PO Box 215 Bondi NSW 2026 | ph.: +61 2 9332 2024 | fax.: +61 2 9332 2022 | mob.: +61 (0)4 1497 8067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au

TRAFFIC AND PARKING IMPACTS REPORT
FOR A DEVELOPMENT APPLICATION
FOR A PROPOSED INDUSTRIAL DEVELOPMENT
AT NO. 130-140 OLD PITTWATER ROAD, BROOKVALE, NSW 2100

Property address	130-140 Old Pittwater Road, Brookvale, NSW 2100
Client	Leech Harmon Architects
Prepared by	O. Sannikov, MEngSc (Traffic Engineering), MIEAust, PEng, FAITPM
Date	11/12/2018
Job No.	18098
Report No.	18098 Rep 01

Item	Report
Site location	• Refer to **Figure 1.**
Existing land use	• One (1) vacant lot and one (1) lot with a single storey industrial unit
Proposed development	• Industrial development comprising ◦ 53 units ◦ 111 car parking spaces ▪ Includes 6 spaces for people with disabilities

Figure 1. Site location.

Item	Report
	Existing traffic and parking situation
Street characteristics	• Refer to **Figure 2.** • The key roads around the proposed development are described below. ◦ Old Pittwater Road ▪ Local collector road • Two traffic lanes and two parking lanes • There is no parking at the Condamine Street intersection ◦ Smith Avenue ▪ Local road • Two traffic lanes and two parking lanes ◦ Pozieres Parade ▪ Local road • Two traffic lanes and two parking lanes ◦ Condamine Street ▪ State road (MR164) • Four traffic lanes and no parking lanes ◦ Other streets in the surrounding area are local/local collector roads. Street conditions are typical for a residential area, with low to moderate traffic volumes. ▪ General speed limit is 60 km/h on main roads and 50 km/h on local streets around the site.
	Public Transport
Bus	• There are four bus stops with a walking distance of approximately 800 and 1000 metres along Condamine Street. ◦ There are fifteen bus routes within the walking distance: 132, 135, 145, 151, 168, 178, 180, 188, 280, E68, E75, E76, E77, E78 and E79. ◦ Refer to **Figure 3.** ▪ Bus Route 132 • Prepay only – Warringah Mall to Manly via North Balgowlah ◦ 4 services operate during the morning peak. ◦ 6 services operate during the afternoon peak. ▪ Bus Route 135 • Prepay only – Warringah Mall to North Head via Manly ◦ 7 services operate during the morning peak. ◦ 5 services operate during the afternoon peak. • Prepay only – North Head to Warringah Mall via Manly ◦ 9 services operate during the morning peak. ◦ 6 services operate during the afternoon peak. ▪ Bus Route 145 • Prepay only – Seaforth to Warringah Mall ◦ 2 services operate during the morning peak. ◦ 2 services operate during the afternoon peak. • Prepay only – Warringah Mall to Seaforth ◦ 1 service operates during the morning peak. ◦ 2 services operate during the afternoon peak. ▪ Bus Route 151

- Prepay only – Mona Vale to City QVB
  - 5 services operate outside of the morning and afternoon peak hours (from 12:20 a.m. to 4:50 a.m.)

- Bus Route 178
  - Prepay only – City Wynyard to Cromer Heights
    - Services operate approximately every 30-60 minutes during the morning peak.
    - Services operate approximately every 30-60 minutes during the afternoon peak.
  - Prepay only – Cromer Heights to City Wynyard
    - Services operate approximately every 30-60 minutes during the morning peak.
    - Services operate approximately every 30-60 minutes during the afternoon peak.

- Bus Route 180
  - Prepay only – City Wynyard to Collaroy Plateau
    - Services operate approximately every 30-60 minutes during the morning peak.
    - No services operate during the afternoon peak.
  - Prepay only – Collaroy Plateau to City Wynyard
    - 1 service operates during the morning peak.
    - Services operate approximately every 30-60 minutes during the afternoon peak.

- Bus Route 188
  - Prepay only – City QVB to Avalon Beach
    - 9 services operate outside of the morning and afternoon peak hours (from 12:48 a.m. to 5:35 a.m.)
  - Prepay only – Mona Vale to City Wynyard
    - 3 services operate outside of the morning and afternoon peak hours (from 4:12 a.m. to 5:12 a.m.)

- Bus Route 280
  - Chatswood to Warringah Mall
    - Services operate approximately every 15-30 minutes during the morning peak.
    - Services operate approximately every 15-30 minutes during the afternoon peak.
  - Prepay only – Warringah Mall to Chatswood
    - Services operate approximately every 15-30 minutes during the morning peak.
    - Services operate approximately every 15-30 minutes during the afternoon peak.

- Bus Route E68
  - Prepay only – City Wynyard to Brookvale via North Balgowlah (express service)
    - No services operate during the morning peak.
    - 7 services operate during the afternoon peak.
  - Prepay only – Brookvale to City Wynyard via North Balgowlah (express service)
    - 9 services operate during the morning peak.
    - No services operate during the afternoon peak.

Item	Report
	▪ Bus Route E75 • Prepay only – City Wynyard to Brookvale (express service) ◦ No services operate during the morning peak. ◦ 6 services operate during the afternoon peak. • Prepay only – Brookvale to City Wynyard (express service) ◦ 8 services operate during the morning peak. ◦ No services operate during the afternoon peak. ▪ Bus Route E76 • Prepay only – City Wynyard to Dee Why via North Curl Curl (express service) ◦ No services operate during the morning peak. ◦ 5 services operate during the afternoon peak. • Prepay only – Dee Why to City Wynyard via North Curl Curl (express service) ◦ 9 services operate during the morning peak. ◦ No services operate during the afternoon peak. ▪ Bus Route E77 • Prepay only – City Wynyard to Dee Why via Wingala (express service) ◦ No services operate during the morning peak. ◦ 4 services operate during the afternoon peak. • Prepay only – Dee Why to City Wynyard via Wingala (express service) ◦ 7 services operate during the morning peak. ◦ No services operate during the afternoon peak. ▪ Bus Route E78 • Prepay only – City Wynyard to Cromer Heights (express service) ◦ No services operate during the morning peak. ◦ 8 services operate during the afternoon peak. • Prepay only – Cromer Heights to City Wynyard (express service) ◦ 9 services operate during the morning peak. ◦ No services operate during the afternoon peak. ▪ Bus Route E79 • Prepay only – City Wynyard to Wheeler Heights (express service) ◦ No services operate during the morning peak. ◦ 7 services operate during the afternoon peak. • Prepay only – Wheeler Heights to City Wynyard (express service) ◦ 7 services operate during the morning peak. ◦ No services operate during the afternoon peak. • The morning peak was considered to be between 6:30 a.m. and 9:30 a.m. and the afternoon peak was considered to be between 3:30 p.m. and 6:30 p.m.

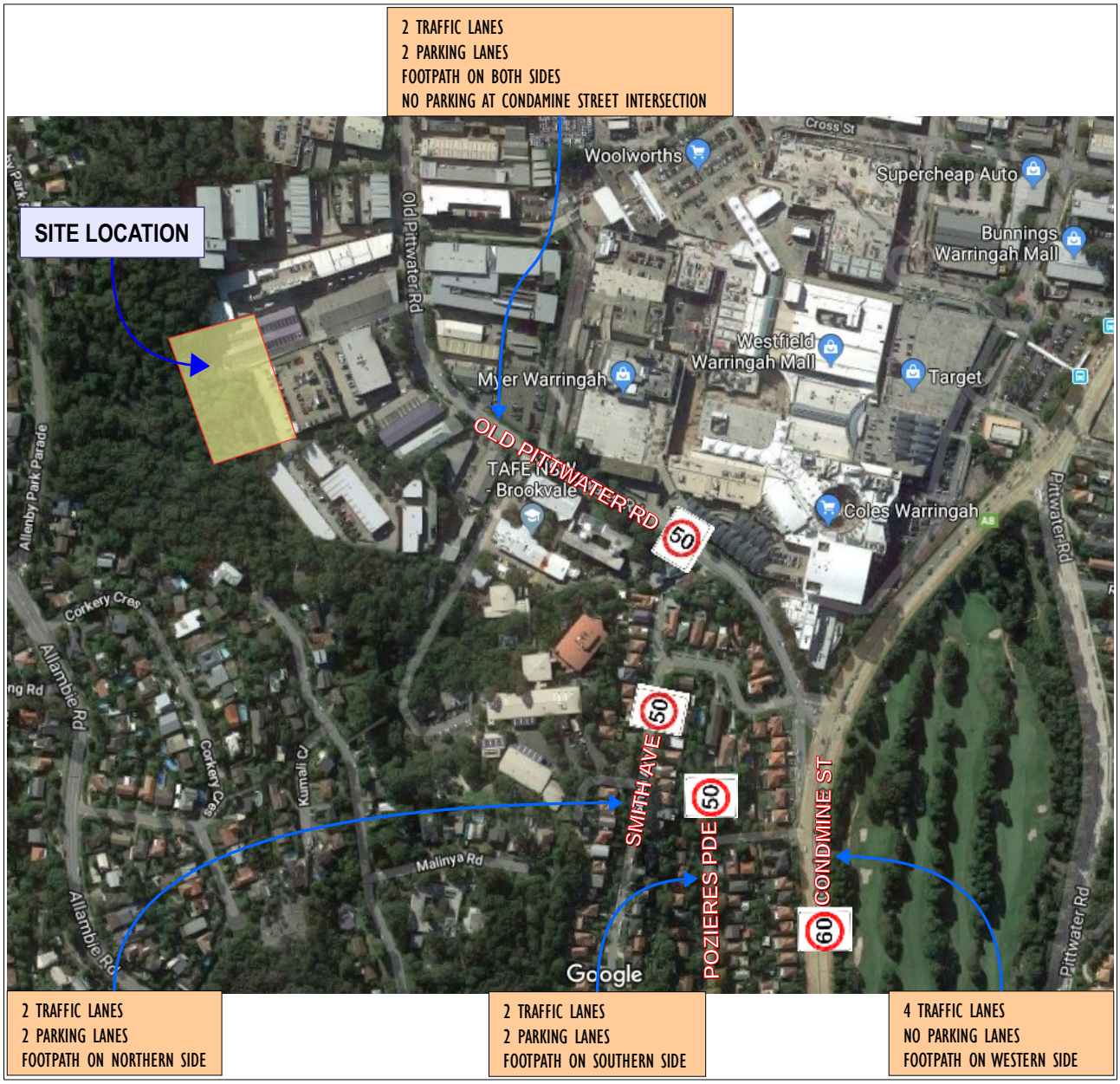


Figure 2. Street characteristics.

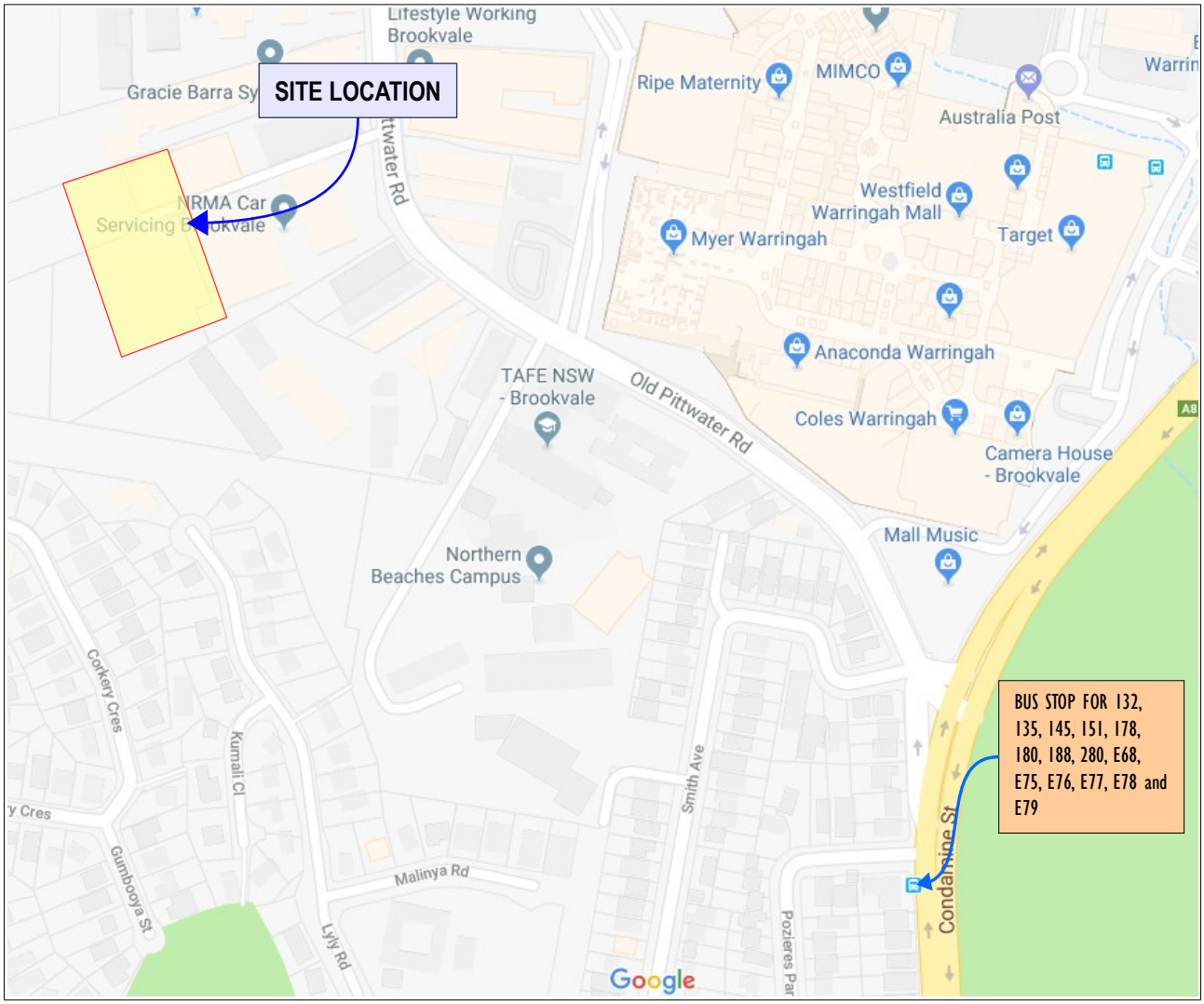


Figure 3. Public transport.

Item	Report	
Traffic volume counts	**Intersections**	
	Location / type of control	Old Pittwater Road / Access laneway (give way control)
		Old Pittwater Road / Condamine Street (signalised intersection)
	Date / Day of the week	Thursday 16th of August 2018 (PM) and Friday 17th of August 2018 (AM)
	Time period (AM)	05:50 to 09:15; morning peak hour occurred at 08:15 – 09:15
	Time period (PM)	14:45 to 18:30; afternoon peak hour occurred at 16:30 – 17:30
	• Refer to **Figures 4a & 4b.**	
Intersection operation	• SIDRA Intersection 8.0 software was used to check the intersection performance. Results of the SIDRA modelling determined that:	
	◦ The intersection of Old Pittwater Road / Access laneway operates at Level of Service B for both the morning and afternoon peak hours (acceptable with spare capacity).	
	◦ The intersection of Old Pittwater Road / Condamine Street also operates at a good Level of Service for both the morning (LoS A) and afternoon (LoS B) peak hours.	

Level of service criteria for intersections			
Level of Service	**Average Delay per Vehicle (secs/veh)**	**Traffic Signals, Roundabout**	**Give Way & Stop Signs**
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays; Roundabouts require other control mode	At capacity, requires other control mode

Source: RTA (2002) Guide to Traffic Generating Developments

Figure 4. Existing traffic volumes.

Item	Report
Planning control document	• Northern Beaches Council ◦ Warringah Council Development Control Plan 2011 ▪ Part C – Sitting Factors

Requirement	Compliance
C1 Subdivision	
Access for Council service vehicles, emergency vehicles and garbage collection vehicles must be provided.	Complies with AS/NZS 2890.2
Driveways, accessways, etc, to allotments should have a gradient not exceeding 1:4 and allow for transitions at a minimum length of 1.5m and at a grade no steeper than 1:10.	Complies with AS/NZS 2890.1
Driveways in excess of 200 metres will not be allowed for residential development.	Not applicable
Driveways that are 30m or more in length require a passing bay to be provided every 30m. To provide a passing bay, driveways shall be widened to 5.0m for a distance of at least 10m.	Complies. The access driveway provides sufficient width for two-way movements.
Passing bays should have regard to sight conditions and minimise vehicular conflict.	Complies
Vehicular ingress/egress points to internal lots may be used as passing/turning bays, subject to extension of a right-of-carriageway over the passing/turning bay.	Noted
Rights-of-carriageway should be located so as to accommodate all vehicle turning facilities.	Complies with the relevant Australian Standards, the AS/NZS 2890 series.
Width of accessways are to be as follows:	Complies with the relevant Australian Standards, the AS/NZS 2890 series.

1. Table: Width of accessways*

Number of lots to be serviced	Width of clear constructed accessway (m)*
1-5	3.5
6-10	5.0
in excess of 10	Access is to be provided by a private or public road constructed with a width that is in accordance with Council standard specifications for engineering works (AUSPEC 1)

*Notes to Table:

The accessway width is exclusive of any area for the provision of services to the lots.
Clear widths exclude fencing and other obstructions.
As the widths specified are for straights, any widening should be exclusive of the widening for curves. The widening for curves should suit the minimum swept path of vehicles in accordance with Australian / New Zealand Standards (at the time of adoption AS/NZS 2890.1:2004 applied).

Design and construction All roads, rights of carriageway, drainage design and construction is to be in accordance with Council's policy requirements including; AUSPEC 1 – Council's Specification for Engineering Works, Development Engineering Minor Works Specification, On Site Stormwater Detention (OSD) Technical Specification and Council's Water Sensitive Urban Design Policy. Additionally, internal roads must be designed in accordance with the relevant Australian Standards.	Complies with the relevant Australian Standards, the AS/NZS 2890 series.

Item	Report		
	Part C2 Traffic, Access and Safety		
	Applicants shall demonstrate that the location of vehicular and pedestrian access meets the objectives. To minimise: a)traffic hazards, b) vehicles queuing on public roads c) the number of vehicle crossings in a street; d) traffic, pedestrian and cyclist conflict; e) interference with public transport facilities; and f) the loss of “on street” kerbside parking	Complies	
	Vehicle access is to be obtained from minor streets and lanes where available and practical.	Complies	
	There will be no direct vehicle access to properties in the B7 zone from Mona Vale Road or Forest Way.	Not applicable	
	Vehicle crossing approvals on public roads are to be in accordance with Council’s Vehicle Crossing Policy (Special Crossings) LAP-PL413 and Vehicle Access to Roadside Development LAP-PL 315.	Not applicable	
	Vehicle crossing construction and design is to be in accordance with Council's Minor works specification.	Complies	
	Facilities for the loading and unloading of service, delivery and emergency vehicles are appropriate to the size and nature of the development, screened from public view and designed so that vehicles may enter and leave in a forward direction.	Complies	
	Part C3 Parking Facilities		
	The following design principles shall be met: Parking is to be located within buildings or on site.	Complies	
	Laneways are to be used to provide rear access to carparking areas where possible.	Complies. Proper access to car parking areas is provided through the driveway and access lane.	
	The carparking is to be provided partly or fully underground for apartment buildings and other large scale developments.	Complies	
	Parking is to be located so that views of the street from front windows are not obscured.	Complies	
	Off street parking is to be provided within the property demonstrating that the following matters have been taken into account: • land use, • the hours of operation, • the availability of public transport, • the availability of alternative car parking and • the need for parking facilities for courier vehicles, delivery / service vehicles and bicycles.	Complies	

Item	Report	
	Carparking, other than for individual dwellings, shall: • Avoid the use of mechanical car stacking spaces; • Not be readily apparent from public spaces; • Provide safe and convenient pedestrian and traffic movement; • Include adequate provision for manoeuvring and convenient access to individual spaces; • Enable vehicles to enter and leave the site in a forward direction; • Incorporate unobstructed access to visitor parking spaces; • Be landscapes to shade parked vehicles, screen them from public view, assist in micro-climate management and create attractive and pleasant places. • Provide on site detention of storm water, where appropriate; and • Minimum car parking dimensions are to be in accordance with AS/NZS 2890.1.	Complies with AS/NZS 2890.1
	Carparking is to be provided in accordance with Appendix 1 which details the rate of car parking for various land uses. Where the carparking rate is not specified in Appendix 1 or the WLEP, carparking must be adequate for the development having regard to the objectives and requirements of the clause. The rates specified in the Roads and Traffic Authority's Guide to Traffic Generating Development should be used as a guide where relevant.	As below

Appendix 1 Car Parking Requirements

Office and Business	
Office premises	1 space per 40 m2 GFA.
Industry and transport	
Industry	1.3 spaces per 100 m2 GFA (including up to 20% of floor area as office space component. Office space component above 20% determined at office rate).
Warehouse or distribution centre	1.3 spaces per 100 m2 GFA (including up to 20% of floor area as office premises space component. Office premises component above 20% determined at office premises rate).

Car parking required	Car parking proposed
The total GFA of the industrial component is 6,010 m^2 and 1.3 spaces per 100 m^2 GFA has to be provided: • 1.3 x 6,441/100 = 83.7 spaces The total GFA of the warehouse is 3,804 m^2 and 1.3 spaces per 100 m^2 GFA has to be provided: • 1.3 x 3804/100 = 49.5 spaces [Table 1] shows units where office premises	111 car parking spaces are provided (shortfall of 23 spaces). This level of provision is considered to be satisfactory. Parking requirements in the DCP do not differentiate between industrial and warehouse developments whereas the latter require less parking according to the RMS Guide to Traffic Generating Developments (1 space per 300 m^2 GFA). This is recognised in DCPs of other Councils in the Sydney

Item	Report	
	were above 20% of total space. Therefore, a separate calculation for the extra office space also had to be taken into account. • 1 x 49.75 / 40 = 1.2 spaces **Total:** 83.7 + 49.5 + 1.2 = 134 spaces	Metropolitan Area. Under the RMS requirements, **warehouse** units will require only 3,804 / 300 = 12.7, say **13 spaces** instead of 50. The **total requirement** will then be 83.7 + 13 + 1.2 = **98 spaces**, well below the proposed provision.

Table 1. Office unit calculations.

Unit	Extra offie space, m ^{2}
1.02	19.75
2.02	7.5
2.03	7.5
2.04	15
Total	**49.75**

Adequate provision for staff, customer and courier parking, and parking and turning of vehicles with trailers must be provided if appropriate to the land use.	Complies
For bulky goods premises adequate on-site parking spaces for service/delivery vehicles at a convenient location, separated from customer parking must be provided.	Not applicable as this site is not a bulky goods premise.

Part C3(A) Bicycle Parking and End of Trip Facilities

Bicycle parking facilities must be provided for new buildings and for alterations or additions to existing buildings. In the case of alterations or additions to existing buildings bicycle parking facilities are required for the additional floor area only.	Complies
Bicycle parking shall be designed and constructed in accordance with Australian Standard AS 2890.3 – Bicycle Parking Facilities.	Complies with AS 2890.3
Bicycle parking facilities shall be designed to be an integral part of the development and where visible from public places or streets, will complement the visual quality of the public domain.	Complies
Bicycle parking shall be provided in accordance with the generation rates in the following table and is determined by adding the requirements as shown in the table below:	As below

Light and General Industry	1 per 200 m^2 GFA	Visitors: 1 per 600 m^2 GFA

Bicycle parking required	Bicycle parking proposed
The total GFA of the industry is 6,491 m^2 and 1 space per 200 m^2 GFA has to be provided: 1 x 6,491 /200 = 32.5, say **33 spaces**	No bicycle parking spaces are provided. The author of this report is of the professional opinion that the level of bicycle parking provision required by the DCP for industrial developments is grossly overestimated. In 2012, TEF Consulting conducted a comprehensive study of business parks and industrial estates for NSW RMS. The results of our study were adopted by RMS to update the

Item	Report	
		Guide to Traffic Generating Developments. An excerpt from the study, with the survey results of travel modes, is included in the Appendix to this report. It demonstrates that cycling as a mode of travel constitutes only 0.4% of all modes on average. Based on the car mode share of 71.3% and the number of required car spaces 98, the likely actual bicycle parking demand will be 0.5, say one (1) bicycle space. Capable of compliance at the Construction Certificate stage.
	End of trip facilities must be provided for new buildings and for alterations or additions to existing buildings. In the case of alterations or additions to existing buildings end of trip facilities are required for the additional floor area only. End of trip facilities are not required for schools, wholly residential buildings or residential components of mixed use buildings.	Capable of compliance at the Construction Certificate stage.
	End of trip facilities shall be provided. A bathroom/ change area(s) shall be provided and shall contain at least one toilet, wash basin, mirror, clothing hooks and power points (including shaving plugs). A minimum of one shower cubicle is required per seven required bicycle parking spaces. Each shower cubicle shall include a private clothes changing area with a bench and a minimum of two clothing hooks. Clothes Lockers shall be provided at the rate of one clothes locker for every required bicycle parking space and should be secure, ventilated and large enough to store cycling gear. Suggested minimum dimensions of a clothes locker are 900mm (height), 350mm (width) and 500mm (depth).	Capable of compliance at the Construction Certificate stage.

Item	Report
	Traffic impacts
Traffic generation	• Base traffic generation rates ◦ From RMS (2002) Guide to Traffic Generating Developments • Updated data from TDT 2013/04a
	• **Traffic generated by proposed development** ◦ Industrial development • Industrial units • Weekday morning peak hour vehicle trips for industrial units = 0.52 per 100 m² GFA ◦ 0.52 × 6441/100 = 33 trips during the morning peak hour • Weekday afternoon peak hour vehicle trips for industrial units = 0.56 per 100 m² GFA ◦ 0.56 × 6441/100 = 36 trips during the afternoon peak hour
	• Warehouses • Weekday morning peak hour vehicle trips for warehouses = 0.52 per 100 m² GFA ◦ 0.52 × 3804/100 = 20 trips during the morning peak hour • Weekday afternoon peak hour vehicle trips for industrial units = 0.56 per 100 m² GFA ◦ 0.56 × 3804/100 = 21 trips during the morning peak hour
	• Office (above 20% of industrial units) • Weekday morning peak hour vehicle trips for warehouses = 0.52 per 100 m² GFA ◦ 1.60 × 49.75/100 = 1 trip during the morning peak hour • Weekday afternoon peak hour vehicle trips for industrial units = 0.56 per 100 m² GFA ◦ 1.2 × 49.75/100 = 1 trip during the morning peak hour
	• For the morning peak hour, 79% of the overall traffic will be entering the site while 21% will be leaving (based on the survey of movements at the existing access lane). ◦ For the total of 54 trips in the morning peak hour: ▪ 54 x 0.79 = **43 trips in** ▪ 54 x 0.21 = **12 trips out**
	• For the afternoon peak hour, 14% of the overall traffic will be entering the site while 86% will be leaving. ◦ For the total of 58 trips in the morning peak hour: ▪ 58 x 0.14 = **8 trips in** ▪ 58 x 0.86 = **50 trips out**
Traffic distribution	• Trip generation and attraction is assumed to be equal in all directions, with trip distribution taking into account the surrounding street network, connections and turn restrictions. • Refer to **Figure 5.**
SIDRA modelling	**Impact on intersection operation** • The operation of the street network under additional traffic loading was modelled using SIDRA Network software. ◦ **Table 2** contains a summary of SIDRA modelling results. • The modelling results were compared to the results of the existing traffic model. The results indicated the following:

Item	Report
	○ The Levels of Service for Old Pittwater Road / Condamine Street remained the same, LoS A for the morning and LoS B for the afternoon peak hours. ○ The Levels of Service for Old Pittwater Road / Access laneway remained the same, LoS B for both the morning and afternoon peak hours. • Modelling results indicate very minor increases in average delays and queue lengths. There will be no noticeable changes to the existing road network operation.

Figure 5. Distribution of additional traffic volumes.

Table 2. SIDRA modelling results.

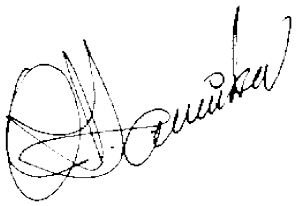
№	Intersection	AM							PM						
		AVD	LOS	DS	Queue, m	Movement			AVD	LOS	DS	Queue, m	Movement		
Existing															
1	Condamine St / Old Pittwater Rd	12.4	A	0.82	166.7	CSt	T	NB	16.4	B	0.93	331.9	OPRd	R	SB
2	Old Pittwater Rd / Access Lane	16.1	B	0.36	5.2	Ln	R	EB	15.5	B	0.52	2.0	Ln	R	EB
7															
1	Condamine St / Old Pittwater Rd	13.0	A	0.82	180.1	CSt	T	NB	17.7	B	0.94	357.6	OPRd	R	SB
5	Old Pittwater Rd / Access Lane	15.7	B	0.38	8.6	Ln	R	EB	16.2	B	0.52	4.4	Ln	R	EB

Level of service criteria for intersections			
Level of Service	**Average Delay per Vehicle (secs/veh)**	**Traffic Signals, Roundabout**	**Give Way & Stop Signs**
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays; Roundabouts require other control mode	At capacity, requires other control mode

Source: RTA (2002) Guide to Traffic Generating Developments

Legend:			
ML	Meurants Ln	EB	Eastbound
WS	Wardia St	WB	Westbound
D	Driveway	NB	Northbound
GPD	Glenwood Park Dr	SB	Southbound
		T	Through movement
		R	Right hand turn
		L	Left hand turn

Conclusions	•	Proposed parking provision ◦ includes a moderate shortfall with regard to the Council's Development Control Plan requirements but fully complies with and exceeds RMS requirements.
	•	Traffic impacts ◦ The additional traffic from the proposed development will have no negative impact on the street network operation.
	•	Design of access, car parking and servicing facilities ◦ Complies with the relevant Standards.
	•	The proposed development is supportable on traffic and parking grounds.



Oleg I. Sannikov

Director

MEngSc (Traffic Engineering)

MIEAust, PEng

FAITPM

References:

Warringah Council Development Control Plan (DCP) 2011

Guide to Traffic Generating Developments RMS (2002)

AS/NZS 2890.1:2004: Parking Facilities – Off-street car parking

AS 2890.2-2002: Parking Facilities – Off-street commercial vehicle facilities

AS 2890.3:2015: Parking Facilities – Bicycle parking

AS/NZS 2890.6:2009: Parking Facilities – Off-street parking for people with disabilities

Appendix

Results of SIDRA modelling

Car park design checks and vehicle turning diagrams

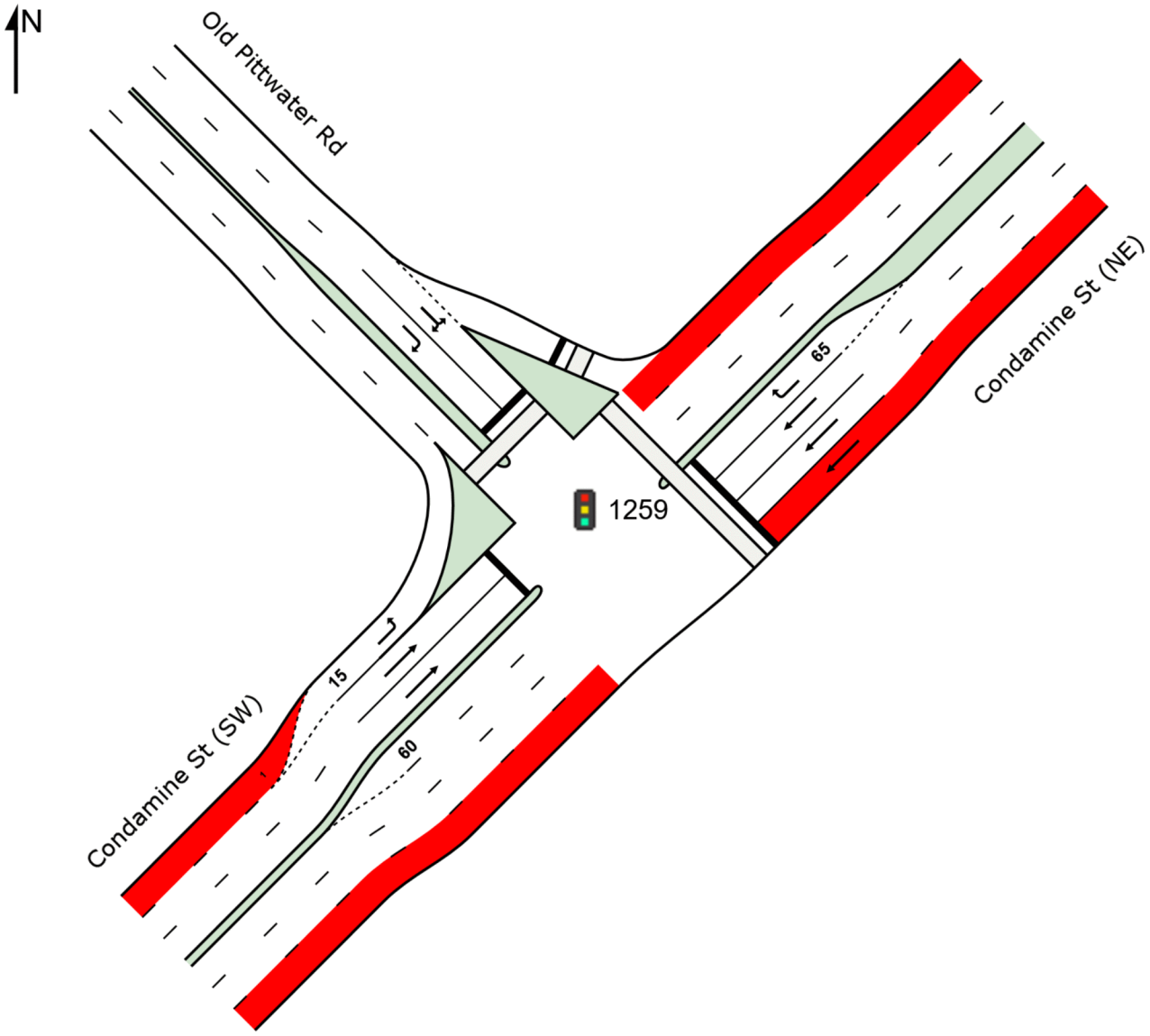
Excerpt from RMS report on Business Parks and Industrial Estates

Bus routes

SITE LAYOUT

Site: 1259 [Condamine St / Old Pittwater Rd AM Ex]

18098
Condamine St / Old Pittwater Rd AM Ex
Site Category: (None)
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd AM Ex]

18098
Condamine St / Old Pittwater Rd AM Ex
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
NorthEast: Condamine St (NE)												
5	T1	1375	9.3	0.509	0.6	LOS A	1.6	11.7	0.04	0.04	0.04	59.3
6	R2	242	2.2	0.544	38.4	LOS C	12.1	86.3	0.93	0.94	1.14	24.8
Approach		1617	8.2	0.544	6.2	LOS A	12.1	86.3	0.18	0.17	0.21	52.4
NorthWest: Old Pittwater Rd												
7	L2	46	15.9	0.819	61.8	LOS E	16.0	118.5	1.00	0.93	1.17	17.7
9	R2	309	4.8	0.819	58.6	LOS E	16.0	118.5	0.97	0.88	1.09	23.0
Approach		356	6.2	0.819	59.0	LOS E	16.0	118.5	0.98	0.89	1.10	22.4
SouthWest: Condamine St (SW)												
10	L2	446	5.2	0.249	5.7	LOS A	0.0	0.0	0.00	0.53	0.00	52.4
11	T1	1156	11.4	0.812	9.2	LOS A	21.7	166.7	0.44	0.41	0.46	50.2
Approach		1602	9.7	0.812	8.2	LOS A	21.7	166.7	0.31	0.45	0.33	50.8
All Vehicles		3575	8.7	0.819	12.4	LOS A	21.7	166.7	0.32	0.37	0.35	46.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	NorthEast Full Crossing	33	54.2	LOS E	0.1	0.1	0.95	0.95
P3	NorthWest Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3B	NorthWest Slip/Bypass Lane Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		138	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd AM Ex]

18098
Condamine St / Old Pittwater Rd AM Ex
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

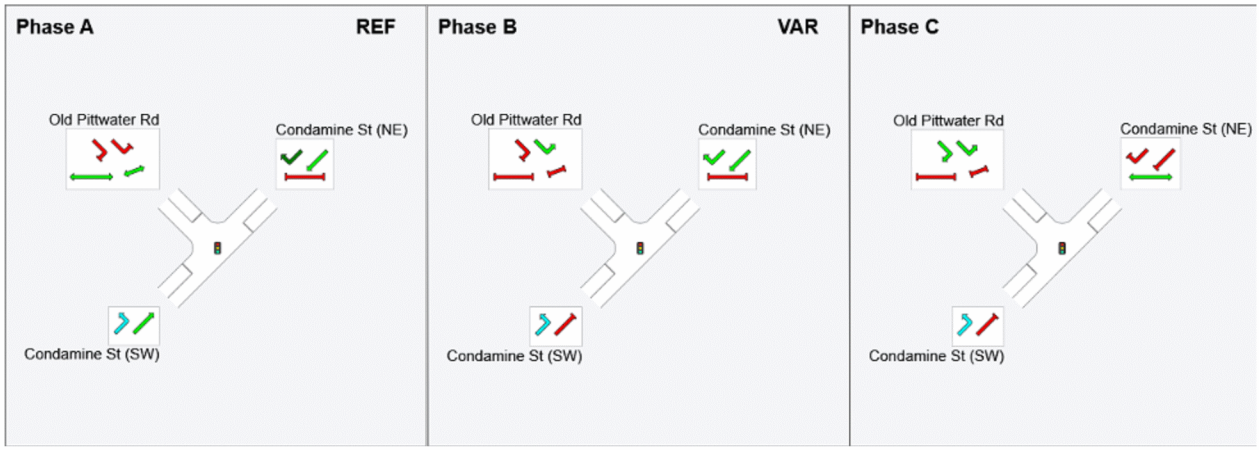
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, B*, C
(* Variable Phase)

PHASE TIMING SUMMARY

Phase	A	B	C
Phase Change Time (sec)	0	67	93
Green Time (sec)	61	20	21
Phase Time (sec)	67	26	27
Phase Split	56%	22%	23%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

OUTPUT PHASE SEQUENCE



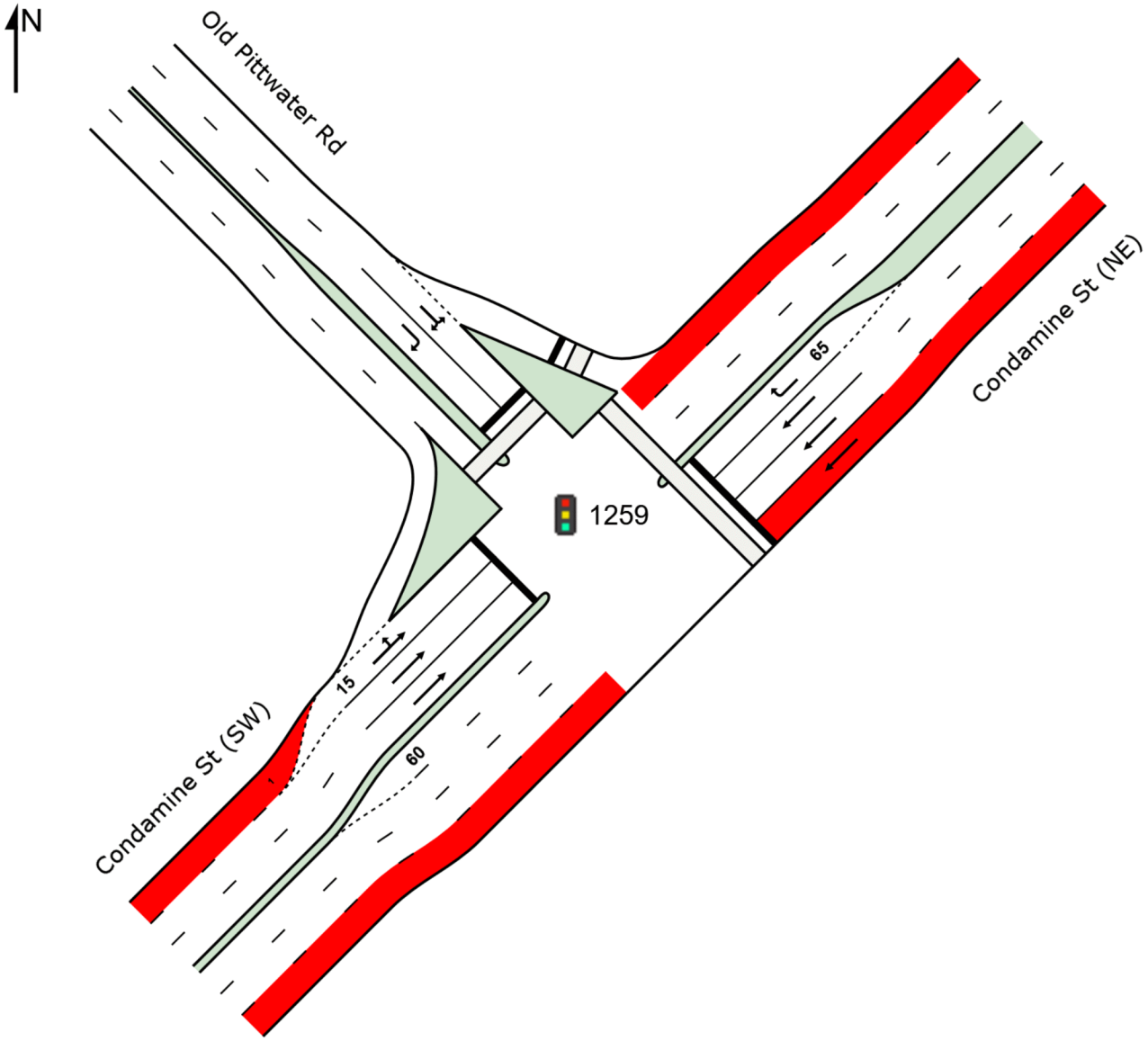
REF: Reference Phase
VAR: Variable Phase

Normal Movement
Slip/Bypass-Lane Movement
Stopped Movement
Other Movement Class (MC) Running
Mixed Running & Stopped MCs
Other Movement Class (MC) Stopped
Permitted/Opposed
Opposed Slip/Bypass-Lane
Turn On Red
Undetected Movement
Continuous Movement
Phase Transition Applied

SITE LAYOUT

Site: 1259 [Condamine St / Old Pittwater Rd AM Fu]

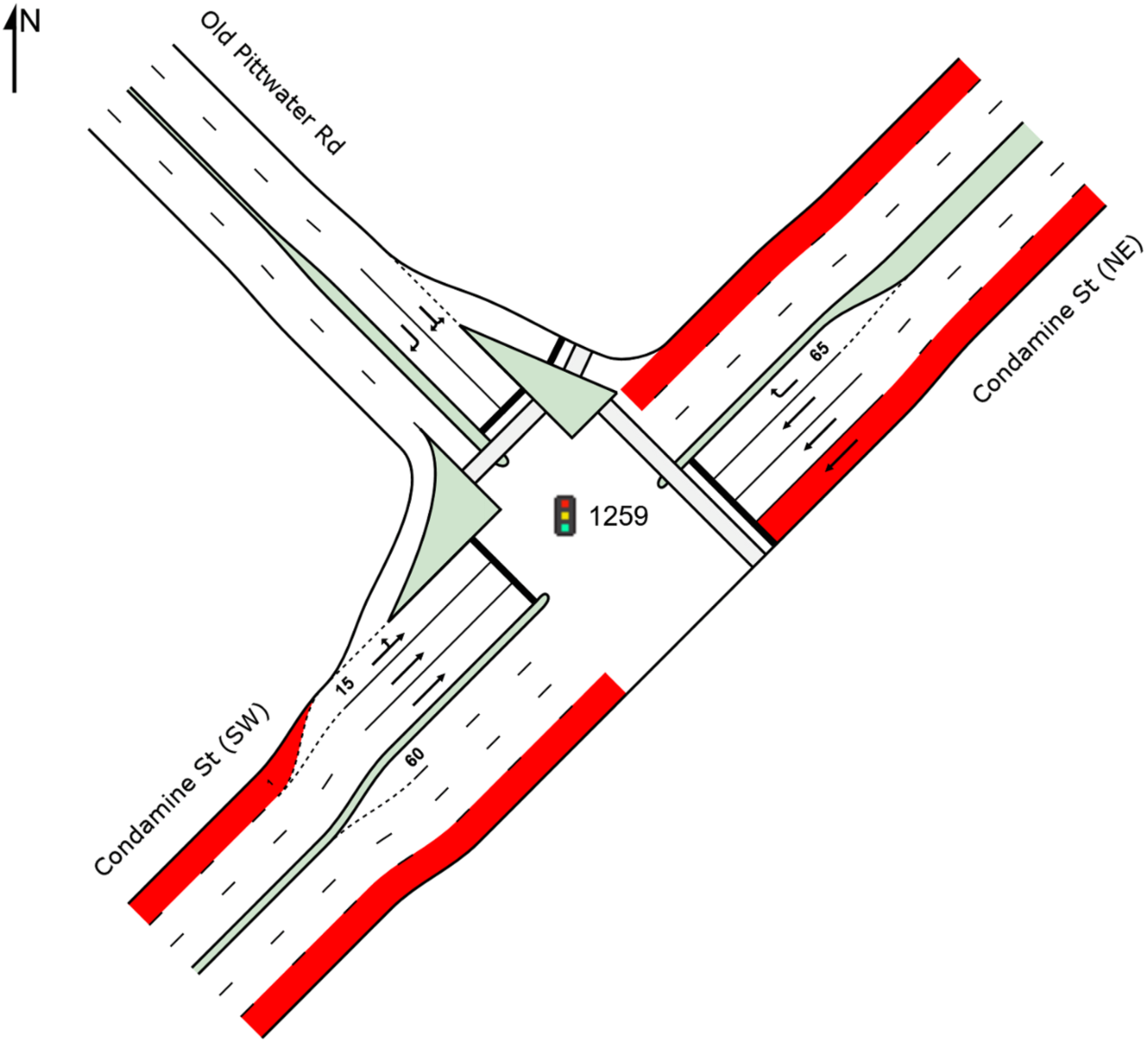
18098
Condamine St / Old Pittwater Rd AM Fu
Site Category: (None)
Signals - Fixed Time Coordinated



SITE LAYOUT

Site: 1259 [Condamine St / Old Pittwater Rd AM Fu]

18098
Condamine St / Old Pittwater Rd AM Fu
Site Category: (None)
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd AM Fu]

18098
Condamine St / Old Pittwater Rd AM Fu
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
NorthEast: Condamine St (NE)												
5	T1	1375	9.3	0.515	0.6	LOS A	1.6	11.9	0.04	0.04	0.04	59.3
6	R2	249	2.1	0.561	40.1	LOS C	12.5	88.9	0.94	0.95	1.16	24.2
Approach		1624	8.2	0.561	6.6	LOS A	12.5	88.9	0.18	0.18	0.21	51.9
NorthWest: Old Pittwater Rd												
7	L2	47	15.6	0.798	59.6	LOS E	16.0	118.2	1.00	0.91	1.14	18.2
9	R2	316	4.7	0.798	56.8	LOS E	16.0	118.2	0.97	0.87	1.07	23.4
Approach		363	6.1	0.798	57.2	LOS E	16.0	118.2	0.97	0.87	1.08	22.8
SouthWest: Condamine St (SW)												
10	L2	460	5.0	0.494	7.4	LOS A	4.9	36.6	0.20	0.58	0.20	50.8
11	T1	1156	11.4	0.821	10.4	LOS A	23.6	180.1	0.47	0.45	0.50	49.2
Approach		1616	9.6	0.821	9.5	LOS A	23.6	180.1	0.39	0.49	0.42	49.6
All Vehicles		3603	8.6	0.821	13.0	LOS A	23.6	180.1	0.36	0.39	0.39	45.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	NorthEast Full Crossing	33	54.2	LOS E	0.1	0.1	0.95	0.95
P3	NorthWest Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3B	NorthWest Slip/Bypass Lane Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		138	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd AM Fu]

18098
Condamine St / Old Pittwater Rd AM Fu
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
NorthEast: Condamine St (NE)												
5	T1	1375	9.3	0.515	0.6	LOS A	1.6	11.9	0.04	0.04	0.04	59.3
6	R2	249	2.1	0.561	40.1	LOS C	12.5	88.9	0.94	0.95	1.16	24.2
Approach		1624	8.2	0.561	6.6	LOS A	12.5	88.9	0.18	0.18	0.21	51.9
NorthWest: Old Pittwater Rd												
7	L2	47	15.6	0.796	59.5	LOS E	15.9	117.7	1.00	0.91	1.14	18.2
9	R2	315	4.7	0.796	56.7	LOS E	15.9	117.7	0.97	0.87	1.06	23.4
Approach		362	6.1	0.796	57.1	LOS E	15.9	117.7	0.97	0.87	1.07	22.8
SouthWest: Condamine St (SW)												
10	L2	460	5.0	0.494	7.4	LOS A	4.9	36.6	0.20	0.58	0.20	50.8
11	T1	1156	11.4	0.821	10.4	LOS A	23.6	180.1	0.47	0.45	0.50	49.2
Approach		1616	9.6	0.821	9.5	LOS A	23.6	180.1	0.39	0.49	0.42	49.6
All Vehicles		3602	8.6	0.821	13.0	LOS A	23.6	180.1	0.36	0.39	0.39	45.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	NorthEast Full Crossing	33	54.2	LOS E	0.1	0.1	0.95	0.95
P3	NorthWest Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3B	NorthWest Slip/Bypass Lane Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		138	54.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd AM Fu]

18098
Condamine St / Old Pittwater Rd AM Fu
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

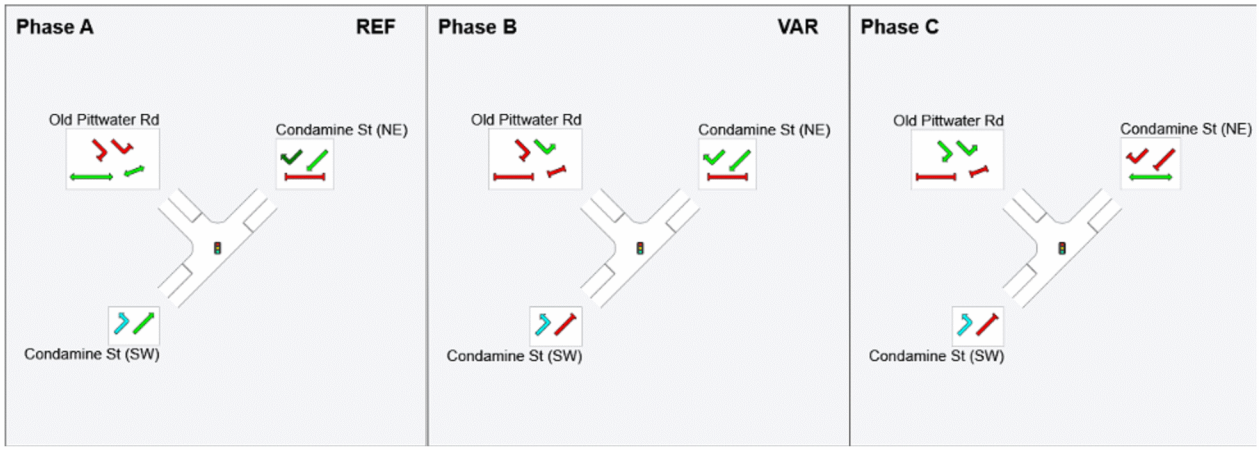
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, B*, C
(* Variable Phase)

PHASE TIMING SUMMARY

Phase	A	B	C
Phase Change Time (sec)	0	66	92
Green Time (sec)	60	20	22
Phase Time (sec)	66	26	28
Phase Split	55%	22%	23%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

OUTPUT PHASE SEQUENCE



REF: Reference Phase
VAR: Variable Phase

Normal Movement
Slip/Bypass-Lane Movement
Stopped Movement
Other Movement Class (MC) Running
Mixed Running & Stopped MCs
Other Movement Class (MC) Stopped
Permitted/Opposed
Opposed Slip/Bypass-Lane
Turn On Red
Undetected Movement
Continuous Movement
Phase Transition Applied

PHASING SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd AM Fu]

18098
Condamine St / Old Pittwater Rd AM Fu
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

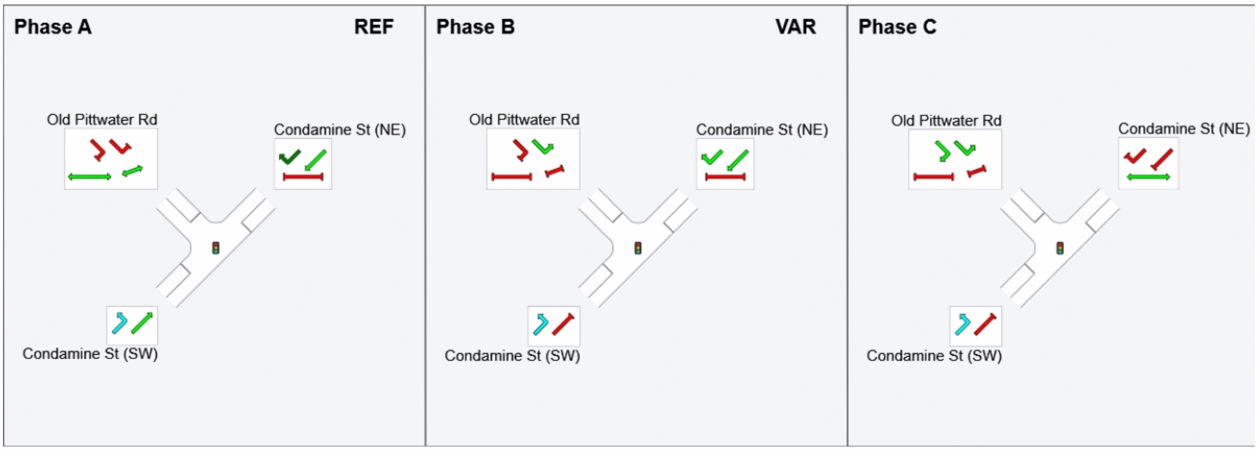
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, B*, C
(* Variable Phase)

PHASE TIMING SUMMARY

Phase	A	B	C
Phase Change Time (sec)	0	66	92
Green Time (sec)	60	20	22
Phase Time (sec)	66	26	28
Phase Split	55%	22%	23%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

OUTPUT PHASE SEQUENCE



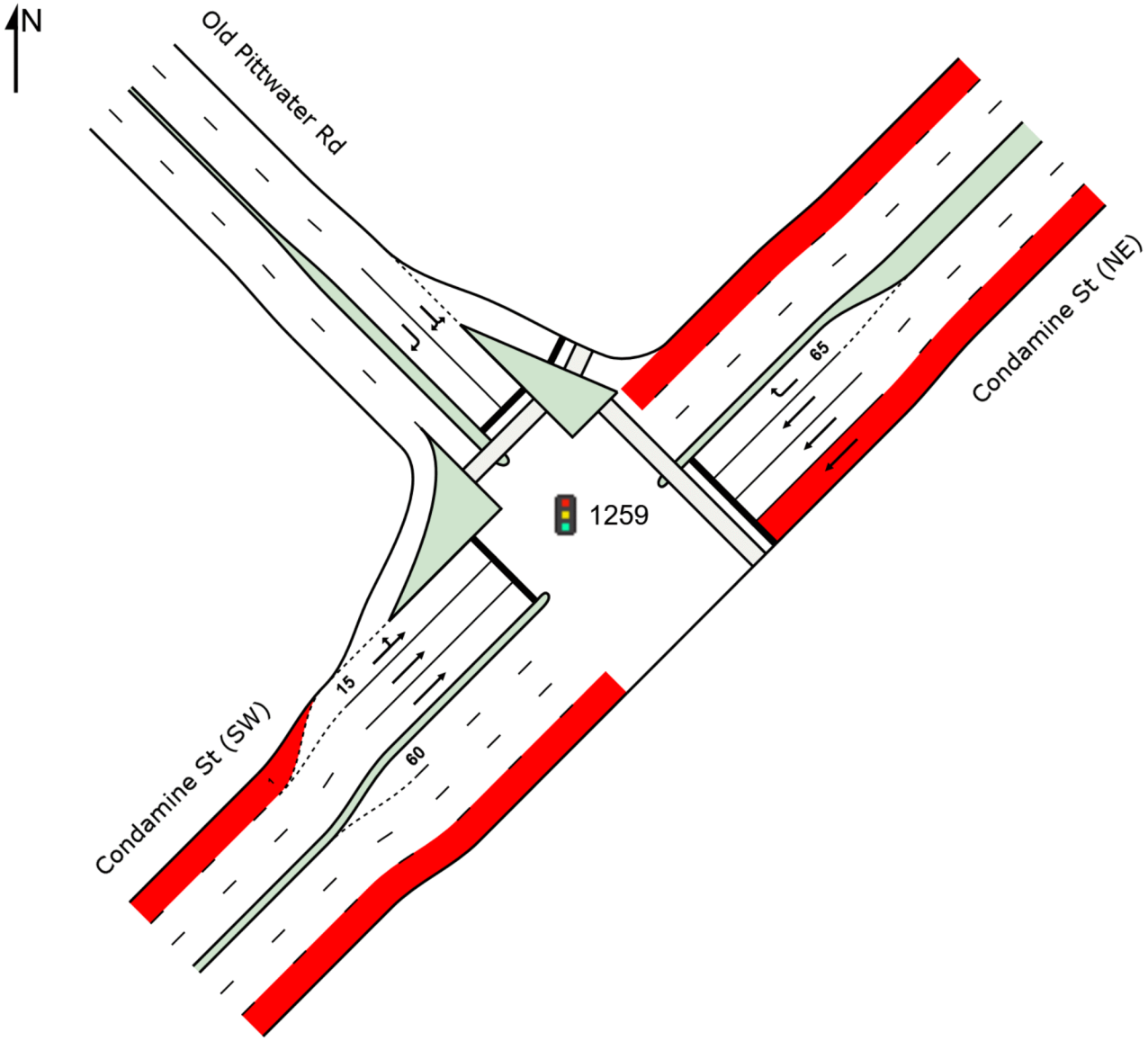
REF: Reference Phase
VAR: Variable Phase

Normal Movement
Slip/Bypass-Lane Movement
Stopped Movement
Other Movement Class (MC) Running
Mixed Running & Stopped MCs
Other Movement Class (MC) Stopped
Permitted/Opposed
Opposed Slip/Bypass-Lane
Turn On Red
Undetected Movement
Continuous Movement
Phase Transition Applied

SITE LAYOUT

Site: 1259 [Condamine St / Old Pittwater Rd PM Ex]

18098
Condamine St / Old Pittwater Rd PM Ex
Site Category: (None)
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd PM Ex]

18098
Condamine St / Old Pittwater Rd PM Ex
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
NorthEast: Condamine St (NE)												
5	T1	1207	7.6	0.653	0.9	LOS A	1.8	13.1	0.06	0.05	0.06	58.9
6	R2	157	0.7	0.927	87.9	LOS F	13.1	92.5	1.00	1.18	1.70	14.4
Approach		1364	6.8	0.927	10.9	LOS A	13.1	92.5	0.17	0.18	0.25	48.2
NorthWest: Old Pittwater Rd												
7	L2	122	2.6	0.926	56.3	LOS D	47.0	331.9	1.00	1.03	1.24	18.8
9	R2	889	0.6	0.926	47.9	LOS D	47.0	331.9	0.92	0.95	1.09	25.5
Approach		1012	0.8	0.926	48.9	LOS D	47.0	331.9	0.93	0.95	1.11	24.8
SouthWest: Condamine St (SW)												
10	L2	427	2.0	0.673	7.4	LOS A	4.5	32.8	0.21	0.58	0.21	51.0
11	T1	1386	6.6	0.746	1.0	LOS A	4.5	32.8	0.08	0.08	0.08	58.8
Approach		1814	5.5	0.746	2.4	LOS A	4.5	32.8	0.11	0.20	0.11	56.9
All Vehicles		4189	4.8	0.927	16.4	LOS B	47.0	331.9	0.33	0.38	0.40	42.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	NorthEast Full Crossing	35	49.2	LOS E	0.1	0.1	0.95	0.95
P3	NorthWest Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P3B	NorthWest Slip/Bypass Lane Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		140	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd PM Ex]

18098
Condamine St / Old Pittwater Rd PM Ex
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

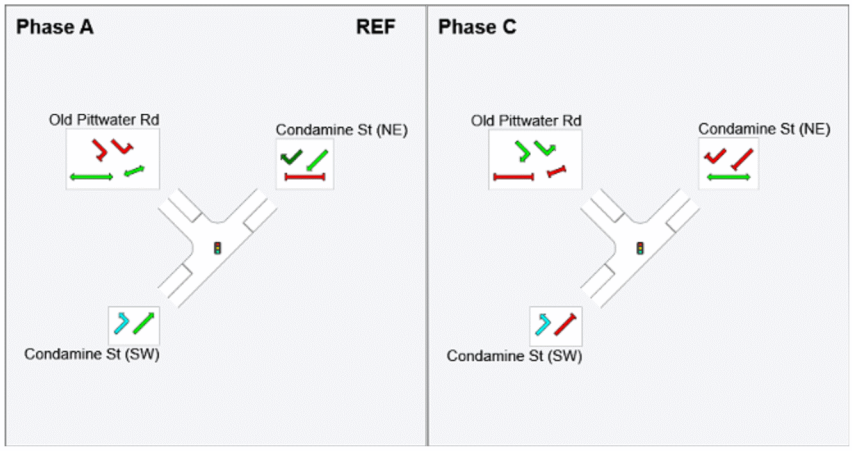
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, C
(* Variable Phase)

PHASE TIMING SUMMARY

Phase	A	C
Phase Change Time (sec)	0	60
Green Time (sec)	54	44
Phase Time (sec)	60	50
Phase Split	55%	45%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

OUTPUT PHASE SEQUENCE



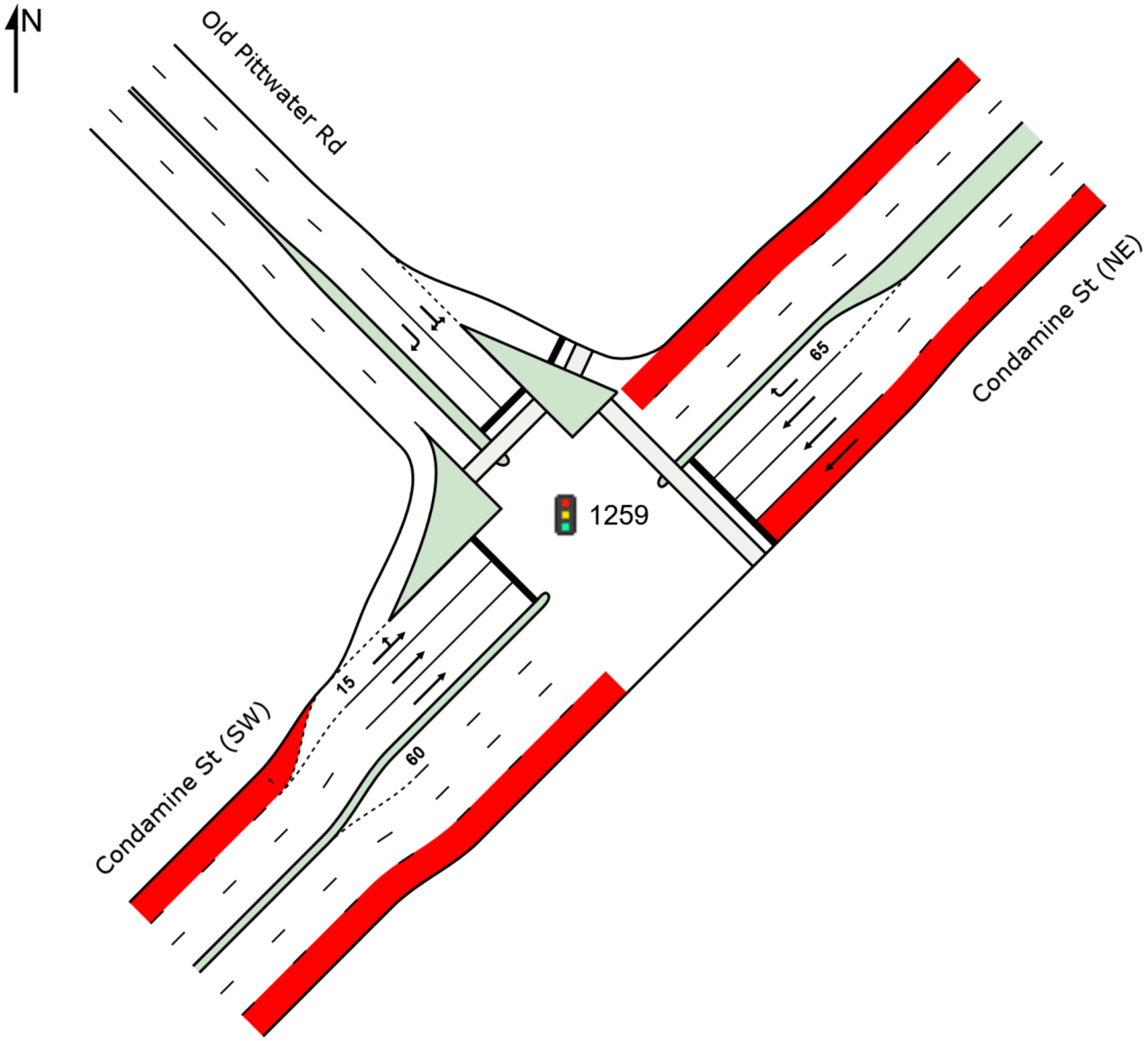
REF: Reference Phase
VAR: Variable Phase

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

SITE LAYOUT

Site: 1259 [Condamine St / Old Pittwater Rd PM Fu]

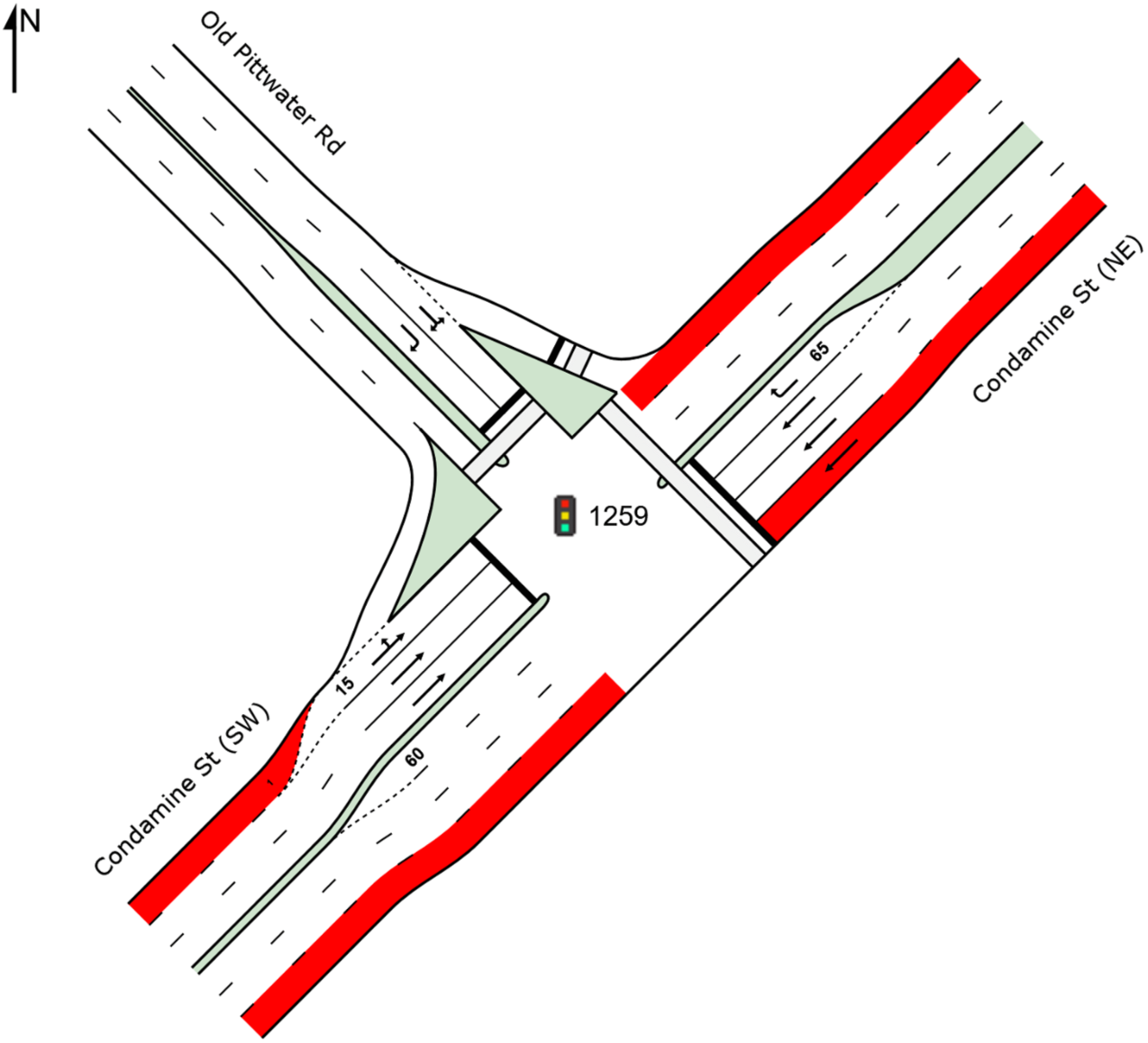
18098
Condamine St / Old Pittwater Rd PM Fu
Site Category: (None)
Signals - Fixed Time Coordinated



SITE LAYOUT

Site: 1259 [Condamine St / Old Pittwater Rd PM Fu]

18098
Condamine St / Old Pittwater Rd PM Fu
Site Category: (None)
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd PM Fu]

18098
Condamine St / Old Pittwater Rd PM Fu
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
NorthEast: Condamine St (NE)												
5	T1	1207	7.6	0.653	0.9	LOS A	1.8	13.1	0.06	0.05	0.06	58.9
6	R2	158	0.7	0.933	90.6	LOS F	13.4	94.7	1.00	1.19	1.72	14.1
Approach		1365	6.8	0.933	11.3	LOS A	13.4	94.7	0.17	0.19	0.25	47.9
NorthWest: Old Pittwater Rd												
7	L2	124	2.5	0.945	62.4	LOS E	50.9	359.0	1.00	1.06	1.30	17.7
9	R2	908	0.6	0.945	52.1	LOS D	50.9	359.0	0.92	0.97	1.13	24.5
Approach		1033	0.8	0.945	53.4	LOS D	50.9	359.0	0.93	0.98	1.15	23.7
SouthWest: Condamine St (SW)												
10	L2	431	2.0	0.675	7.4	LOS A	4.5	32.9	0.22	0.59	0.22	51.0
11	T1	1386	6.6	0.746	1.0	LOS A	4.5	32.9	0.08	0.08	0.08	58.8
Approach		1817	5.5	0.746	2.5	LOS A	4.5	32.9	0.11	0.20	0.11	56.9
All Vehicles		4215	4.8	0.945	17.8	LOS B	50.9	359.0	0.33	0.38	0.41	41.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	NorthEast Full Crossing	35	49.2	LOS E	0.1	0.1	0.95	0.95
P3	NorthWest Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P3B	NorthWest Slip/Bypass Lane Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		140	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd PM Fu]

18098
Condamine St / Old Pittwater Rd PM Fu
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles

Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
NorthEast: Condamine St (NE)												
5	T1	1207	7.6	0.653	0.9	LOS A	1.8	13.1	0.06	0.05	0.06	58.9
6	R2	158	0.7	0.933	90.6	LOS F	13.4	94.7	1.00	1.19	1.72	14.1
Approach		1365	6.8	0.933	11.3	LOS A	13.4	94.7	0.17	0.19	0.25	47.9
NorthWest: Old Pittwater Rd												
7	L2	124	2.5	0.944	62.1	LOS E	50.7	357.6	1.00	1.05	1.30	17.7
9	R2	907	0.6	0.944	51.9	LOS D	50.7	357.6	0.92	0.97	1.13	24.5
Approach		1032	0.8	0.944	53.1	LOS D	50.7	357.6	0.93	0.98	1.15	23.8
SouthWest: Condamine St (SW)												
10	L2	431	2.0	0.675	7.4	LOS A	4.5	32.9	0.22	0.59	0.22	51.0
11	T1	1386	6.6	0.746	1.0	LOS A	4.5	32.9	0.08	0.08	0.08	58.8
Approach		1817	5.5	0.746	2.5	LOS A	4.5	32.9	0.11	0.20	0.11	56.9
All Vehicles		4214	4.8	0.944	17.7	LOS B	50.7	357.6	0.33	0.38	0.41	41.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	NorthEast Full Crossing	35	49.2	LOS E	0.1	0.1	0.95	0.95
P3	NorthWest Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P3B	NorthWest Slip/Bypass Lane Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		140	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd PM Fu]

18098
Condamine St / Old Pittwater Rd PM Fu
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

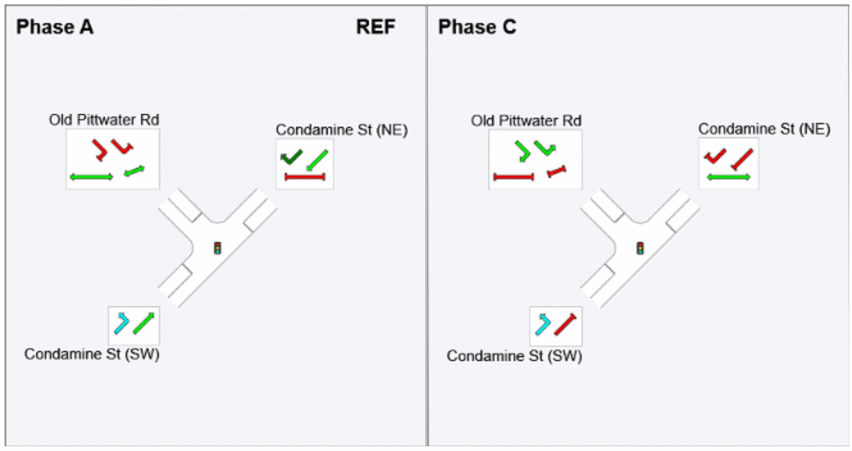
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, C
(* Variable Phase)

PHASE TIMING SUMMARY

Phase	A	C
Phase Change Time (sec)	0	60
Green Time (sec)	54	44
Phase Time (sec)	60	50
Phase Split	55%	45%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

OUTPUT PHASE SEQUENCE



REF: Reference Phase
VAR: Variable Phase

Normal Movement
Slip/Bypass-Lane Movement
Stopped Movement
Other Movement Class (MC) Running
Mixed Running & Stopped MCs
Other Movement Class (MC) Stopped
Permitted/Opposed
Opposed Slip/Bypass-Lane
Turn On Red
Undetected Movement
Continuous Movement
Phase Transition Applied

PHASING SUMMARY

Site: 1259 [Condamine St / Old Pittwater Rd PM Fu]

18098
Condamine St / Old Pittwater Rd PM Fu
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

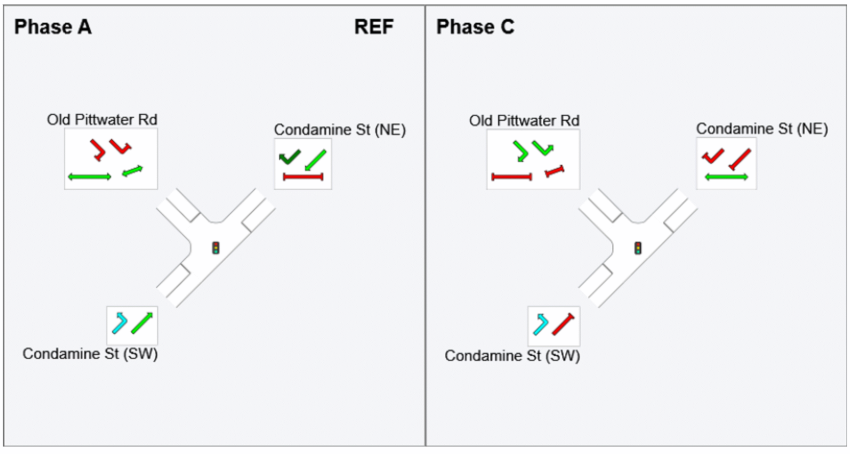
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, C
(* Variable Phase)

PHASE TIMING SUMMARY

Phase	A	C
Phase Change Time (sec)	0	60
Green Time (sec)	54	44
Phase Time (sec)	60	50
Phase Split	55%	45%

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

OUTPUT PHASE SEQUENCE



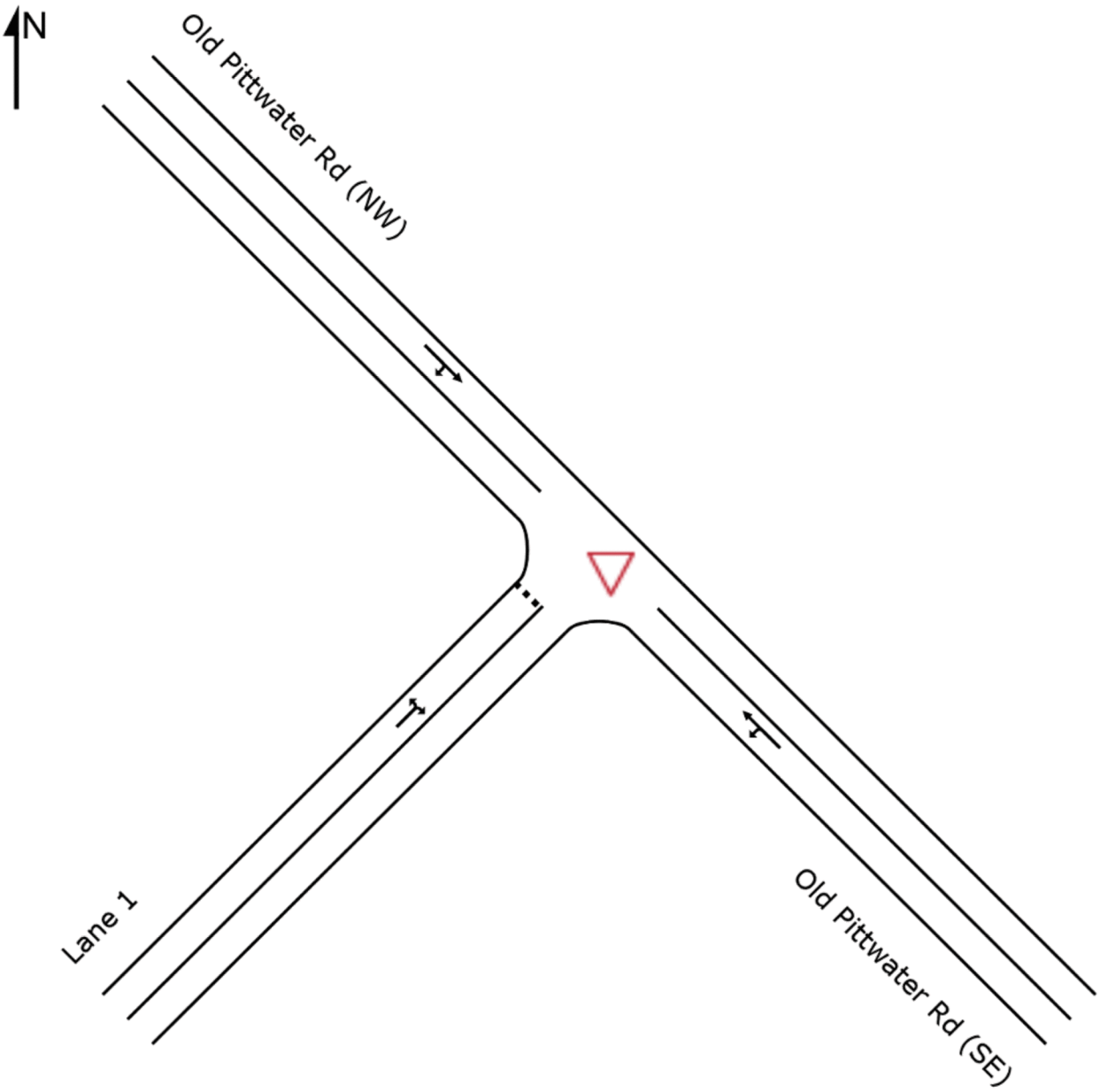
REF: Reference Phase
VAR: Variable Phase

- Normal Movement
- Slip/Bypass-Lane Movement
- Stopped Movement
- Other Movement Class (MC) Running
- Mixed Running & Stopped MCs
- Other Movement Class (MC) Stopped
- Permitted/Opposed
- Opposed Slip/Bypass-Lane
- Turn On Red
- Undetected Movement
- Continuous Movement
- Phase Transition Applied

SITE LAYOUT

Site: [Old Pittwater Rd / Lane 1 AM Ex]

18098
Old Pittwater Rd / Lane 1 AM Ex
Site Category: (None)
Giveway / Yield (Two-Way)



Organisation: TEF Consulting | Created: Tuesday, 11 December 2018 4:09:35 PM
Project: D:\Dropbox___DB current TEF projects_NR\18098 - 130-140 Old Pittwater Rd Brookvale - Leech Harmon Architects\18098_modelling\18098 sidra\18098 - 130-140 Old Pittwater Rd.sip8

MOVEMENT SUMMARY

Site: [Old Pittwater Rd / Lane 1 AM Ex]

18098
Old Pittwater Rd / Lane 1 AM Ex
Site Category: (None)
Giveway / Yield (Two-Way)

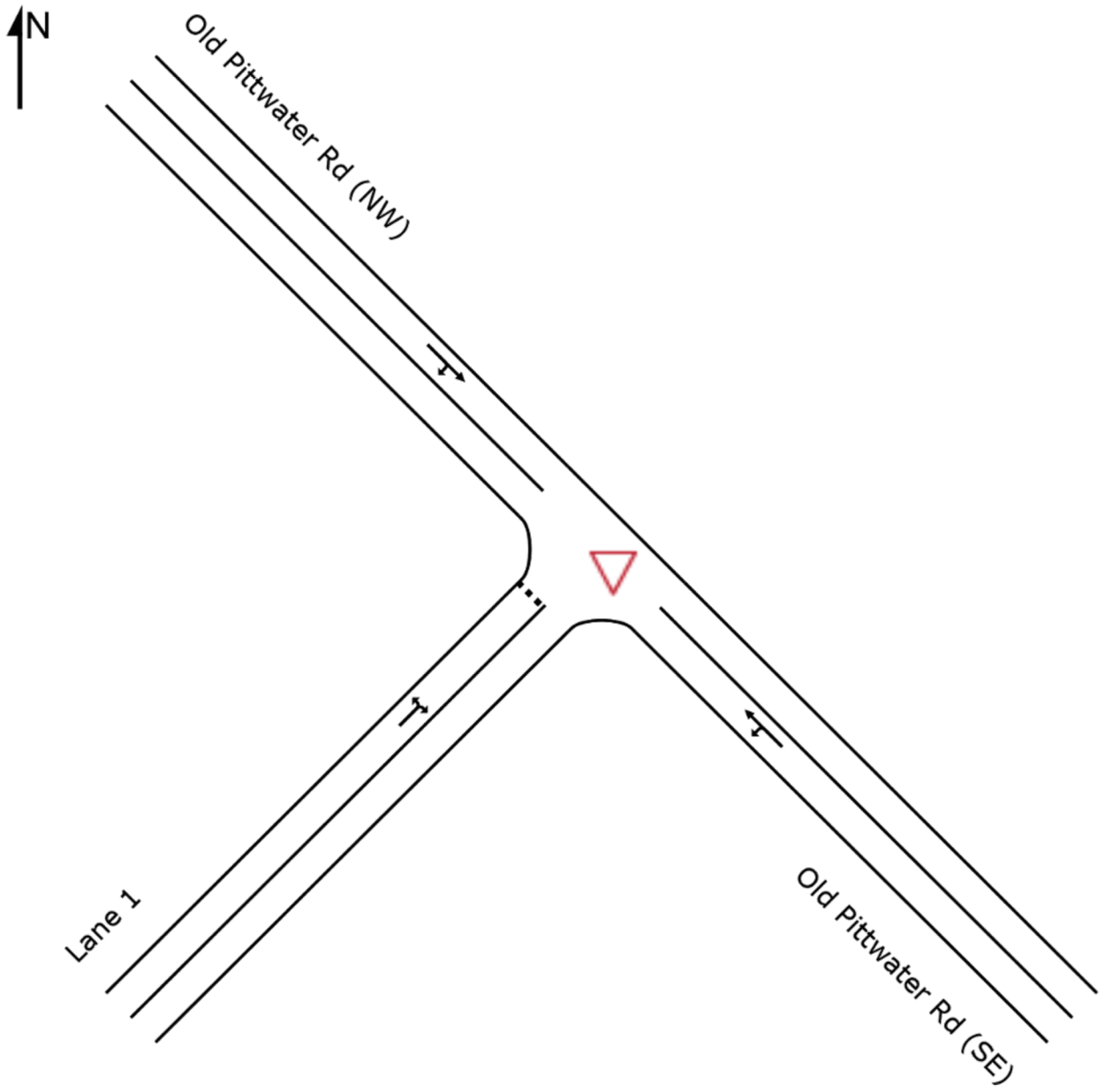
Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Old Pittwater Rd (SE)												
1	L2	25	8.3	0.363	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	31.5
2	T1	663	4.0	0.363	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach		688	4.1	0.363	0.3	NA	0.0	0.0	0.00	0.02	0.00	58.5
NorthWest: Old Pittwater Rd (NW)												
8	T1	346	5.8	0.236	1.1	LOS A	0.7	5.2	0.20	0.06	0.21	58.2
9	R2	34	18.8	0.236	11.2	LOS A	0.7	5.2	0.20	0.06	0.21	30.4
Approach		380	6.9	0.236	2.0	NA	0.7	5.2	0.20	0.06	0.21	55.4
SouthWest: Lane 1												
10	L2	7	14.3	0.044	9.2	LOS A	0.1	1.1	0.69	0.84	0.69	42.2
12	R2	9	22.2	0.044	16.1	LOS B	0.1	1.1	0.69	0.84	0.69	41.3
Approach		17	18.8	0.044	13.0	LOS A	0.1	1.1	0.69	0.84	0.69	41.7
All Vehicles		1085	5.3	0.363	1.1	NA	0.7	5.2	0.08	0.05	0.08	57.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SITE LAYOUT

Site: [Old Pittwater Rd / Lane 1 AM Fu]

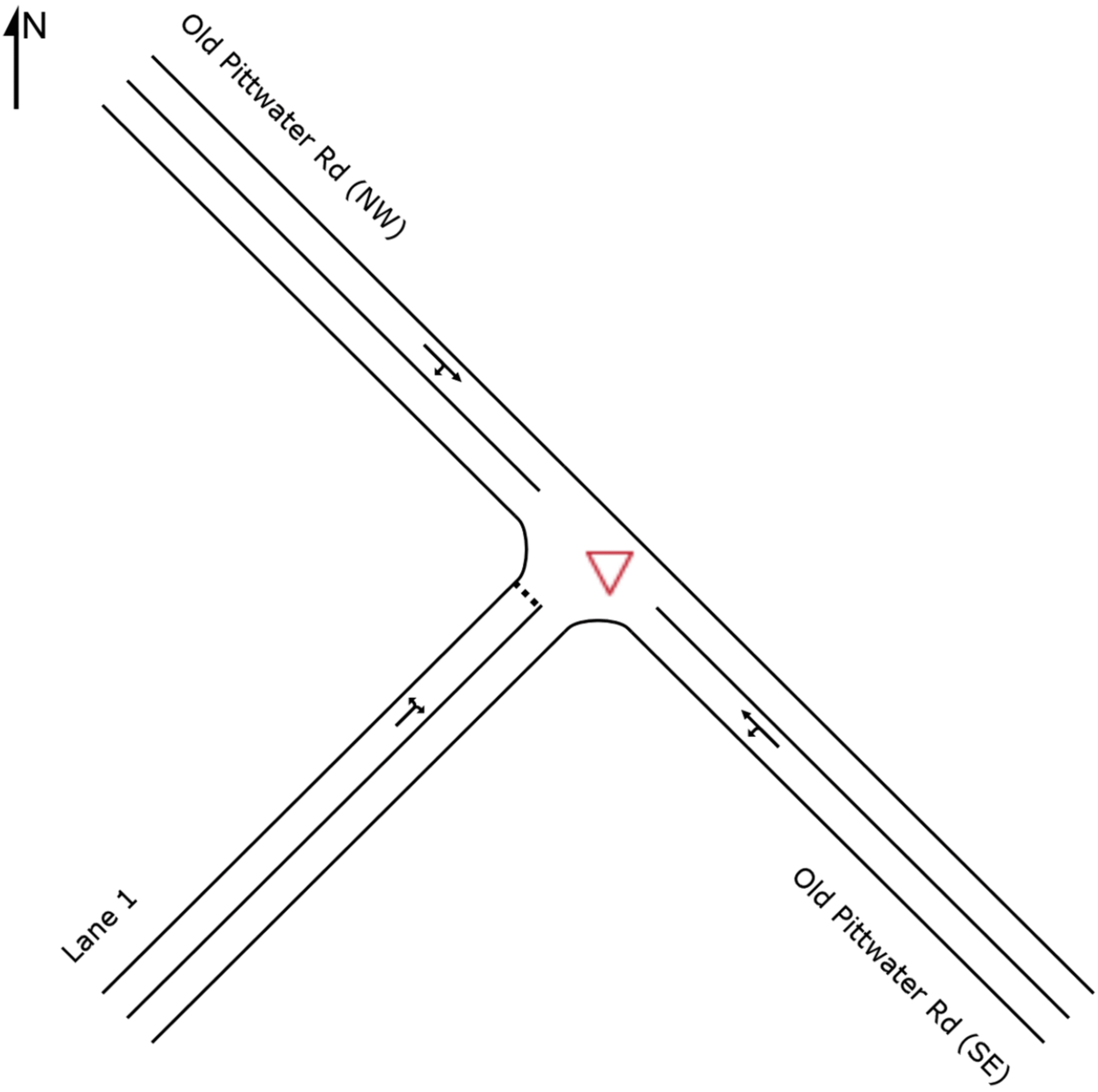
18098
Old Pittwater Rd / Lane 1 AM Fu
Site Category: (None)
Giveway / Yield (Two-Way)



SITE LAYOUT

Site: [Old Pittwater Rd / Lane 1 AM Fu]

18098
Old Pittwater Rd / Lane 1 AM Fu
Site Category: (None)
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: [Old Pittwater Rd / Lane 1 AM Fu]

18098
Old Pittwater Rd / Lane 1 AM Fu
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
SouthEast: Old Pittwater Rd (SE)												
1	L2	47	4.4	0.375	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	31.5
2	T1	663	4.0	0.375	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Approach		711	4.0	0.375	0.4	NA	0.0	0.0	0.00	0.04	0.00	57.4
NorthWest: Old Pittwater Rd (NW)												
8	T1	346	5.8	0.271	1.8	LOS A	1.2	8.9	0.31	0.11	0.35	57.1
9	R2	60	10.5	0.271	11.0	LOS A	1.2	8.9	0.31	0.11	0.35	30.0
Approach		406	6.5	0.271	3.1	NA	1.2	8.9	0.31	0.11	0.35	52.6
SouthWest: Lane 1												
10	L2	14	7.7	0.075	9.0	LOS A	0.2	1.8	0.69	0.85	0.69	42.8
12	R2	17	12.5	0.075	15.7	LOS B	0.2	1.8	0.69	0.85	0.69	42.0
Approach		31	10.3	0.075	12.7	LOS A	0.2	1.8	0.69	0.85	0.69	42.4
All Vehicles		1147	5.0	0.375	1.7	NA	1.2	8.9	0.13	0.09	0.14	55.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Old Pittwater Rd / Lane 1 AM Fu]

18098
Old Pittwater Rd / Lane 1 AM Fu
Site Category: (None)
Giveway / Yield (Two-Way)

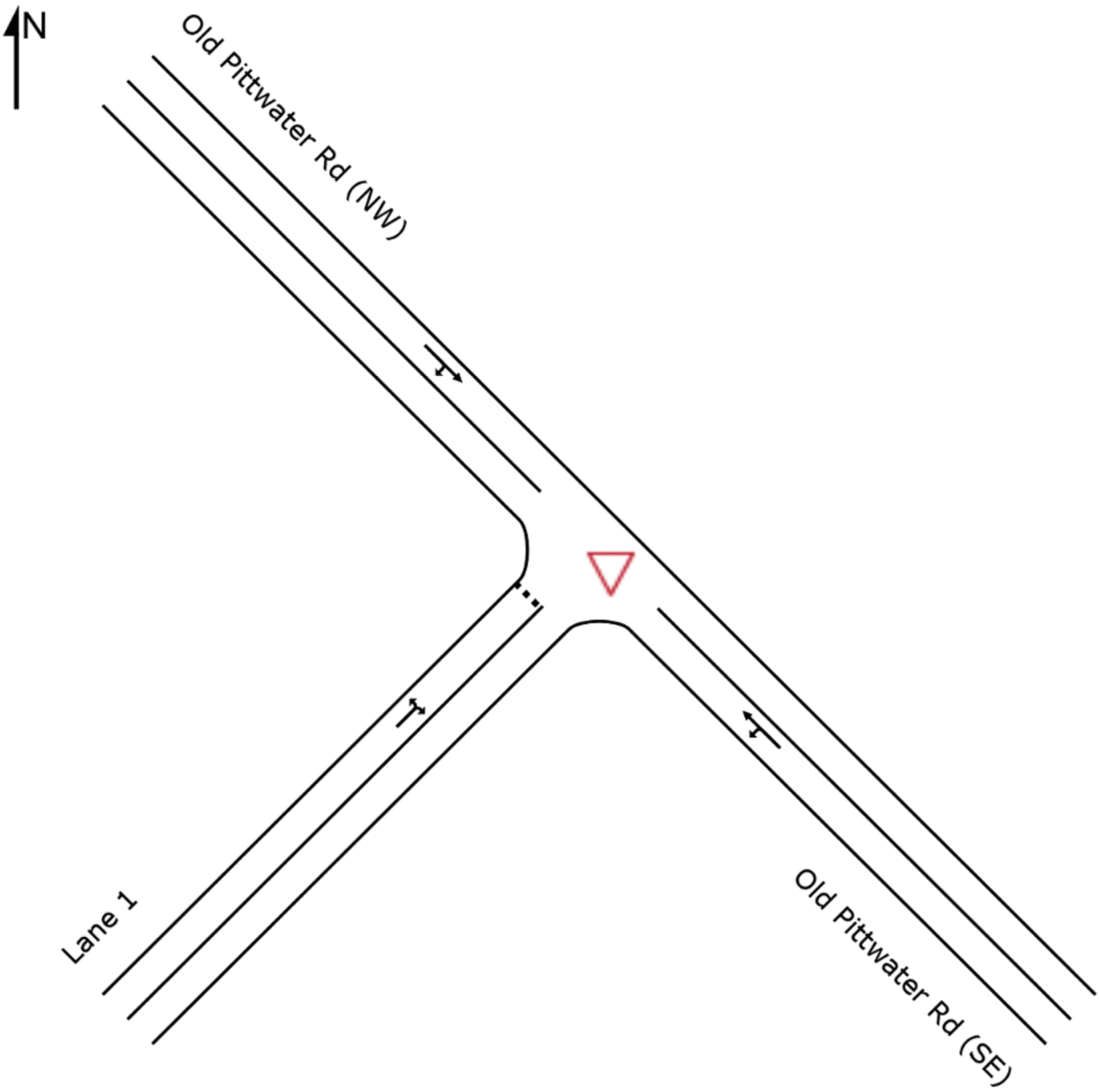
Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Old Pittwater Rd (SE)												
1	L2	46	4.5	0.375	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	31.5
2	T1	663	4.0	0.375	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Approach		709	4.0	0.375	0.4	NA	0.0	0.0	0.00	0.04	0.00	57.5
NorthWest: Old Pittwater Rd (NW)												
8	T1	346	5.8	0.268	1.7	LOS A	1.2	8.6	0.30	0.10	0.34	57.2
9	R2	58	10.9	0.268	11.0	LOS A	1.2	8.6	0.30	0.10	0.34	30.1
Approach		404	6.5	0.268	3.1	NA	1.2	8.6	0.30	0.10	0.34	52.8
SouthWest: Lane 1												
10	L2	13	8.3	0.070	9.0	LOS A	0.2	1.7	0.69	0.85	0.69	42.7
12	R2	16	13.3	0.070	15.7	LOS B	0.2	1.7	0.69	0.85	0.69	41.9
Approach		28	11.1	0.070	12.7	LOS A	0.2	1.7	0.69	0.85	0.69	42.3
All Vehicles		1142	5.1	0.375	1.7	NA	1.2	8.6	0.12	0.08	0.14	55.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SITE LAYOUT

Site: [Old Pittwater Rd / Lane 1 PM Ex]

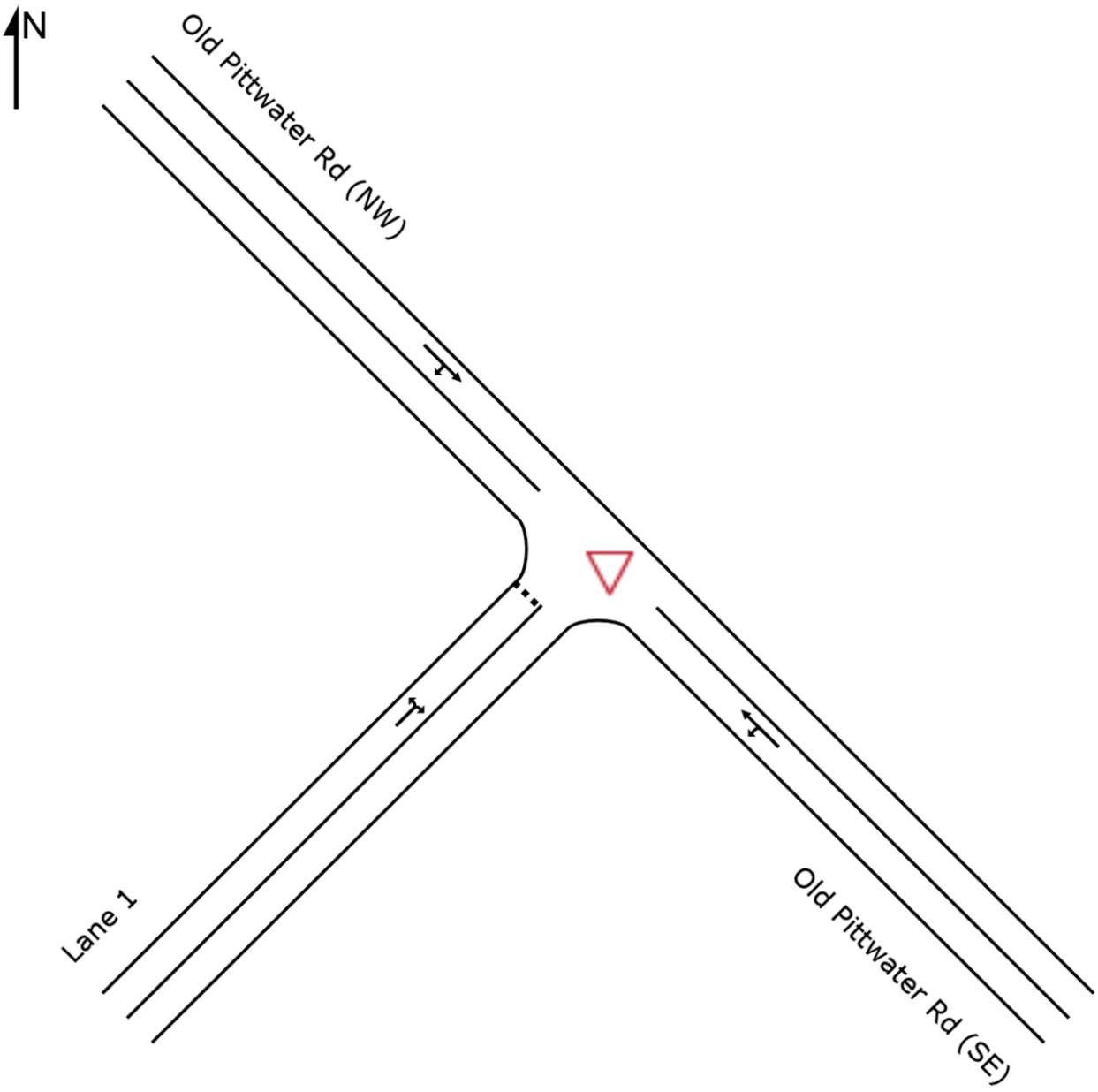
18098
Old Pittwater Rd / Lane 1 PM Ex
Site Category: (None)
Giveway / Yield (Two-Way)



SITE LAYOUT

Site: [Old Pittwater Rd / Lane 1 PM Ex]

18098
Old Pittwater Rd / Lane 1 PM Ex
Site Category: (None)
Giveway / Yield (Two-Way)



Organisation: TEF Consulting | Created: Thursday, 13 December 2018 2:38:05 PM
Project: D:\Dropbox___DB current TEF projects_NR\18098 - 130-140 Old Pittwater Rd Brookvale - Leech Harmon Architects\18098_modelling\18098 sidra\18098 - 130-140 Old Pittwater Rd.sip8

MOVEMENT SUMMARY

Site: [Old Pittwater Rd / Lane 1 PM Ex]

18098
Old Pittwater Rd / Lane 1 PM Ex
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
SouthEast: Old Pittwater Rd (SE)												
1	L2	4	0.0	0.303	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	31.7
2	T1	580	1.6	0.303	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		584	1.6	0.303	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.7
NorthWest: Old Pittwater Rd (NW)												
8	T1	994	0.8	0.518	0.1	LOS A	0.2	1.1	0.01	0.00	0.02	59.9
9	R2	4	25.0	0.518	13.0	LOS A	0.2	1.1	0.01	0.00	0.02	31.1
Approach		998	0.9	0.518	0.1	NA	0.2	1.1	0.01	0.00	0.02	59.7
SouthWest: Lane 1												
10	L2	29	3.6	0.165	8.1	LOS A	0.5	3.5	0.74	0.87	0.74	40.0
12	R2	18	0.0	0.165	30.4	LOS C	0.5	3.5	0.74	0.87	0.74	39.6
Approach		47	2.2	0.165	16.5	LOS B	0.5	3.5	0.74	0.87	0.74	39.9
All Vehicles		1629	1.2	0.518	0.6	NA	0.5	3.5	0.03	0.03	0.03	59.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Old Pittwater Rd / Lane 1 PM Ex]

18098
Old Pittwater Rd / Lane 1 PM Ex
Site Category: (None)
Giveway / Yield (Two-Way)

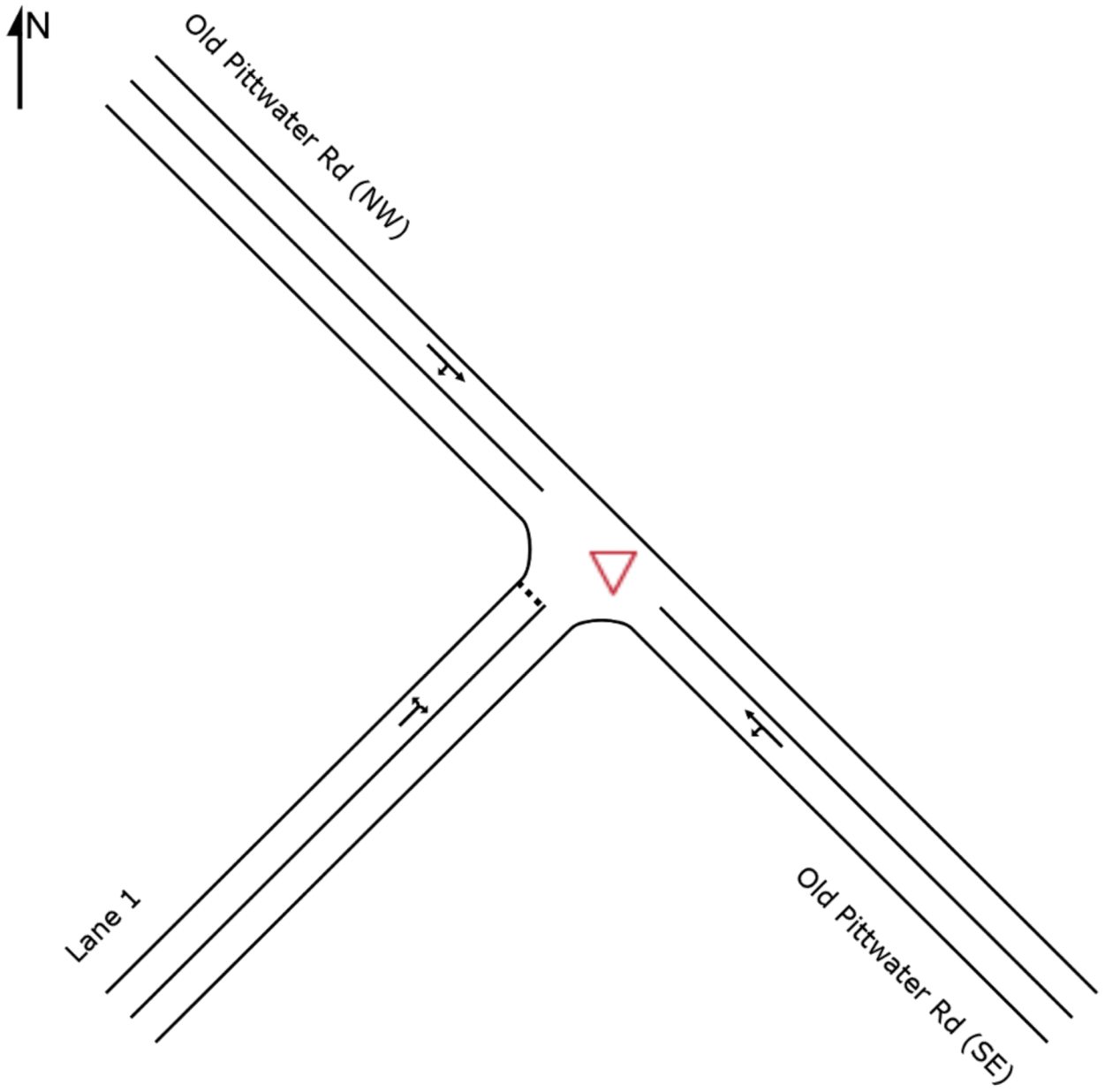
Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Old Pittwater Rd (SE)												
1	L2	4	0.0	0.303	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	31.7
2	T1	580	1.6	0.303	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		584	1.6	0.303	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.7
NorthWest: Old Pittwater Rd (NW)												
8	T1	994	0.8	0.518	0.1	LOS A	0.2	1.1	0.01	0.00	0.02	59.9
9	R2	4	25.0	0.518	13.0	LOS A	0.2	1.1	0.01	0.00	0.02	31.1
Approach		998	0.9	0.518	0.1	NA	0.2	1.1	0.01	0.00	0.02	59.7
SouthWest: Lane 1												
10	L2	29	3.6	0.092	8.1	LOS A	0.3	2.0	0.62	0.80	0.62	44.5
12	R2	18	0.0	0.092	15.5	LOS B	0.3	2.0	0.62	0.80	0.62	44.1
Approach		47	2.2	0.092	10.9	LOS A	0.3	2.0	0.62	0.80	0.62	44.4
All Vehicles		1629	1.2	0.518	0.4	NA	0.3	2.0	0.03	0.03	0.03	59.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SITE LAYOUT

Site: [Old Pittwater Rd / Lane 1 PM Fu]

18098
Old Pittwater Rd / Lane 1 PM Fu
Site Category: (None)
Giveway / Yield (Two-Way)

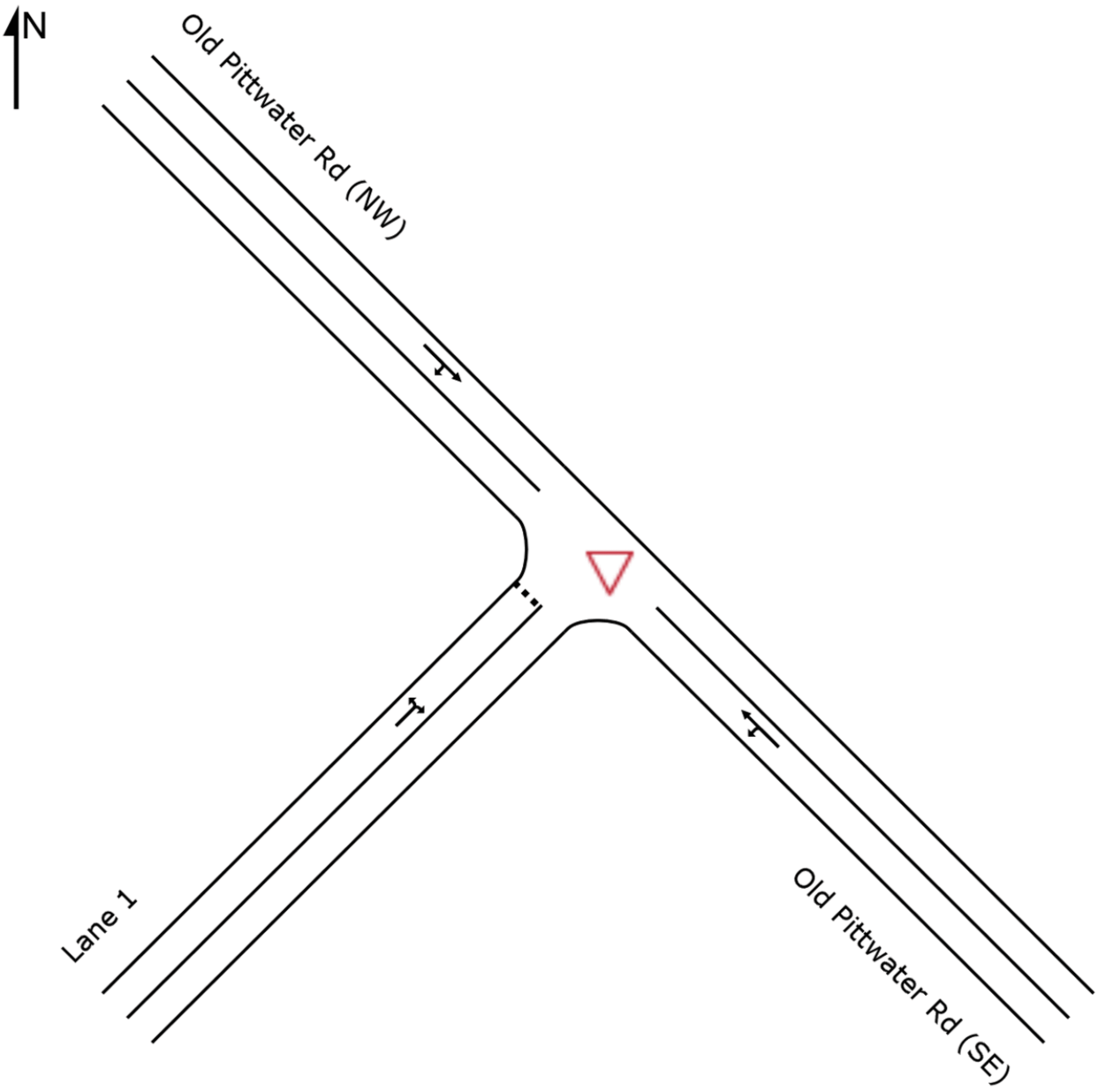


Organisation: TEF Consulting | Created: Tuesday, 11 December 2018 4:09:44 PM
Project: D:\Dropbox___DB current TEF projects_NR\18098 - 130-140 Old Pittwater Rd Brookvale - Leech Harmon Architects\18098_modelling\18098 sidra\18098 - 130-140 Old Pittwater Rd.sip8

SITE LAYOUT

Site: [Old Pittwater Rd / Lane 1 PM Fu]

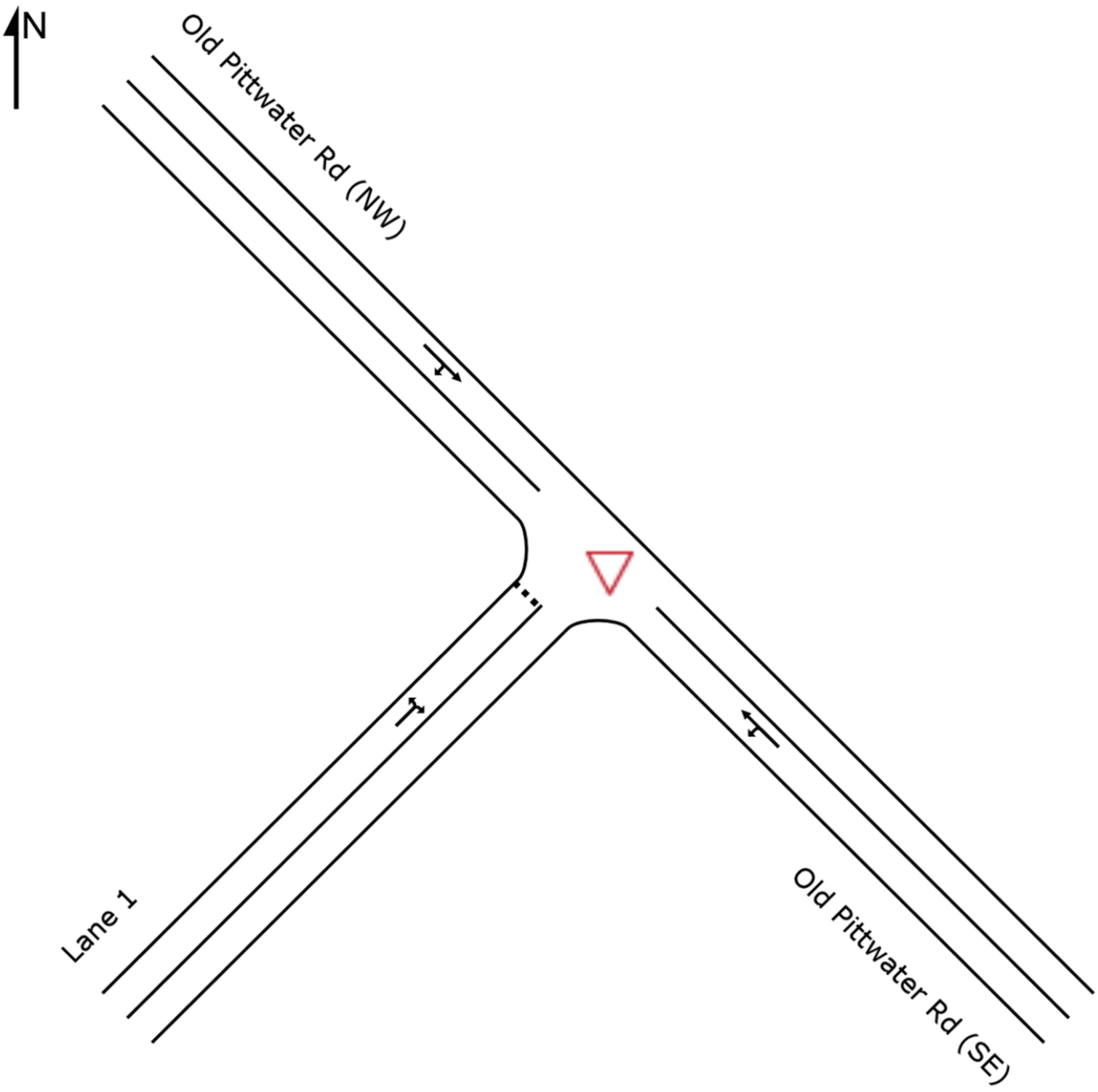
18098
Old Pittwater Rd / Lane 1 PM Fu
Site Category: (None)
Giveway / Yield (Two-Way)



SITE LAYOUT

Site: [Old Pittwater Rd / Lane 1 PM Fu]

18098
Old Pittwater Rd / Lane 1 PM Fu
Site Category: (None)
Giveway / Yield (Two-Way)



Organisation: TEF Consulting | Created: Thursday, 13 December 2018 2:38:07 PM
Project: D:\Dropbox___DB current TEF projects_NR\18098 - 130-140 Old Pittwater Rd Brookvale - Leech Harmon Architects\18098_modelling\18098 sidra\18098 - 130-140 Old Pittwater Rd.sip8

MOVEMENT SUMMARY

Site: [Old Pittwater Rd / Lane 1 PM Fu]

18098
Old Pittwater Rd / Lane 1 PM Fu
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
SouthEast: Old Pittwater Rd (SE)												
1	L2	9	0.0	0.306	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	31.7
2	T1	580	1.6	0.306	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		589	1.6	0.306	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.3
NorthWest: Old Pittwater Rd (NW)												
8	T1	994	0.8	0.523	0.1	LOS A	0.3	2.0	0.03	0.01	0.04	59.8
9	R2	8	12.5	0.523	12.1	LOS A	0.3	2.0	0.03	0.01	0.04	31.2
Approach		1002	0.9	0.523	0.2	NA	0.3	2.0	0.03	0.01	0.04	59.5
SouthWest: Lane 1												
10	L2	63	1.7	0.362	10.8	LOS A	1.3	9.0	0.78	0.97	0.99	37.7
12	R2	39	0.0	0.362	34.9	LOS C	1.3	9.0	0.78	0.97	0.99	37.3
Approach		102	1.0	0.362	20.0	LOS B	1.3	9.0	0.78	0.97	0.99	37.6
All Vehicles		1694	1.2	0.523	1.4	NA	1.3	9.0	0.06	0.06	0.08	58.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: [Old Pittwater Rd / Lane 1 PM Fu]

18098
Old Pittwater Rd / Lane 1 PM Fu
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
SouthEast: Old Pittwater Rd (SE)												
1	L2	9	0.0	0.306	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	31.7
2	T1	580	1.6	0.306	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		589	1.6	0.306	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.3
NorthWest: Old Pittwater Rd (NW)												
8	T1	994	0.8	0.522	0.1	LOS A	0.2	1.7	0.02	0.00	0.03	59.8
9	R2	7	14.3	0.522	12.2	LOS A	0.2	1.7	0.02	0.00	0.03	31.2
Approach		1001	0.9	0.522	0.2	NA	0.2	1.7	0.02	0.00	0.03	59.6
SouthWest: Lane 1												
10	L2	62	1.7	0.353	10.6	LOS A	1.2	8.7	0.77	0.97	0.97	37.9
12	R2	38	0.0	0.353	34.6	LOS C	1.2	8.7	0.77	0.97	0.97	37.5
Approach		100	1.1	0.353	19.7	LOS B	1.2	8.7	0.77	0.97	0.97	37.7
All Vehicles		1691	1.2	0.522	1.3	NA	1.2	8.7	0.06	0.06	0.08	58.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

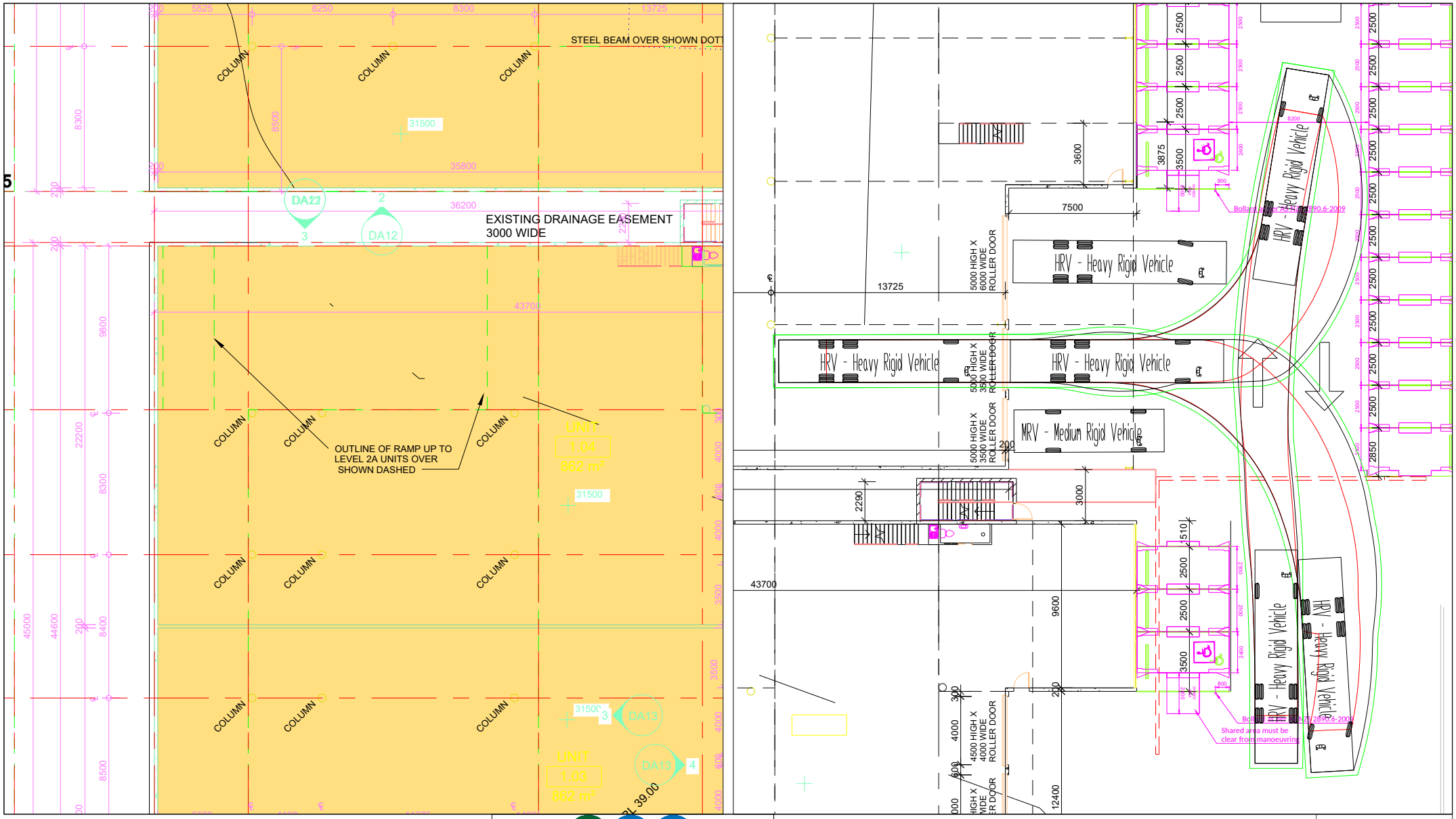
MOVEMENT SUMMARY

Site: [Old Pittwater Rd / Lane 1 PM Fu]

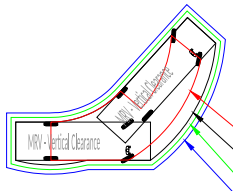
18098
Old Pittwater Rd / Lane 1 PM Fu
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	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	Aver. No. Cycles	Average Speed km/h
SouthEast: Old Pittwater Rd (SE)												
1	L2	9	0.0	0.306	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	31.7
2	T1	580	1.6	0.306	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach		589	1.6	0.306	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.3
NorthWest: Old Pittwater Rd (NW)												
8	T1	994	0.8	0.522	0.1	LOS A	0.2	1.7	0.02	0.00	0.03	59.8
9	R2	7	14.3	0.522	12.2	LOS A	0.2	1.7	0.02	0.00	0.03	31.2
Approach		1001	0.9	0.522	0.2	NA	0.2	1.7	0.02	0.00	0.03	59.6
SouthWest: Lane 1												
10	L2	62	1.7	0.195	8.2	LOS A	0.6	4.4	0.65	0.84	0.65	44.3
12	R2	38	0.0	0.195	16.2	LOS B	0.6	4.4	0.65	0.84	0.65	43.8
Approach		100	1.1	0.195	11.2	LOS A	0.6	4.4	0.65	0.84	0.65	44.1
All Vehicles		1691	1.2	0.522	0.8	NA	0.6	4.4	0.05	0.06	0.06	58.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



LEGEND:



WHEEL TRACK
VEHICLE BODY
300 MM CLEARANCE
600 MM CLEARANCE

TEF CONSULTING

Dwg No 18098/01	Rev. A	13/12/2018

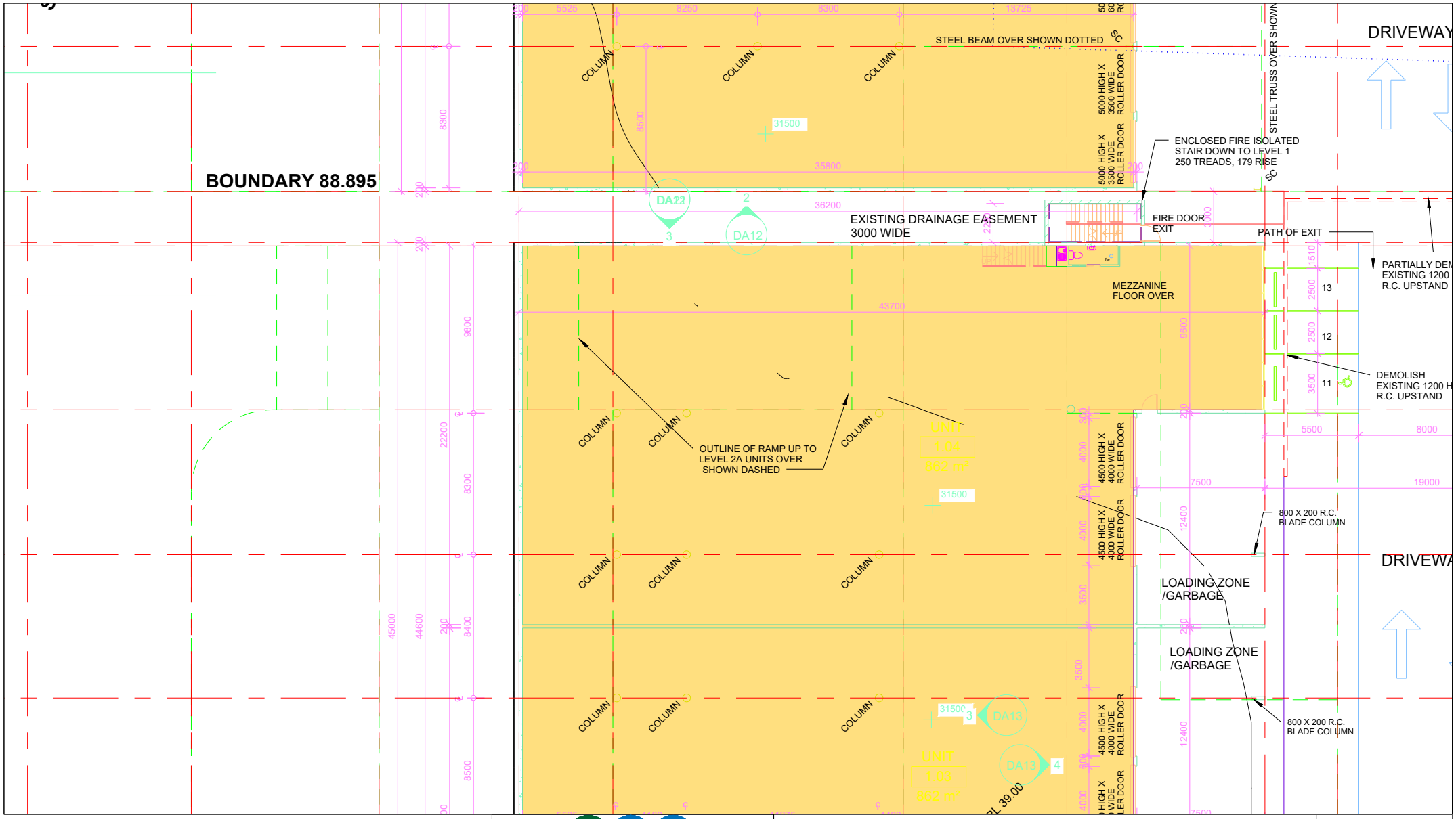
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

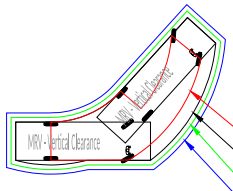
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



WHEEL TRACK
VEHICLE BODY
300 MM CLEARANCE
600 MM CLEARANCE

CONSULTING

Dwg No 18098/02	Rev. A	13/12/2018

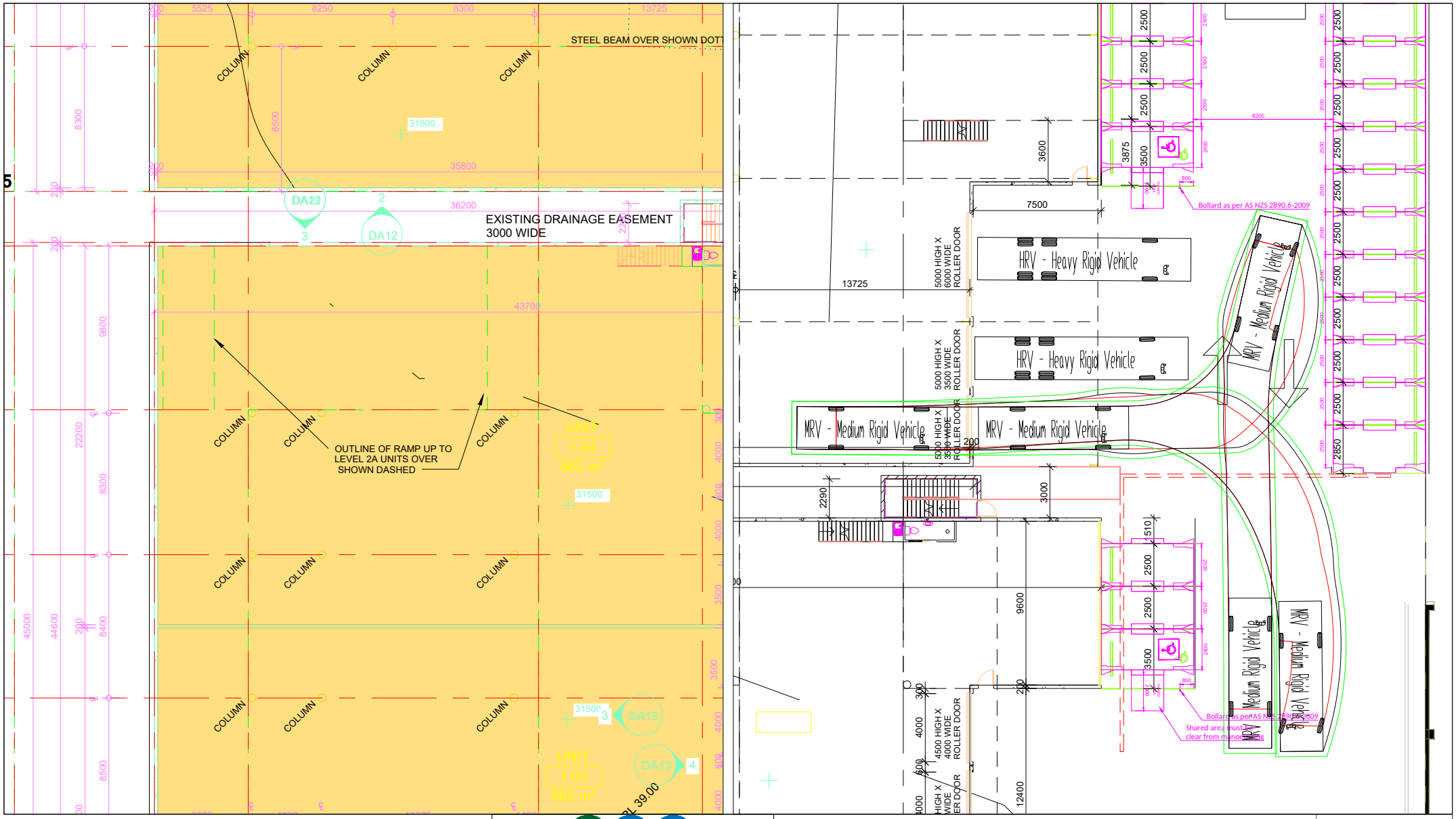
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

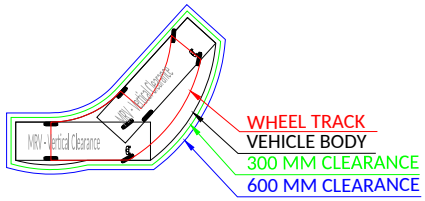
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



CONSULTING

Dwg No 18098/03 | Rev. A | 13/12/2018

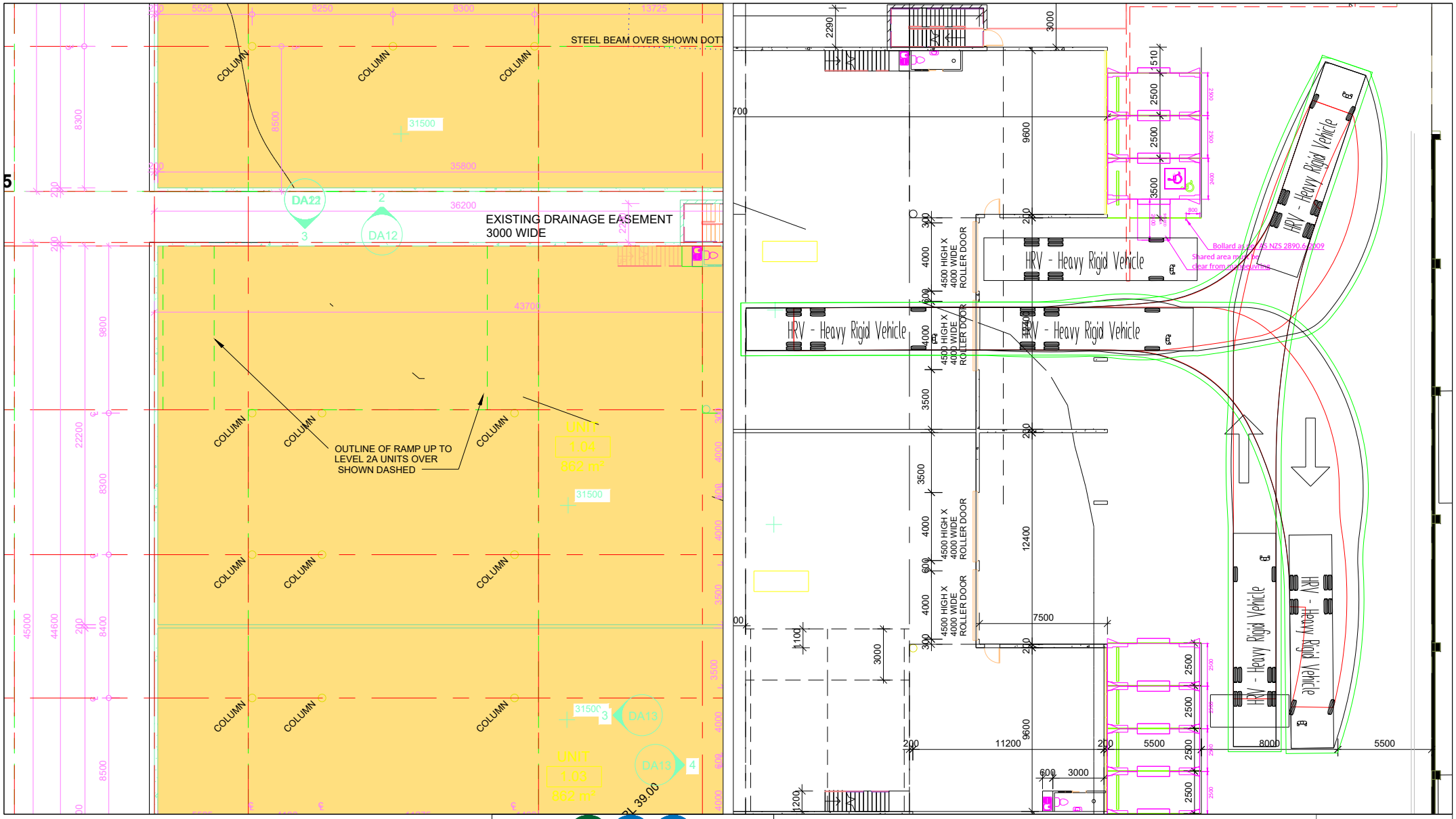
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

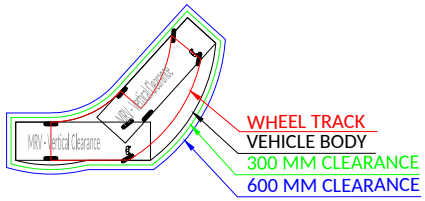
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



TEF CONSULTING

Dwg No 18098/04	Rev. A	13/12/2018

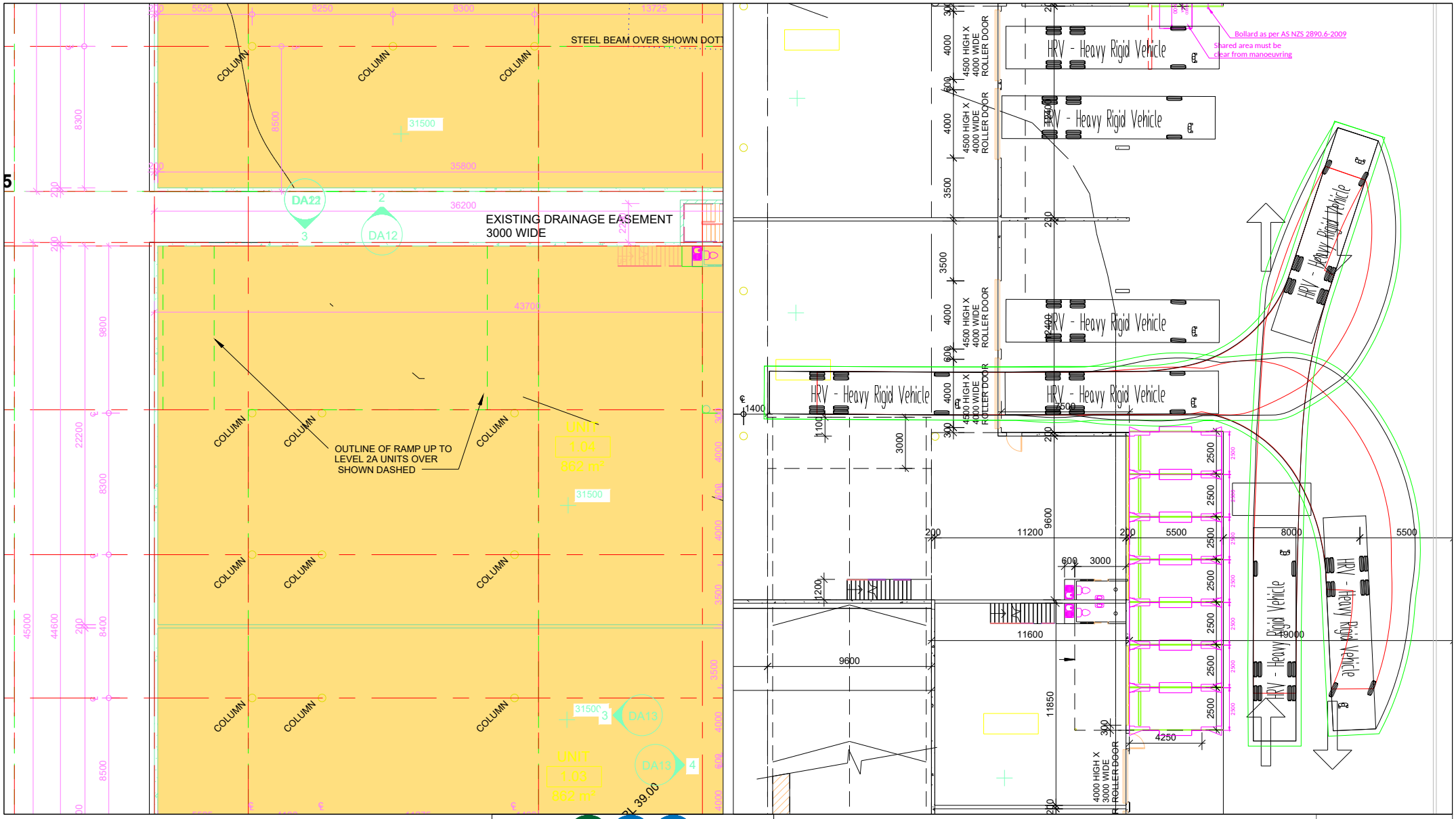
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

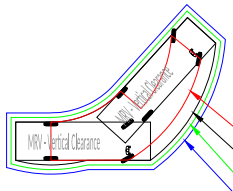
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



WHEEL TRACK
VEHICLE BODY
300 MM CLEARANCE
600 MM CLEARANCE

TEF CONSULTING

Dwg No 18098/05	Rev. A	13/12/2018

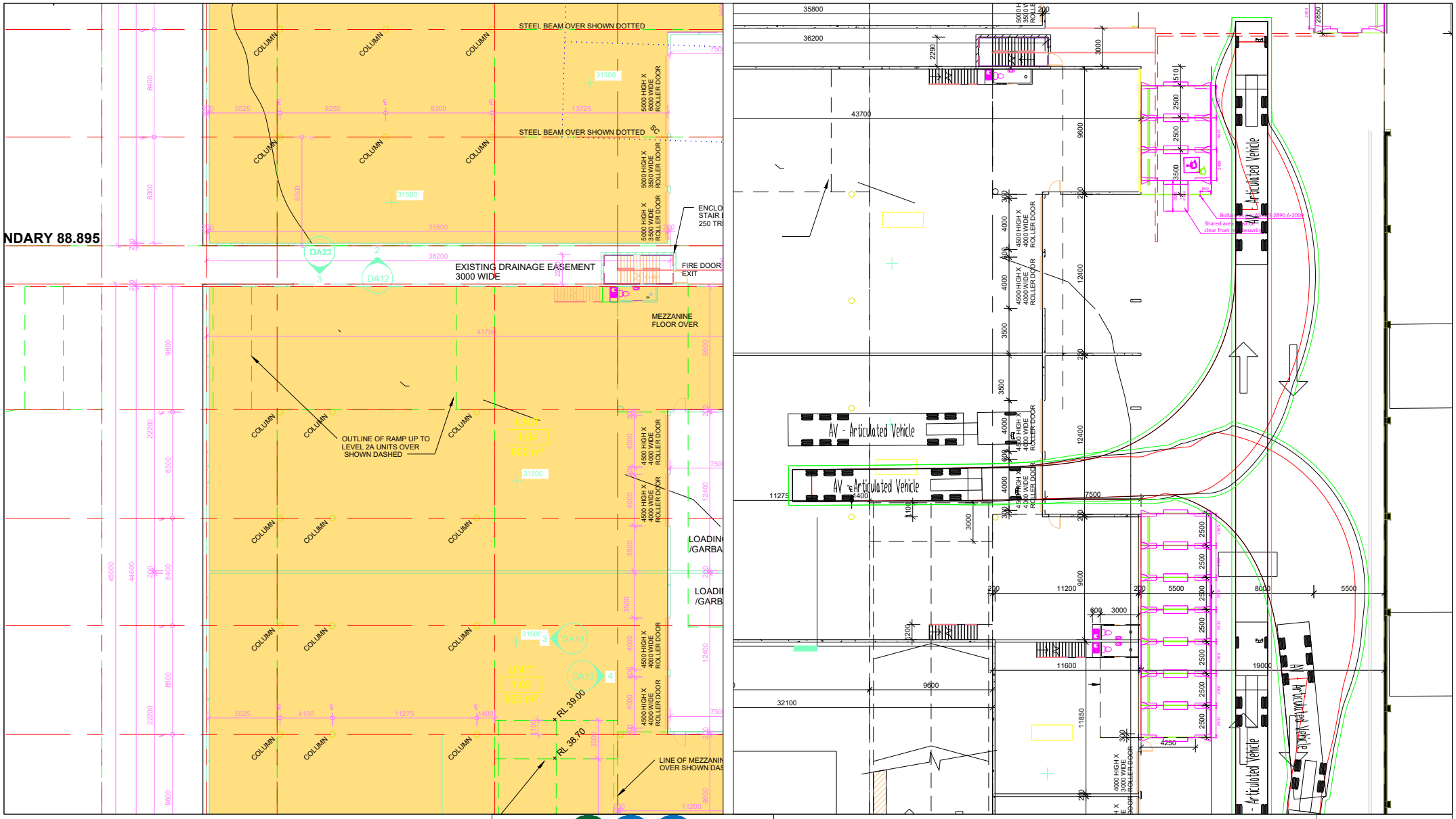
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

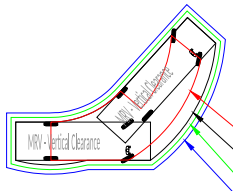
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



TEF CONSULTING

Dwg No 18098/06	Rev. A	13/12/2018

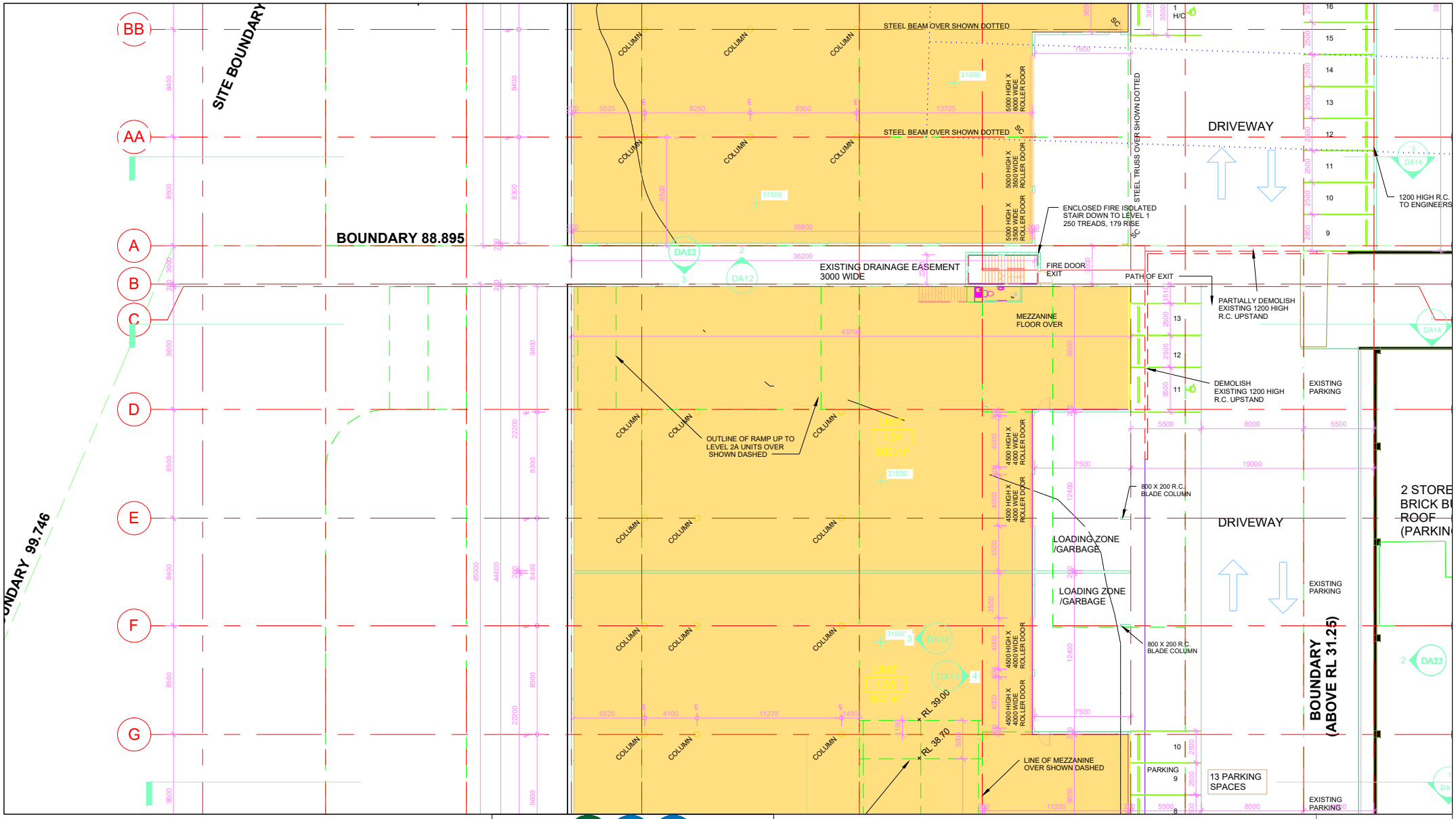
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

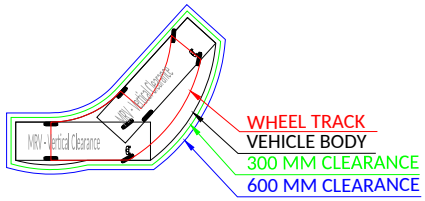
SCALE 1:400@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



CONSULTING

Dwg No 18098/07	Rev. A	13/12/2018

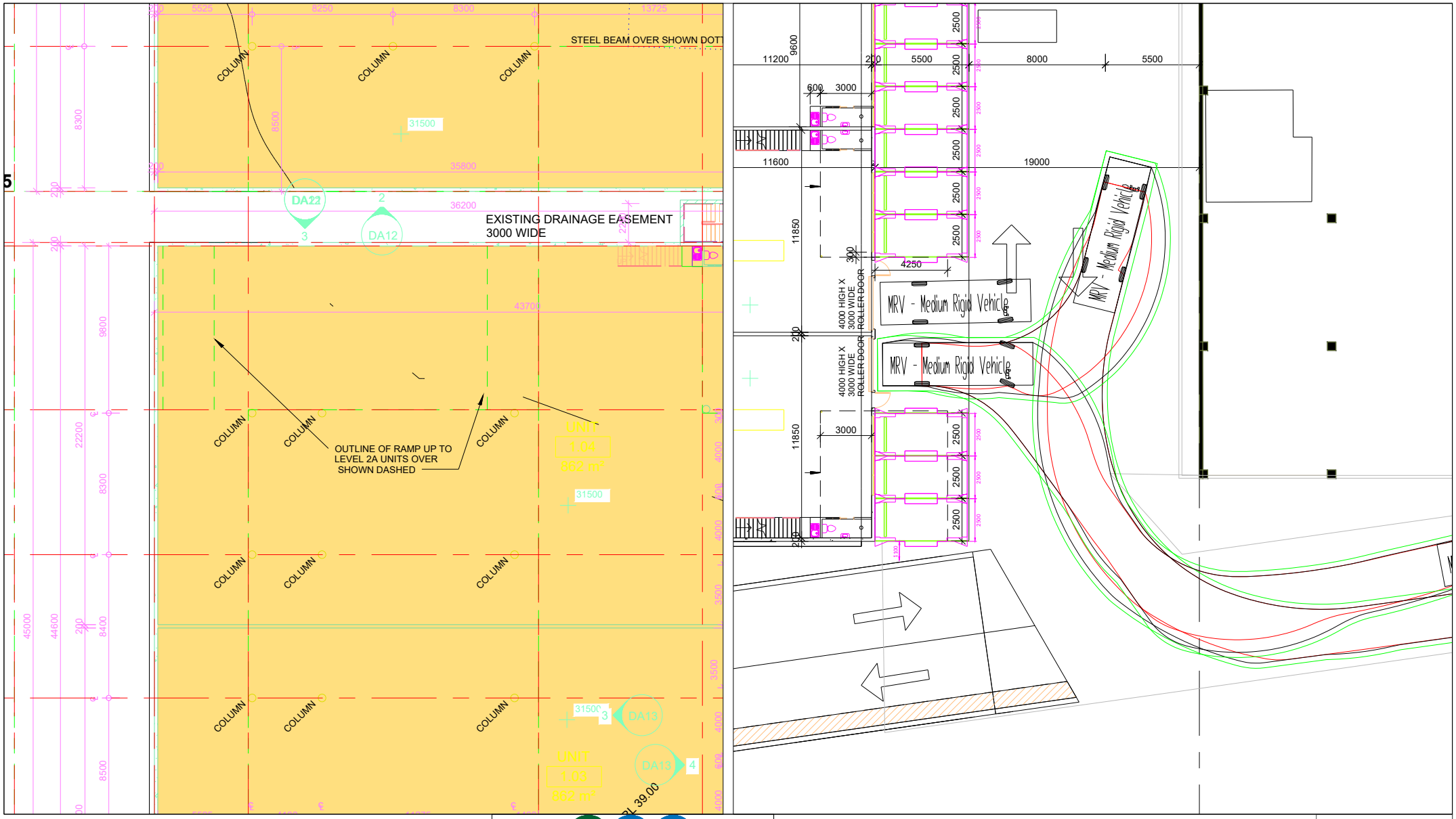
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

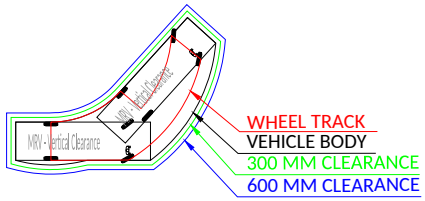
SCALE 1:400@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



N

TEF CONSULTING

Dwg No 18098/08	Rev. A	13/12/2018

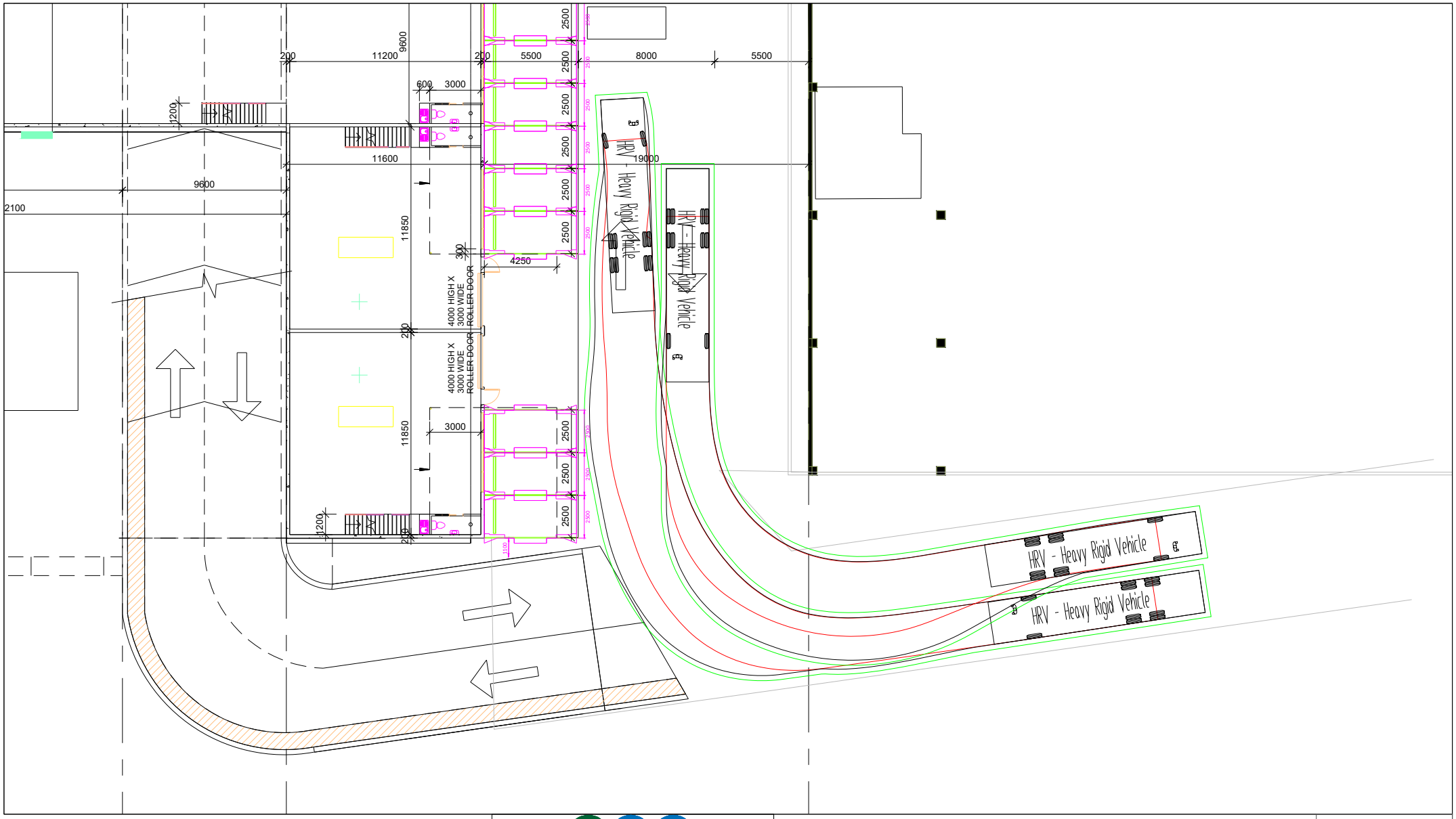
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

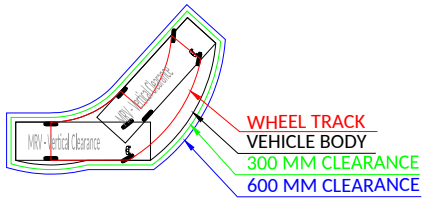
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



CONSULTING

Dwg No 18098/09 | Rev. A | 13/12/2018

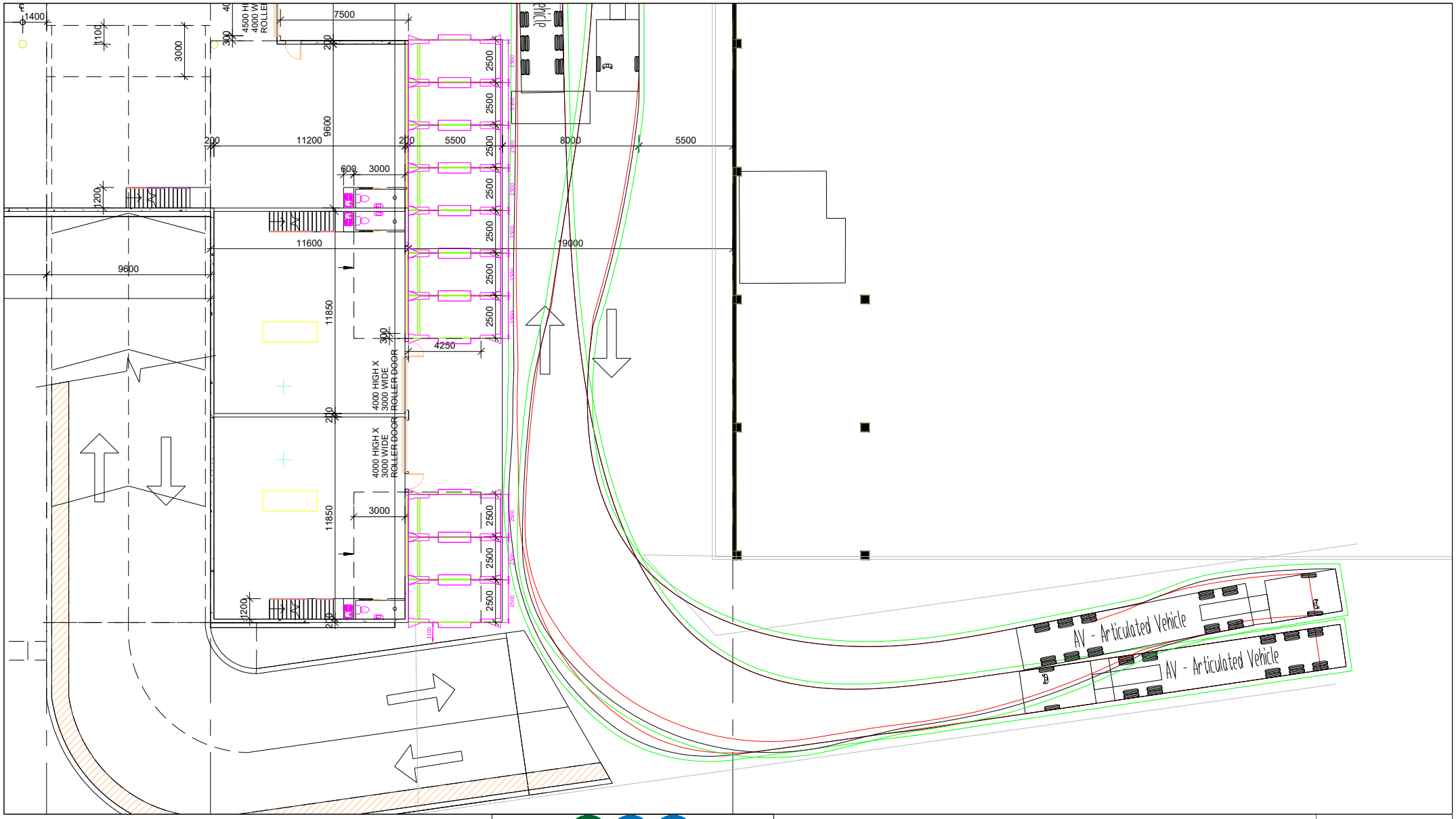
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

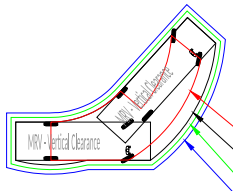
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



WHEEL TRACK
VEHICLE BODY
300 MM CLEARANCE
600 MM CLEARANCE

N

CONSULTING

Dwg No 18098/10 | Rev. A | 13/12/2018

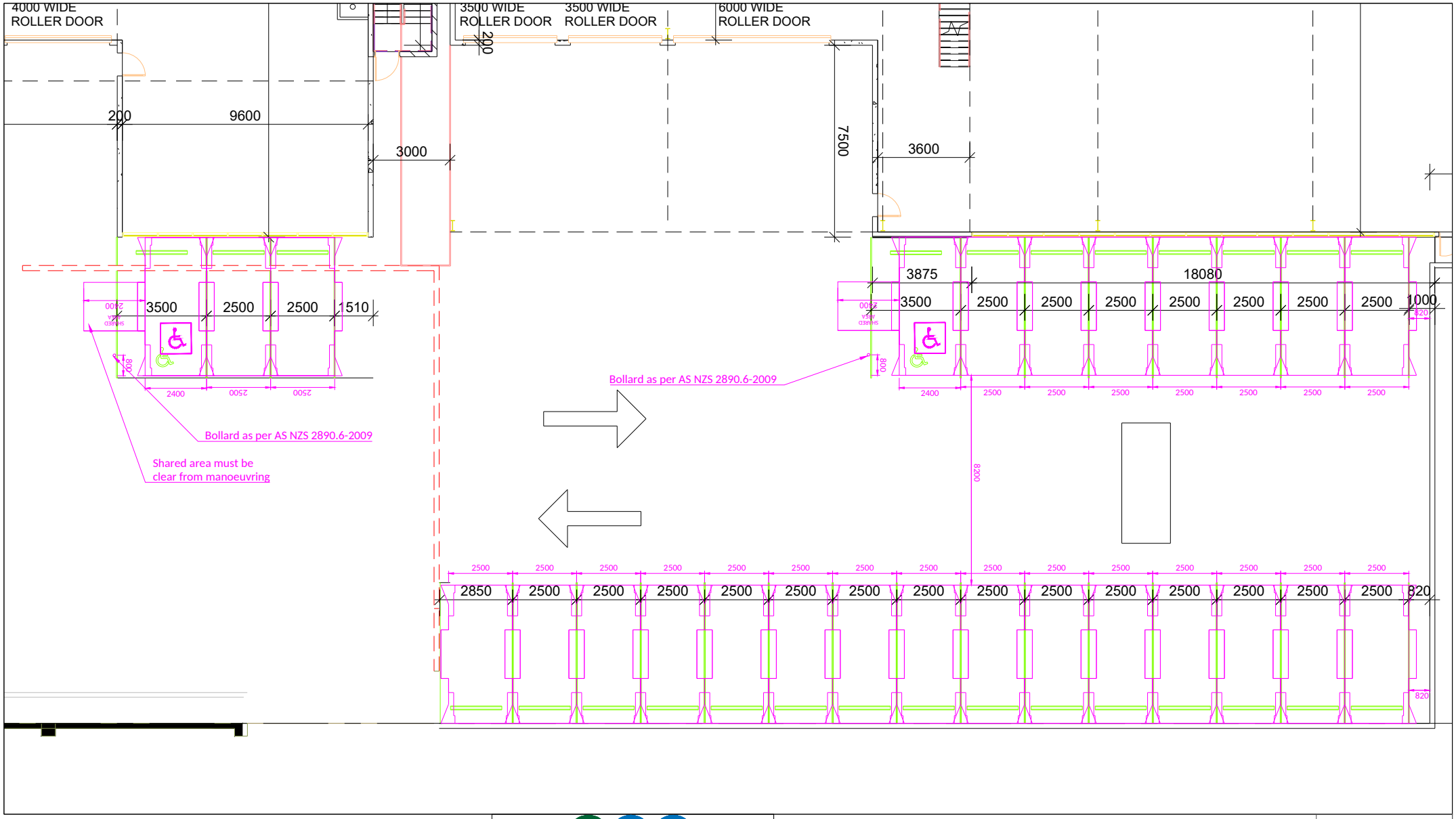
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

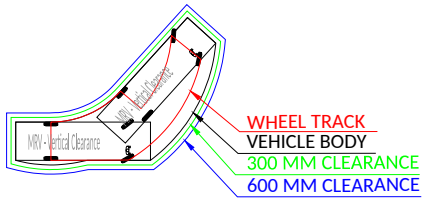
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



CONSULTING

Dwg No 18098/11 | Rev. A | 13/12/2018

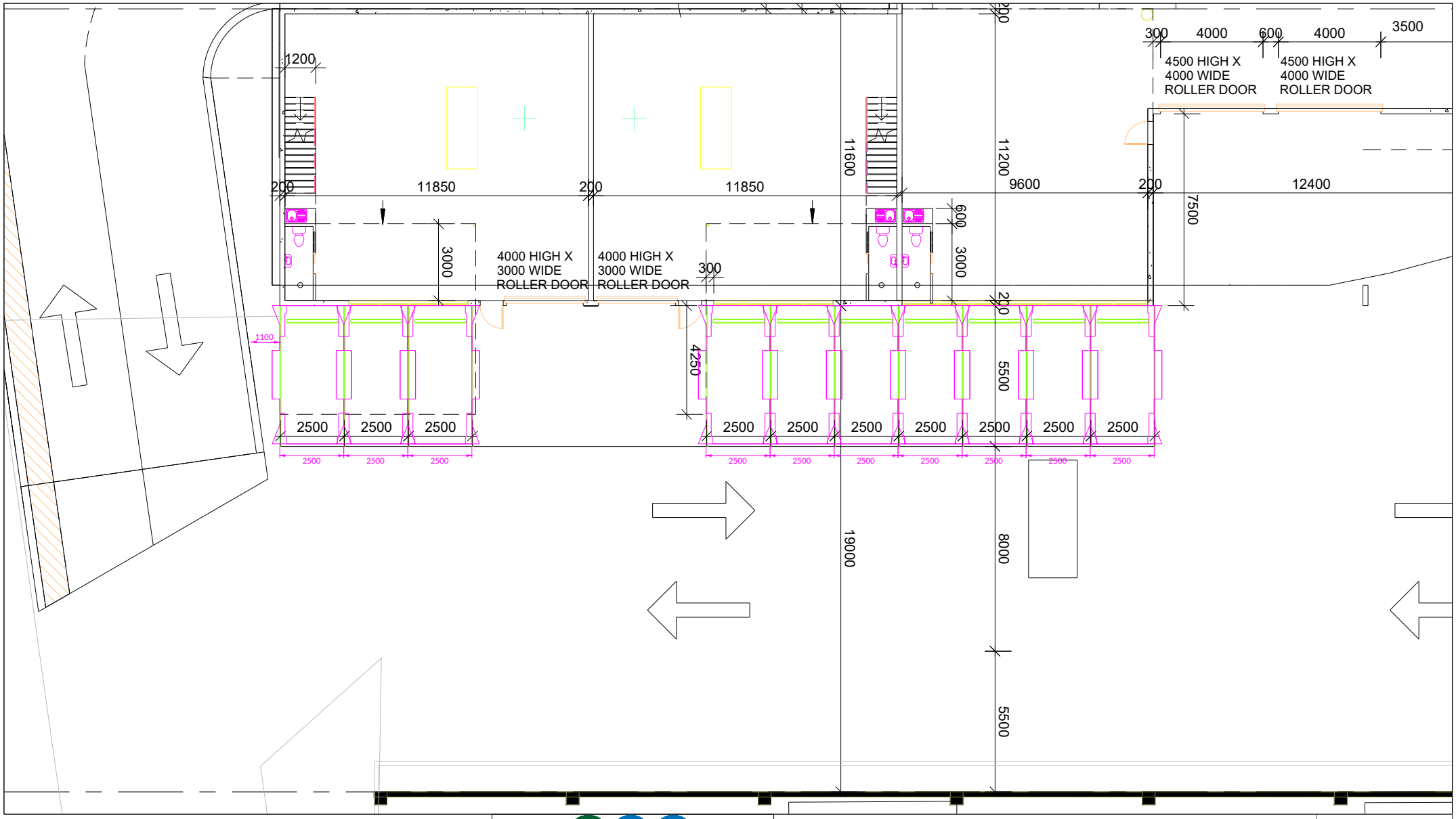
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

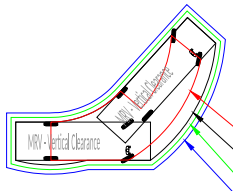
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series
Level 1

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



WHEEL TRACK
VEHICLE BODY
300 MM CLEARANCE
600 MM CLEARANCE

TEF CONSULTING

Dwg No 18098/12 | Rev. A | 13/12/2018

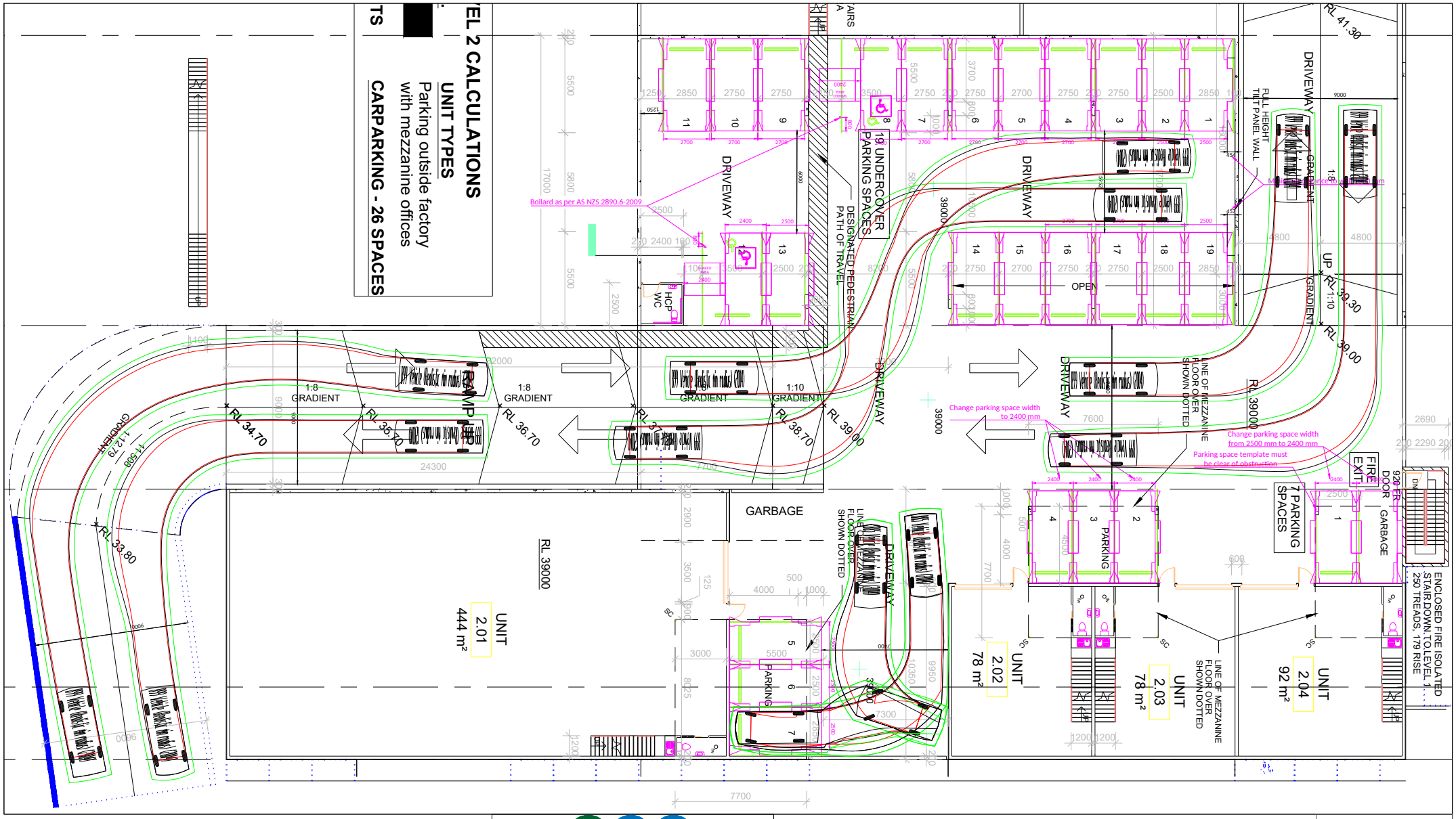
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

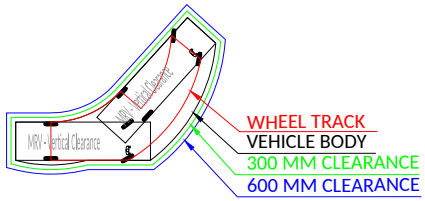
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series
Level 1

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



TEF CONSULTING

Dwg No 18098/13	Rev. A	14/12/2018

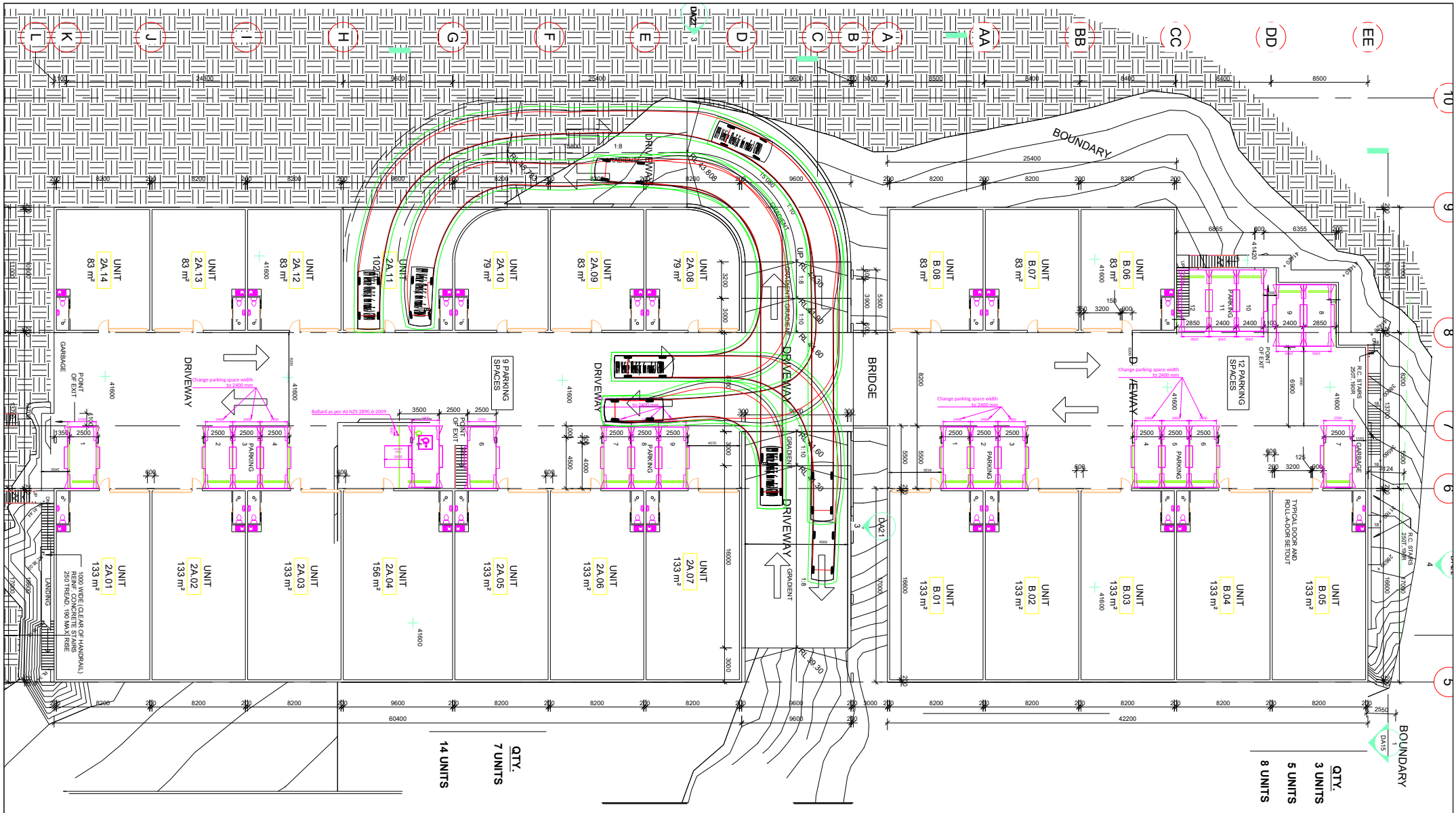
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

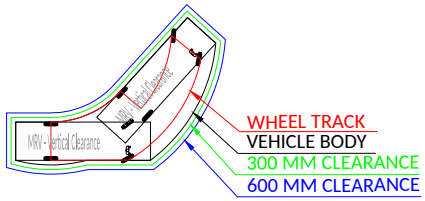
SCALE 1:300@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series
Level 2

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



TEF CONSULTING

Dwg No 18098/14	Rev. A	14/12/2018

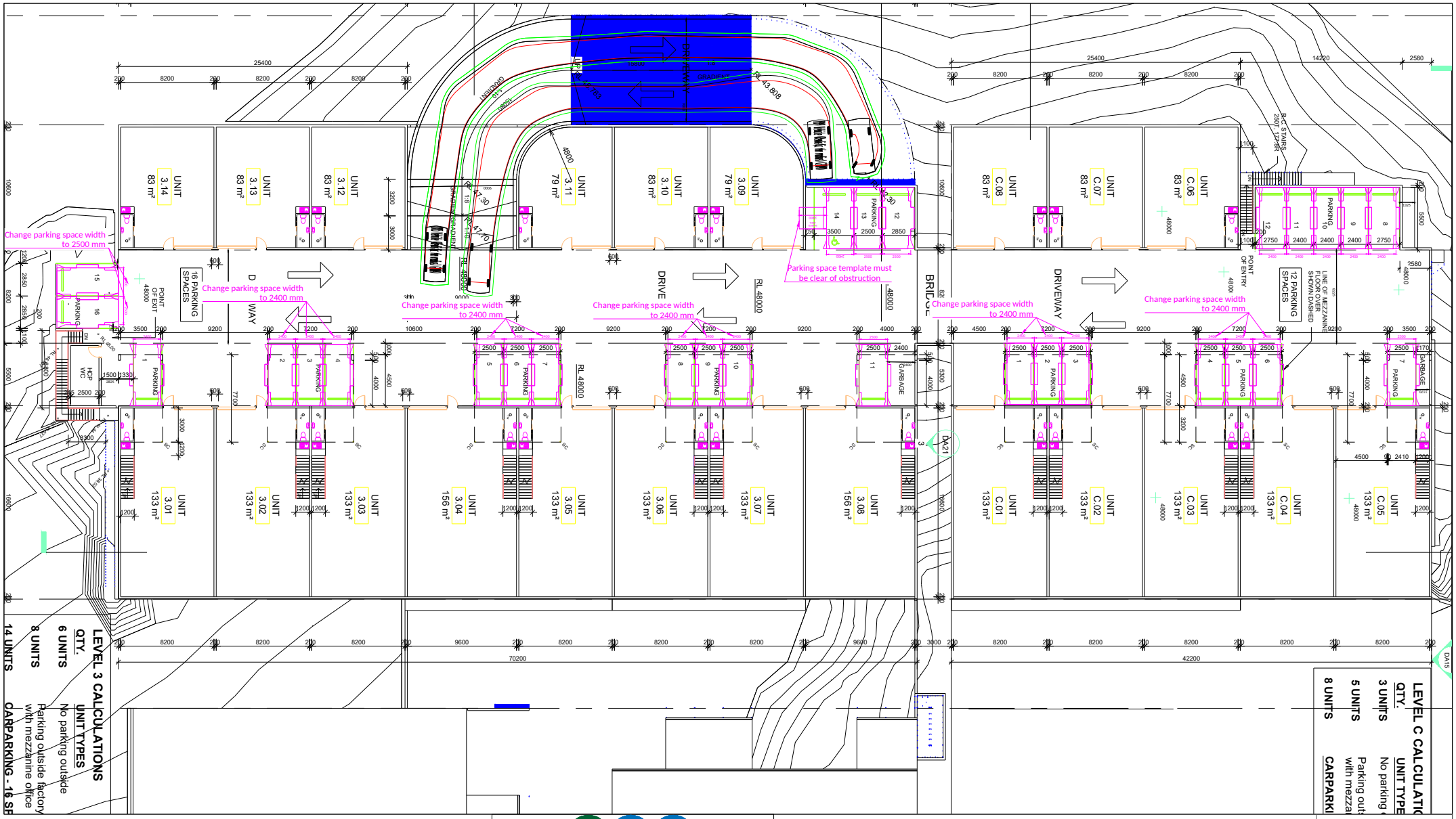
Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

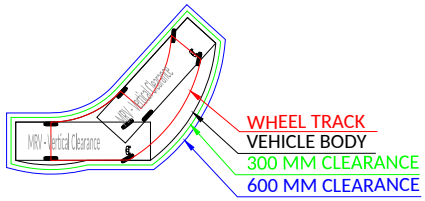
SCALE 1:450@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series
Level 2A

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au



LEGEND:



TEF CONSULTING

Dwg No 18098/15	Rev. A	14/12/2018

Client:
Leech Harmon Architects

130-140 Old Pittwater Rd, Brookvale NSW 2100

SCALE 1:450@A4

Proposed car park layout
Design checks as per AS/NZS 2890 series
Level 3

PO Box 215 Bondi NSW 2026 | ph:+61 (0)2 9332 2024 | fax: +61 (0)2 9332 2022 | mob: +61 (0)414 978 067 | email: o.s@tefconsult.com.au | www.tefconsult.com.au

TRAFFIC, ENVIRONMENTAL & FORENSIC ENGINEERS
TEF CONSULTING

in association with

GENNAOUI CONSULTING PTY LTD

Address PO Box 215, Bondi NSW 2026
Phone 02) 9332 2024 / (02) 9523 9212
Fax (02) 9332 2022
Mobile 0414 978 067 / 0414 554 523
e-mail o.s@tefconsult.com.au / s.s@tefconsult.com.au
www http://www.tefconsult.com.au

NSW GOVERNMENT Transport Roads & Maritime Services

ROADS AND MARITIME SERVICES

TRIP GENERATION SURVEYS

BUSINESS PARKS AND INDUSTRIAL ESTATES

ANALYSIS REPORT

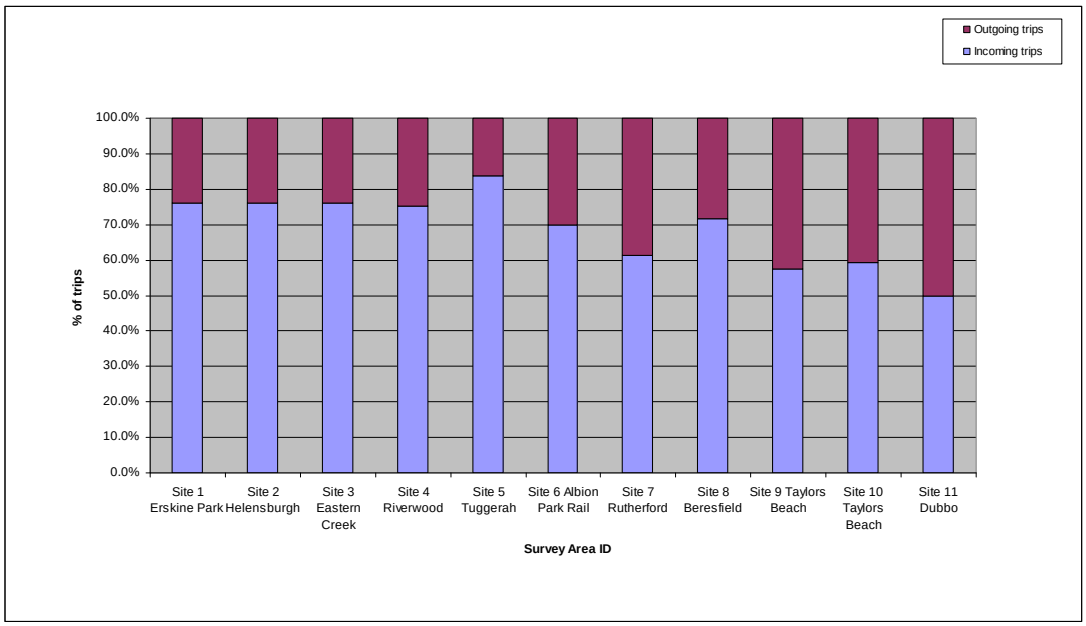


Figure 3.66 Vehicle-based trip distribution – AM Peak

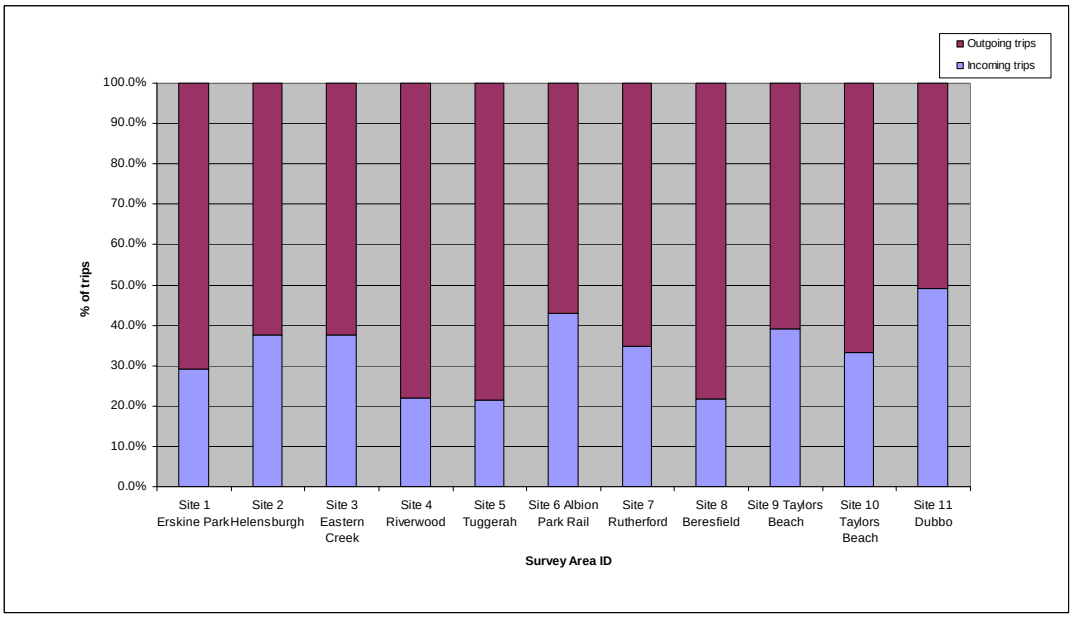


Figure 3.67 Vehicle-based trip distribution – PM Peak

3.5 Modes of travel

Modes of travel were calculated for daily person-based trips. The results are presented in Table 3.8.

Table 3.8 Daily modes of travel.

	Sydney areas					Non-Sydney areas								
Site ID	Site 1 Erskine Park Industrial Estate, Erskine Park	Site 2 Helensburgh Business Park, Helensburgh	Site 3 Wonderland Business Park, Eastern Creek	Site 4 Riverwood Business Park, Riverwood	Average	Site 5 Tuggerah Business Park, Tuggerah	Site 6 Central Business Park, Albion Park Rail	Site 7 Anambah Business Park, Rutherford	Site 8 Freeway Business Park, Beresfield	Site 9 Shearwater Business Park, Taylors Beach	Site 10 Port Stephens Industrial Estate, Taylors Beach	Site 11 Johnson Street Business Park, Dubbo	Average	**Average all sites**
Travel mode														
Car driver	62.5%	81.9%	63.2%	68.8%	69.1%	79.1%	78.6%	70.0%	69.1%	74.3%	71.1%	66.1%	72.6%	71.3%
Car passenger	8.0%	8.3%	8.3%	12.3%	9.2%	11.2%	13.5%	13.4%	9.6%	19.5%	14.1%	10.9%	13.2%	11.7%
Bus	0.8%	0.0%	2.1%	0.5%	0.9%	3.2%	0.0%	0.0%	2.2%	0.0%	0.0%	0.2%	0.8%	0.8%
Commercial vehicle	28.3%	4.2%	25.9%	12.6%	17.8%	4.9%	6.2%	15.5%	18.3%	4.3%	8.9%	21.8%	11.4%	13.7%
Bicycle	0.1%	0.0%	0.3%	0.1%	0.1%	0.3%	0.5%	0.2%	0.4%	0.8%	1.3%	0.1%	0.5%	0.4%
Motorbike	0.1%	0.0%	0.0%	0.0%	0.0%	0.3%	0.4%	0.0%	0.3%	0.9%	3.8%	0.2%	0.8%	0.5%
Walk	0.1%	5.6%	0.2%	5.7%	2.9%	1.1%	0.8%	0.6%	0.0%	0.3%	0.9%	0.4%	0.6%	1.4%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.4%	0.1%	0.1%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

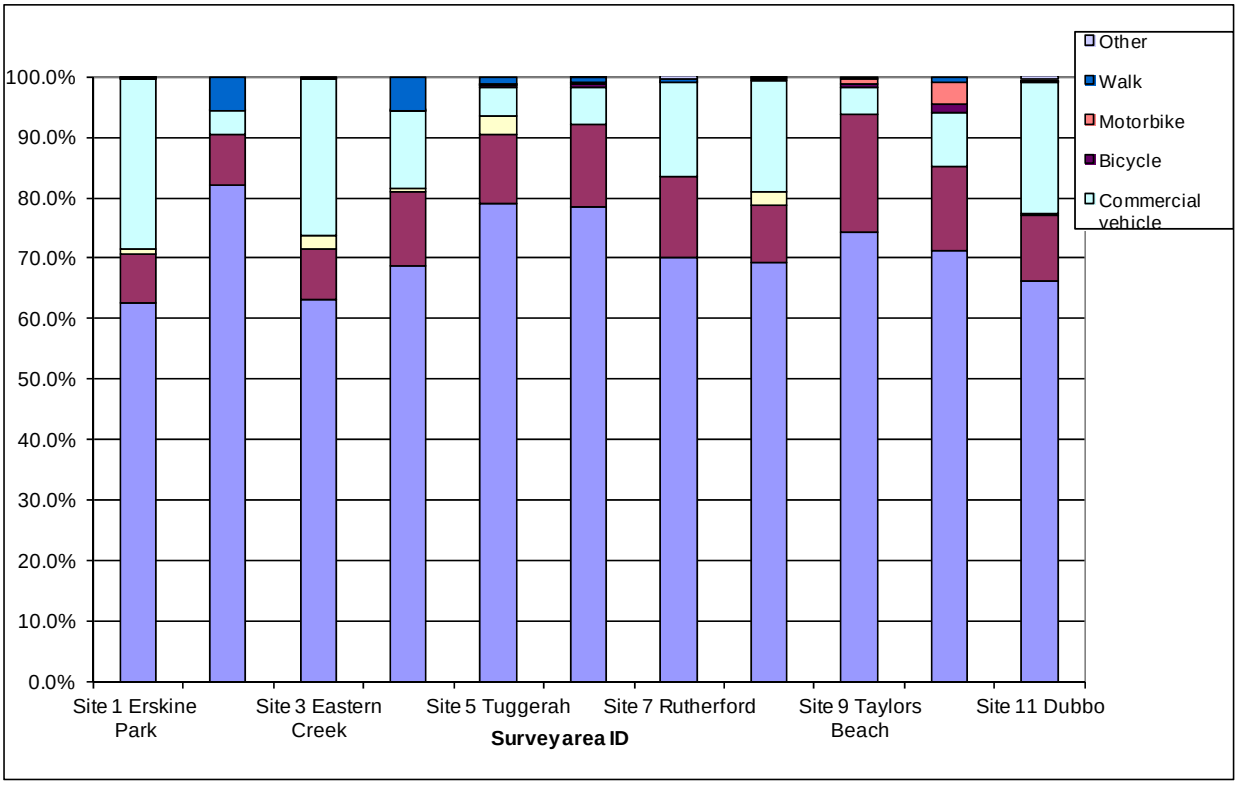


Figure 3.68 Daily modes of travel

3.6 Car occupancy

Car occupancy was calculated for peak hour and daily vehicle-based trips. The results are presented in Tables 3.9 and 3.10 .

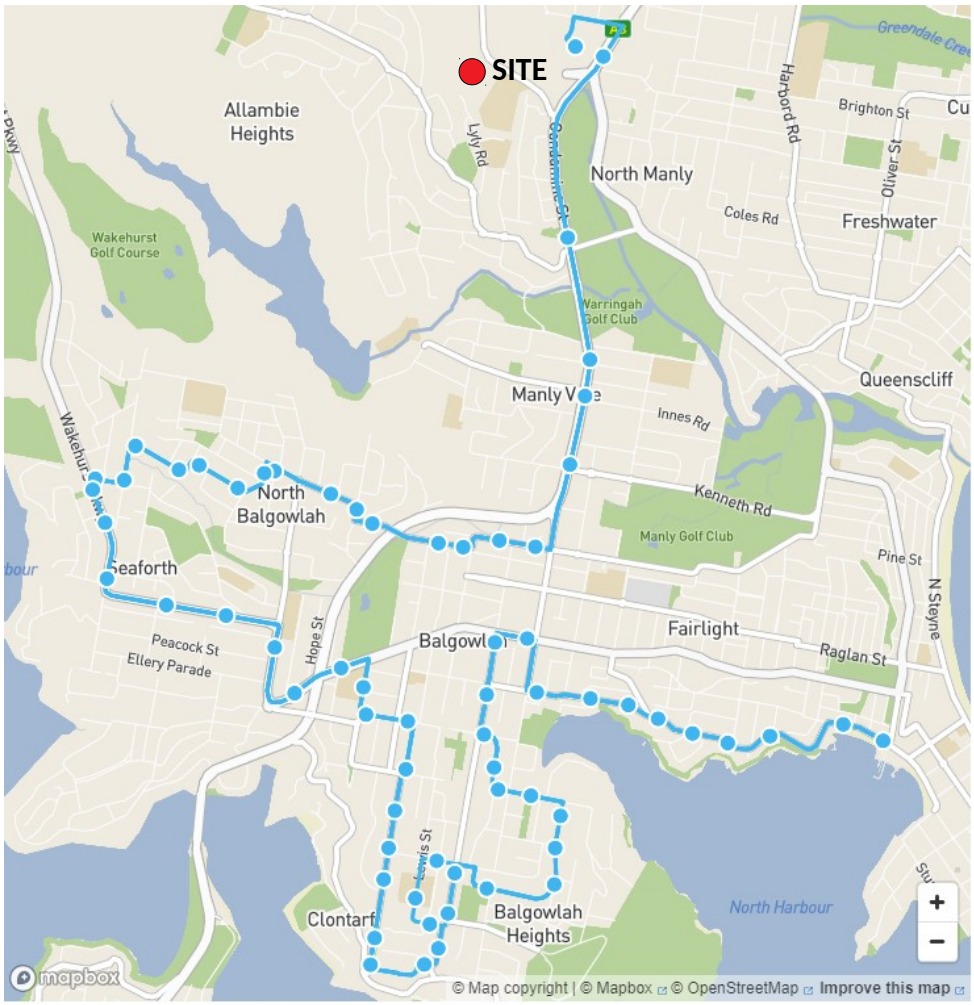
Table 3.9 Car occupancy results.

Site ID	Sydney areas				Non-Sydney areas						
	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
Car Occupancy											
Site AM peak hour	1.10	1.14	1.08	1.20	1.08	1.08	1.18	1.08	1.25	1.34	1.11
Site PM peak hour	1.18	1.23	1.23	1.22	1.14	1.23	1.20	1.14	1.36	1.21	1.14
Daily total vehicle trips	1.10	1.10	1.13	1.18	1.14	1.17	1.19	1.17	1.26	1.20	1.17

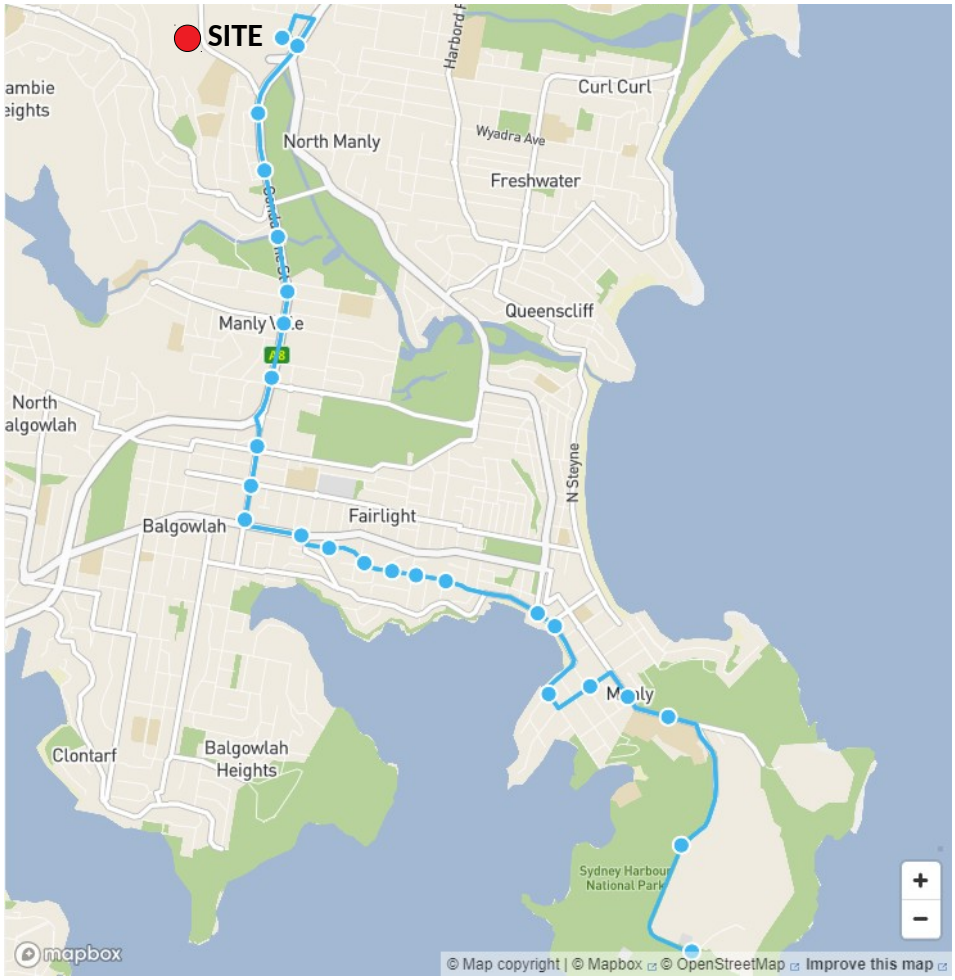
Table 3.10 Car occupancy summary.

Site ID	Sydney areas				Non-Sydney areas				All survey sites				Avg Non-Sydney / Sydney %
	Site 1 to Site 4				Site 5 to Site 11				Site 1 to Site 11				
Car occupancy	Min	Max	Avg	St Dev	Min	Max	Avg	St Dev	Min	Max	Avg	St Dev	
Site AM peak hour	1.08	1.20	1.13	0.05	1.08	1.34	1.16	0.10	1.08	1.34	1.15	0.09	103%
Site PM peak hour	1.18	1.23	1.21	0.02	1.14	1.36	1.20	0.08	1.14	1.36	1.21	0.06	99%
Daily total vehicle trips	1.10	1.18	1.13	0.04	1.14	1.26	1.19	0.04	1.10	1.26	1.16	0.05	105%

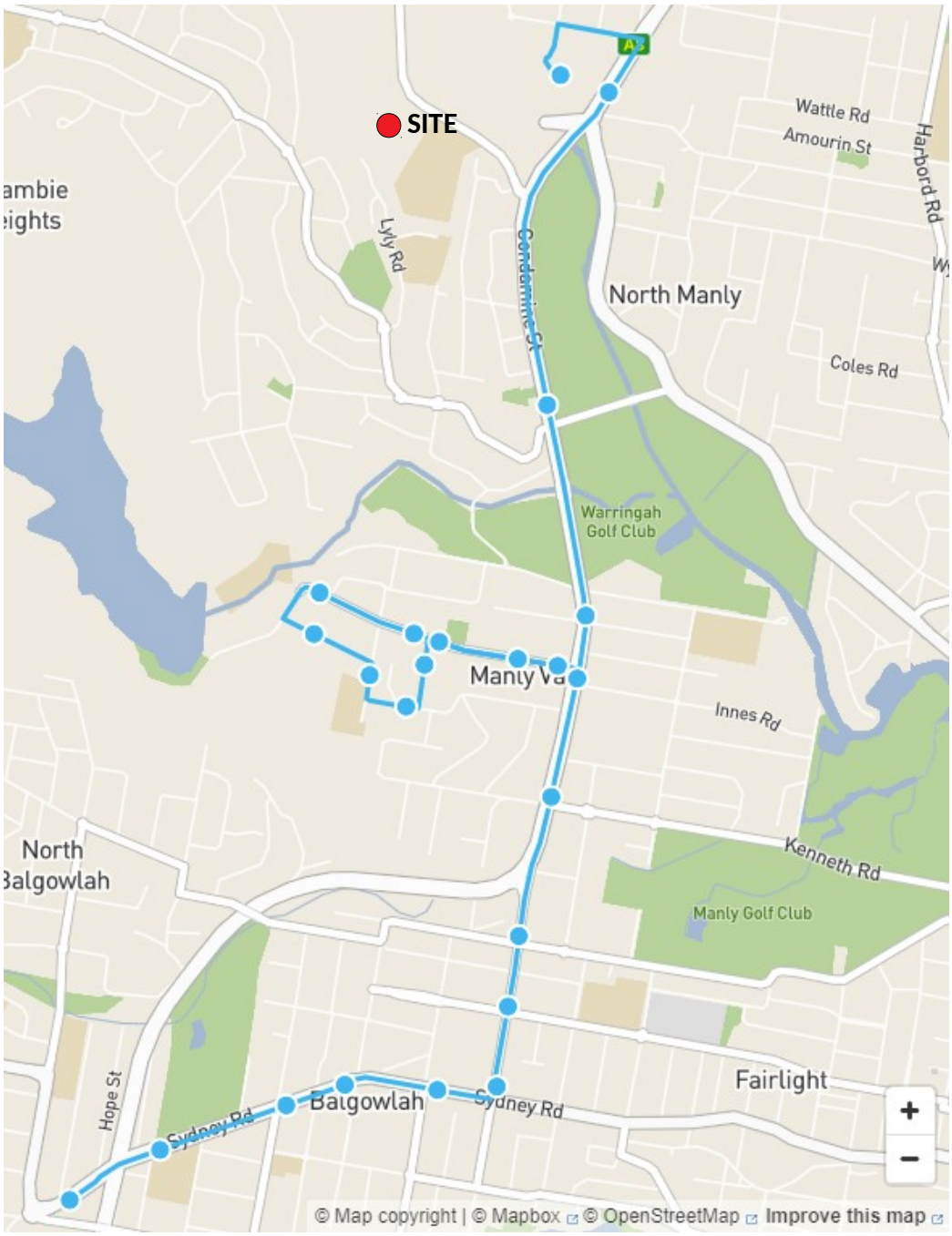
Bus Route 132



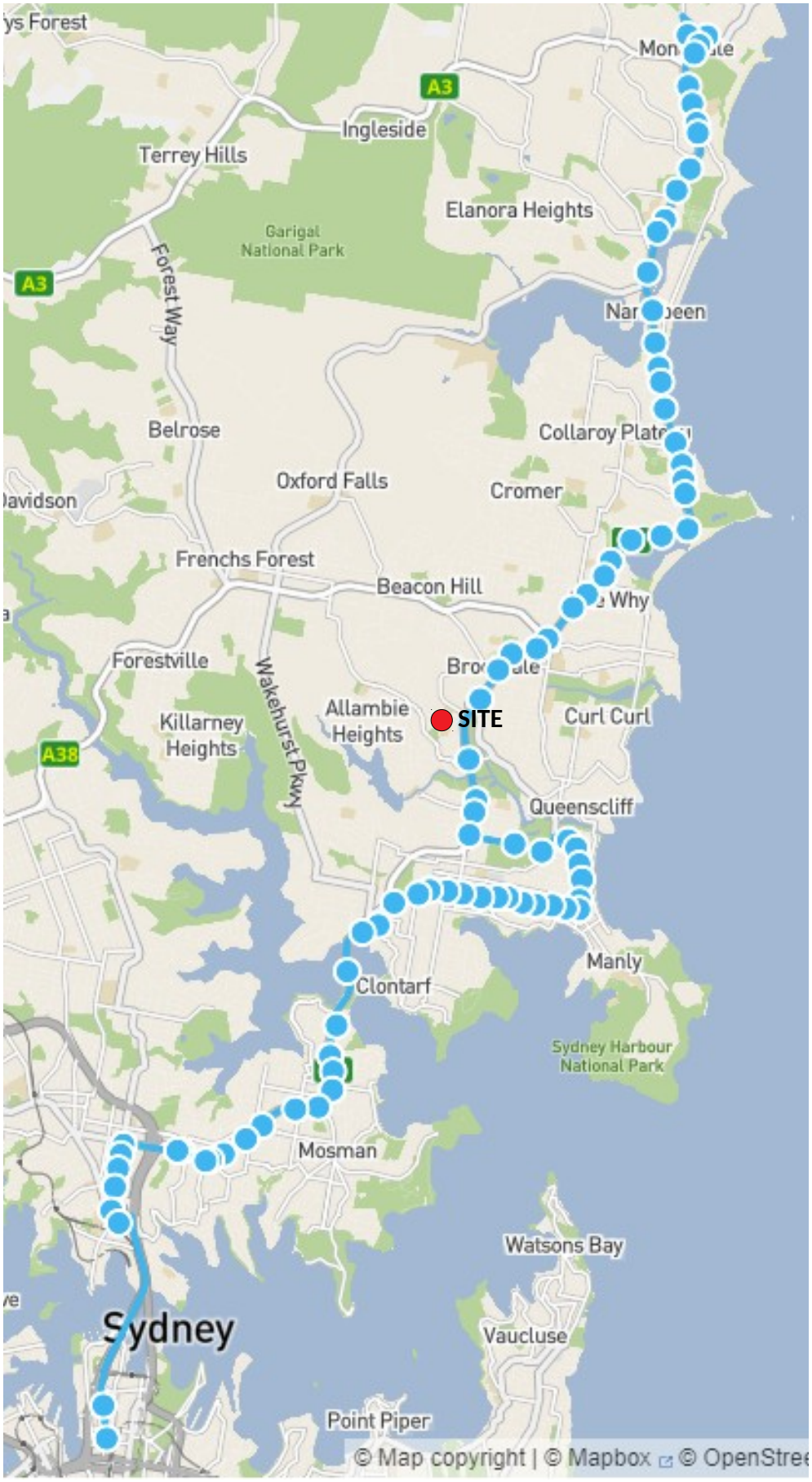
Bus Route 135



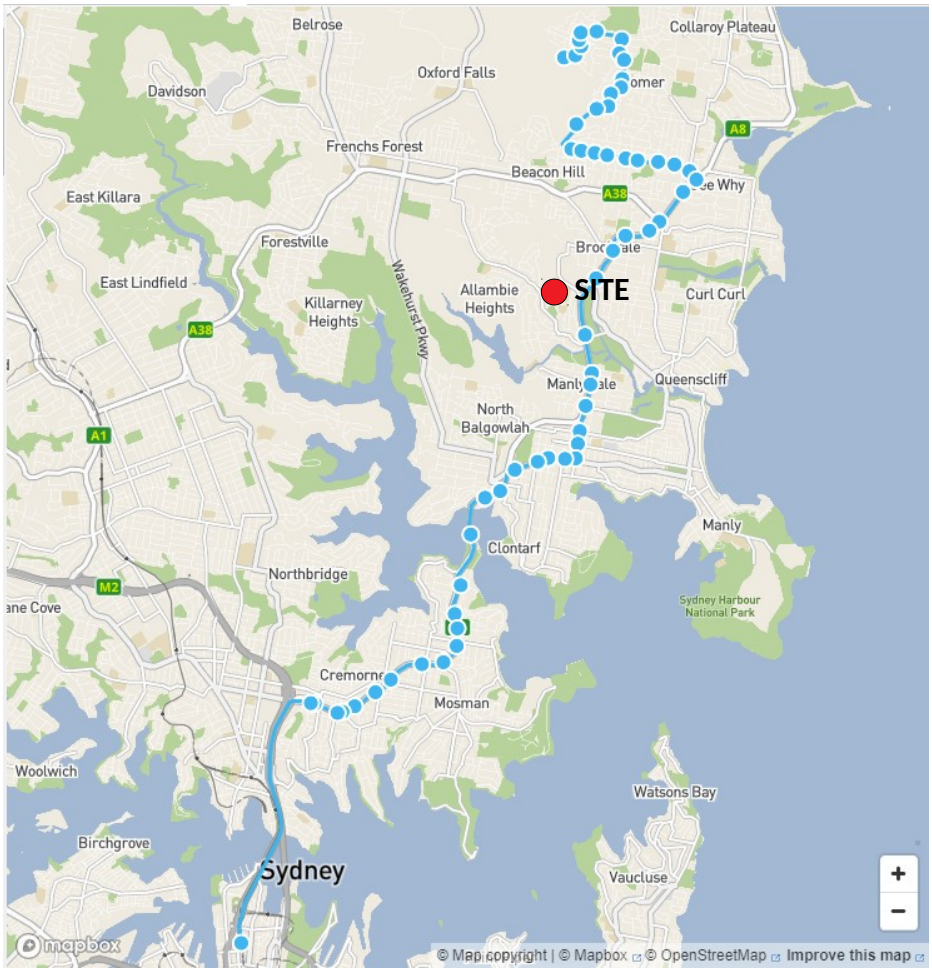
Bus Route 145



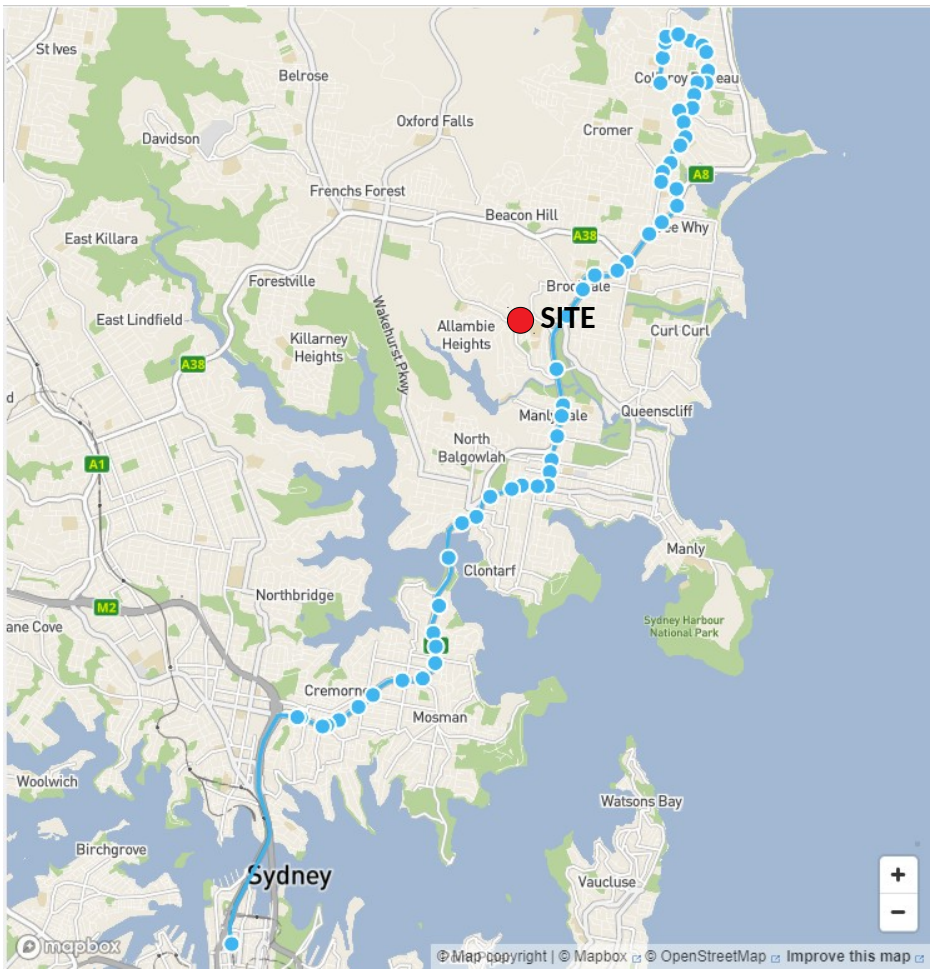
Bus Route 151



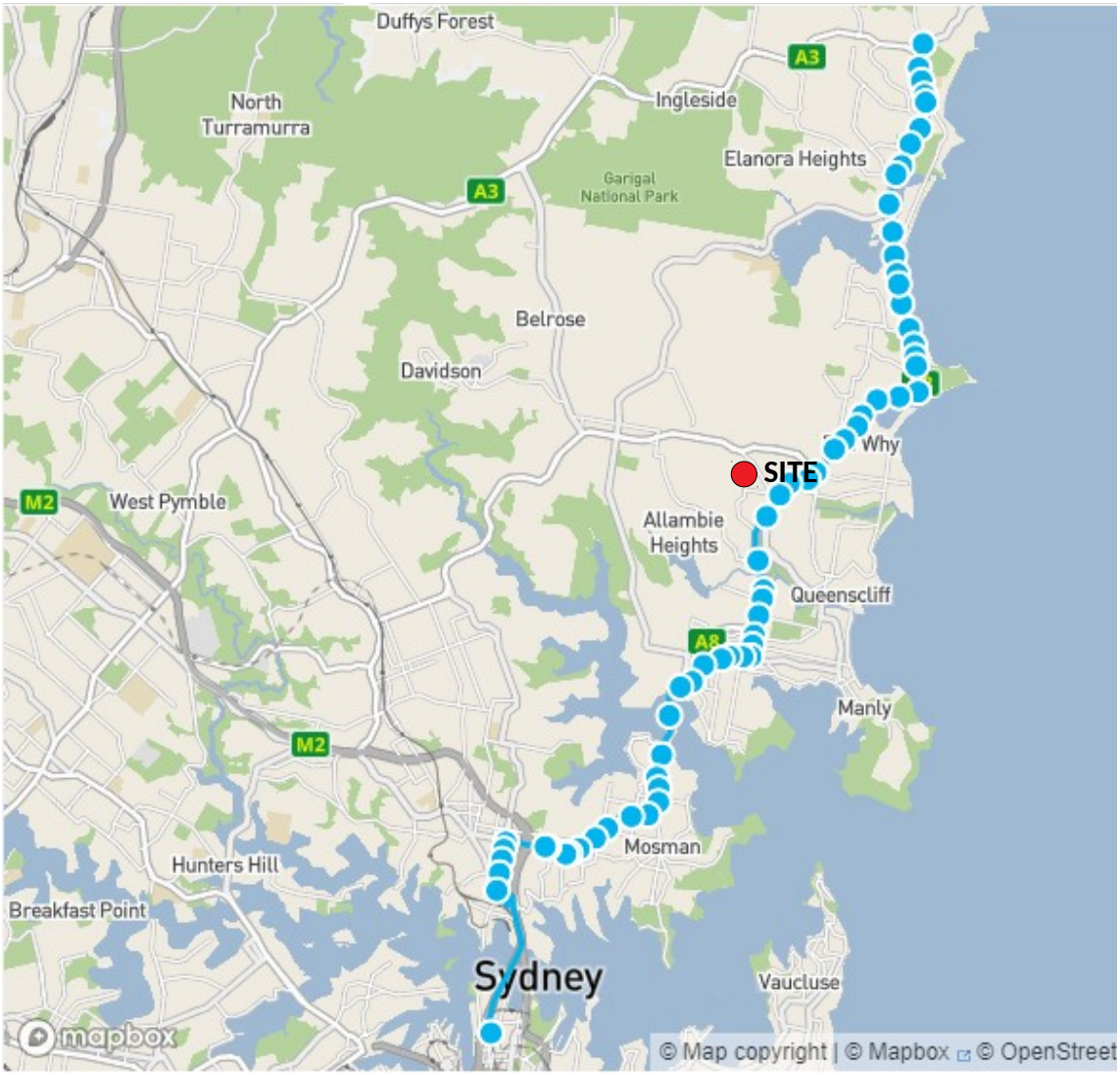
Bus Route 178



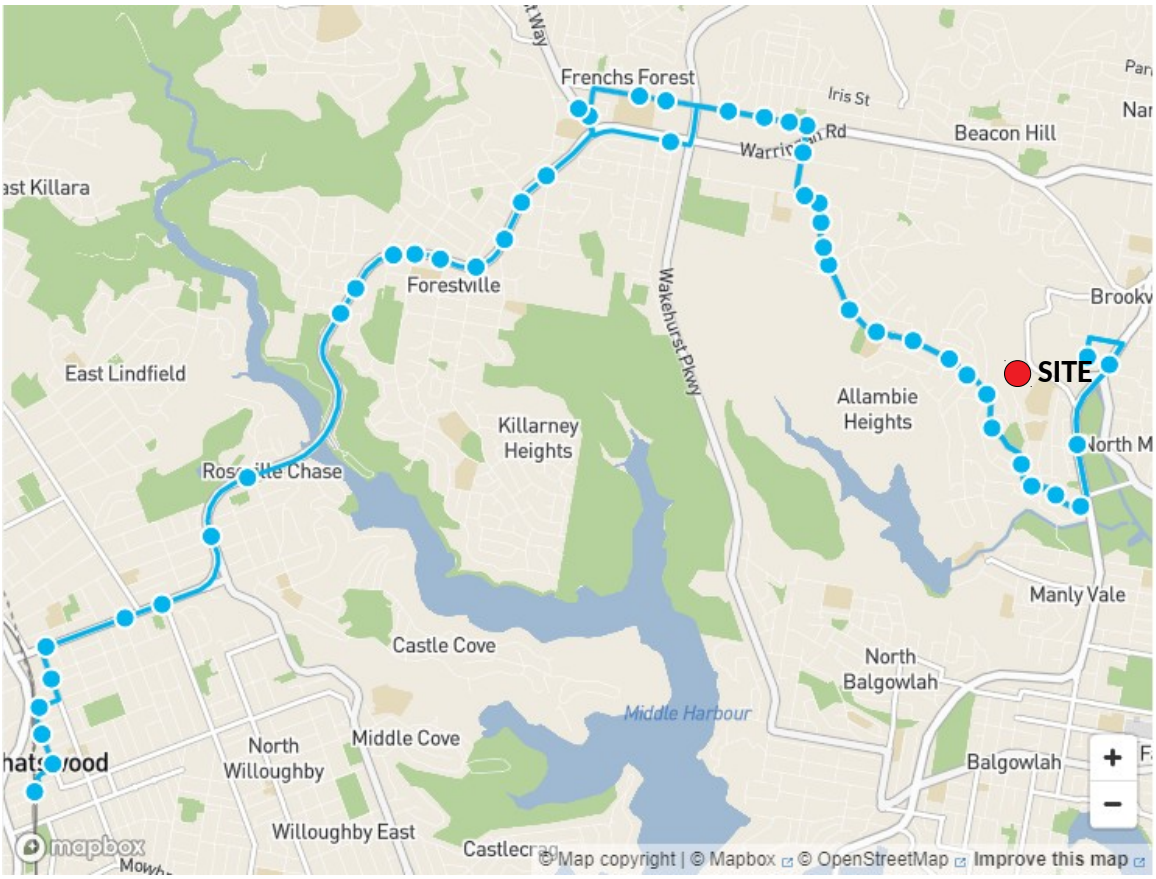
Bus Route 180



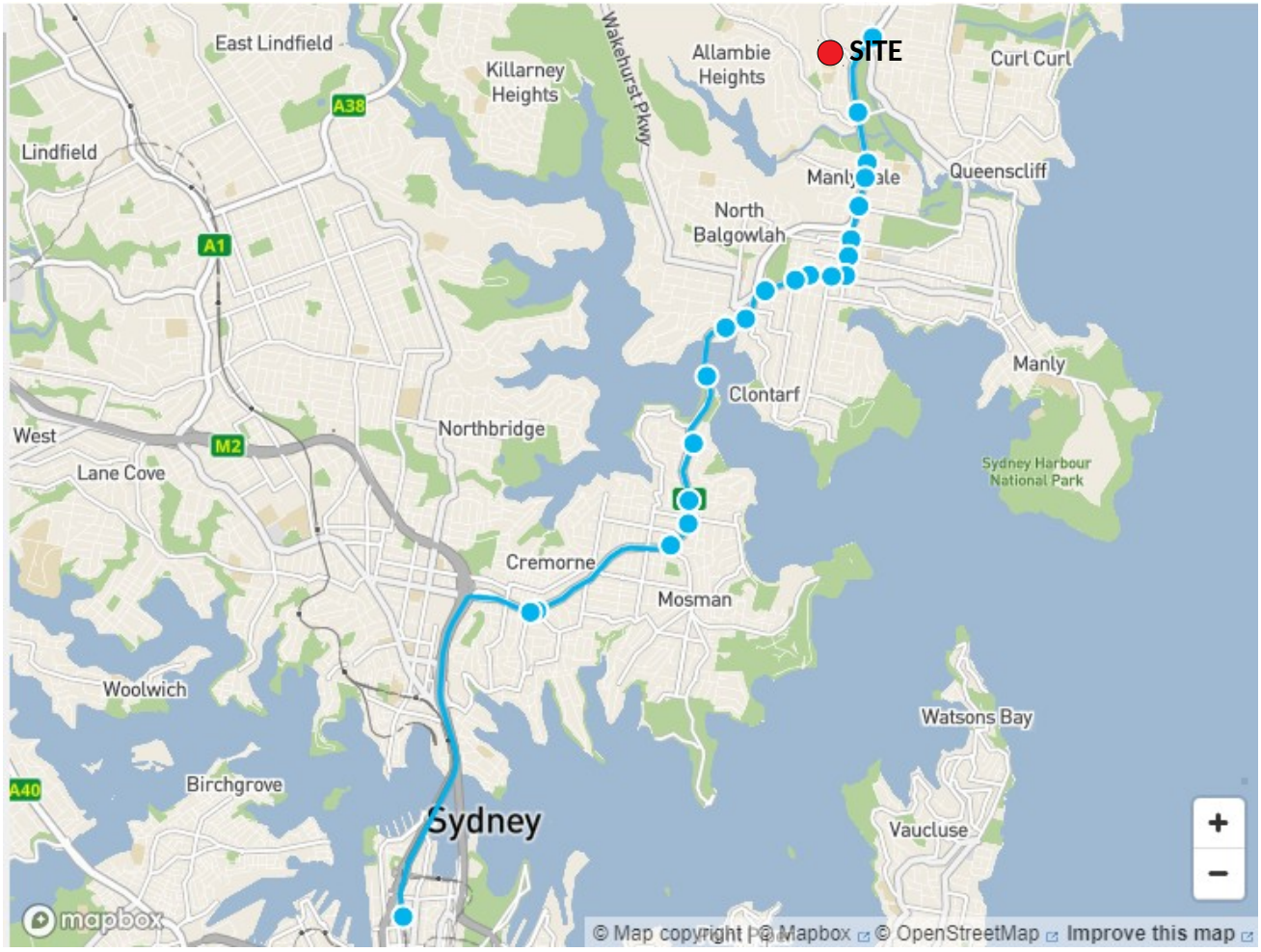
Bus Route 188



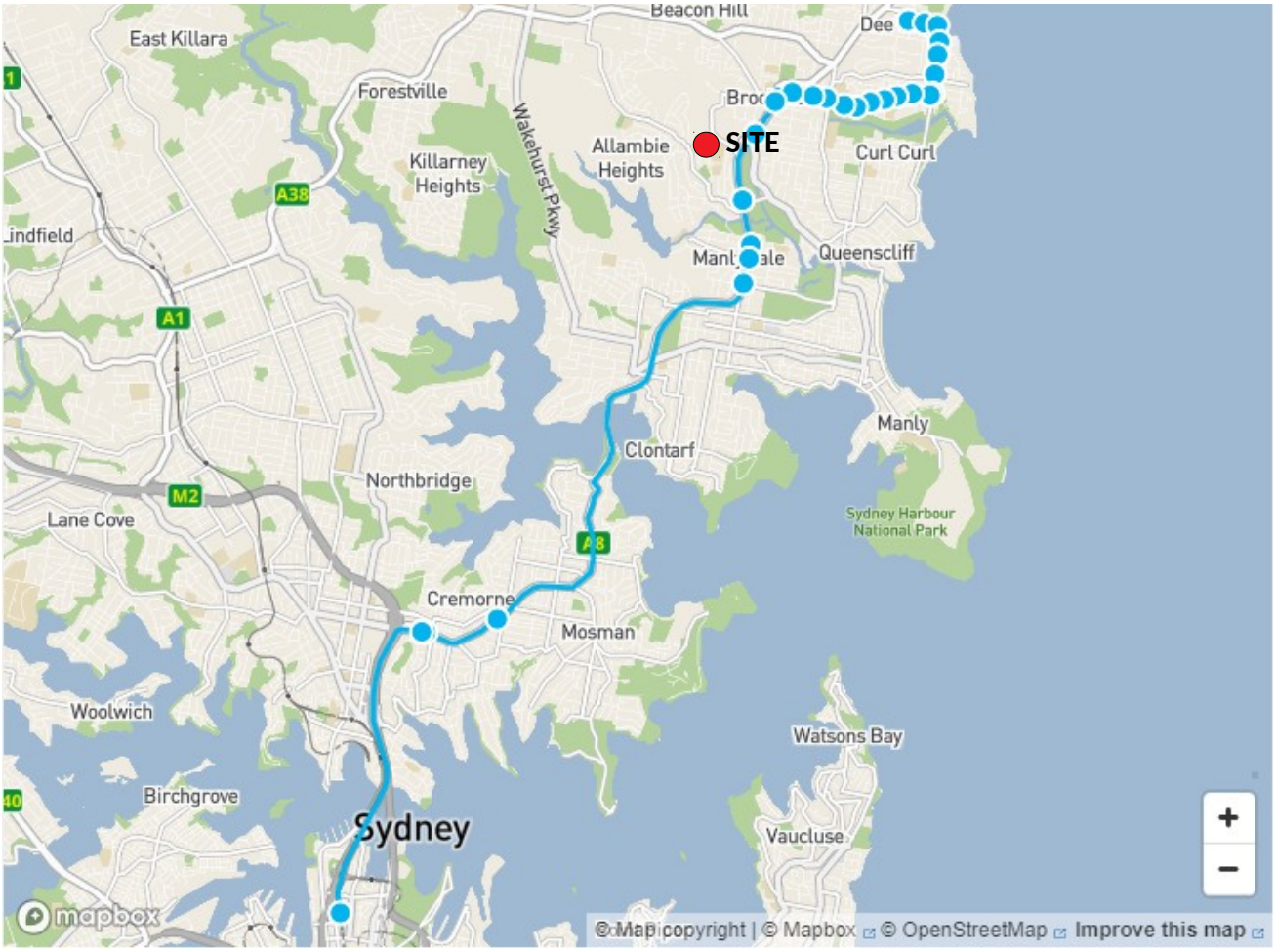
Bus Route 280



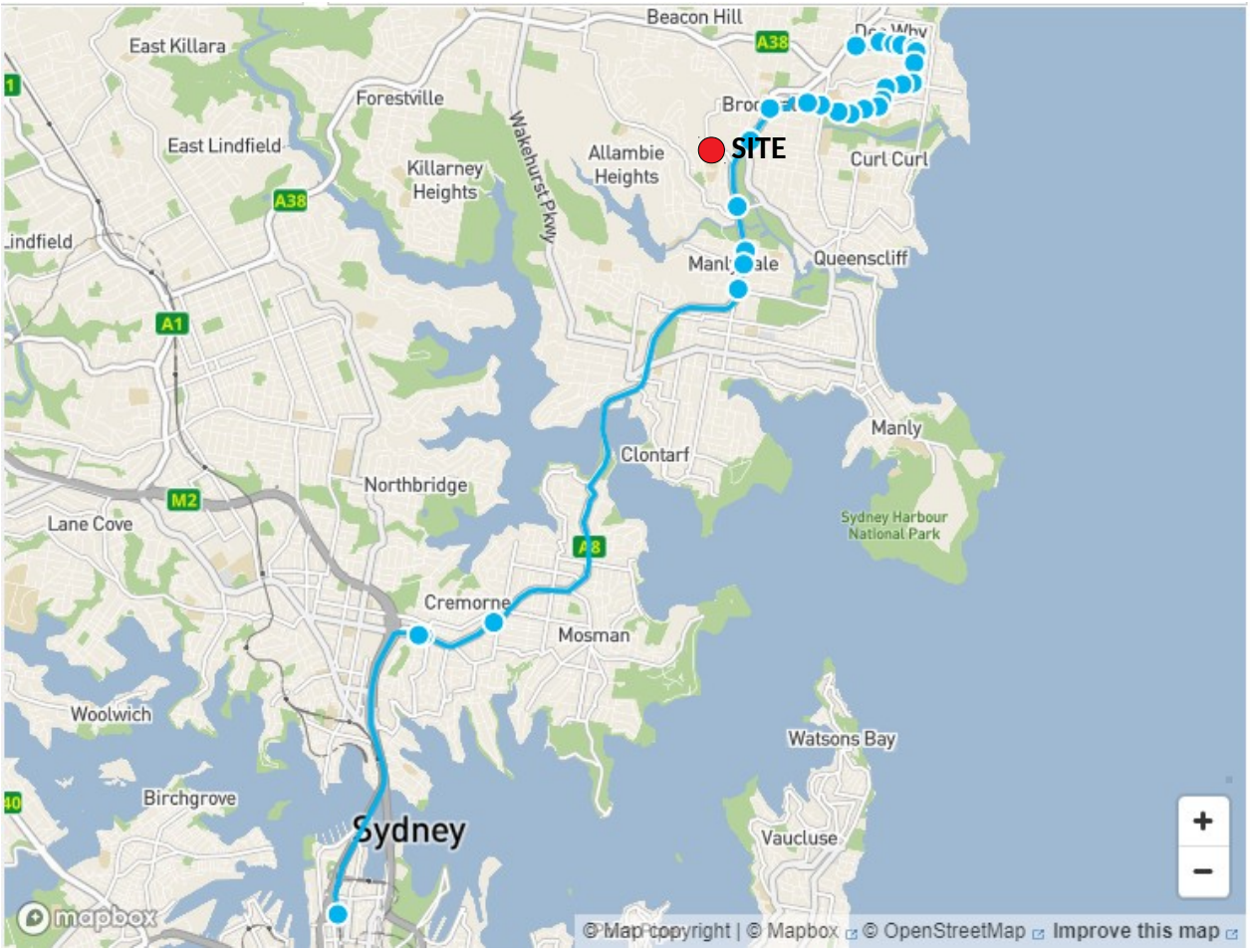
Bus Route E75



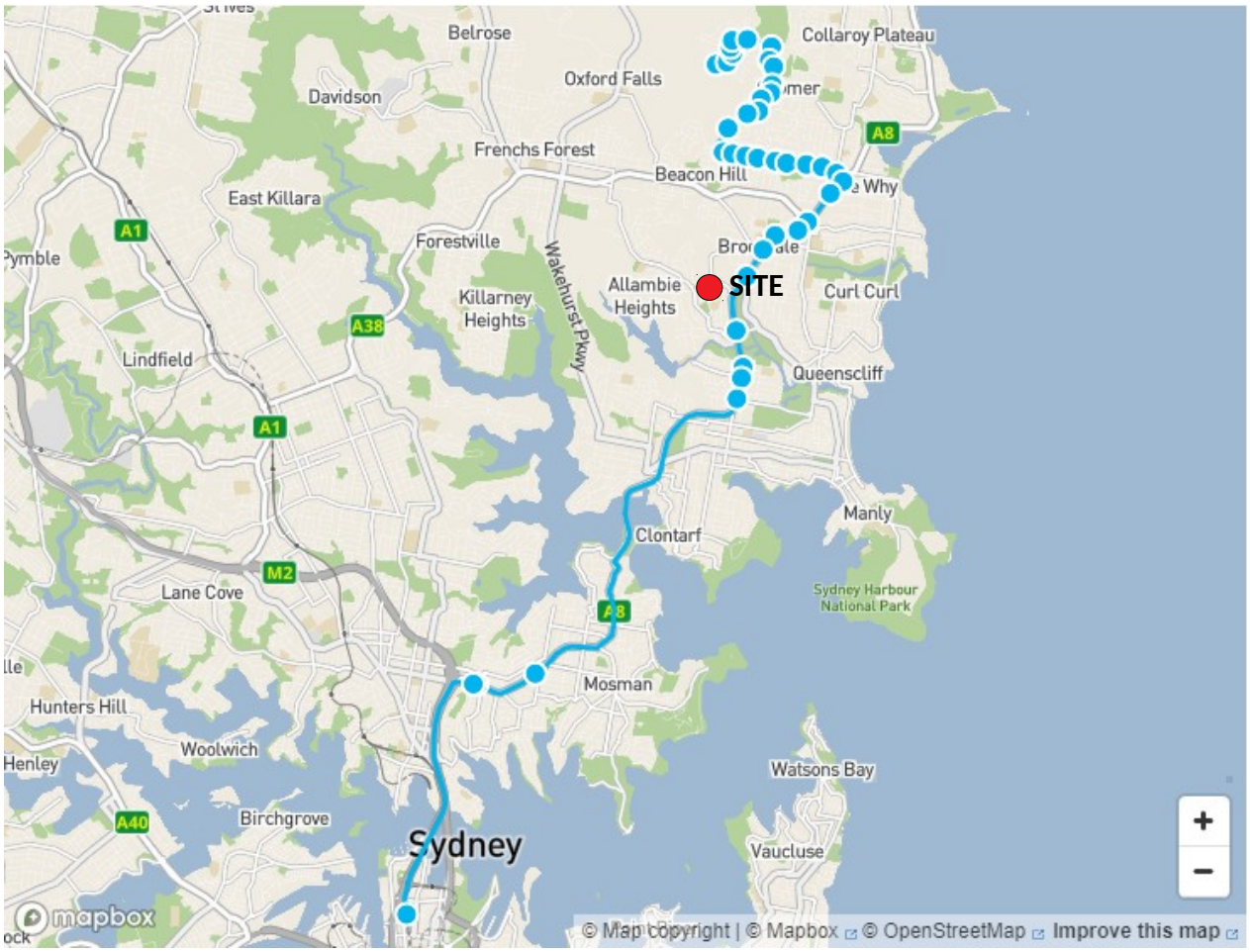
Bus Route E76



Bus Route E77



Bus Route E78



Bus Route E79