

MOVEMENT SUMMARY



Site: AM End - Gregory Hills Dr/South Spine Rd

Final Scenario - Full Development of site and Turner Road Precinct

Signals - Fixed Time Isolated Cycle Time = 140 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: South Spine Road (Sth)											
1	L2	77	0.0	0.162	47.6	LOS D	4.1	28.4	0.81	0.74	27.3
2	T1	1	0.0	0.008	54.0	LOS D	0.1	0.8	0.87	0.58	16.5
3	R2	1	0.0	0.008	58.6	LOS E	0.1	0.8	0.87	0.58	25.0
Approach		79	0.0	0.162	47.8	LOS D	4.1	28.4	0.82	0.74	27.1
East: Gregory Hills Drive (East)											
4	L2	1	0.0	0.432	28.8	LOS C	18.1	126.8	0.67	0.59	39.7
5	T1	866	0.0	0.432	22.4	LOS B	18.1	126.8	0.67	0.59	49.0
6	R2	163	0.0	0.865	77.2	LOS F	10.9	76.3	1.00	1.02	21.9
Approach		1030	0.0	0.865	31.1	LOS C	18.1	126.8	0.72	0.66	42.7
North: South Spine Road (Nth)											
7	L2	67	0.0	0.146	47.4	LOS D	3.6	24.9	0.81	0.73	28.5
8	T1	1	0.0	0.146	42.9	LOS D	3.6	24.9	0.81	0.73	18.3
9	R2	209	0.0	0.976	98.1	LOS F	17.9	125.1	1.00	1.05	18.5
Approach		277	0.0	0.976	85.6	LOS F	17.9	125.1	0.95	0.97	20.2
West: Gregory Hills Drive (West)											
10	L2	76	0.0	0.860	40.3	LOS C	52.2	365.4	0.95	0.89	34.1
11	T1	1628	0.0	0.860	33.8	LOS C	52.2	365.4	0.94	0.89	42.4
12	R2	35	0.0	0.097	20.3	LOS B	1.0	6.7	0.61	0.71	41.0
Approach		1739	0.0	0.860	33.8	LOS C	52.2	365.4	0.93	0.88	42.0
All Vehicles		3125	0.0	0.976	37.9	LOS C	52.2	365.4	0.86	0.81	39.0

Level of Service (LOS) Method: Delay (RTA NSW).

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 per ped	
P1	South Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96	
P2	East Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96	
P3	North Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96	
P4	West 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.

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PHASING SUMMARY

 **Site: AM End - Gregory Hills Dr/South Spine Rd**

Final Scenario - Full Development of site and Turner Road Precinct

Signals - Fixed Time Isolated Cycle Time = 140 seconds (User-Given Phase Times)

Phase times specified by the user

Sequence: Cardno 2009

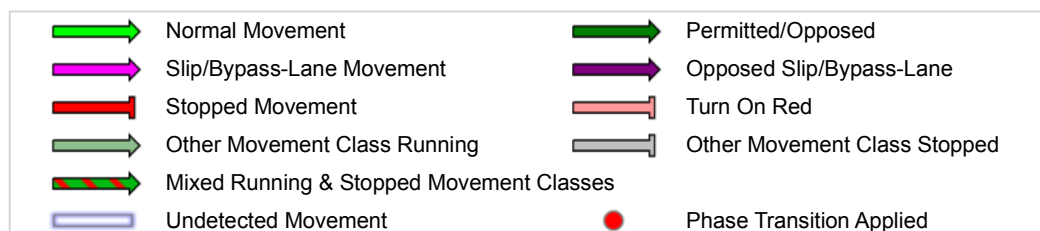
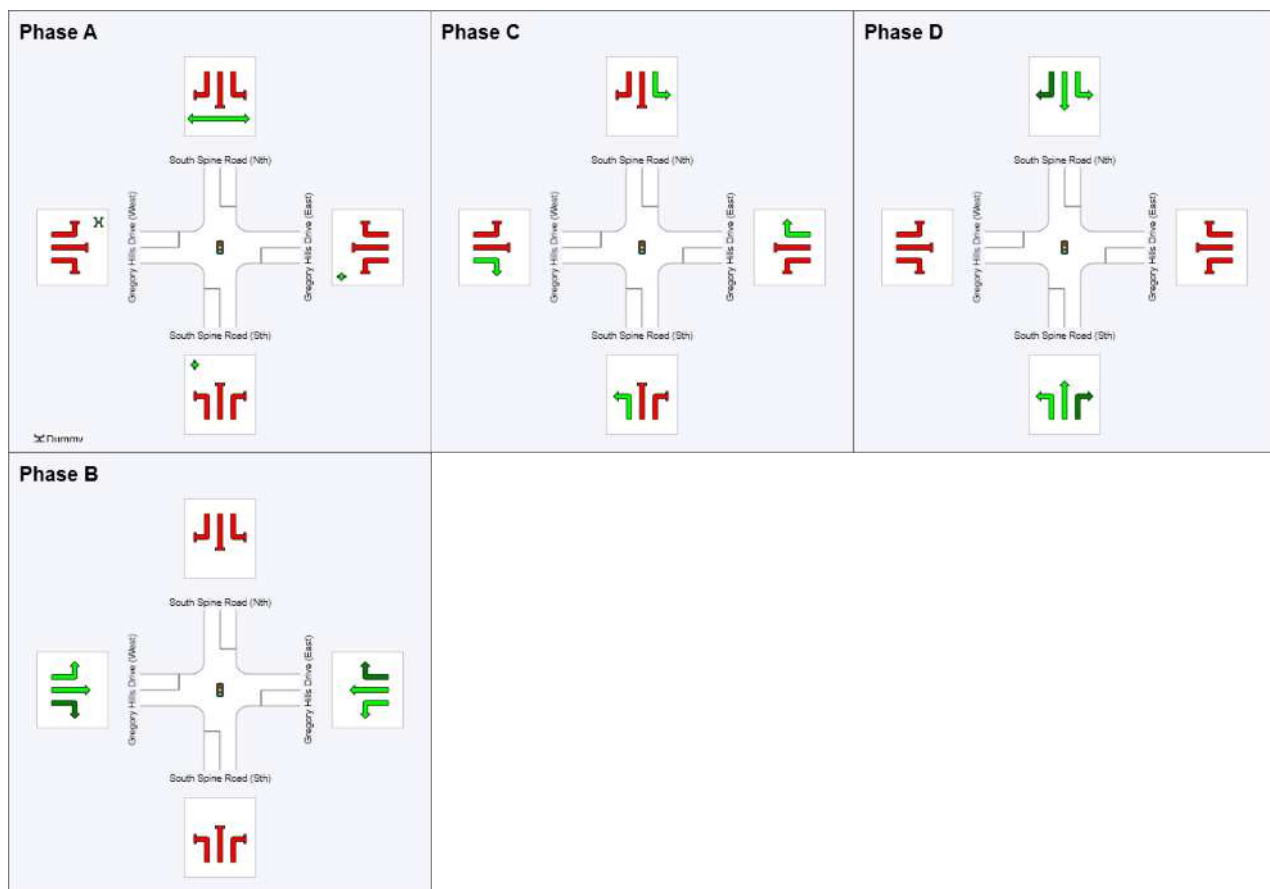
Movement Class: All Movement Classes

Input Sequence: A, C, D, B

Output Sequence: A, C, D, B

Phase Timing Results

Phase	A	C	D	B
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	20	35	62
Green Time (sec)	14	9	21	72
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	20	15	27	78
Phase Split	14 %	11 %	19 %	56 %



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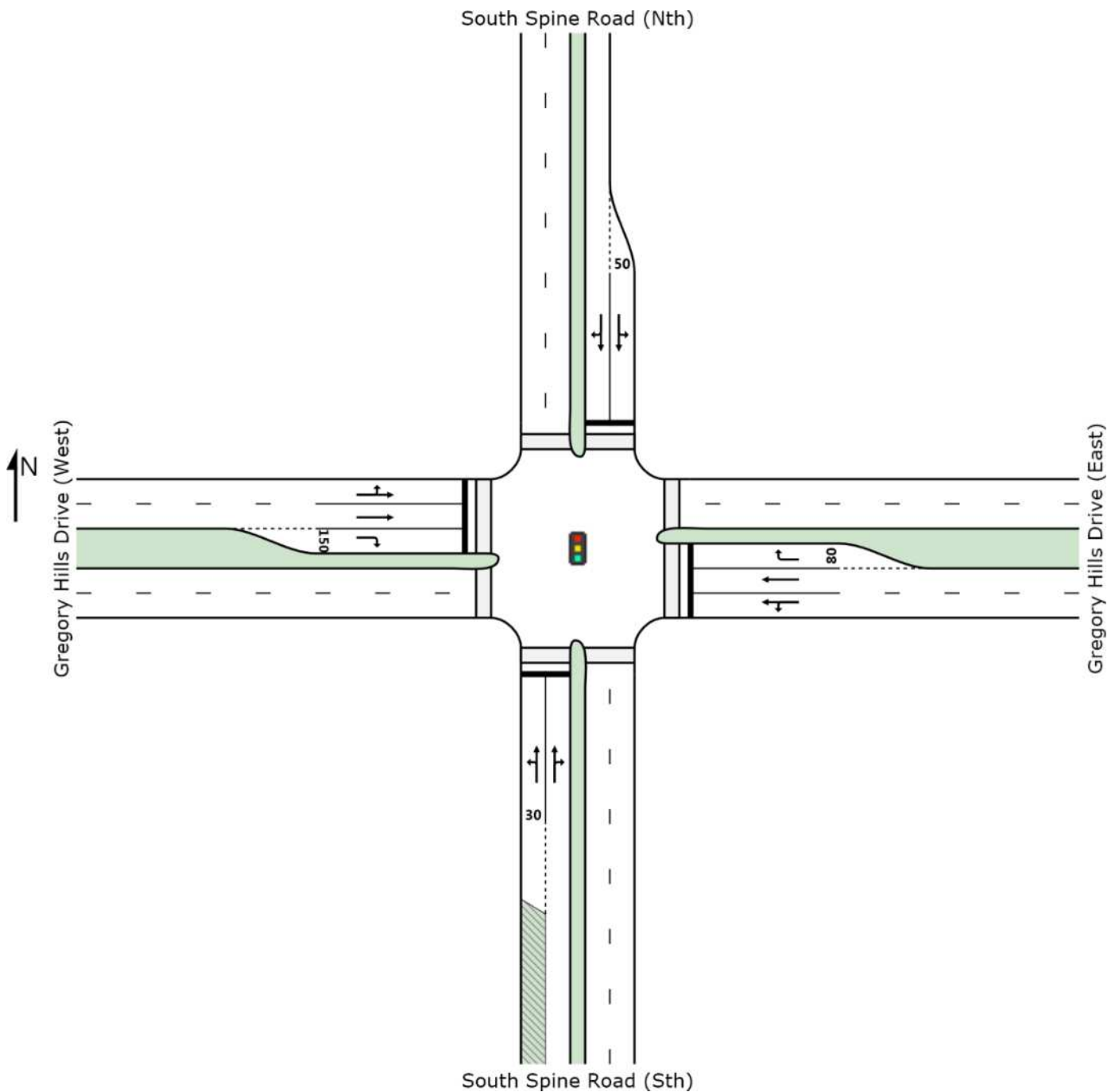
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SITE LAYOUT

Site: PM End - Gregory Hills Dr/South Spine Rd

Final Scenario - Full Development of site and Turner Road Precinct
Signals - Fixed Time Isolated



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MOVEMENT SUMMARY



Site: PM End - Gregory Hills Dr/South Spine Rd

Final Scenario - Full Development of site and Turner Road Precinct

Signals - Fixed Time Isolated Cycle Time = 110 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: South Spine Road (Sth)											
1	L2	25	0.0	0.106	51.1	LOS D	1.2	8.5	0.92	0.71	26.2
2	T1	1	0.0	0.038	60.3	LOS E	0.1	0.8	0.99	0.60	15.3
3	R2	1	0.0	0.038	64.9	LOS E	0.1	0.8	0.99	0.60	23.4
Approach		27	0.0	0.106	52.0	LOS D	1.2	8.5	0.92	0.70	25.7
East: Gregory Hills Drive (East)											
4	L2	1	0.0	0.958	51.6	LOS D	70.4	493.1	1.00	1.10	28.8
5	T1	1764	0.0	0.958	45.8	LOS D	70.4	493.1	0.88	1.01	37.3
6	R2	200	0.0	0.781	46.6	LOS D	11.8	82.6	1.00	0.96	29.4
Approach		1965	0.0	0.958	45.8	LOS D	70.4	493.1	0.89	1.00	36.6
North: South Spine Road (Nth)											
7	L2	99	0.0	0.434	53.9	LOS D	5.1	35.9	0.97	0.78	26.6
8	T1	1	0.0	0.434	49.3	LOS D	5.1	35.9	0.97	0.78	16.9
9	R2	52	0.0	0.720	68.2	LOS E	3.1	21.4	1.00	0.80	23.4
Approach		152	0.0	0.720	58.7	LOS E	5.1	35.9	0.98	0.79	25.4
West: Gregory Hills Drive (West)											
10	L2	198	0.0	0.559	21.5	LOS B	20.5	143.4	0.67	0.67	43.9
11	T1	1060	0.0	0.559	15.1	LOS B	20.8	145.6	0.67	0.63	53.6
12	R2	139	0.0	0.877	71.0	LOS F	8.4	58.6	1.00	1.01	22.0
Approach		1398	0.0	0.877	21.6	LOS B	20.8	145.6	0.70	0.67	47.7
All Vehicles		3542	0.0	0.958	36.9	LOS C	70.4	493.1	0.82	0.86	39.5

Level of Service (LOS) Method: Delay (RTA NSW).

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 per ped	
P1	South Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95	
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95	
P3	North Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95	
P4	West Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95	
All Pedestrians		211	49.3	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.

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PHASING SUMMARY

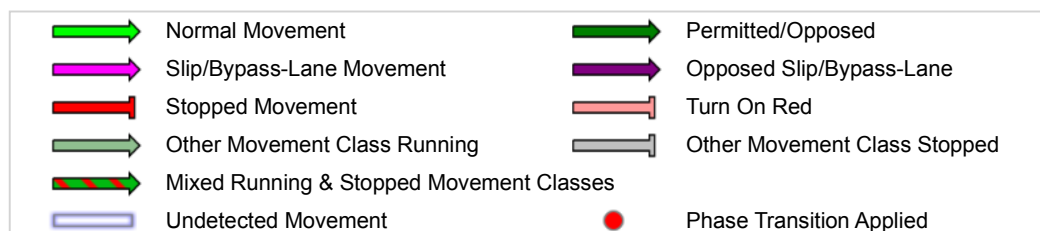
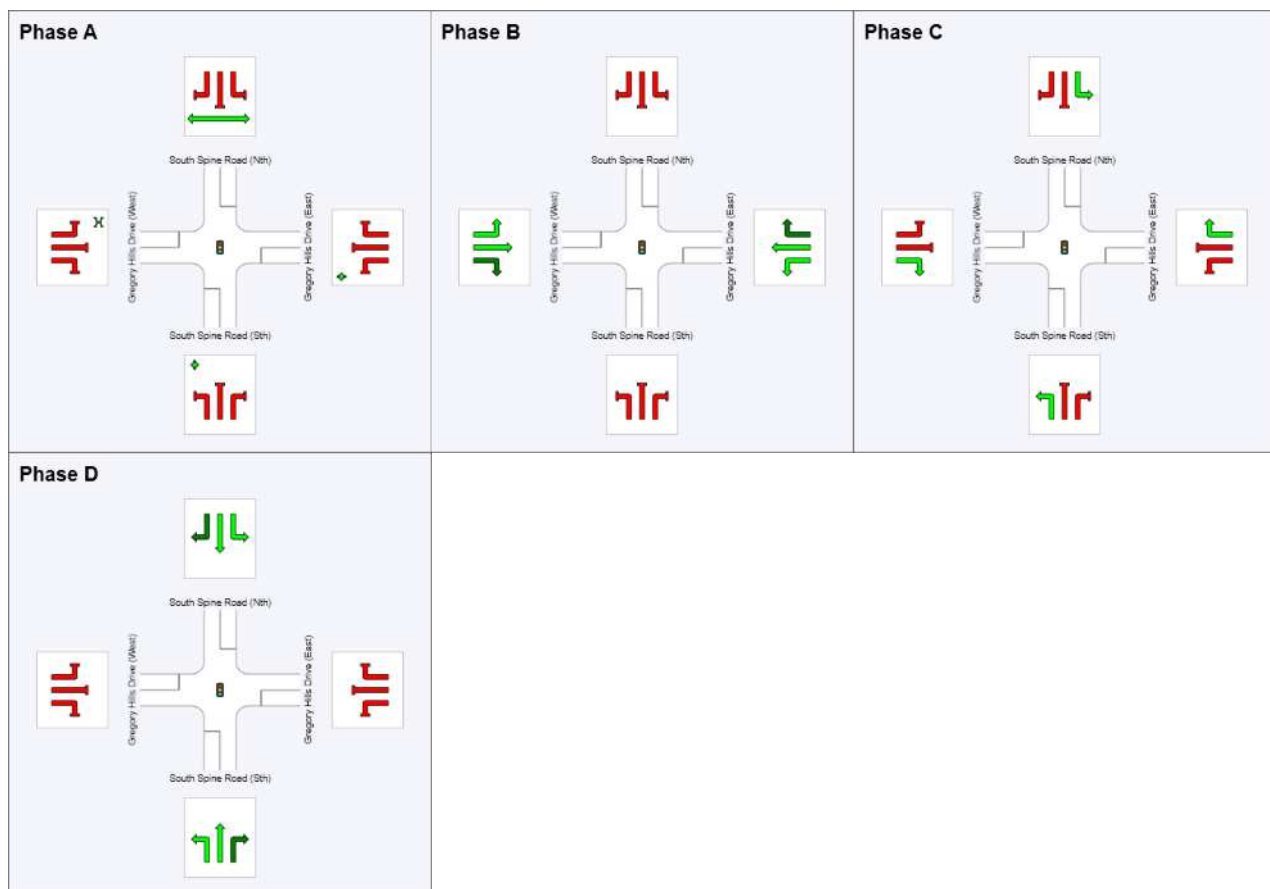
 **Site: PM End - Gregory Hills Dr/South Spine Rd**

Final Scenario - Full Development of site and Turner Road Precinct
Signals - Fixed Time Isolated Cycle Time = 110 seconds (User-Given Phase Times)

Phase times specified by the user
Sequence: Cardno 2009
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

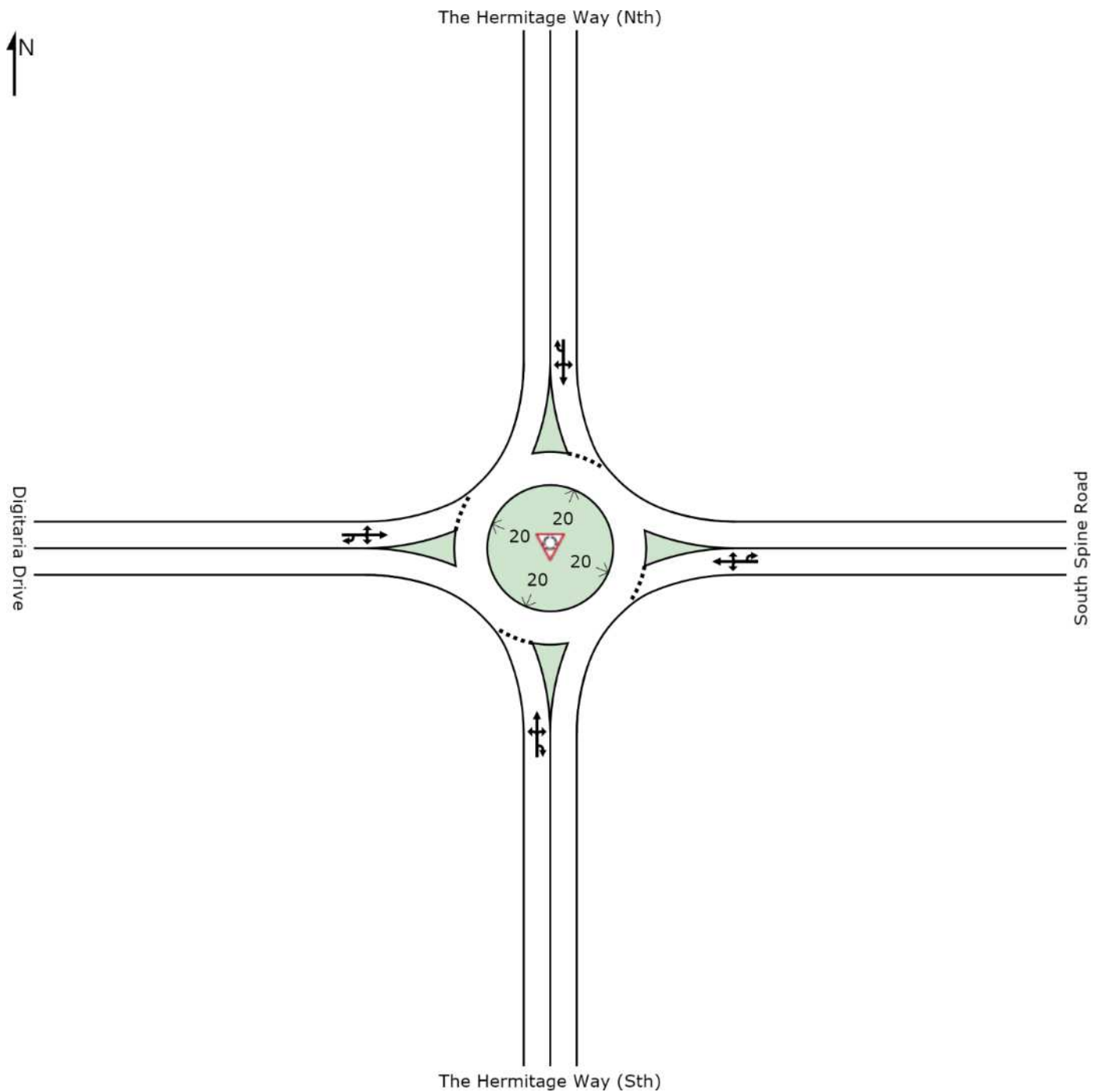
Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	20	90	101
Green Time (sec)	14	64	5	3
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	20	70	11	9
Phase Split	18 %	64 %	10 %	8 %



SITE LAYOUT

Site: AM End - The Hermitage Way/Digitaria Dr/South Spine Rd

Final Scenario - Full Development of site and Turner Road Precinct
Roundabout



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MOVEMENT SUMMARY

 **Site: AM End - The Hermitage Way/Digitaria Dr/South Spine Rd**

Final Scenario - Full Development of site and Turner Road Precinct
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	m		per veh	km/h
South: The Hermitage Way (Sth)											
1	L2	132	0.0	0.419	6.2	LOS A	2.6	18.0	0.54	0.64	47.8
2	T1	263	0.0	0.419	6.5	LOS A	2.6	18.0	0.54	0.64	52.0
3	R2	18	0.0	0.419	11.1	LOS A	2.6	18.0	0.54	0.64	49.8
3u	U	6	0.0	0.419	13.3	LOS A	2.6	18.0	0.54	0.64	54.1
Approach		419	0.0	0.419	6.7	LOS A	2.6	18.0	0.54	0.64	50.5
East: South Spine Road											
4	L2	1	0.0	0.340	9.0	LOS A	2.4	16.5	0.86	0.86	45.1
5	T1	212	0.0	0.340	9.0	LOS A	2.4	16.5	0.86	0.86	43.2
6	R2	1	0.0	0.340	13.5	LOS A	2.4	16.5	0.86	0.86	45.2
6u	U	1	0.0	0.340	15.3	LOS B	2.4	16.5	0.86	0.86	44.7
Approach		215	0.0	0.340	9.0	LOS A	2.4	16.5	0.86	0.86	43.2
North: The Hermitage Way (Nth)											
7	L2	1	0.0	0.558	5.2	LOS A	4.9	34.2	0.57	0.57	45.8
8	T1	592	0.0	0.558	5.5	LOS A	4.9	34.2	0.57	0.57	51.3
9	R2	134	0.0	0.558	10.1	LOS A	4.9	34.2	0.57	0.57	48.1
9u	U	1	0.0	0.558	12.3	LOS A	4.9	34.2	0.57	0.57	51.8
Approach		728	0.0	0.558	6.4	LOS A	4.9	34.2	0.57	0.57	50.7
West: Digitaria Drive											
10	L2	103	0.0	0.236	4.3	LOS A	1.6	11.0	0.52	0.57	46.0
11	T1	75	0.0	0.236	4.3	LOS A	1.6	11.0	0.52	0.57	45.3
12	R2	92	0.0	0.236	8.8	LOS A	1.6	11.0	0.52	0.57	48.7
12u	U	1	0.0	0.236	10.7	LOS A	1.6	11.0	0.52	0.57	47.1
Approach		271	0.0	0.236	5.9	LOS A	1.6	11.0	0.52	0.57	46.8
All Vehicles		1633	0.0	0.558	6.7	LOS A	4.9	34.2	0.59	0.63	49.0

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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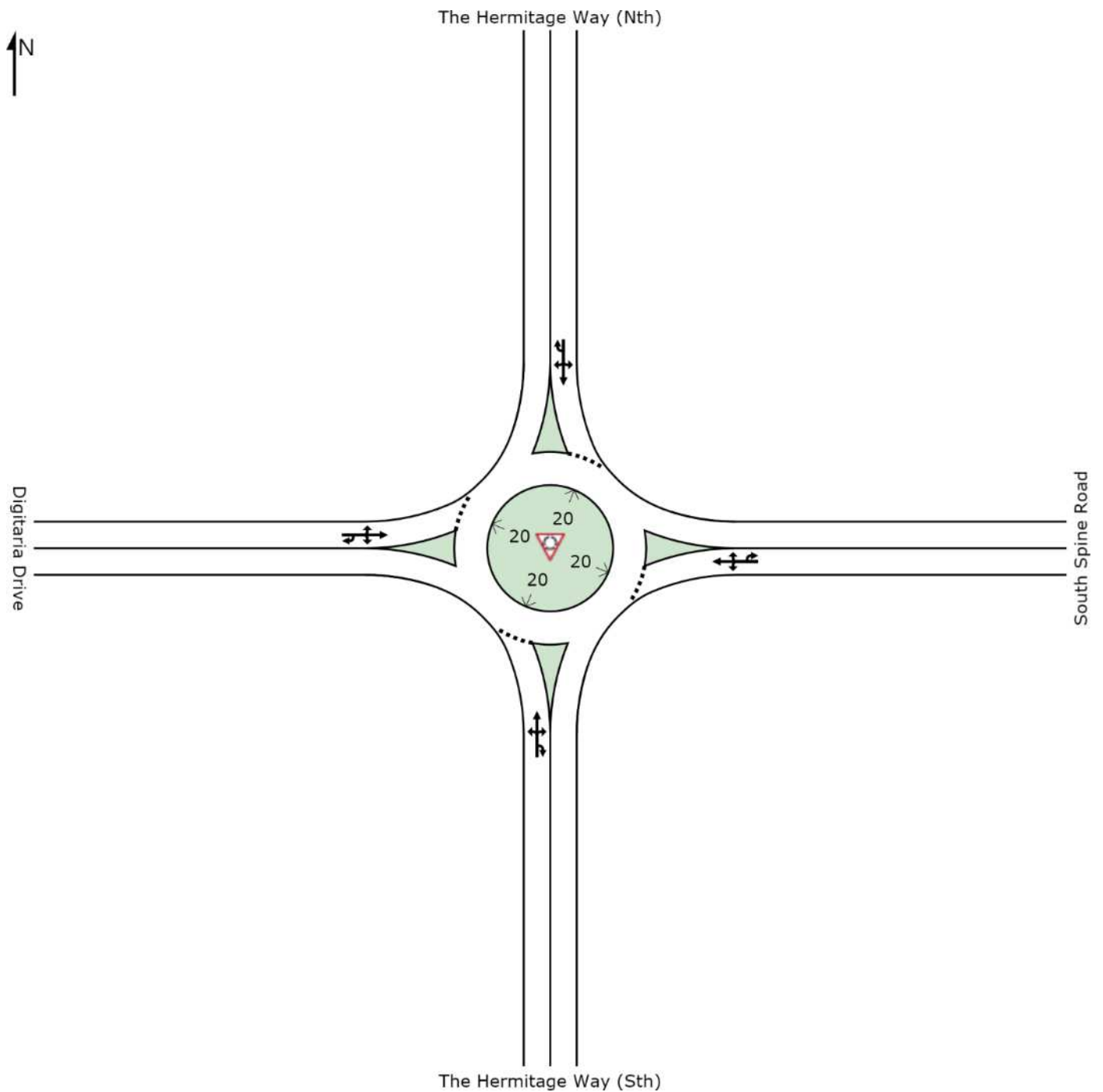
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SITE LAYOUT

Site: PM End - The Hermitage Way/Digitaria Dr/South Spine Rd

Final Scenario - Full Development of site and Turner Road Precinct
Roundabout



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MOVEMENT SUMMARY

 **Site: PM End - The Hermitage Way/Digitaria Dr/South Spine Rd**

Final Scenario - Full Development of site and Turner Road Precinct
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		veh	m		per veh	km/h
South: The Hermitage Way (Sth)											
1	L2	227	0.0	0.854	13.1	LOS A	14.3	100.4	0.84	0.96	42.7
2	T1	605	0.0	0.854	13.3	LOS A	14.3	100.4	0.84	0.96	46.0
3	R2	39	0.0	0.854	18.0	LOS B	14.3	100.4	0.84	0.96	44.2
3u	U	12	0.0	0.854	20.1	LOS B	14.3	100.4	0.84	0.96	48.2
Approach		883	0.0	0.854	13.6	LOS A	14.3	100.4	0.84	0.96	45.1
East: South Spine Road											
4	L2	1	0.0	0.278	5.8	LOS A	1.7	12.0	0.65	0.65	47.1
5	T1	249	0.0	0.278	5.8	LOS A	1.7	12.0	0.65	0.65	45.2
6	R2	1	0.0	0.278	10.3	LOS A	1.7	12.0	0.65	0.65	47.5
6u	U	1	0.0	0.278	12.1	LOS A	1.7	12.0	0.65	0.65	46.9
Approach		252	0.0	0.278	5.8	LOS A	1.7	12.0	0.65	0.65	45.2
North: The Hermitage Way (Nth)											
7	L2	1	0.0	0.289	5.5	LOS A	2.0	13.8	0.58	0.63	45.3
8	T1	203	0.0	0.289	5.8	LOS A	2.0	13.8	0.58	0.63	50.7
9	R2	111	0.0	0.289	10.4	LOS A	2.0	13.8	0.58	0.63	47.6
9u	U	1	0.0	0.289	12.6	LOS A	2.0	13.8	0.58	0.63	51.2
Approach		316	0.0	0.289	7.5	LOS A	2.0	13.8	0.58	0.63	49.6
West: Digitaria Drive											
10	L2	197	0.0	0.591	10.0	LOS A	6.3	43.9	0.96	0.99	41.8
11	T1	102	0.0	0.591	9.9	LOS A	6.3	43.9	0.96	0.99	41.1
12	R2	158	0.0	0.591	14.5	LOS A	6.3	43.9	0.96	0.99	44.6
12u	U	1	0.0	0.591	16.3	LOS B	6.3	43.9	0.96	0.99	42.8
Approach		458	0.0	0.591	11.5	LOS A	6.3	43.9	0.96	0.99	42.7
All Vehicles		1909	0.0	0.854	11.0	LOS A	14.3	100.4	0.80	0.87	45.2

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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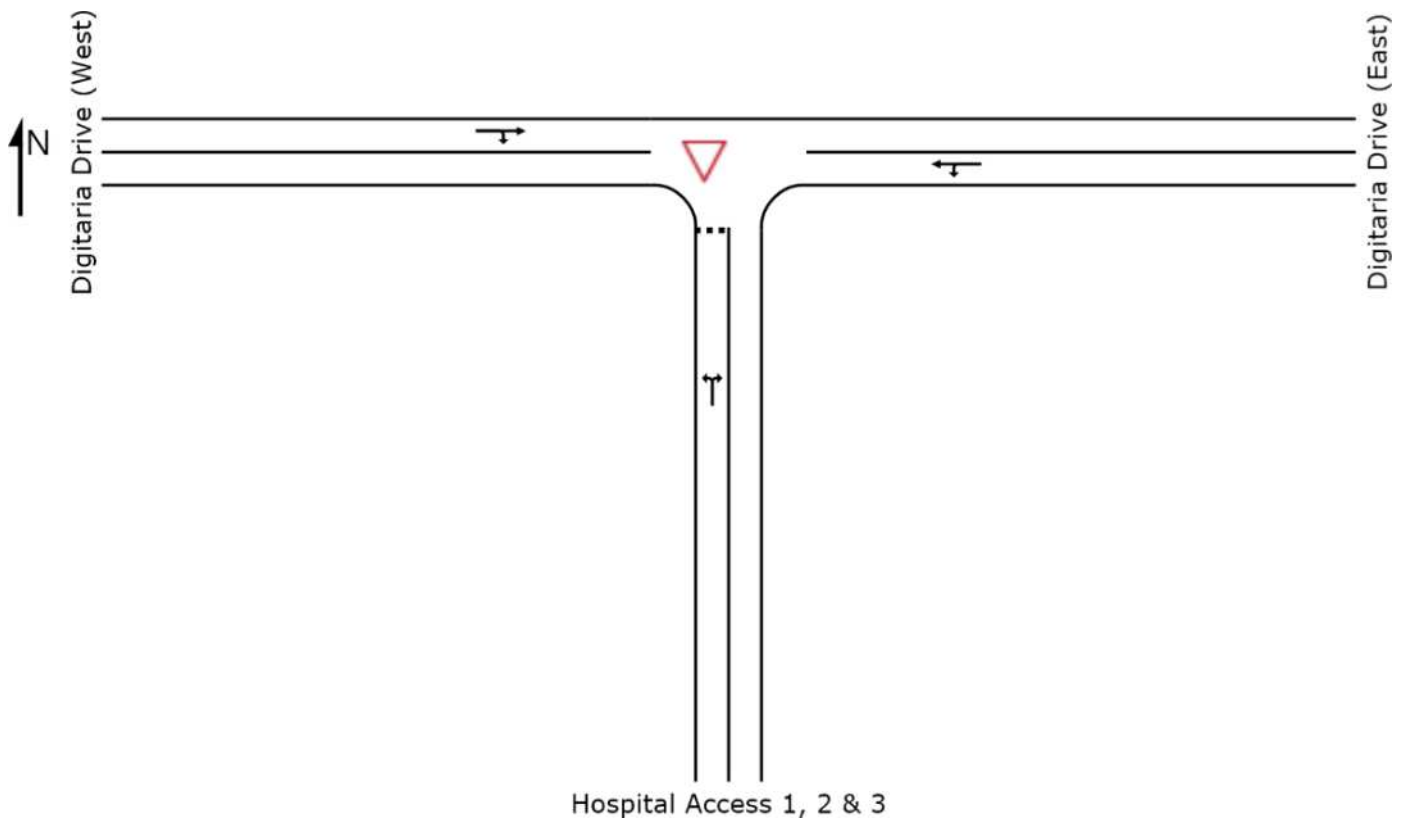
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SITE LAYOUT

▽ Site: AM End - Hospital Access 1, 2 & 3

Final Scenario - Full Development of site and Turner Road Precinct
Giveaway / Yield (Two-Way)



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MOVEMENT SUMMARY

▽ Site: AM End - Hospital Access 1, 2 & 3

Final Scenario - Full Development of site and Turner Road Precinct
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Prop. Queued	Effective Stop Rate	Average Speed	
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m	per veh	km/h	
South: Hospital Access 1, 2 & 3											
1	L2	38	0.0	0.137	2.8	LOS A	0.5	3.4	0.42	0.61	25.4
3	R2	83	0.0	0.137	4.4	LOS A	0.5	3.4	0.42	0.61	21.7
Approach		121	0.0	0.137	3.9	LOS A	0.5	3.4	0.42	0.61	22.9
East: Digitaria Drive (East)											
4	L2	137	0.0	0.209	3.6	LOS A	0.0	0.0	0.00	0.18	34.9
5	T1	264	0.0	0.209	0.0	LOS A	0.0	0.0	0.00	0.18	43.8
Approach		401	0.0	0.209	1.2	NA	0.0	0.0	0.00	0.18	41.4
West: Digitaria Drive (West)											
11	T1	107	0.0	0.138	1.2	LOS A	0.7	4.7	0.42	0.31	34.7
12	R2	99	0.0	0.138	6.2	LOS A	0.7	4.7	0.42	0.31	28.0
Approach		206	0.0	0.138	3.6	NA	0.7	4.7	0.42	0.31	31.7
All Vehicles		728	0.0	0.209	2.4	NA	0.7	4.7	0.19	0.29	34.7

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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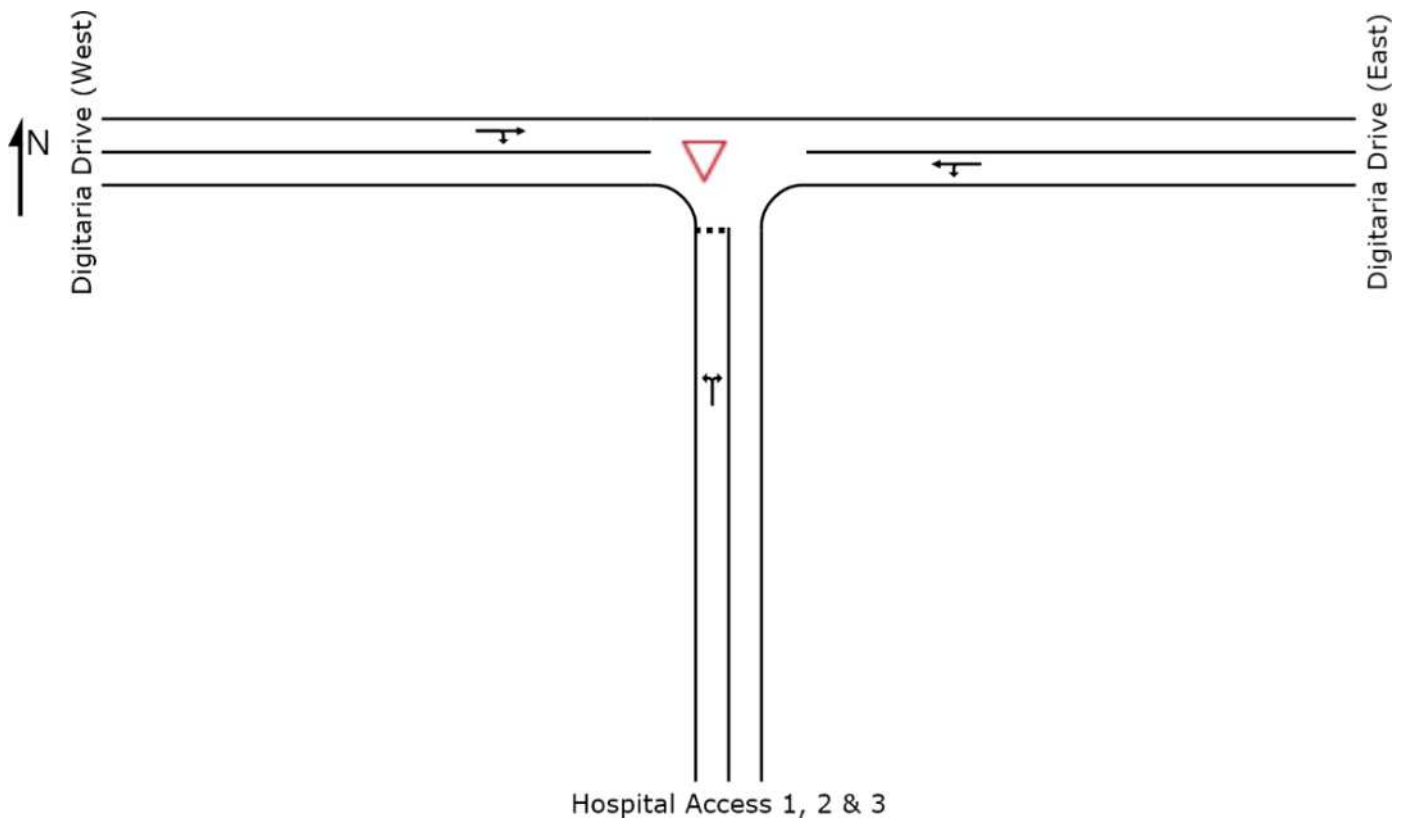
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Project: \\mottmac\project\Sydney\Projects\36xxx\366044\04 Working\02 Documents\Traffic\BGC-Medical Precinct-E&L-Health Hub combined analysis
SIDRA\160610 End scenario baseline.sip6

SITE LAYOUT

▽ Site: PM End - Hospital Access 1, 2 & 3

Final Scenario - Full Development of site and Turner Road Precinct
Giveaway / Yield (Two-Way)



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\\SIDRA\160610 End scenario baseline.sip6

MOVEMENT SUMMARY

▽ Site: PM End - Hospital Access 1, 2 & 3

Final Scenario - Full Development of site and Turner Road Precinct
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Prop. Queued	Effective Stop Rate	Average Speed	
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m	per veh	km/h	
South: Hospital Access 1, 2 & 3											
1	L2	81	0.0	0.368	4.9	LOS A	1.7	11.7	0.59	0.83	21.2
3	R2	178	0.0	0.368	7.2	LOS A	1.7	11.7	0.59	0.83	17.8
Approach		259	0.0	0.368	6.5	LOS A	1.7	11.7	0.59	0.83	18.9
East: Digitaria Drive (East)											
4	L2	21	0.0	0.263	3.6	LOS A	0.0	0.0	0.00	0.02	41.0
5	T1	491	0.0	0.263	0.0	LOS A	0.0	0.0	0.00	0.02	49.1
Approach		512	0.0	0.263	0.2	NA	0.0	0.0	0.00	0.02	48.9
West: Digitaria Drive (West)											
11	T1	198	0.0	0.116	0.3	LOS A	0.2	1.1	0.10	0.04	46.0
12	R2	15	0.0	0.116	6.8	LOS A	0.2	1.1	0.10	0.04	38.6
Approach		213	0.0	0.116	0.7	NA	0.2	1.1	0.10	0.04	45.6
All Vehicles		984	0.0	0.368	1.9	NA	1.7	11.7	0.18	0.24	37.3

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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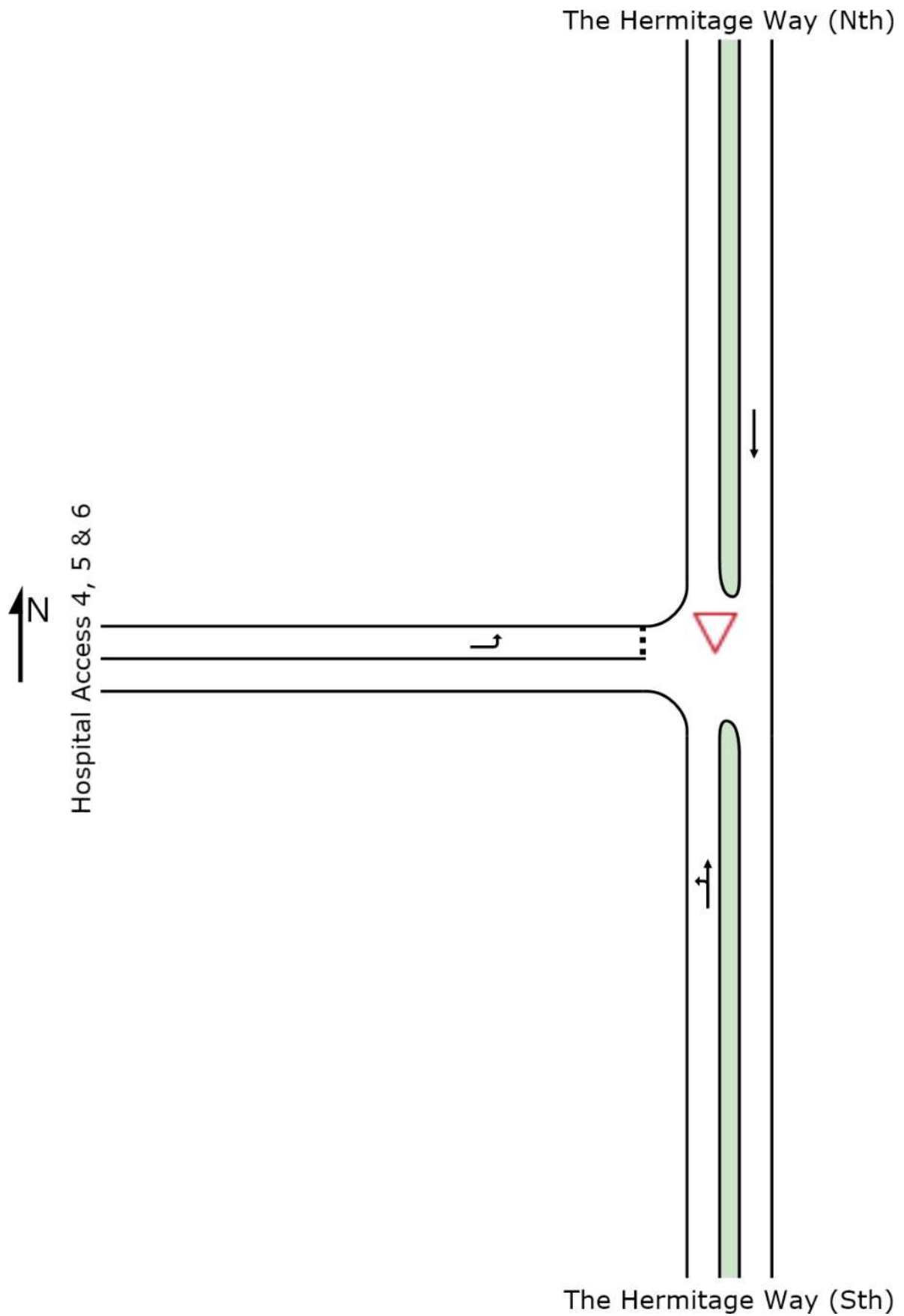
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 \SIDRA\160610 End scenario baseline.sip6

SITE LAYOUT

▽ Site: AM End - Hospital Access 4, 5 & 6

Final Scenario - Full Development of site and Turner Road Precinct
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

▽ Site: AM End - Hospital Access 4, 5 & 6

Final Scenario - Full Development of site and Turner Road Precinct
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: The Hermitage Way (Sth)											
1	L2	324	0.0	0.361	3.5	LOS A	0.0	0.0	0.00	0.27	26.3
2	T1	363	0.0	0.361	0.0	LOS A	0.0	0.0	0.00	0.27	46.2
Approach		687	0.0	0.361	1.7	NA	0.0	0.0	0.00	0.27	35.3
North: The Hermitage Way (Nth)											
8	T1	689	0.0	0.353	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		689	0.0	0.353	0.0	NA	0.0	0.0	0.00	0.00	59.9
West: Hospital Access 4, 5 & 6											
10	L2	55	0.0	0.047	3.4	LOS A	0.2	1.3	0.40	0.53	24.1
Approach		55	0.0	0.047	3.4	LOS A	0.2	1.3	0.40	0.53	24.1
All Vehicles		1431	0.0	0.361	0.9	NA	0.2	1.3	0.02	0.15	43.7

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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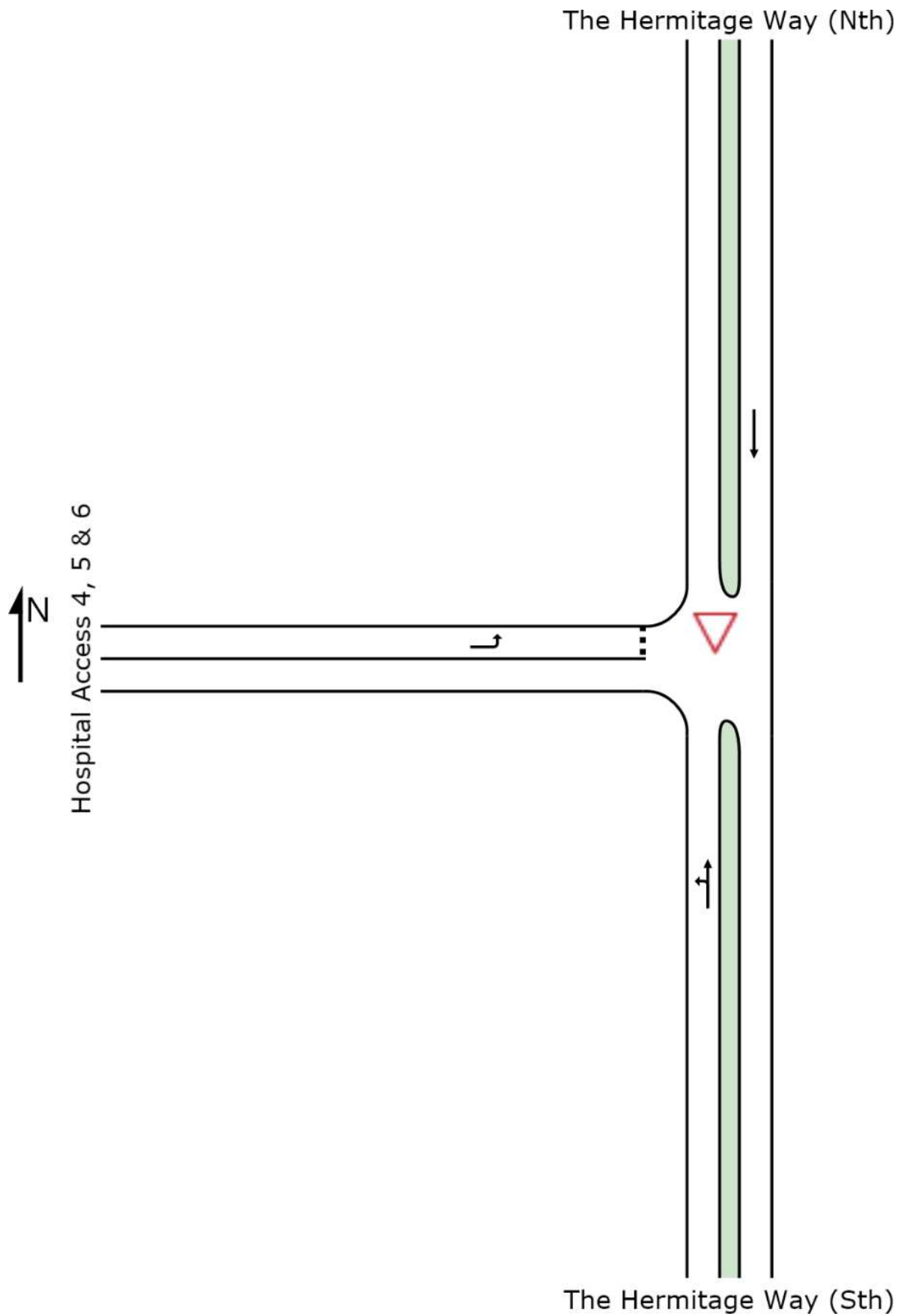
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 \SIDRA\160610 End scenario baseline.sip6

SITE LAYOUT

▽ Site: PM End - Hospital Access 4, 5 & 6

Final Scenario - Full Development of site and Turner Road Precinct
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

▽ Site: PM End - Hospital Access 4, 5 & 6

Final Scenario - Full Development of site and Turner Road Precinct
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: The Hermitage Way (Sth)											
1	L2	50	0.0	0.418	3.5	LOS A	0.0	0.0	0.00	0.04	30.3
2	T1	763	0.0	0.418	0.0	LOS A	0.0	0.0	0.00	0.04	57.6
Approach		813	0.0	0.418	0.2	NA	0.0	0.0	0.00	0.04	55.3
North: The Hermitage Way (Nth)											
8	T1	371	0.0	0.190	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		371	0.0	0.190	0.0	NA	0.0	0.0	0.00	0.00	60.0
West: Hospital Access 4, 5 & 6											
10	L2	117	0.0	0.169	6.4	LOS A	0.6	4.3	0.62	0.79	19.0
Approach		117	0.0	0.169	6.4	LOS A	0.6	4.3	0.62	0.79	19.0
All Vehicles		1301	0.0	0.418	0.7	NA	0.6	4.3	0.06	0.09	49.3

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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 \SIDRA\160610 End scenario baseline.sip6

Gregory Hills Drive/Camden Valley Way Intersection

PM Peak - Comparison of Scenarios

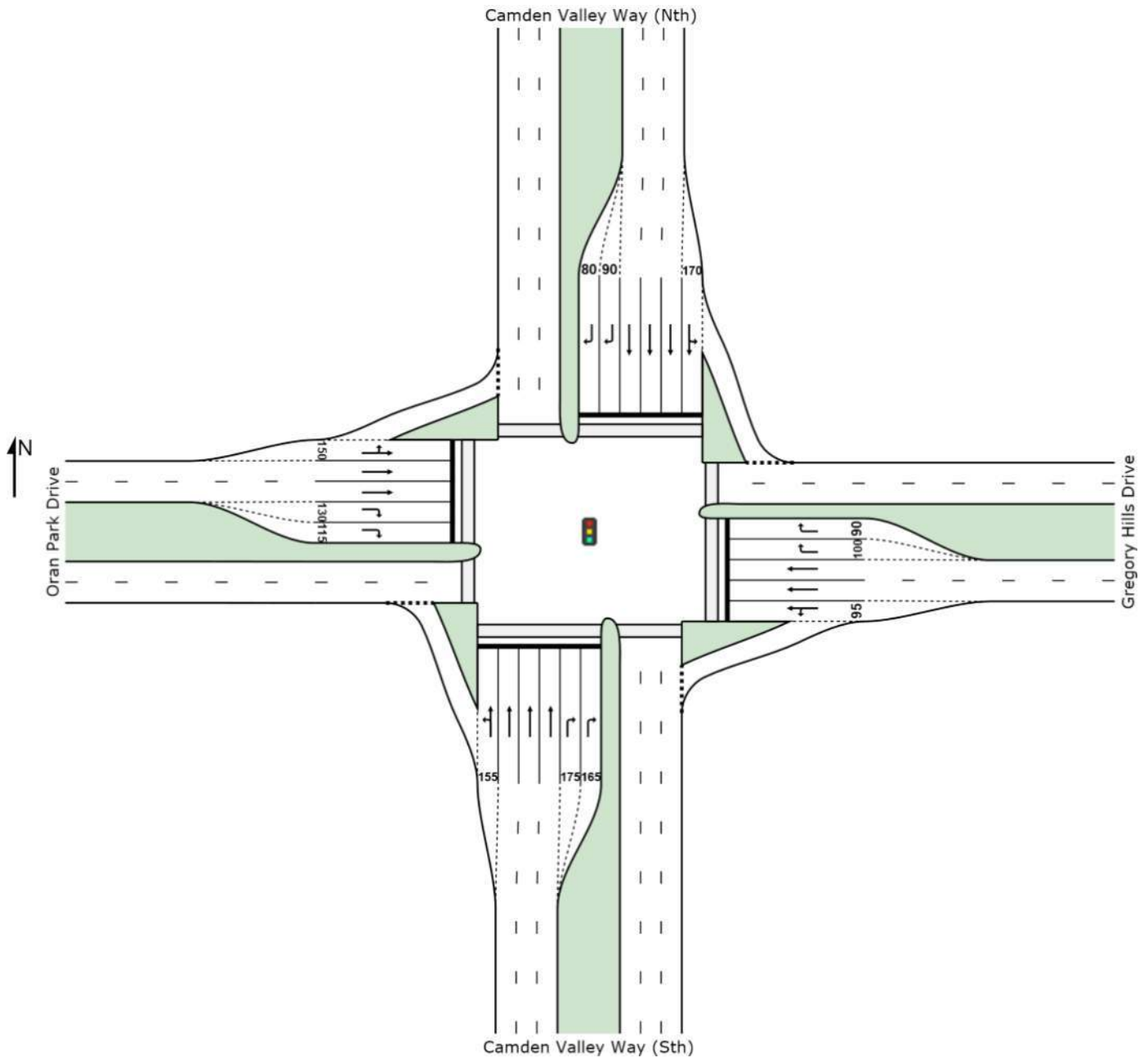
**Scenario 1 - 2026 Turner Road Precinct Background Traffic Only
- No GHCP Development**

SITE LAYOUT

 **Site: PM End - Gregory Hills Dr/Camden Valley Way**

Scenario 1 - Background Traffic Only

Signals - Fixed Time Coordinated



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\\SIDRA\160610 Scenario 1 - background traffic only.sip6

MOVEMENT SUMMARY

Site: PM End - Gregory Hills Dr/Camden Valley Way

Scenario 1 - Background Traffic Only

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Camden Valley Way (Sth)											
1	L2	101	0.0	0.071	8.2	LOS A	0.7	4.7	0.16	0.65	61.7
2	T1	1415	0.0	0.684	24.3	LOS B	20.4	143.0	0.74	0.65	55.0
3	R2	275	0.0	0.740	73.0	LOS F	9.0	63.2	1.00	0.85	25.6
Approach		1791	0.0	0.740	30.9	LOS C	20.4	143.0	0.75	0.68	49.1
East: Gregory Hills Drive											
4	L2	436	0.0	0.435	17.8	LOS B	13.5	94.7	0.58	0.76	48.7
5	T1	75	0.0	0.061	32.8	LOS C	1.6	11.4	0.73	0.55	44.0
6	R2	678	0.0	0.949	83.6	LOS F	25.8	180.6	1.00	1.00	30.1
Approach		1189	0.0	0.949	56.3	LOS D	25.8	180.6	0.83	0.88	34.6
North: Camden Valley Way (Nth)											
7	L2	242	0.0	0.171	9.1	LOS A	2.6	18.0	0.23	0.67	63.8
8	T1	1642	0.0	0.887	50.8	LOS D	35.8	250.9	0.98	0.95	41.0
9	R2	166	0.0	0.646	75.0	LOS F	5.5	38.2	1.00	0.80	35.8
Approach		2050	0.0	0.887	47.8	LOS D	35.8	250.9	0.89	0.90	42.1
West: Oran Park Drive											
10	L2	378	0.0	0.380	20.5	LOS B	12.0	84.1	0.60	0.76	56.2
11	T1	105	0.0	0.135	45.9	LOS D	2.7	19.1	0.86	0.66	38.4
12	R2	66	0.0	0.231	69.6	LOS E	2.0	14.3	0.97	0.73	31.1
Approach		549	0.0	0.380	31.3	LOS C	12.0	84.1	0.69	0.74	48.9
All Vehicles		5578	0.0	0.949	42.6	LOS D	35.8	250.9	0.81	0.81	42.9

Level of Service (LOS) Method: Delay (RTA NSW).

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 per ped	
P1	South Full Crossing	53	53.7	LOS E	0.2	0.2	0.91	0.91	
P2	East Full Crossing	53	50.1	LOS E	0.2	0.2	0.88	0.88	
P3	North Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96	
P4	West Full Crossing	53	46.6	LOS E	0.2	0.2	0.85	0.85	
All Pedestrians		211	52.4	LOS E			0.90	0.90	

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.

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 \SIDRA\160610 Scenario 1 - background traffic only.sip6

PHASING SUMMARY

 **Site: PM End - Gregory Hills Dr/Camden Valley Way**

Scenario 1 - Background Traffic Only

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Phase times specified by the user

Sequence: Leading Right Turn

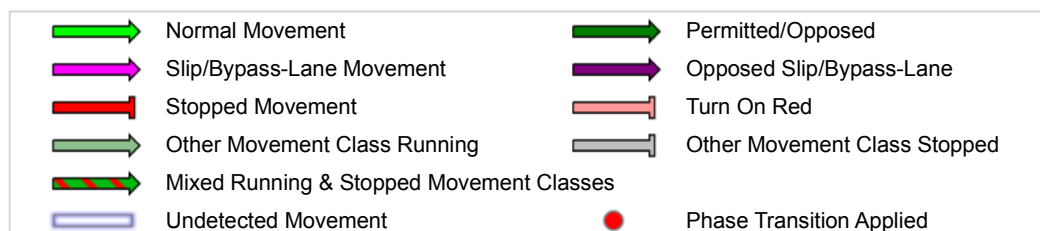
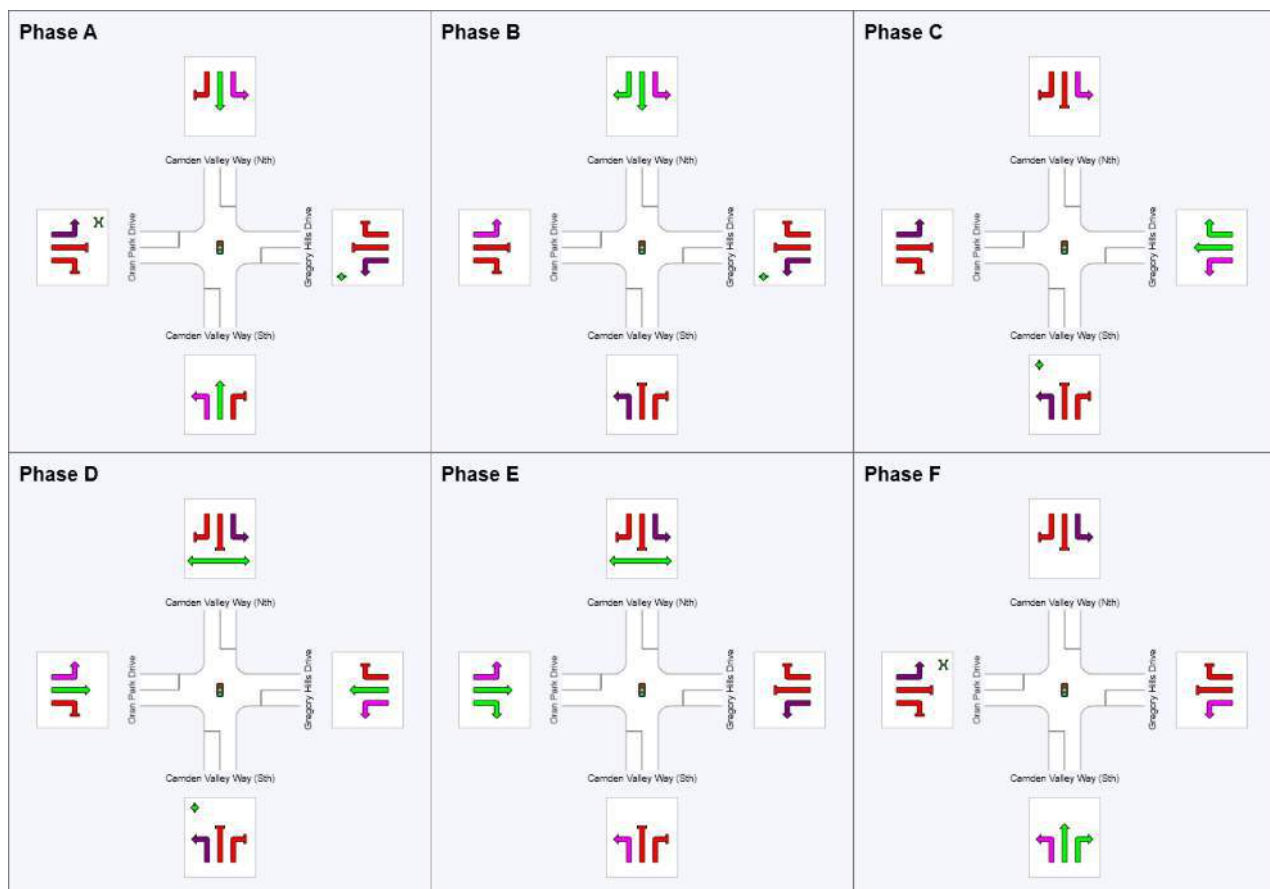
Movement Class: All Movement Classes

Input Sequence: A, B, C, D, E, F

Output Sequence: A, B, C, D, E, F

Phase Timing Results

Phase	A	B	C	D	E	F
Reference Phase	Yes	No	No	No	No	No
Phase Change Time (sec)	0	33	48	79	95	111
Green Time (sec)	27	9	25	10	10	13
Yellow Time (sec)	4	4	4	4	4	4
All-Red Time (sec)	2	2	2	2	2	2
Phase Time (sec)	33	15	31	16	16	19
Phase Split	25 %	12 %	24 %	12 %	12 %	15 %



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 \SIDRA\160610 Scenario 1 - background traffic only.sip6

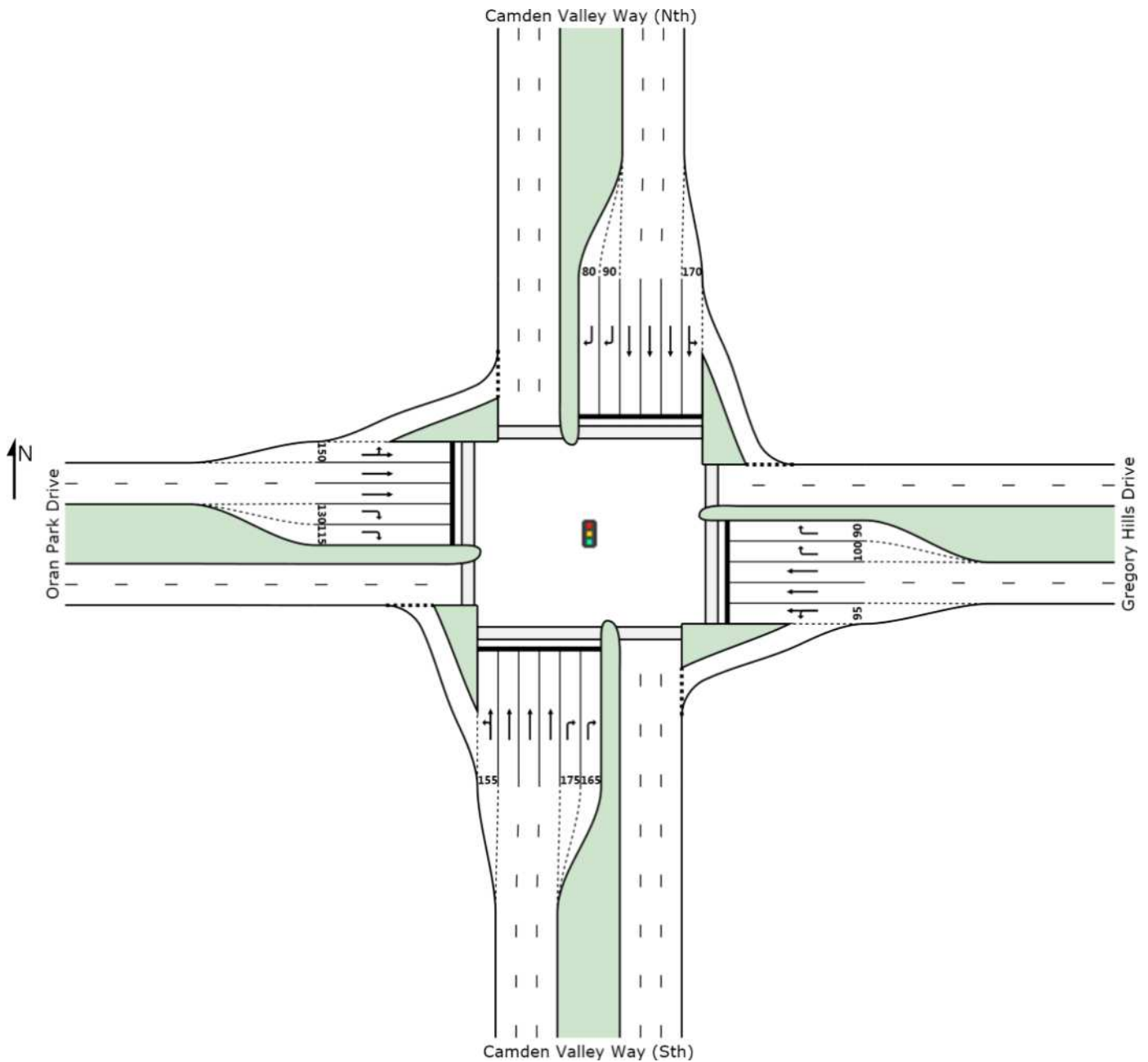
**Scenario 2 - 2026 Full Development of Turner Road and GHCP
Precinct Less Proposed Development**

SITE LAYOUT

Site: PM End - Gregory Hills Dr/Camden Valley Way

Scenario 2 - Full development less proposed development

Signals - Fixed Time Coordinated



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SIDRA\160610 Scenario 2 - everything minus hospital.sip6

MOVEMENT SUMMARY

Site: PM End - Gregory Hills Dr/Camden Valley Way

Scenario 2 - Full development less proposed development

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m		per veh	km/h
South: Camden Valley Way (Sth)											
1	L2	101	0.0	0.076	8.7	LOS A	0.9	6.2	0.20	0.65	61.2
2	T1	1415	0.0	0.684	24.3	LOS B	20.4	143.0	0.74	0.65	55.0
3	R2	394	0.0	1.061	121.3	LOS F	17.5	122.3	1.00	1.06	18.0
Approach		1910	0.0	1.061	43.5	LOS D	20.4	143.0	0.76	0.73	42.1
East: Gregory Hills Drive											
4	L2	534	0.0	0.515	19.6	LOS B	18.3	128.0	0.64	0.78	47.3
5	T1	225	0.0	0.171	32.0	LOS C	4.9	34.6	0.74	0.60	44.4
6	R2	751	0.0	0.982	90.4	LOS F	30.0	209.9	1.00	1.03	28.7
Approach		1510	0.0	0.982	56.7	LOS E	30.0	209.9	0.83	0.88	34.3
North: Camden Valley Way (Nth)											
7	L2	434	0.0	0.334	12.1	LOS A	8.7	60.6	0.39	0.72	61.1
8	T1	1642	0.0	0.953	65.2	LOS E	40.8	285.4	1.00	1.03	36.0
9	R2	166	0.0	0.968	96.1	LOS F	6.4	44.9	1.00	0.92	31.3
Approach		2242	0.0	0.968	57.2	LOS E	40.8	285.4	0.88	0.96	38.5
West: Oran Park Drive											
10	L2	378	0.0	0.396	21.7	LOS B	12.6	88.1	0.62	0.77	55.5
11	T1	292	0.0	0.374	48.7	LOS D	8.1	56.4	0.91	0.74	37.4
12	R2	66	0.0	0.231	69.6	LOS E	2.0	14.3	0.97	0.73	31.1
Approach		736	0.0	0.396	36.7	LOS C	12.6	88.1	0.77	0.75	45.3
All Vehicles		6397	0.0	1.061	50.6	LOS D	40.8	285.4	0.82	0.85	39.2

Level of Service (LOS) Method: Delay (RTA NSW).

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 per ped	
P1	South Full Crossing	53	51.0	LOS E	0.2	0.2	0.89	0.89	
P2	East Full Crossing	53	52.8	LOS E	0.2	0.2	0.90	0.90	
P3	North Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96	
P4	West Full Crossing	53	46.6	LOS E	0.2	0.2	0.85	0.85	
All Pedestrians		211	52.4	LOS E			0.90	0.90	

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.

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\\SIDRA\160610 Scenario 2 - everything minus hospital.sip6

PHASING SUMMARY

 **Site: PM End - Gregory Hills Dr/Camden Valley Way**

Scenario 2 - Full development less proposed development

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Phase times specified by the user

Sequence: Leading Right Turn

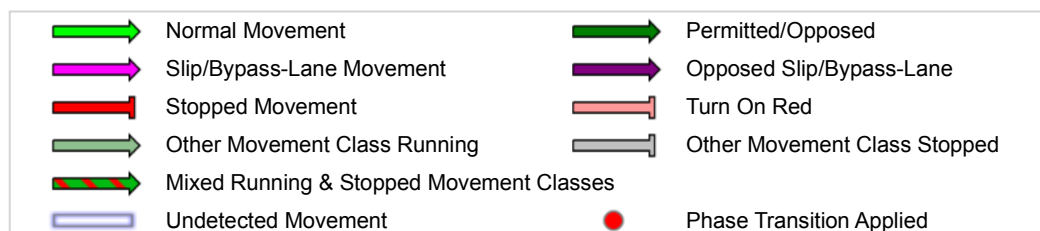
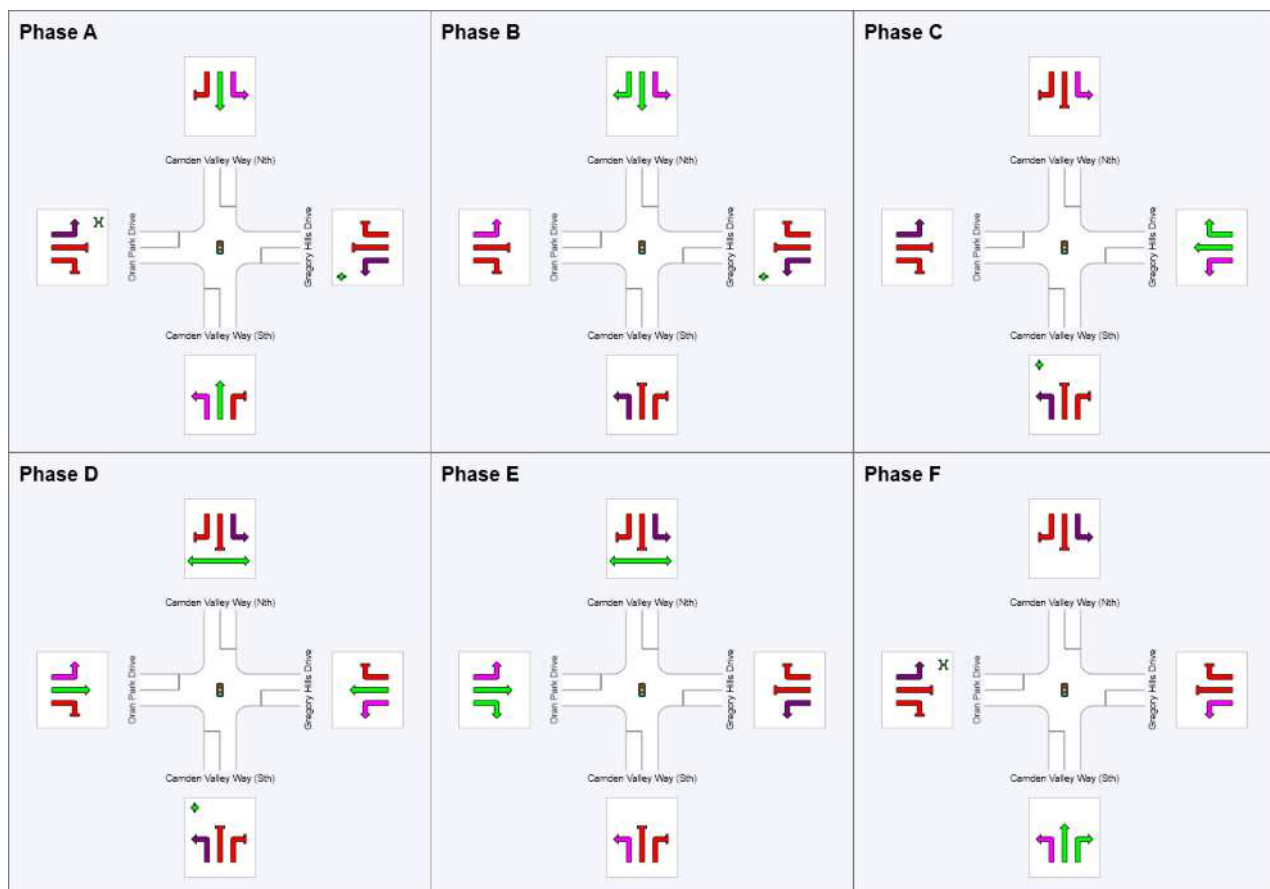
Movement Class: All Movement Classes

Input Sequence: A, B, C, D, E, F

Output Sequence: A, B, C, D, E, F

Phase Timing Results

Phase	A	B	C	D	E	F
Reference Phase	Yes	No	No	No	No	No
Phase Change Time (sec)	0	33	45	79	95	111
Green Time (sec)	27	6	28	10	10	13
Yellow Time (sec)	4	4	4	4	4	4
All-Red Time (sec)	2	2	2	2	2	2
Phase Time (sec)	33	12	34	16	16	19
Phase Split	25 %	9 %	26 %	12 %	12 %	15 %



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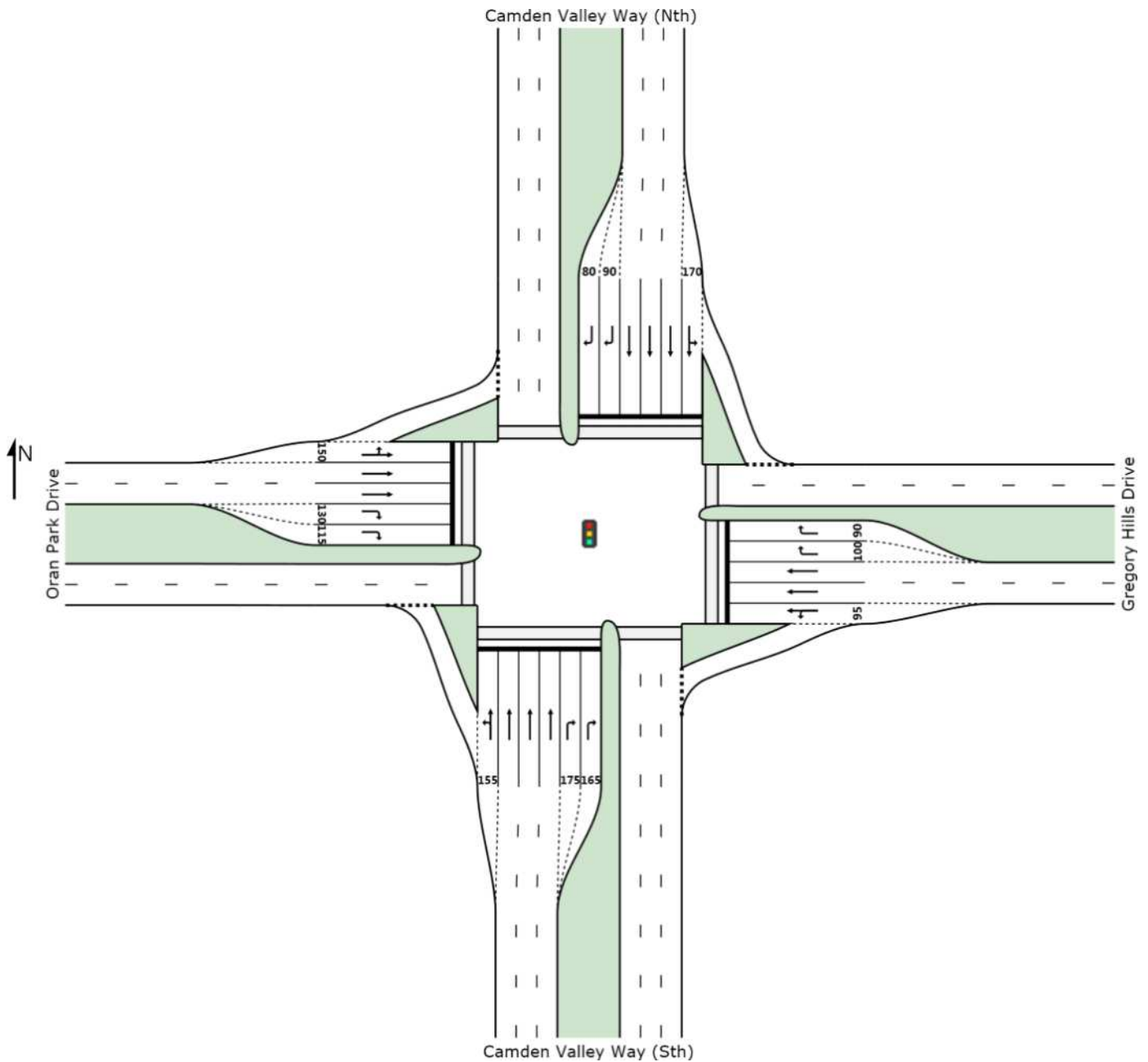
Project: \\mottmac\project\Sydney\Projects\36xxx\366044\04 Working\02 Documents\Traffic\BGC-Medical Precinct-E&L-Health Hub combined analysis
 \SIDRA\160610 Scenario 2 - everything minus hospital.sip6

Scenario 3 - 2026 Full Development with Proposed Development Changes in GHCP Precinct - RMS Trip Generation

SITE LAYOUT

Site: PM End - Gregory Hills Dr/Camden Valley Way

Scenario 3 - Full Development - RMS Trip Generation
Signals - Fixed Time Coordinated



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SIDRA\160610 Scenario 3 - Full Dev - RMS trip gen.sip6

MOVEMENT SUMMARY

Site: PM End - Gregory Hills Dr/Camden Valley Way

Scenario 3 - Full Development - RMS Trip Generation

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Camden Valley Way (Sth)											
1	L2	101	0.0	0.077	8.9	LOS A	0.9	6.6	0.21	0.66	61.0
2	T1	1415	0.0	0.684	24.3	LOS B	20.4	143.0	0.74	0.65	55.0
3	R2	403	0.0	1.085	130.3	LOS F	18.5	129.6	1.00	1.07	17.0
Approach		1919	0.0	1.085	45.7	LOS D	20.4	143.0	0.76	0.74	41.1
East: Gregory Hills Drive											
4	L2	568	0.0	0.548	20.1	LOS B	20.2	141.4	0.66	0.79	46.9
5	T1	282	0.0	0.214	32.6	LOS C	6.3	44.1	0.75	0.62	44.2
6	R2	751	0.0	0.982	90.4	LOS F	30.0	209.9	1.00	1.03	28.7
Approach		1601	0.0	0.982	55.3	LOS D	30.0	209.9	0.84	0.87	34.7
North: Camden Valley Way (Nth)											
7	L2	446	0.0	0.345	12.2	LOS A	9.1	63.9	0.40	0.72	61.0
8	T1	1642	0.0	0.953	65.2	LOS E	40.8	285.4	1.00	1.03	36.0
9	R2	166	0.0	0.968	96.1	LOS F	6.4	44.9	1.00	0.92	31.3
Approach		2254	0.0	0.968	57.0	LOS E	40.8	285.4	0.88	0.96	38.6
West: Oran Park Drive											
10	L2	378	0.0	0.396	21.7	LOS B	12.6	88.1	0.62	0.77	55.5
11	T1	307	0.0	0.394	48.9	LOS D	8.5	59.5	0.92	0.75	37.3
12	R2	66	0.0	0.231	69.6	LOS E	2.0	14.3	0.97	0.73	31.1
Approach		751	0.0	0.396	37.0	LOS C	12.6	88.1	0.77	0.75	45.1
All Vehicles		6524	0.0	1.085	51.0	LOS D	40.8	285.4	0.82	0.85	39.0

Level of Service (LOS) Method: Delay (RTA NSW).

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 per ped	
P1	South Full Crossing	53	51.0	LOS E	0.2	0.2	0.89	0.89	
P2	East Full Crossing	53	52.8	LOS E	0.2	0.2	0.90	0.90	
P3	North Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96	
P4	West Full Crossing	53	46.6	LOS E	0.2	0.2	0.85	0.85	
All Pedestrians		211	52.4	LOS E			0.90	0.90	

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.

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PHASING SUMMARY

 **Site: PM End - Gregory Hills Dr/Camden Valley Way**

Scenario 3 - Full Development - RMS Trip Generation

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Phase times specified by the user

Sequence: Leading Right Turn

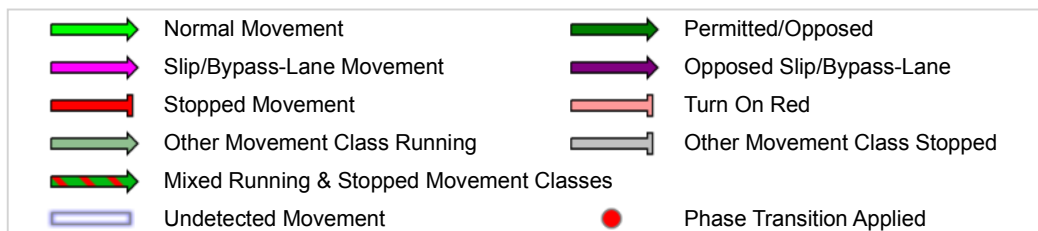
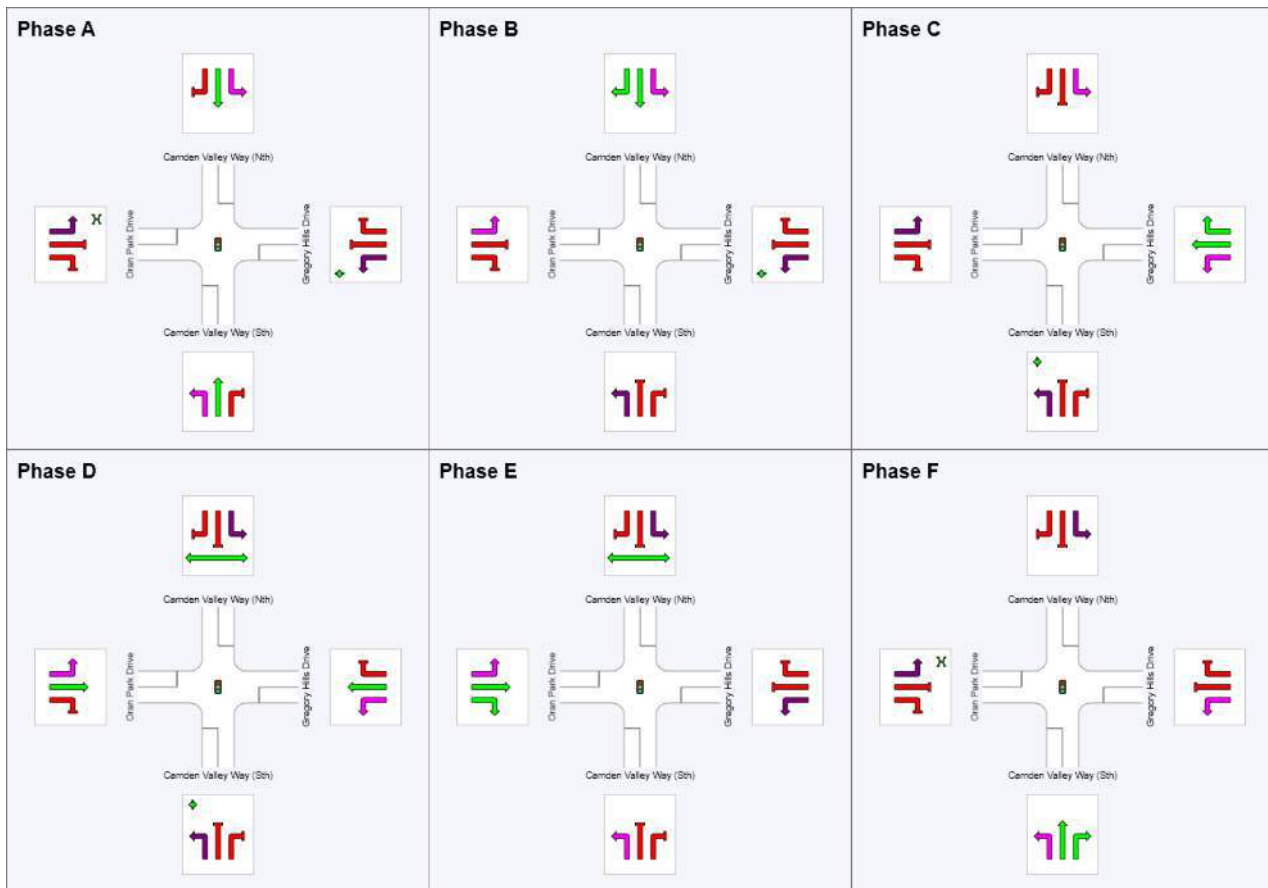
Movement Class: All Movement Classes

Input Sequence: A, B, C, D, E, F

Output Sequence: A, B, C, D, E, F

Phase Timing Results

Phase	A	B	C	D	E	F
Reference Phase	Yes	No	No	No	No	No
Phase Change Time (sec)	0	33	45	79	95	111
Green Time (sec)	27	6	28	10	10	13
Yellow Time (sec)	4	4	4	4	4	4
All-Red Time (sec)	2	2	2	2	2	2
Phase Time (sec)	33	12	34	16	16	19
Phase Split	25 %	9 %	26 %	12 %	12 %	15 %



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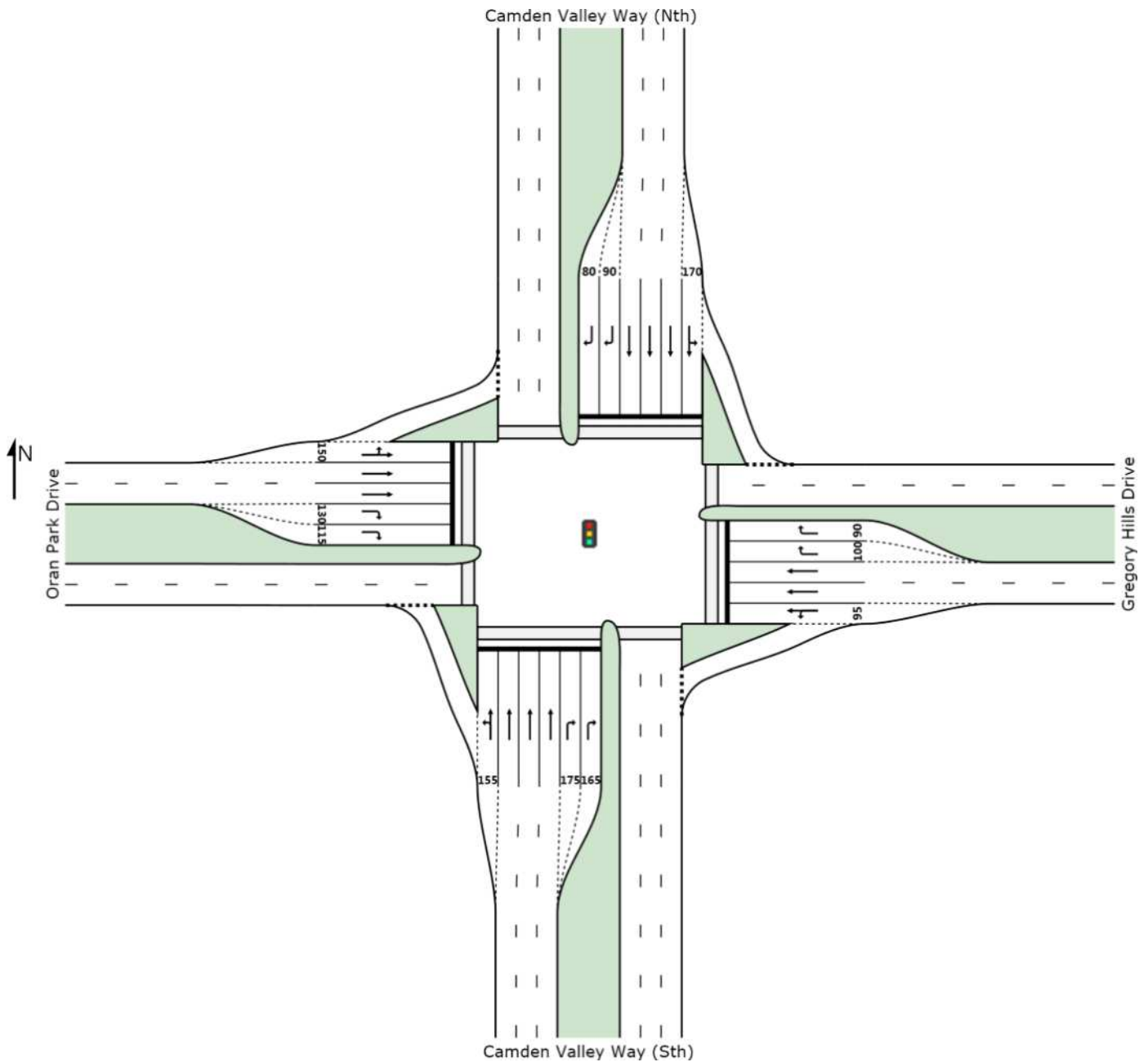
Scenario 4 - 2026 Full Development with Proposed Development Changes in GHCP Precinct - Sensitivity Test

SITE LAYOUT

Site: PM End - Gregory Hills Dr/Camden Valley Way

Scenario 4 - Full Development - Sensitivity Test

Signals - Fixed Time Coordinated



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MOVEMENT SUMMARY

Site: PM End - Gregory Hills Dr/Camden Valley Way

Scenario 4 - Full Development - Sensitivity Test

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Camden Valley Way (Sth)											
1	L2	101	0.0	0.076	8.7	LOS A	0.9	6.2	0.20	0.65	61.2
2	T1	1415	0.0	0.684	24.3	LOS B	20.4	143.0	0.74	0.65	55.0
3	R2	394	0.0	1.061	121.3	LOS F	17.5	122.3	1.00	1.06	18.0
Approach		1910	0.0	1.061	43.5	LOS D	20.4	143.0	0.76	0.73	42.1
East: Gregory Hills Drive											
4	L2	534	0.0	0.515	19.6	LOS B	18.3	128.0	0.64	0.78	47.3
5	T1	225	0.0	0.171	32.0	LOS C	4.9	34.6	0.74	0.60	44.4
6	R2	751	0.0	0.982	90.4	LOS F	30.0	209.9	1.00	1.03	28.7
Approach		1510	0.0	0.982	56.7	LOS E	30.0	209.9	0.83	0.88	34.3
North: Camden Valley Way (Nth)											
7	L2	434	0.0	0.334	12.1	LOS A	8.7	60.6	0.39	0.72	61.1
8	T1	1642	0.0	0.953	65.2	LOS E	40.8	285.4	1.00	1.03	36.0
9	R2	166	0.0	0.968	96.1	LOS F	6.4	44.9	1.00	0.92	31.3
Approach		2242	0.0	0.968	57.2	LOS E	40.8	285.4	0.88	0.96	38.5
West: Oran Park Drive											
10	L2	378	0.0	0.396	21.7	LOS B	12.6	88.1	0.62	0.77	55.5
11	T1	292	0.0	0.374	48.7	LOS D	8.1	56.4	0.91	0.74	37.4
12	R2	66	0.0	0.231	69.6	LOS E	2.0	14.3	0.97	0.73	31.1
Approach		736	0.0	0.396	36.7	LOS C	12.6	88.1	0.77	0.75	45.3
All Vehicles		6397	0.0	1.061	50.6	LOS D	40.8	285.4	0.82	0.85	39.2

Level of Service (LOS) Method: Delay (RTA NSW).

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 per ped	
P1	South Full Crossing	53	51.0	LOS E	0.2	0.2	0.89	0.89	
P2	East Full Crossing	53	52.8	LOS E	0.2	0.2	0.90	0.90	
P3	North Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96	
P4	West Full Crossing	53	46.6	LOS E	0.2	0.2	0.85	0.85	
All Pedestrians		211	52.4	LOS E			0.90	0.90	

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.

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PHASING SUMMARY

 **Site: PM End - Gregory Hills Dr/Camden Valley Way**

Scenario 4 - Full Development - Sensitivity Test

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (User-Given Phase Times)

Phase times specified by the user

Sequence: Leading Right Turn

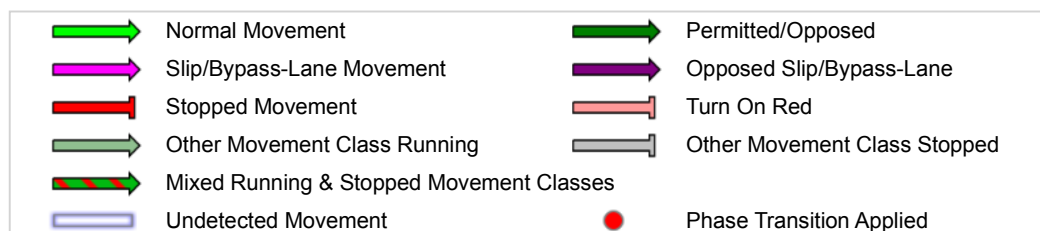
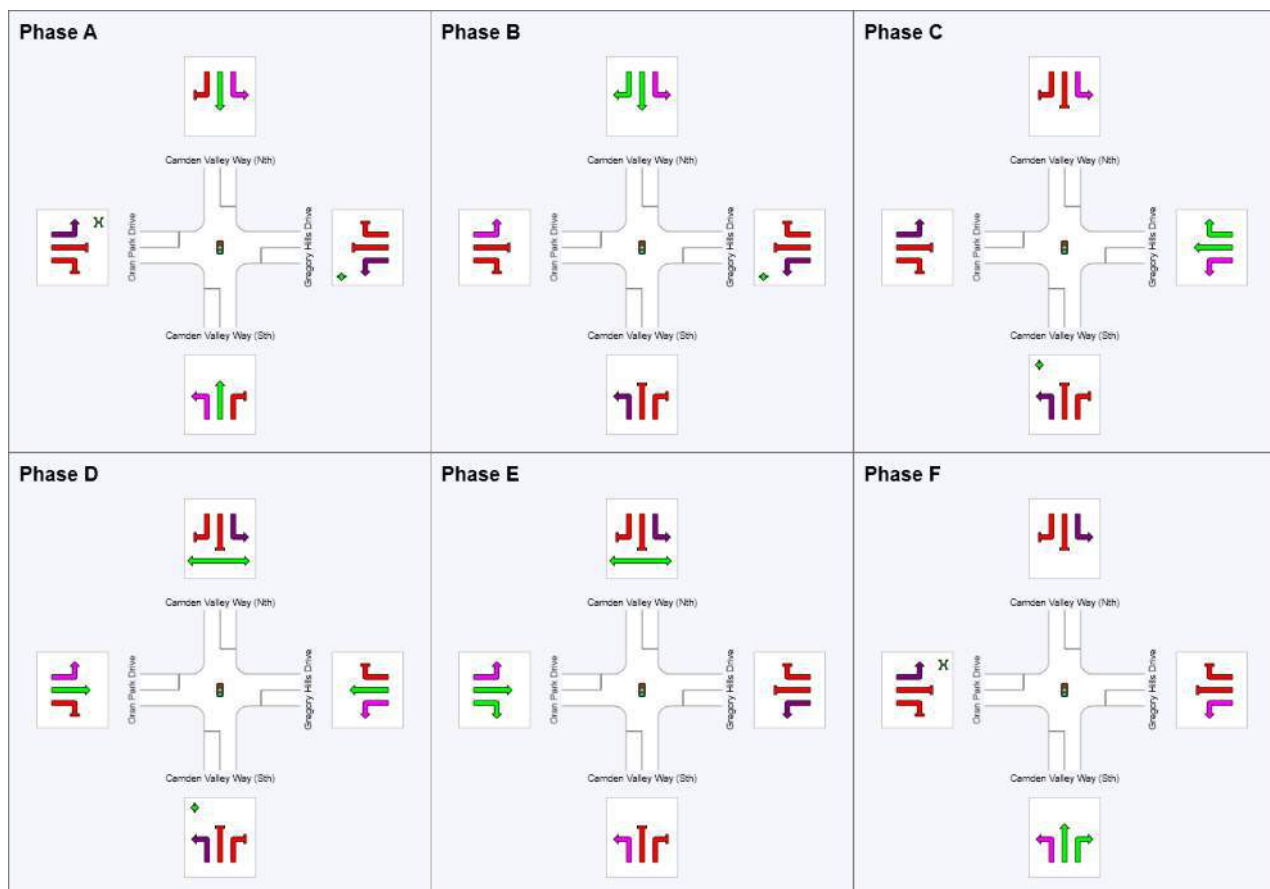
Movement Class: All Movement Classes

Input Sequence: A, B, C, D, E, F

Output Sequence: A, B, C, D, E, F

Phase Timing Results

Phase	A	B	C	D	E	F
Reference Phase	Yes	No	No	No	No	No
Phase Change Time (sec)	0	33	45	79	95	111
Green Time (sec)	27	6	28	10	10	13
Yellow Time (sec)	4	4	4	4	4	4
All-Red Time (sec)	2	2	2	2	2	2
Phase Time (sec)	33	12	34	16	16	19
Phase Split	25 %	9 %	26 %	12 %	12 %	15 %



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 \SIDRA\160610 Scenario 4 - Full Dev - Sensitivity Test.sip6

Appendix E. Bus Route Maps

Explanation of definitions and symbols

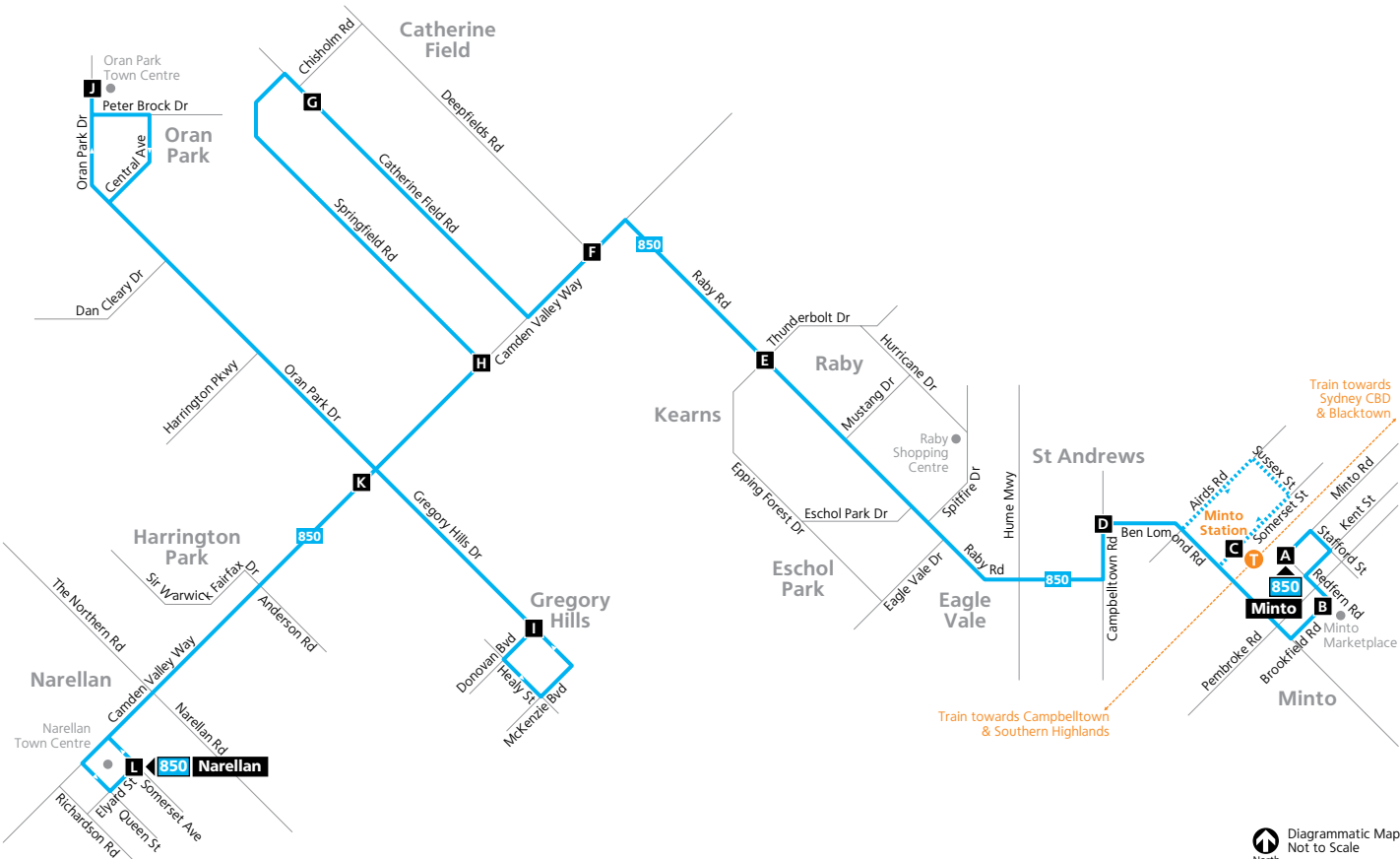
- M** Bus operates firstly via Minto Marketplace then to Oran Park.
- N** Bus operates to and from Oran Park before arriving at Gregory Hills.
- S** Bus operates school days only.
- V** Bus operates school holidays only.
- ... Bus does not operate past this point.

Public Holidays

The Sunday timetable operates on all public holidays except Easter Saturday when the Saturday timetable operates.

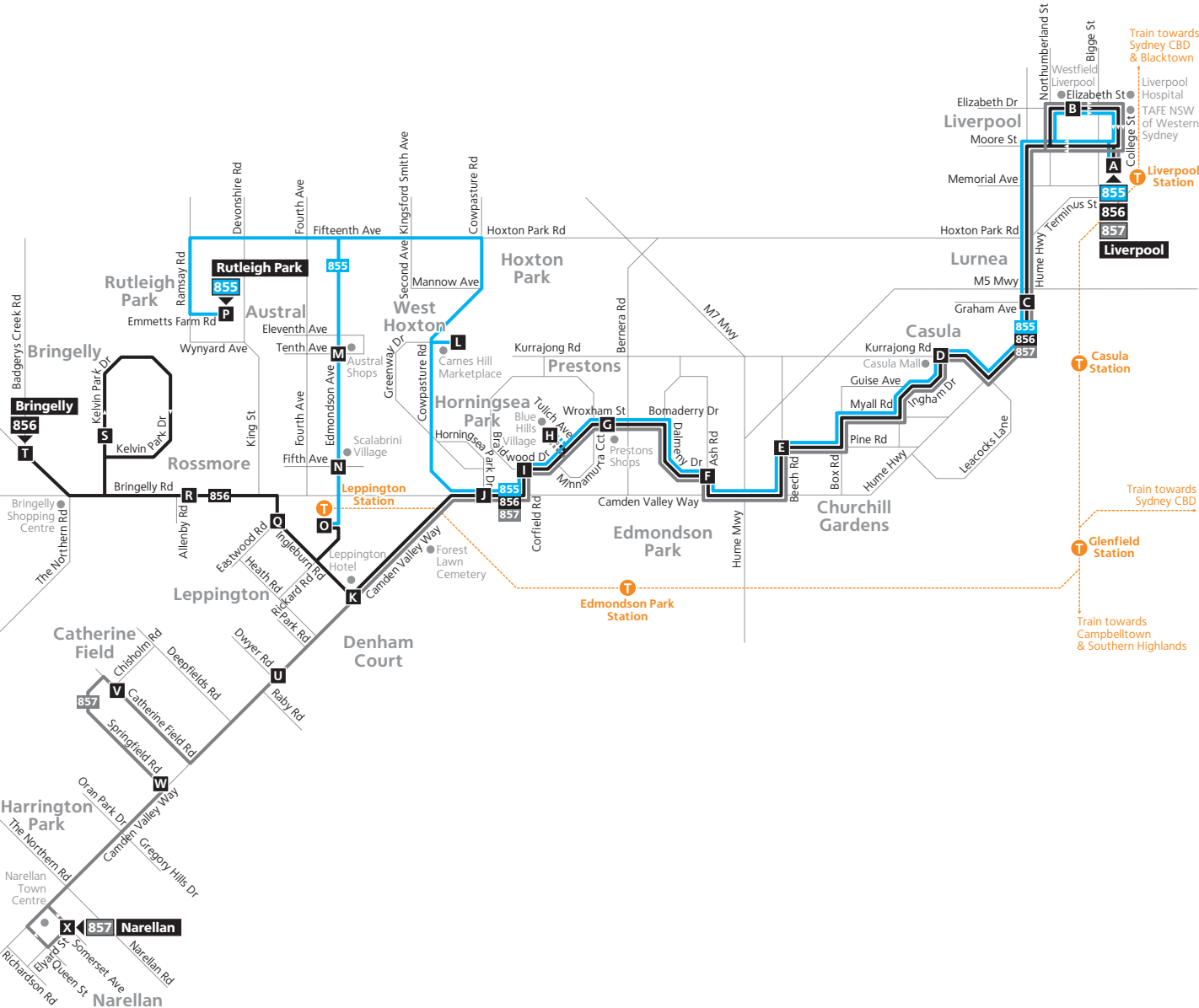
Train Times

The train times shown in this booklet are effective from 8 February 2015. Subsequent changes to train times may occur during the currency of these bus timetables.



- Legend**
- Bus route
 - Bus route number
 - Timing point
 - Train line/station

Diagrammatic Map
Not to Scale



Legend

Bus route

Timing point

Bus route number

Train line/station

Diagrammatic Map
Not to Scale



Explanation of definitions and symbols

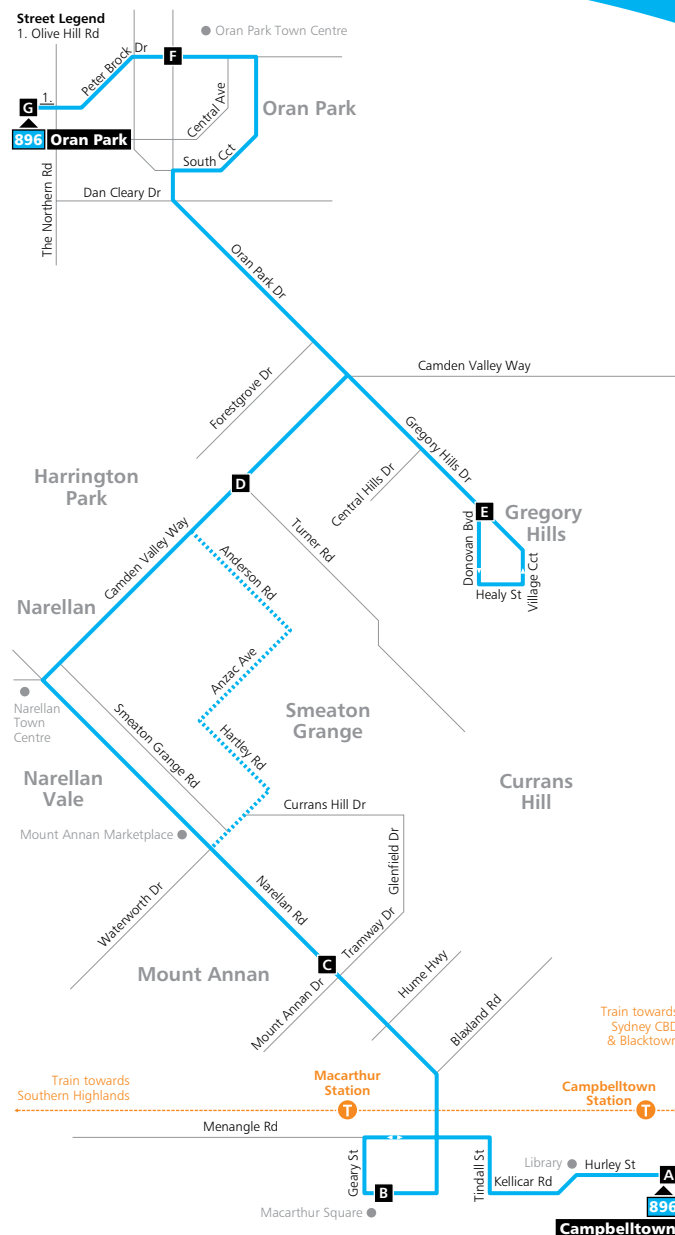
- B** Bus operates through Smeaton Grange via Anderson Rd, Anzac Ave & Hartley Rd.
- G** Bus operates to/from Oran Park direct. Gregory Hills passengers catch the service before/after at the time shown and travel via Oran Park.
- H** Bus operates public school holidays only.
- J** Bus operates public school holidays from timing point 10 minutes later then time shown.
- N** Bus operates via Narellan Rd & Hurley St direct, omitting Macarthur Square.
- S** Bus operates public school days only.
- Y** Bus operates public school days only and diverts from Hartley Rd via Currans Hill Dr, Spring Hill Cir, Glenfield Dr and Tramway Dr to Narellan Rd.
- Z** Bus operates public school days only and diverts from Narellan Rd via Tramway Dr, Glenfield Dr, Spring Hill Cir and Currans Hill Dr to Hartley Rd.

Timing Points

- A** Campbelltown Station
- B** Macarthur Square
- C** Mt Annan Narellan Rd & Mt Annan Dr
- D** Smeaton Grange Camden Valley Wy & Turner Rd
- E** Gregory Hills Donovan Bvd & Gregory Hills Dr
- F** Oran Park Peter Brock Dr & Oran Park Dr
- G** Oran Park Olive Hill Rd

Bus route map

896



Diagrammatic Map
North
Not to Scale



Appendix F. Parking Requirements

Table F.1: Assessment of Parking Requirements

Hospital Element	Patient Parking Demand	Staff Parking Demand	Total Parking Demand
Operating Theatres	9.5	56.5	66.0
IPU	48.7	206.5	255.2
ICU/HDU	0.4	17.4	17.8
IPU 9	6.1	59.8	65.9
Additional support space for IPUs	0.0	25.7	25.7
Mental Health IPU	6.8	35.9	42.7
Birthing	2.5	5.5	8.0
Perioperative Bays	23.8	0.0	23.8
Recovery Bays	15.0	0.0	15.0
Short Stay Unit	6.3	5.0	11.3
Day Treatment	9.5	2.9	12.4
Urgent Care	14.6	9.6	24.2
Consulting Rooms	34.4	26.1	60.5
Medical Imaging	20.2	31.4	51.6
Nuclear Medicine	5.7	8.0	13.7
Rehabilitation/Allied Health	32.1	12.9	45.0
Pathology Collection	4.6	4.7	9.2
Interventional Cardiology	8.0	8.6	16.7
Admissions/Patient Billings	0	5.8	5.8
Catering	0	14.7	14.7
Housekeeping	0	2.2	2.2
Linen Handling	0	3.3	3.3
Pharmacy Inpatient	0	4.4	4.4
Supply	0	1.6	1.6
Waste Management	0	1.6	1.6
Engineering & Maintenance	0	1.6	1.6
IT/Data Centre	0	3.7	3.7
Morgue	0	0.9	0.9
Medical Records	0	5.7	5.7
Education	0	69.5	69.5
Executive Administration	0	10.6	10.6
Biomedical Sale & Distribution	0	36.8	36.8
Biomedical Research	0	53.2	53.2
Retail	0	8.2	8.2
Retail Pharmacy	0	4.1	4.1
Volunteers hub	0	1.6	1.6
Café	0	4.9	4.9
Florist	0	1.6	1.6
Total	248	753	1001

Source: Schedule of proposed facilities, staff and patients provided by Health Projects International.

Note: students are included in staff parking demand for the Education component.

Appendix G. Traffic Generation – Sensitivity Test

Table G.1: Traffic Generation – AM Peak Hour

Hospital Component	Patient Trips – In	Patient Trips – Out	Staff Trips – In	Staff Trips – Out	Total Trips – In	Total Trips – Out
Operating Theatres	10	2	41	5	50	6
IPU	59	11	64	52	123	63
ICU/HDU	0	0	5	4	6	4
IPU 9	7	1	18	15	26	16
Additional support space for IPUs	0	0	9	7	9	7
Mental Health IPU	8	2	9	9	18	11
Birthing	3	1	1	1	4	2
Perioperative Bays	24	5	0	0	24	5
Recovery Bays	15	3	0	0	15	3
Short Stay Unit	6	1	1	0	7	1
Day Treatment	10	2	2	0	12	2
Urgent Care	15	3	2	0	16	3
Consulting Rooms	17	17	19	2	36	19
Medical Imaging	3	3	23	3	25	5
Nuclear Medicine	1	1	6	1	7	1
Rehabilitation/Allied Health	2	2	9	1	11	3
Pathology Collection	1	1	3	0	4	1
Interventional Cardiology	1	1	6	1	7	1
Admissions/Patient Billings	-	-	4	0	4	0
Catering	-	-	0	0	0	0
Housekeeping	-	-	2	0	2	0
Linen Handling	-	-	2	0	2	0
Pharmacy Inpatient	-	-	3	0	3	0
Supply	-	-	1	0	1	0
Waste Management	-	-	1	0	1	0
Engineering & Maintenance	-	-	1	0	1	0
IT/Data Centre	-	-	3	0	3	0
Morgue	-	-	0	0	0	0
Medical Records	-	-	4	0	4	0
Education	-	-	50	6	50	6
Executive Administration	-	-	8	1	8	1
Biomedical Sale and Distribution	-	-	27	3	27	3
Biomedical Research	-	-	38	4	38	4
Retail	-	-	6	1	6	1
Retail Pharmacy	-	-	3	0	3	0
Volunteers hub	-	-	1	0	1	0
Café	-	-	4	0	4	0
Florist	-	-	1	0	1	0
Total	181	54	377	119	558	174

Source: Schedule of proposed facilities, staff and patients provided by Health Projects International.

Note that student trips associated with the Education component are accounted for in the staff trips presented.

Table G.2: Traffic Generation – PM Peak Hour

Hospital Component	Patient Trips – In	Patient Trips – Out	Staff Trips – In	Staff Trips – Out	Total Trips – In	Total Trips – Out
Operating Theatres	3	7	4	37	7	44
IPU	8	45	0	0	8	45
ICU/HDU	0	0	0	0	0	0
IPU 9	1	6	0	0	1	6
Additional support space for IPUs	0	0	0	0	0	0
Mental Health IPU	1	6	0	0	1	6
Birthing	1	2	0	0	1	2
Perioperative Bays	7	18	0	0	7	18
Recovery Bays	5	11	0	0	5	11
Short Stay Unit	2	5	0	3	2	8
Day Treatment	3	7	0	2	3	9
Urgent Care	4	11	1	6	5	17
Consulting Rooms	17	17	2	19	19	36
Medical Imaging	3	3	3	23	5	25
Nuclear Medicine	1	1	1	6	1	7
Rehabilitation/Allied Health	2	2	1	9	3	11
Pathology Collection	1	1	0	3	1	4
Interventional Cardiology	1	1	1	6	1	7
Admissions/Patient Billings	-	-	0	3	0	3
Catering	-	-	0	0	0	0
Housekeeping	-	-	0	1	0	1
Linen Handling	-	-	0	2	0	2
Pharmacy Inpatient	-	-	0	2	0	2
Supply	-	-	0	1	0	1
Waste Management	-	-	0	1	0	1
Engineering & Maintenance	-	-	0	1	0	1
IT/Data Centre	-	-	0	2	0	2
Morgue	-	-	0	0	0	0
Medical Records	-	-	0	3	0	3
Education	-	-	4	38	4	38
Executive Administration	-	-	1	6	1	6
Biomedical Sale and Distribution	-	-	2	20	2	20
Biomedical Research	-	-	3	29	3	29
Retail	-	-	0	4	0	4
Retail Pharmacy	-	-	0	2	0	2
Volunteers hub	-	-	0	1	0	1
Café	-	-	0	2	0	2
Florist	-	-	0	1	0	1
Total	59	142	26	232	85	374

Source: Schedule of proposed facilities, staff and patients provided by Health Projects International.

Note that student trips associated with the Education component are accounted for in the staff trips presented.

Table G.3: Daily Traffic Generation

Hospital Component	Daily Vehicle Trips – Patients & Visitors	Daily Vehicle Trips – Staff	Daily Vehicle Trips - Total
Operating Theatres	69	138	207
IPU	611	1010	1621
ICU/HDU	47	96	143
IPU 9	76	292	369
Additional support space for IPUs	0	96	96
Mental Health IPU	65	175	241
Birthing	27	31	57
Perioperative Bays	135	0	135
Recovery Bays	67	0	67
Short Stay Unit	25	12	37
Day Treatment	0	7	7
Urgent Care	160	24	183
Consulting Rooms	1189	64	1253
Medical Imaging	0	77	77
Nuclear Medicine	82	20	101
Rehabilitation/Allied Health	430	32	461
Pathology Collection	78	11	89
Interventional Cardiology	49	21	70
Admissions/Patient Billings	0	14	14
Catering	0	54	54
Housekeeping	0	5	5
Linen Handling	0	8	8
Pharmacy Inpatient	0	11	11
Supply	0	4	4
Waste Management	0	4	4
Engineering & Maintenance	0	4	4
IT/Data Centre	0	9	9
Morgue	0	4	4
Medical Records	0	14	14
Education	0	10	10
Executive Administration	0	26	26
Biomedical Sale and Distribution	0	90	90
Biomedical Research	0	130	130
Retail	0	20	20
Retail Pharmacy	0	10	10
Volunteers hub	0	4	4
Café	0	12	12
Florist	0	4	4
Total	3109	2542	5651

Source: Schedule of proposed facilities, staff and patients provided by Health Projects International
Note that student trips associated with the Education component are accounted for in the staff trips presented.

Appendix H. Traffic Distribution

Gregory Hills Traffic and Parking Assessment
2026 Background + All GHCP Trips Without Proposed Development

- Legend
- AM Peak Hour
 - PM Peak Hour
 - Site Access
- New development sites in MM Scope
- Bulky Goods Centre
 - Health Hub
 - Entertainment and Leisure Precinct
 - Hospital
- New development sites outside MM Scope
- Children's Hospital

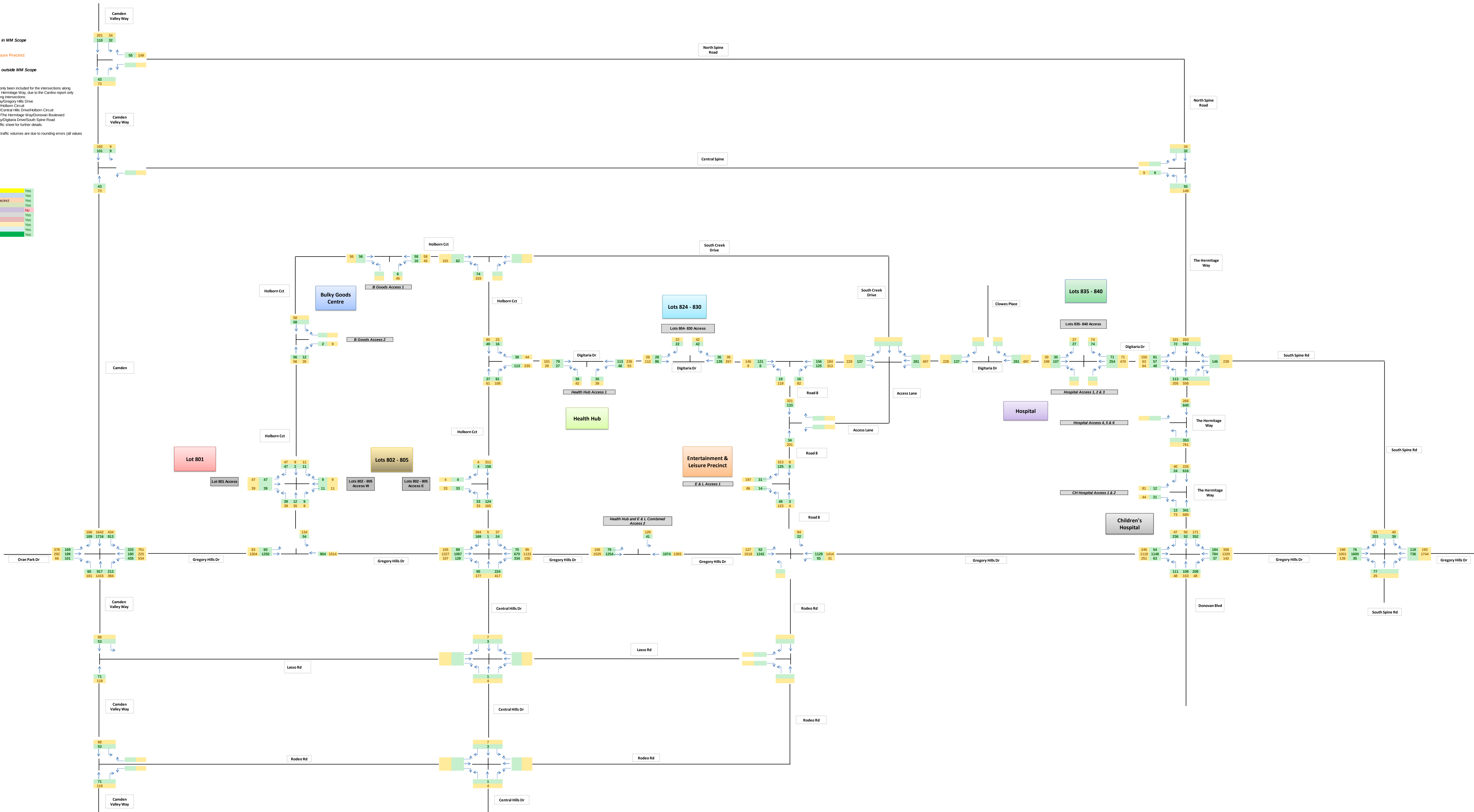
NOTE: Background volumes have only been included for the intersections along Gregory Hills Drive and The Hermitage Way, due to the Carbro report only including data for the following intersections:

- Camden Valley Way/Gregory Hills Drive
- Gregory Hills Drive/Donovan Boulevard
- Gregory Hills Drive/Central Hills Drive
- Gregory Hills Drive/The Hermitage Way/Donovan Boulevard
- The Hermitage Way/Digitalia Drive/South Spine Road

Refer to the background traffic flow for further details.

Any minor discrepancies in traffic volumes are due to rounding errors (all values rounded upwards).

Developments Included:	2026 Background Volumes
Bulky Goods Centre	Yes
Health Hub	Yes
Entertainment & Leisure Precinct	Yes
Hospital	Yes
Children's Hospital	Yes
Lot 801	Yes
Lot 802 - 805	Yes
Lot 804 - 830	Yes
Lot 835 - 840	Yes



Gregory Hills Traffic and Parking Assessment
2026 Total Trips: Background + All GHCP Trips Including Proposed Development

Legend

AM Peak Hour
PM Peak Hour
Site Access

New development sites in MM Scope

- Bulky Goods Centre
- Health Hub
- Entertainment and Leisure Precinct
- Hospital

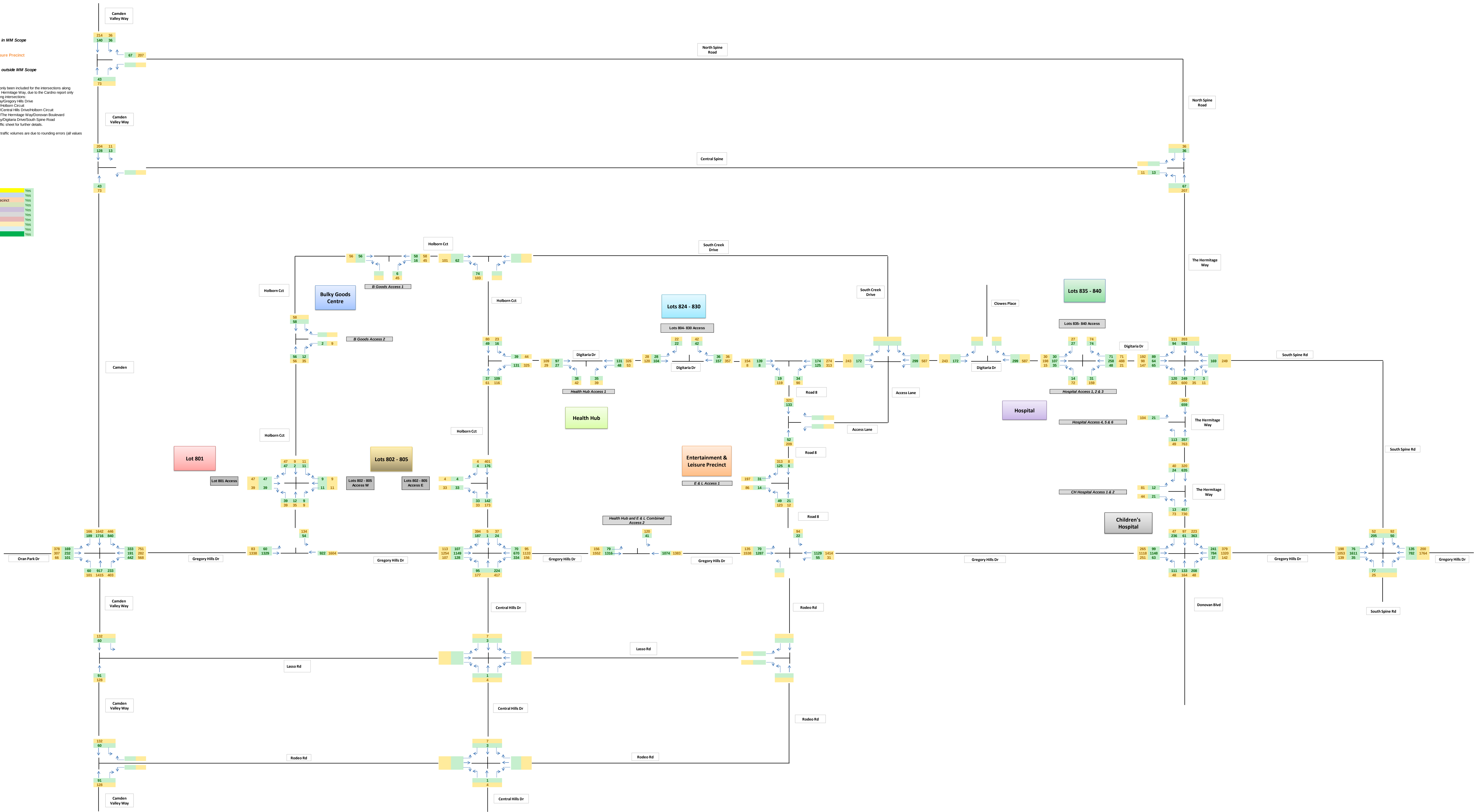
New development sites outside MM Scope

- Children's Hospital

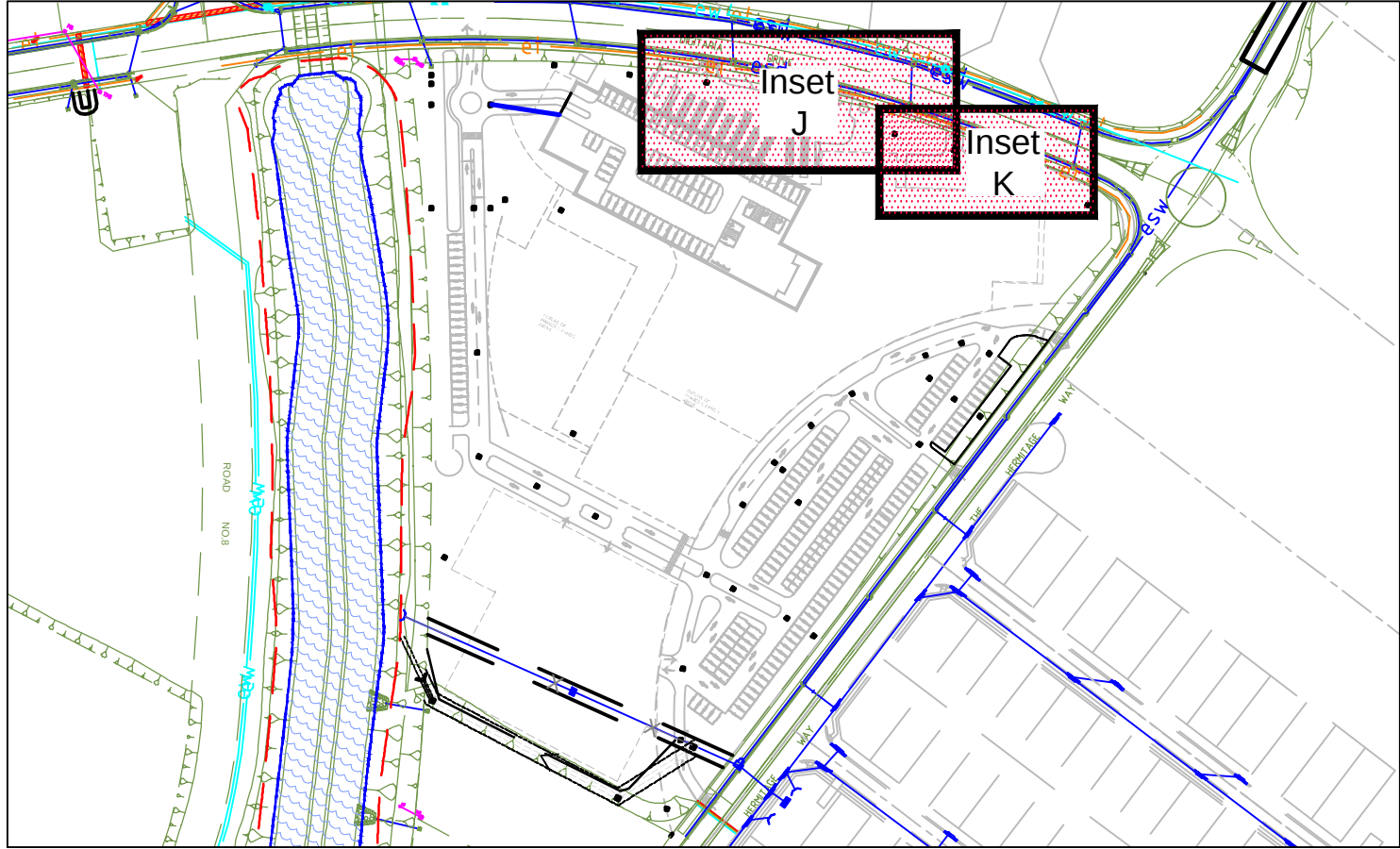
NOTE:
Background volumes have only been included for the intersections along Gregory Hills Drive and The Hermitage Way, due to the Carbro report only including data for the following intersections:
- Camden Valley Way/Gregory Hills Drive
- Gregory Hills Drive/Hermitage Way
- Gregory Hills Drive/Central Hills Drive
- Gregory Hills Drive/Donovan Boulevard
- The Hermitage Way/Digitalia Drive/South Spine Road
Refer to the background traffic study for further details.
Any minor discrepancies in traffic volumes are due to rounding errors (all values rounded upwards).

Developments Included:

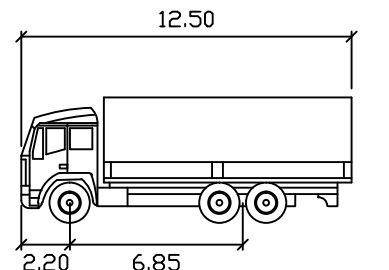
2026 Background Volumes	Yes
Bulky Goods Centre	Yes
Health Hub	Yes
Entertainment & Leisure Precinct	Yes
Hospital	Yes
Children's Hospital	Yes
Lot 801	Yes
Lots 802 - 805	Yes
Lots 824 - 830	Yes
Lots 835 - 840	Yes



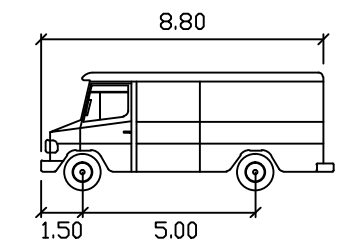
Appendix I. Turning Paths



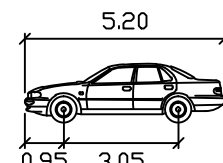
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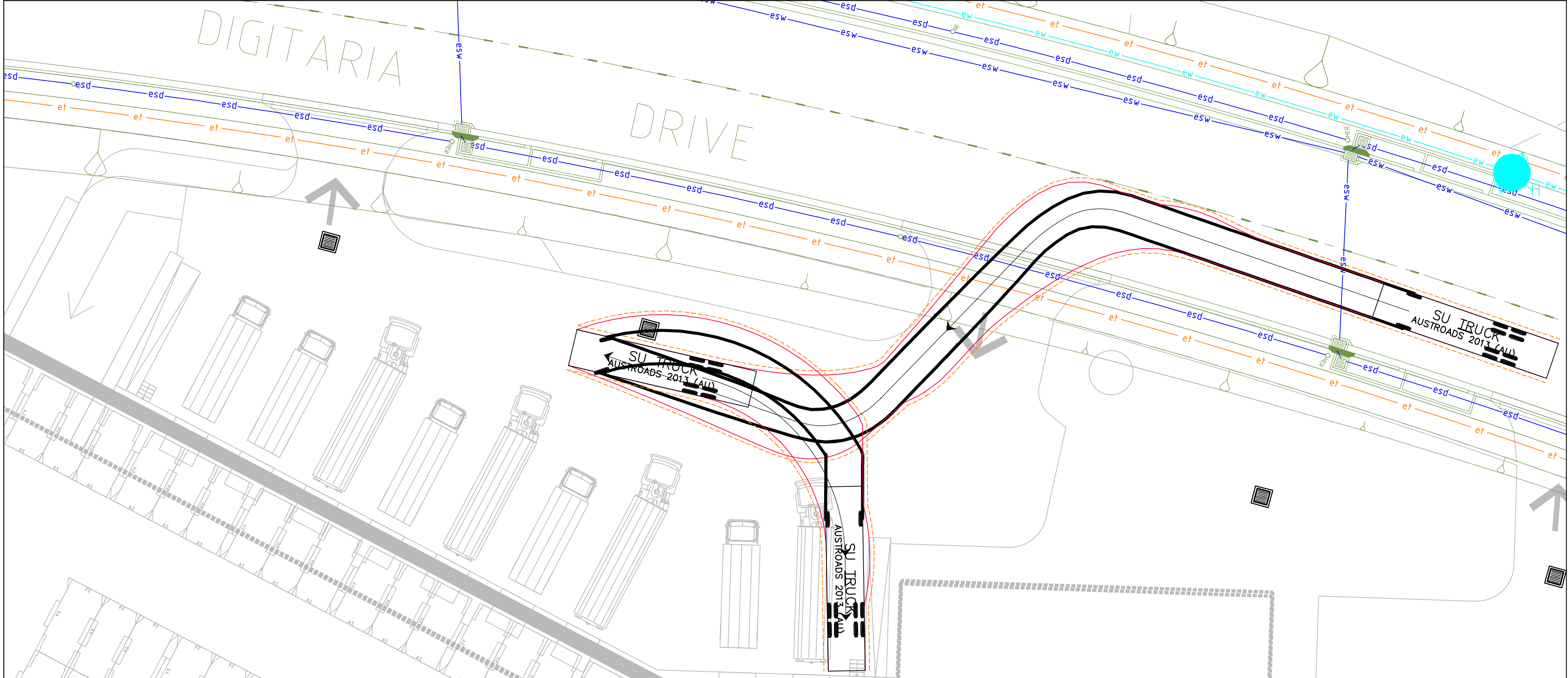
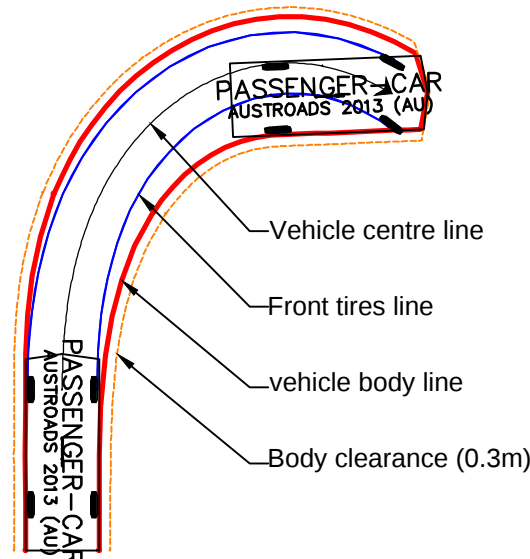
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Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 36.6



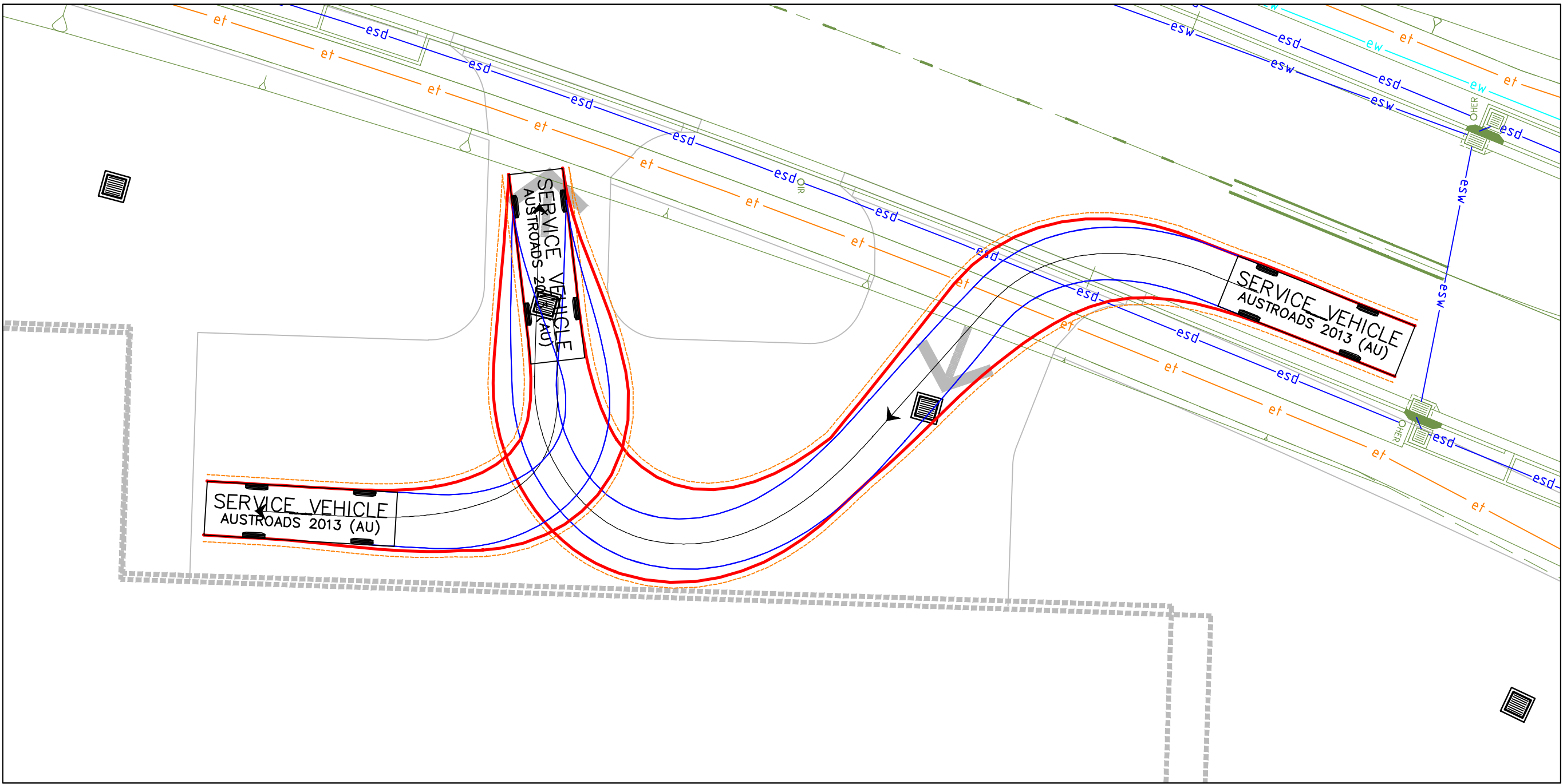
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Steering Angle : 38.7



Passenger-car meters
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Lock to Lock Time : 6.0
Steering Angle : 33.6



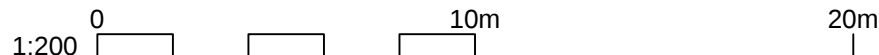
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P1	22.04.16	AMP	Issued Client Review	SR	X



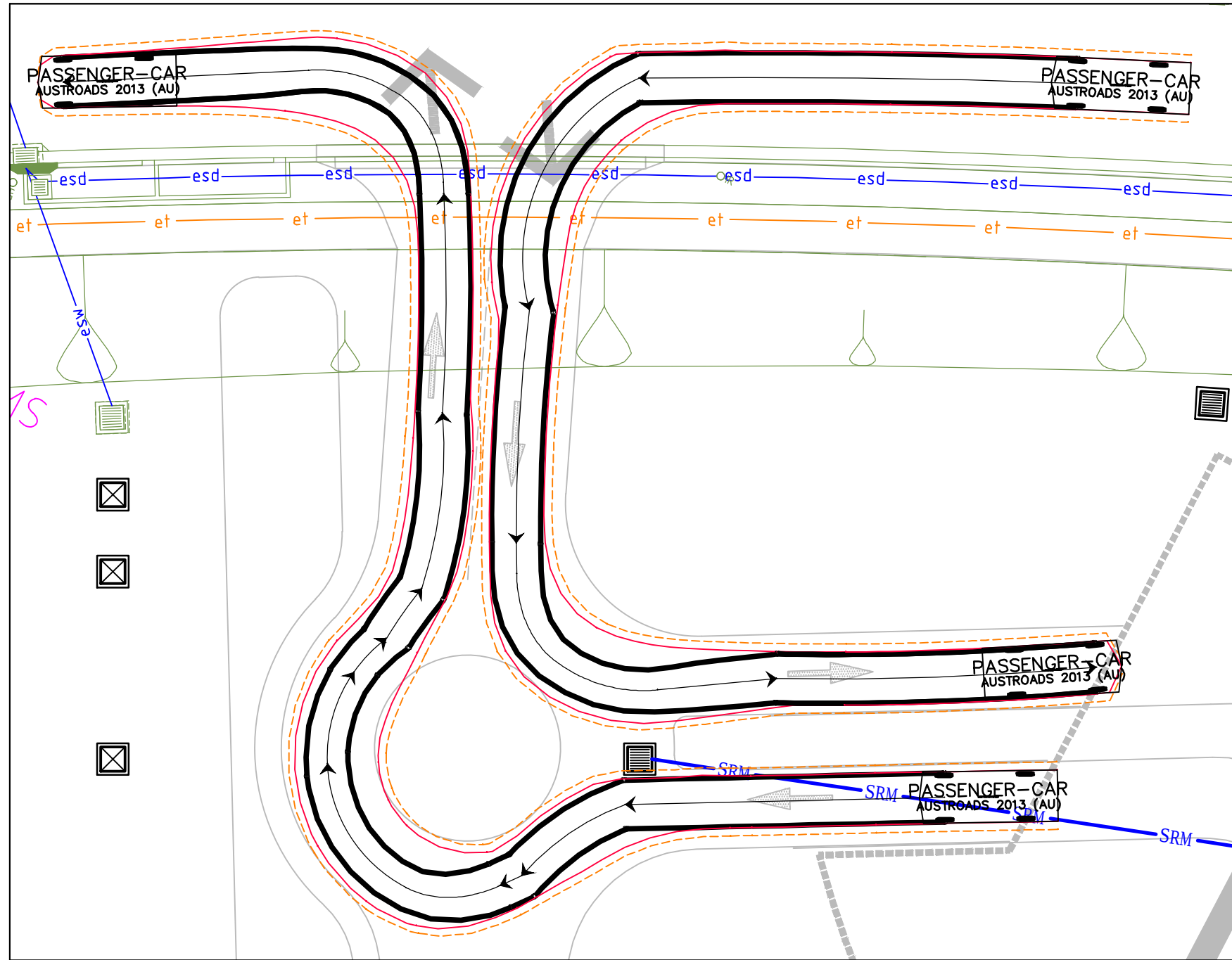
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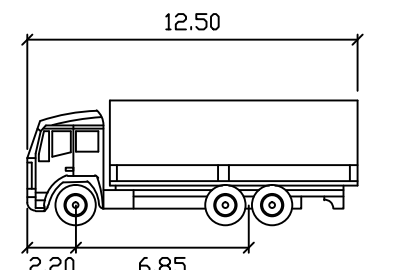
Title
Gregory Hills Corporate Park
Camden Medical Campus
Civil Works
Simulated Vehicle Manoeuvres
Sheet 4

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Drawn	A Paciben	06.05.16	Coordination	S Reilly	06.05.16
Dwg check	G Collins	06.05.16	Approved	C. Avis	06.05.16
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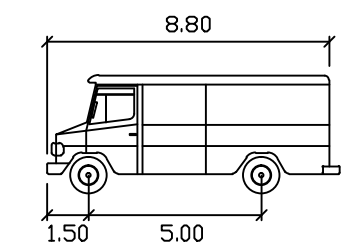
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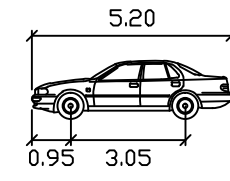
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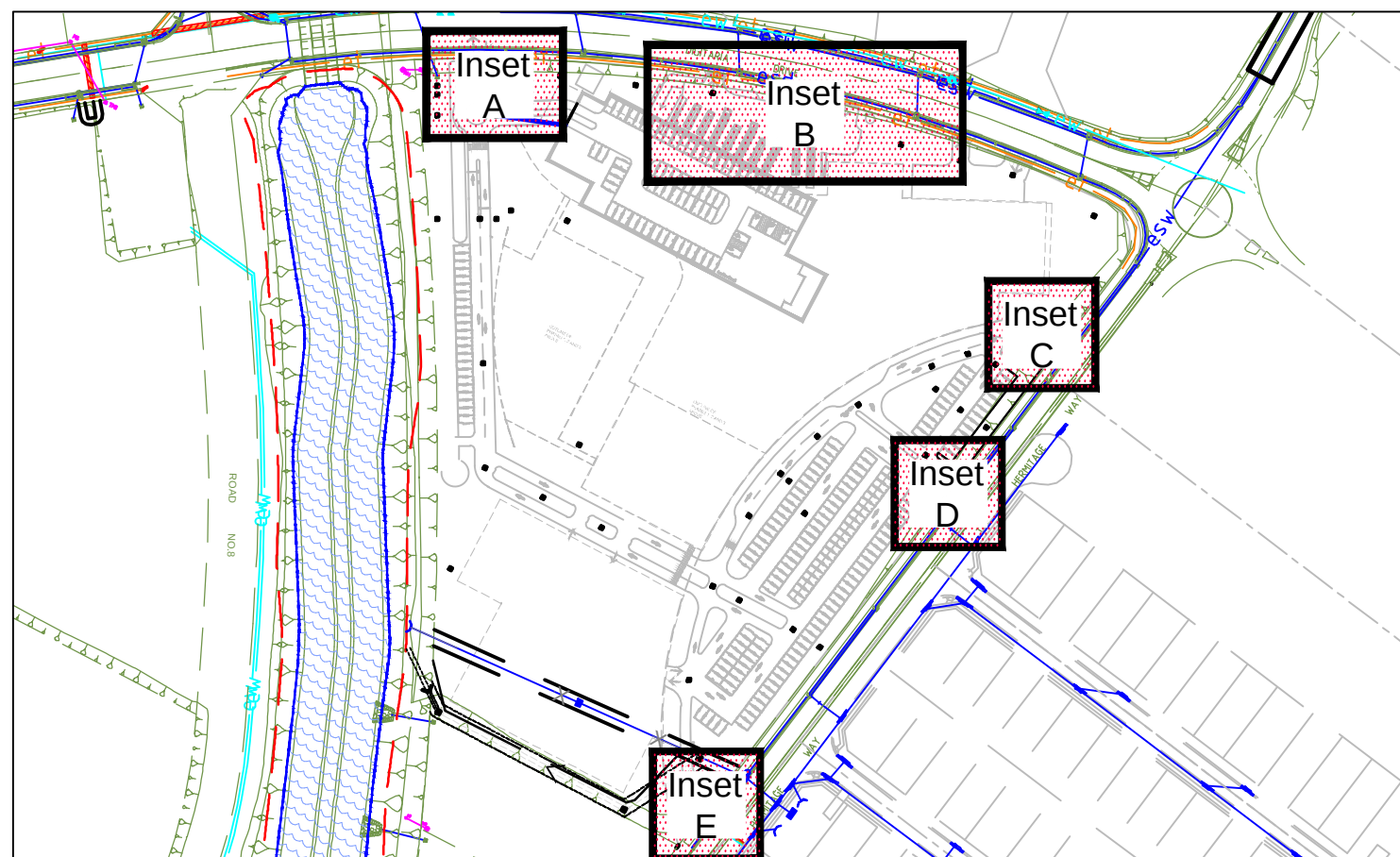
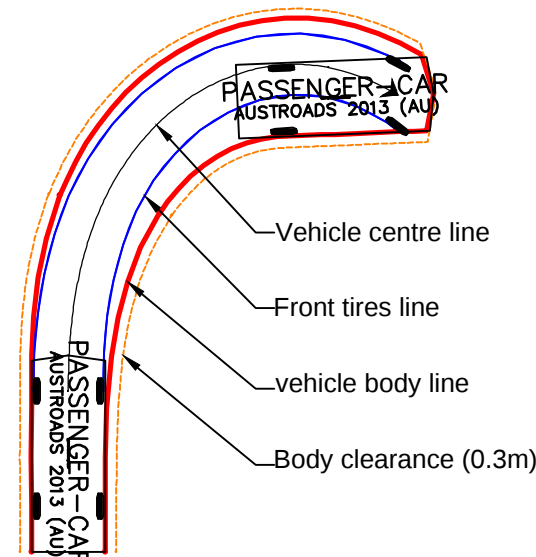
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Steering Angle : 35.6



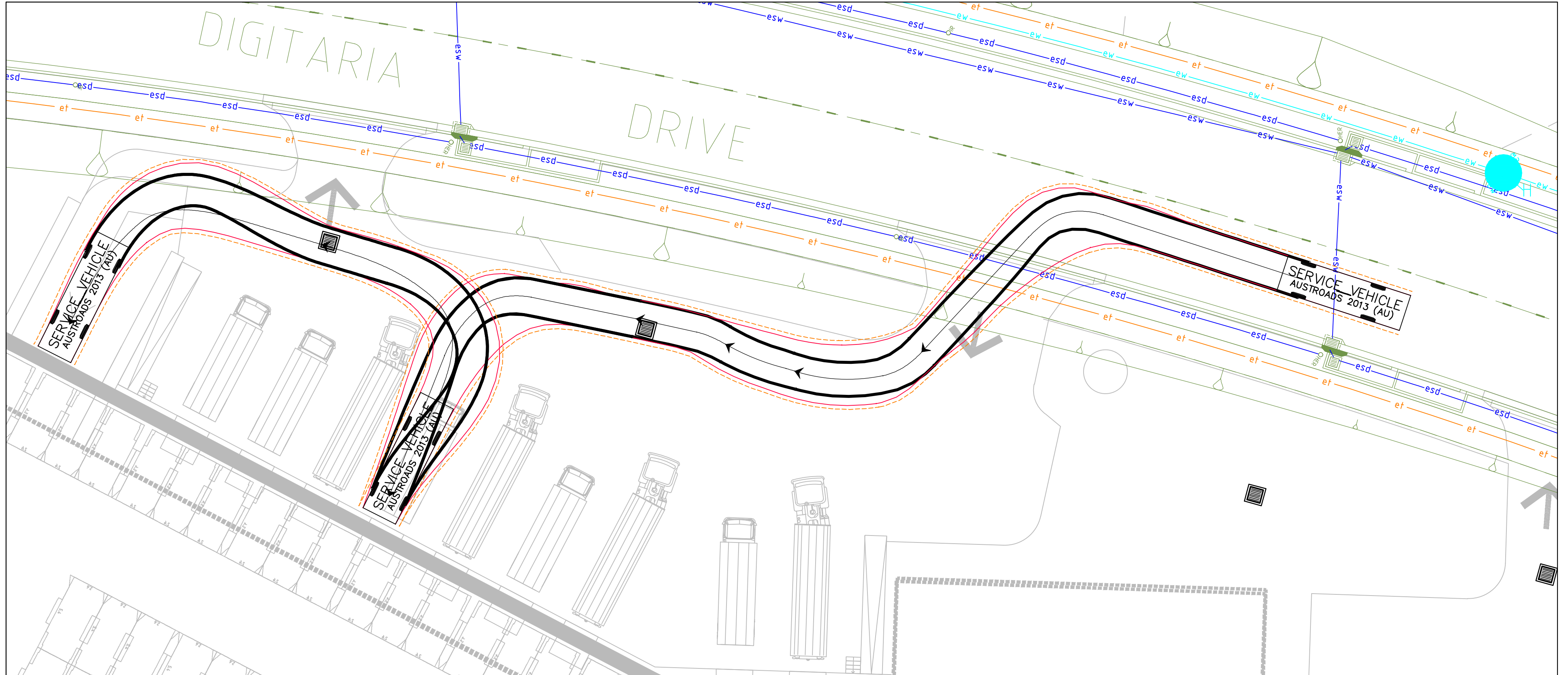
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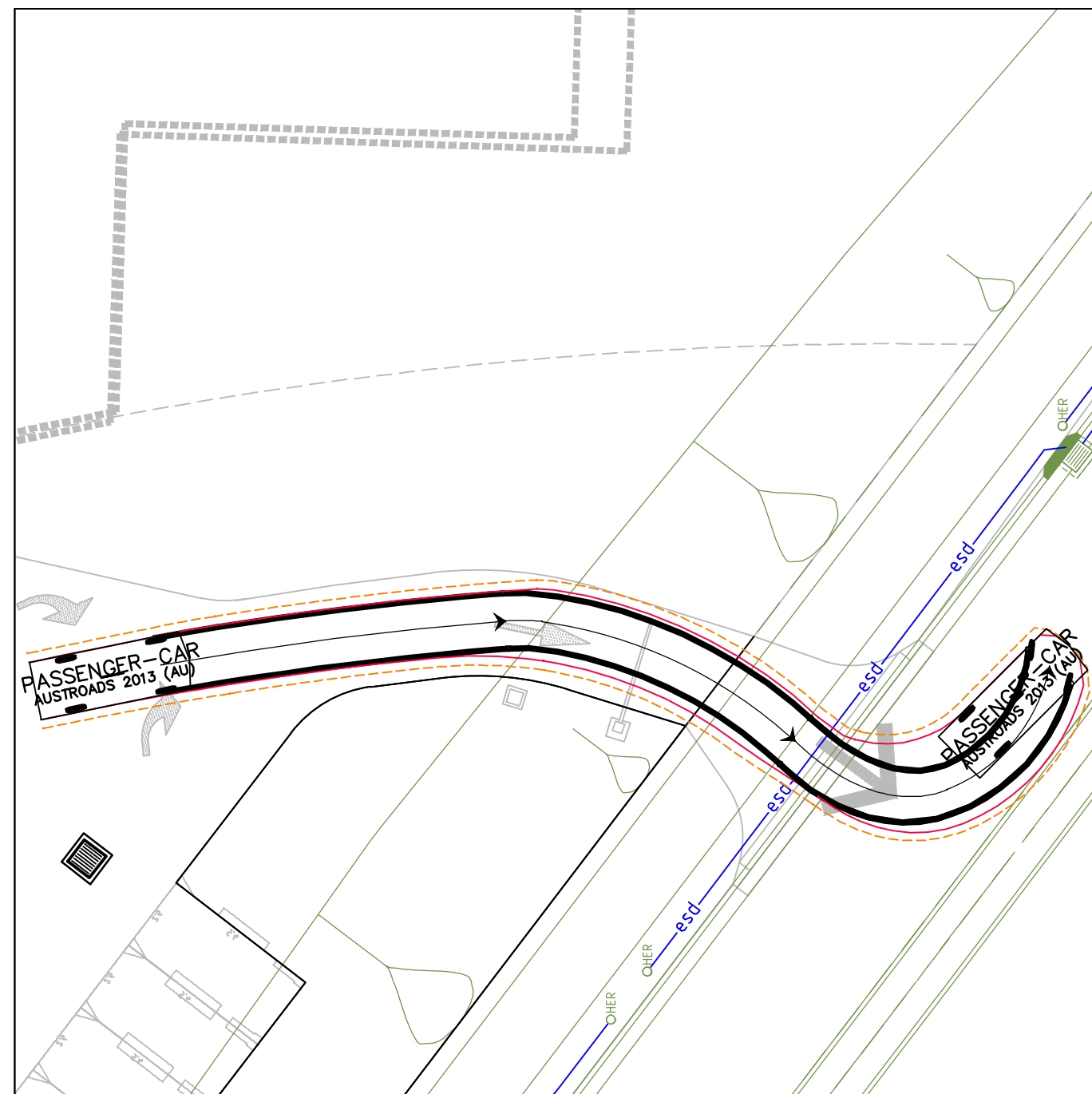
Passenger-car meters
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Lock to Lock Time : 6.0
Steering Angle : 33.6



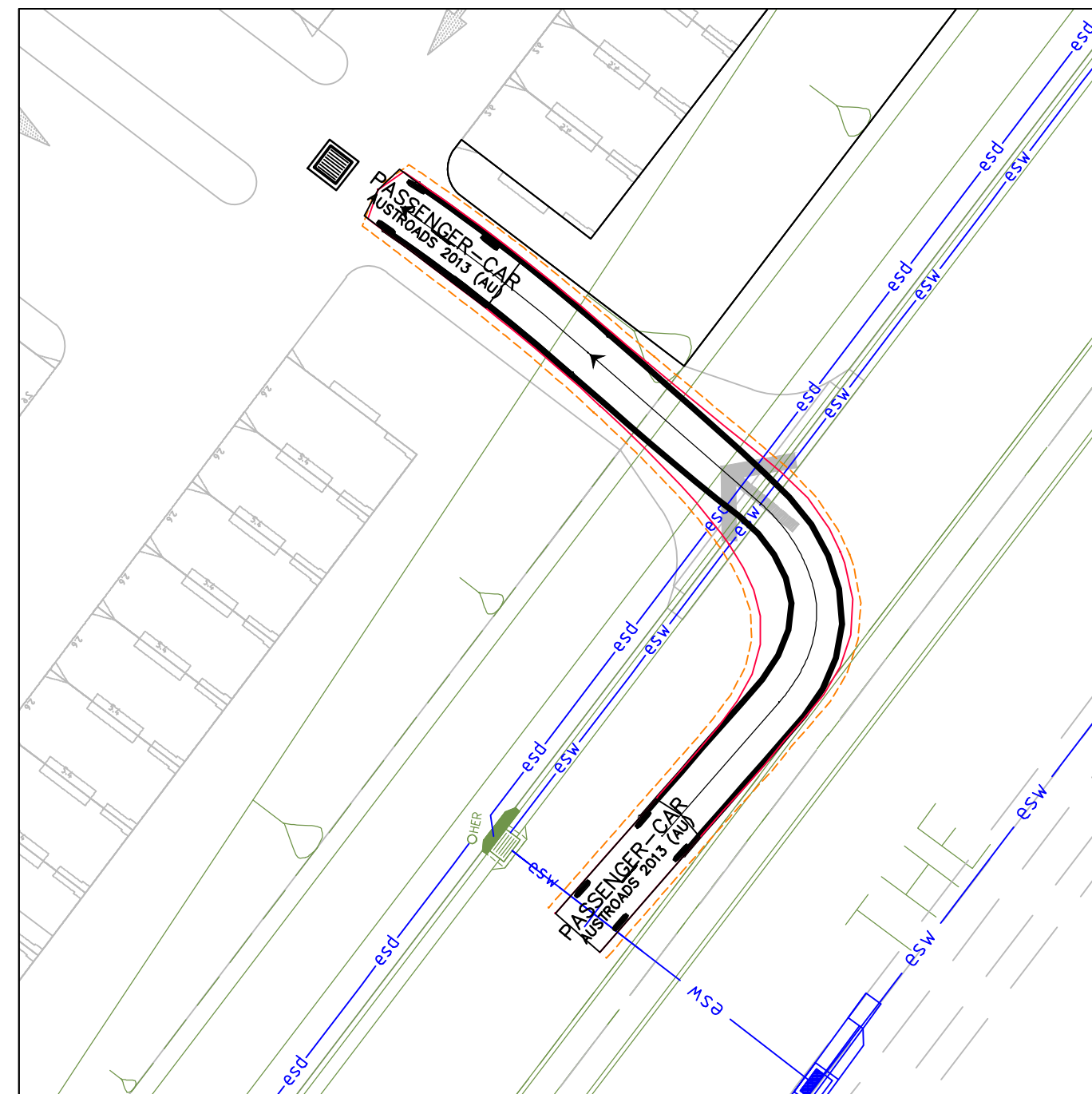
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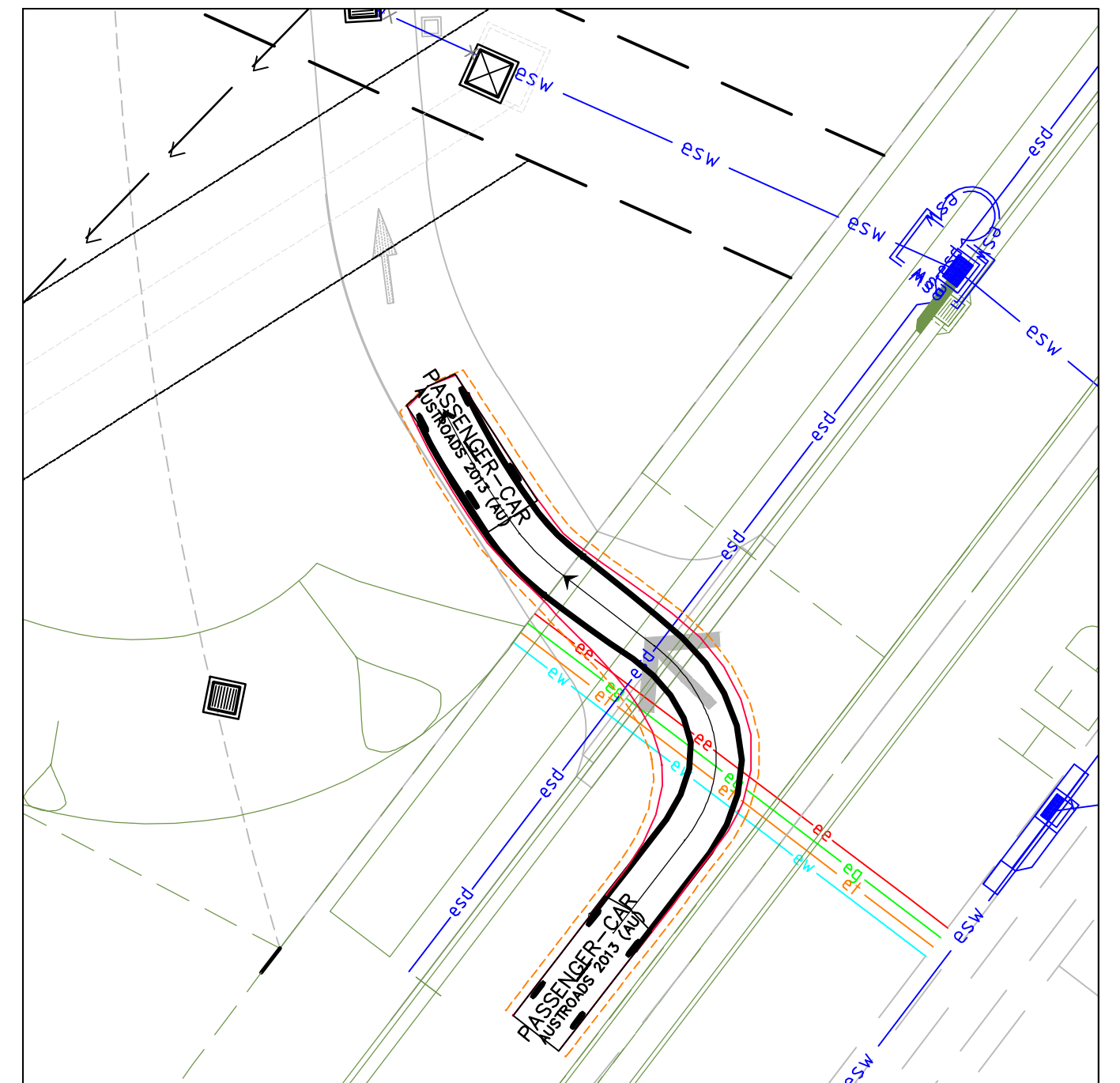
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P3	11.05.16	AMP	Issued for Approval - Minor Amendments	SR	CJA
P2	06.05.16	AMP	Issued for Approval	SR	CJA
P1	22.04.16	AMP	Issued Client Review	SR	X

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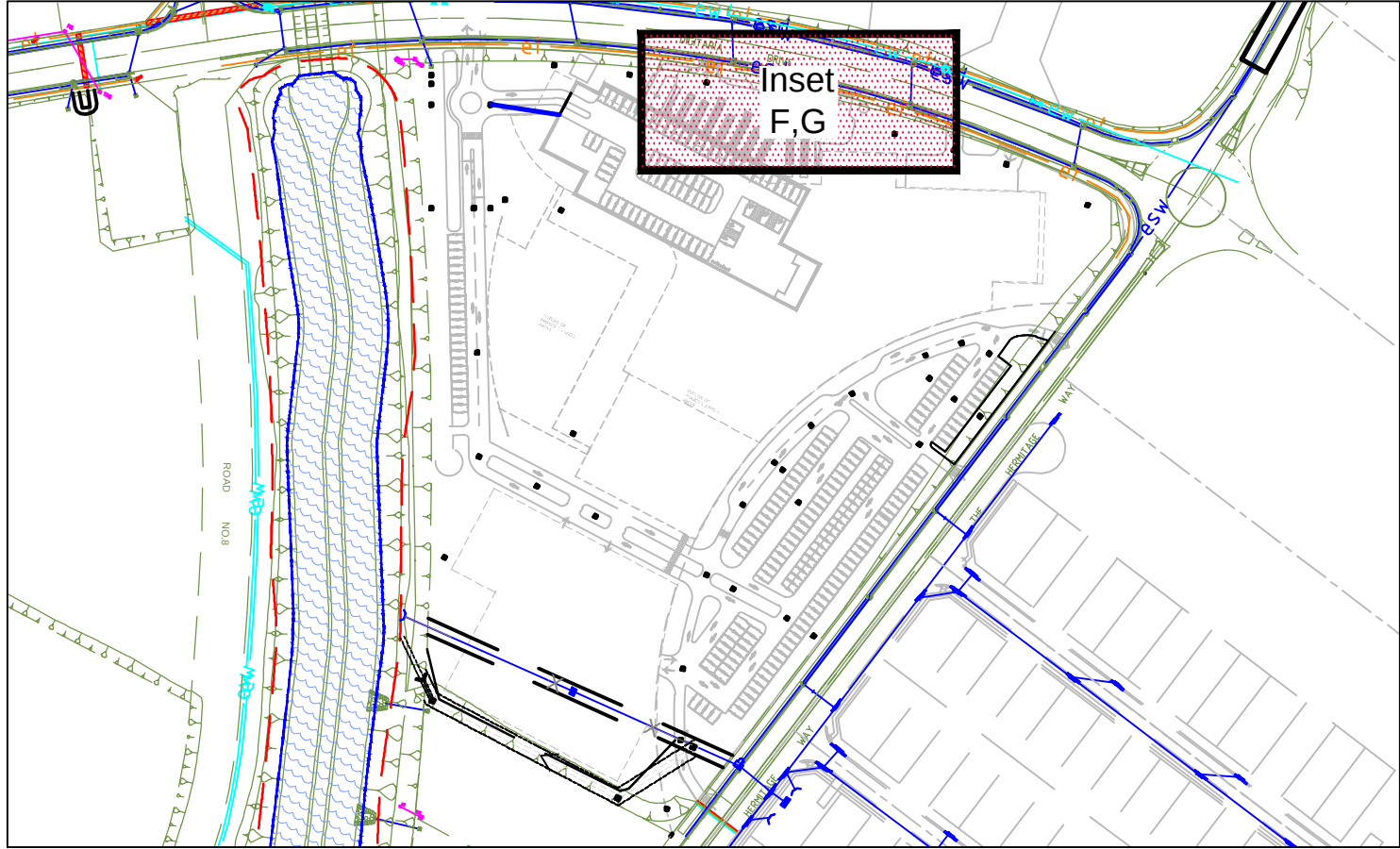


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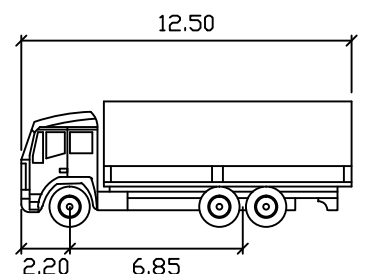
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Gregory Hills
Development Company
Pty Ltd

Title
Gregory Hills Corporate Park
Camden Medical Campus
Civil Works
Simulated Vehicle Manoeuvres
Sheet 1

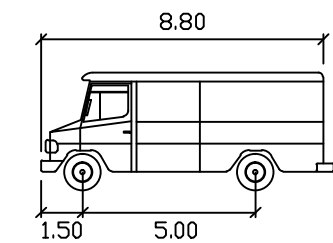
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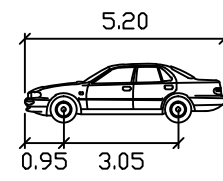
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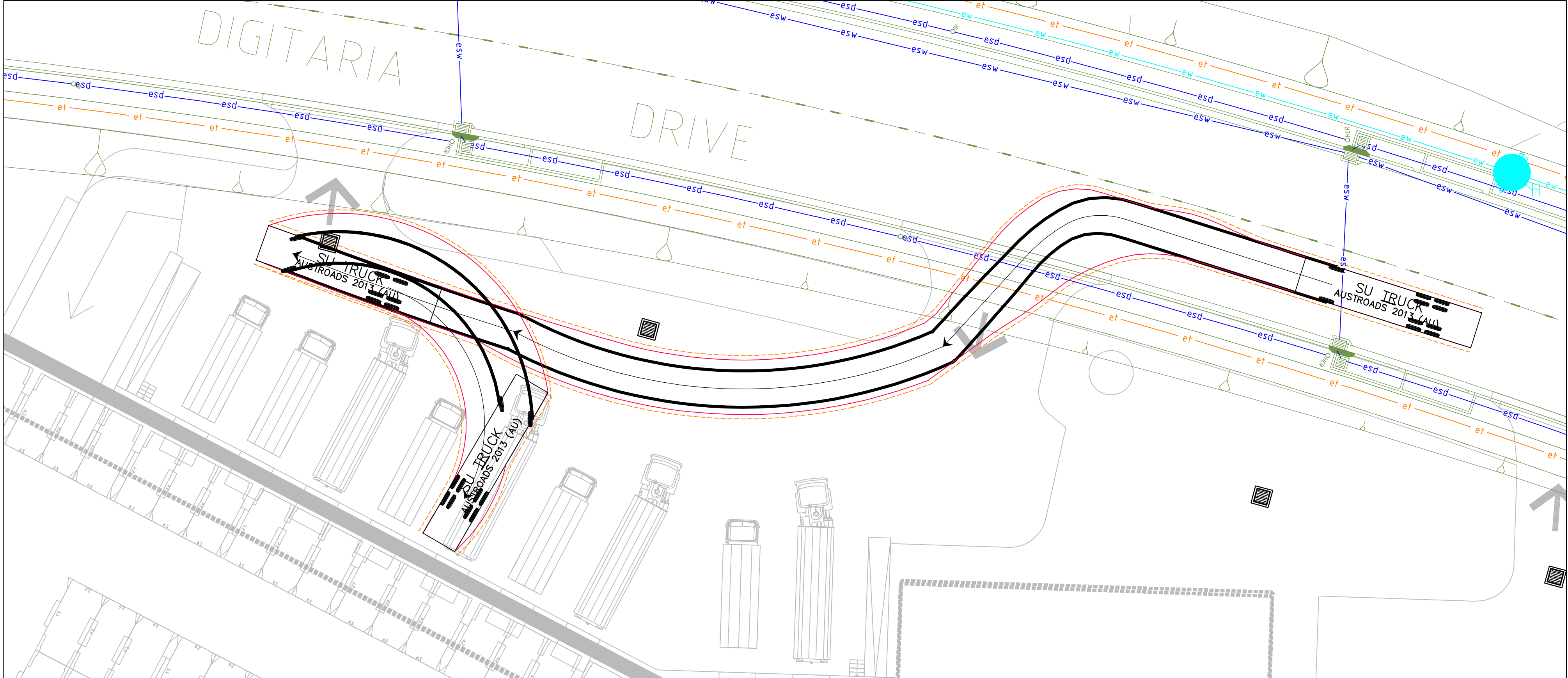
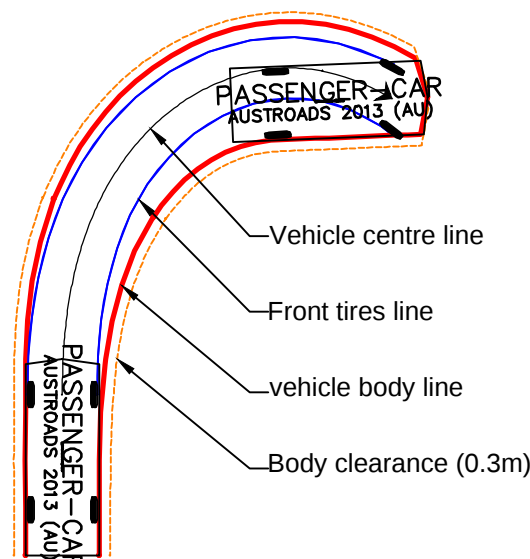
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Steering Angle : 36.6



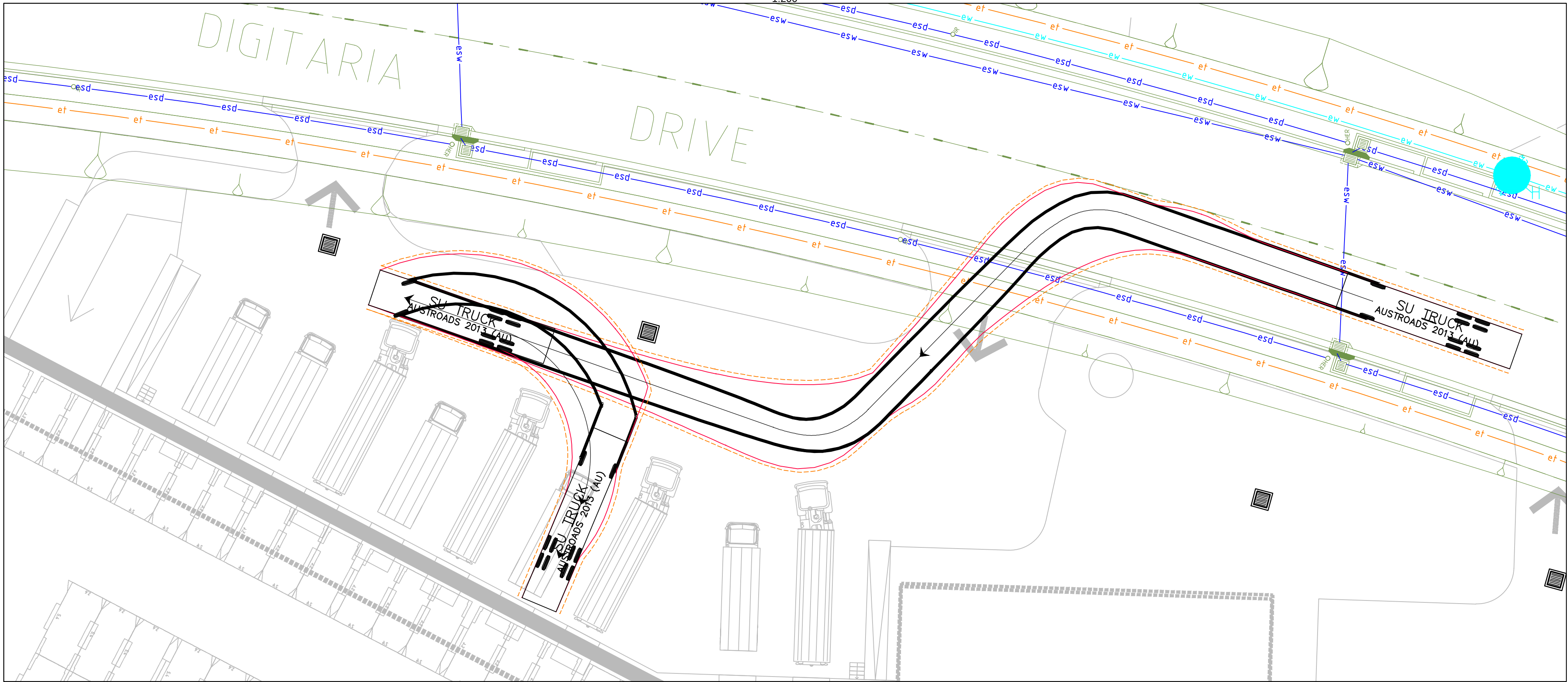
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Passenger-car meters
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Lock to Lock Time : 6.0
Steering Angle : 33.6



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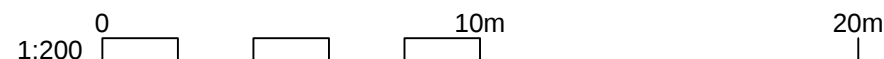


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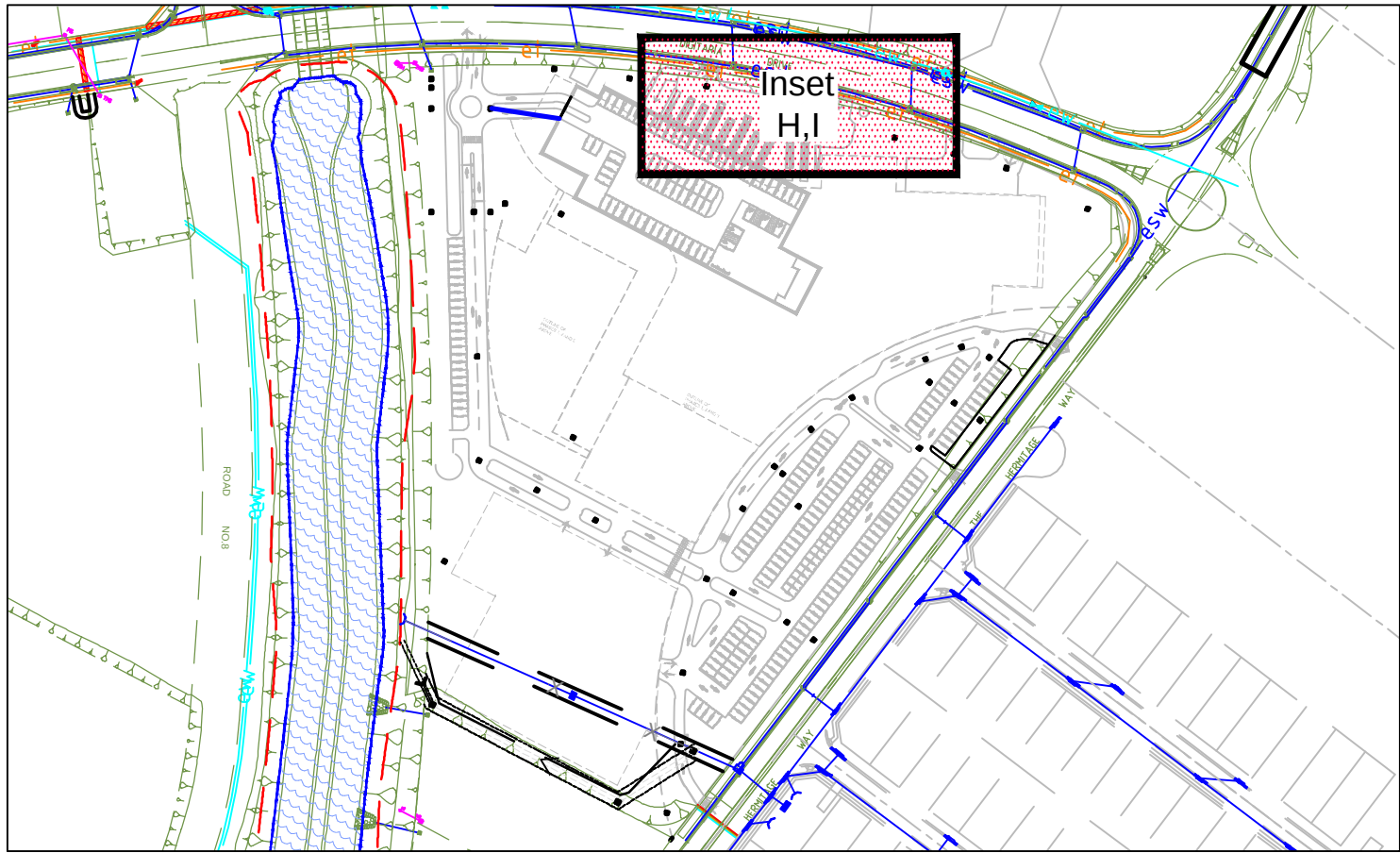


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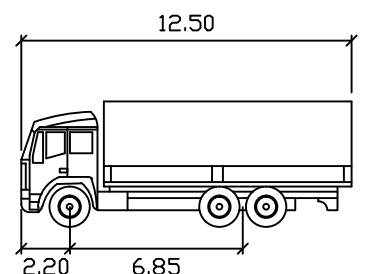
Client
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Development Company
Pty Ltd

Title
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Camden Medical Campus
Civil Works
Simulated Vehicle Manoeuvres
Sheet 2

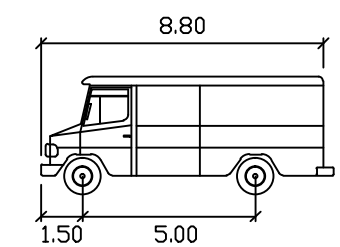
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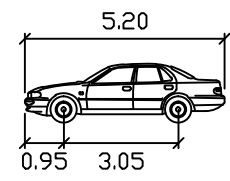
Key Plan
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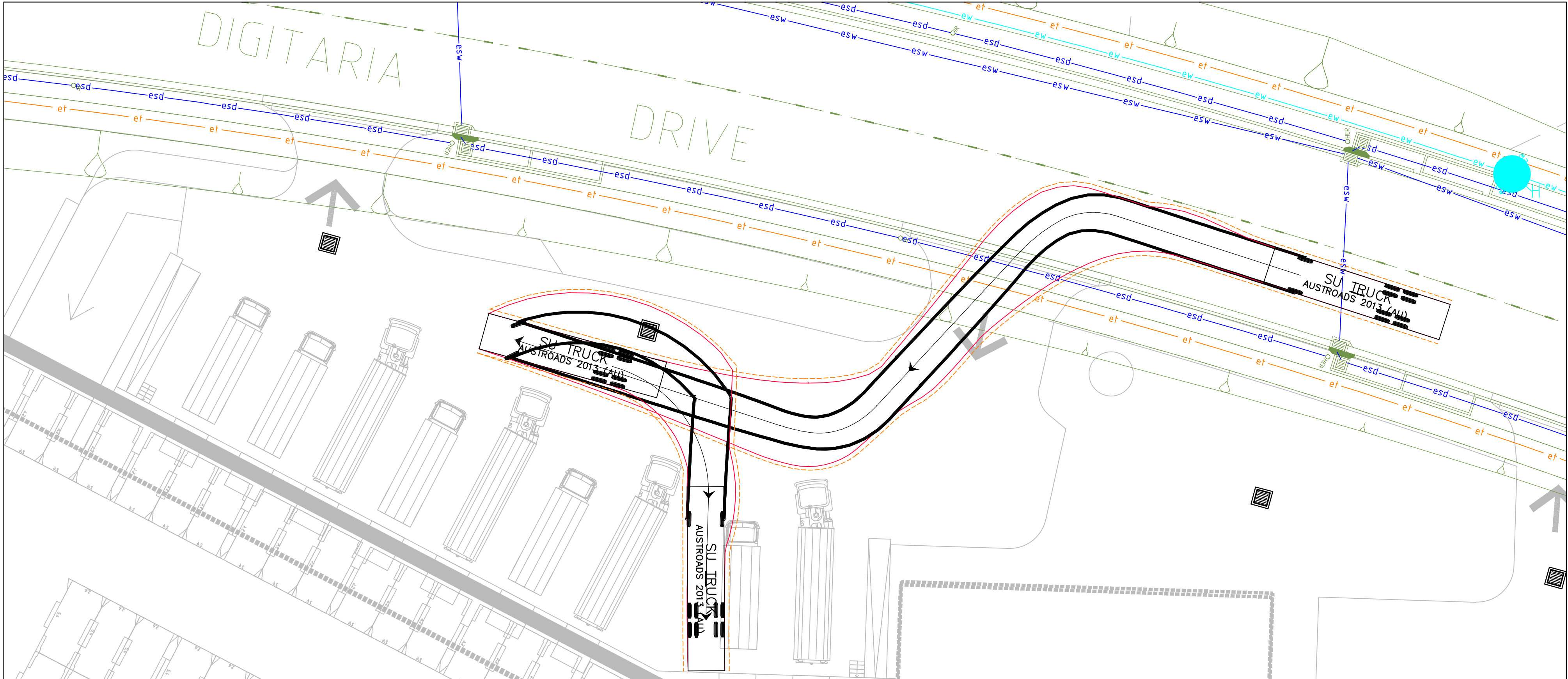
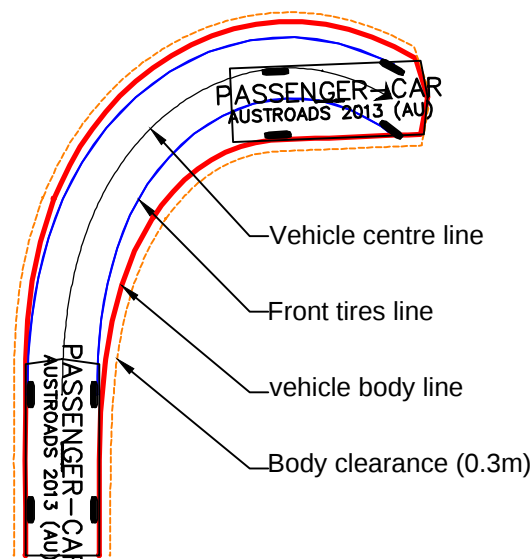
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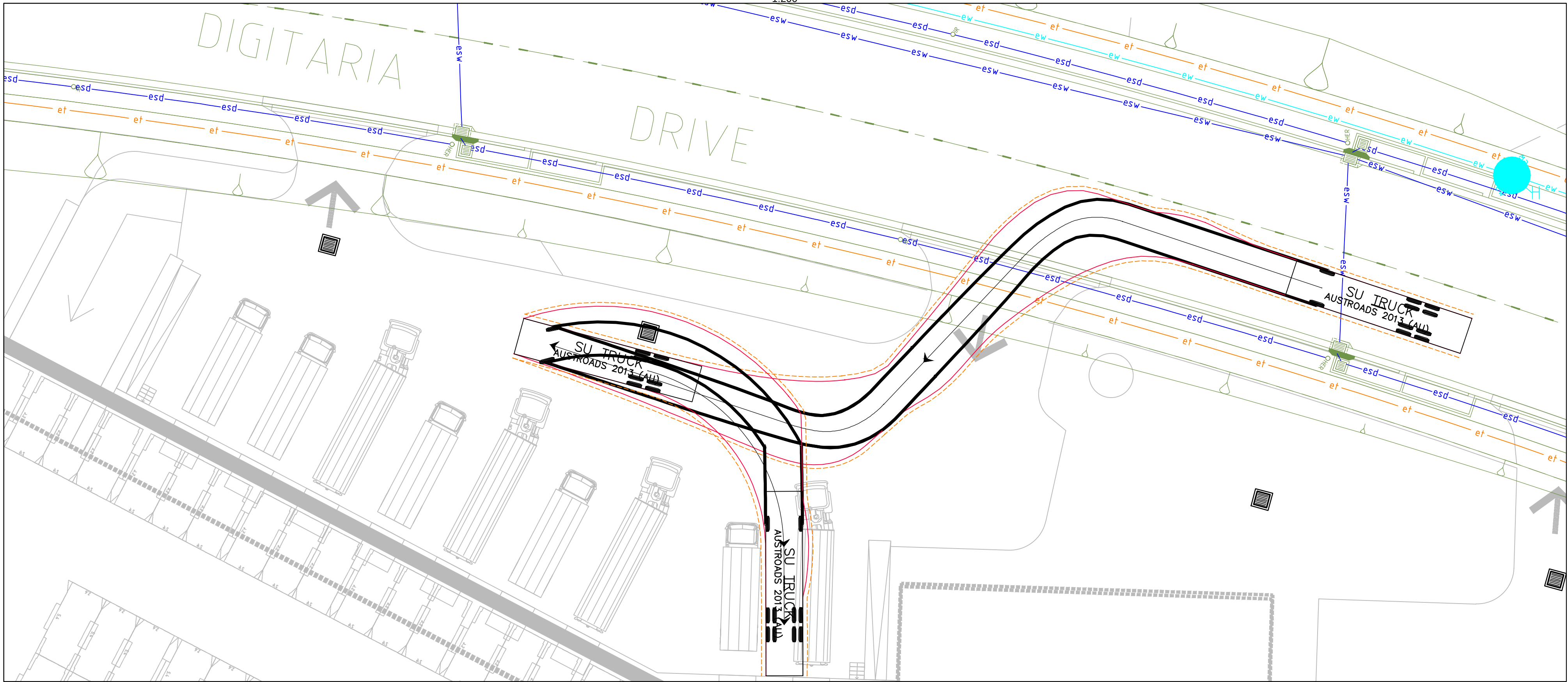
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Passenger-car meters
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Track : 1.84
Lock to Lock Time : 6.0
Steering Angle : 33.6



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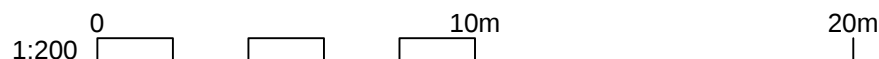


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P1	22.04.16	AMP	Issued Client Review	SR	X



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Pty Ltd

Title
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Civil Works
Simulated Vehicle Manoeuvres
Sheet 3

Designed	C Keenan	06.05.16	Eng check	S Reilly	06.05.16
Drawn	A Paciben	06.05.16	Coordination	S Reilly	06.05.16
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Scale at A1	1:200	Status	PRE	P4	STD
Drawing Number	MMD-368851-C-DR-CA-DA-0182				

Appendix J. Gregory Hills Drive Extension Information



The Hon Brad Hazzard MP

Minister for Planning and Infrastructure

Minister Assisting the Premier on Infrastructure NSW

Mr Chris S. Patterson MP
Member for Camden
66 John Street
CAMDEN NSW 2570



13/18661

Dear Mr Patterson

I refer to your representations on behalf of the Management of the Gregory Hills Corporate Park to the Minister for Ports and Roads. The Minister for Ports and Roads has referred your letter to me in relation to the extension of Badgally Road from Campbelltown to Camden Valley Way and extension of Gregory Hills Drive to Eagle Vale Drive.

The infrastructure planning for the South West Growth Centre includes the extension of Badgally Road from Eagle Vale Drive to Camden Valley Way (now known as Gregory Hills Drive). The delivery of Gregory Hills Drive is secured by a planning agreement between the Minister for Planning and Infrastructure and Dart West Developments Pty Limited.

I am pleased to advise that the Department of Planning and Infrastructure is currently renegotiating the existing planning agreement with Dart West Developments to expedite the delivery of Gregory Hills Drive. Dart West Developments anticipate the road will be open to traffic in 2-3 years.

Badgally Road currently extends from Farrow Road, Campbelltown to Eagle Vale Drive, Eagle Vale. Infrastructure works to support growth, including upgrading this road, will be reviewed as part of the Department's work on regional infrastructure contributions under the new planning system.

I understand that the Roads and Maritime Service are responding to your query regarding installation of traffic signals at the corner of roads 1501 and 1601.

Please contact Mr Terry Natt, Director, Growth Infrastructure Funding of the Department of Planning and Infrastructure on (02) 9228 6571 if further assistance is required.

Yours sincerely

HON BRAD HAZZARD MP
Minister

cc: Manager Customer Relations and Government Services
Transport for NSW

25 FEB 2014