



Bromley Farm Quarry, Upper Cumberworth

Transport Statement Addendum No1

May 2024

Project number 2074B

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Quality Management

	First Issue	Revision 1	Revision 2	Revision 3
Remarks	Final report			
Date	May 2024			
Prepared by	LJO			
Checked by	AH			

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1.0 Introduction

- 1.1 Paragon Highways have been appointed to prepare this Addendum to the Transport Statement dated October 2022 in relation to the proposal to extend quarry operations on land at Bromley Farm Quarry, Upper Cumberworth.
- 1.2 This Addendum provides further information as a result of the Council's highway consultation response (email dated 22rd March 20224), which requires an assessment of the A635 Barnsley Road/ A629 Penistone Road junction so that junction performance incorporating additional HGV trips associated with the extensions of the quarry can be assessed.
- 1.3 To assess the junction performance, it has been necessary to provide an up to date traffic turning count at the junction. The modelling includes the 2024 base and 'with development' traffic scenarios.

2.0 Traffic Surveys

- 2.1 To assess junction performance, it has been necessary to provide an independent traffic survey at the A635 Barnsley Road/ A629 Penistone Road junction. The Council requires the survey to include the morning and evening peak hours and during a neutral month. The survey results can be found at Appendix A.
- 2.2 The survey was carried out during school term time on the 25th April 2024 between 7am and 10am and between 4pm and 6:30pm meeting the highways officer's requirements.
- 2.3 From the survey it was revealed that the morning network peak hour was between 8am and 9am, and the evening network peak hour was between 4:45pm and 5:45pm. These values have been used for the junction capacity assessments within section 4 of this report.

3.0 Development Traffic

- 3.1 The extension of quarry operations would increase the maximum HGV trip generation by 120 HGVs per day (60 in and 60 out), which would be evenly spread out throughout the day. Based on the proposed operating times (between 7:30am and 6pm) the site would generate around 6 HGV trips entering the site and 6 HGV trips leaving the site during each of the peak hours.
- 3.2 For the purpose of junction capacity assessment, these additional trips have been converted to PCU (OGV2), which provides a PCU increase of 14 trips entering the site and 14 trips leaving the site (based on a conversion factor of 2.3).
- 3.3 Details of the HGV routing have been provided previously and confirm the route between Bromley Farm Quarry and the Hazelhead Works to include the A635 Barnsley Road westbound and then south along the A629 Penistone Road before heading west along Cumberworth Lane. The routing through these junctions is then reversed back towards the application site.
- 3.4 The proposed development flows through the A635 Barnsley Road/ A629 Penistone Road junction can be found at Appendix B. The 2024 base and 'with development' flow scenarios can also be seen at Appendix B.

4.0 Junction Capacity Assessment

- 4.1 A capacity assessment has been carried out for the A635/ A629 junction using the PICADY computer program. We have modelled the junction in the morning peak and evening peak periods for both the base year (2024) with and without development traffic.
- 4.2 The results of the PICADY assessment for the base conditions are included at Appendix C and are summarised in the table below.

	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
2024 Base				
A635 Barnsley Rd Left Turn	0.02	0.0	0.02	0.0
A635 Barnsley Rd Right Turn	0.19	0.3	0.31	0.5
A629 Penistone Rd Right Turn	0.47	1.0	0.70	2.2
A635 Holmfirth Rd Left Turn	0.01	0.0	0.00	0.0
A635 Holmfirth Rd Right Turn	0.63	1.8	0.38	0.6
A629 Lane Head Rd Right Turn	0.39	0.7	0.29	0.4

Table 1: PICADY – A635/ A629 Junction 2024 Base

- 4.3 From the above analyses it can be seen that the junction operates well within the normal requirements for the Ratio of Flow to Capacity (RFC value less than 0.85) during the 2024 base flow scenario in the weekday AM and PM peak periods. Traffic turning right from the A629 Penistone Road to the A635 Barnsley Road shows an RFC of 0.70 and queue length of over 2 PCUs.

- 4.4 The results of the PICADY assessment for the 2024 'with development' scenario are included at Appendix C and are summarised in the table below: -

	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
2024 With Development				
A635 Barnsley Rd Left Turn	0.05	0.1	0.05	0.1
A635 Barnsley Rd Right Turn	0.20	0.3	0.32	0.5
A629 Penistone Rd Right Turn	0.49	1.0	0.72	2.8
A635 Holmfirth Rd Left Turn	0.01	0.0	0.00	0.0
A635 Holmfirth Rd Right Turn	0.63	1.8	0.38	0.7
A629 Lane Head Rd Right Turn	0.39	0.7	0.29	0.4

Table 2: PICADY – A635/ A629 Junction 2024 With Development

- 4.5 From the above analyses it can be seen that the junction will operate well within the normal requirements for the Ratio of Flow to Capacity (RFC value less than 0.85) during the 2024 'with development' scenario. The introduction of HGV traffic associated with the development would have a minimal impact on RFC and queue lengths for vehicles turning left at the A635 Barnsley Road junction onto the A629 Penistone Road, and turning right from the A629 Penistone Road into the A635 Barnsley Road junction, with the latter only increasing the queue length by 1 PCU.

- 4.6 The tables above demonstrate that the introduction of the development traffic would not provide a significant impact on junction performance in terms of both RFC and queue lengths, with the latter not exceeding 3 PCUs for vehicles turning right from the A629 Penistone Road to the A635 Barnsley Road.

Appendix A

Traffic Surveys

A	A629 West - Lane Head Road
B	A629 East - Penistone Road
C	A635 North - Holfirth Road
D	A635 South - Barnsley Road

Bromley Farm Quarry, Upper Cumberworth

Time Start	A - B		A - C		A - D		B - A		B - C		B - D		C - A		C - B		D - A		D - B	
	Car / LVG	HGV	Car / LVG	HGV	Car / LVG	HGV	Car / LVG	HGV	Car / LVG	HGV	Car / LVG	HGV	Car / LVG	HGV	Car / LVG	HGV	Car / LVG	HGV	Car / LVG	HGV
7:00 - 7:15	35	1	4	0	58	0	21	1	38	2	2	0	0	0	30	1	9	1	2	1
7:15 - 7:30	42	2	7	1	66	4	22	3	72	3	3	0	0	0	79	2	12	2	2	1
7:30 - 7:45	40	1	9	2	49	1	28	3	75	6	3	0	0	0	55	0	4	3	4	0
7:45 - 8:00	48	3	17	3	56	2	33	1	82	1	2	2	0	0	54	5	10	0	2	3
8:00 - 8:15	45	2	7	1	77	3	39	2	77	2	7	4	0	1	65	1	18	0	1	0
8:15 - 8:30	38	3	6	2	37	0	26	0	79	3	5	3	0	0	61	2	19	1	3	0
8:30 - 8:45	34	3	5	0	49	1	32	1	54	1	4	1	0	1	71	3	17	5	1	4
8:45 - 9:00	40	2	8	0	48	3	25	2	53	4	0	1	0	0	61	3	13	2	3	0
9:00 - 9:15	37	2	7	1	43	2	23	3	44	2	3	0	0	1	51	3	9	2	2	1
9:15 - 9:30	38	2	5	1	41	1	25	3	37	2	3	1	0	0	47	1	11	0	1	2
9:30 - 9:45	29	1	6	0	38	0	23	3	34	2	3	2	0	0	37	2	13	1	2	0
9:45 - 10:00	28	2	7	2	39	1	21	2	30	1	2	0	0	1	34	1	8	2	2	1

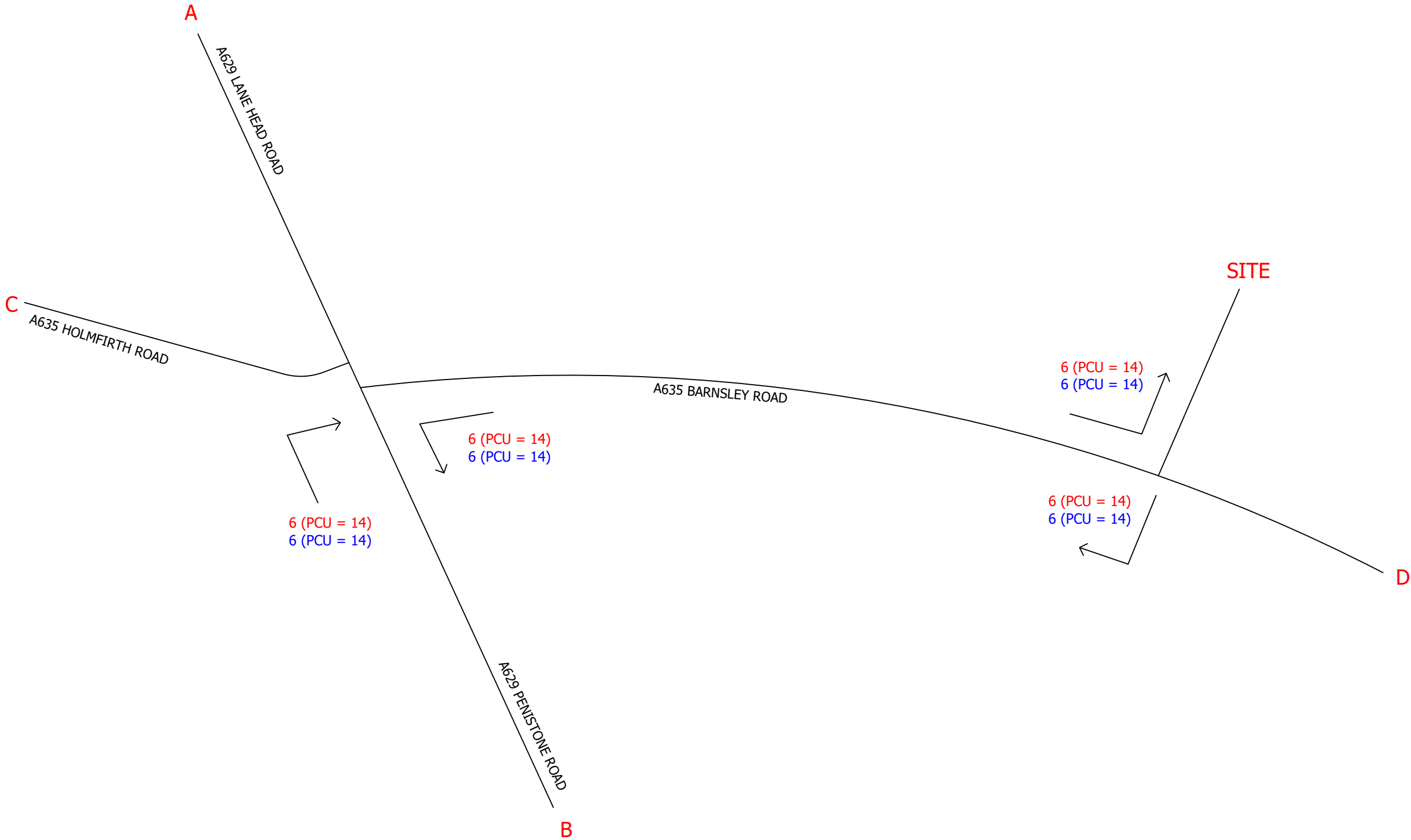
16:00 - 16:15	44	4	10	2	37	2	37	3	78	2	3	1	0	0	37	1	23	0	2	2
16:15 - 16:30	49	3	8	2	49	2	40	2	94	5	3	0	0	0	53	0	28	0	3	0
16:30 - 16:45	44	4	9	1	34	2	52	1	119	5	5	0	0	0	40	1	32	0	2	0
16:45 - 17:00	50	2	13	0	38	0	47	2	111	3	3	3	0	0	46	1	26	0	1	1
17:00 - 17:15	65	0	6	0	47	0	53	2	96	0	8	2	1	0	40	0	30	0	4	0
17:15 - 17:30	45	0	9	0	37	1	42	0	95	1	3	3	0	0	30	1	18	1	3	0
17:30 - 17:45	35	1	6	1	34	0	42	0	93	1	1	0	0	0	44	1	24	0	3	0
17:45 - 18:00	33	1	7	0	36	1	36	0	87	2	3	1	1	0	47	1	27	1	2	1
18:00 - 18:15	36	0	8	0	33	1	34	1	83	1	3	1	2	0	17	1	23	0	2	0
18:15 - 18:30	29	1	5	1	31	0	39	1	79	1	3	1	1	0	15	1	19	1	2	0
Total	884	40	169	20	977	27	740	36	1610	50	72	26	5	4	1014	32	393	22	49	17

Appendix B

Traffic Flows

AM

PM



PROJECT TITLE
BROMLEY FARM, UPPER CUMBERWORTH

DRAWING TITLE
PEAK HOUR FLOWS –
DEVELOPMENT TRAFFIC (HGV MOVEMENTS)

DRAWING NUMBER
ORIGINATOR PROJECT VOL. TYPE ROLE NUMBER
PRGN – 2074 – HGN – DR – CH – 0002

CLIENT
SILKSTONE ENVIROMENTAL

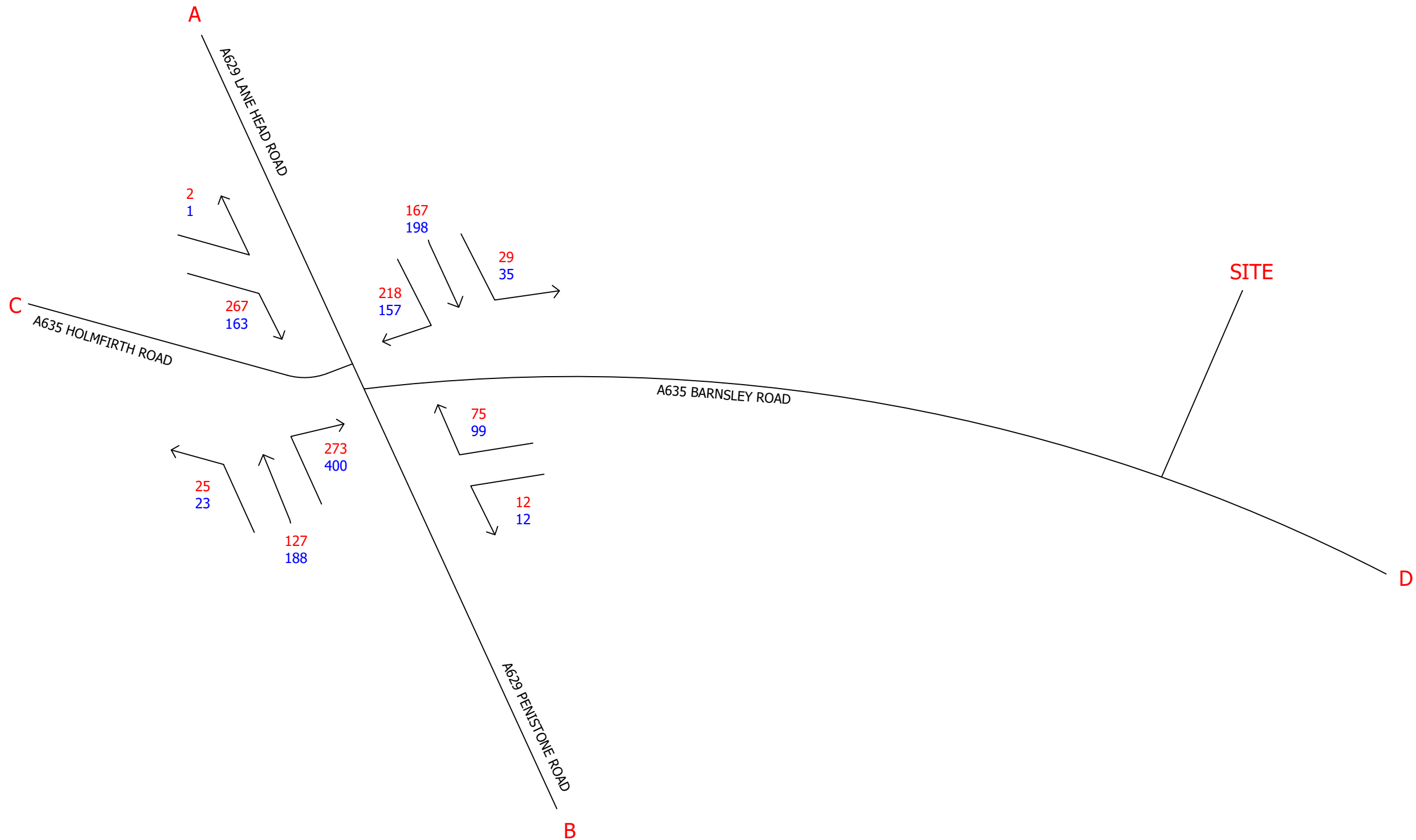
SCALE SIZE DRAWN CHECKED AUTHORISED DATE
NTS A3 JHH LJO JHH MAY 24

PARAGON HIGHWAYS
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AM
PM



PROJECT TITLE
BROMLEY FARM, UPPER CUMBERWORTH

DRAWING TITLE
PEAK HOUR FLOWS –
A629 LANE HEAD ROAD/A629 PENISTONE ROAD/A635
HOLMFIRTH ROAD/A635 BARNSELEY ROAD

ORIGINATOR	PROJECT	VOL.	TYPE	ROLE	NUMBER
PRGN	2074	HGN	DR	CH	0001

CLIENT
SILKSTONE ENVIRONMENTAL

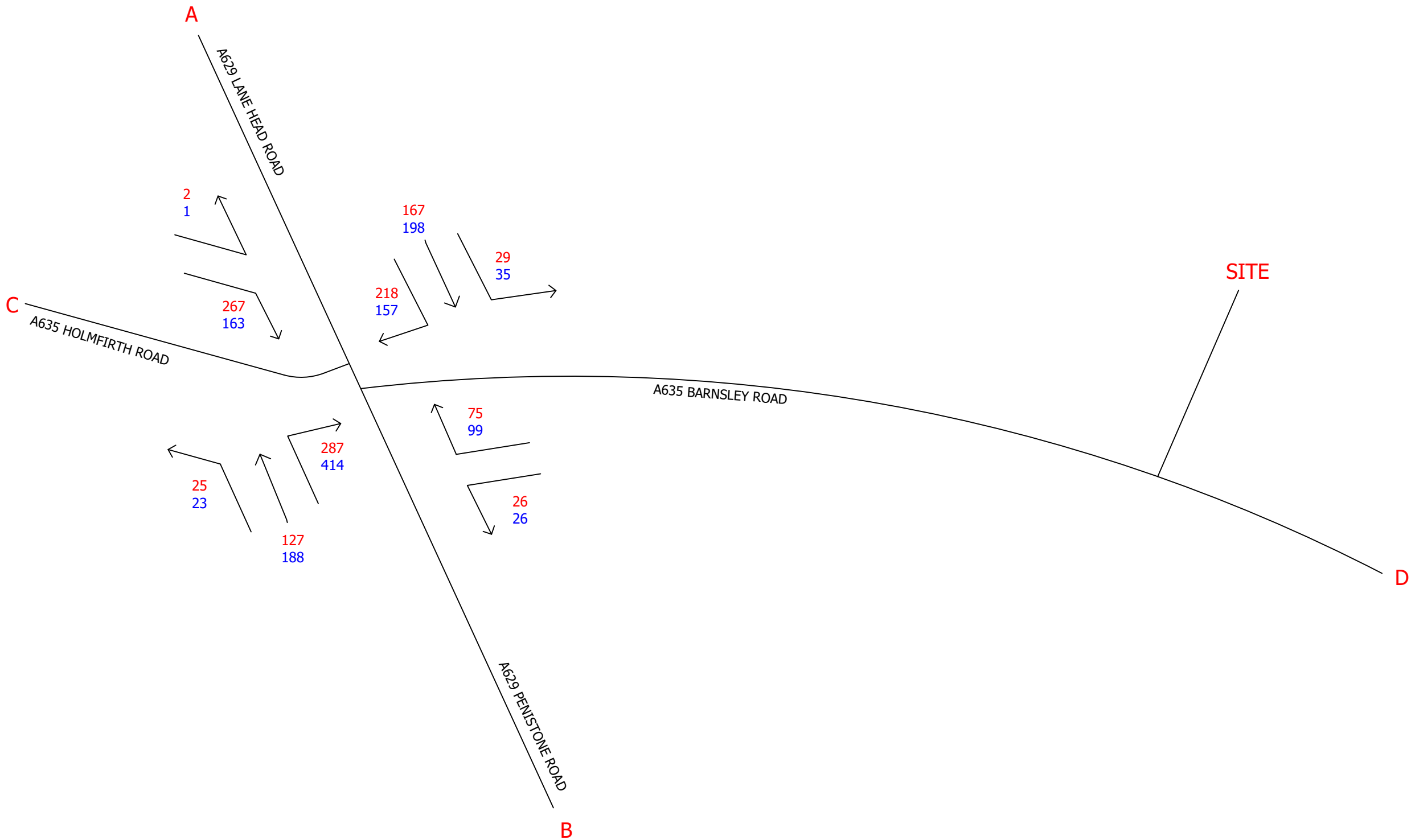
SCALE	SIZE	DRAWN	CHECKED	AUTHORISED	DATE
NTS	A3	JJH	LJO	JJH	MAY 24

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AM
PM



PROJECT TITLE
BROMLEY FARM, UPPER CUMBERWORTH

DRAWING TITLE
PEAK HOUR FLOWS –
2024 + DEVELOPMENT

DRAWING NUMBER
ORIGINATOR PROJECT VOL. TYPE ROLE NUMBER
PRGN – 2074 – HGN – DR – CH – 0003

CLIENT
SILKSTONE ENVIRONMENTAL

SCALE SIZE DRAWN CHECKED AUTHORISED DATE
NTS A3 JH LJO JH MAY 24

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Appendix C

PICADY Output – A635/ A629 Junction

Junctions 9							
PICADY 9 - Priority Intersection Module							
Version: 9.0.2.5947 © Copyright TRL Limited, 2017							
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk							
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution							

Filename: 2024 Base.j9

Path: P:\Projects\Bromley Farm Quarry, Upper Cumberworth - 2074\PICADY\2024 Base

Report generation date: 31/05/2024 13:32:30

»2024, AM

»2024, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2024								
Junction 1 - Stream B-C	0.0	7.18	0.02	A	0.0	6.93	0.02	A
Junction 1 - Stream B-A	0.3	11.61	0.19	B	0.5	15.09	0.31	C
Junction 1 - Stream C-AB	1.0	11.51	0.47	B	2.2	18.24	0.70	C
Junction 2 - Stream B-C	0.0	9.17	0.01	A	0.0	6.62	0.00	A
Junction 2 - Stream B-A	1.8	22.63	0.63	C	0.6	12.34	0.38	B
Junction 2 - Stream C-AB	0.7	10.50	0.39	B	0.4	8.46	0.29	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Bromley Farm Quarry
Location	A629 A635 Junctions
Site number	2074
Date	24/05/2024
Version	
Status	
Identifier	
Client	SE
Jobnumber	2074
Enumerator	LO
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	08:00	09:30	15
D2	2024	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Barnsley Rd Junc	T-Junction	Two-way	6.01	A
2	Holmfirth Rd Junc	T-Junction	Two-way	10.38	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description	Arm type
1	A	A629 Lane Head Road		Major
	B	A635 Barnsley Rd		Minor
	C	A629 Penistone Road		Major
2	A	A629 Penistone Road		Major
	B	A635 Holmfirth Road		Minor
	C	A629 Lane Head Road		Major

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
1	C	7.20		✓	3.00	120.0	✓	8.00
2	C	6.90		✓	2.70	80.0	✓	4.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
1	B	One lane plus flare	10.00	9.00	6.30	4.60	3.80	✓	2.00	90	55
2	B	One lane plus flare	10.00	9.50	5.86	4.43	3.35	✓	2.00	58	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	617	0.107	0.269	0.169	0.385
1	B-C	641	0.093	0.235	-	-
1	C-B	699	0.257	0.257	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
2	B-A	642	0.112	0.284	0.179	0.406
2	B-C	671	0.099	0.250	-	-
2	C-B	654	0.243	0.243	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		✓	196	100.000
	B		✓	87	100.000
	C		✓	400	100.000
2	A		✓	152	100.000
	B		✓	269	100.000
	C		✓	385	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	29	167
	B	75	0	12
	C	127	273	0

Demand (PCU/hr)

Junction 2

		To		
		A	B	C
From	A	0	25	127
	B	267	0	2
	C	167	218	0

Vehicle Mix

Heavy Vehicle Percentages

Junction 1

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Heavy Vehicle Percentages

Junction 2

	To			
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	B-C	0.02	7.18	0.0	A
	B-A	0.19	11.61	0.3	B
	C-AB	0.47	11.51	1.0	B
	C-A				
	A-B				
	A-C				
2	B-C	0.01	9.17	0.0	A
	B-A	0.63	22.63	1.8	C
	C-AB	0.39	10.50	0.7	B
	C-A				
	A-B				
	A-C				

Main Results for each time segment

08:00 - 08:15

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	9	592	0.015	9	0.0	6.797	A
	B-A	56	486	0.116	56	0.1	9.197	A
	C-AB	206	662	0.311	204	0.5	8.611	A
	C-A	96			96			
	A-B	22			22			
	A-C	126			126			
2	B-C	2	569	0.003	1	0.0	6.980	A
	B-A	201	524	0.384	198	0.7	12.063	B
	C-AB	164	627	0.262	163	0.4	8.501	A
	C-A	125			125			
	A-B	19			19			
	A-C	96			96			

08:15 - 08:30

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	11	581	0.019	11	0.0	6.949	A
	B-A	67	460	0.147	67	0.2	10.088	B
	C-AB	245	654	0.375	245	0.6	9.654	A
	C-A	114			114			
	A-B	26			26			
	A-C	150			150			
2	B-C	2	528	0.003	2	0.0	7.529	A
	B-A	240	500	0.480	239	1.0	15.055	C
	C-AB	197	623	0.316	196	0.5	9.267	A
	C-A	149			149			
	A-B	22			22			
	A-C	114			114			

08:30 - 08:45

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	13	565	0.023	13	0.0	7.182	A
	B-A	83	424	0.195	82	0.3	11.574	B
	C-AB	301	645	0.467	300	0.9	11.440	B
	C-A	140			140			
	A-B	32			32			
	A-C	184			184			
2	B-C	2	439	0.005	2	0.0	9.066	A
	B-A	294	469	0.627	291	1.7	21.917	C
	C-AB	242	619	0.391	242	0.7	10.461	B
	C-A	181			181			
	A-B	28			28			
	A-C	140			140			

08:45 - 09:00

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	13	564	0.023	13	0.0	7.184	A
	B-A	83	424	0.195	83	0.3	11.610	B
	C-AB	301	645	0.467	301	1.0	11.514	B
	C-A	140			140			
	A-B	32			32			
	A-C	184			184			
2	B-C	2	434	0.005	2	0.0	9.168	A
	B-A	294	468	0.628	294	1.8	22.629	C
	C-AB	242	619	0.391	242	0.7	10.504	B
	C-A	181			181			
	A-B	28			28			
	A-C	140			140			

09:00 - 09:15

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	11	580	0.019	11	0.0	6.955	A
	B-A	67	459	0.147	68	0.2	10.129	B
	C-AB	245	654	0.375	247	0.7	9.740	A
	C-A	114			114			
	A-B	26			26			
	A-C	150			150			
2	B-C	2	523	0.003	2	0.0	7.592	A
	B-A	240	500	0.480	243	1.0	15.587	C
	C-AB	197	623	0.316	197	0.5	9.323	A
	C-A	149			149			
	A-B	22			22			
	A-C	114			114			

09:15 - 09:30

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	9	591	0.015	9	0.0	6.804	A
	B-A	56	485	0.116	57	0.1	9.251	A
	C-AB	206	662	0.311	206	0.5	8.710	A
	C-A	96			96			
	A-B	22			22			
	A-C	126			126			
2	B-C	2	566	0.003	2	0.0	7.013	A
	B-A	201	523	0.384	202	0.7	12.397	B
	C-AB	164	627	0.262	165	0.4	8.574	A
	C-A	125			125			
	A-B	19			19			
	A-C	96			96			

2024, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix	Junction 1	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.
Warning	Vehicle Mix	Junction 2	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Barnsley Rd Junc	T-Junction	Two-way	9.58	A
2	Holmfirth Rd Junc	T-Junction	Two-way	4.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024	PM	ONE HOUR	17:00	18:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		✓	233	100.000
	B		✓	111	100.000
	C		✓	588	100.000
2	A		✓	211	100.000
	B		✓	164	100.000
	C		✓	355	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

	To			
From		A	B	C
	A	0	35	198
	B	99	0	12
	C	188	400	0

Demand (PCU/hr)

Junction 2

	To			
		A	B	C
From	A	0	23	188
	B	163	0	1
	C	198	157	0

Vehicle Mix

Heavy Vehicle Percentages

Junction 1

	To			
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Heavy Vehicle Percentages

Junction 2

	To			
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	B-C	0.02	6.93	0.0	A
	B-A	0.31	15.09	0.5	C
	C-AB	0.70	18.24	2.2	C
	C-A				
	A-B				
	A-C				
2	B-C	0.00	6.62	0.0	A
	B-A	0.38	12.34	0.6	B
	C-AB	0.29	8.46	0.4	A
	C-A				
	A-B				
	A-C				

Main Results for each time segment

17:00 - 17:15

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	9	575	0.016	9	0.0	6.358	A
	B-A	75	436	0.171	74	0.2	9.927	A
	C-AB	301	655	0.460	298	0.8	10.000	A
	C-A	141			141			
	A-B	26			26			
	A-C	149			149			
2	B-C	0.75	595	0.001	0.75	0.0	6.053	A
	B-A	123	526	0.233	122	0.3	8.882	A
	C-AB	118	616	0.192	117	0.2	7.212	A
	C-A	149			149			
	A-B	17			17			
	A-C	142			142			

17:15 - 17:30

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	11	559	0.019	11	0.0	6.562	A
	B-A	89	399	0.223	89	0.3	11.600	B
	C-AB	360	647	0.557	359	1.2	12.415	B
	C-A	168			168			
	A-B	31			31			
	A-C	178			178			
2	B-C	0.90	577	0.002	0.90	0.0	6.252	A
	B-A	147	503	0.292	146	0.4	10.084	B
	C-AB	141	608	0.232	141	0.3	7.699	A
	C-A	178			178			
	A-B	21			21			
	A-C	169			169			

17:30 - 17:45

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	13	533	0.025	13	0.0	6.925	A
	B-A	109	349	0.312	108	0.4	14.923	B
	C-AB	448	645	0.695	444	2.2	17.638	C
	C-A	199			199			
	A-B	39			39			
	A-C	218			218			
2	B-C	1	546	0.002	1	0.0	6.610	A
	B-A	179	471	0.381	179	0.6	12.267	B
	C-AB	173	599	0.289	173	0.4	8.438	A
	C-A	218			218			
	A-B	25			25			
	A-C	207			207			

17:45 - 18:00

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	13	532	0.025	13	0.0	6.934	A
	B-A	109	348	0.314	109	0.5	15.087	C
	C-AB	448	645	0.695	448	2.2	18.243	C
	C-A	199			199			
	A-B	39			39			
	A-C	218			218			
2	B-C	1	545	0.002	1	0.0	6.616	A
	B-A	179	471	0.381	179	0.6	12.343	B
	C-AB	173	599	0.289	173	0.4	8.456	A
	C-A	218			218			
	A-B	25			25			
	A-C	207			207			

18:00 - 18:15

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	11	559	0.019	11	0.0	6.574	A
	B-A	89	397	0.224	90	0.3	11.752	B
	C-AB	360	647	0.557	364	1.3	12.885	B
	C-A	168			168			
	A-B	31			31			
	A-C	178			178			
2	B-C	0.90	576	0.002	0.90	0.0	6.258	A
	B-A	147	502	0.292	147	0.4	10.161	B
	C-AB	141	608	0.232	142	0.3	7.721	A
	C-A	178			178			
	A-B	21			21			
	A-C	169			169			

18:15 - 18:30

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	9	575	0.016	9	0.0	6.365	A
	B-A	75	434	0.172	75	0.2	10.046	B
	C-AB	301	655	0.460	303	0.9	10.286	B
	C-A	141			141			
	A-B	26			26			
	A-C	149			149			
2	B-C	0.75	595	0.001	0.75	0.0	6.060	A
	B-A	123	525	0.234	123	0.3	8.964	A
	C-AB	118	616	0.192	119	0.2	7.245	A
	C-A	149			149			
	A-B	17			17			
	A-C	142			142			

Junctions 9				
PICADY 9 - Priority Intersection Module				
Version: 9.0.2.5947 © Copyright TRL Limited, 2017				
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Filename: 2024 With Dev.j9

Path: P:\Projects\Bromley Farm Quarry, Upper Cumberworth - 2074\PICADY\2024 With Dev

Report generation date: 31/05/2024 13:41:35

»2024, AM

»2024, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2024								
Junction 1 - Stream B-C	0.1	7.23	0.05	A	0.1	7.79	0.05	A
Junction 1 - Stream B-A	0.3	11.86	0.20	B	0.5	16.90	0.32	C
Junction 1 - Stream C-AB	1.0	12.05	0.49	B	2.8	21.52	0.72	C
Junction 2 - Stream B-C	0.0	9.17	0.01	A	0.0	7.31	0.00	A
Junction 2 - Stream B-A	1.8	22.63	0.63	C	0.7	13.58	0.38	B
Junction 2 - Stream C-AB	0.7	10.50	0.39	B	0.4	9.29	0.29	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Bromley Farm Quarry
Location	A629 A635 Junctions
Site number	2074
Date	24/05/2024
Version	
Status	
Identifier	
Client	SE
Jobnumber	2074
Enumerator	LO
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	08:00	09:30	15
D2	2024	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Barnsley Rd Junc	T-Junction	Two-way	6.38	A
2	Holmfirth Rd Junc	T-Junction	Two-way	10.38	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description	Arm type
1	A	A629 Lane Head Road		Major
	B	A635 Barnsley Rd		Minor
	C	A629 Penistone Road		Major
2	A	A629 Penistone Road		Major
	B	A635 Holmfirth Road		Minor
	C	A629 Lane Head Road		Major

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
1	C	7.20		✓	3.00	120.0	✓	8.00
2	C	6.90		✓	2.70	80.0	✓	4.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
1	B	One lane plus flare	10.00	9.00	6.30	4.60	3.80	✓	2.00	90	55
2	B	One lane plus flare	10.00	9.50	5.86	4.43	3.35	✓	2.00	58	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	616	0.106	0.269	0.169	0.384
1	B-C	655	0.095	0.241	-	-
1	C-B	699	0.257	0.257	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
2	B-A	642	0.112	0.284	0.179	0.406
2	B-C	671	0.099	0.250	-	-
2	C-B	654	0.243	0.243	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		✓	196	100.000
	B		✓	101	100.000
	C		✓	414	100.000
2	A		✓	152	100.000
	B		✓	269	100.000
	C		✓	385	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

		To		
		A	B	C
From	A	0	29	167
	B	75	0	26
	C	127	287	0

Demand (PCU/hr)

Junction 2

		To		
		A	B	C
From	A	0	25	127
	B	267	0	2
	C	167	218	0

Vehicle Mix

Heavy Vehicle Percentages

Junction 1

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Heavy Vehicle Percentages

Junction 2

	To			
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	B-C	0.05	7.23	0.1	A
	B-A	0.20	11.86	0.3	B
	C-AB	0.49	12.05	1.0	B
	C-A				
	A-B				
	A-C				
2	B-C	0.01	9.17	0.0	A
	B-A	0.63	22.63	1.8	C
	C-AB	0.39	10.50	0.7	B
	C-A				
	A-B				
	A-C				

Main Results for each time segment

08:00 - 08:15

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	20	605	0.032	19	0.0	6.765	A
	B-A	56	481	0.117	56	0.1	9.312	A
	C-AB	216	662	0.327	214	0.5	8.806	A
	C-A	96			96			
	A-B	22			22			
	A-C	126			126			
2	B-C	2	569	0.003	1	0.0	6.980	A
	B-A	201	524	0.384	198	0.7	12.063	B
	C-AB	164	627	0.262	163	0.4	8.501	A
	C-A	125			125			
	A-B	19			19			
	A-C	96			96			

08:15 - 08:30

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	23	593	0.039	23	0.0	6.948	A
	B-A	67	454	0.149	67	0.2	10.246	B
	C-AB	258	654	0.394	257	0.7	9.957	A
	C-A	114			114			
	A-B	26			26			
	A-C	150			150			
2	B-C	2	528	0.003	2	0.0	7.529	A
	B-A	240	500	0.480	239	1.0	15.055	C
	C-AB	197	623	0.316	196	0.5	9.267	A
	C-A	149			149			
	A-B	22			22			
	A-C	114			114			

08:30 - 08:45

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	29	577	0.050	29	0.1	7.225	A
	B-A	83	417	0.198	82	0.3	11.818	B
	C-AB	316	645	0.491	315	1.0	11.959	B
	C-A	139			139			
	A-B	32			32			
	A-C	184			184			
2	B-C	2	439	0.005	2	0.0	9.066	A
	B-A	294	469	0.627	291	1.7	21.917	C
	C-AB	242	619	0.391	242	0.7	10.461	B
	C-A	181			181			
	A-B	28			28			
	A-C	140			140			

08:45 - 09:00

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	29	576	0.050	29	0.1	7.228	A
	B-A	83	417	0.198	83	0.3	11.856	B
	C-AB	316	645	0.491	316	1.0	12.050	B
	C-A	139			139			
	A-B	32			32			
	A-C	184			184			
2	B-C	2	434	0.005	2	0.0	9.168	A
	B-A	294	468	0.628	294	1.8	22.629	C
	C-AB	242	619	0.391	242	0.7	10.504	B
	C-A	181			181			
	A-B	28			28			
	A-C	140			140			

09:00 - 09:15

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	23	593	0.039	23	0.0	6.956	A
	B-A	67	453	0.149	68	0.2	10.289	B
	C-AB	258	654	0.394	259	0.7	10.058	B
	C-A	114			114			
	A-B	26			26			
	A-C	150			150			
2	B-C	2	523	0.003	2	0.0	7.592	A
	B-A	240	500	0.480	243	1.0	15.587	C
	C-AB	197	623	0.316	197	0.5	9.323	A
	C-A	149			149			
	A-B	22			22			
	A-C	114			114			

09:15 - 09:30

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	20	604	0.032	20	0.0	6.776	A
	B-A	56	480	0.118	57	0.1	9.369	A
	C-AB	216	662	0.327	217	0.5	8.920	A
	C-A	96			96			
	A-B	22			22			
	A-C	126			126			
2	B-C	2	566	0.003	2	0.0	7.013	A
	B-A	201	523	0.384	202	0.7	12.397	B
	C-AB	164	627	0.262	165	0.4	8.574	A
	C-A	125			125			
	A-B	19			19			
	A-C	96			96			

2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Barnsley Rd Junc	T-Junction	Two-way	11.36	B
2	Holmfirth Rd Junc	T-Junction	Two-way	5.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024	PM	ONE HOUR	17:00	18:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

Demand overview (Traffic)

Junction	Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		✓	233	100.000
	B		✓	125	100.000
	C		✓	602	100.000
2	A		✓	211	100.000
	B		✓	164	100.000
	C		✓	355	100.000

Origin-Destination Data

Demand (PCU/hr)

Junction 1

	To			
		A	B	C
From	A	0	35	198
	B	99	0	26
	C	188	414	0

Demand (PCU/hr)

Junction 2

	To			
		A	B	C
From	A	0	23	188
	B	163	0	1
	C	198	157	0

Vehicle Mix

Heavy Vehicle Percentages

Junction 1

	To			
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Heavy Vehicle Percentages

Junction 2

	To			
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Results

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	B-C	0.05	7.79	0.1	A
	B-A	0.32	16.90	0.5	C
	C-AB	0.72	21.52	2.8	C
	C-A				
	A-B				
	A-C				
2	B-C	0.00	7.31	0.0	A
	B-A	0.38	13.58	0.7	B
	C-AB	0.29	9.29	0.4	A
	C-A				
	A-B				
	A-C				

Main Results for each time segment

17:00 - 17:15

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	20	582	0.034	19	0.0	7.038	A
	B-A	75	434	0.172	74	0.2	10.949	B
	C-AB	312	655	0.476	308	1.0	11.291	B
	C-A	141			141			
	A-B	26			26			
	A-C	149			149			
2	B-C	0.75	595	0.001	0.75	0.0	6.664	A
	B-A	123	526	0.233	121	0.3	9.764	A
	C-AB	118	616	0.192	117	0.3	7.928	A
	C-A	149			149			
	A-B	17			17			
	A-C	142			142			

17:15 - 17:30

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	23	565	0.041	23	0.0	7.304	A
	B-A	89	396	0.225	89	0.3	12.850	B
	C-AB	374	649	0.576	372	1.5	14.209	B
	C-A	167			167			
	A-B	31			31			
	A-C	178			178			
2	B-C	0.90	575	0.002	0.90	0.0	6.891	A
	B-A	147	503	0.292	146	0.4	11.091	B
	C-AB	141	609	0.232	141	0.3	8.462	A
	C-A	178			178			
	A-B	21			21			
	A-C	169			169			

17:30 - 17:45

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	29	538	0.053	29	0.1	7.775	A
	B-A	109	345	0.316	108	0.5	16.678	C
	C-AB	469	652	0.719	465	2.7	20.575	C
	C-A	193			193			
	A-B	39			39			
	A-C	218			218			
2	B-C	1	543	0.002	1	0.0	7.303	A
	B-A	179	471	0.381	179	0.7	13.495	B
	C-AB	174	600	0.289	173	0.4	9.268	A
	C-A	217			217			
	A-B	25			25			
	A-C	207			207			

17:45 - 18:00

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	29	537	0.053	29	0.1	7.791	A
	B-A	109	343	0.318	109	0.5	16.900	C
	C-AB	469	652	0.719	469	2.8	21.515	C
	C-A	193			193			
	A-B	39			39			
	A-C	218			218			
2	B-C	1	543	0.002	1	0.0	7.311	A
	B-A	179	471	0.381	179	0.7	13.578	B
	C-AB	174	600	0.289	174	0.4	9.288	A
	C-A	217			217			
	A-B	25			25			
	A-C	207			207			

18:00 - 18:15

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	23	564	0.041	23	0.0	7.322	A
	B-A	89	394	0.226	90	0.3	13.058	B
	C-AB	374	649	0.576	379	1.6	14.925	B
	C-A	167			167			
	A-B	31			31			
	A-C	178			178			
2	B-C	0.90	575	0.002	0.90	0.0	6.902	A
	B-A	147	502	0.292	147	0.5	11.182	B
	C-AB	141	609	0.232	142	0.3	8.489	A
	C-A	178			178			
	A-B	21			21			
	A-C	169			169			

18:15 - 18:30

Junction	Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	B-C	20	581	0.034	20	0.0	7.055	A
	B-A	75	432	0.172	75	0.2	11.097	B
	C-AB	312	655	0.476	314	1.0	11.689	B
	C-A	141			141			
	A-B	26			26			
	A-C	149			149			
2	B-C	0.75	594	0.001	0.75	0.0	6.673	A
	B-A	123	525	0.234	123	0.3	9.862	A
	C-AB	118	616	0.192	119	0.3	7.969	A
	C-A	149			149			
	A-B	17			17			
	A-C	142			142			