# PROPOSED SENIORS LIVING DEVELOPMENT

**NELSON SHORT STREET, POTTS HILL** 

Assessment of Traffic and Parking Implications

August 2017 (Rev B)

Reference 17047

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Transportation, Traffic and Design Consultants
Suite 502, Level 5
282 Victoria Avenue
CHATSWOOD 2067
Telephone (02) 9411 5660
Facsimile (02) 9904 6622
Email: info@ttpa.com.au

## **TABLE OF CONTENTS**

1.	INTE	ODUCTION	1
2.	PRO	POSED DEVELOPMENT SCHEME	2
	2.1 2.2	Site, Context And Development Circumstances  Proposed Development	
3.	ROA	D NETWORK AND TRAFFIC CONDITIONS	4
	3.1 3.2 3.3 3.4	Road Network Traffic Controls Traffic Conditions Transport Services	5 5
4.	PAR	KING	7
5.	TRA	FFIC	9
6.	ACC	ESS, INTERNAL CIRCULATION AND SERVICING1	1
7.	CON	CLUSION1	2
APPE APPE	NDIX	B SIDRA RESULTS	

# **LIST OF ILLUSTRATIONS**

FIGURE 1	LOCATION
FIGURE 2	SITE
FIGURE 3	ROAD NETWORK
FIGURE 4	TRAFFIC CONTROLS
FIGURE 5	EXISTING PEAK TRAFFIC FLOWS
FIGURE 6	FUTURE PEAK TRAFFIC FLOWS

#### 1. Introduction

This report has been prepared to accompany a Development Application to Canterbury-Bankstown Council for a proposed Seniors Living complex on a site in Nelson Short Street at Potts Hill (Figure 1).

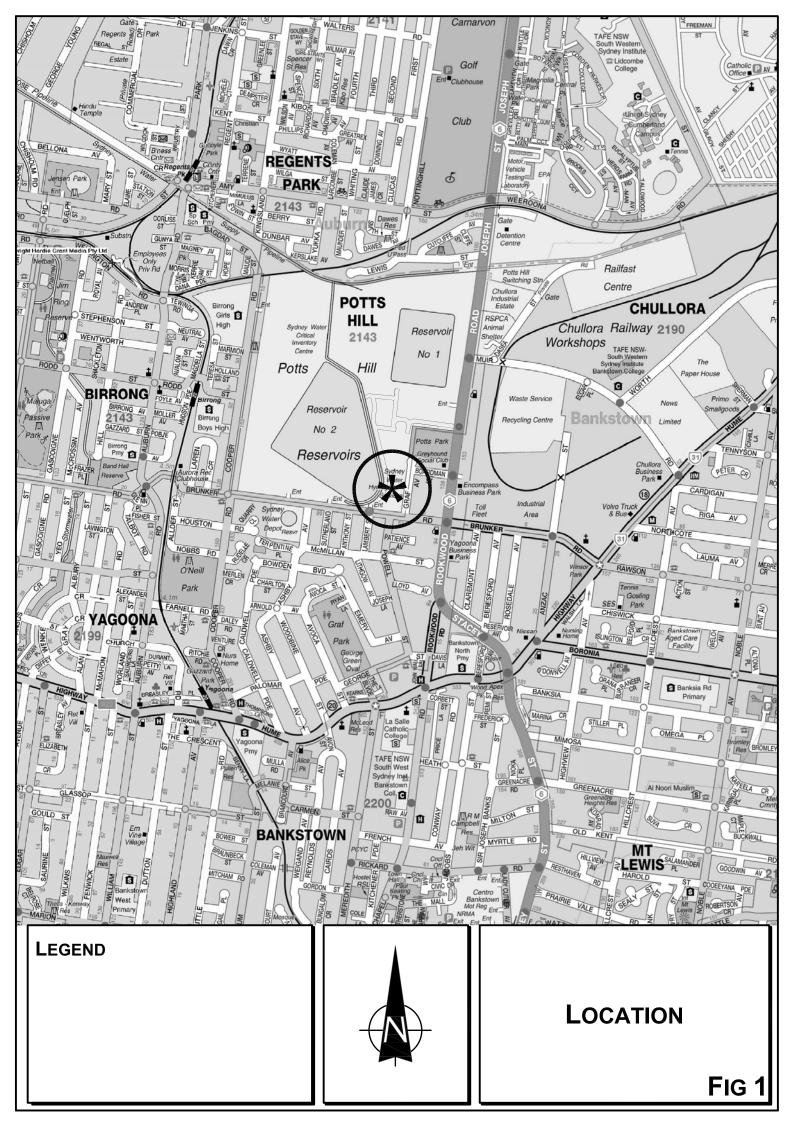
The development site is located within the Potts Hill Reservoir precinct where the southeastern part of large Sydney Water landholding has been subdivided to permit a number of new developments including major Police and Sydney Water facilities.

The proposed development comprises 6 buildings providing for:

- \* 157 ILU's (apartments)
- \* 108 RACF beds
- Medical Centre 122m<sup>2</sup>
- \* Retail, restaurant, lounge and café

The purpose of this report is to:

- \* describe the site, its context and the proposed development scheme
- \* describe the road network serving the site and the prevailing traffic conditions
- \* assess the adequacy of the proposed parking provision
- \* assess the potential traffic implications
- \* assess the suitability of the proposed vehicle access, internal circulation and servicing arrangements



#### 2. Proposed Development Scheme

#### 2.1 SITE, CONTEXT AND DEVELOPMENT CIRCUMSTANCES

The site (Figure 2) is part of the subdivision of a large Sydney Water landholding located on the northern side of Brunker Road being just to the east of Rookwood Road. The irregular shaped site, which comprises an area of 18,920m<sup>2</sup>, also has frontages to Nelson Short Street and Graf Avenue. The site is cleared and vacant at the present time being relatively level with a very slight fall towards the east.

The surrounding uses comprise:

- \* the water reservoir to the west
- the residential dwellings to the east and south
- \* the large NSW Police facility which adjoins to the north and the Sydney Water Regional Office and depot further to the north

#### 2.2 PROPOSED DEVELOPMENT

It is proposed to clear and excavate the site to provide for the construction of 6 new buildings over a basement parking level. The proposed development scheme comprises:

	One- bed ILU	Two- bed ILU	Three- bed ILU	Dementia beds	Residential care beds	Medical Centre GFA	Retail / Restaurant GFA
Building A				14	32		
Building B	11	27	4				
Building C	17	20	1				
Building D	8	23	5			122m²	280m <sup>2</sup> rest. 43m <sup>2</sup> ret.
Building E	11	26	4				82m² café
Building F				14	48		
Total	47	96	14	28	80	122m²	405m²
		Total ILU	157	Total RACF	108		

RACF Staff - 20 max. daytime



**LEGEND** 



SITE

FIG 2

#### TRANSPORT AND TRAFFIC PLANNING ASSOCIATES

A total of 233 parking spaces will be provided in a single basement level with vehicle access on the Nelson Short Street frontage.

Details of the development scheme are provided on the architectural plans prepared by Jackson Teece which accompany the Development Application and are reproduced in part in Appendix A.

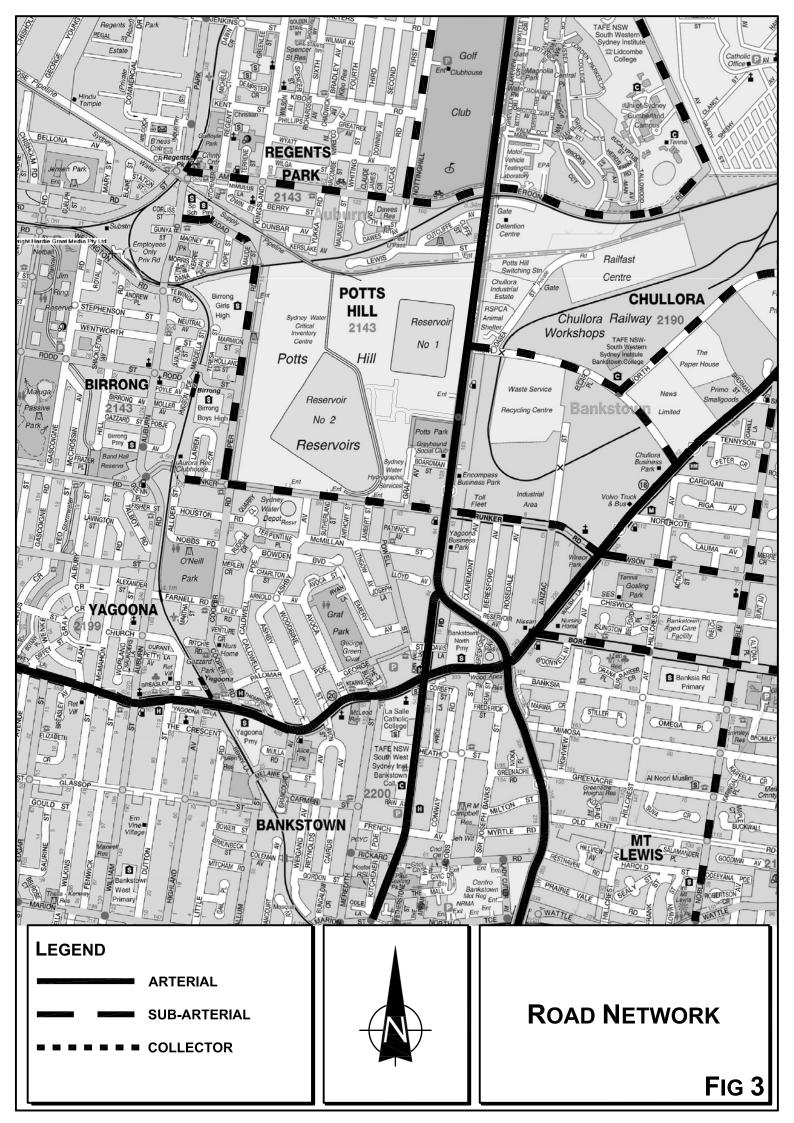
#### 3. ROAD NETWORK AND TRAFFIC CONDITIONS

#### 3.1 ROAD NETWORK

The existing road network is shown on Figure 3 and comprises:

- ★ Hume Highway a State Road and arterial route between the City and Liverpool
- \* Roberts Road a State Road and part of a major arterial route connecting across the Metropolitan Area
- \* Rookwood Road / Stacey Street / Joseph Street a State Road and part of an arterial providing a north-south connection providing a north-south connection linking with numerous other arterial routes
- \* Brunker Road a Regional Road and major collector route connecting between Hume Highway and Auburn Road
- \* Auburn Road a Regional Road and collector route
- Sraf Avenue / Boardman Street a local access road serving the Sydney Water Precinct
- ★ Nelson Short Street a local access road into the Sydney Water Precinct connecting to Brunker Road

Nelson Short Street is relatively flat with a curved alignment and one traffic lane in each direction.



#### 3.2 TRAFFIC CONTROLS

The existing traffic controls shown in Figure 4 comprise:

- \* traffic signals at the Brunker Road and Nelson Short Street intersection with the closure of Lambert Street (see details overleaf)
- \* the traffic signals along Rookwood Road at the Brunker Road, Boardman Street and William Holmes Street intersections
- the roundabout at the Brunker Road and Cooper Road intersection
- \* the traffic signals at numerous intersections along the Hume Highway route

#### 3.3 TRAFFIC CONDITIONS

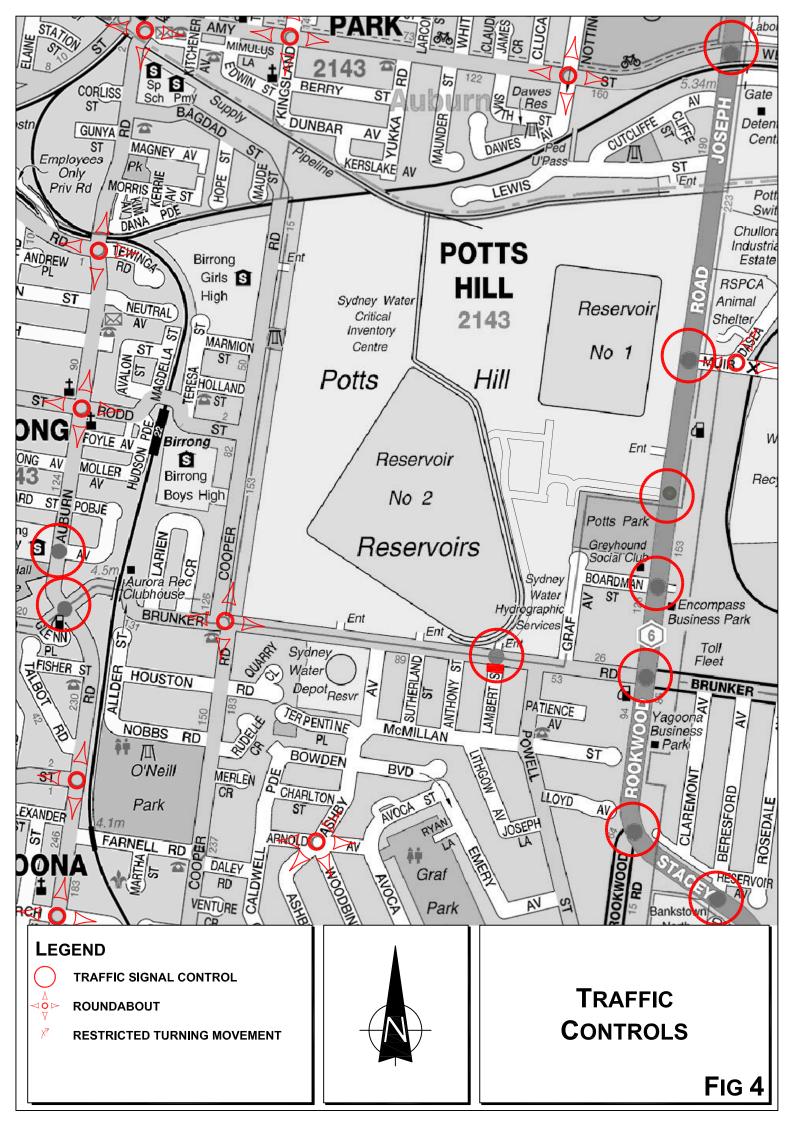
During the morning and afternoon peak periods there are significant traffic flows along Hume Highway and Rookwood Road while the most recent RMS volume recordings in the area are:

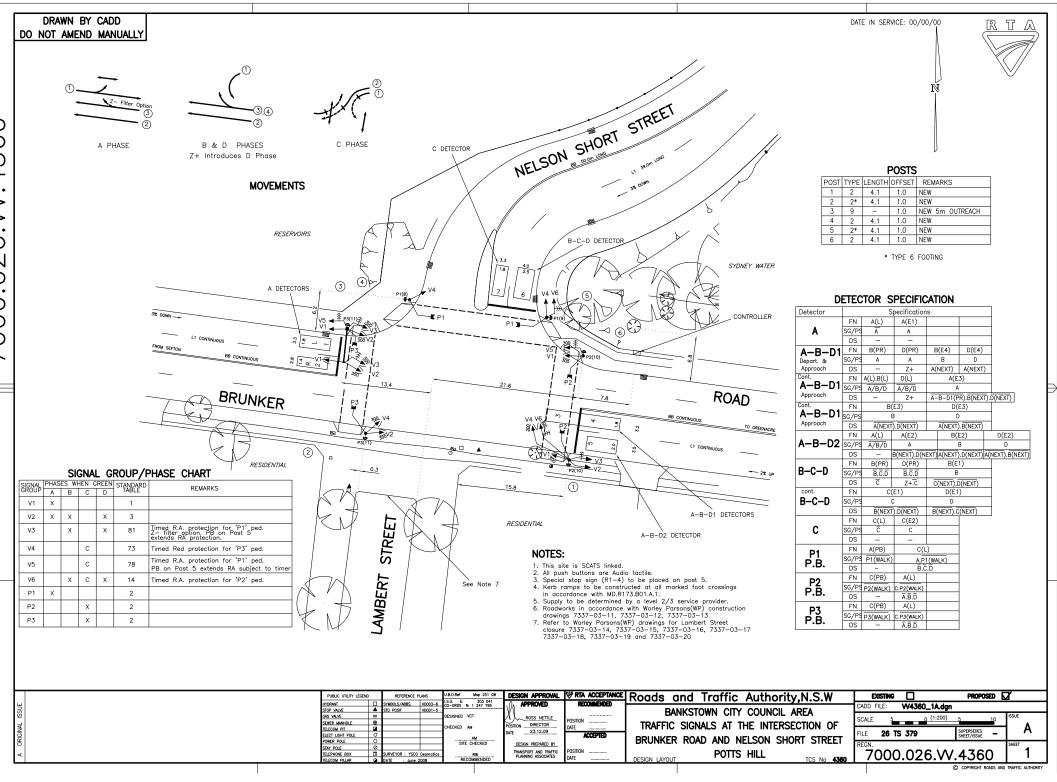
		AADI
Ηu	ume Highway north of Worth Street	59,296
Ro	ookwood Road north of Muir Road	52,967

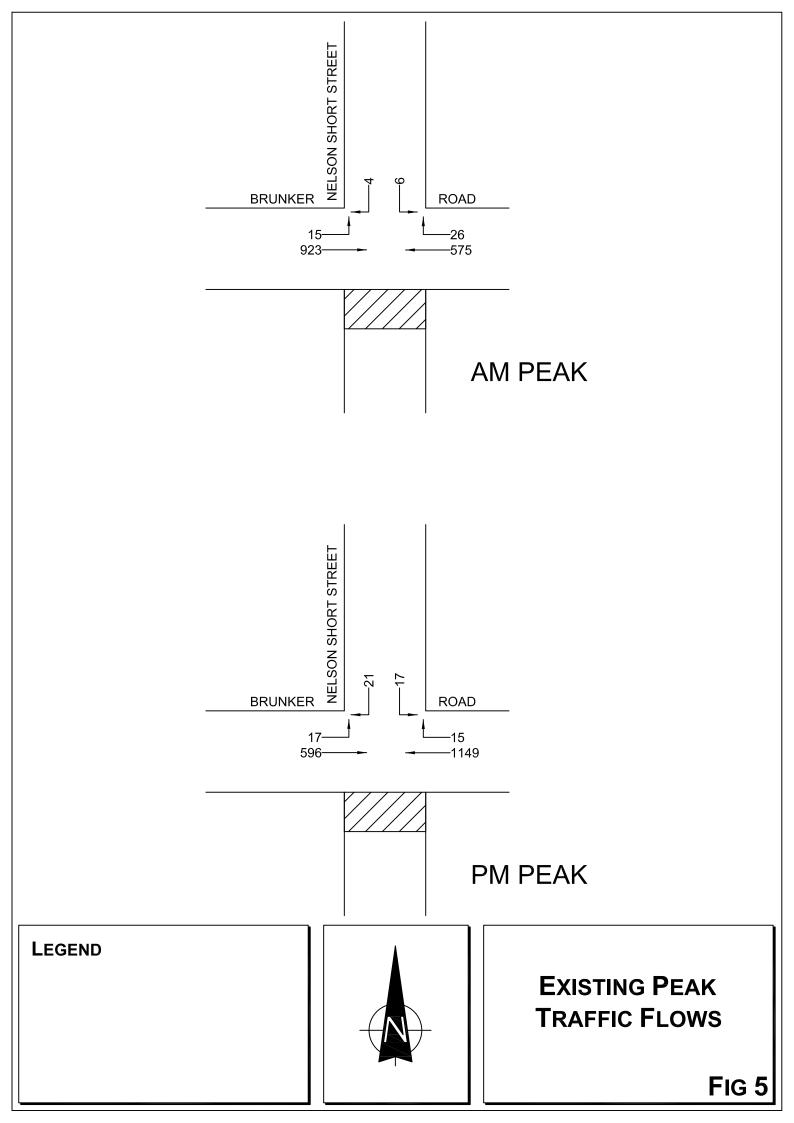
Traffic surveys have been undertaken at the Brunker Road / Nelson Short Street intersection during the morning and afternoon periods and the results are summarised in Figure 5.

The operational performance of this intersection under the existing peak hour flows has been assessed using SIDRA. The results of that assessment indicating a relatively satisfactory performance are provided in Appendix B and summarised in the following while the criteria for interpreting these results is summarised overleaf.

AM				PM	
LOS	DS	AVD	LOS	DS	AVD
В	0.385	10.3	В	0.432	15.0







## Criteria for Interpreting Results of SIDRA Analysis

#### 1. Level of Service (LOS)

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good	Good
'B'	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
'С'	Satisfactory	Satisfactory but accident study required
ʻD'	Operating near capacity	Near capacity and Accident Study required
'E'	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
'F'	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode

#### 2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below, which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabouts	Give Way and Stop Signs
Α	Less than 14	Good operation	Good operation
В	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
С	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode

### 3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

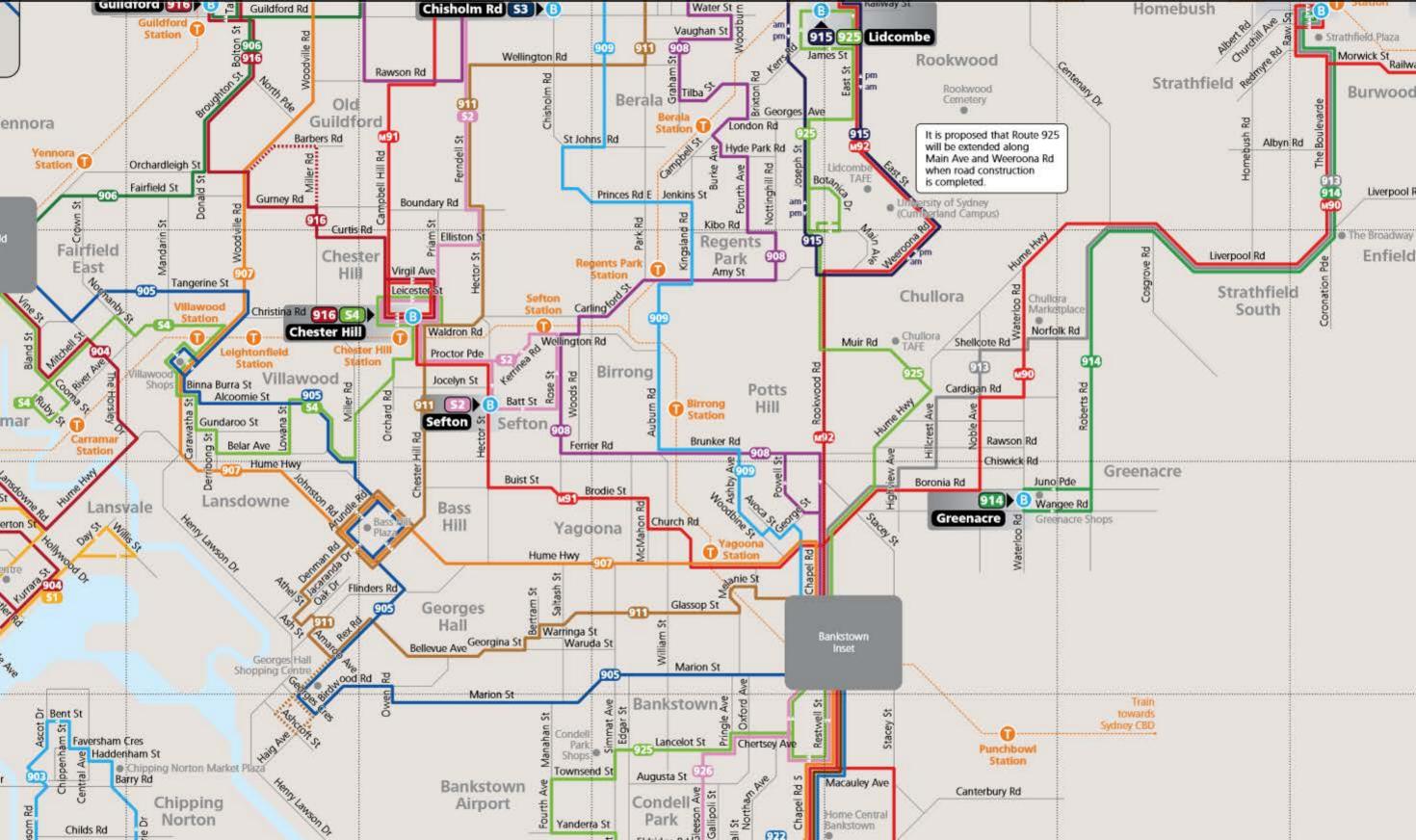
For intersections controlled by **traffic signals**<sup>1</sup> both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a **roundabout or GIVE WAY or STOP signs**, satisfactory intersection operation is indicated by a DS of 0.8 or less.

the values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs

#### 3.4 TRANSPORT SERVICES

Birrong Railway Station on the Bankstown line is located just to the west of the site and within easy walking distance. Bus services (Routes M92, 906 and 909) run along the Rockwood Road just to the east of the site and Brunker Road providing connections to railway stations and the Metropolitan transport system.



#### 4. PARKING

The SEPP (Housing for Seniors or People with A Disability) specifies the following criteria for Parking Provision:

#### **RACF**

1 space per 10 beds

1 space per 15 beds (dementia)

1 space per 2 staff

#### **ILUs**

0.5 space per bedroom

1 bed2 bed3 bed5 space1.5 space

Visitor 1 space per 5 ILU's

Councils DCP specifies the following criteria:

**Retail** 1 space per 40m<sup>2</sup>

**Restaurant** 15 spaces per 100m<sup>2</sup> in excess of 100m<sup>2</sup>

**Medical Centre** 1 space per 25m<sup>2</sup>

Application of this criteria to the proposed development would indicate the following parking requirements:

#### **RACF**

108 Beds
28 Dementia Beds
2 spaces
20 Staff
10 spaces
Total
23 spaces

#### TRANSPORT AND TRAFFIC PLANNING ASSOCIATES

**ILUs** 

47 x One-Bed23.5 spaces96 x Two-Bed96 spaces14 x Three-Bed21 spacesVisitors (157)31.4 spaces

Total 172 spaces

Retail 43m<sup>2</sup> 1 space
Restaurant/café 280m<sup>2</sup> 12 spaces
Medical Centre 122m<sup>2</sup> 5 spaces

Total 18 spaces

Grand Total 190 spaces

It is proposed to provide a total of 233 spaces including an appropriate quantum of accessible spaces in compliance with the SEPP and DCP criteria.

#### 5. TRAFFIC

The RMS Guidelines provide traffic generation criteria for various landuses, however the nature of the proposed development is not accurately reflected in the RMS publication (e.g. there are no separate rates for RACF and ILU while the retail rate is for a large shopping centre, etc.). The traffic generation of the development can be assessed in relation to the various identified traffic activities as follows:

#### RACF and ILU's (TTPA surveys)

	AM	PM
RACF (per bed)	0.17 vtph	0.22 vtph
ILU (apartment)	0.20 vtph	0.20 vtph
(separate)	0.35 vtph	0.30 vtph

#### Retail

43m<sup>2</sup> – 1 parking space (say 1 vtph staff)

Restaurant (say 4 vtph staff/deliveries)

(minimal in Network peaks)

Medical Centre 300m<sup>2</sup>

 $(9 \text{ vtph}/100\text{m}^2)$ 

Application of these factors to the proposed development would indicate the following:

	AM	PM
RACF 108 Beds	19	24
ILUs 157	32	32
Retail	1	1
Restaurant	4	4
Medical Centre	11	11
Total	67	72

#### TRANSPORT AND TRAFFIC PLANNING ASSOCIATES

In reality, the traffic generation external to the site would be reduced by the co-located trips origins/ends (i.e. dual use) of the site itself as well as the adjacent Police and Sydney Water facilities. However, in order to provide a worst case assessment there has been no discount applied to reflect these factors and the projected traffic generation is as follows:

	AM		PM	
	IN	OUT	IN	OUT
RACF	15	4	5	19
ILUs	10	22	22	10
Retail	1	-	-	1
Restaurant	2	2	2	2
Medical Centre	9	2	2	9
Total	37	30	31	41

The projected distribution onto the access road system is:

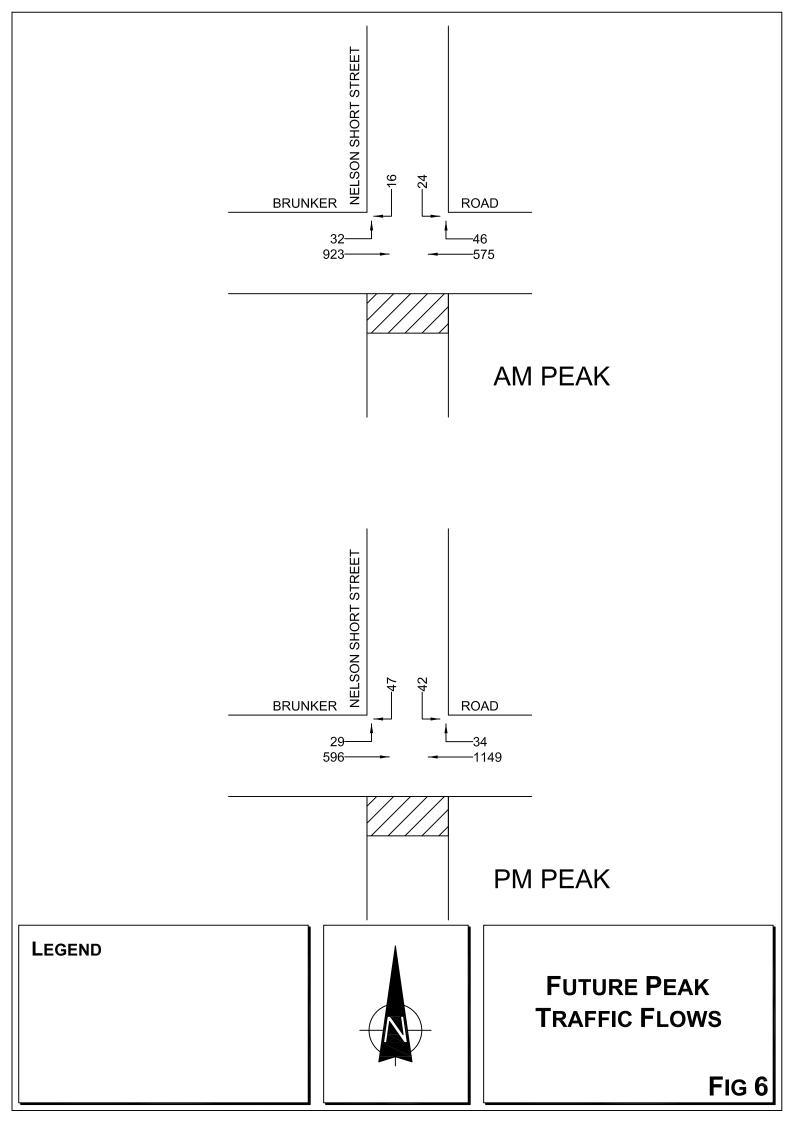
- \* 20% to the north (Rookwood Road)
- \* 20% to the south-east (Rookwood Road / Stacey Street)
- \* 20% to the west (Brunker Road)
- **★** 20% to the south-west (Cooper Street / Hume Highway)
- \* 20% to the east (Brunker Road)

The additional movements at the Brunker Road / Nelson Short Street intersection are shown on Figure 6.

The operational performance of this intersection under the post development circumstances has been assessed using SIDRA. The results of that assessment are provided in Appendix C and summarised in the following indicating a satisfactory outcome:

AM				PM	
LOS	DS	AVD	LOS	DS	AVD
В	0.397	11.3	В	0.472	18.1

Due to the relatively broad directional spread of approach and departure movements there will be no perceptible impact on the other intersections in the area.



#### 6. Access, Internal Circulation and Servicing

#### **Access**

The vehicle access arrangements will comprise a 6.1 metre wide combined ingress/egress driveway for the carpark/loading dock and separate ingress and egress driveway for the two porte cocheres. These driveways will be located where there are good sight distances available and where suitable separation is provided from intersections. The design of the driveways will be compliant with the AS2890.1 and 2890.2 criteria and will accommodate all vehicles requiring to access the site.

The ability for refuse removal and delivery/service vehicles to satisfactorily access the site is demonstrated on the turning path diagrams provided in Appendix C.

#### **INTERNAL CIRCULATION**

Very generous circulation provisions are made in the design particularly for the circulation and manoeuvring of vehicles.

The circulation, manoeuvring and parking arrangement for trucks and cars accord to the requirements of AS2890.1 and 2890.2 and details of the vehicle movements indicating satisfactory design provision are provided in Appendix C.

#### SERVICING

Refuse removal will be undertaken by contract vehicles from the main basement loading dock while other service/delivery vehicles will also utilise this dock. Small service vehicles will be able to utilise the secondary dock in the south-western part of the basement level while service personnel will also be able to utilise the visitor spaces.

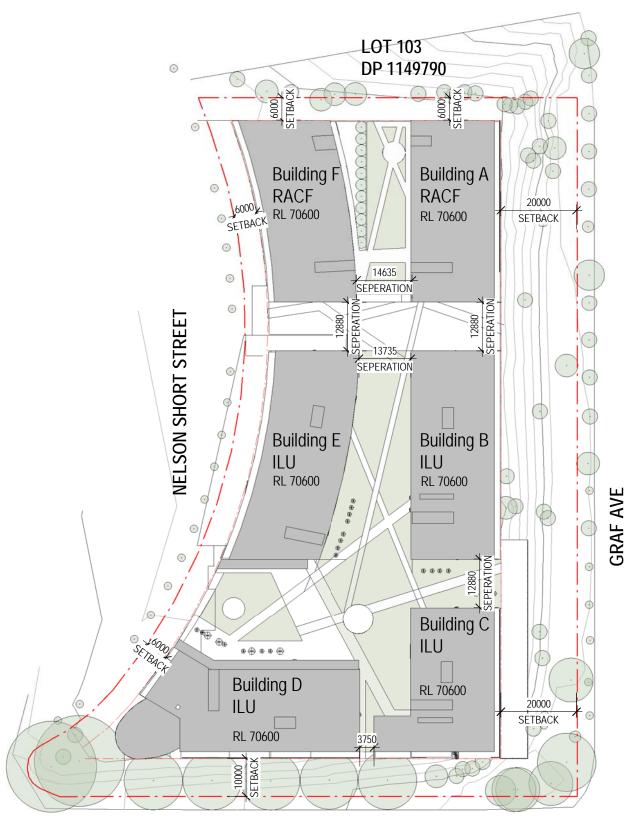
#### 7. CONCLUSION

Assessment for the proposed Seniors Living development in Nelson Short Street at Potts Hill has concluded that:

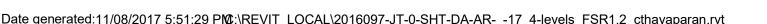
- \* the development will not present any unsatisfactory traffic implications
- \* the proposed parking provision will be suitable and appropriate
- \* the proposed internal circulation, parking and sservicing arrangements will be satisfactory
- \* the proposed vehicle access arrangements will be acceptable and there will be no adverse impacts.

# APPENDIX A

## **DEVELOPMENT PLANS**



**BRUNKER ROAD** 



2. TERRACOTTA VERTICAL SCREENS

# Date generated:11/08/2017 5:51:29 Pto:\REVIT\_LOCAL\2016097-JT-0-SHT-DA-AR-\_-17\_4-levels\_FSR1.2\_cthayaparan.rvt

5. EXPRESSED PFC TO SLAB EDGE MICACEOUS IORN OXIDE PAINT FINISH, NATURAL GREY







- PLANTER



10. HORIZONTAL ALUMININUM VENETIAN BLINDS

Lot 1, Pier 8-9, 23 Hickson Road Walsh Bay New South Wales 2000 Australia T 61 2 9290 2722 F 61 2 9290 1150 E sydney@jacksonteece.com Jackson Teece Chesterman Willis Pty Ltd Trading as Jackson Teece ABN 15 083 837 290

MATERIAL PALETTE

TERRACOTTA FACADE SYSTEM

4. GLASS BALUSTRADE

(A-B)

10375

20000 SETBACK

REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR LANDSCAPE DESIGN

1 North Elevation- RACF -Building A & F

8270

SETBACK

BIO-BANK & VEGETATION CORRIDOR REFER TO

LANDSCAPE ARCHITECTS

DRAWINGS FOR

| LANDSCAPE DESIGN

TOP OF PARAPET +RL 70900

2 South Elevation- ILU -Building C & D - Brunker Road

SUBSTATION KIOSK — BUILDING B ILU's

17350

RESTAURANT

**BEYOND** 

23650

BUILDING A - RACF

2750

10100

RL 71450

7500

10225







DRAWING

APPROVED BY CLIENT

50mm on original

THIS DRAWING ISSUE HAS BEEN REVIEWED FOR

Mushan Project Management

DATE 11/08/17	SCALE @ A1 1 : 200 CR,A	DRAWN K,CW,CT
PROJECT No. 2016097	DRAWING No.	ISSUE P2

ELEVATIONS - 02		
DATE	SCALE @ A1	DRA
11/08/17	1:200 CR,	AK,CW,C
PROJECT No. 2016007	DRAWING No.	ISSI D

CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE COPYRIGHT AND MAY NOT BE REPRODUCED IN WHOLE OR PART OR BY ANY MEDIUM, WITHOUT THE WRITTEN PERMISSION OF JACKSON TEECE. DO NOT SCALE THIS DRAWING, USE FIGURED DIMENSIONS ONLY. VERIFY ALL PROJECT DIMENSIONS BEFORE COMMENCING ON-SITE WORK OR OFF-SITE FABRICATION. NOTIFY JACKSON TEECE OF ANY DISCREPANCIES AND SEEK INSTRUCTIONS.

Preliminary Issue for Consultant Co-ordination

APPROVED DATE

**AMENDMENTS** 

ISSUE DESCRIPTION

**ABBREVIATIONS** 

Framed glass

1800mm high balcony dividing wall.

Cladding- Terracotta Facade System

PFC Slab edge detail. Micaceous iron oxide

External Screen - Vertical Terracotta Baguette

External Screen - Vertical Terracotta Baguette

Window Type 2. - Fixed Glazed Window

Window Type 4. - Hinged Window (planter

Window Type 5. - Hinged Window (planter

Window Type 6. - Glazed Window Anodised

Window Type 7. - Glazed Window Anodised

Column Off-form concrete finish

Precast concrete, paint finish.

Solid Core Fire Door

Glazed Sliding Door

Glazed Sliding Door

Render / Plaster

50x50mm

100x50mm

Skylight

Storage

paint finish. Natural Grey

Perforated Metal Screen

Window Type 1. - XXXX

Anodised Aluminium Frame

access) High level Vent Panel

access) High level Vent Panel

Aluminium Frame

Aluminium Frame

NOTE:
THESE DRAWINGS ARE FOR DEVELOPMENT APPLICATION PURPOSES ONLY
DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER PROJECT
DOCUMENTATION INCLUDING BUT NOT LIMITED TO REPORTS RELATING TO
STRUCTURAL, CIVIL, HYDRAULIC, MECHANICAL, ELECTRICAL, FIRE ENGINEERING
AND LANDSCAPE
ALL WORKS TO COMPLY WITH THE RELEVANT NCC BUILDING CODE OF AUSTRALIA,
CODES, REGULATIONS AND AUSTRALIAN STANDARDS

**PRELIMINARY** 

BAL-01

CD-02

COL

D-02

D-03

SCE-02

SCE-10

SKL-01

STO

\_\_FFL7<u>0.200</u>\_\_(

LEVEL 04 ILU

FFL67.000 LEVEL 03 ILU

\_\_FFL6<u>3.800\_\_</u>(

\_FFL60.600\_\_(

LEVEL 01 ILU

FFL57.000 LEVEL GF RACF

FFL56.200 (

LEVEL GF ILU

LEVEL 02 ILU

CONC-01

\_ FFL70.200 LEVEL 04 ILU

FFL67.000 LEVEL 03 ILU

FFL63.800 LEVEL 02 ILU

FFL60.600 LEVEL 01 ILU

FFL57.000 LEVEL GF RACF

FFL56.200 LEVEL GF ILU

FFL51.700 LEVEL B1

20000

SETBACK

Potts Hill Seniors Living

JACKSON TEECE



REFER PLAN

COURTYARD

47250

BUILDING D - ILU

10100

10100

VENETIAN

BLINDS

 GLAZED CIRCULATION LINKING 'BRIDGE'

BUILDING F

BETWEEN BUILDING A &

REFER PLAN

4050

9900

VENETIAN

BLINDS

9750

BUILDING F - RACF

16m HEIGHT PLANE

**CURVED GRIDS - REFER** 

TO FLOOR PLAN FOR

**BUILDING F GRIDS** 

\_\_\_\_\_RL\_71450\_\_\_\_\_ -

REFER PLAN

33100

BUILDING C - ILU

RL 71450

10650

BUILDING D BEYOND —

10650

alv.

BUILDING E BEYOND -





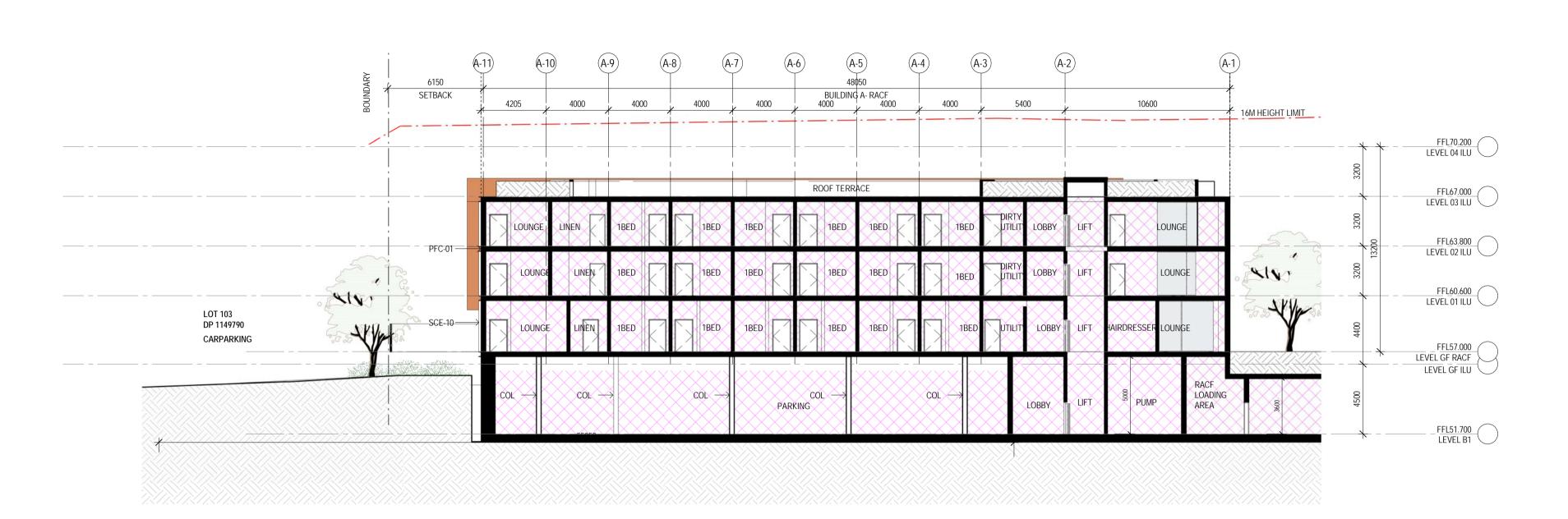


8. FIBRE CEMENT SOFFIT LINING

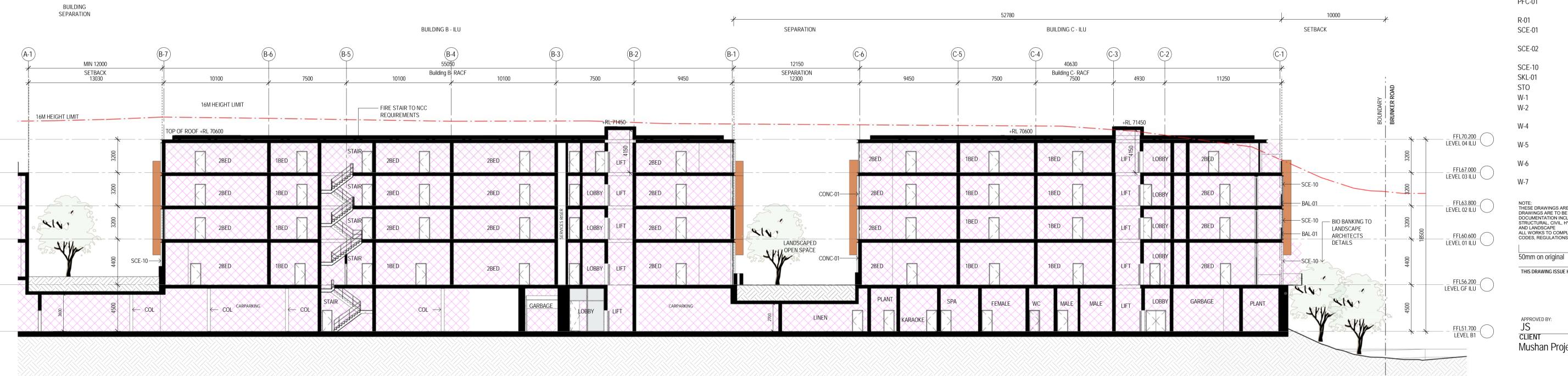
PAINT FINISH: WHITE

9. PERFORATED METAL FOLDING SCREENS

7. TEXTURED PRECAST CONCRETE SUNSCREEN TO POOL FACADE



# 2 Building A North-South Section



1 Building B & C North-South Section

CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE COPYRIGHT AND MAY NOT BE REPRODUCED IN WHOLE OR PART OR BY ANY MEDIUM, WITHOUT THE WRITTEN PERMISSION OF JACKSON TEECE. DO NOT SCALE THIS DRAWING, USE FIGURED DIMENSIONS ONLY. VERIFY ALL PROJECT DIMENSIONS BEFORE COMMENCING ON-SITE WORK OR OFF-SITE FABRICATION. NOTIFY JACKSON TEECE OF ANY DISCREPANCIES AND SEEK INSTRUCTIONS. **AMENDMENTS** ISSUE DESCRIPTION APPROVED DATE

Preliminary Issue for Consultant Co-ordination

## **Department Legend**

Calculating...

#### **ABBREVIATIONS**

BAL-01 Framed glass 1800mm high balcony dividing wall. CD-02 Cladding- Terracotta Facade System Column Off-form concrete finish COL CONC-01 Precast concrete, paint finish. D-01 Solid Core Fire Door D-02 Glazed Sliding Door D-03 Glazed Sliding Door PFC Slab edge detail. Micaceous iron oxide paint finish. Natural Grey R-01 Render / Plaster External Screen - Vertical Terracotta Baguette SCE-01 50x50mm External Screen - Vertical Terracotta Baguette 100x50mm SCE-10 Perforated Metal Screen SKL-01 Skylight STO Storage W-1 Window Type 1. - XXXX W-2 Window Type 2. - Fixed Glazed Window Anodised Aluminium Frame W-4 Window Type 4. - Hinged Window (planter access) High level Vent Panel Window Type 5. - Hinged Window (planter access) High level Vent Panel Window Type 6. - Glazed Window Anodised Aluminium Frame Window Type 7. - Glazed Window Anodised Aluminium Frame NOTE:
THESE DRAWINGS ARE FOR DEVELOPMENT APPLICATION PURPOSES ONLY
DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER PROJECT
DOCUMENTATION INCLUDING BUT NOT LIMITED TO REPORTS RELATING TO
STRUCTURAL, CIVIL, HYDRAULIC, MECHANICAL, ELECTRICAL, FIRE ENGINEERING
AND LANDSCAPE
ALL WORKS TO COMPLY WITH THE RELEVANT NCC BUILDING CODE OF AUSTRALIA,
CODES, REGULATIONS AND AUSTRALIAN STANDARDS

THIS DRAWING ISSUE HAS BEEN REVIEWED FOR

# **PRELIMINARY**

CHECKED BY: JS CLIENT Mushan Project Management

DRAWING SECTIONS - 02

DATE SCALE @ A1 DRAWN 11/08/17 1:200 CR,AK,CW,CT P2 DRAWING No.

PROJECT No. 2016097

PROJECT
Potts Hill Seniors Living

Lot 1, Pier 8-9, 23 Hickson Road Walsh Bay New South Wales 2000 Australia T 61 2 9290 2722 F 61 2 9290 1150

E sydney@jacksonteece.com Jackson Teece Chesterman Willis Pty Ltd Trading as Jackson Teece ABN 15 083 837 290 JACKSON TEECE



JACKSON TEECE



CONCEPTS AND INFORMATION CONTAINED IN THIS DRAWING ARE COFTRIGHT AND MAY NOT BE REPRODUCED IN WHOLE OR PART OR BY ANY MEDIUM, WITHOUT THE WRITTEN PERMISSION OF JACKSON TEECE. DO NOT SCALE THIS DRAWING, USE FIGURED DIMENSIONS ONLY. VERIFY ALL PROJECT DIMENSIONS BEFORE COMMENCING ON-SITE WORK OR OFF-SITE FABRICATION. NOTIFY JACKSON TEECE OF ANY DISCREPANCIES AND SEEK INSTRUCTIONS. **AMENDMENTS** ISSUE DESCRIPTION APPROVED DATE Preliminary Issue for Consultant Co-ordination

NOTE:
THESE DRAWINGS ARE FOR DEVELOPMENT APPLICATION PURPOSES ONLY
DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER PROJECT
DOCUMENTATION INCLUDING BUT NOT LIMITED TO REPORTS RELATING TO
STRUCTURAL, CIVIL, HYDRAULIC, MECHANICAL, ELECTRICAL, FIRE ENGINEERING
AND LANDSCAPE
ALL WORKS TO COMPLY WITH THE RELEVANT NCC BUILDING CODE OF AUSTRALIA,
CODES, REGULATIONS AND AUSTRALIAN STANDARDS

50mm on original THIS DRAWING ISSUE HAS BEEN REVIEWED FOR

# **PRELIMINARY**

APPROVED BY CLIENT Mushan Project Management

DRAWING FLOOR PLAN - BASEMENT 1

DATE SCALE @ A1 DRAWN CR,AK 1:250 11/08/17 P2 PROJECT No. 2016097 DRAWING No.

PROJECT Potts Hill Seniors Living

Lot 1, Pier 8-9, 23 Hickson Road Walsh Bay New South Wales 2000 Australia T 61 2 9290 2722 F 61 2 9290 1150 E sydney@jacksonteece.com Jackson Teece Chesterman Willis Pty Ltd Trading as Jackson Teece ABN 15 083 837 290

# APPENDIX B

## **SIDRA RESULTS**

#### Site: 101 [BRUNKER/NELSON INTERSECTION EXISTING AM PEAK]

New Site

Signals - Fixed Time Isolated Cycle Time = 120 seconds (User-Given Cycle Time)

Move	ment Pe	rformance	- Vehic	les							
Mov	OD	Demand		Deg.	Average	Level of	95% Back		Prop.	Effective	Average
ID	Mov	Total veh/h	HV %	Satn v/c	Delay sec	Service	Vehicles veh	Distance m	Queued	Stop Rate per veh	Speed km/h
East:	BRUNKEI	R ROAD									
5	T1	605	0.0	0.352	8.1	LOS A	8.7	61.0	0.36	0.32	49.7
6	R2	27	0.0	0.352	58.6	LOS E	4.6	32.2	0.96	0.75	24.8
Appro	ach	633	0.0	0.352	10.3	LOS B	8.7	61.0	0.39	0.34	47.6
North:	NELSON	STREET									
7	L2	6	0.0	0.014	42.2	LOS D	0.3	1.9	0.78	0.65	28.6
9	R2	4	0.0	0.023	58.5	LOS E	0.2	1.6	0.92	0.64	30.1
Appro	ach	11	0.0	0.023	48.7	LOS D	0.3	1.9	0.84	0.65	29.3
West:	<b>BRUNKE</b>	R ROAD									
10	L2	16	0.0	0.385	15.4	LOS B	12.9	90.5	0.49	0.45	50.3
11	T1	972	0.0	0.385	9.9	LOS A	13.0	90.7	0.49	0.45	48.0
Appro	ach	987	0.0	0.385	10.0	LOS A	13.0	90.7	0.49	0.45	48.0
All Ve	hicles	1631	0.0	0.385	10.3	LOS B	13.0	90.7	0.45	0.40	47.6

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.

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.

Move	ement Performance - Pe	edestrians						
Mov	Description	Demand	Average		Average Bacl		Prop.	Effective
ID	Description	Flow ped/h	Delay sec	Service	Pedestrian ped	Distance m	Queued	Stop Rate per ped
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	9.6	LOS A	0.1	0.1	0.40	0.40
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pe	destrians	158	39.4	LOS D			0.77	0.77

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.

#### Site: 101 [BRUNKER/NELSON INTERSECTION EXISITING PM PEAK]

New Site

Signals - Fixed Time Isolated Cycle Time = 120 seconds (User-Given Cycle Time)

Move	ment Pe	erformance	- Vehic	les							
Mov ID	OD Mov	Demand I 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 per veh	Average Speed km/h
East: BRUNKER ROAD											
5	T1	1209	0.0	0.431	6.5	LOS A	14.8	103.8	0.41	0.37	51.5
6	R2	16	0.0	0.431	15.4	LOS B	14.8	103.8	0.50	0.46	46.4
Appro	ach	1225	0.0	0.431	6.6	LOS A	14.8	103.8	0.41	0.37	51.4
North:	NELSON	N STREET									
7	L2	18	0.0	0.019	20.3	LOS C	0.5	3.5	0.51	0.65	38.7
9	R2	22	0.0	0.119	59.8	LOS E	1.2	8.5	0.94	0.71	29.9
Appro	ach	40	0.0	0.119	42.1	LOS D	1.2	8.5	0.75	0.68	32.4
West:	BRUNKE	R ROAD									
10	L2	18	0.0	0.432	34.7	LOS C	13.8	96.7	0.79	0.69	39.7
11	T1	627	0.0	0.432	29.2	LOS C	13.9	97.0	0.79	0.68	34.6
Appro	ach	645	0.0	0.432	29.3	LOSC	13.9	97.0	0.79	0.68	34.8
All Vel	hicles	1911	0.0	0.432	15.0	LOS B	14.8	103.8	0.54	0.49	43.7

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.

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.

Move	ement Performance - P	edestrians						
Mov	Description	Demand	Average		Average Back	Prop.	Effective	
ID	Description	Flow ped/h	Delay sec	Service	Pedestrian ped	Distance m	Queued	Stop Rate per ped
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	29.5	LOS C	0.1	0.1	0.70	0.70
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pe	destrians	158	46.0	LOS E			0.87	0.87

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.

#### Site: 101 [BRUNKER/NELSON INTERSECTION AM PEAK]

New Site

Signals - Fixed Time Isolated Cycle Time = 120 seconds (User-Given Cycle Time)

Move	ment Pe	rformance	- Vehic	les							
Mov	OD	Demand	Flows	Deg.	Average	Level of	95% Back	of Queue	Prop.	Effective	Average
ID	Mov	Total	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East:	BRUNKER	ROAD									
5	T1	605	0.0	0.370	5.9	LOS A	9.4	65.5	0.34	0.30	52.0
6	R2	48	0.0	0.370	59.9	LOS E	4.3	30.0	0.96	0.76	24.1
Appro	ach	654	0.0	0.370	9.9	LOS A	9.4	65.5	0.38	0.33	47.9
North	: NELSON	STREET									
7	L2	25	0.0	0.054	42.0	LOS D	1.1	7.8	0.79	0.70	28.6
9	R2	17	0.0	0.091	59.5	LOS E	0.9	6.4	0.94	0.70	29.8
Appro	ach	42	0.0	0.091	49.0	LOS D	1.1	7.8	0.85	0.70	29.2
West:	<b>BRUNKE</b>	R ROAD									
10	L2	34	0.0	0.397	16.0	LOS B	13.6	94.9	0.51	0.47	49.8
11	T1	972	0.0	0.397	10.4	LOS B	13.6	95.3	0.51	0.46	47.4
Appro	ach	1005	0.0	0.397	10.6	LOS B	13.6	95.3	0.51	0.46	47.5
All Ve	hicles	1701	0.0	0.397	11.3	LOS B	13.6	95.3	0.47	0.42	46.8

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.

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.

Move	Movement Performance - Pedestrians												
Mov ID	Demand Average Level of Average Back of Queue Description Flow Delay Service Pedestrian Distance					Prop. Queued	Effective Stop Rate						
		ped/h	sec		ped	m		per ped					
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95					
P3	North Full Crossing	53	10.0	LOS B	0.1	0.1	0.41	0.41					
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95					
All Pedestrians		158	39.5	LOS D			0.77	0.77					

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.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: TRANSPORT AND TRAFFIC PLANNING ASSOCIATES | Processed: Wednesday, 23 August 2017 10:01:55 AM
Project: Not Saved

#### Site: 101 [BRUNKER/NELSON INTERSECTION FUTURE PM PEAK]

New Site

Signals - Fixed Time Isolated Cycle Time = 120 seconds (User-Given Cycle Time)

Move	ment Pe	erformance	- Vehic	les							
Mov ID	OD Mov	Demand I 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 per veh	Average Speed km/h
East: I	BRUNKEI	R ROAD									
5	T1	1209	0.0	0.467	8.7	LOS A	17.3	120.8	0.46	0.42	49.2
6	R2	36	0.0	0.467	21.2	LOS C	17.3	120.8	0.63	0.58	41.5
Appro	ach	1245	0.0	0.467	9.0	LOS A	17.3	120.8	0.46	0.42	48.9
North:	NELSON	STREET									
7	L2	44	0.0	0.044	19.1	LOS B	1.2	8.3	0.49	0.67	39.5
9	R2	49	0.0	0.266	61.1	LOS E	2.8	19.4	0.96	0.74	29.6
Appro	ach	94	0.0	0.266	41.2	LOS D	2.8	19.4	0.74	0.71	32.6
West:	BRUNKE	R ROAD									
10	L2	31	0.0	0.472	37.3	LOS D	14.7	103.1	0.82	0.72	38.5
11	T1	627	0.0	0.472	31.8	LOS C	14.8	103.7	0.82	0.71	33.3
Appro	ach	658	0.0	0.472	32.0	LOSC	14.8	103.7	0.82	0.71	33.6
All Vel	hicles	1997	0.0	0.472	18.1	LOS B	17.3	120.8	0.59	0.53	41.5

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.

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.

Move	ement Performance - Pe	edestrians						
Mov	Description	Demand	Average		Average Bacl		Prop.	Effective
ID	Description	Flow ped/h	Delay sec	Service	Pedestrian ped	Distance m	Queued	Stop Rate per ped
P2	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	31.6	LOS D	0.1	0.1	0.73	0.73
P4	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pe	destrians	158	46.7	LOS E			0.88	0.88

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.

# APPENDIX C

## **TURNING PATH ASSESSMENT**

