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Prepared on behalf of

Farnley Estates

Farnley Masterplan
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Access Appraisal

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Acknowledgements:

The TRICS database has been used in this report to calculate traffic generation rates.

Traffic Data has been supplied by RDS Ltd.

Census data has been obtained from ONS.

Disclaimer

The methodology adopted and the sources of information used by Sanderson Associates (Consulting Engineers) Ltd in providing its services are outlined within this Report.

Any information provided by third parties and referred to herein has not been checked or verified by Sanderson Associates (Consulting Engineers) Ltd, unless otherwise expressly stated within this report.

This report was checked and approved on the 14th January 2016 and the Report is therefore valid on this date, circumstances, regulations and professional standards do change which could subsequently affect the validity of this Report.

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Report Ref:	9058/AND/001/01		January 2016
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Checked & Approved:	Tracy Hargreaves	**Date:**	14th January 2016

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1 Introduction

1.1 This report has been prepared to support the Farnley Estates Masterplan proposals, which include the promotion of a number of sites for development within Farnley Tyas and along the A629 Penistone Road corridor.

1.2 Sanderson Associates has provided advice to the professional team regarding suitable means of access to serve each site, which has been incorporated into the Illustrative layouts that have been produced by DLA Design.

1.3 The reports comments on the access options in relation to sites 2, 3, 4, 5, 6, 16A, 17, 19 and 24, which are shown on Figure 1 included in **Appendix A**.

1.4 A preliminary assessment has also been undertaken of the peak hour traffic that could be generated by the sites on the Penistone Road corridor, to enable Kirklees Council to consider the wider implications of all Local Plan sites. This information has also be utilised to assess the potential access arrangements suggested on Penistone Road, to confirm that the arrangements are feasible access options.

2 Access Appraisal

2.1 Site 2 - Land northwest of Woodsome Drive, Fenay Bridge

2.1.1 The illustrative plans indicate that this site could accommodate approximately 81 no. dwellings. Based on this scale of development, the site could be served by a simple priority junction as shown on drawing 9058/001A included in **Appendix B**.

2.1.2 For a site of this scale, a priority junction with a single lane exit would be appropriate, with right turn lane provision on Penistone Road. The junction would also require radii of 10m due to the current 40mph speed limit; and have visibility splays of 2.4 x 90-120m, although these splays may be reduced should the speed limit be reduced on Penistone Road (or if actual speeds are lower), which may be considered appropriate by the Local Highway Authority (LHA). Due to the long site frontage on Penistone Road, there is considerable scope to locate the site access, which achieves adequate junction spacing and visibility.

2.1.3 As identified below, should site 4 be developed, it would be possible to access both site 4 and site 2 via a new 4 arm roundabout on Penistone Road, with a single lane entry being adequate to serve site 2, as shown on drawing 9058/001A included in **Appendix B**.

2.2 Site 3 - Land south of Woodsome Drive, Lepton

2.2.1 The illustrative plans indicate that this site could accommodate approximately 63 no. dwellings. Based on this scale of development, the site could be served by a simple priority junction on to Rowley Lane, as shown on drawing 9058/003 included in **Appendix B**. As can be seen from the plan, the junction could be provided as a crossroads with Woodsome Drive.

2.2.2 For a site of this scale, a priority junction with a single lane exit would be appropriate. No right turn lane provision on Rowley Lane is considered to be required. The junction would also require radii of 6m due to the current 30mph speed limit; and have visibility splays of 2.4 x 43m that can be achieved in the suggested location.

2.2.3 As discussed with the LHA, capacity problems are experienced at peak times at the Rowley Lane/Penistone Road priority junction. Therefore, to accommodate additional development traffic on Rowley Lane, improvements to this junction may be required. As such, consideration has been given to the feasibility of utilising site 3 to provide a new roundabout on Penistone Road, which would replace the existing Rowley Lane and Woodsome Road junctions, as shown on drawing 9058/001A included in **Appendix B**.

2.2.4 The provision of a new roundabout would address existing problems at the Rowley Lane junction and accommodate development traffic from Site 3 and 6 (and also other potential sites within the Lepton area).

2.2.5 Preliminary capacity analysis has been undertaken of the roundabout (outlined in Section 3), which indicates that single lane approaches on both the Woodsome Road and Rowley Lane/Site 3 arms are adequate, with two lane flared approaches on both of the Penistone Road arms.

2.3 Site 4 – Land to the west of Penistone Road, Fenay Bridge

2.3.1 It is proposed that site 4 could accommodate 'The Hub', which would be the main gateway/commercial hub associated with the proposed Farnley Country Park. The site is likely to include a range of facilities that would complement the County Park, which could include a Visitor/Education centre, café, farm shop, garden centre, craft and design workshops, event spaces, visitor parking and welfare facilities.

2.3.2 Due to the trips that are likely to be generated by the site, it is considered that a roundabout would provide an appropriate means of access; and could also serve site 2, with an indicative roundabout design shown on drawing 9058/001A included in **Appendix B**.

2.3.3 Preliminary capacity analysis has been undertaken of the roundabout (as outlined in Section 3), which indicates that single lane approaches on the site 2 and 4 arms are adequate, with two lane flared approaches on both of the Penistone Road arms. It is noted that accurate traffic generations cannot at this stage be determined for site 4, due to the range of potential uses for the site. Therefore, the assessment includes an assumed traffic generation for site 4 of 100 two-way vehicle movements for weekday AM and PM peak hour periods and 200 two-way vehicle movements for weekend peak hour periods (split evenly for inbound/outbound traffic). However, the test ARCADY modelling indicates that the Site 4 arm could accommodate significantly higher traffic flows (approx. 500-600 pcu's per hour outbound) before additional exit lanes would be required. Due to the long site frontage on Penistone Road, there is considerable scope to locate the junction, which will allow flexibility in the site layout options for sites 2 and 4.

2.4 Site 5 – Land north/south of Woodsome Road, Lepton

2.4.1 The illustrative plans indicate that these small sites could accommodate approximately 11 no. dwellings. Based on this scale of development, the sites could be served by simple priority junctions or private drives, as shown on drawing 9058/004 included in **Appendix B** and would replace the existing accesses. Drawing 9058/001A included in **Appendix B** also shows how access to these sites could be accommodated should the roundabout identified at paragraph 2.2.3 be implemented.

2.5 Site 6 - Land southeast of Hermitage Park, Lepton

2.5.1 There are currently no main public highways within the immediate vicinity of site 6. Therefore, to provide access to this site, some land acquisition is likely to be required. To provide access via Hermitage Park, it would be necessary to purchase land from some of the existing properties to allow a suitable means of access to be created.

2.5.2 Based on access via the existing Hermitage Park junction on to Rowley Lane, the illustrative masterplans indicate that the site could accommodate approximately 45 no. dwellings, which could be adequately served by the existing junction, which benefits from adequate visibilities splays.

2.5.3 As with site 3, to accommodate additional development traffic on Rowley Lane, improvements to the Rowley Lane/Penistone Road junction may be required. Therefore, it may be possible to provide an alternative means of access to site 6 via site 3, subject to a connection being made across the dismantled railway. This access road could then connect into the proposed highway network in site 3 and could include the new roundabout on Penistone Road identified in paragraph 2.2.3.

2.6 Site 16A - Land to northeast of Woodsome Road, Woodsome

2.6.1 The illustrative plans indicate that this site could accommodate approximately 285 no. dwellings. Based on this scale of development and as Woodsome Road is relatively lightly trafficked, the site could be served by a simple priority junction, as shown on drawing 9058/001A included in **Appendix B**.

2.6.2 For a site of this scale, a priority junction with a single lane exit would be appropriate, with right turn lane provision on Woodsome Road. The junction would also require radii of 10m due to the current National speed limit; and have visibility splays of 2.4 x 160-215m, although these splays may be reduced should the speed limit be reduced on Woodsome Road (or if actual speeds are lower), which may be considered appropriate by the Local Highway Authority (LHA). Due to the long site frontage on Woodsome Road, there is scope to locate the site access in a number of locations, which achieves adequate junction spacing and visibility.

2.6.3 To accommodate develop of this site, improvements to the Woodsome Road/Penistone Road junction are likely to be required, which may be a roundabout as identified on drawing 9058/001A included in **Appendix B**, or potentially by a three arm roundabout if not serving site 3, or instead by conversion to a signalisation junction. In additional to improvements at this junction, improvements are also likely to be required at the narrow bridge on Woodsome Road located between the site and Penistone Road.

2.7 Site 17 - Land to the west of Penistone Road, Kirkburton

2.7.1 The illustrative plans indicate that this site could accommodate approximately 270-405 no. dwellings. For a development of approximately 200-300 dwellings, the site could be served by a single simple priority junction, as shown on drawing 9058/001A included in **Appendix B**, which would link to the main area of the site via a bridge over the beck. However, for a larger development, a second point of access (and additional bridge) is likely to be required, which could be provided via a second priority junction located further south on Penistone Road.

2.7.2 Preliminary capacity analysis has been undertaken of the single priority junction (outlined in Section 3), which indicates that a priority junction with a single lane exit would be appropriate, with right turn lane provision on Penistone Road. The junction would also require radii of 10m due to the current 40mph speed limit; and have visibility splays of 2.4 x 90-120m, although these splays may be reduced should the speed limit be reduced on Penistone Road (or if actual speeds are lower), which may be considered appropriate by the Local Highway Authority (LHA).

2.8 Site 19 – Land to south of Butts Way, Farnley Tyas

2.8.1 The illustrative plans indicate that this site could accommodate approximately 66 no. dwellings. Based on this scale of development, the site could be served by a simple priority junction on to Thurstonland Road, with no right turn facility consider necessary. As Thurstonland Road along the site frontage is subject to the national speed limit, it would be desirable to relocate the 30mph speed limit change on entry to Farnley Tyas Village to the south of the access. Subject to the relocation of the speed limit change, visibility splays of 2.4x43m would be required, with 6m junction radii. Due to the relatively long site frontage on Thurstonland Road, there is scope to locate the site access in a number of locations, which achieves adequate junction spacing and visibility.

2.9 Site 24 - Land south of Yew Tree Farm, Farnley Tyas

2.9.1 The illustrative plans indicate that this site could accommodate approximately 24 no. dwellings. Based on this scale of development, the site could be served by a simple priority junction on to Farnley Road, with no right turn facility consider necessary. As Farnley Road along the site frontage is subject to the national speed limit, it would be desirable to relocate the 30mph speed limit change on entry to Farnley Tyas Village to the south of the access. Subject to the relocation of the speed limit change, visibility splays of 2.4x43m would be required, with 6m junction radii. Due to the relatively long site frontage on Farnley Road, there is scope to locate the site access in a number of locations, which achieves adequate junction spacing and visibility.

3 Traffic generations and assessment

3.1 Scope of assessment

3.1.1 A preliminary assessment has been undertaken of the peak hour traffic that could be generated by the sites that could generate significant levels of traffic on to the Penistone Road Corridor (sites 2, 3, 4, 6, 16A & 17), to enable Kirklees Council to consider the wider implications of the Local Plan sites.

3.1.2 The traffic generation information has also be utilised to assess the potential access arrangements suggested on Penistone Road, to confirm that the arrangements are feasible. This includes the assessment of the two roundabouts that have been suggested, together with the Site 17 priority junction site access.

3.2 Based traffic data and growth

3.2.1 Traffic count data has been obtained at the Rowley Lane/Penistone Road and Woodsome Road/Penistone Road junctions on Thursday 3rd December and Saturday 5th December, with the surveys recording cross movements between the Rowley Lane and Penistone Road arms. This data has been analysed, with the network peak hour flows (in PCU's) shown on Figure 2 in **Appendix A**.

3.2.2 For feasibility assessment purposes, 10 years traffic growth has been applied to the above survey data to ensure a robust assessment is undertaken, with the following traffic growth factors obtained from the TEMPRO database (urban principle roads in 00C212 Kirkburton dataset):

	TEMPRO Growth Factors 2015-2025 (00C212 Kirkburton)
AM Peak	1.1945
PM Peak	1.1995
Saturday Peak	1.2088

3.2.3 The 2015 base traffic data has been growthed to 2025, with the flows shown on Figure 3 in **Appendix A**.

3.3 Traffic generations and distribution

3.3.1 The TRICS database has been utilised to calculate potential traffic generations for the sites. As the type of housing that may be proposed on each site is not currently known, detailed interrogation of the TRICS database has not been undertaken. Instead, average rates has been derived for sites in England (excluding London) from the 'Houses Privately Owned' dataset, which are considered to give a reasonable indication of the likely vehicles trips that would be generated by the sites, with further detailed assessment required in due course.

3.3.2 The TRICS output data is included in **Appendix C**, with the network peak hour trip rates shown in the following table:

	AM Peak Hour	PM Peak Hour	Weekend Peak Hour
IN	0.151	0.353	0.226
OUT	0.399	0.203	0.206

3.3.3 To determine the potential traffic distribution from the sites, a simple gravity model has been produced using method of travel to work data from the 2011 census for the Kirklees 51 Middle Output Layer, with a summary of the trip distribution and route allocation included in **Appendix D**. Based on this assessment, site traffic has been distributed as follows:

Penistone Road North	Penistone Road South	Rowley Lane East	Woodsome Road West
58.6%	29.5%	5.5%	6.9%

3.3.4 Based on the information shown on the illustrative masterplan drawings, the residential sites could accommodate the following units:

Site No.	Max. Units
2	81
3	63
5	11
6	45
16A	285
17	405

3.3.5 Based on the aforementioned dwelling numbers, the trip rates identified in paragraph 3.3.2 and the traffic distribution identified in paragraph 3.3.3, the peak hour trip distribution for each site (excluding site 5 due to its scale) have been calculated and are shown on Figures 4-9 in **Appendix A.** As mentioned in paragraph 2.3.3, accurate traffic generations cannot at this stage be determined for site 4, due to the range of potential uses for this site. Therefore, the assessment includes an assumed traffic generation for site 4 of 100 two-way vehicle movements for weekday AM and PM peak hour periods and 200 two-way vehicle movements for weekend peak hour period (split evenly inbound/outbound).

3.4 Traffic modelling

3.4.1 The proposed roundabout that could serve sites 2 and 4 has been assessed using ARCADY modelling software, with output data included in **Appendix E**. As can be seen from the modelling results, the roundabout would be able to operate within capacity (RFC of below 1.000) utilising the ODTab flow profile in 2025. Therefore, it is considered that a roundabout junction of this scale would be appropriate to serve these sites.

3.4.2 The proposed roundabout that could serve sites 3, 6 and 16A and replace the existing Rowley Lane and Woodsome Road junctions has been assessed using ARCADY modelling software, with output data included in **Appendix F**. As can be seen from the modelling results, the roundabout would be able to operate within capacity (RFC of below 1.000) utilising the ODTab flow profile in 2025. Therefore, it is considered that a roundabout junction of this scale would be appropriate to serve these sites and would address the existing capacity issues at the Rowley Lane and Woodsome Road junctions.

3.4.3 The proposed priority junction that could serve sites 17 has been assessed using PICADY modelling software, with output data included in **Appendix G**. The junction has been assessed based on traffic generation for a 300 dwelling development, as this is the maximum that would be served from a single access point. As can be seen from the modelling results, the junction would be able to operate within capacity (RFC of below 1.000) utilising the ODTab flow profile in 2025. Therefore, it is considered that a priority junction would be appropriate to serve this site.

3.4.4 It is concluded that the access arrangements proposed are appropriate to serve the various development sites, would be able to adequately accommodate development traffic and background traffic growth; and would help address existing capacity issues at the Rowley Lane and Woodsome Road junctions on to Penistone Road.

APPENDIX A

Figure 1 - Site Location Plan

Figure 2 - 2015 Base Traffic Flows

Figure 3 - 2025 Base Traffic Flows

Figure 4 - Site 2 Flows

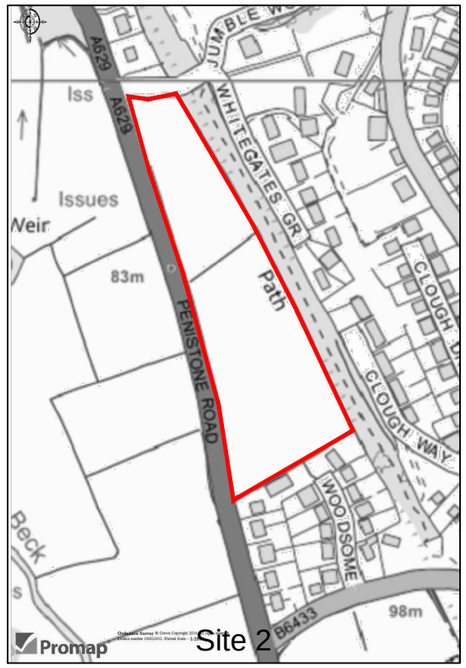
Figure 5 - Site 3 Flows

Figure 6 - Site 4 Flows

Figure 7 - Site 6 Flows

Figure 8 - Site 16A Flows

Figure 9 - Site 17 Flows



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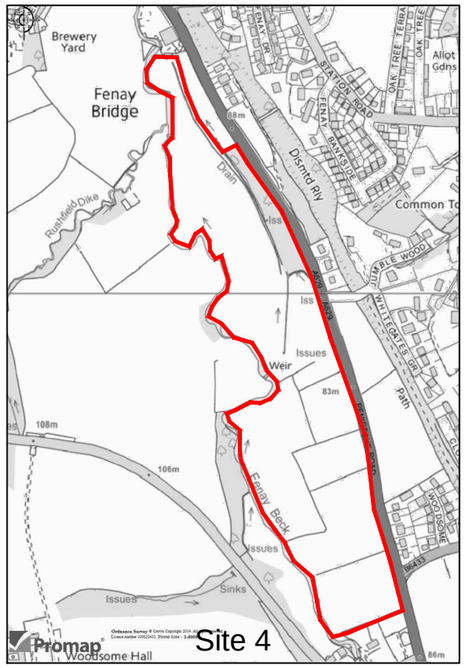
Site 3



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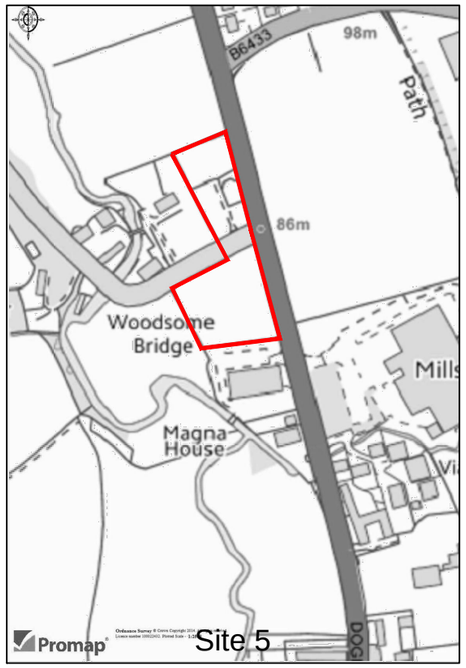

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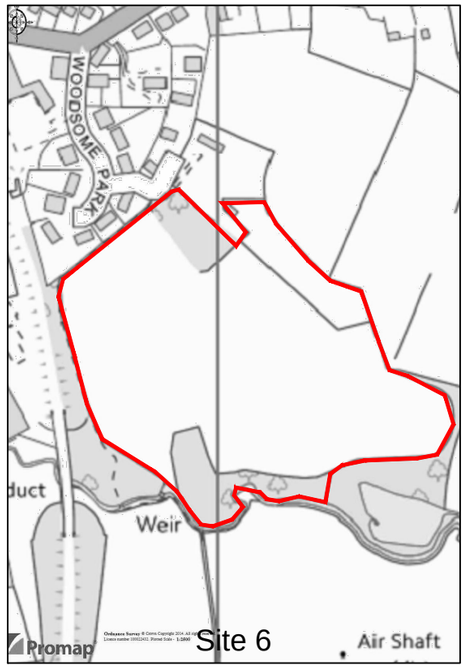

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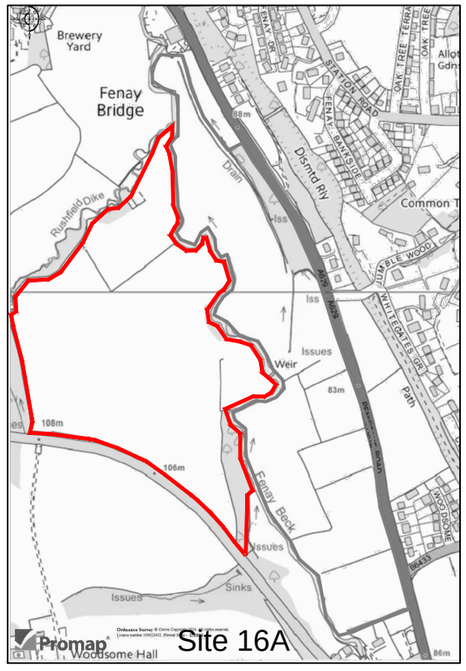

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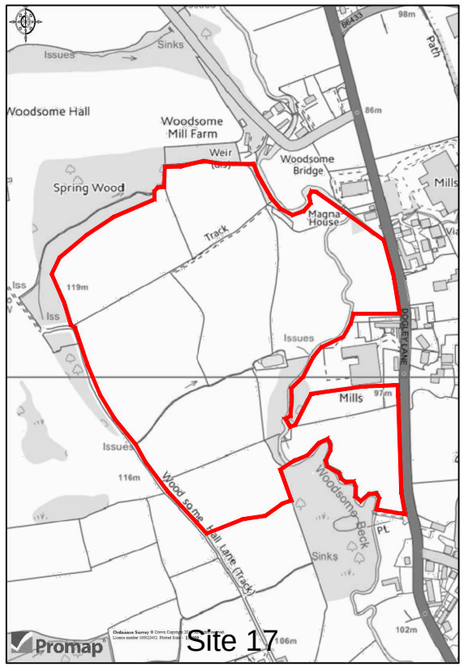

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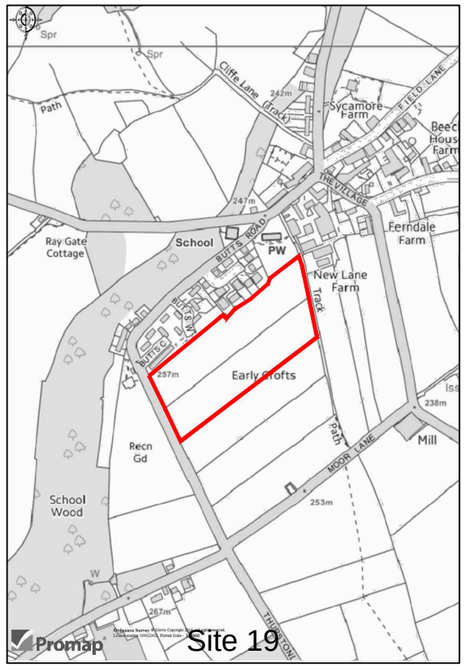

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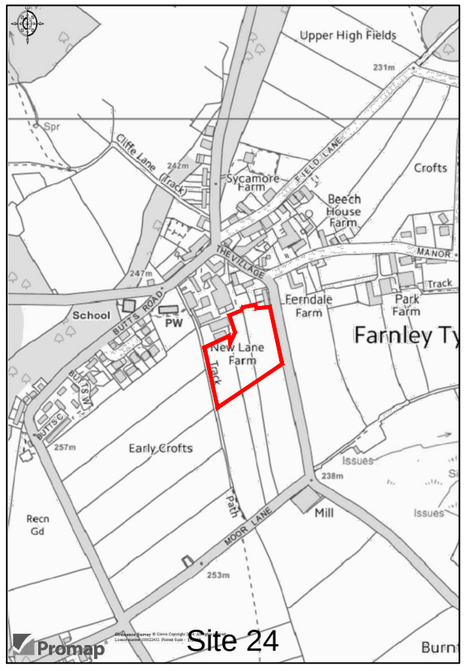

Site 24

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Farnley Masterplan

Site Location Plan

Rev	Amendment	Drawn	Date	Checked

Scale NTS		Drawn By KB	
Drawing Size A3		Checked By AND	
Date Jan. 2016		Approved By AND	
QMS ISO 9001 REGISTERED FIRM	Drawing Number Figure 1		Rev

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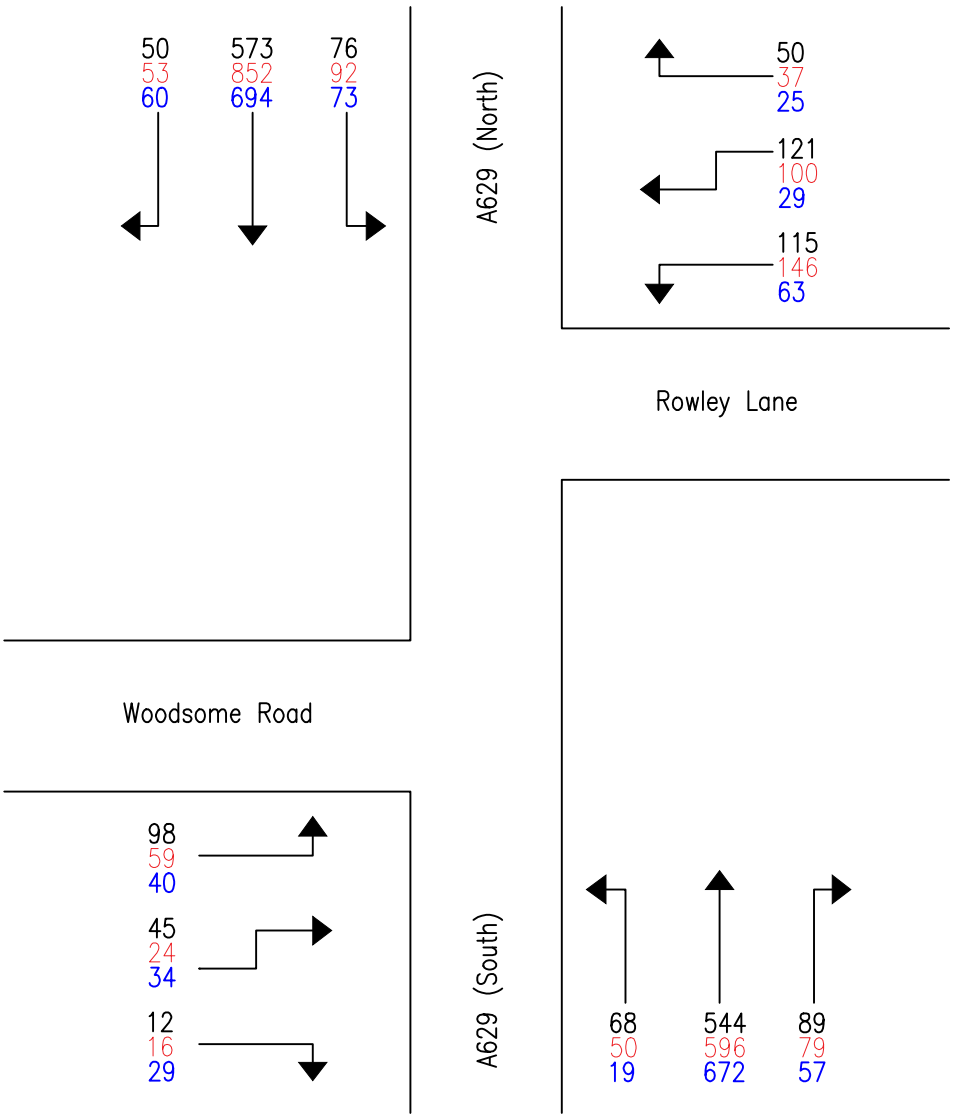

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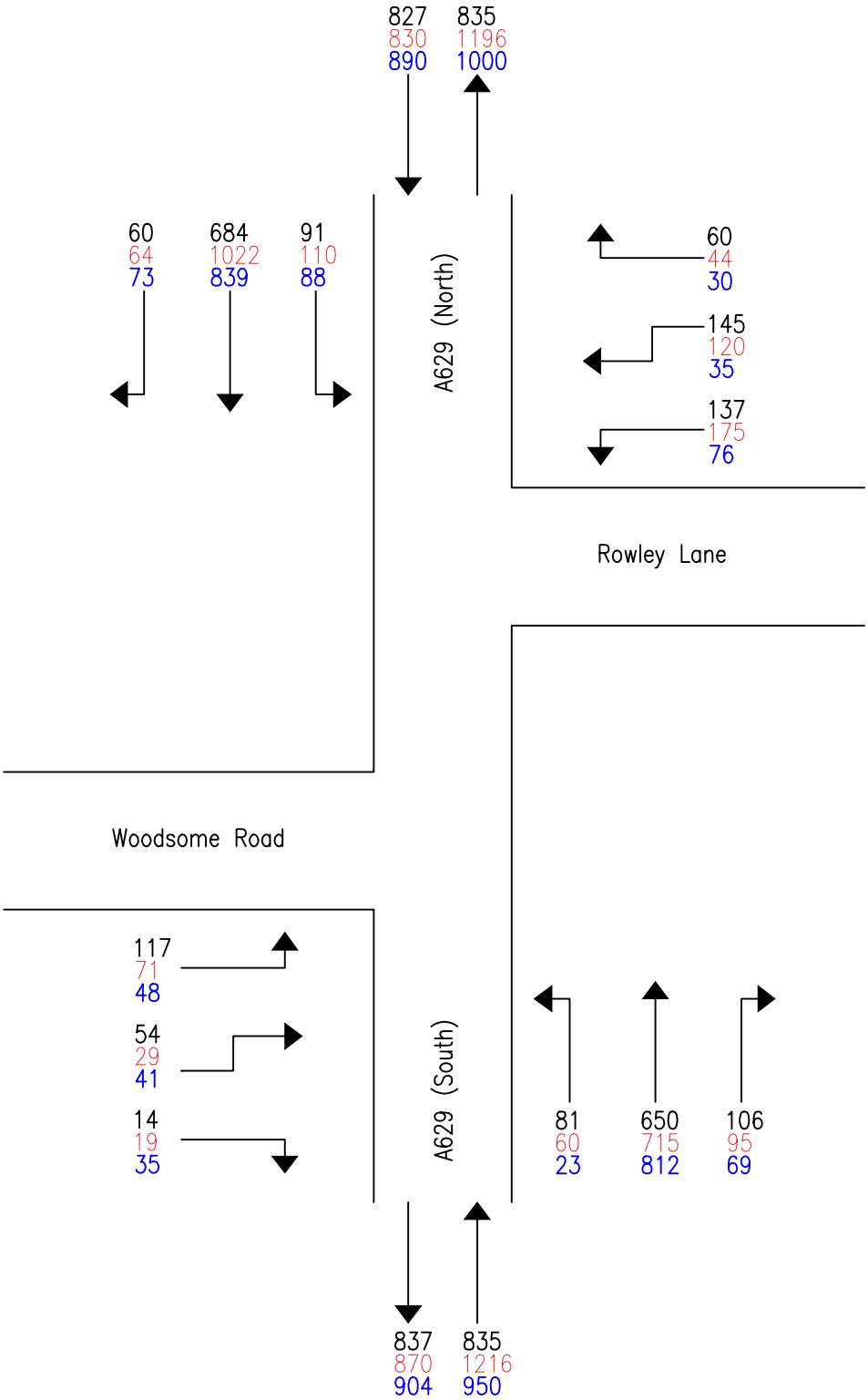

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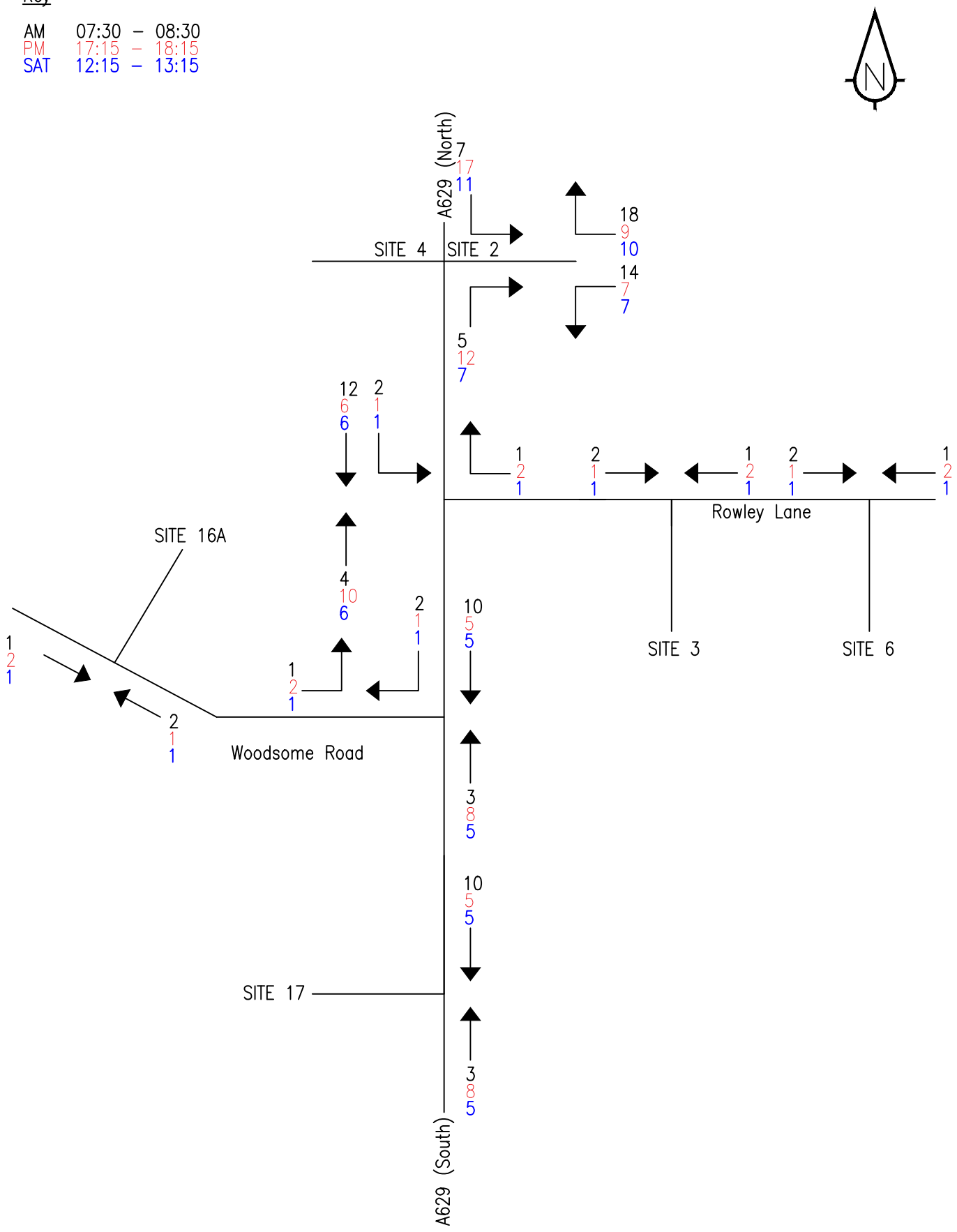

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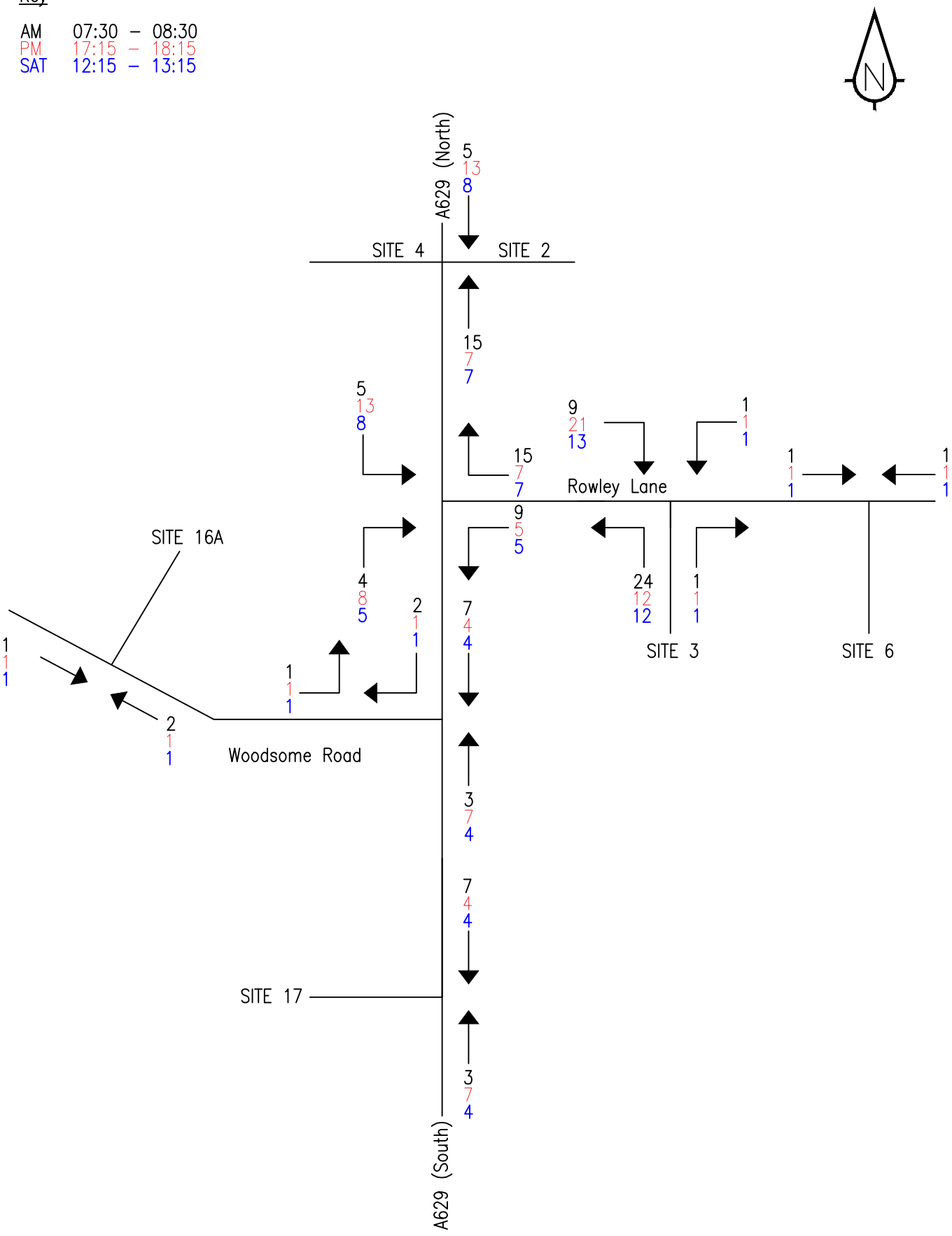

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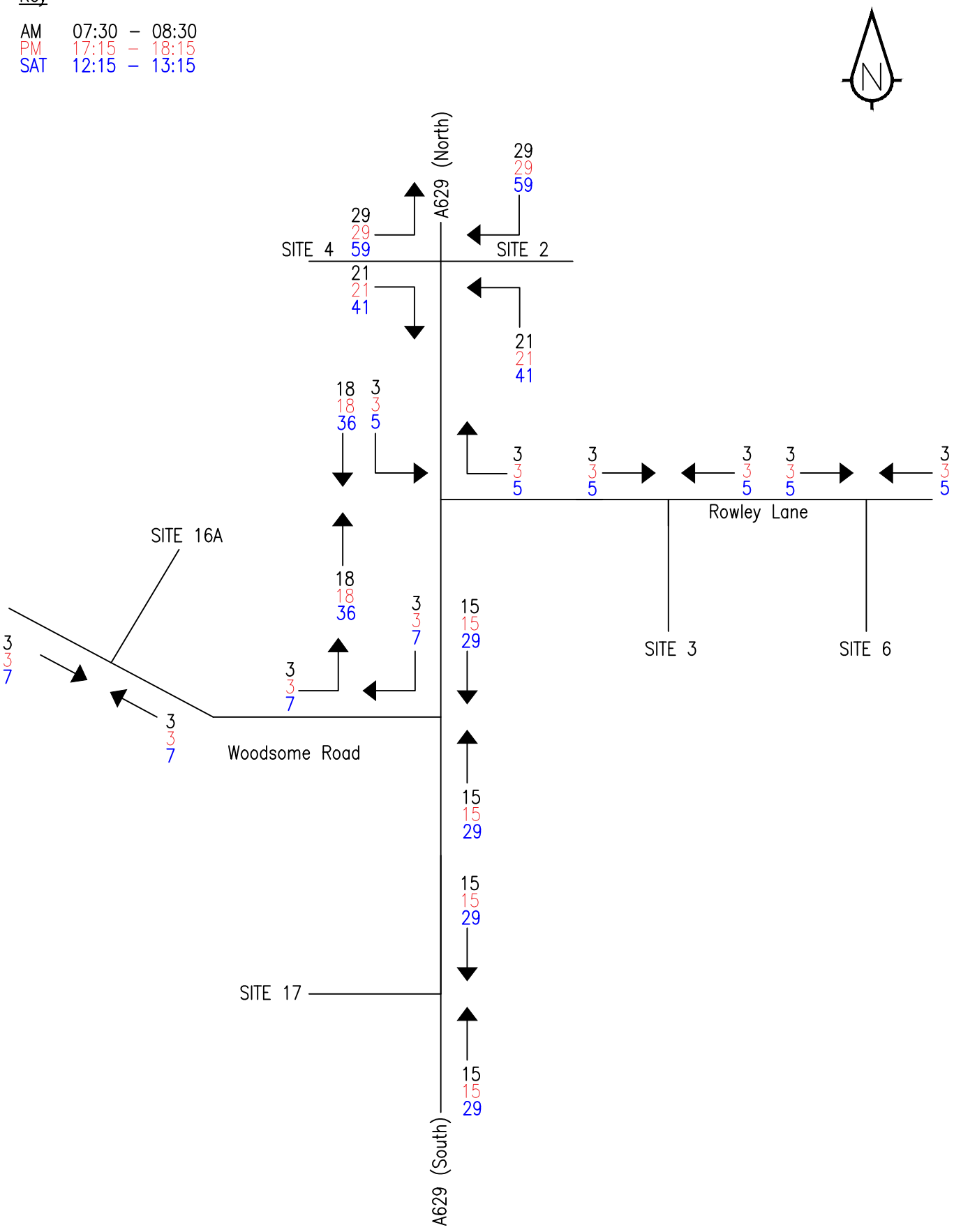

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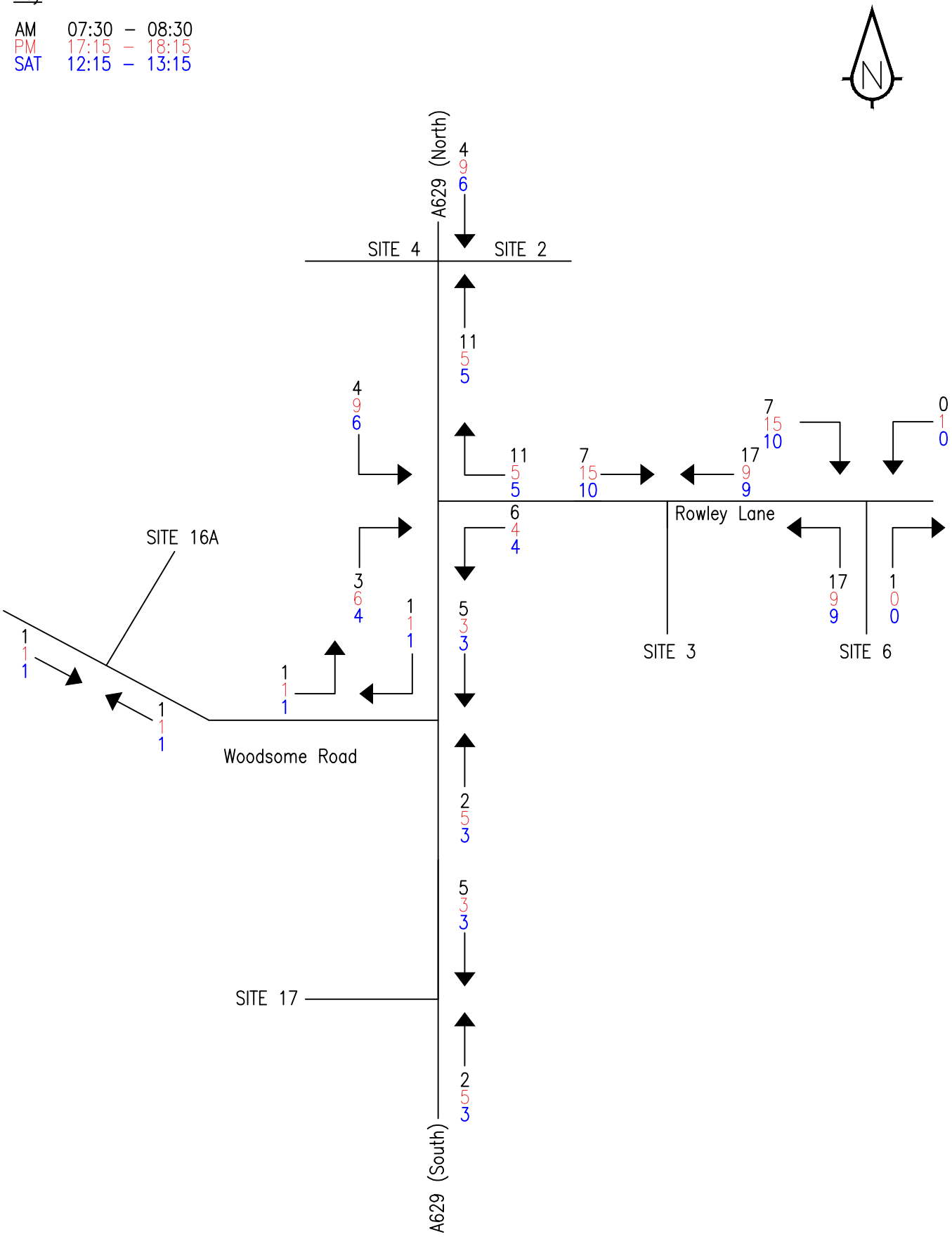

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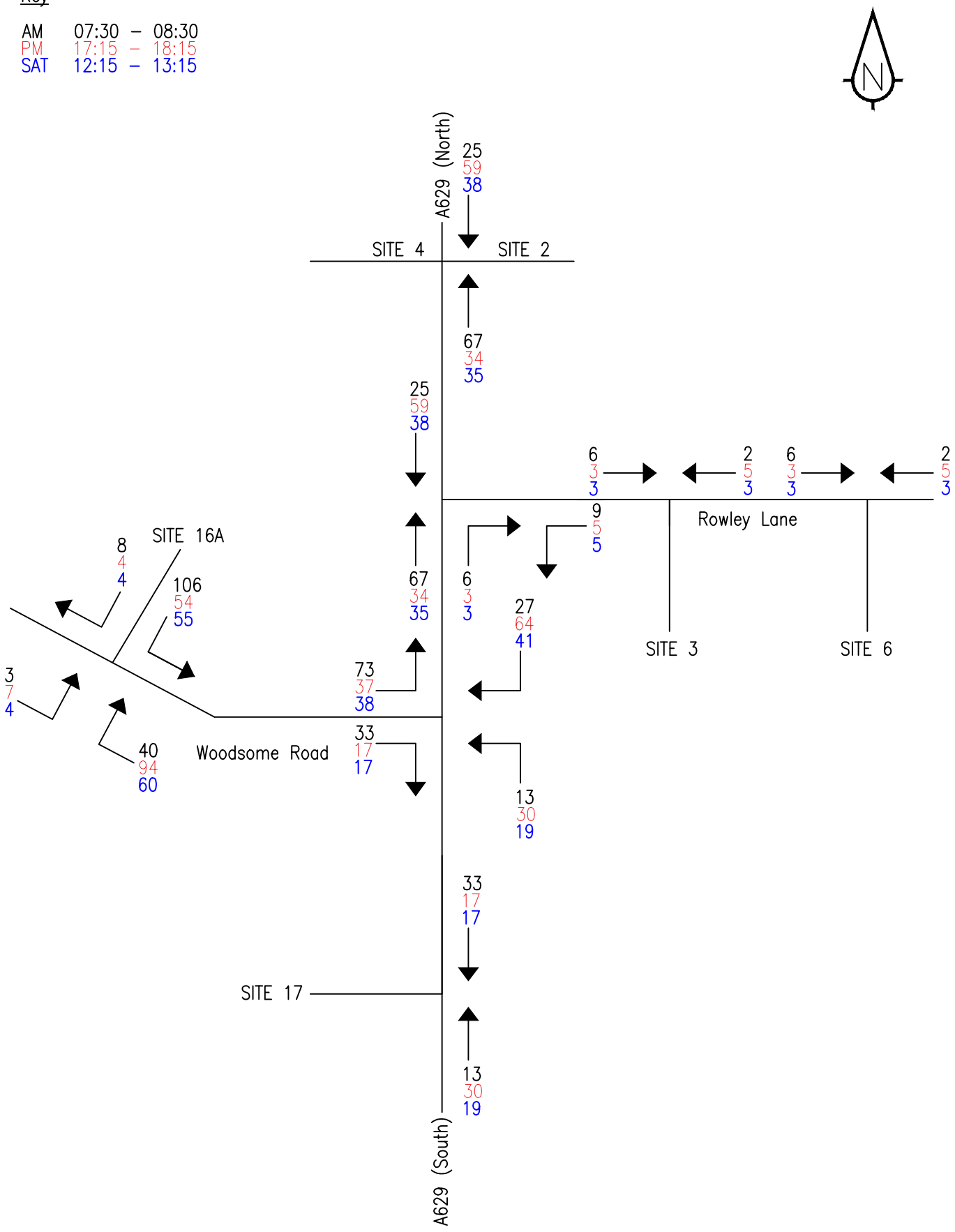

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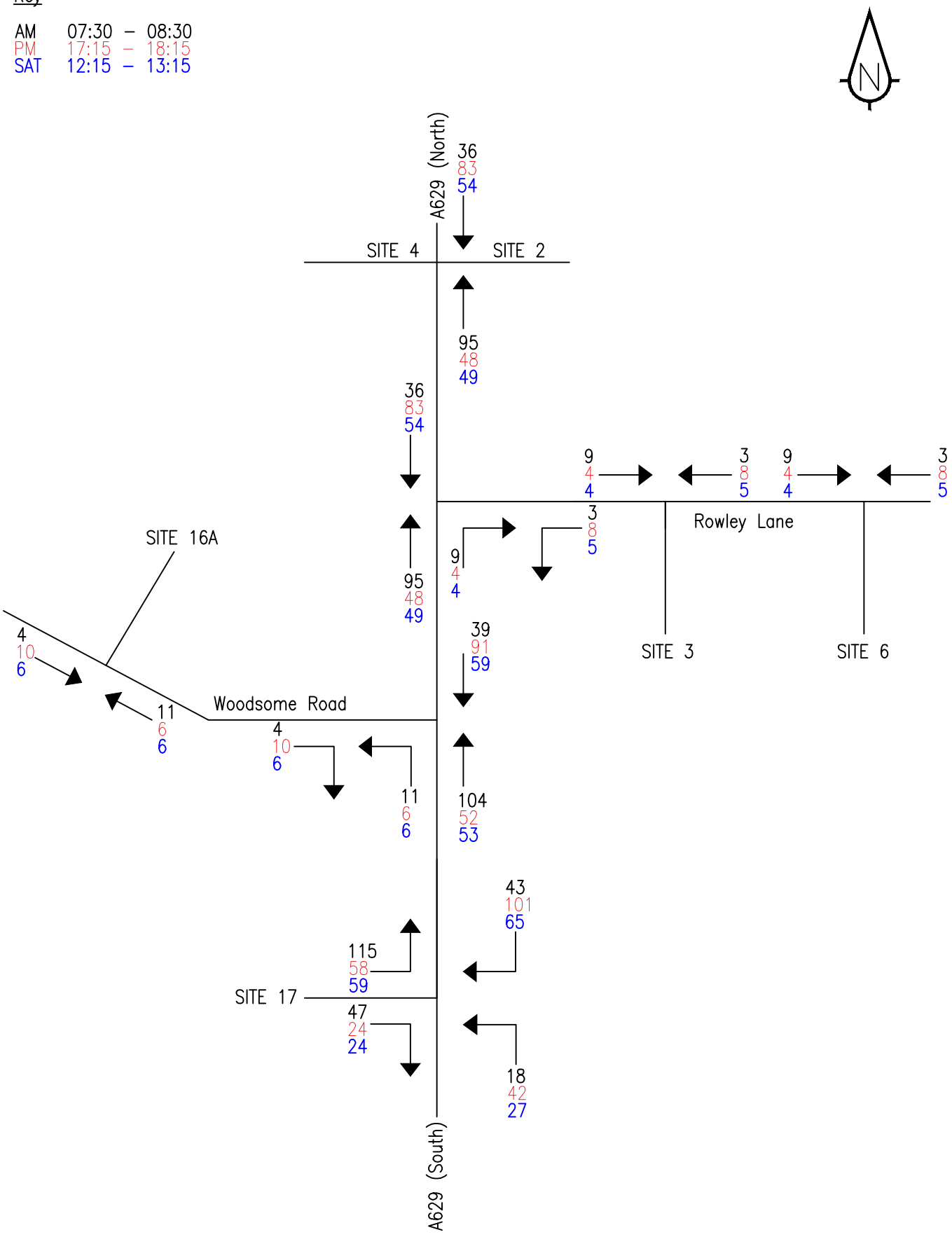

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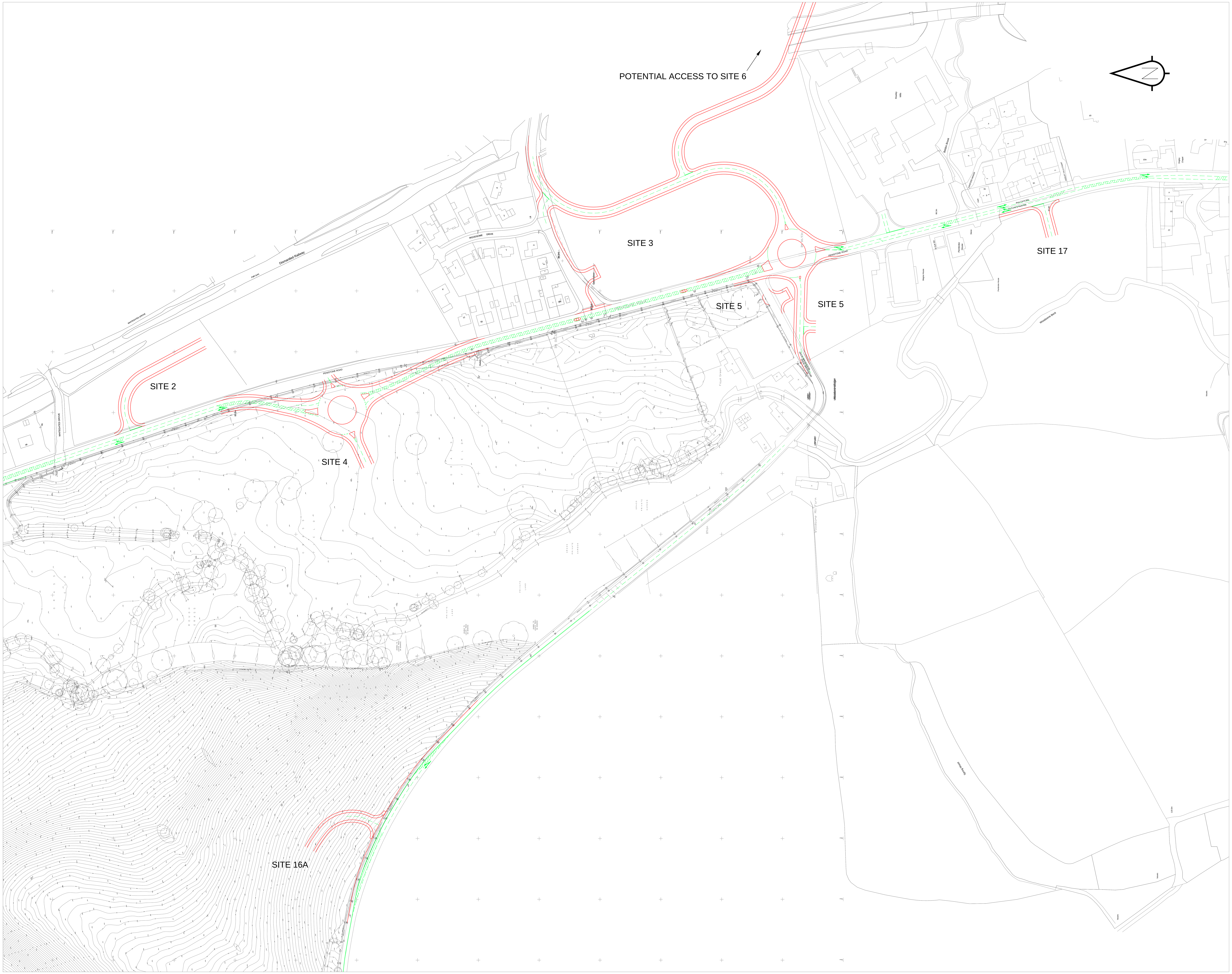
APPENDIX B

Drawing 9058/001A

Drawing 9058/003

Drawing 9058/004



Rev	Amendment	Drawn	Date	Checked
A	AMENDED TO SUIT TRAFFIC MODELLING	AND	11.01.16	AND

sanderson associates (consulting engineers) ltd

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Client
FARNLEY ESTATES

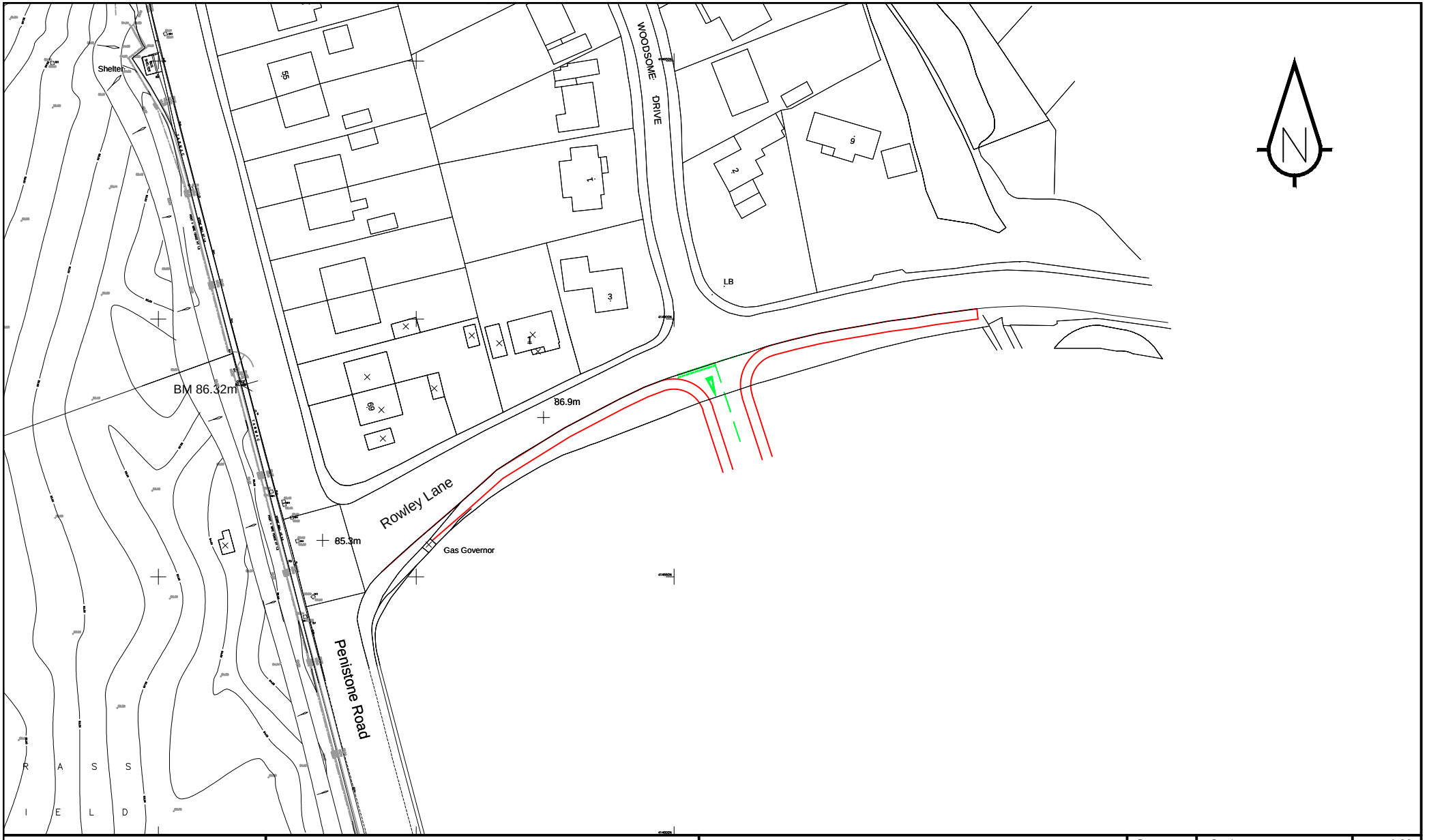
Project Title
FARNLEY MASTERPLAN

Drawing Title
PRELIMINARY ACCESS OPTIONS
SITES 2, 3, 4, 5, 6, 16A & 17

Drawn By	Checked By	Approved By
AND	AJF	AJF

Scale	Date
1:1000	12.12.15

Drawing Size		Drawing Number	Rev
A0	QMS ISO 9001 REGISTERED FIRM	9058/001	



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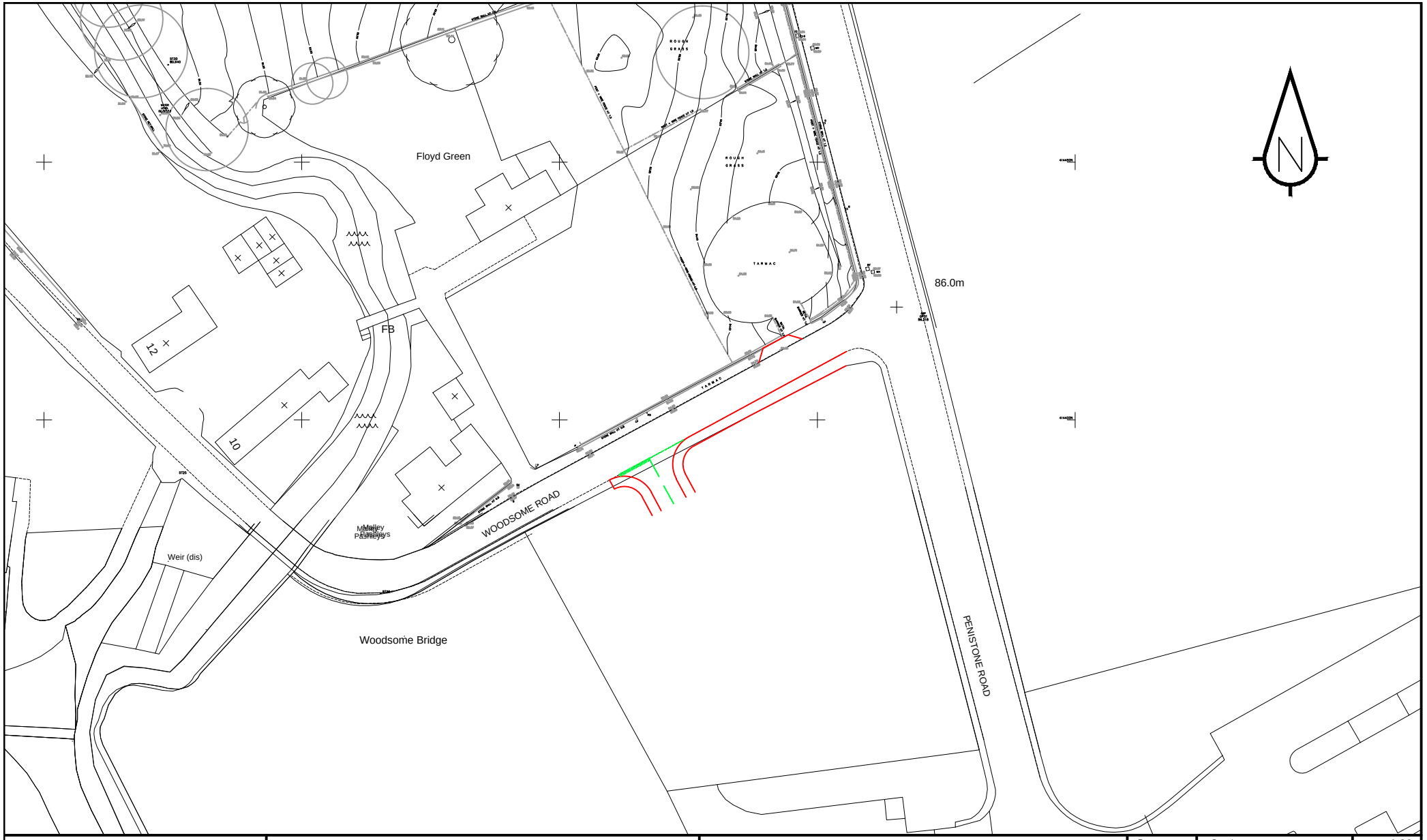
FARNLEY MASTERPLAN

PRELIMINARY ACCESS OPTION SITE NO. 3

Drawn KB	Scale 1:1000	QIM ISO 9001 REGISTERED FIRM
Checked AND	Date Jan. 2016	
Approved AND	Drawing Number 9058/003	Size A4



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FARNLEY MASTERPLAN

PRELIMINARY ACCESS OPTION SITE NO. 5

Drawn KB	Scale 1:1000		
Checked AND	Date Jan. 2016		
Approved AND	Drawing Number 9058/004	Size A4	

APPENDIX C

TRICS Output Data

Calculation Reference: AUDIT-311901-160105-0139

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	EX	ESSEX	1 days
	HC	HAMPSHIRE	1 days
	SC	SURREY	1 days
	WS	WEST SUSSEX	1 days
03	SOUTH WEST		
	CW	CORNWALL	1 days
	DC	DORSET	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	2 days
	SF	SUFFOLK	3 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	3 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	4 days
	ST	STAFFORDSHIRE	1 days
	WK	WARWICKSHIRE	2 days
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NE	NORTH EAST LINCOLNSHIRE	1 days
	NY	NORTH YORKSHIRE	6 days
	SY	SOUTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	4 days
	GM	GREATER MANCHESTER	1 days
	MS	MERSEYSIDE	1 days
09	NORTH		
	CB	CUMBRIA	2 days
	TW	TYNE & WEAR	1 days

Filtering Stage 2 selection:

Parameter:	Number of dwellings
Actual Range:	6 to 432 (units:)
Range Selected by User:	6 to 4334 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 12/11/15

Selected survey days:

Monday	7 days
Tuesday	13 days
Wednesday	6 days
Thursday	9 days
Friday	6 days

Selected survey types:

Manual count	41 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	21
Edge of Town	20

Selected Location Sub Categories:

Residential Zone	34
No Sub Category	7

Filtering Stage 3 selection:

Use Class:

C3	40 days

Population within 1 mile:

1,001 to 5,000	6 days
5,001 to 10,000	12 days
10,001 to 15,000	6 days
15,001 to 20,000	9 days
20,001 to 25,000	5 days
25,001 to 50,000	3 days

Population within 5 miles:

5,001 to 25,000	3 days
25,001 to 50,000	5 days
50,001 to 75,000	2 days
75,001 to 100,000	10 days
100,001 to 125,000	7 days
125,001 to 250,000	7 days
250,001 to 500,000	6 days
500,001 or More	1 days

Car ownership within 5 miles:

0.6 to 1.0	13 days
1.1 to 1.5	28 days

Travel Plan:

Yes	2 days
No	39 days

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	41	75	0.078	41	75	0.277	41	75	0.355
08:00 - 09:00	41	75	0.151	41	75	0.399	41	75	0.550
09:00 - 10:00	41	75	0.150	41	75	0.187	41	75	0.337
10:00 - 11:00	41	75	0.141	41	75	0.172	41	75	0.313
11:00 - 12:00	41	75	0.169	41	75	0.160	41	75	0.329
12:00 - 13:00	41	75	0.181	41	75	0.164	41	75	0.345
13:00 - 14:00	41	75	0.163	41	75	0.156	41	75	0.319
14:00 - 15:00	41	75	0.175	41	75	0.188	41	75	0.363
15:00 - 16:00	41	75	0.284	41	75	0.207	41	75	0.491
16:00 - 17:00	41	75	0.297	41	75	0.180	41	75	0.477
17:00 - 18:00	41	75	0.353	41	75	0.203	41	75	0.556
18:00 - 19:00	41	75	0.257	41	75	0.188	41	75	0.445
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.399			2.481			4.880

Parameter summary

Trip rate parameter range selected:	6 - 432 (units:)
Survey date date range:	01/01/07 - 12/11/15
Number of weekdays (Monday-Friday):	41
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	2

Calculation Reference: AUDIT-311901-160105-0102

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	HF	HERTFORDSHIRE	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS		
	NR	NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	2 days
08	NORTH WEST		
	CH	CHESHIRE	2 days
	MS	MERSEYSIDE	1 days

Filtering Stage 2 selection:

Parameter: Number of dwellings
Actual Range: 22 to 195 (units:)
Range Selected by User: 6 to 4334 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 12/11/15

Selected survey days:

Saturday	1 days
Sunday	8 days

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	4

Selected Location Sub Categories:

Residential Zone	9

Filtering Stage 3 selection:

Use Class:

C3	9 days

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	3 days
15,001 to 20,000	1 days
20,001 to 25,000	2 days
25,001 to 50,000	1 days

Filtering Stage 3 selection (Cont.):

Population within 5 miles:

5,001 to 25,000	2 days
100,001 to 125,000	3 days
125,001 to 250,000	3 days
500,001 or More	1 days

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	5 days
1.6 to 2.0	2 days

Travel Plan:

No	9 days

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	63	0.032	9	63	0.043	9	63	0.075
08:00 - 09:00	9	63	0.050	9	63	0.080	9	63	0.130
09:00 - 10:00	9	63	0.075	9	63	0.179	9	63	0.254
10:00 - 11:00	9	63	0.155	9	63	0.211	9	63	0.366
11:00 - 12:00	9	63	0.165	9	63	0.263	9	63	0.428
12:00 - 13:00	9	63	0.226	9	63	0.206	9	63	0.432
13:00 - 14:00	9	63	0.201	9	63	0.155	9	63	0.356
14:00 - 15:00	9	63	0.202	9	63	0.188	9	63	0.390
15:00 - 16:00	9	63	0.204	9	63	0.160	9	63	0.364
16:00 - 17:00	9	63	0.190	9	63	0.124	9	63	0.314
17:00 - 18:00	9	63	0.181	9	63	0.147	9	63	0.328
18:00 - 19:00	9	63	0.153	9	63	0.117	9	63	0.270
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.834			1.873			3.707

Parameter summary

Trip rate parameter range selected:	22 - 195 (units:)
Survey date date range:	01/01/07 - 12/11/15
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	1
Number of Sundays:	8
Surveys manually removed from selection:	0

APPENDIX D

Gravity Model Data

Employment Distribution Gravity Model -Sheet 1				
Location	**Penistone Road North**	**Penistone Road South**	**Rowley Lane East**	**Woodsome Road West**
Barnsley		100%		
Bradford	100%			
Calderdale	100%			
Doncaster		100%		
Kirklees 001	100%			
Kirklees 002	100%			
Kirklees 003	100%			
Kirklees 004	100%			
Kirklees 005	100%			
Kirklees 006	100%			
Kirklees 007	100%			
Kirklees 008	100%			
Kirklees 009	100%			
Kirklees 010	100%			
Kirklees 011	100%			
Kirklees 012	100%			
Kirklees 013	100%			
Kirklees 014	100%			
Kirklees 015	100%			
Kirklees 016	100%			
Kirklees 017	100%			
Kirklees 018			100%	
Kirklees 019	100%			
Kirklees 020	100%			
Kirklees 021	100%			
Kirklees 022	100%			
Kirklees 023	100%			
Kirklees 024			100%	
Kirklees 025	100%			
Kirklees 026	100%			
Kirklees 027	100%			
Kirklees 028			100%	
Kirklees 029	100%			
Kirklees 030	100%			
Kirklees 031	100%			
Kirklees 032	100%			
Kirklees 033	100%			
Kirklees 034	100%			
Kirklees 035	100%			
Kirklees 036	100%			
Kirklees 037	100%			
Kirklees 038	100%			
Kirklees 039	100%			
Kirklees 040	100%			
Kirklees 041	100%			
Kirklees 042	100%			
Kirklees 043	100%			
Kirklees 044	100%			
Kirklees 045	100%			
Kirklees 046			100%	
Kirklees 047	100%			
Kirklees 048	50%			50%
Kirklees 049	100%			
Kirklees 050	100%			100%
Kirklees 051		100%		
Kirklees 052	100%			
Kirklees 053				100%
Kirklees 054		100%		
Kirklees 055				100%
Kirklees 056		100%		
Kirklees 057		100%		
Kirklees 058				100%
Kirklees 059				100%
Leeds	50%	50%		
Manchester	100%			
Oldham	100%			
Rochdale	100%			
Rotherham		100%		
Selby	50%	50%		
Sheffield		100%		
Tameside	100%			
Trafford	100%			
Wakefield		50%	50%	
Other	50%	50%		

Employment Distribution Gravity Model -Sheet 2					
Location	**No.**	**Penistone Road North**	**Penistone Road South**	**Rowley Lane East**	**Woodsome Road West**
Barnsley	64	0.0%	3.0%	0.0%	0.0%
Bradford	73	3.4%	0.0%	0.0%	0.0%
Calderdale	128	6.0%	0.0%	0.0%	0.0%
Doncaster	13	0.0%	0.6%	0.0%	0.0%
Kirklees 001	1	0.0%	0.0%	0.0%	0.0%
Kirklees 002	3	0.1%	0.0%	0.0%	0.0%
Kirklees 003	5	0.2%	0.0%	0.0%	0.0%
Kirklees 004	1	0.0%	0.0%	0.0%	0.0%
Kirklees 005	5	0.2%	0.0%	0.0%	0.0%
Kirklees 006	2	0.1%	0.0%	0.0%	0.0%
Kirklees 007	1	0.0%	0.0%	0.0%	0.0%
Kirklees 008	2	0.1%	0.0%	0.0%	0.0%
Kirklees 009	2	0.1%	0.0%	0.0%	0.0%
Kirklees 010	8	0.4%	0.0%	0.0%	0.0%
Kirklees 011	5	0.2%	0.0%	0.0%	0.0%
Kirklees 012	1	0.0%	0.0%	0.0%	0.0%
Kirklees 013	7	0.3%	0.0%	0.0%	0.0%
Kirklees 014	2	0.1%	0.0%	0.0%	0.0%
Kirklees 015	11	0.5%	0.0%	0.0%	0.0%
Kirklees 016	11	0.5%	0.0%	0.0%	0.0%
Kirklees 017	15	0.7%	0.0%	0.0%	0.0%
Kirklees 018	1	0.0%	0.0%	0.0%	0.0%
Kirklees 019	5	0.2%	0.0%	0.0%	0.0%
Kirklees 020	1	0.0%	0.0%	0.0%	0.0%
Kirklees 021	7	0.3%	0.0%	0.0%	0.0%
Kirklees 022	18	0.8%	0.0%	0.0%	0.0%
Kirklees 023	8	0.4%	0.0%	0.0%	0.0%
Kirklees 024	10	0.0%	0.0%	0.5%	0.0%
Kirklees 025	36	1.7%	0.0%	0.0%	0.0%
Kirklees 026	25	1.2%	0.0%	0.0%	0.0%
Kirklees 027	5	0.2%	0.0%	0.0%	0.0%
Kirklees 028	4	0.0%	0.0%	0.2%	0.0%
Kirklees 029	205	9.7%	0.0%	0.0%	0.0%
Kirklees 030	9	0.4%	0.0%	0.0%	0.0%
Kirklees 031	19	0.9%	0.0%	0.0%	0.0%
Kirklees 032	25	1.2%	0.0%	0.0%	0.0%
Kirklees 033	54	2.5%	0.0%	0.0%	0.0%
Kirklees 034	34	1.6%	0.0%	0.0%	0.0%
Kirklees 035	10	0.5%	0.0%	0.0%	0.0%
Kirklees 036	4	0.2%	0.0%	0.0%	0.0%
Kirklees 037	20	0.9%	0.0%	0.0%	0.0%
Kirklees 038	9	0.4%	0.0%	0.0%	0.0%
Kirklees 039	22	1.0%	0.0%	0.0%	0.0%
Kirklees 040	19	0.9%	0.0%	0.0%	0.0%
Kirklees 041	7	0.3%	0.0%	0.0%	0.0%
Kirklees 042	110	5.2%	0.0%	0.0%	0.0%
Kirklees 043	21	1.0%	0.0%	0.0%	0.0%
Kirklees 044	24	1.1%	0.0%	0.0%	0.0%
Kirklees 045	22	1.0%	0.0%	0.0%	0.0%
Kirklees 046	24	0.0%	0.0%	1.1%	0.0%
Kirklees 047	7	0.3%	0.0%	0.0%	0.0%
Kirklees 048	22	0.5%	0.0%	0.0%	0.5%
Kirklees 049	17	0.8%	0.0%	0.0%	0.0%
Kirklees 050	14	0.7%	0.0%	0.0%	0.7%
Kirklees 051	116	0.0%	5.5%	0.0%	0.0%
Kirklees 052	6	0.3%	0.0%	0.0%	0.0%
Kirklees 053	37	0.0%	0.0%	0.0%	1.7%
Kirklees 054	51	0.0%	2.4%	0.0%	0.0%
Kirklees 055	13	0.0%	0.0%	0.0%	0.6%
Kirklees 056	56	0.0%	2.6%	0.0%	0.0%
Kirklees 057	55	0.0%	2.6%	0.0%	0.0%
Kirklees 058	17	0.0%	0.0%	0.0%	0.8%
Kirklees 059	55	0.0%	0.0%	0.0%	2.6%
Leeds	187	4.4%	4.4%	0.0%	0.0%
Manchester	8	0.4%	0.0%	0.0%	0.0%
Oldham	11	0.5%	0.0%	0.0%	0.0%
Rochdale	7	0.3%	0.0%	0.0%	0.0%
Rotherham	14	0.0%	0.7%	0.0%	0.0%
Selby	15	0.4%	0.4%	0.0%	0.0%
Sheffield	30	0.0%	1.4%	0.0%	0.0%
Tameside	6	0.3%	0.0%	0.0%	0.0%
Trafford	5	0.2%	0.0%	0.0%	0.0%
Wakefield	157	0.0%	3.7%	3.7%	0.0%
Other	94	2.2%	2.2%	0.0%	0.0%
Total	**2,118**	**58.6%**	**29.5%**	**5.5%**	**6.9%**

		Site 2 (81 units)				
		Penistone Road North	Penistone Road South	Rowley Lane East	Woodsome Road West	Total
AM PEAK	IN	7	3	1	1	12
	OUT	18	10	2	2	32
PM PEAK	IN	17	8	2	2	29
	OUT	9	5	1	1	16
WEEKEND PEAK	IN	11	5	1	1	18
	OUT	10	5	1	1	17

		Site 3 (63 units)				
		Penistone Road North	Penistone Road South	Rowley Lane East	Woodsome Road West	Total
AM PEAK	IN	5	3	1	1	10
	OUT	15	7	1	2	25
PM PEAK	IN	13	7	1	1	22
	OUT	7	4	1	1	13
WEEKEND PEAK	IN	8	4	1	1	14
	OUT	7	4	1	1	13

		Site 4 (Hub Uses)				
		Penistone Road North	Penistone Road South	Rowley Lane East	Woodsome Road West	Total
AM PEAK	IN	29	15	3	3	50
	OUT	29	15	3	3	50
PM PEAK	IN	29	15	3	3	50
	OUT	29	15	3	3	50
WEEKEND PEAK	IN	59	29	5	7	100
	OUT	59	29	5	7	100

		Site 6 (45 units)				
		Penistone Road North	Penistone Road South	Rowley Lane East	Woodsome Road West	Total
AM PEAK	IN	4	2	0	1	7
	OUT	11	5	1	1	18
PM PEAK	IN	9	5	1	1	16
	OUT	5	3	0	1	9
WEEKEND PEAK	IN	6	3	0	1	10
	OUT	5	3	0	1	9

		Site 16A (285 units)				
		Penistone Road North	Penistone Road South	Rowley Lane East	Woodsome Road West	Total
AM PEAK	IN	25	13	2	3	43
	OUT	67	33	6	8	114
PM PEAK	IN	59	30	5	7	101
	OUT	34	17	3	4	58
WEEKEND PEAK	IN	38	19	3	4	64
	OUT	35	17	3	4	59

		Site 17 (405 units)				
		Penistone Road North	Penistone Road South	Rowley Lane East	Woodsome Road West	Total
AM PEAK	IN	36	18	3	4	61
	OUT	95	47	9	11	162
PM PEAK	IN	83	42	8	10	143
	OUT	48	24	4	6	82
WEEKEND PEAK	IN	54	27	5	6	92
	OUT	49	24	4	6	83

APPENDIX E

ARCADY Output - Site 2/4 Roundabout

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\9000\9000\9058_FarnleyTyas\engineering\Traffic_Programs\Arcady\Site 4 Roundabout AM.vai"
(drive-on-the-left) at 10:55:47 on Monday, 11 January 2016

FILE PROPERTIES

RUN TITLE: Farnley Estates Masterplan Proposals
LOCATION: Penistone Road
DATE: 05/01/16
CLIENT: Farnley Estates
ENUMERATOR: adam.darwin [PC115]
JOB NUMBER: 9058
STATUS: Preliminary
DESCRIPTION:

INPUT DATA

ARM A - Penistone Road (s)
ARM B - Site 4 Access
ARM C - Penistone Road (n)
ARM D - Site 2 Access

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.00	7.00	10.00	20.00	40.00	40.0	0.570	23.177
ARM B	3.50	4.00	5.00	20.00	40.00	22.0	0.552	20.132
ARM C	3.00	7.00	22.00	20.00	40.00	34.0	0.628	27.533
ARM D	3.50	4.00	4.00	20.00	40.00	21.0	0.553	20.087

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: 2025 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	10.34	15.51	10.34
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	10.44	15.66	10.44
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 2

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.06	0.09	0.06
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.09	0.13	0.09
ARM D	15.00	45.00	75.00	0.40	0.60	0.40

DEMAND SET TITLE: Site 3

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.19	0.28	0.19
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.06	0.09	0.06
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 4

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.26	0.39	0.26
ARM B	15.00	45.00	75.00	0.63	0.94	0.63
ARM C	15.00	45.00	75.00	0.36	0.54	0.36
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 6

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.14	0.21	0.14
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.05	0.08	0.05
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 16A

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.84	1.26	0.84
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.31	0.47	0.31
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 17

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	1.19	1.78	1.19
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.45	0.67	0.45
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: 2025 Base

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	827.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		835.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 2

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	5.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	7.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.438	0.000	0.563	0.000
		14.0	0.0	18.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 3

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	15.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		5.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 4

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	1.000	0.000	0.000
		0.0	21.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.420	0.000	0.580	0.000
		21.0	0.0	29.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	1.000	0.000	0.000
		0.0	29.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 6

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	11.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		4.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 16A

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	67.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		25.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 17

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	95.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		36.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	13.06	22.84	0.572	- - -	0.0	1.3	18.8	-	0.101
ARM B	0.63	12.99	0.048	- - -	0.0	0.1	0.7	-	0.081
ARM C	11.81	27.33	0.432	- - -	0.0	0.8	11.0	-	0.064
ARM D	0.40	13.49	0.030	- - -	0.0	0.0	0.4	-	0.076
07.30-07.45									
ARM A	15.60	22.78	0.685	- - -	1.3	2.1	30.1	-	0.137
ARM B	0.75	11.58	0.065	- - -	0.1	0.1	1.0	-	0.092
ARM C	14.10	27.29	0.517	- - -	0.8	1.1	15.5	-	0.076
ARM D	0.48	12.19	0.039	- - -	0.0	0.0	0.6	-	0.085
07.45-08.00									
ARM A	19.10	22.69	0.842	- - -	2.1	4.8	63.9	-	0.254
ARM B	0.92	9.71	0.094	- - -	0.1	0.1	1.5	-	0.114
ARM C	17.27	27.23	0.634	- - -	1.1	1.7	24.5	-	0.100
ARM D	0.59	10.43	0.056	- - -	0.0	0.1	0.9	-	0.101
08.00-08.15									
ARM A	19.10	22.69	0.842	- - -	4.8	5.1	74.4	-	0.275
ARM B	0.92	9.62	0.095	- - -	0.1	0.1	1.6	-	0.115
ARM C	17.27	27.23	0.634	- - -	1.7	1.7	25.7	-	0.100
ARM D	0.59	10.40	0.056	- - -	0.1	0.1	0.9	-	0.102
08.15-08.30									
ARM A	15.60	22.77	0.685	- - -	5.1	2.2	36.2	-	0.147
ARM B	0.75	11.44	0.065	- - -	0.1	0.1	1.1	-	0.094
ARM C	14.10	27.29	0.517	- - -	1.7	1.1	16.7	-	0.076
ARM D	0.48	12.16	0.039	- - -	0.1	0.0	0.6	-	0.086
08.30-08.45									
ARM A	13.06	22.84	0.572	- - -	2.2	1.4	21.2	-	0.103
ARM B	0.63	12.91	0.049	- - -	0.1	0.1	0.8	-	0.081
ARM C	11.81	27.33	0.432	- - -	1.1	0.8	11.8	-	0.065
ARM D	0.40	13.45	0.030	- - -	0.0	0.0	0.5	-	0.077

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.3	*
07.45	2.1	**
08.00	4.8	*****
08.15	5.1	*****
08.30	2.2	**
08.45	1.4	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.1
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.1	*
08.00	1.7	**
08.15	1.7	**
08.30	1.1	*
08.45	0.8	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.0
08.00	0.1
08.15	0.1
08.30	0.0
08.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1432.9	955.2	244.6	0.17	244.7	0.17
B	68.8	45.9	6.7	0.10	6.7	0.10
C	1295.2	863.5	105.1	0.08	105.2	0.08
D	44.0	29.4	3.9	0.09	3.9	0.09
ALL	2840.9	1894.0	360.4	0.13	360.4	0.13

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING 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.

END OF JOB

========== end of file ==========

Printed at 10:56:16 on 11/01/2016]

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-
"j:\9000\9000\9058_FarnleyTyas\engineering\Traffic_Programs\Arcady\Site 4 Roundabout PM.vai"
(drive-on-the-left) at 10:56:43 on Monday, 11 January 2016

FILE PROPERTIES

RUN TITLE: Farnley Estates Masterplan Proposals
LOCATION: Penistone Road
DATE: 05/01/16
CLIENT: Farnley Estates
ENUMERATOR: adam.darwin [PC115]
JOB NUMBER: 9058
STATUS: Preliminary
DESCRIPTION:

INPUT DATA

ARM A - Penistone Road (s)
ARM B - Site 4 Access
ARM C - Penistone Road (n)
ARM D - Site 2 Access

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.00	7.00	10.00	20.00	40.00	40.0	0.570	23.177
ARM B	3.50	4.00	5.00	20.00	40.00	22.0	0.552	20.132
ARM C	3.00	7.00	22.00	20.00	40.00	34.0	0.628	27.533
ARM D	3.50	4.00	4.00	20.00	40.00	21.0	0.553	20.087

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(17.00)AND ENDS(18.30)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: 2025 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	10.38	15.56	10.38
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	14.95	22.42	14.95
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 2

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.15	0.23	0.15
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.21	0.32	0.21
ARM D	15.00	45.00	75.00	0.20	0.30	0.20

DEMAND SET TITLE: Site 3

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.09	0.13	0.09
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.16	0.24	0.16
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 4

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.26	0.39	0.26
ARM B	15.00	45.00	75.00	0.63	0.94	0.63
ARM C	15.00	45.00	75.00	0.36	0.54	0.36
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 6

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.06	0.09	0.06
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.11	0.17	0.11
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 16A

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.43	0.64	0.43
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.74	1.11	0.74
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 17

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.60	0.90	0.60
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	1.04	1.56	1.04
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: 2025 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	830.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		1196.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 2

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)			
	ARM A	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)	1.000 12.0 (0.0)
	ARM B	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)
	ARM C	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)	1.000 17.0 (0.0)
	ARM D	0.438 7.0 (0.0)	0.000 0.0 (0.0)	0.563 9.0 (0.0)	0.000 0.0 (0.0)

DEMAND SET TITLE: Site 3

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)			
	ARM A	0.000 0.0 (0.0)	0.000 0.0 (0.0)	1.000 7.0 (0.0)	0.000 0.0 (0.0)
	ARM B	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)
	ARM C	1.000 13.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)
	ARM D	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)

DEMAND SET TITLE: Site 4

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30		TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)			
	ARM A	0.000 0.0 (0.0)	1.000 21.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)
	ARM B	0.420 21.0 (0.0)	0.000 0.0 (0.0)	0.580 29.0 (0.0)	0.000 0.0 (0.0)
	ARM C	0.000 0.0 (0.0)	1.000 29.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)
	ARM D	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)

DEMAND SET TITLE: Site 6

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	5.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		9.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 16A

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	34.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		59.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 17

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	48.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		83.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	12.01	22.91	0.524	- - -	0.0	1.1	15.7	-	0.091
ARM B	0.63	13.63	0.046	- - -	0.0	0.0	0.7	-	0.077
ARM C	17.64	27.27	0.647	- - -	0.0	1.8	25.5	-	0.101
ARM D	0.20	10.38	0.019	- - -	0.0	0.0	0.3	-	0.098
17.15-17.30									
ARM A	14.34	22.85	0.627	- - -	1.1	1.7	23.7	-	0.116
ARM B	0.75	12.34	0.061	- - -	0.0	0.1	0.9	-	0.086
ARM C	21.07	27.22	0.774	- - -	1.8	3.3	45.6	-	0.157
ARM D	0.24	8.47	0.028	- - -	0.0	0.0	0.4	-	0.121
17.30-17.45									
ARM A	17.56	22.79	0.771	- - -	1.7	3.2	44.1	-	0.185
ARM B	0.92	10.61	0.086	- - -	0.1	0.1	1.4	-	0.103
ARM C	25.80	27.15	0.950	- - -	3.3	11.9	137.0	-	0.428
ARM D	0.29	6.10	0.048	- - -	0.0	0.0	0.7	-	0.172
17.45-18.00									
ARM A	17.56	22.78	0.771	- - -	3.2	3.3	48.7	-	0.191
ARM B	0.92	10.56	0.087	- - -	0.1	0.1	1.4	-	0.104
ARM C	25.80	27.15	0.950	- - -	11.9	14.0	196.1	-	0.578
ARM D	0.29	5.87	0.050	- - -	0.0	0.1	0.8	-	0.179
18.00-18.15									
ARM A	14.34	22.84	0.628	- - -	3.3	1.7	27.2	-	0.121
ARM B	0.75	12.26	0.061	- - -	0.1	0.1	1.0	-	0.087
ARM C	21.07	27.22	0.774	- - -	14.0	3.6	69.4	-	0.204
ARM D	0.24	8.03	0.030	- - -	0.1	0.0	0.5	-	0.129
18.15-18.30									
ARM A	12.01	22.90	0.524	- - -	1.7	1.1	17.3	-	0.092
ARM B	0.63	13.56	0.046	- - -	0.1	0.0	0.7	-	0.077
ARM C	17.64	27.27	0.647	- - -	3.6	1.9	29.4	-	0.106
ARM D	0.20	10.25	0.020	- - -	0.0	0.0	0.3	-	0.100

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.1	*
17.30	1.7	**
17.45	3.2	***
18.00	3.3	***
18.15	1.7	**
18.30	1.1	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.1
17.45	0.1
18.00	0.1
18.15	0.1
18.30	0.0

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.8	**
17.30	3.3	***
17.45	11.9	**********
18.00	14.0	**********
18.15	3.6	****
18.30	1.9	**

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.1
18.15	0.0
18.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1317.2	878.2	176.7	0.13	176.7	0.13
B	68.8	45.9	6.2	0.09	6.2	0.09
C	1935.3	1290.2	503.1	0.26	503.2	0.26
D	22.0	14.7	3.0	0.14	3.0	0.14
ALL	3343.3	2228.9	689.0	0.21	689.1	0.21

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING 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.

END OF JOB

========== end of file ==========

Printed at 10:56:53 on 11/01/2016]

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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

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Run with file:-
"j:\9000\9000\9058_FarnleyTyas\engineering\Traffic_Programs\Arcady\Site 4 Roundabout AM.vai"
(drive-on-the-left) at 10:55:47 on Monday, 11 January 2016

FILE PROPERTIES

RUN TITLE: Farnley Estates Masterplan Proposals
LOCATION: Penistone Road
DATE: 05/01/16
CLIENT: Farnley Estates
ENUMERATOR: adam.darwin [PC115]
JOB NUMBER: 9058
STATUS: Preliminary
DESCRIPTION:

INPUT DATA

ARM A - Penistone Road (s)
ARM B - Site 4 Access
ARM C - Penistone Road (n)
ARM D - Site 2 Access

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.00	7.00	10.00	20.00	40.00	40.0	0.570	23.177
ARM B	3.50	4.00	5.00	20.00	40.00	22.0	0.552	20.132
ARM C	3.00	7.00	22.00	20.00	40.00	34.0	0.628	27.533
ARM D	3.50	4.00	4.00	20.00	40.00	21.0	0.553	20.087

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: 2025 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	10.34	15.51	10.34
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	10.44	15.66	10.44
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 2

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.06	0.09	0.06
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.09	0.13	0.09
ARM D	15.00	45.00	75.00	0.40	0.60	0.40

DEMAND SET TITLE: Site 3

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.19	0.28	0.19
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.06	0.09	0.06
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 4

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.26	0.39	0.26
ARM B	15.00	45.00	75.00	0.63	0.94	0.63
ARM C	15.00	45.00	75.00	0.36	0.54	0.36
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 6

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.14	0.21	0.14
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.05	0.08	0.05
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 16A

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.84	1.26	0.84
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.31	0.47	0.31
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: Site 17

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	1.19	1.78	1.19
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.45	0.67	0.45
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: 2025 Base

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	827.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		835.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 2

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	5.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	7.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.438	0.000	0.563	0.000
		14.0	0.0	18.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 3

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	15.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		5.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 4

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	1.000	0.000	0.000
		0.0	21.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.420	0.000	0.580	0.000
		21.0	0.0	29.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	1.000	0.000	0.000
		0.0	29.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 6

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	11.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		4.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 16A

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	67.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		25.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 17

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	95.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		36.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	13.06	22.84	0.572	- - -	0.0	1.3	18.8	-	0.101
ARM B	0.63	12.99	0.048	- - -	0.0	0.1	0.7	-	0.081
ARM C	11.81	27.33	0.432	- - -	0.0	0.8	11.0	-	0.064
ARM D	0.40	13.49	0.030	- - -	0.0	0.0	0.4	-	0.076
07.30-07.45									
ARM A	15.60	22.78	0.685	- - -	1.3	2.1	30.1	-	0.137
ARM B	0.75	11.58	0.065	- - -	0.1	0.1	1.0	-	0.092
ARM C	14.10	27.29	0.517	- - -	0.8	1.1	15.5	-	0.076
ARM D	0.48	12.19	0.039	- - -	0.0	0.0	0.6	-	0.085
07.45-08.00									
ARM A	19.10	22.69	0.842	- - -	2.1	4.8	63.9	-	0.254
ARM B	0.92	9.71	0.094	- - -	0.1	0.1	1.5	-	0.114
ARM C	17.27	27.23	0.634	- - -	1.1	1.7	24.5	-	0.100
ARM D	0.59	10.43	0.056	- - -	0.0	0.1	0.9	-	0.101
08.00-08.15									
ARM A	19.10	22.69	0.842	- - -	4.8	5.1	74.4	-	0.275
ARM B	0.92	9.62	0.095	- - -	0.1	0.1	1.6	-	0.115
ARM C	17.27	27.23	0.634	- - -	1.7	1.7	25.7	-	0.100
ARM D	0.59	10.40	0.056	- - -	0.1	0.1	0.9	-	0.102
08.15-08.30									
ARM A	15.60	22.77	0.685	- - -	5.1	2.2	36.2	-	0.147
ARM B	0.75	11.44	0.065	- - -	0.1	0.1	1.1	-	0.094
ARM C	14.10	27.29	0.517	- - -	1.7	1.1	16.7	-	0.076
ARM D	0.48	12.16	0.039	- - -	0.1	0.0	0.6	-	0.086
08.30-08.45									
ARM A	13.06	22.84	0.572	- - -	2.2	1.4	21.2	-	0.103
ARM B	0.63	12.91	0.049	- - -	0.1	0.1	0.8	-	0.081
ARM C	11.81	27.33	0.432	- - -	1.1	0.8	11.8	-	0.065
ARM D	0.40	13.45	0.030	- - -	0.0	0.0	0.5	-	0.077

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.3	*
07.45	2.1	**
08.00	4.8	*****
08.15	5.1	*****
08.30	2.2	**
08.45	1.4	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.1
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.1	*
08.00	1.7	**
08.15	1.7	**
08.30	1.1	*
08.45	0.8	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.0
07.45	0.0
08.00	0.1
08.15	0.1
08.30	0.0
08.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1432.9	955.2	244.6	0.17	244.7	0.17
B	68.8	45.9	6.7	0.10	6.7	0.10
C	1295.2	863.5	105.1	0.08	105.2	0.08
D	44.0	29.4	3.9	0.09	3.9	0.09
ALL	2840.9	1894.0	360.4	0.13	360.4	0.13

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING 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.

END OF JOB

========== end of file ==========

Printed at 10:55:57 on 11/01/2016]

APPENDIX F

ARCADY Output - Site 3/6 Roundabout

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\9000\9000\9058_FarnleyTyas\engineering\Traffic_Programs\Arcady\Rowley Lane Roundabout AM.vai"
(drive-on-the-left) at 20:01:33 on Tuesday, 5 January 2016

FILE PROPERTIES

RUN TITLE: Farnley Estates Masterplan Proposals
LOCATION: Penistone Road
DATE: 05/01/16
CLIENT: Farnley Estates
ENUMERATOR: adam.darwin [PC115]
JOB NUMBER: 9058
STATUS: Preliminary
DESCRIPTION:

INPUT DATA

ARM A - Penistone Road (s)
ARM B - Woodsome Road
ARM C - Penistone Road (n)
ARM D - Rowley Lane

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.00	6.80	15.00	20.00	40.00	39.0	0.592	24.944
ARM B	3.00	6.00	2.00	12.00	40.00	46.0	0.470	16.197
ARM C	3.00	6.90	30.00	20.00	40.00	33.0	0.644	28.756
ARM D	3.00	6.00	6.00	20.00	40.00	34.0	0.546	20.686

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(07.15)AND ENDS(08.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: 2025 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	10.46	15.69	10.46
ARM B	15.00	45.00	75.00	2.31	3.47	2.31
ARM C	15.00	45.00	75.00	10.44	15.66	10.44
ARM D	15.00	45.00	75.00	4.28	6.41	4.28

DEMAND SET TITLE: Site 2

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.04	0.06	0.04
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	0.17	0.26	0.17
ARM D	15.00	45.00	75.00	0.01	0.02	0.01

DEMAND SET TITLE: Site 3

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.04	0.06	0.04
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	0.06	0.09	0.06
ARM D	15.00	45.00	75.00	0.30	0.45	0.30

DEMAND SET TITLE: Site 4

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.19	0.28	0.19
ARM B	15.00	45.00	75.00	0.04	0.06	0.04
ARM C	15.00	45.00	75.00	0.26	0.39	0.26
ARM D	15.00	45.00	75.00	0.04	0.06	0.04

DEMAND SET TITLE: Site 6

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
ARM A	15.00	45.00	75.00	0.03	0.04	0.03
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	0.05	0.08	0.05
ARM D	15.00	45.00	75.00	0.21	0.32	0.21

DEMAND SET TITLE: Site 16A

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
ARM A	15.00	45.00	75.00	0.16	0.24	0.16
ARM B	15.00	45.00	75.00	1.33	1.99	1.33
ARM C	15.00	45.00	75.00	0.31	0.47	0.31
ARM D	15.00	45.00	75.00	0.03	0.04	0.03

DEMAND SET TITLE: Site 17

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
ARM A	15.00	45.00	75.00	1.44	2.16	1.44
ARM B	15.00	45.00	75.00	0.05	0.08	0.05
ARM C	15.00	45.00	75.00	0.45	0.67	0.45
ARM D	15.00	45.00	75.00	0.04	0.06	0.04

DEMAND SET TITLE: 2025 Base

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.097	0.777	0.127
		0.0	81.0	650.0	106.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.076	0.000	0.632	0.292
		14.0	0.0	117.0	54.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.819	0.072	0.000	0.109
		684.0	60.0	0.0	91.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.401	0.424	0.175	0.000
		137.0	145.0	60.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 2

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	3.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.714	0.143	0.000	0.143
		10.0	2.0	0.0	2.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	1.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 3

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	5.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.292	0.083	0.625	0.000
		7.0	2.0	15.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 4

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	15.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	3.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.714	0.143	0.000	0.143
		15.0	3.0	0.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	1.000	0.000
		0.0	0.0	3.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 6

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	2.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.294	0.059	0.647	0.000
		5.0	1.0	11.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 16A

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	1.000	0.000	0.000
		0.0	13.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.311	0.000	0.632	0.057
		33.0	0.0	67.0	6.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	1.000	0.000	0.000
		0.0	25.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	1.000	0.000	0.000
		0.0	2.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 17

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.096	0.826	0.078
		0.0	11.0	95.0	9.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	1.000	0.000	0.000	0.000
		4.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		36.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	1.000	0.000	0.000	0.000
		3.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	12.40	22.51	0.551	- - -	0.0	1.2	17.3	-	0.097
ARM B	3.78	10.50	0.360	- - -	0.0	0.6	7.9	-	0.147
ARM C	11.79	26.89	0.439	- - -	0.0	0.8	11.3	-	0.066
ARM D	4.92	14.64	0.336	- - -	0.0	0.5	7.2	-	0.102

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
ARM A	14.80	22.03	0.672	- - -	1.2	2.0	28.4	-	0.136
ARM B	4.51	9.37	0.481	- - -	0.6	0.9	12.9	-	0.204
ARM C	14.08	26.52	0.531	- - -	0.8	1.1	16.3	-	0.080
ARM D	5.87	13.45	0.437	- - -	0.5	0.8	11.1	-	0.131

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	18.13	21.38	0.848	- - -	2.0	5.0	65.3	-	0.275
ARM B	5.52	7.90	0.699	- - -	0.9	2.1	28.6	-	0.394
ARM C	17.25	26.04	0.662	- - -	1.1	1.9	27.5	-	0.112
ARM D	7.19	11.84	0.607	- - -	0.8	1.5	21.0	-	0.211

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	18.13	21.36	0.849	- - -	5.0	5.3	77.3	-	0.304
ARM B	5.52	7.82	0.707	- - -	2.1	2.3	33.5	-	0.430
ARM C	17.25	26.01	0.663	- - -	1.9	1.9	29.0	-	0.114
ARM D	7.19	11.81	0.609	- - -	1.5	1.5	22.7	-	0.216

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	14.80	22.00	0.673	- - -	5.3	2.1	34.5	-	0.147
ARM B	4.51	9.25	0.487	- - -	2.3	1.0	15.8	-	0.219
ARM C	14.08	26.47	0.532	- - -	1.9	1.1	17.8	-	0.081
ARM D	5.87	13.40	0.438	- - -	1.5	0.8	12.4	-	0.134

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	12.40	22.49	0.551	- - -	2.1	1.2	19.5	-	0.100
ARM B	3.78	10.43	0.362	- - -	1.0	0.6	9.0	-	0.152
ARM C	11.79	26.86	0.439	- - -	1.1	0.8	12.1	-	0.067
ARM D	4.92	14.60	0.337	- - -	0.8	0.5	7.9	-	0.104

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.2	*
07.45	2.0	**
08.00	5.0	*****
08.15	5.3	*****
08.30	2.1	**
08.45	1.2	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.6	*
07.45	0.9	*
08.00	2.1	**
08.15	2.3	**
08.30	1.0	*
08.45	0.6	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.1	*
08.00	1.9	**
08.15	1.9	**
08.30	1.1	*
08.45	0.8	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	*
07.45	0.8	*
08.00	1.5	*
08.15	1.5	**
08.30	0.8	*
08.45	0.5	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1359.9	906.6	242.3	0.18	242.3	0.18
B	414.3	276.2	107.7	0.26	107.7	0.26
C	1293.8	862.6	114.1	0.09	114.1	0.09
D	539.6	359.7	82.4	0.15	82.4	0.15
ALL	3607.6	2405.1	546.5	0.15	546.5	0.15

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING 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.

END OF JOB

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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program advice and maintenance, contact:

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Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\9000\9000\9058_FarnleyTyas\engineering\Traffic_Programs\Arcady\Rowley Lane Roundabout PM.vai"
(drive-on-the-left) at 19:59:00 on Tuesday, 5 January 2016

FILE PROPERTIES

RUN TITLE: Farnley Estates Masterplan Proposals
LOCATION: Penistone Road
DATE: 05/01/16
CLIENT: Farnley Estates
ENUMERATOR: adam.darwin [PC115]
JOB NUMBER: 9058
STATUS: Preliminary
DESCRIPTION:

INPUT DATA

ARM A - Penistone Road (s)
ARM B - Woodsome Road
ARM C - Penistone Road (n)
ARM D - Rowley Lane

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.00	6.80	15.00	20.00	40.00	39.0	0.592	24.944
ARM B	3.00	6.00	2.00	12.00	40.00	46.0	0.470	16.197
ARM C	3.00	6.90	30.00	20.00	40.00	33.0	0.644	28.756
ARM D	3.00	6.00	6.00	20.00	40.00	34.0	0.546	20.686

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(17.00)AND ENDS(18.30)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: 2025 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	10.88	16.31	10.88
ARM B	15.00	45.00	75.00	1.49	2.23	1.49
ARM C	15.00	45.00	75.00	14.95	22.42	14.95
ARM D	15.00	45.00	75.00	4.24	6.36	4.24

DEMAND SET TITLE: Site 2

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.10	0.15	0.10
ARM B	15.00	45.00	75.00	0.03	0.04	0.03
ARM C	15.00	45.00	75.00	0.09	0.13	0.09
ARM D	15.00	45.00	75.00	0.03	0.04	0.03

DEMAND SET TITLE: Site 3

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.09	0.13	0.09
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	0.16	0.24	0.16
ARM D	15.00	45.00	75.00	0.15	0.23	0.15

DEMAND SET TITLE: Site 4

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.19	0.28	0.19
ARM B	15.00	45.00	75.00	0.04	0.06	0.04
ARM C	15.00	45.00	75.00	0.26	0.39	0.26
ARM D	15.00	45.00	75.00	0.04	0.06	0.04

DEMAND SET TITLE: Site 6

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
ARM A	15.00	45.00	75.00	0.06	0.09	0.06
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	0.11	0.17	0.11
ARM D	15.00	45.00	75.00	0.11	0.17	0.11

DEMAND SET TITLE: Site 16A

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
ARM A	15.00	45.00	75.00	0.38	0.56	0.38
ARM B	15.00	45.00	75.00	0.68	1.01	0.68
ARM C	15.00	45.00	75.00	0.74	1.11	0.74
ARM D	15.00	45.00	75.00	0.06	0.09	0.06

DEMAND SET TITLE: Site 17

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
ARM A	15.00	45.00	75.00	0.73	1.09	0.73
ARM B	15.00	45.00	75.00	0.13	0.19	0.13
ARM C	15.00	45.00	75.00	1.04	1.56	1.04
ARM D	15.00	45.00	75.00	0.10	0.15	0.10

DEMAND SET TITLE: 2025 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.069	0.822	0.109
		0.0	60.0	715.0	95.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.160	0.000	0.597	0.244
		19.0	0.0	71.0	29.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.855	0.054	0.000	0.092
		1022.0	64.0	0.0	110.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.516	0.354	0.130	0.000
		175.0	120.0	44.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 2

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	8.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	2.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.714	0.143	0.000	0.143
		5.0	1.0	0.0	1.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	1.000	0.000
		0.0	0.0	2.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

DEMAND SET TITLE: Site 3

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	7.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	13.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.333	0.083	0.583	0.000
		4.0	1.0	7.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

DEMAND SET TITLE: Site 4

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	15.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	3.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.714	0.143	0.000	0.143
		15.0	3.0	0.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	1.000	0.000
		0.0	0.0	3.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

DEMAND SET TITLE: Site 6

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	5.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	9.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.333	0.111	0.556	0.000
		3.0	1.0	5.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

DEMAND SET TITLE: Site 16A

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	1.000	0.000	0.000
		0.0	30.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.315	0.000	0.630	0.056
		17.0	0.0	34.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	1.000	0.000	0.000
		0.0	59.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	1.000	0.000	0.000
		0.0	5.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

DEMAND SET TITLE: Site 17

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
17.00 - 18.30	ARM A	0.000	0.103	0.828	0.069
		0.0	6.0	48.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	1.000	0.000	0.000	0.000
		10.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		83.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	1.000	0.000	0.000	0.000
		8.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	12.46	22.62	0.551	- - -	0.0	1.2	17.3	-	0.097
ARM B	2.38	10.59	0.225	- - -	0.0	0.3	4.2	-	0.121
ARM C	17.42	27.22	0.640	- - -	0.0	1.7	24.8	-	0.100
ARM D	4.74	11.85	0.400	- - -	0.0	0.7	9.4	-	0.139
17.15-17.30									
ARM A	14.88	22.17	0.671	- - -	1.2	2.0	28.3	-	0.135
ARM B	2.85	9.48	0.300	- - -	0.3	0.4	6.1	-	0.150
ARM C	20.80	26.92	0.773	- - -	1.7	3.3	45.2	-	0.158
ARM D	5.66	10.12	0.560	- - -	0.7	1.2	17.3	-	0.221
17.30-17.45									
ARM A	18.22	21.63	0.843	- - -	2.0	4.8	63.4	-	0.266
ARM B	3.49	8.03	0.434	- - -	0.4	0.7	10.6	-	0.218
ARM C	25.47	26.52	0.960	- - -	3.3	13.1	147.1	-	0.467
ARM D	6.94	8.00	0.867	- - -	1.2	4.8	57.2	-	0.672
17.45-18.00									
ARM A	18.22	21.56	0.845	- - -	4.8	5.1	75.1	-	0.293
ARM B	3.49	7.95	0.439	- - -	0.7	0.8	11.4	-	0.224
ARM C	25.47	26.50	0.961	- - -	13.1	16.0	220.5	-	0.665
ARM D	6.94	7.77	0.892	- - -	4.8	6.1	84.0	-	0.951
18.00-18.15									
ARM A	14.88	22.02	0.676	- - -	5.1	2.1	34.9	-	0.148
ARM B	2.85	9.35	0.305	- - -	0.8	0.4	6.9	-	0.155
ARM C	20.80	26.89	0.773	- - -	16.0	3.6	73.8	-	0.217
ARM D	5.66	9.66	0.587	- - -	6.1	1.5	27.6	-	0.292
18.15-18.30									
ARM A	12.46	22.58	0.552	- - -	2.1	1.2	19.5	-	0.100
ARM B	2.38	10.52	0.227	- - -	0.4	0.3	4.6	-	0.123
ARM C	17.42	27.21	0.640	- - -	3.6	1.8	28.6	-	0.105
ARM D	4.74	11.73	0.404	- - -	1.5	0.7	10.9	-	0.145

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.2	*
17.30	2.0	**
17.45	4.8	*****
18.00	5.1	*****
18.15	2.1	**
18.30	1.2	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.3	
17.30	0.4	
17.45	0.7	*
18.00	0.8	*
18.15	0.4	
18.30	0.3	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	1.7	**
17.30	3.3	***
17.45	13.1	*************
18.00	16.0	****************
18.15	3.6	****
18.30	1.8	**

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.7	*
17.30	1.2	*
17.45	4.8	*****
18.00	6.1	******
18.15	1.5	*
18.30	0.7	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1366.8	911.2	238.5	0.17	238.6	0.17
B	261.5	174.3	43.9	0.17	43.9	0.17
C	1910.5	1273.7	540.1	0.28	540.1	0.28
D	520.3	346.9	206.4	0.40	206.4	0.40
ALL	4059.1	2706.1	1028.9	0.25	1029.0	0.25

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING 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.

END OF JOB

========== end of file ==========

Printed at 19:59:44 on 05/01/2016]

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA,UK

Run with file:-
"j:\9000\9000\9058_FarnleyTyas\engineering\Traffic_Programs\Arcady\Rowley Lane Roundabout Sat.vai"
(drive-on-the-left) at 20:12:13 on Tuesday, 5 January 2016

FILE PROPERTIES

RUN TITLE: Farnley Estates Masterplan Proposals
LOCATION: Penistone Road
DATE: 05/01/16
CLIENT: Farnley Estates
ENUMERATOR: adam.darwin [PC115]
JOB NUMBER: 9058
STATUS: Preliminary
DESCRIPTION:

INPUT DATA

ARM A - Penistone Road (s)
ARM B - Woodsome Road
ARM C - Penistone Road (n)
ARM D - Rowley Lane

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.00	6.80	15.00	20.00	40.00	39.0	0.592	24.944
ARM B	3.00	6.00	2.00	12.00	40.00	46.0	0.470	16.197
ARM C	3.00	6.90	30.00	20.00	40.00	33.0	0.644	28.756
ARM D	3.00	6.00	6.00	20.00	40.00	34.0	0.546	20.686

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(12.00)AND ENDS(13.30)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: 2025 Base

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.30	16.95	11.30
ARM B	15.00	45.00	75.00	1.55	2.32	1.55
ARM C	15.00	45.00	75.00	12.50	18.75	12.50
ARM D	15.00	45.00	75.00	1.76	2.64	1.76

DEMAND SET TITLE: Site 2

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.06	0.09	0.06
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	0.09	0.13	0.09
ARM D	15.00	45.00	75.00	0.01	0.02	0.01

DEMAND SET TITLE: Site 3

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.05	0.08	0.05
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	0.10	0.15	0.10
ARM D	15.00	45.00	75.00	0.15	0.23	0.15

DEMAND SET TITLE: Site 4

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.36	0.54	0.36
ARM B	15.00	45.00	75.00	0.09	0.13	0.09
ARM C	15.00	45.00	75.00	0.51	0.77	0.51
ARM D	15.00	45.00	75.00	0.06	0.09	0.06

DEMAND SET TITLE: Site 6

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.04	0.06	0.04
ARM B	15.00	45.00	75.00	0.01	0.02	0.01
ARM C	15.00	45.00	75.00	0.08	0.11	0.08
ARM D	15.00	45.00	75.00	0.11	0.17	0.11

DEMAND SET TITLE: Site 16A

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
ARM A	15.00	45.00	75.00	0.24	0.36	0.24
ARM B	15.00	45.00	75.00	0.69	1.03	0.69
ARM C	15.00	45.00	75.00	0.47	0.71	0.47
ARM D	15.00	45.00	75.00	0.04	0.06	0.04

DEMAND SET TITLE: Site 17

T15

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
ARM A	15.00	45.00	75.00	0.74	1.11	0.74
ARM B	15.00	45.00	75.00	0.08	0.11	0.08
ARM C	15.00	45.00	75.00	0.68	1.01	0.68
ARM D	15.00	45.00	75.00	0.06	0.09	0.06

DEMAND SET TITLE: 2025 Base

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
12.00 - 13.30	ARM A	0.000	0.025	0.898	0.076
		0.0	23.0	812.0	69.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.282	0.000	0.387	0.331
		35.0	0.0	48.0	41.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.839	0.073	0.000	0.088
		839.0	73.0	0.0	88.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.539	0.248	0.213	0.000
		76.0	35.0	30.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 2

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
12.00 - 13.30	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	5.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.714	0.143	0.000	0.143
		5.0	1.0	0.0	1.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	1.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 3

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
12.00 - 13.30	ARM A	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	8.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.333	0.083	0.583	0.000
		4.0	1.0	7.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 4

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
12.00 - 13.30	ARM A	0.000	0.000	1.000	0.000
		0.0	0.0	29.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	1.000	0.000
		0.0	0.0	7.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.707	0.171	0.000	0.122
		29.0	7.0	0.0	5.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	0.000	1.000	0.000
		0.0	0.0	5.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 6

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
12.00 - 13.30	ARM A	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	6.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.333	0.111	0.556	0.000
		3.0	1.0	5.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

DEMAND SET TITLE: Site 16A

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
12.00 - 13.30					
	ARM A	0.000	1.000	0.000	0.000
		0.0	19.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.309	0.000	0.636	0.055
		17.0	0.0	35.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.000	1.000	0.000	0.000
		0.0	38.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.000	1.000	0.000	0.000
		0.0	3.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

DEMAND SET TITLE: Site 17

T33

TIME	FROM/T	ARM A	ARM B	ARM C	ARM D
12.00 - 13.30					
	ARM A	0.000	0.102	0.831	0.068
		0.0	6.0	49.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	1.000	0.000	0.000	0.000
		6.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000	0.000
		54.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	1.000	0.000	0.000	0.000
		5.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.00-12.15									
ARM A	12.84	23.42	0.548	- -	-	0.0	1.2	17.2	-	0.093
ARM B	2.45	10.20	0.240	- -	-	0.0	0.3	4.5	-	0.128
ARM C	14.48	27.28	0.531	- -	-	0.0	1.1	16.2	-	0.077
ARM D	2.21	13.16	0.168	- -	-	0.0	0.2	2.9	-	0.091

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.15-12.30									
ARM A	15.33	23.11	0.663	- -	-	1.2	1.9	27.5	-	0.127
ARM B	2.92	9.02	0.324	- -	-	0.3	0.5	6.8	-	0.163
ARM C	17.29	26.99	0.641	- -	-	1.1	1.8	25.2	-	0.102
ARM D	2.64	11.68	0.226	- -	-	0.2	0.3	4.2	-	0.110

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.30-12.45									
ARM A	18.77	22.71	0.827	- - -	1.9	4.4	58.6	-	0.235
ARM B	3.58	7.45	0.480	- - -	0.5	0.9	12.6	-	0.255
ARM C	21.18	26.60	0.796	- - -	1.8	3.7	50.7	-	0.176
ARM D	3.23	9.69	0.333	- - -	0.3	0.5	7.1	-	0.154

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
ARM A	18.77	22.70	0.827	- - -	4.4	4.6	67.4	-	0.252
ARM B	3.58	7.38	0.485	- - -	0.9	0.9	13.7	-	0.263
ARM C	21.18	26.58	0.797	- - -	3.7	3.8	56.4	-	0.184
ARM D	3.23	9.63	0.335	- - -	0.5	0.5	7.5	-	0.156

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
ARM A	15.33	23.10	0.664	- - -	4.6	2.0	32.5	-	0.135
ARM B	2.92	8.92	0.328	- - -	0.9	0.5	7.8	-	0.168
ARM C	17.29	26.96	0.641	- - -	3.8	1.8	28.8	-	0.106
ARM D	2.64	11.58	0.228	- - -	0.5	0.3	4.6	-	0.112

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.15-13.30									
ARM A	12.84	23.40	0.548	- - -	2.0	1.2	19.2	-	0.095
ARM B	2.45	10.14	0.241	- - -	0.5	0.3	5.0	-	0.130
ARM C	14.48	27.26	0.531	- - -	1.8	1.1	17.7	-	0.079
ARM D	2.21	13.10	0.169	- - -	0.3	0.2	3.1	-	0.092

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.15	1.2	*
12.30	1.9	**
12.45	4.4	****
13.00	4.6	*****
13.15	2.0	**
13.30	1.2	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.15	0.3	
12.30	0.5	
12.45	0.9	*
13.00	0.9	*
13.15	0.5	
13.30	0.3	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.15	1.1	*
12.30	1.8	**
12.45	3.7	****
13.00	3.8	****
13.15	1.8	**
13.30	1.1	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.15	0.2
12.30	0.3
12.45	0.5
13.00	0.5
13.15	0.3
13.30	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1408.1	938.7	222.4	0.16	222.4	0.16
B	268.4	178.9	50.4	0.19	50.4	0.19
C	1588.4	1058.9	195.0	0.12	195.1	0.12
D	242.3	161.5	29.5	0.12	29.5	0.12
ALL	3507.1	2338.1	497.2	0.14	497.3	0.14

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING 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.

END OF JOB

========== end of file ==========

Printed at 20:12:25 on 05/01/2016]

APPENDIX G

PICADY Output - Site 17 Priority Junction

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

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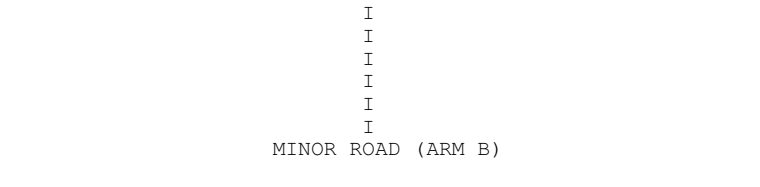
Run with file:-
"J:\9000\9000\9058_FarnleyTyas\engineering\Traffic_Programs\Picady\Site 17 Access AM-PM.vpi"
(drive-on-the-left) at 12:12:02 on Tuesday, 12 January 2016

RUN INFORMATION

RUN TITLE	: Farnley Estates Masterplan Proposals
LOCATION	: Penistone Road - Site 17
DATE	: 05/01/16
CLIENT	: Farnley Estates
ENUMERATOR	: adam.darwin [PC115]
JOB NUMBER	: 9058
STATUS	: Preliminary
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Penistone Road (s)
ARM B IS Site Access
ARM C IS Penistone Road (n)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.50 M.
- VISIBILITY	(VC-B)120.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (5)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 84.0 M.
- VISIBILITY TO RIGHT	(VB-A) 106.0 M.
- LANE 1 WIDTH	(WB-C) -
- LANE 2 WIDTH	(WB-A) -
WIDTH AT 0 M FROM JUNCTION	10.00 M.
WIDTH AT 5 M FROM JUNCTION	4.30 M.
WIDTH AT 10 M FROM JUNCTION	3.00 M.
WIDTH AT 15 M FROM JUNCTION	3.00 M.
WIDTH AT 20 M FROM JUNCTION	3.00 M.
- LENGTH OF FLARED SECTION	DERIVED: 0 PCU

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
664.47	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2025 AM Base

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	10.46	15.69	10.46
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	10.44	15.66	10.44

Demand set: Site 2 AM

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.04	0.06	0.04
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.13	0.19	0.13

Demand set: Site 3 AM

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.04	0.06	0.04
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.09	0.13	0.09

Demand set: Site 4 AM

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.19	0.28	0.19
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.19	0.28	0.19

Demand set: Site 6 AM

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.03	0.04	0.03
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.06	0.09	0.06

Demand set: Site 16A AM

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.16	0.24	0.16
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.41	0.62	0.41

Demand set: Site 17 AM (300 Units)

TIME PERIOD BEGINS 07.15 AND ENDS 08.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.16	0.24	0.16
ARM B	15.00	45.00	75.00	1.50	2.25	1.50
ARM C	15.00	45.00	75.00	0.40	0.60	0.40

Demand set: 2025 AM Base

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
07.15 - 08.45	ARM A	0.000	0.000	1.000
		0.0	0.0	837.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		835.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 2 AM

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
07.15 - 08.45	ARM A	0.000	0.000	1.000
		0.0	0.0	3.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		10.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 3 AM

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
07.15 - 08.45	ARM A	0.000	0.000	1.000
		0.0	0.0	3.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		7.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 4 AM

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
07.15 - 08.45	ARM A	0.000	0.000	1.000
		0.0	0.0	15.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		15.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 6 AM

TIME	FROM/TO	ARM A	ARM B	ARM C
07.15 - 08.45		TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S)		
	ARM A	0.000 0.0 (0.0)	0.000 0.0 (0.0)	1.000 2.0 (0.0)
	ARM B	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)
	ARM C	1.000 5.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 16A AM

TIME	FROM/TO	ARM A	ARM B	ARM C
07.15 - 08.45		TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S)		
	ARM A	0.000 0.0 (0.0)	0.000 0.0 (0.0)	1.000 13.0 (0.0)
	ARM B	0.000 0.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)
	ARM C	1.000 33.0 (0.0)	0.000 0.0 (0.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 17 AM (300 Units)

TIME	FROM/TO	ARM A	ARM B	ARM C
07.15 - 08.45		TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S)		
	ARM A	0.000 0.0 (0.0)	1.000 13.0 (0.0)	0.000 0.0 (0.0)
	ARM B	0.292 35.0 (0.0)	0.000 0.0 (0.0)	0.708 85.0 (0.0)
	ARM C	0.000 0.0 (0.0)	1.000 32.0 (0.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
B-C	1.07	8.94	0.119		0.00	0.13	1.9		0.13
B-A	0.44	5.39	0.082		0.00	0.09	1.2		0.20
C-AB	0.40	8.21	0.049		0.00	0.05	0.8		0.13
A-B	0.16								
A-C	10.95								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.30-07.45									
B-C	1.27	8.25	0.154		0.13	0.18	2.6		0.14
B-A	0.52	4.26	0.123		0.09	0.14	2.0		0.27
C-AB	0.48	7.66	0.063		0.05	0.07	1.0		0.14
A-B	0.19								
A-C	13.08								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
B-C	1.56	7.21	0.216		0.18	0.27	3.9		0.18
B-A	0.64	2.71	0.237		0.14	0.30	4.1		0.48
C-AB	0.59	6.89	0.085		0.07	0.09	1.4		0.16
A-B	0.24								
A-C	16.02								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
B-C	1.56	7.21	0.216		0.27	0.27	4.1		0.18
B-A	0.64	2.71	0.237		0.30	0.30	4.5		0.48
C-AB	0.59	6.89	0.085		0.09	0.09	1.4		0.16
A-B	0.24								
A-C	16.02								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	1.27	8.25	0.154		0.27	0.18	2.9		0.14
B-A	0.52	4.26	0.123		0.30	0.14	2.3		0.27
C-AB	0.48	7.66	0.063		0.09	0.07	1.0		0.14
A-B	0.19								
A-C	13.08								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	1.07	8.94	0.119		0.18	0.14	2.1		0.13
B-A	0.44	5.39	0.082		0.14	0.09	1.4		0.20
C-AB	0.40	8.21	0.049		0.07	0.05	0.8		0.13
A-B	0.16								
A-C	10.95								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.2
08.00	0.3
08.15	0.3
08.30	0.2
08.45	0.1

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.1
08.00	0.3
08.15	0.3
08.30	0.1
08.45	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.1
07.45	0.1
08.00	0.1
08.15	0.1
08.30	0.1
08.45	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	117.0	78.0	17.6	0.15	17.6	0.15
B-A	48.2	32.1	15.6	0.32	15.6	0.32
C-AB	44.0	29.4	6.3	0.14	6.3	0.14
A-B	17.9	11.9				
A-C	1201.6	801.1				
ALL	2674.4	1782.9	39.5	0.01	39.5	0.01

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING 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.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
664.47	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2025 PM Base

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	10.88	16.31	10.88
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	15.20	22.80	15.20

Demand set: Site 2 PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.10	0.15	0.10
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.06	0.09	0.06

Demand set: Site 3 PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.09	0.13	0.09
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.05	0.08	0.05

Demand set: Site 4 PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.19	0.28	0.19
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.19	0.28	0.19

Demand set: Site 6 PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.06	0.09	0.06
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.04	0.06	0.04

Demand set: Site 16A PM

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.38	0.56	0.38
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.21	0.32	0.21

Demand set: Site 17 PM (300 Units)

TIME PERIOD BEGINS 17.00 AND ENDS 18.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.52	0.79	0.52
ARM B	15.00	45.00	75.00	1.02	1.54	1.02
ARM C	15.00	45.00	75.00	1.26	1.89	1.26

Demand set: 2025 PM Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
17.00 - 18.30	ARM A	0.000	0.000	1.000
		0.0	0.0	870.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		1216.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 2 PM

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.30	ARM A	0.000	0.000	1.000
		0.0	0.0	8.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		5.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 3 PM

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.30	ARM A	0.000	0.000	1.000
		0.0	0.0	7.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		4.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 4 PM

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.30	ARM A	0.000	0.000	1.000
		0.0	0.0	15.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		15.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 6 PM

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.30	ARM A	0.000	0.000	1.000
		0.0	0.0	5.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		3.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 16A PM

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.30	ARM A	0.000	0.000	1.000
		0.0	0.0	30.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM C	1.000	0.000	0.000
		17.0	0.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

Demand set: Site 17 PM (300 Units)

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
17.00 - 18.30	ARM A	0.000	1.000	0.000
		0.0	42.0	0.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.293	0.000	0.707
		24.0	0.0	58.0
		(0.0)	(0.0)	(0.0)
	ARM C	0.000	1.000	0.000
		0.0	101.0	0.0
		(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	0.73	8.69	0.084		0.00	0.09	1.3		0.13
B-A	0.30	3.86	0.078		0.00	0.08	1.2		0.28
C-AB	1.27	7.92	0.160		0.00	0.19	2.8		0.15
A-B	0.53								
A-C	11.73								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	0.87	7.90	0.110		0.09	0.12	1.8		0.14
B-A	0.36	2.43	0.148		0.08	0.17	2.3		0.48
C-AB	1.51	7.31	0.207		0.19	0.26	3.9		0.17
A-B	0.63								
A-C	14.01								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	1.06	5.54	0.192		0.12	0.23	3.4		0.22
B-A	0.44	0.47	0.938		0.17	1.98	19.2		5.13
C-AB	1.85	6.46	0.287		0.26	0.40	5.9		0.22
A-B	0.77								
A-C	17.16								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-C	1.06	5.47	0.195		0.23	0.24	3.6		0.23
B-A	0.44	0.47	0.946		1.98	2.87	36.8		6.14
C-AB	1.85	6.46	0.287		0.40	0.40	6.1		0.22
A-B	0.77								
A-C	17.16								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-C	0.87	7.74	0.112		0.24	0.13	2.0		0.15
B-A	0.36	2.43	0.148		2.87	0.18	5.4		0.57
C-AB	1.51	7.31	0.207		0.40	0.27	4.0		0.17
A-B	0.63								
A-C	14.01								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.15-18.30									
B-C	0.73	8.69	0.084		0.13	0.09	1.4		0.13
B-A	0.30	3.85	0.078		0.18	0.09	1.4		0.28
C-AB	1.27	7.92	0.160		0.27	0.19	2.9		0.15
A-B	0.53								
A-C	11.73								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.1	
17.30	0.1	
17.45	0.2	
18.00	0.2	
18.15	0.1	
18.30	0.1	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.15	0.1	
17.30	0.2	
17.45	2.0	**
18.00	2.9	***
18.15	0.2	
18.30	0.1	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.15	0.2
17.30	0.3
17.45	0.4
18.00	0.4
18.15	0.3
18.30	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	79.8	53.2	13.4	0.17	13.4	0.17
B-A	33.0	22.0	66.3	2.01	66.3	2.01
C-AB	139.0	92.7	25.6	0.18	25.6	0.18
A-B	57.8	38.5				
A-C	1287.0	858.0				
ALL	3331.0	2220.6	105.3	0.03	105.3	0.03

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING 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.

*******END OF RUN*******

========== end of file ==========

Printed at 12:12:23 on 12/01/2016]

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 5.0 (JUNE 2010)

FOR SALES AND DISTRIBUTION INFORMATION,
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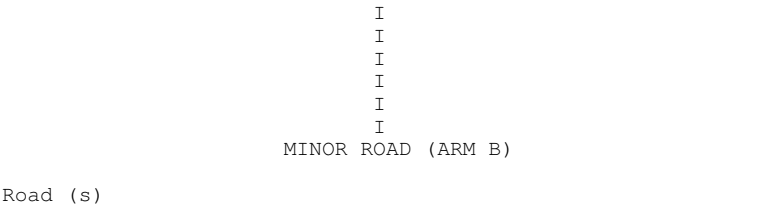
Run with file:-
"J:\9000\9000\9058_FarnleyTyas\engineering\Traffic_Programs\Picady\Site 17 Access Sat.vpi"
(drive-on-the-left) at 12:13:26 on Tuesday, 12 January 2016

RUN INFORMATION

RUN TITLE	: Farnley Estates Masterplan Proposals
LOCATION	: Penistone Road - Site 17
DATE	: 05/01/16
CLIENT	: Farnley Estates
ENUMERATOR	: adam.darwin [PC115]
JOB NUMBER	: 9058
STATUS	: Preliminary
DESCRIPTION	:

MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Penistone Road (s)
ARM B IS Site Access
ARM C IS Penistone Road (n)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.50 M.
- VISIBILITY	(VC-B)120.00 M.
- BLOCKS TRAFFIC (SPACES)	YES (5)
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 84.0 M.
- VISIBILITY TO RIGHT	(VB-A) 106.0 M.
- LANE 1 WIDTH	(WB-C) -
- LANE 2 WIDTH	(WB-A) -
WIDTH AT 0 M FROM JUNCTION	10.00 M.
WIDTH AT 5 M FROM JUNCTION	4.30 M.
WIDTH AT 10 M FROM JUNCTION	3.00 M.
WIDTH AT 15 M FROM JUNCTION	3.00 M.
WIDTH AT 20 M FROM JUNCTION	3.00 M.
- LENGTH OF FLARED SECTION	DERIVED: 0 PCU

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
664.47	0.26	0.26

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2025 Sat Base

TIME PERIOD BEGINS 12.00 AND ENDS 13.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	11.30	16.95	11.30
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	11.88	17.81	11.88

Demand set: Site 2 Sat

TIME PERIOD BEGINS 12.00 AND ENDS 13.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.06	0.09	0.06
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.06	0.09	0.06

Demand set: Site 3 Sat

TIME PERIOD BEGINS 12.00 AND ENDS 13.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.05	0.08	0.05
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.05	0.08	0.05

Demand set: Site 4 Sat

TIME PERIOD BEGINS 12.00 AND ENDS 13.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.36	0.54	0.36
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.36	0.54	0.36

Demand set: Site 6 Sat

TIME PERIOD BEGINS 12.00 AND ENDS 13.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN: FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN): BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.04	0.06	0.04
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.04	0.06	0.04

Demand set: Site 16A Sat

TIME PERIOD BEGINS 12.00 AND ENDS 13.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.24	0.36	0.24
ARM B	15.00	45.00	75.00	0.00	0.00	0.00
ARM C	15.00	45.00	75.00	0.21	0.32	0.21

Demand set: Site 17 Sat (300 units)

TIME PERIOD BEGINS 12.00 AND ENDS 13.30

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.25	0.38	0.25
ARM B	15.00	45.00	75.00	0.77	1.16	0.77
ARM C	15.00	45.00	75.00	0.60	0.90	0.60

Demand set: 2025 Sat Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
12.00 - 13.30	ARM A	0.000 0.0 (0.0)	0.000 0.0 (10.0)	1.000 904.0 (10.0)
	ARM B	0.000 0.0 (10.0)	0.000 0.0 (0.0)	0.000 0.0 (10.0)
	ARM C	1.000 950.0 (10.0)	0.000 0.0 (10.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

Demand set: Site 2 Sat

TIME	FROM/TO	ARM A	ARM B	ARM C
12.00 - 13.30		TURNING PROPORTIONS (PERCENTAGE OF H.V.S)		
		TURNING COUNTS		
	ARM A	0.000	0.000	1.000
		0.0	0.0	5.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(10.0)	(0.0)	(10.0)
	ARM C	1.000	0.000	0.000
		5.0	0.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

Demand set: Site 3 Sat

TIME	FROM/TO	ARM A	ARM B	ARM C
12.00 - 13.30		TURNING PROPORTIONS (PERCENTAGE OF H.V.S)		
		TURNING COUNTS		
	ARM A	0.000	0.000	1.000
		0.0	0.0	4.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(10.0)	(0.0)	(10.0)
	ARM C	1.000	0.000	0.000
		4.0	0.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

Demand set: Site 4 Sat

TIME	FROM/TO	ARM A	ARM B	ARM C
12.00 - 13.30		TURNING PROPORTIONS (PERCENTAGE OF H.V.S)		
		TURNING COUNTS		
	ARM A	0.000	0.000	1.000
		0.0	0.0	29.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(10.0)	(0.0)	(10.0)
	ARM C	1.000	0.000	0.000
		29.0	0.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

Demand set: Site 6 Sat

TIME	FROM/TO	ARM A	ARM B	ARM C
12.00 - 13.30	ARM A	0.000	0.000	1.000
		0.0	0.0	3.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(10.0)	(0.0)	(10.0)
	ARM C	1.000	0.000	0.000
		3.0	0.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

Demand set: Site 16A Sat

TIME	FROM/TO	ARM A	ARM B	ARM C
12.00 - 13.30	ARM A	0.000	0.000	1.000
		0.0	0.0	19.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.000	0.000	0.000
		0.0	0.0	0.0
		(10.0)	(0.0)	(10.0)
	ARM C	1.000	0.000	0.000
		17.0	0.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

Demand set: Site 17 Sat (300 units)

TIME	FROM/TO	ARM A	ARM B	ARM C
12.00 - 13.30	ARM A	0.000	1.000	0.000
		0.0	20.0	0.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.290	0.000	0.710
		18.0	0.0	44.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.000	1.000	0.000
		0.0	48.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.00-12.15									
B-C	0.55	7.56	0.073		0.00	0.08	1.1		0.14
B-A	0.23	3.67	0.062		0.00	0.06	0.9		0.29
C-AB	0.60	6.89	0.087		0.00	0.09	1.4		0.16
A-B	0.25								
A-C	12.10								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.15-12.30									
B-C	0.66	6.80	0.097		0.08	0.11	1.5		0.16
B-A	0.27	2.41	0.112		0.06	0.12	1.7		0.47
C-AB	0.72	6.27	0.115		0.09	0.13	1.9		0.18
A-B	0.30								
A-C	14.44								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.30-12.45									
B-C	0.81	5.30	0.152		0.11	0.18	2.5		0.22
B-A	0.33	0.67	0.494		0.12	0.73	8.5		2.45
C-AB	0.88	5.42	0.163		0.13	0.19	2.9		0.22
A-B	0.37								
A-C	17.69								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
B-C	0.81	5.21	0.155		0.18	0.18	2.7		0.23
B-A	0.33	0.67	0.495		0.73	0.83	11.9		2.80
C-AB	0.88	5.42	0.163		0.19	0.19	2.9		0.22
A-B	0.37								
A-C	17.69								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
B-C	0.66	6.77	0.097		0.18	0.11	1.7		0.16
B-A	0.27	2.41	0.112		0.83	0.13	2.4		0.49
C-AB	0.72	6.27	0.115		0.19	0.13	2.0		0.18
A-B	0.30								
A-C	14.44								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.15-13.30									
B-C	0.55	7.55	0.073		0.11	0.08	1.2		0.14
B-A	0.23	3.67	0.062		0.13	0.07	1.1		0.29
C-AB	0.60	6.89	0.087		0.13	0.10	1.5		0.16
A-B	0.25								
A-C	12.10								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.15	0.1	
12.30	0.1	
12.45	0.2	
13.00	0.2	
13.15	0.1	
13.30	0.1	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.15	0.1	
12.30	0.1	
12.45	0.7	*
13.00	0.8	*
13.15	0.1	
13.30	0.1	

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.15	0.1
12.30	0.1
12.45	0.2
13.00	0.2
13.15	0.1
13.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	60.6	40.4	10.8	0.18	10.8	0.18
B-A	24.8	16.5	26.4	1.07	26.4	1.07
C-AB	66.1	44.0	12.5	0.19	12.5	0.19
A-B	27.5	18.4				
A-C	1326.9	884.6				
ALL	2893.2	1928.8	49.8	0.02	49.8	0.02

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING 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.

*******END OF RUN*******

========== end of file ==========

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