

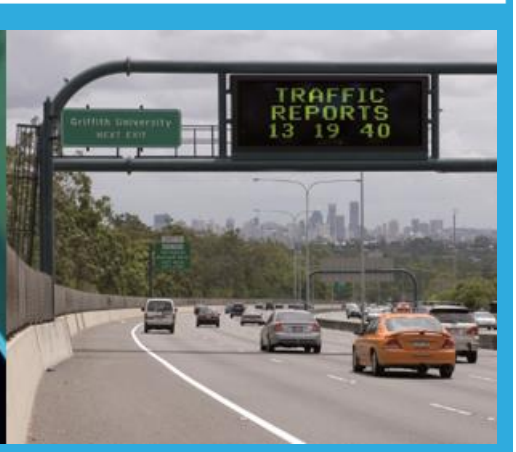

Final Report

'Solaris'

Proposed Mixed Use Development, Lake Street, Foster
Traffic and Parking Assessment

Prepared by:

MRCagney Pty Ltd

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MRCagney

Document Information

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1	Final Report	RB	GR	 Gerard Reardon (RPEng #0821)	06/04/17

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1. Introduction

MRCagney has been commissioned by Eynoc Pty Ltd to undertake a Traffic Impact Assessment for a proposed Mixed Use Development to be located on lots 11, 12 and 13 DP 47987 West Street, Forster.

The proposed Mixed Use Development will include:

- Council library as well as community and visitor centres;
- Retail and supermarket usages;
- Cinema;
- Childcare centre;
- Residential units and serviced apartments; and
- Hotel with adjoining amenities.

The development will be delivered over four stages with stage one of the development anticipated for a 2018/19 completion date. Accordingly, the 10-year design horizon year adopted for traffic analysis purposes was 2028.

This report is to accompany a Development Application to be lodged with Mid-Coast Council; accordingly, this report addresses the following external and internal traffic-related issues:

- The traffic impacts of the proposal on the adjacent external road network;
- The proposed car parking provision;
- The site access arrangements;
- The functional operation of the internal car traffic areas; and
- Servicing arrangements.

A summary of the findings of this report are included within Section 5.

2. Existing Conditions

2.1 Subject Site

The proposed development will be located on the corner of the intersection of Lake Street and West Street, Forster with frontages along both Lake Street, West Street and Middle Street. The subject site, illustrated below in Figure 2-1, is described as lots 11, 12 and 13 DP 47987 and is approximately 12,000m^2 in area.

Figure 2-1: Locality Plan

(source: Google Maps)

2.2 Existing Road Network

The characteristics of key roads near the subject site and therefore most likely to be used by visitors and residents of the development are summarised in Table 2-1 below.

Table 2-1: Characteristics of the Adjacent Road Network

Road	Carriageway Width (Approx.)	Cross-Section	Kerbside Parking Type
Head Street	19m	Four-lane, two-way	Parallel
Beach Street	14m	Two-lane, two-way	Parallel
Little Street	14m	Two-lane, two-way	Parallel
Memorial Drive	12m	Two-lane, two-way	Parallel / Perpendicular
Wallis Street	19m	Two-lane, two-way	Parallel / Central
Lake Street	21m	Two-lane, two-way	Parallel / Central / Angle
West Street	15m	Two-lane, two-way	Parallel / Central / Perpendicular
Middle Street	12m	Two-lane, two-way	Parallel
MacIntosh Street	20m	Four-lane, two-way	Parallel

It is noted that there is substantial kerbside parking allocated along the site's frontages: Lake Street, West Street and Middle Street. This parking is a combination of angle, parallel and central parking. Photographs 2-1 to 2-3 below show typical cross-sections for these three frontages.

Photograph 2-1:

Looking west along Lake Street (site on the left)

Photograph 2-2:

Looking south along West Street (site on the left)

Photograph 2-3:

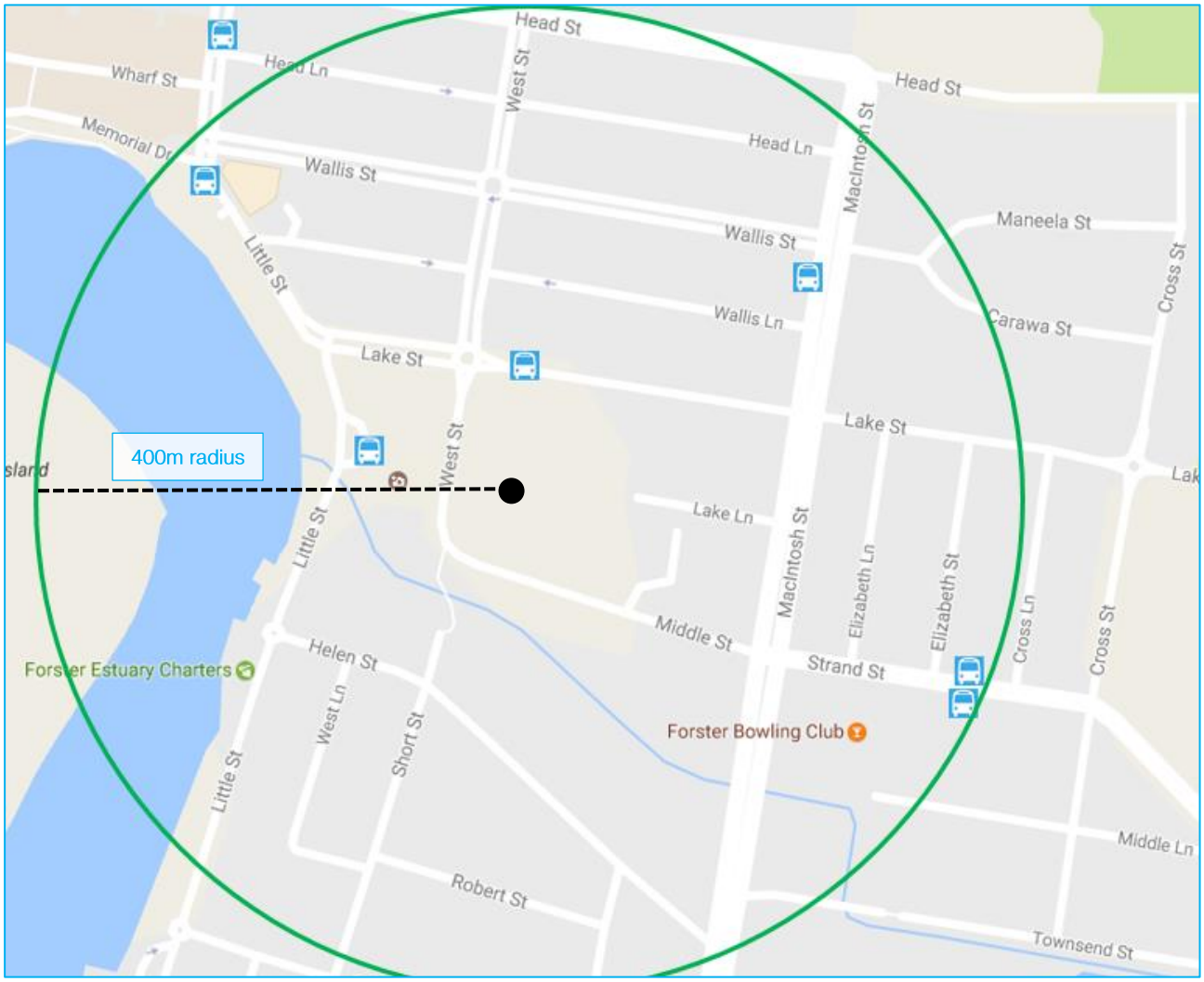
Looking east along Middle Street (site on the left)

(source: Street View)

2.3 Public Transport

Several bus stops are located within a 400m radius of the subject site as seen in Figure 2-2 below. The bus stops are serviced by two separate transport companies (*Forster Bus Lines* and *Busways*).

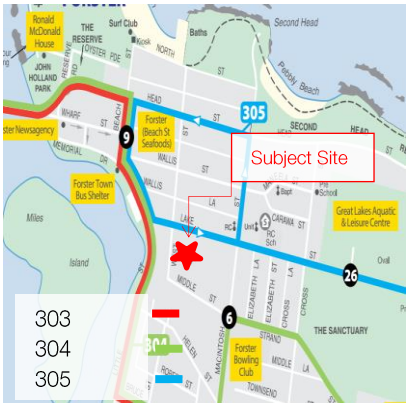
Figure 2-2: Bus Stops Near Subject Site



Forster Bus Lines operates the 303, 304 and 305 bus services which typically operate Monday to Saturday, with the 305 running along the Lake Street frontage. An outbound bus stop for the 305 route is located close to the site, just east of the Lake Street / West Street intersection, with buses heading east along Lake Street. *Busways* operates the 150 and 151 long-distance coach bus services, which provide connection between Taree and Newcastle, travelling along Little Street. These routes are shown in Table 2-2 below.

Forster Bus Lines also runs school buses nearby, travelling along Head Street, MacIntosh Street and Lake Street. Busways also operates school only services however these are not in the immediate area of the development.

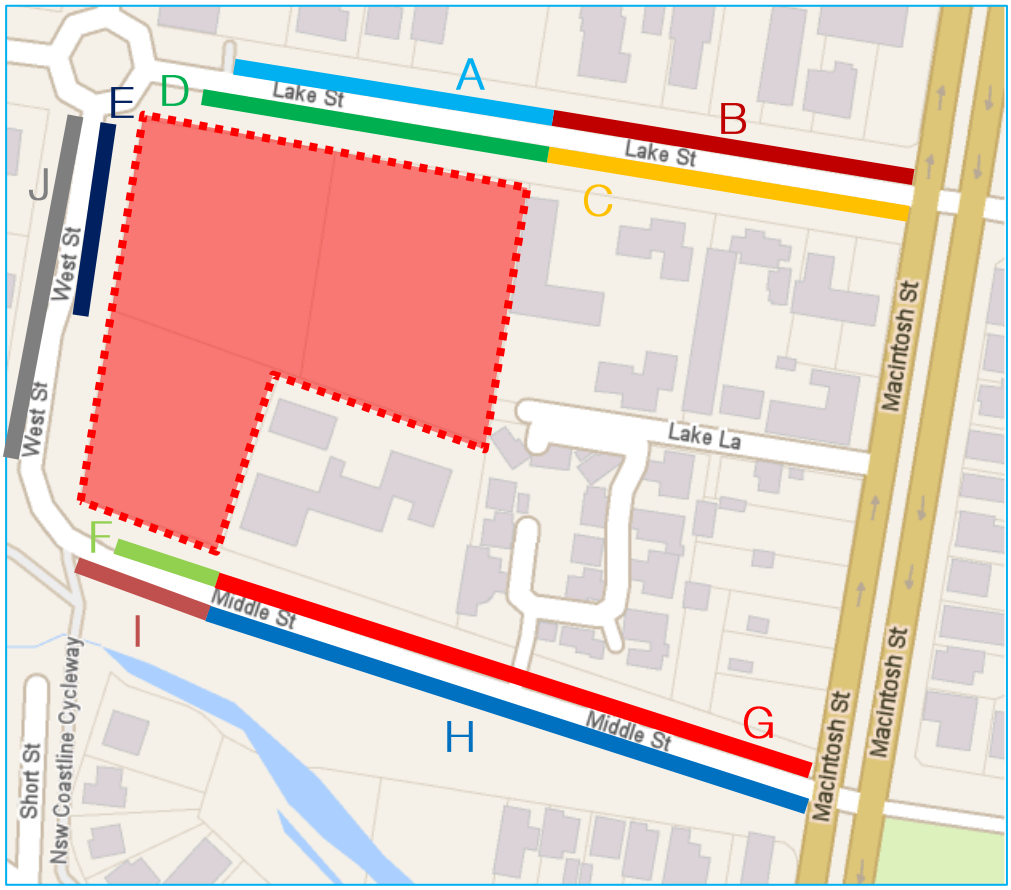
Table 2-2: Existing Bus Services

Route	Region	Frequency	Bus Route (near site)
150	Taree Railway Station to Newcastle Watt St - Bus Interchange	2 services / day (Long Distance Coach Service)	
151	Taree Railway Station to Newcastle Watt St - Bus Interchange	2 services / day (Long Distance Coach Service)	
303	Forster to Tuncurry Via Cape Hawke Hospital and Legacy Village	Monday to Friday Approximately every 30 minutes between 7:30am - 4pm Saturday Approximately every 3 hours between 9am - 2:15pm	
304	Forster to Tuncurry Via Club Forster, Bowling Clubs and Cape Hawke Hospital	Monday to Friday Approximately every 90 minutes between 9am - 3pm Saturday Approximately every 2-3 hours between 10am - 3:40pm	
305	Stockland to Forster via One Mile and Forster Golf Club Forster to Stockland via Golf Club and One Mile	Monday to Friday Approximately every 90 minutes between 7:30am - 4pm Saturday 2 services / day at 9:30am and 2:50pm	

2.4 Existing Kerbside Parking Utilisation

A parking survey was undertaken every day from Thursday 16nd March 2017 to Monday 20th March 2017 (at times of 8:00am, 12:00 noon, 3:00pm and 7:00pm) to gauge the utilisation of the current supply of kerbside parking along the site's three frontages: Lake Street, West Street and Middle Street. The parking area was broken into 10 zones (seen in Figure 2-3) to further investigate which areas were underutilised and which were at capacity.

Figure 2-3: Kerbside Parking Utilisation Survey Zones



While the kerbside parking is not line-marked, based on AS2890.1:2004 *(Parking facilities - Off-street car parking)*, the car parking capacity was calculated for all 10 zones. Using the peak survey data for weekdays and weekends, parking utilisation could be determined. Notably, the peak period for all weekdays surveyed was Monday at 12:00 noon and Sunday at 3:00pm for the weekend. The results of the parking utilisation survey are summarised in Table 2-3 below.

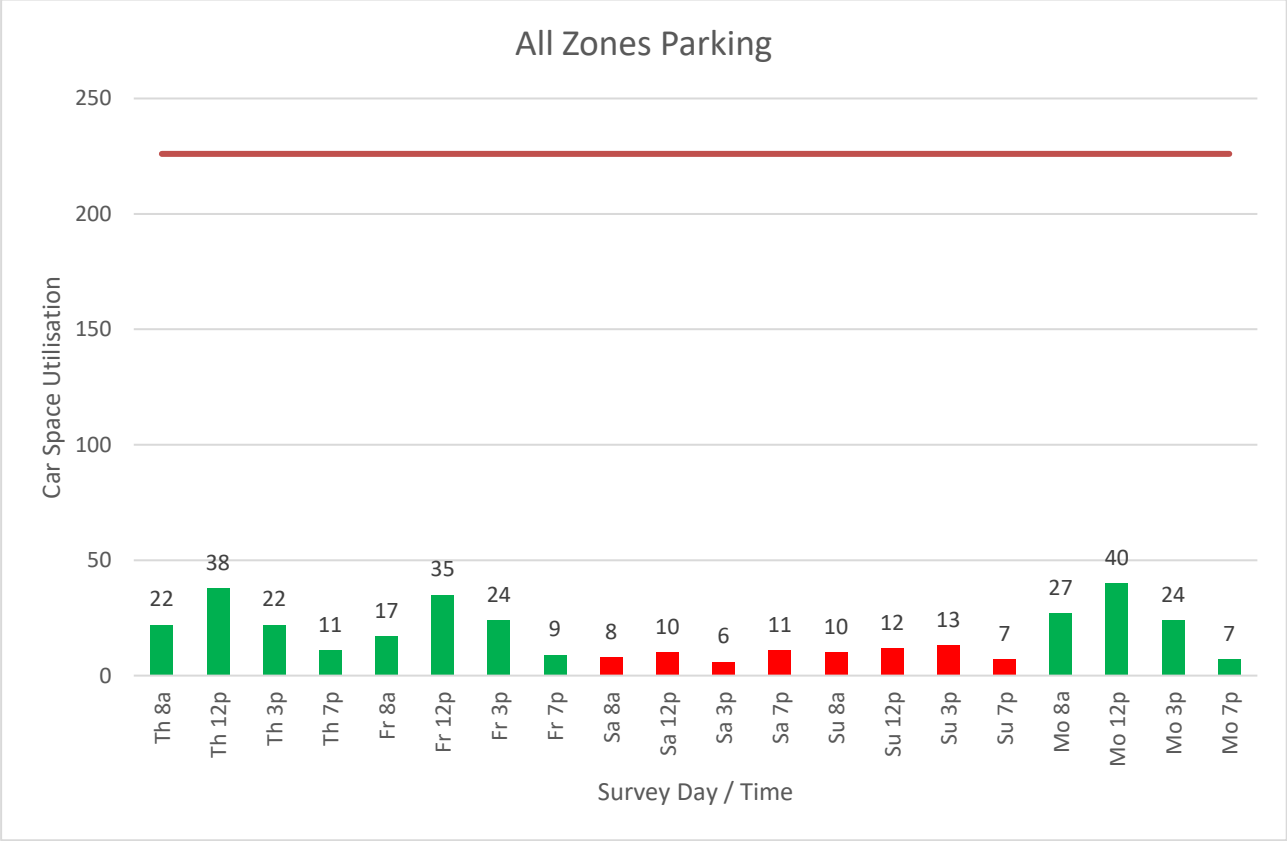
Table 2-3: Current Kerbside Parking Data

Parking Zone	Location	Capacity	Peak Weekday (Monday 12:00p noon)	Peak Weekday Space Capacity	Peak Weekend (Sunday 3:00pm)	Peak Weekend Spare Capacity
A	Lake Street	25	4 (16%)	21 (84%)	4 (16%)	21 (84%)
B	Lake Street	29	5 (17%)	24 (83%)	1 (3%)	28 (97%)
C	Lake Street	25	0 (0%)	25 (100%)	0 (0%)	25 (100%)

Parking Zone	Location	Capacity	Peak Weekday (Monday 12:00p noon)	Peak Weekday Space Capacity	Peak Weekend (Sunday 3:00pm)	Peak Weekend Spare Capacity
D	Lake Street	35	0 (0%)	35 (100%)	2 (6%)	33 (94%)
E	West Street	19	2 (11%)	17 (89%)	0 (0%)	19 (100%)
F	Middle Street	7	1 (14%)	6 (86%)	0 (0%)	7 (100%)
G	Middle Street	28	9 (32%)	19 (68%)	1 (4%)	27 (96%)
H	Middle Street	22	11 (50%)	11 (50%)	1 (5%)	21 (95%)
I	Middle Street	6	0 (0%)	6 (100%)	0 (0%)	6 (100%)
J	West Street	30	8 (27%)	22 (73%)	4 (13%)	26 (87%)
TOTAL	-	**226**	**40 (18%)**	**186 (82%)**	**13 (6%)**	**213 (94%)**

The total parking utilised during every survey time has been plotted in Figure 2-4 below. The capacity line shows how much the parking surrounding the site is underutilised. At its peak (Monday at 12:00 noon), only 40 out of 226 spaces are being used (i.e. less than 20% of capacity). This utilisation shows how much kerbside parking will be available to users of the proposed development if required.

Figure 2-4: All Zones Parking Utilisation



3. Proposed Development

3.1 Description

The proposed mixed use development will consist of several major components, with areas and other important metrics summarised in Table 3-1 below:

Table 3-1: Proposed Development's Land Usage Schedule

Land Usage	Area
Library	1,753m^2
Community Centre	476m^2 - 200 seats
Visitor Centre	362m^2
Specialty Retail	282m^2
Restaurant	1,338m^2 - 647 seats
Supermarket	841m^2
Cinema	2,143m^2 - 800 seats
Childcare Centre	386m^2 - 50 children
Residential Units	143 units
Serviced Apartments	18 apartments
Hotel	84 rooms
Function Rooms	464m^2 - 218 seats
Gym	268m^2
Business Centre	89m^2
Nightclub	817m^2

Architectural plans of the proposed development, prepared by TVS Architects, are included within Appendix A of this report. The development will feature two buildings consisting of 10 levels, with the other two buildings ranging between 7 and 9 levels. It should be noted that this report refers to Buildings A through C, consistent with the parking schedule, as opposed to the latest plans which differentiate Building C as two distinct buildings. Most servicing will be contained to the rear of the development just off West Street.

Car parking for the development will be provided over four levels. The public retail car park will be accessed via Lake Street and West Street. Hotel parking can be reached from the Middle Street access, while the podium residential parking can be accessed by Lake Street and West Street.

While the development will be constructed in four distinct stages, as indicated on the architectural plans (Appendix A), the assessment included in this report has considered the end state arrangement of full development.

Currently the configuration of the Lake Street, the West Street and Middle Street frontage of the proposed development comprises wide carriageways with limited line marking, limited signage and limited measures to control speed. Appropriately the configuration of these street frontages is proposed to be modified to provide a street design which complements activity, highly pedestrianised streetscape design of the proposed development. The changes proposed will engender low speed, provide formalised parking, provide for the proposed development accesses and provide for planned cycle infrastructure.

Specifically, the proposed modifications include:

- Installation of a roundabout at the Lake Street access;
- Provision of formalised central and kerbside parking along both Lake and West Streets;
- Provision of parallel parking along the Lake Street frontage to provide for a bus zone and a 2minute passenger / 20-minute commercial vehicle loading zone; and
- Formalisation of the design of West Street, south of Lake Street and part of Middle Street to operate similar to a low speed (i.e. 20 km/h) car park circulation aisle with perpendicular parking. The landscaping design reflects this operational intent.

3.2 Development Accesses

Access points for the development will be provided along all three frontages (Lake Street, West Street and Middle Street). All three can be used for ingress however egress is only possible via the Lake Street and Middle Street accesses.

3.2.1 Lake Street Access

The Lake Street access will be off a roundabout proposed to be installed at the access. From Lake Street, residents will use access the ramp up to the podium parking, while the public will be directed to the ramp down to the basement carpark. The roundabout will also connect to the entrance of the Bella Villa Motor Inn (located on the northern side of Lake Street). The exit of the inn is located on the western approach to the roundabout, with exiting traffic able to merge just before the roundabout entrance.

The provision of the roundabout at the access enables motorists to be able to perform a U-turn if needed.

3.2.2 West Street Access

The West Street access is an 'ingress-only access' and intended to be used by residents and service vehicles, providing ingress only to the development.

3.2.3 Middle Street Access

The Middle Street access features kerbside set-down and a porte-cochère for drop-offs / pick-ups. This access is two-way to allow ingress to and egress from the retail, hotel and other usages on the southern part of the site.

Most hotel traffic will use this access as will retail and other usages.

3.3 Car Parking Provision

A total of **513 car parking spaces** are provided in various areas of the development:

- **Building A:** Basement 1 / Lower Ground Level **(252 spaces)**, Level 1 **(17 spaces)** and Level 2 **(77 spaces)**;
- **Building B:** Level 1 **(61 spaces)** and Level 2 **(64 spaces)**; and
- **Building C:** Basement 2 **(42 spaces)**.

The car parking supply for the proposed development considered the various components of the development against the Great Lakes DCP and are detailed further below. Parking rates for land uses not specified in the Great Lakes DCP[1] have been sourced from the NSW RTA (now RMS) Guide to Traffic Generation Developments[2] or the NSW State Environmental Planning Policy[3].

[1] "Great Lakes Development Control Plan", Mid-Coast Council, 2013.
[2] "Guide to Traffic Generating Developments", Roads and Traffic Authority, 2002.
[3] "State Environmental Planning Policy (Housing for Seniors or People with a Disability)", NSW Government, 2004.

Available on-street parking along the three frontages is in addition to the 513 off-street car spaces. Based on the current utilisation by users of the surrounding site, a majority of these spaces would be available for users of the proposed development to use in addition to the on-site parking provided.

Below are notes regarding all land usages and assumptions made when determining the rate of parking as well as the calculation of the final provision required. Conservatively, all floor areas were assumed to be gross leasable floor areas.

Library

No parking provision was specified for a library land usage in the Great Lakes DCP, therefore the commercial office / business premises rate was adopted:

- **Visitor parking: 44 spaces** - 1 space per 40m^2 GLFA.

Community Centre

No parking provision was specified for a community centre land usage in the Great Lakes DCP, therefore the theatre rate was adopted. The community centre is specified to include 200 seats:

- **Visitor parking: 20 spaces** - 1 space for every 10 seats.

Visitor Centre

No parking provision was specified for a visitor centre land usage in the Great Lakes DCP, therefore the commercial office / business premises rate was adopted:

- **Visitor parking: 10 spaces** - 1 space per 40m^2 GLFA.

Residential Units

The parking provision specified for residential units in the State Environmental Planning Policy (SEPP) was chosen, as opposed to the Great Lakes DCP, because the intended audience for the units is seniors:

- **Total parking: 175 spaces** - 0.5 car parking spaces for each bedroom per dwelling, with Great Lakes DCP rates used for penthouses.

It should be noted that 4 of the residential units are penthouses, therefore are not restricted to seniors. In these cases, the rates for serviced apartments have been used.

Serviced Apartments

The parking provisions specified for serviced apartments in the Great Lakes DCP can be seen below:

- **Resident parking: 19 spaces** - one (1) car parking space for each one (1) bedroom dwelling and 1.2 car parking spaces for each two (2) bedroom dwelling;
- **Visitor parking: 4 spaces** - 0.2 visitor car parking spaces per dwelling; and
- **Additional parking: 2 spaces** - 1 trailer space per eight (8) dwellings.

Hotel

The parking provision specified for a hotel in the NSW RTA Guide to Traffic Generating Developments is extracted below. It is being assumed that the hotel would be rated either 3 to 5 stars as this is the standard for this rate. The RTA rate of 1 space for every 4 rooms for 3 or 4 star hotels would be more applicable to a hotel located in a CBD area. As Forster is a regional centre, a rate of 1 space for every 2 rooms would be more suitable:

- **Visitor parking: 42 spaces** - one (1) car parking space for every two (2) rooms.

It should also be noted that valet parking may allow more flexible parking options.

Restaurants

The number of seats available was calculated using a rate of 2.1m^2 per seat (per the RTA Guide to Traffic Generating Developments). The seating area provided translates to approximately 638 seats. Forster is identified in the Council's S94 parking contributions plans hence the reduced rate from the Great Lakes DCP can be used:

- **Visitor parking: 43 spaces** - 1 space per 15 seats in an area identified in Council's S94 parking contributions plan.

Specialty Retail / Supermarket

The parking provision specified for both retail and supermarket land usages in the Great Lakes DCP can be seen below:

- **Retail visitor parking: 12 spaces** - 1 space per 24m^2 GLFA; and
- **Supermarket visitor parking: 35 spaces** - 1 space per 24m^2 GLFA.

Cinema

The theatre usage rate in the Great Lakes DCP was adopted:

- **Visitor parking: 80 spaces** - 1 space for every 10 seats.

Gym

The parking provision specified for a gym land usage in the NSW RTA Guide to Traffic Generating Developments can be seen below. It was assumed that the development was in a metropolitan sub-regional area when selecting a specific rate from the above guide:

- **Visitor parking: 13 spaces** - 4.5 spaces per 100m^2 GLFA.

Childcare

The parking provision specified for a childcare land usage in the NSW RTA Guide to Traffic Generating Developments can be seen below:

- **Visitor parking: 13 spaces** - 1 space for every 4 children.

Function Rooms

The function rooms are located in Building C, the location of the hotel. These two uses are connected to each other, with users of the hotel likely to use the function rooms. It has been deemed that hotel parking numbers is inclusive of a provision for the function rooms.

Business Centre

No parking provision was specified for a business centre land usage in the Great Lakes DCP, therefore the commercial office / business premises rate was adopted (this usage would be like a library):

- **Visitor parking: 3 spaces** - 1 space per 40m^2 GLFA.

Nightclub

No parking provision was specified for a nightclub land usage in the Great Lakes DCP, therefore the place of assembly rate was adopted:

- **Visitor parking: 82 spaces** - 1 space per 10m^2 of seating area.

3.3.1 Parking Supply Summary

Table 3-2 below summarises the proposed allocation of car parking for the proposed mixed use development.

Table 3-2: Car Parking Provision Summary

Type of Land Use	Unit	Car Parking Rate	Resident Provision	Visitor Provision
Library	1,753m^2	1 space / 40m^2 GLFA	-	44
Community Centre	476m^2 - 200 seats	1 space / 10 seats	-	20
Visitor Centre	362m^2	1 space / 40m^2 GLFA	-	10
Residential Units	5 (1-bedroom), 72 (2-bedroom), 64 (3-bedroom), 1 (4-bedroom), 1 (5-bedroom), 143 (total units) or 350 (bedrooms)	As specified above.	175	-
Serviced Apartments	12 (1-bedroom), 6 (2-bedroom), 18 (total)	As specified above.	19	6
Restaurant	1,338m^2 seating area - 638 seats	1 space / 15 seats	-	43
Retail / Supermarket	1123m^2 (841m^2 for supermarket, 282m^2 for specialty retail)	1 space / 24m^2 GLFA	-	47
Cinema	2,143m^2 - 800 seats	1 space / 10 seats	-	80
Nightclub	817m^2	1 space / 10m^2 of seating area	-	82
Childcare Centre	374m^2 - 50 children	1 space / 4 children	-	13
Gym	268m^2	4.5 spaces / 100m^2 GLFA	-	13
Function Rooms	464m^2 seating area - 221 seats	-	-	-
Business Centre	89m^2	1 space / 40m^2 GLFA	-	3
Hotel	84 rooms	1 space / 2 rooms	-	42
		Total	194	403

* Note: GLFA = Gross leasable floor area.

As indicated, the development would require **597 car spaces**. However, this doesn't consider the temporal demand which would be experienced. As the development contains a variety of usages, their peak periods are unlikely to align. For instance, the nightclub usage will only experience a parking demand during late evenings, while the gym would expect its highest demand during the early morning and afternoon.

Residential parking must always be provided for hence it is not included in temporal demand analysis. Parking for the hotel and function room usages is also not included in the temporal demand analysis as parking was assigned for these usages in Building C. Regarding the childcare centre, it is proposed that 13 on-street space be designated for parent and staff use. Most users will be in a rush and will not want to look for a space inside a parking structure.

Table 3-3 below shows the expected utilisation percentage for each usage at various times of the week and day, while Table 3-4 displays this same information in terms of parking spaces.

It is expected some patrons would utilise on-street parking regardless of the provision for off-street parking. It is noted that the current low utilisation of on-street parking indicates that this would not create an adverse impact. Half of nightclub, restaurant and community centre patrons are likely to park on the street for convenience, as well as 100% of childcare centre visitors. Adjusted totals are included in the above table.

Upper Basement Level 1 provides 252 car spaces for all these usages. Around midday during the weekend is the period of highest utilisation. Factoring in temporal demand (i.e. 221 spaces), the parking provided will meet the expected peak demand. Even if all nightclub, restaurant, childcare and community centre users were to use on-site parking, the public parking area would still be sufficient (245 spaces demanded of the 252 provided).

In summary, the proposed parking supply is considered adequate.

Table 3-3: Temporal Demand by Percentage

Type of Land Use	Policy Requirement	Weekday				Weekend			
		8am	12pm	4pm	9pm	8am	12pm	4pm	9pm
Library	44	15%	50%	100%	0%	15%	100%	50%	0%
Community Centre	20	50%	50%	100%	75%	50%	75%	75%	0%
Visitor Centre	10	20%	50%	100%	0%	20%	100%	100%	0%
Restaurant	43	0%	30%	100%	100%	0%	75%	100%	100%
Retail / Supermarket	47	20%	20%	100%	0%	20%	100%	20%	0%
Cinema	80	0%	10%	20%	30%	0%	100%	100%	60%
Nightclub	82	0%	0%	0%	100%	0%	0%	5%	100%
Gym	13	30%	15%	100%	15%	30%	50%	30%	10%
Business Centre	3	15%	50%	100%	0%	0%	0%	0%	0%

Table 3-4: Temporal Demand by Parking Spaces

Type of Land Use	Policy Requirement	Weekday				Weekend			
		8am	12pm	4pm	9pm	8am	12pm	4pm	9pm
Library	44	7	22	44	0	7	44	22	0
Community Centre	20	10	10	20	15	10	15	15	0
Visitor Centre	10	2	5	9	0	2	9	9	0
Restaurant	43	0	13	43	43	0	33	43	43
Retail / Supermarket	47	10	10	47	0	10	47	10	0
Cinema	80	0	8	16	24	0	80	80	48
Nightclub	82	0	0	0	82	0	0	5	82
Gym	13	4	2	13	2	4	7	4	1
Business Centre	3	1	2	3	0	0	0	0	0
TOTAL	342	39	77	205	168	38	245	198	176
ADJUSTED TOTAL	**270**	**34**	**65**	**173**	**98**	**33**	**221**	**166**	**113**

3.4 Car Park Layout

The overall parking layout has been reviewed. The layout of the car parking of the proposed development, as well as the internal ramps, is generally in accord with AS2890.1:2004 (refer to MRCagney Figures D1 to D13 within Appendix D).

Parking provided for **residents** must be in accordance with the following dimensions from AS2890.1:2004 (User Class Type 1A):

- Car park spaces should be a minimum of 5.4m in length and 2.4m in width;
- Tandem car park spaces should be a minimum of 10.8m in length;
- Parking aisles should be a minimum of 5.8m in width; and
- Disability car park spaces should be a minimum of 3.2m in width (AS2890.5:1993).

Checking the dimensions of the residential car park (seen in Appendix D, Figures D4 and D6 to D7) confirms compliance with AS2890.1:2004:

- Car park spaces are 5.4m in length and 3.05 to 3.2m in width to comply with state's SEPP policy;
- Tandem car park spaces are 10.8m in length;
- Parking aisles are 5.8 to 6.2m in width; and
- Disability car park spaces are 3.65 to 3.8m in width.

Parking provided for **public users**, in particular retail users must be in accordance with the following dimensions from AS2890.1:2004 (User Class Type 3):

- Car park spaces should be a minimum of 5.4m in length and 2.6m in width;
- Parking aisles should be a minimum of 5.8m in width;
- Small car spaces should be a minimum of 5.0m in length and 2.3m in width; and
- Disability car park spaces should be a minimum of 2.4m in width with an adjacent vacant bay.

Checking the dimensions of the retail car park (seen in Appendix D, Figures D9 to D12) confirms compliance with AS2890.1:2004:

- Car park spaces are 5.4m in length and 2.6m in width;
- Parking aisles are 6.0 to 6.85m in width;
- Small car spaces are 5.4m in length and 2.4m in width; and
- Disability car park spaces are 2.6m in width with an adjacent vacant bay.

Parking provided for **hotel users** must be in accordance with the following dimensions from AS2890.1:2004 (User Class Type 2):

- Car park spaces should be a minimum of 5.4m in length and 2.5m in width; and
- Parking aisles should be a minimum of 5.8m in width.

Checking the dimensions of the hotel car park (seen in Appendix D, Figure D13) confirms compliance with AS2890.1:2004:

- Car park spaces are 5.4m in length and 2.5m in width; and
- Parking aisles are 5.81 to 6.2m in width.

All internal ramps are either graded 1 in 5 (20%) or 1 in 10 (10%), with all ramps supporting two-way movement and at least 5.5m in width. Therefore, all internal ramps are grade and width compliant (refer to Figures D35-D40 in Appendix D).

Circulation roads (i.e. aisles without parking) within the development must also be a minimum of 5.5m in width. All such cases within the development are 5.5 to 5.8m in width, hence compliance is achieved.

Swept path analysis for a 5.2m large car (B99), throughout the various car parks and ramps as well as the main access points, can be seen in Appendix D, Figures D25 to 34. These demonstrate there is adequate space for manoeuvring.

3.5 Proposed Changes to Kerbside Parking

The kerbside parking will be changed slightly along the three frontages. Zones that were not immediate frontage will remain unchanged. The angle parking along the Lake Street frontage, originally in zones A and D, will be replaced by perpendicular median parking. This will reduce the combined capacity of these zones from 60 to 26. Zones E and J, situated along West Street, would also be reconfigured but remain as perpendicular parking. However, this will only result in a minor loss of spaces: 19 to 18 and 30 to 26 respectively. Due to a major access point now being in Zone F (the Middle Street frontage), no kerbside parking will be allocated in this area or the opposite Zone I. This only means a change of 13 spaces.

In terms of total kerbside capacity, the current total of 226 would be reduced to 174. There are negligible space losses over the three frontages, apart from the Lake Street reconfiguration which significantly reduced kerbside capacity at the front of the site. These changes are reflected in Table 3-5, including zone-specific breakdowns.

Table 3-5: Kerbside Parking Capacity Changes Due to the Development

Parking Zone	Location	Current Capacity	Proposed Capacity	Capacity Loss
A	Lake Street	25	13	12
B	Lake Street	29	29	-
C	Lake Street	25	25	-
D	Lake Street	35	13	22
E	West Street	19	18	1
F	Middle Street	7	0	7
G	Middle Street	28	28	-
H	Middle Street	22	22	-
I	Middle Street	6	0	6
J	West Street	30	26	4
	Total	**226**	**174**	**42**

Although reconfiguration due to the development means a reduction in the availability of on-street spaces (i.e. 226 to 174), the amount of spaces available for development patrons, when accounting for people who currently use on-street parking (peak usage of 40), is expected to be more than necessary.

3.6 Servicing Facilities

The Great Lakes DCP does not appear to provide guidance on the appropriate service vehicle recommended for each land usage. Service vehicles will in most cases enter via the West Street access (ingress only) and exit via the Middle Street access. Loading zone and bays are located just inside the access point, at the rear of the retail and supermarket areas.

Based on the requirements of the potential usages on the site, the development has been designed for manoeuvring of a 12.5m Heavy Rigid Vehicle (HRV) generally for residential and other uses, a 5.37m Van and 6.4m Small Rigid Vehicle (deliveries) for the retail / food outlets, and a 19.0m Articulated Vehicle (AV), also for retail usages but more specifically for the supermarket. Provision has also been made for Refuse Collection Vehicles (RCV), although this will generally be catered for by the HRV requirements with some potential localised treatments. The design vehicles assigned to the different land usages are summarised in Table 3-6.

In terms of supply of loading bays:

- Two bays will be located off the West Street ingress with capacity for a 19.0m AV;
- Refuse collection will be undertaken in the central servicing area and adjoining to the hotel (refer to Appendix A for a waste management plan);
- Two bays will be located adjacent to the hotel with capacity for an SRV; and
- A kerbside loading zone can be located along both Lake Street and West Street.

Swept path analysis for the service vehicles designed for illustrate that the internal manoeuvrability of the development is generally satisfactory. These can be seen in Appendix D, Figures D14 to D23.

Table 3-6: Recommended Design Vehicles

Use or user class	Design vehicle
Council Library, Community and Visitor Centre	HRV
Supermarket	AV
Cinema	HRV
Childcare Centre	MRV
Residential Units, Serviced Apartments and Hotel	HRV
Nightclub	MRV

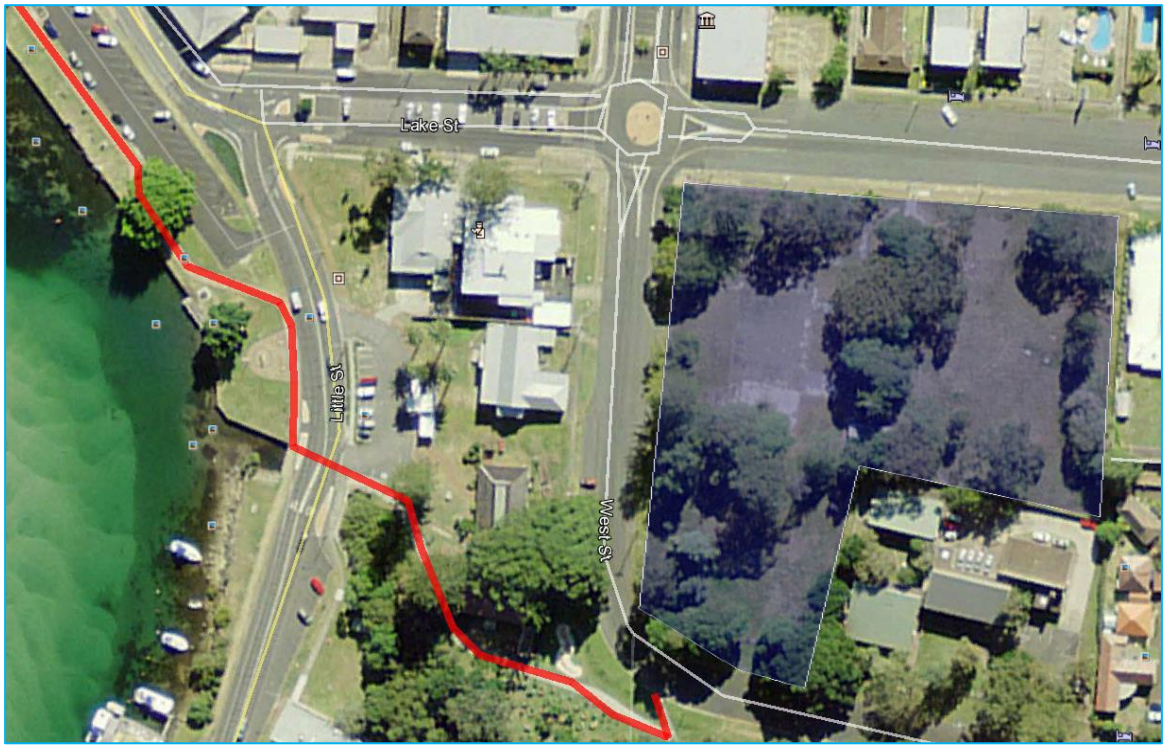
Note: ***MRV****: medium rigid vehicle (8.8m),* ***HRV****: heavy rigid vehicle (12.5m),* ***AV:*** *articulated vehicle (19.0m).*

3.7 Pedestrian Access

Immediately adjacent to the site, there is a pedestrian / cycle footpath which connects the esplanade to the south-west corner of the site as shown in Figure 3-1. This external pedestrian linkage provides a convenient and scenic access route between the development and surrounding attractors such as the small entertainment and restaurant precinct along Memorial Drive (just northwest of the site) as well as restaurants along Little Street.

Outside of the immediate area surrounding the development, it also runs across the Forster-Tuncurry Bridge, connecting to Tuncurry Village in the north-west and Forster Village and Forster Keys in the south-east. A further route connects to the beach area due north of the site; this route can be reached by staying on the boardwalk that runs along Cape Hawke Harbour instead of branching off to cross the bridge.

Figure 3-1: Pedestrian Access Via Esplanade



Source: O2 Landscape Architecture

3.8 Cycling Provisions

Following discussions with Council Officers, it is understood that an off-street shared pedestrian / cycle path is planned for the northern side of Lake Street. The proposed areas for both Lake Street and West Street, along the subject site frontages, has taken into consideration this planned shared pedestrian / cycle path.

The same walking route previously mentioned (connecting Tuncurry Village to Forster Village and Forster Keys) is a shared path, meaning cyclists have easy access to major surrounding areas.

The provision of bicycle parking for visitors of the development will be finalised during the design development phase, however it is envisaged that cycle racks will be located in common areas throughout the development for visitors.

Further, space designated for resident bicycle parking will be provided inside units while extensive parking and end-of-trip facilities / amenities will be provided for employees.

4. Traffic Impact Assessment

4.1 Existing (2017) Traffic Volumes

As a part of the traffic assessment, detailed traffic surveys were undertaken at the key intersections near the site, namely:

- Intersection 1 - Lake Street / MacIntosh Street;
- Intersection 2 - Lake Street / West Street;
- Intersection 3 - West Street / Wallis Street;
- Intersection 4 - West Street / Head Street;
- Intersection 5 - Head Street / Beach Street; and
- Intersection 6 - Beach Street / Little Street / Wallis Street / Memorial Drive.
- Intersection 7 - MacIntosh Street / Middle Street

These intersections were chosen based on consideration of the expected distribution of generated traffic and acknowledging that, given the nature of the layout of the surrounding road network, once further away from the site the generated traffic will distribute throughout the network, decreasing the impact on traffic operations.

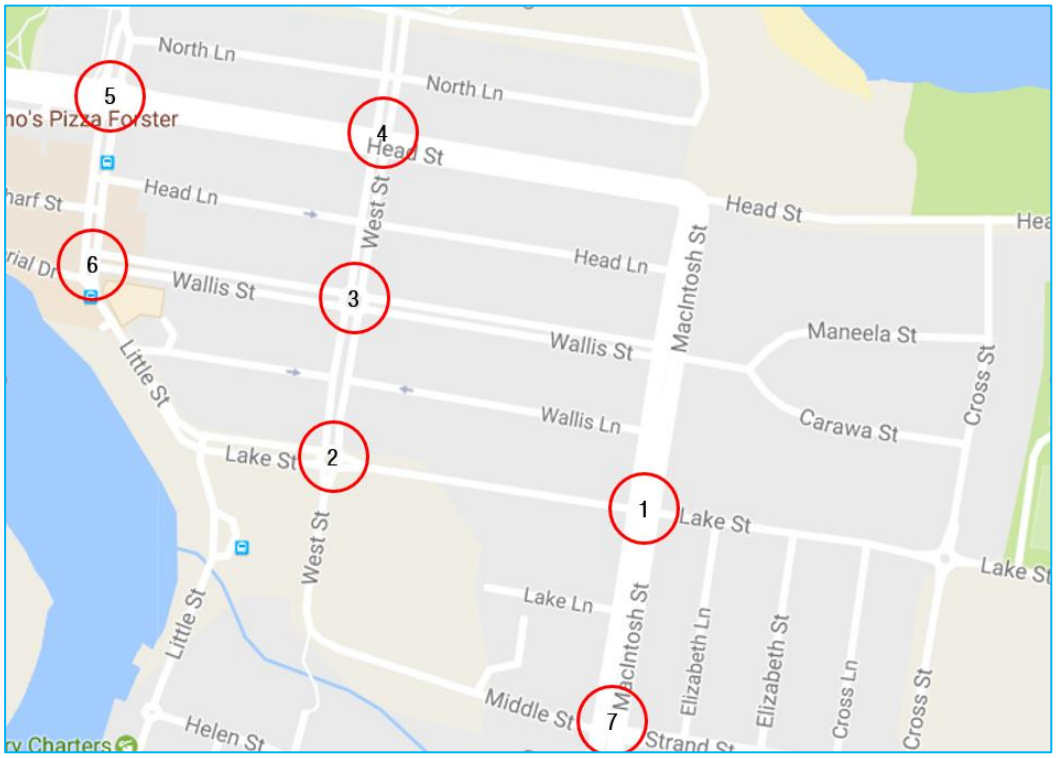
The surveys categorised vehicle type (light and heavy) and traffic flow into 15-minute time intervals.

The traffic surveys for the intersections 1 - 6 were undertaken at the locations illustrated in Figure 4-1 during the following periods:

- Thursday 2nd March 2017: 7:30AM to 9:30AM; and
- Thursday 2nd March 2017: 2:30PM to 4:30PM.

Survey data for intersection 7 was taken on a different date, Tuesday 7th March 2017, due to issues occurring at that location during the original survey period. Despite this, the same survey times were used. These time periods are typical peak operating periods of the proposed land usages of the proposed development.

Figure 4-1: Traffic Survey Locations



The observed peak hour periods of the road network are listed below:

- AM Peak Hour: 8:15AM to 9:15AM; and
- PM Peak Hour: 2:45PM to 3:45PM.

The 2017 observed traffic volumes near the subject site during the weekday AM and PM peak hours are illustrated in Appendix B, Figures B1 to B2.

The traffic survey volumes are provided in Appendix C in their entirety.

4.2 Future (2028) Background Traffic

The opening year of the proposed development is anticipated to be 2018/19, meaning a 10-year design horizon year of **2028** was selected for traffic analysis purposes.

A 2% compounded annual growth rate has been applied to existing traffic volumes, identified from the peak hour surveys undertaken on the 2nd March 2017, to determine the background traffic for the 2028 horizon year, as this is the most critical for the traffic impact assessment.

The 2018 and 2028 Base traffic volumes (i.e. no development) near the subject site during the weekday AM and PM peak hours are illustrated in Appendix B, Figures B3 to B4 for 2018, as well as Figures B5 to B6 for 2028.

4.3 Traffic Generation and Distribution

Utilising published trip rates from the New South Wales RTA (now RMS) Guide to Traffic Generating Developments as well as the Institute of Transportation Engineers (ITE) Trip Generation Manual[4], the traffic expected to be generated by the proposed development during the road peak hour periods was calculated. Notes regarding rate selection for each land usage is displayed in Table 4-1 with final calculations summarised in Table 4-2. It should be noted that the total generation will be conservative as no reduction has been incorporated for the utilisation of the uses by residents of the development.

The following facilities are ancillary to the residential units, to be used by residents only:

- Resident's Club on Level 1 (355m^2);
- Resident's Recreational Facilities on Level 5 (559m^2); and
- Resident's Amenities / Sauna on Level 6 (53m^2).

[4] "Trip Generation Manual", Institute of Transportation Engineers, 2006.

Table 4-1: Land Usage Traffic Generation Notes and Characteristics

Type of Land Usage	Category	Units	Description / Notes
Residential Units	Residential	143 units	A standard rate was applied for all units despite differing sizes as ITE didn't differentiate based on size.
Serviced Apartments	Residential	18 apartments	Closest in purpose and operation to the residential units as a hotel usage wasn't compatible with the development's intent.
Hotel	Hotel	84 rooms	An occupancy of 85% was assumed.
Restaurant	Retail	1,338m^2	There are four distinct restaurant areas spread throughout the development; breakfast is not expected to be served therefore no AM generation is expected.
Supermarket	Retail	841m^2	The estimates are good however AM generation is likely conservative as it is envisaged that the supermarket won't generate traffic early in the morning.
Retail	Retail	282m^2	Some space is allocated to specialty retail but without a specific specialty, this rate is general and may slightly differ.
Library	Other	1,753m^2	These are adjoining land uses mainly intended for use by residents, therefore estimates will likely be conservative.
Community Centre	Other	476m^2	
Visitor Centre	Other	362m^2	No trips should be solely generated by the visitor centre as users are likely visiting another part of the development.
Cinema	Other	800 seats	This will be conservative as likely users will be residents, with usage possibly restricted to private screenings and a reduced schedule compared to other cinemas.
Nightclub	Other	817m^2	This will also likely be conservative as users are likely to use other modes of transport (walk, taxi, Uber, etc.).
Gym	Other	268m^2	The gym will be public so cannot be considered ancillary, with the rate for a health / fitness club used.
Function Rooms	Other	464m^2	Expected to behave like the restaurant land usage, therefore restaurant rates have been adopted.
Business Centre	Other	89m^2	Expected to behave like the library land usage, therefore library rates have been adopted.
Childcare Centre	Other	50 children	While rates per GFA were available, rates relating to children in attendance gave a better representation.
Common Facilities + Back of Housing + Lobby + Amenities	Other	-	These parts of the development were deemed as ancillary as they were not expected to solely generate traffic.

Table 4-2: Development Traffic Generation during the Road Peak Hour Periods

Type of Land Usage	Rate Source	Weekday Traffic Generation Rate (On-road peak hour vehicles)		Weekday Traffic Generation (vph)	
		AM	PM	AM	PM
Residential Units	ITE	0.51 / unit	0.62 / unit	73	89
Serviced Apartments	ITE	0.51 / unit	0.62 / unit	9	11
Hotel	ITE	0.56 / room	0.59 / room	40	42
Restaurant	RTA	-	5 / 100m^2	-	67
Supermarket	ITE	3.5 / 100m^2	11.25 / 100m^2	29	95
Retail	-	1 / 100m^2	3 / 100m^2	3	8
Library	ITE	1.14 / 100m^2	7.63 / 100m^2	20	134
Community Centre	ITE	1.74 / 100m^2	1.77 / 100m^2	8	8
Visitor Centre	-	Ancillary			
Cinema	ITE	-	0.1 / seat	-	80
Nightclub	RTA	-	10 / 100m^2	-	82
Gym	ITE	1.3 / 100m^2	4.36 / 100m^2	3	12
Function Rooms	RTA	-	5 / 100m^2	-	23
Business Centre	ITE	1.14 / 100m^2	7.63 / 100m^2	1	7
Childcare Centre	ITE	0.8 / child	0.82 / child	40	41
Common Facilities + Back of Housing + Lobby + Amenities	-	Ancillary			
			Total	227	698

Notes: Common facilities, back of housing, lobby and amenities have been deemed as ancillary; all areas are measurements of gross floor area (GFA) and traffic generation rates have units of vehicles per hour (vph).

Where possible, in and out splits were adopted from ITE's Trip Generation Manual. Specific in / out splits for all land usages can be seen in the Traffic Generation table at the end of Appendix B.

The way in which land usages were allocated into categories (retail, hotel, retail and other) can be seen earlier in Table 4-1. After grouping specific land usages into larger categories, the traffic they generated was allocated to certain access points (both ingress and egress). Appendix B, Figures B7 to B14, display the traffic generated by the four sub-categories: residential, hotel, retail and other.

This is summarised in Table 4-3, along with total ingress and egress traffic generated by the development:

Table 4-3: Generated Traffic In / Out Splits and Allocated Accesses

Category of Land Usage	Access Allocation	Weekday AM Traffic Generation (vph)		Weekday PM Traffic Generation (vph)	
		In / Out	Total	In / Out	Total
Residential	**Ingress:** 50% Lake Street, 50% West Street; **Egress:** 100% Lake Street.	16 / 66	82	65 / 35	100
Hotel	**Ingress:** 100% Middle Street; **Egress:** 100% Middle Street.	24 / 16	40	22 / 20	42
Retail	**Ingress:** 75% Lake Street, 25% Middle Street; **Egress:** 100% Lake Street.	19 / 13	32	93 / 77	170
Other	**Ingress:** 70% Lake Street, 30% Middle Street; **Egress:** 75% Lake Street, 25% Middle Street.	43 / 30	73	239 / 148	387
	Total	103 / 124	227	419 / 279	698

The directional assignment of generated traffic adopted in this assessment was split between three different routes for simplicity:

- To / from the north (via West Street): 45%;
- To / from the north (via Little Street / Beach Street): 45%; and
- To / from the south (via MacIntosh Street): 10%.

In reality, this would not be the case, therefore final SIDRA summaries will be conservative with an exaggerated stress on keys intersections: Head Street / Beach Street, Head Street / West Street and MacIntosh Street / Lake Street. The selected distribution still allowed for all seven existing intersections as well as the three new access intersections (detailed in section 4.5.1) to operate satisfactorily, even with traffic assigned through the busiest movements and intersections.

The total traffic generated by the proposed development during peak hour periods can be seen in Appendix B, Figures B15 to B16.

4.4 Design (2028) Traffic Volumes

The Design (with development) traffic volumes were determined by adding the development traffic volumes to the Base (without development) volumes during weekday AM and weekday PM peak hour periods for the 10-year design horizon of 2028.

The 2018 Design traffic volumes were calculated as:

= (2017 observed traffic volumes x $(1 + 2\%)^{1}$) + Development Traffic.

The 2028 Design traffic volumes were calculated as:

= (2017 observed traffic volumes x $(1 + 2\%)^{11}$) + Development Traffic.

The 2018 and 2028 Design traffic volumes for the proposed development are illustrated in Appendix B, Figures B17 to B20.

4.5 Impact on External Road Network

4.5.1 Intersection Operation

The operation of the intersections of interest has been assessed using SIDRA 7.0. SIDRA calculates the amount of delay to vehicles using an intersection and, amongst other performance measures, gives a Level of Service (LoS) rating which indicates the relative performance of traffic movements within the intersection.

Table 4-4 presents the criteria generally applied to intersection performance. The Level of Service is determined from the calculated delay to traffic movements, which is a representation of driver frustration, fuel consumption and increased travel time. There are six Level of Service categories ranging from A (very low delay and very good operating conditions) to F (over saturation where arrival rates exceed intersection capacity). Typically, a Level of Service D or better is acceptable.

Table 4-4: Intersection Level of Service Criteria

Level of Service	Average Delay per Vehicle (sec)	Expected Delay
Traffic Signals and Roundabouts		
A	0-14	Little or no delay
B	15-28	Minimal delay
C	29-42	Satisfactory delays with spare capacity
D	43-56	Satisfactory but near capacity
E	57-70	At capacity
F	>70	Extremely delay, unsatisfactory

Assuming continued growth within the local road network, the 10-year post development horizon scenario for 2028 is the most critical for the Base (without development) and Design (with development) cases.

Therefore, summary SIDRA results for these scenarios have been provided in tables under their respective intersection heading, along with the existing geometry of the intersections used.

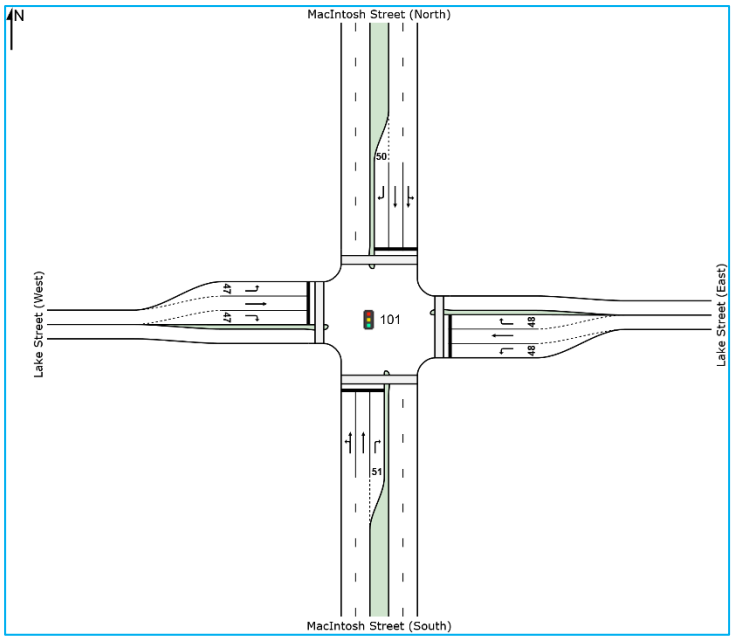
Three further intersections were analysed in addition to the existing seven. One roundabout and two priority intersections will be added to the road network for the purpose of allowing access to the development. These are numbered in the following manner:

- Intersection 8 - Lake Street / Site Access 1;
- Intersection 9 - West Street / Site Access 2; and
- Intersection 10 - Middle Street / Site Access 3.

4.5.2 Intersection 1: MacIntosh Street / Lake Street

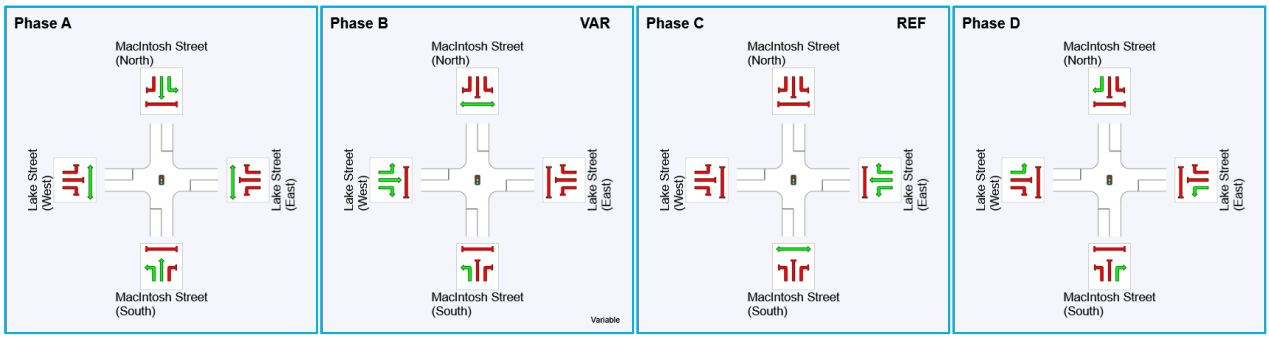
The MacIntosh Street / Lake Street intersection modelled can be seen in Figure 4-2.

Figure 4-2: Intersection 1 (Existing Intersection Layout)



Signal phasing was determined based on a user-given cycle time of 120 seconds. The phasing for the AM and PM design peak scenarios was identical, provided in Figure 4-3.

Figure 4-3: Intersection 1 Signal Phasing (AM and PM)



The results regarding the performance of this intersection, seen in Table 4-5, suggest that it will operate within acceptable limits during both the 2027 AM and PM peaks, as well as with or without the proposed development.

The addition of development traffic translates to a slight worsening for the north, south and east approaches but an improvement in the west approach during the PM peak. The AM peak is very similar between the base and design cases except for the right-turn movement on the Lake Street west approach, one of the primary routes used by exiting vehicles.

Table 4-5: Intersection 1 Performance

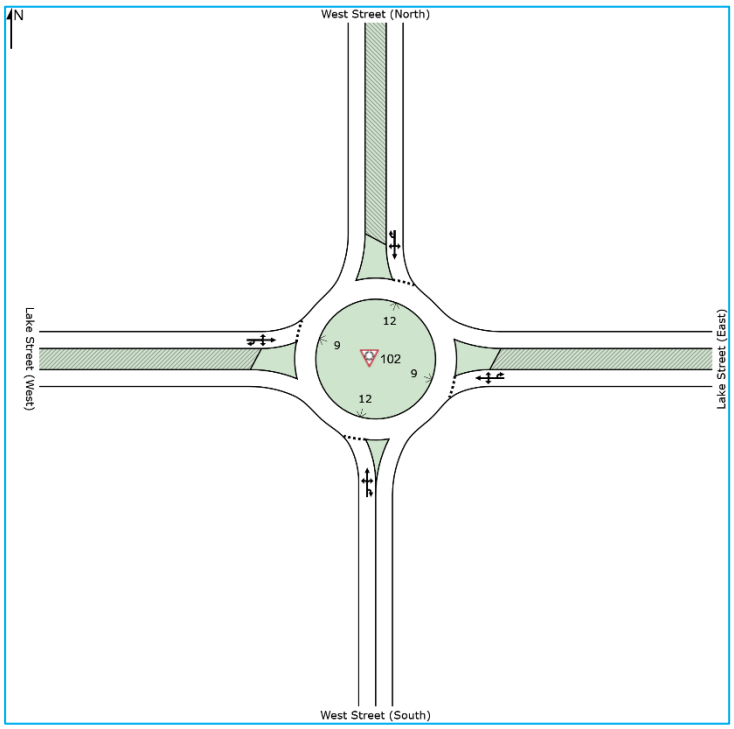
Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
S	L	0.57	123	41	0.56	133	36	0.57	123	41	0.59	138	38
	T	0.57	123	36	0.56	133	30	0.57	123	36	0.59	138	32
	R	0.31	13	69	0.51	21	70	0.31	13	69	0.51	21	70
E	L	0.07	14	29	0.08	14	35	0.07	14	29	0.08	15	35
	T	0.25	45	34	0.17	26	40	0.25	45	34	0.18	26	40
	R	0.80	152	50	0.67	104	51	0.80	152	50	0.67	106	52
N	L	0.81	206	49	0.65	164	39	0.81	206	49	0.68	168	40
	T	0.81	206	43	0.65	164	32	0.81	206	43	0.68	168	34
	R	0.75	31	73	0.57	23	71	0.75	31	73	0.57	23	71
W	L	0.02	1	28	0.03	2	28	0.02	1	28	0.03	2	27
	T	0.16	15	51	0.23	22	51	0.16	15	51	0.19	22	48
	R	0.36	32	59	0.67	67	61	0.42	38	59	0.66	77	58

Note: Practical Maximum Degree of Saturation (X_p) for a Signalised Intersection is 0.90.

4.5.3 Intersection 2: West Street / Lake Street

The West Street / Lake Street intersection modelled can be seen in Figure 4-4. Existing parking separates opposing lanes on the north and west approaches, with new parking to do the same on the east approach.

Figure 4-4: Intersection 2 (Proposed Intersection Layout)



The results of SIDRA analysis for this intersection (seen in Table 4-6) indicate that the roundabout will operate well within acceptable limits for both 2028 AM and PM peak periods, and with or without the proposed development.

This intersection will be used by most of the traffic exiting and entering the development. Even with large numbers of development traffic, this roundabout functions in a satisfactory manner.

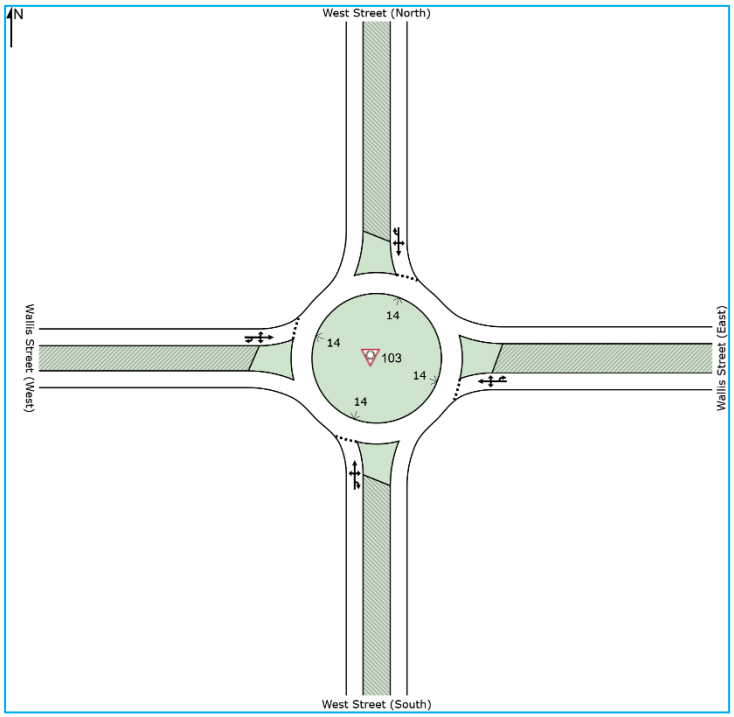
Table 4-6: Intersection 2 Performance

Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
S	L	0.07	2	6	0.06	2	5	0.10	4	6	0.13	5	7
	T	0.07	2	6	0.06	2	6	0.10	4	7	0.13	5	7
	R	0.07	2	10	0.06	2	9	0.10	4	10	0.13	5	10
E	L	0.18	7	5	0.12	5	5	0.26	11	5	0.33	15	6
	T	0.18	7	5	0.12	5	5	0.26	11	5	0.33	15	6
	R	0.18	7	8	0.12	5	8	0.26	11	9	0.33	15	9
N	L	0.06	2	5	0.11	4	5	0.10	4	5	0.32	15	7
	T	0.06	2	5	0.11	4	5	0.10	4	5	0.32	15	7
	R	0.06	2	9	0.11	4	9	0.10	4	9	0.32	15	10
W	L	0.09	3	6	0.13	5	5	0.13	5	6	0.32	14	6
	T	0.09	3	6	0.13	5	5	0.13	5	6	0.32	14	6
	R	0.09	3	9	0.13	5	9	0.13	5	9	0.32	14	10

4.5.4 Intersection 3: West Street / Wallis Street

The West Street / Wallis Street intersection modelled can be seen in Figure 4-5. Parking separates opposing lanes on all four approaches.

Figure 4-5: Intersection 3 (Existing Intersection Layout)



The results of SIDRA analysis for this intersection (seen in Table 4-7) indicate that the roundabout will operate well within acceptable limits for both peak periods, and with or without the proposed development.

While this intersection does carry a large amount of traffic to and from the development, it is expected to be exclusively through traffic along West Street, the major road of the intersection. The impact on the intersection's performance is barely noticeable.

Table 4-7: Intersection 3 Performance

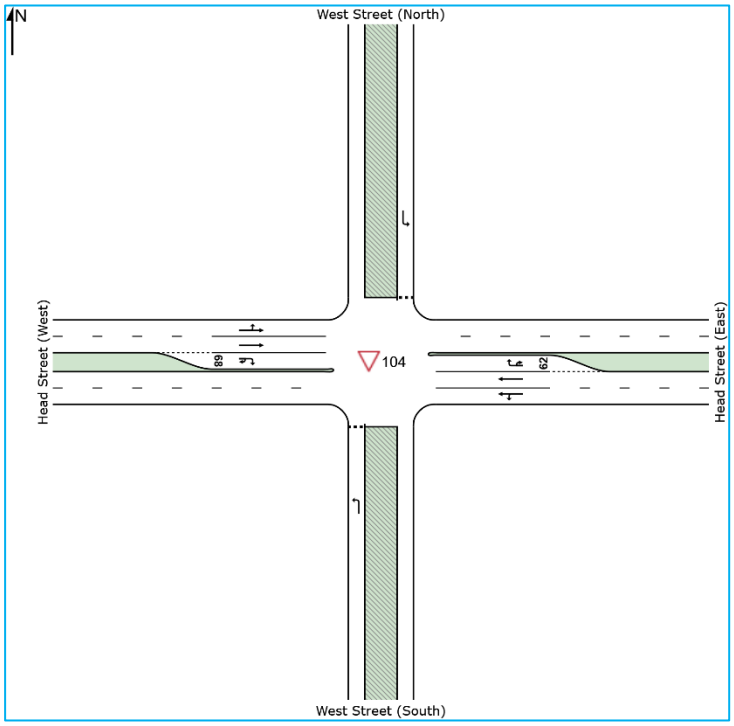
Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
S	L	0.12	4	4	0.09	3	4	0.16	6	4	0.17	7	4
	T	0.12	4	5	0.09	3	5	0.16	6	5	0.17	7	5
	R	0.12	4	9	0.09	3	9	0.16	6	9	0.17	7	9
E	L	0.03	1	4	0.03	1	5	0.04	1	5	0.03	1	6
	T	0.03	1	5	0.03	1	5	0.04	1	5	0.03	1	6
	R	0.03	1	9	0.03	1	9	0.04	1	9	0.03	1	10
N	L	0.02	1	4	0.04	1	5	0.05	2	4	0.18	7	5
	T	0.02	1	5	0.04	1	5	0.05	2	5	0.18	7	5
	R	0.02	1	9	0.04	1	9	0.05	2	9	0.18	7	9

Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
W	L	0.03	1	5	0.08	3	5	0.03	1	5	0.09	3	5
	T	0.03	1	5	0.08	3	5	0.03	1	5	0.09	3	6
	R	0.03	1	9	0.08	3	9	0.03	1	9	0.09	3	9

4.5.5 Intersection 4: Head Street / West Street

The Head Street / West Street intersection modelled can be seen in Figure 4-6. Parking separates opposing lanes on the north and south approaches. This intersection is the first of two in which the minor road only allows left-outs.

Figure 4-6: Intersection 4 (Existing Intersection Layout)



The results of SIDRA analysis for this intersection (seen in Table 4-8) indicate that it will operate well within acceptable limits for both peak periods, and with or without the proposed development.

This is another intersection in which only one or two movements are expected to carry new traffic generated by the development: the west approach right-turn and the south approach left-turn. Even though a high proportion of development-generated traffic may use these movements, the impact on the intersection performance is minor.

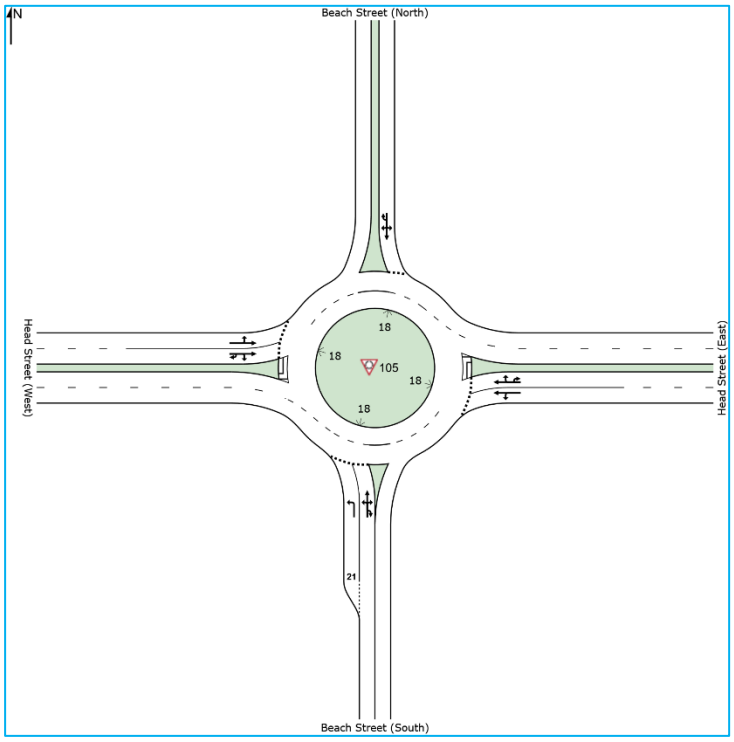
Table 4-8: Intersection 4 Performance

Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
S	L	0.18	5	8	0.15	4	8	0.25	7	9	0.31	10	9
E	L	0.26	0	6	0.25	0	6	0.26	0	6	0.25	0	6
	T	0.26	0	0	0.25	0	0	0.26	0	0	0.25	0	0
	R	0.12	3	14	0.13	3	13	0.12	3	14	0.13	3	13
N	L	0.12	3	8	0.16	4	8	0.12	3	8	0.16	4	8
W	L	0.28	0	6	0.26	0	6	0.28	0	6	0.26	0	6
	T	0.28	0	0	0.26	0	0	0.28	0	0	0.26	0	0
	R	0.05	1	12	0.07	2	12	0.15	4	13	0.47	16	16

4.5.6 Intersection 5: Head Street / Beach Street

The Head Street / Beach Street intersection modelled can be seen in Figure 4-7. Almost all traffic arriving in Forster must use this intersection, in combination with the bridge connection to Tuncurry.

Figure 4-7: Intersection 5 (Existing Intersection Layout)



The results of SIDRA analysis for this intersection (seen in Table 4-9) indicate that it will operate well within acceptable limits for both peak periods, with or without the proposed development.

Table 4-9: Intersection 5 Performance

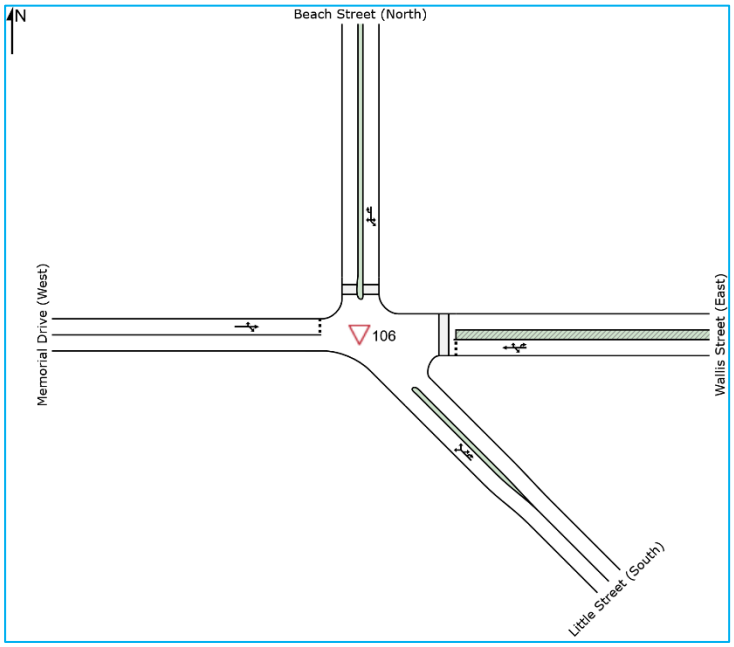
Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
S	L	0.34	12	8	0.39	14	8	0.41	16	9	0.56	25	10
	T	0.34	11	8	0.39	14	9	0.41	15	9	0.56	24	11
	R	0.34	11	13	0.39	14	13	0.41	15	14	0.56	24	15
E	L	0.50	27	6	0.47	25	7	0.54	32	7	0.63	48	10
	T	0.50	27	7	0.47	25	7	0.54	32	7	0.63	48	11
	R	0.50	26	11	0.47	24	11	0.54	32	12	0.63	46	16
N	L	0.17	5	9	0.20	6	8	0.17	5	9	0.25	8	10
	T	0.17	5	9	0.20	6	9	0.17	5	9	0.25	8	10
	R	0.17	5	13	0.20	6	13	0.17	5	13	0.25	8	15
W	L	0.46	28	5	0.46	28	5	0.49	30	5	0.59	43	5
	T	0.46	28	5	0.46	28	5	0.49	30	5	0.59	43	5
	R	0.46	27	9	0.46	27	9	0.49	29	9	0.59	42	10

This roundabout carries nearly all the expected development traffic. However, the intersection already carries close to 1000 vph along its busiest movements, meaning the impact experienced is minimised.

4.5.7 Intersection 6: Beach Street / Little Street / Wallis Street / Memorial Drive

The Head Street / Little Street / Wallis Street / Memorial Drive intersection modelled can be seen in Figure 4-8. Parking separates opposing lanes on the east approach.

Figure 4-8: Intersection 6 (Existing Intersection Layout)



The results of SIDRA analysis for this intersection (seen in Table 4-10) indicate that it will operate well within acceptable limits for both 2028 AM and PM peak periods, and with or without the proposed development.

Again, a large portion of the development's traffic will use this intersection but a minimal impact will be felt as it would already be operating quite well in the 10-year horizon base scenario.

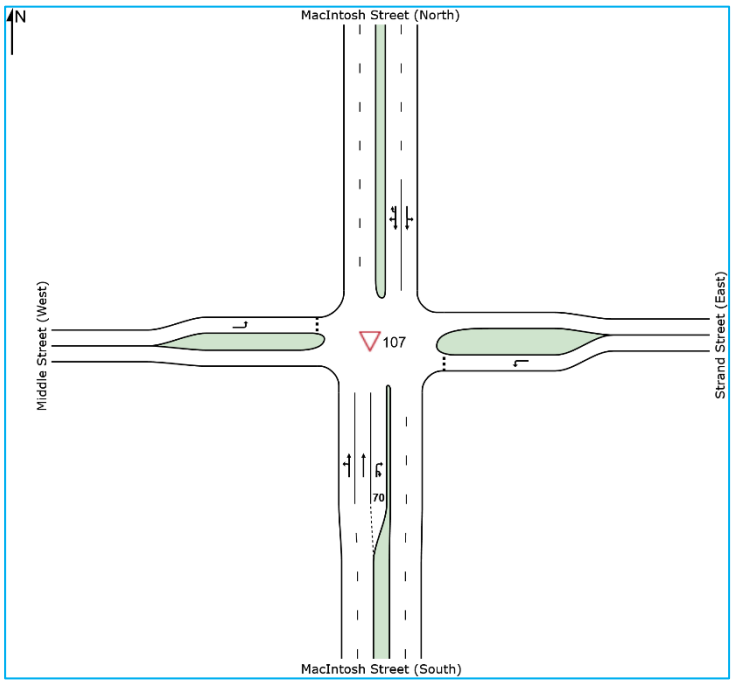
Table 4-10: Intersection 6 Performance

Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
S	L	0.23	2	6	0.24	2	6	0.28	11	6	0.34	15	6
	T	0.23	2	0	0.24	2	0	0.28	11	5	0.34	15	5
	R	0.23	2	7	0.24	2	8	0.28	11	8	0.34	15	10
E	L	0.06	2	7	0.09	2	7	0.07	2	8	0.14	3	9
	T	0.06	2	9	0.09	2	10	0.07	2	10	0.14	3	15
	R	0.06	2	11	0.09	2	13	0.07	2	12	0.14	3	19
N	L	0.21	2	6	0.24	2	6	0.23	2	6	0.33	2	6
	T	0.21	2	0	0.24	2	0	0.23	2	5	0.33	2	5
	R	0.21	2	7	0.24	2	8	0.23	2	6	0.33	2	6
W	L	0.10	3	7	0.18	4	7	0.11	3	7	0.27	7	8
	T	0.10	3	9	0.18	4	10	0.11	3	10	0.27	7	16
	R	0.10	3	12	0.18	4	13	0.11	3	12	0.27	7	19

4.5.8 Intersection 7: MacIntosh Street / Middle Street / Strand Street

The MacIntosh Street / Middle Street / Strand Street intersection modelled can be seen in Figure 4-9. Parking separates opposing lanes on all four approaches. This intersection is the second of two in which the minor road only allows left-outs.

Figure 4-9: Intersection 7 (Existing Intersection Layout)



The results of SIDRA analysis for this intersection (seen in Table 4-11) indicate that it will operate well within acceptable limits for both peak periods, and with or without the proposed development. The right-turn from the south MacIntosh approach is the critical movement for this intersection.

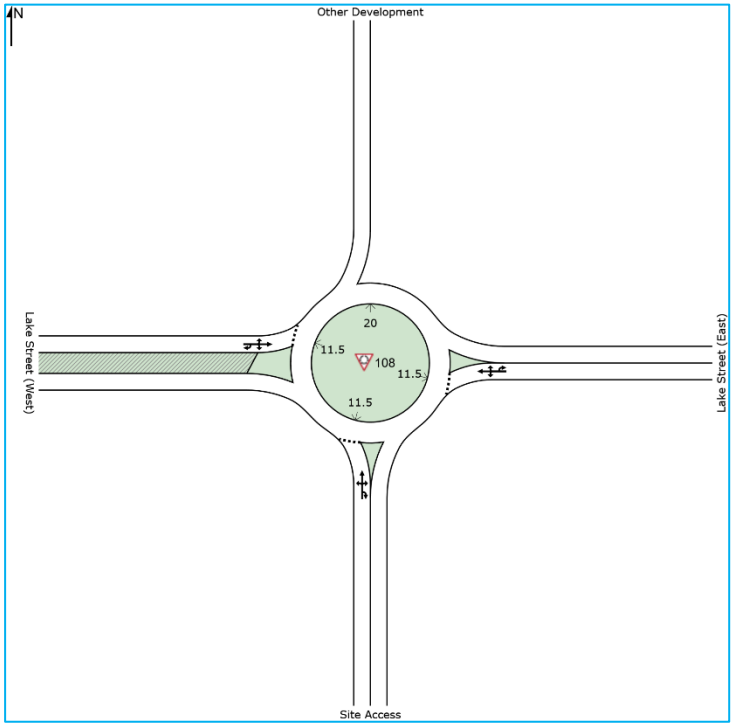
Table 4-11: Intersection 7 Performance

Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
S	L	0.21	0	6	0.21	0	6	0.22	0	6	0.22	0	6
	T	0.21	0	0	0.21	0	0	0.22	0	0	0.22	0	0
	R	0.63	27	20	0.47	16	17	0.64	27	20	0.49	17	18
E	L	0.20	6	8	0.27	8	8	0.21	6	8	0.28	8	9
N	L	0.26	0	6	0.26	0	6	0.27	0	6	0.27	0	6
	T	0.26	1	0	0.26	1	0	0.27	1	0	0.27	1	0
	R	0.26	1	13	0.26	1	13	0.27	1	13	0.27	1	13
W	L	0.00	0	7	0.01	0	7	0.00	0	7	0.01	0	7

4.5.9 Intersection 8: Lake Street / Site Access 1

The Lake Street / Site Access 1 intersection modelled can be seen in Figure 4-10. The roundabout features a northern leg to accommodate the existing entrance into the Bella Villa Motor Inn. Ingress and egress from the inn is separated, with the exit from the same complex further to the west before the roundabout

Figure 4-10: Intersection 8 (Proposed Intersection Layout)



SIDRA analysis (seen in Table 4-12) reveals that this site access intersection will operate within acceptable limits.

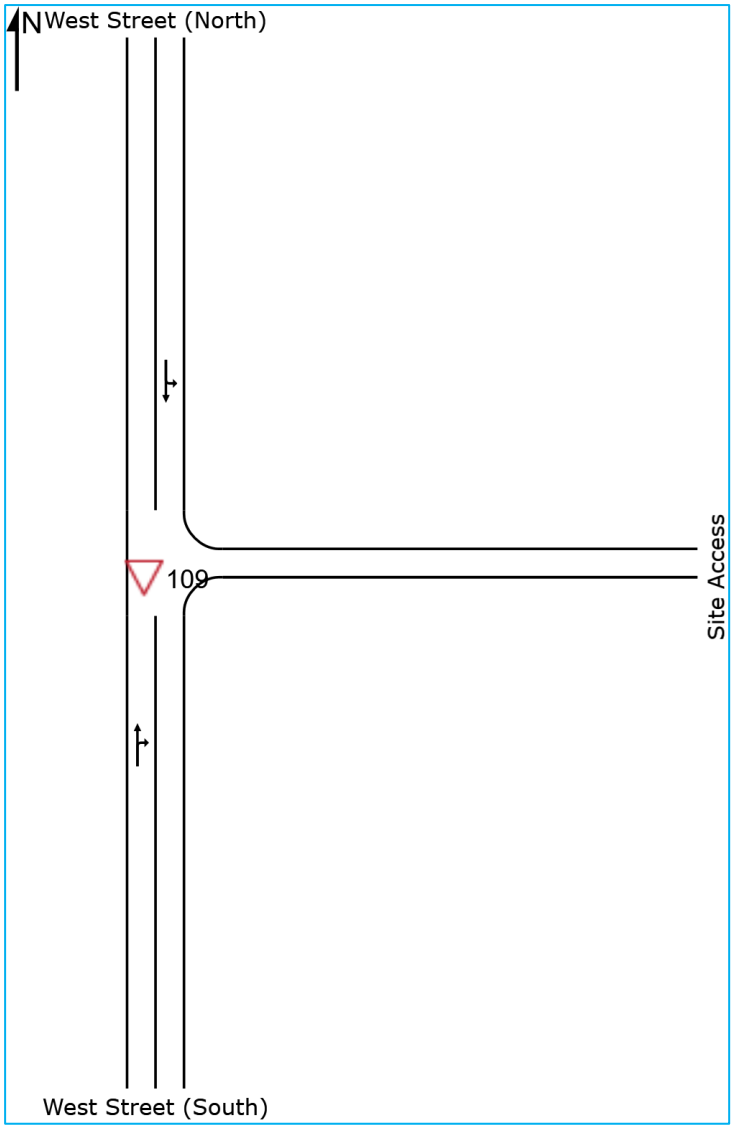
Table 4-12: Intersection 8 Performance

Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
S	L	-	-	-	-	-	-	0.10	3	6	0.20	8	5
	T	-	-	-	-	-	-	0.10	3	6	0.20	8	6
	R	-	-	-	-	-	-	0.10	3	10	0.20	8	9
E	L	-	-	-	-	-	-	0.18	7	5	0.18	7	6
	T	-	-	-	-	-	-	0.18	7	5	0.18	7	6
	R	-	-	-	-	-	-	0.18	7	9	0.18	7	10
W	L	-	-	-	-	-	-	0.13	5	4	0.33	16	5
	T	-	-	-	-	-	-	0.13	5	4	0.33	16	5
	R	-	-	-	-	-	-	0.13	5	9	0.33	16	9

4.5.10 Intersection 9: West Street / Site Access 2

The Lake Street / Site Access 2 intersection modelled can be seen in Figure 4-11.

Figure 4-11: Intersection 9 (Proposed Intersection Layout)



SIDRA analysis (seen in Table 4-13) shows that this intersection will operate effectively, although this is to be expected. Queuing should only ever be experienced when vehicles are turning right from the southern approach as the site access is one-way (no egressing traffic).

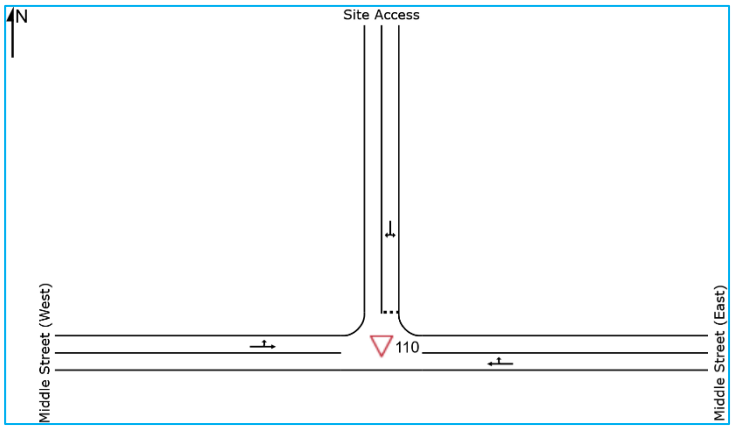
Table 4-13: Intersection 9 Performance

Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
S	T	-	-	-	-	-	-	0.05	0	0	0.06	0	0
	R	-	-	-	-	-	-	0.05	0	6	0.06	0	6
N	L	-	-	-	-	-	-	0.03	0	6	0.08	0	6
	T	-	-	-	-	-	-	0.03	0	0	0.08	0	0

4.5.11 Intersection 10: Middle Street / Site Access 3

The Middle Street / Site Access 3 intersection modelled can be seen in Figure 4-12.

Figure 4-12: Intersection 10 (Proposed Intersection Layout)



The southern site access should operate well within acceptable limits (seen in Table 4-14) with the northern approach the only approach experiencing any significant queuing.

Table 4-14: Intersection 10 Performance

Approach	Movement	2028 Base Volumes						2028 Design Volumes					
		Weekday AM			Weekday PM			Weekday AM			Weekday PM		
		DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)	DOS	95%ile Queue (m)	Avg Delay (sec)
E	T	-	-	-	-	-	-	0.04	0	0	0.03	1	0
	R	-	-	-	-	-	-	0.04	0	6	0.03	1	6
N	L	-	-	-	-	-	-	0.02	1	6	0.05	1	6
	R	-	-	-	-	-	-	0.02	1	6	0.05	1	6
W	L	-	-	-	-	-	-	0.02	0	6	0.06	0	6
	T	-	-	-	-	-	-	0.02	0	0	0.06	0	0

5. Summary of Findings

MRCagney has been commissioned by Eynoc Pty Ltd to undertake a traffic impact assessment for the proposed Mixed Use Development to be located on the corner of the intersection of Lake Street and West Street in Forster, NSW, also bounded by Middle Street.

The proposed development will include a library, community rooms, supermarket, cinema, childcare centre, residential units, services apartments and hotel, in addition to a range of ancillary retail, restaurant and gym tenancies. The development will be delivered over four stages with construction of stage 1 to be completed as soon as 2018/19. As such, the 10-year horizon for the whole development was allocated as 2028.

The following is a summary of the findings:

1. Access

   The proposed development will be located on the south-east corner of the Lake Street / West Street intersection located in Forster and is also bounded by Middle Street to the south. The primary access to the development will be provided via a roundabout on the north side of the development along Lake Street. A second access will be located on the south side of the development along Middle Street. A third ingress-only access point is on the west side of the development along West Street.

   Residential traffic will be largely restricted to the Lake Street access with some traffic using West Street for ingress, while hotel traffic will mainly utilise the Middle Street access. Retail and other land usages will likely use a mix of the Lake Street and Middle Street accesses.

2. Car Parking

   A total of **513 car spaces** will be provided, broken down across three buildings and four levels:

   - **Building A:** Basement 1 / Lower Ground Level **(252 spaces)**, Level 1 **(17 spaces)** and Level 2 **(77 spaces)**;
   - **Building B:** Level 1 **(61 spaces)** and Level 2 **(64 spaces)**; and
   - **Building C:** Basement 2 **(42 spaces)**.

   Temporal demand assessed that 12:00 noon on a typical weekend day will be peak parking period. During this time, only 221 spaces would be required of the 252 spaces provided in the retail parking level, meaning the parking provision would adequately meet the peak demands of the development.

3. Car Park Layout

   A dimension check of car parks, demonstrated that all three car park areas (residential, retail and hotel) are compliant with (or exceed) the standards set out in AS2890.1:2004 and the relevant state policies.

   Internal ramps and circulation aisles for two-way movement are required to have a minimum width of 5.5m; all instances in this development are compliant. Parking aisles have differing requirements based on user class (usually 5.8m); again, all instances in this development meet their respective minimum.

   Swept path analysis undertaken shows there is adequate space for manoeuvring in all locations.

4. Servicing

   The Great Lakes Development Control Plan doesn't appear to offer guidance regarding servicing, however the development has been designed for manoeuvring of:

   - A 19.0m Articulated Vehicle (AV) for retail usages, specifically the supermarket;
   - A 12.5m Heavy Rigid Vehicle (HRV) for the residential / hotel usages; and

- A 6.4m Small Rigid Vehicle (SRV) and 5.37m Van for the retail / food outlets.

Provision has also been made for a Refuse Collection Vehicle (RCV).

5. External Road Network Impact

The 10-year planning horizon for the development is 2028.

The conservatively (high side) peak hour trip generation of the proposed development, during the AM and PM road peak periods adopted for assessment of the external road network was:

- AM peak hour: 103 vph IN + 124 vph OUT = 227 vph; and
- PM peak hour: 419 vph IN + 279 vph OUT = 698 vph.

Even with the addition of traffic generated by the development to the base volumes for 2028, all intersections will operate satisfactorily.

The results of SIDRA analyses, included in Section 4 of this report, illustrate that:

- by 2028, all intersections will operate within acceptable limits in both the base and design scenarios;
- All new access intersections for the development will operate satisfactorily; and

Therefore, no external road network improvements, other than the works proposed along the Lake, West and Middle street frontages of the subject site, are required to ensure satisfactory operation of all intersections.

In summary, based on the findings of this assessment, provided the recommendations included in this report are implemented, there appears to be no traffic engineering reason to preclude this development from proceeding.

Appendix A

Architectural Plans

Renders are preliminary only

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Forster Civic Precinct
Cnr Lake, West & Middle Street

For

Enyoc Pty Ltd

Perspective Views

5490.02 [1]

Police Station and Court House

Surf Lifesaving Club

Forster High St Shopping Precinct

Tuncurry High St Shopping Precinct

Tuncurry Public School

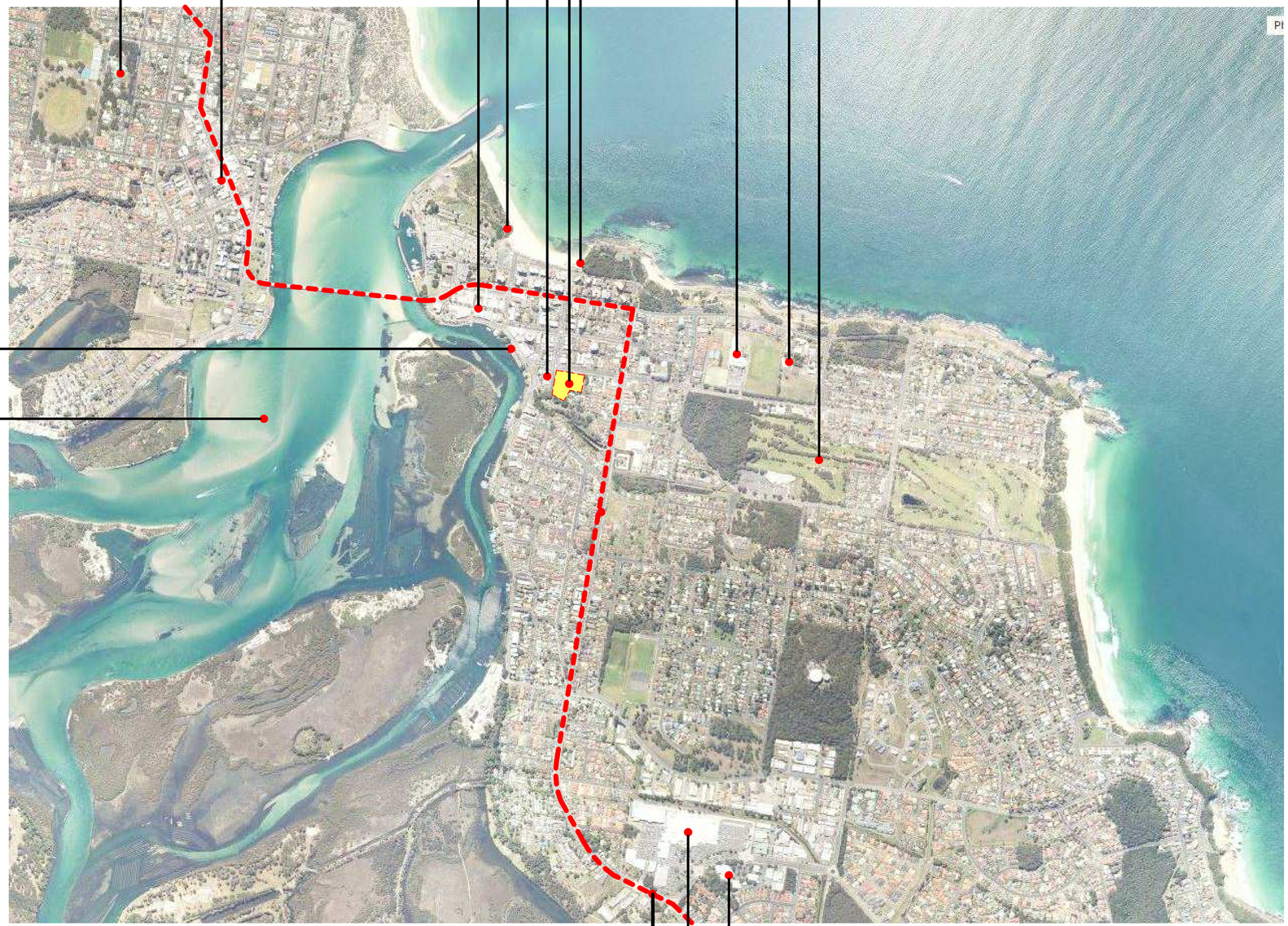
Project Site

Sea Baths

Great Lakes Aquatic & Leisure Centre

Forster Public School

Forster Golf Club



Lake Forshore Boardwalk

Wallis Lake

MacIntosh Street/Main Road Access through Forster/Tuncurry

MidCoast Council Chambers and Library

Forster Shopping Centre

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Cnr Lake, West & Middle Street

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Location Plan

5490.10 [1]

N

Site Plan

Scale @ A1 1 : 400

RPD

Lots 11, 12 and 13 on DP47987
Corner of West and Lake Street, Forster NSW
Site Area: 12,153.4m²

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Forster Civic Precinct
Cnr Lake, West & Middle Street

For

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Site Plan

5490.21 [1]

N

0 8 16 24 32 40

Scale (m) 1 : 400 @A1 Scale (m) 1 : 800 @A3

Usage & Area Schedule

Uses			Areas			GFA m²
			Council Brief		Provided	
Council		Common Building Facilities/ Community Centre	Total m²	875.6		893
		Library	Total m²	1712		1753
		Visitor Centre	Total m²	350		362
		Sub total GFA m²		**2937.6**		**3008**
Developer	Stage 1		**Number of units**	**No. Units with Ventilation Compliance**	**No. Units with 3 hrs Daylight Compliance**	
		1 Bed Units 1A.1 x 5 @ 77.4m²	5	5	0	387
		2 Bed Units 2A.1 x 24 @ 107m² 2F.1 x 1 @ 107.7m²	25	25	20	2676
		3 Bed Units 3A.1 x 12 @ 126.3m² 3A.2 x 5 @ 124.6m² 3B.1 x 6 @ 131.7m²	23	23	23	2929
		Total no. Stage 1 Units	**53**	**53**	**43**	
		Corridors/ Lobbies (enclosed)				549
		Ground Amenities				31
		Ground Residential Office				38
		Ground Staff Bike Enclosure & PWD Shower				49
		Ground Restaurant/ Cafés				404
		Level 1 Resident's Club (enclosed)				355
		Stage 1 Sub total GFA m²				**7418**
	Stage 2	2 Bed Units 2A.1 x 19 @ 107m² 2A.2 x 9 @ 109.8m²	28	28	24	3021
		3 Bed Units 3C.1 x 15 @ 123.7m² 3D.1 x 14 @ 125.4	29	29	29	3611
		4 Bed Penthouse Units 1 x @ 456.3m²	1	1	1	456
		5 Bed Penthouse Units 1 x @ 499.9m²	1	1	1	500
		Total no. Stage 2 Units	**59**	**59**	**55**	
		Corridors/ Lobbies (enclosed)				861
		Ground Amenities				18
		Ground Supermarket				841
		Ground Retail				89
		Ground Gym				268
		Ground Restaurants/ Cafes				306
		Level 5 Resident's Recreational Facilities (enclosed)				559
		Level 6 Resident's Amenities/ Sauna (enclosed)				53
		Stage 2 Sub total GFA m²				**10583**

Uses			Areas			GFA m²
Developer	stage 3	2 Bed Units 2A.1 x 5@ 107m² 2A.2 x 5@ 109.8m² 2A.3 x 9@ 112.6m²	19	9	2	2097
		3 Bed Units 3B.2 x 10@ 124.6m²	10	10	0	1869
		3 Bed Penthouse Units 2 x @ 318.4m²	2	2	2	437
		Total no. Stage 3 Units	**31**	**21**	**4**	
		Total no. Units (Stages1,2,3)	**143**			
		Corridors/ Lobbies (enclosed)				304
		Ground/ Level 3 / 4 Cinema				2143
		Stage 3 Sub total GFA m²				**6850**
	Stage 4	Hotel Room Type 0A.1 @ 43.2m²	68			2938
		Hotel Room Type 0B.1 @38.7m²	4			155
		Hotel Room Type 0C.1 @ 41.5m²	4			166
		Hotel Room Type 0D.1 @ 34.2m²	8			274
		1 Bed Serviced Apartment 1B.1 x 9 @ 64.5m² 1C.1x 1 @ 60.9m² 1D.1x 1 @ 59.3m² 1E.1x 1 @ 85.8m²	12			787
		2 Bed Serviced Apartment 2B.1 x 3 @ 94m² 2C.1 x 1 @ 100.4m² 2D.1 x 1 @ 87.6m² 2E.1 x 1 @ 87.5m²	6			558
		Total no. Hotel Rooms	**102**			
		Corridors (enclosed)				691
		Basement 1 Hotel Back of House				352
		Basement 1 Hotel Lobby				127
		Ground Childcare (including outdoor play)				386
		Ground Retail				193
		Ground/ Basement 1 / 2 Night Club				817
		Ground Hotel Bussiness Centre				89
		Level 1 Restaurant/ Kitchen				464
		Level 1 Amenities				59
		Level 1 Function Rooms/ Lounge				464
		Level 1 Terrace Dining /Bar				164
		Stage 4 Sub total GFA m²				**8682**
		Total GFA m²				**36541**

Site Area:	**12153.4**
Total GFA:	**36541**
Plot Ratio:	**3.007**

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Cnr Lake, West & Middle Street

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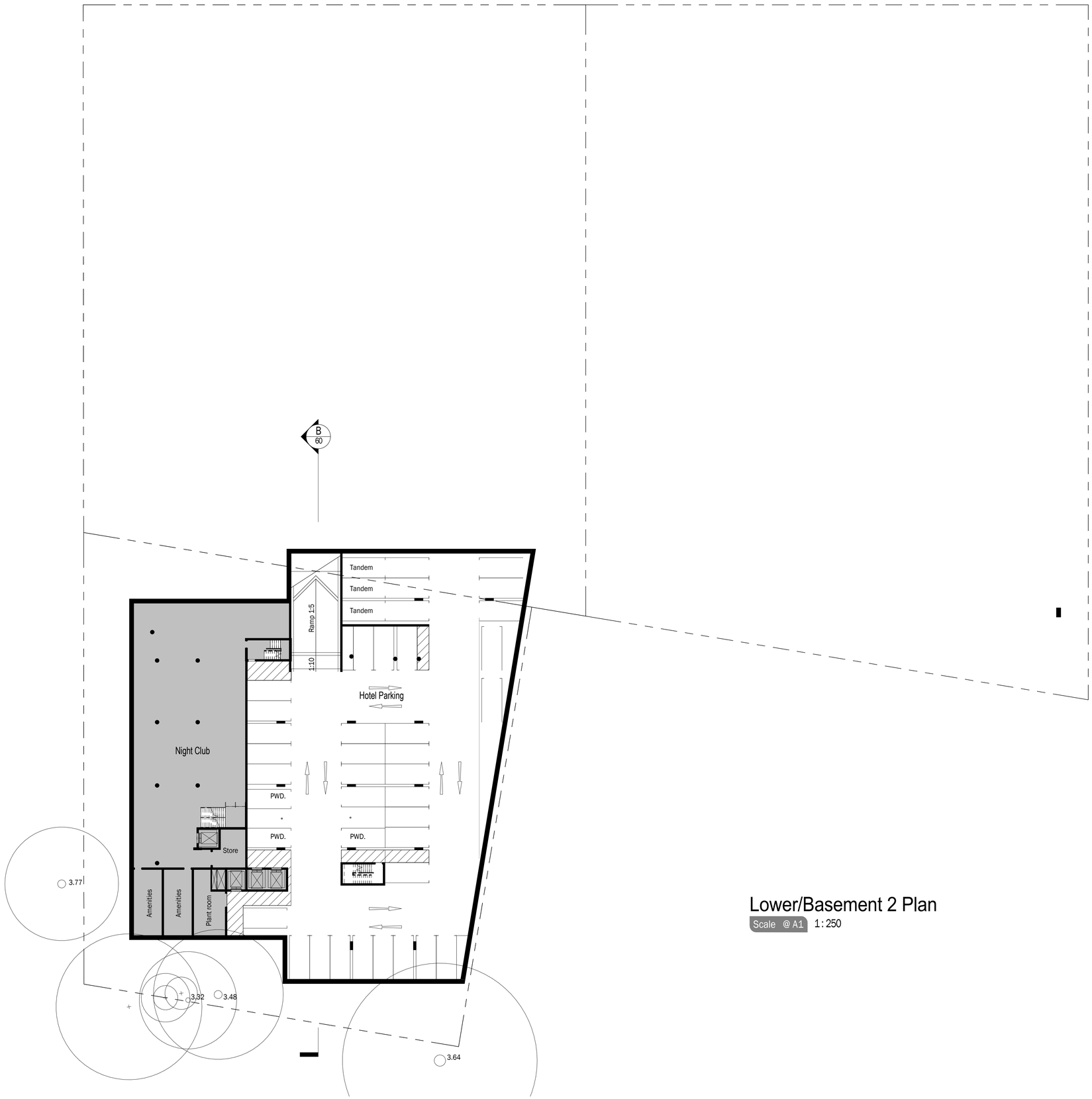
Development Statistics

5490.09 [1]



Lower/Basement 2 Plan

Scale @ A1 1 : 250

Parking Schedule

Level	Description	Count
BLDG A - Basement 1 / Lower Ground Level	Hotel	3
BLDG A - Basement 1 / Lower Ground Level	Library Employee	2
BLDG A - Basement 1 / Lower Ground Level	Library Loading Bay	1
BLDG A - Basement 1 / Lower Ground Level	PWD Bay	6
BLDG A - Basement 1 / Lower Ground Level	Retail Bay	233
BLDG A - Basement 1 / Lower Ground Level	Retail Bay (Small)	7
BLDG A - Basement 1 / Lower Ground Level		252
BLDG A - Level 1	3.2 Residential Bay	13
BLDG A - Level 1	3.8 Residential Bay	4
BLDG A - Level 1		17
BLDG A - Level 2	2.4 Residential Bay	4
BLDG A - Level 2	3.2 Res. Tandem Bay	27
BLDG A - Level 2	3.2 Residential Bay	44
BLDG A - Level 2	3.8 Residential Bay	2
BLDG A - Level 2		77
BLDG B - Level 1	3.2 Res. Tandem Bay	20
BLDG B - Level 1	3.2 Residential Bay	35
BLDG B - Level 1	3.8 Residential Bay	6
BLDG B - Level 1		61
BLDG B - Level 2	3.2 Res. Tandem Bay	18
BLDG B - Level 2	3.2 Residential Bay	40
BLDG B - Level 2	3.8 Residential Bay	6
BLDG B - Level 2		64
BLDG C - Basement 2	Hotel	39
BLDG C - Basement 2	PWD Bay	3
BLDG C - Basement 2		42
Grand Total		513

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Cnr Lake, West & Middle Street

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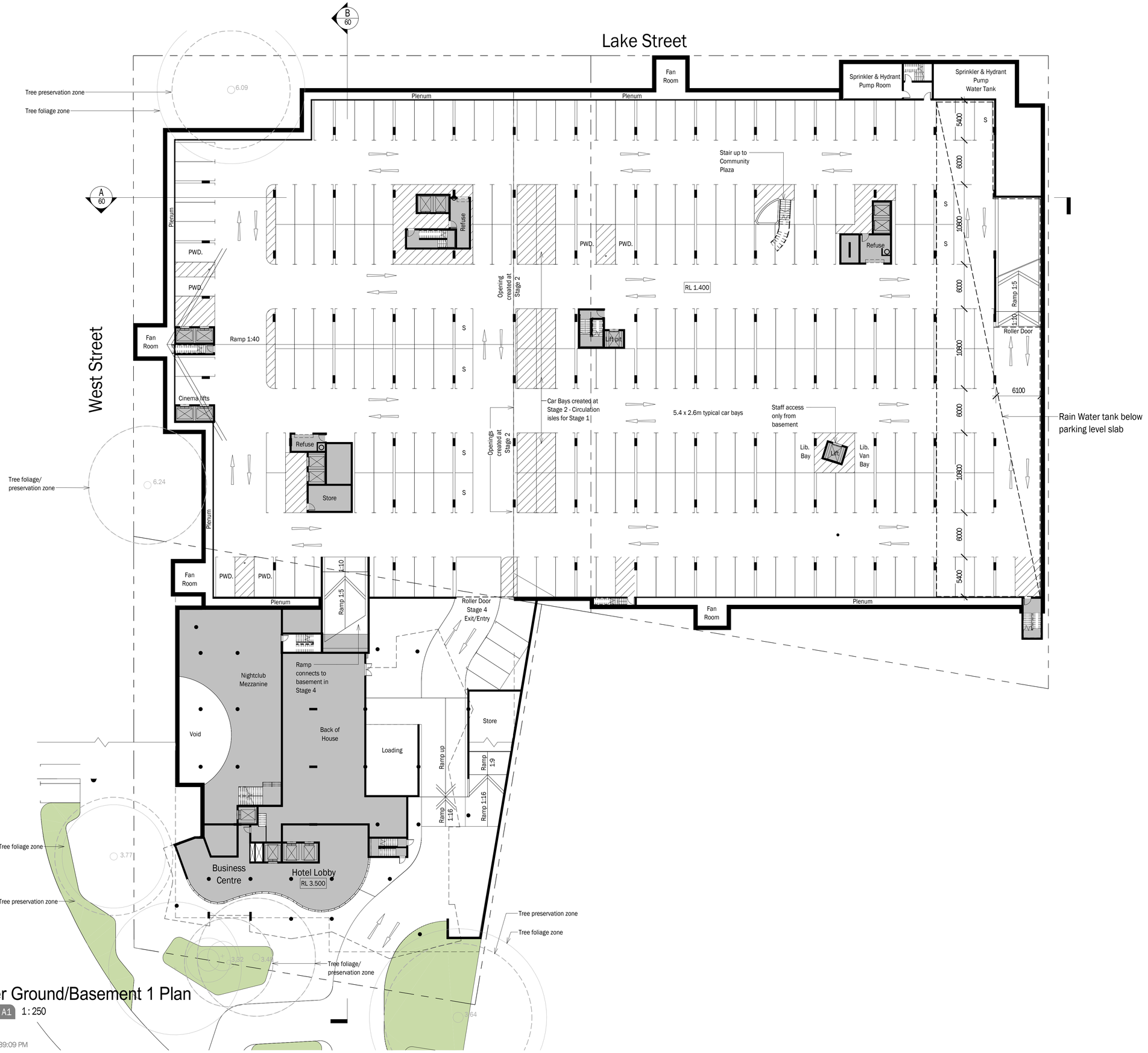
Lower Basement 2 Plan

5490.22 [1]

0 5 10 15 20 25

Scale (m) 1 : 250 @A1 Scale (m) 1 : 500 @A3



Lower Ground/Basement 1 Plan

Scale @ A1 1:250

Parking Schedule

Level	Description	Count
BLDG A - Basement 1 / Lower Ground Level	Hotel	3
BLDG A - Basement 1 / Lower Ground Level	Library Employee	2
BLDG A - Basement 1 / Lower Ground Level	Library Loading Bay	1
BLDG A - Basement 1 / Lower Ground Level	PWD Bay	6
BLDG A - Basement 1 / Lower Ground Level	Retail Bay	233
BLDG A - Basement 1 / Lower Ground Level	Retail Bay (Small)	7
BLDG A - Basement 1 / Lower Ground Level		252
BLDG A - Level 1	3.2 Residential Bay	13
BLDG A - Level 1	3.8 Residential Bay	4
BLDG A - Level 1		17
BLDG A - Level 2	2.4 Residential Bay	4
BLDG A - Level 2	3.2 Res. Tandem Bay	27
BLDG A - Level 2	3.2 Residential Bay	44
BLDG A - Level 2	3.8 Residential Bay	2
BLDG A - Level 2		77
BLDG B - Level 1	3.2 Res. Tandem Bay	20
BLDG B - Level 1	3.2 Residential Bay	35
BLDG B - Level 1	3.8 Residential Bay	6
BLDG B - Level 1		61
BLDG B - Level 2	3.2 Res. Tandem Bay	18
BLDG B - Level 2	3.2 Residential Bay	40
BLDG B - Level 2	3.8 Residential Bay	6
BLDG B - Level 2		64
BLDG C - Basement 2	Hotel	39
BLDG C - Basement 2	PWD Bay	3
BLDG C - Basement 2		42
Grand Total		513

TVS architects

SOLARIS

Forster Civic Precinct
Cnr Lake, West & Middle Street

For

Enyoc Pty Ltd

Upper Basement 1 Plan

5490.23 [1]

N

0 5 10 15 20 25

Scale (m) 1:250 @A1 Scale (m) 1:500 @A3

DA Issue 03/04/17

Street Parking Schedule

Description	Count
2.6 Street Parking	79
Grand Total	79

Bicycle Parking Schedule

Description	Count
Bike Rack	18
Grand Total	18

Ground Level

Scale @A1 1:250

DA Issue 03/04/17

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Forster Civic Precinct
Cnr Lake, West & Middle Street

For

Enyoc Pty Ltd

Ground Floor Plan

5490.24 [1]

N

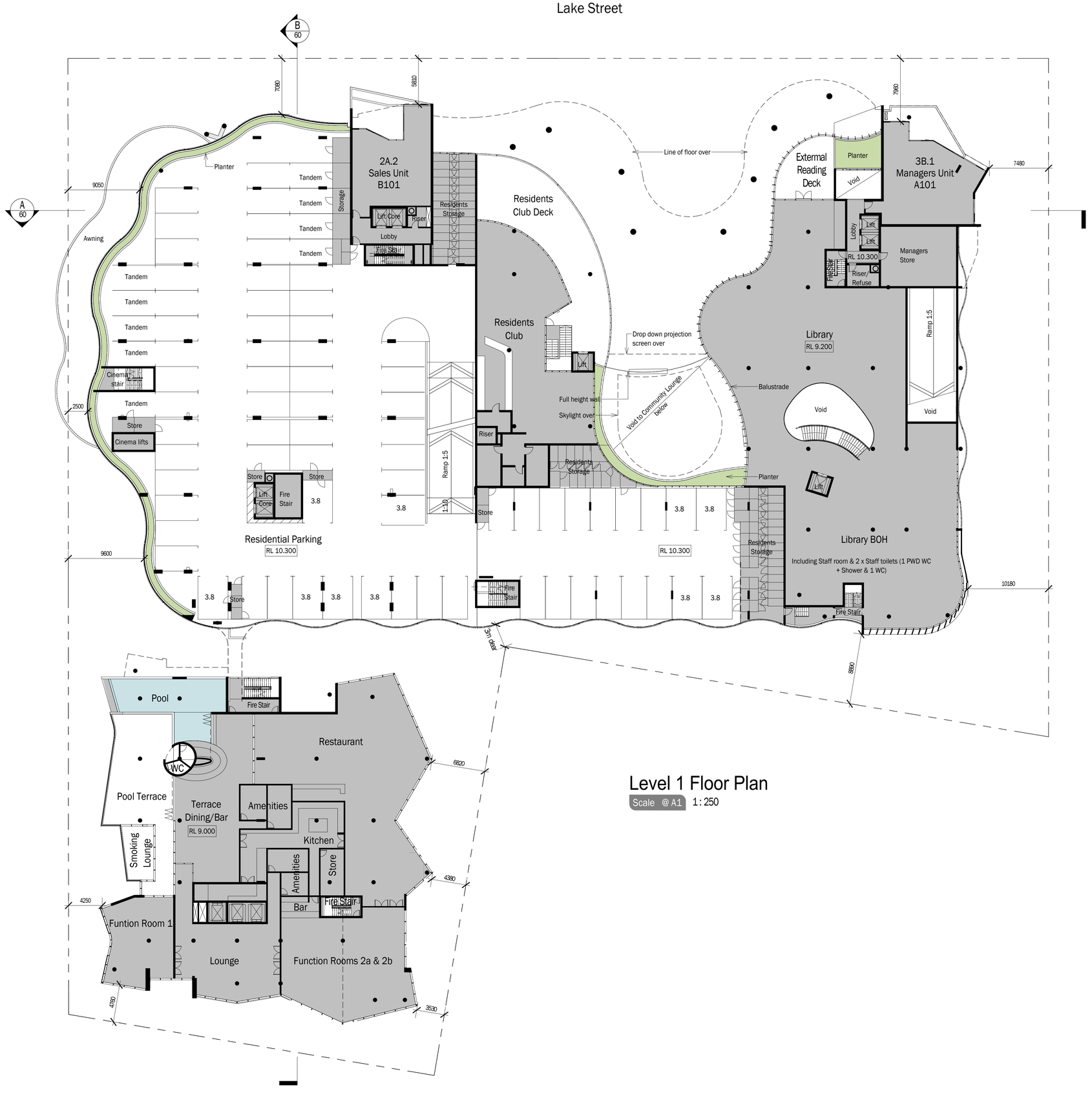
0 5 10 15 20 25

Scale (m) 1:250 @A1 Scale (m) 1:500 @A3

Lake Street

West Street

Middle Street



Level 1 Floor Plan

Scale @ A1 1 : 250

Parking Schedule		
Level	Description	Count
BLDG A - Basement 1 / Lower Ground Level	Hotel	3
BLDG A - Basement 1 / Lower Ground Level	Library Employee	2
BLDG A - Basement 1 / Lower Ground Level	Library Loading Bay	1
BLDG A - Basement 1 / Lower Ground Level	PWD Bay	6
BLDG A - Basement 1 / Lower Ground Level	Retail Bay	233
BLDG A - Basement 1 / Lower Ground Level	Retail Bay (Small)	7
BLDG A - Basement 1 / Lower Ground Level		252
BLDG A - Level 1	3.2 Residential Bay	13
BLDG A - Level 1	3.8 Residential Bay	4
BLDG A - Level 1		17
BLDG A - Level 2	2.4 Residential Bay	4
BLDG A - Level 2	3.2 Res. Tandem Bay	27
BLDG A - Level 2	3.2 Residential Bay	44
BLDG A - Level 2	3.8 Residential Bay	2
BLDG A - Level 2		77
BLDG B - Level 1	3.2 Res. Tandem Bay	20
BLDG B - Level 1	3.2 Residential Bay	35
BLDG B - Level 1	3.8 Residential Bay	6
BLDG B - Level 1		61
BLDG B - Level 2	3.2 Res. Tandem Bay	18
BLDG B - Level 2	3.2 Residential Bay	40
BLDG B - Level 2	3.8 Residential Bay	6
BLDG B - Level 2		64
BLDG C - Basement 2	Hotel	39
BLDG C - Basement 2	PWD Bay	3
BLDG C - Basement 2		42
Grand Total		513

TVS architects

SOLARIS

Forster Civic Precinct
Cnr Lake, West & Middle Street

For

Enyoc Pty Ltd

Level 1 Floor Plan

5490.25 [1]

N

0 5 10 15 20 25

Scale (m) 1 : 250 @A1 Scale (m) 1 : 500 @A3

DA Issue 03/04/17

Level 2 Floor Plan

Scale @ A1 1 : 250

DA Issue 03/04/17

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SOLARIS

Forster Civic Precinct
Cnr Lake, West & Middle Street

For

Enyoc Pty Ltd

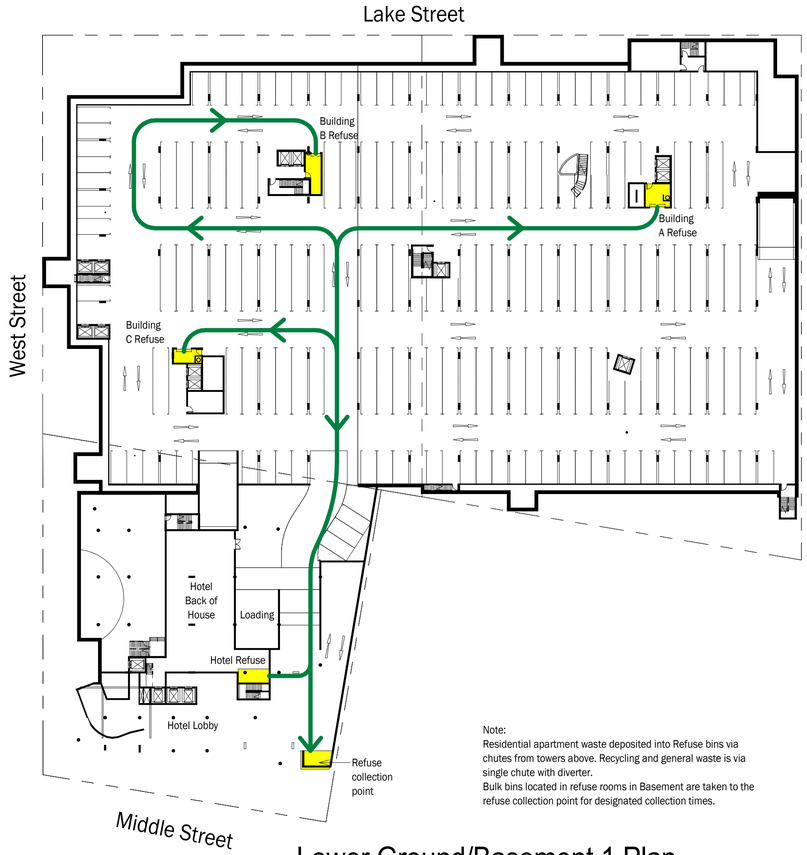
Level 2 Floor Plan

5490.26 [1]

N

0 5 10 15 20 25

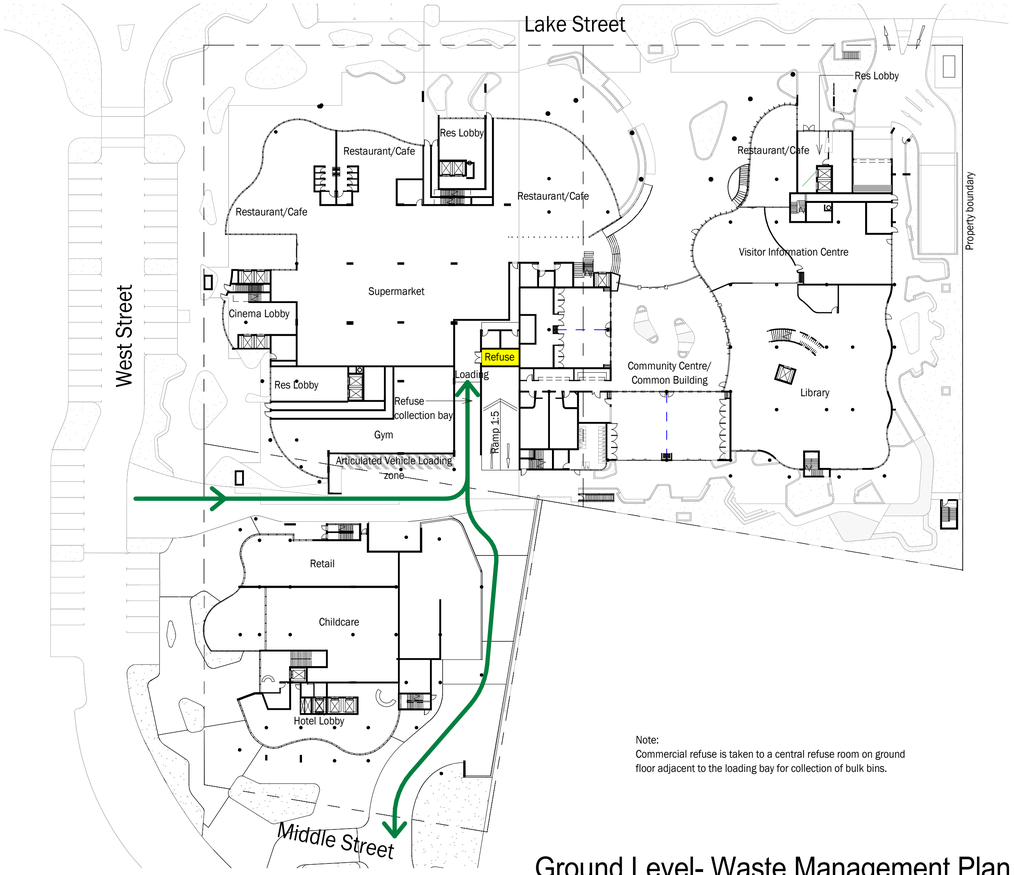
Scale (m) 1 : 250 @A1 Scale (m) 1 : 500 @A3



Note:
Residential apartment waste deposited into Refuse bins via chutes from towers above. Recycling and general waste is via single chute with diverter.
Bulk bins located in refuse rooms in Basement are taken to the refuse collection point for designated collection times.

Lower Ground/Basement 1 Plan

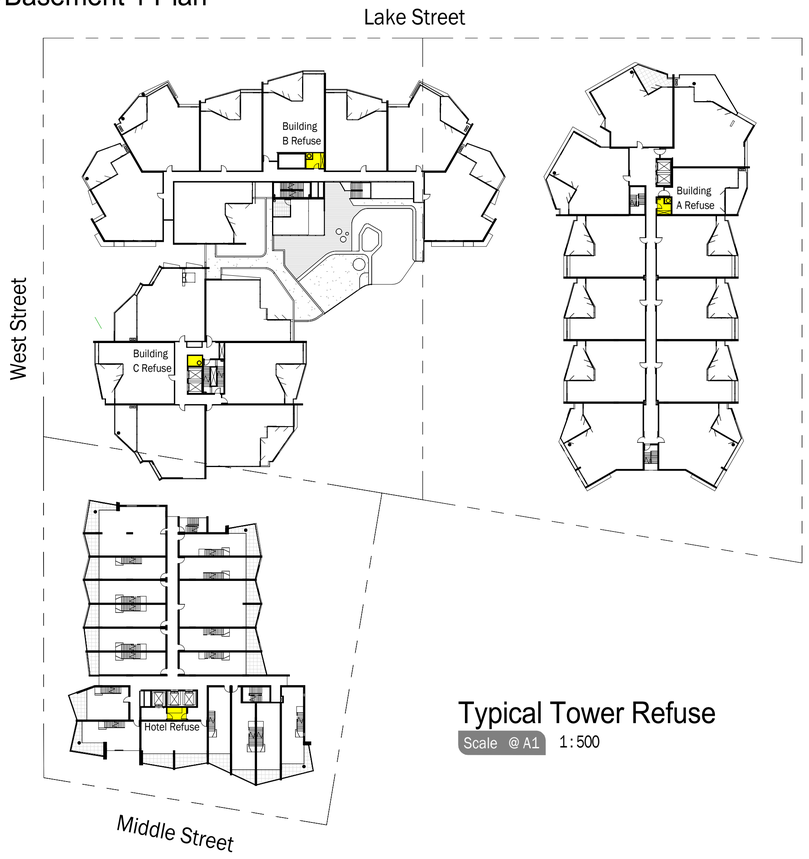
Scale @ A1 1:500



Note:
Commercial refuse is taken to a central refuse room on ground floor adjacent to the loading bay for collection of bulk bins.

Ground Level- Waste Management Plan

Scale @ A1 1:500



Typical Tower Refuse

Scale @ A1 1:500

DA Issue 03/04/17

TVS architects

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Forster Civic Precinct
Cnr Lake, West & Middle Street

For

Enyoc Pty Ltd

Waste Management Plan

5490.17 [1]

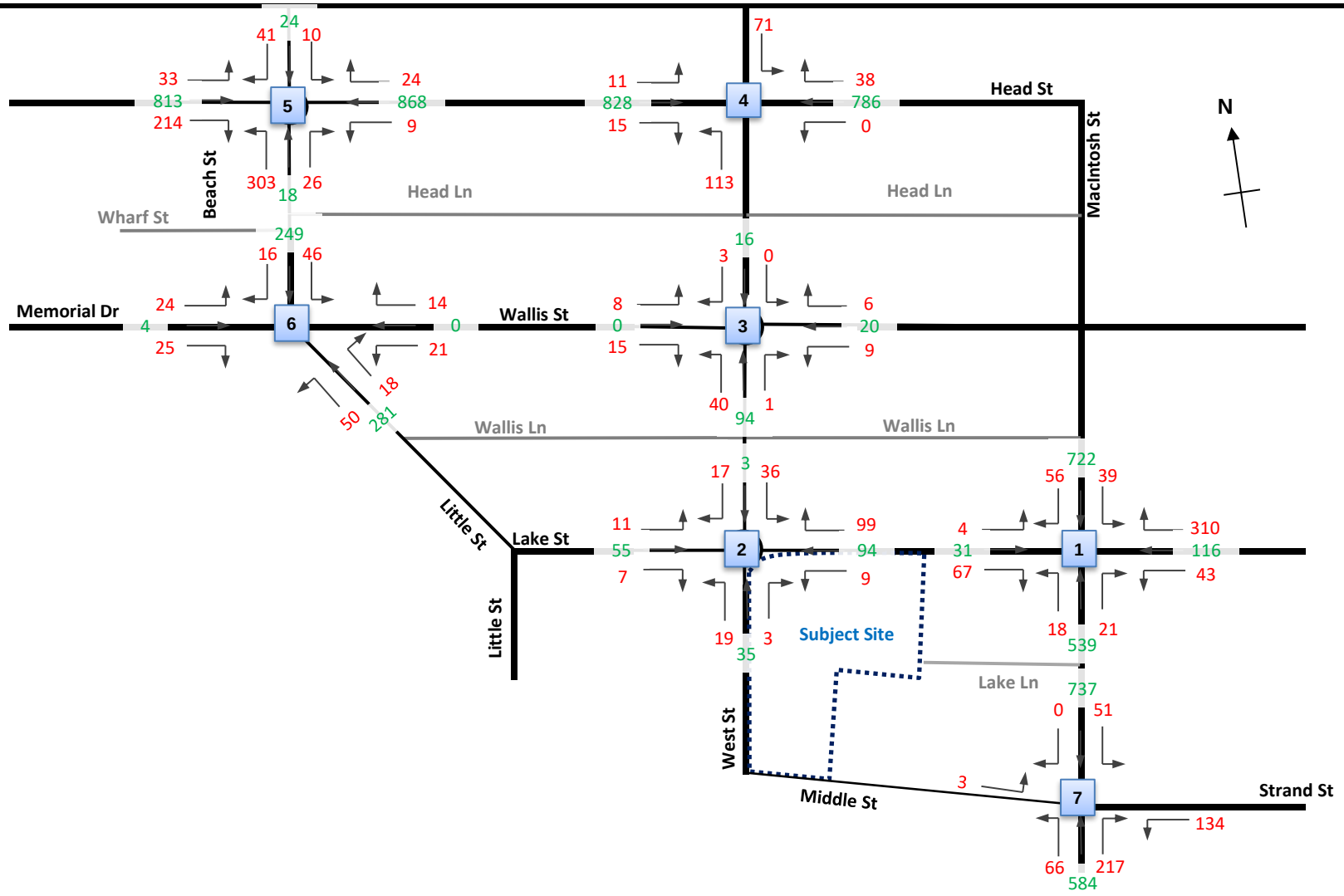
N

0 10 20 30 40 50

Scale (m) 1:500 @A1 Scale (m) 1:1000 @A3

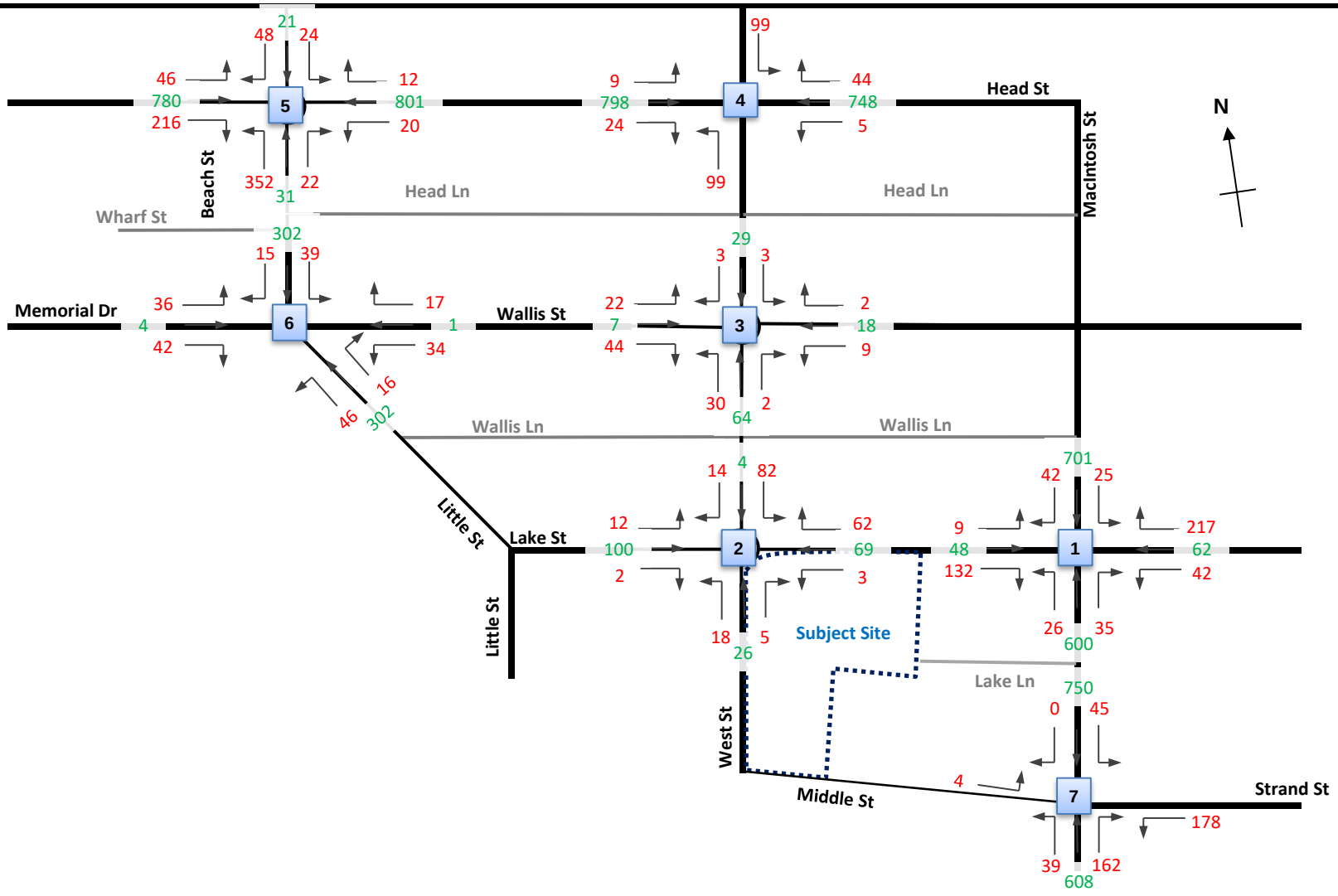
Appendix B

Traffic Volume Diagrams and Data



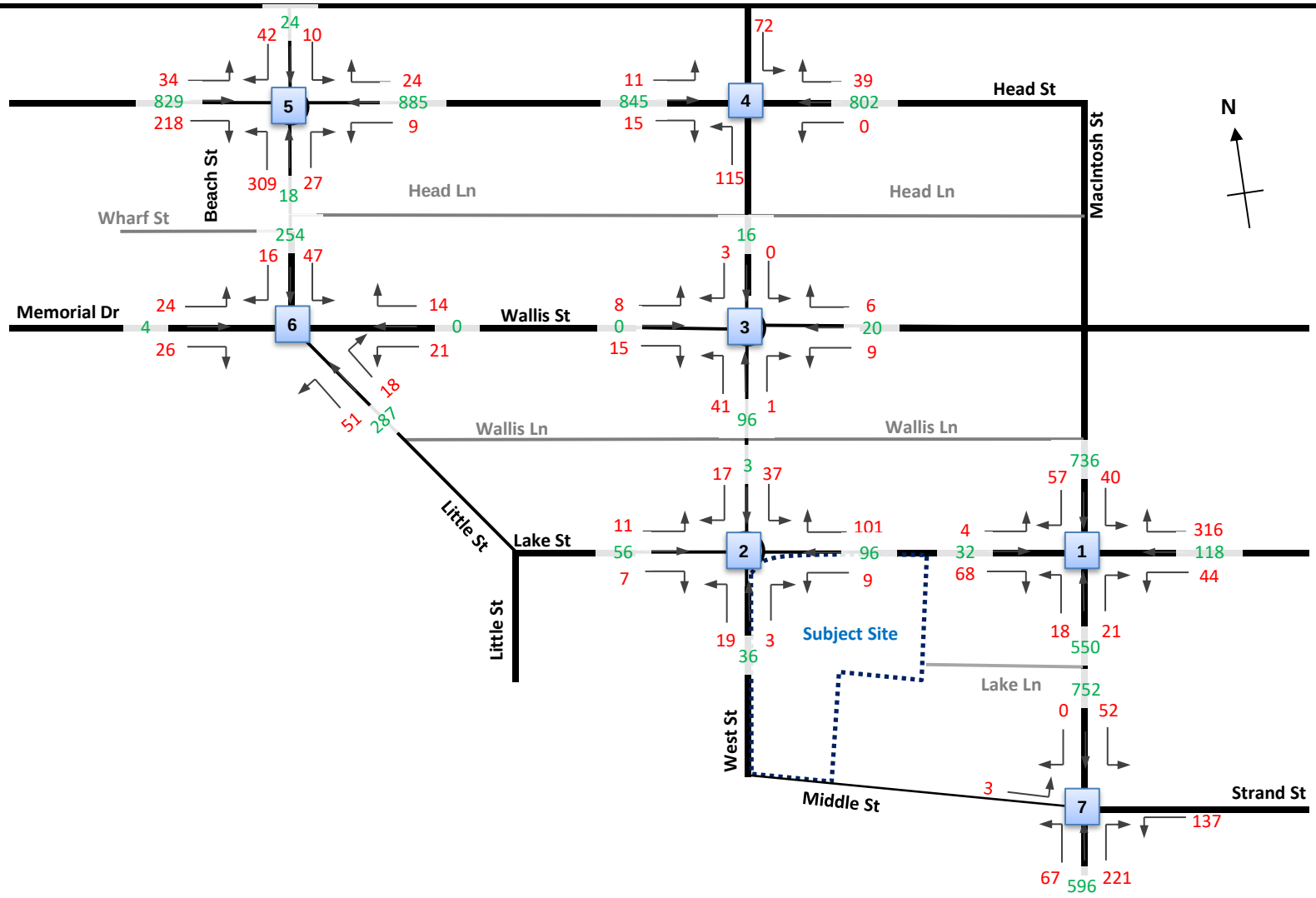
Forster Redevelopment	2017 Weekday AM Existing Traffic Volumes	
	Figure B1	Project No: 6169

MRCagney



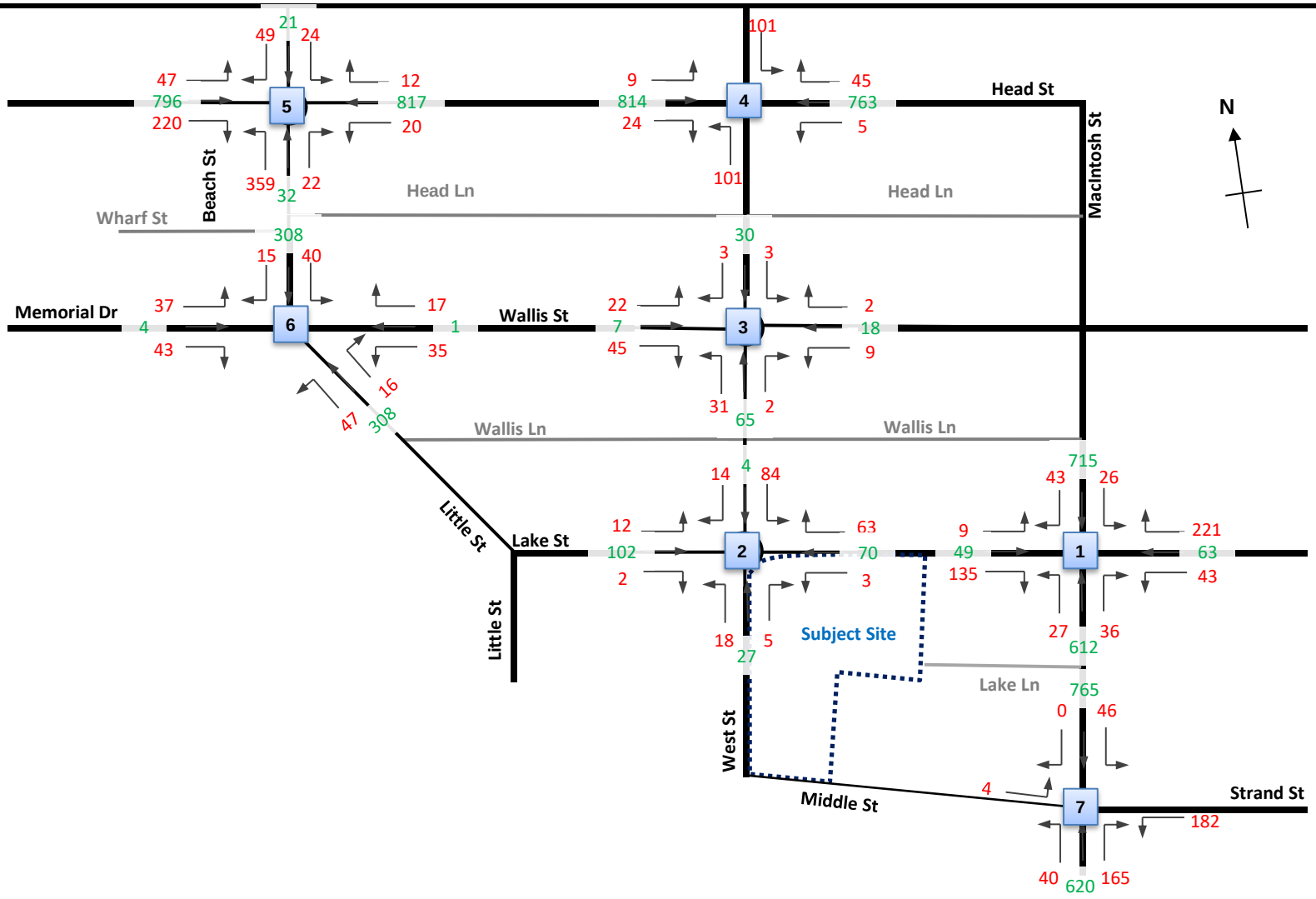
Forster Redevelopment	2017 Weekday PM Existing Traffic Volumes	
	Figure B2	Project No: 6169

MRCagney



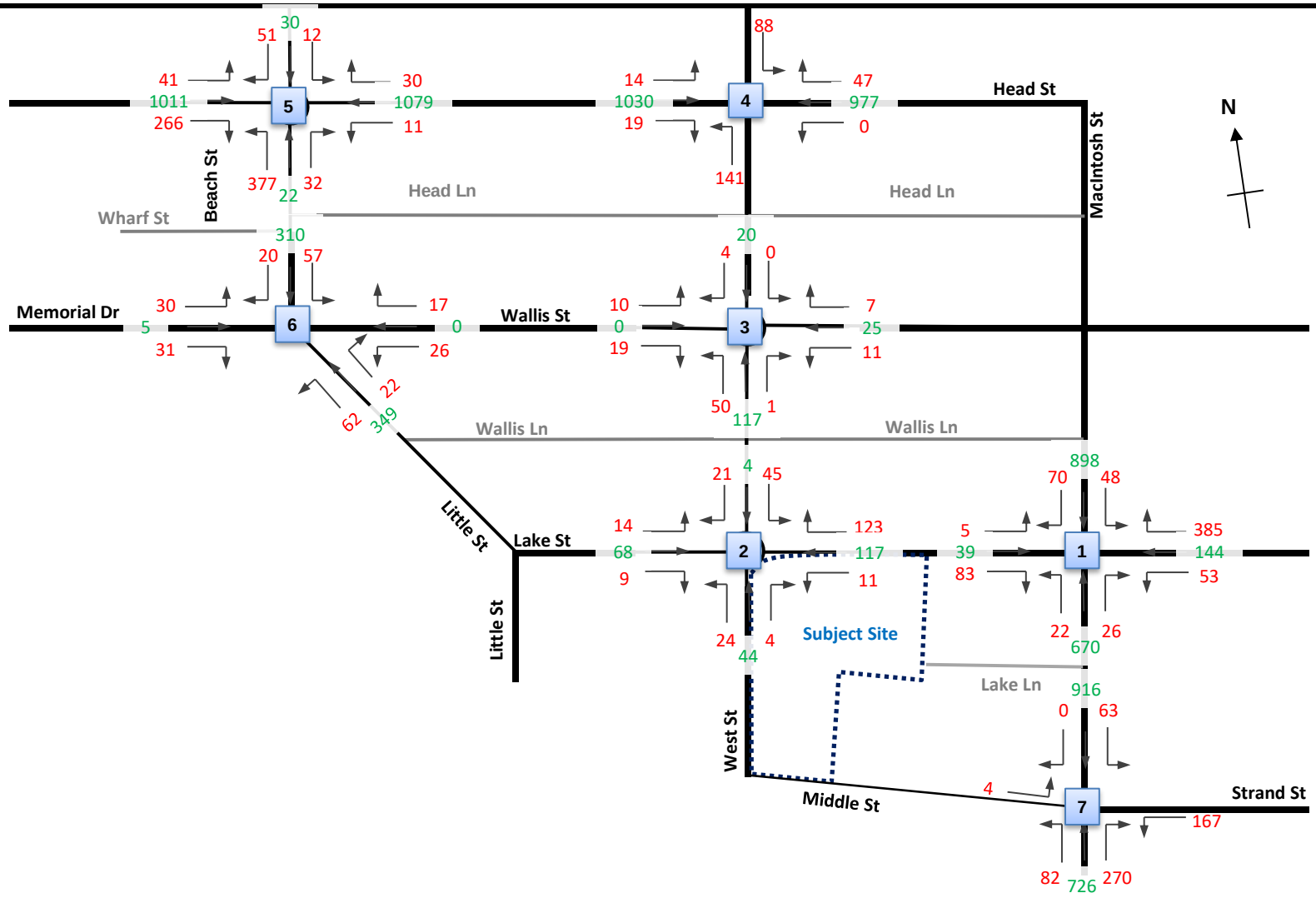
Forster Redevelopment	2018 Weekday AM Base Traffic Volumes	
	Figure B3	Project No: 6169

MRCagney



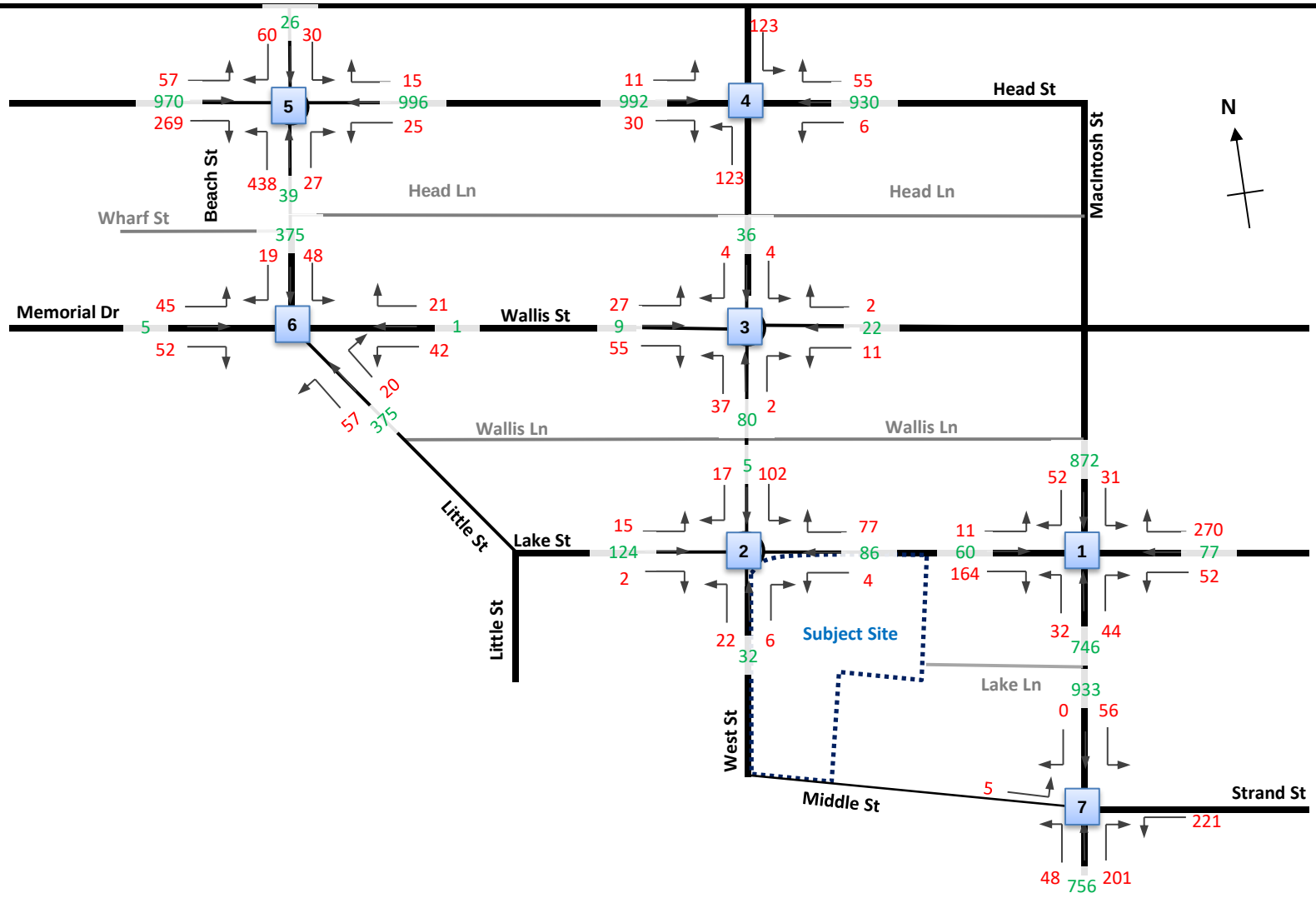
Forster Redevelopment	2018 Weekday PM Base Traffic Volumes	
	Figure B4	Project No: 6169

MRCagney



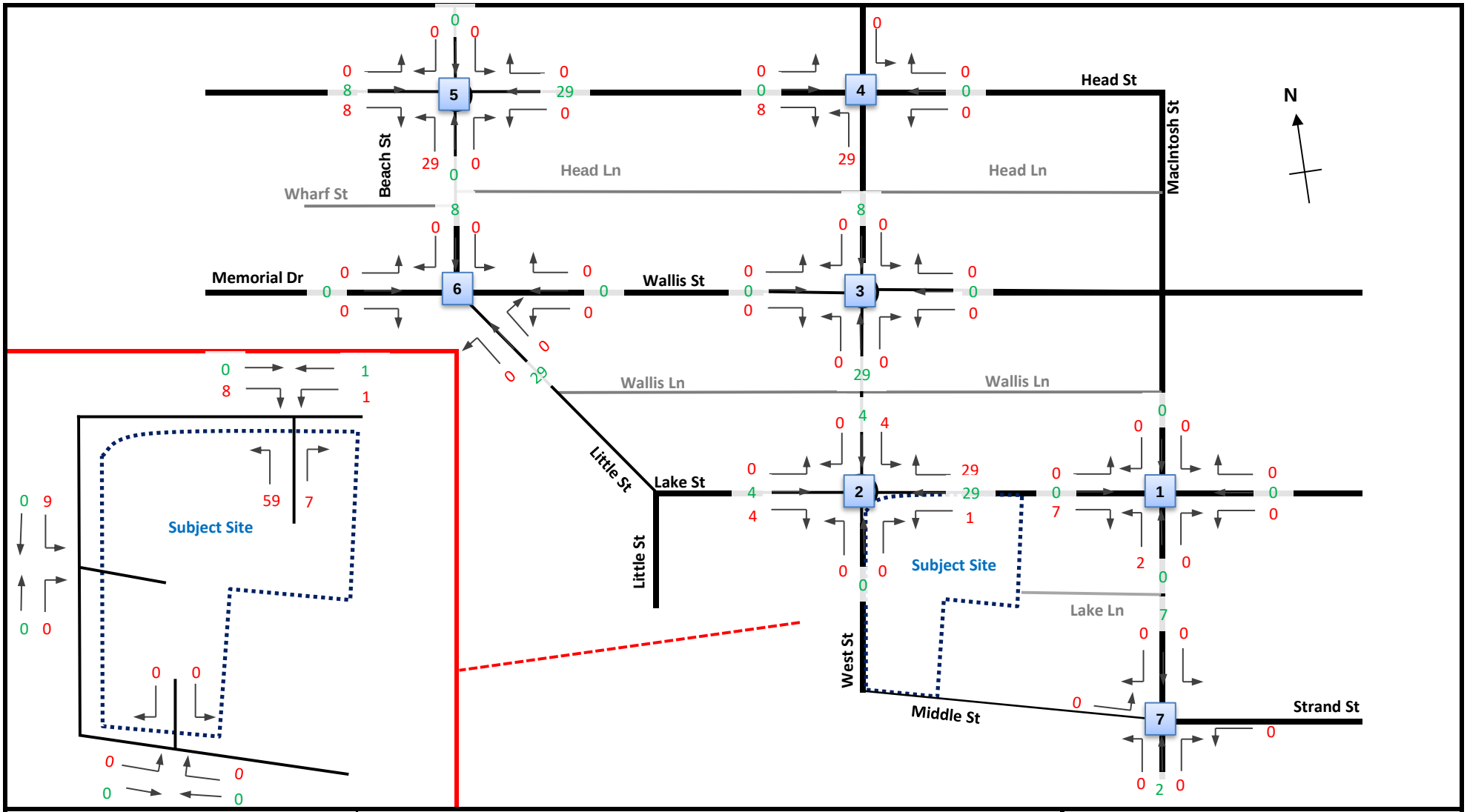
Forster Redevelopment	2028 Weekday AM Base Traffic Volumes	
	Figure B5	Project No: 6169

MRCagney



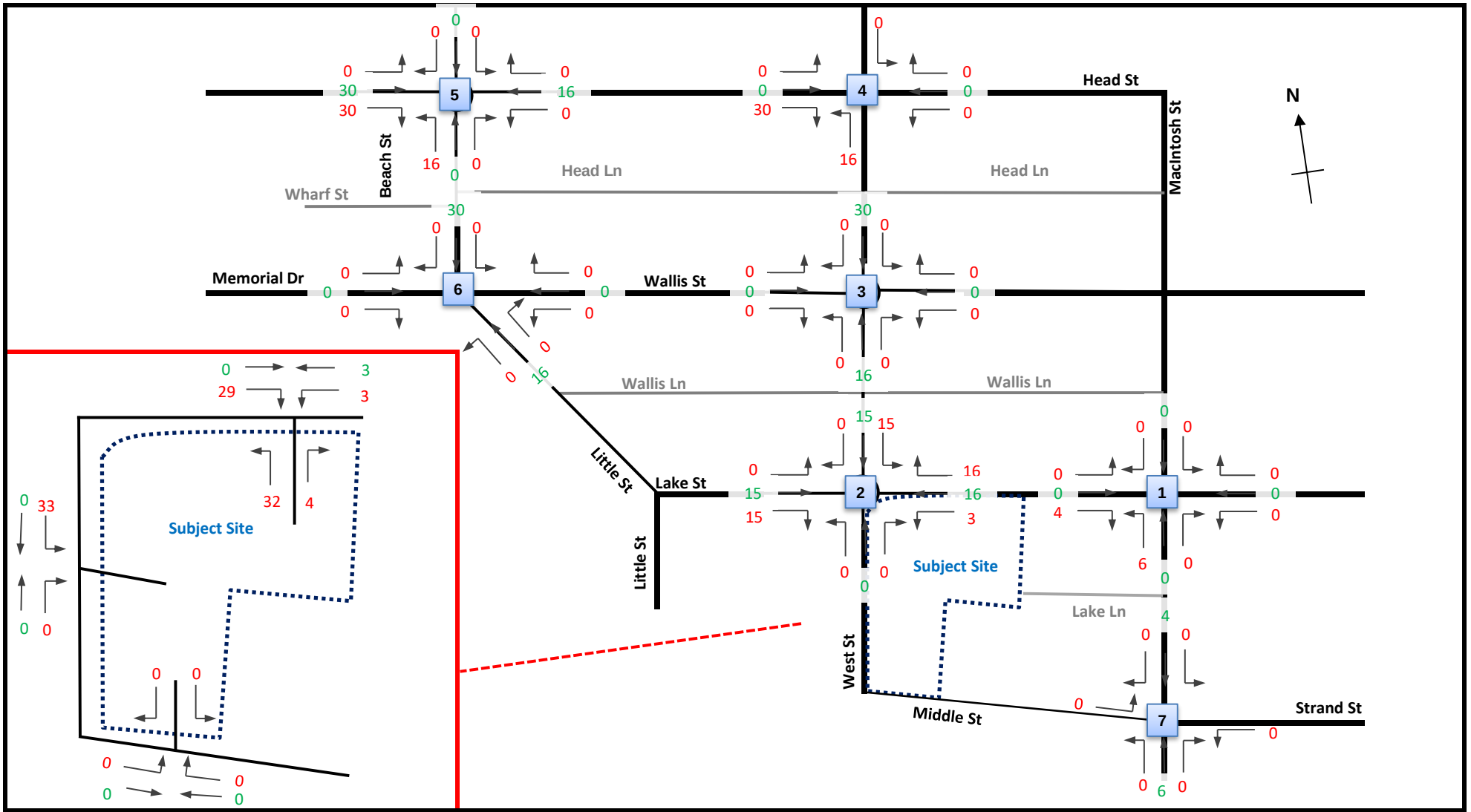
Forster Redevelopment	**2028 Weekday PM Base Traffic Volumes**	
	Figure B6	Project No: 6169

MRCagney



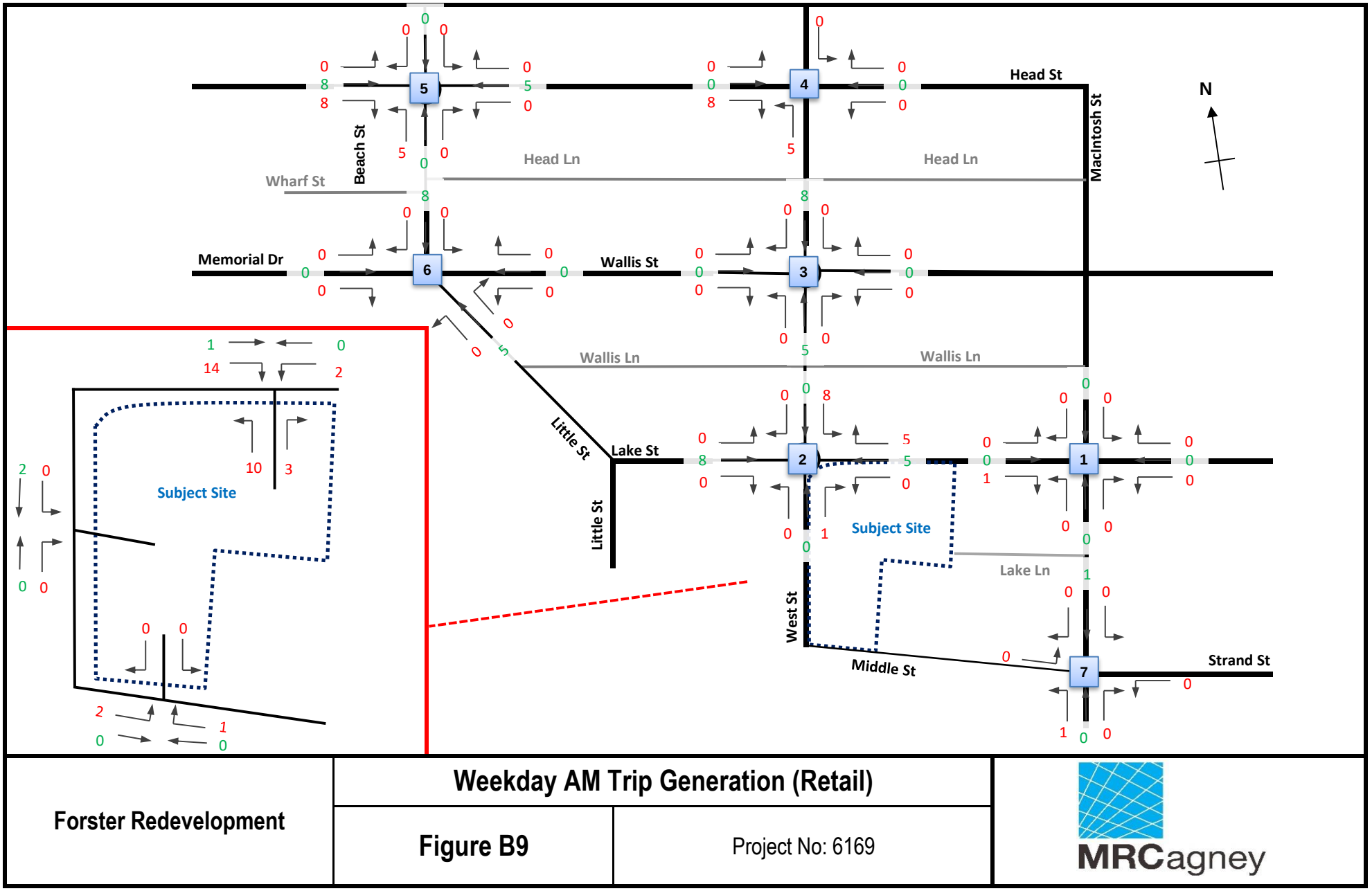
Forster Redevelopment	Weekday AM Trip Generation (Residential)	
	Figure B7	Project No: 6169

MRCagney



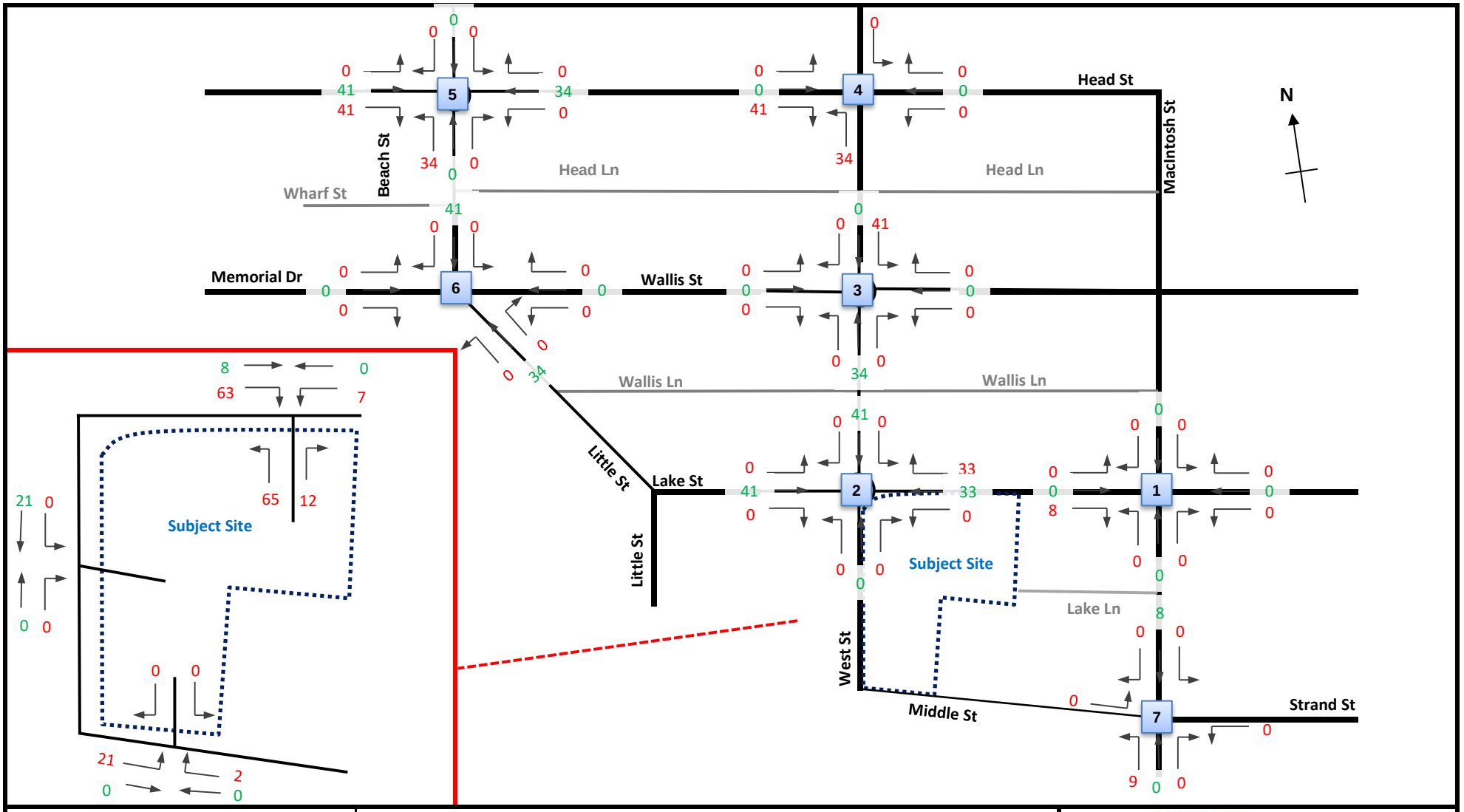
Forster Redevelopment	**Weekday PM Trip Generation (Residential)**	
	Figure B8	Project No: 6169

MRCagney



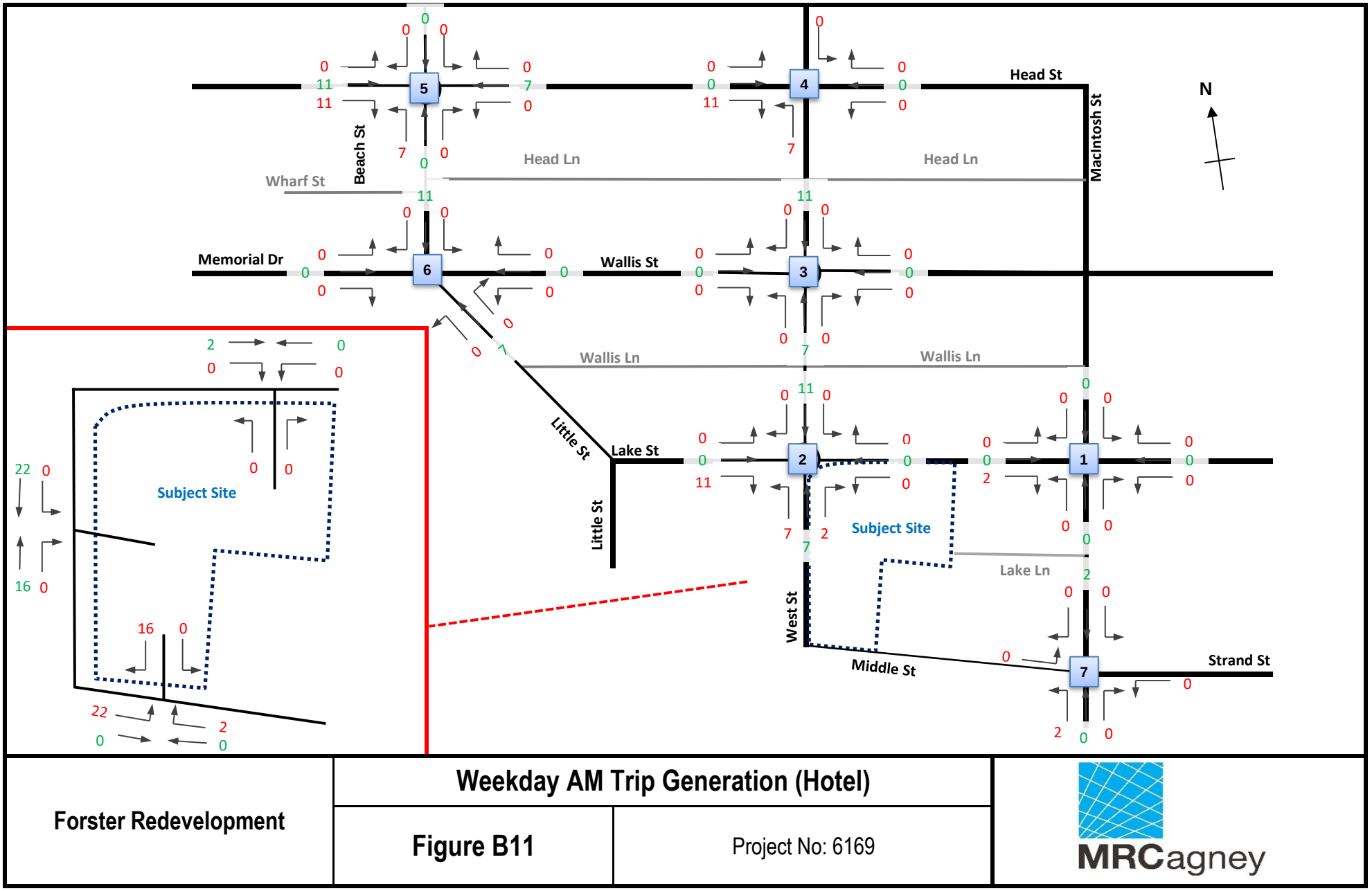
Forster Redevelopment	**Weekday AM Trip Generation (Retail)**	
	Figure B9	Project No: 6169

MRCagney



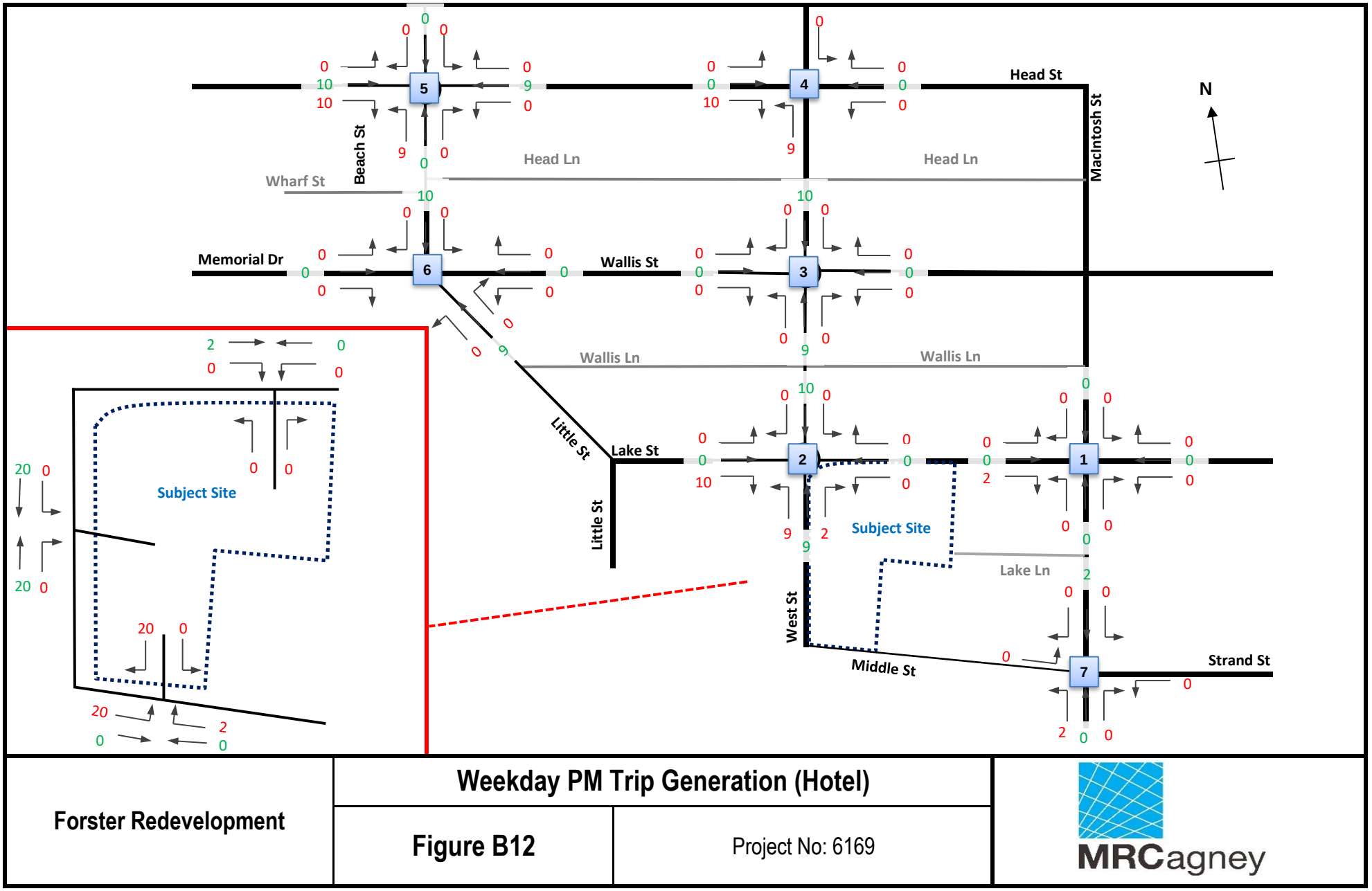
Forster Redevelopment	Weekday PM Trip Generation (Retail)	
	Figure B10	Project No: 6169

MRCagney



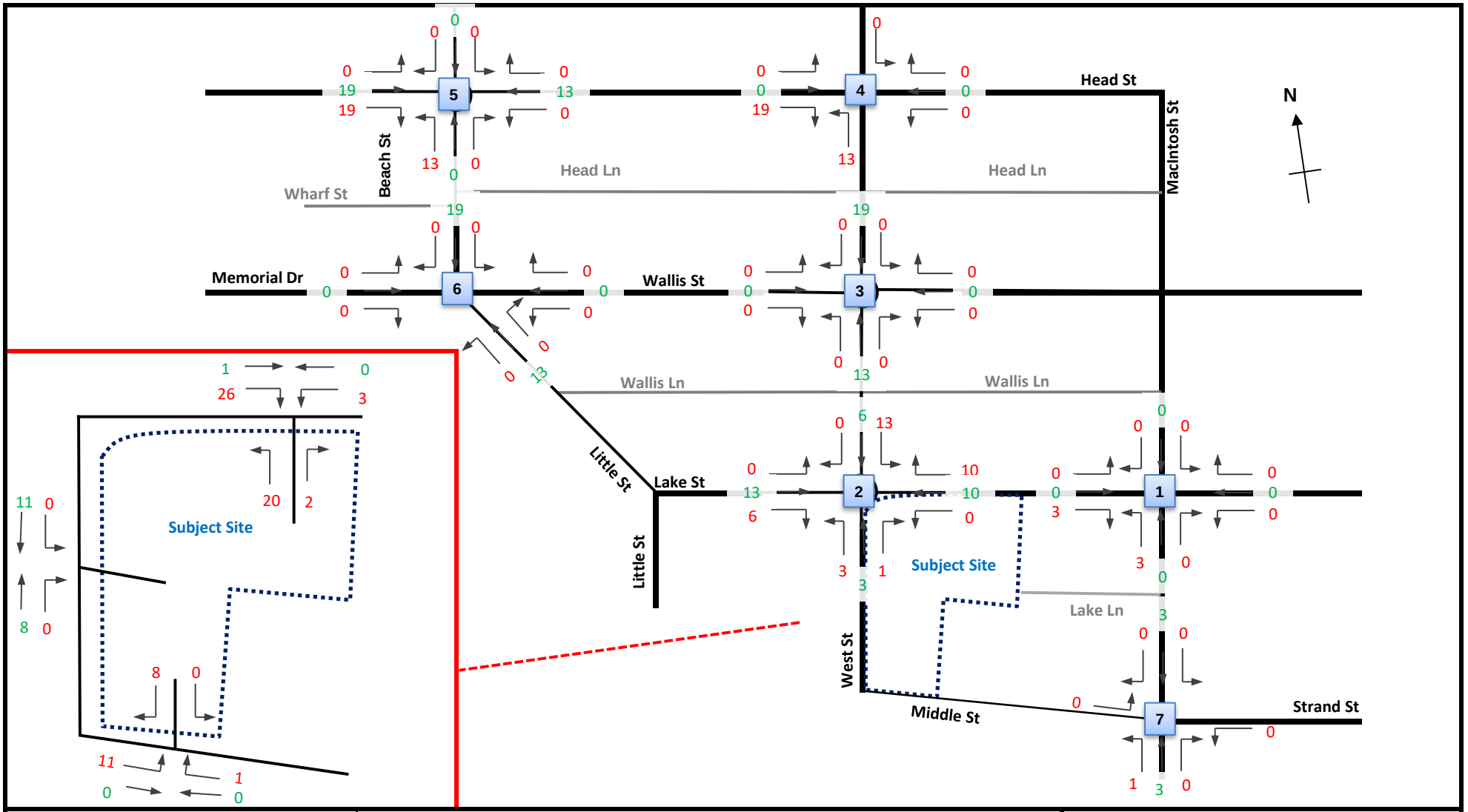
Forster Redevelopment	**Weekday AM Trip Generation (Hotel)**	
	Figure B11	Project No: 6169

MRCagney



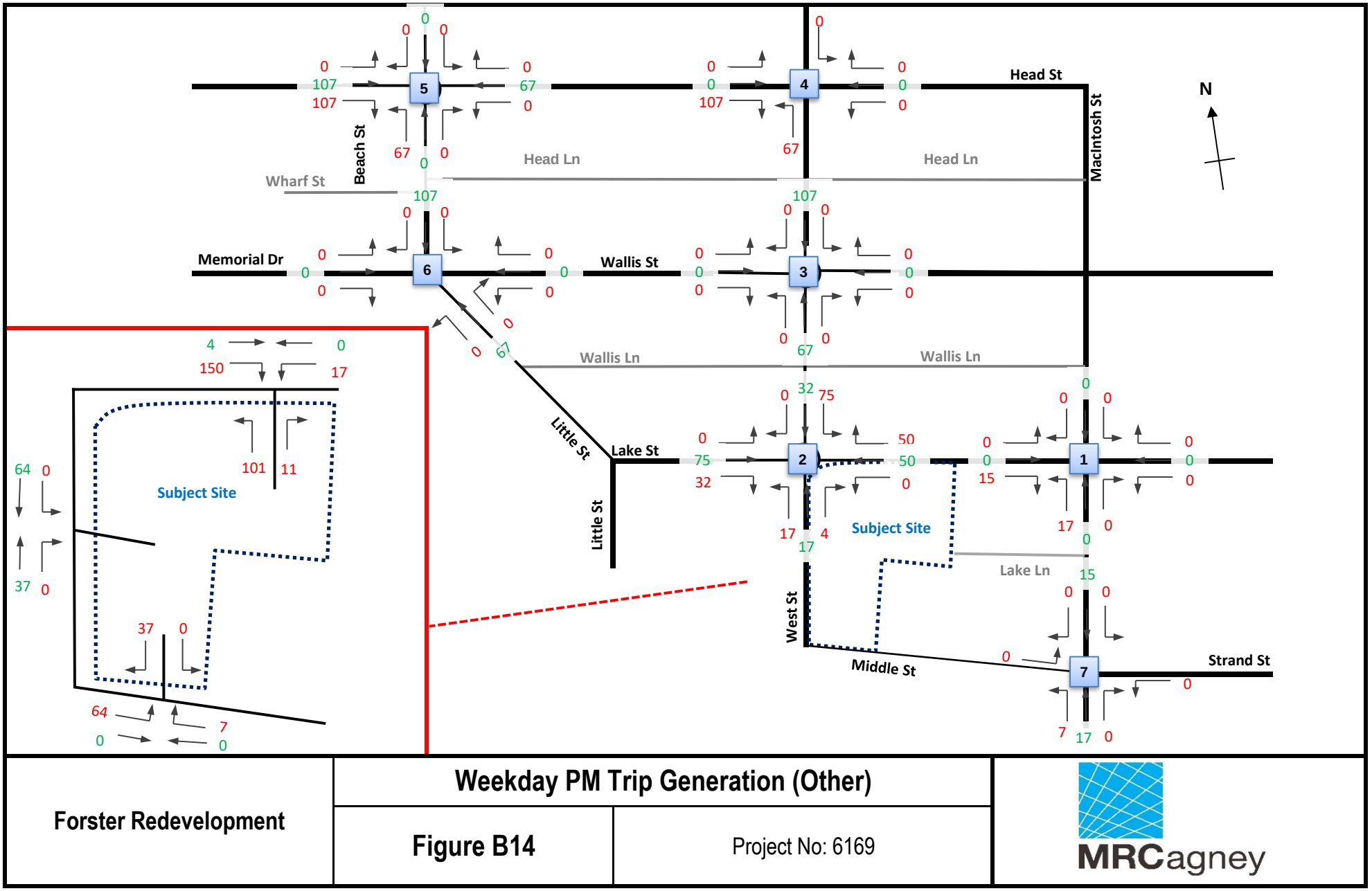
Forster Redevelopment	**Weekday PM Trip Generation (Hotel)**	
	Figure B12	Project No: 6169

MRCagney



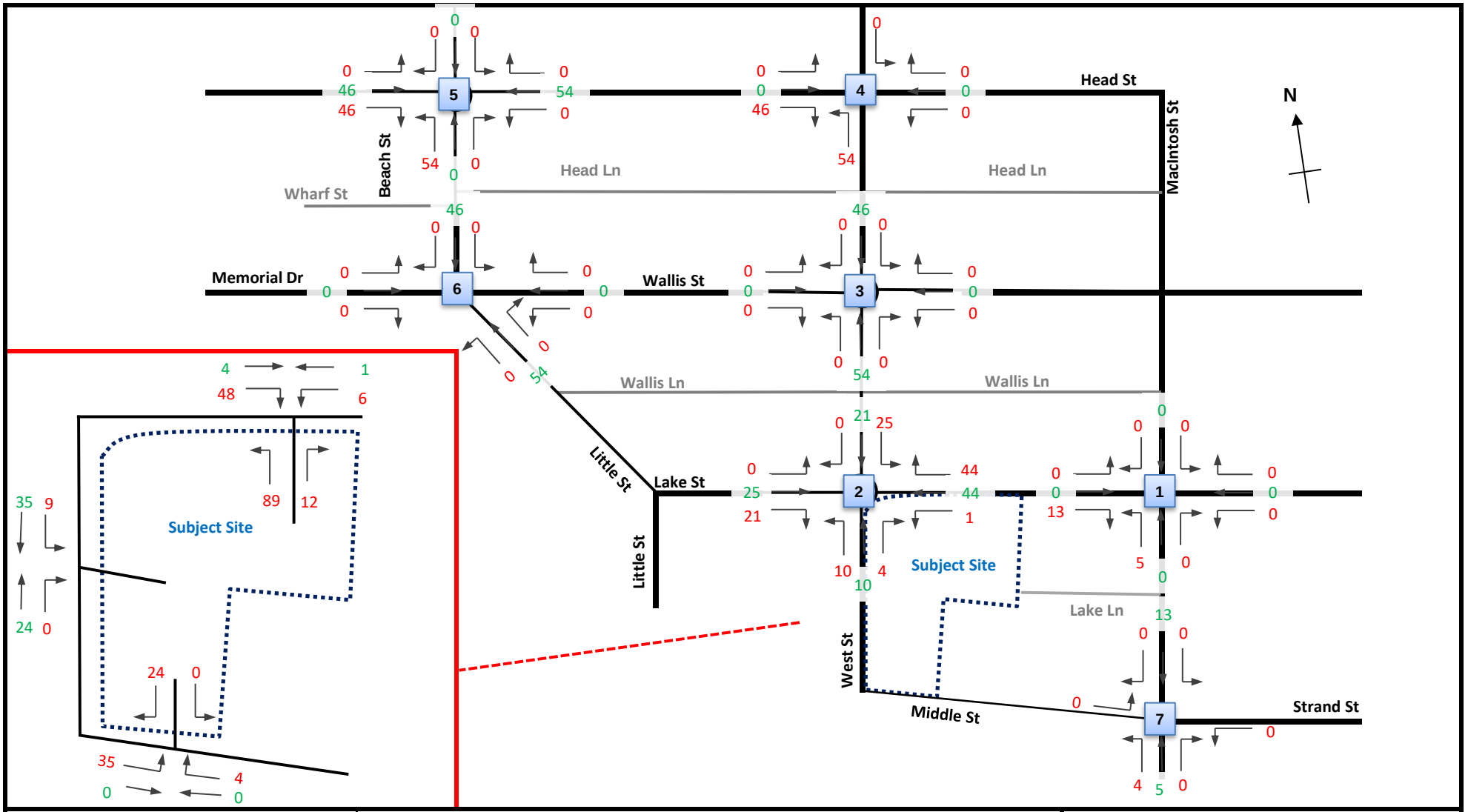
Forster Redevelopment	**Weekday AM Trip Generation (Other)**	
	Figure B13	Project No: 6169

MRCagney



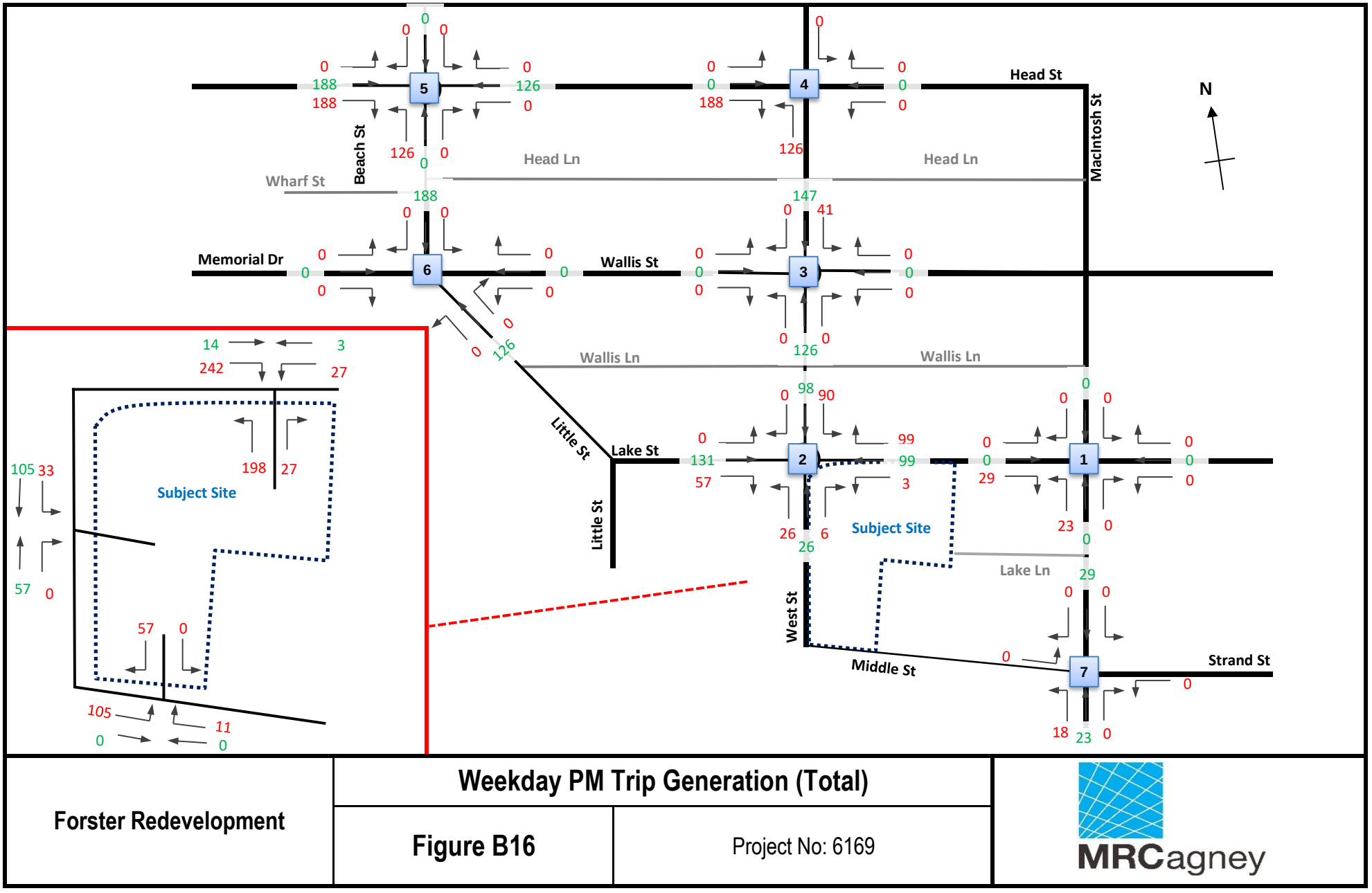
Forster Redevelopment	**Weekday PM Trip Generation (Other)**	
	Figure B14	Project No: 6169

MRCagney



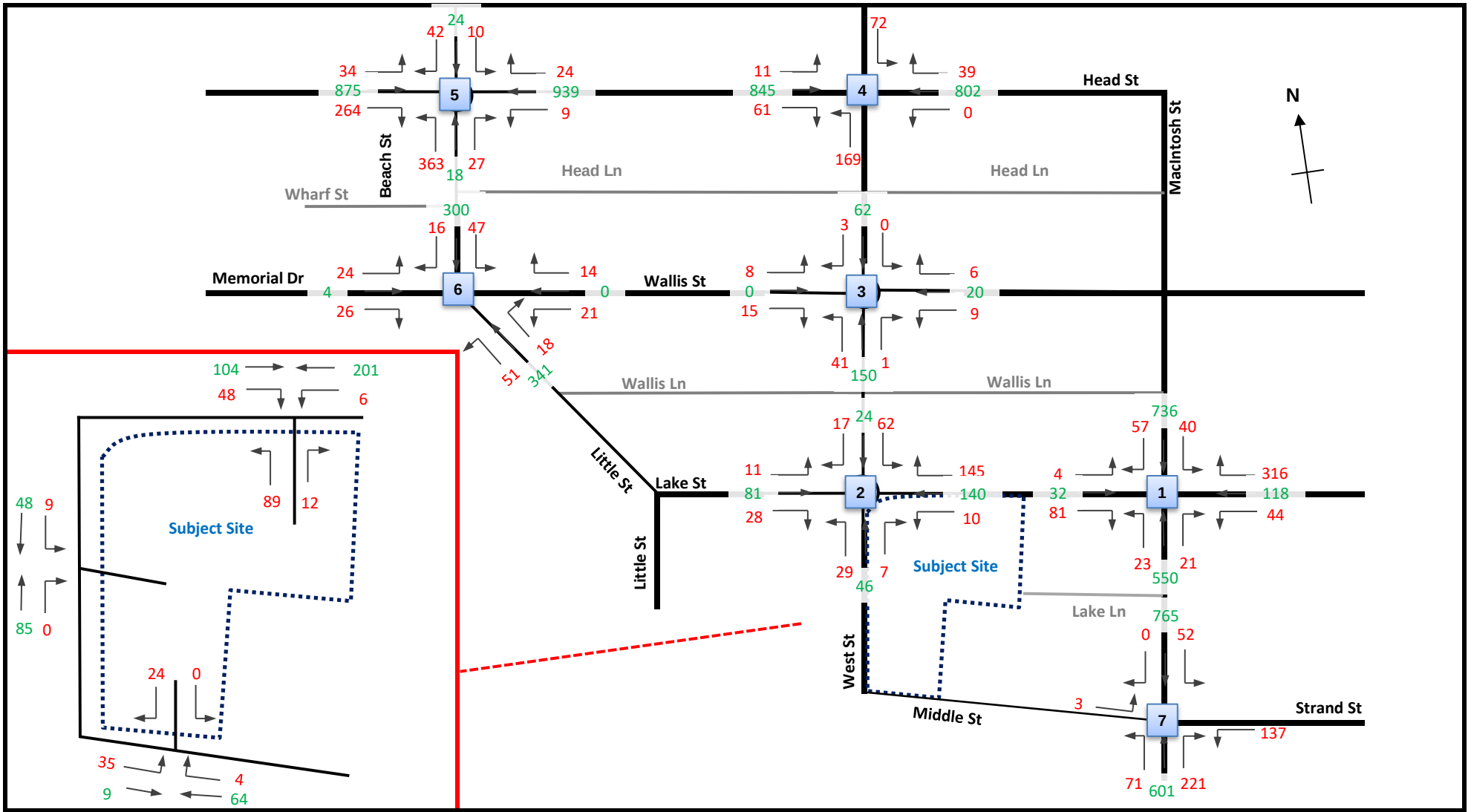
Forster Redevelopment	**Weekday AM Trip Generation (Total)**	
	Figure B15	Project No: 6169

MRCagney



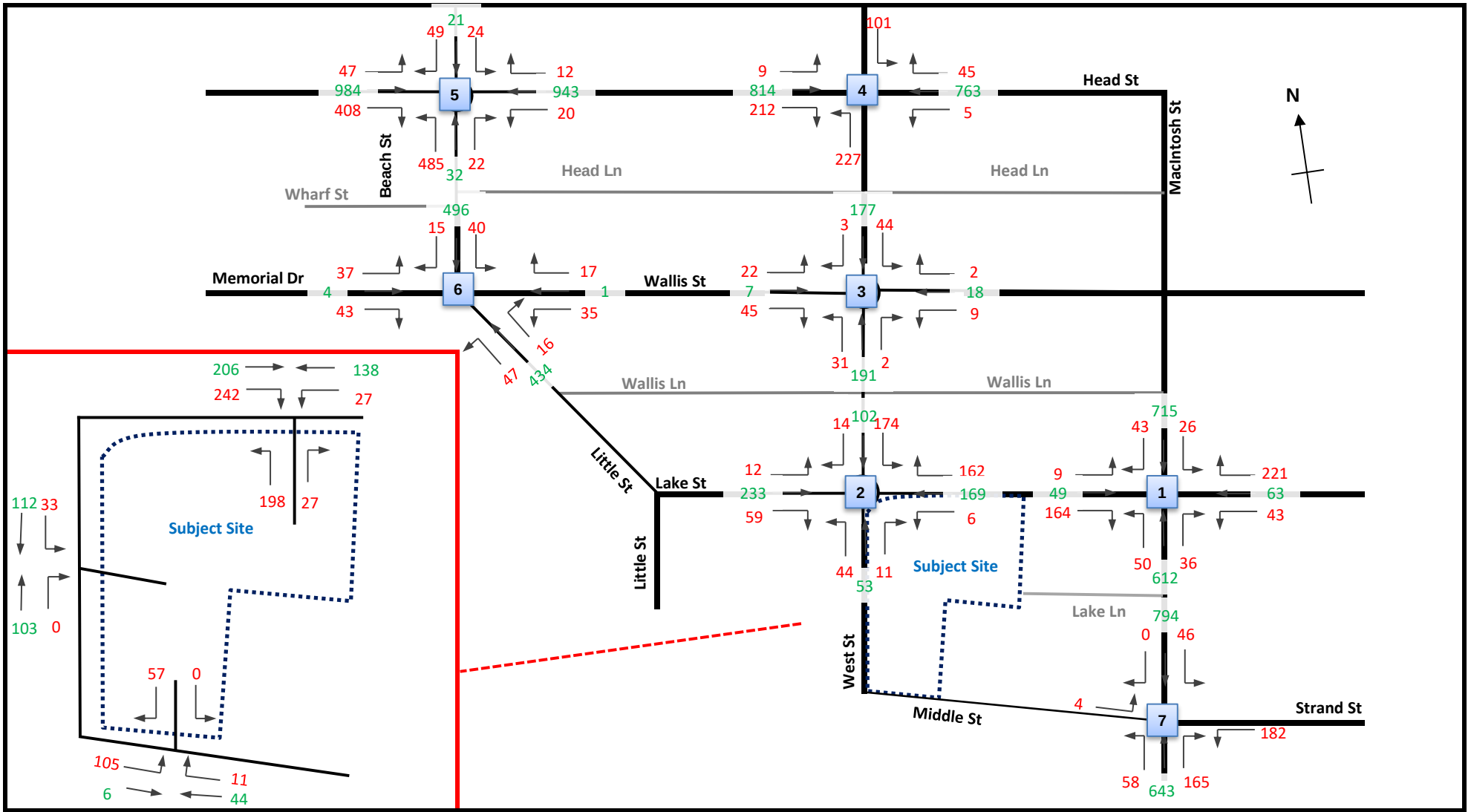
Forster Redevelopment	**Weekday PM Trip Generation (Total)**	
	Figure B16	Project No: 6169

MRCagney



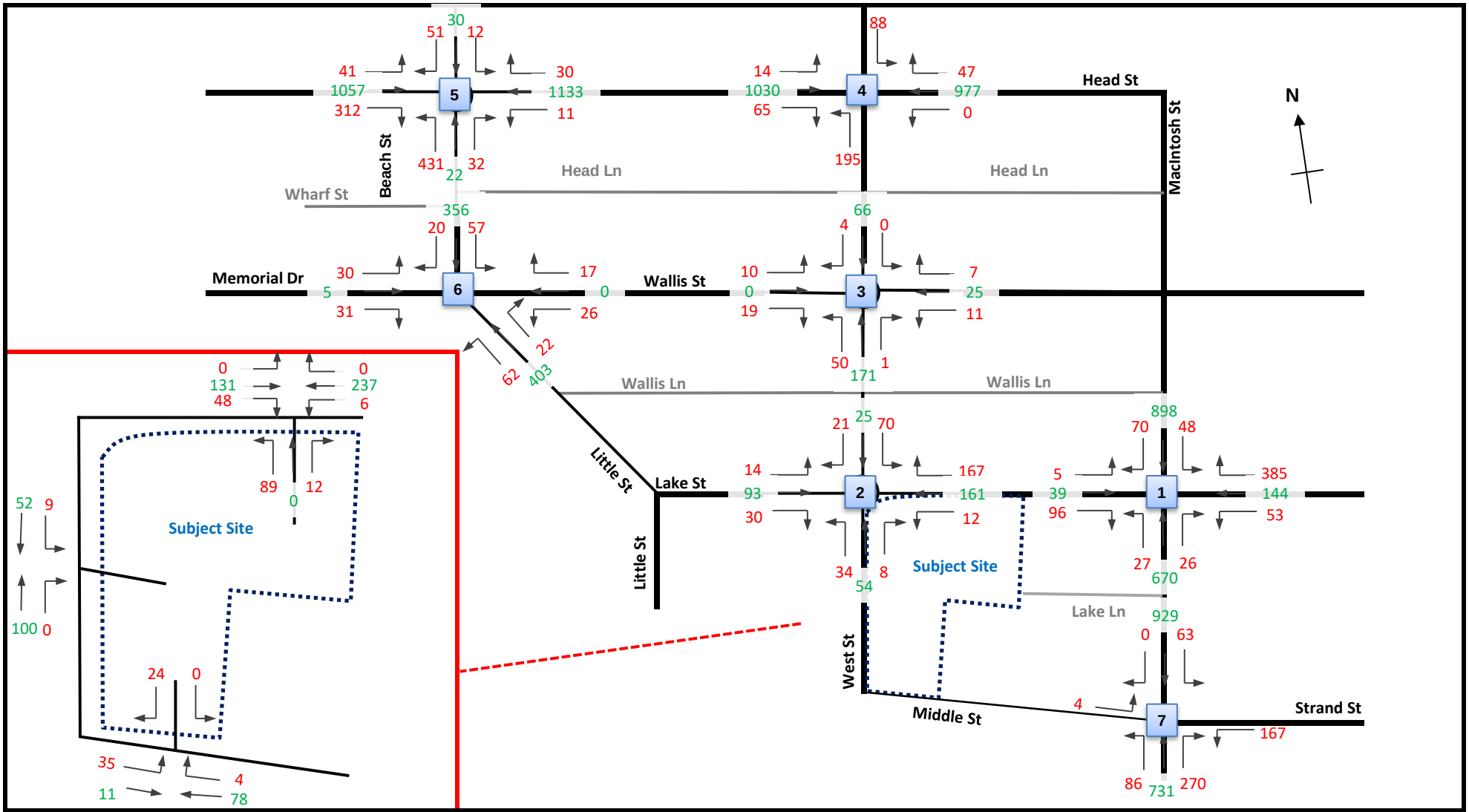
Forster Redevelopment	**2018 Weekday AM Design Traffic Volumes**	
	Figure B17	Project No: 6169

MRCagney



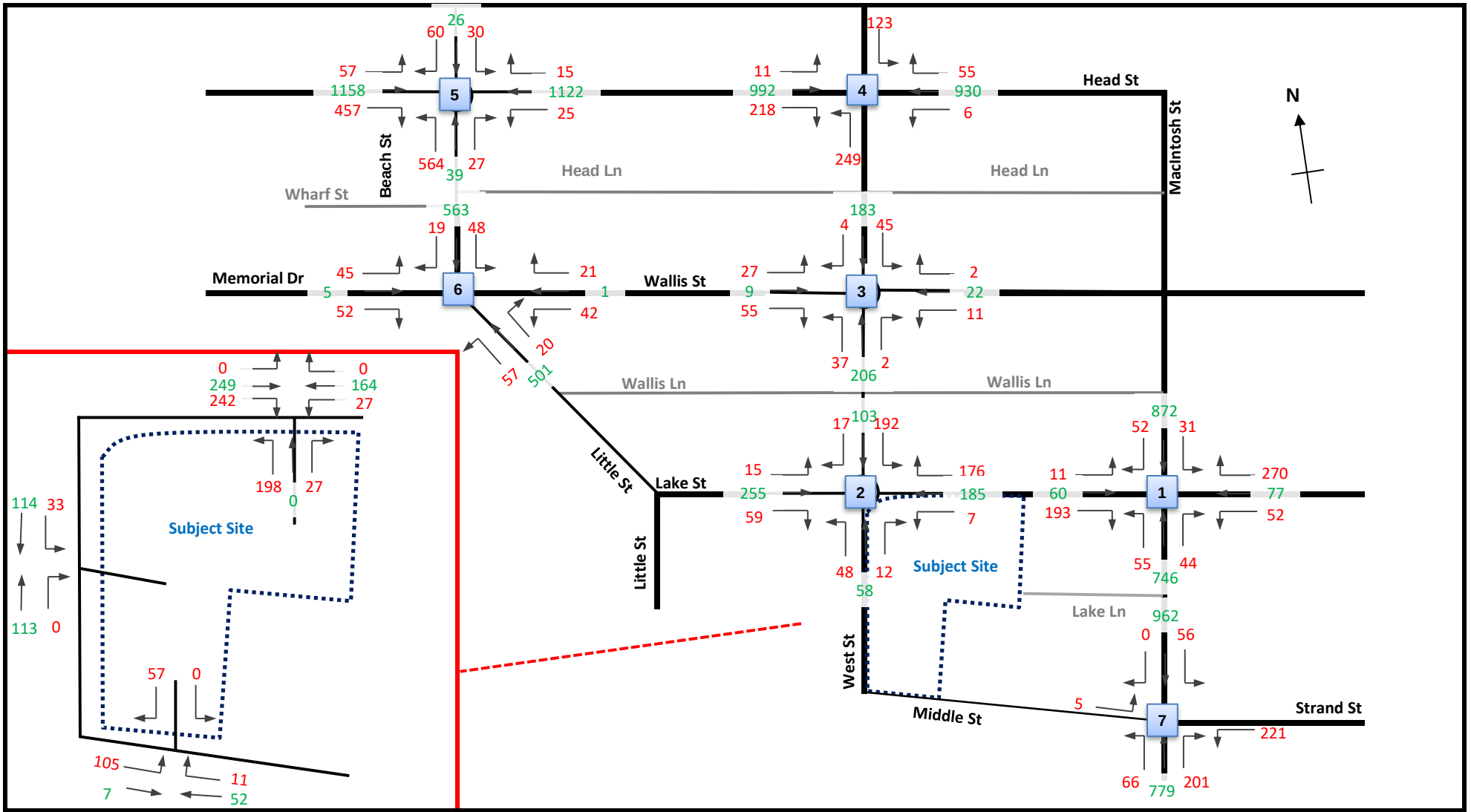
Forster Redevelopment	**2018 Weekday PM Design Traffic Volumes**	
	Figure B18	Project No: 6169

MRCagney



Forster Redevelopment	**2028 Weekday AM Design Traffic Volumes**	
	Figure B19	Project No: 6169

MRCagney



Forster Redevelopment	**2028 Weekday PM Design Traffic Volumes**	
	Figure B20	Project No: 6169

MRCagney

Appendix C

Traffic Survey Data

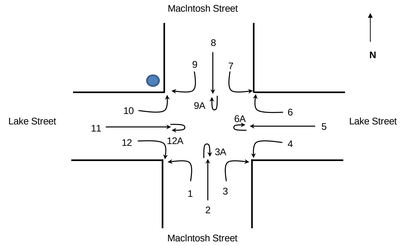
NSW | VIC | QLD | SA | WA | NT | ACT | TAS

Forster Traffic Counts

Thursday, 2 March 2017

JOB NUMBER	7755
JOB NAME	Forster Traffic Counts
CLIENT	MRCagney
SURVEY LOCATIONS	1. Lake Street & MacIntosh Street 2. Lake Street & West Street 3. West Street & Wallis Street 4. West Street & Head Street 5. Head Street & Beach Street 6. Beach Street, Little Street, Wallis Street & Memorial Drive
SURVEY TYPE	Intersection Count
SURVEY DATE	Thursday, 2 March 2017
SURVEY PERIOD	07:30 AM - 09:30 AM 02:30 PM - 04:30 PM
WEATHER	Fine

Client	**: MRCagney**
Job	**: ForsterTraffic Counts**
Day/Date	**: Thursday, 02 March 2017**
Survey Location	**: Lake Street & MacIntosh Street**
Weather	**: Fine**



AM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
7:30 - 7:45	2	0	**2**	90	5	**95**	1	0	**1**	0	0	**0**	2	0	**2**	11	0	**11**	32	2	**34**	0	0	**0**	5	0	**5**	70	12	**82**	1	1	**2**	0	0	**0**	0	0	**0**	5	0	**5**	9	0	**9**	0	0	**0**	**248**	**7:30 - 8:30**	**1433**
7:45 - 8:00	2	0	**2**	94	6	**100**	3	0	**3**	0	0	**0**	4	0	**4**	19	1	**20**	71	1	**72**	0	0	**0**	4	3	**7**	108	4	**112**	5	0	**5**	0	0	**0**	1	0	**1**	5	0	**5**	10	1	**11**	0	0	**0**	**342**	**7:45 - 8:45**	**1686**
8:00 - 8:15	3	0	**3**	120	5	**125**	4	0	**4**	0	0	**0**	3	0	**3**	20	0	**20**	74	1	**75**	0	0	**0**	4	0	**4**	99	11	**110**	6	1	**7**	0	0	**0**	2	0	**2**	4	0	**4**	9	0	**9**	0	0	**0**	**366**	**8:00 - 9:00**	**1876**
8:15 - 8:30	5	0	**5**	153	4	**157**	1	1	**2**	0	0	**0**	9	1	**10**	24	0	**24**	69	2	**71**	0	0	**0**	8	2	**10**	162	8	**170**	10	0	**10**	0	0	**0**	0	0	**0**	10	0	**10**	8	0	**8**	0	0	**0**	**477**	**8:15 - 9:15**	**1966**
8:30 - 8:45	5	0	**5**	124	5	**129**	9	0	**9**	0	0	**0**	8	0	**8**	27	0	**27**	84	1	**85**	0	0	**0**	12	2	**14**	178	8	**186**	19	0	**19**	0	0	**0**	2	0	**2**	5	0	**5**	12	0	**12**	0	0	**0**	**501**	**8:30 - 9:30**	**1882**
8:45 - 9:00	4	0	**4**	147	4	**151**	7	2	**9**	0	0	**0**	14	1	**15**	37	0	**37**	80	1	**81**	0	0	**0**	10	1	**11**	164	13	**177**	17	0	**17**	0	0	**0**	1	0	**1**	9	0	**9**	19	1	**20**	0	0	**0**	**532**	**AM Peak**	**1966**
9:00 - 9:15	4	0	**4**	98	4	**102**	1	0	**1**	0	0	**0**	10	0	**10**	27	1	**28**	73	0	**73**	0	0	**0**	4	0	**4**	180	9	**189**	10	0	**10**	0	0	**0**	1	0	**1**	7	0	**7**	27	0	**27**	0	0	**0**	**456**		
9:15 - 9:30	10	0	**10**	103	8	**111**	3	1	**4**	0	0	**0**	8	0	**8**	13	0	**13**	37	2	**39**	0	0	**0**	5	0	**5**	169	3	**172**	5	0	**5**	0	0	**0**	0	0	**0**	10	0	**10**	15	1	**16**	0	0	**0**	**393**		
Total	**35**	**0**	**35**	**929**	**41**	**970**	**29**	**4**	**33**	**0**	**0**	**0**	**58**	**2**	**60**	**178**	**2**	**180**	**520**	**10**	**530**	**0**	**0**	**0**	**52**	**8**	**60**	**1130**	**68**	**1198**	**73**	**2**	**75**	**0**	**0**	**0**	**7**	**0**	**7**	**55**	**0**	**55**	**109**	**3**	**112**	**0**	**0**	**0**	**3315**		
AM Peak	**18**	**0**	**18**	**522**	**17**	**539**	**18**	**3**	**21**	**0**	**0**	**0**	**41**	**2**	**43**	**115**	**1**	**116**	**306**	**4**	**310**	**0**	**0**	**0**	**34**	**5**	**39**	**684**	**38**	**722**	**56**	**0**	**56**	**0**	**0**	**0**	**4**	**0**	**4**	**31**	**0**	**31**	**66**	**1**	**67**	**0**	**0**	**0**	**1966**		

PM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
14:30 - 14:45	8	0	**8**	151	2	**153**	11	0	**11**	0	0	**0**	3	1	**4**	13	1	**14**	44	2	**46**	0	0	**0**	3	0	**3**	129	3	**132**	6	0	**6**	0	0	**0**	3	0	**3**	13	0	**13**	22	1	**23**	0	0	**0**	**416**	**14:30 - 15:30**	**1872**
14:45 - 15:00	4	1	**5**	123	11	**134**	12	1	**13**	0	0	**0**	6	0	**6**	16	2	**18**	45	2	**47**	0	0	**0**	4	0	**4**	164	8	**172**	7	0	**7**	0	0	**0**	1	0	**1**	11	0	**11**	39	1	**40**	0	0	**0**	**458**	**14:45 - 15:45**	**1939**
15:00 - 15:15	6	0	**6**	153	4	**157**	5	1	**6**	0	0	**0**	24	0	**24**	16	0	**16**	62	4	**66**	0	0	**0**	5	3	**8**	177	4	**181**	17	0	**17**	0	0	**0**	4	0	**4**	14	0	**14**	30	0	**30**	0	0	**0**	**529**	**15:00 - 16:00**	**1862**
15:15 - 15:30	6	0	**6**	151	4	**155**	9	1	**10**	0	0	**0**	8	0	**8**	19	0	**19**	47	1	**48**	0	0	**0**	4	6	**10**	162	3	**165**	8	1	**9**	0	0	**0**	2	0	**2**	11	0	**11**	26	0	**26**	0	0	**0**	**469**	**15:15 - 16:15**	**1747**
15:30 - 15:45	9	0	**9**	150	4	**154**	6	0	**6**	0	0	**0**	4	0	**4**	9	0	**9**	56	0	**56**	0	0	**0**	3	0	**3**	172	11	**183**	9	0	**9**	0	0	**0**	2	0	**2**	12	0	**12**	35	1	**36**	0	0	**0**	**483**	**15:30 - 16:30**	**1720**
15:45 - 16:00	8	0	**8**	127	8	**135**	4	1	**5**	0	0	**0**	0	0	**0**	11	0	**11**	37	0	**37**	0	0	**0**	3	0	**3**	140	3	**143**	2	0	**2**	0	0	**0**	1	0	**1**	9	0	**9**	26	1	**27**	0	0	**0**	**381**	**PM Peak**	**1939**
16:00 - 16:15	8	0	**8**	149	1	**150**	6	0	**6**	0	0	**0**	8	0	**8**	10	2	**12**	44	1	**45**	0	0	**0**	7	2	**9**	131	1	**132**	5	0	**5**	0	0	**0**	1	0	**1**	11	0	**11**	27	0	**27**	0	0	**0**	**414**		
16:15 - 16:30	10	0	**10**	124	4	**128**	3	0	**3**	0	0	**0**	14	0	**14**	19	0	**19**	40	2	**42**	0	0	**0**	7	0	**7**	164	2	**166**	6	0	**6**	0	0	**0**	2	0	**2**	11	0	**11**	34	0	**34**	0	0	**0**	**442**		
Total	**59**	**1**	**60**	**1128**	**38**	**1166**	**56**	**4**	**60**	**0**	**0**	**0**	**67**	**1**	**68**	**113**	**5**	**118**	**375**	**12**	**387**	**0**	**0**	**0**	**36**	**11**	**47**	**1239**	**35**	**1274**	**60**	**1**	**61**	**0**	**0**	**0**	**16**	**0**	**16**	**92**	**0**	**92**	**239**	**4**	**243**	**0**	**0**	**0**	**3592**		
PM Peak	**25**	**1**	**26**	**577**	**23**	**600**	**32**	**3**	**35**	**0**	**0**	**0**	**42**	**0**	**42**	**60**	**2**	**62**	**210**	**7**	**217**	**0**	**0**	**0**	**16**	**9**	**25**	**675**	**26**	**701**	**41**	**1**	**42**	**0**	**0**	**0**	**9**	**0**	**9**	**48**	**0**	**48**	**130**	**2**	**132**	**0**	**0**	**0**	**1939**		

HOURLY FLOW

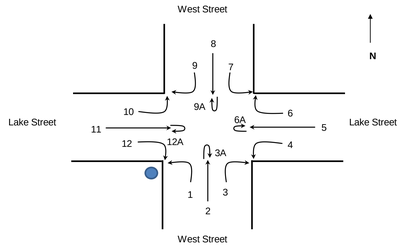
TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
7:30 - 8:30	12	0	**12**	457	20	**477**	9	1	**10**	0	0	**0**	18	1	**19**	74	1	**75**	246	6	**252**	0	0	**0**	21	5	**26**	439	35	**474**	22	2	**24**	0	0	**0**	3	0	**3**	24	0	**24**	36	1	**37**	0	0	**0**	1361	72	**1433**
7:45 - 8:45	15	0	**15**	491	20	**511**	17	1	**18**	0	0	**0**	24	1	**25**	90	1	**91**	298	5	**303**	0	0	**0**	28	7	**35**	547	31	**578**	40	1	**41**	0	0	**0**	5	0	**5**	24	0	**24**	39	1	**40**	0	0	**0**	1618	68	**1686**
8:00 - 9:00	17	0	**17**	544	18	**562**	21	3	**24**	0	0	**0**	34	2	**36**	108	0	**108**	307	5	**312**	0	0	**0**	34	5	**39**	603	40	**643**	52	1	**53**	0	0	**0**	5	0	**5**	28	0	**28**	48	1	**49**	0	0	**0**	1801	75	**1876**
8:15 - 9:15	18	0	**18**	522	17	**539**	18	3	**21**	0	0	**0**	41	2	**43**	115	1	**116**	306	4	**310**	0	0	**0**	34	5	**39**	684	38	**722**	56	0	**56**	0	0	**0**	4	0	**4**	31	0	**31**	66	1	**67**	0	0	**0**	1895	71	**1966**
8:30 - 9:30	23	0	**23**	472	21	**493**	20	3	**23**	0	0	**0**	40	1	**41**	104	1	**105**	274	4	**278**	0	0	**0**	31	3	**34**	691	33	**724**	51	0	**51**	0	0	**0**	4	0	**4**	31	0	**31**	73	2	**75**	0	0	**0**	1814	68	**1882**

HOURLY FLOW

TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
14:30 - 15:30	24	1	**25**	578	21	**599**	37	3	**40**	0	0	**0**	41	1	**42**	64	3	**67**	198	9	**207**	0	0	**0**	16	9	**25**	632	18	**650**	38	1	**39**	0	0	**0**	10	0	**10**	49	0	**49**	117	2	**119**	0	0	**0**	1804	68	**1872**
14:45 - 15:45	25	1	**26**	577	23	**600**	32	3	**35**	0	0	**0**	42	0	**42**	60	2	**62**	210	7	**217**	0	0	**0**	16	9	**25**	675	26	**701**	41	1	**42**	0	0	**0**	9	0	**9**	48	0	**48**	130	2	**132**	0	0	**0**	1865	74	**1939**
15:00 - 16:00	29	0	**29**	581	20	**601**	24	3	**27**	0	0	**0**	36	0	**36**	55	0	**55**	202	5	**207**	0	0	**0**	15	9	**24**	651	21	**672**	36	1	**37**	0	0	**0**	9	0	**9**	46	0	**46**	117	2	**119**	0	0	**0**	1801	61	**1862**
15:15 - 16:15	31	0	**31**	577	17	**594**	25	2	**27**	0	0	**0**	20	0	**20**	49	2	**51**	184	2	**186**	0	0	**0**	17	8	**25**	605	18	**623**	24	1	**25**	0	0	**0**	6	0	**6**	43	0	**43**	114	2	**116**	0	0	**0**	1695	52	**1747**
15:30 - 16:30	35	0	**35**	550	17	**567**	19	1	**20**	0	0	**0**	26	0	**26**	49	2	**51**	177	3	**180**	0	0	**0**	20	2	**22**	607	17	**624**	22	0	**22**	0	0	**0**	6	0	**6**	43	0	**43**	122	2	**124**	0	0	**0**	1676	44	**1720**

austraffic

Client : MRCagney
Job : ForsterTraffic Counts
Day/Date : Thursday, 02 March 2017
Survey Location : Lake Street & West Street
Weather : Fine



AM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
7:30 - 7:45	0	0	**0**	4	0	**4**	1	0	**1**	0	0	**0**	0	0	**0**	8	0	**8**	7	0	**7**	0	0	**0**	5	0	**5**	0	0	**0**	2	0	**2**	0	0	**0**	0	0	**0**	12	0	**12**	1	0	**1**	0	0	**0**	**40**	7:30 - 8:30	236
7:45 - 8:00	5	0	**5**	4	0	**4**	1	0	**1**	0	0	**0**	1	1	**2**	17	1	**18**	6	0	**6**	1	0	**1**	6	0	**6**	1	0	**1**	4	0	**4**	0	0	**0**	1	0	**1**	7	1	**8**	1	0	**1**	0	0	**0**	**58**	7:45 - 8:45	289
8:00 - 8:15	0	1	**1**	8	0	**8**	0	0	**0**	0	0	**0**	0	0	**0**	18	0	**18**	10	1	**11**	0	0	**0**	6	0	**6**	0	0	**0**	2	0	**2**	0	0	**0**	1	0	**1**	8	0	**8**	2	0	**2**	0	0	**0**	**57**	8:00 - 9:00	344
8:15 - 8:30	0	0	**0**	12	0	**12**	1	0	**1**	0	0	**0**	1	0	**1**	21	0	**21**	22	0	**22**	1	0	**1**	6	0	**6**	0	0	**0**	2	0	**2**	1	0	**1**	1	0	**1**	9	0	**9**	3	0	**3**	1	0	**1**	**81**	8:15 - 9:15	395
8:30 - 8:45	3	0	**3**	6	0	**6**	0	0	**0**	0	0	**0**	3	0	**3**	22	0	**22**	28	0	**28**	0	0	**0**	7	0	**7**	1	0	**1**	5	0	**5**	0	0	**0**	3	1	**4**	12	0	**12**	2	0	**2**	0	0	**0**	**93**	8:30 - 9:30	411
8:45 - 9:00	4	0	**4**	10	0	**10**	1	0	**1**	0	0	**0**	3	0	**3**	26	0	**26**	31	0	**31**	0	0	**0**	14	0	**14**	1	0	**1**	4	0	**4**	0	0	**0**	2	0	**2**	13	1	**14**	1	0	**1**	2	0	**2**	**113**	AM Peak	411
9:00 - 9:15	11	1	**12**	7	0	**7**	1	0	**1**	0	0	**0**	2	0	**2**	25	0	**25**	17	1	**18**	1	0	**1**	9	0	**9**	1	0	**1**	6	0	**6**	0	0	**0**	4	0	**4**	20	0	**20**	1	0	**1**	1	0	**1**	**108**		
9:15 - 9:30	4	0	**4**	6	0	**6**	2	0	**2**	0	0	**0**	1	0	**1**	16	1	**17**	17	0	**17**	0	0	**0**	17	0	**17**	1	0	**1**	7	0	**7**	0	0	**0**	6	0	**6**	13	3	**16**	3	0	**3**	0	0	**0**	**97**		
Total	**27**	**2**	**29**	**57**	**0**	**57**	**7**	**0**	**7**	**0**	**0**	**0**	**11**	**1**	**12**	**153**	**2**	**155**	**138**	**2**	**140**	**3**	**0**	**3**	**70**	**0**	**70**	**5**	**0**	**5**	**32**	**0**	**32**	**1**	**0**	**1**	**18**	**1**	**19**	**94**	**5**	**99**	**14**	**0**	**14**	**4**	**0**	**4**	**647**		
AM Peak	**22**	**1**	**23**	**29**	**0**	**29**	**4**	**0**	**4**	**0**	**0**	**0**	**9**	**0**	**9**	**89**	**1**	**90**	**93**	**1**	**94**	**1**	**0**	**1**	**47**	**0**	**47**	**4**	**0**	**4**	**22**	**0**	**22**	**0**	**0**	**0**	**15**	**1**	**16**	**58**	**4**	**62**	**7**	**0**	**7**	**3**	**0**	**3**	**411**		

PM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
14:30 - 14:45	2	0	**2**	2	0	**2**	1	0	**1**	0	0	**0**	0	0	**0**	17	1	**18**	11	0	**11**	0	0	**0**	26	0	**26**	0	0	**0**	4	0	**4**	0	0	**0**	6	0	**6**	17	1	**18**	0	0	**0**	1	0	**1**	**89**	14:30 - 15:30	398
14:45 - 15:00	4	0	**4**	11	1	**12**	1	0	**1**	0	0	**0**	0	1	**1**	15	1	**16**	12	2	**14**	0	1	**1**	21	1	**22**	2	0	**2**	6	0	**6**	2	0	**2**	3	0	**3**	28	0	**28**	1	0	**1**	2	0	**2**	**115**	14:45 - 15:45	408
15:00 - 15:15	6	1	**7**	7	0	**7**	2	0	**2**	0	0	**0**	2	0	**2**	14	0	**14**	21	0	**21**	0	0	**0**	21	0	**21**	0	0	**0**	1	0	**1**	0	0	**0**	4	0	**4**	23	0	**23**	0	0	**0**	4	1	**5**	**107**	15:00 - 16:00	376
15:15 - 15:30	4	0	**4**	3	0	**3**	2	0	**2**	0	0	**0**	0	0	**0**	19	1	**20**	15	0	**15**	0	0	**0**	14	0	**14**	0	0	**0**	3	0	**3**	0	0	**0**	2	0	**2**	23	0	**23**	1	0	**1**	0	0	**0**	**87**	15:15 - 16:15	357
15:30 - 15:45	3	0	**3**	4	0	**4**	0	0	**0**	0	0	**0**	0	0	**0**	19	0	**19**	12	0	**12**	0	0	**0**	25	0	**25**	2	0	**2**	4	0	**4**	1	0	**1**	3	0	**3**	25	1	**26**	0	0	**0**	0	0	**0**	**99**	15:30 - 16:30	365
15:45 - 16:00	4	0	**4**	7	0	**7**	1	0	**1**	0	0	**0**	0	0	**0**	17	0	**17**	5	0	**5**	0	1	**1**	17	0	**17**	1	0	**1**	8	0	**8**	0	0	**0**	3	0	**3**	19	0	**19**	0	0	**0**	0	0	**0**	**83**	PM Peak	408
16:00 - 16:15	1	0	**1**	7	0	**7**	2	0	**2**	0	0	**0**	0	0	**0**	17	0	**17**	7	3	**10**	0	0	**0**	17	0	**17**	1	0	**1**	5	0	**5**	0	0	**0**	4	0	**4**	21	0	**21**	2	0	**2**	1	0	**1**	**88**		
16:15 - 16:30	6	1	**7**	5	0	**5**	2	0	**2**	0	0	**0**	1	0	**1**	16	0	**16**	18	0	**18**	0	0	**0**	20	0	**20**	0	0	**0**	0	0	**0**	1	0	**1**	2	0	**2**	21	0	**21**	0	0	**0**	2	0	**2**	**95**		
Total	**30**	**2**	**32**	**46**	**1**	**47**	**11**	**0**	**11**	**0**	**0**	**0**	**3**	**1**	**4**	**134**	**3**	**137**	**101**	**5**	**106**	**0**	**2**	**2**	**161**	**1**	**162**	**6**	**0**	**6**	**31**	**0**	**31**	**4**	**0**	**4**	**27**	**0**	**27**	**177**	**2**	**179**	**4**	**0**	**4**	**10**	**1**	**11**	**763**		
PM Peak	**17**	**1**	**18**	**25**	**1**	**26**	**5**	**0**	**5**	**0**	**0**	**0**	**2**	**1**	**3**	**67**	**2**	**69**	**60**	**2**	**62**	**0**	**1**	**1**	**81**	**1**	**82**	**4**	**0**	**4**	**14**	**0**	**14**	**3**	**0**	**3**	**12**	**0**	**12**	**99**	**1**	**100**	**2**	**0**	**2**	**6**	**1**	**7**	**408**		

HOURLY FLOW

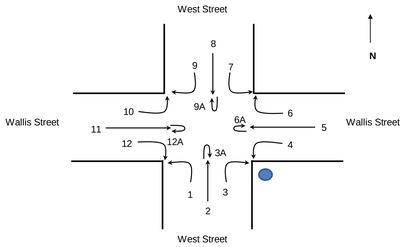
TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
7:30 - 8:30	5	1	**6**	28	0	**28**	3	0	**3**	0	0	**0**	2	1	**3**	64	1	**65**	45	1	**46**	2	0	**2**	23	0	**23**	1	0	**1**	10	0	**10**	1	0	**1**	3	0	**3**	36	1	**37**	7	0	**7**	1	0	**1**	231	5	**236**
7:45 - 8:45	8	1	**9**	30	0	**30**	2	0	**2**	0	0	**0**	5	1	**6**	78	1	**79**	66	1	**67**	2	0	**2**	25	0	**25**	2	0	**2**	13	0	**13**	1	0	**1**	6	1	**7**	36	1	**37**	8	0	**8**	1	0	**1**	283	6	**289**
8:00 - 9:00	7	1	**8**	36	0	**36**	2	0	**2**	0	0	**0**	7	0	**7**	87	0	**87**	91	1	**92**	1	0	**1**	33	0	**33**	2	0	**2**	13	0	**13**	1	0	**1**	7	1	**8**	42	1	**43**	8	0	**8**	3	0	**3**	340	4	**344**
8:15 - 9:15	18	1	**19**	35	0	**35**	3	0	**3**	0	0	**0**	9	0	**9**	94	0	**94**	98	1	**99**	2	0	**2**	36	0	**36**	3	0	**3**	17	0	**17**	1	0	**1**	10	1	**11**	54	1	**55**	7	0	**7**	4	0	**4**	391	4	**395**
8:30 - 9:30	22	1	**23**	29	0	**29**	4	0	**4**	0	0	**0**	9	0	**9**	89	1	**90**	93	1	**94**	1	0	**1**	47	0	**47**	4	0	**4**	22	0	**22**	0	0	**0**	15	1	**16**	58	4	**62**	7	0	**7**	3	0	**3**	403	8	**411**

HOURLY FLOW

TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
14:30 - 15:30	16	1	**17**	23	1	**24**	6	0	**6**	0	0	**0**	2	1	**3**	65	3	**68**	59	2	**61**	0	1	**1**	82	1	**83**	2	0	**2**	14	0	**14**	2	0	**2**	15	0	**15**	91	1	**92**	2	0	**2**	7	1	**8**	386	12	**398**
14:45 - 15:45	17	1	**18**	25	1	**26**	5	0	**5**	0	0	**0**	2	1	**3**	67	2	**69**	60	2	**62**	0	1	**1**	81	1	**82**	4	0	**4**	14	0	**14**	3	0	**3**	12	0	**12**	99	1	**100**	2	0	**2**	6	1	**7**	397	11	**408**
15:00 - 16:00	17	1	**18**	21	0	**21**	5	0	**5**	0	0	**0**	2	0	**2**	69	1	**70**	53	0	**53**	0	1	**1**	77	0	**77**	3	0	**3**	16	0	**16**	1	0	**1**	12	0	**12**	90	1	**91**	1	0	**1**	4	1	**5**	371	5	**376**
15:15 - 16:15	12	0	**12**	21	0	**21**	5	0	**5**	0	0	**0**	0	0	**0**	72	1	**73**	39	3	**42**	0	1	**1**	73	0	**73**	4	0	**4**	20	0	**20**	1	0	**1**	12	0	**12**	88	1	**89**	3	0	**3**	1	0	**1**	351	6	**357**
15:30 - 16:30	14	1	**15**	23	0	**23**	5	0	**5**	0	0	**0**	1	0	**1**	69	0	**69**	42	3	**45**	0	1	**1**	79	0	**79**	4	0	**4**	17	0	**17**	2	0	**2**	12	0	**12**	86	1	**87**	2	0	**2**	3	0	**3**	359	6	**365**

austraffic

Client : MRCagney
Job : ForsterTraffic Counts
Day/Date : Thursday, 02 March 2017
Survey Location : West Street & Wallis Street
Weather : Fine



AM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
7:30 - 7:45	1	0	**1**	13	0	**13**	0	0	**0**	0	0	**0**	1	0	**1**	0	1	**1**	1	0	**1**	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	**21**	7:30 - 8:30	**128**
7:45 - 8:00	2	0	**2**	10	0	**10**	0	0	**0**	0	0	**0**	2	0	**2**	2	0	**2**	0	0	**0**	0	0	**0**	1	0	**1**	3	0	**3**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	3	0	**3**	0	0	**0**	**24**	7:45 - 8:45	**163**
8:00 - 8:15	1	0	**1**	22	1	**23**	0	0	**0**	0	0	**0**	1	0	**1**	4	0	**4**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**	0	0	**0**	0	0	**0**	1	0	**1**	2	1	**3**	0	0	**0**	0	0	**0**	**37**	8:00 - 9:00	**202**
8:15 - 8:30	7	0	**7**	25	0	**25**	0	0	**0**	0	0	**0**	2	0	**2**	3	0	**3**	2	1	**3**	0	0	**0**	0	0	**0**	2	0	**2**	1	0	**1**	0	0	**0**	1	0	**1**	0	0	**0**	2	0	**2**	0	0	**0**	**46**	8:15 - 9:15	**215**
8:30 - 8:45	9	1	**10**	26	0	**26**	0	0	**0**	1	0	**1**	2	0	**2**	2	0	**2**	2	0	**2**	1	0	**1**	0	0	**0**	5	0	**5**	1	0	**1**	0	0	**0**	3	0	**3**	0	0	**0**	3	0	**3**	0	0	**0**	**56**	8:30 - 9:30	**232**
8:45 - 9:00	11	0	**11**	24	0	**24**	1	0	**1**	0	0	**0**	3	0	**3**	10	0	**10**	0	0	**0**	0	0	**0**	0	0	**0**	5	0	**5**	0	0	**0**	0	0	**0**	3	0	**3**	0	0	**0**	5	0	**5**	1	0	**1**	**63**	AM Peak	**232**
9:00 - 9:15	11	1	**12**	19	0	**19**	0	0	**0**	0	0	**0**	2	0	**2**	5	0	**5**	1	0	**1**	0	0	**0**	0	0	**0**	4	0	**4**	1	0	**1**	0	0	**0**	1	0	**1**	0	0	**0**	5	0	**5**	0	0	**0**	**50**		
9:15 - 9:30	8	0	**8**	15	0	**15**	0	0	**0**	0	0	**0**	2	0	**2**	6	0	**6**	2	0	**2**	0	0	**0**	2	0	**2**	4	0	**4**	1	0	**1**	1	0	**1**	7	0	**7**	2	0	**2**	11	0	**11**	1	1	**2**	**63**		
Total	**50**	**2**	**52**	**154**	**1**	**155**	**1**	**0**	**1**	**1**	**0**	**1**	**15**	**0**	**15**	**32**	**1**	**33**	**8**	**1**	**9**	**1**	**0**	**1**	**3**	**0**	**3**	**30**	**0**	**30**	**4**	**0**	**4**	**1**	**0**	**1**	**17**	**0**	**17**	**5**	**1**	**6**	**29**	**0**	**29**	**2**	**1**	**3**	**360**		
AM Peak	**39**	**2**	**41**	**84**	**0**	**84**	**1**	**0**	**1**	**1**	**0**	**1**	**9**	**0**	**9**	**23**	**0**	**23**	**5**	**0**	**5**	**1**	**0**	**1**	**2**	**0**	**2**	**18**	**0**	**18**	**3**	**0**	**3**	**1**	**0**	**1**	**14**	**0**	**14**	**2**	**0**	**2**	**24**	**0**	**24**	**2**	**1**	**3**	**232**		

PM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
14:30 - 14:45	5	0	**5**	13	0	**13**	0	0	**0**	0	0	**0**	1	0	**1**	4	0	**4**	1	0	**1**	0	0	**0**	0	0	**0**	8	0	**8**	1	0	**1**	0	0	**0**	4	0	**4**	1	0	**1**	12	0	**12**	4	0	**4**	**54**	14:30 - 15:30	**235**
14:45 - 15:00	9	1	**10**	17	2	**19**	1	0	**1**	0	0	**0**	5	0	**5**	3	0	**3**	0	0	**0**	0	0	**0**	0	0	**0**	8	1	**9**	0	0	**0**	0	0	**0**	4	0	**4**	0	0	**0**	12	0	**12**	2	0	**2**	**65**	14:45 - 15:45	**238**
15:00 - 15:15	9	0	**9**	21	0	**21**	0	0	**0**	0	0	**0**	2	0	**2**	3	0	**3**	0	0	**0**	0	0	**0**	0	0	**0**	7	0	**7**	0	0	**0**	0	0	**0**	7	0	**7**	5	0	**5**	13	0	**13**	0	0	**0**	**67**	15:00 - 16:00	**221**
15:15 - 15:30	7	0	**7**	12	0	**12**	0	0	**0**	1	0	**1**	0	0	**0**	10	0	**10**	2	0	**2**	0	0	**0**	1	0	**1**	4	0	**4**	1	0	**1**	0	0	**0**	3	0	**3**	0	0	**0**	8	0	**8**	0	0	**0**	**49**	15:15 - 16:15	**199**
15:30 - 15:45	4	0	**4**	12	0	**12**	1	0	**1**	0	0	**0**	2	0	**2**	2	0	**2**	0	0	**0**	0	0	**0**	2	0	**2**	9	0	**9**	2	0	**2**	1	0	**1**	8	0	**8**	2	0	**2**	11	0	**11**	1	0	**1**	**57**	15:30 - 16:30	**214**
15:45 - 16:00	4	0	**4**	10	0	**10**	0	0	**0**	1	0	**1**	3	0	**3**	7	0	**7**	0	0	**0**	0	0	**0**	1	0	**1**	7	0	**7**	0	0	**0**	0	0	**0**	7	0	**7**	0	0	**0**	8	0	**8**	0	0	**0**	**48**	PM Peak	**238**
16:00 - 16:15	1	0	**1**	17	3	**20**	0	0	**0**	0	0	**0**	3	0	**3**	3	0	**3**	1	0	**1**	0	0	**0**	2	0	**2**	6	0	**6**	1	0	**1**	0	0	**0**	1	0	**1**	1	0	**1**	5	0	**5**	1	0	**1**	**45**		
16:15 - 16:30	11	0	**11**	15	0	**15**	2	0	**2**	0	0	**0**	5	0	**5**	9	0	**9**	0	0	**0**	0	0	**0**	1	0	**1**	5	0	**5**	2	0	**2**	0	0	**0**	6	0	**6**	1	0	**1**	6	0	**6**	1	0	**1**	**64**		
Total	**50**	**1**	**51**	**117**	**5**	**122**	**4**	**0**	**4**	**2**	**0**	**2**	**21**	**0**	**21**	**41**	**0**	**41**	**4**	**0**	**4**	**0**	**0**	**0**	**7**	**0**	**7**	**54**	**1**	**55**	**7**	**0**	**7**	**1**	**0**	**1**	**40**	**0**	**40**	**10**	**0**	**10**	**75**	**0**	**75**	**9**	**0**	**9**	**449**		
PM Peak	**29**	**1**	**30**	**62**	**2**	**64**	**2**	**0**	**2**	**1**	**0**	**1**	**9**	**0**	**9**	**18**	**0**	**18**	**2**	**0**	**2**	**0**	**0**	**0**	**3**	**0**	**3**	**28**	**1**	**29**	**3**	**0**	**3**	**1**	**0**	**1**	**22**	**0**	**22**	**7**	**0**	**7**	**44**	**0**	**44**	**3**	**0**	**3**	**238**		

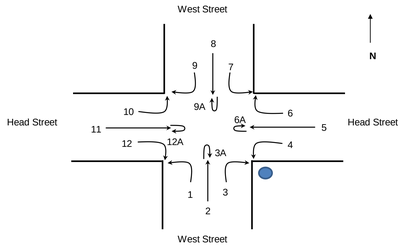
HOURLY FLOW

TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
7:30 - 8:30	11	0	**11**	70	1	**71**	0	0	**0**	0	0	**0**	6	0	**6**	9	1	**10**	3	1	**4**	0	0	**0**	1	0	**1**	12	0	**12**	1	0	**1**	0	0	**0**	3	0	**3**	3	1	**4**	5	0	**5**	0	0	**0**	124	4	**128**
7:45 - 8:45	19	1	**20**	83	1	**84**	0	0	**0**	1	0	**1**	7	0	**7**	11	0	**11**	4	1	**5**	1	0	**1**	1	0	**1**	14	0	**14**	2	0	**2**	0	0	**0**	5	0	**5**	3	1	**4**	8	0	**8**	0	0	**0**	159	4	**163**
8:00 - 9:00	28	1	**29**	97	1	**98**	1	0	**1**	1	0	**1**	8	0	**8**	19	0	**19**	4	1	**5**	1	0	**1**	0	0	**0**	16	0	**16**	2	0	**2**	0	0	**0**	8	0	**8**	2	1	**3**	10	0	**10**	1	0	**1**	198	4	**202**
8:15 - 9:15	38	2	**40**	94	0	**94**	1	0	**1**	1	0	**1**	9	0	**9**	20	0	**20**	5	1	**6**	1	0	**1**	0	0	**0**	16	0	**16**	3	0	**3**	0	0	**0**	8	0	**8**	0	0	**0**	15	0	**15**	1	0	**1**	212	3	**215**
8:30 - 9:30	39	2	**41**	84	0	**84**	1	0	**1**	1	0	**1**	9	0	**9**	23	0	**23**	5	0	**5**	1	0	**1**	2	0	**2**	18	0	**18**	3	0	**3**	1	0	**1**	14	0	**14**	2	0	**2**	24	0	**24**	2	1	**3**	229	3	**232**

HOURLY FLOW

TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
14:30 - 15:30	30	1	**31**	63	2	**65**	1	0	**1**	1	0	**1**	8	0	**8**	20	0	**20**	3	0	**3**	0	0	**0**	1	0	**1**	27	1	**28**	2	0	**2**	0	0	**0**	18	0	**18**	6	0	**6**	45	0	**45**	6	0	**6**	231	4	**235**
14:45 - 15:45	29	1	**30**	62	2	**64**	2	0	**2**	1	0	**1**	9	0	**9**	18	0	**18**	2	0	**2**	0	0	**0**	3	0	**3**	28	1	**29**	3	0	**3**	1	0	**1**	22	0	**22**	7	0	**7**	44	0	**44**	3	0	**3**	234	4	**238**
15:00 - 16:00	24	0	**24**	55	0	**55**	1	0	**1**	2	0	**2**	7	0	**7**	22	0	**22**	2	0	**2**	0	0	**0**	4	0	**4**	27	0	**27**	3	0	**3**	1	0	**1**	25	0	**25**	7	0	**7**	40	0	**40**	1	0	**1**	221	0	**221**
15:15 - 16:15	16	0	**16**	51	3	**54**	1	0	**1**	2	0	**2**	8	0	**8**	22	0	**22**	3	0	**3**	0	0	**0**	6	0	**6**	26	0	**26**	4	0	**4**	1	0	**1**	19	0	**19**	3	0	**3**	32	0	**32**	2	0	**2**	196	3	**199**
15:30 - 16:30	20	0	**20**	54	3	**57**	3	0	**3**	1	0	**1**	13	0	**13**	21	0	**21**	1	0	**1**	0	0	**0**	6	0	**6**	27	0	**27**	5	0	**5**	1	0	**1**	22	0	**22**	4	0	**4**	30	0	**30**	3	0	**3**	211	3	**214**

Client	**: MRCagney**
Job	**: ForsterTraffic Counts**
Day/Date	**: Thursday, 02 March 2017**
Survey Location	**: West Street & Head Street**
Weather	**: Fine**



AM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
7:30 - 7:45	18	0	**18**	1	0	**1**	0	0	**0**	0	0	**0**	0	0	**0**	116	5	**121**	4	0	**4**	0	0	**0**	12	1	**13**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	91	11	**102**	2	0	**2**	0	0	**0**	**261**	**7:30 - 8:30**	**1440**
7:45 - 8:00	14	0	**14**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	161	8	**169**	8	0	**8**	0	0	**0**	16	4	**20**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	127	8	**135**	4	0	**4**	0	0	**0**	**351**	**7:45 - 8:45**	**1694**
8:00 - 8:15	22	1	**23**	0	0	**0**	1	0	**1**	0	0	**0**	2	0	**2**	181	6	**187**	5	0	**5**	0	0	**0**	13	0	**13**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	132	14	**146**	1	0	**1**	0	0	**0**	**379**	**8:00 - 9:00**	**1828**
8:15 - 8:30	28	1	**29**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	204	6	**210**	12	0	**12**	0	0	**0**	17	0	**17**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**	167	9	**176**	1	0	**1**	0	0	**0**	**449**	**8:15 - 9:15**	**1862**
8:30 - 8:45	33	0	**33**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	194	6	**200**	11	0	**11**	0	0	**0**	17	0	**17**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	238	9	**247**	6	0	**6**	0	0	**0**	**515**	**8:30 - 9:30**	**1780**
8:45 - 9:00	28	0	**28**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	211	5	**216**	7	0	**7**	0	0	**0**	22	0	**22**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**	191	15	**206**	3	0	**3**	0	0	**0**	**485**	**AM Peak**	**1862**
9:00 - 9:15	23	0	**23**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	156	4	**160**	8	0	**8**	0	0	**0**	15	0	**15**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**	193	6	**199**	5	0	**5**	0	0	**0**	**413**		
9:15 - 9:30	24	0	**24**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	127	9	**136**	3	1	**4**	0	0	**0**	24	0	**24**	0	0	**0**	0	0	**0**	0	0	**0**	2	0	**2**	169	4	**173**	4	0	**4**	0	0	**0**	**367**		
Total	**190**	**2**	**192**	**1**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**2**	**1350**	**49**	**1399**	**58**	**1**	**59**	**0**	**0**	**0**	**136**	**5**	**141**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**15**	**1308**	**76**	**1384**	**26**	**0**	**26**	**0**	**0**	**0**	**3220**		
AM Peak	**112**	**1**	**113**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**765**	**21**	**786**	**38**	**0**	**38**	**0**	**0**	**0**	**71**	**0**	**71**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**11**	**789**	**39**	**828**	**15**	**0**	**15**	**0**	**0**	**0**	**1862**		

PM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
14:30 - 14:45	16	0	**16**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	165	4	**169**	19	0	**19**	0	0	**0**	26	0	**26**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**	167	5	**172**	6	0	**6**	0	0	**0**	**413**	**14:30 - 15:30**	**1775**
14:45 - 15:00	24	2	**26**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	155	13	**168**	10	0	**10**	0	0	**0**	30	0	**30**	0	0	**0**	0	0	**0**	0	0	**0**	2	0	**2**	181	7	**188**	3	1	**4**	0	0	**0**	**428**	**14:45 - 15:45**	**1827**
15:00 - 15:15	30	0	**30**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	191	8	**199**	10	0	**10**	1	0	**1**	22	0	**22**	0	0	**0**	0	0	**0**	0	0	**0**	5	0	**5**	181	6	**187**	1	0	**1**	0	0	**0**	**456**	**15:00 - 16:00**	**1782**
15:15 - 15:30	19	0	**19**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	182	5	**187**	12	0	**12**	0	0	**0**	29	0	**29**	0	0	**0**	0	0	**0**	0	0	**0**	2	0	**2**	216	4	**220**	8	0	**8**	0	0	**0**	**478**	**15:15 - 16:15**	**1746**
15:30 - 15:45	24	0	**24**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**	191	3	**194**	12	0	**12**	0	0	**0**	18	0	**18**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	193	10	**203**	11	0	**11**	0	0	**0**	**465**	**15:30 - 16:30**	**1689**
15:45 - 16:00	17	0	**17**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	146	9	**155**	10	0	**10**	0	0	**0**	11	0	**11**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	178	3	**181**	8	0	**8**	0	0	**0**	**383**	**PM Peak**	**1827**
16:00 - 16:15	23	3	**26**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	176	2	**178**	11	0	**11**	0	0	**0**	25	0	**25**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**	167	3	**170**	7	0	**7**	0	0	**0**	**420**		
16:15 - 16:30	24	0	**24**	0	0	**0**	0	0	**0**	0	0	**0**	1	0	**1**	141	6	**147**	12	0	**12**	0	0	**0**	24	0	**24**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**	202	2	**204**	6	0	**6**	0	0	**0**	**421**		
Total	**177**	**5**	**182**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**7**	**1347**	**50**	**1397**	**96**	**0**	**96**	**1**	**0**	**1**	**185**	**0**	**185**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**20**	**1485**	**40**	**1525**	**50**	**1**	**51**	**0**	**0**	**0**	**3464**		
PM Peak	**97**	**2**	**99**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**5**	**719**	**29**	**748**	**44**	**0**	**44**	**1**	**0**	**1**	**99**	**0**	**99**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**9**	**771**	**27**	**798**	**23**	**1**	**24**	**0**	**0**	**0**	**1827**		

HOURLY FLOW

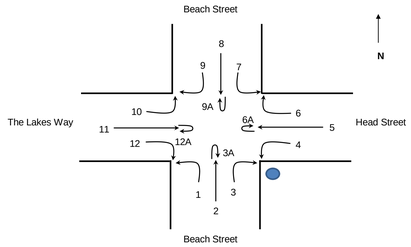
TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
7:30 - 8:30	82	2	**84**	1	0	**1**	1	0	**1**	0	0	**0**	2	0	**2**	662	25	**687**	29	0	**29**	0	0	**0**	58	5	**63**	0	0	**0**	0	0	**0**	0	0	**0**	6	0	**6**	517	42	**559**	8	0	**8**	0	0	**0**	1366	74	**1440**
7:45 - 8:45	97	2	**99**	0	0	**0**	1	0	**1**	0	0	**0**	2	0	**2**	740	26	**766**	36	0	**36**	0	0	**0**	63	4	**67**	0	0	**0**	0	0	**0**	0	0	**0**	7	0	**7**	664	40	**704**	12	0	**12**	0	0	**0**	1622	72	**1694**
8:00 - 9:00	111	2	**113**	0	0	**0**	1	0	**1**	0	0	**0**	2	0	**2**	790	23	**813**	35	0	**35**	0	0	**0**	69	0	**69**	0	0	**0**	0	0	**0**	0	0	**0**	9	0	**9**	728	47	**775**	11	0	**11**	0	0	**0**	1756	72	**1828**
8:15 - 9:15	112	1	**113**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	765	21	**786**	38	0	**38**	0	0	**0**	71	0	**71**	0	0	**0**	0	0	**0**	0	0	**0**	11	0	**11**	789	39	**828**	15	0	**15**	0	0	**0**	1801	61	**1862**
8:30 - 9:30	108	0	**108**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	688	24	**712**	29	1	**30**	0	0	**0**	78	0	**78**	0	0	**0**	0	0	**0**	0	0	**0**	9	0	**9**	791	34	**825**	18	0	**18**	0	0	**0**	1721	59	**1780**

HOURLY FLOW

TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
14:30 - 15:30	89	2	**91**	0	0	**0**	0	0	**0**	0	0	**0**	3	0	**3**	693	30	**723**	51	0	**51**	1	0	**1**	107	0	**107**	0	0	**0**	0	0	**0**	0	0	**0**	13	0	**13**	745	22	**767**	18	1	**19**	0	0	**0**	1720	55	**1775**
14:45 - 15:45	97	2	**99**	0	0	**0**	0	0	**0**	0	0	**0**	5	0	**5**	719	29	**748**	44	0	**44**	1	0	**1**	99	0	**99**	0	0	**0**	0	0	**0**	0	0	**0**	9	0	**9**	771	27	**798**	23	1	**24**	0	0	**0**	1768	59	**1827**
15:00 - 16:00	90	0	**90**	0	0	**0**	0	0	**0**	0	0	**0**	5	0	**5**	710	25	**735**	44	0	**44**	1	0	**1**	80	0	**80**	0	0	**0**	0	0	**0**	0	0	**0**	8	0	**8**	768	23	**791**	28	0	**28**	0	0	**0**	1734	48	**1782**
15:15 - 16:15	83	3	**86**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**	695	19	**714**	45	0	**45**	0	0	**0**	83	0	**83**	0	0	**0**	0	0	**0**	0	0	**0**	6	0	**6**	754	20	**774**	34	0	**34**	0	0	**0**	1704	42	**1746**
15:30 - 16:30	88	3	**91**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**	654	20	**674**	45	0	**45**	0	0	**0**	78	0	**78**	0	0	**0**	0	0	**0**	0	0	**0**	7	0	**7**	740	18	**758**	32	0	**32**	0	0	**0**	1648	41	**1689**

austraffic

Client	**: MRCagney**
Job	**: ForsterTraffic Counts**
Day/Date	**: Thursday, 02 March 2017**
Survey Location	**: Head Street & Beach Street**
Weather	**: Fine**



AM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
7:30 - 7:45	41	1	**42**	3	0	**3**	2	0	**2**	0	0	**0**	2	0	**2**	131	4	**135**	3	1	**4**	0	0	**0**	1	0	**1**	6	0	**6**	12	1	**13**	0	0	**0**	3	0	**3**	91	11	**102**	27	1	**28**	1	0	**1**	**342**	**7:30 - 8:30**	**1843**
7:45 - 8:00	47	4	**51**	4	0	**4**	4	0	**4**	0	0	**0**	0	0	**0**	171	8	**179**	3	0	**3**	0	0	**0**	5	0	**5**	3	1	**4**	13	1	**14**	0	0	**0**	5	0	**5**	124	9	**133**	44	1	**45**	0	0	**0**	**447**	**7:45 - 8:45**	**2138**
8:00 - 8:15	46	1	**47**	7	0	**7**	3	0	**3**	1	0	**1**	1	0	**1**	191	6	**197**	4	0	**4**	0	0	**0**	1	1	**2**	3	0	**3**	7	0	**7**	0	0	**0**	13	1	**14**	128	12	**140**	45	0	**45**	1	1	**2**	**473**	**8:00 - 9:00**	**2313**
8:15 - 8:30	69	1	**70**	3	0	**3**	9	0	**9**	1	0	**1**	3	0	**3**	227	7	**234**	4	1	**5**	1	0	**1**	0	0	**0**	6	0	**6**	12	0	**12**	0	0	**0**	5	0	**5**	166	10	**176**	49	3	**52**	4	0	**4**	**581**	**8:15 - 9:15**	**2404**
8:30 - 8:45	76	1	**77**	4	0	**4**	5	0	**5**	0	0	**0**	2	0	**2**	213	5	**218**	12	0	**12**	1	0	**1**	2	1	**3**	7	0	**7**	8	0	**8**	0	0	**0**	8	1	**9**	234	7	**241**	45	1	**46**	4	0	**4**	**637**	**8:30 - 9:30**	**2323**
8:45 - 9:00	81	2	**83**	8	0	**8**	6	0	**6**	0	0	**0**	1	0	**1**	224	5	**229**	2	0	**2**	0	0	**0**	3	0	**3**	6	0	**6**	9	1	**10**	0	0	**0**	9	0	**9**	186	15	**201**	60	1	**61**	3	0	**3**	**622**	**AM Peak**	**2404**
9:00 - 9:15	71	2	**73**	3	0	**3**	6	0	**6**	2	0	**2**	3	0	**3**	182	5	**187**	5	0	**5**	1	0	**1**	4	0	**4**	5	0	**5**	11	0	**11**	0	0	**0**	9	1	**10**	188	7	**195**	55	0	**55**	4	0	**4**	**564**		
9:15 - 9:30	65	1	**66**	4	0	**4**	4	0	**4**	2	0	**2**	3	1	**4**	146	7	**153**	7	0	**7**	1	0	**1**	9	0	**9**	6	0	**6**	19	1	**20**	0	0	**0**	2	0	**2**	160	3	**163**	54	1	**55**	4	0	**4**	**500**		
Total	**496**	**13**	**509**	**36**	**0**	**36**	**39**	**0**	**39**	**6**	**0**	**6**	**15**	**1**	**16**	**1485**	**47**	**1532**	**40**	**2**	**42**	**4**	**0**	**4**	**25**	**2**	**27**	**42**	**1**	**43**	**91**	**4**	**95**	**0**	**0**	**0**	**54**	**3**	**57**	**1277**	**74**	**1351**	**379**	**8**	**387**	**21**	**1**	**22**	**4166**		
AM Peak	**297**	**6**	**303**	**18**	**0**	**18**	**26**	**0**	**26**	**3**	**0**	**3**	**9**	**0**	**9**	**846**	**22**	**868**	**23**	**1**	**24**	**3**	**0**	**3**	**9**	**1**	**10**	**24**	**0**	**24**	**40**	**1**	**41**	**0**	**0**	**0**	**31**	**2**	**33**	**774**	**39**	**813**	**209**	**5**	**214**	**15**	**0**	**15**	**2404**		

PM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
14:30 - 14:45	68	3	**71**	9	0	**9**	10	0	**10**	3	0	**3**	4	0	**4**	177	4	**181**	4	0	**4**	1	0	**1**	8	0	**8**	3	0	**3**	17	0	**17**	0	0	**0**	10	0	**10**	156	5	**161**	39	0	**39**	2	0	**2**	**523**	**14:30 - 15:30**	**2327**
14:45 - 15:00	83	1	**84**	9	0	**9**	7	0	**7**	2	0	**2**	4	0	**4**	176	14	**190**	4	0	**4**	1	0	**1**	7	0	**7**	9	0	**9**	17	0	**17**	0	0	**0**	12	0	**12**	175	8	**183**	43	1	**44**	4	0	**4**	**577**	**14:45 - 15:45**	**2408**
15:00 - 15:15	80	2	**82**	6	0	**6**	5	0	**5**	6	0	**6**	4	0	**4**	209	9	**218**	4	0	**4**	3	0	**3**	5	0	**5**	4	0	**4**	11	0	**11**	1	0	**1**	15	0	**15**	172	6	**178**	55	0	**55**	5	0	**5**	**602**	**15:00 - 16:00**	**2360**
15:15 - 15:30	93	2	**95**	8	0	**8**	7	0	**7**	3	0	**3**	4	0	**4**	198	5	**203**	3	0	**3**	0	0	**0**	7	0	**7**	3	0	**3**	10	0	**10**	0	0	**0**	8	0	**8**	210	4	**214**	53	1	**54**	6	0	**6**	**625**	**15:15 - 16:15**	**2311**
15:30 - 15:45	90	1	**91**	8	0	**8**	3	0	**3**	0	0	**0**	8	0	**8**	187	3	**190**	1	0	**1**	1	0	**1**	5	0	**5**	5	0	**5**	10	0	**10**	0	0	**0**	11	0	**11**	195	10	**205**	63	0	**63**	3	0	**3**	**604**	**15:30 - 16:30**	**2255**
15:45 - 16:00	75	0	**75**	5	0	**5**	7	0	**7**	3	0	**3**	3	0	**3**	162	8	**170**	3	1	**4**	1	0	**1**	2	0	**2**	3	0	**3**	13	0	**13**	0	0	**0**	11	0	**11**	178	3	**181**	42	2	**44**	7	0	**7**	**529**	**PM Peak**	**2408**
16:00 - 16:15	83	2	**85**	8	0	**8**	7	0	**7**	0	0	**0**	5	0	**5**	182	5	**187**	4	0	**4**	1	0	**1**	2	0	**2**	6	0	**6**	15	1	**16**	0	0	**0**	13	0	**13**	165	3	**168**	46	3	**49**	2	0	**2**	**553**		
16:15 - 16:30	97	1	**98**	7	0	**7**	8	0	**8**	0	0	**0**	3	0	**3**	167	6	**173**	3	0	**3**	2	0	**2**	6	0	**6**	0	0	**0**	12	0	**12**	1	0	**1**	14	0	**14**	197	2	**199**	35	2	**37**	6	0	**6**	**569**		
Total	**669**	**12**	**681**	**60**	**0**	**60**	**54**	**0**	**54**	**17**	**0**	**17**	**35**	**0**	**35**	**1458**	**54**	**1512**	**26**	**1**	**27**	**10**	**0**	**10**	**42**	**0**	**42**	**33**	**0**	**33**	**105**	**1**	**106**	**2**	**0**	**2**	**94**	**0**	**94**	**1448**	**41**	**1489**	**376**	**9**	**385**	**35**	**0**	**35**	**4582**		
PM Peak	**346**	**6**	**352**	**31**	**0**	**31**	**22**	**0**	**22**	**11**	**0**	**11**	**20**	**0**	**20**	**770**	**31**	**801**	**12**	**0**	**12**	**5**	**0**	**5**	**24**	**0**	**24**	**21**	**0**	**21**	**48**	**0**	**48**	**1**	**0**	**1**	**46**	**0**	**46**	**752**	**28**	**780**	**214**	**2**	**216**	**18**	**0**	**18**	**2408**		

HOURLY FLOW

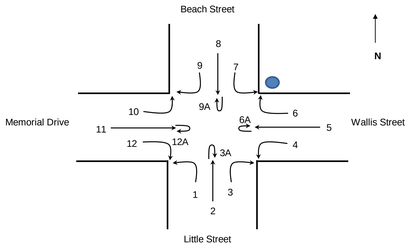
TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
7:30 - 8:30	203	7	**210**	17	0	**17**	18	0	**18**	2	0	**2**	6	0	**6**	720	25	**745**	14	2	**16**	1	0	**1**	7	1	**8**	18	1	**19**	44	2	**46**	0	0	**0**	26	1	**27**	509	42	**551**	165	5	**170**	6	1	**7**	1756	87	**1843**
7:45 - 8:45	238	7	**245**	18	0	**18**	21	0	**21**	2	0	**2**	6	0	**6**	802	26	**828**	23	1	**24**	2	0	**2**	8	2	**10**	19	1	**20**	40	1	**41**	0	0	**0**	31	2	**33**	652	38	**690**	183	5	**188**	9	1	**10**	2054	84	**2138**
8:00 - 9:00	272	5	**277**	22	0	**22**	23	0	**23**	2	0	**2**	7	0	**7**	855	23	**878**	22	1	**23**	2	0	**2**	6	2	**8**	22	0	**22**	36	1	**37**	0	0	**0**	35	2	**37**	714	44	**758**	199	5	**204**	12	1	**13**	2229	84	**2313**
8:15 - 9:15	297	6	**303**	18	0	**18**	26	0	**26**	3	0	**3**	9	0	**9**	846	22	**868**	23	1	**24**	3	0	**3**	9	1	**10**	24	0	**24**	40	1	**41**	0	0	**0**	31	2	**33**	774	39	**813**	209	5	**214**	15	0	**15**	2327	77	**2404**
8:30 - 9:30	293	6	**299**	19	0	**19**	21	0	**21**	4	0	**4**	9	1	**10**	765	22	**787**	26	0	**26**	3	0	**3**	18	1	**19**	24	0	**24**	47	2	**49**	0	0	**0**	28	2	**30**	768	32	**800**	214	3	**217**	15	0	**15**	2254	69	**2323**

HOURLY FLOW

TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
14:30 - 15:30	324	8	**332**	32	0	**32**	29	0	**29**	14	0	**14**	16	0	**16**	760	32	**792**	15	0	**15**	5	0	**5**	27	0	**27**	19	0	**19**	55	0	**55**	1	0	**1**	45	0	**45**	713	23	**736**	190	2	**192**	17	0	**17**	2262	65	**2327**
14:45 - 15:45	346	6	**352**	31	0	**31**	22	0	**22**	11	0	**11**	20	0	**20**	770	31	**801**	12	0	**12**	5	0	**5**	24	0	**24**	21	0	**21**	48	0	**48**	1	0	**1**	46	0	**46**	752	28	**780**	214	2	**216**	18	0	**18**	2341	67	**2408**
15:00 - 16:00	338	5	**343**	27	0	**27**	22	0	**22**	12	0	**12**	19	0	**19**	756	25	**781**	11	1	**12**	5	0	**5**	19	0	**19**	15	0	**15**	44	0	**44**	1	0	**1**	45	0	**45**	755	23	**778**	213	3	**216**	21	0	**21**	2303	57	**2360**
15:15 - 16:15	341	5	**346**	29	0	**29**	24	0	**24**	6	0	**6**	20	0	**20**	729	21	**750**	11	1	**12**	3	0	**3**	16	0	**16**	17	0	**17**	48	1	**49**	0	0	**0**	43	0	**43**	748	20	**768**	204	6	**210**	18	0	**18**	2257	54	**2311**
15:30 - 16:30	345	4	**349**	28	0	**28**	25	0	**25**	3	0	**3**	19	0	**19**	698	22	**720**	11	1	**12**	5	0	**5**	15	0	**15**	14	0	**14**	50	1	**51**	1	0	**1**	49	0	**49**	735	18	**753**	186	7	**193**	18	0	**18**	2202	53	**2255**

austraffic

Client : MRCagney
Job : ForsterTraffic Counts
Day/Date : Thursday, 02 March 2017
Survey Location : Beach Street & Little Street, Wallis Street & Memorial Drive
Weather : Fine



AM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
7:30 - 7:45	3	0	**3**	37	1	**38**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	2	0	**2**	0	0	**0**	1	0	**1**	42	1	**43**	1	0	**1**	1	0	**1**	3	0	**3**	0	0	**0**	5	1	**6**	0	0	**0**	**98**	7:30 - 8:30	**529**
7:45 - 8:00	12	1	**13**	46	2	**48**	3	0	**3**	1	0	**1**	0	0	**0**	0	0	**0**	1	1	**2**	0	0	**0**	1	0	**1**	55	1	**56**	2	1	**3**	0	0	**0**	3	1	**4**	0	0	**0**	7	1	**8**	0	0	**0**	**139**	7:45 - 8:45	**604**
8:00 - 8:15	6	0	**6**	40	1	**41**	1	0	**1**	0	0	**0**	1	0	**1**	0	0	**0**	4	0	**4**	0	0	**0**	2	0	**2**	53	0	**53**	2	0	**2**	1	0	**1**	4	0	**4**	0	1	**1**	7	0	**7**	0	0	**0**	**123**	8:00 - 9:00	**685**
8:15 - 8:30	13	0	**13**	67	1	**68**	4	0	**4**	0	0	**0**	1	0	**1**	0	0	**0**	3	0	**3**	0	0	**0**	6	0	**6**	51	4	**55**	5	0	**5**	1	0	**1**	5	0	**5**	1	0	**1**	6	1	**7**	0	0	**0**	**169**	8:15 - 9:15	**749**
8:30 - 8:45	8	0	**8**	67	0	**67**	5	0	**5**	0	0	**0**	6	0	**6**	0	0	**0**	2	0	**2**	0	0	**0**	11	0	**11**	57	1	**58**	4	0	**4**	0	0	**0**	8	0	**8**	0	0	**0**	4	0	**4**	0	0	**0**	**173**	8:30 - 9:30	**766**
8:45 - 9:00	17	0	**17**	80	2	**82**	8	0	**8**	0	0	**0**	8	0	**8**	0	0	**0**	3	0	**3**	0	0	**0**	18	0	**18**	66	0	**66**	1	0	**1**	0	0	**0**	8	0	**8**	1	0	**1**	8	0	**8**	0	0	**0**	**220**	AM Peak	**766**
9:00 - 9:15	12	0	**12**	62	2	**64**	1	0	**1**	0	0	**0**	4	2	**6**	0	0	**0**	6	0	**6**	0	0	**0**	11	0	**11**	69	1	**70**	6	0	**6**	0	0	**0**	3	0	**3**	2	0	**2**	6	0	**6**	0	0	**0**	**187**		
9:15 - 9:30	16	0	**16**	54	1	**55**	7	0	**7**	0	0	**0**	4	1	**5**	2	0	**2**	5	0	**5**	0	0	**0**	8	1	**9**	67	1	**68**	2	0	**2**	0	0	**0**	6	0	**6**	1	0	**1**	9	1	**10**	0	0	**0**	**186**		
Total	**87**	**1**	**88**	**453**	**10**	**463**	**29**	**0**	**29**	**1**	**0**	**1**	**24**	**3**	**27**	**2**	**0**	**2**	**26**	**1**	**27**	**0**	**0**	**0**	**58**	**1**	**59**	**460**	**9**	**469**	**23**	**1**	**24**	**3**	**0**	**3**	**40**	**1**	**41**	**5**	**1**	**6**	**52**	**4**	**56**	**0**	**0**	**0**	**1295**		
AM Peak	**53**	**0**	**53**	**263**	**5**	**268**	**21**	**0**	**21**	**0**	**0**	**0**	**22**	**3**	**25**	**2**	**0**	**2**	**16**	**0**	**16**	**0**	**0**	**0**	**48**	**1**	**49**	**259**	**3**	**262**	**13**	**0**	**13**	**0**	**0**	**0**	**25**	**0**	**25**	**4**	**0**	**4**	**27**	**1**	**28**	**0**	**0**	**0**	**766**		

PM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
14:30 - 14:45	9	0	**9**	62	3	**65**	4	0	**4**	0	0	**0**	12	0	**12**	1	0	**1**	3	0	**3**	0	0	**0**	14	0	**14**	51	0	**51**	1	0	**1**	1	0	**1**	7	0	**7**	0	0	**0**	6	0	**6**	0	0	**0**	**174**	14:30 - 15:30	**814**
14:45 - 15:00	7	0	**7**	69	1	**70**	6	0	**6**	0	0	**0**	10	1	**11**	0	0	**0**	4	0	**4**	1	0	**1**	9	0	**9**	71	1	**72**	4	0	**4**	0	0	**0**	8	0	**8**	0	0	**0**	8	0	**8**	0	0	**0**	**200**	14:45 - 15:45	**856**
15:00 - 15:15	13	1	**14**	68	1	**69**	2	0	**2**	0	0	**0**	10	0	**10**	0	0	**0**	3	0	**3**	1	0	**1**	17	0	**17**	67	0	**67**	2	0	**2**	0	0	**0**	8	1	**9**	0	0	**0**	7	0	**7**	0	0	**0**	**201**	15:00 - 16:00	**850**
15:15 - 15:30	18	0	**18**	80	2	**82**	6	0	**6**	0	0	**0**	7	0	**7**	1	0	**1**	8	0	**8**	0	0	**0**	5	0	**5**	81	1	**82**	6	0	**6**	0	0	**0**	10	0	**10**	0	0	**0**	14	0	**14**	0	0	**0**	**239**	15:15 - 16:15	**846**
15:30 - 15:45	7	0	**7**	81	0	**81**	2	0	**2**	0	0	**0**	6	0	**6**	0	0	**0**	2	0	**2**	0	0	**0**	8	0	**8**	81	0	**81**	3	0	**3**	0	0	**0**	8	1	**9**	4	0	**4**	13	0	**13**	0	0	**0**	**216**	15:30 - 16:30	**787**
15:45 - 16:00	16	0	**16**	58	1	**59**	4	0	**4**	0	0	**0**	9	0	**9**	1	0	**1**	5	0	**5**	0	0	**0**	12	0	**12**	58	2	**60**	3	0	**3**	0	0	**0**	10	0	**10**	1	0	**1**	14	0	**14**	0	0	**0**	**194**	PM Peak	**856**
16:00 - 16:15	11	0	**11**	76	1	**77**	2	0	**2**	0	0	**0**	14	0	**14**	1	0	**1**	0	0	**0**	0	0	**0**	5	0	**5**	61	2	**63**	1	0	**1**	1	0	**1**	11	0	**11**	1	0	**1**	10	0	**10**	0	0	**0**	**197**		
16:15 - 16:30	8	0	**8**	75	1	**76**	3	0	**3**	0	0	**0**	9	0	**9**	0	0	**0**	6	0	**6**	0	0	**0**	7	0	**7**	49	2	**51**	0	0	**0**	0	0	**0**	12	0	**12**	0	0	**0**	8	0	**8**	0	0	**0**	**180**		
Total	**89**	**1**	**90**	**569**	**10**	**579**	**29**	**0**	**29**	**0**	**0**	**0**	**77**	**1**	**78**	**4**	**0**	**4**	**31**	**0**	**31**	**2**	**0**	**2**	**77**	**0**	**77**	**519**	**8**	**527**	**20**	**0**	**20**	**2**	**0**	**2**	**74**	**2**	**76**	**6**	**0**	**6**	**80**	**0**	**80**	**0**	**0**	**0**	**1601**		
PM Peak	**45**	**1**	**46**	**298**	**4**	**302**	**16**	**0**	**16**	**0**	**0**	**0**	**33**	**1**	**34**	**1**	**0**	**1**	**17**	**0**	**17**	**2**	**0**	**2**	**39**	**0**	**39**	**300**	**2**	**302**	**15**	**0**	**15**	**0**	**0**	**0**	**34**	**2**	**36**	**4**	**0**	**4**	**42**	**0**	**42**	**0**	**0**	**0**	**856**		

HOURLY FLOW

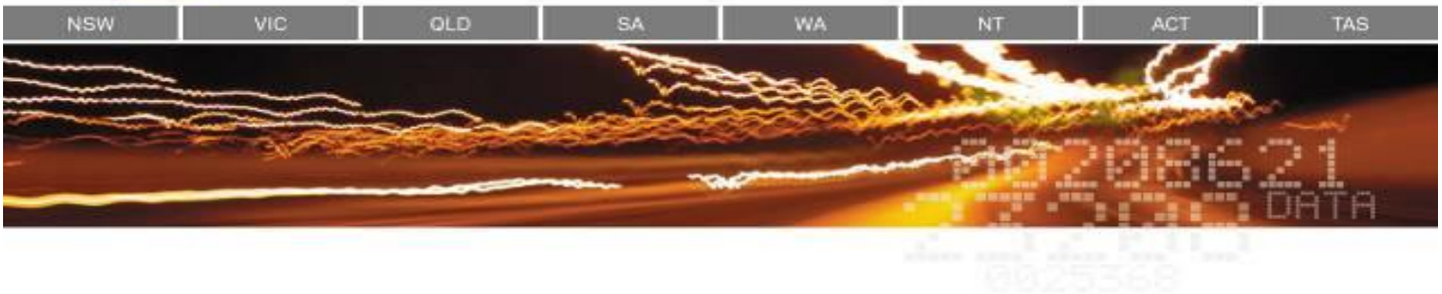
TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
7:30 - 8:30	34	1	**35**	190	5	**195**	8	0	**8**	1	0	**1**	2	0	**2**	0	0	**0**	10	1	**11**	0	0	**0**	10	0	**10**	201	6	**207**	10	1	**11**	3	0	**3**	15	1	**16**	1	1	**2**	25	3	**28**	0	0	**0**	510	19	**529**
7:45 - 8:45	39	1	**40**	220	4	**224**	13	0	**13**	1	0	**1**	8	0	**8**	0	0	**0**	10	1	**11**	0	0	**0**	20	0	**20**	216	6	**222**	13	1	**14**	2	0	**2**	20	1	**21**	1	1	**2**	24	2	**26**	0	0	**0**	587	17	**604**
8:00 - 9:00	44	0	**44**	254	4	**258**	18	0	**18**	0	0	**0**	16	0	**16**	0	0	**0**	12	0	**12**	0	0	**0**	37	0	**37**	227	5	**232**	12	0	**12**	2	0	**2**	25	0	**25**	2	1	**3**	25	1	**26**	0	0	**0**	674	11	**685**
8:15 - 9:15	50	0	**50**	276	5	**281**	18	0	**18**	0	0	**0**	19	2	**21**	0	0	**0**	14	0	**14**	0	0	**0**	46	0	**46**	243	6	**249**	16	0	**16**	1	0	**1**	24	0	**24**	4	0	**4**	24	1	**25**	0	0	**0**	735	14	**749**
8:30 - 9:30	53	0	**53**	263	5	**268**	21	0	**21**	0	0	**0**	22	3	**25**	2	0	**2**	16	0	**16**	0	0	**0**	48	1	**49**	259	3	**262**	13	0	**13**	0	0	**0**	25	0	**25**	4	0	**4**	27	1	**28**	0	0	**0**	753	13	**766**

HOURLY FLOW

TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
14:30 - 15:30	47	1	**48**	279	7	**286**	18	0	**18**	0	0	**0**	39	1	**40**	2	0	**2**	18	0	**18**	2	0	**2**	45	0	**45**	270	2	**272**	13	0	**13**	1	0	**1**	33	1	**34**	0	0	**0**	35	0	**35**	0	0	**0**	802	12	**814**
14:45 - 15:45	45	1	**46**	298	4	**302**	16	0	**16**	0	0	**0**	33	1	**34**	1	0	**1**	17	0	**17**	2	0	**2**	39	0	**39**	300	2	**302**	15	0	**15**	0	0	**0**	34	2	**36**	4	0	**4**	42	0	**42**	0	0	**0**	846	10	**856**
15:00 - 16:00	54	1	**55**	287	4	**291**	14	0	**14**	0	0	**0**	32	0	**32**	2	0	**2**	18	0	**18**	1	0	**1**	42	0	**42**	287	3	**290**	14	0	**14**	0	0	**0**	36	2	**38**	5	0	**5**	48	0	**48**	0	0	**0**	840	10	**850**
15:15 - 16:15	52	0	**52**	295	4	**299**	14	0	**14**	0	0	**0**	36	0	**36**	3	0	**3**	15	0	**15**	0	0	**0**	30	0	**30**	281	5	**286**	13	0	**13**	1	0	**1**	39	1	**40**	6	0	**6**	51	0	**51**	0	0	**0**	836	10	**846**
15:30 - 16:30	42	0	**42**	290	3	**293**	11	0	**11**	0	0	**0**	38	0	**38**	2	0	**2**	13	0	**13**	0	0	**0**	32	0	**32**	249	6	**255**	7	0	**7**	1	0	**1**	41	1	**42**	6	0	**6**	45	0	**45**	0	0	**0**	777	10	**787**

austraffic
TRAFFIC & TRANSPORT DATA SPECIALISTS

NSW | VIC | QLD | SA | WA | NT | ACT | TAS



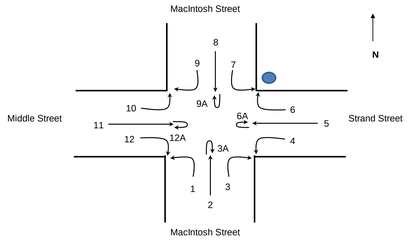
Forster Traffic Counts

Tuesday, 7 March 2017

JOB NUMBER	7755
JOB NAME	Forster Traffic Counts
CLIENT	MRCagney
SURVEY LOCATIONS	7. MacIntosh Street, Middle Street & Strand Street
SURVEY TYPE	Intersection Count
SURVEY DATE	Tuesday, 7 March 2017
SURVEY PERIOD	07:30 AM - 09:30 AM 02:30 PM - 04:30 PM
WEATHER	Fine

austraffic

Client : MRCagney
Job : ForsterTraffic Counts
Day/Date : Tuesday, 07 March 2017
Survey Location : MacIntosh Street, Middle Street & Strand Street
Weather : Fine



AM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
7:30 - 7:45	4	1	5	104	4	108	10	1	11	0	0	0	11	1	12	0	0	0	0	0	0	0	0	0	3	2	5	72	6	78	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	221	7:30 - 8:30	1269
7:45 - 8:00	6	0	6	123	0	123	24	1	25	0	0	0	21	1	22	1	0	1	0	0	0	0	0	0	4	1	5	121	2	123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	305	7:45 - 8:45	1504
8:00 - 8:15	7	1	8	137	6	143	21	1	22	0	0	0	21	1	22	0	0	0	0	0	0	0	0	0	4	0	4	127	7	134	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	335	8:00 - 9:00	1719
8:15 - 8:30	14	0	14	140	7	147	49	2	51	0	0	0	22	2	24	0	0	0	0	0	0	0	0	0	15	0	15	147	8	155	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	408	8:15 - 9:15	1793
8:30 - 8:45	18	0	18	145	4	149	67	2	69	0	0	0	37	1	38	0	0	0	0	0	0	0	0	0	10	1	11	163	7	170	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	456	8:30 - 9:30	1782
8:45 - 9:00	18	0	18	149	11	160	56	1	57	0	0	0	35	3	38	0	0	0	0	0	0	0	0	0	12	1	13	226	8	234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	520	AM Peak	1793
9:00 - 9:15	16	0	16	120	8	128	40	0	40	0	0	0	34	0	34	0	0	0	0	0	0	0	0	0	11	1	12	171	7	178	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	409		
9:15 - 9:30	16	0	16	158	13	171	24	0	24	0	0	0	19	0	19	0	0	0	0	0	0	0	0	0	16	0	16	142	7	149	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	397		
Total	99	2	101	1076	53	1129	291	8	299	0	0	0	200	9	209	1	0	1	0	0	0	0	0	0	75	6	81	1169	52	1221	0	0	0	0	0	0	8	0	8	0	0	0	2	0	2	0	0	0	3051		
AM Peak	66	0	66	554	30	584	212	5	217	0	0	0	128	6	134	0	0	0	0	0	0	0	0	0	48	3	51	707	30	737	0	0	0	0	0	0	3	0	3	0	0	0	1	0	1	0	0	0	1793		

PM

Time	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Total of all Movements	Peak Hour Volume Determination	
Period	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
14:30 - 14:45	11	0	11	138	6	144	43	0	43	0	0	0	27	1	28	0	0	0	0	0	0	0	0	0	11	0	11	166	4	170	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	408	14:30 - 15:30	1770
14:45 - 15:00	8	0	8	144	10	154	57	2	59	0	0	0	28	0	28	0	0	0	0	0	0	0	0	0	9	0	9	159	8	167	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	427	14:45 - 15:45	1788
15:00 - 15:15	10	0	10	140	3	143	28	0	28	0	0	0	73	2	75	0	0	0	0	0	0	0	0	0	14	0	14	218	5	223	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	495	15:00 - 16:00	1719
15:15 - 15:30	11	0	11	152	4	156	40	0	40	1	0	1	39	4	43	0	0	0	0	0	0	0	0	0	10	0	10	171	7	178	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	440	15:15 - 16:15	1646
15:30 - 15:45	10	0	10	149	6	155	35	0	35	0	0	0	32	0	32	0	0	0	0	0	0	0	0	0	10	2	12	175	7	182	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	426	15:30 - 16:30	1598
15:45 - 16:00	5	0	5	122	3	125	37	1	38	1	0	1	30	0	30	0	0	0	0	0	0	0	0	0	11	0	11	144	3	147	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	358	PM Peak	1788
16:00 - 16:15	6	0	6	173	1	174	38	1	39	0	0	0	32	0	32	0	0	0	0	0	0	0	0	0	18	0	18	149	3	152	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	422		
16:15 - 16:30	3	1	4	150	1	151	33	0	33	1	0	1	22	0	22	0	0	0	0	0	0	0	0	0	11	0	11	166	4	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	392		
Total	64	1	65	1168	34	1202	311	4	315	3	0	3	283	7	290	0	0	0	0	0	0	0	0	0	94	2	96	1348	41	1389	0	0	0	0	0	0	6	0	6	1	0	1	1	0	1	0	0	0	3368		
PM Peak	39	0	39	585	23	608	160	2	162	1	0	1	172	6	178	0	0	0	0	0	0	0	0	0	43	2	45	723	27	750	0	0	0	0	0	0	4	0	4	1	0	1	0	0	0	0	0	0	1788		

HOURLY FLOW

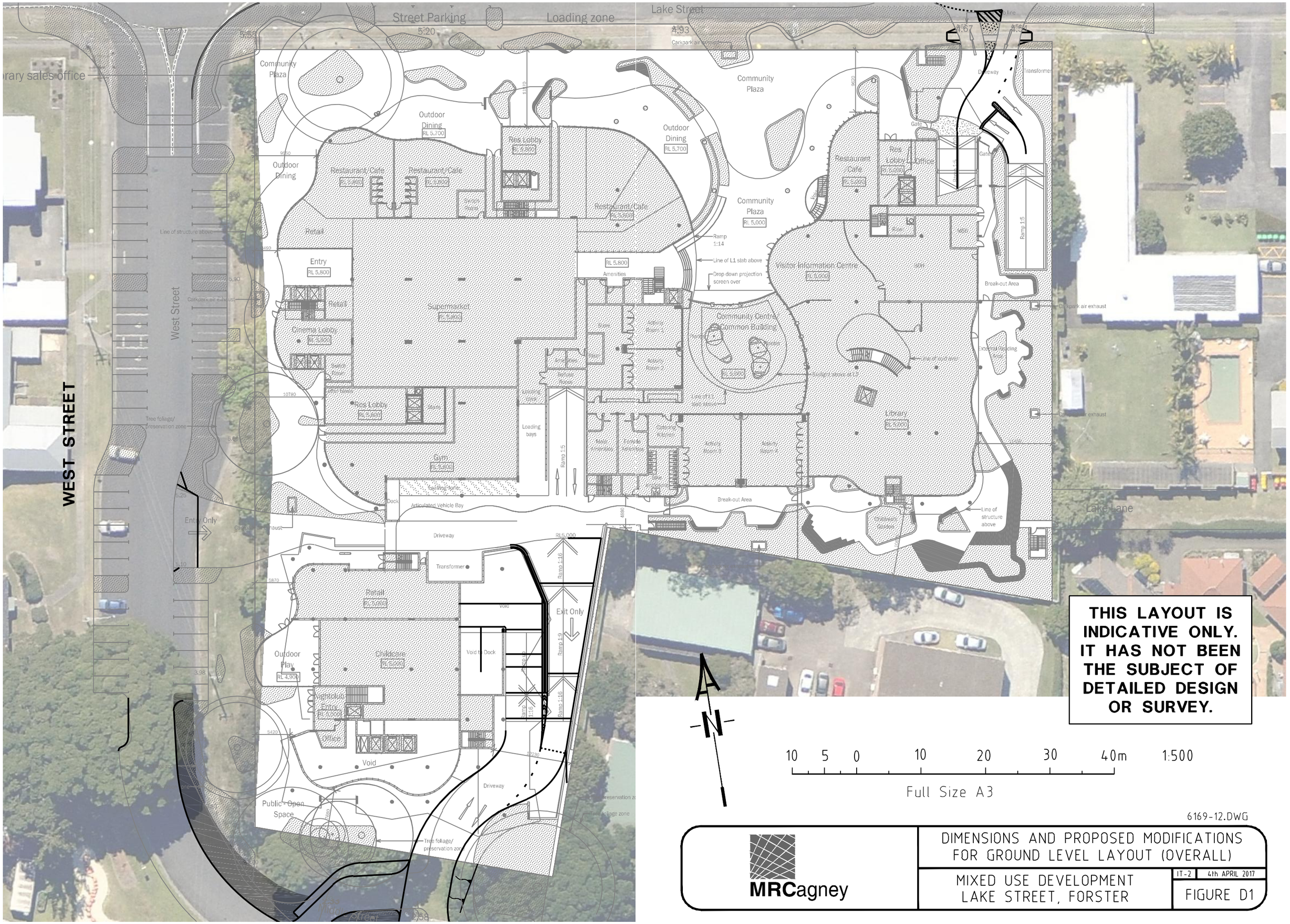
TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
7:30 - 8:30	31	2	33	504	17	521	104	5	109	0	0	0	75	5	80	1	0	1	0	0	0	0	0	0	26	3	29	467	23	490	0	0	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	1214	55	1269
7:45 - 8:45	45	1	46	545	17	562	161	6	167	0	0	0	101	5	106	1	0	1	0	0	0	0	0	0	33	2	35	558	24	582	0	0	0	0	0	0	4	0	4	0	0	0	1	0	1	0	0	0	1449	55	1504
8:00 - 9:00	57	1	58	571	28	599	193	6	199	0	0	0	115	7	122	0	0	0	0	0	0	0	0	0	41	2	43	663	30	693	0	0	0	0	0	0	4	0	4	0	0	0	1	0	1	0	0	0	1645	74	1719
8:15 - 9:15	66	0	66	554	30	584	212	5	217	0	0	0	128	6	134	0	0	0	0	0	0	0	0	0	48	3	51	707	30	737	0	0	0	0	0	0	3	0	3	0	0	0	1	0	1	0	0	0	1719	74	1793
8:30 - 9:30	68	0	68	572	36	608	187	3	190	0	0	0	125	4	129	0	0	0	0	0	0	0	0	0	49	3	52	702	29	731	0	0	0	0	0	0	2	0	2	0	0	0	2	0	2	0	0	0	1707	75	1782

HOURLY FLOW

TIME PERIOD	Movement 1			Movement 2			Movement 3			Movement 3A			Movement 4			Movement 5			Movement 6			Movement 6A			Movement 7			Movement 8			Movement 9			Movement 9A			Movement 10			Movement 11			Movement 12			Movement 12A			Grand Total		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
14:30 - 15:30	40	0	40	574	23	597	168	2	170	1	0	1	167	7	174	0	0	0	0	0	0	0	0	0	44	0	44	714	24	738	0	0	0	0	0	0	5	0	5	1	0	1	0	0	0	0	0	0	1714	56	1770
14:45 - 15:45	39	0	39	585	23	608	160	2	162	1	0	1	172	6	178	0	0	0	0	0	0	0	0	0	43	2	45	723	27	750	0	0	0	0	0	0	4	0	4	1	0	1	0	0	0	0	0	0	1728	60	1788
15:00 - 16:00	36	0	36	563	16	579	140	1	141	2	0	2	174	6	180	0	0	0	0	0	0	0	0	0	45	2	47	708	22	730	0	0	0	0	0	0	2	0	2	1	0	1	1	0	1	0	0	0	1672	47	1719
15:15 - 16:15	32	0	32	596	14	610	150	2	152	2	0	2	133	4	137	0	0	0	0	0	0	0	0	0	49	2	51	639	20	659	0	0	0	0	0	0	1	0	1	1	0	1	1	0	1	0	0	0	1604	42	1646
15:30 - 16:30	24	1	25	594	11	605	143	2	145	2	0	2	116	0	116	0	0	0	0	0	0	0	0	0	50	2	52	634	17	651	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	1565	33	1598

Appendix D

MRCagney Figures



WEST STREET

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

N

10 5 0 10 20 30 40m 1:500

Full Size A3

6169-12.DWG

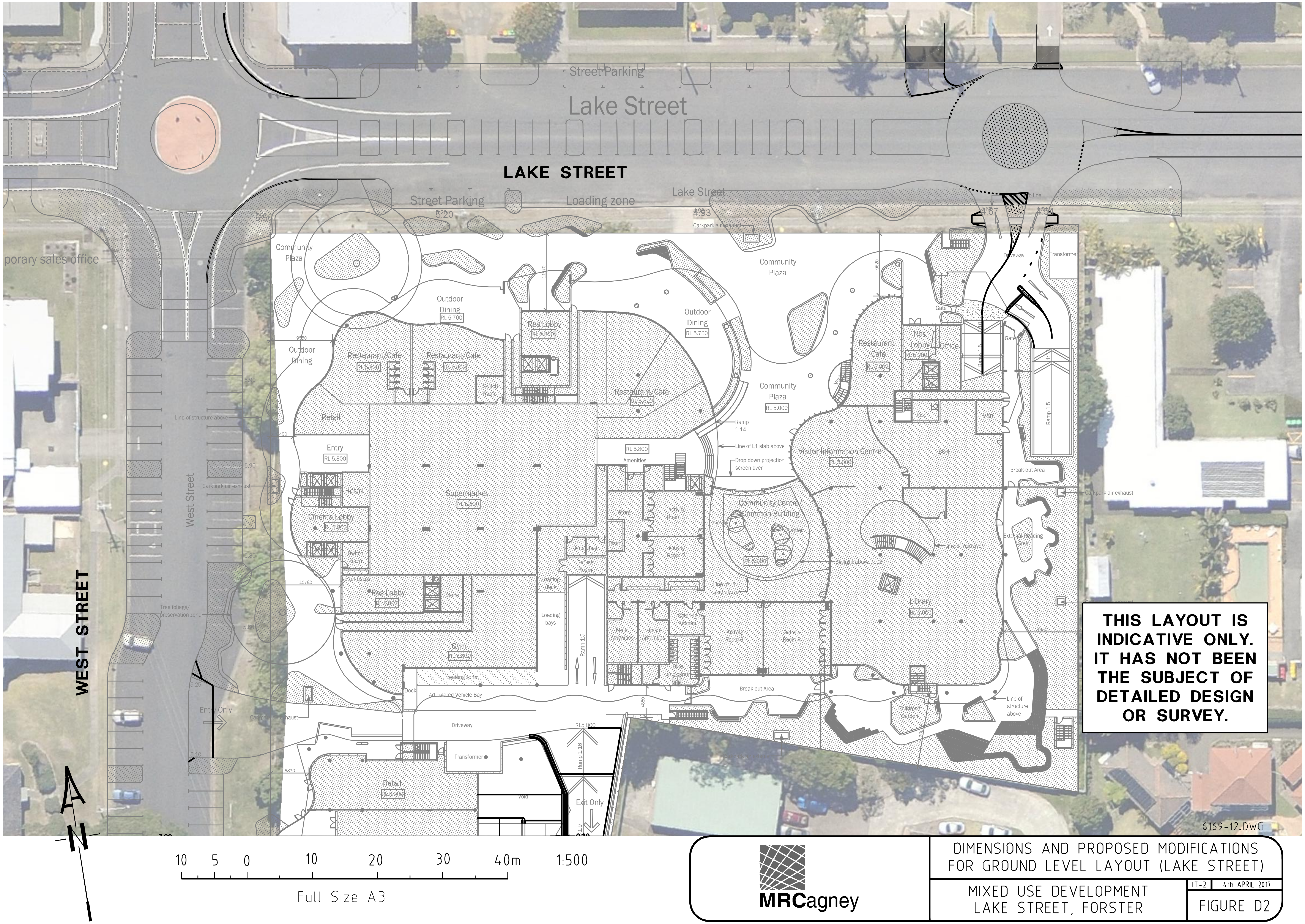
MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS FOR GROUND LEVEL LAYOUT (OVERALL)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D1



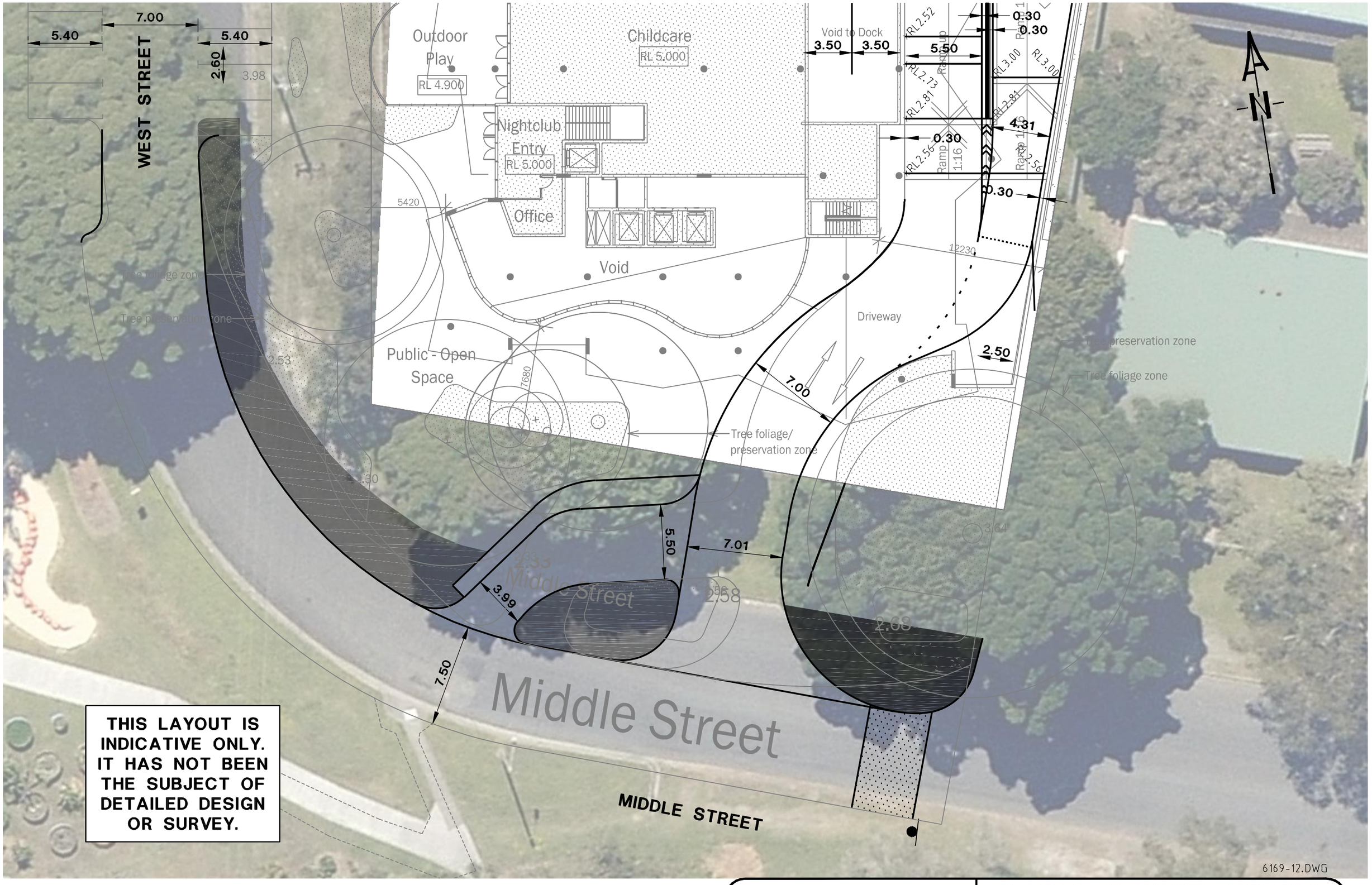
MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS FOR GROUND LEVEL LAYOUT (LAKE STREET)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D2



5 0 5 10 15 20m 1:250

Full Size A3

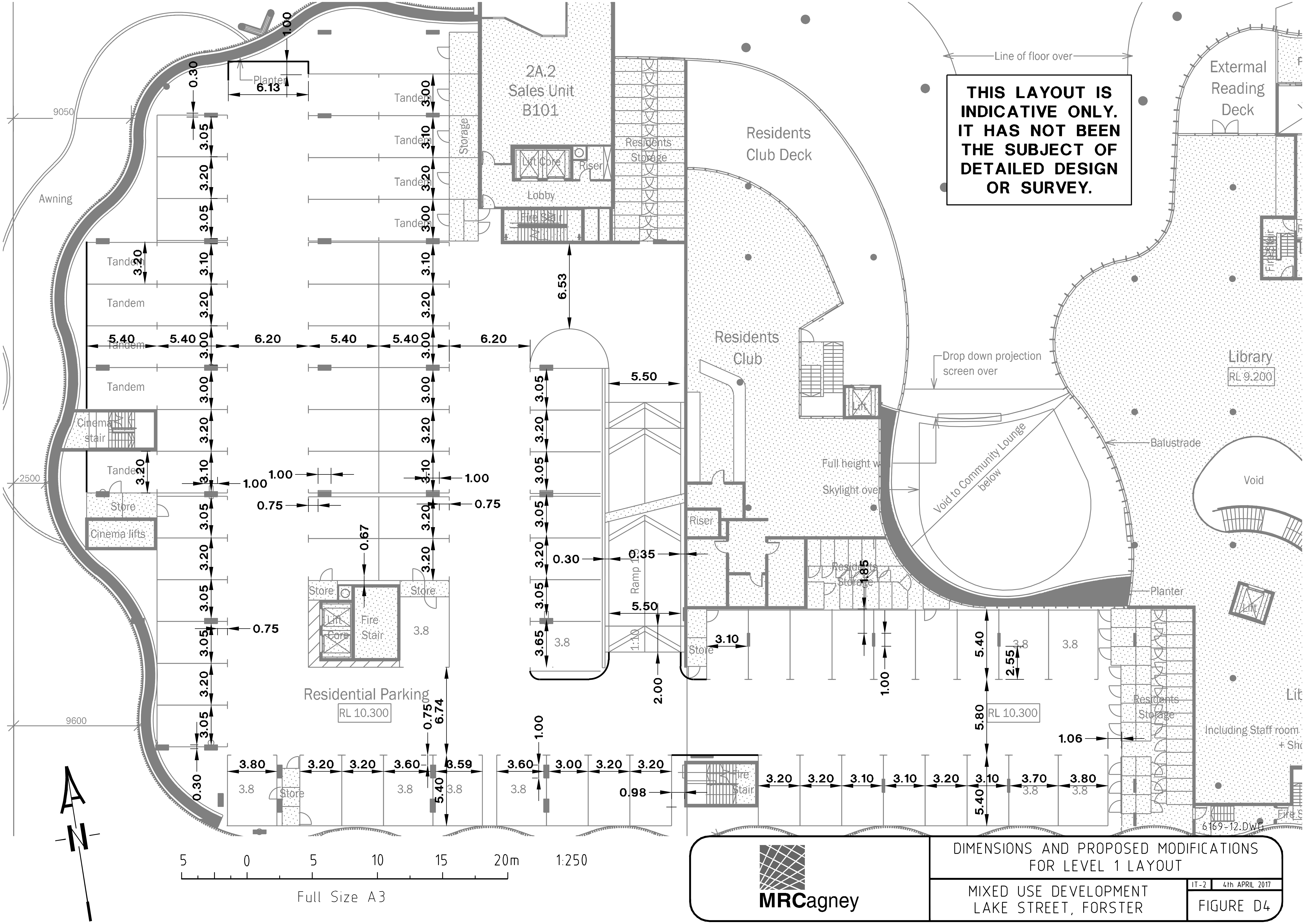
MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS FOR GROUND LEVEL LAYOUT (MIDDLE STREET)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D3



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.
Line of floor over
External Reading Deck
Residents Club Deck
Residents Club
2A.2 Sales Unit B101
Lift Core
Riser
Lobby
Fire Stair
Residents Storage
Storage
Planter
Tandem
Awning
Cinema stair
Store
Cinema lifts
Drop down projection screen over
Library
RL 9.200
Lift
Balustrade
Void to Community Lounge below
Full height w
Skylight over
Void
Planter
Ramp 1:8
Residential Parking
RL 10.300
Residents Storage
Including Staff room + Sho
Fire Stair
6169-12.DWG
5 0 5 10 15 20m 1:250
Full Size A3

MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS FOR LEVEL 1 LAYOUT

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 4th APRIL 2017

FIGURE D4

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

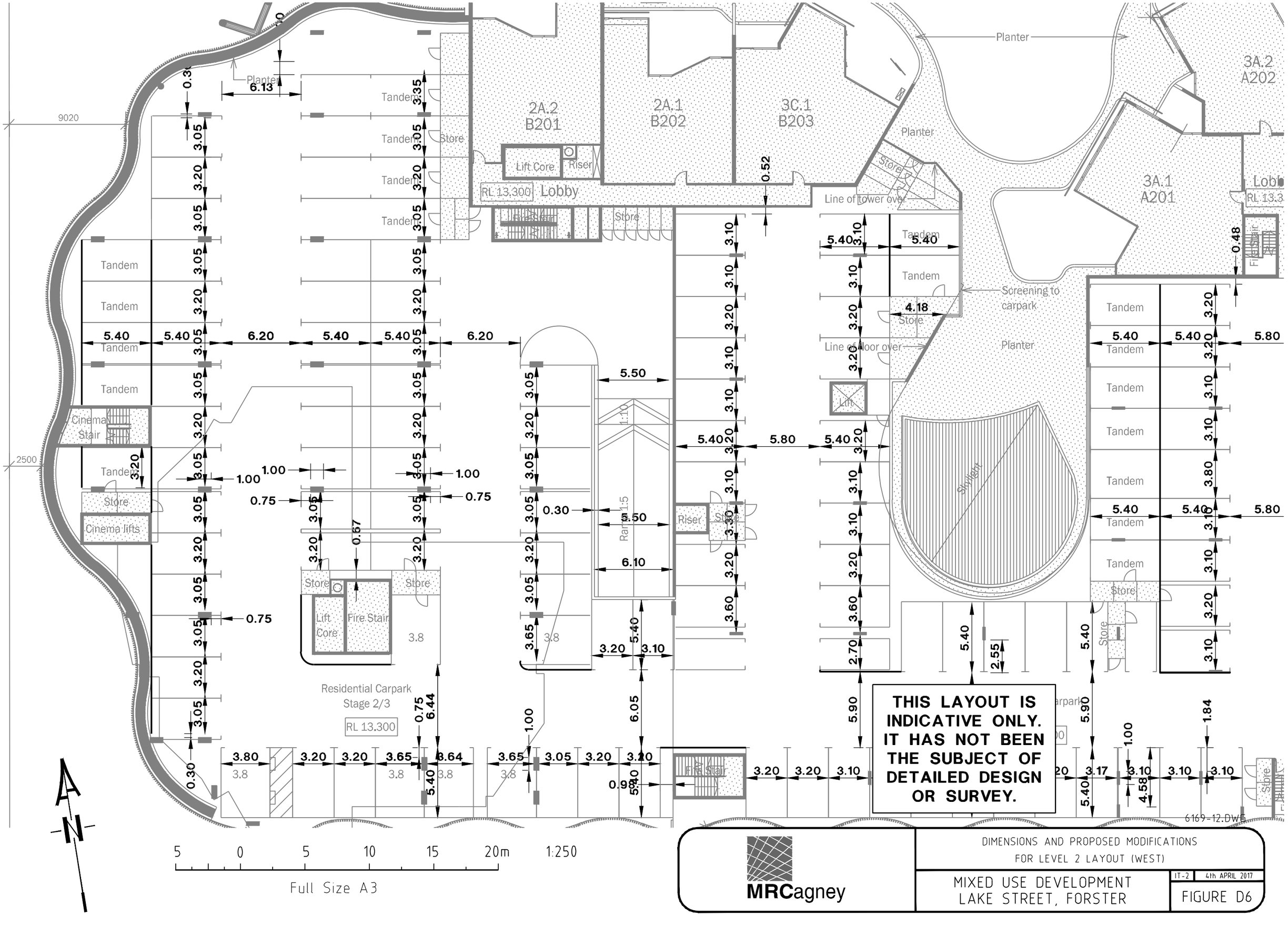
MRCagney

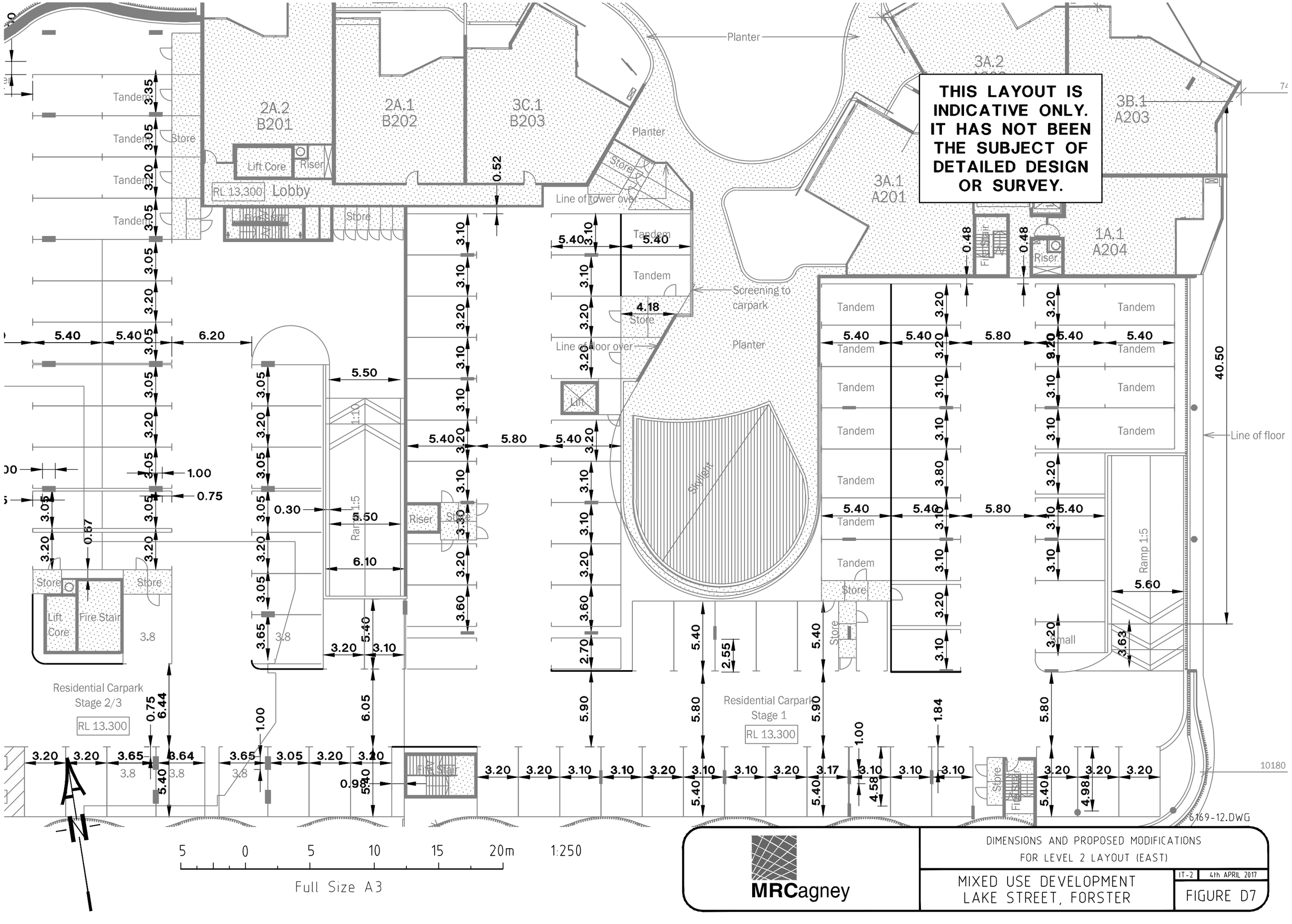
BASEMENT LEVEL 2 LAYOUT (OVERALL)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D5


2A.2
B201
2A.1
B202
3C.1
B203
3A.2
A202
3A.1
A201
Lobby
RL 13.300
Lift Core
Riser
Store
Planter
Tandem
Cinema Stair
Cinema lifts
Residential Carpark
Stage 2/3
RL 13.300
Line of tower over
Line of floor over
Screening to carpark
Skylight
Ramp 1:5
Fire Stair
Lift
Lift Core
THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.
6169-12.DWG
5 0 5 10 15 20m 1:250
Full Size A3
MRCagney
DIMENSIONS AND PROPOSED MODIFICATIONS
FOR LEVEL 2 LAYOUT (WEST)
MIXED USE DEVELOPMENT
LAKE STREET, FORSTER
IT-2
4th APRIL 2017
FIGURE D6



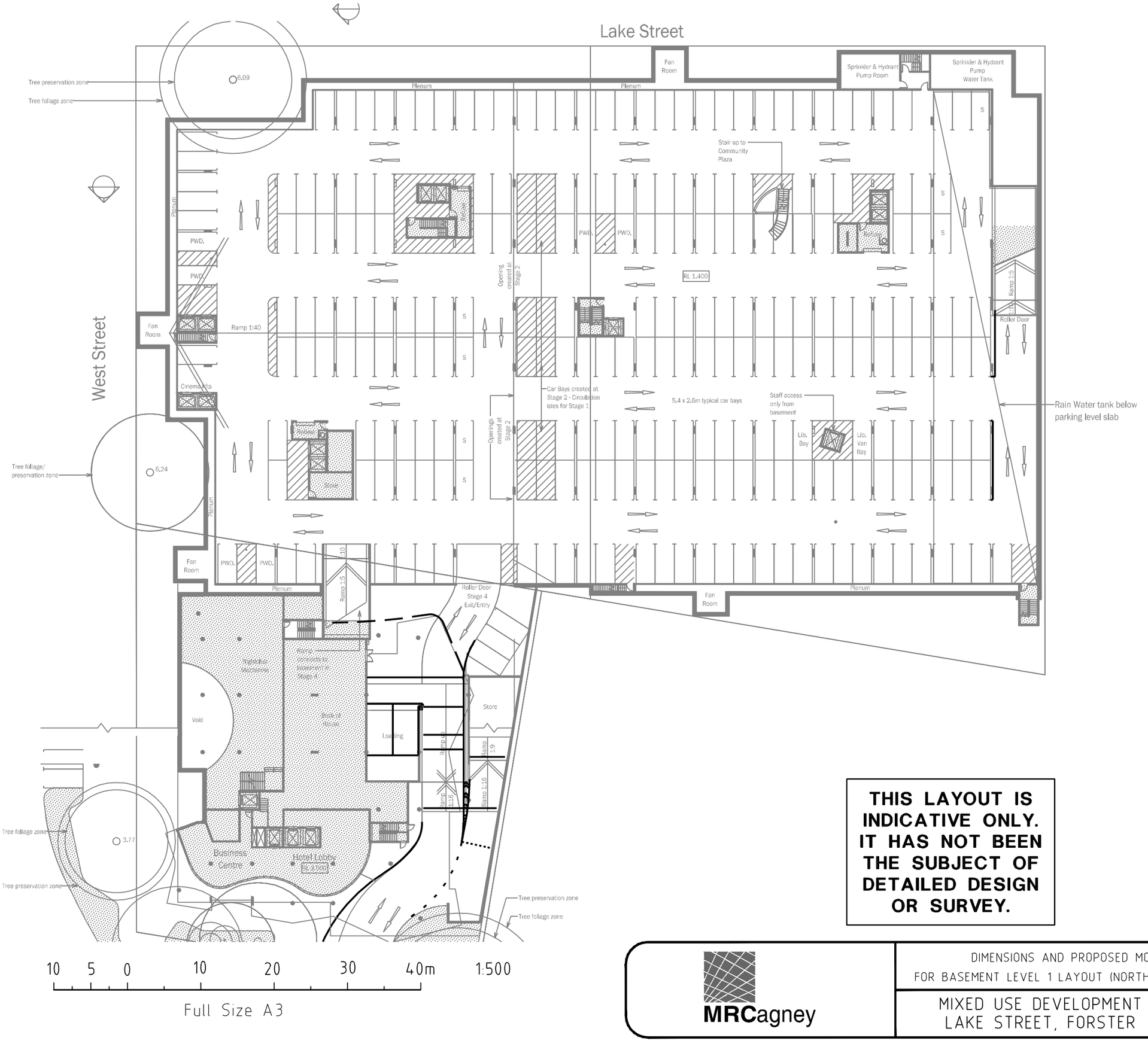
MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS FOR LEVEL 2 LAYOUT (EAST)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D7



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS
FOR BASEMENT LEVEL 1 LAYOUT (NORTHWESTERN QUADRANT)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D8

6.09

Plenum

Plenum

Stair up to Community Plaza

Refuse

PWD.

PWD.

PWD.

Plenum

Opening created at Stage 2

RL 1.400

Fan Room

Ramp 1:40

Lift

Cinema lifts

Car Bays created at Stage 2 - Circulation isles for Stage 1

5.4 x 2.6m typical car bays

Staff access only from basement

Refuse

Openings created at Stage 2

Lib. Bay

Lift

Store

6.24

Plenum

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

5 0 5 10 15 20m 1:250

Full Size A3

6169-12.DWG

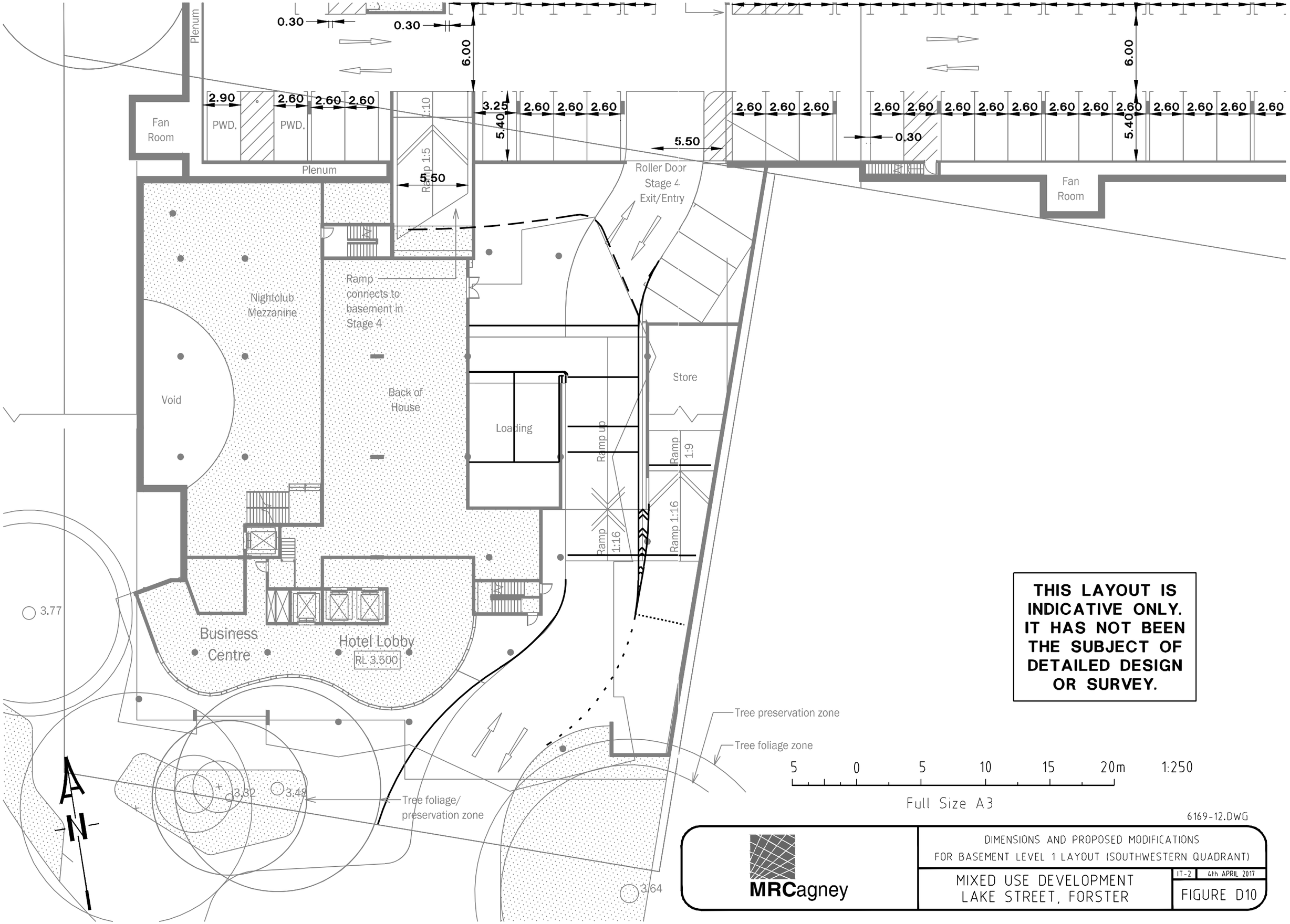
MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS
FOR BASEMENT LEVEL 1 LAYOUT (NORTHWESTERN QUADRANT)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D9



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

5 0 5 10 15 20m 1:250

Full Size A3

6169-12.DWG

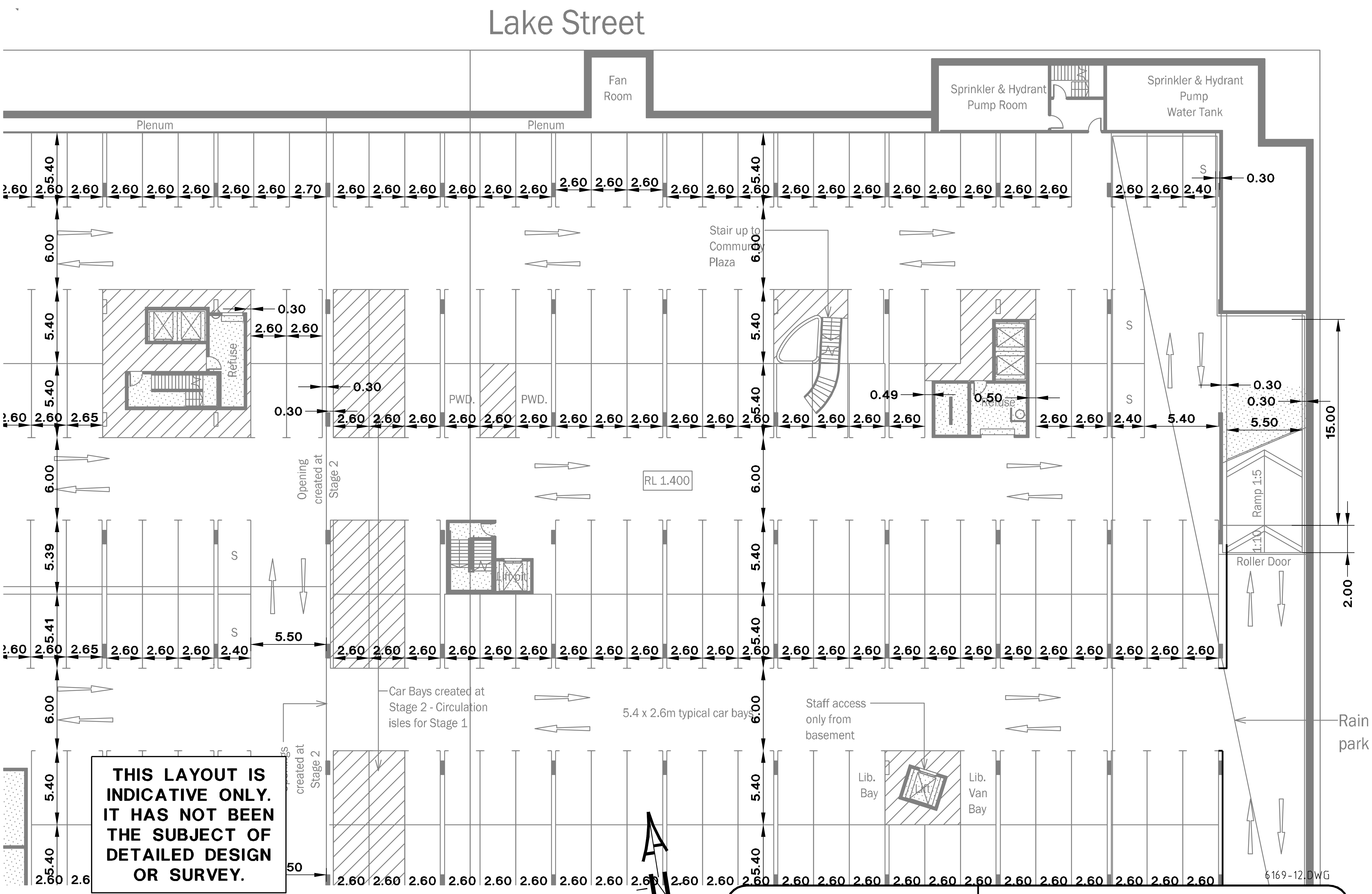
MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS
FOR BASEMENT LEVEL 1 LAYOUT (SOUTHWESTERN QUADRANT)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D10


Lake Street
Fan Room
Sprinkler & Hydrant Pump Room
Sprinkler & Hydrant Pump Water Tank
Plenum
Plenum
Stair up to Community Plaza
Refuse
Refuse
PWD.
PWD.
Opening created at Stage 2
RL 1.400
Liftpit
Ramp 1:5
1:10
Roller Door
Car Bays created at Stage 2 - Circulation isles for Stage 1
5.4 x 2.6m typical car bays
Staff access only from basement
Lib. Bay
Lift
Lib. Van Bay
Rain park
6169-12.DWG

5 0 5 10 15 20m 1:250

Full Size A3

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

DIMENSIONS AND PROPOSED MODIFICATIONS FOR BASEMENT LEVEL 1 LAYOUT (NORTHEASTERN QUADRANT)

MRCagney

MIXED USE DEVELOPMENT LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D11

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

Community Plaza

RL 1.400

Opening created at Stage 2

Openings created at Stage 2

Car Bays created at Stage 2 - Circulation isles for Stage 1

5.4 x 2.6m typical car bays

Staff access only from basement

PWD.

PWD.

Lift

Lift

Refuse

Ramp 1:5

1:10

Roller Door

Roller Door Stage 4 Exit/Entry

Lib. Bay

Lib. Van Bay

Fan Room

Plenum

Ra pa

6169-12.DWG

5 0 5 10 15 20m 1:250

Full Size A3

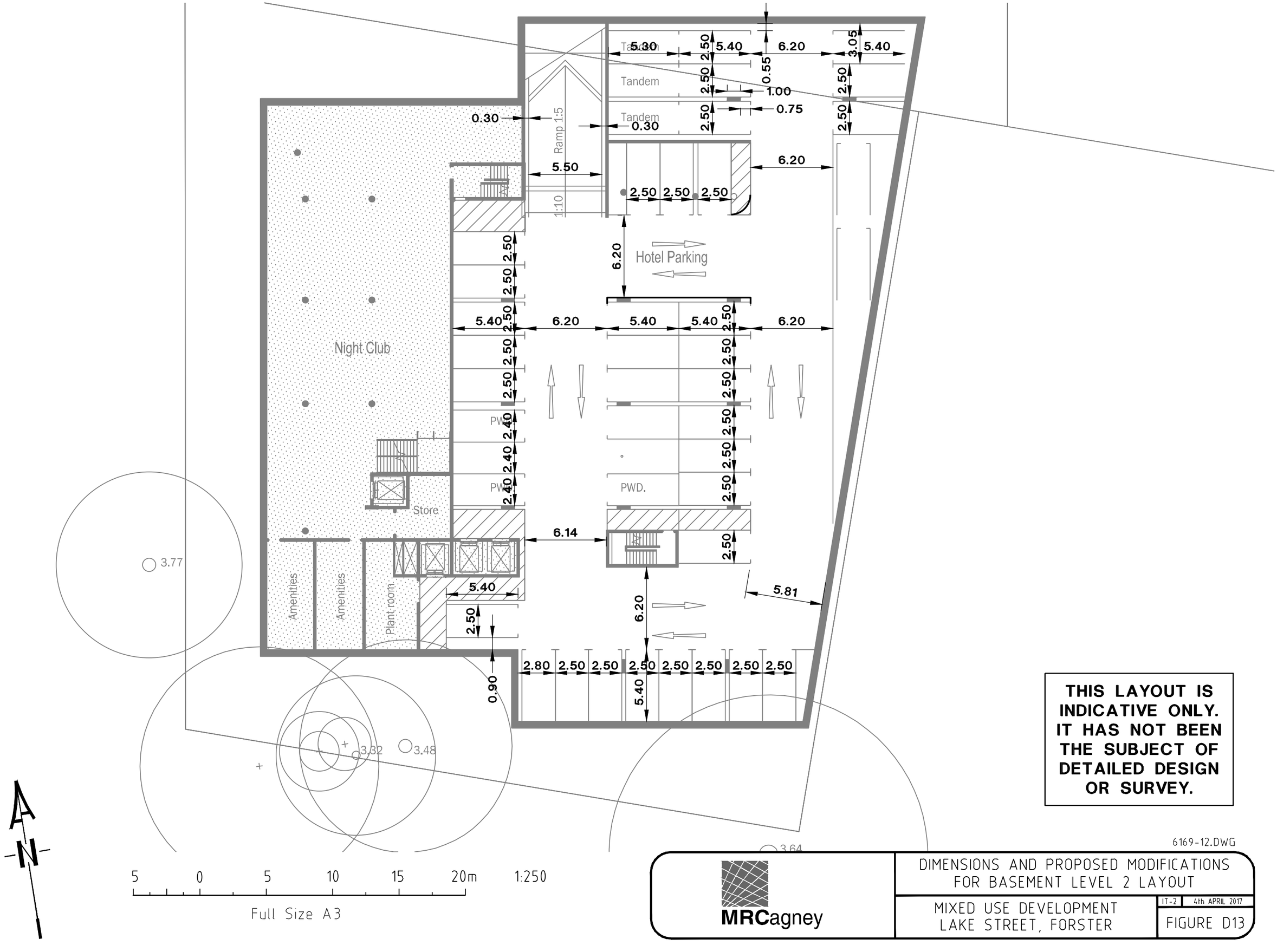
MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS FOR BASEMENT LEVEL 1 LAYOUT (SOUTHEASTERN QUADRANT)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D12



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

MRCagney

DIMENSIONS AND PROPOSED MODIFICATIONS FOR BASEMENT LEVEL 2 LAYOUT

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D13

Tree foliage/
preservation zone
5.60
RL 5.800
Stairs
Loading
bays
Ramp 1:5
Male
Amenities
Female
Amenities
Catering
Kitchen
Activity
Room 3
Gym
RL 5.800
Bike
enclosure
Break-out Are
Loading zone
5.25
Dock
Dedicated Vehicle Bay
4880
Entry Only
Carkpark air exhaust
Driveway
RL5.000
5.10
Transformer
Ramp 1:16
Carkpark air exhaus
5870
Retail
RL 5.000
Void
Exit Only
Ramp 1:9
Void to Dock
Ramp up
Ramp
1:16
Outdoor
Play
RL 4.900
Childcare
RL 5.000
3.98
Nightclub
Entry
RL 5.000
5420
3.31
Office
Void
Tree foliage zone
Tree preservation zone
Driveway
2.53
Public - Open
Space_
7680
Tree preservation zone
Tree foliage zone
WEST STREET
N
5 0 5 10 15 20m 1:250
Full Size A3

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

MRCagney

19.0m (AUSTROADS) SEMI-TRAILER MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL TO ACCESS LOADING AREA (WEST STREET)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D14

6169-12.DWG

Outdoor Play
RL 4.900
Childcare
RL 5.000
Void to Dock
Ramp up
Ramp 1:16
Nightclub Entry
RL 5.000
Office
Void
Public - Open Space
Driveway
Middle Street
MIDDLE STREET
3.98
3.31
2.53
2.30
2.33
2.68
3.64
5420
12230
7680
Tree foliage zone
Tree preservation zone
Tree foliage/ preservation zone

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

5 0 5 10 15 20m 1:250

Full Size A3

6169-12.DWG

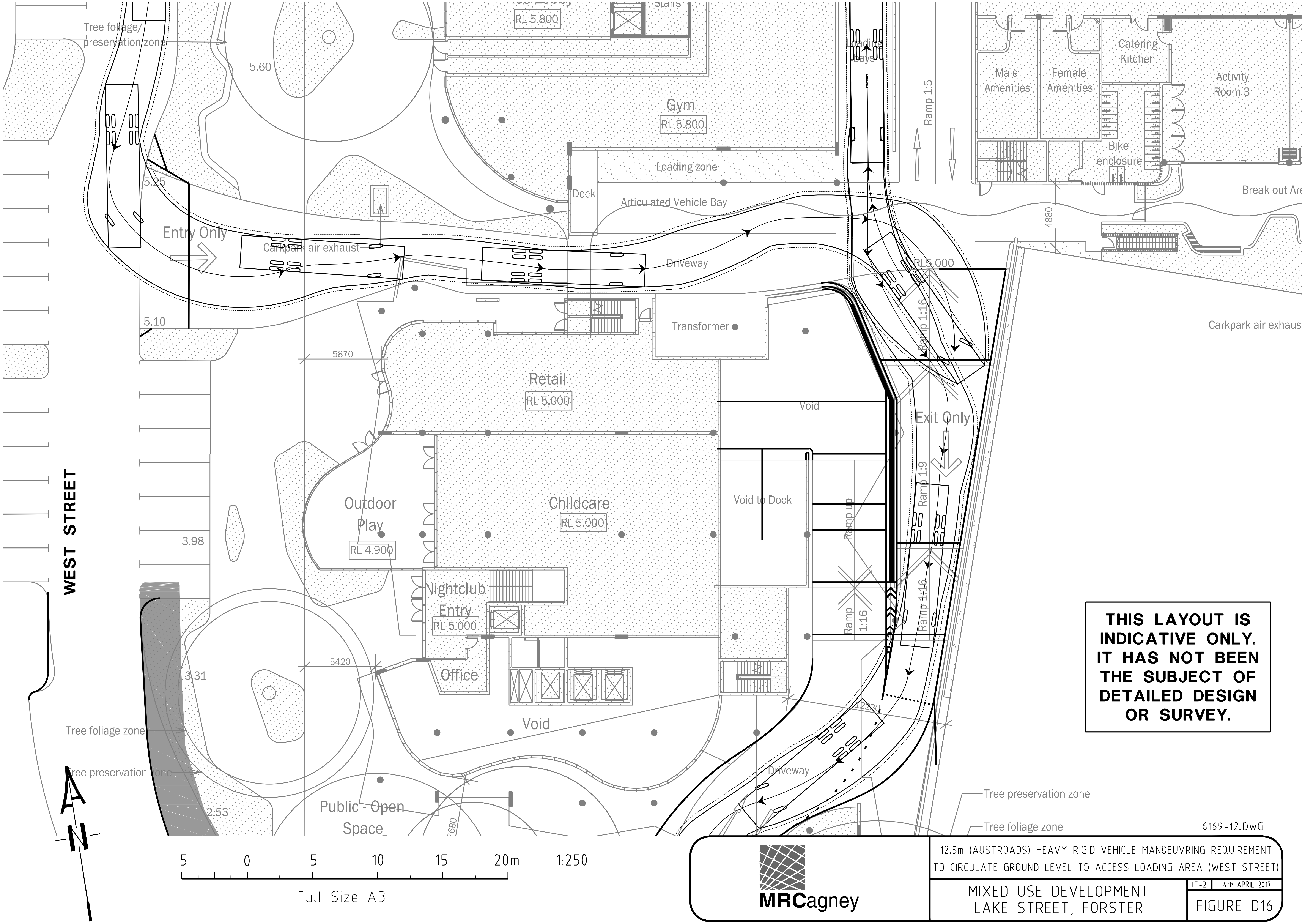
MRCagney

19.0m (AUSTROADS) SEMI-TRAILER MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL TO ACCESS LOADING AREA (MIDDLE ST)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D15



Tree foliage/ preservation zone
5.60
RL 5.800
Gym
RL 5.800
Loading zone
Loading bays
Ramp 1:5
Male Amenities
Female Amenities
Catering Kitchen
Activity Room 3
Bike enclosure
Break-out Are
Dock
Articulated Vehicle Bay
4880
5.25
Entry Only
Carkpark air exhaust
Driveway
RL 5.000
Carkpark air exhaus
5.10
Transformer
Ramp 1:16
5870
Retail
RL 5.000
Void
Exit Only
Void to Dock
Ramp up
Ramp 1:9
Outdoor Play
RL 4.900
Childcare
RL 5.000
WEST STREET
3.98
Nightclub Entry
RL 5.000
Ramp 1:16
Ramp 1:16
5420
Office
3.31
Void
12230
Tree foliage zone
Tree preservation zone
Driveway
2.53
Public - Open Space
7680
Tree preservation zone
Tree foliage zone
N
5 0 5 10 15 20m 1:250
Full Size A3

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

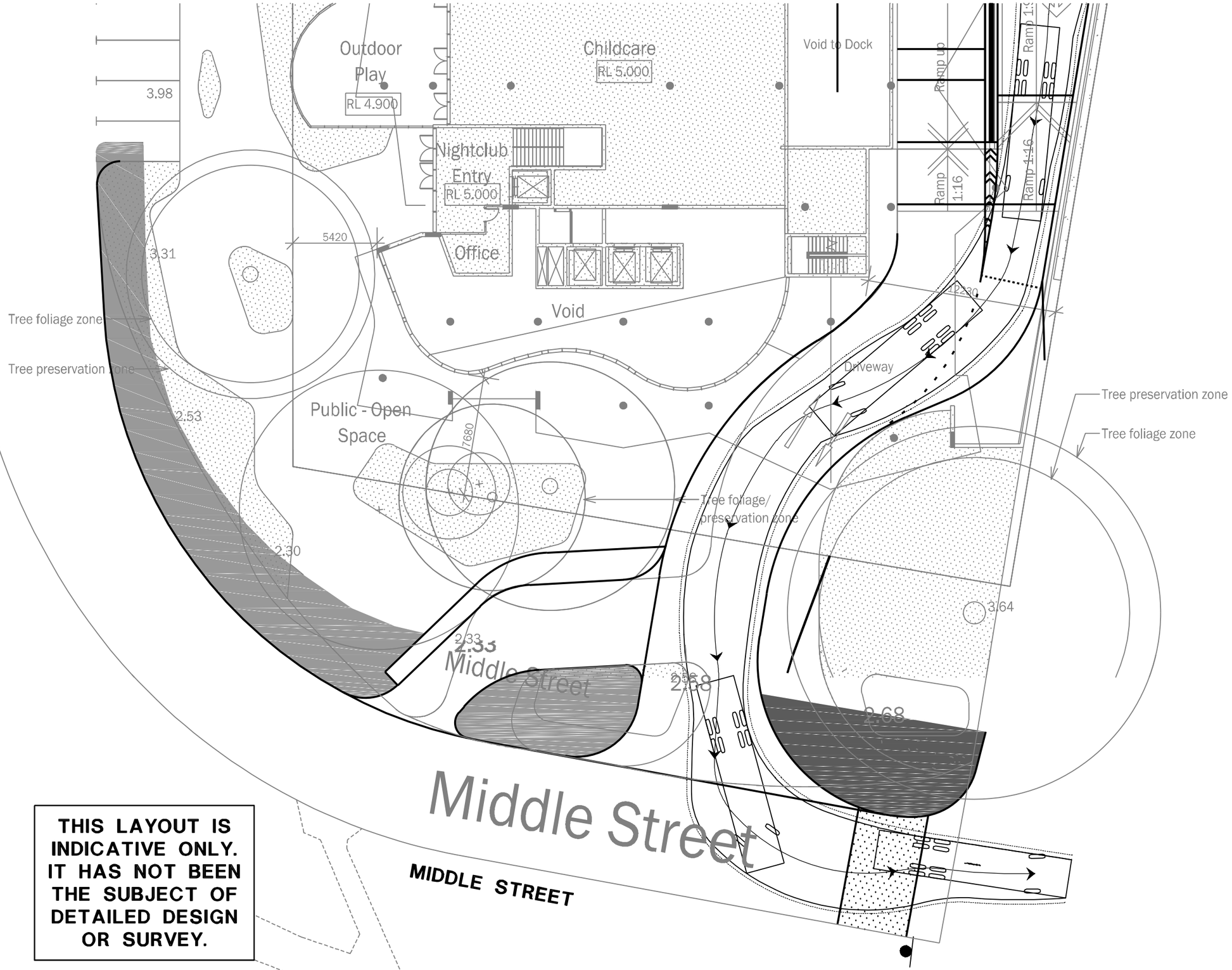
MRCagney

12.5m (AUSTROADS) HEAVY RIGID VEHICLE MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL TO ACCESS LOADING AREA (WEST STREET)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D16



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

5 0 5 10 15 20m 1:250

Full Size A3

6169-12.DWG

MRCagney

12.5m (AUSTROADS) HEAVY RIGID VEHICLE MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL TO ACCESS LOADING AREA (MIDDLE ST)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D17

Tree foliage/
preservation zone

5.60

RL 5.800

Stairs

Loading
bays

Ramp 1:5

Male
Amenities

Female
Amenities

Catering
Kitchen

Activity
Room 3

Bike
enclosure

Break-out Are

Gym
RL 5.800

Loading zone

Dock

Articulated Vehicle Bay

4880

5.25

Entry Only

Carkpark air exhaust

Driveway

RL5.000

5.10

Transformer

Ramp 1:16

Carkpark air exhaus

5870

Retail
RL 5.000

Void

Exit Only

Void to Dock

Ramp up

Ramp 1.9

Outdoor
Play
RL 4.900

Childcare
RL 5.000

Nightclub
Entry
RL 5.000

Ramp
1:16

Ramp 1:16

3.98

5420

3.31

Office

P230

Void

Tree foliage zone

Tree preservation zone

Driveway

Public - Open
Space_

2.53

7680

Tree preservation zone

Tree foliage zone

WEST STREET

N

5 0 5 10 15 20m 1:250

Full Size A3

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

MRCagney

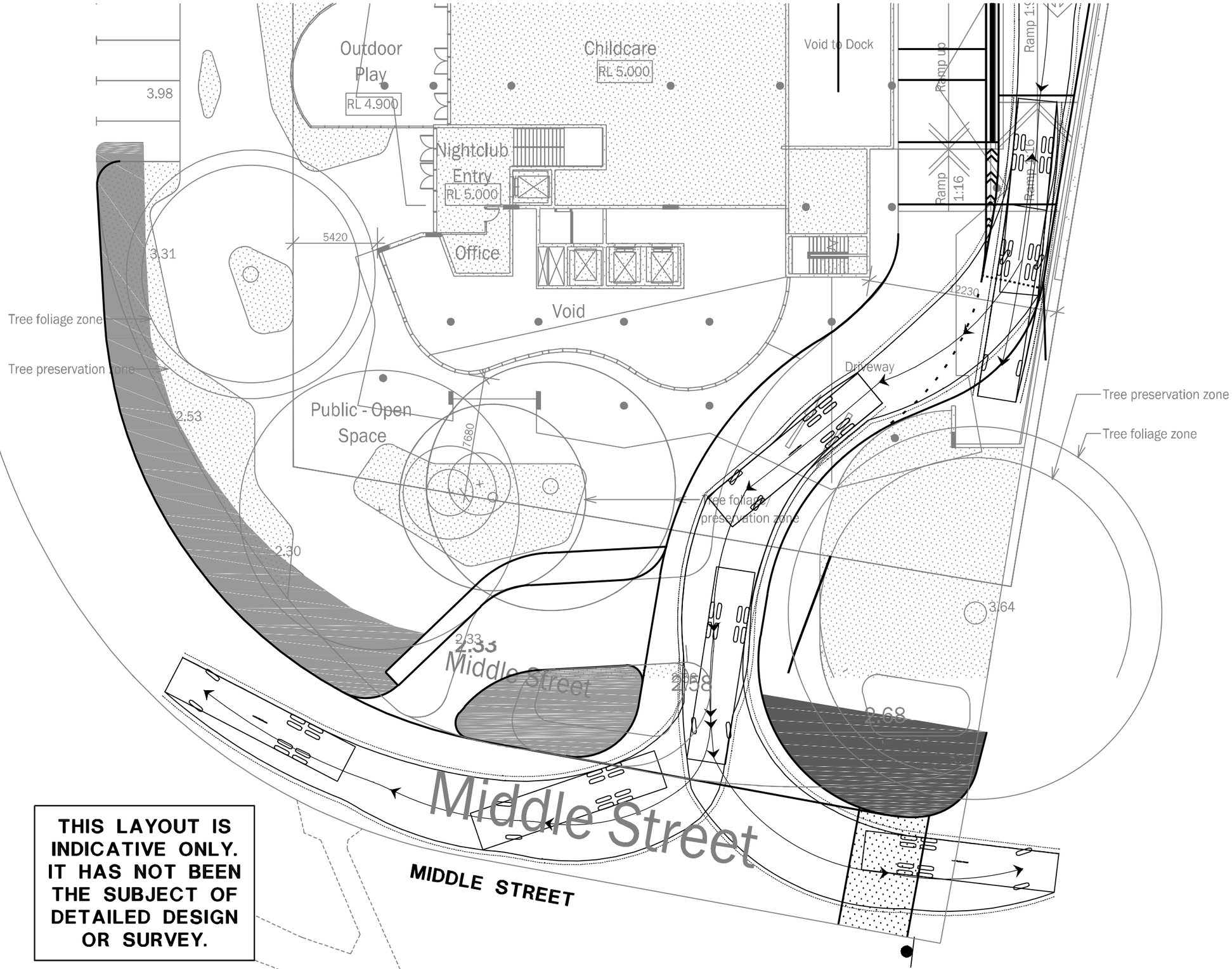
12.5m (AUSTROADS) HEAVY RIGID VEHICLE MANOEUVRING REQUIREMENT
TO CIRCULATE GROUND LEVEL FOR REFUSE COLLECTION (WEST STREET)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D18

6169-12.DWG



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

5 0 5 10 15 20m 1:250

Full Size A3

6169-12.DWG

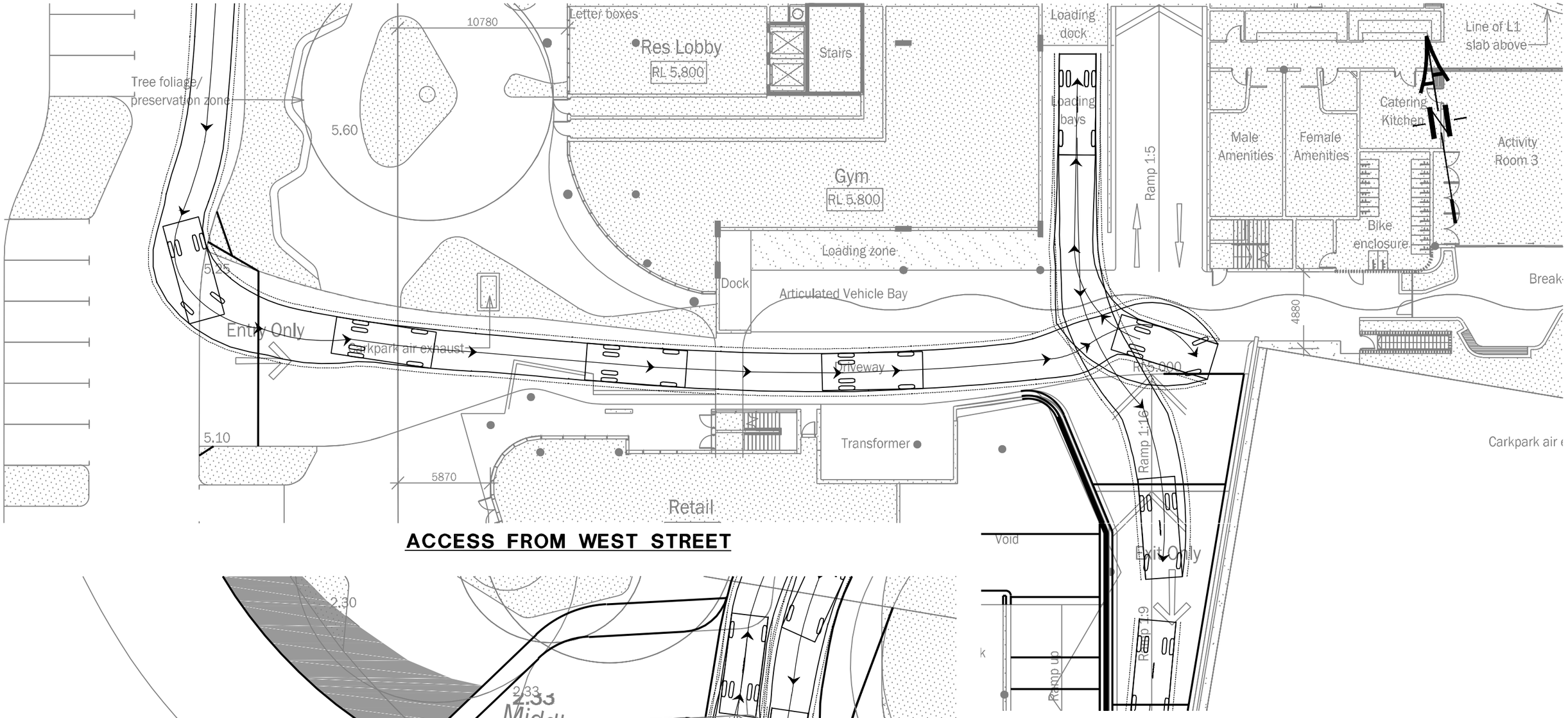
MRCagney

12.5m (AUSTROADS) HEAVY RIGID VEHICLE MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL 1 FOR REFUSE COLLECTION (MIDDLE STREET)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D19



ACCESS FROM WEST STREET

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

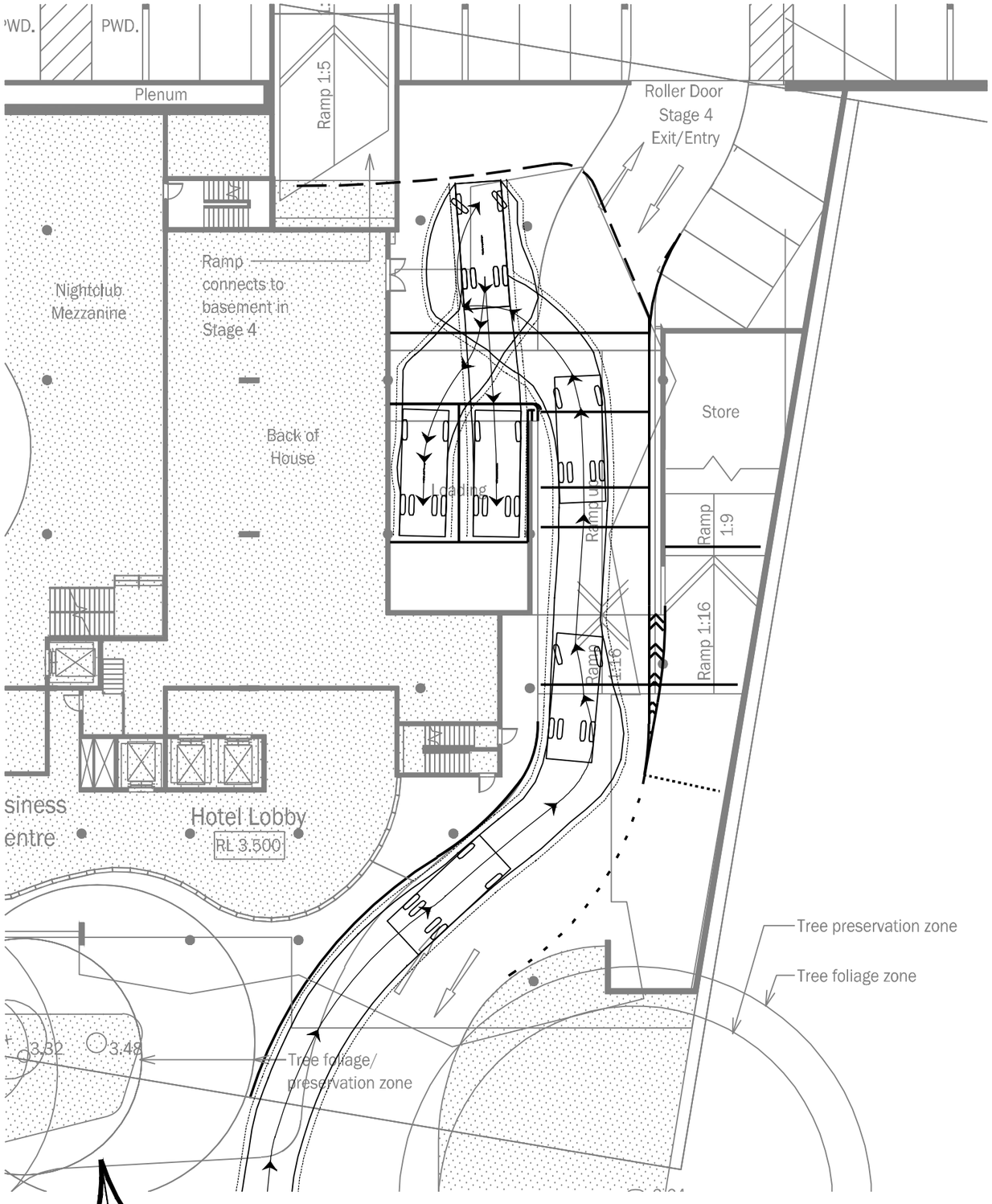
MRCagney

6.4m SMALL RIGID VEHICLE MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL TO ACCESS LOADING AREAS

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

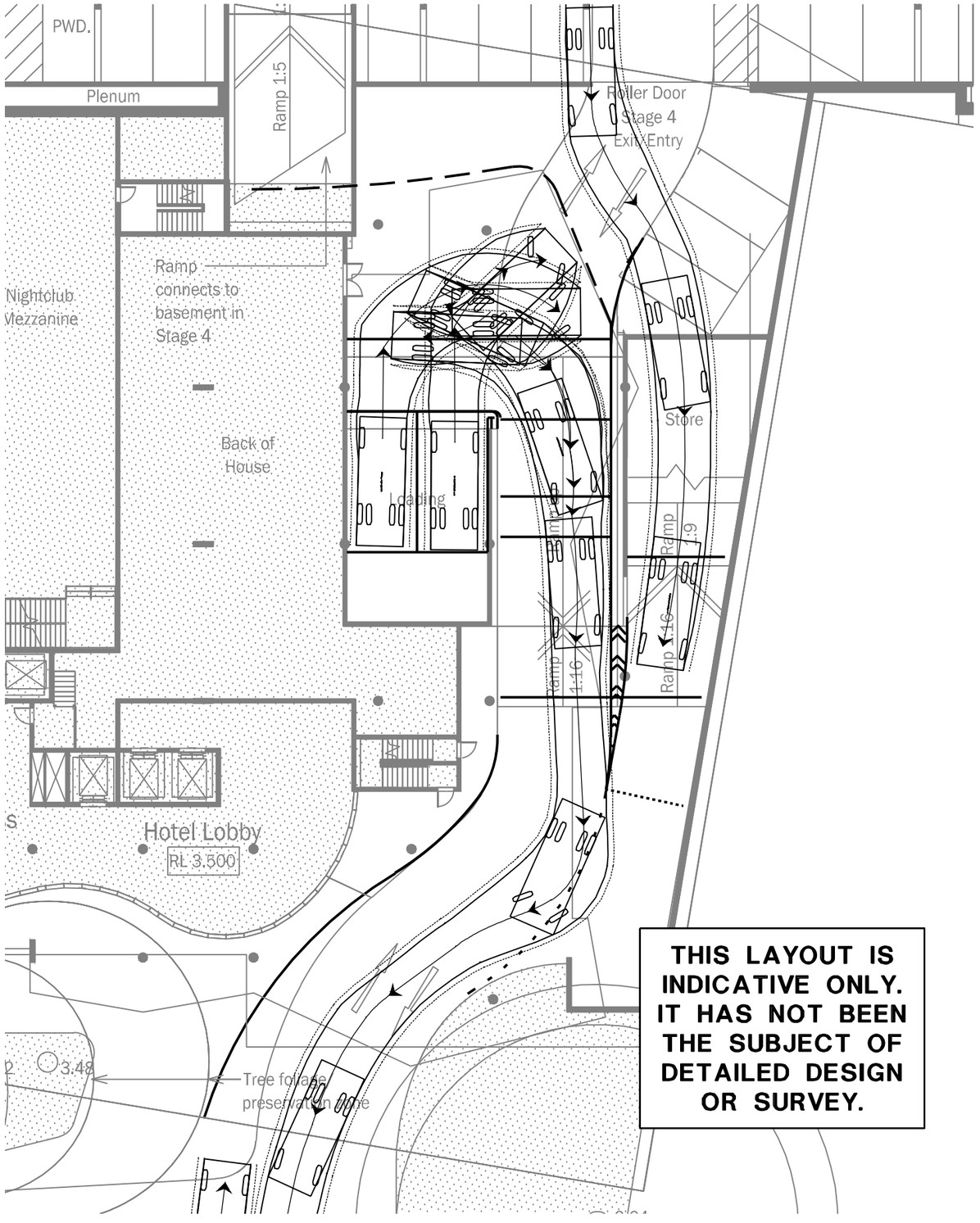
FIGURE D20



INGRESS MANOEUVRE

5 0 5 10 15 20m 1:250

Full Size A3



EGRESS MANOEUVRE

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

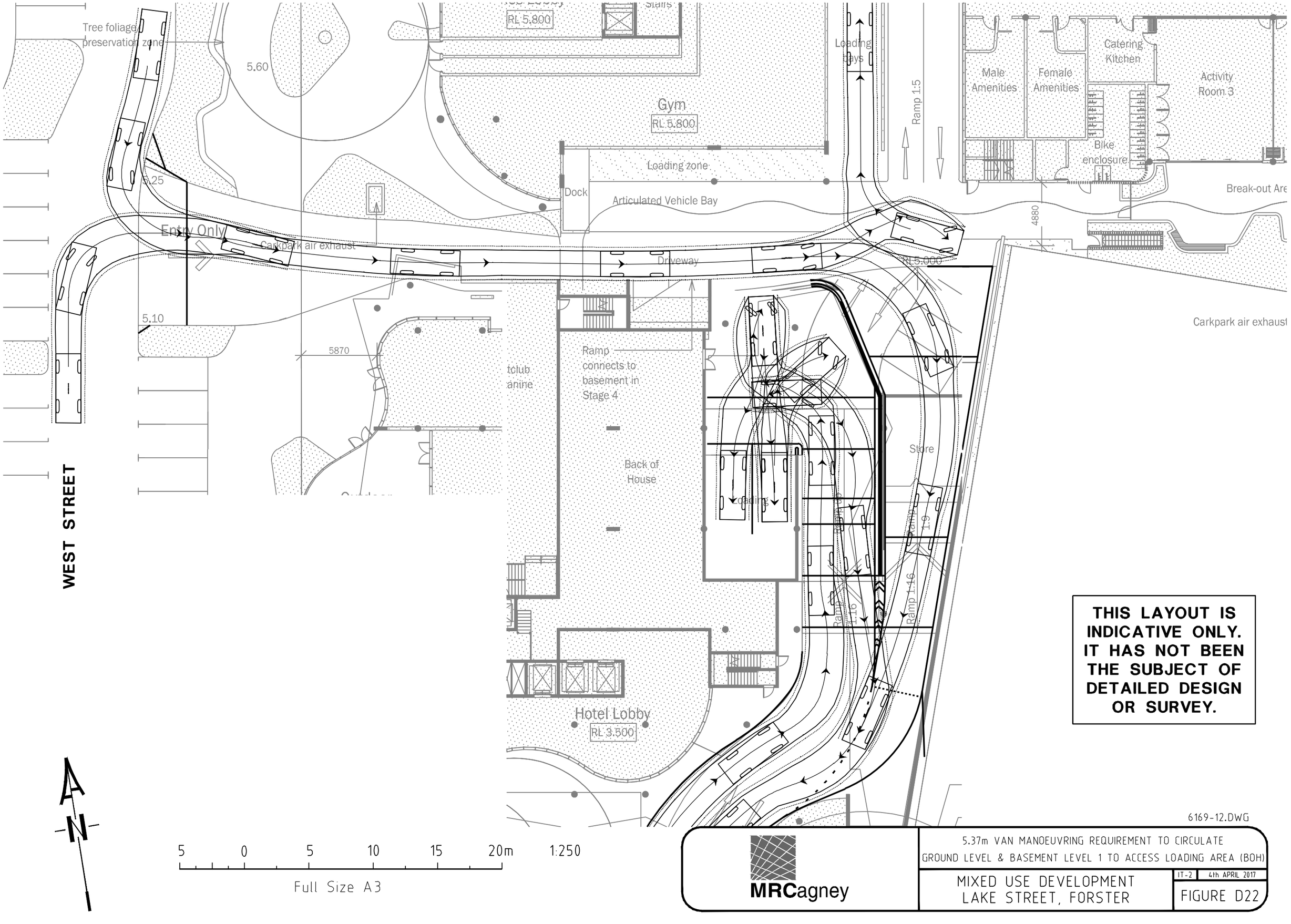
MRCagney

6.4m SMALL RIGID VEHICLE MANOEUVRING REQUIREMENT TO CIRCULATE BASEMENT LEVEL 1 TO ACCESS LOADING AREA (BOH)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D21



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

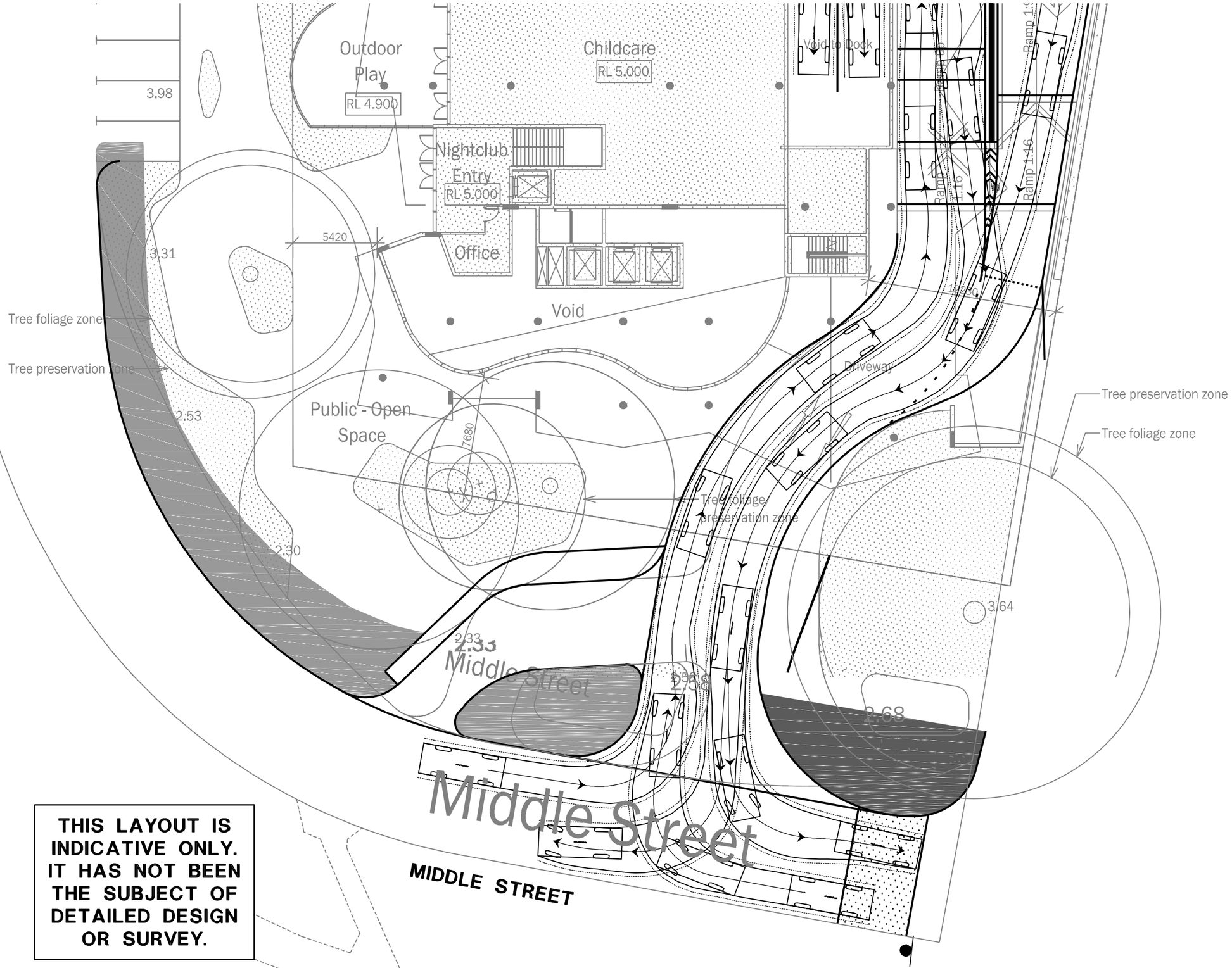
MRCagney

5.37m VAN MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL & BASEMENT LEVEL 1 TO ACCESS LOADING AREA (BOH)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D22



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

5 0 5 10 15 20m 1:250

Full Size A3

6169-12.DWG

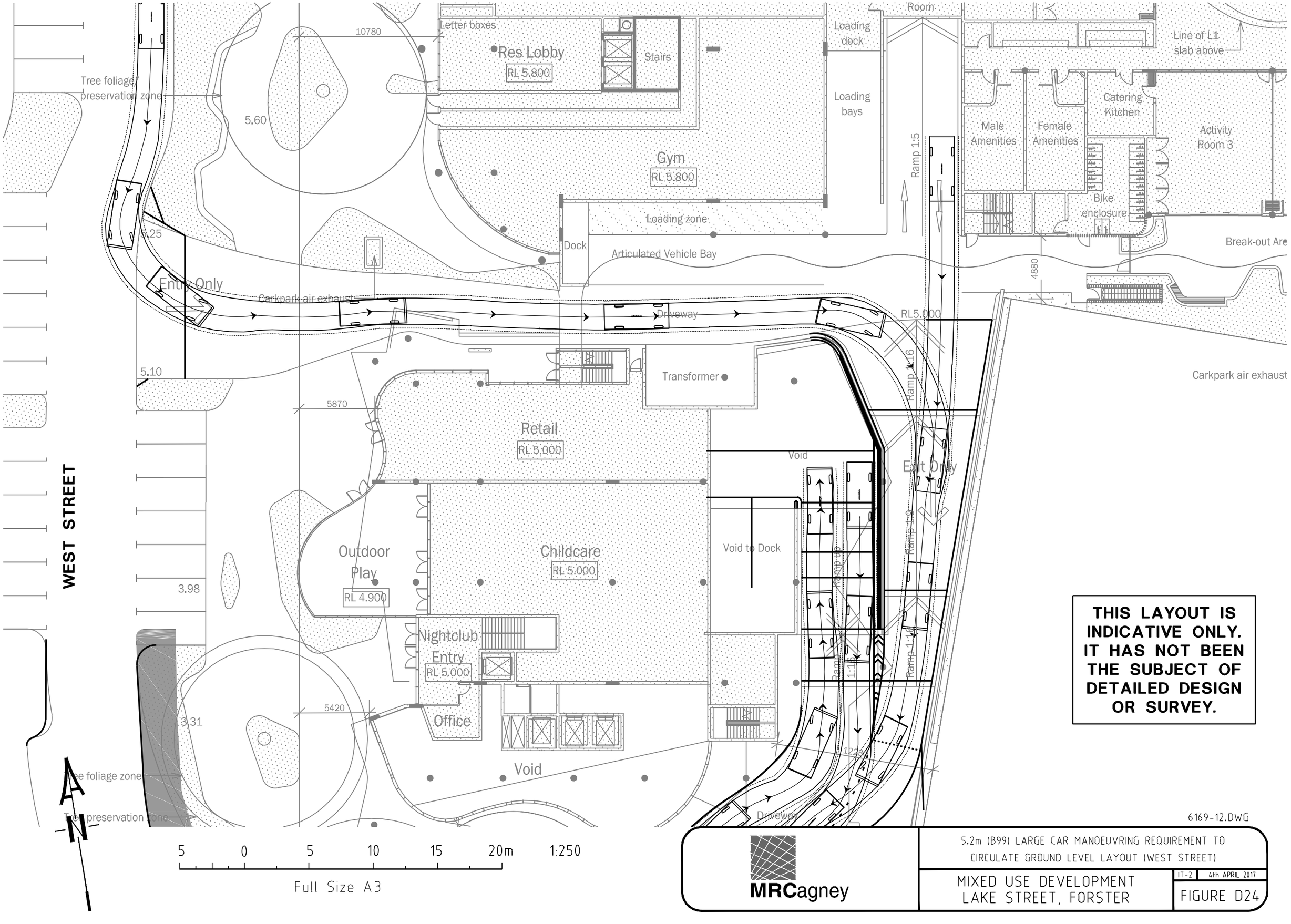
MRCagney

5.37m VAN MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL TO ACCESS LOADING AREA (MIDDLE ST)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D23



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

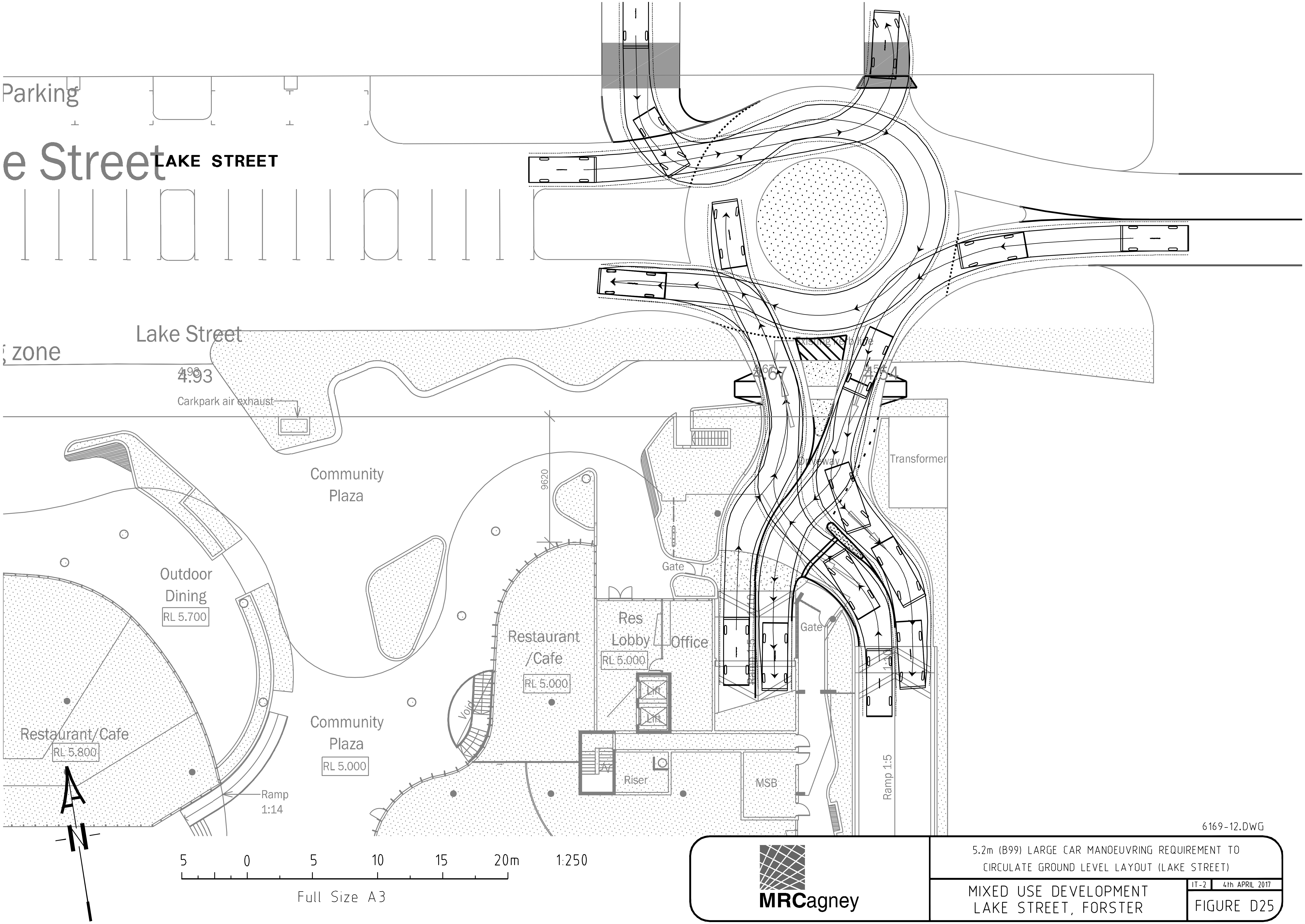
MRCagney

5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL LAYOUT (WEST STREET)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D24



6169-12.DWG

MRCagney

5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL LAYOUT (LAKE STREET)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D25

WEST STREET

Outdoor Play
RL 4.900

Childcare
RL 5.000

Void to Dock

Nightclub Entry
RL 5.000

Office

Void

Public - Open Space

Ramp up

Ramp 1:14

Ramp 1:14

Driveway

Tree foliage zone

Tree preservation zone

Tree preservation zone

Tree foliage zone

Tree foliage preservation zone

3.98

3.31

2.53

2.30

5420

7680

1220

3.64

2.68

Middle Street

Middle Street

MIDDLE STREET

N

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

5 0 5 10 15 20m 1:250

Full Size A3

6169-12.DWG

MRCagney

5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE GROUND LEVEL LAYOUT (MIDDLE STREET)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D26

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

Line of floor over

Planter

9050

Awning

Tandem

Tandem

Tandem

Tandem

Tandem

Tandem

Tandem

Tandem

Tandem

Cinema lift stair

2500

Store

Cinema lifts

9600

Storage

2A.2
Sales Unit
B101

Lift Core

Riser

Residents Storage

Lobby

Fire Stair

Residents Club Deck

Residents Club

Lift

Full height w

Skylight ove

Drop down projection screen over

Void to Community below

Balustrade

Extermal Reading Deck

Library
RL 9.200

Void

Riser

Residents Storage

Planter

Lift

Store

3.8

3.8

Store

Lift Core

Fire Stair

3.8

3.8

Ramp 1:10

Residential Parking
RL 10.300

RL 10.300

Residents Storage

Including Staff room

3.8

Store

3.8

3.8

3.8

Fire Stair

3.8

3.8

6169-12.DWG

N

5 0 5 10 15 20m 1:250

Full Size A3

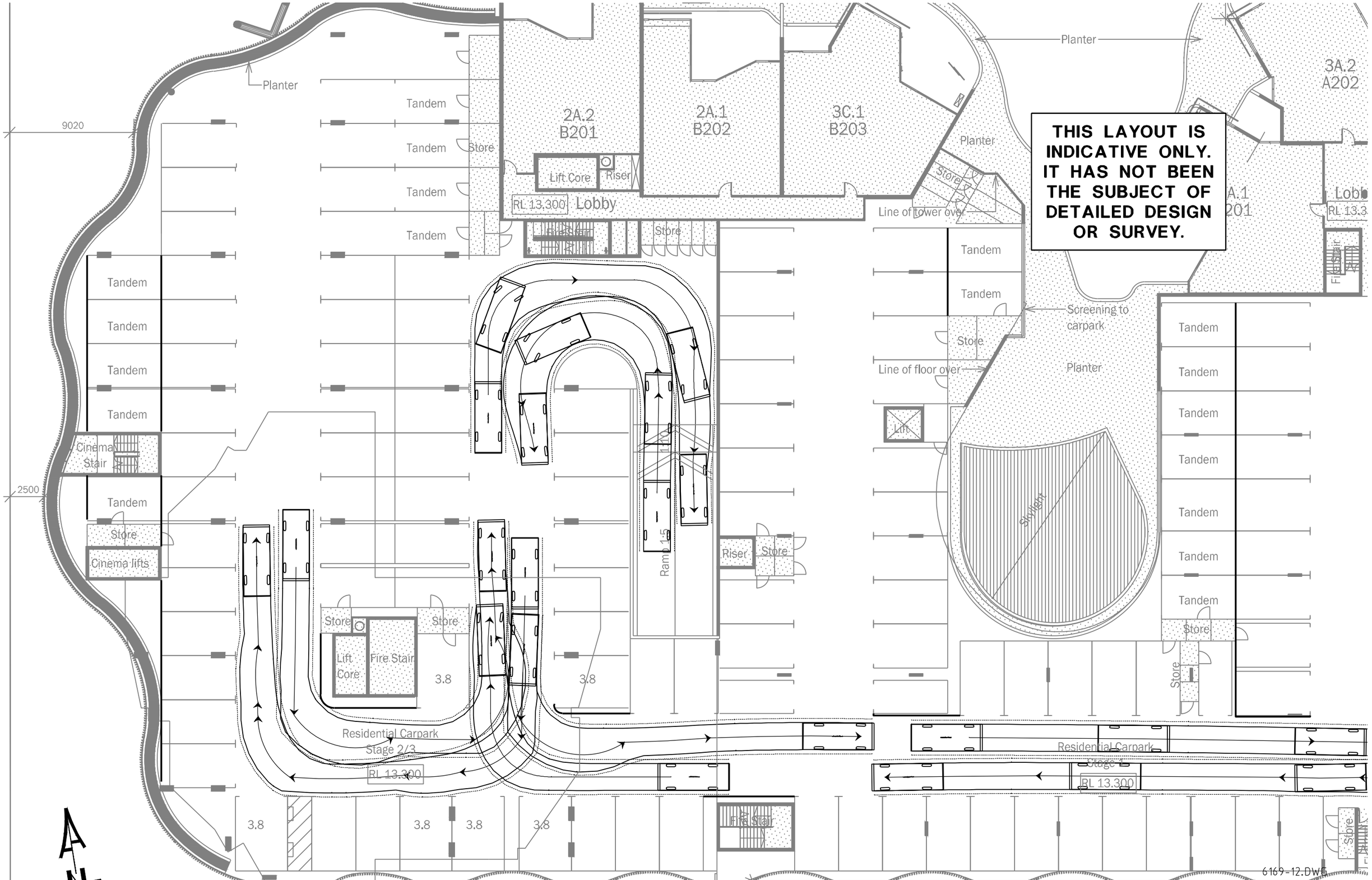
MRCagney

5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE LEVEL 1 LAYOUT

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D27


THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.
Planter
Tandem
Tandem
Tandem
Tandem
Store
2A.2
B201
2A.1
B202
3C.1
B203
Lift Core
Riser
RL 13.300
Lobby
Fire Stair
Store
Planter
Store
Line of tower over
Planter
3A.2
A202
A.1
201
Lobb
RL 13.3
Fire Stair
Tandem
Tandem
Screening to carpark
Store
Line of floor over
Planter
Lift
Skylight
Tandem
Tandem
Tandem
Tandem
Store
Store
9020
2500
Tandem
Tandem
Tandem
Tandem
Cinema Stair
Tandem
Store
Cinema lifts
Store
Store
Lift Core
Fire Stair
3.8
3.8
Ramp 1:5
Riser
Store
Residential Carpark
Stage 2/3
RL 13.300
Residential Carpark
Stage 1
RL 13.300
3.8
3.8
3.8
3.8
Fire Stair
Store
6169-12.DWG
A
N
5 0 5 10 15 20m 1:250
Full Size A3
MRCagney
5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE LEVEL 2 LAYOUT (WEST)
MIXED USE DEVELOPMENT
LAKE STREET, FORSTER
IT-2
4th APRIL 2017
FIGURE D28

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

Tandem
Store
2A.2 B201
2A.1 B202
3C.1 B203
Lift Core
Riser
RL 13.300
Lobby
Fire Stair
Planter
Line of tower over
Line of floor over
Screening to carpark
3A.1 A201
3A.2
1A.1 A204
Lift
Skylight
Ramp 1:5
Small
Residential Carpark Stage 2/3
Residential Carpark Stage 2
3.8
Line of floor
10180
7469-12.DWG

5 0 5 10 15 20m 1:250

Full Size A3

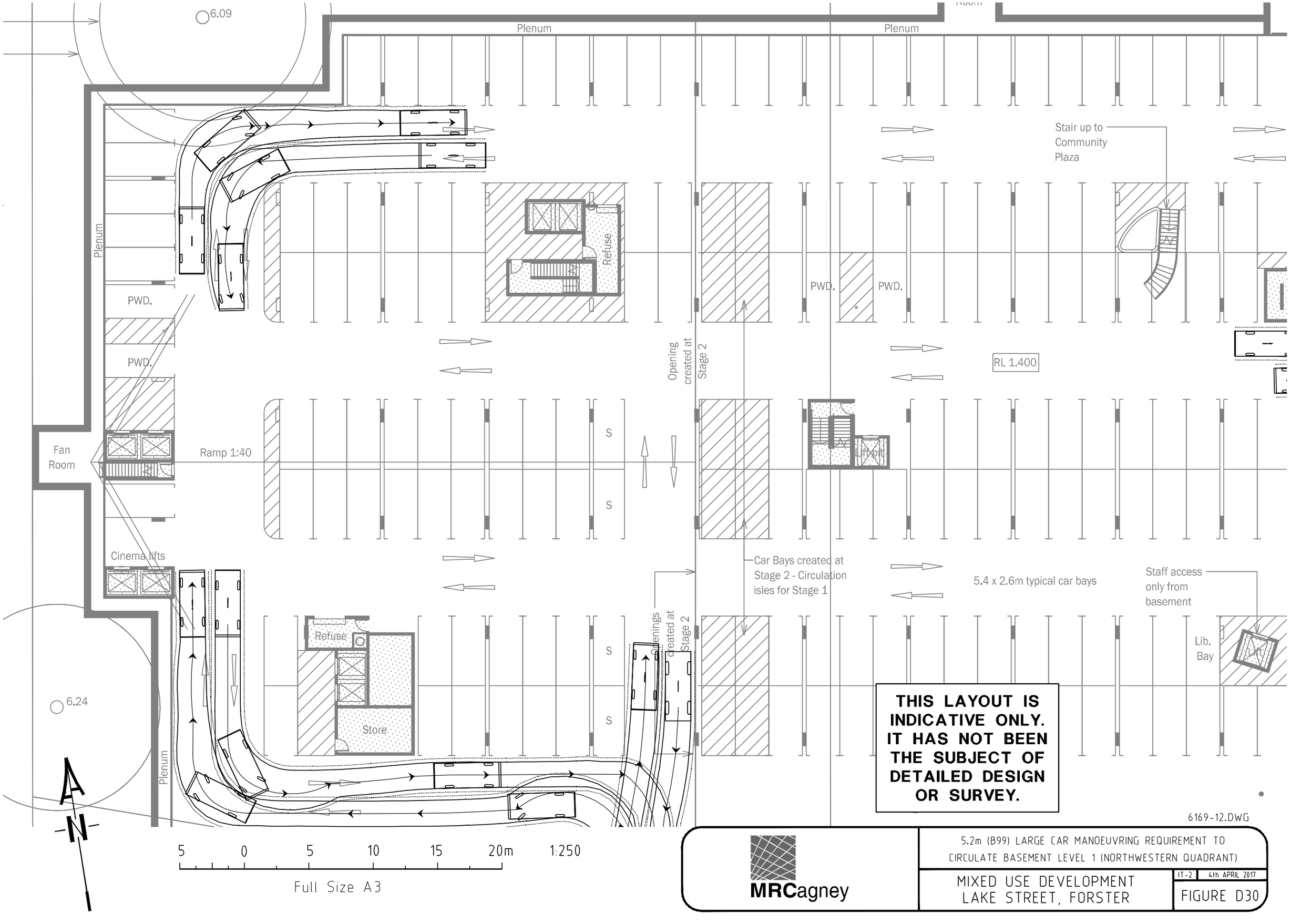
MRCagney

5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE LEVEL 2 LAYOUT (EAST)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D29



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

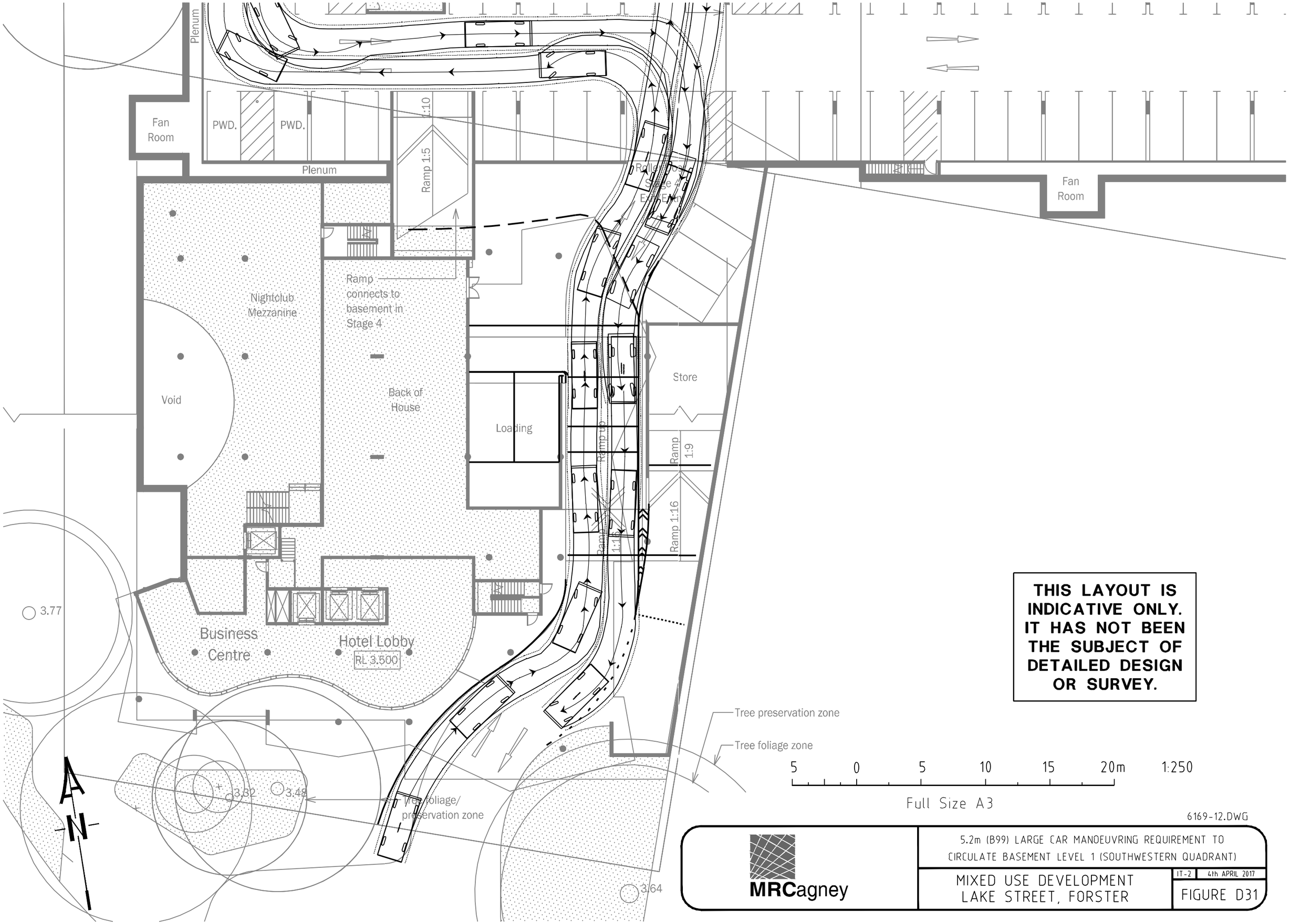
MRCagney

5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE BASEMENT LEVEL 1 (NORTHWESTERN QUADRANT)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D30



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

MRCagney

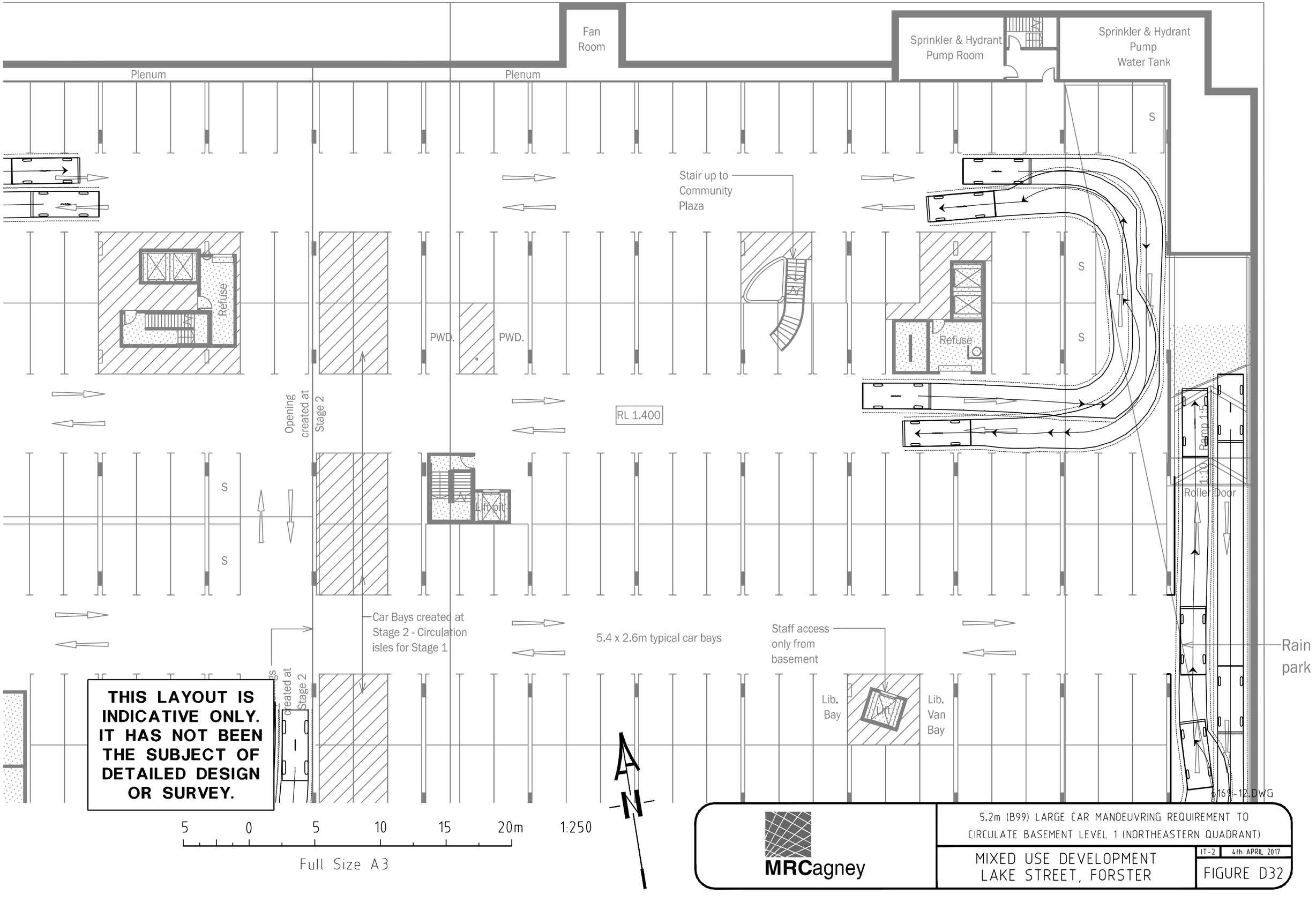
5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE BASEMENT LEVEL 1 (SOUTHWESTERN QUADRANT)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D31

Lake Street



MRCagney

5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE BASEMENT LEVEL 1 (NORTHEASTERN QUADRANT)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D32

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

Community Plaza

PWD.

PWD.

Refuse

S

S

Opening created at Stage 2

RL 1.400

Lift

S

S

Ramp 1:5

1:10

Roller Door

Car Bays created at Stage 2 - Circulation isles for Stage 1

5.4 x 2.6m typical car bays

Staff access only from basement

Ra

pa

Openings created at Stage 2

S

S

Lib. Bay

Lift

Lib. Van Bay

Ramp 1:5

1:10

Roller Door Stage 2 Exit

Lift

Plenum

Fan Room

6169-12.DWG

N

5 0 5 10 15 20m 1:250

Full Size A3

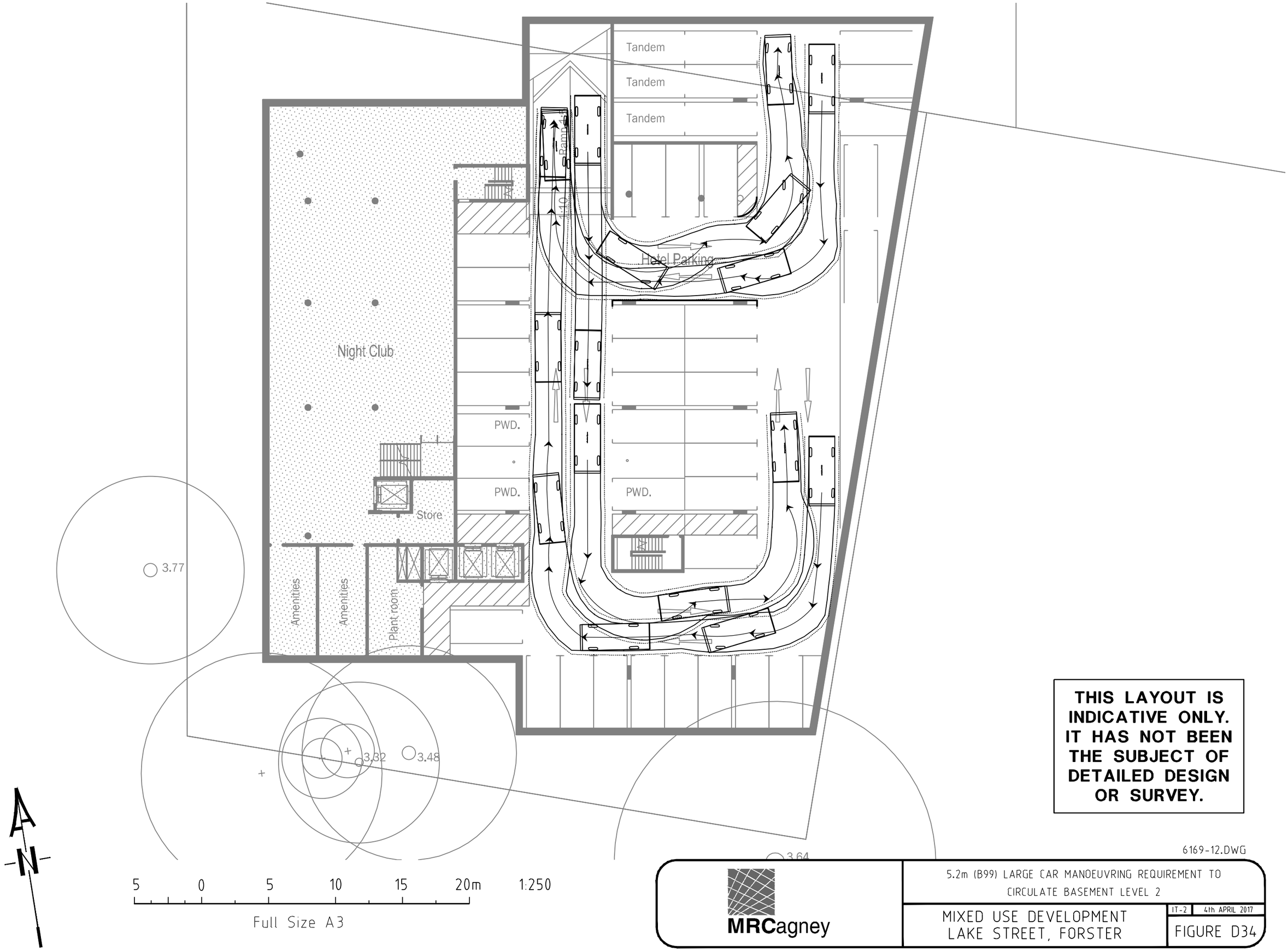
MRCagney

5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE BASEMENT LEVEL 1 (SOUTHEASTERN QUADRANT)

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D33



THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

6169-12.DWG

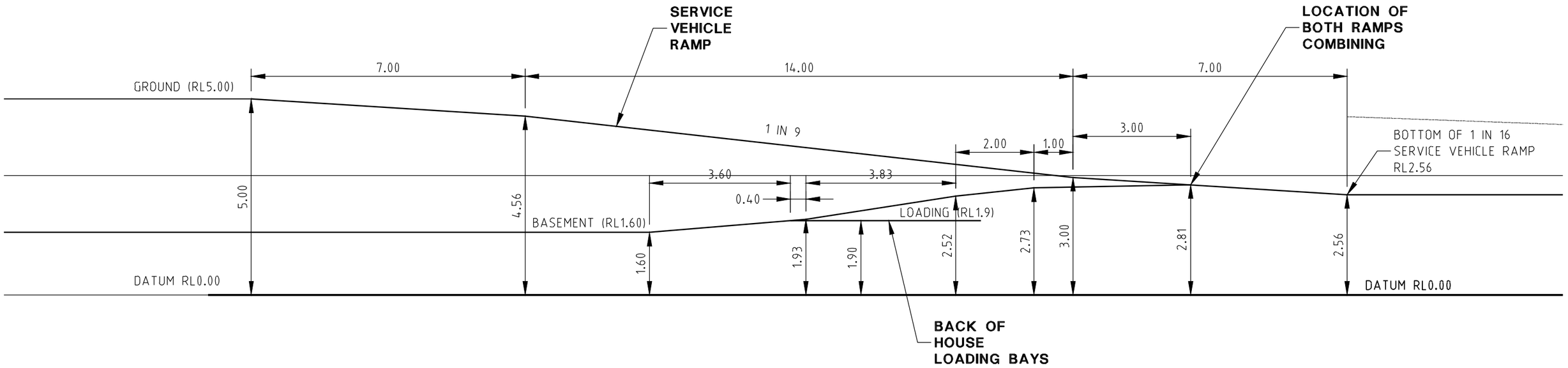
MRCagney

5.2m (B99) LARGE CAR MANOEUVRING REQUIREMENT TO CIRCULATE BASEMENT LEVEL 2

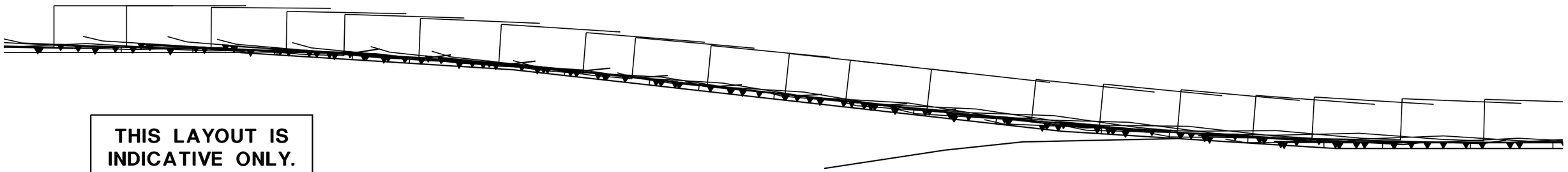
MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D34



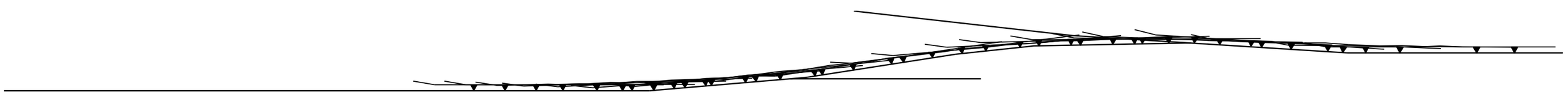
PROPOSED GRADING



SEMI-TRAILER GROUND CLEARANCE TEMPLATE OVERLAY

THIS LAYOUT IS INDICATIVE ONLY. IT HAS NOT BEEN THE SUBJECT OF DETAILED DESIGN OR SURVEY.

SMALL RIGID VEHICLE GROUND CLEARANCE TEMPLATE OVERLAY (INGRESS)



SMALL RIGID VEHICLE GROUND CLEARANCE TEMPLATE OVERLAY (EGRESS)

6169-12.DWG

5 0 5 10 15 20m 1:250

Full Size A3

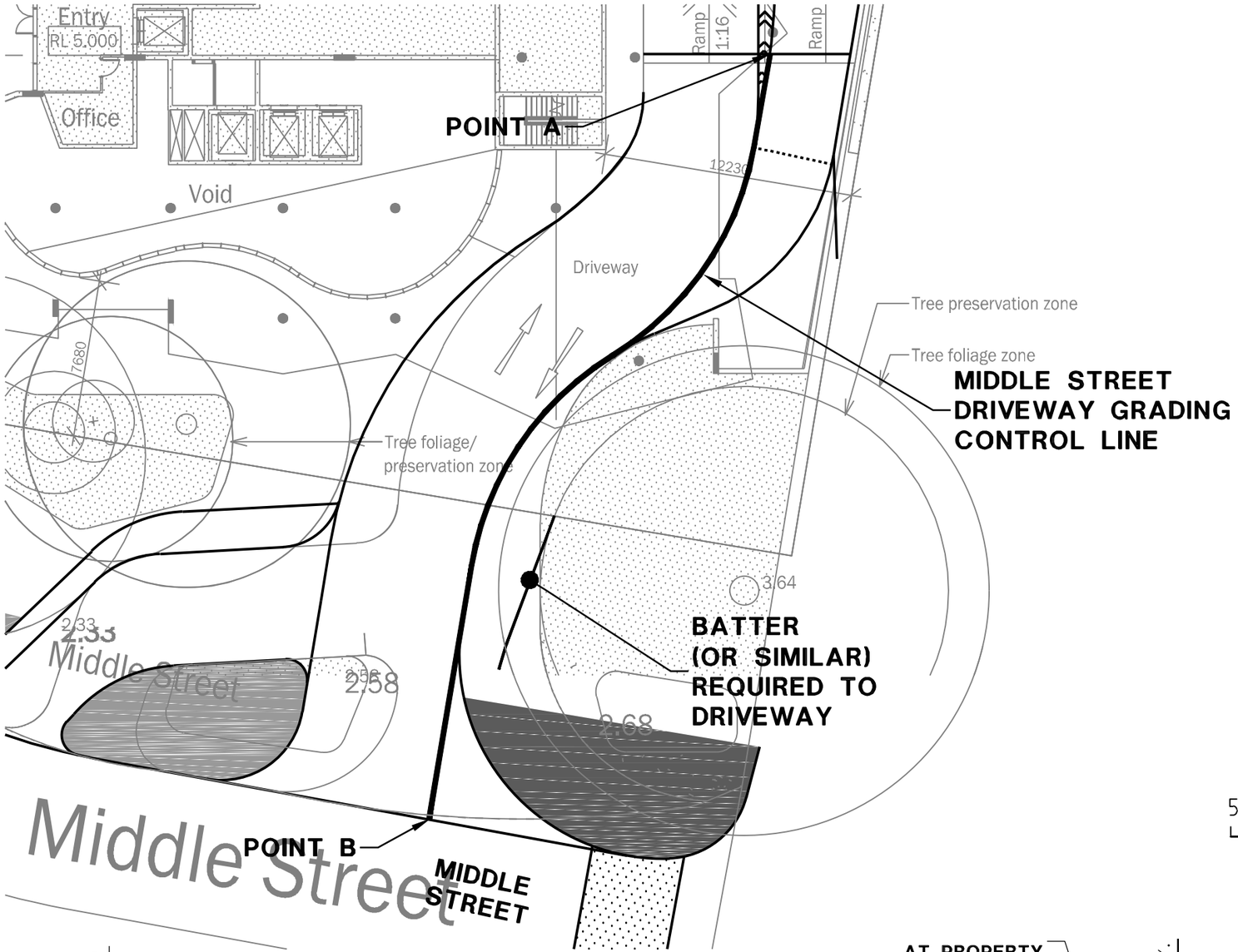
MRCagney

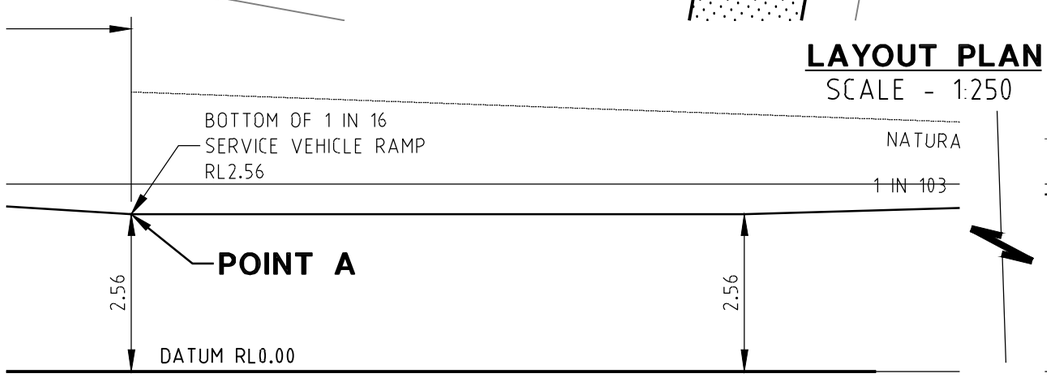
PROPOSED LAYOUT AND GRADING
FOR SERVICE VEHICLE RAMP AND LOADING AREA

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

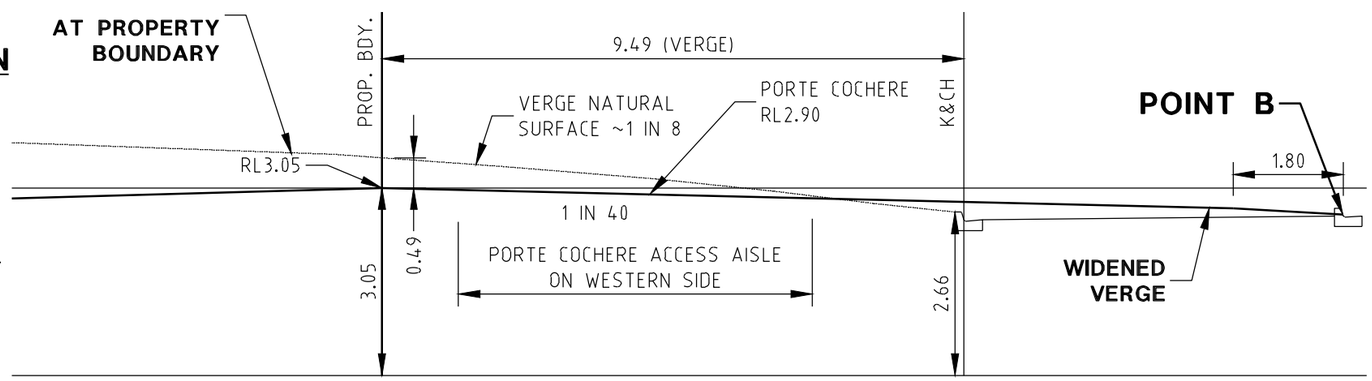
IT-2 | 4th APRIL 2017

FIGURE D35





LAYOUT PLAN
SCALE - 1:250



MIDDLE STREET DRIVEWAY GRADING
SCALE - 1:100

5 0 5 10 15 20m 1:250

Full Size A3

2 1 0 2 4 6 8m 1:100

Full Size A3

6169-12.DWG

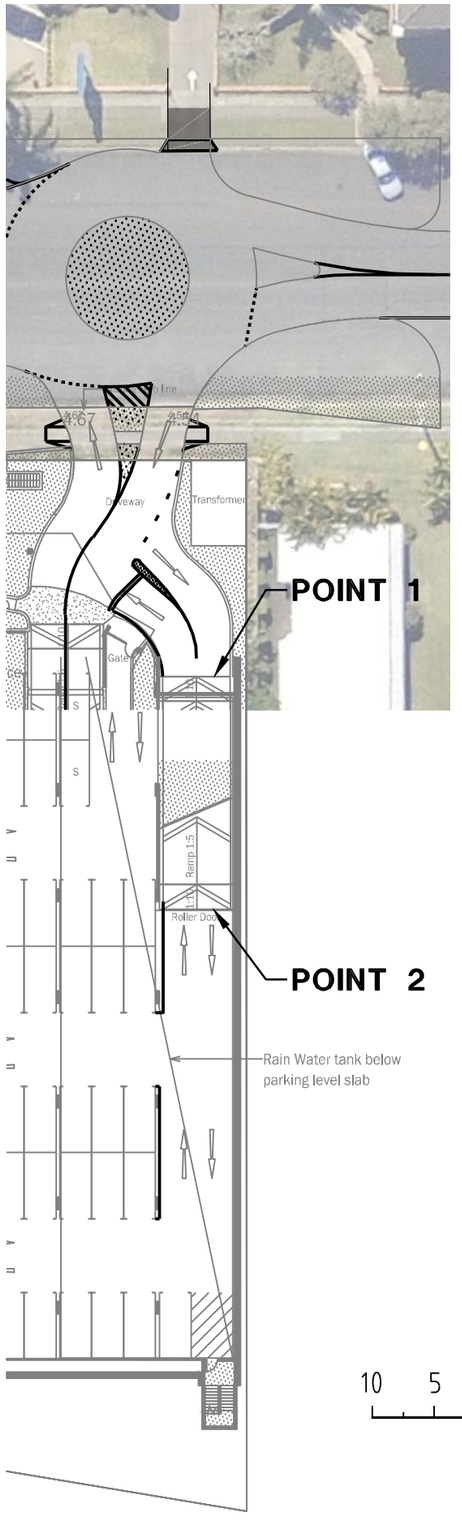
MRCagney

PROPOSED LAYOUT AND GRADING
FOR MIDDLE STREET DRIVEWAY CROSSOVER

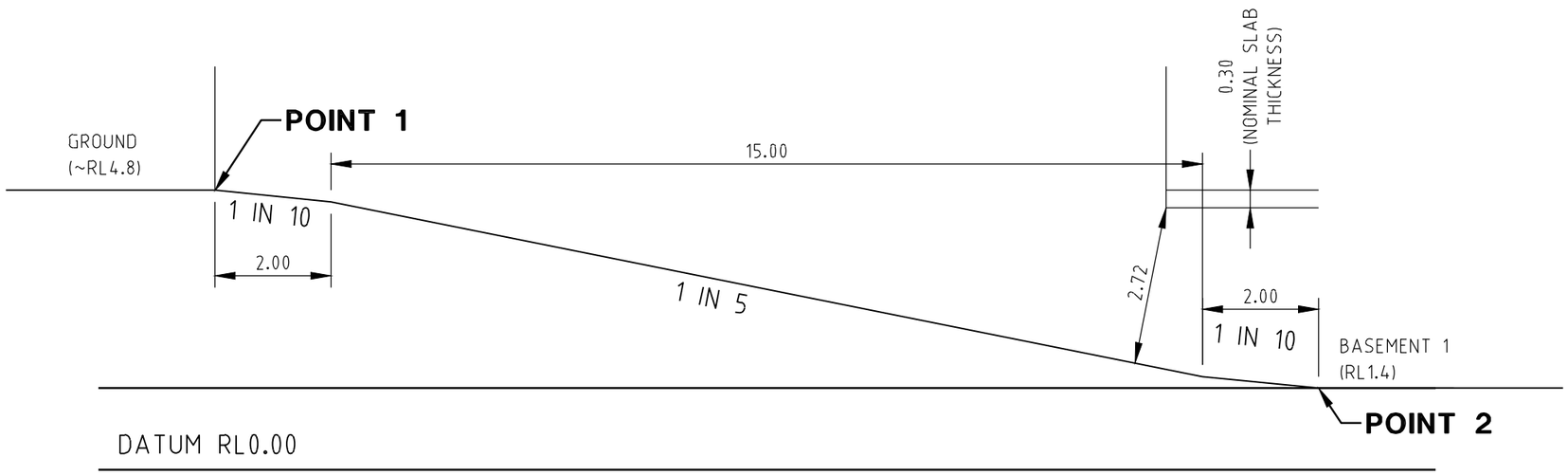
MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

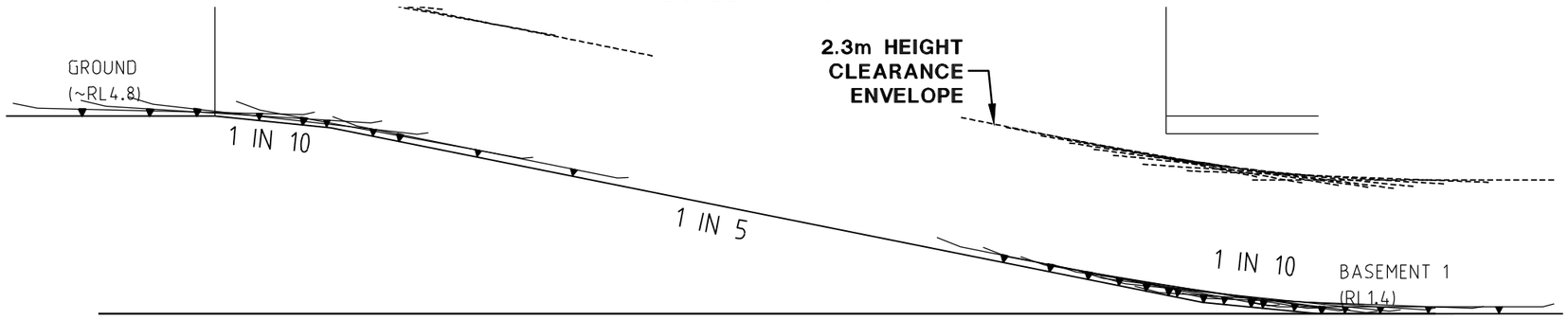
FIGURE D36



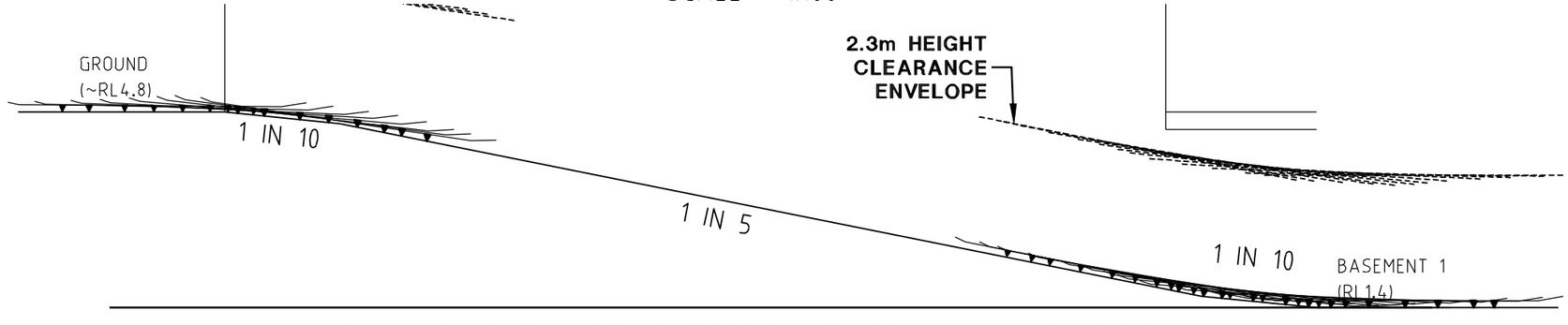
LAYOUT PLAN
SCALE - 1:500



PROPOSED RAMP GRADING
SCALE - 1:100



GROUND CLEARANCE TEMPLATE OVERLAY (INGRESS)
SCALE - 1:100



GROUND CLEARANCE TEMPLATE OVERLAY (EGRESS)
SCALE - 1:100

10 5 0 10 20 30 40m 1:500
Full Size A3

5 0 5 10 15 20m 1:250
Full Size A3

6169-12.DWG

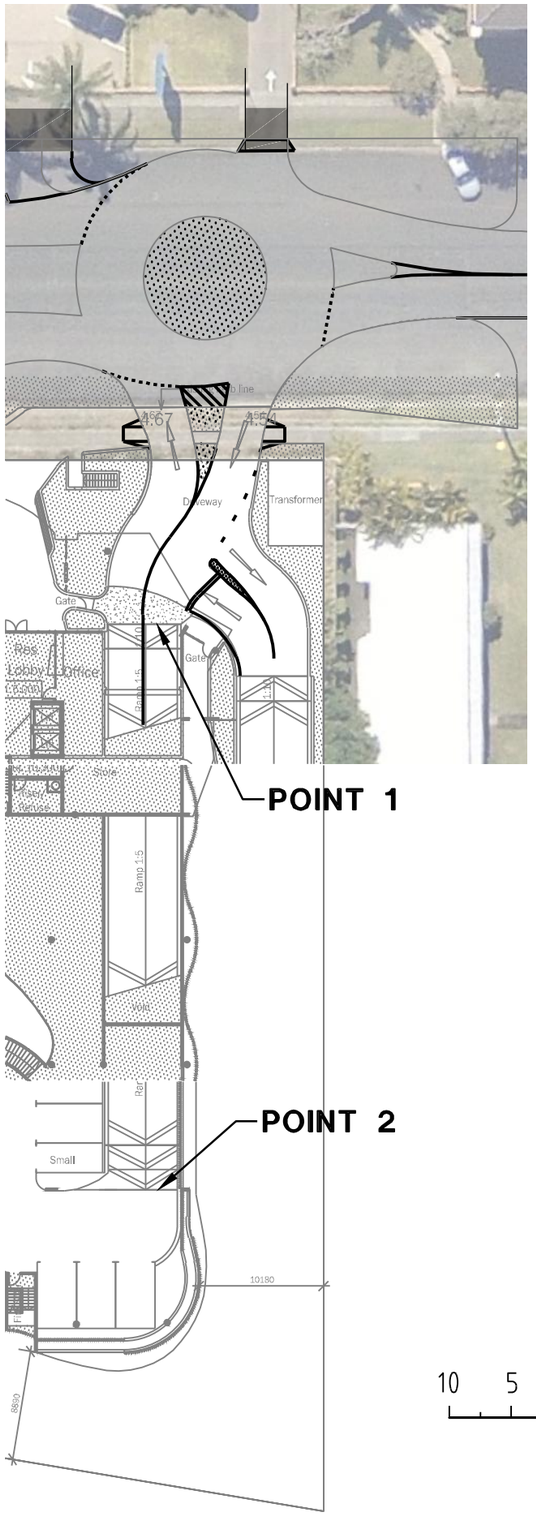
MRCagney

PROPOSED LAYOUT AND GRADING
FOR LAKE STREET ACCESS TO BASEMENT LEVEL 1 FROM GROUND

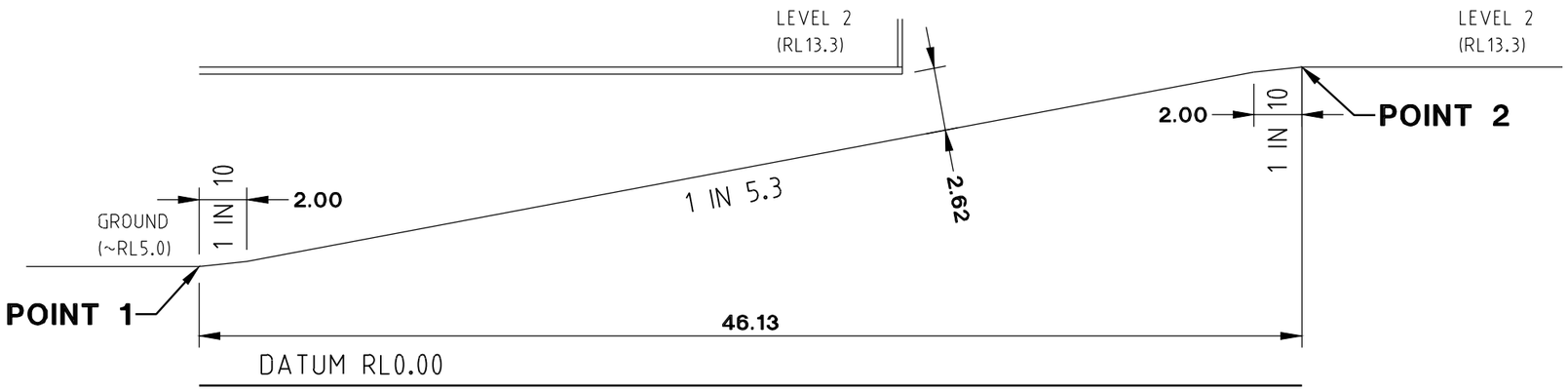
MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

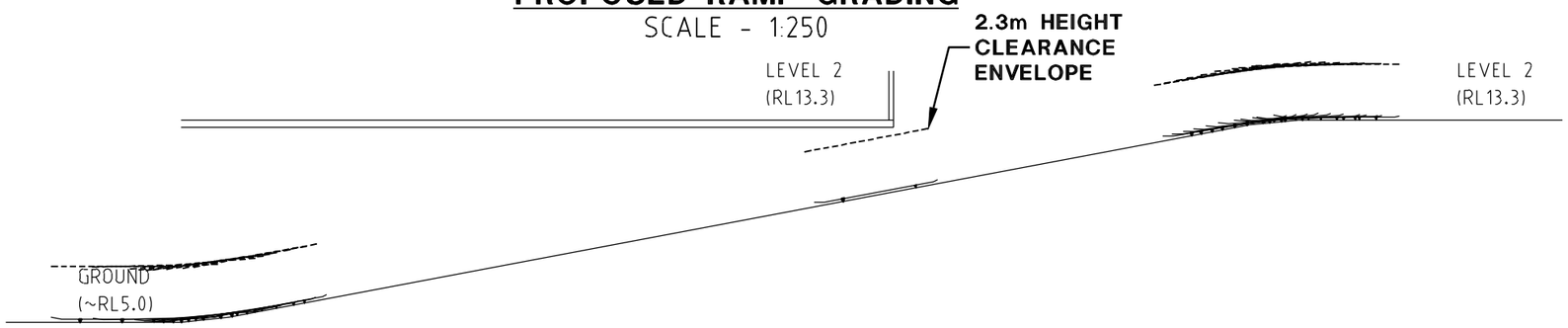
FIGURE D37



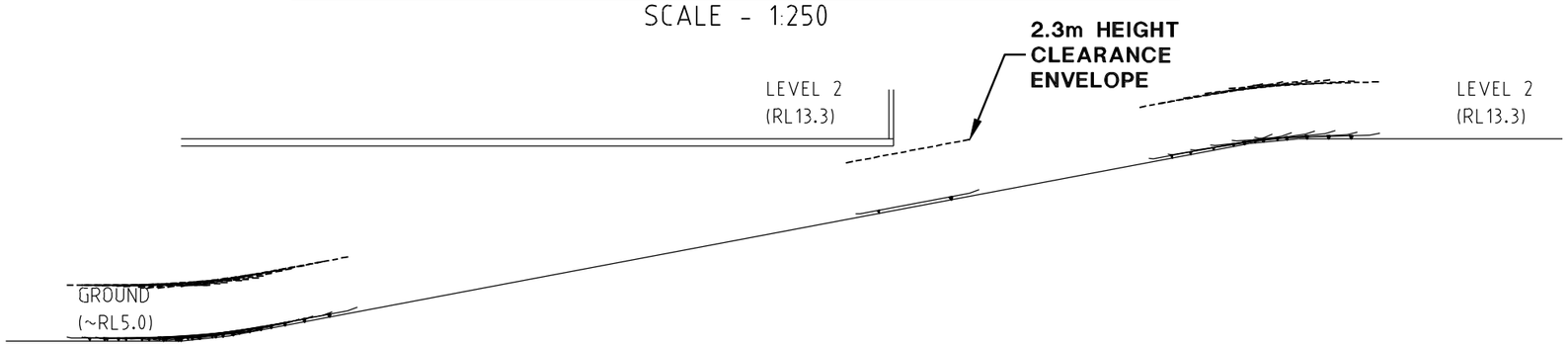
LAYOUT PLAN
SCALE - 1:500



PROPOSED RAMP GRADING
SCALE - 1:250



GROUND CLEARANCE TEMPLATE OVERLAY (INGRESS)
SCALE - 1:250



GROUND CLEARANCE TEMPLATE OVERLAY (EGRESS)
SCALE - 1:250

10 5 0 10 20 30 40m 1:500
Full Size A3

5 0 5 10 15 20m 1:250
Full Size A3

6169-12.DWG

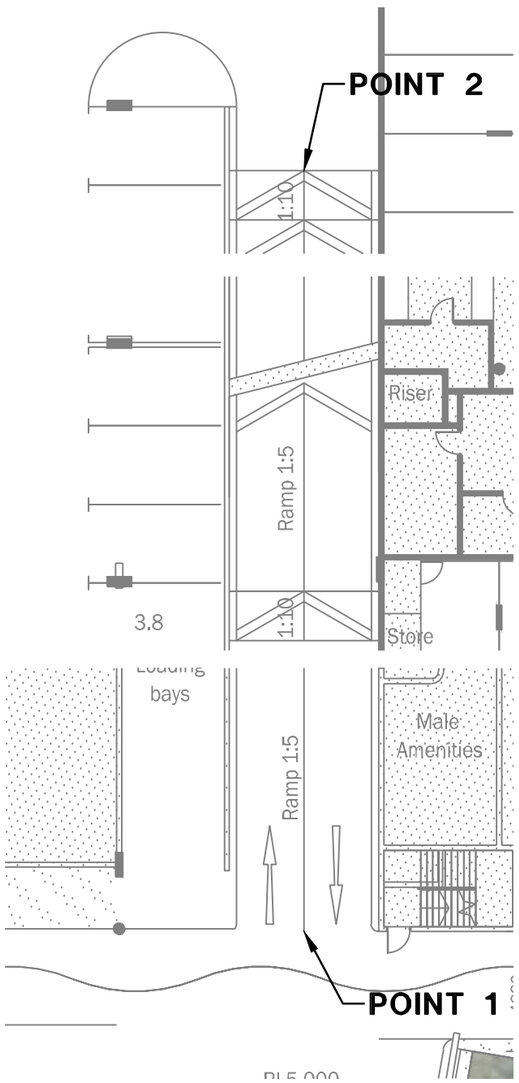
MRCagney

PROPOSED LAYOUT AND GRADING
FOR LAKE STREET ACCESS TO LEVEL 2 FROM GROUND

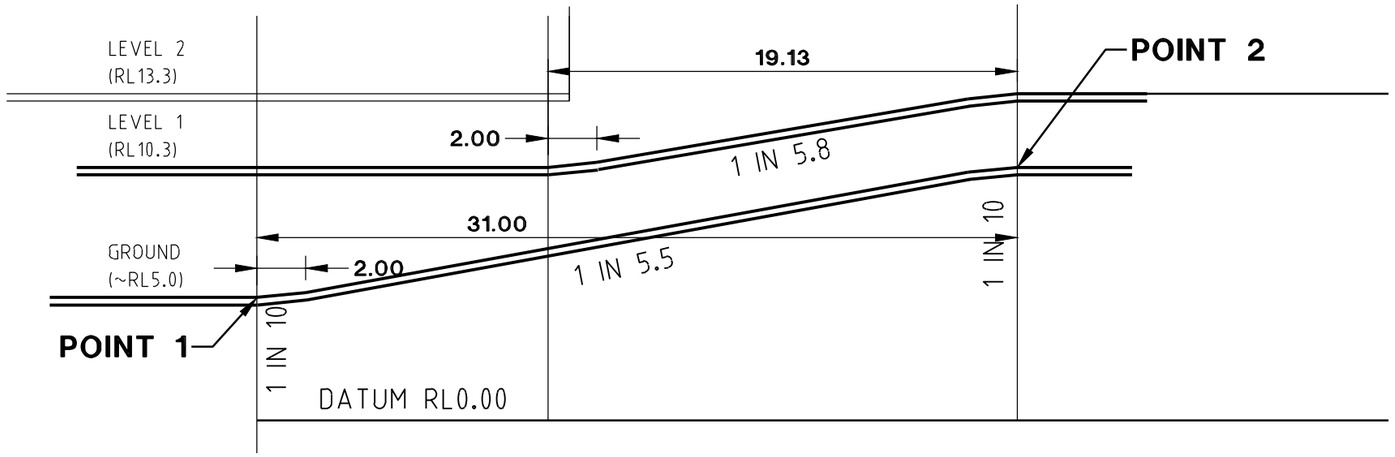
MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

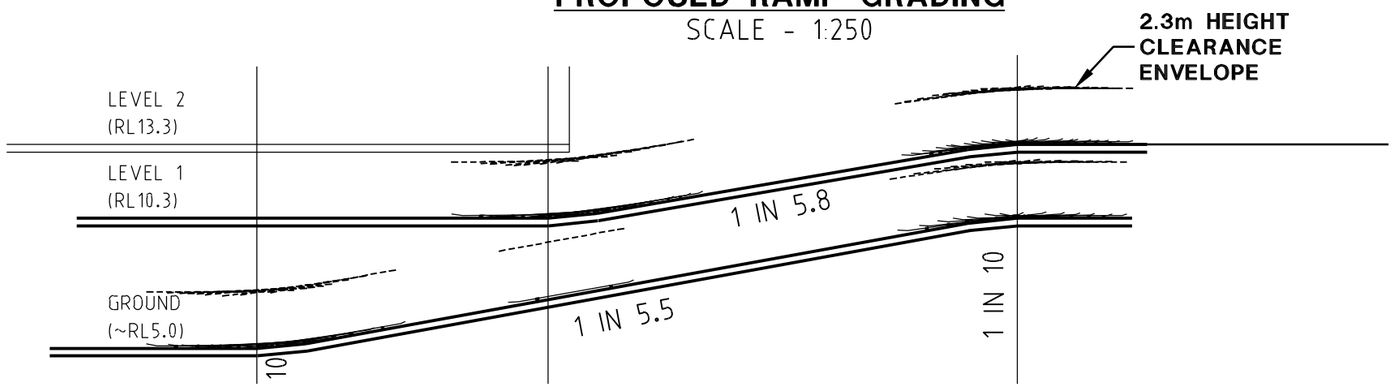
FIGURE D38



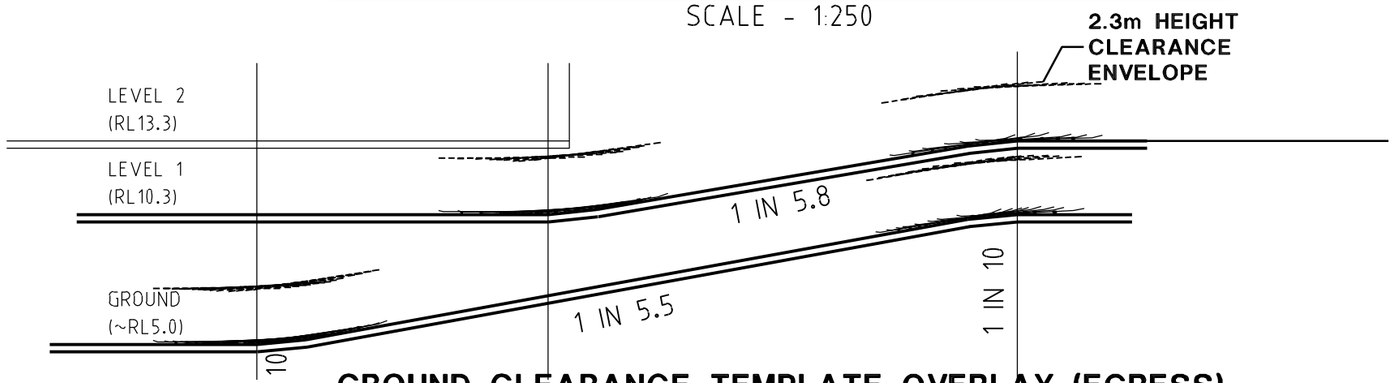
LAYOUT PLAN
SCALE - 1:250



PROPOSED RAMP GRADING
SCALE - 1:250



GROUND CLEARANCE TEMPLATE OVERLAY (INGRESS)
SCALE - 1:250



GROUND CLEARANCE TEMPLATE OVERLAY (EGRESS)
SCALE - 1:250

5 0 5 10 15 20m 1:250

Full Size A3

6169-12.DWG

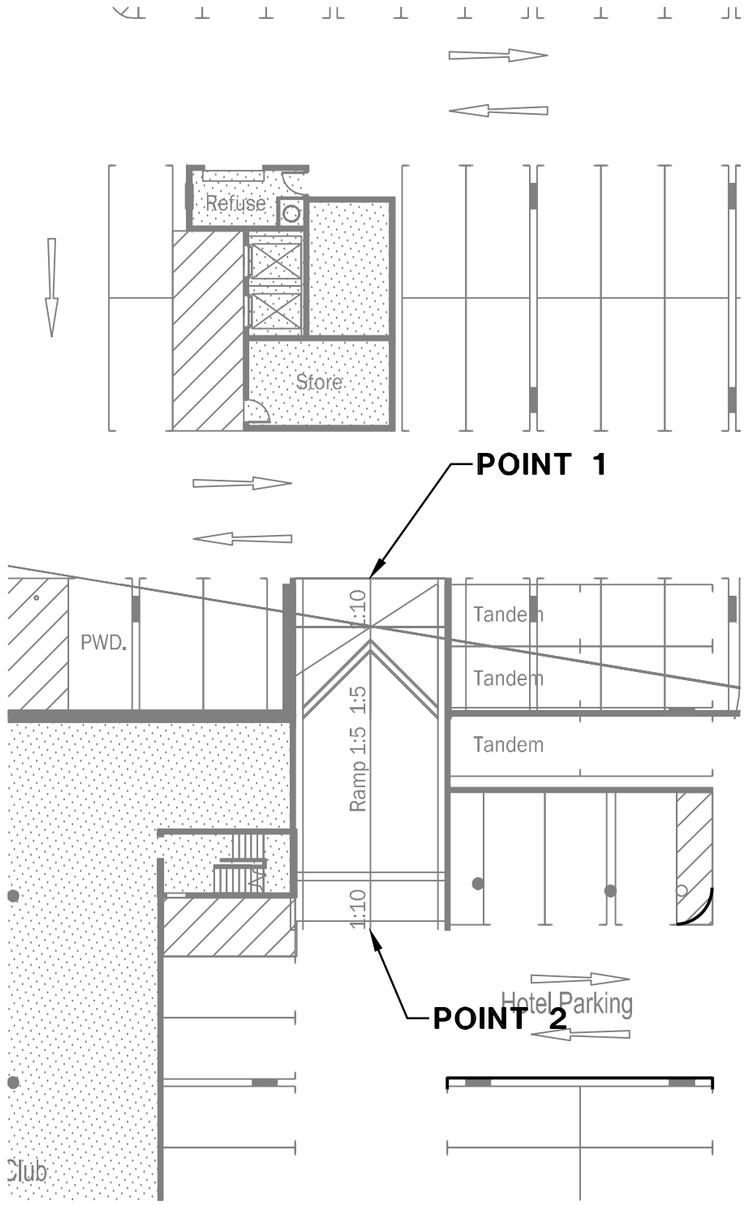
MRCagney

PROPOSED LAYOUT AND GRADING
FROM WEST STREET AISLE TO LEVELS 1 AND 2

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

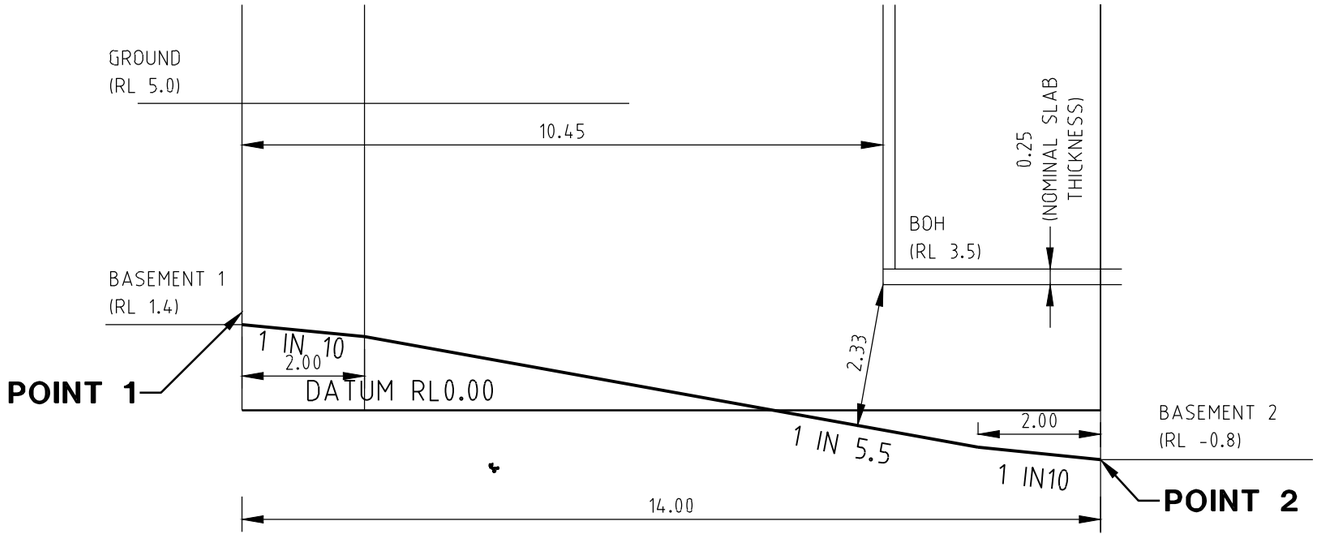
FIGURE D39



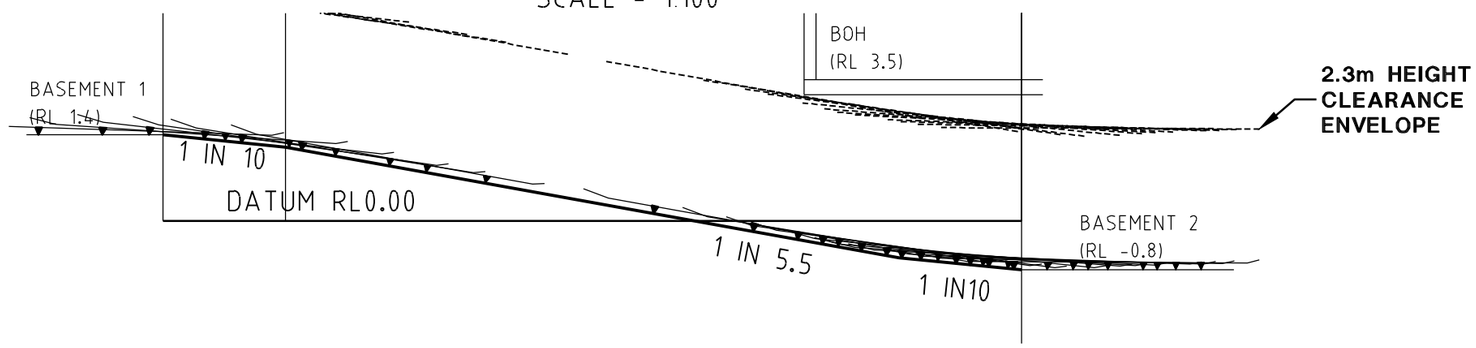
LAYOUT PLAN
SCALE - 1:250

5 0 5 10 15 20m 1:250

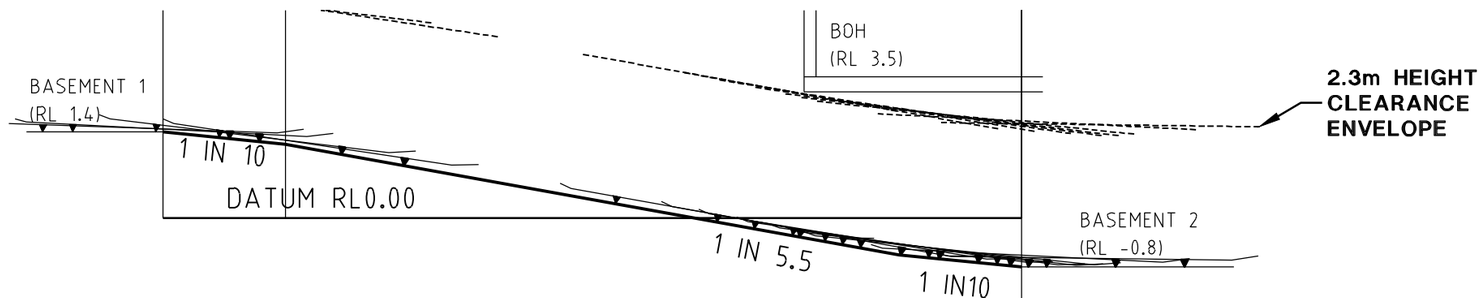
Full Size A3



PROPOSED RAMP GRADING
SCALE - 1:100



GROUND CLEARANCE TEMPLATE OVERLAY (INGRESS)
SCALE - 1:100



GROUND CLEARANCE TEMPLATE OVERLAY (EGRESS)
SCALE - 1:100

5 0 5 10 15 20m 1:250

Full Size A3

6169-12.DWG

MRCagney

PROPOSED LAYOUT AND GRADING
FOR ACCESS TO BASEMENT 2 FROM BASEMENT 1

MIXED USE DEVELOPMENT
LAKE STREET, FORSTER

IT-2 | 4th APRIL 2017

FIGURE D40

Appendix E

Parking Survey Data

ON STREET PARKING SURVEY FORM

Date / Day: Thursday 16th March 2017 Name of Surveyor: Gavin Maberly-Smith

Parking Zone (Refer attached Plan A)	8:15am	12:00pm	3:00pm	7:00pm
A	3	3	2	4
B	5	4	0	1
C	0	0	2	1
D	0	0	0	0
E	0	2	2	0
F	0	0	0	0
G	5	12	8	1
H	2	7	3	1
I	0	0	0	0
J	7	10	5	3

ON STREET PARKING SURVEY FORM

Date / Day: Friday 17th March 2017 Name of Surveyor: Gavin Maberly-Smith

Parking Zone (Refer attached Plan A)	8:00am	12:00pm	3:00pm	7:00pm
A	4	2	3	3
B	3 (construction vehicles)	3	1	1
C	1	2	1	0
D	0	0	0	0
E	0	0	0	0
F	0	0	1	1
G	4	10	7	0
H	1	4	4	1
I	0	0	0	0
J	4	14	7	3

ON STREET PARKING SURVEY FORM

Date / Day: Saturday 18th March 2017 Name of Surveyor: Gavin Maberly-Smith

Parking Zone (Refer attached Plan A)	8:00am	12:20pm	3:00pm	7:00pm
A	4	2	0	2
B	0	3	0	0
C	0	0	0	3
D	0	0	1	0
E	0	0	0	0
F	1	0	0	0
G	0	1	1	0
H	1	1	1	1
I	0	0	0	0
J	2	3	3	5

ON STREET PARKING SURVEY FORM

Date / Day: Sunday 19th March 2017 Name of Surveyor: Gavin Maberly-Smith

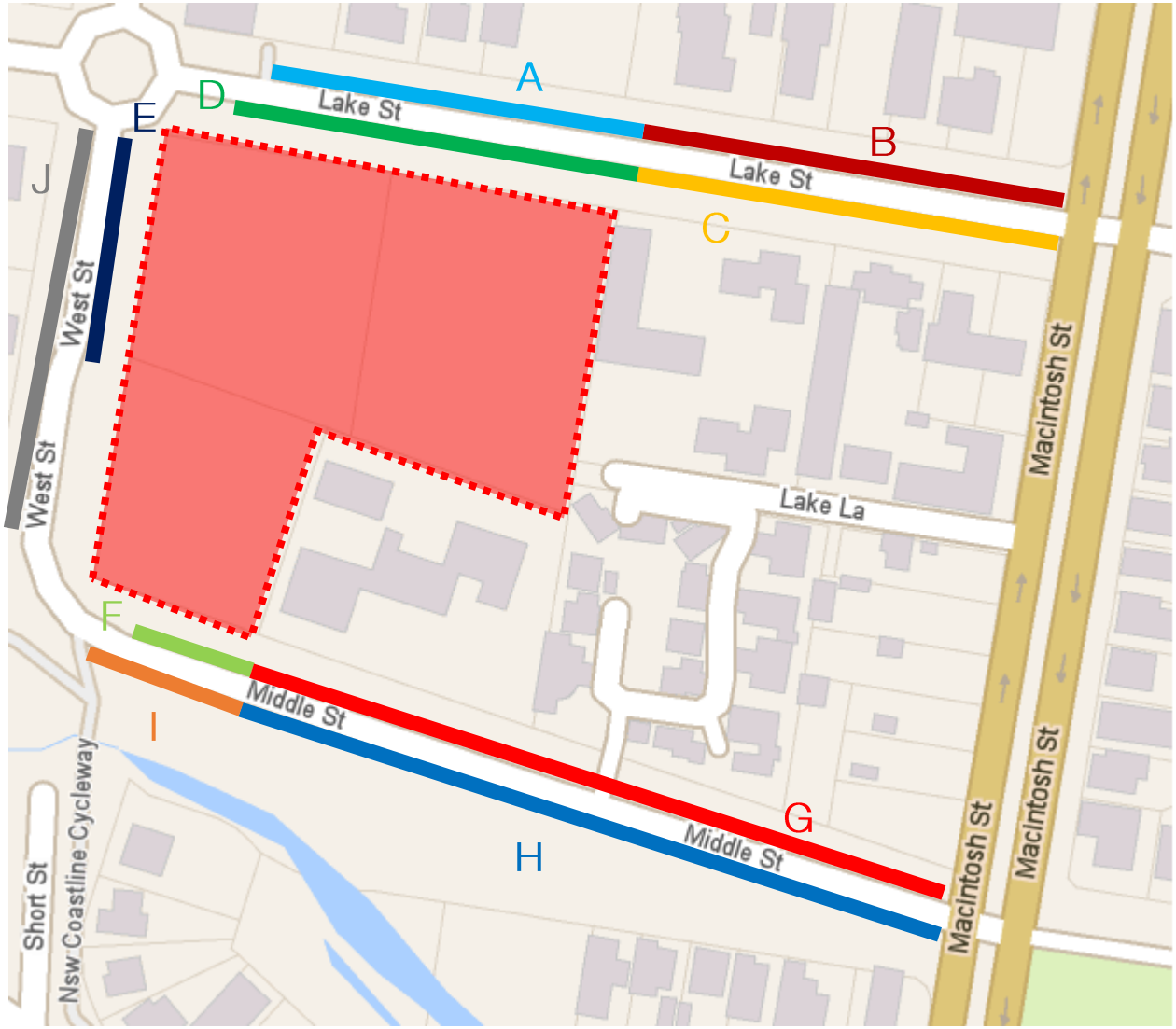
Parking Zone (Refer attached Plan A)	8:15am	12:00pm	3:00pm	7:00pm
A	2	2	4	3
B	2	3	1	0
C	1	0	0	0
D	0	0	2	0
E	0	0	0	0
F	0	0	0	0
G	0	1	1	0
H	1	1	1	1
I	0	0	0	0
J	4	5	4	3

ON STREET PARKING SURVEY FORM

Date / Day: Monday 20th March 2017 Name of Surveyor: Gavin Maberly-Smith

Parking Zone (Refer attached Plan A)	8:20am	12:00pm	3:00pm	6:40pm
A	4	4	3	3
B	3	5	3	0
C	0	0	1	0
D	0	0	0	1
E	2	2	1	0
F	0	1	0	0
G	7	9	7	1
H	5	11	4	1
I	0	0	0	0
J	6	8	5	1

Plan A: Kerbside Parking Utilisation Survey Zones



Appendix F

Results of SIDRA Analyses

Intersection 1 [2028 Base AM] Movement Summary:

Site: 101 [2028 Base AM]

MacIntosh / Lake
Signals - Fixed Time Isolated Cycle Time = 120 seconds (User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: MacIntosh Street (South)											
1	L2	22	0.0	0.572	40.9	LOS D	17.1	122.9	0.88	0.77	37.2
2	T1	670	3.1	0.572	35.5	LOS D	17.1	122.9	0.88	0.76	37.9
3	R2	26	15.4	0.311	69.4	LOS E	1.6	12.5	1.00	0.72	27.7
Approach		718	3.5	0.572	36.9	LOS D	17.1	122.9	0.88	0.76	37.3
East: Lake Street (East)											
4	L2	53	3.8	0.073	29.1	LOS C	1.9	13.6	0.65	0.71	39.8
5	T1	144	0.7	0.247	34.0	LOS C	6.3	44.6	0.80	0.65	38.6
6	R2	385	1.3	0.803	50.0	LOS D	21.4	151.5	0.95	0.89	32.5
Approach		582	1.4	0.803	44.1	LOS D	21.4	151.5	0.88	0.81	34.4
North: MacIntosh Street (North)											
7	L2	48	12.5	0.813	49.3	LOS D	28.1	206.4	0.98	0.92	34.0
8	T1	898	5.2	0.813	43.3	LOS D	28.1	206.4	0.97	0.91	35.0
9	R2	70	0.0	0.754	73.0	LOS E	4.5	31.3	1.00	0.85	27.1
Approach		1016	5.2	0.813	45.6	LOS D	28.1	206.4	0.97	0.91	34.3
West: Lake Street (West)											
10	L2	5	0.0	0.015	28.1	LOS C	0.1	0.9	0.85	0.64	40.3
11	T1	39	0.0	0.160	51.3	LOS D	2.1	14.5	0.93	0.69	32.6
12	R2	83	1.2	0.361	58.8	LOS E	4.6	32.4	0.96	0.77	30.1
Approach		127	0.8	0.361	55.3	LOS E	4.6	32.4	0.94	0.74	31.2
All Vehicles		2443	3.6	0.813	43.2	LOS D	28.1	206.4	0.92	0.83	35.0

Intersection 1 [2028 Base PM] Movement Summary:

Site: 101 [2028 Base PM]

MacIntosh / Lake
Signals - Fixed Time Isolated Cycle Time = 120 seconds (User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: MacIntosh Street (South)											
1	L2	32	3.1	0.556	35.9	LOS D	18.3	132.6	0.83	0.74	39.1
2	T1	746	3.9	0.556	30.3	LOS C	18.3	132.6	0.83	0.72	40.0
3	R2	44	9.1	0.505	70.3	LOS E	2.7	20.5	1.00	0.74	27.5
Approach		822	4.1	0.556	32.7	LOS C	18.3	132.6	0.84	0.73	39.0
East: Lake Street (East)											
4	L2	52	0.0	0.084	34.7	LOS C	2.1	14.4	0.72	0.72	37.6
5	T1	77	2.6	0.172	39.5	LOS D	3.6	25.7	0.84	0.66	36.5
6	R2	270	3.3	0.670	50.7	LOS D	14.4	103.6	0.96	0.83	32.3
Approach		399	2.8	0.670	46.4	LOS D	14.4	103.6	0.90	0.78	33.6
North: MacIntosh Street (North)											
7	L2	31	35.5	0.650	38.5	LOS D	22.3	163.8	0.88	0.78	37.6
8	T1	872	3.7	0.650	32.1	LOS C	22.3	163.8	0.87	0.77	39.2
9	R2	52	1.9	0.568	70.5	LOS E	3.2	22.9	1.00	0.76	27.6
Approach		955	4.6	0.650	34.4	LOS C	22.3	163.8	0.88	0.77	38.3
West: Lake Street (West)											
10	L2	11	0.0	0.032	28.4	LOS C	0.3	2.2	0.85	0.67	40.1
11	T1	60	0.0	0.231	51.0	LOS D	3.2	22.4	0.93	0.71	32.7
12	R2	164	1.2	0.668	61.1	LOS E	9.5	67.3	1.00	0.83	29.6
Approach		235	0.9	0.668	57.0	LOS E	9.5	67.3	0.98	0.79	30.7
All Vehicles		2411	3.8	0.670	38.0	LOS D	22.3	163.8	0.88	0.76	36.8

Intersection 1 [2028 Design AM] Movement Summary:

Site: 101 [2028 Design AM]

MacIntosh / Lake
Signals - Fixed Time Isolated Cycle Time = 120 seconds (User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: MacIntosh Street (South)											
1	L2	24	0.0	0.573	41.0	LOS D	17.2	123.3	0.88	0.77	37.2
2	T1	670	3.1	0.573	35.5	LOS D	17.2	123.3	0.88	0.76	37.8
3	R2	26	15.4	0.311	69.4	LOS E	1.6	12.5	1.00	0.72	27.7
Approach		720	3.5	0.573	36.9	LOS D	17.2	123.3	0.88	0.76	37.3
East: Lake Street (East)											
4	L2	53	3.8	0.073	29.1	LOS C	1.9	13.6	0.65	0.71	39.8
5	T1	144	0.7	0.247	34.0	LOS C	6.3	44.6	0.80	0.65	38.6
6	R2	385	1.3	0.803	50.0	LOS D	21.4	151.5	0.95	0.89	32.5
Approach		582	1.4	0.803	44.1	LOS D	21.4	151.5	0.88	0.81	34.4
North: MacIntosh Street (North)											
7	L2	48	12.5	0.813	49.3	LOS D	28.1	206.4	0.98	0.92	34.0
8	T1	898	5.2	0.813	43.3	LOS D	28.1	206.4	0.97	0.91	35.0
9	R2	70	0.0	0.754	73.0	LOS E	4.5	31.3	1.00	0.85	27.1
Approach		1016	5.2	0.813	45.6	LOS D	28.1	206.4	0.97	0.91	34.3
West: Lake Street (West)											
10	L2	5	0.0	0.015	28.1	LOS C	0.1	0.9	0.85	0.64	40.3
11	T1	39	0.0	0.160	51.3	LOS D	2.1	14.5	0.93	0.69	32.6
12	R2	96	1.0	0.417	59.2	LOS E	5.3	37.7	0.97	0.78	30.0
Approach		140	0.7	0.417	55.9	LOS E	5.3	37.7	0.95	0.75	31.0
All Vehicles		2458	3.5	0.813	43.3	LOS D	28.1	206.4	0.92	0.83	34.9

Intersection 1 [2028 Design PM] Movement Summary:

Site: 101 [2028 Design PM]

MacIntosh / Lake
Signals - Fixed Time Isolated Cycle Time = 120 seconds (User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: MacIntosh Street (South)											
1	L2	40	2.5	0.586	37.8	LOS D	19.1	138.0	0.86	0.76	38.3
2	T1	746	3.9	0.586	32.2	LOS C	19.1	138.0	0.85	0.75	39.2
3	R2	44	9.1	0.505	70.3	LOS E	2.7	20.5	1.00	0.74	27.5
Approach		830	4.1	0.586	34.4	LOS C	19.1	138.0	0.86	0.75	38.3
East: Lake Street (East)											
4	L2	52	0.0	0.086	35.4	LOS D	2.1	14.6	0.73	0.72	37.3
5	T1	77	2.6	0.178	40.4	LOS D	3.6	26.1	0.85	0.66	36.1
6	R2	270	3.3	0.696	52.2	LOS D	14.7	105.9	0.97	0.84	31.8
Approach		399	2.8	0.696	47.8	LOS D	14.7	105.9	0.91	0.79	33.2
North: MacIntosh Street (North)											
7	L2	31	35.5	0.679	40.3	LOS D	22.9	168.3	0.90	0.80	36.9
8	T1	872	3.7	0.679	33.9	LOS C	22.9	168.3	0.89	0.79	38.5
9	R2	52	1.9	0.568	70.5	LOS E	3.2	22.9	1.00	0.76	27.6
Approach		955	4.6	0.679	36.1	LOS D	22.9	168.3	0.90	0.79	37.6
West: Lake Street (West)											
10	L2	11	0.0	0.028	26.9	LOS C	0.3	2.1	0.82	0.67	40.8
11	T1	60	0.0	0.194	47.7	LOS D	3.1	21.6	0.91	0.69	33.7
12	R2	193	1.0	0.661	58.2	LOS E	10.9	77.3	0.99	0.83	30.3
Approach		264	0.8	0.661	54.6	LOS D	10.9	77.3	0.97	0.79	31.3
All Vehicles		2448	3.7	0.696	39.4	LOS D	22.9	168.3	0.89	0.77	36.3

Intersection 2 [2028 Base AM] Movement Summary:

Site: 102 [2028 Base AM]

Lake / West
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	24	4.2	0.069	5.8	LOS A	0.3	2.4	0.42	0.56	52.7
2	T1	44	0.0	0.069	6.0	LOS A	0.3	2.4	0.42	0.56	53.7
3	R2	4	0.0	0.069	9.5	LOS A	0.3	2.4	0.42	0.56	53.5
3u	U	1	0.0	0.069	11.2	LOS B	0.3	2.4	0.42	0.56	54.0
Approach		73	1.4	0.069	6.2	LOS A	0.3	2.4	0.42	0.56	53.4
East: Lake Street (East)											
4	L2	11	0.0	0.181	4.8	LOS A	1.0	6.9	0.16	0.56	52.4
5	T1	117	0.0	0.181	4.9	LOS A	1.0	6.9	0.16	0.56	53.6
6	R2	123	0.8	0.181	8.3	LOS A	1.0	6.9	0.16	0.56	53.1
6u	U	2	0.0	0.181	10.0	LOS B	1.0	6.9	0.16	0.56	53.9
Approach		253	0.4	0.181	6.6	LOS A	1.0	6.9	0.16	0.56	53.3
North: West Street (North)											
7	L2	45	0.0	0.058	4.8	LOS A	0.3	2.0	0.24	0.55	53.1
8	T1	4	0.0	0.058	5.1	LOS A	0.3	2.0	0.24	0.55	54.0
9	R2	21	0.0	0.058	8.6	LOS A	0.3	2.0	0.24	0.55	53.7
9u	U	1	0.0	0.058	10.3	LOS B	0.3	2.0	0.24	0.55	54.3
Approach		71	0.0	0.058	6.0	LOS A	0.3	2.0	0.24	0.55	53.3
West: Lake Street (West)											
10	L2	14	7.1	0.087	5.6	LOS A	0.4	3.0	0.34	0.54	52.3
11	T1	68	1.5	0.087	5.6	LOS A	0.4	3.0	0.34	0.54	53.6
12	R2	9	0.0	0.087	9.0	LOS A	0.4	3.0	0.34	0.54	53.3
12u	U	5	0.0	0.087	10.7	LOS B	0.4	3.0	0.34	0.54	54.0
Approach		96	2.1	0.087	6.2	LOS A	0.4	3.0	0.34	0.54	53.4
All Vehicles		493	0.8	0.181	6.4	LOS A	1.0	6.9	0.25	0.55	53.3

Intersection 2 [2028 Base PM] Movement Summary:

Site: 102 [2028 Base PM]

Lake / West
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	22	4.5	0.055	5.4	LOS A	0.3	1.9	0.35	0.54	52.8
2	T1	32	3.1	0.055	5.7	LOS A	0.3	1.9	0.35	0.54	53.8
3	R2	6	0.0	0.055	9.1	LOS A	0.3	1.9	0.35	0.54	53.6
3u	U	1	0.0	0.055	10.8	LOS B	0.3	1.9	0.35	0.54	54.2
Approach		61	3.3	0.055	6.0	LOS A	0.3	1.9	0.35	0.54	53.4
East: Lake Street (East)											
4	L2	4	25.0	0.124	5.1	LOS A	0.7	4.7	0.15	0.55	51.6
5	T1	86	2.3	0.124	4.9	LOS A	0.7	4.7	0.15	0.55	53.6
6	R2	77	2.6	0.124	8.3	LOS A	0.7	4.7	0.15	0.55	53.1
6u	U	1	0.0	0.124	10.0	LOS B	0.7	4.7	0.15	0.55	53.9
Approach		168	3.0	0.124	6.5	LOS A	0.7	4.7	0.15	0.55	53.3
North: West Street (North)											
7	L2	102	1.0	0.110	5.1	LOS A	0.6	4.0	0.32	0.55	53.2
8	T1	5	0.0	0.110	5.4	LOS A	0.6	4.0	0.32	0.55	54.1
9	R2	17	0.0	0.110	8.9	LOS A	0.6	4.0	0.32	0.55	53.8
9u	U	4	0.0	0.110	10.6	LOS B	0.6	4.0	0.32	0.55	54.4
Approach		128	0.8	0.110	5.8	LOS A	0.6	4.0	0.32	0.55	53.3
West: Lake Street (West)											
10	L2	15	0.0	0.128	5.3	LOS A	0.6	4.6	0.29	0.51	52.9
11	T1	124	0.8	0.128	5.4	LOS A	0.6	4.6	0.29	0.51	54.0
12	R2	2	0.0	0.128	8.7	LOS A	0.6	4.6	0.29	0.51	53.6
12u	U	9	11.1	0.128	10.7	LOS B	0.6	4.6	0.29	0.51	53.8
Approach		150	1.3	0.128	5.7	LOS A	0.6	4.6	0.29	0.51	53.9
All Vehicles		507	2.0	0.128	6.0	LOS A	0.7	4.7	0.26	0.54	53.5

Intersection 2 [2028 Design AM] Movement Summary:

Site: 102 [2028 Design AM]

Lake / West
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	34	2.9	0.099	6.3	LOS A	0.5	3.6	0.49	0.61	52.4
2	T1	54	0.0	0.099	6.6	LOS A	0.5	3.6	0.49	0.61	53.4
3	R2	8	0.0	0.099	10.0	LOS A	0.5	3.6	0.49	0.61	53.1
3u	U	1	0.0	0.099	11.7	LOS B	0.5	3.6	0.49	0.61	53.7
Approach		97	1.0	0.099	6.8	LOS A	0.5	3.6	0.49	0.61	53.0
East: Lake Street (East)											
4	L2	12	0.0	0.261	5.1	LOS A	1.5	10.8	0.27	0.57	52.1
5	T1	161	0.0	0.261	5.2	LOS A	1.5	10.8	0.27	0.57	53.3
6	R2	167	0.6	0.261	8.5	LOS A	1.5	10.8	0.27	0.57	52.8
6u	U	2	0.0	0.261	10.3	LOS B	1.5	10.8	0.27	0.57	53.5
Approach		342	0.3	0.261	6.8	LOS A	1.5	10.8	0.27	0.57	53.0
North: West Street (North)											
7	L2	70	0.0	0.100	5.1	LOS A	0.5	3.7	0.32	0.55	53.1
8	T1	25	0.0	0.100	5.4	LOS A	0.5	3.7	0.32	0.55	54.0
9	R2	21	0.0	0.100	8.8	LOS A	0.5	3.7	0.32	0.55	53.7
9u	U	1	0.0	0.100	10.5	LOS B	0.5	3.7	0.32	0.55	54.3
Approach		117	0.0	0.100	5.9	LOS A	0.5	3.7	0.32	0.55	53.4
West: Lake Street (West)											
10	L2	14	7.1	0.134	6.0	LOS A	0.7	4.9	0.41	0.59	51.8
11	T1	93	1.1	0.134	6.0	LOS A	0.7	4.9	0.41	0.59	53.2
12	R2	30	0.0	0.134	9.3	LOS A	0.7	4.9	0.41	0.59	52.8
12u	U	5	0.0	0.134	11.1	LOS B	0.7	4.9	0.41	0.59	53.5
Approach		142	1.4	0.134	6.9	LOS A	0.7	4.9	0.41	0.59	53.0
All Vehicles		698	0.6	0.261	6.7	LOS A	1.5	10.8	0.34	0.57	53.1

Intersection 2 [2028 Design PM] Movement Summary:

Site: 102 [2028 Design PM]

Lake / West
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	48	2.1	0.128	6.5	LOS A	0.7	5.0	0.55	0.64	52.2
2	T1	58	1.7	0.128	6.9	LOS A	0.7	5.0	0.55	0.64	53.2
3	R2	12	0.0	0.128	10.3	LOS B	0.7	5.0	0.55	0.64	52.9
3u	U	1	0.0	0.128	12.0	LOS B	0.7	5.0	0.55	0.64	53.5
Approach		119	1.7	0.128	7.1	LOS A	0.7	5.0	0.55	0.64	52.8
East: Lake Street (East)											
4	L2	7	14.3	0.330	6.2	LOS A	2.1	15.1	0.46	0.62	51.0
5	T1	185	1.1	0.330	6.0	LOS A	2.1	15.1	0.46	0.62	52.6
6	R2	176	1.1	0.330	9.3	LOS A	2.1	15.1	0.46	0.62	52.2
6u	U	1	0.0	0.330	11.1	LOS B	2.1	15.1	0.46	0.62	52.9
Approach		369	1.4	0.330	7.6	LOS A	2.1	15.1	0.46	0.62	52.4
North: West Street (North)											
7	L2	192	0.5	0.324	6.5	LOS A	2.1	14.6	0.59	0.67	52.4
8	T1	103	0.0	0.324	6.9	LOS A	2.1	14.6	0.59	0.67	53.3
9	R2	17	0.0	0.324	10.3	LOS B	2.1	14.6	0.59	0.67	53.1
9u	U	4	0.0	0.324	12.0	LOS B	2.1	14.6	0.59	0.67	53.6
Approach		316	0.3	0.324	6.9	LOS A	2.1	14.6	0.59	0.67	52.8
West: Lake Street (West)											
10	L2	15	0.0	0.324	6.3	LOS A	2.0	14.2	0.51	0.63	51.8
11	T1	255	0.4	0.324	6.4	LOS A	2.0	14.2	0.51	0.63	52.9
12	R2	59	0.0	0.324	9.7	LOS A	2.0	14.2	0.51	0.63	52.5
12u	U	9	11.1	0.324	11.8	LOS B	2.0	14.2	0.51	0.63	52.7
Approach		338	0.6	0.324	7.1	LOS A	2.0	14.2	0.51	0.63	52.8
All Vehicles		1142	0.9	0.330	7.2	LOS A	2.1	15.1	0.52	0.64	52.7

Intersection 3 [2028 Base AM] Movement Summary:

Site: 103 [2028 Base AM]

West / Wallis
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	50	4.0	0.121	4.4	LOS A	0.6	4.4	0.15	0.45	54.1
2	T1	117	0.0	0.121	4.7	LOS A	0.6	4.4	0.15	0.45	55.4
3	R2	1	0.0	0.121	8.5	LOS A	0.6	4.4	0.15	0.45	55.1
3u	U	1	0.0	0.121	10.4	LOS B	0.6	4.4	0.15	0.45	55.9
Approach		169	1.2	0.121	4.7	LOS A	0.6	4.4	0.15	0.45	55.0
East: Wallis Street (East)											
4	L2	11	0.0	0.034	4.4	LOS A	0.2	1.1	0.16	0.49	53.7
5	T1	25	0.0	0.034	4.7	LOS A	0.2	1.1	0.16	0.49	54.9
6	R2	7	14.3	0.034	8.8	LOS A	0.2	1.1	0.16	0.49	54.0
6u	U	1	0.0	0.034	10.4	LOS B	0.2	1.1	0.16	0.49	55.4
Approach		44	2.3	0.034	5.4	LOS A	0.2	1.1	0.16	0.49	54.5
North: West Street (North)											
7	L2	1	0.0	0.020	4.3	LOS A	0.1	0.7	0.11	0.48	53.8
8	T1	20	0.0	0.020	4.6	LOS A	0.1	0.7	0.11	0.48	54.9
9	R2	4	0.0	0.020	8.5	LOS A	0.1	0.7	0.11	0.48	54.6
9u	U	1	0.0	0.020	10.3	LOS B	0.1	0.7	0.11	0.48	55.4
Approach		26	0.0	0.020	5.4	LOS A	0.1	0.7	0.11	0.48	54.8
West: Wallis Street (West)											
10	L2	10	0.0	0.026	4.8	LOS A	0.1	0.8	0.27	0.58	52.1
11	T1	1	0.0	0.026	5.1	LOS A	0.1	0.8	0.27	0.58	53.2
12	R2	19	0.0	0.026	8.9	LOS A	0.1	0.8	0.27	0.58	53.0
12u	U	1	0.0	0.026	10.8	LOS B	0.1	0.8	0.27	0.58	53.7
Approach		31	0.0	0.026	7.5	LOS A	0.1	0.8	0.27	0.58	52.7
All Vehicles		270	1.1	0.121	5.2	LOS A	0.6	4.4	0.16	0.47	54.6

Intersection 3 [2028 Base PM] Movement Summary:

Site: 103 [2028 Base PM]

West / Wallis
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	37	2.7	0.087	4.4	LOS A	0.4	3.1	0.14	0.45	54.1
2	T1	80	2.5	0.087	4.7	LOS A	0.4	3.1	0.14	0.45	55.3
3	R2	2	0.0	0.087	8.5	LOS A	0.4	3.1	0.14	0.45	55.1
3u	U	1	0.0	0.087	10.4	LOS B	0.4	3.1	0.14	0.45	55.9
Approach		120	2.5	0.087	4.7	LOS A	0.4	3.1	0.14	0.45	54.9
East: Wallis Street (East)											
4	L2	11	0.0	0.029	4.7	LOS A	0.1	1.0	0.24	0.48	53.6
5	T1	22	0.0	0.029	4.9	LOS A	0.1	1.0	0.24	0.48	54.8
6	R2	2	0.0	0.029	8.8	LOS A	0.1	1.0	0.24	0.48	54.5
6u	U	1	0.0	0.029	10.7	LOS B	0.1	1.0	0.24	0.48	55.3
Approach		36	0.0	0.029	5.2	LOS A	0.1	1.0	0.24	0.48	54.4
North: West Street (North)											
7	L2	4	0.0	0.036	4.5	LOS A	0.2	1.2	0.21	0.47	53.6
8	T1	36	2.8	0.036	4.9	LOS A	0.2	1.2	0.21	0.47	54.7
9	R2	4	0.0	0.036	8.7	LOS A	0.2	1.2	0.21	0.47	54.5
9u	U	1	0.0	0.036	10.6	LOS B	0.2	1.2	0.21	0.47	55.3
Approach		45	2.2	0.036	5.3	LOS A	0.2	1.2	0.21	0.47	54.6
West: Wallis Street (West)											
10	L2	27	0.0	0.076	4.6	LOS A	0.4	2.6	0.23	0.58	52.3
11	T1	9	0.0	0.076	4.9	LOS A	0.4	2.6	0.23	0.58	53.4
12	R2	55	0.0	0.076	8.8	LOS A	0.4	2.6	0.23	0.58	53.1
12u	U	4	0.0	0.076	10.7	LOS B	0.4	2.6	0.23	0.58	53.9
Approach		95	0.0	0.076	7.3	LOS A	0.4	2.6	0.23	0.58	52.9
All Vehicles		296	1.4	0.087	5.7	LOS A	0.4	3.1	0.19	0.50	54.2

Intersection 3 [2028 Design AM] Movement Summary:

Site: 103 [2028 Design AM]

West / Wallis
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	50	4.0	0.157	4.4	LOS A	0.8	6.0	0.16	0.45	54.0
2	T1	171	0.0	0.157	4.7	LOS A	0.8	6.0	0.16	0.45	55.3
3	R2	1	0.0	0.157	8.5	LOS A	0.8	6.0	0.16	0.45	55.1
3u	U	1	0.0	0.157	10.4	LOS B	0.8	6.0	0.16	0.45	55.9
Approach		223	0.9	0.157	4.7	LOS A	0.8	6.0	0.16	0.45	55.0
East: Wallis Street (East)											
4	L2	11	0.0	0.036	4.6	LOS A	0.2	1.2	0.23	0.49	53.5
5	T1	25	0.0	0.036	4.9	LOS A	0.2	1.2	0.23	0.49	54.6
6	R2	7	14.3	0.036	9.0	LOS A	0.2	1.2	0.23	0.49	53.8
6u	U	1	0.0	0.036	10.6	LOS B	0.2	1.2	0.23	0.49	55.2
Approach		44	2.3	0.036	5.6	LOS A	0.2	1.2	0.23	0.49	54.2
North: West Street (North)											
7	L2	1	0.0	0.051	4.3	LOS A	0.3	1.8	0.11	0.45	54.1
8	T1	65	0.0	0.051	4.6	LOS A	0.3	1.8	0.11	0.45	55.3
9	R2	4	0.0	0.051	8.5	LOS A	0.3	1.8	0.11	0.45	55.0
9u	U	1	0.0	0.051	10.3	LOS B	0.3	1.8	0.11	0.45	55.8
Approach		71	0.0	0.051	4.9	LOS A	0.3	1.8	0.11	0.45	55.2
West: Wallis Street (West)											
10	L2	10	0.0	0.027	5.0	LOS A	0.1	0.9	0.33	0.59	52.0
11	T1	1	0.0	0.027	5.3	LOS A	0.1	0.9	0.33	0.59	53.0
12	R2	19	0.0	0.027	9.2	LOS A	0.1	0.9	0.33	0.59	52.8
12u	U	1	0.0	0.027	11.1	LOS B	0.1	0.9	0.33	0.59	53.5
Approach		31	0.0	0.027	7.8	LOS A	0.1	0.9	0.33	0.59	52.6
All Vehicles		369	0.8	0.157	5.1	LOS A	0.8	6.0	0.17	0.46	54.8

Intersection 3 [2028 Design PM] Movement Summary:

Site: 103 [2028 Design PM]

West / Wallis
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	37	2.7	0.170	4.4	LOS A	1.0	6.9	0.15	0.44	54.1
2	T1	206	1.0	0.170	4.7	LOS A	1.0	6.9	0.15	0.44	55.3
3	R2	2	0.0	0.170	8.5	LOS A	1.0	6.9	0.15	0.44	55.1
3u	U	1	0.0	0.170	10.4	LOS B	1.0	6.9	0.15	0.44	55.9
Approach		246	1.2	0.170	4.7	LOS A	1.0	6.9	0.15	0.44	55.1
East: Wallis Street (East)											
4	L2	11	0.0	0.034	5.6	LOS A	0.2	1.2	0.42	0.54	53.0
5	T1	22	0.0	0.034	5.8	LOS A	0.2	1.2	0.42	0.54	54.1
6	R2	2	0.0	0.034	9.7	LOS A	0.2	1.2	0.42	0.54	53.8
6u	U	1	0.0	0.034	11.6	LOS B	0.2	1.2	0.42	0.54	54.6
Approach		36	0.0	0.034	6.1	LOS A	0.2	1.2	0.42	0.54	53.7
North: West Street (North)											
7	L2	4	0.0	0.175	4.6	LOS A	1.0	7.0	0.24	0.45	53.7
8	T1	224	0.4	0.175	4.9	LOS A	1.0	7.0	0.24	0.45	54.9
9	R2	4	0.0	0.175	8.7	LOS A	1.0	7.0	0.24	0.45	54.6
9u	U	1	0.0	0.175	10.6	LOS B	1.0	7.0	0.24	0.45	55.4
Approach		233	0.4	0.175	4.9	LOS A	1.0	7.0	0.24	0.45	54.8
West: Wallis Street (West)											
10	L2	27	0.0	0.085	5.3	LOS A	0.4	2.9	0.37	0.61	51.9
11	T1	9	0.0	0.085	5.5	LOS A	0.4	2.9	0.37	0.61	52.9
12	R2	55	0.0	0.085	9.4	LOS A	0.4	2.9	0.37	0.61	52.7
12u	U	4	0.0	0.085	11.3	LOS B	0.4	2.9	0.37	0.61	53.4
Approach		95	0.0	0.085	7.9	LOS A	0.4	2.9	0.37	0.61	52.5
All Vehicles		610	0.7	0.175	5.4	LOS A	1.0	7.0	0.23	0.48	54.5

Intersection 4 [2028 Base AM] Movement Summary:

Site: 104 [2028 Base AM]

Head / West
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	141	0.7	0.181	8.4	LOS A	0.7	4.7	0.51	0.76	51.5
Approach		141	0.7	0.181	8.4	LOS A	0.7	4.7	0.51	0.76	51.5
East: Head Street (East)											
4	L2	1	0.0	0.255	5.6	LOS A	0.0	0.0	0.00	0.00	58.3
5	T1	977	2.7	0.255	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
6	R2	47	0.0	0.123	13.8	LOS B	0.4	3.0	0.75	0.90	47.5
6u	U	1	0.0	0.123	25.5	LOS D	0.4	3.0	0.75	0.90	47.3
Approach		1026	2.5	0.255	0.7	NA	0.4	3.0	0.04	0.04	59.2
North: West Street (North)											
7	L2	88	0.0	0.116	8.4	LOS A	0.4	2.9	0.50	0.74	51.5
Approach		88	0.0	0.116	8.4	LOS A	0.4	2.9	0.50	0.74	51.5
West: Head Street (West)											
10	L2	14	0.0	0.276	5.6	LOS A	0.0	0.0	0.00	0.02	58.2
11	T1	1030	4.7	0.276	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
12	R2	19	0.0	0.047	12.3	LOS B	0.2	1.1	0.71	0.87	48.2
12u	U	1	0.0	0.047	22.1	LOS C	0.2	1.1	0.71	0.87	48.1
Approach		1064	4.5	0.276	0.3	NA	0.2	1.1	0.01	0.02	59.6
All Vehicles		2319	3.2	0.276	1.3	NA	0.7	4.7	0.07	0.10	58.5

Intersection 4 [2028 Base PM] Movement Summary:

Site: 104 [2028 Base PM]

Head / West
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	123	1.6	0.154	8.2	LOS A	0.6	4.0	0.49	0.74	51.6
Approach		123	1.6	0.154	8.2	LOS A	0.6	4.0	0.49	0.74	51.6
East: Head Street (East)											
4	L2	6	0.0	0.246	5.6	LOS A	0.0	0.0	0.00	0.01	58.2
5	T1	930	3.9	0.246	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
6	R2	55	0.0	0.133	13.1	LOS B	0.5	3.3	0.73	0.89	47.9
6u	U	1	0.0	0.133	23.7	LOS C	0.5	3.3	0.73	0.89	47.7
Approach		992	3.6	0.246	0.8	NA	0.5	3.3	0.04	0.05	59.1
North: West Street (North)											
7	L2	123	0.0	0.158	8.3	LOS A	0.6	4.0	0.50	0.75	51.5
Approach		123	0.0	0.158	8.3	LOS A	0.6	4.0	0.50	0.75	51.5
West: Head Street (West)											
10	L2	11	0.0	0.263	5.6	LOS A	0.0	0.0	0.00	0.01	58.2
11	T1	992	3.4	0.263	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
12	R2	30	3.3	0.070	12.3	LOS B	0.2	1.7	0.70	0.88	48.3
12u	U	1	0.0	0.070	20.9	LOS C	0.2	1.7	0.70	0.88	48.2
Approach		1034	3.4	0.263	0.5	NA	0.2	1.7	0.02	0.03	59.4
All Vehicles		2272	3.2	0.263	1.5	NA	0.6	4.0	0.08	0.12	58.3

Intersection 4 [2028 Design AM] Movement Summary:

Site: 104 [2028 Design AM]

Head / West
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	195	0.5	0.250	8.5	LOS A	1.0	6.8	0.53	0.78	51.3
Approach		195	0.5	0.250	8.5	LOS A	1.0	6.8	0.53	0.78	51.3
East: Head Street (East)											
4	L2	1	0.0	0.255	5.6	LOS A	0.0	0.0	0.00	0.00	58.3
5	T1	977	2.7	0.255	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
6	R2	47	0.0	0.123	13.8	LOS B	0.4	3.0	0.75	0.90	47.5
6u	U	1	0.0	0.123	25.5	LOS D	0.4	3.0	0.75	0.90	47.3
Approach		1026	2.5	0.255	0.7	NA	0.4	3.0	0.04	0.04	59.2
North: West Street (North)											
7	L2	88	0.0	0.116	8.4	LOS A	0.4	2.9	0.50	0.74	51.5
Approach		88	0.0	0.116	8.4	LOS A	0.4	2.9	0.50	0.74	51.5
West: Head Street (West)											
10	L2	14	0.0	0.276	5.6	LOS A	0.0	0.0	0.00	0.02	58.2
11	T1	1030	4.7	0.276	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
12	R2	64	0.0	0.147	12.8	LOS B	0.5	3.7	0.72	0.89	48.2
12u	U	1	0.0	0.147	23.0	LOS C	0.5	3.7	0.72	0.89	48.0
Approach		1109	4.3	0.276	0.9	NA	0.5	3.7	0.04	0.06	59.0
All Vehicles		2418	3.1	0.276	1.7	NA	1.0	6.8	0.10	0.14	58.1

Intersection 4 [2028 Design PM] Movement Summary:

Site: 104 [2028 Design PM]

Head / West
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
1	L2	249	0.8	0.310	8.7	LOS A	1.4	9.7	0.54	0.81	51.2
Approach		249	0.8	0.310	8.7	LOS A	1.4	9.7	0.54	0.81	51.2
East: Head Street (East)											
4	L2	6	0.0	0.246	5.6	LOS A	0.0	0.0	0.00	0.01	58.2
5	T1	930	3.9	0.246	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
6	R2	55	0.0	0.133	13.1	LOS B	0.5	3.3	0.73	0.89	47.9
6u	U	1	0.0	0.133	23.7	LOS C	0.5	3.3	0.73	0.89	47.7
Approach		992	3.6	0.246	0.8	NA	0.5	3.3	0.04	0.05	59.1
North: West Street (North)											
7	L2	123	0.0	0.158	8.3	LOS A	0.6	4.0	0.50	0.75	51.5
Approach		123	0.0	0.158	8.3	LOS A	0.6	4.0	0.50	0.75	51.5
West: Head Street (West)											
10	L2	11	0.0	0.263	5.6	LOS A	0.0	0.0	0.00	0.01	58.2
11	T1	992	3.4	0.263	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
12	R2	218	0.5	0.465	15.6	LOS C	2.3	16.4	0.79	1.02	46.5
12u	U	1	0.0	0.465	26.2	LOS D	2.3	16.4	0.79	1.02	46.3
Approach		1222	2.9	0.465	2.9	NA	2.3	16.4	0.14	0.19	56.9
All Vehicles		2586	2.8	0.465	2.9	NA	2.3	16.4	0.16	0.22	56.8

Intersection 5 [2028 Base AM] Movement Summary:

Site: 105 [2028 Base AM]

Head / Beach
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Beach Street (South)											
1	L2	377	1.9	0.340	8.0	LOS A	1.7	12.1	0.74	0.89	51.8
2	T1	22	0.0	0.340	8.4	LOS A	1.6	11.4	0.74	0.89	52.5
3	R2	32	0.0	0.340	12.8	LOS B	1.6	11.4	0.74	0.89	52.4
3u	U	4	0.0	0.340	14.8	LOS B	1.6	11.4	0.74	0.89	53.2
Approach		435	1.6	0.340	8.4	LOS A	1.7	12.1	0.74	0.89	51.9
East: Head Street (East)											
4	L2	11	0.0	0.496	6.4	LOS A	3.8	26.9	0.65	0.64	52.2
5	T1	1079	2.5	0.496	6.7	LOS A	3.8	26.9	0.66	0.66	53.4
6	R2	30	3.3	0.496	11.3	LOS B	3.6	25.7	0.67	0.69	53.0
6u	U	4	0.0	0.496	13.3	LOS B	3.6	25.7	0.67	0.69	54.1
Approach		1124	2.5	0.496	6.8	LOS A	3.8	26.9	0.66	0.66	53.3
North: Beach Street (North)											
7	L2	12	8.3	0.166	8.7	LOS A	0.7	4.7	0.68	0.87	50.0
8	T1	30	0.0	0.166	8.6	LOS A	0.7	4.7	0.68	0.87	51.3
9	R2	51	2.0	0.166	13.1	LOS B	0.7	4.7	0.68	0.87	51.2
9u	U	1	0.0	0.166	15.0	LOS B	0.7	4.7	0.68	0.87	52.1
Approach		94	2.1	0.166	11.1	LOS B	0.7	4.7	0.68	0.87	51.1
West: Head Street (West)											
10	L2	41	4.9	0.462	4.8	LOS A	3.8	27.7	0.35	0.45	53.4
11	T1	1011	4.7	0.462	4.8	LOS A	3.8	27.7	0.36	0.48	54.3
12	R2	266	2.3	0.462	9.3	LOS A	3.7	27.0	0.37	0.54	53.4
12u	U	19	0.0	0.462	11.3	LOS B	3.7	27.0	0.37	0.54	54.4
Approach		1337	4.2	0.462	5.8	LOS A	3.8	27.7	0.36	0.49	54.1
All Vehicles		2990	3.1	0.496	6.7	LOS A	3.8	27.7	0.54	0.63	53.4

Intersection 5 [2028 Base PM] Movement Summary:

Site: 105 [2028 Base PM]

Head / Beach
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Beach Street (South)											
1	L2	438	1.6	0.386	8.1	LOS A	2.0	14.2	0.74	0.90	51.8
2	T1	39	0.0	0.386	8.5	LOS A	1.9	13.5	0.74	0.90	52.4
3	R2	27	0.0	0.386	12.9	LOS B	1.9	13.5	0.74	0.90	52.3
3u	U	14	0.0	0.386	14.9	LOS B	1.9	13.5	0.74	0.90	53.2
Approach		518	1.4	0.386	8.5	LOS A	2.0	14.2	0.74	0.90	51.9
East: Head Street (East)											
4	L2	25	0.0	0.472	6.5	LOS A	3.5	25.3	0.65	0.65	52.2
5	T1	996	3.9	0.472	6.8	LOS A	3.5	25.3	0.66	0.67	53.3
6	R2	15	0.0	0.472	11.3	LOS B	3.3	24.1	0.67	0.70	53.2
6u	U	6	0.0	0.472	13.3	LOS B	3.3	24.1	0.67	0.70	54.1
Approach		1042	3.7	0.472	6.8	LOS A	3.5	25.3	0.66	0.67	53.3
North: Beach Street (North)											
7	L2	30	0.0	0.202	8.3	LOS A	0.8	5.8	0.68	0.87	50.4
8	T1	26	0.0	0.202	8.5	LOS A	0.8	5.8	0.68	0.87	51.5
9	R2	60	0.0	0.202	12.9	LOS B	0.8	5.8	0.68	0.87	51.4
9u	U	1	0.0	0.202	14.9	LOS B	0.8	5.8	0.68	0.87	52.3
Approach		117	0.0	0.202	10.8	LOS B	0.8	5.8	0.68	0.87	51.2
West: Head Street (West)											
10	L2	57	0.0	0.459	4.8	LOS A	3.9	27.8	0.38	0.45	53.4
11	T1	970	3.6	0.459	4.9	LOS A	3.9	27.8	0.38	0.49	54.3
12	R2	269	0.7	0.459	9.3	LOS A	3.8	27.0	0.40	0.55	53.3
12u	U	22	0.0	0.459	11.3	LOS B	3.8	27.0	0.40	0.55	54.2
Approach		1318	2.8	0.459	5.9	LOS A	3.9	27.8	0.39	0.50	54.0
All Vehicles		2995	2.8	0.472	6.9	LOS A	3.9	27.8	0.56	0.64	53.3

Intersection 5 [2028 Design AM] Movement Summary:

Site: 105 [2028 Design AM]

Head / Beach
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Beach Street (South)											
1	L2	431	1.6	0.406	8.7	LOS A	2.2	15.6	0.78	0.92	51.4
2	T1	22	0.0	0.406	9.2	LOS A	2.1	14.6	0.78	0.93	51.9
3	R2	32	0.0	0.406	13.6	LOS B	2.1	14.6	0.78	0.93	51.8
3u	U	4	0.0	0.406	15.6	LOS B	2.1	14.6	0.78	0.93	52.7
Approach		489	1.4	0.406	9.1	LOS A	2.2	15.6	0.78	0.92	51.4
East: Head Street (East)											
4	L2	11	0.0	0.542	7.0	LOS A	4.5	32.2	0.71	0.70	52.0
5	T1	1133	3.4	0.542	7.4	LOS A	4.5	32.2	0.72	0.73	53.1
6	R2	30	0.0	0.542	12.2	LOS B	4.5	32.0	0.73	0.76	52.9
6u	U	4	0.0	0.542	14.2	LOS B	4.5	32.0	0.73	0.76	53.8
Approach		1178	3.3	0.542	7.6	LOS A	4.5	32.2	0.72	0.73	53.1
North: Beach Street (North)											
7	L2	12	0.0	0.170	8.6	LOS A	0.7	4.8	0.69	0.87	50.1
8	T1	30	0.0	0.170	8.9	LOS A	0.7	4.8	0.69	0.87	51.2
9	R2	51	0.0	0.170	13.3	LOS B	0.7	4.8	0.69	0.87	51.1
9u	U	1	0.0	0.170	15.3	LOS B	0.7	4.8	0.69	0.87	51.9
Approach		94	0.0	0.170	11.3	LOS B	0.7	4.8	0.69	0.87	51.0
West: Head Street (West)											
10	L2	41	0.0	0.489	4.8	LOS A	4.2	30.2	0.36	0.45	53.5
11	T1	1056	3.3	0.489	4.8	LOS A	4.2	30.2	0.37	0.48	54.3
12	R2	311	0.6	0.489	9.3	LOS A	4.1	29.4	0.39	0.55	53.3
12u	U	19	0.0	0.489	11.3	LOS B	4.1	29.4	0.39	0.55	54.2
Approach		1427	2.6	0.489	5.9	LOS A	4.2	30.2	0.37	0.49	54.1
All Vehicles		3188	2.6	0.542	7.2	LOS A	4.5	32.2	0.57	0.66	53.2

Intersection 5 [2028 Design PM] Movement Summary:

Site: 105 [2028 Design PM]

Head / Beach
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Beach Street (South)											
1	L2	564	1.2	0.563	10.0	LOS B	3.6	25.3	0.85	0.99	50.5
2	T1	39	0.0	0.563	10.7	LOS B	3.3	23.5	0.84	0.99	50.9
3	R2	27	0.0	0.563	15.1	LOS B	3.3	23.5	0.84	0.99	50.8
3u	U	14	0.0	0.563	17.1	LOS B	3.3	23.5	0.84	0.99	51.7
Approach		644	1.1	0.563	10.4	LOS B	3.6	25.3	0.85	0.99	50.5
East: Head Street (East)											
4	L2	25	0.0	0.625	10.0	LOS A	6.7	48.3	0.87	0.91	50.8
5	T1	1122	3.5	0.625	10.7	LOS B	6.7	48.3	0.87	0.94	51.4
6	R2	15	0.0	0.625	15.8	LOS B	6.3	45.6	0.87	0.97	50.8
6u	U	6	0.0	0.625	17.8	LOS B	6.3	45.6	0.87	0.97	51.6
Approach		1168	3.3	0.625	10.8	LOS B	6.7	48.3	0.87	0.94	51.4
North: Beach Street (North)											
7	L2	30	0.0	0.250	9.8	LOS A	1.1	7.6	0.76	0.90	49.4
8	T1	26	0.0	0.250	10.1	LOS B	1.1	7.6	0.76	0.90	50.5
9	R2	60	0.0	0.250	14.5	LOS B	1.1	7.6	0.76	0.90	50.4
9u	U	1	0.0	0.250	16.5	LOS B	1.1	7.6	0.76	0.90	51.2
Approach		117	0.0	0.250	12.3	LOS B	1.1	7.6	0.76	0.90	50.1
West: Head Street (West)											
10	L2	57	0.0	0.586	4.9	LOS A	6.0	43.2	0.45	0.46	53.1
11	T1	1158	3.0	0.586	5.0	LOS A	6.0	43.2	0.46	0.49	53.9
12	R2	457	0.4	0.586	9.5	LOS A	5.9	41.9	0.48	0.57	52.7
12u	U	22	0.0	0.586	11.5	LOS B	5.9	41.9	0.48	0.57	53.6
Approach		1694	2.2	0.586	6.3	LOS A	6.0	43.2	0.47	0.51	53.6
All Vehicles		3623	2.3	0.625	8.7	LOS A	6.7	48.3	0.67	0.75	52.2

Intersection 6 [2028 Base AM] Movement Summary:

Site: 106 [2028 Base AM]

Beach / Little / Memorial / Wallis
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Little Street (South)											
1	L2	62	0.0	0.234	6.1	LOS A	0.3	2.3	0.09	0.11	57.0
2	T1	349	1.7	0.234	0.2	LOS A	0.3	2.3	0.09	0.11	58.6
3	R2	22	0.0	0.234	7.1	LOS A	0.3	2.3	0.09	0.11	56.4
3u	U	1	0.0	0.234	9.5	LOS A	0.3	2.3	0.09	0.11	56.5
Approach		434	1.4	0.234	1.4	NA	0.3	2.3	0.09	0.11	58.2
East: Wallis Street (East)											
4	L2	26	7.7	0.062	6.8	LOS A	0.2	1.5	0.42	0.67	51.1
5	T1	1	0.0	0.062	9.0	LOS A	0.2	1.5	0.42	0.67	51.6
6	R2	17	0.0	0.062	11.1	LOS B	0.2	1.5	0.42	0.67	51.0
6u	U	1	0.0	0.062	6.9	LOS A	0.2	1.5	0.42	0.67	51.0
Approach		45	4.4	0.062	8.5	LOS A	0.2	1.5	0.42	0.67	51.1
North: Beach Street (North)											
7	L2	57	0.0	0.210	6.2	LOS A	0.3	2.1	0.10	0.11	56.9
8	T1	310	2.3	0.210	0.2	LOS A	0.3	2.1	0.10	0.11	58.5
9	R2	20	0.0	0.210	7.4	LOS A	0.3	2.1	0.10	0.11	56.3
9u	U	1	0.0	0.210	9.9	LOS A	0.3	2.1	0.10	0.11	56.4
Approach		388	1.8	0.210	1.5	NA	0.3	2.1	0.10	0.11	58.1
West: Memorial Drive (West)											
10	L2	30	0.0	0.104	6.8	LOS A	0.4	2.5	0.51	0.73	50.9
11	T1	5	0.0	0.104	9.0	LOS A	0.4	2.5	0.51	0.73	51.0
12	R2	31	3.2	0.104	11.6	LOS B	0.4	2.5	0.51	0.73	50.3
Approach		66	1.5	0.104	9.2	LOS A	0.4	2.5	0.51	0.73	50.6
All Vehicles		933	1.7	0.234	2.3	NA	0.4	2.5	0.14	0.18	57.2

Intersection 6 [2028 Base PM] Movement Summary:

Site: 106 [2028 Base PM]

Beach / Little / Memorial / Wallis
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Little Street (South)											
1	L2	57	1.8	0.244	6.3	LOS A	0.3	2.3	0.09	0.10	57.1
2	T1	375	1.3	0.244	0.2	LOS A	0.3	2.3	0.09	0.10	58.7
3	R2	20	0.0	0.244	7.5	LOS A	0.3	2.3	0.09	0.10	56.5
3u	U	1	0.0	0.244	10.3	LOS B	0.3	2.3	0.09	0.10	56.6
Approach		453	1.3	0.244	1.3	NA	0.3	2.3	0.09	0.10	58.4
East: Wallis Street (East)											
4	L2	42	2.4	0.093	6.9	LOS A	0.3	2.3	0.43	0.68	51.1
5	T1	1	0.0	0.093	9.9	LOS A	0.3	2.3	0.43	0.68	51.3
6	R2	21	0.0	0.093	12.6	LOS B	0.3	2.3	0.43	0.68	50.7
6u	U	2	0.0	0.093	6.9	LOS A	0.3	2.3	0.43	0.68	50.8
Approach		66	1.5	0.093	8.8	LOS A	0.3	2.3	0.43	0.68	51.0
North: Beach Street (North)											
7	L2	48	0.0	0.237	6.4	LOS A	0.3	2.1	0.09	0.09	57.2
8	T1	375	0.5	0.237	0.2	LOS A	0.3	2.1	0.09	0.09	58.8
9	R2	19	0.0	0.237	7.6	LOS A	0.3	2.1	0.09	0.09	56.6
9u	U	1	0.0	0.237	10.3	LOS B	0.3	2.1	0.09	0.09	56.7
Approach		443	0.5	0.237	1.2	NA	0.3	2.1	0.09	0.09	58.5
West: Memorial Drive (West)											
10	L2	45	4.4	0.179	7.1	LOS A	0.6	4.4	0.55	0.76	50.0
11	T1	5	0.0	0.179	10.1	LOS B	0.6	4.4	0.55	0.76	50.3
12	R2	52	0.0	0.179	12.9	LOS B	0.6	4.4	0.55	0.76	49.7
Approach		102	2.0	0.179	10.2	LOS B	0.6	4.4	0.55	0.76	49.9
All Vehicles		1064	1.0	0.244	2.6	NA	0.6	4.4	0.15	0.19	57.0

Intersection 6 [2028 Design AM] Movement Summary:

Site: 106 [2028 Design AM]

Beach / Little / Memorial / Wallis
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Little Street (South)											
21a	L1	62	0.0	0.280	5.5	LOS A	1.6	11.4	0.08	0.53	53.5
23a	R1	403	0.0	0.280	4.6	LOS A	1.6	11.4	0.08	0.53	54.1
23b	R3	22	0.0	0.280	8.1	LOS A	1.6	11.4	0.08	0.53	53.4
23u	U	1	0.0	0.280	10.2	LOS B	1.6	11.4	0.08	0.53	53.6
Approach		488	0.0	0.280	4.9	NA	1.6	11.4	0.08	0.53	54.0
East: Wallis Street (East)											
4b	L3	26	0.0	0.067	7.7	LOS A	0.2	1.6	0.45	0.70	51.0
5	T1	1	0.0	0.067	10.0	LOS B	0.2	1.6	0.45	0.70	50.8
6	R2	17	0.0	0.067	12.4	LOS B	0.2	1.6	0.45	0.70	50.2
6u	U	1	0.0	0.067	6.9	LOS A	0.2	1.6	0.45	0.70	50.3
Approach		45	0.0	0.067	9.5	LOS A	0.2	1.6	0.45	0.70	50.7
North: Beach Street (North)											
7	L2	57	0.0	0.230	5.7	LOS A	0.2	1.5	0.03	0.53	54.2
7a	L1	355	0.0	0.230	4.6	LOS A	0.2	1.5	0.03	0.53	54.2
9	R2	20	0.0	0.230	5.7	LOS A	0.2	1.5	0.03	0.53	53.7
9u	U	1	0.0	0.230	10.7	LOS B	0.2	1.5	0.03	0.53	53.7
Approach		433	0.0	0.230	4.8	NA	0.2	1.5	0.03	0.53	54.2
West: Memorial Drive (West)											
10	L2	30	0.0	0.114	7.0	LOS A	0.4	2.7	0.54	0.74	50.7
11	T1	5	0.0	0.114	10.1	LOS B	0.4	2.7	0.54	0.74	50.8
12a	R1	31	0.0	0.114	11.7	LOS B	0.4	2.7	0.54	0.74	50.7
Approach		66	0.0	0.114	9.5	LOS A	0.4	2.7	0.54	0.74	50.7
All Vehicles		1032	0.0	0.280	5.3	NA	1.6	11.4	0.10	0.55	53.7

Intersection 6 [2028 Design PM] Movement Summary:

Site: 106 [2028 Design PM]

Beach / Little / Memorial / Wallis
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Little Street (South)											
21a	L1	57	0.0	0.336	5.6	LOS A	2.1	14.5	0.08	0.53	53.6
23a	R1	501	0.0	0.336	4.6	LOS A	2.1	14.5	0.08	0.53	54.1
23b	R3	20	0.0	0.336	10.1	LOS B	2.1	14.5	0.08	0.53	53.4
23u	U	1	0.0	0.336	14.4	LOS B	2.1	14.5	0.08	0.53	53.6
Approach		579	0.0	0.336	4.9	NA	2.1	14.5	0.08	0.53	54.0
East: Wallis Street (East)											
4b	L3	42	0.0	0.137	8.9	LOS A	0.5	3.2	0.54	0.78	49.2
5	T1	1	0.0	0.137	15.0	LOS B	0.5	3.2	0.54	0.78	49.0
6	R2	21	0.0	0.137	19.1	LOS C	0.5	3.2	0.54	0.78	48.5
6u	U	2	0.0	0.137	6.9	LOS A	0.5	3.2	0.54	0.78	48.5
Approach		66	0.0	0.137	12.2	LOS B	0.5	3.2	0.54	0.78	49.0
North: Beach Street (North)											
7	L2	48	0.0	0.334	5.7	LOS A	0.2	1.6	0.02	0.54	54.3
7a	L1	563	0.0	0.334	4.6	LOS A	0.2	1.6	0.02	0.54	54.3
9	R2	19	0.0	0.334	5.7	LOS A	0.2	1.6	0.02	0.54	53.7
9u	U	1	0.0	0.334	13.2	LOS B	0.2	1.6	0.02	0.54	53.8
Approach		631	0.0	0.334	4.7	NA	0.2	1.6	0.02	0.54	54.3
West: Memorial Drive (West)											
10	L2	45	0.0	0.272	8.4	LOS A	1.0	6.8	0.71	0.88	47.4
11	T1	5	0.0	0.272	16.3	LOS C	1.0	6.8	0.71	0.88	47.5
12a	R1	52	0.0	0.272	19.4	LOS C	1.0	6.8	0.71	0.88	47.4
Approach		102	0.0	0.272	14.4	LOS B	1.0	6.8	0.71	0.88	47.4
All Vehicles		1378	0.0	0.336	5.9	NA	2.1	14.5	0.12	0.57	53.3

Intersection 7 [2028 Base AM] Movement Summary:

Site: 107 [2028 Base AM]

MacIntosh / Middle / Strand
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: MacIntosh Street (South)											
1	L2	82	0.0	0.214	5.6	LOS A	0.0	0.0	0.00	0.12	57.2
2	T1	726	5.1	0.214	0.0	LOS A	0.0	0.0	0.00	0.05	59.4
3	R2	270	2.2	0.628	19.7	LOS C	3.7	26.7	0.86	1.14	44.1
3u	U	1	0.0	0.628	29.4	LOS D	3.7	26.7	0.86	1.14	44.0
Approach		1079	4.0	0.628	5.4	NA	3.7	26.7	0.22	0.33	54.5
East: Strand Street (East)											
4	L2	167	4.2	0.204	8.1	LOS A	0.8	5.6	0.49	0.74	51.5
Approach		167	4.2	0.204	8.1	LOS A	0.8	5.6	0.49	0.74	51.5
North: MacIntosh Street (North)											
7	L2	63	6.3	0.261	5.6	LOS A	0.0	0.0	0.00	0.08	57.4
8	T1	916	4.0	0.261	0.1	LOS A	0.1	0.7	0.01	0.04	59.6
9	R2	1	0.0	0.261	12.6	LOS B	0.1	0.7	0.01	0.00	57.9
9u	U	1	0.0	0.261	19.2	LOS C	0.1	0.7	0.01	0.00	57.7
Approach		981	4.2	0.261	0.5	NA	0.1	0.7	0.01	0.04	59.4
West: Middle Street (West)											
10	L2	4	0.0	0.004	6.9	LOS A	0.0	0.1	0.37	0.56	52.5
Approach		4	0.0	0.004	6.9	LOS A	0.0	0.1	0.37	0.56	52.5
All Vehicles		2231	4.1	0.628	3.4	NA	3.7	26.7	0.15	0.23	56.3

Intersection 7 [2028 Base PM] Movement Summary:

Site: 107 [2028 Base PM]

MacIntosh / Middle / Strand
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: MacIntosh Street (South)											
1	L2	48	0.0	0.212	5.6	LOS A	0.0	0.0	0.00	0.07	57.7
2	T1	756	3.8	0.212	0.0	LOS A	0.0	0.0	0.00	0.03	59.6
3	R2	201	1.0	0.468	16.7	LOS C	2.3	16.1	0.81	1.03	45.8
3u	U	1	0.0	0.468	26.5	LOS D	2.3	16.1	0.81	1.03	45.7
Approach		1006	3.1	0.468	3.7	NA	2.3	16.1	0.16	0.23	56.1
East: Strand Street (East)											
4	L2	221	3.2	0.272	8.4	LOS A	1.1	8.0	0.52	0.77	51.4
Approach		221	3.2	0.272	8.4	LOS A	1.1	8.0	0.52	0.77	51.4
North: MacIntosh Street (North)											
7	L2	56	3.6	0.263	5.6	LOS A	0.0	0.0	0.00	0.07	57.6
8	T1	933	3.6	0.263	0.1	LOS A	0.1	0.7	0.01	0.03	59.6
9	R2	1	0.0	0.263	12.5	LOS B	0.1	0.7	0.01	0.00	57.9
9u	U	1	0.0	0.263	20.0	LOS C	0.1	0.7	0.01	0.00	57.6
Approach		991	3.6	0.263	0.4	NA	0.1	0.7	0.01	0.04	59.5
West: Middle Street (West)											
10	L2	5	0.0	0.005	7.0	LOS A	0.0	0.1	0.39	0.58	52.4
Approach		5	0.0	0.005	7.0	LOS A	0.0	0.1	0.39	0.58	52.4
All Vehicles		2223	3.3	0.468	2.7	NA	2.3	16.1	0.13	0.20	57.0

Intersection 7 [2028 Design AM] Movement Summary:

Site: 107 [2028 Design AM]

MacIntosh / Middle / Strand
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: MacIntosh Street (South)											
1	L2	89	0.0	0.217	5.6	LOS A	0.0	0.0	0.00	0.13	57.2
2	T1	728	5.1	0.217	0.0	LOS A	0.0	0.0	0.00	0.06	59.4
3	R2	270	2.2	0.641	20.4	LOS C	3.8	27.4	0.87	1.15	43.8
3u	U	1	0.0	0.641	30.4	LOS D	3.8	27.4	0.87	1.15	43.7
Approach		1088	4.0	0.641	5.6	NA	3.8	27.4	0.22	0.34	54.4
East: Strand Street (East)											
4	L2	167	4.2	0.206	8.2	LOS A	0.8	5.7	0.50	0.74	51.5
Approach		167	4.2	0.206	8.2	LOS A	0.8	5.7	0.50	0.74	51.5
North: MacIntosh Street (North)											
7	L2	63	6.3	0.265	5.6	LOS A	0.0	0.0	0.00	0.08	57.4
8	T1	929	4.0	0.265	0.1	LOS A	0.1	0.7	0.01	0.04	59.6
9	R2	1	0.0	0.265	12.7	LOS B	0.1	0.7	0.01	0.00	57.9
9u	U	1	0.0	0.265	19.4	LOS C	0.1	0.7	0.01	0.00	57.7
Approach		994	4.1	0.265	0.5	NA	0.1	0.7	0.01	0.04	59.4
West: Middle Street (West)											
10	L2	4	0.0	0.004	6.8	LOS A	0.0	0.1	0.37	0.56	52.5
Approach		4	0.0	0.004	6.8	LOS A	0.0	0.1	0.37	0.56	52.5
All Vehicles		2253	4.0	0.641	3.5	NA	3.8	27.4	0.14	0.24	56.3

Intersection 7 [2028 Design PM] Movement Summary:

Site: 107 [2028 Design PM]

MacIntosh / Middle / Strand
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: MacIntosh Street (South)											
1	L2	80	0.0	0.222	5.6	LOS A	0.0	0.0	0.00	0.11	57.3
2	T1	764	3.8	0.222	0.0	LOS A	0.0	0.0	0.00	0.05	59.5
3	R2	201	1.0	0.489	17.6	LOS C	2.4	17.0	0.83	1.04	45.3
3u	U	1	0.0	0.489	28.1	LOS D	2.4	17.0	0.83	1.04	45.2
Approach		1046	3.0	0.489	3.9	NA	2.4	17.0	0.16	0.25	55.9
East: Strand Street (East)											
4	L2	221	3.2	0.277	8.6	LOS A	1.2	8.3	0.53	0.78	51.2
Approach		221	3.2	0.277	8.6	LOS A	1.2	8.3	0.53	0.78	51.2
North: MacIntosh Street (North)											
7	L2	56	3.6	0.270	5.6	LOS A	0.0	0.0	0.00	0.07	57.6
8	T1	962	3.5	0.270	0.1	LOS A	0.1	0.7	0.01	0.03	59.6
9	R2	1	0.0	0.270	13.2	LOS B	0.1	0.7	0.01	0.00	57.9
9u	U	1	0.0	0.270	20.5	LOS C	0.1	0.7	0.01	0.00	57.6
Approach		1020	3.5	0.270	0.4	NA	0.1	0.7	0.01	0.03	59.5
West: Middle Street (West)											
10	L2	5	0.0	0.005	7.0	LOS A	0.0	0.1	0.38	0.57	52.4
Approach		5	0.0	0.005	7.0	LOS A	0.0	0.1	0.38	0.57	52.4
All Vehicles		2292	3.2	0.489	2.8	NA	2.4	17.0	0.13	0.20	56.9

Intersection 8 [2028 Design AM] Movement Summary:

Site: 108 [2028 Design AM]

Forster Roundabout Access
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Site Access											
1	L2	89	0.0	0.097	5.7	LOS A	0.5	3.4	0.42	0.59	53.0
2	T1	1	0.0	0.097	5.9	LOS A	0.5	3.4	0.42	0.59	54.1
3	R2	12	0.0	0.097	9.7	LOS A	0.5	3.4	0.42	0.59	54.1
3u	U	1	0.0	0.097	11.5	LOS B	0.5	3.4	0.42	0.59	54.8
Approach		103	0.0	0.097	6.2	LOS A	0.5	3.4	0.42	0.59	53.1
East: Lake Street (East)											
4	L2	6	0.0	0.182	4.7	LOS A	1.0	6.8	0.21	0.46	53.6
5	T1	237	0.0	0.182	5.0	LOS A	1.0	6.8	0.21	0.46	54.7
6	R2	1	0.0	0.182	8.5	LOS A	1.0	6.8	0.21	0.46	54.3
6u	U	1	0.0	0.182	10.5	LOS B	1.0	6.8	0.21	0.46	55.4
Approach		245	0.0	0.182	5.0	LOS A	1.0	6.8	0.21	0.46	54.7
West: Lake Street (West)											
10	L2	1	0.0	0.129	4.4	LOS A	0.7	5.1	0.09	0.51	53.3
11	T1	131	0.0	0.129	4.4	LOS A	0.7	5.1	0.09	0.51	54.7
12	R2	48	0.0	0.129	8.5	LOS A	0.7	5.1	0.09	0.51	54.4
12u	U	15	0.0	0.129	10.3	LOS B	0.7	5.1	0.09	0.51	55.0
Approach		195	0.0	0.129	5.9	LOS A	0.7	5.1	0.09	0.51	54.7
All Vehicles		543	0.0	0.182	5.5	LOS A	1.0	6.8	0.21	0.50	54.4

Intersection 8 [2028 Design PM] Movement Summary:

Site: 108 [2028 Design PM]

Forster Roundabout Access
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Site Access											
1	L2	198	0.0	0.200	5.4	LOS A	1.2	8.1	0.39	0.57	53.1
2	T1	1	0.0	0.200	5.6	LOS A	1.2	8.1	0.39	0.57	54.2
3	R2	27	0.0	0.200	9.4	LOS A	1.2	8.1	0.39	0.57	54.2
3u	U	1	0.0	0.200	11.2	LOS B	1.2	8.1	0.39	0.57	54.9
Approach		227	0.0	0.200	5.9	LOS A	1.2	8.1	0.39	0.57	53.2
East: Lake Street (East)											
4	L2	27	0.0	0.180	5.8	LOS A	1.0	6.8	0.44	0.56	52.7
5	T1	164	0.0	0.180	6.0	LOS A	1.0	6.8	0.44	0.56	53.8
6	R2	1	0.0	0.180	9.6	LOS A	1.0	6.8	0.44	0.56	53.5
6u	U	1	0.0	0.180	11.6	LOS B	1.0	6.8	0.44	0.56	54.5
Approach		193	0.0	0.180	6.1	LOS A	1.0	6.8	0.44	0.56	53.6
West: Lake Street (West)											
10	L2	1	0.0	0.330	4.5	LOS A	2.3	16.0	0.17	0.54	52.6
11	T1	249	0.0	0.330	4.5	LOS A	2.3	16.0	0.17	0.54	54.1
12	R2	242	0.0	0.330	8.5	LOS A	2.3	16.0	0.17	0.54	53.7
12u	U	6	0.0	0.330	10.4	LOS B	2.3	16.0	0.17	0.54	54.3
Approach		498	0.0	0.330	6.6	LOS A	2.3	16.0	0.17	0.54	53.9
All Vehicles		918	0.0	0.330	6.3	LOS A	2.3	16.0	0.28	0.55	53.7

Intersection 9 [2028 Design AM] Movement Summary:

Site: 109 [2028 Design AM]

West / Site Access 2
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
2	T1	100	0.0	0.051	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
3	R2	1	0.0	0.051	5.8	LOS A	0.0	0.0	0.00	0.01	57.5
Approach		101	0.0	0.051	0.1	NA	0.0	0.0	0.00	0.01	59.9
North: West Street (North)											
7	L2	9	0.0	0.032	5.5	LOS A	0.0	0.0	0.00	0.09	57.6
8	T1	52	0.0	0.032	0.0	LOS A	0.0	0.0	0.00	0.09	59.2
Approach		61	0.0	0.032	0.8	NA	0.0	0.0	0.00	0.09	59.0
All Vehicles		162	0.0	0.051	0.3	NA	0.0	0.0	0.00	0.04	59.5

Intersection 9 [2028 Design PM Movement Summary:

Site: 109 [2028 Design PM]

West / Site Access 2
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: West Street (South)											
2	T1	113	0.0	0.058	0.0	LOS A	0.0	0.0	0.01	0.01	59.9
3	R2	1	0.0	0.058	6.1	LOS A	0.0	0.0	0.01	0.01	57.5
Approach		114	0.0	0.058	0.1	NA	0.0	0.0	0.01	0.01	59.9
North: West Street (North)											
7	L2	33	0.0	0.076	5.5	LOS A	0.0	0.0	0.00	0.13	57.2
8	T1	114	0.0	0.076	0.0	LOS A	0.0	0.0	0.00	0.13	58.8
Approach		147	0.0	0.076	1.3	NA	0.0	0.0	0.00	0.13	58.4
All Vehicles		261	0.0	0.076	0.7	NA	0.0	0.0	0.00	0.08	59.1

Intersection 10 [2028 Design AM] Movement Summary:

Site: 110 [2028 Design AM]

Middle / Site Access 3
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Middle Street (East)											
5	T1	78	0.0	0.042	0.0	LOS A	0.0	0.2	0.01	0.03	59.7
6	R2	4	0.0	0.042	5.6	LOS A	0.0	0.2	0.01	0.03	57.4
Approach		82	0.0	0.042	0.3	NA	0.0	0.2	0.01	0.03	59.6
North: Site Access											
7	L2	1	0.0	0.021	5.6	LOS A	0.1	0.5	0.14	0.57	53.3
9	R2	24	0.0	0.021	5.8	LOS A	0.1	0.5	0.14	0.57	52.8
Approach		25	0.0	0.021	5.8	LOS A	0.1	0.5	0.14	0.57	52.8
West: Middle Street (West)											
10	L2	35	0.0	0.024	5.5	LOS A	0.0	0.0	0.00	0.45	54.7
11	T1	11	0.0	0.024	0.0	LOS A	0.0	0.0	0.00	0.45	56.1
Approach		46	0.0	0.024	4.2	NA	0.0	0.0	0.00	0.45	55.0
All Vehicles		153	0.0	0.042	2.4	NA	0.1	0.5	0.03	0.24	56.9

Intersection 10 [2028 Design PM] Movement Summary:

Site: 110 [2028 Design PM]

Middle / Site Access 3
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Middle Street (East)											
5	T1	52	0.0	0.034	0.1	LOS A	0.1	0.5	0.08	0.10	58.7
6	R2	11	0.0	0.034	5.8	LOS A	0.1	0.5	0.08	0.10	56.6
Approach		63	0.0	0.034	1.1	NA	0.1	0.5	0.08	0.10	58.3
North: Site Access											
7	L2	1	0.0	0.050	5.6	LOS A	0.2	1.1	0.16	0.58	53.2
9	R2	57	0.0	0.050	5.9	LOS A	0.2	1.1	0.16	0.58	52.7
Approach		58	0.0	0.050	5.9	LOS A	0.2	1.1	0.16	0.58	52.7
West: Middle Street (West)											
10	L2	105	0.0	0.060	5.5	LOS A	0.0	0.0	0.00	0.54	53.9
11	T1	7	0.0	0.060	0.0	LOS A	0.0	0.0	0.00	0.54	55.3
Approach		112	0.0	0.060	5.2	NA	0.0	0.0	0.00	0.54	54.0
All Vehicles		233	0.0	0.060	4.2	NA	0.2	1.1	0.06	0.43	54.8