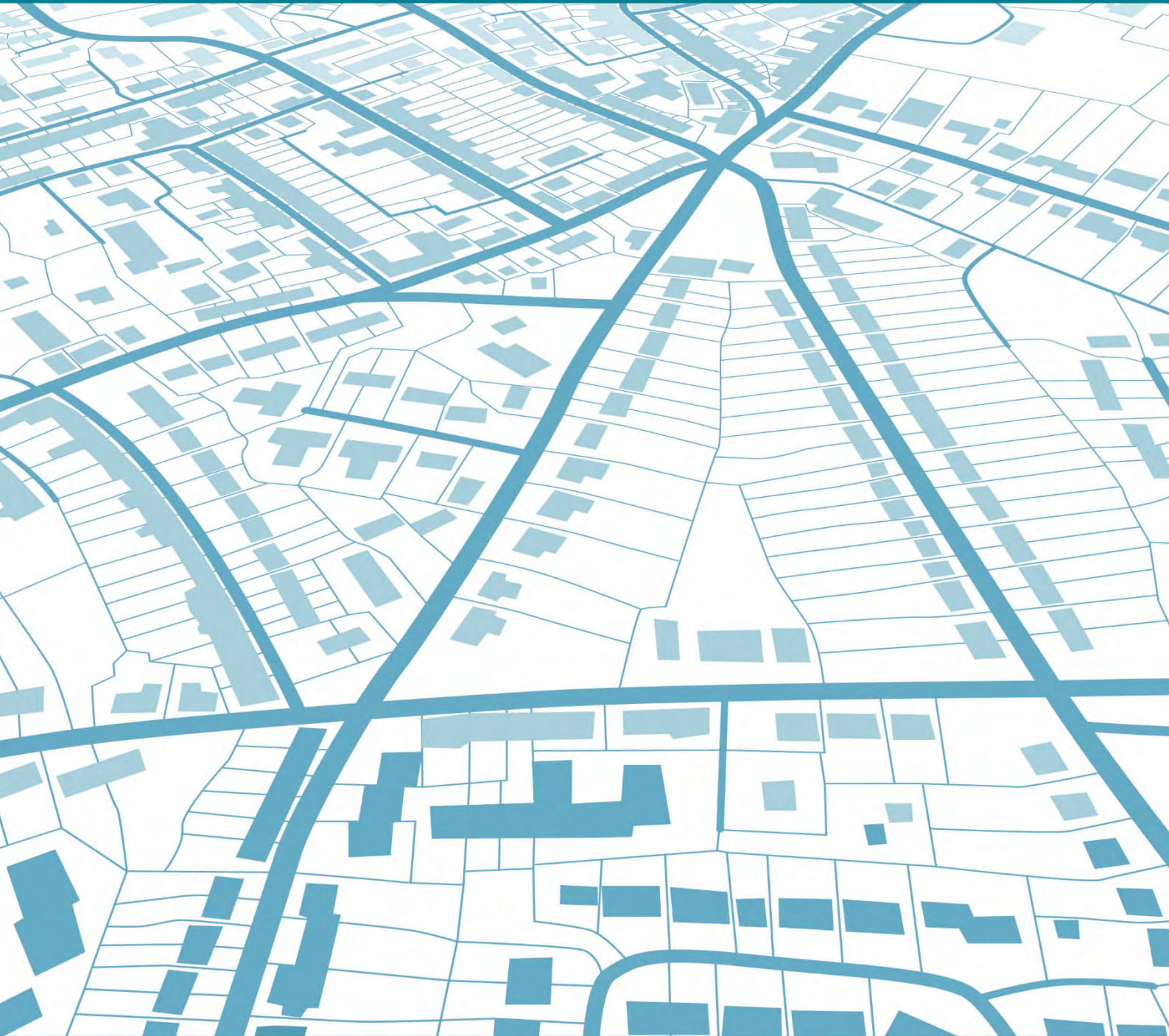




Proposed GenesisCare Medical Facility Cnr Kellicar Road & Camden Road, Campbelltown

Traffic and Parking Assessment

Ref: 21009
Date: October 2021
Rev: F

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1.0 Introduction

This report has been prepared to accompany revised plans for a Development Application to Campbelltown City Council for a proposed medical facility for GenesisCare on the corner of Kellicar Road and Camden Road at Campbelltown (Figure 1).

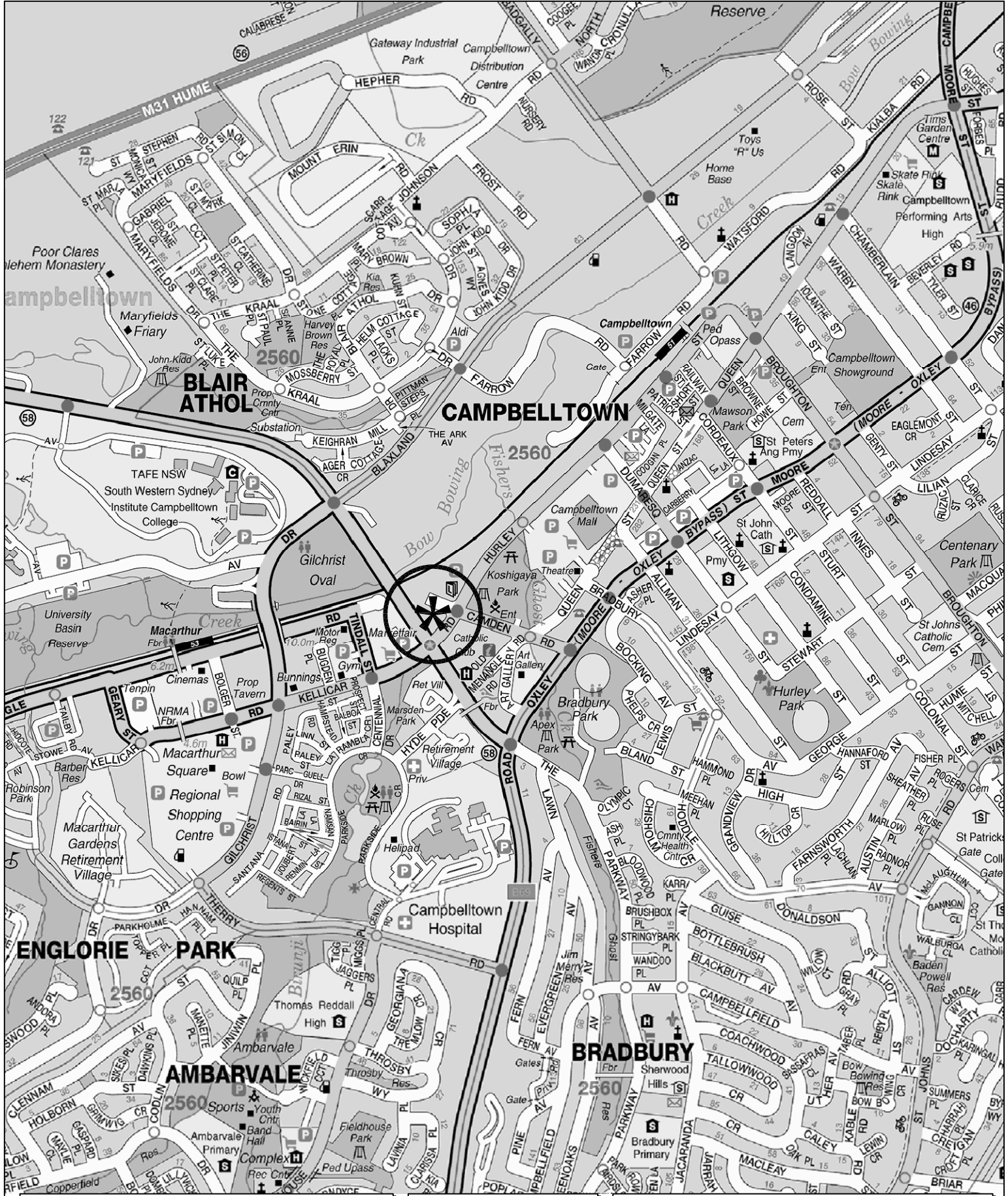
The population in the South Western Metropolitan Area is increasing rapidly and there is a corresponding increased demand for services including hospital and medical facilities. The existing large vacant site on the corner of Narellan Road, Kellicar Road and Camden Road has good access to public transport services, the arterial road system and the major residential precincts in the Region.

The proposed GenesisCare medical facility will be a comprehensive cancer centre with:

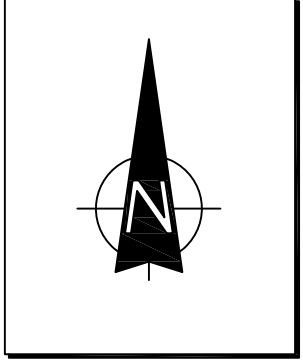
- ❖ 2 Bunker radiation oncology
- ❖ Medical oncology
- ❖ Clinical trials
- ❖ Medical imaging
- ❖ Wellness and Outpatient services

The purpose of this report is to:

- ❖ describe the site, it's context and the revised development scheme
- ❖ describe the road system serving the site and the existing traffic circumstances
- ❖ assess the adequacy of the proposed on-site parking provision
- ❖ assess the potential traffic implications of the development
- ❖ assess the suitability of the proposed vehicle access, internal circulation and servicing arrangements
- ❖ respond to traffic and parking issues raised in relation to the submitted Development Application



LEGEND



LOCATION

FIG 1

2.0 Proposed Development Scheme

2.1 Site, Context and Existing Circumstances

The site (Figure 2) occupies a triangular shaped area of some 4,741m² with frontages to Camden Road, Kellicar Road and Narellan Road in the southern part of the Campbelltown Town Centre.

The nearby uses include:

- ❖ The Macarthur Square retail centre on the western side of Narellan Road
- ❖ The large Catholic Club on the southern side of Kellicar Road
- ❖ The Council Library and vacant land on the eastern side of Camden Road
- ❖ The large Campbelltown Mall and Town Centre extending to the north-east

The site is largely vacant grassland with some perimeter trees at the present time.

2.2 Proposed Development

It is proposed to clear the site and provide level platforms for the new building and hardstand areas. The proposed 4 level building comprises:

- ❖ 2 bunker radiation oncology
- ❖ Medical oncology
- ❖ Clinical trials
- ❖ Medical imaging
- ❖ Wellness and Outpatient services

Total floor area: 3,242m² GFA (2,796m² NLA)



LEGEND



SITE

FIG 2

An at-grade carpark will provide a total of 63 parking spaces with vehicle accesses on the Camden Road frontage. As part of the development scheme, it is proposed to modify the existing carriageway geometry of Camden Road at the site frontage and reactivate the traffic signals to provide full controlled access at the Kellicar Road/Hurley Street intersection (as previously existed prior to construction of the northern Narellan Road railway over the bridge).

The projected operational circumstances for the development are based on the GenesisCare experience at their numerous other facilities with allowance for the larger proposed floor area at Campbelltown. The projected staff, shift and patient details are as follows:

Staff / Shift Time (maximum)	
6.30am – 4.30pm	1 – 2 (2)
7.00am – 5.00pm	3
7.00am – 3.00pm	8
8.00am – 6.00pm	15
9.00am – 5.00pm	20
10.00am – 6.00pm	8
Total:	56

Note: Details of the nature/function of the various staff are provided in the Statement of Environmental Effects

Patients	Average per Day	Maximum
7.00am – 5.00pm (1 hour stay)	30	55
8.00am – 6.00pm (1/2 hour stay)	45	80
7.00am – 5.00pm (4 ½ hour stay)	20	30
7.00am – 6.00pm (1 hour stay)	25	40
Total:	120	205

Note: All patients will have timed appointments and these will be “managed” to ensure a “metered” arrival and departure. Accordingly, the approximate arrival/departure rate of patients is as follows:

<i>Average</i>	<i>10 per hour</i>
<i>Maximum</i>	<i>18 per hour</i>

Transport and Traffic Planning Associates

Details of the proposed development are provided on the revised plans prepared by Team 2 Architects for the Development Application which are reproduced in part in Appendix A.

3.0 Road Network and Traffic Conditions

3.1 Road Network

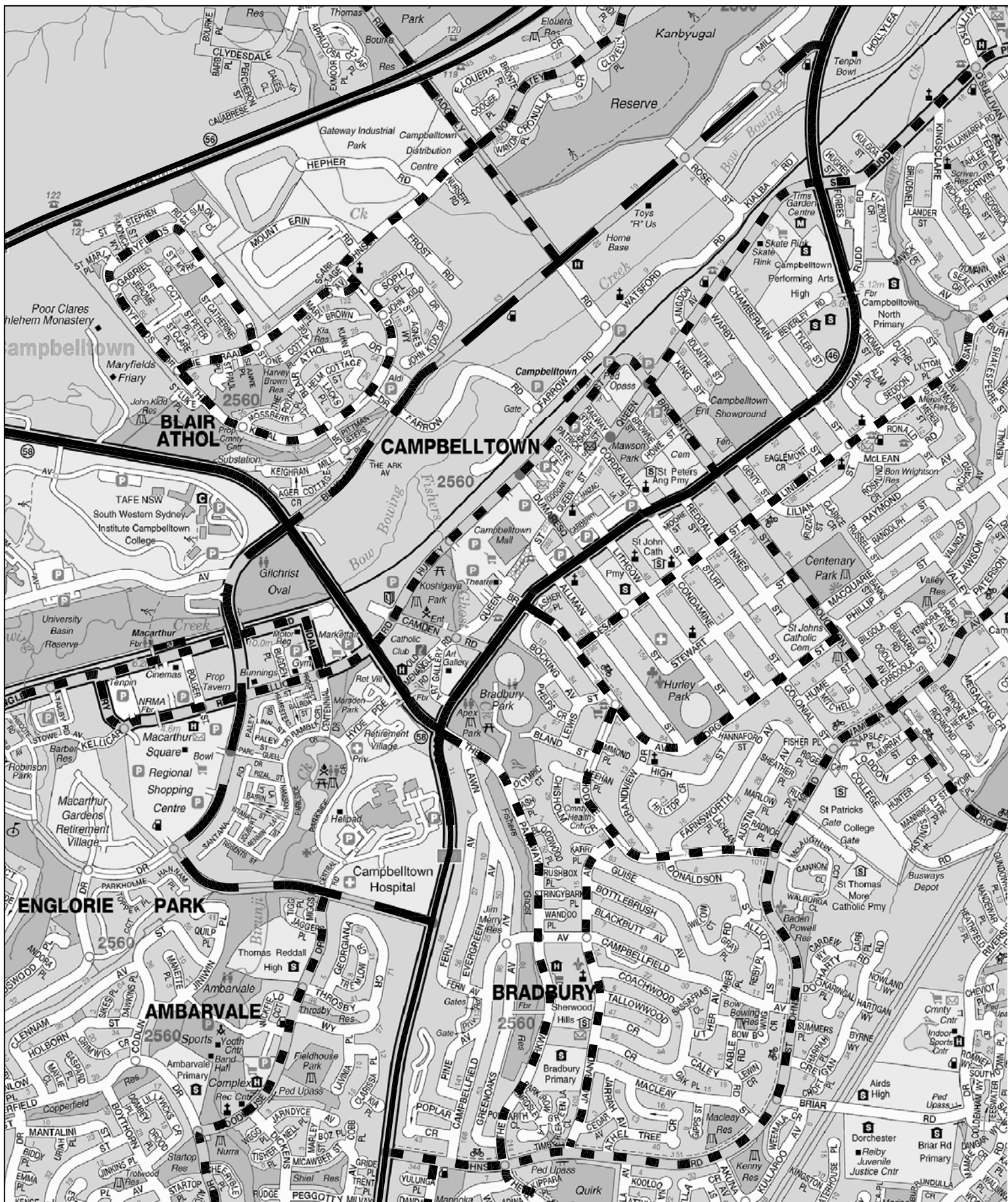
The existing road network serving the site (Figure 3) comprises:

- ❖ M31 Hume Motorway – a *State Road* and part of the arterial route link between Sydney and Melbourne
- ❖ Narellan Road – a *State Road* and arterial route linking between Campbelltown and Narellan
- ❖ Appin Road / Moore Oxley Bypass – a *State Road* and arterial route linking between Appin and Glenfield
- ❖ Blaxland Road / Gilcrist Drive – a *Regional Road* and sub-arterial route linking between Campbelltown and Leumeah
- ❖ Kellicar Road / Hurley Street – a *State / Regional Road* and major collector route running along the western side of the Town Centre
- ❖ Camden Road – a *minor collector road* connecting between Kellicar Road / Hurley Street and Oxley Moore Bypass with a dead-end section to the northwest of Kellicar Road

3.2 Traffic Controls

The existing traffic controls which have been applied to the road system in the vicinity of the site (Figure 4) include:

- ❖ The traffic signal control at the Kellicar Road / Camden Road / Hurley Street intersection which includes:
 - prohibition of the right turn movement from Hurley Street
 - restriction of access for the northern arm of Camden Road to left turn IN/OUT only



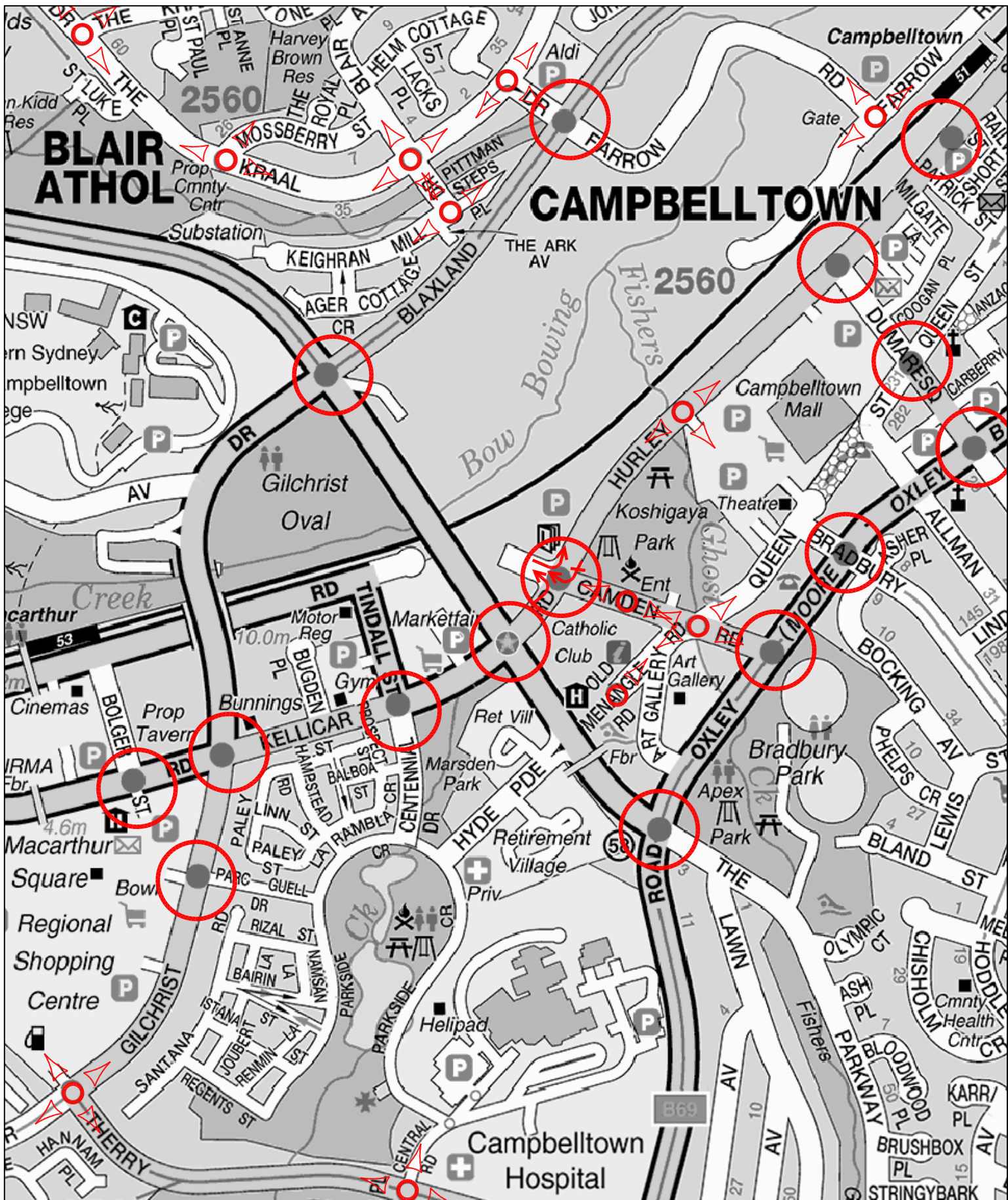
LEGEND

- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR



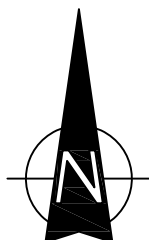
ROAD NETWORK

FIG 3



LEGEND

-  TRAFFIC SIGNAL CONTROL
-  ROUNDABOUT



TRAFFIC CONTROLS

FIG 4

Details of this existing intersection arrangement and the former arrangement (prior to the closure of Camden Road) are provided and the traffic signal design plans reproduced overleaf

- ❖ The traffic signals at the Narellan Road / Kellicar Road intersection

Details if this existing intersection arrangement are provided on the traffic signal design plan reproduced overleaf

- ❖ The roundabouts along Camden Road and traffic signals at the Moore Street intersection
- ❖ The NO STOPPING restrictions along Hurley Street, Kellicar Road and Narellan Road in the vicinity of the site
- ❖ The bus stops on Hurley Street in the vicinity of the site

3.3 Traffic Conditions

An indication of the current traffic conditions on the road system serving the site is provided by data published by TfNSW and traffic surveys undertaken as part of this study. The TfNSW data is expressed in terms of Annual Average Daily Traffic (AADT) and is provided in the following:

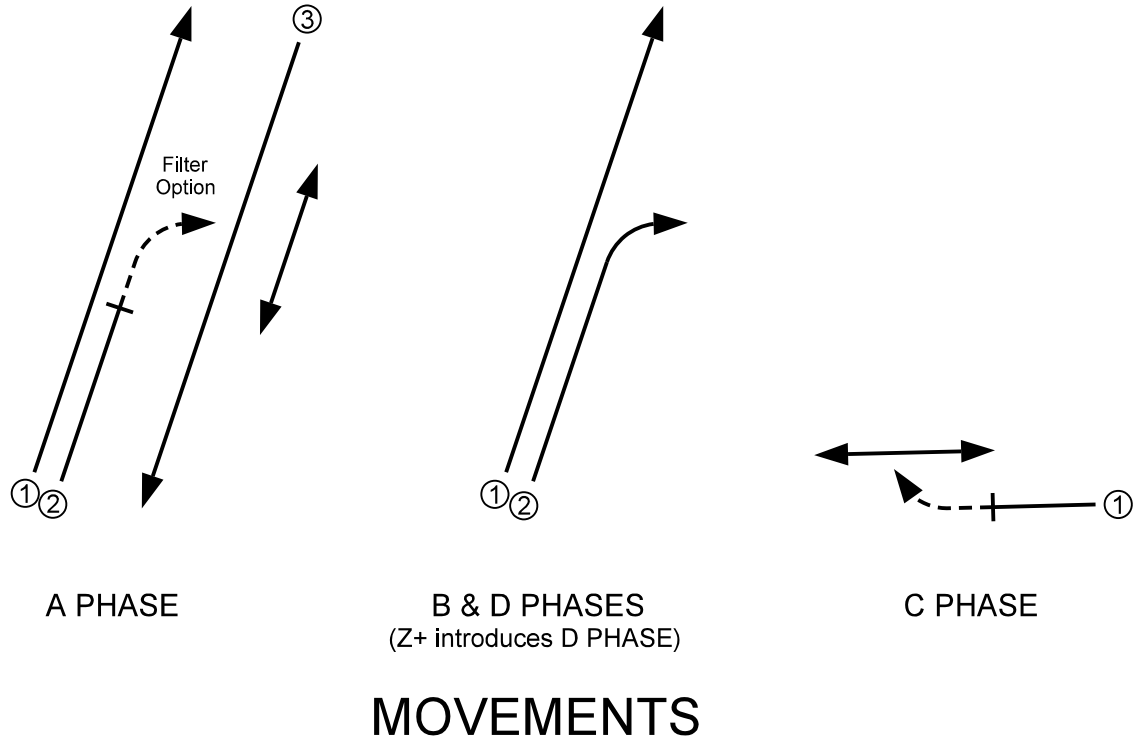
	AADT
Narellan Road North of Kellicar Road	31,000

Traffic surveys have been undertaken at the intersections of Narellan Road / Kellicar Road and Kellicar Road / Hurley Street / Camden Road during the weekday AM and PM peak periods. The results of these surveys are provided in Appendix B and summarised in Figure 5.

The results of SIDRA analysis of these intersections for the peak traffic periods are provided in Appendix C and summarised in the following while the criteria for interpreting SIDRA results is reproduced overleaf.

DRAWN BY CADD
DO NOT AMEND MANUALLY

DATE IN SERVICE : 10/07/87



POSTS				
POST	TYPE	LENGTH	OFFSET	REMARKS
1	2	4.1	1.1	EXISTING
2	2	4.1	-	EXISTING
3	2	4.1	1.4	EXISTING
4	2	4.1	-	EXISTING
5	2	4.1	-	EXISTING
6	2	4.1	0.9	EXISTING
7	2	4.1	1.0	EXISTING
8	2	4.1	-	EXISTING
9	2	4.1	1.1	EXISTING

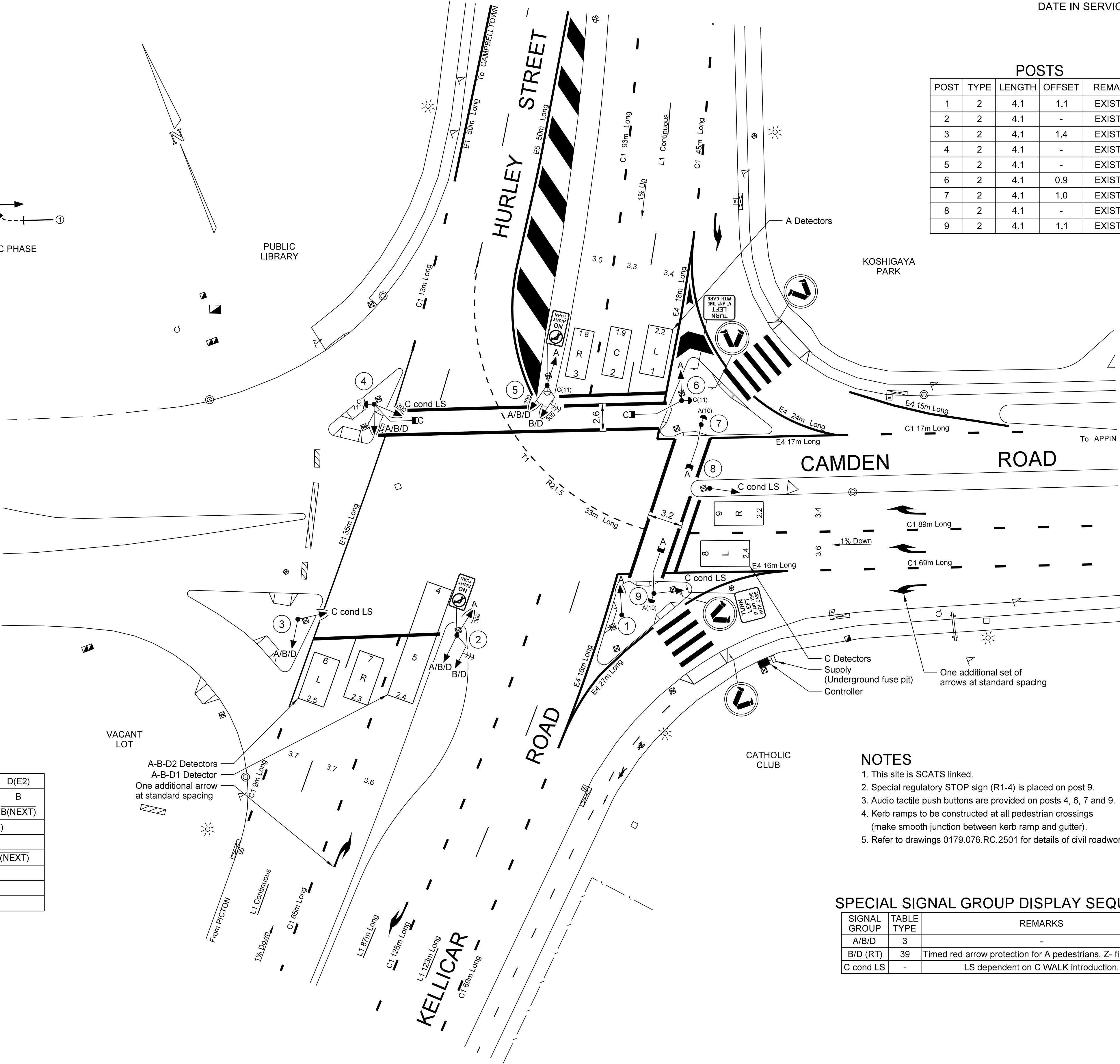
DETECTOR SPECIFICATION						
Detector	Specifications					
A	FN	A(L)	A(E3)			
	SG/PS	A	A			
	DS	-	-			
A-B-D1 Depart. & Approach	FN	B(PR)	D(PR)			
	SG/PS	A	A			
	DS	Z-	Z-Z+			
A-B-D1 Approach	FN	A(L),B(L)	D(L)	B(L)	D(L)	
	SG/PS	A/B/D	A/B/D	B/D	B/D	
	DS	Z-	Z-Z+	Z-	Z-Z+	
cont.	FN	A(E2)			B(E2)	D(E2)
A-B-D1 Approach	SG/PS	A			B	B
	DS	Z-A-B-D1(PR),B(NEXT),D(NEXT)			D(NEXT)	B(NEXT)
A-B-D2	FN	A(L)	A(E1)	B(E1)		
	SG/PS	A/B/D	A	B		
	DS	-	B(NEXT),D(NEXT)	A(NEXT),D(NEXT)		
cont.	FN	D(E1)				
A-B-D2	SG/PS	D				
	DS	A(NEXT),B(NEXT)				
C	FN	C(L)	C(E1)			
	SG/PS	C	C			
	DS	-	-			
A P.B.	FN	A(PB)	C(L)			
	SG/PS	A(WALK)	A,A(WALK)			
	DS	-	B,C			
C P.B.	FN	C(PB)	A(L)			
	SG/PS	C(WALK)	C,C(WALK)			
	DS	-	A,B,D			

VACANT LOT
A-B-D2 Detectors
A-B-D1 Detector
One additional arrow
at standard spacing

- NOTES
1. This site is SCATS linked.
 2. Special regulatory STOP sign (R1-4) is placed on post 9.
 3. Audio tactile push buttons are provided on posts 4, 6, 7 and 9.
 4. Kerb ramps to be constructed at all pedestrian crossings (make smooth junction between kerb ramp and gutter).
 5. Refer to drawings 0179.076.RC.2501 for details of civil roadworks.

SPECIAL SIGNAL GROUP DISPLAY SEQUENCE

SIGNAL GROUP	TABLE TYPE	REMARKS
A/B/D	3	-
B/D (RT)	39	Timed red arrow protection for A pedestrians. Z- filter option.
C cond LS	-	LS dependent on C WALK introduction.



A ORIGINAL ISSUE

ISSUE NO. 01/08/10
DATE 24/01/11
CADD FILE: K:\Signals\TCS\1000-vv1099vv1028\VV1028_1E.dgn
SCALE 5 0 (1:200) 5 10
FILE 76 TS 312
REGN. 7000.076.VV.1028

ROADS AND TRAFFIC AUTHORITY OF NSW

CAMPBELLTOWN COUNCIL AREA

TRAFFIC SIGNALS AT

KELLCAR ROAD,

CAMDEN ROAD AND HURLEY STREET

CAMPBELLTOWN

DESIGN LAYOUT TCS No 1028

EXISTING ☐ **PROPOSED** ☒

CADD FILE: K:\Signals\TCS\1000-vv1099vv1028\VV1028_1E.dgn

SCALE 5 0 (1:200) 5 10

FILE 76 TS 312

REGN. 7000.076.VV.1028

ISSUE **E**

SHEET **1**

SIGNAL GROUP PHASE CHART

SIGNAL GROUP	Phase during which green displayed						OVERLAPS PERMITTED
	A	B	C	D	E	E1	E2
V1	X	X				X	E1-A-B B-A-E1
V2	X		X				E2-A-C C-A-E2
V3		X		X	X		E-E1 B-E
V4			X	X		X	C-E2 C-E
V5				X			
P1	X	X				X	E2-A-C
P2			X				

DETECTOR SPECIFICATION

Detector	Specification		
	FN	D(L)	D(E3)
D3	SGPS	D	D
	DS	-	D3(PR)

NOTES:

- The phasing for this site to be in accordance with Plan reg.VD 018-5.6
- Special regulatory stop signs (N°RT-202) placed on posts 4.9 & 10
- Provision is made in cabling for future phase as follows:-
 - Additional 'E' phase 3-aspect right turn arrow lanterns on posts 4 & 9
 - 'D/E' overlap lanterns on posts 3, 4, 9 & 10
- Departure section to be disconnected at controller until required.

DESIGN LAYOUT

REFERENCE PLANS		SURVEYOR	
Symbol & Ash	N003-6	DATE	10/10/87
Standard Post	V001-5	DESIGNED	R. LUHR
Det. Schedule Exp	V010-7	CHECKED	G. EYRE
Diamond G100	V010-5	PASSED	8/2/87

THIS PLAN HAS BEEN TAKEN TO THE SITE OF THE WORK AND APPROVED.

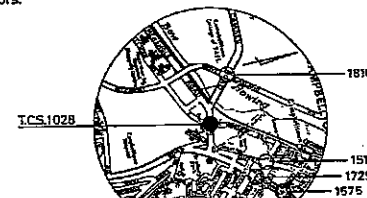
APPROVED
DIVISIONAL ENGINEER
DATE 9.2.87

ROADS AND TRAFFIC AUTHORITY, NSW
CITY OF CAMPBELLTOWN - M.R.178
CAMDEN ROAD, HURLEY STREET
& KELLICAR ROAD AT CAMPBELLTOWN
DESIGN LAYOUT
T.C.S. No. 1028

DIVISION: PARRAMATTA		SUPERSEDES	
FILE N°	N° OF SHEETS	SHEET N°	ISSUE
76TS312		1	
SCALE 1:200		1 2 3 4 5	
Reg. N°		0178.076 VV.1028.	

LOCALITY SKETCH

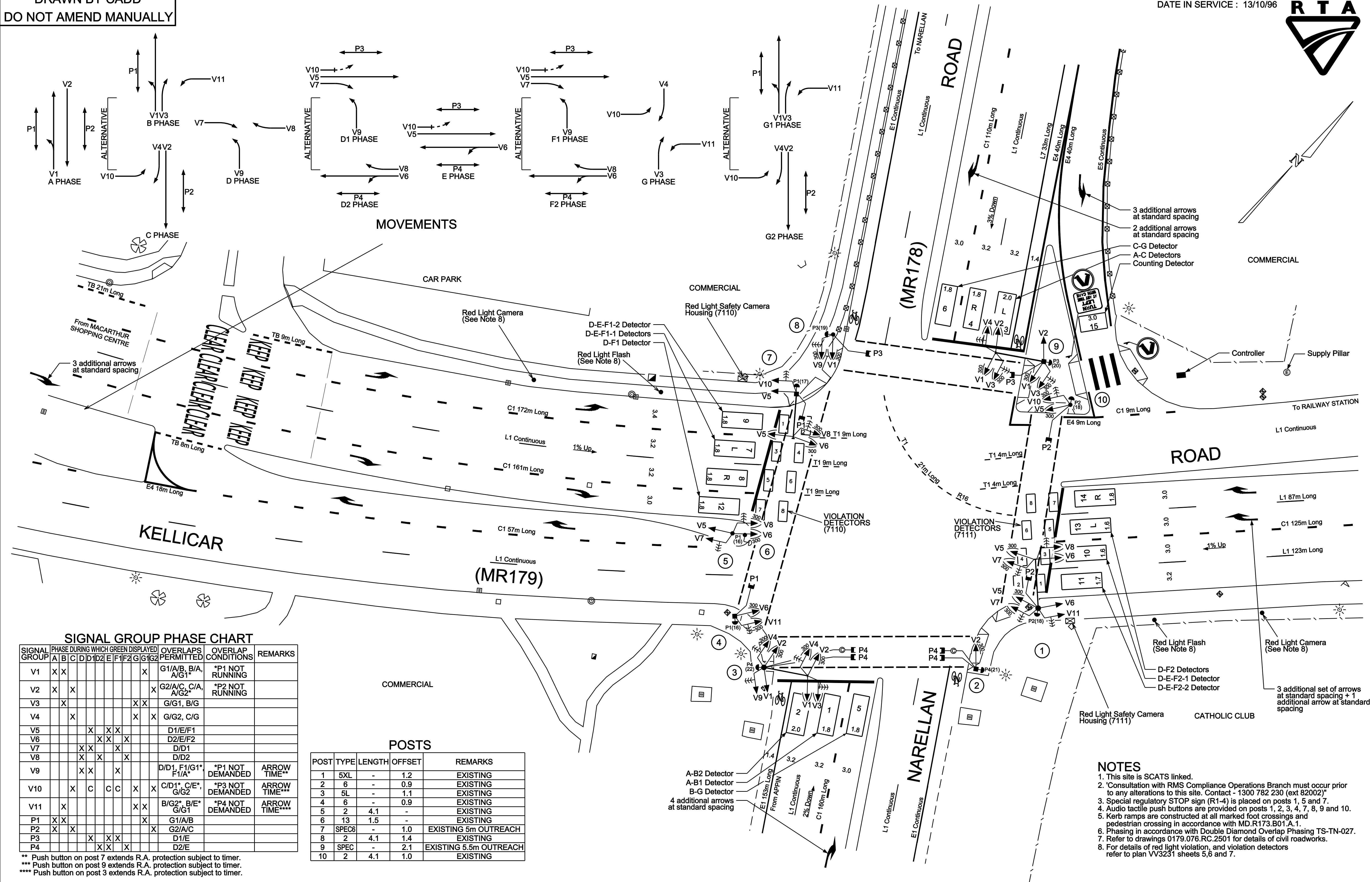
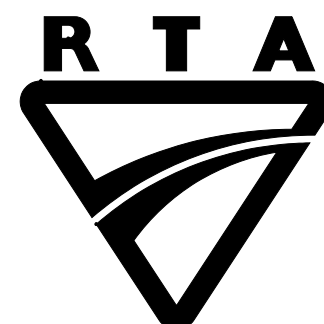
1:50,000 Co-ords: E. 282075
N 7226450



0178.076.VV.3231

DRAWN BY CADD
DO NOT AMEND MANUALLY

DATE IN SERVICE : 13/10/96



SIGNAL GROUP PHASE CHART

SIGNAL GROUP	PHASE DURING WHICH GREEN DISPLAYED	OVERLAPS PERMITTED	OVERLAP CONDITIONS	REMARKS
V1	X X		G1/A/B, B/A, A/G1*	*P1 NOT RUNNING
V2	X X		G2/A/C, C/A, A/G2*	*P2 NOT RUNNING
V3	X		G/G1, B/G	
V4	X		G/G2, C/G	
V5		X X X X	D1/E/F1	
V6		X X X X	D2/E/F2	
V7		X X X X	D/D1	
V8		X X X X	D/D2	
V9		X X X X	D/D1, F1/G1*, F1/A*	*P1 NOT DEMANDED
V10		X X X X	C/D1*, C/E*, G/G2	*P3 NOT DEMANDED
V11		X X X X	B/G2*, B/E*, G/G1	*P4 NOT DEMANDED
P1	X X		G1/A/B	
P2	X X		G2/A/C	
P3		X X X X	D1/E	
P4		X X X X	D2/E	

** Push button on post 7 extends R.A. protection subject to timer.
*** Push button on post 9 extends R.A. protection subject to timer.
**** Push button on post 3 extends R.A. protection subject to timer.

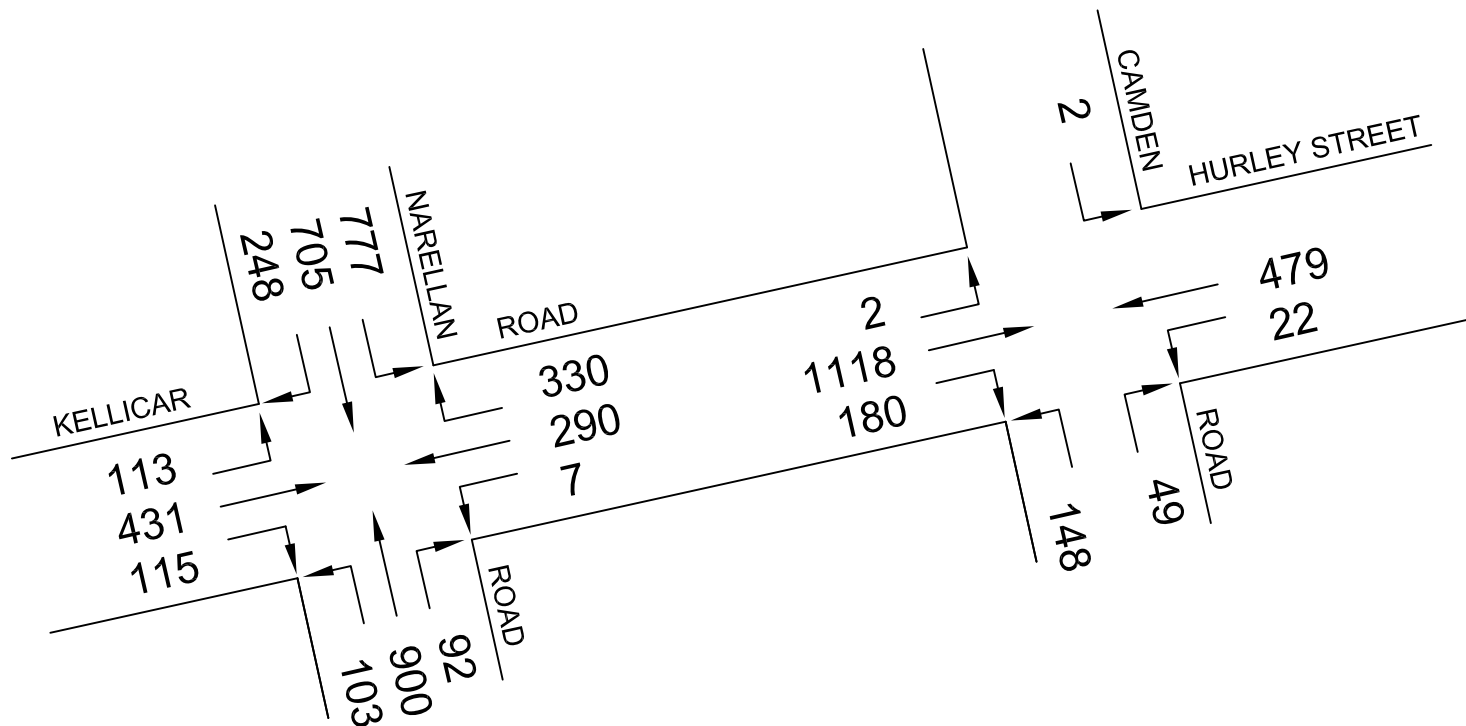
POSTS

POST	TYPE	LENGTH	OFFSET	REMARKS
1	5XL	-	1.2	EXISTING
2	6	-	0.9	EXISTING
3	5L	-	1.1	EXISTING
4	6	-	0.9	EXISTING
5	2	4.1	-	EXISTING
6	13	1.5	-	EXISTING
7	SPEC6	-	1.0	EXISTING 5m OUTREACH
8	2	4.1	1.4	EXISTING
9	SPEC	-	2.1	EXISTING 5.5m OUTREACH
10	2	4.1	1.0	EXISTING

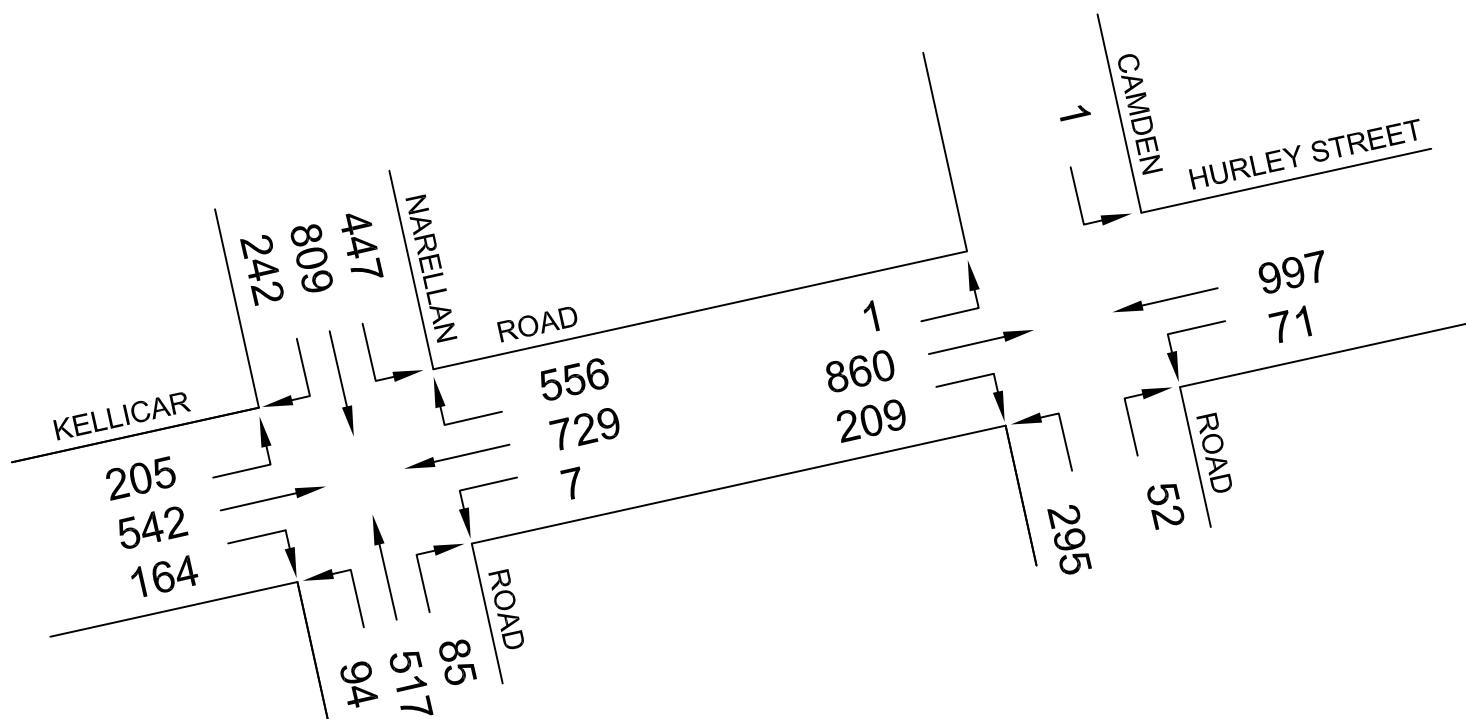
NOTES

- This site is SCATS linked.
- Consultation with RMS Compliance Operations Branch must occur prior to any alterations to this site. Contact - 1300 782 230 (ext 82002)
- Special regulatory STOP sign (R1-4) is placed on posts 1, 5 and 7.
- Audio tactile push buttons are provided on posts 1, 2, 3, 4, 7, 8, 9 and 10.
- Kerb ramps are constructed at all marked foot crossings and pedestrian crossing in accordance with MD.R173.B01.A.1.
- Phasing in accordance with Double Diamond Overlap Phasing TS-TN-027.
- Refer to drawings 0179.076.RC.2501 for details of civil roadworks.
- For details of red light violation, and violation detectors refer to plan VV3231 sheets 5, 6 and 7.

A ORIGINAL ISSUE B ISSUE: OFFICE INST 22/7/1996 C ISSUE: POST CHART 22/7/1996 D ISSUE: PLAN AMENDED TO SUIT WAE E ISSUE: J1 SN644 25/05/10 F ISSUE: J1 SN644 25/05/10 G ISSUE: J1 SN644 25/05/10 H ISSUE: J1 SN644 25/05/10 I ISSUE: J1 SN644 25/05/10 J ISSUE: J1 SN644 25/05/10 K ISSUE: J1 SN644 25/05/10 L ISSUE: J1 SN644 25/05/10 M ISSUE: J1 SN644 25/05/10 N ISSUE: J1 SN644 25/05/10 O ISSUE: J1 SN644 25/05/10 P ISSUE: J1 SN644 25/05/10 Q ISSUE: J1 SN644 25/05/10 R ISSUE: J1 SN644 25/05/10 S ISSUE: J1 SN644 25/05/10 T ISSUE: J1 SN644 25/05/10 U ISSUE: J1 SN644 25/05/10 V ISSUE: J1 SN644 25/05/10 W ISSUE: J1 SN644 25/05/10 X ISSUE: J1 SN644 25/05/10 Y ISSUE: J1 SN644 25/05/10 Z ISSUE: J1 SN644 25/05/10		PUBLIC UTILITY LEGEND HYDRANT STOP VALVE GAS VALVE SEWER MANHOLE TELECOM PIT ELECT LIGHT POLE POWER POLE STAY POLE TELEPHONE BOX TELECOM PILLAR		REFERENCE PLANS SYMBOLS/ABBS. VD003-6 STD POSIT VD001-5 DET SCHED EXP VD018-10 PRES. DETECT VD005-17 SSG DIS. SEQ. VD018-8 CABLE INSTALL SHEET 5 CABLE CHART SHEET 6 SURVEYOR: D. VANDERBURG DATE: 28/08/07		U.B.D. Ref. Map 346 G7 I.S.G. E: 281 960 CO-ORDS N: 1 228 360 DESIGNED: G VARLEY- ProVision DRAFTING S.A. MANLE SITE CHECKED RECOMMENDED		DESIGN APPROVAL APPROVED S.A. MANLE DATE: 12/7/1996 DESIGN PREPARED BY ROAD TECHNOLOGY & DESIGN TECHNOLOGY & TECHNICAL SERVICES OPERATIONS & SERVICES		RTA ACCEPTANCE RECOMMENDED S.A. MANLE DATE: 18/7/1996 ACCEPTED A.G. [Signature] DATE: 18/7/1996		ROADS AND TRAFFIC AUTHORITY OF NSW CAMPBELLTOWN COUNCIL AREA TRAFFIC SIGNALS AT NARELLAN ROAD (MR178) AND KELLICAR ROAD (MR179) CAMPBELLTOWN TCS No 3231		EXISTING ☒ PROPOSED ☐ CADD FILE: K:\Signals\....VV3231_1G.dgn SCALE 5 0 (1:200) 5 10 FILE 76 TS 343 SUPERSEDES SHEET/ISSUE 1/F REGN. 0178.076.VV.3231 ISSUE G SHEET 1	
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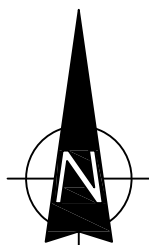


AM PEAK



PM PEAK

LEGEND



EXISTING PEAK
TRAFFIC FLOWS

FIG 5

	AM		PM	
	LOS	AVD	LOS	AVD
Narellan/Kellicar	C	33.2	C	39.6
Kellicar/Camden	A	13.4	B	14.7

These results indicate that these intersections operate with a generally satisfactory level of service at the present time. Although there is some queuing during the afternoon peak along Kellicar Road into Hurley Street from the Narellan Road intersection.

3.4 Transport Services

The development site is conveniently located to both rail and bus services with Campbelltown Railway station located some 1Km to the north while numerous bus services (17) run along Hurley Street adjacent to the site. These bus routes operate between Campbelltown and suburbs such as Blair Athol, Narellan, Ambarvale, Appin, Wollongong, Bradbury, Airds, Wedderburn, Menangle, Camden and Glen Alpine (see details overleaf).

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
'C'	Satisfactory	Satisfactory but accident study required
'D'	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
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	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

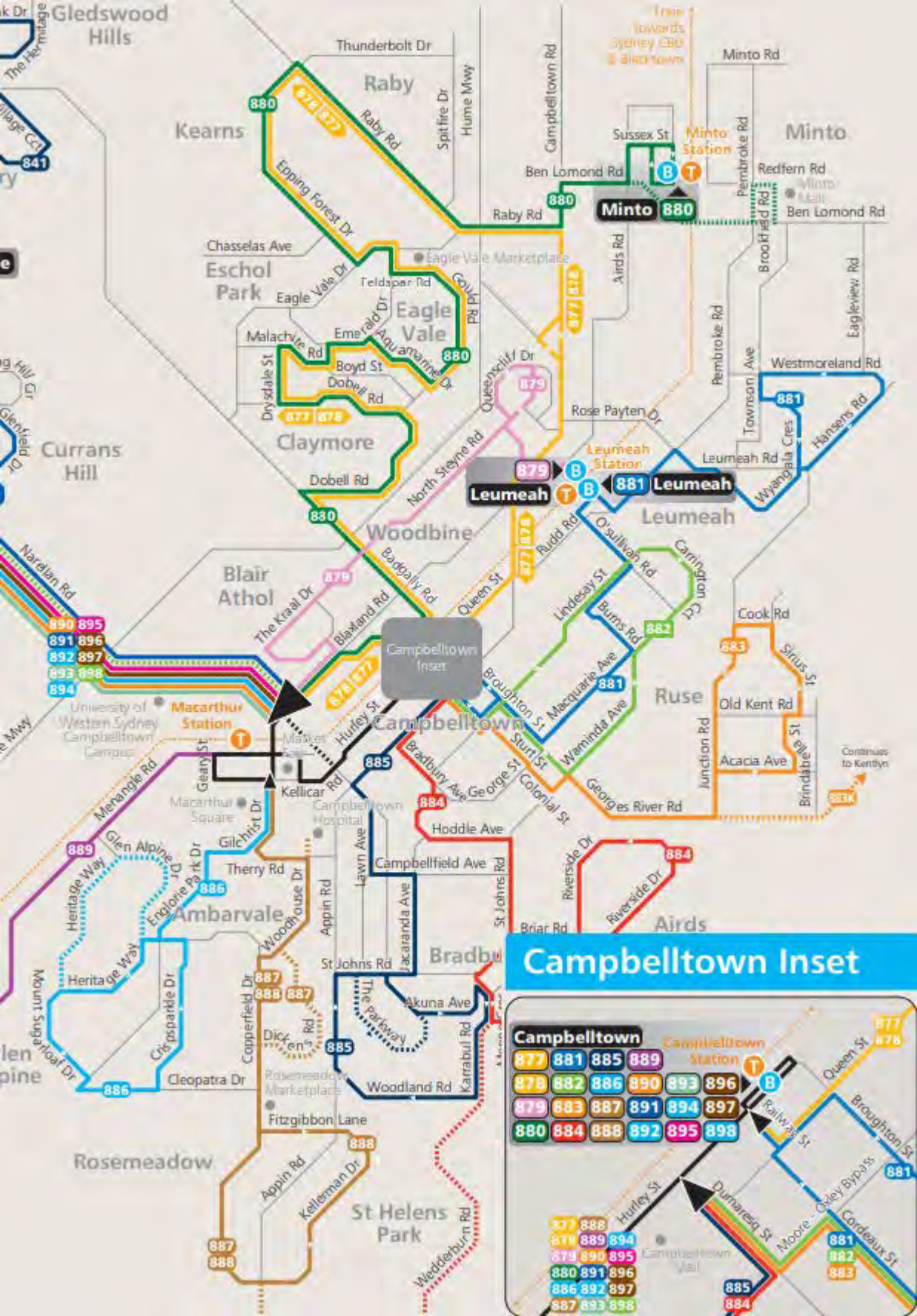
3. Degree of Saturation (DS)

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

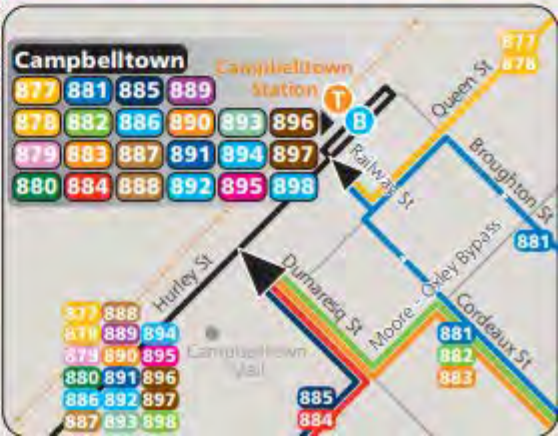
For intersections controlled by **traffic signals** both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

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.





Campbelltown Inset



4.0 Parking

Council's DCP specifies the following parking provision in relation to normal medical centre type uses:

Medical Centre / Health Consulting Room	- 1 space per 35m ² GFA
Other Health Services	- on merits

The principal difference between a normal medical centre and the proposed GenesisCare facility is that patients at medical centres include casual "walk in" visitations whereas patient visits at GenesisCare are strictly for timed appointments only. Also, the proposed 2 radiation bunkers involve a significant floorspace not found in medical centres which have minor staff/patient presence (i.e. for the floor area involved).

Parking demands are also influenced by proximity to public transport services and in this regard the existing GenesisCare facility at Kingswood provides a very comparable circumstance to the proposed Campbelltown site.

Detailed questionnaire surveys have been undertaken at the Kingswood facility in relation to the arrival/departure travel mode characteristics of staff and patients. The results of these surveys are summarised in the following:

Travel Mode	Staff	Patients
Drive/n and Park	65%	61%
Car Pool	5%	N/A
Set-down/Pick-up	6%	11%
Other (taxi etc.)	1.5%	5%
Train	12.5%	15%
Bus	10%	8%
Total:	100%	100%

Application of this data to the projected staff and patient numbers at Campbelltown would indicate the following parking demands:

Staff (max)	56 @ 65% - 36.4 spaces (say 40)
--------------------	---------------------------------

Patients

Maximum at one time	33 @ 61% - 20.1 spaces (say 25)
---------------------	---------------------------------

Average at one time	21 @ 61% - 12.8 spaces (say 15)
---------------------	---------------------------------

On this basis, it is apparent that the worst possible case concurrent on-site parking demand could be some 65 spaces and it is proposed to provide a total of 63 spaces including:

- 3 accessible spaces
- 4 elec. charge spaces
- 29 staff spaces
- 34 visitor spaces

It is apparent that the proposed parking provision will be adequate for the projected maximum staff and patient characteristics of the proposed facility.

5.0 Access and Traffic

Access

The principal essential element of vehicle access for the proposed development is the reactivation of the traffic signals controlling the northern arm of Camden Road at the Kellicar Road/Hurley Street intersection.

This was a major intersection prior to the construction of the Narellan Road railway overpass and the constructed left turn slip lanes etc were synonymous to that circumstance.

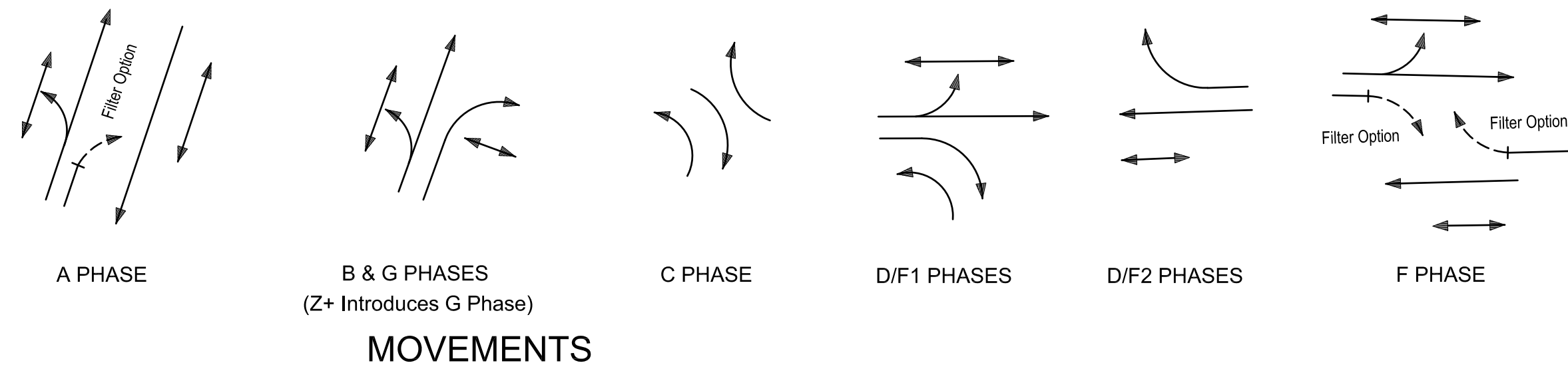
Council has indicated a desire to achieve a desirable urban streetscape outcome with the development and it is proposed to narrow the carriageway and details of the proposed access intersection, traffic signal arrangement and phasing are provided on the diagram overleaf.

Vehicle access for the site itself will comprise an ingress only driveway midway along the Camden Road frontage and a combined ingress/egress driveway at the northern end of the site. These driveways will comply with the design requirements of AS2890.1 & 2 and there will be good sight distances available.

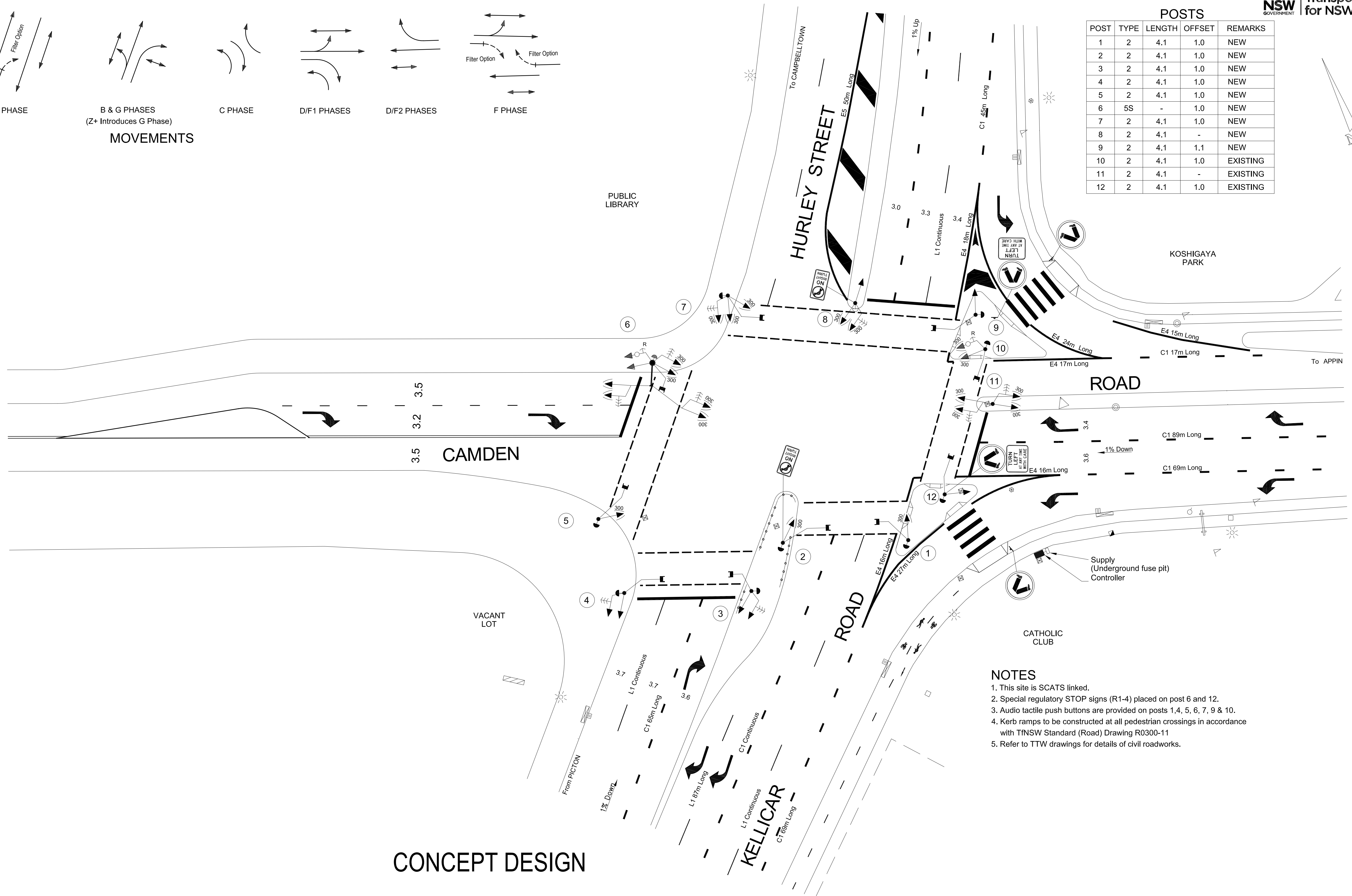
Traffic

The former RMS undertook a consultant study of the traffic and parking characteristics of Medical Centres in 2015. However, the sites surveyed were only relatively small (i.e. 210m² to 1,361m² GFA – average 720m² GFA) as indicated on the extract overleaf.

These sites are distinctly different to GenesisCare facilities particularly as the great majority did not have access to a railway station besides being of a totally different size and function to the proposed GenesisCare facility (e.g. “Walk In” patients rather than only by appointment, very ill patients requiring serious medical procedures and therefore not self-drive etc).



POSTS				
POST	TYPE	LENGTH	OFFSET	REMARKS
1	2	4.1	1.0	NEW
2	2	4.1	1.0	NEW
3	2	4.1	1.0	NEW
4	2	4.1	1.0	NEW
5	2	4.1	1.0	NEW
6	5S	-	1.0	NEW
7	2	4.1	1.0	NEW
8	2	4.1	-	NEW
9	2	4.1	1.1	NEW
10	2	4.1	1.0	EXISTING
11	2	4.1	-	EXISTING
12	2	4.1	1.0	EXISTING



CONCEPT DESIGN

NOTES

1. This site is SCATS linked.
2. Special regulatory STOP signs (R1-4) placed on post 6 and 12.
3. Audio tactile push buttons are provided on posts 1,4, 5, 6, 7, 9 & 10.
4. Kerb ramps to be constructed at all pedestrian crossings in accordance with TfNSW Standard (Road) Drawing R0300-11
5. Refer to TTW drawings for details of civil roadworks.

A ORIGINAL ISSUE

PUBLIC UTILITY LEGEND		REFERENCE PLANS		U.B.D. Ref.	Map 344 G6
HYDRANT		SYMBOLS/ABRVS	VD0034	I.S.G. E:	282 141
STOP VALVE		STD POSIN/CMPT	VD001-5	C.O.R.DS N:	1 228 468
GAS VALVE		INST. STOP DET	VC005-17	DESIGNED:	J. SINGH
SEWER MANHOLE		WVE GROUP OP	TS-TN-019	CHECKED:	M. KONG
COMMS PIT		DET LOGIC OP	TS-TN-020		
ELECT LIGHT POLE		PED MVT OP	TS-TN-021		M. KONG
POWER POLE					SITE CHECKED
STAY POLE					
TELEPHONE BOX		SURVEYOR: ????			B. LO
COMMS PILLAR		DATE: ???? ?			RECOMMENDED

DESIGN APPROVAL
APPROVED

NAME R. NETTLE
POSITION DIRECTOR
DATE 27.09.2021

DESIGN PREPARED BY
TRANSPORT AND TRAFFIC
PLANNING ASSOCIATES

TFNSW RECOMMENDATION	
ROAD DESIGN ENGINEERING	
NAME	
POSITION	
DATE	
NETWORK OPERATIONS	
NAME	
POSITION	
DATE	

TFNSW ACCEPTANCE	
ACCEPTED	
NAME	
POSITION	
DATE	
ACCEPTED BY	
.....	
SECTION	

TRANSPORT FOR NEW SOUTH WALES

CAMPBELLTOWN COUNCIL AREA
TRAFFIC SIGNALS AT
KELLICAR ROAD,
CAMDEN ROAD AND HURLEY STREET
CAMPBELLTOWN

EXISTING ☐		PROPOSED ☒	
CADD FILE: VV1028_CONCEPT.DWG			
SCALE 5 0 (1:200) 5 10 			ISSUE
FILE SF0000/000000		SUPERSEDES SHEET/ISSUE 1/E	
REG No. DS0000/000000		TCS No. 1028	
		SHEET ?	

Assessment of projected staff and patient details (see P3) indicates the following projected arrival and departure by car for the morning and afternoon network peak periods

	AM (vtph)		PM (vtph)	
	8 – 9am		5 – 6pm	
	IN	OUT	IN	OUT
Staff	27	-	-	28
Patients	18	15	15	11
Total:	45	15	15	39

It is understood that there is the potential for development to occur on the vacant site on the opposite side of Camden Road, however details of this potential development are not known at this time. This site is a similar size to the subject site and has the potential for a similar or comparable development outcome. For the purposes of providing a robust assessment an identical peak traffic generation outcome has been adopted for incorporation in the assessment.

The projected distribution of the total generated movements is as follows:

		AM		PM	
		IN	OUT	IN	OUT
Narellan Road North	30%	27	9	9	22
Narellan Road South	20%	18	6	6	14
Camden Road	40% IN / 30% OUT	36	9	9	28
Hurley Street	10% OUT	-	3	-	7
Kellicar Road West	10%	9	3	6	7
Total		120 vtph		108 vtph	

The projected future peak traffic movements with the proposed and potential developments with access on Camden Road are shown on Figure 6. These projected future traffic circumstances have been assessed with the north-western arm of Camden Street reincorporated into the traffic signal control (SDO phasing) and the results are provided in Appendix C and summarised in the following:

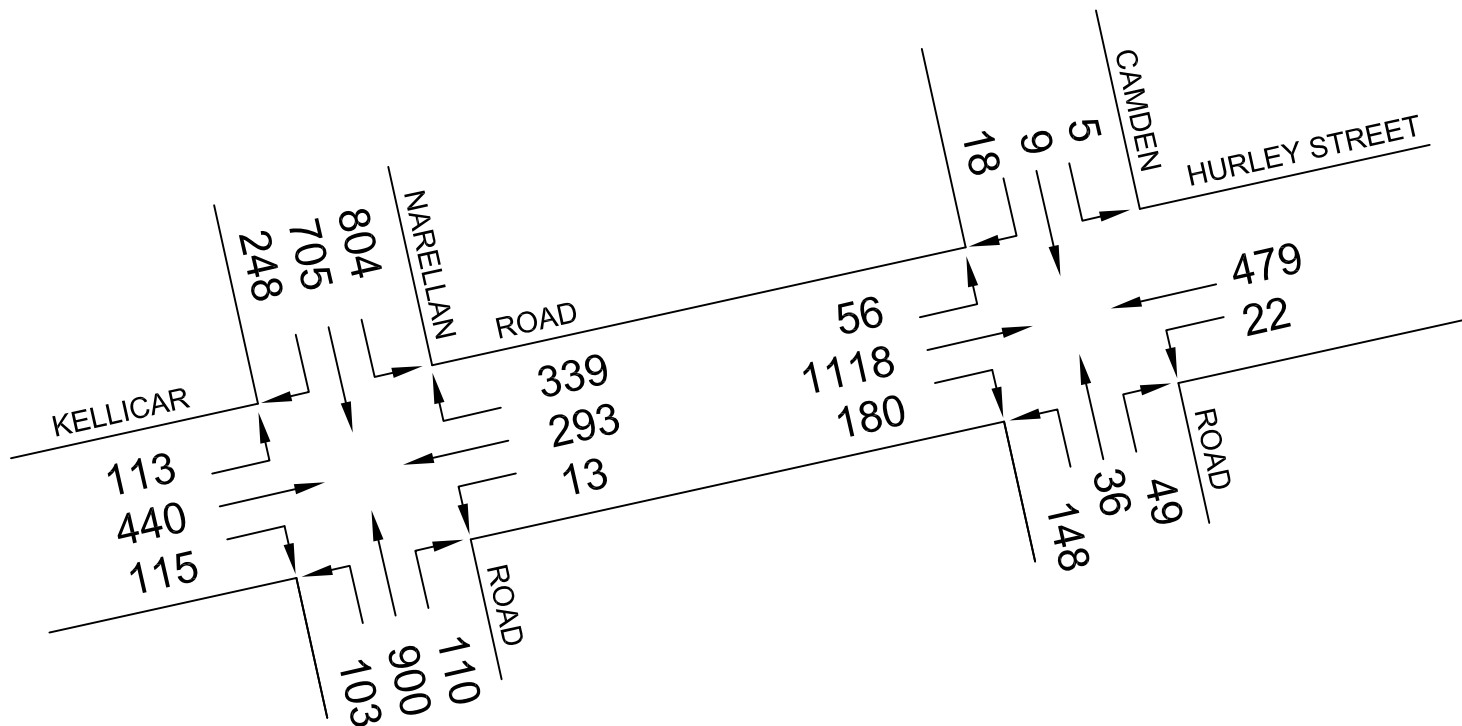
	AM		PM	
	LOS	AVD	LOS	AVD
Narellan/Kellicar	D	52.1	D	43.1
Kellicar/Camden	B	22.2	B	26.4

The results indicate that these intersections will continue to have a satisfactory operational performance with the proposed / envisaged developments and the modified traffic signal control at the Camden Road intersection.

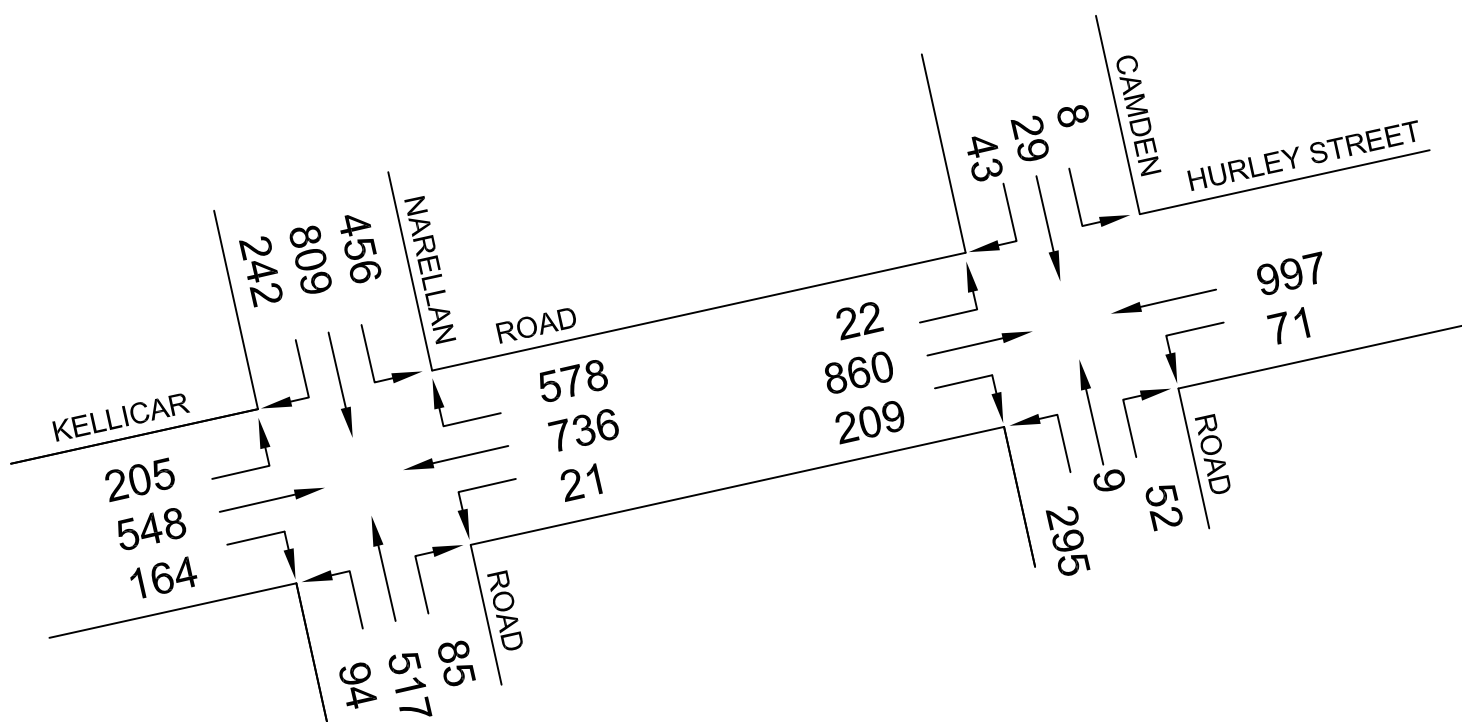
Table 2.1 Details of the selected survey sites (continued on the next page).

Site ID	Sydney sites									
	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10
Name of the development	The Mosman Practice	Crows Nest Medical Practice	Five Dock Medical Centre	Riverstone Family Medical Practice	Dural Medical Centre	Hunters Hill Medical Practice	Broadway General Practice	Sans Souci Medical Practice	Balmoral Street Medical Centre	Barwell Medical Centre
Site address	393 Military Road, Mosman NSW 2088	Suite 1a/375 Pacific Highway, Crows Nest NSW 2065	150 Great North Road, Five Dock NSW 2046	10 Pitt Street, Riverstone NSW 2765	535 Galston Road, Dural NSW 2158	6 Ryde Road, Hunters Hill NSW 2110	M105 Level 1 Broadway Shopping Centre, 1 Bay Street Broadway, Sydney NSW 2007	420/410/422 Rocky Point Road, Sans Souci NSW 2219	98 Balmoral Street, Hornsby NSW 2077	Suite 16, 7/9 Barwell Avenue, Castle Hill NSW 2154
Day and date of survey(s)	Mon, 01/06/15	Mon, 09/03/15	Thu, 19/03/15	Sat, 28/02/15 Mon, 02/03/15	Thu, 05/03/15 Sat, 07/03/15	Fri, 13/03/15	Wed, 04/03/15	Sat, 21/03/15 Mon-Fri, 23-27/03/15	Sun, 15/03/15 Mon, 16/03/15	Fri, 06/03/15 Sun-Tue, 8-12/03/15 Sat, 14/03/15 Wed-Thu, 25-26/03/2015
Duration of survey - frontage road	7:00-19:00	7:00-19:00	7:00-19:00	Sat 7:30-13:00 Mon 7:00-19:00	Thu 7:00-19:00 Sat 7:00-13:30	7:30-19:00	7:00-19:00	Sat 7:00-13:00 Mon-Fri 7:00-19:00	7:00-19:00	Mon-Thu 7:30-18:30 Fri 7:00-19:00 Sat-Sun 8:30-13:30
Duration of survey - site trip generation	7:00-19:00	7:00-19:00	7:00-19:00	Sat 8:00-13:00 Mon 7:00-19:00	Thu 7:00-19:00 Sat 7:00-13:30	8:00-18:00	8:00-19:00	Sat 8:00-13:00 Mon-Fri 8:00-18:00	7:00-19:00	Mon-Thu 8:00-18:00 Fri 8:00-17:00 Sat 8:00-13:00 Sun 9:00-13:00
Surrounding area characteristics	Town centre	Inner suburb	Inner suburb	Outer suburb	Outer suburb	Inner suburb	Town centre	Inner suburb	Town centre	Town centre
Surrounding land uses	Low-medium density residential, scattered commercial.	Low-medium density residential.	Low density residential.	Commercial / retail and low density residential.	Commercial / retail and low density residential.	Low density residential.	Commercial / retail. Located within a shopping centre.	Commercial / retail and low-medium residential.	Low density residential developments.	Commercial / retail and low-medium residential.
Frontage road - AM peak period (weekday)	7:00-8:00	8:00-9:00	8:15-9:15	10:00-11:00	7:45-8:45	8:45-09:45	9:15-10:15	multi-day ¹	7:45-8:45	multi-day
Frontage road - PM peak period (weekday)	16:15-17:15	17:15-18:15	17:30-18:30	15:15-16:15	16:00-17:00	15:30-16:30	12:15-13:15	multi-day	16:15-17:15	multi-day
Development details:										
Total site area (m ²)	876	1726	424	720	909	1069	1361	2215	400	4979
Total GFA (m ²)	1194	300	848	210	235	804	1361	475	800	980
No. of rooms	23	9	12	5	5	14	14	11	12	12
No. of doctors	15	6	6	5	5	12	12	10	5	9
No. of total staff	29	10	13	11	8	16	18	15	6	14

¹ For detailed information please refer to the Trip Generation Surveys Medical Centres Data Report.

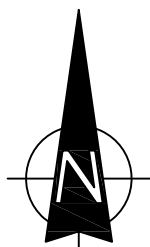


AM PEAK



PM PEAK

LEGEND



**FUTURE PEAK
TRAFFIC FLOWS**

FIG 6

6.0 Internal Circulation and Servicing

Internal Circulation

The parking spaces and provision for manoeuvring will be entirely compliant with the design criteria of AS2890.1, and Council's DCP requirements, as such provision to circulation and manoeuvring will be quite satisfactory. The designated visitor parking bays will be 2,600 wide, the staff spaces will be 2,400 wide while the accessible bays will comply with AS 2890.6.

Servicing

Refuse will be removed from the loading bay by a contract collection service while delivery vehicles will also be able to use this bay. Details of the turning path assessment for these vehicles are provided in Appendix D.

7.0 Issues

Traffic and parking issues have been raised in a Council engaged peer review of the Traffic Report and a response from TfNSW. These issues are identified and responded to in the following:

❖ **Operational Hours**

The facility will be licensed to operate 23 hours and the peak staffing times will be 6.30am to 6.00pm and the peak patient times will be 9.00am to 7.00pm.

❖ **Comparable Facility**

The Kingswood Genesis Care facility is entirely comparable due to:

- staffing/facilities
- socio demographic characteristics
- proximity to transport services

❖ **Left Turn Slip Lanes**

Left turn slip lanes will be retained for the turns into and out of Camden Street but with the geometry modified to comply with “high angle” design criteria.

❖ **Assessment of Other Intersections**

The assessed traffic generation of the proposed development during the road network peak periods is only 60 vtpd in the AM and 54 vtpd in the PM and a similar projection has been made for potential development of the site on the northern side of Camden Road even though there is no awareness of the nature of this development or if and when it might occur. Accordingly, such development would normally be subject to its own Development Application and Traffic Assessment if and when it occurs.

The generated traffic movements will be spread relatively evenly distributed over the available access road system and as such, any additional movements at the peripheral intersections will be quite minor and any impact on their operational performances will be entirely imperceptible particularly in any traffic modelling.

There is a roundabout on Hurley Street, however this is some 350m from the Camden Street intersection and is not subject to any delays or queuing. There is also a roundabout on Camden Street about 150m from the Hurley Street intersection, however this has very minor side street volumes and does not experience any delays or queuing.

❖ **Ability for Vehicles to Turn Right From Camden Road to Kellicar Road**

The projected right turn movement out of Camden Road in the afternoon peak is only 43 vph (Genesis development plus other assumed development).

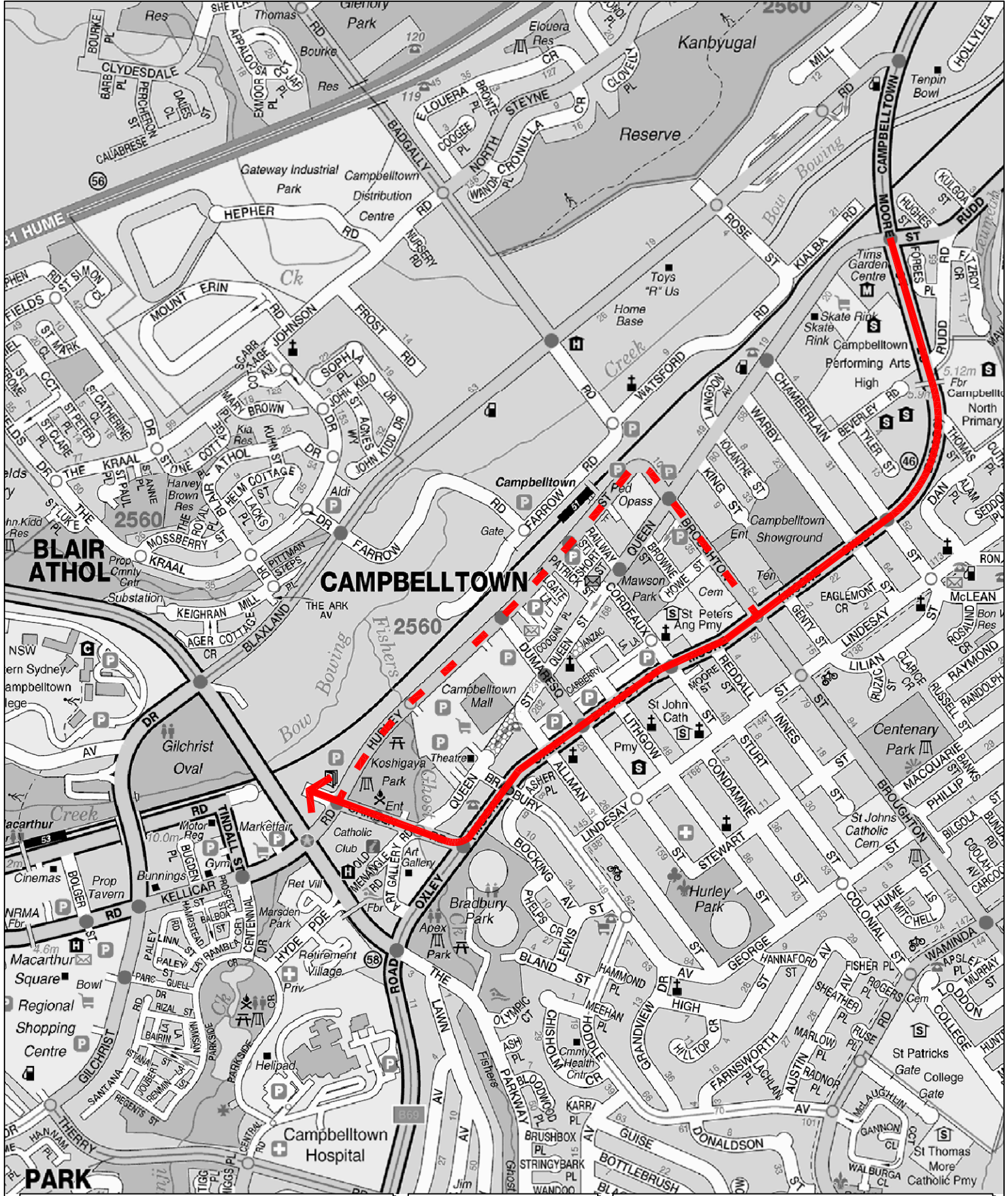
For a circumstance of 140 second signal cycle length, this equates to 1.67 vehicles per cycle. It is acknowledged that the southbound through movement from Hurley Street to Kellicar Road queues through the Camden Road intersection in the afternoon peak at times however, this southbound movement is synchronised with the right turn movement from Kellicar Road to Narellan Road and the right turn movement out of Camden Road will precede the through movement and any temporary queuing that may occur at that time. It is apparent therefore, that the very minor right turn vehicle movements will have no difficulty in entering Kellicar Road. The location of traffic signals on arterial roads where peak hour queuing occurs is a very common circumstance which does not result in any adverse traffic implications.

❖ **Provision of Diamond Turn Phasing for Right Turn Movements from Kellicar Road and Hurley Street**

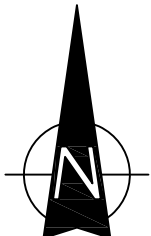
There is simply no need to provide for a right turn movement from Hurley Street to Camden Road (currently prohibited) due to the very minor potential demand for this movement and the far more logical route via the Moore Oxley Bypass (see details overleaf).

❖ **Split Pedestrian Crossing Across Kellicar Road**

This proposal has been deleted.



LEGEND



ALTERNATIVE ROUTES

❖ **Dimensions of Parking Bays and Blind Aisles**

The proposed arrangement of the parking area has been revised with designated visitor spaces 2,600 wide and staff spaces 2,400 wide to accord with AS 2890.1 and blind aisles have been deleted.

❖ **Turning Paths**

The swept paths diagrams have been revised to incorporate the “clearance lines”.

❖ **TfNSW Road Reservation**

There was a long-established road reservation for a future bus corridor which affected the subject site and had been part of the discussions with TfNSW. However, by letter of 19.10.21 TfNSW advised Council that they would abandon this reservation (see details overleaf).

21009

Ross Nettle

From: Justine Kinch <justine.kinch@transport.nsw.gov.au>
Sent: Tuesday, 19 October 2021 11:30 AM
To: Rebecca Grasso; Lindy Deitz
Cc: Pahee Rathan; Andy Sharp
Subject: RE: GenesisCare Development - Camden Road, Campbelltown
Attachments: 20211014 - TfNSW Letter to Council regarding Genesis Care development_final.pdf

Morning Rebecca and Lindy,

Transport is pleased to provide a response to your request regarding the road reservation on Camden Road that impacts the proposed Genesis Care development. Transport has reviewed your letter emailed on 11th October and agreed to abandon the corridor, I have also spoken with Andy Sharp earlier today to discuss our approach.

Regards and thanks for your patience.

OFFICIAL: Sensitive – NSW Government

Justine Kinch
Western Parkland City Director
Community + Place
Greater Sydney
Transport for NSW

M 0439 142 531 E justine.kinch@transport.nsw.gov.au



**Transport
for NSW**

From: Kelly Wooden [<mailto:kelly.wooden@campbelltown.nsw.gov.au>] **On Behalf Of** Rebecca Grasso
Sent: Monday, 11 October 2021 10:04 AM
To: Justine Kinch <justine.kinch@transport.nsw.gov.au>
Cc: Pahee Rathan <Pahee.RATHAN@transport.nsw.gov.au>
Subject: GenesisCare Development - Camden Road, Campbelltown

CAUTION: This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

Good morning Justine,

Please see attached letter for consideration.

Kind regards

19 October 2021

TfNSW Reference: SYD21/00556/04

Council Reference: CNR-25235 – 2036/2021/DA-C

Lindy Dietz
General Manager
Campbelltown City Council
PO Box 57
CAMPBELLTOWN NSW 2560

PROPOSED GENESIS CARE DEVELOPMENT AT THE INTERSECTION OF CAMDEN ROAD, HURLEY STREET AND KELLCAR ROAD, CAMPBELLTOWN

Dear Lindy,

Reference is made to your correspondence dated 11 October 2021, which was referred to Transport for NSW (TfNSW) for consideration.

As you stated in your letter, TfNSW and Council needs to work together to realise Council's vision for Campbelltown City Council and State government objective of providing safe and efficient public transport for Campbelltown Region as outlined in the Future Transport 2056. To that point and in recognition of the adoption of *Re-Imagining Campbelltown* and the current work we are collaborating on through the Place Based Strategy for Campbelltown we provide the following response to your proposal:

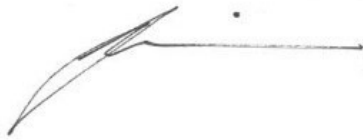
- To enable development of the site as proposed, TfNSW will need to abandon the existing road reserve on Camden Road. The alternate alignment presented on the Land Reservation Acquisition Plan (Project 936 SK011) would not meet requirements to construct a future bus connection under Narellen Road.
- TfNSW looks forward to continuing to work together to implement key actions of the Place-Based Transport Strategy.

Notwithstanding the above, TfNSW requires the applicant to address the traffic signal design requirements as part of the development application to ensure that the signalised intersection operates safely and efficiently. Details of the TfNSW requirements were outlined at the meeting on Friday 8 October 2021 with the applicant and Council. TfNSW will provide its requirements in writing to the applicant and Council shortly.

If you have any further questions please do not hesitate to contact either myself or Mrs Rachel Cumming, Director Land Use, on 02 8849 2077 or email rachel.cumming@transport.nsw.gov.au.

I hope this has been of assistance.

Yours sincerely,

A handwritten signature in dark ink, consisting of a stylized, sweeping line that curves upwards and then extends horizontally to the right.

Justine Kinch
Western Parkland City Director
Community and Place

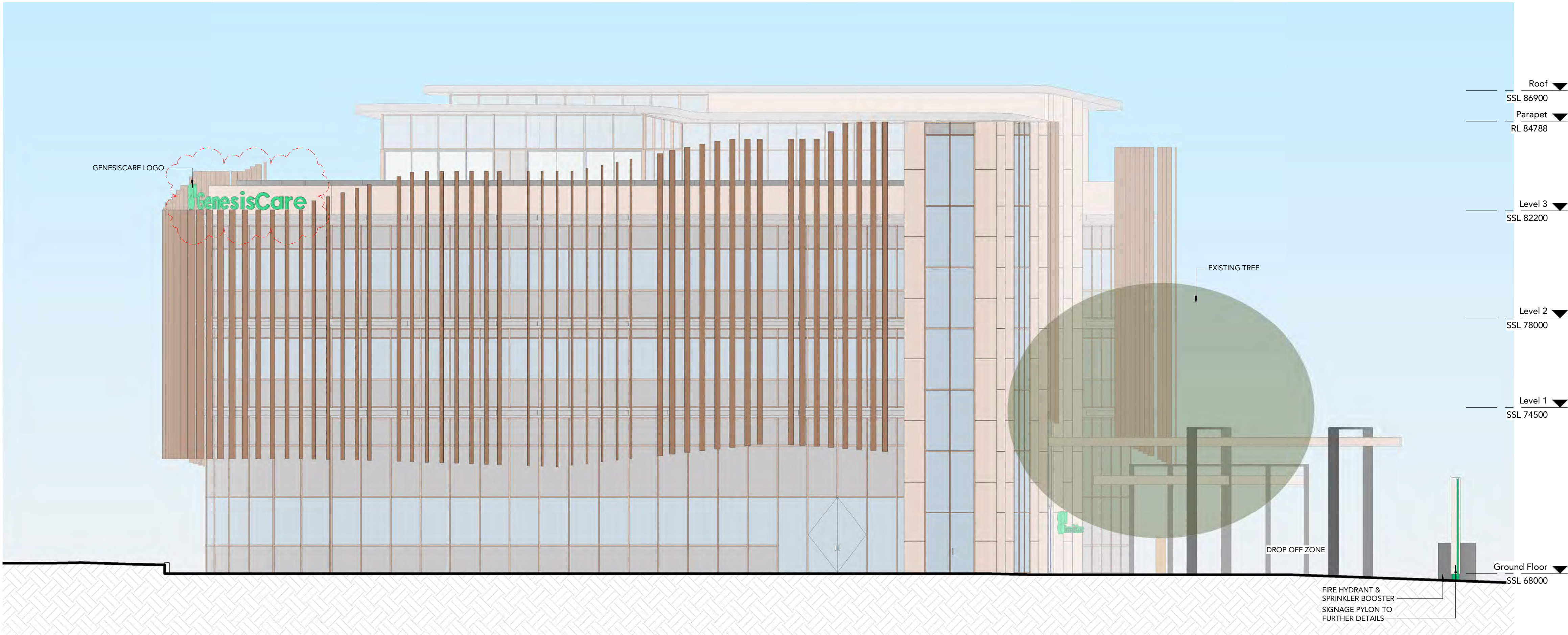
8.0 Conclusion

The assessment of the potential traffic, transport and parking implications of the proposed GenesisCare development scheme at Campbelltown has concluded that:

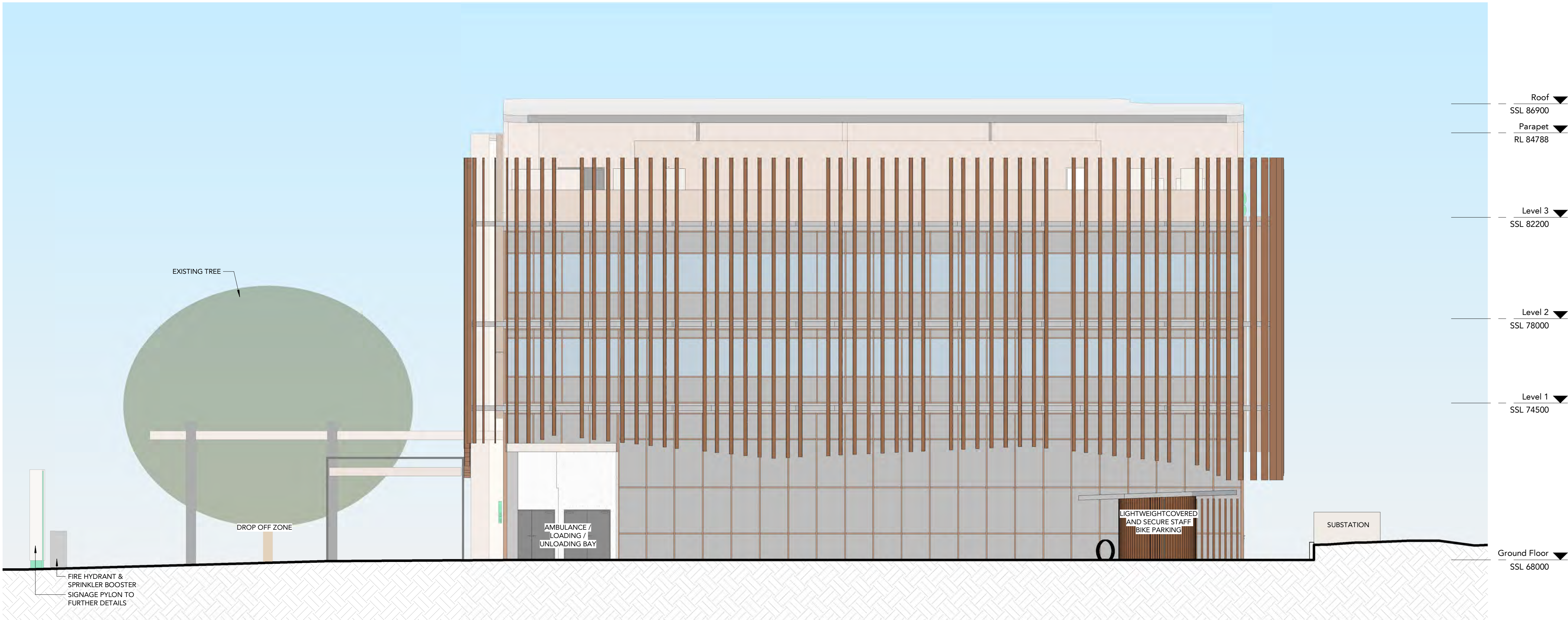
- ❖ there will not be any unsatisfactory traffic implications
- ❖ the proposed parking provision will be adequate for the needs of the development
- ❖ the proposed vehicle access, internal circulation and servicing arrangements will be suitable and appropriate
- ❖ the proposed modifications to the access intersection traffic signals and the geometry of the frontage section of Camden Road will be entirely suitable and appropriate.

Appendix A

Development Plans



1 North Elevation - Camden Road
Scale: 1 : 100



2 South Elevation - From Parking
Scale: 1 : 100

DRAWING STATUS:		
PRELIMINARY		
Rev	Revision Description	Date
1	Preliminary Issue	04/11/2020
2	Preliminary Issue	06/11/2020
3	Pre DA Issue	20/11/2020
4	Pre DA Issue	23/11/2020
5	Preliminary Issue	18/12/2020
6	Preliminary Issue	10/02/2021
7	Preliminary Issue - Loading Zone	24/03/2021
8	PRE-DA ISSUE - DESIGN EXCELLENCE PANEL	01/04/2021
9	DESIGN EXCELLENCE PANEL	21/04/2021
10	Preliminary Issue - Drawings update	10/05/2021
11	Preliminary Issue	19/05/2021
12	Preliminary Issue - GenesisCare Signoff	20/05/2021

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2. All dimensions and levels are in millimeters unless noted otherwise. No dimension shall be obtained by scaling the drawing.
3. All dimensions to be checked on site with any discrepancies referred to team 2 architects before proceeding with work.
4. All work to be carried out in accordance with the requirements of the principal certifying authority, current ncc & australian standards.



0 1 2 3 4 5
SCALE 1:100

TEAM 2
ARCHITECTS

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E: info@team2.com.au
Reg NSW: 9940

MELBOURNE Suite 204/9-11 Claremont Street,
South Yarra, VIC 3141
ABN: 72 104 833 507
Reg Vic: 19340

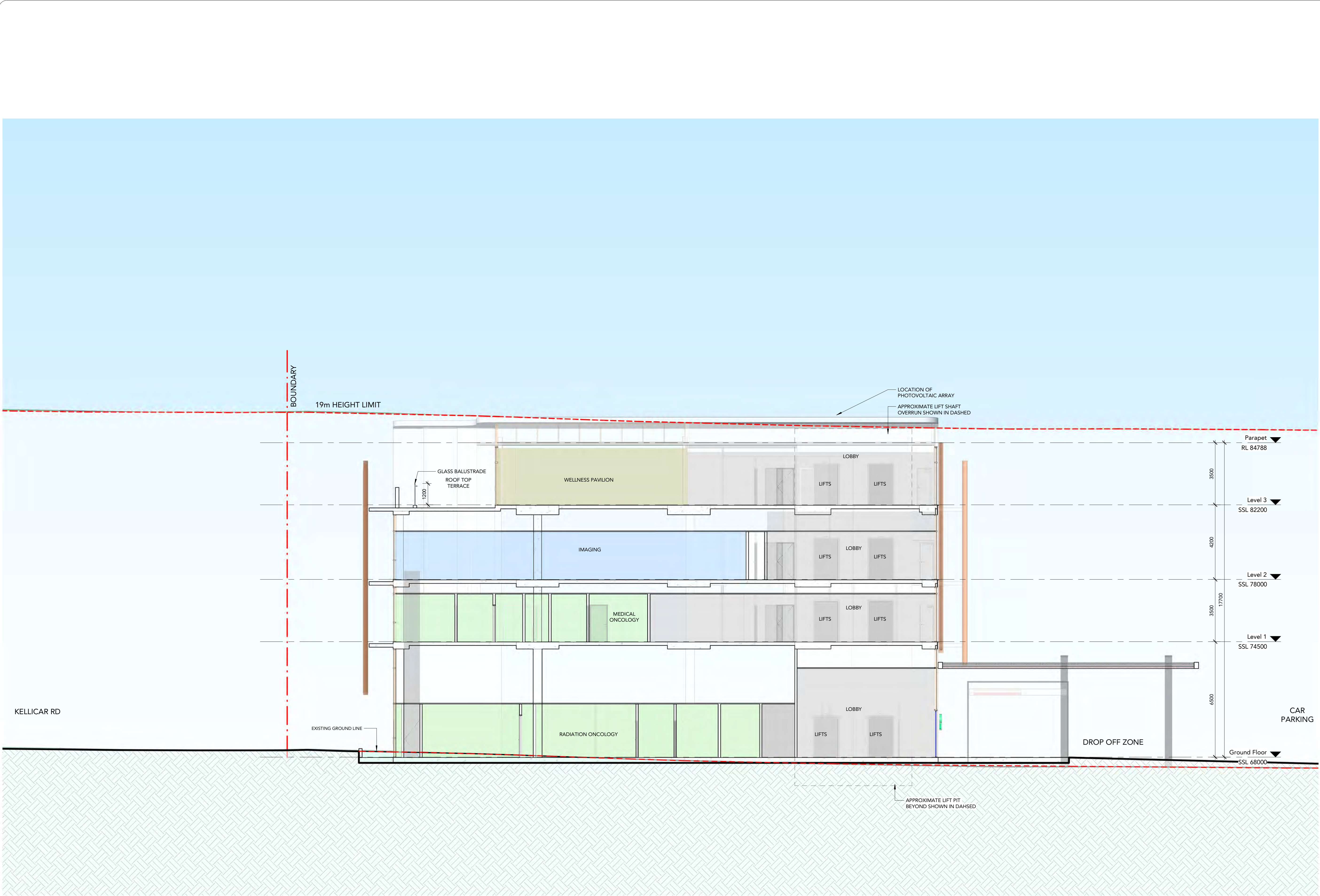
GenesisCare Campbelltown
Campbelltown

Title:
ELEVATIONS - NORTH - SOUTH

Project #	Scale	Doc	Clk	DB
936	1 : 100 @A1	IK	DB	

Drawings #:
DA-201

12



1 DA SITE SECTION AA
Scale: 1 : 100

DRAWING STATUS:		
PRELIMINARY		
Rev	Revision Description	Date
1	Preliminary Issue	20/10/2020
2	Preliminary Issue	04/11/2020
3	Pre DA Issue	20/11/2020
4	Preliminary Issue	18/12/2020
5	Preliminary Issue	18/01/2021
6	Preliminary Issue	10/02/2021
7	Preliminary Issue - Roof and Mech Coordination	17/02/2021
8	Preliminary Issue - Loading Zone	24/03/2021
9	PRE-DA ISSUE - DESIGN EXCELLENCE PANEL	01/04/2021
10	DESIGN EXCELLENCE PANEL	21/04/2021
11	Preliminary Issue - Drawings update	10/05/2021
12	Preliminary Issue	19/05/2021
13	Preliminary Issue - GenesisCare Signoff	20/05/2021

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4. All work to be carried out in accordance with the requirements of the principal certifying authority, current ncc & australian standards.

- LEGENDS
- BACK OF HOUSE
 - CIRCULATION
 - CLINICAL TRIALS
 - CONSULT
 - MEDICAL / RADIATION ONCOLOGY
 - PATHOLOGY
 - STAFF
 - IMAGING
 - WELLNESS



0 1 2 3 4 5
SCALE 1:100

TEAM 2
ARCHITECTS

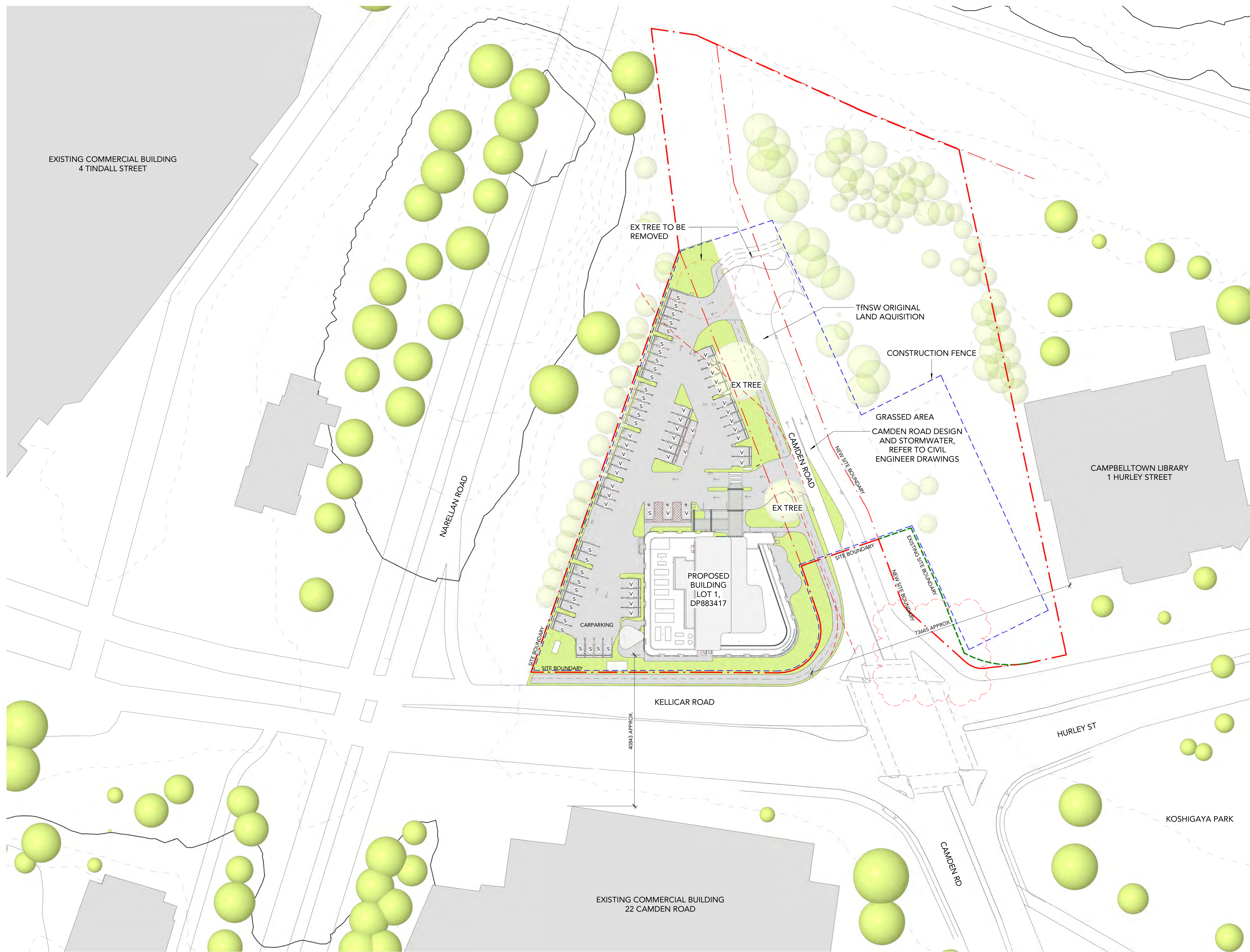
SYDNEY MELBOURNE
701/1 Chandos Street, Suite 204/9-11 Claremont Street,
St Leonards NSW 2065 South Yarra, VIC 3141
T: + 61 2 9437 3166 A: 72 104 833 507
E: info@team2.com.au Reg NSW: 9940 Reg Vic: 19340

GenesisCare Campbelltown
Campbelltown

Title:
SECTION - AA

Project #: 936 Scale: 1 : 100 @A1 Doc: IK Cld: DB

Drawings #: DA-301 13



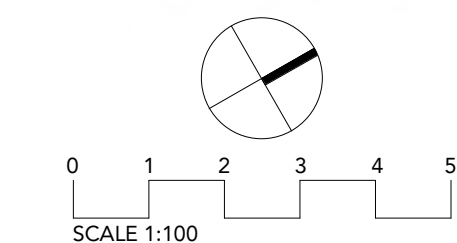
1 Proposed Site Plan - Overall - TfNSW Land Aquisition
Scale: 1 : 500

DRAWING STATUS:		
DEVELOPMENT APPLICATION		
Rev	Revision Description	Date
1	Revised Development Application	20/10/2021

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DRAWING LEGEND:
1. Architectural drawings shall be read in conjunction with other consultant drawings and specifications. Any discrepancies shall be referred to team 2 architects before proceeding with work.
2. All dimensions and levels are in millimeters unless noted otherwise. No dimension shall be obtained by scaling the drawing.
3. All dimensions to be checked on site with any discrepancies referred to team 2 architects before proceeding with work.
4. All work to be carried out in accordance with the requirements of the principal certifying authority, current ncc & australian standards.

Legend
Original land reservation acquisition



TEAM 2
ARCHITECTS
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Reg Vic: 19340

GenesisCare Campbelltown
Campbelltown

Title:				
SITE PLAN PROPOSED - OVERALL				
Project #	Scale	Drawn	Checked	Discussed
936	As	AK	IK	DB
Drawings #:				Revised
DA-011.1				1



1 Proposed Site Plan
Scale: 1 : 250

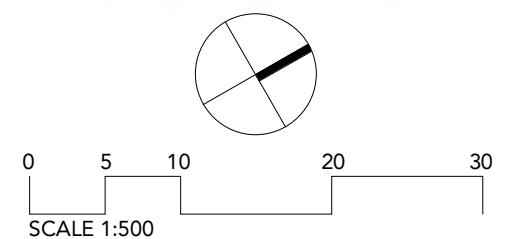
DRAWING STATUS:		
DEVELOPMENT APPLICATION		
Rev	Revision Description	Date
12	DESIGN EXCELLENCE PANEL	21/04/2021
13	Preliminary Issue	29/04/2021
14	Preliminary Issue - Drawings update	10/05/2021
15	Sketch Issue - New Camden road overlay	10/05/2021
16	Preliminary Issue - Camden Road Update	14/05/2021
17	Preliminary Issue	19/05/2021
18	Preliminary Issue - GenesisCare Signoff	20/05/2021
19	Preliminary Issue - Crossings removed	21/05/2021
20	DEVELOPMENT APPLICATION	15/06/2021
21	DA - For Information	25/06/2021
22	DEVELOPMENT APPLICATION	29/06/2021
23	Revised Development Application	15/10/2021
24	Revised Development Application	20/10/2021

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DRAWING LEGEND:

1. Architectural drawings shall be read in conjunction with other consultant drawings and specifications. Any discrepancies shall be referred to team 2 architects before proceeding with work.
2. All dimensions and levels are in millimeters unless noted otherwise. No dimension shall be obtained by scaling the drawing.
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4. All work to be carried out in accordance with the requirements of the principal certifying authority, current ncc & Australian standards.

V = VISITOR PARKING SPACES 2600W
S = STAFF PARKING SPACES 2400W



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GenesisCare Campbelltown
Campbelltown

Title:
SITE PLAN PROPOSED

Project #	Scale	Doc	Clcd
936	As	0A1	IK DB

Drawings: indicated

DA-012

24

Appendix B

Traffic Survey Results

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

Intersection of Kellicar Road and Narellan Road, Kelcar

GPS -34.0721, 150.80565

Date: Thu 11/02/21

Weather: Overcast

Suburban: Kelcar

Customer: TTFA

North: Narellan Road

East: Kellicar Road

South: Narellan Road

West: Kellicar Road

Survey Period AM: 7:00 AM-9:00 AM

PM: 4:00 PM-6:00 PM

Traffic Peak AM: 7:45 AM-8:45 AM

PM: 4:45 PM-5:45 PM

All Vehicles

Time		North Approach Narellan Road				East Approach Kellicar Road				South Approach Narellan Road				West Approach Kellicar Road				Hourly Total	Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	
7:00	7:15	0	57	98	70	0	52	23	2	0	19	210	13	0	8	53	9	3185	
7:15	7:30	0	47	105	107	0	65	60	1	0	13	209	19	0	10	54	28	3522	
7:30	7:45	0	75	106	144	0	78	41	2	0	13	235	14	0	13	90	28	3832	
7:45	8:00	0	80	163	178	0	88	64	2	0	31	244	22	0	15	98	29	4111	
8:00	8:15	0	43	182	172	0	82	69	1	0	12	214	23	0	33	89	31	4003	
8:15	8:30	0	72	178	178	0	78	79	0	0	31	204	26	0	24	130	28		
8:30	8:45	0	53	182	249	0	82	78	4	0	18	238	32	0	43	114	25		
8:45	9:00	0	46	123	221	0	75	69	3	0	11	199	24	0	34	76	25		
16:00	16:15	0	50	168	151	0	151	133	0	0	31	123	34	0	50	118	42	4117	
16:15	16:30	0	40	165	102	0	139	183	4	0	15	140	20	0	22	134	49	4203	
16:30	16:45	0	53	199	112	0	155	153	3	0	16	173	12	0	29	106	51	4347	
16:45	17:00	0	36	169	91	0	138	163	3	0	18	120	22	0	49	140	42	4393	
17:00	17:15	0	80	200	121	0	143	185	1	0	21	143	27	0	35	117	64	4336	
17:15	17:30	0	79	217	118	0	128	183	2	0	23	147	25	0	48	142	45		
17:30	17:45	0	47	219	117	0	147	198	1	0	23	107	20	0	32	143	54		
17:45	18:00	0	39	161	104	0	128	172	7	0	18	112	16	0	24	109	44		

Peak Time		North Approach Narellan Road				East Approach Kellicar Road				South Approach Narellan Road				West Approach Kellicar Road				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour
7:45	8:45	0	248	705	777	0	330	290	7	0	82	900	103	0	115	431	113	4111
16:45	17:45	0	242	805	447	0	556	729	7	0	85	517	94	0	164	542	205	4393

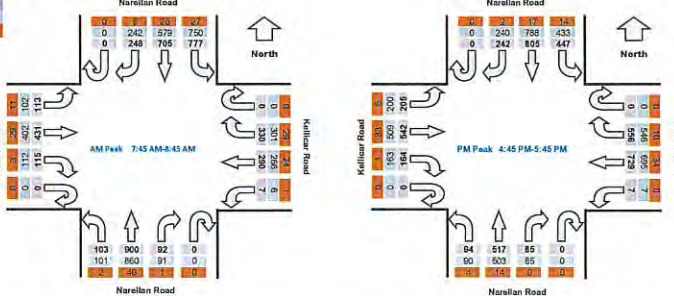
Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total

Light

Heavy



Light Vehicles

Time		North Approach Narellan Road				East Approach Kellicar Road				South Approach Narellan Road				West Approach Kellicar Road			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	55	88	61	0	47	20	2	0	18	204	13	0	7	50	9
7:15	7:30	0	45	93	101	0	58	50	1	0	13	207	19	0	9	51	27
7:30	7:45	0	72	96	137	0	73	40	2	0	13	228	14	0	13	83	25
7:45	8:00	0	80	154	171	0	80	59	1	0	31	233	22	0	15	90	26
8:00	8:15	0	43	173	162	0	74	64	1	0	11	203	22	0	30	85	28
8:15	8:30	0	69	171	172	0	67	71	0	0	31	195	25	0	24	128	27
8:30	8:45	0	50	181	245	0	80	72	4	0	18	229	32	0	43	99	21
8:45	9:00	0	43	118	217	0	68	62	3	0	11	195	24	0	32	69	23
16:00	16:15	0	50	162	144	0	150	124	0	0	31	120	34	0	48	112	41
16:15	16:30	0	39	159	100	0	138	172	4	0	14	139	20	0	22	127	49
16:30	16:45	0	53	193	110	0	149	146	3	0	16	167	12	0	29	97	51
16:45	17:00	0	36	168	89	0	137	158	3	0	18	113	22	0	48	130	41
17:00	17:15	0	80	197	119	0	140	174	1	0	21	140	25	0	35	106	63
17:15	17:30	0	78	209	113	0	127	178	2	0	23	143	24	0	48	138	42
17:30	17:45	0	46	214	112	0	142	187	1	0	23	107	19	0	32	135	54
17:45	18:00	0	38	157	103	0	128	162	7	0	18	108	16	0	24	100	44

Peak Time		North Approach Narellan Road				East Approach Kellicar Road				South Approach Narellan Road				West Approach Kellicar Road				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour
7:45	8:45	0	242	679	750	0	301	266	6	0	81	860	101	0	112	402	102	3912
16:45	17:45	0	240	788	433	0	546	695	7	0	85	503	90	0	163	509	200	4259

Heavy Vehicles

Time		North Approach Narellan Road				East Approach Kellicar Road				South Approach Narellan Road				West Approach Kellicar Road			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	2	10	9	0	5	3	0	0	1	6	0	0	1	3	0
7:15	7:30	0	2	12	6	0	7	10	0	0	0	2	0	0	1	3	1
7:30	7:45	0	3	10	7	0	5	1	0	0	0	7	0	0	0	7	3
7:45	8:00	0	0	9	7	0	8	5	1	0	0	11	0	0	0	8	3
8:00	8:15	0	0	9	10	0	8	5	0	0	1	11	1	0	3	4	3
8:15	8:30	0	3	7	6	0	11	8	0	0	0	9	1	0	0	2	1
8:30	8:45	0	3	1	4	0	2	6	0	0	0	9	0	0	0	15	4
8:45	9:00	0	3	5	4	0	7	7	0	0	0	4	0	0	2	7	2
16:00	16:15	0	0	6	7	0	1	9	0	0	0	3	0	0	2	6	1
16:15	16:30	0	1	6	2	0	3	11	0	0	1	1	0	0	0	7	0
16:30	16:45	0	0	6	2	0	6	7	0	0	0	8	0	0	0	9	0
16:45	17:00	0	0	1	2	0	1	7	0	0	0	7	0	0	1	10	1
17:00	17:15	0	0	3	2	0	3	11	0	0	0	3	2	0	0	11	1
17:15	17:30	0	1	8	5	0	1	5	0	0	0	4	1	0	0	4	3
17:30	17:45	0	1	5	5	0	5	11	0	0	0	0	1	0	0	8	0
17:45	18:00	0	1	4	1	0	0	10	0	0	0	4	0	0	0	9	0

Peak Time		North Approach Narellan Road				East Approach Kellicar Road				South Approach Narellan Road				West Approach Kellicar Road				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour
7:45	8:45	0	6	26	27	0	29	24	1	0	1	40	2	0	3	29	11	199
16:45	17:45	0	2	17	14	0	10	34	0	0	0	14	4	0	1	33	5	134

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

Intersection of Kellicar Road and Camden Road, Kellicar

GPS -34 07 11.4, 150 80677

Date: Thu 11/02/21

Weather: Overcast

Suburban: Kellicar

Customer: TTFA

North: Camden Road
East: Kellicar Road
South: Camden Road
West: Kellicar Road

Survey Period AM: 7:00 AM-9:00 AM
PM: 4:00 PM-6:00 PM
Traffic Peak AM: 7:45 AM-8:45 AM
PM: 4:45 PM-5:45 PM

All Vehicles

Time		North Approach Camden Road				East Approach Kellicar Road				South Approach Camden Road				West Approach Kellicar Road				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	0	1	0	0	47	2	0	15	0	30	0	28	114	0	1425	
7:15	7:30	0	0	0	0	0	0	93	3	0	18	0	33	0	25	149	0	1624	
7:30	7:45	0	0	0	0	0	0	87	5	0	13	0	34	0	29	218	0	1818	
7:45	8:00	0	0	0	0	0	0	122	4	0	16	0	32	0	39	287	1	2000	Peak
8:00	8:15	0	0	0	1	0	0	117	3	0	7	0	35	0	32	241	0	1993	
8:15	8:30	0	0	0	0	0	0	116	3	0	16	0	41	0	57	282	0		
8:30	8:45	0	0	0	1	0	0	124	12	0	10	0	40	0	52	328	1		
8:45	9:00	0	0	0	1	0	0	98	5	0	13	0	49	0	42	285	1		
16:00	16:15	0	0	0	1	0	1	218	22	0	16	0	66	0	40	259	1	2403	
16:15	16:30	0	0	0	0	0	0	239	30	0	15	0	87	0	56	195	0	2401	
16:30	16:45	0	0	0	2	0	0	225	17	0	9	0	86	2	49	181	2	2400	
16:45	17:00	0	0	0	0	0	0	248	17	0	14	0	56	2	53	194	0	2491	Peak
17:00	17:15	0	0	0	0	0	0	225	18	0	16	0	104	2	52	205	0	2468	
17:15	17:30	0	0	0	0	0	0	244	17	0	8	0	69	0	49	234	0		
17:30	17:45	0	0	0	1	0	1	280	19	0	14	0	66	0	55	227	1		
17:45	18:00	0	0	0	1	0	0	234	15	0	5	0	73	1	55	174	1		

Peak Time		North Approach Camden Road				East Approach Kellicar Road				South Approach Camden Road				West Approach Kellicar Road				Peak total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:45	8:45	0	0	0	2	0	0	479	22	0	49	0	148	0	180	1118	2	2000	
16:45	17:45	0	0	0	1	0	1	997	71	0	52	0	295	4	209	860	1	2491	

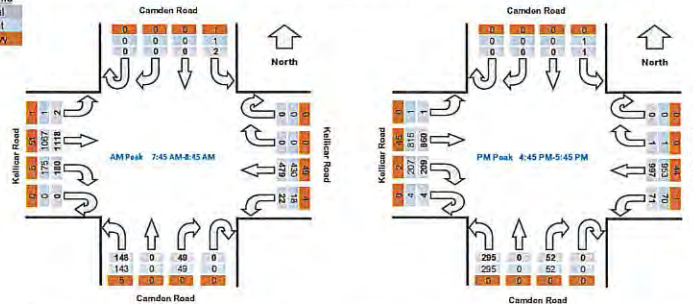
Note: Site sketch is for illustrating traffic flows. Direction is indicative only. drawing is not to scale and not an exact streets configuration.

Graphic

Total

Light

Heavy



Light Vehicles

Time		North Approach Camden Road				East Approach Kellicar Road				South Approach Camden Road				West Approach Kellicar Road				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	0	0	0	0	39	2	0	15	0	30	0	28	101	0		
7:15	7:30	0	0	0	0	0	0	77	3	0	18	0	32	0	24	141	0		
7:30	7:45	0	0	0	0	0	0	81	5	0	13	0	34	0	28	205	0		
7:45	8:00	0	0	0	0	0	0	108	3	0	16	0	32	0	38	253	1		
8:00	8:15	0	0	0	1	0	0	106	2	0	7	0	33	0	31	227	0		
8:15	8:30	0	0	0	0	0	0	100	2	0	16	0	38	0	57	274	0		
8:30	8:45	0	0	0	0	0	0	116	11	0	10	0	40	0	49	313	0		
8:45	9:00	0	0	0	1	0	0	85	4	0	12	0	48	0	40	256	1		
16:00	16:15	0	0	0	1	0	1	208	22	0	16	0	66	0	40	246	1		
16:15	16:30	0	0	0	0	0	0	225	30	0	15	0	87	0	54	187	0		
16:30	16:45	0	0	0	2	0	0	212	17	0	9	0	86	2	49	170	2		
16:45	17:00	0	0	0	0	0	0	240	17	0	14	0	56	2	52	183	0		
17:00	17:15	0	0	0	0	0	0	211	17	0	16	0	104	2	52	192	0		
17:15	17:30	0	0	0	0	0	0	238	17	0	8	0	69	0	48	226	0		
17:30	17:45	0	0	0	1	0	1	264	19	0	14	0	66	0	55	214	1		
17:45	18:00	0	0	0	1	0	0	227	15	0	5	0	70	1	55	164	1		

Peak Time		North Approach Camden Road				East Approach Kellicar Road				South Approach Camden Road				West Approach Kellicar Road				Peak total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:45	8:45	0	0	0	1	0	0	430	18	0	49	0	143	0	175	1007	1	1894	
16:45	17:45	0	0	0	1	0	1	953	70	0	52	0	295	4	207	815	1	2399	

Heavy Vehicles

Time		North Approach Camden Road				East Approach Kellicar Road				South Approach Camden Road				West Approach Kellicar Road				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	0	1	0	0	8	0	0	0	0	0	0	0	13	0		
7:15	7:30	0	0	0	0	0	0	16	0	0	0	0	1	0	1	8	0		
7:30	7:45	0	0	0	0	0	0	6	0	0	0	0	0	0	1	13	0		
7:45	8:00	0	0	0	0	0	0	14	1	0	0	0	0	0	1	14	0		
8:00	8:15	0	0	0	0	0	0	11	1	0	0	0	2	0	1	14	0		
8:15	8:30	0	0	0	0	0	0	15	1	0	0	0	3	0	0	8	0		
8:30	8:45	0	0	0	1	0	0	8	1	0	0	0	0	0	3	15	1		
8:45	9:00	0	0	0	0	0	0	13	1	0	1	0	1	0	2	9	0		
16:00	16:15	0	0	0	0	0	0	10	0	0	0	0	0	0	0	13	0		
16:15	16:30	0	0	0	0	0	0	14	0	0	0	0	0	0	2	8	0		
16:30	16:45	0	0	0	0	0	0	13	0	0	0	0	0	0	0	11	0		
16:45	17:00	0	0	0	0	0	0	8	0	0	0	0	0	0	1	11	0		
17:00	17:15	0	0	0	0	0	0	14	1	0	0	0	0	0	0	13	0		
17:15	17:30	0	0	0	0	0	0	6	0	0	0	0	0	0	1	8	0		
17:30	17:45	0	0	0	0	0	0	18	0	0	0	0	0	0	0	13	0		
17:45	18:00	0	0	0	0	0	0	7	0	0	0	0	3	0	0	10	0		

Peak Time		North Approach Camden Road				East Approach Kellicar Road				South Approach Camden Road				West Approach Kellicar Road				Peak total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:45	8:45	0	0	0	1	0	0	49	4	0	0	0	5	0	5	51	1	116	
16:45	17:45	0	0	0	0	0	0	44	1	0	0	0	0	0	2	45	0	92	

Appendix C

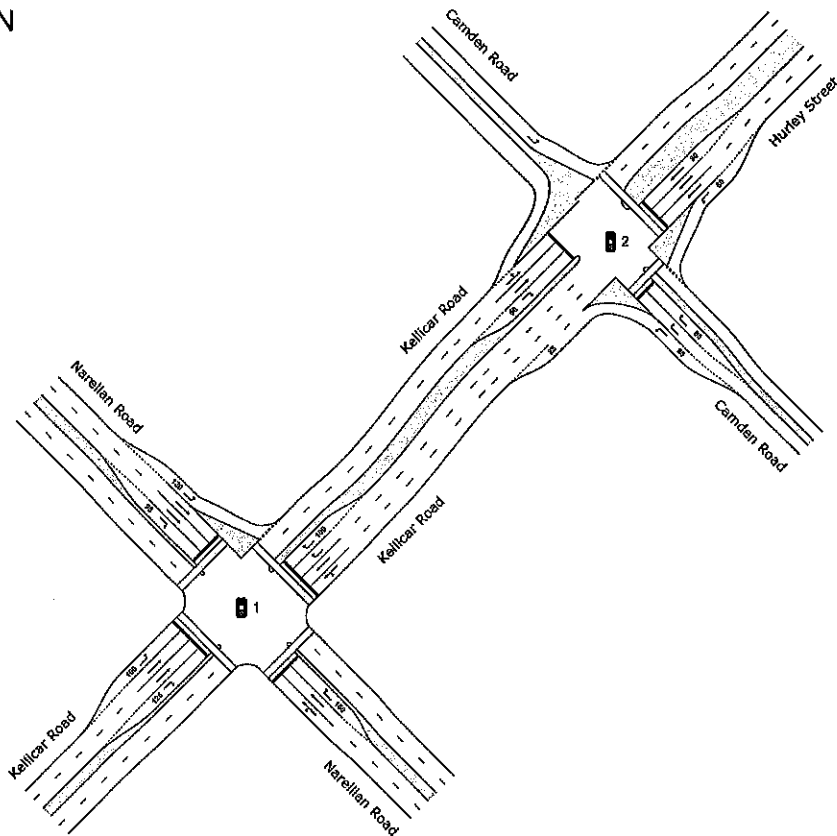
SIDRA Results

NETWORK LAYOUT

Network: N101 [Existing]

New Network

Network Category: (None)



SITES IN NETWORK		
Site ID	CCG ID	Site Name
1	NA	Narellan - Kellicar - Ex
2	NA	Camden - Hurley - Ex

MOVEMENT SUMMARY

Site: 1 [Narellan - Kellicar AM - Ex]

Network: N101 [Existing AM]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Vehicles	Back of Queue Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
SouthEast: Narellan Road														
1	L2	103	1.9	103	1.9	0.740	31.1	LOS C	14.9	107.7	0.77	0.71	0.77	31.8
2	T1	900	4.4	900	4.4	0.740	26.0	LOS B	15.0	109.3	0.77	0.70	0.77	39.8
3	R2	92	1.1	92	1.1	0.437	63.9	LOS E	3.5	24.6	0.92	0.77	0.92	15.5
Approach		1095	3.9	1095	3.9	0.740	29.7	LOS C	15.0	109.3	0.78	0.70	0.78	37.0
NorthEast: Kellicar Road														
4	L2	7	14.3	7	14.3	0.511	52.5	LOS D	5.1	38.3	0.85	0.70	0.85	22.3
5	T1	290	8.3	290	8.3	0.511	47.5	LOS D	5.2	38.6	0.86	0.70	0.86	16.6
6	R2	330	8.8	330	8.8	0.734	61.5	LOS E	6.5	49.3	0.97	0.82	0.99	22.6
Approach		627	8.6	627	8.6	0.734	54.9	LOS D	6.5	49.3	0.91	0.76	0.93	20.5
NorthWest: Narellan Road														
7	L2	777	3.5	777	3.5	0.576	6.2	LOS A	1.3	9.7	0.05	0.58	0.07	50.1
8	T1	705	3.7	705	3.7	0.432	25.7	LOS B	8.3	59.7	0.61	0.53	0.61	40.3
9	R2	248	2.4	248	2.4	0.731	65.1	LOS E	9.8	70.0	0.97	0.85	1.01	23.0
Approach		1730	3.4	1730	3.4	0.731	22.6	LOS B	9.8	70.0	0.41	0.60	0.43	38.7
SouthWest: Kellicar Road														
10	L2	113	9.7	113	9.7	0.169	16.8	LOS B	1.2	9.3	0.28	0.64	0.28	41.0
11	T1	431	6.7	431	6.7	0.734	50.5	LOS D	8.2	60.9	0.94	0.79	0.96	11.0
12	R2	115	2.6	115	2.6	0.491	58.8	LOS E	4.2	29.9	0.89	0.77	0.89	20.8
Approach		659	6.5	659	6.5	0.734	46.2	LOS D	8.2	60.9	0.82	0.76	0.83	17.9
All Vehicles		4111	4.8	4111	4.8	0.740	33.2	LOS C	15.0	109.3	0.65	0.68	0.66	31.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate		
		ped/h	sec		ped	m			
P1	SouthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96	
P2	NorthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96	
P3	NorthWest Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96	
P4	SouthWest Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96	
All Pedestrians		211	64.3	LOS F			0.96	0.96	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

 Site: 1 [Narellan - Kellicar AM - Ex]

 Network: N101 [Existing AM]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*

Output Phase Sequence: A, D, E, G, G2*

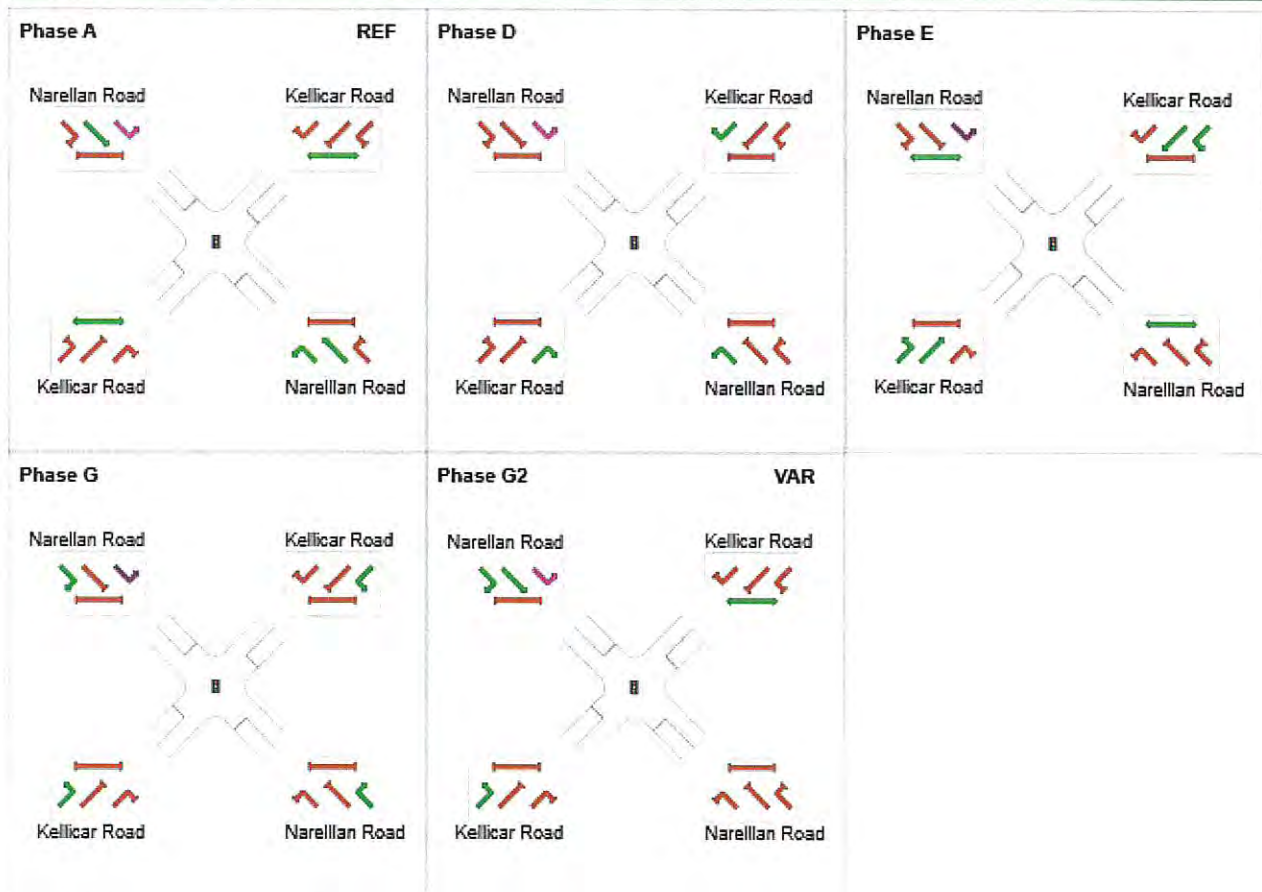
(* Variable Phase)

Phase Timing Summary

Phase	A	D	E	G	G2
Phase Change Time (sec)	0	56	80	108	130
Green Time (sec)	50	18	22	16	4
Phase Time (sec)	56	24	28	22	10
Phase Split	40%	17%	20%	16%	7%

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

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

MOVEMENT SUMMARY

Site: 2 [Camden - Hurley AM - Ex]

Network: N101 [Existing AM]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
SouthEast: Camden Road														
1	L2	148	3.4	148	3.4	0.082	5.6	LOS A	0.0	0.0	0.00	0.53	35.1	
3	R2	49	0.0	49	0.0	0.092	61.9	LOS E	0.9	6.3	0.90	0.71	17.1	
Approach		197	2.5	197	2.5	0.092	19.6	LOS B	0.9	6.3	0.22	0.57	22.8	
NorthEast: Hurley Street														
4	L2	22	18.2	22	18.2	0.018	6.2	LOS A	0.0	0.4	0.11	0.56	44.5	
5	T1	479	10.2	479	10.2	0.255	35.2	LOS C	4.8	36.2	0.76	0.63	21.0	
Approach		501	10.6	501	10.6	0.255	33.9	LOS C	4.8	36.2	0.73	0.63	21.7	
NorthWest: Camden Road														
27	L2	2	0.0	2	0.0	0.002	7.0	LOS A	0.0	0.1	0.18	0.57	47.6	
Approach		2	0.0	2	0.0	0.002	7.0	LOS A	0.0	0.1	0.18	0.57	47.6	
SouthWest: Kellicar Road														
30	L2	2	0.0	2	0.0	0.383	10.5	LOS A	6.1	44.1	0.29	0.26	47.4	
11	T1	1118	4.6	1118	4.6	0.383	3.9	LOS A	6.1	44.1	0.23	0.21	52.1	
12	R2	180	2.8	180	2.8	0.185	8.7	LOS A	1.0	7.1	0.21	0.61	33.9	
Approach		1300	4.3	1300	4.3	0.383	4.6	LOS A	6.1	44.1	0.23	0.27	49.9	
All Vehicles		2000	5.7	2000	5.7	0.383	13.4	LOS A	6.1	44.1	0.36	0.39	36.9	

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	SouthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P2	NorthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	64.3	LOS F			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 2 [Camden - Hurley AM - Ex]

Network: N101 [Existing AM]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Leading Right Turn (phase reduction applied)

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

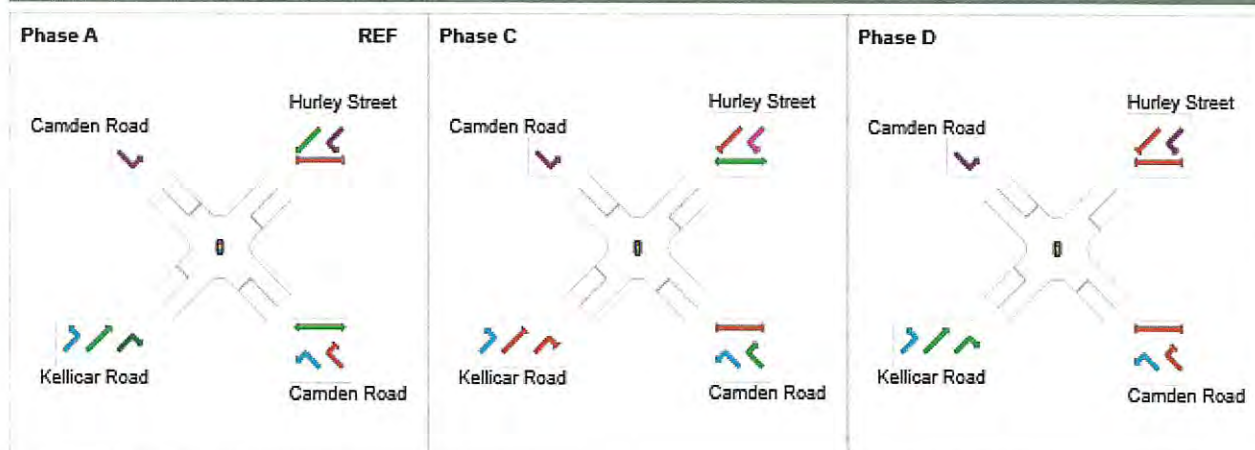
Output Phase Sequence: A, C, D

Phase Timing Summary

Phase	A	C	D
Phase Change Time (sec)	0	54	80
Green Time (sec)	48	20	54
Phase Time (sec)	54	26	60
Phase Split	39%	19%	43%

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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

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

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Project: T:WORK21\21009 - GENESISCARE, CNR KELLICAR ROAD AND CAMDEN ROAD, CAMPBELLTOWN\MODEL\19OCT21.sip8

MOVEMENT SUMMARY

Site: 1 [Narellan - Kellicar PM - Ex]

Network: N101 [Existing PM]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Queue	Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles	Distance				km/h
SouthEast: Narellan Road														
1	L2	94	4.3	94	4.3	0.717	46.9	LOS D	10.6	76.2	0.91	0.81	1.03	25.0
2	T1	517	2.7	517	2.7	0.717	43.1	LOS D	11.0	78.9	0.91	0.79	0.97	32.7
3	R2	85	0.0	85	0.0	0.534	43.5	LOS D	2.4	17.0	0.97	0.76	0.97	20.3
Approach		696	2.6	696	2.6	0.717	43.7	LOS D	11.0	78.9	0.92	0.79	0.97	30.7
NorthEast: Kellicar Road														
4	L2	7	0.0	7	0.0	0.756	42.9	LOS D	12.0	87.6	0.83	0.74	1.21	25.7
5	T1	729	4.7	729	4.7	0.756	35.7	LOS C	12.3	89.5	0.84	0.74	1.03	20.2
6	R2	556	1.8	556	1.8	0.758	49.2	LOS D	10.2	72.5	0.92	0.83	0.93	25.9
Approach		1292	3.4	1292	3.4	0.758	41.5	LOS C	12.3	89.5	0.87	0.78	0.99	23.4
NorthWest: Narellan Road														
7	L2	447	3.1	447	3.1	0.571	29.8	LOS C	10.3	74.2	0.66	0.83	0.81	30.8
8	T1	805	2.1	805	2.1	0.771	37.3	LOS C	12.6	90.0	0.94	0.83	0.97	35.0
9	R2	242	0.8	242	0.8	0.734	39.1	LOS C	6.2	43.7	0.98	0.84	1.01	30.3
Approach		1494	2.2	1494	2.2	0.771	35.4	LOS C	12.6	90.0	0.86	0.83	0.93	33.3
SouthWest: Kellicar Road														
10	L2	205	2.4	205	2.4	0.276	10.4	LOS A	1.1	8.1	0.25	0.64	0.25	46.2
11	T1	542	6.1	542	6.1	0.778	46.3	LOS D	10.2	75.5	0.94	0.81	0.96	11.8
12	R2	164	0.6	164	0.6	0.690	60.6	LOS E	6.4	44.8	0.95	0.81	0.96	20.4
Approach		911	4.3	911	4.3	0.778	40.8	LOS C	10.2	75.5	0.79	0.77	0.80	20.6
All Vehicles		4393	3.1	4393	3.1	0.778	39.6	LOS C	12.6	90.0	0.86	0.80	0.93	27.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	SouthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P2	NorthEast Full Crossing	53	42.6	LOS E	0.2	0.2	0.92	0.92
P3	NorthWest Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P4	SouthWest Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	58.8	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

 Site: 1 [Narellan - Kellicar PM - Ex]

 Network: N101 [Existing PM]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, B*, C, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*

Output Phase Sequence: A, B*, C, D, D2*, E, G, G2*

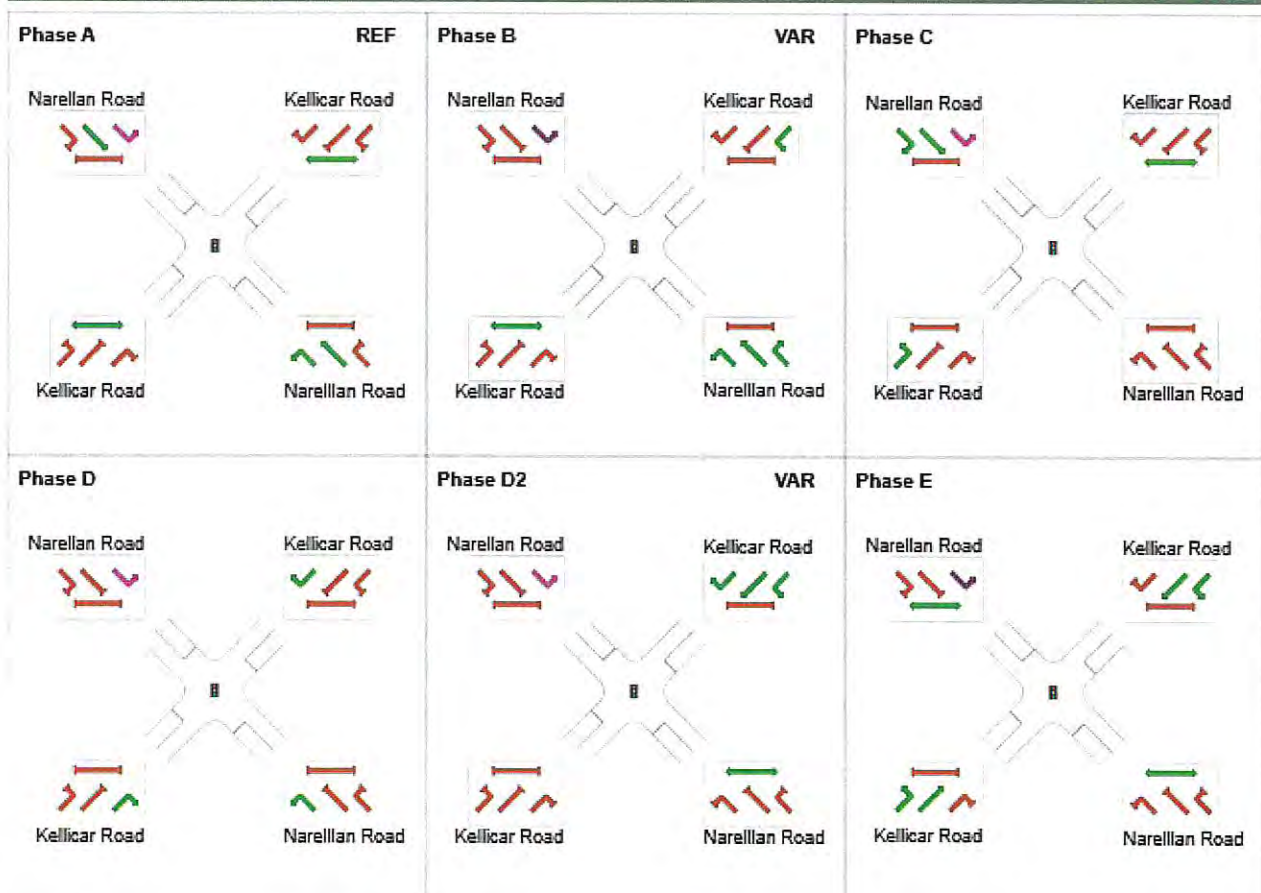
(* Variable Phase)

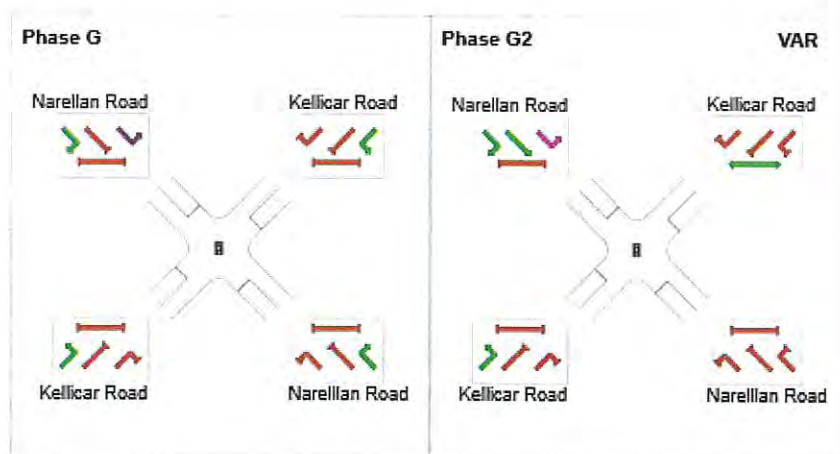
Phase Timing Summary

Phase	A	B	C	D	D2	E	G	G2
Phase Change Time (sec)	0	25	37	52	76	86	118	130
Green Time (sec)	19	6	9	18	4	26	6	4
Phase Time (sec)	25	12	15	24	10	32	12	10
Phase Split	18%	9%	11%	17%	7%	23%	9%	7%

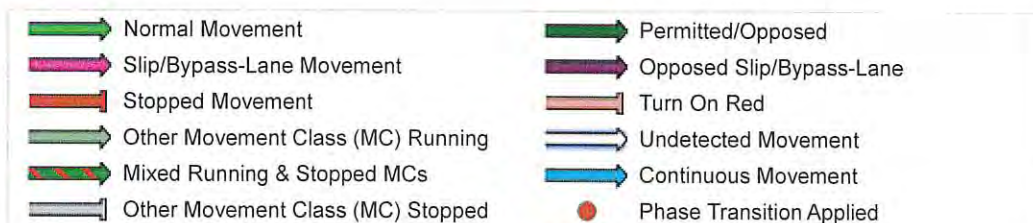
See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency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

Output Phase Sequence





REF: Reference Phase
VAR: Variable Phase



MOVEMENT SUMMARY

Site: 2 [Camden - Hurley PM - Ex]

Network: N101 [Existing PM]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	Distance m			km/h	
SouthEast: Camden Road														
1	L2	295	0.0	295	0.0	0.159	5.6	LOS A	0.0	0.0	0.00	0.53	0.00	35.0
3	R2	52	0.0	52	0.0	0.098	62.0	LOS E	1.0	6.7	0.90	0.71	0.90	17.1
Approach		347	0.0	347	0.0	0.159	14.1	LOS A	1.0	6.7	0.14	0.56	0.14	25.4
NorthEast: Hurley Street														
4	L2	71	1.4	71	1.4	0.053	6.3	LOS A	0.2	1.7	0.14	0.58	0.14	44.8
5	T1	997	4.4	997	4.4	0.456	25.9	LOS B	10.5	76.4	0.72	0.63	0.72	25.4
Approach		1068	4.2	1068	4.2	0.456	24.6	LOS B	10.5	76.4	0.68	0.63	0.68	26.4
NorthWest: Camden Road														
27	L2	2	0.0	2	0.0	0.002	6.5	LOS A	0.0	0.1	0.15	0.56	0.15	48.2
Approach		2	0.0	2	0.0	0.002	6.5	LOS A	0.0	0.1	0.15	0.56	0.15	48.2
SouthWest: Kellicar Road														
30	L2	2	0.0	2	0.0	0.296	9.7	LOS A	3.9	28.4	0.24	0.22	0.24	49.1
11	T1	860	5.2	860	5.2	0.296	3.9	LOS A	3.9	28.4	0.23	0.21	0.23	52.1
12	R2	209	1.0	209	1.0	0.317	9.3	LOS A	1.1	7.6	0.24	0.62	0.24	33.2
Approach		1071	4.4	1071	4.4	0.317	5.0	LOS A	3.9	28.4	0.23	0.29	0.23	48.8
All Vehicles		2488	3.7	2488	3.7	0.456	14.7	LOS B	10.5	76.4	0.41	0.47	0.41	34.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian	Distance m	Prop. Queued	Effective Stop Rate	
P1	SouthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96	
P2	NorthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96	
All Pedestrians		105	64.3	LOS F			0.96	0.96	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

 Site: 2 [Camden - Hurley PM - Ex]

 Network: N101 [Existing PM]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Leading Right Turn (phase reduction applied)

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

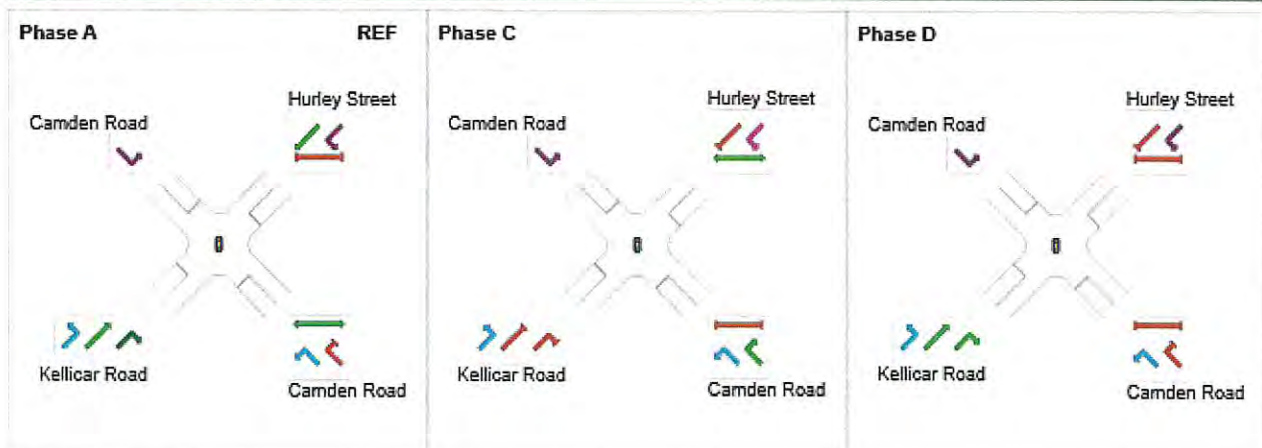
Output Phase Sequence: A, C, D

Phase Timing Summary

Phase	A	C	D
Phase Change Time (sec)	0	73	99
Green Time (sec)	67	20	35
Phase Time (sec)	73	26	41
Phase Split	52%	19%	29%

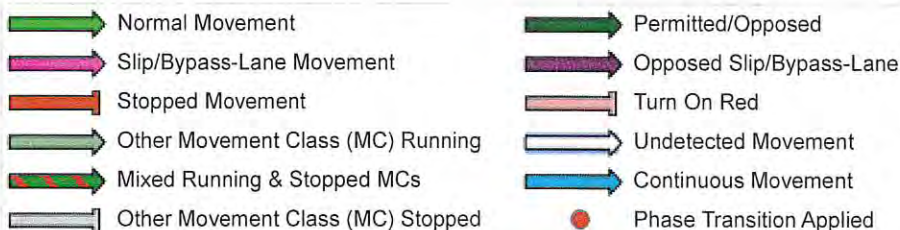
See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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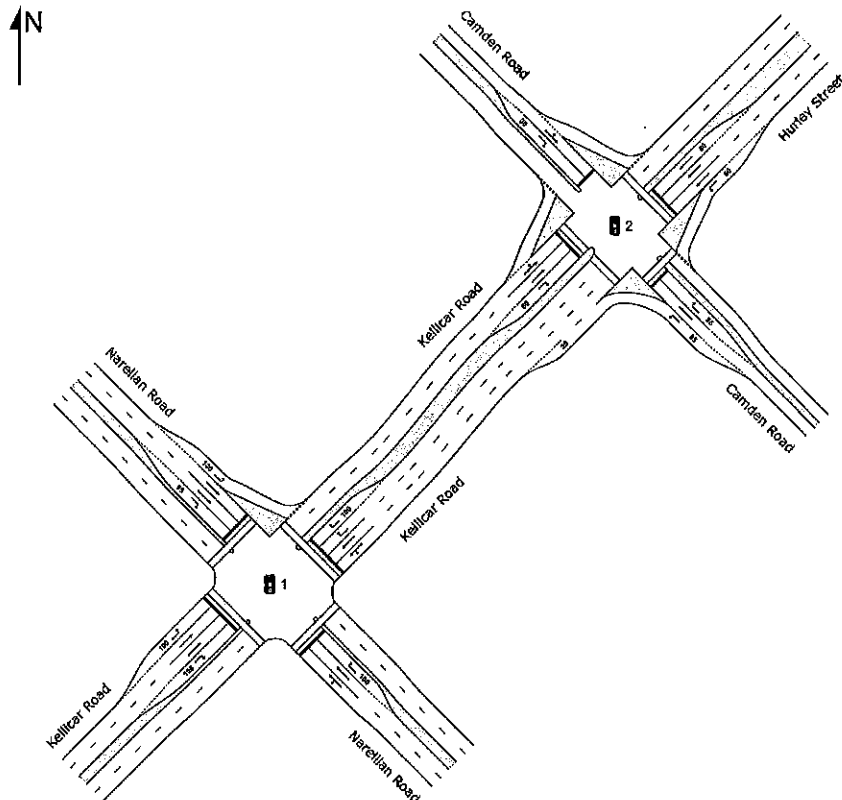
Project: T:WORK21\21009 - GENESISCARE, CNR KELLICAR ROAD AND CAMDEN ROAD, CAMPBELLTOWNMODELModel 19OCT21.sip8

NETWORK LAYOUT

Network: N101 [Post Development]

New Network

Network Category: (None)



SITES IN NETWORK		
Site ID	CCG ID	Site Name
1	NA	Narellan - Kellicar - Fut
2	NA	Camden - Hurley - Fut

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Project: T:WORK21\21009 - GENESISCARE, CNR KELLICAR ROAD AND CAMDEN ROAD, CAMPBELLTOWN\MODEL\Model
19OCT21.sip8

MOVEMENT SUMMARY

Site: 1 [Narellan - Kellicar AM - Fut]

Network: N101 [AM Post Development]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov. ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Queue	Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	Distance m				km/h
SouthEast: Narellan Road														
1	L2	103	1.9	103	1.9	0.880	45.8	LOS D	19.7	142.5	0.95	0.92	1.17	25.6
2	T1	900	4.4	900	4.4	0.880	40.6	LOS C	19.9	144.7	0.96	0.92	1.10	33.6
3	R2	110	0.9	110	0.9	0.320	44.7	LOS D	3.3	23.1	0.74	0.74	0.74	20.0
Approach		1113	3.9	1113	3.9	0.880	41.5	LOS C	19.9	144.7	0.93	0.90	1.07	32.0
NorthEast: Kellicar Road														
4	L2	13	23.1	13	23.1	0.508	51.3	LOS D	5.1	38.1	0.84	0.69	0.84	22.4
5	T1	293	6.8	293	6.8	0.508	46.2	LOS D	5.3	39.4	0.84	0.69	0.84	16.9
6	R2	339	8.8	339	8.8	0.566	51.8	LOS D	5.9	44.2	0.86	0.78	0.86	25.1
Approach		645	8.2	645	8.2	0.566	49.2	LOS D	5.9	44.2	0.85	0.74	0.85	22.0
NorthWest: Narellan Road														
7	L2	804	3.7	804	3.7	1.007	68.2	LOS E	34.8	251.5	1.00	1.12	1.40	18.3
8	T1	705	3.7	705	3.7	0.700	50.0	LOS D	12.7	91.6	0.92	0.79	0.92	30.7
9	R2	248	2.4	248	2.4	0.906	52.0	LOS D	7.2	51.5	1.00	0.95	1.28	26.2
Approach		1757	3.5	1757	3.5	1.007	58.6	LOS E	34.8	251.5	0.97	0.96	1.19	24.4
SouthWest: Kellicar Road														
10	L2	113	9.7	113	9.7	0.202	16.0	LOS B	1.2	9.0	0.43	0.67	0.43	41.5
11	T1	440	6.6	440	6.6	0.975	67.4	LOS E	11.7	86.4	1.00	0.99	1.25	8.6
12	R2	115	2.6	115	2.6	0.368	49.8	LOS D	3.7	26.2	0.79	0.75	0.79	23.0
Approach		668	6.4	668	6.4	0.975	55.7	LOS D	11.7	86.4	0.87	0.90	1.03	15.6
All Vehicles		4183	4.8	4183	4.8	1.007	52.1	LOS D	34.8	251.5	0.93	0.90	1.08	24.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		ped	Distance m		
P1	SouthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P2	NorthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P3	NorthWest Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P4	SouthWest Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	64.3	LOS F			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

Site: 1 [Narellan - Kellicar AM - Fut]

Network: N101 [AM Post Development]

Site Category: Genesiscare
Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

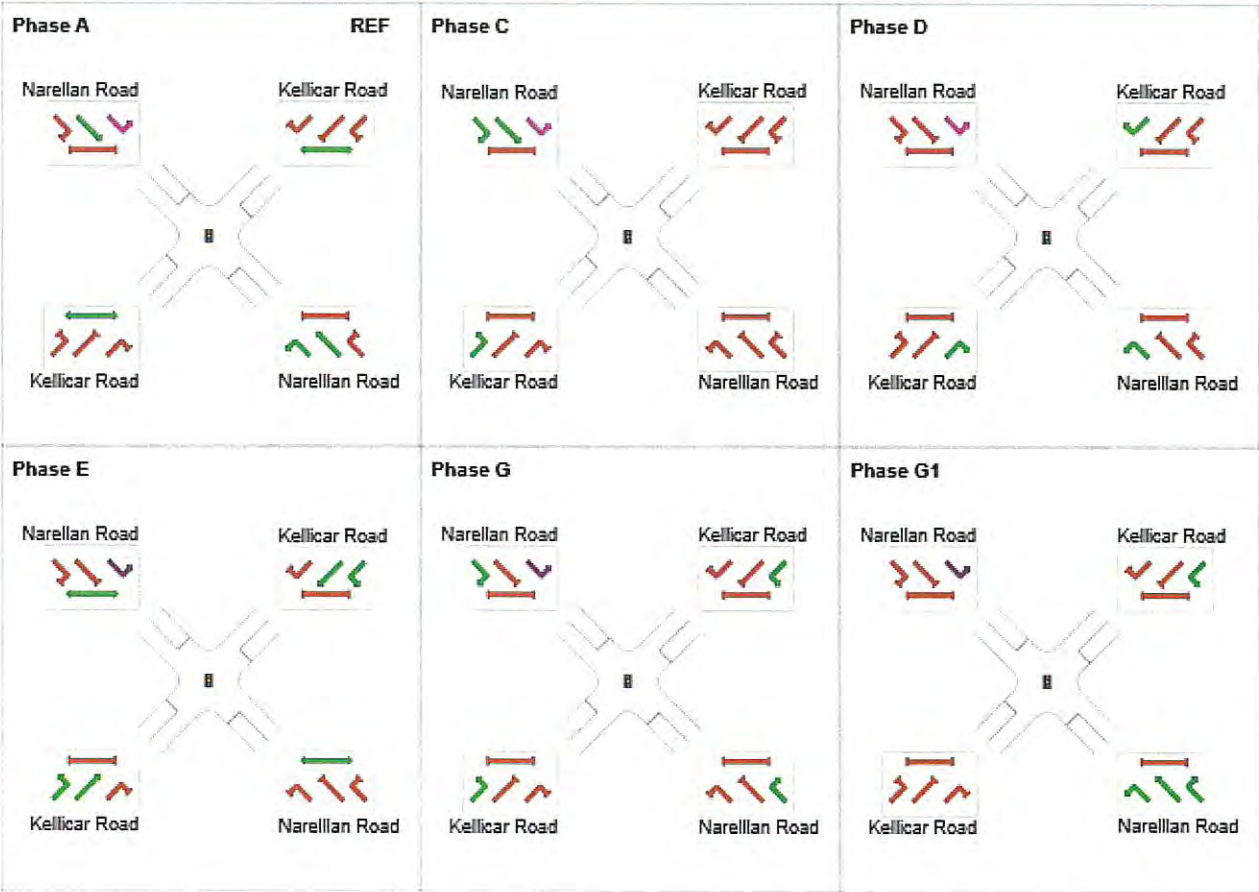
Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, C, D, E, G, G1
Output Phase Sequence: A, C, D, E, G, G1

Phase Timing Summary

Phase	A	C	D	E	G	G1
Phase Change Time (sec)	0	29	43	73	102	121
Green Time (sec)	23	8	24	23	13	13
Phase Time (sec)	29	14	30	29	19	19
Phase Split	21%	10%	21%	21%	14%	14%

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

Normal Movement Permitted/Opposed

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

MOVEMENT SUMMARY

 Site: 2 [Camden - Hurley AM - Fut]

 Network: N101 [AM Post Development]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Queue Vehicles	Back of Queue Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %									
SouthEast: Camden Road														
1	L2	148	3.4	148	3.4	0.082	5.6	LOS A	0.0	0.0	0.00	0.53	0.00	35.1
2	T1	36	11.1	36	11.1	0.132	55.9	LOS D	1.3	10.1	0.90	0.67	0.90	24.1
3	R2	49	0.0	49	0.0	0.150	53.0	LOS D	1.7	11.9	0.85	0.72	0.85	19.0
Approach		233	3.9	233	3.9	0.150	23.3	LOS B	1.7	11.9	0.32	0.59	0.32	24.3
NorthEast: Hurley Street														
4	L2	22	18.2	22	18.2	0.019	7.8	LOS A	0.1	1.2	0.21	0.58	0.21	42.5
5	T1	479	10.2	479	10.2	0.306	41.9	LOS C	5.2	39.6	0.83	0.68	0.83	18.7
Approach		501	10.6	501	10.6	0.306	40.4	LOS C	5.2	39.6	0.80	0.68	0.80	19.4
NorthWest: Camden Road														
7	L2	5	20.0	5	20.0	0.061	39.6	LOS C	0.4	2.9	0.88	0.65	0.88	34.1
8	T1	9	11.1	9	11.1	0.061	33.8	LOS C	0.4	2.9	0.88	0.65	0.88	30.8
9	R2	18	16.7	18	16.7	0.066	52.3	LOS D	0.6	4.9	0.85	0.68	0.85	22.4
Approach		32	15.6	32	15.6	0.066	45.1	LOS D	0.6	4.9	0.86	0.67	0.86	26.5
SouthWest: Kellicar Road														
10	L2	56	7.1	55	7.2	0.551	17.6	LOS B	13.4	97.5	0.51	0.50	0.66	44.2
11	T1	1118	4.6	1098	4.6	0.551	13.1	LOS A	13.4	97.5	0.57	0.53	0.66	39.6
12	R2	180	2.8	177	2.8	0.210	23.0	LOS B	4.5	32.3	0.68	0.75	0.68	21.6
Approach		1354	4.4	1330 ^{N1}	4.4	0.551	14.6	LOS B	13.4	97.5	0.58	0.56	0.66	37.5
All Vehicles		2120	6.0	2096 ^{N1}	6.1	0.551	22.2	LOS B	13.4	97.5	0.61	0.59	0.66	30.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	SouthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P2	NorthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P41	SouthWest Stage 1	53	64.3	LOS F	0.2	0.2	0.96	0.96
P42	SouthWest Stage 2	53	35.8	LOS D	0.1	0.1	0.92	0.92
All Pedestrians		211	57.1	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

 Site: 2 [Camden - Hurley AM - Fut]

 Network: N101 [AM Post Development]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, B, D, F1

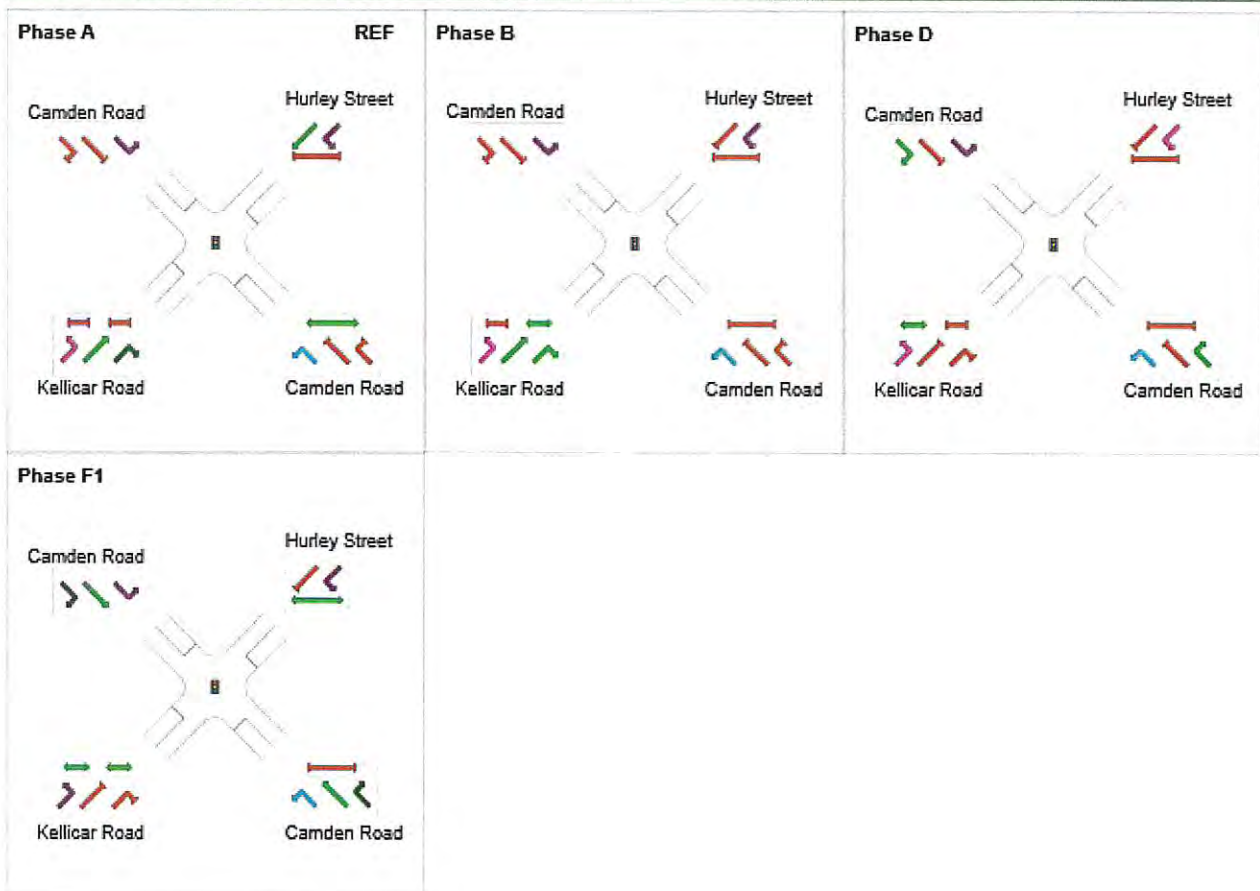
Output Phase Sequence: A, B, D, F1

Phase Timing Summary

Phase	A	B	D	F1
Phase Change Time (sec)	0	46	100	113
Green Time (sec)	40	48	7	21
Phase Time (sec)	46	54	13	27
Phase Split	33%	39%	9%	19%

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

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

 Normal Movement

 Permitted/Opposed



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Organisation: TRANSPORT AND TRAFFIC PLANNING ASSOCIATES | Processed: Tuesday, 19 October 2021 7:58:41 PM

Project: T:\WORK21\21009 - GENESISCARE, CNR KELLCAR ROAD AND CAMDEN ROAD, CAMPBELLTOWN\MODEL\Model 19OCT21.sip8

MOVEMENT SUMMARY

Site: 1 [Narellan - Kellicar PM - Fut]

Network: N101 [PM Post Development]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles														
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed	
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m			km/h	
SouthEast: Narellan Road														
1	L2	94	4.3	94	4.3	0.827	55.0	LOS D	11.4	82.3	0.98	0.90	1.15	22.6
2	T1	517	2.7	517	2.7	0.827	50.5	LOS D	12.7	91.2	0.98	0.89	1.09	30.3
3	R2	85	0.0	85	0.0	0.377	59.9	LOS E	3.1	21.5	0.89	0.76	0.89	16.3
Approach		696	2.6	696	2.6	0.827	52.2	LOS D	12.7	91.2	0.97	0.87	1.07	28.0
NorthEast: Kellicar Road														
4	L2	21	9.5	21	9.5	0.942	54.9	LOS D	15.8	115.0	1.00	0.96	1.13	21.7
5	T1	736	4.8	736	4.8	0.942	49.7	LOS D	15.8	115.0	1.00	0.96	1.13	16.0
6	R2	578	2.1	578	2.1	0.819	51.8	LOS D	11.2	79.6	0.95	0.85	0.99	25.1
Approach		1335	3.7	1335	3.7	0.942	50.7	LOS D	15.8	115.0	0.98	0.91	1.07	20.7
NorthWest: Narellan Road														
7	L2	456	3.1	456	3.1	0.582	8.3	LOS A	2.5	18.3	0.17	0.63	0.22	47.5
8	T1	809	2.3	809	2.3	0.744	48.6	LOS D	14.8	105.4	0.92	0.81	0.92	31.1
9	R2	242	0.8	242	0.8	0.734	40.1	LOS C	6.4	45.2	0.98	0.84	1.01	30.0
Approach		1507	2.3	1507	2.3	0.744	35.1	LOS C	14.8	105.4	0.70	0.76	0.72	33.4
SouthWest: Kellicar Road														
10	L2	205	2.4	205	2.4	0.281	10.9	LOS A	1.2	8.3	0.27	0.64	0.27	45.8
11	T1	548	6.0	548	6.0	0.887	46.4	LOS D	13.0	95.5	0.98	0.89	1.06	11.7
12	R2	164	0.6	164	0.6	0.460	46.9	LOS D	5.2	36.3	0.79	0.77	0.79	23.9
Approach		917	4.3	917	4.3	0.887	38.5	LOS C	13.0	95.5	0.79	0.82	0.84	21.3
All Vehicles		4455	3.2	4455	3.2	0.942	43.1	LOS D	15.8	115.0	0.84	0.83	0.90	26.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue	Prop. Queued	Effective Stop Rate	
		ped/h	sec		Pedestrian ped	Distance m		
P1	SouthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P2	NorthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P3	NorthWest Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P4	SouthWest Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	64.3	LOS F			0.96	0.96

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

 Site: 1 [Narellan - Kellicar PM - Fut]

 Network: N101 [PM Post Development]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, C, D, E, G

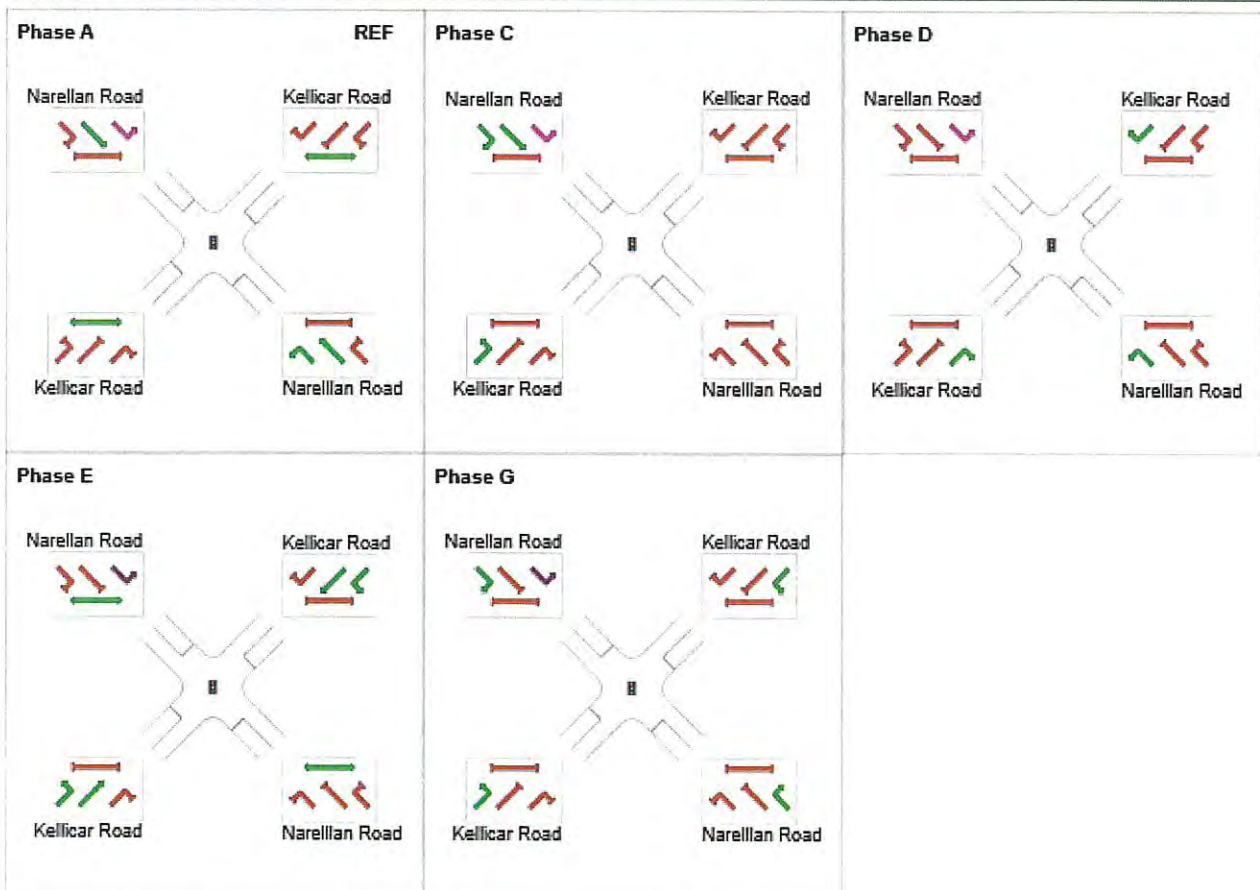
Output Phase Sequence: A, C, D, E, G

Phase Timing Summary

Phase	A	C	D	E	G
Phase Change Time (sec)	0	34	46	79	115
Green Time (sec)	28	6	27	30	19
Phase Time (sec)	34	12	33	36	25
Phase Split	24%	9%	24%	26%	18%

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

Output Phase Sequence



REF: Reference Phase

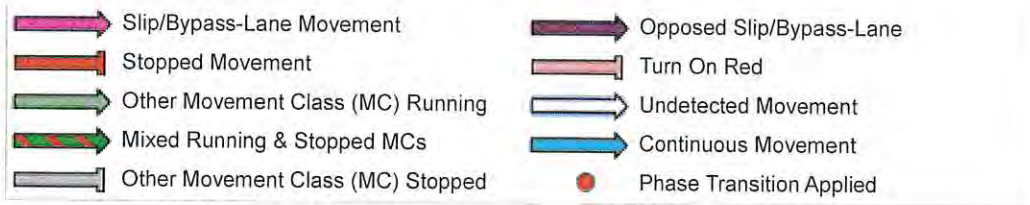
VAR: Variable Phase



Normal Movement



Permitted/Opposed



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Organisation: TRANSPORT AND TRAFFIC PLANNING ASSOCIATES | Processed: Tuesday, 19 October 2021 8:05:52 PM

Project: T:\WORK21\21009 - GENESISCARE, CNR KELICAR ROAD AND CAMDEN ROAD, CAMPBELLTOWN\MODEL\Model
19OCT21.sip8

MOVEMENT SUMMARY

Site: 2 [Camden - Hurley PM - Fut]

Network: N101 [PM Post Development]

Site Category: Genesiscare

Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles													
Mov ID	Turn	Demand veh/h	Flows HV %	Arrival Total veh/h	Flows HV %	Deg Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles	Prop. Queued Distance m	Effective Stop Rate	Aver. No Cycles	Average Speed km/h
SouthEast: Camden Road													
1	L2	295	1.0	295	1.0	0.160	5.6	LOS A	0.3	2.2	0.00	0.53	35.0
2	T1	9	11.1	9	11.1	0.035	55.5	LOS D	0.3	2.5	0.89	0.61	24.2
3	R2	52	0.0	52	0.0	0.173	54.0	LOS D	1.8	12.8	0.87	0.72	18.8
Approach		356	1.1	356	1.1	0.173	14.0	LOS A	1.8	12.8	0.15	0.56	26.5
NorthEast: Hurley Street													
4	L2	71	1.4	71	1.4	0.061	10.4	LOS A	0.7	5.1	0.34	0.63	40.0
5	T1	997	4.4	997	4.4	0.699	33.0	LOS C	13.0	94.6	0.84	0.74	21.9
Approach		1068	4.2	1068	4.2	0.699	31.5	LOS C	13.0	94.6	0.81	0.74	22.8
NorthWest: Camden Road													
7	L2	8	12.5	8	12.5	0.162	47.5	LOS D	1.1	8.5	0.91	0.70	31.6
8	T1	29	13.8	29	13.8	0.162	41.8	LOS C	1.1	8.5	0.91	0.70	28.0
9	R2	43	7.0	43	7.0	0.171	54.9	LOS D	1.5	11.4	0.86	0.72	21.7
Approach		80	10.0	80	10.0	0.171	49.4	LOS D	1.5	11.4	0.89	0.71	25.0
SouthWest: Kellicar Road													
10	L2	22	4.5	22	4.5	0.436	21.0	LOS B	13.6	99.4	0.65	0.60	41.7
11	T1	860	5.2	860	5.2	0.436	17.2	LOS B	13.6	99.4	0.71	0.64	35.9
12	R2	209	1.0	209	1.0	0.427	51.4	LOS D	8.4	59.5	1.00	0.92	12.6
Approach		1091	4.4	1091	4.4	0.436	23.8	LOS B	13.6	99.4	0.77	0.70	29.8
All Vehicles		2595	4.0	2595	4.0	0.699	26.4	LOS B	13.6	99.4	0.70	0.69	26.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Prop. Queued Distance m	Effective Stop Rate	
P1	SouthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P2	NorthEast Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P41	SouthWest Stage 1	53	64.3	LOS F	0.2	0.2	0.96	0.96
P42	SouthWest Stage 2	53	36.2	LOS D	0.1	0.1	0.92	0.92
All Pedestrians		211	57.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

PHASING SUMMARY

 Site: 2 [Camden - Hurley PM - Fut]

 Network: N101 [PM Post Development]

Site Category: Genesiscare
Signals - Fixed Time Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

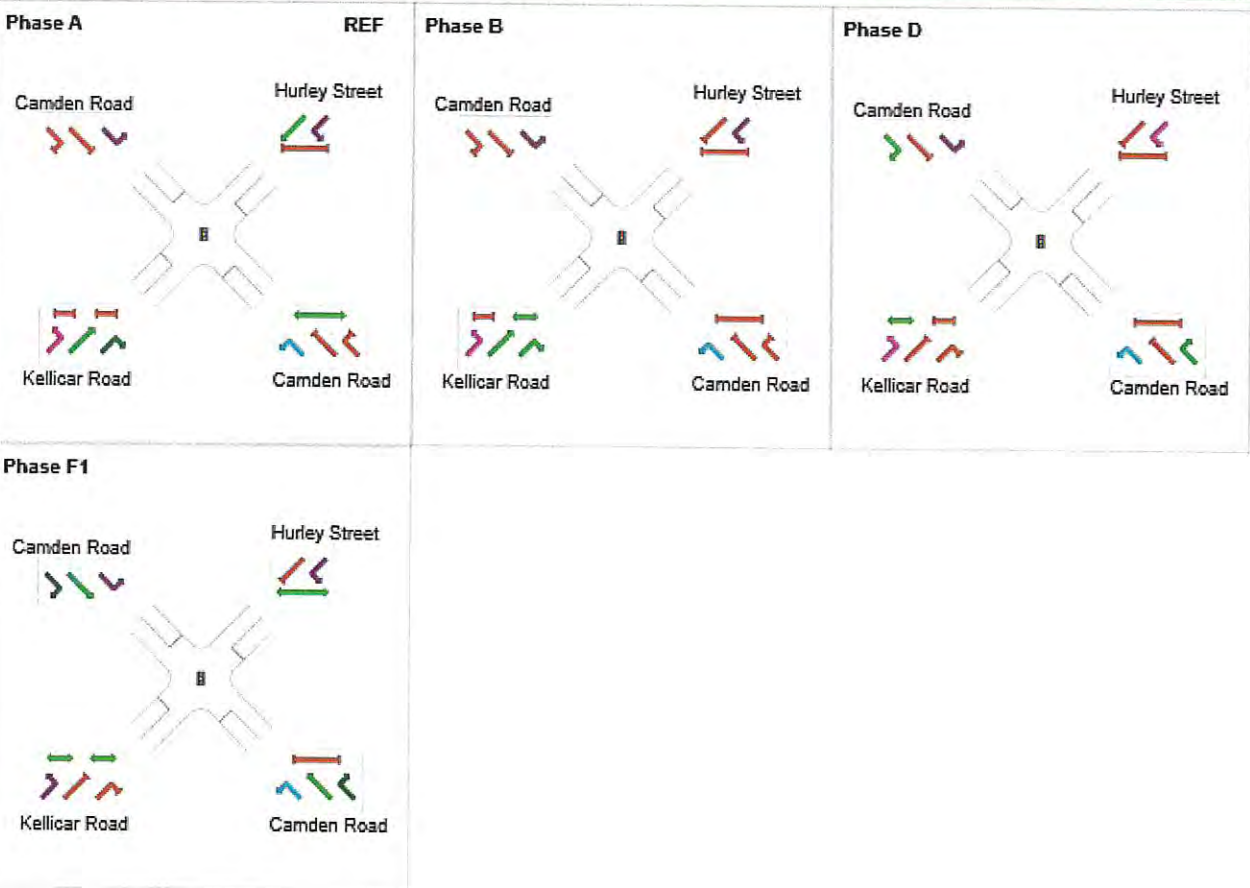
Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, D, F1
Output Phase Sequence: A, B, D, F1

Phase Timing Summary

Phase	A	B	D	F1
Phase Change Time (sec)	0	68	101	114
Green Time (sec)	62	27	7	20
Phase Time (sec)	68	33	13	26
Phase Split	49%	24%	9%	19%

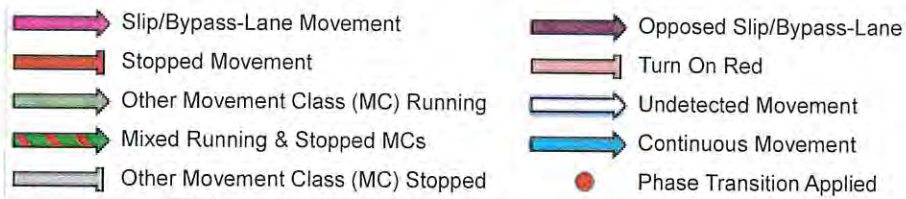
See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

 Normal Movement  Permitted/Opposed

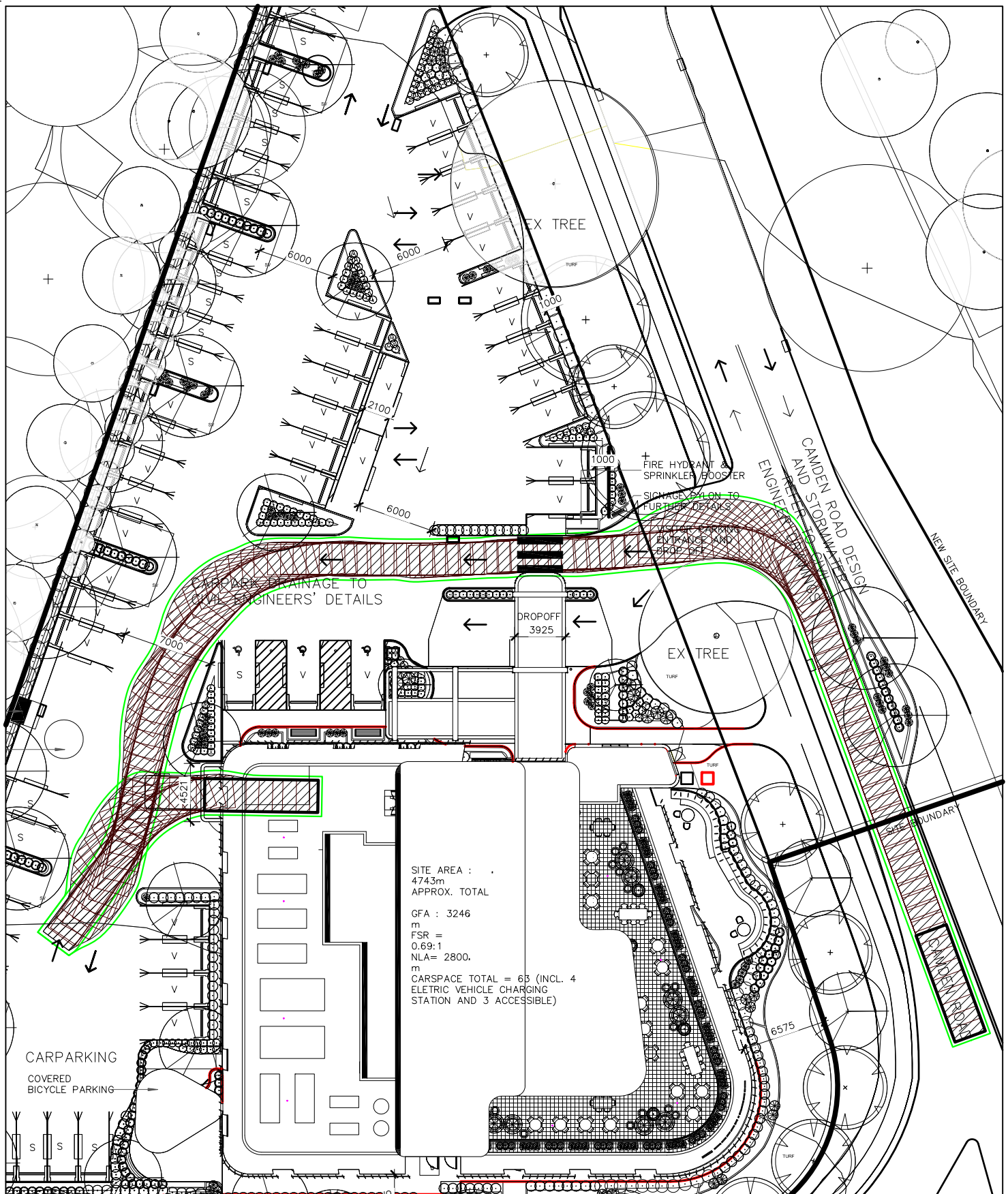


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Project: T:\WORK21\21009 - GENESISCARE, CNR KELLICAR ROAD AND CAMDEN ROAD, CAMPBELLTOWN\MODEL\Model
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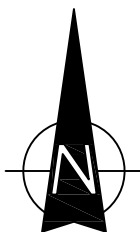
Appendix D

Turning Path Assessment



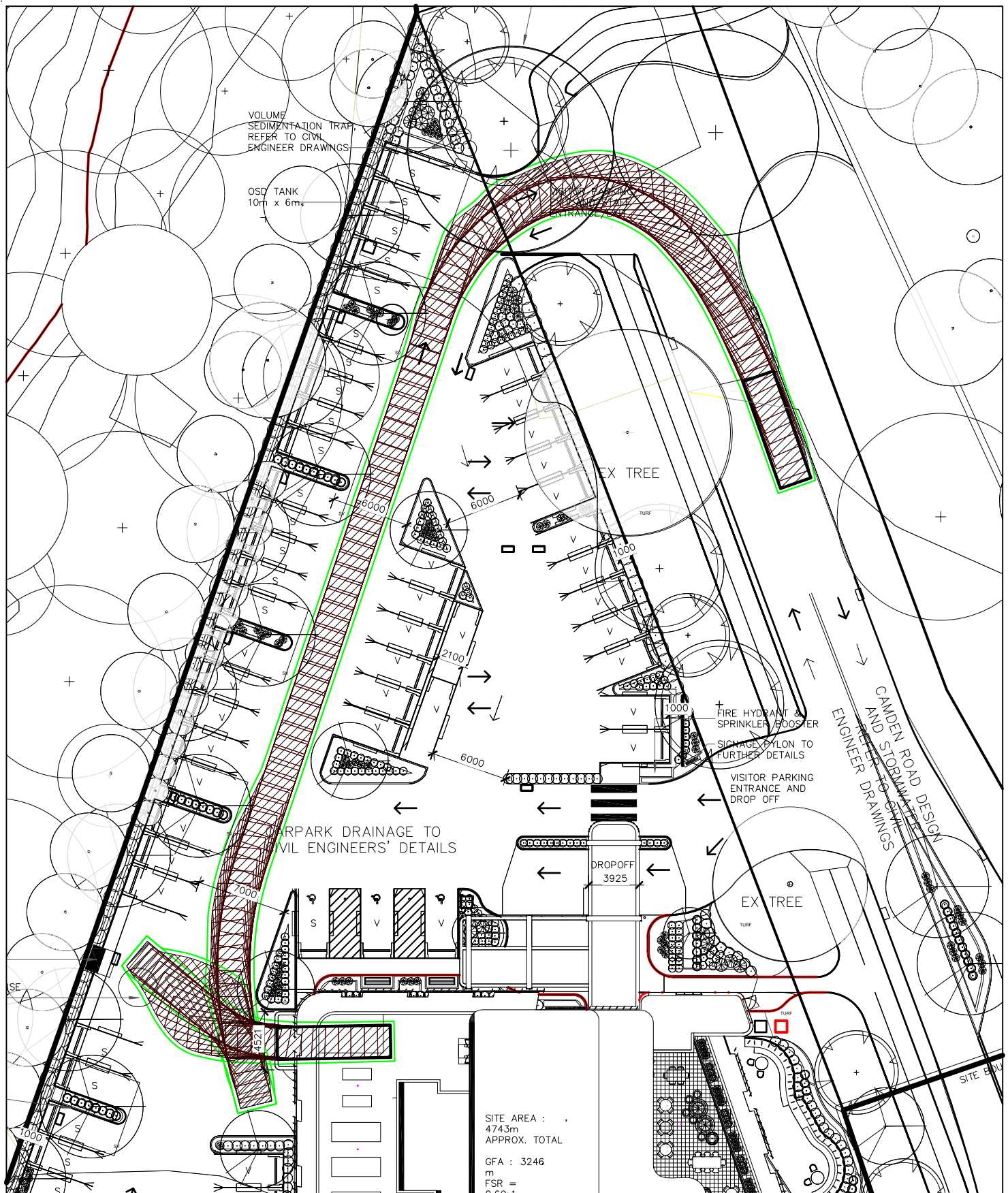
NOTE

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



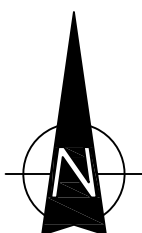
**SWEPT PATH ANALYSIS
 OF AN 8.8m RIGID
 VEHICLE ENTERING THE SITE**

SP 1



NOTE

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



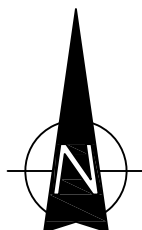
SWEPT PATH ANALYSIS OF AN 8.8m RIGID VEHICLE EXITING THE SITE

SP 2



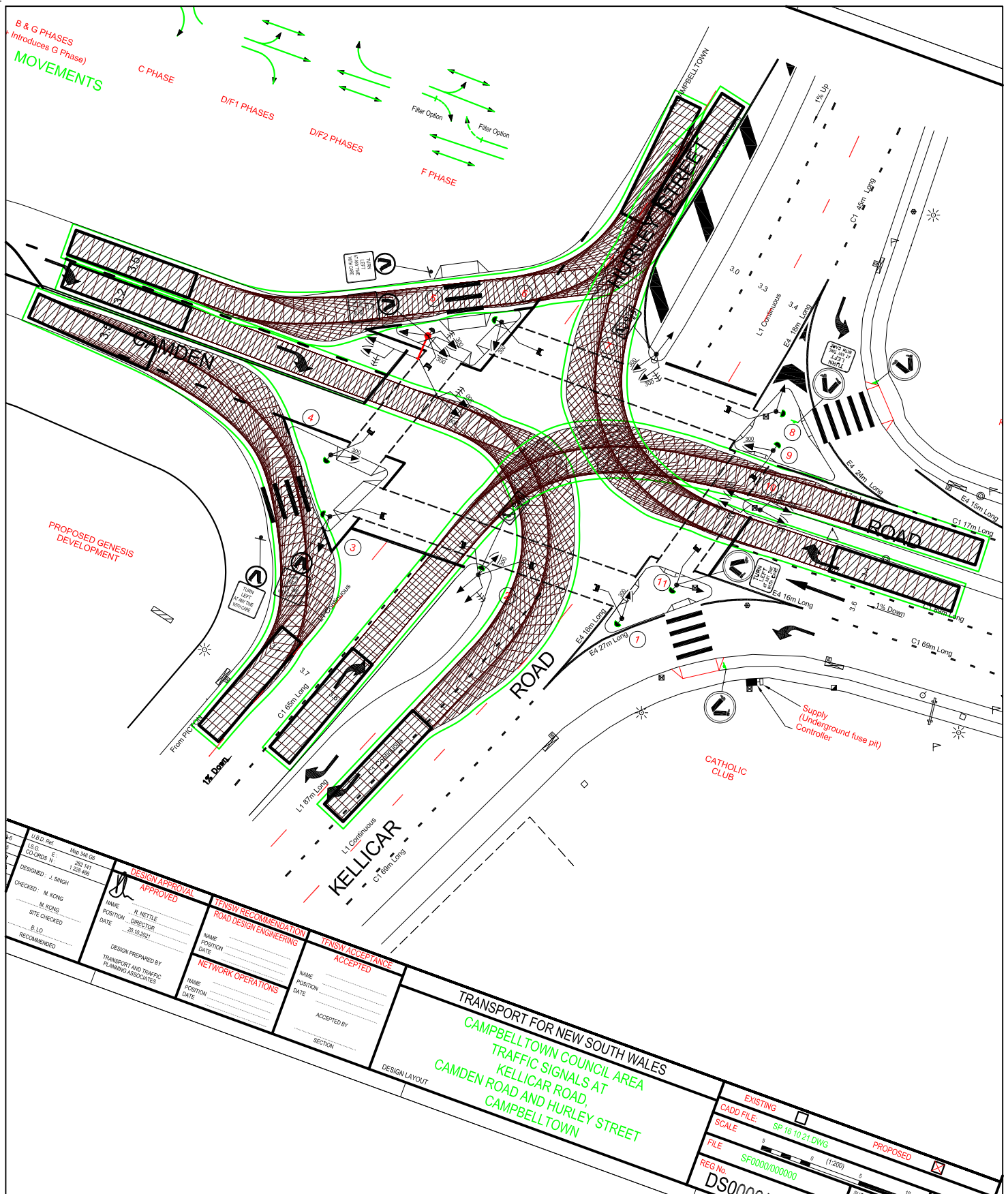
NOTE

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



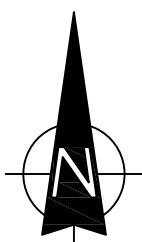
SWEPT PATH ANALYSIS OF A 12.5m RIGID VEHICLE TURNING

SP 3



NOTE

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



SWEPT PATH ANALYSIS OF 12.5m RIGID VEHICLES

SP 4