

5.0 SUMMARY

- The traffic report has been prepared in support of a planning proposal that seeks to rezone the amalgamated sites to facilitate a *Residential Mixed – Use development*. The proposal seeks to rezone the site to **B5**.
- The site is known as Nos. 642-644 (Lots 1 and 2, D.P. 5208) Canterbury Road, 1 and 3 Platts Avenue (Lot 4 and Lot 5 D.P.5208) and 2a, 2b,2c Liberty Street (Lots 51, D.P. 6042, Lot 2, D.P. 514813, Lot 1, D.P. 125537 and Lot 2, D.P. 383957) Belmore.
- The site has a frontage to Canterbury Road of **29.31** metres, a site frontage to Platts Avenue of **40.235** metres and a frontage to Liberty Street of **62.66** metres. The site area is **4557.8m²**.
- The site has vehicular access to the basement car park off Platts Avenue.
- The proposed development proposes **901.8m²** of 'business use', of which 415.1m² is included in FSR and **11911m²** of 'residential use'. The total GFA is **12326.1m²**. The site development proposes an **FSR of 2.7:1**.
- The architectural drawings for the proposed development prepared by Geoform Architects proposes **147** residential units with **51** x one bedroom units, **93** two bedroom units and **3** three bedroom units.
- The car parking requirement for this site has been calculated to be **157 spaces** in accordance with **Canterbury DCP Section 6.8**. The basement car park will have **3** levels.
- A loading dock has been provided for two Medium Rigid loading spaces and **1** Small Rigid Truck space. The loading Dock is located on level **B2** and has a minimum head height clearance of **4.6** metres.
- The design of the entrance driveway and loading dock have been checked using Autoturn 8.0.
- The proposed traffic generation for the development is **46** vehicles in the AM peak hour and **46** vehicles in the PM peak hour.
- The **SIDRA** analysis of the existing scenario at the intersection of Canterbury Road and Kingsgrove Road gives a Level of Service of **D** in the AM peak hour and **C** in the PM peak hour. *Future volumes* from this development are *low* and do *not change* the *operational capacity* of this intersection. The future volumes have been modelled in two scenarios. **Scenario1 PD1** models the intersection with no changes to the intersection geometry or signal phasing.

APPENDICES

APPENDIX A

EXTEND OF SITE
TOTAL SITE AREA = 4557.8sqm

EXTENT OF CURRENT ZONE

CANTERBURY ROAD

PLATTS AVENUE

642 - 644 CANTERBURY ROAD, BELMORE

LIBERTY STREET

#2 LOT 1
DP 514813
SINGLE STOREY
BRICK SHOP

#650-658
LOT A
DP 383957
SINGLE
STOREY
WORKSHOP

#642-644
LOT 2
DP 5208
STEEL & BRICK
WAREHOUSE AND
SHOWROOM

#642-644
LOT 1
DP 5208

#2C-2D
LOT B
DP 383957

#2B
LOT 2
DP 514813
BRICK WAREHOUSE
AND OFFICE

#1
LOT 4
DP 5208
SINGLE STOREY
FIBRO HOUSE

#3
LOT 5
DP 5208
SINGLE
STOREY
FIBRO HOUSE

#2C-2D
LOT 1
DP 125537

#2A
LOT 51
DP 6042
SINGLE STOREY
BRICK HOUSE

geoform+

suite 145-H 780 boule street melbourne park row 2010

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REV	DATE	DESCRIPTION
1	11.11.2014	PRELIMINARY LAYOUT
2	11.11.2014	PRELIMINARY LAYOUT
3	24.11.2014	FINAL LAYOUT

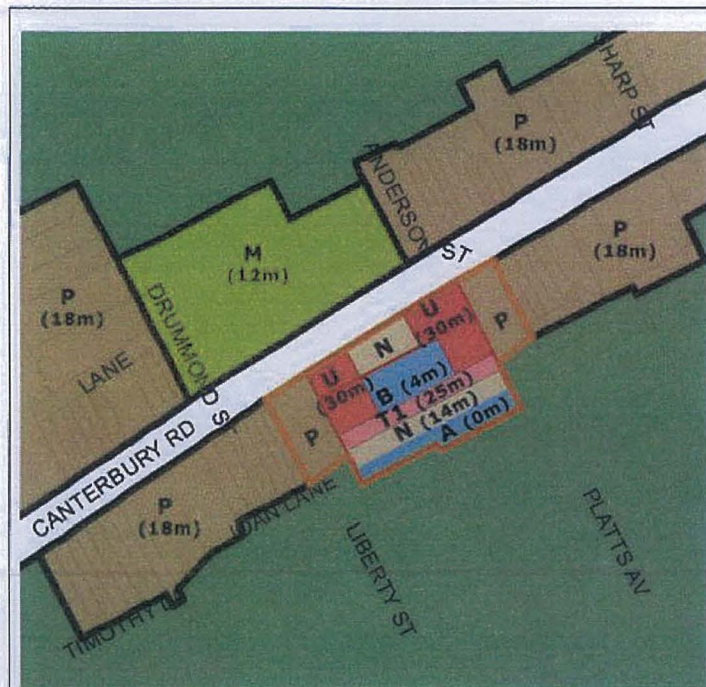
job # :
scale : 1:400 @ A3
date : SEP 2014

Site : SITEPLAN

design+architecture+interiors

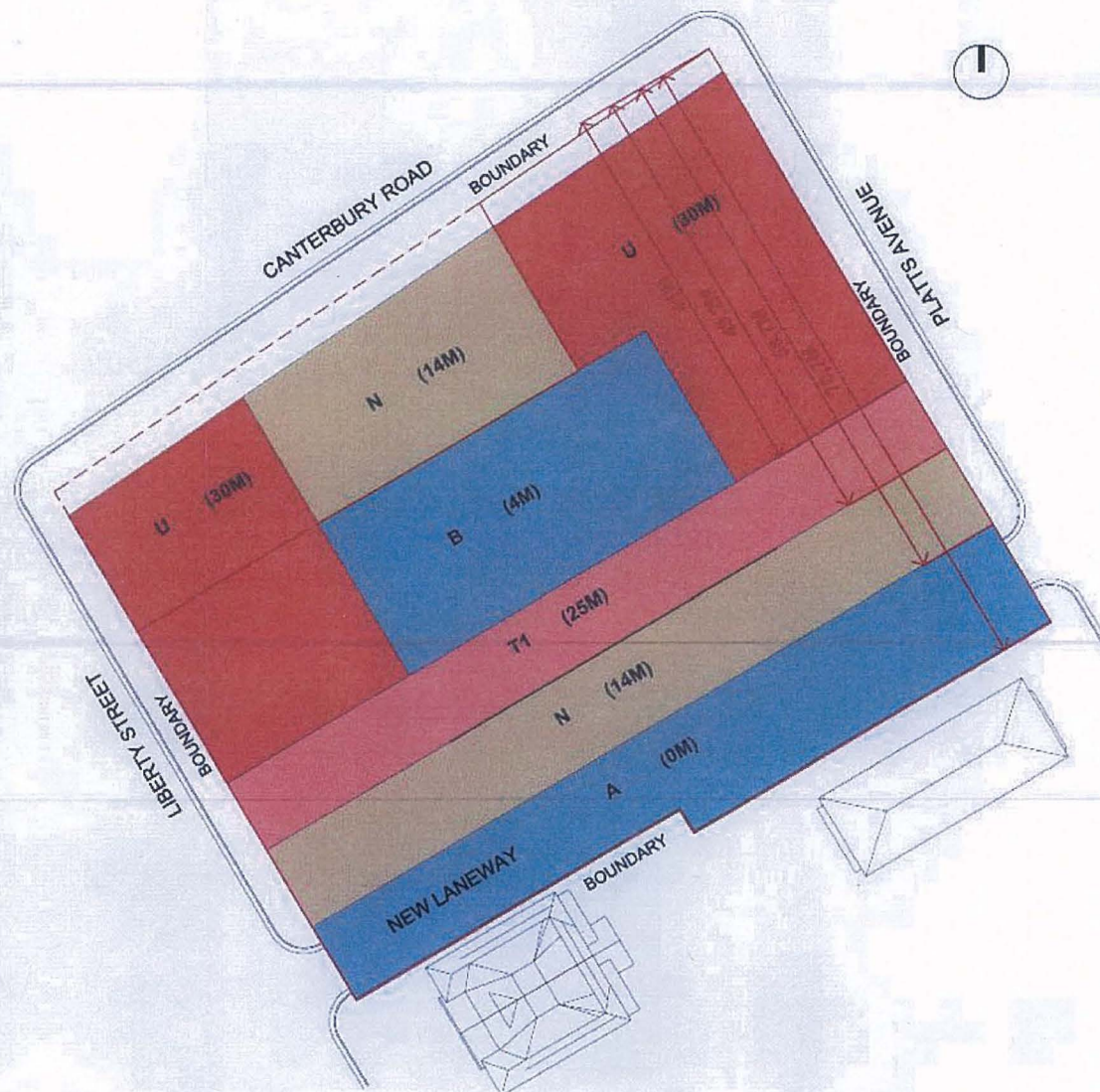
developed in concept, do not scale drawing, work to figure dimensions only, not to scale dimensions in the field. confirm by on-site, dimensions in field may vary. note: this is a preliminary drawing. it is not to be used for construction. it is not to be used for any other purpose. it is not to be used for any other purpose.

drawing number :
SK_01 C



Maximum Building Height (m)

B	4	O	15
L	8.5	P	18
U	9.5		21
K	10		25
T1	11		27
T2	11.5		27
N	12		30
A	14		



642 - 644 CANTERBURY ROAD, BELMORE

Rev	Date	Description
A	21.10.2014	Preparation for release
B	15.11.2014	Preparation for release
C	24.11.2014	Final approval

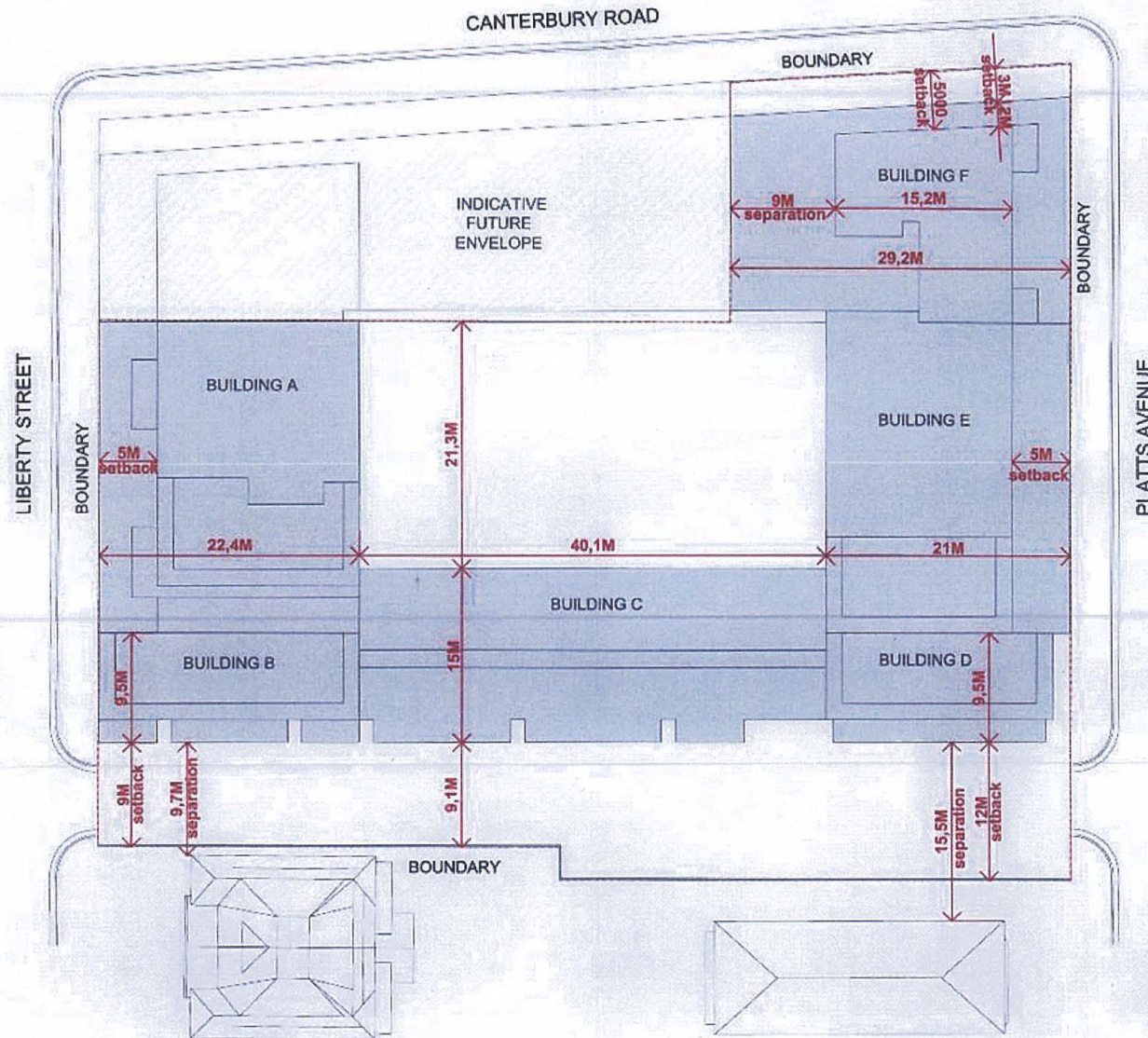
Job #
Scale
Date
1:500 @ A3
SEP 2014

PROPOSED BUILDING HEIGHT DIAGRAM

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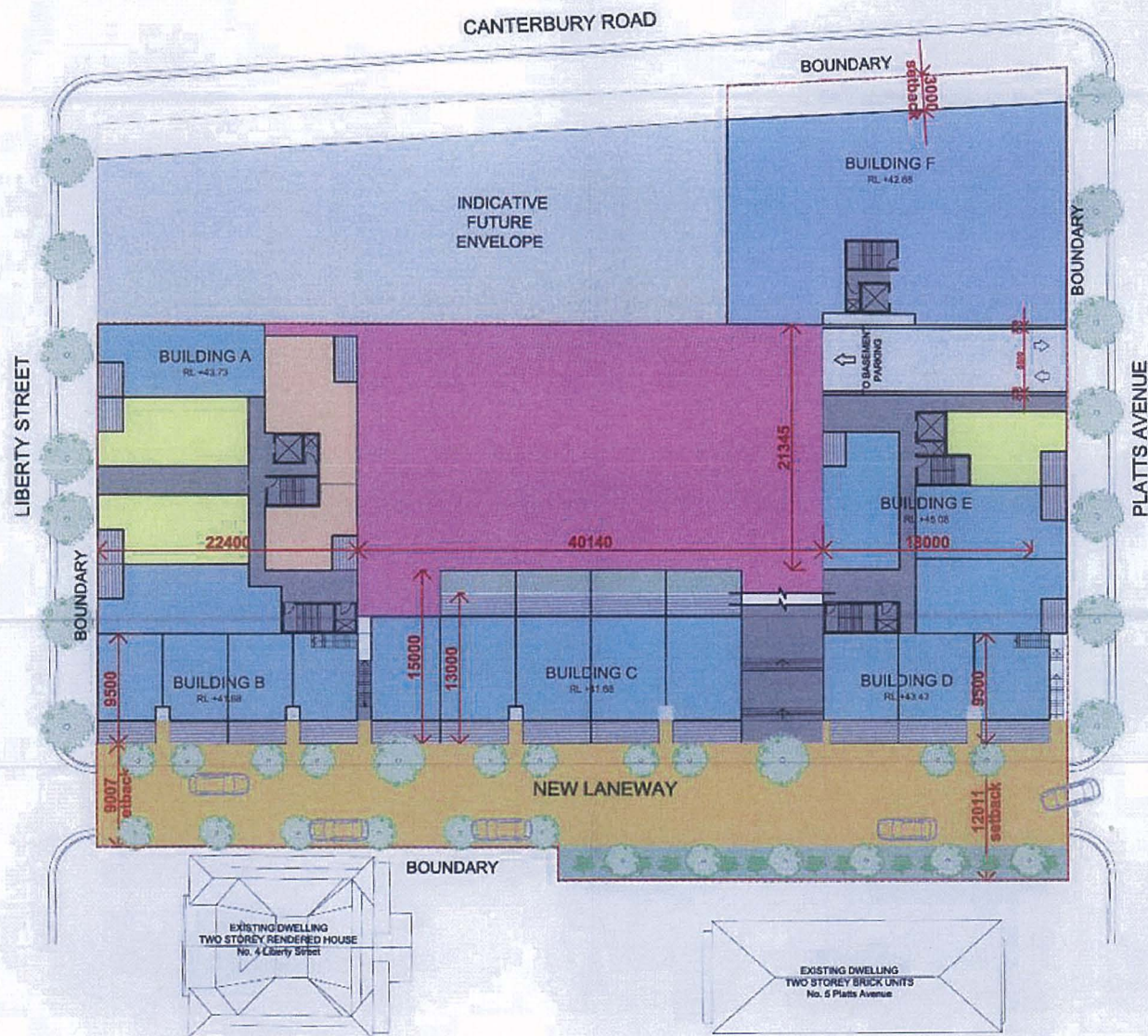
design+architecture+interiors is a registered business name. All dimensions are in metres unless otherwise stated. This diagram is for informational purposes only and does not constitute a contract. The client is responsible for ensuring that the diagram is used in accordance with the relevant planning and building regulations.

SK_02 C



C





geoform+

units 145-147/80 Bourke Street Moore Park NSW 2010

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REV	DATE	DESCRIPTION
A	21.10.2014	PRELIMINARY PLAN FOR REVIEW
B	11.11.2014	PRELIMINARY PLAN FOR REVIEW
C	24.11.2014	PRELIMINARY PLAN FOR REVIEW

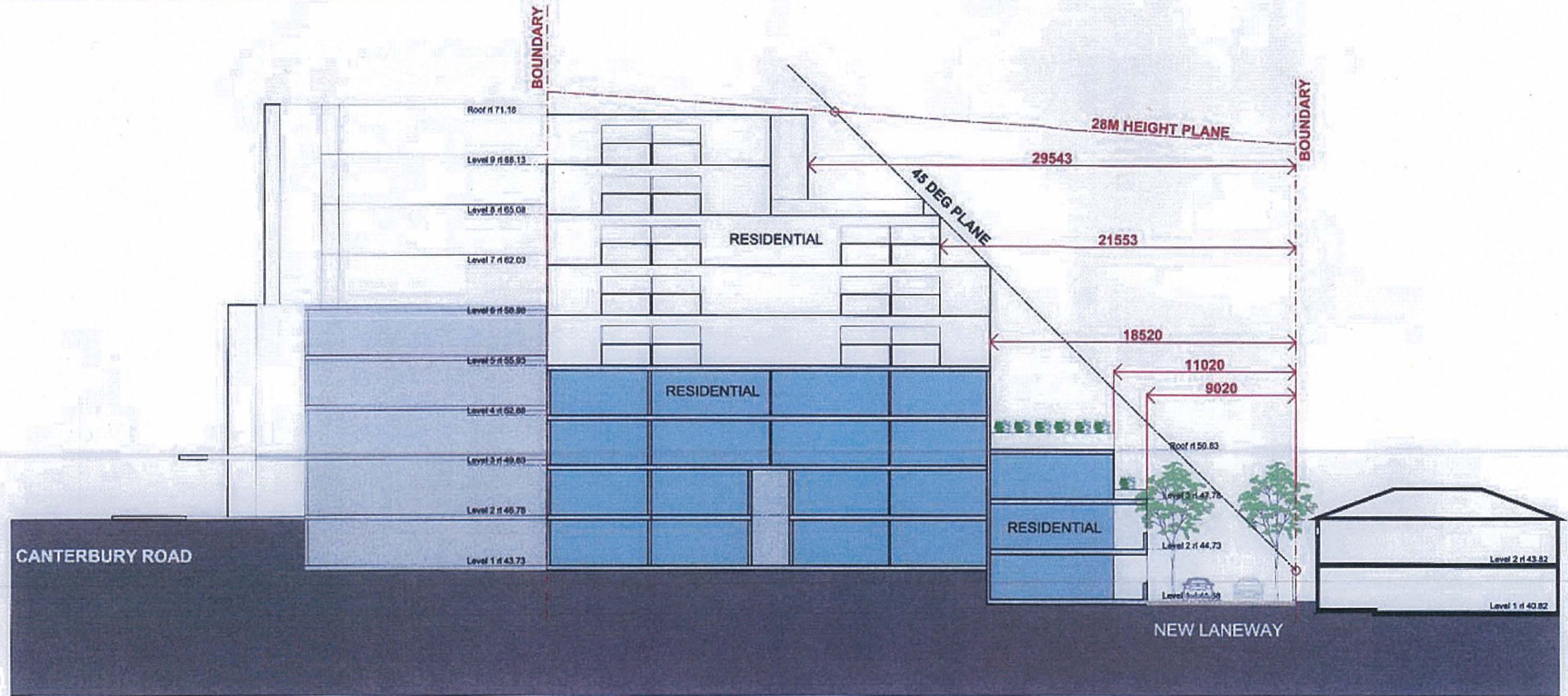
job # :
 scale : 1:400 @ A3
 date : SEP 2014

title : **LEVEL 01 (GROUND) PLAN**

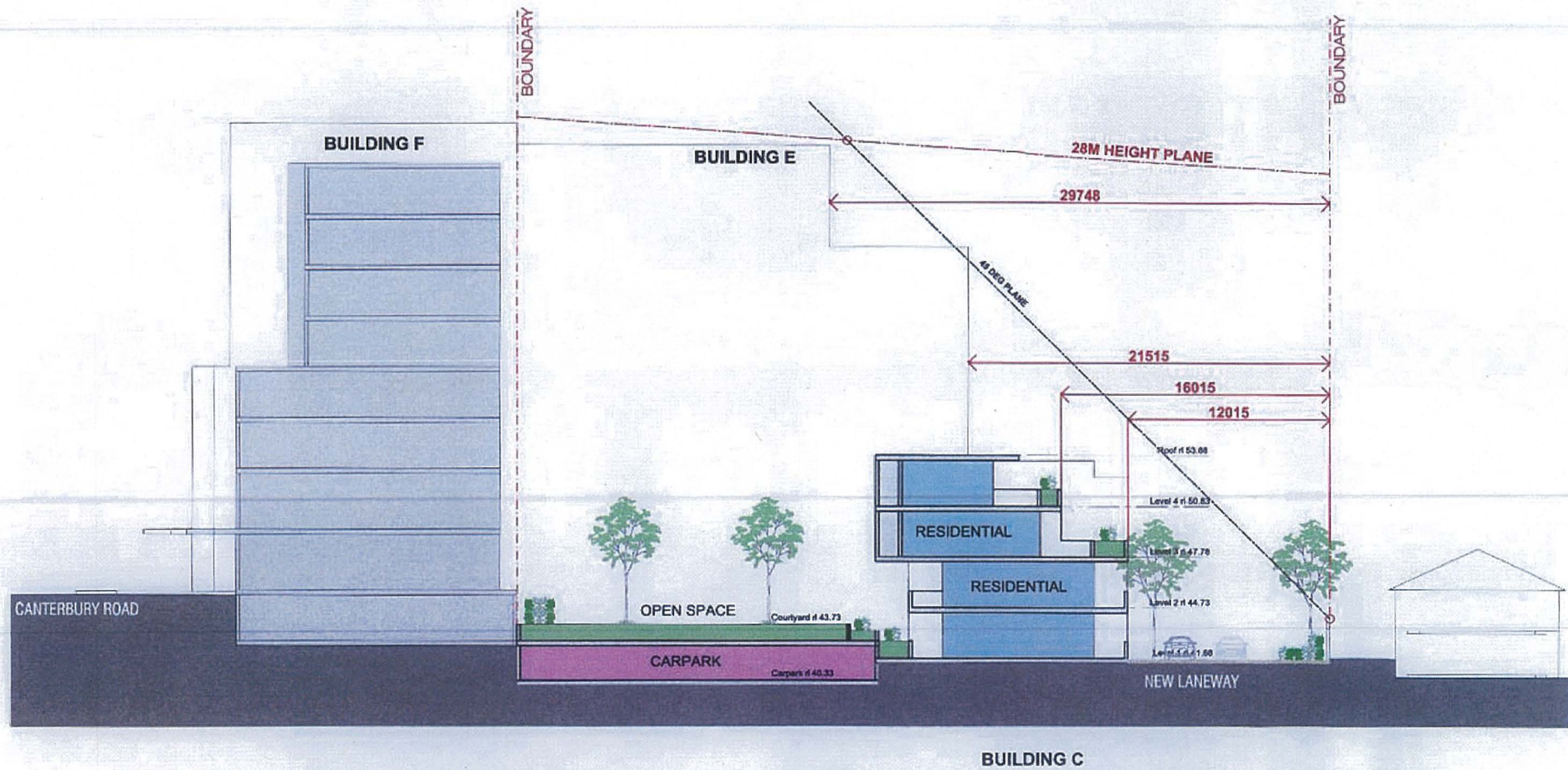
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drawing number : **SK_10** issue : **C**



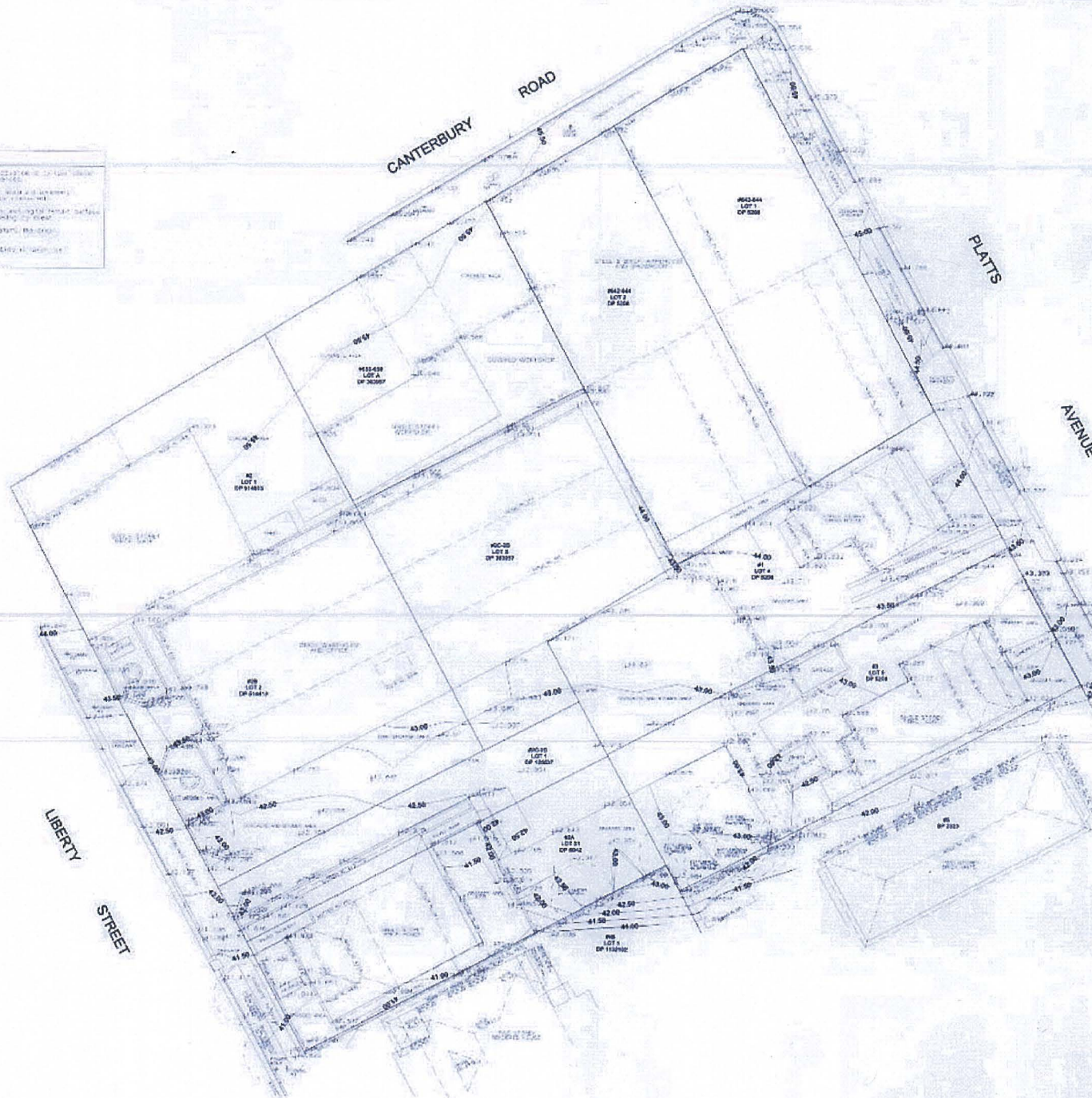
Rev	Date	Description
A	01.10.2014	preliminary layout for review
B	10.11.2014	preliminary layout for review
C	24.11.2014	final layout for approval



APPENDIX B

NOTES:

1. This plan shows the boundaries of the lots and the location of the easements and the location of the easements and the location of the easements.
2. The boundaries of the lots are shown by the solid lines and the location of the easements is shown by the dashed lines.
3. The location of the easements is shown by the dashed lines and the location of the easements is shown by the dashed lines.
4. The location of the easements is shown by the dashed lines and the location of the easements is shown by the dashed lines.
5. The location of the easements is shown by the dashed lines and the location of the easements is shown by the dashed lines.



MATT CARROLL- CONTRACT SURVEYOR. ABN: 3563540398
 ADDRESS: 2/24 PACIFIC STREET, WAMBERAL, 2260.
 PHONE: 0418 648 647
 EMAIL: matt.carroll@seymourwhyte.com.au

SURVEY TYPE: 1:10,000 SCALE
 SURVEY ADDRESS: 2/24 Pacific Street, Wamberal, 2260
 CLIENT: Mr. J. Carroll
 DATE OF SURVEY: 22/04/2014
 DATE OF SKETCH: 22/04/2014
 SCALE: 1:10,000

DATE	INITIALS	DESCRIPTION	REV. NO.
02/05/2014			

APPENDIX C



City of Canterbury

City of Cultural Diversity

BELMORE SUBURB MAP

Legend

- Car park locations
- Train Station
- Suburb boundaries
- M5 Motorway
- Railway Line
- Property boundaries
- Schools
- Parks and Reserves
- Rivers and Creeks



Scale 1:10,000 @A3

0 112.5 225 450 Meters

Printed: 29 Jun 2012

Projection: GDA 2014
Zone 56

IMPORTANT PUBLIC NOTICE OF DISCLAIMER

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Jim Montague
General Manager

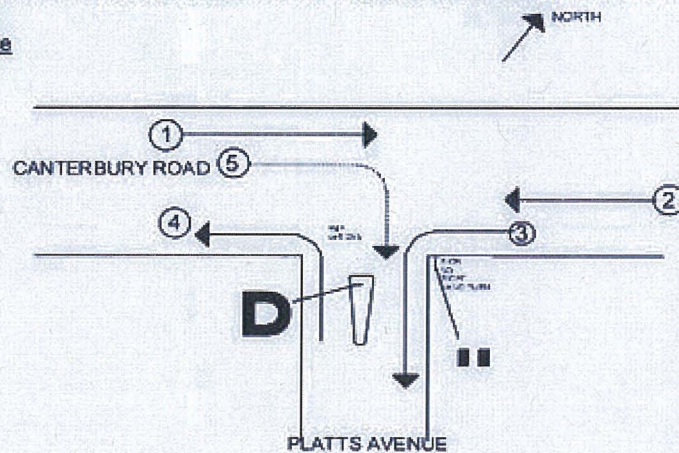


APPENDIX D

INTERSECTION: TRAFFIC VOLUME COUNT

DAY: Thurs DATE: 6/11/14 WEATHER: Fine OBSERVER: E. Halley

Canterbury Road/ Platts Ave Belmore



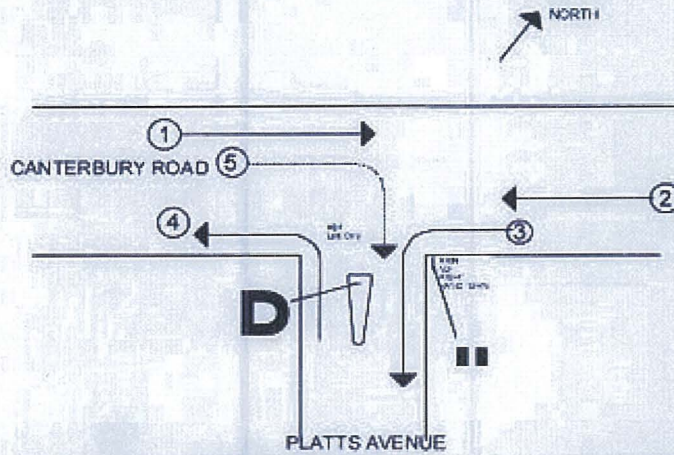
Time	MOVEMENT NUMBER					
	1	2	3	4	5	6
7.00AM TO						
7.15AM	436	136	0	11	1	1
7.15AM TO						
7.30AM	409	173	0	7	0	0
7.30AM TO						
7.45AM	419	192	1	11	1	0
7.45AM TO						
8.00AM	372	182	1	24	3	0
8.00AM TO						
8.15AM	327	185	0	27	0	0
8.15AM TO						
8.30AM	328	193	1	23	0	0
8.30AM TO						
8.45AM	321	189	0	13	1	0
8.45AM TO						
9.00AM	376	173	0	9	0	0

7:00-8:00	1636	683	2	53	5	1
7:15-8:15	1527	732	2	68	4	0
7:30-8:30	1446	752	3	85	4	0
7:45-8:45	1348	749	2	87	4	0
8:00-9:00	1352	740	1	72	1	0

INTERSECTION:
TRAFFIC VOLUME COUNT

DAY: . Thurs DATE: 6/11/14 WEATHER Fine OBSERVER: E. Halley

Canterbury Road/ Platts Ave Belmore



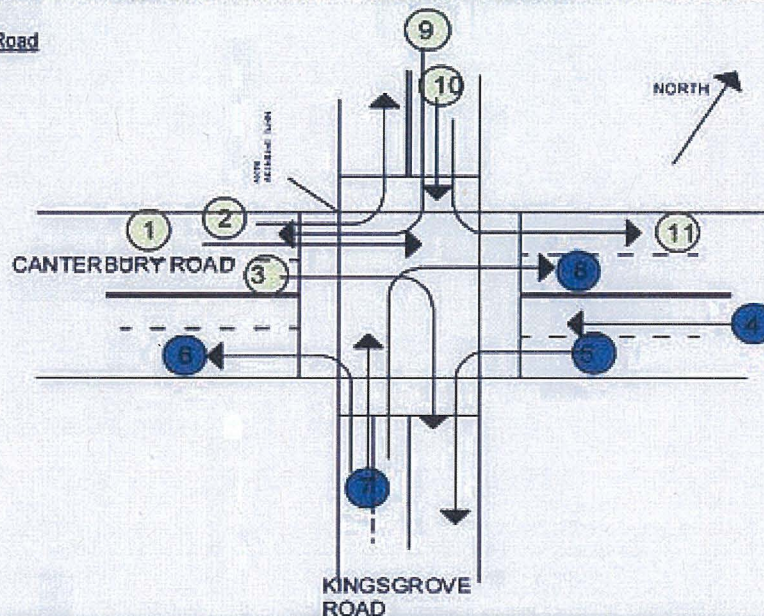
Time	MOVEMENT NUMBER					
	1	2	3	4	5	6
4.00PM TO						
4.15PM	244	350	2	23	3	0
4.15PM TO						
4.30PM	245	325	0	13	3	0
4.30PM TO						
4.45PM	251	304	1	18	2	0
4.45PM TO						
5.00PM	252	329	1	20	3	0
5.00PM TO						
5.15PM	292	305	1	12	1	0
5.15PM TO						
5.30PM	267	340	5	23	2	0
5.30PM TO						
5.45PM	282	274	2	11	4	0
5.45PM TO						
6.00PM	254	337	1	11	3	0

4:00-5:00	992	1308	4	74	11	0
4:15-5:15	1040	1263	3	63	9	0
4:30-5:30	1062	1278	8	73	8	0
4:45-5:45	1093	1248	9	66	10	0
5:00-6:00	1095	1256	9	57	10	0

INTERSECTION: **TRAFFIC VOLUME COUNT**

DAY: Thurs DATE: 6/11/14 WEATHER: Fine OBSERVER: R. Rabinovitch

Canterbury Road/ Kingsgrove Road



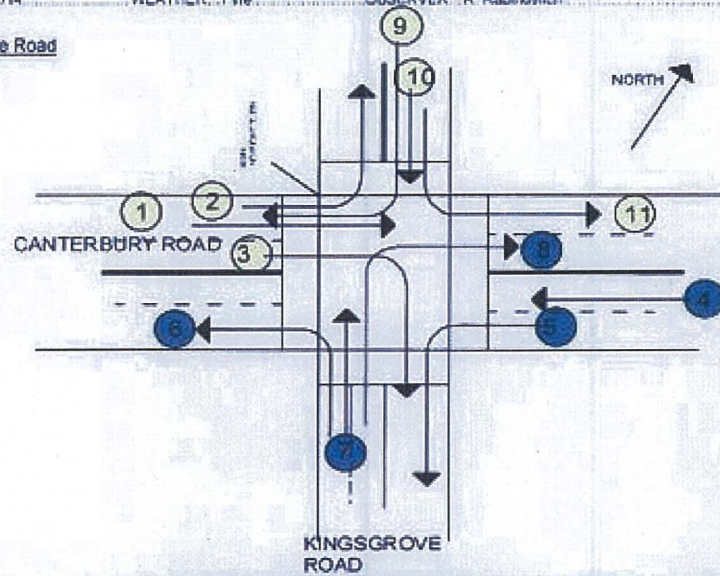
Time	MOVEMENT NUMBER										
	1	2	3	4	5	6	7	8	NRT	10	11
7.00AM TO											
7.15AM	322	1	97	120	8	19	72	31		89	14
7.15AM TO											
7.30AM	294	2	82	154	8	19	109	44		70	10
7.30AM TO											
7.45AM	334	0	75	171	15	21	110	41		73	15
7.45AM TO											
8.00AM	281	0	85	148	13	22	110	40		70	15
8.00AM TO											
8.15AM	268	0	62	165	21	19	103	44		78	6
8.15AM TO											
8.30AM	242	1	82	174	14	18	93	41		79	8
8.30AM TO											
8.45AM	249	2	70	160	11	21	99	40		79	9
8.45AM TO											
9.00AM	294	1	73	161	19	17	91	46		60	17

7:00-8:00	1231	3	339	593	44	81	401	156	0	302	54
7:15-8:15	1177	2	304	638	57	81	432	169	0	291	40
7:30-8:30	1125	1	304	658	63	80	416	166	0	300	44
7:45-8:45	1040	3	299	647	59	80	405	165	0	306	38
8:00-9:00	1053	4	287	680	65	75	386	171	0	296	40

TRAFFIC VOLUME COUNT

DAY: Thurs DATE: 6/11/14 WEATHER: Fine OBSERVER: R. Rabinovitch

Canterbury Road/ Kingsgrove Road



Time	MOVEMENT NUMBER										
	1	2	3	4	5	6	7	8	NRT	10	11
4.00PM TO											
4.15PM	193	3	49	316	32	37	73	32		88	12
4.15PM TO											
4.30PM	186	0	51	291	26	27	80	33		99	8
4.30PM TO											
4.45PM	196	0	55	273	25	31	75	32		110	11
4.45PM TO											
5.00PM	186	5	45	280	30	46	81	36		75	5
5.00PM TO											
5.15PM	223	0	46	273	34	29	79	28		94	7
5.15PM TO											
5.30PM	231	2	68	270	25	30	78	39		81	14
5.30PM TO											
5.45PM	239	2	66	272	15	36	79	37		108	11
5.45PM TO											
6.00PM	147	0	46	267	29	37	83	32		80	11

4:00-5:00	781	8	200	1160	113	141	309	133	0	372	36
4:15-5:15	791	5	198	1117	115	133	315	129	0	378	31
4:30-5:30	836	7	216	1096	114	136	313	135	0	360	37
4:45-5:45	879	9	227	1066	104	141	317	140	0	358	37
5:00-6:00	840	4	228	1082	103	132	320	136	0	363	43

APPENDIX E

INTERSECTION SUMMARY

Site: AMEX CANTERBURY RD-
PLATTS AVE - Conversion

Canterbury Road and Platts Avenue
Giveaway / Yield (Two-Way)

Intersection Performance - Hourly Values

Performance Measure	Vehicles	Persons
Demand Flows (Total)	2453 veh/h	2943 pers/h
Percent Heavy Vehicles	0.0 %	
Degree of Saturation	0.412	
Practical Spare Capacity	94.1 %	
Effective Intersection Capacity	5951 veh/h	
Control Delay (Total)	0.26 veh-h/h	0.31 pers-h/h
Control Delay (Average)	0.4 sec	0.4 sec
Control Delay (Worst Lane)	12.6 sec	
Control Delay (Worst Movement)	12.6 sec	12.6 sec
Geometric Delay (Average)	0.2 sec	
Stop-Line Delay (Average)	0.2 sec	
Level of Service (Aver. Int. Delay)	NA	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	0.7 veh	
95% Back of Queue - Distance (Worst Lane)	4.7 m	
Total Effective Stops	65 veh/h	78 pers/h
Effective Stop Rate	0.03 per veh	0.03 per pers
Proportion Queued	0.02	0.02
Performance Index	25.7	25.7
Travel Distance (Total)	1485.2 veh-km/h	1782.2 pers-km/h
Travel Distance (Average)	606 m	606 m
Travel Time (Total)	25.2 veh-h/h	30.2 pers-h/h
Travel Time (Average)	36.9 sec	36.9 sec
Travel Speed	59.1 km/h	59.1 km/h
Cost (Total)	772.26 \$/h	772.26 \$/h
Fuel Consumption (Total)	107.1 L/h	
Carbon Dioxide (Total)	267.8 kg/h	
Hydrocarbons (Total)	0.373 kg/h	
Carbon Monoxide (Total)	8.22 kg/h	
NOx (Total)	0.490 kg/h	

LOS (Aver. Int. Delay) for Vehicles is not applicable since the average intersection delay is not a good LOS measure for two-way sign control due to zero delays associated with major road movements.

LOS Method for individual vehicle movements and lanes: Delay (HCM).

Intersection Performance - Annual Values

Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,177,263 veh/y	1,412,716 pers/y
Delay	124 veh-h/y	149 pers-h/y
Effective Stops	31,149 veh/y	37,378 pers/y
Travel Distance	712,884 veh-km/y	855,460 pers-km/y
Travel Time	12,072 veh-h/y	14,487 pers-h/y
Cost	370,686 \$/y	370,686 \$/y
Fuel Consumption	51,413 L/y	
Carbon Dioxide	128,532 kg/y	
Hydrocarbons	179 kg/y	
Carbon Monoxide	3,947 kg/y	
NOx	235 kg/y	

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SIDRA INTERSECTION 5.0.5.1510

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SIDRA
INTERSECTION

INTERSECTION SUMMARY

Site: PMEX CANTERBURY RD-
PLATTS AVE - Conversion - Copy

Canterbury Road and Platts Avenue
Giveaway / Yield (Two-Way)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	2544 veh/h	3053 pers/h
Percent Heavy Vehicles	0.0 %	
Degree of Saturation	0.342	
Practical Spare Capacity	134.2 %	
Effective Intersection Capacity	7449 veh/h	
Control Delay (Total)	0.52 veh-h/h	0.62 pers-h/h
Control Delay (Average)	0.7 sec	0.7 sec
Control Delay (Worst Lane)	29.6 sec	
Control Delay (Worst Movement)	29.6 sec	29.6 sec
Geometric Delay (Average)	0.2 sec	
Stop-Line Delay (Average)	0.5 sec	
Level of Service (Aver. Int. Delay)	NA	
Level of Service (Worst Movement)	LOS D	
Level of Service (Worst Lane)	LOS D	
95% Back of Queue - Vehicles (Worst Lane)	1.4 veh	
95% Back of Queue - Distance (Worst Lane)	9.9 m	
Total Effective Stops	71 veh/h	85 pers/h
Effective Stop Rate	0.03 per veh	0.03 per pers
Proportion Queued	0.02	0.02
Performance Index	27.2	27.2
Travel Distance (Total)	1541.1 veh-km/h	1849.3 pers-km/h
Travel Distance (Average)	606 m	606 m
Travel Time (Total)	26.3 veh-h/h	31.6 pers-h/h
Travel Time (Average)	37.2 sec	37.2 sec
Travel Speed	58.6 km/h	58.6 km/h
Cost (Total)	806.91 \$/h	806.91 \$/h
Fuel Consumption (Total)	111.4 L/h	
Carbon Dioxide (Total)	278.6 kg/h	
Hydrocarbons (Total)	0.389 kg/h	
Carbon Monoxide (Total)	8.52 kg/h	
NOx (Total)	0.508 kg/h	

LOS (Aver. Int. Delay) for Vehicles is not applicable since the average intersection delay is not a good LOS measure for two-way sign control due to zero delays associated with major road movements.

LOS Method for individual vehicle movements and lanes: Delay (HCM).

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,221,221 veh/y	1,465,465 pers/y
Delay	247 veh-h/y	297 pers-h/y
Effective Stops	33,883 veh/y	40,660 pers/y
Travel Distance	739,718 veh-km/y	887,661 pers-km/y
Travel Time	12,631 veh-h/y	15,158 pers-h/y
Cost	387,315 \$/y	387,315 \$/y
Fuel Consumption	53,490 L/y	
Carbon Dioxide	133,724 kg/y	
Hydrocarbons	187 kg/y	
Carbon Monoxide	4,091 kg/y	
NOx	244 kg/y	

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SIDRA INTERSECTION 5.0.5.1510

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SIDRA
INTERSECTION

INTERSECTION SUMMARY

Site: AM CANTERBURY RD-
KINGSGROVE RD

CANTERBURY ROAD- KINGSGROVE ROAD

Signals - Fixed Time Cycle Time = 150 seconds (Practical Cycle Time)

Intersection Performance - Hourly Values

Performance Measure	Vehicles	Persons
Demand Flows (Total)	3365 veh/h	4038 pers/h
Percent Heavy Vehicles	0.0 %	
Degree of Saturation	0.943	
Practical Spare Capacity	4.6 %	
Effective Intersection Capacity	3566 veh/h	
Control Delay (Total)	46.80 veh-h/h	56.16 pers-h/h
Control Delay (Average)	50.1 sec	50.1 sec
Control Delay (Worst Lane)	104.6 sec	
Control Delay (Worst Movement)	104.8 sec	104.8 sec
Geometric Delay (Average)	1.5 sec	
Stop-Line Delay (Average)	48.5 sec	
Level of Service (Aver. Int. Delay)	LOS D	
Level of Service (Worst Movement)	LOS F	
Level of Service (Worst Lane)	LOS F	
95% Back of Queue - Vehicles (Worst Lane)	85.7 veh	
95% Back of Queue - Distance (Worst Lane)	599.6 m	
Total Effective Stops	2994 veh/h	3593 pers/h
Effective Stop Rate	0.89 per veh	0.89 per pers
Proportion Queued	0.87	0.87
Performance Index	242.1	242.1
Travel Distance (Total)	2031.9 veh-km/h	2438.3 pers-km/h
Travel Distance (Average)	604 m	604 m
Travel Time (Total)	84.2 veh-h/h	101.0 pers-h/h
Travel Time (Average)	90.0 sec	90.0 sec
Travel Speed	24.1 km/h	24.1 km/h
Cost (Total)	2427.59 \$/h	2427.59 \$/h
Fuel Consumption (Total)	278.6 L/h	
Carbon Dioxide (Total)	696.6 kg/h	
Hydrocarbons (Total)	1.265 kg/h	
Carbon Monoxide (Total)	46.24 kg/h	
NOx (Total)	1.414 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).

LOS Method for individual vehicle movements and lanes: Delay (RTA NSW).

Intersection Performance - Annual Values

Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,615,326 veh/y	1,938,392 pers/y
Delay	22,464 veh-h/y	26,957 pers-h/y
Effective Stops	1,437,047 veh/y	1,724,457 pers/y
Travel Distance	975,311 veh-km/y	1,170,373 pers-km/y
Travel Time	40,392 veh-h/y	48,470 pers-h/y
Cost	1,165,241 \$/y	1,165,241 \$/y
Fuel Consumption	133,746 L/y	
Carbon Dioxide	334,364 kg/y	
Hydrocarbons	607 kg/y	
Carbon Monoxide	22,197 kg/y	
NOx	679 kg/y	

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SIDRA
INTERSECTION

INTERSECTION SUMMARY

Site: PM CANTERBURY RD-
KINGSGROVE RD

CANTERBURY ROAD- KINGSGROVE ROAD

Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	3432 veh/h	4118 pers/h
Percent Heavy Vehicles	0.0 %	
Degree of Saturation	1.222	
Practical Spare Capacity	-26.3 %	
Effective Intersection Capacity	2810 veh/h	
Control Delay (Total)	38.92 veh-h/h	46.70 pers-h/h
Control Delay (Average)	40.8 sec	40.8 sec
Control Delay (Worst Lane)	274.2 sec	
Control Delay (Worst Movement)	274.2 sec	274.2 sec
Geometric Delay (Average)	1.5 sec	
Stop-Line Delay (Average)	39.4 sec	
Level of Service (Aver. Int. Delay)	LOS C	
Level of Service (Worst Movement)	LOS F	
Level of Service (Worst Lane)	LOS F	
95% Back of Queue - Vehicles (Worst Lane)	32.2 veh	
95% Back of Queue - Distance (Worst Lane)	225.7 m	
Total Effective Stops	3047 veh/h	3656 pers/h
Effective Stop Rate	0.89 per veh	0.89 per pers
Proportion Queued	0.83	0.83
Performance Index	175.7	175.7
Travel Distance (Total)	2071.6 veh-km/h	2485.9 pers-km/h
Travel Distance (Average)	604 m	604 m
Travel Time (Total)	77.1 veh-h/h	92.5 pers-h/h
Travel Time (Average)	80.8 sec	80.8 sec
Travel Speed	26.9 km/h	26.9 km/h
Cost (Total)	2231.38 \$/h	2231.38 \$/h
Fuel Consumption (Total)	268.6 L/h	
Carbon Dioxide (Total)	671.6 kg/h	
Hydrocarbons (Total)	1.199 kg/h	
Carbon Monoxide (Total)	45.24 kg/h	
NOx (Total)	1.396 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).

LOS Method for individual vehicle movements and lanes: Delay (RTA NSW).

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,647,158 veh/y	1,976,590 pers/y
Delay	18,680 veh-h/y	22,416 pers-h/y
Effective Stops	1,462,457 veh/y	1,754,948 pers/y
Travel Distance	994,378 veh-km/y	1,193,253 pers-km/y
Travel Time	36,991 veh-h/y	44,389 pers-h/y
Cost	1,071,063 \$/y	1,071,063 \$/y
Fuel Consumption	128,943 L/y	
Carbon Dioxide	322,357 kg/y	
Hydrocarbons	576 kg/y	
Carbon Monoxide	21,716 kg/y	
NOx	670 kg/y	

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INTERSECTION

APPENDIX F

INTERSECTION SUMMARY

Site: PD1-AM CANTERBURY RD-
KINGSGROVE RD

CANTERBURY ROAD- KINGSGROVE ROAD

Signals - Fixed Time Cycle Time = 150 seconds (Practical Cycle Time)

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	3377 veh/h	4052 pers/h
Percent Heavy Vehicles	0.0 %	
Degree of Saturation	0.950	
Practical Spare Capacity	-5.2 %	
Effective Intersection Capacity	3555 veh/h	
Control Delay (Total)	48.91 veh-h/h	58.69 pers-h/h
Control Delay (Average)	52.1 sec	52.1 sec
Control Delay (Worst Lane)	98.9 sec	
Control Delay (Worst Movement)	99.1 sec	99.1 sec
Geometric Delay (Average)	1.5 sec	
Stop-Line Delay (Average)	50.6 sec	
Level of Service (Aver. Int. Delay)	LOS D	
Level of Service (Worst Movement)	LOS F	
Level of Service (Worst Lane)	LOS F	
95% Back of Queue - Vehicles (Worst Lane)	92.0 veh	
95% Back of Queue - Distance (Worst Lane)	644.0 m	
Total Effective Stops	3043 veh/h	3652 pers/h
Effective Stop Rate	0.90 per veh	0.90 per pers
Proportion Queued	0.88	0.88
Performance Index	248.6	248.6
Travel Distance (Total)	2038.8 veh-km/h	2446.5 pers-km/h
Travel Distance (Average)	604 m	604 m
Travel Time (Total)	86.4 veh-h/h	103.7 pers-h/h
Travel Time (Average)	92.1 sec	92.1 sec
Travel Speed	23.6 km/h	23.6 km/h
Cost (Total)	2488.01 \$/h	2488.01 \$/h
Fuel Consumption (Total)	283.0 L/h	
Carbon Dioxide (Total)	707.5 kg/h	
Hydrocarbons (Total)	1.289 kg/h	
Carbon Monoxide (Total)	46.90 kg/h	
NOx (Total)	1.430 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).

LOS Method for individual vehicle movements and lanes: Delay (RTA NSW).

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,620,884 veh/y	1,945,061 pers/y
Delay	23,478 veh-h/y	28,173 pers-h/y
Effective Stops	1,460,766 veh/y	1,752,920 pers/y
Travel Distance	978,615 veh-km/y	1,174,339 pers-km/y
Travel Time	41,475 veh-h/y	49,770 pers-h/y
Cost	1,194,245 \$/y	1,194,245 \$/y
Fuel Consumption	135,839 L/y	
Carbon Dioxide	339,598 kg/y	
Hydrocarbons	619 kg/y	
Carbon Monoxide	22,513 kg/y	
NOx	686 kg/y	

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INTERSECTION

INTERSECTION SUMMARY

Site: PD1-PM CANTERBURY RD-
KINGSGROVE RD

CANTERBURY ROAD- KINGSGROVE ROAD

Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Intersection Performance - Hourly Values

Performance Measure	Vehicles	Persons
Demand Flows (Total)	3442 veh/h	4131 pers/h
Percent Heavy Vehicles	0.0 %	
Degree of Saturation	1.229	
Practical Spare Capacity	-26.7 %	
Effective Intersection Capacity	2802 veh/h	
Control Delay (Total)	39.77 veh-h/h	47.73 pers-h/h
Control Delay (Average)	41.6 sec	41.6 sec
Control Delay (Worst Lane)	279.6 sec	
Control Delay (Worst Movement)	279.6 sec	279.6 sec
Geometric Delay (Average)	1.5 sec	
Stop-Line Delay (Average)	40.1 sec	
Level of Service (Aver. Int. Delay)	LOS C	
Level of Service (Worst Movement)	LOS F	
Level of Service (Worst Lane)	LOS F	
95% Back of Queue - Vehicles (Worst Lane)	32.6 veh	
95% Back of Queue - Distance (Worst Lane)	228.3 m	
Total Effective Stops	3077 veh/h	3692 pers/h
Effective Stop Rate	0.89 per veh	0.89 per pers
Proportion Queued	0.83	0.83
Performance Index	177.8	177.8
Travel Distance (Total)	2077.9 veh-km/h	2493.4 pers-km/h
Travel Distance (Average)	604 m	604 m
Travel Time (Total)	78.0 veh-h/h	93.6 pers-h/h
Travel Time (Average)	81.6 sec	81.6 sec
Travel Speed	26.6 km/h	26.6 km/h
Cost (Total)	2257.46 \$/h	2257.46 \$/h
Fuel Consumption (Total)	270.6 L/h	
Carbon Dioxide (Total)	676.6 kg/h	
Hydrocarbons (Total)	1.210 kg/h	
Carbon Monoxide (Total)	45.51 kg/h	
NOx (Total)	1.403 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).
LOS Method for individual vehicle movements and lanes: Delay (RTA NSW).

Intersection Performance - Annual Values

Performance Measure	Vehicles	Persons
Demand Flows (Total)	1,652,211 veh/y	1,982,653 pers/y
Delay	19,091 veh-h/y	22,909 pers-h/y
Effective Stops	1,476,972 veh/y	1,772,366 pers/y
Travel Distance	997,376 veh-km/y	1,196,852 pers-km/y
Travel Time	37,458 veh-h/y	44,949 pers-h/y
Cost	1,083,582 \$/y	1,083,582 \$/y
Fuel Consumption	129,900 L/y	
Carbon Dioxide	324,751 kg/y	
Hydrocarbons	581 kg/y	
Carbon Monoxide	21,845 kg/y	
NOx	674 kg/y	



Lyle Marshall & Associates Pty Ltd

Consulting Engineers, Transportation and Environmental Planners, Hydrology & Hydraulics & Architects

ABN 39 001 200 620

Meeting Minutes

Project: 642-644 Canterbury Road, 1-3 Platts Avenue, 2a,2b,2c,2d Liberty Street
Belmore- Traffic and Parking Assessment for Rezoning Planning
Proposal

Location: Roads and Maritime Services Level 7, 27 Argyle Place Parramatta

Time: 10:30am

Date: 28/11/14

Attendees:

James Hall	RMS A/Manager, Strategic Land Use Network and Safety Section
Ken Hind	RMS
Nicolas Kocoski	RMS
Erica Marshall-McClelland	Lyle Marshall & Associates Pty Ltd
Matt Daniel	Statewide Planning Pty Ltd

The traffic impacts from the proposed rezoning planning proposal were discussed. The RMS are in support of the spot rezoning to this site.

Item	Description	Action
1	Review of Road Network	The traffic and Impact assessment report at Development Application Stage may include additional intersections to be modelled using SIDRA including Harp Street and Kingsgrove Road and other routes that may be used by residents as part of way-finding routes
2	Corridor Study- Canterbury Road	<i>The spot rezoning of the site is supported and is a small traffic generator. However, the cumulative traffic impact of all future development (rezonings) along the Canterbury Road over the long term (20 years) should be investigated to identify traffic and transport infrastructure improvements to accommodate all future development and implement appropriate developer funding mechanisms. James Hall will contact Pinch Point Program Team for their consideration in undertaking a corridor study to inform possible road and transport infrastructure improvements for further consideration.</i>
3	Setbacks to Canterbury Road	Roads and Maritime support the CDCP requirement for a 3 metre setback on Canterbury Road to be dedicated to Council as public road at no cost to either Council or State Government. This setback enables the possibility of future road/transport infrastructure that may be required to support the cumulative impacts of future rezoning along the Canterbury Road corridor.