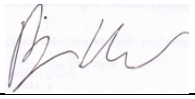
15 January 2024

Doctors & Co.
Level 8/25 Restwell Street,
Bankstown NSW 2200

Proposed new Medical Centre at 11 Cessnock Road, Gillieston Heights

PREPARED BY	BENNY CHEN – PRINCIPAL TRAFFIC ENGINEER MEngSc, MPublicPolicy, NER 	
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REPORT VERSION	DATE	STATUS (FINAL/DRAFT)*
N233055N (Version 1b)	December 2023	FINAL
N233207A (Version 1b)	January 2024	FINAL

Please find attached the Traffic and Parking Impact Assessment [N233055N (Version 1b)], and Car Park Certification, including Swept Paths [N233207A (Version 1b)], in relation to the proposed **new Medical Centre** (the proposal) at **11 Cessnock Road, Gillieston Heights** (the site).

If you have any questions regarding this submission, please do not hesitate to contact TP Consulting.

Yours faithfully,

David Tran *B. Planning (Hon)*
TP Consulting

TRAFFIC AND PARKING IMPACT ASSESSMENT

Proposed Medical Centre

11 Cessnock Road, Gillieston Heights

Prepared for: Doctors and Co

N233055N (Version 1b)

December 2023

1.INTRODUCTION

This Traffic and Parking Impact Assessment (TPIA / Report) relates to a Proposed Medical Centre at 11 Cessnock Road Gillieston Heights (corner of Cessnock Road with Beckett Street).

The site is currently a residential dwelling house and unoccupied.

This Report presents an assessment of the anticipated transport implications of the Proposed Medical Centre, with the following considerations:

- Background and existing traffic and parking conditions of the Proposed Medical Centre
- Assessment of the public transport network within the vicinity of the site
- Adequacy of car, bicycle and motorcycle parking provision
- The projected traffic generation of the Proposed Medical Centre and;
- The transport impact of the Proposed Medical Centre on the surrounding road network.

In the course of preparing this assessment, the proposed medical centre and its environs have been inspected, plans of the development examined, and all relevant traffic and parking data collected and analysed.

2. BACKGROUND AND EXISTING CONDITIONS OF THE PROPOSED MEDICAL CENTRE

2.1. Location and Land Use

The Proposed Medical Centre is located at the corner of Cessnock Road and Beckett Street.

The site is located in the Cessnock local centre and Gillieston Heights Take Away Pizza and bottle shop is located adjacent to the proposed medical centre. An Oakwood Village is located towards the north-east side of the proposed medical centre. The immediate surroundings of the site are retail businesses, residential dwellings and recreational areas.

The proposed medical centre has a site frontage with a vehicle access and egress via Beckett Street.

Figures 1 and 2 show the location of the proposed medical centre from aerial and street map perspective respectively. Figure 2 also shows the location of the surveyed intersections in relation to the site.

Figure 3 shows a photography of the site frontage taken from Cessnock Road and Beckett Street respectively.

Figure 1: Location of the Proposed Medical Centre on Aerial

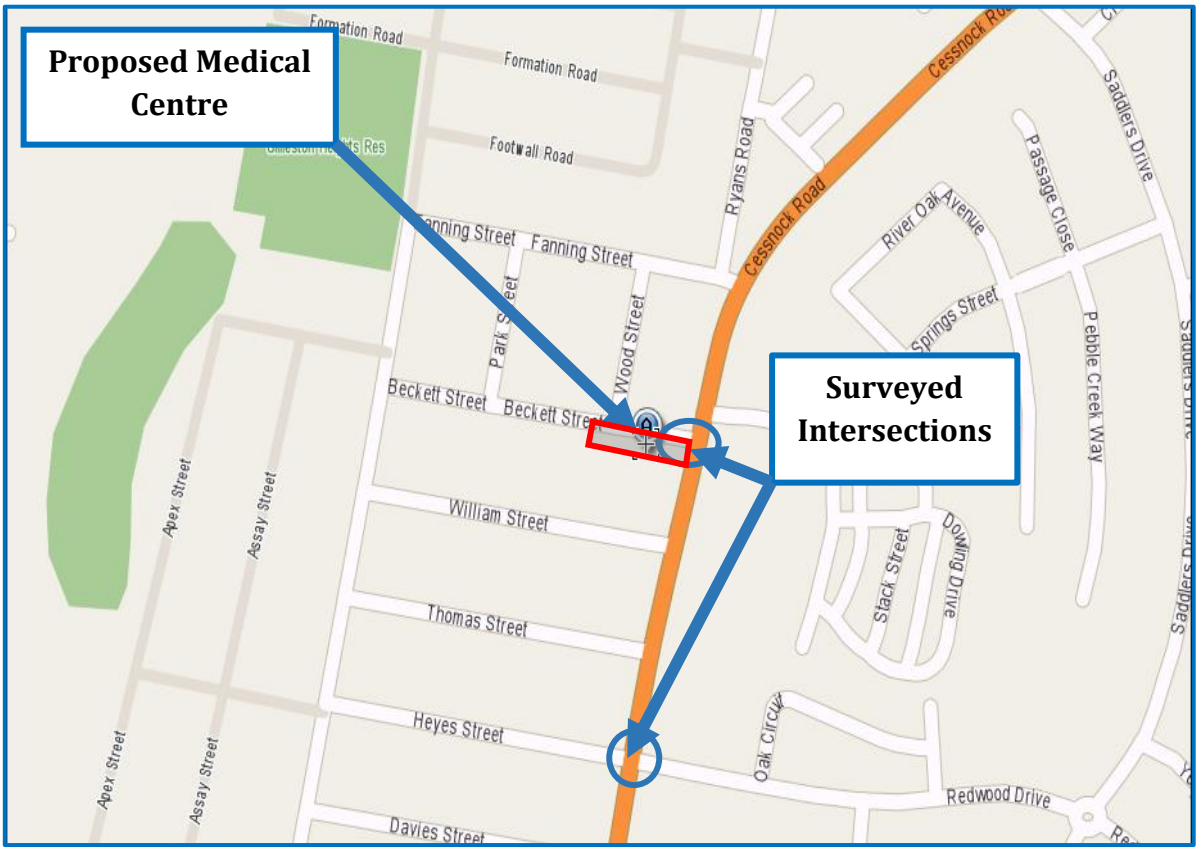

Figure 2: Location of the Proposed Medical Centre on Aerial

Figure 3A: Photograph of the proposed medical centre from Cessnock Road

Figure 3: Photograph of the proposed medical centre from Beckett Street

2.2. Road Network

This section discusses the road network adjacent to the proposed medical centre.

Heyes Street is a local road with one lane of traffic each way and the default speed limit of 50km/hr. Time un-restricted on-street parking is permitted on both sides of this road. Figure 4a present photograph of Heyes Street.

Cessnock Road is a sub-arterial road with one lane of traffic within Gillieston Heights. There is "centreline" treatment in a median island, painted islands, painter lines running off concrete median islands. The parking lane is marked out where it is permitted. All right turn lanes are line marked on Cessnock Road. The bicycle lane is marked out. Cessnock Road is a well-planned and built road within Gillieston Heights (credit to Council and the community). The sign posted speed limit of 60 km/hr. Figure 4b show photograph of Cessnock Road.

Beckett Street is a local road with one lane of traffic each way. The default speed of this road is 50 km/hr. Time un-restricted on-street parking is permitted on both sides of the road. Figure 4c shows a photograph of Beckett Street.

Figure 4a: Heyes Street looking East to the intersection of Cessnock road and Beckett Street

Figure 4b: Cessnock Road: looking South from proposed medical centre

Figure 4c: Beckett Street: looking South-west from intersection of Cessnock Road and Beckett Street

2.3.Public Transport

The proposed medical centre is located within 50 metres short walking distance from the bus stops located on Cessnock Road. These bus stops are serviced by bus route 164. Also, there is a bus stop on Maitland Train Station serviced by bus route 164. These services provide transport to suburbs including Gillieston Heights, Maitland and Cessnock.

Overall, the site has access to the public transport. Figure 5 shows the public transport map with respect to the location of the site.

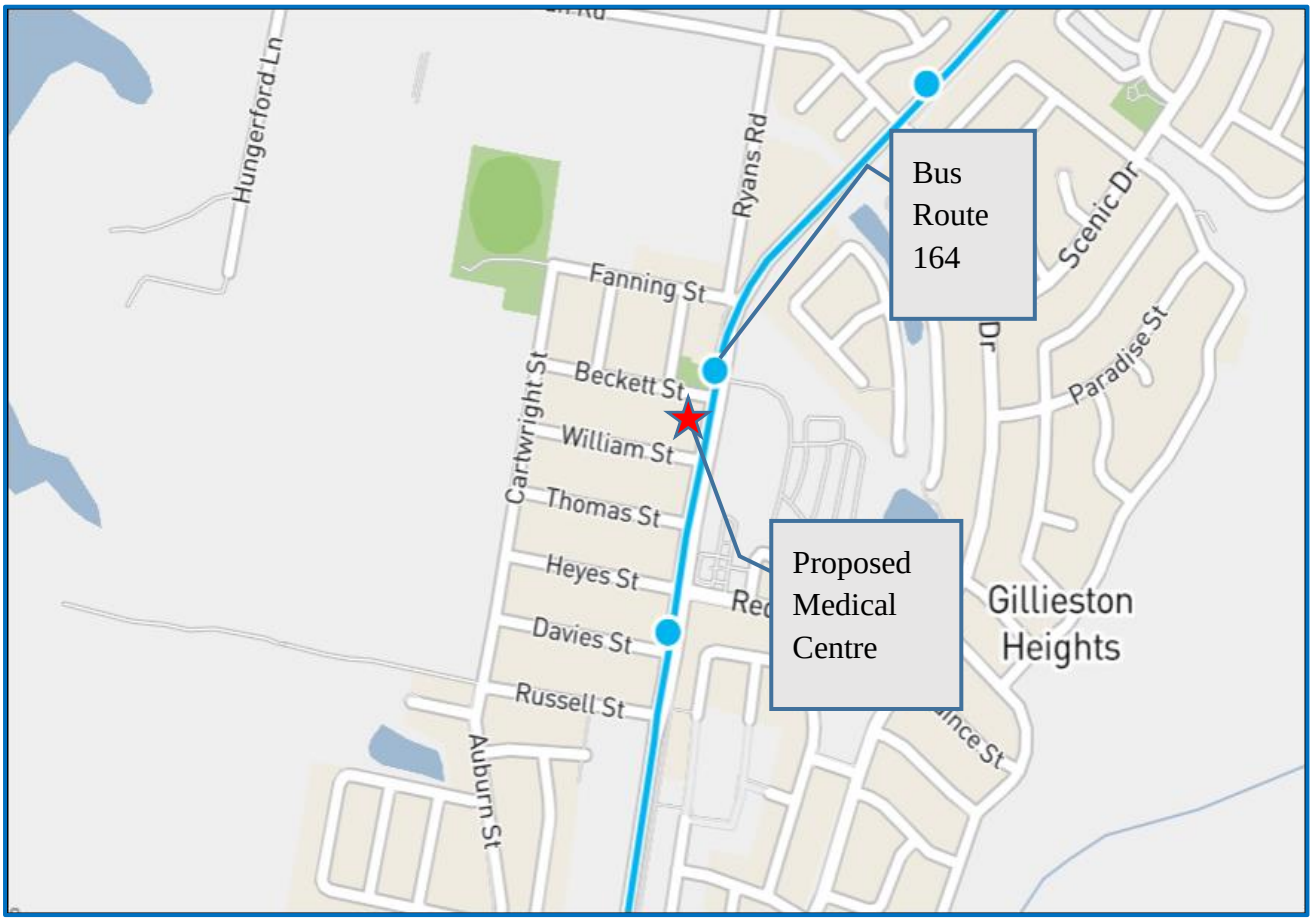

Figure 5b: Bus route 164 Map and the Proposed Medical Centre Location

2.4.Public Parking

The proposed medical centre is located in a residential zone where on-street parking is permitted along Beckett Street.

Site visits show that there are vacant car spaces on Beckett Street with a driver needing minimal circulating to find a car space.

These on-street parking spaces can be utilised by visitors should any additional visitor parking demand arises.

2.5. Intersection Description

As part of the traffic impact assessment, the performance of the nearby intersection was surveyed and assessed:

- Priority intersection of Cessnock Road with Beckett Street
- Signalised intersection of Cessnock Street with Heyes Street and Redwood Drive

External traffic travelling to and from the development is likely to travel through the intersections mentioned above.

The priority intersection of Cessnock Road with Beckett Street is a three-leg intersection with only left turns permitted. Drivers on Beckett Street need give way to traffic on Cessnock Street. Figure 6a presents the layout of this intersection using SIDRA 9.1 – an industry standard intersection assessment software and Figure 6b represents the aerial view of the intersection.

The signalised intersection of Cessnock Road with Heyes Street is a three-leg intersection with all turn movements permitted. Short right lanes are provided on Cessnock Road. Pedestrian crossings are provided at each arm of the intersection. Figure 6c presents the layout of this intersection using SIDRA 9.1 and Figure 6d represents the aerial view of the intersection. The numbers on the lane represent the length of short lane in metres.

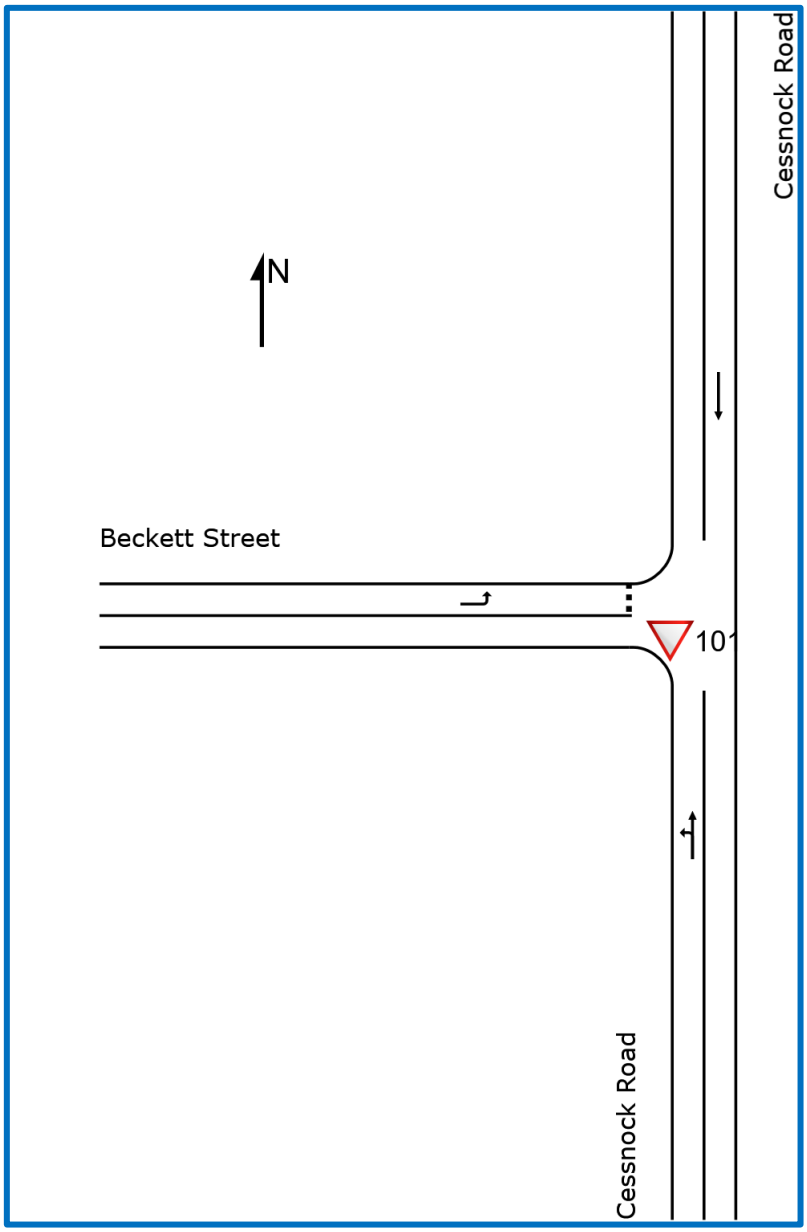

Figure 6a: Priority intersection of Cessnock Road with Beckett Street (SIDRA)

Figure 6b: Priority Intersection of Cessnock Road with Beckett Street Aerial View

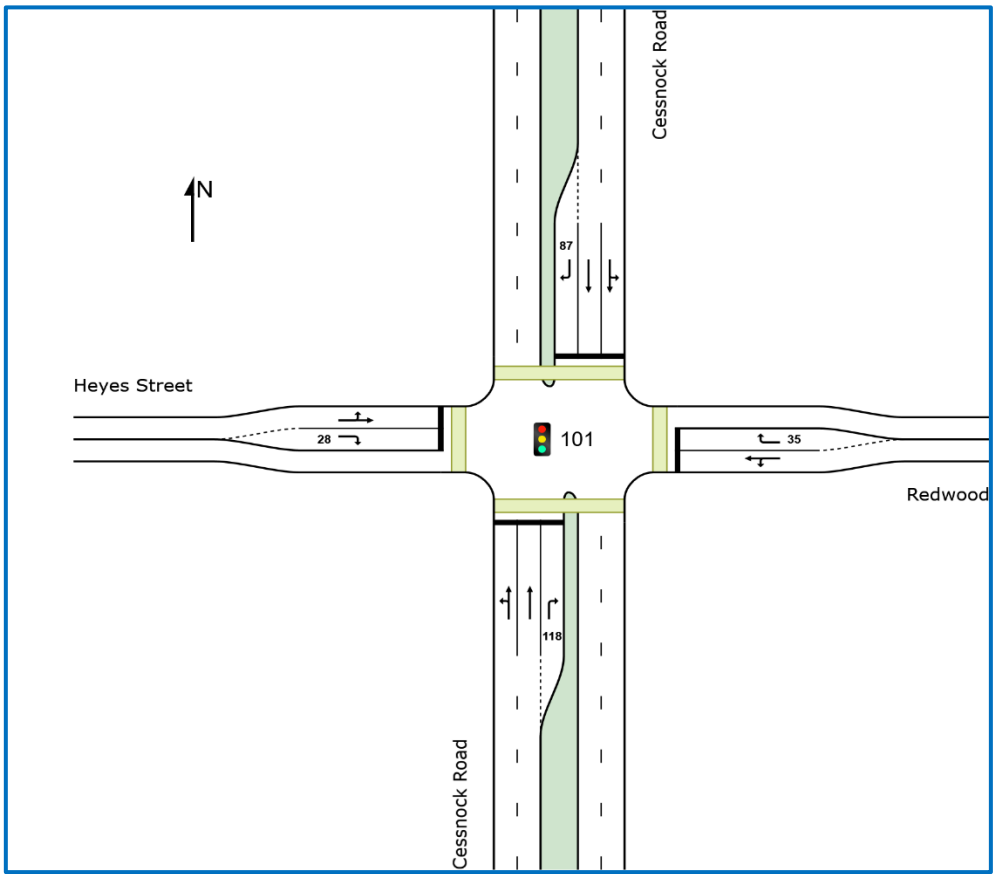

Figure 6c: Signalised intersection of Cessnock Road with Beckett Street and Redwood Drive (SIDRA)

Figure 6d: Signalised intersection of Cessnock Road with Heyes Street and Redwood Drive Aerial View

2.6. Existing Traffic Volume

As part of the traffic assessment, traffic counts have been undertaken at the above-mentioned intersections and the AM and PM peak hours are identified accordingly. The AM peak hour is 7:45an to 8:45am and the PM peak hour is 4:30pm to 5:30pm. The traffic survey was undertaken in November 2023.

The following figures present the traffic volumes in vehicles for the weekday peak hours. The bracketed numbers are trucks or buses, the unbracketed are cars.

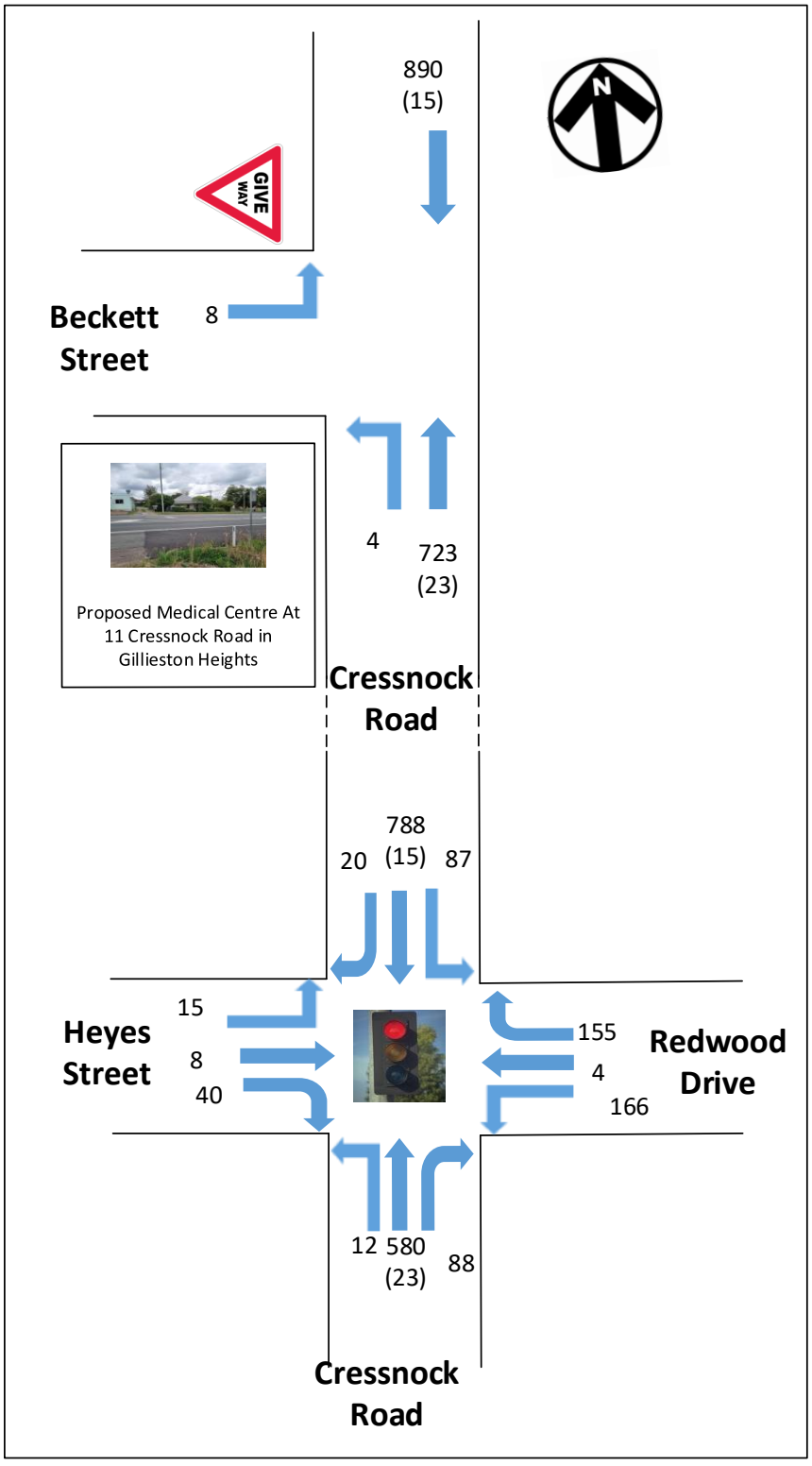

Figure 8a: Existing Weekday Traffic Volumes AM Peak Hour

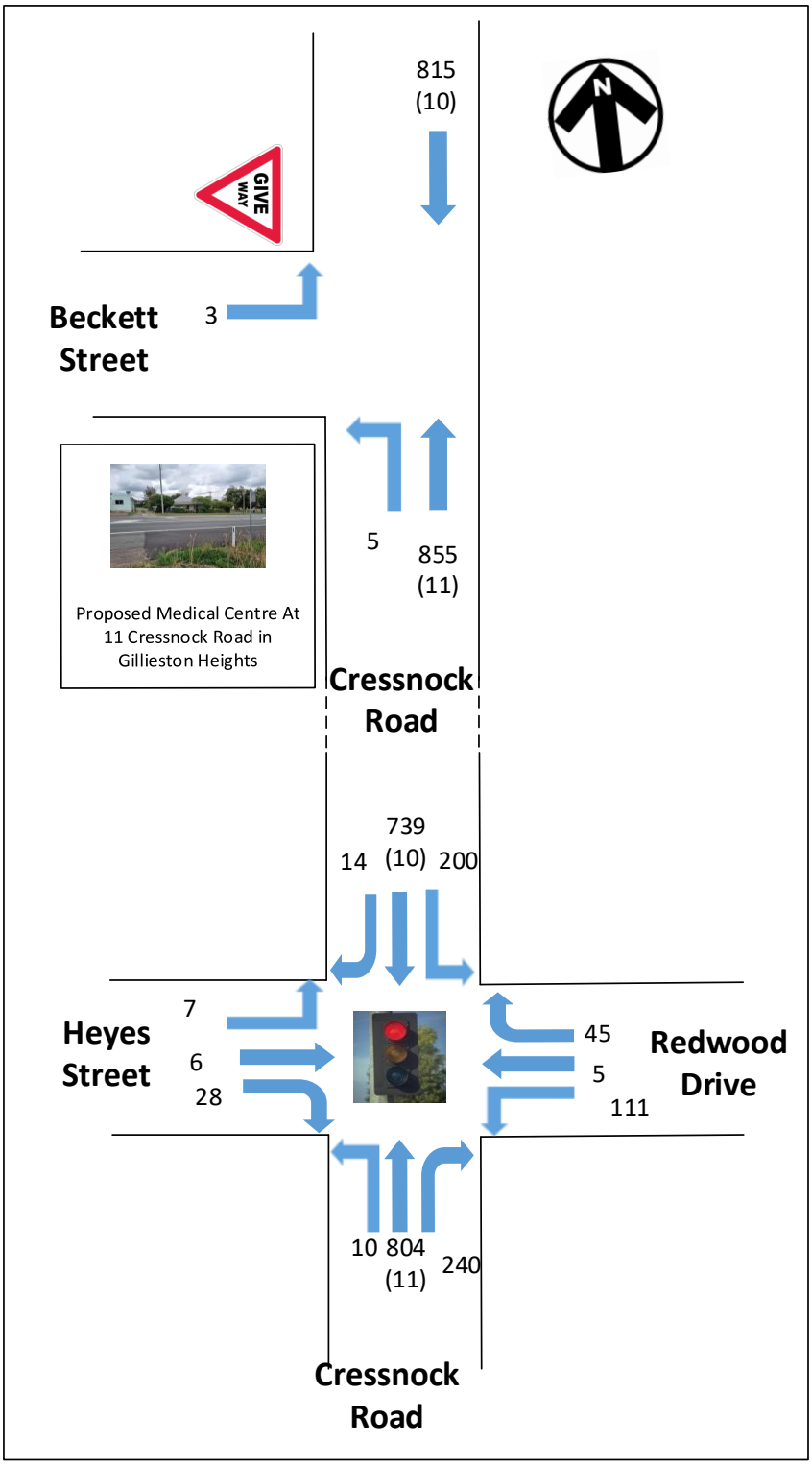

Figure 8b: Existing Weekday Traffic Volumes PM Peak Hour

2.7. Intersection Assessment with Existing Traffic

An intersection assessment has been undertaken for the:

- Priority intersection of Cessnock Road with Beckett Street
- Signalised intersection of Cessnock Street with Heyes Street and Redwood Drive

The existing intersection operating performance was assessed using the SIDRA software package (version 9) to determine the Degree of Saturation (DS), Average Delay (AVD in seconds) and Level of Service (LoS) at each intersection. The SIDRA program provides Level of Service Criteria Tables for various intersection types. The key indicator of intersection performance is Level of Service, where results are placed on a continuum from 'A' to 'F', as shown in Table 1.

LoS	Traffic Signal / Roundabout	Give Way / Stop Sign / T-Junction control
A	Good operation	Good operation
B	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	Satisfactory	Satisfactory, but accident study required
D	Operating near capacity	Near capacity & accident study required
E	At capacity, at signals incidents will cause excessive delays.	At capacity, requires other control mode
F	Unsatisfactory and requires additional capacity, Roundabouts require other control mode	At capacity, requires other control mode

Table 1: Intersection Level of Service

The Average Vehicle Delay (AVD) provides a measure of the operational performance of an intersection as indicated below, which relates AVD to LOS. The AVD's should be taken as a guide only as longer delays could be tolerated in some locations (i.e., inner city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route). For traffic signals, the average delay over all movements should be taken. For roundabouts and priority control intersections (sign control) the critical movement for level of service assessment should be that movement with the highest average delay.

LoS	Average Delay per Vehicles (seconds/vehicle)
A	Less than 14
B	15 to 28
C	29 to 42
D	43 to 56
E	57 to 70
F	>70

Table 2: Intersection Average Delay (AVD)

The degree of saturation (DS) is another measure of the operational performance of individual intersections. For intersections controlled by traffic signals both queue length and delay increase rapidly as DS approaches 1. It is usual to attempt to keep DS to less than 0.9. Degrees of Saturation in the order of 0.7 generally represent satisfactory intersection operation. When DS exceed 0.9 queues can be anticipated.

The results of the intersection analysis are as follows:

Intersection/ Performance criteria	AM Peak Hour Existing	PM Peak Hour Existing
Cessnock Road-Beckett Street		
LoS	N/A (worst A)	N/A (worst A)
AVD	0.2	0.2
DS	0.49	0.47
Cessnock Road -Beckett St and Redwood Drive		
LoS	C	C
AVD	25.7	29.2
DS	0.88	0.83

Table 3: Existing Intersection Performances

As presented in Table 3, both intersections are currently operating at excellent condition. Overall, there is spare capacity to accommodate the additional traffic. The full intersection results are presented in Appendix A.

2.8.Conclusion of existing conditions

The Proposed Medical Centre is located in an area where there are a reasonable number of vacant car spaces on a weekday along Beckett Street.

The nearby intersection performs well with sufficient spare capacity to accommodate additional traffic.

3.PROPOSED MEDICAL CENTRE

A description of the development for which approval is now sought features the following:

- Demolition of existing house and structures
- Construction of a new medical centre

3.1. Medical Centre

The proposed medical centre development consists of:

- Five consulting rooms
- One reception/waiting room
- Two Treatment/recovery room
- Two bathrooms + one accessible bathroom
- One staff room
- One write-up room
- One Pathology room
- One Procedure room
- One X-Ray room
- One Allied Health room
- One Manager room
- Two Ultra Sonogram room and;
- One Storage/IT room

Between 2-3 doctors, 1 nurse and 2 administration/support staff will be working in the proposed medical centre. It is anticipated that there will be between 5-6 patients in the waiting room at any one time.

A total of 401.25 m^2 GFA.

3.2.Car and Bicycle Parking

Car Parking is provided on ground level. Access and egress to the ground level is via a two-way driveway runs off Beckett Street.

- Fifteen car spaces consisting of 13x standard car spaces, 1x loading / unloading space (which can also be used as 1 additional standard car space when not in use for loading / unloading), and 1x accessible space.
- Eight bicycle spaces

A full scaled plan of the proposed medical centre is provided as part of the Development Application.

4. PARKING REQUIREMENTS

4.1.Car Parking

The *City of Maitland Council Development Control Plan 2011 (DCP)* provides car parking rates for a medical centre. The Development Control plan stipulates the minimum car parking requirement for a medical centre as follows:

- Two car spaces per practitioner/professional person

Table 4a below presents the minimum car parking requirement for the proposed medical centre based on the car parking rates listed above.

No of staff	Car Parking Rate	Car Spaces Required	Car Spaces Provided
5	2 spaces per practitioner /professional person	10	15
Total		10	15

Table 4a: Summary of DCP Car Parking Requirements

As presented in Table 4a above, the proposed medical centre complies with Council's car parking requirements.

Additionally, these vacant cars spaces can be occupied should any demand for patients arises during peak hours.

4.2. Bicycle Parking

The *City of Maitland Council Development Control Plan 2011 (DCP)* does not outline any requirements of bicycle parking spaces. However, it states that provision should be made for the cyclist via the installation of bicycle parking facilities. For this purpose, eight bicycle parking spaces are provided which is acceptable.

4.3.Accessible parking

The City of Maitland Council Development Control Plan 2011 (DCP) stipulates the car parking rate for accessible parking as follows:

- One accessible space per two to five surgeries.

The proposed medical centre has one accessible car space and complies with Council's car parking requirements.

5. TRAFFIC GENERATION AND IMPACT

5.1.Proposed Traffic Generation

The *NSW RTA Guide to Traffic Generating Developments 2002* outlines the trip generation rate for a medical centre as follows:

- 10.4 trips per 100m^2 for AM peak hour
- 8.8 trips per 100m^2 for PM peak hour

Application of the above-mentioned rates to the proposed medical centre results the peak hour trip generation presented in Table 5 below:

Peak Hour	Use	Area (GFA m^2)	Trip Generation Rate (per 100m^2 GFA)	Trip Generated
AM	Medical Centre	401.25	10.4	42
PM			8.8	36

Table 5: Trips generated by the proposed medical centre in weekday peak hours

5.2.Trip Distribution

The proposed medical centre is a low trip generator in both AM and PM peak hours.

Table 6 shows the net trip calculation from existing and proposed trips and distributed to the road network assuming 80 percent origin trips 20 percent destination trips for both AM and PM peak hour for proposed medical centre results in the following:

Peak Hour	Origin	Destination	Net Trips
AM	8	33	42
PM	29	7	36

Table 6: Summary of Trip distribution

5.3.Traffic Volume with Medical Centre traffic

The additional medical centre trips are assigned onto the local traffic network. The following figures present the traffic volume with the development trips (in red for origin trips and blue for destination trips) for the weekday AM and PM peak hours. The additional medical centre trips represent a small proportion of the existing traffic volumes on Cessnock Road.

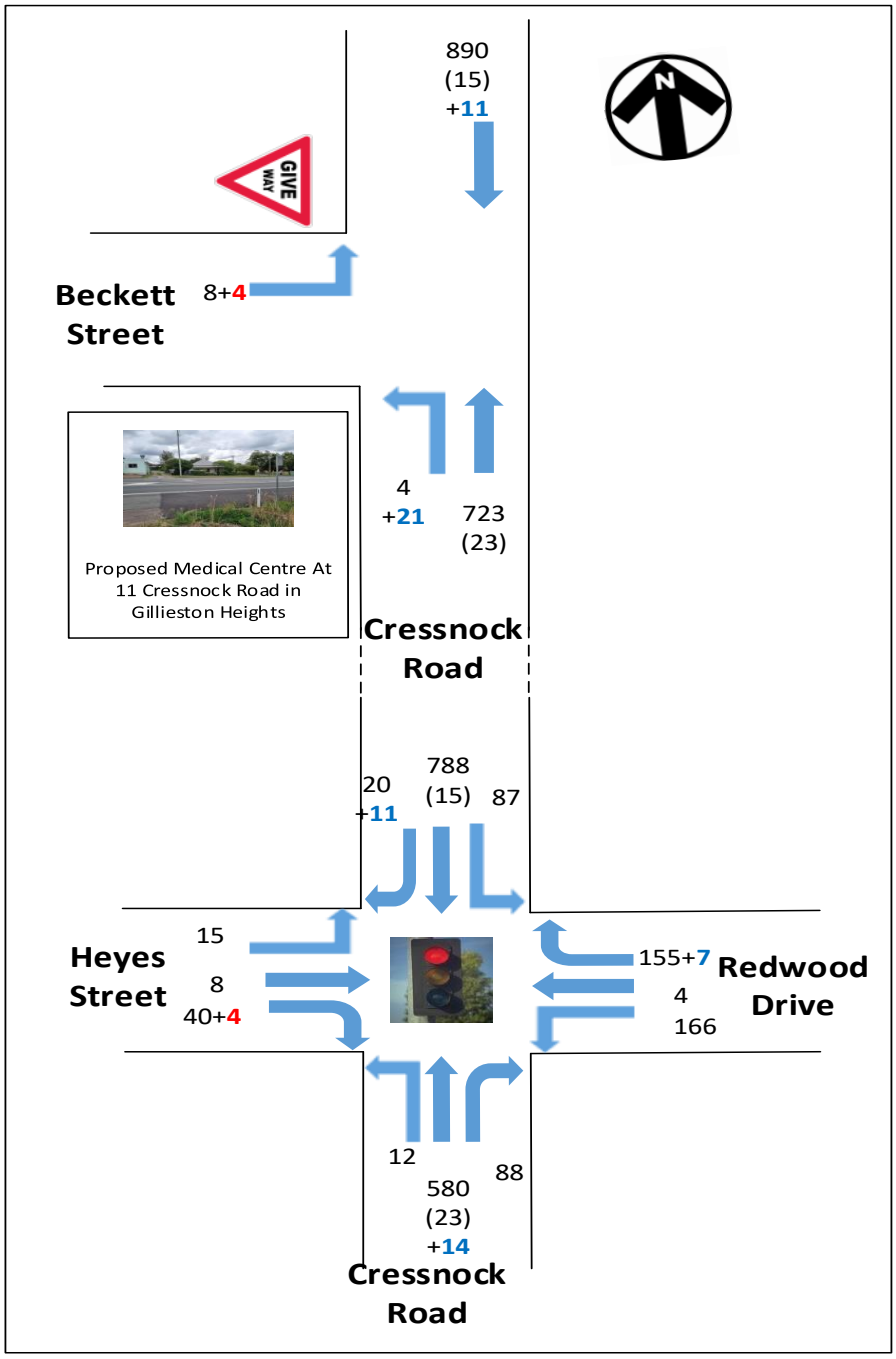

Figure 9a: Existing Weekday Traffic Volumes with medical centre traffic AM Peak Hour

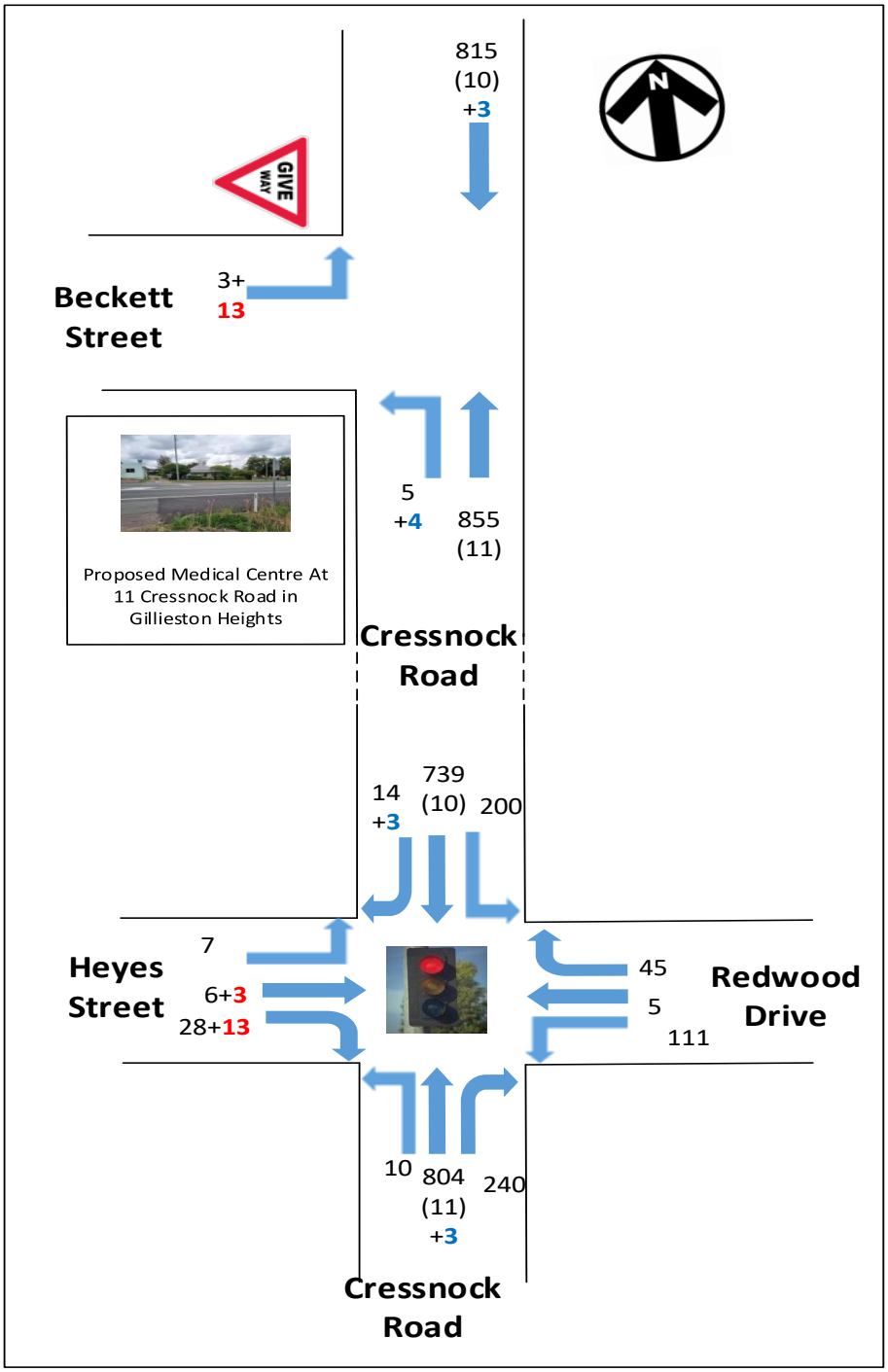

Figure 9b: Existing Weekday Traffic Volumes with medical centre traffic PM Peak Hour

5.4. Traffic Impact

This section assesses the following intersections for the existing traffic with the medical centre traffic. The results of the intersection assessment are as follows:

Intersection/ Performance criteria	Performance with Existing Traffic		Projected Performance with Existing and medical centre traffic	
	AM Peak Hour Existing	PM Peak Hour Existing	AM Peak Hour Projected	PM Peak Hour Projected
Cessnock Road-Beckett Street				
LoS	N/A (worst A)	N/A (worst A)	N/A (worst A)	N/A (worst A)
AVD	0.2	0.2	0.3	0.2
DS	0.49	0.47	0.50	0.48
Cessnock Road-Heyes St and Redwood Drive				
LoS	C	C	C	C
AVD	25.7	29.2	27.4	29.3
DS	0.88	0.83	0.88	0.83

Table 7: Projected intersection performance with medical centre traffic

As presented in Table 7 above, the additional trips generated by the proposed medical centre have minimum impact on the intersection performances in both AM and PM peak hours. The LoS, AVD and DS of each intersection are not significantly affected by the addition of medical centre traffic.

The traffic impacts of the proposed medical centre are therefore considered acceptable.

The full SIDRA results are presented in Appendix B for the intersection assessment with the medical centre traffic.

6. CONCLUSIONS

This & Parking Impact Assessment Report relates to a proposed medical centre at *11 Cessnock Road in Gillieston Heights*. Based on the analysis and discussions presented in this report, the following conclusions are made:

- Vacant on-street parking spaces are available along Beckett Street.
- The proposed medical centre has access to public bus transport system.
- Both the intersections are currently operating at excellent condition with spare capacity to accommodate additional traffic
- City of Maitland provides car parking rates for a medical centre. The medical centre complies with Council's car parking,
- The proposed medical centre is expected to generate low number of additional trips in both AM and PM peak hours.
- According to the intersection assessment, the additional trips can be accommodated in the nearby intersections without significantly affecting the performance of any turn movement, approach arm or the overall intersection. The traffic impacts of the proposed medical centre are therefore considered acceptable.

There are no traffic engineering reasons why a development consent for the proposed medical centre at 11 Cessnock Road in Gillieston Heights should be refused.

APPENDIX A

INTERSECTION ASSESSMENT FOR EXISTING TRAFFIC

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road															
1	L2	All MCs	4	0.0	4	0.0	0.413	5.7	LOS A	0.0	0.0	0.00	0.00	0.00	57.2
2	T1	All MCs	785	3.1	785	3.1	0.413	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
Approach			789	3.1	789	3.1	0.413	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.6
North: Cessnock Road															
8	T1	All MCs	953	1.7	953	1.7	0.494	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
Approach			953	1.7	953	1.7	0.494	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.6
West: Beckett Street															
10	L2	All MCs	8	0.0	8	0.0	0.013	8.6	LOS A	0.0	0.3	0.60	0.71	0.60	43.8
Approach			8	0.0	8	0.0	0.013	8.6	LOS A	0.0	0.3	0.60	0.71	0.60	43.8
All Vehicles			1751	2.3	1751	2.3	0.494	0.2	NA	0.0	0.3	0.00	0.00	0.00	59.5

Table A1: Weekday Priority Intersection Performance of Cessnock Road with Beckett Street for the AM Peak Hour

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road																
1	L2	All MCs	13	0.0	13	0.0		0.567	24.2	LOS C	8.2	59.4	0.90	0.76	0.90	41.1
2	T1	All MCs	635	3.8	635	3.8		0.567	19.6	LOS B	8.2	59.5	0.90	0.76	0.90	45.2
3	R2	All MCs	93	0.0	93	0.0	*	0.499	34.4	LOS C	2.8	19.5	0.99	0.77	0.99	33.5
Approach			740	3.3	740	3.3		0.567	21.6	LOS C	8.2	59.5	0.91	0.76	0.91	43.2
East: Redwood Drive																
4	L2	All MCs	175	0.0	175	0.0		0.339	22.4	LOS C	4.2	29.4	0.82	0.77	0.82	37.5
5	T1	All MCs	4	0.0	4	0.0		0.339	29.5	LOS C	4.2	29.4	0.82	0.77	0.82	38.2
6	R2	All MCs	163	0.0	163	0.0	*	0.879	42.2	LOS D	5.8	40.5	1.00	1.07	1.59	31.3
Approach			342	0.0	342	0.0		0.879	32.0	LOS C	5.8	40.5	0.91	0.91	1.19	34.2
North: Cessnock Road																
7	L2	All MCs	92	0.0	92	0.0		0.813	30.5	LOS C	14.6	103.6	0.99	0.98	1.19	37.7
8	T1	All MCs	845	1.9	845	1.9	*	0.813	25.9	LOS C	14.7	104.6	0.99	0.98	1.19	41.6
9	R2	All MCs	21	0.0	21	0.0		0.113	32.7	LOS C	0.6	4.2	0.94	0.69	0.94	34.0
Approach			958	1.6	958	1.6		0.813	26.5	LOS C	14.7	104.6	0.99	0.97	1.18	41.0
West: Heyes Street																
10	L2	All MCs	16	0.0	16	0.0		0.087	13.9	LOS B	0.4	2.9	0.89	0.67	0.89	39.8
11	T1	All MCs	8	0.0	8	0.0		0.087	22.3	LOS C	0.4	2.9	0.89	0.67	0.89	40.7
12	R2	All MCs	42	0.0	42	0.0	*	0.227	33.3	LOS C	1.2	8.5	0.95	0.72	0.95	33.8
Approach			66	0.0	66	0.0		0.227	27.3	LOS C	1.2	8.5	0.93	0.70	0.93	35.9
All Vehicles			2106	1.9	2106	1.9		0.879	25.7	LOS C	14.7	104.6	0.94	0.88	1.08	40.3

Table A2: Weekday Signalised Intersection Performance of Cessnock Road with Heyes Street and Redwood Street for the AM Peak Hour

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road																
1	L2	All MCs	3	0.0	3	0.0		0.473	5.7	LOS A	0.0	0.0	0.00	0.00	0.00	57.1
2	T1	All MCs	912	1.3	912	1.3		0.473	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
Approach			915	1.3	915	1.3		0.473	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.6
North: Cessnock Road																
8	T1	All MCs	868	1.2	868	1.2		0.449	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			868	1.2	868	1.2		0.449	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.7
West: Beckett Street																
10	L2	All MCs	3	0.0	3	0.0		0.006	9.9	LOS A	0.0	0.1	0.68	0.72	0.68	43.1
Approach			3	0.0	3	0.0		0.006	9.9	LOS A	0.0	0.1	0.68	0.72	0.68	43.1
All Vehicles			1786	1.2	1786	1.2		0.473	0.2	NA	0.0	0.1	0.00	0.00	0.00	59.6

Table A3: Weekday Priority Intersection Performance of Cessnock Road with Beckett Street for the PM Peak Hour

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road																
1	L2	All MCs	11	0.0	11	0.0		0.715	28.9	LOS C	13.8	97.6	0.94	0.85	0.99	39.1
2	T1	All MCs	858	1.3	858	1.3		0.715	24.3	LOS C	13.8	97.7	0.94	0.85	0.99	42.8
3	R2	All MCs	253	0.0	253	0.0	*	0.794	39.4	LOS D	9.3	65.3	1.00	0.95	1.23	32.0
Approach			1121	1.0	1121	1.0		0.794	27.8	LOS C	13.8	97.7	0.96	0.87	1.04	39.7
East: Redwood Drive																
4	L2	All MCs	117	0.0	117	0.0		0.225	23.9	LOS C	3.2	22.3	0.79	0.74	0.79	36.8
5	T1	All MCs	5	0.0	5	0.0		0.225	37.4	LOS D	3.2	22.3	0.79	0.74	0.79	37.5
6	R2	All MCs	47	0.0	47	0.0	*	0.298	39.3	LOS D	1.6	11.4	0.97	0.73	0.97	32.1
Approach			169	0.0	169	0.0		0.298	28.6	LOS C	3.2	22.3	0.84	0.74	0.84	35.3
North: Cessnock Road																
7	L2	All MCs	211	0.0	211	0.0		0.829	34.3	LOS C	18.1	127.2	0.99	0.99	1.18	35.4
8	T1	All MCs	788	1.3	788	1.3	*	0.829	29.7	LOS C	18.3	129.8	0.99	0.99	1.17	39.6
9	R2	All MCs	15	0.0	15	0.0		0.046	31.2	LOS C	0.4	3.0	0.86	0.67	0.86	34.5
Approach			1014	1.0	1014	1.0		0.829	30.7	LOS C	18.3	129.8	0.99	0.98	1.17	38.6
West: Heyes Street																
10	L2	All MCs	7	0.0	7	0.0		0.062	14.5	LOS B	0.3	2.1	0.90	0.65	0.90	38.3
11	T1	All MCs	6	0.0	6	0.0		0.062	27.5	LOS C	0.3	2.1	0.90	0.65	0.90	39.1
12	R2	All MCs	29	0.0	29	0.0	*	0.185	38.7	LOS D	1.0	7.0	0.96	0.71	0.96	32.2
Approach			43	0.0	43	0.0		0.185	33.0	LOS C	1.0	7.0	0.94	0.69	0.94	34.0
All Vehicles			2347	0.9	2347	0.9		0.829	29.2	LOS C	18.3	129.8	0.96	0.91	1.08	38.8

Table A4: Weekday Signalised Intersection Performance of Cessnock Road with Heyes Street and Redwood Street for the PM Peak Hour

APPENDIX B

INTERSECTION ASSESSMENT WITH MEDICAL CENTRE TRAFFIC

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road															
1	L2	All MCs	25	0.0	25	0.0	0.424	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	56.8
2	T1	All MCs	785	3.1	785	3.1	0.424	0.2	LOS A	0.0	0.0	0.00	0.02	0.00	59.2
Approach			811	3.0	811	3.0	0.424	0.3	NA	0.0	0.0	0.00	0.02	0.00	59.1
North: Cessnock Road															
8	T1	All MCs	964	1.6	964	1.6	0.500	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
Approach			964	1.6	964	1.6	0.500	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.6
West: Beckett Street															
10	L2	All MCs	13	0.0	13	0.0	0.019	8.6	LOS A	0.1	0.5	0.61	0.73	0.61	43.7
Approach			13	0.0	13	0.0	0.019	8.6	LOS A	0.1	0.5	0.61	0.73	0.61	43.7
All Vehicles			1787	2.2	1787	2.2	0.500	0.3	NA	0.1	0.5	0.00	0.01	0.00	59.2

Table B1: Weekday Priority Intersection Performance of Cessnock Road with Beckett Street for the AM Peak Hour with medical centre traffic

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road																
1	L2	All MCs	13	0.0	13	0.0		0.614	25.3	LOS C	8.7	62.7	0.92	0.78	0.92	40.6
2	T1	All MCs	649	3.7	649	3.7		0.614	20.7	LOS C	8.7	62.8	0.92	0.78	0.92	44.6
3	R2	All MCs	93	0.0	93	0.0	*	0.499	34.4	LOS C	2.8	19.5	0.99	0.77	0.99	33.5
Approach			755	3.2	755	3.2		0.614	22.5	LOS C	8.7	62.8	0.93	0.78	0.93	42.8
East: Redwood Drive																
4	L2	All MCs	175	0.0	175	0.0		0.321	21.5	LOS C	4.1	28.6	0.80	0.76	0.80	37.8
5	T1	All MCs	4	0.0	4	0.0		0.321	28.3	LOS C	4.1	28.6	0.80	0.76	0.80	38.6
6	R2	All MCs	169	0.0	169	0.0	*	0.782	37.2	LOS D	5.5	38.7	1.00	0.95	1.30	32.7
Approach			348	0.0	348	0.0		0.782	29.2	LOS C	5.5	38.7	0.90	0.85	1.05	35.1
North: Cessnock Road																
7	L2	All MCs	92	0.0	92	0.0		0.861	34.6	LOS C	15.9	112.4	1.00	1.06	1.31	36.2
8	T1	All MCs	845	1.9	845	1.9	*	0.861	30.0	LOS C	16.0	113.5	1.00	1.06	1.31	39.7
9	R2	All MCs	33	0.0	33	0.0		0.176	33.0	LOS C	0.9	6.6	0.95	0.71	0.95	33.9
Approach			969	1.6	969	1.6		0.861	30.6	LOS C	16.0	113.5	1.00	1.05	1.30	39.1
West: Heyes Street																
10	L2	All MCs	16	0.0	16	0.0		0.087	13.7	LOS B	0.4	2.9	0.89	0.67	0.89	40.0
11	T1	All MCs	8	0.0	8	0.0		0.087	22.1	LOS C	0.4	2.9	0.89	0.67	0.89	40.8
12	R2	All MCs	46	0.0	46	0.0	*	0.249	33.4	LOS C	1.3	9.4	0.96	0.73	0.96	33.8
Approach			71	0.0	71	0.0		0.249	27.6	LOS C	1.3	9.4	0.93	0.71	0.93	35.8
All Vehicles			2143	1.9	2143	1.9		0.861	27.4	LOS C	16.0	113.5	0.96	0.91	1.11	39.5

Table B2: Weekday Signalised Intersection Performance of Cessnock Road with Heyes Street and Redwood Street for the AM Peak Hour with medical centre traffic

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cessnock Road																
1	L2	All MCs	9	0.0	9	0.0		0.476	5.7	LOS A	0.0	0.0	0.00	0.01	0.00	57.0
2	T1	All MCs	912	1.3	912	1.3		0.476	0.2	LOS A	0.0	0.0	0.00	0.01	0.00	59.5
Approach			921	1.3	921	1.3		0.476	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.4
North: Cessnock Road																
8	T1	All MCs	872	1.2	872	1.2		0.450	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			872	1.2	872	1.2		0.450	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.7
West: Beckett Street																
10	L2	All MCs	17	0.0	17	0.0		0.032	10.1	LOS A	0.1	0.7	0.68	0.83	0.68	43.0
Approach			17	0.0	17	0.0		0.032	10.1	LOS A	0.1	0.7	0.68	0.83	0.68	43.0
All Vehicles			1809	1.2	1809	1.2		0.476	0.3	NA	0.1	0.7	0.01	0.01	0.01	59.3

Table B3: Weekday Priority Intersection Performance of Cessnock Road with Beckett Street for the PM Peak Hour with medical centre traffic

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand Flows [Total	HV]	Arrival Flows [Total	HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Stop Rate	Eff.	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%		v/c	sec		veh	m					km/h
South: Cessnock Road																	
1	L2	All MCs	11	0.0	11	0.0		0.719	29.0	LOS C	13.9	98.3	0.94	0.85	0.99		39.1
2	T1	All MCs	862	1.3	862	1.3		0.719	24.4	LOS C	13.9	98.5	0.94	0.85	0.99		42.7
3	R2	All MCs	253	0.0	253	0.0	*	0.794	39.4	LOS D	9.3	65.3	1.00	0.95	1.23		32.0
Approach			1125	1.0	1125	1.0		0.794	27.8	LOS C	13.9	98.5	0.96	0.87	1.05		39.7
East: Redwood Drive																	
4	L2	All MCs	117	0.0	117	0.0		0.225	23.9	LOS C	3.2	22.3	0.79	0.74	0.79		36.8
5	T1	All MCs	5	0.0	5	0.0		0.225	37.4	LOS D	3.2	22.3	0.79	0.74	0.79		37.5
6	R2	All MCs	47	0.0	47	0.0	*	0.298	39.3	LOS D	1.6	11.4	0.97	0.73	0.97		32.1
Approach			169	0.0	169	0.0		0.298	28.6	LOS C	3.2	22.3	0.84	0.74	0.84		35.3
North: Cessnock Road																	
7	L2	All MCs	211	0.0	211	0.0		0.829	34.3	LOS C	18.1	127.2	0.99	0.99	1.18		35.4
8	T1	All MCs	788	1.3	788	1.3	*	0.829	29.7	LOS C	18.3	129.8	0.99	0.99	1.17		39.6
9	R2	All MCs	18	0.0	18	0.0		0.056	31.3	LOS C	0.5	3.7	0.86	0.68	0.86		34.5
Approach			1017	1.0	1017	1.0		0.829	30.7	LOS C	18.3	129.8	0.99	0.98	1.17		38.5
West: Heyes Street																	
10	L2	All MCs	7	0.0	7	0.0		0.103	13.6	LOS B	0.5	3.2	0.93	0.66	0.93		38.2
11	T1	All MCs	13	0.0	13	0.0		0.103	25.0	LOS C	0.5	3.2	0.93	0.66	0.93		38.9
12	R2	All MCs	43	0.0	43	0.0	*	0.271	39.2	LOS D	1.5	10.4	0.97	0.73	0.97		32.1
Approach			63	0.0	63	0.0		0.271	33.4	LOS C	1.5	10.4	0.96	0.71	0.96		33.9
All Vehicles			2375	0.9	2375	0.9		0.829	29.3	LOS C	18.3	129.8	0.96	0.91	1.08		38.7

Table B4: Weekday Signalised Intersection Performance of Cessnock Road with Heyes Street and Redwood Street for the PM Peak Hour with medical centre traffic

CAR PARK CERTIFICATION

Proposed Medical Centre

11 Cessnock Road, Gillieston Heights

Prepared for: Doctors & Co

N233207A (Version 1b)

January 2024

1. INTRODUCTION

This Car Parking Certification (CPC/Report) relates to a Proposed Medical Centre at 11 Cessnock Road Gillieston Heights (corner of Cessnock Road with Beckett Street).

Car parking is provided on the ground level.

Vehicle access and egress to the car parking area is via Beckett Street. Fifteen car spaces are provided including one disabled car space with a shared zone.

One of the car spaces is also used as a loading bay. Refer to the Plan of Management which will ensure loading requirements do not conflict

Reference is made to AS2890.1 (2004), AS2890.6 (2009) and Council's Development Control Plan for compliance.

2. DRIVEWAY

The details of the driveway from Cessnock Road to the ground level parking area are as follows from the perspective of the inbound movement for description purposes:

- The driveway at the property line is 6 metres wide
- The driveway has a gradient of less than 5 percent

3. CAR SPACES

The details of the car parking area are as follows:

- The 90-degree car space is 2.6 metres wide and 5.5 metres long
- The disabled car space is 2.6 metres wide and 5.5 metres long. A shared zone is located next to the disabled car space.
- The parking aisle is 6.5 metres wide minimum
- A blind aisle extension of 1 metre minimum is provided
- Bike racks are provided

4. SWEPT PATHS

A swept turning path analysis is performed using a B85 car with a length of 4.91 metres in length to confirm that vehicle movements are adequate.

All swept paths show adequate manoeuvrability.

The swept paths are presented in Appendix A.

5. CAR SIGHT DISTANCE

The car driver's sight distance requirement to enter the external road is stated in Figure 3.2 of AS2890.1.

The sight distance varies according to the speed of the external road. Beckett St has a default speed limit of 50km/hr.

The minimum sight distance required is 45 metres. The minimum vehicle sight distance is met.

The pedestrian sight distance triangle is met as set out in Figure 3.3 of AS2890.1.

6. CONCLUSIONS AND RECOMMENDATIONS

The car parking area and driveway is compliant with Australian Standards and Council's DCP.

APPENDIX A – SWEPT PATHS

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B85
STANDARDS 2004 (AU_NZ)

PROPOSED ROAD
CROSSING

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17,500

1,000

29,308

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VERANDAH

GE 47.02

1 STOREY
3 RESIDENCE
No. 2

GUTTER 45.03

GARAGE

GUTTER 43.46

ENCLOSED
PATIO

2

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STANDARDS 2004 (AU_NZ)

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BECKETT

B85
STANDARDS 2004 (AU_NZ)

PROPOSED ROAD
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B85
STANDARDS 2004 (AU_NZ)

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GUTTER 43.46

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B85
STANDARDS 2004 (AU_NZ)

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ENCLOSED
PATIO

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BECKETT STREE

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STANDARDS 2004 (AU_NZ)

PROPOSED ROAD
CROSSING

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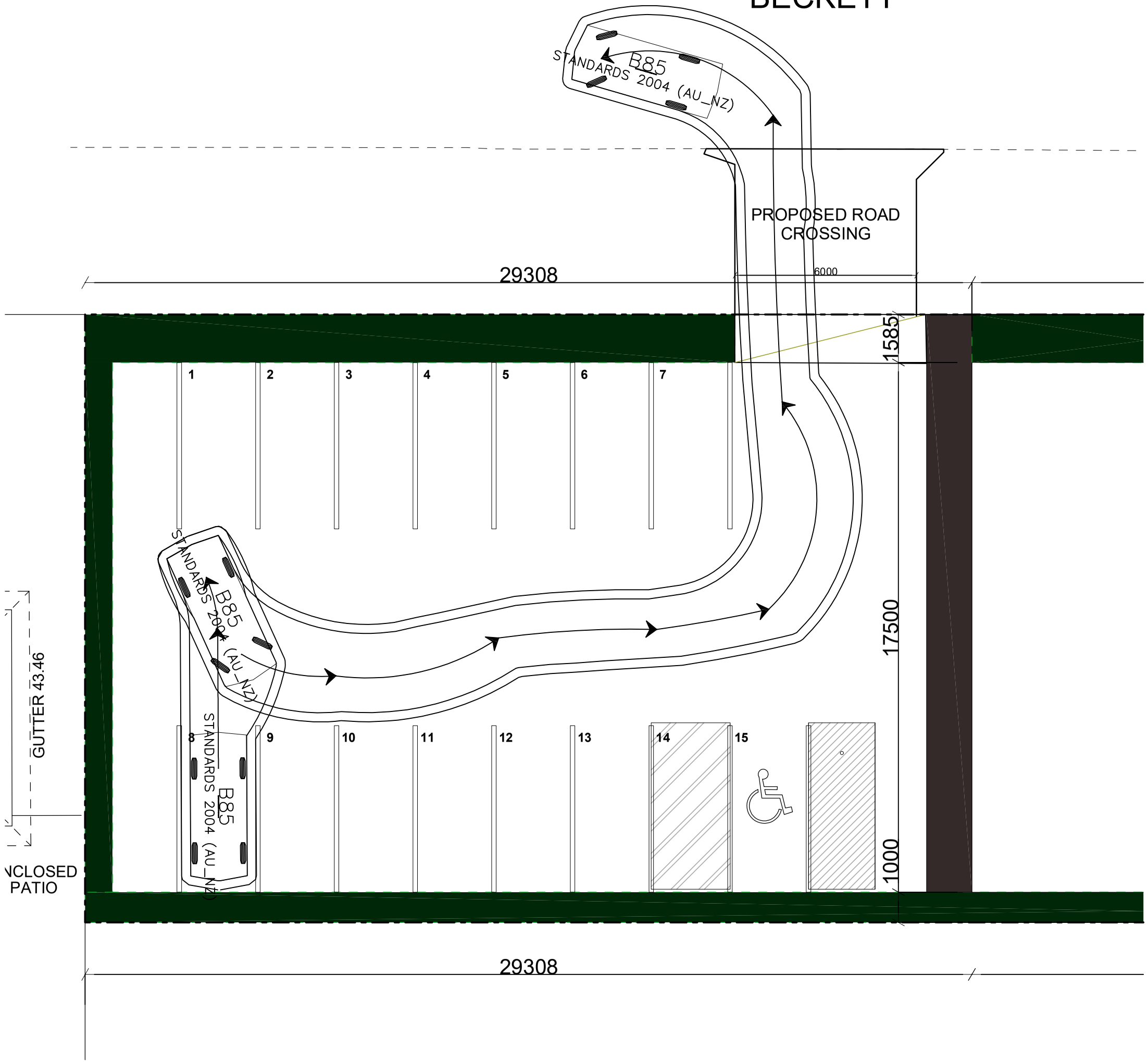
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STANDARDS 2004 (AU_NZ)

PROPOSED ROAD
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B85
STANDARDS 2004 (AU_NZ)

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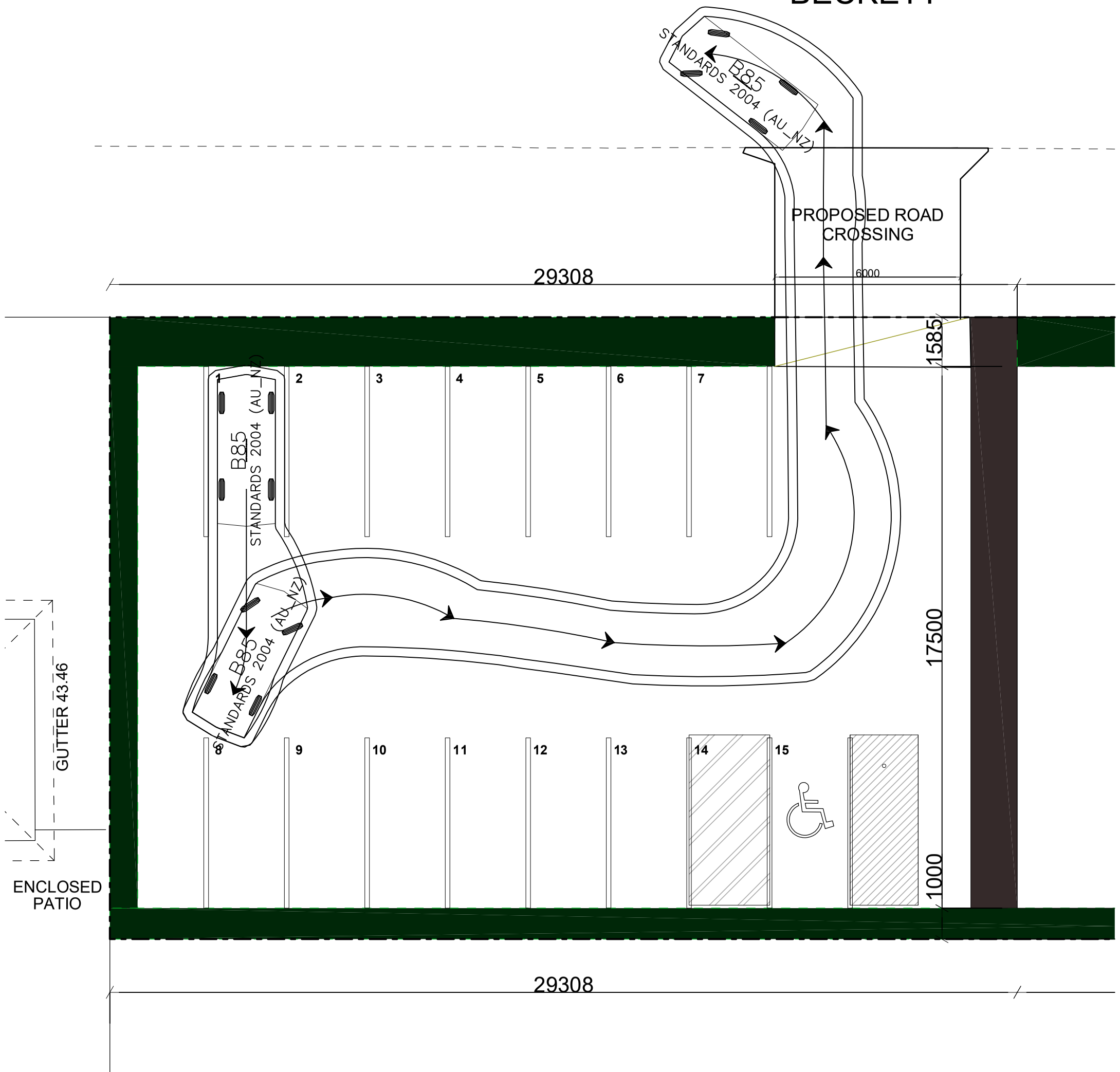
B85
STANDARDS 2004 (AU_NZ)
PROPOSED ROAD CROSSING
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GUTTER 43.46
ENCLOSED PATIO
29308

BECKETT

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B85
STANDARDS 2004 (AU_NZ)

PROPOSED ROAD
CROSSING

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STANDARDS 2004 (AU_NZ)

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GUTTER 45.03

GARAGE

GUTTER 43.46

ENCLOSED
PATIO

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STANDARDS 2004 (AU_NZ)

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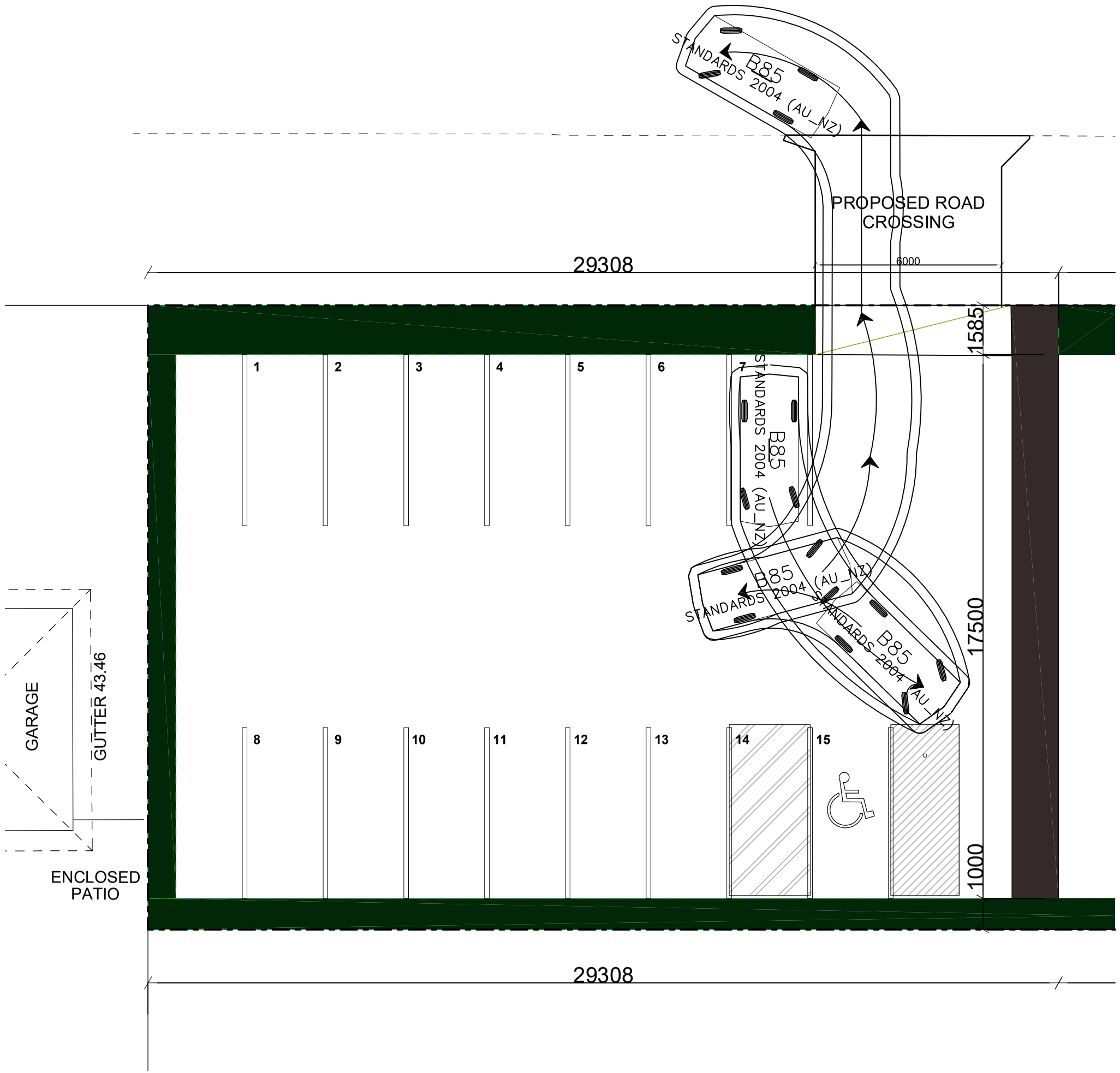
BECKETT


B85
STANDARDS 2004 (AU_NZ)
PROPOSED ROAD CROSSING
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STANDARDS 2004 (AU_NZ)
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STANDARDS 2004 (AU_NZ)
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STANDARDS 2004 (AU_NZ)
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GARAGE
GUTTER 43.46
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