

DEVELOPMENT SUMMARY

NUMBER OF BEDS RACF

GROUND FLOOR	30
LEVEL 1	30
LEVEL 2	30

TOTAL 90

CAR PARKING

NEW BAYS OFF WARD ST	12
NEW BAYS OFF SPENCER ST	34
REMOVED EXISTING BAYS OFF SPENCER ST	-16

TOTAL ADDITIONAL CAR PARKS 30

SITE COVERAGE

SITE AREA: 26711.85 m²

BUILDING COVER	
EXISTING BUILDINGS	6593.2 m ²
90 BED RACF	1743.8 m ²
KITCHEN	291.2 m ²

TOTAL 8628.2 m²
SITE PERCENTAGE 32.3%

GROSS FLOOR AREA
RACF GFA

GROUND FLOOR	1513 m ²
LEVEL 1	1577 m ²
LEVEL 2	1484 m ²
Grand total	4574 m ²

KITCHEN GFA

KITCHEN GROUND 131 m²

TOTAL DEVELOPMENT GFA 4705 m²

LANDSCAPED AREA 9818 m²
PERCENTAGE 36.7%

SITE PLAN - 1:1000

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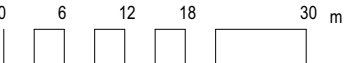
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Dated: 20 September 2022

DEVELOPMENT APPLICATION



MERCY CARE RACF - ROCKHAMPTON

75 WARD STREET,
THE RANGE, QLD 4700

MERCY HEALTH & AGED CARE CENTRAL QUEENSLAND LIMITED

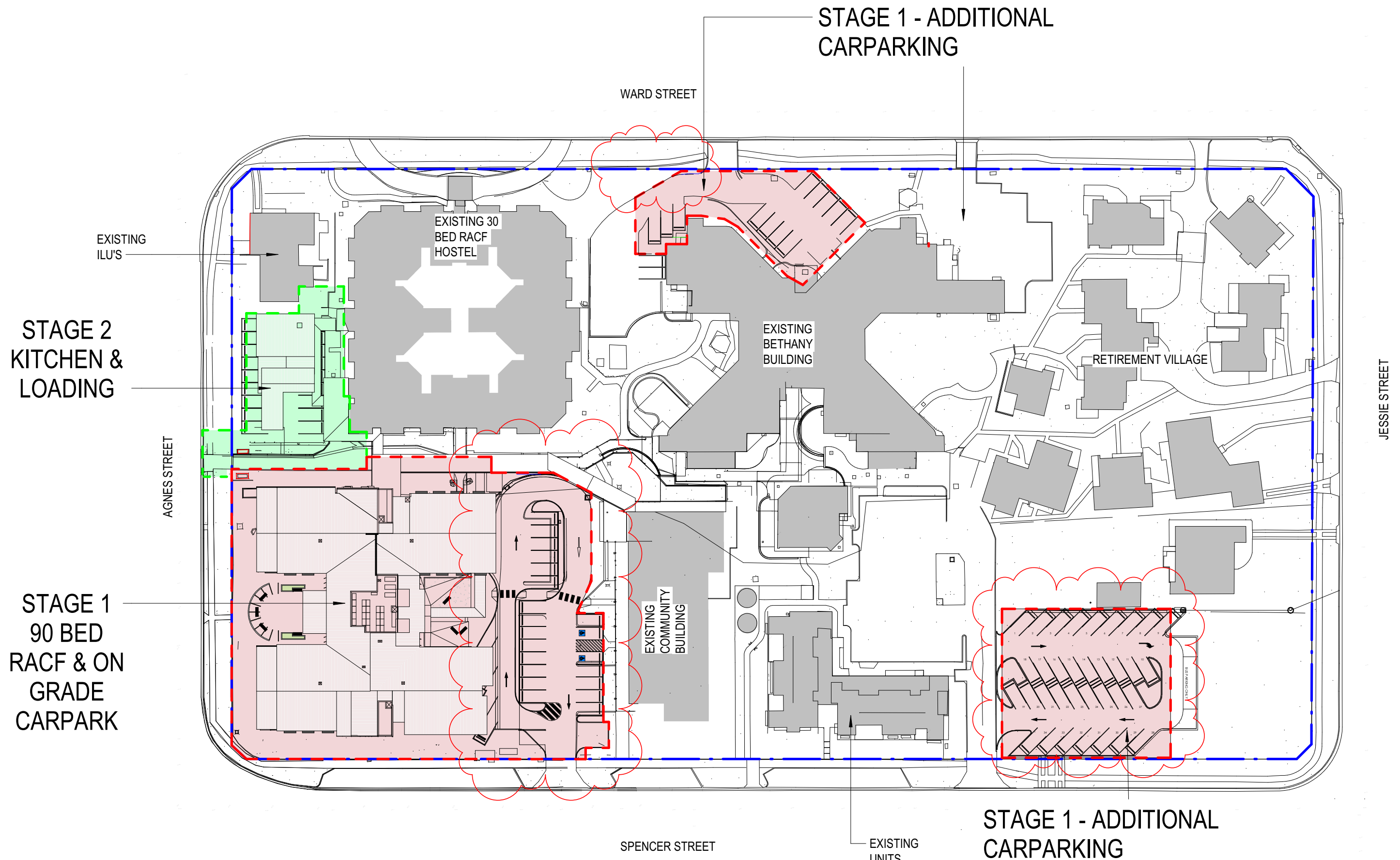
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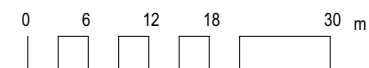
SITE PLAN & DEVELOPMENT
SUMMARY

@ A3
A-1.01

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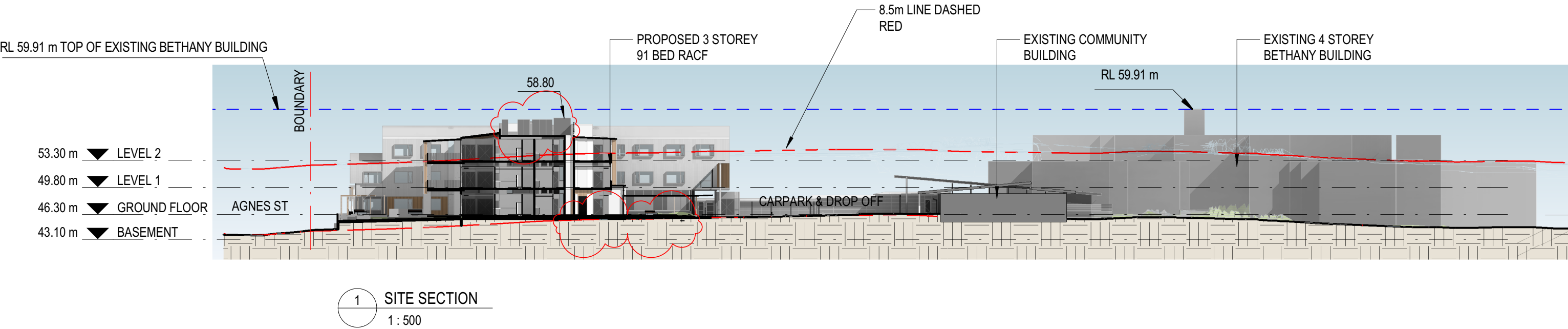
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SITE PLAN - STAGING

1 : 750 @ A3
A-1.03

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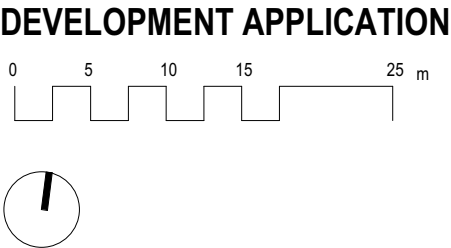
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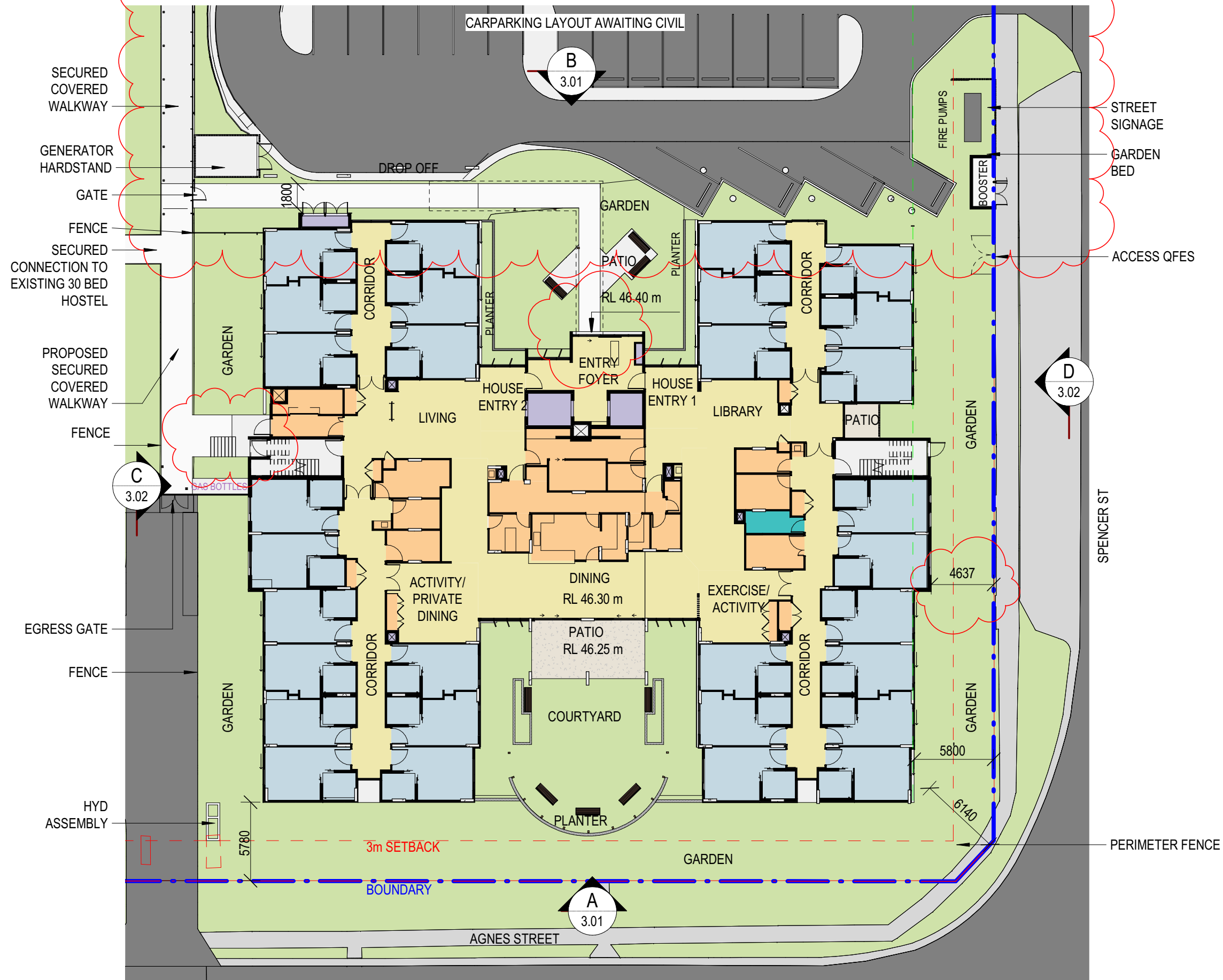
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SITE SECTION

1 : 500 @ A3

A-1.10

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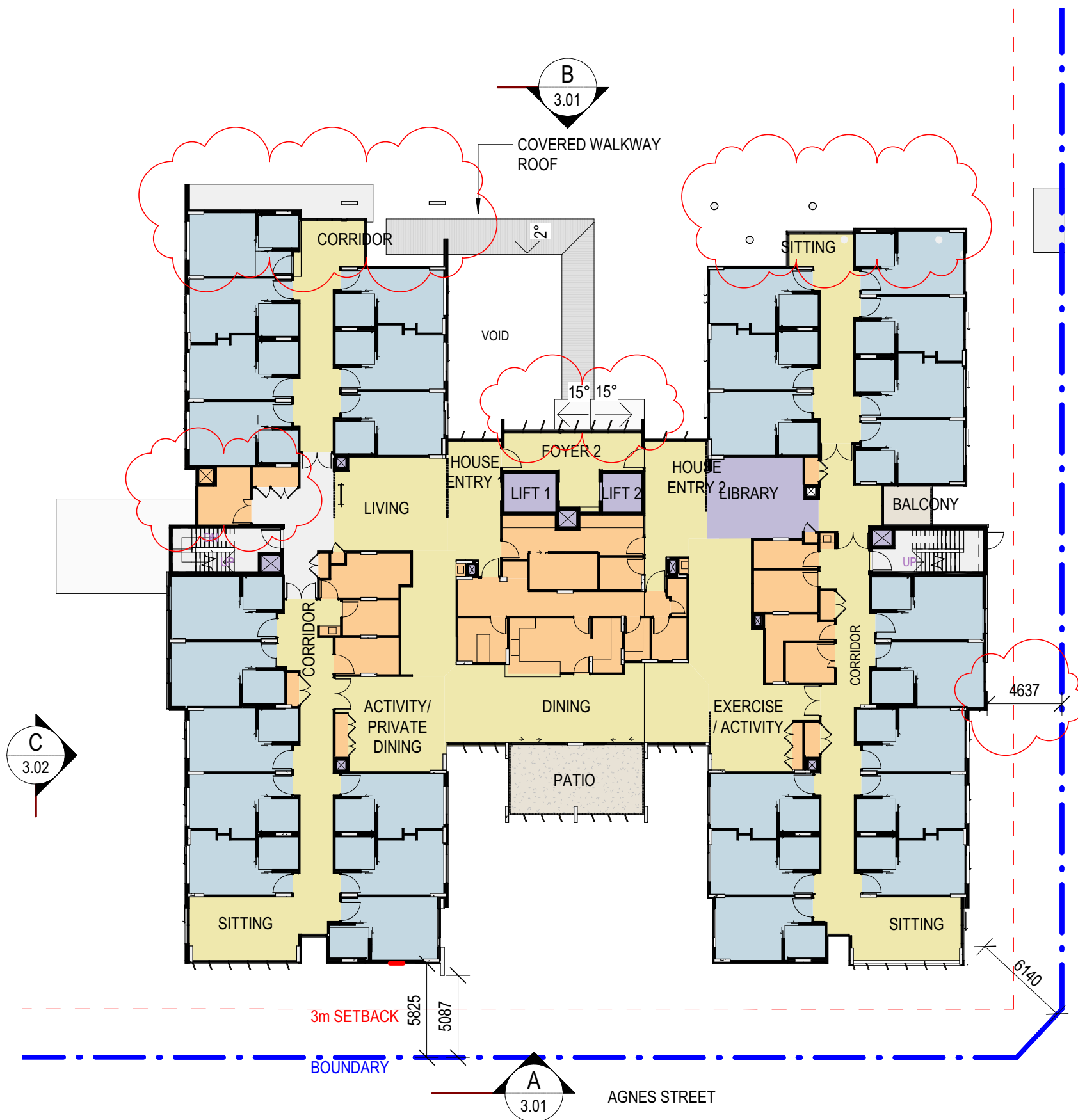
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- ROOM TYPES
- BACK OF HOUSE & SERVICES
 - BED
 - COMMON AREA
 - OUTDOOR SPACE
 - PLANT
- 30 BEDS

1 DA - LEVEL 1 - FLOOR PLANS
1:300

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75 WARD STREET,
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RACF LEVEL 1

1:300 @ A3
A-2.03

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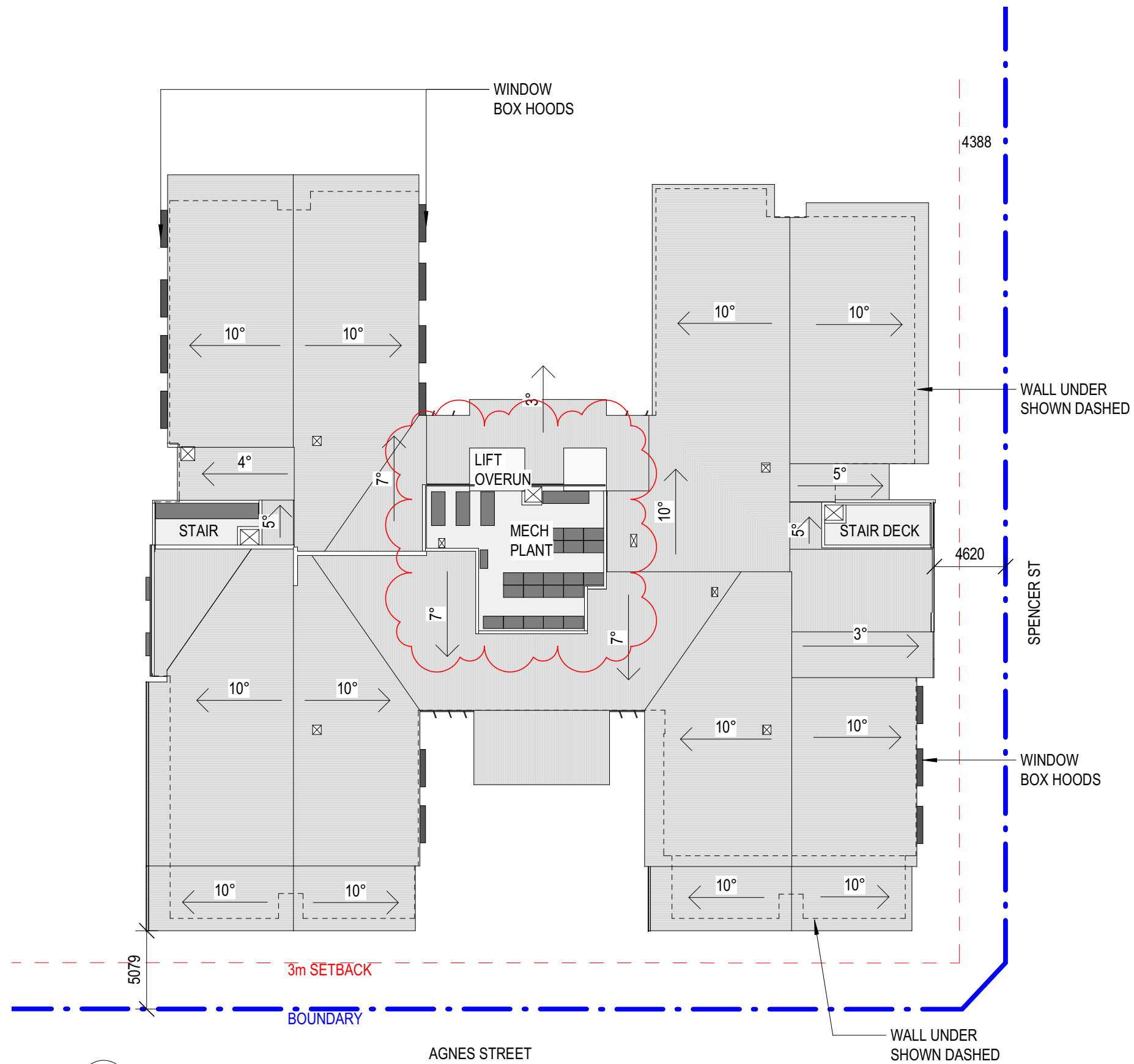
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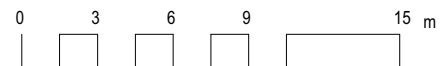
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1
30-03
DA - ROOF PLAN
1 : 300

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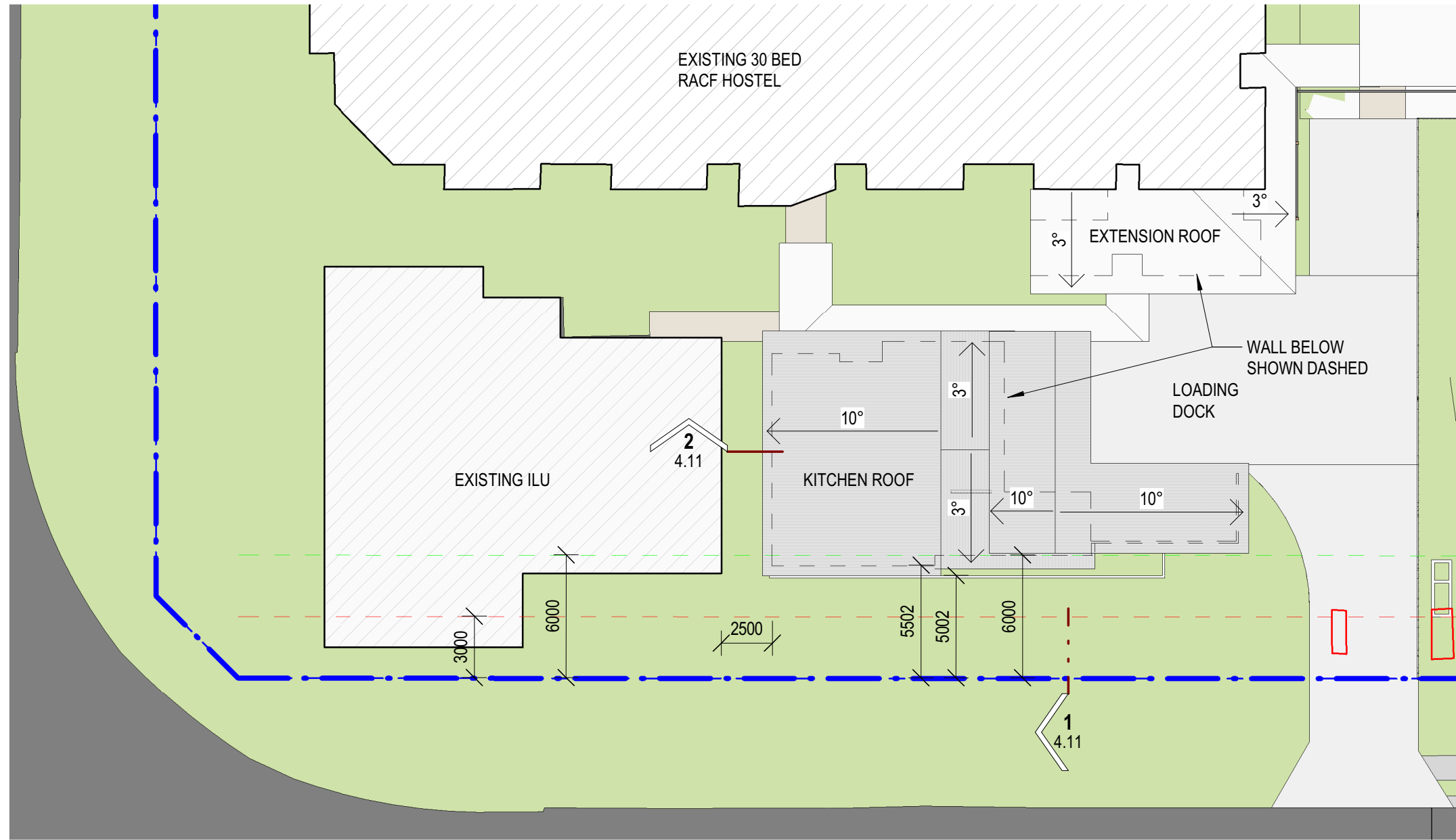
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RACF ROOF PLAN

1 : 300 @ A3
A-2.05

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WARD STREET



1
1.10
KITCHEN ROOF PLAN
1 : 250

AGNES STREET

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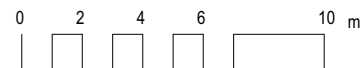
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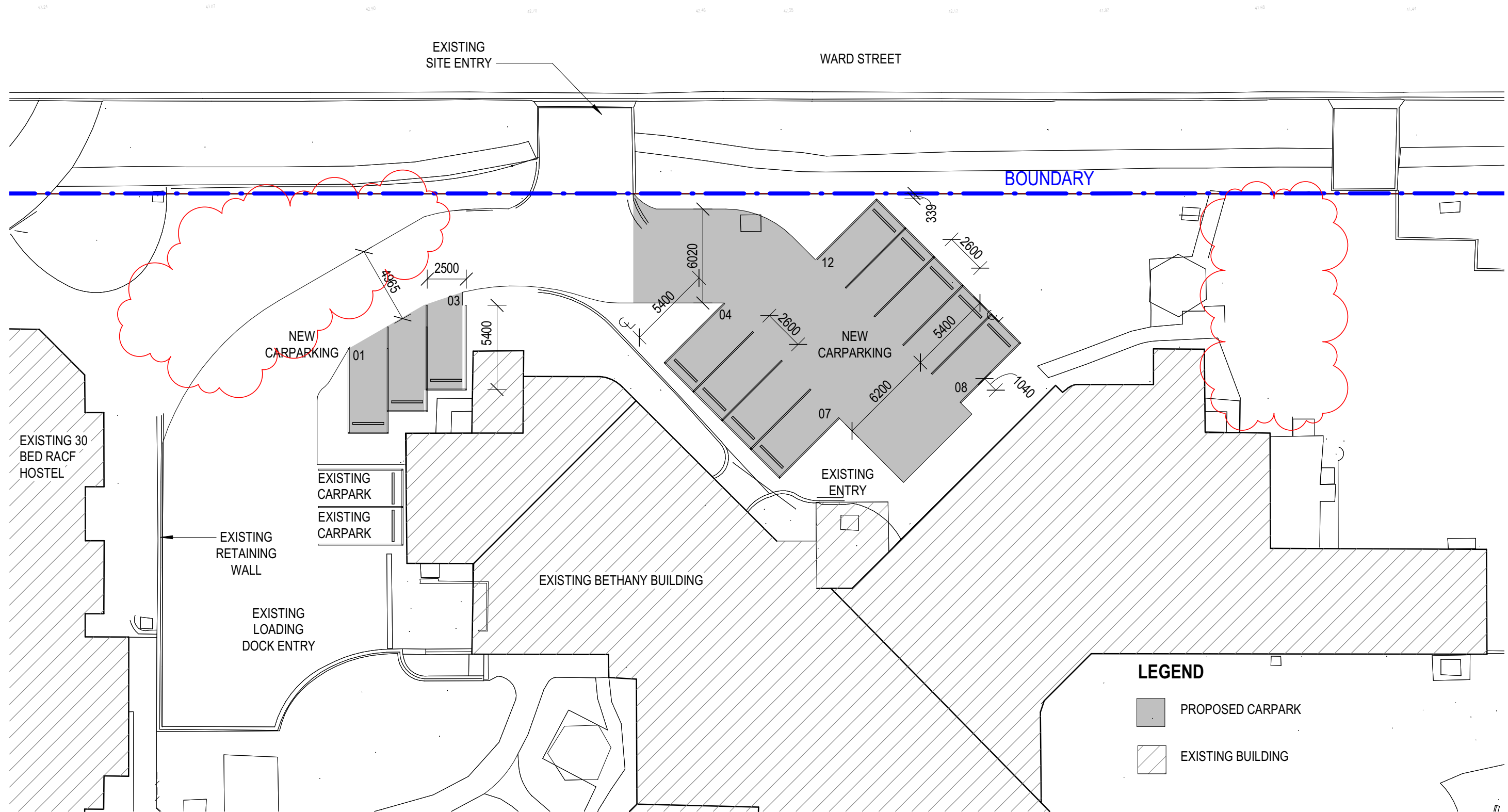
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KITCHEN ROOF PLAN

1 : 250 @ A3
A-2.12

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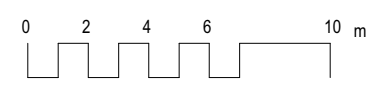


LEGEND

- PROPOSED CARPARK
- EXISTING BUILDING

1 DA - CARPARKING PLAN 1
1:250

DEVELOPMENT APPLICATION



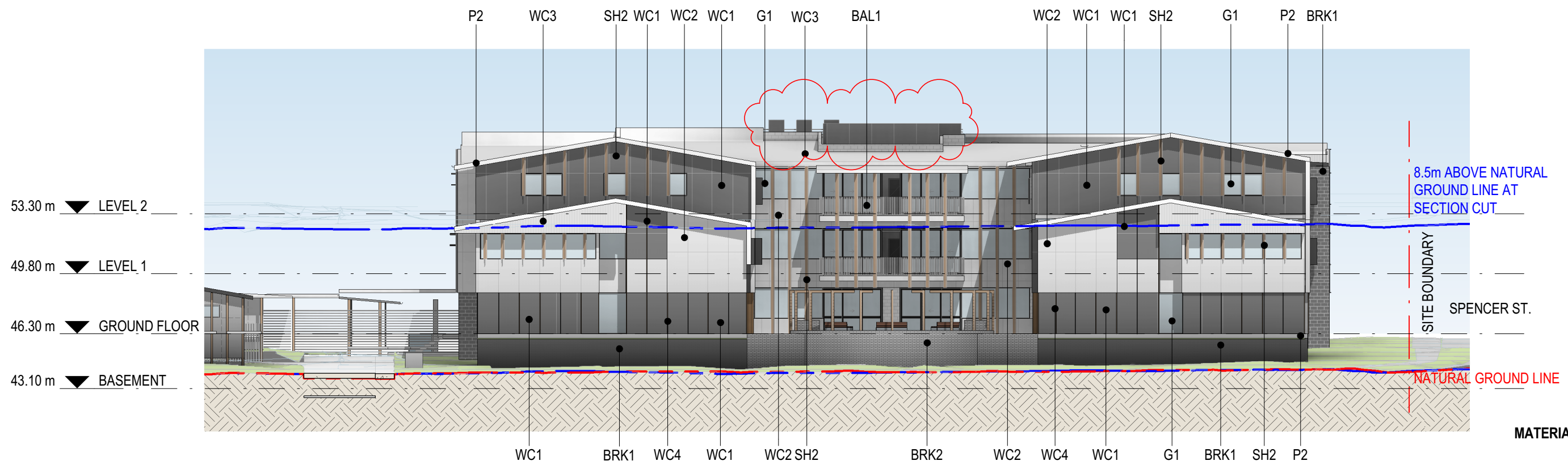
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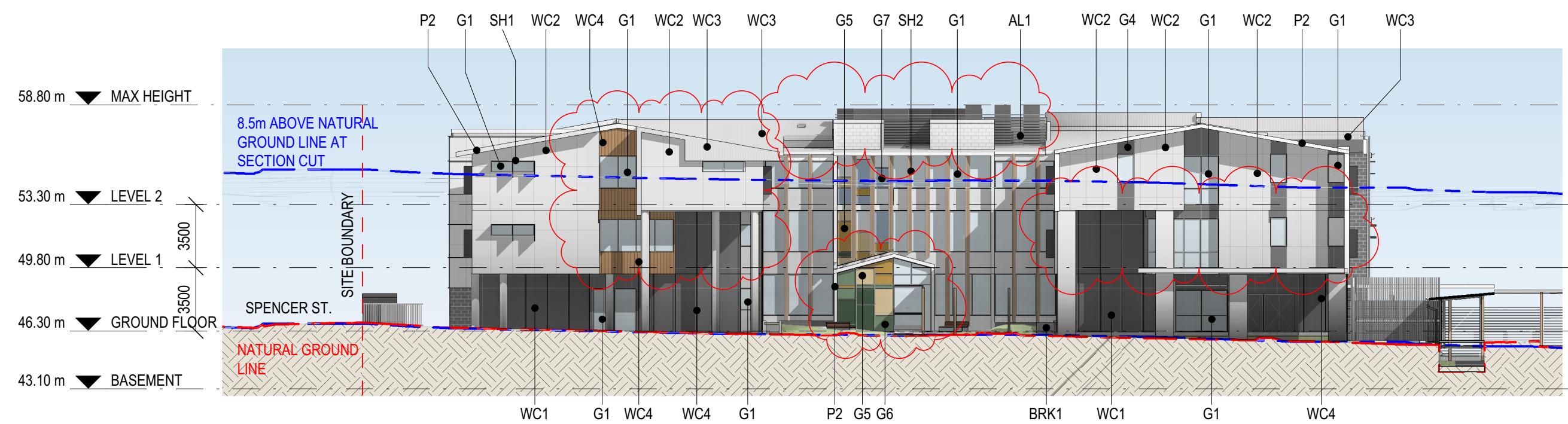
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WARD STREET CAR PARKING
1 : 250 @ A3
A-2.20
30/06/2022
rev. 2



A
2.02
RACF - WEST ELEVATION - AGNES ST
1 : 250

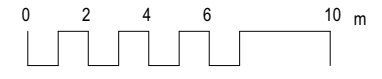


B
2.02
RACF - EAST ELEVATION
1 : 250

MATERIALS LEGEND	
AL1	ANNODISED ALUMINIUM LOUVRE SCREEN
BAL1	ALUMINIUM OFF WHITE BALUSTRADE
BRK1	MASONARY DARK
BRK2	MASONARY LIGHT
G1	FIXED GREY GLASS
G4	COLOURBACK GREY GLASS
G5	FIXED GLAZING YELLOW GLASS
G6	FIXED GLAZING GREEN GLASS
G7	FIXED GLAZING BLUE GLASS
P2	OFF WHITE TRIMS AND PAINT
SH1	SUN HOOD
SH2	VERTICAL SUN BLADES
WC1	DARK GREY BATTEN AND TEXTURED BOARD
WC2	OFF WHITE TEXTURED BOARD
WC3	OFF WHITE VERTICAL METAL CLADDING
WC4	TIMBER LOOK VERTICAL JOINT CLADDING

NOTE - TREES OMITTED FOR CLARITY

DEVELOPMENT APPLICATION



MERCY CARE RACF - ROCKHAMPTON

75 WARD STREET,
THE RANGE, QLD 4700

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ELEVATIONS - RACF

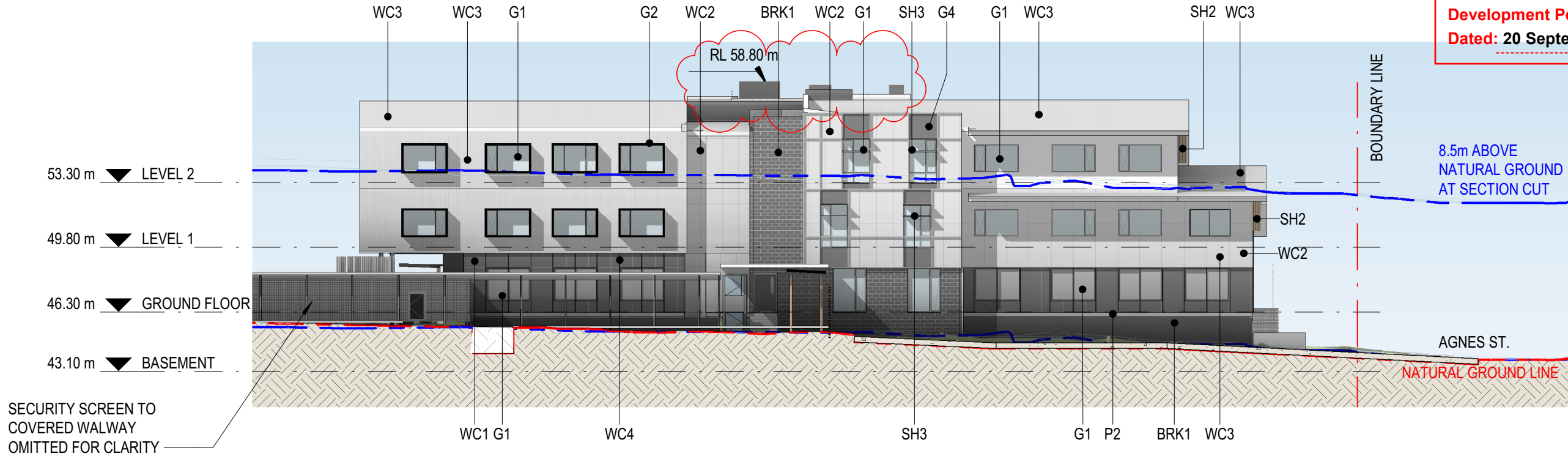
1 : 250 @ A3
A-3.01

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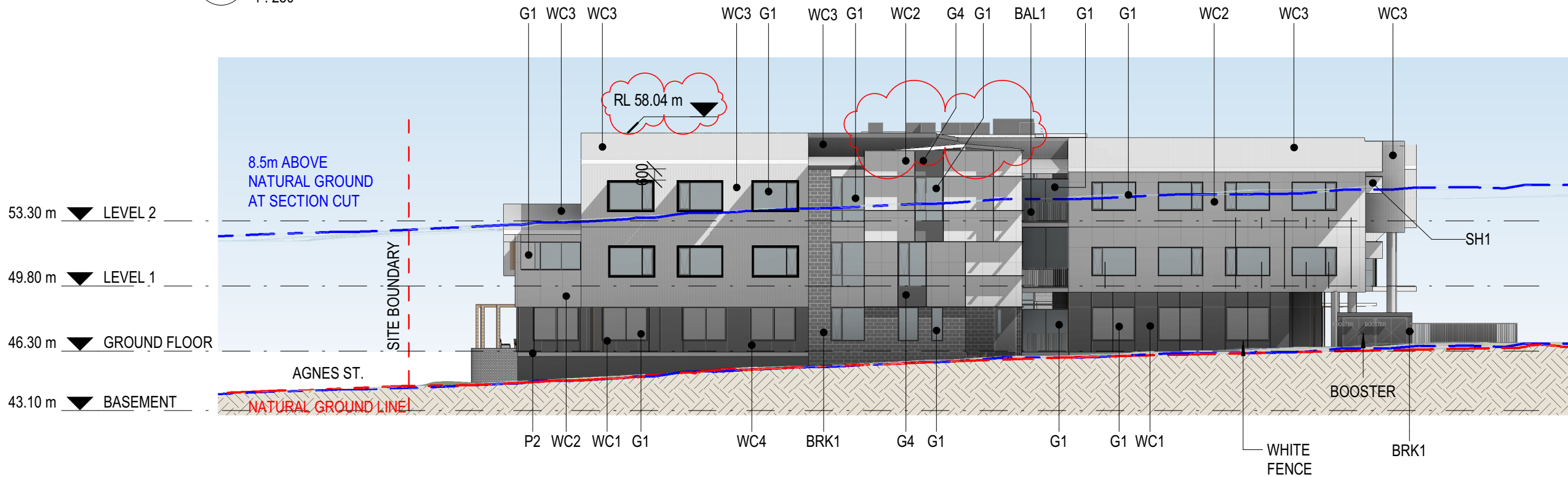
Dated: 20 September 2022



C RACF - NORTH ELEVATION
2.02
1 : 250

MATERIALS LEGEND

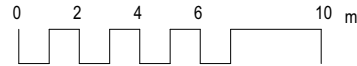
BAL1	ALUMINIUM OFF WHITE BALUSTRADE
BRK1	MASONRY DARK
G1	FIXED GREY GLASS
G2	ALUMINIUM FRAMED WINDOW BOX
G4	COLOURBACK GREY GLASS
P2	OFF WHITE TRIMS AND PAINT
SH1	SUN HOOD
SH2	VERTICAL SUN BLADES
SH3	HORIZONTAL SUN BLADES
WC1	DARK GREY BATTEN AND TEXTURED BOARD
WC2	OFF WHITE TEXTURED BOARD
WC3	OFF WHITE VERTICAL METAL CLADDING
WC4	TIMBER LOOK VERTICAL JOINT CLADDING



D RACF - SOUTH ELEVATION - SPENCER ST
2.02
1 : 250

NOTE - TREES OMITTED FOR CLARITY

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75 WARD STREET,
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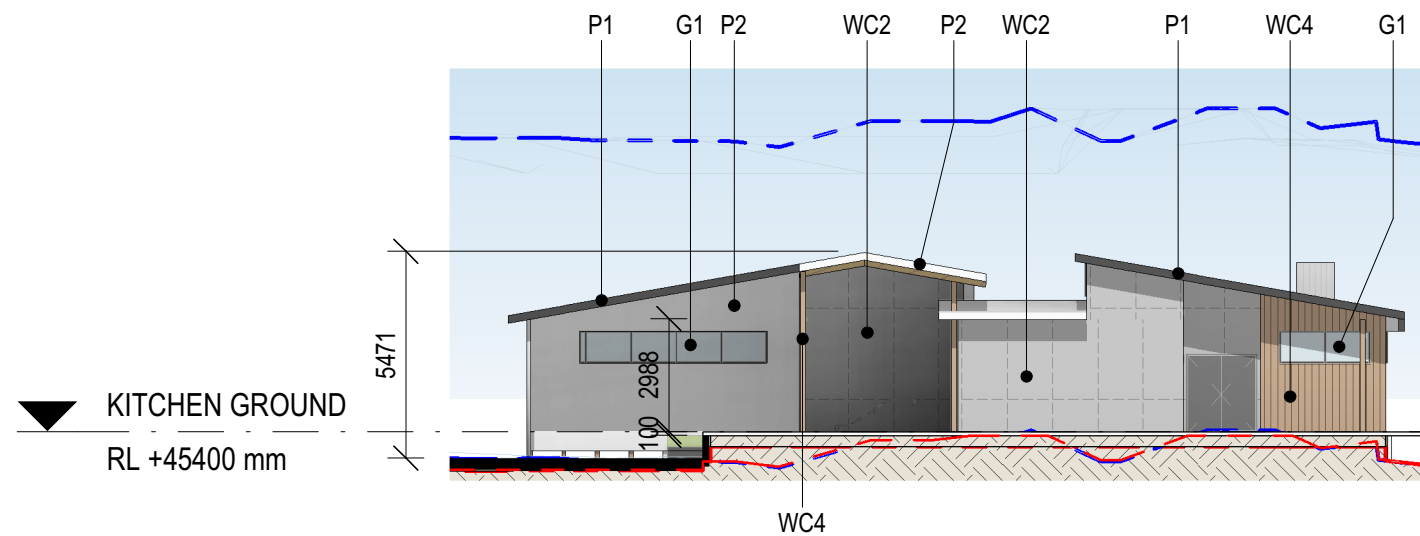
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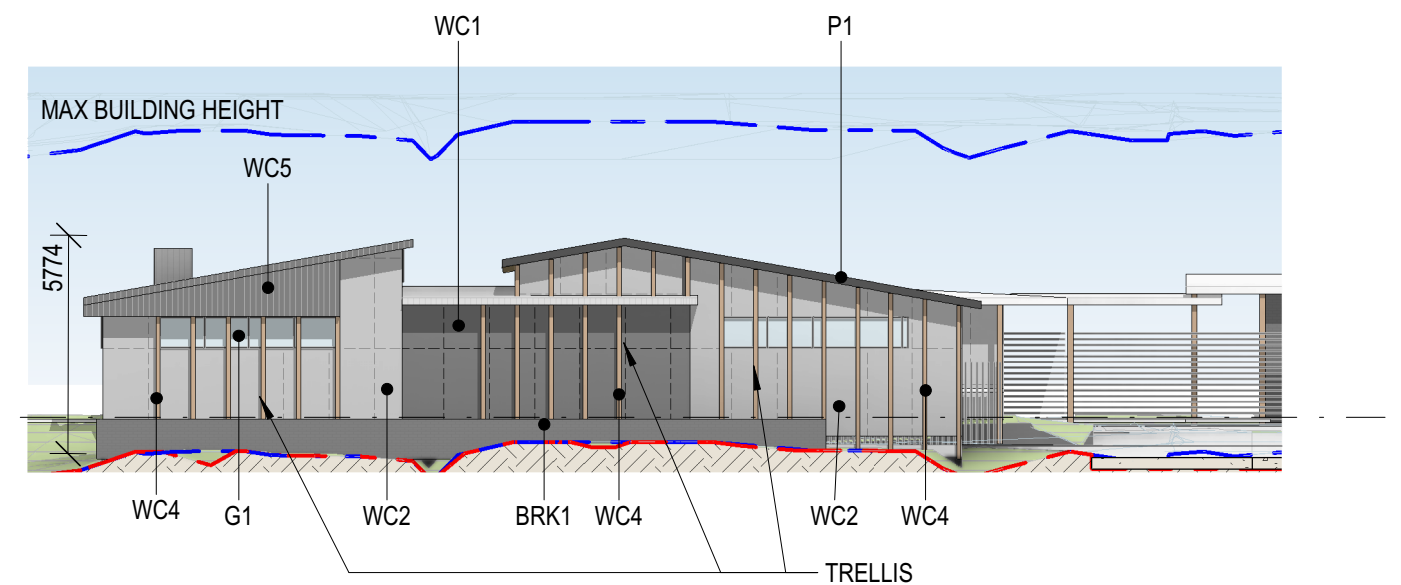
ELEVATIONS - RACF

1 : 250 @ A3
A-3.02

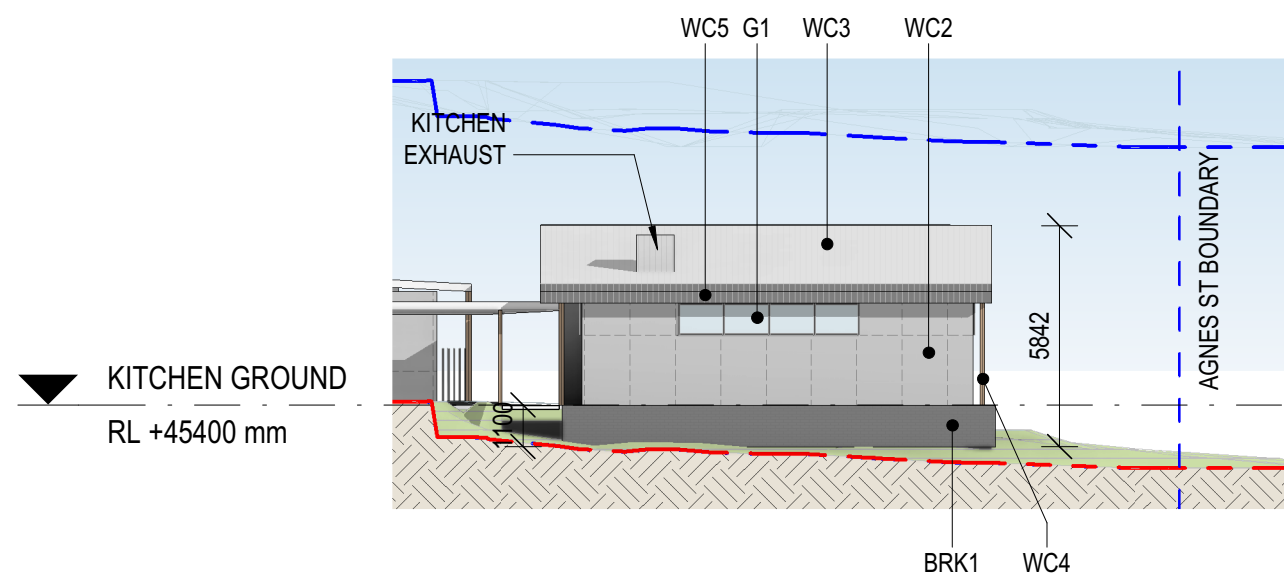
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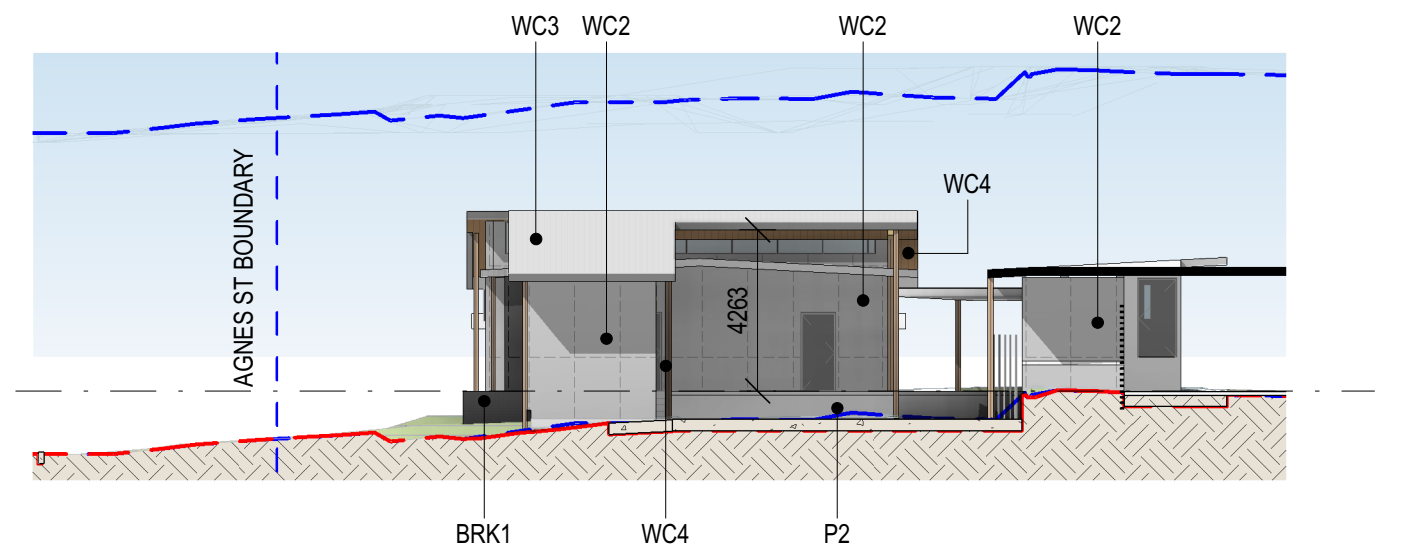
E EAST ELEVATION
1 : 200



F WEST ELEVATION - AGNES ST
1 : 200



G NORTH ELEVATION
1 : 200



H SOUTH ELEVATION
1 : 200

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MATERIALS LEGEND

BRK1	MASONARY DARK
G1	FIXED GREY GLASS
P1	DARK GREY TRIMS AND PAINT
P2	OFF WHITE TRIMS AND PAINT
WC1	DARK GREY BATTEN AND TEXTURED BOARD

NOTE - TREES OMITTED FOR CLARITY

MATERIALS LEGEND

WC2	OFF WHITE TEXTURED BOARD
WC3	OFF WHITE VERTICAL METAL CLADDING
WC4	TIMBER LOOK VERTICAL JOINT CLADDING
WC5	DARK GREY VERTICAL METAL CLADDING

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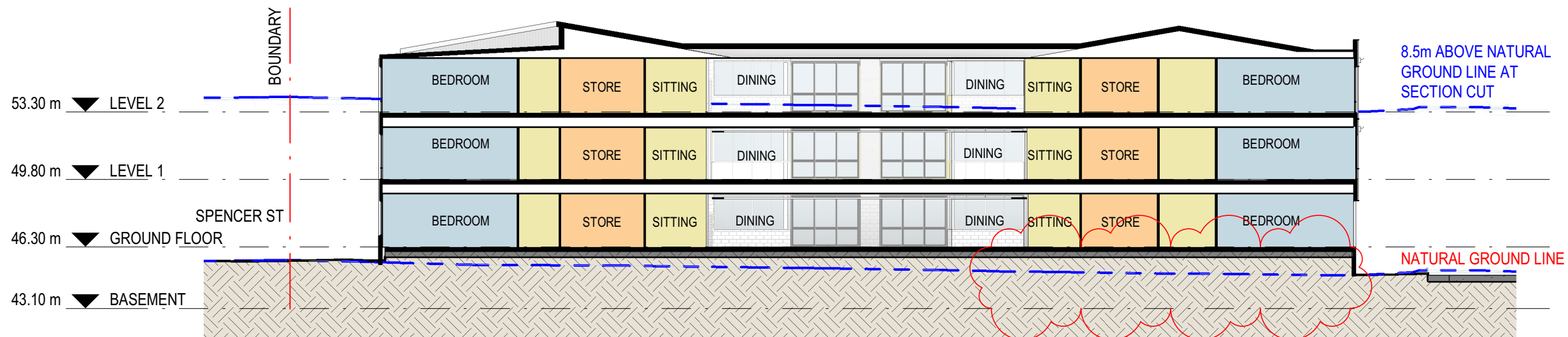
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KITCHEN ELEVATIONS

1 : 200 @ A3
A-3.11

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1 SECTION 1
1 : 250

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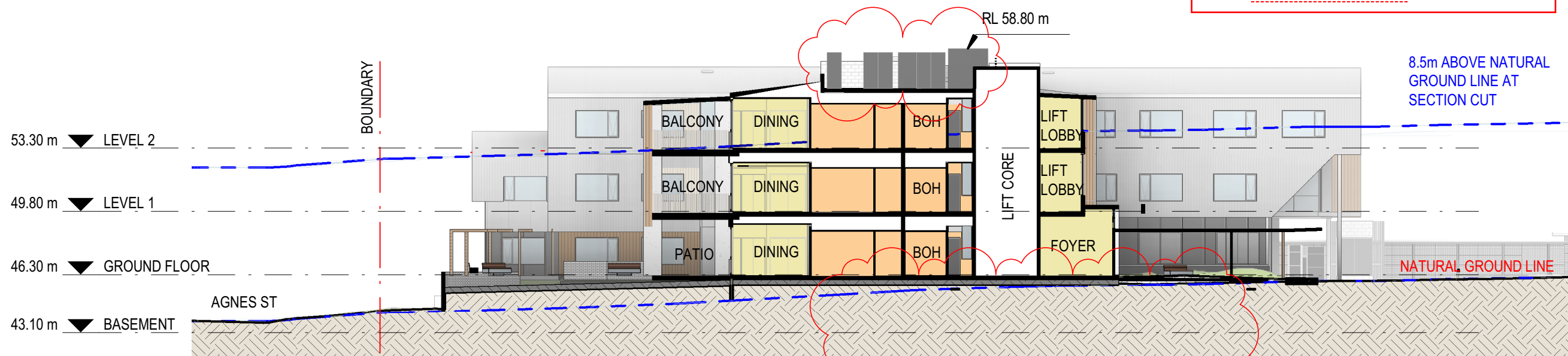
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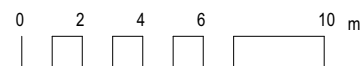
ROOM TYPES

- BACK OF HOUSE & SERVICES
- COMMON AREA
- OUTDOOR SPACE
- PLANT



2 SECTION 2
1 : 250

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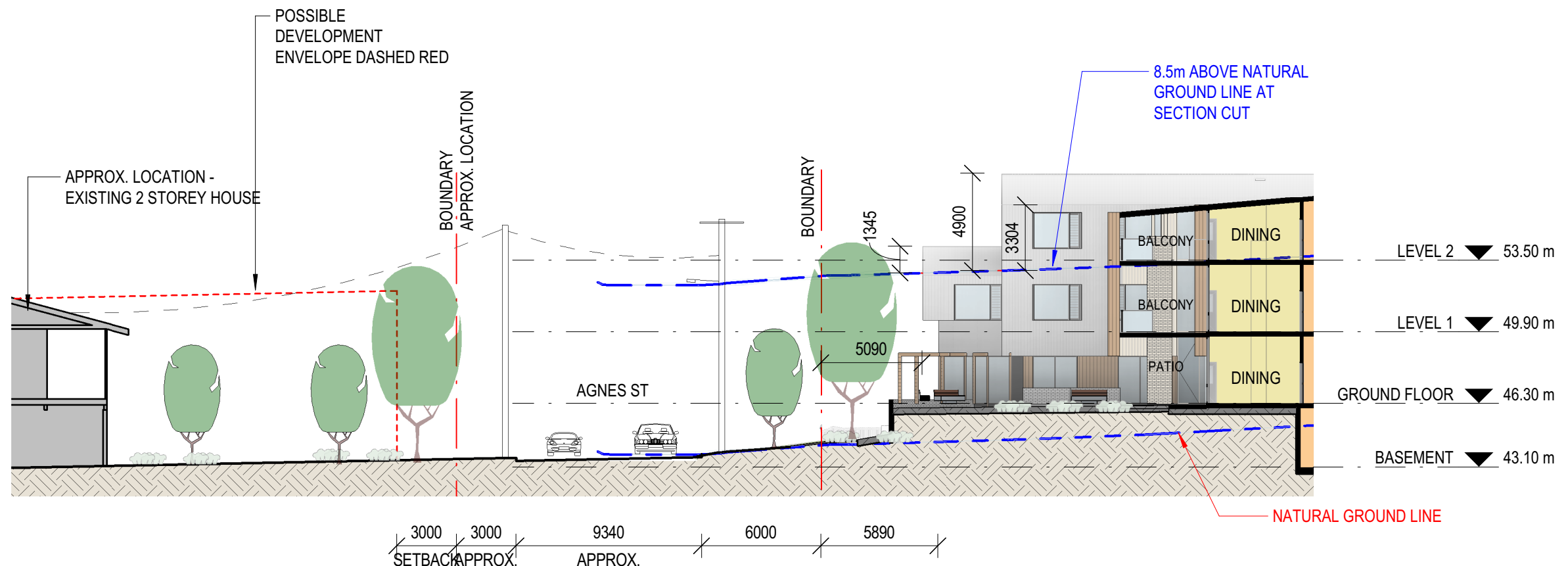
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SECTIONS - RACF

1 : 250 @ A3
A-4.01

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1 AGNES STREET SECTION TYPICAL
1 : 250

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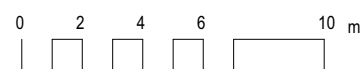
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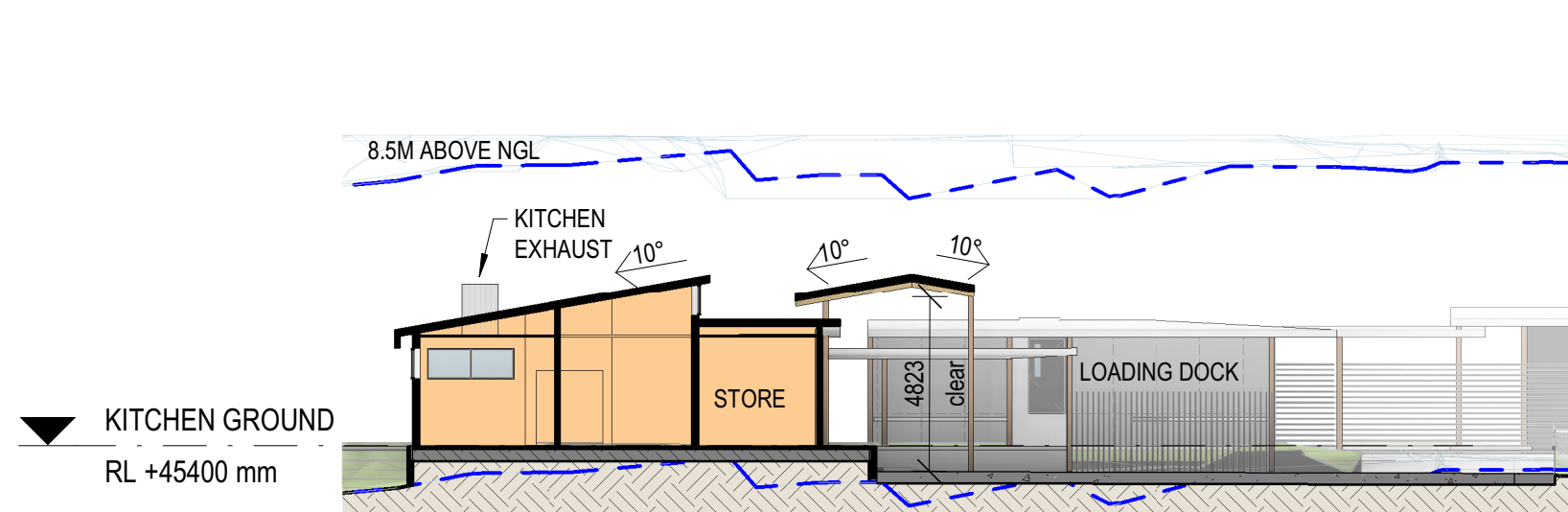
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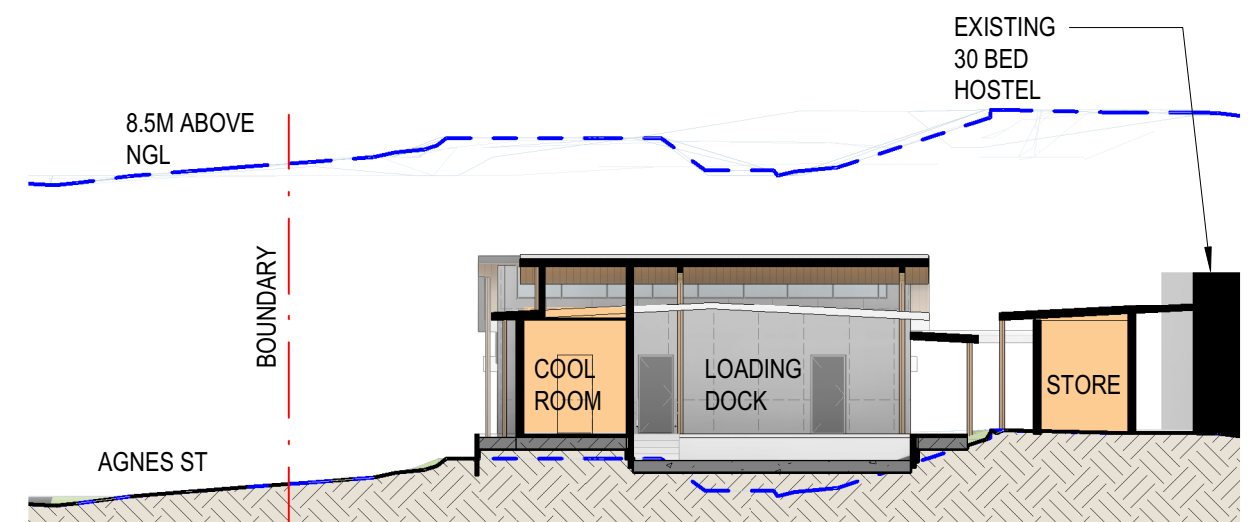
SECTIONS - STREET SCAPE

1 : 250 @ A3
A-4.02

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2
2.11 KITCHEN LONG SECTION
1 : 200



1
2.11 KITCHEN CROSS SECTION
1 : 200

DEVELOPMENT APPLICATION



**MERCY CARE RESIDENTIAL AGED CARE
FACILITY - ROCKHAMPTON**
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SECTIONS - KITCHEN

1 : 200 @ A3
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Environmental Noise Assessment

Bethany Rockhampton

Corner of Spencer and Agnes Streets

The Range

Report 1338R1-R0

16 December 2021

Document Control

Report 1338R1-R0

Version History:

Version	Date	Prepared by	Reviewed by	Description / nature of amendments
Draft 1	29-Nov-21	JC	JC	Initial draft
Revision 0	16-Dec-21	JC	JC	Final report

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1 Introduction

RoadPro Acoustics was engaged by Mercy Health & Aged Care Central Queensland Limited to assess potential noise impacts from a proposed expansion of the Bethany Aged Care facility at a site at Corner of Spencer and Agnes Streets, The Range (the Site). The Site location is shown in **Figure 1**, and proposed site layout is shown in **Figure 2**. Plans are provided in **Appendix A**.



Figure 1: Site Location – Corner of Spencer and Agnes Streets, The Range

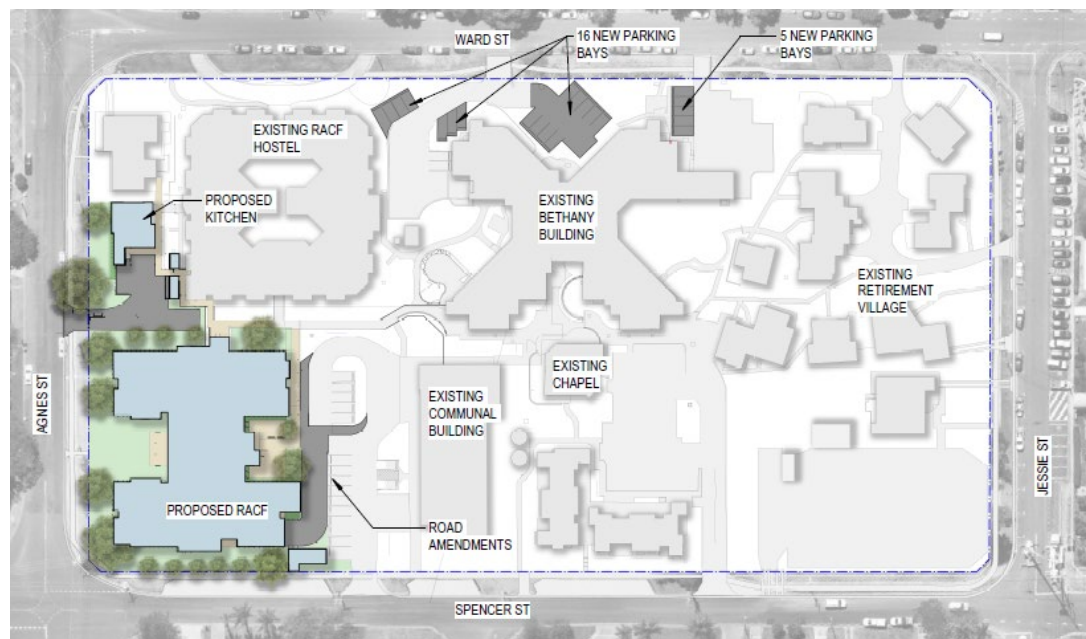


Figure 2: Site layout - Corner of Spencer and Agnes Streets, The Range

- expansion of the Bethany Aged Care facility,
- inclusion of a basement car park,
- minor increases to ground level carparking, and
- a kitchen.

This noise assessment has been carried out generally in accordance with the following:

- Environmental Protection (Noise) Policy 2019,
- Environmental Protection Act 1997,
- Rockhampton Region Planning Scheme,
- *Noise Measurement Manual*, Queensland Government – Environmental Protection Agency, Version 4, August 2013, and
- Australian Standard *AS1055.1–1997 Acoustics – Description and measurement of environmental noise*.

Information used for this assessment included:

- Development plans prepared by Thomson Adsett architects;
- Google Earth imagery;
- Queensland Globe imagery;
- Ausmap LIDAR spot heights; and
- Photographs, data and general information from a site visit and inspection.

2 Acoustic Terminology

The following is a brief explanation of the acoustic terminology used in this report.

2.1 Sound (Noise) Level

Sound or noise consists of minute fluctuations in atmospheric pressure capable of evoking the sense of hearing. The human ear responds to changes in sound pressure over a very wide range. The loudest sound pressure to which the human ear responds is ten million times greater than the softest. The decibel (abbreviated as dB) scale reduces this ratio to a more manageable size by the use of logarithms.

The symbols “L” or “LA” are commonly used to represent Sound Pressure Level.

2.2 “A” Weighted Sound Pressure Level - dB(A)

The overall level of a sound is usually expressed in terms of dB(A), which is measured using a sound level meter with an “A-weighting” filter. This is an electronic filter having a frequency response corresponding approximately to that of human hearing.

People’s hearing is most sensitive to sounds at mid frequencies (500 Hz to 4000 Hz), and less sensitive at lower and higher frequencies. Thus, the level of a sound in dB(A) is a good measure of the loudness of that sound. Different sources having the same dB(A) level generally sound about equally as loud.

A change of 1 dB(A) or 2 dB(A) in the level of a sound is difficult for most people to detect, whilst a 3 dB(A) to 5 dB(A) change corresponds to small but noticeable change in loudness. A 10 dB(A) change corresponds to an approximate doubling or halving in loudness.

Table 1 below shows examples of typical noise levels.

Table 1: Typical Noise Levels

Sound Pressure Level (dB(A))	Typical Source	Subjective Evaluation
130	Threshold of pain	Intolerable
120	Heavy rock concert	Extremely
110	Grinding on steel	noisy
100	Loud car horn at 3 m	Very noisy
90	Construction site with pneumatic hammering	
80	Curbside of busy street	Loud
70	Loud radio or television	
60	Department store	Moderate to
50	General Office	quiet
40	Inside private office	Quiet to very
30	Inside bedroom	quiet
20	Unoccupied recording studio	Almost silent

2.3 Statistical Sound (Noise) Levels

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels L_{AN} , where L_{AN} is the A-weighted sound pressure level exceeded by N% of a given measurement period. For example, the L_{A1} is the noise level exceeded for 1% of the time, L_{A10} the noise exceeded for 10% of the time, and so on.

Of particular relevance are:

L_{A1} The noise level exceeded for 1% of the 15 minute interval.

L_{A10} The noise level exceeded for 10% of the 15 minute interval. This is commonly referred to as the average maximum noise level.

L_{A90} The noise level exceeded for 90% of the sample period. This noise level is described as the average minimum background sound level (in the absence of the source under consideration), or simply the background level

L_{Aeq} is the A-weighted equivalent continuous sound pressure level (basically the average sound level). It is defined as the steady sound level that contains the same amount of acoustical energy as a given time-varying sound.

When dealing with numerous days of statistical noise data a method is required to determine the noise descriptors that are representative of a monitoring location for a particular time of day. The method of statistical accumulation provides an appropriate method of determining these noise descriptors.

This method accumulates each value for the days of monitoring and produces an estimate of the “repeatable minimum” **L_{A90}** noise level over the daytime and night-time measurement periods, as required by the Department of Environment and Heritage Protection. In addition, the method produces mean or “average” levels that are representative of the other descriptors that can be expected on a typical day at each particular site.

3 Background and Road Traffic Noise

Noise measurements were carried out at the site from Tuesday 12th October 2021 to Tuesday 19th October 2021 at the location ML1 shown in **Figure 3** and **Figure 4**. The location was selected as being representative of background noise levels for the nearest sensitive receivers, as well as providing an indication of potential road traffic noise impacts on the Site.

The measurements were carried out using a Nor139 sound level meter (Serial number 1392783) recording “fast” response “A” frequency weighted sound levels at 1-hour intervals, with the microphone at a height of approximately 1.5 m. The instrument was checked for calibration prior to and post-measurement using a 94 dB acoustic signal at 1000 Hz, and drift in calibration remained within ±0.5 dB.

Weather conditions for the duration of the survey were monitored via the Rockhampton Airport Bureau of Meteorology station. Some inclement weather was noted during the monitoring period in the form of short storms on several days, and elevated wind towards the end of the measurement period. The data were reviewed, and overall background noise levels were adopted that reflected the actual background noise levels for the Site.



Figure 3: Noise Logger Location - Corner of Spencer and Agnes Streets, The Range



Figure 4: Noise Logger

Ambient noise at the Site was dominated by natural sounds and intermittent road traffic.

A summary of the logged data is provided in **Table 2**. The full dataset of the measurements and weather is provided as charts in **Appendix B**.

Table 2: Logger noise measurement results, dB(A)

Day	Period,T	L _{A90,T}	L _{Aeq,T}	L _{A10,T}	L _{A1,T}
Tuesday-12-Oct-21	Day	(40.0)	(61.5)	(59.7)	(69.4)
	Eve	35.8	51.8	51.0	59.3
	Night	34.5	50.2	39.1	53.6
Wednesday-13-Oct-21	Day	37.8	57.9	58.8	67.4
	Eve	36.4	53.9	52.9	64.1
	Night	34.5	51.2	38.4	55.1
Thursday-14-Oct-21	Day	40.5	61.9	58.9	67.1
	Eve	40.6	54.0	53.9	63.5
	Night	37.8	51.6	48.0	59.0
Friday-15-Oct-21	Day	42.9	58.9	60.5	67.9
	Eve	39.1	52.3	53.0	61.3
	Night	34.6	50.8	44.4	55.2
Saturday-16-Oct-21	Day	37.2	55.7	57.9	65.2
	Eve	36.2	52.7	52.5	61.2
	Night	33.6	50.3	42.9	57.5
Sunday-17-Oct-21	Day	38.2	56.0	57.5	64.6
	Eve	37.4	51.2	52.2	60.3
	Night	34.9	50.8	41.0	51.9
Monday-18-Oct-21	Day	41.6	59.3	60.0	67.4
	Eve	40.2	53.4	54.3	64.0
	Night	35.1	50.9	49.4	54.7
Overall	Day	38	59	59	67
	Eve	36	53	53	61
	Night	34	51	43	55

4 Criteria

4.1 Road Traffic Noise

4.1.3 AS 2107 – 2016

Australian Standard 2107:2016 *Acoustics—Recommended design sound levels and reverberation times for building interiors* is silent on child care centres specifically, but provides recommended internal sound levels for primary school teaching area, presented in **Table 3**.

Table 3: Internal design sound levels from AS2107: 2016

Type of occupancy/activity	Design sound level (L _{Aeq,T}) Range
Houses and apartments in suburban areas or near minor roads	
Living areas	30 to 40
Sleep areas (night time)	30 to 35
Work areas	35 to 40

Where the noise level impacting on a façade is predicted to result in internal noise levels exceeding the maximum recommended design sound levels in **Table 3**, construction categories specified in AS 3671-1989 *Acoustics - Road traffic noise intrusion - Building siting and construction* are applied as follows:

Category 1. Standard construction; openings, including open windows and doors may comprise up to 10% of the exposed facade. TNR of approximately 10 dB(A) is expected.

Category 2. Standard construction, except for lightweight elements such as fibrous cement or metal cladding or all-glass facades. Windows, doors and other openings must be closed. TNR of approximately 25 dB(A) is expected.

Category 3. Special construction, chosen in accordance with Clause 3.4. Windows, doors and other openings must be closed. TNR between 25 and 35 dB(A) is expected.

Category 4. TNR greater than 35 dB(A) is required; special acoustic advice should be sought.

4.2 Noise Emissions

4.3 Acoustic Quality Objectives - Residences

The *Environmental Protection (Noise) Policy 2019* (EPP(Noise)) is designed to achieve the object of the *Environmental Protection Act 1994*. Relevant extracts are as follows:

The environmental values to be enhanced or protected under this policy are—

(a) the qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystems; and

(b) the qualities of the acoustic environment that are conducive to human health and wellbeing, including by ensuring a suitable acoustic environment for individuals to do any of the following—

(i) sleep;

(ii) study or learn;

(iii) be involved in recreation, including relaxation and conversation; and

(c) the qualities of the acoustic environment that are conducive to protecting the amenity of the community.

Acoustic Quality Objectives are specified for residences as shown in **Table 4**.

Table 4: Environmental Protection (Noise) Policy 2019 Acoustic Quality Objectives

Sensitive receptor	Time of day	Acoustic quality objectives (measured at the receptor) dB(A)			Environmental value
		L _{Aeq,adj,1hr}	L _{A10,adj,1hr}	L _{A1,adj,1hr}	
Dwelling (for outdoors)	Daytime and evening	50	55	65	health and wellbeing
Dwelling (for indoors)	Daytime and evening	35	40	45	health and wellbeing
	Nighttime	30	35	40	health and wellbeing, in relation to the ability to sleep
commercial and retail activity (for indoors)	when the activity is open for business	45			health and wellbeing, in relation to the ability to converse

In order to assess internal sound levels, a 7 dB(A) noise reduction (free-field) through partially opened windows as per the Queensland Ecoaccess Guideline *Planning for Noise Control* (2004) is assumed. Where a building façade is expected to be closed, the outside to inside noise reduction is expected to be 20 dB(A)+.

4.4 Background Creep

The EPP(Noise) provides the following regarding *background* creep in **Section 9**.

(2) *To the extent it is reasonable to do so, noise must be dealt with in a way that ensures—*

(a) the noise does not have any adverse effect, or potential adverse effect, on an environmental value under this policy; and

(b) background creep in an area or place is prevented or minimised.

The potential for an increase in background noise levels from this proposal is limited to noise from mechanical plant. The criteria specified in the *Environmental Protection Act 1994* is deemed to be appropriate for control of mechanical plant noise by the Queensland Government.

4.5 Mechanical Plant Noise

The *Environmental Protection Act 1994* specifies criteria for specific mechanical plant, summarised in **Table 5**.

Table 5: Summary of mechanical plant noise criteria from the Queensland *Environmental Protection Act 1994*

Plant	Time Period Start	Time Period Finish	Criterion
Pumps ¹	7am	7pm	Background + 5 dB(A)
	7pm	10pm	Background + 3 dB(A)
	10pm	7am	Inaudible
Air conditioning equipment	7am	10pm	Background + 5 dB(A)
	10pm	7am	Background + 3 dB(A)
Refrigeration plant ²	7am	10pm	Background + 5 dB(A)
	10pm	7am	Background + 3 dB(A)

Notes:

¹A pump means an electrical, mechanical or pneumatic pump; and includes a swimming pool pump and a spa blower. Examples — liquid pump, air pump, heat pump.

²Criteria for refrigeration plant applies to an occupier of premises at or for which there is plant or equipment for refrigeration (refrigeration equipment); or an owner of refrigeration equipment that is on or in a vehicle, other than a vehicle used or to be used on a railway. "Vehicle" includes a trailer.

The site-specific criteria for mechanical plant noise considering the measured background noise levels are provided in **Table 6**.

Table 6: Site-specific mechanical plant noise criteria from the Queensland Environmental Protection Act 1994

Plant	Time Period Start	Time Period Finish	Criterion
Pumps	7am	6pm	$38 + 5 = 43 \text{ dB(A)}$
	6pm	7pm	$36 + 5 = 41 \text{ dB(A)}$
	7pm	10pm	$36 + 3 = 39 \text{ dB(A)}$
	10pm	7am	$34 - 10 = 24 \text{ dB(A)}$
Air conditioning equipment	7am	6pm	$38 + 5 = 43 \text{ dB(A)}$
	6pm	10pm	$36 + 5 = 41 \text{ dB(A)}$
	10pm	7am	$34 + 3 = 37 \text{ dB(A)}$
Refrigeration plant	7am	6pm	$38 + 5 = 43 \text{ dB(A)}$
	6pm	10pm	$36 + 5 = 41 \text{ dB(A)}$
	10pm	7am	$34 + 3 = 37 \text{ dB(A)}$

Notes:

¹A noise level 10 dB(A) or more below the ambient background noise level is generally adopted for design purposes to represent “inaudibility”. Even though a noise level 10 dB(A) below the background noise level may not be imperceptible, the likelihood of disturbance being caused by the source is considered to be negligible.

5 Noise Impact Assessment

5.1 General Methodology

The nearest potentially affected receivers to the Site will be residences from the south to the west of the Site, as shown in **Figure 5**. The surrounding residences are a mix of single and double-storey structures.

**Figure 5: Model scenario**

Calculations of environmental noise emissions from the site were carried out using the PEN3D environmental noise software package. Terrain data was derived from LIDAR spot heights at 5 m grid intervals and converted to 0.5 m ground contours.

5.2 Air Conditioners

Air conditioning plant will be located on a rooftop platform as shown in the plans for the Site. Noise emissions were provided by the mechanical services engineer. Sound power levels for the plant are shown in **Table 7**.

Table 7 Air conditioning plant sound power levels, dB

	1/1 Octave Band Centre Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Condenser	70	71	66	67	61	59	51	45
Preconditioner	83	78	76	73	73	75	68	64

Calculated air conditioner plant noise levels are provided in **Table 8**.

Table 8 Air conditioning plant noise levels

Receptor	X Posn	Y Posn	Height	Ground	Noise Level
	(m)	(m)	(m)	(m)	(dB(A))
67 Spencer Street	244024.3	7410135	4.5	47.2	34
69 Spencer Street	244007.1	7410137	4.5	47	35
71 Spencer Street	243986.5	7410132	4.5	46.5	35
331 Agnes Street	243969.8	7410131	2	46	34
324 Agnes Street	243926.9	7410191	1.5	43.1	34
322 Agnes Street	243923.6	7410220	2.5	43	34
318 Agnes Street	243937.5	7410234	1.5	43.4	34
Hostel West	243987	7410254	2.5	44.7	35
316 Agnes Street	243933	7410254	4.5	42.6	33
314 Agnes Street	243942.3	7410266	2	43	33
Hostel South	243994.9	7410230	2	45.3	36
Community Building	244037.1	7410187	4.5	46	36

The results indicate that the night-time noise criterion of 37 dB(A) for air conditioning plant will be achieved at all receivers.

5.3 Kitchen Exhaust

The kitchen exhaust plant has not yet been specified. The model was used to determine the maximum permissible radiated sound power level for the exhaust, which is 85 dB(A).

5.4 Car Parking Noise

Vehicle noise for carparking was modelled using the BayFIU method adapted for Australian conditions¹. The $L_{Aeq(1 \text{ hour})}$ sound power level for a single vehicle movement is 64 dB, and it was assumed a peak hour would have one vehicle use each car park. The method incorporates all noise such as door closures and engine starts. The $L_{A10(1 \text{ hour})}$ and $L_{A1(1 \text{ hour})}$ noise levels are approximately 2 dB(A) and 8 dB(A) greater than the $L_{Aeq(1 \text{ hour})}$ respectively.

¹ Laurence Nicol and Paul Johnson, Paper Number 39, Proceedings of ACOUSTICS 2011 (November 2011) "Prediction of parking area noise in Australian conditions"

Vehicles travelling through the Site were modelled as moving point sources. Sound power spectra for cars² is shown in **Table 9**.

Table 9 Vehicle sound power levels at low speeds, dB

1/1 Octave Band Centre Frequency (Hz)								
	63	125	250	500	1000	2000	4000	8000
Light	63	72	73	77	78	78	75	69

In addition to the at-grade carparks, a point source representing the basement carpark portal was included in the model with a $L_{Aeq}(1 \text{ hour})$ sound power level of 75 dB(A).

Predicted $L_{Aeq}(1 \text{ hour})$ noise levels from carparking are shown in **Table 10**.

Table 10 Predicted $L_{Aeq}(1 \text{ hour})$ noise levels from carparking

Receptor	Height	Ground	$L_{Aeq}(1 \text{ hour})$	$L_{A10}(1 \text{ hour})$	$L_{A1}(1 \text{ hour})$
	(m)	(m)	dB	dB	dB
67 Spencer Street	4.5	47.2	37	39	47
69 Spencer Street	4.5	47	38	40	48
71 Spencer Street	4.5	46.5	31	33	41
331 Agnes Street	2	45.9	36	38	46
324 Agnes Street	1.5	43.1	34	36	44
322 Agnes Street	2.5	43	31	33	41
318 Agnes Street	1.5	43.4	25	27	35
316 Agnes Street	4.5	42.6	6	27	35
314 Agnes Street	2	43	16	8	16

Noise from carparking is expected to achieve the external Acoustic Quality Objectives for a peak hour of operation. The internal Acoustic Quality Objectives will also be achieved for a peak hour during the daytime and evening.

The internal Acoustic Quality Objectives may be exceeded if a peak hour of car parking occurred during the night-time period. However, the risk of this is expected to be low due to the residential nature of the proposal.

The minor additional carparking on the northern side of the broader Site is not expected to be perceptible given the existing saturated on-street car parking observed along Ward Street.

5.1 Loading Bay / Delivery Noise

Loading bay / delivery noise will produce relatively low overall noise levels and is not expected to cause any adverse effects if the activity is limited to daytime i.e. 7am – 6pm.

5.2 Waste Collection Noise

As with the loading bay, if collection is limited to daytime or the surrounding residential collection time, no adverse impacts are expected.

6 Discussion of Results and Mitigation

The results indicate that the proposal as presented is expected to achieve the relevant criteria.

² Emanuel Hammer, Sebastian Egger, Tina Saurer and Erik Bühlmann, 23rd International Congress on Sound and Vibration (July 2016) "Traffic Noise Modelling at Lower Speeds"

However, the nature of the proposal departs from the existing environment, with the potential for some relatively minor details to detract from the local acoustic amenity if not addressed.

1.1.1 Driveway Grates

If the Site drainage system requires grates to be installed in driveways, these should be seated on nylon or similar bushes to prevent metal on concrete impact noise which can become very annoying over time, particularly in low background noise environments.

1.1.2 Basement Carpark Portal

The total noise levels from the basement carpark in conjunction with the external carparks are expected to achieve the noise criteria. However, the reverberant nature of basement carparks combined with the singular fixed point from which noise escaping from within the carpark will emanate from will potentially make the basement carpark portal a source of annoyance at 69 and 67 Spencer Street, and potentially further to the east. Vehicles operating at higher RPM up the ramp is expected to add to this potential, as is any noise from the carpark roller / panel door.

The following are therefore recommended for treatment of noise from the basement carpark ramp and portal:

1. Construct an acoustic fence along the southern side of the carpark ramp to a height such that the line of sight from a person standing on the front verandah or at the front window of the residences opposite the Site on Spencer Street to a point at least 500 mm above the upper northern corner of the carpark portal.
2. Extend the fence around the eastern side of the ramp to nominally 10m from the radius.
3. Select a door for the carpark with minimal noise emissions.

1 and 2 above are indicated in **Figure 6**.

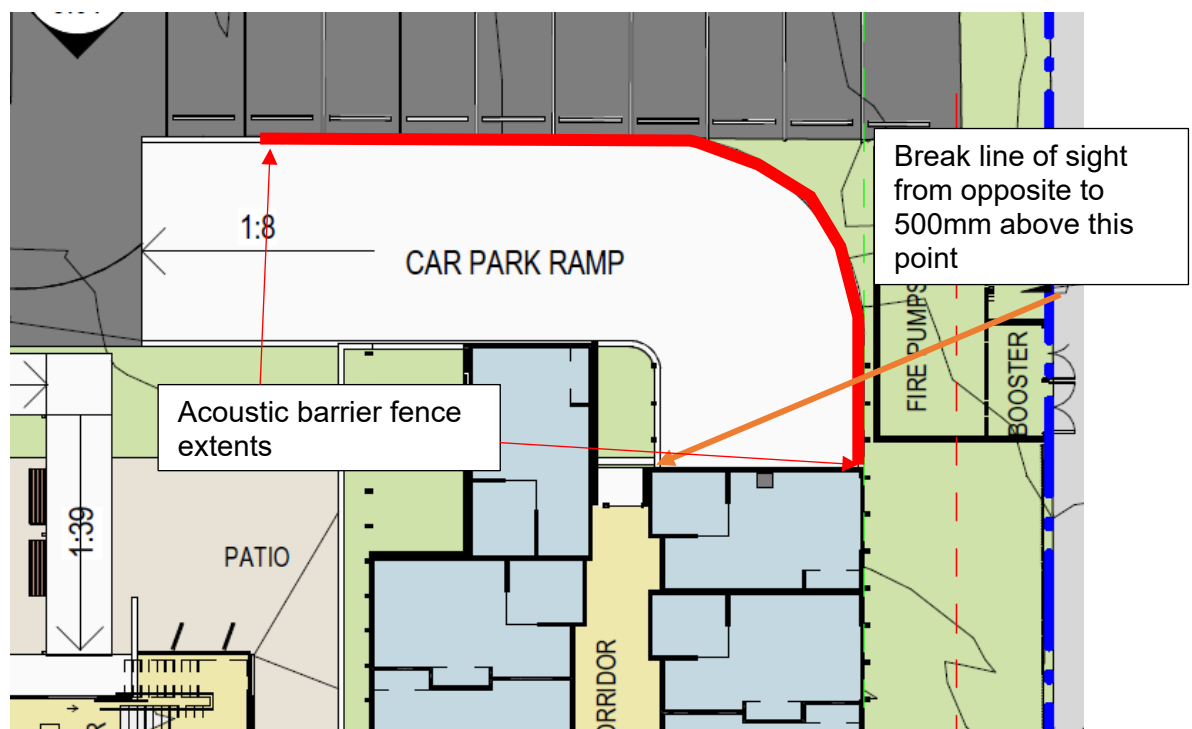


Figure 6 Car park ramp and portal acoustic barrier fence

6.2 Air Conditioners

No additional noise mitigation is required for the rooftop AC plant. If a barrier around the platform periphery is proposed, then constructing the southern and western walls to a height at least equal to the top of the plant of a solid i.e. gap-free material with a surface density of at least 10 kg/m² will further reduce plant noise levels external to the broader Site.

6.3 Road Traffic Noise

The measured maximum $L_{Aeq}(1 \text{ hour})$ noise levels for the daytime and nighttime periods indicate that noise reductions in the order of 20 dB(A) are required to achieve acceptable internal noise levels in accordance with AS2107.

This level of noise reduction is achieved with AS3671 Category 2 construction as follows:

Category 2. *Standard construction, except for lightweight elements such as fibrous cement or metal cladding or all-glass facades. Windows, doors and other openings must be closed. TNR of approximately 25 dB(A) is expected.*

The construction of the building will achieve this standard without any further measures.

7 Conclusion and Summary of Recommendations

RoadPro Acoustics was engaged by Mercy Health & Aged Care Central Queensland Limited to assess potential noise emissions and road traffic noise impacts on a proposed new building for the Bethany Aged Care facility at the Corner of Spencer and Agnes Streets, The Range.

It was found that the Site design can achieve the Acoustic Quality Objectives for normal operation during the day, evening and night.

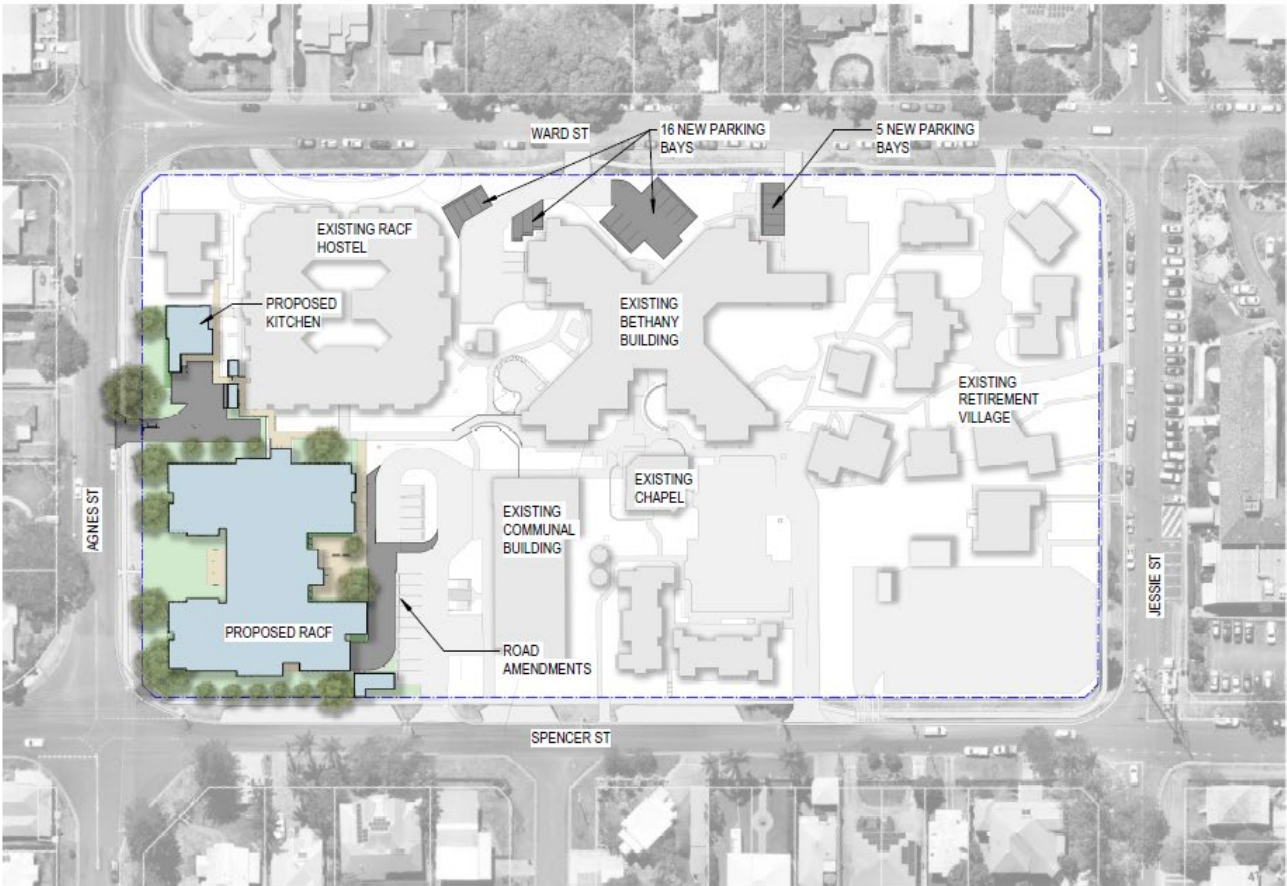
The proposed kitchen exhaust must be further assessed during the detailed design stage of the project to ensure the noise criteria are achieved.

Recommendations have been made to further mitigate noise from the Site where specific sources are considered to have the potential to cause annoyance at existing residences.

Typical construction materials are expected to satisfy the requirements for road traffic noise intrusion and reverberation control in accordance with AS 2107 and AS 3671.

It is the view of RoadPro Acoustics that the Site is suitable for the proposed use, subject to the recommendations made in this report.

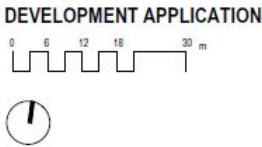
Appendix A – Proposal Plans



DEVELOPMENT SUMMERY

NUMBER OF BEDS RACF	
GROUND FLOOR	30
LEVEL 1	31
LEVEL 2	30
TOTAL	91
CAR PARKING	
NEW BAYS OFF WARD ST	21
NEW RACF BASEMENT CARPARK	34
REMOVED EXISTING BAYS OFF SPENCER ST	-25
TOTAL ADDITIONAL CAR PARKS	30
SITE COVERAGE	
SITE AREA:	26711.85 m²
BUILDING COVER	
EXISTING BUILDINGS	6593.2 m²
91 BED RACF	2117.36 m²
KITCHEN	291.2 m²
TOTAL	9001.76 m²
SITE PERCENTAGE	33.7%
GROSS FLOOR AREA	
RACF GFA	
BASEMENT	59 m²
GROUND FLOOR	1519 m²
LEVEL 1	1695 m²
LEVEL 2	1584 m²
Grand total	4857 m²
KITCHEN GFA	
KITCHEN GROUND	131 m²
TOTAL DEVELOPMENT GFA	4988 m²
LANDSCAPED AREA	
PERCENTAGE	9752 m² 36.5%

SITE PLAN - 1:1000



MERCY CARE RESIDENTIAL AGED CARE
FACILITY - ROCKHAMPTON
75 WARD STREET,
THE RANGE, QLD 4700

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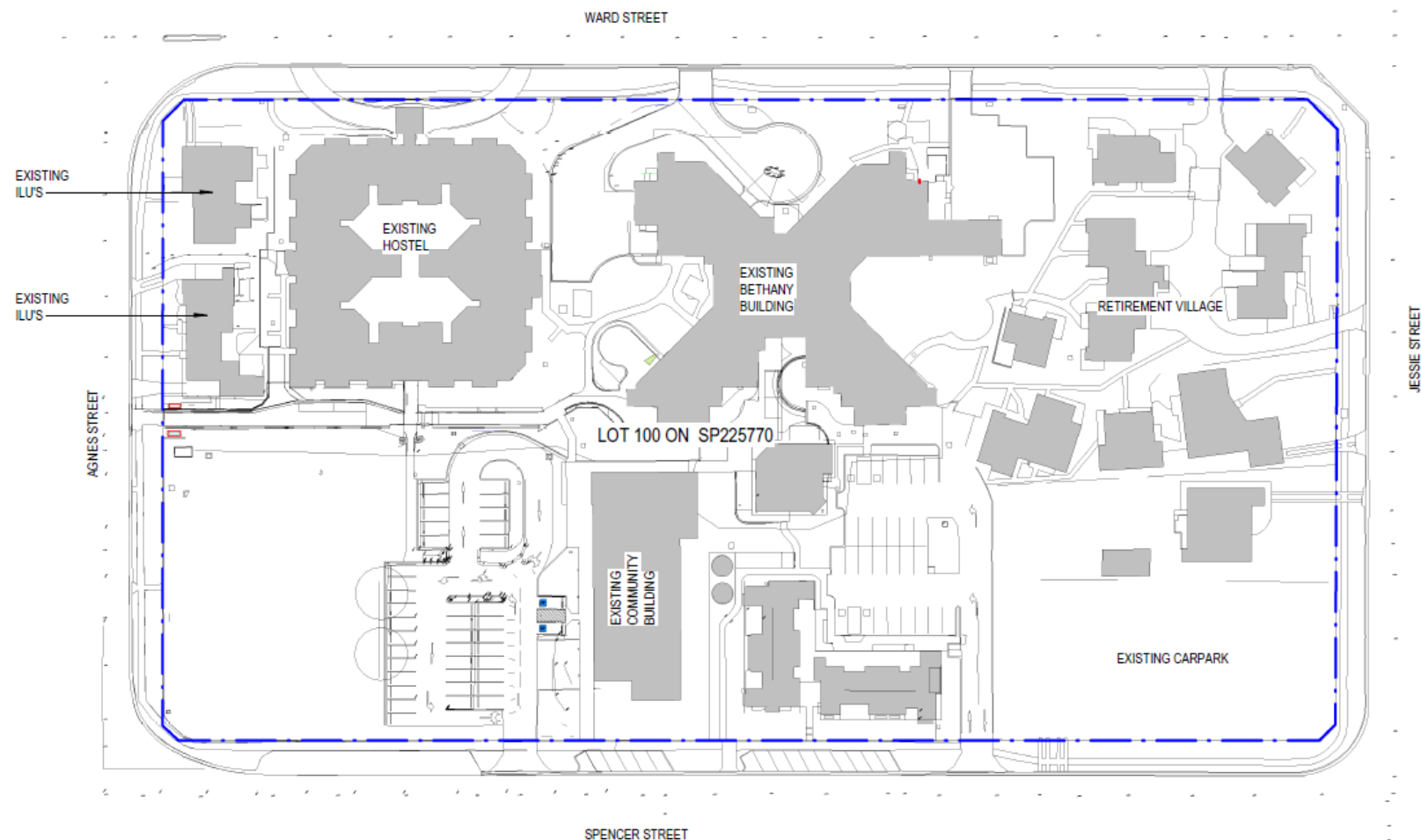
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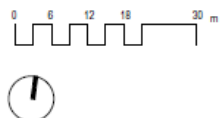
SITE PLAN & DEVELOPMENT
SUMMARY

@ A3
A-1.01

03/12/2021
rev. 2



DEVELOPMENT APPLICATION



**MERCY CARE RESIDENTIAL AGED CARE
FACILITY - ROCKHAMPTON**
75 WARD STREET,
THE RANGE, QLD 4700

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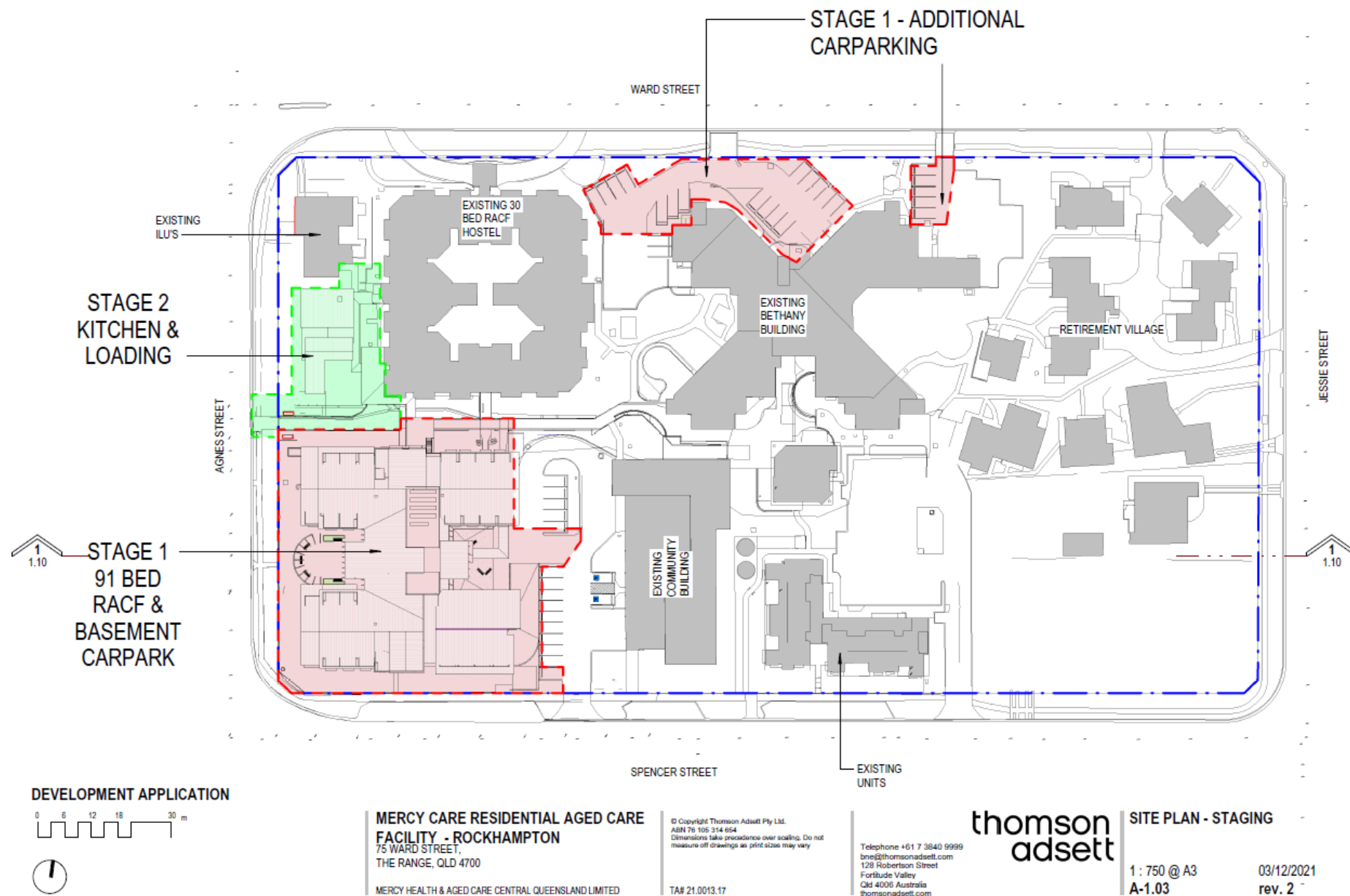
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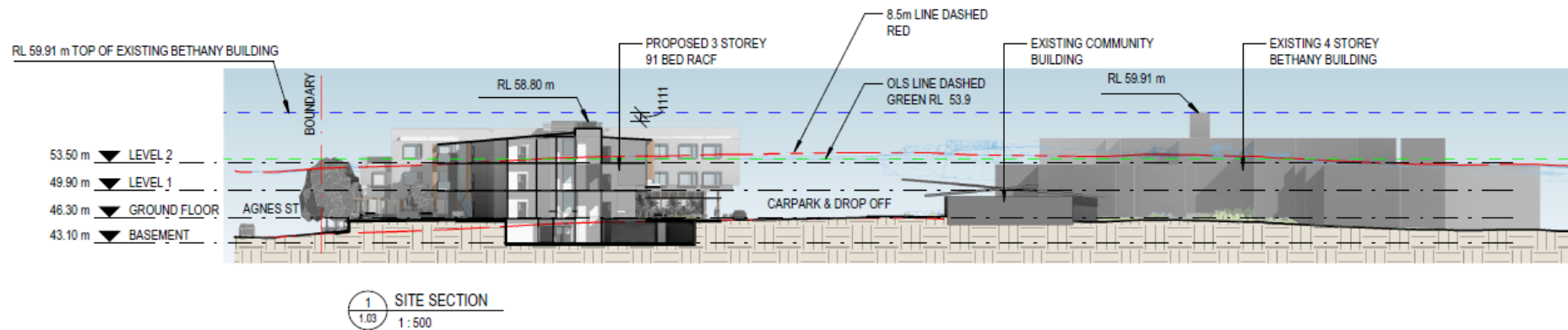
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EXISTING SITE

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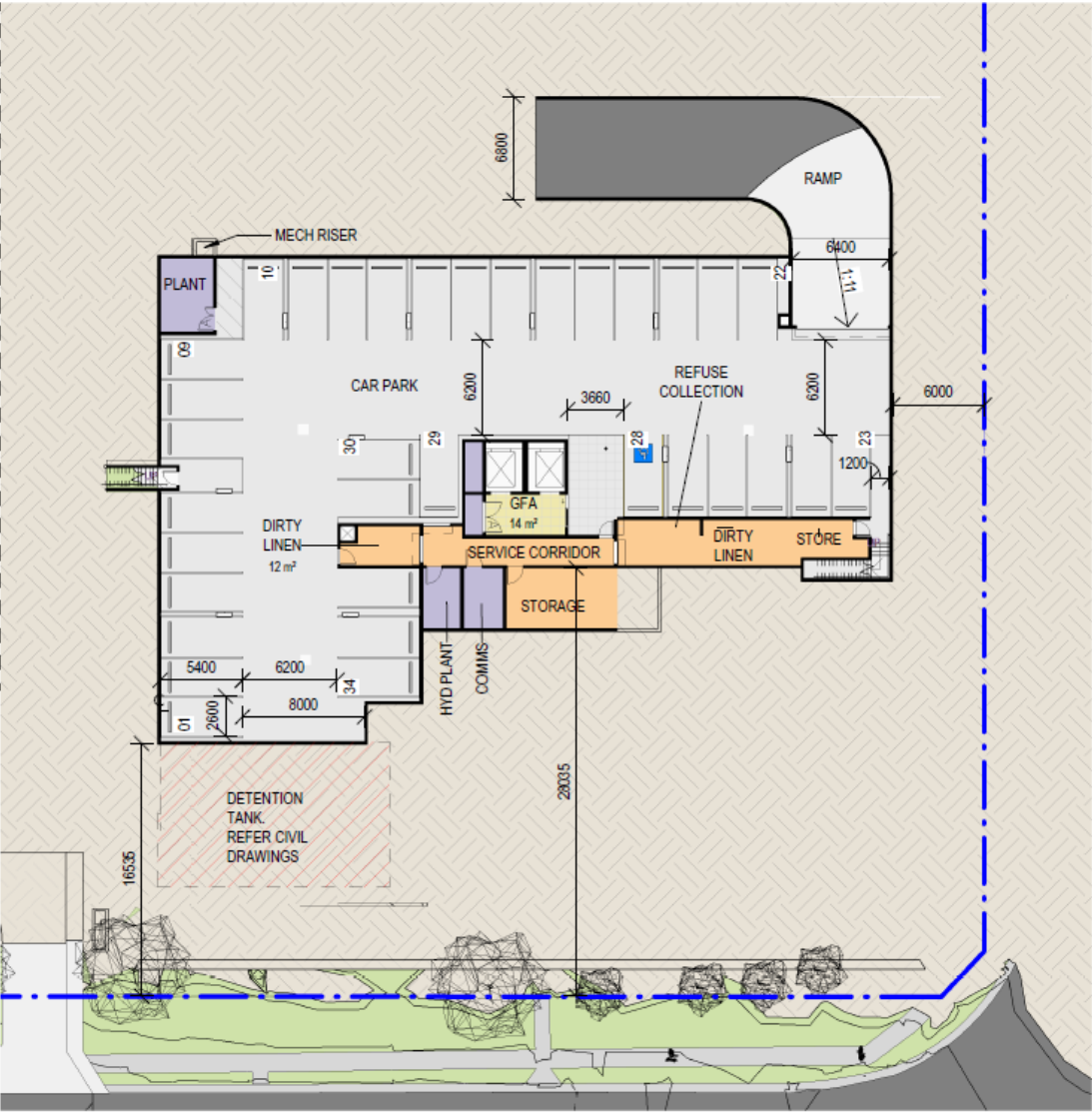
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SITE SECTION

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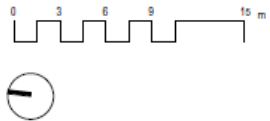
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- ROOM TYPES
- BACK OF HOUSE
 - CAR PARKING
 - COMMON AREA
 - SERVICES

34 CARS

DEVELOPMENT APPLICATION



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75 WARD STREET,
THE RANGE, QLD 4700
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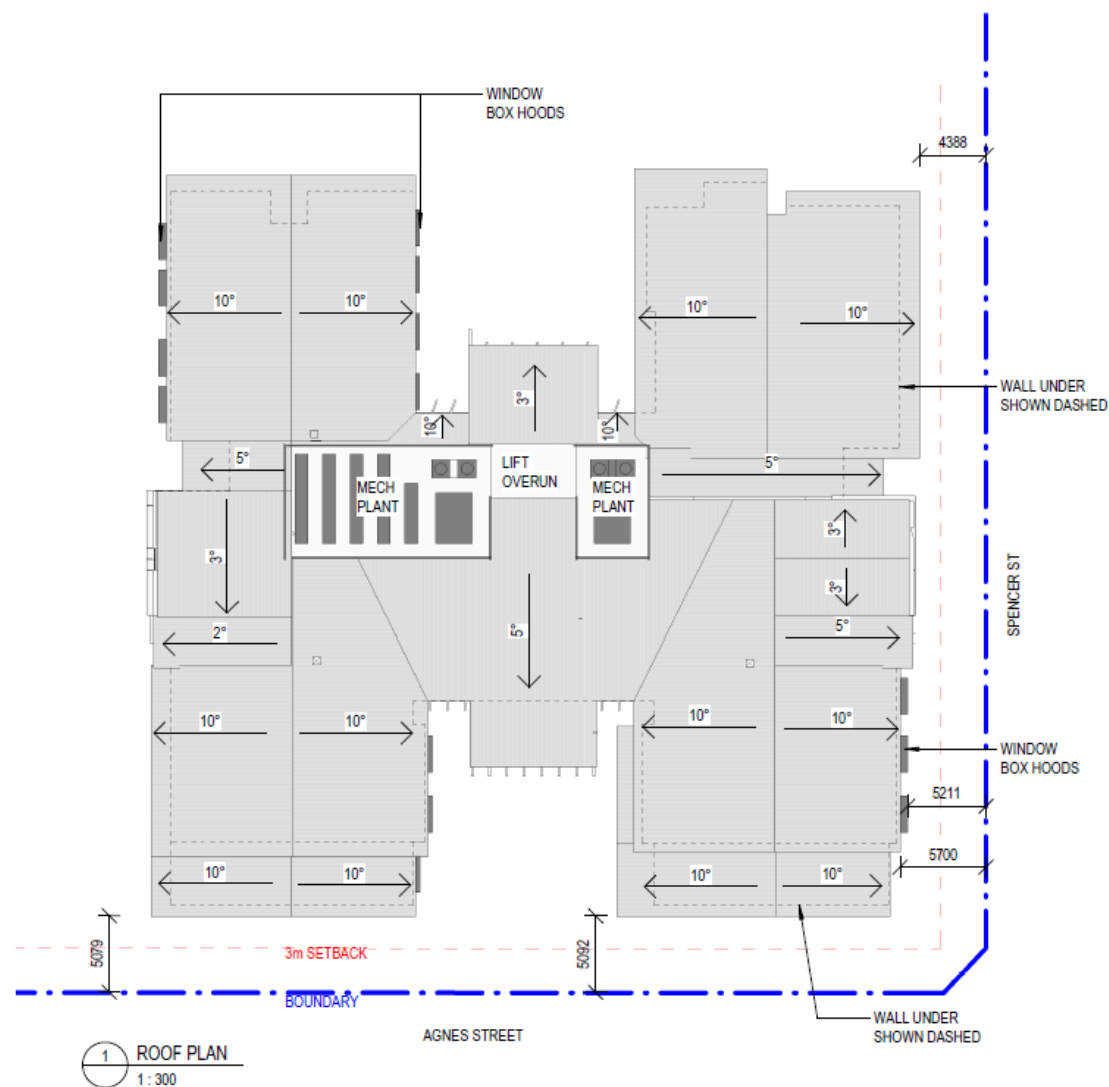
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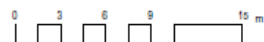
RACF BASEMENT PLAN
1:300 @ A3
A-2.01
03/12/2021
rev. 3





1 ROOF PLAN
1 : 300

DEVELOPMENT APPLICATION



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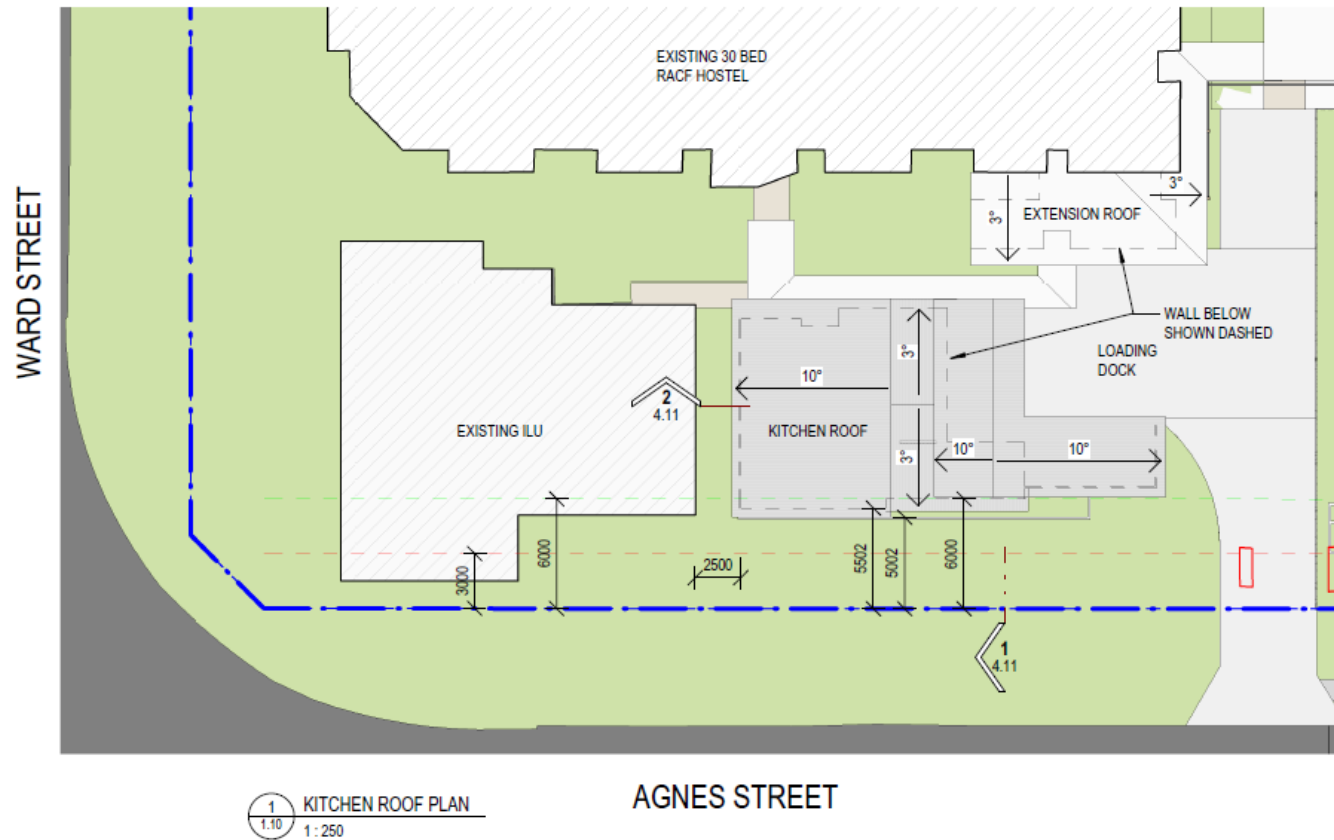
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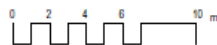
RACF ROOF PLAN

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DEVELOPMENT APPLICATION



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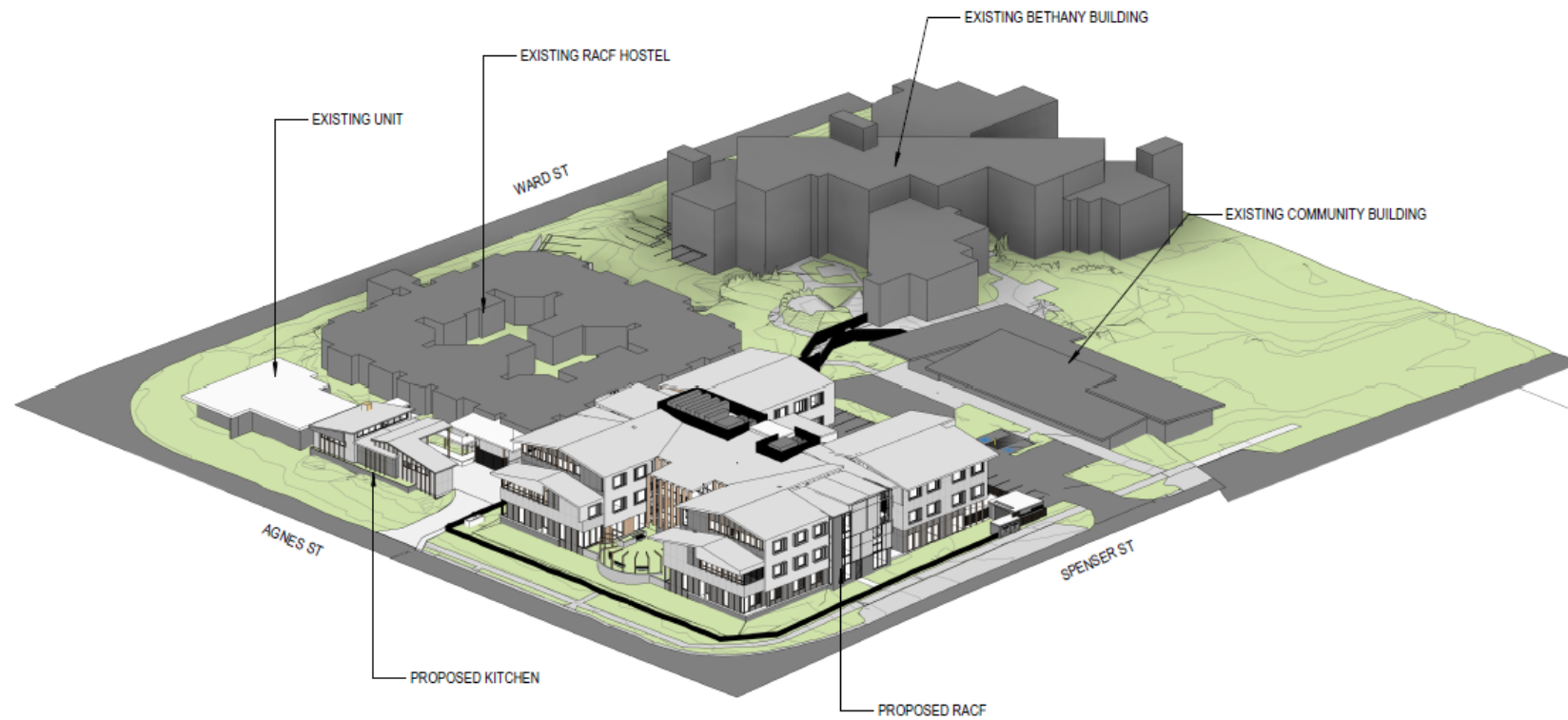
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KITCHEN ROOF PLAN

1: 250 @ A3
A-2.12

03/12/2021
rev. 1



1 MASSING
NOTE - TREES OMITTED FOR CLARITY

DEVELOPMENT APPLICATION

**MERCY CARE RESIDENTIAL AGED CARE
FACILITY - ROCKHAMPTON**
75 WARD STREET,
THE RANGE, QLD 4700

MERCY HEALTH & AGED CARE CENTRAL QUEENSLAND LIMITED

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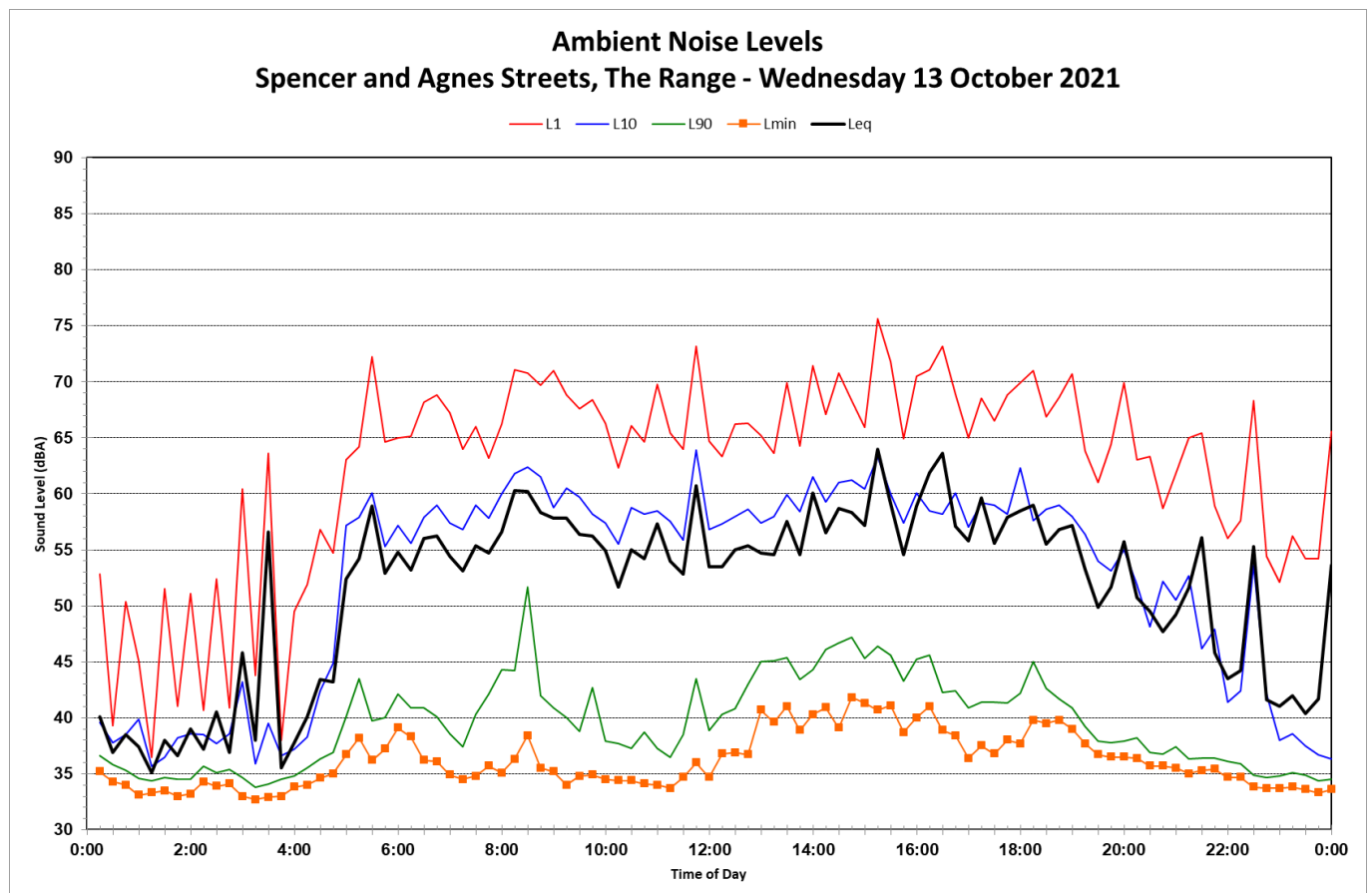
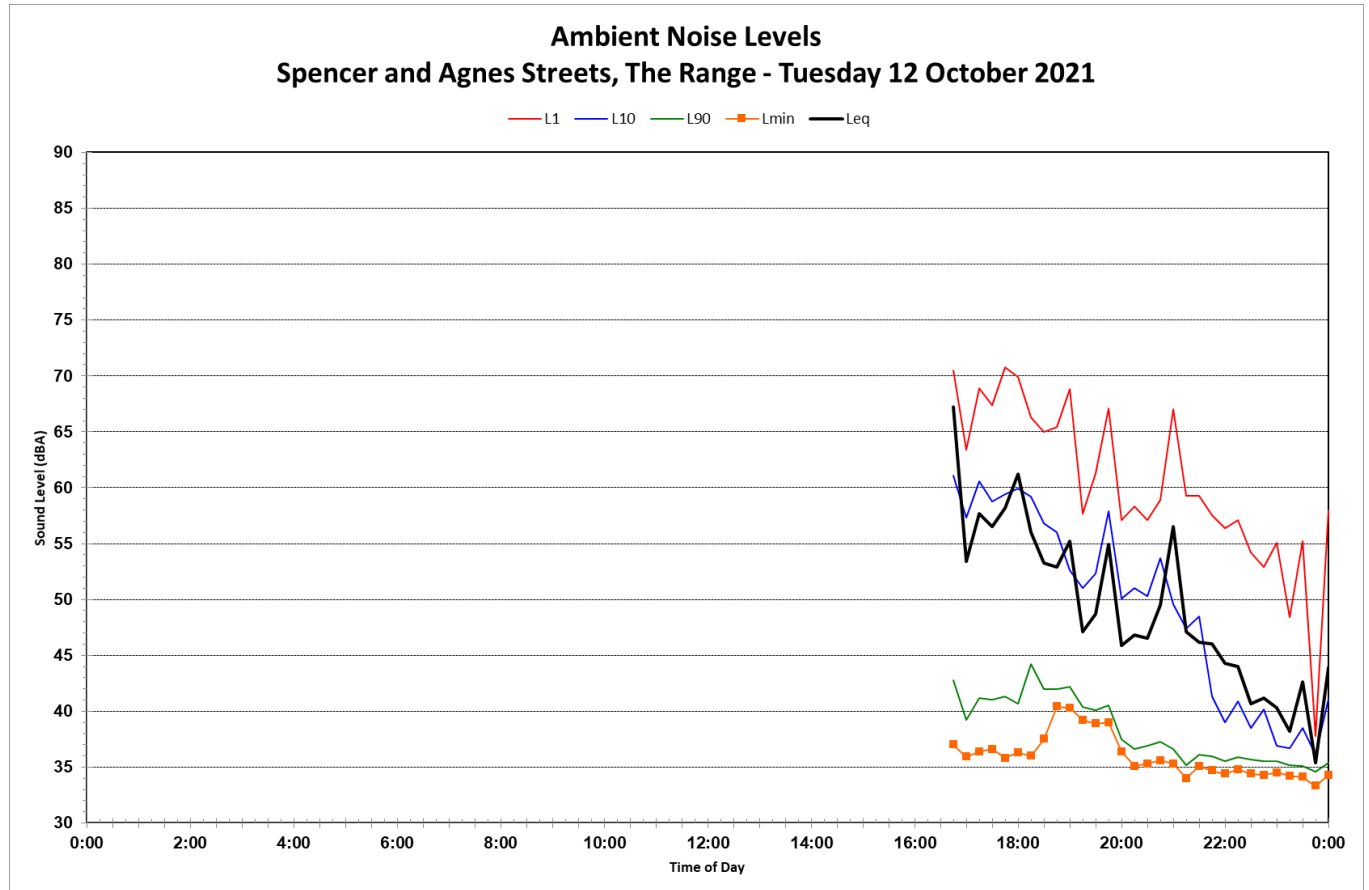
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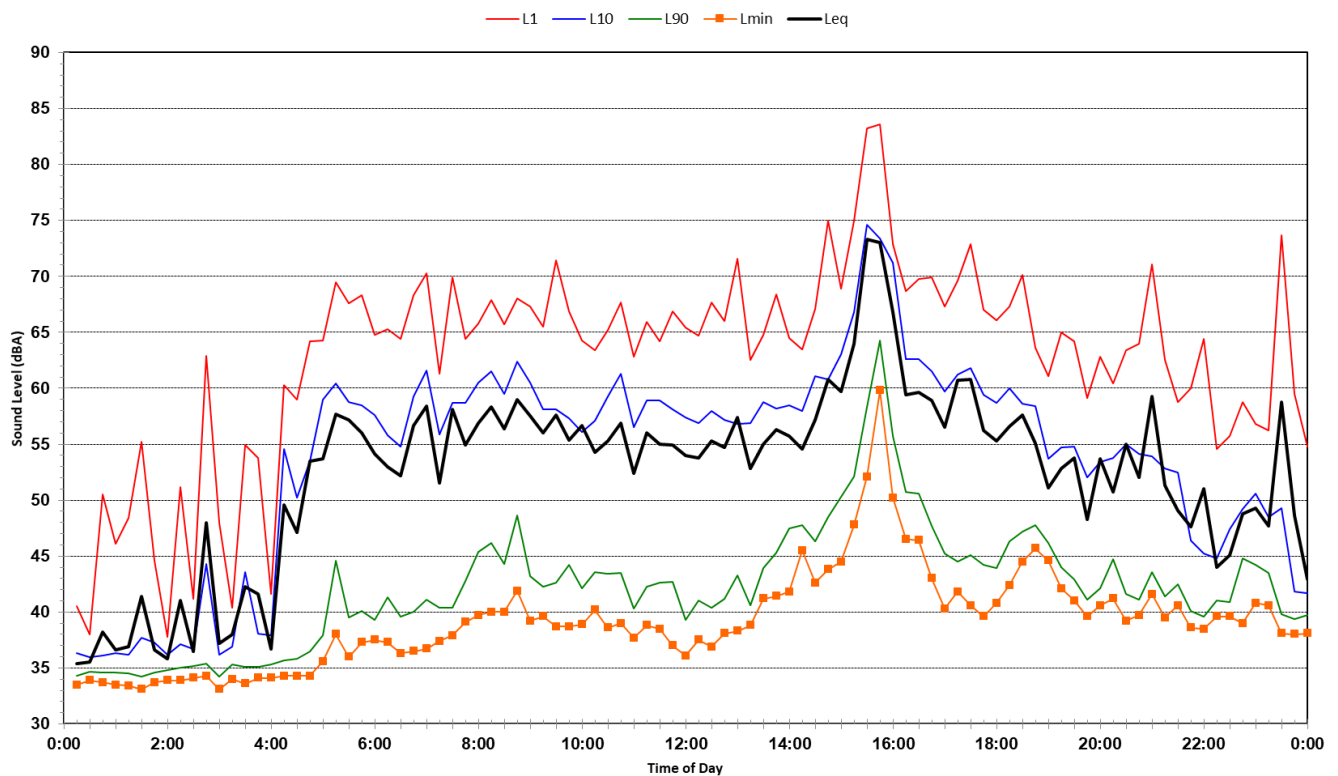
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rev. 1

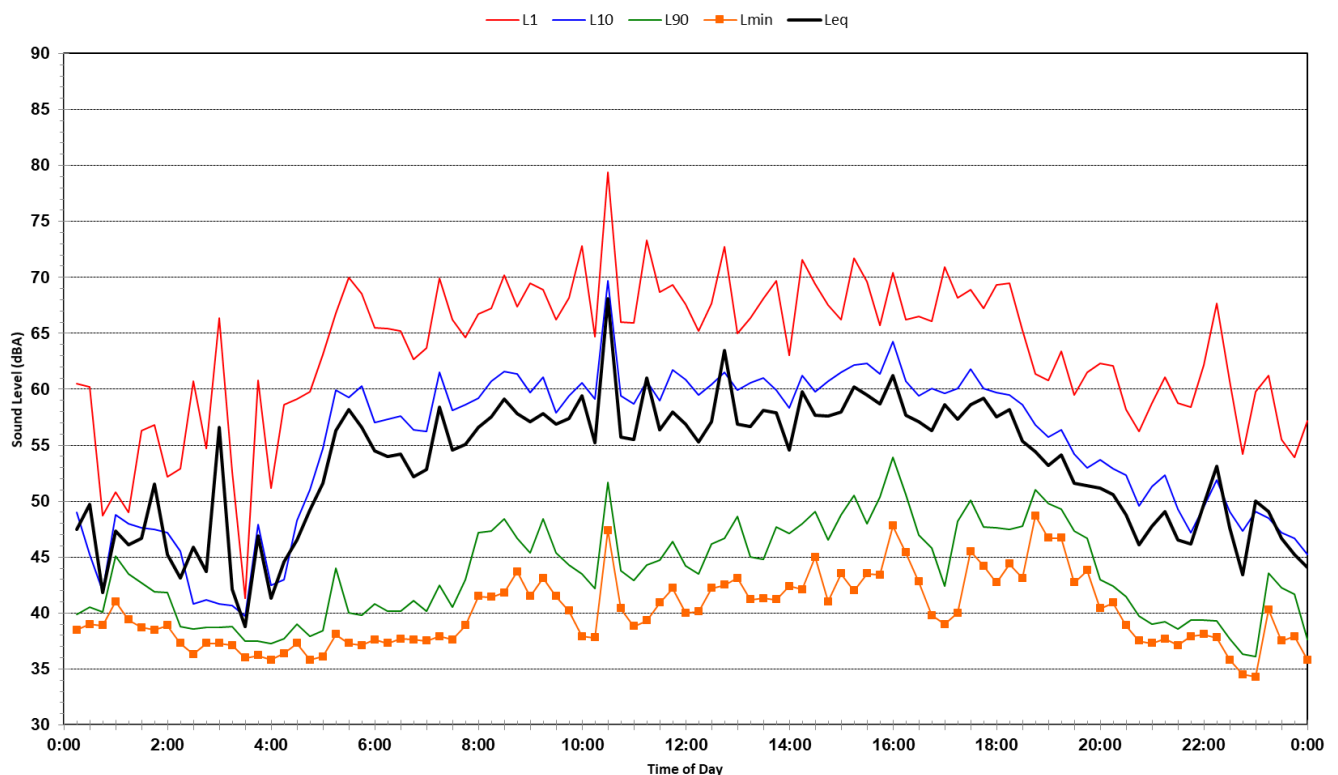
Appendix B – Noise Charts



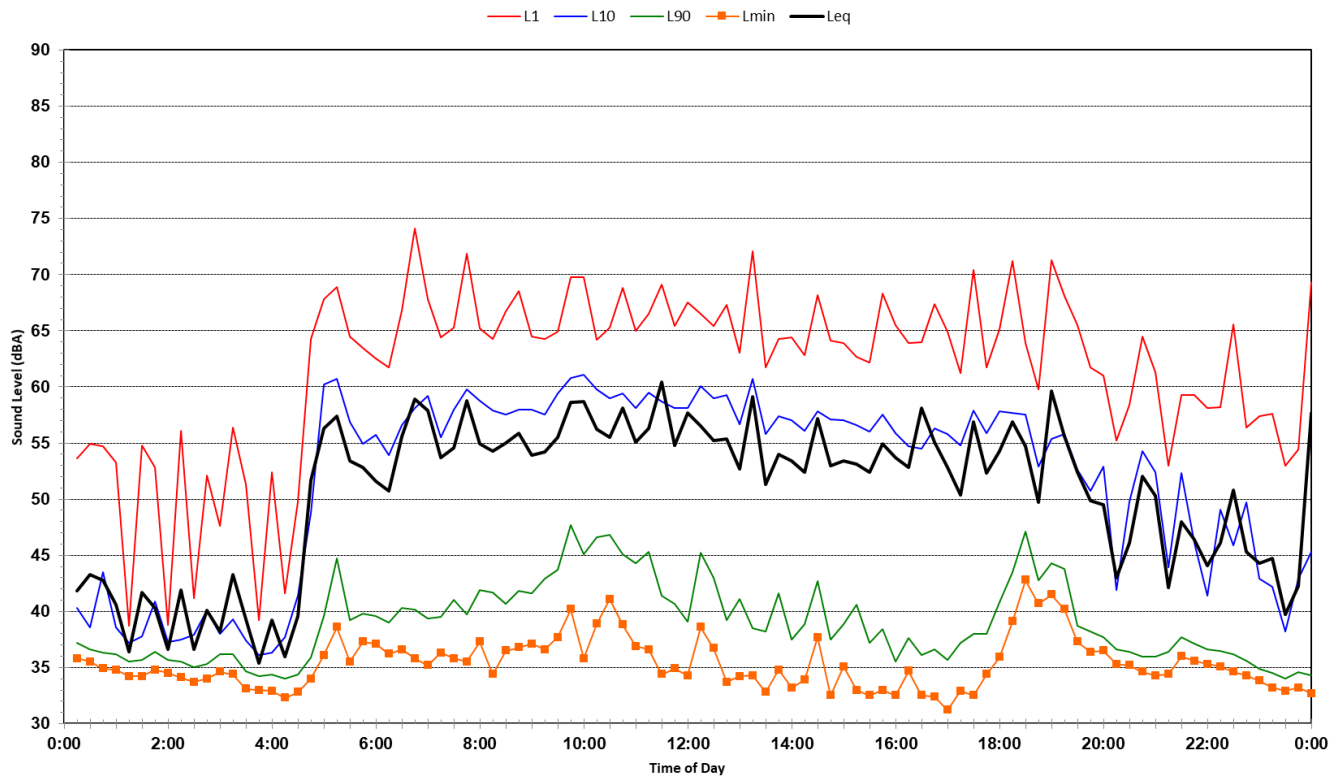
Ambient Noise Levels Spencer and Agnes Streets, The Range - Thursday 14 October 2021



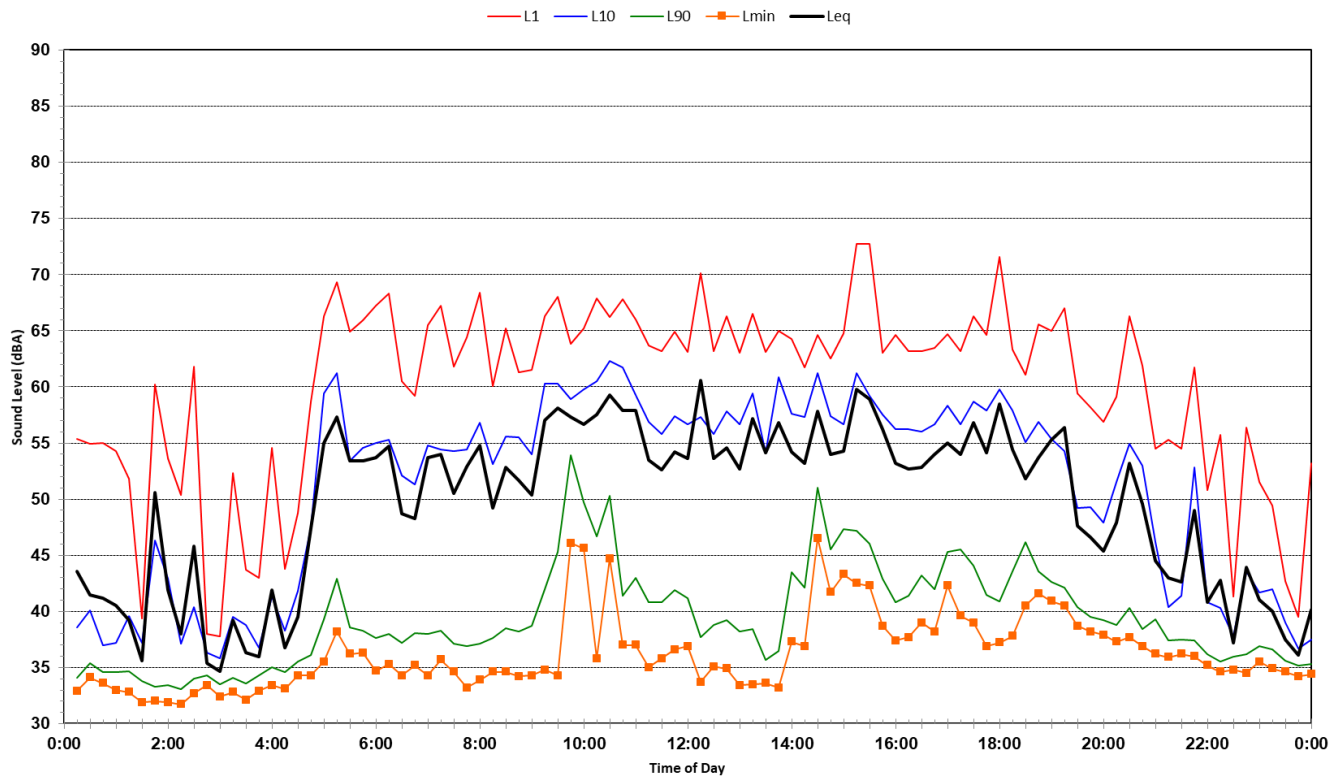
Ambient Noise Levels Spencer and Agnes Streets, The Range - Friday 15 October 2021



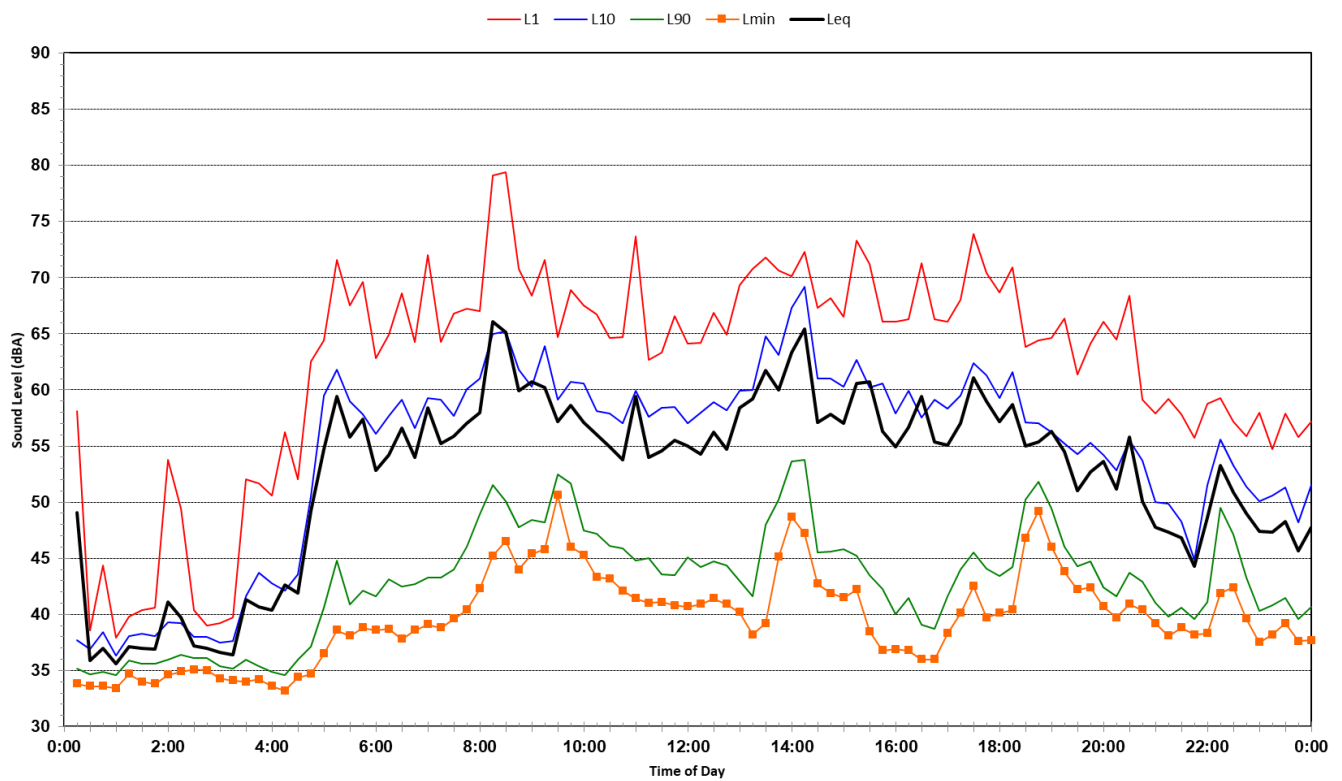
Ambient Noise Levels Spencer and Agnes Streets, The Range - Saturday 16 October 2021



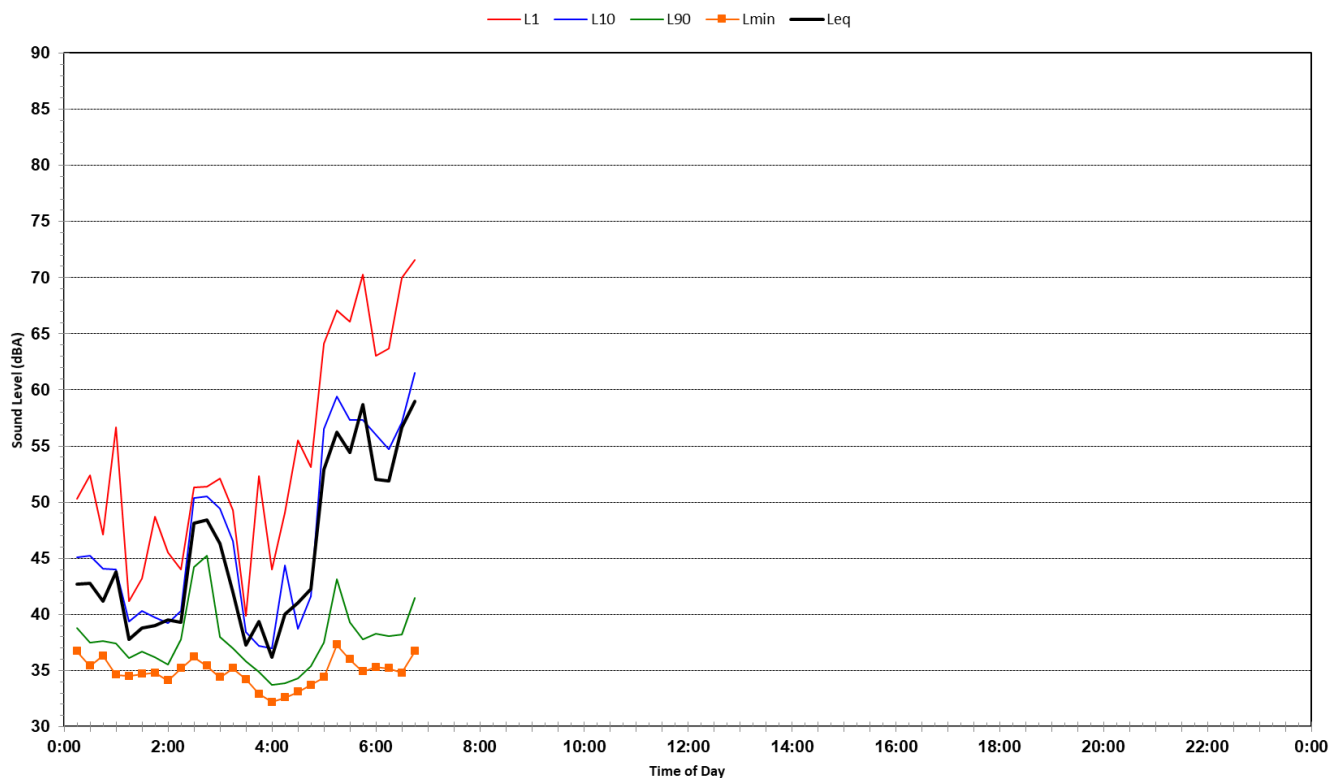
Ambient Noise Levels Spencer and Agnes Streets, The Range - Sunday 17 October 2021



Ambient Noise Levels Spencer and Agnes Streets, The Range - Monday 18 October 2021



Ambient Noise Levels Spencer and Agnes Streets, The Range - Tuesday 19 October 2021





mcmurtrie
CONSULTING ENGINEERS

TRAFFIC IMPACT ASSESSMENT

Mercy Care RACF – Rockhampton

75 Ward Street

The Range, QLD 4700

Prepared For: Mercy Health and Aged Care Central Queensland

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/167-2021

Dated: 20 September 2022

Job No. 0402122

December 2021

Revision A

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TRAFFIC IMPACT ASSESSMENT

Rev.	Description	Signature	Date
A	DA Issue	 RPEQ 5141	14-12-21

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INTRODUCTION

1.1. BACKGROUND

McMurtrie Consulting Engineers has been engaged by Mercy Health and Aged Care Central Queensland to prepare a Traffic Impact Assessment (TIA) for the proposed 1st Stage Residential Aged Care Facility (RACF) on the existing Bethany site located at 75 Ward Street, The Range, QLD 4700, Lot 100 on SPO225770.

This report forms part of a Development Application to be lodged with the Rockhampton Regional Council (RRC).

The following issues have been addressed as part of the study:

- Adequacy of the proposed car parking supply;
- The proposed car parking layout and design;
- Site access arrangements;
- Provision for service vehicle access;
- Provision for safe access by cyclists and pedestrians;
- Potential impact upon the local road network.

The proposed RACF accesses from Spencer Street which is a Council controlled road – no State Controlled Roads are impacted.

1.2. REFERENCES

In preparing this report, reference has been made to the following:

- Rockhampton Region Planning Scheme;
- Australian / New Zealand Standard, Parking Facilities, Part 1: Off-Street Car parking AS/ NZS 2890.1:2004;
- Australian / New Zealand Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS/ NZS 2890.2:2018;
- Australian / New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with a Disability AS/ NZS 2890.6:2009;
- Background traffic AADT received from RRC
- Other documents and data as referenced in the report.

SITE ENVIRONS

2.1. SUBJECT SITE

As shown in Figure 2.1, the proposed site is part of the existing Bethany Complex and abuts Agnes Street on the South-Western side, and Spencer Street to the Southern side – the remainder of the Bethany site is bounded by Ward and Jessie Streets.



Figure 2.1 - Location of Subject Site
[Source: Queensland Globe]

Existing land zoning is shown as community facilities as per Figure 2.2 below.



Figure 2.2 - Location of Subject Site
[Source: Rockhampton Region Planning Scheme]

2.2. ADJACENT LAND USE / APPROVALS

The subject site is located within a residential zone, with other low density residential zone surrounding the site.

2.3. ROAD NETWORK

Spencer Street

Access to the site is proposed directly from Spencer Street at the existing access location into the carpark. Spencer Street is an access street under the control of RRC. Images of the local road access frontages are shown in Figures 2.3 and 2.4.

Agnes Street

Access to the proposed kitchen facility will be gained directly from the existing access on Agnes Street. Agnes Street is an access street also under the control of RRC and images of the local road access frontages are shown in Figures 2.3 and 2.4.



Figure 2.3 – Spencer Street along the frontage of the site



Figure 2.4 – Agnes Street along the frontage of the site

Surveyed Traffic Volumes

RRC traffic count data was provided as follows:

Ward Street

Date: 9/03/18 – 23/03/18

Location: Between Jessie Street and Dagmar Street

AADT: 987.9

Commercial: 5%

Pedestrian Infrastructure

A pedestrian path is located around the entire road frontage perimeter of the site as shown in Figure 2.6.



Figure 2.6 – Pedestrian Infrastructure

Cyclist Infrastructure

Bicycle lanes are not currently provided along the frontage of the site.

DEVELOPMENT PROPOSAL

3.1. LAND USES

The proposed plan of development is for the addition of a 91 bed RACF and associated kitchen facilities on the existing Bethany site along with the augmentation of the existing carparking arrangements to replace any carparks that are removed as a result of the new building.

A plan of the proposed development is shown in Figure 3.1.

NOTE - It is acknowledged that there may be some minor discrepancies between the architectural layouts provided in this report and the associated Thomson Adsett documentation. Whilst not ideal, the minor layout discrepancies should form no material impact to the proposed development from an engineering assessment perspective. Conservative engineering principals have been applied to the afforded earthworks areas, stormwater intent and servicing. As such, any concern should be suitable for conditioning as part of the detailed design process (i.e. finalised in Operational Works stage).

3.2. VEHICLE ACCESS

Access to the site will be via the existing access crossovers to Spencer Street and Agnes Street.

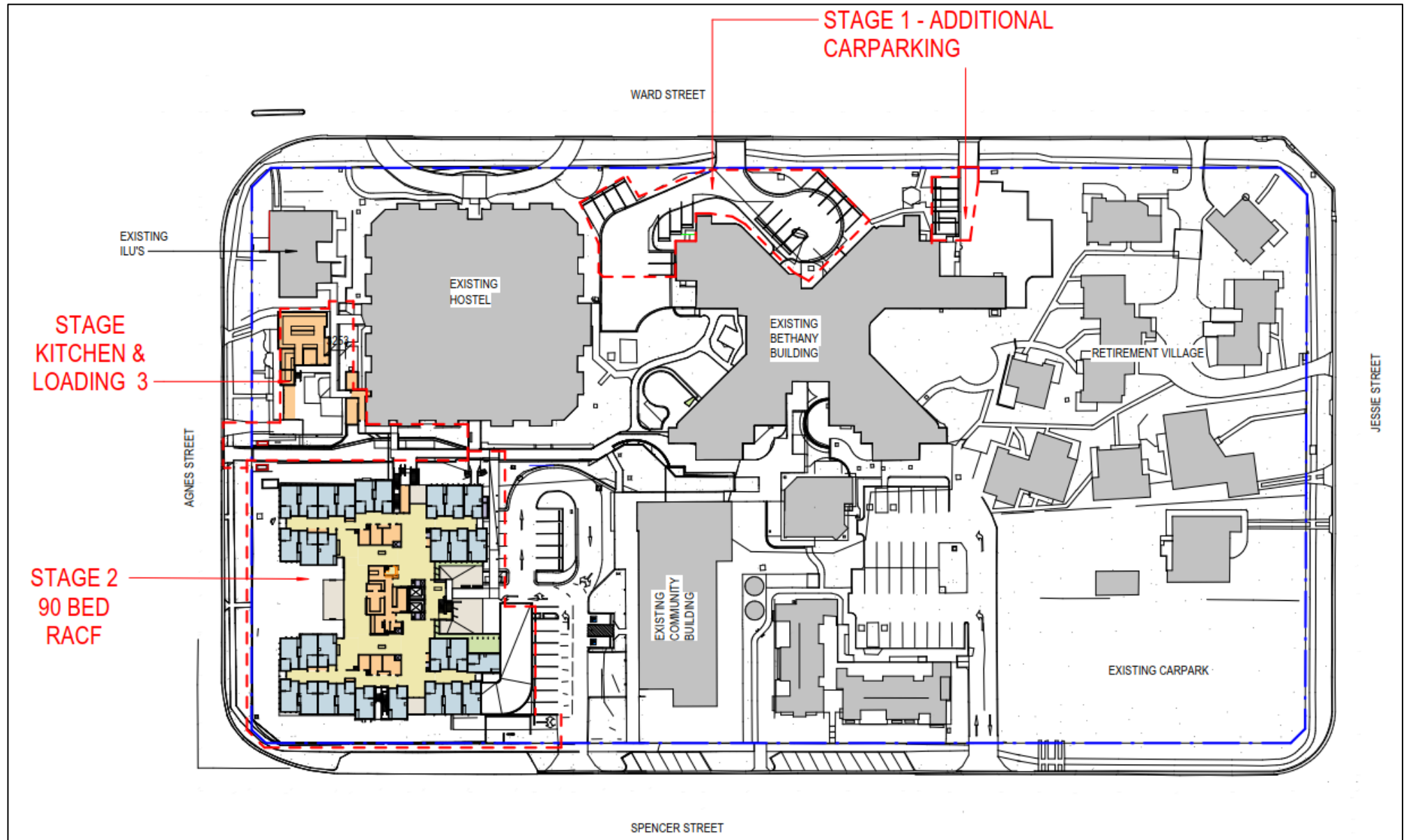


Figure 3.1 – Proposed Plan of Development

CAR PARKING

4.1. STATUTORY REQUIREMENT

The car parking requirements for different development types are set out in the Rockhampton Regional Council Access, Parking and Transport Code. A review of the car parking rates and the use of the proposed development result in the below parking requirement:

- 1 space per 6 beds plus 2 spaces per 3 fulltime employees

4.2. ADEQUACY OF PROPOSED PARKING SUPPLY

The current residential care facilities, comprising the Bethany Nursing Home (86 beds) and JB Gordon Hostel (30 beds) is registered to accommodate a total of 116 beds. The development proposal is to construct a new residential aged care facility with a capacity of 91 beds and reducing the existing Bethany Nursing Home to a 52 bed facility. Thereby resulting in an overall increase of 57 beds with the development proposal. The development will also require an increase in staff from 85 staff to 116 staff, thereby resulting in an increase of 31 staff members.

In accordance with the Rockhampton Region Planning Scheme 2015, the following car parking ration applies:

- Two (2) spaces per three (3) full time employees; and
- One (1) space per six (6) beds for visitors.

Therefore, the proposed development is required to make provision for 30 additional onsite car parking spaces.

4.3. CAR PARKING LAYOUT AND DESIGN

Car Parking

The geometric layout of the proposed car parking has been designed to comply with *AS2890.1:2004*, in respect to parking bay dimensions and aisle widths. The proposed car parking provides the following dimensions and characteristics:

Table 4.1: Parking Layout and Geometry

Design Element	Required	Supplied	Compliance
General parking (User Class 2)	2.5m wide x 5.4m long	2.6m wide x 5.4m long	Compliant
Disabled Parking	2.4m wide x 5.4m long, plus shared zone	2.5m wide x 5.4m long	Compliant
Clearance adjacent to vertical obstructions	0.3m (i.e. walls, fences, etc)	Minimum 0.3 metres	Compliant
Aisle Width	5.8 metres	> 5.8 metres	Compliant
Circulation width	5.5 metres	> 5.5 metres	Compliant
Aisle extension	1 metre beyond last parking / 8 metre aisle	N/A	N/A
Grades (driveway)	1:20 maximum for the first 6 metres into the site	1:20 for the first 6 metres	Compliant
Grades (car parking module)	1:20 measured parallel to the angle of the parking space or 1:16 in all other directions	1:20 measured parallel to the angle of the parking space or 1:16 in all other directions	Compliant
Grade (transitions)	Max 1:8 (summit) and 1:6.7 (sag) at 2 metres	N/A	N/A
Height Clearance	Minimum 2.2m clearance to overhead structures and services	N/A	N/A

As demonstrated in Table 4.1, the internal geometric layout should be compliant with the requirements of the Australian Standards publication *AS2890.1:2004*. A dimensioned layout of the proposed car parking arrangements will be provided as part of Operational Works submission. Wheel stops can be provided at the end of parking spaces fronting a footpath for pedestrian protection.

A swept path analysis has been prepared for the largest site vehicle (see Figures 4.1 and 4.2) which will be a 12.5m Rigid Vehicle and a Refuse Vehicle to enter and exit the site in a forward gear via the Agnes Street access adjacent to the proposed kitchen facilities. Minor changes will be made to the access and turnaround areas as part of Operational Works to facilitate these movements.

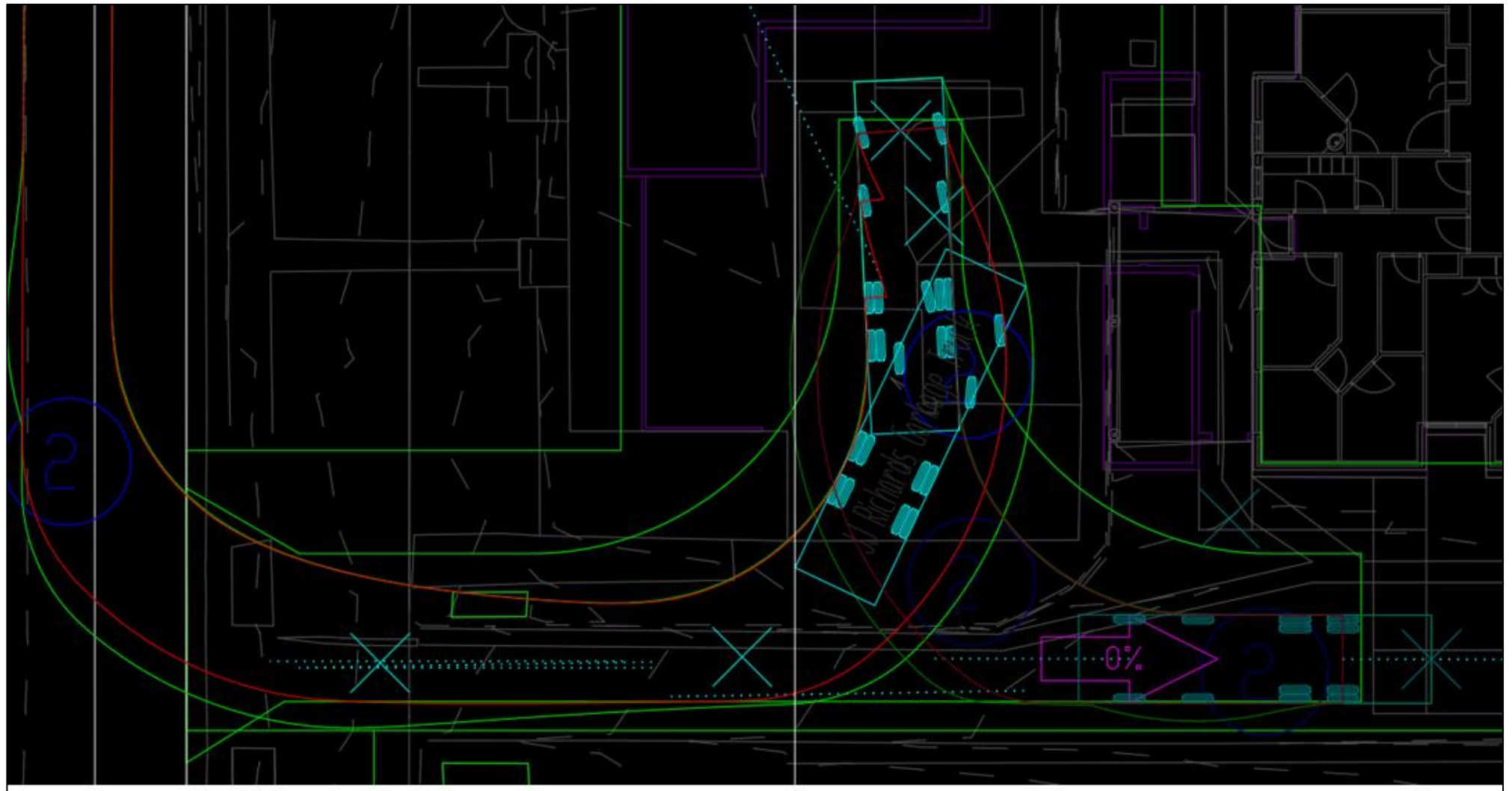


Figure 4.1 – Swept Path of Refuse Vehicle entering and exiting via Agnes Street

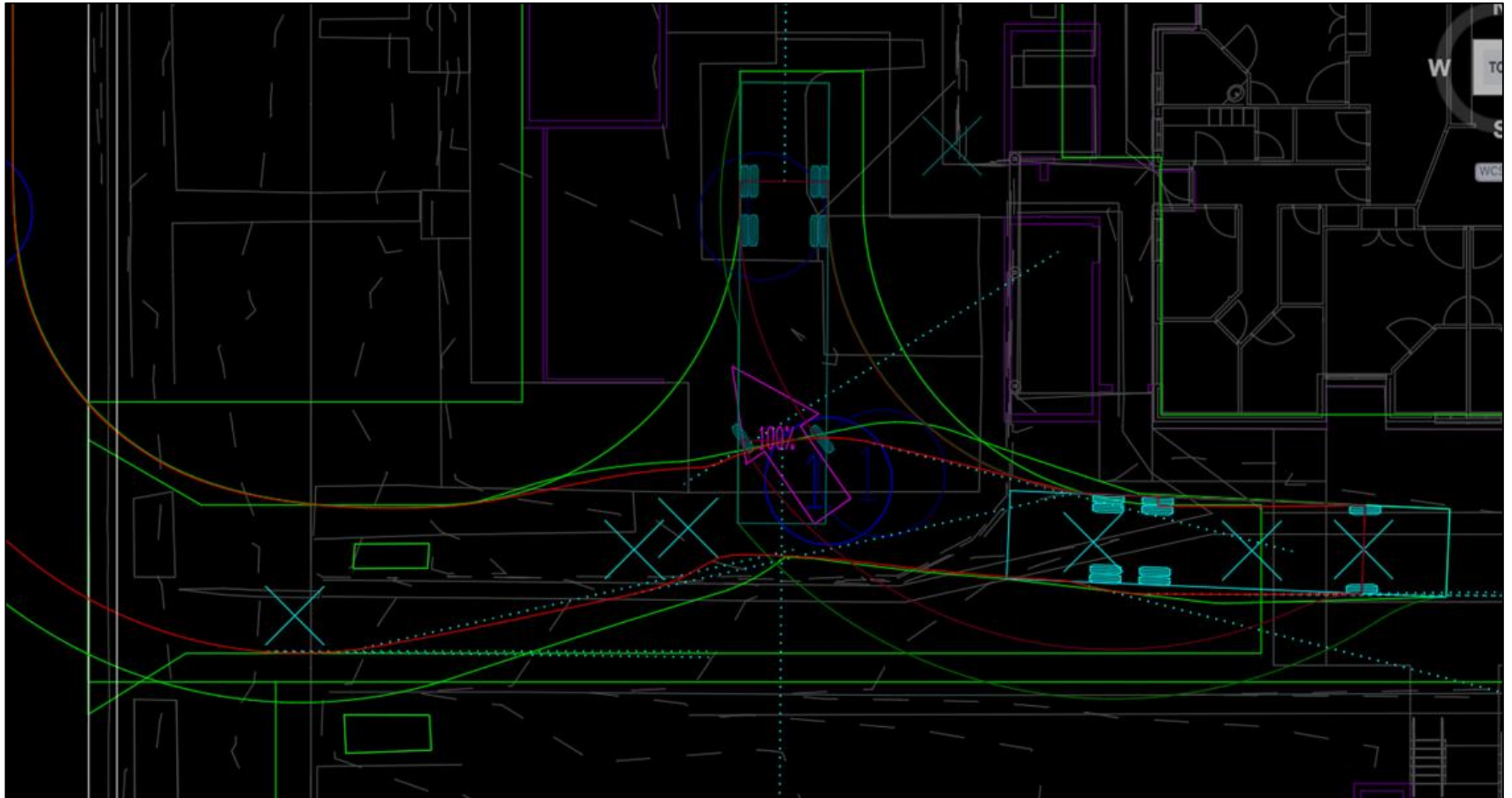


Figure 4.2 – Swept Path of 12.5m Delivery Vehicle entering and exiting via Agnes Street

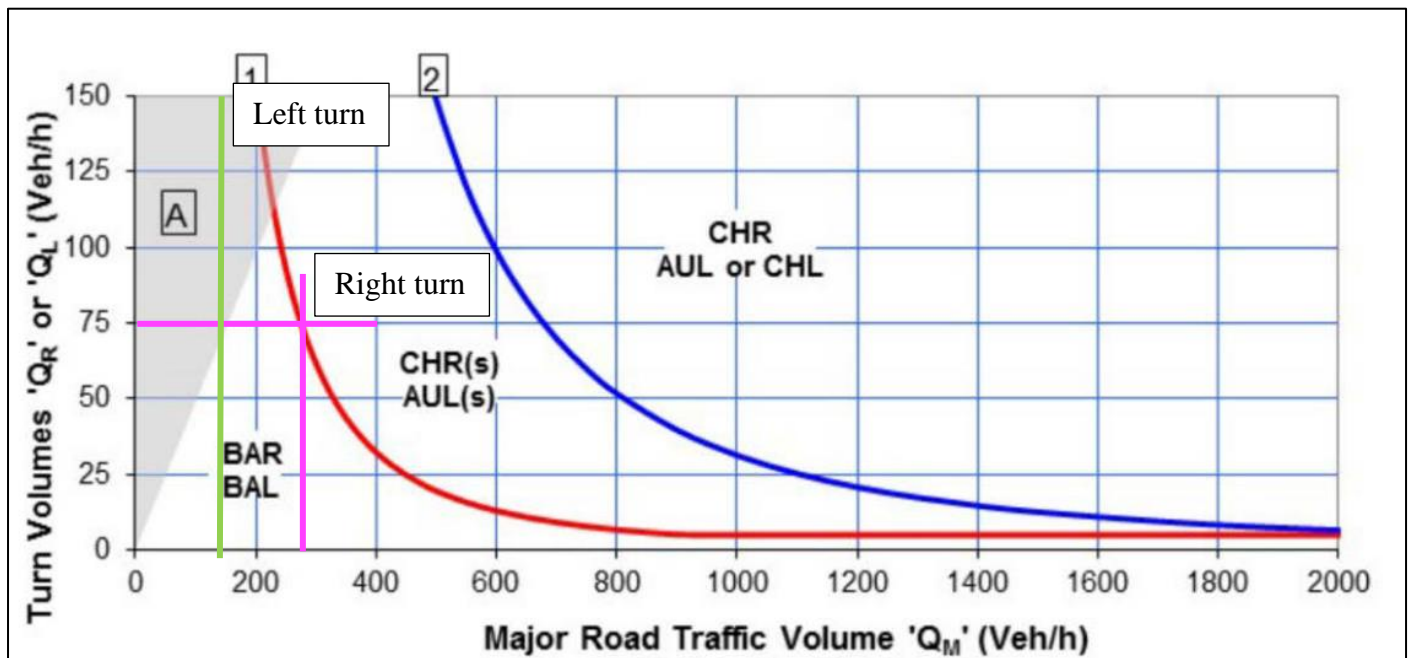
4.4. SUITABILITY OF PROPOSED ACCESSES

As mentioned previously access to the site is proposed to be gained via the existing arrangements at both Agnes Street and Spencer Street.

The existing accesses provide sufficient visibility for the 50kph speed environment.

In terms of capacity/turn warrants assessment refer to Figure 4.3 below.

For a BAR/BAL treatment on Agnes Street, which has the highest peak hour 2 way traffic volume (272 vph), up to 75 vph can turn in from the right and virtually an unlimited number from the left turn assuming a 50/50 peak hour directional split.



**Figure 4.3 – Turn Warrants Diagram (<70km/hr)
at Proposed Entries**

These volumes are unlikely to be exceeded at any site access and any required access widening or upgrading for the sites largest vehicle can be carried out as part of a future Operational Works application to provide access in accordance with CMDG requirements subject to detailed design.

TRAFFIC IMPACT

5.1. TRAFFIC GENERATION

The RMS “Guide to Traffic Generating Developments” 2002 and the “Guide to Traffic Generating Developments, Updated traffic surveys” (TDT 2013/04a) provide the following peak hour trip generation rates:

- Aged Care Facility – 0.1 to 0.2 trips per dwelling.

Application of the above rate for a total of 90 beds results in an additional 18 peak hour trips for the proposal or 9 vehicles inbound and 9 vehicles outbound during the peaks.

5.2. IMPACT ASSESSMENT

The existing peak counts on the surrounding streets, assuming a 50/50 peak hour directional split, are shown in Figure 5.1.



Figure 5.1 – Adjacent Streets Traffic Vols

The peak hour counts are well within the capacity of a two lane, two way access street and the addition of an extra 9 vph in each direction is unlikely to have any impact on the performance of the adjacent existing intersections.

In any case at low volumes, capacity analysis is usually not warranted - as a general guideline, as shown below in Table 2 below, this extract from the Austroads Guide to Traffic Engineering Part 6: Intersections, Interchanges and Crossings (2007, Table 2.4) is sighted as an acceptable “rule of thumb”. This table is used as a general guide only however the volumes are well less than the table would suggest is necessary for further analysis.

Table 5.1: Summary of peak hour development traffic

Major road type ¹	Major road flow (vph) ²	Minor road flow (vph) ³
Two-lane	400	250
	500	200
	600	100
Four-lane	1000	100
	1500	50
	2000	25

With the addition of the peak hour development traffic volumes these figures are not close to being exceeded at any adjacent intersection.

CONCLUSIONS AND RECOMMENDATIONS

The subject site is located within the existing Bethany Facility and the proposed development is for the 1st Stage Residential Aged Care Facility (RACF) located at 75 Ward Street, The Range, QLD 4700, Lot 100 on SPO225770.

The existing site accesses appear to be adequate to cater for any minor increase or redistribution of traffic associated with the development proposal.

The additional car parking provided onsite will be sufficient for the proposed development.

The additional peak hour volumes generated by the proposed development are minor and effectively inconsequential when considered in relation to existing volumes and substantial excess capacity in the surrounding network and intersections.

TECHNICAL MEMORANDUM

Project No. 040-21-22

Date: 07-Dec-21

To:
Blake Challen
Thomson Adsett
Blake.Challen@thomsonadsett.com

From:
Chris Hewitt
Principal Civil Engineer
McMurtrie Consulting Engineers
chris@mcmengineers.com

**ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS**

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

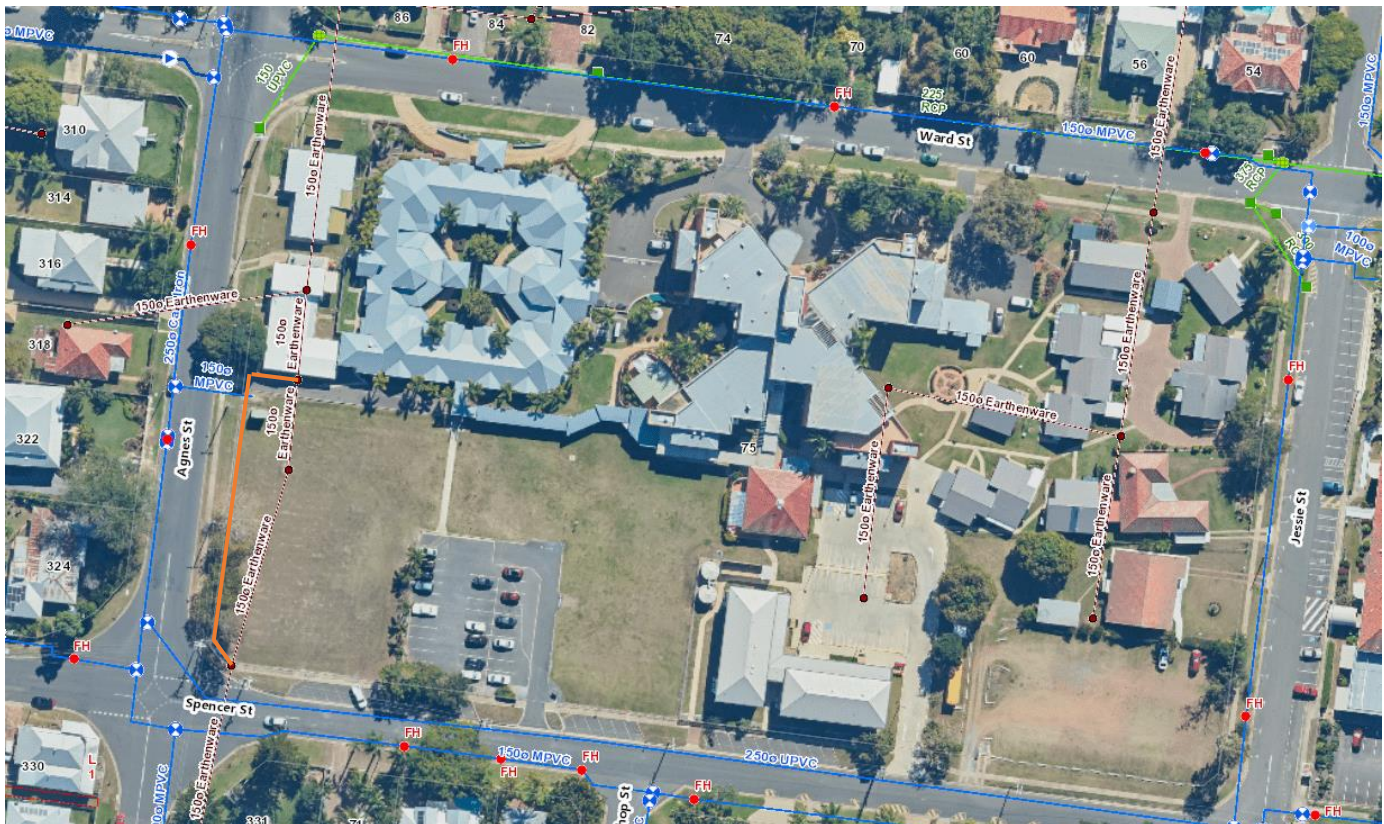
Development Permit No.: D/167-2021

Dated: 20 September 2022

Re: Relocation of Sewer at Bethany Residential Aged Care, The Range

McMurtrie Consulting Engineers have been engaged by Mercy Health CQ for due diligence and engineering services in support of advancing designs relating to their proposed Residential Aged Care Facility (RACF) at their Bethany Facility at The Range in South Rockhampton.

It has been identified that a portion of Rockhampton Regional Councils sewer main will require relocation to make way for the proposed development. The section of sewer main in question runs inside the western boundary of the site and at its maximum parallels the boundary at a 12m offset.



Rockhampton Regional Council Interactive Mapping – accessed 8th November 2021 (Proposed sewer alignment in orange)



Within the survey Conducted by Capricorn Survey Group it was identified that the furthest upstream access chamber is in the southwest corner of the property at an invert level of 41.92m AHD. Another manhole exists downstream of this, to the left of the Agnes Street driveway, at an invert level of 41.29m AHD.

It is proposed that a new 150mm diameter sewer main be laid on an alignment parallel to the Agnes St frontage, at a 2m offset. This would require 74m of new sewer main and 2 new access chambers. Following existing inverts this would require a longitudinal grade of ~0.8% (1:125), well within the minimum grade of 1:150.

The only perceived complication to this proposal is the depth of excavations being down to a depth of ~3m which will require special consideration by the contractor, particularly in locations adjacent to existing buildings.

NOTE - It is acknowledged that there may be some minor discrepancies between the architectural layouts provided in this report and the associated Thomson Adsett documentation. Whilst not ideal, the minor layout discrepancies should form no material impact to the proposed development from an engineering assessment perspective. Conservative engineering principals have been applied to the afforded earthworks areas, stormwater intent and servicing. As such, any concern should be suitable for conditioning as part of the detailed design process (i.e. finalised in Operational Works stage).

Kind regards,

Chris Hewitt

Associate Director
Principal Civil Engineer


A P1	3.12.2021 16.11.2021	ISSUE FOR APPROVALS. PRELIMINARY ISSUE.	DB DB
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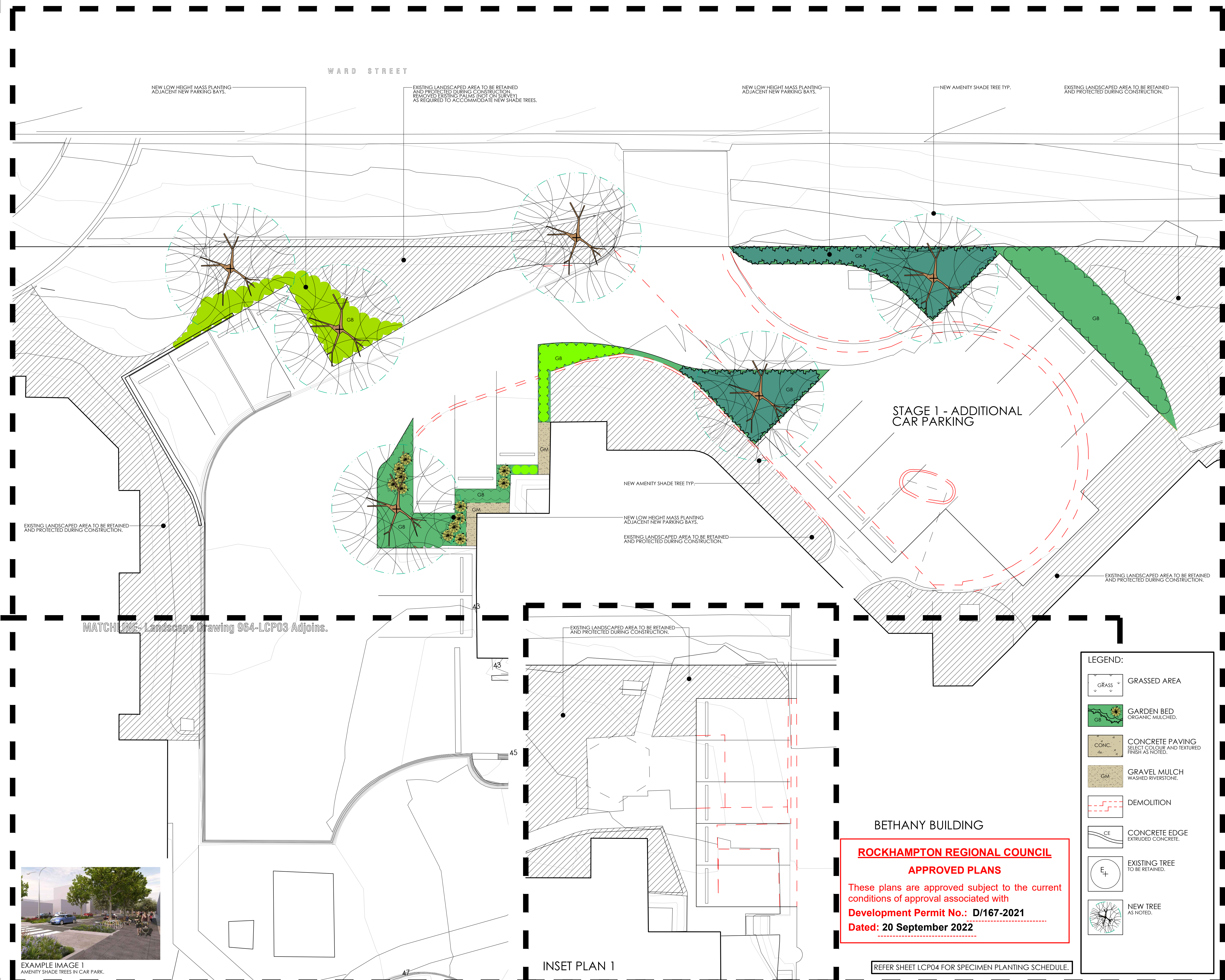
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GLADSTONE: OLD MANY PEAKS SCHOOL
BOYNE VALLEY, QLD 4680
EMAIL: design@landscapearchitects.com.au

PROJECT:
MERCY CARE RACF
ROCKHAMPTON

DRAWING TITLE:
LANDSCAPE
CONCEPT PLAN 2:
STAGE 1-
ADDITIONAL PARKING



PROJECT NO.: 964	DWG NO.: 964-LCP02	REVISION: A
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MATCHLINE- Landscape Drawing 964-LCP06 Adjoins.

EXISTING LANDSCAPED AREA TO BE RETAINED AND PROTECTED DURING CONSTRUCTION.

EXISTING HOSTEL

EXISTING BETHANY BUILDING

MATCHLINE- Landscape Drawing 964-LCP02 Adjoins.

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/167-2021

Dated: 20 September 2022

EXISTING GARDEN

EXISTING SECURE COVERED WALKWAY

GATE

EXISTING FENCE-
EXISTING GRASSED AREA TO REMAIN -PROTECT DURING CONSTRUCTION.

EXISTING LANDSCAPED AREA TO BE RETAINED AND PROTECTED DURING CONSTRUCTION.

EXISTING GARDEN

EXISTING CAR PARK
RECONFIGURED- REFER ARCHITECTURAL SCHEME

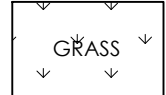
EXISTING COVERED ENTRY

EXISTING BUILDING

REFER SHEET LCP04 FOR SPECIMEN PLANTING SCHEDULE.

MATCHLINE- Landscape Drawing 964-LCP04 Adjoins.

LEGEND:



GRASSED AREA



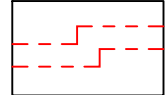
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ORGANIC MULCHED.



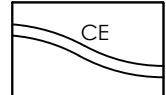
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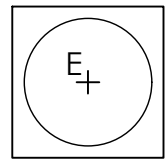
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WASHED RIVERSTONE.



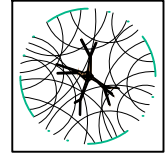
DEMOLITION



CONCRETE EDGE
EXTRUDED CONCRETE.



EXISTING TREE
TO BE RETAINED.



NEW TREE
AS NOTED.

THIS SHEET TO BE PRINTED IN COLOUR.

A	3.12.2021	ISSUE FOR APPROVALS.	DB
P1	16.11.2021	PRELIMINARY ISSUE.	DB
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ASSOCIATES
LANDSCAPE
ARCHITECTS

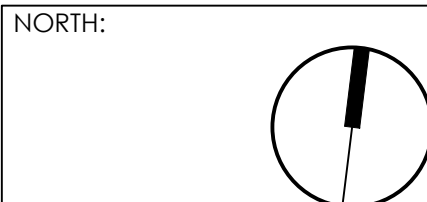
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EMAIL: design@landscapearchitects.com.au

CLIENT:
MERCY HEALTH+
AGED CARE
CENTRAL QLD. LTD.

PROJECT:
MERCY CARE RACF
ROCKHAMPTON

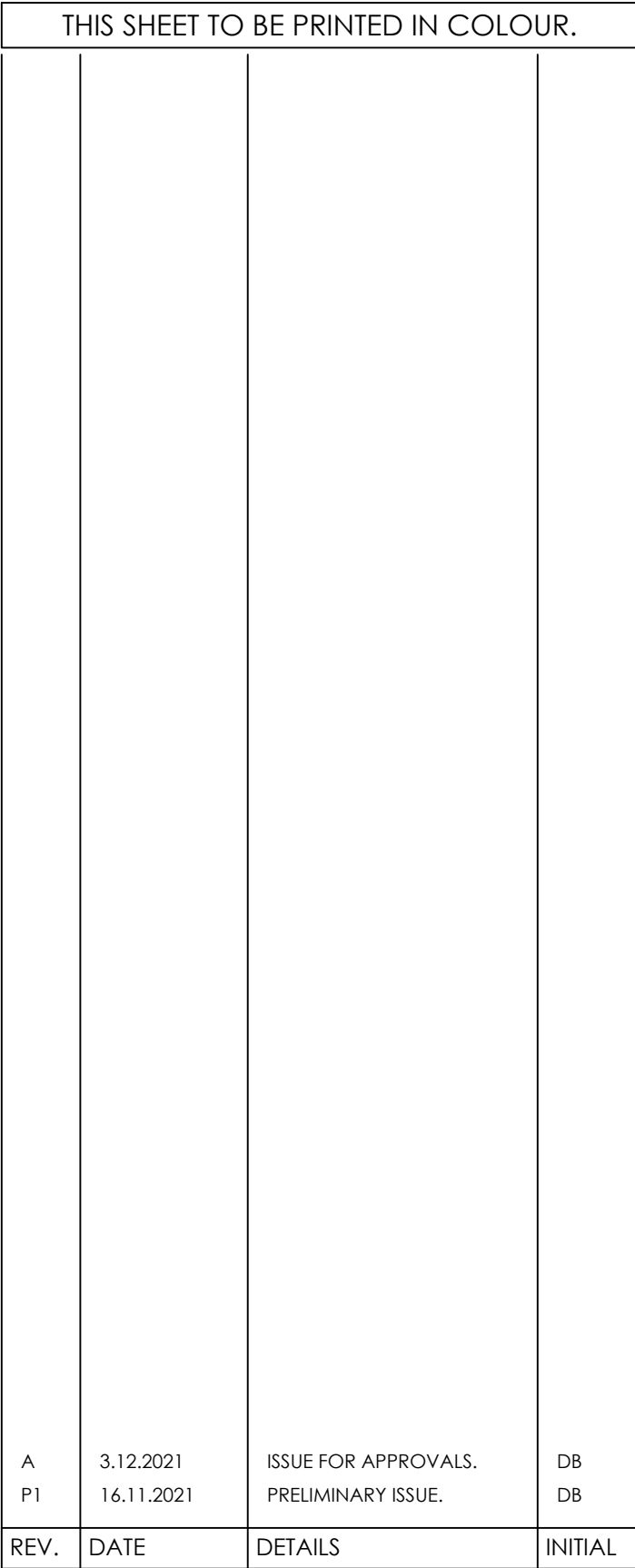
75 WARD STREET, ROCKHAMPTON.

DRAWING TITLE:
LANDSCAPE
CONCEPT PLAN 3:
STAGE 2- 90 BED RACF



DATE: OCT 2021
DRAWN: DB
SCALE: 1:100 AT A1

PROJECT NO.: 964
DWG NO.: 964-LCP03
REVISION: A



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ASSOCIATES
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CLIENT:
MERCY HEALTH+
AGED CARE
CENTRAL QLD. LTD.

PROJECT:
MERCY CARE RACF
ROCKHAMPTON

75 WARD STREET, ROCKHAMPTON.

DRAWING TITLE:
LANDSCAPE
CONCEPT PLAN 4:
STAGE 2- 90 BED RACF

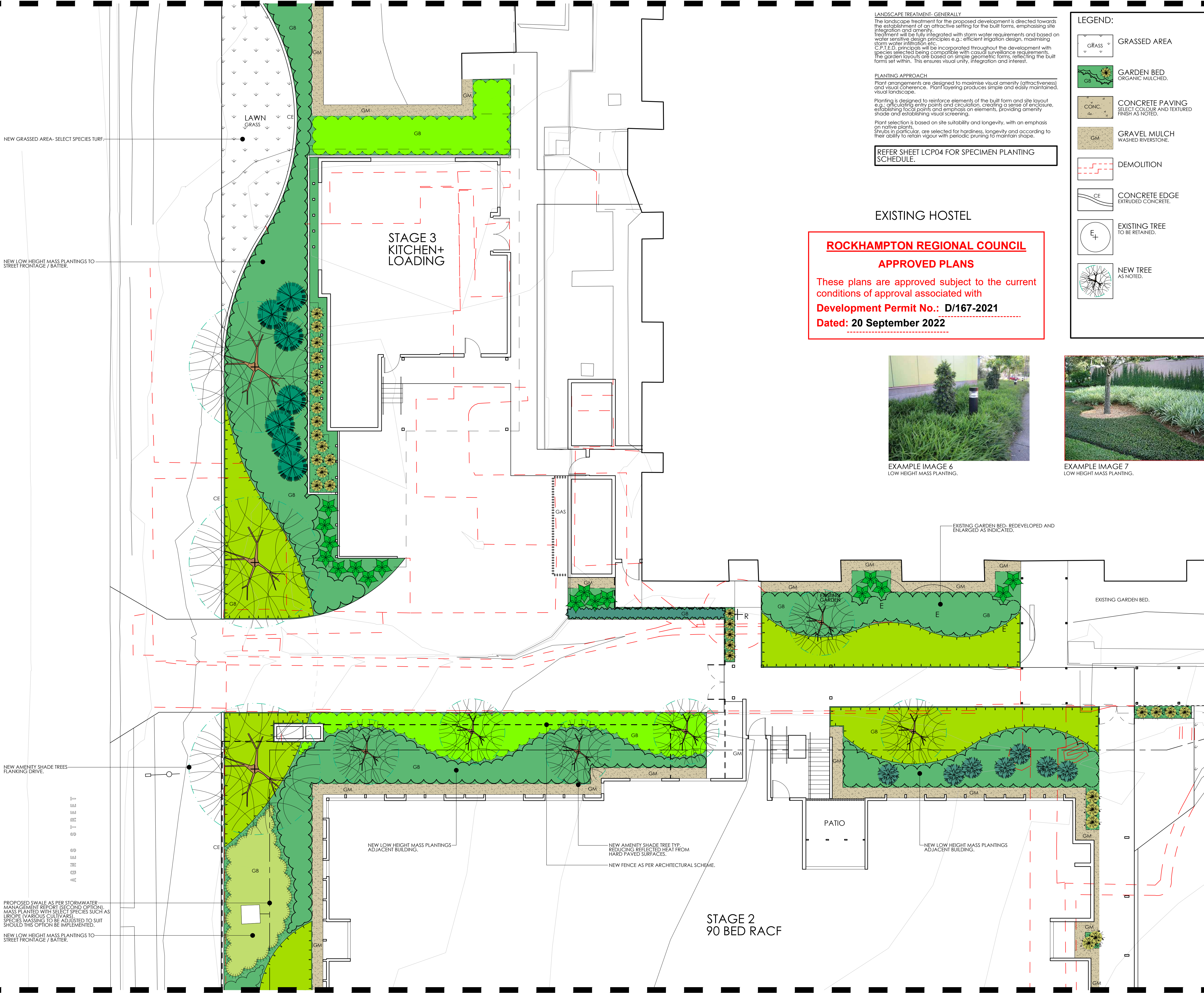
NORTH:



DATE: OCT 2021	DRAWN: DB	SCALE: 1:100 AT A1
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PROJECT NO.:	DWG NO.:	REVISION:
964	964-LCP04	A

SPECIMEN PLANT SCHEDULE- 9&4			
	Species	Common Name	Size at maturity (Ht. m x Dia. m)
	Trees		
native	Brachychiton acerifolium	Illawarra Flame Tree	10 x 3
native	Buckinghamia celissima	Ivory Curl Flower	8 x 3
native	Cupanlopis anacardioides	Tuckeroo	10 x 2
native	Elaeocarpus eumundii	Eumundi quandong	10-12 x 3-5
native	Harpullia pendula	Tulip Wood	6 x 4
	Lagerflora latifolia	Crepe Myrtle	4 x 3
	Peltophorum pterocarpum	Yellow Poinciana	5 x 2
	Plumeria obtusa	Evergreen Frangipanni	5x6
	Shrubs		
native	Alpinia caerulea	Native Ginger	1.5 x 1
	Alpinia xerumbert	Ginger	2 x 2
	Alpinia xerumbert variegata	Variegated Ginger	2 x 2
native	Austromyrtus dulcis	Mydym	1 x 2
	Brunfelsia latifolia	Yesterday Today Tomorrow	2x 1.5
native	Callistomen Little John	Bottle Brush	1.5 x 2
	Cordyline australis	Cabbage Palm	3 x 1
	Gardenia florida	Gardenia	1 x 1.5
native	Hedychium coronarium	White Ginger	1.5 x 1
	Heliconia 'Firefly'	Claw Flower	1 x 1.5
	Ixora 'Sunkist'	Ixora	0.5 x 0.5
	Ixora 'Pink Malay'	Ixora	1 x 1
native	Malealeuca 'Claret Tops'	Claret Tops	1 x 1
native	Malealeuca thymifolia	Thyme Honey Myrtle	1 x 1
	Nandina domestica	Sacred Japanese Bamboo	1.5 x 1
	Pentas 'Buderim Blue'	Pentas	0.5 x 0.5
	Philodendron 'Xanadu'	Philodendron	1 x 1
	Phyllanthus minutiflorus	Phyllanthus	1 x 1
	Rhaphiolepis fergusonii	Indian Hawthorn	1 x 1
native	Syzygium 'Cascade'	Lilly Pilly	1.5 x 1
native	Syzygium 'Elite'	Magenta Cherry	2 x 1
native	Westringea fruticosa	Coastal Rosemary	1 x 1
	Palms		
	Archontophoenix cunninghamiana	Piccabeen Palm	6-8 x 1-1.5
	Carpentaria acuminata	Carpentaria acuminata	
	Lepidozamia peroffskyana	Shining Burrawang	
	Livistona decipiens	Weeping Cabbage Palm	
	Wodyetia bifurcata	Fox Tail Palm	
	Groundcovers+ Foliage Plants		
	Cordyline fruticosa 'Kialaua'	Cordyline	
	Cordyline fruticosa negra	Cordyline	
	Cordyline terminalis rubra	Cordyline	
native	Crinum pedunculatum	Swamp Lilly	
	Cuphea hyssopifolia 'mauve'	Cuphea	
native	Dianella species	Flax Lilly	
	Dietes grandiflora	Spanish Iris	
	Erigeron karvinskianus	Seaside Daisy	
	Gazania ringens	Gazania	
native	Grevillea banksii prostrate	Prostrate Grevillea	
native	Helichrysum ramosissimum	Everlasting Daisy	
	Hemeroallis species	Day Lilly	
	Hymenocallis littoralis	Spider Lilly	
	Liriope species	Turf Lilly	
native	Lomandra spp.	Mat Rush	
	Rhoeo discolor dwarf	Moses in the cradle	
	Trachelospermum jasminoides	Star Jasmine	
	Tulbaghia violaceae	Ornamental Chive	
	Zephyranthes candida	False Crocus	
	Zoysia tenuifolia	Dwarf Korean Grass	



LANDSCAPE TREATMENT- GENERALLY
The landscape treatment for the proposed development is directed towards the establishment of an attractive setting for the built forms, emphasising site integration and amenity.
Treatment will be fully integrated with storm water requirements and based on water sensitive design principles e.g.: efficient irrigation design, maximising storm water infiltration etc.
C.P.I.E.D. principles will be incorporated throughout the development with species selected being compatible with casual surveillance requirements.
The garden layouts are based on simple geometric forms, reflecting the built forms set within. This ensures visual unity, integration and interest.

PLANTING APPROACH
Plant arrangements are designed to maximise visual amenity (attractiveness) and visual coherence. Plant layering produces simple and easily maintained visual landscape.
Planting is designed to reinforce elements of the built form and site layout e.g. articulating entry points and circulation, creating a sense of enclosure, establishing focal points and emphasis on elements, providing amenity shade and establishing visual screening.
Plant selection is based on site suitability and longevity, with an emphasis on native plants.
Shrubs in particular, are selected for hardiness, longevity and according to their ability to retain vigour with periodic pruning to maintain shape.

REFER SHEET LCP04 FOR SPECIMEN PLANTING SCHEDULE.

EXISTING HOSTEL

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/167-2021
Dated: 20 September 2022



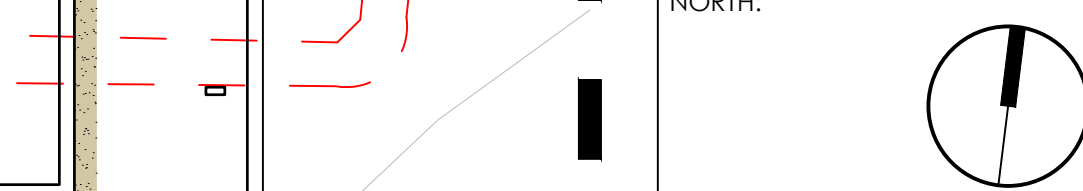
EXAMPLE IMAGE 6
LOW HEIGHT MASS PLANTING.



EXAMPLE IMAGE 7
LOW HEIGHT MASS PLANTING.

EXISTING GARDEN BED- REDEVELOPED AND ENLARGED AS INDICATED.

EXISTING GARDEN BED.



DATE: OCT 2021 DRAWN: DB SCALE: 1:100 AT A1

PROJECT NO.: 964 DWG NO.: 964-LCP06 REVISION: B

LEGEND:

- GRASS GRASSED AREA
- GB GARDEN BED ORGANIC MULCHED.
- CONC CONCRETE PAVING SELECT COLOUR AND TEXTURED FINISH AS NOTED.
- GM GRAVEL MULCH WASHED RIVERSTONE.
- DEMOLITION
- CE CONCRETE EDGE EXTRUDED CONCRETE.
- E+ EXISTING TREE TO BE RETAINED.
- NEW TREE AS NOTED.

THIS SHEET TO BE PRINTED IN COLOUR.

REV.	DATE	DETAILS	INITIAL
B	14.2.2022	OPTIONAL SWALE INCLUDED.	DB
A	3.12.2021	ISSUE FOR APPROVALS.	DB
P1	16.11.2021	PRELIMINARY ISSUE.	DB

Figured dimensions take precedence over those scaled.
Verify all dimensions on site before commencing any work or shop drawings. If any doubt ask.
Copyright of all drawings and documents and of the work executed is vested in the Principal's Consultants.

THIS DOCUMENT DESCRIBES THE FULL INTENT OF LANDSCAPE DESIGN.
ALDERSON+ ASSOCIATES TAKE NO RESPONSIBILITY FOR ANY 'AS CONSTRUCTED' VARIATION FROM THEIR DRAWINGS AND DOCUMENTS, INCLUDING HARD LANDSCAPING SETOUT AND SOFT LANDSCAPING INSTALLATION.

ALDERSON + ASSOCIATES LANDSCAPE ARCHITECTS

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PH:040 991 5853
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GLADSTONE: OLD MANY PEAKS SCHOOL
BOYNE VALLEY, QLD 4680
EMAIL: design@landscapearchitects.com.au

CLIENT:
MERCY HEALTH+ AGED CARE CENTRAL QLD. LTD.

PROJECT:
MERCY CARE RACF ROCKHAMPTON

75 WARD STREET, ROCKHAMPTON.

DRAWING TITLE:
LANDSCAPE CONCEPT PLAN 6: STAGE 2/3- 90 BED RACF + KITCHEN

MATCHLINE- Landscape Drawing 964-LCP05 Adjoins.

THIS SHEET TO BE PRINTED IN COLOUR.

AGNES STREET

EXISTING TREE TO BE RETAINED TYP.
WHERE PERMITTED BY NEW SOIL DEPTH.

NEW ARBOR TO LEADING EDGE OF TERRACE
SUPPORTING CLIMBING ROSES.
SEATING UNDER ADJOINING ARTIFICIAL
GRASSED AREA.

NEW TALL PLANTINGS AS SCREEN TO
COURTYARD AND TERRACE.
SPECIES EXAMPLE:
• Eucalyptus eumundi (EUMUNDI
QUANDONG)

NEW FENCE TO BOUNDARY AS PER
ARCHITECTURAL SCHEME.

NEW LOW HEIGHT RETAINING WALL TO
EDGE OF TERRACE.

PROPOSED SWALE AS PER STORMWATER
MANAGEMENT REPORT (SECOND OPTION).
MASS PLANTED WITH SELECT SPECIES SUCH AS
LIRIOPE (VARIOUS CULTIVARS).
SPECIES MASSING TO BE ADJUSTED TO SUIT
SHOULD THIS OPTION BE IMPLEMENTED.

NEW LOW HEIGHT MASS PLANTINGS TO
STREET FRONTAGE / BATTER.

LEGEND:

- GRASS GRASSED AREA
- GB GARDEN BED ORGANIC MULCHED.
- CONC. CONCRETE PAVING SELECT COLOUR AND TEXTURED FINISH AS NOTED.
- GM GRAVEL MULCH WASHED RIVERSTONE.
- ART-G ARTIFICIAL GRASS PROPRIETARY ITEM.
- DEMOLITION
- CE CONCRETE EDGE EXTRUDED CONCRETE.
- EXISTING TREE TO BE RETAINED.
- NEW TREE AS NOTED.

STREET BOUNDARY ALIGNMENT

Planting of varying heights, to the street frontage softens the built form, visually integrates it with the site, enhances the sense of arrival and visual appeal of the development, and provides a simple spatial definition between public and private space. Trees in particular aid in moderating the scale of the building by providing a graduated sense of height around the perimeter.

AMENITY SHADE

The provision of shade trees where possible, is an integral theme of the proposed landscape treatment. Shade trees are located adjacent paved areas to reduce heat and glare reflected from these hard surfaces. Shade trees also reduce the amount of heat load on the building. Shade trees further aid the integration of the building by modifying its scale and acting as a partial visual screen from the surrounding landscape. Shade tree species are carefully selected based on their suitability for incorporation around buildings and infrastructure.



EXAMPLE IMAGE 2
ARTIFICIAL GRASSED AREA.



EXAMPLE IMAGE 3
PLEACHED TREES AS HIGH SCREEN.



EXAMPLE IMAGE 4
BACKED SEATING WITH CORNER BENCH.



EXAMPLE IMAGE 5
SENSORY GARDEN.

RAISED PLANTER PARTLY OFFERING ACCESSIBLE, PERSONAL
CHOICE. PLANTING FOR RESIDENTS AND SPATIAL SEPARATION
FROM ADJOINING UNITS.

NEW PROPRIETARY CORNER SEATING FORMING
ALCOVE.

NEW SMALL FLOWERING TREE SET IN TREE GRATE

NEW RAISED GARDEN BED WITH LARGE WATER BASIN.
LOCATED CENTRALLY TO COURT AS INWARD FOCAL
POINT.

NEW OUTDOOR AREA AS PER ARCHITECTURAL SCHEME.

NEW SMALL FLOWERING TREE SET IN TREE GRATE

NEW PROPRIETARY CORNER SEATING FORMING
ALCOVE.

RAISED PLANTER PARTLY OFFERING ACCESSIBLE, PERSONAL
CHOICE. PLANTING FOR RESIDENTS AND SPATIAL SEPARATION
FROM ADJOINING UNITS.

STAGE 2
90 BED RACF

RAISED PLANTER AS PER ARCHITECTURAL
SCHEME.

NEW MASS PLANTED PALM GROVE
WITH DENSE UNDERSTOREY FLANKING ENTRY.
PARTIAL ON-PODIUM AREA WITH MOUNDING
FOR SOIL DEPTH.
PALMS TO PROVIDE SHADE TO SEATING AREA
AND MODERATE BUILDING SCALE.

SEATING AREA IN PALM GROVE - ARTIFICIAL GRASSED
AREA WITH PROPRIETARY CORNER SEATING.

SEATING AREA IN PALM GROVE - ARTIFICIAL GRASSED
AREA WITH PROPRIETARY CORNER SEATING.

NEW MASS PLANTED PALM GROVE
WITH DENSE UNDERSTOREY FLANKING ENTRY.
PARTIAL ON-PODIUM AREA WITH MOUNDING
FOR SOIL DEPTH.
PALMS TO PROVIDE SHADE TO SEATING AREA
AND MODERATE BUILDING SCALE.

RAISED PLANTER AS PER ARCHITECTURAL
SCHEME.

PATIO

NEW COURT
ART-G

NEW PATH
CONC.

EXISTING
CONCRETE PATH

RAMP TO
BASEMENT

NEW HYDRANT
BOOSTER+ PLANT

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/167-2021

Dated: 20 September 2022

LOCATION FOR NEW SIGNAGE AS PER
ARCHITECTURAL SCHEME. LOW HEIGHT
PLANTING IN FOREGROUND.

SPENCER STREET

REFER SHEET LCP04 FOR SPECIMEN PLANTING SCHEDULE.

REV.	DATE	DETAILS	INITIAL
B	14.2.2022	OPTIONAL SWALE INCLUDED.	DB
A	3.12.2021	ISSUE FOR APPROVALS.	DB
P1	16.11.2021	PRELIMINARY ISSUE.	DB

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ALDERSON +
ASSOCIATES
LANDSCAPE
ARCHITECTS

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GLADSTONE: OLD MANY PEAKS SCHOOL
BOYNE VALLEY, QLD 4680
EMAIL: design@landscapearchitects.com.au

CLIENT:
MERCY HEALTH+
AGED CARE
CENTRAL QLD. LTD.

PROJECT:
MERCY CARE RACF
ROCKHAMPTON

75 WARD STREET, ROCKHAMPTON.

DRAWING TITLE:
LANDSCAPE
CONCEPT PLAN 5:
STAGE 2- 90 BED RACF

NORTH:

DATE: OCT 2021 DRAWN: DB SCALE: 1:100 AT A1

PROJECT NO.: 964 DWG NO.: 964-LCP05 REVISION: B



Janes and Stewart Structures Pty Ltd
ABN: 30 620 233 025
120 William Street, PO Box 1072
Rockhampton 4700
07 4922 1948
janes.and.stewart@jsstructures.com.au

Letter – 21145LETTM01
Gideon Town Planning
PO Box 450
Rockhampton, QLD 4700

Attention: Gideon Genade
gg@gideontownplanning.com.au

Dear Gideon,

**Technical Letter – Traffic and Stormwater
Bethany New Residential Aged Care Facility
75 Ward Street, The Range**

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: D/167-2021

Dated: 20 September 2022

Janes and Stewart Structures has prepared this technical letter in support of the Development Application for a proposed 90 bed residential aged care building at the existing Bethany Aged Care facility located at 75 Ward Street, The Range, Rockhampton. A development application has been lodged with Rockhampton Regional Council for the project with draft conditions released by the Council prior to decision of the application. The design of the project has been evolving during this time which has led to some minor amendments being made to the overall development proposal. This in turn has resulted in some adjustments to the traffic and stormwater strategy submitted in the initial development application, where a Traffic Impact Assessment and a Stormwater Management Report were completed by McMurtrie Consulting Engineers (MCE). The intent of this letter is to provide an overview of the stormwater and traffic alterations further to the previous completed reports.

Traffic

The Traffic Impact Assessment by MCE specifies that an additional 30 on-site car parking spaces are required as a result of the development. The initial development application included a basement car park under the new residential aged car building. The basement car park has since been removed from the project and the additional required car parks have been incorporated into new and modified on-grade car parks on the site. The development will also remove 16 on-site car parks which has been considered into the car parking strategy to ensure that the net total increase of car parks of 30 is achieved.

The amended on-site car parking strategy is shown on the site plan and development summary drawing A-1.01, Rev 3 prepared by Thomson Adsett which is attached to this letter.

The existing on-site car park off Spencer Street is intended to be modified to suit the development proposal whilst maintaining access via the existing Spencer Street crossover. A new off-street car park is now proposed further to the east on the site accessing via an existing concrete crossover off

Spencer Street, referenced as the 'lower car park'. The lower car park will also incorporate a space to park a 7.7m long mini bus. This bus parking will not act as a bus stop and it will only be used to store the bus on-site. The turnpath of a 7.7m Rosa bus using the car park has been included on the SK101 [1] drawing attached. The area of this new lower car park is presently used as informal overflow parking which is accessed via a separate slab and tracks crossover from Spencer Street. This crossover is intended to be removed with the proposal, therefore reducing the number of crossovers to the site along Spencer Street. Based on the amended on-site car parking arrangement off Spencer Street, we believe that there will be no change to the overall traffic generation and insignificant impact to the traffic situation of Spencer Street fronting the site, as specified in the MCE Traffic Impact Assessment.

Modification to the existing on-site car park accessing off Ward Street is also proposed opposite the existing Bethany building. The Ward Street crossover to this car park and the refuse collection loading area will be maintained. The initial development application also included new on-site car parking off Ward Street, however the revised car park arrangement includes a reduced number of new car parks in this area and also consolidates the parking with access obtained via one existing crossover as opposed to two. Therefore, we believe there is no significant change in this area from what was previously provided in the MCE Traffic Impact Assessment.

The following table provides an overview of the intended off-street car parking yield for the 3 on-site car park areas mentioned above:

Table 1 Car Park Summary

Description	No. of Car Parks in Proposal	No of Removed Car Parks
Modified Upper Car Park off Spencer Street (between Community Building and New Aged Care)	25	16
New Lower Car Park off Spencer Street	34	
New Car Park off Ward Street	12	
Total Car Parks	71	
Total Additional Car Parks	+30 (46-16)	

In summary, the amended traffic strategy is similar to the initial development application proposal with the same number of additional on-site car parks provided. The changes in the car parking layout and traffic situation is considered insignificant to the information provided in the MCE Traffic Impact Assessment.

Stormwater Drainage

The options presented for the stormwater drainage strategy for the development proposal within the initial MCE Stormwater Management Report will remain generally unchanged based on the amended layout. The imperious area for the modified upper car park off Spencer Street and the car parking off Ward Street is similar to the proposed in the initial development application and discharge locations remain the same, resulting in negligible change to the stormwater situation.

The new lower car park off Spencer Street will result in a small increase in the impervious area on the Bethany Site. This portion of the site currently discharges overland to the Jessie Street road reserve. As the existing area for the new lower car park is a generally a bare earth surface from regular vehicle movements from overflow parking, this surface would have high impervious

properties. Therefore, we believe the minimal increase in impervious area from the new sealed car park will have minimal impact to the Jessie Street road reserve as the legal point of discharge. This car park is also located at the lower end of the site and will therefore peak flows from the car park should discharge prior to peak flows from the upper catchment, resulting in a non coincidental peak scenario of the contributing catchments to the Jessie Street road reserve. Therefore, we envisage no stormwater detention measures would be necessary for this additional lower car park works.

Stormwater from the new lower car park is intended to be conveyed via overland surface flow directed by kerb and channel on the northern side of the car park, following in the same general direction as the existing surface flows. Stormwater inlets within the kerb and channel will be incorporated to create a new piped connection for minor design storm flows to the Jessie Street kerb and channel, with the gap flow between the minor and major assigned design storms to discharge to Jessie Street, in line with the existing scenario.

The preliminary stormwater layout for the lower car park can be seen on SK100 [1] prepared by Janes and Stewart Structures Pty Ltd attached to this letter.

Given the minimal increase in the impervious properties for this portion of the site where the lower car park is proposed, specific Stormwater Quality treatment is not proposed. The MCE Stormwater Report provides a water quality strategy for the remainder of the development which will be generally maintained.

We have cited draft conditions for the development approval of this project which were released by Rockhampton Regional Council. Within these conditions, we note that the Council plans to condition that an updated stormwater management report is to be submitted with the further Operational Works application. Should Council require any further information relating to the stormwater management strategy, there is opportunity to provide this information in the updated stormwater report.

If you should have any queries relating to this technical letter, please feel free to contact our office and speak with Matthew Dennis.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'Matthew Dennis'.

Matthew Dennis

Senior Civil Engineer (RPEQ 24862)

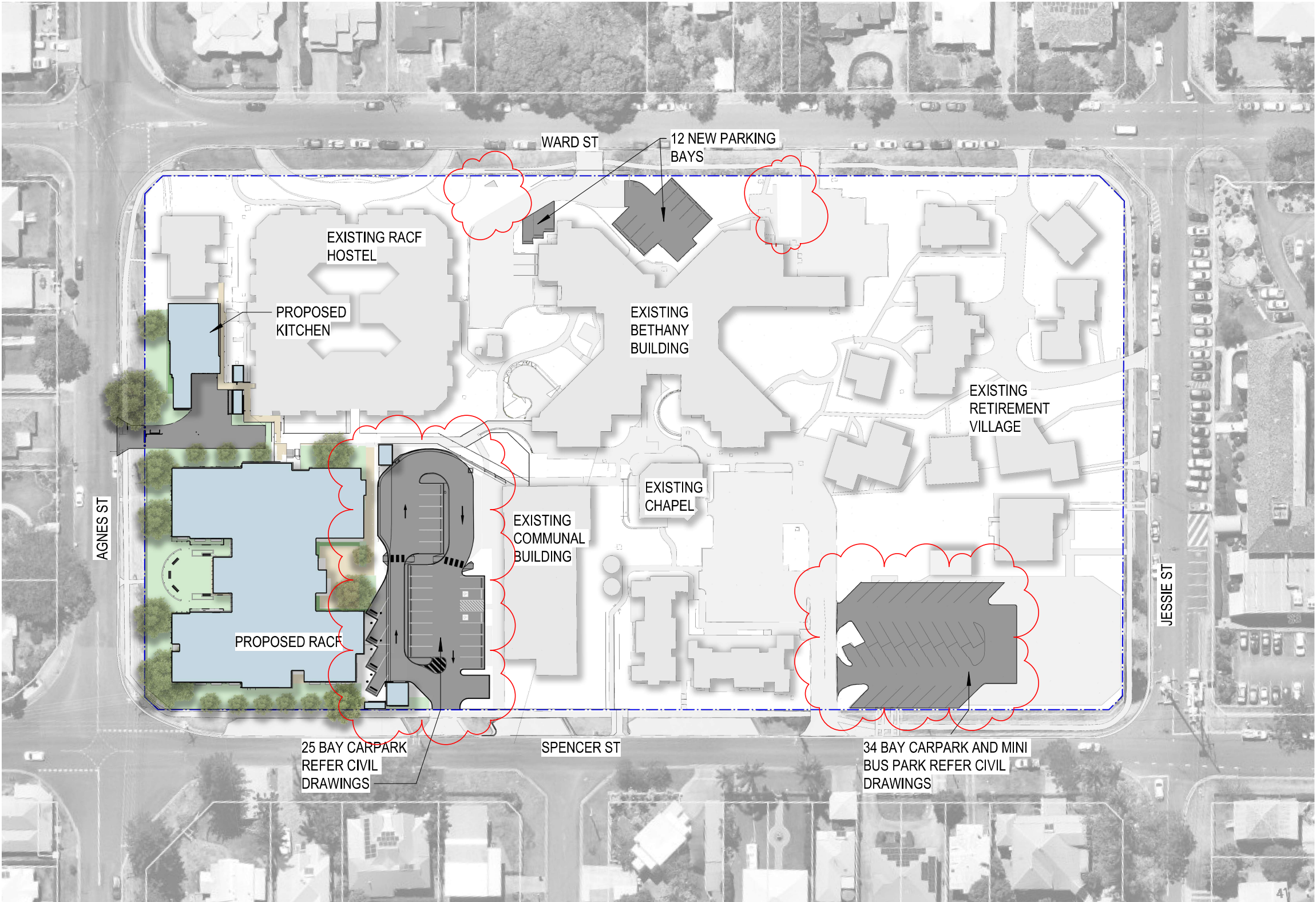
for and on behalf of Janes and Stewart Structures Pty Ltd

ATTACHMENTS

1. Site Plan and Development Summary A-1.01, Rev 3 (prepared by Thomson Adsett)
2. SK100 – Lower Car Park Layout (prepared by Janes and Stewart Structures)
3. SK101 – Lower Car Park Turnpath – Rosa Bus (prepared by Janes and Stewart Structures)

COPIES

1. Specialised Property Consulting (SPC) – Peter Fraser, Eric Williamson
2. Thomson Adsett – Blake Challen



DEVELOPMENT SUMMARY

NUMBER OF BEDS RACF

GROUND FLOOR	30
LEVEL 1	30
LEVEL 2	30

TOTAL 90

CAR PARKING

NEW BAYS OFF WARD ST	12
NEW BAYS OFF SPENCER ST	34
REMOVED EXISTING BAYS OFF SPENCER ST	-16

TOTAL ADDITIONAL CAR PARKS 30

SITE COVERAGE

SITE AREA: 26711.85 m²

BUILDING COVER	
EXISTING BUILDINGS	6593.2 m²
90 BED RACF	1743.8 m²
KITCHEN	291.2 m²

TOTAL 8628.2 m²
SITE PERCENTAGE 32.3%

GROSS FLOOR AREA

RACF GFA

GROUND FLOOR	1513 m²
LEVEL 1	1577 m²
LEVEL 2	1484 m²
Grand total	4574 m²

KITCHEN GFA

KITCHEN GROUND 131 m²

TOTAL DEVELOPMENT GFA 4705 m²

LANDSCAPED AREA

PERCENTAGE 9818 m²
36.7%

SITE PLAN - 1:1000

DEVELOPMENT APPLICATION



MERCY CARE RACF - ROCKHAMPTON

75 WARD STREET,
THE RANGE, QLD 4700

MERCY HEALTH & AGED CARE CENTRAL QUEENSLAND LIMITED

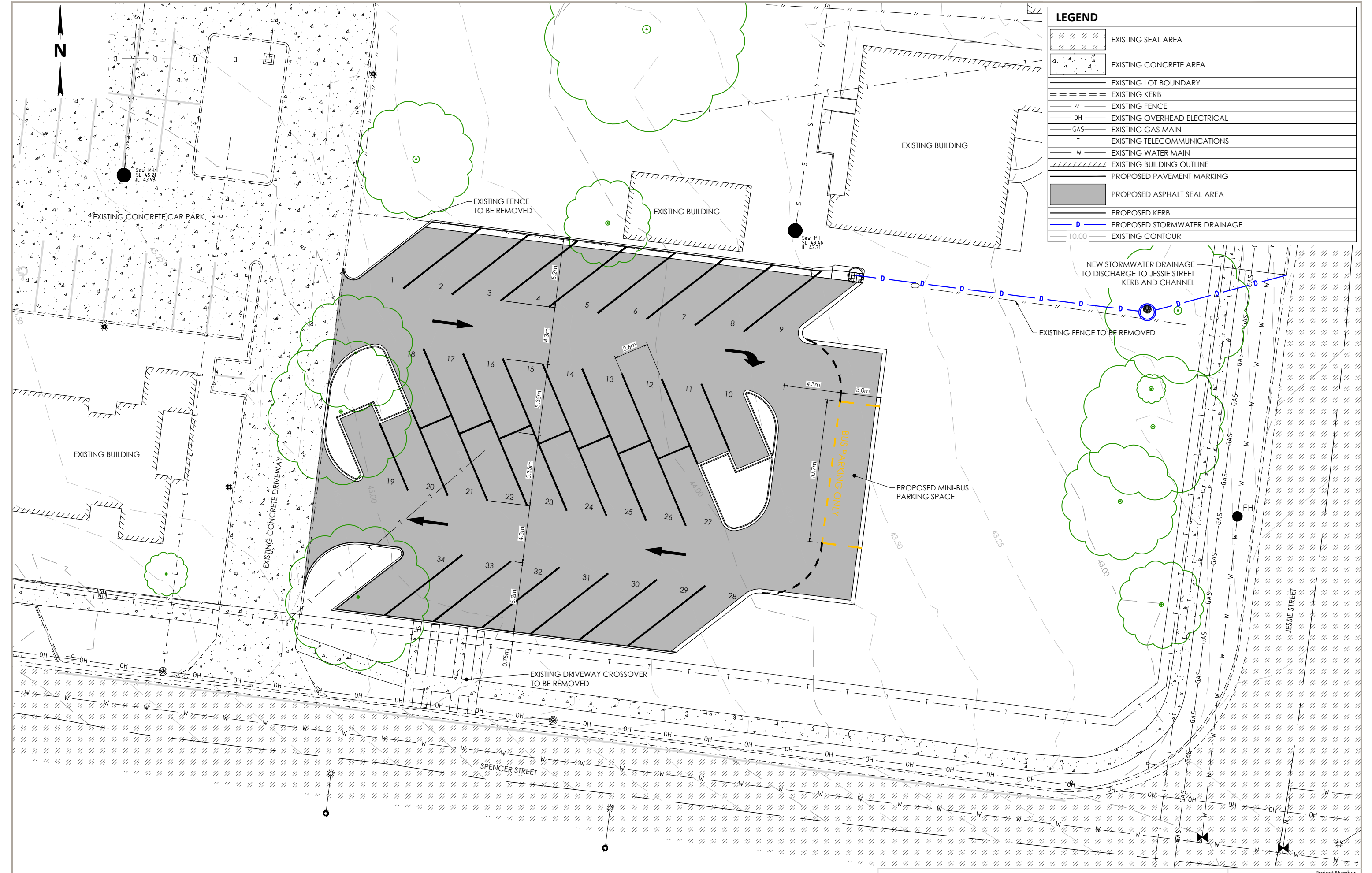
TA# 21.0013.17

thomson
adsett

SITE PLAN & DEVELOPMENT
SUMMARY

@ A3
A-1.01

30/06/2022
rev. 3



LEGEND	
	EXISTING SEAL AREA
	EXISTING CONCRETE AREA
	EXISTING LOT BOUNDARY
	EXISTING KERB
	EXISTING FENCE
	EXISTING OVERHEAD ELECTRICAL
	EXISTING GAS MAIN
	EXISTING TELECOMMUNICATIONS
	EXISTING WATER MAIN
	EXISTING BUILDING OUTLINE
	PROPOSED PAVEMENT MARKING
	PROPOSED ASPHALT SEAL AREA
	PROPOSED KERB
	PROPOSED STORMWATER DRAINAGE
	EXISTING CONTOUR

CAR PARK NUMBER SUMMARY	
DESCRIPTION	NO.
STANDARD CAR PARK BAYS	34

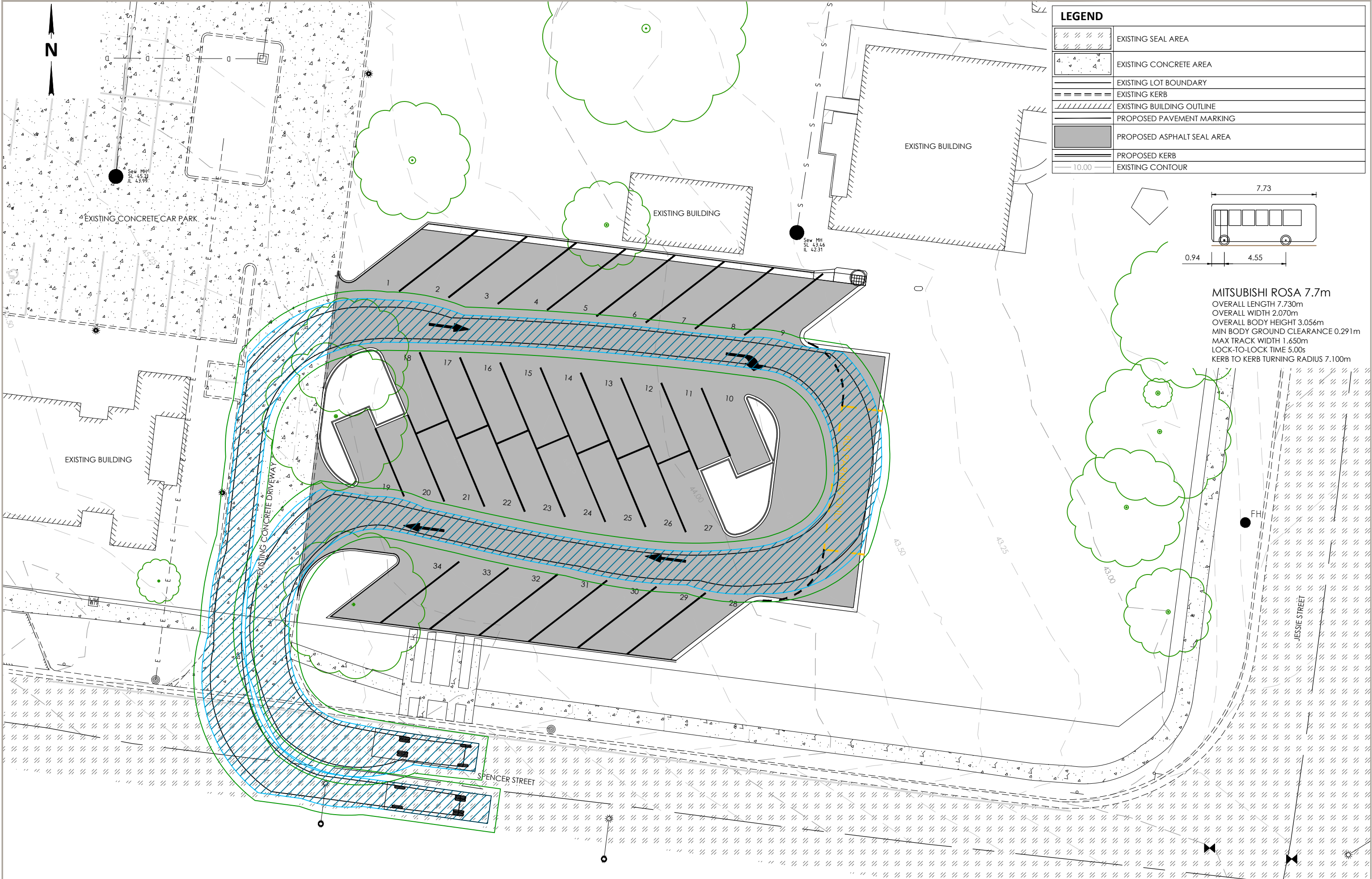
RESIDENTIAL AGED CARE FACILITY
BETHANY ROCKHAMPTON

0 1.25 5.0m 1:250

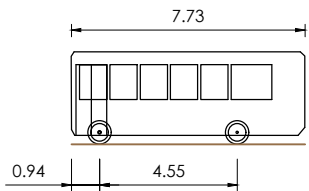
Janes and Stewart Structures Pty Ltd
120 William Street | Po Box 1072
Rockhampton 4700
07 4922 1948
janes.and.stewart@jsstructures.com.au
ABN 30 620 233 025



SK100[1]	Project Number
21145	Date
22/06/2022	
LOWER CAR PARK LAYOUT CNR SPENCER ST & JESSIE ST	



LEGEND	
	EXISTING SEAL AREA
	EXISTING CONCRETE AREA
	EXISTING LOT BOUNDARY
	EXISTING KERB
	EXISTING BUILDING OUTLINE
	PROPOSED PAVEMENT MARKING
	PROPOSED ASPHALT SEAL AREA
	PROPOSED KERB
	EXISTING CONTOUR



MITSUBISHI ROSA 7.7m
OVERALL LENGTH 7.730m
OVERALL WIDTH 2.070m
OVERALL BODY HEIGHT 3.056m
MIN BODY GROUND CLEARANCE 0.291m
MAX TRACK WIDTH 1.650m
LOCK-TO-LOCK TIME 5.00s
KERB TO KERB TURNING RADIUS 7.100m

RESIDENTIAL AGED CARE FACILITY
BETHANY ROCKHAMPTON

0 1.25 5.0m
1:250

Janes and Stewart Structures Pty Ltd
120 William Street | Po Box 1072
Rockhampton 4700
07 4922 1948
janes.and.stewart@jsstructures.com.au
ABN 30 620 233 025



SK101[1] Project Number

21145 Date

22/06/2022

LOWER CAR PARK
TURNPATH - ROSA BUS