Appendix G CSRM 2021 Saturn Forecast Results

Technical note

Project:	Northstowe	**To:**	WSP Basingstoke
Subject:	2021 Do Minimum and Do Something Results	**From:**	Atkins
Date:	25 Oct 2011	**cc:**	Gerry Corrance, CCC

1. Introduction

This note provides 2021 Do Minimum and Do Something modelling results from the Cambridge Sub-Regional Model (CSRM) commissioned for this project.

The requested data consists of:

- Link flows at 35 locations;
- Slip Road flows at 5 locations;
- Turning movements at 14 junctions; and
- Weaving movements at 3 locations.

The data requests were received in the form of a drawing from WSP, entitled “Phase 1 CSRM Output”, and a technical note from AECOM, entitled “DC001 Tech Note 01 16092011”.

Further data has been requested for the Environmental Assessment: this consists of speed data on 16 links as specified on the drawing provided by WSP entitled “Environmental Assessment Road Link References”. This data is provided for the AM Peak, Inter Peak and PM Peak models, Do Minimum and Do Something.

In addition, the total matrix sizes and overall network statistics have been provided, to allow conclusions to be drawn about the impact of the Northstowe development on the model as a whole.

2. Data

2.1. Link Flows

Table 2 shows the link flows (including % HGV) at each location specified on the drawing “Phase 1 CSRM Output” provided by WSP. An additional link has been included (not shown on the drawing): this is School Lane in Longstanton, and has been assigned the Link ID 38. The link flow data is provided in PCUs/hour.

2.2. Slip Road Flows

Table 3 shows the slip road flows at the requested locations (including % HGV). This flow data is provided in PCU/hr.

2.3. Turning Movements

Figures 3 to 56 show the turning movements (in PCUs) for each of the requested locations. These junctions have been assigned numerical identifiers as defined in Table 1 below. This turning movement flow data is provided in PCUs/hour.

Table 1. Junction IDs

ID	Description
1	Willingham crossroads: B1050 / Berrycroft / Over Road
2	B1050 Longstanton Bypass / Ramper Road
3	B1050 Longstanton Bypass / Station Road
4	B1050 / Northstowe Access (not built in the Do Minimum scenario)
5	B1050 Longstanton Bypass / Hatton's Road
6	A14 Jn28 northern junction
7	A14 Jn28 southern roundabout
8	A14 Jn29 northern roundabout
9	A14 Jn29 southern roundabout
10	A14 Jn30 northern junction
11	A14 Jn30 southern junction
12	Oakington crossroads: Dry Drayton Road / Cambridge Road
13	Cambridge Road / Park Lane (between Oakington and Girton)
14	Oakington Road / Rampton Road (Cottenham)

2.4. Weaving Movements

Figures 1 and 2 below show definitions of the weaving movements that have been requested. Table 4 provides the total hourly flows (in PCUs/hr) at each weaving location and the percentage of these movements that are weaving.

2.5. Speed Data

Table 5 shows the link cruise speeds (in kph) at each location specified on the drawing “Environmental Assessment Road Link References”.

2.6. Matrix Totals

The matrices have been sectored into three parts, comprising Northstowe, Cambridge and the rest of the model. These sectored matrices are provided in Table 6 (AM Do Minimum), Table 7 (AM Do Something), Table 8 (PM Do Minimum) and Table 9 (PM Do Something).

Overall, these matrices show a reduction in total highway trips to/from Cambridge and the rest of the model, with an increase in trips to/from Northstowe (as expected). The total matrix sizes have increased slightly.

2.7. Network Statistics

Table 10 shows the overall network summary statistics for each of the four models. This table shows that, in both the AM and PM peak hours, the total travel time and total travel distance have decreased slightly. The average speed has increased marginally in the AM peak and remained unchanged in the PM peak.

This suggests that while the total matrix sizes have increased, the average trip length has decreased and the network is slightly less congested overall. This is mainly due to the abstraction of trips from Cambridge city. It should be noted that the local roads around Northstowe have experienced significant increases in traffic flow, particularly the B1050 between Northstowe and Bar Hill.

Figure 1. Weaving Locations 1 and 2

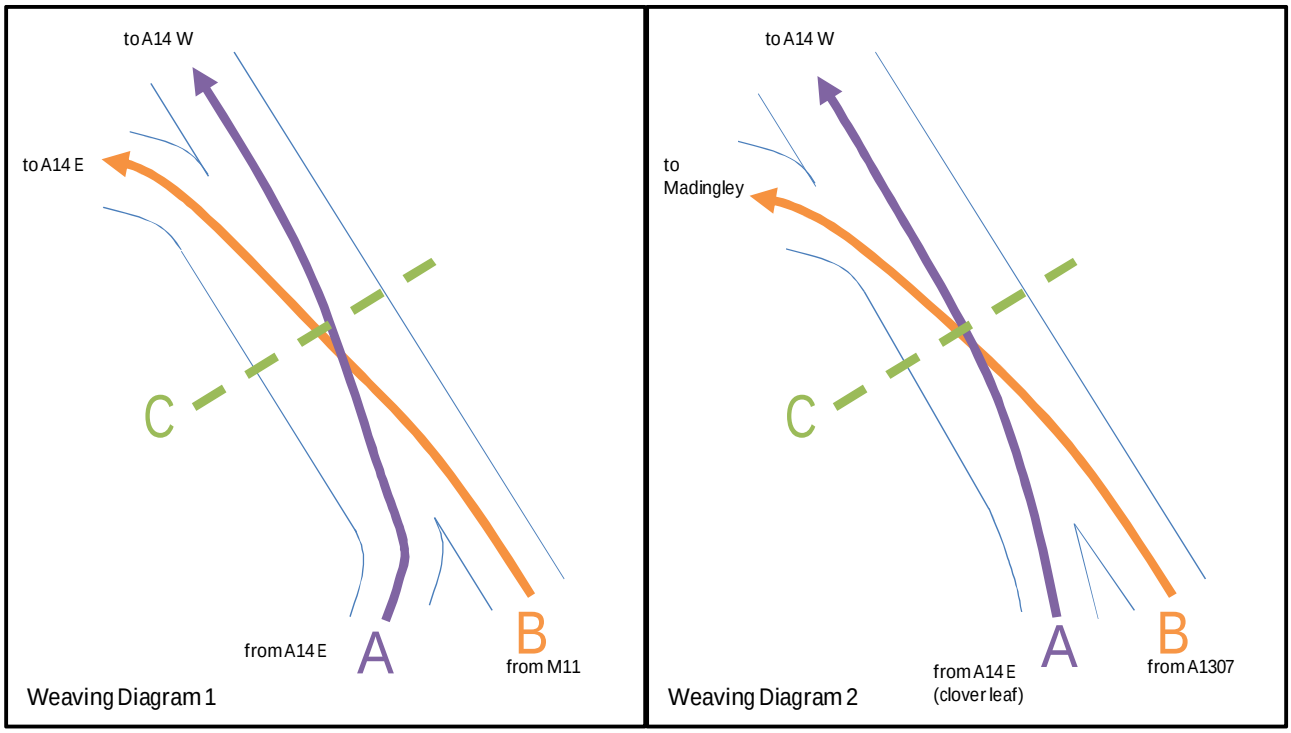

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Figure 2. Weaving Location 3

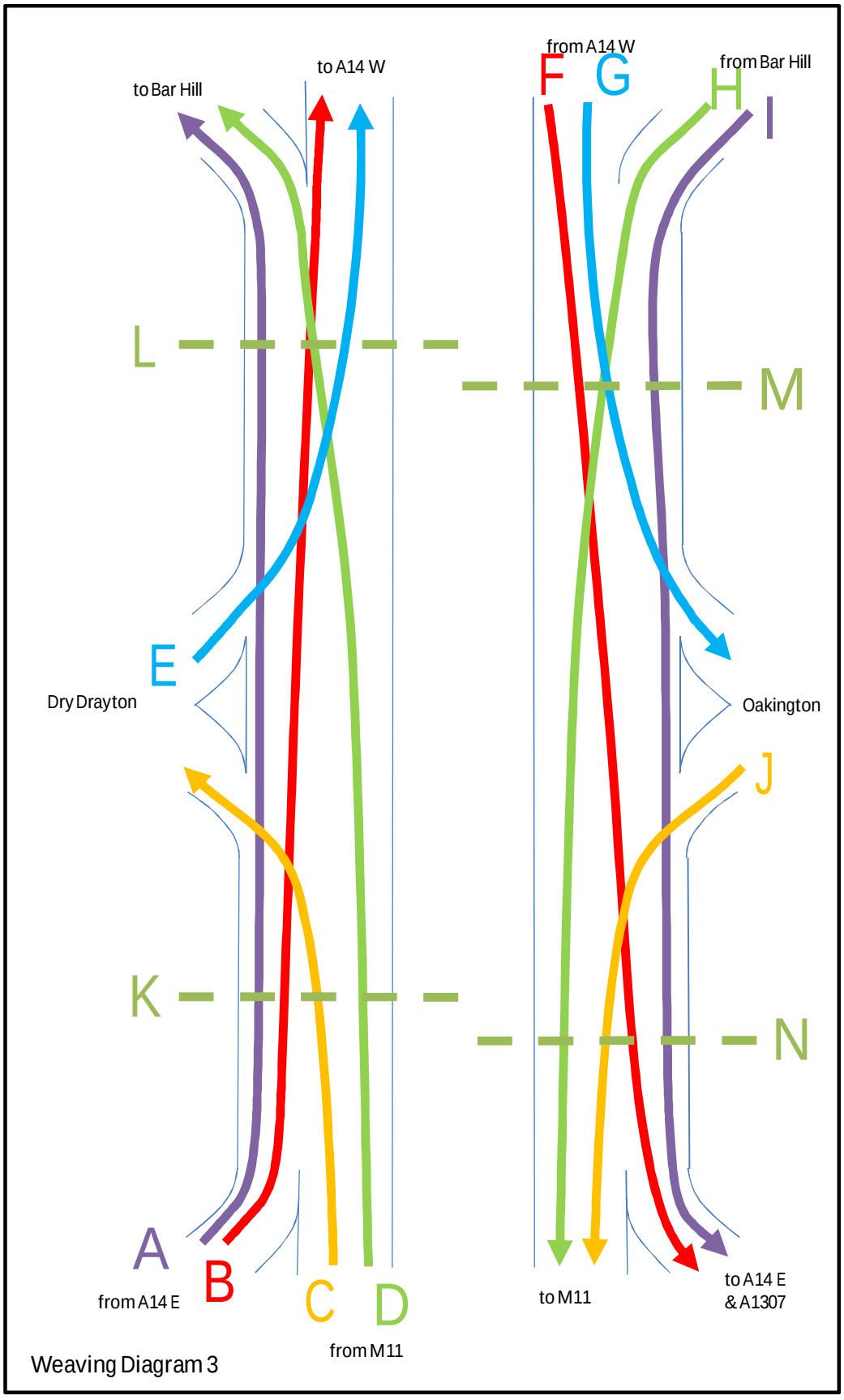

Table 2. Link Flows in PCUs/hr (with % HGVs)

Link ID	AM Do Minimum	PM Do Minimum	AM Do Something	PM Do Something
1 EB	105 (2%)	150 (2%)	133 (2%)	180 (1%)
1 WB	97 (1%)	123 (3%)	100 (1%)	130 (3%)
2 NB	373 (13%)	699 (8%)	395 (11%)	650 (8%)
2 SB	618 (11%)	415 (14%)	610 (11%)	465 (10%)
3 EB	382 (2%)	182 (5%)	398 (2%)	195 (5%)
3 WB	184 (5%)	314 (3%)	190 (7%)	386 (3%)
4 NB	110 (5%)	99 (20%)	131 (4%)	142 (12%)
4 SB	94 (20%)	99 (7%)	111 (14%)	123 (4%)
5 NB	339 (13%)	769 (4%)	404 (10%)	795 (4%)
5 SB	723 (7%)	488 (12%)	904 (6%)	573 (9%)
6 NB	66 (2%)	195 (2%)	72 (2%)	135 (2%)
6 SB	225 (2%)	99 (4%)	218 (2%)	107 (4%)
7 EB	107 (6%)	121 (5%)	98 (6%)	223 (2%)
7 WB	92 (4%)	74 (4%)	161 (2%)	118 (2%)
8 NB	57 (9%)	188 (9%)	80 (7%)	263 (6%)
8 SB	119 (9%)	115 (9%)	123 (8%)	102 (10%)
9 NB	153 (9%)	393 (4%)	190 (7%)	528 (2%)
9 SB	391 (2%)	238 (1%)	459 (1%)	269 (1%)
10 NB	521 (11%)	1122 (4%)	620 (9%)	1197 (3%)
10 SB	1078 (6%)	710 (10%)	1285 (5%)	832 (8%)
14 NB	362 (9%)	351 (11%)	373 (8%)	336 (12%)
14 SB	251 (31%)	234 (18%)	288 (27%)	224 (19%)
15 NB	297 (5%)	329 (8%)	308 (5%)	314 (9%)
15 SB	180 (21%)	186 (8%)	216 (18%)	175 (9%)
16 EB	66 (40%)	29 (31%)	66 (40%)	29 (31%)
16 WB	13 (24%)	50 (21%)	13 (24%)	50 (21%)
17 EB	703 (8%)	641 (7%)	706 (9%)	621 (7%)
17 WB	880 (9%)	789 (9%)	877 (8%)	760 (9%)
18 NB	361 (6%)	484 (6%)	366 (6%)	484 (6%)
18 SB	647 (4%)	412 (3%)	653 (4%)	423 (3%)
19 EB	310 (13%)	323 (13%)	305 (15%)	308 (13%)
19 WB	669 (11%)	500 (13%)	659 (11%)	485 (13%)
20 NB	322 (21%)	751 (5%)	323 (20%)	789 (5%)
20 SB	665 (2%)	209 (1%)	666 (2%)	209 (1%)
21 NB	314 (8%)	405 (5%)	311 (8%)	397 (5%)
21 SB	449 (6%)	325 (5%)	451 (6%)	324 (5%)
22 NB	227 (16%)	421 (8%)	235 (16%)	419 (8%)
22 SB	669 (9%)	383 (11%)	673 (9%)	404 (11%)
23 EB	576 (3%)	342 (8%)	584 (3%)	357 (7%)
23 WB	374 (5%)	350 (7%)	372 (5%)	352 (7%)
24 EB	120 (3%)	167 (29%)	121 (3%)	167 (29%)
24 WB	244 (17%)	268 (2%)	241 (17%)	264 (2%)

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Link ID	AM Do Minimum	PM Do Minimum	AM Do Something	PM Do Something
25 NB	125 (0%)	228 (0%)	122 (0%)	225 (0%)
25 SB	301 (0%)	107 (0%)	293 (0%)	102 (0%)
26 NB	592 (20%)	914 (5%)	587 (19%)	938 (6%)
26 SB	986 (4%)	782 (4%)	986 (4%)	786 (4%)
27 EB	3764 (25%)	3676 (26%)	3765 (24%)	3677 (26%)
27 WB	3247 (32%)	3611 (25%)	3248 (32%)	3620 (25%)
28 EB	3422 (24%)	3458 (26%)	3425 (24%)	3465 (26%)
28 WB	3277 (32%)	3724 (24%)	3267 (32%)	3741 (24%)
29 EB	2742 (26%)	3820 (22%)	2744 (26%)	3798 (22%)
29 WB	3709 (27%)	3585 (24%)	3684 (27%)	3585 (24%)
30 NB	3244 (30%)	3442 (26%)	3233 (30%)	3465 (25%)
30 SB	3517 (29%)	3207 (24%)	3553 (28%)	3204 (24%)
31 EB	5257 (26%)	5029 (26%)	5361 (25%)	5039 (26%)
31 WB	4345 (32%)	4964 (29%)	4373 (31%)	5012 (29%)
32 EB	5109 (27%)	4974 (26%)	5272 (26%)	4985 (26%)
32 WB	4484 (30%)	5175 (28%)	4539 (29%)	5209 (27%)
33 EB	4075 (32%)	4127 (30%)	4072 (32%)	4102 (30%)
33 WB	3720 (34%)	4013 (34%)	3697 (35%)	4069 (34%)
34 EB	3689 (34%)	3849 (31%)	3700 (34%)	3858 (31%)
34 WB	3443 (36%)	3680 (36%)	3468 (36%)	3686 (36%)
35 EB	572 (0%)	526 (1%)	604 (0%)	521 (1%)
35 WB	607 (4%)	610 (0%)	613 (4%)	596 (0%)
36 NB	501 (11%)	1025 (6%)	526 (10%)	1019 (6%)
36 SB	936 (8%)	580 (11%)	916 (8%)	593 (9%)
37 EB	310 (13%)	323 (13%)	305 (15%)	308 (13%)
37 WB	669 (11%)	500 (13%)	659 (11%)	485 (13%)
38 NB	145 (4%)	242 (3%)	169 (3%)	267 (2%)
38 SB	265 (3%)	130 (6%)	282 (3%)	145 (4%)

Table 3. Slip Road Flows in PCUs/hr (with % HGVs)

Slip Road	AM Do Minimum	PM Do Minimum	AM Do Something	PM Do Something
Jn28 EB off	300 (28%)	215 (32%)	318 (26%)	251 (26%)
Jn28 EB on	687 (17%)	493 (18%)	690 (17%)	495 (18%)
Jn28 WB off	497 (26%)	584 (24%)	509 (26%)	655 (21%)
Jn28 WB on	220 (40%)	250 (32%)	280 (31%)	271 (29%)
Jn29 EB off	197 (4%)	157 (7%)	217 (4%)	192 (6%)
Jn29 EB on	1231 (6%)	1004 (8%)	1417 (5%)	1075 (6%)
Jn29 WB off	979 (7%)	1481 (4%)	1072 (6%)	1489 (4%)
Jn29 WB on	209 (9%)	324 (2%)	224 (8%)	353 (2%)
Jn30 EB off	317 (10%)	410 (5%)	366 (8%)	399 (5%)
Jn30 EB on	465 (9%)	465 (12%)	455 (9%)	452 (12%)
Jn30 WB off	397 (16%)	274 (14%)	390 (18%)	256 (14%)
Jn30 WB on	536 (4%)	484 (6%)	556 (4%)	454 (6%)
Jn31 A14 EB	1618 (32%)	1757 (36%)	1646 (31%)	1738 (36%)
Jn31 A14 WB	2536 (32%)	2502 (34%)	2516 (32%)	2517 (34%)
Jn32 EB off	824 (11%)	891 (7%)	822 (11%)	887 (7%)
Jn32 WB on	586 (5%)	679 (2%)	586 (5%)	674 (2%)

Table 4. Weaving Movements: Percentages Weaving (with Total PCUs)

Movement	AM Do Minimum	PM Do Minimum	AM Do Something	PM Do Something
Weaving diagram 1	100% (2458)	99% (2385)	100% (2439)	98% (2397)
Weaving diagram 2	71% (2220)	67% (2362)	71% (2233)	67% (2379)
Weaving diagram 3 – northbound across K	63% (4266)	63% (4848)	63% (4295)	63% (4893)
Weaving diagram 3 – northbound across L	59% (4407)	60% (5056)	59% (4463)	60% (5087)
Weaving diagram 3 – southbound across M	60% (5068)	60% (4905)	60% (5233)	60% (4904)
Weaving diagram 3 – southbound across N	63% (5214)	62% (4955)	63% (5320)	62% (4954)

Table 5. Link Cruise Speeds (kph)

Link ID	AM DM	IP DM	PM DM	AM DS	IP DS	PM DS
1 NB	62	62	54	62	62	56
1 SB	56	63	61	57	62	60
2 EB	62	66	66	61	66	65
2 WB	66	65	63	65	65	62
3 EB	66	67	66	67	66	65
3 WB	67	66	67	66	66	66
4 NB	47	47	47	47	47	47
4 SB	47	47	47	47	47	47
5 NB	85	82	74	83	80	73
5 SB	75	83	82	70	80	80
6 NB	66	66	62	65	65	58
6 SB	62	66	65	60	66	64
7 NB	66	66	65	66	66	64
7 SB	64	66	66	64	66	66
9 NB	76	74	75	76	74	76
9 SB	67	75	72	68	75	72
10 NB	68	68	68	68	68	68
10 SB	63	63	63	63	63	63
11 NB	45	43	45	45	43	45
11 SB	37	44	41	37	44	42
12 NB	66	69	68	66	68	69
12 SB	61	68	64	61	68	64
13 EB	66	61	62	66	60	62
13 WB	72	59	66	71	60	66
14 EB	57	57	55	57	57	56
14 WB	65	55	58	66	55	57
15 EB	77	81	79	74	79	79
15 WB	86	80	76	86	79	75
16 EB	74	82	78	73	81	78
16 WB	88	81	79	88	80	78

Table 6. 2021 AM Do Minimum Trip Matrix (PCUs)

	Northstowe	Cambridge	Rest of model	*Totals*
Northstowe	0	2	10	*12*
Cambridge	0	6,716	7,861	*14,577*
Rest of model	7	13,807	73,342	*87,156*
Totals	*7*	*20,525*	*81,212*	*101,745*

Table 7. 2021 AM Do Something Trip Matrix (PCUs)

	Northstowe	Cambridge	Rest of model	*Totals*
Northstowe	7	103	360	*470*
Cambridge	33	6,676	7,806	*14,515*
Rest of model	158	13,646	73,002	*86,805*
Totals	*198*	*20,425*	*81,168*	*101,791*

Table 8. 2021 PM Do Minimum Trip Matrix (PCUs)

	Northstowe	Cambridge	Rest of model	*Totals*
Northstowe	0	0	7	*7*
Cambridge	0	6,929	12,825	*19,754*
Rest of model	4	8,736	75,315	*84,055*
Totals	*4*	*15,665*	*88,147*	*103,816*

Table 9. 2021 PM Do Something Trip Matrix (PCUs)

	Northstowe	Cambridge	Rest of model	*Totals*
Northstowe	10	35	207	*252*
Cambridge	96	6,890	12,635	*19,621*
Rest of model	356	8,669	75,035	*84,060*
Totals	*462*	*15,593*	*87,878*	*103,933*

Table 10. 2021 Network Summary Statistics

Metric	AM Do Minimum	PM Do Minimum	AM Do Something	PM Do Something
Total travel time (PCU-hrs)	96,379	103,401	96,009	103,342
Total travel distance (PCU-kms)	5,244,067	5,605,345	5,228,227	5,597,858
Average speed (kph)	54.4	54.2	54.5	54.2

Figure 3. Junction 1 turning movements – AM DM

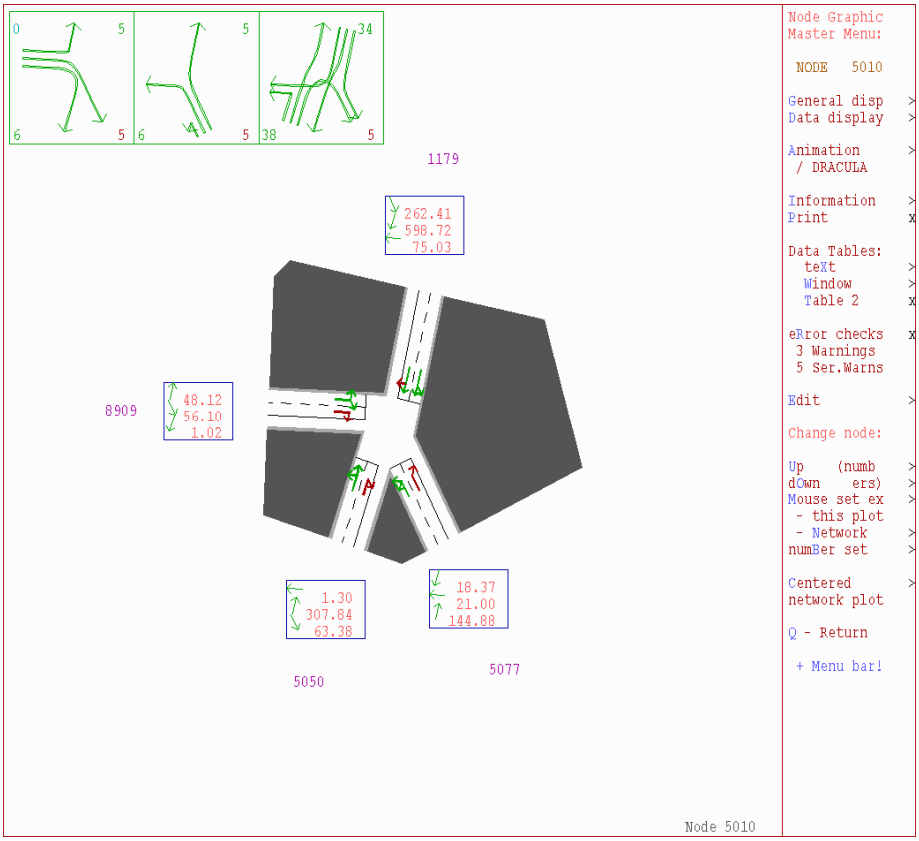


Figure 4. Junction 2 turning movements – AM DM

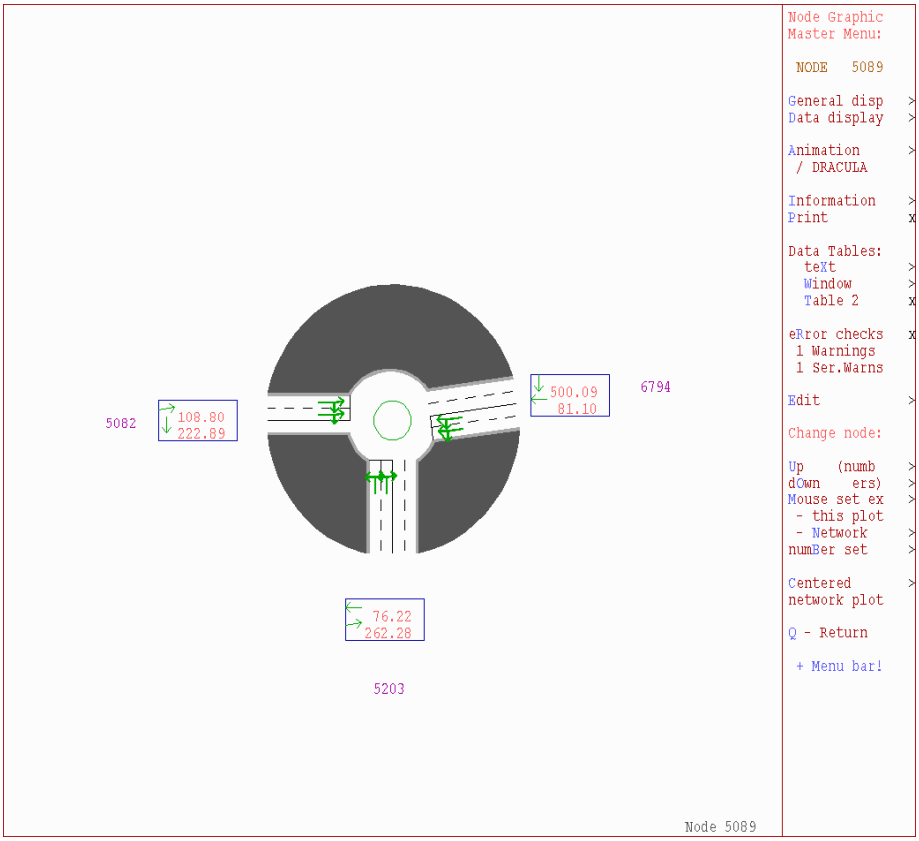


Figure 5. Junction 3 turning movements – AM DM

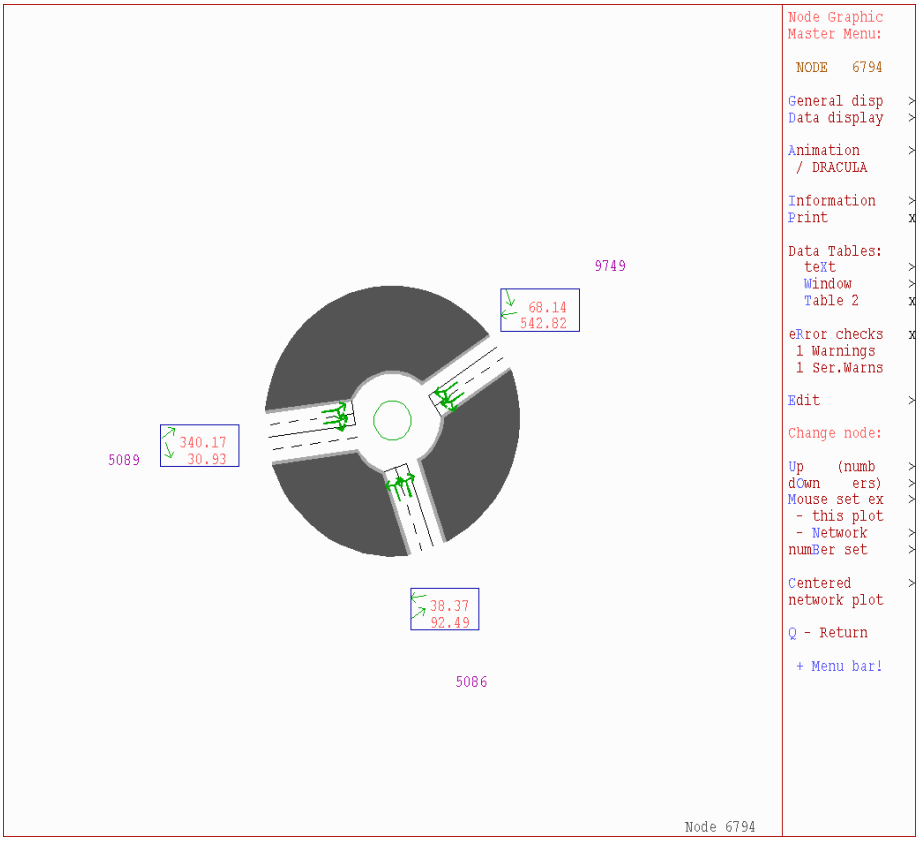


Figure 6. Junction 5 turning movements – AM DM

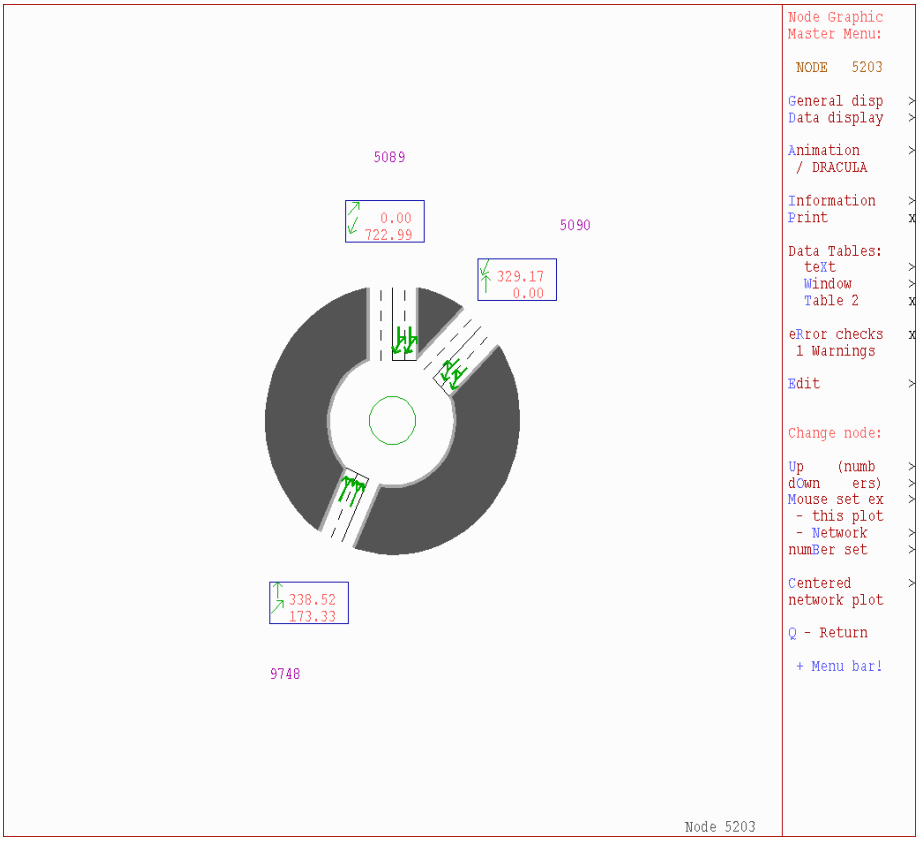


Figure 7. Junction 6 turning movements – AM DM

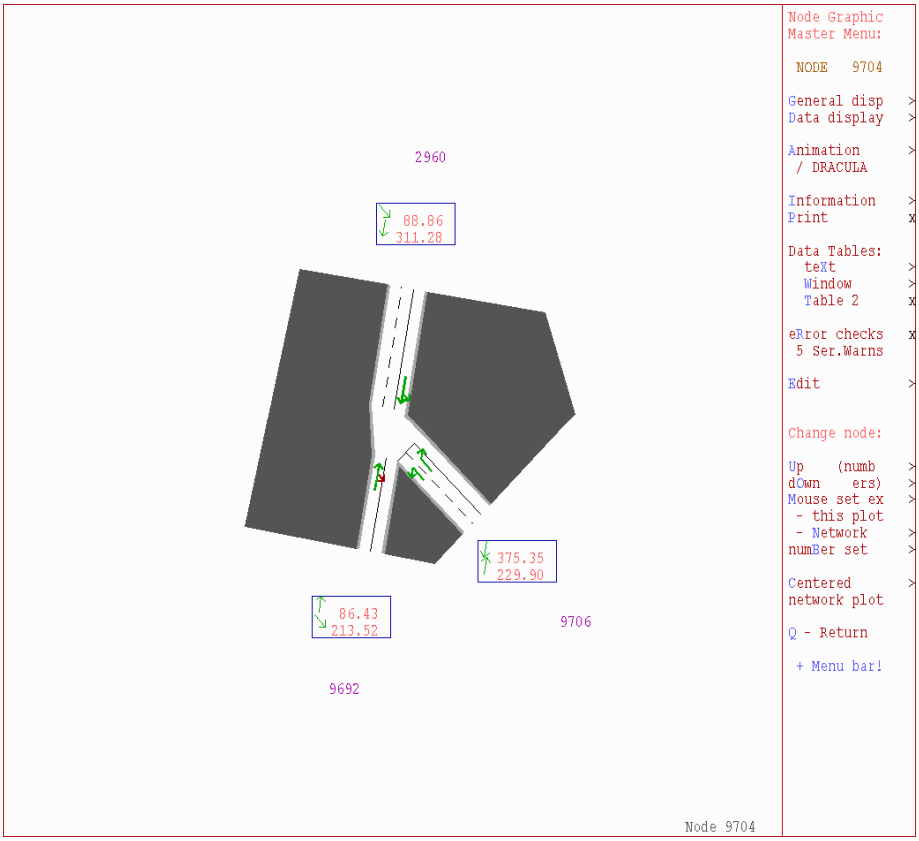


Figure 8. Junction 7 turning movements – AM DM

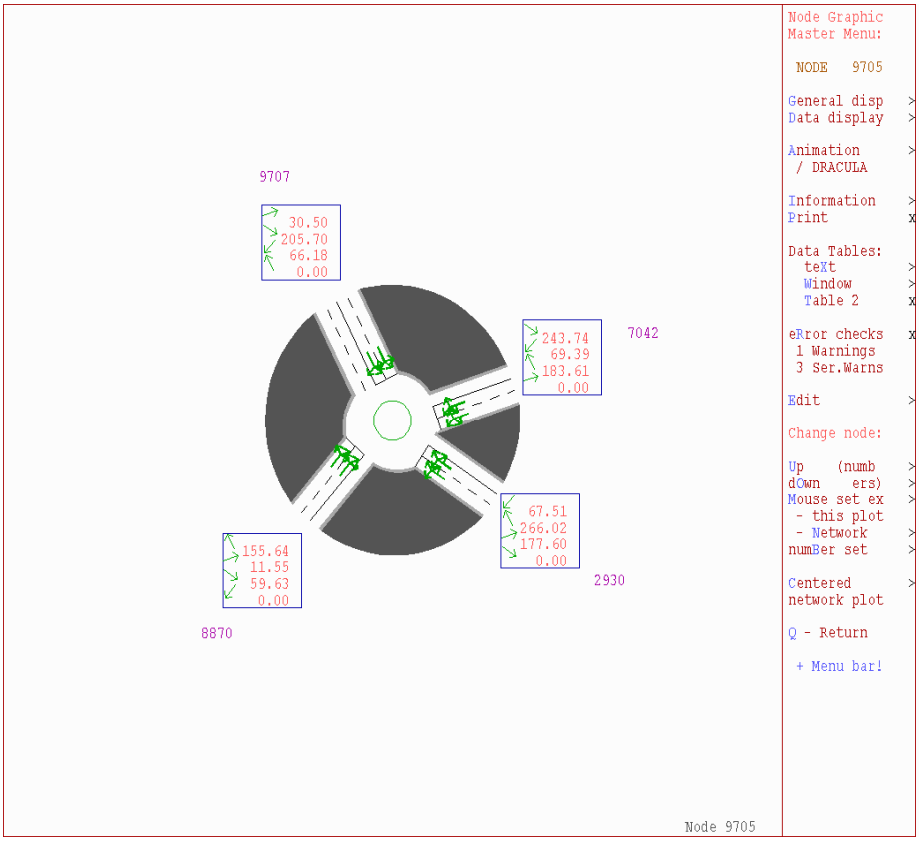


Figure 9. Junction 8 turning movements – AM DM

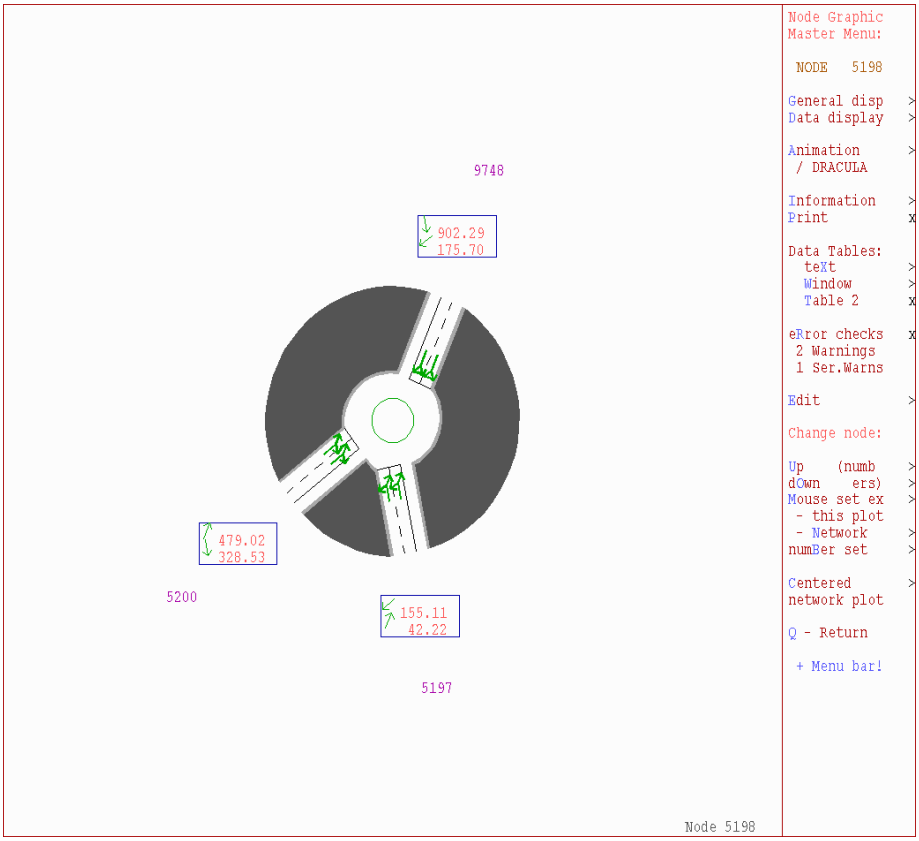


Figure 10. Junction 9 turning movements – AM DM

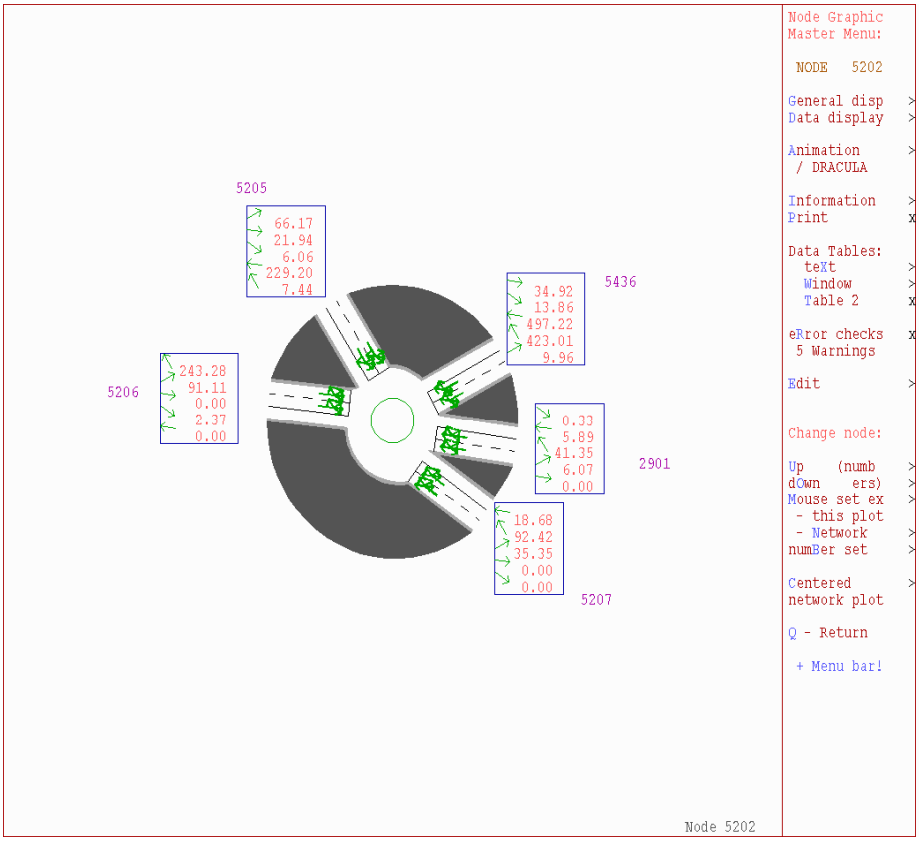


Figure 11. Junction 10 turning movements – AM DM

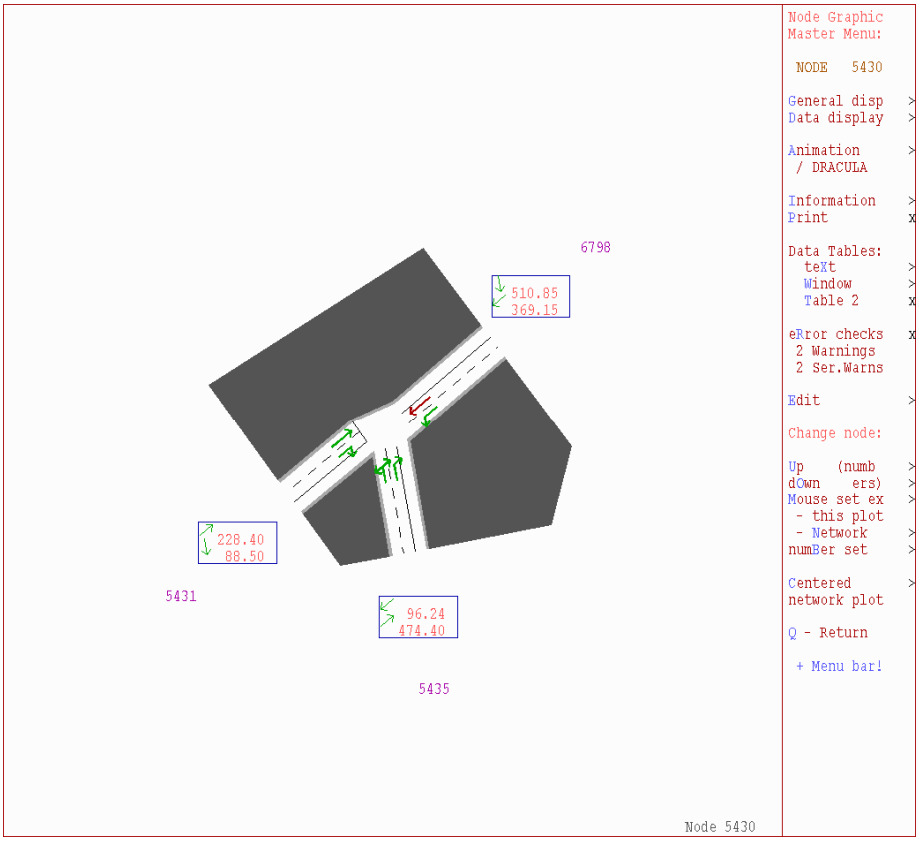


Figure 12. Junction 11 turning movements – AM DM

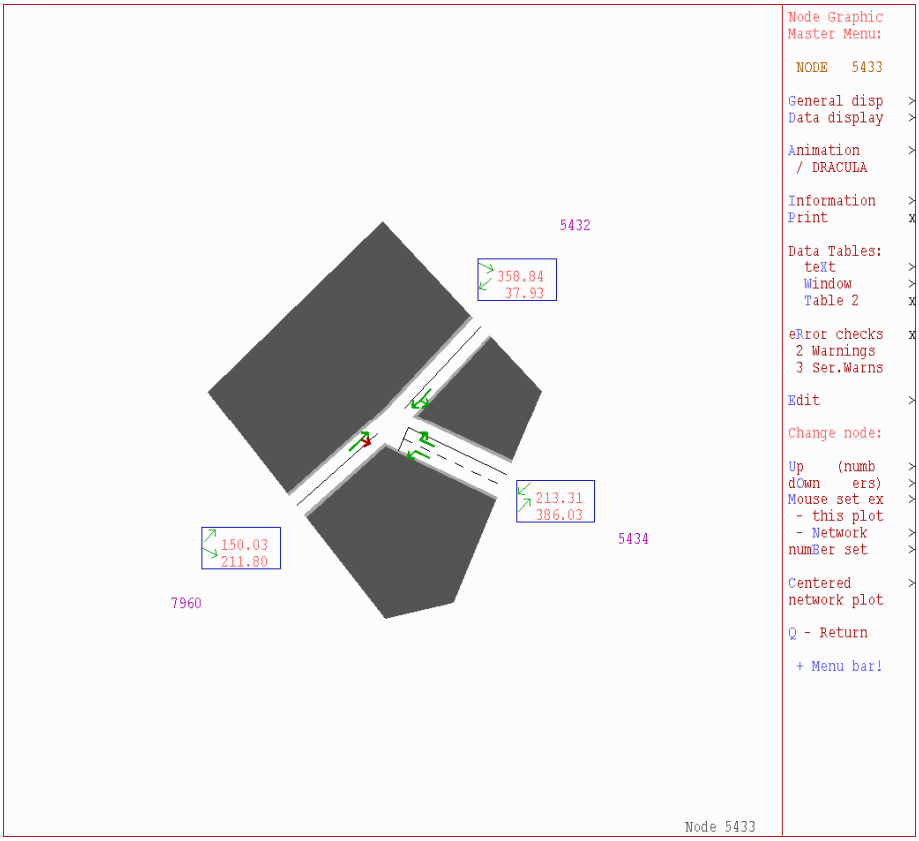


Figure 13. Junction 12 turning movements – AM DM

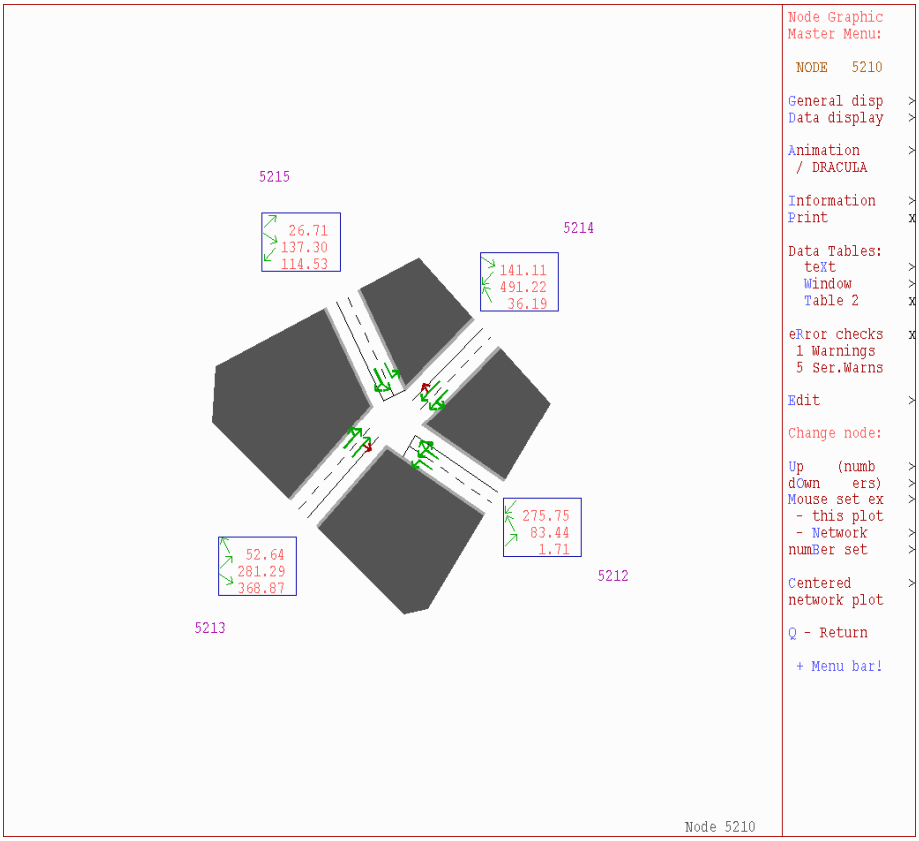


Figure 14. Junction 13 turning movements – AM DM

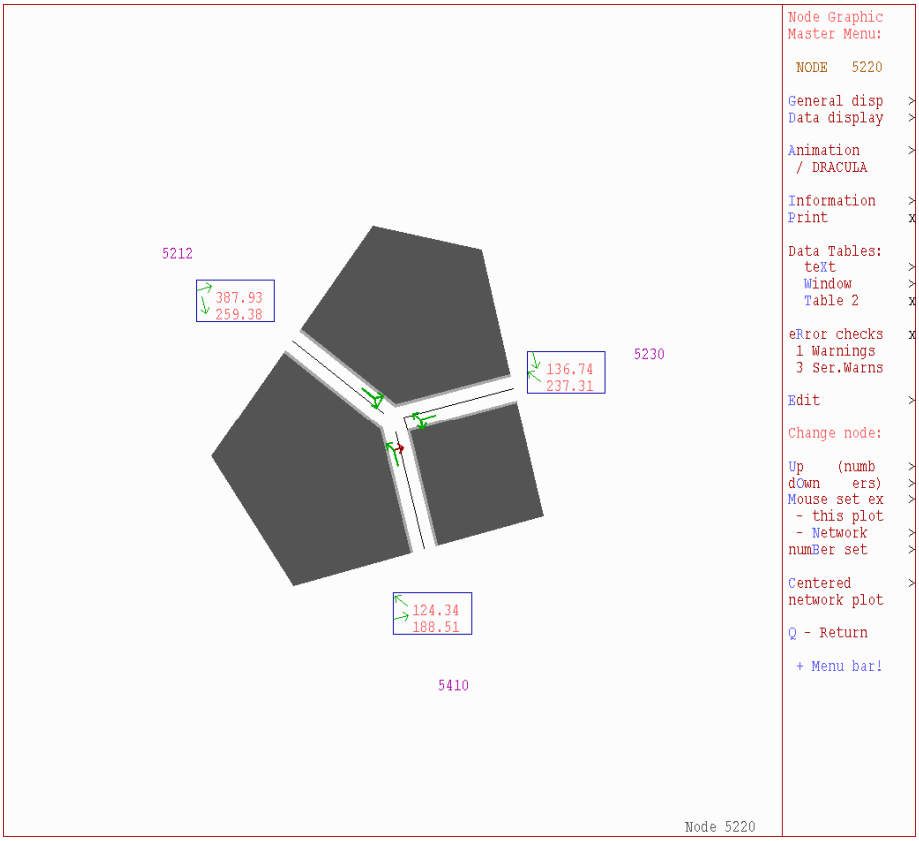


Figure 15. Junction 14 turning movements – AM DM

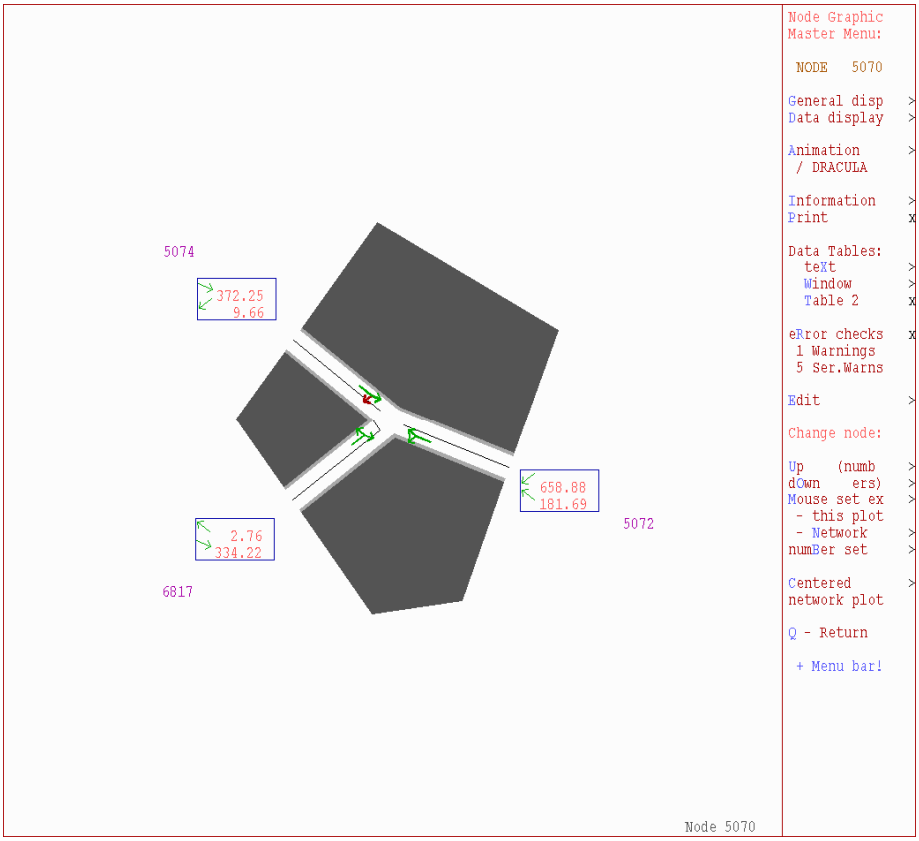


Figure 16. Junction 1 turning movements – PM DM

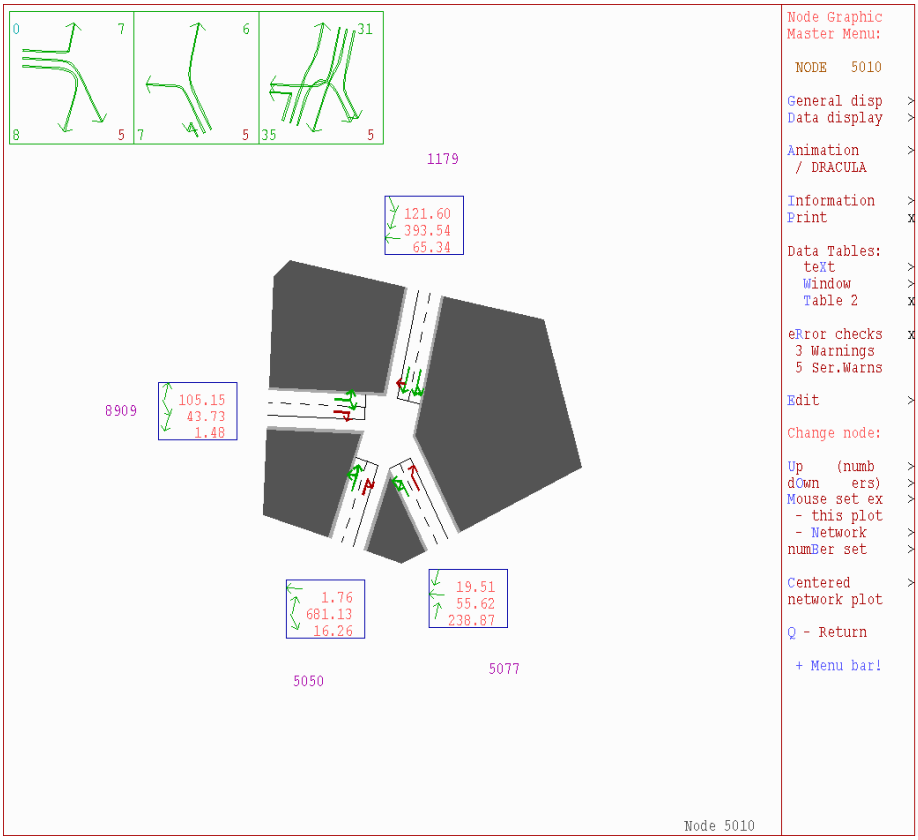


Figure 17. Junction 2 turning movements – PM DM

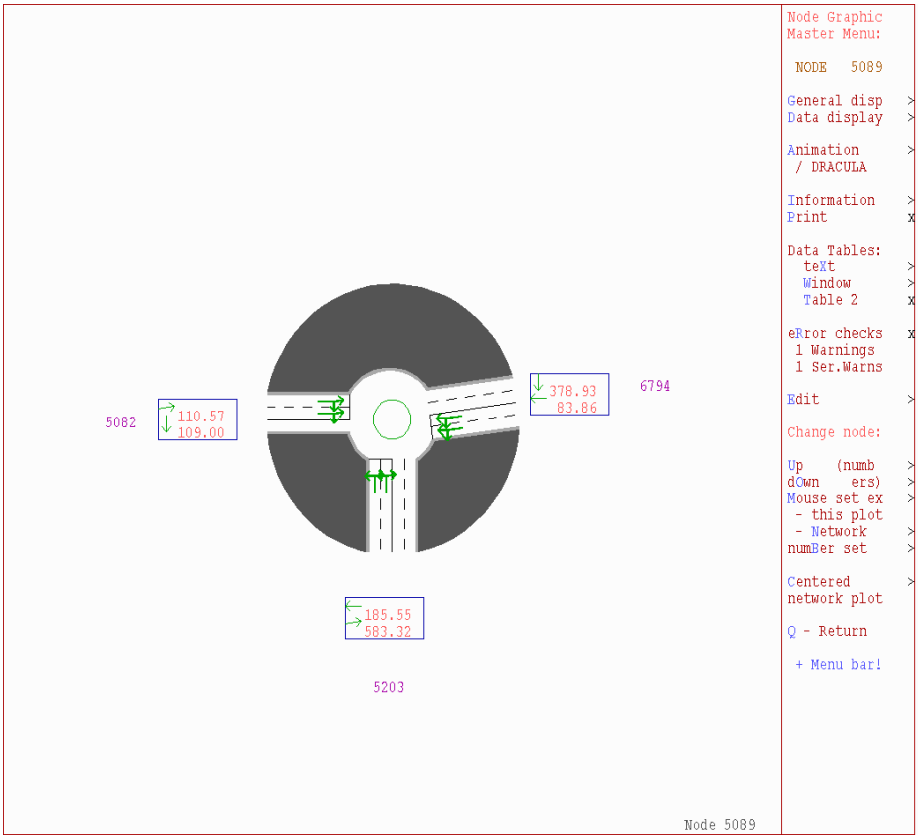


Figure 18. Junction 3 turning movements – PM DM

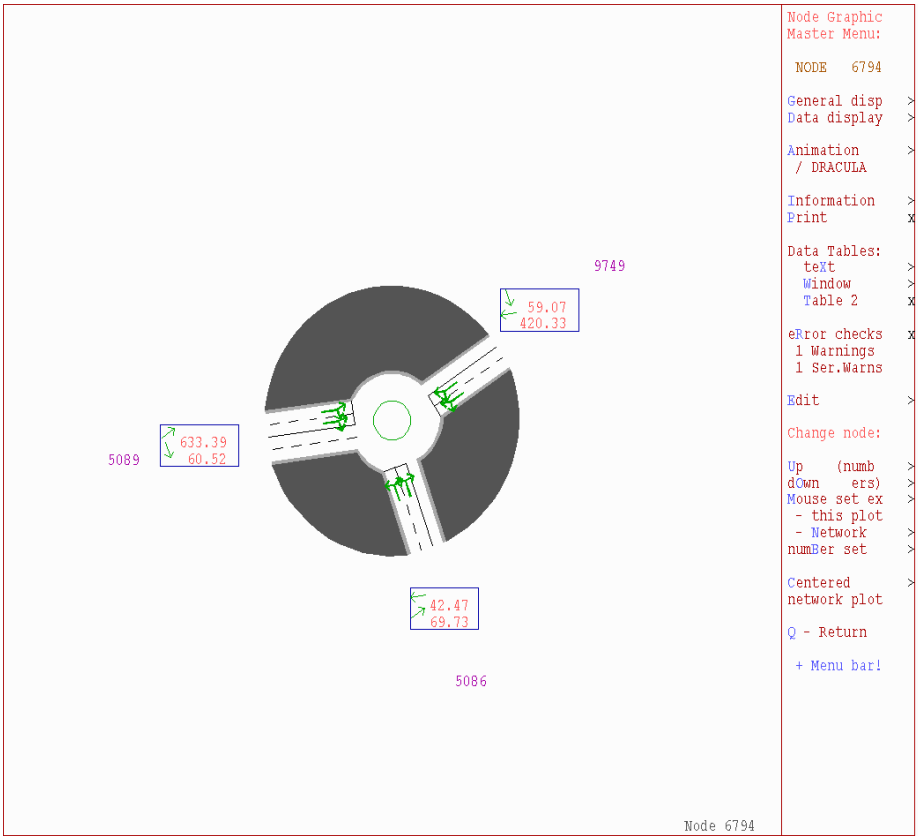


Figure 19. Junction 5 turning movements – PM DM

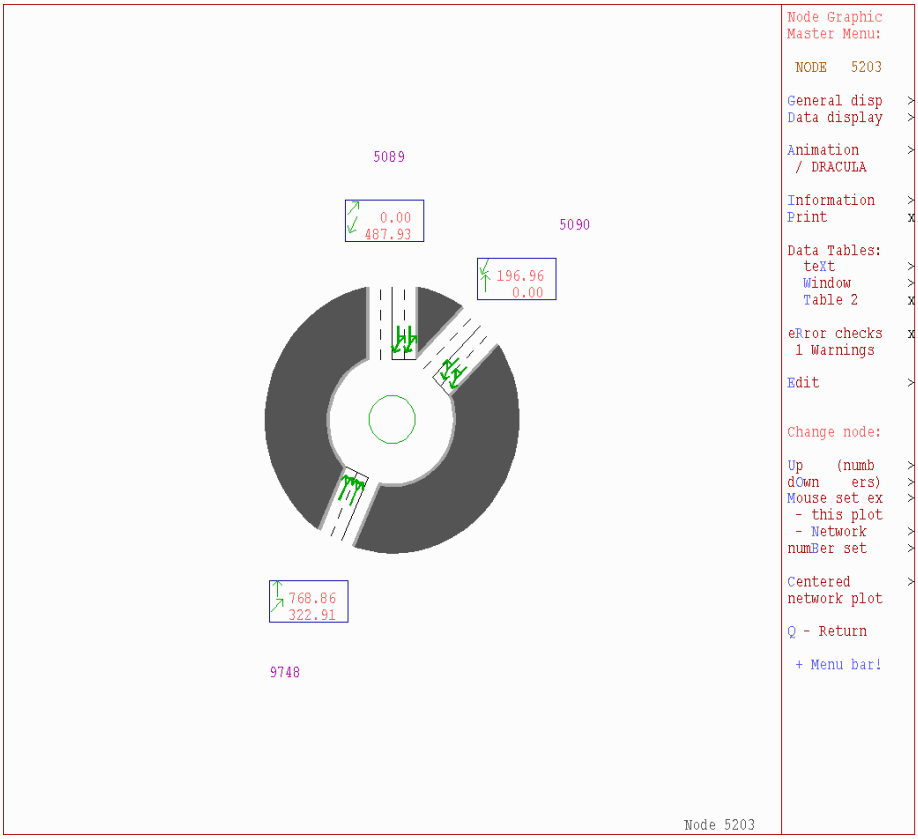


Figure 20. Junction 6 turning movements – PM DM

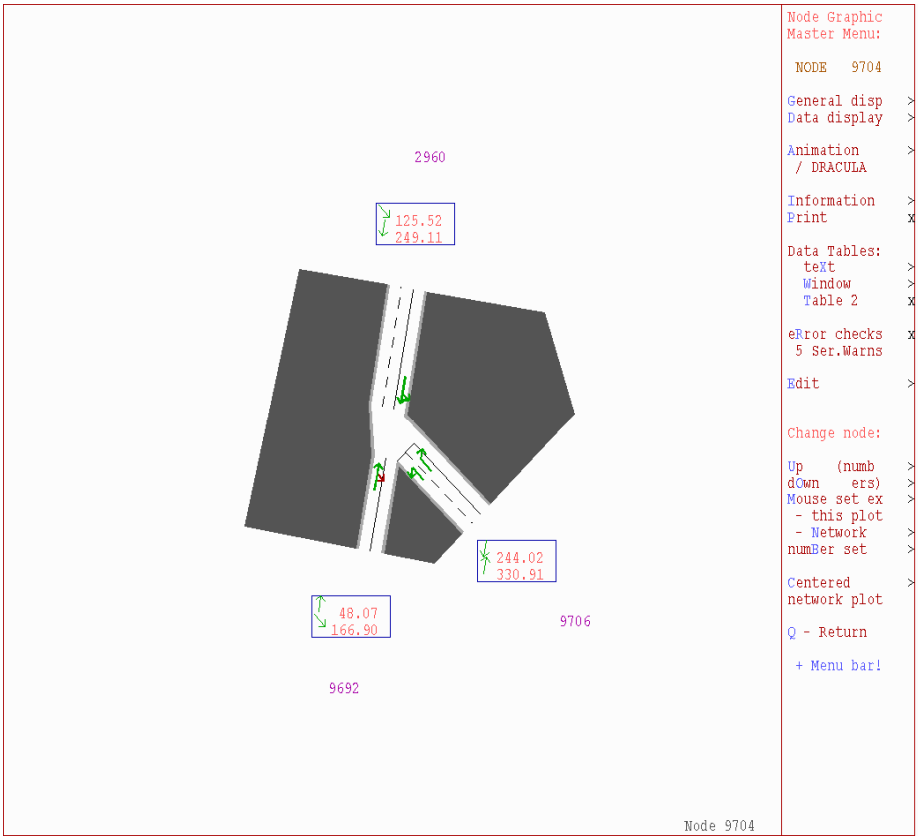


Figure 21. Junction 7 turning movements – PM DM

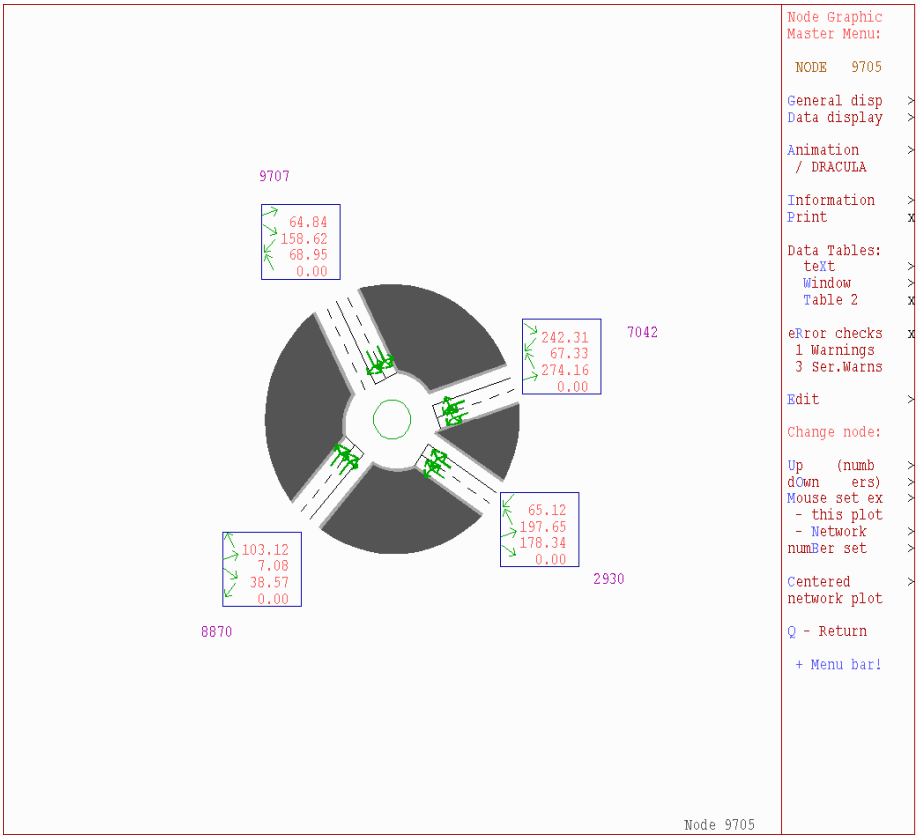


Figure 22. Junction 8 turning movements – PM DM

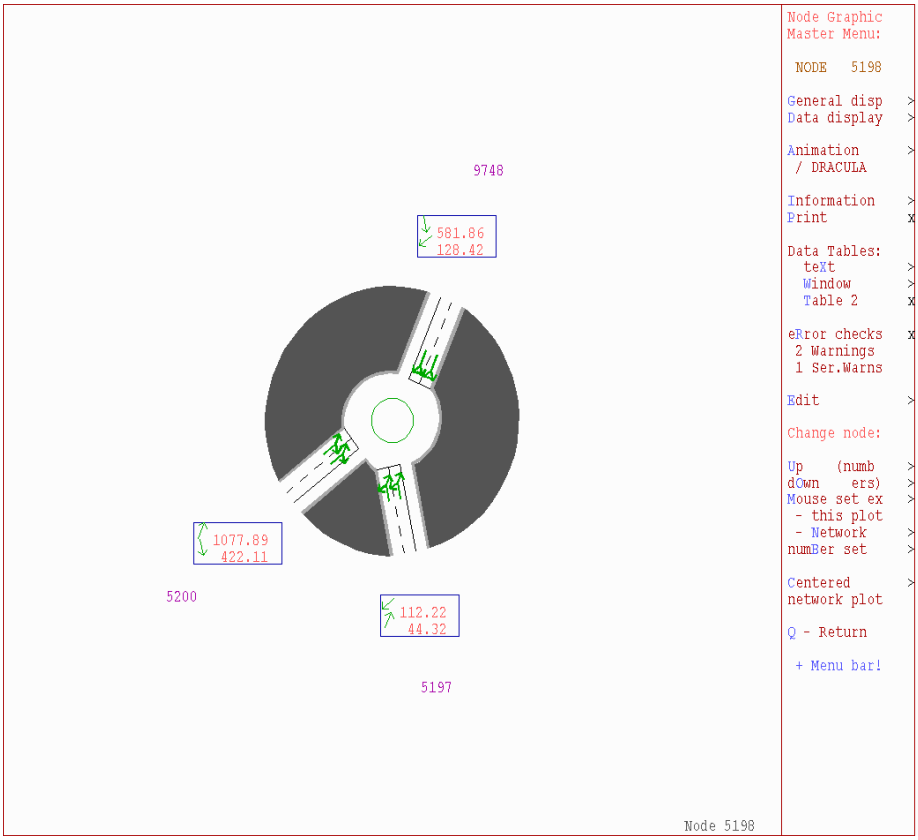


Figure 23. Junction 9 turning movements – PM DM

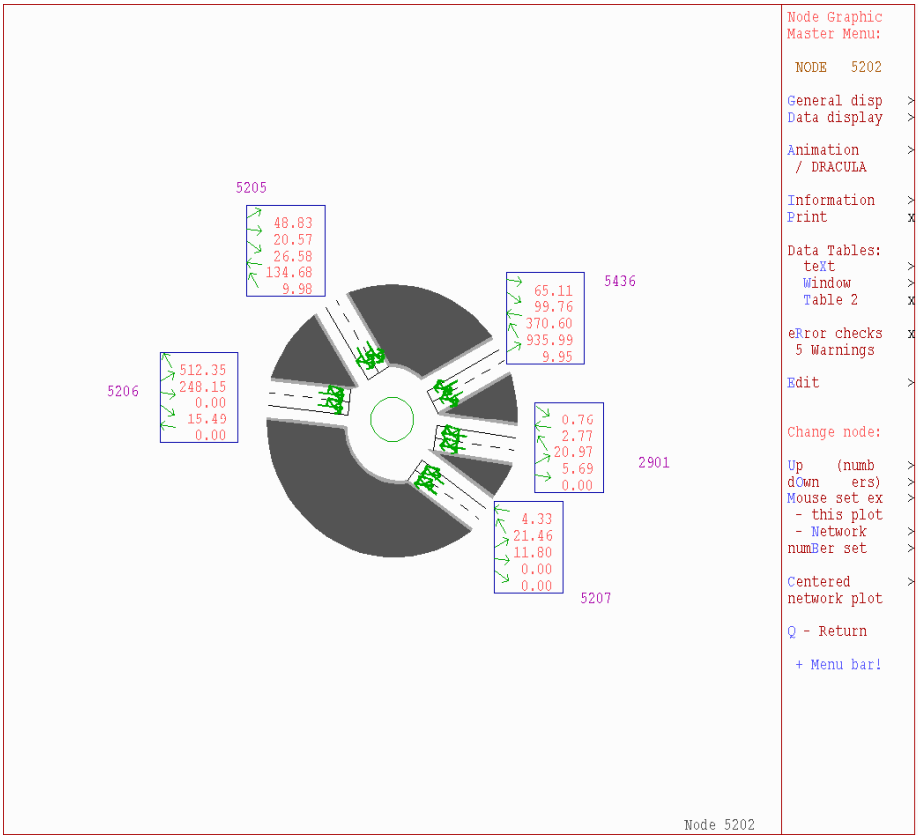


Figure 24. Junction 10 turning movements – PM DM

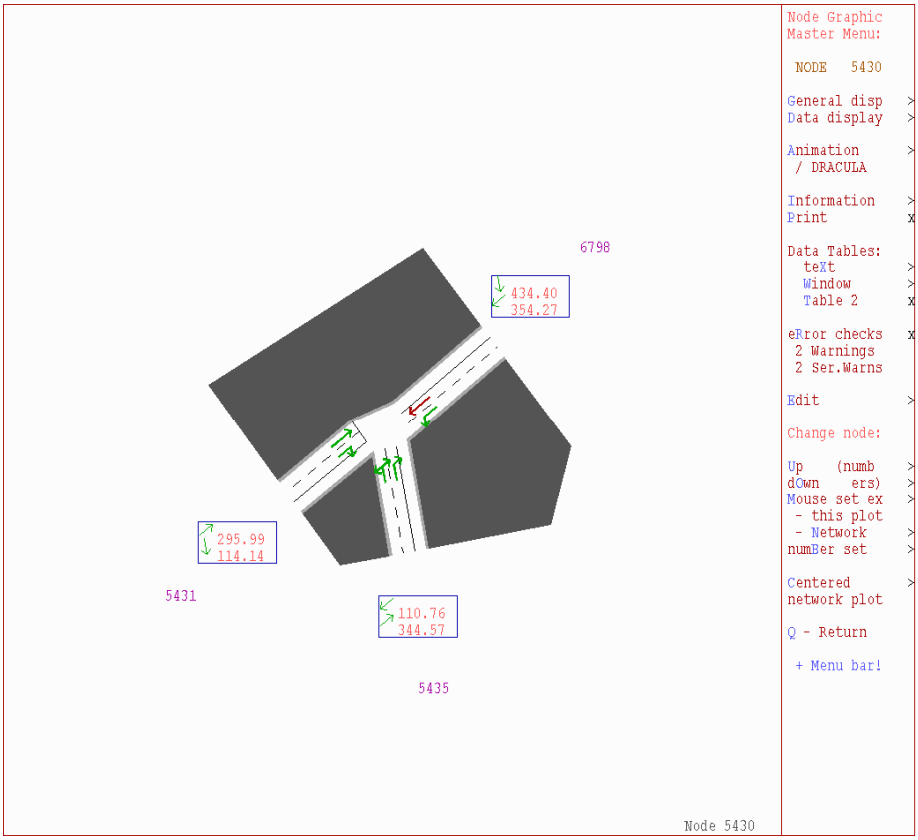


Figure 25. Junction 11 turning movements – PM DM

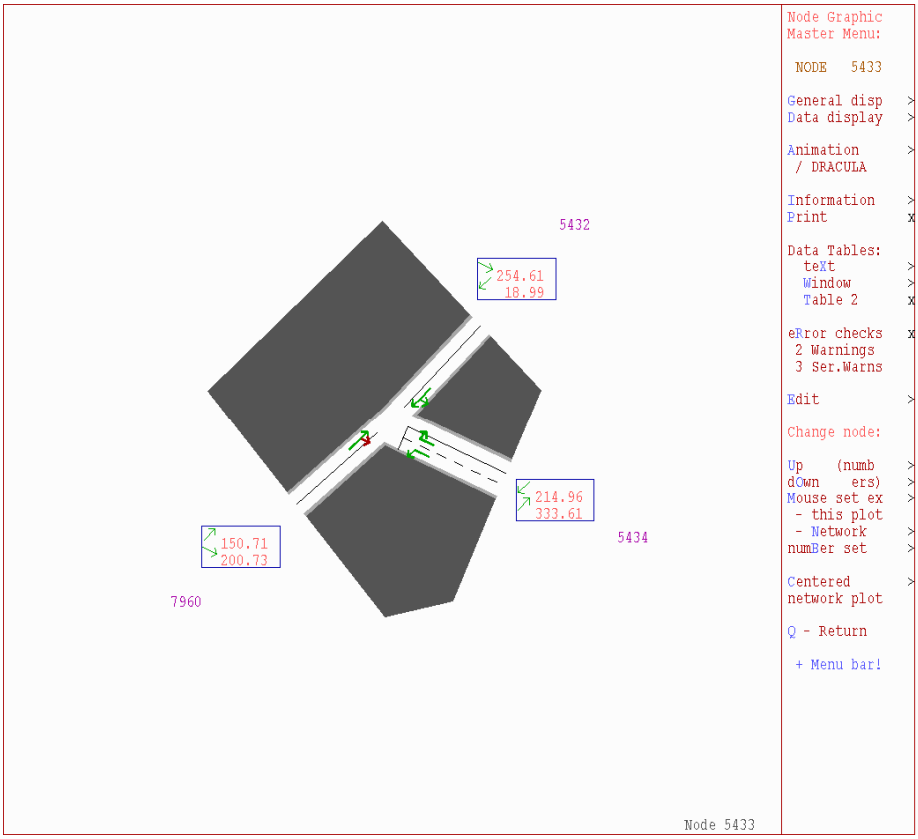


Figure 26. Junction 12 turning movements – PM DM

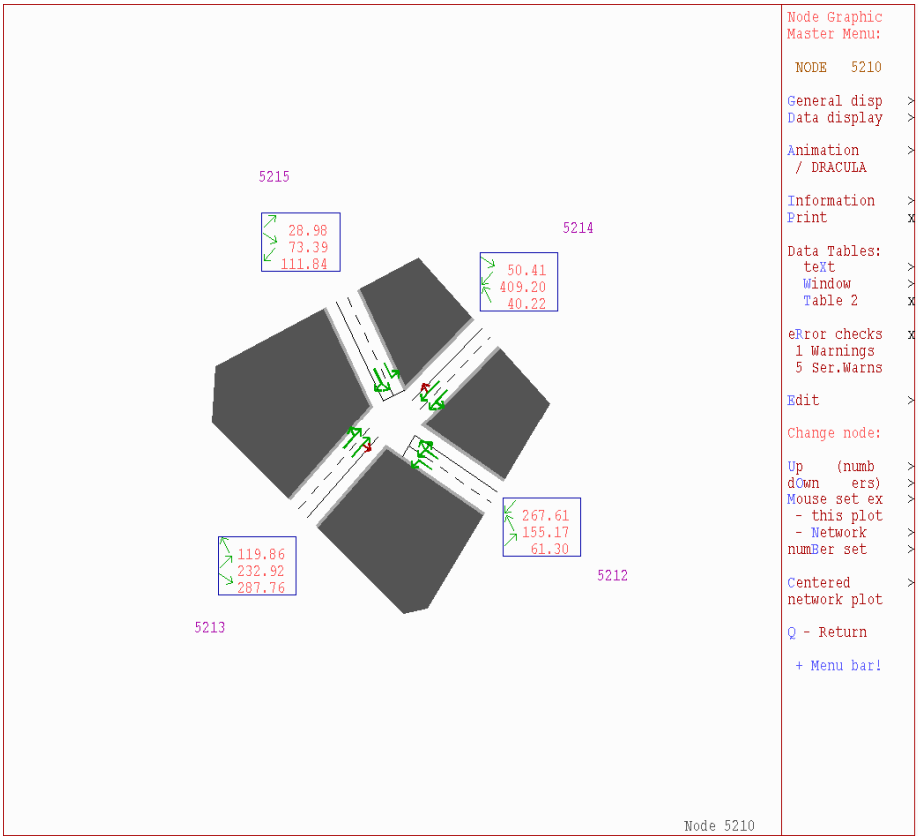


Figure 27. Junction 13 turning movements – PM DM

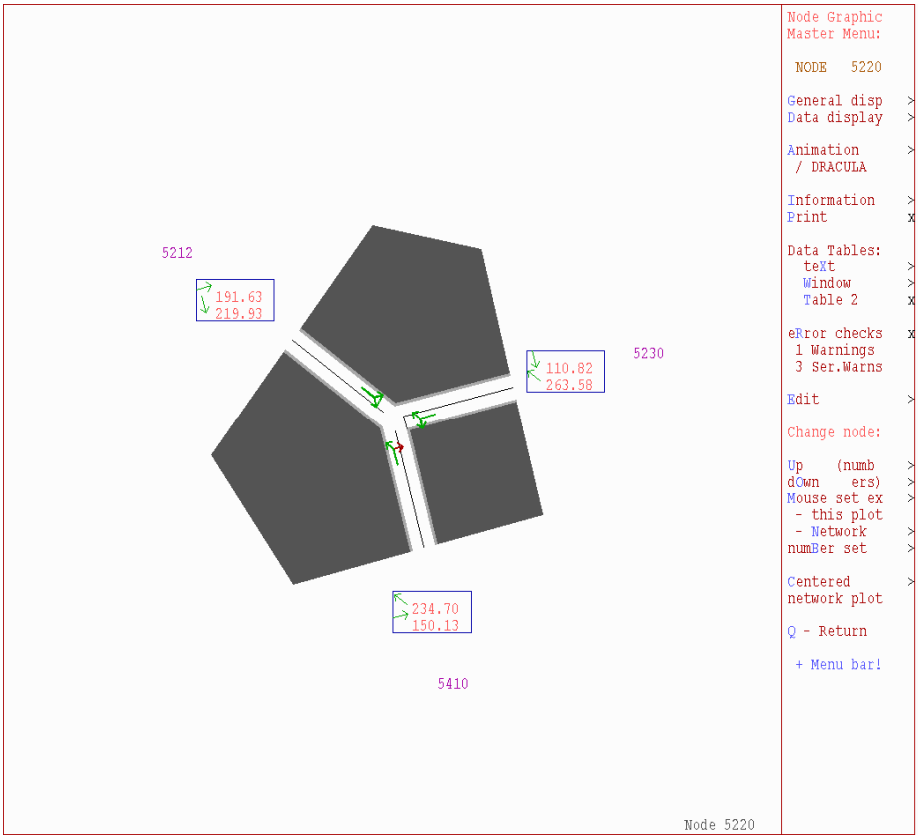


Figure 28. Junction 14 turning movements – PM DM

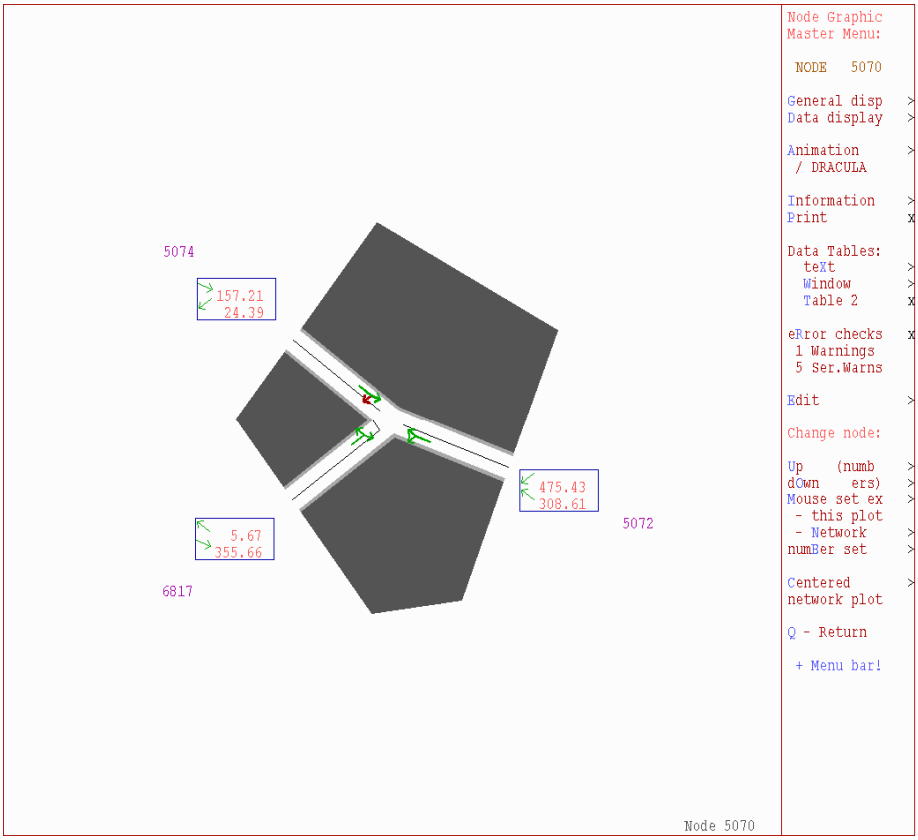


Figure 29. Junction 1 turning movements – AM DS

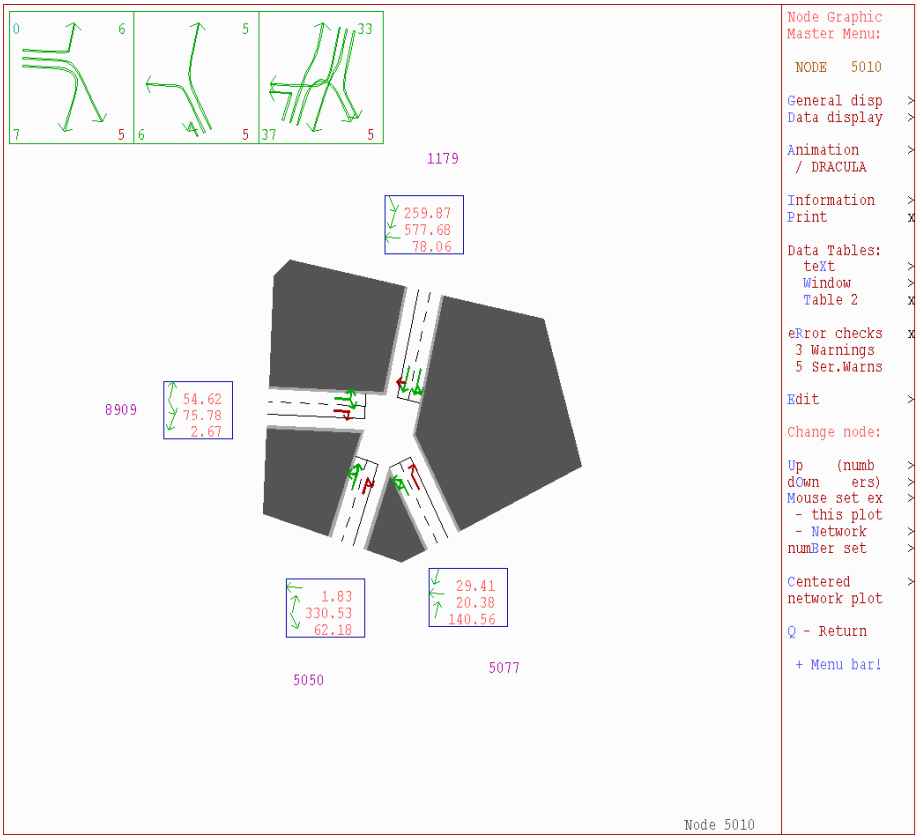


Figure 30. Junction 2 turning movements – AM DS

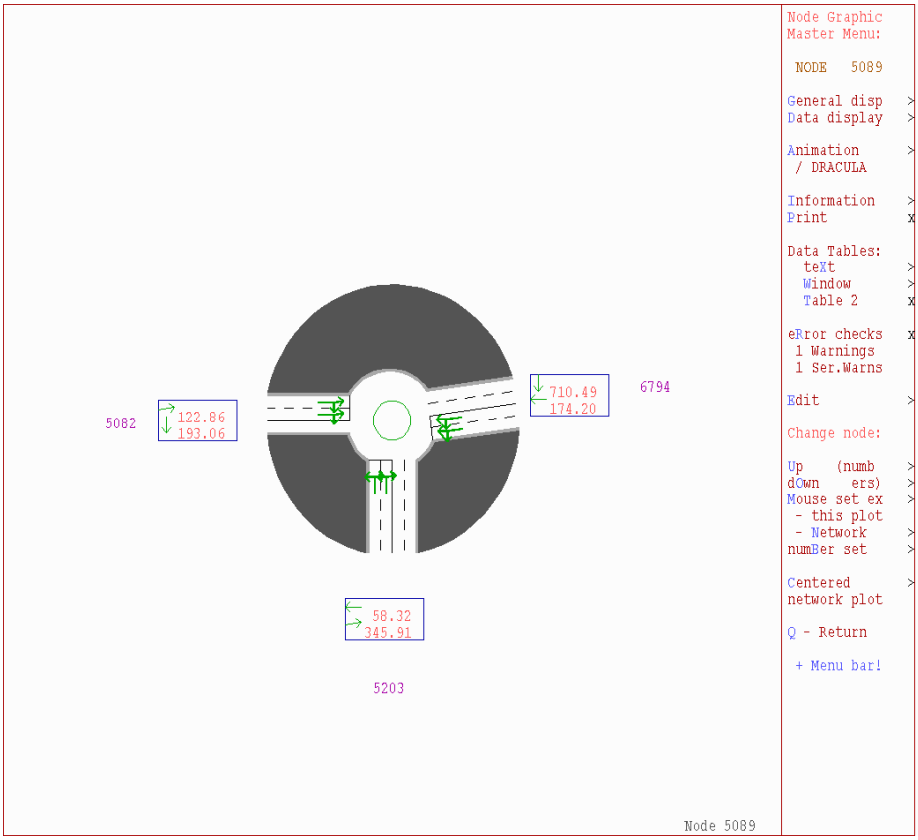


Figure 31. Junction 3 turning movements – AM DS

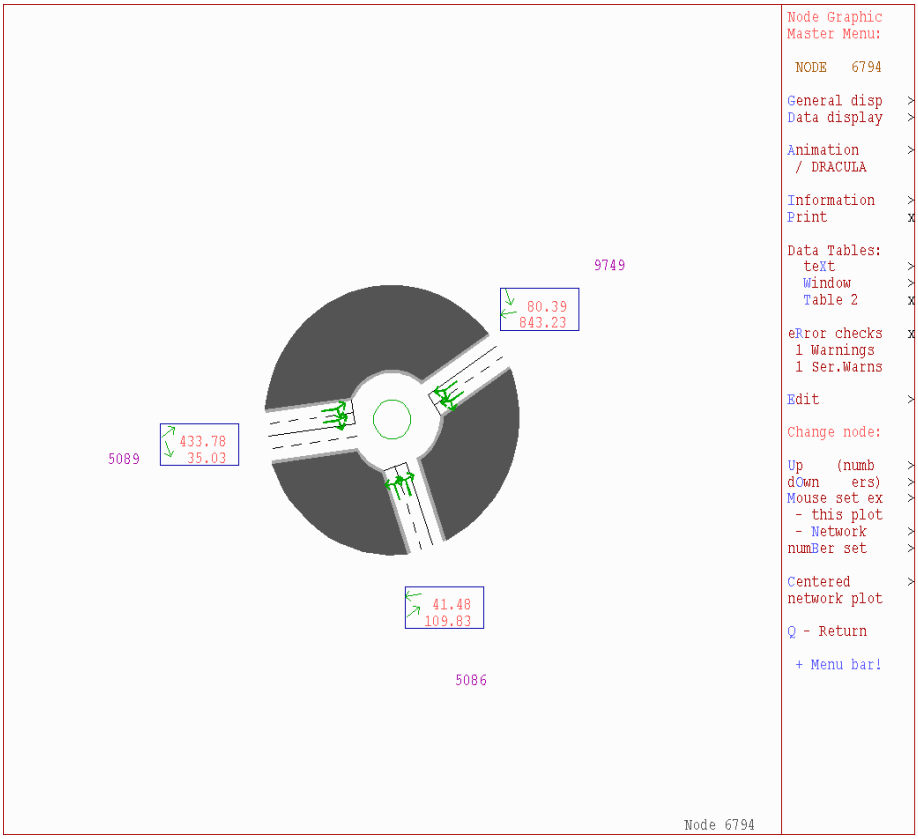


Figure 32. Junction 4 turning movements – AM DS

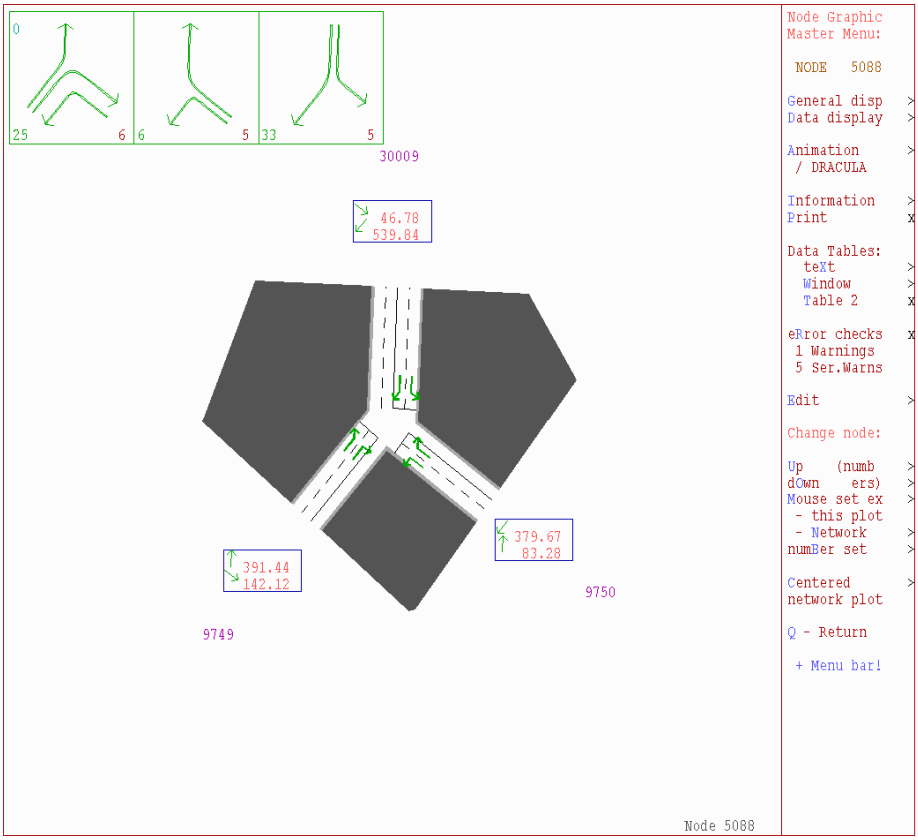


Figure 33. Junction 5 turning movements – AM DS

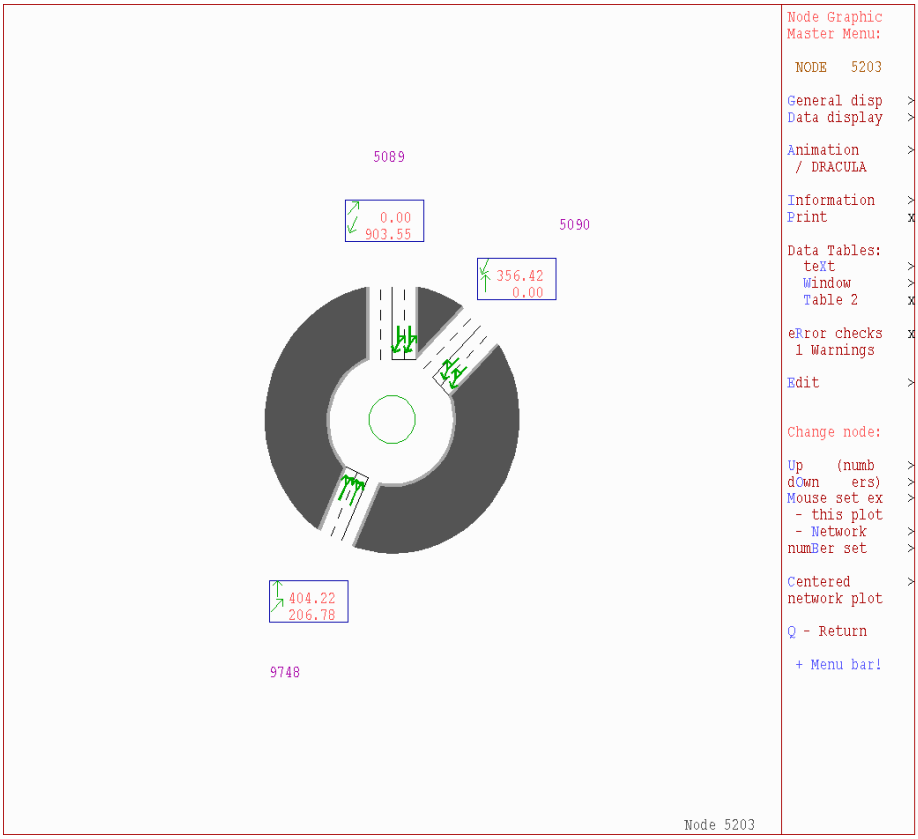


Figure 34. Junction 6 turning movements – AM DS

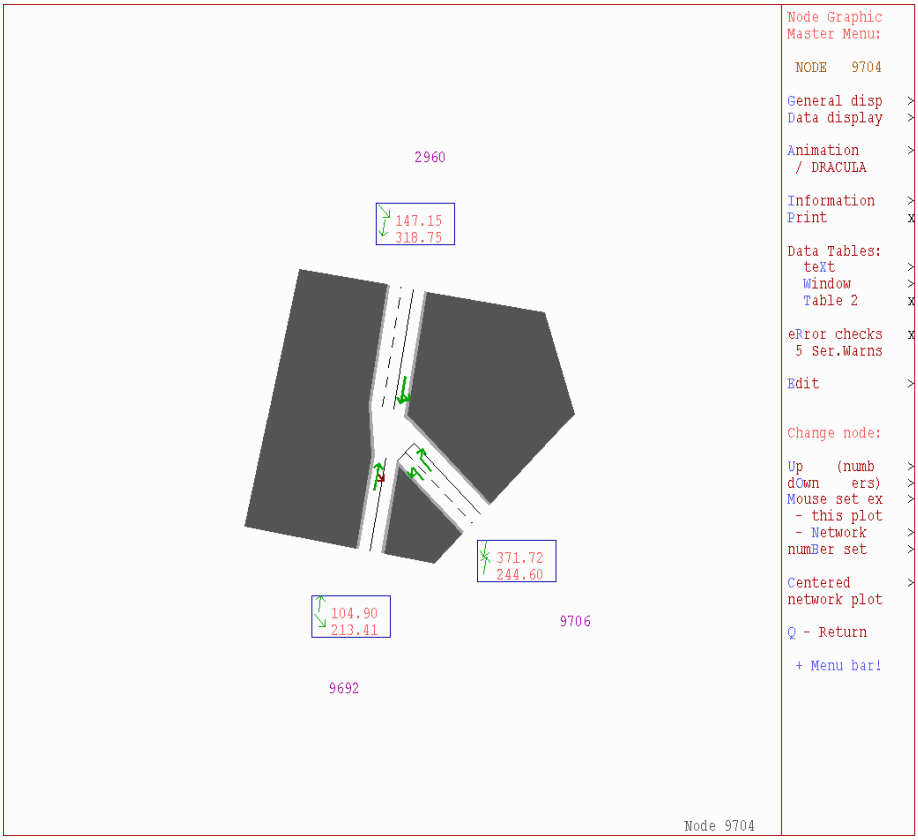


Figure 35. Junction 7 turning movements – AM DS

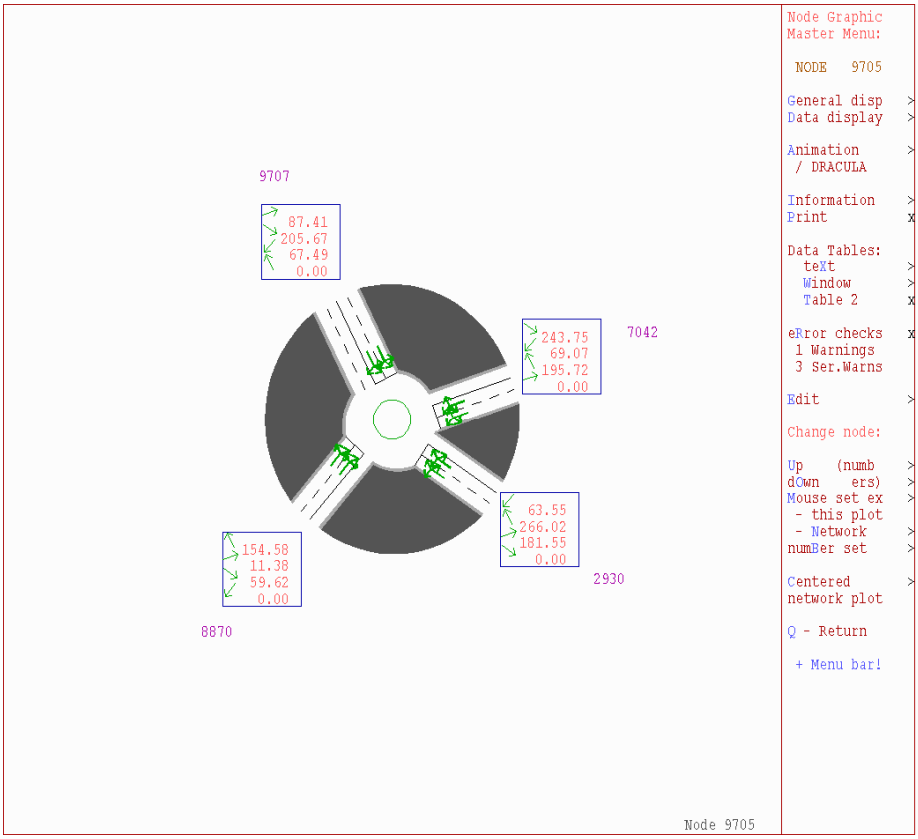


Figure 36. Junction 8 turning movements – AM DS

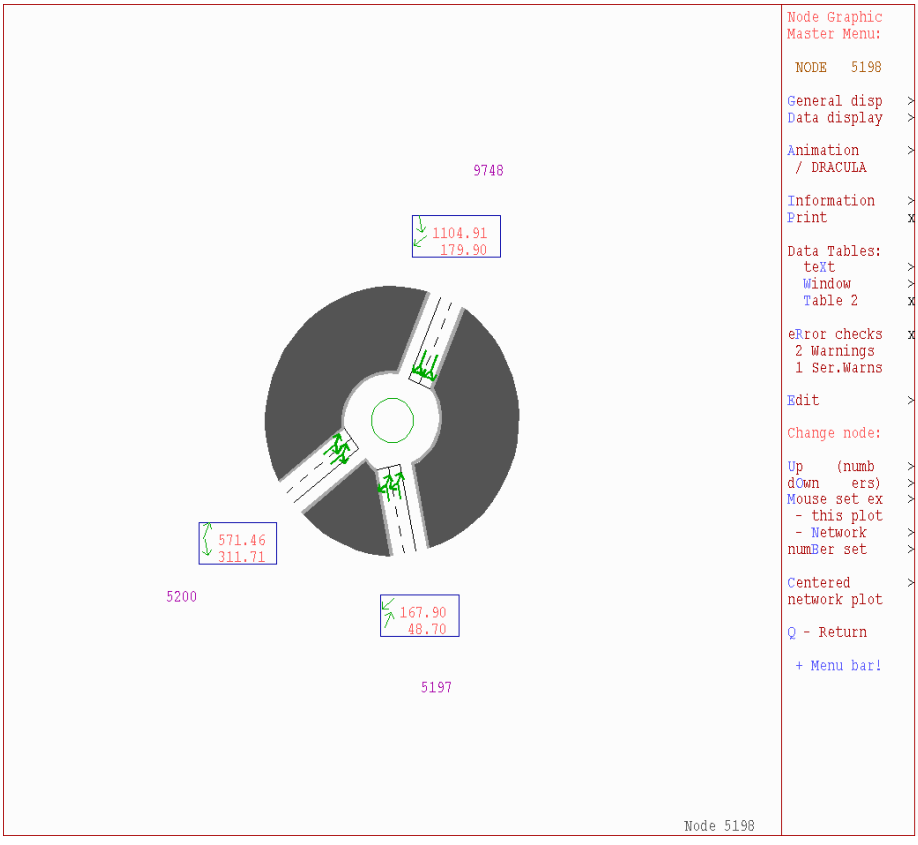


Figure 37. Junction 9 turning movements – AM DS

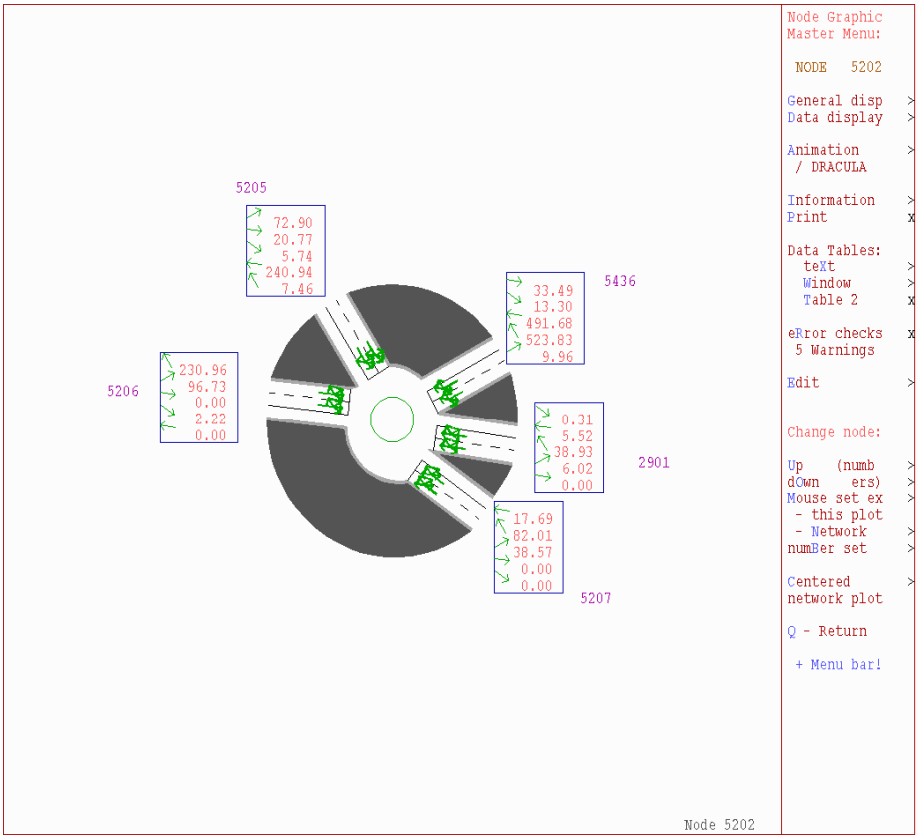


Figure 38. Junction 10 turning movements – AM DS

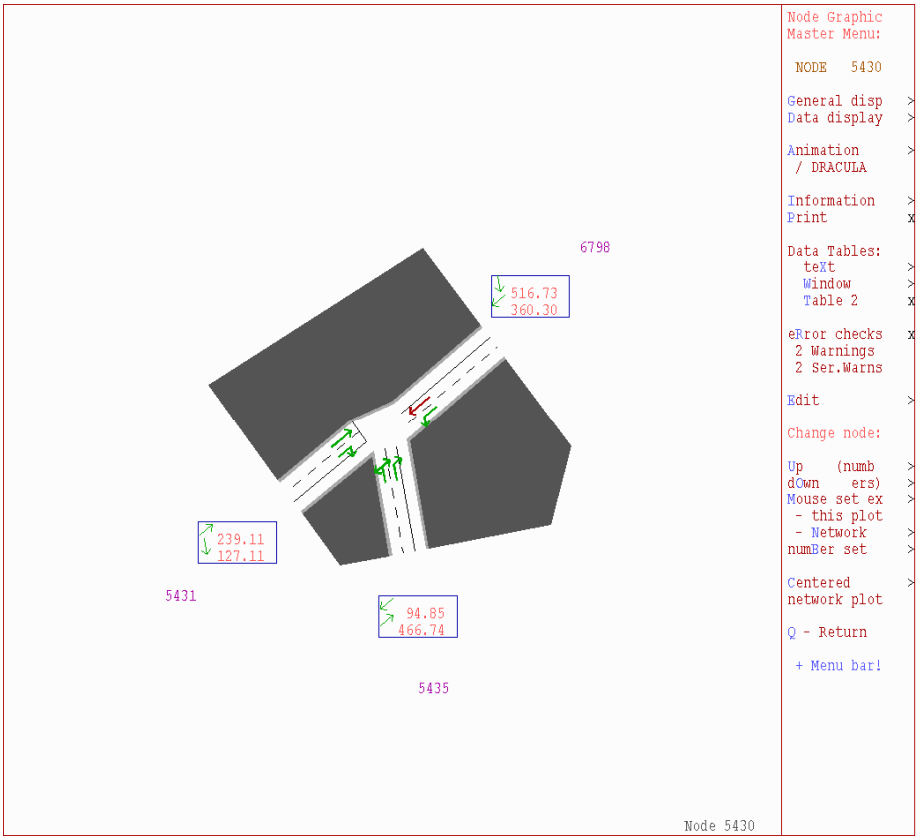


Figure 39. Junction 11 turning movements – AM DS

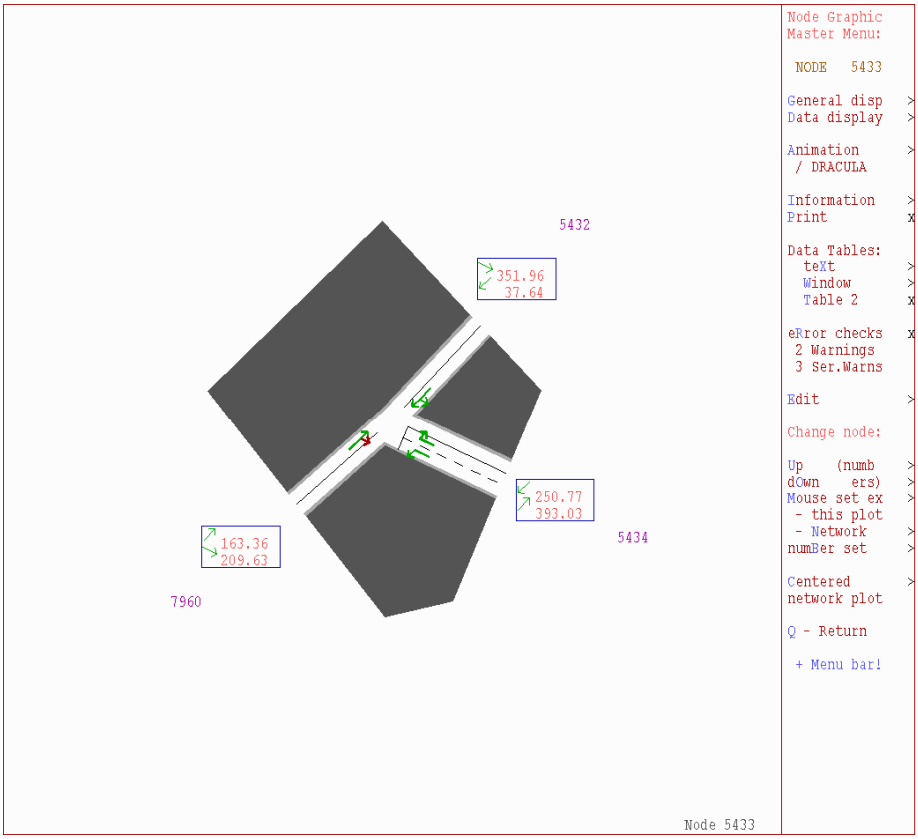


Figure 40. Junction 12 turning movements – AM DS

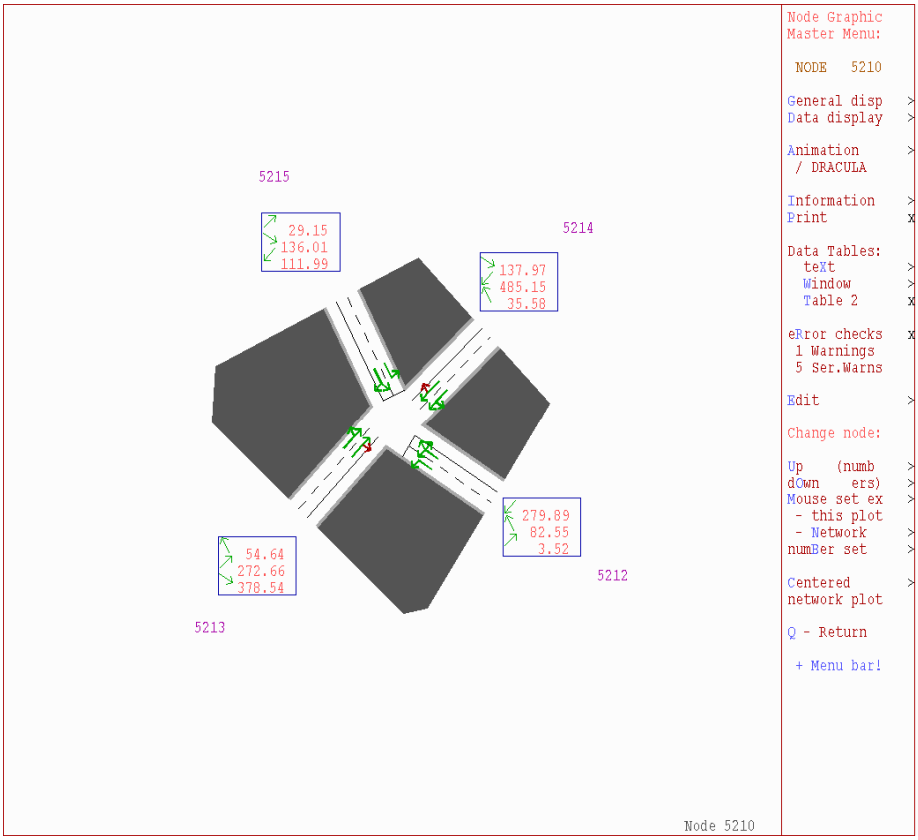


Figure 41. Junction 13 turning movements – AM DS

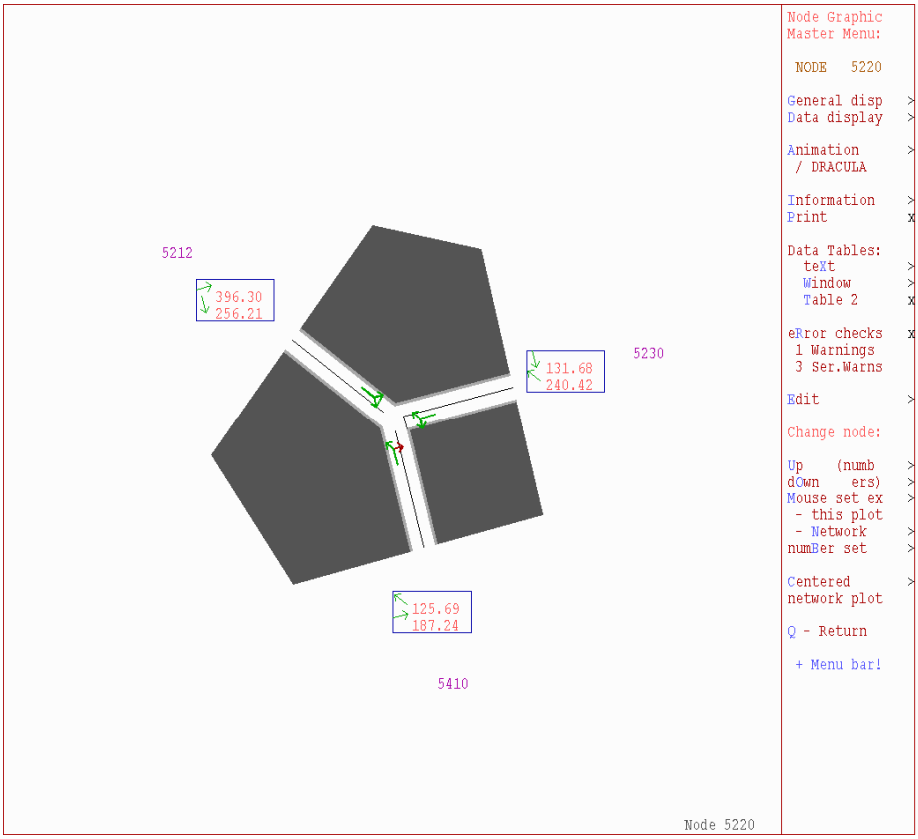


Figure 42. Junction 14 turning movements – AM DS

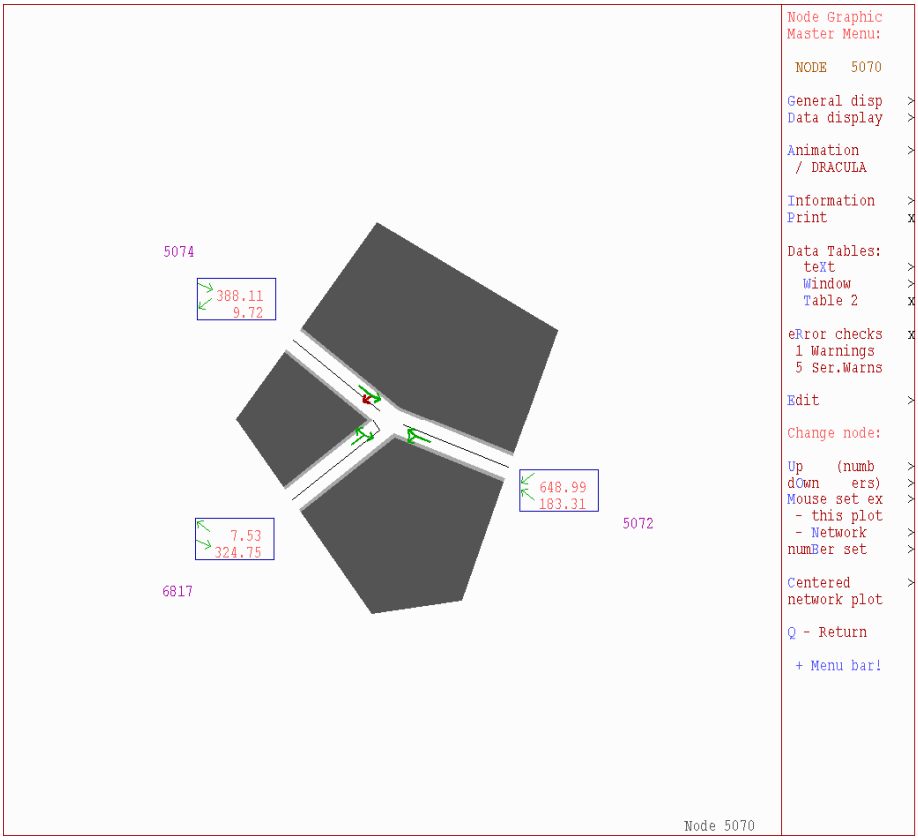


Figure 43. Junction 1 turning movements – PM DS

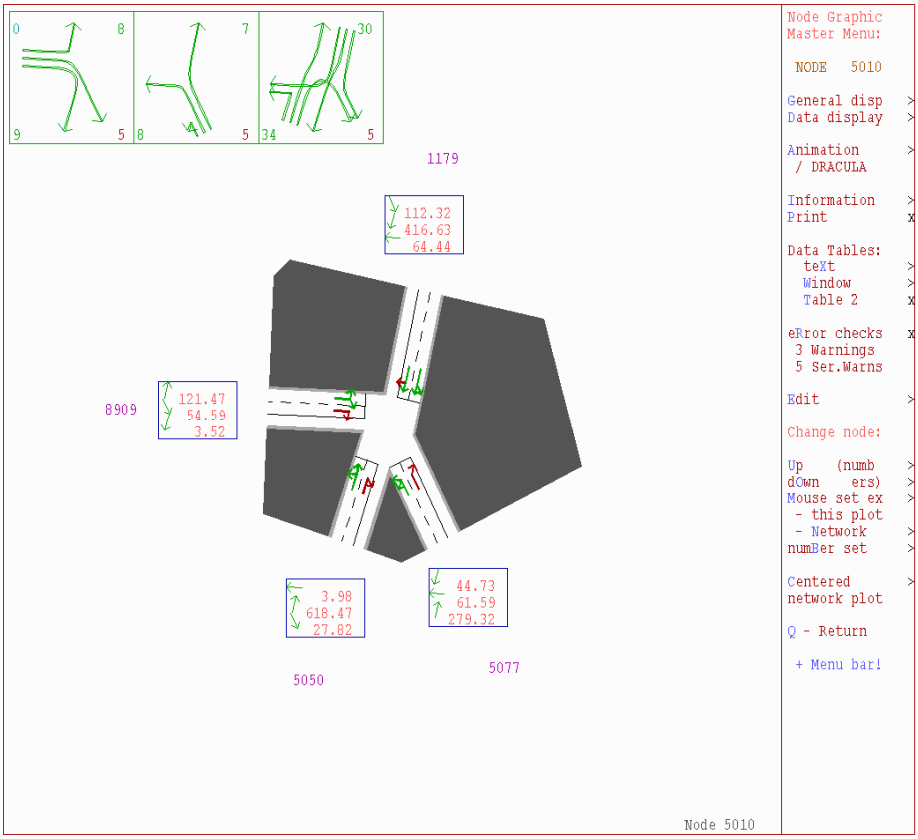


Figure 44. Junction 2 turning movements – PM DS

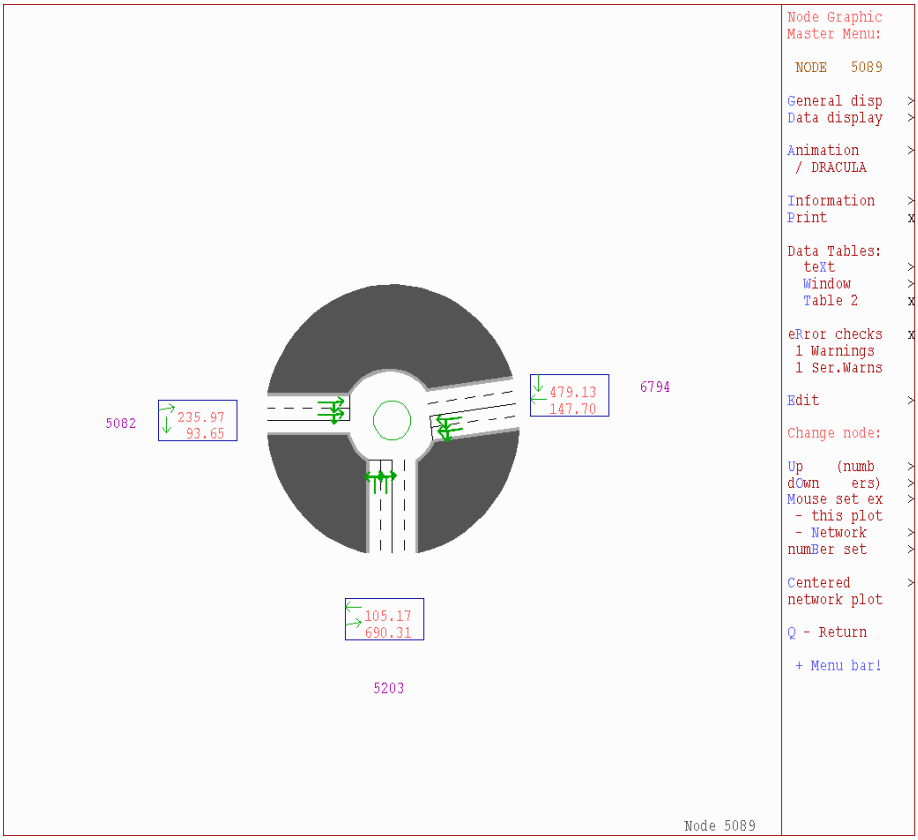


Figure 45. Junction 3 turning movements – PM DS

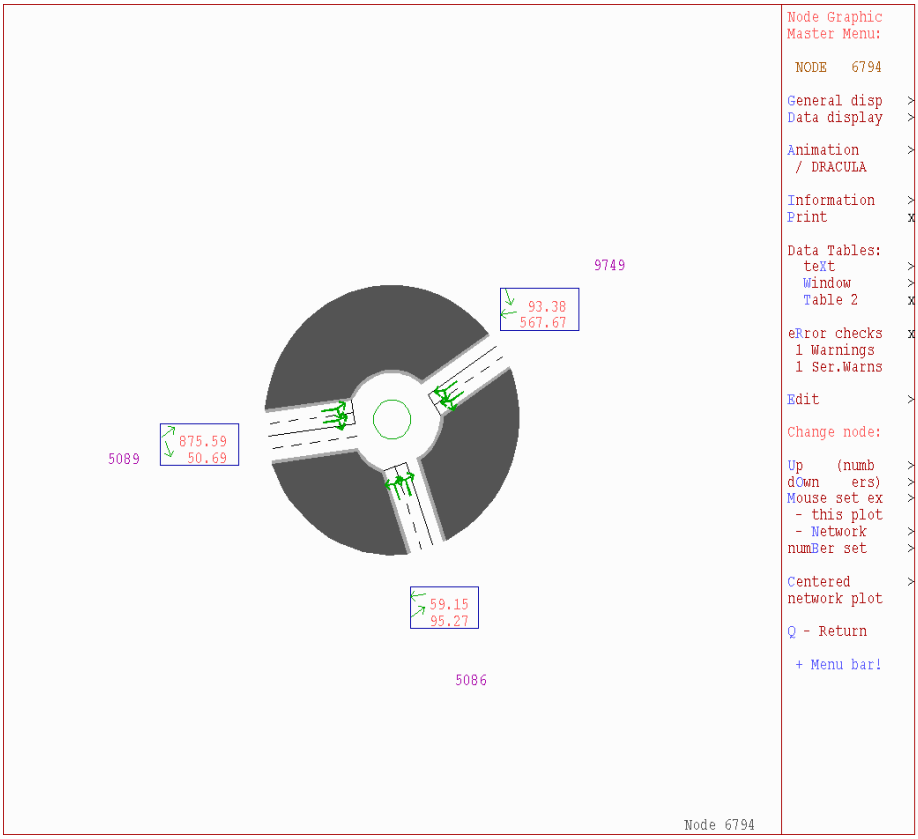


Figure 46. Junction 4 turning movements – PM DS

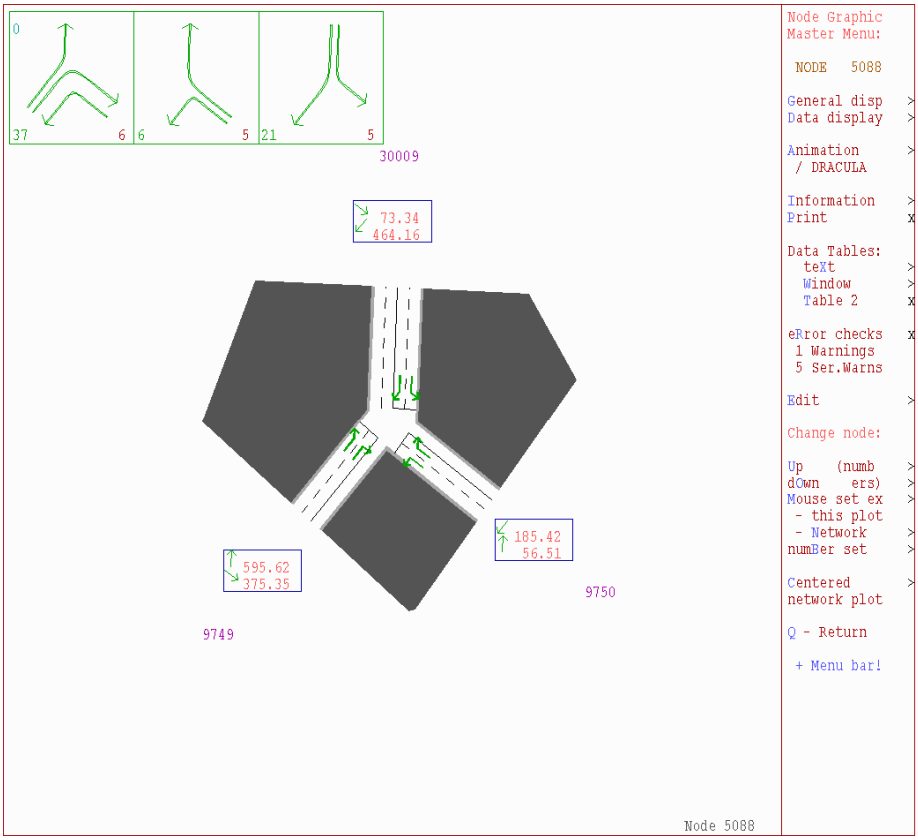


Figure 47. Junction 5 turning movements – PM DS

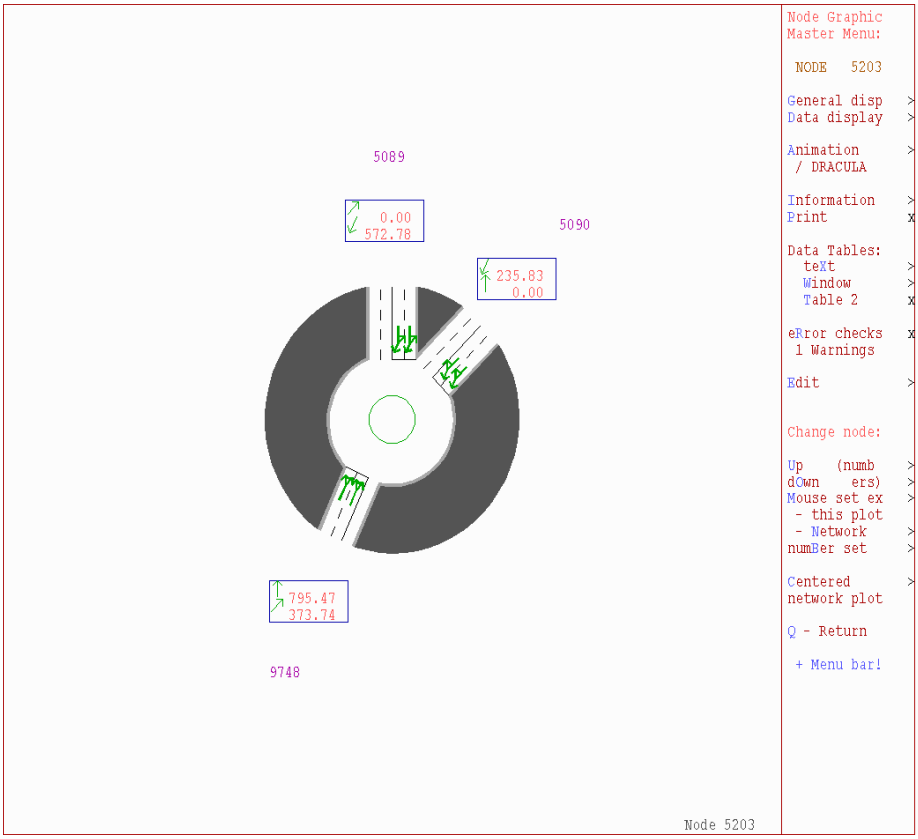


Figure 48. Junction 6 turning movements – PM DS

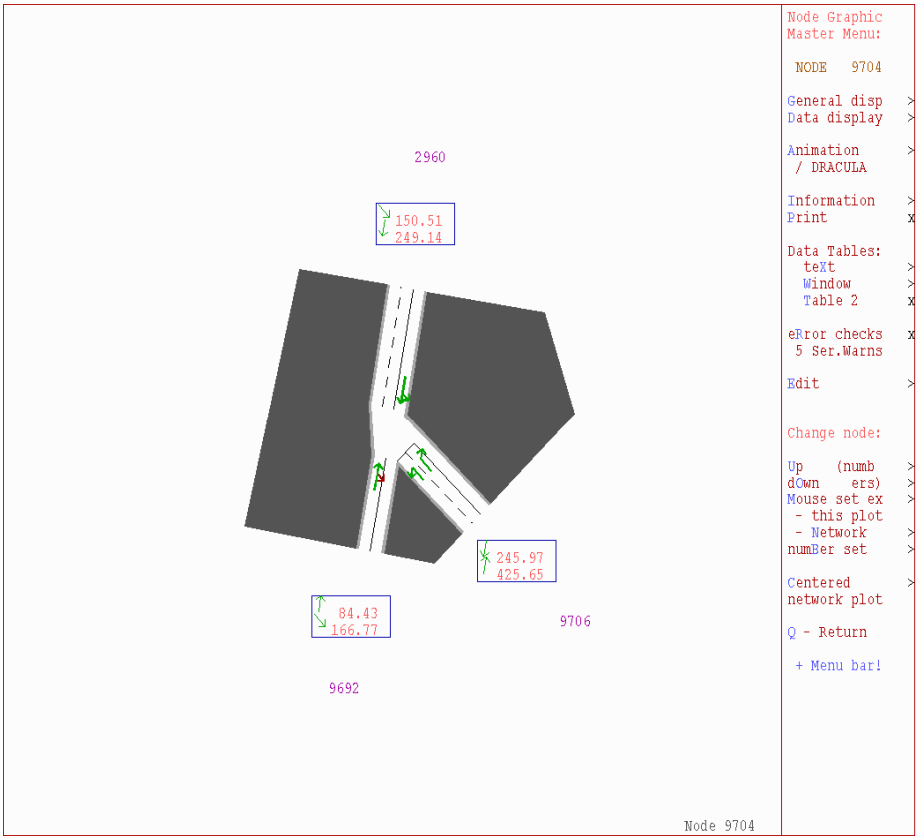


Figure 49. Junction 7 turning movements – PM DS

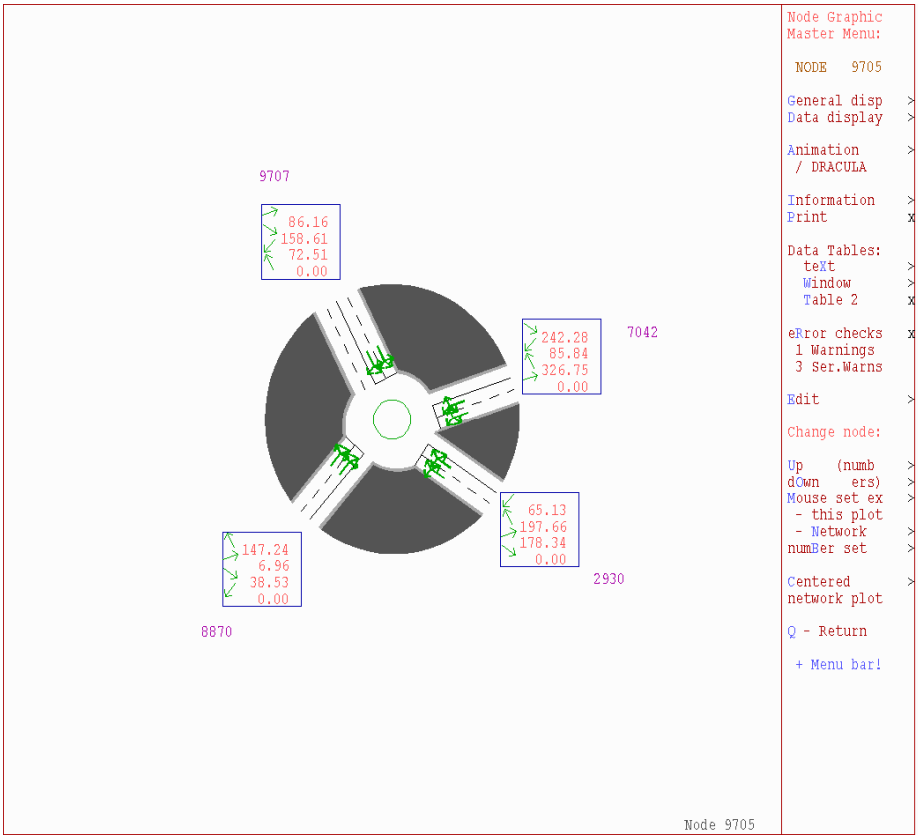


Figure 50. Junction 8 turning movements – PM DS

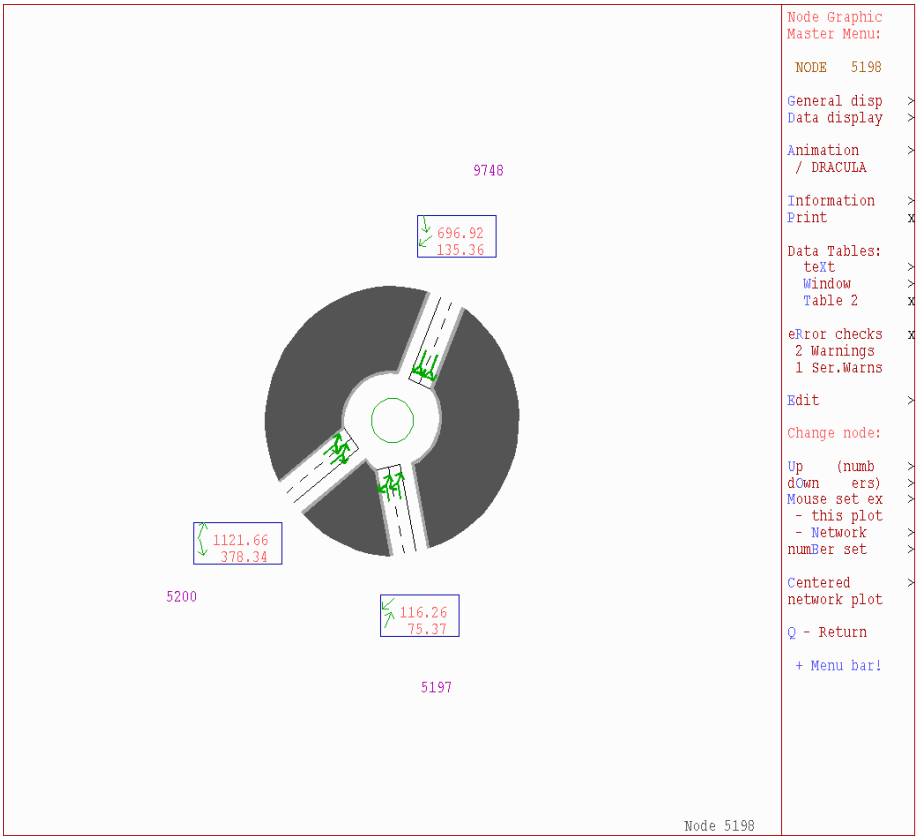


Figure 51. Junction 9 turning movements – PM DS

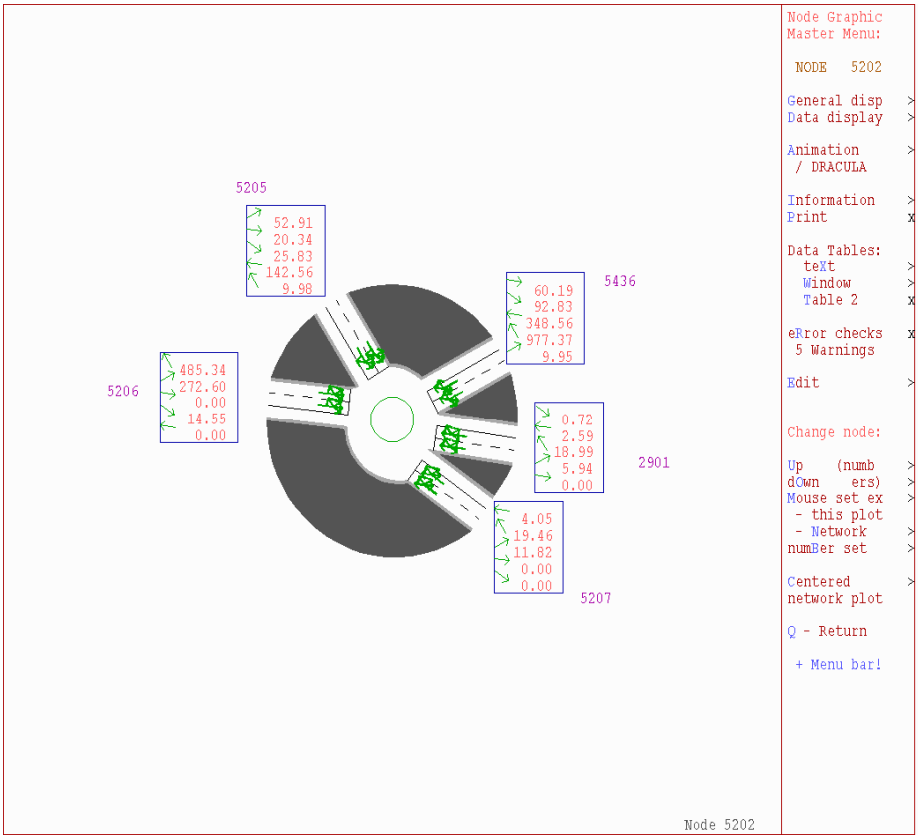


Figure 52. Junction 10 turning movements – PM DS

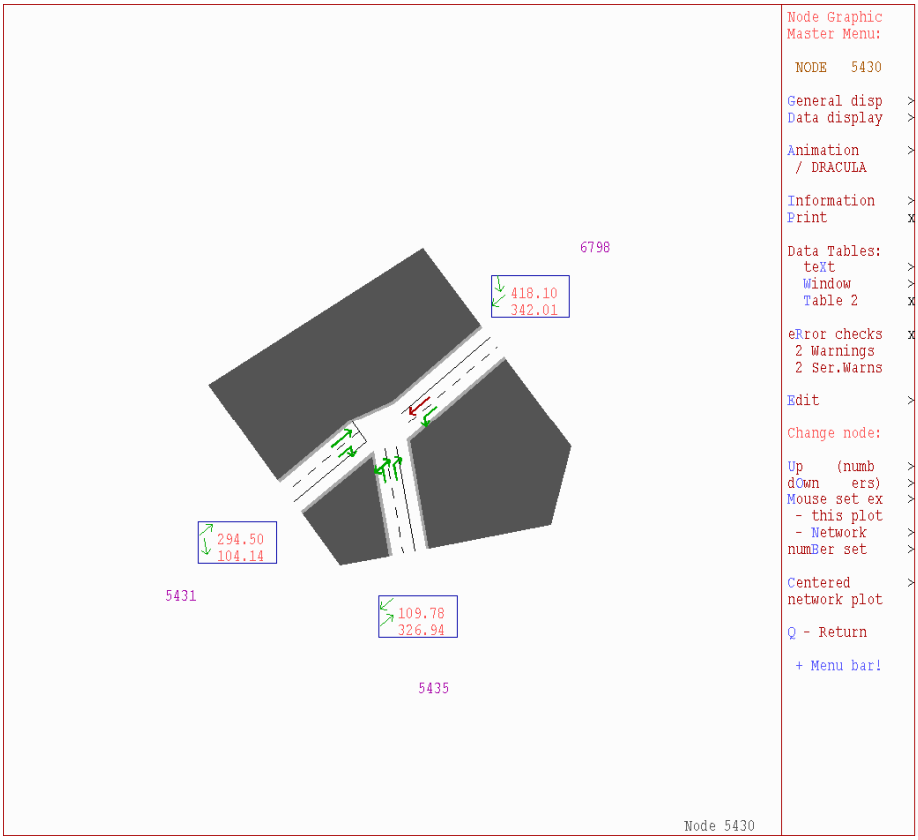


Figure 53. Junction 11 turning movements – PM DS

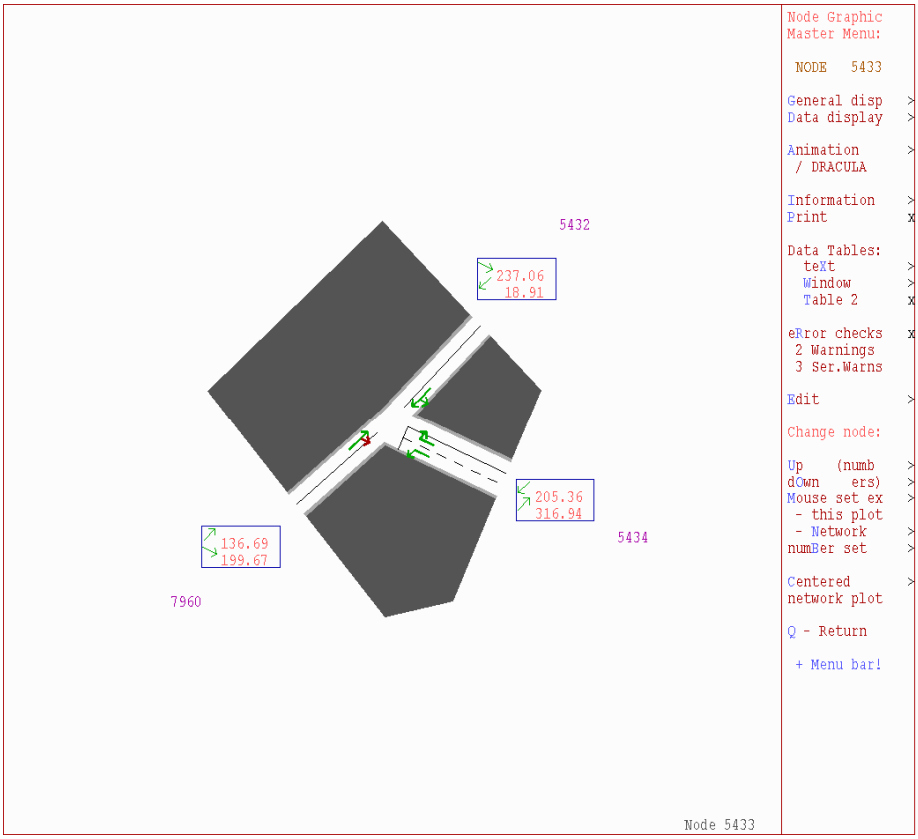


Figure 54. Junction 12 turning movements – PM DS

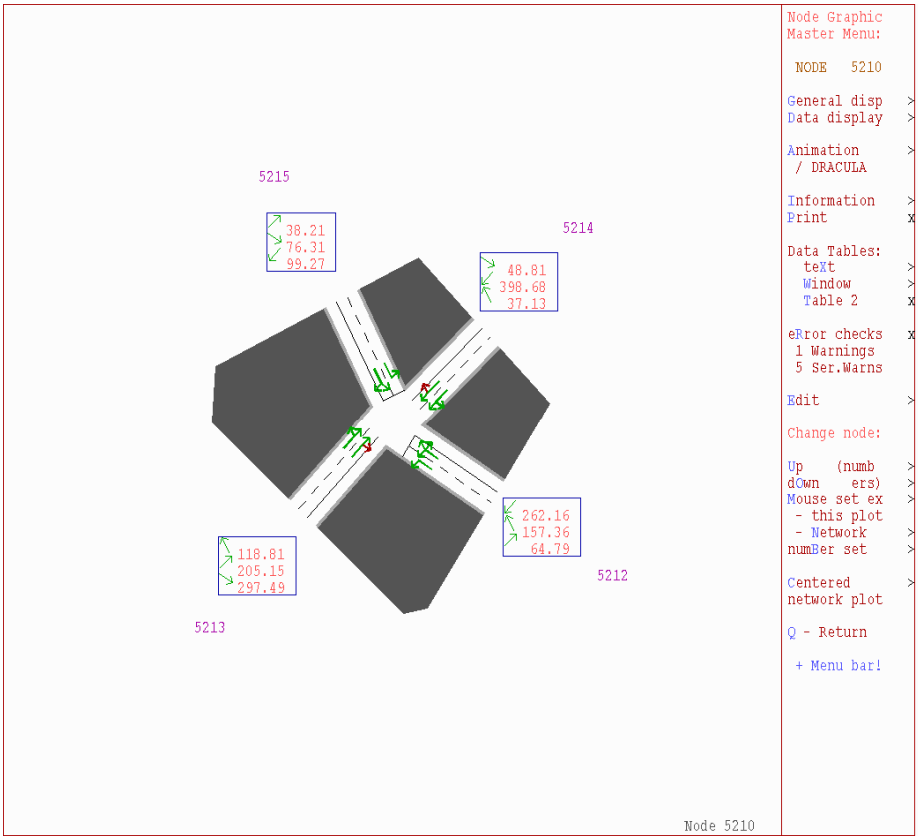


Figure 55. Junction 13 turning movements – PM DS

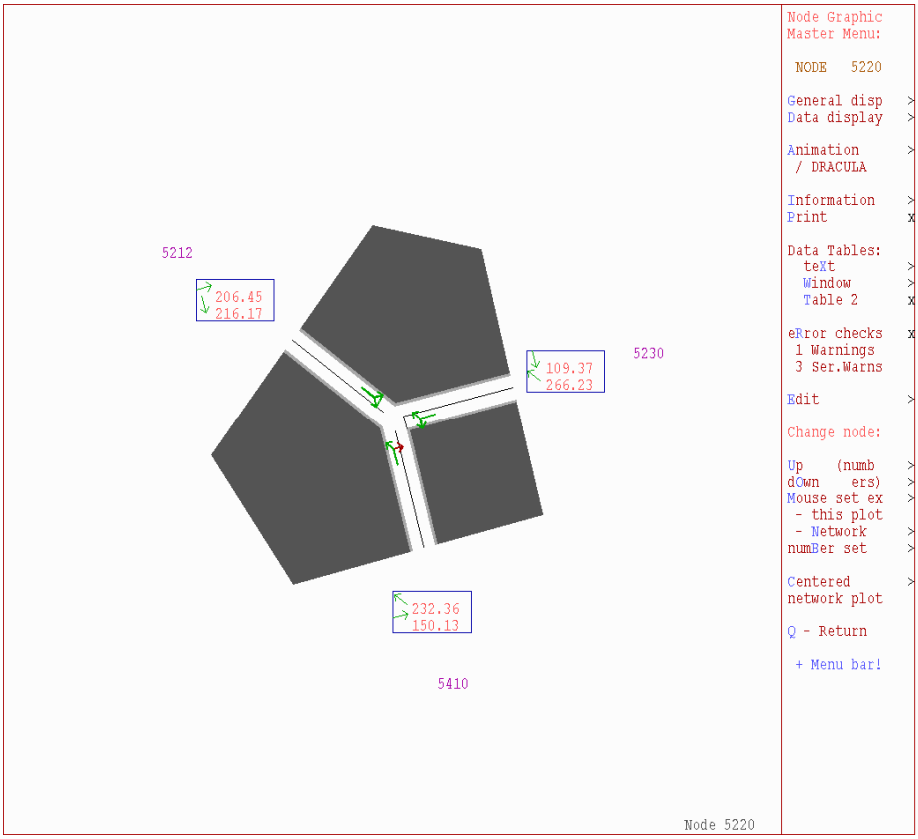
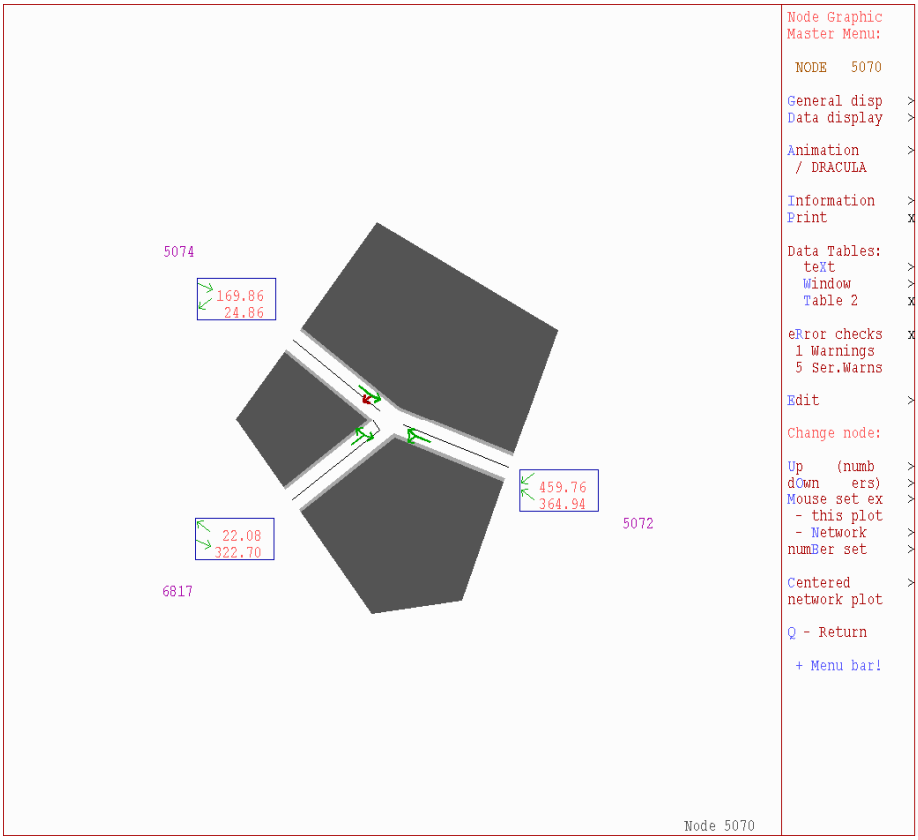


Figure 56. Junction 14 turning movements – PM DS



Technical Note

Project:	Northstowe (5102593)	**To:**	WSP Basingstoke
Subject:	2021 Do Minimum and Do Something Additional Results	**From:**	Atkins
Date:	25 Nov 2011	**cc:**	Gerry Corrance, CCC

1. Contents

In addition to the technical note issued on 26 October 2011, this note provides additional junction data:

- Demand flows (to complement the actual arrival flows provided previously);
- V/C Ratios; and
- Average Queues.

The numerical identifiers for junctions are the same as those previously used, reproduced here for clarity.

In addition, further analysis of the performance of the Bar Hill A14 junction (Jn29) is provided, illustrating the model's response due to the capacity constraint occurring on the overbridge itself at Jn29 (as opposed to the roundabouts). It is evident that the queue here increases significantly in the PM peak between DM and DS, although no corresponding issue is apparent in the AM.

Table 1. Junction IDs

ID	Description
1	Willingham crossroads: B1050 / Berrycroft / Over Road
2	B1050 Longstanton Bypass / Ramper Road
3	B1050 Longstanton Bypass / Station Road
4	B1050 / Northstowe Access (not built in the Do Minimum scenario)
5	B1050 Longstanton Bypass / Hatton's Road
6	A14 Jn28 northern junction
7	A14 Jn28 southern roundabout
8	A14 Jn29 northern roundabout
9	A14 Jn29 southern roundabout
10	A14 Jn30 northern junction
11	A14 Jn30 southern junction
12	Oakington crossroads: Dry Drayton Road / Cambridge Road
13	Cambridge Road / Park Lane (between Oakington and Girton)
14	Oakington Road / Rampton Road (Cottenham)

The 170 figures are arranged as follows:

Table 2. Table of Figures

	Demand Flows	Queues	V/C Ratios	Jn29 Issues
AM Do Minimum	Figures 1-13	Figures 55-67	Figures 109-121	Figures 163-164
PM Do Minimum	Figures 14-26	Figures 68-80	Figures 122-134	Figures 165-166
AM Do Something	Figures 27-40	Figures 81-94	Figures 135-148	Figures 167-168
PM Do Something	Figures 41-54	Figures 95-108	Figures 149-162	Figures 169-170

Technical Note

2. Outputs

Figure 1. Junction 1 turning movements (demand) – AM DM

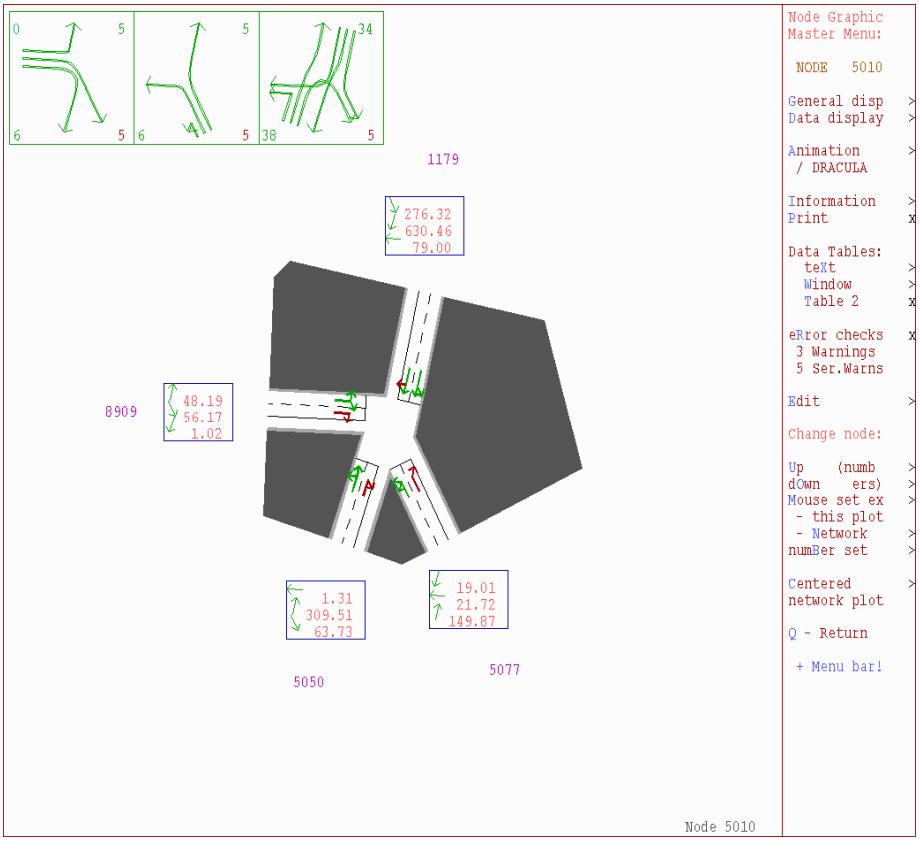


Figure 2. Junction 2 turning movements (demand) – AM DM

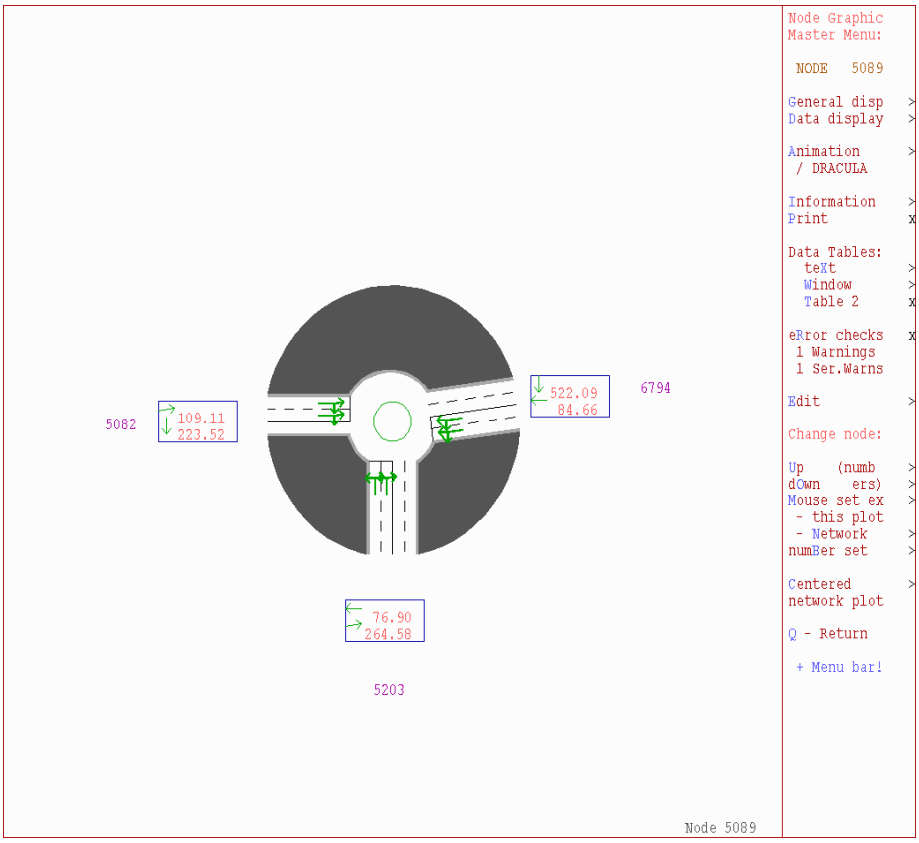


Figure 3. Junction 3 turning movements (demand) – AM DM

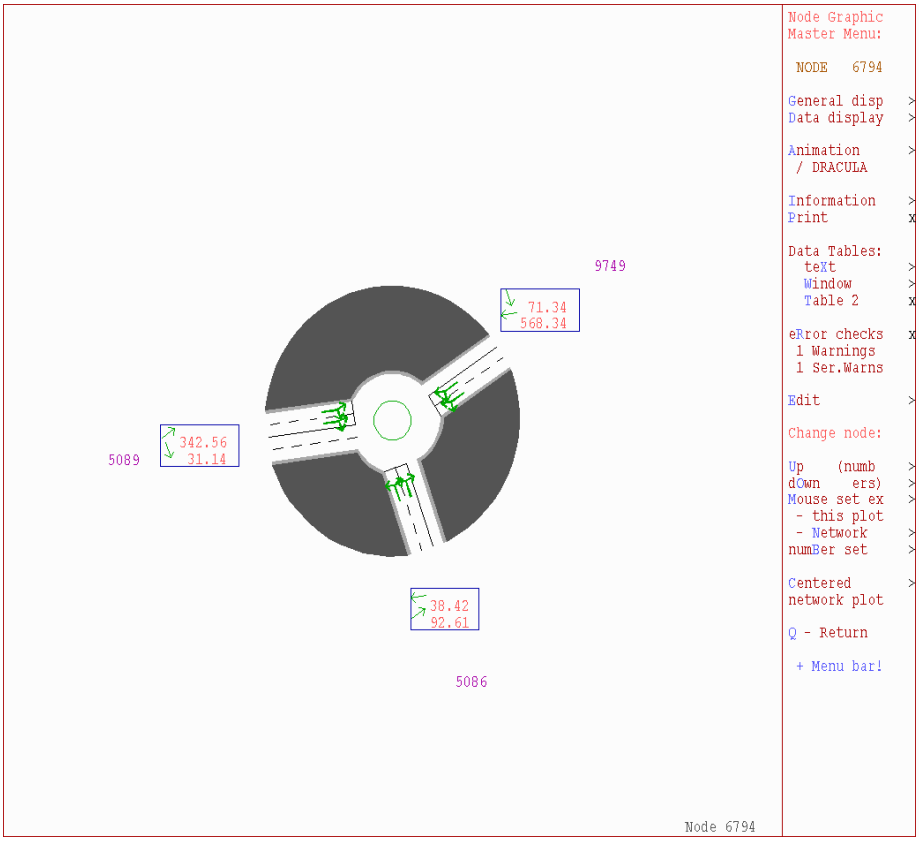


Figure 4. Junction 5 turning movements (demand) – AM DM

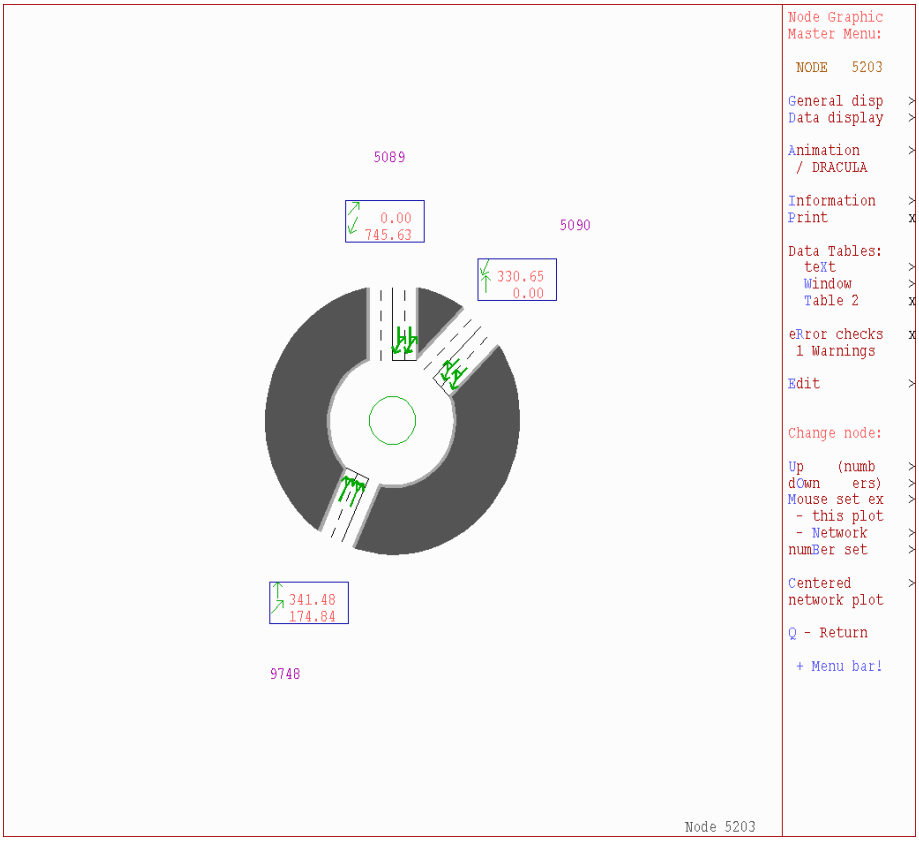


Figure 5. Junction 6 turning movements (demand) – AM DM

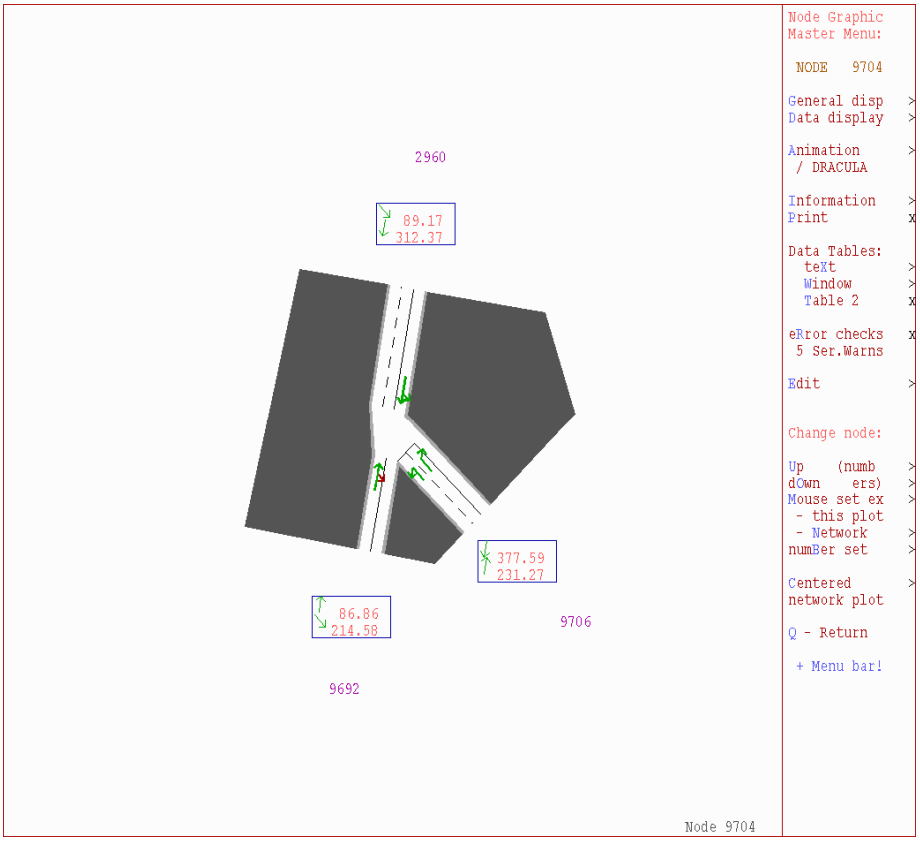


Figure 6. Junction 7 turning movements (demand) – AM DM

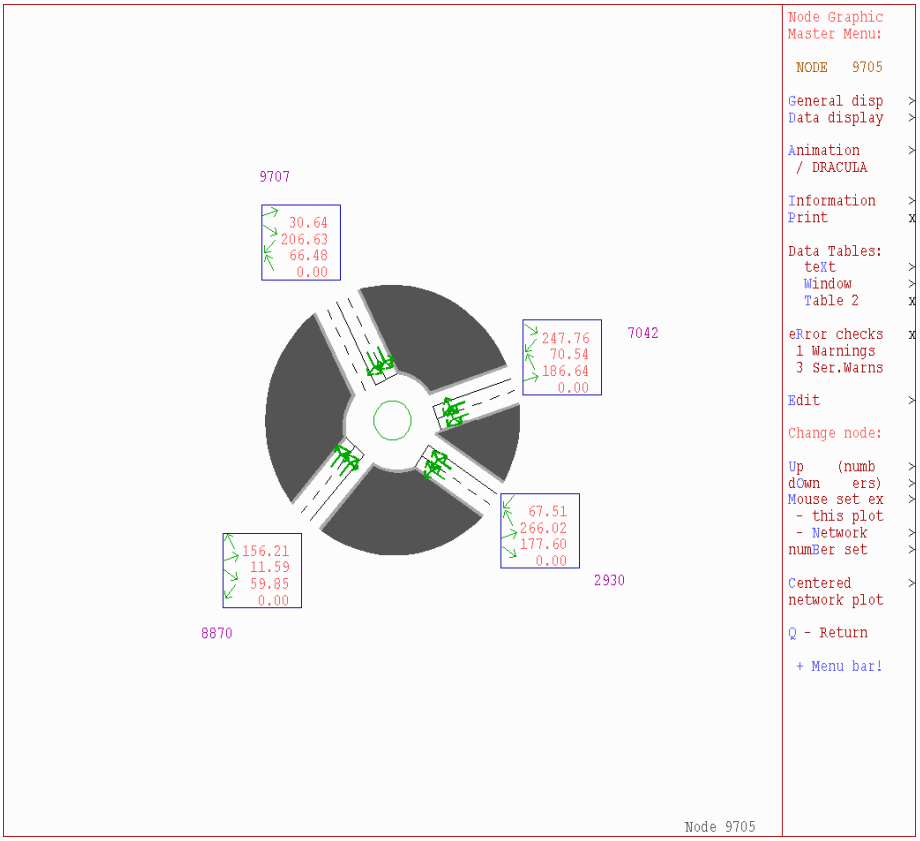


Figure 7. Junction 8 turning movements (demand) – AM DM

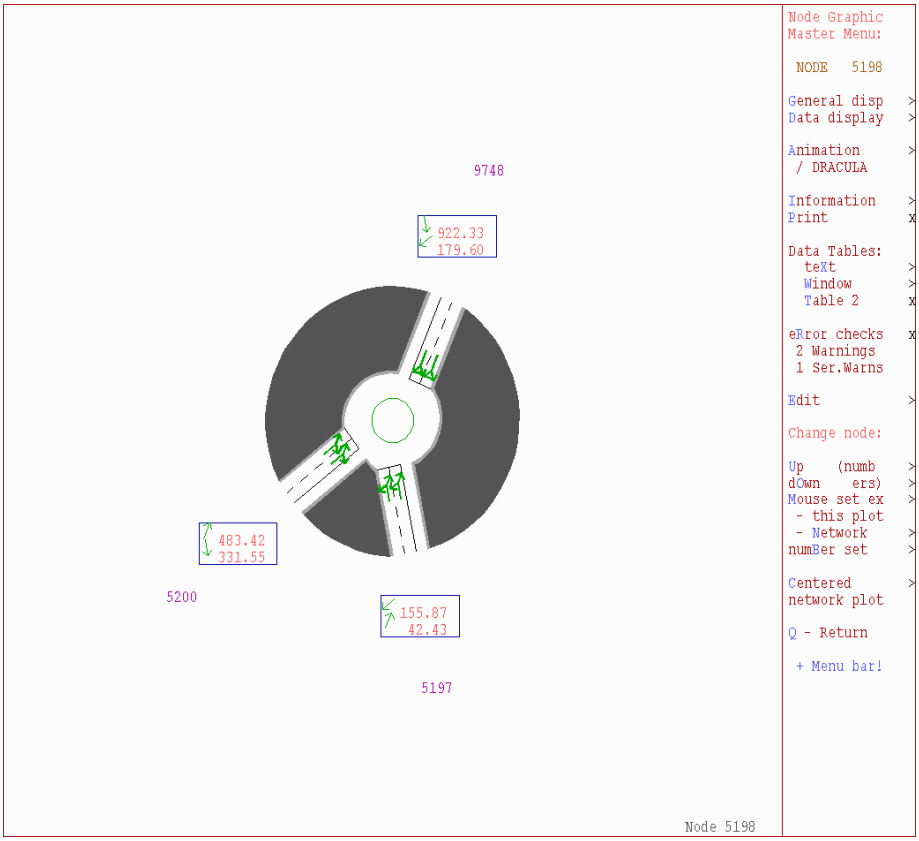


Figure 8. Junction 9 turning movements (demand) – AM DM

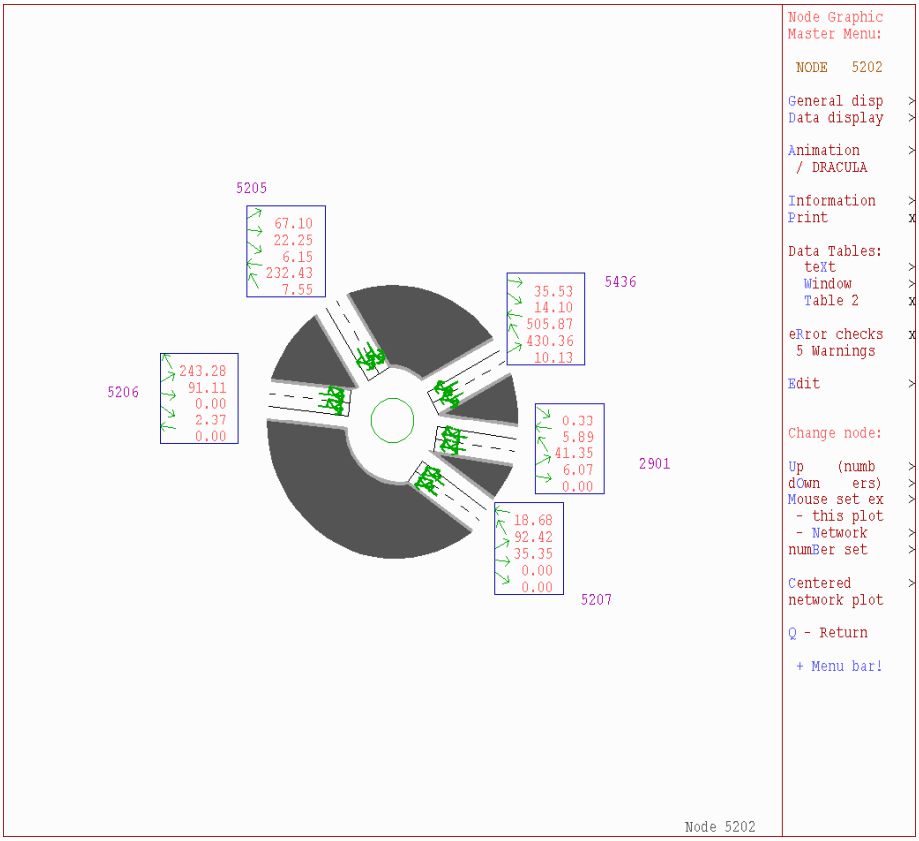


Figure 9. Junction 10 turning movements (demand) – AM DM

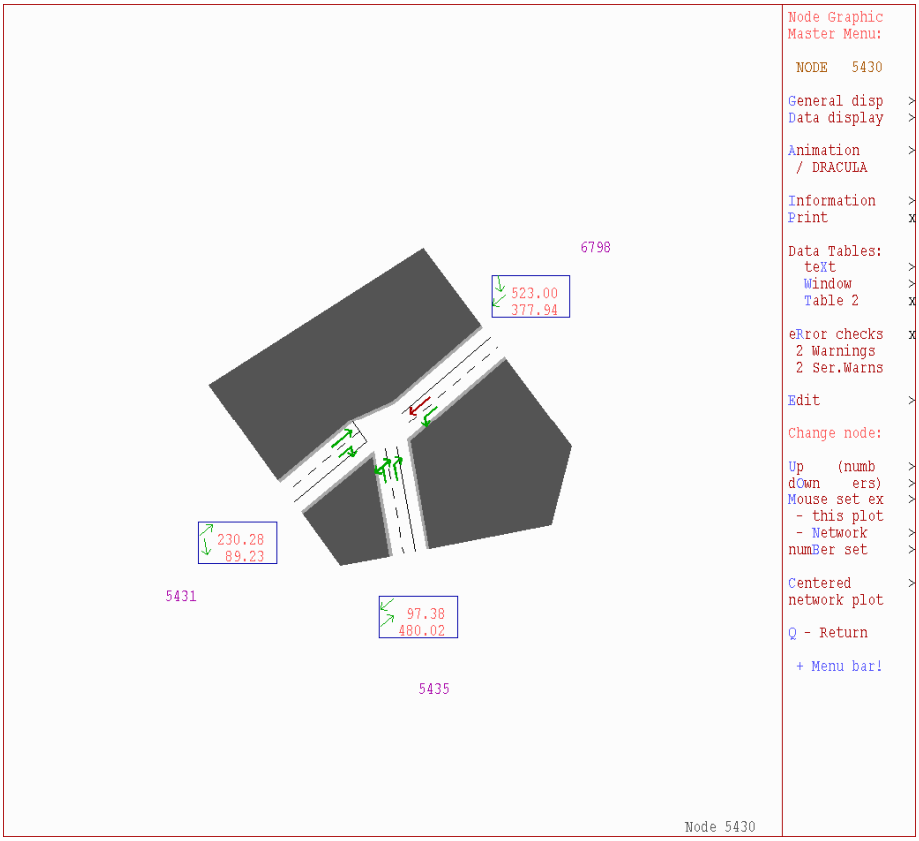


Figure 10. Junction 11 turning movements (demand) – AM DM

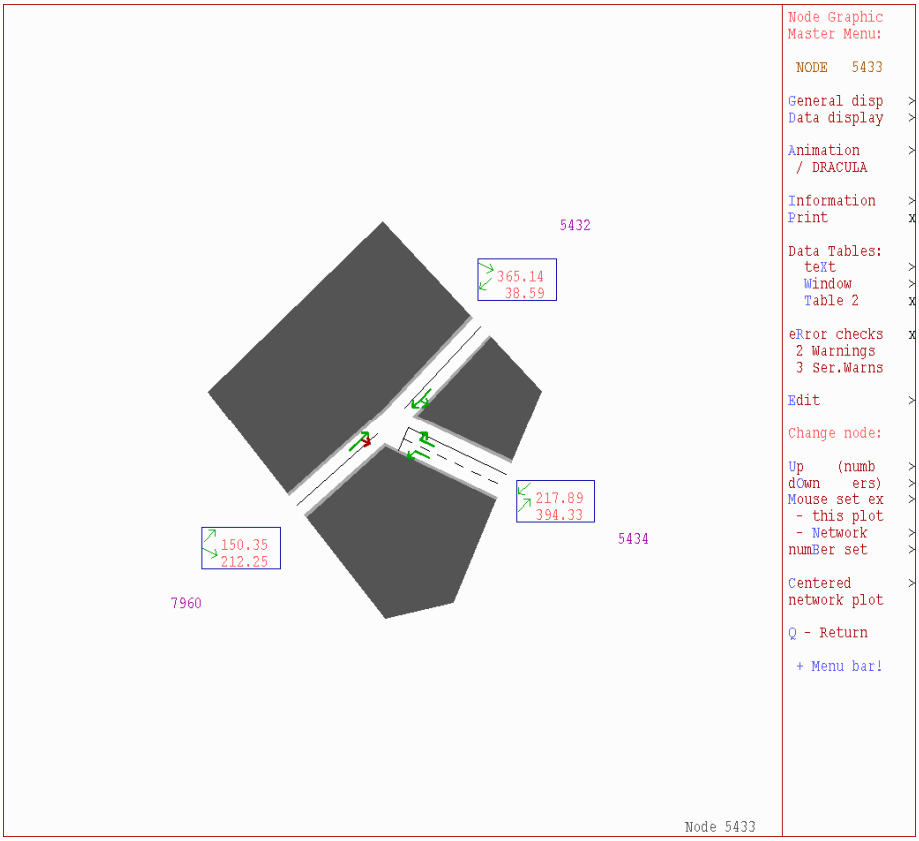


Figure 11. Junction 12 turning movements (demand) – AM DM

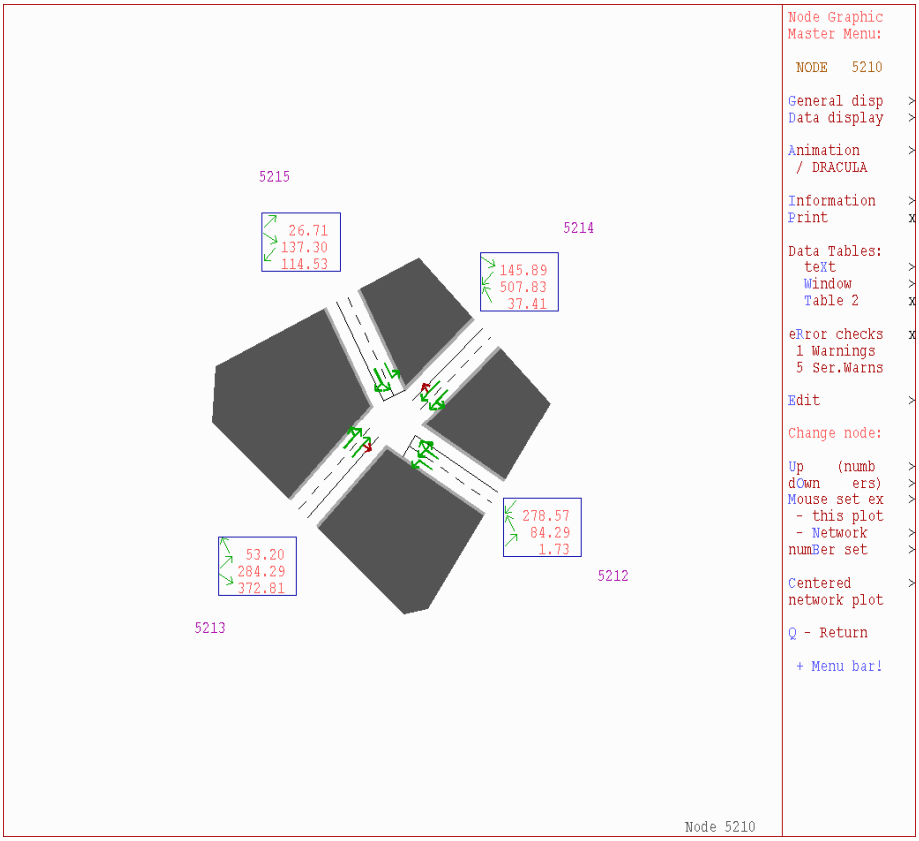


Figure 12. Junction 13 turning movements (demand) – AM DM

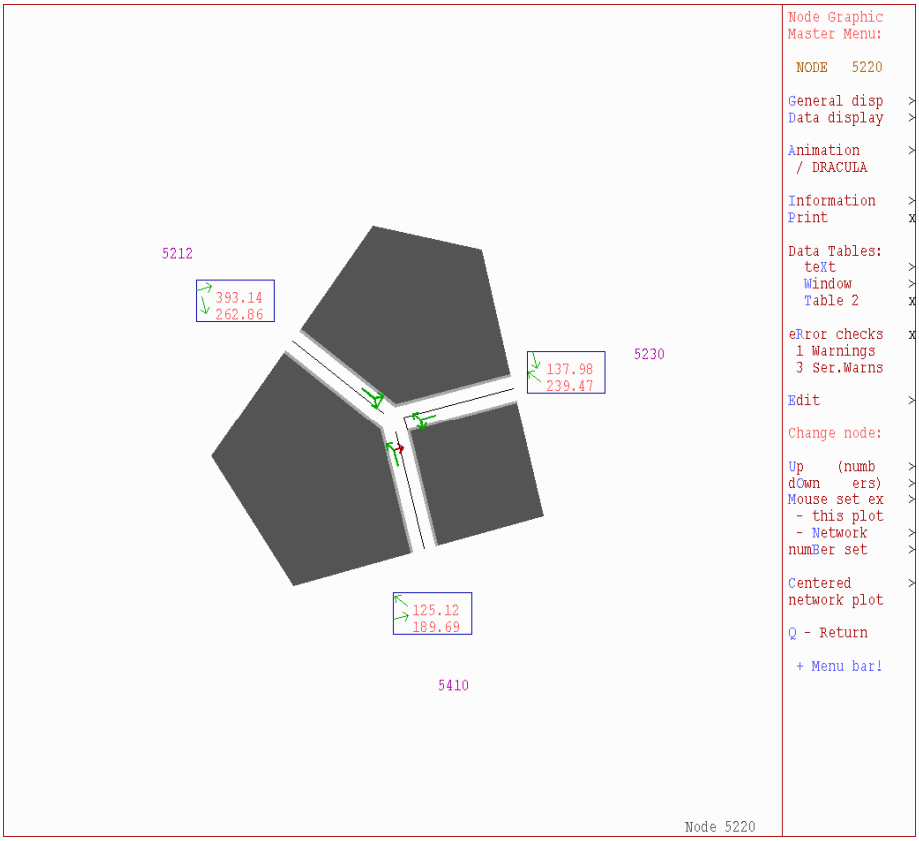


Figure 13. Junction 14 turning movements (demand) – AM DM

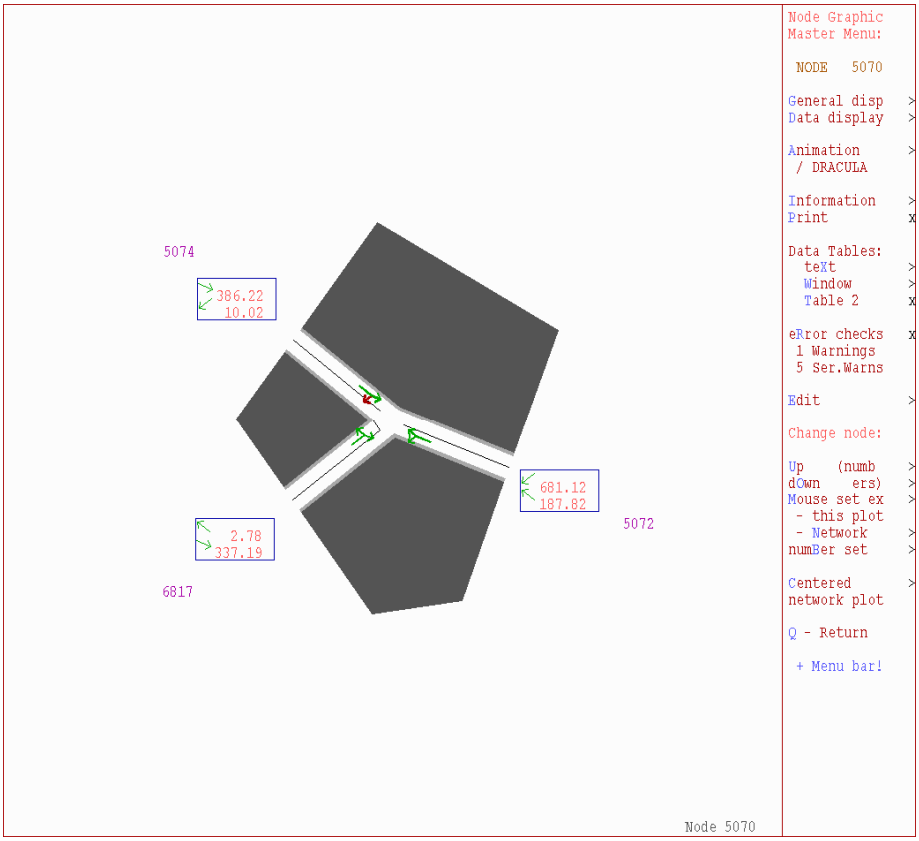


Figure 14. Junction 1 turning movements (demand) – PM DM

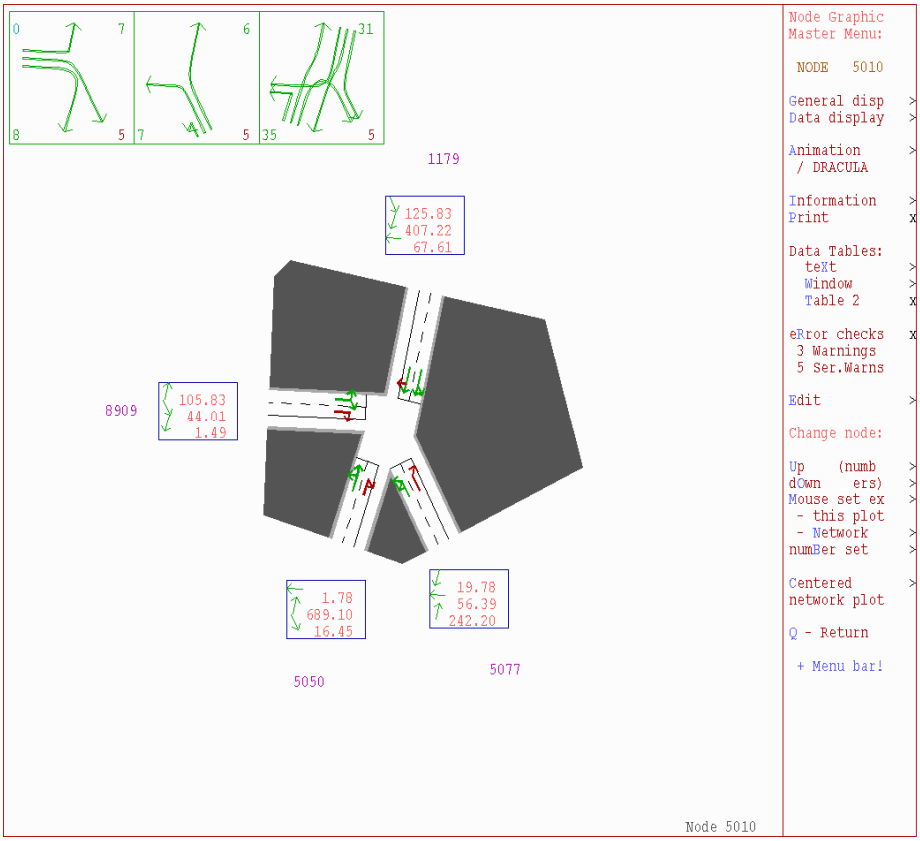


Figure 15. Junction 2 turning movements (demand) – PM DM

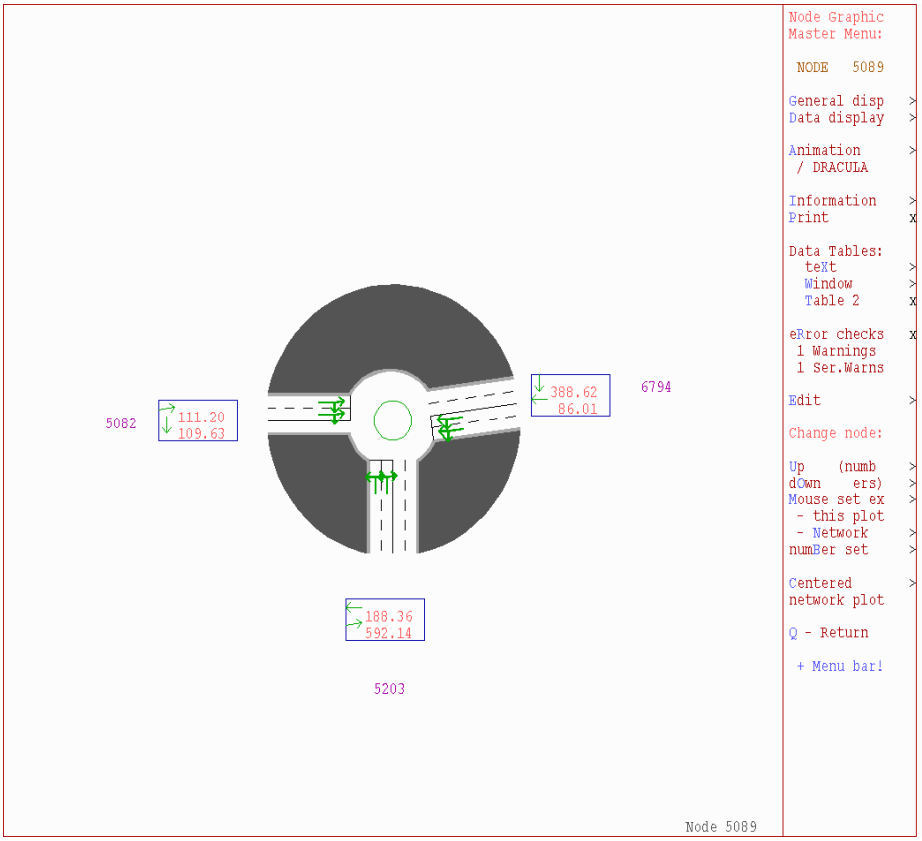


Figure 16. Junction 3 turning movements (demand) – PM DM

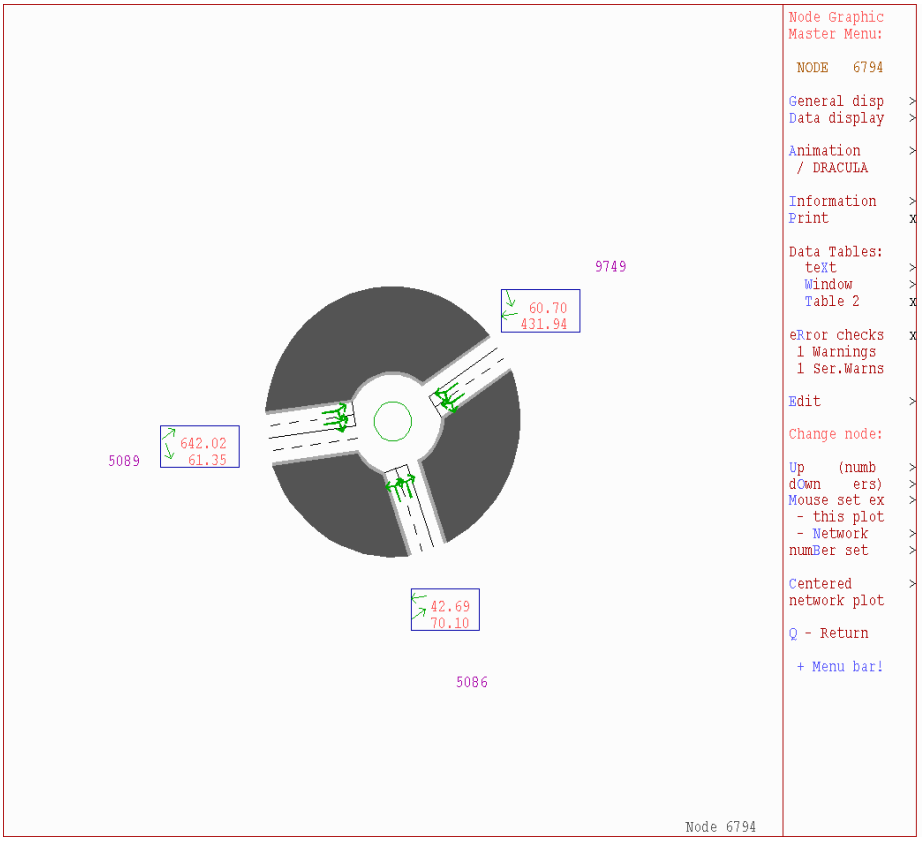


Figure 17. Junction 5 turning movements (demand) – PM DM

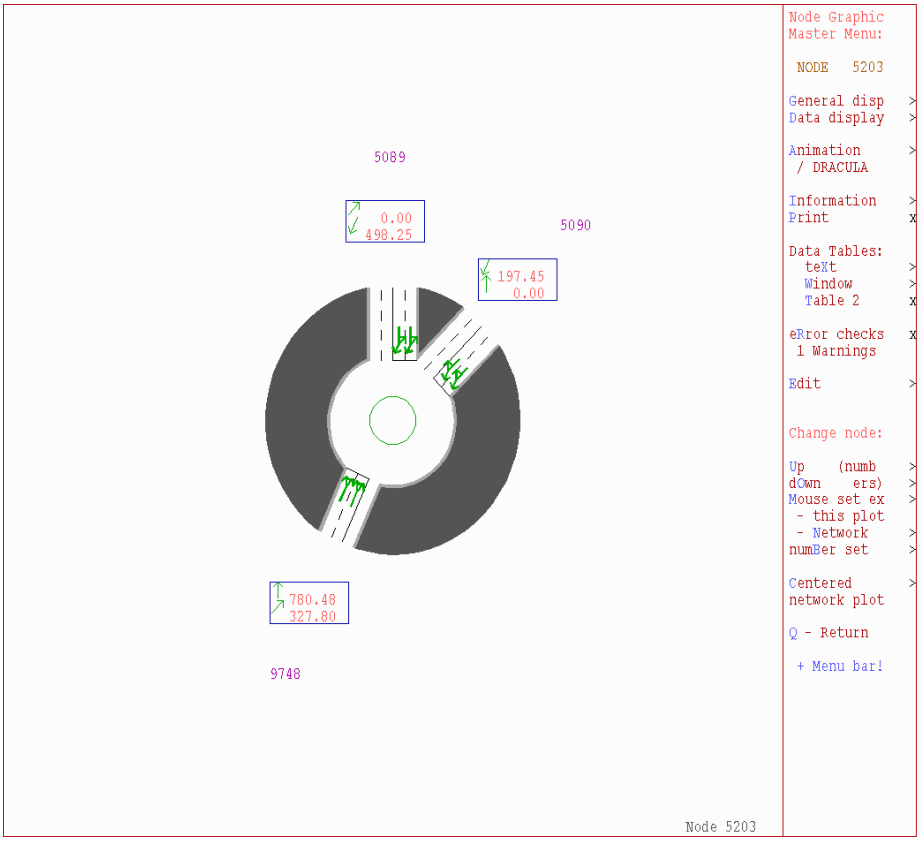


Figure 18. Junction 6 turning movements (demand) – PM DM

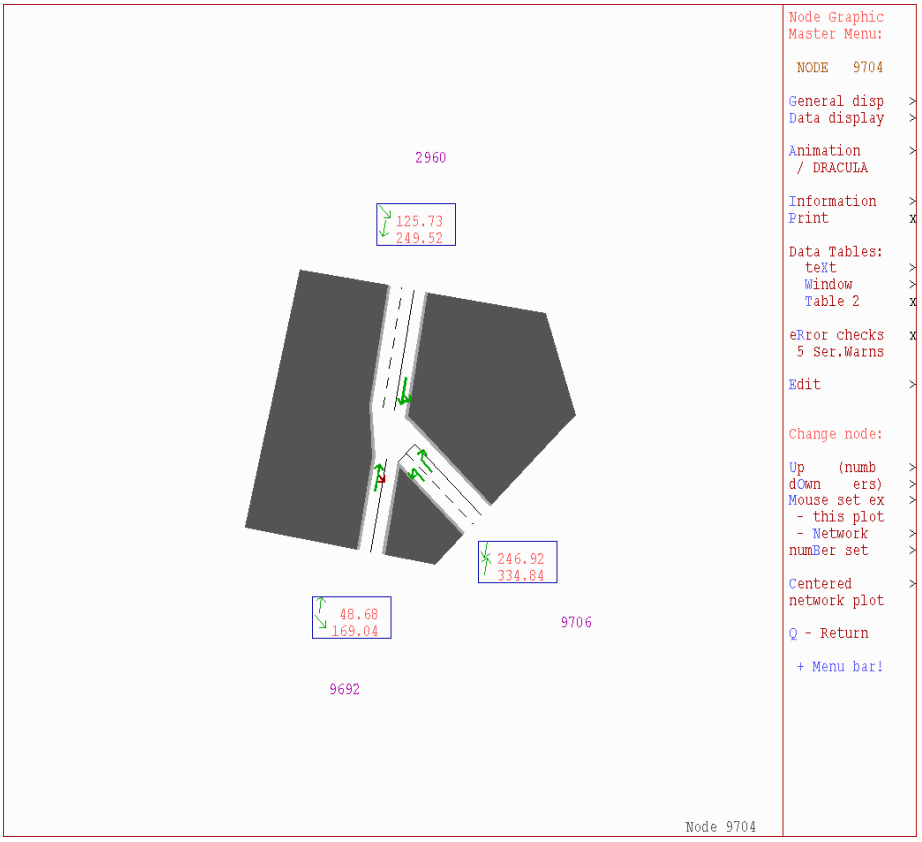


Figure 19. Junction 7 turning movements (demand) – PM DM

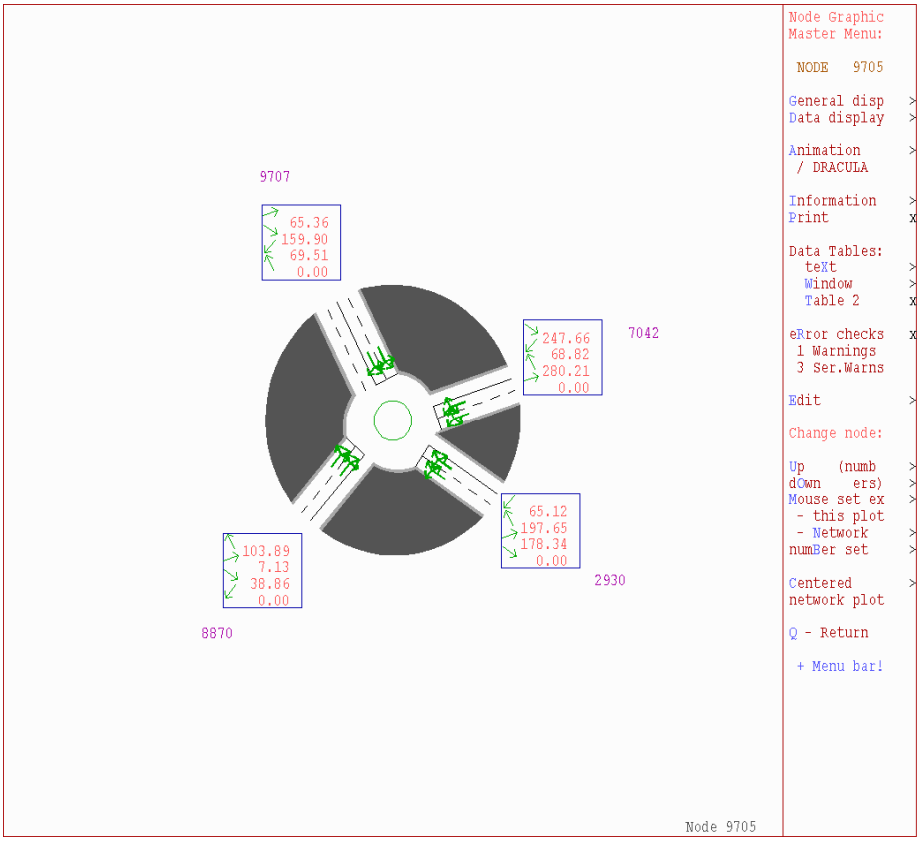


Figure 20. Junction 8 turning movements (demand) – PM DM

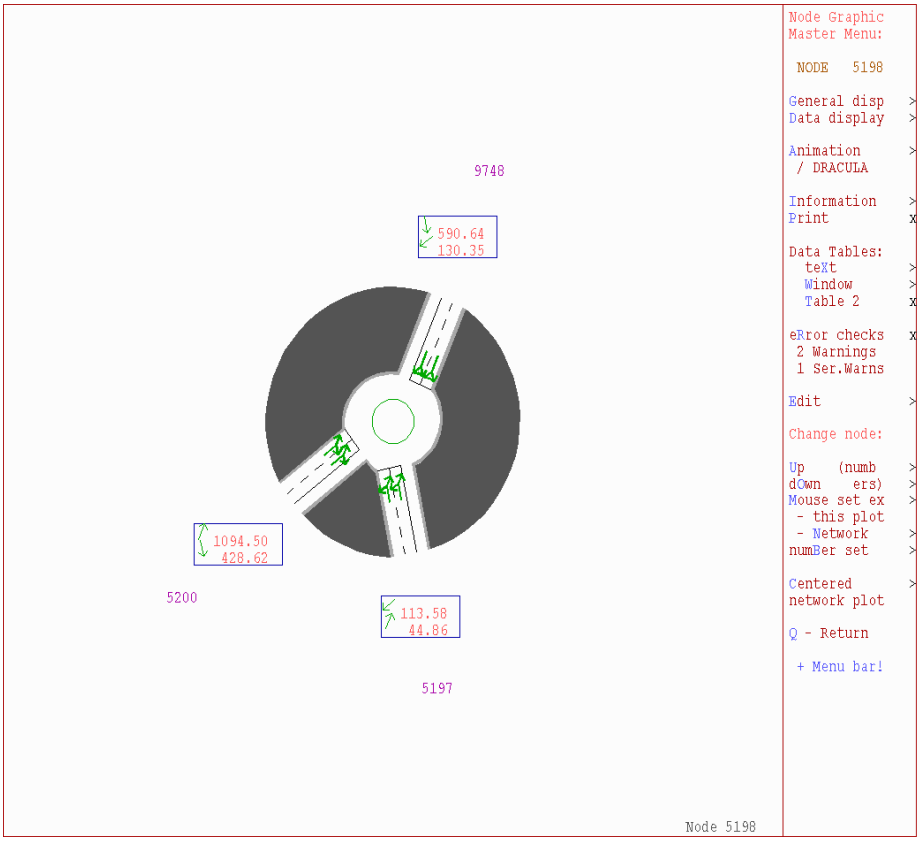


Figure 21. Junction 9 turning movements (demand) – PM DM

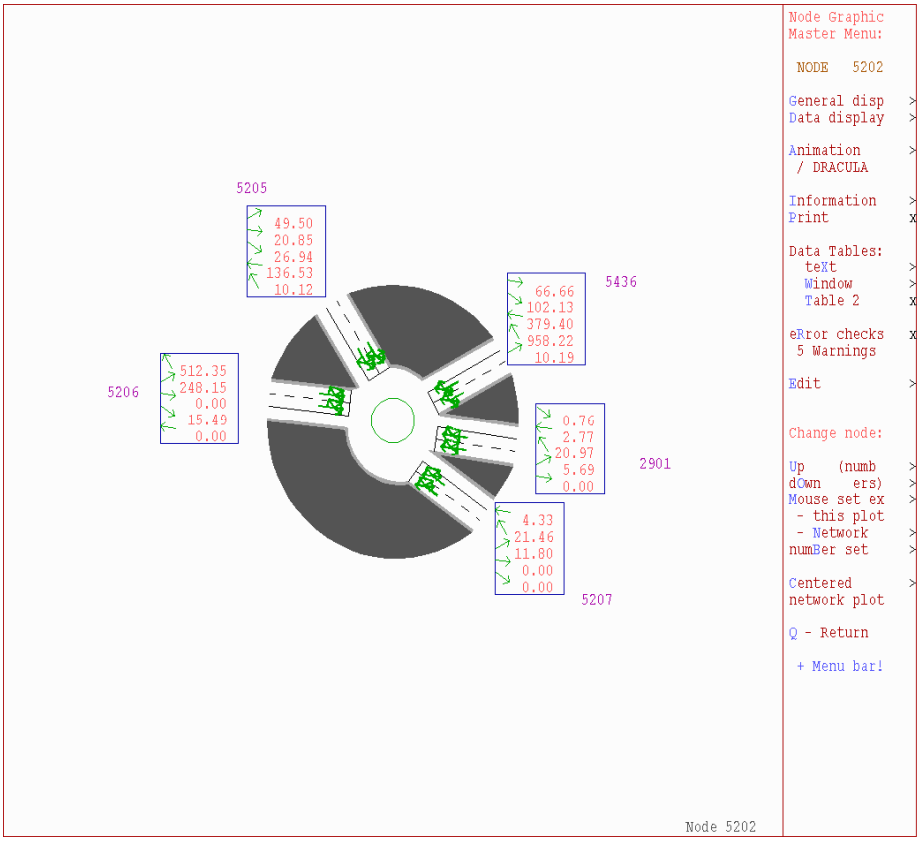


Figure 22. Junction 10 turning movements (demand) – PM DM

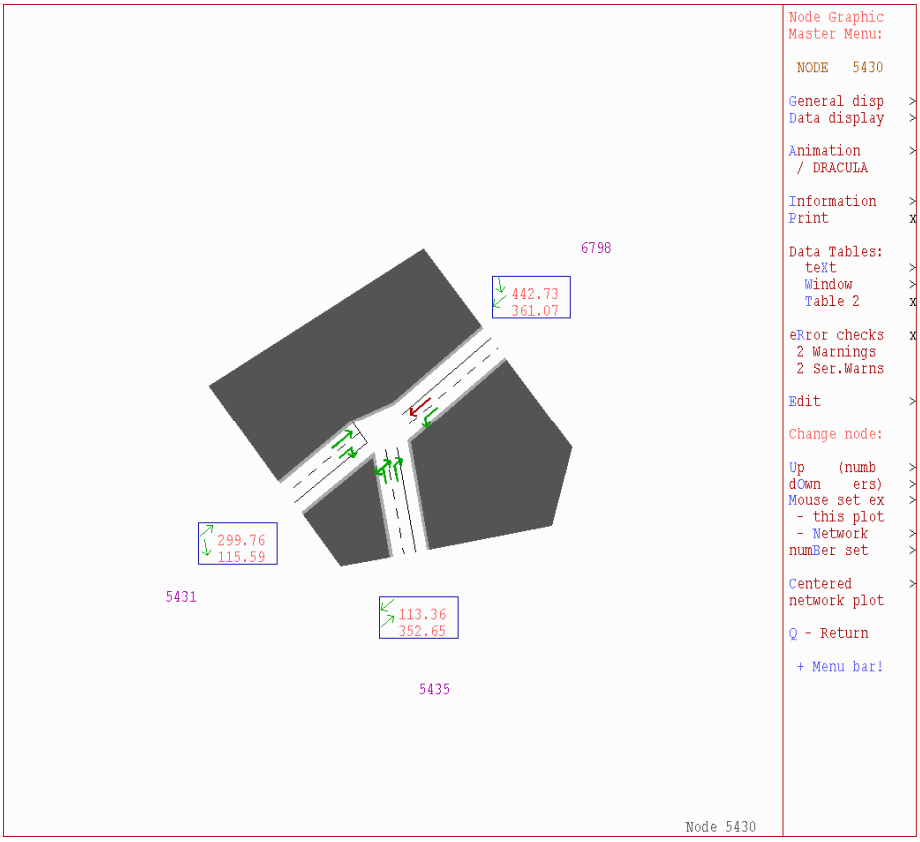


Figure 23. Junction 11 turning movements (demand) – PM DM

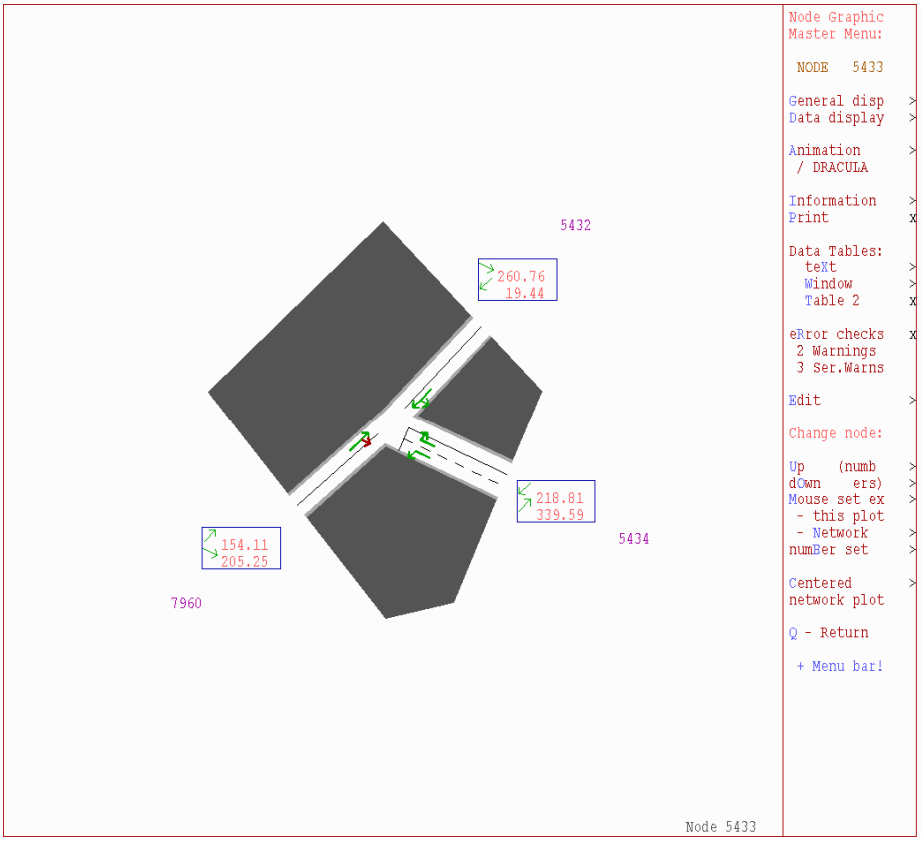


Figure 24. Junction 12 turning movements (demand) – PM DM

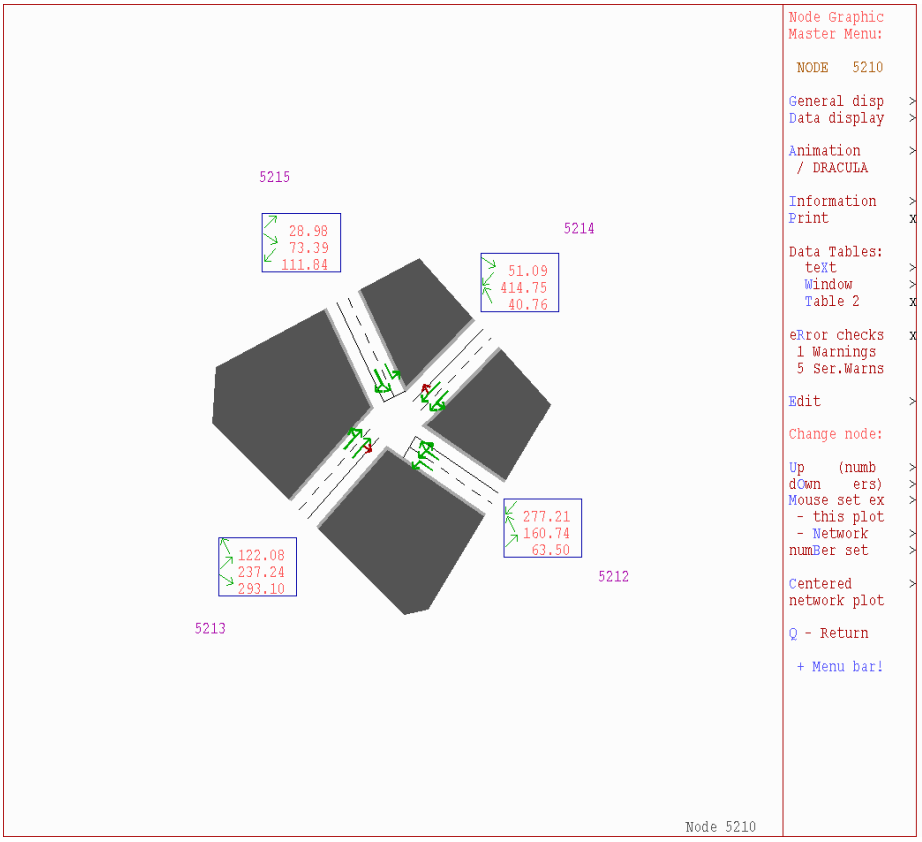


Figure 25. Junction 13 turning movements (demand) – PM DM

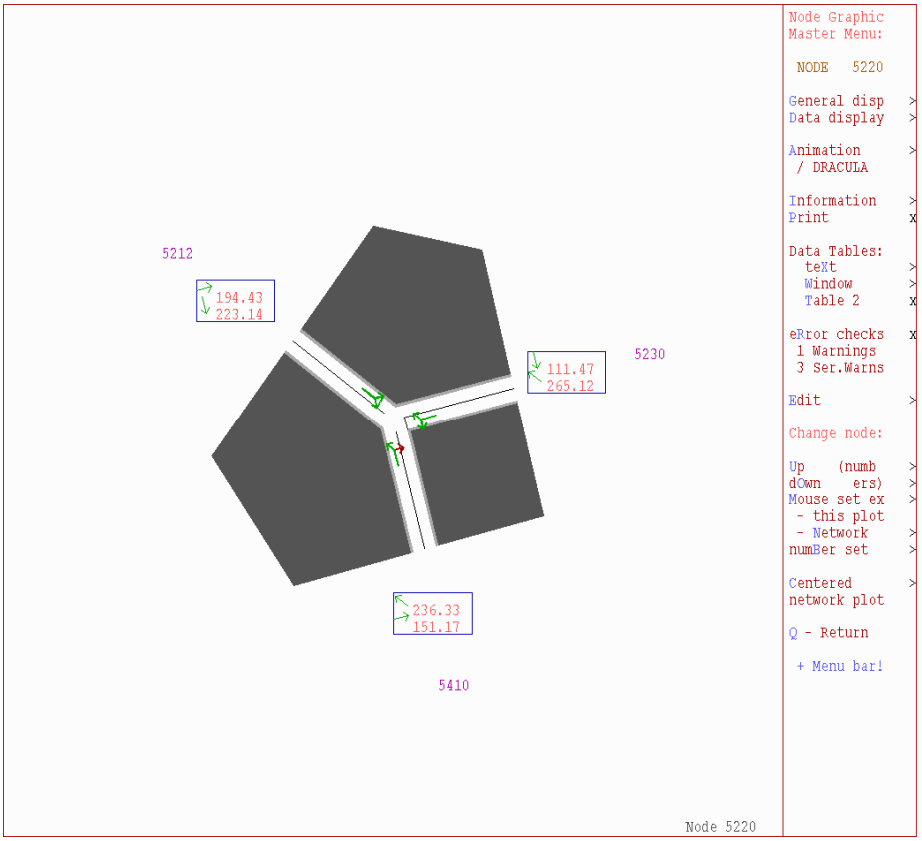


Figure 26. Junction 14 turning movements (demand) – PM DM

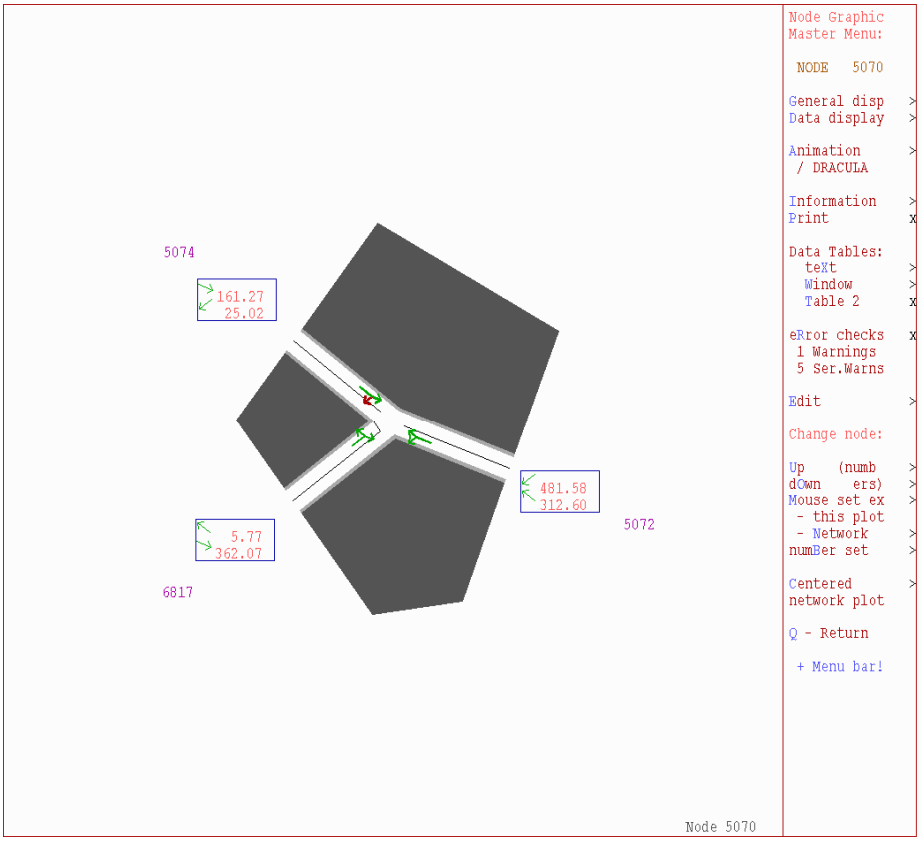


Figure 27. Junction 1 turning movements (demand) – AM DS

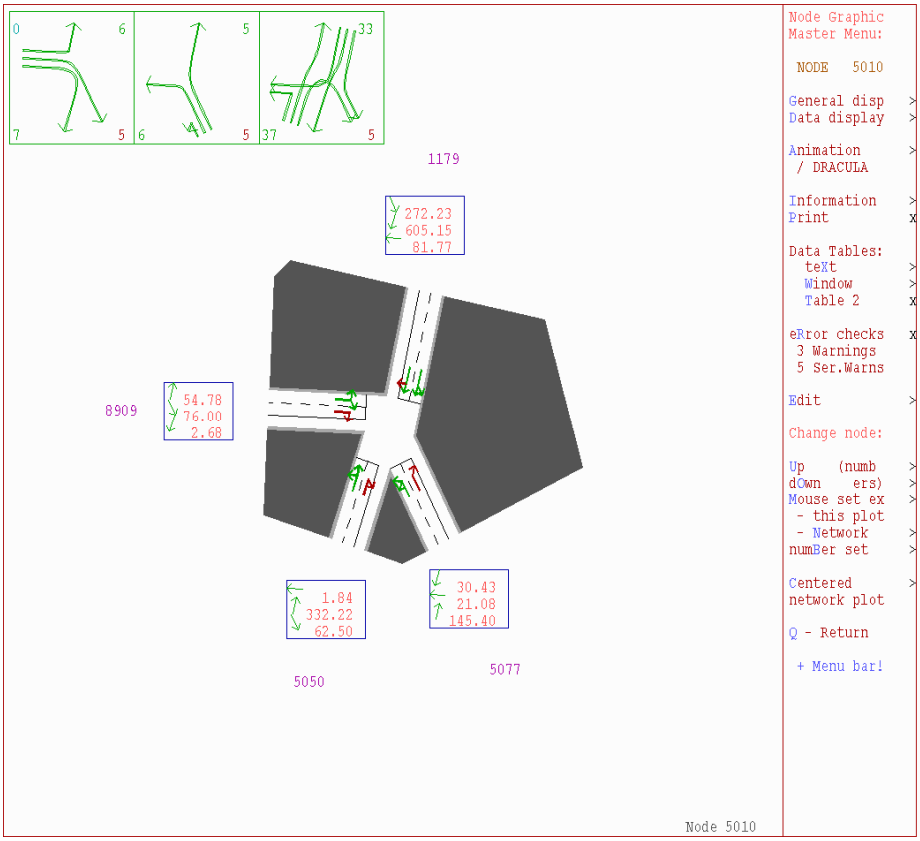


Figure 28. Junction 2 turning movements (demand) – AM DS

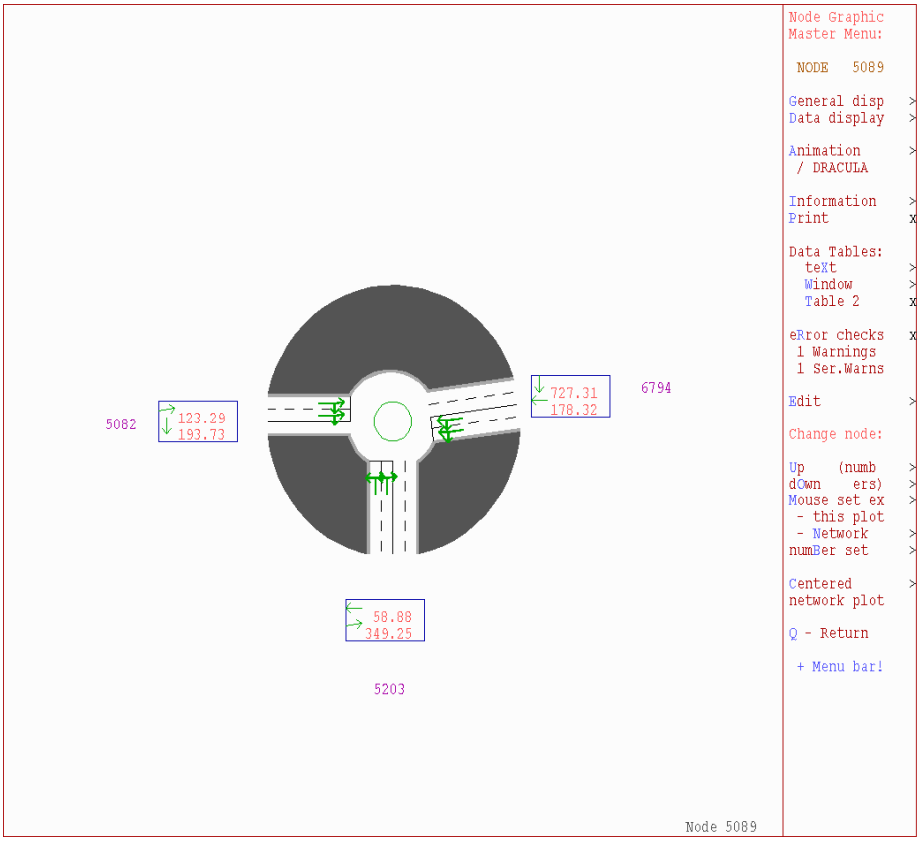


Figure 29. Junction 3 turning movements (demand) – AM DS

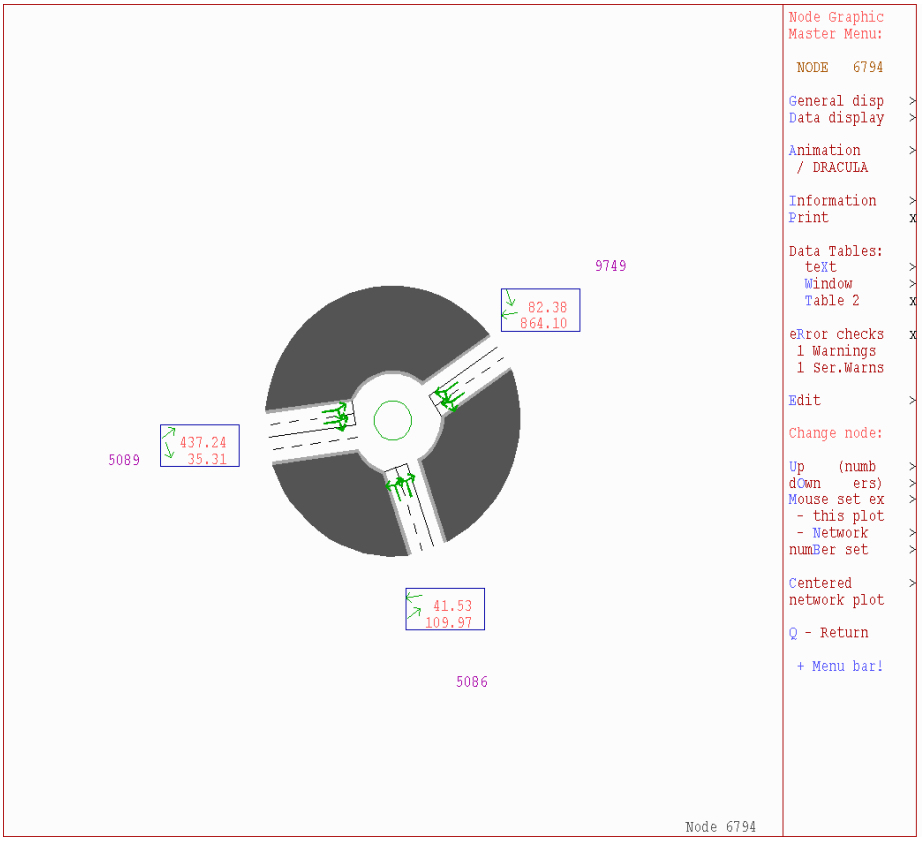


Figure 30. Junction 4 turning movements (demand) – AM DS

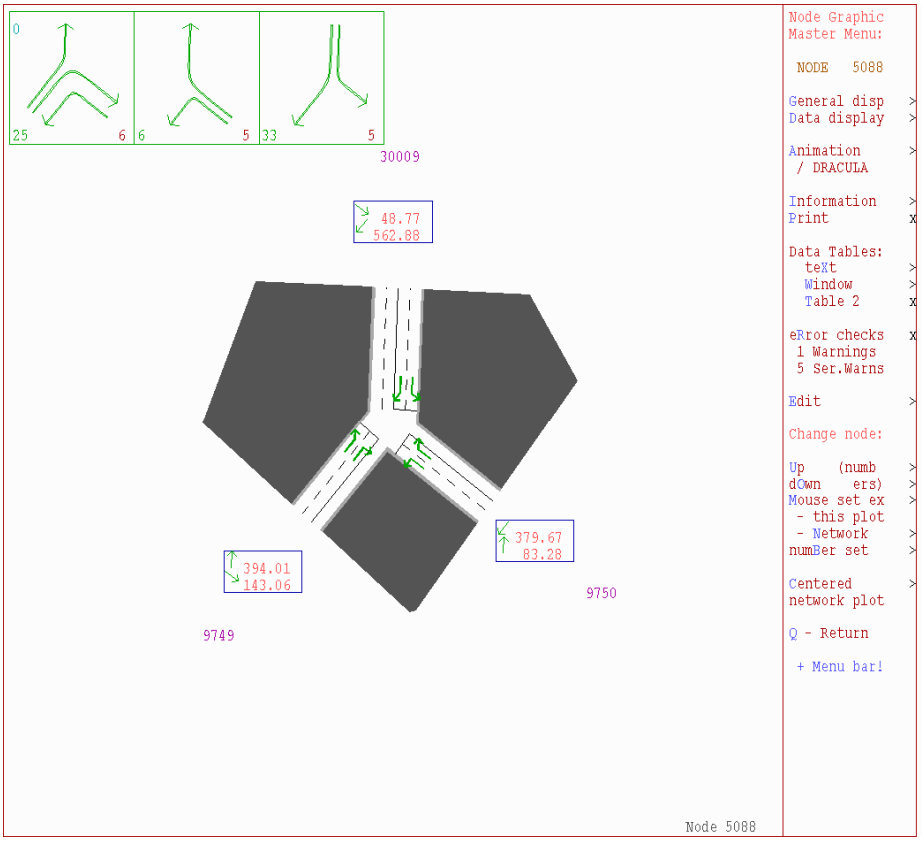


Figure 31. Junction 5 turning movements (demand) – AM DS

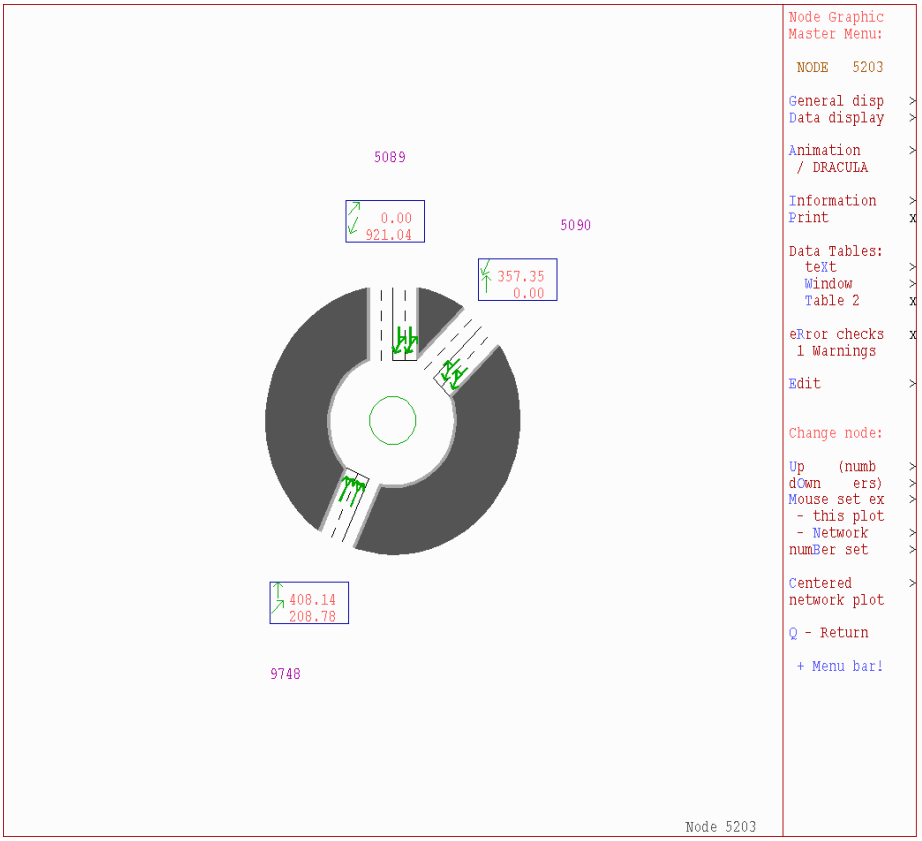


Figure 32. Junction 6 turning movements (demand) – AM DS

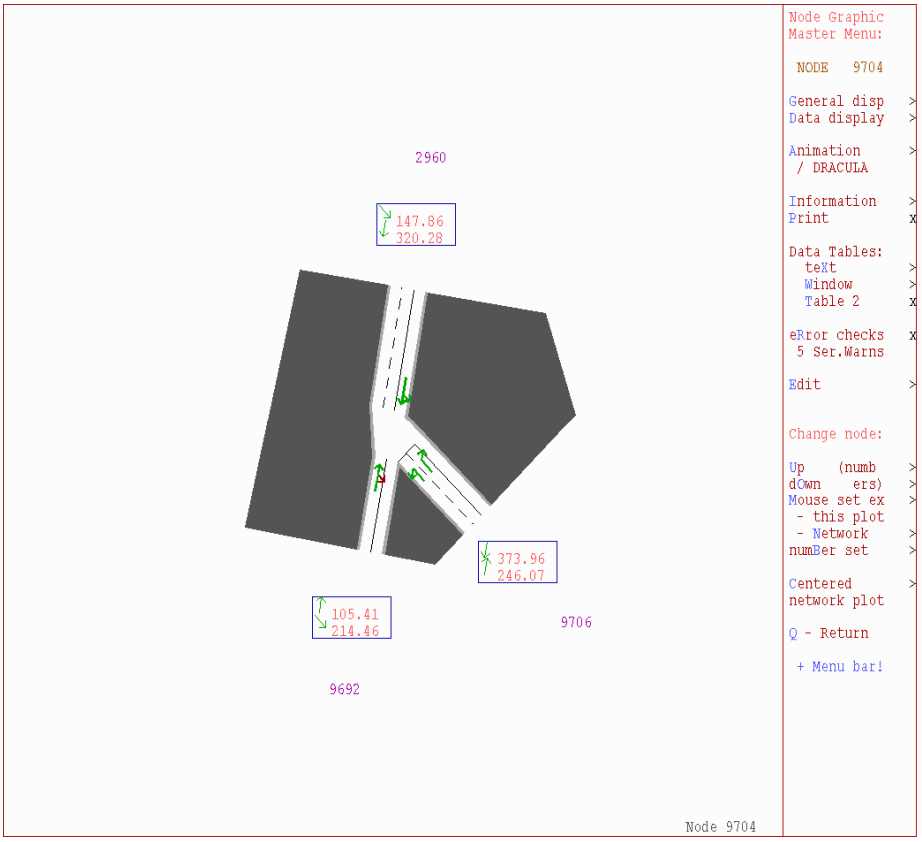


Figure 33. Junction 7 turning movements (demand) – AM DS

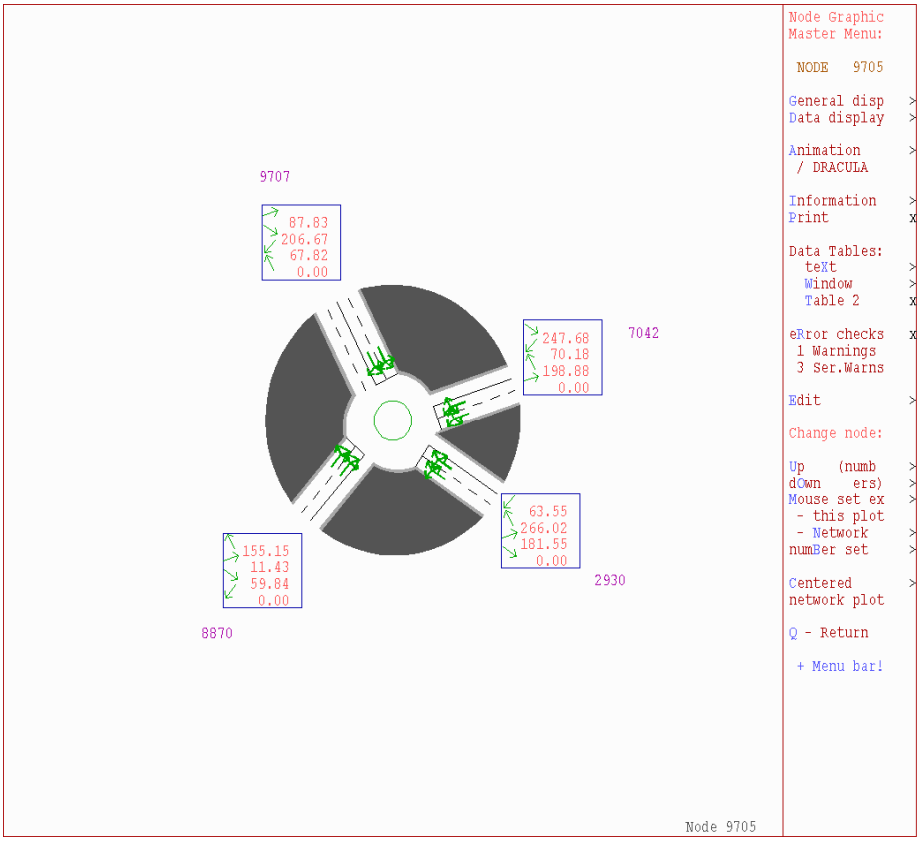


Figure 34. Junction 8 turning movements (demand) – AM DS

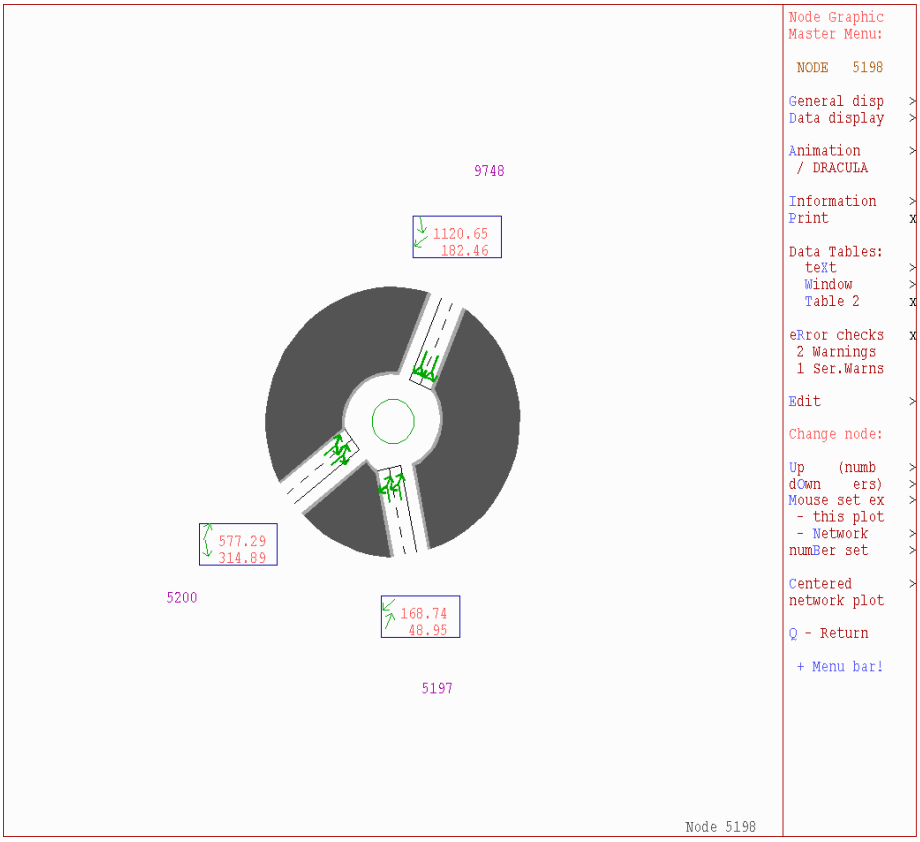


Figure 35. Junction 9 turning movements (demand) – AM DS

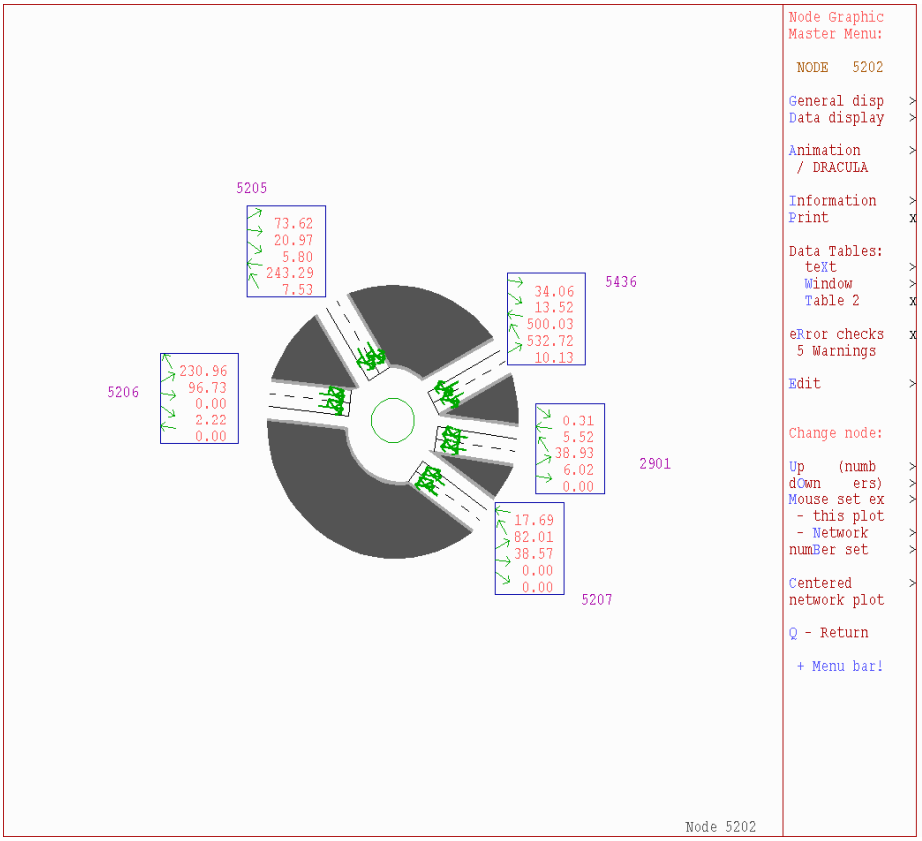


Figure 36. Junction 10 turning movements (demand) – AM DS

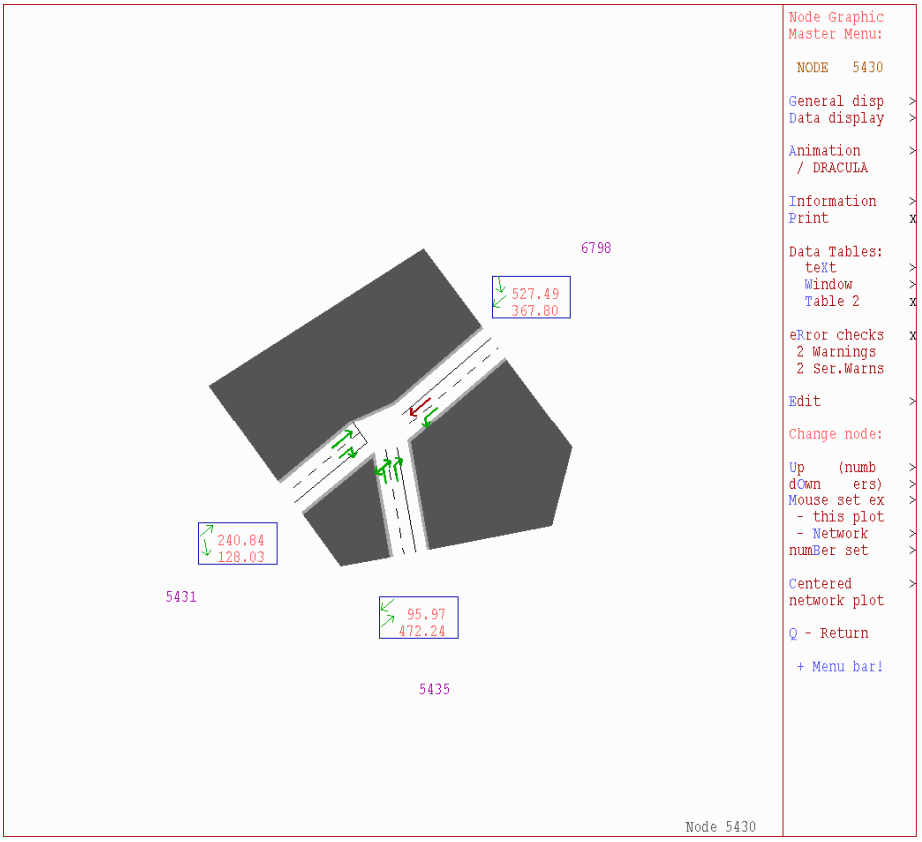


Figure 37. Junction 11 turning movements (demand) – AM DS

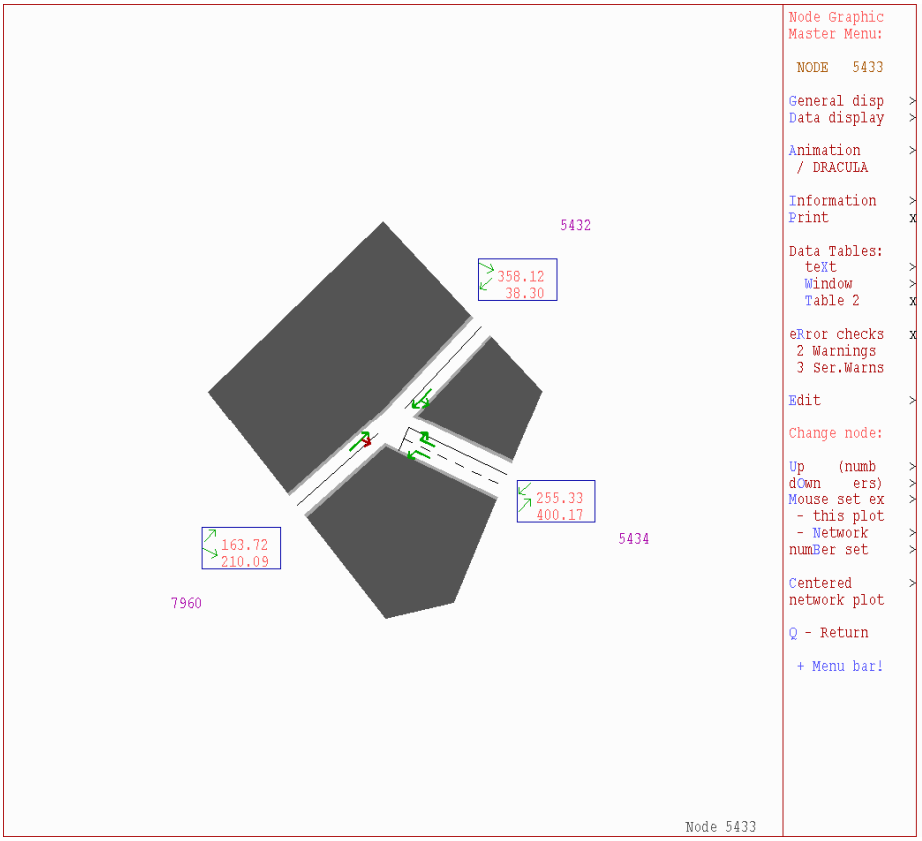


Figure 38. Junction 12 turning movements (demand) – AM DS

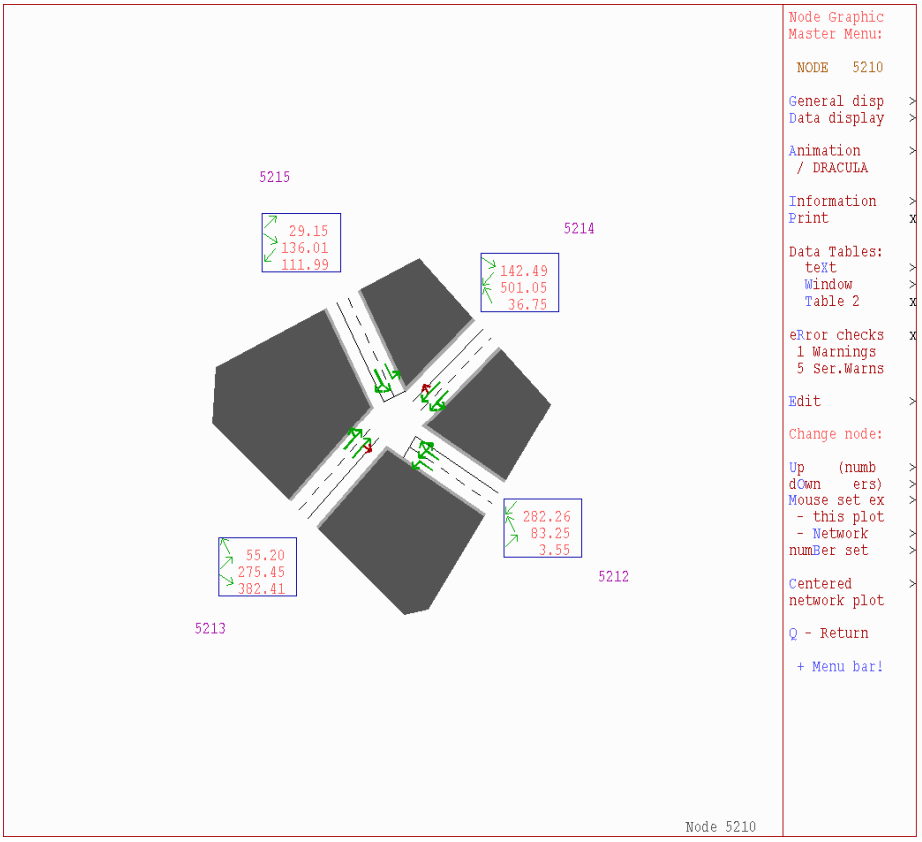


Figure 39. Junction 13 turning movements (demand) – AM DS

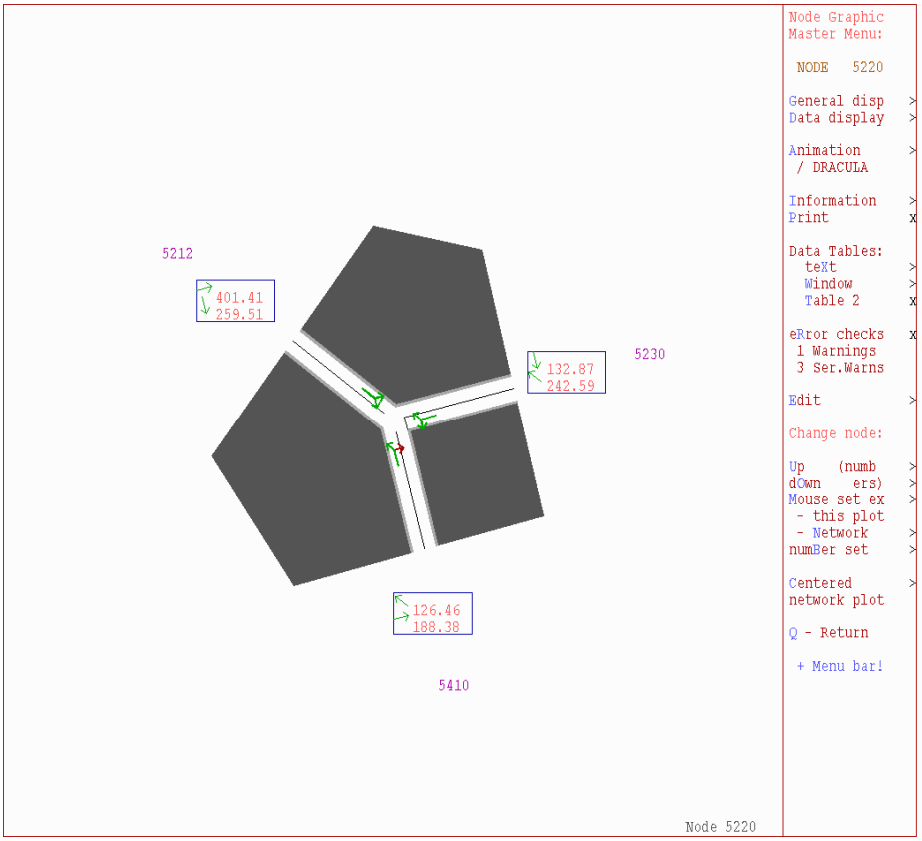


Figure 40. Junction 14 turning movements (demand) – AM DS

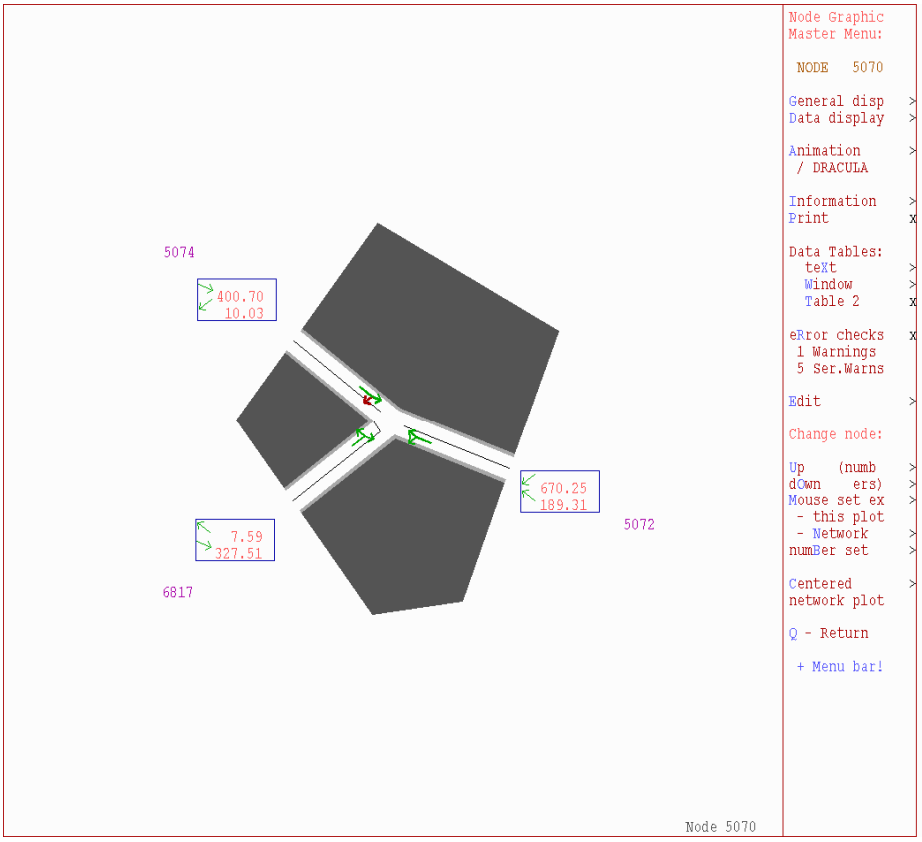


Figure 41. Junction 1 turning movements (demand) – PM DS

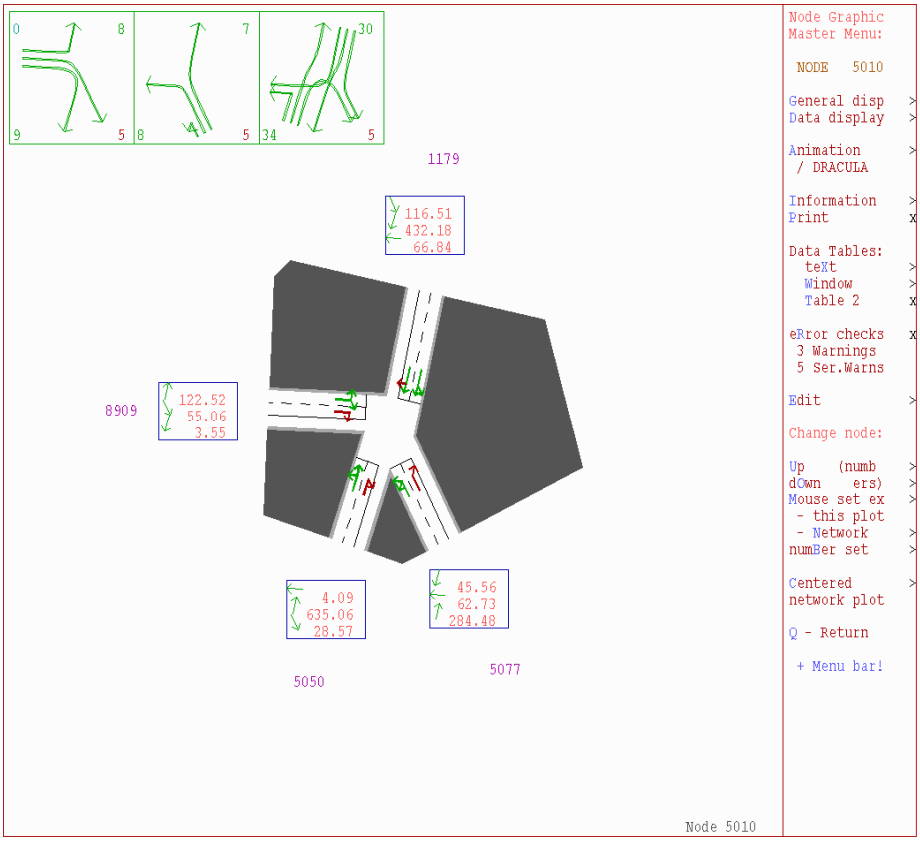


Figure 42. Junction 2 turning movements (demand) – PM DS

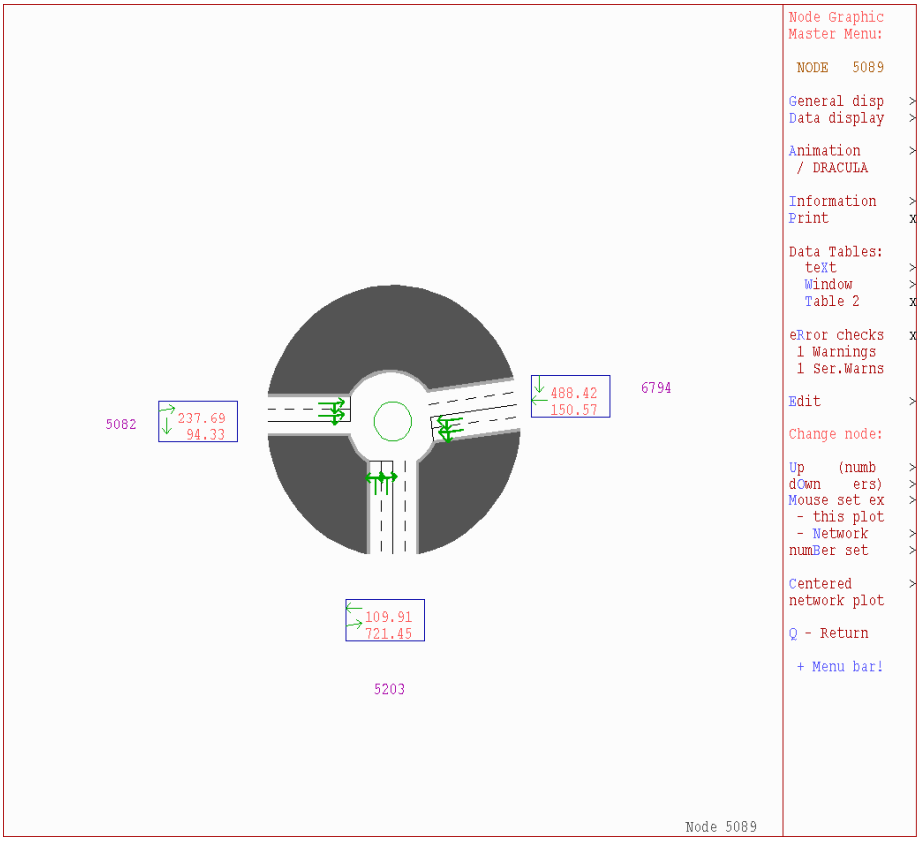


Figure 43. Junction 3 turning movements (demand) – PM DS

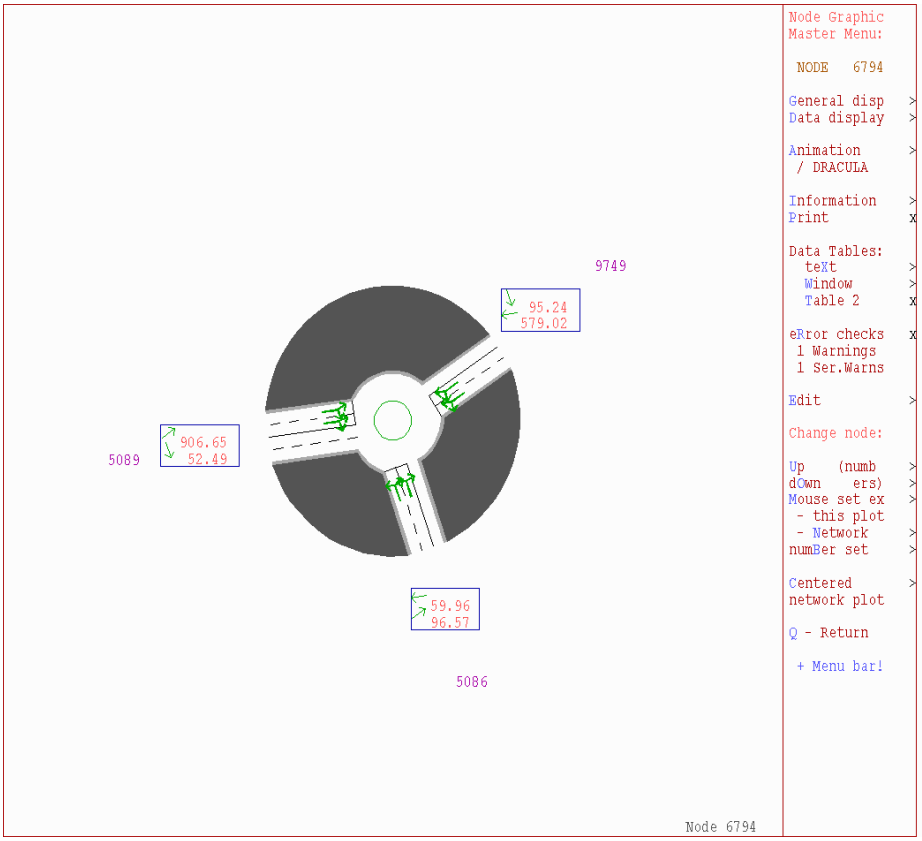


Figure 44. Junction 4 turning movements (demand) – PM DS

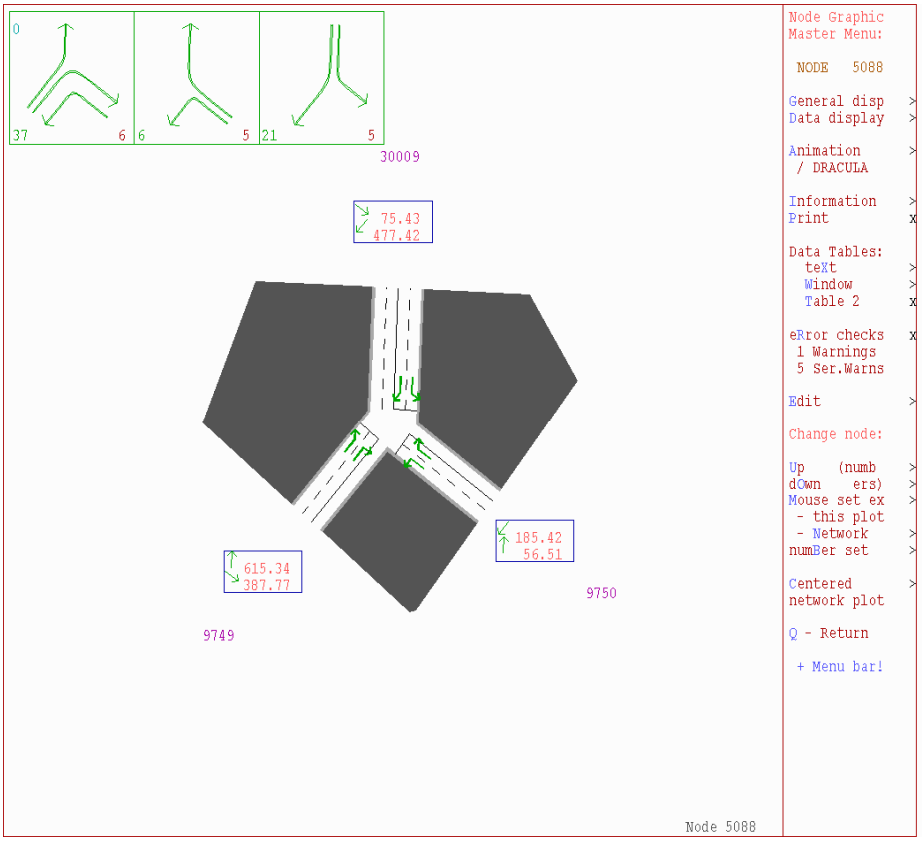


Figure 45. Junction 5 turning movements (demand) – PM DS

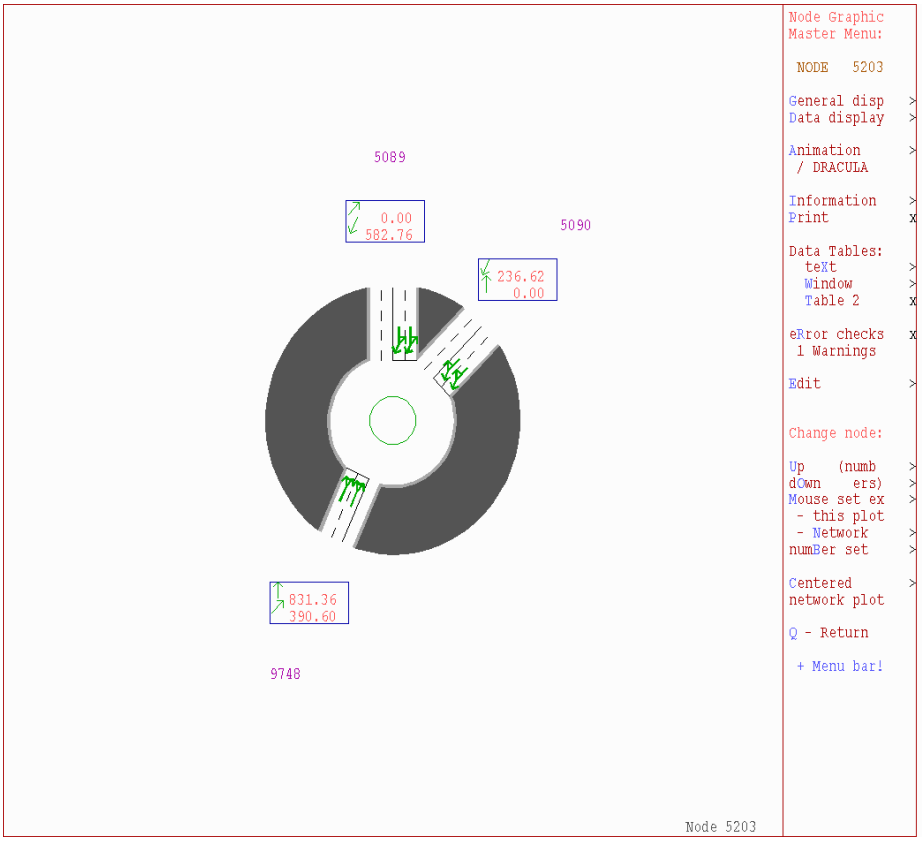


Figure 46. Junction 6 turning movements (demand) – PM DS

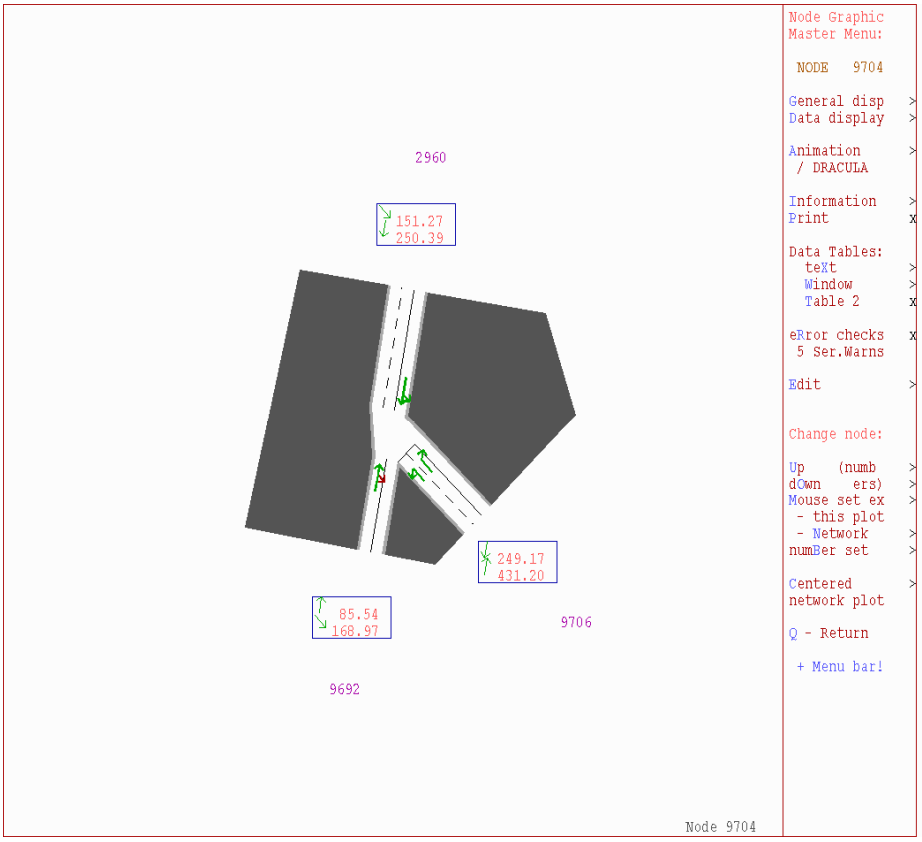


Figure 47. Junction 7 turning movements (demand) – PM DS

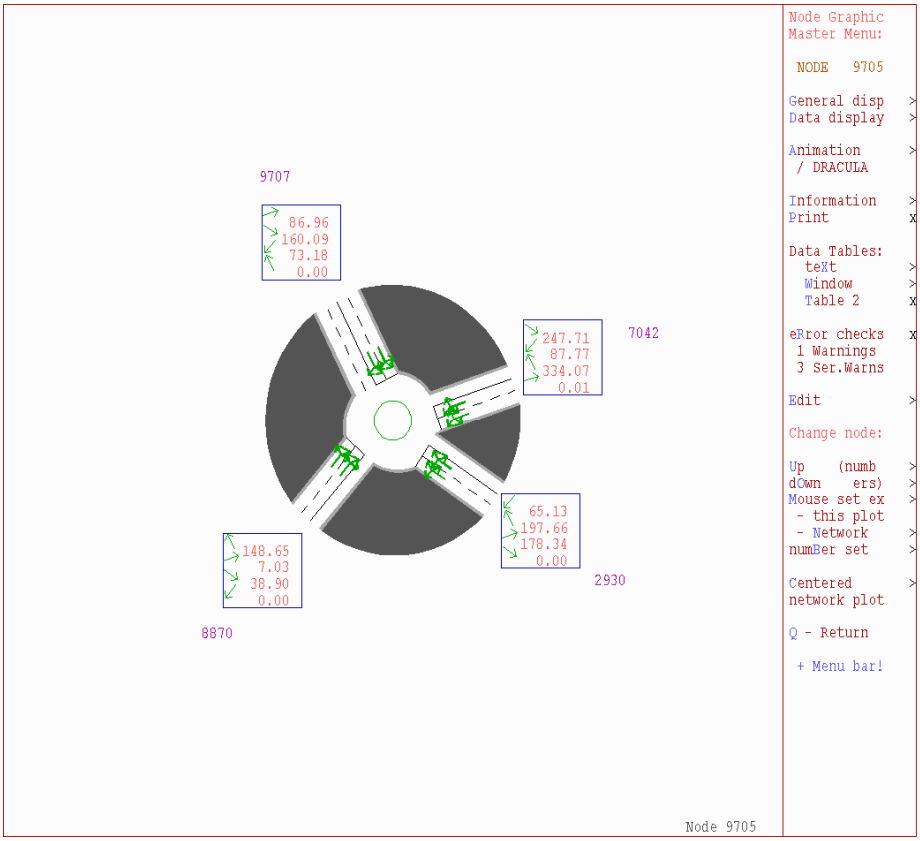


Figure 48. Junction 8 turning movements (demand) – PM DS

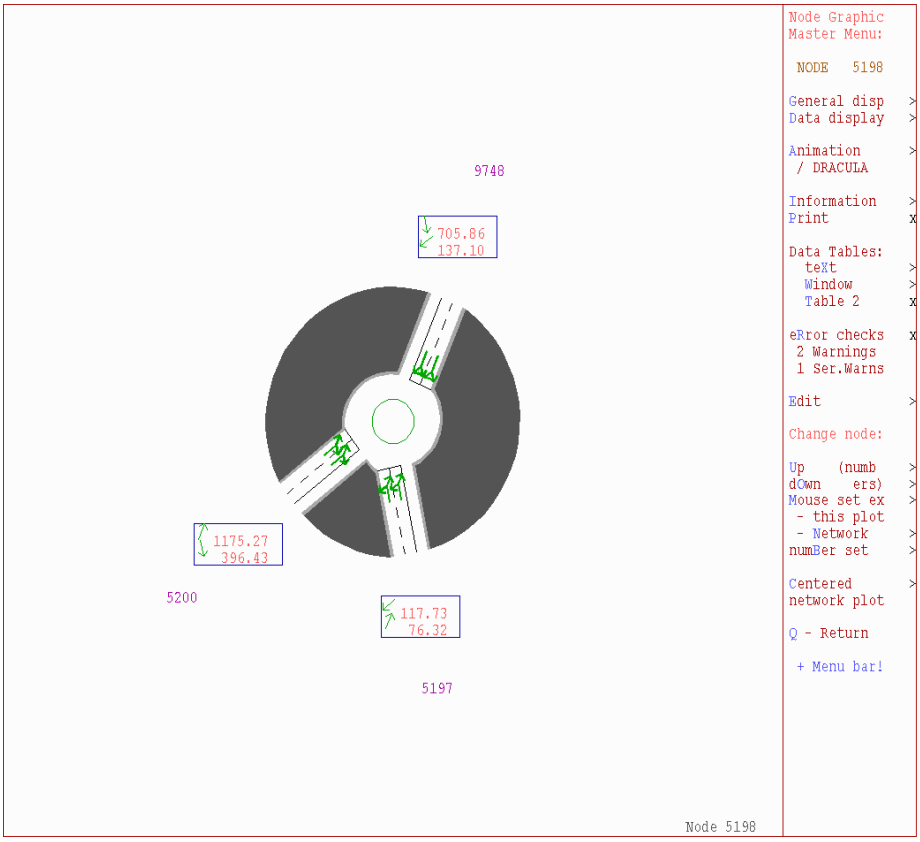


Figure 49. Junction 9 turning movements (demand) – PM DS

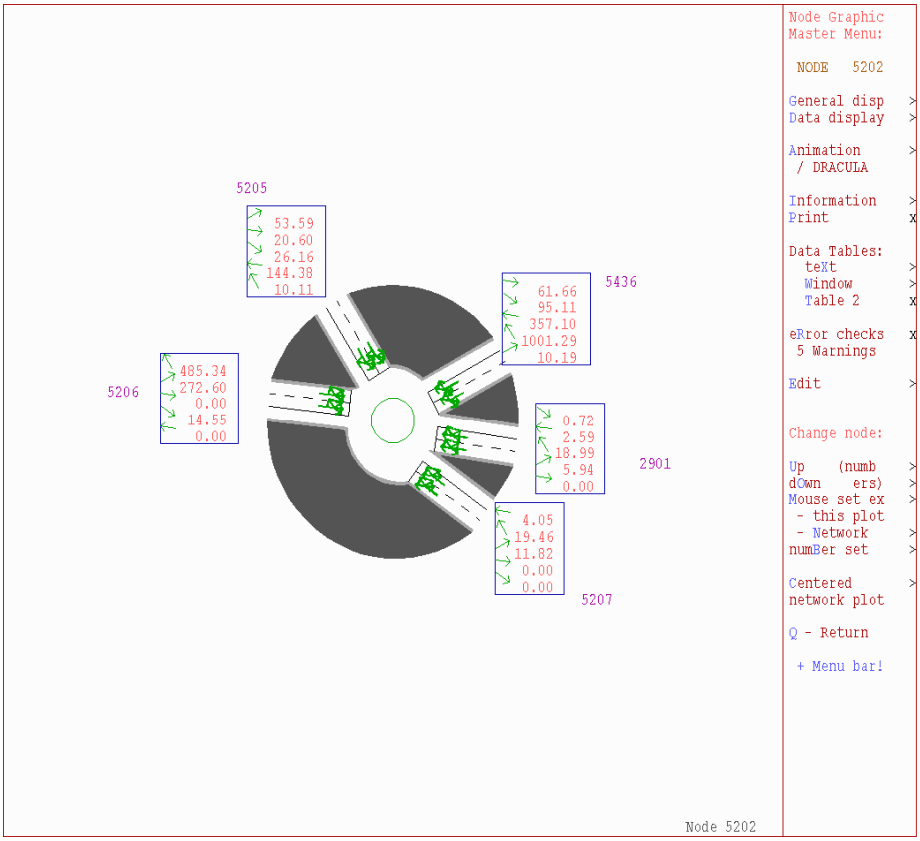


Figure 50. Junction 10 turning movements (demand) – PM DS

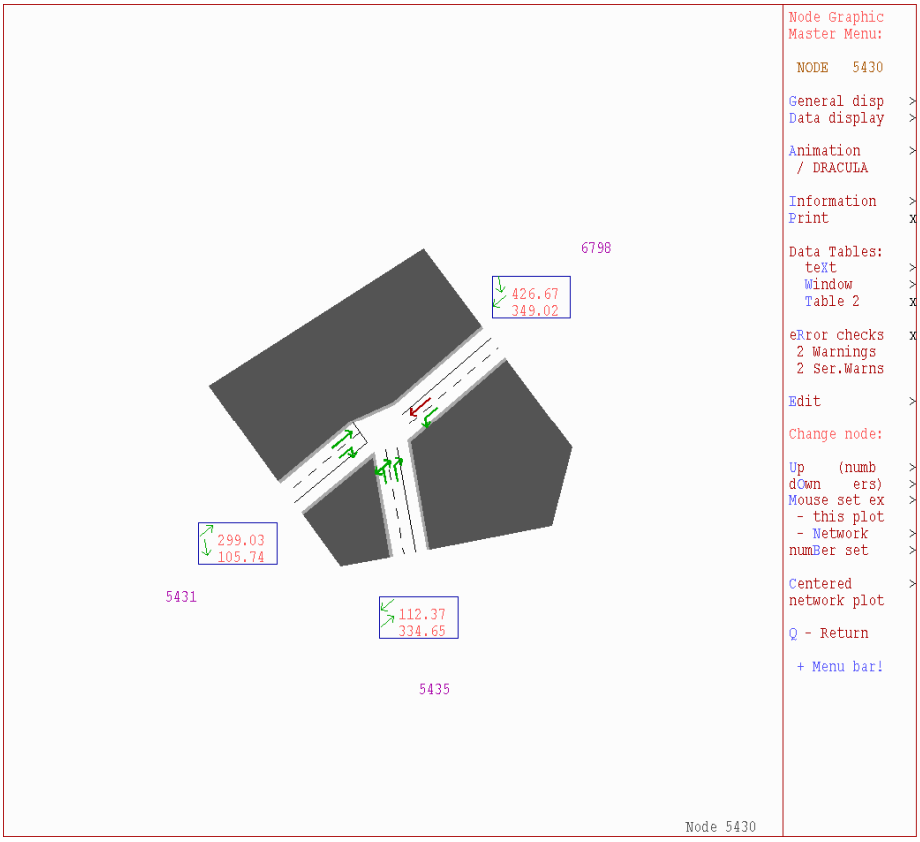


Figure 51. Junction 11 turning movements (demand) – PM DS

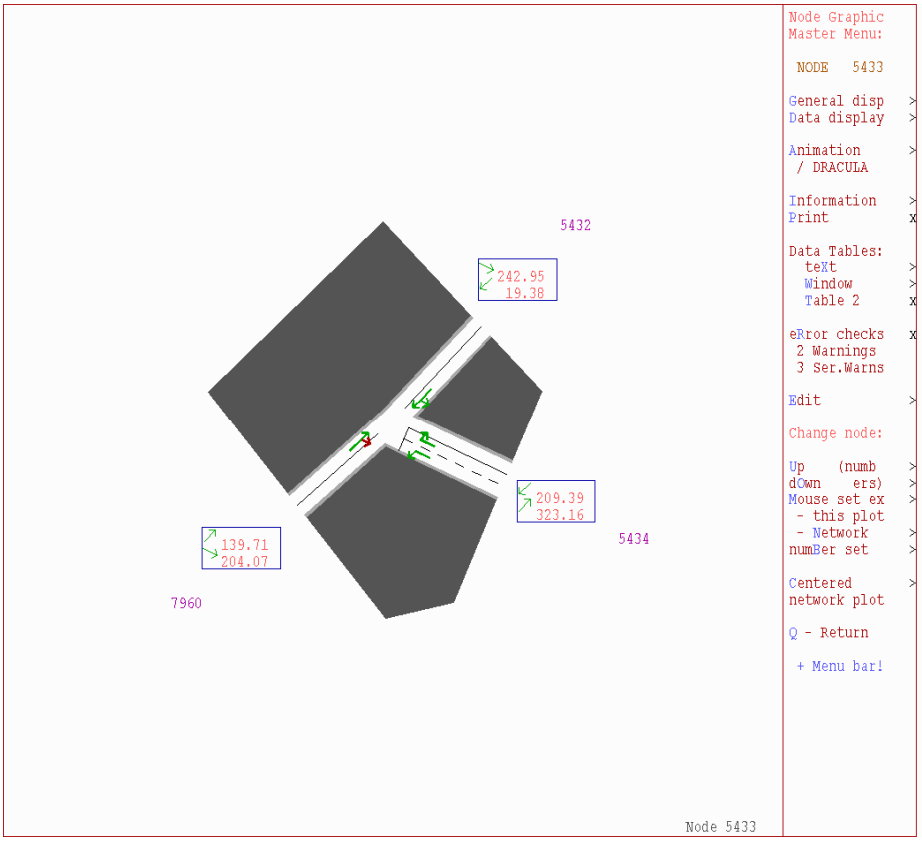


Figure 52. Junction 12 turning movements (demand) – PM DS

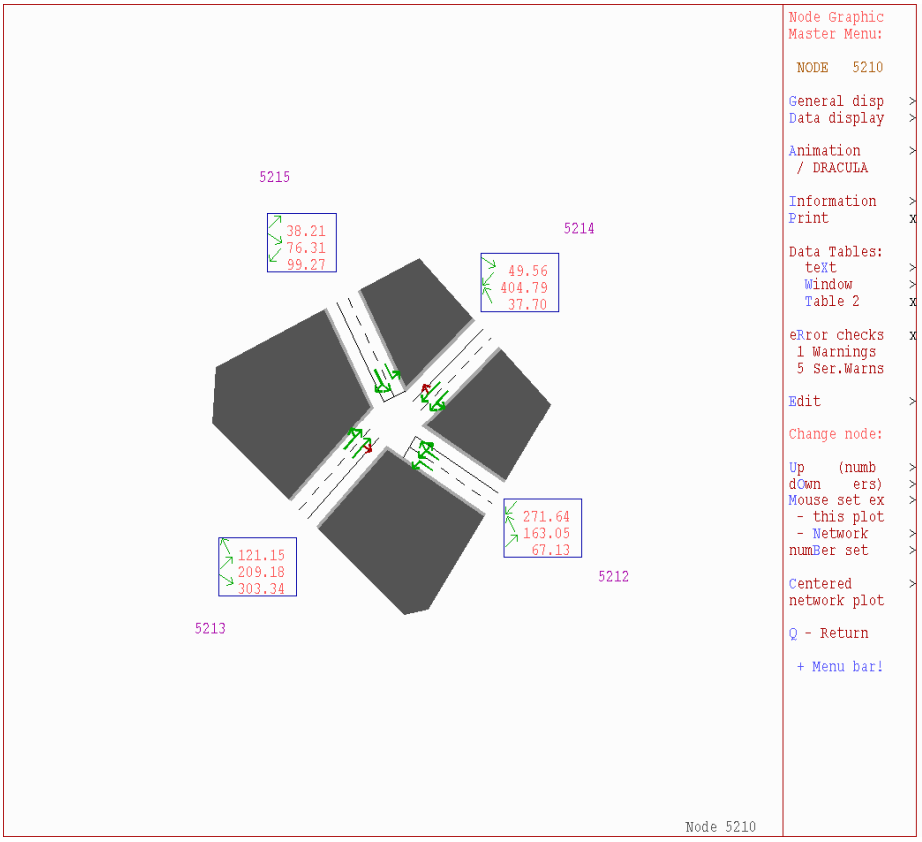


Figure 53. Junction 13 turning movements (demand) – PM DS

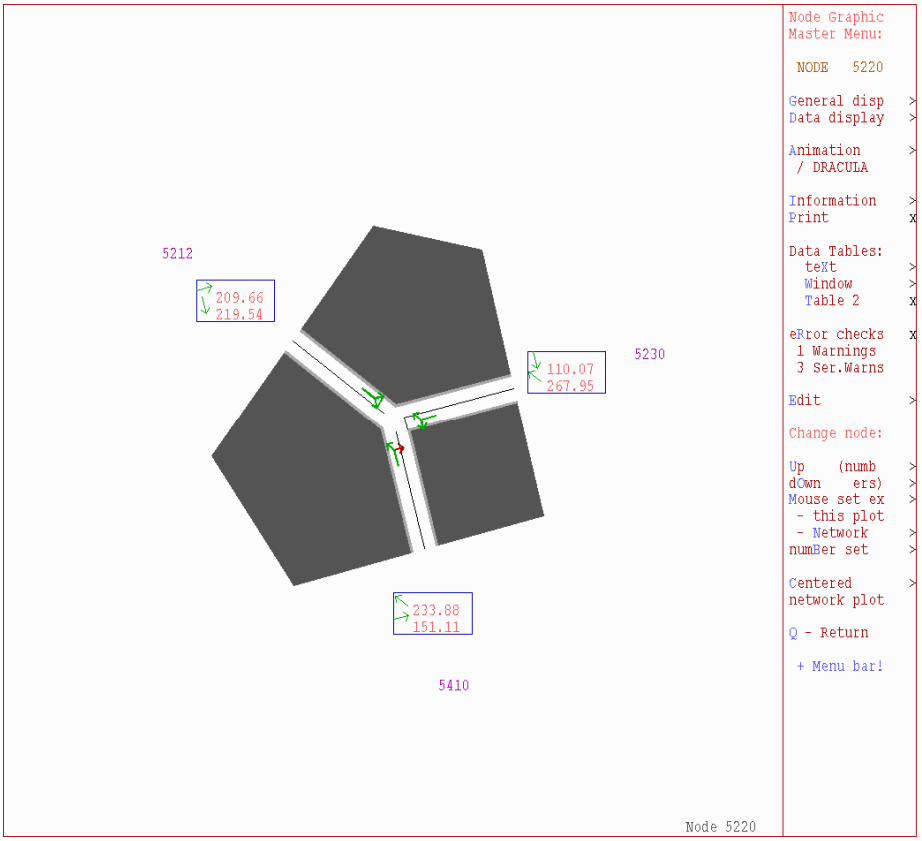


Figure 54. Junction 14 turning movements (demand) – PM DS

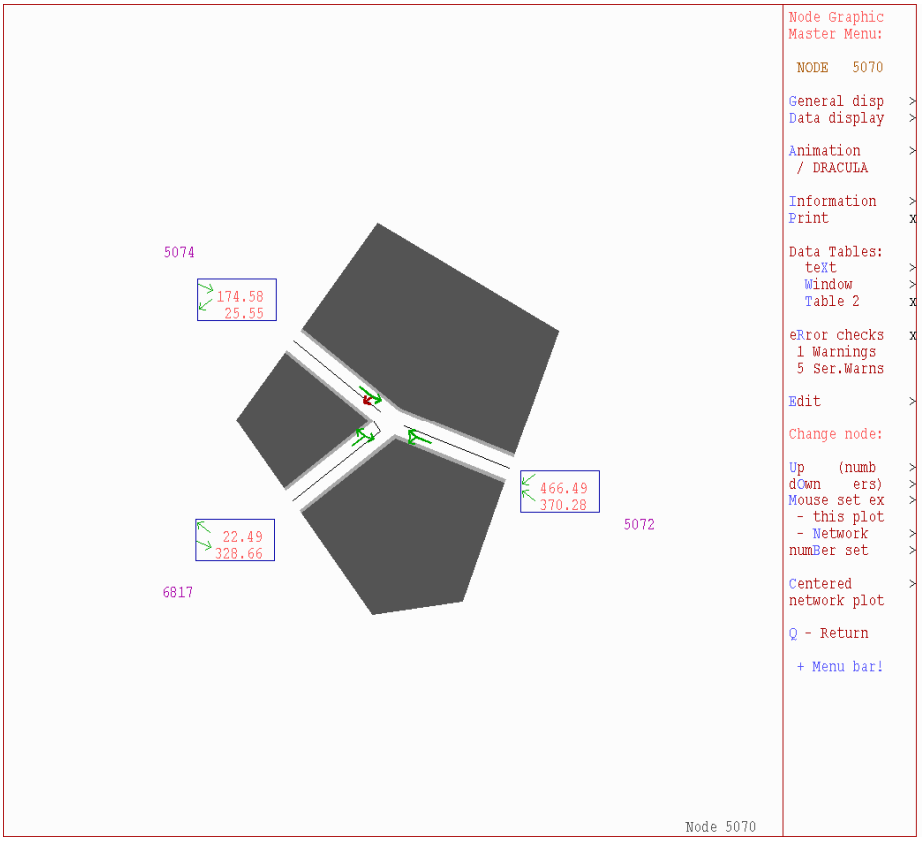


Figure 55. Junction 1 queues – AM DM

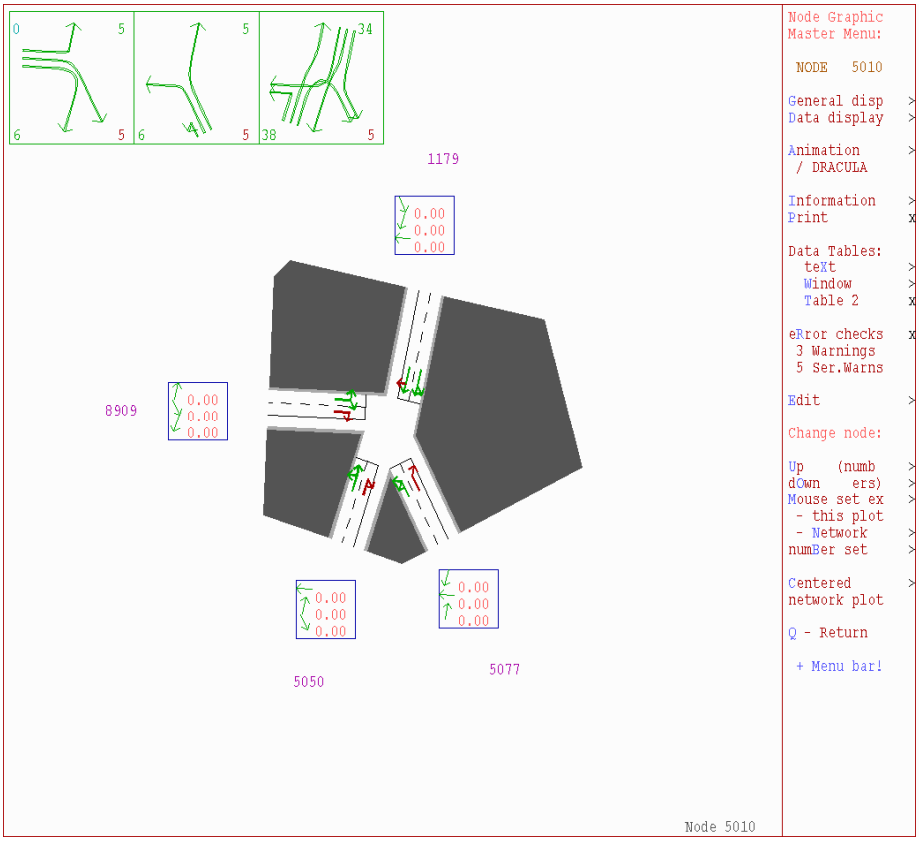


Figure 56. Junction 2 queues – AM DM

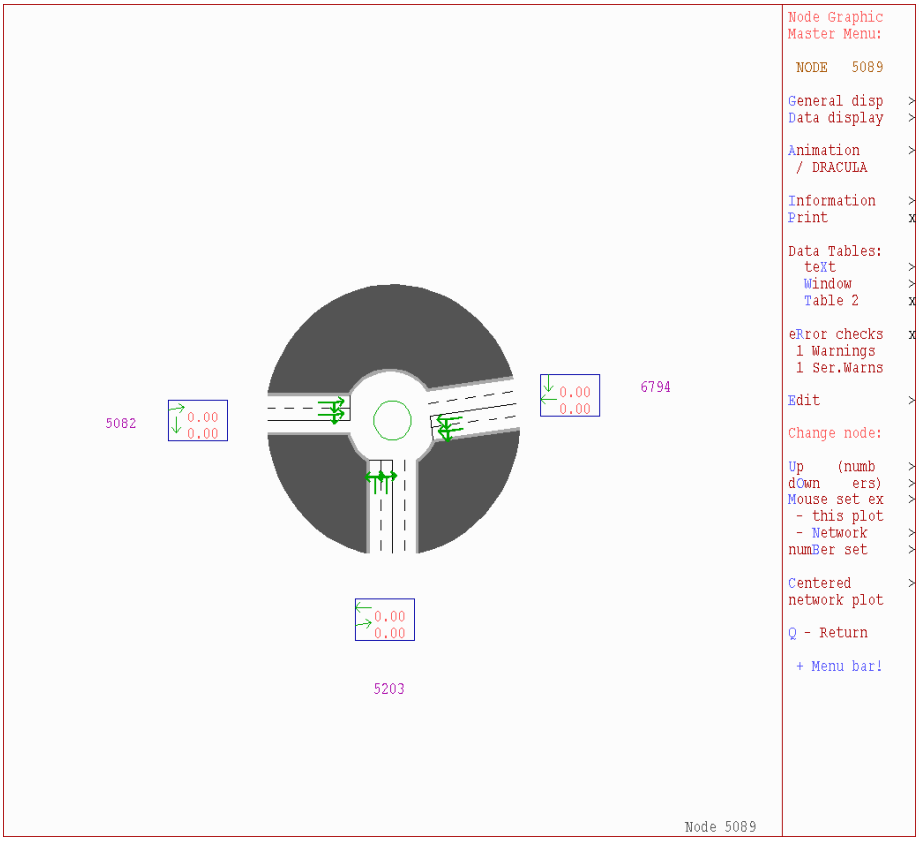


Figure 57. Junction 3 queues – AM DM

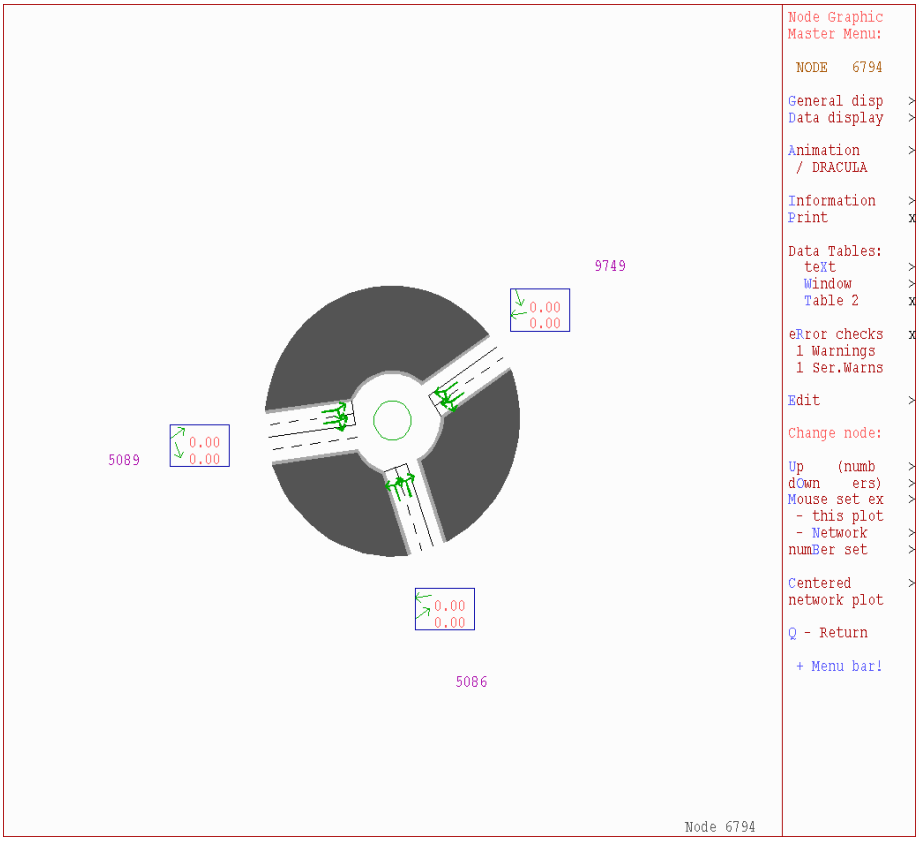


Figure 58. Junction 5 queues – AM DM

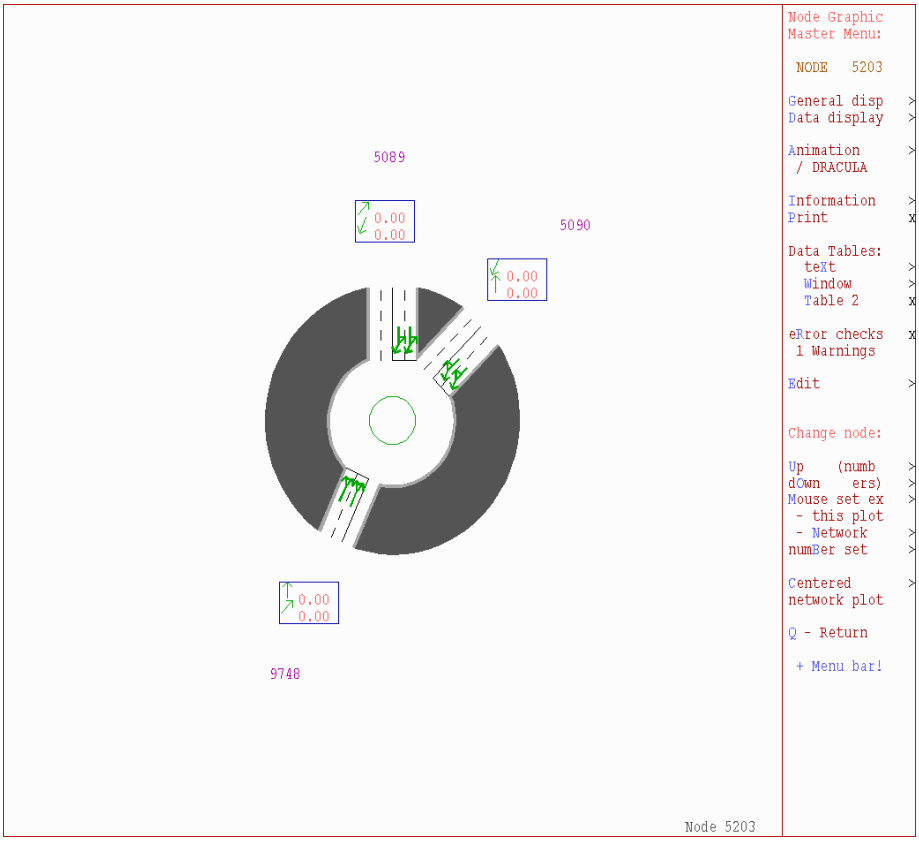


Figure 59. Junction 6 queues – AM DM

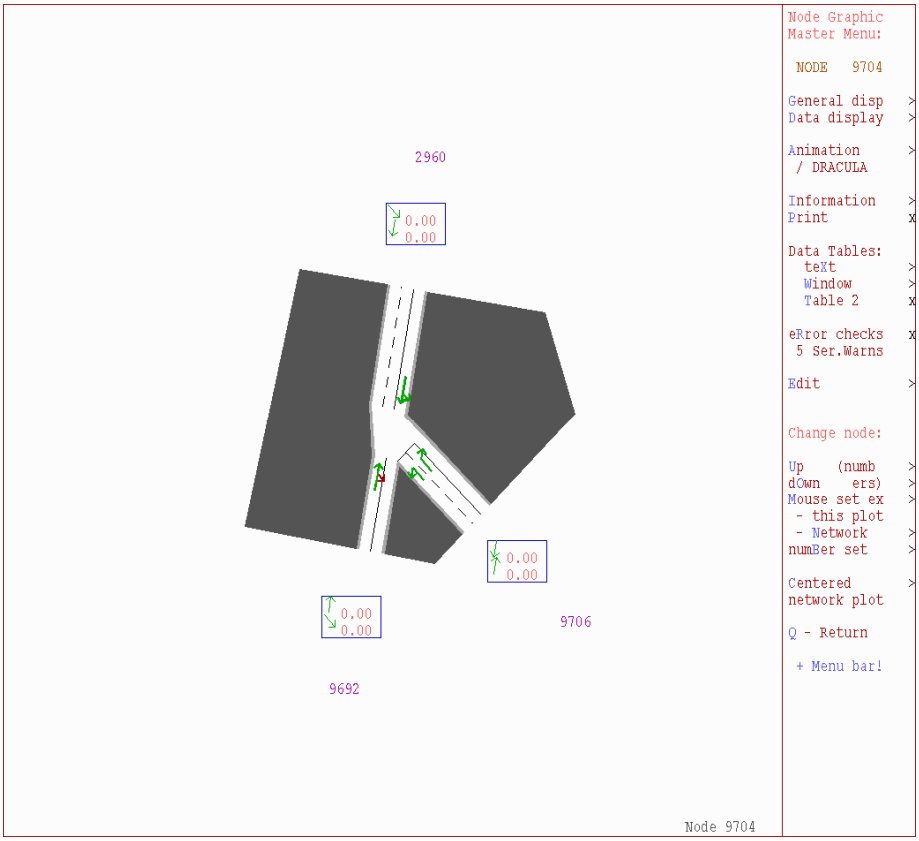


Figure 60. Junction 7 queues – AM DM

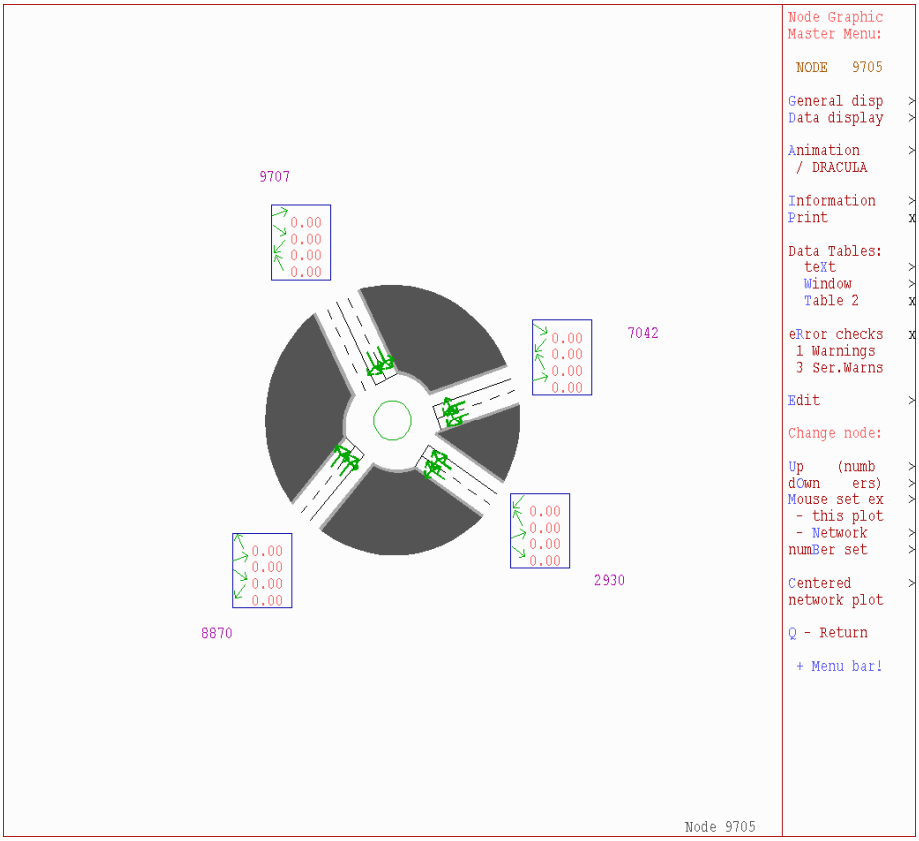


Figure 61. Junction 8 queues – AM DM

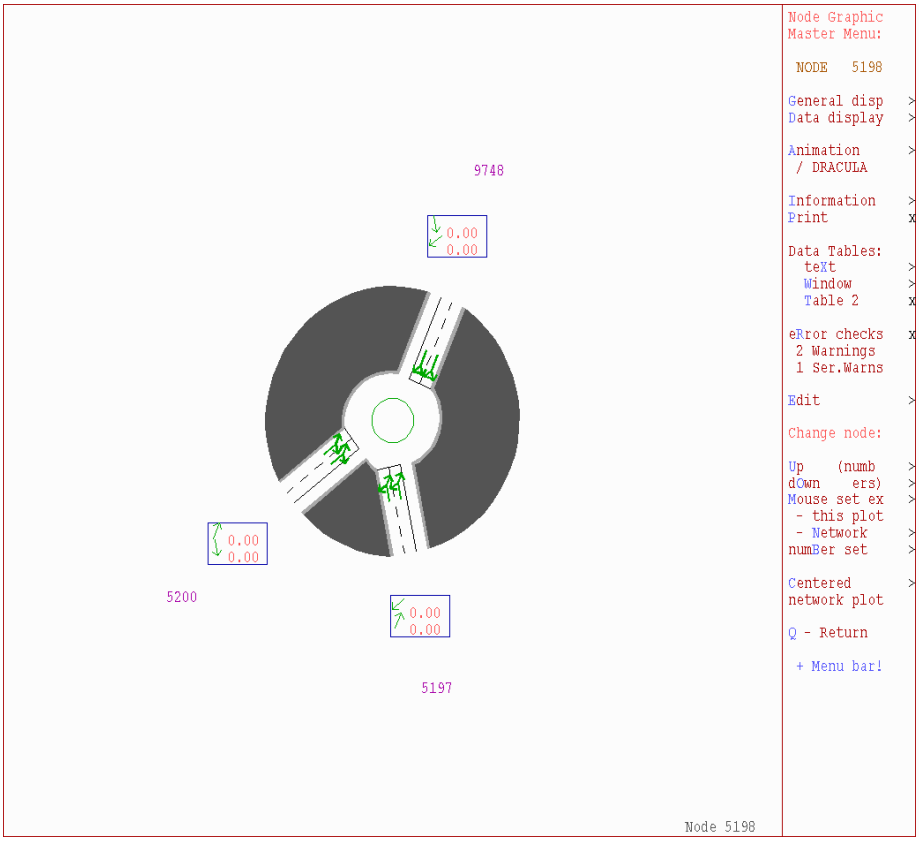


Figure 62. Junction 9 queues – AM DM

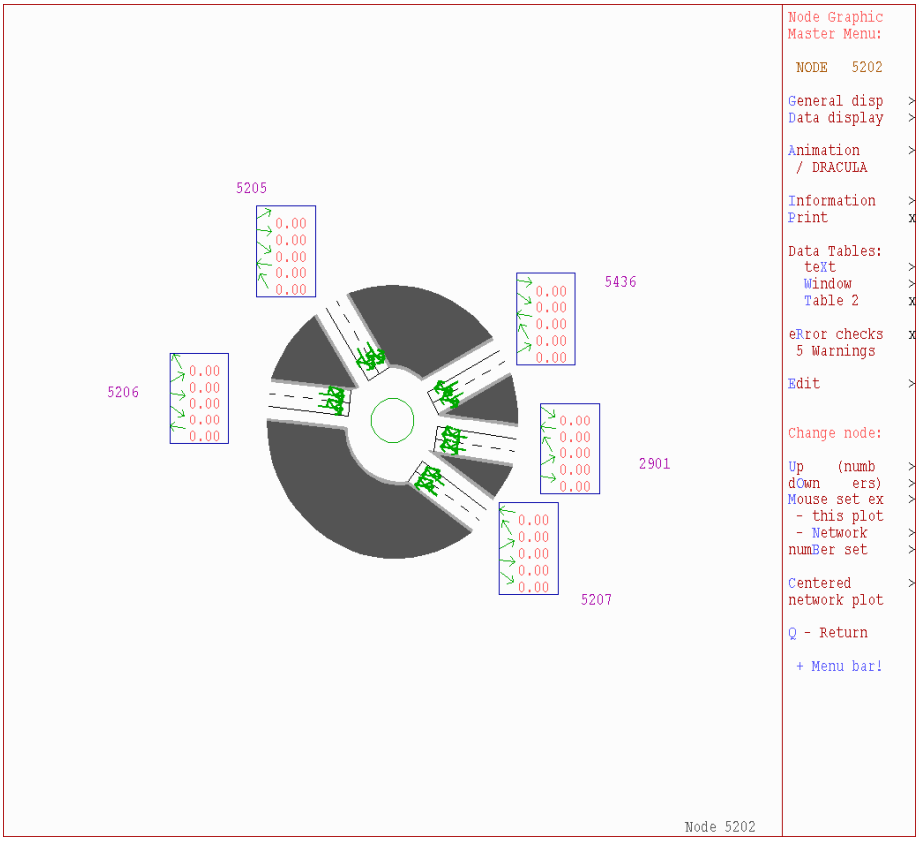


Figure 63. Junction 10 queues – AM DM

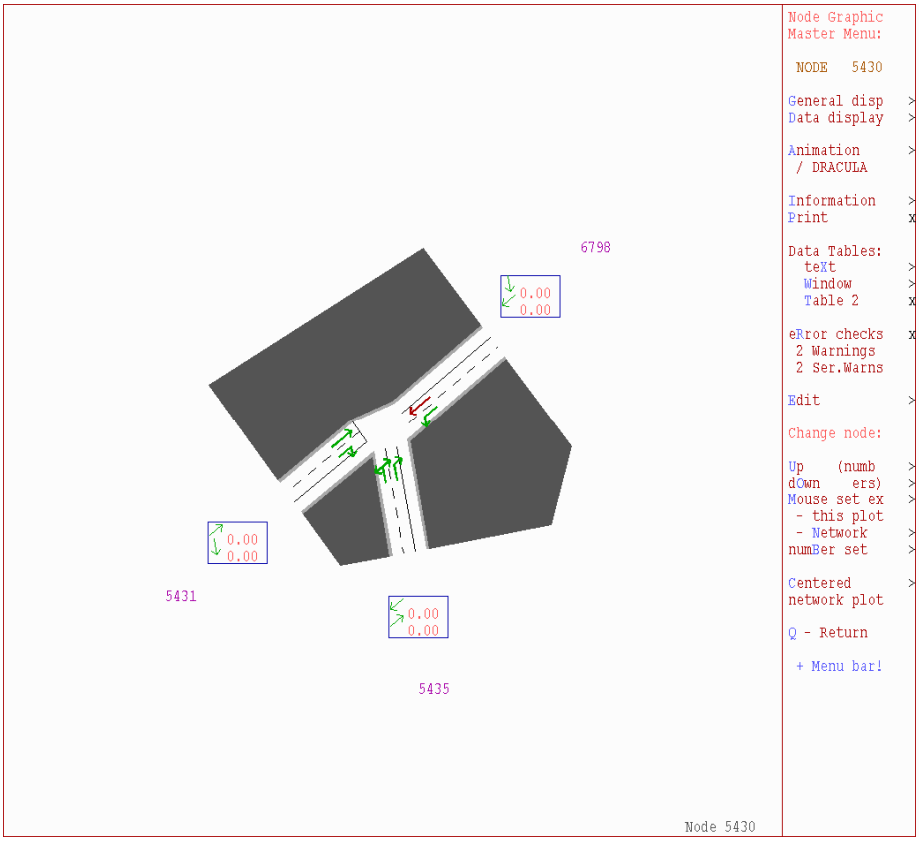


Figure 64. Junction 11 queues – AM DM

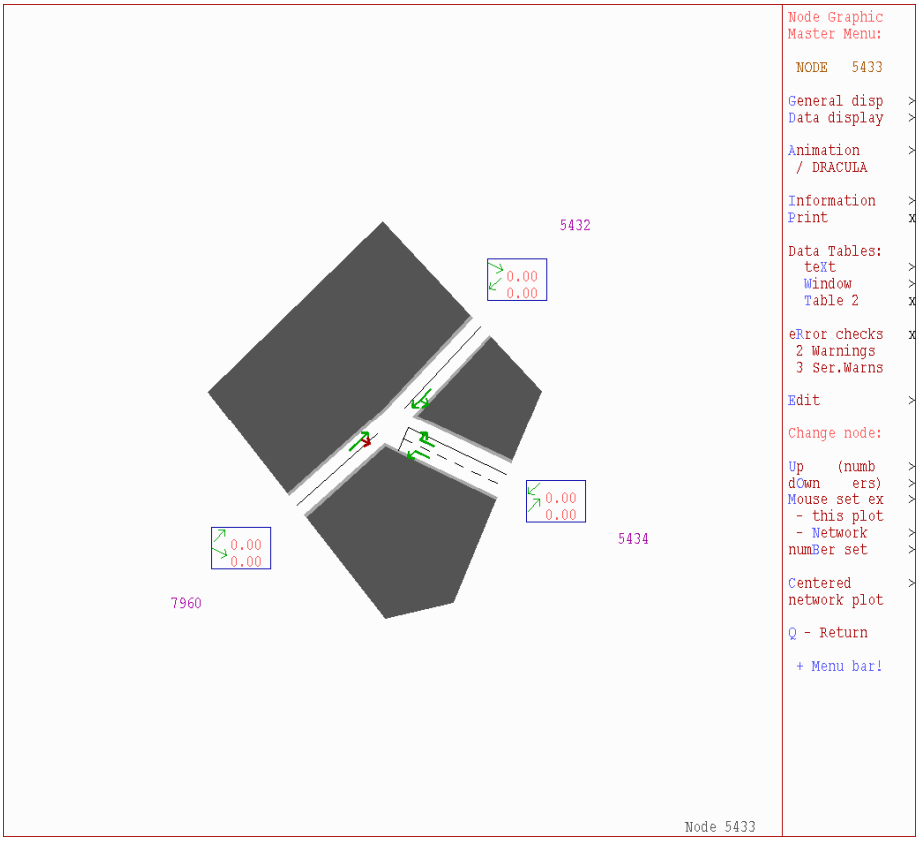


Figure 65. Junction 12 queues – AM DM

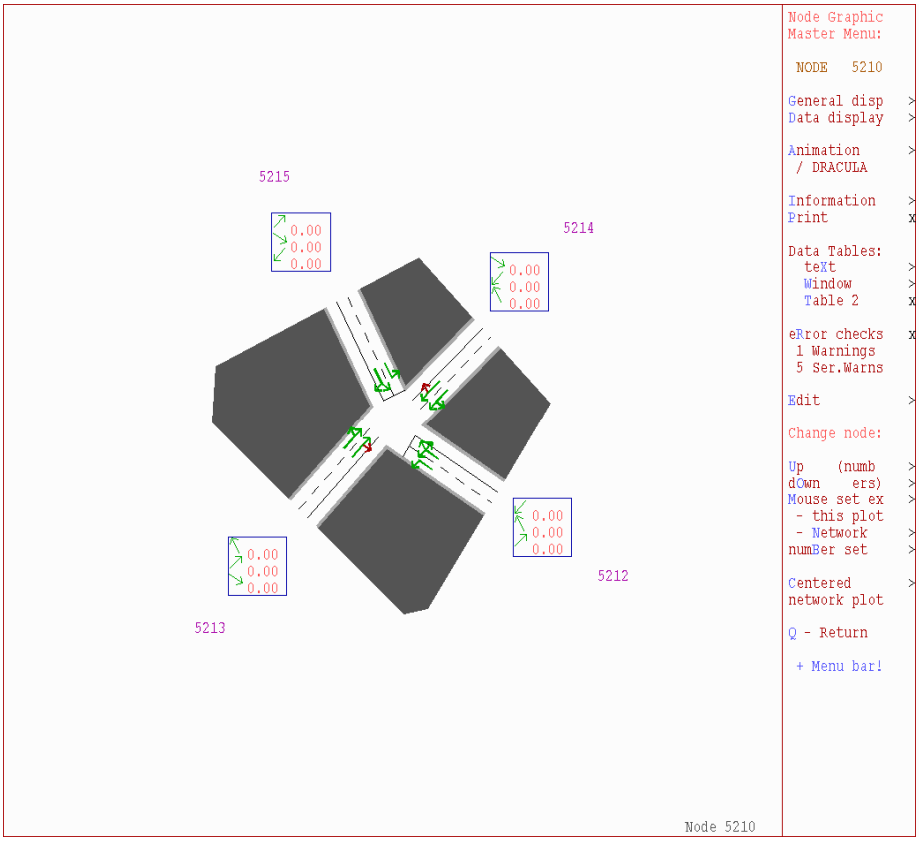


Figure 66. Junction 13 queues – AM DM

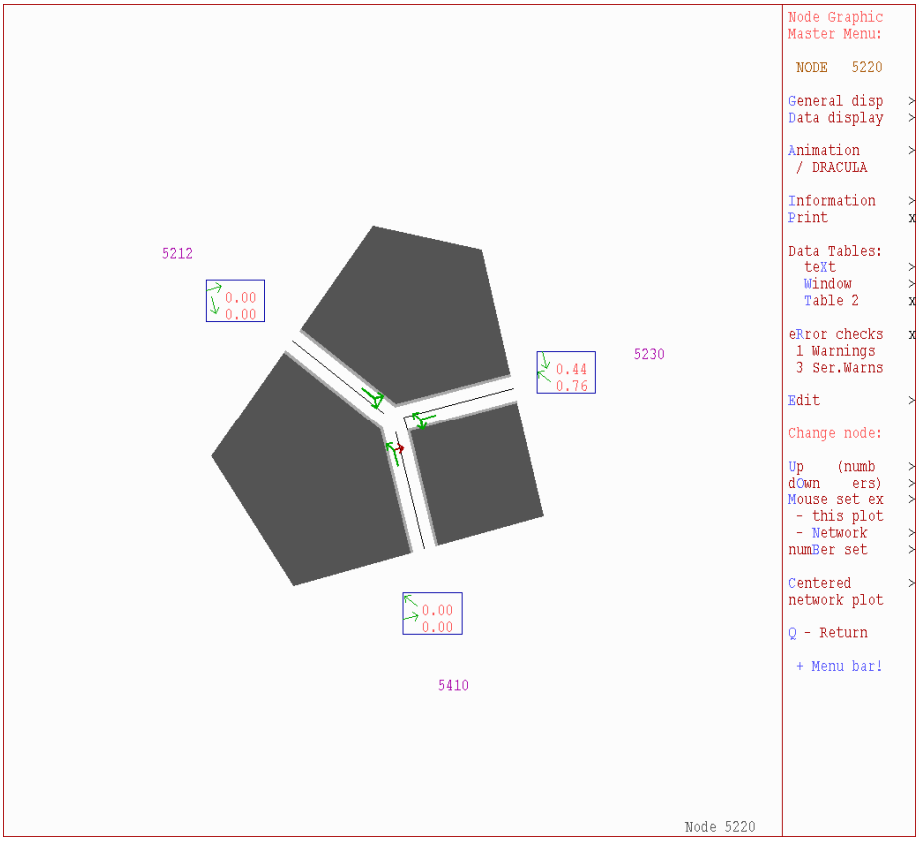


Figure 67. Junction 14 queues – AM DM

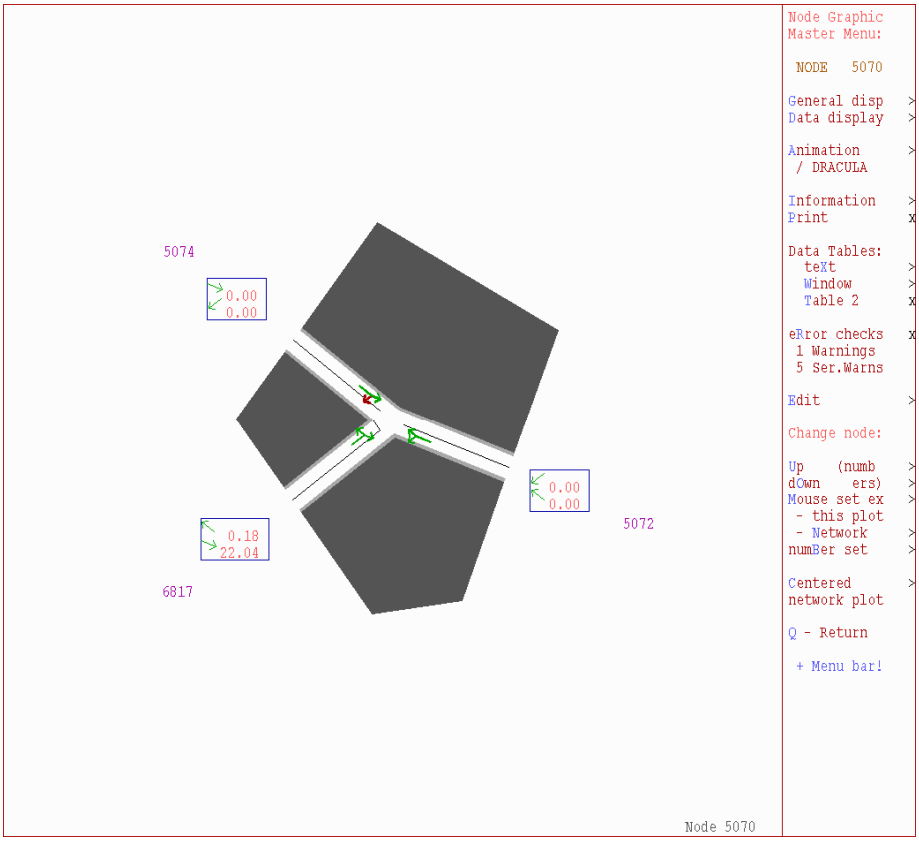


Figure 68. Junction 1 queues – PM DM

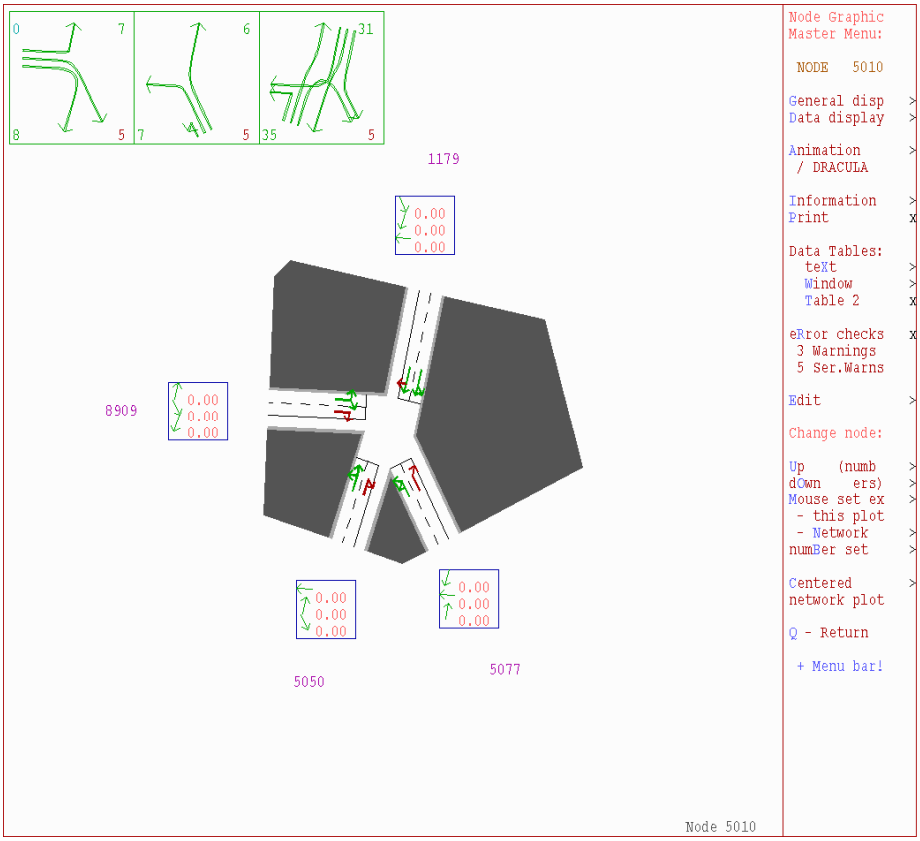


Figure 69. Junction 2 queues – PM DM

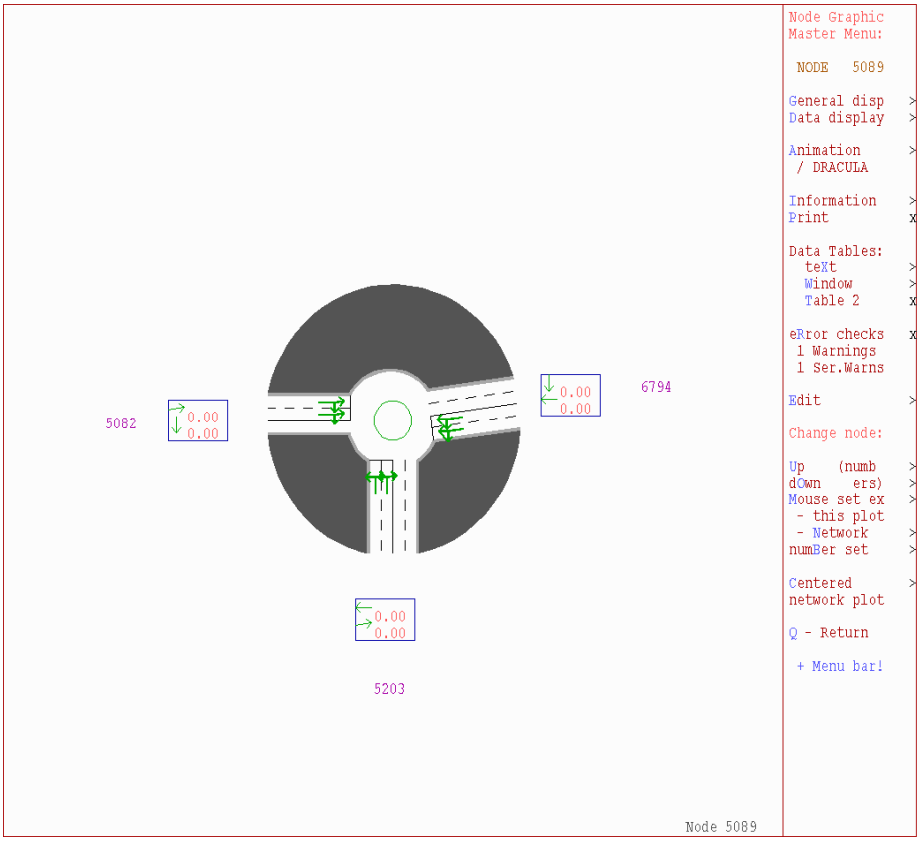


Figure 70. Junction 3 queues – PM DM

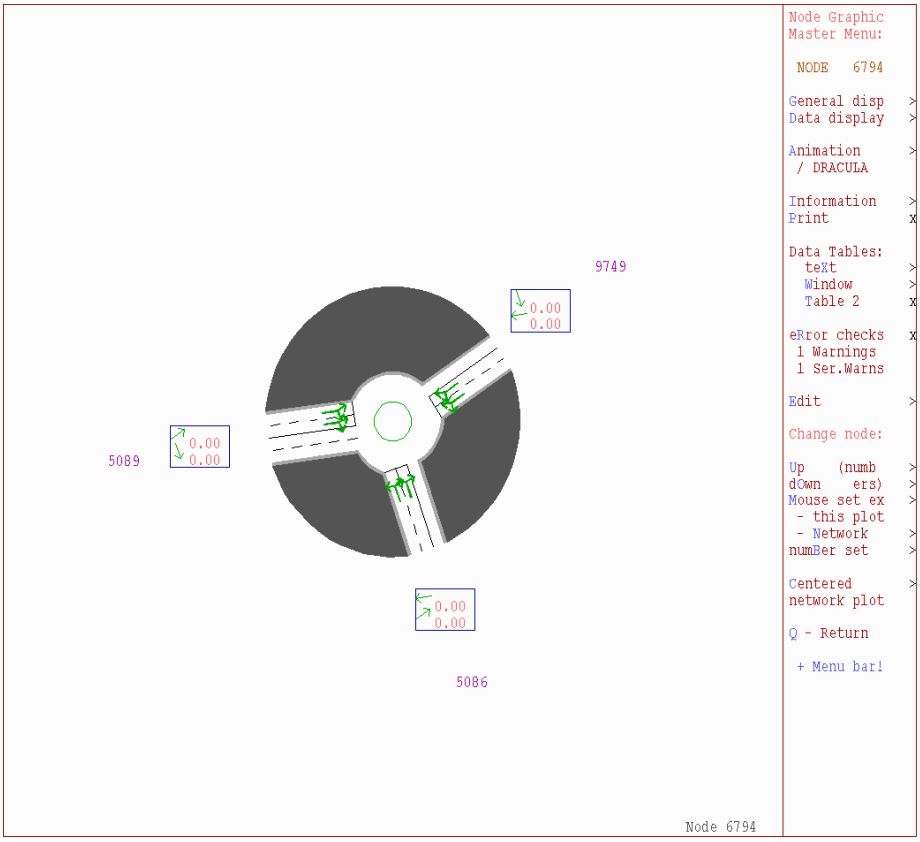


Figure 71. Junction 5 queues – PM DM

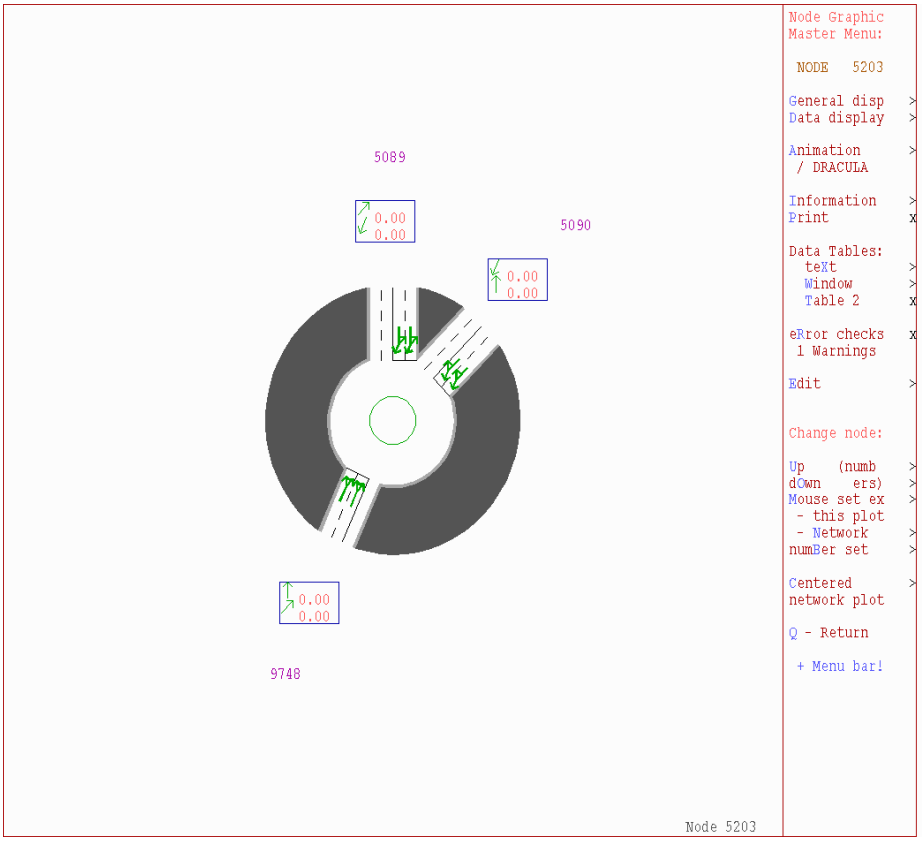


Figure 72. Junction 6 queues – PM DM

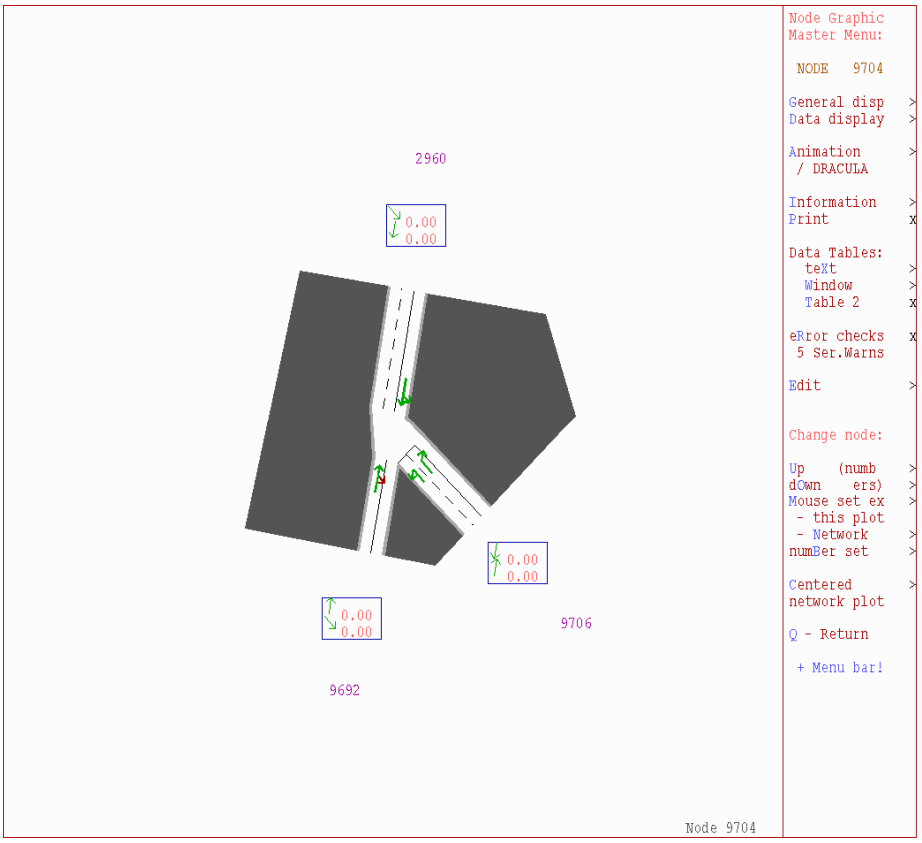


Figure 73. Junction 7 queues – PM DM

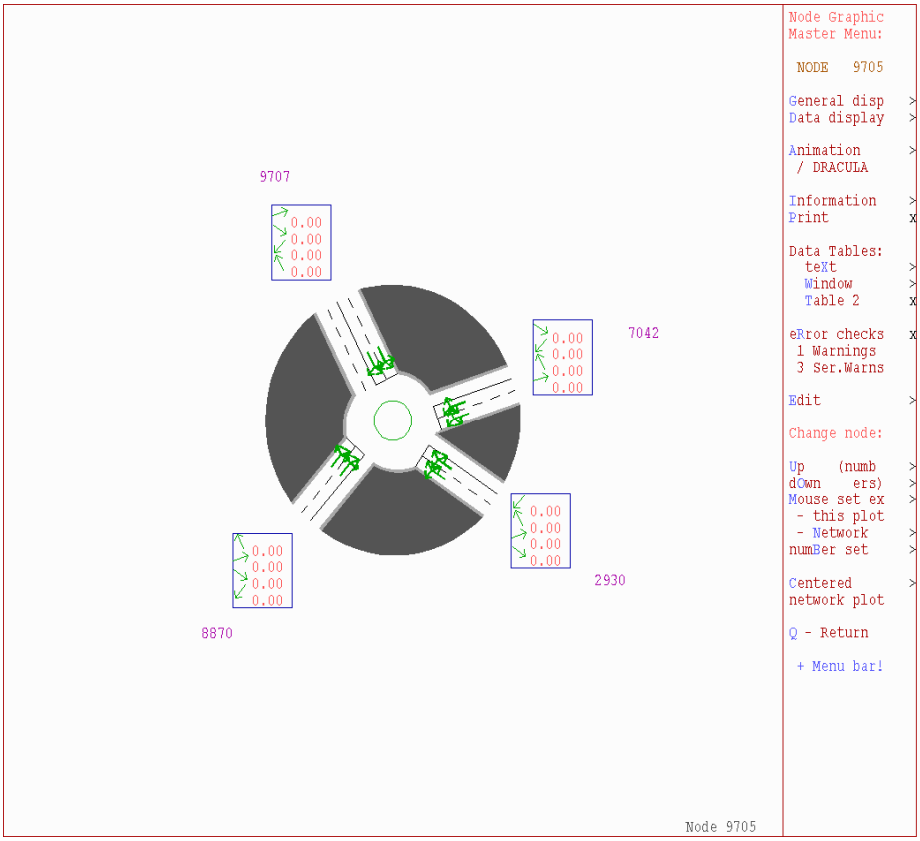


Figure 74. Junction 8 queues – PM DM

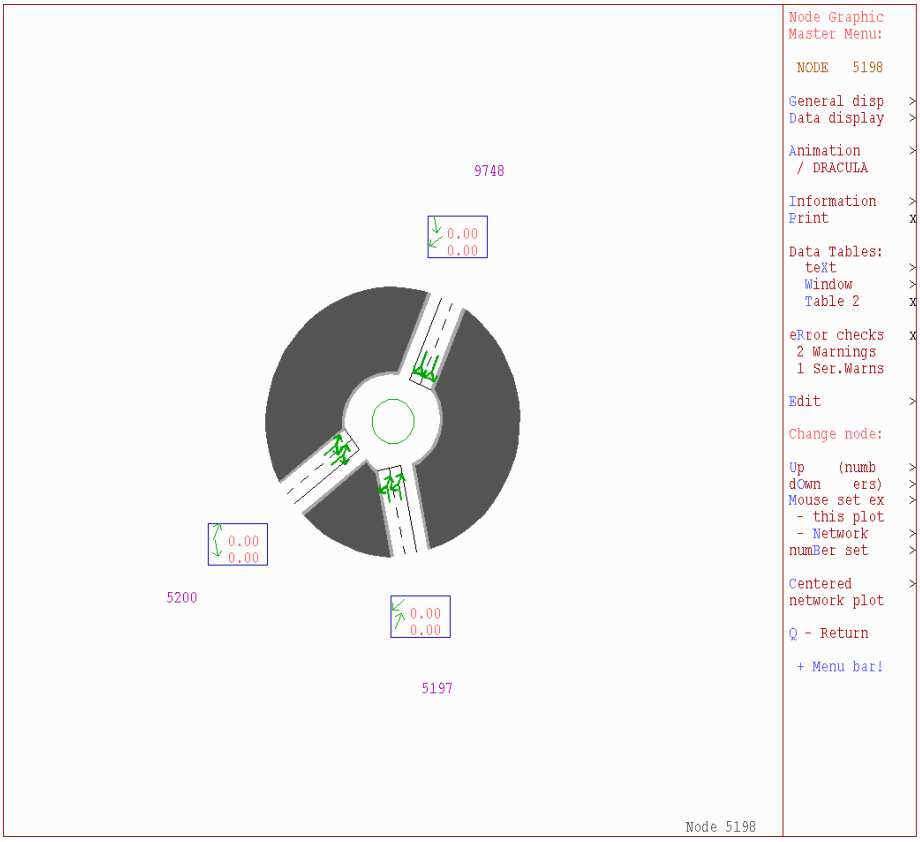


Figure 75. Junction 9 queues – PM DM

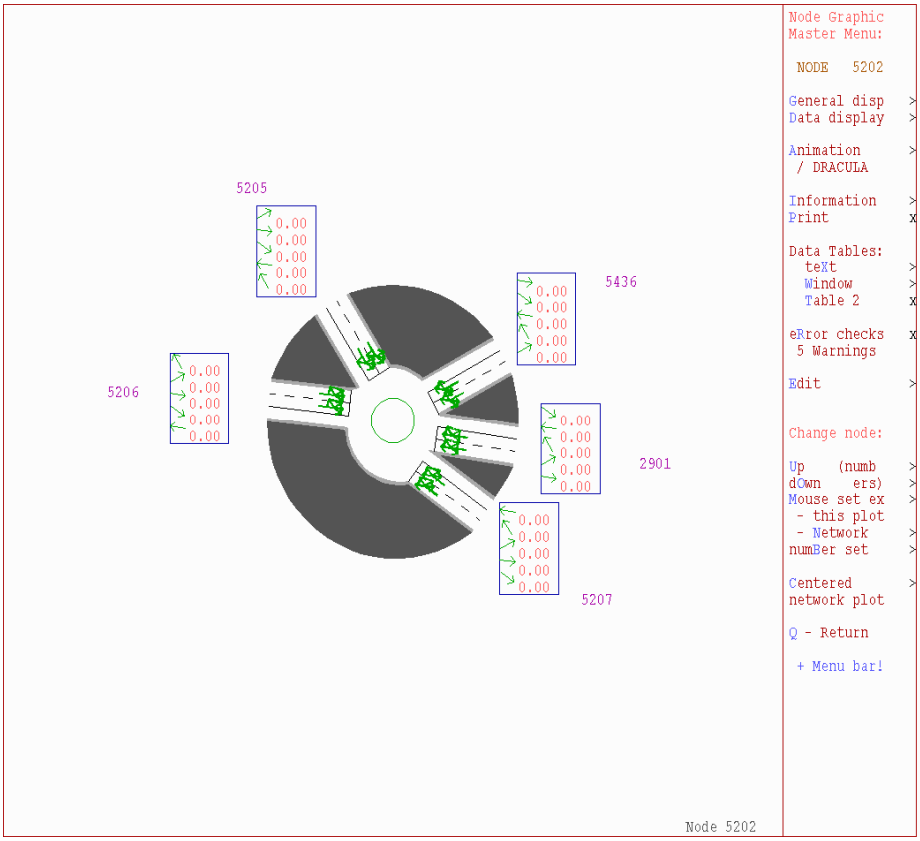


Figure 76. Junction 10 queues – PM DM

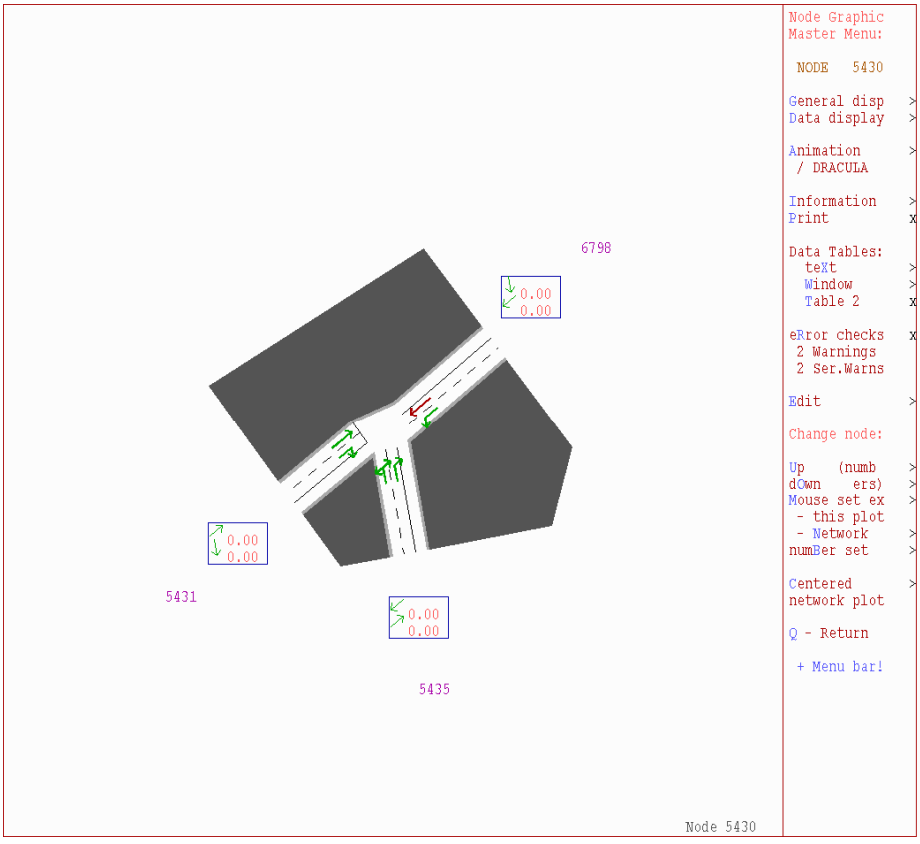


Figure 77. Junction 11 queues – PM DM

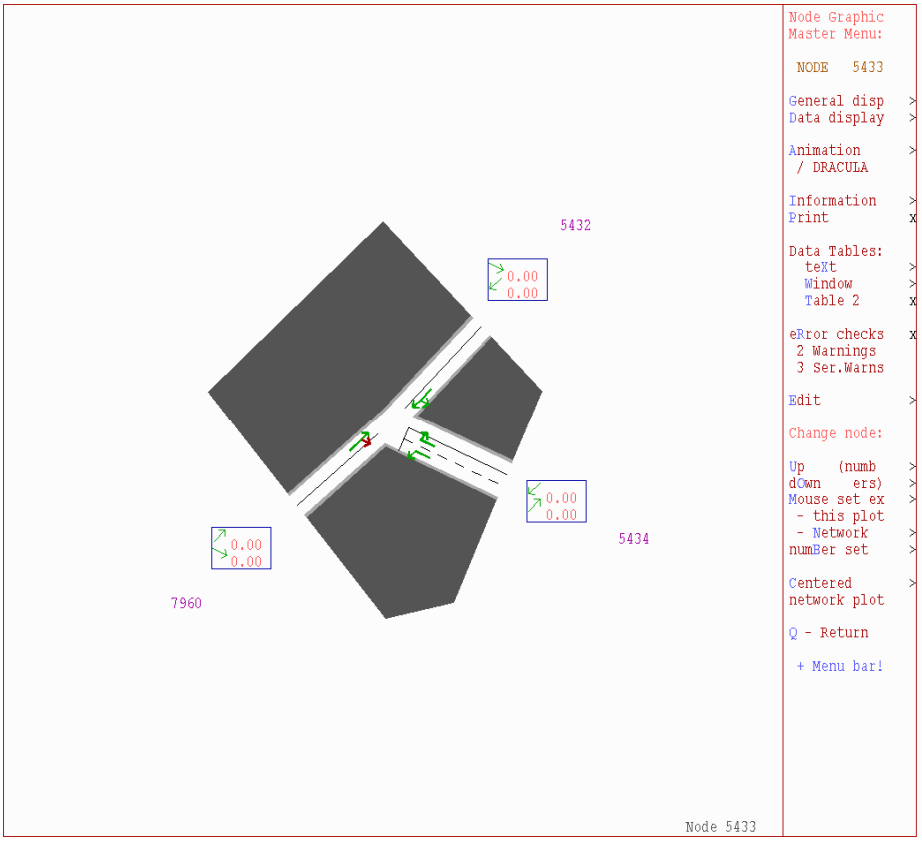


Figure 78. Junction 12 queues – PM DM

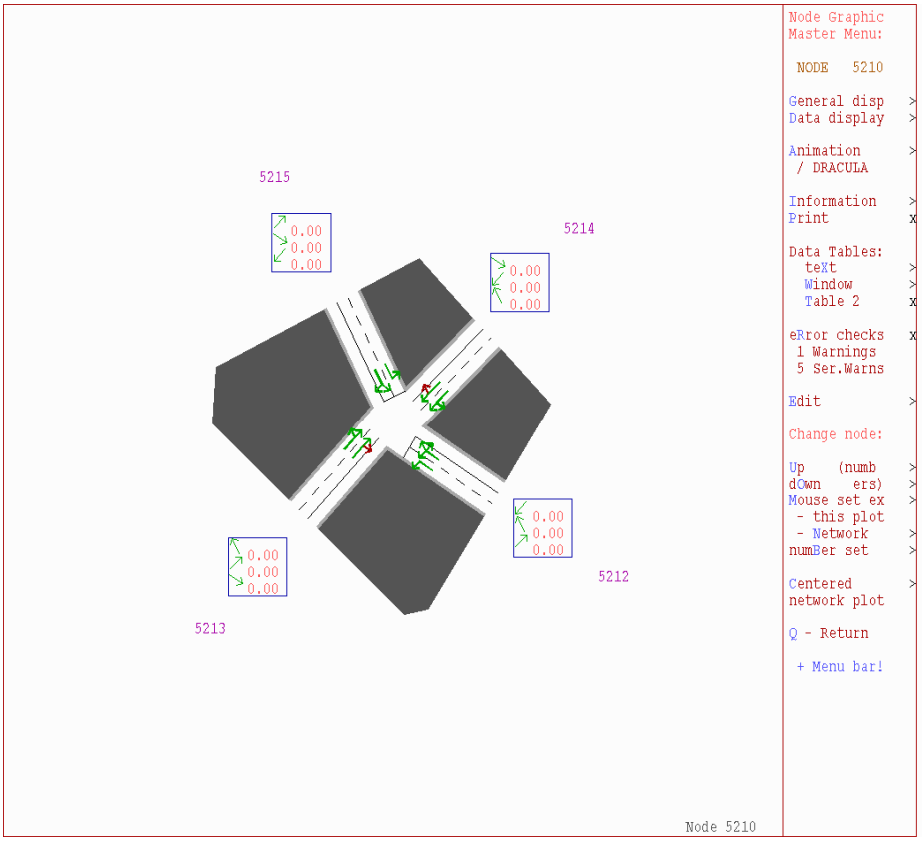


Figure 79. Junction 13 queues – PM DM

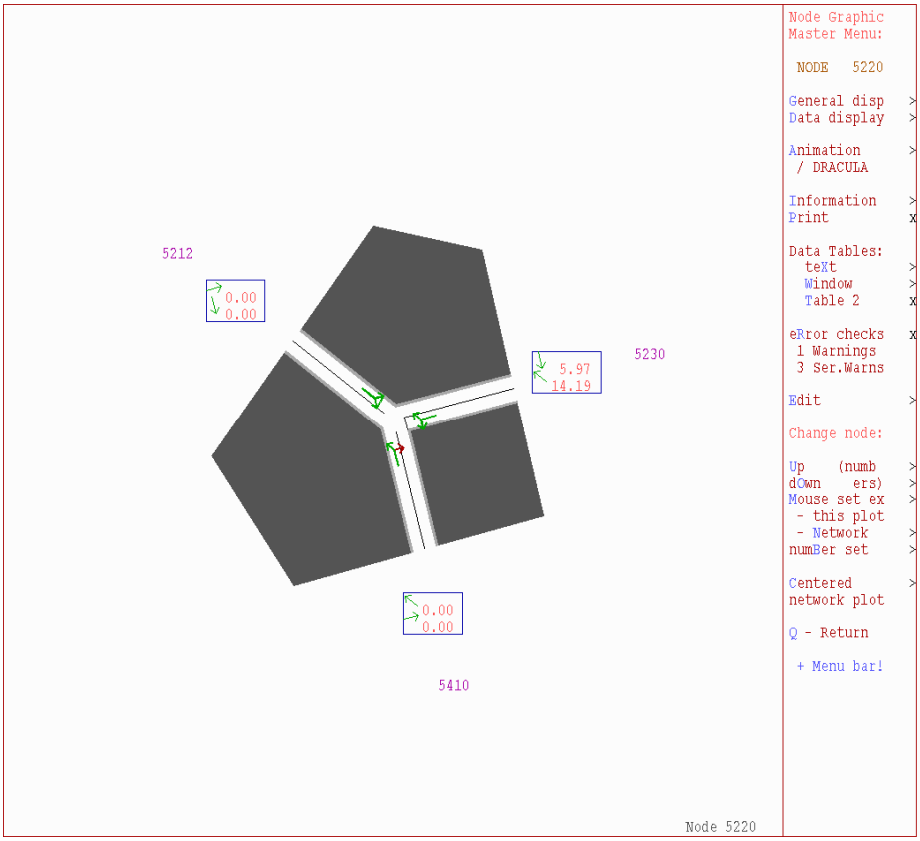


Figure 80. Junction 14 queues – PM DM

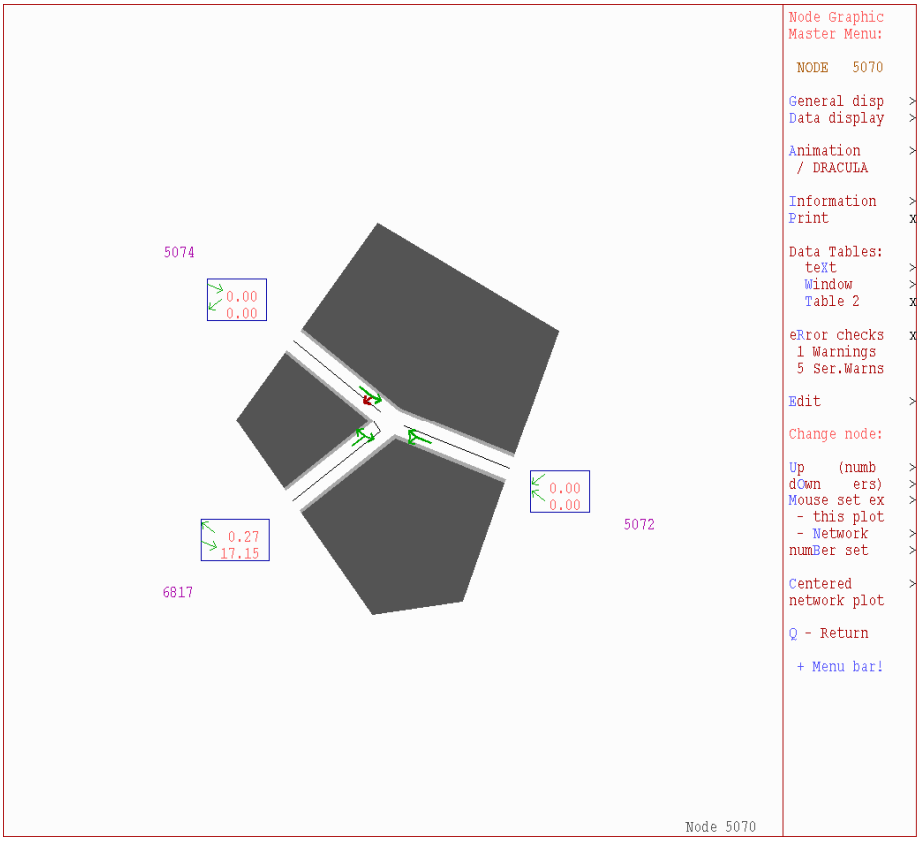


Figure 81. Junction 1 queues – AM DS

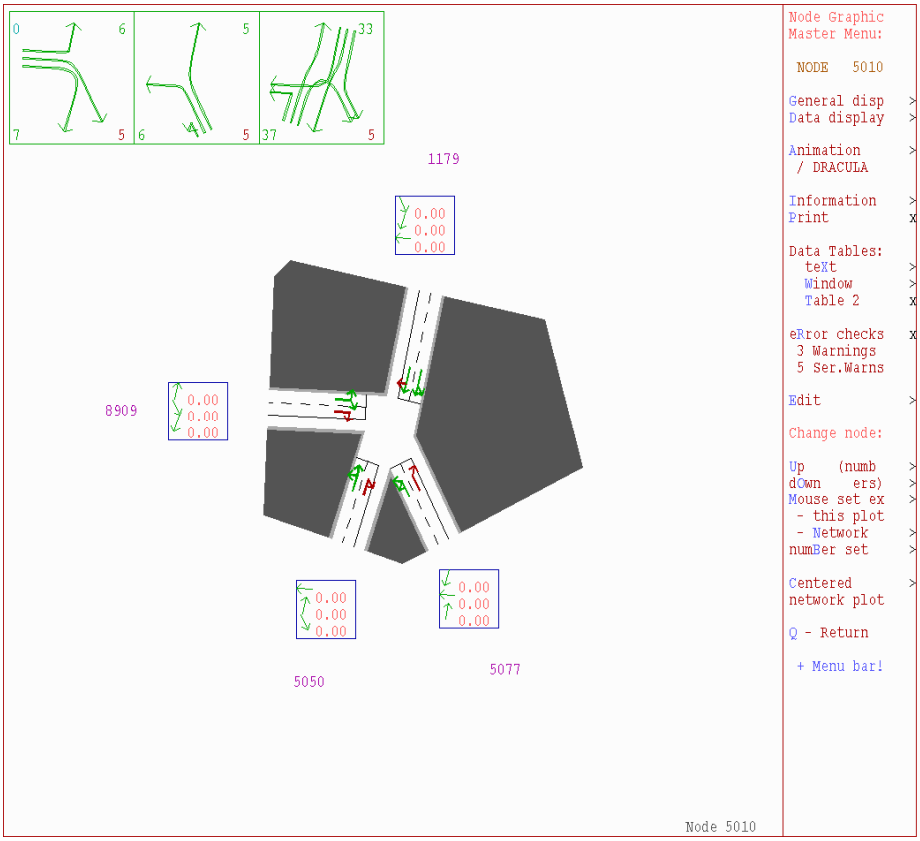


Figure 82. Junction 2 queues – AM DS

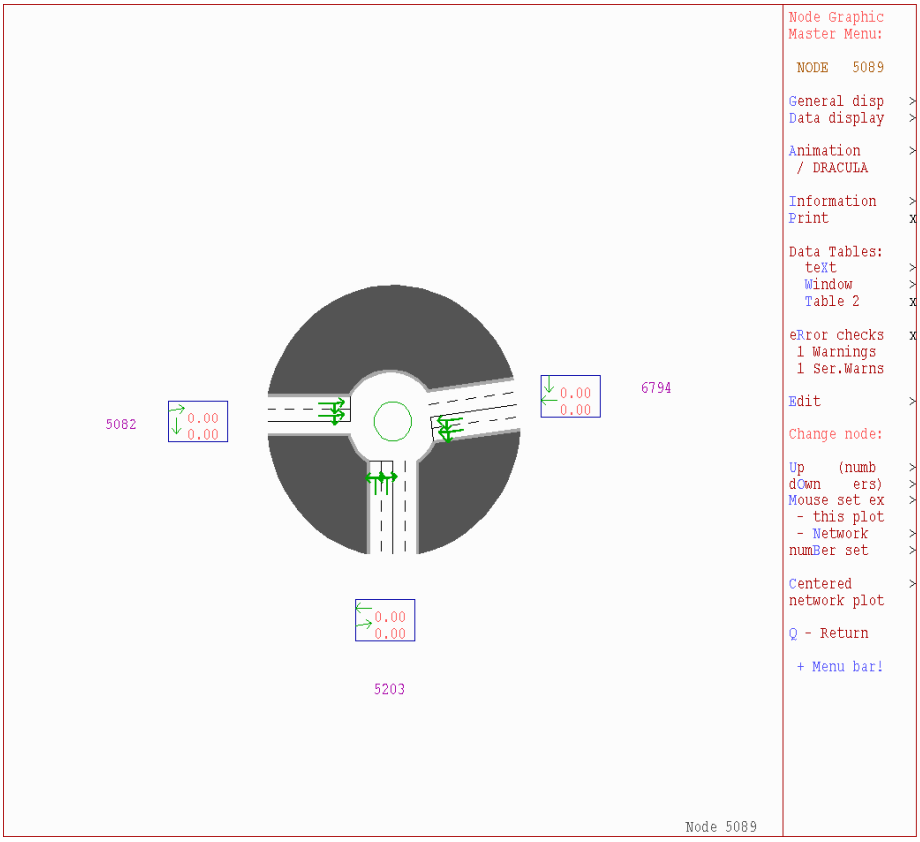


Figure 83. Junction 3 queues – AM DS

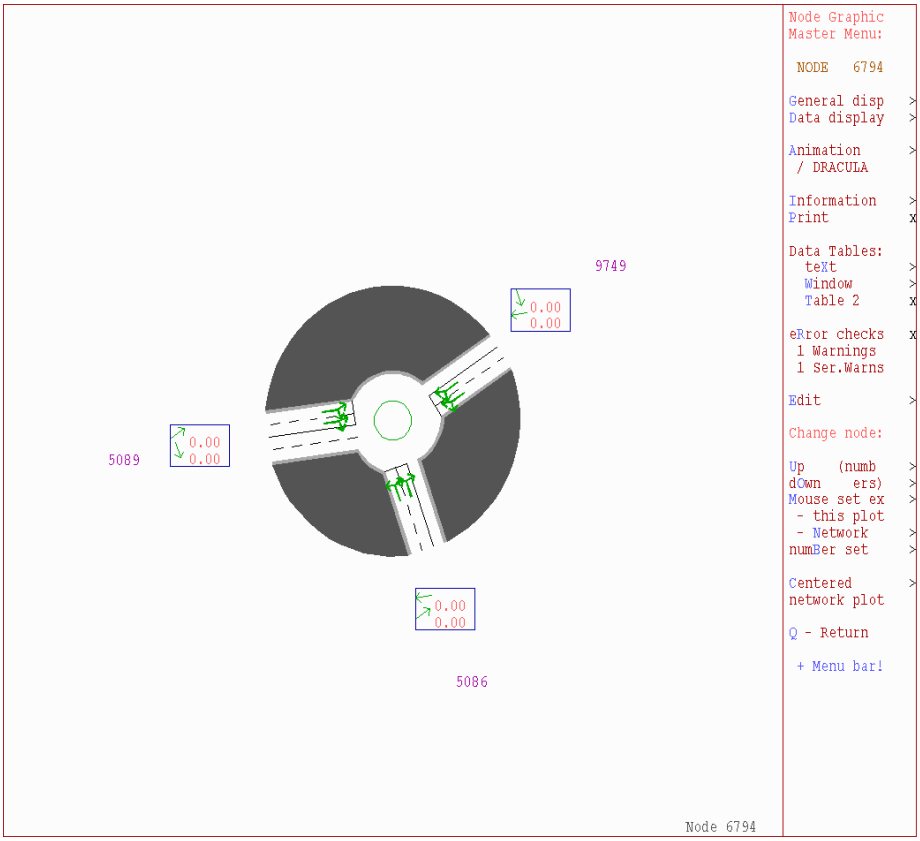


Figure 84. Junction 4 queues – AM DS

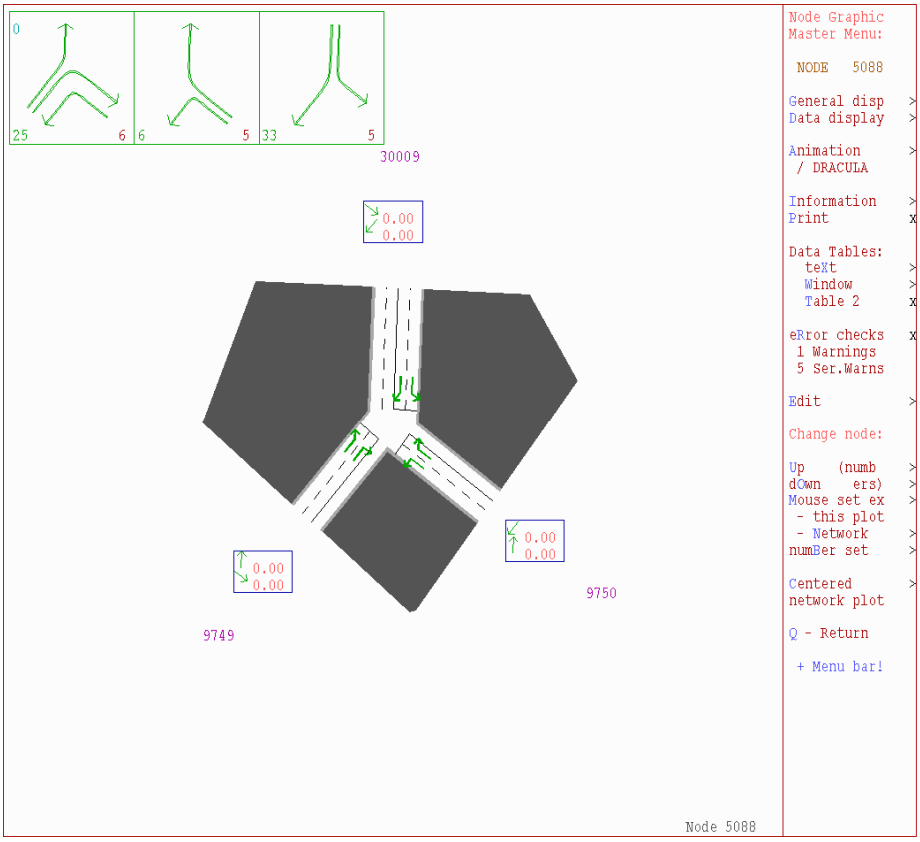


Figure 85. Junction 5 queues – AM DS

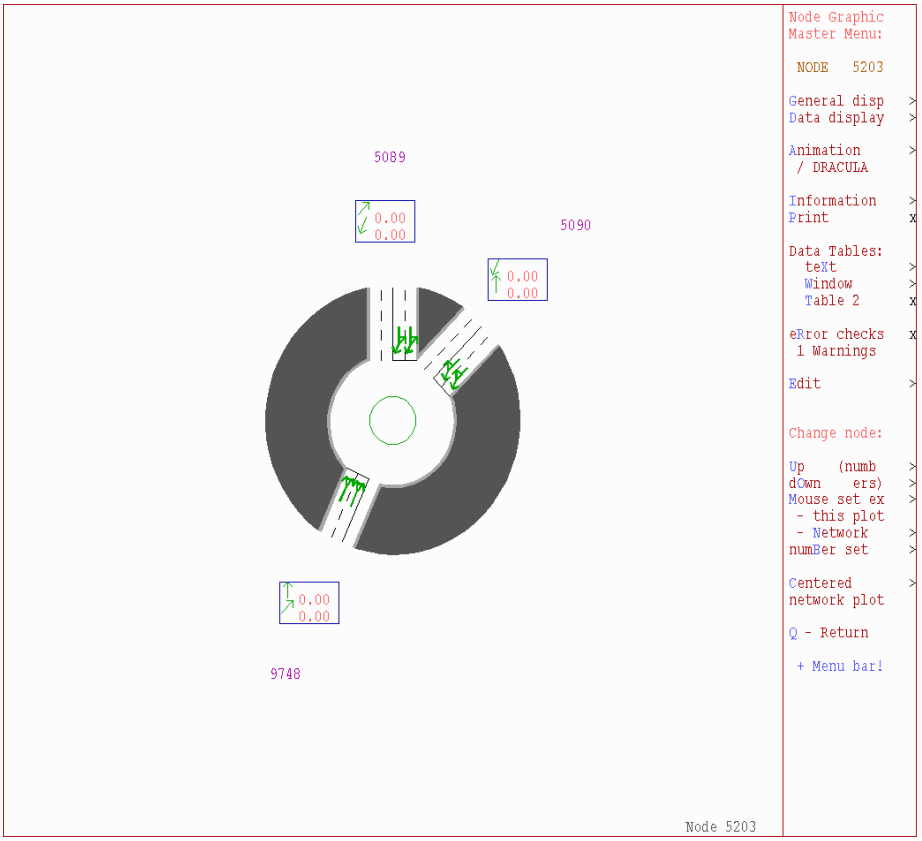


Figure 86. Junction 6 queues – AM DS

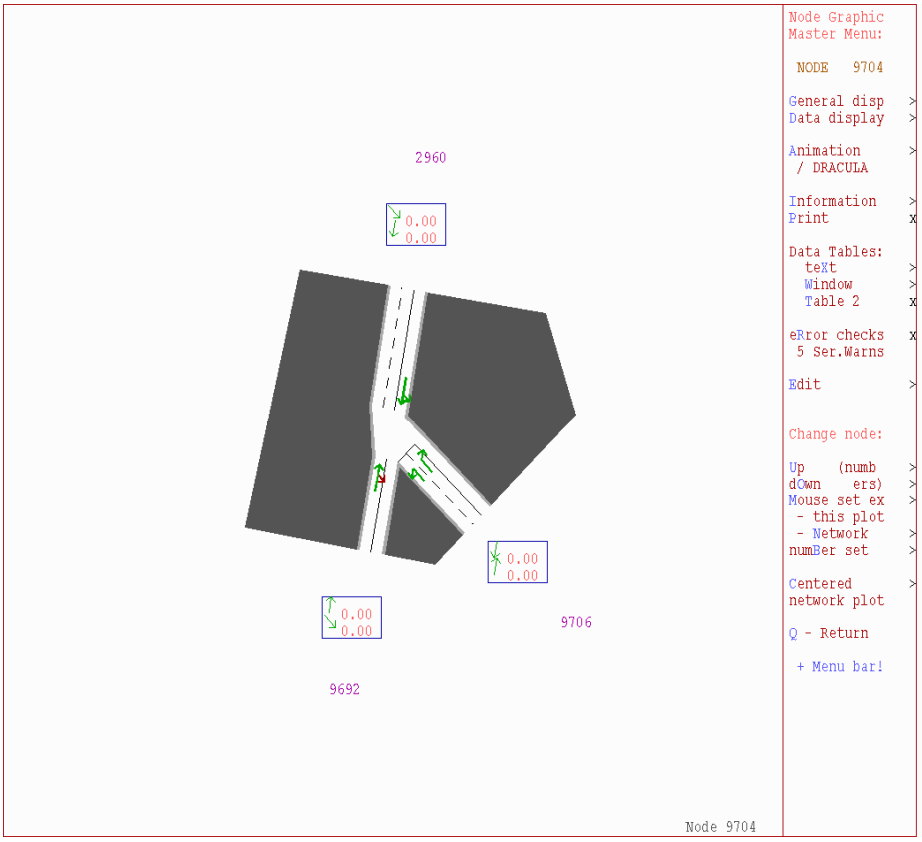


Figure 87. Junction 7 queues – AM DS

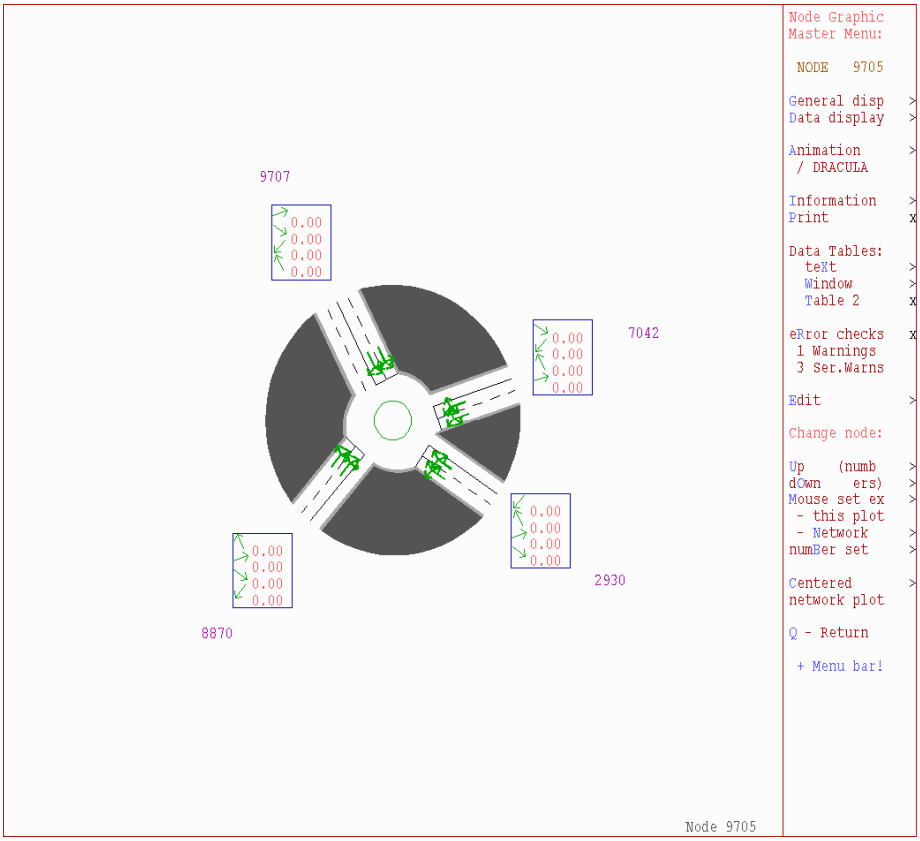


Figure 88. Junction 8 queues – AM DS

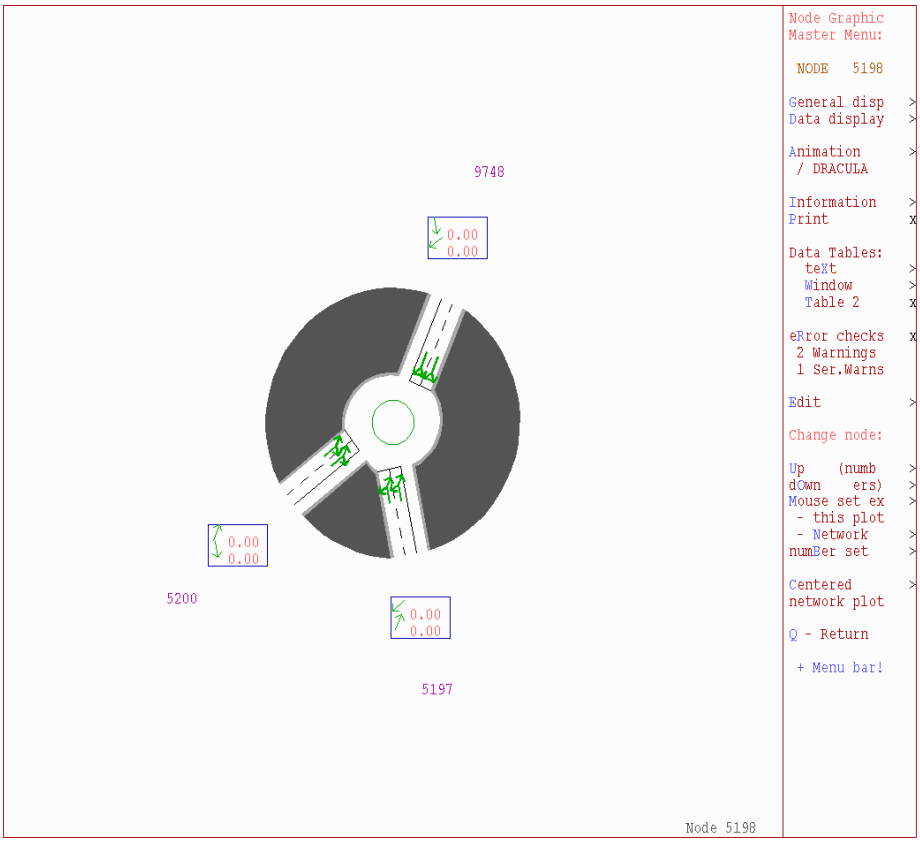


Figure 89. Junction 9 queues – AM DS

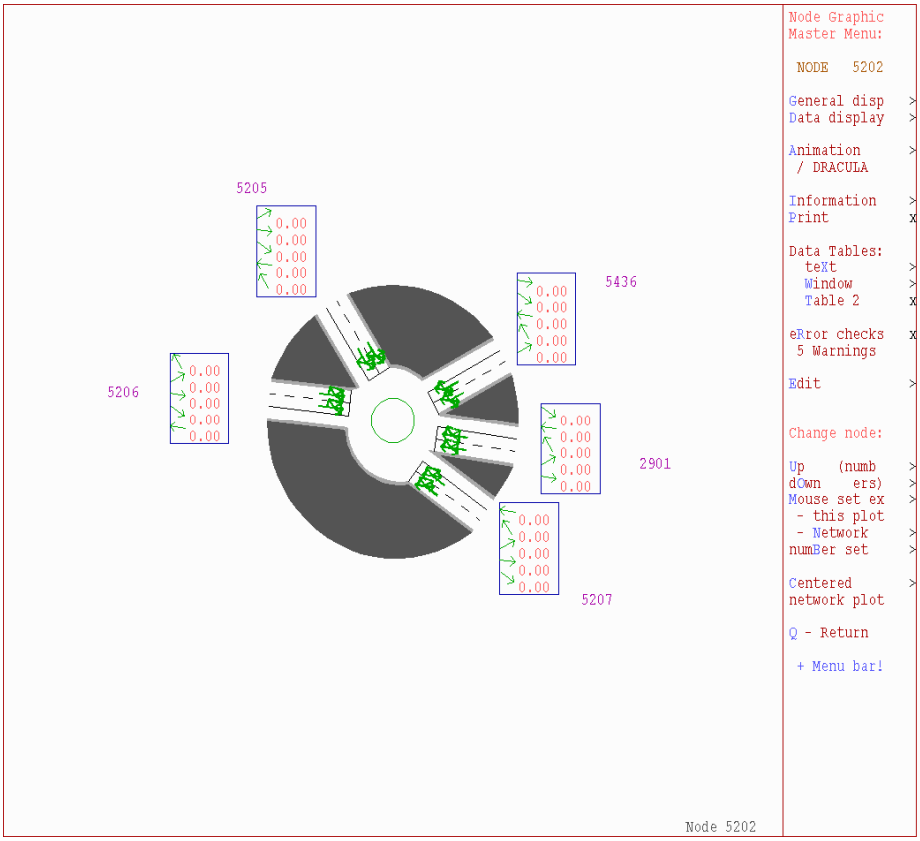


Figure 90. Junction 10 queues – AM DS

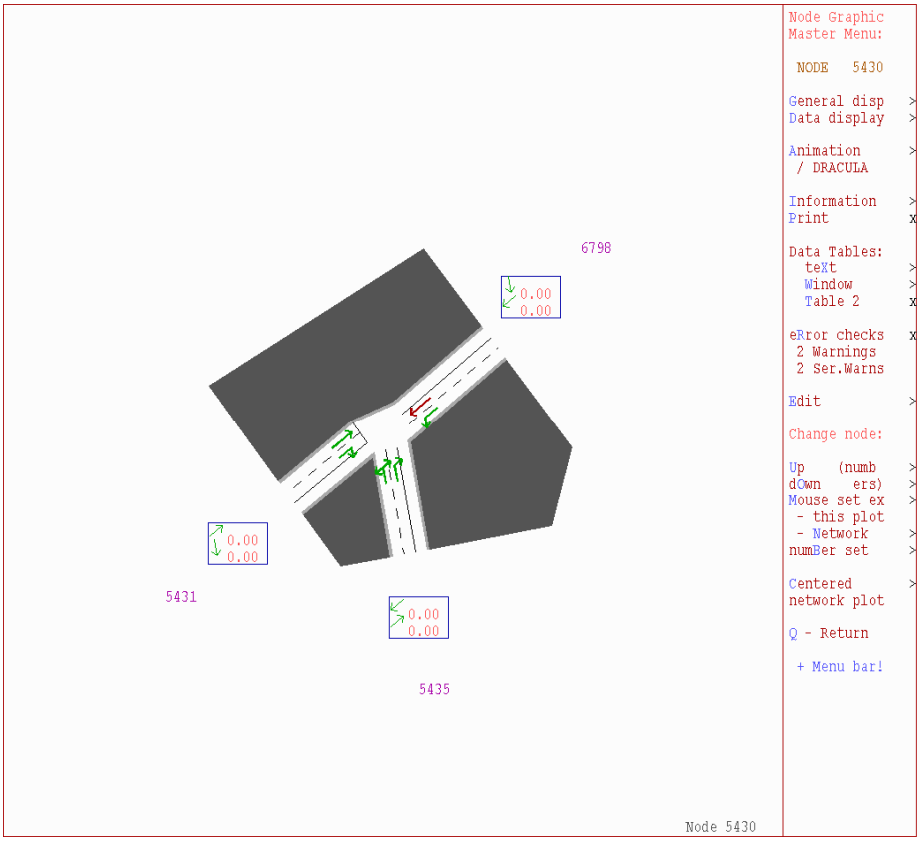


Figure 91. Junction 11 queues – AM DS

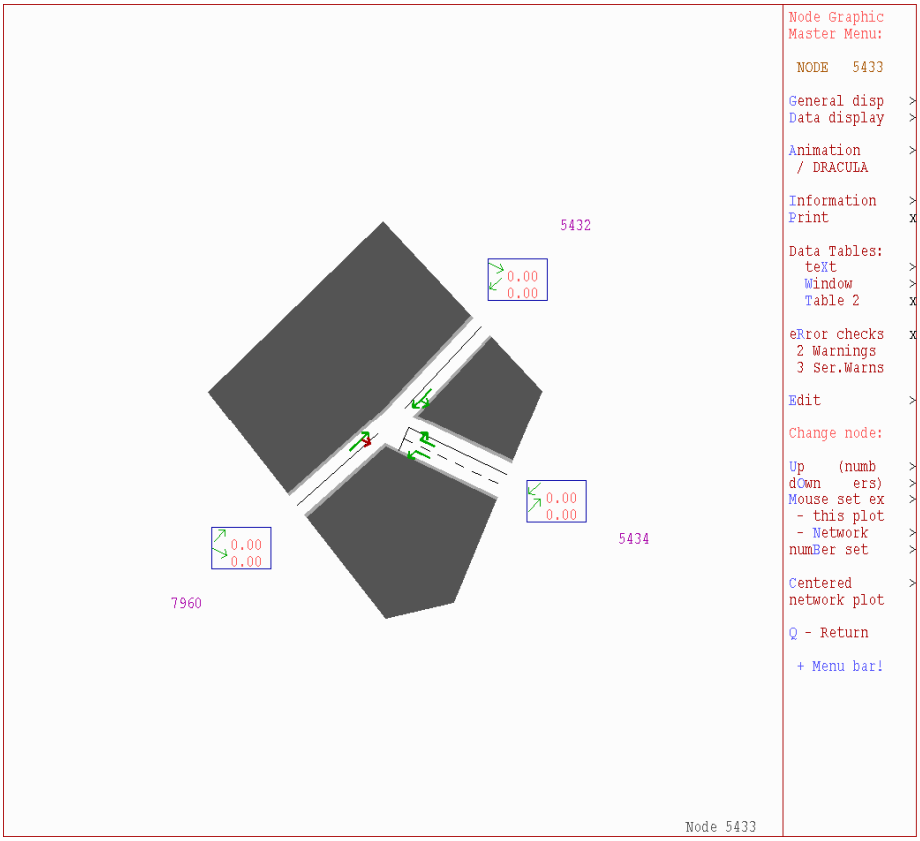


Figure 92. Junction 12 queues – AM DS

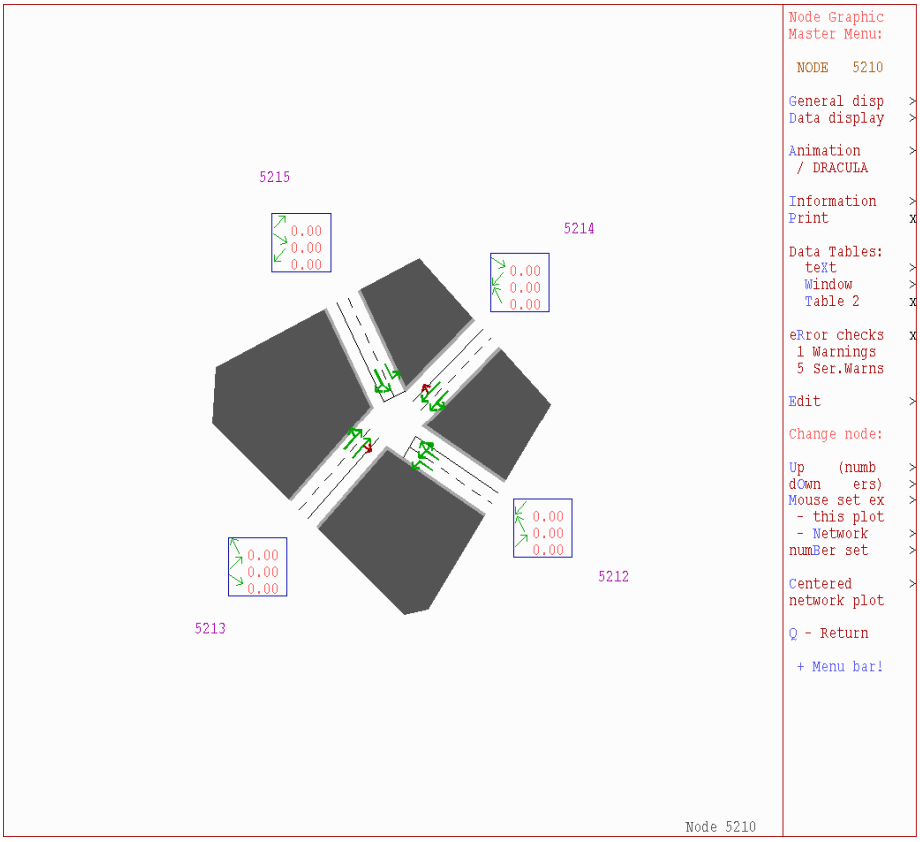


Figure 93. Junction 13 queues – AM DS

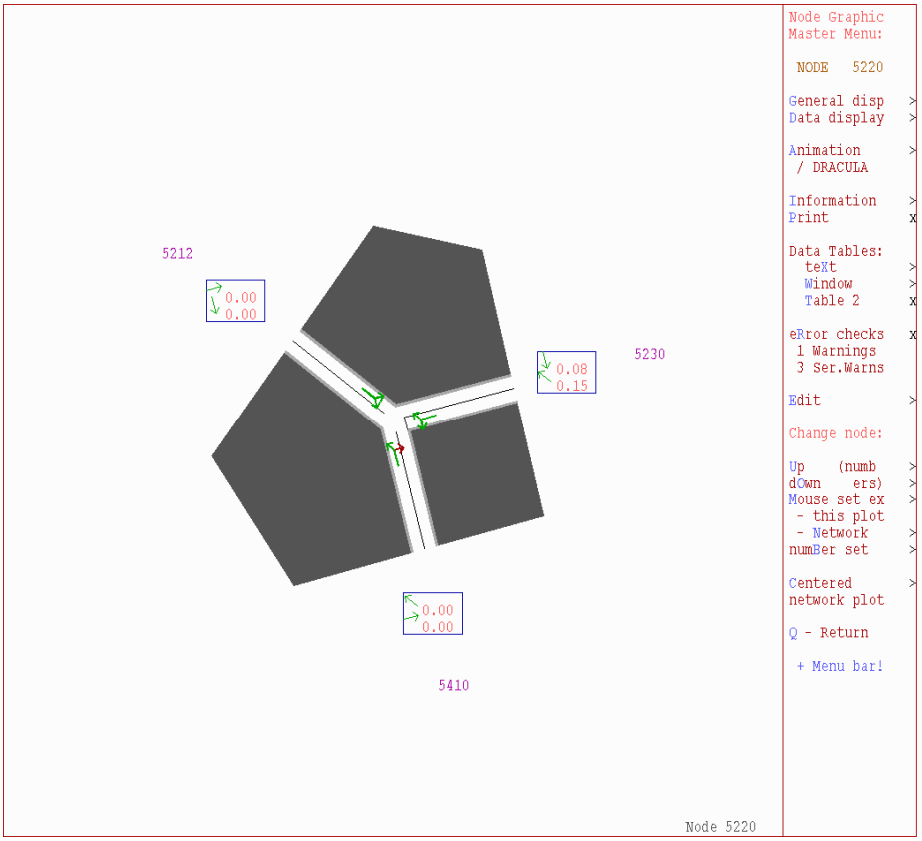


Figure 94. Junction 14 queues – AM DS

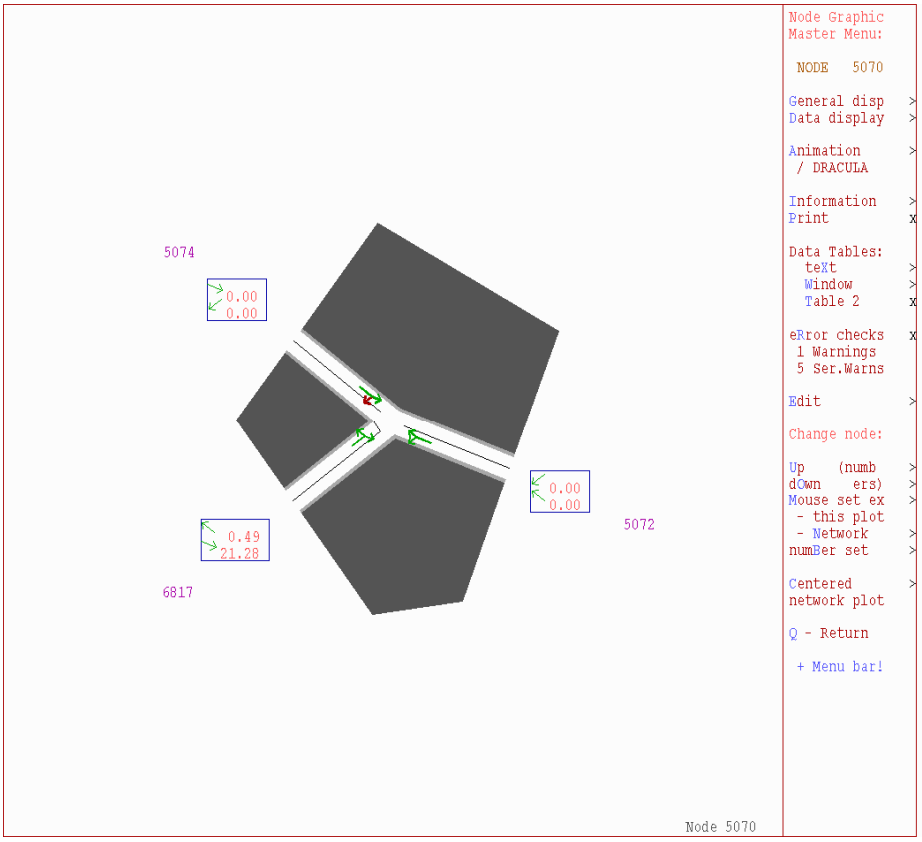


Figure 95. Junction 1 queues – PM DS

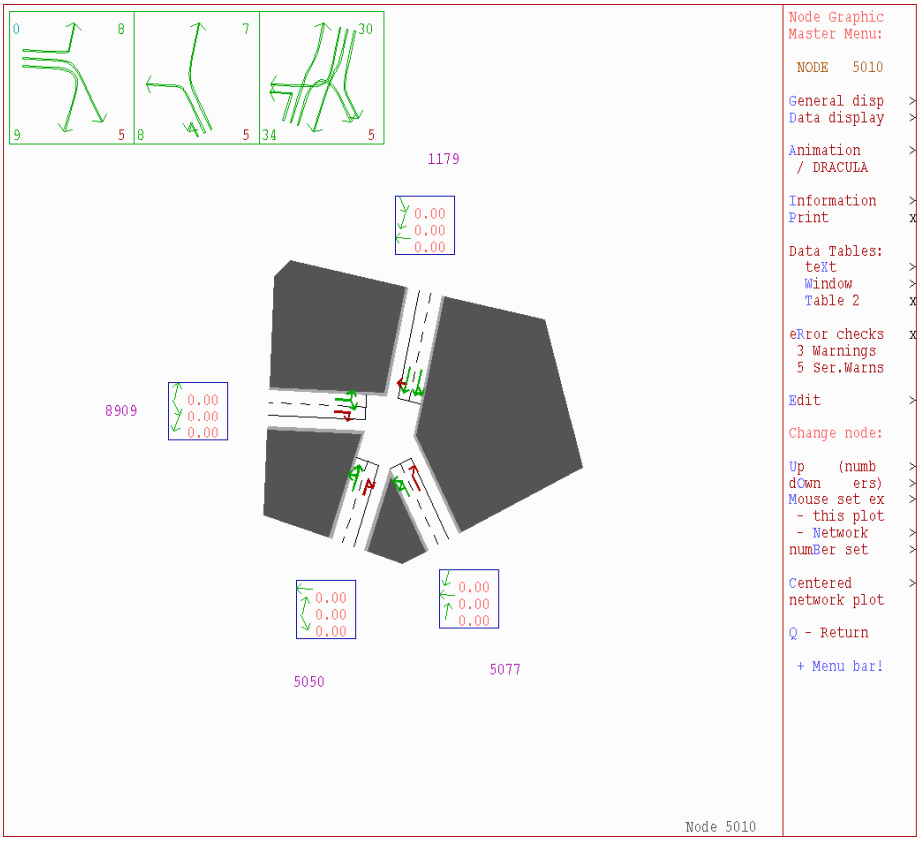


Figure 96. Junction 2 queues – PM DS

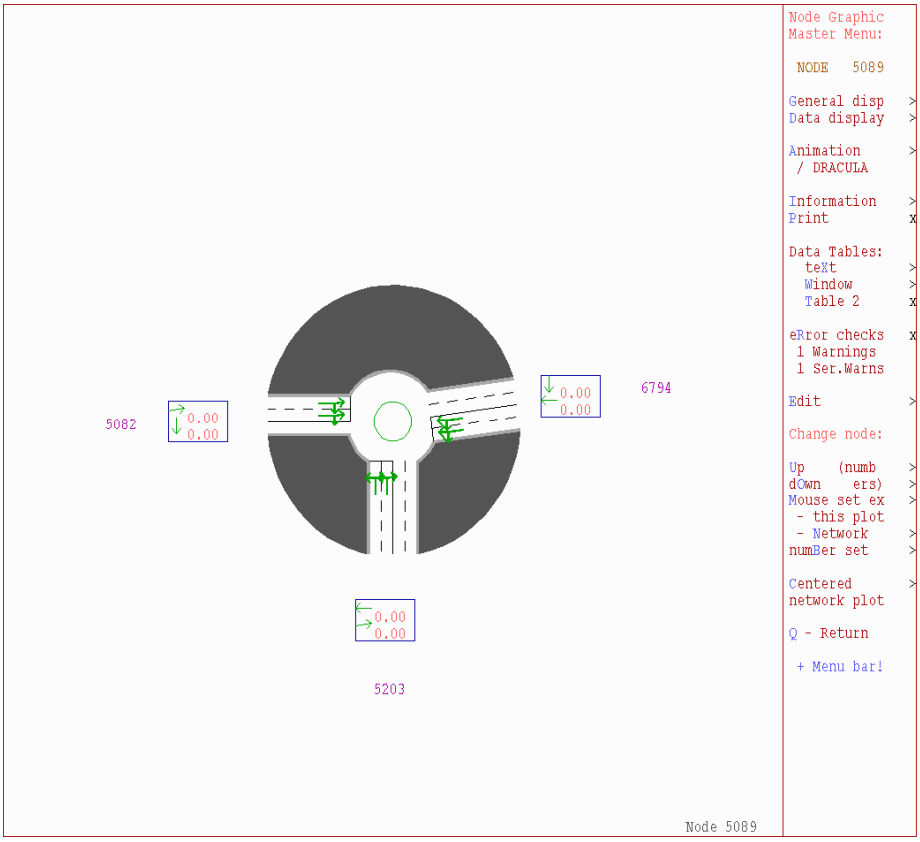


Figure 97. Junction 3 queues – PM DS

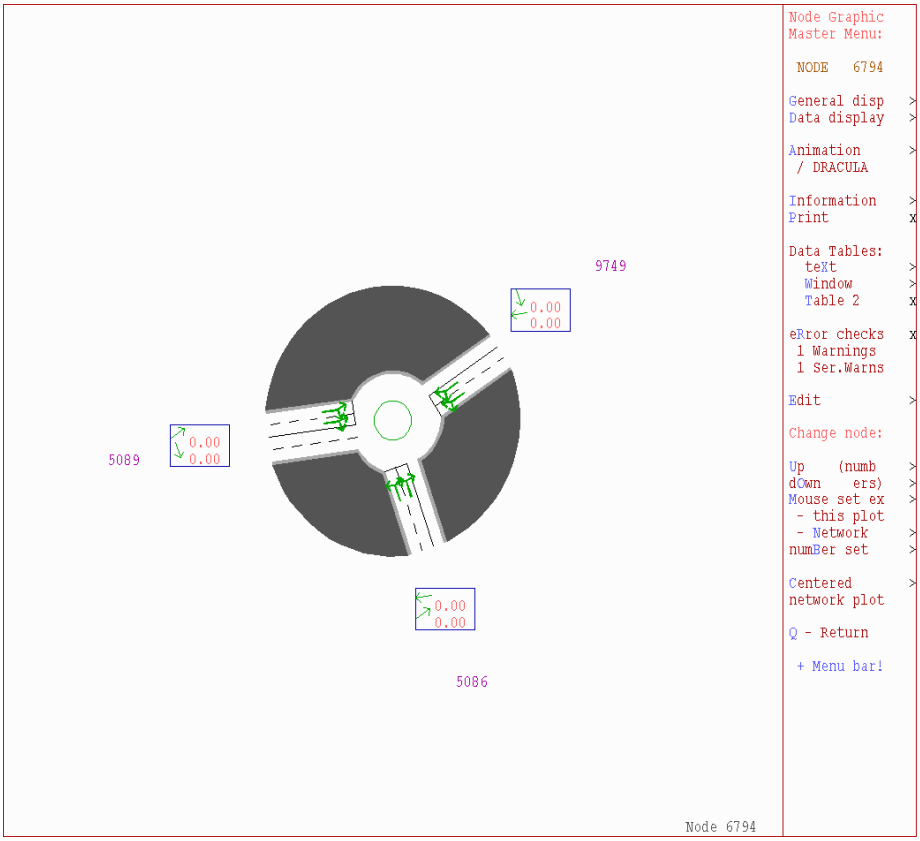


Figure 98. Junction 4 queues – PM DS

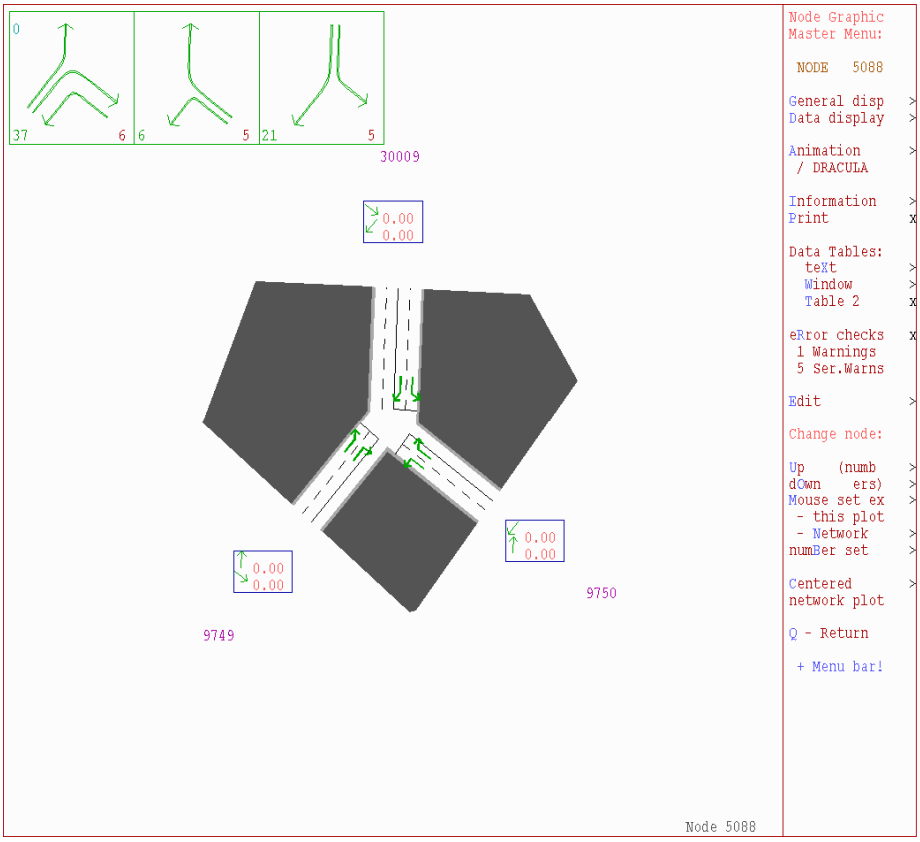


Figure 99. Junction 5 queues – PM DS

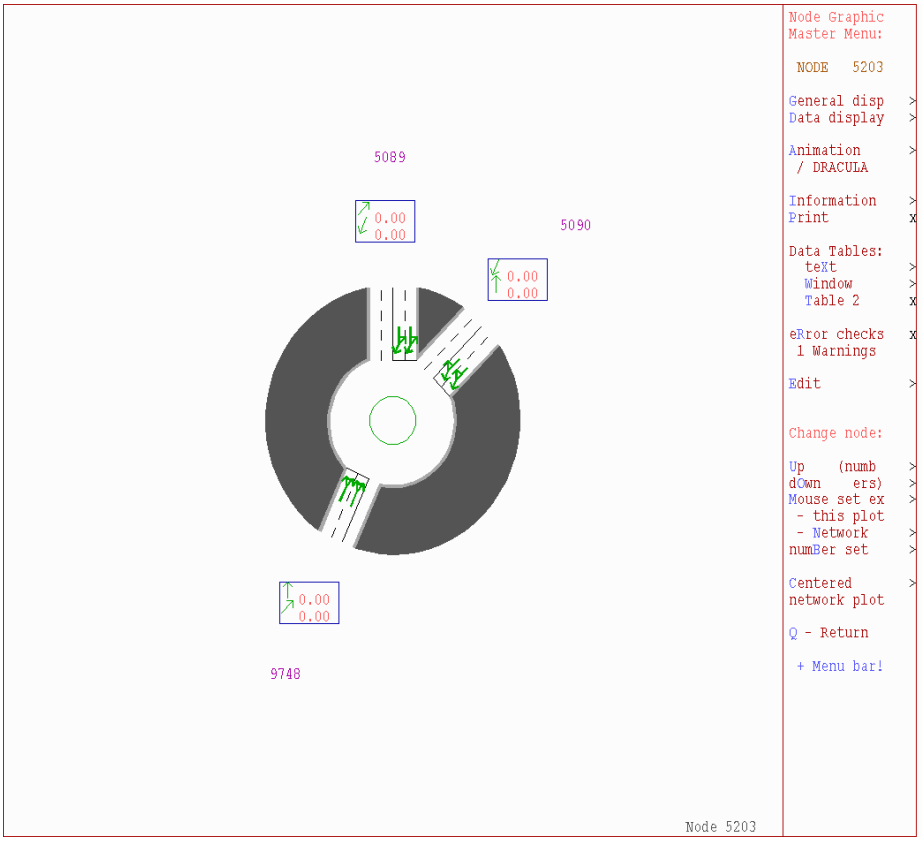


Figure 100. Junction 6 queues – PM DS

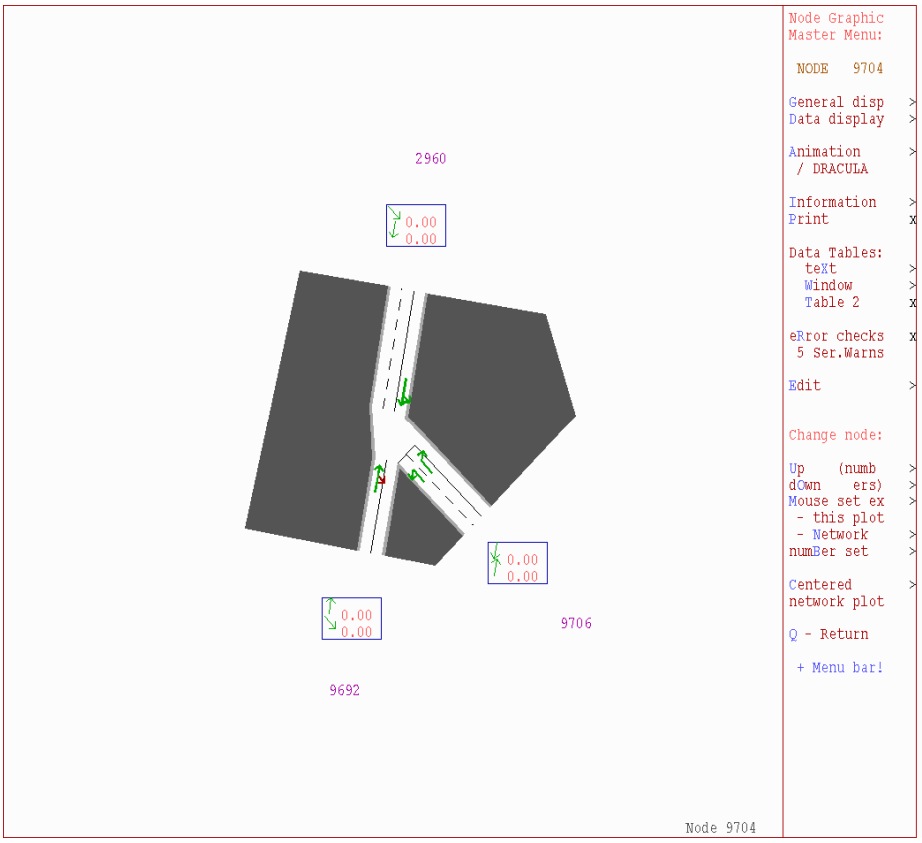


Figure 101. Junction 7 queues – PM DS

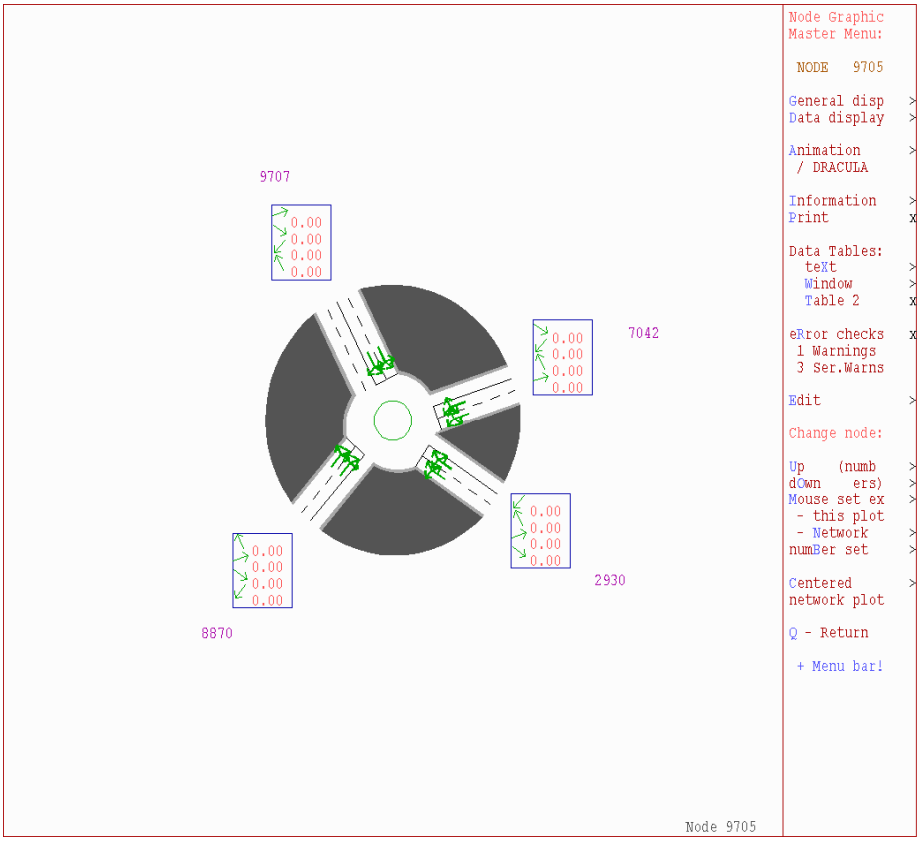


Figure 102. Junction 8 queues – PM DS

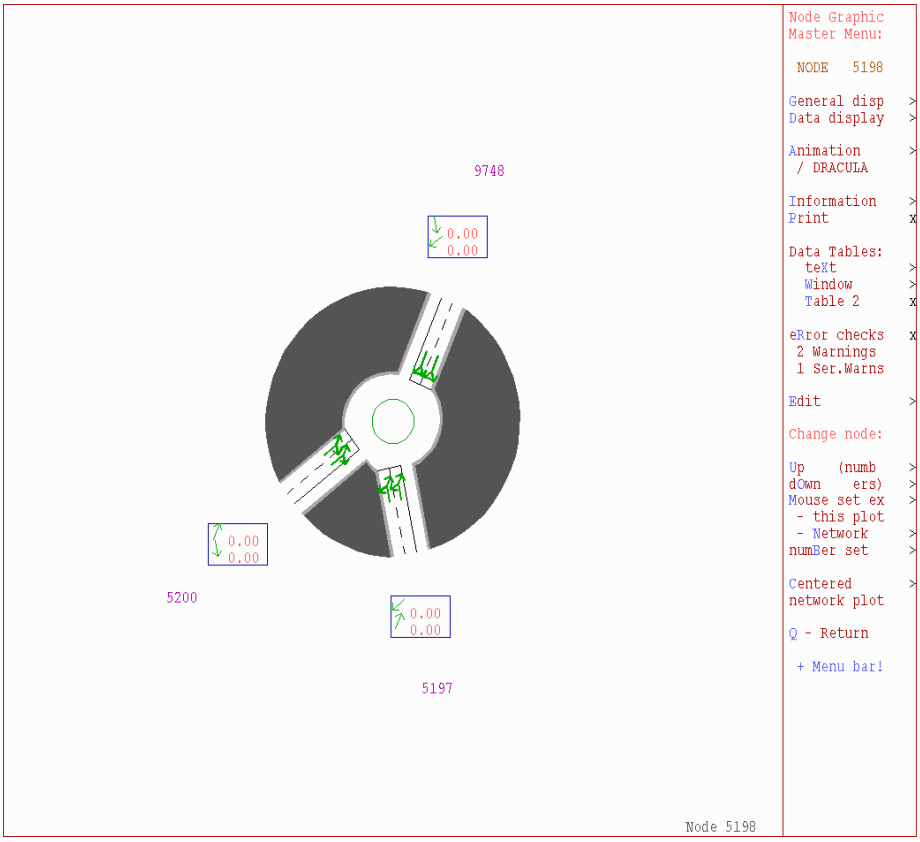


Figure 103. Junction 9 queues – PM DS

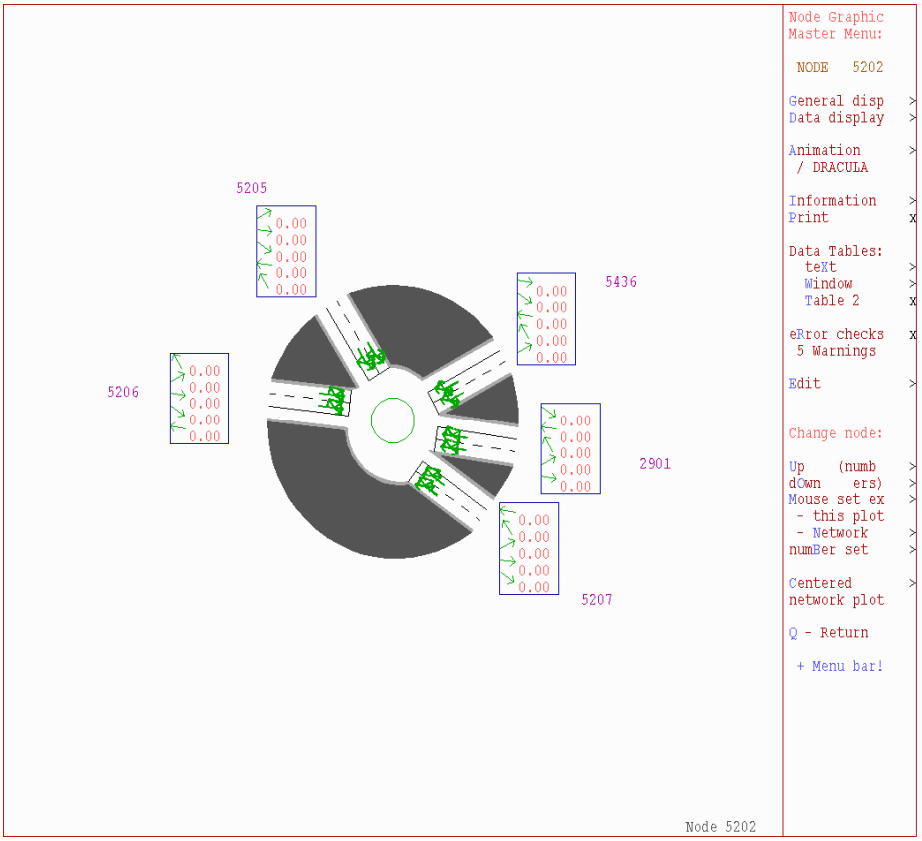


Figure 104. Junction 10 queues – PM DS

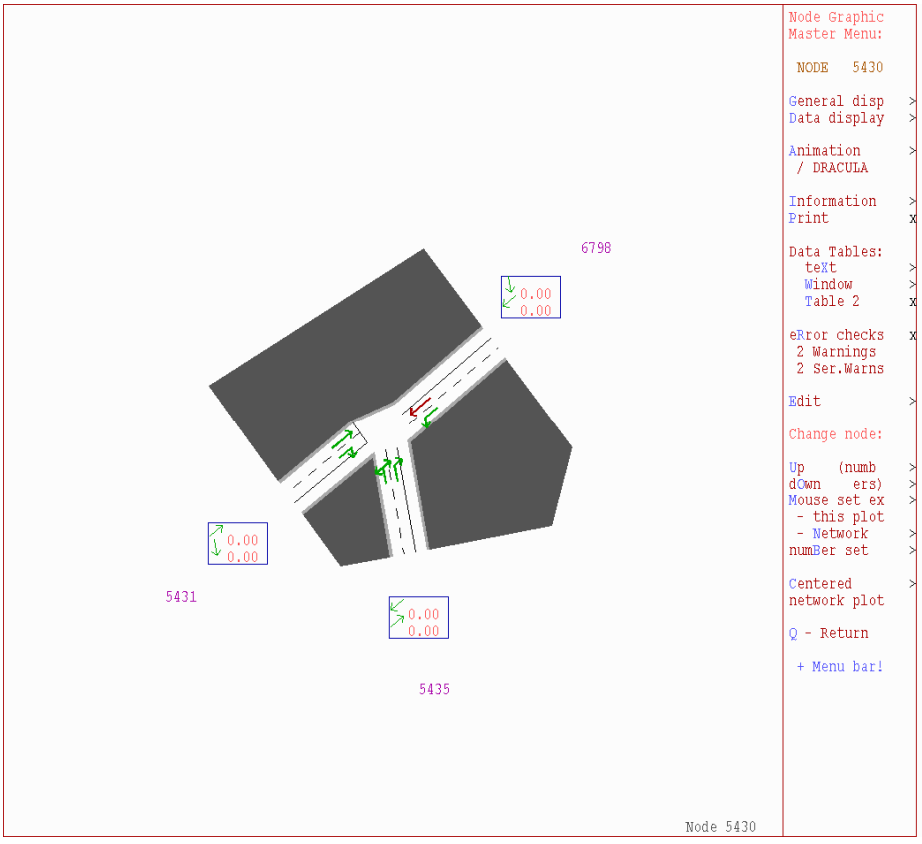


Figure 105. Junction 11 queues – PM DS

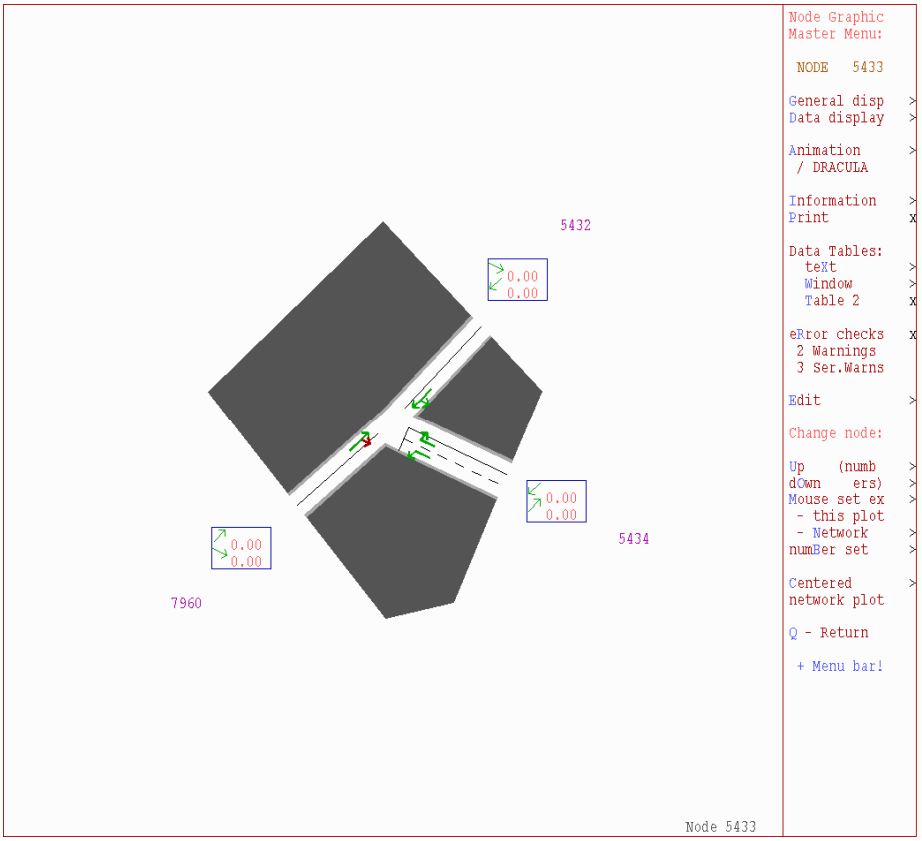


Figure 106. Junction 12 queues – PM DS

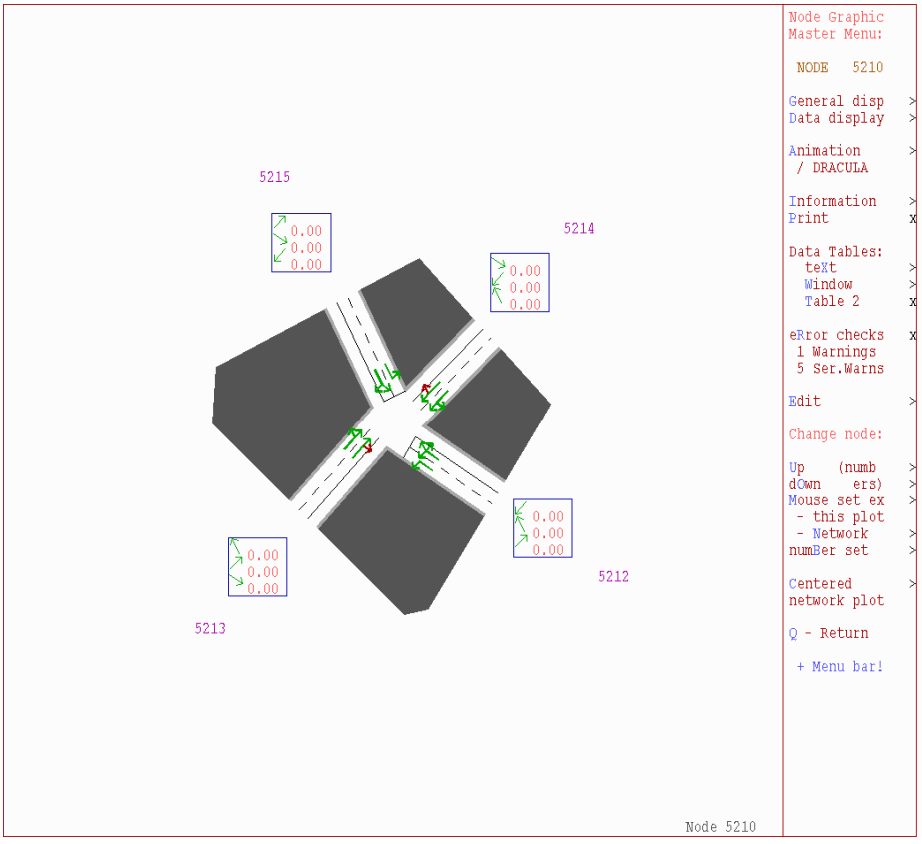


Figure 107. Junction 13 queues – PM DS

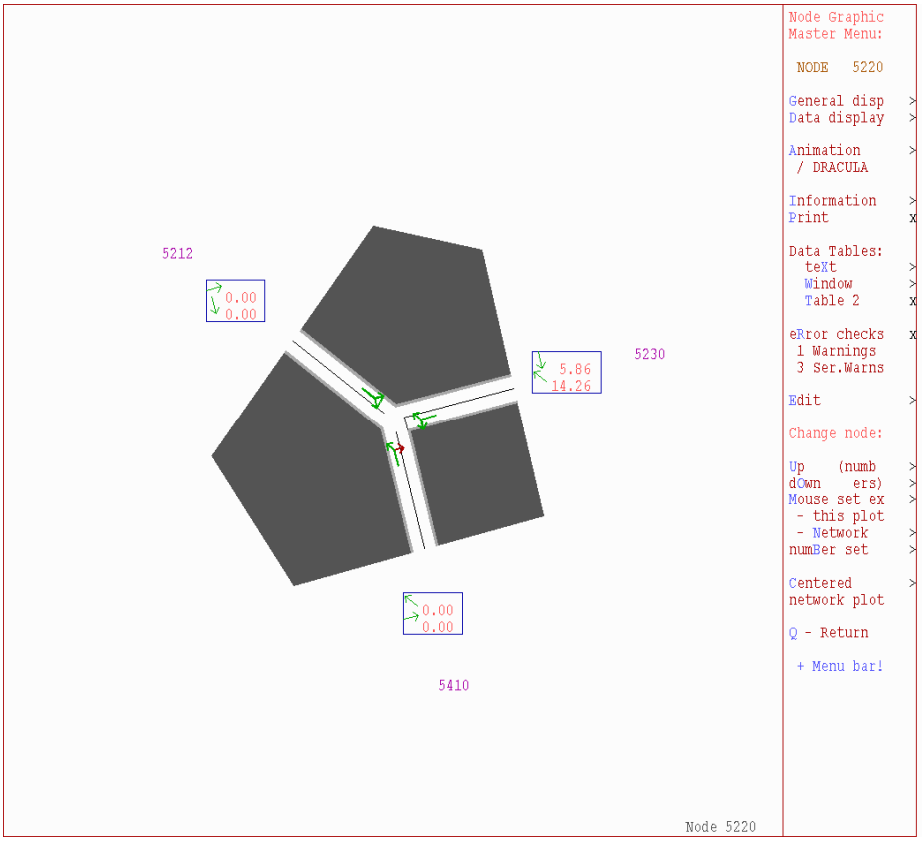


Figure 108. Junction 14 queues – PM DS

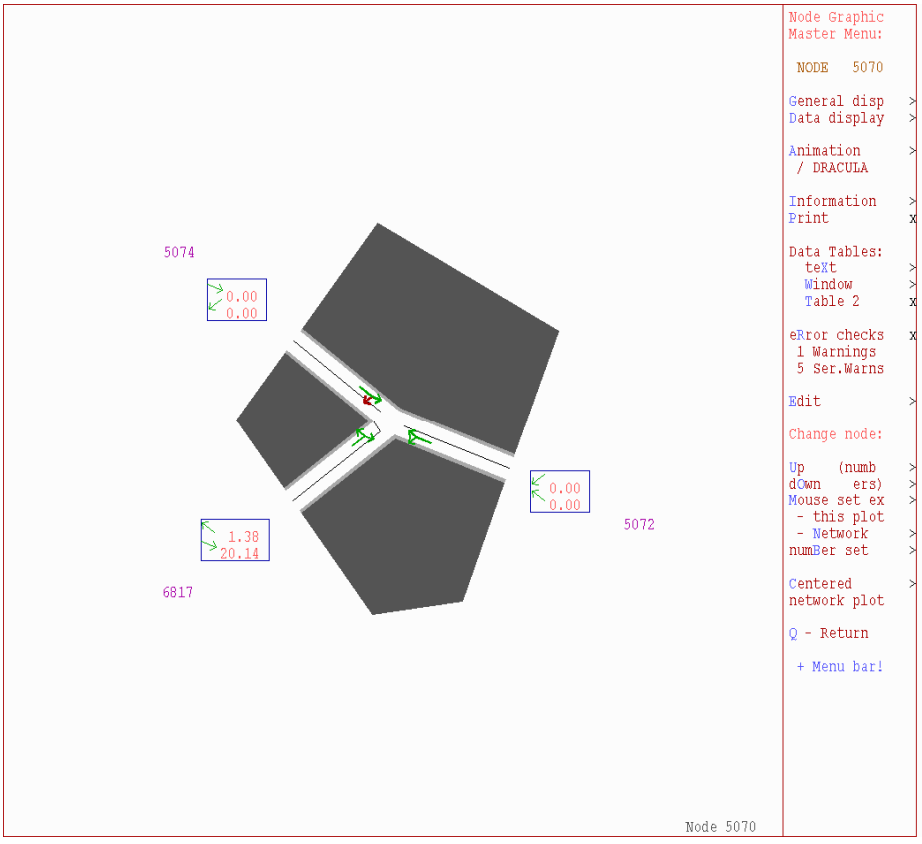


Figure 109. Junction 1 V/C ratios – AM DM

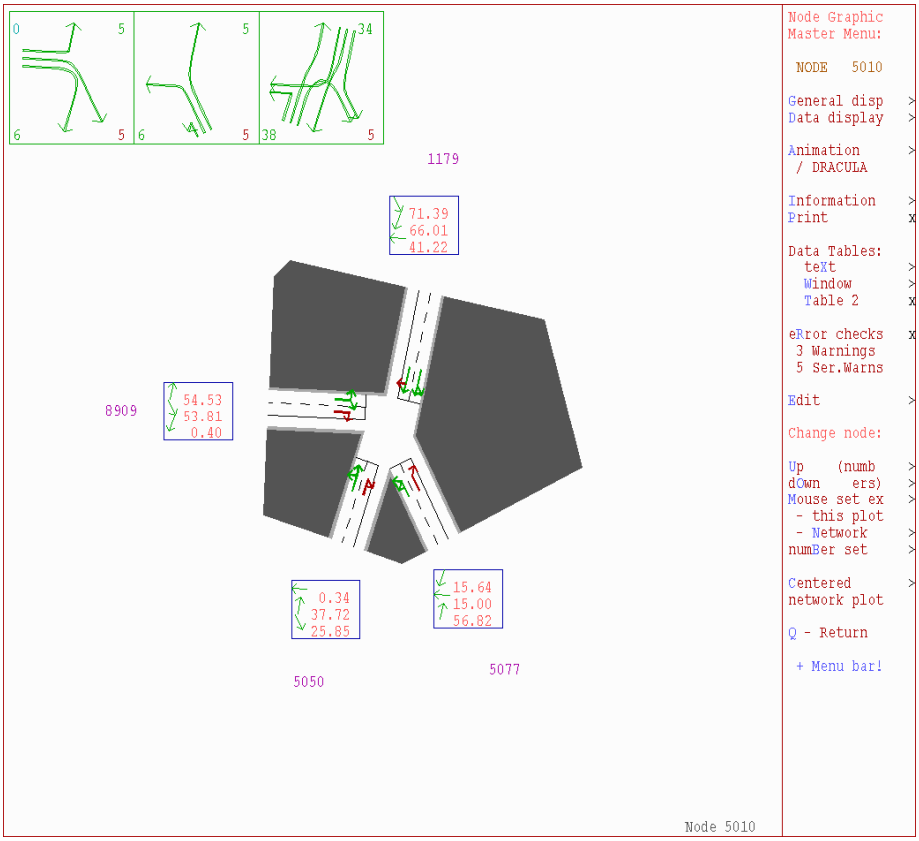


Figure 110. Junction 2 V/C ratios – AM DM

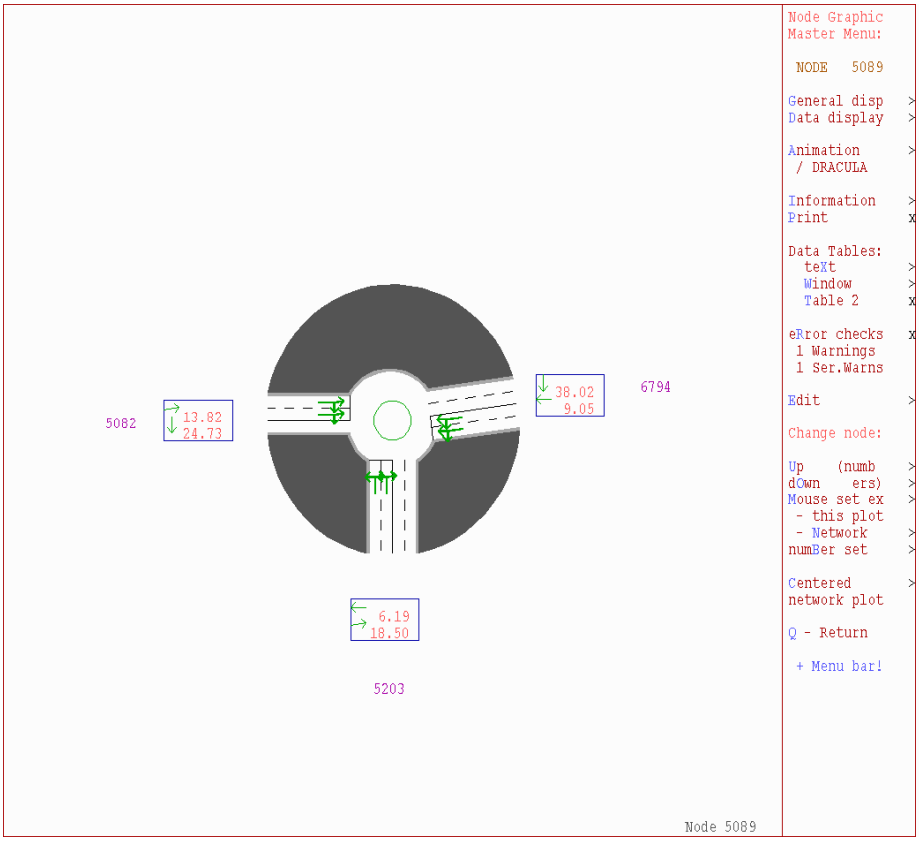


Figure 111. Junction 3 V/C ratios – AM DM

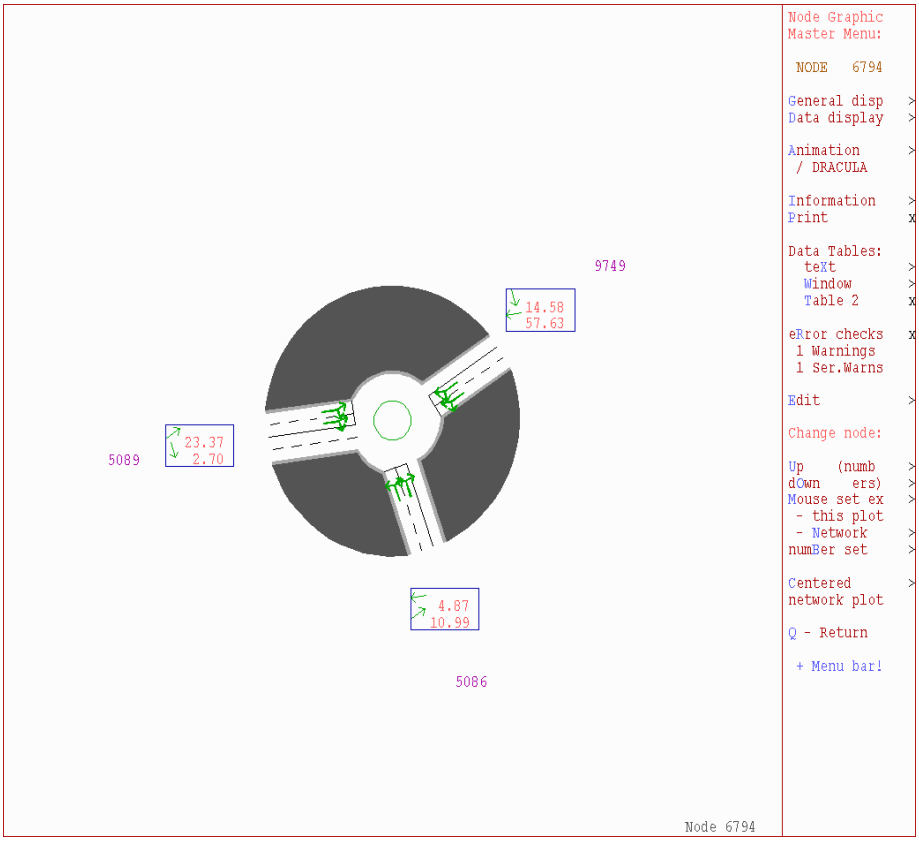


Figure 112. Junction 5 V/C ratios – AM DM

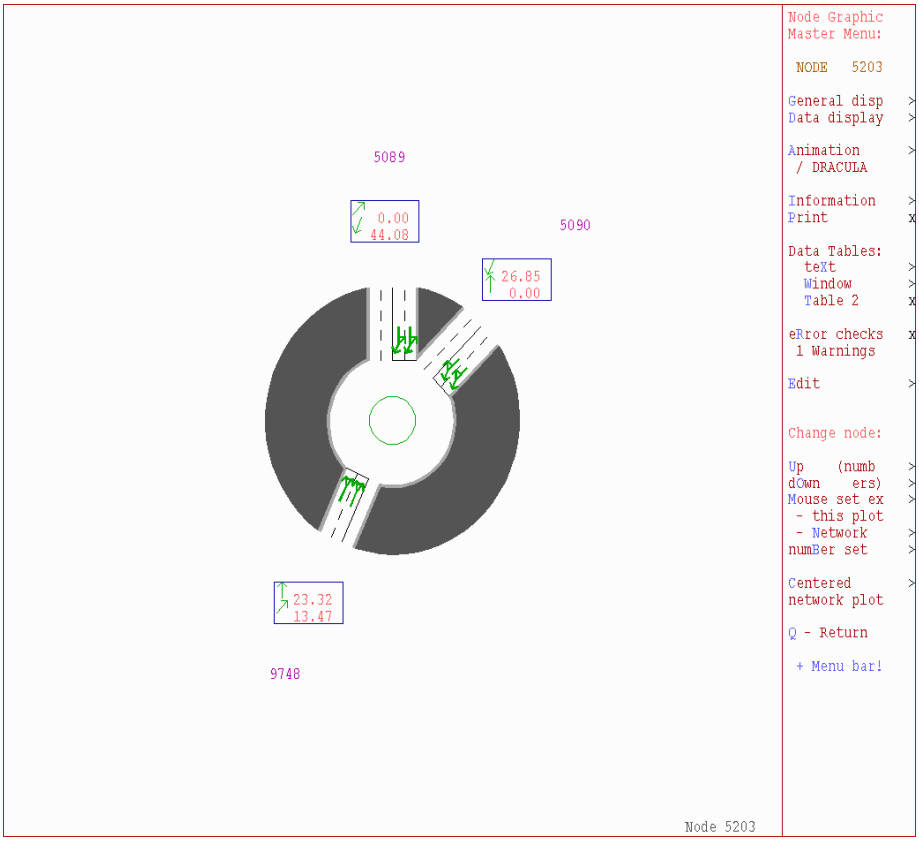


Figure 113. Junction 6 V/C ratios – AM DM

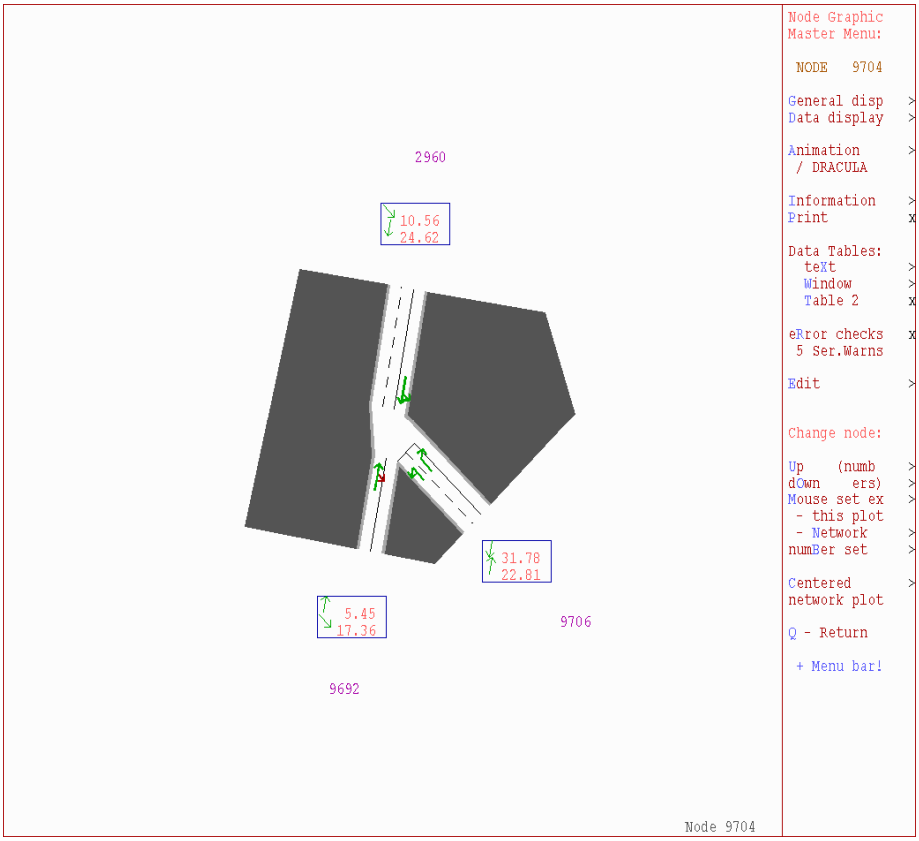


Figure 114. Junction 7 V/C ratios – AM DM

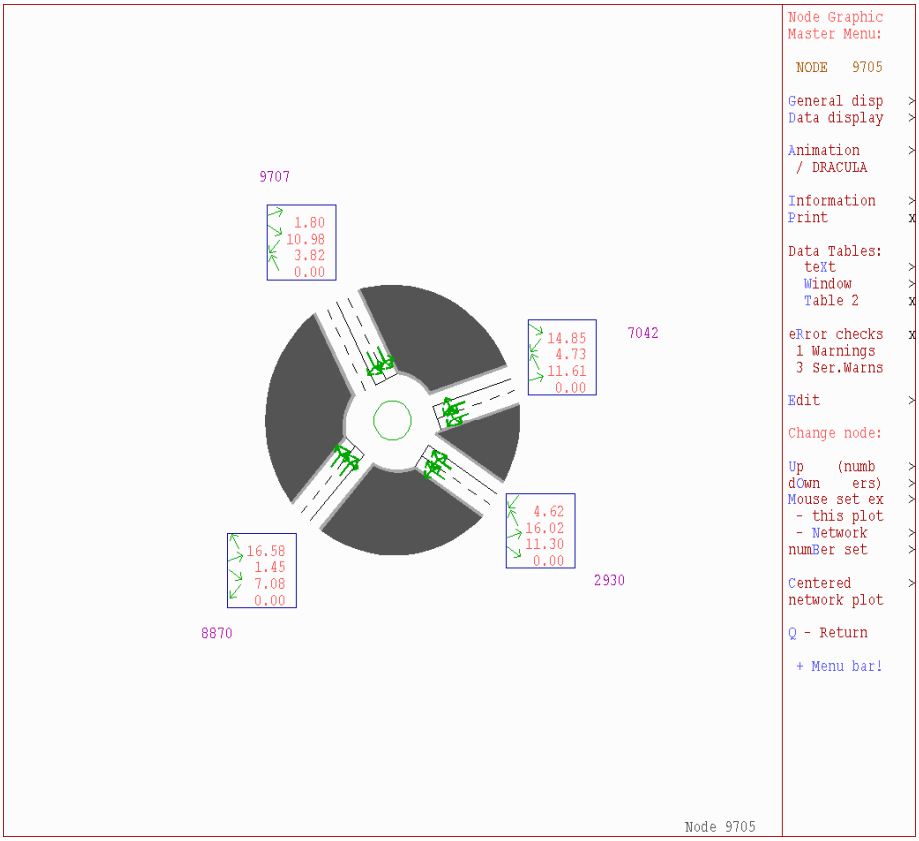


Figure 115. Junction 8 V/C ratios – AM DM

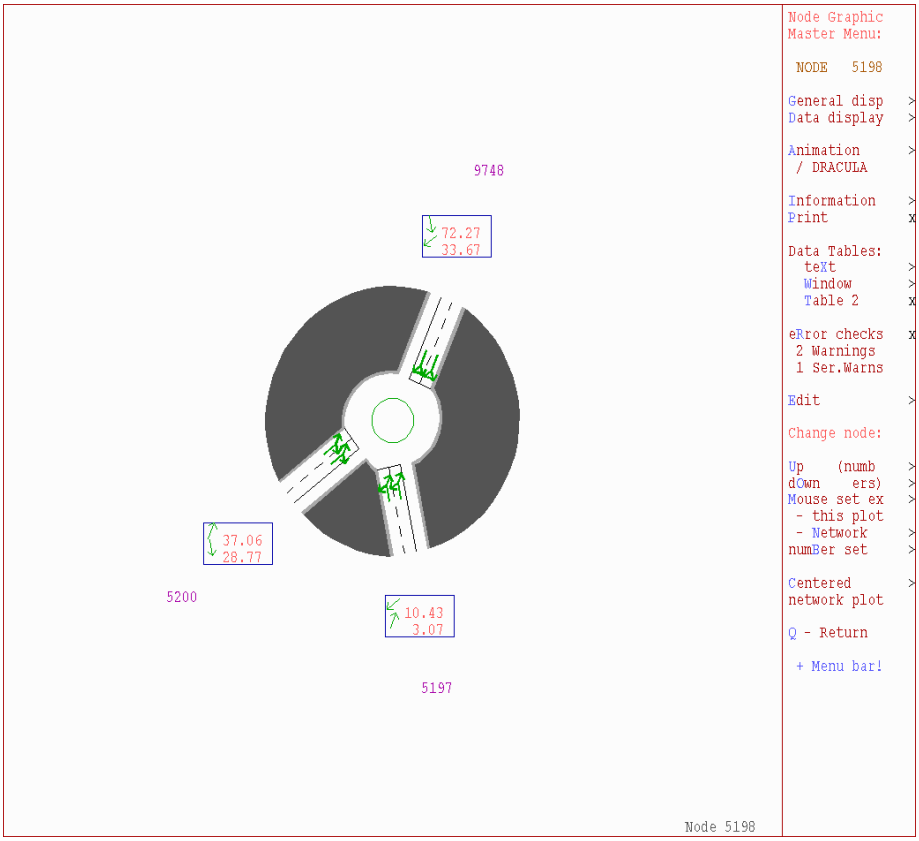


Figure 116. Junction 9 V/C ratios – AM DM

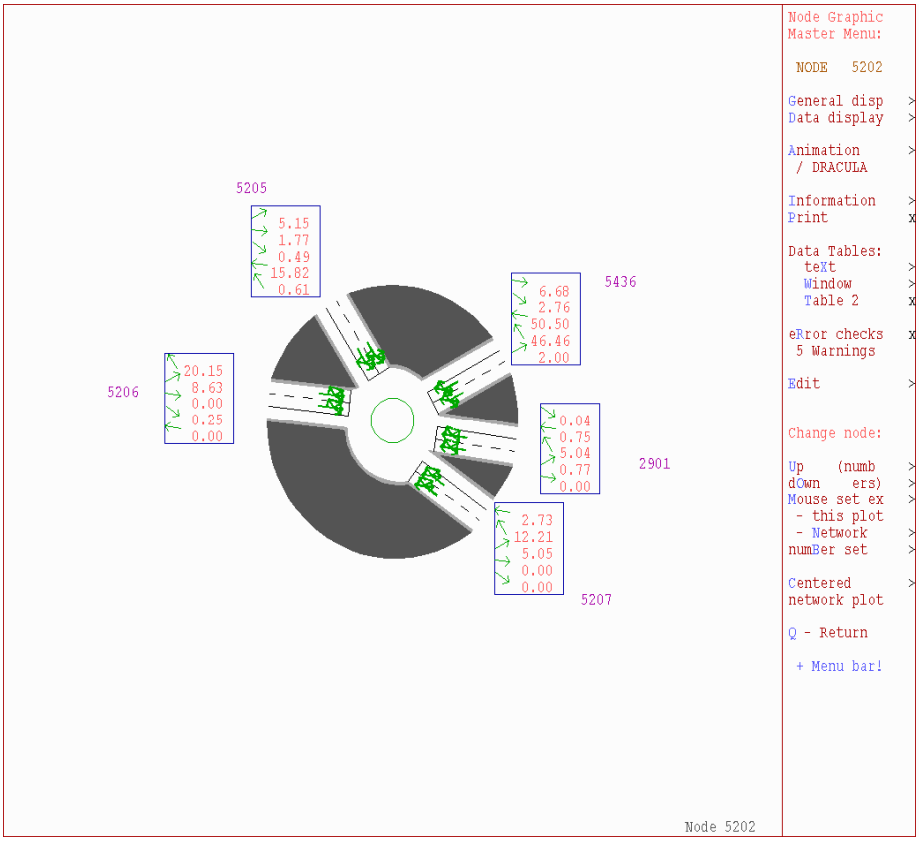


Figure 117. Junction 10 V/C ratios – AM DM

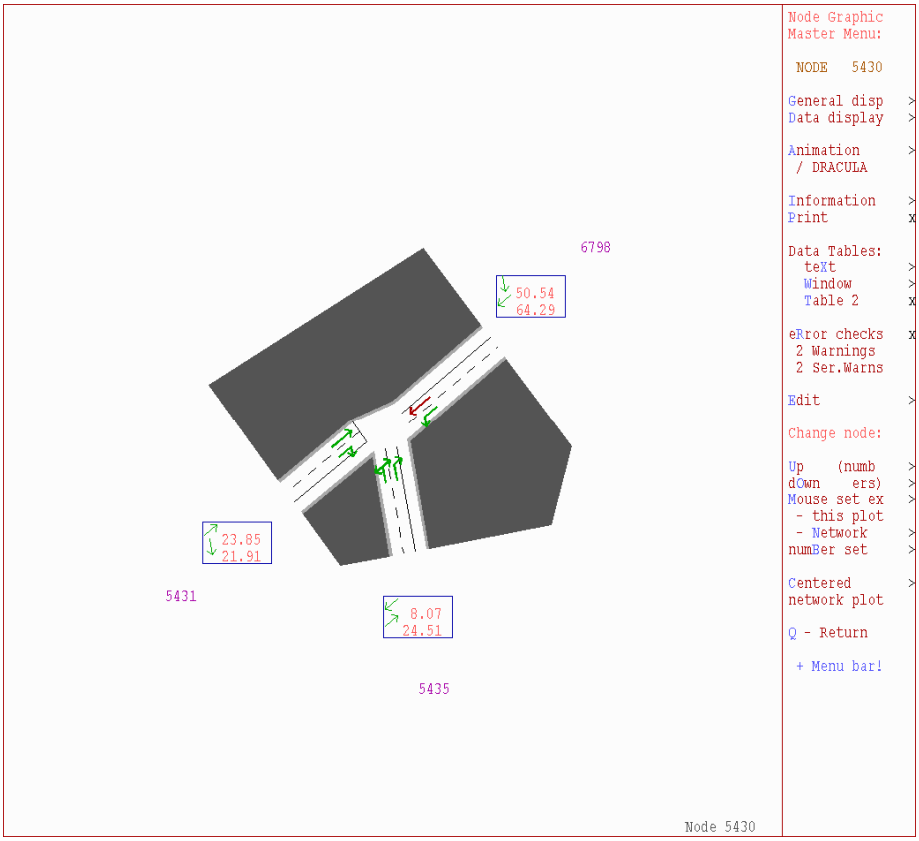


Figure 118. Junction 11 V/C ratios – AM DM

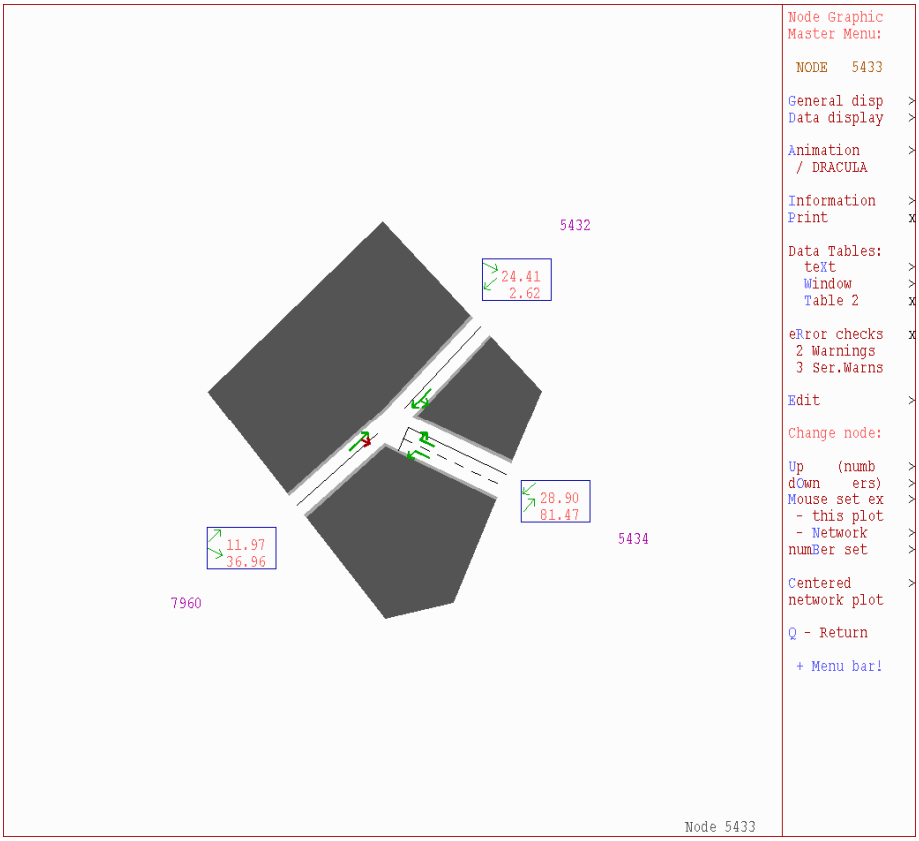


Figure 119. Junction 12 V/C ratios – AM DM

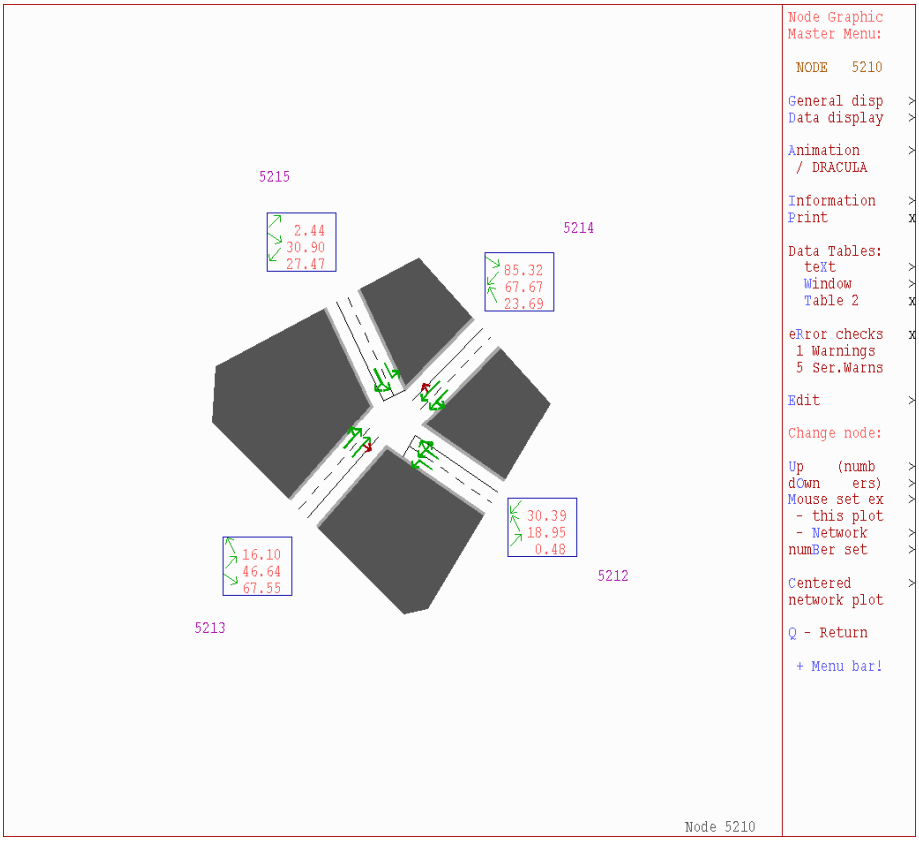


Figure 120. Junction 13 V/C ratios – AM DM

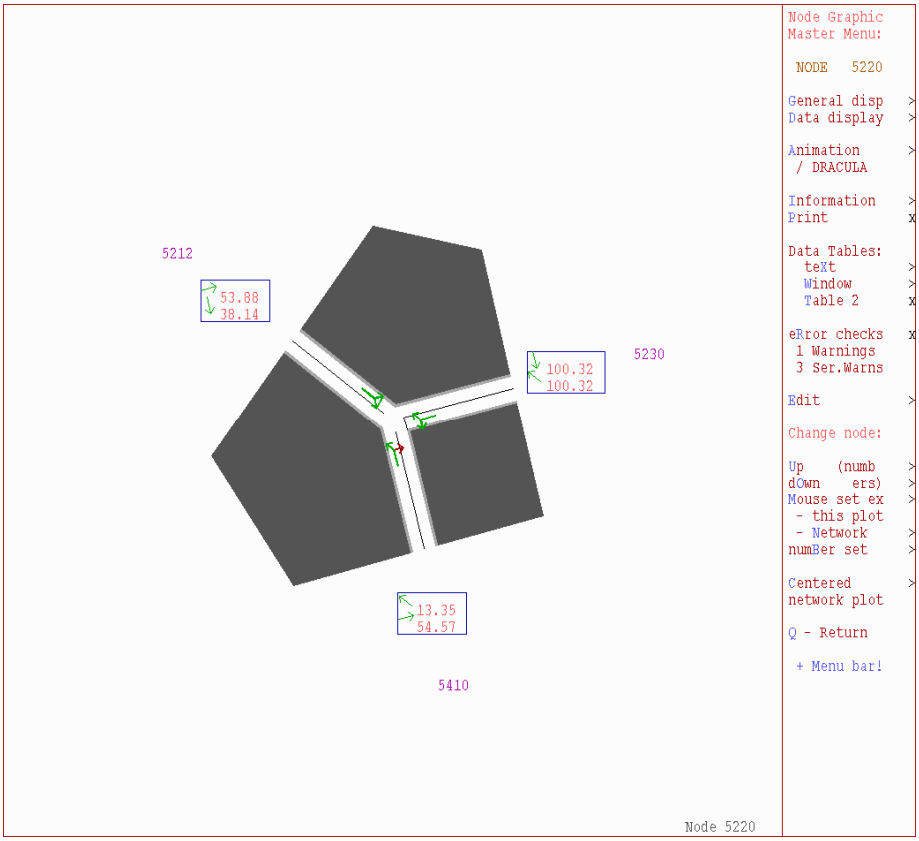


Figure 121. Junction 14 V/C ratios – AM DM

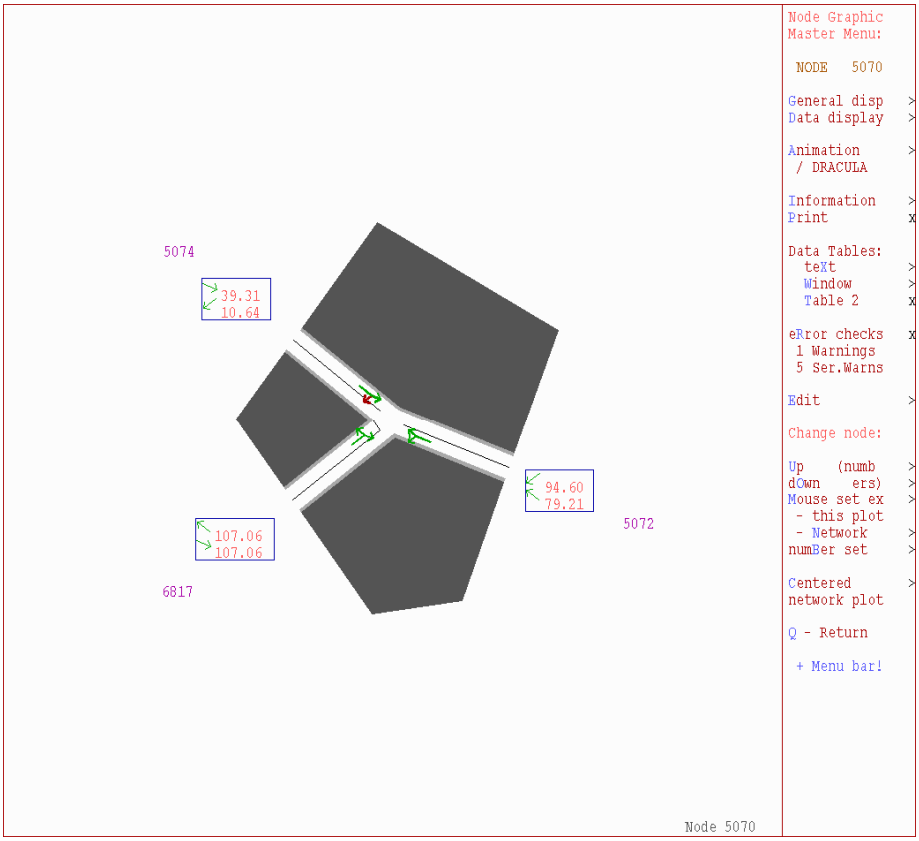


Figure 122. Junction 1 V/C ratios – PM DM

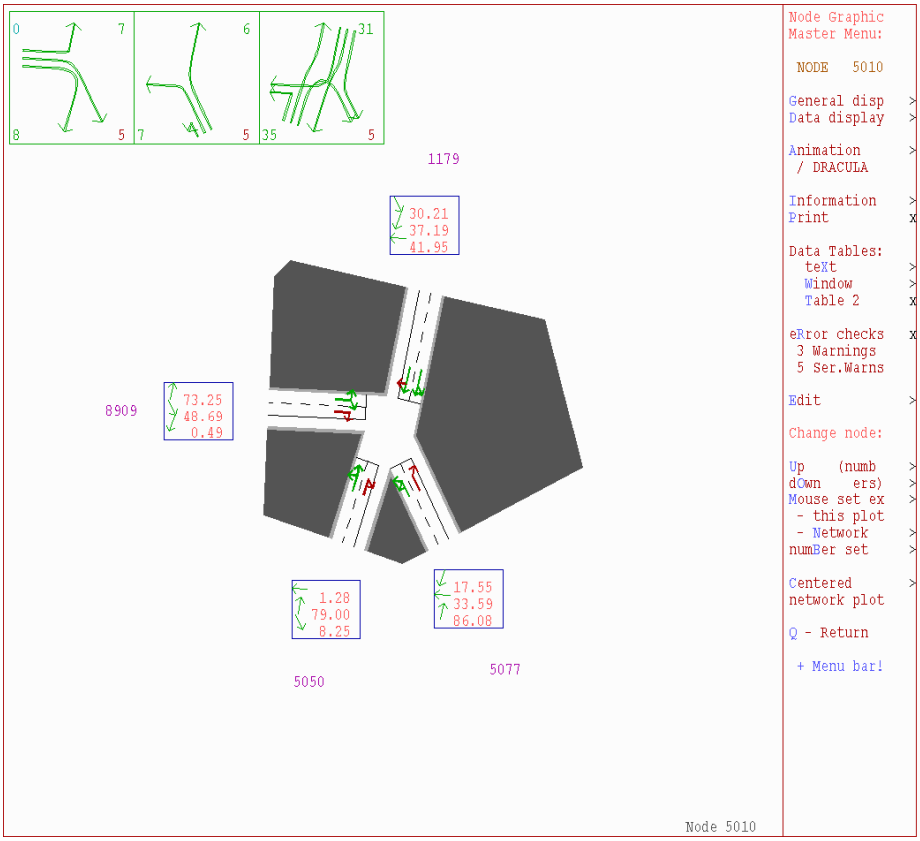


Figure 123. Junction 2 V/C ratios – PM DM

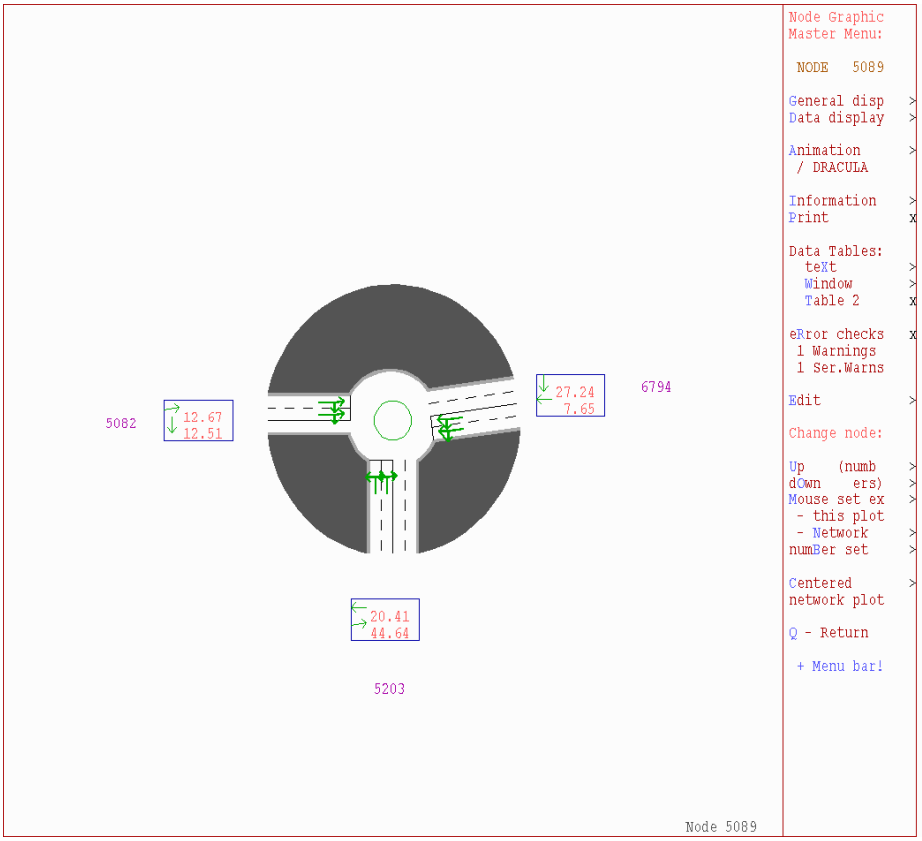


Figure 124. Junction 3 V/C ratios – PM DM

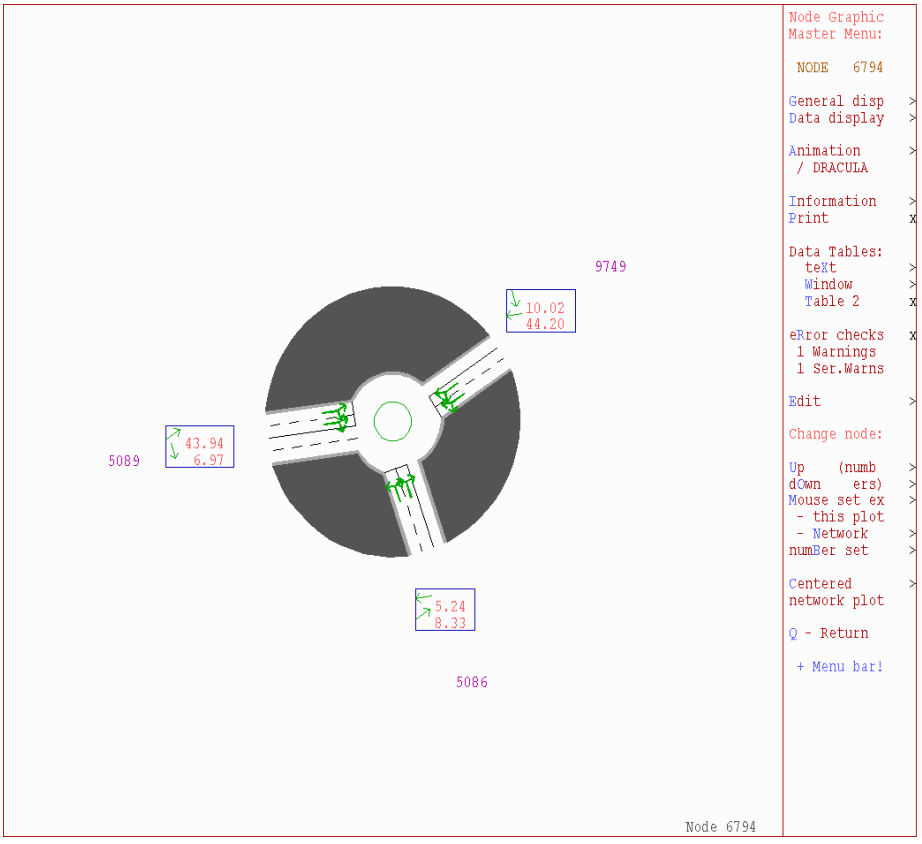


Figure 125. Junction 5 V/C ratios – PM DM

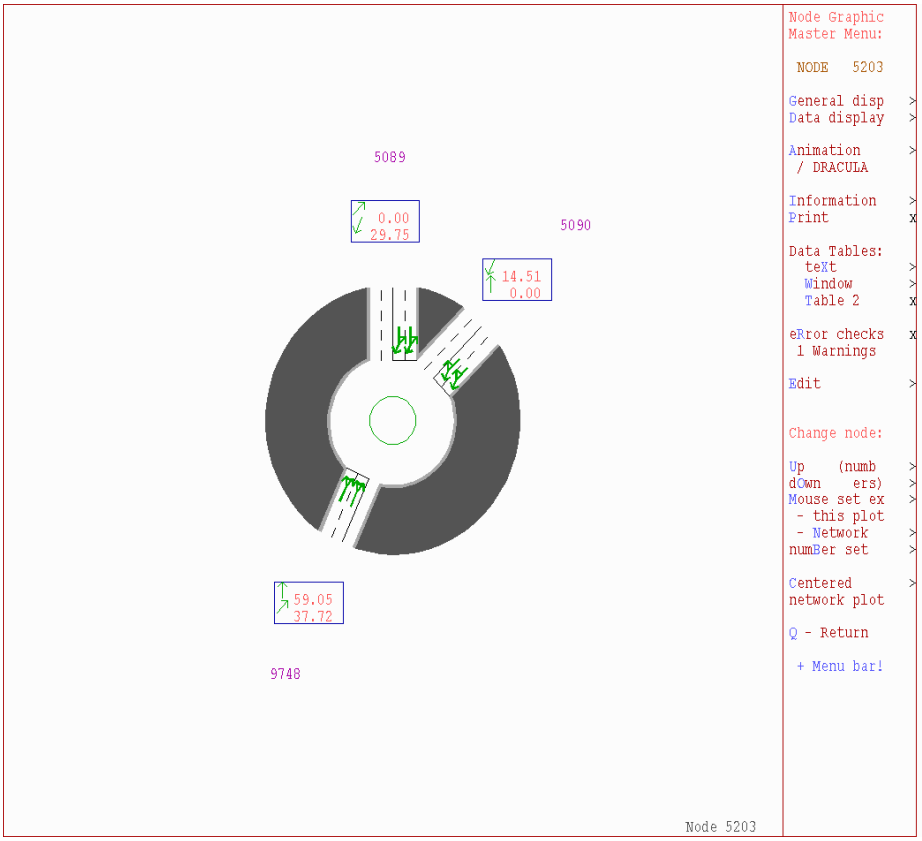


Figure 126. Junction 6 V/C ratios – PM DM

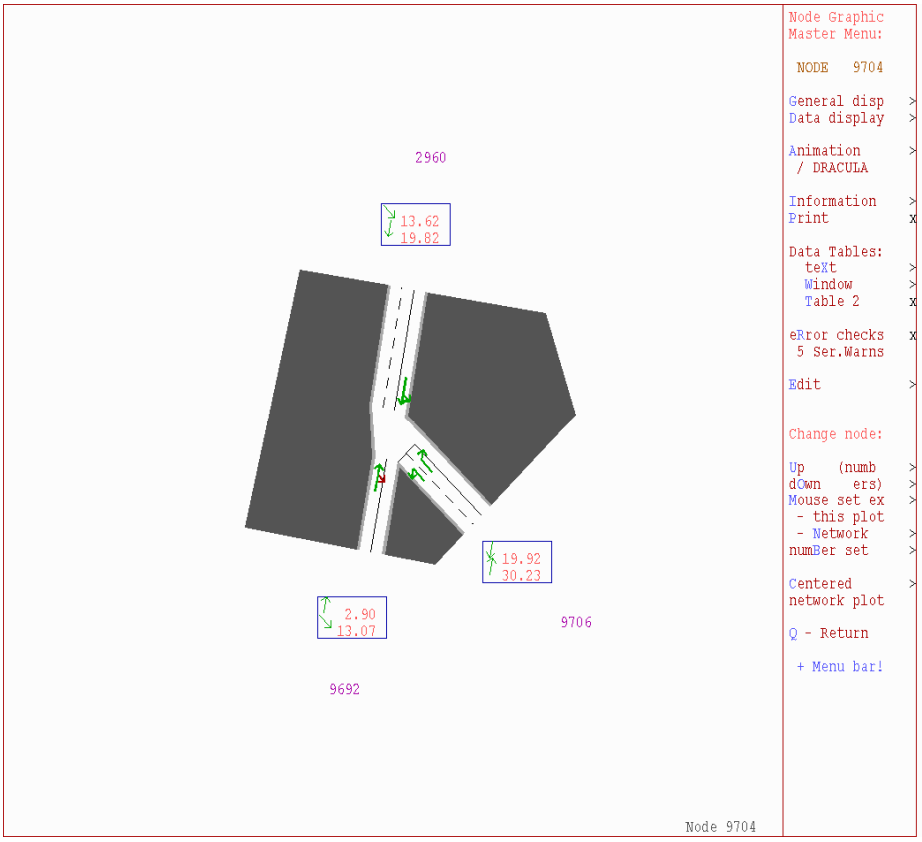


Figure 127. Junction 7 V/C ratios – PM DM

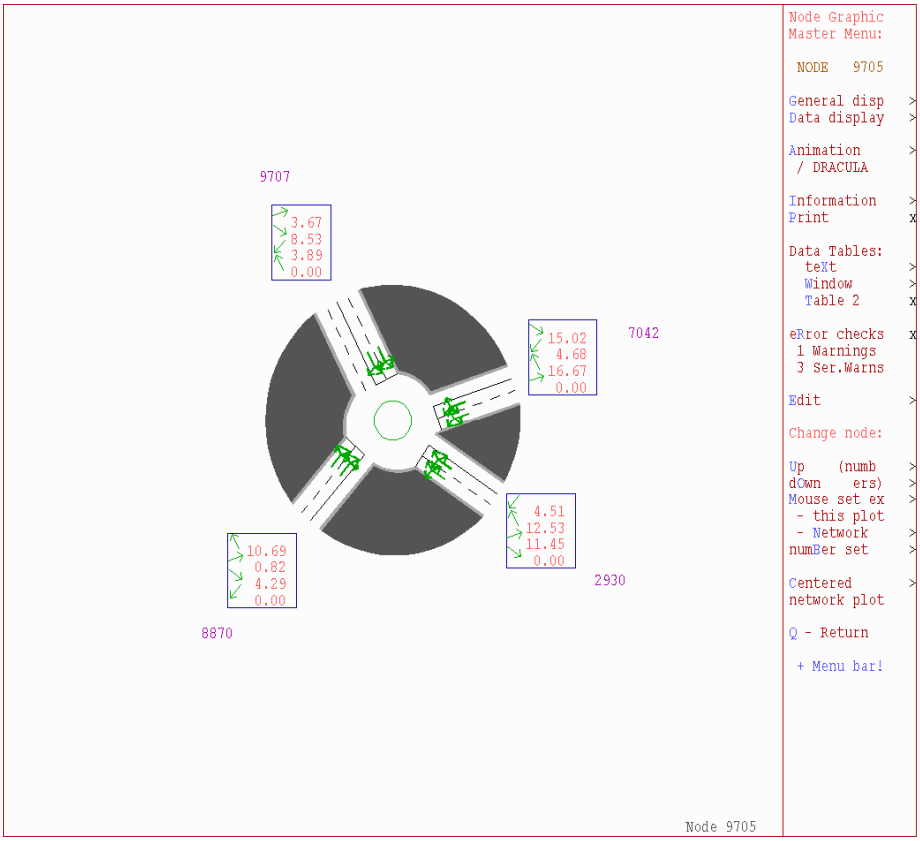


Figure 128. Junction 8 V/C ratios – PM DM

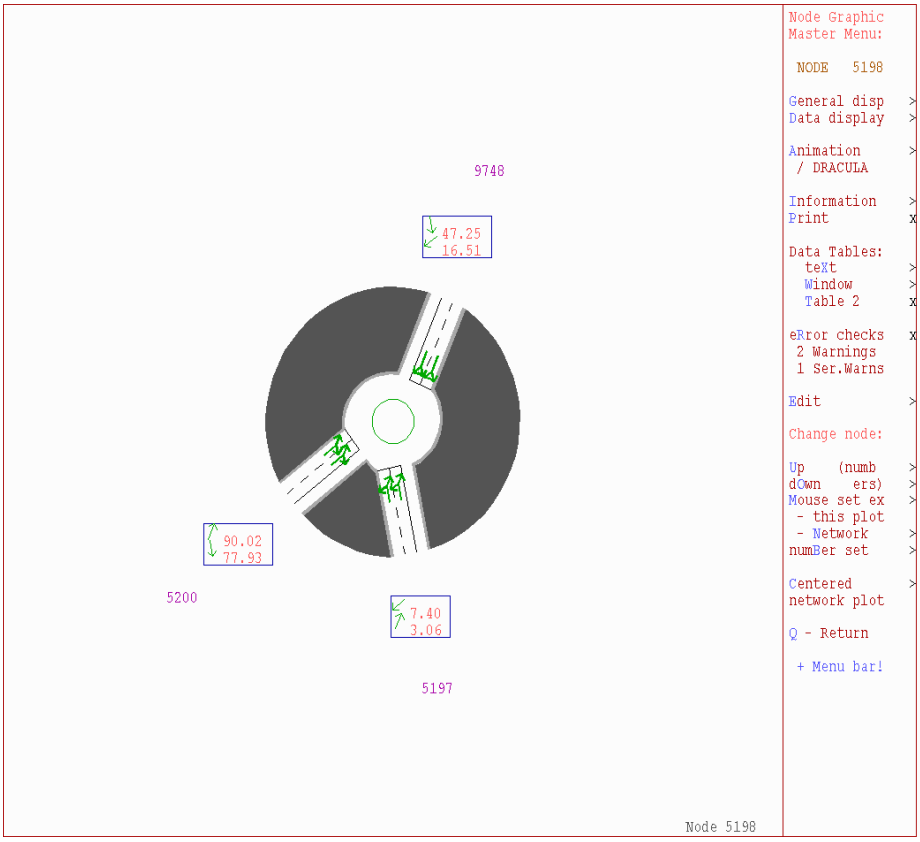


Figure 129. Junction 9 V/C ratios – PM DM

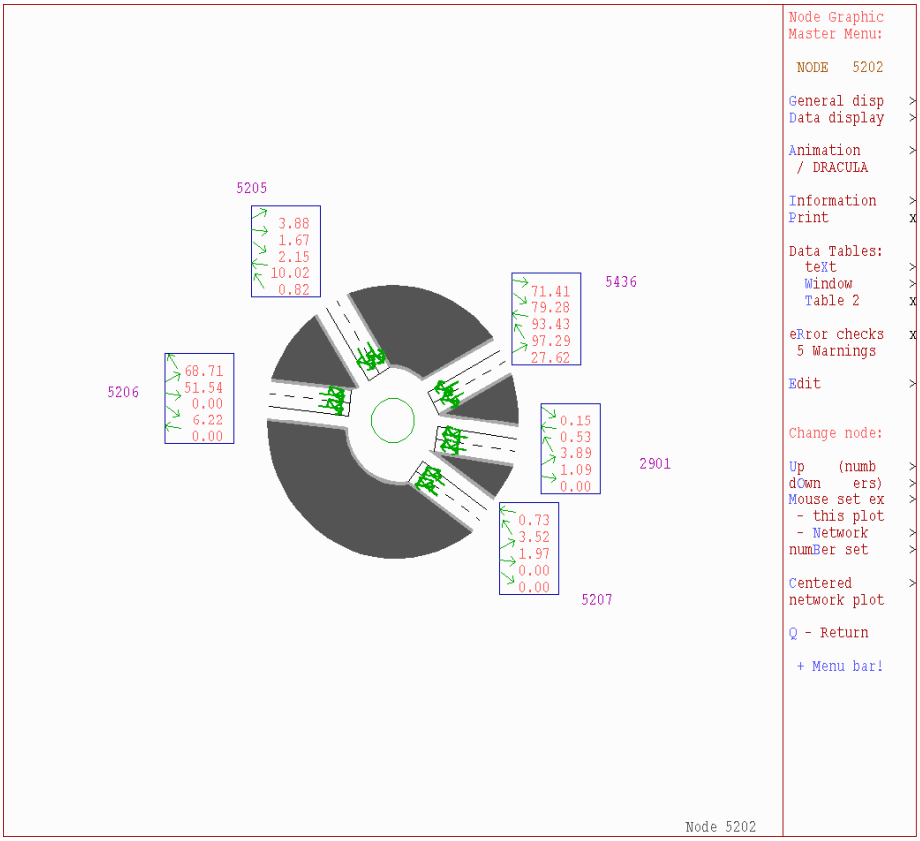


Figure 130. Junction 10 V/C ratios – PM DM

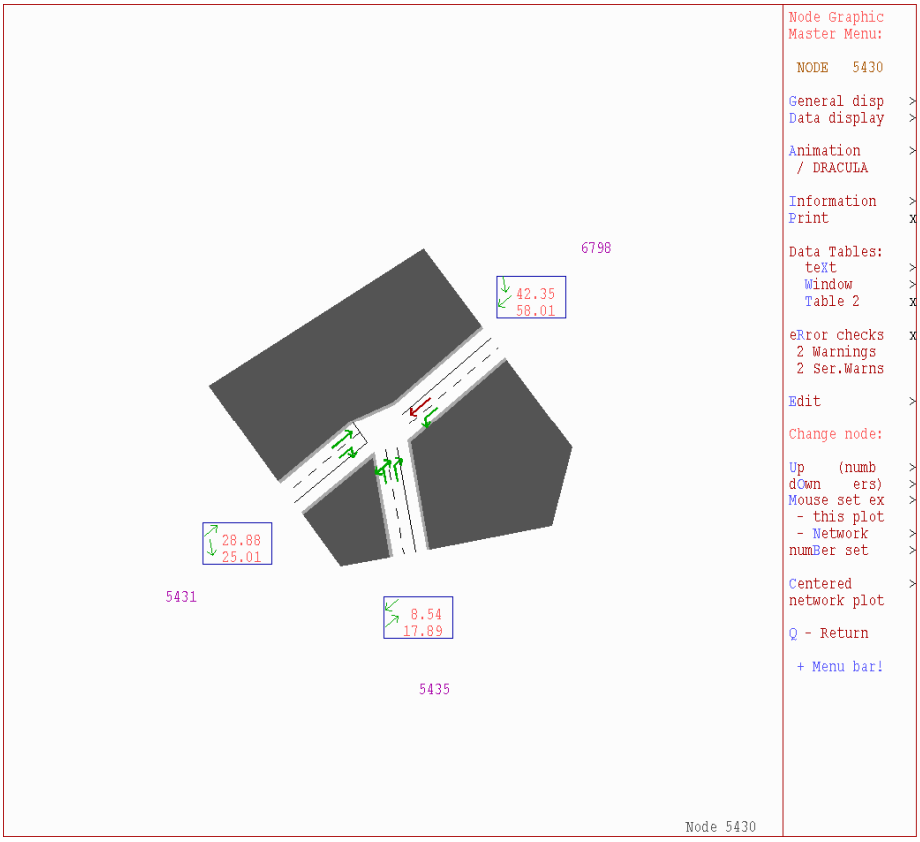


Figure 131. Junction 11 V/C ratios – PM DM

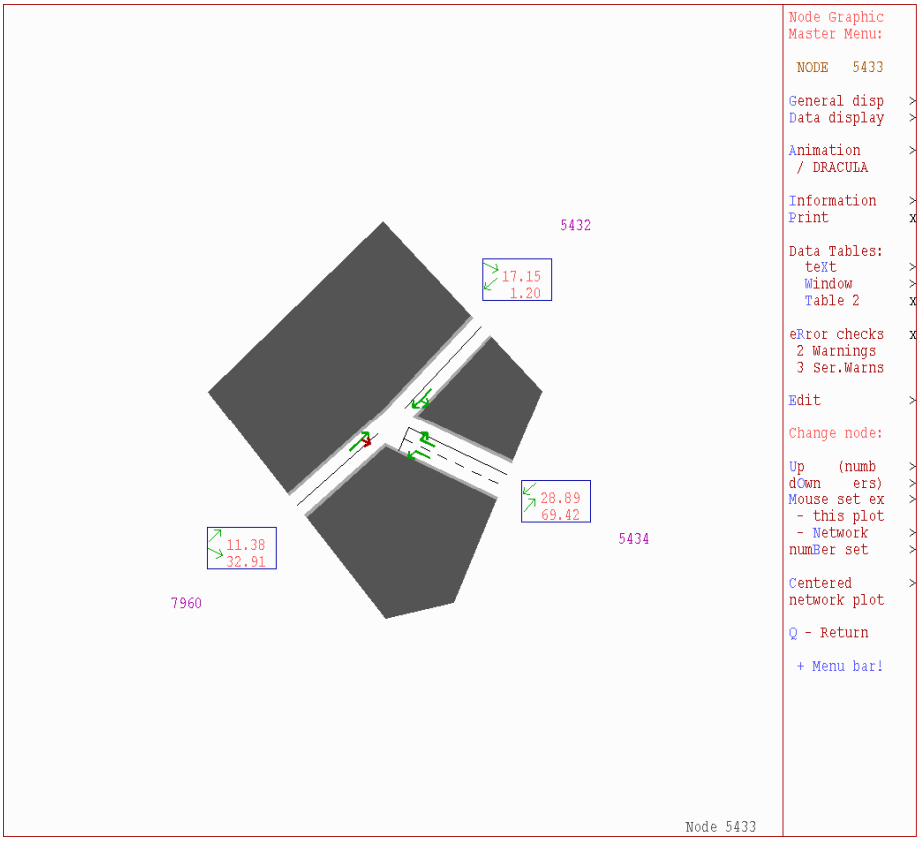


Figure 132. Junction 12 V/C ratios – PM DM

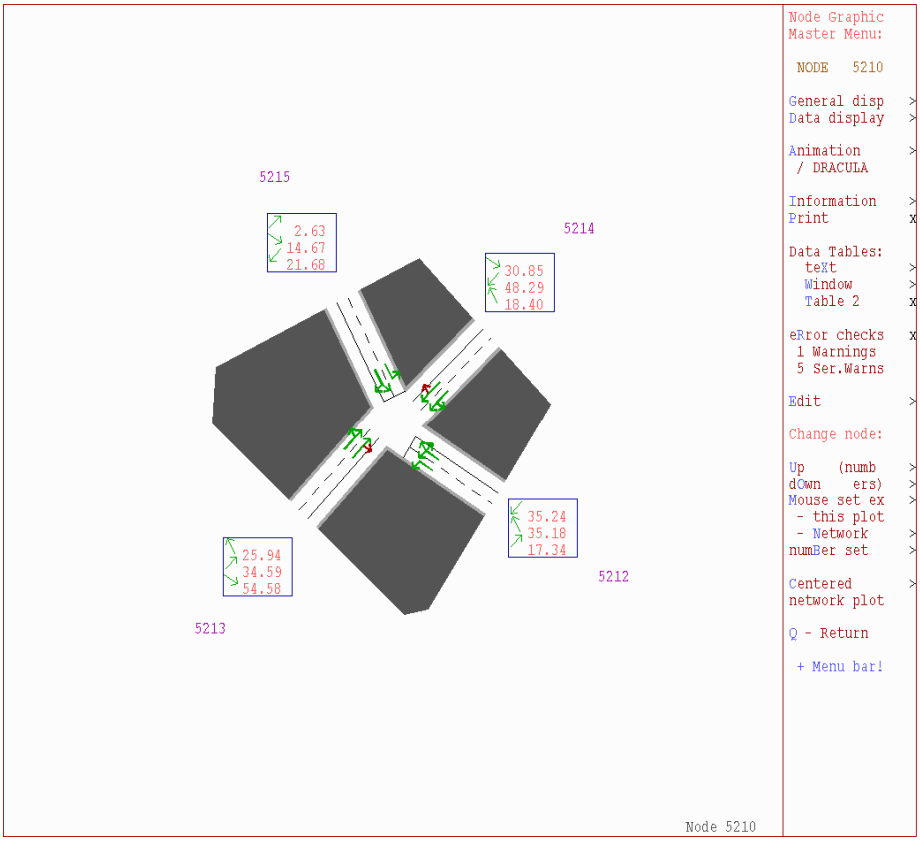


Figure 133. Junction 13 V/C ratios – PM DM

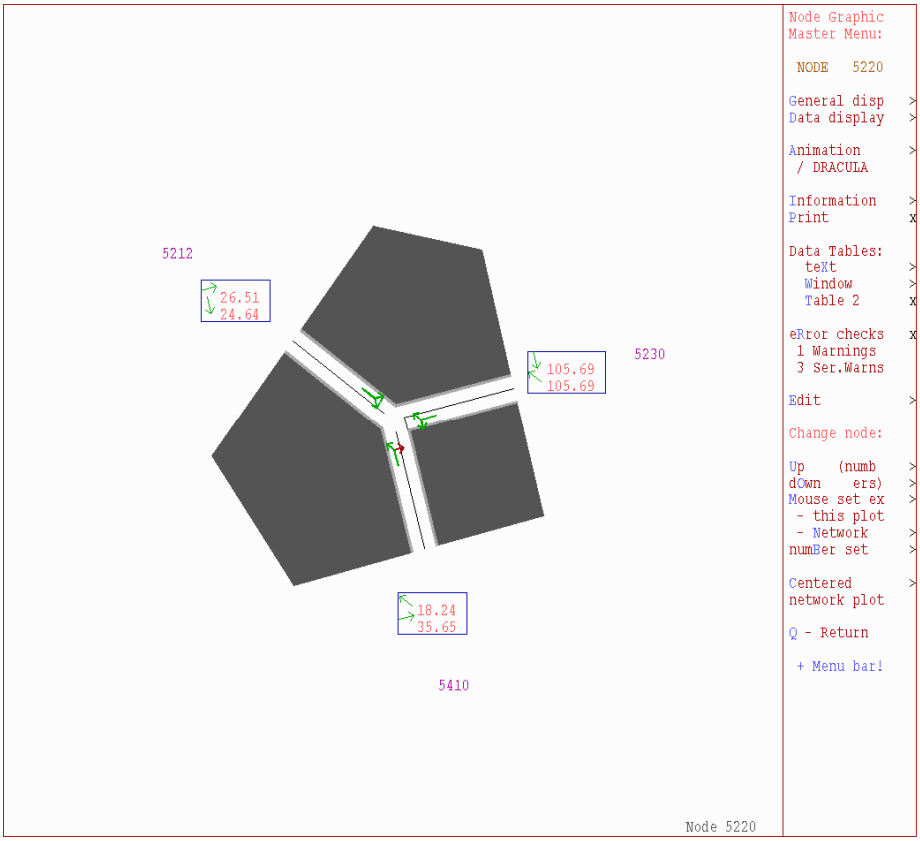


Figure 134. Junction 14 V/C ratios – PM DM

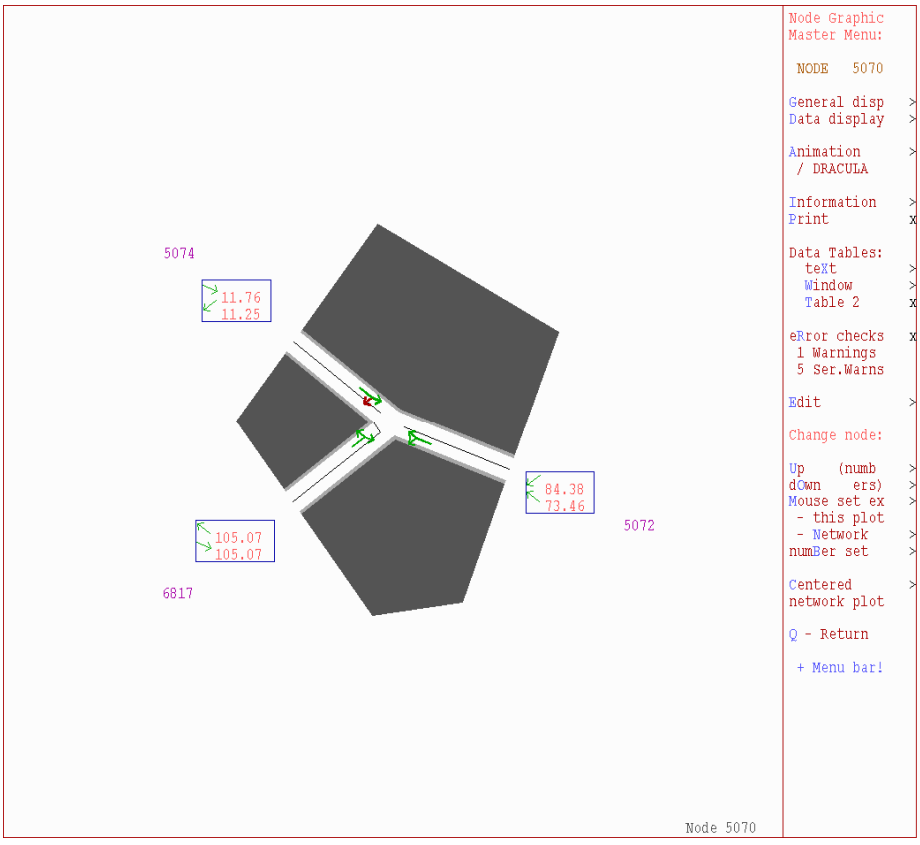


Figure 135. Junction 1 V/C ratios – AM DS

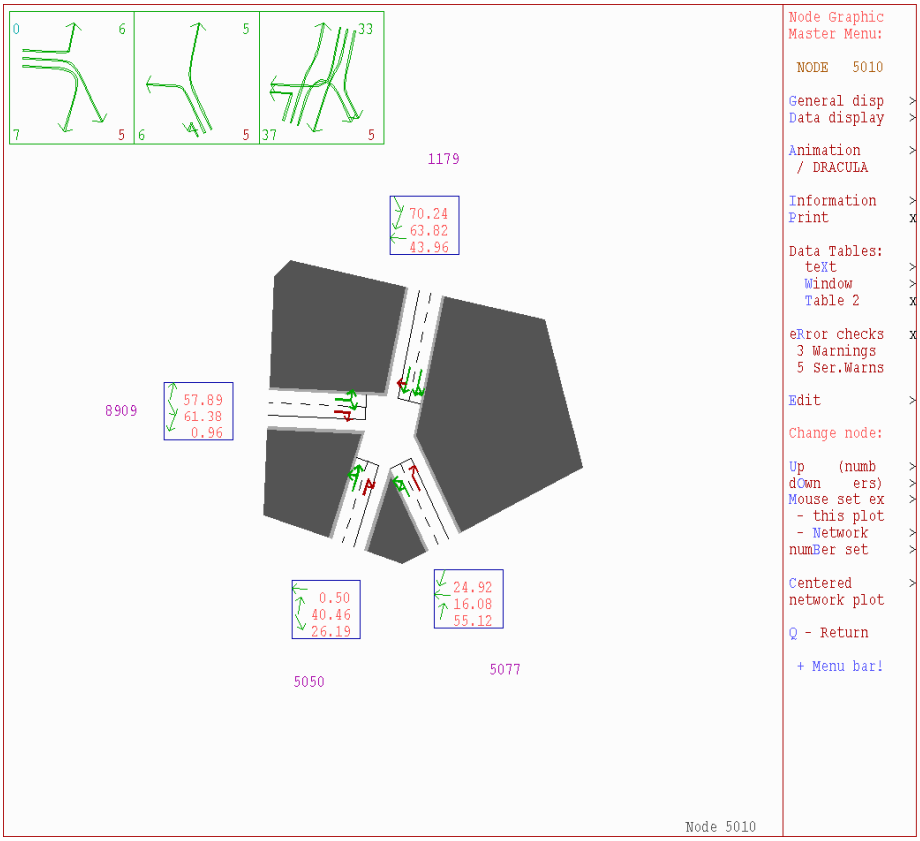


Figure 136. Junction 2 V/C ratios – AM DS

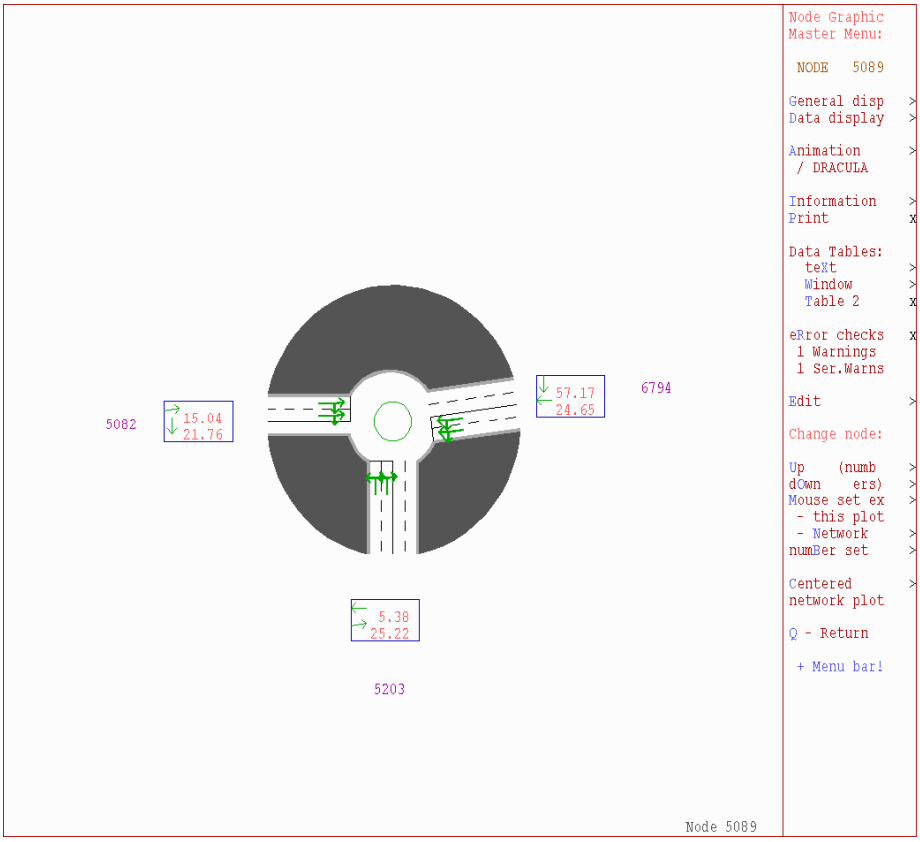


Figure 137. Junction 3 V/C ratios – AM DS

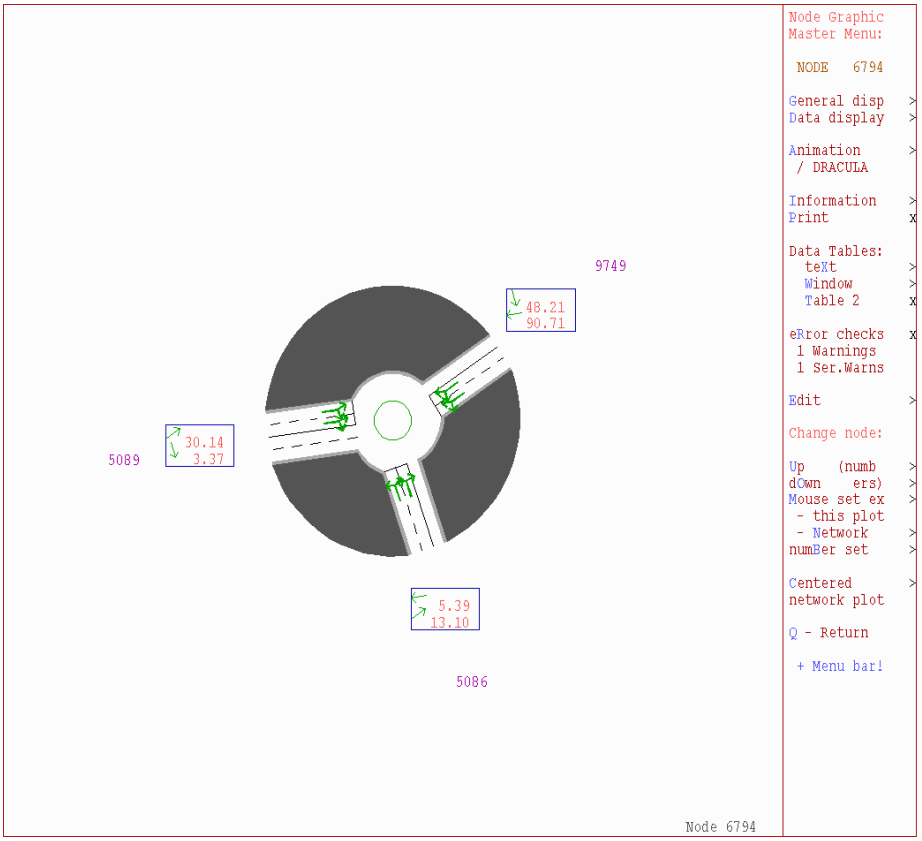


Figure 138. Junction 4 V/C ratios – AM DS

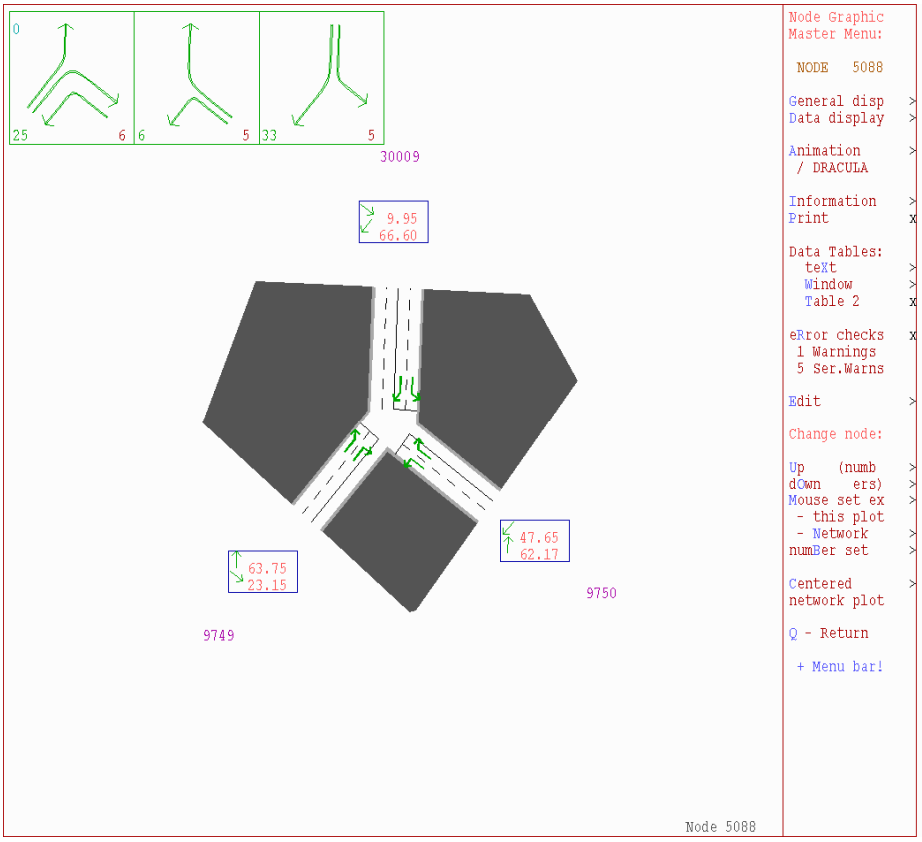


Figure 139. Junction 5 V/C ratios – AM DS

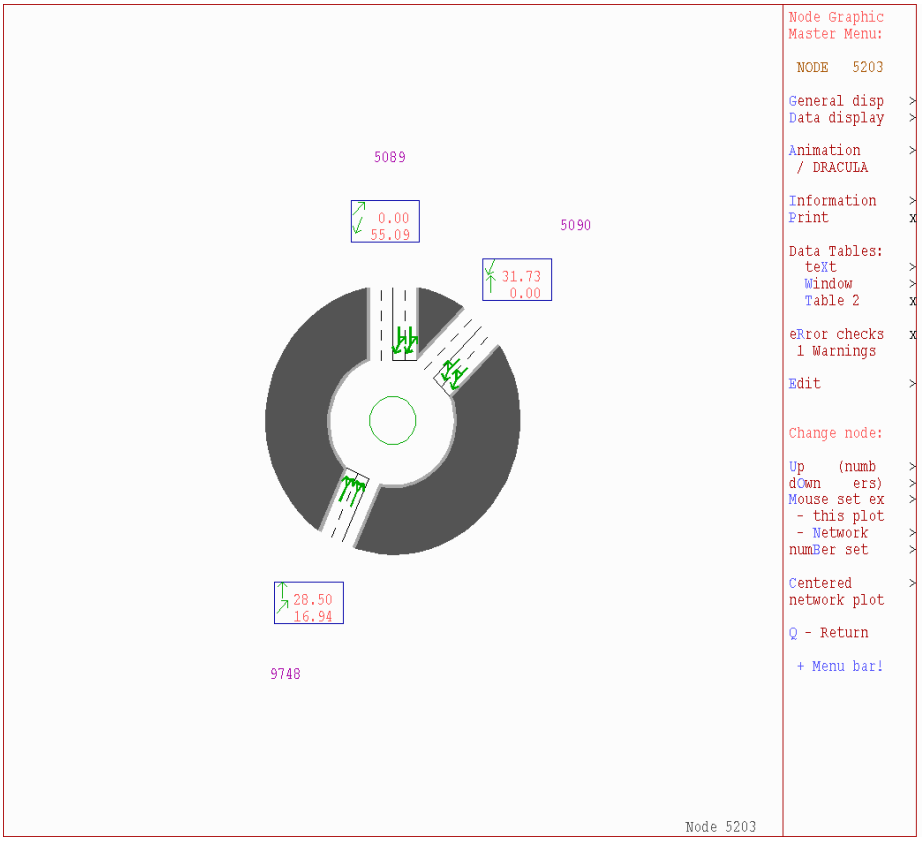


Figure 140. Junction 6 V/C ratios – AM DS

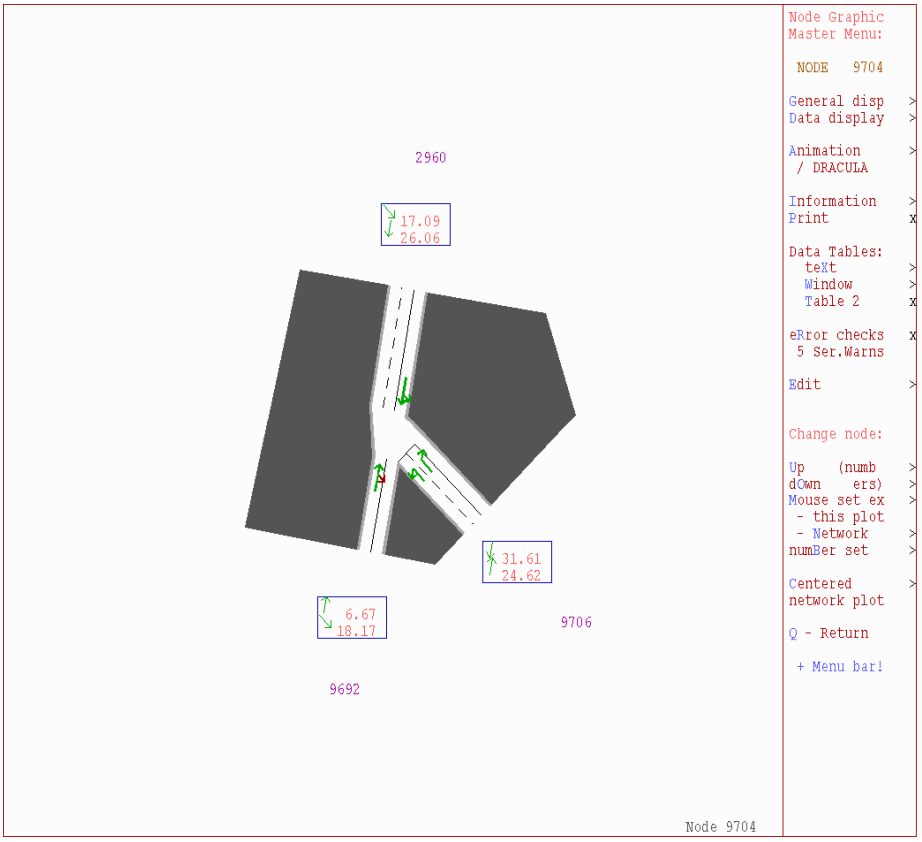


Figure 141. Junction 7 V/C ratios – AM DS

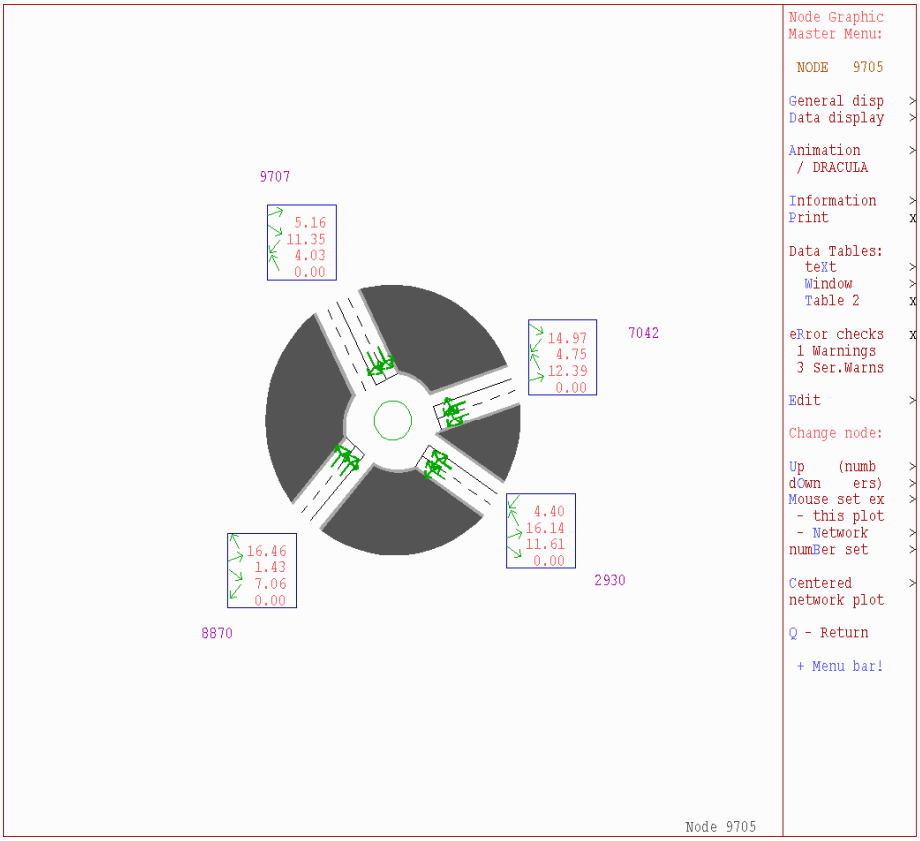


Figure 142. Junction 8 V/C ratios – AM DS

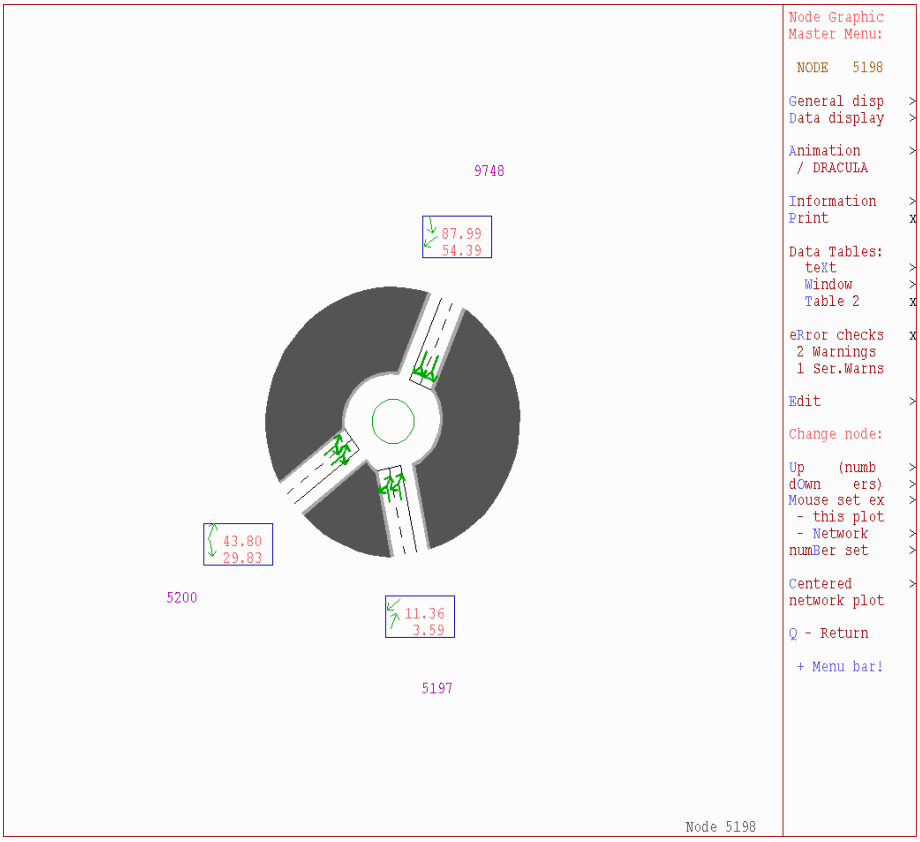


Figure 143. Junction 9 V/C ratios – AM DS

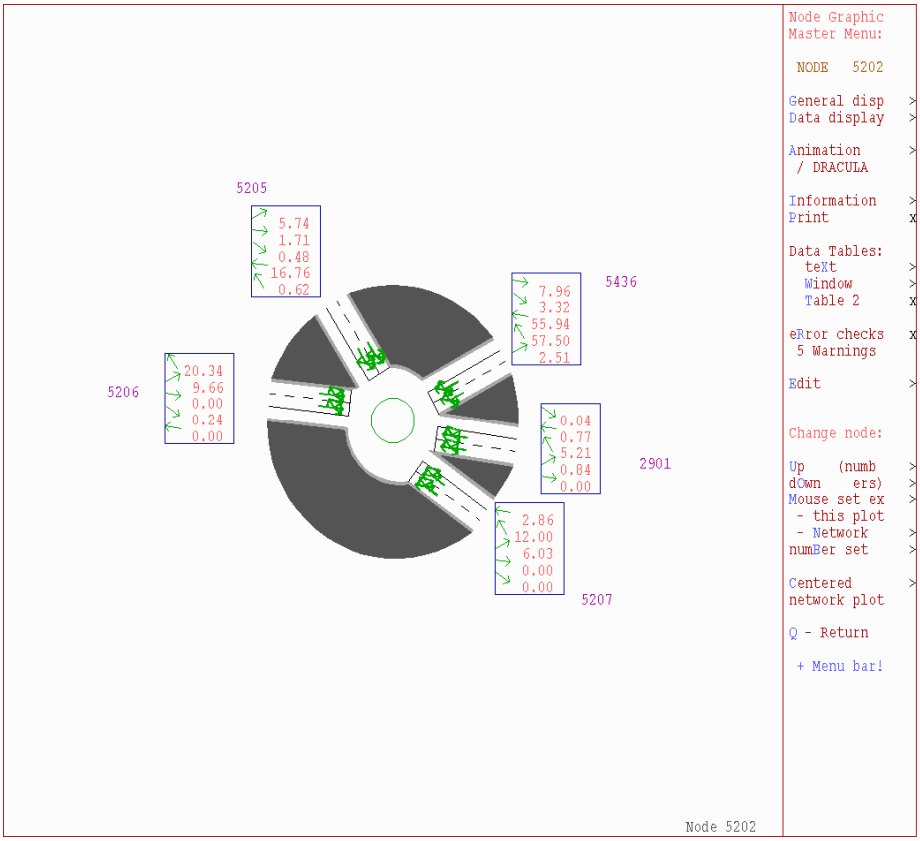


Figure 144. Junction 10 V/C ratios – AM DS

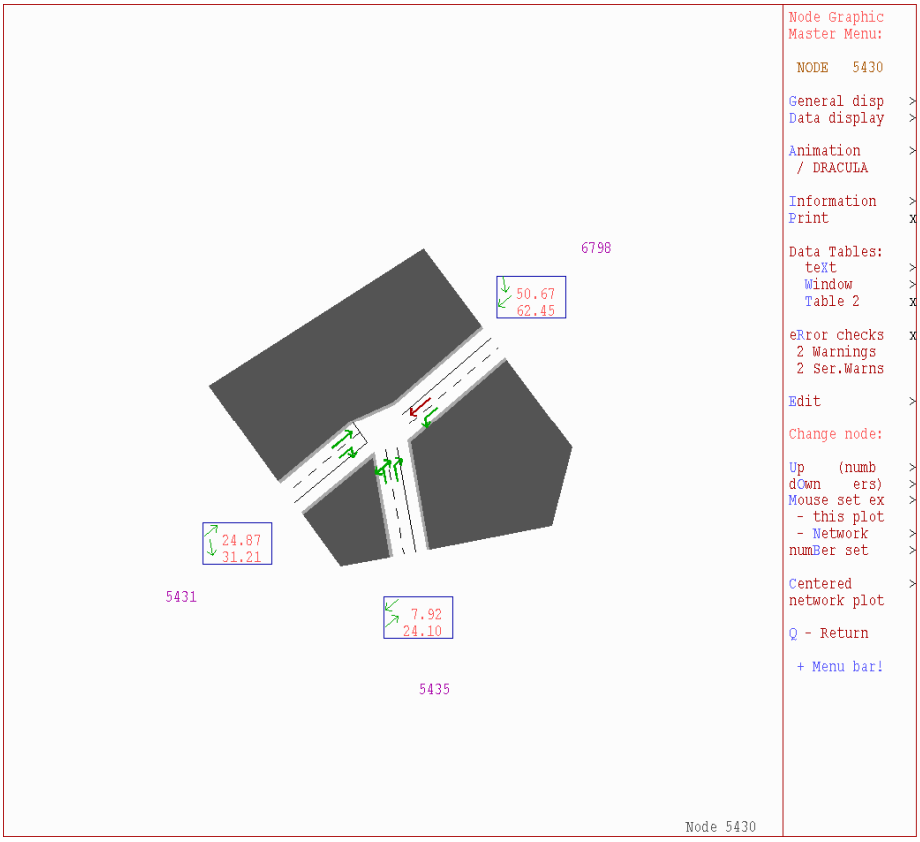


Figure 145. Junction 11 V/C ratios – AM DS

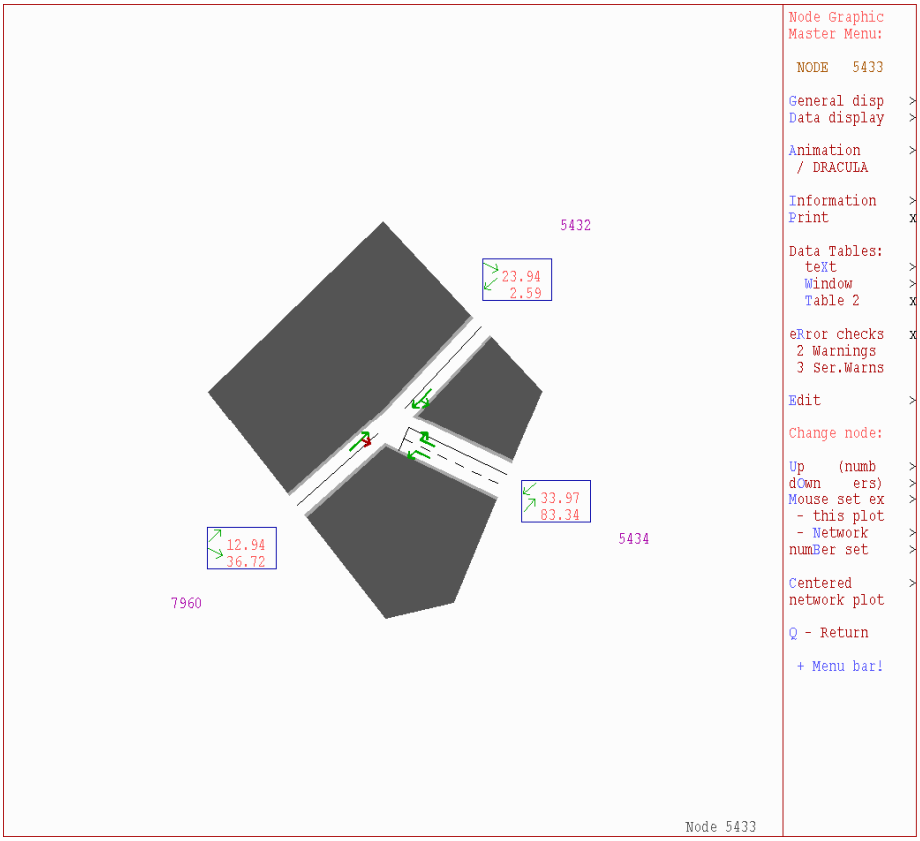


Figure 146. Junction 12 V/C ratios – AM DS

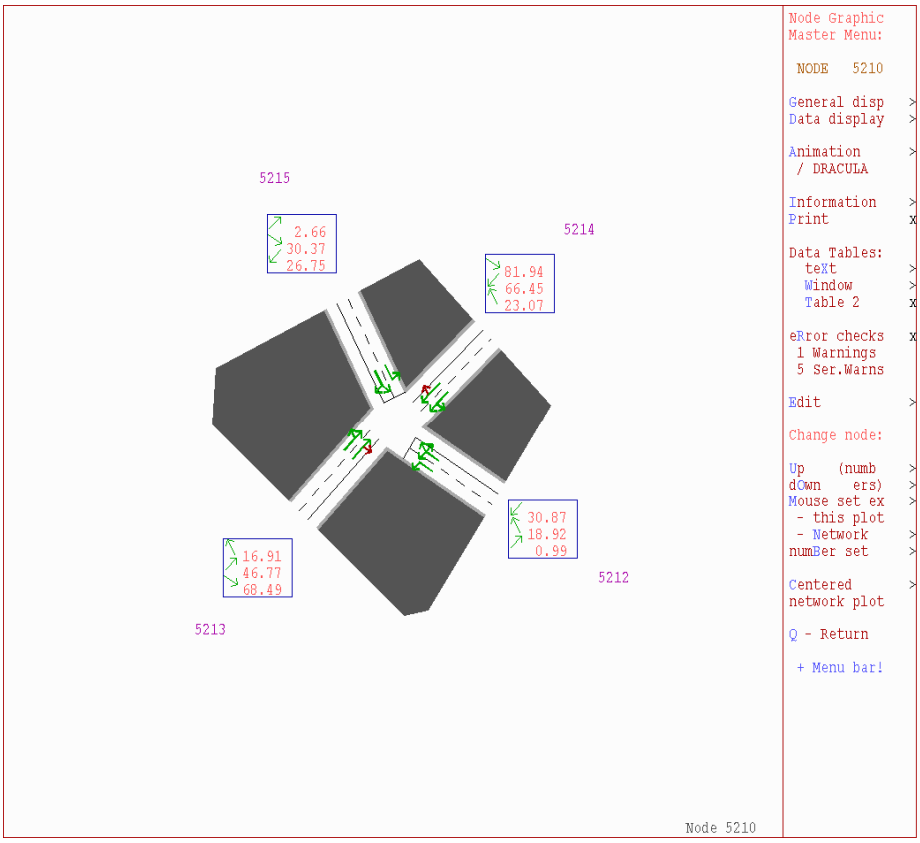


Figure 147. Junction 13 V/C ratios – AM DS

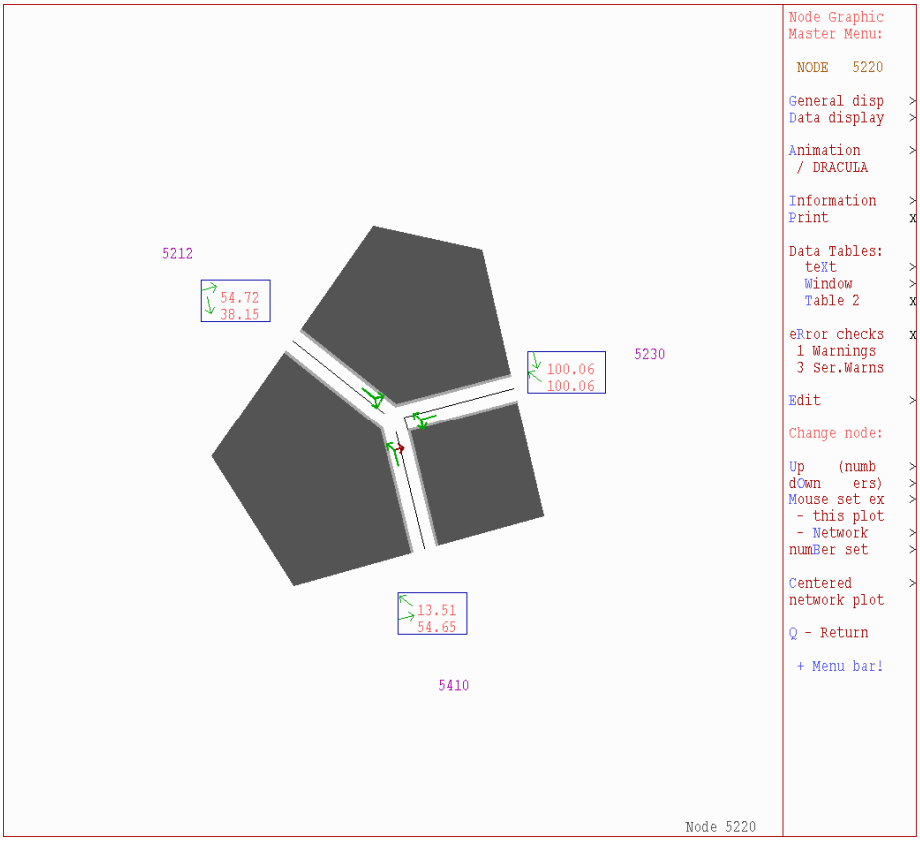


Figure 148. Junction 14 V/C ratios – AM DS

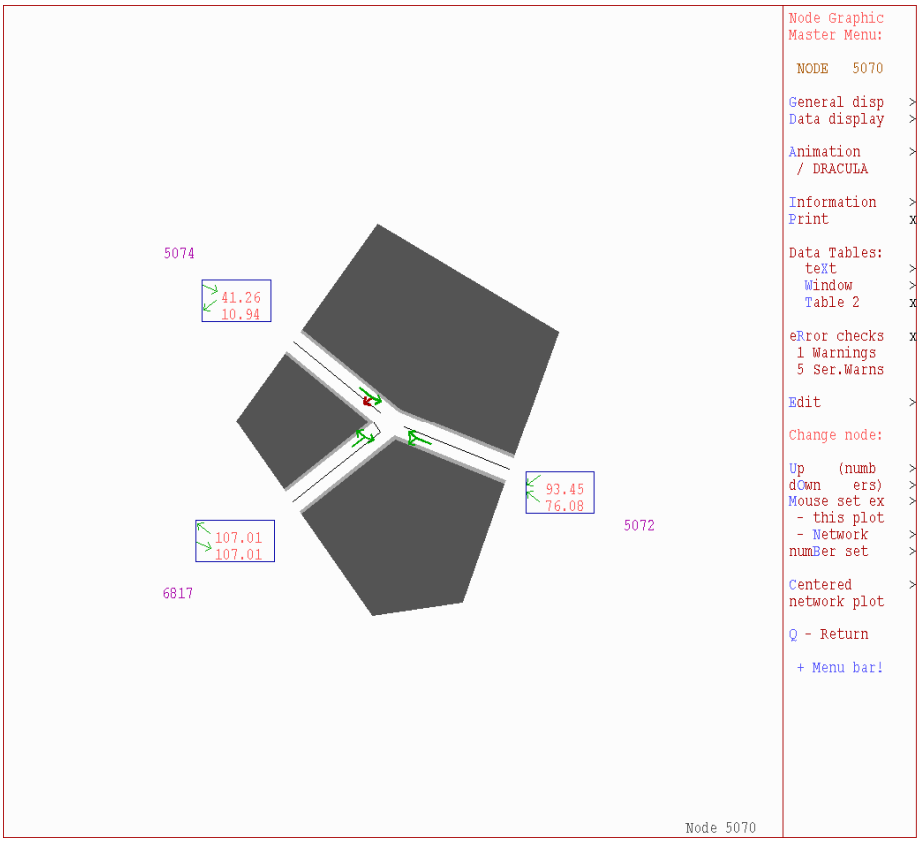


Figure 149. Junction 1 V/C ratios – PM DS

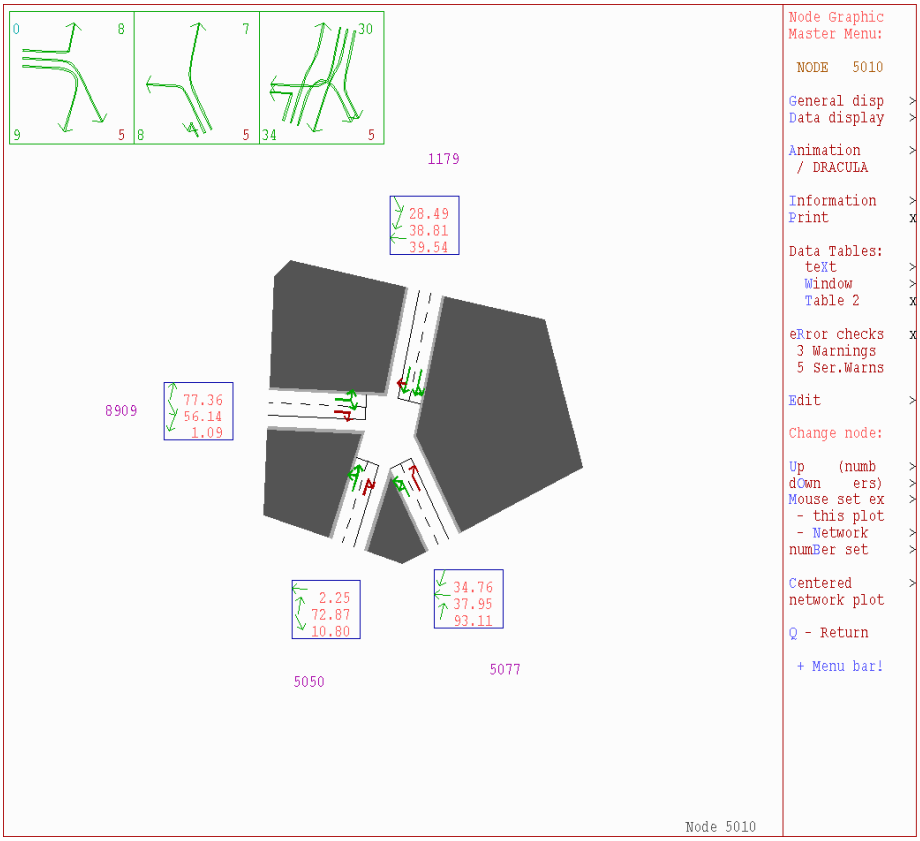


Figure 150. Junction 2 V/C ratios – PM DS

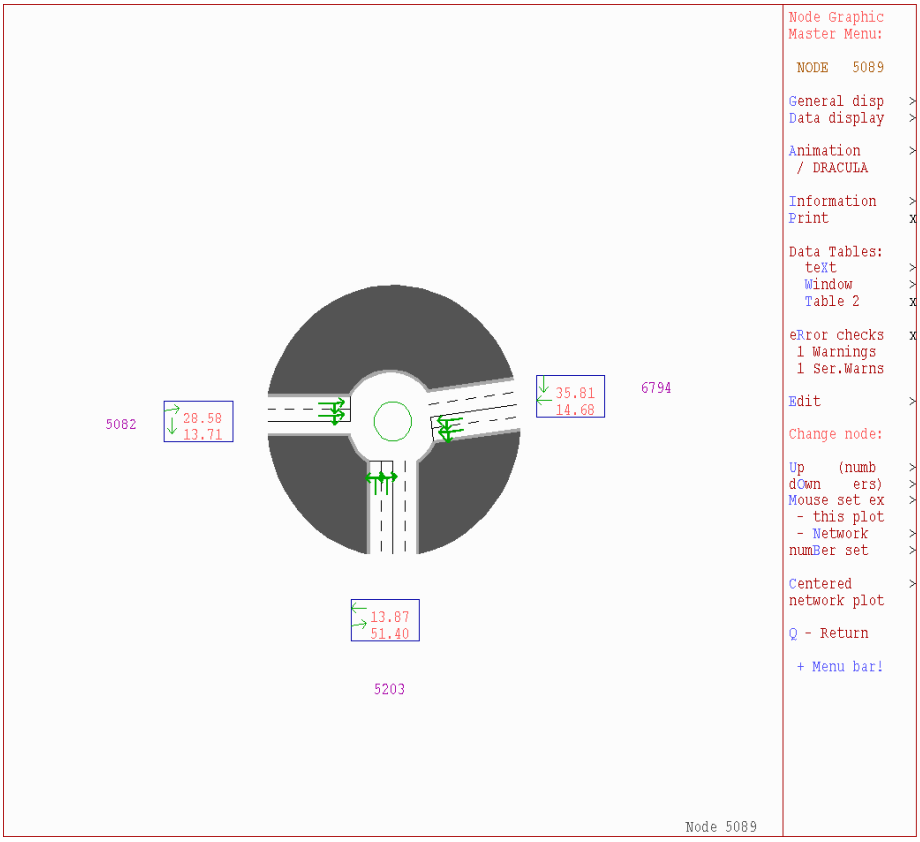


Figure 151. Junction 3 V/C ratios – PM DS

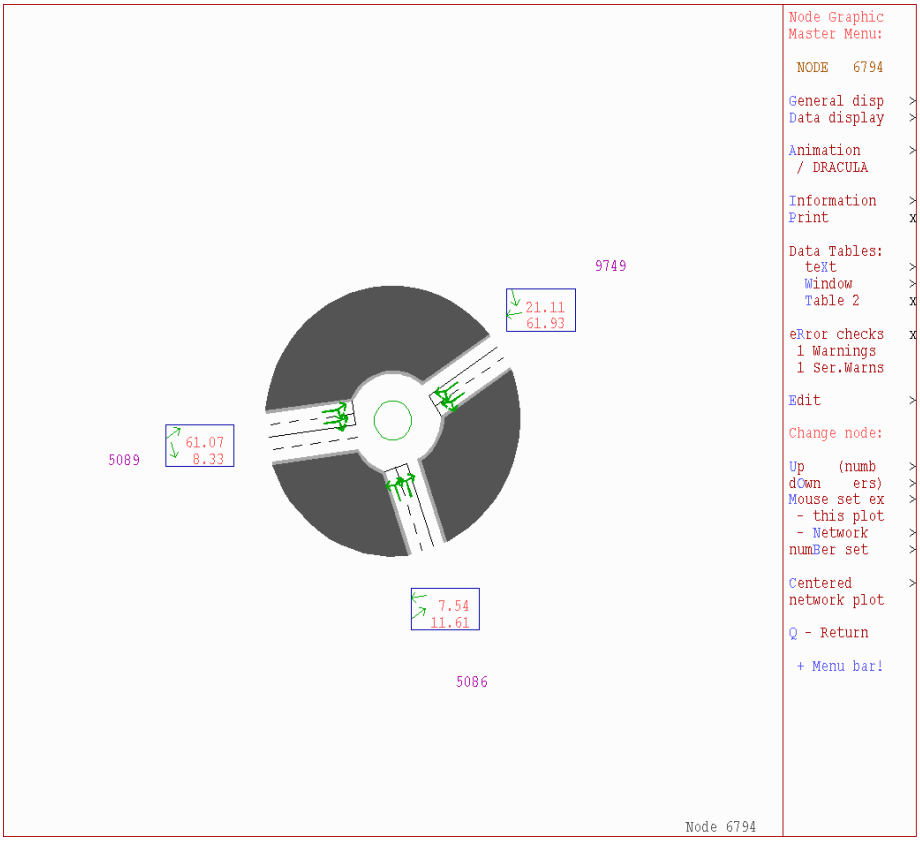


Figure 152. Junction 4 V/C ratios – PM DS

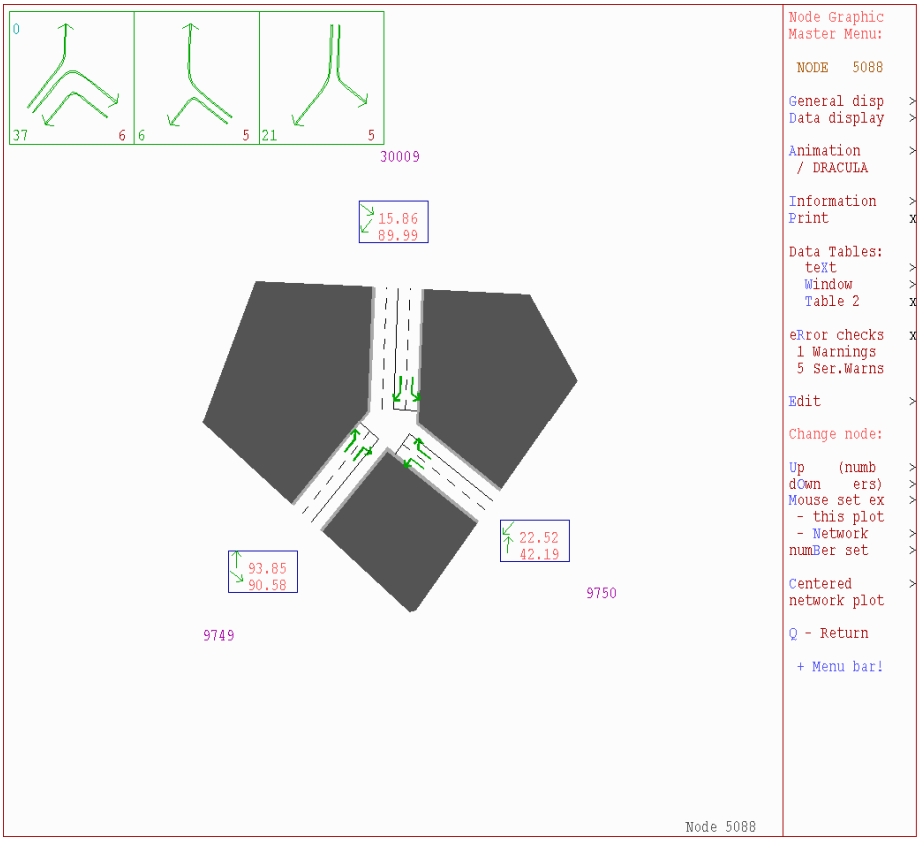


Figure 153. Junction 5 V/C ratios – PM DS

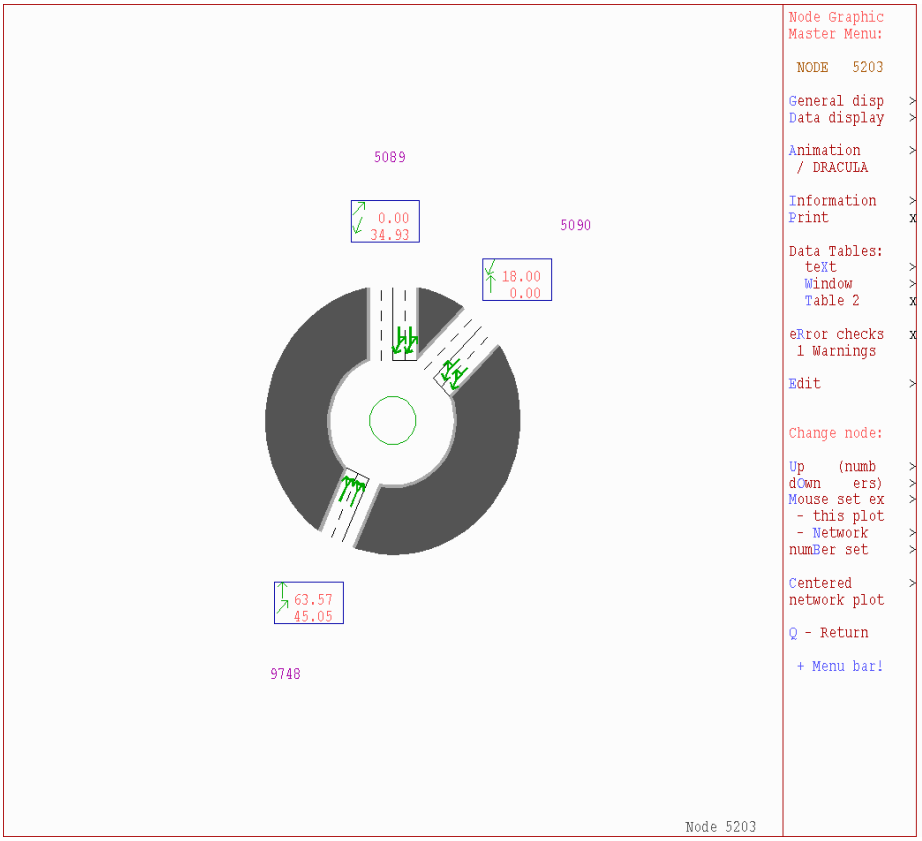


Figure 154. Junction 6 V/C ratios – PM DS

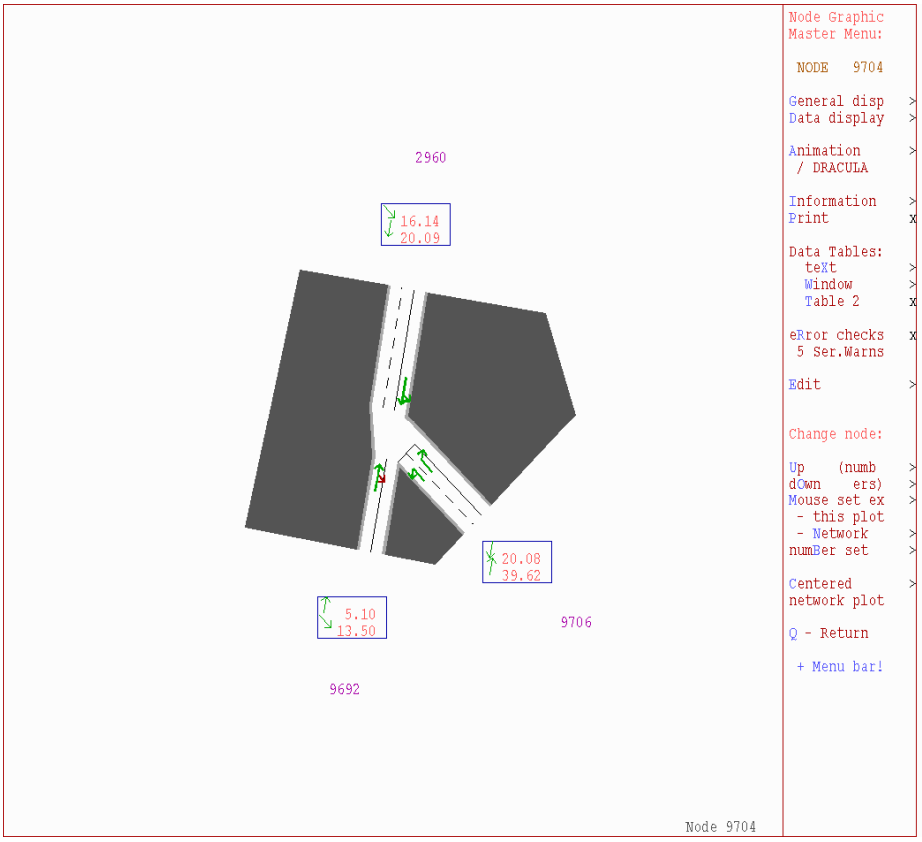


Figure 155. Junction 7 V/C ratios – PM DS

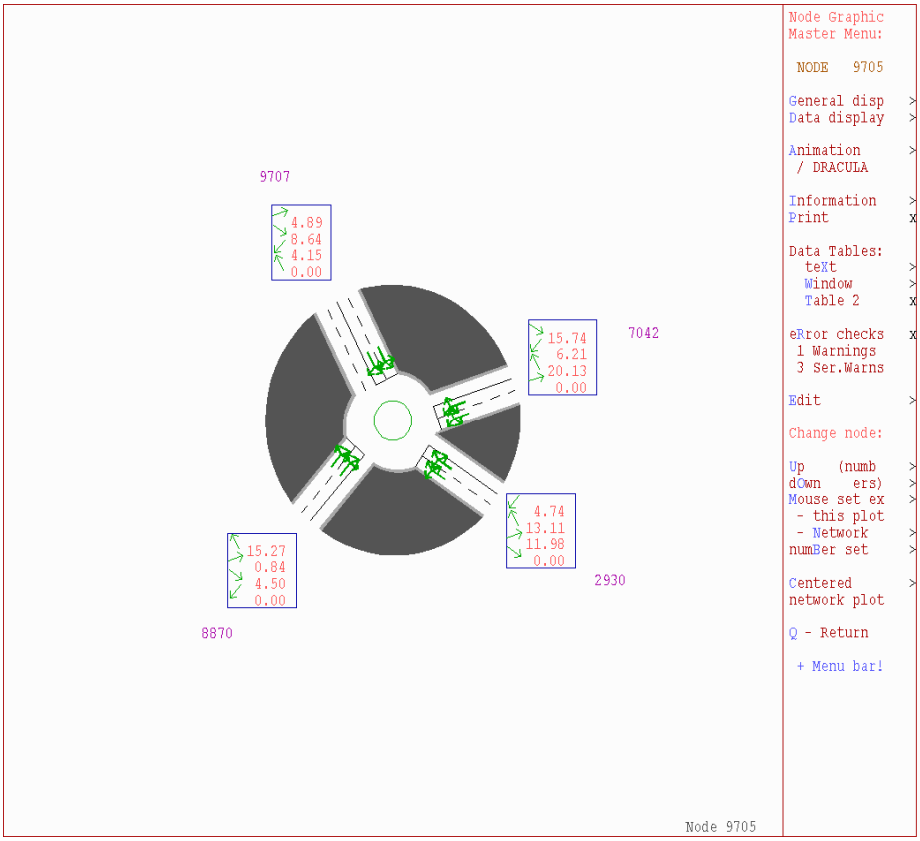


Figure 156. Junction 8 V/C ratios – PM DS

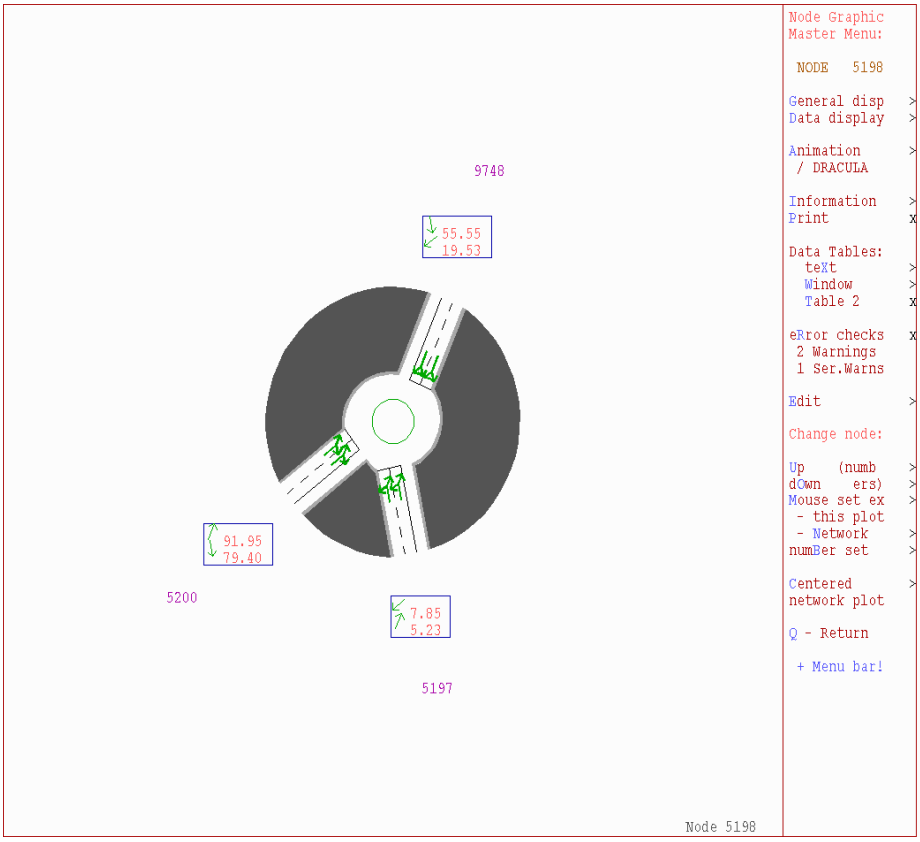


Figure 157. Junction 9 V/C ratios – PM DS

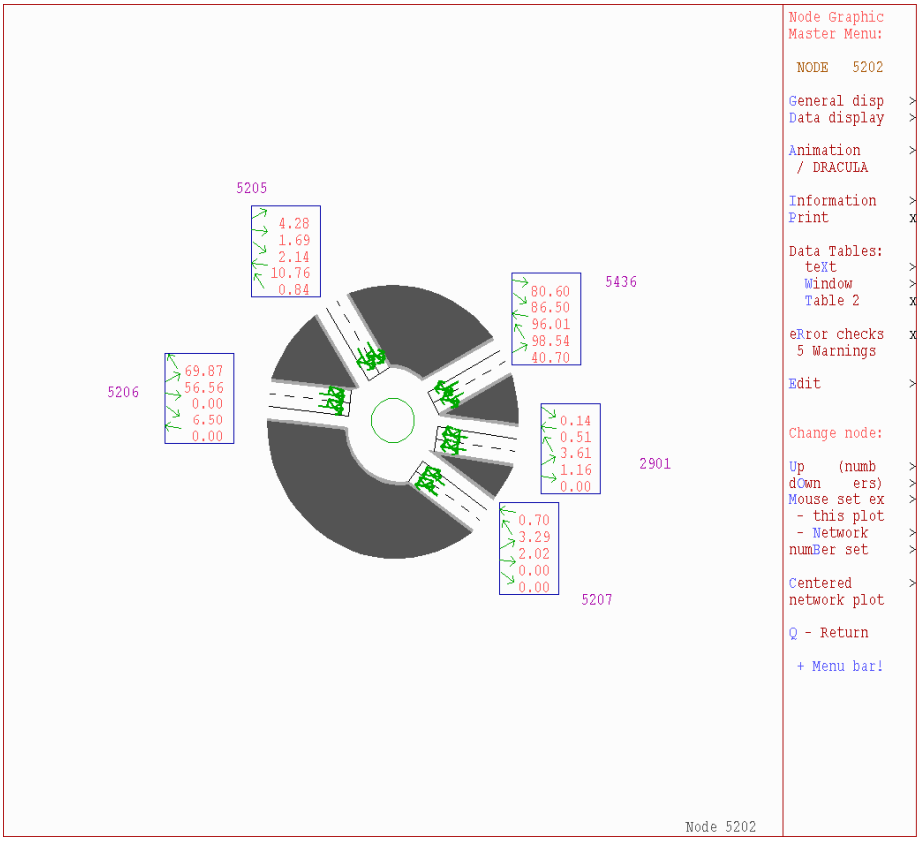


Figure 158. Junction 10 V/C ratios – PM DS

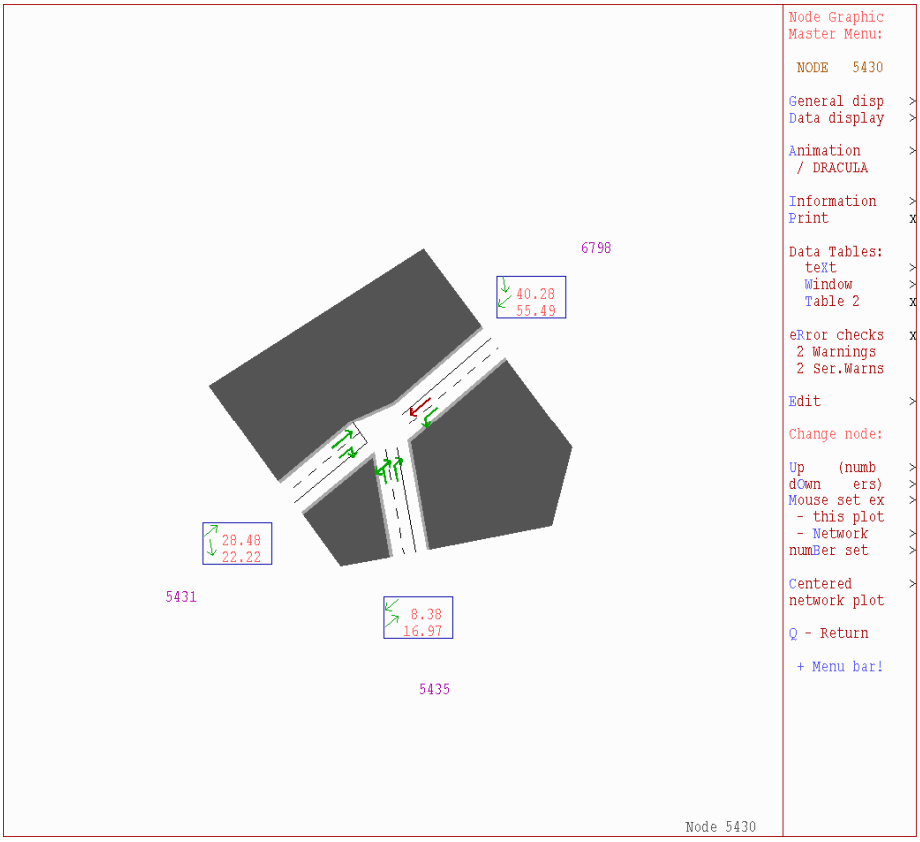


Figure 159. Junction 11 V/C ratios – PM DS

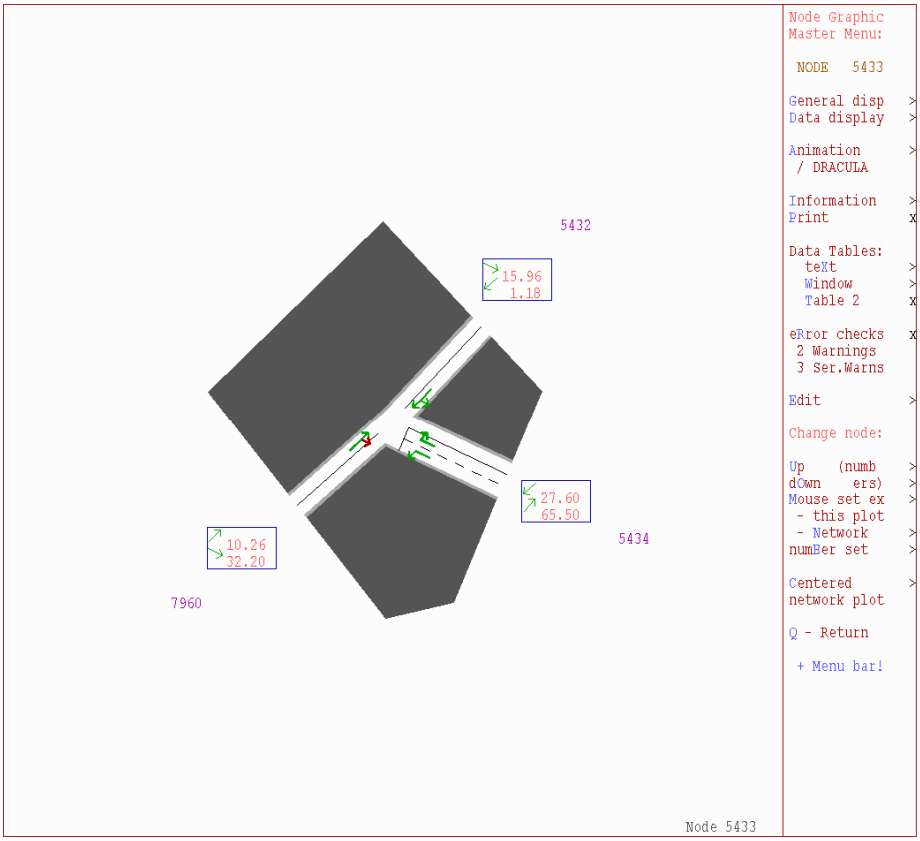


Figure 160. Junction 12 V/C ratios – PM DS

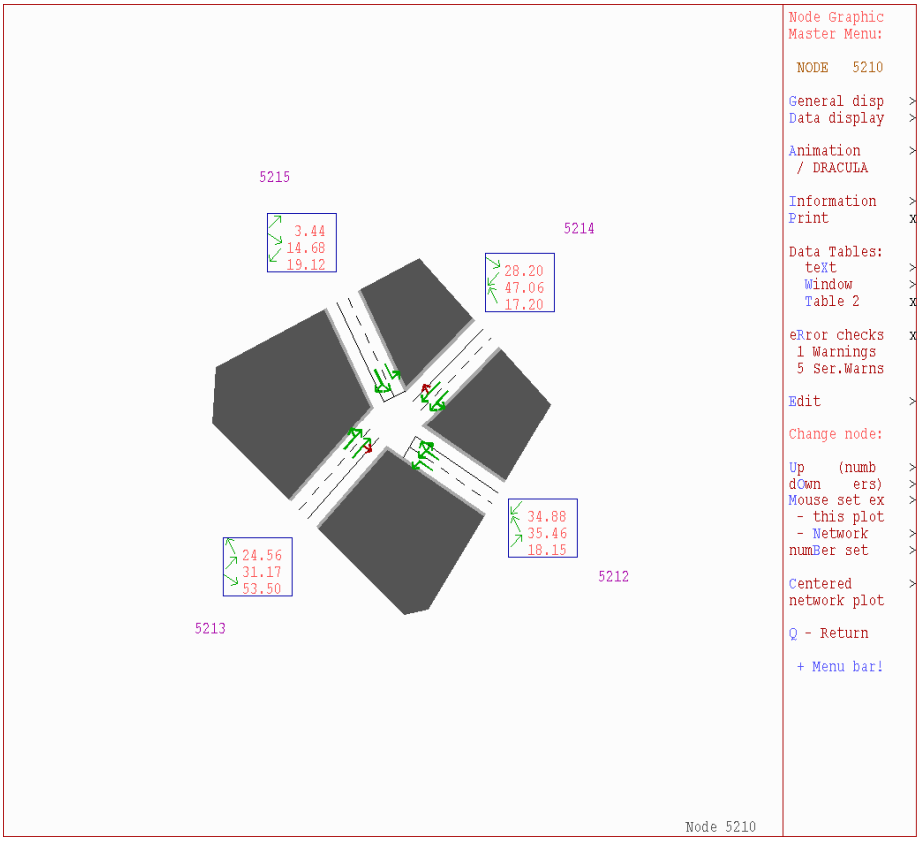


Figure 161. Junction 13 V/C ratios – PM DS

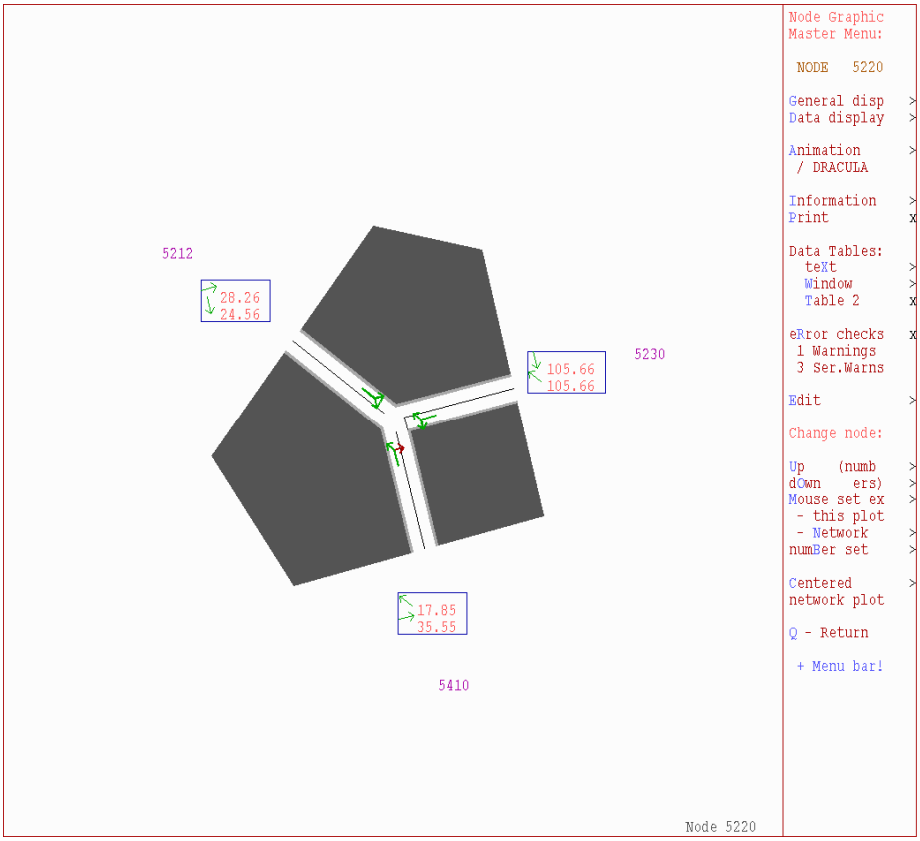


Figure 162. Junction 14 V/C ratios – PM DS

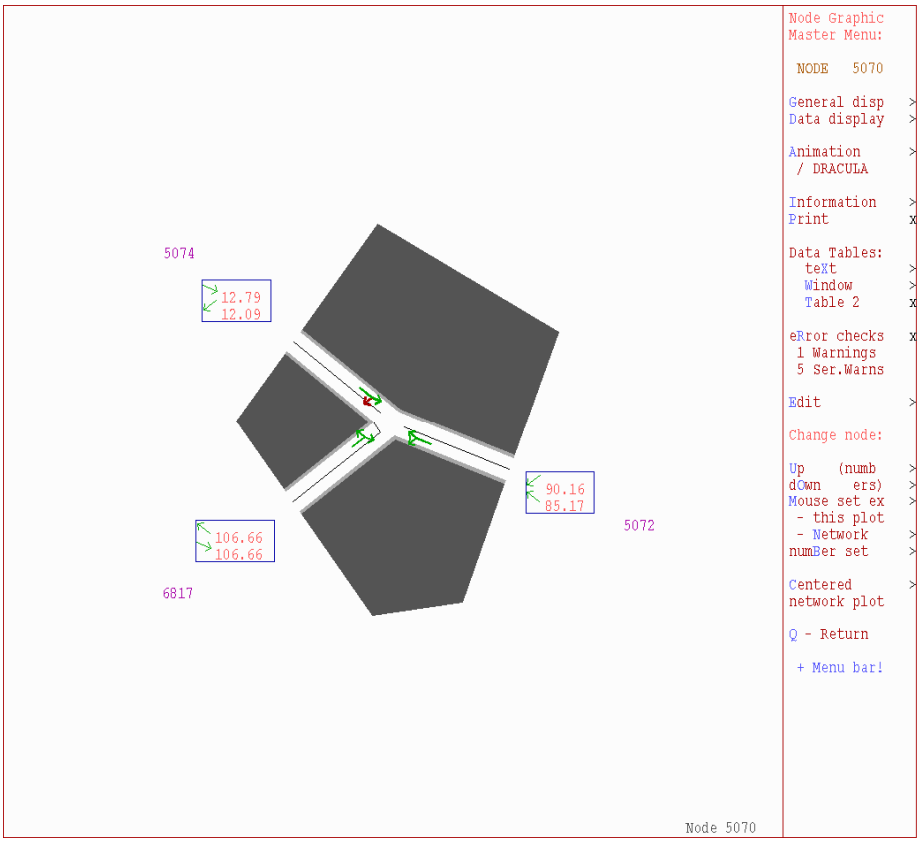


Figure 163. Bar Hill Junction V/C Ratios – AM DM

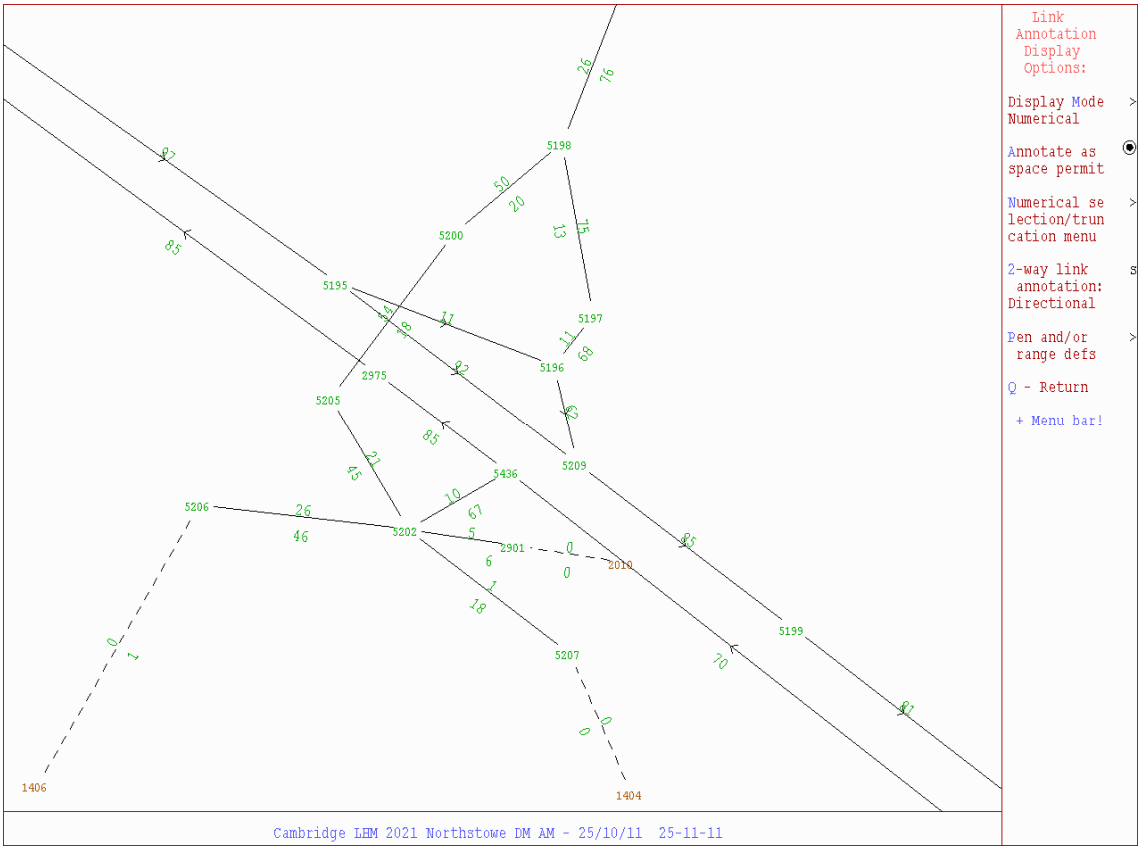
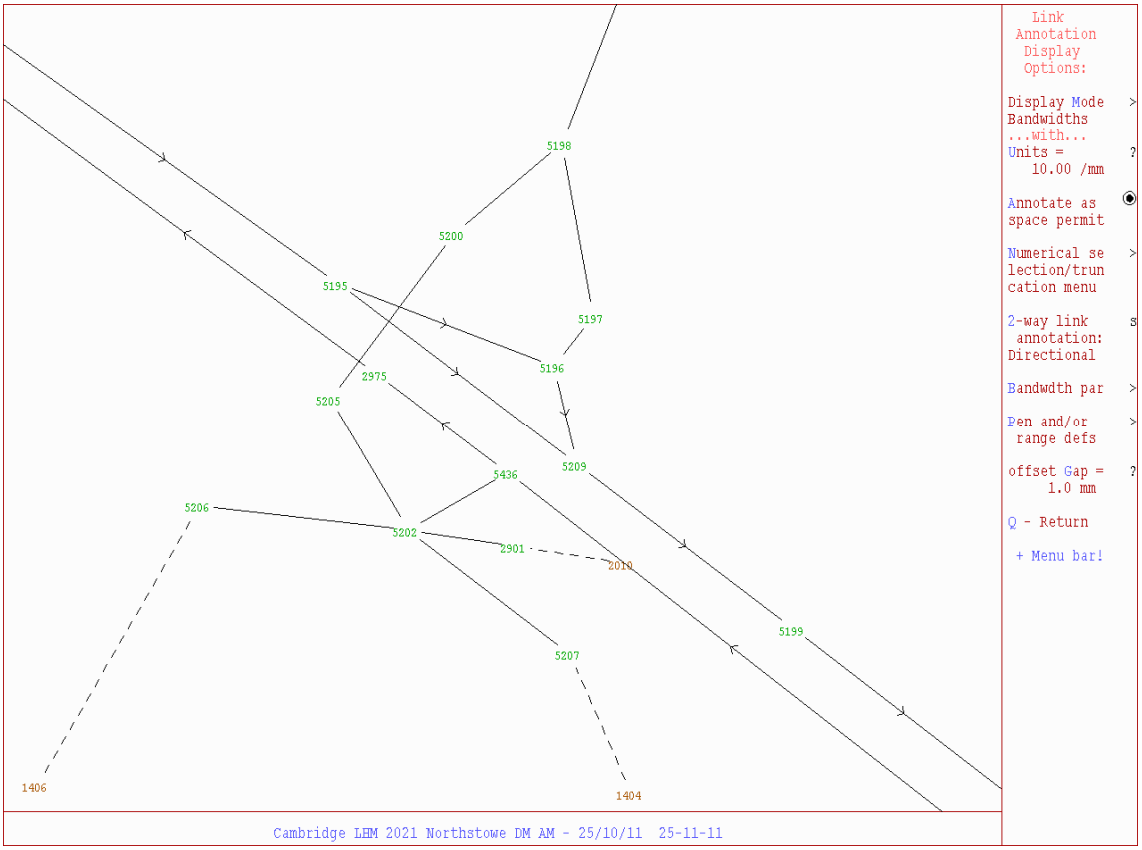


Figure 164. Bar Hill Junction Queues – AM DM



Technical Note

Figure 165. Bar Hill Junction V/C Ratios – PM DM

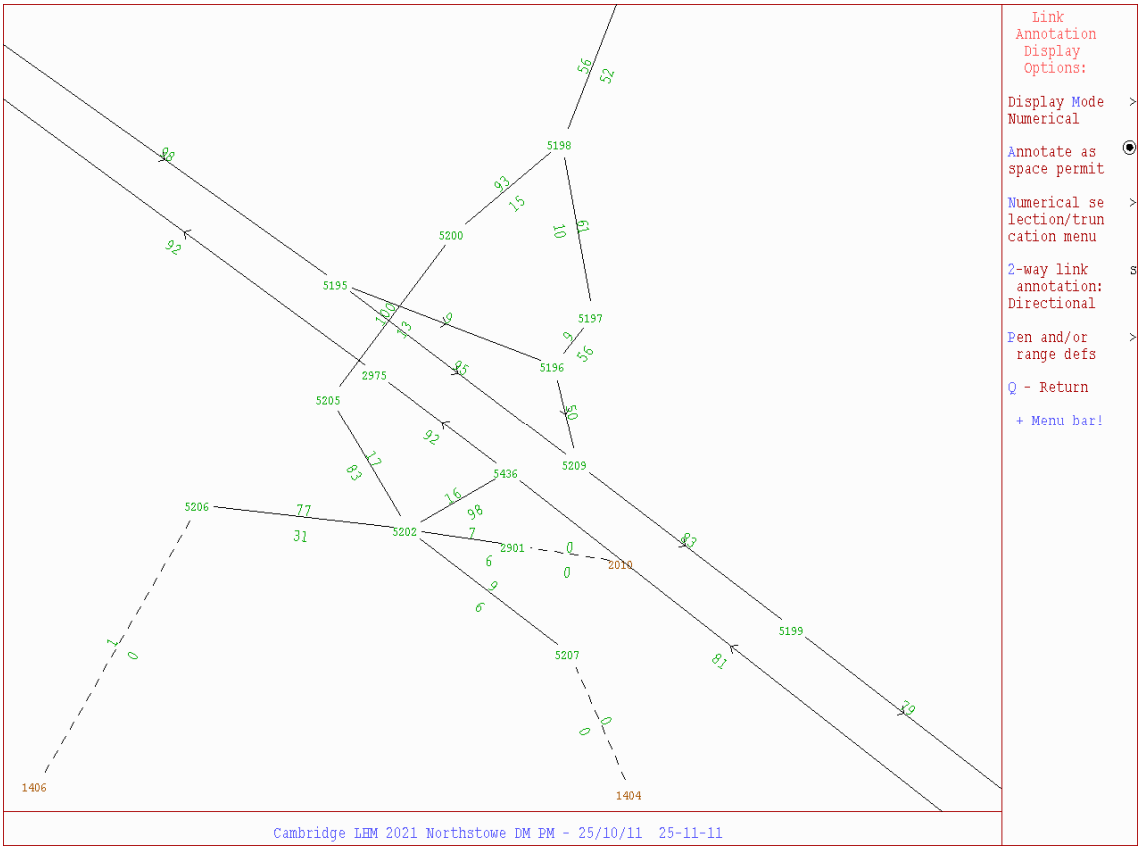


Figure 166. Bar Hill Junction Queues – PM DM

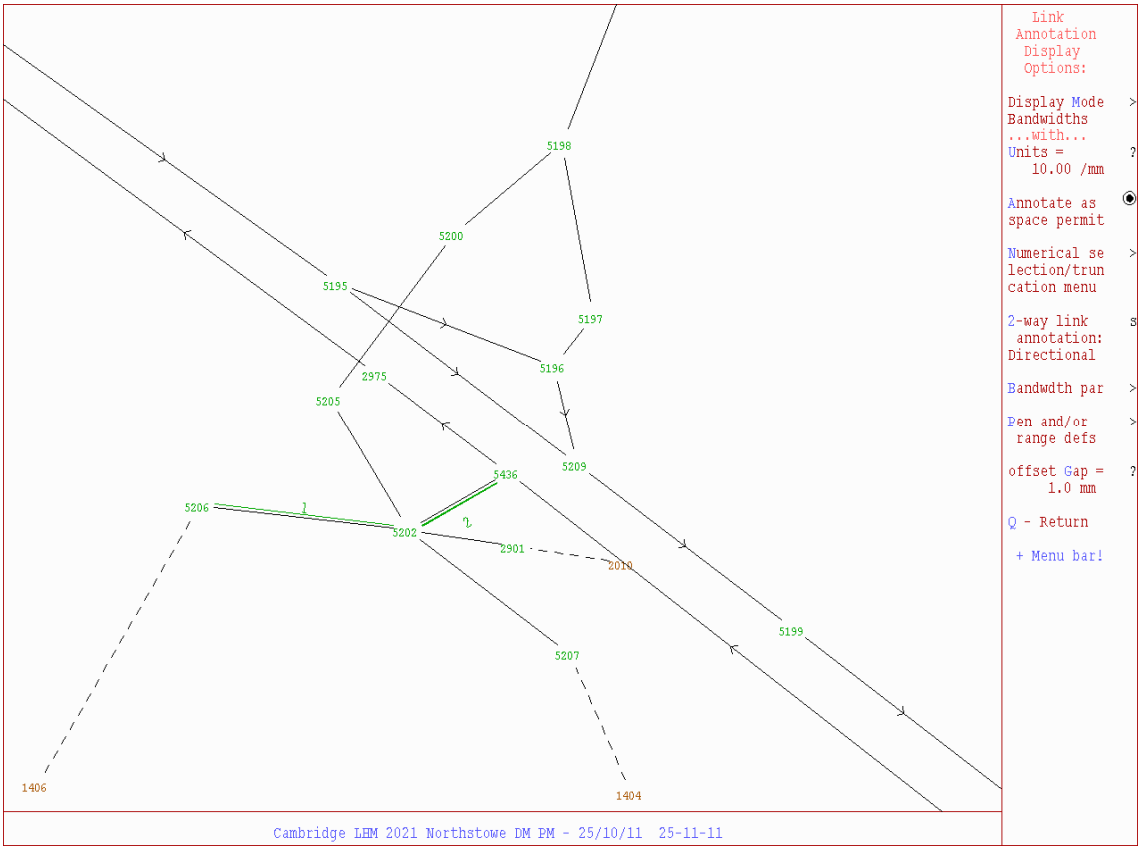


Figure 167. Bar Hill Junction V/C Ratios – AM DS

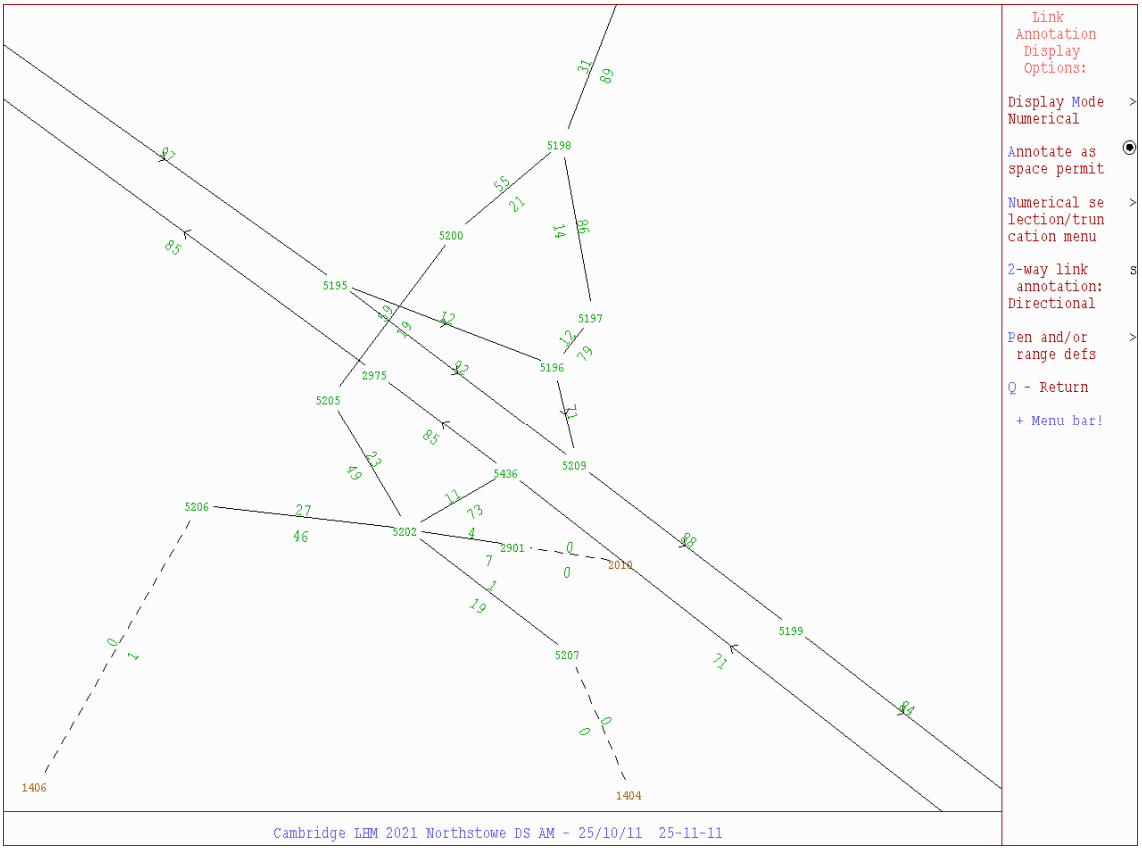


Figure 168. Bar Hill Junction Queues – AM DS

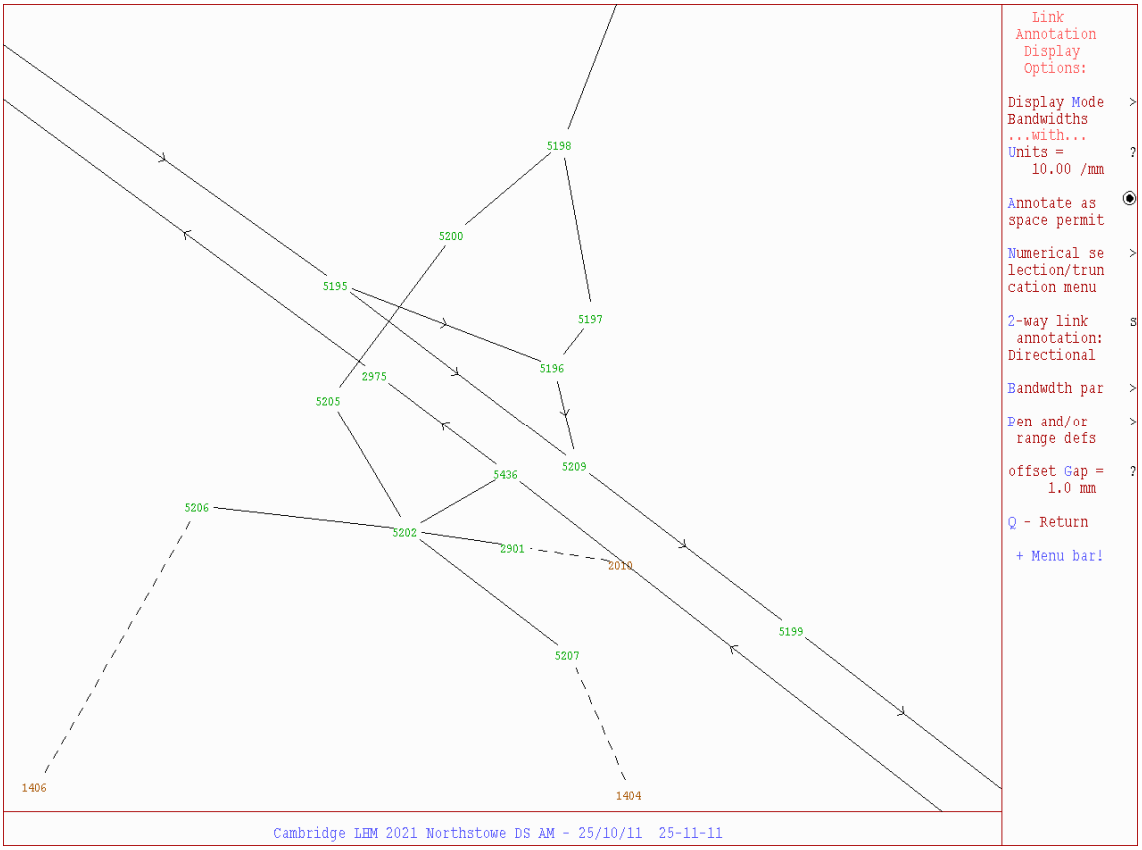


Figure 169. Bar Hill Junction V/C Ratios – PM DS

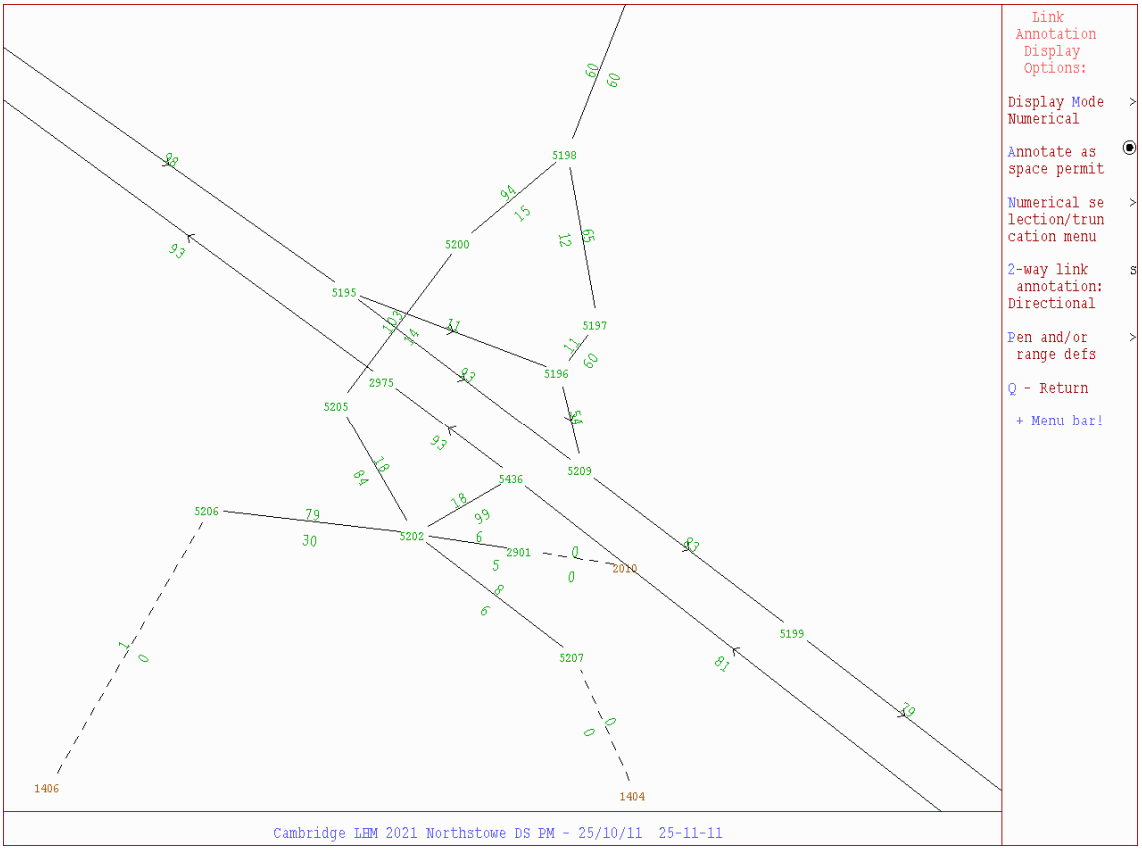
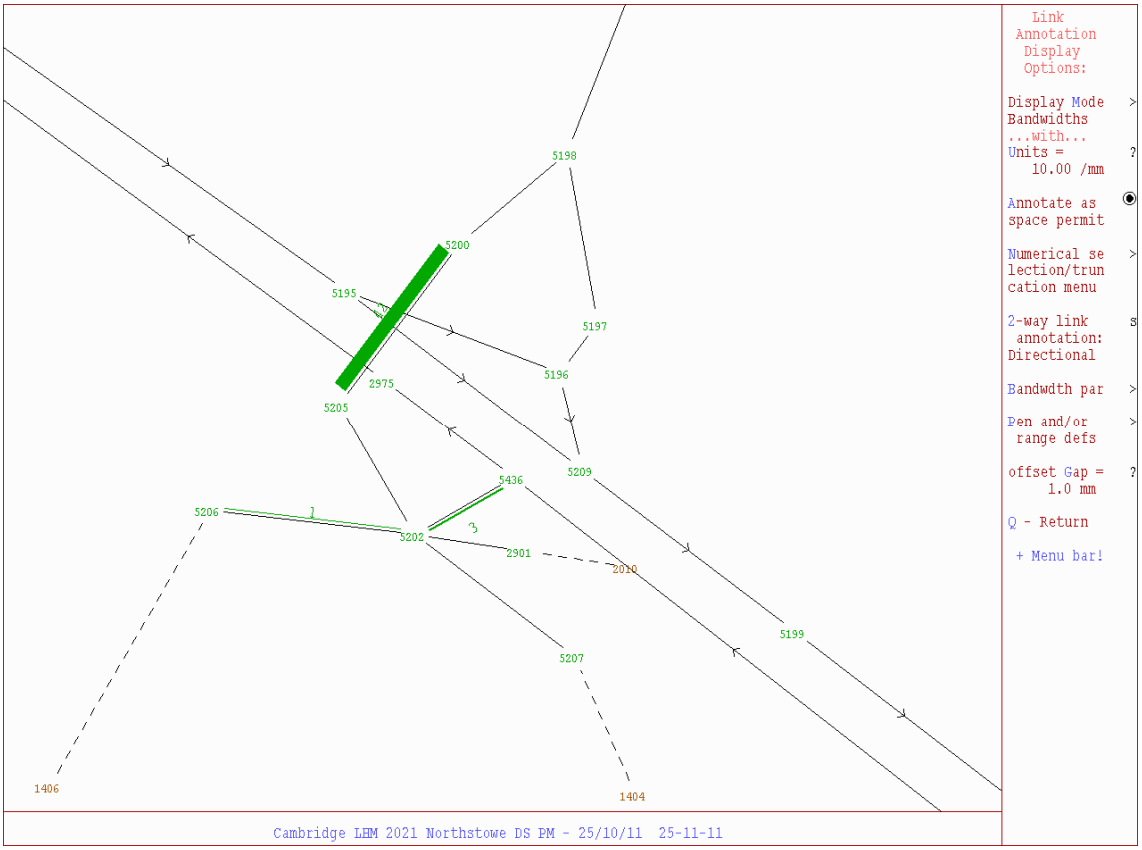


Figure 170. Bar Hill Junction Queues – PM DS



Appendix H Bar Hill Do Minimum 2021 ARCADY Assessments

ARCADY 6

GUI Version: 6.2 AF
Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
Email: software@ trl.co.uk
Web:www.trlsoftware.co.uk

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Northern Roundabout\Bar Hill-Northern Roundabout AM Flat Profile.vai**
At: **13:57:52 on Monday, December 12, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 Eastbound On-Slip
Arm C	A14 Overbridge

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100

File Properties

Run Title	2021 DM Bar Hill-Northern Roundabout AM - WITH SEGREGATED LANES
Location	Northstowe
Date	08/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

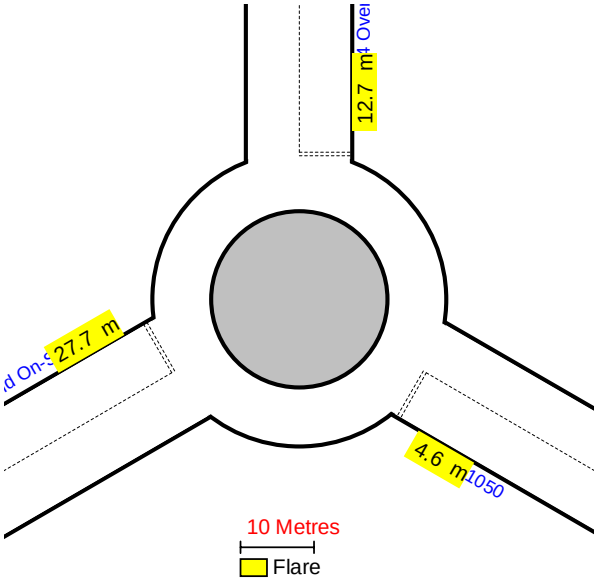
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C
Approach Road Half-Width (m)	3.75	4.50	3.65
Entry Width (m)	7.25	7.80	7.25
Flare Length (m)	4.60	27.70	12.70
Entry Radius (m)	20.00	29.00	23.00
Inscribed Circle Diameter (m)	40.00	40.00	40.00
Entry Angle (degrees)	67.00	38.00	68.00
Slope	0.515	0.710	0.558
Intercept (PCU/Min)	20.991	34.353	24.456

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(120) Arm B(120) Arm C(120)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **07:45 to 09:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DM Base AM

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 07:45 to 08:00	A	2.20
	B	2.46
	C	4.11
Segment : 2 - 08:00 to 08:15	A	2.92
	B	3.28
	C	5.48
Segment : 3 - 08:15 to 08:30	A	2.92
	B	3.28
	C	5.48
Segment : 4 - 08:30 to 08:45	A	2.92
	B	3.28
	C	5.48
Segment : 5 - 08:45 to 09:00	A	2.92
	B	3.28
	C	5.48
Segment : 6 - 09:00 to 09:15	A	2.20
	B	2.46
	C	4.11

Turning Proportions for Demand Set: 2021 DM Base AM

Turning proportions vary over entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C
07:45 to 09:15	Arm A	0.000	1.000	0.000
		0.0	16.3	0.0
	Arm B	0.213	0.000	0.787
		21.3	0.0	78.7
	Arm C	0.000	1.000	0.000
		0.0	40.7	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DM Base AM

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C
07:45 to 09:15	Arm A	0.0	16.3	0.0
	Arm B	21.3	0.0	78.7
	Arm C	0.0	40.7	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 07:45 to 08:00	A	2.20	18.87	0.117	-	0.0	0.1	1.9	-	0.060
	B	2.46	34.35	0.072	-	0.0	0.1	1.1	-	0.031
	C	4.11	24.16	0.170	-	0.0	0.2	3.0	-	0.050
Segment : 2 - 08:00 to 08:15	A	2.92	18.16	0.161	-	0.1	0.2	2.8	-	0.066
	B	3.28	34.35	0.095	-	0.1	0.1	1.6	-	0.032
	C	5.48	24.07	0.228	-	0.2	0.3	4.3	-	0.054
Segment : 3 - 08:15 to 08:30	A	2.92	18.16	0.161	-	0.2	0.2	2.9	-	0.066
	B	3.28	34.35	0.095	-	0.1	0.1	1.6	-	0.032
	C	5.48	24.07	0.228	-	0.3	0.3	4.4	-	0.054
Segment : 4 - 08:30 to 08:45	A	2.92	18.16	0.161	-	0.2	0.2	2.9	-	0.066
	B	3.28	34.35	0.095	-	0.1	0.1	1.6	-	0.032
	C	5.48	24.07	0.228	-	0.3	0.3	4.4	-	0.054
Segment : 5 - 08:45 to 09:00	A	2.92	18.16	0.161	-	0.2	0.2	2.9	-	0.066
	B	3.28	34.35	0.095	-	0.1	0.1	1.6	-	0.032
	C	5.48	24.07	0.228	-	0.3	0.3	4.4	-	0.054
Segment : 6 - 09:00 to 09:15	A	2.20	18.86	0.117	-	0.2	0.1	2.0	-	0.060
	B	2.46	34.35	0.072	-	0.1	0.1	1.2	-	0.031
	C	4.11	24.16	0.170	-	0.3	0.2	3.1	-	0.050

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Northern Roundabout\Bar Hill-Northern Roundabout AM Flat Profile.vai**
At: **14:05:28 on Wednesday, December 21, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 Eastbound On-Slip
Arm C	A14 Overbridge

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100

File Properties

Run Title	2021 DM Bar Hill-Northern Roundabout AM
Location	Northstowe
Date	21/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

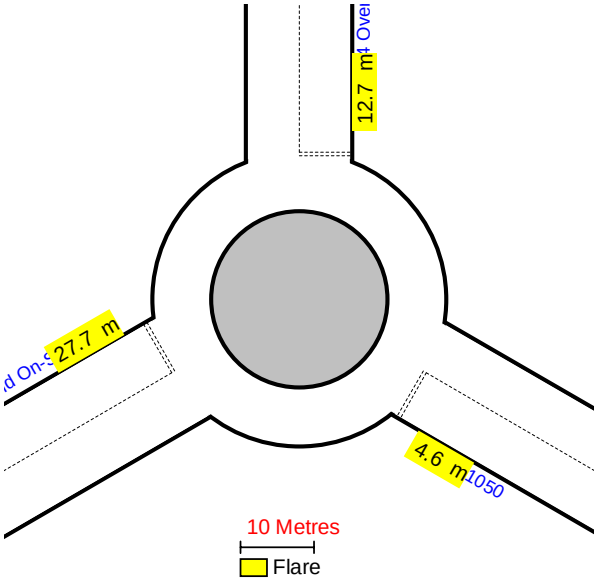
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C
Approach Road Half-Width (m)	3.75	4.50	3.65
Entry Width (m)	7.25	7.80	7.25
Flare Length (m)	4.60	27.70	12.70
Entry Radius (m)	20.00	29.00	23.00
Inscribed Circle Diameter (m)	40.00	40.00	40.00
Entry Angle (degrees)	67.00	38.00	68.00
Slope	0.515	0.710	0.558
Intercept (PCU/Min)	20.991	34.353	24.456

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(120) Arm B(120) Arm C(120)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **07:45 to 09:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DM Base AM

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 07:45 to 08:00	A	13.48
	B	2.46
	C	10.10
Segment : 2 - 08:00 to 08:15	A	17.97
	B	3.28
	C	13.47
Segment : 3 - 08:15 to 08:30	A	17.97
	B	3.28
	C	13.47
Segment : 4 - 08:30 to 08:45	A	17.97
	B	3.28
	C	13.47
Segment : 5 - 08:45 to 09:00	A	17.97
	B	3.28
	C	13.47
Segment : 6 - 09:00 to 09:15	A	13.48
	B	2.46
	C	10.10

Turning Proportions for Demand Set: 2021 DM Base AM

Turning proportions vary over entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C
07:45 to 09:15	Arm A	0.000	0.837	0.163
		0.0	83.7	16.3
	Arm B	0.213	0.000	0.787
		21.3	0.0	78.7
	Arm C	0.593	0.407	0.000
		59.3	40.7	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DM Base AM

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C
07:45 to 09:15	Arm A	0.0	83.7	16.3
	Arm B	21.3	0.0	78.7
	Arm C	59.3	40.7	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 07:45 to 08:00	A	13.48	18.88	0.714	-	0.0	2.4	32.8	-	0.175
	B	2.46	32.81	0.075	-	0.0	0.1	1.2	-	0.033
	C	10.10	24.16	0.418	-	0.0	0.7	10.4	-	0.071
Segment : 2 - 08:00 to 08:15	A	17.97	18.17	**0.989**	-	2.4	14.7	152.4	-	0.697
	B	3.28	32.37	0.101	-	0.1	0.1	1.7	-	0.034
	C	13.47	24.07	0.560	-	0.7	1.3	18.1	-	0.094
Segment : 3 - 08:15 to 08:30	A	17.97	18.17	**0.989**	-	14.7	20.1	264.1	-	1.143
	B	3.28	32.31	0.102	-	0.1	0.1	1.7	-	0.034
	C	13.47	24.07	0.560	-	1.3	1.3	18.9	-	0.094
Segment : 4 - 08:30 to 08:45	A	17.97	18.17	**0.989**	-	20.1	24.0	332.2	-	1.378
	B	3.28	32.30	0.102	-	0.1	0.1	1.7	-	0.034
	C	13.47	24.07	0.560	-	1.3	1.3	19.0	-	0.094
Segment : 5 - 08:45 to 09:00	A	17.97	18.17	**0.989**	-	24.0	27.1	384.0	-	1.555
	B	3.28	32.30	0.102	-	0.1	0.1	1.7	-	0.034
	C	13.47	24.07	0.560	-	1.3	1.3	19.0	-	0.094
Segment : 6 - 09:00 to 09:15	A	13.48	18.87	0.715	-	27.1	2.6	105.1	-	0.385
	B	2.46	32.60	0.075	-	0.1	0.1	1.2	-	0.033
	C	10.10	24.16	0.418	-	1.3	0.7	11.2	-	0.072

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Northern Roundabout\Bar Hill-Northern Roundabout PM Flat Profile.vai**
At: **14:02:56 on Monday, December 12, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 Eastbound On-Slip
Arm C	A14 Overbridge

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100

File Properties

Run Title	2021 PM DM - Bar Hill-Northern Roundabout - WITH SEGEGATED LANES
Location	Northstowe
Date	09/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

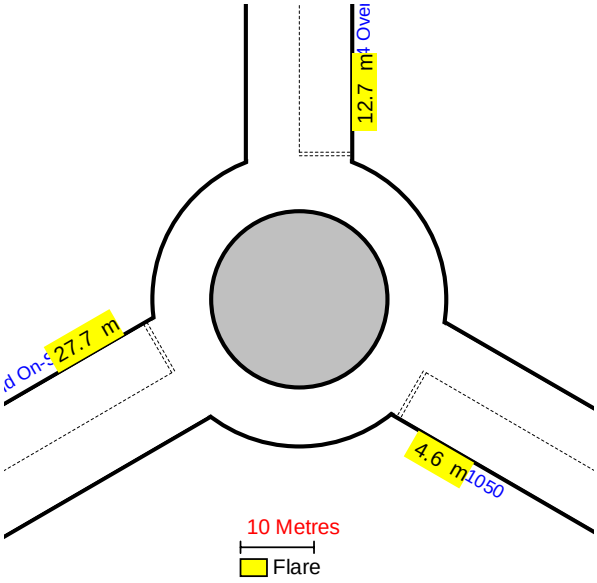
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C
Approach Road Half-Width (m)	3.75	4.50	3.65
Entry Width (m)	7.25	7.80	7.25
Flare Length (m)	4.60	27.70	12.70
Entry Radius (m)	20.00	29.00	23.00
Inscribed Circle Diameter (m)	40.00	40.00	40.00
Entry Angle (degrees)	67.00	38.00	68.00
Slope	0.515	0.710	0.558
Intercept (PCU/Min)	20.991	34.353	24.456

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(120) Arm B(120) Arm C(120)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **16:45 to 18:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DM Base PM

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 16:45 to 17:00	A	1.60
	B	1.95
	C	5.28
Segment : 2 - 17:00 to 17:15	A	2.13
	B	2.60
	C	7.03
Segment : 3 - 17:15 to 17:30	A	2.13
	B	2.60
	C	7.03
Segment : 4 - 17:30 to 17:45	A	2.13
	B	2.60
	C	7.03
Segment : 5 - 17:45 to 18:00	A	2.13
	B	2.60
	C	7.03
Segment : 6 - 18:00 to 18:15	A	1.60
	B	1.95
	C	5.28

Turning Proportions for Demand Set: 2021 DM Base PM

Turning proportions vary over entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C
16:45 to 18:15	Arm A	0.000	1.000	0.000
		0.0	18.0	0.0
	Arm B	0.282	0.000	0.718
		28.2	0.0	71.8
	Arm C	0.000	1.000	0.000
		0.0	28.1	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DM Base PM

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C
16:45 to 18:15	Arm A	0.0	18.0	0.0
	Arm B	28.2	0.0	71.8
	Arm C	0.0	28.1	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 16:45 to 17:00	A	1.60	18.27	0.088	-	0.0	0.1	1.4	-	0.060
	B	1.95	34.35	0.057	-	0.0	0.1	0.9	-	0.031
	C	5.28	24.15	0.219	-	0.0	0.3	4.1	-	0.053
Segment : 2 - 17:00 to 17:15	A	2.13	17.37	0.123	-	0.1	0.1	2.1	-	0.066
	B	2.60	34.35	0.076	-	0.1	0.1	1.2	-	0.032
	C	7.03	24.05	0.292	-	0.3	0.4	6.1	-	0.059
Segment : 3 - 17:15 to 17:30	A	2.13	17.37	0.123	-	0.1	0.1	2.1	-	0.066
	B	2.60	34.35	0.076	-	0.1	0.1	1.2	-	0.032
	C	7.03	24.05	0.292	-	0.4	0.4	6.2	-	0.059
Segment : 4 - 17:30 to 17:45	A	2.13	17.37	0.123	-	0.1	0.1	2.1	-	0.066
	B	2.60	34.35	0.076	-	0.1	0.1	1.2	-	0.032
	C	7.03	24.05	0.292	-	0.4	0.4	6.2	-	0.059
Segment : 5 - 17:45 to 18:00	A	2.13	17.37	0.123	-	0.1	0.1	2.1	-	0.066
	B	2.60	34.35	0.076	-	0.1	0.1	1.2	-	0.032
	C	7.03	24.05	0.292	-	0.4	0.4	6.2	-	0.059
Segment : 6 - 18:00 to 18:15	A	1.60	18.26	0.088	-	0.1	0.1	1.5	-	0.060
	B	1.95	34.35	0.057	-	0.1	0.1	0.9	-	0.031
	C	5.28	24.15	0.219	-	0.4	0.3	4.3	-	0.053

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Northern Roundabout\Bar Hill-Northern Roundabout PM Flat Profile.vai**
At: **14:12:46 on Wednesday, December 21, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 Eastbound On-Slip
Arm C	A14 Overbridge

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100

File Properties

Run Title	2021 PM DM - Bar Hill-Northern Roundabout
Location	Northstowe
Date	21/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

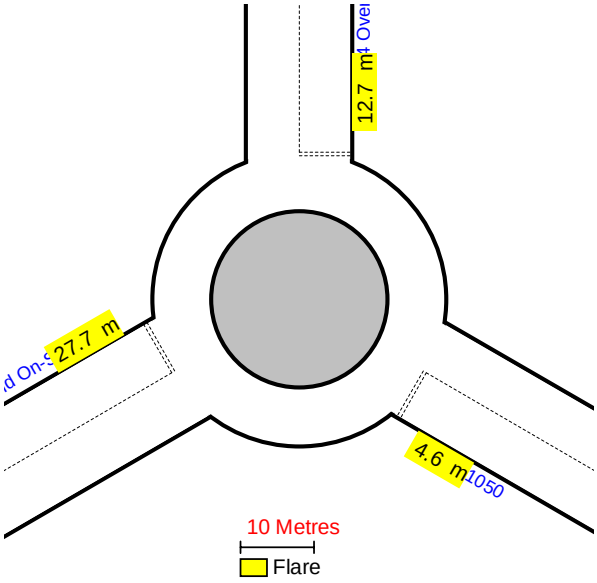
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C
Approach Road Half-Width (m)	3.75	4.50	3.65
Entry Width (m)	7.25	7.80	7.25
Flare Length (m)	4.60	27.70	12.70
Entry Radius (m)	20.00	29.00	23.00
Inscribed Circle Diameter (m)	40.00	40.00	40.00
Entry Angle (degrees)	67.00	38.00	68.00
Slope	0.515	0.710	0.558
Intercept (PCU/Min)	20.991	34.353	24.456

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(120) Arm B(120) Arm C(120)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **16:45 to 18:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DM Base PM

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 16:45 to 17:00	A	8.88
	B	1.95
	C	18.75
Segment : 2 - 17:00 to 17:15	A	11.83
	B	2.60
	C	25.00
Segment : 3 - 17:15 to 17:30	A	11.83
	B	2.60
	C	25.00
Segment : 4 - 17:30 to 17:45	A	11.83
	B	2.60
	C	25.00
Segment : 5 - 17:45 to 18:00	A	11.83
	B	2.60
	C	25.00
Segment : 6 - 18:00 to 18:15	A	8.88
	B	1.95
	C	18.75

Turning Proportions for Demand Set: 2021 DM Base PM

Turning proportions vary over entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C
16:45 to 18:15	Arm A	0.000	0.820	0.180
		0.0	82.0	18.0
	Arm B	0.282	0.000	0.718
		28.2	0.0	71.8
	Arm C	0.719	0.281	0.000
		71.9	28.1	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DM Base PM

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C
16:45 to 18:15	Arm A	0.0	82.0	18.0
	Arm B	28.2	0.0	71.8
	Arm C	71.9	28.1	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 16:45 to 17:00	A	8.88	18.31	0.485	-	0.0	0.9	13.3	-	0.105
	B	1.95	33.23	0.059	-	0.0	0.1	0.9	-	0.032
	C	18.75	24.15	0.776	-	0.0	3.3	44.6	-	0.172
Segment : 2 - 17:00 to 17:15	A	11.83	17.61	0.672	-	0.9	2.0	27.8	-	0.169
	B	2.60	32.85	0.079	-	0.1	0.1	1.3	-	0.033
	C	25.00	24.05	1.040	-	3.3	27.7	258.6	-	0.847
Segment : 3 - 17:15 to 17:30	A	11.83	17.54	0.674	-	2.0	2.0	30.2	-	0.175
	B	2.60	32.84	0.079	-	0.1	0.1	1.3	-	0.033
	C	25.00	24.05	1.040	-	27.7	45.0	548.0	-	1.679
Segment : 4 - 17:30 to 17:45	A	11.83	17.53	0.675	-	2.0	2.0	30.6	-	0.175
	B	2.60	32.84	0.079	-	0.1	0.1	1.3	-	0.033
	C	25.00	24.05	1.040	-	45.0	61.0	795.9	-	2.346
Segment : 5 - 17:45 to 18:00	A	11.83	17.52	0.675	-	2.0	2.1	30.8	-	0.175
	B	2.60	32.84	0.079	-	0.1	0.1	1.3	-	0.033
	C	25.00	24.05	1.040	-	61.0	76.4	1031.1	-	2.981
Segment : 6 - 18:00 to 18:15	A	8.88	17.58	0.505	-	2.1	1.0	16.2	-	0.117
	B	1.95	33.21	0.059	-	0.1	0.1	0.9	-	0.032
	C	18.75	24.15	0.776	-	76.4	4.6	576.2	-	1.707

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Southern Roundabout\2021 AM BASE CRAFTS WAY ROUNDABOUT.vai**
At: **14:09:20 on Monday, December 12, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 On/Off Slip
Arm C	Hotel Access
Arm D	Crafts way
Arm E	Saxon way

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100
Arm D	100
Arm E	100

File Properties

Run Title	2021 AM DM - CRAFTS WAY ROUNDABOUT
Location	Bar Hill Interchange - A14
Date	08/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

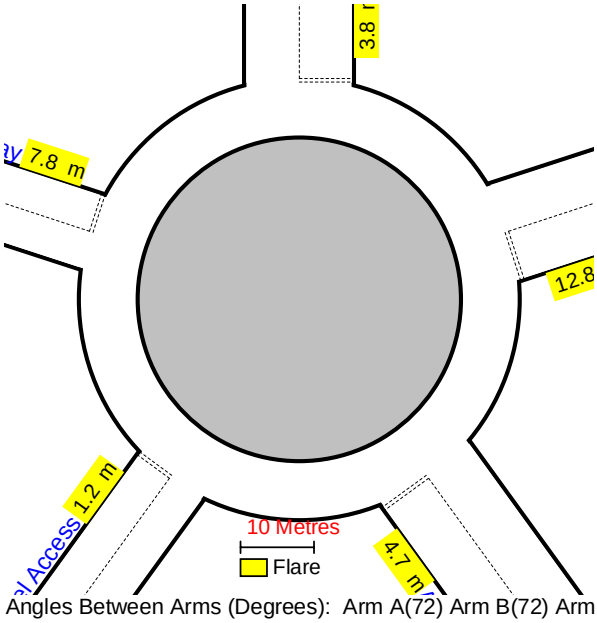
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C	Arm D	Arm E
Approach Road Half-Width (m)	4.00	6.00	2.80	3.80	6.95
Entry Width (m)	7.00	7.50	5.50	5.40	7.50
Flare Length (m)	12.80	4.70	1.20	7.80	3.80
Entry Radius (m)	28.30	20.00	9.00	20.00	17.10
Inscribed Circle Diameter (m)	64.00	64.00	64.00	64.00	64.00
Entry Angle (degrees)	9.00	49.50	16.50	6.50	20.50
Slope	0.587	0.552	0.405	0.533	0.637
Intercept (PCU/Min)	31.374	31.744	15.599	26.031	37.909

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(72) Arm B(72) Arm C(72) Arm D(72) Arm E(72)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **07:45 to 09:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DM Scenario

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 07:45 to 08:00	A	4.13
	B	12.23
	C	0.68
	D	1.83
	E	4.20
Segment : 2 - 08:00 to 08:15	A	5.50
	B	16.30
	C	0.90
	D	2.43
	E	5.60
Segment : 3 - 08:15 to 08:30	A	5.50
	B	16.30
	C	0.90
	D	2.43
	E	5.60
Segment : 4 - 08:30 to 08:45	A	5.50
	B	16.30
	C	0.90
	D	2.43
	E	5.60
Segment : 5 - 08:45 to 09:00	A	5.50
	B	16.30
	C	0.90
	D	2.43
	E	5.60
Segment : 6 - 09:00 to 09:15	A	4.13
	B	12.23
	C	0.68
	D	1.83
	E	4.20

Turning Proportions for Demand Set: 2021 DM Scenario

Turning proportions vary over time and entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 1 - 07:45 to 08:00	Arm A	0.021	0.200	0.066	0.018	0.695
		2.1	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0
Segment : 2 - 08:00 to 08:15	Arm A	0.021	0.200	0.066	0.018	0.695
		2.1	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 3 - 08:15 to 08:30	Arm A	0.021	0.200	0.066	0.018	0.695
		2.1	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0
Segment : 4 - 08:30 to 08:45	Arm A	0.021	0.200	0.066	0.018	0.695
		2.1	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0
Segment : 5 - 08:45 to 09:00	Arm A	0.021	0.200	0.066	0.018	0.695
		2.1	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0
Segment : 6 - 09:00 to 09:15	Arm A	0.021	0.200	0.066	0.018	0.695
		2.1	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DM Scenario

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
07:45 to 08:00	Arm A	2.1	20.0	6.6	1.8	69.4
	Arm B	43.3	1.0	3.5	1.3	50.8
	Arm C	75.9	11.1	0.0	1.8	11.1
	Arm D	63.0	28.1	0.0	0.0	13.0
	Arm E	72.3	27.1	0.0	0.6	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 07:45 to 08:00	A	4.13	30.29	0.136	-	0.0	0.2	2.3	-	0.038
	B	12.23	29.91	0.409	-	0.0	0.7	10.1	-	0.056
	C	0.68	9.61	0.071	-	0.0	0.1	1.1	-	0.112
	D	1.83	17.93	0.102	-	0.0	0.1	1.7	-	0.062
	E	4.20	33.02	0.127	-	0.0	0.1	2.2	-	0.035
Segment : 2 - 08:00 to 08:15	A	5.50	29.92	0.184	-	0.2	0.2	3.3	-	0.041
	B	16.30	29.30	0.556	-	0.7	1.2	18.0	-	0.076
	C	0.90	7.60	0.118	-	0.1	0.1	1.9	-	0.149
	D	2.43	15.22	0.160	-	0.1	0.2	2.8	-	0.078
	E	5.60	31.39	0.178	-	0.1	0.2	3.2	-	0.039
Segment : 3 - 08:15 to 08:30	A	5.50	29.92	0.184	-	0.2	0.2	3.4	-	0.041
	B	16.30	29.30	0.556	-	1.2	1.2	18.7	-	0.077
	C	0.90	7.59	0.119	-	0.1	0.1	2.0	-	0.149
	D	2.43	15.20	0.160	-	0.2	0.2	2.8	-	0.078
	E	5.60	31.38	0.178	-	0.2	0.2	3.3	-	0.039
Segment : 4 - 08:30 to 08:45	A	5.50	29.92	0.184	-	0.2	0.2	3.4	-	0.041
	B	16.30	29.30	0.556	-	1.2	1.2	18.7	-	0.077
	C	0.90	7.59	0.119	-	0.1	0.1	2.0	-	0.149
	D	2.43	15.20	0.160	-	0.2	0.2	2.8	-	0.078
	E	5.60	31.38	0.178	-	0.2	0.2	3.3	-	0.039
Segment : 5 - 08:45 to 09:00	A	5.50	29.92	0.184	-	0.2	0.2	3.4	-	0.041
	B	16.30	29.30	0.556	-	1.2	1.3	18.8	-	0.077
	C	0.90	7.59	0.119	-	0.1	0.1	2.0	-	0.149
	D	2.43	15.20	0.160	-	0.2	0.2	2.8	-	0.078
	E	5.60	31.38	0.178	-	0.2	0.2	3.3	-	0.039
Segment : 6 - 09:00 to 09:15	A	4.13	30.28	0.136	-	0.2	0.2	2.4	-	0.038
	B	12.23	29.90	0.409	-	1.3	0.7	10.7	-	0.057
	C	0.68	9.57	0.071	-	0.1	0.1	1.2	-	0.113
	D	1.83	17.88	0.102	-	0.2	0.1	1.7	-	0.062
	E	4.20	32.99	0.127	-	0.2	0.1	2.2	-	0.035

ARCADY 6

GUI Version: 6.2 AF
Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information, program advice and maintenance, contact:

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Web:www.trlsoftware.co.uk

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Southern Roundabout\2021 PM BASE CRAFTS WAY ROUNDABOUT.vai**
At: **14:12:14 on Monday, December 12, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 On/Off Slip
Arm C	Hotel Access
Arm D	Crafts way
Arm E	Saxon way

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100
Arm D	100
Arm E	100

File Properties

Run Title	2021 PM DM - CRAFTS WAY ROUNDABOUT
Location	Bar Hill Interchange - A14
Date	08/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

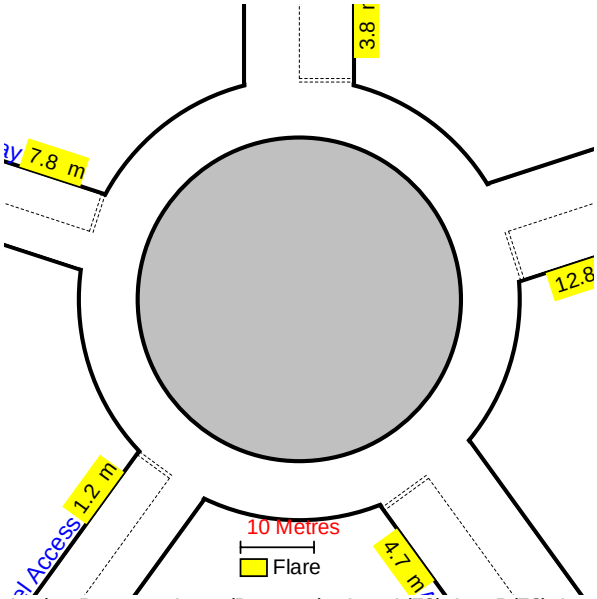
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C	Arm D	Arm E
Approach Road Half-Width (m)	4.00	6.00	2.80	3.80	6.95
Entry Width (m)	7.00	7.50	5.50	5.40	7.50
Flare Length (m)	12.80	4.70	1.20	7.80	3.80
Entry Radius (m)	28.30	20.00	9.00	20.00	17.10
Inscribed Circle Diameter (m)	64.00	64.00	64.00	64.00	64.00
Entry Angle (degrees)	9.00	49.50	16.50	6.50	20.50
Slope	0.587	0.552	0.405	0.533	0.637
Intercept (PCU/Min)	31.374	31.744	15.599	26.031	37.909

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(72) Arm B(72) Arm C(72) Arm D(72) Arm E(72)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **16:45 to 18:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DM Scenario PM

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 16:45 to 17:00	A	3.03
	B	18.53
	C	0.38
	D	0.46
	E	9.70
Segment : 2 - 17:00 to 17:15	A	4.03
	B	24.70
	C	0.50
	D	0.62
	E	12.93
Segment : 3 - 17:15 to 17:30	A	4.03
	B	24.70
	C	0.50
	D	0.62
	E	12.93
Segment : 4 - 17:30 to 17:45	A	4.03
	B	24.70
	C	0.50
	D	0.62
	E	12.93
Segment : 5 - 17:45 to 18:00	A	4.03
	B	24.70
	C	0.50
	D	0.62
	E	12.93
Segment : 6 - 18:00 to 18:15	A	3.03
	B	18.53
	C	0.38
	D	0.46
	E	9.70

Turning Proportions for Demand Set: 2021 DM Scenario PM

Turning proportions vary over time and entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 1 - 16:45 to 17:00	Arm A	0.041	0.202	0.087	0.112	0.558
		4.1	20.2	8.7	11.2	55.8
	Arm B	0.632	0.007	0.044	0.067	0.250
		63.2	0.7	4.4	6.7	25.0
	Arm C	0.694	0.166	0.000	0.033	0.107
		70.0	16.7	0.0	3.3	10.8
	Arm D	0.570	0.321	0.000	0.000	0.108
		56.8	32.0	0.0	0.0	10.8
	Arm E	0.660	0.320	0.000	0.020	0.000
		66.0	32.0	0.0	2.0	0.0
Segment : 2 - 17:00 to 17:15	Arm A	0.041	0.202	0.087	0.112	0.558
		4.1	20.2	8.7	11.2	55.8
	Arm B	0.632	0.007	0.044	0.067	0.250
		63.2	0.7	4.4	6.7	25.0
	Arm C	0.694	0.166	0.000	0.033	0.107
		70.0	16.7	0.0	3.3	10.8
	Arm D	0.570	0.321	0.000	0.000	0.108
		56.8	32.0	0.0	0.0	10.8
	Arm E	0.660	0.320	0.000	0.020	0.000
		66.0	32.0	0.0	2.0	0.0

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 3 - 17:15 to 17:30	Arm A	0.041	0.202	0.087	0.112	0.558
		4.1	20.2	8.7	11.2	55.8
	Arm B	0.632	0.007	0.044	0.067	0.250
		63.2	0.7	4.4	6.7	25.0
	Arm C	0.694	0.166	0.000	0.033	0.107
		70.0	16.7	0.0	3.3	10.8
	Arm D	0.570	0.321	0.000	0.000	0.108
		56.8	32.0	0.0	0.0	10.8
	Arm E	0.660	0.320	0.000	0.020	0.000
		66.0	32.0	0.0	2.0	0.0
Segment : 4 - 17:30 to 17:45	Arm A	0.041	0.202	0.087	0.112	0.558
		4.1	20.2	8.7	11.2	55.8
	Arm B	0.632	0.007	0.044	0.067	0.250
		63.2	0.7	4.4	6.7	25.0
	Arm C	0.694	0.166	0.000	0.033	0.107
		70.0	16.7	0.0	3.3	10.8
	Arm D	0.570	0.321	0.000	0.000	0.108
		56.8	32.0	0.0	0.0	10.8
	Arm E	0.660	0.320	0.000	0.020	0.000
		66.0	32.0	0.0	2.0	0.0
Segment : 5 - 17:45 to 18:00	Arm A	0.041	0.202	0.087	0.112	0.558
		4.1	20.2	8.7	11.2	55.8
	Arm B	0.632	0.007	0.044	0.067	0.250
		63.2	0.7	4.4	6.7	25.0
	Arm C	0.694	0.166	0.000	0.033	0.107
		70.0	16.7	0.0	3.3	10.8
	Arm D	0.570	0.321	0.000	0.000	0.108
		56.8	32.0	0.0	0.0	10.8
	Arm E	0.660	0.320	0.000	0.020	0.000
		66.0	32.0	0.0	2.0	0.0
Segment : 6 - 18:00 to 18:15	Arm A	0.041	0.202	0.087	0.112	0.558
		4.1	20.2	8.7	11.2	55.8
	Arm B	0.632	0.007	0.044	0.067	0.250
		63.2	0.7	4.4	6.7	25.0
	Arm C	0.694	0.166	0.000	0.033	0.107
		70.0	16.7	0.0	3.3	10.8
	Arm D	0.570	0.321	0.000	0.000	0.108
		56.8	32.0	0.0	0.0	10.8
	Arm E	0.660	0.320	0.000	0.020	0.000
		66.0	32.0	0.0	2.0	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DM Scenario PM

Vary over time and entry

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 1 - 16:45 to 17:00	Arm A	4.1	20.2	8.7	11.2	55.8
	Arm B	63.2	0.7	4.4	6.7	25.0
	Arm C	70.0	16.7	0.0	3.3	10.8
	Arm D	56.8	32.0	0.0	0.0	10.8
	Arm E	66.0	32.0	0.0	2.0	0.0
Segment : 2 - 17:00 to 17:15	Arm A	4.1	20.2	8.7	11.2	55.8
	Arm B	63.2	0.7	4.4	6.7	25.0
	Arm C	70.0	16.7	0.0	3.3	10.8
	Arm D	56.8	32.0	0.0	0.0	10.8
	Arm E	66.0	32.0	0.0	2.0	0.0
Segment : 3 - 17:15 to 17:30	Arm A	4.1	20.2	8.7	11.2	55.8
	Arm B	63.2	0.7	4.4	6.7	25.0
	Arm C	70.0	16.7	0.0	3.3	10.8
	Arm D	56.8	32.0	0.0	0.0	10.8
	Arm E	66.0	32.0	0.0	2.0	0.0
Segment : 4 - 17:30 to 17:45	Arm A	4.1	20.2	8.7	11.2	55.8
	Arm B	63.2	0.7	4.4	6.7	25.0
	Arm C	70.0	16.7	0.0	3.3	10.8
	Arm D	56.8	32.0	0.0	0.0	10.8
	Arm E	66.0	32.0	0.0	2.0	0.0
Segment : 5 - 17:45 to 18:00	Arm A	4.1	20.2	8.7	11.2	55.8
	Arm B	63.2	0.7	4.4	6.7	25.0
	Arm C	70.0	16.7	0.0	3.3	10.8
	Arm D	56.8	32.0	0.0	0.0	10.8
	Arm E	66.0	32.0	0.0	2.0	0.0
Segment : 6 - 18:00 to 18:15	Arm A	4.1	20.2	8.7	11.2	55.8
	Arm B	63.2	0.7	4.4	6.7	25.0
	Arm C	70.0	16.7	0.0	3.3	10.8
	Arm D	56.8	32.0	0.0	0.0	10.8
	Arm E	66.0	32.0	0.0	2.0	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 16:45 to 17:00	A	3.03	29.25	0.104	-	0.0	0.1	1.7	-	0.038
	B	18.53	30.31	0.611	-	0.0	1.6	22.2	-	0.083
	C	0.38	7.52	0.051	-	0.0	0.1	0.8	-	0.140
	D	0.46	16.15	0.028	-	0.0	0.0	0.4	-	0.064
	E	9.70	29.87	0.325	-	0.0	0.5	7.0	-	0.049
Segment : 2 - 17:00 to 17:15	A	4.03	28.54	0.141	-	0.1	0.2	2.4	-	0.041
	B	24.70	29.83	0.828	-	1.6	4.5	60.5	-	0.182
	C	0.50	4.86	0.103	-	0.1	0.1	1.6	-	0.229
	D	0.62	12.89	0.048	-	0.0	0.1	0.7	-	0.081
	E	12.93	27.21	0.475	-	0.5	0.9	13.1	-	0.070
Segment : 3 - 17:15 to 17:30	A	4.03	28.53	0.141	-	0.2	0.2	2.5	-	0.041
	B	24.70	29.83	0.828	-	4.5	4.6	68.9	-	0.194
	C	0.50	4.78	0.105	-	0.1	0.1	1.7	-	0.234
	D	0.62	12.80	0.048	-	0.1	0.1	0.8	-	0.082
	E	12.93	27.13	0.477	-	0.9	0.9	13.5	-	0.070
Segment : 4 - 17:30 to 17:45	A	4.03	28.53	0.141	-	0.2	0.2	2.5	-	0.041
	B	24.70	29.83	0.828	-	4.6	4.7	70.2	-	0.194
	C	0.50	4.78	0.105	-	0.1	0.1	1.7	-	0.234
	D	0.62	12.79	0.048	-	0.1	0.1	0.8	-	0.082
	E	12.93	27.13	0.477	-	0.9	0.9	13.6	-	0.070
Segment : 5 - 17:45 to 18:00	A	4.03	28.53	0.141	-	0.2	0.2	2.5	-	0.041
	B	24.70	29.83	0.828	-	4.7	4.7	70.8	-	0.194
	C	0.50	4.78	0.105	-	0.1	0.1	1.7	-	0.234
	D	0.62	12.79	0.048	-	0.1	0.1	0.8	-	0.082
	E	12.93	27.13	0.477	-	0.9	0.9	13.6	-	0.070
Segment : 6 - 18:00 to 18:15	A	3.03	29.23	0.104	-	0.2	0.1	1.8	-	0.038
	B	18.53	30.30	0.612	-	4.7	1.6	25.5	-	0.088
	C	0.38	7.40	0.051	-	0.1	0.1	0.9	-	0.143
	D	0.46	15.99	0.029	-	0.1	0.0	0.5	-	0.064
	E	9.70	29.73	0.326	-	0.9	0.5	7.4	-	0.050

Appendix I Bar Hill Scheme 2021 ARCADY Assessments

ARCADY 6

GUI Version: 6.2 AF
Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information, program advice and maintenance, contact:

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Email: software@ trl.co.uk
Web:www.trlsoftware.co.uk

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Northern Roundabout\Bar Hill-Northern Roundabout AM Flat Profile.vai**
At: **14:41:10 on Friday, December 09, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 Eastbound On-Slip
Arm C	A14 Overbridge

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100

File Properties

Run Title	2021 DS Bar Hill-Northern Roundabout AM - WITH SEGREGATED LANES
Location	Northstowe
Date	08/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

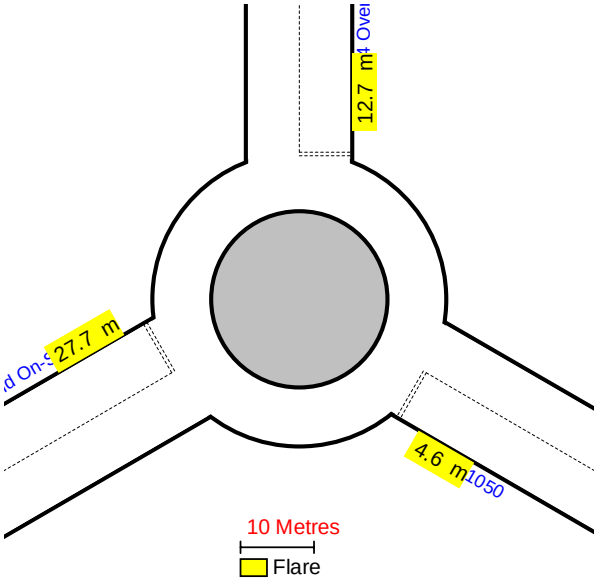
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C
Approach Road Half-Width (m)	3.75	4.50	3.65
Entry Width (m)	7.25	7.80	7.25
Flare Length (m)	4.60	27.70	12.70
Entry Radius (m)	20.00	29.00	23.00
Inscribed Circle Diameter (m)	40.00	40.00	40.00
Entry Angle (degrees)	67.00	38.00	68.00
Slope	0.515	0.710	0.558
Intercept (PCU/Min)	20.991	34.353	24.456

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(120) Arm B(120) Arm C(120)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **07:45 to 09:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DS Base AM - USING SEGREGATED LANES

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 07:45 to 08:00	A	3.00
	B	3.62
	C	5.20
Segment : 2 - 08:00 to 08:15	A	3.00
	B	3.62
	C	5.20
Segment : 3 - 08:15 to 08:30	A	3.00
	B	3.62
	C	5.20
Segment : 4 - 08:30 to 08:45	A	3.00
	B	3.62
	C	5.20
Segment : 5 - 08:45 to 09:00	A	3.00
	B	3.62
	C	5.20
Segment : 6 - 09:00 to 09:15	A	2.25
	B	2.10
	C	3.90

Turning Proportions for Demand Set: 2021 DS Base AM - USING SEGREGATED LANES

Turning proportions vary over entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C
07:45 to 09:15	Arm A	0.000	0.000	1.000
		0.0	0.0	100.0
	Arm B	0.226	0.000	0.774
		22.6	0.0	77.4
	Arm C	0.000	1.000	0.000
		0.0	100.0	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DS Base AM - USING SEGREGATED LANES

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C
07:45 to 09:15	Arm A	0.0	0.0	100.0
	Arm B	22.6	0.0	77.4
	Arm C	0.0	100.0	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 07:45 to 08:00	A	3.00	18.31	0.164	-	0.0	0.2	2.9	-	0.065
	B	3.62	32.22	0.112	-	0.0	0.1	1.9	-	0.035
	C	5.20	24.00	0.217	-	0.0	0.3	4.0	-	0.053
Segment : 2 - 08:00 to 08:15	A	3.00	18.30	0.164	-	0.2	0.2	2.9	-	0.065
	B	3.62	32.21	0.112	-	0.1	0.1	1.9	-	0.035
	C	5.20	24.00	0.217	-	0.3	0.3	4.1	-	0.053
Segment : 3 - 08:15 to 08:30	A	3.00	18.30	0.164	-	0.2	0.2	2.9	-	0.065
	B	3.62	32.21	0.112	-	0.1	0.1	1.9	-	0.035
	C	5.20	24.00	0.217	-	0.3	0.3	4.1	-	0.053
Segment : 4 - 08:30 to 08:45	A	3.00	18.30	0.164	-	0.2	0.2	2.9	-	0.065
	B	3.62	32.21	0.112	-	0.1	0.1	1.9	-	0.035
	C	5.20	24.00	0.217	-	0.3	0.3	4.1	-	0.053
Segment : 5 - 08:45 to 09:00	A	3.00	18.30	0.164	-	0.2	0.2	2.9	-	0.065
	B	3.62	32.21	0.112	-	0.1	0.1	1.9	-	0.035
	C	5.20	24.00	0.217	-	0.3	0.3	4.1	-	0.053
Segment : 6 - 09:00 to 09:15	A	2.25	18.97	0.119	-	0.2	0.1	2.1	-	0.060
	B	2.10	32.75	0.064	-	0.1	0.1	1.0	-	0.033
	C	3.90	24.19	0.161	-	0.3	0.2	2.9	-	0.049

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Northern Roundabout\Bar Hill-Northern Roundabout AM Flat Profile.vai**
At: **10:44:45 on Friday, December 09, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 Eastbound On-Slip
Arm C	A14 Overbridge

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100

File Properties

Run Title	2021 DS Bar Hill-Northern Roundabout AM
Location	Northstowe
Date	08/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	Existing Layout appears to have informal segregated lanes on Arms A & C. However no information is available for turning proportions. Model is run as is lanes do not exist. Geometic Improvements may be required.

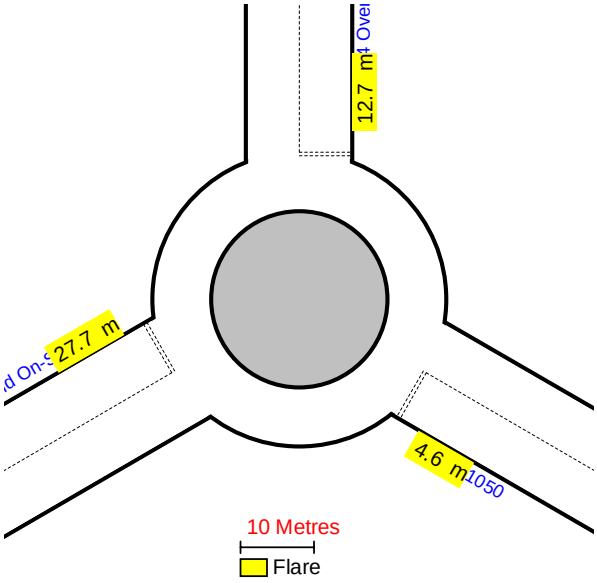
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C
Approach Road Half-Width (m)	3.75	4.50	3.65
Entry Width (m)	7.25	7.80	7.25
Flare Length (m)	4.60	27.70	12.70
Entry Radius (m)	20.00	29.00	23.00
Inscribed Circle Diameter (m)	40.00	40.00	40.00
Entry Angle (degrees)	67.00	38.00	68.00
Slope	0.515	0.710	0.558
Intercept (PCU/Min)	20.991	34.353	24.456

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(120) Arm B(120) Arm C(120)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **07:45 to 09:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DS Base AM

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 07:45 to 08:00	A	16.10
	B	2.71
	C	11.04
Segment : 2 - 08:00 to 08:15	A	21.42
	B	3.62
	C	14.72
Segment : 3 - 08:15 to 08:30	A	21.42
	B	3.62
	C	14.72
Segment : 4 - 08:30 to 08:45	A	21.42
	B	3.62
	C	14.72
Segment : 5 - 08:45 to 09:00	A	21.42
	B	3.62
	C	14.72
Segment : 6 - 09:00 to 09:15	A	16.10
	B	2.71
	C	11.04

Turning Proportions for Demand Set: 2021 DS Base AM

Turning proportions vary over entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C
07:45 to 09:15	Arm A	0.000	0.848	0.152
		0.0	84.8	15.2
	Arm B	0.226	0.000	0.774
		22.6	0.0	77.4
	Arm C	0.647	0.353	0.000
		64.7	35.3	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DS Base AM

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C
07:45 to 09:15	Arm A	0.0	84.8	15.2
	Arm B	22.6	0.0	77.4
	Arm C	64.7	35.3	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 07:45 to 08:00	A	16.10	18.99	0.848	-	0.0	4.9	62.0	-	0.287
	B	2.71	32.65	0.083	-	0.0	0.1	1.3	-	0.033
	C	11.04	24.12	0.458	-	0.0	0.8	12.1	-	0.076
Segment : 2 - 08:00 to 08:15	A	21.42	18.32	**1.169**	-	4.9	54.2	454.2	-	1.815
	B	3.62	32.40	0.112	-	0.1	0.1	1.9	-	0.035
	C	14.72	24.00	0.613	-	0.8	1.6	22.4	-	0.107
Segment : 3 - 08:15 to 08:30	A	21.42	18.31	**1.170**	-	54.2	101.1	1164.8	-	4.383
	B	3.62	32.38	0.112	-	0.1	0.1	1.9	-	0.035
	C	14.72	24.00	0.613	-	1.6	1.6	23.5	-	0.108
Segment : 4 - 08:30 to 08:45	A	21.42	18.31	**1.170**	-	101.1	147.8	1866.8	-	6.910
	B	3.62	32.38	0.112	-	0.1	0.1	1.9	-	0.035
	C	14.72	24.00	0.613	-	1.6	1.6	23.6	-	0.108
Segment : 5 - 08:45 to 09:00	A	21.42	18.31	**1.170**	-	147.8	194.5	2567.3	-	9.331
	B	3.62	32.38	0.112	-	0.1	0.1	1.9	-	0.035
	C	14.72	24.00	0.613	-	1.6	1.6	23.7	-	0.108
Segment : 6 - 09:00 to 09:15	A	16.10	18.97	0.849	-	194.5	152.8	2605.0	-	9.216
	B	2.71	32.32	0.084	-	0.1	0.1	1.4	-	0.034
	C	11.04	24.11	0.458	-	1.6	0.9	13.2	-	0.077

ARCADY 6

GUI Version: 6.2 AF
Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information, program advice and maintenance, contact:

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Email: software@ trl.co.uk
Web:www.trlsoftware.co.uk

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Northern Roundabout\Bar Hill-Northern Roundabout PM Flat Profile.vai**
At: **14:47:08 on Friday, December 09, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 Eastbound On-Slip
Arm C	A14 Overbridge

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100

File Properties

Run Title	2021 PM DS - Bar Hill-Northern Roundabout - WITH SEGEGATED LANES
Location	Northstowe
Date	09/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

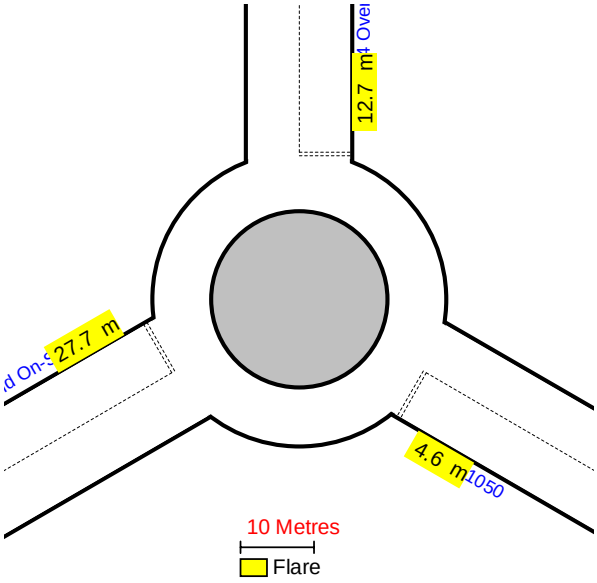
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C
Approach Road Half-Width (m)	3.75	4.50	3.65
Entry Width (m)	7.25	7.80	7.25
Flare Length (m)	4.60	27.70	12.70
Entry Radius (m)	20.00	29.00	23.00
Inscribed Circle Diameter (m)	40.00	40.00	40.00
Entry Angle (degrees)	67.00	38.00	68.00
Slope	0.515	0.710	0.558
Intercept (PCU/Min)	20.991	34.353	24.456

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(120) Arm B(120) Arm C(120)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **16:45 to 18:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DS Base PM With Segregated Lanes

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 16:45 to 17:00	A	1.69
	B	2.39
	C	4.73
Segment : 2 - 17:00 to 17:15	A	2.25
	B	3.18
	C	6.30
Segment : 3 - 17:15 to 17:30	A	2.25
	B	3.18
	C	6.30
Segment : 4 - 17:30 to 17:45	A	2.25
	B	3.18
	C	6.30
Segment : 5 - 17:45 to 18:00	A	2.25
	B	3.18
	C	6.30
Segment : 6 - 18:00 to 18:15	A	1.69
	B	2.39
	C	4.73

Turning Proportions for Demand Set: 2021 DS Base PM With Segregated Lanes

Turning proportions vary over entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C
16:45 to 18:15	Arm A	0.000	0.000	1.000
		0.0	0.0	100.0
	Arm B	0.393	0.000	0.607
		39.3	0.0	60.7
	Arm C	0.000	1.000	0.000
		0.0	100.0	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DS Base PM With Segregated Lanes

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C
16:45 to 18:15	Arm A	0.0	0.0	100.0
	Arm B	39.3	0.0	60.7
	Arm C	0.0	100.0	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 16:45 to 17:00	A	1.69	18.55	0.091	-	0.0	0.1	1.5	-	0.059
	B	2.39	33.15	0.072	-	0.0	0.1	1.1	-	0.032
	C	4.73	23.93	0.198	-	0.0	0.2	3.6	-	0.052
Segment : 2 - 17:00 to 17:15	A	2.25	17.75	0.127	-	0.1	0.1	2.1	-	0.065
	B	3.18	32.76	0.097	-	0.1	0.1	1.6	-	0.034
	C	6.30	23.76	0.265	-	0.2	0.4	5.3	-	0.057
Segment : 3 - 17:15 to 17:30	A	2.25	17.75	0.127	-	0.1	0.1	2.2	-	0.065
	B	3.18	32.75	0.097	-	0.1	0.1	1.6	-	0.034
	C	6.30	23.76	0.265	-	0.4	0.4	5.4	-	0.057
Segment : 4 - 17:30 to 17:45	A	2.25	17.75	0.127	-	0.1	0.1	2.2	-	0.065
	B	3.18	32.75	0.097	-	0.1	0.1	1.6	-	0.034
	C	6.30	23.76	0.265	-	0.4	0.4	5.4	-	0.057
Segment : 5 - 17:45 to 18:00	A	2.25	17.75	0.127	-	0.1	0.1	2.2	-	0.065
	B	3.18	32.75	0.097	-	0.1	0.1	1.6	-	0.034
	C	6.30	23.76	0.265	-	0.4	0.4	5.4	-	0.057
Segment : 6 - 18:00 to 18:15	A	1.69	18.54	0.091	-	0.1	0.1	1.5	-	0.059
	B	2.39	33.15	0.072	-	0.1	0.1	1.2	-	0.033
	C	4.73	23.93	0.198	-	0.4	0.2	3.8	-	0.052

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Northern Roundabout\Bar Hill-Northern Roundabout PM Flat Profile.vai**
At: **10:47:49 on Friday, December 09, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 Eastbound On-Slip
Arm C	A14 Overbridge

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100

File Properties

Run Title	2021 DS - Bar Hill-Northern Roundabout PM
Location	Northstowe
Date	09/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	Existing Layout appears to have informal segregated lanes on Arms A & C. However no information is available for turning proportions. Model is run as is lanes do not exist. Geometic Improvements may be required.

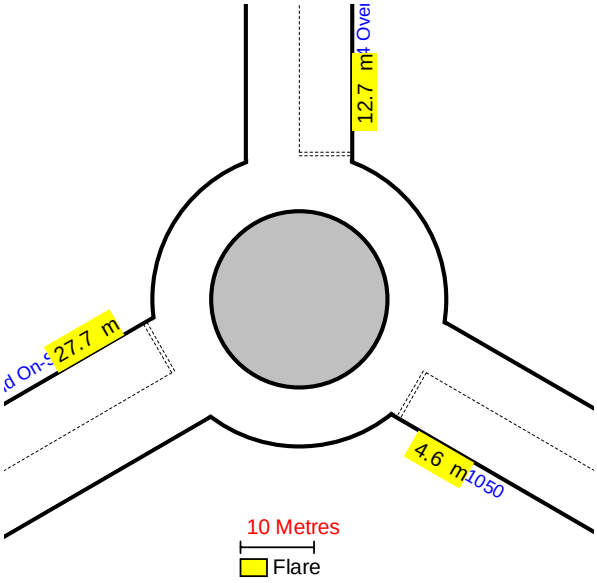
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C
Approach Road Half-Width (m)	3.75	4.50	3.65
Entry Width (m)	7.25	7.80	7.25
Flare Length (m)	4.60	27.70	12.70
Entry Radius (m)	20.00	29.00	23.00
Inscribed Circle Diameter (m)	40.00	40.00	40.00
Entry Angle (degrees)	67.00	38.00	68.00
Slope	0.515	0.710	0.558
Intercept (PCU/Min)	20.991	34.353	24.456

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(120) Arm B(120) Arm C(120)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **16:45 to 18:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DS Base PM

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 16:45 to 17:00	A	10.40
	B	2.39
	C	18.75
Segment : 2 - 17:00 to 17:15	A	13.87
	B	3.18
	C	25.00
Segment : 3 - 17:15 to 17:30	A	13.87
	B	3.18
	C	25.00
Segment : 4 - 17:30 to 17:45	A	13.87
	B	3.18
	C	25.00
Segment : 5 - 17:45 to 18:00	A	13.87
	B	3.18
	C	25.00
Segment : 6 - 18:00 to 18:15	A	10.40
	B	2.39
	C	18.75

Turning Proportions for Demand Set: 2021 DS Base PM

Turning proportions vary over entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C
16:45 to 18:15	Arm A	0.000	0.838	0.162
		0.0	83.8	16.2
	Arm B	0.393	0.000	0.607
		39.3	0.0	60.7
	Arm C	0.748	0.252	0.000
		74.8	25.2	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DS Base PM

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C
16:45 to 18:15	Arm A	0.0	83.8	16.2
	Arm B	39.3	0.0	60.7
	Arm C	74.8	25.2	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 16:45 to 17:00	A	10.40	18.59	0.560	-	0.0	1.2	17.7	-	0.120
	B	2.39	33.16	0.072	-	0.0	0.1	1.1	-	0.032
	C	18.75	23.93	0.783	-	0.0	3.4	46.1	-	0.178
Segment : 2 - 17:00 to 17:15	A	13.87	17.98	0.771	-	1.2	3.2	42.8	-	0.229
	B	3.18	32.77	0.097	-	0.1	0.1	1.6	-	0.034
	C	25.00	23.76	1.052	-	3.4	30.8	281.4	-	0.919
Segment : 3 - 17:15 to 17:30	A	13.87	17.93	0.774	-	3.2	3.3	48.7	-	0.245
	B	3.18	32.76	0.097	-	0.1	0.1	1.6	-	0.034
	C	25.00	23.76	1.052	-	30.8	51.6	620.5	-	1.895
Segment : 4 - 17:30 to 17:45	A	13.87	17.92	0.774	-	3.3	3.3	49.8	-	0.246
	B	3.18	32.76	0.097	-	0.1	0.1	1.6	-	0.034
	C	25.00	23.76	1.052	-	51.6	71.4	923.4	-	2.720
Segment : 5 - 17:45 to 18:00	A	13.87	17.91	0.774	-	3.3	3.4	50.3	-	0.246
	B	3.18	32.76	0.097	-	0.1	0.1	1.6	-	0.034
	C	25.00	23.76	1.052	-	71.4	90.7	1216.4	-	3.523
Segment : 6 - 18:00 to 18:15	A	10.40	17.92	0.580	-	3.4	1.4	22.6	-	0.138
	B	2.39	33.14	0.072	-	0.1	0.1	1.2	-	0.033
	C	18.75	23.93	0.783	-	90.7	16.9	807.5	-	2.339

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Southern Roundabout\2021 AM BASE CRAFTS WAY ROUNDABOUT.vai**
At: **09:32:31 on Tuesday, December 13, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 On/Off Slip
Arm C	Hotel Access
Arm D	Crafts way
Arm E	Saxon way

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100
Arm D	100
Arm E	100

File Properties

Run Title	2021 AM DS - CRAFTS WAY ROUNDABOUT
Location	Bar Hill Interchange - A14
Date	08/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

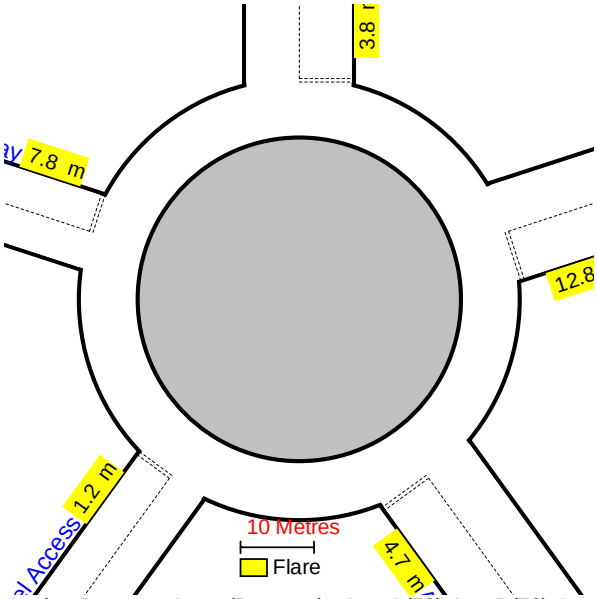
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C	Arm D	Arm E
Approach Road Half-Width (m)	4.00	6.00	2.80	3.80	6.95
Entry Width (m)	7.00	7.50	5.50	5.40	7.50
Flare Length (m)	12.80	4.70	1.20	7.80	3.80
Entry Radius (m)	28.30	20.00	9.00	20.00	17.10
Inscribed Circle Diameter (m)	64.00	64.00	64.00	64.00	64.00
Entry Angle (degrees)	9.00	49.50	16.50	6.50	20.50
Slope	0.587	0.552	0.405	0.533	0.637
Intercept (PCU/Min)	31.374	31.744	15.599	26.031	37.909

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(72) Arm B(72) Arm C(72) Arm D(72) Arm E(72)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **07:45 to 09:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DM Scenario

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 07:45 to 08:00	A	4.34
	B	12.23
	C	0.68
	D	1.83
	E	4.20
Segment : 2 - 08:00 to 08:15	A	5.78
	B	16.30
	C	0.90
	D	2.43
	E	5.60
Segment : 3 - 08:15 to 08:30	A	5.78
	B	16.30
	C	0.90
	D	2.43
	E	5.60
Segment : 4 - 08:30 to 08:45	A	5.78
	B	16.30
	C	0.90
	D	2.43
	E	5.60
Segment : 5 - 08:45 to 09:00	A	5.78
	B	16.30
	C	0.90
	D	2.43
	E	5.60
Segment : 6 - 09:00 to 09:15	A	4.34
	B	12.23
	C	0.68
	D	1.83
	E	4.20

Turning Proportions for Demand Set: 2021 DM Scenario

Turning proportions vary over time and entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 1 - 07:45 to 08:00	Arm A	0.020	0.200	0.066	0.018	0.695
		2.0	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0
Segment : 2 - 08:00 to 08:15	Arm A	0.020	0.200	0.066	0.018	0.695
		2.0	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 3 - 08:15 to 08:30	Arm A	0.020	0.200	0.066	0.018	0.695
		2.0	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0
Segment : 4 - 08:30 to 08:45	Arm A	0.020	0.200	0.066	0.018	0.695
		2.0	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0
Segment : 5 - 08:45 to 09:00	Arm A	0.020	0.200	0.066	0.018	0.695
		2.0	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0
Segment : 6 - 09:00 to 09:15	Arm A	0.020	0.200	0.066	0.018	0.695
		2.0	20.0	6.6	1.8	69.4
	Arm B	0.433	0.010	0.035	0.013	0.509
		43.3	1.0	3.5	1.3	50.8
	Arm C	0.760	0.111	0.000	0.018	0.111
		75.9	11.1	0.0	1.8	11.1
	Arm D	0.605	0.270	0.000	0.000	0.125
		63.0	28.1	0.0	0.0	13.0
	Arm E	0.723	0.271	0.000	0.006	0.000
		72.3	27.1	0.0	0.6	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DM Scenario

Vehicle percentages constant over time and entry

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
07:45 to 08:00	Arm A	2.0	20.0	6.6	1.8	69.4
	Arm B	43.3	1.0	3.5	1.3	50.8
	Arm C	75.9	11.1	0.0	1.8	11.1
	Arm D	63.0	28.1	0.0	0.0	13.0
	Arm E	72.3	27.1	0.0	0.6	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 07:45 to 08:00	A	4.34	30.29	0.143	-	0.0	0.2	2.5	-	0.038
	B	12.23	29.82	0.410	-	0.0	0.7	10.1	-	0.057
	C	0.68	9.55	0.071	-	0.0	0.1	1.1	-	0.113
	D	1.83	17.85	0.103	-	0.0	0.1	1.7	-	0.062
	E	4.20	33.02	0.127	-	0.0	0.1	2.2	-	0.035
Segment : 2 - 08:00 to 08:15	A	5.78	29.92	0.193	-	0.2	0.2	3.5	-	0.041
	B	16.30	29.18	0.559	-	0.7	1.3	18.2	-	0.077
	C	0.90	7.52	0.120	-	0.1	0.1	2.0	-	0.151
	D	2.43	15.12	0.161	-	0.1	0.2	2.8	-	0.079
	E	5.60	31.39	0.178	-	0.1	0.2	3.2	-	0.039
Segment : 3 - 08:15 to 08:30	A	5.78	29.92	0.193	-	0.2	0.2	3.6	-	0.041
	B	16.30	29.17	0.559	-	1.3	1.3	18.8	-	0.078
	C	0.90	7.51	0.120	-	0.1	0.1	2.0	-	0.151
	D	2.43	15.09	0.161	-	0.2	0.2	2.9	-	0.079
	E	5.60	31.38	0.178	-	0.2	0.2	3.3	-	0.039
Segment : 4 - 08:30 to 08:45	A	5.78	29.92	0.193	-	0.2	0.2	3.6	-	0.041
	B	16.30	29.17	0.559	-	1.3	1.3	18.9	-	0.078
	C	0.90	7.50	0.120	-	0.1	0.1	2.0	-	0.151
	D	2.43	15.09	0.161	-	0.2	0.2	2.9	-	0.079
	E	5.60	31.38	0.178	-	0.2	0.2	3.3	-	0.039
Segment : 5 - 08:45 to 09:00	A	5.78	29.92	0.193	-	0.2	0.2	3.6	-	0.041
	B	16.30	29.17	0.559	-	1.3	1.3	18.9	-	0.078
	C	0.90	7.50	0.120	-	0.1	0.1	2.0	-	0.151
	D	2.43	15.09	0.161	-	0.2	0.2	2.9	-	0.079
	E	5.60	31.38	0.178	-	0.2	0.2	3.3	-	0.039
Segment : 6 - 09:00 to 09:15	A	4.34	30.28	0.143	-	0.2	0.2	2.5	-	0.039
	B	12.23	29.81	0.410	-	1.3	0.7	10.8	-	0.057
	C	0.68	9.51	0.072	-	0.1	0.1	1.2	-	0.113
	D	1.83	17.80	0.103	-	0.2	0.1	1.8	-	0.063
	E	4.20	32.99	0.127	-	0.2	0.1	2.2	-	0.035

Run Information

Run with file:- **n:\Northstowe, Phase 1, planning application\ANALYSIS\Junction Assessments\BAR HILL\Southern Roundabout\2021 PM BASE CRAFTS WAY ROUNDABOUT.vai**
At: **11:28:58 on Friday, December 09, 2011**
Mode: **Drive On The Left**
Units: **Metric**

Arm Labelling

Arm	Full Arm Names
Arm A	B1050
Arm B	A14 On/Off Slip
Arm C	Hotel Access
Arm D	Crafts way
Arm E	Saxon way

Flow Scaling Factor

Arm	Flow Scaling Factor (%)
Arm A	100
Arm B	100
Arm C	100
Arm D	100
Arm E	100

File Properties

Run Title	2021 PM DS - CRAFTS WAY ROUNDABOUT
Location	Bar Hill Interchange - A14
Date	08/12/2011
Client	Gallagher / HCA
Enumerator	UKTDM002
Job Number	11012988
Status	On-going
Description	

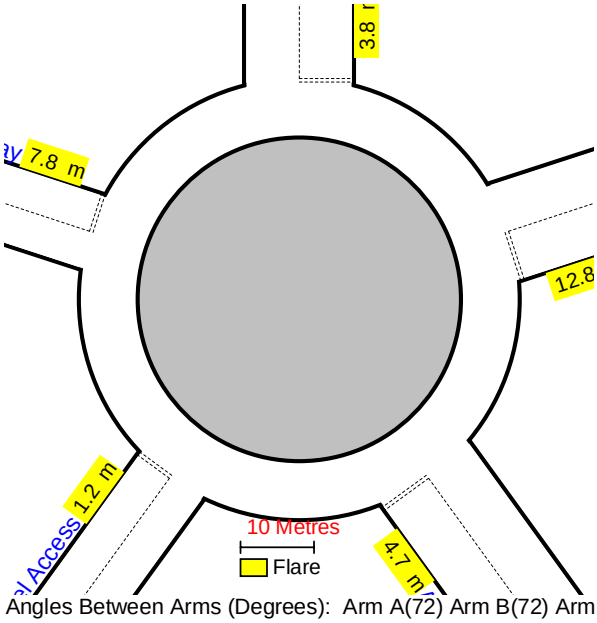
Errors and Warnings

[No errors or warnings]

Geometric Data

Data Item	Arm A	Arm B	Arm C	Arm D	Arm E
Approach Road Half-Width (m)	4.00	6.00	2.80	3.80	6.95
Entry Width (m)	7.00	7.50	5.50	5.40	7.50
Flare Length (m)	12.80	4.70	1.20	7.80	3.80
Entry Radius (m)	28.30	20.00	9.00	20.00	17.10
Inscribed Circle Diameter (m)	64.00	64.00	64.00	64.00	64.00
Entry Angle (degrees)	9.00	49.50	16.50	6.50	20.50
Slope	0.587	0.552	0.405	0.533	0.637
Intercept (PCU/Min)	31.374	31.744	15.599	26.031	37.909

Junction Diagram: (View Extent = 80m)



Angles Between Arms (Degrees): Arm A(72) Arm B(72) Arm C(72) Arm D(72) Arm E(72)

Demand Data

Demand Profiles are Synthesised using **DIRECT** Data
Period of interest (for Queue and Delay calculations): **16:45 to 18:15**
Length of Time Period: **90 min**
Length of Time Segment: **15 min**

Direct Data for Demand Set: 2021 DS Scenario PM

Time Period	Arm	Demand Data (Veh/Min)
Segment : 1 - 16:45 to 17:00	A	3.14
	B	18.60
	C	0.36
	D	0.44
	E	9.65
Segment : 2 - 17:00 to 17:15	A	4.18
	B	24.82
	C	0.48
	D	0.58
	E	12.87
Segment : 3 - 17:15 to 17:30	A	4.18
	B	24.82
	C	0.48
	D	0.58
	E	12.87
Segment : 4 - 17:30 to 17:45	A	4.18
	B	24.82
	C	0.48
	D	0.58
	E	12.87
Segment : 5 - 17:45 to 18:00	A	4.18
	B	24.82
	C	0.48
	D	0.58
	E	12.87
Segment : 6 - 18:00 to 18:15	A	3.14
	B	18.60
	C	0.36
	D	0.44
	E	9.65

Turning Proportions for Demand Set: 2021 DS Scenario PM

Turning proportions vary over time and entry and calculated from turning count data (shaded)

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 1 - 16:45 to 17:00	Arm A	0.039	0.212	0.079	0.099	0.571
		3.9	21.1	7.9	9.9	56.9
	Arm B	0.657	0.007	0.040	0.062	0.234
		65.6	0.7	4.0	6.2	23.4
	Arm C	0.656	0.206	0.000	0.034	0.103
		65.5	20.6	0.0	3.4	10.3
	Arm D	0.543	0.343	0.000	0.000	0.114
		54.3	34.3	0.0	0.0	11.4
	Arm E	0.628	0.354	0.000	0.018	0.000
		62.8	35.4	0.0	1.8	0.0
Segment : 2 - 17:00 to 17:15	Arm A	0.039	0.212	0.079	0.099	0.571
		3.9	21.1	7.9	9.9	56.9
	Arm B	0.657	0.007	0.040	0.062	0.234
		65.6	0.7	4.0	6.2	23.4
	Arm C	0.656	0.206	0.000	0.034	0.103
		65.5	20.6	0.0	3.4	10.3
	Arm D	0.543	0.343	0.000	0.000	0.114
		54.3	34.3	0.0	0.0	11.4
	Arm E	0.628	0.354	0.000	0.018	0.000
		62.8	35.4	0.0	1.8	0.0

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 3 - 17:15 to 17:30	Arm A	0.039	0.212	0.079	0.099	0.571
		3.9	21.1	7.9	9.9	56.9
	Arm B	0.657	0.007	0.040	0.062	0.234
		65.6	0.7	4.0	6.2	23.4
	Arm C	0.656	0.206	0.000	0.034	0.103
		65.5	20.6	0.0	3.4	10.3
	Arm D	0.543	0.343	0.000	0.000	0.114
		54.3	34.3	0.0	0.0	11.4
	Arm E	0.628	0.354	0.000	0.018	0.000
		62.8	35.4	0.0	1.8	0.0
Segment : 4 - 17:30 to 17:45	Arm A	0.039	0.212	0.079	0.099	0.571
		3.9	21.1	7.9	9.9	56.9
	Arm B	0.657	0.007	0.040	0.062	0.234
		65.6	0.7	4.0	6.2	23.4
	Arm C	0.656	0.206	0.000	0.034	0.103
		65.5	20.6	0.0	3.4	10.3
	Arm D	0.543	0.343	0.000	0.000	0.114
		54.3	34.3	0.0	0.0	11.4
	Arm E	0.628	0.354	0.000	0.018	0.000
		62.8	35.4	0.0	1.8	0.0
Segment : 5 - 17:45 to 18:00	Arm A	0.039	0.212	0.079	0.099	0.571
		3.9	21.1	7.9	9.9	56.9
	Arm B	0.657	0.007	0.040	0.062	0.234
		65.6	0.7	4.0	6.2	23.4
	Arm C	0.656	0.206	0.000	0.034	0.103
		65.5	20.6	0.0	3.4	10.3
	Arm D	0.543	0.343	0.000	0.000	0.114
		54.3	34.3	0.0	0.0	11.4
	Arm E	0.628	0.354	0.000	0.018	0.000
		62.8	35.4	0.0	1.8	0.0
Segment : 6 - 18:00 to 18:15	Arm A	0.039	0.212	0.079	0.099	0.571
		3.9	21.1	7.9	9.9	56.9
	Arm B	0.657	0.007	0.040	0.062	0.234
		65.6	0.7	4.0	6.2	23.4
	Arm C	0.656	0.206	0.000	0.034	0.103
		65.5	20.6	0.0	3.4	10.3
	Arm D	0.543	0.343	0.000	0.000	0.114
		54.3	34.3	0.0	0.0	11.4
	Arm E	0.628	0.354	0.000	0.018	0.000
		62.8	35.4	0.0	1.8	0.0

Heavy Vehicle Percentages for Demand Set: 2021 DS Scenario PM

Vary over time and entry

Time Period	From/To	Arm A	Arm B	Arm C	Arm D	Arm E
Segment : 1 - 16:45 to 17:00	Arm A	3.9	21.1	7.9	9.9	56.9
	Arm B	65.6	0.7	4.0	6.2	23.4
	Arm C	65.5	20.6	0.0	3.4	10.3
	Arm D	54.3	34.3	0.0	0.0	11.4
	Arm E	62.8	35.4	0.0	1.8	0.0
Segment : 2 - 17:00 to 17:15	Arm A	3.9	21.1	7.9	9.9	56.9
	Arm B	65.6	0.7	4.0	6.2	23.4
	Arm C	65.5	20.6	0.0	3.4	10.3
	Arm D	54.3	34.3	0.0	0.0	11.4
	Arm E	62.8	35.4	0.0	1.8	0.0
Segment : 3 - 17:15 to 17:30	Arm A	3.9	21.1	7.9	9.9	56.9
	Arm B	65.6	0.7	4.0	6.2	23.4
	Arm C	65.5	20.6	0.0	3.4	10.3
	Arm D	54.3	34.3	0.0	0.0	11.4
	Arm E	62.8	35.4	0.0	1.8	0.0
Segment : 4 - 17:30 to 17:45	Arm A	3.9	21.1	7.9	9.9	56.9
	Arm B	65.6	0.7	4.0	6.2	23.4
	Arm C	65.5	20.6	0.0	3.4	10.3
	Arm D	54.3	34.3	0.0	0.0	11.4
	Arm E	62.8	35.4	0.0	1.8	0.0
Segment : 5 - 17:45 to 18:00	Arm A	3.9	21.1	7.9	9.9	56.9
	Arm B	65.6	0.7	4.0	6.2	23.4
	Arm C	65.5	20.6	0.0	3.4	10.3
	Arm D	54.3	34.3	0.0	0.0	11.4
	Arm E	62.8	35.4	0.0	1.8	0.0
Segment : 6 - 18:00 to 18:15	Arm A	3.9	21.1	7.9	9.9	56.9
	Arm B	65.6	0.7	4.0	6.2	23.4
	Arm C	65.5	20.6	0.0	3.4	10.3
	Arm D	54.3	34.3	0.0	0.0	11.4
	Arm E	62.8	35.4	0.0	1.8	0.0

Queues and Delay:

Segment	Arm	Demand (Veh / Min)	Capacity (Veh / Min)	Demand / Capacity (RFC)	Ped Flow (Ped / Min)	Start Queue (Veh)	End Queue (Veh)	Delay (Veh.Min / Time Segment)	Geometric Delay (Veh.Min / Time Segment)	Arrival Delay (Min / Veh)
Segment : 1 - 16:45 to 17:00	A	3.14	29.06	0.108	-	0.0	0.1	1.8	-	0.039
	B	18.60	30.29	0.614	-	0.0	1.6	22.5	-	0.084
	C	0.36	7.45	0.048	-	0.0	0.1	0.7	-	0.141
	D	0.44	15.98	0.028	-	0.0	0.0	0.4	-	0.064
	E	9.65	29.57	0.326	-	0.0	0.5	7.1	-	0.050
Segment : 2 - 17:00 to 17:15	A	4.18	28.29	0.148	-	0.1	0.2	2.6	-	0.041
	B	24.82	29.80	0.833	-	1.6	4.6	62.2	-	0.186
	C	0.48	4.75	0.101	-	0.1	0.1	1.6	-	0.234
	D	0.58	12.66	0.046	-	0.0	0.0	0.7	-	0.083
	E	12.87	26.81	0.480	-	0.5	0.9	13.3	-	0.071
Segment : 3 - 17:15 to 17:30	A	4.18	28.28	0.148	-	0.2	0.2	2.6	-	0.042
	B	24.82	29.80	0.833	-	4.6	4.8	71.1	-	0.199
	C	0.48	4.67	0.103	-	0.1	0.1	1.7	-	0.239
	D	0.58	12.56	0.046	-	0.0	0.0	0.7	-	0.083
	E	12.87	26.73	0.482	-	0.9	0.9	13.8	-	0.072
Segment : 4 - 17:30 to 17:45	A	4.18	28.28	0.148	-	0.2	0.2	2.6	-	0.042
	B	24.82	29.80	0.833	-	4.8	4.9	72.5	-	0.200
	C	0.48	4.67	0.103	-	0.1	0.1	1.7	-	0.239
	D	0.58	12.56	0.046	-	0.0	0.0	0.7	-	0.083
	E	12.87	26.72	0.482	-	0.9	0.9	13.9	-	0.072
Segment : 5 - 17:45 to 18:00	A	4.18	28.28	0.148	-	0.2	0.2	2.6	-	0.042
	B	24.82	29.80	0.833	-	4.9	4.9	73.2	-	0.201
	C	0.48	4.67	0.103	-	0.1	0.1	1.7	-	0.239
	D	0.58	12.56	0.046	-	0.0	0.0	0.7	-	0.083
	E	12.87	26.72	0.482	-	0.9	0.9	13.9	-	0.072
Segment : 6 - 18:00 to 18:15	A	3.14	29.05	0.108	-	0.2	0.1	1.8	-	0.039
	B	18.60	30.28	0.614	-	4.9	1.6	25.9	-	0.089
	C	0.36	7.32	0.049	-	0.1	0.1	0.8	-	0.144
	D	0.44	15.82	0.028	-	0.0	0.0	0.4	-	0.065
	E	9.65	29.43	0.328	-	0.9	0.5	7.5	-	0.051

Appendix J Minor Residential Access - 2021 PICADY Assessments

PICADY

GUI Version: 5.1 AE
Analysis Program Release: 5.0 (MAY 2010)

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	N:\..\PROPOSED\Proposed Western Access Junction.vpi
Date Run	16 December 2011
Time Run	15:19:51
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	B1050 Northbound	100
Arm B	Development Access	100
Arm C	B1050 Southbound	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	Proposed Western Access Junction
Location	Northstowe
Date	05 December 2011
Enumerator	ukddd001 [W11UK0063]
Job Number	-
Status	-
Client	-
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

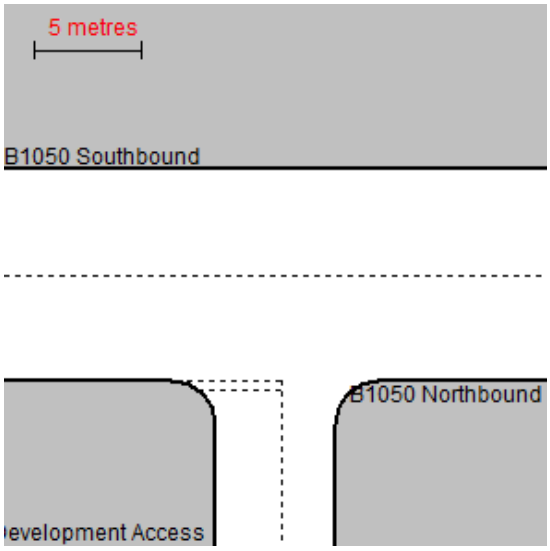
Parameter	Minor Arm B
Major Road Carriageway Width (m)	7.50
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road First Lane Width (m)	3.00
Minor Road Visibility To Right (m)	70
Minor Road Visibility To Left (m)	100
Major Road Right Turn Visibility (m)	80
Major Road Right Turn Blocks Traffic	Yes (if over 0 veh)

Slope and Intercept Values

Stream	Intercept for Stream	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	545.333	0.093	0.235	0.148	0.335
B-C	668.004	0.096	0.242	-	-
C-B	620.292	0.225	0.225	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	07:45-09:15	90	15
Second Modelling Period	16:45-18:15	90	15

ODTAB Turning Counts

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

From / To	Arm A	Arm B	Arm C
Arm A	0.0	5.0	530.0
Arm B	15.0	0.0	10.0
Arm C	910.0	7.0	0.0

Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

From / To	Arm A	Arm B	Arm C
Arm A	0.0	13.0	583.0
Arm B	6.0	0.0	6.0
Arm C	645.0	13.0	0.0

ODTAB Synthesised Flows

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

Arm	Rising Time	Rising Flow (veh / min)	Peak Time	Peak Flow (veh / min)	Falling Time	Falling Flow (veh / min)
Arm A	08:00	6.688	08:30	10.031	09:00	6.688
Arm B	08:00	0.313	08:30	0.469	09:00	0.313
Arm C	08:00	11.462	08:30	17.194	09:00	11.462

Heavy Vehicles Percentages

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

From / To	Arm A	Arm B	Arm C
Arm A	-	0.0	0.0
Arm B	0.0	-	0.0
Arm C	0.0	0.0	-

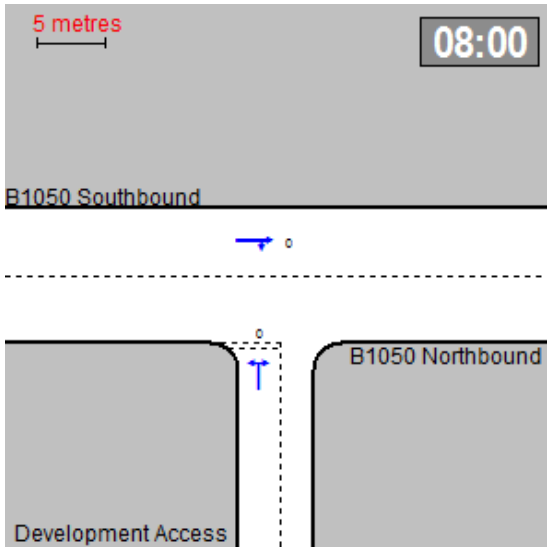
Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

From / To	Arm A	Arm B	Arm C
Arm A	-	0.0	0.0
Arm B	0.0	-	0.0
Arm C	0.0	0.0	-

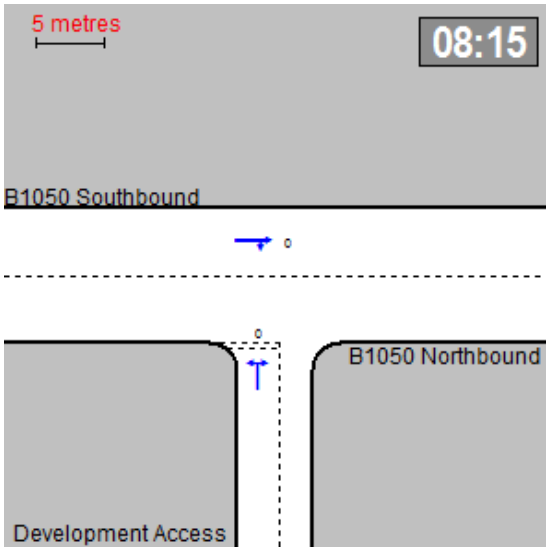
Queue Diagrams

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15
View Extent: 40m

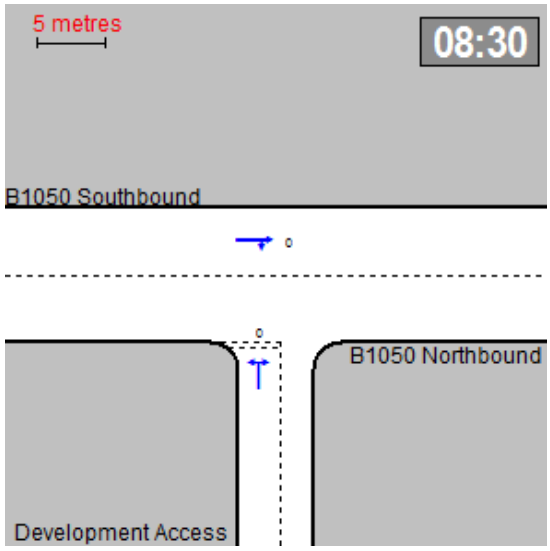
Queue Interval 1: 07:45-08:00



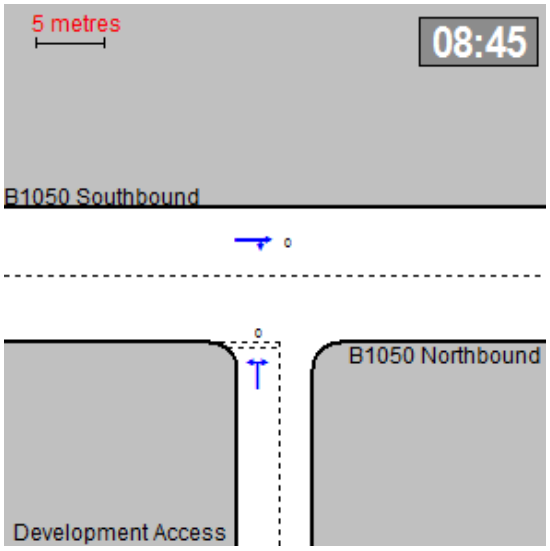
Queue Interval 2: 08:00-08:15



Queue Interval 3: 08:15-08:30

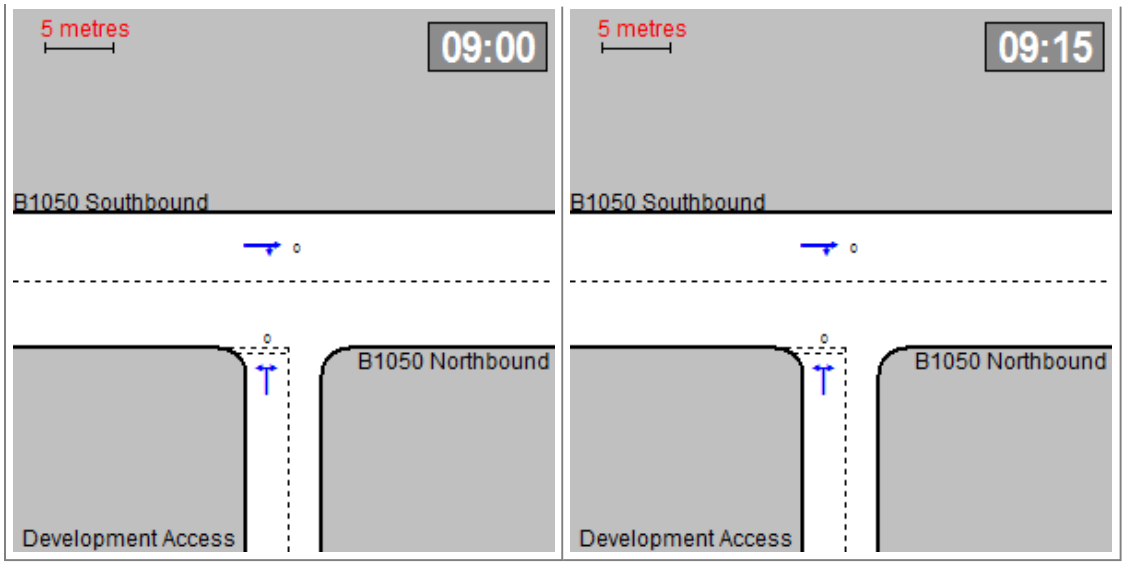


Queue Interval 4: 08:30-08:45



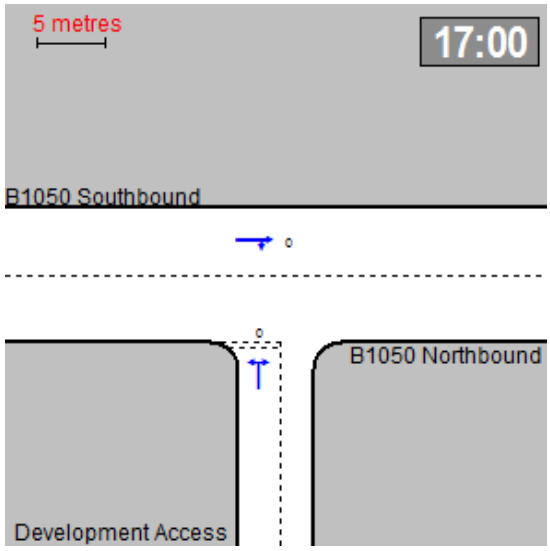
Queue Interval 5: 08:45-09:00

Queue Interval 6: 09:00-09:15

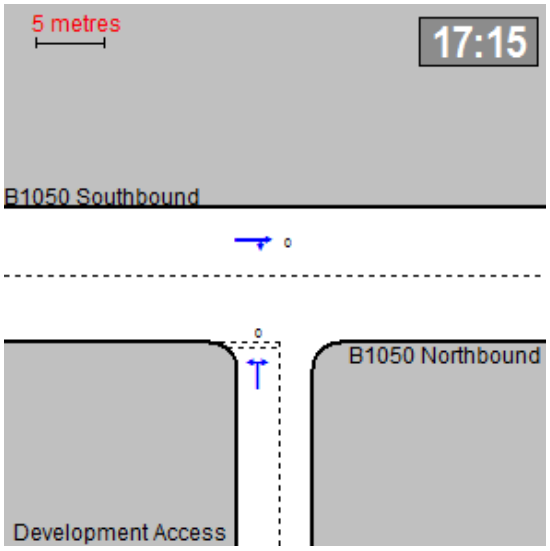

5 metres
09:00
B1050 Southbound
B1050 Northbound
Development Access
5 metres
09:15
B1050 Southbound
B1050 Northbound
Development Access

Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15
View Extent: 40m

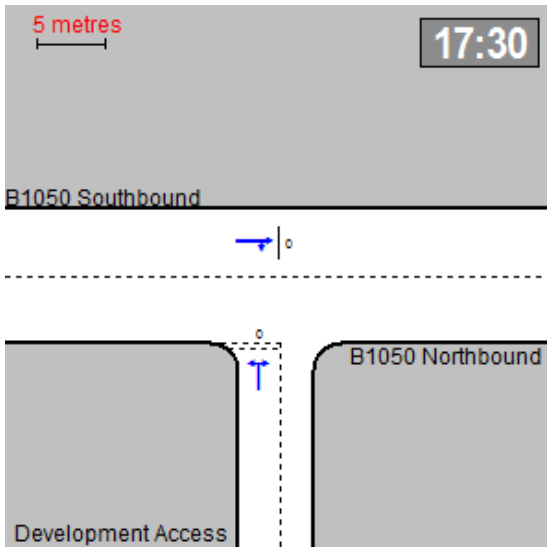
Queue Interval 1: 16:45-17:00



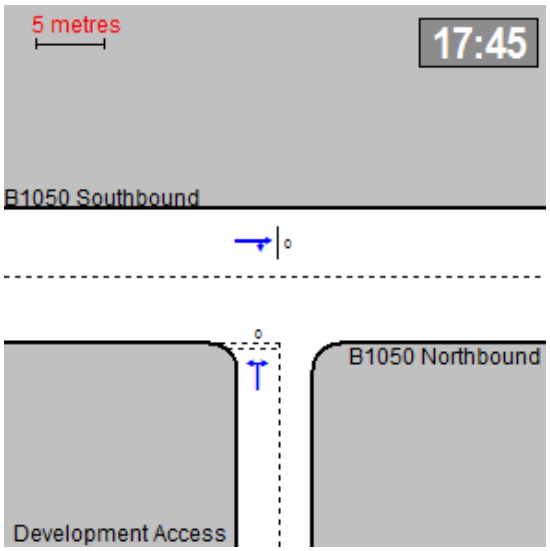
Queue Interval 2: 17:00-17:15



Queue Interval 3: 17:15-17:30

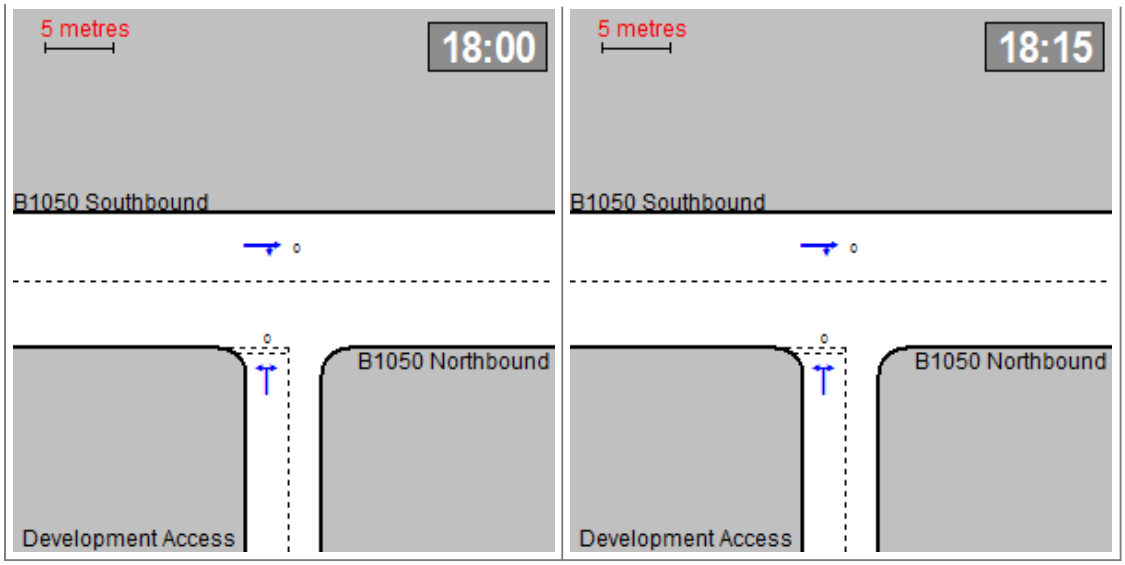


Queue Interval 4: 17:30-17:45



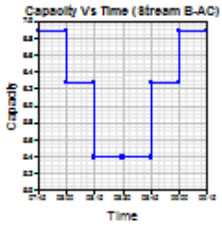
Queue Interval 5: 17:45-18:00

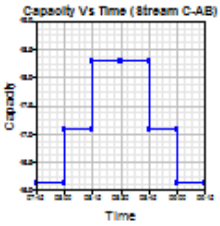
Queue Interval 6: 18:00-18:15


5 metres
18:00
B1050 Southbound
B1050 Northbound
Development Access
5 metres
18:15
B1050 Southbound
B1050 Northbound
Development Access

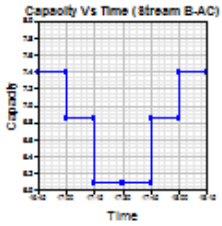
Capacity Graph

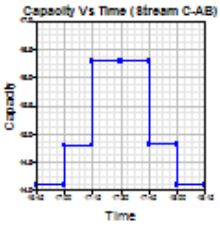
Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15





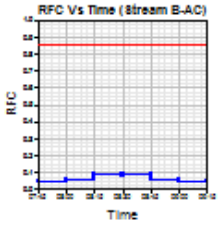
Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

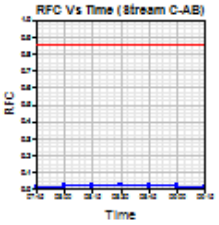




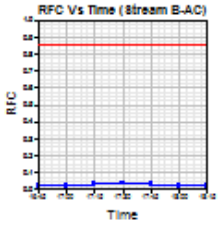
RFC Graph

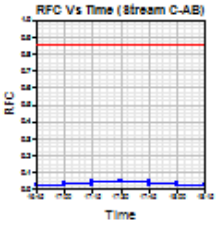
Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15





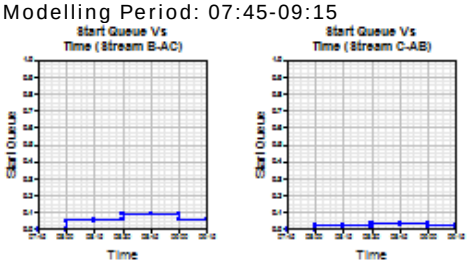
Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15



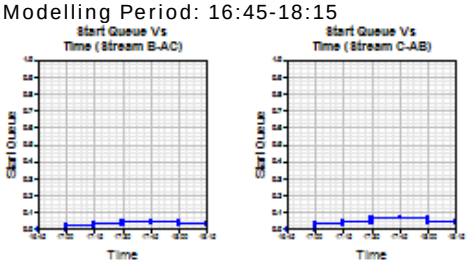


Start Queue Graph

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

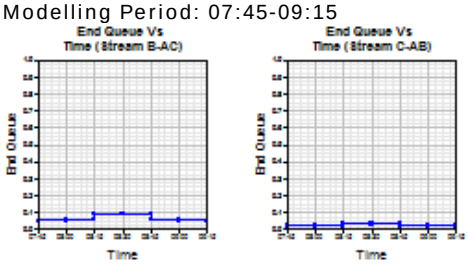


Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

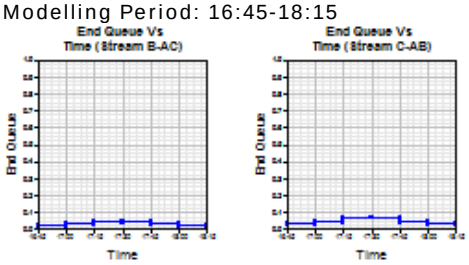


End Queue Graph

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

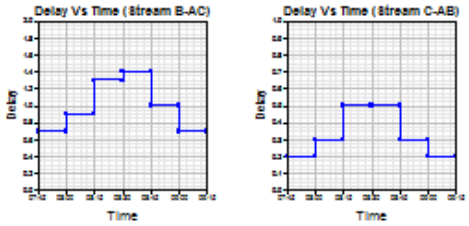


Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

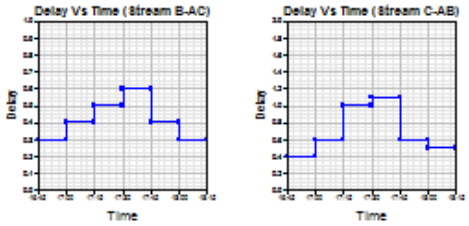


Delay Graph

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15



Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15



Queues & Delays

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-AC	0.31	6.88	0.046	-	0.00	0.05	-	0.7	0.15
	C-AB	0.22	16.12	0.014	-	0.00	0.02	-	0.2	0.06
	C-A	11.28	-	-	-	-	-	-	-	-
	A-B	0.06	-	-	-	-	-	-	-	-
	A-C	6.65	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-AC	0.37	6.27	0.060	-	0.05	0.06	-	0.9	0.17
	C-AB	0.31	17.08	0.018	-	0.02	0.02	-	0.3	0.06
	C-A	13.43	-	-	-	-	-	-	-	-
	A-B	0.07	-	-	-	-	-	-	-	-
	A-C	7.94	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-AC	0.46	5.39	0.085	-	0.06	0.09	-	1.3	0.20
	C-AB	0.45	18.28	0.025	-	0.02	0.03	-	0.5	0.06
	C-A	16.38	-	-	-	-	-	-	-	-
	A-B	0.09	-	-	-	-	-	-	-	-
	A-C	9.73	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-AC	0.46	5.39	0.085	-	0.09	0.09	-	1.4	0.20
	C-AB	0.45	18.28	0.025	-	0.03	0.03	-	0.5	0.06
	C-A	16.38	-	-	-	-	-	-	-	-
	A-B	0.09	-	-	-	-	-	-	-	-
	A-C	9.73	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-AC	0.37	6.27	0.060	-	0.09	0.06	-	1.0	0.17
	C-AB	0.31	17.08	0.018	-	0.03	0.02	-	0.3	0.06
	C-A	13.43	-	-	-	-	-	-	-	-
	A-B	0.07	-	-	-	-	-	-	-	-
	A-C	7.94	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-AC	0.31	6.88	0.046	-	0.06	0.05	-	0.7	0.15
	C-AB	0.22	16.12	0.014	-	0.02	0.02	-	0.2	0.06
	C-A	11.28	-	-	-	-	-	-	-	-
	A-B	0.06	-	-	-	-	-	-	-	-
	A-C	6.65	-	-	-	-	-	-	-	-

Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-AC	0.15	7.39	0.020	-	0.00	0.02	-	0.3	0.14
	C-AB	0.34	14.10	0.024	-	0.00	0.03	-	0.4	0.07
	C-A	7.92	-	-	-	-	-	-	-	-
	A-B	0.16	-	-	-	-	-	-	-	-
	A-C	7.32	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-AC	0.18	6.85	0.026	-	0.02	0.03	-	0.4	0.15
	C-AB	0.46	14.80	0.031	-	0.03	0.04	-	0.6	0.07
	C-A	9.40	-	-	-	-	-	-	-	-
	A-B	0.19	-	-	-	-	-	-	-	-

	A-C	8.74	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-AC	0.22	6.08	0.036	-	0.03	0.04	-	0.5	0.17
	C-AB	0.77	16.28	0.047	-	0.04	0.07	-	1.0	0.06
	C-A	11.31	-	-	-	-	-	-	-	-
	A-B	0.24	-	-	-	-	-	-	-	-
	A-C	10.70	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-AC	0.22	6.08	0.036	-	0.04	0.04	-	0.6	0.17
	C-AB	0.77	16.28	0.047	-	0.07	0.07	-	1.1	0.06
	C-A	11.31	-	-	-	-	-	-	-	-
	A-B	0.24	-	-	-	-	-	-	-	-
	A-C	10.70	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-AC	0.18	6.85	0.026	-	0.04	0.03	-	0.4	0.15
	C-AB	0.46	14.81	0.031	-	0.07	0.04	-	0.6	0.07
	C-A	9.40	-	-	-	-	-	-	-	-
	A-B	0.19	-	-	-	-	-	-	-	-
	A-C	8.74	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-AC	0.15	7.39	0.020	-	0.03	0.02	-	0.3	0.14
	C-AB	0.34	14.10	0.024	-	0.04	0.03	-	0.5	0.07
	C-A	7.92	-	-	-	-	-	-	-	-
	A-B	0.16	-	-	-	-	-	-	-	-
	A-C	7.32	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-AC	34.4	22.9	6.0	0.2	6.0	0.2
C-AB	29.4	19.6	2.0	0.1	2.0	0.1
C-A	1232.8	821.9	-	-	-	-
A-B	6.9	4.6	-	-	-	-
A-C	729.5	486.3	-	-	-	-
All	2033.0	1355.3	8.1	0.0	8.1	0.0

Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-AC	16.5	11.0	2.5	0.2	2.5	0.2
C-AB	46.9	31.3	4.2	0.1	4.2	0.1
C-A	858.8	572.5	-	-	-	-
A-B	17.9	11.9	-	-	-	-
A-C	802.5	535.0	-	-	-	-
All	1742.6	1161.7	6.8	0.0	6.8	0.0

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period.
These will only be significantly different if there is a large queue remaining at the end of the time period.

PICADY 5 Run Successful

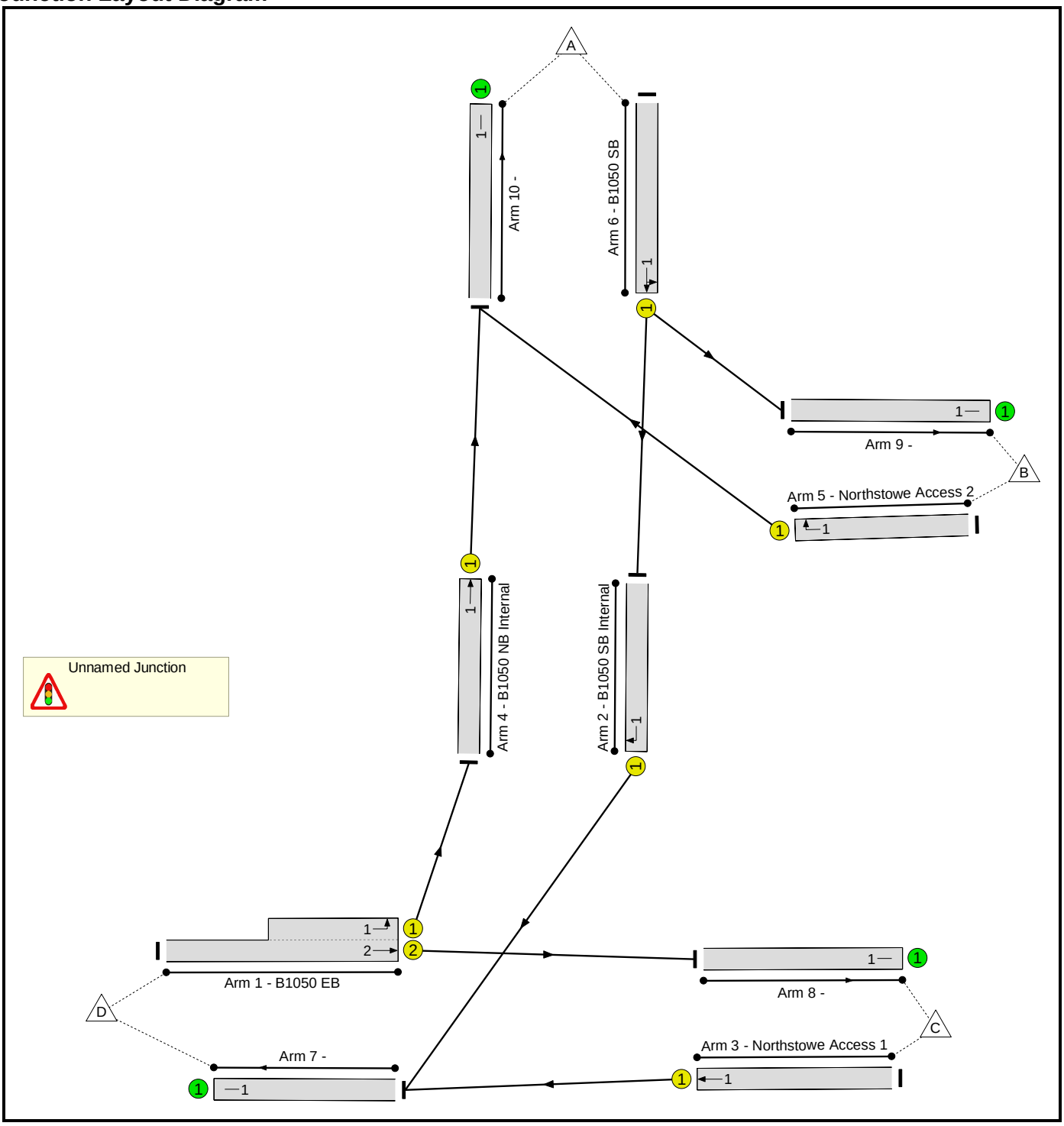
Appendix K Main Site Signal Access - 2021 LINSIG Assessments

TA Report

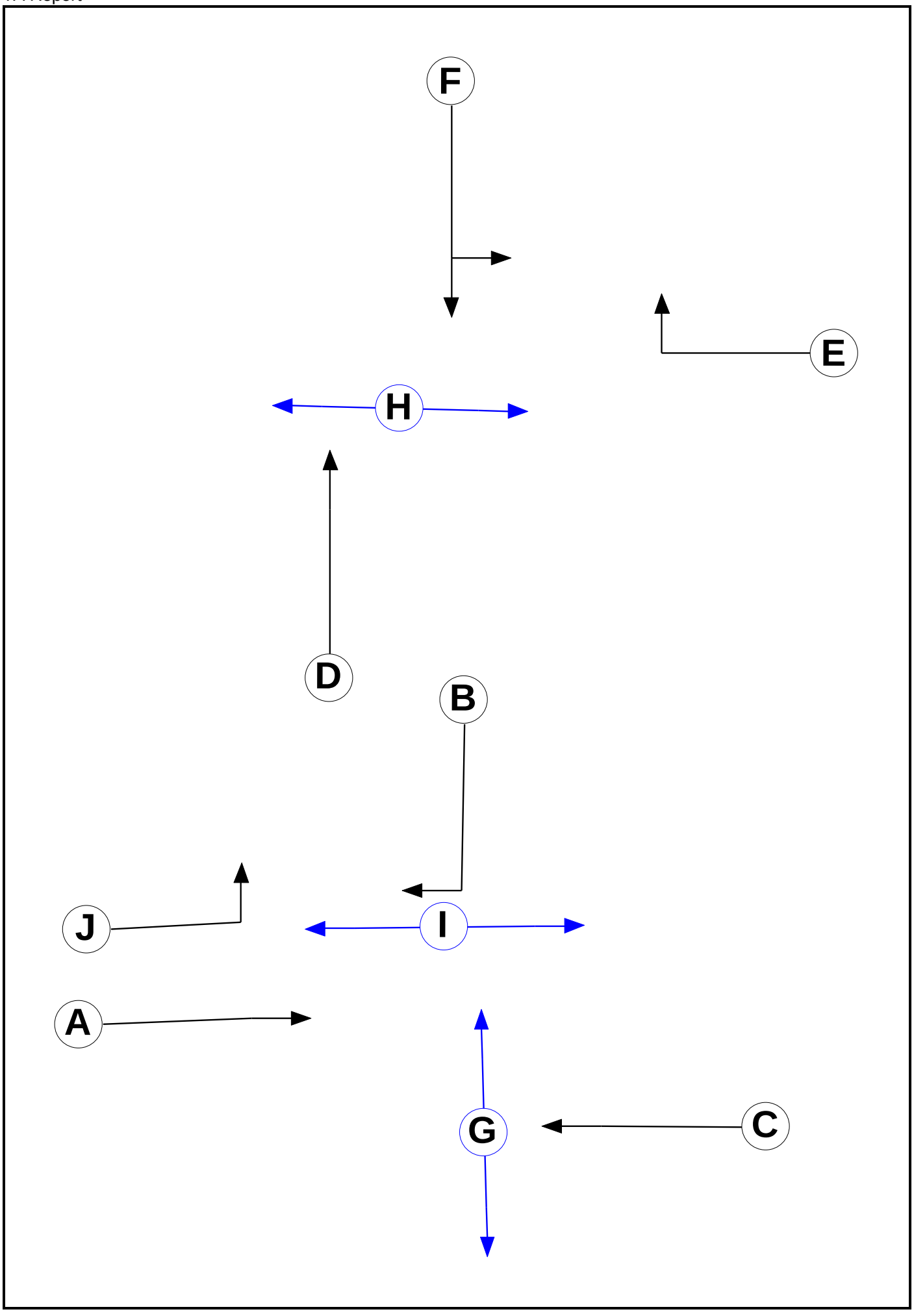
User and Project Details

Project:	**Northstowe**
Title:	
Location:	
File name:	Proposed Access Junction.lsg3x
Author:	
Company:	
Address:	
Notes:	

Junction Layout Diagram



Phase Diagram


F
E
H
D
B
J
I
A
G
C

Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	1		7	7
D	Traffic	2		7	7
E	Traffic	2		7	7
F	Traffic	2		7	7
G	Pedestrian	1		4	4
H	Pedestrian	2		4	4
I	Pedestrian	1		5	5
J	Traffic	1		7	7

Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J
A		5	-	-	-	-	7	-	-	-
B	5		5	-	-	-	-	-	5	5
C	-	5		-	-	-	5	-	-	-
D	-	-	-		5	-	-	5	-	-
E	-	-	-	5		5	-	-	-	-
F	-	-	-	-	5		-	7	-	-
G	11	-	11	-	-	-		-	-	-
H	-	-	-	8	-	8	-		-	-
I	-	9	-	-	-	-	-	-		9
J	-	9	-	-	-	-	-	-	6	

Scenario 1: '2021 Phase 1 Modelled Flows AM Peak' (FG5: '2021 Phase 1 Modelled Flows AM Peak', Plan 1: 'Network Control Plan 1')

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	B1050 EB Ahead	Traffic	1	33	5	38
B	B1050 SB Internal Right	Traffic	1	28	47	0
C	Northstowe Access 1 Ahead	Traffic	1	33	5	38
D	B1050 NB Internal Ahead	Traffic	2	55	50	30
E	Northstowe Access 2 Right	Traffic	2	7	35	42
F	B1050 SB Ahead Left	Traffic	2	55	50	30
G	Pedestrians across	Pedestrian	1	10	45	55
H	Pedestrians across	Pedestrian	2	5	37	42
I	Pedestrians across	Pedestrian	1	5	33	38
J	B1050 EB Left	Traffic	1	22	5	27

TA Report

TA Report

Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**72.4%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**72.4%**
1/2+1/1	B1050 EB Left Ahead	U	1	N/A	A J		1	33:22	-	533	1929:1929	743	71.7%
2/1	B1050 SB Internal Right	U	1	N/A	B		1	28	-	540	1929	746	72.4%
3/1	Northstowe Access 1 Ahead	U	1	N/A	C		1	33	-	380	1965	891	42.7%
4/1	B1050 NB Internal Ahead	U	2	N/A	D		1	55	-	391	1965	1467	26.6%
5/1	Northstowe Access 2 Right	U	2	N/A	E		1	7	-	84	1747	186	45.1%
6/1	B1050 SB Ahead Left	U	2	N/A	F		1	55	-	587	1965	1467	40.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**8.5**	**3.8**	**0.0**	**12.3**	-	-	-	-
Unnamed Junction	-	-	**0**	**0**	**0**	**8.5**	**3.8**	**0.0**	**12.3**	-	-	-	-
1/2+1/1	533	533	-	-	-	2.9	1.3	-	4.2	28.3	7.1	1.3	8.3
2/1	540	540	-	-	-	2.6	1.3	-	3.9	25.8	6.2	1.3	7.5
3/1	380	380	-	-	-	1.5	0.4	-	1.8	17.4	5.3	0.4	5.6
4/1	391	391	-	-	-	0.2	0.2	-	0.4	3.8	1.1	0.2	1.3
5/1	84	84	-	-	-	0.7	0.4	-	1.1	48.9	1.6	0.4	2.0
6/1	587	587	-	-	-	0.6	0.3	-	0.9	5.5	4.4	0.3	4.7

C1 Stream: 1 PRC for Signalled Lanes (%): 24.3 — Total Delay for Signalled Lanes (pcuHr): 9.90 — Cycle Time (s): 75

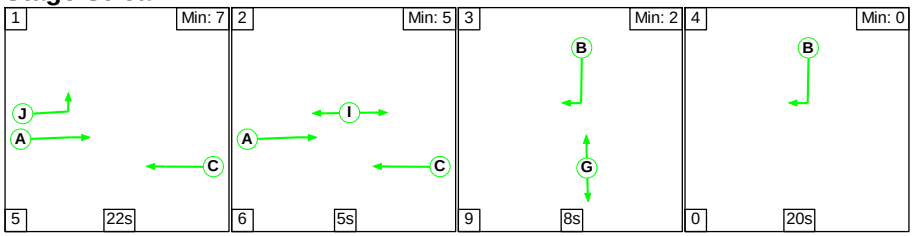
C1 Stream: 2 PRC for Signalled Lanes (%): 99.7 — Total Delay for Signalled Lanes (pcuHr): 2.45 — Cycle Time (s): 75

PRC Over All Lanes (%): 24.3 — Total Delay Over All Lanes(pcuHr): 12.35

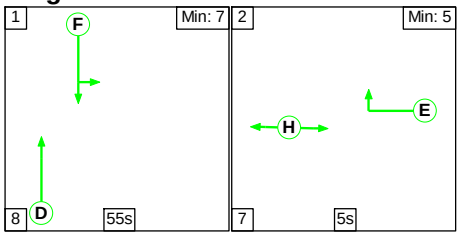
TA Report

Staging Plan Diagram

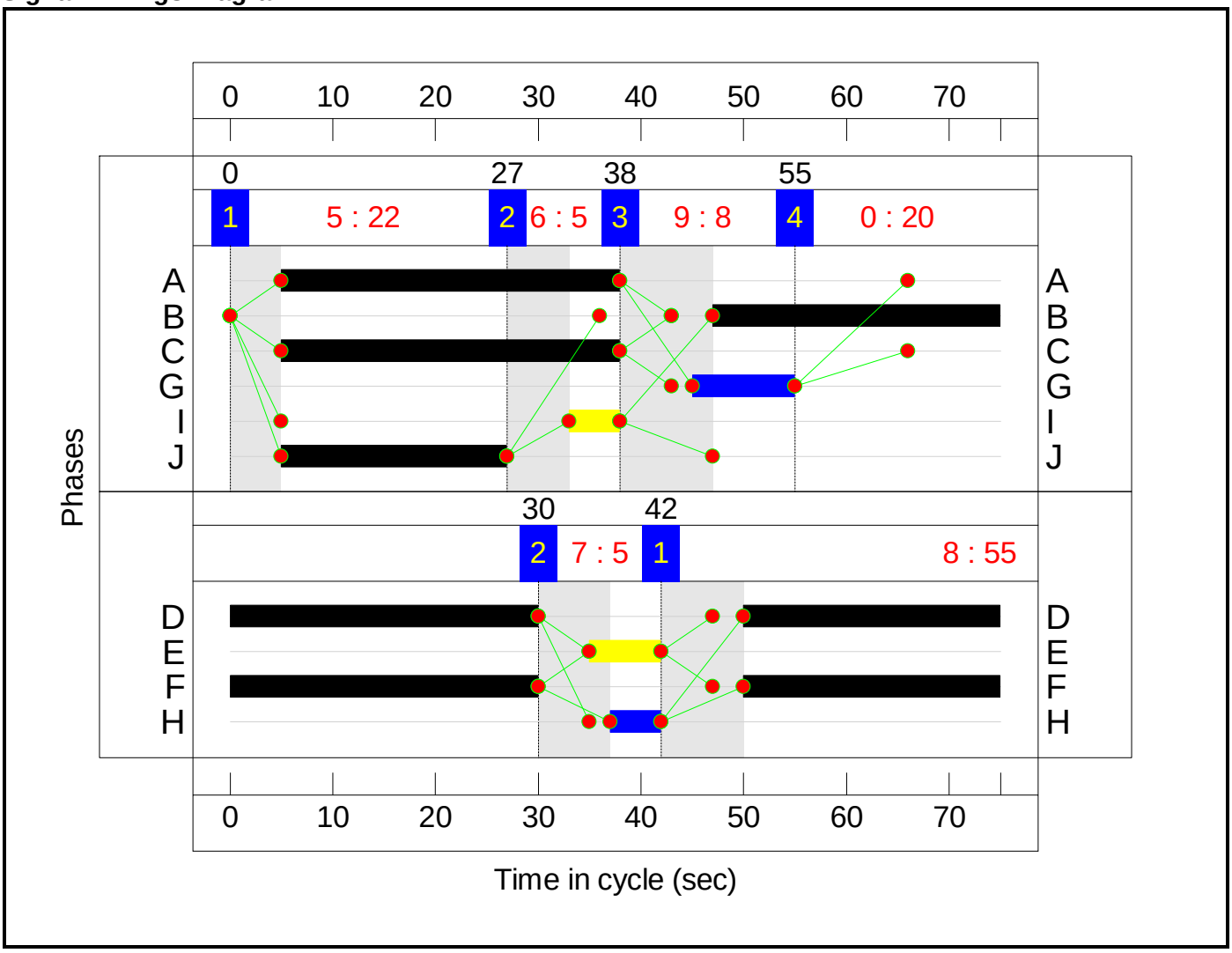
Stage Stream: 1



Stage Stream: 2



Signal Timings Diagram



Scenario 2: '2021 Phase 1 Modelled Flows PM Peak' (FG6: '2021 Phase 1 Modelled Flows PM Peak', Plan 1: 'Network Control Plan 1')

Phase Timings

Phase Name	Description	Phase	Stage Stream	Green Period 1		
				Total Green	Start Time	End Time
A	B1050 EB Ahead	Traffic	1	52	62	24
B	B1050 SB Internal Right	Traffic	1	24	33	57
C	Northstowe Access 1 Ahead	Traffic	1	52	62	24
D	B1050 NB Internal Ahead	Traffic	2	69	40	19
E	Northstowe Access 2 Right	Traffic	2	8	24	32
F	B1050 SB Ahead Left	Traffic	2	69	40	19
G	Pedestrians across	Pedestrian	1	4	31	35
H	Pedestrians across	Pedestrian	2	6	26	32
I	Pedestrians across	Pedestrian	1	5	19	24
J	B1050 EB Left	Traffic	1	41	62	13

TA Report

Link Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**86.6%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**86.6%**
1/2+1/1	B1050 EB Left Ahead	U	1	N/A	A J		1	52:41	-	971	1929:1929	1122	86.5%
2/1	B1050 SB Internal Right	U	1	N/A	B		1	24	-	464	1929	536	86.6%
3/1	Northstowe Access 1 Ahead	U	1	N/A	C		1	52	-	185	1965	1157	16.0%
4/1	B1050 NB Internal Ahead	U	2	N/A	D		1	69	-	596	1965	1528	39.0%
5/1	Northstowe Access 2 Right	U	2	N/A	E		1	8	-	57	1747	175	32.6%
6/1	B1050 SB Ahead Left	U	2	N/A	F		1	69	-	537	1965	1528	35.1%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**0**	**0**	**9.9**	**7.0**	**0.0**	**16.9**	-	-	-	-
Unnamed Junction	-	-	**0**	**0**	**0**	**9.9**	**7.0**	**0.0**	**16.9**	-	-	-	-
1/2+1/1	971	971	-	-	-	4.2	3.1	-	7.3	27.2	14.6	3.1	17.6
2/1	464	464	-	-	-	4.0	3.0	-	7.0	54.4	8.6	3.0	11.6
3/1	185	185	-	-	-	0.4	0.1	-	0.5	10.3	2.1	0.1	2.2
4/1	596	596	-	-	-	0.2	0.3	-	0.5	2.9	0.8	0.3	1.1
5/1	57	57	-	-	-	0.6	0.2	-	0.8	52.9	1.3	0.2	1.6
6/1	537	537	-	-	-	0.5	0.3	-	0.7	4.9	4.0	0.3	4.3

C1 Stream: 1 PRC for Signalled Lanes (%): 3.9
C1 Stream: 2 PRC for Signalled Lanes (%): 130.8
PRC Over All Lanes (%): 3.9

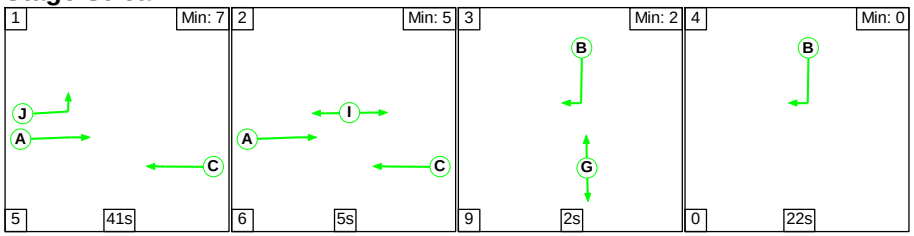
Total Delay for Signalled Lanes (pcuHr): 14.87
Total Delay for Signalled Lanes (pcuHr): 2.04
Total Delay Over All Lanes(pcuHr): 16.91

Cycle Time (s): 90
Cycle Time (s): 90

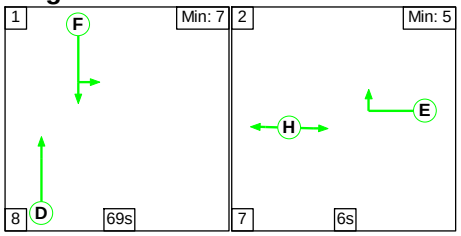
TA Report

Staging Plan Diagram

Stage Stream: 1

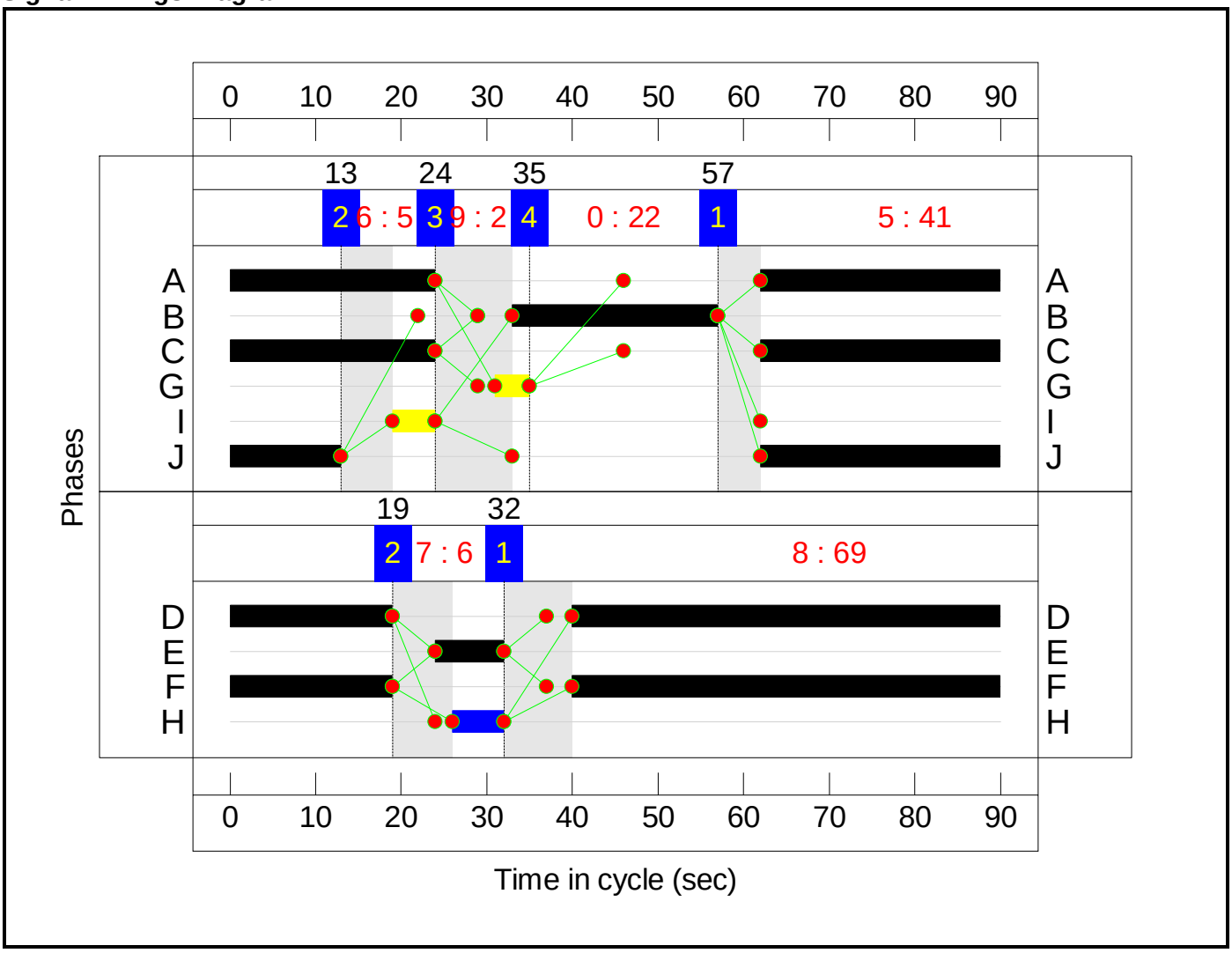


Stage Stream: 2



TA Report

Signal Timings Diagram



Appendix L Employment Access - 2021 PICADY Assessments

PICADY

GUI Version: 5.1 AE
Analysis Program Release: 5.0 (MAY 2010)

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax: +44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	N:\..\PROPOSED\Proposed Employment Access Junction.vpi
Date Run	16 December 2011
Time Run	15:20:54
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	B1050 Southbound	100
Arm B	Employment Access	100
Arm C	B1050 Northbound	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	Proposed Employment Access Junction
Location	Northstowe
Date	05 December 2011
Enumerator	ukddd001 [W11UK0063]
Job Number	-
Status	-
Client	-
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

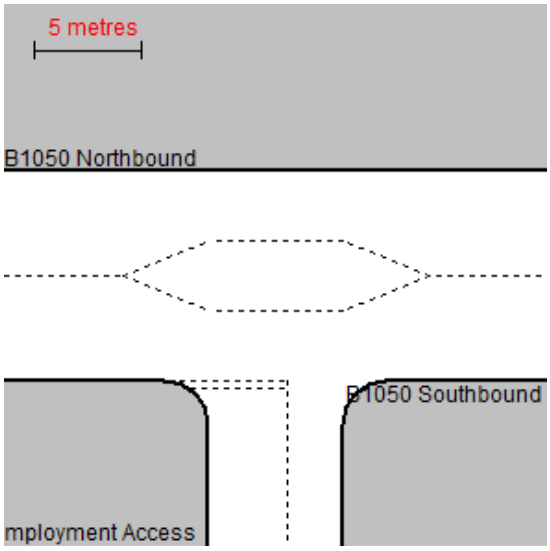
Parameter	Minor Arm B
Major Road Carriageway Width (m)	6.40
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	3.20
Minor Road First Lane Width (m)	3.65
Minor Road Visibility To Right (m)	100
Minor Road Visibility To Left (m)	100
Major Road Right Turn Visibility (m)	250
Major Road Right Turn Blocks Traffic	Yes (if over 6 veh)

Slope and Intercept Values

Stream	Intercept for Stream	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	597.243	0.107	0.270	0.170	0.386
B-C	731.590	0.110	0.279	-	-
C-B	796.964	0.303	0.303	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	07:45-09:15	90	15
Second Modelling Period	16:45-18:15	90	15

ODTAB Turning Counts

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

From / To	Arm A	Arm B	Arm C
Arm A	0.0	25.0	562.0
Arm B	10.0	0.0	10.0
Arm C	431.0	45.0	0.0

Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

From / To	Arm A	Arm B	Arm C
Arm A	0.0	8.0	531.0
Arm B	20.0	0.0	40.0
Arm C	772.0	10.0	0.0

ODTAB Synthesised Flows

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

Arm	Rising Time	Rising Flow (veh / min)	Peak Time	Peak Flow (veh / min)	Falling Time	Falling Flow (veh / min)
Arm A	08:00	7.338	08:30	11.006	09:00	7.338
Arm B	08:00	0.250	08:30	0.375	09:00	0.250
Arm C	08:00	5.950	08:30	8.925	09:00	5.950

Heavy Vehicles Percentages

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

From / To	Arm A	Arm B	Arm C
Arm A	-	0.0	0.0
Arm B	0.0	-	0.0
Arm C	0.0	0.0	-

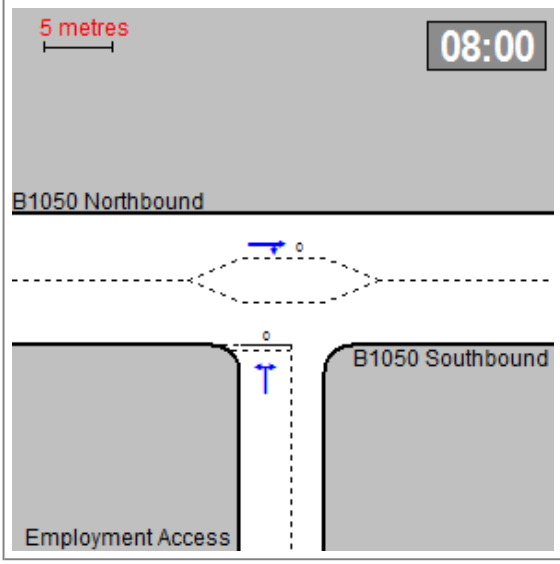
Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

From / To	Arm A	Arm B	Arm C
Arm A	-	0.0	0.0
Arm B	0.0	-	0.0
Arm C	0.0	0.0	-

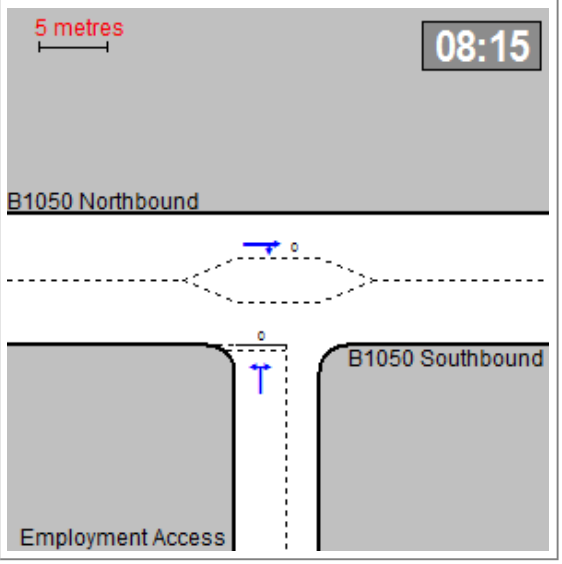
Queue Diagrams

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15
View Extent: 40m

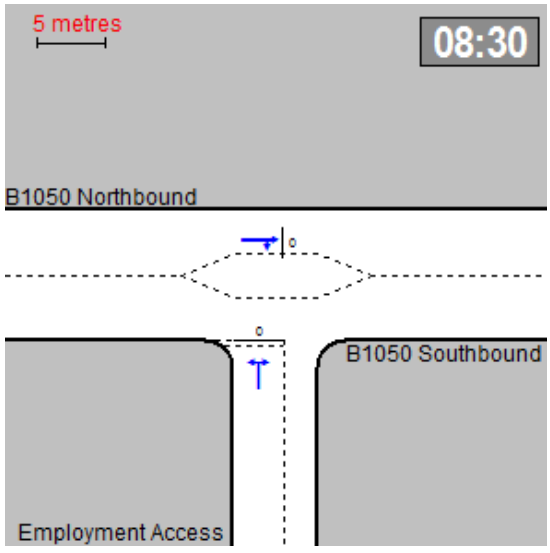
Queue Interval 1: 07:45-08:00



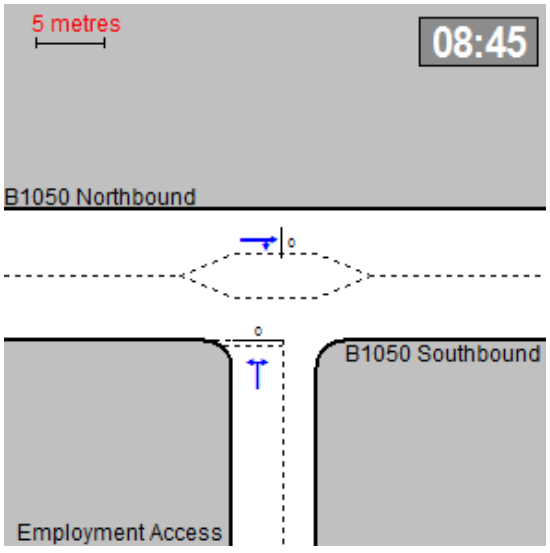
Queue Interval 2: 08:00-08:15



Queue Interval 3: 08:15-08:30

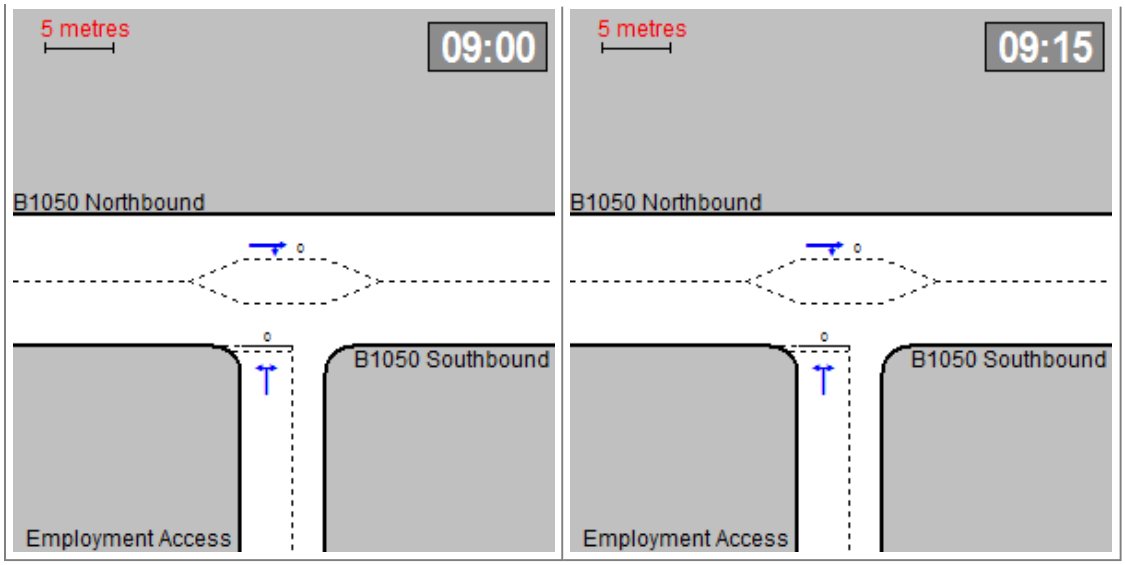


Queue Interval 4: 08:30-08:45



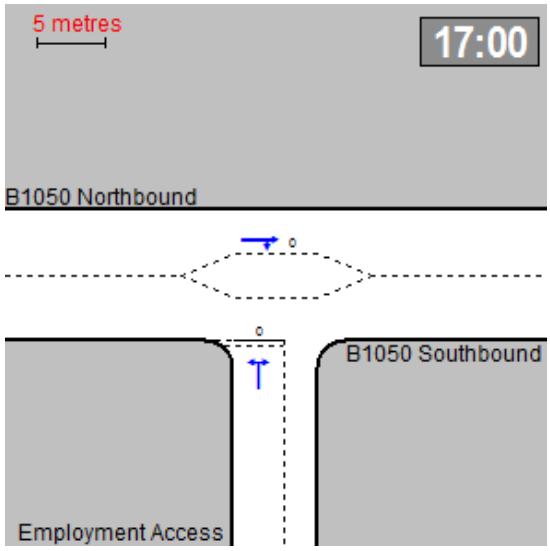
Queue Interval 5: 08:45-09:00

Queue Interval 6: 09:00-09:15

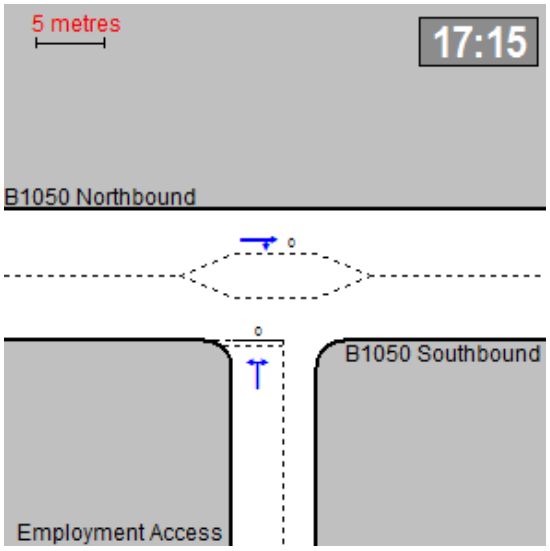

5 metres
09:00
B1050 Northbound
B1050 Southbound
Employment Access
5 metres
09:15
B1050 Northbound
B1050 Southbound
Employment Access

Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15
View Extent: 40m

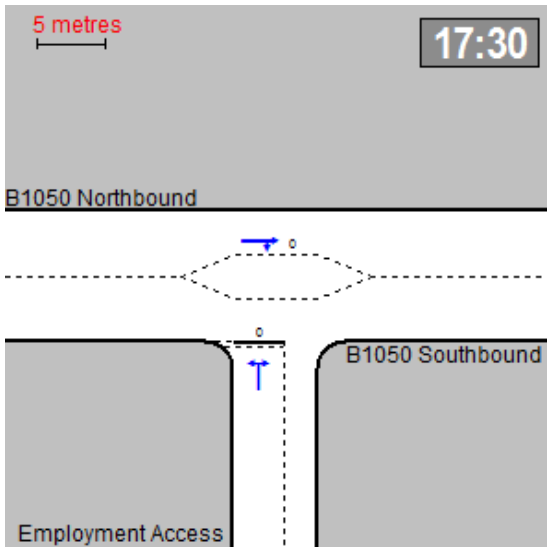
Queue Interval 1: 16:45-17:00



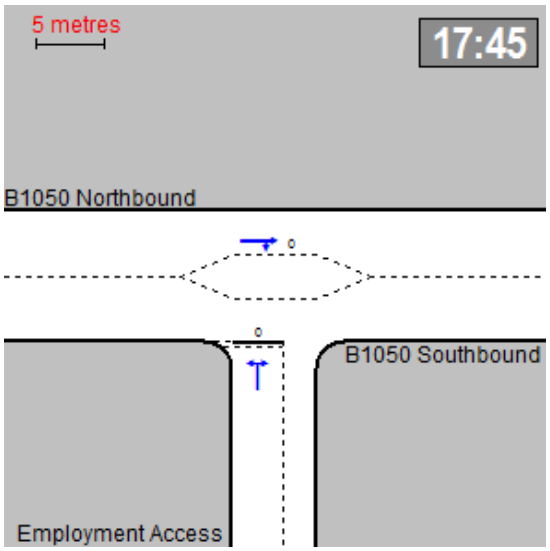
Queue Interval 2: 17:00-17:15



Queue Interval 3: 17:15-17:30

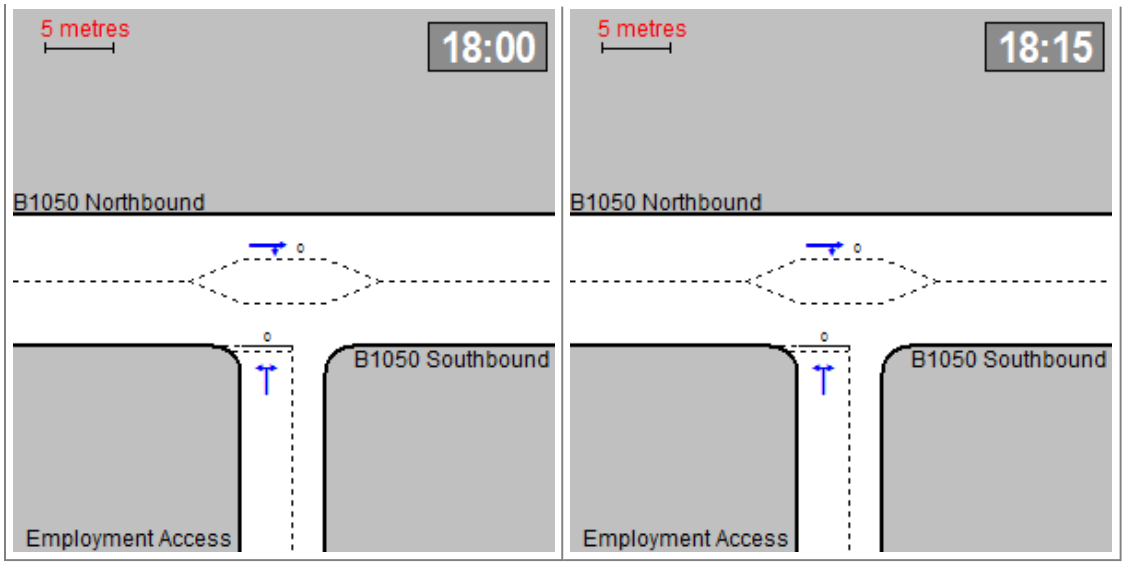


Queue Interval 4: 17:30-17:45



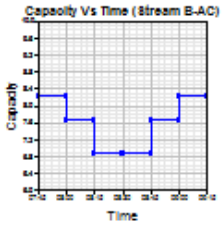
Queue Interval 5: 17:45-18:00

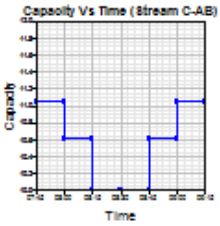
Queue Interval 6: 18:00-18:15


5 metres
18:00
B1050 Northbound
B1050 Southbound
Employment Access
5 metres
18:15
B1050 Northbound
B1050 Southbound
Employment Access

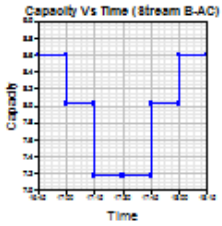
Capacity Graph

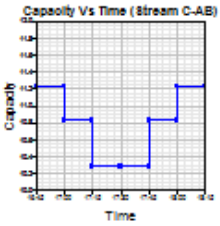
Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15





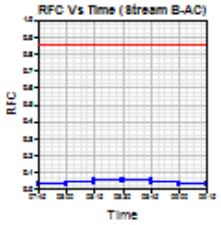
Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

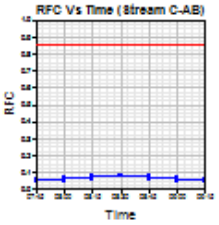




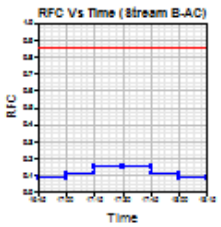
RFC Graph

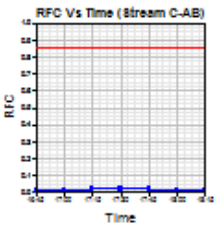
Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15





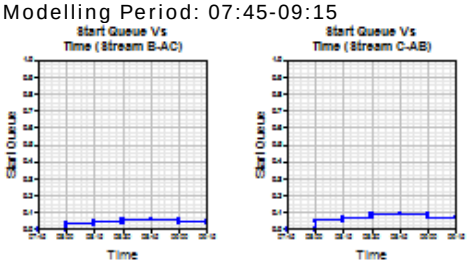
Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15



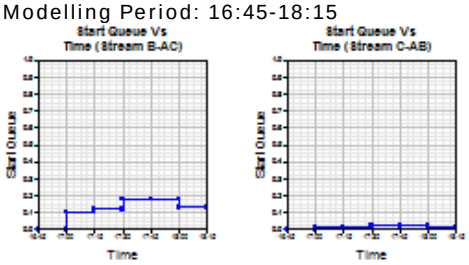


Start Queue Graph

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

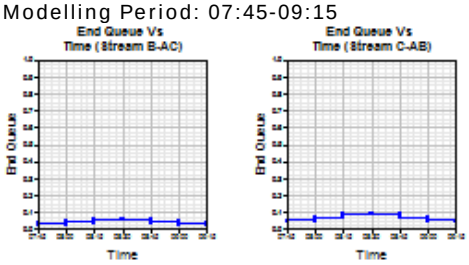


Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

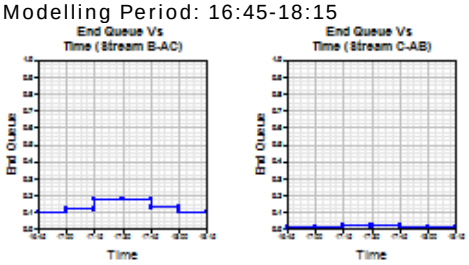


End Queue Graph

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

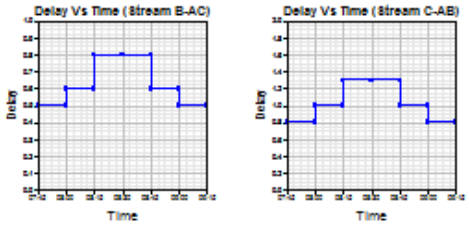


Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

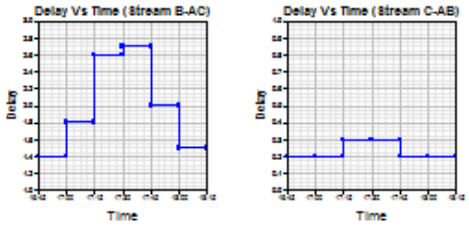


Delay Graph

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15



Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15



Queues & Delays

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-AC	0.25	8.21	0.031	-	0.00	0.03	-	0.5	0.13
	C-AB	0.56	11.05	0.051	-	0.00	0.05	-	0.8	0.10
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.31	-	-	-	-	-	-	-	-
	A-C	7.05	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-AC	0.30	7.66	0.039	-	0.03	0.04	-	0.6	0.14
	C-AB	0.67	10.61	0.064	-	0.05	0.07	-	1.0	0.10
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.37	-	-	-	-	-	-	-	-
	A-C	8.42	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-AC	0.37	6.87	0.053	-	0.04	0.06	-	0.8	0.15
	C-AB	0.83	10.01	0.082	-	0.07	0.09	-	1.3	0.11
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.46	-	-	-	-	-	-	-	-
	A-C	10.31	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-AC	0.37	6.87	0.053	-	0.06	0.06	-	0.8	0.15
	C-AB	0.83	10.01	0.082	-	0.09	0.09	-	1.3	0.11
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.46	-	-	-	-	-	-	-	-
	A-C	10.31	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-AC	0.30	7.66	0.039	-	0.06	0.04	-	0.6	0.14
	C-AB	0.67	10.61	0.064	-	0.09	0.07	-	1.0	0.10
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.37	-	-	-	-	-	-	-	-
	A-C	8.42	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-AC	0.25	8.21	0.031	-	0.04	0.03	-	0.5	0.13
	C-AB	0.56	11.05	0.051	-	0.07	0.05	-	0.8	0.10
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.31	-	-	-	-	-	-	-	-
	A-C	7.05	-	-	-	-	-	-	-	-

Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-AC	0.75	8.60	0.088	-	0.00	0.10	-	1.4	0.13
	C-AB	0.13	11.23	0.011	-	0.00	0.01	-	0.2	0.09
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.10	-	-	-	-	-	-	-	-
	A-C	6.66	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh / min)	Capacity (veh / min)	RFC	Ped. Flow (ped / min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min / segment)	Delay (veh.min / segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-AC	0.90	8.02	0.112	-	0.10	0.12	-	1.8	0.14
	C-AB	0.15	10.83	0.014	-	0.01	0.01	-	0.2	0.09
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.12	-	-	-	-	-	-	-	-

	A-C	7.96	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-AC	1.10	7.17	0.154	-	0.12	0.18	-	2.6	0.16
	C-AB	0.18	10.28	0.018	-	0.01	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.15	-	-	-	-	-	-	-	-
	A-C	9.74	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-AC	1.10	7.17	0.154	-	0.18	0.18	-	2.7	0.16
	C-AB	0.18	10.28	0.018	-	0.02	0.02	-	0.3	0.10
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.15	-	-	-	-	-	-	-	-
	A-C	9.74	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-AC	0.90	8.02	0.112	-	0.18	0.13	-	2.0	0.14
	C-AB	0.15	10.83	0.014	-	0.02	0.01	-	0.2	0.09
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.12	-	-	-	-	-	-	-	-
	A-C	7.96	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
18:00-18:15	B-AC	0.75	8.60	0.088	-	0.13	0.10	-	1.5	0.13
	C-AB	0.13	11.23	0.011	-	0.01	0.01	-	0.2	0.09
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.10	-	-	-	-	-	-	-	-
	A-C	6.66	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: 2021 Phase 1 Modelled Flows AM Peak
Modelling Period: 07:45-09:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-AC	27.5	18.4	3.8	0.1	3.8	0.1
C-AB	61.9	41.3	6.3	0.1	6.3	0.1
C-A	-	-	-	-	-	-
A-B	34.4	22.9	-	-	-	-
A-C	773.6	515.7	-	-	-	-
All	1490.7	993.8	10.2	0.0	10.2	0.0

Demand Set: 2021 Phase 1 Modelled Flows PM Peak
Modelling Period: 16:45-18:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-AC	82.6	55.1	12.0	0.1	12.0	0.1
C-AB	13.8	9.2	1.3	0.1	1.3	0.1
C-A	-	-	-	-	-	-
A-B	11.0	7.3	-	-	-	-
A-C	730.9	487.3	-	-	-	-
All	1900.8	1267.2	13.3	0.0	13.3	0.0

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period.
These will only be significantly different if there is a large queue remaining at the end of the time period.

PICADY 5 Run Successful