



Willoughby City Council

AGENDA

TRAFFIC COMMITTEE MEETING NO 6/2019

27 November 2019

Notice of Traffic Committee Meeting
to be held in the Banksia Room
Willoughby City Council
Level 6, 31 Victor Street, Chatswood commencing 9:30am



WILLOUGHBY CITY COUNCIL TRAFFIC COMMITTEE

The following information is provided so that you may be aware of the structure and operation of the Willoughby City Traffic Committee.

The Willoughby Traffic Committee is not a Committee of Willoughby City Council but a Technical Committee of the Roads and Maritime Services.

Council has been delegated certain powers, from the Roads and Maritime Services, with regard to traffic matters upon its local roads. A condition of this delegation is that Council must take into account the Traffic Committee recommendations.

There are four permanent members of the Traffic Committee, *each of whom has a single vote only.*

- The members are the **NSW Police Service, the Roads and Maritime Services, the Local State Member of Parliament (for the location of the issue to be voted upon), and Willoughby City Council.**
- Willoughby City Council operates its Traffic Committee such that the single Council vote, upon any issue is held by the Chair of the Meeting.
- Generally the Traffic Committee meetings are chaired by a staff member of Council's Transport Management Group.
- Willoughby City Council allows the public to attend and speak at its Traffic Committee on issues of concern for a maximum of five minutes.
- If either the Police or RMS representative on the Traffic Committee disagrees with any Traffic Committee recommendation, or Council resolution on any Traffic Committee recommendation, that member may lodge an appeal with the Sydney Regional Traffic Committee for determination. The appeal must be lodged in writing within 14 days of Council's resolution.
- Any action relative to any issue under appeal must cease until the matter is determined.
- The Sydney Regional Traffic Committee is chaired by an independent chairperson and submissions and representations are welcomed from all interested parties.

1	PRESENT	4
2	APOLOGIES.....	4
3	MATTERS ARISING FROM THE MINUTES OR FROM COUNCIL RESOLUTION.....	4
3.1	COUNCIL ADOPTION OF THE LOCAL TRAFFIC COMMITTEE MINUTES	4
4	FORMAL ITEMS FOR CONSIDERATION	6
4.1	RAEBURN AVENUE, CASTLECRAG - TIMED LOADING ZONE REGULATORY PARKING RESTRICTIONS.....	6
4.2	ROCHE LANE, NORTHBRIDGE - DISABLED CAR PARKING SPACE	9
4.3	CARR STREET, EDDY ROAD, LONE PINE AVENUE, BERESFORD AVENUE, DALRYMPLE ROAD AND BEACONSFIELD ROAD, CHATSWOOD AND CHATSWOOD WEST - NO PARKING, BUS ZONE AND 4P TIMED PARKING WITH RESIDENT PARKING RESTRICTIONS.....	23
4.4	VICTORIA AVENUE & STANLEY STREET, CHATSWOOD – MARKED FOOT CROSSING IMPROVEMENT WORKS.....	110
4.5	DELEGATED ITEMS - REGULATORY SIGNPOSTING AND LINE MARKING.....	114
5	LATE ITEMS.....	125
6	INFORMAL ITEMS	125
7	GENERAL BUSINESS	125

1 PRESENT**2 APOLOGIES****DISCLOSURE OF INTEREST**

Refer Code of Conduct:–

[Code of Conduct - Community Representatives](#)

[Code of Conduct - Councillors and Officers](#)

3 MATTERS ARISING FROM THE MINUTES OR FROM COUNCIL RESOLUTION

That the Minutes of the Ordinary Meeting of the Local Traffic Committee held 23 October 2019, copies of which have been circulated to each member of the Local Traffic Committee, be confirmed.

3.1 COUNCIL ADOPTION OF THE LOCAL TRAFFIC COMMITTEE MINUTES

The Minutes of the Ordinary Meeting of Council held on 23 October 2019 will be presented to Council at its meeting of 9 December 2019.

TRAFFIC COMMITTEE RECOMMENDATION

That the information be received and noted.

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4 FORMAL ITEMS FOR CONSIDERATION

4.1 RAEBURN AVENUE, CASTLECRAG - TIMED LOADING ZONE REGULATORY PARKING RESTRICTIONS

ATTACHMENTS:	1. PARKING RESTRICTIONS PLAN
WARD:	SAILORS BAY WARD
RESPONSIBLE OFFICER:	GORDON FARRELLY - TRAFFIC & TRANSPORT TEAM LEADER
AUTHOR:	GORDON FARRELLY - TRAFFIC & TRANSPORT TEAM LEADER
CITY STRATEGY OUTCOME:	2.4 – REDUCE PARKING AND TRAFFIC CONGESTION
MEETING DATE:	27 NOVEMBER 2019

1. PURPOSE OF REPORT

To approve the implementation of a timed Loading Zone in place of an existing full time Loading Zone in Raeburn Avenue, west side of road, between Edinburgh Road and Chandler Lane, Northbridge

2. OFFICER'S RECOMMENDATION

That Council approve the implementation of a Loading Zone 6 am to 6 pm Monday to Sunday in Raeburn Avenue, west side of road, between Edinburgh Road and Chandler Lane, Northbridge as outlined in ATTACHMENT 1.

3. BACKGROUND

Councillor Hugh Eriksson has received a submission from shop owners and residents requesting a review of the current full time loading zone in Raeburn Avenue, west side of road, between Edinburgh Road and Chandler Lane, Northbridge.

The request for the review is due to the increased demand for street parking, especially at night, for residents and visitors to the shopping centre including restaurants along Edinburgh Road that are open at night. The submission indicates that there is the potential to provide two more car parking spots in the evening if the full time Loading Zone was limited to business hours.

The location of the existing full time Loading Zone restrictions is provided in the Locality Plan below.



Locality Plan: Raeburn Avenue, west side of road, between Edinburgh Road and Chandler Lane, Northbridge

4. DISCUSSION

The full time Loading Zone primarily provides street parking for compliant delivery and service vehicles to support the operation of shops within the Castlecrag Shopping Centre, particularly those along the northern side of Edinburgh Road between Eastern Valley Way and Raeburn Avenue. The businesses along Edinburgh Road between Eastern Valley Way and Raeburn Avenue are a range of service, retail and cafés/ restaurants. Other than the cafés/ restaurants the shops would typically operate during 8 am – 6 pm Monday to Sunday.

The delivery of goods and services to these shops would typically occur during, or shortly before, the operating hours of the shops. Modification of the operating hours of the existing full time Loading Zone to a timed loading zone is unlikely to result in a detrimental impact on the operation of the shops along Edinburgh Road.

It is considered that the existing full time Loading Zone in Raeburn Avenue, west side of road, between Edinburgh Road and Chandler Lane can be changed to Loading zone 6 am to 6 pm Monday to Sunday and unrestricted parking outside these hours. The proposed new regulatory parking restrictions are provided in ATTACHMENT 1.

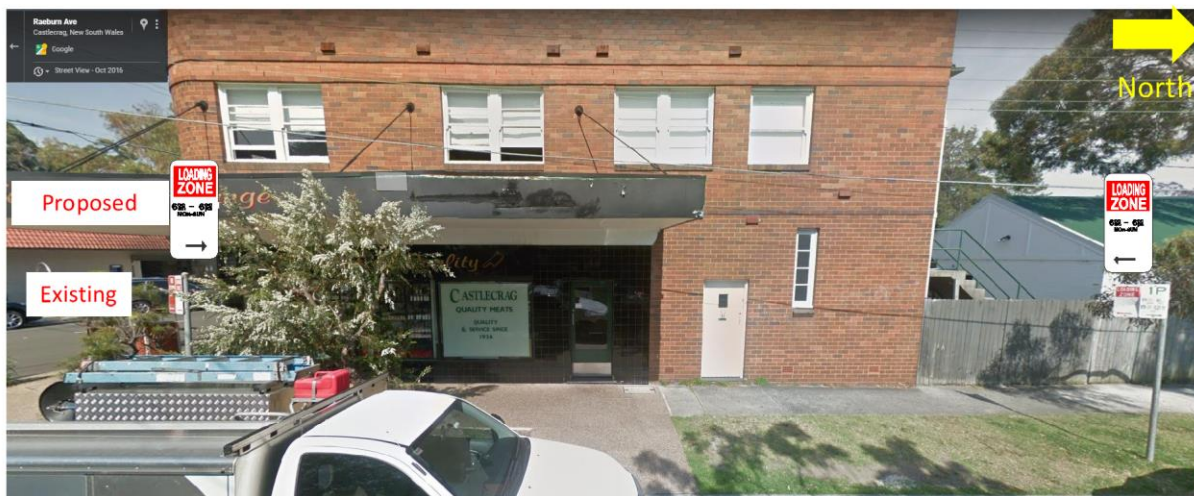
Community consultation is currently in progress and the results of the community consultation will be provided at the meeting.

5. CONCLUSION

The delivery of goods and services to these shops would typically occur during, or shortly before, the operating hours of the shops. Modification of the operating hours of the existing full time Loading Zone to a timed loading zone is unlikely to result in a detrimental impact on the operation of the shops along Edinburgh Road.

It is requested that the Local Traffic Committee approve that the existing full time Loading Zone in Raeburn Avenue, west side of road, between Edinburgh Road and Chandler Lane be changed to Loading zone 6 am to 6 pm Monday to Sunday and unrestricted parking at other times.

Raeburn Avenue, Castlecrag, west side of road, between Edinburgh Road and
Chandler Lane



Proposal: Change the existing full time Loading Zone to Loading Zone 6 am – 6 pm
Monday to Sunday

4.2 ROCHE LANE, NORTHBRIDGE - DISABLED CAR PARKING SPACE

ATTACHMENTS:	1. NORTHBRIDGE PUBLIC SCHOOL – PROPOSED ACCESSIBLE CAR BAY ASSESSMENT REPORT 2. DISABLED CAR PARKING SPACE WORKS
WARD:	SAILORS BAY WARD
RESPONSIBLE OFFICER:	GORDON FARRELLY - TRAFFIC & TRANSPORT TEAM LEADER
AUTHOR:	HASSAN YOUSAF - TRAFFIC ENGINEER
CITY STRATEGY OUTCOME:	2.1 – ENHANCE TRANSPORT CHOICES AND CONNECTIONS THROUGHOUT THE CITY
MEETING DATE:	27 NOVEMBER 2019

1. PURPOSE OF REPORT

To approve the installation of one disabled parking space, compliant with Australian standards, in Roche Lane, Northbridge.

2. OFFICER'S RECOMMENDATION

That Council approve the implementation of one disabled parking space compliant with Australian standards in Roche Lane, Northbridge adjacent to the entry to Northbridge Public School.

3. BACKGROUND

Council has received a submission from the NSW School Infrastructure Department and Secretary of Northbridge Public School Parents & Citizens Association to install a disabled parking space in Roche Lane, Northbridge adjacent to the school entrance. The request was made by the school to assist with current and future enrolment of students with special needs.

A disabled parking space needs to be provided in accordance with Australian Standard 2890.6. Australian Standard 2890.6 mandates that a disabled parking space must be of a minimum size and include a number of measures to support its safe and effective use.

4. DISCUSSION

Three potential locations were identified for the disabled parking space:

- Northbridge Public School car park,
- Sailors Bay Road in front of Northbridge Public School, and
- Roche Lane adjacent to the Northbridge Public School entrance.

Northbridge Public School car park

The potential to provide a disabled car parking space in the school's car park has been investigated by NSW School Infrastructure Department. The Department has decided that it's not possible considering that:

- The car park would need to be levelled;
- There wouldn't be enough space at the rear of the car to allow sufficient space to unload the wheelchair;
- There is also a large tree in this location; and
- It would restrict access for other vehicles to use the carpark.

Sailors Bay Road

The main entry of the school is via Sailors Bay Road, refer to Figure 1 below. The suitability of providing the disabled car space along Sailors Bay Road was investigated. The following factors led to a position that the Sailors Bay Road school frontage is not suitable because of:

- The presence of a bicycle lane. To retain this facility as well as providing the disabled car space would require the footpath to be narrowed.
- The need to install a kerb ramp which will result in a reduction in the footpath width.
- The proximity of the disabled car space to an existing school crossing requiring undesirable additional traffic activity.



Figure 1: Northbridge Public School entry via Sailors Bay Road

Roche Lane adjacent to the Northbridge Public School entrance

Roche Lane is at the rear entry to the school, it is a cul-de-sac with access provided to Northbridge Golf Club. It carries a low volume of traffic throughout the day. Roche Lane is around 4.5m wide and there are no parking restrictions in place.

The proposed location for the disabled car parking space is at the rear entry of the school in Roche Lane opposite John Roche Park, refer to Figure 2 below. This location would provide students with special needs safe and convenient access to the school.

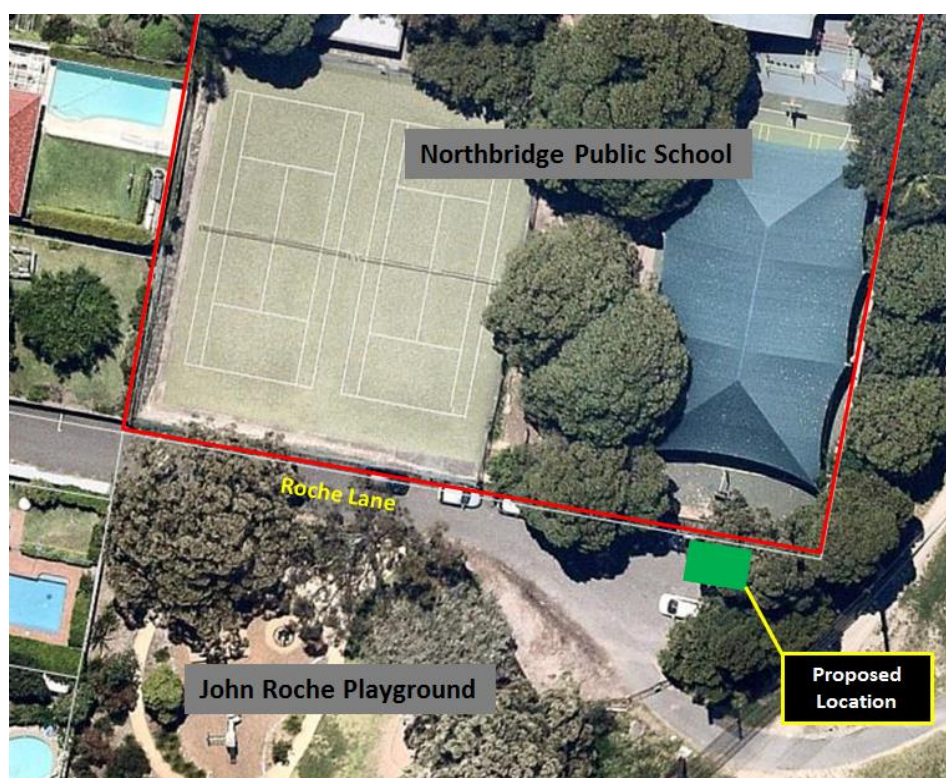


Figure 2: Northbridge Public School entry via Roche Lane

The parking demand in Roche Lane is generally low. There is space of parking for four cars at the dead end of the Roche Lane, although this is not a designated parking area.

The assessment of the 3 potential locations recommended Roche Lane as the preferred location.

NSW School Infrastructure Department engaged an external consultant to undertake a feasibility study to assess the suitability of this location to be used as a disabled car parking space. The report states that the site is generally level with some sharp rises and falls within the threshold between ground surface finishes and advises that the space is suitable to be converted to a designated accessible parking space provided that minor amendments are completed to the site. The area also satisfies the headroom for disabled spaces.

Minor works will need to be undertaken to ensure the entire 4.8m wide x 5.4m long area meets Australian Standard 2890.6 including:

- Grading of the area so that it is no more than 1 in 40 in accordance with the standard
- Application of appropriate materials to make it slip resistant.
- Installation of a wheelchair compliant apron at the driveway for entering into the school;
- Improving the water drainage at this location;
- Installing a small 1.3m x 2.1m gate for general access for wheelchairs;
- Provision of line marking, disabled parking signs, yellow painted shared space pavement markings and bollards to meet Australian Standard 2890.6.

Consultation with the local community is being undertaken and the results will be provided at the meeting. Northbridge Golf Club was consulted due to the fact that they use the small gate at the end of the Roche Lane to enter the site. Northbridge Golf Club has advised it has no objection to this proposal.

5. CONCLUSION

The Northbridge Public School does not have any disabled car parking spaces for pick up and drop off of disabled school children. An assessment was completed of 3 potential locations that recommended Roche Lane as the preferred location. The proposal to install the parking space can be done by minor amendments to the area at the dead end of the Roche Lane.

The proposal is considered to meet the objectives of improving access for the people with mobility needs as part of Council's commitment to ensure that the City is connected and inclusive as outlined in Council's Community Strategic Plan 2028.

It is recommended that the Traffic Committee endorse the proposed works. Works will be scheduled to be implemented by NSW School Infrastructure Department as soon as possible, subject to Council approval.

The works will be 100% funded by NSW School Infrastructure Department.



Justin Walker
Senior Asset Services Officer
School Infrastructure NSW, NSW Government
Suite 7A, 6-18 Bridge Road
Hornsby, NSW 2077

15 November 2019

Dear Justin,

RE: Northbridge Public School – Proposed Accessible Car Bay Assessment Final v2

MGAC has been engaged to assess a proposed accessible car bay at the rear end of Northbridge Public School on Roche Lane. The proposed accessible car bay will be located at the eastern end of the lane where it meets the gate of Northbridge Golf Course. While this report captures the design feasibility of the accessible car bay, advisory notes have been included with regards to the car bay's relationship to the school and the path of travel leading to it.

The assessment has been based on the delivery of equality, inclusiveness and functionality for people with disabilities and the achievement of universal accessibility.

Site Description

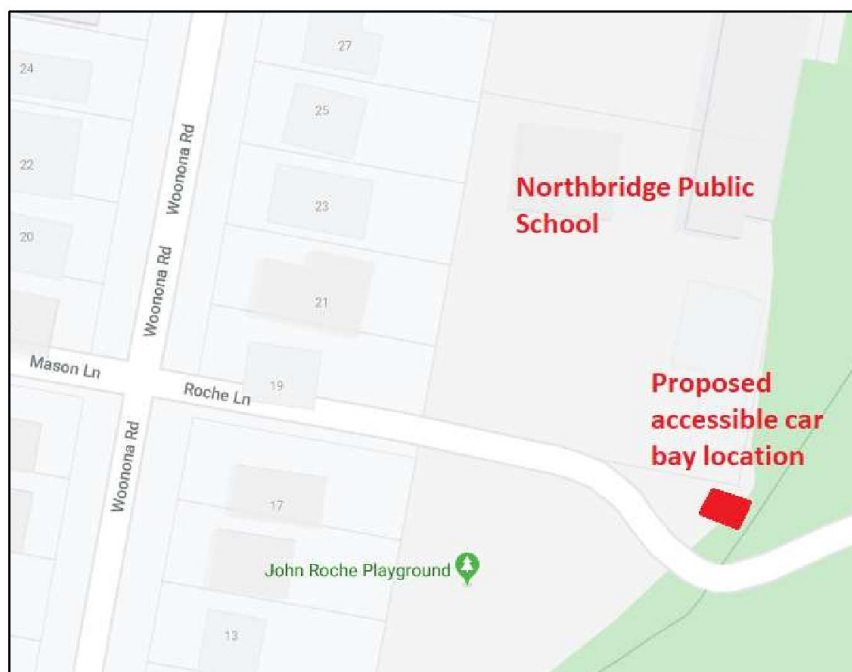
The proposed works is the allocation of an accessible car bay, associated shared area and associated signage/markings in accordance with relevant Australian Standards at the end of Roche Lane. Roche Lane is a dead-end road that borders the southern edge of Northbridge Public School.

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Statutory Regulations

The regulation that this report has used as a basis of the assessment

- ☐ AS2890.6 – 2009 (Off-street parking for people with disabilities)
- ☐ AS1428.1 – 2009 (General requirements for access – New building work)

Assessment

The area proposed for the accessible car bay and shared area is currently used for parking by Northbridge Public School (see figure 1 below). This parking area backs up against the eastern fence bordering Northbridge Golf Course and is separate to the vehicular path of travel leading from Roche Lane to the Northbridge Golf Course access gate.

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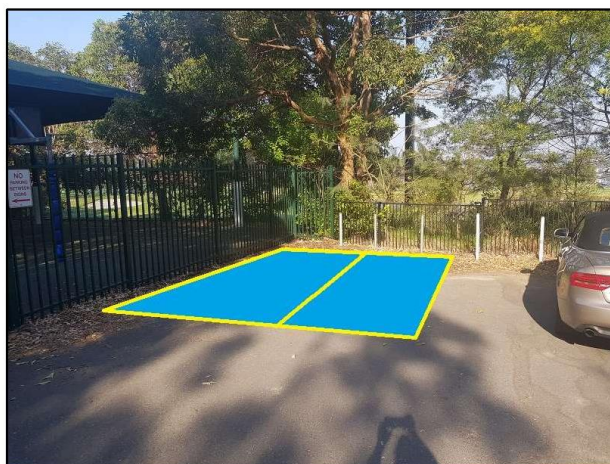


Figure 1

The area is predominantly sealed asphalt of grades varying from approximately 1 in 8 to 1 in 40 and shallower, with some sharp rises and falls with the threshold between ground surface finishes (indicated in red within figure 2 below). The area is currently susceptible to plant litter, however appropriate management will enable clear paths of travel throughout the area. There are no mandatory requirements under code to have illumination at an accessible car bay.

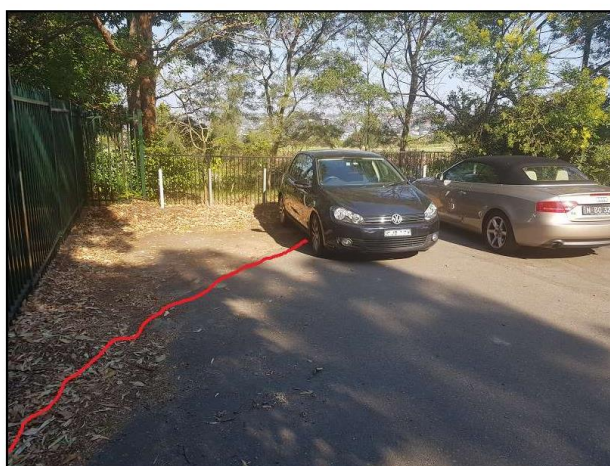


Figure 2

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Under AS2890.6:2009, a 4.8m wide x 5.4m long consisting of the accessible car space with dimensions of 2.4m wide x 5.4m long and the associated shared area with dimensions of 2.4m wide x 5.4m long is required.

The area highlighted in figure 1 can achieve 4.8m wide x 5.4m long clear of the vehicular path of travel in accordance with AS2890.6:2009 Fig. 2.3. Works will need to be undertaken to ensure the entire 4.8m wide x 5.4m long area is graded at no more than 1 in 40 (or 1 in 33 if bitumen is used). This area (including all line-marking) is required to be slip resistant both in dry and wet conditions.

The area highlighted in figure 1 achieves headroom requirements of AS2890.6:2009 Fig. 2.7. All branches of nearby trees are clear of the required 2.5m headroom above the proposed accessible car bay and associated shared area.

The accessible car bay is to be marked with the universal symbol for access in accordance with AS2890.6:2009 Clause 3.1. This denotes the white symbol of access being between 800mm – 1000mm high within a blue rectangle with sides no longer than 1200mm. The shared area is required to be hatched for the full area and all line-marking is to be in the colour yellow. It is advised that additional vertical signage is provided at the far end of the bay to indicate that it is an accessible bay.

A bollard is required 800mm \pm 50mm from the end of the shared area. Based on site measurements, this required bollard falls outside the vehicular path of travel on Roche Lane. As this bollard stands, it is advised that this bollard is also yellow or achieves appropriate luminance contrast with surrounding surfaces to minimise the potential of an accident.

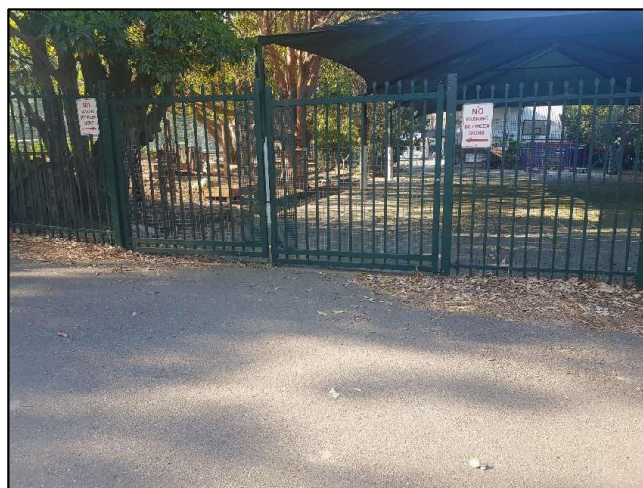


Figure 3

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From the accessible car bay, an AS1428.1:2009 compliant accessible path of travel is required to the school (see figure 3 above). Depending on the exact location of the proposed accessible car bay, appropriate grades appear to be achievable.

The scope of works also outlines upgrade to the apron/threshold from Roche Lane to the school. This threshold will also need to be designed in accordance to AS1428.1:2009, however on-site measurements show this is achievable and can be resolved in further design development.

Conclusion

Based on the above analysis, the following input addresses information sought by the council:

1. Is the area adequate and levelled?

Response – The area is not adequate and level in its current condition. As part of the construction works, the area will be refurbished as a hardstand plane surface with a fall not exceeding 1:40 in any direction in accordance with AS/NZS 2890.6:2009.

2. Can an adequate turning area be retained?

Response – The Department of Education will address this item in a separate assessment.

3. Does the surface need to be resurfaced for wheelchair users?

Response – As part of the construction works, the area will be refurbished as a hardstand plane surface with a fall not exceeding 1:40 in any direction in accordance with AS/NZS 2890.6:2009.

4. Are there any drainage issues?

Response – After refurbishment the accessible car bay and shared area will be graded at 1:40 providing suitable run-off for drainage.

5. Is there provision for lighting?

Response – There are no mandatory requirements under accessibility codes to have illumination at an accessible car bay.

6. Has there been stakeholder consultation?

Response – The Department of Education will address this item in separate documentation.

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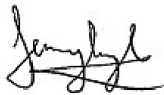
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It is my opinion that the area at the end of Roche Lane is suitable for an AS2890.6:2009 compliant accessible car bay. Works will need to be undertaken on the grades of the accessible car bay and shared zone to ensure the compliant grade of 1 in 40 (or 1 in 33 for bitumen surfaces) is achieved. The accessible car bay and required adjacent shared area can achieve full compliance in accordance with AS2890.6:2009. Line-marking, signage and provision of a bollard will also need to be provided, which is readily achievable.

Yours faithfully,



Jeremy Tagle
Senior Access Consultant
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Yousaf, Hassan

From: Justin Walker <justin.walker39@det.nsw.edu.au>
Sent: Wednesday, 13 November 2019 5:24 PM
To: Herath, Anoma
Cc: Yousaf, Hassan; Pat Timmins
Subject: RE: Application to create a disabled parking space for Northbridge Public School
Attachments: image042.wmz; image005.emz; image044.emz; image046.emz; image048.emz; image050.emz; image052.emz; image056.emz; image059.emz; Northbridge Public School - Proposed Accessible Car Bay Assessment Final.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Anoma and Hassan,

Please find attached the disability access consultant's report.

Apologies that this is a little late, however could I request that this matter be confirmed as on agenda item in the upcoming traffic committee meeting on 27th November?

Also, please find below the section of our scope of work describing what our contractor will be required to construct:

1.1 Disabled parking space in Roche Lane

- Construct a disabled parking space in Roche Lane in accordance with all relevant Australian Standards.
- The disabled parking space is to be clearly marked and signposted. See Figures 15, 16 and 17.

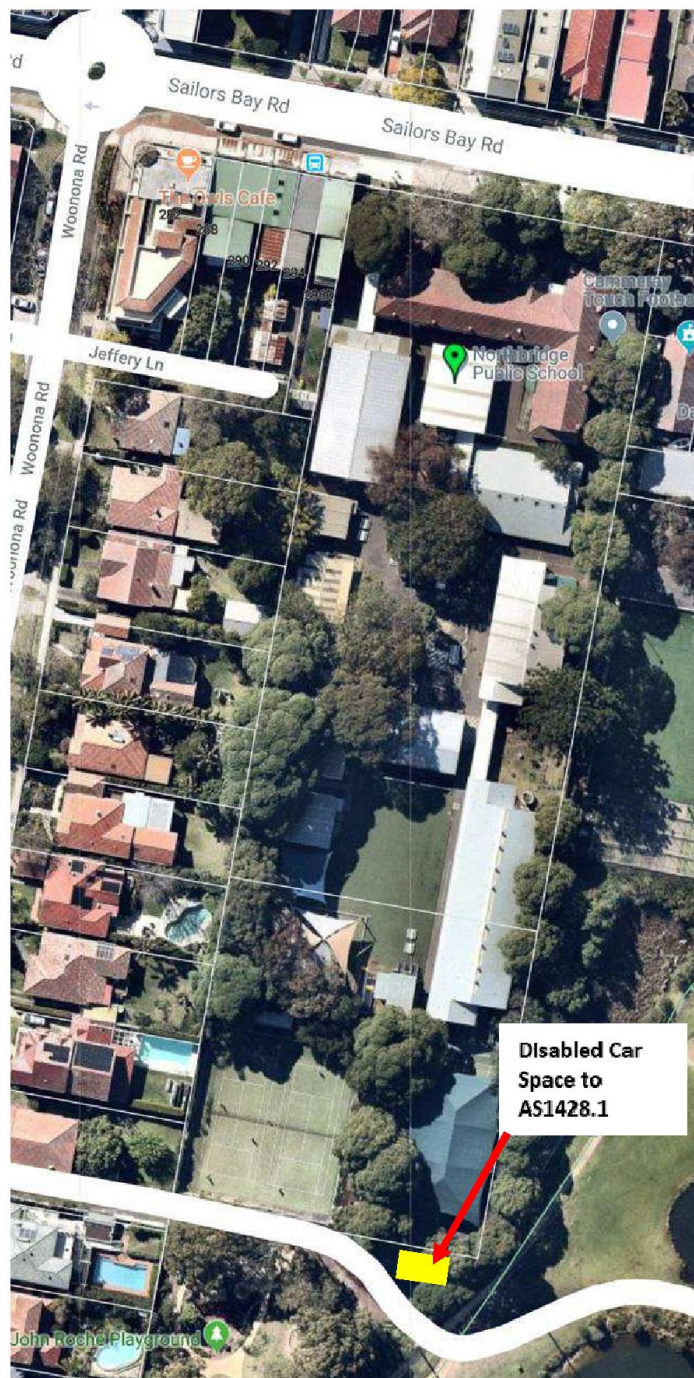


Figure 15: Location of proposed disabled parking space



Figure 16: Location of proposed disabled parking space to AS1428.2 in Roche Lane

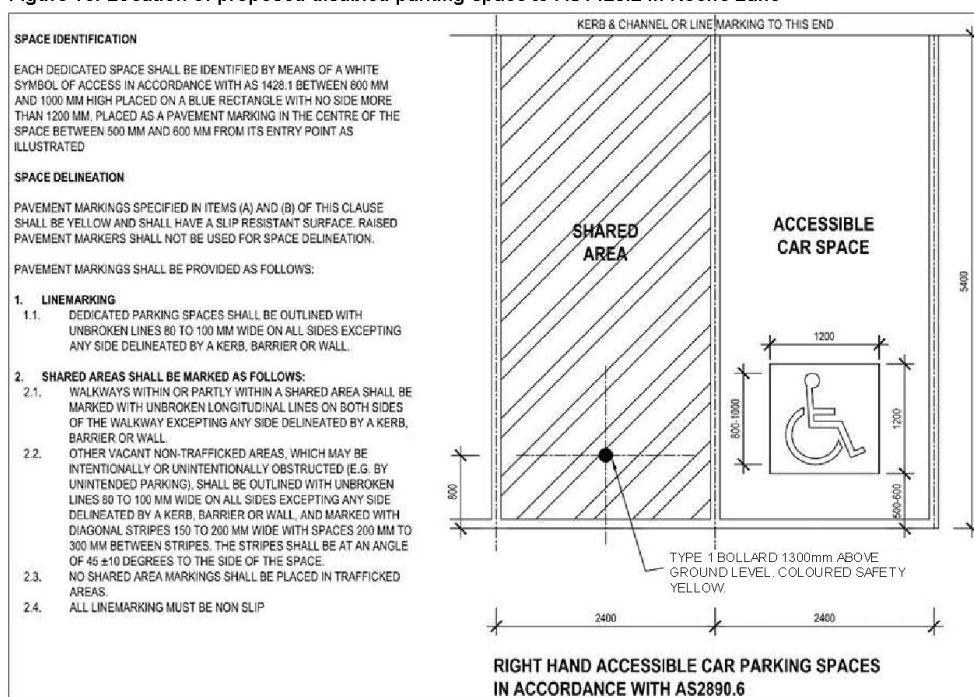


Figure 17: Details of disabled car parking space



Figure 18: Double gates at Roche Lane – New concrete apron

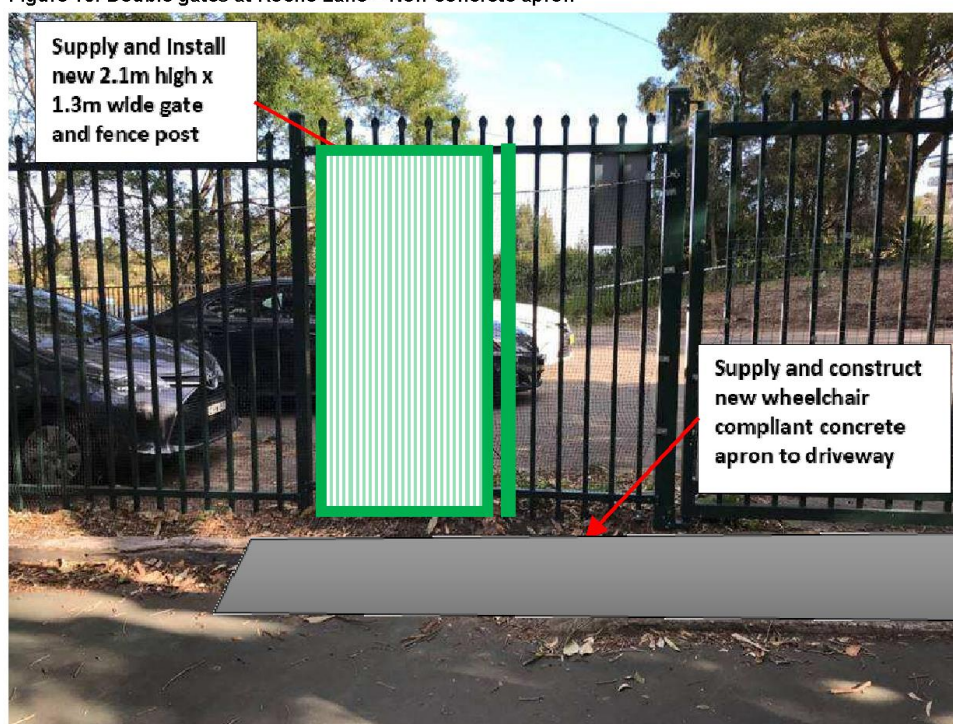


Figure 19: Double gates at Roche Lane – New pedestrian gate

Regards,

4.3 CARR STREET, EDDY ROAD, LONE PINE AVENUE, BERESFORD AVENUE, DALRYMPLE ROAD AND BEACONSFIELD ROAD, CHATSWOOD AND CHATSWOOD WEST - NO PARKING, BUS ZONE AND 4P TIMED PARKING WITH RESIDENT PARKING RESTRICTIONS

ATTACHMENTS:	1. STATE TRANSIT AUTHORITY 255 BUS ROUTE TRAFFIC STUDY 2. STATE TRANSIT AUTHORITY 255 BUS ROUTE RISK ASSESSMENT REPORT 3. PROPOSED NEW PARKING RESTRICTIONS IN CHATSWOOD AND CHATSWOOD WEST 4. PARKING RESTRICTION PLAN
WARD:	WEST WARD
RESPONSIBLE OFFICER:	GORDON FARRELLY - TRAFFIC & TRANSPORT TEAM LEADER
AUTHOR:	DANIEL SUI - SENIOR TRANSPORT ENGINEER
CITY STRATEGY OUTCOME:	2.4 – REDUCE PARKING AND TRAFFIC CONGESTION
MEETING DATE:	27 NOVEMBER 2019

1. PURPOSE OF REPORT

To approve implementation of timed No Parking, timed Bus Zone and 4P timed parking with resident parking restrictions in Carr Street, Eddy Road, Lone Pine Avenue, Beresford Avenue, Dalrymple Road and Beaconsfield Road, Chatswood and Chatswood West to support the safe and efficient movement of State Transit Authority's (STA) 255 bus service between Chatswood Interchange and Chatswood West.

2. OFFICER'S RECOMMENDATION

That Council:

- **Note the 255 Bus Service Traffic Study and STA 255 Bus Route Safety Risk Assessment report.**
- **Approve the implementation of Bus Zones 6:30am to 6:30pm Monday to Saturday restrictions at all exiting bus stops as outlined in ATTACHMENT 3 and ATTACHMENT 4.**
- **Approve the implementation of No Parking 6:30am to 6:30pm Monday to Saturday regulatory parking restrictions on Carr Street, Eddy Road, Lone Pine Avenue, Beresford Avenue, Dalrymple Road and Beaconsfield Road as outlined in ATTACHMENT 3 and ATTACHMENT 4.**

- **Approve the implementation of 4P 6:30am to 6:30pm Monday to Saturday Residential Parking Area (RA 6) parking restrictions in Carr Street as outlined in ATTACHMENT 3 and ATTACHMENT 4**
- **Note that monitoring of the impact of the street parking restrictions on the performance of the 255 bus service will be undertaken in consultation with STA and TfNSW.**
- **Note that a report will be presented to the Local Traffic Committee within 12 months of implementation which will outline the impact of the street parking restrictions on the performance of the 255 bus service and consider adjustments to the street parking restrictions including the reinstatement of the existing unrestricted parking zones if necessary to improve residents' amenities. The report will be written in consultation with STA and TfNSW.**

3. BACKGROUND

The Local Traffic Committee (LTC) at its meeting on 19 June 2019 (Item 4.5) recommended changes to street parking arrangements along De Villiers Avenue, Eddy Road and Lone Pine Avenue to support the safe and efficient movement of the STA 255 bus service. Council at its meeting on 12 August 2019 adopted the LTC recommendations.

The approved parking restrictions were implemented in late October 2019. Observations indicate that buses are now able to manoeuvre safely and efficiently through De Villiers Avenue, Eddy Road and Lone Pine Avenue.

An investigation has been completed and proposed improvement works developed for the remaining sections of STA 255 bus service route in consultation with STA and TfNSW. The aim of the street parking proposal is to maximise safety for all road users, increase bus travel time reliability, maintain access for all road users, maximise local amenity by retention of street parking and prioritise local residents' parking with permits where it is needed. The investigation considered bus movements along:

- Carr Street between Centennial Avenue and De Villiers Avenue
- Eddy Road between De Villiers Avenue and Lone Pine Avenue
- Lone Pine Avenue between Eddy Road / De Villiers Avenue and Beresford Avenue
- Beresford Avenue between Lone Pine Avenue and Pearl Avenue
- Dalrymple Road between Beresford Avenue and Ivy Street
- Dalrymple Road, east of Beaconsfield Road
- Beaconsfield Road between Greville Street and Ferndale Street, and
- Intersection of Beaconsfield Road and Cramer Crescent.

Centennial Avenue is part of an existing 2P timed parking with resident parking scheme (RA 6) that is adjacent to Carr Street.

The investigations included a traffic study and consideration of a risk assessment undertaken by State Transit Authority. A copy of the traffic study and risk assessment report is provided in ATTACHMENT 1 and ATTACHMENT 2.

4. DISCUSSION

The investigations identified the following needs to support the the safe and efficient movement of the State Transit Authority's (STA) 255 bus service:

- Formalise all existing bus stops
- Address pinch points, and
- Prioritise local resident and visitor parking needs over commuters.

Sections of Carr Street, Eddy Road, Beresford Avenue, Dalrymple Road and Beaconsfield Road have been identified as pinch points.

During the investigations it was observed that long term commuter parking occurs in Carr Street which reduces access for residents and visitors to street parking opportunities in the local area during weekday business hours.

The initial proposal was to implement the following new parking restrictions to address the needs/ problems:

- Bus Zones 6:30am to 6:30pm Monday to Saturday restrictions
- No Parking 6:30am to 6:30pm Monday to Saturday restrictions, and
- 2P 6:30am to 6:30pm Monday to Saturday Residential Parking Area (RA 6).

The timed Bus Zone and No Parking restrictions will enable local residents and visitors to park outside of the hours of operation of the restrictions.

The proposed changes are listed in ATTACHMENT 3 and provided in a Street Parking Plan in ATTACHMENT 4.

Community consultation with all the affected residents was undertaken and 23 submissions were received. In summary, 14 supported the proposal, 2 opposed and 7 provided a mixed response. The community feedback for each street is provided below:

	Street	Support	Oppose	Comments
1.	Carr Street	6/ 7 ^A	2/ 7 ^B	0
2.	Eddy Road (Option 2)	3	0	0
3.	Lone Pine Avenue	0	0	0
4.	Beresford Avenue	0	0	0
5.	Dalrymple Road	2	0	2
6.	Beaconsfield Road	3	0	1

A – Support for proposed Bus Zone 6:30am to 6:30pm Monday to Saturday restrictions only.

B – Opposed the No Parking 6:30am to 6:30pm Monday to Saturday restrictions and 2P 6:30am to 6:30pm Monday to Saturday Residential Parking Area (RA 6) restrictions.

The community feedback for Eddy Road, Lone Pine Avenue, Beresford Avenue, Dalrymple Road and Beaconsfield Road indicated that the local community was accepting and/ or

generally in support of the proposed new street parking restrictions. All submissions were considered. There are no changes to the original proposal on these streets following consideration of the community feedback.

Council received a total of 15 unique submissions from Carr Street residents. The breakdown of the responses indicated 6 support all measures, 2 opposed all measures and 7 supported the provision of timed bus zone restrictions, but were opposed to the timed No Parking and timed parking with resident parking restrictions.

Carr Street is approximately 6.8 metres wide. Under the existing bus operations a 2.5 metres wide bus leaves 4.3 metres for parking on both sides of the road. Vehicle widths with extended side mirrors combined with car parking orientation results in an extremely challenging road environment for motorists and bus drivers to navigate. The intent of the No Parking 6:30am to 6:30pm Monday to Saturday restrictions is to provide more road space for vehicle movements along Carr Street. It is also noted that the STA has provided evidence of incidents along Carr Street which demonstrates an on-going safety and mobility problem that needs to be resolved.

The residents' feedback indicates that the major concern is the loss of 7 kerbside parking spaces on the western side of Carr St and that the proposed 2P timed parking with resident parking is too short a duration for visitors, especially on Saturday. Investigations have revealed that the majority of the properties along Carr Street have at least one off street car parking spaces with 2 properties having no off street parking. In addition, observations of car parking demands in Carr Street and in adjacent local streets reveal that there is car parking available throughout the day. All properties with no off street parking and one off street parking space in Carr Street are eligible to receive resident parking permits and to purchase visitor parking permits for their visitors. In addition, implementing the initially proposed 2P timed parking with resident parking restrictions on the eastern side of Carr Street will provide a longer duration for local residents and visitors to park.

Carr Street residents requested that other measures be considered including using smaller buses; road widening; parking bay markings; permission for residents to park on the nature strip and park half on the road and nature strip. These suggestions have been investigated and are not considered feasible. A response to each suggestion is provided below:

Suggestion	Response
Provide smaller buses and changing bus routes	Transport for New South Wales and State Transit Authority have advised that due to existing bus operational reasons provision of smaller bus is not feasible at this time.
Implement road widening	This is not favoured due to the high cost.
Install parking bay marking	This is not considered necessary in Carr Street at this time.
Provide permission for residents to park on the nature strip	Contradicts the Australian Road Rules and Roads and Maritimes Services Parking rules.
Provide permission for residents to park half on the road and nature strip	This arrangement is permitted in specific circumstances that do not apply to Carr Street at this time.

When considering bus safety and mobility operational needs, the proposed changes and the resident concerns in Carr Street it is considered that, on balance, the proposal has merit and should be implemented. The proposed change to the initially proposed 2P to 4P timed parking with resident parking restrictions on the eastern side of Carr Street will provide a

longer duration for local residents and visitors to park and should be incorporated into the original proposal.

5. CONCLUSION

The community feedback for Eddy Road, Lone Pine Avenue, Beresford Avenue, Dalrymple Road and Beaconsfield Road indicated that the local community was accepting and/ or generally in support of the proposed new street parking restrictions. All submissions were considered. There are no changes to the original proposal on these streets following consideration of the community feedback.

Council received a total of 15 unique submissions from Carr Street residents. The breakdown of the responses indicated 6 Support all measures, 2 opposed all measures and 7 supported the provision of timed bus zone restrictions and were opposed to the timed No Parking and timed parking with resident parking restrictions. When considering bus safety and mobility operational needs, the proposed changes and the resident concerns in Carr Street it is considered that, on balance, the proposal has merit and should be implemented. The proposed change to the initially proposed 2P to 4P timed parking with resident parking restrictions on the eastern side of Carr Street will provide a longer duration for local residents and visitors to park and should be incorporated into the original proposal.

A Street Parking Plan has been developed to formalise all existing bus stops, eliminate bus movement pinch points and prioritise local resident and visitor parking needs over commuters. The plan is anticipated to improve the safe access and efficient movement of STA 255 bus services operating between Chatswood Interchange and Chatswood West as well as maximise local amenity. It is recommended that the Local Traffic Committee support the plan. The Street Parking Plan is outlined in ATTACHMENTS 3 and 4.

The proposed street parking improvement works will be funded from Willoughby Street Parking Strategy 2019/20 delivery program.

Willoughby City Council
Route 255
Bus Route Review – Stage 2

Final | 15 November 2019

This report takes into account the particular instructions and requirements of our client.
It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 250602-15

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Document verification

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Job title	Route 255		Job number	250602-15	
Document title	Bus Route Review – Stage 2		File reference		
Document ref					
Revision	Date	Filename	191023 Bus Route 255 Review Update.docx		
Draft 1	13 Nov 2019	Description	First draft		
			Prepared by	Checked by	Approved by
		Name	Ahsan M Haider, Ian Brocklehurst	Ian Brocklehurst	Ian Brocklehurst
		Signature			
Final	15 Nov 2019	Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name	Ahsan M Haider, Ian Brocklehurst	Ian Brocklehurst	Ian Brocklehurst
		Signature			
		Filename			
		Description			
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Contents

	Page
1 Introduction	1
1.1 Overview	1
1.2 Purpose of Report	1
2 Project Context	2
2.1 Route 255	2
2.2 Stage 1 Findings	3
3 Identification of issues	4
3.1 Methodology	4
3.2 Assessment assumptions	4
3.3 Swept path analysis findings	5
4 Proposed Mitigations	7
4.1 Overview	7
4.2 Formalising Bus Stop Zones	7
4.3 Proposed parking mitigation measures	9
4.4 Consultation	11
5 Conclusion	12

Appendices

Appendix A

Stage 1 – Implemented Changes

Appendix B

Swept Path Assessment

Appendix C

Existing Parking Restrictions

Appendix D

Proposed Parking Mitigations

1 Introduction

1.1 Overview

Arup has been engaged by Willoughby City Council (Council) to review the operations, identify issues and recommend potential mitigation measures for bus route 255 (Colwell Crescent to Chatswood). This bus service connects the western part of Chatswood to Chatswood Interchange.

Arup previously carried out the first stage of the route assessment in April 2019. This initial work focused on Eddy Road and De Villers Avenue as the locations with highest priority issues as advised by the bus operator and local community feedback.

This report will continue upon the stage 1 works, to complete a review of the remainder of the route.

1.2 Purpose of Report

The key purpose of this review is to improve bus operations on the 255, making it safer and improve travel times and the reliability for customers by overcoming identified constraints along the route.

This report will continue reviewing those locations along the route following Stage 1. The purpose of this report is to:

- Analyse the current operation of the bus route
- Identify issues and problems with current operations with a focus on parking restrictions
- Develop options to mitigate any issues and problems identified
- Provide an overview of consultations with the community and key stakeholders (to be undertaken by Council)
- Report findings and recommendations to improve the operation of the route.

Council will use the findings from this report to submit recommendations for endorsement at the local traffic committee.

It is noted that this investigation focused on operational issues only, consideration was not given to DDA compliance or bus stop infrastructure.

2 Project Context

2.1 Route 255

Route 255 is a bus route connecting the western part of Chatswood to the Chatswood Interchange. It is an infrequent service, operating around every 2 hours in each direction between 6.50 am and 6.30 pm on weekdays; and 9.00 am to 5.30 pm on Saturdays. There are no Sunday services. Figure 1 shows the bus route in blue.

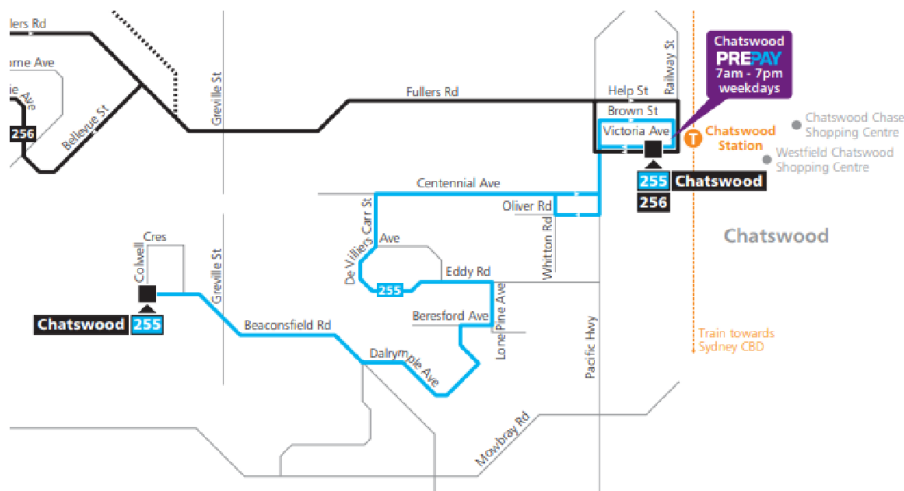


Figure 1: Diagrammatic route map

Source: Transport for NSW

Route 255 operates mainly in a low-density residential environment with narrow streets and low patronage. The service is mainly used by residents for access to Chatswood or by students to access local schools.

Both Willoughby City Council and the State Transit Authority (STA) have received several complaints from residents about the operation of buses on the route, particularly from conflicts with parked cars, noting an occasion where a bus driver had to leave the bus to have a car moved so the bus could continue on its route.

STA has recorded a few incidents involving buses and parked cars along the route. Considering this, Council decided to review the current operations of route 255 in conjunction with STA.

Data analysis including consideration of travel patterns, patronage and service performance was undertaken for Stage 1, this work was used to inform Stage 2 (this report).

2.2 Stage 1 Findings

In stage 1, following a review of the operations of the 255 route and on-site observations Arup identified three potential options to improve bus operations and manoeuvrability on Eddy Road and De Villiers Avenue. These options included:

- **Option A** – Relocate 3 bus stops to address issues.
- **Option B** - Maintain existing bus stop locations, add No Parking restrictions to key pinch points
- **Option C** - Remove parking on the southern side of Eddy Road and western side of De Villiers Avenue completely.

Each option presented, different benefits and constraints. We compared each option against the potential improvements to bus operations, improved manoeuvrability and impact on local parking. A summary table is shown below.

Consideration	Option A	Option B	Option C
Improvement in bus operations	✓	✓	✓
Bus stop manoeuvring and alignment with kerb	✗	✓	✓
Retain parking	✓	✓	✗
Parking Spaces Removed	10 spaces	20-25 spaces	35-45 spaces

Table 1 Stage 1 – Summary of options impact assessment

It was recommended that option B was preferred, as it provided the right balance of benefits while limiting the impact on parking removal on the residents. The report also recommended that formal bus zone signage be installed at all bus stops along the route.

The key findings from Stage 1, have been endorsed by the Council and Implemented in October 2019. The proposed changes are shown in the plans attached in **Appendix A**.

3 Identification of issues

3.1 Methodology

An assessment framework was developed to identify, assess and address issues and conflicts relating to operations of buses along the route 255.

A swept path assessment was carried out from Carr Street to Beaconsfield Road, it used information from several sources such as on-site visit observations, a previous State Transit Authority (STA) risk assessment and analysis of bus performance data. Issues identified as part of the swept path assessment were split into two different categories:

- Identified major conflicts (shown in red); and
- Potential conflicts (shown in orange).

The proposed mitigation response for each category is different. Generally, major identified issues are matched with proposed mitigation measures, while those shown as potential conflicts had a mixture of parking changes and ongoing monitoring.

3.2 Assessment assumptions

The following assumptions were used to undertake the swept path assessment:

- A 2.5m wide, 12.5m long rigid bus has been used for the assessment.
- A B85 design vehicle has been assumed for the parked vehicles.
- A 300mm envelope on both sides of the bus has been assumed. This is inconsistent with the *State Transit Bus Infrastructure Guide*.
- A bus speed of 5km/hr has been assumed at pinch points. This is consistent with the analysis of the bus service speeds presented in the previous Arup report and was observed to be a realistic speed based on on-site observations.
- A road width of approximately 7.4 metres (kerb face to kerb face) was measured during the site visit. This has been used for assessment where relevant.
- *AS2890.5* outlines a minimum width of 2.1 metres for on-street parking spaces. This width has been used as a guide in the placement of the on-street parked vehicles.
- The parking arrangement shown in the swept paths represents a theoretical maximum parking demand where all possible parking spaces are occupied.
- The number of parking spaces available is difficult to quantify in exact terms. This is because the number of cars that can be parked in an on-street environment can be dependent on the vehicle size and tendency for different drivers to park closer or further away from the next vehicle. Thus, the number of spaces assumed is an estimated amount based on typical conditions, rather than an exact number.

3.3 Swept path analysis findings

A swept path assessment was undertaken using aerial imagery, to understand and identify potential conflicts and issues with the current bus operations. The assessment considered buses travelling in both directions and was carried out using AutoCAD Vehicle Tracking software.

Issues are generally caused by on-street parking on local roads and are typically exacerbated due to the narrow carriageway widths in the area, and curves or intersections. The impact of this can include:

- Parked cars obstruct bus movements and access
- Buses become stuck between parked cars
- Damage to buses and cars due to narrow widths
- One-way traffic meaning, vehicles cannot pass
- Buses not being able to reach the kerb to pick up passengers

The swept path assessment is shown in **Appendix B**. The findings of the swept path assessment are summarised in Table 2.

Table 2: Swept path assessment findings

Street	Adjacent Addresses	Issue Type	Issue Description
Carr Street	4-18 Carr Street	Identified conflict	Parking on both sides of Carr Street, require vehicles to drive in the middle of the road.
De Villiers Avenue	22 De Villiers Avenue	Identified conflict	Parked cars on the corner of Carr St and De Villiers Avenue restricts the ability of buses turning in a safe manner
De Villiers Avenue	24-26 De Villiers Avenue	Identified conflict	Parking on both sides of the road at the curve impedes bus access and manoeuvrability.
De Villiers Avenue	26-32 De Villiers Avenue	Identified conflict	Parking on both sides of the road at the curve impedes bus access and manoeuvrability.
Eddy Road	81-83 Eddy Road	Identified conflict	Parking on both sides of the road at the curve impedes bus access and manoeuvrability.
Eddy Road	40 Eddy Road	Identified conflict	Parked car at the intersection of Lone Pine Avenue and Beresford Avenue restricts

Willoughby City Council

Route 255
Bus Route Review – Stage 2

Street	Adjacent Addresses	Issue Type	Issue Description
			the ability of buses turning in a safe manner.
Lone Pine Avenue	19 Lone Pine Avenue	Identified conflict	Parked car at the intersection of Lone Pine Avenue and Beresford Avenue restricts the ability of buses turning in a safe manner.
Lone Pine Avenue	3-15 Lone Pine Avenue	Identified conflict	Parking on both sides of the road impedes bus access and manoeuvrability.
Lone Pine Avenue	1 Lone Pine Avenue	Identified conflict	Parked car restricts the ability of buses turning in a safe manner.
Beresford Avenue	Southside of Beresford Avenue (Wallace Park Reserve)	Potential conflict	Parking on both sides of the road impedes bus access and manoeuvrability.
Dalrymple Avenue	79-91 Dalrymple Avenue	Identified conflict / Potential conflict	Parking on both sides of the road at the curve impedes bus access and manoeuvrability.
Dalrymple Avenue	Northside of Dalrymple Avenue adjacent to Ferndale Park	Identified conflict	Parked car on the corner of Dalrymple Avenue near park restricts the ability of buses turning in a safe manner.
Dalrymple Avenue	39-41 Dalrymple Avenue	Identified conflict	Parking on both sides of the road at the curve impedes bus access and manoeuvrability.
Dalrymple Avenue	63 Beaconsfield Road	Identified conflict	Parking on both sides of the road at the curve impedes bus access and manoeuvrability.
Beaconsfield Road	70 Beaconsfield Road	Identified conflict	Parking on both sides of the road at the curve impedes bus access and manoeuvrability.
Beaconsfield Road	83-85 Beaconsfield Road	Identified conflict	Parking on both sides of the road at the curve impedes bus access and manoeuvrability.

Street	Adjacent Addresses	Issue Type	Issue Description
Beaconsfield Road	101-103 Beaconsfield Road	Identified conflict	Parking on both sides of the road at the curve impedes bus access and manoeuvrability.
Beaconsfield Road	117-119 Beaconsfield Road	Operational	Stopped bus blocks residential access to properties.

4 Proposed Mitigations

4.1 Overview

Arup has worked with the Council to develop a program of works, which looks to respond to issues of poor performance and Identified issues.

The program of works is to be delivered over several stages. The first stage completed by Arup in April 2019 was endorsed by Council and was implemented on site in October 2019. This report outlines the findings and recommendations of the second stage, and future stages will consider the outcomes of the ongoing monitoring of potential issues.

4.2 Formalising Bus Stop Zones

Bus manoeuvrability at stops have been identified as an issue following on-site observations. Buses that cannot pull into a stop correctly can impact on traffic flow, become stuck and are unsafe for customers due to a gap when boarding and alighting.

It is recommended that bus stops be modified to provide a 25-metre signposted bus zone. The bus zone would extend 17.5 metres on the approach side, and 7.5 metres on the departure side of the marked bus stop. This is not in accordance with standard guidelines which specify a length of 30m. However, given the low-traffic volumes and residential nature of the area, a length of 25m has been agreed upon in consultation with STA. See Figure 2.

Furthermore, as Route 255 does not operate on Sundays, the bus zones should be marked for bus operations only (6:30am – 6:30pm, Monday to Saturday).

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Route 255
Bus Route Review – Stage 2

A typical bus zone configuration is shown in Figure 2.

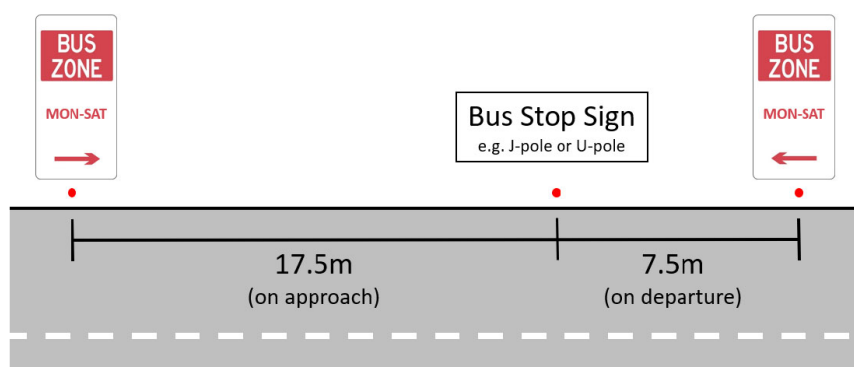


Figure 2: Bus Stop Design

Several of the existing bus stops already have bus zones. A total of 14 of the 28 bus stops along the route will need to be upgraded, these are shown below:

Table 3: Bus Stops Requiring Signposting

Direction	Stop Name	Stop TSN
Towards Chatswood Interchange	Beaconsfield Rd at Ferndale St	205736
	Dalrymple Ave at Beresford Ave	205723
	Eddy Rd opp De Villiers Ave	205720
	41 De Villiers Ave	205719
	De Villiers Ave at Carr St	205717
	Carr St at Centennial Ave	205776
	Centennial Ave opp Chatswood High School	205775
From Chatswood Interchange	De Villiers Ave opp Carr St	205777
	Eddy Rd at De Villiers Ave	205718
	Eddy Rd at De Villiers Ave	205722
	Dalrymple Ave at Beresford Ave	205780
	Beaconsfield Rd opp Ferndale St	205735
	Beaconsfield Rd before Greville St	205737
	Beaconsfield Rd before Cramer Cres	205739

4.3 Proposed parking mitigation measures

In response to the issues identified in Section 3, Arup has proposed several mitigation measures to address the impact of these issues, which includes the permanent removal of parking, changes to existing parking restrictions and the ongoing monitoring of some potential issues.

Generally, these mitigation measures look to remove parking spaces which present a barrier to the efficient and safe movement of buses during operating hours (6:30am to 6:30pm Monday to Friday).

Detailed maps showing the existing parking restrictions along the route are shown in proposed **Appendix C**, and the proposed parking changes are shown in **Appendix D**.

A summary of the recommended proposed parking changes are shown in Table 4.

Table 4: Proposed Parking Changes

Street	Adjacent Addresses	Proposed Recommendations	Number of Spaces	Status
Carr Street	4-18 Carr Street	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 7 spaces during bus operating hours	Proposed for Stage 2
De Villiers Avenue	22 De Villiers Avenue	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 2 spaces during bus operating hours	Implemented in Stage 1
De Villiers Avenue	24-26 De Villiers Avenue	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 2 spaces during bus operating hours	Implemented in Stage 1
De Villiers Avenue	26-32 De Villiers Avenue	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 11 to 13 spaces during bus operating hours	Implemented in Stage 1
Eddy Road	81-83 Eddy Road	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 2 spaces during bus operating hours	Implemented in Stage 1

Willoughby City Council

Route 255
Bus Route Review – Stage 2

Street	Adjacent Addresses	Proposed Recommendations	Number of Spaces	Status
Eddy Road	40 Eddy Road	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 2 spaces during bus operating hours	Implemented in Stage 1
Lone Pine Avenue	19 Lone Pine Avenue	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 9 to 12 spaces during bus operating hours	Implemented in Stage 1
Lone Pine Avenue	15-3 Lone Pine Avenue	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 1 space during bus operating hours	Proposed for Stage 2
Lone Pine Avenue	1 Lone Pine Avenue	Proposed No Stopping 6:30am-6:30pm Mon-Sat	Remove 1 space	Proposed for Stage 2
Beresford Avenue	Southside of Beresford Avenue (Wallace Park Reserve)	Proposed No Stopping 6:30am-6:30pm Mon-Sat	Remove 5 to 6 spaces during bus operating hours	Proposed for Stage 2
Dalrymple Avenue	91-79 Dalrymple Avenue	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 11 to 13 spaces during bus operating hours	Proposed for Stage 2
Dalrymple Avenue	Northside of Dalrymple Avenue adjacent to Ferndale Park	No change	No impact	Council and STA to monitor
Dalrymple Avenue	39-41 Dalrymple Avenue	Proposed No Parking 6:30am-6:30pm Mon-Sat	Remove 5 to 6 spaces during bus operating hours	Proposed for Stage 2

Street	Adjacent Addresses	Proposed Recommendations	Number of Spaces	Status
Dalrymple Avenue	63 Beaconsfield Road	No change	No impact	Council and STA to monitor
Beaconsfield Road	70 Beaconsfield Road	No change	No impact	Council and STA to monitor
Beaconsfield Road	83-85 Beaconsfield Road	No change	No impact	Council and STA to monitor
Beaconsfield Road	101-103 Beaconsfield Road	No change	No impact	Council and STA to monitor
Beaconsfield Road	117-119 Beaconsfield Road	Proposed relocation of bus stop	No net impact	Proposed for Stage 2

As shown in Table 4, the proposed Stage 2 mitigation measures would see one parking space removed permanently and changes to parking restrictions for an additional 29 to 33 spaces.

It is noted that based on the findings of the previous Arup Stage 1 report (April 2019), several of the proposed parking restrictions have already been implemented. These spaces are identified in the table and in the relevant maps.

4.4 Consultation

Council undertook consultation with the local community and key stakeholders including Transport for NSW (TfNSW) and State Transit Authority (STA) in October and November 2019.

Feedback provided to the Council was generally positive and in support of the proposed changes. See below for a summary.

- **TfNSW and STA:** Indicated they are happy with the draft proposals and support the proposed changes to parking along the bus route. They suggested that both Council and STA should monitor the bus route performance post-implementation and work together if minor changes are required.
- **Local Community:** A limited number of responses were received from affected residents, however, those submissions received were generally happy and supportive of the proposed parking mitigation recommendations.

5 Conclusion

Following a detailed review of the operations of the bus route 255, several issues were identified in relation to bus performance, widths, safety and manoeuvrability at stops.

To address these issues, and in the interest of improving bus operations, Arup has recommended changes to the proposed parking restrictions and bus stop signage along the route. These are detailed in section 4.

Proposed mitigation measures in Stage 2 would see one parking space permanently removed on Lone Pine Avenue and changes to parking restrictions for an additional 29 to 33 spaces. Parking would only be restricted during bus operating hours 6:30am – 6:30pm Monday to Saturday.

In addition to proposed parking controls, it is also recommended that bus zone signs be installed along the length of the route during bus operation hours (6:30am – 6:30pm Monday to Saturday). A total of 14 stops will need to be upgraded with bus zone signage.

Several issues have been identified for further monitoring before a recommended mitigation or change is proposed. Stakeholders and the local community were consulted and generally supported the proposed changes.

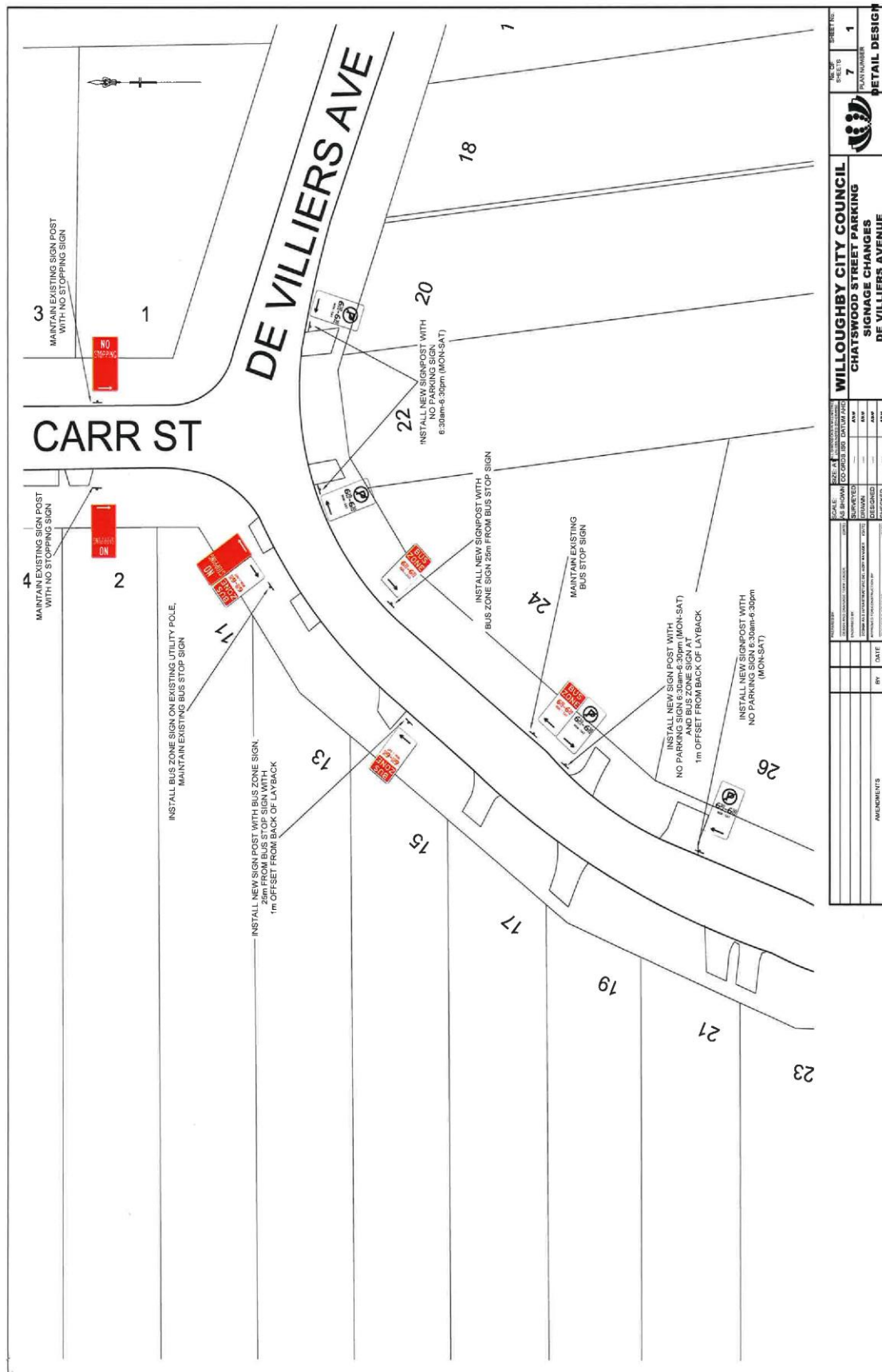
Immediate next steps include:

- A review of the recommendations and consultant inputs by council officers
- Submit the proposed changes to the local traffic committee for endorsement
- Implement the new parking controls on site.

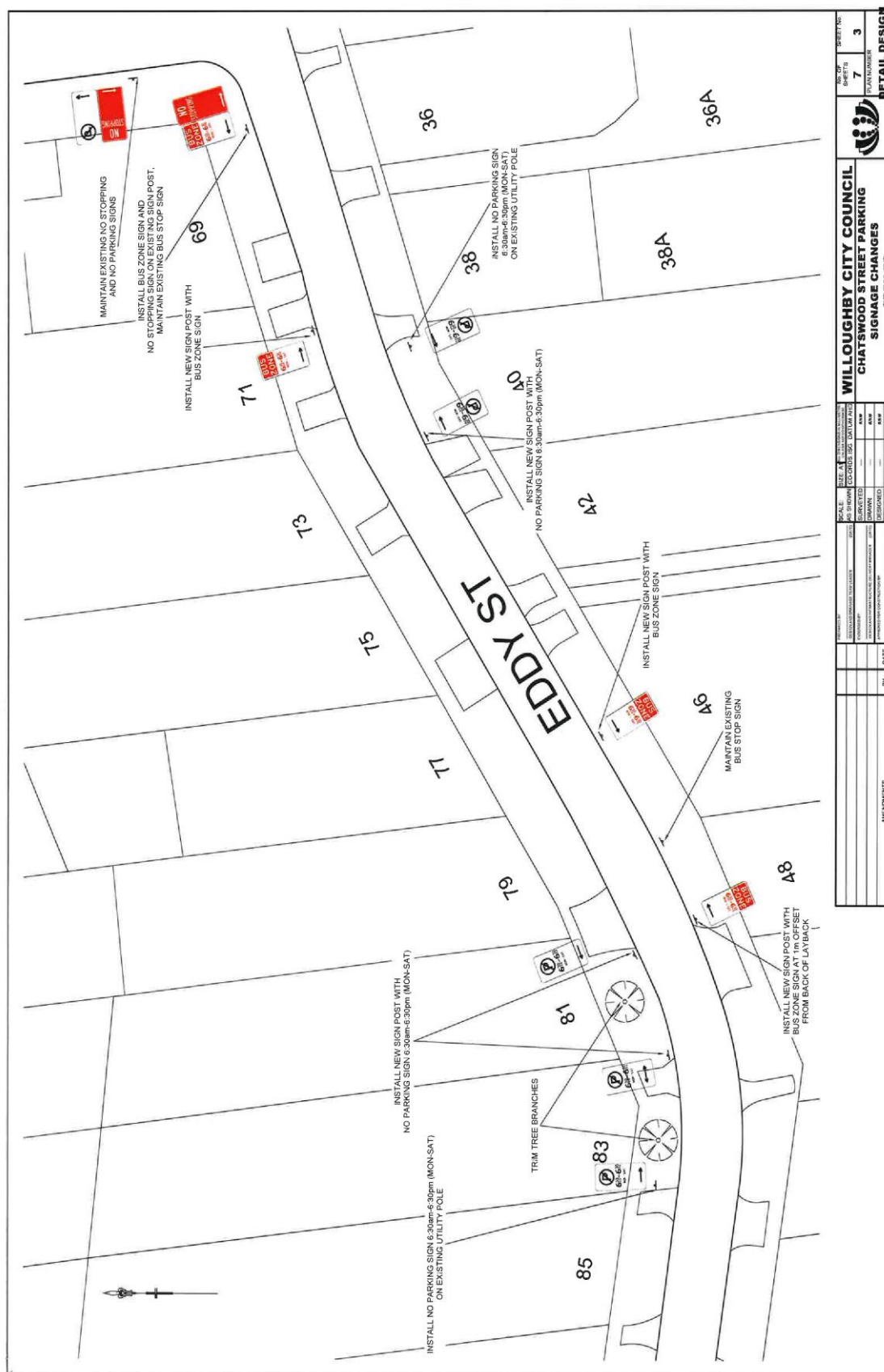
It is recommended that Council continue to monitor the operations of the 255 in conjunction with STA over the coming months to understand if the residents have benefited from the improvements and note any further issues, which could be addressed in future improvement works.

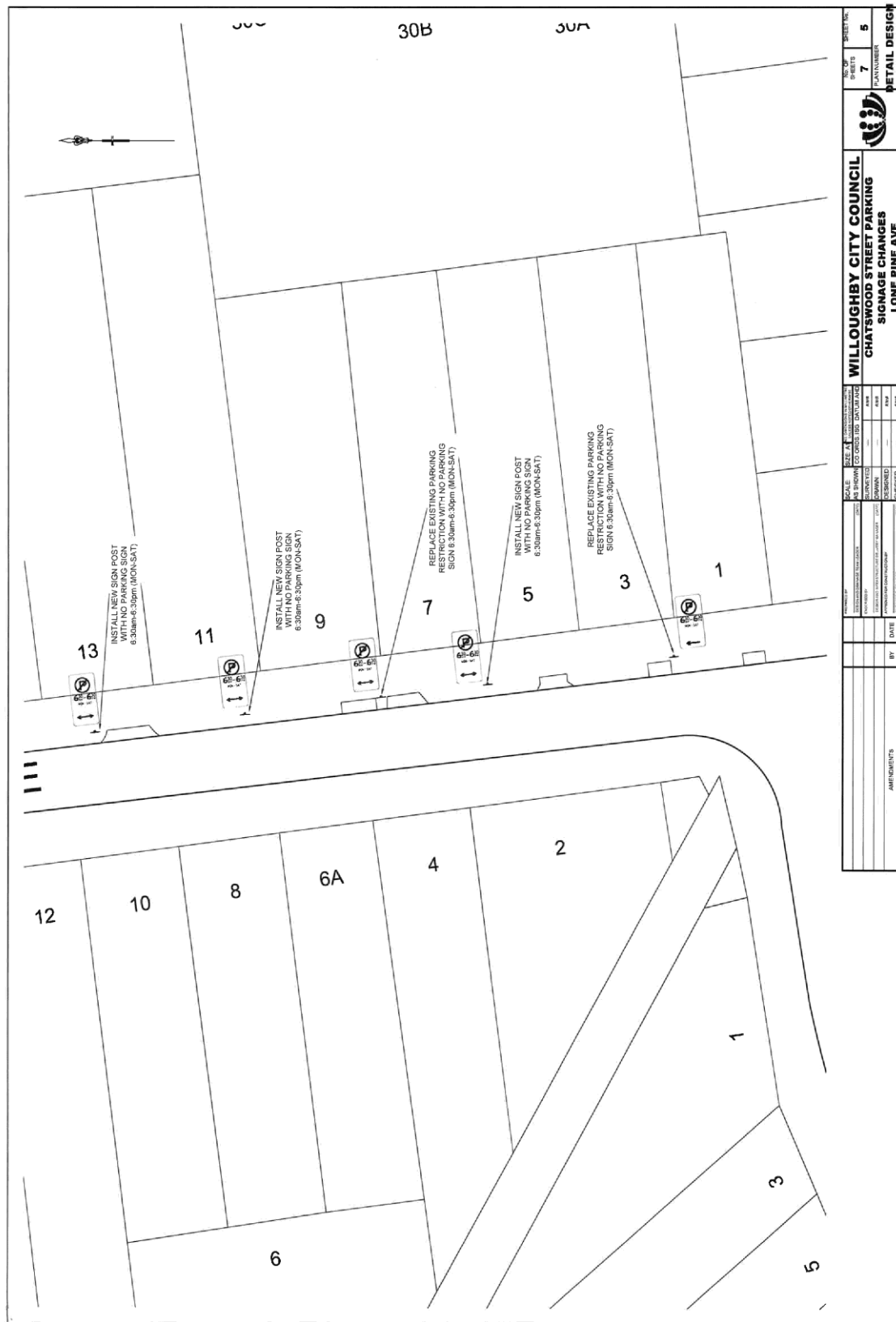
Appendix A

Stage 1 – Implemented Changes



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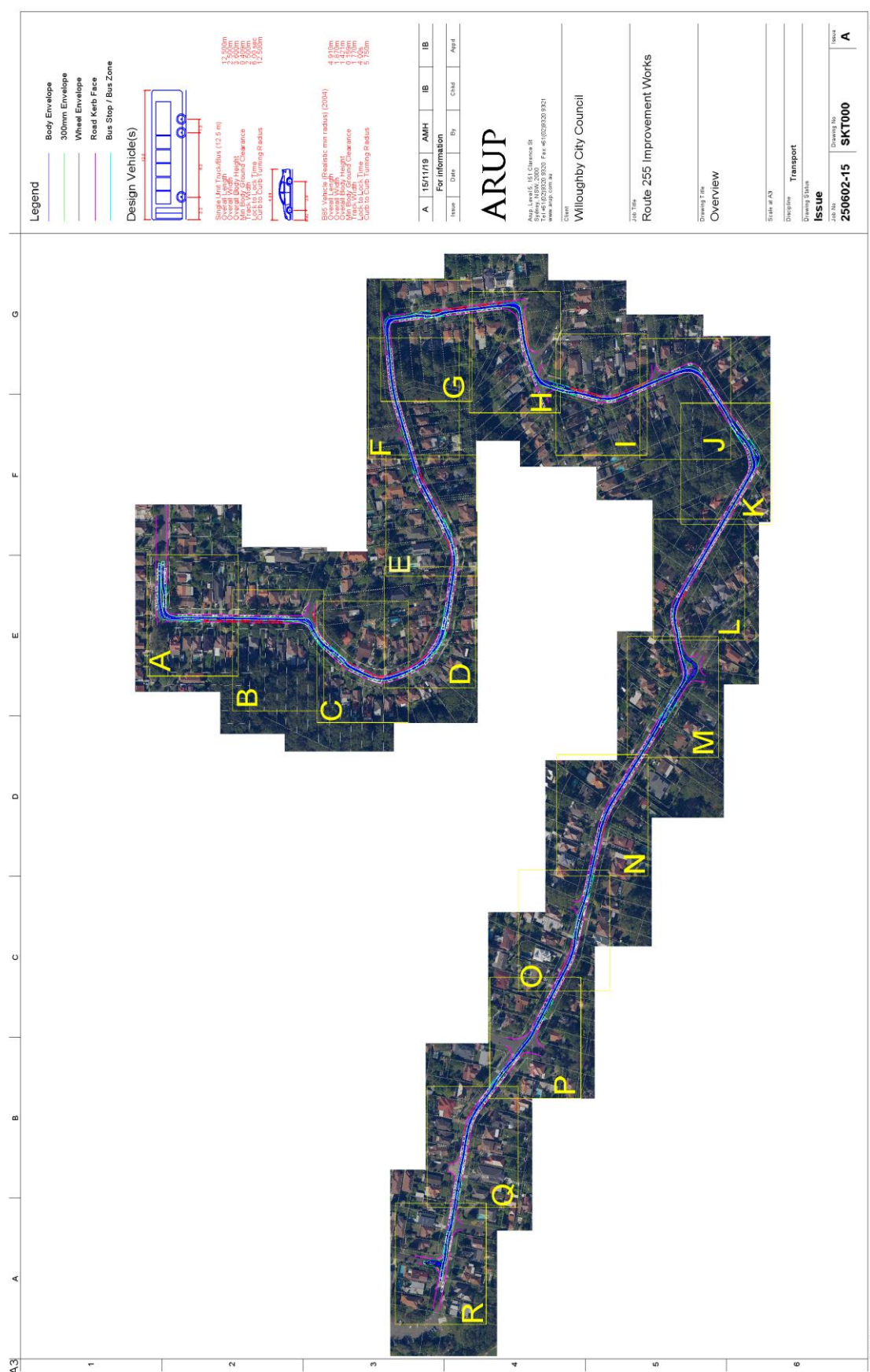


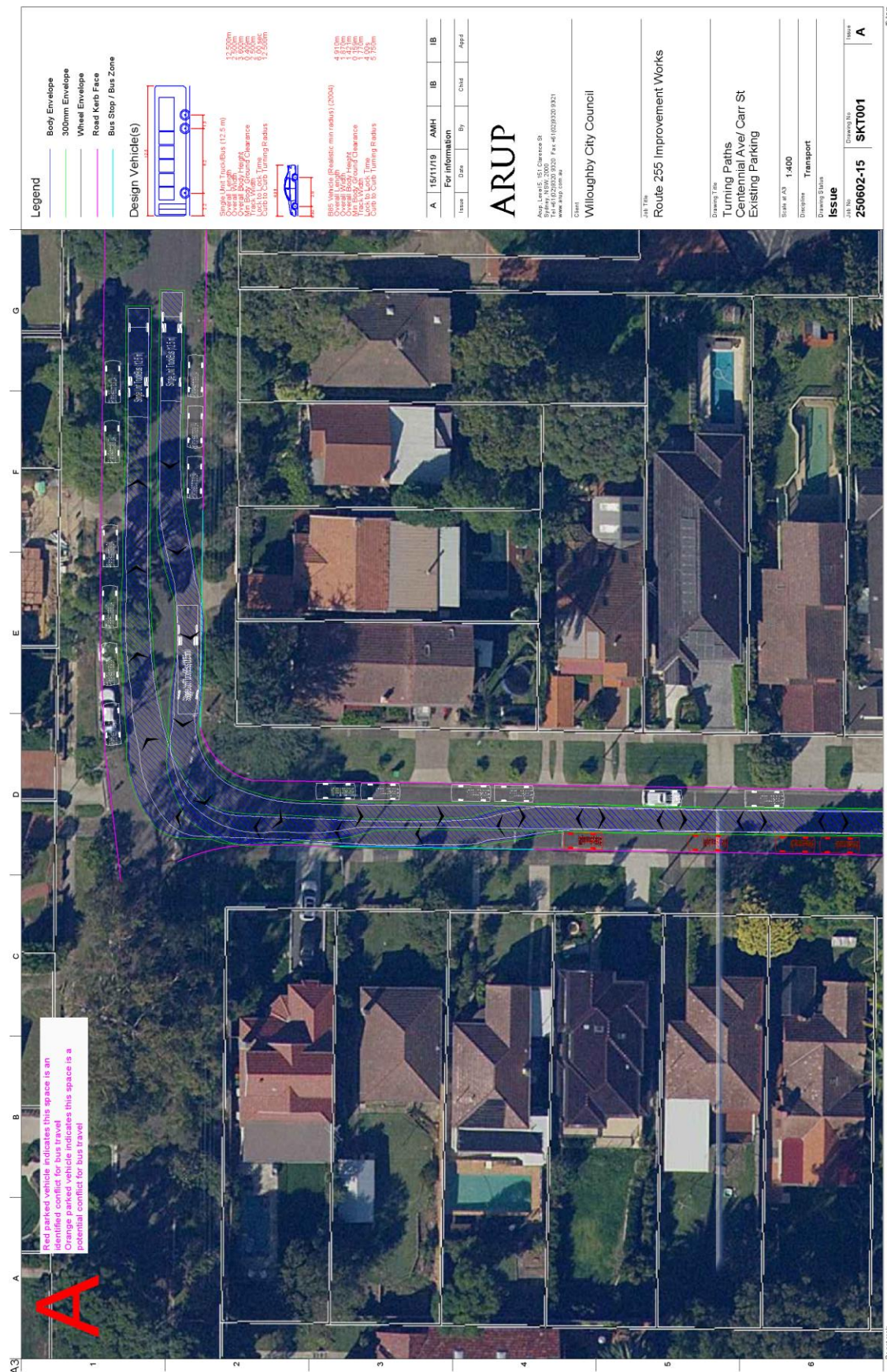


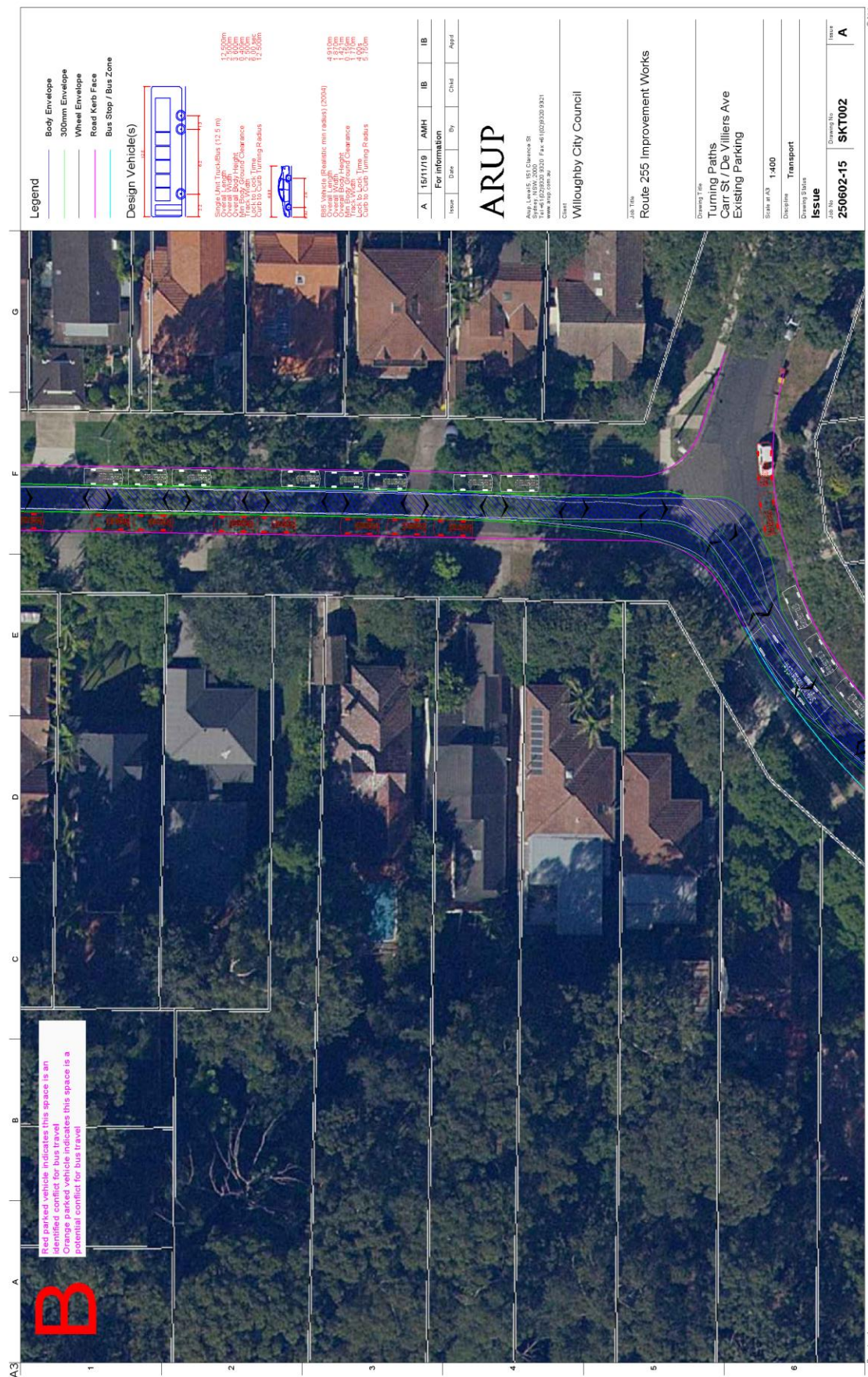


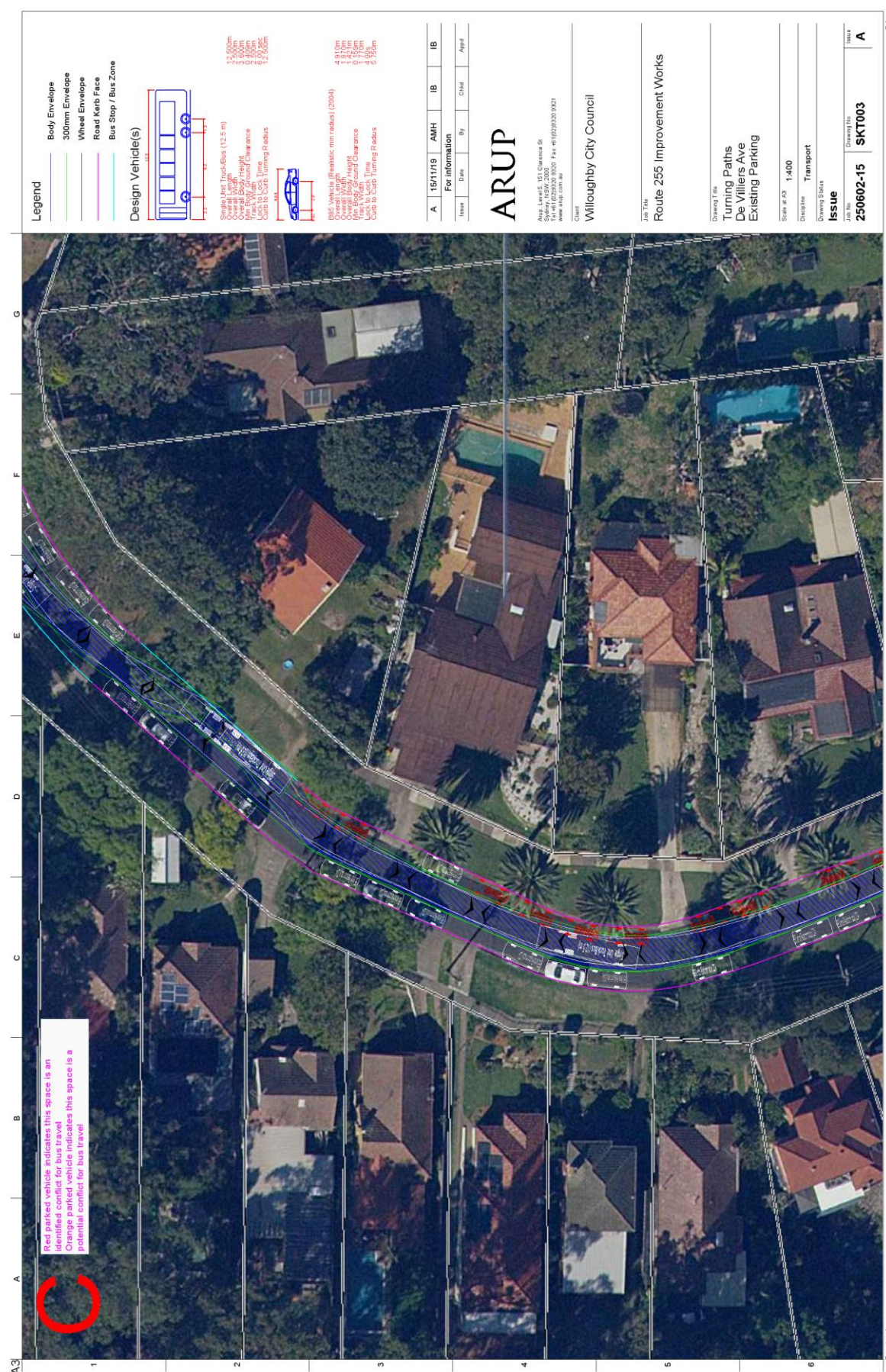
Appendix B

Swept Path Assessment

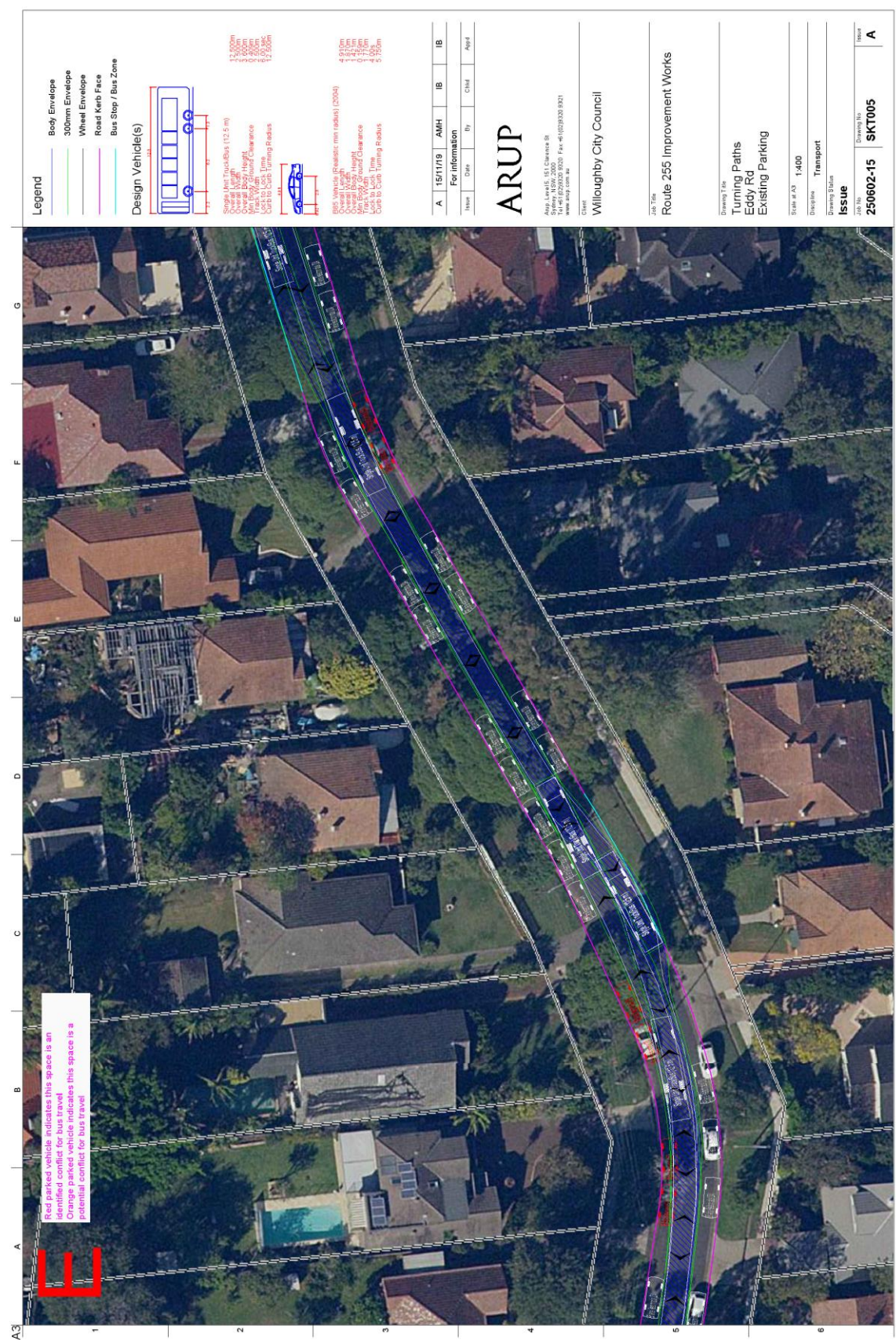






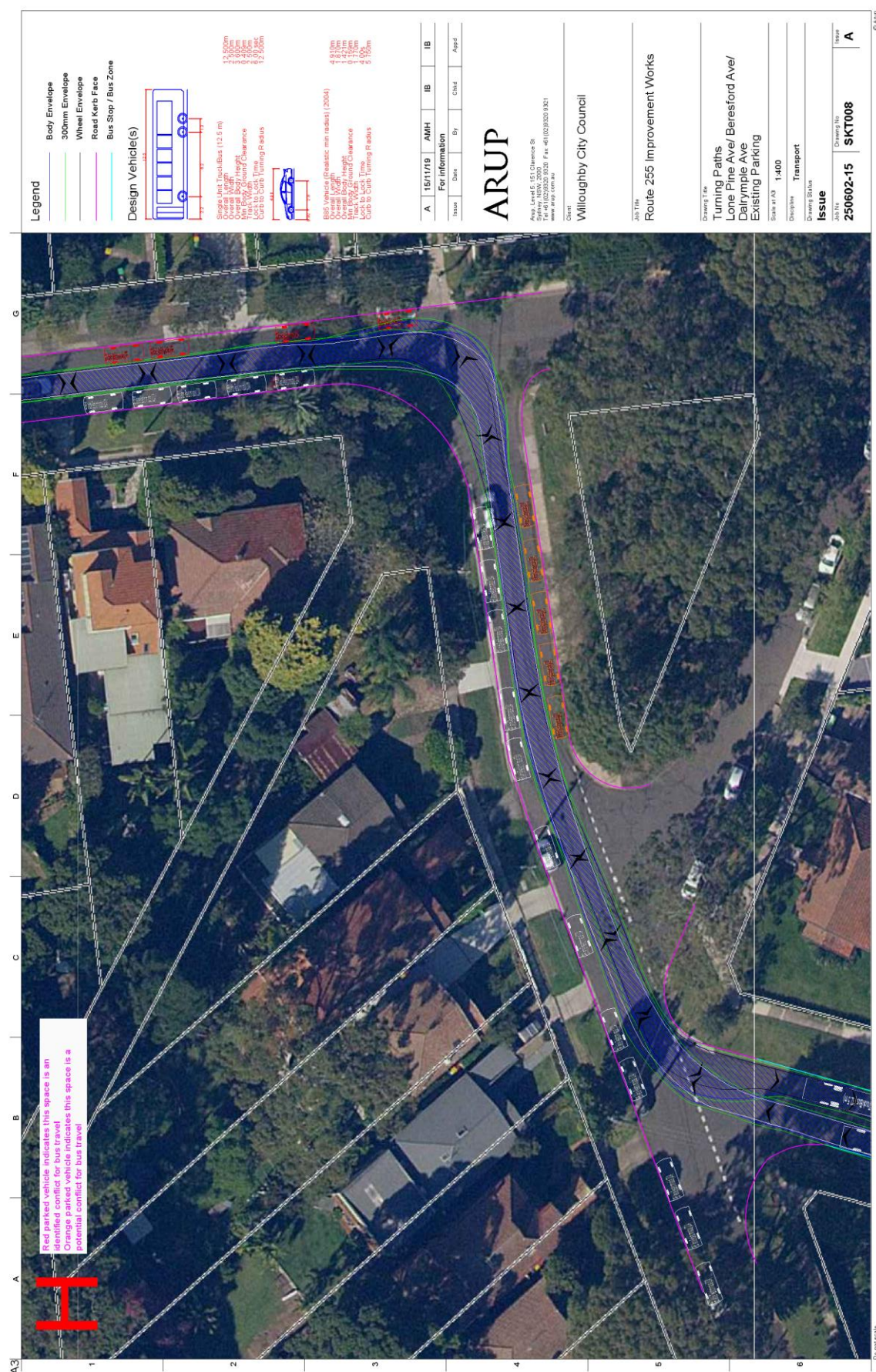


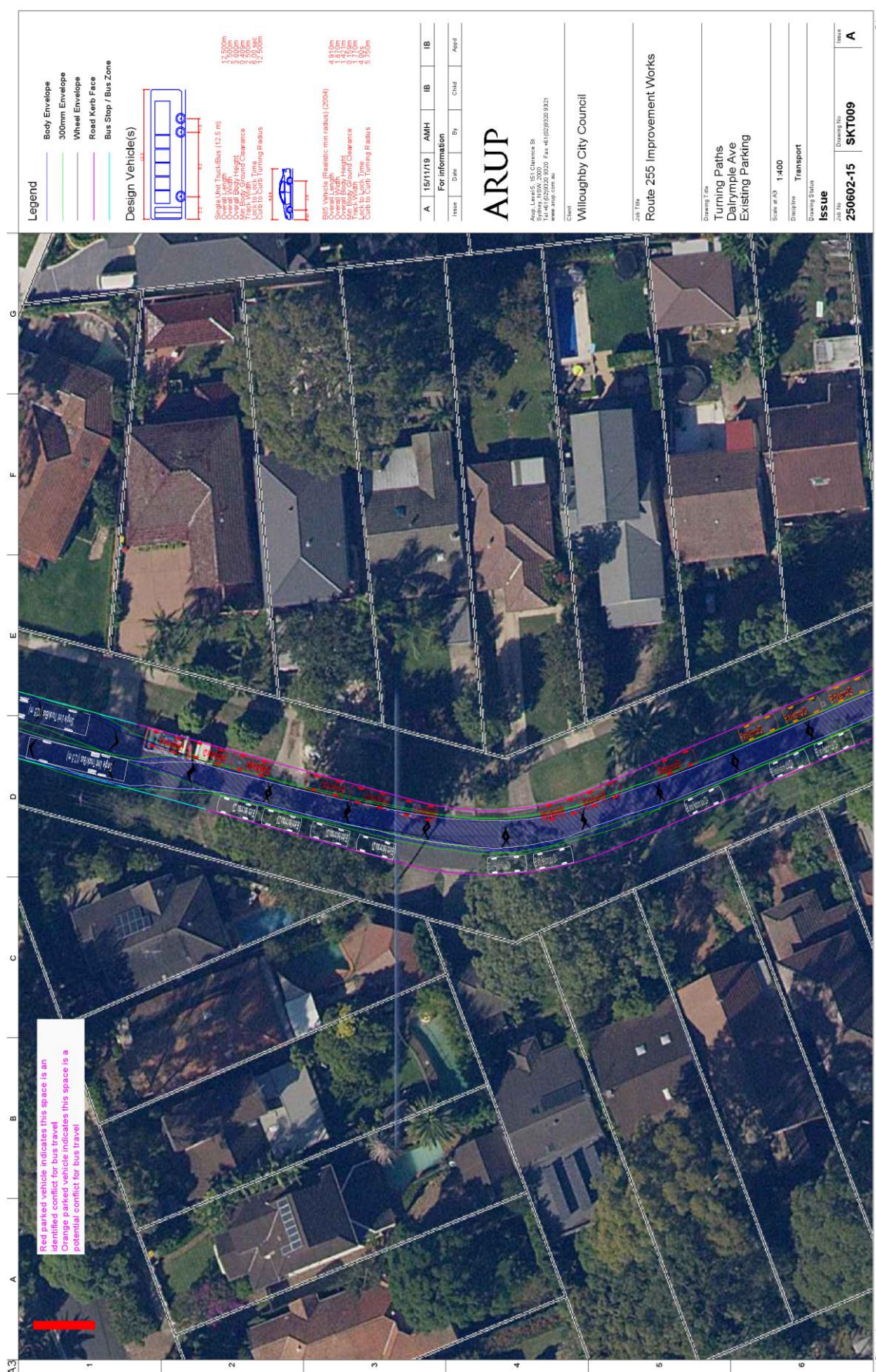


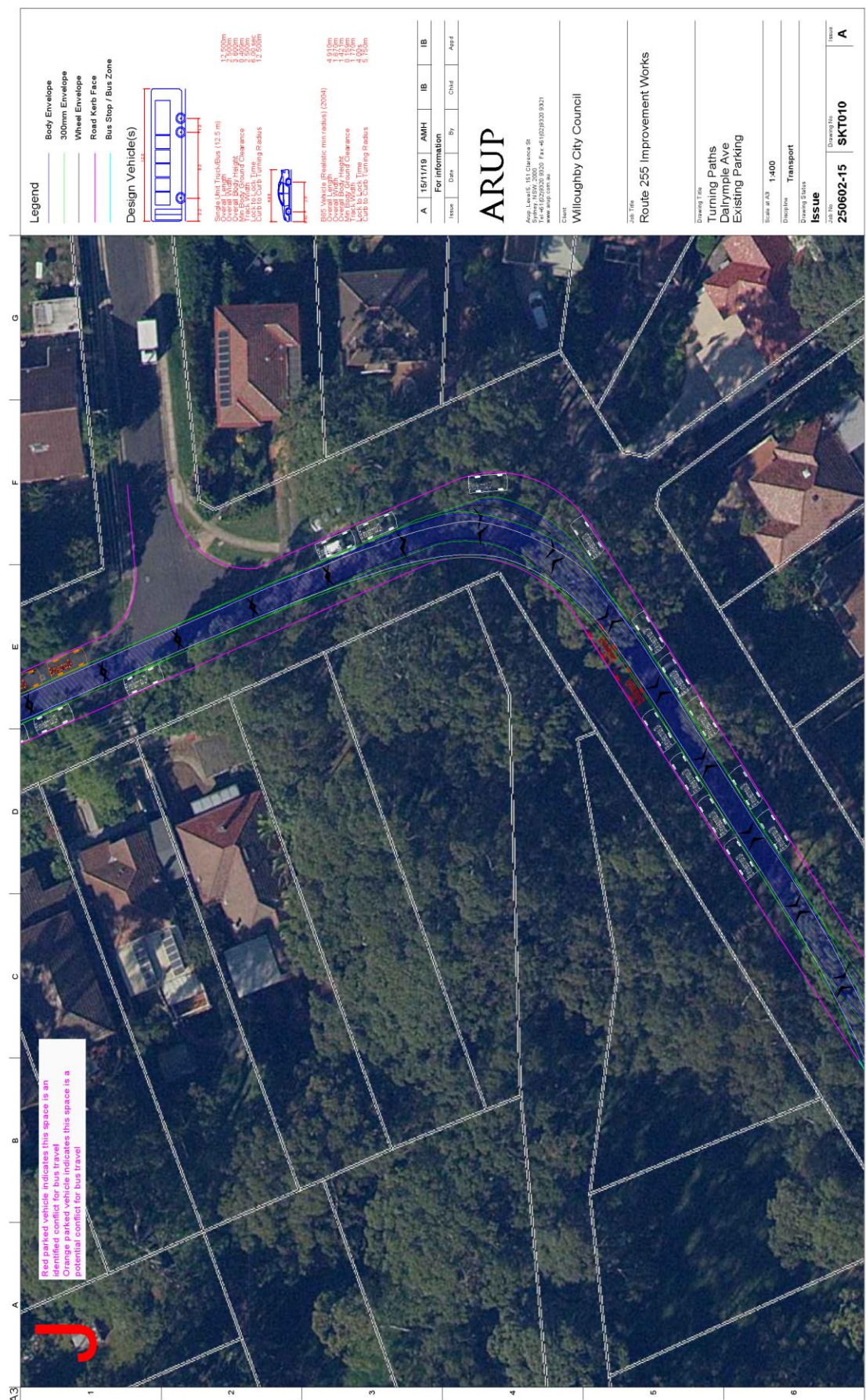














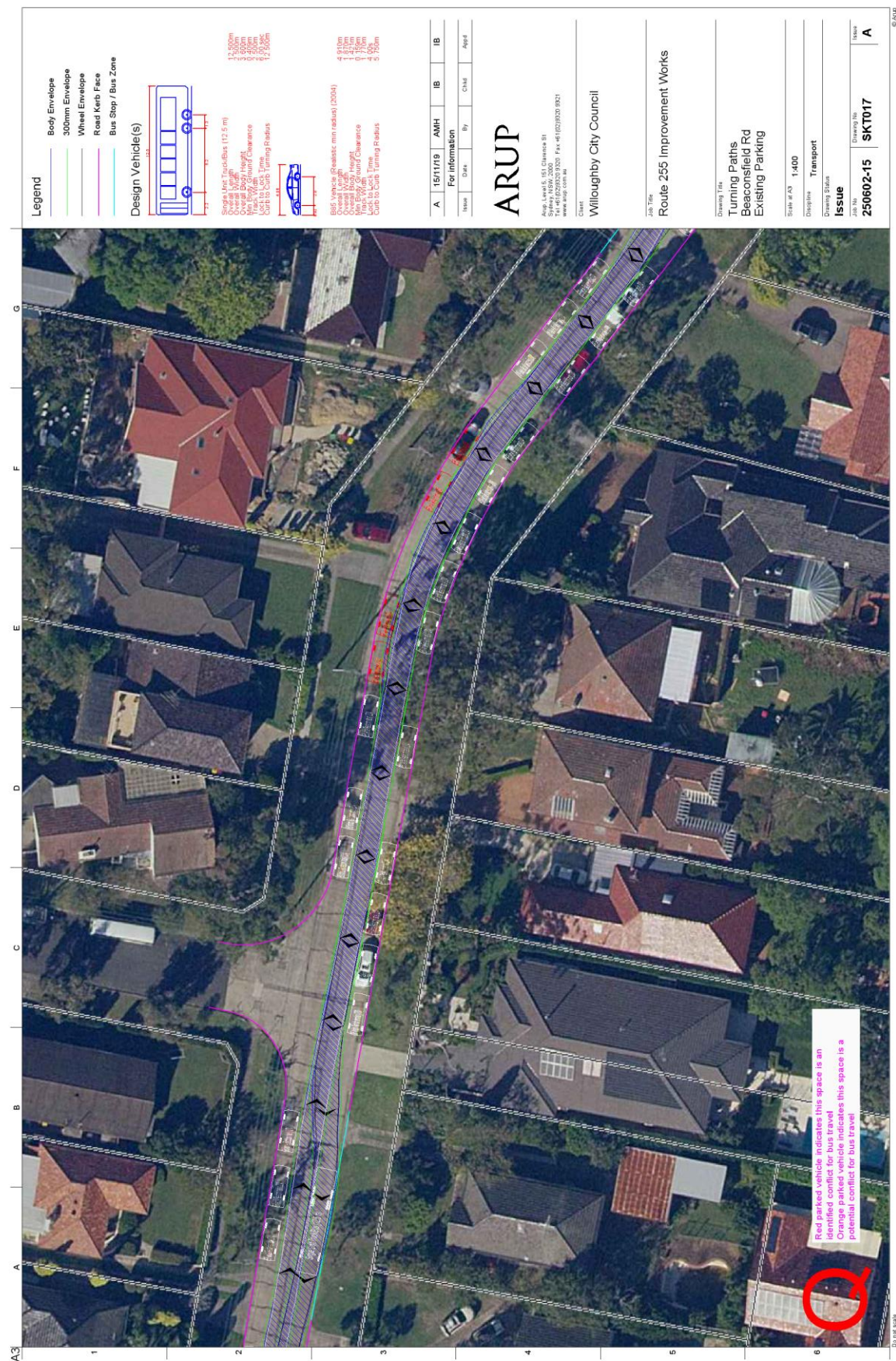


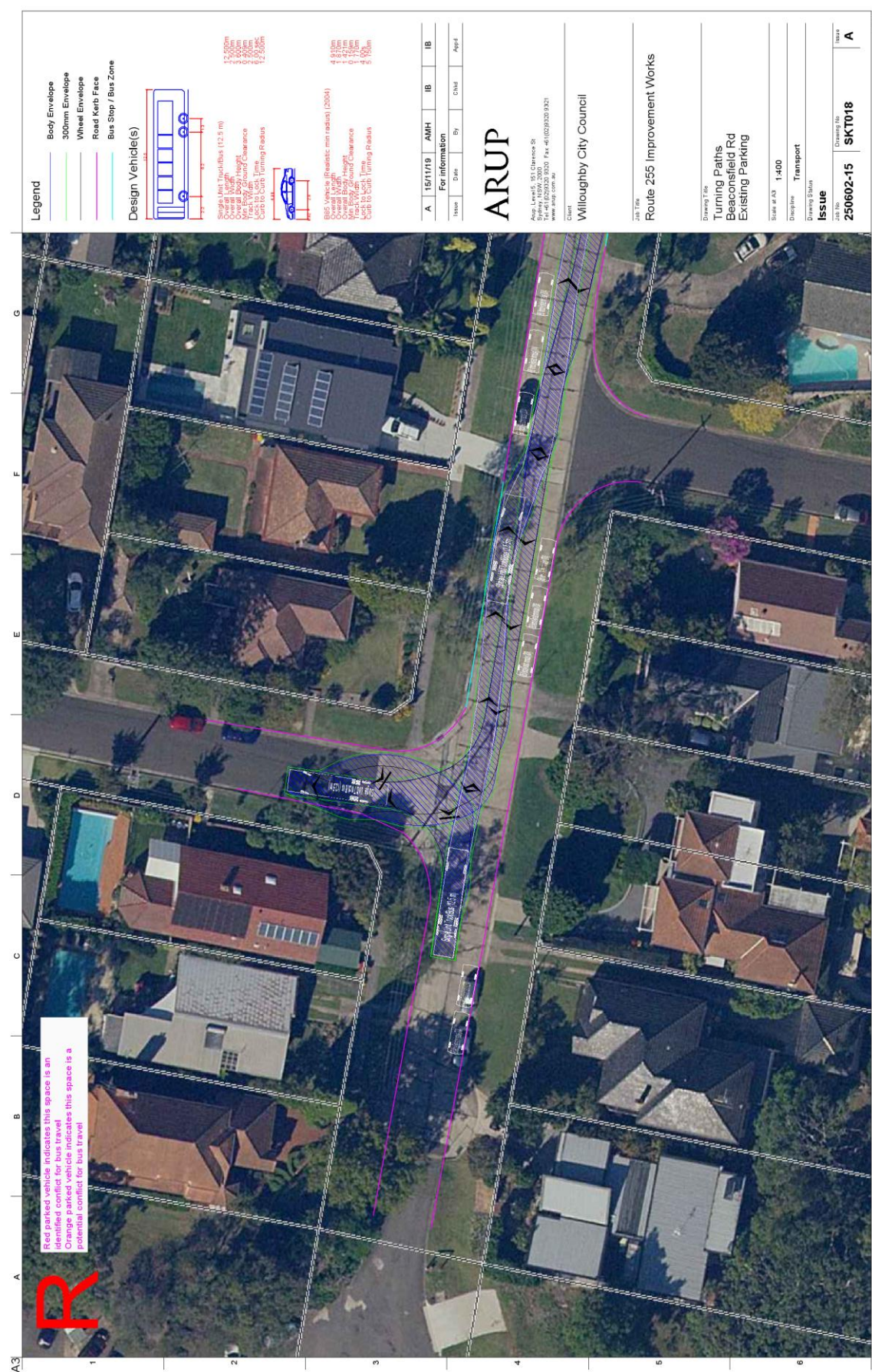








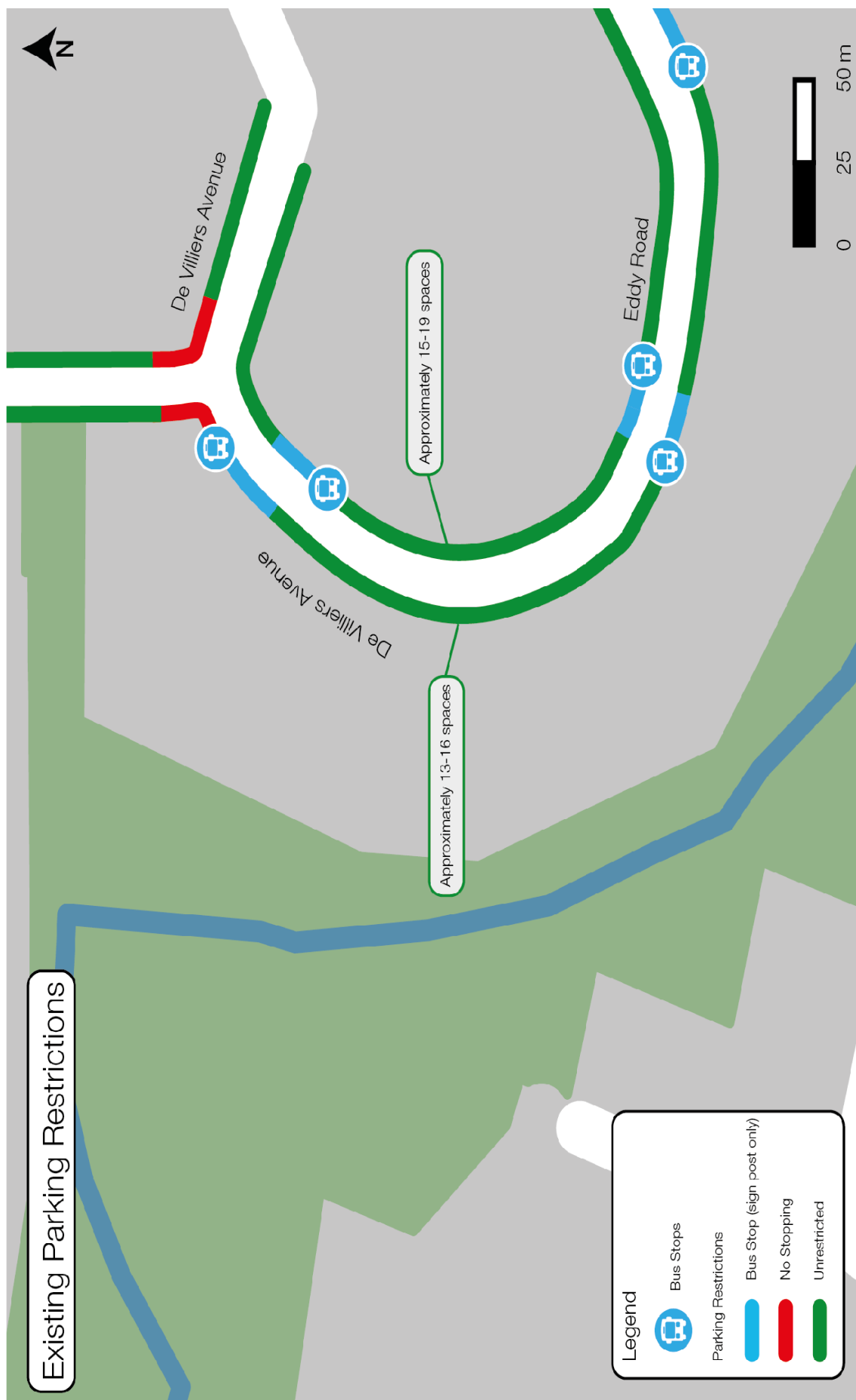


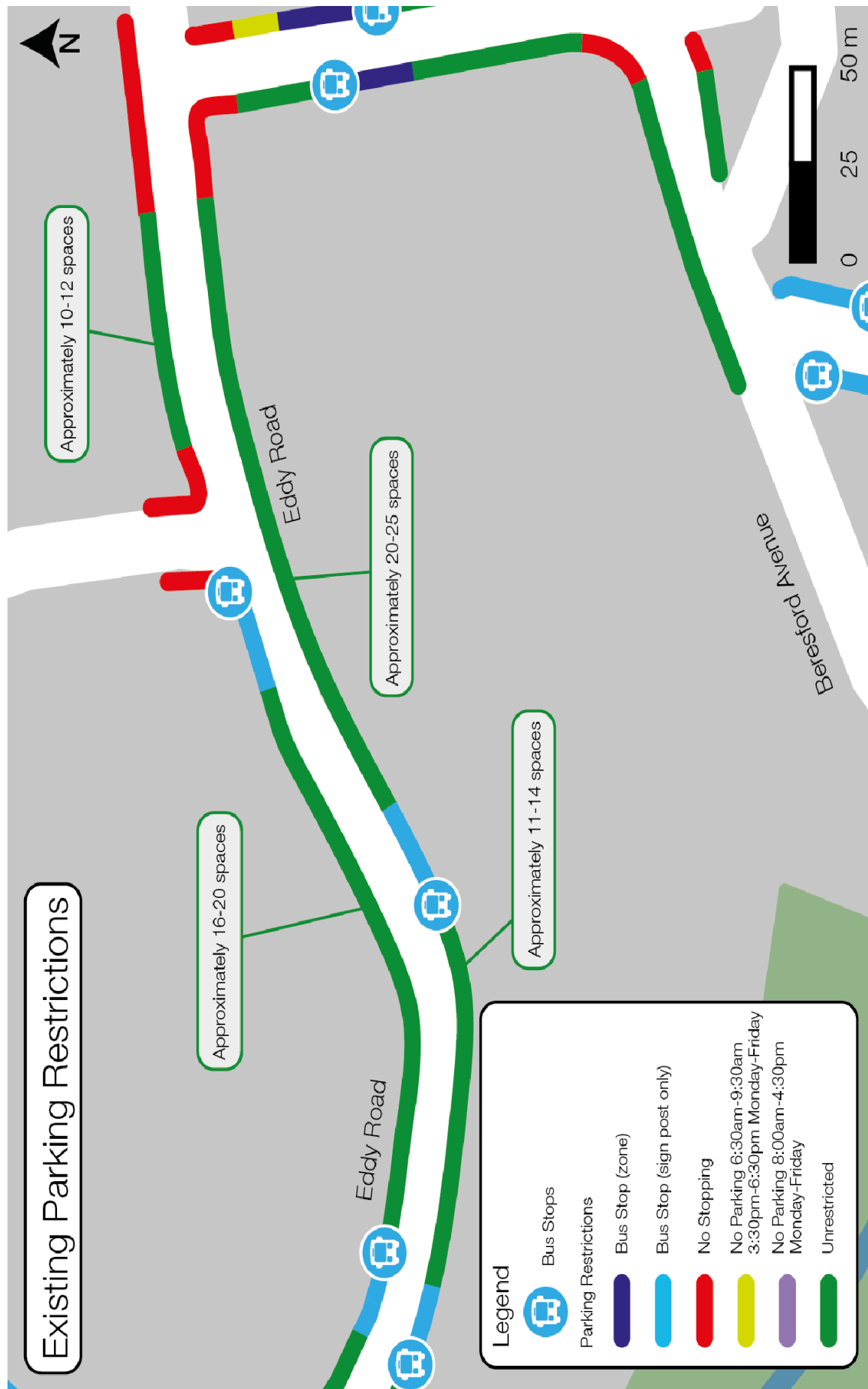


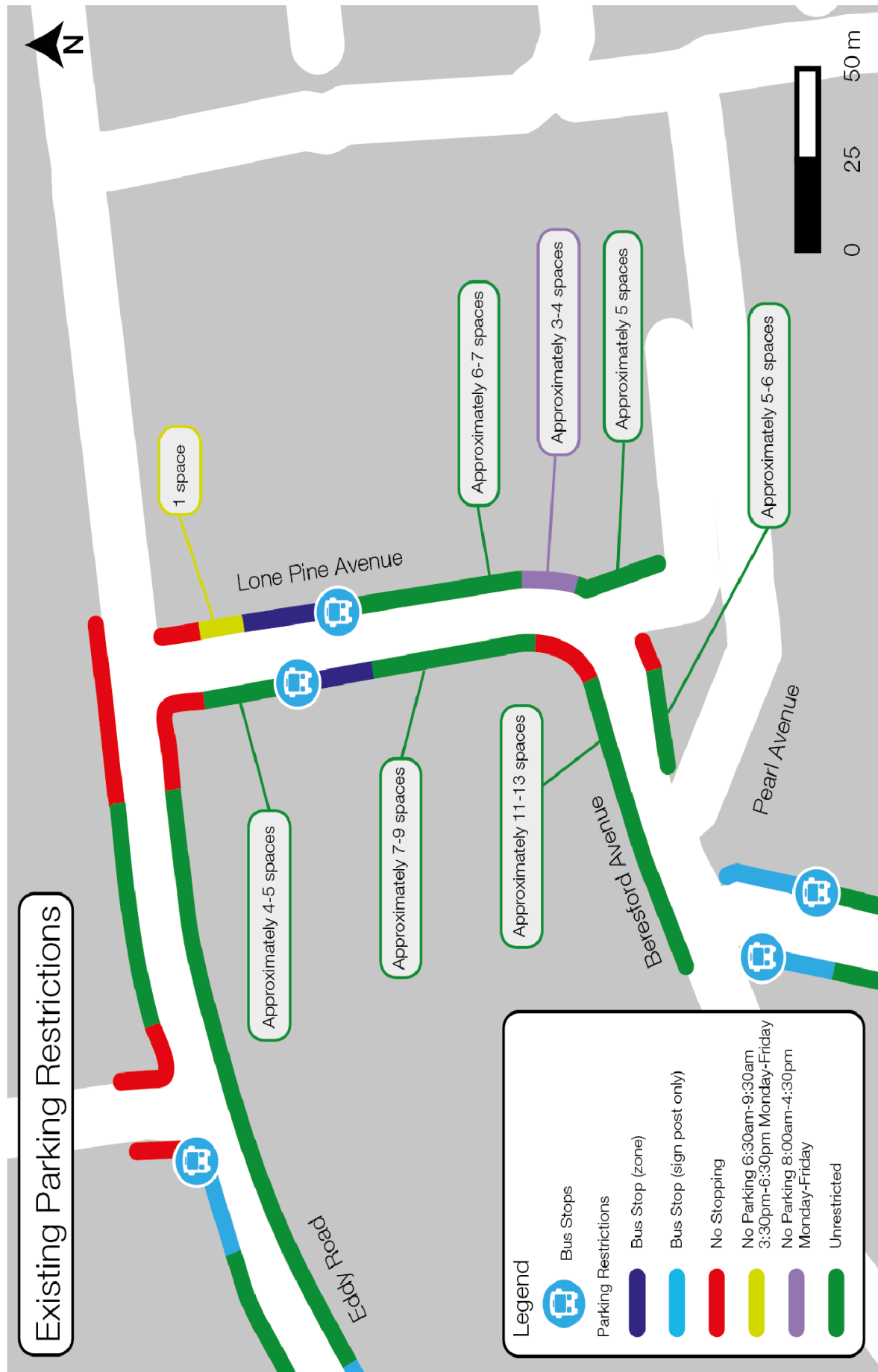
Appendix C

Existing Parking Restrictions

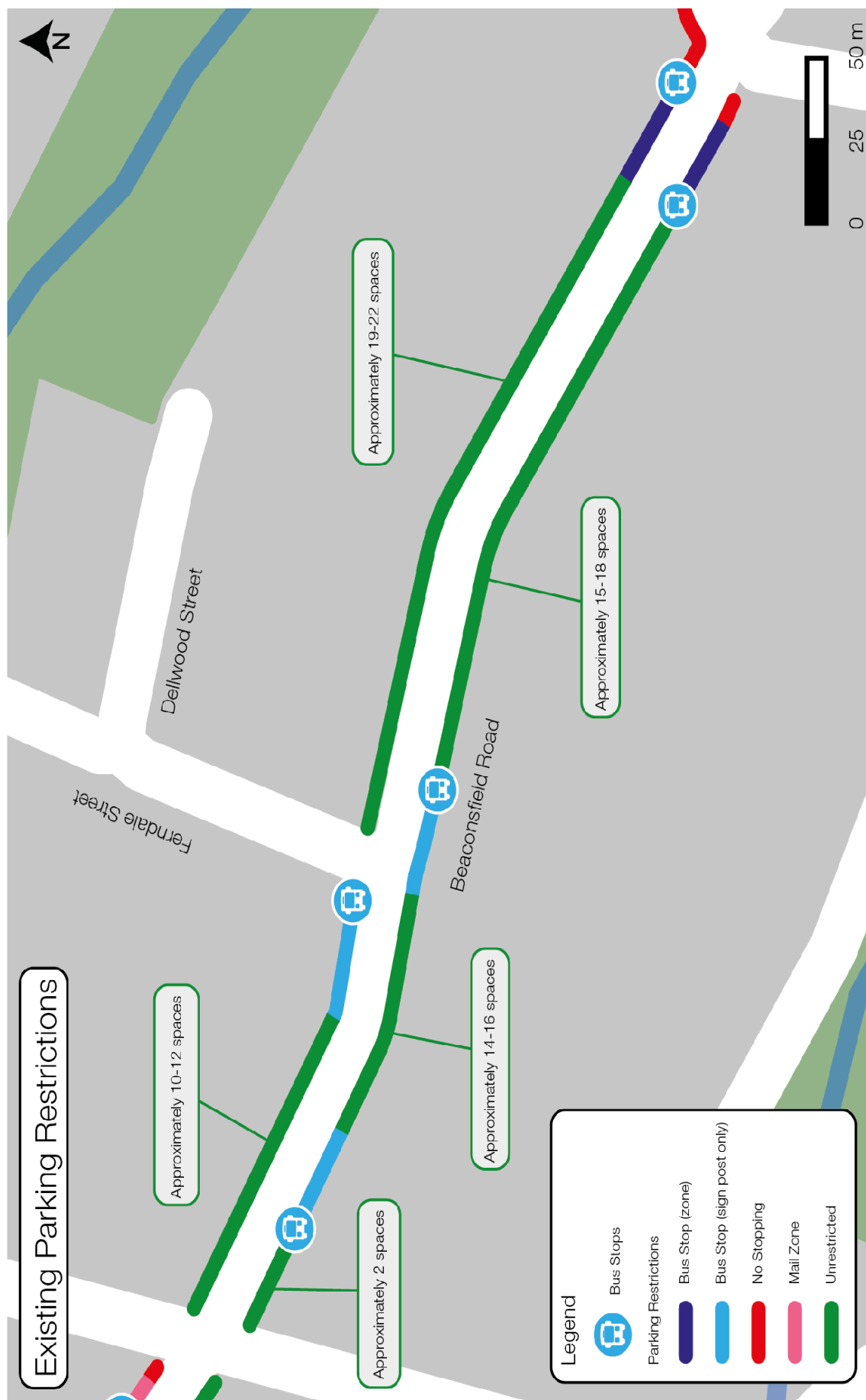


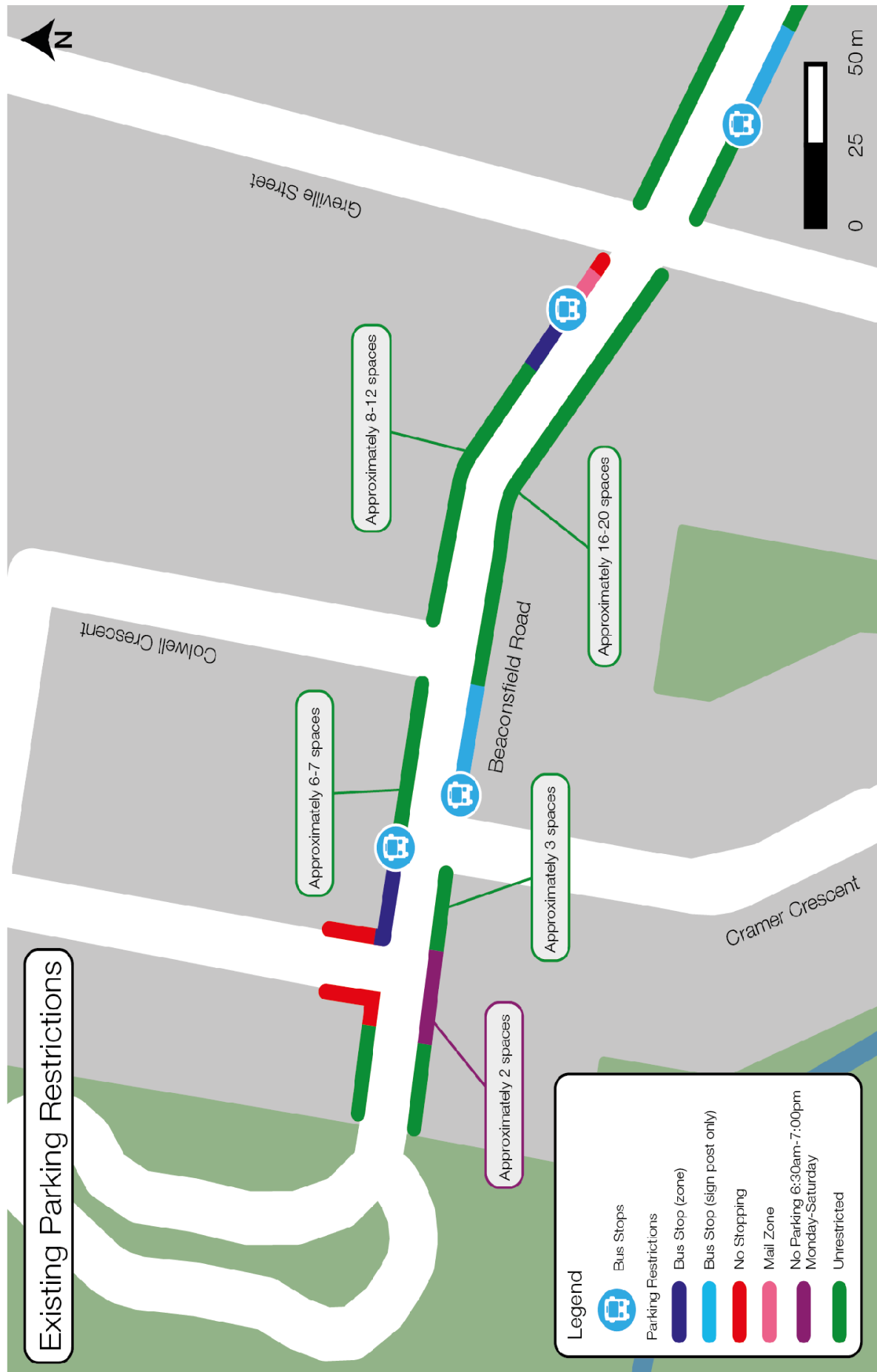






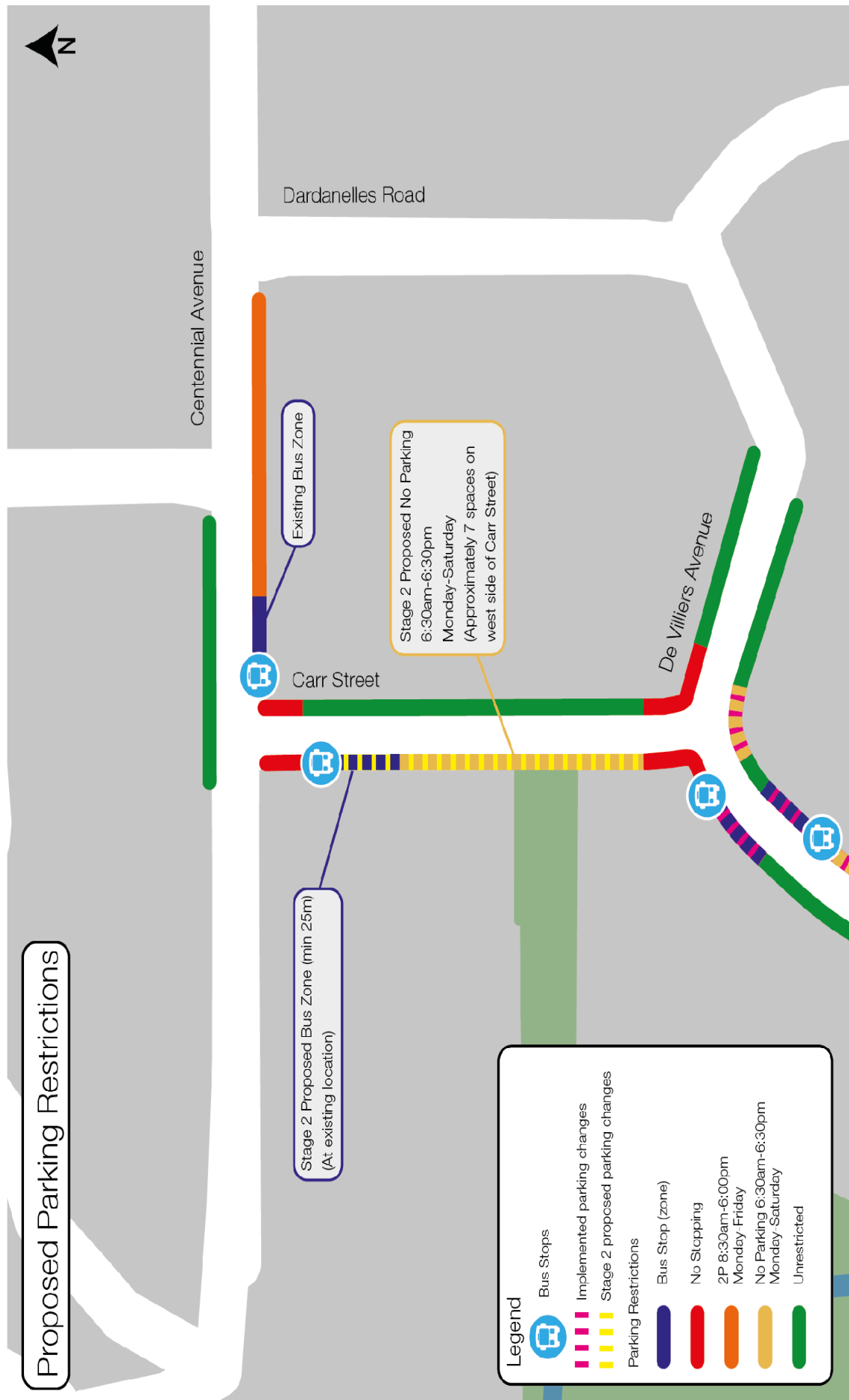


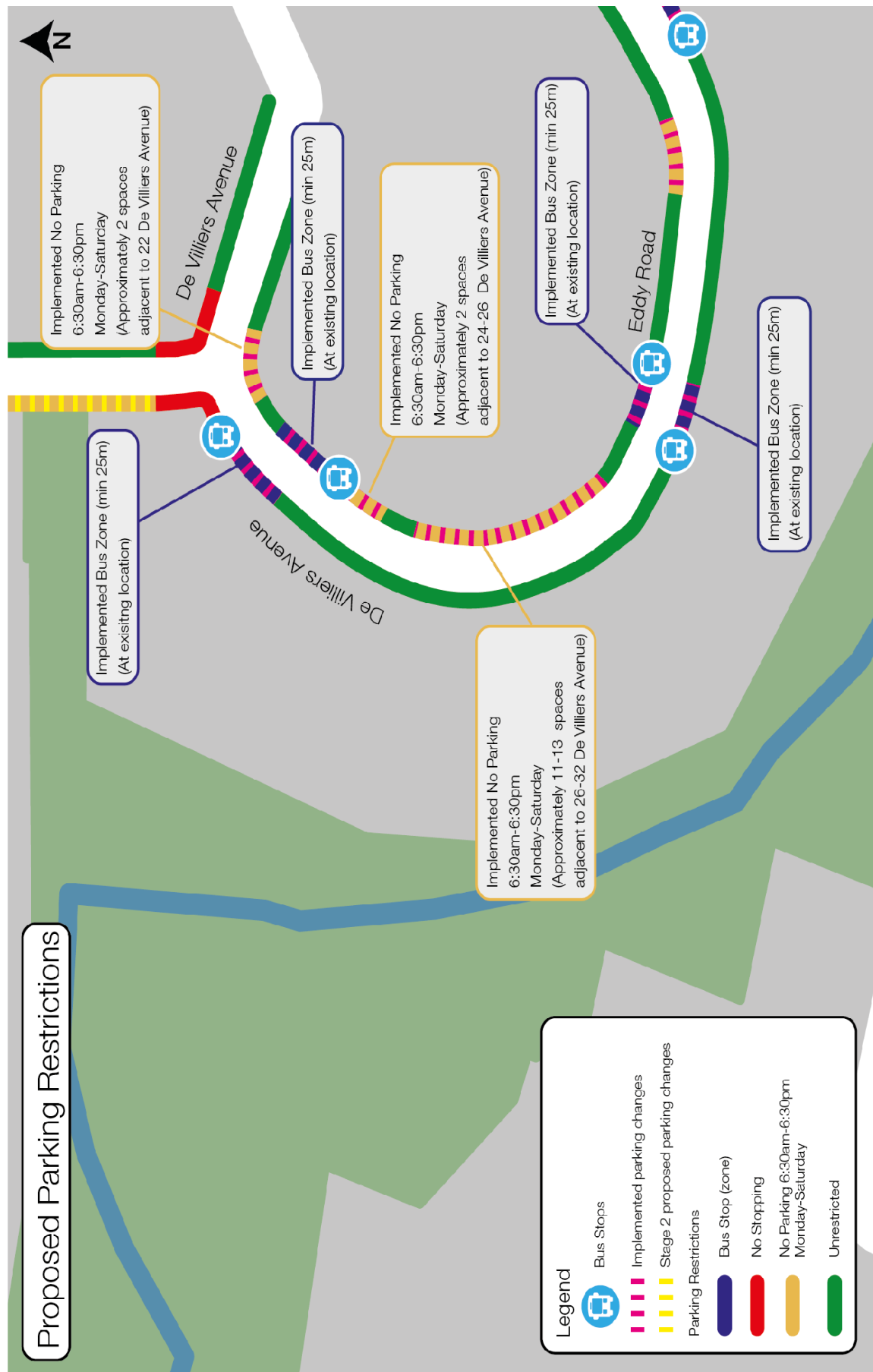




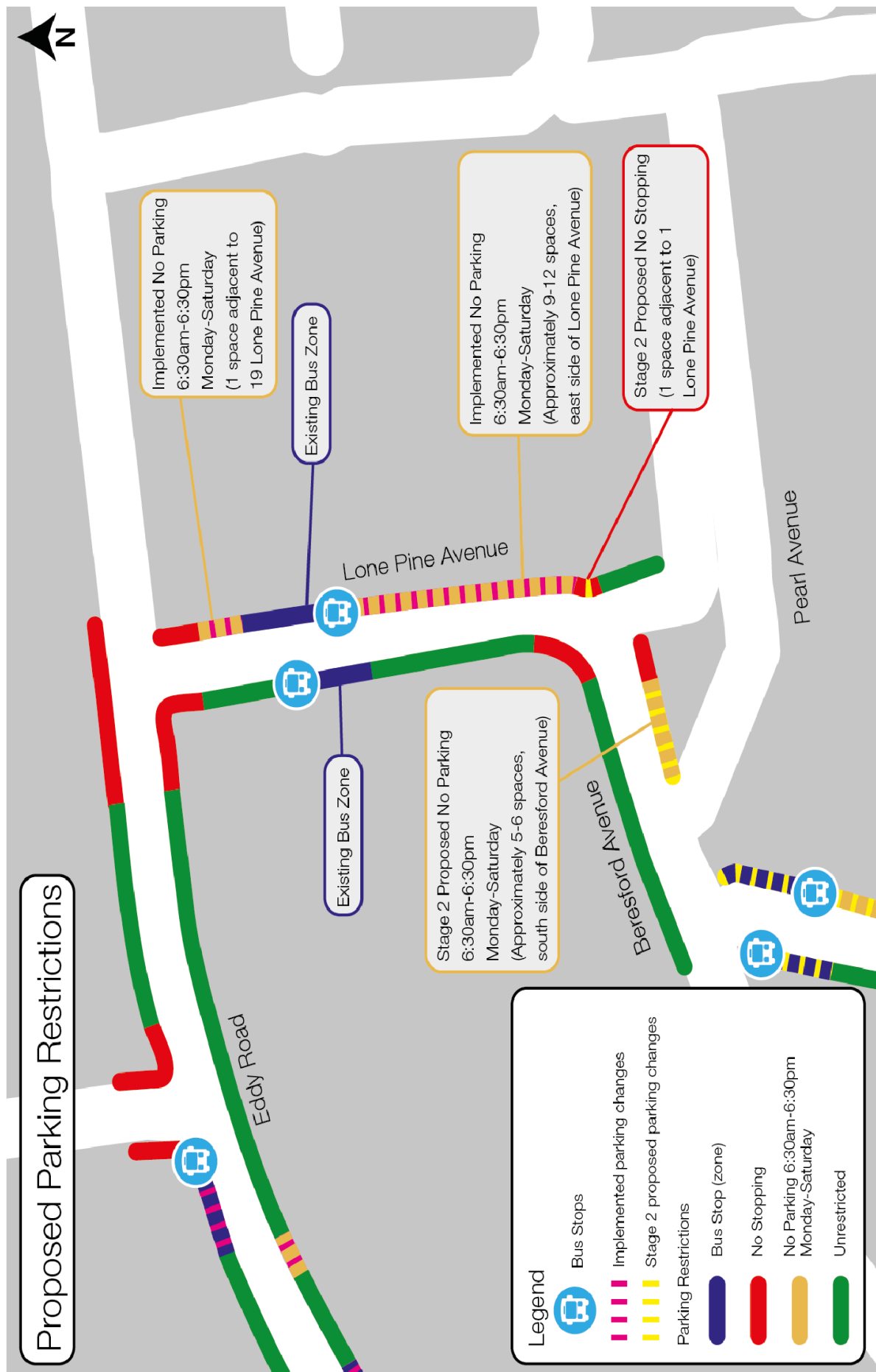
Appendix D

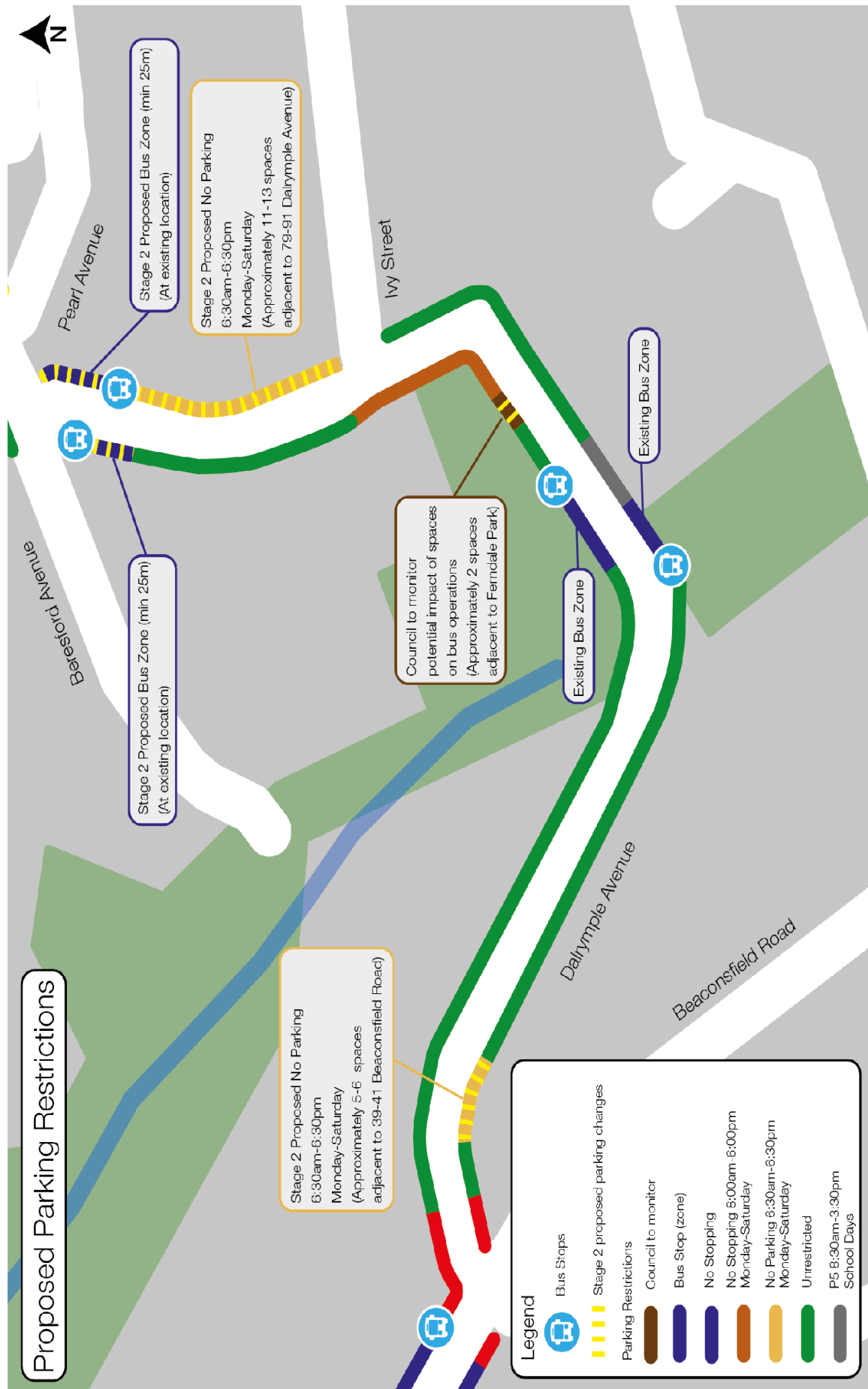
Proposed Parking Mitigations

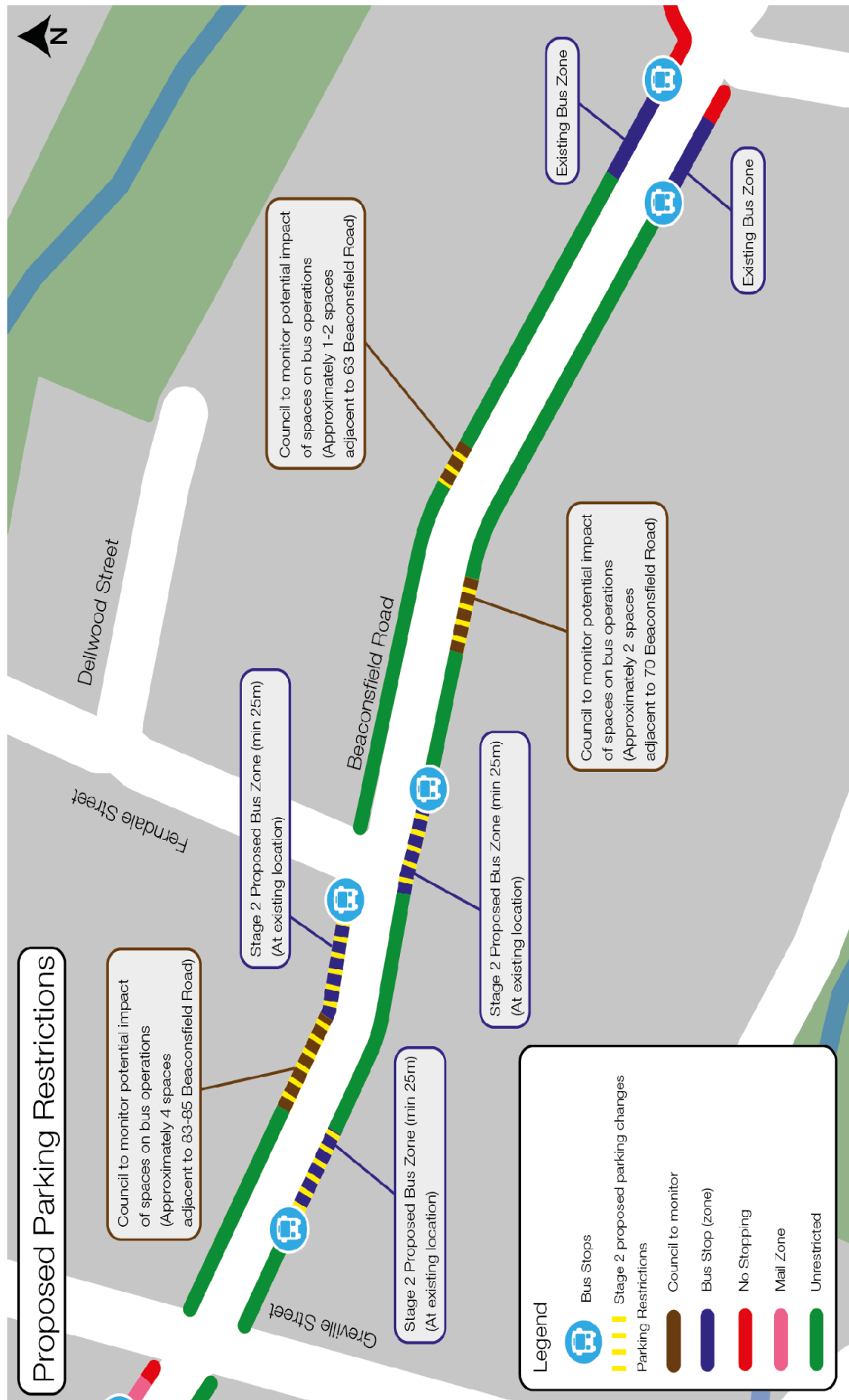


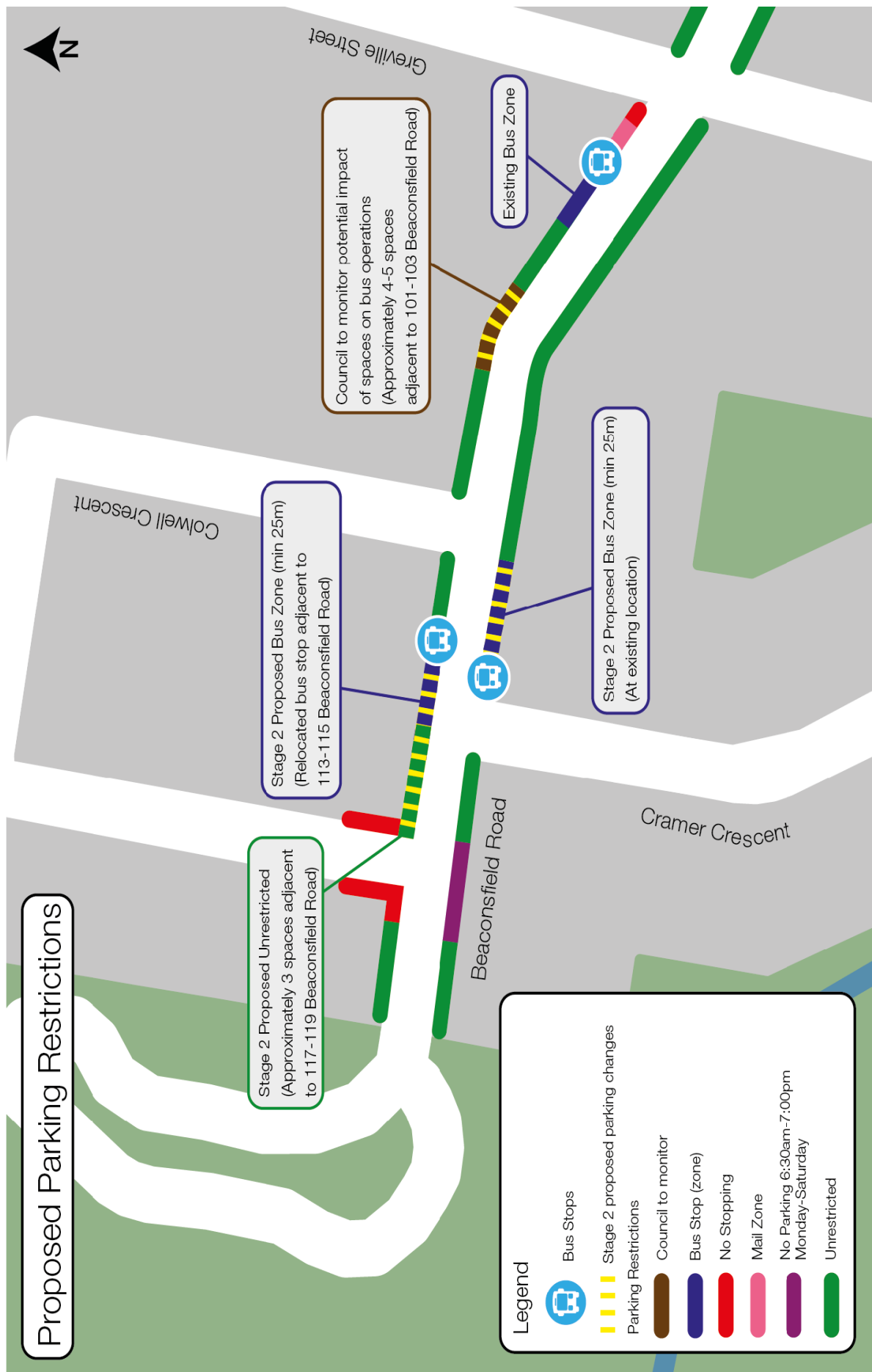




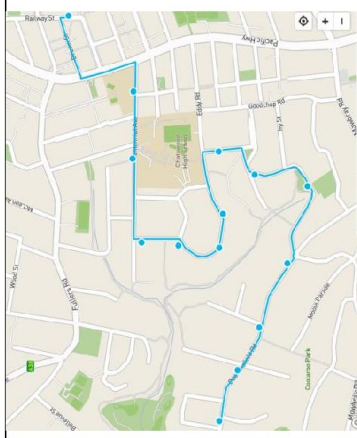








PART A – GENERAL INFORMATION		GENERIC RISK ASSESSMENT		SITE SPECIFIC RISK ASSESSMENT		OTHER
Scope:		To access the feasibility of using smaller buses on Route 255 due to the number of collisions between buses and vehicles parked on both sides of the Streets.		Risk Register Number: (Check with Risk Register)		
Location:		Chatswood to Beaconsfield Rd		Date of origin:	9 July 2019	
Depot / Business Unit at which assessment/review conducted:		Willoughby Depot		Last Reviewed: <i>changes are in italic (e.g. staff involved & added info)</i>		
Person(s) Leading:		Name:	Suada Havryliv	Position:	Safety Officer	
		Name:	Kamal Krishn	Position:	Safety Professional	
Manager / Supervisor: (Who is Responsible for Area?)		Name:	Tony Moujalli	Position:	Customer Operations Manager	
Other people involved / consulted:		Name:	Alan Borg	Position:	Transport Planner, Transport NSW	
		Name:	Egwin Herbert	Position:	Traffic and Services Manager	
		Name:		Position:		
		Name:		Position:		
References It is a requirement that legal and advisory documentation used for this risk assessment, such as Australian Standards, Codes of Practice, Regulations etc, where possible, are listed. <ul style="list-style-type: none"> • WHS Act & Regulation 2011 • Work Health & Safety Act 2011 • Work Health & Safety regulation (NSW) 2017 • Road Transport Act 2013 • Australian Road Rules 						
Description Full description of task, process or scope of the assessment and the context for the risk assessment. Also list any assumptions made and the source of any data used. <p>To assess the Safe operation of small rigid bus along route 255. The assessment was conducted in both directions along the route. Route 255 is an existing route, which operates from Chatswood to Beaconsfield Rd. Chatswood West, inbound and outbound. It has fourteen (14) bus stops along the route. Seven (7) of these bus stops operate through narrow streets including Carr St, De Villiers Ave, Eddy Rd, Lone Pine Ave and Dalrymple Ave.</p>						



Local residents park along both sides of these streets, and over the last 17 months, there have been twelve (12) reports of fixed object collisions on route. This does not include cancelled trips, as a result of parked cars blocking the roads, or bus operators seeking assistance from Network Control Centre (NCC) due to limited mobility of the bus along route.

The Risk Assessment looked at any new and existing hazards that impact the operation of a rigid and small rigid bus along the route.

Note: The only variation between the smaller rigid and standard rigid buses is that the height and length of the vehicle. The width is identical.

Bus Dimensions:

Scania Diesel EEV (Small Rigid) – 3.226m (H) x 11.103m (L) x 2.5m (W)

Volvo Diesel Euro 5 (Standard Rigid) – 3.51m (H) 12.5m (L) 2.5m (W)

Has this task been assessed previously? (Check Risk Registers) ☐ Yes ☒ No



Has this task resulted in any injuries / illnesses or serious near miss events? ☐ Yes ☒ No


If yes, describe?


Date of Issue: December 2016
Due for Review: December 2019


PROC 50.04 – Safety Risk Management
File completed assessments in D7/0313

Issue 12
Page 2 of 12

PART B – RISK ASSESSMENT							
Step 1 Hazard Identification				Step 2 Risk Assessment		Step 3 Risk Control	
Item No	Item	Hazards (What can cause harm?)	Associated Risks (What harm can happen?)	Existing Risk Controls (What are the existing controls?)	Risk Rating w/ Existing controls (Use Risk Matrix – See Table 1)	Additional Risk Controls Required (If elimination not possible, apply the hierarchy of risk controls – See Table 2)	Risk Rating w/ Additional Controls (Use Risk Matrix – See Table 1)
1.	Bus travelling along Carr Street inbound and outbound  	<ul style="list-style-type: none">• Vehicles parked on both sides of the street causing an obstruction and reducing access for buses to make a right turn into De Villiers Avenue safely• Bus becoming stuck in between parked vehicles• Only allows one direction of traffic to flow at a time	<ul style="list-style-type: none">• Collision with bus and parked vehicles• Damage to bus and other vehicles• Passenger Injury	<ul style="list-style-type: none">• Licensed and trained Bus Operators• Australian Road Rules• Network Control Centre (NCC)	10	<ul style="list-style-type: none">• Restricted parking to be implemented on one side of street during service operation times (06:30 to 18:30)• Remove or Re-route service	19

PART B – RISK ASSESSMENT					
Step 1 Hazard Identification			Step 2 Risk Assessment		Step 3 Risk Control
Item No	Item	Hazards (What can cause harm?)	Associated Risks (What harm can happen?)	Existing Risk Controls (What are the existing controls?)	Risk Rating w/ Existing Controls (Use Risk Matrix – See Table 1)
					
2.	Bus travelling along De Villiers Ave, inbound and outbound 	<ul style="list-style-type: none"> Curved and Narrow Street with parked vehicles on both sides of the street reducing access for bus to proceed through safely. Bus becoming stuck in between parked vehicles 	<ul style="list-style-type: none"> Collision with bus and parked vehicles Damage to bus and parked vehicles Passenger Injury 	<ul style="list-style-type: none"> Licensed and trained Bus Operators Australian Road Rules Network Control Centre (NCC) 	10
				<ul style="list-style-type: none"> Restricted parking to be implemented on one side of street during service operation times (06:30 to 18:30) Remove or Re-route service 	19

PART B – RISK ASSESSMENT							
Step 1 Hazard Identification			Step 2 Risk Assessment		Step 3 Risk Control		
Item No	Item	Hazards (What can cause harm?)	Associated Risks (What harm can happen?)	Existing Risk Controls (What are the existing controls?)	Risk Rating w/ Existing controls (Use Risk Matrix – See Table 1)	Additional Risk Controls Required (If elimination not possible, apply the hierarchy of risk controls – See Table 2)	Risk Rating w/ Additional Controls (Use Risk Matrix – See Table 1)
		<ul style="list-style-type: none">Only allows one direction of traffic to flow at a time					
3.	Bus travelling along Lone Pine Ave, inbound and outbound 	<ul style="list-style-type: none">Parked trailer and vehicles on both sides of the street reducing access for buses to proceed through safelyBus becoming stuck in between parked vehiclesOnly allows one direction of traffic to flow at a time	<ul style="list-style-type: none">Collision with bus and parked vehicleDamage to the bus and parked vehiclesCollision with bus and oncoming vehiclePassenger injury	<ul style="list-style-type: none">Licensed and trained Bus OperatorsAustralian Road RulesNetwork Control Centre (NCC)	10	<ul style="list-style-type: none">Restricted parking to be implemented on one side of street during service operation times (06:30 to 18:30)Remove or Re-route service	19

PART B – RISK ASSESSMENT							
Step 1 Hazard Identification			Step 2 Risk Assessment		Step 3 Risk Control		
Item No	Item	Hazards (What can cause harm?)	Associated Risks (What harm can happen?)	Existing Risk Controls (What are the existing controls?)	Risk Rating w/ Existing controls (Use Risk Matrix – See Table 1)	Additional Risk Controls Required (If elimination not possible, apply the hierarchy of risk controls – See Table 2)	Risk Rating w/ Additional Controls (Use Risk Matrix – See Table 1)
							

PART B – RISK ASSESSMENT					
Step 1 Hazard Identification			Step 2 Risk Assessment		Step 3 Risk Control
Item No	Item	Hazards (What can cause harm?)	Associated Risks (What harm can happen?)	Existing Risk Controls (What are the existing controls?)	Risk Rating w/ Existing controls (Use Risk Matrix – See Table 1)
					
4.	Bus travelling along Dalrymple Ave, inbound and outbound 	<ul style="list-style-type: none"> Cars parked on both sides of the street reducing access for buses to proceed through safely Bus becoming stuck in between parked vehicles Only allows one direction of traffic to 	<ul style="list-style-type: none"> Collision with bus and parked vehicles Damage to the bus and other vehicles Passenger injury Collision with bus and oncoming vehicle 	<ul style="list-style-type: none"> Licensed and trained Bus Operators Australian Road Rules Network Control Centre (NCC) 	10
				<ul style="list-style-type: none"> Restricted parking to be implemented on one side of street during bus operation times (06:30 to 18:30) Remove or Re-route service 	19

Step 1

Item	Hazard Identification		Risk Assessment		Risk Control		
	Item	Hazards (What can cause harm?)	Associated Risks (What harm can happen?)	Existing Risk Controls (What are the existing controls?)	Risk Rating w/ Existing controls (Use Risk Matrix – See Table 1)	Additional Risk Controls Required (If elimination not possible, apply the hierarchy of risk controls – See Table 2)	Risk Rating w/ Additional Controls (Use Risk Matrix – See Table 1)
No							
		flow at a time					

PART C – ACTION PLAN

Enter identified Recommendations into action plan and CAR/BIN system. Identify timeframe for resolution using the Recommended Guideline for completing corrective actions table below

Very High	Corrective actions recommended to be completed within 1 month.
High Risk	Corrective actions recommended to be completed within 3 months.
Medium Risk	Corrective actions recommended to be completed within 6 months.
Low Risk	If actions are required, then corrective action recommended to be completed within 12 months.

Additional Risk Controls Required (transfer information from Part B, Step 3)	Action Proposed to be Taken	Responsible Officer(s)	Timeframe for Resolution (see above)	Action Reference
Parking restrictions signs to be installed along identified pinch points	Customer Operations Manager to liaise and report findings to council for their consideration and consultation with residents	Customer Operations Manager	October 2019	
Remove or Re-route service	Customer Operations Manager to liaise with Transport NSW and Willoughby Council regarding the feasibility of this service to be re-routed or removed	Customer Operations Manager	October 2019	

PART D – MONITOR AND REVIEW

It is important to monitor risk controls and review risk assessments regularly. The timeframe for Risk Assessment review is dependent on the highest risk rating priority (RR) as identified in Part B, Step 2 of the Risk Assessment.

Note: Additional reviews are required when there is a change in the process, relevant legal changes or where a concern has arisen. If the risk assessment has changed substantially a new risk assessment is warranted.

Risk Rating Priority	Risk Assessment Review Timeframe
Very High Risk (1-4)	No later than 1 year post risk assessment completion
High Risk (5-11)	No later than 3 years post risk assessment completion
Medium Risk (12-18)	No later than 5 years post risk assessment completion
Low Risk (19-25)	No later than 5 years post risk assessment completion

What was the highest risk rating (RR) identified in Part B, Step 2?	Highest Risk Rating:
Based on the highest risk rating and the timeframes above, set the date for review of the risk assessment:	Review Date:

Date of Issue: December 2016
 Due for Review: December 2019

PROC 50.04 – Safety Risk Management
 File completed assessments in D*/0313

Issue 12
 Page 10 of 12

Risk Assessment Matrix
 Use matrix to determine risk score & risk rating priority

	CONSEQUENCE				
	What is the severity of any potential harm?				
LIKELIHOOD What is the likelihood of any potential harm?	Insignificant (1) • No injuries, • No illness or disease • low financial cost ($< \$6,000$)	Minor (2) • First aid treatment, no time lost • minor illness or disease (able to continue work) • Medium financial loss ($\$6,000 - \$36,000$)	Moderate (3) • Medical / hospital injury • illness or disease requiring time off work (at least 1 day) • High financial loss ($\$36,000 - \35 million)	Major (4) • Permanent disability / extensive injuries (amputations, quadriplegia) • Chronic illness or disease • External notification required • Major financial loss ($\$3.5 \text{ million} - \35 million)	Catastrophic (5) • Fatality / death • Illness/disease leading to death • Extreme financial loss (over $\$35 \text{ million}$)
Very Likely (A) Close to a 100% probability Many times a year	15 Medium	10 High	6 High	3 Very High	1 Very High
Likely (B) Above 50% probability More than once a year	19 Low	14 Medium	9 High	5 High	2 Very High
Possible (C) About 50% probability About once a year	22 Low	18 Medium	13 Medium	8 High	4 Very High
Unlikely (D) Less than 50% probability About once in 5 years	24 Low	21 Low	17 Medium	12 Medium	7 High
Rare (E) Close to zero probability Once in 10 years	25 Low	23 Low	20 Low	16 Medium	11 High
Risk Rating Key	Low = 19 - 25	Medium = 12 - 18	High = 5 - 11	Very High = 1 - 4	

Table 2: Risk Control

The most effective strategy for risk control is:

Elimination of risk

This means to completely remove the risk so no control/s need to be implemented.

When elimination of risk is not reasonably practicable, the hierarchy of controls should be consulted to implement the next most effective strategy reasonably practicable. A combination of the following controls may be required to be taken to minimise the risk to the lowest level reasonably practicable if no single control is sufficient for that purpose.

Level 1	Elimination	This means to completely remove the risk so no control/s need to be implemented <i>When elimination is not reasonably practicable, the hierarchy of controls should be consulted to implement the next effective strategy. A combination of the following may be required to be taken to minimise the risk.</i>	Highest	Most
Level 2	Substitution	Replacing a hazardous substance or process with a less hazardous one, e.g. substituting a solvent based chemical with a water based one	Level of health and safety protection	Reliability of controls
	Isolation	Isolating the hazard from the person at risk, e.g. isolating the power before working on electrical circuitry, enclosures for noisy machinery		
	Engineering	Redesign a process or piece of equipment to make it less hazardous, e.g. installing an exhaust ventilation system to extract dangerous fumes or dust		
Level 3	Administration	Minimising the risk by administrative or procedural means e.g. by adopting safe work practices or providing appropriate training, instruction or information	Lowest	Least
	PPE	Have people wear personal protective equipment and clothing while near a hazard, e.g. gloves, glasses. Earmuffs, aprons, safety footwear, dust masks		

Issue	Release Date	Summary of Changes
12	December 2016	Reviewed as per review schedule.
11	January 2015	Modified Review dates, Risk Assessment Types, Action reference.
10	January 2013	Form reviewed as per review schedule. Hierarchy of controls table updated in line with PROC 50.04 – Safety Risk Management.

Date of Issue: December 2016
 Due for Review: December 2019

PROC 50.04 – Safety Risk Management
 File completed assessments in D*0313

Issue 12
 Page 12 of 12

ATTACHMENT 3

Proposed new street parking restrictions in Carr Street, Eddy Road, Lone Pine Avenue, Beresford Avenue, Dalrymple Road and Beaconsfield Road, Chatswood and Chatswood West

Carr Street between Centennial Avenue and De Villiers Avenue

Bus zone 6:30am to 6:30pm Monday to Saturday - Formalise the existing bus stop on the west side of road. The bus zone will be 25 metres in length. Local residents and visitors will be able to park outside of the bus zone hours of operation.

No Parking 6:30 am to 6:30pm Monday to Saturday – To be implemented on the western side of road.

4P 6:30 am to 6:30pm Monday to Saturday Permit Holders Excepted (Area RA 6) – To be implemented on eastern side of road to support resident and visitor parking.

Eddy Road between De Villiers Avenue and Lone Pine Avenue

No Parking 6:30 am to 6:30pm Monday to Saturday – This is Option 2. To be introduced on Eddy Road, north side of road, between De Villiers Ave and Lone Pine Avenue.

Lone Pine Ave between Eddy Road / De Villiers Avenue and Beresford Avenue

No Parking 6:30 am to 6:30pm Monday to Saturday - Extend the existing No Parking 6:30 am to 6:30pm Monday to Saturday restriction by 6 metres adjacent to 1 Carr Street.

Beresford Avenue between Lone Pine Avenue and Pearl Avenue

No Parking 6:30 am to 6:30pm Monday to Saturday - to be introduced on Beresford Avenue, south side of road, between Lone Pine Avenue and Dalrymple Road.

Dalrymple Road between Beresford Avenue and Ivy Street

Bus zones 6:30 am to 6:30pm Monday to Saturday - Formalise two (2) existing bus stops. Each bus zone will be 25 metres in length. Local residents and visitors will be able to park outside of the bus zone hours of operation.

No Parking 6:30 am to 6:30pm Monday to Saturday - To be implemented on Dalrymple Road, east side of road, between Beresford Avenue and Ivy Street.

No Parking 6:30 am to 6:30pm Monday to Saturday - To be implemented on Dalrymple Road, east of Beaconsfield Road, south side of road, between 28 Dalrymple Road and 36 Dalrymple Road.

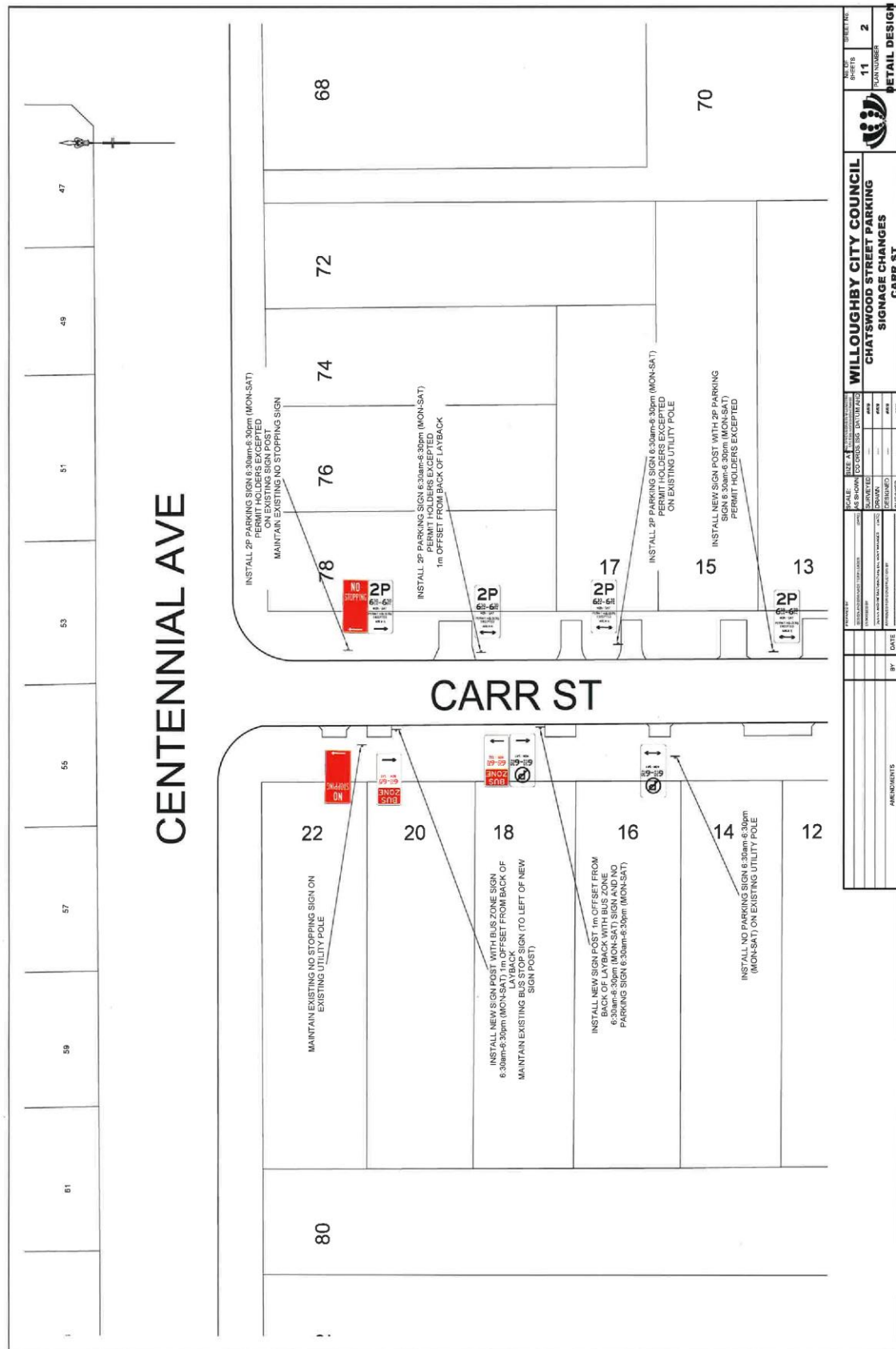
Beaconsfield Road between Greville Street and Ferndale Street

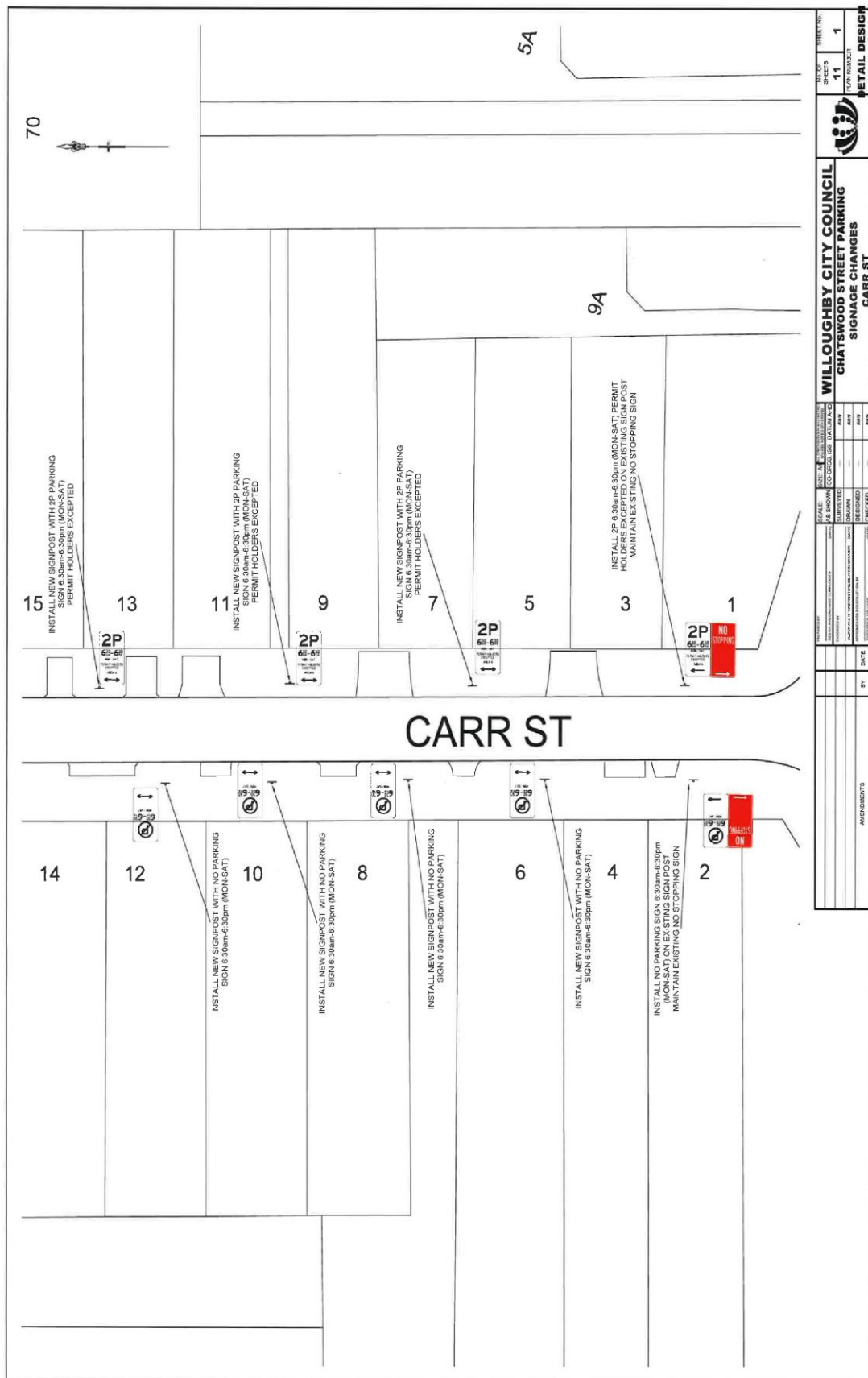
Bus zones 6:30 am to 6:30pm Monday to Saturday - Formalise three (3) existing bus stops. Each bus zone will be 25 metres in length. Local residents and visitors will be able to park outside of the bus zone hours of operation.

These bus zones are located adjacent to properties number 76; 79; 92; 113; and 114 Beaconsfield Road.

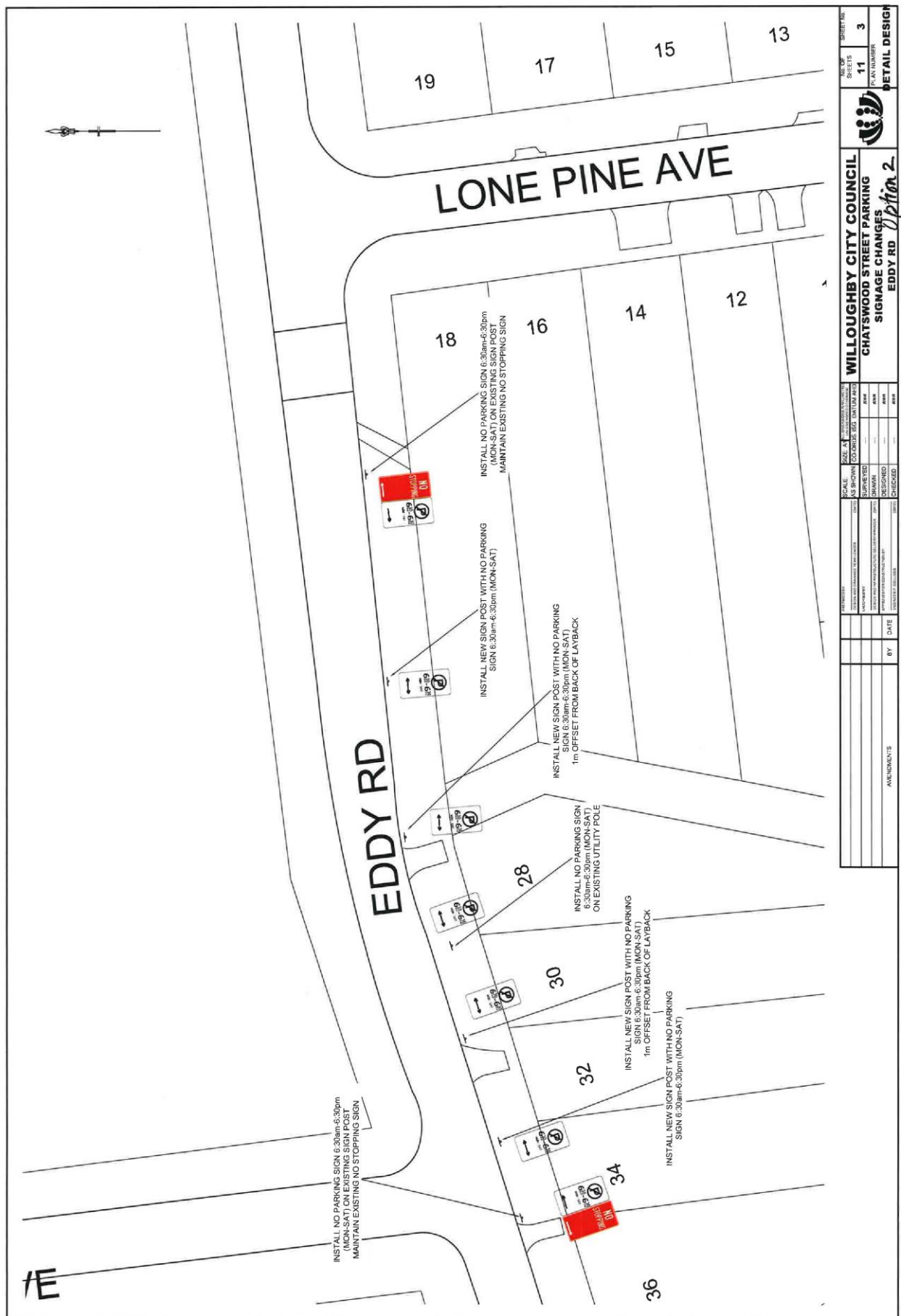
No Parking 6:30am to 6:30pm Monday to Saturday – To be implemented in Beaconsfield Rd from Greville Street to Ferndale Street, north and south side of road;

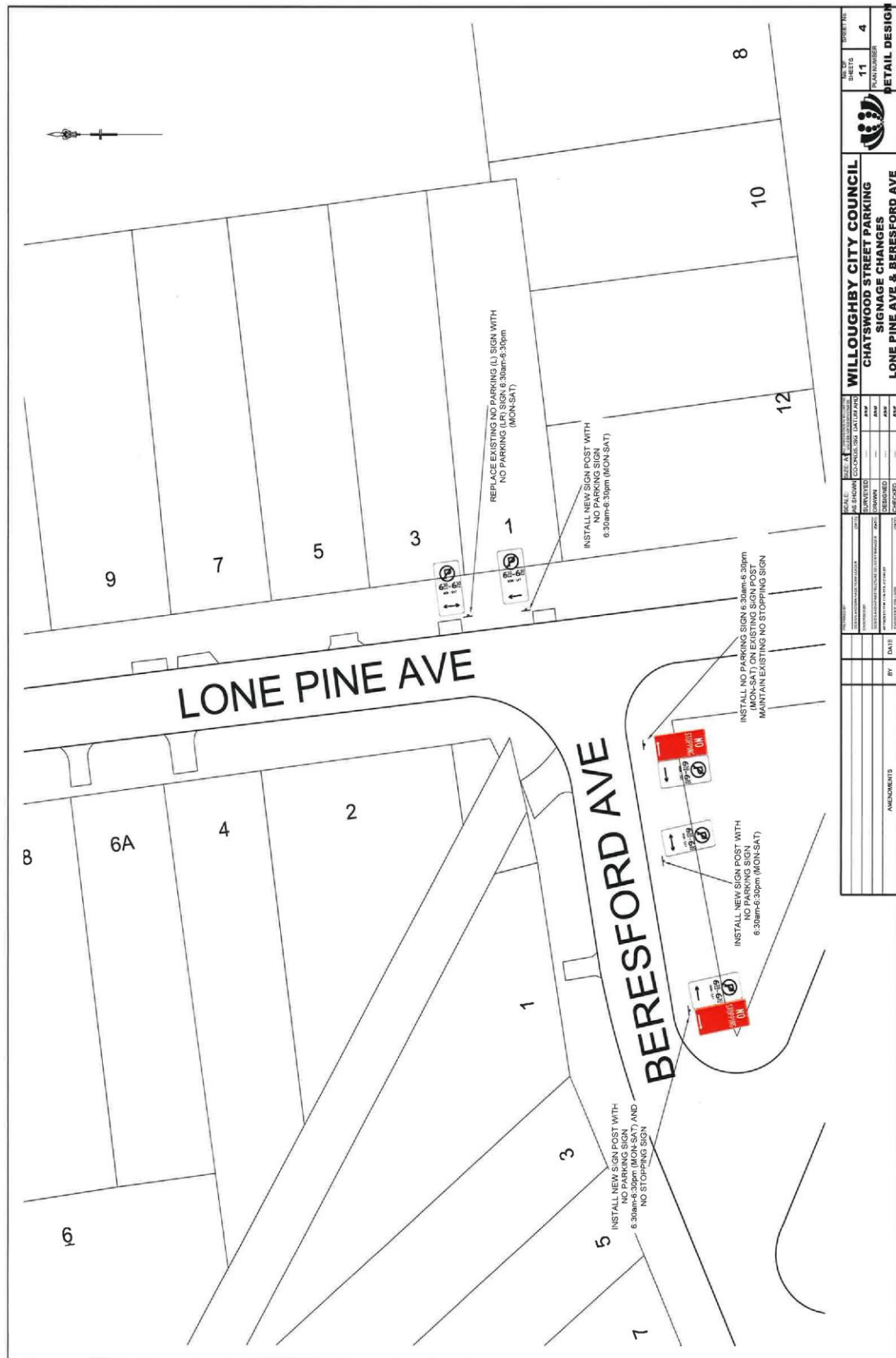
No Parking 6:30am to 6:30pm Monday to Saturday – To be implemented in Beaconsfield Rd and Cramer Crescent intersection, north and south side of road

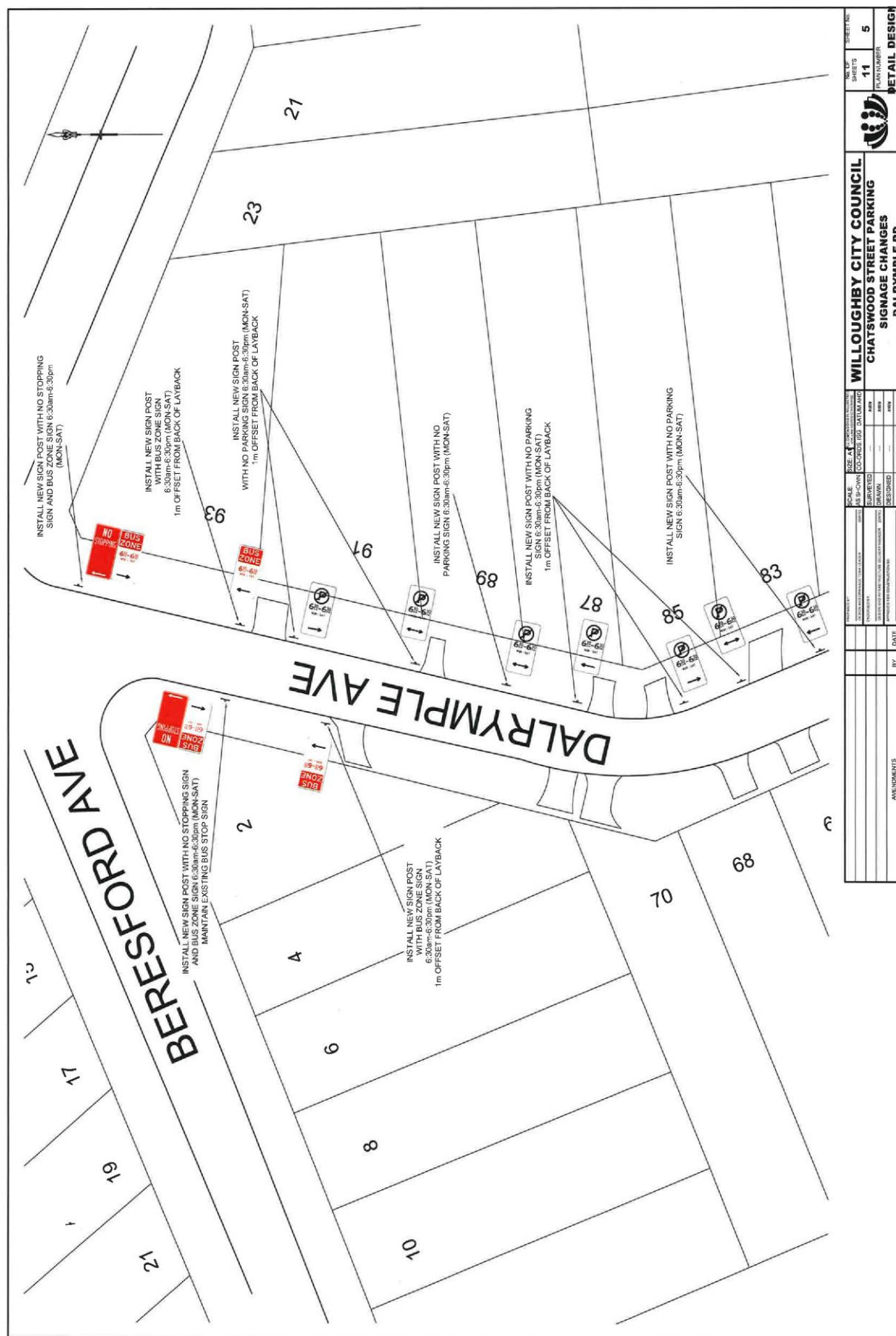


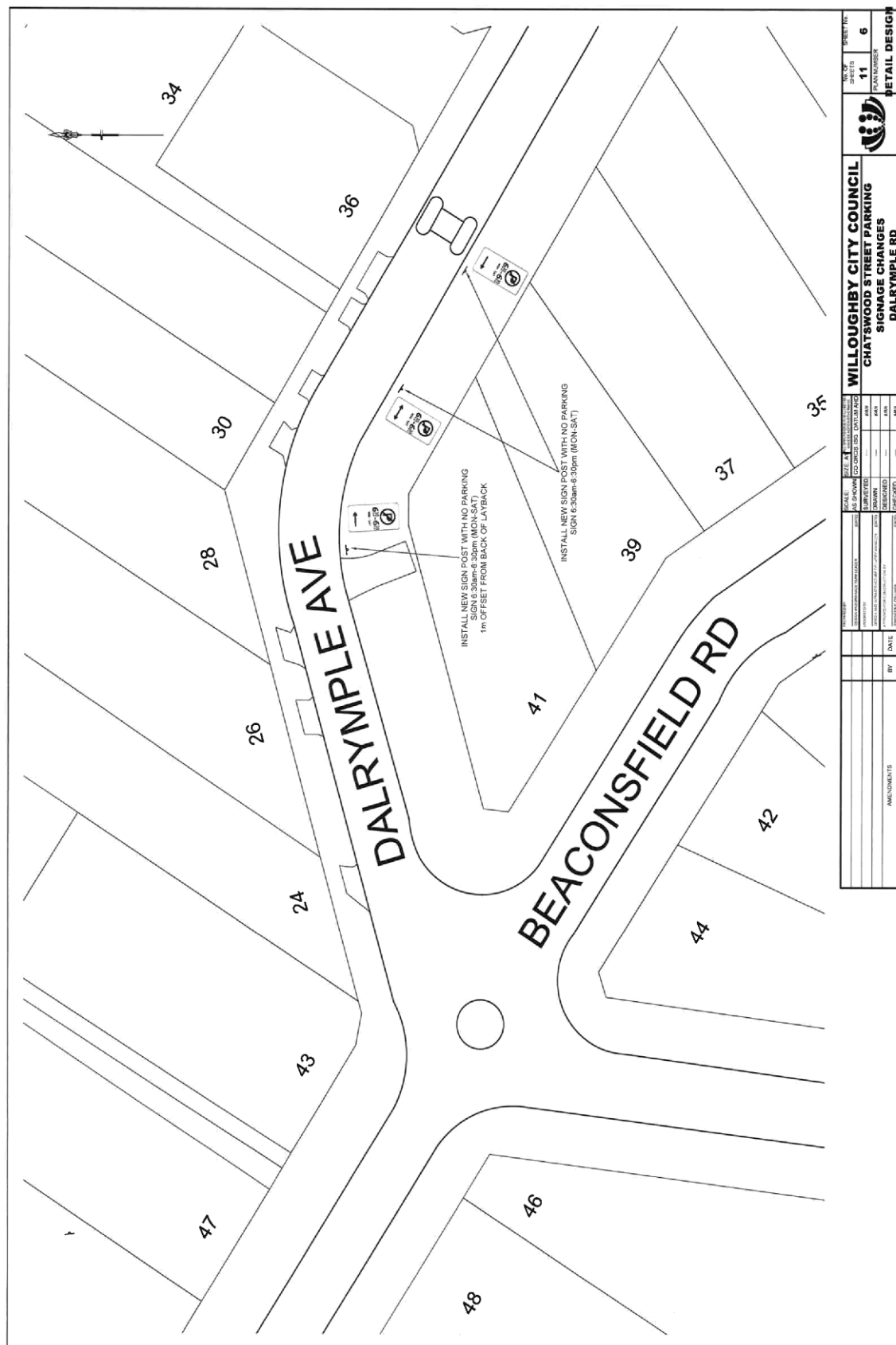


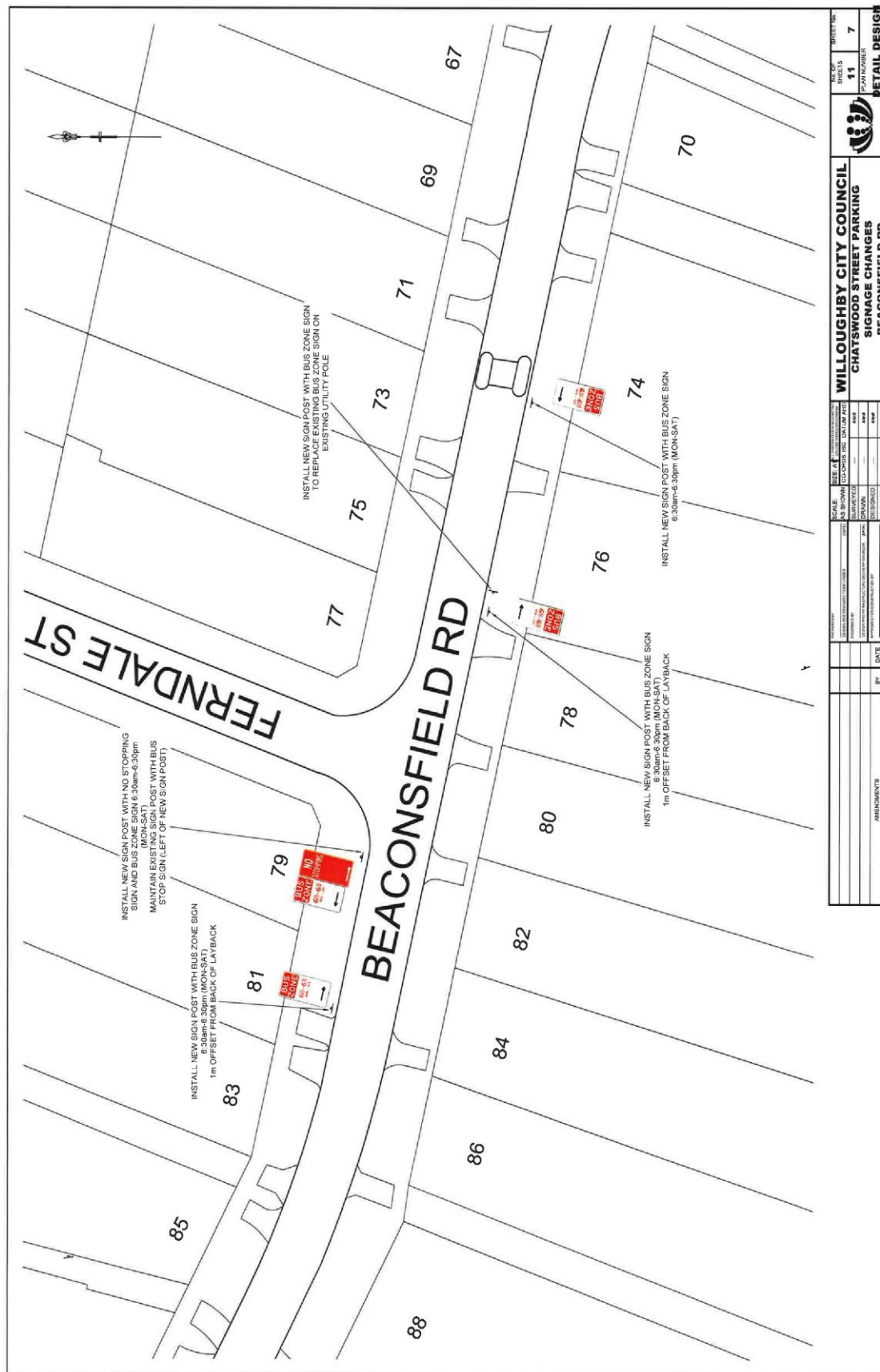




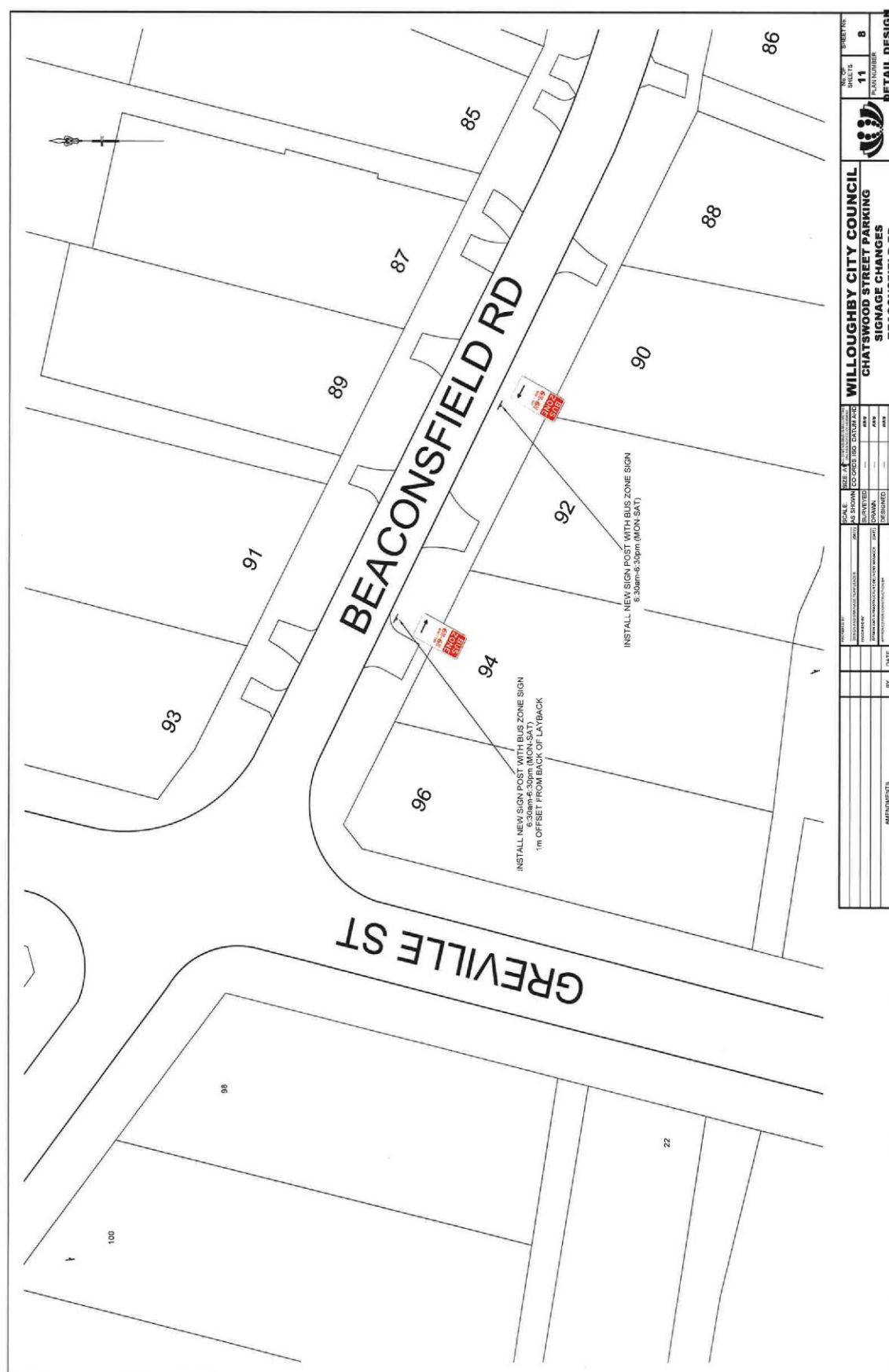


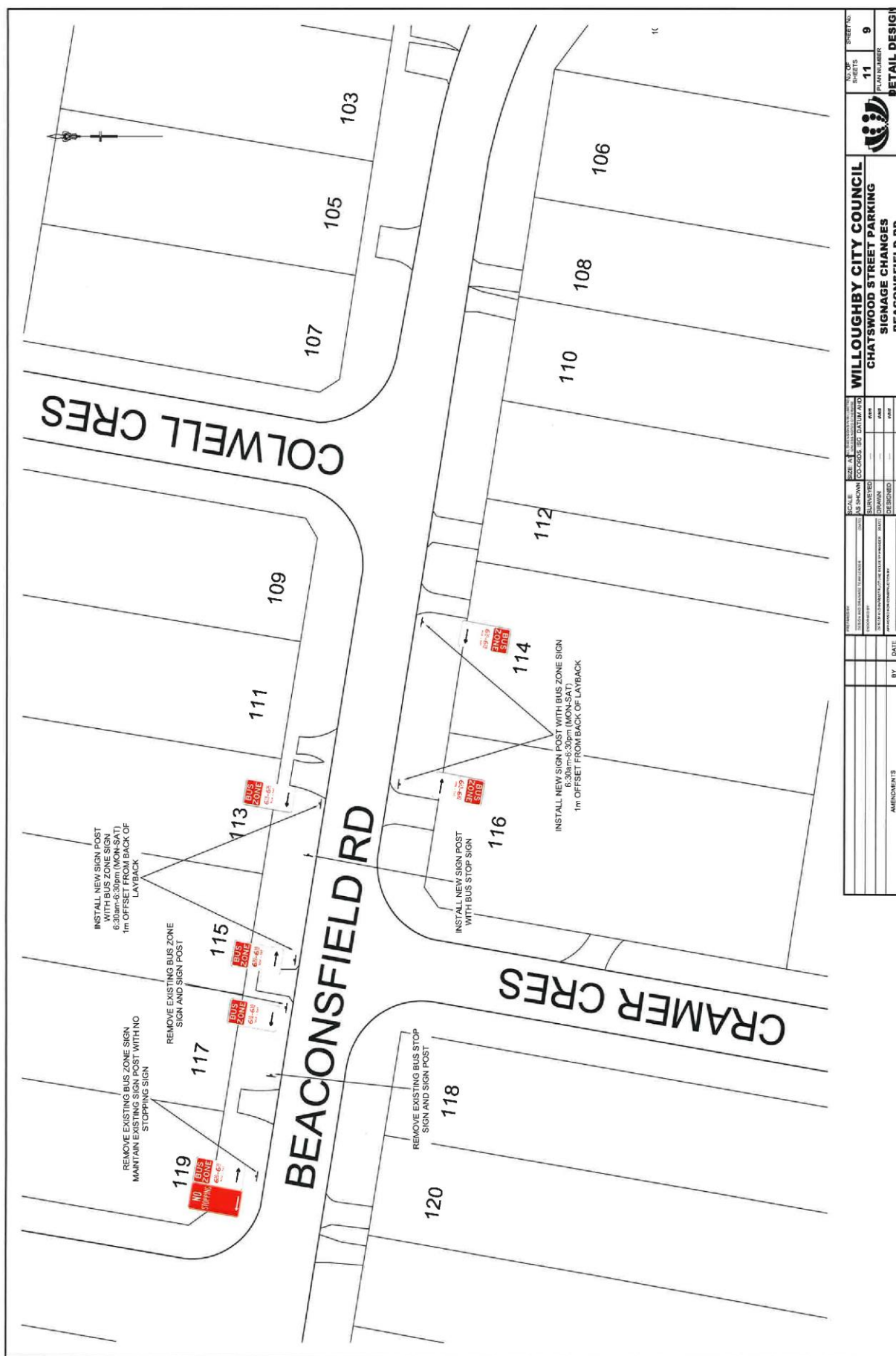






WILLOUGHBY CITY COUNCIL		CHATSWOOD STREET PARKING		SIGNAGE CHANGES		BEACONSFIELD RD	
DATE	11/11/19	SCALE	AS SHOWN	DATE	11/11/19	DATE	11/11/19
BY	DATE	BY	DATE	BY	DATE	BY	DATE
AMENDMENTS		AMENDMENTS		AMENDMENTS		AMENDMENTS	
NO. OF SHEETS	11	NO. OF SHEETS	11	NO. OF SHEETS	11	NO. OF SHEETS	11
SHEET NO.	7	SHEET NO.	7	SHEET NO.	7	SHEET NO.	7









PAGE 109

4.4 VICTORIA AVENUE & STANLEY STREET, CHATSWOOD – MARKED FOOT CROSSING IMPROVEMENT WORKS

ATTACHMENTS:	1. CONCEPT DESIGN PLAN
WARD:	MIDDLE HARBOUR WARD
RESPONSIBLE OFFICER:	GORDON FARRELLY - TRAFFIC & TRANSPORT TEAM LEADER
AUTHOR:	MELISSA NATOLI – STUDENT ENGINEER
CITY STRATEGY OUTCOME:	3.1 – FOSTER FEELINGS OF SAFETY, SECURITY AND CLEANLINESS
MEETING DATE:	27 NOVEMBER 2019

1. PURPOSE OF REPORT

To approve the implementation of changes to the existing marked foot crossing in Victoria Avenue at the intersection with Stanley Street, Chatswood.

2. OFFICER'S RECOMMENDATION

That Council approve the implementation of changes to the existing marked foot crossing in Victoria Avenue, at the intersection with Stanley Street, Chatswood as outlined in ATTACHMENT 1.

3. BACKGROUND

Council has received submissions indicating pedestrian safety concerns and near misses at the existing marked foot crossing in Victoria Avenue at the intersection of Stanley Street, Chatswood. A vehicle and pedestrian crash in 2013 resulted in the pedestrian receiving a serious injury.

Victoria Avenue is an important east-west traffic and pedestrian route connecting Chatswood Central Business District with Penshurst Street, a state road, and local centres including Chatswood East and surrounding residential areas. Traffic movement along Victoria Road is constant and high, particularly during the weekday morning and afternoon peak periods and on weekends. Victoria Avenue is also an important bus route.

Residences, commercial and retail establishments located in close proximity to the intersection lead to a high pedestrian demand to cross Victoria Avenue at this crossing at all times. There is also a constant east-west pedestrian movement along Victoria Avenue, particularly during the weekday morning and afternoon peak periods. Penshurst Street, approximately 200m away, and Baldry Street, approximately 350m away, are the closest alternate formal crossing facilities in close proximity along Victoria Avenue.

The marked foot crossing design currently permits two eastbound travel lanes and one westbound travel lane to traverse the crossing. Islands are located in the centre and on the southern side of Victoria Avenue.

Observations highlighted a constant traffic movement in Stanley Street with a regular volume of vehicles turning right to/ from Stanley Street into/ out of Victoria Avenue. The current design of Victoria Road at this intersection permits eastbound vehicles to pass vehicles waiting to turn right into Stanley Street. The weekday afternoon peak period is when right turning vehicles have the highest impact on eastbound traffic movement in Victoria Avenue.

The location of the marked foot crossing is shown in the Locality Plan below.



Locality Plan: Existing marked foot crossing in Victoria Avenue at the intersection Stanley Street, Chatswood

4. DISCUSSION

It is proposed to change the existing crossing on Victoria Avenue at Stanley Street by introducing a concrete island on the northern side of Victoria Avenue while also widening the existing islands to improve safety. The new concrete island will improve safety by mandating that only one eastbound travel lane passes through the marked foot crossing. The accompanied extension of the existing blister islands will further assist in, not only giving priority to the high number of pedestrians crossing Victoria Avenue, but also enhancing their visibility to drivers. This will prove particularly beneficial during weekday peak periods.

Key works include:

- Installation of a new concrete island on the northern side of the road;
- Widening of the existing islands on the southern side of the road;
- Modification of painted traffic islands and line marking;
- Removal of existing middle refuge islands;
- Installation of 'No Right Turn' sign into Stanley Street during the weekday afternoon peak Monday-Friday (4:30pm-6:30pm);

- Relocation of existing speed cushions and implementation of an additional speed cushion.

A right turn ban is proposed to be introduced from Victoria Avenue into Stanley Street for 4:30pm - 6:30pm Monday-Friday. This is necessary to maintain traffic flow along Victoria Avenue during this busy afternoon peak period. The right turn will be permitted at all other times. Furthermore, removal of the existing middle refuge islands is proposed in order to provide an improved alignment along Victoria Avenue. Existing speed cushions on Victoria Avenue will be adjusted to encourage vehicles to decrease speed as they approach the crossing. The proposed improvement works are shown in ATTACHMENT 1.

Investigations undertaken in the development of this proposal included monitoring of traffic movement along Victoria Avenue and at its intersection with Stanley Street and Crick Street during the weekday morning and afternoon peak periods. Observations of eastbound traffic queues in Victoria Avenue from the Penshurst Street intersection indicated that a single eastbound lane in Victoria Avenue through the intersection would be acceptable at all times.

A weekday afternoon peak period right turn ban is included as part of the proposal to support traffic flow during this period. The number of vehicles currently undertaking this movement is low and can be accommodated at adjacent intersections. There will be no loss of parking with the proposal.

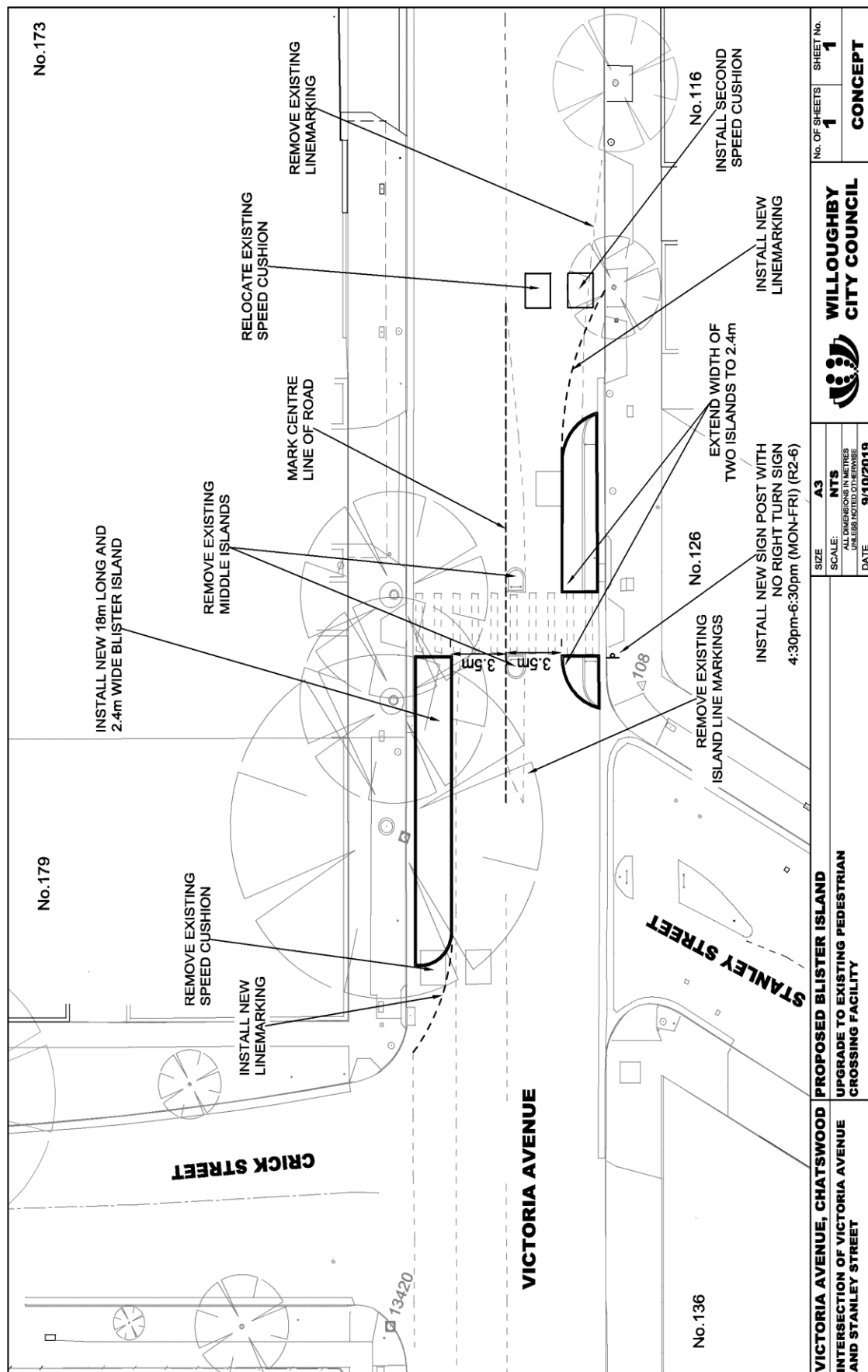
Community consultation is currently in progress and the results of the community consultation will be provided at the meeting.

5. CONCLUSION

The need to improve pedestrian safety at this location is in response to community submissions indicating pedestrian safety concerns and near misses at the existing marked foot crossing in Victoria Avenue, at the intersection with Stanley Street, Chatswood.

It is requested that the Local Traffic Committee approve the changes at the existing marked foot crossing in Victoria Avenue, at its intersection with Stanley Street, Chatswood as outlined in ATTACHMENT 1.

The project will be funded by both a grant from Roads and Maritime Service and Council's programs. There is funding provided in 2019/20 budget for the delivery of this project.



4.5 DELEGATED ITEMS - REGULATORY SIGNPOSTING AND LINE MARKING

ATTACHMENTS:	1. DIAGRAMS OF SIGNPOSTING AND LINE MARKING CHANGES
WARD:	ALL WARDS
RESPONSIBLE OFFICER:	GORDON FARRELLY - TRAFFIC & TRANSPORT TEAM LEADER
AUTHOR:	HASSAN YOUSAF- TRAFFIC ENGINEER
CITY STRATEGY OUTCOME:	2.1 – ENHANCE TRANSPORT CHOICES AND CONNECTIONS THROUGHOUT THE CITY 2.4 – REDUCE PARKING AND TRAFFIC CONGESTION 3.1 – FOSTER FEELINGS OF SAFETY, SECURITY AND CLEANLINESS
MEETING DATE:	27 NOVEMBER 2019

1. PURPOSE OF REPORT

To approve the implementation of regulatory signposting and line marking changes at various locations in Willoughby Local Government Area.

2. OFFICER'S RECOMMENDATION

That Council approve the implementation of regulatory signposting and line marking changes at various locations in the Willoughby Local Government Area.

3. BACKGROUND

These are minor traffic and parking issues forwarded to Council for its consideration and, if appropriate, action. The action is typically implementation of regulatory signposting, line marking and pavement marking.

4. DISCUSSION

The regulatory signposting, line marking and pavement marking changes have been implemented since the last Local Traffic Committee are outlined in the table below.

No.	Location	Issue	Proposed Works
19/50	Felton Avenue, Lane Cove North	Request to install Advance Warning signs at the approach of aged care facility on Felton Avenue, Lane Cove North	Installation of Pedestrian (W6-1) and Aged (W8-18) signs together on both approaches of Catholic Healthcare facility located on Felton Avenue, Lane Cove North.

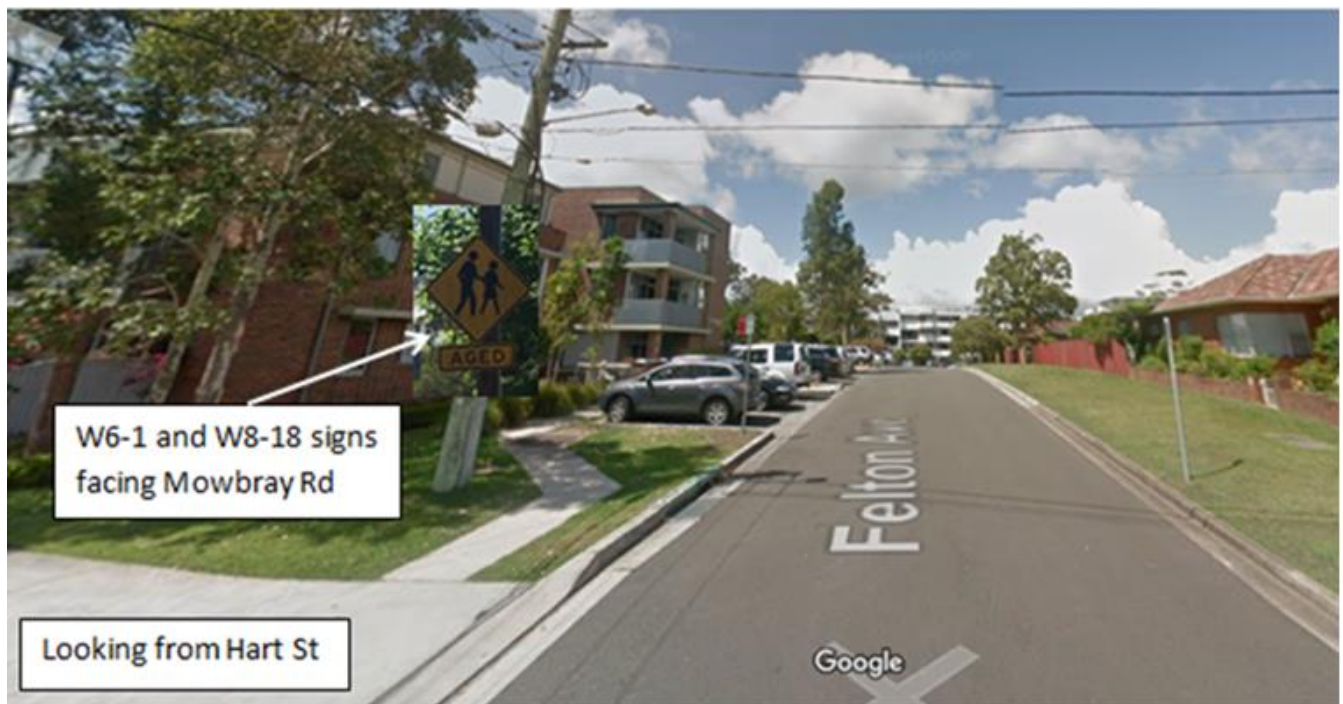
No.	Location	Issue	Proposed Works
19/51	Edward Street, Willoughby	Request to formalise the existing school bus stop by installing Bus Zone signs on Edward Street near the corner of Borlaise Street in Willoughby	Installation of Bus Zone (3pm – 4pm, School Days) signs for 20m length on Edward Street, Willoughby near the intersection with Borlaise Street.
19/52	Kameruka Road, Northbridge	Request to formalise the existing school bus stop by installing Bus Zone signs on Kameruka Road, Northbridge	Installation of Bus Zone (7:30am to 9am, and 2:30pm to 4:30pm, School Days) signs at the existing school bus stop outside property 17 Kameruka Road, Northbridge.
19/53	Alleyne Street, Chatswood	Request to install driveway white lines by owner of 62 Alleyne Street, Chatswood	Installation of white lines on either side of the driveway servicing property 62 Alleyne Street, Chatswood.
19/54	Penkivil Street, Willoughby	Request to review the No Parking signage outside 17-27 Penkivil Street, Willoughby, following the change in waste collection schedule	Replacement of existing No Parking (6am to 4pm, Monday to Thursday) signs with No Parking (6am to 12pm, Tuesday to Friday) outside 17-27 Penkivil Street, Willoughby.
19/55	Salisbury Lane, Willoughby	Request to install No Parking signs in Salisbury Lane between properties 42 and 44 Salisbury Road, Willoughby due to non-standard length and narrow lane	Installation of No Parking and Motor Bike Parking signs in Salisbury Lane between the garages of properties 42 and 44 Salisbury Road, Willoughby.
19/56	Darling Street, Chatswood	Request to install driveway white lines by owner of 21 Darling Street, Chatswood	Installation of white lines on either side of the driveway servicing property 21 Darling Street, Chatswood
19/57	Garland Road, Naremburn	Request to install driveway white lines by owner of 16 Garland Road, Naremburn	Installation of white lines on either side of the driveway servicing property 16 Garland Road, Naremburn

Diagrams for each location showing the regulatory signposting, line marking and pavement marking changes implemented since the last Local Traffic Committee are provided in ATTACHMENT 1.

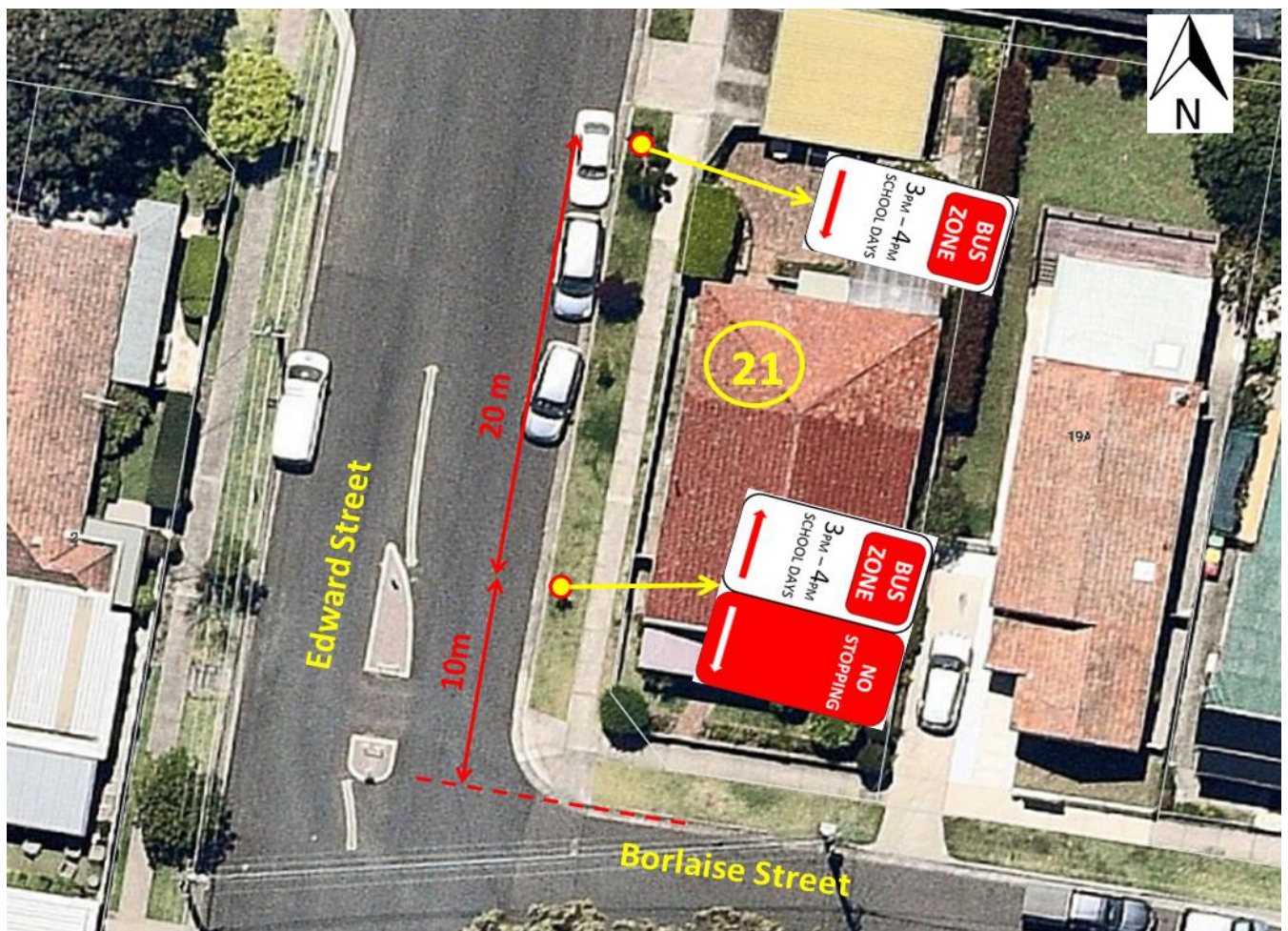
5. CONCLUSION

Willoughby City Council has allocated funding for the implementation of regulatory signposting in its Works Services Road and Street Signs (6630) cost centre. White driveway line marking is funded by payment by the applicant (no cost to Willoughby City Council).

19/50 – Felton Avenue, Lane Cove North



19/51 – Edward Street, Willoughby



19/52 – Kameruka Road, Northbridge



19/53 – Alleyne Street, Chatswood



17-27

REPLACE

REPLACE

FOR LEASE

Penkivil Street

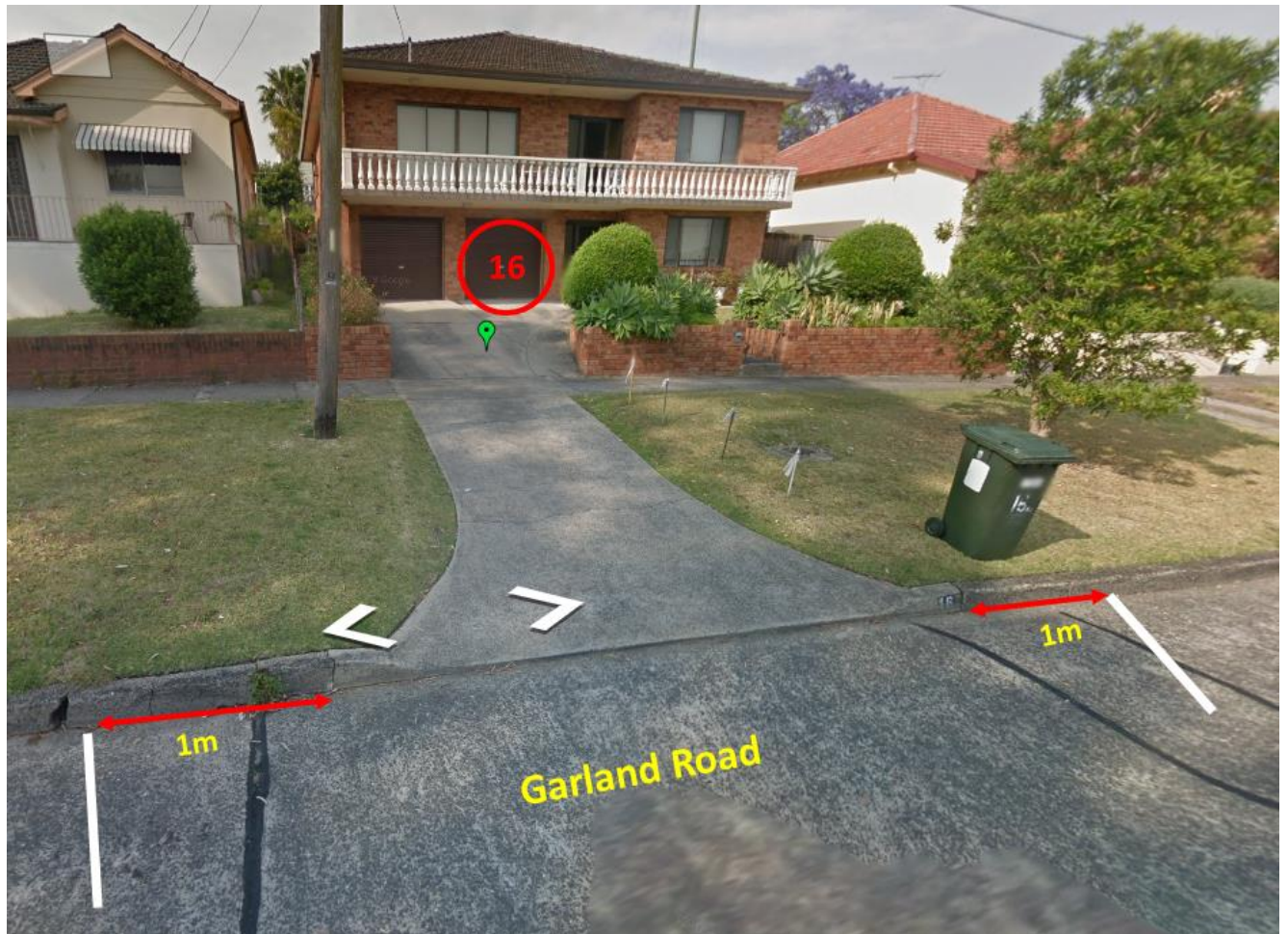
19/55 – Salisbury Lane, Willoughby



19/56 – Darling Street, Chatswood



19/57 – Garland Road, Naremburn



5 LATE ITEMS

Nil

6 INFORMAL ITEMS

Nil

7 GENERAL BUSINESS

Nil