

Proposed Expansion of Child Care Facility

Kindy Patch Emma's 61A Narang St, East Maitland Traffic Impact Study

Prepared by

Northern Transport Planning and Engineering Pty Ltd

A.B.N. 79 056 088 629

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TABLE OF CONTENTS

Contents

1. INTRODUCTION.....	2
2. SITE LAYOUT – EXISTING CHILD CARE FACILITY	2
3. PARKING SURVEY – EXISTING CHILD CARE	4
4. AUSTRALIAN STANDARDS - OFF-STREET PARKING	5
5. PARKING REQUIREMENTS.....	6
6. TURNING PATHS	7
7. INTERSECTION COUNT – NERANG ST / CHILD CARE ACCESS DRIVEWAY	15
8. RECOMMENDATION	17

1. INTRODUCTION

This report provides a parking and traffic impact assessment of the existing Child Care Facility at 61A Narang St, East Maitland NSW, as well as its proposed development.

The facility is seeking approval to expand the facility by increasing the number of children enrolled from 61 to 124. This report reviews the proposed parking provisions for the proposed expanded facility against the parking and traffic requirements set by Maitland City Council.

Compliance with Australian Design standards are also assessed.

2. SITE LAYOUT – EXISTING CHILD CARE FACILITY

An aerial photograph of the existing child care facility is shown in Figure 2-1 below:



Figure 2-1: Existing Child Care Centre – 61A Narang St, East Maitland.

An extension is proposed over the existing parking area as shown below in Figure 2-2:



Figure 2-2: Floor plan of proposed extension (highlighted in yellow) above existing parking spaces.

Discussion

Table 2-1 summarises the key information for the expansion of the childcare facility.

Table 2-1: Key information on the expansion of the childcare centre

	Floor Area (m ²)	Enrolments	Parking Bays
Existing Childcare	668	61	14
Proposed Childcare	988	124	30

As shown in table 2-1, the existing facility has a floor area of 668m² and provides access to 14 parking spaces including 1 disability parking space. There are 61 children currently enrolled.

The proposed childcare facility seeks to cater for an increase in enrolments to 124 children. This is proposed by increasing the floor area by 320m² to 988m² total and likewise increasing the parking spaces by 16 to a total of 30 spaces.

3. PARKING SURVEY – EXISTING CHILD CARE

The results of a parking survey carried out on Wednesday 1st February are shown in Table 3-1 below:

Table 3-1: Kindy Patch Emma’s - Parking Accumulation on 1st February 2023
(Peak times are shaded in blue)

Kindy Patch Emma’s

Parking Accumulation on Wednesday 1st February 2023

Interval	IN	OUT	Accumulation	Surplus
6:30	0	0	1	13
6:45	4	1	4	10
7:00	3	2	5	9
7:15	3	4	4	10
7:30	3	2	5	9
7:45	7	4	8	6
8:00	2	3	7	7
8:15	6	7	6	8
8:30	3	2	7	7
8:45	2	3	6	8
9:00	2	2	6	8
9:15	1	0	7	7
9:30	0	2	5	9

Interval	IN	OUT	Accumulation	Surplus
14:00	0	1	6	8
14:15	0	0	6	8
14:30	0	0	6	8
14:45	1	0	7	7
15:00	3	1	9	5
15:15	1	1	9	5
15:30	1	3	7	7
15:45	1	1	7	7
16:00	5	5	7	7
16:15	5	4	8	6
16:30	7	7	8	6
16:45	3	4	7	7
17:00	5	5	7	7
17:15	1	6	2	12
17:30	1	1	2	12
17:45	0	0	2	12
18:00	0	2	0	14

Discussion

The existing peak parking demand was 9 spaces in the PM Peak between 15:00 and 15:30 which still left a surplus of 5 spaces. This equated to an effective parking demand ratio of 1 space per 6.78 children, a figure which will be referred to later in this report. There was also a surplus of 6 parking spaces available during the AM Peak between 7:30 and 8:30.

This parking rate has in-part been achieved by up to 8 staff members parking on the street.

Two enrolled children (3% of the total) were also observed being dropped off and collected by their parent or guardian on foot.

4. AUSTRALIAN STANDARDS - OFF-STREET PARKING

The User Classification defined for different types of Off-Street parking activity are detailed in Table 1.1 of AS/NZS 2890.1:2004 as reproduced in Table 4-1 below:

Table 4-1: User Classification for Parking Activities

TABLE 1.1

CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES

User class	Required door opening	Required aisle width	Examples of uses (Note 1)
1	Front door, first stop	Minimum for single manoeuvre entry and exit	Employee and commuter parking (generally, all-day parking)
1A	Front door, first stop	Three-point turn entry and exit into 90° parking spaces only, otherwise as for User Class 1	Residential, domestic and employee parking
2	Full opening, all doors	Minimum for single manoeuvre entry and exit	Long-term city and town centre parking, sports facilities, entertainment centres, hotels, motels, airport visitors (generally medium-term parking)
3	Full opening, all doors	Minimum for single manoeuvre entry and exit	Short-term city and town centre parking, parking stations, hospital and medical centres
3A	Full opening, all doors	Additional allowance above minimum single manoeuvre width to facilitate entry and exit	Short term, high turnover parking at shopping centres
4	Size requirements are specified in AS/NZS 2890.6 (Note 2)		Parking for people with disabilities

These user classes are then used to select the required parking layouts that are presented in the extract from AS/ANZ 2890.1:2004 Figure 2.2 Layout for Angle Parking Spaces attached as Appendix A to this report.

Discussion

It is considered that the parking requirements for the parents using the Child Care parking area would be User Class 2. Staff parking could be defined as Class 1A.

Accordingly based on these User Classes and the details provided in Appendix A the parking bay layout requirements for 90 degree angle parking at the site would be:

Parent Parking Bays	2.5m x 5.4m	5.8m aisle
Staff Parking Bays	2.4m x 5.4m	5.8m aisle

The existing parking area complies with the requirements set out in AS/ANZ 2890.1: 2004.

5. PARKING REQUIREMENTS

The proposed parking arrangement for the expanded facility will provide a total of 30 parking spaces as shown below in Figure 5-1:

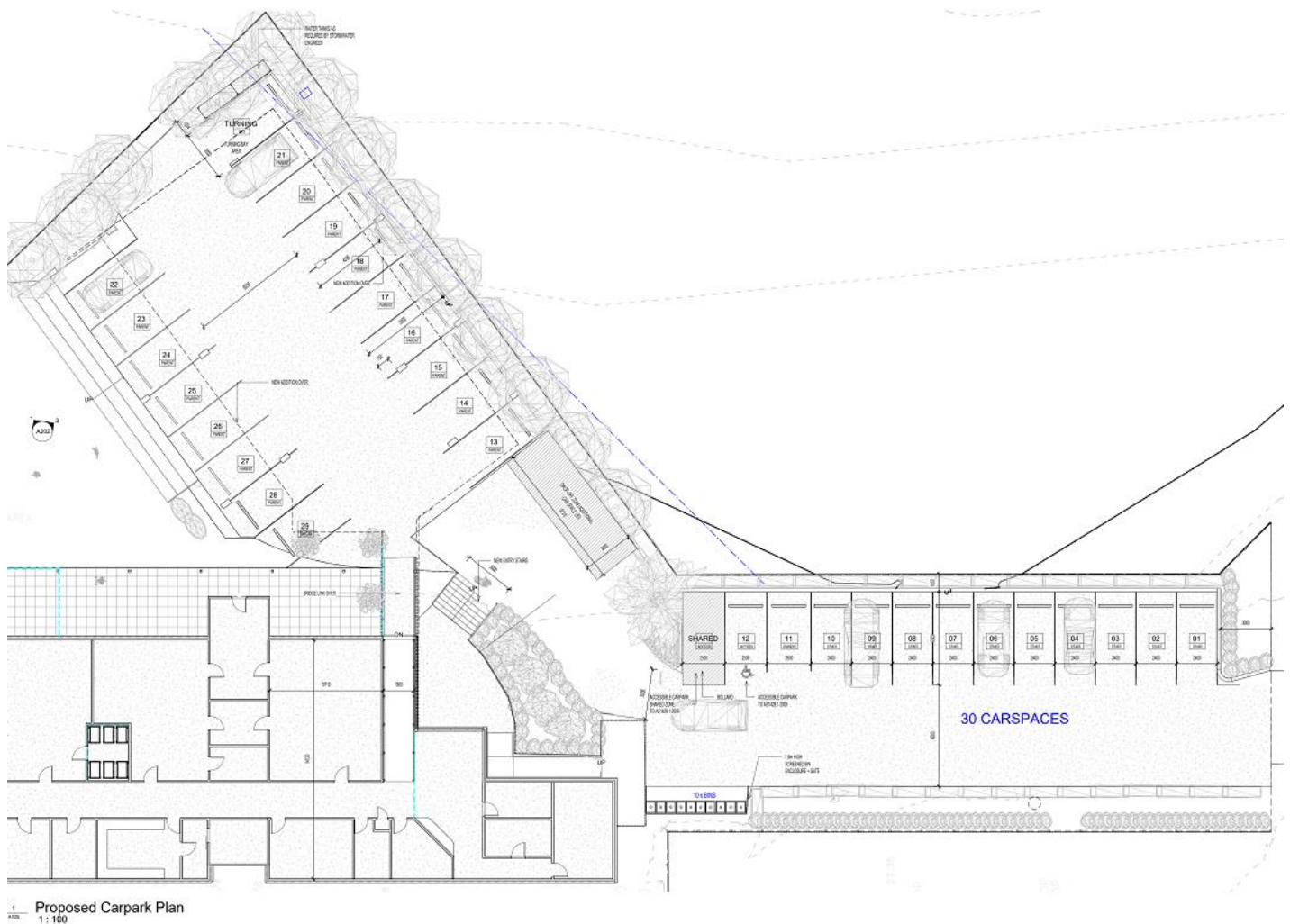


Figure 5-1: Proposed parking arrangement, with 30 total parking spaces.

The parking arrangement provides 11 staff parking spaces and 19 parent and guardian spaces (including 1 small car space), mostly in the undercover parking area closer to the access of the facility.

Maitland City Council Development Control Plan 2011 – Part C sets out parking requirements for childcare centres as detailed below in Table 5-1:

Table 5-1: Maitland City Council parking requirements for Childcare Centres

Land Use Component	Car Parking	Disabled Parking
Childcare Centre (Children)	1 space per 4 children	1 space if total parking spaces is between 10 and 100

Discussion

Based on Council’s parking requirements the proposed Child Care Facility will require the following:

$$124 \text{ children at } 1 \text{ parking space per } 4 \text{ children} = 31 \text{ parking spaces}$$

The proposed carpark includes 30 off-street parking spaces. This leaves a technical deficiency of 1 parking space by council’s standards.

However, applying the parking ratio of 1 parking space per 6.78 children observed the carpark can expect to have a peak parking demand of 19 spaces.

Therefore, it is expected that the proposed carpark will have an effective surplus of 11 parking spaces if the same proportion of staff members continue to park on-street.

6. TURNING PATHS

Critical vehicle turning paths for the parking bays provided are shown below in Figures 6-1 to 6-9:

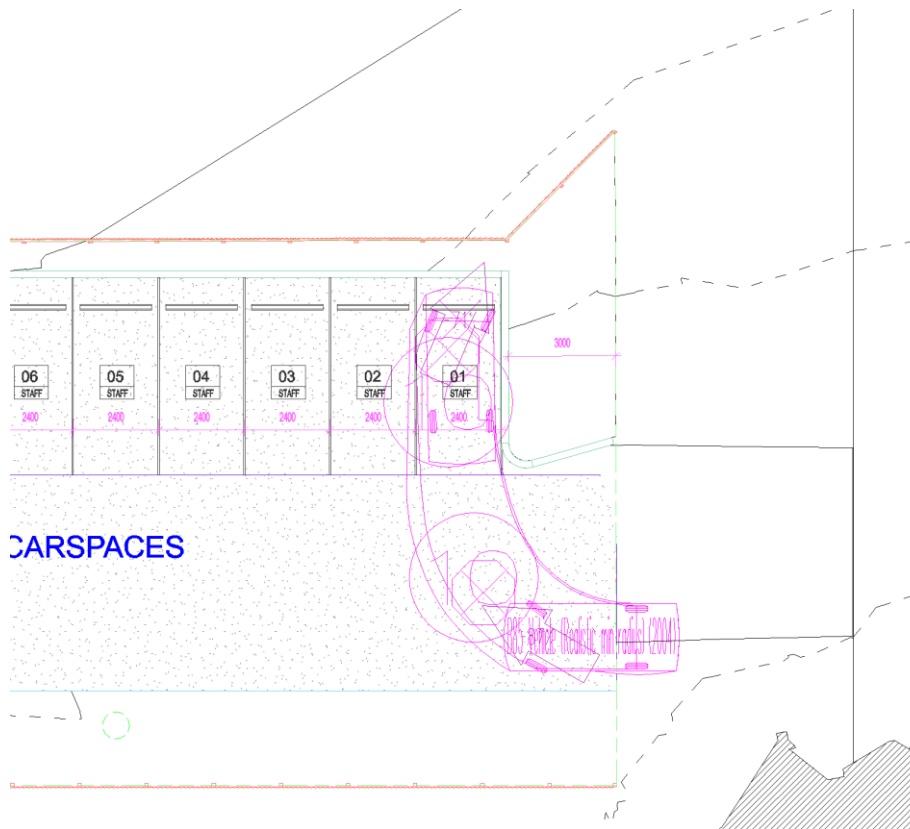


Figure 6-1: Parking Space ‘01’ Forward IN

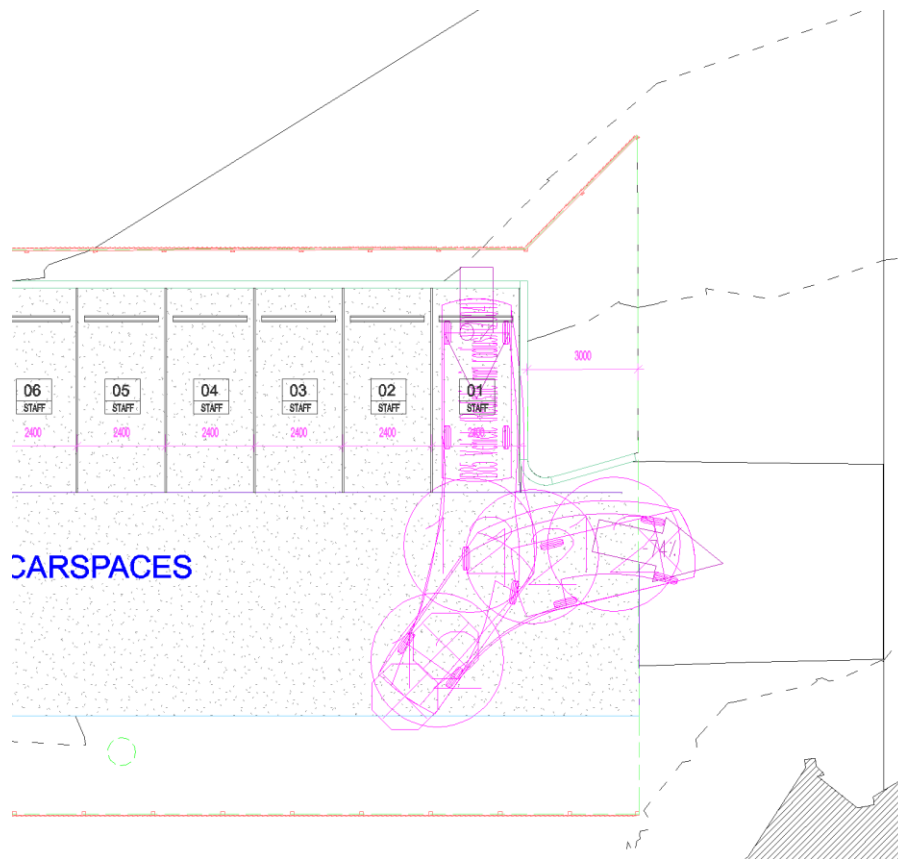


Figure 6-2: Parking Space '01' Reverse OUT

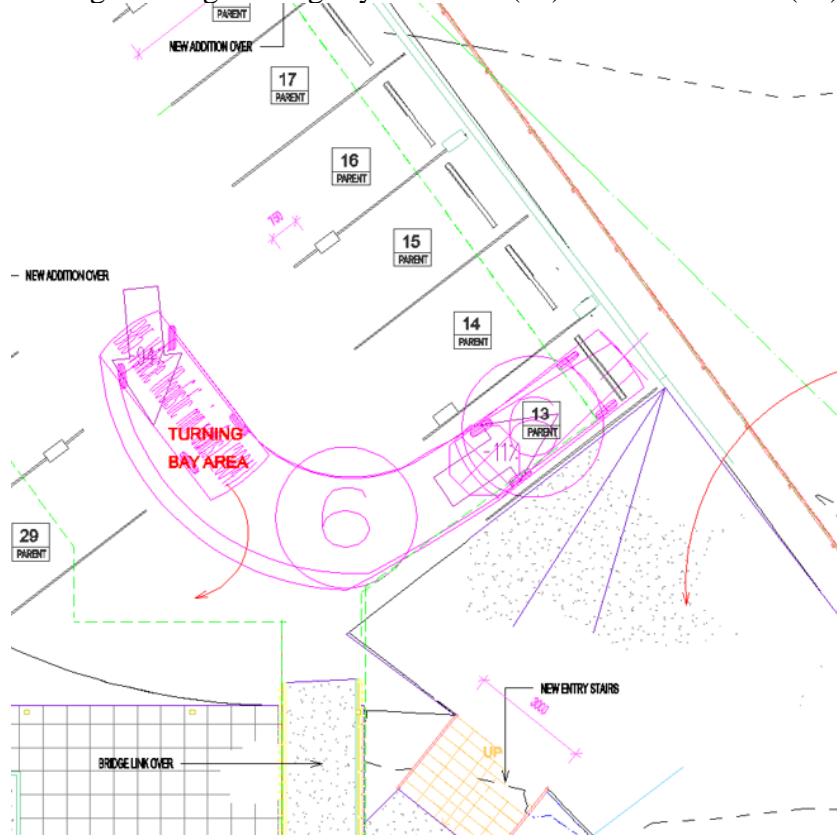


Figure 6-3: Parking Space '13' Reverse IN



Figure 6-4: Parking Space '13' Forward OUT

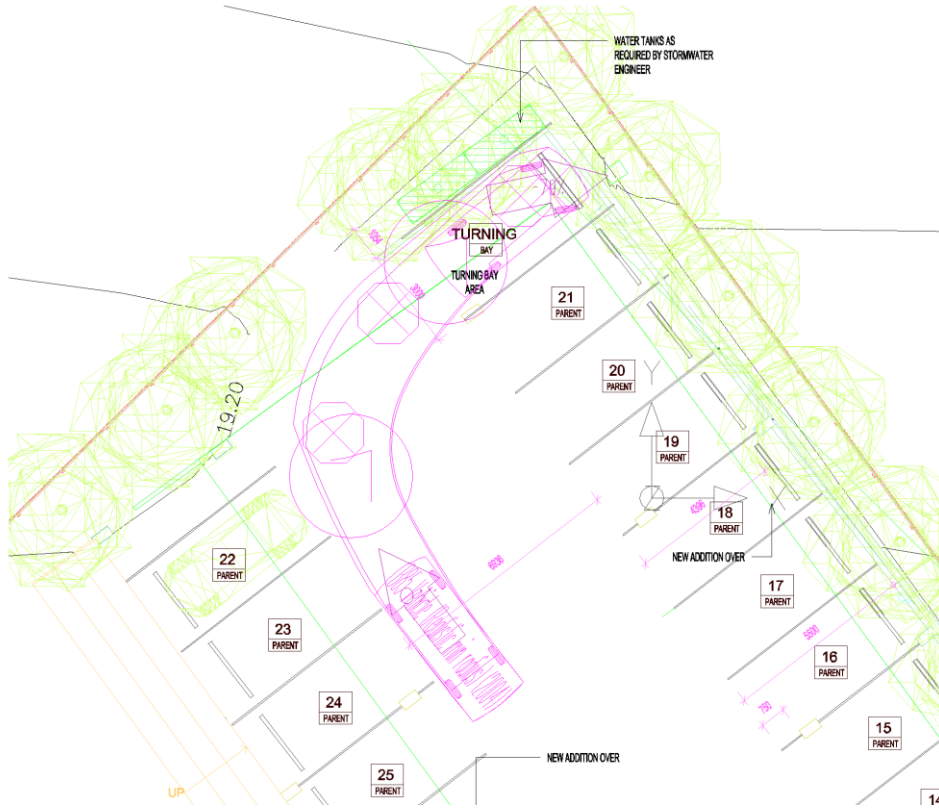


Figure 6-5: Turning Bay Forward IN

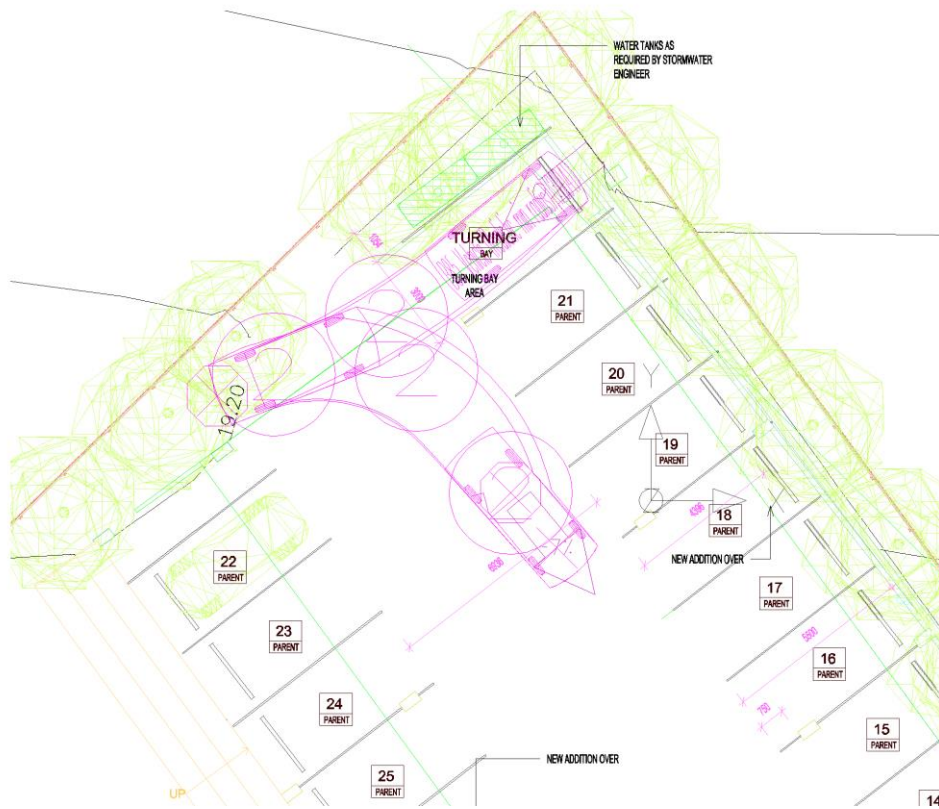


Figure 6-6: Turning Bay Reverse OUT

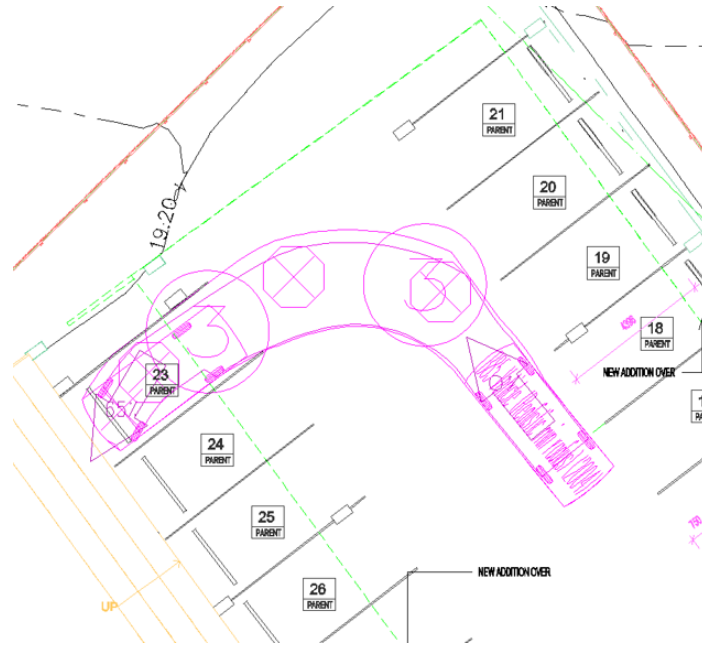


Figure 6-7: Parking Space '23' Forward IN

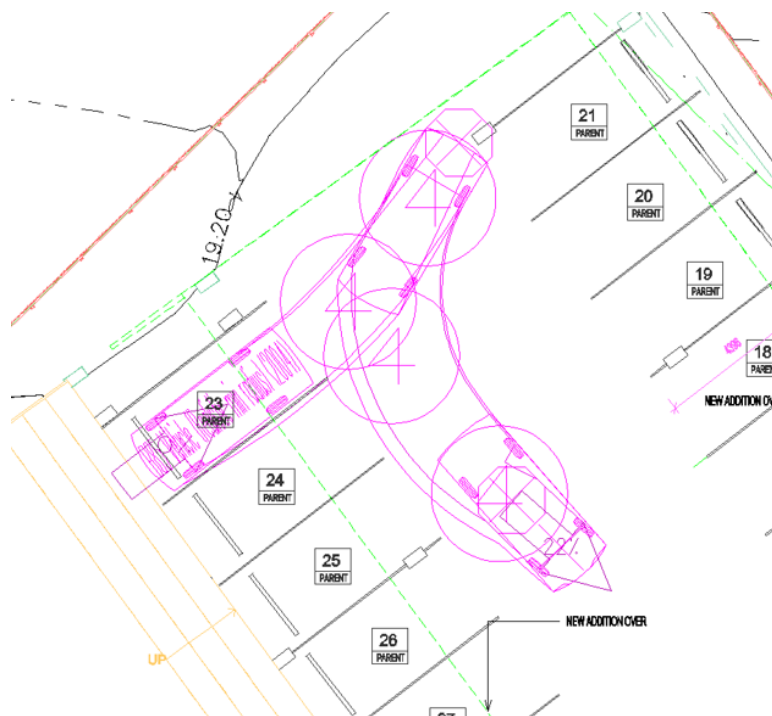


Figure 6-8: Parking Space '23' Reverse OUT

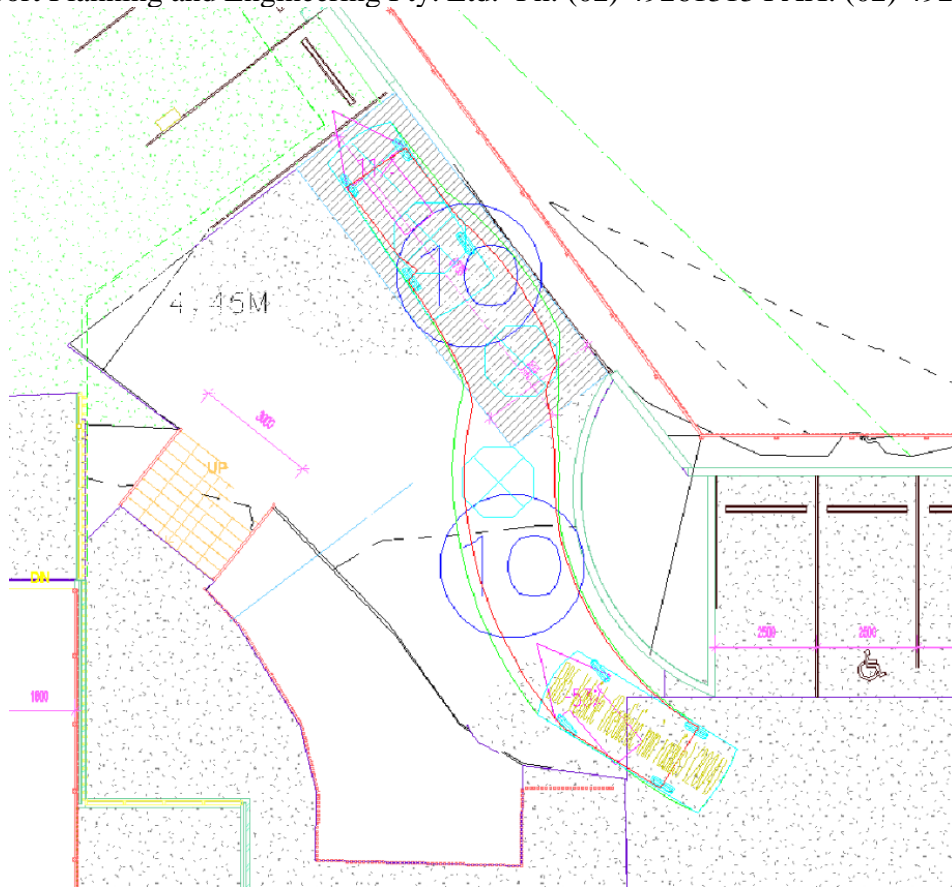


Figure 6-9: Parking Space '30' Forward IN

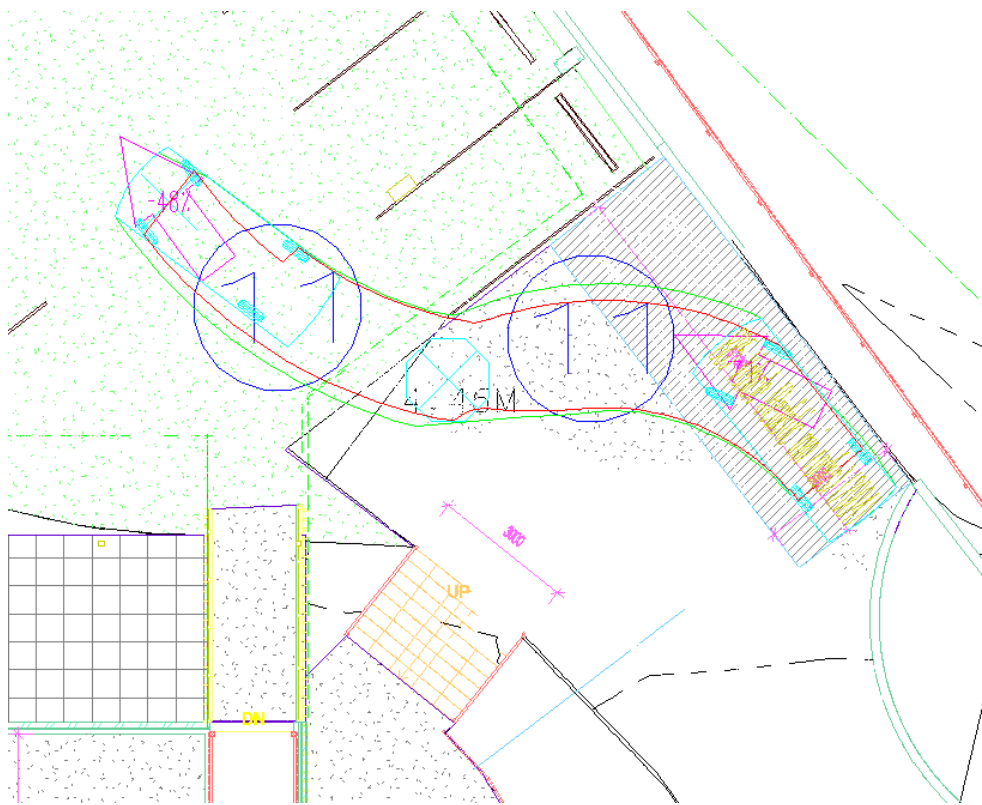


Figure 6-10: Parking Space '30' Forward OUT

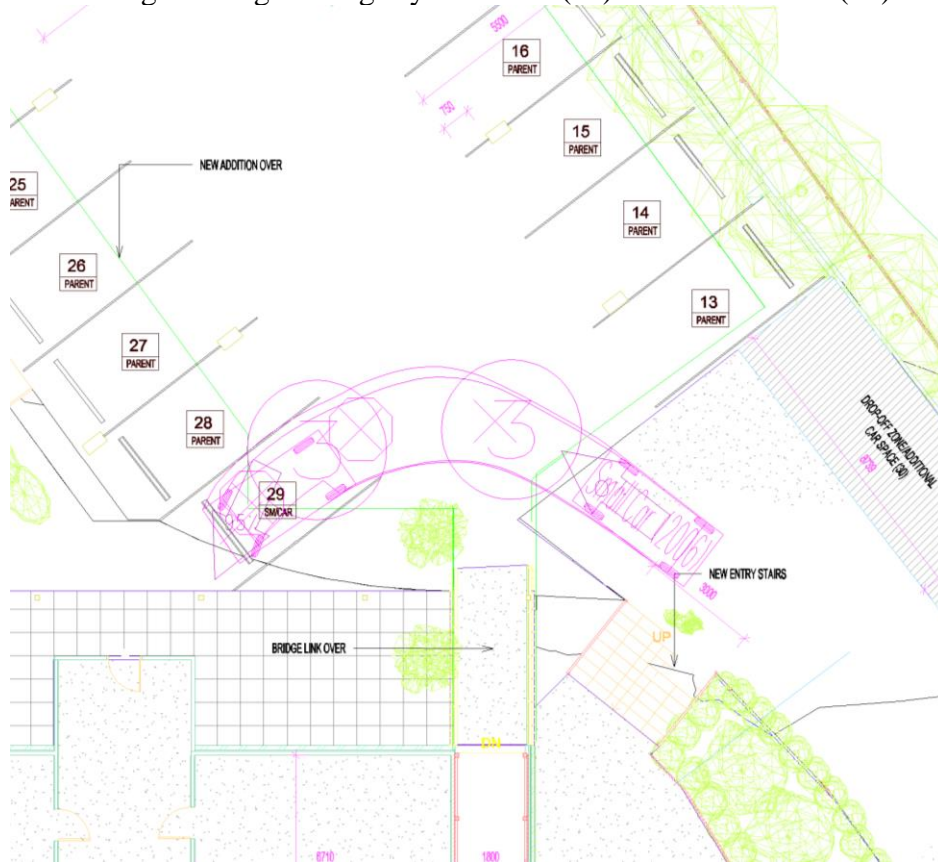


Figure 6-11: Parking Space Small Car '29' Forward IN



Figure 6-12: Parking Space Small Car '29' Forward OUT



Discussion:

It can be seen from this turning path assessment that all the critical Parking Bays can be accessed.

7. INTERSECTION COUNT – NERANG ST / CHILD CARE ACCESS DRIVEWAY

Figures 6-1 and 6-2 show the peak hour intersection performance for the morning and afternoon peak periods. The full reports can be found in the appendices.

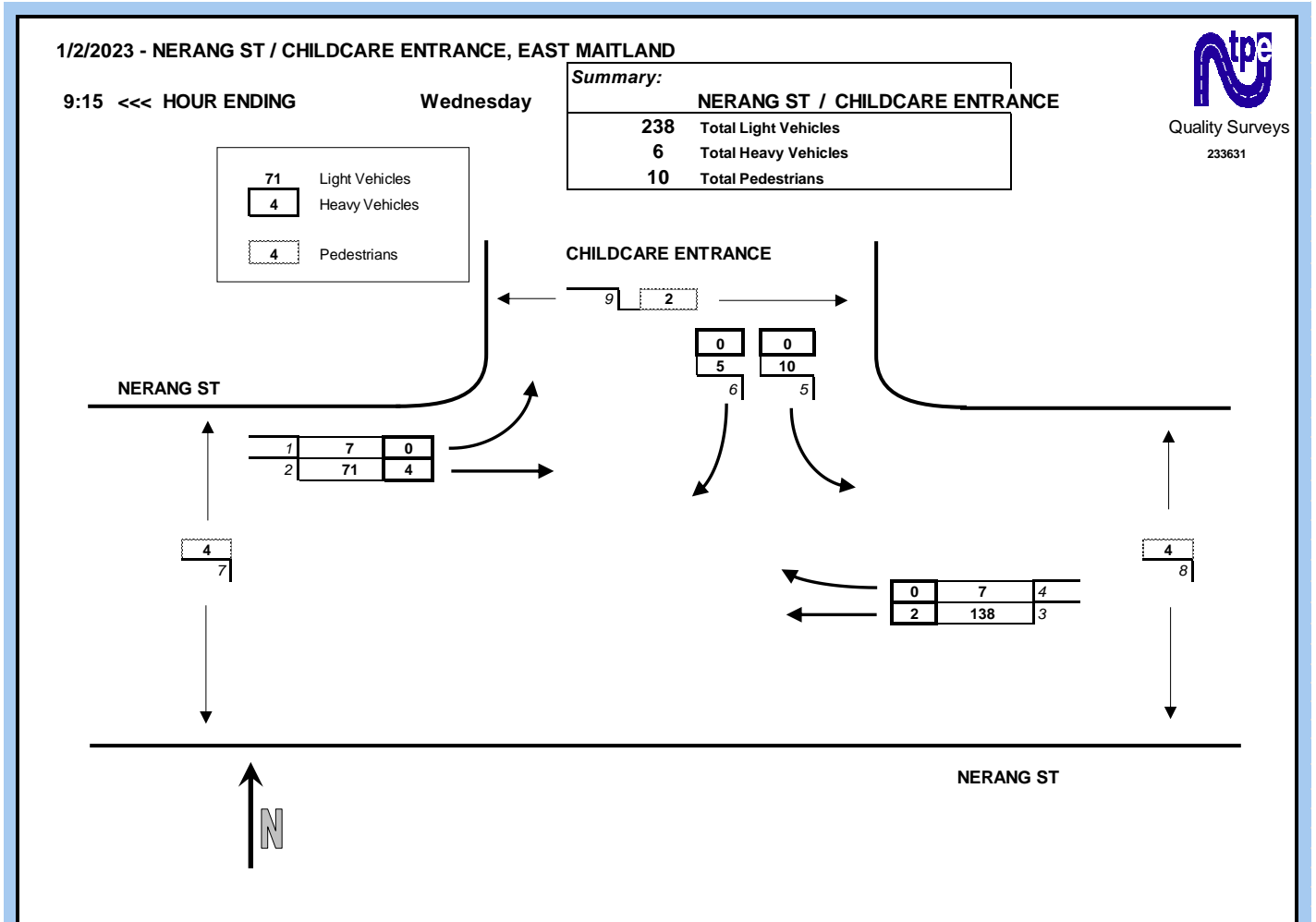


Figure 7-1: Intersection of Nerang St & Childcare Entrance, AM Peak.

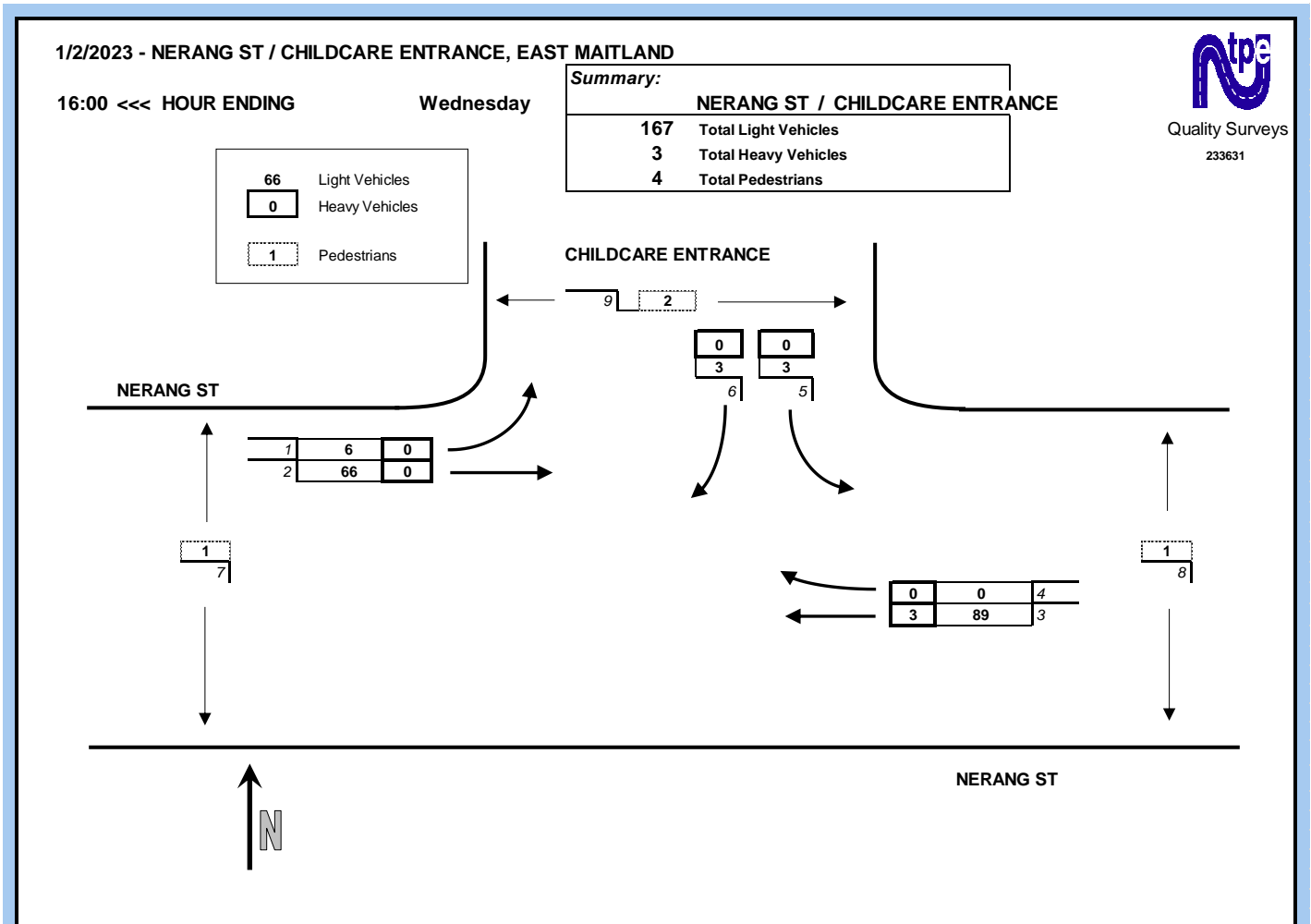


Figure 7-2: Intersection of Nerang St & Childcare Entrance, PM Peak.

Discussion:

The traffic volumes along Nerang St are relatively low during both the AM and PM Peak periods.

Traffic flows generated by the childcare facility make up less than 12% of traffic flows on Nerang St. It is therefore considered that the increased traffic flows generated by the proposed expanded child care facility will have a negligible impact on the surrounding road network.

8. RECOMMENDATION

It is acknowledged that based on Council's parking requirements there is a shortfall of 1 parking space for the proposed development. However, based on surveyed parking demand of the existing childcare centre, and the assumption that the same proportion of staff will continue to park on the street, it is considered that parking provisions for the proposed Childcare Facility will exceed the demand by up to 11 parking spaces.

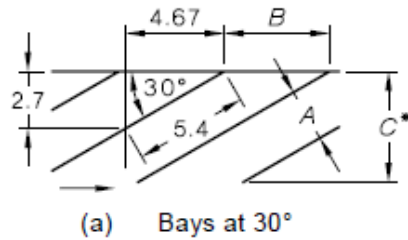
Based on this traffic impact assessment it is considered that the parking area at the existing Child Care Facility is more than sufficient to accommodate the additional parking generated by an increase in the number of child placements from 61 to 124.

It is therefore recommended that the proposed development be approved.

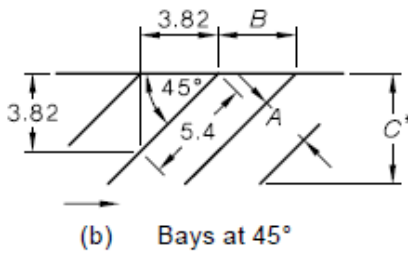
Appendix A

Angle Parking Layout requirements for User Classifications

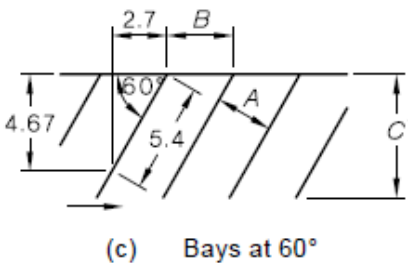
AS/NZS 2890.1: 2004



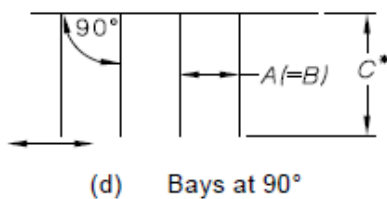
(a) Bays at 30°



(b) Bays at 45°



(c) Bays at 60°



(d) Bays at 90°

User class (Note 1)	A (Notes 2 & 3)	B	C ₁	C ₂	C ₃	Aisle width
1,1A	2.1	4.2	4.4	4.1	4.5	3.1
2	2.3	4.6	4.4	4.1	4.7	3.0
3	2.5	5.0	4.4	4.1	4.9	2.9
3A	2.5	5.0	4.4	4.1	4.9	3.45

User class (Note 1)	A (Note 3)	B	C ₁	C ₂	C ₃	Aisle width
1,1A	2.4	3.4	5.2	4.8	5.5	3.9
2	2.5	3.5	5.2	4.8	5.6	3.7
3	2.6	3.7	5.2	4.8	5.7	3.5
3A	2.6	3.7	5.2	4.8	5.7	4.2
4	(See Note 5)					

User class (Note 1)	A (Note 3)	B	C ₁	C ₂	C ₃	Aisle width
1,1A	2.4	2.75	5.7	5.1	5.9	4.9
2	2.5	2.90	5.7	5.1	6.0	4.6
3	2.6	3.00	5.7	5.1	6.0	4.3
3A	2.6	3.00	5.7	5.1	6.0	5.1
4	(See Note 5)					

User class (Note 1)	A (Note 3)	B	C ₁	C ₂	C ₃	Aisle width (Note 4)
1	2.4	2.4	5.4	4.8	5.4	6.2
1A	2.4	2.4	5.4	4.8	5.4	5.8
2	2.5	2.5	5.4	4.8	5.4	5.8
3	2.6	2.6	5.4	4.8	5.4	5.8
3A	2.6	2.6	5.4	4.8	5.4	6.6
3A	2.7	2.7	5.4	4.8	5.4	6.2
4	(See Note 5)					

*Dimension C is selected as follows (see Note 6):

C₁—where parking is to a wall or high kerb not allowing any overhang.

C₂—where parking is to a low kerb which allows 600 mm overhang in accordance with Clause 2.4.1(a)(i).

C₃—where parking is controlled by wheelstops installed at right angles to the direction of parking, or where the ends of parking spaces form a sawtooth pattern, e.g. as shown in the upper half of Figure 2.4(b).

For Notes—see over.

DIMENSIONS IN METRES

FIGURE 2.2 LAYOUTS FOR ANGLE PARKING SPACES

Appendix B

Intersection performance of Nerang St & Childcare Entrance

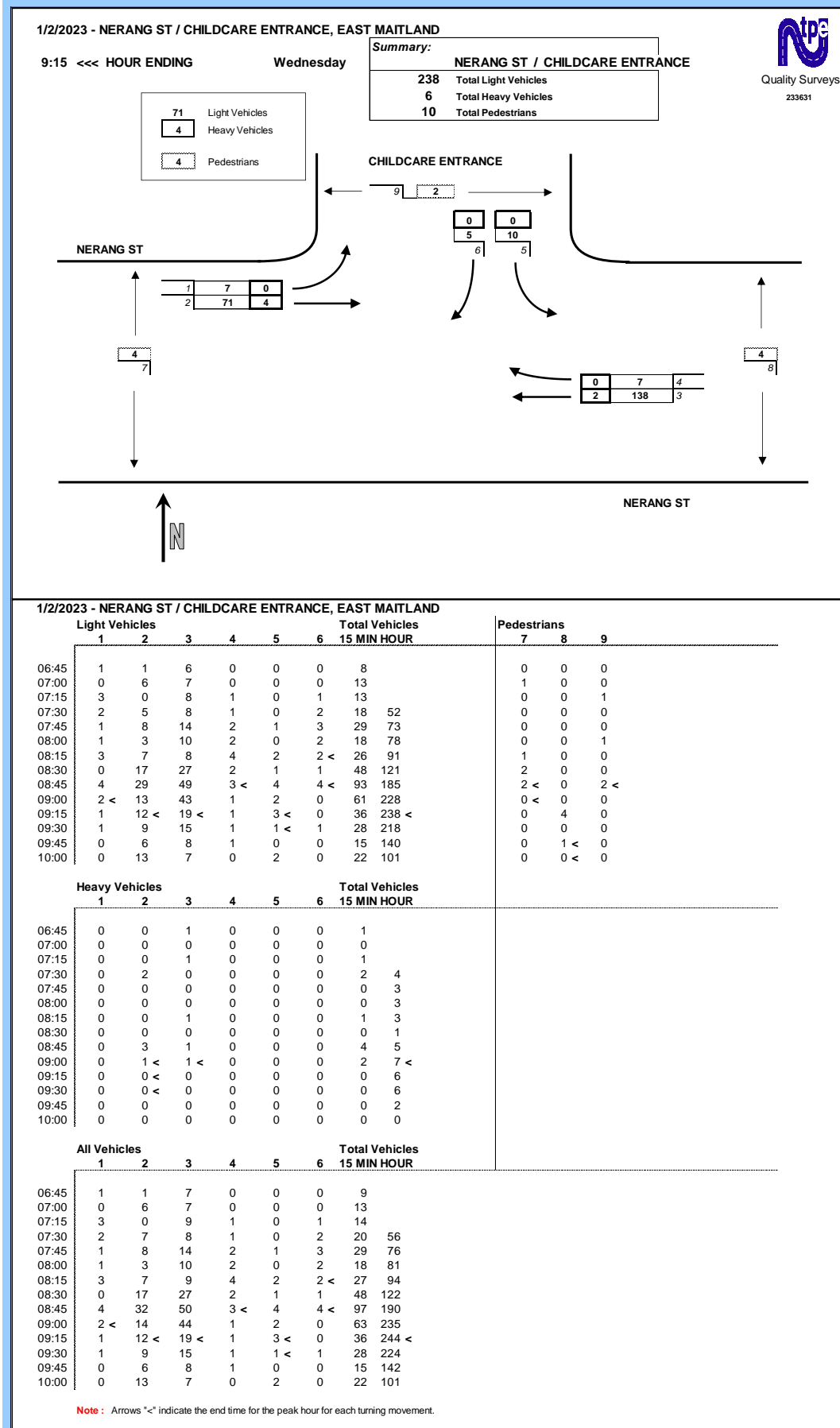


Figure 8-1: Intersection performance of Nerang St & Childcare Entrance, AM peak.

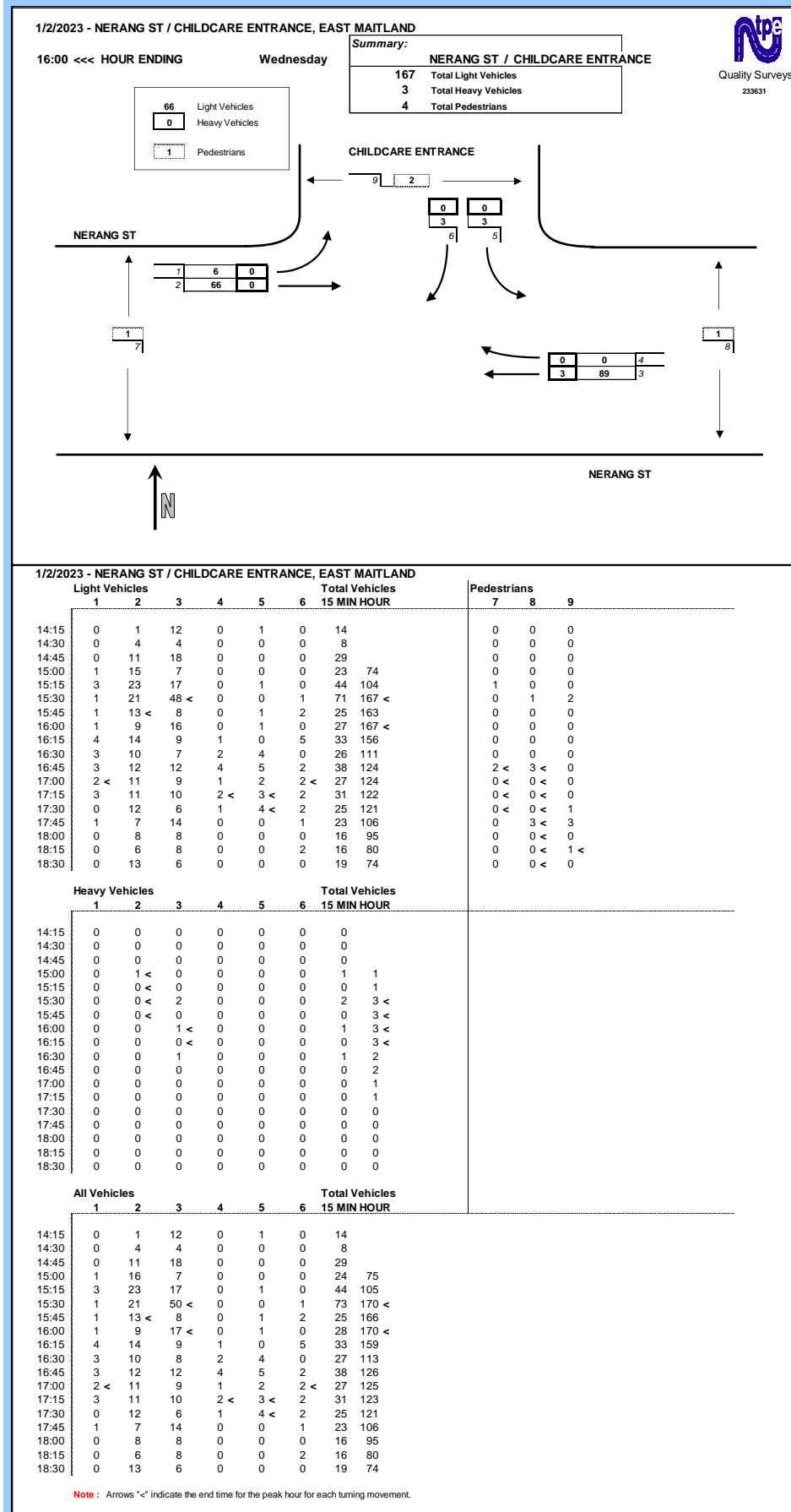


Figure 8-2: Intersection performance of Nerang St & Childcare Entrance, PM Peak.