

Lot 46 Miles Street, Yamba

Revised Traffic Impact Assessment



Kahuna No. 1 Pty Ltd

2nd June 2021

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1.3 Scope of Works

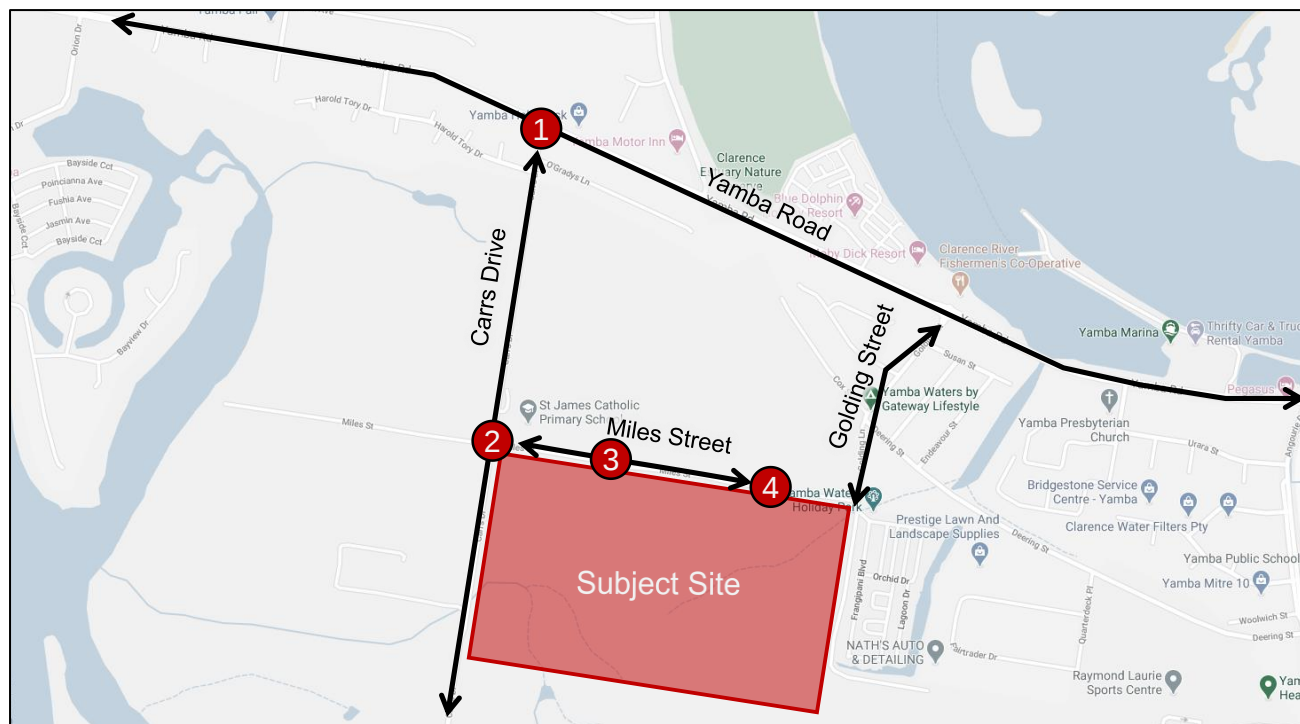
The following scope of works was completed as part of preparing this Traffic Impact Assessment (TIA):

- Reviewing the existing and proposed external local road network configuration against Council's road hierarchy requirements
- Reviewing the proposed access arrangements (e.g. intersection treatments, intersection spacing) against relevant Council guidelines and/or Austroads Guide to Road Design requirements
- Reviewing the proposed internal road layout (e.g. hierarchy, intersection locations / spacing / configurations) relevant Council guidelines and/or Austroads Guide to Road Design requirements
- Reviewing the need for traffic calming measures
- Reviewing existing and proposed active transport provisions against relevant Council guidelines
- Estimating the traffic generation of the proposed development based on typical industry rates
- Reviewing the expected distribution of development traffic across the surrounding road network
- Forecasting future design traffic volumes on the surrounding road network based on adopted staging, with consideration to future development potential in the catchment
- Undertaking operational (SIDRA) analysis at the Yamba Road / Carrs Road intersection to assess development traffic impacts during the weekday AM and PM peaks

2. CONTEXT

2.1 Road Network

Figure 2.1 identifies the key roads surrounding the subject site.



Source: Google Maps

Figure 2.1: Road Network

Table 2.1 summarises relevant characteristics of the existing and proposed road network.

Table 2.1: Key Roads – Existing and Proposed

Road Name	Existing / Proposed	Jurisdiction	Hierarchy	Cross-Section	Speed Limit
Miles Street	Proposed	Council	Collector	2-lanes undivided	50km/h
Carrs Drive	Existing	Council	Main Collector	2-lanes undivided	50/60km/h
Golding Street	Existing	Council	Local Access	2-lanes undivided	50km/h
Yamba Road	Existing	Council	Local Arterial	2-lanes undivided	50km/h

Table 2.2 summarises relevant characteristics of the key existing and proposed intersections.

Table 2.2: Key Intersections – Existing and Proposed

ID	Name	Existing / Proposed	Jurisdiction	Control
1	Yamba Road / Carrs Drive	Existing	Council	Priority (Give-Way)
2	Carrs Drive / Miles Street	Proposed	Council	Priority (Give-Way)
3	Miles Street / West Site Access	Proposed	Council	Priority (Give-Way)
4	Miles Street / East Site Access	Proposed	Council	Priority (Give-Way)

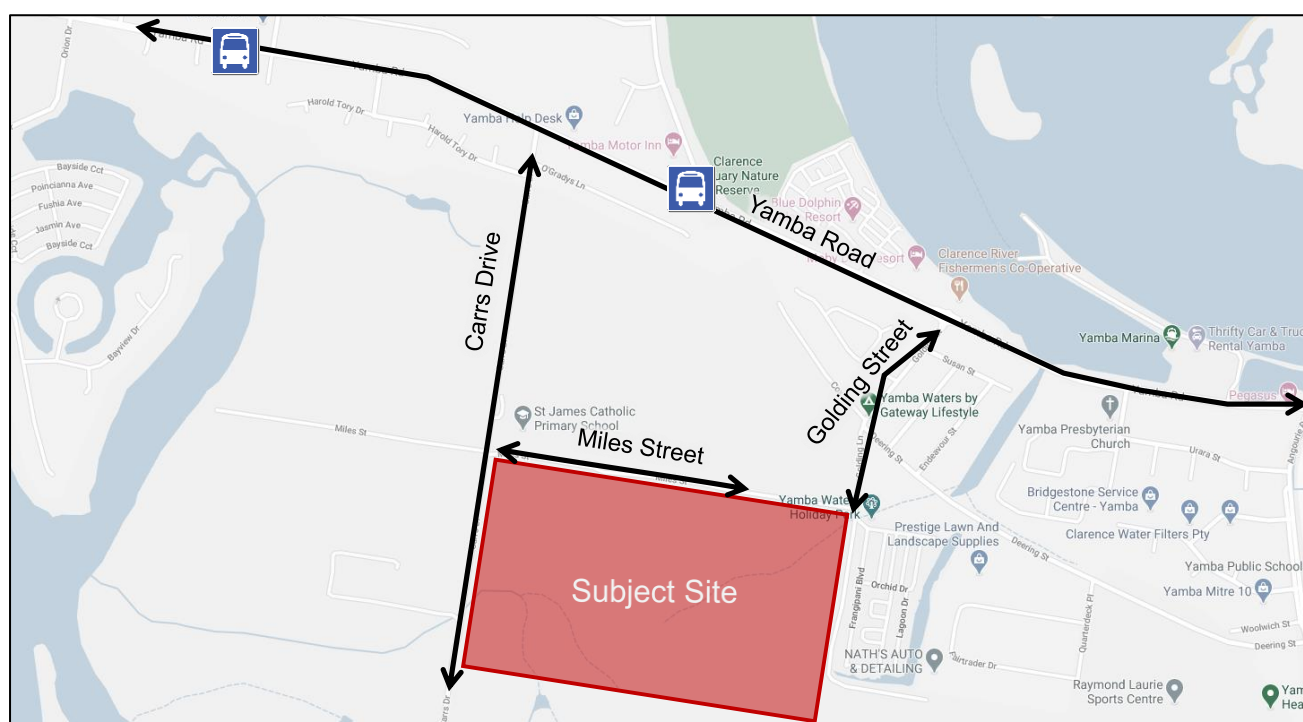
2.2 Alternative Transport Networks

The subject site is located within a relatively undeveloped area of Yamba. As such there is limited active and public transport infrastructure nearby.

There are no existing footpaths along the site frontages. The closest path is located north of the site and runs along the eastern side of Carrs Drive.

As part of these works a 2.5m wide 'dual use' path will be constructed along one (1) side of Miles Street in accordance with 'Northern Rivers Design Manual' D1 – Geometric Road Design (Urban and Rural)' (NRDM D1) and 'Northern Rivers Design Manual D9 – Cycleway and Pathway Design' (NRDM D9). The path will be constructed at the same time as the adjacent section of Miles Street is constructed.

Currently, the closest bus stop to the subject site is located ~1.5km away on Yamba Road (west of Treelands Drive) and Shores Drive (north of Yamba Road). Figure 2.2 illustrates the location of these existing bus stops.



Source: Google Maps

Figure 2.2: Existing Bus Stops

Table 2.3 provides an overview of the existing bus route which services local bus stops.

Table 2.3: Existing Bus Services

ID	Key Areas Served	Weekday Frequency	Weekend Frequency
Route 380	Grafton, Ulmarra, Maclean, West Yamba, Yamba	8 services	4 services

Although the subject site is not well serviced by public transport, the development is not expected to generate sufficient demand for new or modified bus services. Accordingly, no modifications to the existing public transport network are required as a direct result of the development.

3. SITE LAYOUT REVIEW

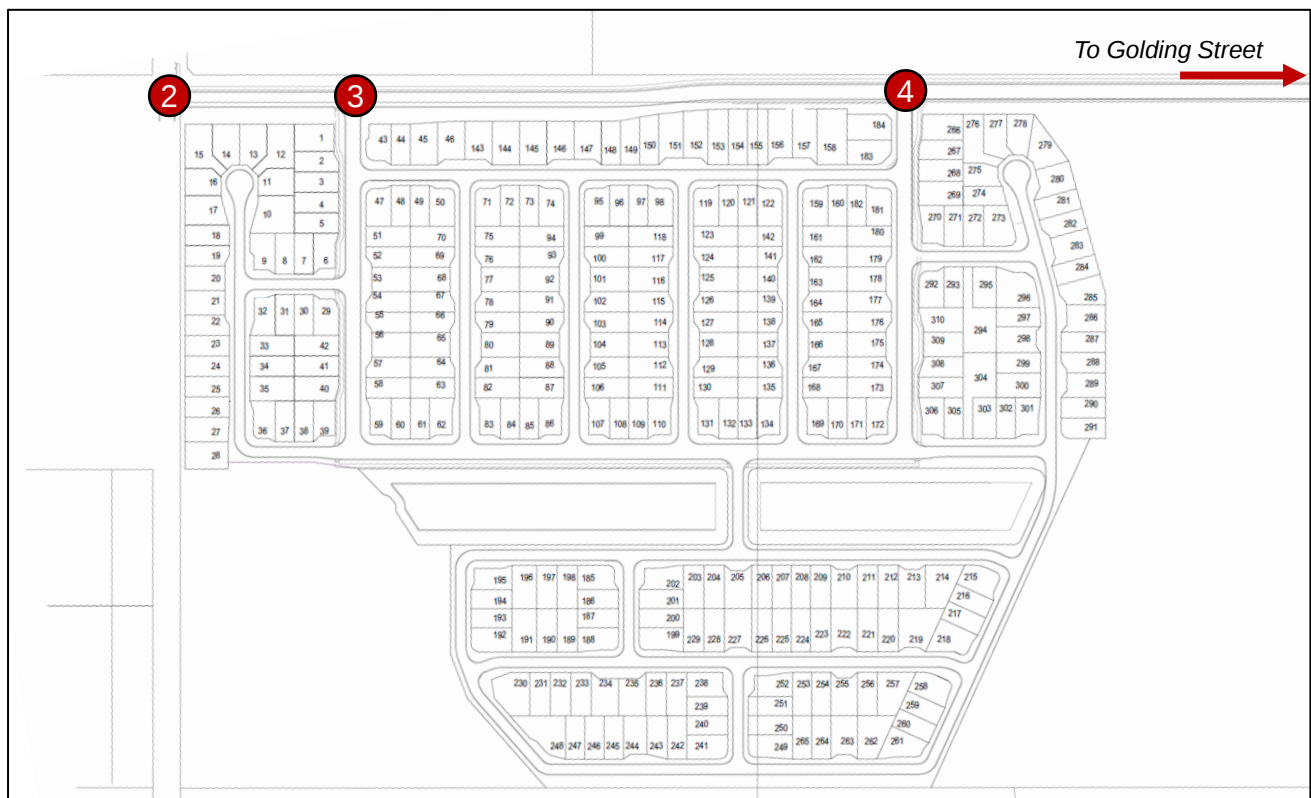
3.1 External Access

3.1.1 Overview

Proposed vehicular access arrangements are via two (2) proposed intersections (Intersection 3 and 4) on Miles Street.

In addition, it is recommended that an emergency access is constructed prior to the sealing of the 101st residential lot.

Figure 3.1 identifies the location of each site access intersection.



Source: Mortons Urban Solutions

Figure 3.1: Proposed Access Intersections

3.1.2 Sight Distance

Required sight distances for Intersections 3 and 4 have been identified. The NRDM Part 1 refers to relevant Austroads requirements in relation to intersection sight distances.

Austroads 'Guide to Road Design Part 4A – Unsignalised and Signalised Intersections' (Part 4A) requires Safe Intersection Sight Distance (SISD) to be achieved at new intersections.

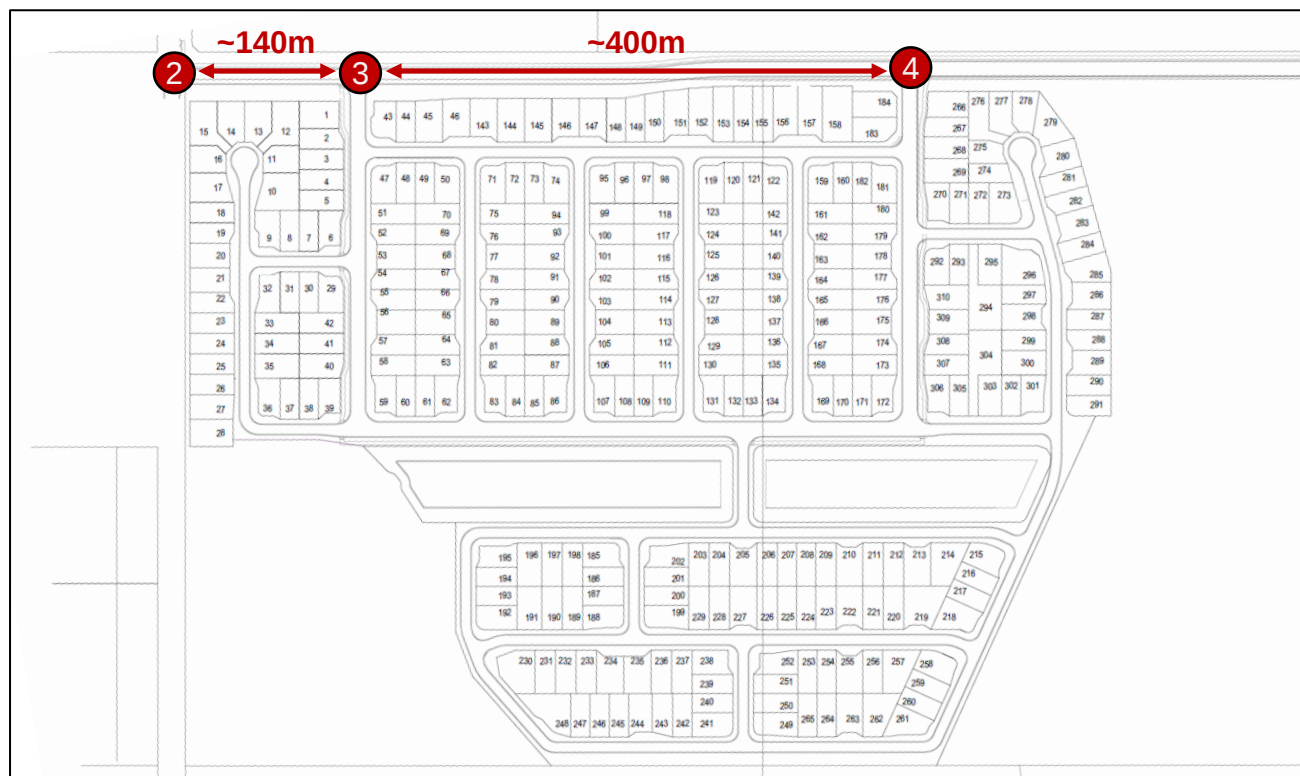
An overview of required SISD at the access intersections is provided below:

- Design speed: 60km/h
- Grade: Generally flat
- Reaction time: 2 seconds
- SISD: 123m.

It is noted that a review of sight distances at Intersections 3 and 4 has not been undertaken as detailed intersection plans have not yet been prepared. However, given the relatively flat topography of the local area, it is expected that SISD will be achieved at the intersections.

3.1.3 Separation

Figure 3.2 identifies the separation between the proposed site access intersections and adjacent intersections.



Source: Mortons Urban Solutions

Figure 3.2: Site Access Intersection Separation

The proposed site access intersection locations comply with NRDM Part 1 which indicates that the spacing of intersections on minor streets should be at least 50m.

3.2 Roads

3.2.1 Hierarchy

Figure 3.3 identifies the road hierarchy of Miles Street and internal roads.

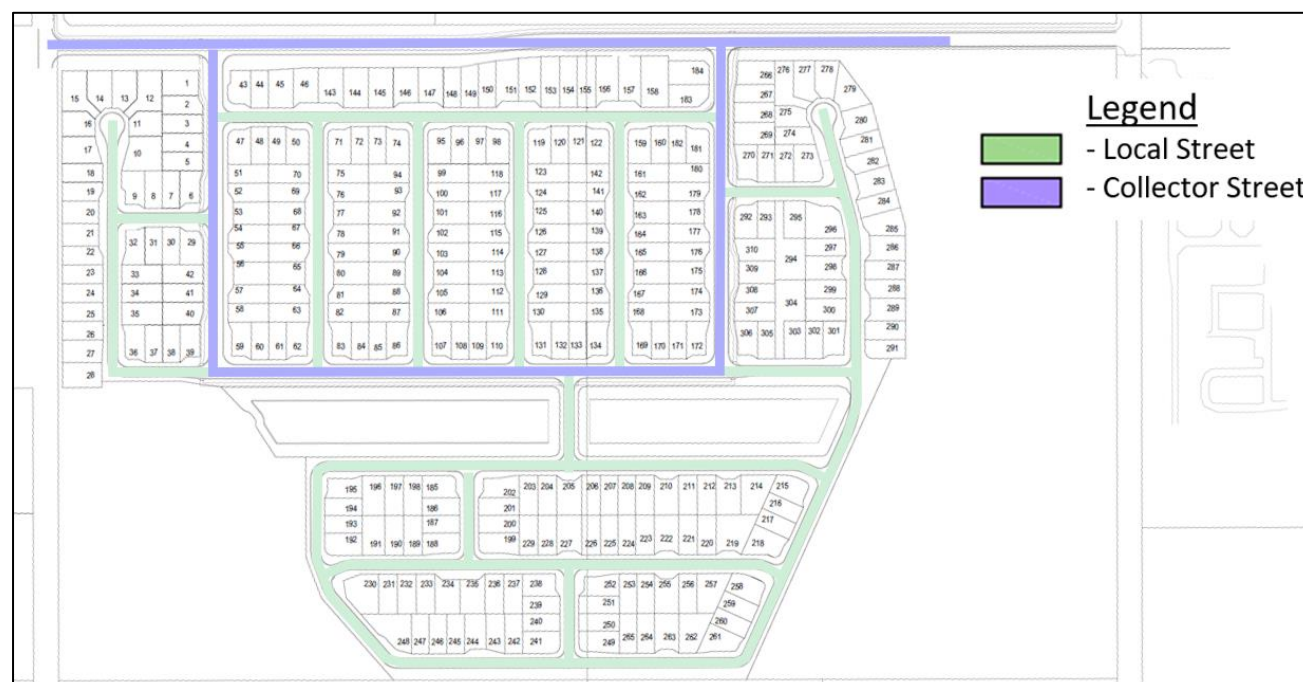


Figure 3.3: Road Hierarchy

The road hierarchy arrangements illustrated above have been reviewed against relevant NRDM Part 1 requirements. The review indicated that the proposed subject site road configuration / hierarchy is consistent with NRDM Part 1 requirements.

3.2.2 Traffic Volumes

A review of the traffic volumes expected to be carried by each of the internal roads and Miles Street has been undertaken considering the environmental capacity of the road. Environmental capacities are identified based on the traffic volumes expected to be carried by roads of varying types rather than the physical carrying capacity (e.g. even if both roads had the same number of lanes, residents would expect that a local street should carry less traffic than a major arterial road).

The environmental capacity thresholds for various road types as identified in NRDM Part 1 are as follows:

- Access Street – 100 vehicles per day (vpd)
- Local Street – 2,000vpd
- Collector Street – 3,000vpd.

A review of the daily traffic volumes expected to be carried by each of the roads has been undertaken noting the development traffic generation estimates identified in Section 4.2.3. The review indicated that daily traffic volumes carried by Miles Street and the subject site's internal roads will not exceed NRDM Part 1 environmental capacity thresholds.

Importantly, our review identifies that the proposed development does not necessitate the extension of Miles Street east to Golding Street (i.e. a second, permanent access is not required).

3.2.3 Road Reserve

Table 3.1 provides a summary of our review of proposed subject site road reserve and cu-de-sac widths against NRDM Part 1 requirements.

Table 3.1: Internal Roads – Road Reserve Review

Hierarchy	Required Road Reserve	Proposed Road Reserve	Compliant
Access Street	14m	15m	Yes
Local Street	15m-17m	15m	Yes
Collector Street	18m	19.5m	Yes
Cul-de-sac	Min. 10m radius	13m radius	Yes

In summary, the proposed road corridor widths comply with NRDM Part 1 requirements

3.2.4 Speed Control

NRDM Part 1 indicates that speed control devices (e.g. curves, specific speed control devices) should be provided at 100m to 150m intervals. However, it is understood that speed control devices are not proposed at Council's request.

3.3 Active Transport

As part of the development, all Collector Streets (including Miles Street) will include a 2.5m wide 'dual use' path on one side in accordance with NRDM Part 1 and NRDM Part 9.

These paths are proposed to be constructed at the time each of the streets are constructed.

3.4 Refuse Collection & Servicing

Kerbside refuse collection is proposed for the development with bins collected by a side loading refuse collection vehicle (RCV).

General servicing of each residential lot will occur on-street.

The width of all internal road corridors comply with NRDM Part 1 requirements. It is therefore expected that RCVs and general service vehicles will be able to access and service each lot. Accordingly, no further investigation of servicing is considered necessary.

In summary the proposed site layout arrangements are expected to appropriately accommodate refuse and general servicing. They are therefore considered acceptable from a traffic engineering perspective.

4. TRAFFIC ASSESSMENT INPUTS

4.1 Assessed Intersections

The following Study Intersections have been assessed to identify development traffic impacts:

- Intersection 1: Yamba Road / Carrs Drive
- Intersection 2: Carrs Drive / Miles Street.

4.2 Background Traffic Volumes

4.2.1 Traffic Survey Data

Traffic surveys were undertaken at Intersection 1 to identify baseline traffic demands. It is noted that Intersection 1 traffic survey data was used to establish future volumes at Intersection 2.

Table 4.1 summarises key survey details.

Table 4.1: Key Traffic Survey Details

Intersection	Date of Survey	AM Peak Period	PM Peak Period
1	Thursday 31 st May 2018	8:00AM to 9:00AM	2:30PM to 3:30PM

A copy of the traffic survey data results is included at **Appendix B**.

4.2.2 Traffic Growth Rate

For the purpose of this assessment, a 2% per annum linear growth rate has been applied to the 2018 traffic survey data to forecast future traffic volumes.

4.2.3 Future Nearby Development Traffic

Two (2) larger scale developments that are proposed to be constructed along Carrs Drive which are expected to increase traffic volumes at Intersection 1 and 2. Key development details are summarised below:

- Site: 22 Carrs Drive | Yield / Use: 161 residential lots | Council Reference: SUB2014/0016
- Site: Lot 1 Carrs Drive | Yield / Use: 200 manufactured home dwellings | Council Reference: DMU2018/0041.

Table 4.2 identifies the estimated traffic generation of each development.

Table 4.2: Estimated Traffic Generation – Nearby Development

Development	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
22 Carrs Drive	35	81	116	76	51	127
Lot 1 Carrs Drive	24	56	80	48	32	80
Total	59	137	196	124	83	207

These volumes have been added to those calculated by applying the background growth rate identified in Section 4.2.2. The volumes have been distributed as per Section 4.3.4.

4.3 Development Traffic Volumes

4.3.1 Trip Rates

Table 4.3 provides a summary of the adopted trip rates for the proposed development. These rates were obtained from RMS Guide to Traffic Generating Developments.

Table 4.3: Trip Rates

Land Use	AM Peak	PM Peak	Daily	Unit
Residential	0.85	0.85	9	trips/dwelling

4.3.2 Directional Split

Table 4.4 provides a summary of the adopted directional splits.

Table 4.4: Adopted Directional Split

Land Use	AM		PM		Daily	
	In	Out	In	Out	In	Out
Dwelling House	25%	75%	25%	75%	50%	50%

4.3.3 Traffic Volumes

Table 4.5 provides a summary of estimated development traffic generation by Lot.

Table 4.5: Estimated Traffic Generation

Yield	AM Peak			PM Peak			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
310 Lots	66	198	264	198	66	264	1,395	1,395	2,790

As indicated above, the development may generate in approximately 260 peak hour trips and 2,800 daily trips.

4.3.4 External Traffic Distribution

Development traffic volumes have been distributed across the Study Intersections based on the results of the Intersection 1 traffic surveys.

Figures identifying assumed traffic distribution are included at **Appendix C**.

4.4 Design Traffic Volumes

The following is again noted in relation to the proposed development:

- Development Year of Completion: Expected to be completed by 2030
- Development Access: Via Miles Street / Carrs Drive

Noting the above, the following traffic volume scenarios have been assessed at Intersection 1:

- **2018 Survey Data**
- **2030 Background:** 2018 Survey factored up by 2% p.a. plus future nearby development traffic
- **2030 With Development:** 2030 Background plus development traffic
- **2040 Background:** 2018 Survey factored up by 2% p.a. plus future nearby development traffic
- **2040 With Development:** 2040 Background plus development traffic

The following traffic volume scenarios have been assessed Intersection 2:

- **2030 With Development:** 2030 Background plus development traffic
- **2040 With Development:** 2040 Background plus development traffic

Figures identifying design traffic volumes are included at **Appendix C**.

5. TRAFFIC ASSESSMENT RESULTS

5.1 Intersection 1 – Yamba Road / Carrs Drive

Figure 5.1 illustrates the intersection form which was assessed in SIDRA. It is noted that the intersection was assessed as a roundabout as we understand Council are proposing to upgrade the priority-controlled (give-way) intersection in the near future.

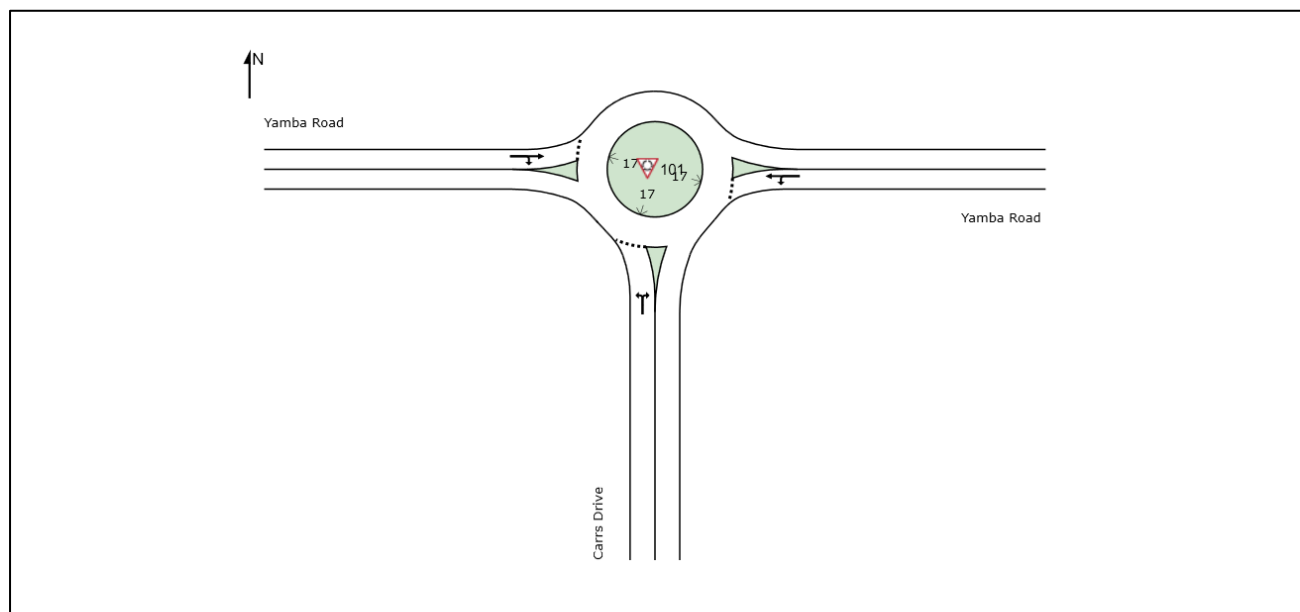


Figure 5.1: Intersection 1 Layout

Table 5.1 summarises the analysis results. Detailed SIDRA outputs are provided at **Appendix D**.

Table 5.1: SIDRA Results – Intersection 1

Scenario	Peak	Demand	Degree of Saturation (DOS)	Average Delay (sec)	Level of Service	95 th Percentile Queue Length (m)
2018 BG	AM	933	0.303	5.0	A	14.9
2030 BG		1,366	0.458	5.9	A	26.8
2030 BG+DEV		1,629	0.546	6.9	A	34.2
2040 BG		1,966	0.702	7.0	A	58.2
2040 BG+DEV		2,229	0.828	10.9	B	108
2018 BG	PM	994	0.328	4.8	A	15.6
2030 BG		1,426	0.494	5.5	A	30.5
2030 BG+DEV		1,689	0.650	6.4	A	48.8
2040 BG		1,625	0.567	5.7	A	39.7
2040 BG+DEV		1,888	0.733	6.7	A	64.1

The results indicate that the intersection will operate below the typically adopted performance threshold for a roundabout (i.e. $DOS < 0.85$) in all scenarios.

In summary, no intersection upgrades are required to offset development related traffic impacts.

5.2

5.2 Intersection 2 – Carrs Drive / Miles Street

Figure 5.2 illustrates the intersection form, which was assessed in SIDRA, noting that it is not yet constructed. It is noted that the intersection was not assessed for a survey or background cases as the intersection has not yet been constructed and there would be no turning volumes.

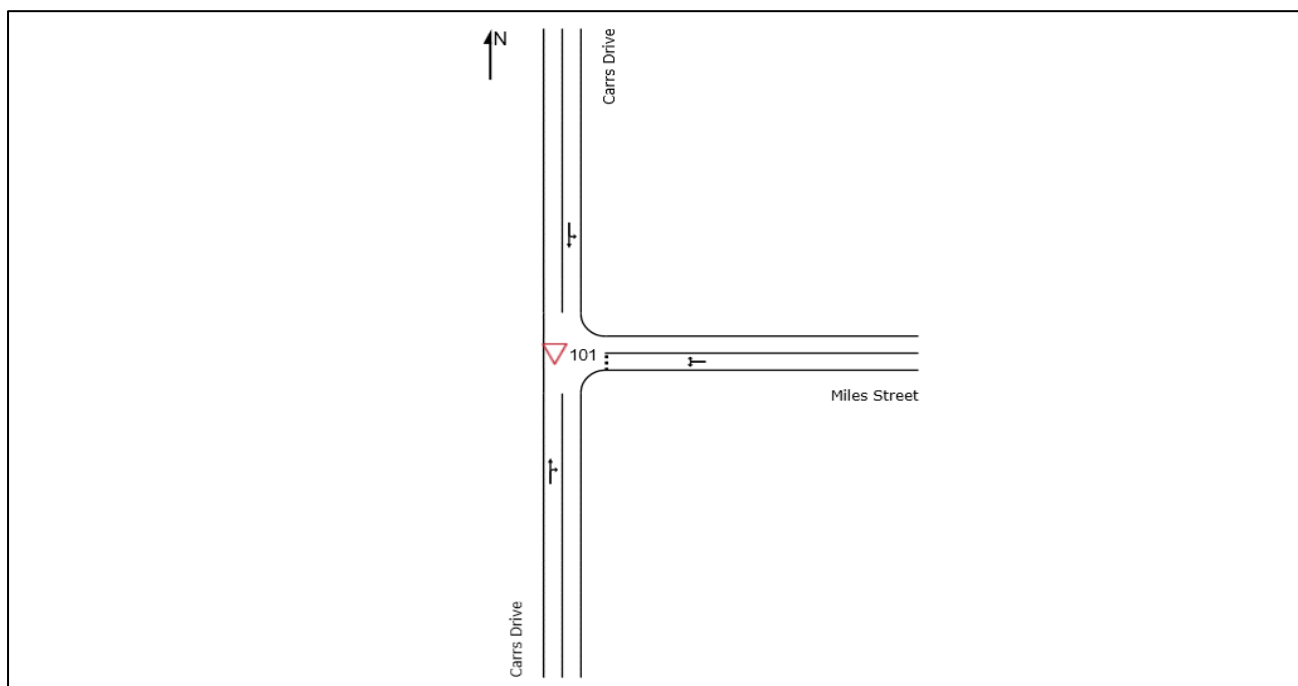


Figure 5.2: Intersection 2 Layout

Table 5.2 summarises the analysis results. Detailed SIDRA outputs are provided at **Appendix D**.

Table 5.2: SIDRA Results – Intersection 2

Scenario	Peak	Demand	Degree of Saturation (DOS)	Average Delay (sec)	Level of Service	95 th Percentile Queue Length (m)
2030 BG+DEV	AM	361	0.185	4.1	A	0.7
2040 BG+DEV		361	0.185	4.1	A	0.7
2030 BG+DEV	PM	362	0.143	4.3	A	0.2
2040 BG+DEV		362	0.143	4.3	A	0.2

The results indicate that the intersection will operate well below the typically adopted performance threshold for a priority-controlled intersection (i.e. $DOS < 0.9$).

In summary, no intersection upgrades are required to offset development traffic impacts.

6. SUMMARY

Key findings are summarised below:

- No modifications to the existing public transport network are required as a direct result of the proposed development
- A 2.5m wide 'dual use' path will be constructed along one (1) side of Miles Street and each of the internal collector streets. These paths will be constructed in at the same time as the adjacent road section. The proposed paths comply with NRDM Part 1 and NRDM Part 9
- It is recommended that an emergency access is constructed provided prior to the sealing of the 101st residential lot
- Sight distances at the Miles Street site access intersections are to comply with Safe Intersection Sight Distance (SISD) requirements. A review of sight distances at the access intersections has not been undertaken. However, given the relatively flat topography of the local area, it is expected that SISD will be achieved
- The proposed Miles Street site access intersection locations comply with NRDM Part 1 with respect to intersection spacing
- The proposed development road network configuration / hierarchy is generally consistent with NRDM Part 1 requirements
- Daily traffic volumes carried by Miles Street and subject site development roads will not exceed NRDM Part 1 environmental capacity thresholds. Importantly, the development does not necessitate the extension of Miles Street east to Golding Street (i.e. a second, permanent access is not required)
- Proposed internal road corridor widths comply with NRDM Part 1 requirements
- Proposed internal layout arrangements are expected to appropriately accommodate refuse and general servicing. They are therefore considered acceptable from a traffic engineering perspective
- No upgrades are required at Intersection 1 (Yamba Road / Carrs Road) to offset development related traffic impacts

Based on the findings of this report, we are of the view that there are no traffic engineering related matters to preclude approval of this development application.

Appendix A: Proposed Development Plans

GENERAL

1. CONTRACT SPECIFICATIONS
ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATION.
2. SETOUT
SURVEY SETOUT INFORMATION HAS BEEN ESTABLISHED ON SITE BY THE PRINCIPAL'S SURVEYOR TO ENABLE THE CONTRACTOR TO ACCURATELY SETOUT THE WORKS TO THE CO-ORDINATES SHOWN. SETOUT INFORMATION SHALL NOT BE OBTAINED BY SCALING FROM THESE DRAWINGS.
3. DATUM
LEVELS SHOWN ARE TO A.H.D.
4. TRENCH SPOIL
ALL MATERIALS ARISING FROM ROADS & SERVICES ARE TO BE COMPACTED TO FUTURE STAGES, TO LEVEL 1 IF NO SPOIL AREA IS AVAILABLE THESE MATERIALS SHALL BE TRUCKED TO A LICENSED TIP. THESE WORKS FORM PART OF THE CONTRACTED WORKS.
5. CHECK ELECTRONIC SETOUT
CONTRACTOR IS RESPONSIBLE TO ENSURE ANY ELECTRONIC DATA FILES MATCH THE DRAWINGS.
6. PRE START
a. ERECT SITE SIGNAGE. CONSTRUCT ENTRY & EXIT POINT AS INDICATED.
b. CONSTRUCT VEHICLE WASHDOWN AREA & ASSOCIATED SILT MANAGEMENT DEVICES.
c. CONSTRUCT SITE OFFICE & STORAGE COMPOUND AREA.
d. INSTALL EROSION & SEDIMENT CONTROL DEVICES AS PER THE CONTRACTOR'S EROSION & SEDIMENT CONTROL PLAN.
e. ERECT TEMPORARY TREE PROTECTION FENCING IN ACCORDANCE WITH THE APPROVED VEGETATION MANAGEMENT PLAN & AUTHORITIES APPROVAL CONDITIONS (IF REQUIRED).
7. HEALTH & SAFETY
ALL WORKS UNDERTAKEN BY THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE WORKPLACE HEALTH & SAFETY LEGISLATION.
8. STOCKPILING
STOCKPILING OF ANY SURPLUS MATERIAL IS NOT PERMITTED

PROJECT SPECIFIC REPORTS

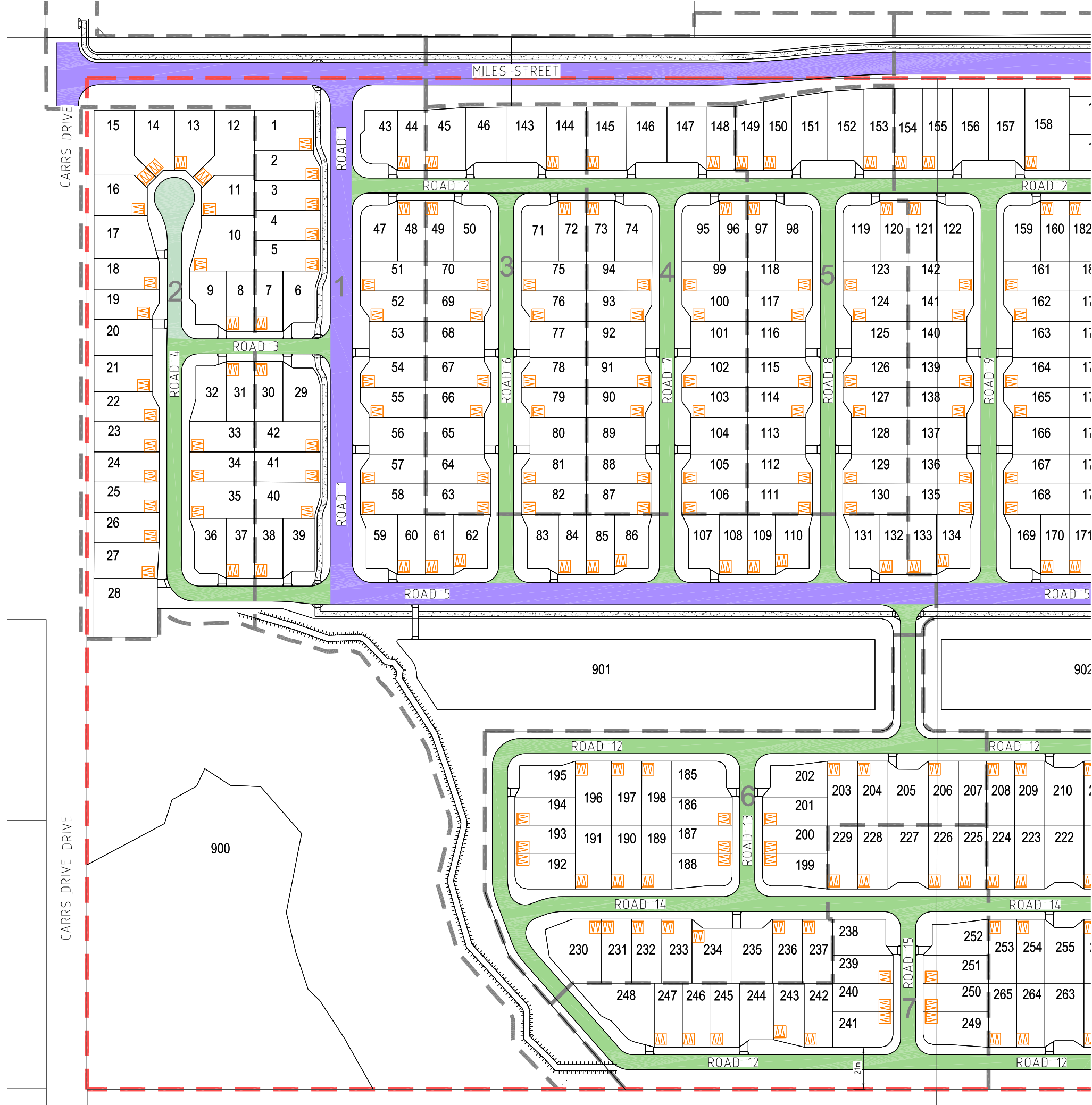
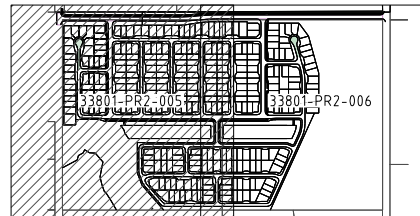
- THE CONTRACTOR MUST FOLLOW THE RECOMMENDATIONS & PROCEDURES OUTLINED IN THE FOLLOWING REPORTS AT ALL TIMES.
- a) GEOTECHNICAL INVESTIGATION REPORTS (INCLUDING ANY ACID SULPHATE OR DISPERSIVE SOIL REPORTING)
b) VEGETATION & FAUNA MANAGEMENT PLANS
c) OTHER MANAGEMENT PLANS NOMINATED IN THE CONTRACT, AUTHORITIES APPROVAL CONDITIONS OR BY THE SUPERINTENDENT.

LEGEND

- ACCESS STREET
(7m CARRIAGEWAY)
- LOCAL STREET
(7.5m CARRIAGEWAY)
- COLLECTOR STREET
WITH DUAL USE PATH
(11m CARRIAGEWAY)
- EXISTING PROPERTY LINE
- EXISTING KERB (INVERT)
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- SITE BOUNDARY
- STAGE BOUNDARY



SHEET LAYOUT



PROJECT NAME

YAMBA GARDENS

PRELIMINARY

RP DESCRIPTION
Lot 46 & 47 on DP751395,
MILES ST, YAMBA NSW 2464
LOCALITY OF CLARENCE VALLEY
LOCAL AUTHORITY - CLARENCE VALLEY COUNCIL

CLIENT

KAHUNA NO. 1 PTY LTD

0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE
TENDER	
COUNCIL	
CONSTRUCTION	

A 28-05-21 ISSUED FOR APPROVAL

PRE DATE AMENDMENT

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ASSOCIATED CONSULTANTS

BIOME
WATER AND ENVIRONMENTAL CONSULTING

DRAWING TITLE

ROAD HIERARCHY, STAGING PLAN & GENERAL NOTES SHEET 01

PRELIMINARY ISSUE

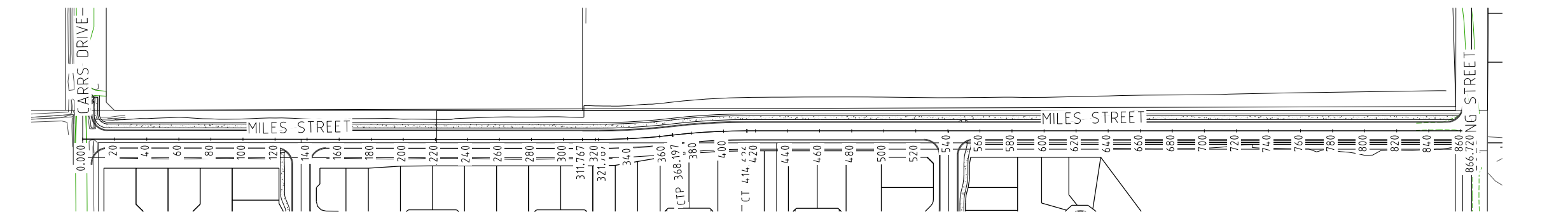
MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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Southport QLD 4215

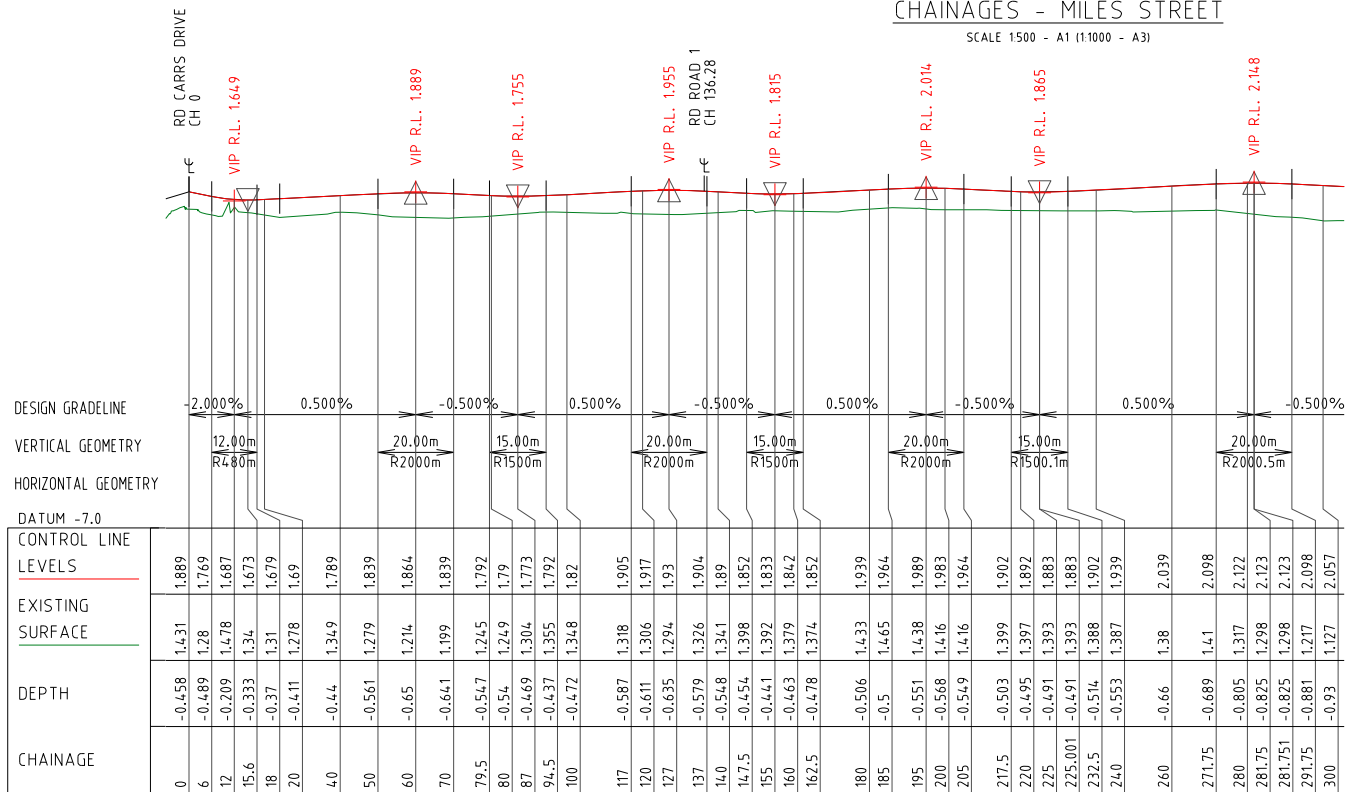
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED PP	DRAWN SF
APPROVED	REQ 4706 DATE 28-05-21
DRAWING NUMBER 33801-PR2-005	AMEND. A



CHAINAGES - MILES STREET

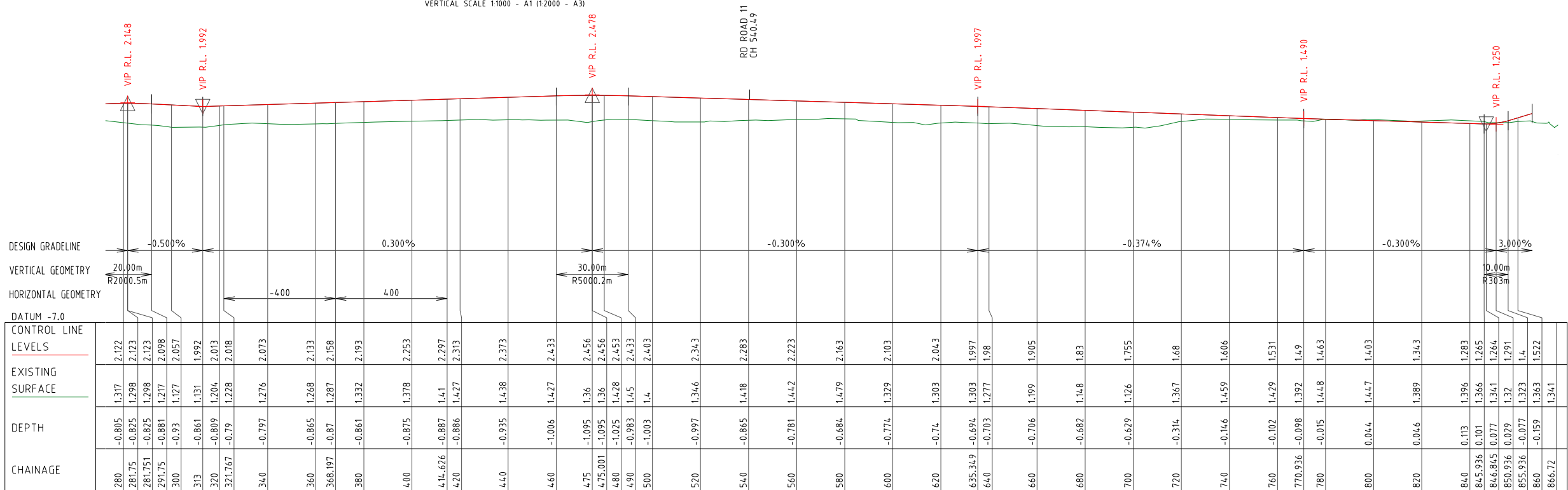
SCALE 1:500 - A1 (1:1000 - A3)



LONGITUDINAL SECTION MILES STREET (CONTINUED)

HORIZONTAL SCALE 1:1000 - A1 (1:2000 - A3)

VERTICAL SCALE 1:1000 - A1 (1:2000 - A3)



LONGITUDINAL SECTION MILES STREET

HORIZONTAL SCALE 1:1000 - A1 (1:2000 - A3)

VERTICAL SCALE 1:1000 - A1 (1:2000 - A3)

PROJECT NAME

YAMBA GARDENS

PRELIMINARY

RP DESCRIPTION

Lot 46 & 47 on DP751395,
MILES ST, YAMBA NSW 2464
LOCALITY OF CLARENCE VALLEY
LOCAL AUTHORITY - CLARENCE VALLEY COUNCIL

CLIENT

**KAHUNA NO. 1
PTY LTD**

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

0 10 20 30 40 50m

Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION	..	

A	28-05-21	COUNCIL ISSUE
PRE DATE		AMENDMENT

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ASSOCIATED CONSULTANTS



DRAWING TITLE

**LONGITUDINAL
SECTION
MILES STREET**



MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED PP	DRAWN SF
APPROVED <i>[Signature]</i>	RPEQ 4706 DATE 28-05-21

DRAWING NUMBER

33801-PR2-052

AMEND.

A

CONSTRUCTION SERVICES

1. CONSTRUCTION OF SEWER/ROOFWATER/STORMWATER/SERVICES EXCAVATED MATERIAL TO BE PLACED ON HIGH SIDE OF TRENCH & TO PROTECT PIPE WORK & DIRECT SURFACE MATERIAL AWAY FROM EXCAVATIONS. TOPSOIL & GRASS SEED AREAS IN ALLOTMENTS IMMEDIATELY AFTER COMPLETING THE SEWER & ROOFWATER DRAINAGE CONSTRUCTION. DEPRESS GROUND AROUND TEMPORARY FIELD INLETS TO CREATE SILT POND.
2. TRIP HAZARD MANHOLES OR STRUCTURES INSTALLED IN THE ROAD, FOOTPATH OR VERGE MUST MATCH NEATLY WITH NO TRIP HAZARD.
3. EXISTING SERVICES - EXTERNAL WORKS THE LOCATIONS OF ALL EXISTING SERVICES WITHIN THE WORK AREA SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION COMMENCING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RELEVANT AUTHORITIES & TO ENSURE THAT THE EXISTING SERVICES ARE NOT DAMAGED OR DISTURBED IN ANY WAY BY THE CONTRACT WORKS.

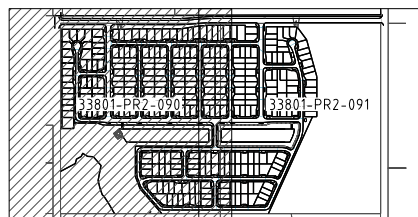
NOTE:

1. PRELIMINARY SERVICE LAYOUTS ARE SUBJECT TO CHANGE DURING DETAILED DESIGN AT CONSTRUCTION CERTIFICATE STAGE.
2. EXTENSION TO SERVICE ADJACENT DEVELOPMENT SITES BY OTHERS.

LEGEND

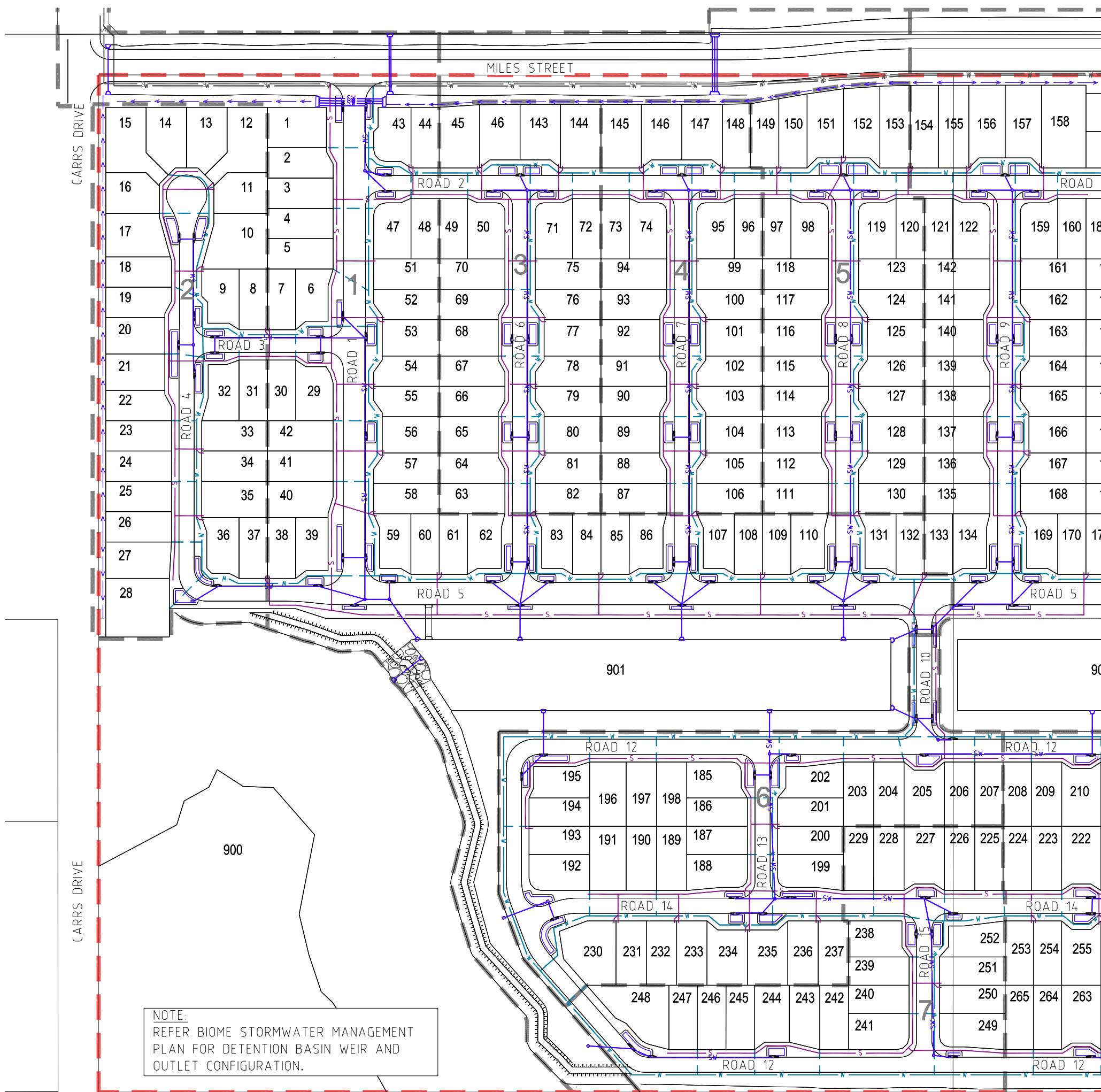
- S — EXISTING SEWER
- SW — EXISTING STORMWATER
- W — EXISTING WATER
- — EXISTING SWALE
- S — PROPOSED SEWER
- SW — PROPOSED STORMWATER
- — PROPOSED SWALE
- W — PROPOSED WATER
- PROPOSED WATER CONDUIT
- - - SITE BOUNDARY
- - - STAGE BOUNDARY

SHEET LAYOUT



NOTE:

REFER BIOME STORMWATER MANAGEMENT PLAN FOR DETENTION BASIN WEIR AND OUTLET CONFIGURATION.



PROJECT NAME
YAMBA GARDENS
PRELIMINARY
RP DESCRIPTION
Lot 46 & 47 on DP751395,
MILES ST, YAMBA NSW 2464
LOCALITY OF CLARENCE VALLEY
LOCAL AUTHORITY - CLARENCE VALLEY COUNCIL

CLIENT
KAHUNA NO. 1 PTY LTD



0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE
TENDER	
COUNCIL	
CONSTRUCTION	

A	28-05-21	ISSUED FOR APPROVAL
PRE DATE		AMENDMENT

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DRAWING TITLE

COMBINED SERVICES PLAN
SHEET 01

PRELIMINARY ISSUE

MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel: 07 55711 1099

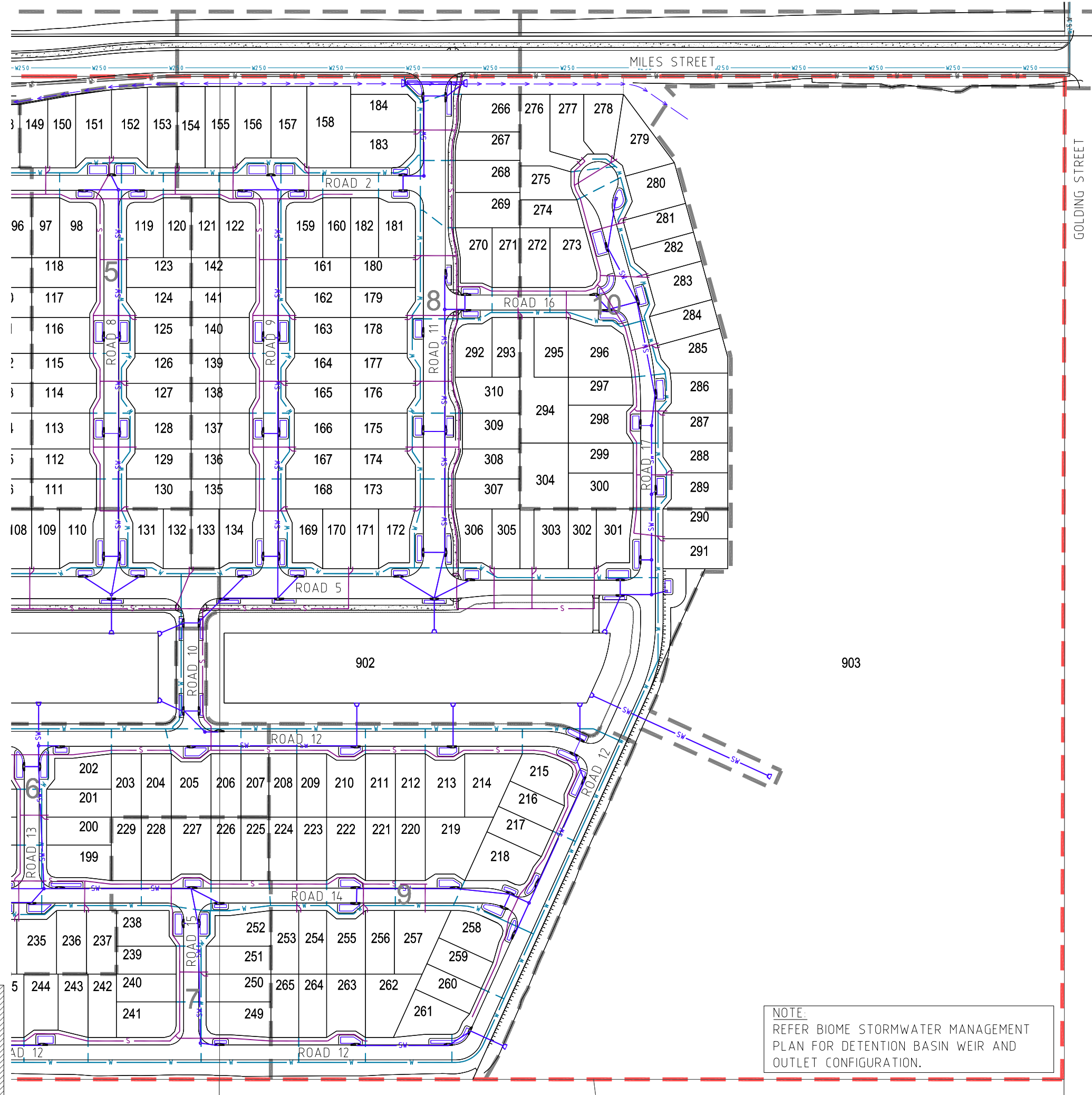
Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED PP	DRAWN SF
APPROVED	REQ 4706 DATE 28-05-21

DRAWING NUMBER
33801-PR2-091

AMEND.
A



PROJECT NAME
YAMBA GARDENS
PRELIMINARY
RP DESCRIPTION
Lot 46 & 47 on DP751395,
MILES ST, YAMBA NSW 2464
LOCALITY OF CLARENCE VALLEY
LOCAL AUTHORITY - CLARENCE VALLEY COUNCIL

CLIENT
KAHUNA NO. 1 PTY LTD



0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE
TENDER	
COUNCIL	
CONSTRUCTION	

A	28-05-21	ISSUED FOR APPROVAL
PRE DATE		AMENDMENT

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DRAWING TITLE

COMBINED SERVICES
PLAN
SHEET 02

PRELIMINARY ISSUE

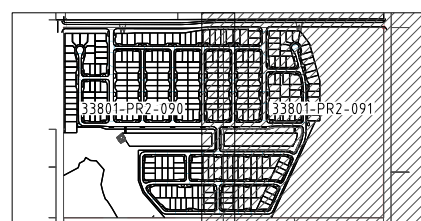


MUS Pty Ltd T/As:
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DESIGNED PP	DRAWN SF
APPROVED [Signature]	REQ 4706 DATE 28-05-21

DRAWING NUMBER
33801-PR2-092
AMEND.
A

SHEET LAYOUT



NOTE:
REFER BIOME STORMWATER MANAGEMENT
PLAN FOR DETENTION BASIN WEIR AND
OUTLET CONFIGURATION.

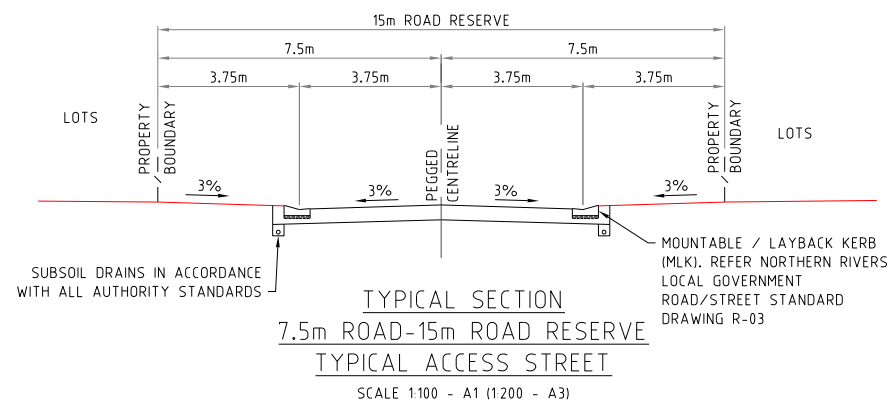
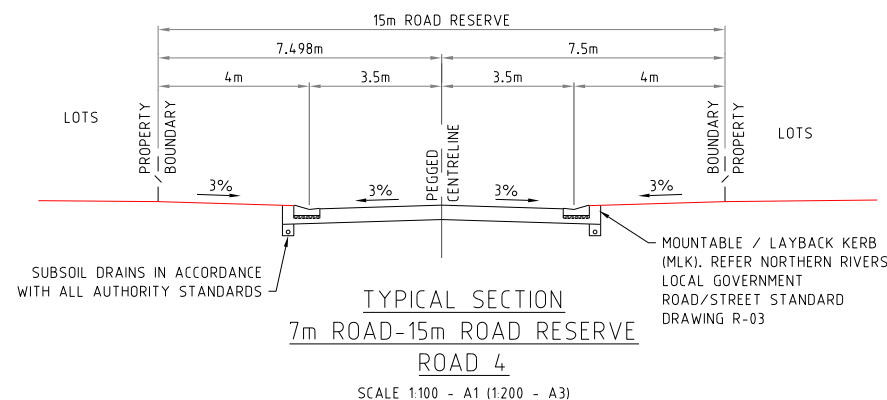
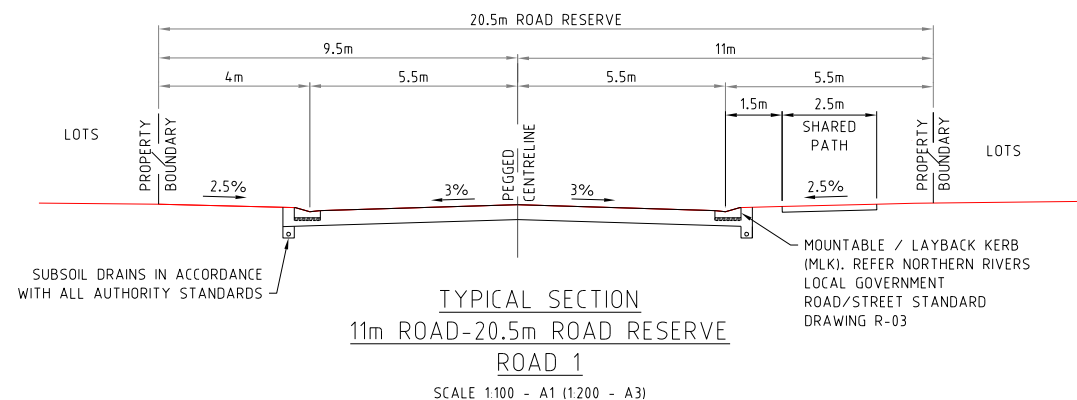
TO AUTHORITY SPECIFICATIONS
(NOT LESS THAN 150mm).
NOTE: CONTRACTORS KERB
RATE TO INCLUDE 75mm
GRAVEL BEDDING.

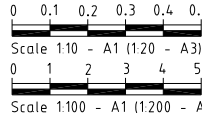
TYPE 2.3
GRAVEL BEDDING

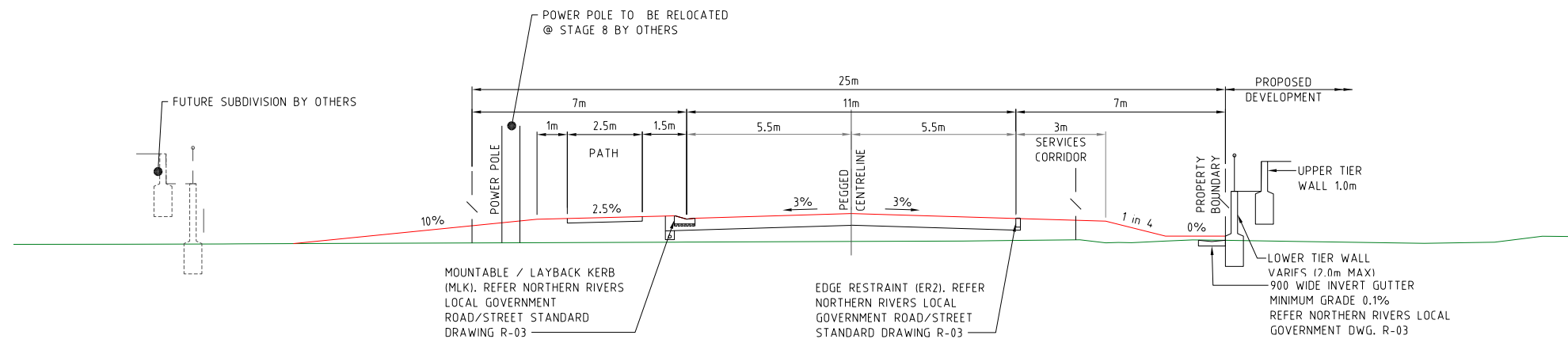
75mm

TYPICAL BEDDING DETAIL

SCALE 1:10 - A1 (1:20 - A3)

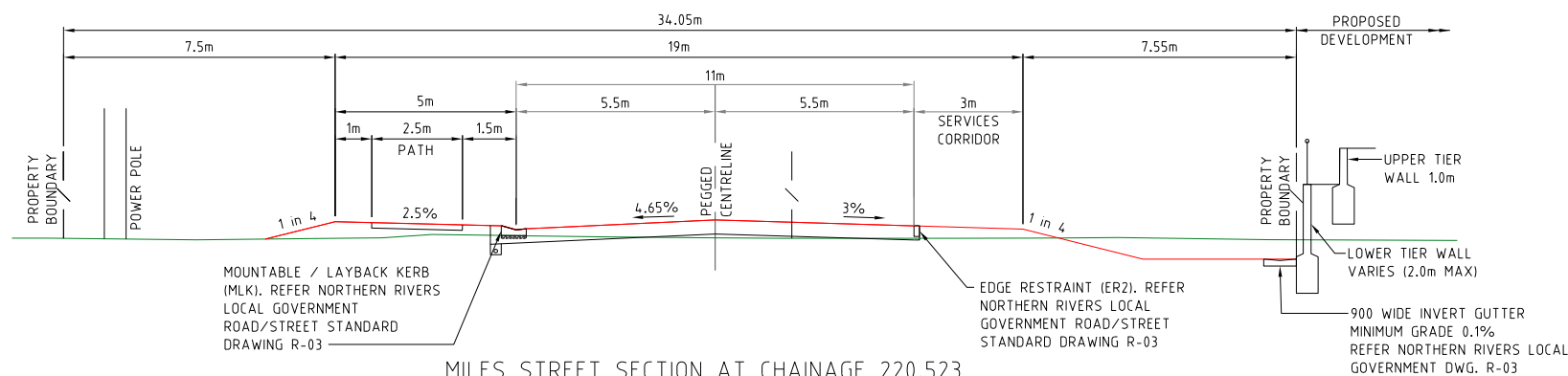


PROJECT NAME YAMBA GARDENS PRELIMINARY RP DESCRIPTION Lot 46 & 47 on DP751395, MILES ST, YAMBA NSW 2464. LOCALITY OF CLARENCE VALLEY LOCAL AUTHORITY - CLARENCE VALLEY COUNCIL		
CLIENT		
KAHUNA NO. 1 PTY LTD		
 0 0.1 0.2 0.3 0.4 0.5m Scale 1:10 - A1 (1:20 - A3) 0 1 2 3 4 5m Scale 1:100 - A1 (1:200 - A3)		
ISSUES	DATE	
TENDER		
COUNCIL	****/****/****	
CONSTRUCTION		
A	28-05-21	ISSUED FOR APPROVAL
PRE	DATE	AMENDMENT
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ASSOCIATED CONSULTANTS		
		
DRAWING TITLE		
ROADWORKS DETAILS SHEET 01		
PRELIMINARY ISSUE		
 MORTONS urbansolutions Urban & Regional Planning Civil Engineering Project Coordination		
MUS Pty Ltd T/A/s Mortons-Urban Solutions ABN 39 116 375 065 mortons@urbansolutions.net.au www.urbansolutions.net.au Tel 07 5571 1099		Postal Address PO Box 2484 Southport QLD 4215 Gold Coast Office Suite 9, 19 Short St Southport QLD 4215
DESIGNED PP	DRAWN SF	
APPROVED 	PEQ 4706	DATE 28-05-21
DRAWING NUMBER		AMEND.
33801-PR2-120		A



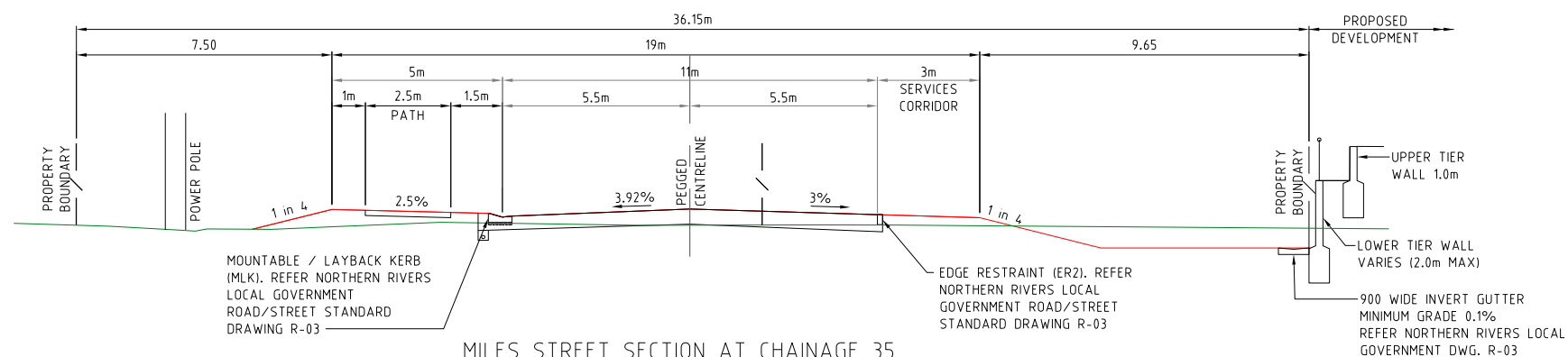
MILES STREET SECTION AT CHAINAGE 437.02

SCALE 1:100 - A1 (1:200 - A3)



MILES STREET SECTION AT CHAINAGE 220.523

SCALE 1:100 - A1 (1:200 - A3)



MILES STREET SECTION AT CHAINAGE 35

SCALE 1:100 - A1 (1:200 - A3)

PROJECT NAME
YAMBA GARDENS
PRELIMINARY
RP DESCRIPTION
Lot 46 & 47 on DP751395,
MILES ST, YAMBA NSW 2464
LOCALITY OF CLARENCE VALLEY
LOCAL AUTHORITY - CLARENCE VALLEY COUNCIL

CLIENT
KAHUNA NO. 1 PTY LTD

0 1 2 3 4 5m
Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER		
COUNCIL	28-05-21	
CONSTRUCTION		

A	28-05-21	ISSUED FOR APPROVAL
PRE	DATE	AMENDMENT

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DRAWING TITLE

ROADWORKS
DETAILS
SHEET 02

PRELIMINARY ISSUE

MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As: Postal Address
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www.urbansolutions.net.au Gold Coast Office
Tel: 07 5571 1099 Suite 9, 19 Short St
Southport QLD 4215

DESIGNED PP	DRAWN SF
APPROVED <i>[Signature]</i>	RPE 4706 DATE 28-05-21

DRAWING NUMBER
33801-PR2-121
AMEND.
A

Appendix B: Traffic Survey Data

Turning Movement Count Summary

Site ID:

1

Location:

Yamba Rd & Carrs Dr, Yamba

Date:

31-May-2018

Surveyed Time:

7:00 AM

to

9:00 AM

Weather:

Fine

Data for hour starting:

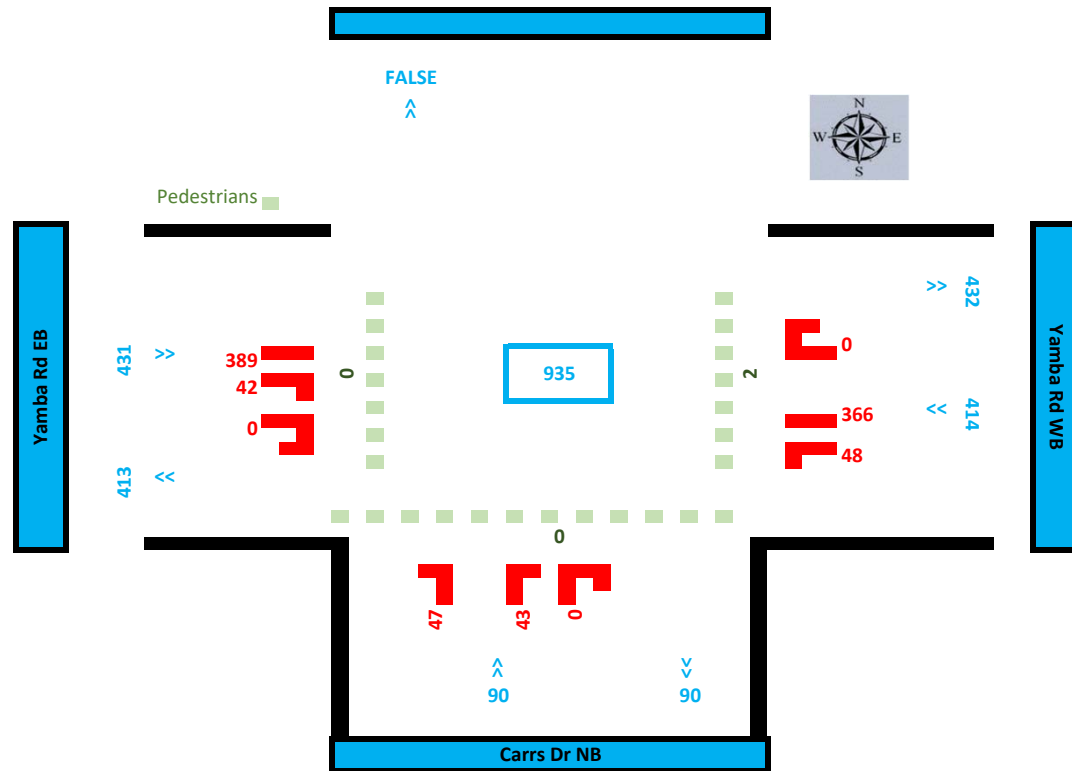
8:00 AM

to

9:00 AM

Vehicle Class:

ALL VEHICLES



Turning Movement Count Summary

Site ID: 1

Location: Yamba Rd & Carrs Dr, Yamba

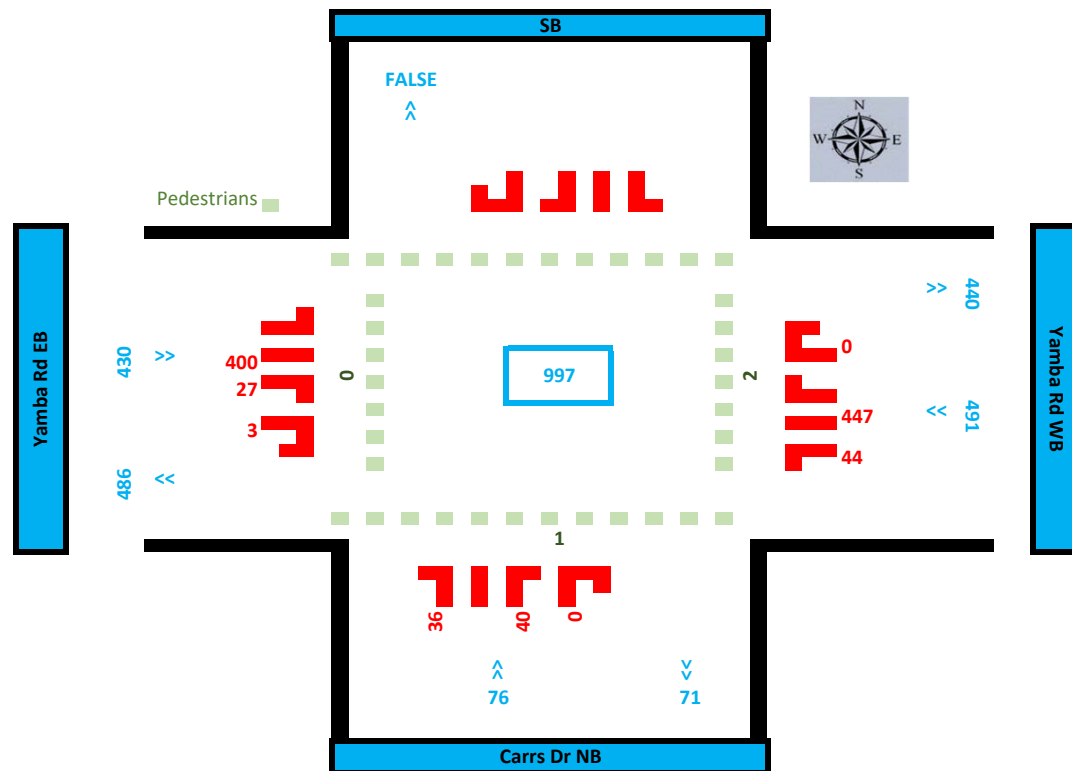
Date: 31-May-2018

Surveyed Time: 3:00 PM to 6:00 PM

Weather: Fine

Data for hour starting: 3:00 PM to 4:00 PM

Vehicle Class: ALL VEHICLES



Appendix C: Design Traffic Volumes

Development Generation Distribution

LOCALITY PLAN

Table 1: Development Yields

Development	Land Use	Yield	Unit
Lots 46-47	Residential	310	Dwellings
Total	-	310	

Table 2: Peak Period Traffic Generation Rates

Land Use	AM Peak	PM Peak	Unit	Source
Residential	0.85	0.85	Trips per dwelling	RMS GTGD(2002)

Table 3: Directional Traffic Distribution

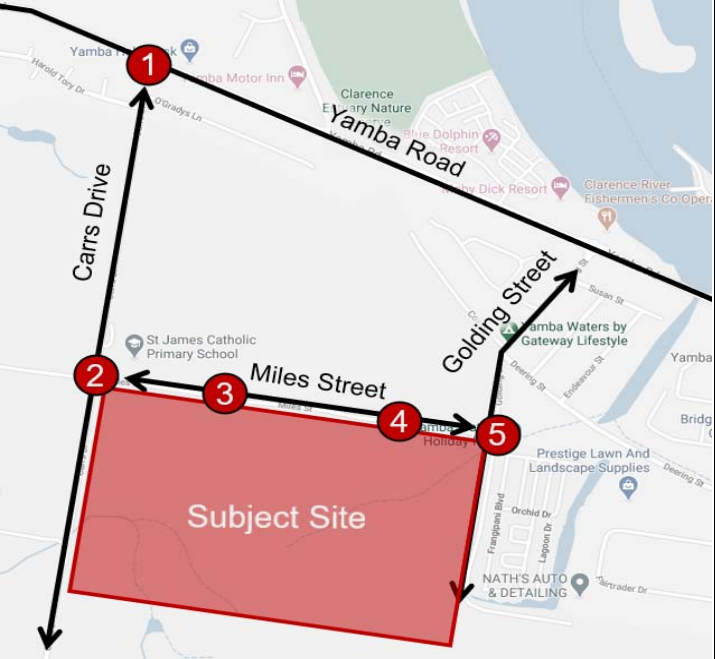
Land Use	AM Peak			PM Peak		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Residential	25%	75%	100%	75%	25%	100%

Table 4: Traffic Generation

Development	Land Use	AM Peak			PM Peak		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Lots 46-47	Residential	66	198	264	198	66	264
Total	-	66	198	264	198	66	264

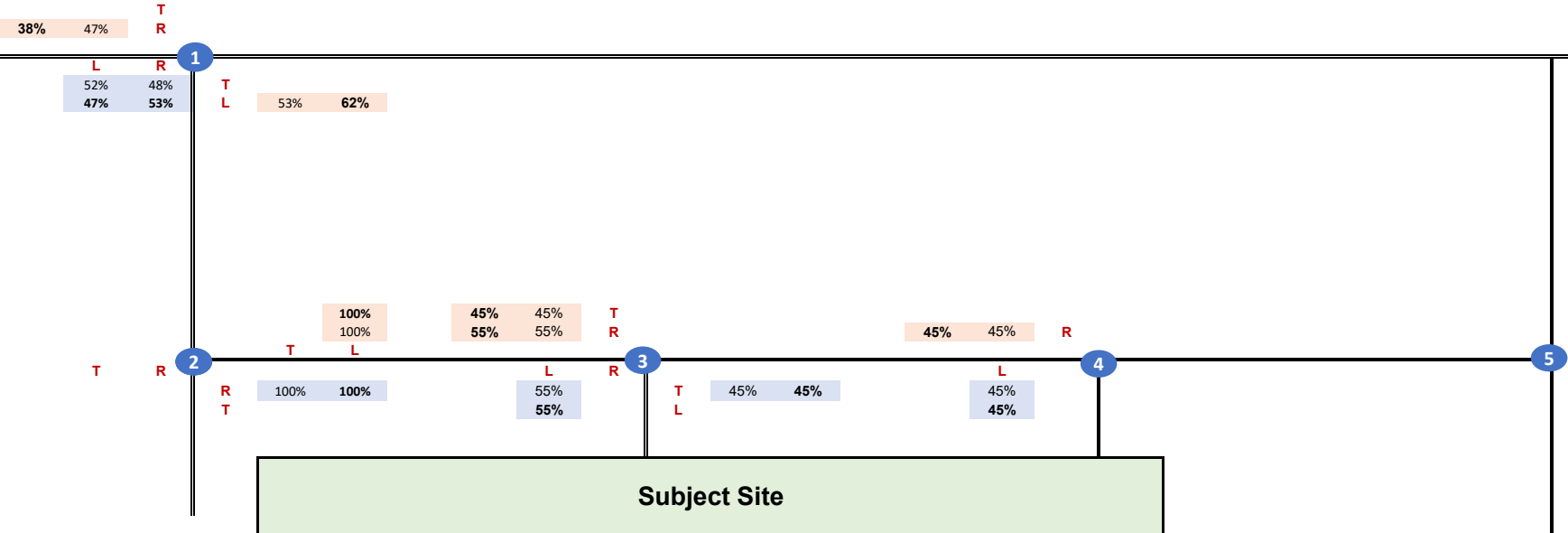
Table 5: Development Timing

Development	Year of Opening	Design Year
Lots 46-47	2030	2040



Carrs Drive Access Traffic Generation (%)

DETAILS



DOCUMENT CONTROL

Job Number:	P4428
Prepared By:	Jaiden Patel
Reviewed By:	Nathan Edwards
Job Name:	Lot 46 47 Miles Street Yamba TIA
Prepared Date:	14/05/2021
Reviewed Date:	14/05/2021
File Path:	\\BITZIOS-FS1.bitzios.local\Projects\IP4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\Traffic Gen\2. Revised TIA\

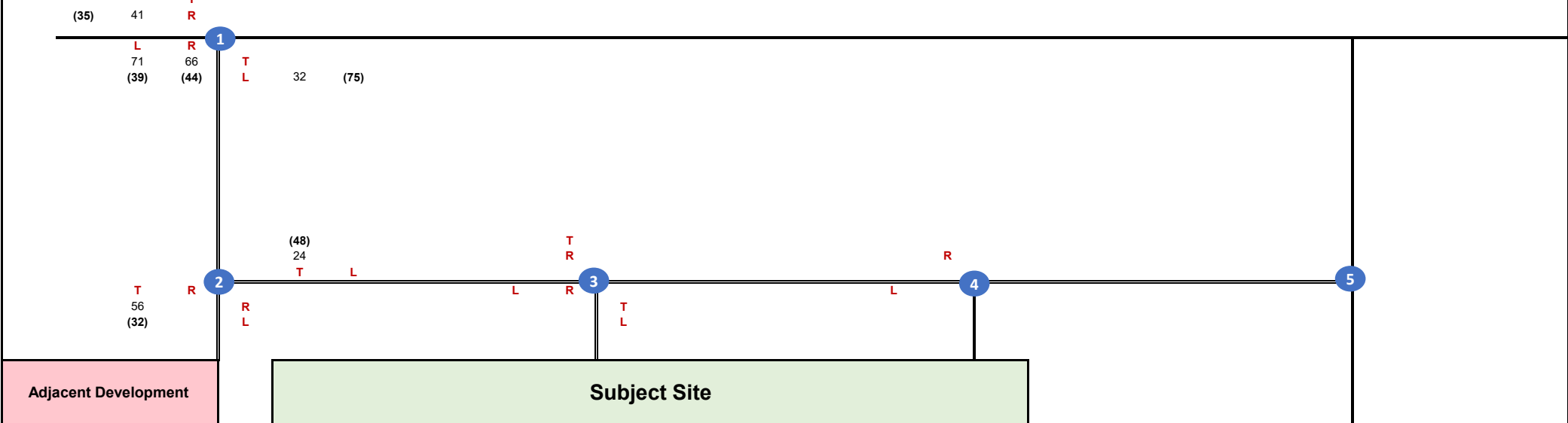
LEGEND

- ## AM Peak Period
- (##) PM Peak Period
- L Left Turn Movement
- T Through Turn Movement
- R Right Turn Movement
- 1 Intersection ID

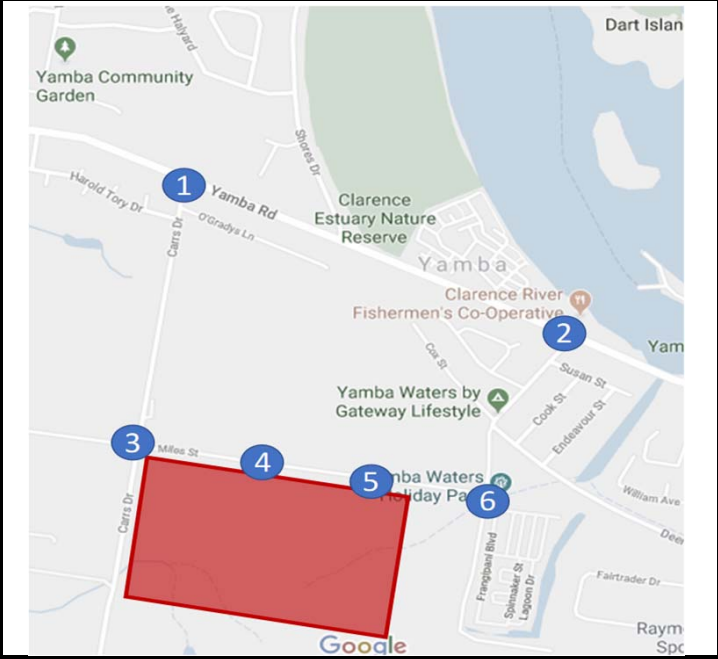


Adjacent Development Traffic Volumes	
	Manufactured Housing Estate, Lot 1 Carrs Drive, Yamba
Northbound	100
Southbound	100
Eastbound	100
Westbound	100

Manufactured Housing Estate - Lot 1 Carrs Drive, Yamba	



LOCALITY PLAN



INTERSECTION VOLUMES

Land Use	AM Peak			PM Peak		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Manufactured Home Estate	73	137	210	110	83	193

DETAILS

	INT #1	INT #2
Date of Traffic Surveys		
Base Year	0	0
Year of Opening	0	0
Design Year	0	0
Road Network Growth	0.0%	0.0%

DOCUMENT CONTROL

Job Number:	P4428
Prepared By:	Jaiden Patel
Reviewed By:	Nathan Edwards
Job Name:	Lot 46 47 Miles Street Yamba TIA
Prepared Date:	14/05/2021
Reviewed Date:	14/05/2021
File Path:	\\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\Traffic Gen\2. Revised TIA\

LEGEND

##	AM Peak Period
(##)	PM Peak Period
L	Left Turn Movement
T	Through Turn Movement
R	Right Turn Movement
1	Intersection ID



BG VOLUMES

[illegible]

Year of Opening (2030)



Design Year (2040)	



LOCALITY PLAN

INTERSECTION VOLUMES	
Intersection	Volume
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
20	100
21	100
22	100
23	100
24	100
25	100
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85	100
86	100
87	100
88	100
89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100

	Survey		2030		2040	
	AM	PM	AM	PM	AM	PM
#1	933	(994)	1156	(1233)	1343	(1432)

DETAILS

	INT #1	INT #2
Date of Traffic Surveys		
Base Year	2018	2018
Year of Opening	2030	2030
Design Year	2040	2040
Road Network Growth	2.0%	2.0%

DOCUMENT CONTROL

Job Number:	P4428
Prepared By:	Jaiden Patel
Reviewed By:	Nathan Edwards
Job Name:	Lot 46 47 Miles Street Yamba TIA
Prepared Date:	14/05/2021
Reviewed Date:	14/05/2021
File Path:	\\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\Traffic Gen\2. Revised TIA\

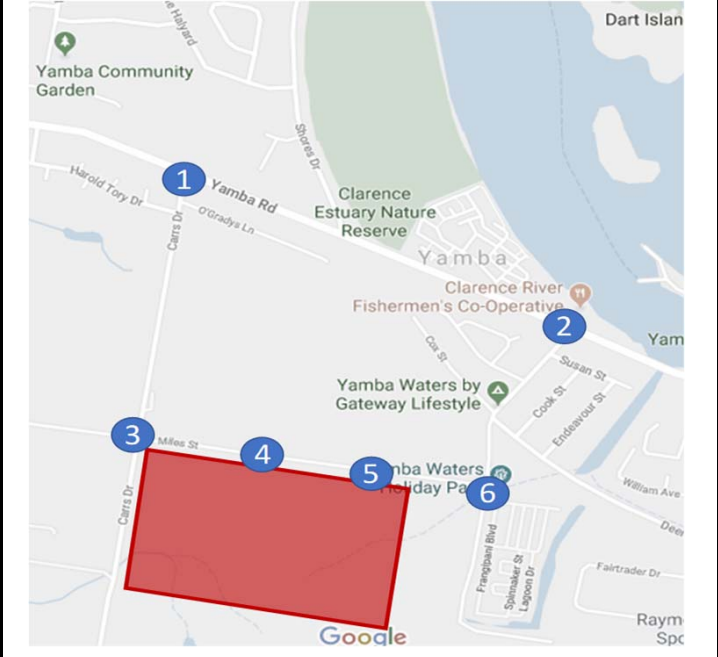
LEGEND

##	AM Peak Period
(##)	PM Peak Period
L	Left Turn Movement
T	Through Turn Movement
R	Right Turn Movement
1	Intersection ID



BACKGROUND + OTHER DEVELOPMENT VOLUMES

LOCALITY PLAN



INTERSECTION VOLUMES

	Survey		2030		2040	
	AM	PM	AM	PM	AM	PM
#1	1143	(1187)	1366	(1426)	1966	(1625)

DETAILS

	INT #1	INT #2
Date of Traffic Surveys		
Base Year	2018	2018
Year of Opening	2030	2030
Design Year	2040	2040
Road Network Growth	2.0%	2.0%

DOCUMENT CONTROL

Job Number:	P4428
Prepared By:	Jaiden Patel
Reviewed By:	Nathan Edwards
Job Name:	Lot 46 47 Miles Street Yamba TIA
Prepared Date:	14/05/2021
Reviewed Date:	14/05/2021
File Path:	\\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\Traffic Gen\2. Revised TIA\

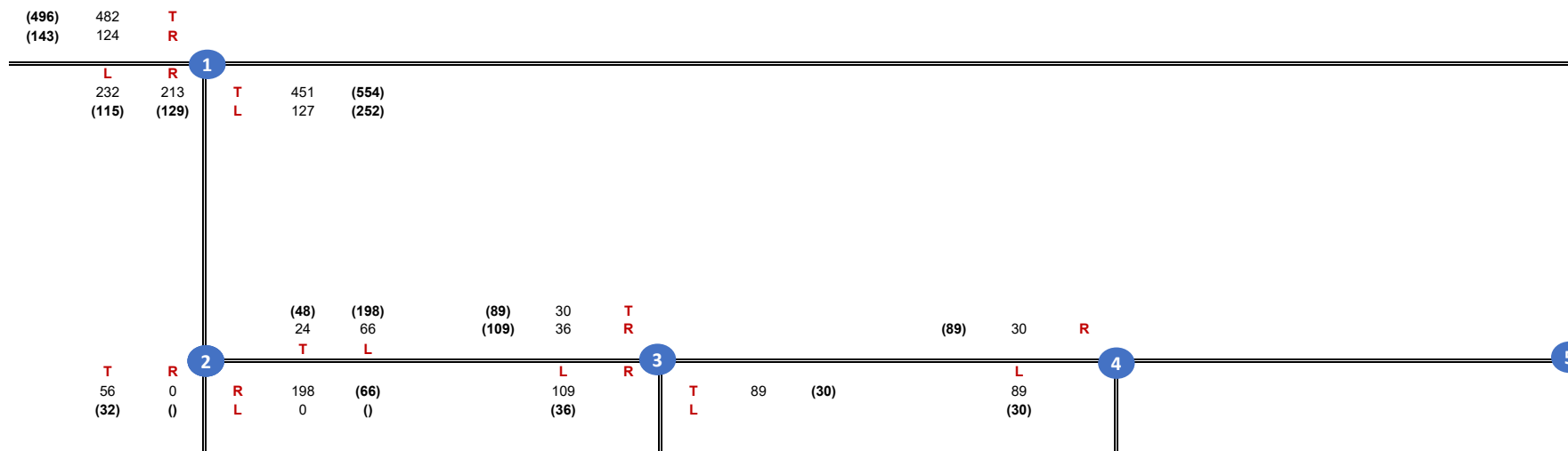
LEGEND

- ## AM Peak Period
- (##) PM Peak Period
- L Left Turn Movement
- T Through Turn Movement
- R Right Turn Movement
- 1 Intersection ID



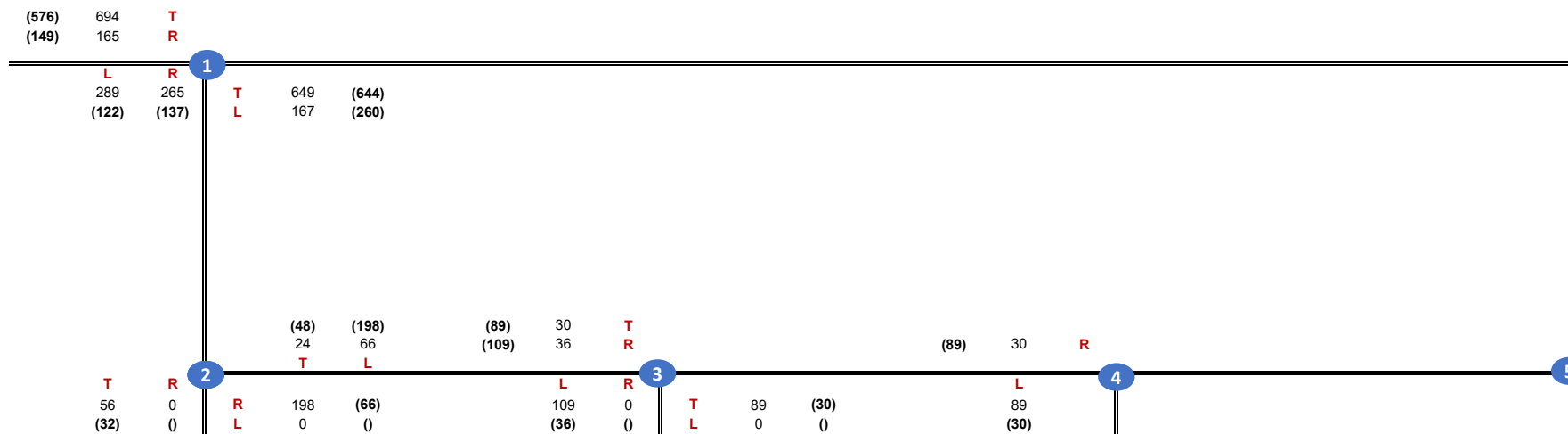
LOCALITY PLAN

LOCALITY PLAN

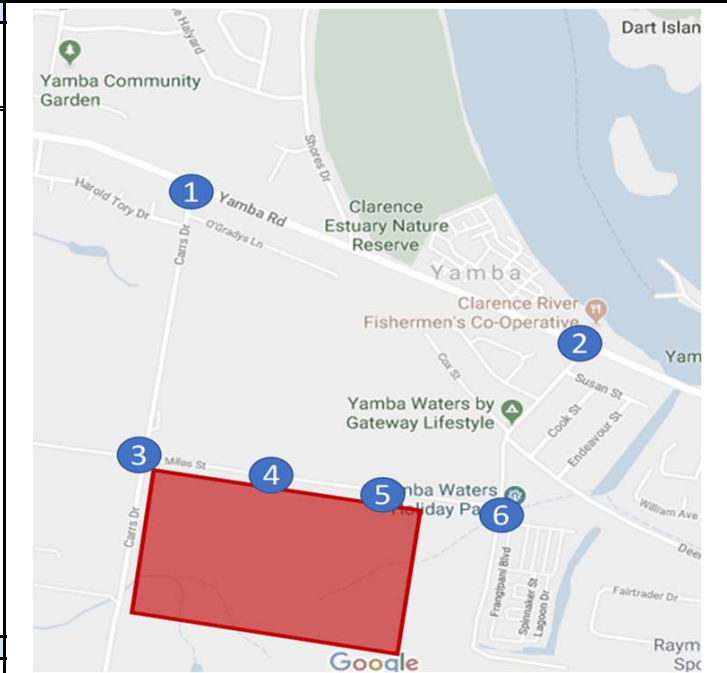


Subject Site

Design Year (2040)



Subject Site



DETAILS

	INT #1	INT #2
Date of Traffic Surveys		
Base Year	2018	2018
Year of Opening	2030	2030

DOCUMENT CONTROL

Job Number:	P4428
Prepared By:	Jaiden Patel
Reviewed By:	Nathan Edwards
Job Name:	Lot 46 47 Miles Street Yamba TIA
Prepared Date:	14/05/2021
Reviewed Date:	14/05/2021
File Path:	\\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\Traffic Gen12_ Revised TIA\

LEGEND

##	AM Peak Period
(##)	PM Peak Period
L	Left Turn Movement
T	Through Turn Movement
R	Right Turn Movement
1	Intersection ID



Appendix D: SIDRA Analysis Outputs

SITE LAYOUT

 **Site: 101 [2018-BG-AM]**

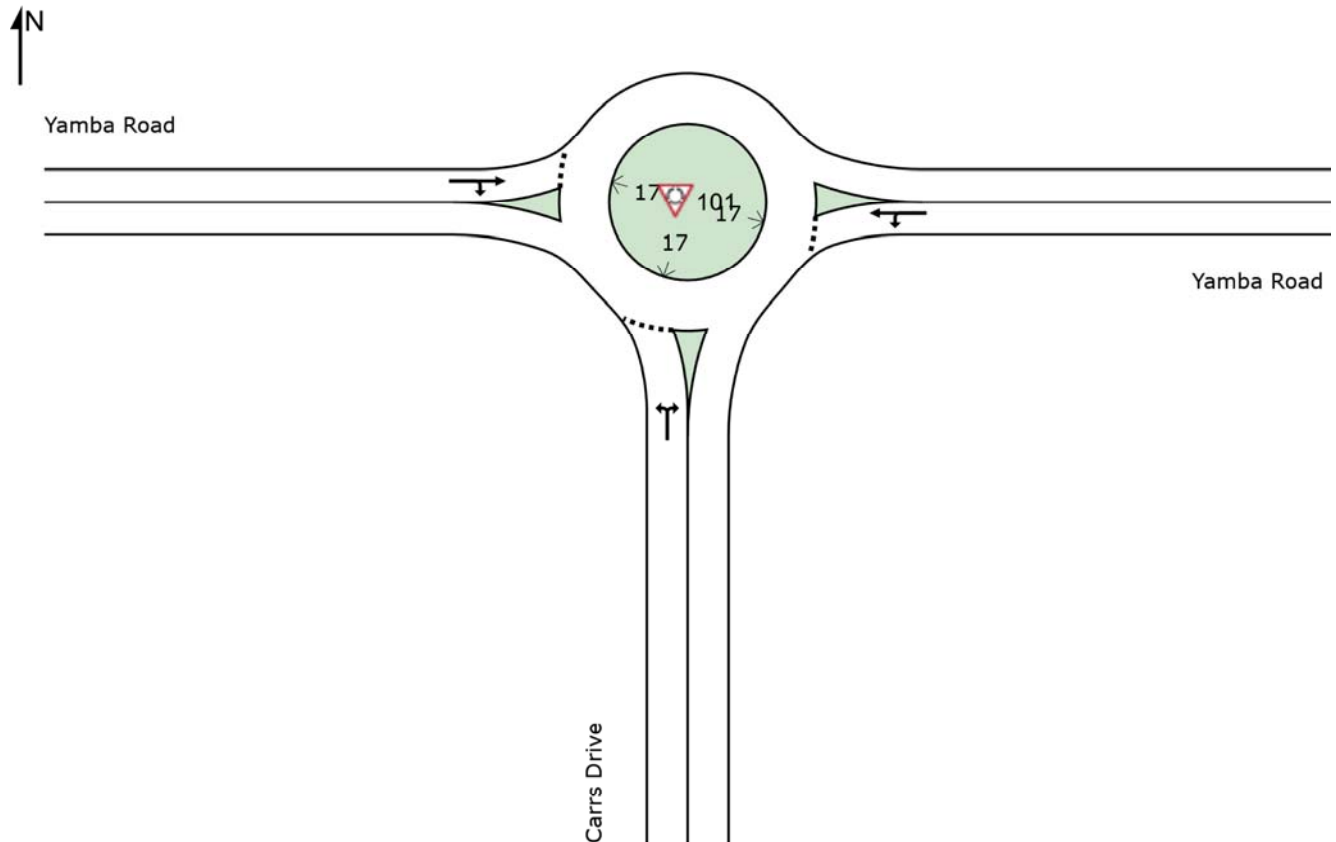
Project Number: P4428

Project Name: Lot 46 47_37 Miles Street Yamba TIA

Prepared by: JP

Site Category: (None)

Roundabout



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Organisation: BITZIOS CONSULTING | Created: Friday, 14 May 2021 1:41:45 PM

Project: \\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\SIDRA\2. Revised TIA\Intersection 1
P4428.001M_Int 1_Yamba Rd_Carrs Dr.sip8

MOVEMENT SUMMARY



Site: 101 [2018-BG-AM]

Project Number: P4428
 Project Name: Lot 46 47_37 Miles Street Yamba TIA
 Prepared by: JP
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Carrs Drive												
1	L2	47	5.0	0.087	5.6	LOS A	0.4	2.7	0.42	0.64	0.42	52.2
3	R2	43	5.0	0.087	9.9	LOS A	0.4	2.7	0.42	0.64	0.42	53.1
Approach		90	5.0	0.087	7.6	LOS A	0.4	2.7	0.42	0.64	0.42	52.6
East: Yamba Road												
4	L2	48	5.0	0.289	4.3	LOS A	1.8	13.1	0.19	0.43	0.19	54.2
5	T1	364	5.0	0.289	4.5	LOS A	1.8	13.1	0.19	0.43	0.19	55.4
Approach		412	5.0	0.289	4.4	LOS A	1.8	13.1	0.19	0.43	0.19	55.2
West: Yamba Road												
11	T1	389	5.0	0.303	4.5	LOS A	2.0	14.9	0.20	0.44	0.20	55.0
12	R2	42	5.0	0.303	8.7	LOS A	2.0	14.9	0.20	0.44	0.20	54.7
Approach		431	5.0	0.303	4.9	LOS A	2.0	14.9	0.20	0.44	0.20	54.9
All Vehicles		933	5.0	0.303	5.0	LOS A	2.0	14.9	0.22	0.46	0.22	54.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 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.
 Roundabout Capacity Model: SIDRA Standard.
 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.

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Project: \\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\SIDRA\2. Revised TIA\Intersection 1
 P4428.001M_Int 1_Yamba Rd_Carrs Dr.sip8

MOVEMENT SUMMARY



Site: 101 [2018-BG-PM]

Project Number: P4428
 Project Name: Lot 46 47_37 Miles Street Yamba TIA
 Prepared by: JP
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Carrs Drive												
1	L2	36	5.0	0.077	5.9	LOS A	0.3	2.5	0.46	0.67	0.46	51.8
3	R2	40	5.0	0.077	10.3	LOS B	0.3	2.5	0.46	0.67	0.46	52.8
Approach		76	5.0	0.077	8.2	LOS A	0.3	2.5	0.46	0.67	0.46	52.3
East: Yamba Road												
4	L2	44	5.0	0.328	4.2	LOS A	2.1	15.6	0.15	0.42	0.15	54.3
5	T1	447	5.0	0.328	4.4	LOS A	2.1	15.6	0.15	0.42	0.15	55.5
Approach		491	5.0	0.328	4.4	LOS A	2.1	15.6	0.15	0.42	0.15	55.4
West: Yamba Road												
11	T1	400	5.0	0.298	4.4	LOS A	2.0	14.8	0.20	0.43	0.20	55.1
12	R2	27	5.0	0.298	8.7	LOS A	2.0	14.8	0.20	0.43	0.20	54.9
Approach		427	5.0	0.298	4.7	LOS A	2.0	14.8	0.20	0.43	0.20	55.1
All Vehicles		994	5.0	0.328	4.8	LOS A	2.1	15.6	0.19	0.45	0.19	55.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 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.
 Roundabout Capacity Model: SIDRA Standard.
 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.

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Project: \\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\SIDRA\2. Revised TIA\Intersection 1
 P4428.001M_Int 1_Yamba Rd_Carrs Dr.sip8

MOVEMENT SUMMARY



Site: 101 [2030-BG-AM]

Project Number: P4428
 Project Name: Lot 46 47_37 Miles Street Yamba TIA
 Prepared by: JP
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Carrs Drive												
1	L2	129	5.0	0.261	6.3	LOS A	1.4	9.9	0.55	0.73	0.55	51.7
3	R2	119	5.0	0.261	10.7	LOS B	1.4	9.9	0.55	0.73	0.55	52.6
Approach		248	5.0	0.261	8.4	LOS A	1.4	9.9	0.55	0.73	0.55	52.1
East: Yamba Road												
4	L2	92	5.0	0.415	4.7	LOS A	3.1	22.9	0.36	0.47	0.36	53.5
5	T1	451	5.0	0.415	4.9	LOS A	3.1	22.9	0.36	0.47	0.36	54.7
Approach		543	5.0	0.415	4.8	LOS A	3.1	22.9	0.36	0.47	0.36	54.4
West: Yamba Road												
11	T1	482	5.0	0.458	5.1	LOS A	3.7	26.8	0.44	0.52	0.44	53.8
12	R2	93	5.0	0.458	9.4	LOS A	3.7	26.8	0.44	0.52	0.44	53.6
Approach		575	5.0	0.458	5.8	LOS A	3.7	26.8	0.44	0.52	0.44	53.8
All Vehicles		1366	5.0	0.458	5.9	LOS A	3.7	26.8	0.43	0.54	0.43	53.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 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.
 Roundabout Capacity Model: SIDRA Standard.
 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.

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Project: \\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\SIDRA\2. Revised TIA\Intersection 1
 P4428.001M_Int 1_Yamba Rd_Carrs Dr.sip8

MOVEMENT SUMMARY

 **Site: 101 [2030-BG-PM]**

Project Number: P4428
Project Name: Lot 46 47_37 Miles Street Yamba TIA
Prepared by: JP
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows 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
South: Carrs Drive												
1	L2	84	5.0	0.201	6.8	LOS A	1.0	7.6	0.58	0.75	0.58	51.2
3	R2	94	5.0	0.201	11.2	LOS B	1.0	7.6	0.58	0.75	0.58	52.1
Approach		178	5.0	0.201	9.1	LOS A	1.0	7.6	0.58	0.75	0.58	51.7
East: Yamba Road												
4	L2	130	5.0	0.494	4.6	LOS A	4.2	30.5	0.33	0.45	0.33	53.6
5	T1	554	5.0	0.494	4.7	LOS A	4.2	30.5	0.33	0.45	0.33	54.8
Approach		684	5.0	0.494	4.7	LOS A	4.2	30.5	0.33	0.45	0.33	54.6
West: Yamba Road												
11	T1	496	5.0	0.433	4.9	LOS A	3.5	25.3	0.38	0.49	0.38	54.2
12	R2	68	5.0	0.433	9.2	LOS A	3.5	25.3	0.38	0.49	0.38	53.9
Approach		564	5.0	0.433	5.4	LOS A	3.5	25.3	0.38	0.49	0.38	54.1
All Vehicles		1426	5.0	0.494	5.5	LOS A	4.2	30.5	0.38	0.50	0.38	54.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.
Roundabout Capacity Model: SIDRA Standard.
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.

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Project: \\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\SIDRA\2. Revised TIA\Intersection 1
P4428.001M_Int 1_Yamba Rd_Carrs Dr.sip8

MOVEMENT SUMMARY

 **Site: 101 [2030-BG+DEV-AM]**

Project Number: P4428
Project Name: Lot 46 47_37 Miles Street Yamba TIA
Prepared by: JP
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows 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
South: Carrs Drive												
1	L2	232	5.0	0.473	7.0	LOS A	3.1	22.6	0.66	0.79	0.68	51.2
3	R2	213	5.0	0.473	11.4	LOS B	3.1	22.6	0.66	0.79	0.68	52.1
Approach		445	5.0	0.473	9.1	LOS A	3.1	22.6	0.66	0.79	0.68	51.6
East: Yamba Road												
4	L2	127	5.0	0.464	5.0	LOS A	3.8	27.9	0.46	0.51	0.46	53.1
5	T1	451	5.0	0.464	5.2	LOS A	3.8	27.9	0.46	0.51	0.46	54.3
Approach		578	5.0	0.464	5.1	LOS A	3.8	27.9	0.46	0.51	0.46	54.0
West: Yamba Road												
11	T1	482	5.0	0.546	6.0	LOS A	4.7	34.2	0.63	0.63	0.63	53.0
12	R2	124	5.0	0.546	10.3	LOS B	4.7	34.2	0.63	0.63	0.63	52.8
Approach		606	5.0	0.546	6.9	LOS A	4.7	34.2	0.63	0.63	0.63	52.9
All Vehicles		1629	5.0	0.546	6.9	LOS A	4.7	34.2	0.58	0.63	0.58	52.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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.
Roundabout Capacity Model: SIDRA Standard.
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.

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Project: \\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\SIDRA\2. Revised TIA\Intersection 1
P4428.001M_Int 1_Yamba Rd_Carrs Dr.sip8

MOVEMENT SUMMARY



Site: 101 [2030-BG+DEV-PM]

Project Number: P4428
 Project Name: Lot 46 47_37 Miles Street Yamba TIA
 Prepared by: JP
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Carrs Drive												
1	L2	115	5.0	0.290	7.0	LOS A	1.7	12.3	0.66	0.79	0.66	51.1
3	R2	129	5.0	0.290	11.3	LOS B	1.7	12.3	0.66	0.79	0.66	52.0
Approach		244	5.0	0.290	9.3	LOS A	1.7	12.3	0.66	0.79	0.66	51.5
East: Yamba Road												
4	L2	252	5.0	0.650	5.5	LOS A	6.7	48.8	0.61	0.56	0.61	52.6
5	T1	554	5.0	0.650	5.7	LOS A	6.7	48.8	0.61	0.56	0.61	53.7
Approach		806	5.0	0.650	5.6	LOS A	6.7	48.8	0.61	0.56	0.61	53.4
West: Yamba Road												
11	T1	496	5.0	0.515	5.3	LOS A	4.5	33.1	0.50	0.55	0.50	53.5
12	R2	143	5.0	0.515	9.5	LOS A	4.5	33.1	0.50	0.55	0.50	53.2
Approach		639	5.0	0.515	6.2	LOS A	4.5	33.1	0.50	0.55	0.50	53.4
All Vehicles		1689	5.0	0.650	6.4	LOS A	6.7	48.8	0.57	0.59	0.57	53.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 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.
 Roundabout Capacity Model: SIDRA Standard.
 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.

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Project: \\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\SIDRA\2. Revised TIA\Intersection 1
 P4428.001M_Int 1_Yamba Rd_Carrs Dr.sip8

MOVEMENT SUMMARY



Site: 101 [2040-BG-AM]

Project Number: P4428
 Project Name: Lot 46 47_37 Miles Street Yamba TIA
 Prepared by: JP
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Carrs Drive												
1	L2	186	5.0	0.466	8.8	LOS A	3.3	24.3	0.79	0.91	0.86	50.0
3	R2	171	5.0	0.466	13.1	LOS B	3.3	24.3	0.79	0.91	0.86	50.8
Approach		357	5.0	0.466	10.9	LOS B	3.3	24.3	0.79	0.91	0.86	50.4
East: Yamba Road												
4	L2	132	5.0	0.629	5.4	LOS A	6.6	48.3	0.60	0.54	0.60	52.5
5	T1	649	5.0	0.629	5.5	LOS A	6.6	48.3	0.60	0.54	0.60	53.7
Approach		781	5.0	0.629	5.5	LOS A	6.6	48.3	0.60	0.54	0.60	53.5
West: Yamba Road												
11	T1	694	5.0	0.702	6.1	LOS A	8.0	58.2	0.74	0.62	0.74	52.7
12	R2	134	5.0	0.702	10.3	LOS B	8.0	58.2	0.74	0.62	0.74	52.5
Approach		828	5.0	0.702	6.8	LOS A	8.0	58.2	0.74	0.62	0.74	52.7
All Vehicles		1966	5.0	0.702	7.0	LOS A	8.0	58.2	0.69	0.64	0.71	52.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 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.
 Roundabout Capacity Model: SIDRA Standard.
 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.

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Project: \\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\SIDRA\2. Revised TIA\Intersection 1
 P4428.001M_Int 1_Yamba Rd_Carrs Dr.sip8

MOVEMENT SUMMARY

 **Site: 101 [2040-BG-PM]**

Project Number: P4428
 Project Name: Lot 46 47_37 Miles Street Yamba TIA
 Prepared by: JP
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Carrs Drive												
1	L2	91	5.0	0.239	7.5	LOS A	1.3	9.6	0.66	0.79	0.66	50.7
3	R2	102	5.0	0.239	11.9	LOS B	1.3	9.6	0.66	0.79	0.66	51.6
Approach		193	5.0	0.239	9.8	LOS A	1.3	9.6	0.66	0.79	0.66	51.2
East: Yamba Road												
4	L2	138	5.0	0.567	4.7	LOS A	5.4	39.7	0.39	0.46	0.39	53.3
5	T1	644	5.0	0.567	4.9	LOS A	5.4	39.7	0.39	0.46	0.39	54.5
Approach		782	5.0	0.567	4.8	LOS A	5.4	39.7	0.39	0.46	0.39	54.3
West: Yamba Road												
11	T1	576	5.0	0.503	5.0	LOS A	4.5	32.5	0.44	0.50	0.44	53.9
12	R2	74	5.0	0.503	9.3	LOS A	4.5	32.5	0.44	0.50	0.44	53.7
Approach		650	5.0	0.503	5.5	LOS A	4.5	32.5	0.44	0.50	0.44	53.9
All Vehicles		1625	5.0	0.567	5.7	LOS A	5.4	39.7	0.44	0.52	0.44	53.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 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.
 Roundabout Capacity Model: SIDRA Standard.
 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: 101 [2040-BG+DEV-AM]

Project Number: P4428
 Project Name: Lot 46 47_37 Miles Street Yamba TIA
 Prepared by: JP
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows 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
South: Carrs Drive												
1	L2	289	5.0	0.747	14.1	LOS B	8.8	64.4	0.97	1.15	1.39	46.6
3	R2	265	5.0	0.747	18.4	LOS B	8.8	64.4	0.97	1.15	1.39	47.4
Approach		554	5.0	0.747	16.2	LOS B	8.8	64.4	0.97	1.15	1.39	47.0
East: Yamba Road												
4	L2	167	5.0	0.693	5.8	LOS A	8.1	59.1	0.75	0.61	0.75	52.0
5	T1	649	5.0	0.693	6.0	LOS A	8.1	59.1	0.75	0.61	0.75	53.1
Approach		816	5.0	0.693	5.9	LOS A	8.1	59.1	0.75	0.61	0.75	52.9
West: Yamba Road												
11	T1	694	5.0	0.828	11.4	LOS B	14.8	108.0	1.00	0.92	1.25	50.1
12	R2	165	5.0	0.828	15.7	LOS B	14.8	108.0	1.00	0.92	1.25	49.9
Approach		859	5.0	0.828	12.2	LOS B	14.8	108.0	1.00	0.92	1.25	50.1
All Vehicles		2229	5.0	0.828	10.9	LOS B	14.8	108.0	0.90	0.86	1.10	50.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 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.
 Roundabout Capacity Model: SIDRA Standard.
 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.

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Project: \\BITZIOS-FS1.bitzios.local\Projects\P4428 Lot 46 47 Miles Street Yamba TIA\Technical Work\SIDRA\2. Revised TIA\Intersection 1
 P4428.001M_Int 1_Yamba Rd_Carrs Dr.sip8

MOVEMENT SUMMARY

 **Site: 101 [2040-BG+DEV-PM]**

Project Number: P4428
 Project Name: Lot 46 47_37 Miles Street Yamba TIA
 Prepared by: JP
 Site Category: (None)
 Roundabout

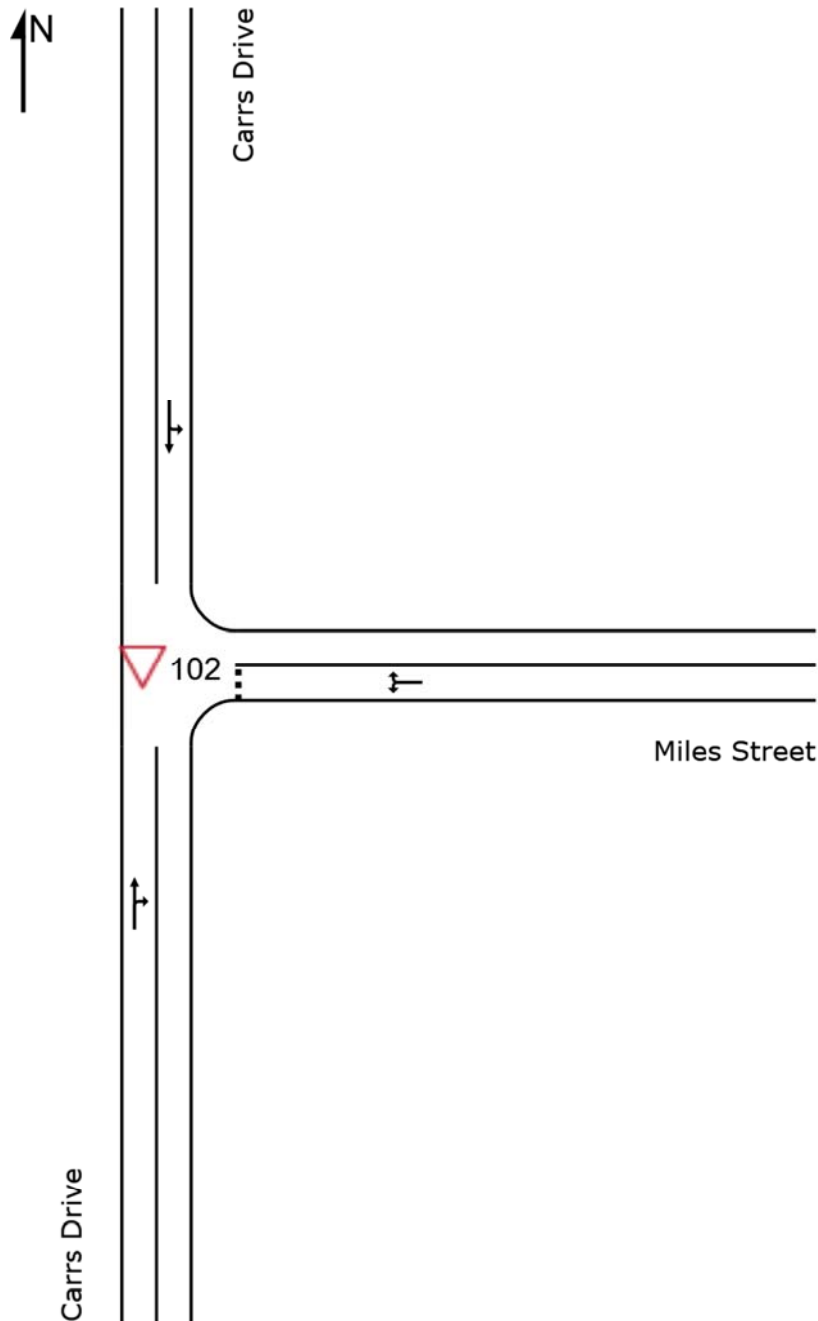
Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Carrs Drive												
1	L2	122	5.0	0.346	7.7	LOS A	2.2	16.0	0.75	0.84	0.75	50.6
3	R2	137	5.0	0.346	12.1	LOS B	2.2	16.0	0.75	0.84	0.75	51.4
Approach		259	5.0	0.346	10.0	LOS B	2.2	16.0	0.75	0.84	0.75	51.0
East: Yamba Road												
4	L2	260	5.0	0.733	5.8	LOS A	8.8	64.1	0.72	0.59	0.72	52.2
5	T1	644	5.0	0.733	6.0	LOS A	8.8	64.1	0.72	0.59	0.72	53.3
Approach		904	5.0	0.733	5.9	LOS A	8.8	64.1	0.72	0.59	0.72	53.0
West: Yamba Road												
11	T1	576	5.0	0.590	5.5	LOS A	5.8	42.5	0.57	0.56	0.57	53.2
12	R2	149	5.0	0.590	9.7	LOS A	5.8	42.5	0.57	0.56	0.57	53.0
Approach		725	5.0	0.590	6.3	LOS A	5.8	42.5	0.57	0.56	0.57	53.2
All Vehicles		1888	5.0	0.733	6.7	LOS A	8.8	64.1	0.67	0.61	0.67	52.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 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.
 Roundabout Capacity Model: SIDRA Standard.
 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: 102 [2030 - BG+DEV AM]

- P4428
- Lot 46 47 Miles Street Yamba TIA
- Prepared by: JP
Site Category: (None)
Giveaway / Yield (Two-Way)



MOVEMENT SUMMARY

▽ Site: 102 [2030 - BG+DEV AM]

- P4428
 - Lot 46 47 Miles Street Yamba TIA
 - Prepared by: JP
 Site Category: (None)
 Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows 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
South: Carrs Drive												
2	T1	56	5.0	0.030	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	59.9
3	R2	1	5.0	0.030	5.8	LOS A	0.0	0.0	0.01	0.01	0.01	53.2
Approach		57	5.0	0.030	0.1	NA	0.0	0.0	0.01	0.01	0.01	59.7
East: Miles Street												
4	L2	1	5.0	0.185	4.7	LOS A	0.7	4.9	0.22	0.55	0.22	49.1
6	R2	208	5.0	0.185	5.1	LOS A	0.7	4.9	0.22	0.55	0.22	48.6
Approach		209	5.0	0.185	5.1	LOS A	0.7	4.9	0.22	0.55	0.22	48.7
North: Carrs Drive												
7	L2	69	5.0	0.052	5.6	LOS A	0.0	0.0	0.00	0.43	0.00	54.6
8	T1	25	5.0	0.052	0.0	LOS A	0.0	0.0	0.00	0.43	0.00	56.2
Approach		95	5.0	0.052	4.1	NA	0.0	0.0	0.00	0.43	0.00	55.0
All Vehicles		361	5.0	0.185	4.1	NA	0.7	4.9	0.13	0.44	0.13	51.7

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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MOVEMENT SUMMARY

▽ Site: 102 [2030 - BG+DEV PM]

- P4428
 - Lot 46 47 Miles Street Yamba TIA
 - Prepared by: JP
 Site Category: (None)
 Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows 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
South: Carrs Drive												
2	T1	32	5.0	0.018	0.0	LOS A	0.0	0.1	0.03	0.02	0.03	59.7
3	R2	1	5.0	0.018	6.4	LOS A	0.0	0.1	0.03	0.02	0.03	53.1
Approach		33	5.0	0.018	0.2	NA	0.0	0.1	0.03	0.02	0.03	59.5
East: Miles Street												
4	L2	1	5.0	0.066	4.8	LOS A	0.2	1.6	0.26	0.57	0.26	49.0
6	R2	69	5.0	0.066	5.3	LOS A	0.2	1.6	0.26	0.57	0.26	48.6
Approach		71	5.0	0.066	5.3	LOS A	0.2	1.6	0.26	0.57	0.26	48.6
North: Carrs Drive												
7	L2	208	5.0	0.143	5.6	LOS A	0.0	0.0	0.00	0.47	0.00	54.2
8	T1	51	5.0	0.143	0.0	LOS A	0.0	0.0	0.00	0.47	0.00	55.9
Approach		259	5.0	0.143	4.5	NA	0.0	0.0	0.00	0.47	0.00	54.6
All Vehicles		362	5.0	0.143	4.3	NA	0.2	1.6	0.05	0.45	0.05	53.7

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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MOVEMENT SUMMARY

▽ Site: 102 [2040 - BG+DEV AM]

- P4428
 - Lot 46 47 Miles Street Yamba TIA
 - Prepared by: JP
 Site Category: (None)
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows 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
South: Carrs Drive												
2	T1	56	5.0	0.030	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	59.9
3	R2	1	5.0	0.030	5.8	LOS A	0.0	0.0	0.01	0.01	0.01	53.2
Approach		57	5.0	0.030	0.1	NA	0.0	0.0	0.01	0.01	0.01	59.7
East: Miles Street												
4	L2	1	5.0	0.185	4.7	LOS A	0.7	4.9	0.22	0.55	0.22	49.1
6	R2	208	5.0	0.185	5.1	LOS A	0.7	4.9	0.22	0.55	0.22	48.6
Approach		209	5.0	0.185	5.1	LOS A	0.7	4.9	0.22	0.55	0.22	48.7
North: Carrs Drive												
7	L2	69	5.0	0.052	5.6	LOS A	0.0	0.0	0.00	0.43	0.00	54.6
8	T1	25	5.0	0.052	0.0	LOS A	0.0	0.0	0.00	0.43	0.00	56.2
Approach		95	5.0	0.052	4.1	NA	0.0	0.0	0.00	0.43	0.00	55.0
All Vehicles		361	5.0	0.185	4.1	NA	0.7	4.9	0.13	0.44	0.13	51.7

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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MOVEMENT SUMMARY

▽ Site: 102 [2040 - BG+DEV PM]

- P4428
 - Lot 46 47 Miles Street Yamba TIA
 - Prepared by: JP
 Site Category: (None)
 Giveaway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows 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
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3	R2	1	5.0	0.018	6.4	LOS A	0.0	0.1	0.03	0.02	0.03	53.1
Approach		33	5.0	0.018	0.2	NA	0.0	0.1	0.03	0.02	0.03	59.5
East: Miles Street												
4	L2	1	5.0	0.066	4.8	LOS A	0.2	1.6	0.26	0.57	0.26	49.0
6	R2	69	5.0	0.066	5.3	LOS A	0.2	1.6	0.26	0.57	0.26	48.6
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North: Carrs Drive												
7	L2	208	5.0	0.143	5.6	LOS A	0.0	0.0	0.00	0.47	0.00	54.2
8	T1	51	5.0	0.143	0.0	LOS A	0.0	0.0	0.00	0.47	0.00	55.9
Approach		259	5.0	0.143	4.5	NA	0.0	0.0	0.00	0.47	0.00	54.6
All Vehicles		362	5.0	0.143	4.3	NA	0.2	1.6	0.05	0.45	0.05	53.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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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.

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