

DEVELOPMENT SUMMARY

SITE AREA:	1,485 m²		
UNITS:	15 UNITS (COMPRISED OF (x14) THREE BEDROOM UNITS + (x1) FOUR BEDROOM UNITS)		
CARPARKS:	- GROUND LEVEL:	21 SPACES INCLUDING (x1) PWD + (x10) TANDEMS	
SITE COVER:	- GROUND:	1,017m²	68.51%
	- LEVEL 01:	1,079m²	72.65%
	- LEVEL 02:	402m²	27.07%
	- LEVELS 03 - 07:	399m²	26.86%
	- LEVELS 08:	398m²	26.80%
TOTAL LANDSCAPING:	- GROUND	430m²	

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/2-2021

Dated: 16 April 2021

COTTEEPARKER

BRISBANE
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COTTEE PARKER ARCHITECTS PTY LTD
ABN 77 010 924 106
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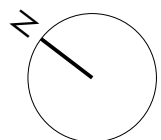
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

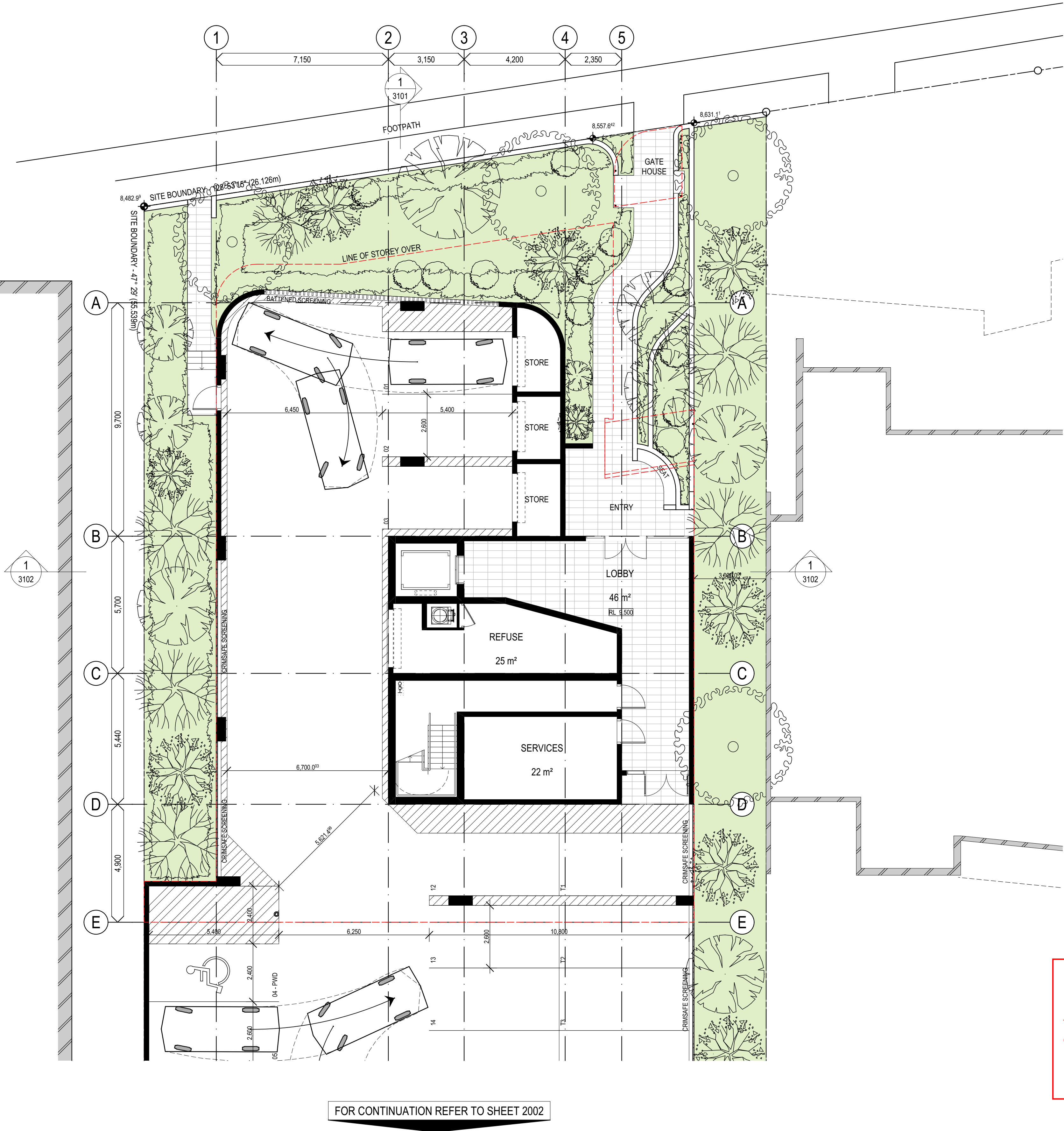
DRAWING TITLE

DEVELOPMENT SUMMARY

ISSUE PURPOSE	DATE	JH D	KV C	KV A	JOB No	DRAWING No	ISSUE
STATUS					5599	SD0002	A



1 FLOOR PLAN - GROUND FLOOR
SCALE 1:100 @ A1
SCALE 1:200 @ A3



FOR CONTINUATION REFER TO SHEET 2002

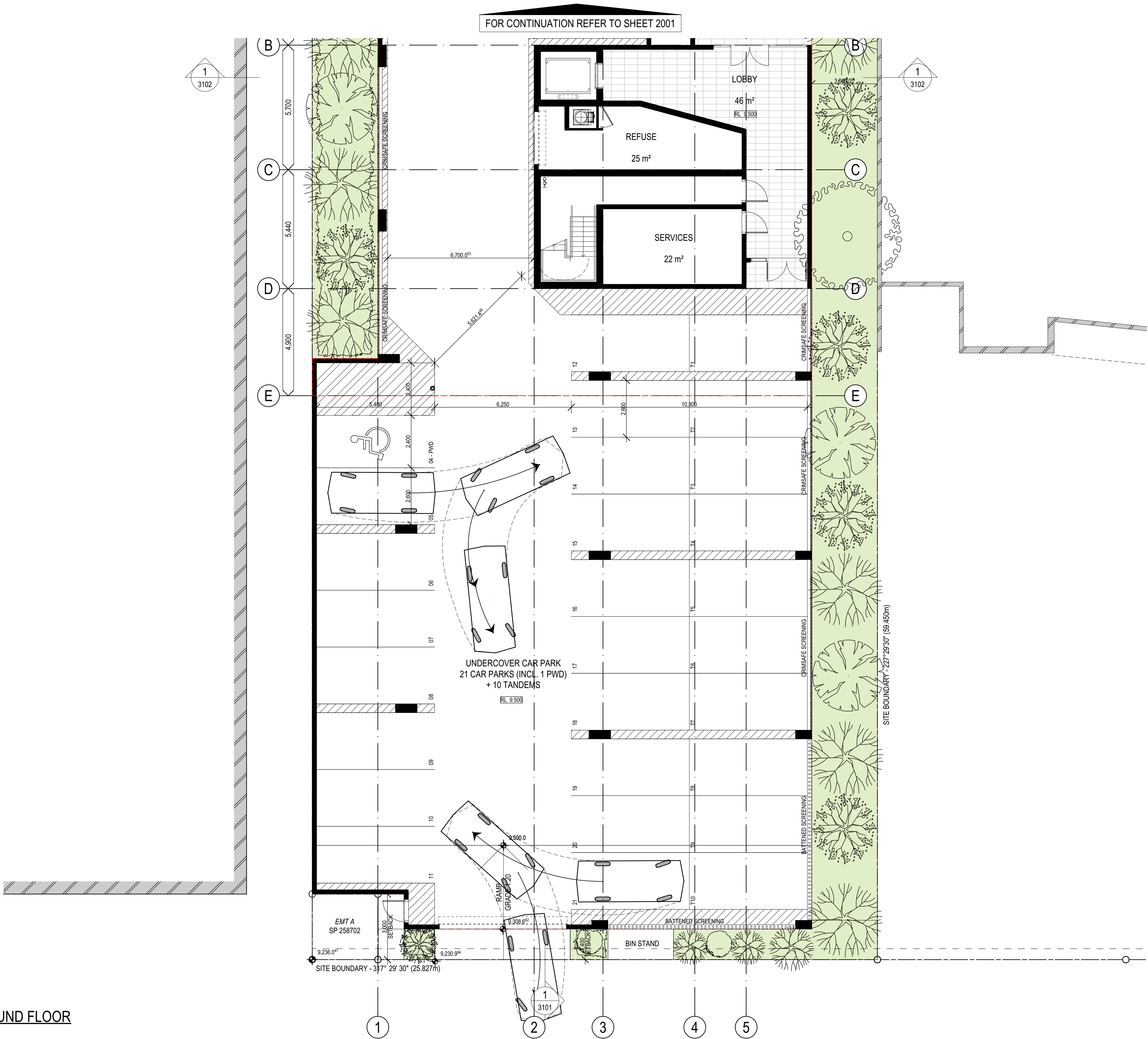
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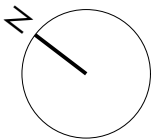
1 FLOOR PLAN - GROUND FLOOR
SCALE 1:100 @ A1
SCALE 1:200 @ A3

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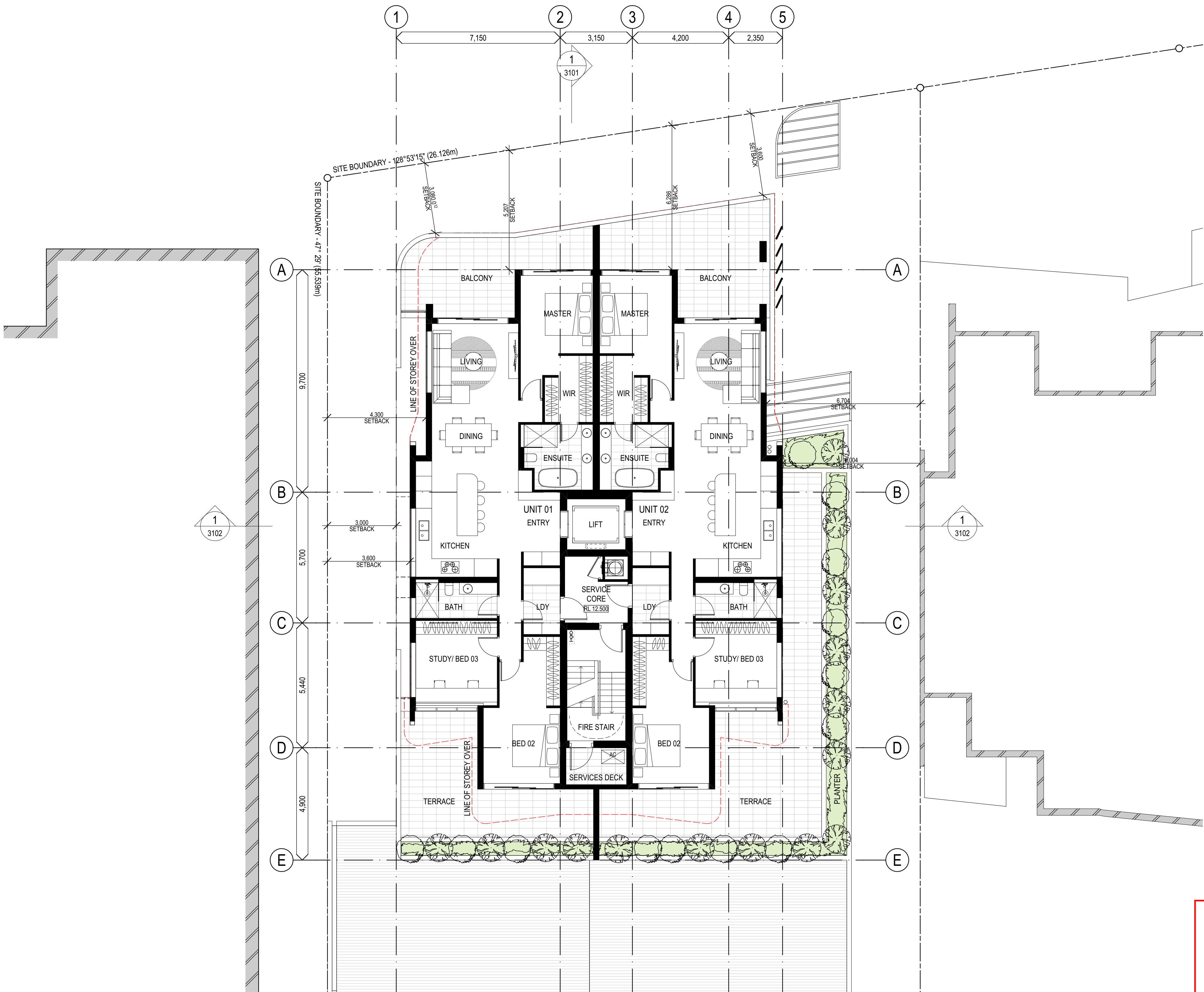
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

FLOOR PLAN - GROUND FLOOR

JOB No 5599
DRAWING No SD2002
ISSUE A

STATUS
A DA SUBMISSION ISSUE
DATE D. C. A.



1 FLOOR PLAN - LEVEL 01
SCALE 1:100 @ A1
SCALE 1:200 @ A3

FOR CONTINUATION REFER TO SHEET 2004

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APPROVED PLANS

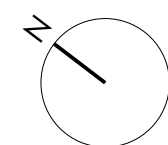
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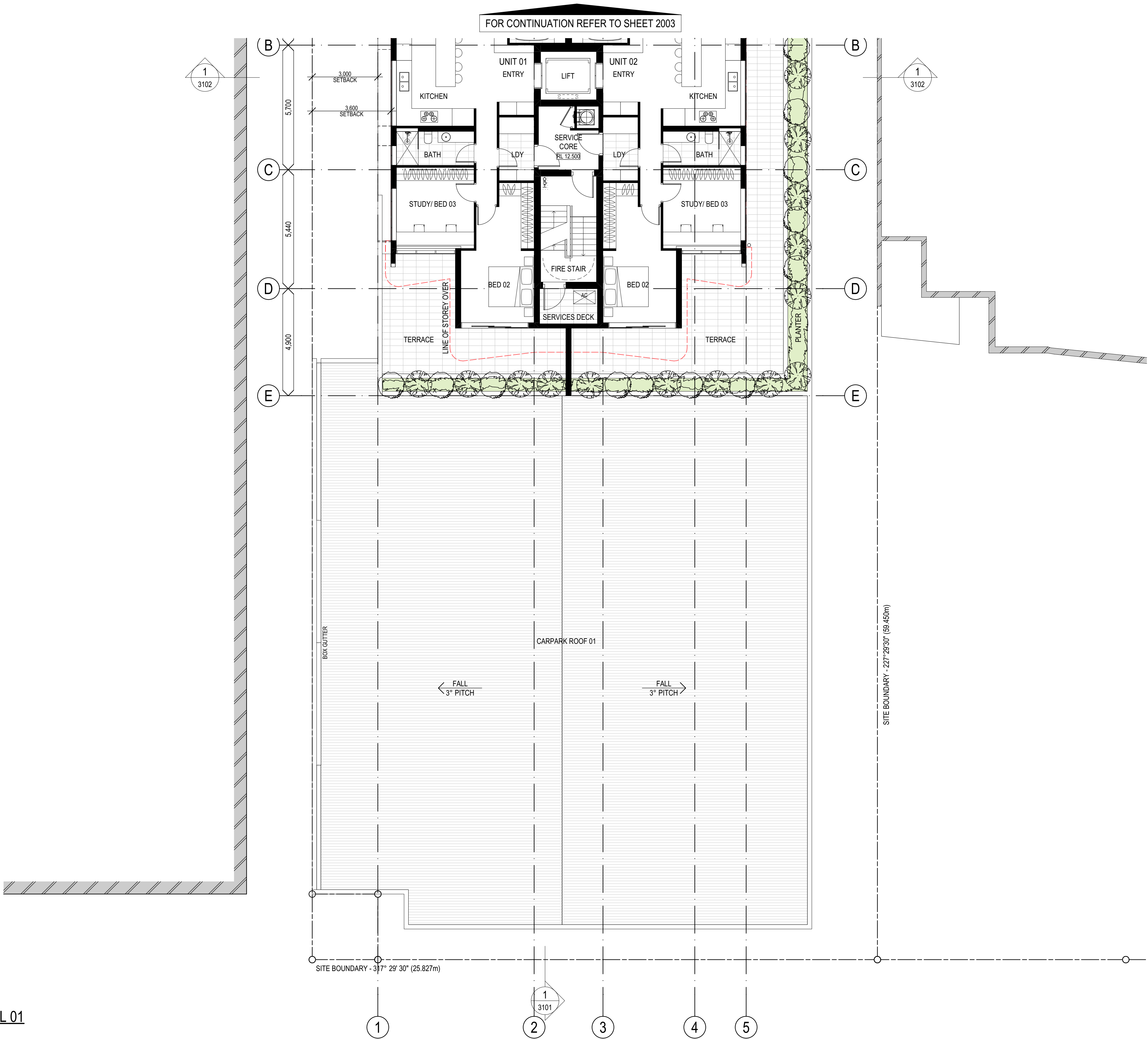
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE
FLOOR PLAN - LEVEL 01

ISSUE PURPOSE	DATE	JL	KV	KV	DATE	ISSUE
A	16/04/2021	D	C	A	5599	SD2003

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1 FLOOR PLAN - LEVEL 01
SCALE 1:100 @ A1
SCALE 1:200 @ A3

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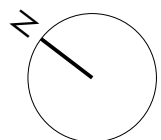
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
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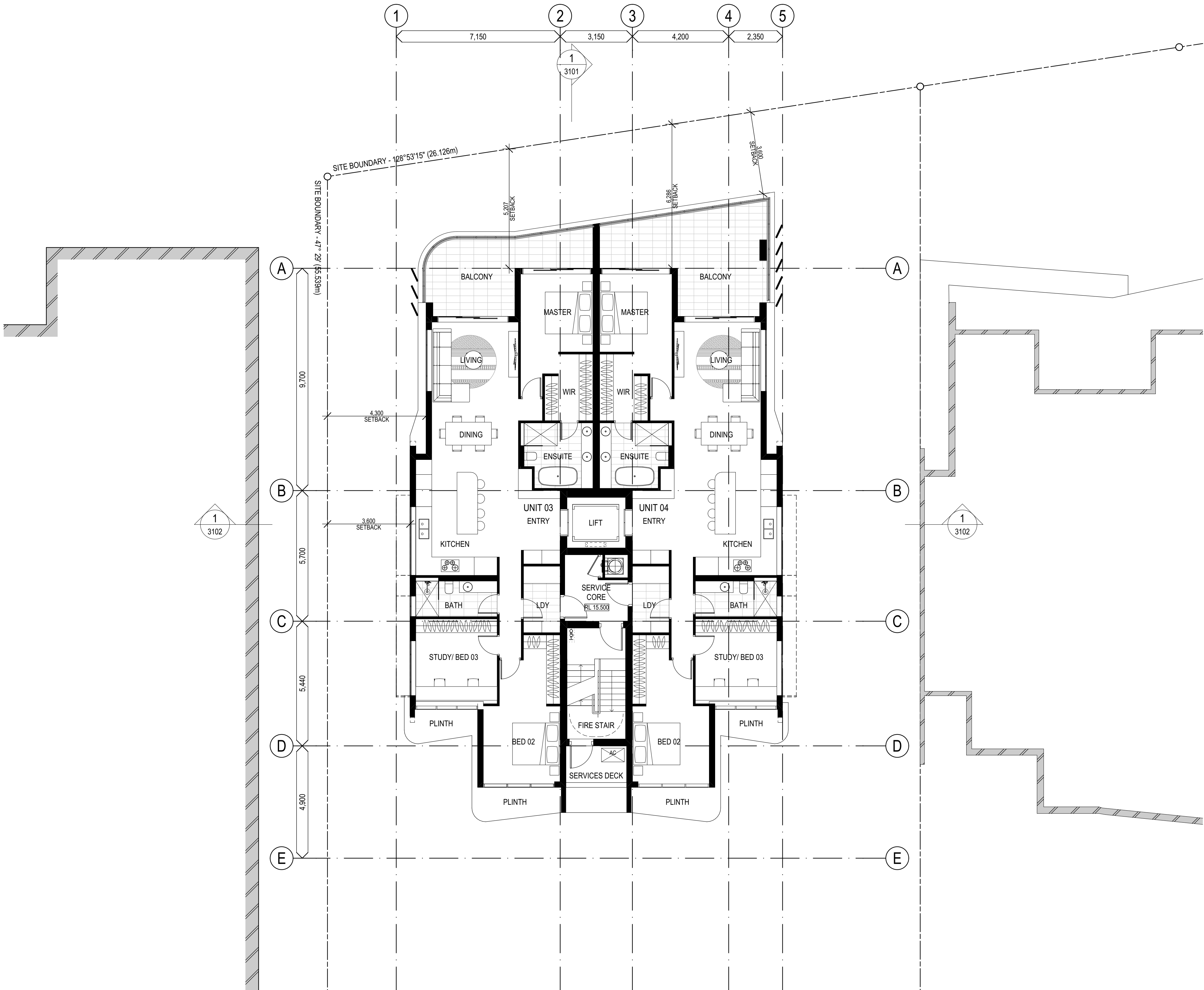
DRAWING TITLE
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ISSUE PURPOSE	DATE	JH. KV. KV. D. C. A.	JOB No 5599	DRAWING No SD2004	ISSUE A
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SCALE 1:200 @ A3



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APPROVED PLANS

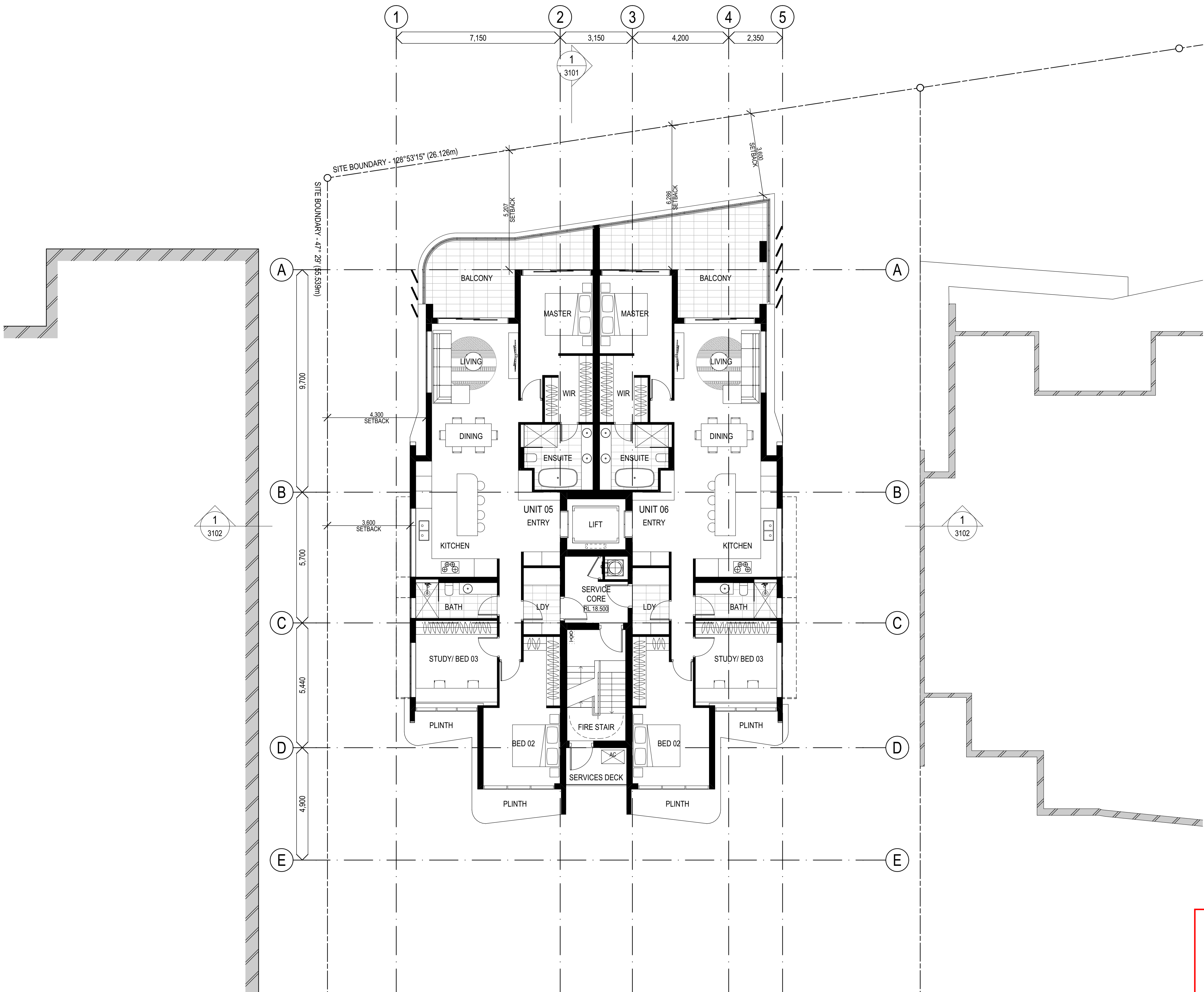
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Dated: 16 April 2021

GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
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DRAWING TITLE
FLOOR PLAN - LEVEL 02

ISSUE	PURPOSE	DATE	JL	KV	KV
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5599					
SD2005					
A					



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SCALE 1:200 @ A3

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APPROVED PLANS

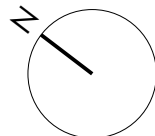
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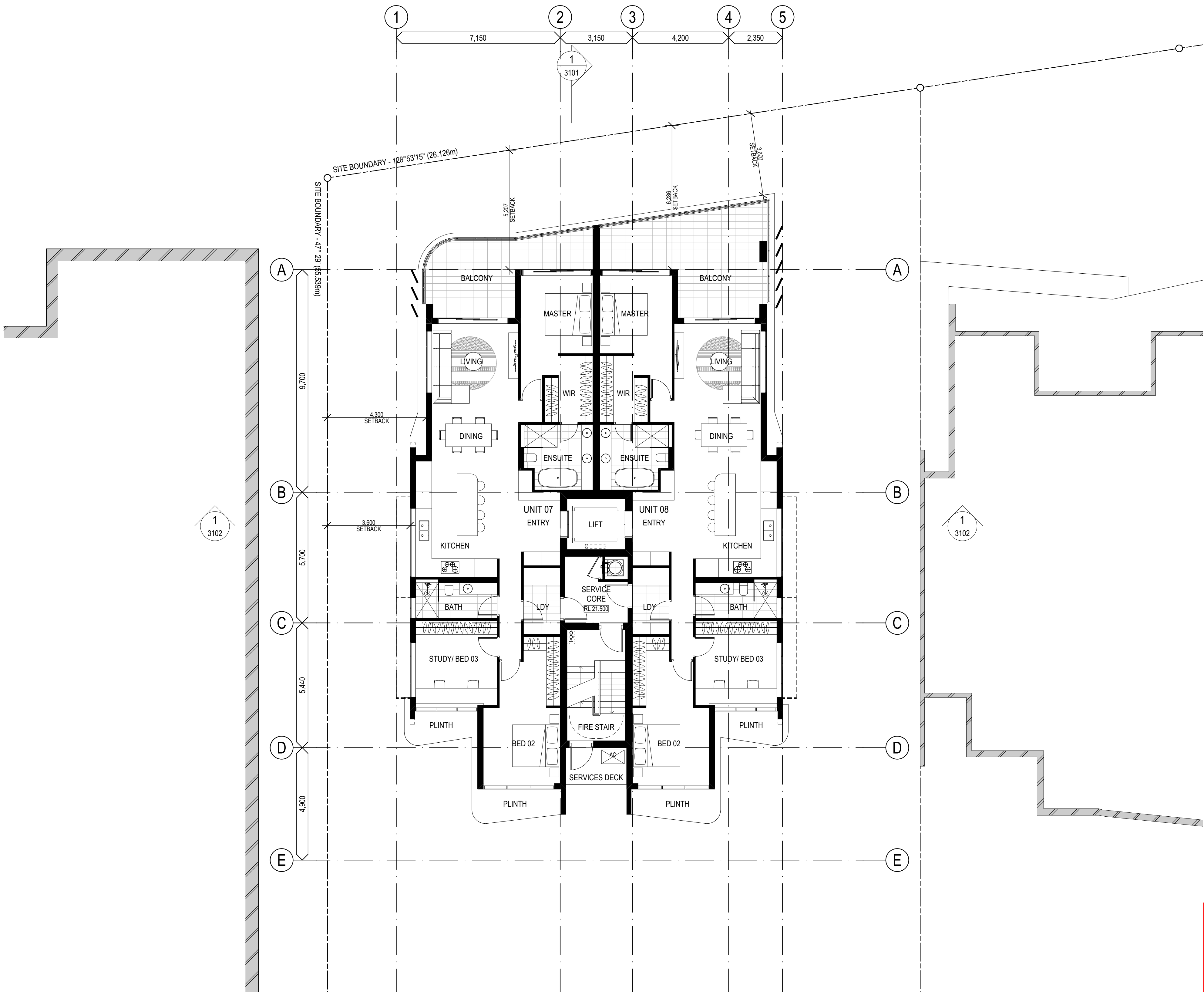
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

FLOOR PLAN - LEVEL 03

ISSUE	PURPOSE	DATE	JL	KV	KV
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SD2006					
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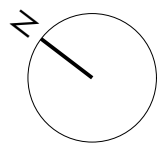


1 FLOOR PLAN - LEVEL 04
SCALE 1:100 @ A1
SCALE 1:200 @ A3

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
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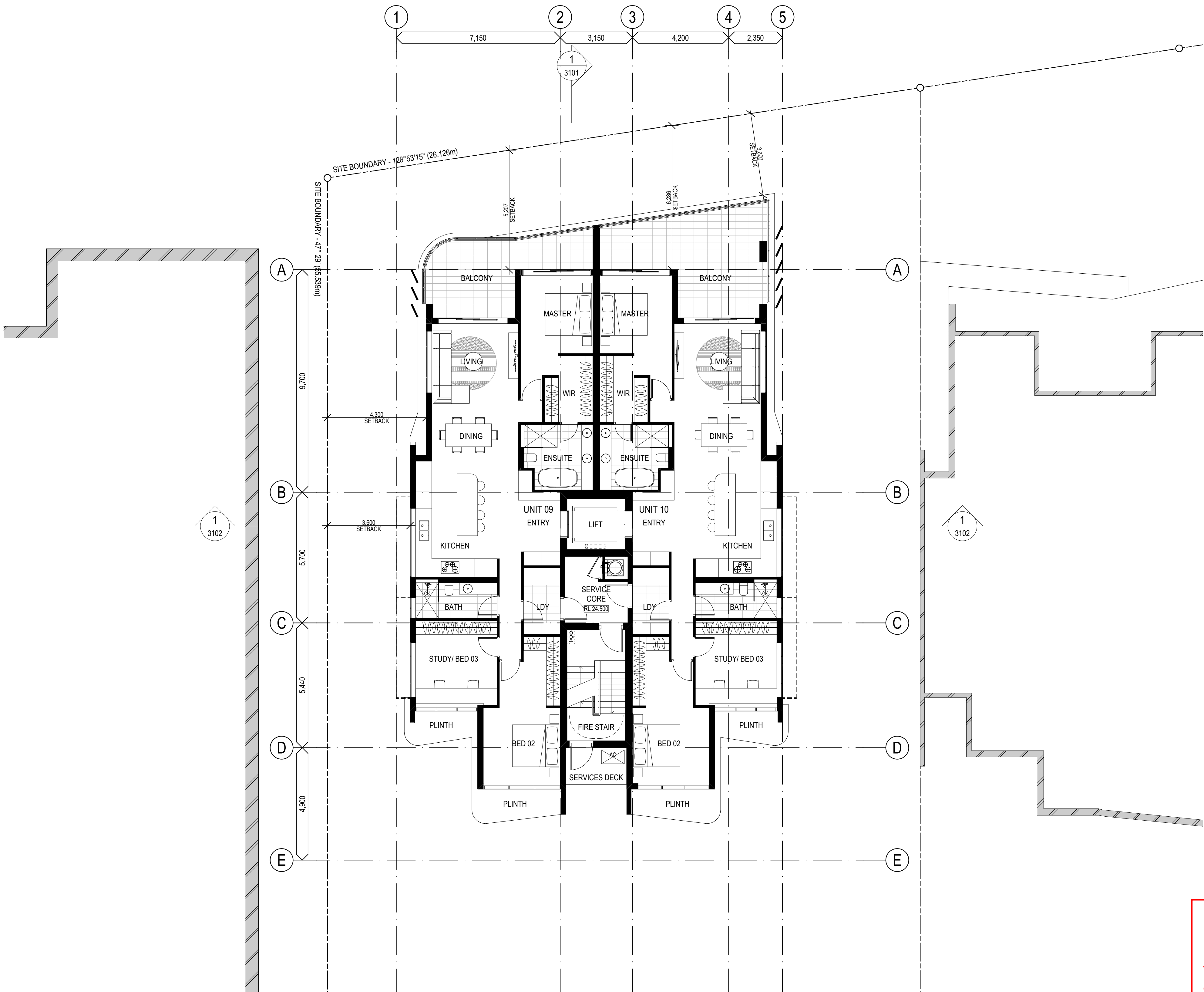
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE
FLOOR PLAN - LEVEL 04

ISSUE	PURPOSE	DATE	JL	KV	KV
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SD2007					
A					

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1 FLOOR PLAN - LEVEL 05
SCALE 1:100 @ A1
SCALE 1:200 @ A3

ROCKHAMPTON REGIONAL COUNCIL

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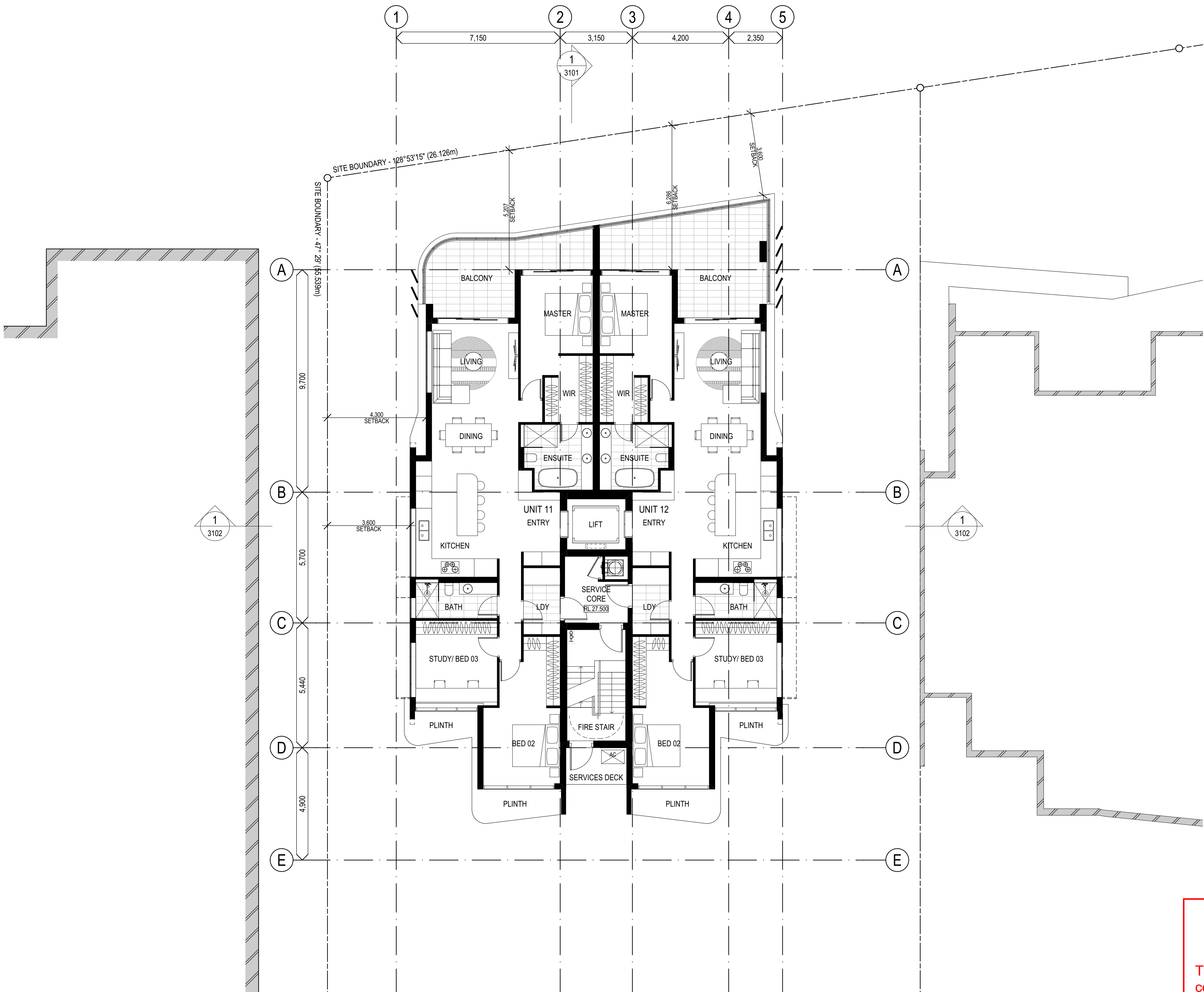
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE
FLOOR PLAN - LEVEL 05

ISSUE PURPOSE	DATE	JL	KV	KV	JOB No	DRAWING No	ISSUE
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1 FLOOR PLAN - LEVEL 06
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ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

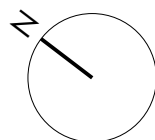
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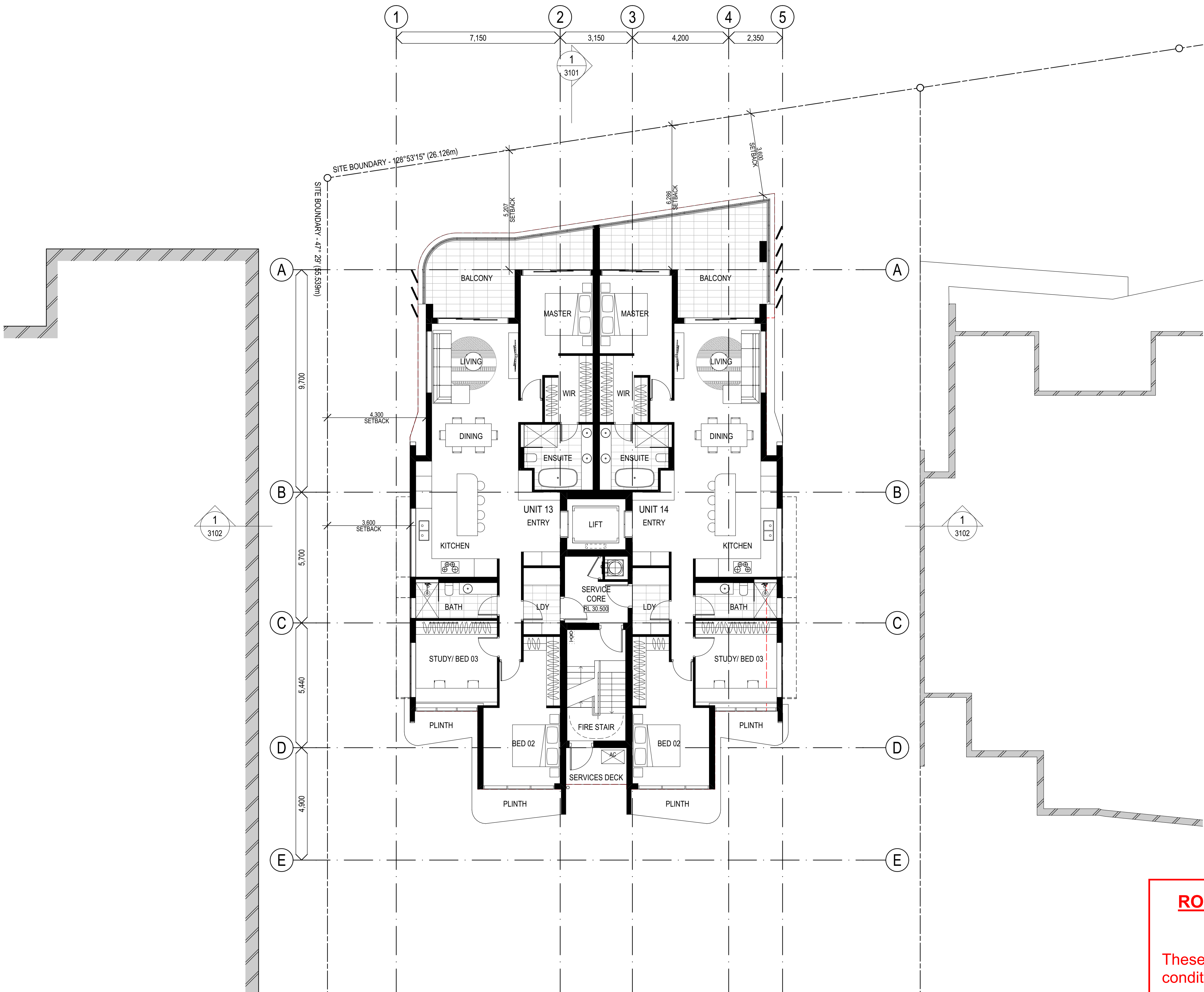
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE
FLOOR PLAN - LEVEL 06

ISSUE	PURPOSE	DATE	JL	KV	KV
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SD2009					
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ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

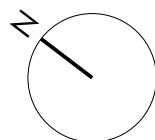
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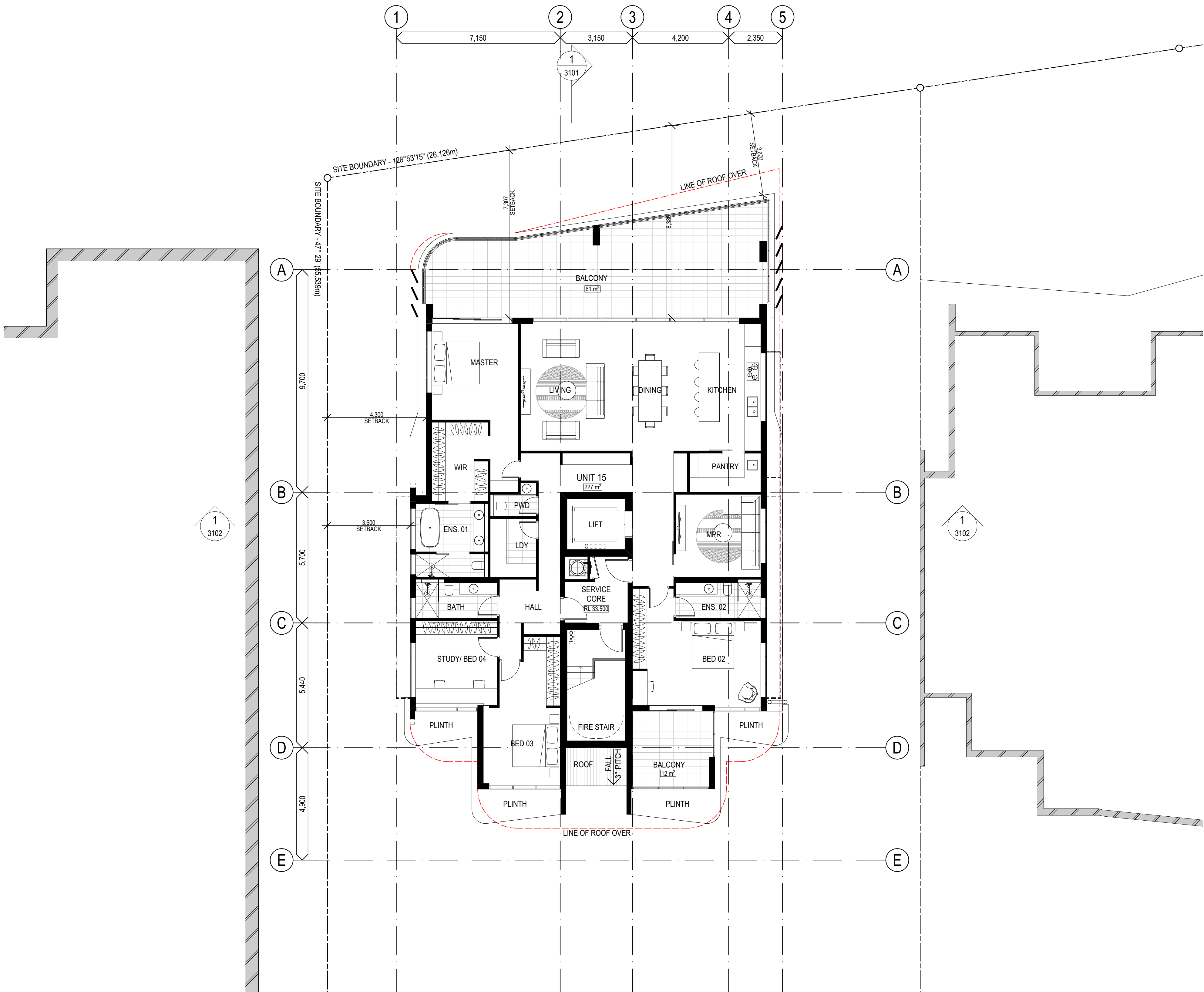
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE
FLOOR PLAN - LEVEL 07

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SD2010					
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ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

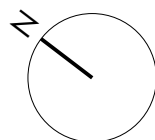
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T 61 7 3846 7422
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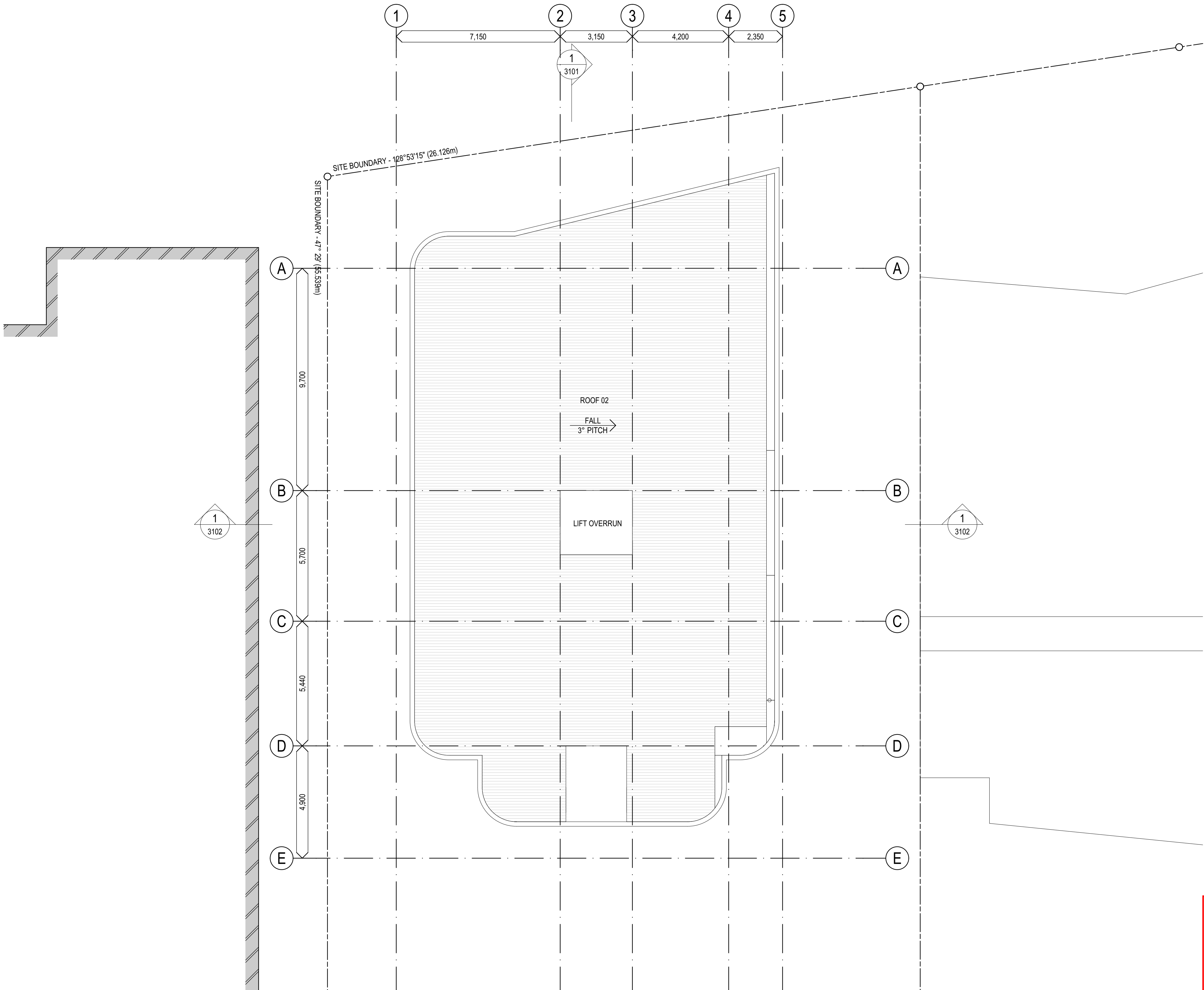
GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE
FLOOR PLAN - LEVEL 08

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1 FLOOR PLAN - ROOF
SCALE 1:100 @ A1
SCALE 1:200 @ A3

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

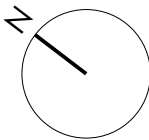
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GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE
FLOOR PLAN - ROOF

ISSUE PURPOSE	DATE	JH D.	XV C.	XV A.	JOB No	DRAWING No	ISSUE
STATUS					5599	SD2012	A

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EXTERIOR FINISHES LEGEND	
RC:	RENDERED CONCRETE / MASONRY
GL01:	CLEAR VISION GLAZING
AB01:	ALUMINIUM BATTENS- ANODISED - COLOUR WHITE
AB02:	ALUMINIUM BATTENS- ANODISED - COLOUR BRASS
SS01:	VERTICAL ALUMINIUM SUNSCREEN - ANODISED - COLOUR BRASS
SS02:	HORIZONTAL ALUMINIUM SUNSCREEN - POWDERCOATED - COLOUR WHITE
GB:	GLAZED BALUSTRADE - CLEAR
WH:	WINDOW HOOD
CR:	CRIMS SAFE SCREENING



1 NORTH ELEVATION
SCALE 1:100 @ A1
SCALE 1:200 @ A3



2 SOUTH ELEVATION
SCALE 1:100 @ A1
SCALE 1:200 @ A3

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Dated: **16 April 2021**

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GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE
ELEVATIONS

ISSUE PURPOSE	DATE	JH	XV	IV	DRAWING No	ISSUE
STATUS		D	C	A		
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					5599	
					DRAWING No	
					SD3001	
					ISSUE	
					A	

EXTERIOR FINISHES LEGEND	
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AB01:	ALUMINIUM BATTENS- ANODISED - COLOUR WHITE
AB02:	ALUMINIUM BATTENS- ANODISED - COLOUR BRASS
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SS02:	HORIZONTAL ALUMINIUM SUNSCREEN - POWDERCOATED - COLOUR WHITE
GB:	GLAZED BALUSTRADE - CLEAR
WH:	WINDOW HOOD
CR:	CRIMS SAFE SCREENING



1 EAST ELEVATION
SCALE 1:100 @ A1
SCALE 1:200 @ A3

ROCKHAMPTON REGIONAL COUNCIL
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GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE

ELEVATIONS

ISSUE PURPOSE	DATE	JL	KV	KV	DRAWING No	ISSUE
STATUS		D	C	A	5599	SD3002

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EXTERIOR FINISHES LEGEND	
RC:	RENDERED CONCRETE / MASONRY
GL01:	CLEAR VISION GLAZING
AB01:	ALUMINIUM BATTENS- ANODISED - COLOUR WHITE
AB02:	ALUMINIUM BATTENS- ANODISED - COLOUR BRASS
SS01:	VERTICAL ALUMINIUM SUNSCREEN - ANODISED - COLOUR BRASS
SS02:	HORIZONTAL ALUMINIUM SUNSCREEN - POWDERCOATED - COLOUR WHITE
GB:	GLAZED BALUSTRADE - CLEAR
WH:	WINDOW HOOD
CR:	CRIMSASE SCREENING



1 WEST ELEVATION
SCALE 1:100 @ A1
SCALE 1:200 @ A3

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GALLERY APARTMENTS - STAGE 02

50-58 VICTORIA PARADE, ROCKHAMPTON
CLIENT - RIDDELL DEVELOPMENTS PTY LTD

DRAWING TITLE
ELEVATIONS

ISSUE PURPOSE	DATE	JH	XV	IV	JOB No	DRAWING No	ISSUE
STATUS		D	C	A	5599	SD3003	A

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Letter – 20157LETTM01
Capricorn Survey Group
132 Victoria Parade
Rockhampton, QLD 4700

Attention: Richard Ford
richard@csgcq.com.au

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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Dated: 16 April 2021

Dear Richard,

Gallery Apartments – Stage 2
58A Victoria Parade, Rockhampton
Technical Memorandum

Janes and Stewart Structures Pty Ltd has prepared this technical memorandum in support of the Material Change of Use Application for Stage 2 of the Gallery Apartments, located at 58A Victoria Parade, Rockhampton City. Stage 1 of the Gallery Apartments was completed in 2018 with the Stage 2 proposal consisting of an 8 storey, 15 unit multi residential building, to be situated on the neighbouring allotment described as Lot 2 on SP273050.

This document intends to address some of the key Civil Engineering infrastructure considerations associated with the development including a traffic impact review vehicular access to the site, stormwater drainage and sewer and water connections. With the intent of addressing these considerations outlined above, this document should also clarify queries received from Rockhampton Regional Council in an information request letter dated 5th February 2021 for the Material Change of Use Development Application reference D/2-2021.

The locality of the subject site can be seen in the following image:



Figure 1 Locality Image

1. Traffic Impact Review

The subject site has frontage to the existing Council controlled road corridors of Quay Lane and Victoria Parade. As part of the development proposal, an off-street car parking facility is incorporated into the design where access to this car park is to be from Quay Lane.

External Road Network

Both Quay Lane and Victoria Parade are identified by Rockhampton Regional Council as part of their road hierarchy network. Quay Lane currently caters for the loading dock of the Pilbeam Theatre, circulation for the existing ancillary car parking facility and access for the off-street car parks of the Gallery Apartments Stage 1. It is noted that Quay Lane does not extend to service the Quest Apartments and Tenachy House, with access for Quest gained via both Victoria Parade and an access easement from the Quest to Bolsover Street. Access to Tenachy House is gained via Bolsover Street. Victoria Parade currently services several mixed uses including high density residential apartments and commercial facilities such as office buildings and restaurants.

The characteristics of the existing external road corridors fronting the subject site are outlined in the following table:

Table 1 External Road Characteristics

	Victoria Parade	Quay Lane
Jurisdiction	Council Controlled	Council Controlled
Road Hierarchy ^[1]	Major Urban Collector	Urban Access Place
Posted Speed	Not posted (50km/h)	Not posted (50km/h)
Design AADT (vpd) ^[2]	3001-6000	0-250
Lane Formation	Undivided / two-lane / two-way	Undivided / two-lane / two-way
Carriageway Width	~10.5m	~5.5m
Reserve Width	22.0m	6.0m
On-Street Parking	Yes (Uncontrolled both sides)	No
Footpaths	Yes (Concrete both sides)	No
Cycle Lanes	No	No

^[1] Based off Rockhampton Regional Council Planning Scheme Road Hierarchy Overlay

^[2] Obtained from the Capricorn Municipal Development Guidelines (CMDG) – Design Specification D1 – Geometric Road Design

As highlighted in the above table, Victoria Parade is assigned as a Major Urban Collector within Council's hierarchy and Quay Lane is defined as an Urban Access Place. The Capricorn Municipal Development Guidelines (CMDG) suggest that property access via a Major Urban Collector is discouraged and there are also significant differences between design Average Annual Daily Traffic (AADT) for the Major Urban Collector compared to the Urban Access Place, where the Major Urban Collector designed to cater for substantially more traffic volume. Based on these key considerations, access to the site is more practical from Quay Lane considering safety and the CMDG recommendations.

Traffic Volumes

Traffic Volume data has been made available through Rockhampton Regional Council's traffic count records. Given that access is proposed off Quay Lane, analysis of existing traffic volumes have been limited to Quay Lane between Cambridge Street and the subject site. Traffic data was collected in two locations along Quay Lane over two weeks in February / March 2020. The approximate locations of the count information is shown in the following image:



Figure 2 Traffic Count Locations

Advice received from the developer of the Gallery Apartments stage 1 confirmed that the facility was at 100% occupancy approximately 6 months following completion of the construction in mid 2018. Therefore, the traffic counts completed in 2020 should include the traffic generation from the Gallery Apartments stage 1 in its fully occupied state. However, to cater for any vacancies during the time of the count, a 3% growth rate has been applied to project traffic from 2020 to 2021. This is considered to be a conservative approach given that Quay Lane services a minimal number of land parcels. The following table shows the data from the traffic count and the projected traffic volume in 2021 to form the base case for the analysis:

Table 2 Average Annual Daily Traffic (AADT)

Year	Count Location 1 (vpd)	Count Location 2 (vpd)
2020	130	82
2021 ^[1] (Base Case)	134	85

^[1] Based on a 3% growth rate of 2020 AADT data.

Given that the traffic count location 2 was taken just south of the existing entry/exit crossover for the Gallery Apartments 1 and with no other developments accessing past this point, it could be assumed that the traffic generated at count location 2 is entirely associated with the Gallery Apartments stage 1.

Also, with the location of traffic count 1 being near the intersection of Quay Lane to Cambridge Street with no accesses located between the count and the intersection, count location 1 could be considered to reflect the full average annual daily traffic for the Quay Lane road corridor.

Traffic Generation

The projected traffic generation from Stage 2 of the Gallery Apartments has been determined using typical traffic generation rates from similar high rise residential developments. The Department of Transport and Main Roads Guide to Traffic Impact Assessment – September 2017 suggests that Traffic Generation Data is available through the Queensland Government Open Source Data. An analysis of the average weekday (daily) volumes from the open source data has been completed to calculate an average traffic generation rate per bedroom. The following table includes the calculated traffic generation rate per bedroom as well as projected traffic generation from the Gallery Apartments Stage 2:

Table 3 Traffic Generation

Description	Value
High Rise Residential Traffic Generation Rate (daily trips per bed) ^[1]	1.71
Number of Beds ^[2]	46
Daily Traffic Generation (vehicles per day)	78.66 therefore = 79

^[1] derived from Queensland Open Source Data for High Rise Residential Land Use.

^[2] based on number of beds from Development Application Architectural drawings.

Based on the projected traffic numbers grown from the traffic count information from Council of Quay Lane, Stage 1 of the Gallery Apartments generates around 2.83 trips per unit based on the assumption that the 30 units within Stage 1 are fully occupied (i.e. $85/30 = 2.83$).

Considering most of the units within Stage 2 have 3 bedrooms, this would suggest that the traffic generation rate adopted for Stage 2 is conservative at approximately 5.13 trips per unit (i.e. $1.71 \times \text{avg } 3 \text{ bedroom units}$).

Traffic Impact Assessment

A review of the projected traffic volumes of Quay Lane with the inclusion of the traffic generated from Stage 2 of the Gallery Apartments has been conducted. The following table shows the results:

Table 4 Traffic Volumes – Base Case and Total Developed Case

Description	Vehicles per Day (vpd)
2021 (Base Case)	134
Gallery Stage 2	79
Total	213

Therefore, the Stage 2 of the Gallery Apartments will increase traffic within Quay Lane to an estimated 213 vehicles per day. As previously stated, Quay Lane is identified as an Urban Access Place within Council's Road Hierarchy where the Capricorn Municipal Development Guidelines indicate an urban access place can cater for 250 vehicles per day. With the total daily traffic volume on Quay Lane including the Gallery Stage 2 being around 15% less than the maximum design traffic for Quay Lane, this indicates the projected traffic from the development can be catered for in the current laneway capacity.

Access and Egress

The proposed vehicular crossover for the off-street car parking facility accessing via Quay Lane has been located in close proximity to the existing electrical easement at the northern end of the site frontage to the laneway. This provides maximum separation from the existing basement ramp crossover access for the Gallery Apartments Stage 1 in the adjacent allotment to the new Stage 2 vehicle crossover. No other vehicle access crossovers are currently located adjacent to the proposed Stage 2 access as highlighted in the image below:

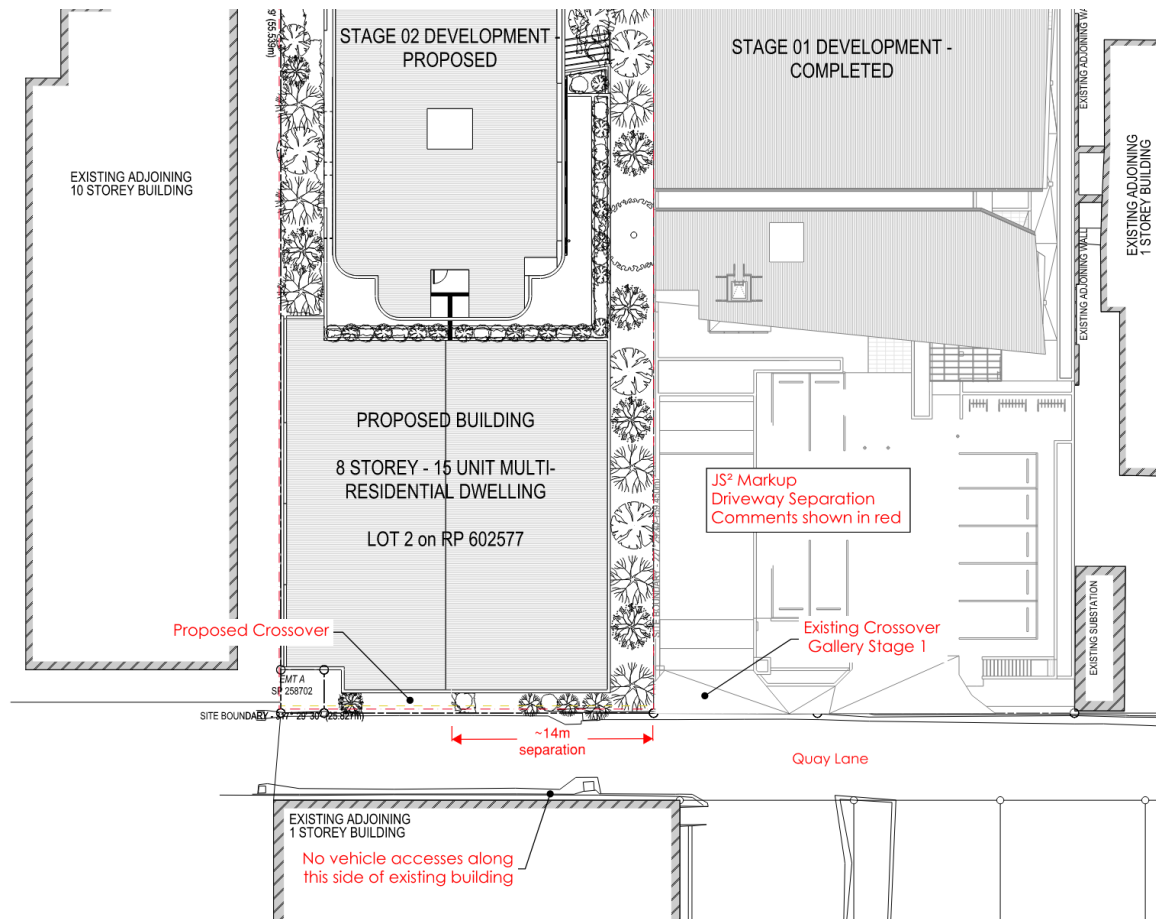


Figure 3 Access Separation (Source: Architectural Site Plan Issue A with JS² Comments shown in red)

The proposed crossover will be designed in accordance with the requirements of the Capricorn Municipal Development Guidelines (CMDG) with the finer detailed elements of the crossover to be confirmed as part of the further detailed design phases of the project. This includes consideration of the crossover form including any flares required and details for the crossover levels to transition from Quay Lane to the off-street car park.

An assessment of the vehicle turning movements for a B99 standard passenger car vehicle entering and exiting the site have been completed to check functionality of the crossover. The results of this turnpath analysis are shown in the turnpath drawing shown below:

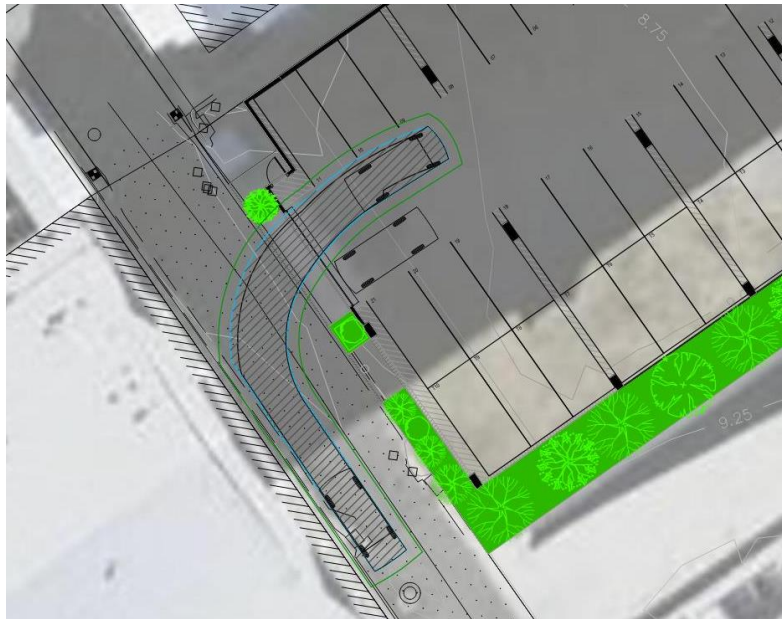


Figure 4 B99 Turnpath - Entry

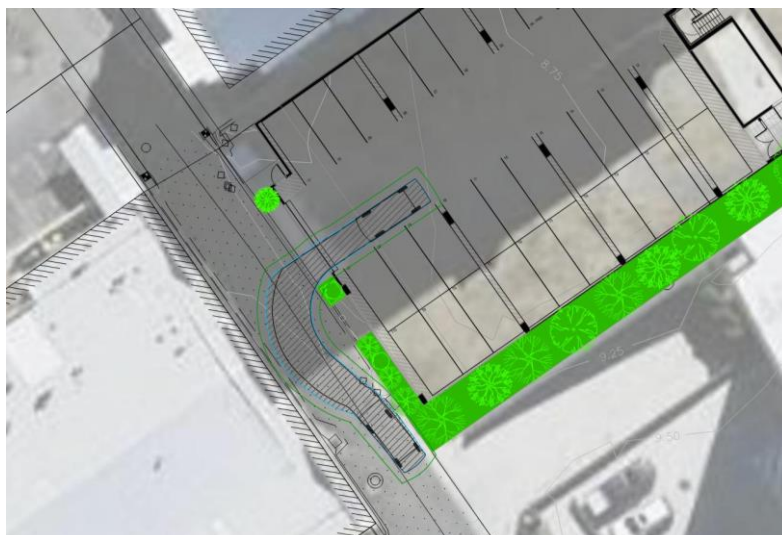


Figure 5 B99 Turnpath - Exit

2. Stormwater Drainage

An assessment has been undertaken to review the stormwater management strategy for the proposed Gallery Apartments Stage 2.

A development permit for Material Change of Use for the Gallery Apartments was previously approved by Rockhampton Regional Council prior to the project being split into two stages under application number D/155-2014. This approval was then subsequently amended to incorporate the staged development to construct two separate apartment buildings. A site-based stormwater management plan prepared by Bornhorst and Ward Consulting Engineers was approved by Council as part of this aforementioned approval. The general strategy for stormwater quantity as defined in the Bornhorst and Ward stormwater management plan will be maintained in this separate development application which is outlined in this section.

Stormwater Quantity

The development site falls towards the road reserve of Victoria Parade in the existing case with a gentle fall of 1.7% based on site survey information available. Overland flow is then captured and conveyed to the Fitzroy River through an underground pit and pipe drainage system within Victoria Parade. The existing Council stormwater drainage network in the vicinity of the subject site can be seen in the following extract from Council's Geographical Information System (GIS):

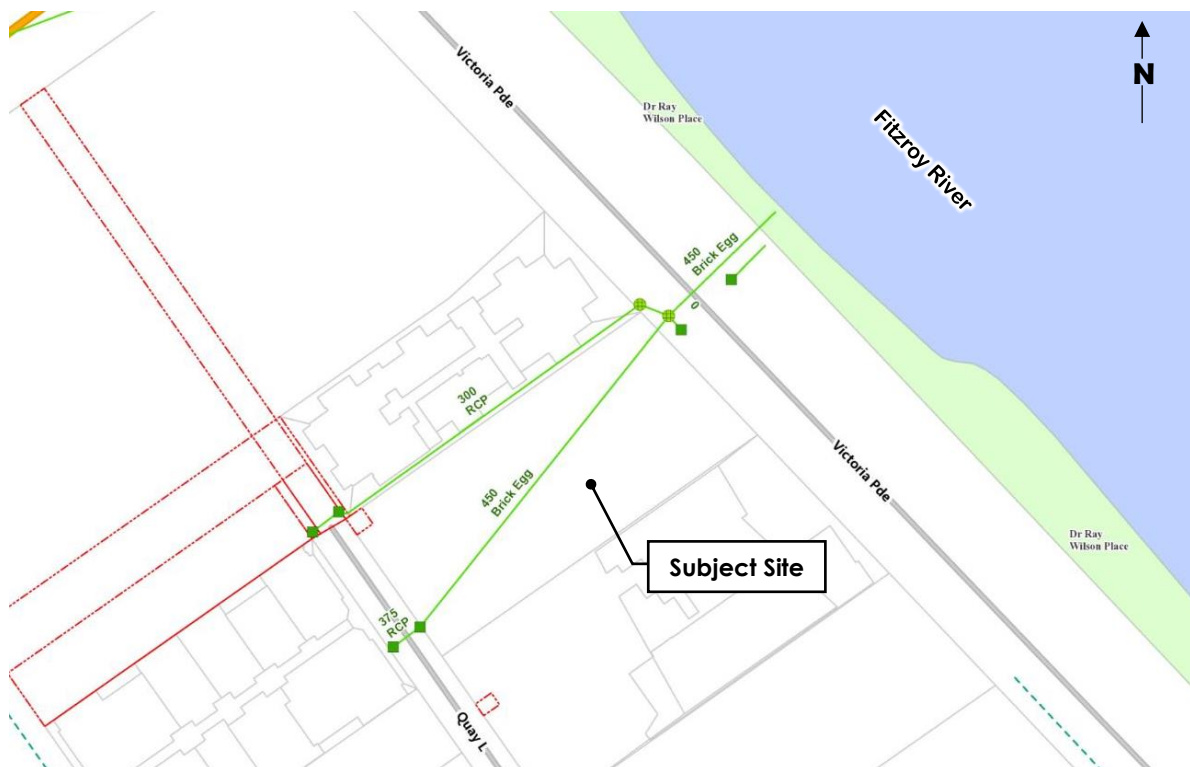


Figure 6 Existing Council Stormwater Infrastructure (Source: RRC)

The development site is located at the downstream end of the greater South Rockhampton Local Catchment. A study of the catchment has been prepared for Rockhampton Regional Council by AECOM which is available for public viewing in draft format on Council's website. The location of the subject site in relation to the greater South Rockhampton Local Catchment is shown as follows:

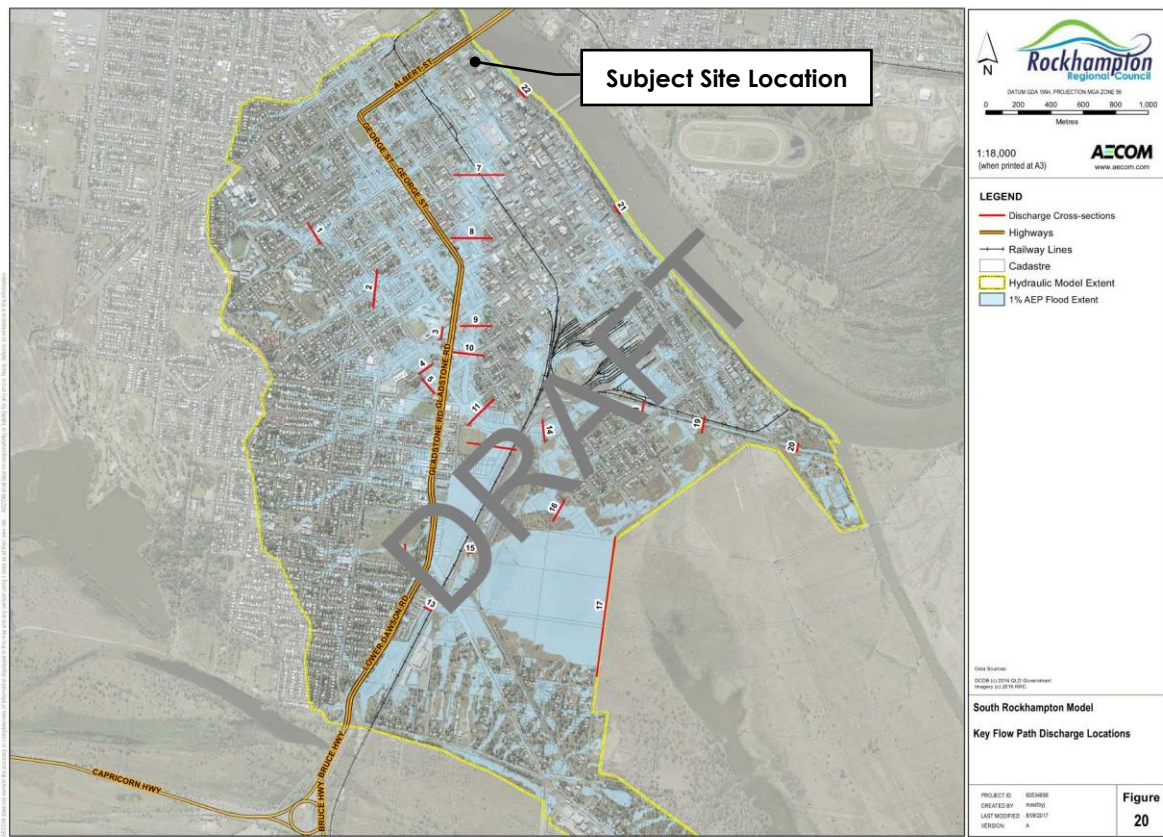


Figure 7 South Rockhampton Local Catchment (Source: RRC Website)

As the site is located within the bottom one-third of the overall South Rockhampton local catchment, we believe no stormwater mitigation measures such as detention are warranted with this development. The time of concentration for the subject site will reduce as a result from the proposed stage 2 development which will allow peak flows from the site to discharge quicker and avoiding coinciding with peak flows from the greater upstream catchment.

Flood Hazard Assessment

Rockhampton Regional Council's planning scheme highlights that the subject site is within the flood hazard overlay extent, to a medium level (H2) risk from flooding of the Fitzroy River (Riverine). This is based off the Defined Flood Event adopted by Council to be the 1% annual exceedance probability (AEP) or 1 in 100 year flood event. The flood hazard overlay identifies a small portion of the site along the Victoria Parade frontage is impacted by the Flood Hazard Overlay as shown in the following extract from Council's planning scheme mapping:

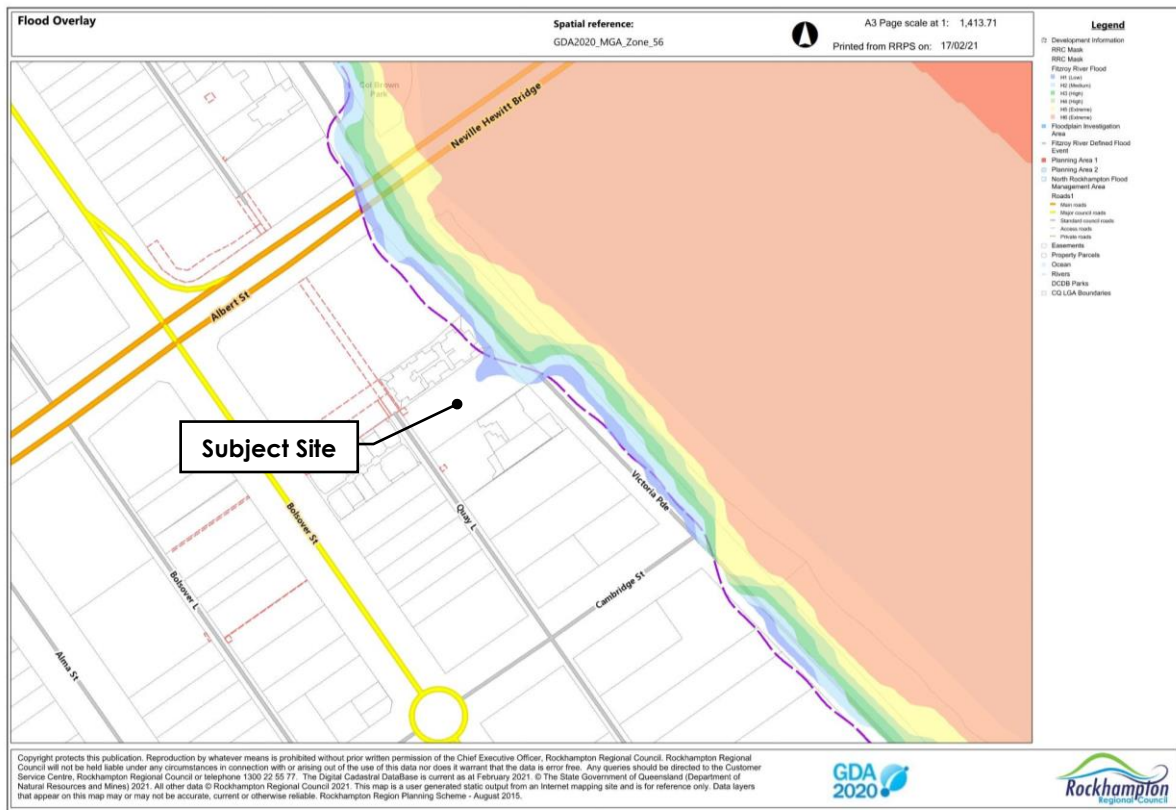


Figure 8 Flood Hazard Overlay Mapping (Source: RRC)

A Flood Property Search for the site has been obtained from Council and is attached to this technical memorandum. This has indicated the following results for peak water surface level in Australian Height Datum (AHD) for the Defined Flood Event (1% AEP) for both Riverine and Local Catchment Creek Flooding:

Table 5 Defined Flood Event Peak Water Surface Level (WSL) (Source: RRC Flood Property Search)

	Peak Water Surface Level – AHD (m)
Fitzroy River (Riverine Flooding)	8.54

The detailed survey for the site indicates a maximum elevation of approximately 9.25m AHD. Based on the local catchment creek flooding provided by Council in the flood property search report, the 1% AEP water surface level is nominated at 9.54m AHD. This would suggest that the entire site and surrounding properties and road corridors would be inundated in the 1% AEP defined flood event. This contradicts the flood extent shown on the flood search map from Council, suggesting an anomaly in the local catchment flood level.

The extent of flooding from the Fitzroy River based on the defined flood event only impacts the front portion of the site. The proposed high rise residential dwelling is intended to be set back from the front boundary in line with the neighbouring buildings as shown on the Architectural documentation submitted as part of the development application. The landscaped area between the proposed building the Victoria Parade boundary will be constructed at similar level to the existing surface therefore minimising any significant displacement of flood water.

Therefore, proposed development does not adversely impact the flood situation from Riverine flooding of the Fitzroy River with the site located on the fringe of the flood hazard overlay extent.

In addition to this, there are no proposed habitable rooms located on the ground floor of the Gallery Apartments – Stage 2 with the ground floor including common areas (lift, refuse facilities) and the off-street car park. Habitable rooms are located from Level 01 upwards therefore meaning habitable areas will be well above the Rockhampton Regional Council planning scheme requirements of assigning habitable floors a minimum of 500mm above the defined flood level.

Stormwater Management Proposal

As part of the Stage 1 development, an internal pit and pipe drainage system was constructed along the Victoria Parade boundary connecting to the existing Council stormwater fronting the stage 2 development site. The internal drainage system also incorporates a stormwater quality improvement device (SQID). An extract of the Operational Works approved drawing prepared by Calibre Consulting showing the existing internal drainage system is included below:

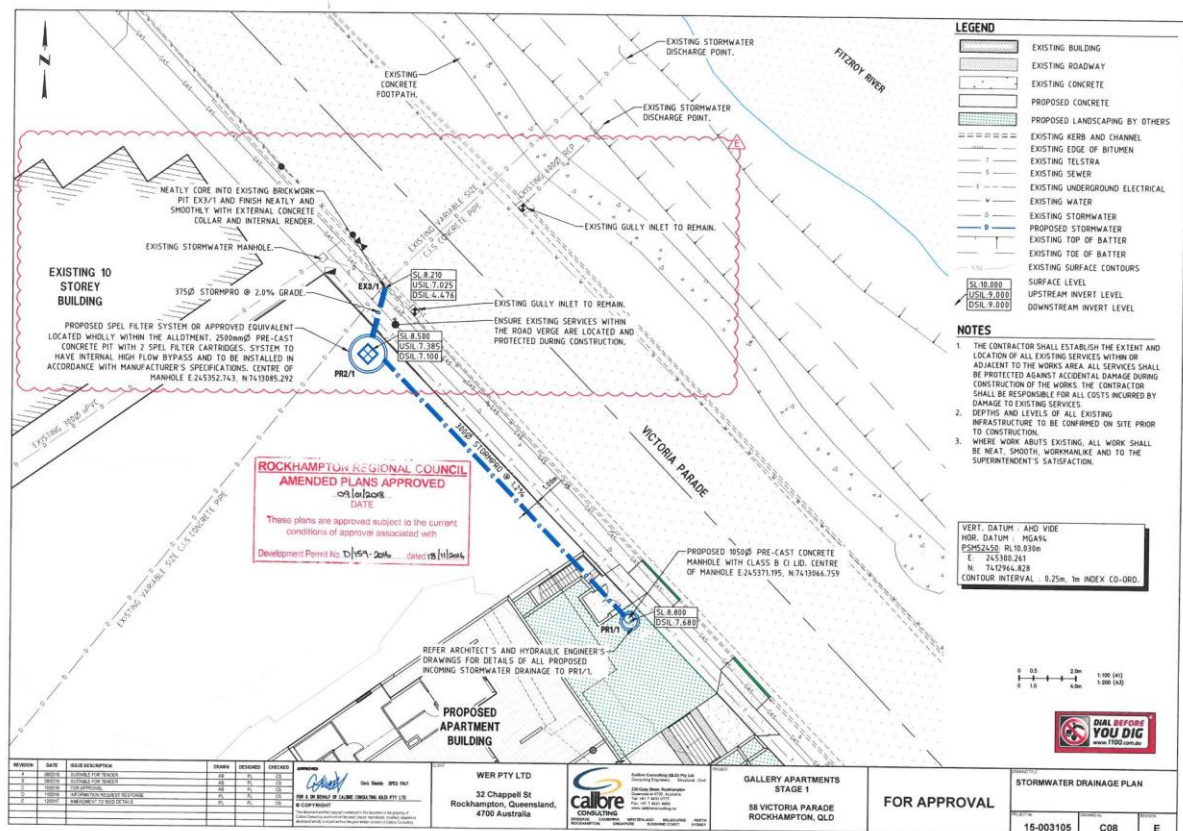


Figure 9 Extract Calibre Operational Works Stormwater Drainage Plan

It is intended that the roofwater from the proposed Stage 2 development will connect into the internal drainage system constructed as part of the Stage 1 Gallery Apartments.

A review of the hydraulic capacity of the internal drainage system and the connection to existing council stormwater will be completed at the further detailed design phase to confirm suitability to service both existing stage 1 and proposed stage 2 of the Gallery Apartments development.

Stormwater Diversion

According to Rockhampton Regional Council's records, an existing stormwater pipe currently traverses diagonally across the site in order to convey runoff from Quay Lane to Victoria Parade. Records indicate that this pipe is a 450mm diameter and consists of a brick egg construction as shown in Figure 6 of this report.

Similar to the proposal suggested in the Bornhorst and Ward Consulting Engineers Site Based Stormwater Management Plan as part of the previous development approval D/115-2014, the existing 450mm diameter stormwater line is proposed to be diverted around the main structure of the proposed high rise residential building.

To ensure compliance with the Queensland Development Code MP1.4 – Building over or near relevant infrastructure, access chambers required for the stormwater diversion will be installed in locations ensuring a minimum 1.5m clear radius around the centre of the chamber where this area is open to the sky. As per the existing situation, no easement is proposed over the diverted stormwater drainage. The suggested diversion is shown as follows with further details to be incorporated in a subsequent Operational Works application:

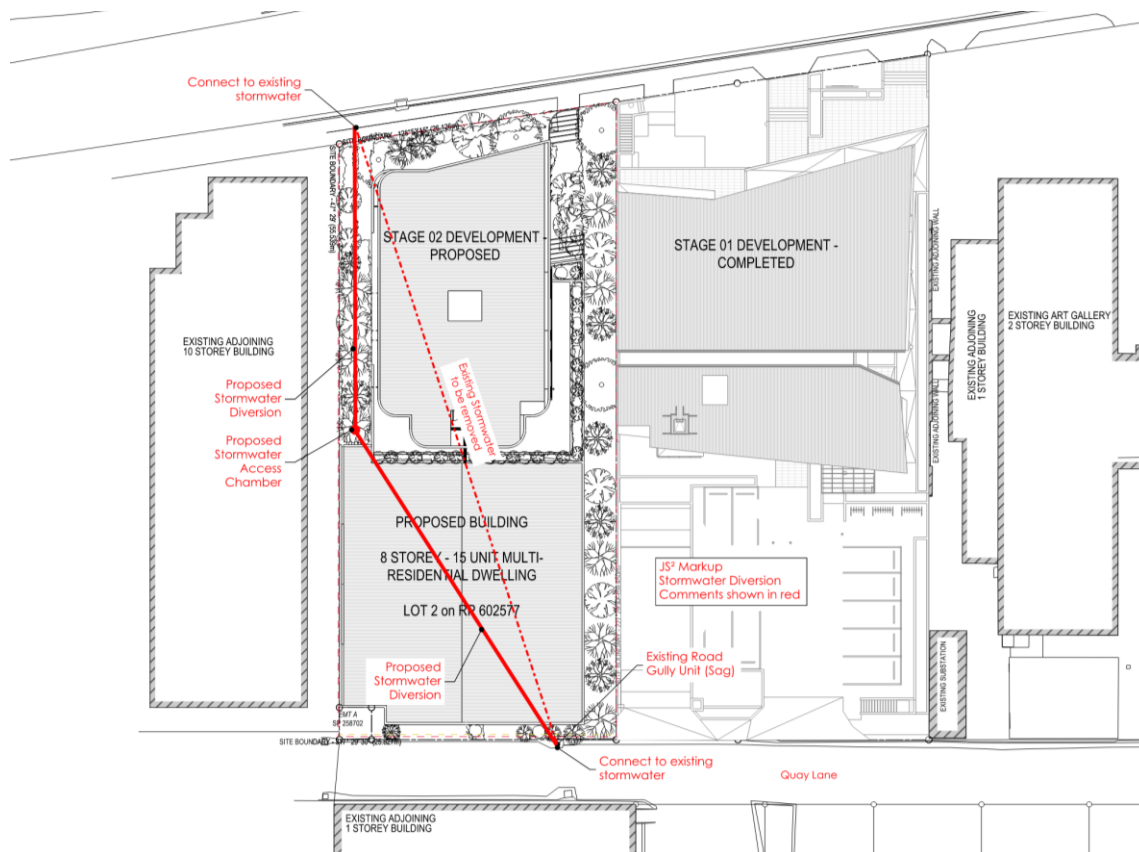


Figure 10 Stormwater Diversion

As part of the stormwater diversion works, the contributing catchment will be assessed to appropriately size stormwater and consider pit and pipe drainage and the surface overland flow strategy. In particular, ensuring the Quay Lane catchment is effectively conveyed to Victoria Parade will be part of this process. This review will all be undertaken as part of the detailed design Operational Works phase of the project.

Stormwater Quality

As part of the Stage 1 development of the Gallery Apartments, a stormwater quality improvement device (SQID) was installed. This improvement device was also shown in Figure 9 of this report showing the extract of the Operational Works approved drawing prepared by Calibre Consulting.

The stormwater quality device documented on the Operational Works drawings for stage 1 was specified to be a SPEL filter 2500mm diameter chamber with two filter cartridges installed. It is our understanding that a MUSIC model was completed for both the stage 1 and stage 2 development at the time of the stage 1 design phase. This indicated that one additional filter cartridge would be required as part of the stage 2 development, which could be simply installed within the existing SPEL filter chamber on the site. Therefore, this approach is proposed to be adopted to satisfy the stormwater quality requirements of the State Planning Policy (SPP) - July 2017.

3. Sewer Connection

The existing site currently has access to Rockhampton Regional Council's gravity sewer network with an existing access chamber located in the southern corner of the site. As this existing access chamber is at the top of the existing Council sewer line and limited to servicing the Gallery Stage 2 site only, it is proposed to make a sanitary drainage connection to the Council sewer network at this access chamber. The following extract from Council's Geographical Information System shows the existing network in the vicinity of the site:



Figure 11 Existing Council Sewer Network (Source: RRC)

Given the Council controlled access chamber within the subject site is only servicing the Gallery Stage 2, further discussion can be had with Council during the detailed design phase in relation to ownership of assets and the most practical solution for all parties.

Water Connection

Existing water reticulation infrastructure is available in the road reserves of Quay Lane and Victoria Parade adjacent to the development, with a 100mm diameter main located in Quay Lane and a 150mm diameter main located in Victoria Parade. The section of 150mm diameter main fronting the Galley stage 2 site was constructed as part of the stage 1 Gallery apartments development. It is expected that a connection for water supply (including hydraulic fire services) will be made to the 150mm diameter main in Victoria Parade for the stage 2 development, similar to the stage 1 development. Details of the water services including connection to Council infrastructure will be further designed and documented as part of the detailed design phase of the project and appropriate approvals sought from relevant authorities at the detailed design phase by the nominated hydraulics consultant. The following extract shows Councils existing water infrastructure around the Gallery Apartments Stage 2 site based on records available:

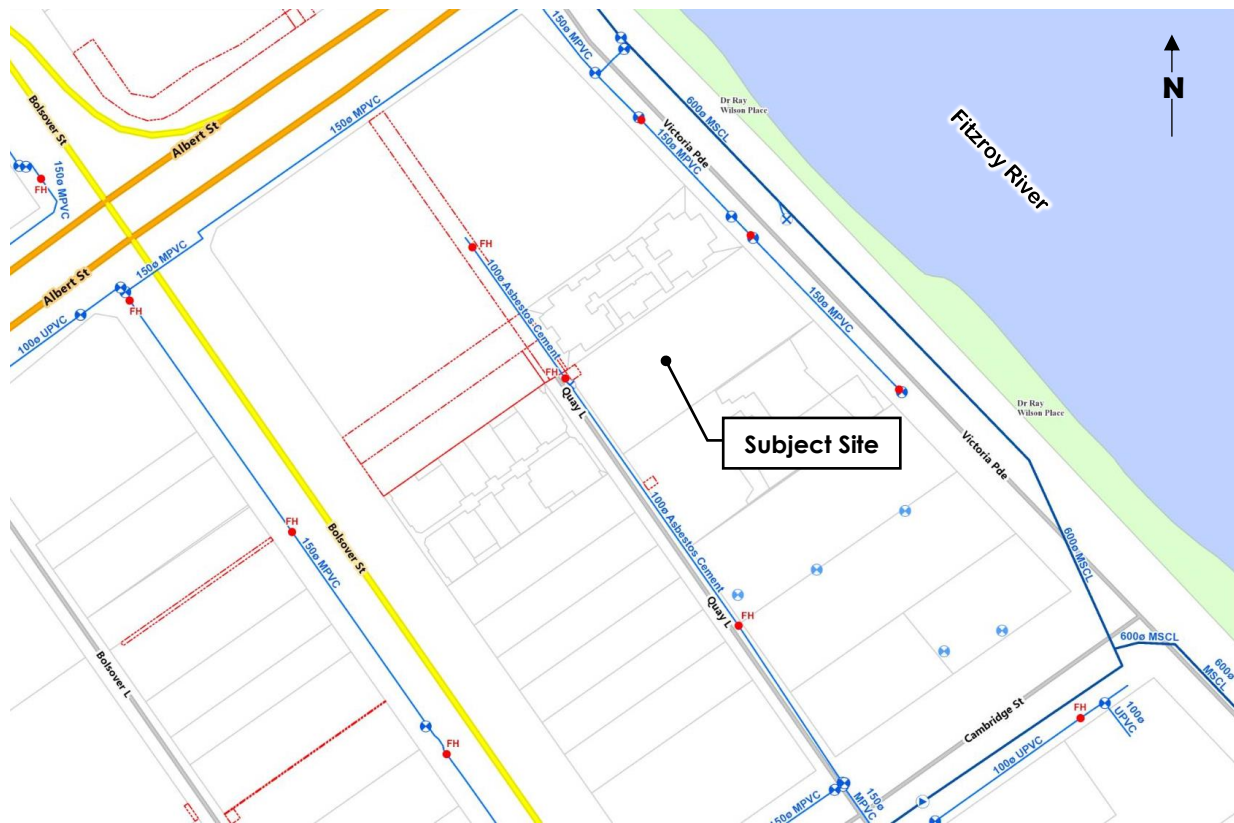


Figure 12 Existing Council Water Network (Source: RRC)

If you have any queries in relation to this technical memorandum, please do not hesitate to contact our office and speak with Matthew Dennis.

Yours sincerely



Matthew Dennis

RPEQ 24862

Senior Civil Engineer

for and on behalf of Janes and Stewart Structures Pty Ltd

Attachments

1. Flood Property Search Report



Rockhampton Office
232 Bolsover St, Rockhampton
Gracemere Office
1 Ranger St, Gracemere
Mount Morgan Office
32 Hall St, Mount Morgan

17 February 2021

Your Ref: matthew.dennis@jjstructures.com.au
Telephone: 07 4936 8099 or 1300 22 55 77
Email: developmentadvice@rrc.qld.gov.au

Janes and Stewart Structures Pty Ltd
PO BOX 1072
ROCKHAMPTON QLD 4700

Dear Sir / Madam

**FLOOD INFORMATION REQUEST – 58A VICTORIA PARADE, ROCKHAMPTON CITY QLD 4700
– LOT 2 ON SP273050**

Council is in receipt of your application dated 10 February 2021 requesting flood information for 58A Victoria Parade, Rockhampton City QLD 4700, and more properly described as Lot 2 on SP273050.

Please find attached a Flood Search Property Report for your reference. The purpose of this report is to provide flood level information to support the application of Council's planning scheme Flood Hazard overlay code, floodplain planning provisions, and applicable flood planning levels.

Council records show that the abovementioned property parcel is identified as being at risk of flood in a 1% AEP Fitzroy River and/or Local Storm / Overland Flow flooding event. Annual Exceedance Probability (AEP) is the probability of a flood event of a given magnitude being equalled or exceeded in any one year. A 1% AEP event means there is statistically a 1% (or 1 in 100) probability that an event of that magnitude will occur or be exceeded in any year.

The design flood level information contained within this report provide water surface levels for a range of typical planning and development design standards. The flood planning level for most development in the Flood Hazard overlay area is the Defined Flood Event (DFE). Council has adopted a DFE of 1% AEP as a planning standard for the management of development in Rockhampton Region. As such, for most development types - the floodplain planning provisions of Council's planning scheme apply relative to the 1% AEP defined flood event. Exceptions apply for critical infrastructure. The Defined flood event may change as Council undertakes further flood risk analysis and profiling as part of its long-term floodplain management planning for the catchment.

The flood levels contained within this flood search report have been sourced from Council's adopted flood modelling and flood study at this location, and are based on the best available information at the time of completing the study. The flood levels are measured in metres Australian Height Datum (mAHD), where mean sea level is approximately zero (0) mAHD.

Council is committed to providing residents with the most up to date flood risk information. The current flood study for this catchment area has assessed flood risk for a number of flood events including rare flood events greater than the 1%AEP flood, to provide a better understanding of the flood behaviour in the catchment. As such, the flood search report contains flood levels for flood events such as the 0.2%AEP (1 in 500 year AEP), 0.05% AEP (1 in 2000 year flood event), and the PMF (probable maximum flood). This information is being provided for completeness, and may not be applicable for development assessment purposes.

Please note: All reasonable steps have been undertaken to ensure the information presented in this report is accurate at the time of generation. Changes to the topography and condition of the local creeks and waterways may have an impact on flooding. Over time, Council may also undertake further technical studies to maintain the understanding of flooding across the city, and update the information available. Should you have any queries regarding this information please contact Council's Development Engineering section using the contact information above.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Mohit Paudyal', with a stylized flourish at the end.

Mohit Paudyal
Senior Development Engineer
Planning and Regulatory Services

Enc Flood Search Property Report and Flood Property Map

Rockhampton Regional Council Flood Search Property Report

Property Address: 58A Victoria Parade
Rockhampton City QLD 4700

Lot Details: Lot 2 on SP273050

Date of Issue: 17 February 2021



Flood Search Property Report Overview

It is possible for one or more sources of flooding to occur, especially where a property is near a creek or waterway. These flooding sources can include riverine, creek and overland flow flooding which can each behave differently and impact how a building or development is designed. All flood hazard triggers should be considered when designing and planning with flooding in mind.

The Rockhampton Regional Council Flood Search Report is provided to support planning and development, in accordance with the current version of the Rockhampton Region Planning Scheme 2015.

This report summaries flood information for this property to inform and supplement the application of the Council's planning scheme Flood Hazard overlay code, floodplain planning provisions, and the applicable flood planning levels. The contents of this report have been derived from Council's flood studies and flood modelling and should be considered along with all other applicable planning and development requirements. Flood studies and associated modelling assist Council to better understand flooding in the Rockhampton region and implement plans to avoid and mitigate its impacts on the community.

Flood modelling of the Fitzroy River has been progressively refined over a long period of time. The flood modelling addresses riverine impacts on Rockhampton City and surrounding areas, including Alton Downs, Pink Lily, Nine Mile, Fairy Bower, Midgee and Port Curtis. Local Creek and Catchment Flood Studies provide Council with information on flood behaviour of the creeks, and how they are expected to respond during varying intensities and durations of rainfall events.

Understanding your flood risk can help you prepare for flooding at your home or business. The information provided in this report utilises information from the most up to date flood studies available to Council at the date of issue of this report. All reasonable steps have been undertaken to ensure the information presented in this report is accurate at the time of generation. Changes to the topography and condition of the local creeks and waterways may have an impact on flooding. Over time, Council may undertake further technical studies to maintain the understanding of flooding across the city, and update the information available.

Copies of Council's current Flood Studies are available on Council's website at www.rrc.qld.gov.au

What is flood modelling?

Flood modelling uses sophisticated computer software to estimate how rainfall of various intensities and duration produce stormwater flows along creek and river catchments.

Flood modelling is used to estimate:

- The inundation extents of the areas that may be flooded;
- The peak depths of flood waters; and
- The hazard related to the depth of water or how quickly the water flows (velocity).

Flood modelling estimates a range of design floods based on a statistical analysis of rainfall information provided by the Bureau of Meteorology. This information is used to establish the likelihood of a rainfall or flood event.

Disclaimer

Council provides this information as a general reference source only and has taken all reasonable measures to ensure that the material in this report is as accurate as possible at the time of publication. Council makes no representation and gives no warranty about the accuracy, reliability, completeness or suitability for any particular purpose of the information. To the full extent that it is able to do so in law, the Council disclaims all liability including liability in negligence, for losses and damages including indirect and consequential loss and damage, caused by or arriving from anyone using or relying on the information for any purpose.

When reading this report, please consider:

- If a property is identified as being at risk of being affected by Fitzroy River and/ or Local Creek Catchment flooding, the highest maximum flood heights should be used to establish minimum building and development levels. For large property parcels - there may be a significant difference between the minimum and maximum flood heights for a particular flood type. In these situations, you may need to seek further advice from Council regarding the flood height that is appropriate for the exact location of the proposed building or development.
- The flood maps included with this report display the flood inundation extent only. All maps generated from the Flood Studies are available on Council's website.
- The flood maps provided depict the flood inundation extents under existing climate and catchment conditions.
- If preparing a new building and/or development application, it is recommended that you confirm all flood related provisions within Council's Planning Scheme relevant to the property.

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Property Details

Address: 58A Victoria Parade, Rockhampton City QLD 4700
Lot and plan: Lot 2 on SP273050

Property Ground Levels:

Property ground levels can be found on the attached property flood report. The ground level data has been sourced from Aerial LiDAR survey, and as such, these levels are approximate.

Should the extent of flooding at a property need to be more accurately predicted, then individual property level information (e.g. surveyed site levels, and building floor levels) could be utilised in conjunction with Council's flood information. Council does not undertake this level of investigation or survey on behalf of property owners.

For your information:

AHD (Australian Height Datum) is the National Mapping Datum used throughout Australia. The level of 0.0m AHD is approximately mean sea level.

Elevation Data Source: The digital elevation model used in the flood modelling is generated on a regional scale and utilises ground level elevations from aerial laser surveys performed in 2016. The survey data used to determine the extent and depth of potential inundation is captured and updated periodically and may not reflect inundation of land that has recently been modified, such as a new subdivision that has changed the existing landform.

Flood Information

Riverine Flood: Affected

The property is identified as being at risk of flooding from the Fitzroy River. A property flood report displaying the 1% AEP (Annual Exceedance Probability) flood extent on the property is attached. Planning and development must consider risk to people and property, natural floodplain characteristics, and flood free/low flood hazard access outcomes during a river flood event.

For your information:

AEP (Annual Exceedance Probability) is the probability of a flood event of a given size occurring or being exceeded in any one year. Information in relation to more or less likely floods and the full flood plain extent can be accessed on Council's website.

Local Storm / Overland Flow Flood: Affected

The property is identified as being at risk of flooding from Local Storm / Overland Flow flooding. The attached map displays the 1% AEP flood extent on the property due to the Local Storm / Overland Flow Flooding. Planning and development must consider risk to people and property, natural floodplain characteristics, and flood free/low flood hazard access outcomes during local storm and overland flow flood events.

For your information:

AEP (Annual Exceedance Probability) is the probability of a flood event of a given size occurring or being exceeded in any one year. Information in relation to more or less likely floods and the full flood plain extent can be accessed on Council's website.

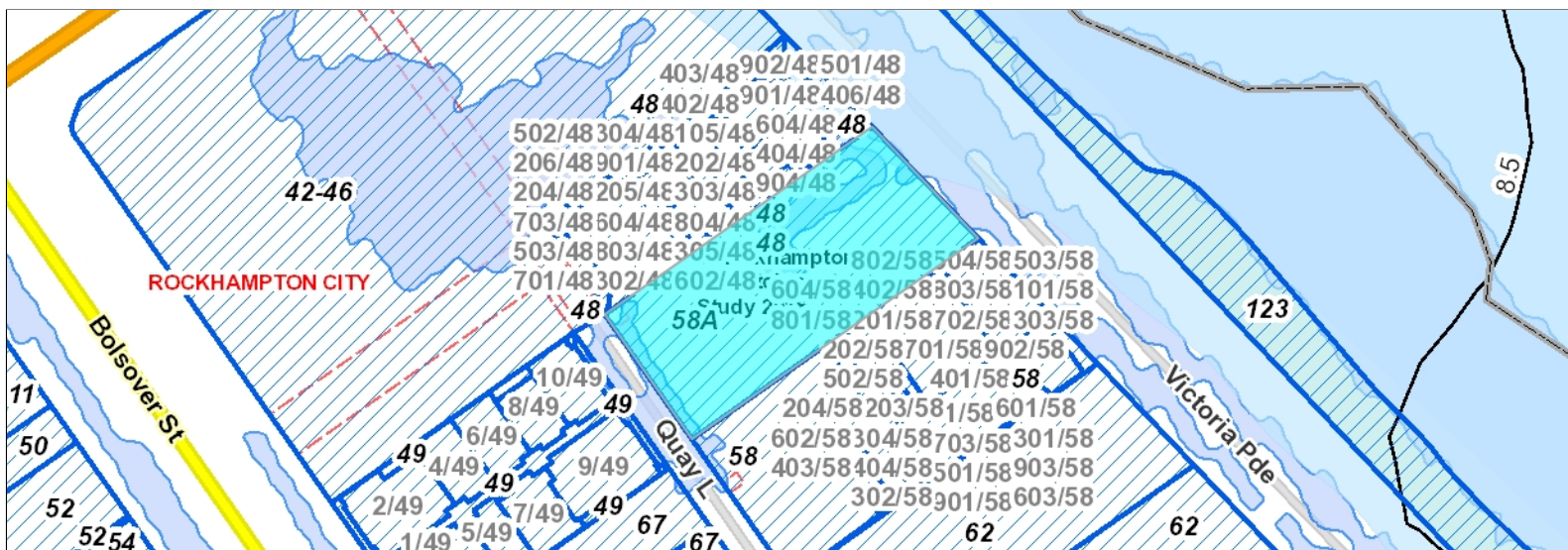
Disclaimer

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Flood Report for 58A Victoria Parade Rockhampton City QLD 4700Printed from
GeoCortex on
11/02/2021

Owners: Riddell Developments Pty Ltd Ratepayer Address: 32 Chappell St KAWANA QLD 4701

Parcel ID: SP273050/2 Land use: Vacant Land

**Riverine Catchment:** Fitzroy River 2014 Flood Study**Creek Catchment:** South Rockhampton Local Catchment Study 2018**Mitigation Area:** N/A**Horizontal Datum:** MGA Z56, GDA2020**Elevation / WSL:** mAHD **Velocity:** m/sec**Comments**

N/A

Riverine

AEP 1% WSL Min:	8.54
AEP 1% WSL Max:	8.54
AEP 1% Velocity Min:	0.06
AEP 1% Velocity Max:	0.44
AEP 2% WSL Min:	N/A
AEP 2% WSL Max:	N/A
AEP 2% Velocity Min:	N/A
AEP 2% Velocity Max:	N/A
AEP 5% WSL Min:	N/A
AEP 5% WSL Max:	N/A
AEP 5% Velocity Min:	N/A
AEP 5% Velocity Max:	N/A
AEP 10% WSL Min:	N/A
AEP 10% WSL Max:	N/A
AEP 10% Velocity Min:	N/A
AEP 10% Velocity Max:	N/A

Creek

PMF WSL Min:	8.83	AEP 5% WSL Min:	8.74
PMF WSL Max:	9.56	AEP 5% WSL Max:	9.48
PMF Velocity Min:	0.16	AEP 5% Velocity Min:	0.04
PMF Velocity Max:	0.97	AEP 5% Velocity Max:	0.54
AEP 0.05% WSL Min:	8.80	AEP 10% WSL Min:	8.73
AEP 0.05% WSL Max:	9.55	AEP 10% WSL Max:	8.77
AEP 0.05% Velocity Min:	0.11	AEP 10% Velocity Min:	0.29
AEP 0.05% Velocity Max:	0.89	AEP 10% Velocity Max:	0.52
AEP 0.2% WSL Min:	8.78	AEP 18% WSL Min:	N/A
AEP 0.2% WSL Max:	9.54	AEP 18% WSL Max:	N/A
AEP 0.2% Velocity Min:	0.09	AEP 18% Velocity Min:	N/A
AEP 0.2% Velocity Max:	0.82	AEP 18% Velocity Max:	N/A
AEP 1% WSL Min:	8.77	AEP 39% WSL Min:	N/A
AEP 1% WSL Max:	9.54	AEP 39% WSL Max:	N/A
AEP 1% Velocity Min:	0.07	AEP 39% Velocity Min:	N/A
AEP 1% Velocity Max:	0.73	AEP 39% Velocity Max:	N/A
AEP 2% WSL Min:	8.73	AEP 63% WSL Min:	N/A
AEP 2% WSL Max:	9.50	AEP 63% WSL Max:	N/A
AEP 2% Velocity Min:	0.06	AEP 63% Velocity Min:	N/A
AEP 2% Velocity Max:	0.63	AEP 63% Velocity Max:	N/A

Property Elevation

Ground Elevation (Min): 8.63

Ground Elevation (Max): 9.55