO 35mm RISE, STEP RAMP - MAX SLOPE 1 IN 10 FOR UP TO 150mm RISE).

Plan Legend

ACU	Air Conditioner Unit
AFGD	Alum Framed Glass Door
AWC	Ambulant compliant Toilet
BO	Bollard
DHB	Disabled compliant Hand Basin
DP	Down Pipe
DWC	Disabled compliant Toilet
EF	Mechanical exhaust fan discharging to outside air in accord. with AS 1668.2
EL	Emergency Light in accord. with AS 2293.1 at 2700mm mount height above F.L.
EL1	Emergency Light in accord. with AS 2293.1 at 9500mm mount height above F.L.
FE1	9kg water fire extinguisher (rating: 2A)
FHR	36m Fire Hose Reel in accord. with AS 1221 and AS 2441 (for fire fighting purposes)
HC	Hose Cock
HGD	Half Glass Door
HWS	Electric Instantaneous Hot Water System in c/board
IES	Illuminated Exit Sign
KS	Kitchen Sink
MB	Meter Box
RE	Required EXIT with lever action escape latch
RF	Refrigerator
UR	Urinal
WB	Wash Basin
WBS	Wash Basin
Workshop	2100.0 m ²
Grand total	2190.0 m ²

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/23-2024

Dated: 20 August 2024

1 Shed 1 Floor Plan - Part A
1 : 100

PROPOSED INDUSTRIAL DEVELOPMENT FOR GCJLT HOLDINGS PTY LTD AT LOT 1 BUSH CRESCENT, PARKHURST

this drawing
Shed 1 Floor Plan - Part A

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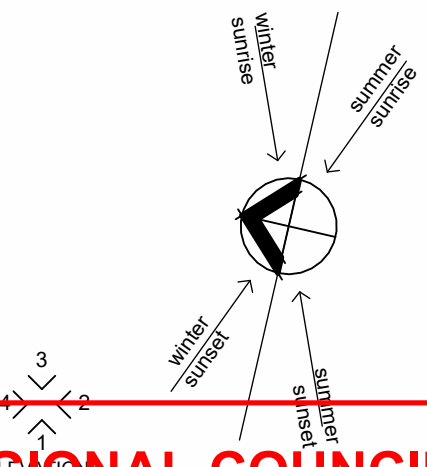
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DRAWN : *DA Webb*
CHKD :

WIND SPEED C2
PLAN SIZE: A1

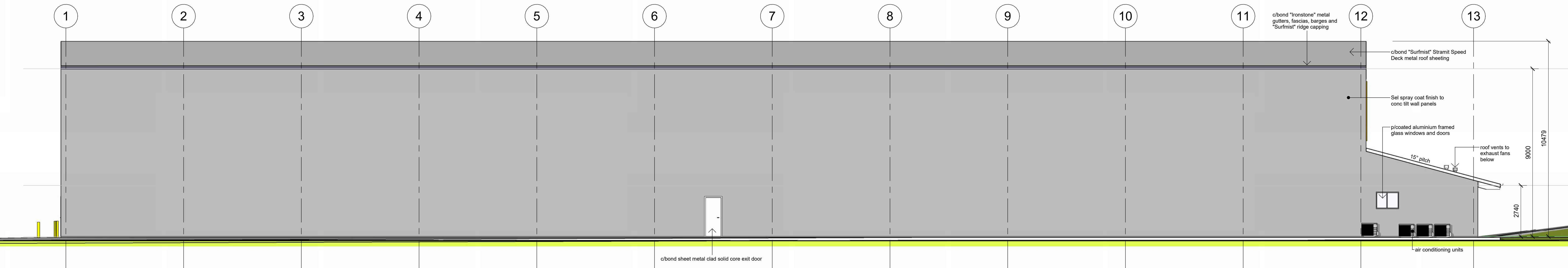
PROJECT NUMBER
231009 - 05
SHEET 05 OF 16 SHEETS
REVISION

PRINT DATE : 29/04/2024 6:05:03 PM

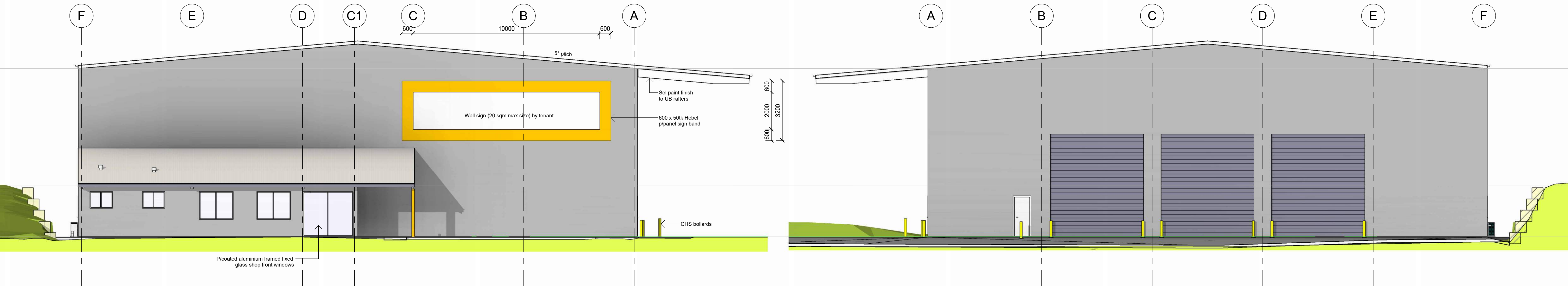
Floor Areas	
Offices & Amenities	90.0 m ²
Workshop	2100.0 m ²
Grand total	2190.0 m ²



PRINT DATE : 29/04/2024 6:05:07 PM

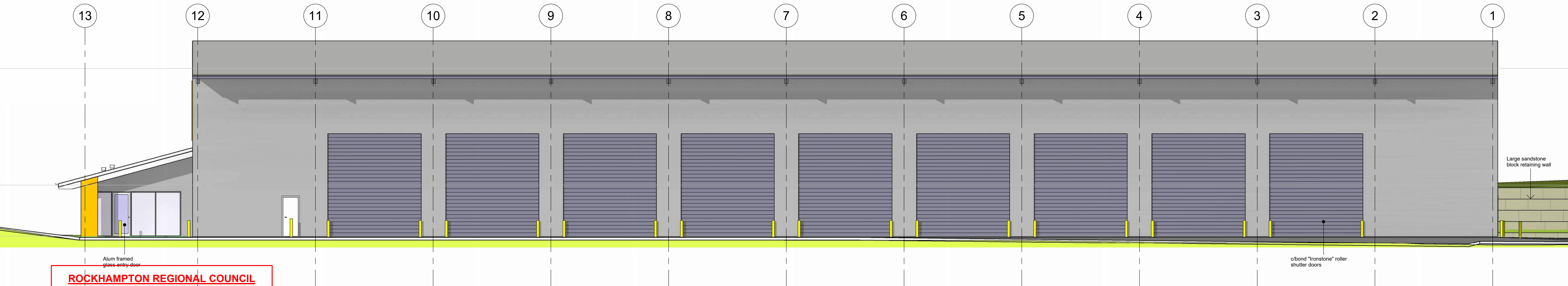


1 Elevation 1
1 : 100



3 Elevation 2
1 : 100

4 Elevation 4
1 : 100



2 Elevation 3
1 : 100

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/23-2024
Dated: 20 August 2024

REVISIONS		
NO.	DESCRIPTION	DATE

PROPOSED INDUSTRIAL
DEVELOPMENT FOR GCJLT
HOLDINGS PTY LTD AT LOT 1 BUSH
CRESCENT, PARKHURST

this drawing
Shed 1 Elevations

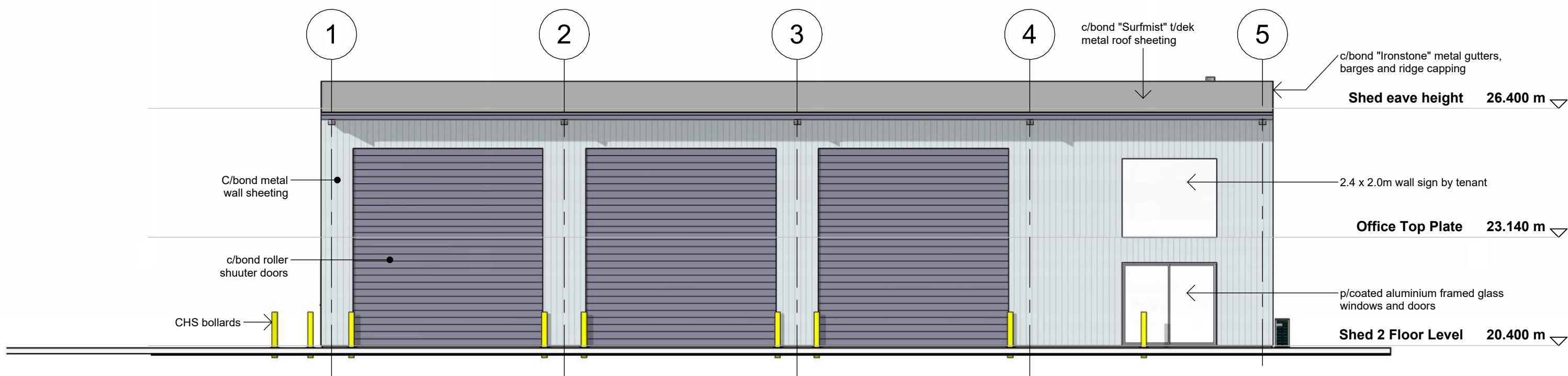


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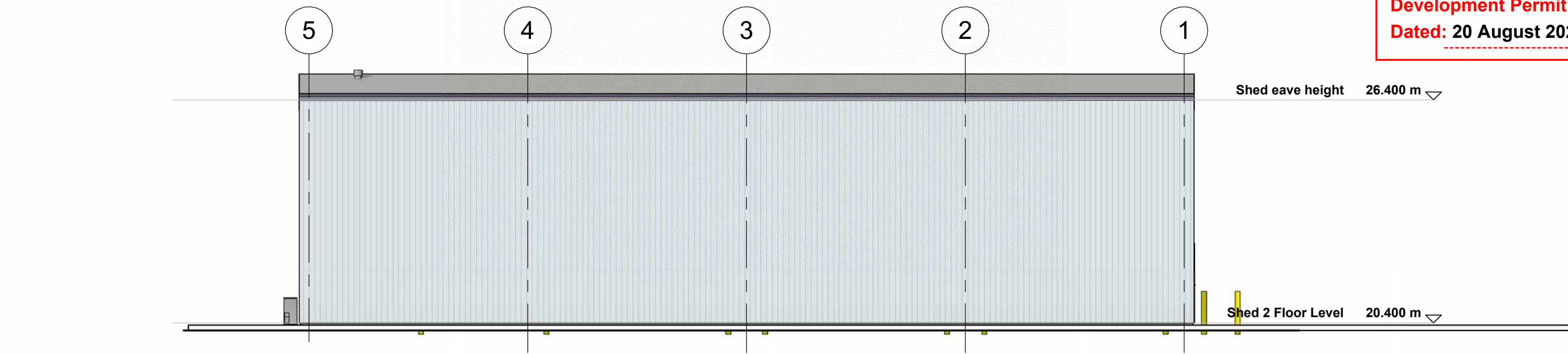
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DRAWN : *DP Webb*
CHKD :

WIND
SPEED C2
PLAN
SIZE: A1

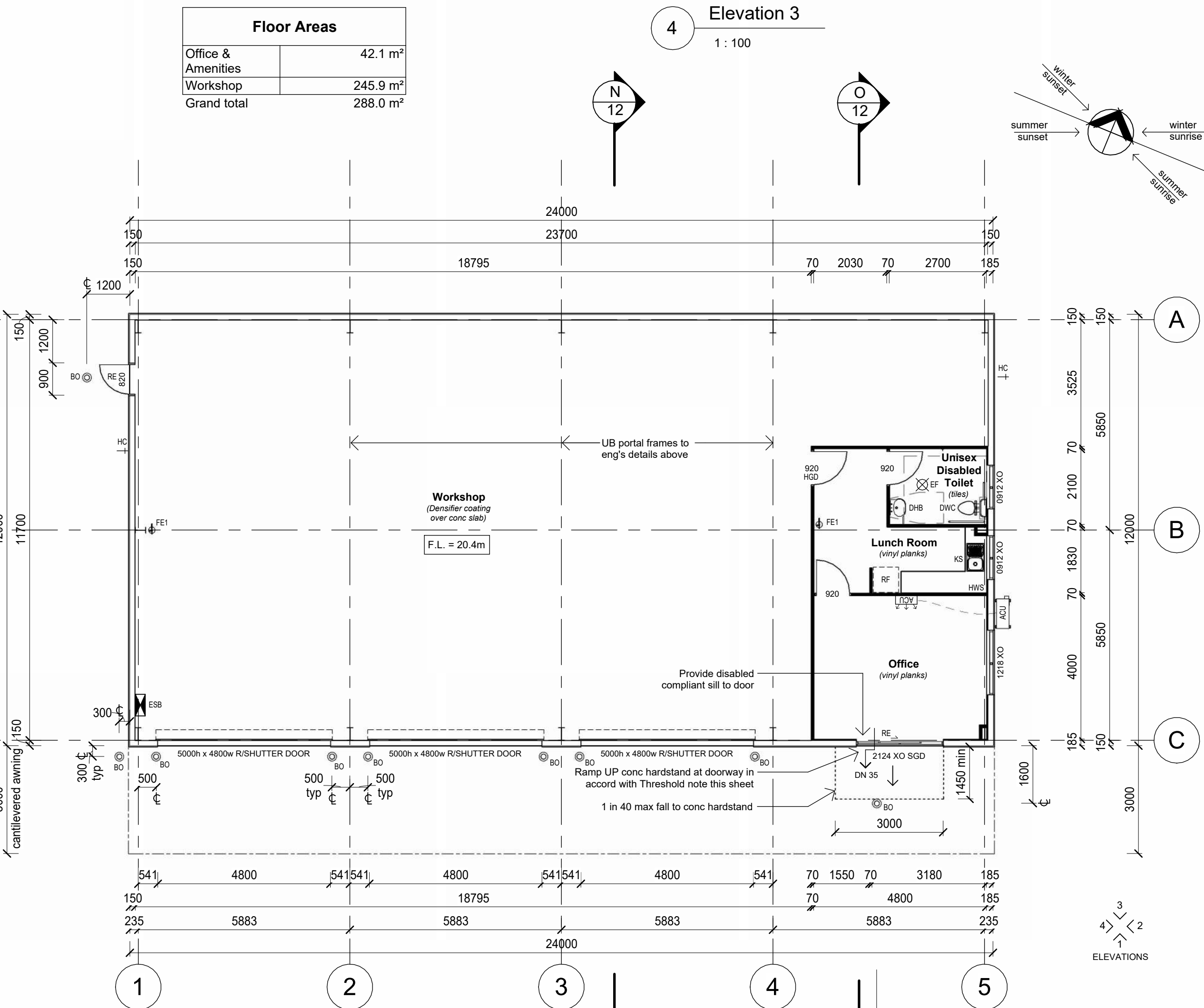
PROJECT NUMBER
231009 - 07
SHEET 07 OF 16 SHEETS
REVISION



2 Elevation 1
1 : 100



4 Elevation 3
1 : 100



1 Shed 2 Floor Plan
1 : 100

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS

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Development Permit No.: D/23-2024
Dated: 20 August 2024

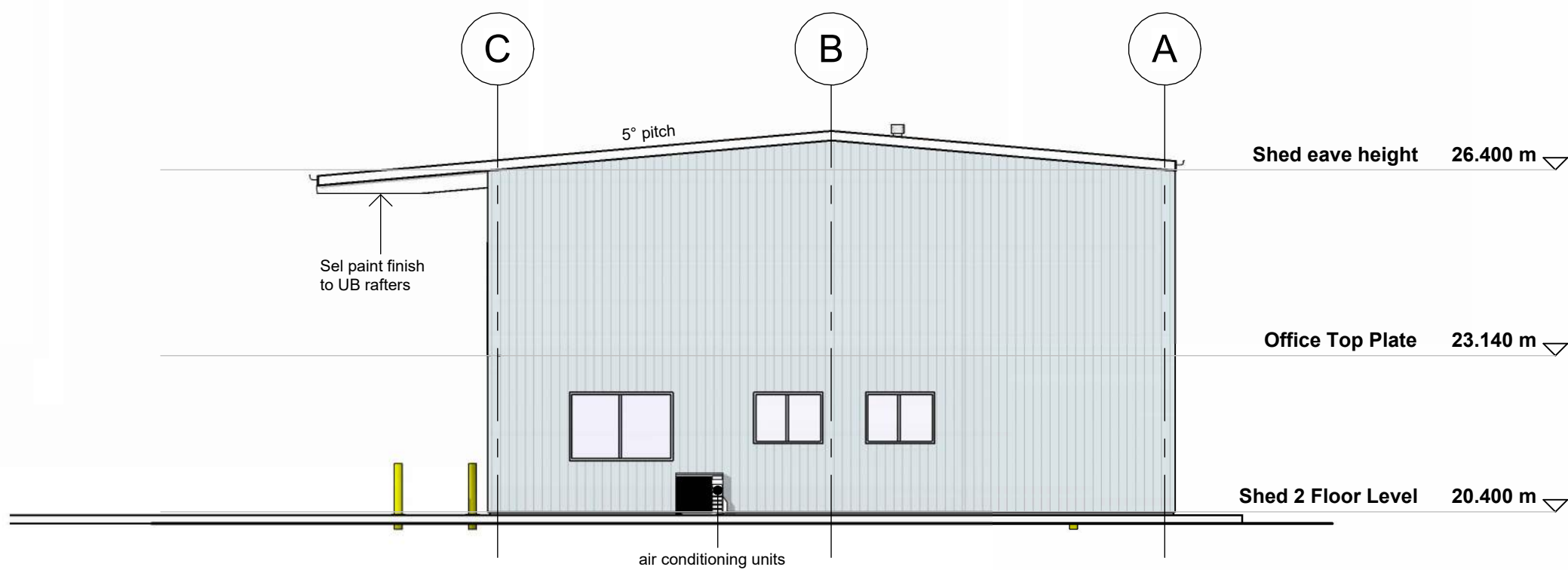
Energy Efficiency Details	
Roof Colour	Light
Wall Colour	Medium
Roof Insulation	R1.8 Anticon Blanket
Ceiling Insulation	Nil
Wall Insulation	R1.0 Batts to office only
Floor Insulation	Nil
Solar Power	Nil
Hot Water Unit	Electric instantaneous
Glazing	Alum framed, single, tinted
Downlights	Sealed LED
Floor Finishes	Refer to plan

Window Legend

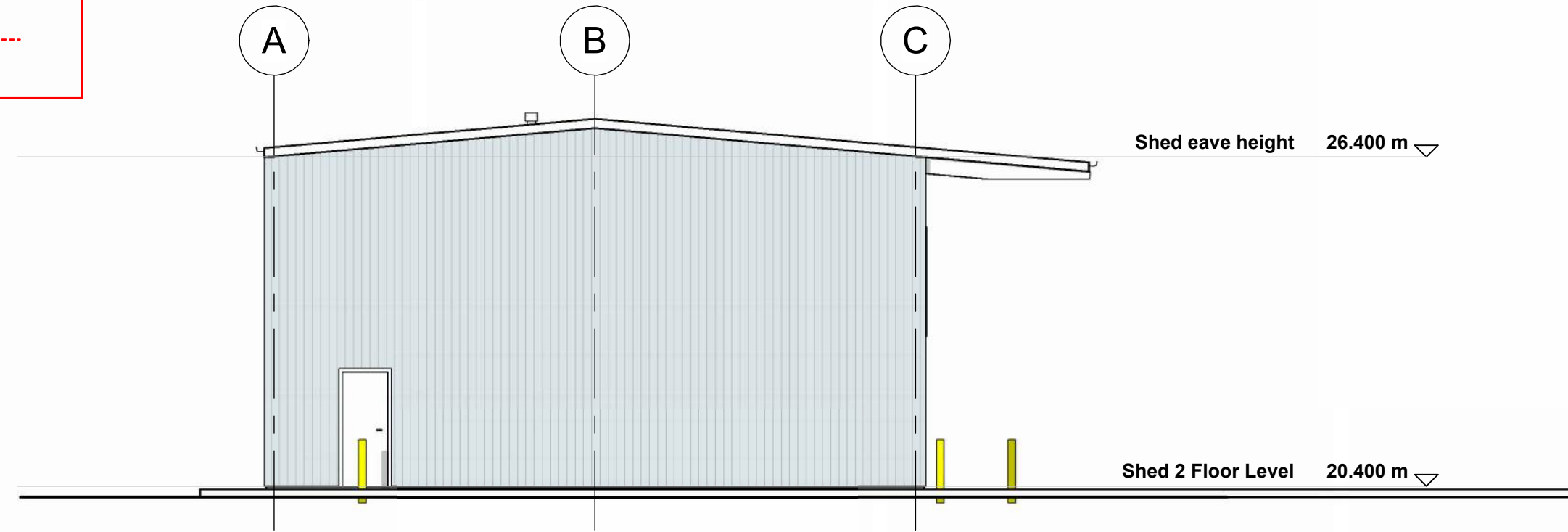
1218 - 1200 high x 1800 wide
XO - Sliding / Fixed
X - Sliding
O - Fixed
D - Double Hung
A - Awning
CMT - Casement
L - Louvre
FG - Fixed Glass
GSW - Gas Strut Window
Glazing to wet areas to be obscure
Refer to EE table for remainder of Glazing

THRESHOLDS :
TO BE IN ACCORDANCE WITH AS 1428.1, "ACCESS FOR THE DISABLED", (MAX. STEP 9mm, THRESHOLD RAMP - MAX SLOPE 1 IN 8 FOR UP TO 35mm RISE, STEP RAMP - MAX SLOPE 1 IN 10 FOR UP TO 190mm RISE).

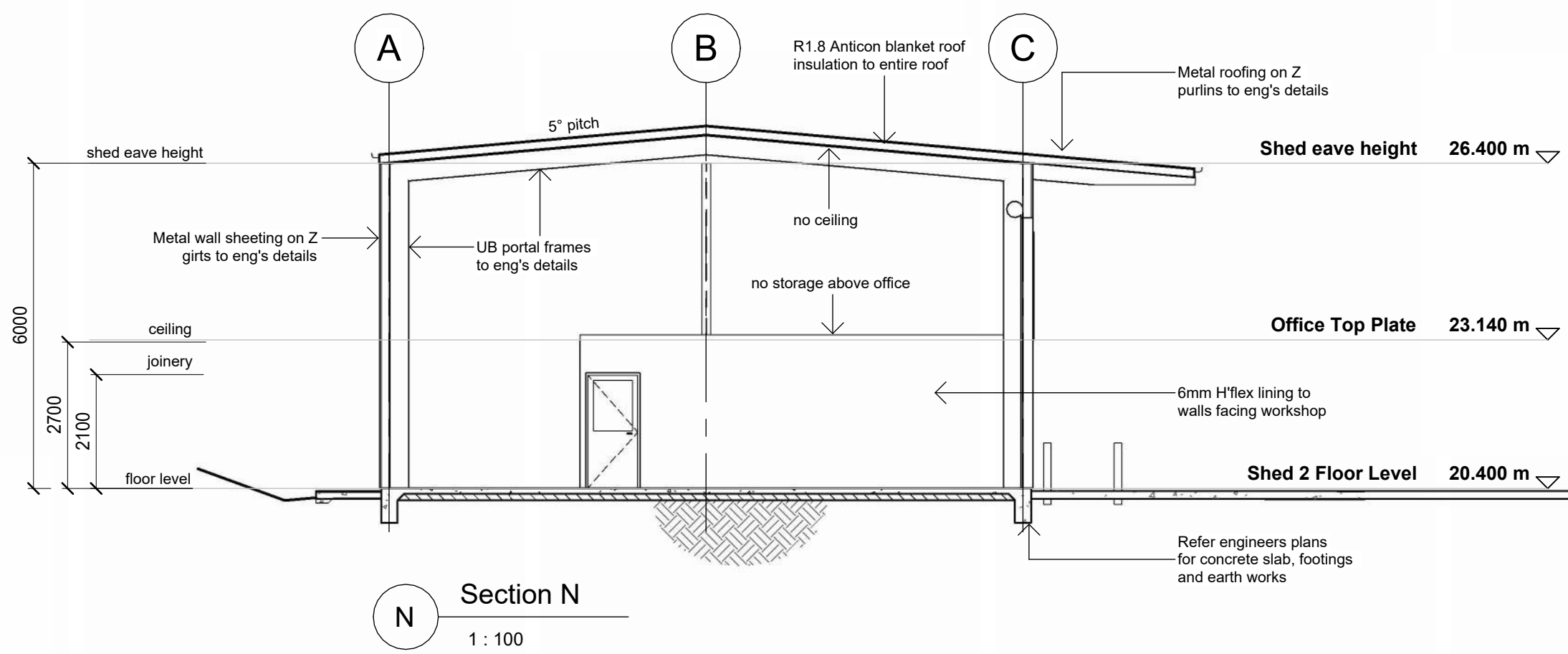
Plan Legend	
ACU	Air Conditioner Unit
BO	Conc filled CHS Bollard
	Painted in safety yellow
DHB	Disabled compliant Hand Basin
DWC	Disabled compliant Toilet
EF	Mechanical exhaust fan discharging to outside air in accord. with AS 1668.2
ESB	Electrical Sub Board
FE1	9kg water fire extinguisher (rating: 2A)
HC	Hose Cock
HGD	Half Glass Door
HWS	Electric Instantaneous Hot Water System in c/board
KS	Kitchen Sink
RE	Required EXIT with lever action escape latch
RF	Refrigerator



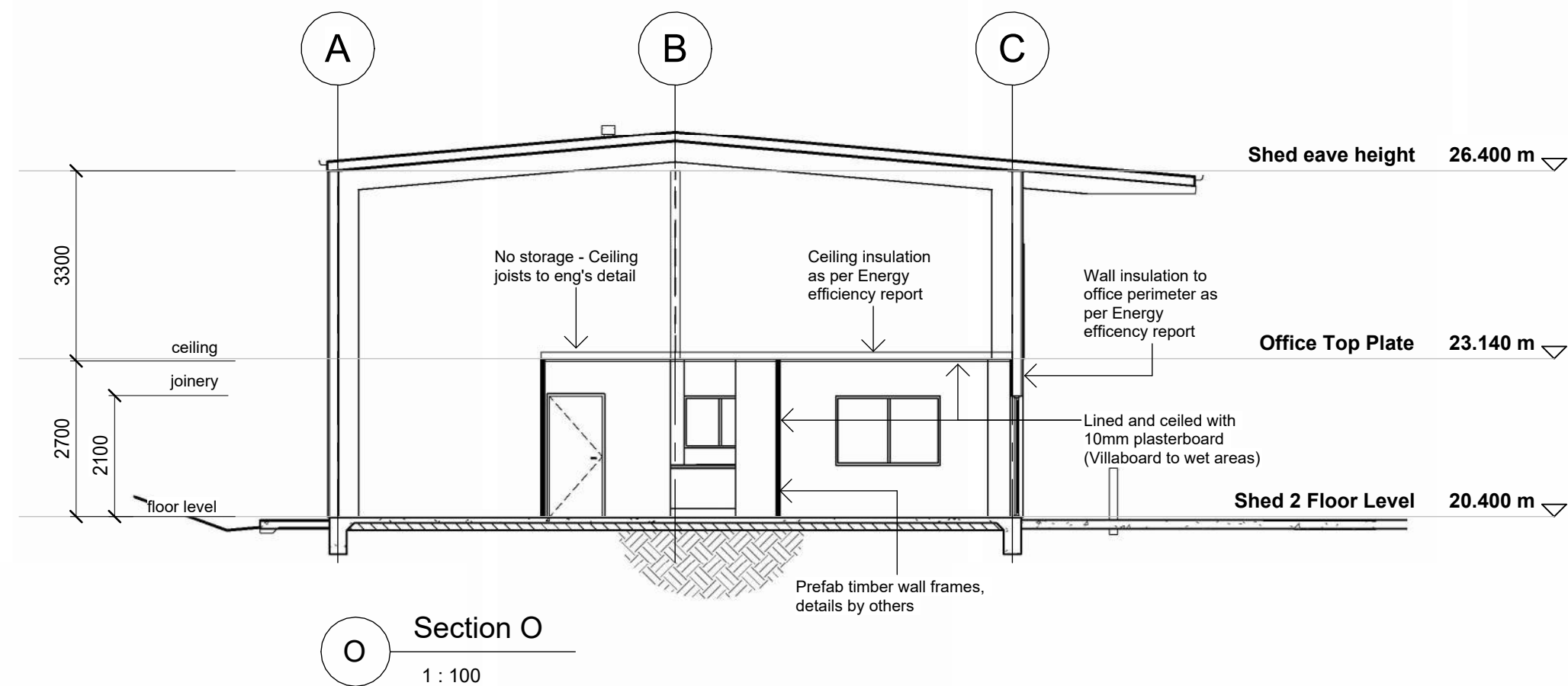
3 Elevation 2
1 : 100



5 Elevation 4
1 : 100



N Section N
1 : 100



O Section O
1 : 100

REV	NO.	DESCRIPTION	DATE
1	FOR COORDINATION		28/04/24

PROPOSED INDUSTRIAL DEVELOPMENT FOR GCJLT HOLDINGS P/L AT LOT 1 BUSH CRESCENT, PARKHURST

this drawing
Shed 2 Floor Plan, Elevations and Sections



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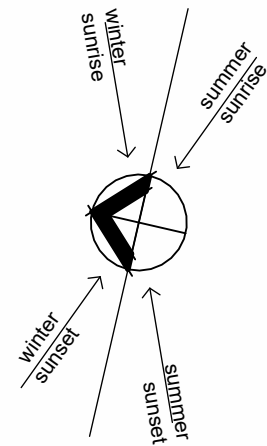
PROJECT
MANAGER : *D. Webb*
DRAWN : *D. Webb*
CHKD :

WIND
SPEED C2
PLAN
SIZE: A1
REVISION 4

PROJECT NUMBER
231009 - 12
SHEET 12 OF 16 SHEETS
REVISION 4

APPROVED PLANS

Dated: 20 August 2024




Lot Number : 1 (Proposed)
Reg./Survey Plan Number : 8621-20-DTL
Locality : Parkhurst
Local Government : Rockhampton R.C.
Area : 6339.8m²


Landscaping

Planting to landscaped areas is to be selected from the following species. Other species may be used subject to availability.

Groundcovers and Creepers (200Ø min pot size)				
	Bracteantha Bracteata/Everlasting Daisy	Native	300mm	60

	Cycadales / Cycad	Native	2000mm	27
---	-------------------	--------	--------	----

	Xanthorrea Johnsonii / Australian Grass Tree	Native	2000mm	19
---	--	--------	--------	----

	Cupaniopsis Anacardoides / Tuckeroo Tree	Native	5000mm	8
---	--	--------	--------	---

Top Soil _____ 100mm organic loam
Mounding (Clean topsoil) _____ 100mm min
Existing Trees _____ NIL
Mulch beds with wood chips, wood chip depth _____ 100mm
Maintenance program
- Watering _____ Automatic Sprinkler system with timer
Hedging/shrubs _____ drippers
Lawn/trees _____ underturf drip system
- Maintenance _____ Local Lawn Care Business employed
_____ permanently for fortnightly visits

Planting _____ permanently for longevity visits

- Garden Beds _____ Cultivate entire soil to 300mm min depth.
If clay is encountered break up & mix with
gypsum 1kg/sqm. Import clean topsoil over.
Fertilize with 'Agriform' plant pills as directed

- Lawn _____ Cultivate area to 150mm min depth.
Spread 50mm min clean topsoil over
Fertilize prior to laying turf with N.P.K 15-15-15
Fertilize after turf laid with sulphate of ammonia 10g/sqm


- Shade/Street Trees _____
New trees to be double stacked, mulched & watered in.
Use of water crystals is recommended.
New trees to be watered with automatic sprinkler system

[illegible]

PROPOSED INDUSTRIAL
DEVELOPMENT FOR GCJLT
HOLDINGS PTY LTD AT LOT 1 BUSH
CRESCENT, PARKHURST

this drawing
Landscape Plan



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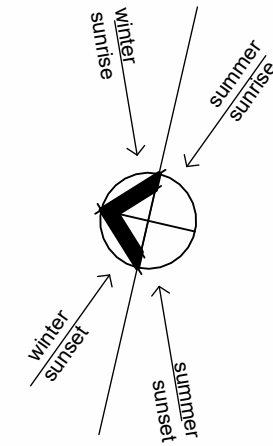
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E-mail mailbox@rufusdesigngroup.com

PROJECT MANAGER :	D Webb
DRAWN :	D Webb
CHKD :	

WIND SPEED	C2	PROJECT NUMBER	
		231009	- 15
PLAN SIZE:	A1	SHEET 15 OF 16 SHEETS	
		REVISION	

PRINT DATE : 29/04/2024 6:05:38 PM



R.P.D.
Lot Number : 1 (Proposed)
Reg./Survey Plan Number : 8621-20-DTL
Locality : Parkhurst
Local Government : Rockhampton R.C.
Area : 6339.8m²

DISCLOSURE PLAN ONLY

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

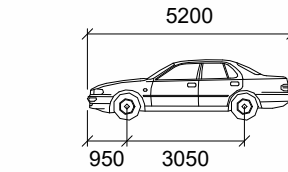
These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/23-2024

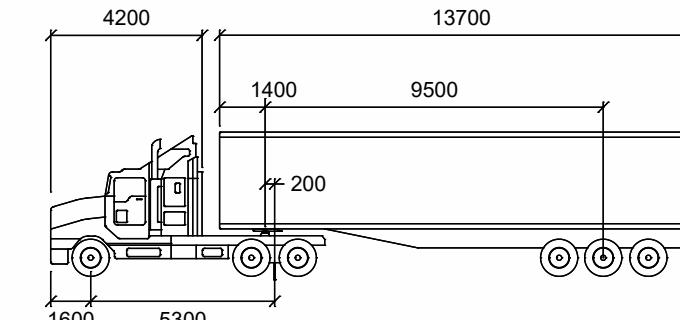
Dated: 20 August 2024

VEHICLE SWEEP PATH'S

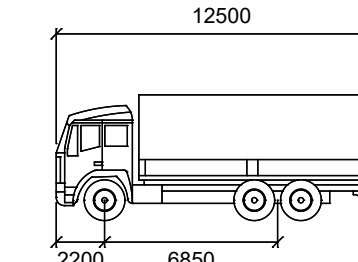
Swept Path's Generated by AutoTURN Version 9.0



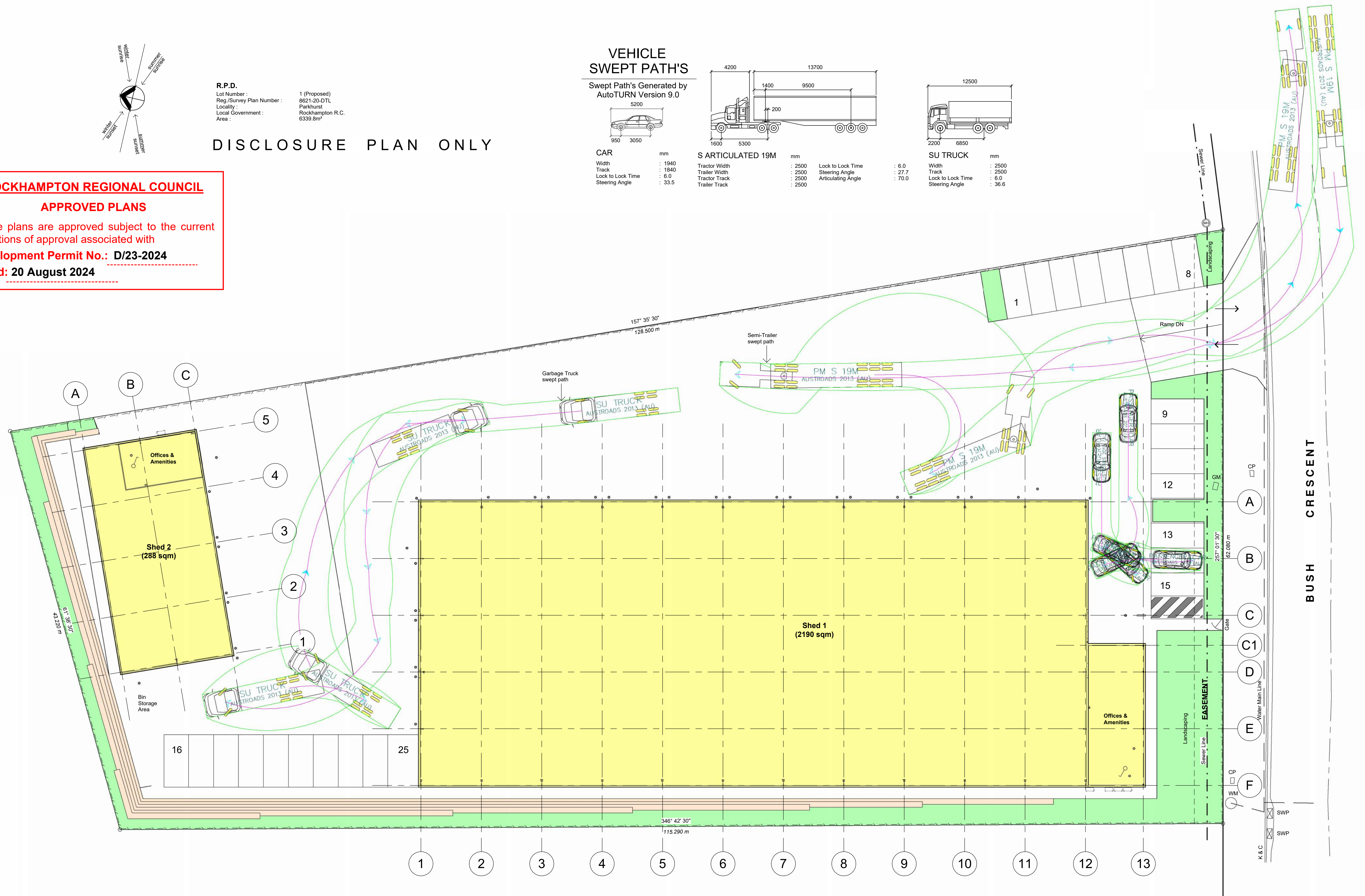
CAR
Width : 1940
Track : 1840
Lock to Lock Time : 6.0
Steering Angle : 33.5



S ARTICULATED 19M
Tractor Width : 2500
Tractor Track : 2500
Tractor Lock to Lock Time : 6.0
Tractor Steering Angle : 27.7
Tractor Articulating Angle : 70.0
Tractor Trailer Track : 2500



SU TRUCK
Width : 2500
Track : 2500
Lock to Lock Time : 6.0
Steering Angle : 36.6



1 Vehicle Swept Path Plan
1 : 200

REVISIONS	NO.	DESCRIPTION	DATE

PROPOSED INDUSTRIAL DEVELOPMENT FOR GCJLT HOLDINGS PTY LTD AT LOT 1 BUSH CRESCENT, PARKHURST

this drawing
Vehicle Swept Path Plan



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PROJECT
MANAGER
DRAWN
CHKD

WIND
SPEED
PLAN
SIZE

PROJECT NUMBER
231009 - 16
SHEET 16 OF 16 SHEETS
REVISION

PRINT DATE : 29/04/2024 6:05:42 PM

2023



ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/23-2024

Dated: 20 August 2024

**PROPOSED INDUSTRIAL DEVELOPMENT
LOT 1 BUSH CRESCENT, PARKHURST**

STORMWATER MANAGEMENT REPORT

FOR GCJLT HOLDINGS PTY LTD

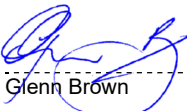
D23.317-RP01

STORMWATER MANAGEMENT PLAN

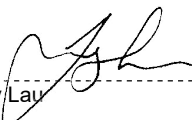
PROPOSED INDUSTRIAL DEVELOPMENT
LOT 1 BUSH CRESCENT, PARKHURST

Document History & Status

REVISION	DATE	ISSUED TO	DESCRIPTION	BY	APPROVED
A	07/02/2023	Rufus Design Group	For Council Lodgement	AL	GB
B	13/05/2024	Rufus Design Group	Council RFI Amendments	GB	TL

Prepared By

Glenn Brown
Engineering Director
RPEQ 7682

Dileigh Consulting Engineers Pty Ltd
47 Normanby Street
Yeppoon QLD 4703
Australia

Reviewed By

Tony Lau
Senior Engineering
RPEQ 19272

Telephone: +61 7 4911 2553
Email: admin@dileigh.com.au

Date: 13/05/2024
Reference: D23.317-RP01(B)

1. Introduction

This report was prepared for GCJLT Holdings Pty Ltd in support of a proposed development to the subject site at Lot 1 Bush Crescent, Parkhurst (as per ROL for Lot 5 on SP333392). This report should be read in conjunction with the overall application relating to this project. The proponent is seeking approval to develop the lot with a proposed equipment sales and service centre.

The portion of land subject to this application has an area of 6340m².

2. Existing Stormwater Conditions

Proposed Lot 1 is currently a partially developed brownfield site with compacted earth hardstand and grassed batter slopes. The site generally falls to the north, excluding a small catchment falling to the south, and is captured by a sediment basin located on the corner of Bush Crescent and McLaughlin Street in accordance with Development Approval D/139-2022.

The existing fraction impervious, accepted by Rockhampton Regional Council in approved Stormwater Management Report D22.320-RP01 Revision C (dated 4 August 2023), is 0.75 for a brownfield site.

Based on the average flow path slope and fraction impervious of the site, an overall time of concentration (Tc) of 16 minutes has been adopted in accordance with QUDM Figure 4.4 with a C₁₀ value of 0.838 in accordance with QUDM Table 4.5.4.

Friends Equation (Eq 4.5) - Shallow overland sheet flow				
L	Surface	n	S	Tc
m		Manning's	%	minutes
100	Bare Soil	0.0275	0.5	16

Utilising a Tc of 16 minutes and the relevant rainfall intensities, the following discharges for a range of events were calculated using the C₁₀ value of 0.838 where $Q_y = C \cdot I \cdot A / 360$ for the existing site.

PRE-DEVELOPMENT SITE CONDITIONS						
Development Area		0.634 ha			Fi	0.750
Event AEP	C	I	A	Q	¹ I ₁₀ (mm/hr)	65.1
%	coefficient	mm/hr	ha	m ³ /s	TC (minutes)	16
63.2	0.670	79.8	0.634	0.0942	C ₁₀	0.838
50	0.712	88.7	0.634	0.1112	From QUDM Table 4.5.3	
20	0.796	118.0	0.634	0.1653		
10	0.838	138.0	0.634	0.2035	In accordance with QUDM Eqn. 4.3	
5	0.879	159.0	0.634	0.2462		
2	0.963	187.0	0.634	0.3172		
1	1.000	210.0	0.634	0.3698		

3. Post Developed Site Flows and Management

3.1 Post Developed Flows

The proposed development of the site increases the fraction impervious to a value of 0.886 based on information provided by the applicant. Based on this value, a C_{10} value of 0.876 (From QUDM Table 4.5.3) was adopted.

Based on preliminary site grading and a concrete finished surface, a revised T_c of 8 minutes was adopted.

Friends Equation (Eq 4.5) - Shallow overland sheet flow				
L	Surface	n	S	Tc
m		Manning's	%	minutes
80	Paved	0.015	0.5	8

Based on the revised fraction impervious and time of concentration, the following discharges from site were calculated:

POST-DEVELOPMENT SITE CONDITIONS						
Development Area		0.634 ha			Fi	0.853
Event AEP	C	I	A	Q	$^1I_{10}$ (mm/hr)	65.1
%	coefficient	mm/hr	ha	m ³ /s	TC (minutes)	8
63.2	0.701	103.0	0.634	0.1271	C_{10}	0.866
50	0.744	115.0	0.634	0.1508	From QUDM Table 4.5.3	
20	0.832	152.0	0.634	0.2227		
10	0.876	178.0	0.634	0.2746	In accordance with QUDM Eqn. 4.3	
5	0.920	205.0	0.634	0.3320		
2	1.000	241.0	0.634	0.4244		
1	1.000	269.0	0.634	0.4737		

When compared with the pre-developed total site flows, we note an increase in flow for all recurrence intervals. Refer table below:

COMPARISON OF UNTREATED FLOWS			
Event AEP	Pre-Development (Total)	Post-Development	Change
%	m ³ /s	m ³ /s	%
63.2	0.0942	0.1271	35%
50	0.1112	0.1508	36%
20	0.1653	0.2227	35%
10	0.2035	0.2746	35%
5	0.2462	0.3320	35%
2	0.3172	0.4244	34%
1	0.3698	0.4737	28%

3.2 Discharge Flow Management

3.2.1 Quantity Mitigation

It is proposed to mitigate the increase in site runoff with the provision of an on-site detention in the form of underground detention tank(s) equating to 30kL storage volume located in the landscaping area fronting Bush Crescent.

An internal stormwater line is to capture and control of roof water up to and including the minor storm event (20% AEP / 1 in 5 year ARI).

It is proposed to restrict detained flows with a 100mm low-flow orifice through an internal weir. High level flows will bypass the weir and discharge from the tank via a 450mm diameter outlet pipe. All outflows from the tank(s) is to be discharged to the existing road gully unit in Bush Crescent.

Minor event (20% AEP / 1 in 5 year ARI) total site flows are reduced by 9.4L/s when compared to pre-development conditions. Major event (1% AEP / 1 in 100 year ARI) total site flows are reduced by 2.7L/s when compared to pre-development conditions. Flows are summarised below.

Total Site Flows Treated with On-Site Detention (OSD)		
	20% AEP	1% AEP
Pre-Development	0.1653 m ³ /s	0.3698 m ³ /s
Post-Development with OSD	0.1559 m ³ /s	0.3671 m ³ /s
% Reduction	5.7%	0.7%

Refer drawings in Appendix A for further detail of the tank arrangement and hydrographs.

3.2.2 Conveying Site Flows

Minor event flows will be captured and conveyed by the internal stormwater network to the on-site detention tank. Once flows exceed the minor storm event or sufficient retention has taken place flows will bypass the on-site detention via an internal weir structure in the underground tank outlet. A barrier kerb will be provided to the east side of the concrete pavement to ensure there is no bypass to the adjacent site in minor rainfall events.

Site levels have been designed to enable all minor surface flows to be directed to a stormwater pit and discharged from site to the existing gully pit in Bush Crescent.

In storm events greater than 20% AEP (1 in 5-year ARI). gap flows will bypass the internal stormwater pipes and discharge as overland flows to the interallotment drainage to be established along the northern boundary of the balance allotment.

We note that inter-allotment drainage channel and/or infrastructure will be required for the development of future stages to the development at the subject site as there is no infrastructure available in Bush Crescent to which the either the minor or major flow events can be realistically discharged for these future allotments.

The existing downstream sediment basin and general site sediment and erosion measures are to remain in-place until further development occurs on Lots 2, 3 and 4. Appropriate timing for decommissioning of the sediment basin shall be determined at such time.

3.2.2 Conveying External Catchment Flows

Flows from the external catchments located to the north and west of the development site will generally discharge through the development site as overland flow. Flows from the northern catchment will either flow along the catch drain at the top of the wall and discharge to grass line swale commencing in proposed lot 3 or in larger events may cascade over the wall and collect in the proposed swale at the base of the retaining wall. collecting in the proposed swale drain then being discharged through the balance allotment swale.

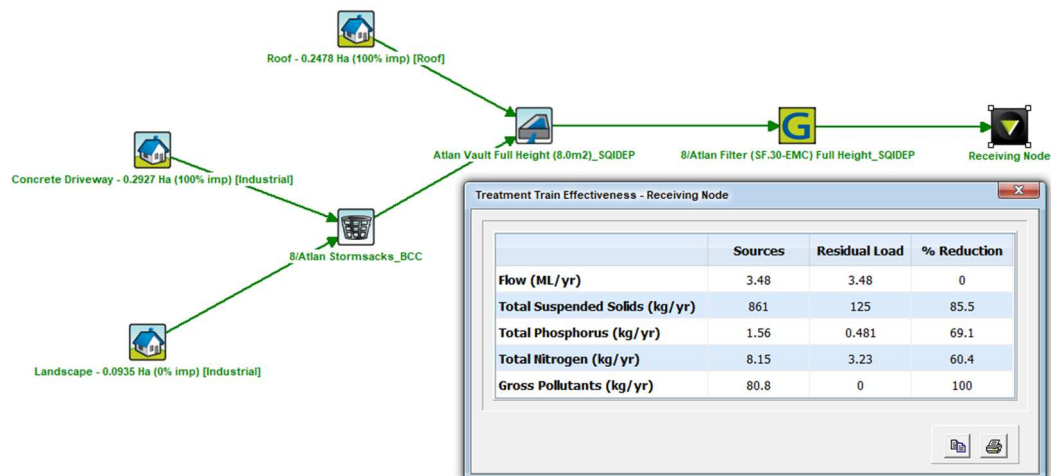
Flows from the western catchment which are significantly smaller than the northern catchments will generally cascade over wall and flow through the site to be picked up in the pipe network for minor events or flow overland to the eastern boundary for major events where it will be directed to the rear boundary to discharge through the interallotment drainage system described earlier.

3.3 Stormwater Quality Management

Due to the size of the development (>2500m²), State Planning Policy (SPP) Healthy Water has been triggered.

It is proposed to provide ATLAN Stormsacks or equivalent approved field inlet gross pollutant traps (GPTs) to all internal stormwater pits and ATLANFilter Cartridges or equivalent approved treatment device within the underground detention tanks).

The MUSIC treatment train demonstrating load reductions in accordance with SPP requirements is shown below. No additional stormwater quality improvement devices (SQIDs) are proposed at this time.



4. Conclusion

The proposed development will increase the impervious area of the site. It is proposed to mitigate the increase in runoff by providing an underground detention tank(s) controlled by a low-flow orifice and internal weir. All minor runoff from the site is to be captured and discharged to the existing stormwater infrastructure in Bush Crescent. Major gap flows are to have their impact on downstream allotments reduced with the provision of a rubble energy dissipator. Quality improvement is to be achieved with the provision of approved GPTs in field inlets and stormwater filtration devices in the underground tank(s). This report has outlined a compliant treatment train utilising products from Atlan Stormwater.

Appendix A – Stormwater Management Strategy Drawings

OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT

LOT 5 BUSH CRESCENT, PARKHURST

GCJLT HOLDINGS PTY LTD

D23.317

CIVIL DESIGN



LOCALITY PLAN
(Not To Scale)



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DESIGN DRAWING LIST INDEX	
SHEET NUMBER	SHEET TITLE
CIVIL	
C-00	TITLE PAGE
C-01	EXISTING FEATURES & SERVICES
CIVIL: ACCESS AREAS	
C-101	PROPOSED SITE LAYOUT
C-102	EARTHWORKS PLAN
C-103	ACCESS AND PARKING LAYOUT DETAILS
C-104	SETOUT POINTS
C-105	SWALE LONGITUDINAL SECTION DETAILS
CIVIL: STORMWATER	
C-201	STORMWATER LAYOUT
C-202	LONGITUDINAL SECTION SH 1 OF 2
C-203	LONGITUDINAL SECTION SH 2 OF 2
C-204	STORMWATER CALCULATIONS
CIVIL: SEWER	
C-301	SEWER LAYOUT
C-302	LONGITUDINAL SECTION
CIVIL: ENVIRONMENTAL MANAGEMENT	
C-401	EROSION SEDIMENT CONTROL PLAN
C-402	ENVIRONMENTAL MANGEMENT NOTES

REFERENCE DRAWING LIST INDEX		
SHEET NUMBER	SHEET TITLE	REVISION
COUNCIL APPROVED DRAWINGS - SEWER GRAVITY MAIN CONSTRUCTION MCLAUGHLIN STREET		
2020-230-01	OVERALL SITE LAYOUT	B
2020-230-02	DETAILS AND NOTES	B
2020-230-03	GENERAL LAYOUT PLAN - SHEET 1 OF 4	C
2020-230-04	GENERAL LAYOUT PLAN - SHEET 2 OF 4	C
2020-230-05	GENERAL LAYOUT PLAN - SHEET 3 OF 4	C
2020-230-06	GENERAL LAYOUT PLAN - SHEET 4 OF 4	C
2020-230-07	GRAVITY LONGITUDINAL SECTION - SHEET 1 OF 6	C
2020-230-08	GRAVITY LONGITUDINAL SECTION - SHEET 2 OF 6	C
2020-230-09	GRAVITY LONGITUDINAL SECTION - SHEET3 OF 6	C
2020-230-10	GRAVITY LONGITUDINAL SECTION - SHEET 4 OF 6	C
2020-230-11	GRAVITY LONGITUDINAL SECTION - SHEET 5 OF 6	C
2020-230-12	GRAVITY LONGITUDINAL SECTION - SHEET 6 OF 6	C
2020-230-13	MANHOLE BASE DETAILS	C

OPERATIONAL WORKS ISSUE

FOR CONSTRUCTION ONLY WITH COUNCIL APPROVAL

DRAINAGE

- PROVIDE A DRAINAGE LAYER DIRECTLY BEHIND THE FACING UNITS AT A THICKNESS OF 'X' OF 25-75mm CLEAN ROCK SCREENINGS WITH POSITIVE DRAINAGE PATH AT A SUITABLE OUTLET.
- GEO-FABRIC SEPERATION TO BE PLACED BETWEEN IN-SITU AND DRAINAGE MATERIAL.

DESIGN ASSUMPTIONS

- DESIGN IS BASED ON RETAINING IN-SITU MATERIAL WITH THE FOLLOWING MINIMUM CHARACTERISTICS. CONFIRM ONSITE.
- INTERNAL FRICTION ANGLE: 28 DEGREES
- SOIL UNIT WEIGHT: 19kN/m3
- RETAINING WALL DESIGNED AS CLASS B IN ACCORDANCE WITH AS4378.
- FOOTING TO BE FOUNDED ON GRAVEL BEARING PAD WITH 200 kPa MINIMUM BEARING CAPACITY.

DESIGN PARAMETERS

- MAXIMUM SURCHARGE LOADS APPLIED TO RETAINING WALL STRUCTURES:
CONSTRUCTION LIVE LOAD - 2.5 kPa
IN-SERVICE LIVE LOAD - 2.5 kPa
- THE DESIGN ASSUMES NO WATER PRESSURE ACTING ON FACE.
- THE DESIGN HAS NOT BEEN CONSIDERED FOR SEISMIC FORCES



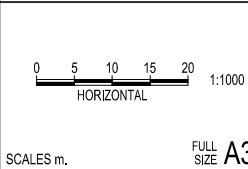
EXISTING LEVELS AND SERVICES

1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND LEVELS OF ALL EXISTING SERVICES WITH THE RELEVANT AUTHORITIES INCLUDING "DIAL BEFORE YOU DIG" PRIOR TO COMMENCING CONSTRUCTION.
2. ANY COSTS ASSOCIATED WITH REPAIRING DAMAGE TO EXISTING SERVICES SHALL BE PAID FOR BY THE CONTRACTOR.
3. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING LEVELS ARE AS PER THIS DESIGN WHERE CONNECTIONS TO EXISTING INFRASTRUCTURE ARE REQUIRED. ANY DIFFERENCES TO BE NOTIFIED TO THE ENGINEER PRIOR TO ORDERING MATERIALS OR COMMENCING ANY WORKS.
4. PRIOR TO COMMENCING WORKS THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO CLASHES BETWEEN ANY CROSSING SERVICE OR PIPELINE. ANY CLASHES TO BE NOTIFIED TO THE ENGINEER PRIOR TO WORKS COMMENCING.
5. PRIOR TO COMMENCING WORKS THE CONTRACTOR SHALL VERIFY LOCATION AND DETAILS OF ALL EXISTING SERVICE CONNECTIONS TO NEW ALLOTMENTS PREVIOUSLY INSTALLED.

LEGEND

- ED EXISTING OVERHEAD ELECTRICITY
- T TELSTRA (CABLE & PIT)
- W EXISTING WATER MAIN
- S EXISTING SEWER MAIN & ACCESS CHAMBER
- EXISTING BARRIER KERB AND CHANNEL
- EXISTING BARRIER KERB AND CHANNEL
- D EXISTING STORMWATER MAIN
- EXISTING KERB INLET
- S PROPOSED SEWER MAIN & ACCESS CHAMBER (DESIGN AND WORKS BY RRC)
- S150 PROPOSED SEWER (INDICATIVE ONLY)
- PROPOSED LANDSCAPE AREA
- PROPOSED RUBBLE PIT
- PROPOSED CONCRETE HARDSTAND
- PROPOSED SHED
- PROPOSED SANDSTONE BLOCK RETAINING WALL

DATUM: HORIZ. GDA 94 VERT. AHD



OPERATIONAL WORKS ISSUE

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A	PRELIMINARY	14/12/2023
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DESIGNED	AML
CHECKED	ACD
APPROVED	G J BROWN
RPEQ 7682	SIGN
17.05.2024	

GCJLT HOLDINGS PTY LTD
OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT
LOT 5 BUSH CRESCENT, PARKHURST
PROPOSED SITE LAYOUT & RETAINING WALL DETAIL

DWG No.	D23.317-101
CIVIL	
REVISION	B



EARTHWORKS AND ROADWORKS NOTES

- CONTROL TESTING OF EARTHWORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH AS 3798 WITH LEVEL 1 GITA SUPERVISION
- EMBANKMENT MATERIAL SHALL BE FREE OF TREE STUMPS AND ROOTS AND BE CAPABLE OF BEING COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS.
- EMBANKMENT FOUNDATIONS SHALL BE PREPARED BY GRADING AND LEVELING THE AREA, ADJUSTING THE MOISTURE CONTENT WHERE NECESSARY AND COMPACTING THE TOP 200mm TO PROVIDE A RELATIVE COMPACTION OF NOT LESS THAN 98 PER CENT AS DETERMINED BY AS1289.5.7.1 FOR STANDARD COMPACTION EFFORT.
- WHERE AN EMBANKMENT IS TO BE CONSTRUCTED ON OR AGAINST ANY NATURAL SLOPES OR THE BATTERS OF EXISTING EMBANKMENTS THAT ARE STEEPER THAN 4 HORIZONTAL TO 1 VERTICAL, THE FACE OF THE SLOPE TO BE COVERED AND SHALL BE CUT IN THE FORM OF HORIZONTAL TERRACES, EACH WITH A MINIMUM WIDTH OF 1m. TERRACES ARE TO BE CUT PROGRESSIVELY AS THE EMBANKMENT IS PLACED AND THE MATERIAL THUS EXCAVATED PLACED AND COMPACTED AS PART OF THE NEW EMBANKMENT. WHERE POSSIBLE, TERRACES SHALL COINCIDE WITH NATURAL DISCONTINUITIES.
- FILL FOR EMBANKMENTS SHALL BE PLACED IN LAYERS PARALLEL TO THE GRADE LINE WITH A MAXIMUM LAYER THICKNESS OF 250mm FOLLOWING COMPACTION ALL LAYERS SHALL BE TRIMMED PRIOR TO AND DURING COMPACTION TO AVOID BRIDGING OVER LOW AREAS AND TO PRESENT A SMOOTH SURFACE AT THE TOP OF EACH LAYER.
- FILL SHALL BE PLACED AND COMPACTED TO THE FOLLOWING STANDARDS:
 - ALLOTMENT FILL SHALL ACHIEVE A MINIMUM DRY DENSITY RATIO (M.D.D.R.) OF 95% STANDARD.
 - ROADWORK EMBANKMENTS SHALL ACHIEVE A MINIMUM DRY DENSITY RATIO (MDDR) OF 100% STANDARD.
- FIELD DENSITY TESTS SHALL BE UNDERTAKEN AT THE FOLLOWING MINIMUM FREQUENCY:
 - ALLOTMENT FILL: AS REQUIRED FOR LEVEL 1 GITA CERTIFICATION AS "CONTROLLED FILL"
 - EMBANKMENT FILL: 1 TEST/250CU.M OR 1 TEST/200mm THICKNESS/100sq.m. (WHICHEVER IS GREATER)
 - SUBGRADE: 1 TEST/75m OF ROAD LENGTH
 - PAVEMENT: 1 TEST/75m OF ROAD LENGTH
- ROAD PAVEMENT SHALL BE PLACED AND COMPACTED TO ACHIEVE A MINIMUM DRY DENSITY RATIO (M.D.D.R.) OF 100% STANDARD.
- BATTER SLOPES 1 IN 4 MAX WITHIN ALLOTMENTS UNLESS SPECIFIED OTHERWISE.
- ROCK PIECES IN THE EMBANKMENT FILL MATERIAL SHALL HAVE A MAXIMUM DIMENSION, MEASURED IN ANY DIRECTION, OF 167mm. ANY LARGER PIECES SHALL BE EITHER REMOVED, OR REDUCED IN SIZE FOR INCORPORATION INTO THE EMBANKMENT LAYERS, WITH SUFFICIENT FINE MATERIAL PLACED AROUND THE LARGER MATERIAL AS IT IS DEPOSITED TO FILL ANY VOIDS AND PRODUCE A DENSE, COMPACT EMBANKMENT.
- WHEN PLACING AND COMPACTING LAYERS, ENSURE EQUIPMENT AND TECHNIQUES USED AVOID SURFACE HEAVING OR OTHER DAMAGE TO THE FOUNDATIONS AND UNDERLYING EMBANKMENT LAYERS.
- CUT/FILL LEVELS GIVEN TO TOP OF FINISHED SURFACE

EARTHWORKS DEPTHS SHADED TABLE
(‘SURFACE HEAT MAP’)

No.	MIN. LEVEL	MAX. LEVEL	COLOUR	VOLUME	AREA
1	-3.000	-2.750		0.00 Cu. M	0.2m²
2	-2.750	-2.500		1.05 Cu. M	10.9m²
3	-2.500	-2.250		6.72 Cu. M	35.5m²
4	-2.250	-2.000		17.58 Cu. M	49.3m²
5	-2.000	-1.750		32.01 Cu. M	70.5m²
6	-1.750	-1.500		52.91 Cu. M	94.0m²
7	-1.500	-1.250		78.59 Cu. M	110.4m²
8	-1.250	-1.000		108.54 Cu. M	132.5m²
9	-1.000	-0.750		146.12 Cu. M	170.0m²
10	-0.750	-0.500		192.64 Cu. M	205.6m²
11	-0.500	-0.250		254.22 Cu. M	329.9m²
12	-0.250	0.000		409.52 Cu. M	1152.1m²
13	0.000	0.250		873.32 Cu. M	1830.5m²
14	0.250	0.500		322.41 Cu. M	2460.9m²
15	0.500	0.750		1.26 Cu. M	62.9m²

EARTHWORKS VOLUMES

VOLUME CUT (Cu.m)	VOLUME FILL (Cu.m)	BALANCE (Cu.m)
1299.91	1197.00	102.91 CUT

DATUM: HORIZ. GDA 94 VERT. AHD

0 5 10 15 20
HORIZONTAL

SCALES m.

FULL
SIZE

OPERATIONAL WORKS ISSUE

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RPEQ 7682	SIGN
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GCJLT HOLDINGS PTY LTD
OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT
LOT 5 BUSH CRESCENT, PARKHURST

EARTHWORKS PLAN

DWG No.

D23.317-102

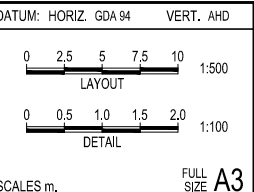
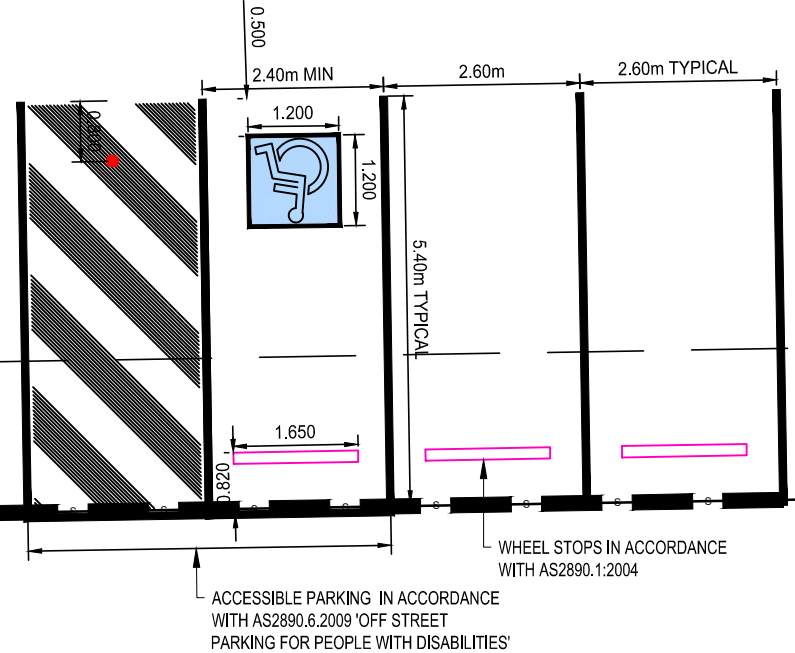
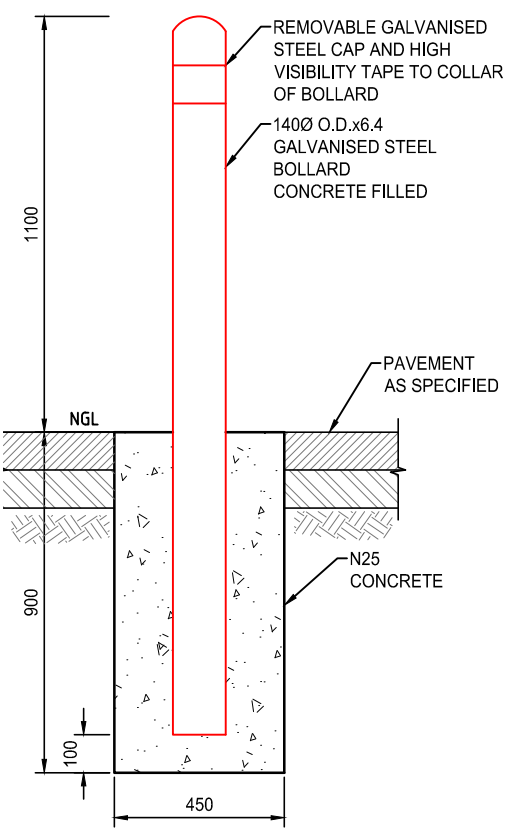
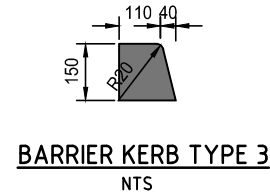
CIVIL

REVISION

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- LEGEND**
- EO — EXISTING OVERHEAD ELECTRICITY
 - T — TELSTRA (CABLE & PIT)
 - W — EXISTING WATER MAIN
 - S — EXISTING SEWER MAIN & ACCESS CHAMBER
 - EXISTING BARRIER KERB AND CHANNEL
 - D — EXISTING STORMWATER MAIN
 - EXISTING KERB INLET
 - D — PROPOSED STORMWATER DRAINAGE
 - S150 — PROPOSED SEWER (INDICATIVE ONLY)
 - PROPOSED LANDSCAPE AREA
 - PROPOSED RUBBLE PIT
 - PROPOSED CONCRETE HARDSTAND
 - PROPOSED SHED
 - PROPOSED SANDSTONE BLOCK RETAINING WALL



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CIVIL / STRUCTURAL DESIGN & PROJECT MANAGEMENT

ACN 121 309 171
47 Normanby Street
Yeppoon, Queensland 4703

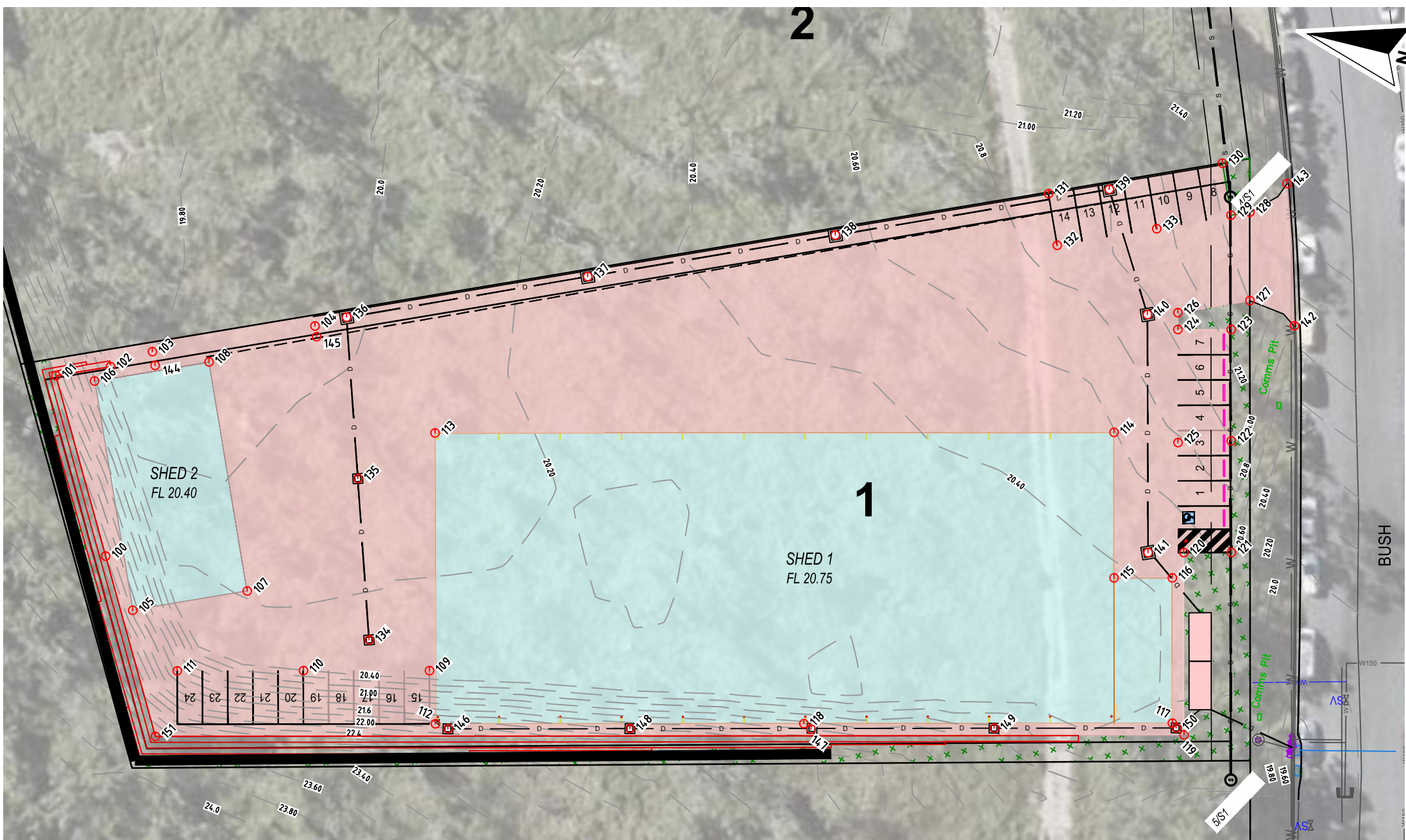
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GCJLT HOLDINGS PTY LTD
OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT
LOT 5 BUSH CRESCENT, PARKHURST

ACCESS AND PARKING LAYOUT AND DETAILS

DWG No.	D23.317-103
CIVIL	
REVISION	B



LEGEND

- EO EXISTING OVERHEAD ELECTRICITY
- T TELSTRA (CABLE & PIT)
- W EXISTING WATER MAIN
- S EXISTING SEWER MAIN & ACCESS CHAMBER
- EXISTING BARRIER KERB AND CHANNEL
- EXISTING BARRIER KERB AND CHANNEL
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- PROPOSED SANDSTONE BLOCK RETAINING WALL

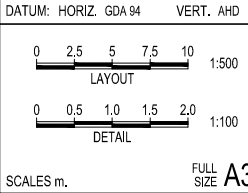
Point Table				
Point #	Easting	Northing	Level	Description
100	244382.311	7419117.898	20.312	FSL
101	244399.286	7419127.060	20.052	FSL
102	244401.462	7419121.784	19.907	FSL
103	244403.920	7419117.920	19.821	FSL
104	244410.246	7419102.172	19.800	FSL
105	244377.478	7419113.923	20.400	FSL
106	244399.638	7419123.060	20.327	FSL
107	244382.064	7419102.857	20.301	FSL
108	244404.204	7419111.986	20.350	FSL
109	244378.272	7419082.713	20.614	FSL
110	244375.353	7419095.381	20.510	FSL
111	244372.434	7419108.049	20.692	FSL

Point Table				
Point #	Easting	Northing	Level	Description
112	244373.047	7419080.893	20.653	FSL
113	244402.281	7419087.629	20.635	FSL
114	244417.998	7419019.417	20.658	FSL
115	244403.381	7419016.049	20.650	FSL
116	244404.728	7419010.202	20.631	FSL
117	244390.111	7419006.834	20.635	FSL
118	244381.579	7419043.864	20.647	FSL
119	244389.212	7419005.395	20.583	FSL
120	244407.532	7419009.616	20.519	FSL
121	244408.632	7419004.841	20.610	FSL
122	244419.838	7419007.424	20.823	FSL
123	244431.044	7419010.006	21.035	FSL

Point Table				
Point #	Easting	Northing	Level	Description
124	244429.810	7419015.365	20.925	FSL
125	244418.443	7419012.737	20.762	FSL
126	244431.501	7419015.755	21.012	FSL
127	244434.372	7419008.792	21.377	FSL
128	244443.263	7419010.840	21.588	FSL
129	244442.517	7419012.649	21.490	FSL
130	244447.553	7419014.726	21.218	FSL
131	244440.477	7419031.494	20.879	FSL
132	244435.485	7419029.436	20.743	FSL
133	244439.449	7419019.821	20.900	FSL
134	244379.963	7419089.491	20.370	TOP OF PIT
135	244395.914	7419094.340	20.260	TOP OF PIT

Point Table				
Point #	Easting	Northing	Level	Description
136	244411.865	7419099.190	19.901	TOP OF PIT
137	244421.519	7419075.901	20.164	TOP OF PIT
138	244431.389	7419051.964	20.465	TOP OF PIT
139	244442.310	7419025.478	20.809	TOP OF PIT
140	244430.614	7419018.763	20.872	TOP OF PIT
141	244406.704	7419013.210	20.598	TOP OF PIT
142	244432.867	7419003.731	20.791	FSL
143	244446.986	7419007.748	21.281	FSL
144	244402.608	7419117.319	20.219	FSL
145	244409.218	7419101.755	20.064	FSL
146	244372.844	7419079.516	20.650	TOP OF PIT
147	244381.182	7419043.019	20.638	TOP OF PIT

Point Table				
Point #	Easting	Northing	Level	Description
148	244377.065	7419061.222	20.644	TOP OF PIT
149	244385.509	7419024.635	20.634	TOP OF PIT
150	244389.730	7419006.341	20.603	TOP OF PIT
151	244365.335	7419108.735	21.151	FSL



OPERATIONAL WORKS ISSUE

FOR CONSTRUCTION ONLY WITH COUNCIL APPROVAL

REV	REVISION DESCRIPTION	DATE
A	PRELIMINARY	14/12/2023
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ACN 121 309 171
47 Normanby Street
Yeppoon, Queensland 4703

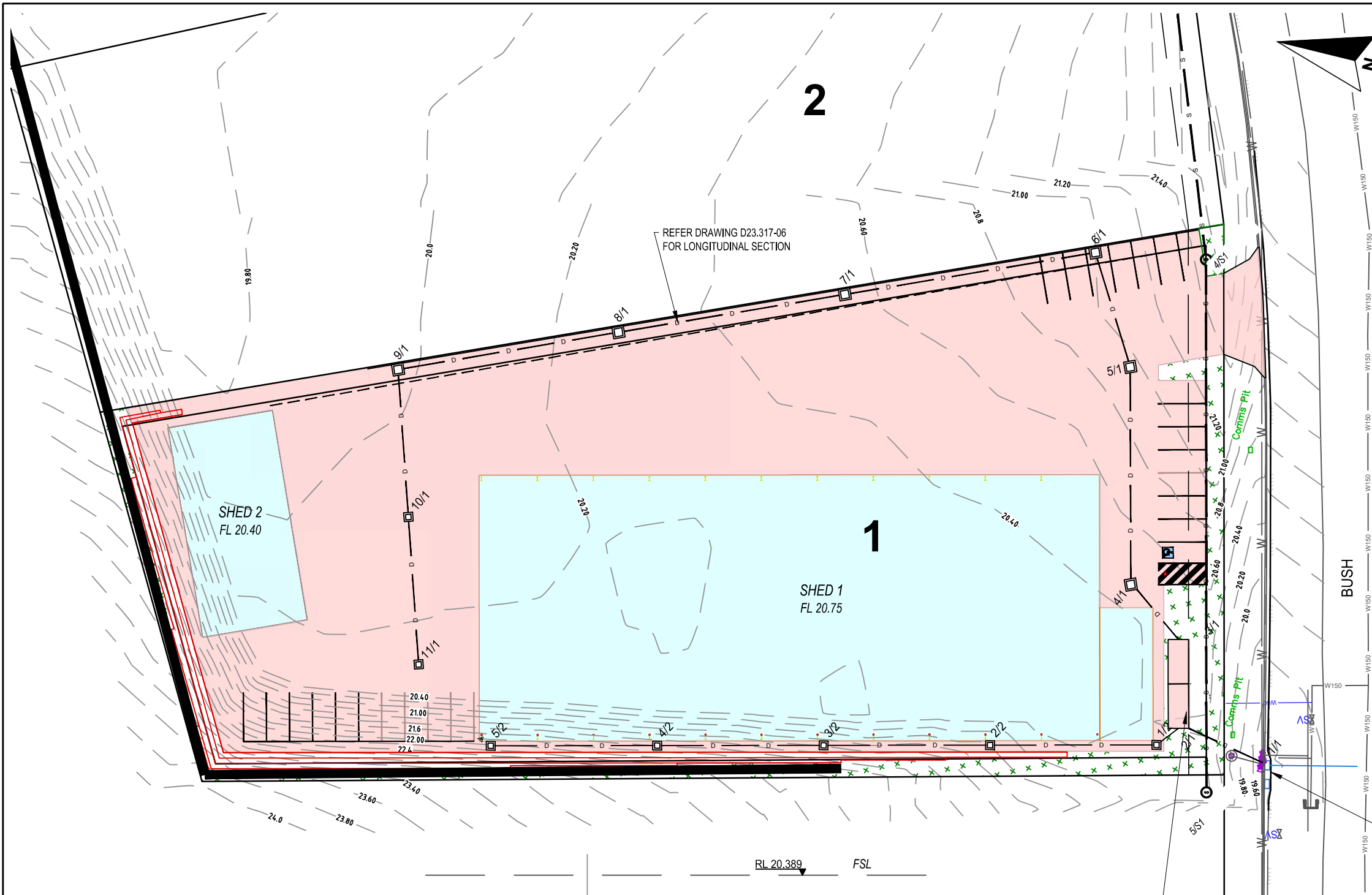
Phone: 07 49112553
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Email: admin@dileigh.com.au

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GCJLT HOLDINGS PTY LTD
OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT
LOT 5 BUSH CRESCENT, PARKHURST

SETOUT POINTS

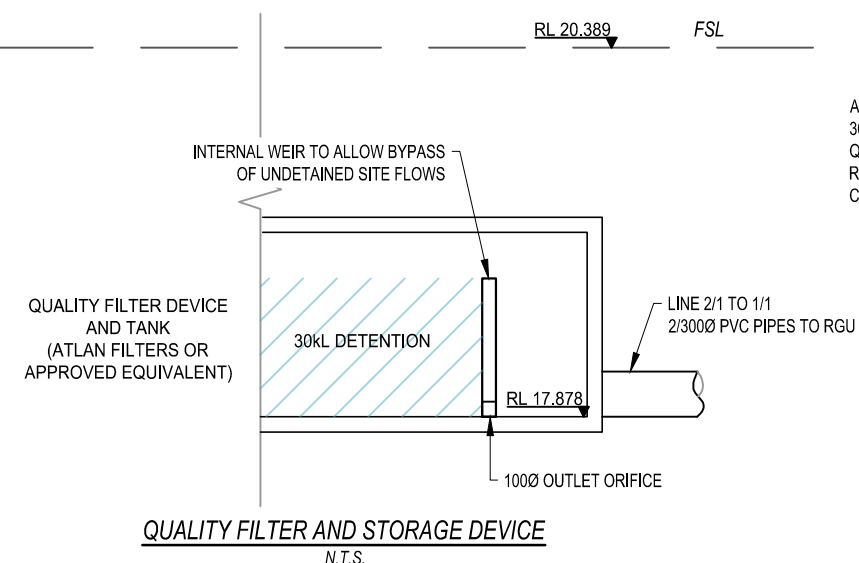
DWG No.	D23.317-104
CIVIL	
REVISION	B



- LEGEND**
- EO EXISTING OVERHEAD ELECTRICITY
 - T TELSTRA (CABLE & PIT)
 - W EXISTING WATER MAIN
 - S EXISTING SEWER MAIN & ACCESS CHAMBER
 - EXISTING BARRIER KERB AND CHANNEL
 - EXISTING BARRIER KERB AND CHANNEL
 - EXISTING STORMWATER MAIN
 - EXISTING KERB INLET
 - D PROPOSED STORMWATER DRAINAGE LINE
 - S150 PROPOSED SEWER (INDICATIVE ONLY)
 - PROPOSED LANDSCAPE AREA
 - PROPOSED RUBBLE PIT
 - PROPOSED CONCRETE HARDSTAND
 - PROPOSED SHED
 - PROPOSED SANDSTONE BLOCK RETAINING WALL

NOTE:
THE SERVICES INFORMATION SHOWN ON THIS DRAWING HAVE BEEN DERIVED FROM THE FOLLOWING SOURCES:

- SURFACE LOCATIONS OF SERVICES LOCATED BY THE SURVEYOR
- PLAN DATA PROVIDED BY SERVICE AUTHORITIES
- THE CONTRACTOR OR CONSTRUCTION AUTHORITY IS TO CONFIRM THE ACTUAL LOCATIONS OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.



ATLAN TANKS (OR SIMILAR APPROVED) FOR 30kL DETENTION AND TO ACHIEVE SPP WATER QUALITY OBJECTIVES
REFER TO DRAWING D23.317-07 FOR CALCULATIONS

EXISTING KERB INLET AND PIT TO EXISTING 4500 STORMWATER PIPE.
PIT INVERT NOT PICKED UP IN SURVEY BUT MEASURES APPROXIMATELY 2.4m BELOW GRATE

DATUM: HORIZ. GDA 94 VERT. AHD

0 2.5 5 7.5 10 1:500
HORIZONTAL

SCALES m. FULL SIZE A3

OPERATIONAL WORKS ISSUE

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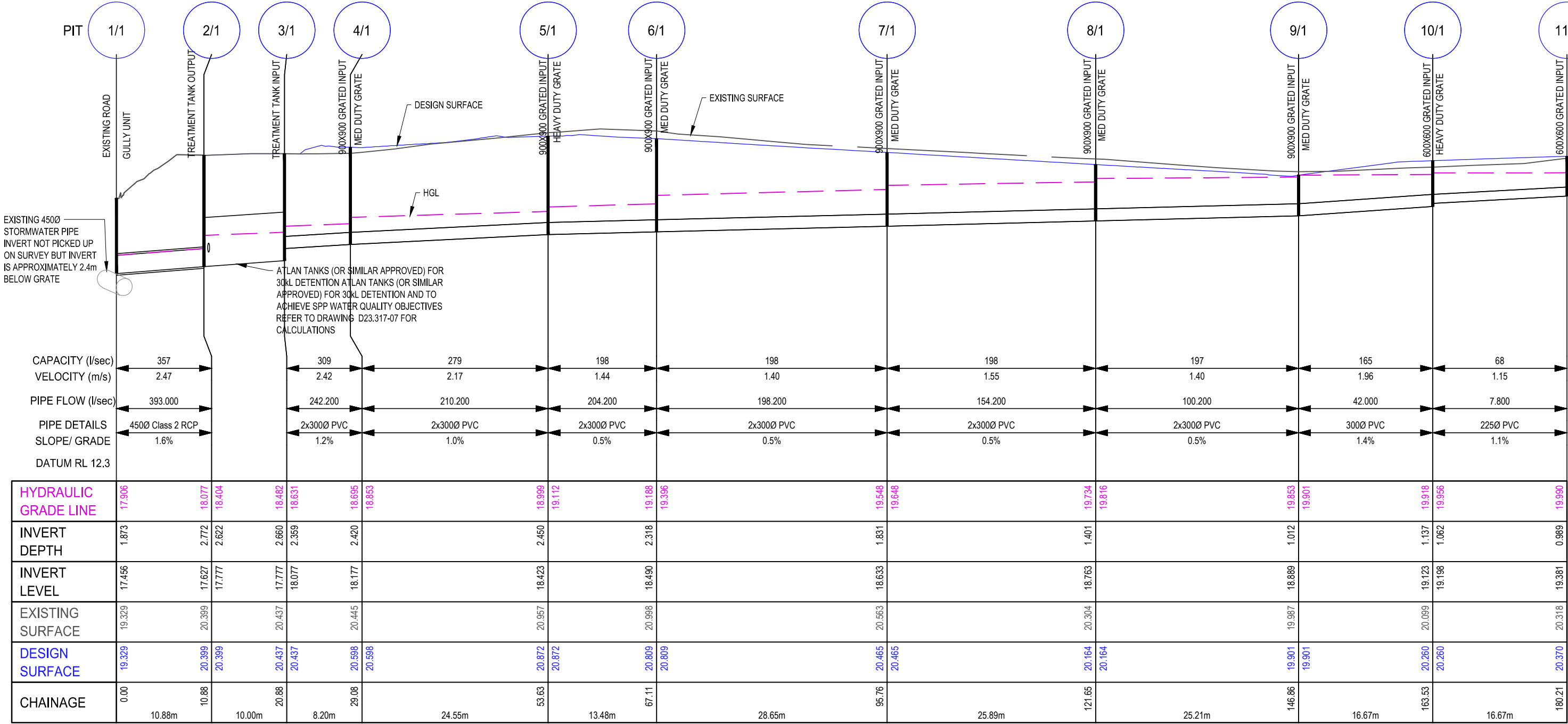
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RPEQ 7682	SIGN
17.05.2024	

GCJLT HOLDINGS PTY LTD
OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT
LOT 5 BUSH CRESCENT, PARKHURST

STORMWATER LAYOUT PLAN

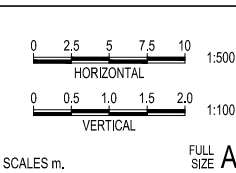
DWG No.	D23.317-201
CIVIL	
REVISION	B

- DRAINAGE LONGITUDINAL SECTION NOTES:
1. PIPED NETWORK MODELED AND LONGITUDINAL SECTION GENERATED BY CSD PIPES.
 2. PIPE NETWORK FOR GROUND INLET PITS MODELED FOR Q10 MINOR EVENT IN ACCORDANCE WITH CMDG STORMWATER DESIGN GUIDELINE TABLE 0.5.04.2 FOR COMMERCIAL DEVELOPMENT.
 3. MAJOR AND MINOR RAINFALL INTENSITIES GENERATED USING BUREAU OF METEOROLOGY 2018 RAINFALL IFD DATA SYSTEM.



LINE 1

DATUM: HORIZ. GDA 94 VERT. AHD



OPERATIONAL WORKS ISSUE

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OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT
LOT 5 BUSH CRESCENT, PARKHURST

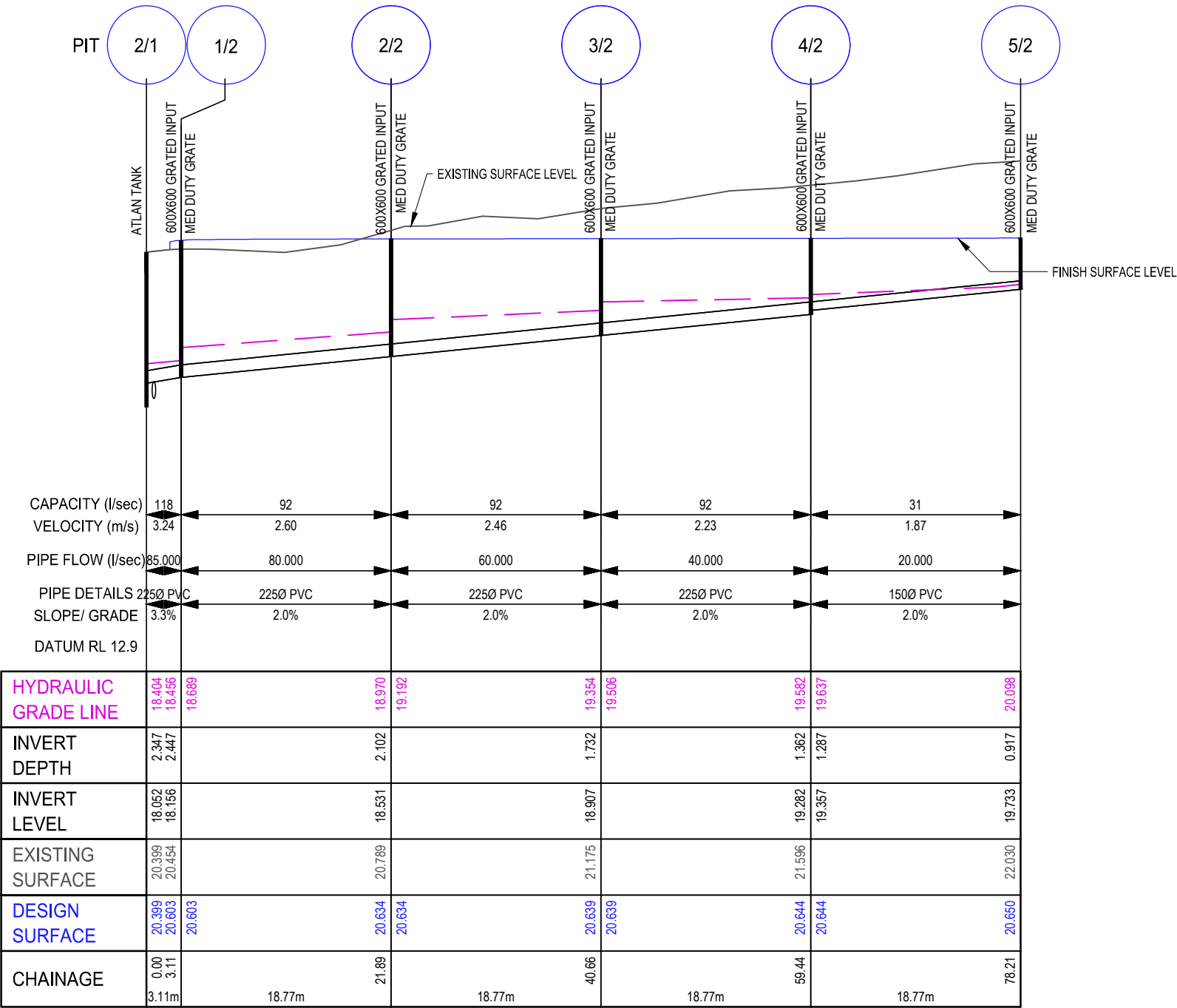
STORMWATER LONGITUDINAL SECTION SH 1 OF 2

DWG No. **D23.317-202**

CIVIL

REVISION **B**

- DRAINAGE LONGITUDINAL SECTION NOTES:
1. PIPED NETWORK MODELED AND LONGITUDINAL SECTION GENERATED BY CSD PIPES.
 2. PIPE NETWORK FOR GROUND INLET PITS MODELED FOR Q10 MINOR EVENT IN ACCORDANCE WITH CMDG STORMWATER DESIGN GUIDELINE TABLE 0.5.04.2 FOR COMMERCIAL DEVELOPMENT.
 3. MAJOR AND MINOR RAINFALL INTENSITIES GENERATED USING BUREAU OF METEOROLOGY 2018 RAINFALL IFD DATA SYSTEM.



LINE 2

DATUM: HORIZ. GDA 94 VERT. AHD

0 2.5 5 7.5 10

HORIZONTAL

0 0.5 1.0 1.5 2.0

VERTICAL

SCALES m. FULL SIZE A3

OPERATIONAL WORKS ISSUE

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GCJLT HOLDINGS PTY LTD

OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT

LOT 5 BUSH CRESCENT, PARKHURST

STORMWATER LONGITUDINAL SECTION SH 1 OF 2

DWG No.

D23.317-203

CIVIL

REVISION

B

PRE-DEVELOPMENT SITE CONDITIONS				
Development Area 0.634 ha				
Event AEP	C	I	A	Q
%	coefficient	mm/hr	ha	m ³ /s
63.2	0.670	79.8	0.634	0.0942
50	0.712	88.7	0.634	0.1112
20	0.796	118.0	0.634	0.1653
10	0.838	138.0	0.634	0.2035
5	0.879	159.0	0.634	0.2462
2	0.963	187.0	0.634	0.3172
1	1.000	210.0	0.634	0.3698

Fi	0.750
¹ I ₁₀ (mm/hr)	65.1
TC (minutes)	16
C ₁₀	0.838

From QUDM Table 4.5.3

In accordance with QUDM Eqn. 4.3

POST-DEVELOPMENT SITE CONDITIONS				
Development Area 0.634 ha				
Event AEP	C	I	A	Q
%	coefficient	mm/hr	ha	m ³ /s
63.2	0.701	103.0	0.634	0.1271
50	0.744	115.0	0.634	0.1508
20	0.832	152.0	0.634	0.2227
10	0.876	178.0	0.634	0.2746
5	0.920	205.0	0.634	0.3320
2	1.000	241.0	0.634	0.4244
1	1.000	269.0	0.634	0.4737

Fi	0.886
¹ I ₁₀ (mm/hr)	65.1
TC (minutes)	8
C ₁₀	0.876

From QUDM Table 4.5.3

In accordance with QUDM Eqn. 4.3

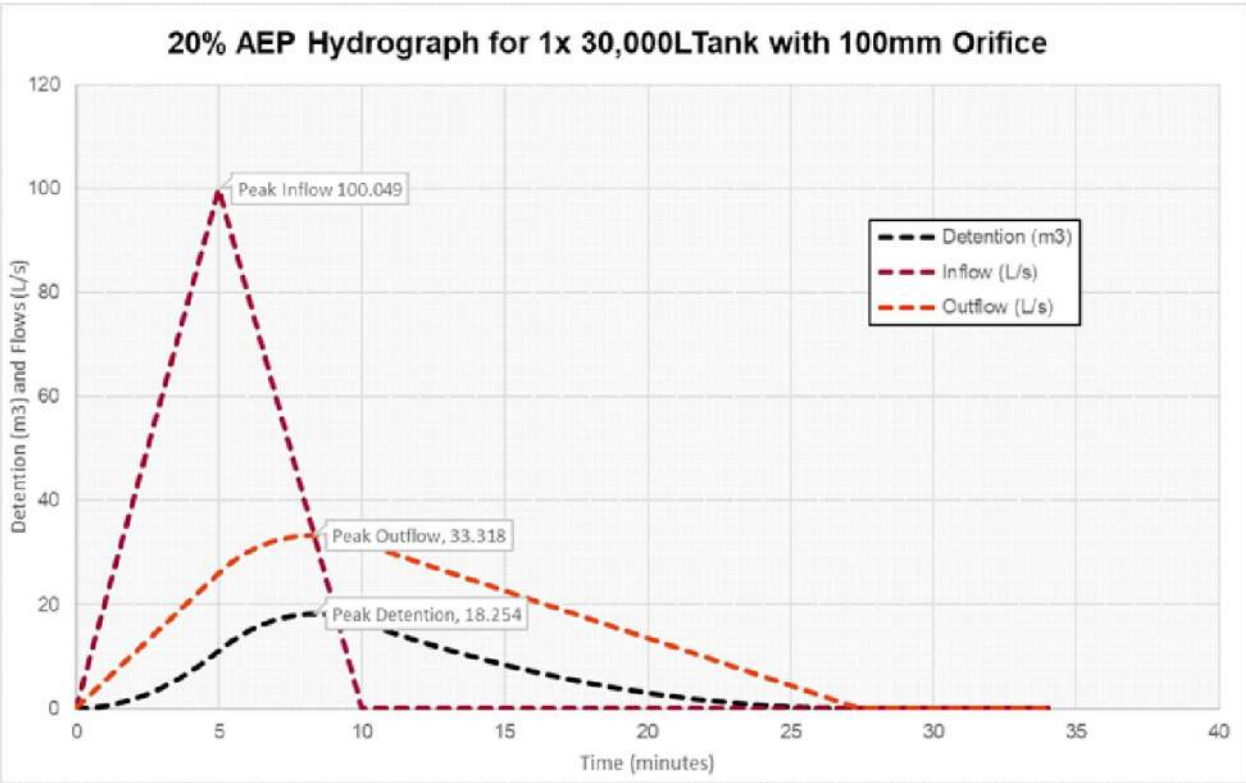
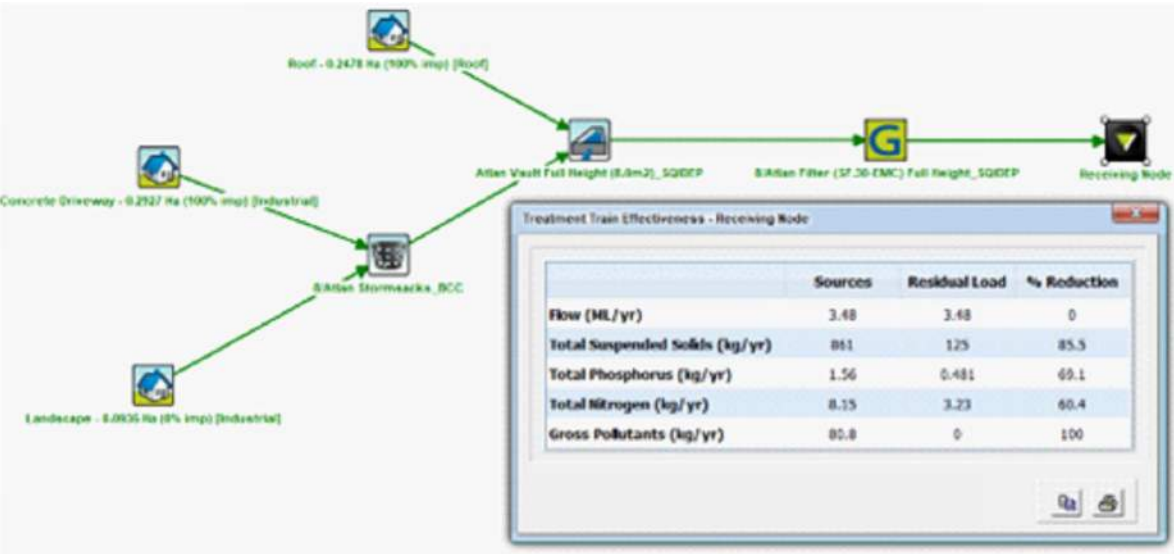
OSD INFLOW CATCHMENT				
Development Area 0.2478 ha				
Event AEP	C	I	A	Q
%	coefficient	mm/hr	ha	m ³ /s
63.2	0.720	115.0	0.2478	0.0570
50	0.765	128.0	0.2478	0.0674
20	0.855	170.0	0.2478	0.1000
10	0.900	200.0	0.2478	0.1239
5	0.945	229.0	0.2478	0.1490
2	1.000	268.0	0.2478	0.1845
1	1.000	300.0	0.2478	0.2065

Fi	1.0
¹ I ₁₀ (mm/hr)	65.1
TC (minutes)	5
C ₁₀	0.900

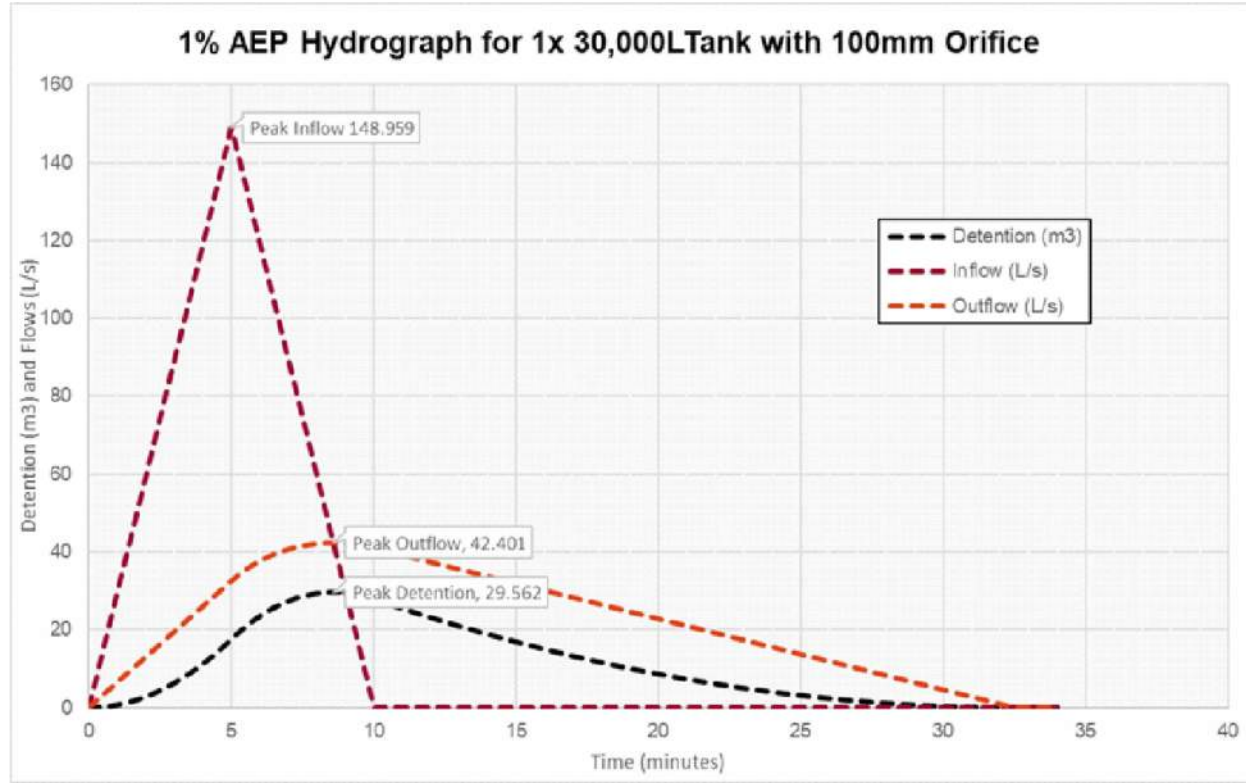
From QUDM Table 4.5.3

In accordance with QUDM Eqn. 4.3

COMPARISON OF UNTREATED FLOWS			
Event AEP	Pre-Development	Post-Development	Change
%	m ³ /s	m ³ /s	%
63.2	0.0942	0.1271	35%
50	0.1112	0.1508	36%
20	0.1653	0.2227	35%
10	0.2035	0.2746	35%
5	0.2462	0.3320	35%
2	0.3172	0.4244	34%
1	0.3698	0.4737	28%



Treated 20% AEP Site Flows	
Pre-Development	0.1653 m ³ /s
Post-Development with OSD	0.1559 m ³ /s
5.7 % DECREASE IN MINOR FLOW	



Treated 1% AEP Site Flows	
Pre-Development	0.3698 m ³ /s
Post-Development with OSD	0.3671 m ³ /s
0.7 % DECREASE IN MAJOR FLOW	

DATUM: HORIZ. GDA 94 VERT. AHD

0 5 10 15 20

HORIZONTAL

1:1000

SCALES m.

FULL SIZE A3

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DILEIGH

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DESIGNED

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APPROVED

RPEQ 7682

17.05.2024

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GCJLT HOLDINGS PTY LTD

OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT

LOT 5 BUSH CRESCENT, PARKHURST

STORMWATER CALCULATIONS

DWG No.

D23.317-204

CIVIL

REVISION

B

C:\OneDrive - DILEIGH CONSULTING ENGINEERS PTY LTD\data\2023\023.317_ADAMS - Lot 5 Bush Crescent, Parkhurst\Civil\023.317-2.dwg, 204, 16/05/2024 5:30:09 PM, Ashkan, ISO full bleed A3 (420.00 x 297.00 MM), 1:1



LEGEND

- ED EXISTING OVERHEAD ELECTRICITY
- T TELSTRA (CABLE & PIT)
- W EXISTING WATER MAIN
- S EXISTING SEWER MAIN & ACCESS CHAMBER
- EXISTING BARRIER KERB AND CHANNEL
- EXISTING BARRIER KERB AND CHANNEL
- EXISTING STORMWATER MAIN
- EXISTING KERB INLET
- D PROPOSED SEWER (INDICATIVE ONLY)
- S PROPOSED SEWER MAIN & ACCESS CHAMBER (DESIGN AND WORKS BY RRC)
- S150 PROPOSED SEWER (INDICATIVE ONLY)
- PROPOSED LANDSCAPE AREA
- PROPOSED RUBBLE PIT
- PROPOSED CONCRETE HARDSTAND
- PROPOSED SHED
- PROPOSED SANDSTONE BLOCK RETAINING WALL

SEWER NOTES

- HOUSE CONNECTIONS SHALL BE IN ACCORDANCE WITH CMDG STD DRAWING SD-S-030
- ALIGNMENT OF SEWER MAIN IN PRIVATE PROPERTY SHALL BE 2.0m FROM THE FRONT AND REAR PROPERTY BOUNDARY AND 2.0m FROM THE SIDE PROPERTY BOUNDARY.
- ALL SEWERS SHALL BE 150 DIA. uPVC CLASS SN8 R.R.J. UNLESS OTHERWISE NOTED.
- ALL SEWER MANHOLES TO BE 1050mm DIAMETER, UNLESS SPECIFIED OTHERWISE ON SEWER LONGITUDINAL SECTIONS.
- MANHOLE LIDS TO BE CONSTRUCTED TO FOLLOW SLOPE OF BATTERS IF POSSIBLE AND FINISHED 50mm PROUD OF FINISHED SURFACE.
- MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CMDG STD DRAWINGS SD-S-021 & SD-S-024.

NOTE:
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• THE CONTRACTOR OR CONSTRUCTION AUTHORITY IS TO CONFIRM THE ACTUAL LOCATIONS OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.

DATUM: HORIZ. GDA 94 VERT. AHD

0 2.5 5 7.5 10
HORIZONTAL

SCALES m.

FULL SIZE A3

OPERATIONAL WORKS ISSUE

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APPROVED	G J BROWN
RPEQ 7682	SIGN
17.05.2024	

GCJLT HOLDINGS PTY LTD
OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT
LOT 5 BUSH CRESCENT, PARKHURST

SEWER LAYOUT PLAN

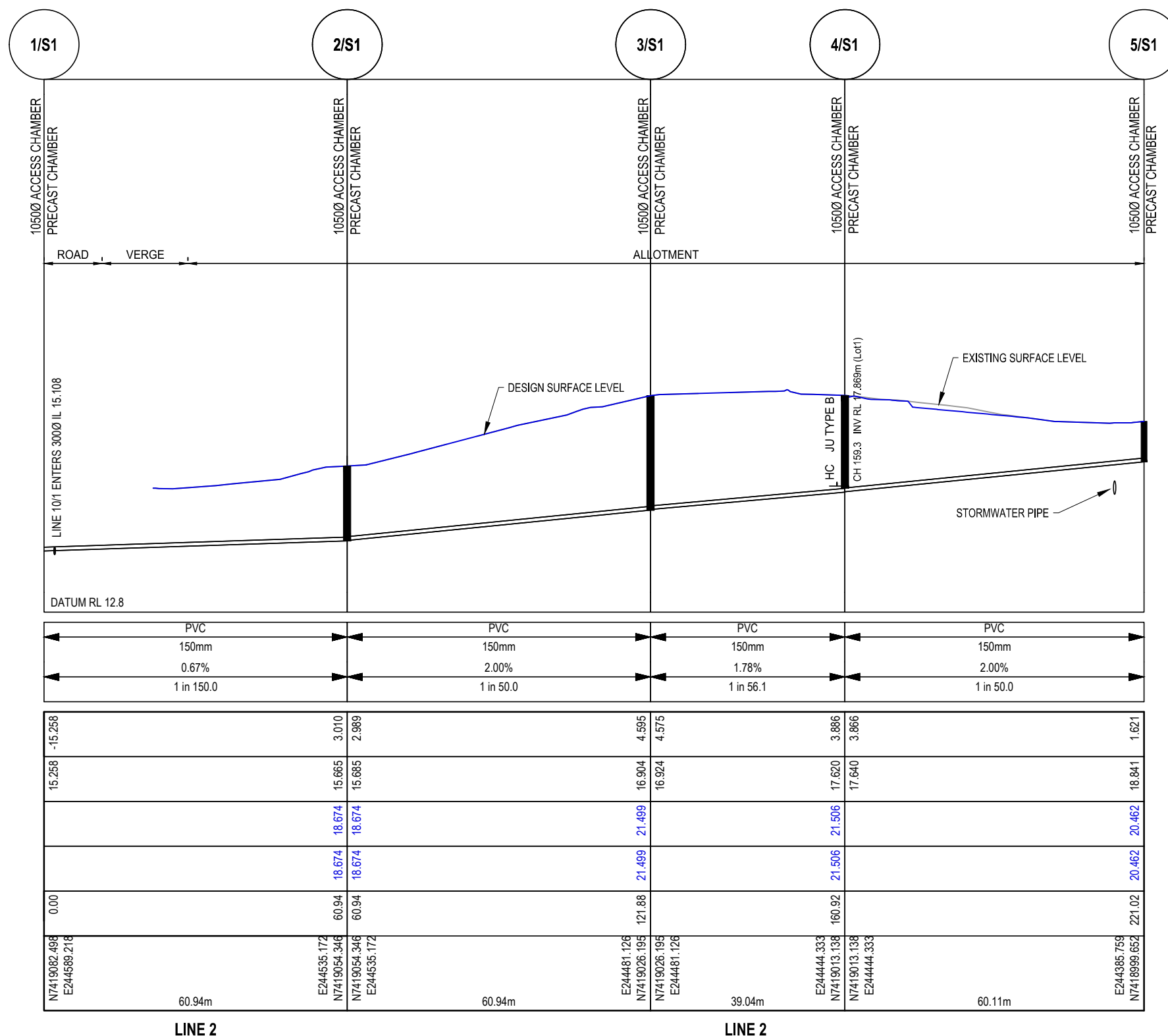
DWG No.

D23.317-301

CIVIL

REVISION

B



PIPE MATERIAL
PIPE DIAMETER
PIPE GRADE
PIPE SLOPE

DEPTH TO INVERT
INVERT LEVEL
DESIGN SURFACE LEVELS
EXISTING SURFACE LEVELS
RUNNING CHAINAGE

LINE 2


LINE 2

OPERATIONAL WORKS ISSUE

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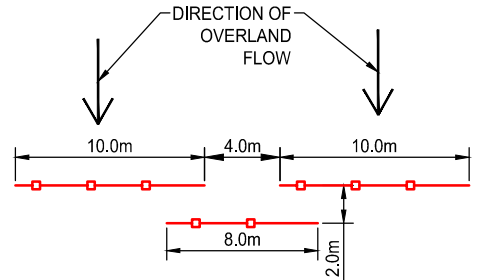
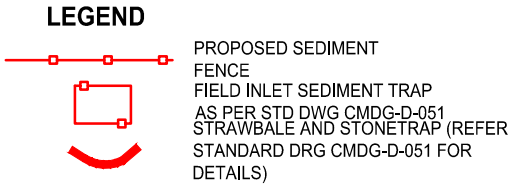
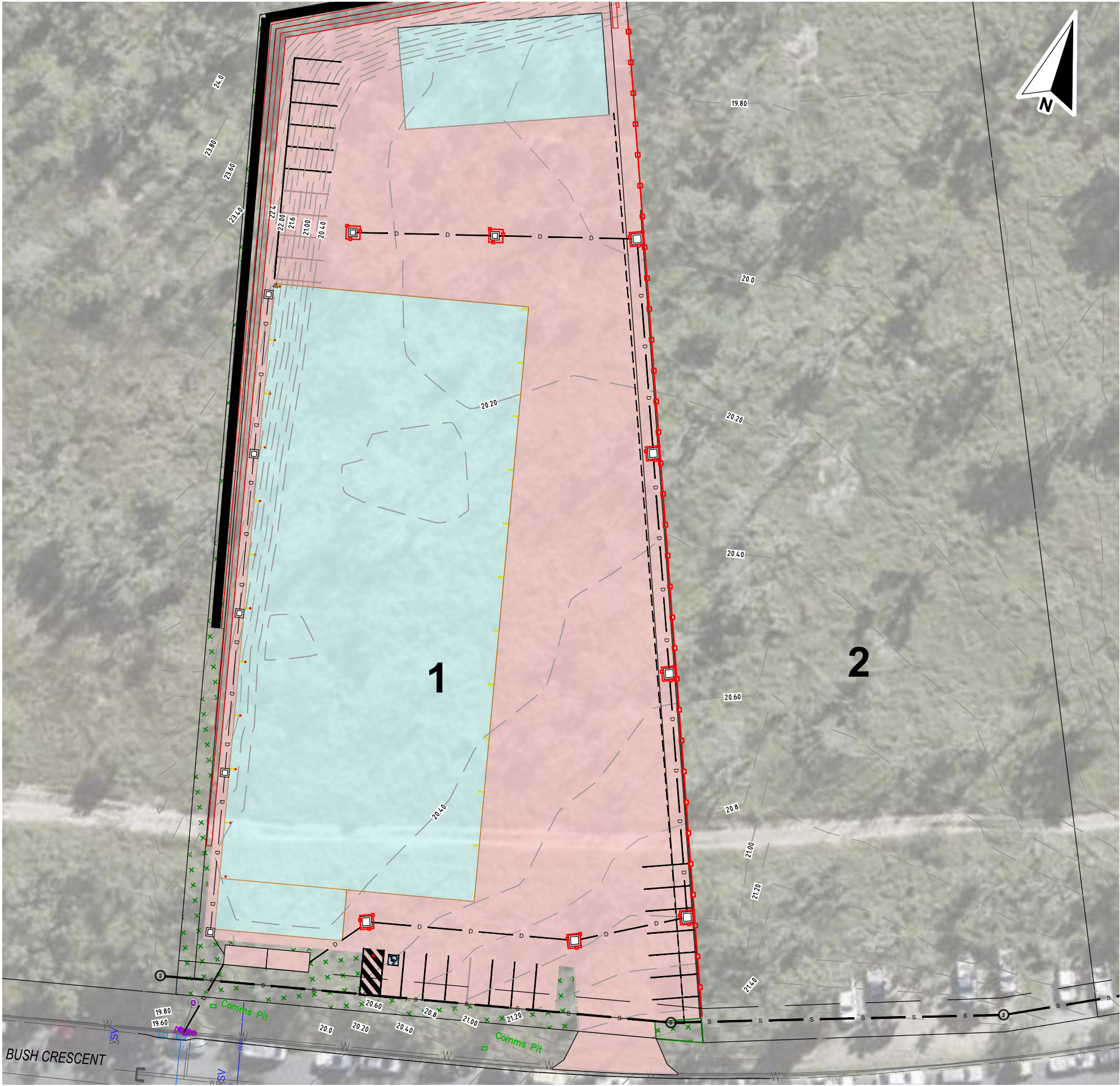
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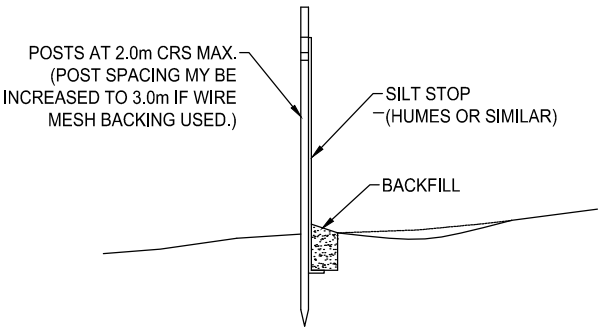
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OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT
LOT 5 BUSH CRESCENT, PARKHURST

SEWER LONGITUDINAL SECTION SHEET 1 OF 2

DWG No.	D23.317-302
	CIVIL
REVISION	B



SEDIMENT FENCE DETAIL
N.T.S



SEDIMENT FENCE DETAIL
N.T.S

DATUM: HORIZ. GDA 94 VERT. AHD

0 2.5 5 7.5 10 1:500
HORIZONTAL

SCALES m.

FULL SIZE **A3**

OPERATIONAL WORKS ISSUE

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GCJLT HOLDINGS PTY LTD
OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT
LOT 5 BUSH CRESCENT, PARKHURST

EROSION AND SEDIMENT CONTROL PLAN

DWG No.	D23.317-401
REVISION	B

ENVIRONMENTAL MANAGEMENT NOTES:

- 1. PRIOR TO THE COMMENCEMENT OF EARTHWORKS, TOPSOIL SHALL BE STRIPPED AND STOCKPILED FROM SELECT AREAS ONLY FOR RE-SPREADING OVER DISTURBED AREAS PRIOR TO REVEGETATION AND LANDSCAPING.
- 2. PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS ALL SEDIMENT CONTROL DEVICES WILL BE ERECTED WHERE SHOWN ON THE DRAWINGS OR OTHERWISE DIRECTED BY THE ENGINEER.
- 3. ALL DISTURBED AREAS ON-SITE AND IN ROAD RESERVE WILL BE RE-TOPSOILED, TURFED OR LANDSCAPED.
- 4. ALL SOIL CONSERVATION AND ENVIRONMENTAL PROTECTION MEASURES SHALL BE MONITORED BY THE CONTRACTOR AT REGULAR INTERVALS DURING CONSTRUCTION. SEDIMENT CONTROL DEVICES WILL BE MONITORED AFTER RAIN EVENTS AND MADE GOOD WHERE NECESSARY. THIS WILL ALSO BE CARRIED OUT DURING THE DEFECTS LIABILITY PERIOD.
- 5. SILT FENCES SHALL BE INSTALLED ON THE LOW SIDE OF ALL STOCKPILES WHERE REQUIRED.
- 6. SILT FENCES SHALL REMAIN ON SITE UNTIL ALL CONSTRUCTION ACTIVITIES ARE COMPLETE AND THERE IS 90% VEGETATION COVERAGE OF PROPOSED LANDSCAPED AREAS.

NOISE MANAGEMENT:

- 1. WORKING HOURS - WORKING HOURS FOR THE SITE ARE TO BE 6.30am TO 6.30pm MONDAY TO SATURDAY. NO WORK TO BE UNDERTAKEN OUTSIDE OF TIMES SPECIFIED UNDER ANY CIRCUMSTANCES.
- 2. NOISE MINIMISATION METHODS - NOISE WILL BE MINIMISED USING THE FOLLOWING METHODS:-
 - 2.1. RESTRICTED WORKING HOURS AS DETAILED ABOVE
 - 2.2. NOISE GENERATING MACHINERY TO OPERATED ONLY WHEN NECESSARY TO UNDERTAKE WORKS - VEHICLES AND MACHINERY ARE NOT TO BE LEFT 'IDLING' WHEN NOT IN USE.
 - 2.3. NOISE SHIELDING ON PLANT TO BE INSPECTED PRIOR TO COMMENCEMENT OF WORKS AND MADE GOOD WHERE FOUND TO BE FAULTY.
 - 2.4. VEHICLES AND MACHINERY TO BE REGULARLY MAINTAINED TO REDUCE ENGINE NOISE THROUGH INFREQUENT MAINTENANCE.

DUST MANAGEMENT:

- 1. MINIMISING DUST GENERATION - THE FOLLOWING WORK PRACTICES WILL BE USED TO MINIMISE DUST GENERATION:-
 - 1.1. WIND CONDITIONS ON SITE ARE TO BE MONITORED AND SITE WORKS STOPPED IF WIND STRENGTH IS SUCH THAT EFFORTS TO MINIMISE AND/OR SUPPRESS DUST ARE INEFFECTIVE.
 - 1.2. SOIL STABILISATION OF BATTERS (THROUGH TOPSOILING AND REVEGETATION) TO BE UNDERTAKEN IMMEDIATELY AFTER FINAL TRIM TO MINIMISE EXPOSURE OF BARE EARTH.
 - 1.3. STOCKPILES INTENDING TO BE LEFT IN PLACE FOR 28 DAYS OR GREATER SHALL BE GRASS SEEDED.
- 2. DUST SUPPRESSION -
 - 2.1. WET DOWN DUST GENERATING SURFACES DAILY PRIOR TO COMMENCEMENT OF WORK USING WATER TRUCKS, SPRINKLERS AND HOSE WATERING BY HAND.
 - 2.2. ADDITIONAL WETTING DOWN OF SITE AREAS IS TO BE UNDERTAKEN AS NEEDED DURING THE COURSE OF THE DAY WHERE WORK AREAS HAVE DRIED AND ARE GENERATING DUST.

WEED MANAGEMENT:

- 1. MOVEMENT OF SOIL - EXISTING TOP SOIL IS TO BE STOCKPILED AND RE-USED ON SITE AFTER SITE WORKS ARE COMPLETE, ANY ADDITIONAL TOP SOIL REQUIRED IS TO BE FREE OF PLANT SEEDS PRIOR TO SPREADING ON SITE.
- 2. FILL MATERIAL - FILL MATERIAL TO BE IMPORTED ON SITE IS TO BE 'CLEAN FILL' AND FREE FROM ANY ORGANIC MATTER OR MATERIALS.

EMERGENCY VEHICLE ACCESS:

- 1. MAINTAIN CLEAR ACCESS TO SITE FOR EMERGENCY VEHICLES AT ALL TIMES

WASTE MANAGEMENT:

- 1. ALL LITTER AND WASTE TO BE CONTAINED ON SITE IN CONTAINERS PROVIDED FOR THAT PURPOSE.
- 2. ALL WASTE TO BE FURTHER DISPOSED OFF SITE IN A RESPONSIBLE MANNER.
- 3. WHERE POSSIBLE MINIMISE WASTE THROUGH WASTE MINIMIZATION AND RE-USE.

EROSION AND SEDIMENT MANAGEMENT:

DRAINAGE MANAGEMENT - WHERE POSSIBLE, RAINWATER DISCHARGE FROM UPSTREAM PROPERTIES IS TO BE DIRECTED AWAY FROM WORKS THROUGH TEMPORARY BUNDING.

- 1. SOIL STABILISATION -
 - 1.1. EXPOSED EARTH SHALL BE TOPSOILED, VEGETATED, AND LANDSCAPED AS SOON AS POSSIBLE AFTER TRIMMING.
 - 1.2. RE-VEGETATED AND LANDSCAPED AREAS SHALL BE REGULARLY WATERED TO ASSIST ESTABLISHMENT OF COVER.
 - 1.3. ALL BANKS AND BATTERS ARE TO BE REGULARLY INSPECTED TO IDENTIFY AREAS OF EROSION AND RESHAPED TO PREVENT FURTHER EROSION IF NECESSARY - RECTIFICATION WORKS ARE TO BE RE-VEGETATED IMMEDIATELY.
- 2. STOCKPILE PROTECTION -
 - 2.1. STOCKPILES ARE TO BE SITUATED SUCH THAT THEY ARE NOT IN ANY STORMWATER FLOW PATHS.
 - 2.2. SILT FENCING IS TO BE INSTALLED TO DOWNSTREAM SIDE OF STOCKPILE AREAS PRIOR TO THEIR USE.
 - 2.3. STOCKPILES INTENDING TO BE LEFT IN PLACE FOR 28 DAYS OR GREATER SHALL BE GRASS SEEDED.
 - 2.4. STOCKPILES TO HAVE A MAXIMUM SLOPE OF 2H:1V.
- 3. SEDIMENT TRAPS -
 - 3.1. SILT FENCING & SEDIMENT TRAPS TO BE INSTALLED AT AREAS OF SITE DISCHARGE AS SHOWN ON PLAN.
 - 3.2. SILT FENCING TO BE INSTALLED TO DOWNSTREAM SIDE OF STOCKPILE AREAS, STRIPPED AREAS, AND ANY OTHER AREAS OF BARE EARTH WHERE SILT LADEN RUNOFF CAN BE GENERATED.
 - 3.3. SEDIMENT FENCING TO BE INSTALLED IN ACCORDANCE WITH SEDIMENT FENCE DETAILS ON THIS SHEET.
 - 3.4. SEDIMENT FENCE LAYOUT SHALL CONFORM TO "TYPICAL LAYOUT ACROSS GRADE" AS DETAILED ON STANDARD DRAWING CMDG-D-050.
 - 3.5. SILT FENCES AND SEDIMENT TRAPS SHALL REMAIN ON SITE UNTIL ALL CONSTRUCTION ACTIVITIES ARE COMPLETE AND THERE IS 90% VEGETATION COVERAGE OF PROPOSED LANDSCAPED AREAS.
- 4. VEHICLE AND ROAD MANAGEMENT:-
 - 4.1. VEHICLES AND PLANT ARE TO ONLY ACCESS THE SITE FROM BUSH CRESCENT SITE ACCESS TO BE OVER A SHAKER ACCESS PAD OR RUMBLE GRID IN ACCORDANCE WITH STANDARD DWG CMDG-D-050.
 - 4.2. VEHICLE OPERATOR TO ASSESS MATERIAL ON VEHICLE PRIOR TO EXITING SITE AND REMOVE EXCESS WITH SHOVEL OR BRUSH.
 - 4.3. BUSH CRESCENT TO BE INSPECTED AT END OF EACH DAY AND ANY DEPOSITED MATERIAL IS TO BE REMOVED.

ACID SULFATE SOILS:

- 1. DUE TO THE ELEVATION AND SITE GEOLOGY IT IS UNLIKELY THAT A.S.S. WILL BE ENCOUNTERED ON THIS SITE.
- 2. IF A.S.S. ARE ENCOUNTERED ON THE SITE DURING CONSTRUCTION ENGAGE A SUITABLY QUALIFIED ENVIRONMENTAL CONSULTANT TO PRODUCE AN A.S.S. MANAGEMENT PLAN FOR IT.

FAUNA MANAGEMENT:

- 1. ANY CLEARING OF REMNANT VEGETATION WILL REQUIRE A FAUNA SPOTTER / CATCHER TO BE IN ATTENDANCE.

VEGETATION MANAGEMENT:

- 1. WHERE VEGETATION COVENANT EXISTS ON SITE. THIS AREA TO BE CLEARLY PEGGED AND FLAGGED OR FENCED PRIOR TO WORK COMMENCING ON SITE TO PREVENT ANY CLEARING IN THIS AREA.

BUSH FIRE MANAGEMENT:

- 1. THE SITE IS PREDOMINANTLY CLEARED AND NOT IN A BUSH FIRE HAZARD ZONE (BUT STILL MAY BE SUBJECT TO BUSH FIRES)
- 2. ANY CLEARED VEGETATION TO BE MULCHED AND USED ON SITE.
- 3. MULCHED STOCK PILES TO BE NO MORE THAN 2.0m HIGH AND WET DOWN DAILY.
- 4. REMOVE MULCH FROM SITE IF SAFE TO DO SO SHOULD BUSHFIRES THREATEN THE AREA.

DATUM: HORIZ. GDA 94

VERT. AHD

SCALES m.

FULL SIZE A3

OPERATIONAL WORKS ISSUE

FOR CONSTRUCTION ONLY WITH COUNCIL APPROVAL

REV	REVISION DESCRIPTION	DATE
A	PRELIMINARY	14/12/2023
B	FOR APPROVAL	03/05/2024



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RPEQ 7682	SIGN
17.05.2024	

GCJLT HOLDINGS PTY LTD

OPERATIONAL WORKS FOR RECONFIGURATION OF A LOT

LOT 5 BUSH CRESCENT, PARKHURST

ENVIRONMENTAL MANAGEMENT NOTES

DWG No.

D23.317-402

CIVIL

REVISION

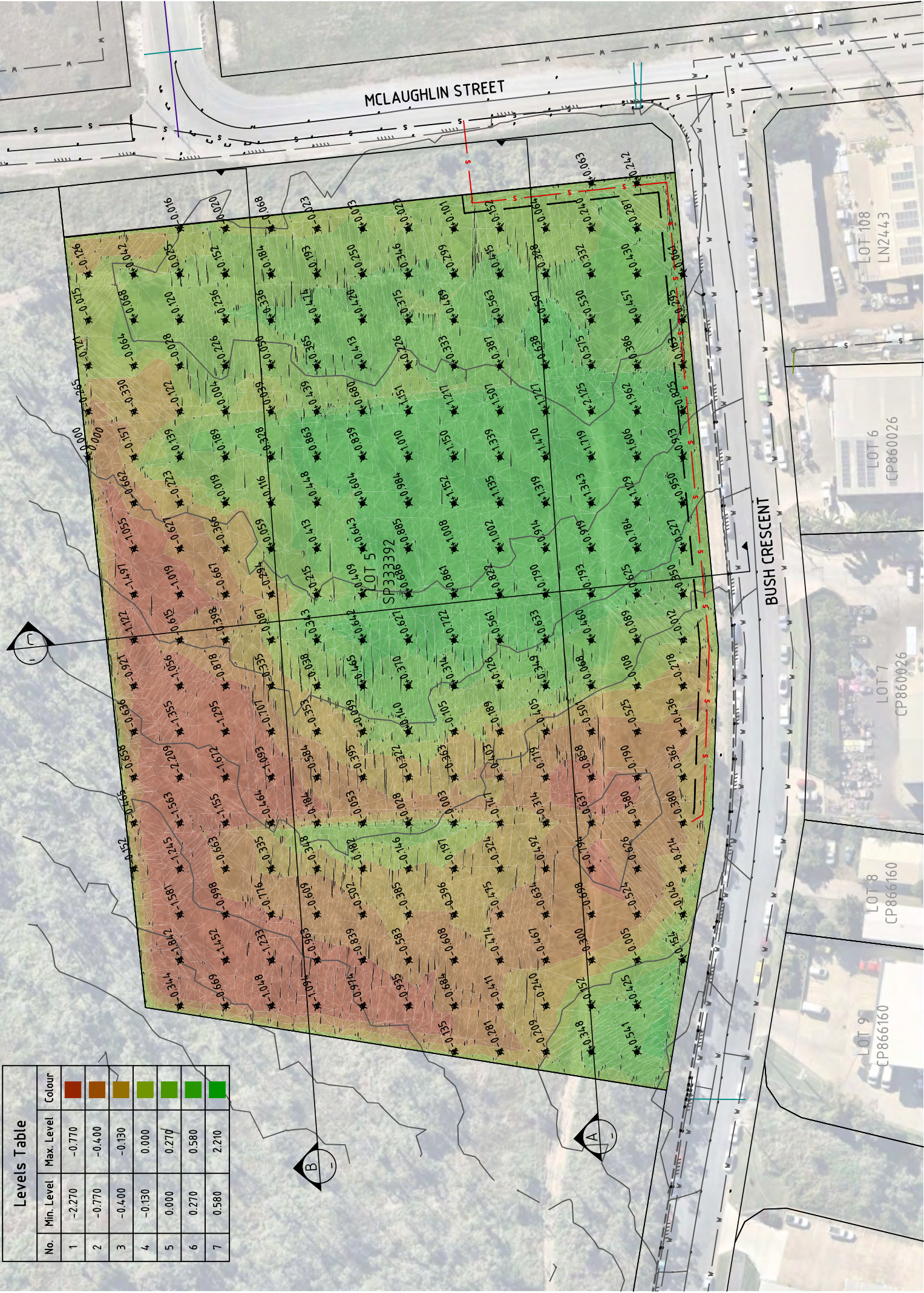
B

LEGEND

- 43.5 EXISTING CONTOUR
- 99.5 DESIGN CONTOUR
- 52.5 EARTHWORKS LEVELS

EARTHWORKS BALANCE			
VOLUME CUT (Cu.m)	VOLUME FILL (Cu.m)	BALANCE (Cu.m)	
6690.45	6593.43	97.02 CUT	

Levels Table			
No.	Min. Level	Max. Level	Colour
1	-2.270	-0.770	
2	-0.770	-0.400	
3	-0.400	-0.130	
4	-0.130	0.000	
5	0.000	0.270	
6	0.270	0.580	
7	0.580	2.210	



BULK EARTHWORKS

- ALL LAYERS SHALL BE UNIFORMLY COMPACTED TO NOT LESS THAN RELATIVE COMPACTION SPECIFIED BEFORE THE NEXT LAYER IS COMMENCED. EACH LAYOUT OF MATERIAL SHALL BE TRIMMED PRIOR TO AND DURING COMPACTION TO AVOID BRIDGING OVER LOW AREAS. A SMOOTH SURFACE SHALL BE PRESENTED AT THE TOP OF EACH LAYER.
- THE FOLLOWING AREAS SHALL BE COMPACTED TO PROVIDE A RELATIVE COMPACTION, DETERMINED BY AS 1289.5.7.1 FOR STANDARD COMPACTION EFFORT, OF NOT LESS THAN 95%.
 - EACH LAYER OF MATERIAL REPLACING UNSUITABLE MATERIAL.
 - EACH LAYER OF MATERIAL PLACED IN EMBANKMENTS, UP TO 0.3 METRES FROM THE TOP OF THE SUBGRADE.
 - THE WHOLE AREA ON THE FLOOR OF CUTTINGS.
 - FILL PLACED ADJACENT TO STRUCTURES UP TO 1.0 METRES FROM THE TOP OF PAVEMENT.
 - MATERIAL IN UNSEALED VERGES AND WITHIN MEDIANS UP TO THE LEVEL AT WHICH TOPSOIL IS PLACED.
 - SPOIL (EXCLUDING UNSUITABLE MATERIAL)
 - ALL OTHER AREAS EXCEPT THOSE WHERE 97% RELATIVE COMPACTION IS SPECIFIED.
- UNSUITABLE MATERIAL SHALL BE STOCKPILED AS DIRECTED BY THE SUPERINTENDENT AND UNSUITABLE EARTHWORKS COMPACTED BY TRACK ROLLING.
- THE FOLLOWING AREAS SHALL BE COMPACTED TO PROVIDE A RELATIVE COMPACTION OF NOT LESS THAN 98% AS DETERMINED BY AS 1289.5.7.1 FOR STANDARD COMPACTION EFFORT:
 - FOUNDATIONS FOR SHALLOW EMBANKMENTS.
 - EACH LAYOUT OF THE EMBANKMENT WITHIN 0.3 METRES FROM THE TOP OF THE SUBGRADE.
 - EACH LAYER OF THE SELECTED MATERIAL ZONE.
 - ANY AREAS OF MATERIAL OF SPECIFIED QUALITY WHICH MAY BE SHOWN IN THE DRAWINGS OR SPECIFIED ELSEWHERE BEHIND CURBS AND ALL GUTTERS OR ADJACENT TO RIGID PAVEMENTS.
 - THE FILL MATERIAL PLACED ADJACENT TO STRUCTURES WITHIN 1.0 METRES FROM THE TOP OF THE PAVEMENT, UNLESS OTHERWISE STATED.
 - AT THE TIME OF COMPACTION, THE MOISTURE CONTENT OF THE MATERIAL SHALL BE ADJUSTED TO PERMIT THE SPECIFIED COMPACTION TO BE ATTAINED AT A MOISTURE CONTENT OF NOT LESS THAN 80% OR MORE THAN 100% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY AS1289.5.1.1 OR AS 1289.5.7.1. MATERIAL WHICH BECOMES WETTED UP AFTER PLACEMENT SHALL NOT BE COMPACTED UNTIL IT HAS DRIED OUT SO THAT THE MOISTURE CONTENT IS WITHIN THIS RANGE. THE DRYING PROCESS MAY BE ASSISTED BY AERATION. IF THERE IS INSUFFICIENT MOISTURE IN THE MATERIAL FOR IT TO BE COMPACTED AS SPECIFIED, WATER SHALL BE ADDED. THE ADDED WATER SHALL BE APPLIED UNIFORMLY AND THOROUGHLY MIXED WITH THE MATERIAL UNTIL A HOMOGENEOUS MIXTURE IS OBTAINED.
 - COMPACTION SHALL BE UNDERTAKEN TO OBTAIN THE SPECIFIED RELATIVE COMPACTION FOR THE FULL DEPTH OF EACH LAYER IN EMBANKMENTS AND FOR THE FULL WIDTH OF THE FORMATION OVER THE ENTIRE LENGTH OF THE WORK. COMPACTION SHALL BE COMPLETED PROMPTLY TO MINIMISE THE POSSIBILITY OF RAIN DAMAGE.
 - ANY MATERIAL PLACED BY THE CONTRACTOR THAT HAS ATTAINED THE SPECIFIED RELATIVE COMPACTION BUT SUBSEQUENTLY BECOMES WETTED UP SO THAT THE MOISTURE CONTENT IS GREATER THAN THE APPARENT OPTIMUM, DETERMINED BY AS1289.5.7.1 SHUT SHALL BE DRIED OUT AND UNIFORMLY RE COMPACTED TO THE REQUIRED RELATIVE COMPACTION IN ACCORDANCE WITH THIS CLAUSE BEFORE THE NEXT LAYER OF MATERIAL IS PLACED. ALTERNATIVELY, THE CONTRACTOR MAY REMOVE THE LAYER OF WETTED MATERIAL TO A STOCKPILE SITE FOR DRYING AND LATER REUSE.
 - FOLLOWING COMPLETION OF COMPACTION AND TRIMMING, THE ENTIRE SUBGRADE AREA SHALL BE INSPECTED BY PROOF ROLLING WITH A FULLY LOADED SINGLE REAR AXLE TRUCK (OR ACCEPTABLE EQUIVALENT). ACCEPTABLE PROOF ROLLING SHALL BE TAKEN TO BE NO VISIBLE SIGNS OF DEFORMATION OR INSTABILITY IN THE SUBGRADE.
 - THE SPECIFIED COMPACTION AND MOISTURE TESTS SHALL BE TAKEN AT THE RANDOM TEST FREQUENCY, PRIOR TO TESTING THE CONTRACTOR SHALL WORK THE LOT TO ENSURE UNIFORM MOISTURE CONTENT AND COMPACTION OF ALL MATERIAL WITHIN THE LOT. THE TESTS THEN TAKEN SHALL BE CONSIDERED TO REPRESENT THE TOTAL VOLUME OF MATERIAL PLACED WITHIN THE LOT.
 - LIMITS AND TOLERANCES:
 - BATTER SLOPES: EXCAVATION ±300MM, FILL ±300MM
 - FLOOR OF CUTTING: ±50MM PARALLEL TO THE DESIGNED GRADE LINE
 - TOP OF EMBANKMENT: ±10MM FROM THE GRADE LINE.

OPERATIONAL WORKS ISSUE

FOR CONSTRUCTION ONLY WITH COUNCIL APPROVAL

0 5 10 15 20
HORIZONTAL
1:1000
FULL SIZE
A3
SCALES m.

REV	FOR DISCUSSION	REVISION DESCRIPTION	DATE
A	FOR DISCUSSION		06/07/2022
B	OPERATIONAL WORKS		08/09/2022
C	RESPONSE TO BRI		19/12/2022
D	FURTHER ADVICE RESPONSE		09/02/2023

DILEIGH

CIVIL / STRUCTURAL DESIGN & PROJECT MANAGEMENT

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Designed

Checked

Approved

RPEQ 7682

14.02.2023

CER

TAHAMIL

GJB

GLENN J BROWN

Sign

BTRE 1 PTY LTD
PROPOSED DEVELOPMENT OF LOT 5
LOT 5 BUSH CRESCENT, PARKHURST
OPERATIONAL WORKS
EARTHWORKS PLAN

Dwg No. D22.320-03
CIVIL
Revision D