

Spreadsheet Notes

An audit of the spreadsheet was undertaken to ensure all cells were linked (where appropriate) to enable the model to be updated. To ensure consistency with the traffic flows presented in this spreadsheet and the junctions models sent with this

Junction
PRTM Traffic Flows
Coventry Road / Site Access (proposed site access junction)
B578 Lutterworth Road / Passchendaele Drive priority junction
A5 / Wolvey Road priority junction
B4109 Rugby Road / Three Pots Road / Canberra Way roundabout
B4109 Rugby Road / Sketchley Road / Sketchley Lane roundabout
B578 Lutterworth Road / Lychgate Lane priority junction
B4669 Sapcote Road / B4669 Burbage Road / B578 Hinckley Road priority junction (existing layout)
B4669 Sapcote Road / B4669 Burbage Road / B578 Hinckley Road priority junction (mitigation scheme)
A5 / B578 Lutterworth Road priority junction
2023 Traffic Surveys
M69 Junction 1 signalised roundabout
B4109 Rugby Road / Coventry Road priority junction (existing layout)
B4109 Rugby Road / Coventry Road priority junction (mitigation scheme)

For transparency the total traffic flow difference between the numbers presented in the submitted TA and this up

Total traffic movements included within the TA appendix

Junction
Developed using furnished PRTM Traffic Flows
Coventry Road / Site Access (proposed site access junction)
B578 Lutterworth Road / Passchendaele Drive priority junction
A5 / Wolvey Road priority junction
B4109 Rugby Road / Three Pots Road / Canberra Way roundabout
B4109 Rugby Road / Sketchley Road / Sketchley Lane roundabout
B578 Lutterworth Road / Lychgate Lane priority junction
B4669 Sapcote Road / B4669 Burbage Road / B578 Hinckley Road priority junction
A5 / B578 Lutterworth Road priority junction
Developed using 2023 Traffic Surveys
M69 Junction 1 signalised roundabout
B4109 Rugby Road / Coventry Road junction

Total traffic movements within this updated spreadsheet

Junction
Developed using furnished PRTM Traffic Flows
Coventry Road / Site Access (proposed site access junction)
B578 Lutterworth Road / Passchendaele Drive priority junction
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B4109 Rugby Road / Three Pots Road / Canberra Way roundabout
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B4669 Sapcote Road / B4669 Burbage Road / B578 Hinckley Road priority junction
A5 / B578 Lutterworth Road priority junction
Developed using 2023 Traffic Surveys
M69 Junction 1 signalised roundabout

B4109 Rugby Road / Coventry Road junction

Difference

Junction
Developed using furnished PRTM Traffic Flows
Coventry Road / Site Access (proposed site access junction)
B578 Lutterworth Road / Passchendaele Drive priority junction
A5 / Wolvey Road priority junction
B4109 Rugby Road / Three Pots Road / Canberra Way roundabout
B4109 Rugby Road / Sketchley Road / Sketchley Lane roundabout
B578 Lutterworth Road / Lychgate Lane priority junction
B4669 Sapcote Road / B4669 Burbage Road / B578 Hinckley Road priority junction
A5 / B578 Lutterworth Road priority junction
Developed using 2023 Traffic Surveys
M69 Junction 1 signalised roundabout
B4109 Rugby Road / Coventry Road junction

methodology to be followed, consequently some rounding error has been noticed and cell reference errors. In the spreadsheet, changes to traffic flows and the junction models re-run with these new flows are listed below

Re-run	New Model	Explanation
✓		rounding error in distribution %
✓		rounding error in distribution %
	✓	requested by National Highways
✓		cell reference error, flow revised for one movement
✓		rounding error in distribution %
✓		cell reference error, flow revised for one movement
		-
		-
✓		updated Junctions10 parameters / cell reference error, flow revised for
✓		updated traffic growth using TEMPro v8.1
✓		rounding error in distribution %
✓		rounding error in distribution %

dated spreadsheet are listed below

2021 / 2023		2026		2026 + Dev	
AM	PM	AM	PM	AM	PM
436	471	479	535	831	813
419	418	649	595	732	677
2,172	2,224	2,119	2,322	2,132	2,332
1,978	1,938	2,208	2,067	2,309	2,154
1,489	1,632	1,780	1,845	1,838	1,891
1,104	1,096	1,321	1,268	1,504	1,411
1,865	2,051	2,028	2,129	2,117	2,197
1,718	1,757	1,858	2,039	1,885	2,104
4,232	4,564	4,346	4,696	4,427	4,769
1,795	2,121	2,066	2,292	2,227	2,426

2021 / 2023		2026		2026 + Dev	
AM	PM	AM	PM	AM	PM
436	471	479	535	831	814
419	418	649	595	732	677
2,172	2,224	2,119	2,322	2,132	2,332
1,980	1,965	2,210	2,094	2,311	2,182
1,490	1,632	1,781	1,845	1,838	1,892
1,108	1,095	1,325	1,267	1,513	1,411
1,865	2,051	2,028	2,129	2,117	2,197
1,717	1,757	1,857	2,039	1,900	2,110
4,232	4,564	4,323	4,676	4,404	4,749

1,795	2,121	2,066	2,292	2,226	2,427
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2021 / 2023		2026		2026 + Dev	
AM	PM	AM	PM	AM	PM
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
+2	+27	+2	+27	+3	+27
+1	-	+1	-	-	+1
+3	-	+3	-	+8	-
-	-	-	-	-	-
-1	-	-1	-	+15	+6
-	-	-23	-20	-23	-20
-	-	-	-	-1	+1

1.

one movement

2031		2031 + Dev	
AM	PM	AM	PM
490	556	842	838
790	651	873	733
2,152	2,401	2,165	2,411
2,198	2,111	2,299	2,200
1,782	1,918	1,840	1,964
1,442	1,350	1,625	1,494
2,114	2,175	2,203	2,244
1,955	2,159	1,982	2,225
4,523	4,905	4,604	4,978
-	-	-	-

2031		2031 + Dev	
AM	PM	AM	PM
490	556	842	835
790	651	873	733
2,152	2,401	2,165	2,411
2,200	2,138	2,301	2,226
1,783	1,918	1,840	1,966
1,446	1,349	1,634	1,493
2,114	2,175	2,203	2,243
1,954	2,159	1,997	2,230
4,595	5,005	4,676	5,078

-	-	-	-
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2031		2031 + Dev	
AM	PM	AM	PM
-	-	-	-4
-	-	-	-
-	-	-	-
+2	+27	+3	+26
+1	-	-	+2
+3	-	+8	-1
-	-	-	-1
-1	-	+15	+5
+73	+100	+72	+100
-	-	-	-

TRIP GENERATION

Vehicle Trip Rates

Residential Trip Rates (Calculated from traffic count)			
Car Drivers	Arrivals	Departures	Two-Way
07:30 - 08:30	0.278	0.569	0.847
17:00 - 18:00	0.486	0.194	0.681

Note: Calculated from a traffic survey of Ambion Way, Burbage

Committed Development Vehicle Trip Generation

Committed Development - Ambion Way (72dw)

	Arrivals	Departures	Two-Way
AM Peak Hour	20	41	61
PM Peak Hour	35	14	49

Committed Development - Canberra Way (93dw)

	Arrivals	Departures	Two-Way
AM Peak Hour	26	53	79
PM Peak Hour	45	18	63

Proposed Development Vehicle Trip Generation

Proposed Development - Flanders Close Access (55dw)

	Arrivals	Departures	Two-Way
AM Peak Hour	15	31	47
PM Peak Hour	27	11	37

Proposed Development - Coventry Road Access (378dw)

	Arrivals	Departures	Two-Way
AM Peak Hour	105	215	320
PM Peak Hour	184	74	257

Care Home Trip Rates (TRICS)			
Car Drivers	Arrivals	Departures	Two-Way
08:00 - 09:00	0.073	0.060	0.133
17:00 - 18:00	0.034	0.043	0.077

Proposed Development - Care Home (66 beds)

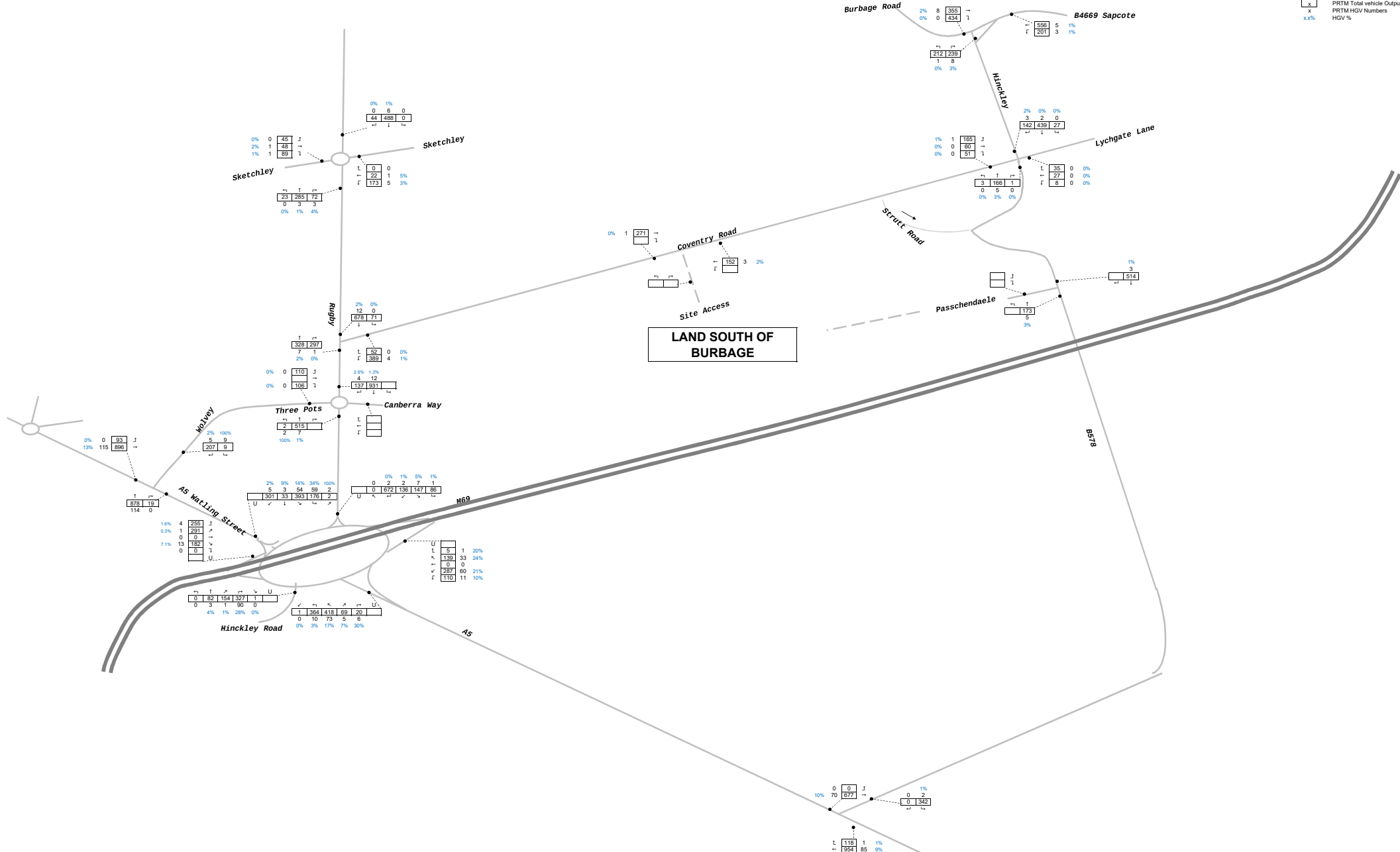
	Arrivals	Departures	Two-Way
AM Peak Hour	5	4	9
PM Peak Hour	2	3	5

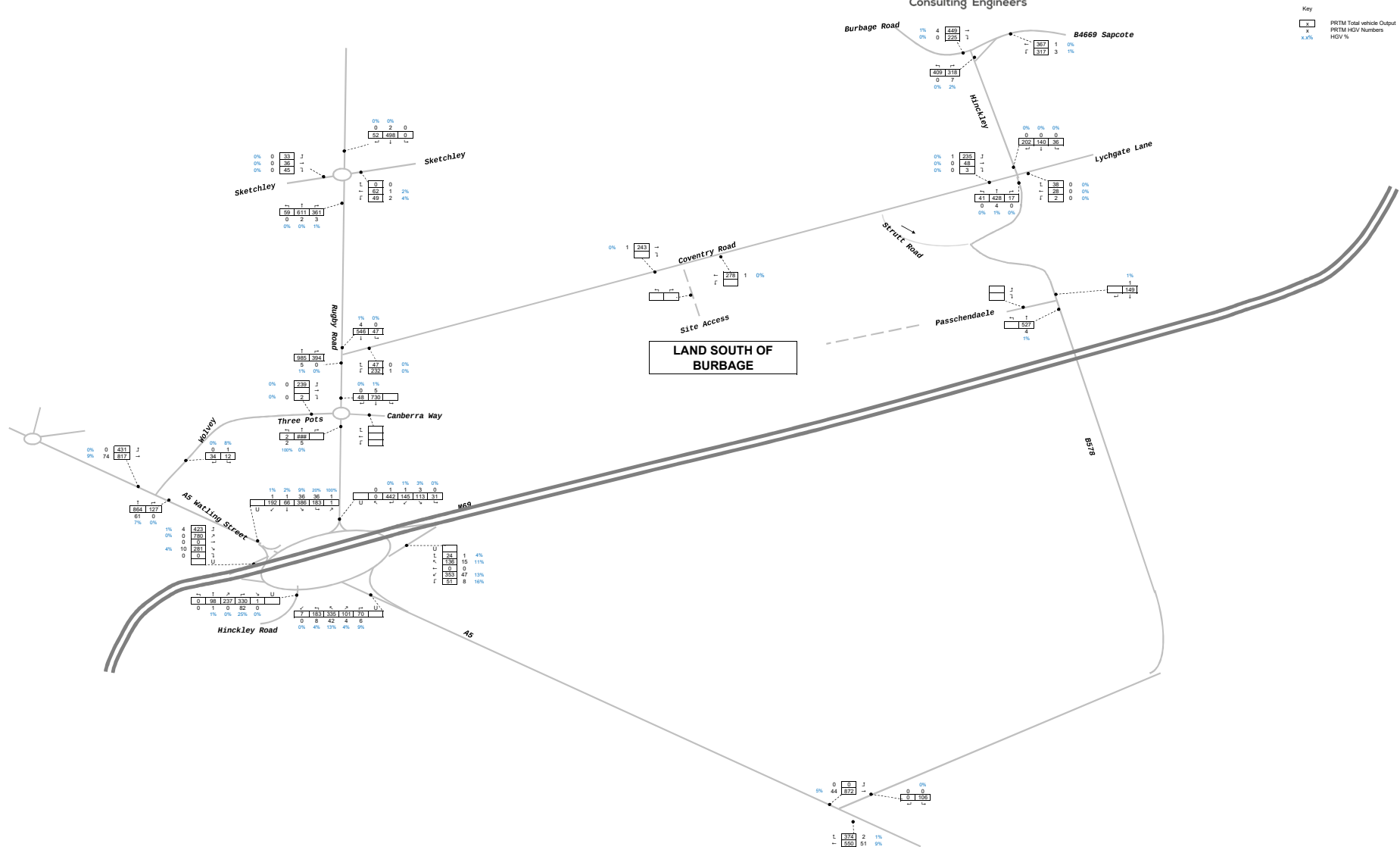
Proposed Develop

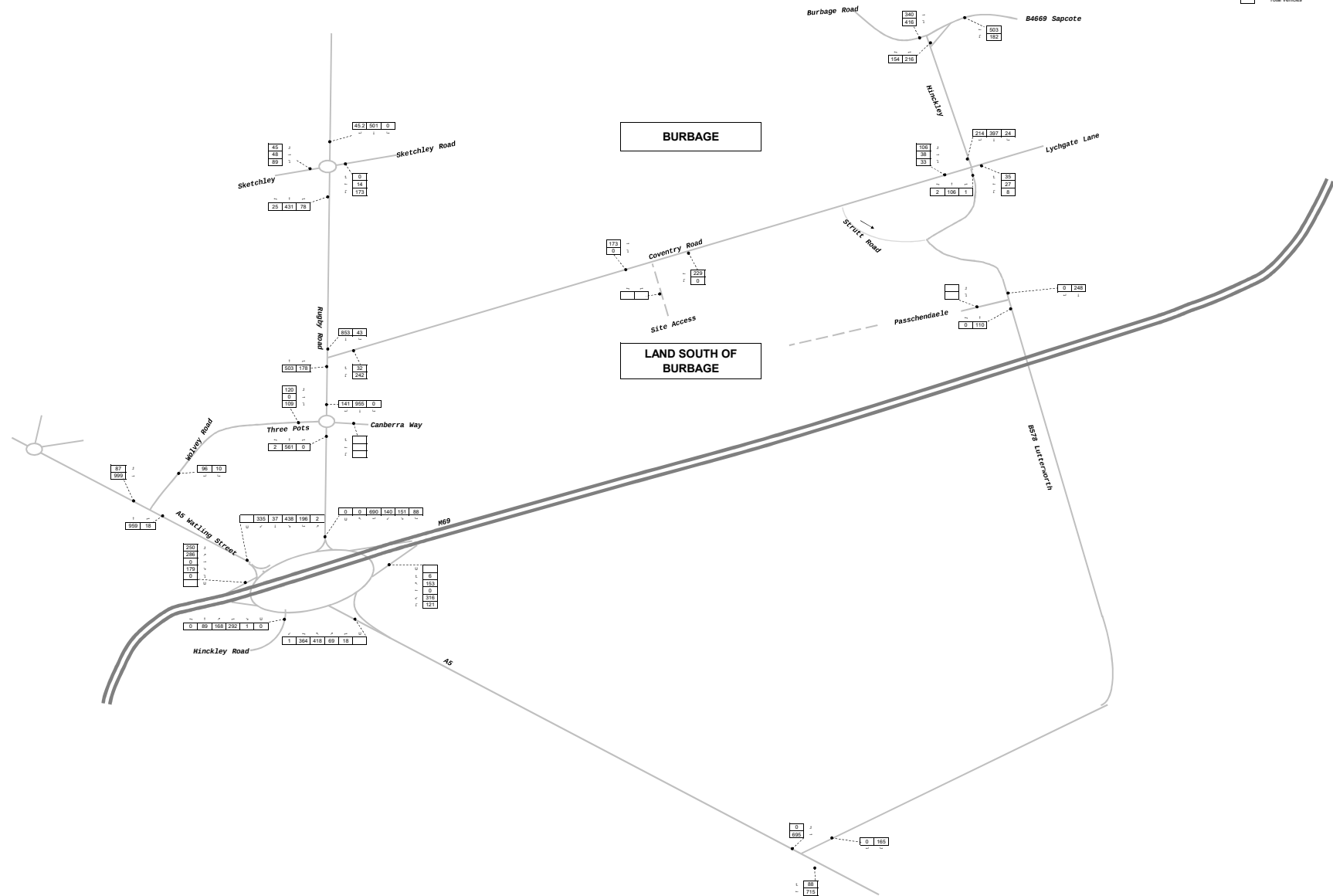
AM Peak Hour
PM Peak Hour

ment - Total

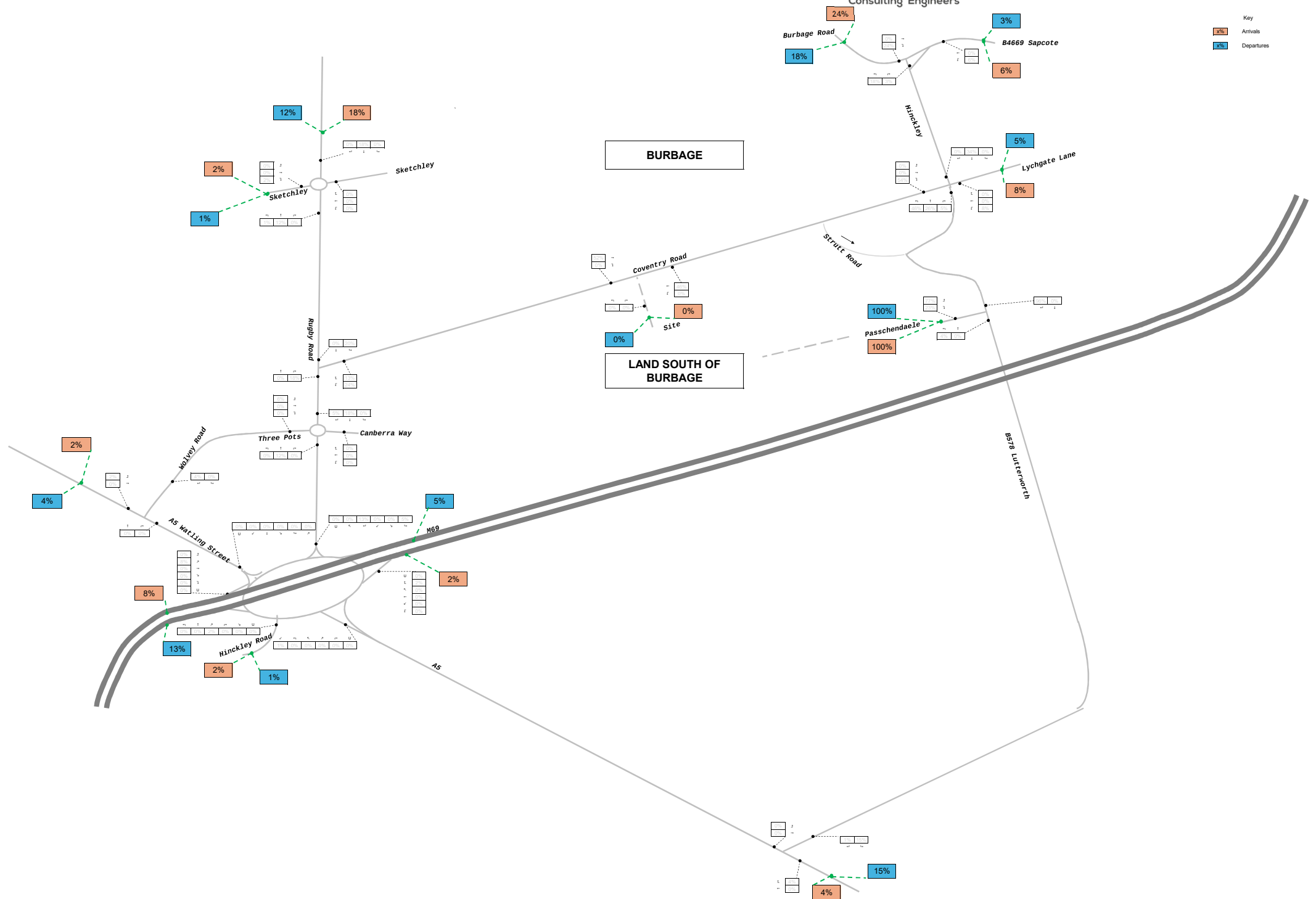
Arrivals	Departures	Two-Way
125	251	376
213	87	300

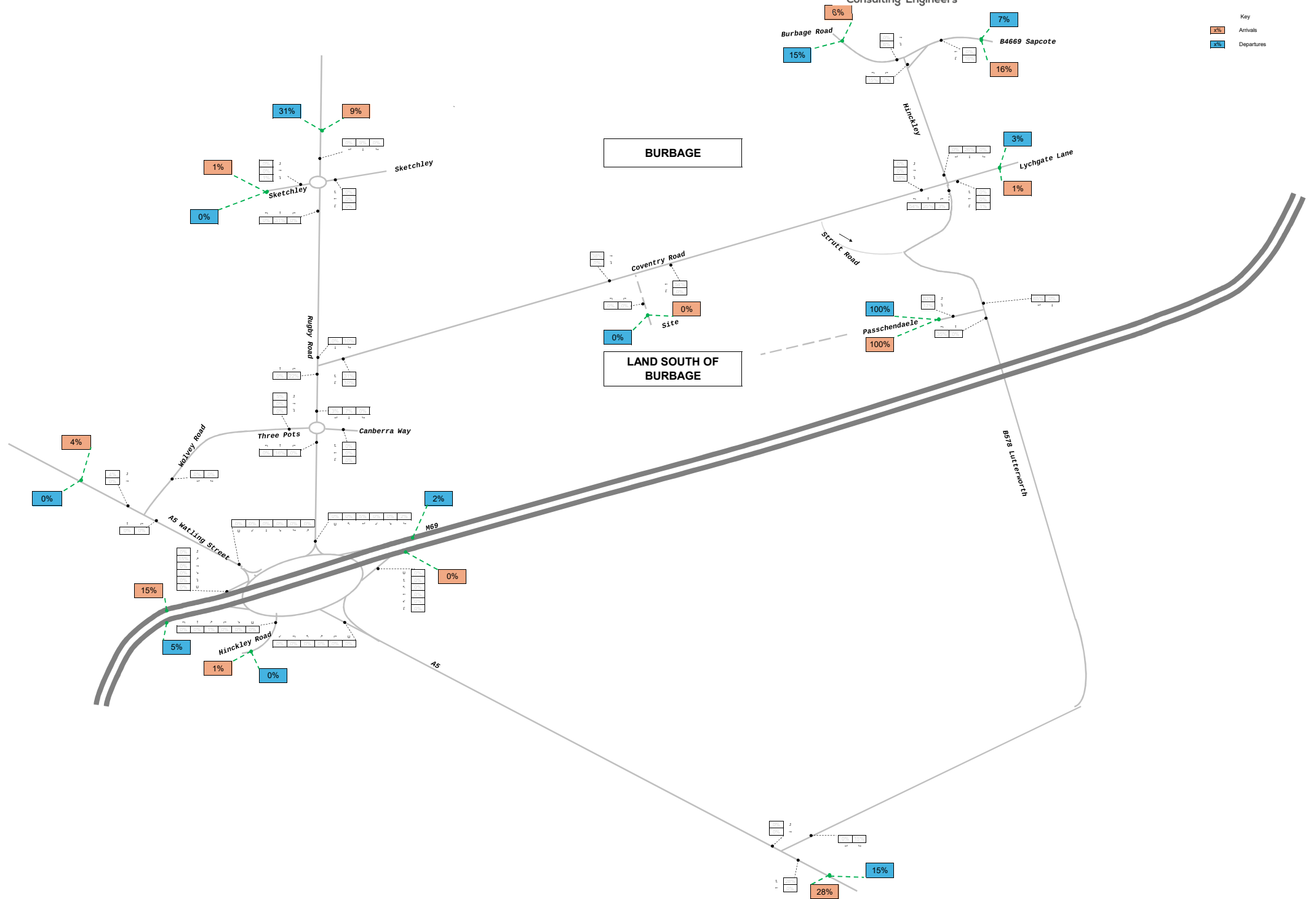


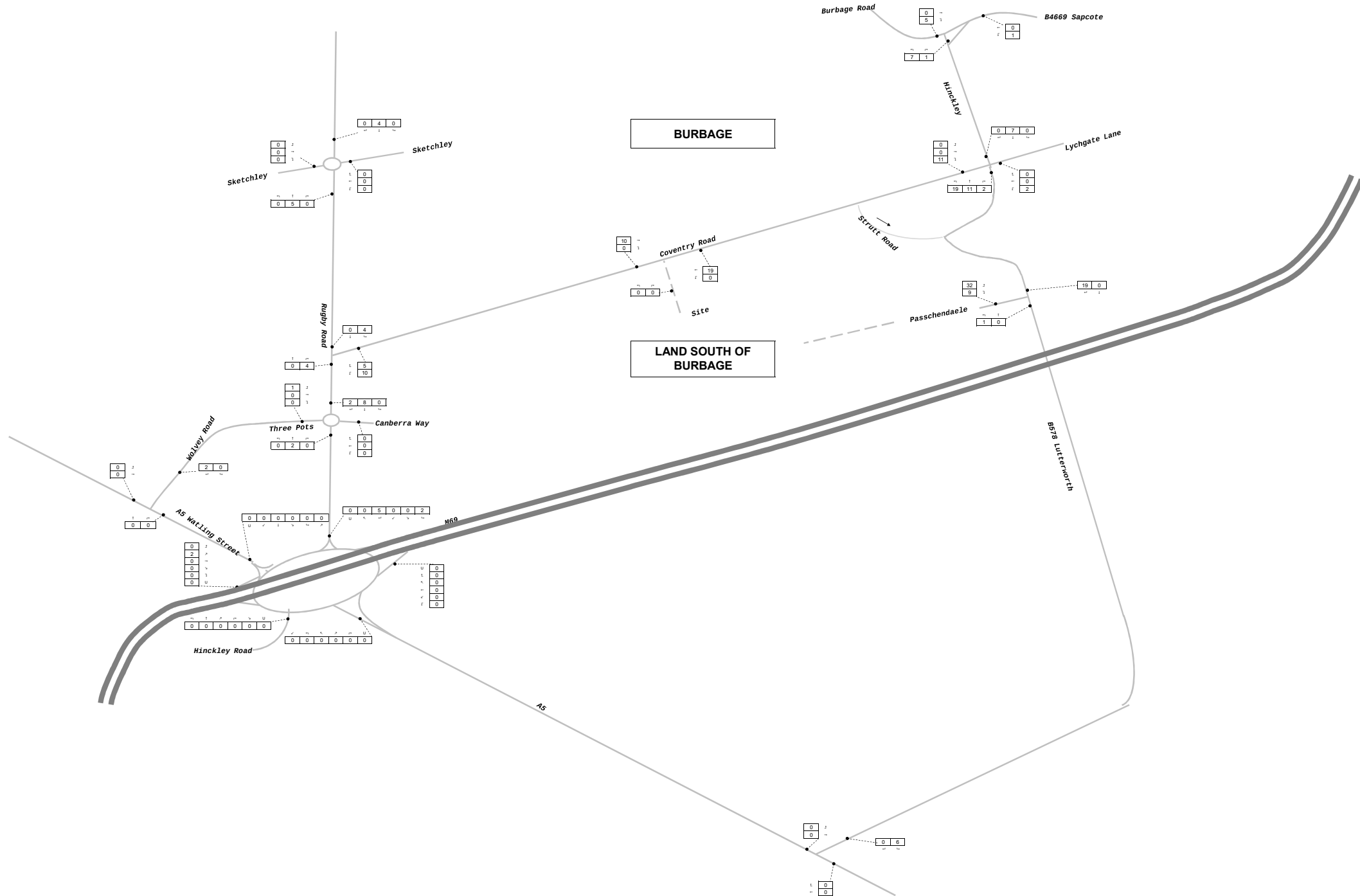


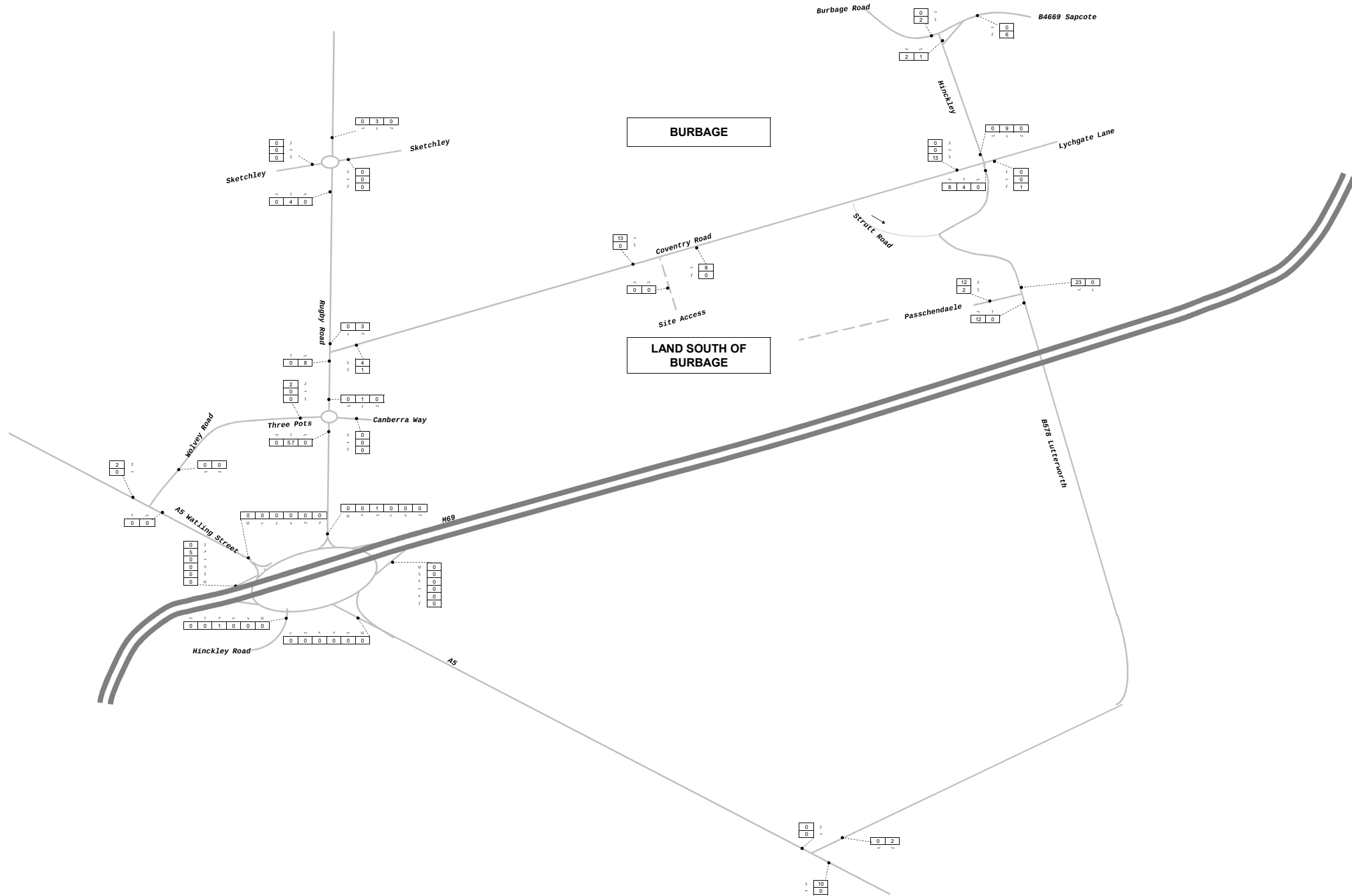


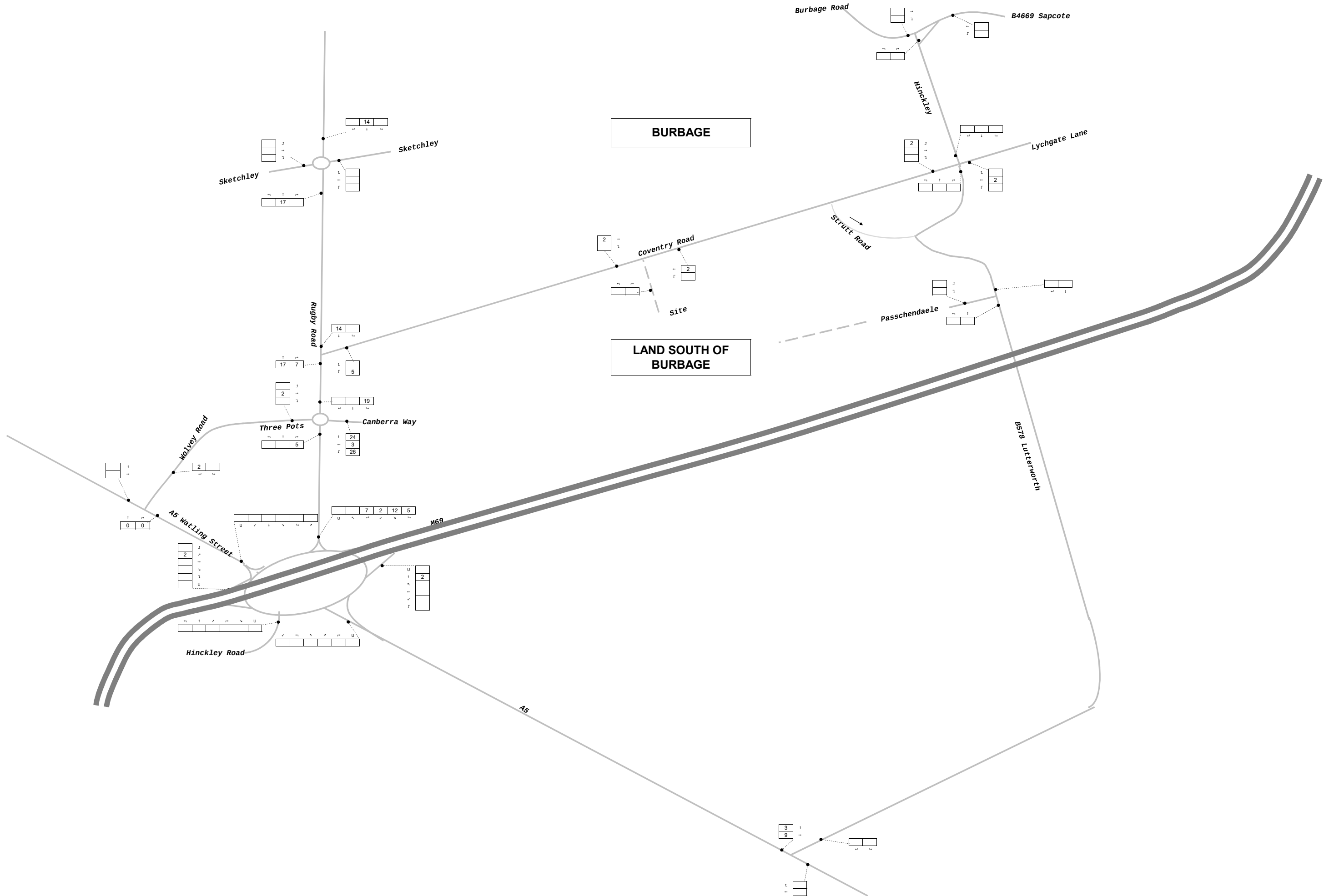


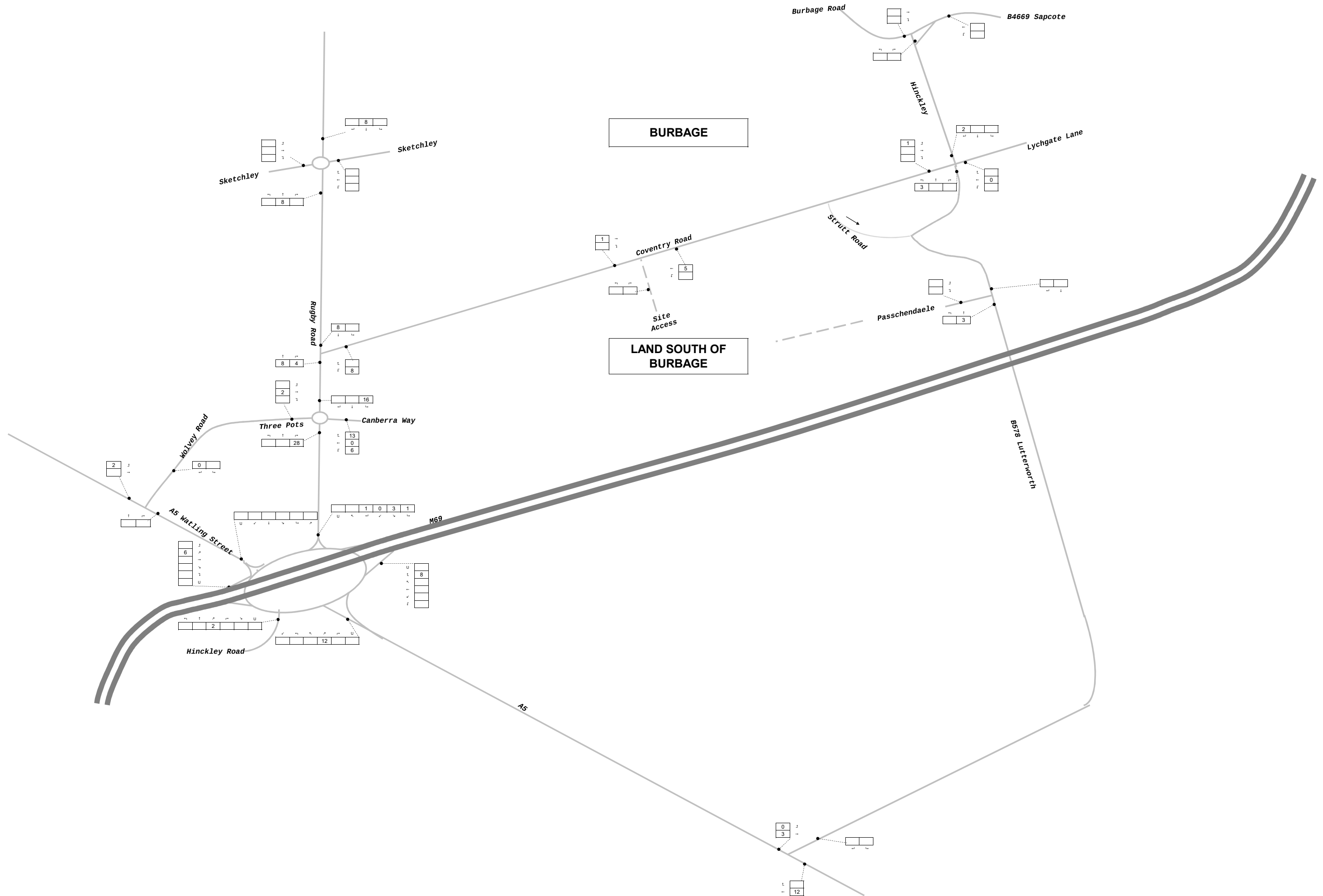


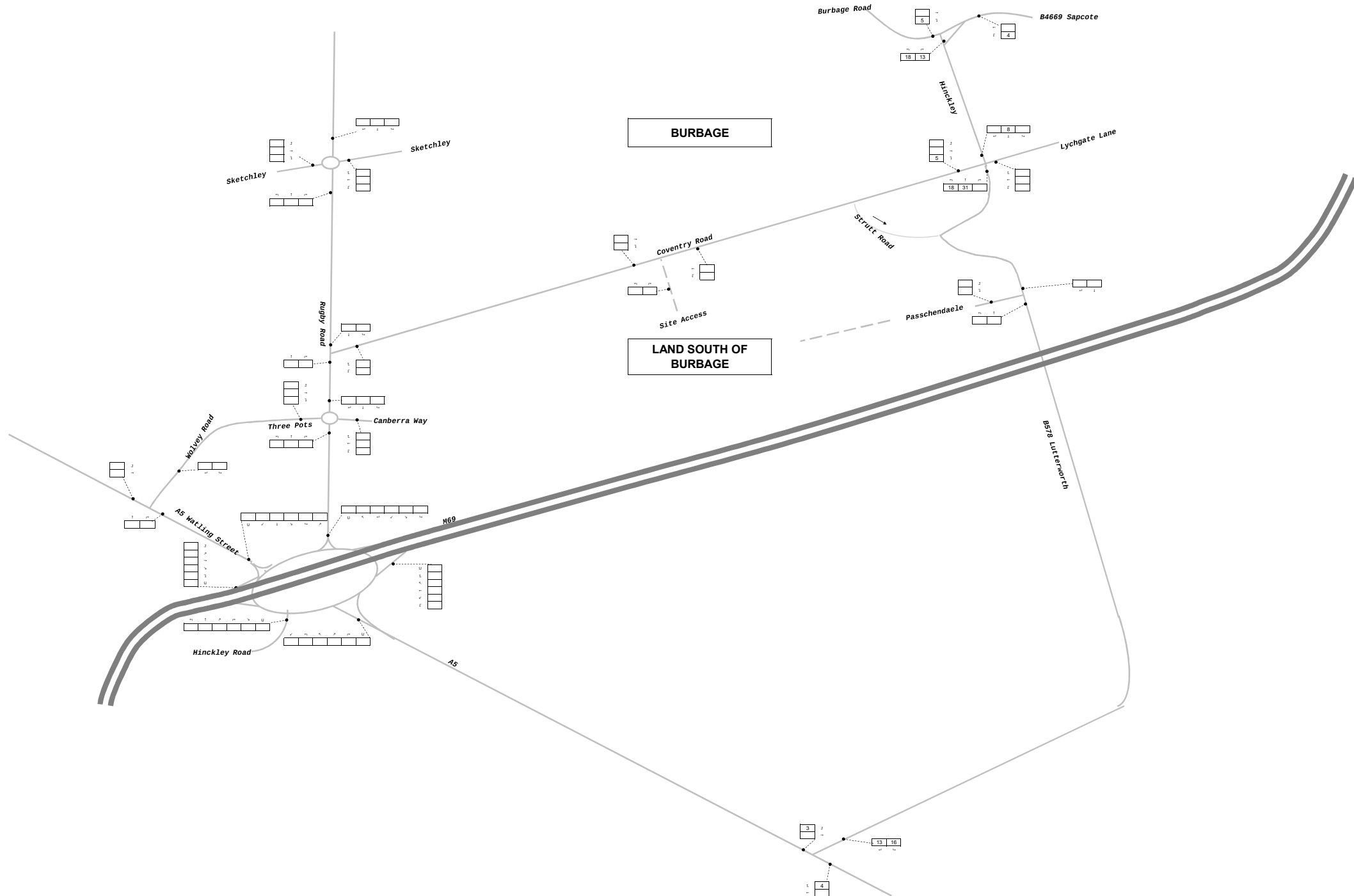


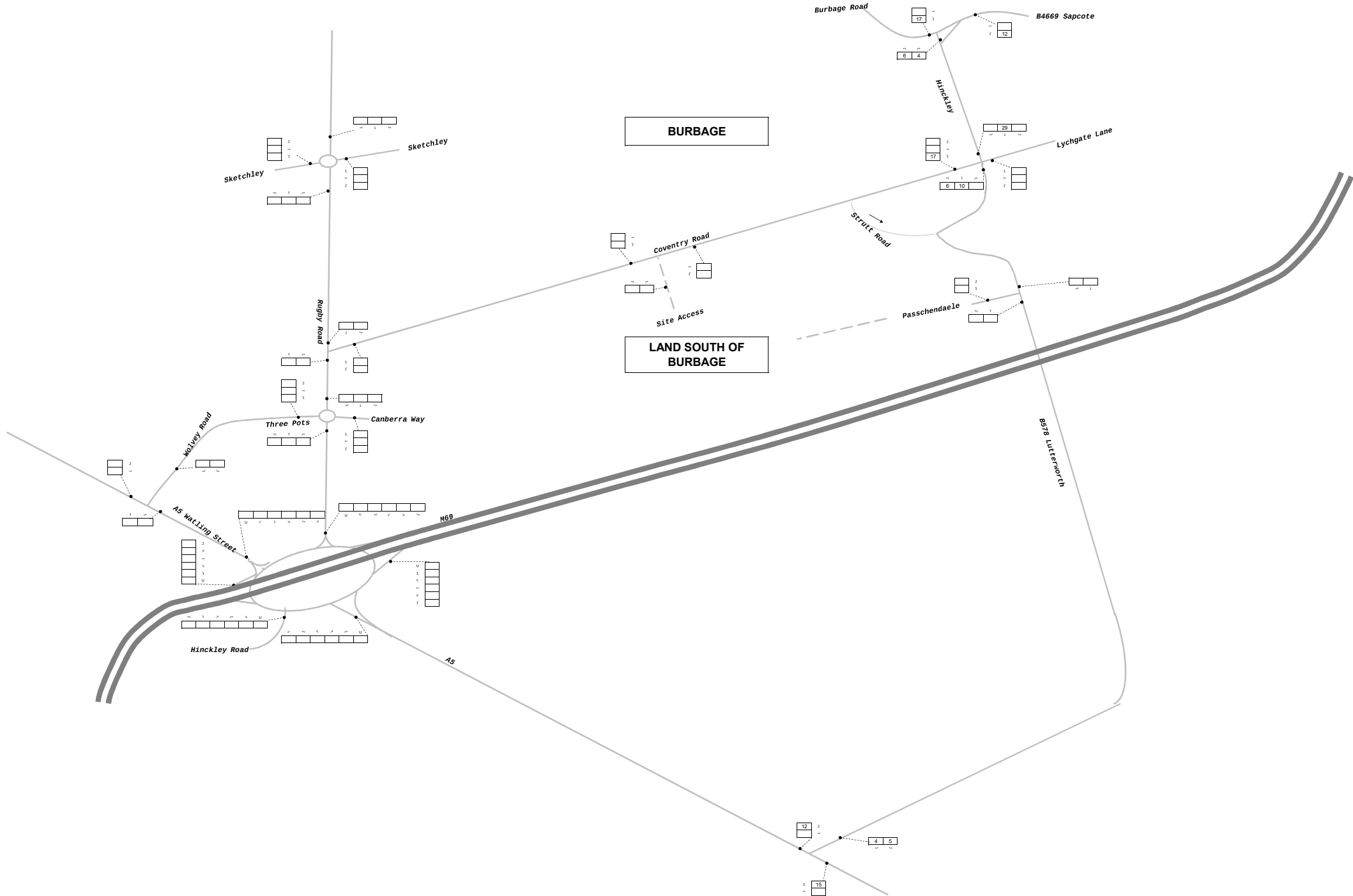


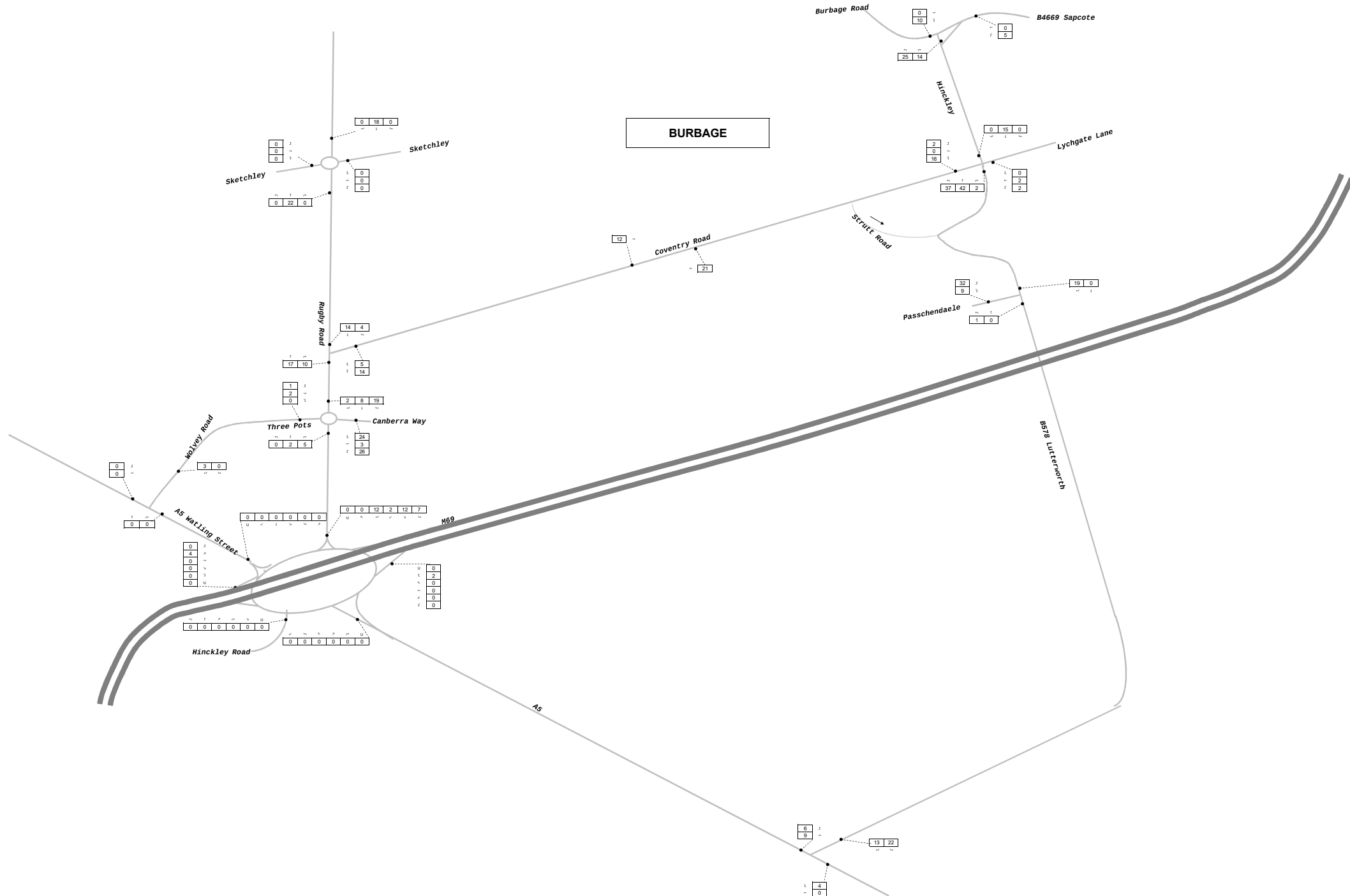


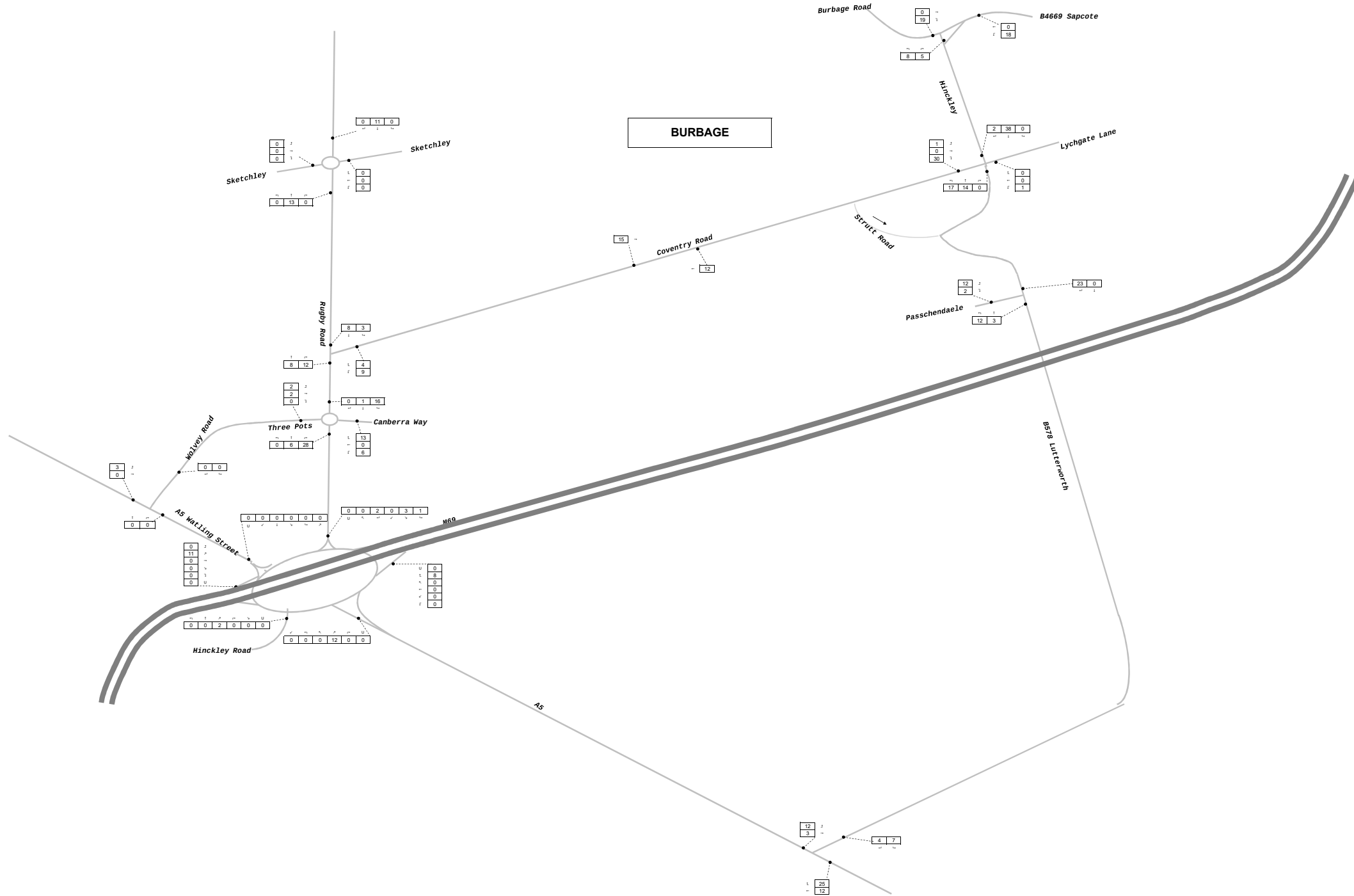










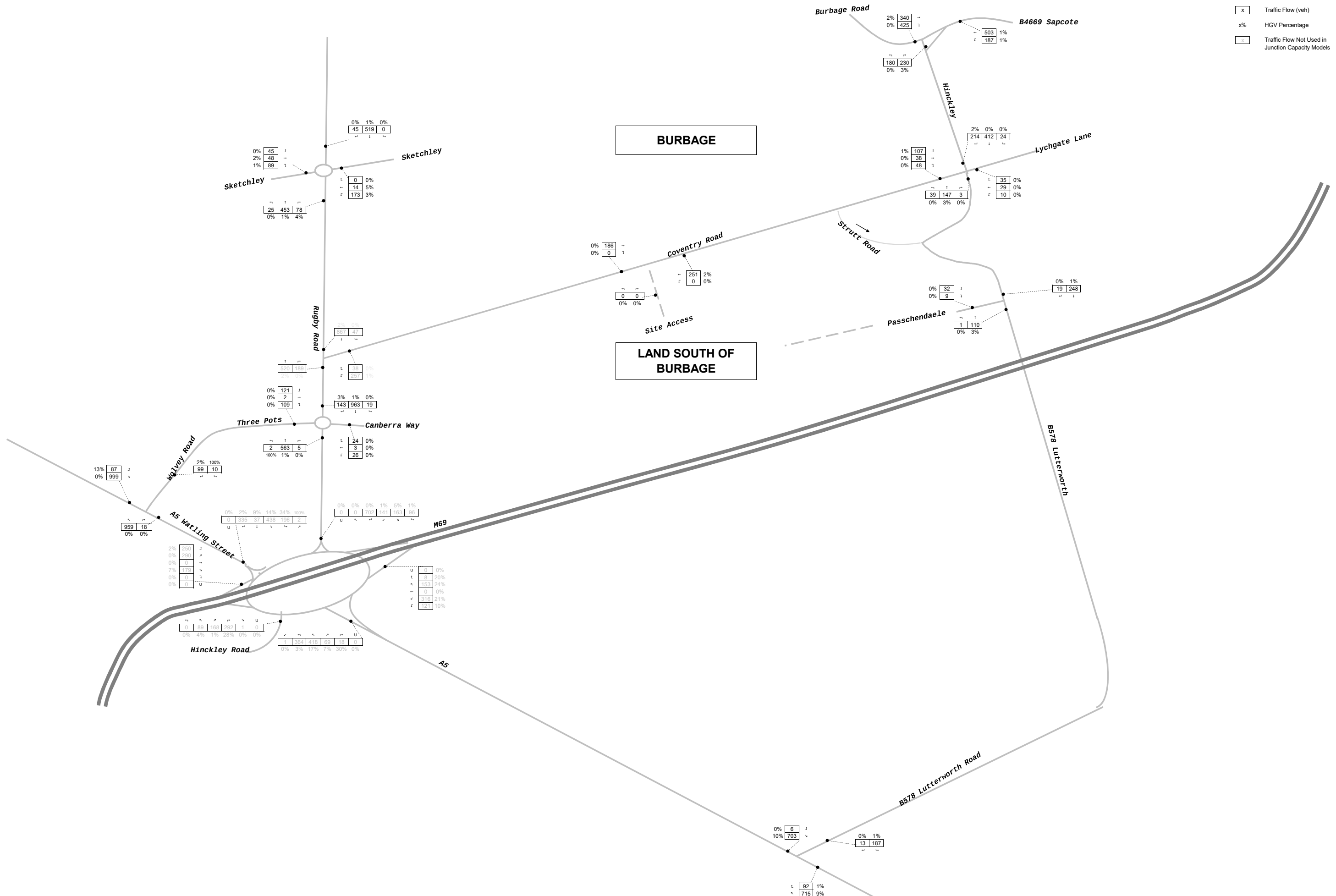


Key

- | |
|---|
| x |
|---|

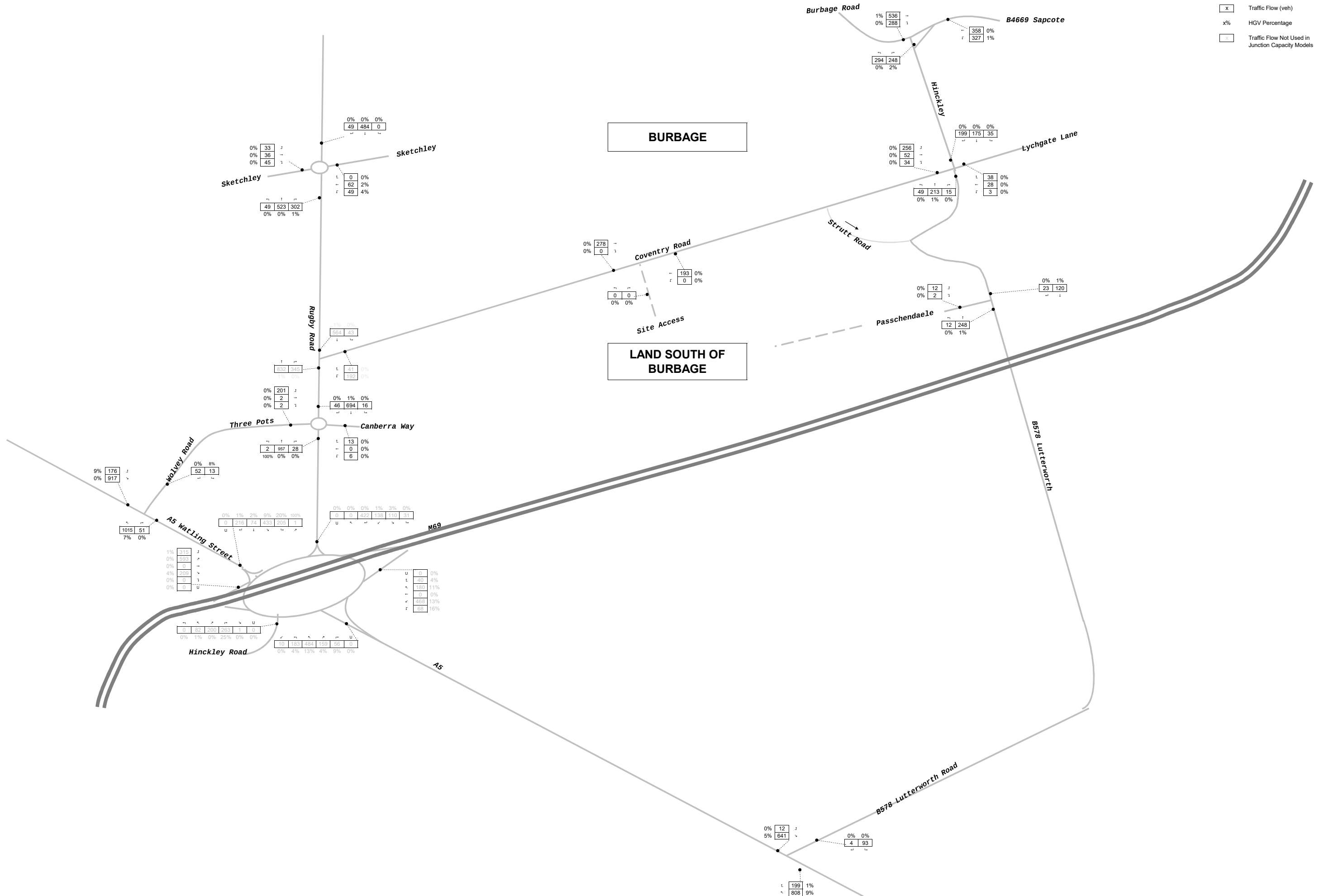
 Traffic Flow (veh)
- x% HGV Percentage
- | |
|---|
| x |
|---|

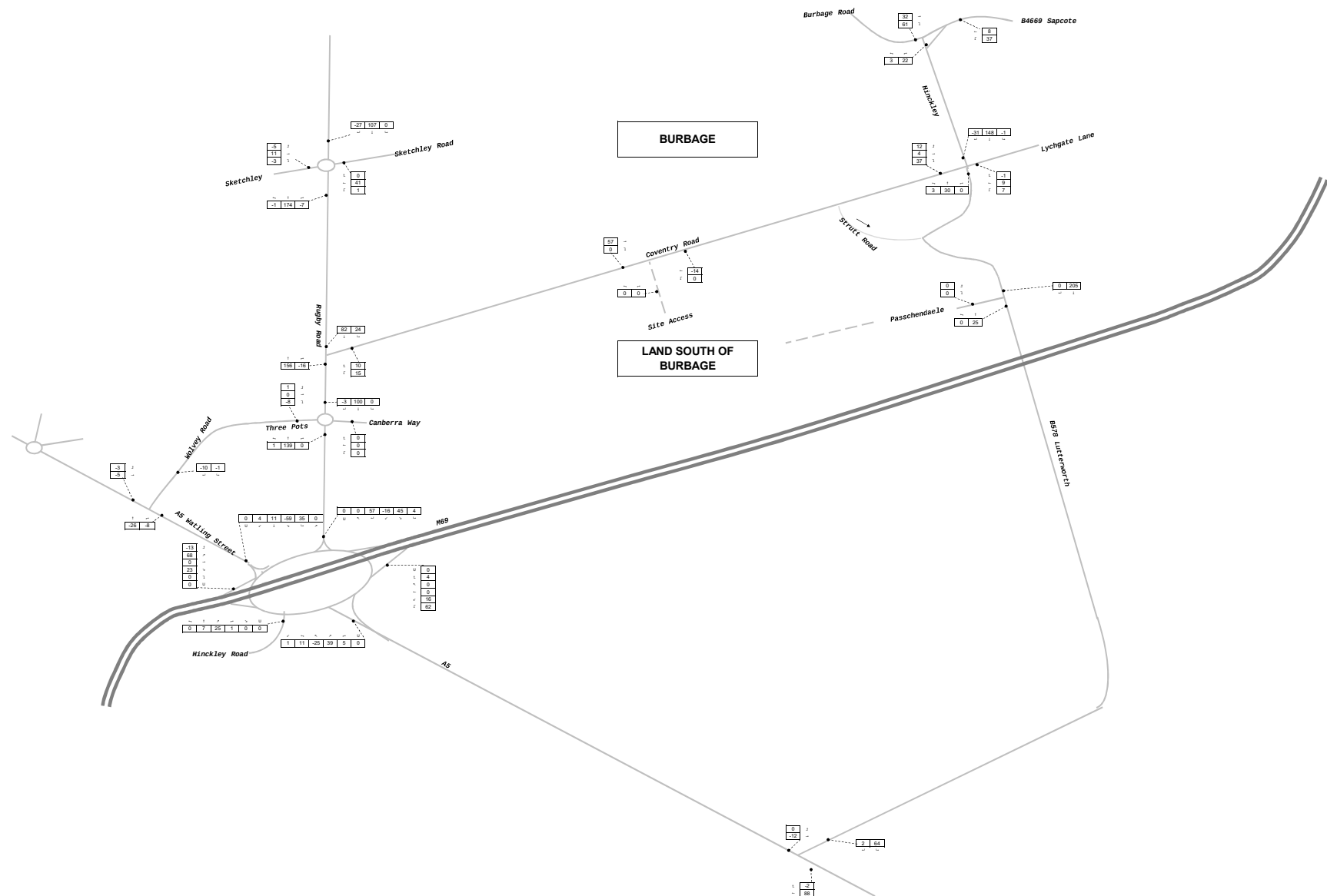
 Traffic Flow Not Used in Junction Capacity Models

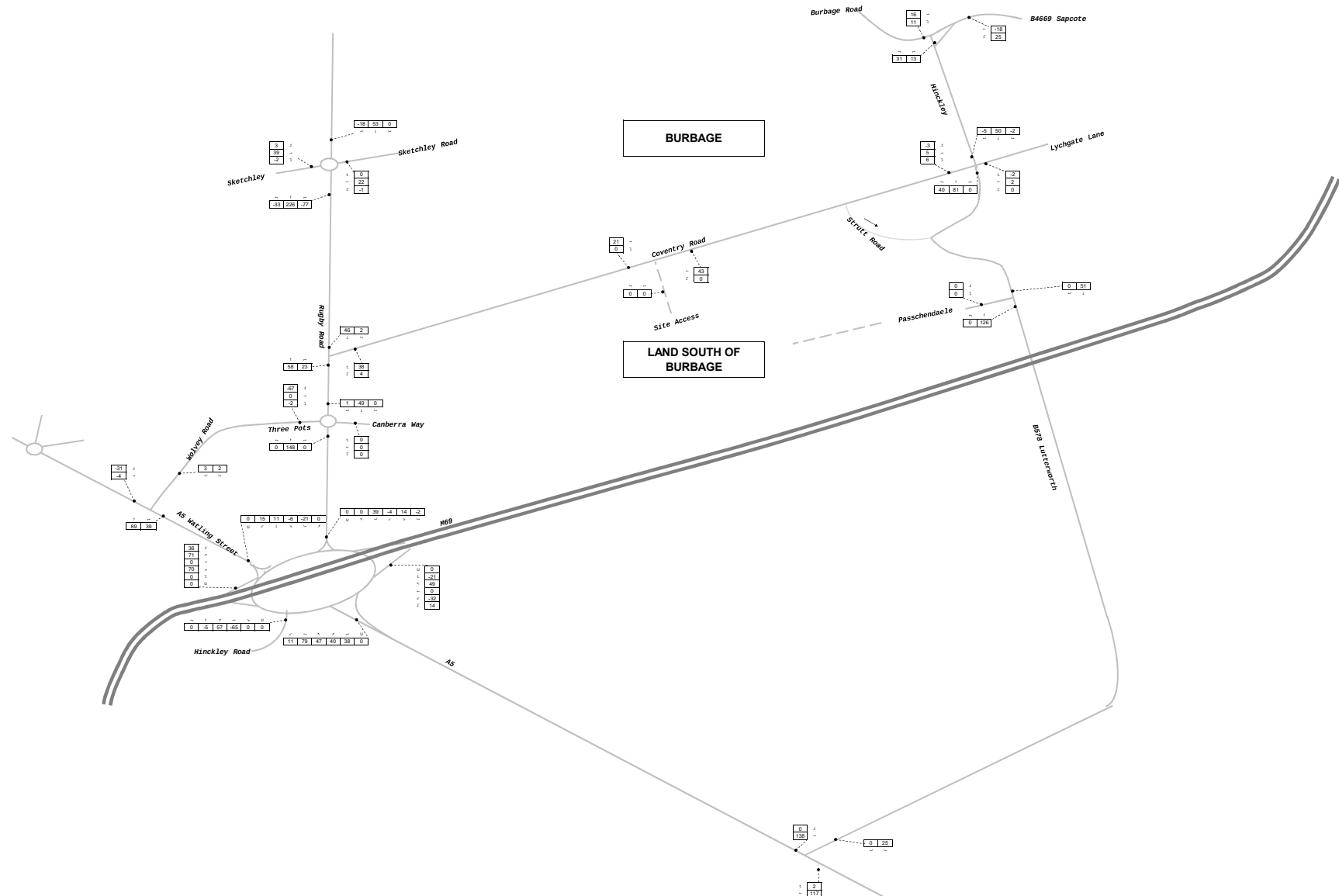


Key

x	Traffic Flow (veh)
x%	HGV Percentage
x	Traffic Flow Not Used in Junction Capacity Models







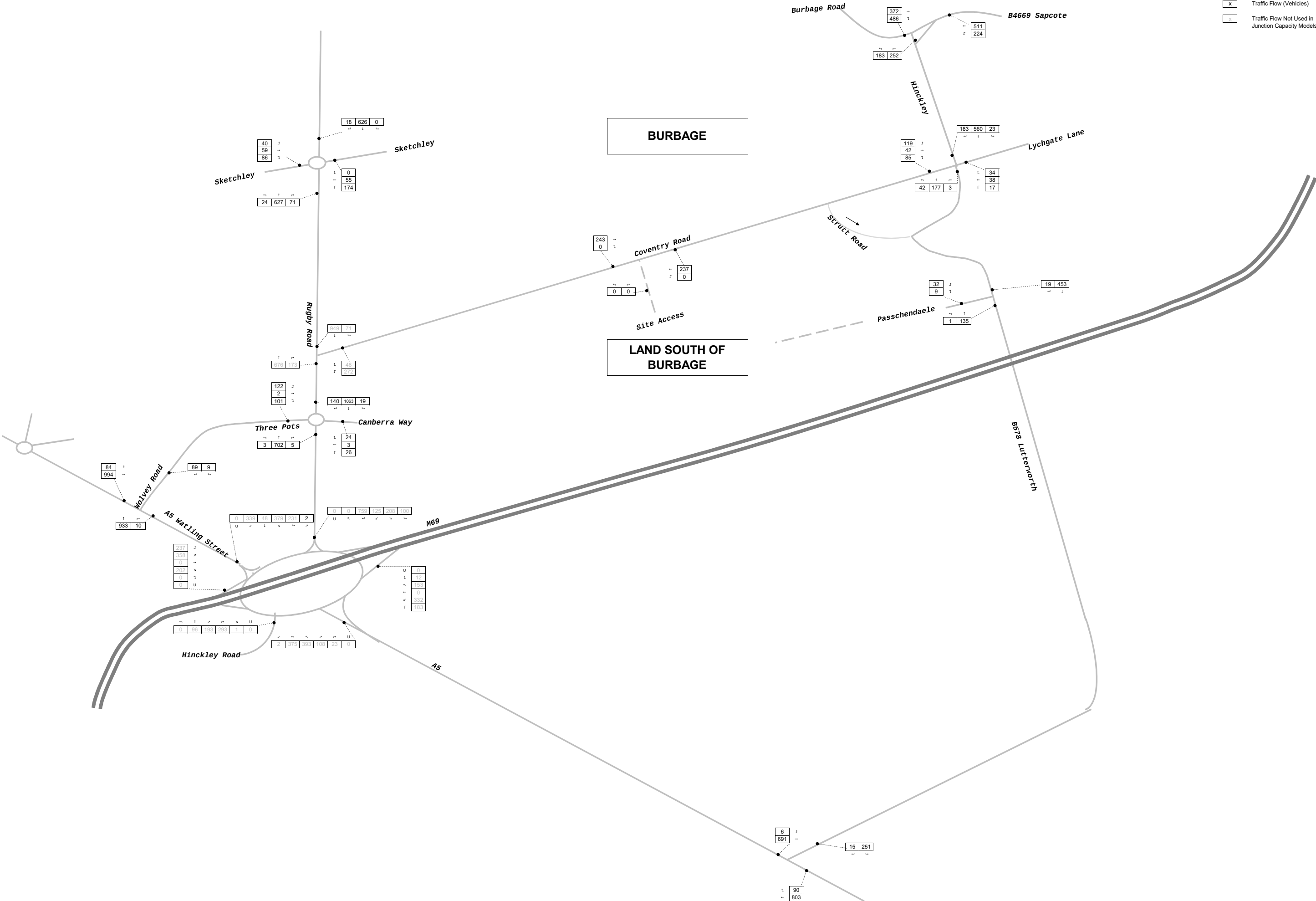
Key

X

Traffic Flow (Vehicles)

X

Traffic Flow Not Used in Junction Capacity Models



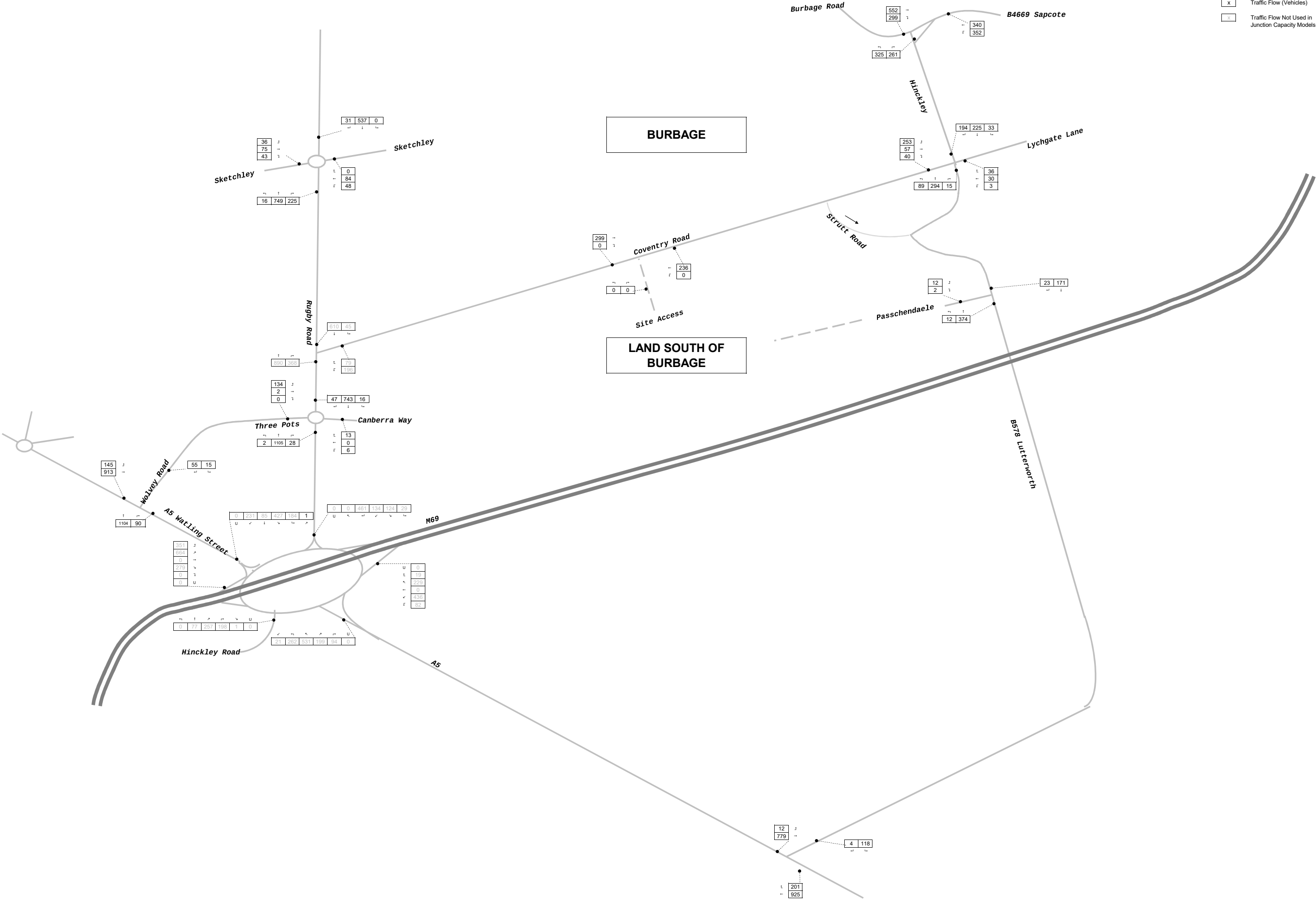
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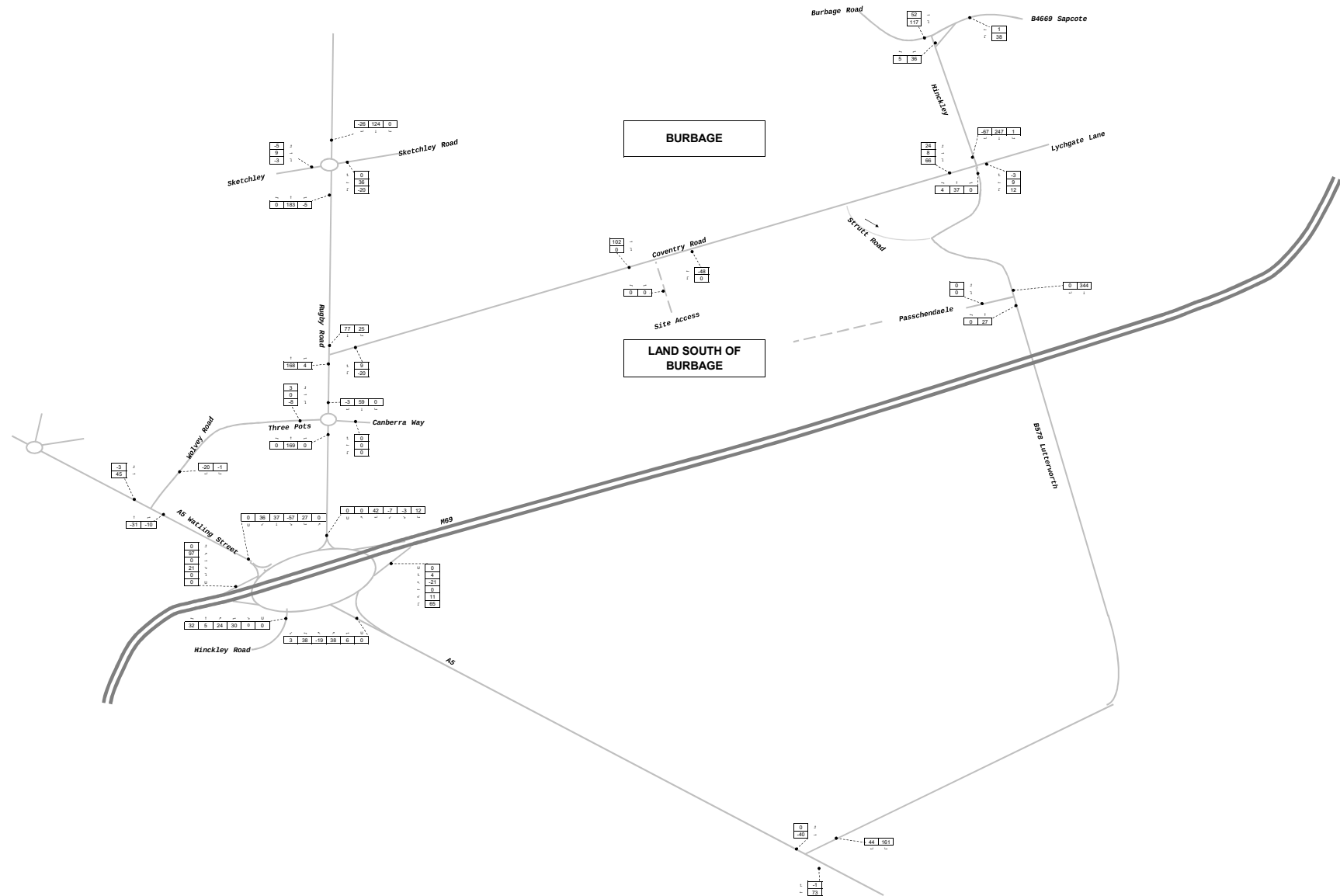
x

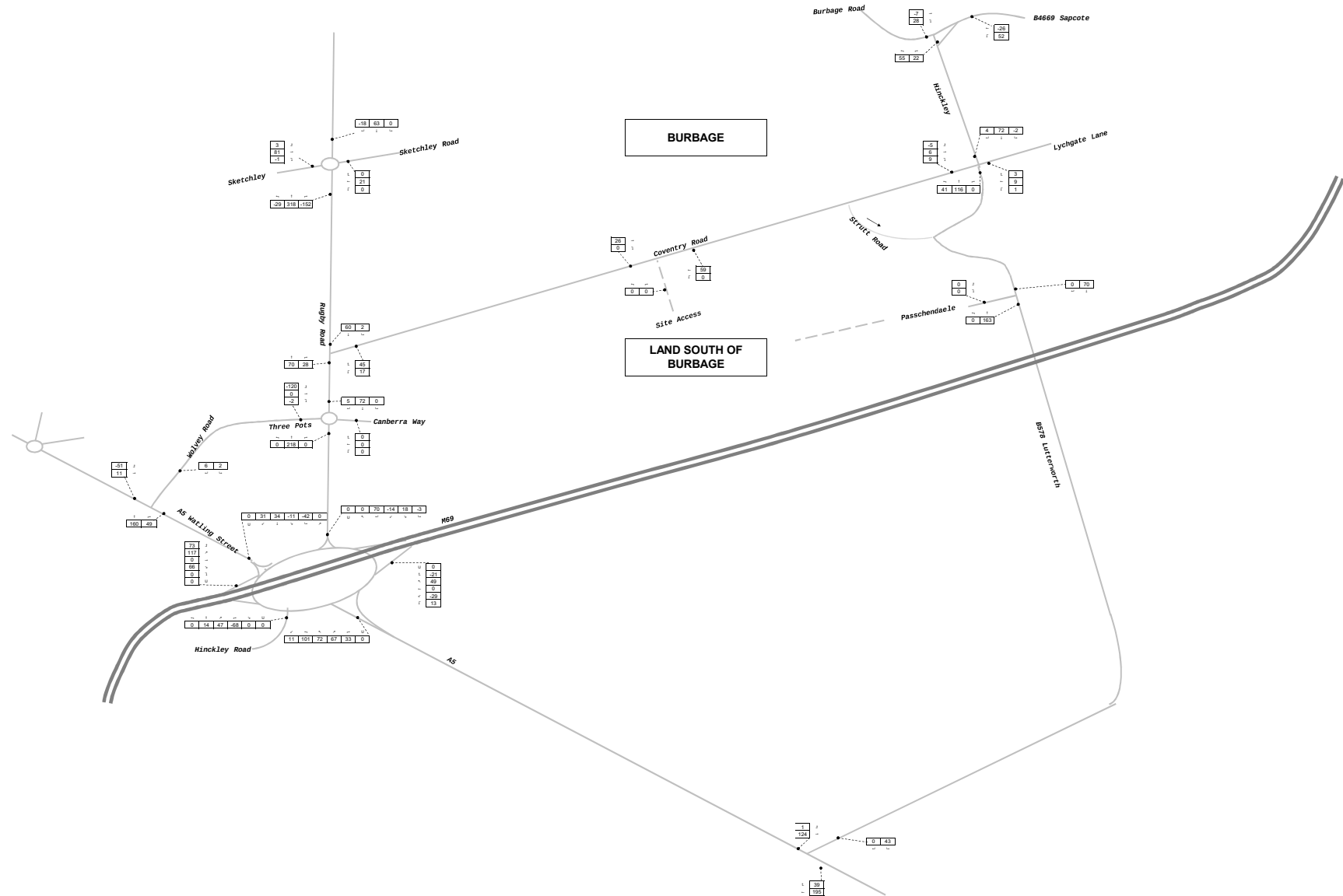
Traffic Flow (Vehicles)

x

Traffic Flow Not Used in Junction Capacity Models



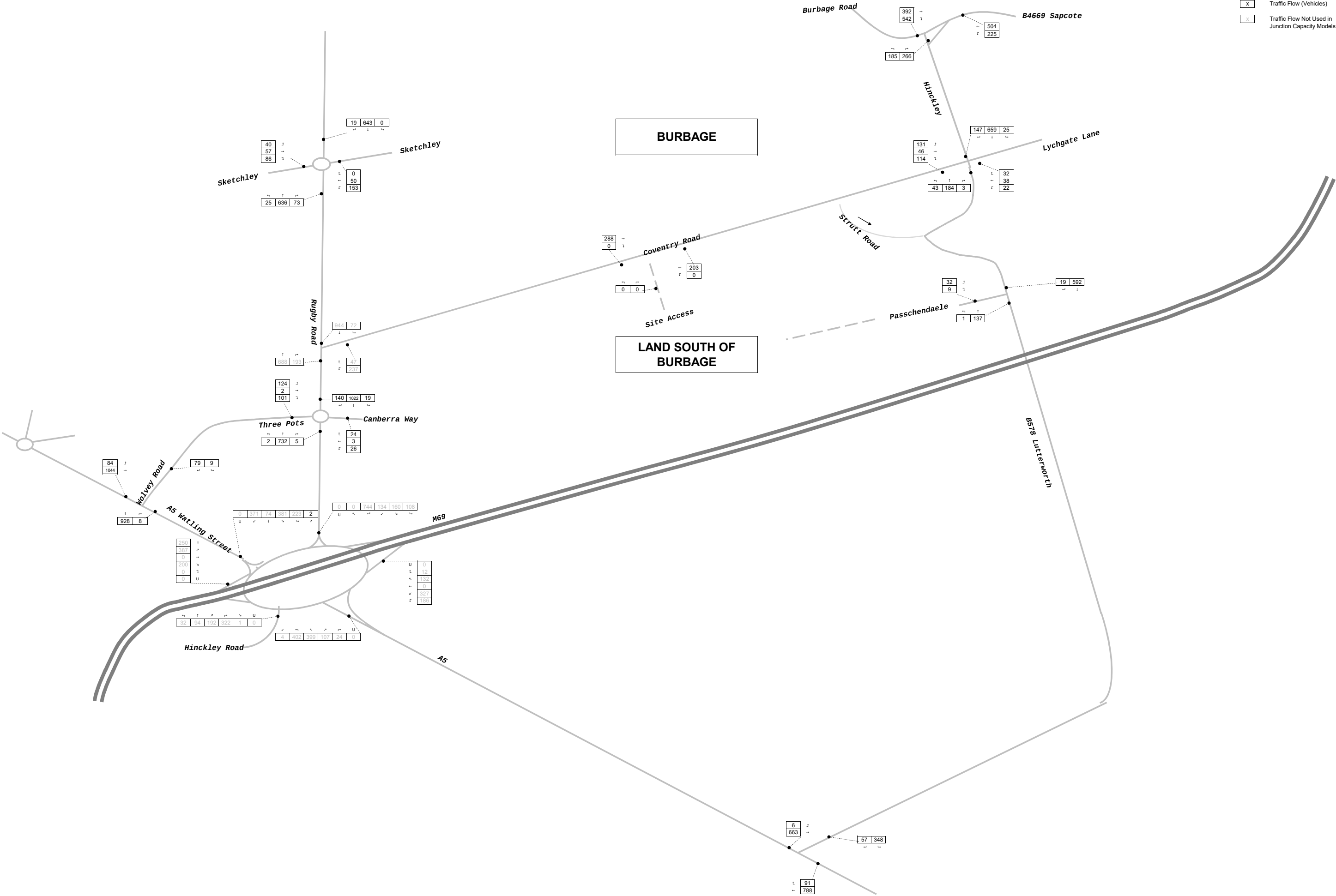




Key

☐ Traffic Flow (Vehicles)

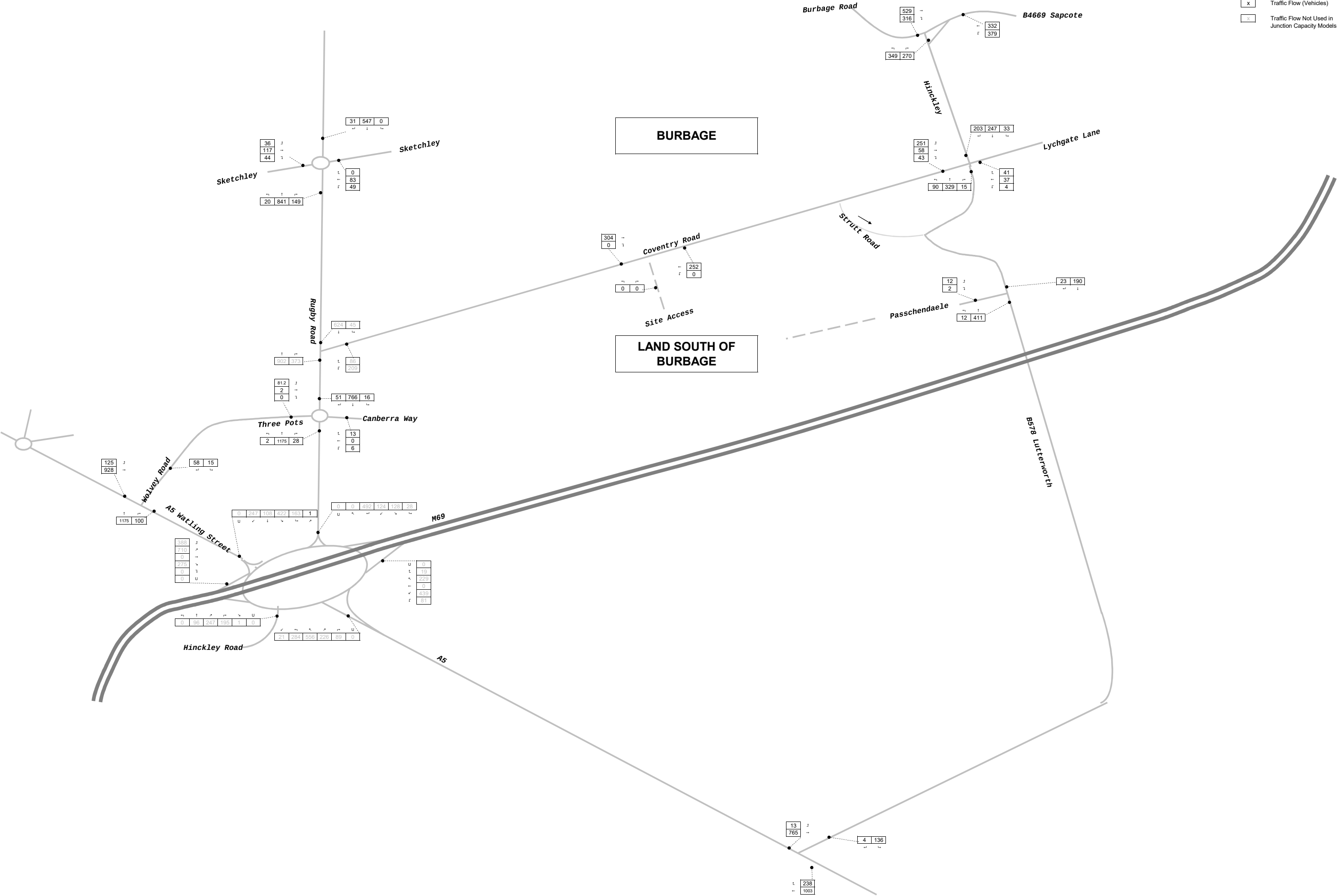
☐ Traffic Flow Not Used in Junction Capacity Models



Key

☒ Traffic Flow (Vehicles)

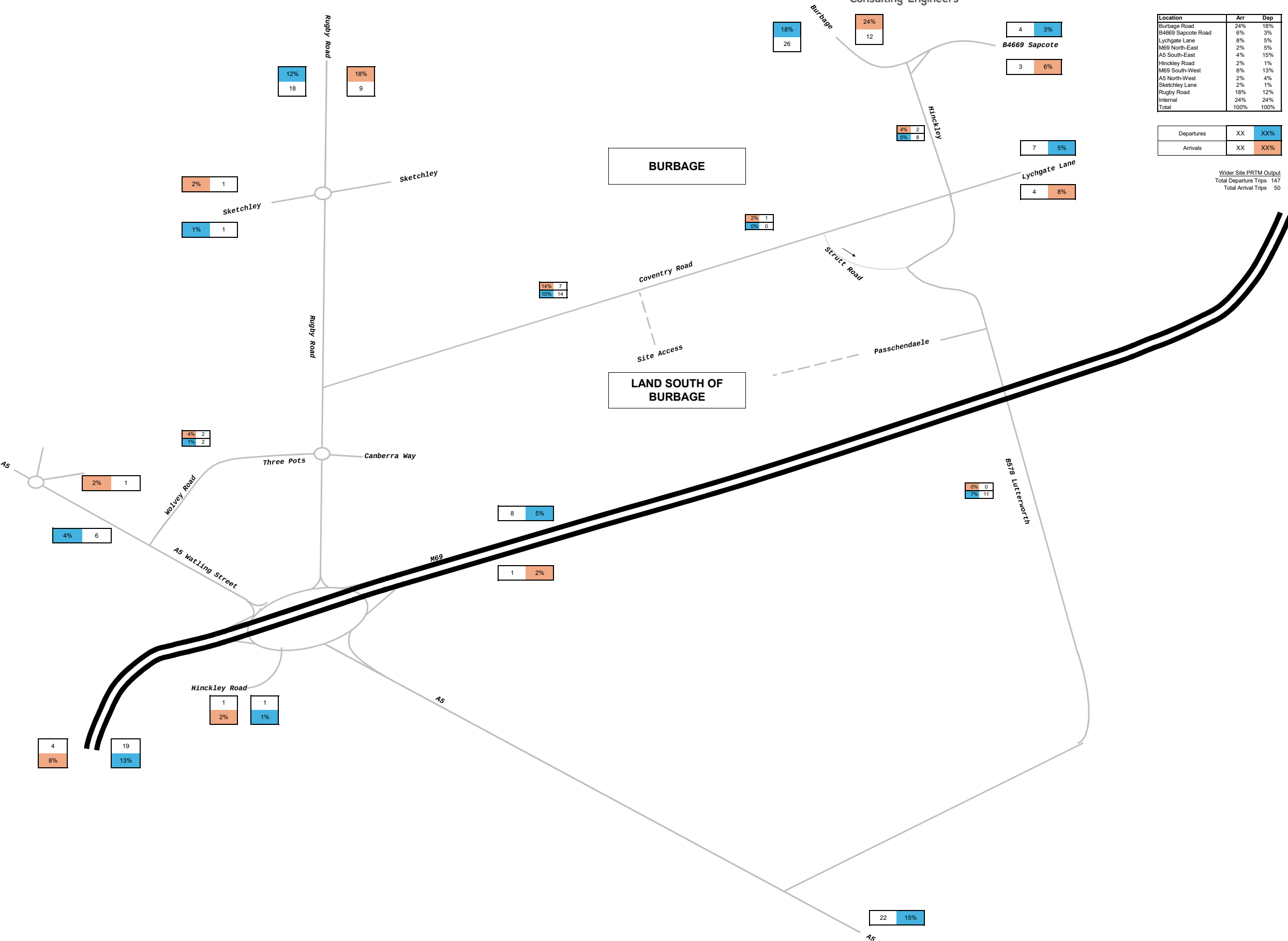
☐ Traffic Flow Not Used in Junction Capacity Models



Location	Arr	Dep
Burbage Road	24%	18%
B4669 Sapcote Road	6%	3%
Lychgate Lane	6%	5%
M69 North-East	2%	5%
A5 South-East	4%	15%
Hinckley Road	2%	1%
M69 South-West	8%	13%
A5 North-West	2%	4%
Sketchley Lane	2%	1%
Rugby Road	18%	12%
Internal	24%	24%
Total	100%	100%

Departures	XX	XX%
Arrivals	XX	XX%

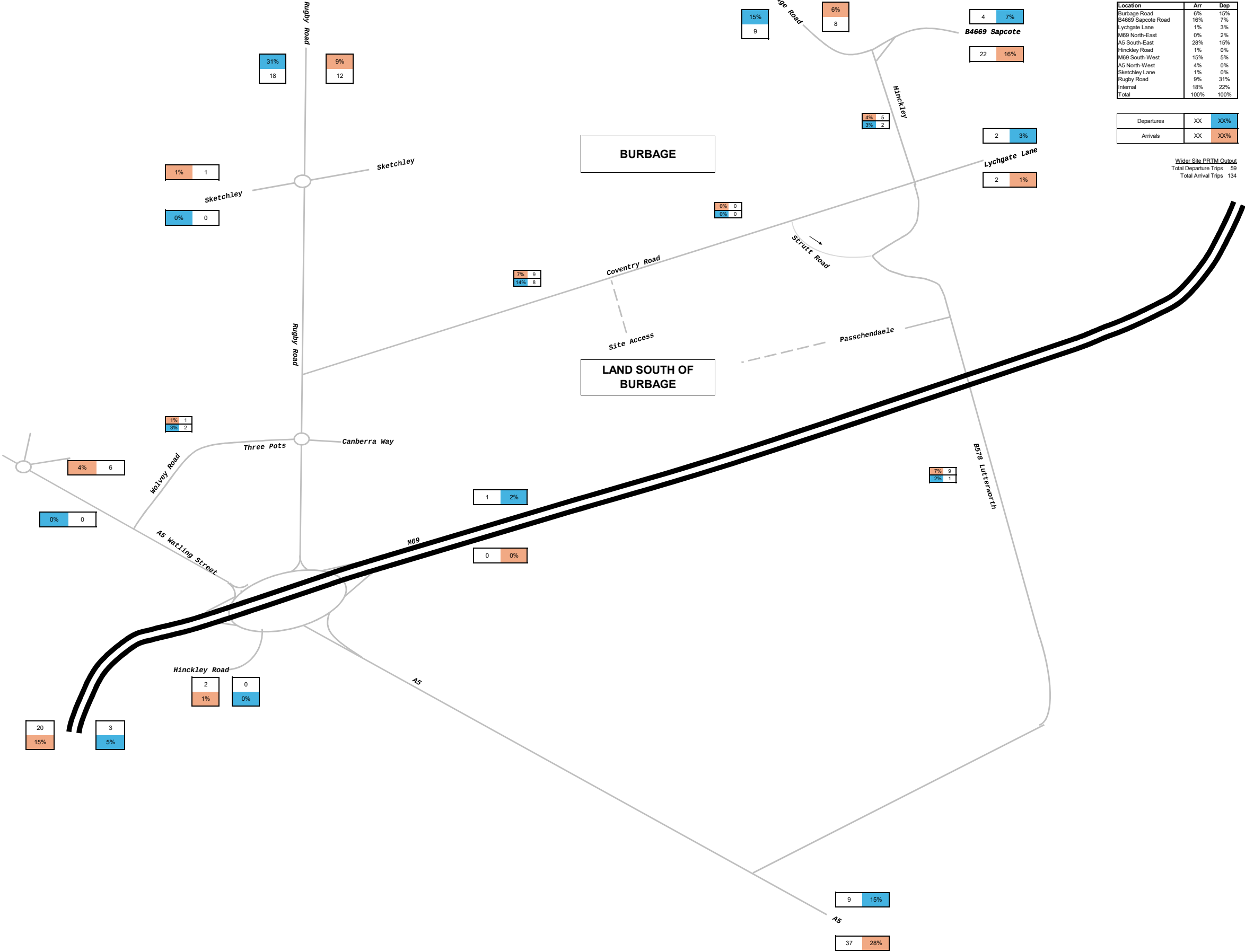
Wider Site PRTM Output
Total Departure Trips 147
Total Arrival Trips 50

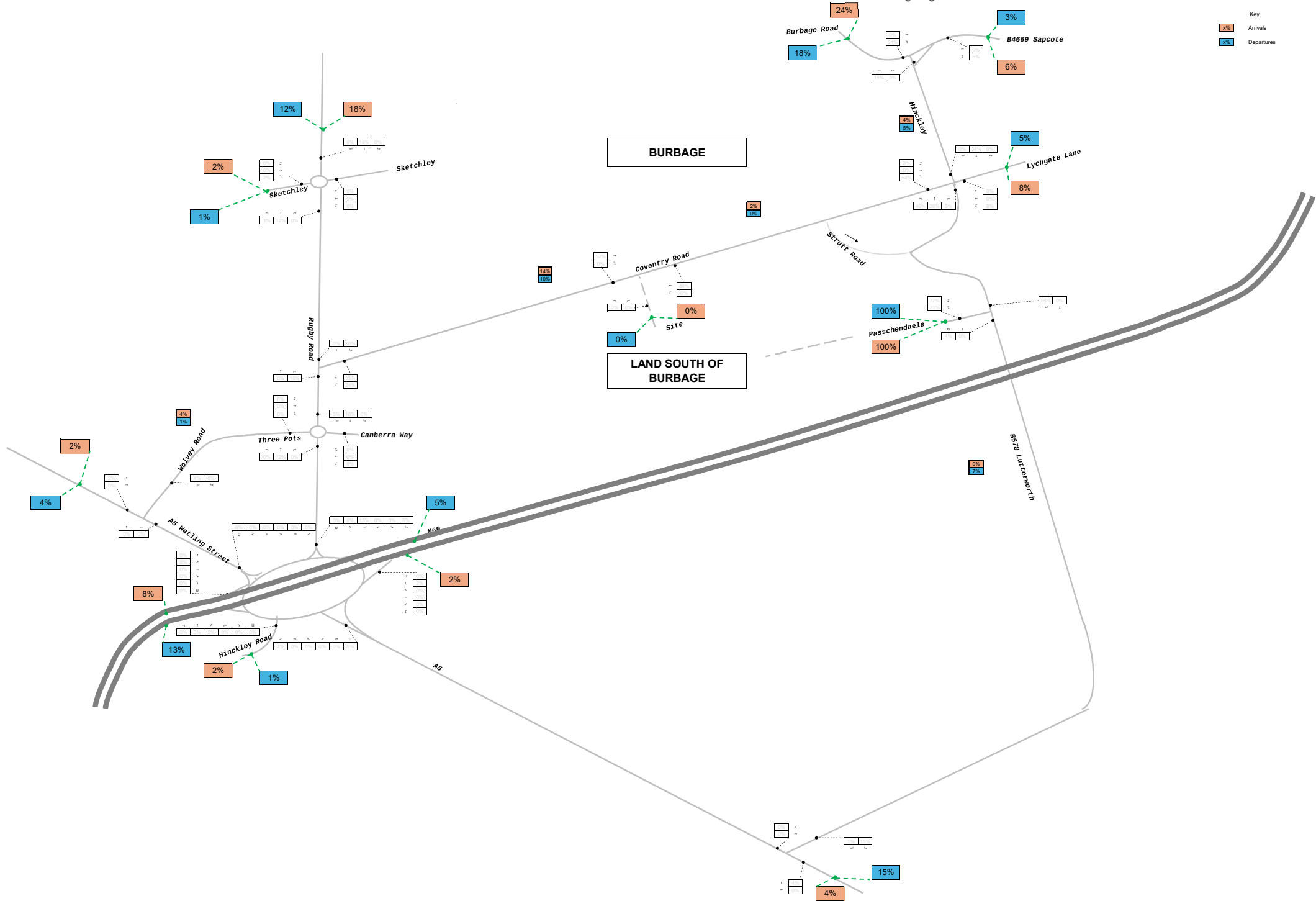


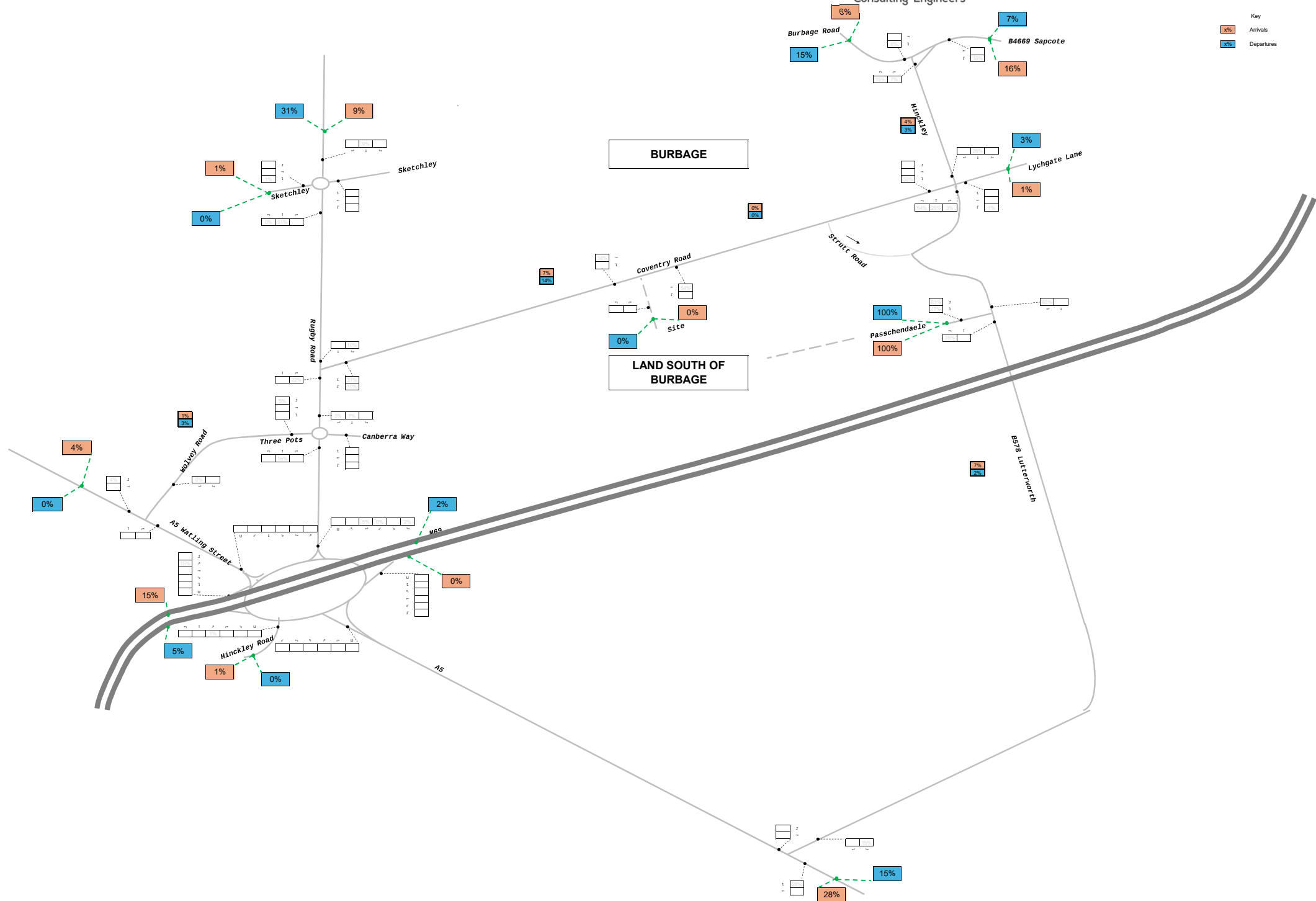
Location	Arr	Dep
Burbage Road	6%	15%
B4669 Sapcote Road	16%	7%
Lychgate Lane	1%	3%
M69 North-East	0%	2%
A5 South-East	28%	15%
Hinckley Road	1%	0%
M69 South-West	15%	5%
A5 North-West	4%	0%
Sketchley Lane	1%	0%
Rugby Road	9%	31%
Internal	18%	22%
Total	100%	100%

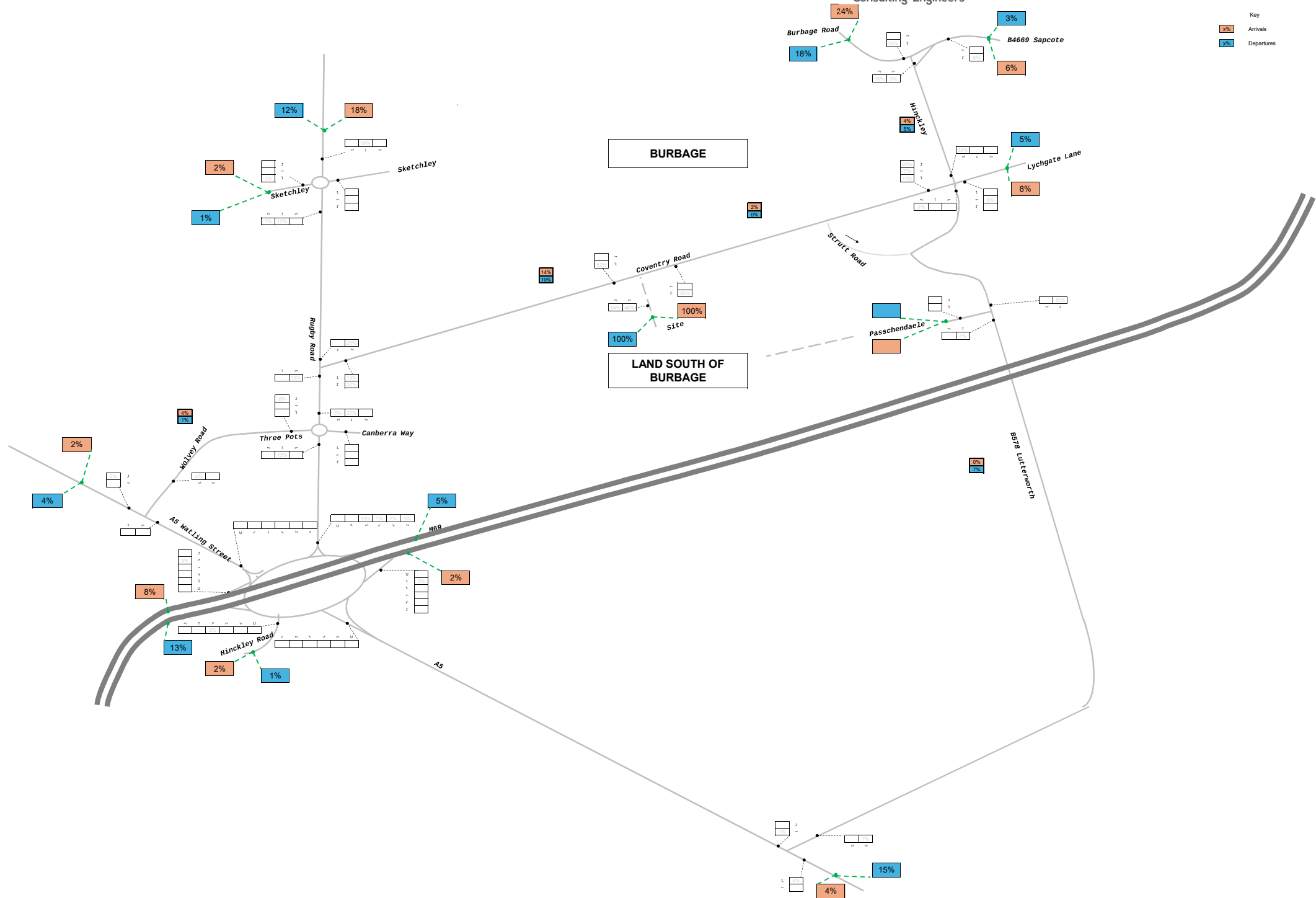
Departures	XX	XX%
Arrivals	XX	XX%

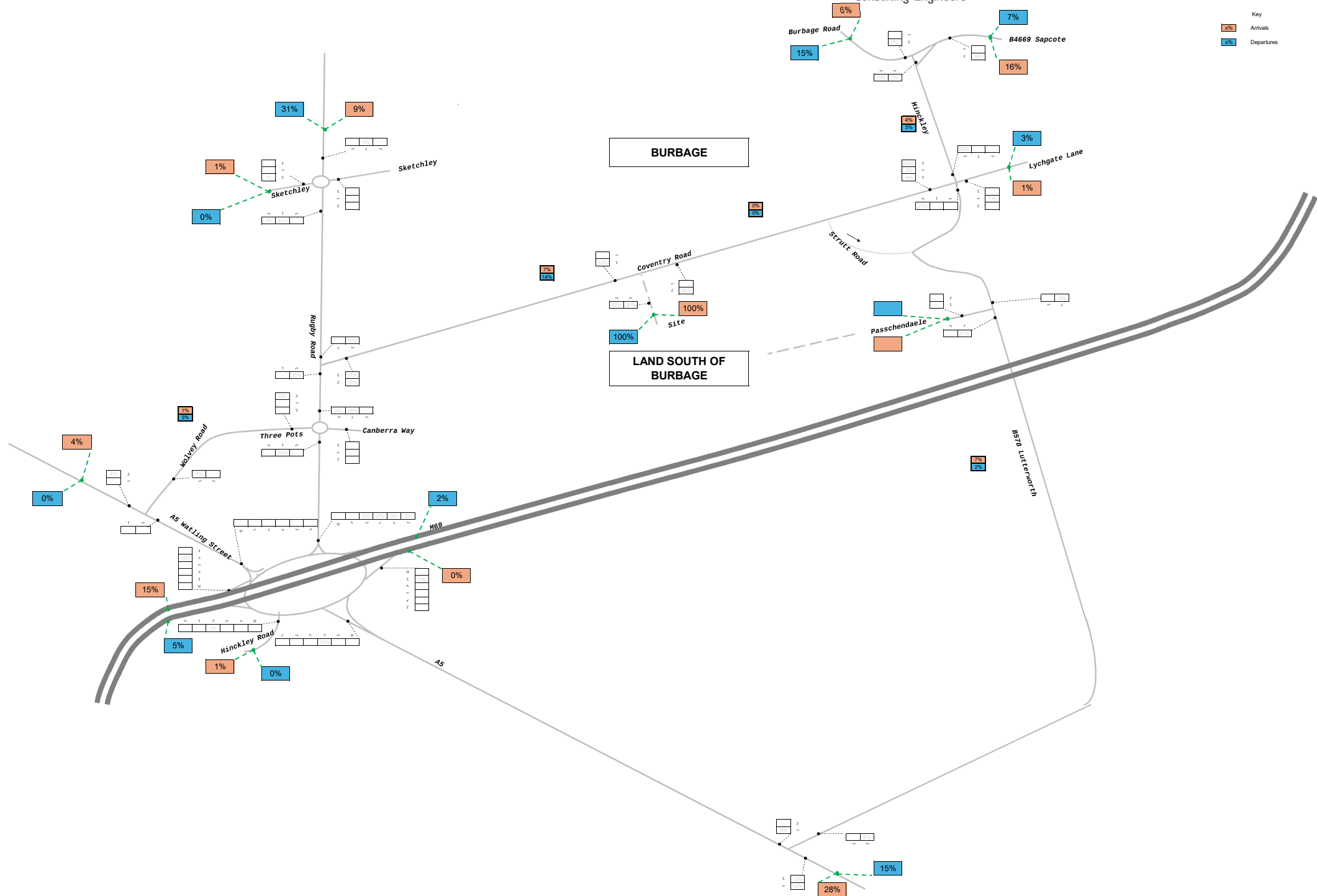
Wider Site PRTM Output
Total Departure Trips 59
Total Arrival Trips 134











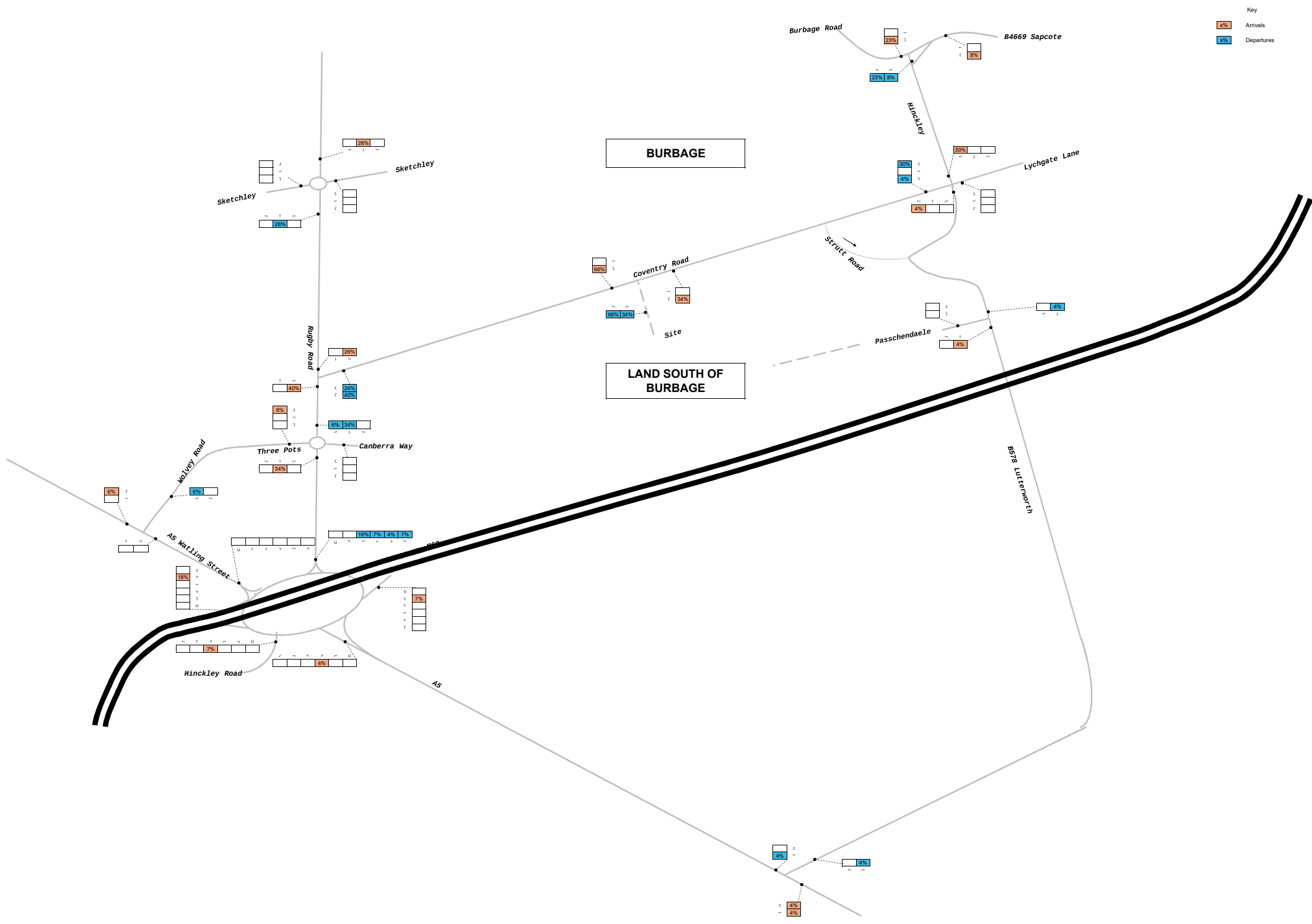
S083
Gravity Model
Calculations

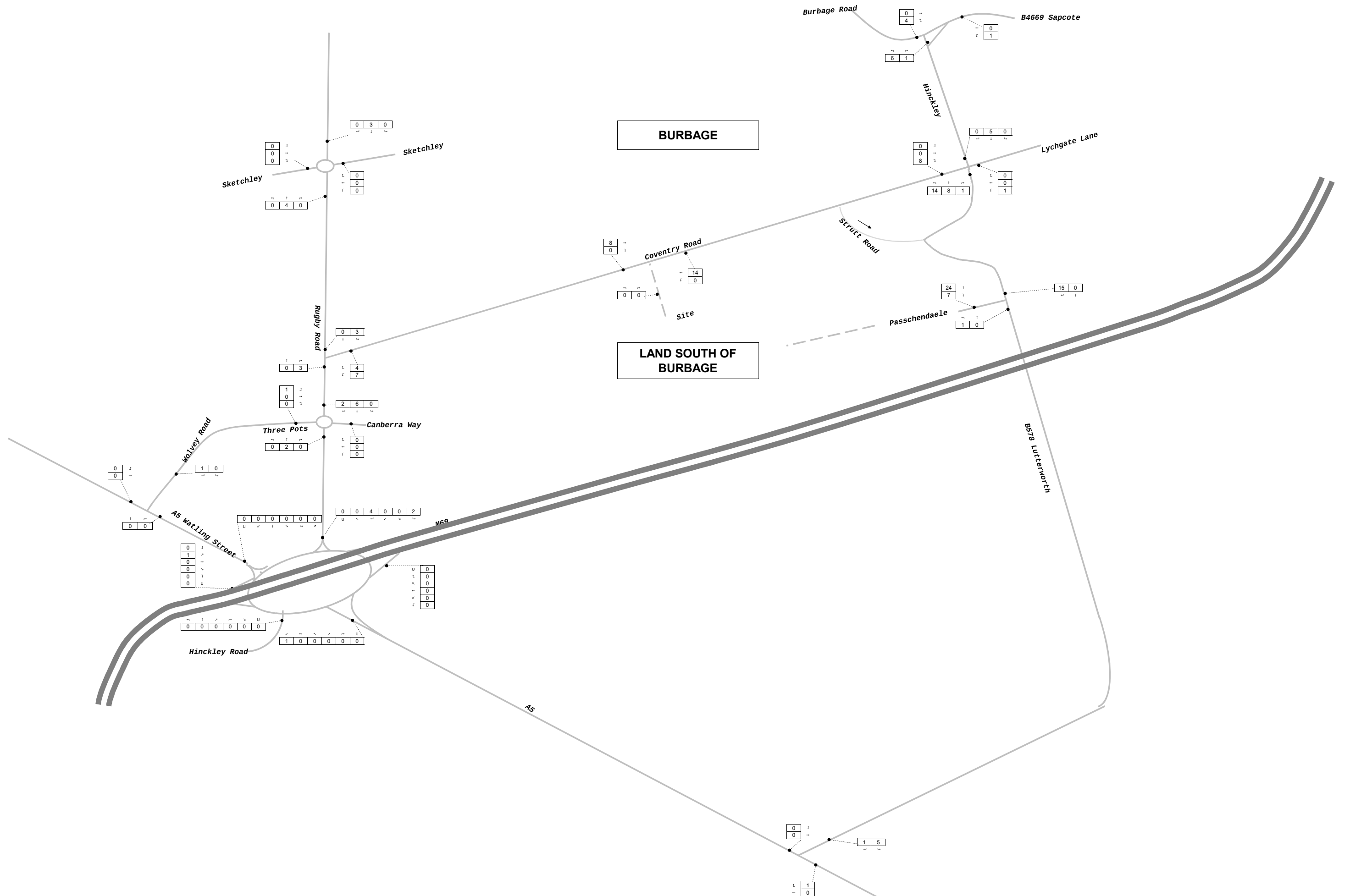
Power value 2.0

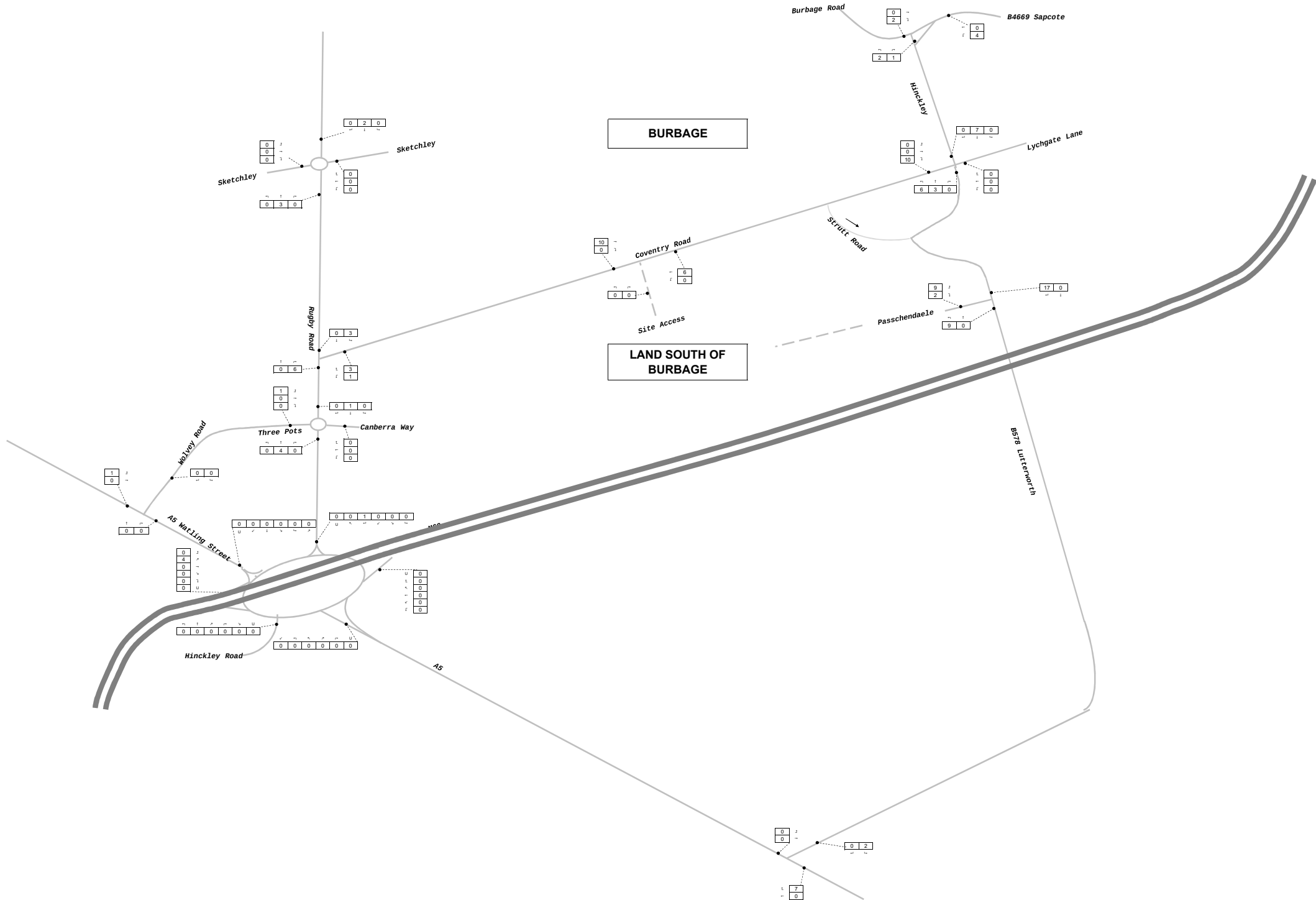
NOMIS (BUA inc Subdivision)

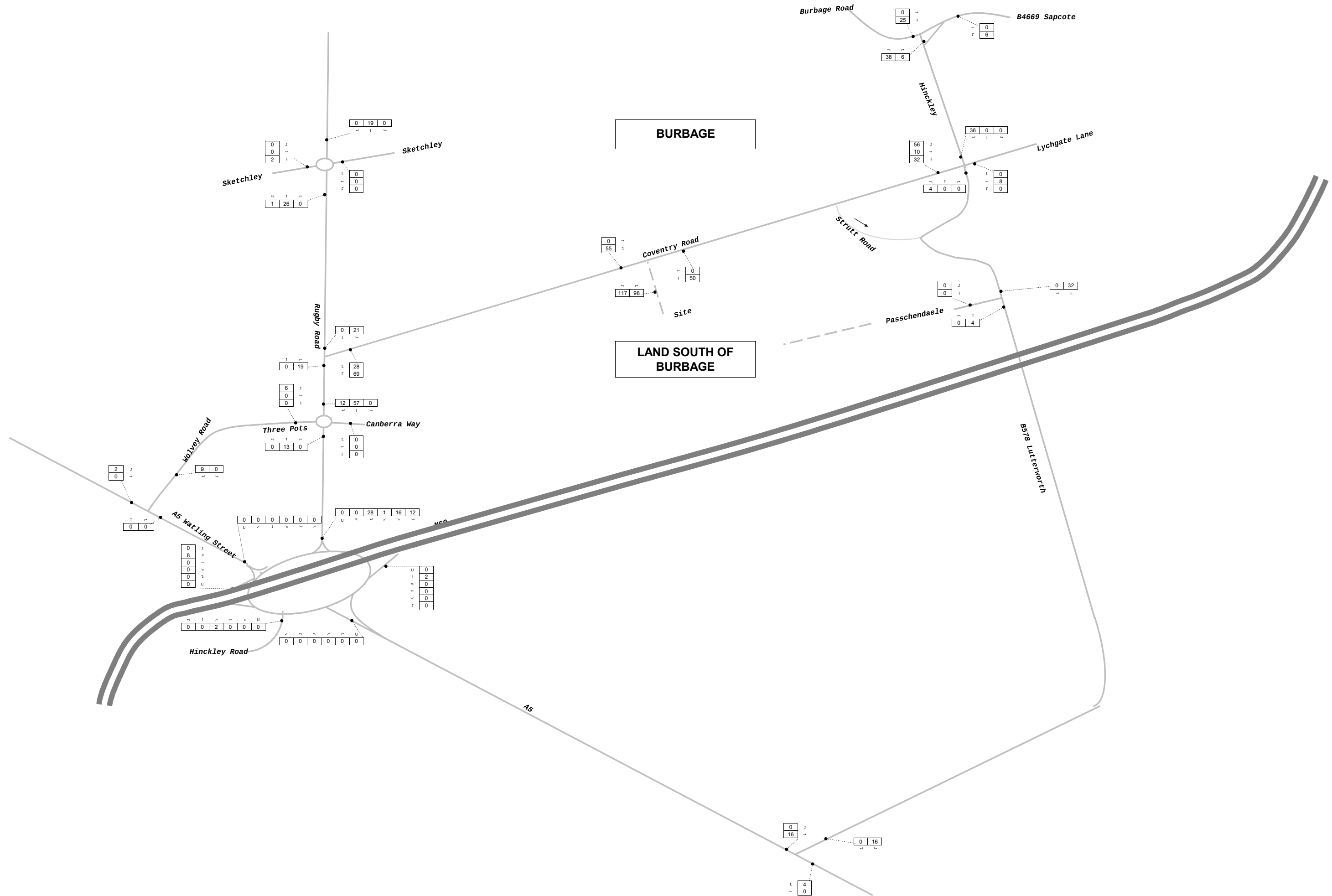
Locations	Population	Distance (km)	Calculation	Distribution	Route	Proportion
Atherstone	11,259	14.4	54.1	0.6%	A5 North-West	0.6%
Bedworth	31,332	9.1	381.7	4.2%	A5 North-West; M69 South-West; Hinckley Road	1.4%
Bulkington	6,146	6.9	129.5	1.4%	Hinckley Road	1.4%
Coalville	37,661	22.5	74.5	0.8%	Rugby Road; M69 North-East	0.4%
Coventry	345,328	16.3	1304.5	14.4%	M69 South-West	14.4%
Earl Shilton	10,047	6.7	223.8	2.5%	B4669 Burbage Road	2.5%
Hinckley	34,202	3.1	3652.7	40.4%	B4669 Burbage Road; Rugby Road	20.2%
Leicester	368,600	19.3	989.6	11.0%	B4669 Sapcote Road; M69 North-East	5.5%
Lutterworth	10,833	12.9	65.3	0.7%	A5 South-East	0.7%
Narborough	8,448	11.6	62.9	0.7%	B4669 Sapcote Road	0.7%
Nuneaton	94,634	7.7	1600.3	17.7%	A5 South-East; A5 North-West; Rugby Road; Hinckley Road	4.4%
Rugby	78,117	17.8	247.1	2.7%	A5 South-East	2.7%
Sapcote	3,260	5.3	117.8	1.3%	B4669 Sapcote Road	1.3%
Syston	12,804	27.4	17.0	0.2%	B4669 Sapcote Road; M69 North-East	0.1%
Tamworth	78,653	26.1	115.7	1.3%	Rugby Road; M69 North-East	0.6%
Total	1,131,324	207	9,036	100.0%		

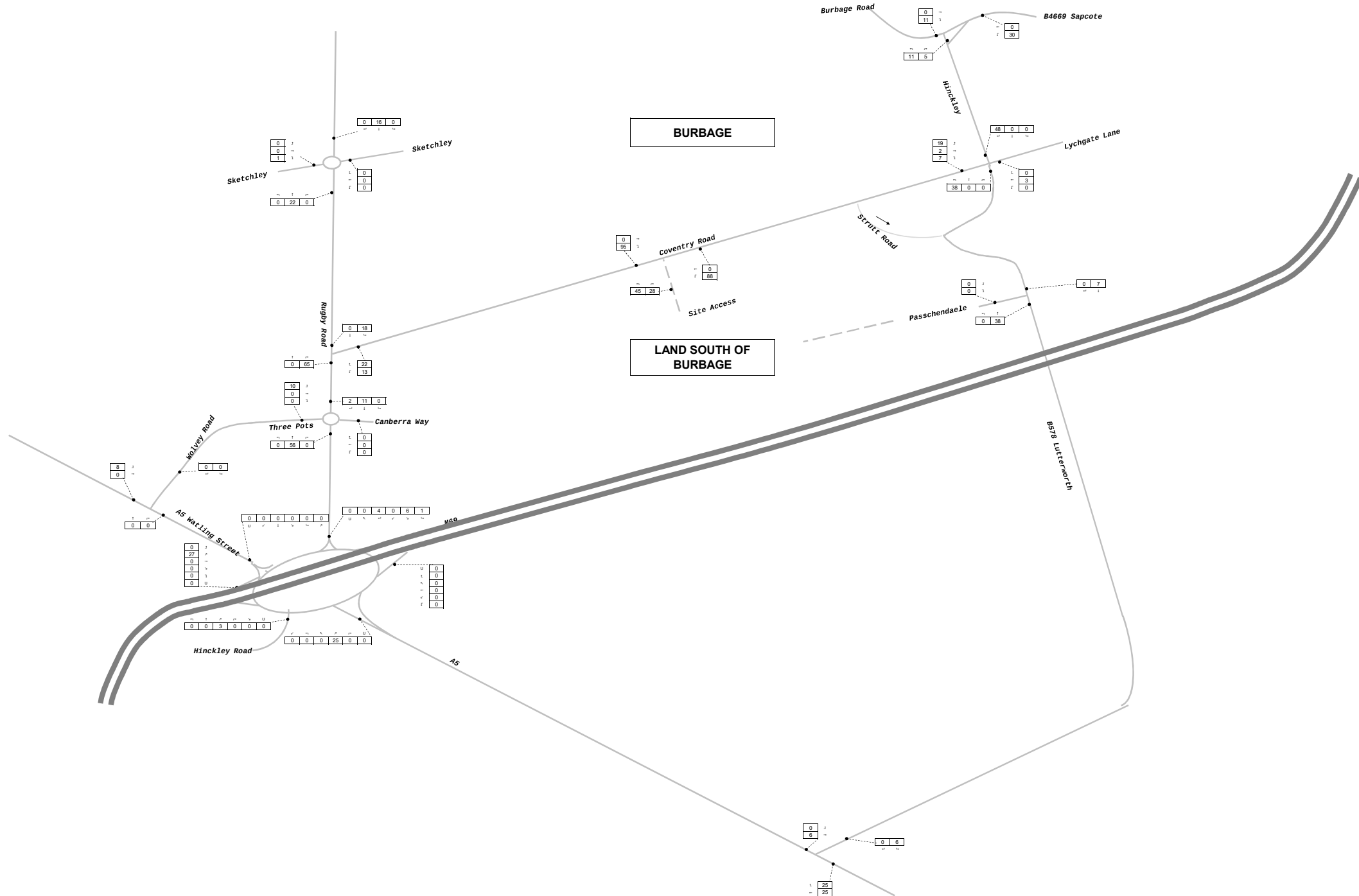
Link	Dist
A5 North-West	6.4%
A5 South-East	7.9%
M69 North-East	6.6%
M69 South-West	15.8%
B4669 Sapcote Road	7.6%
B4669 Burbage Road	22.7%
Hinckley Road	7.3%
B4109 Rugby Road	25.7%
Total	100.0%

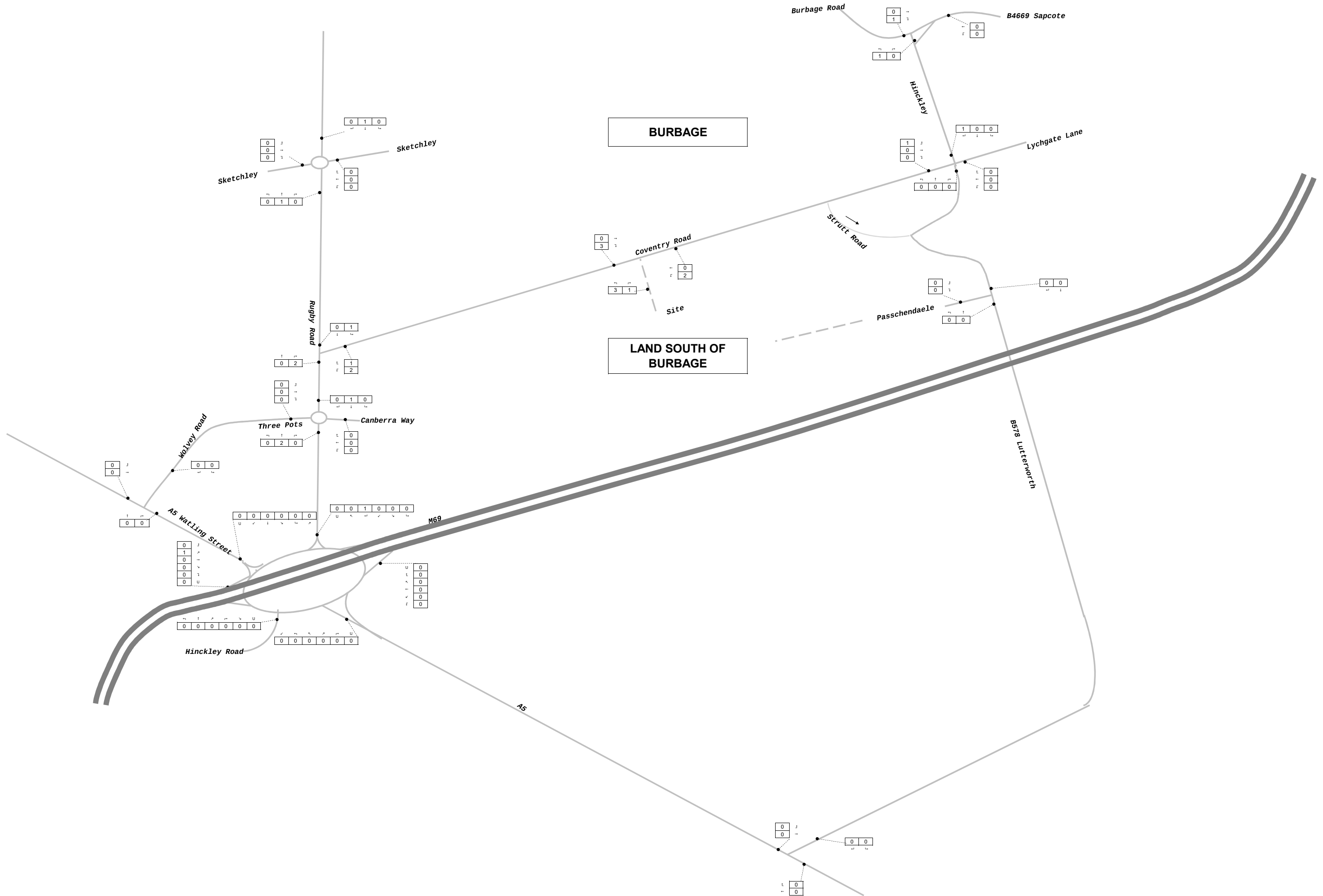


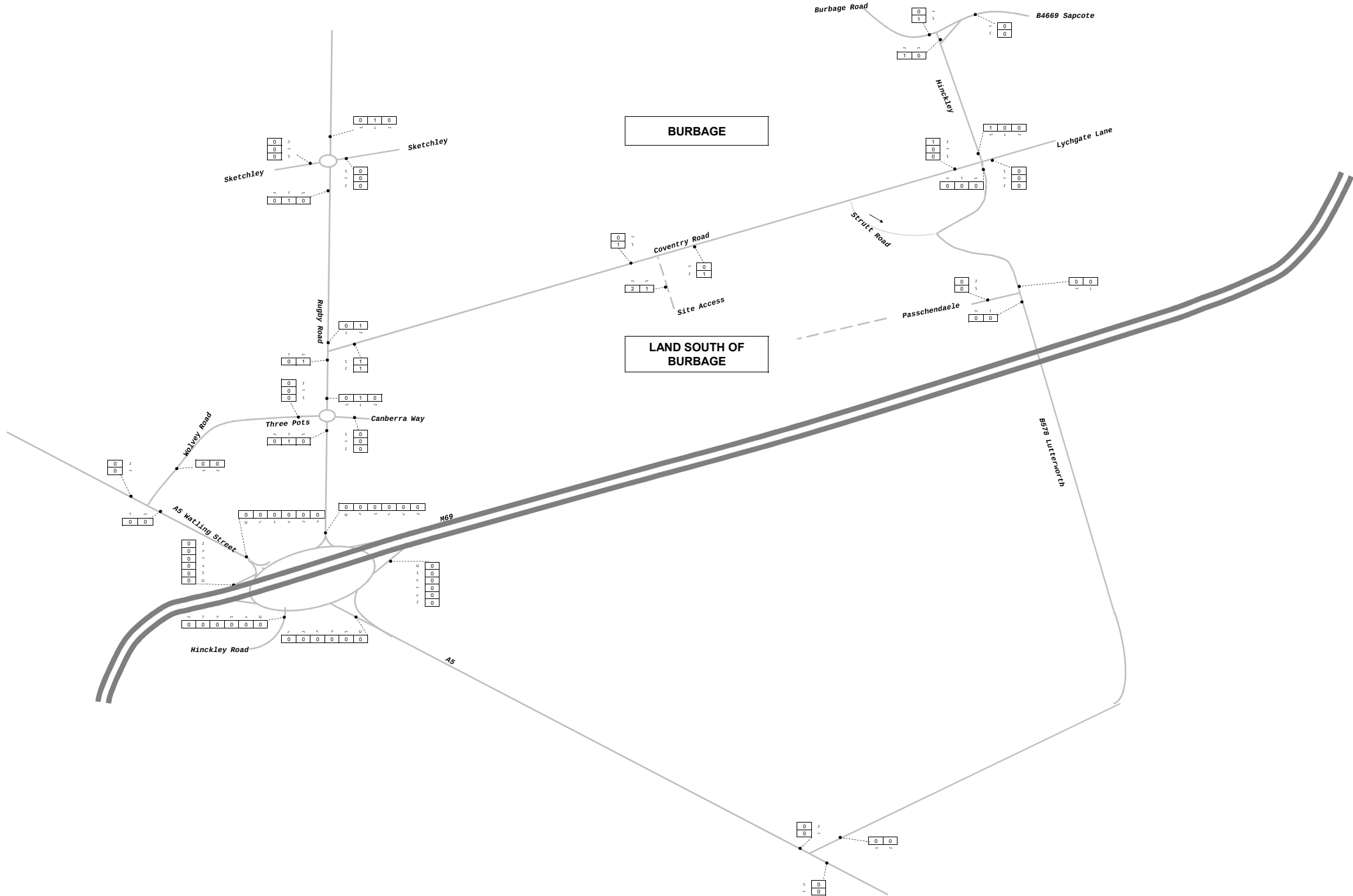


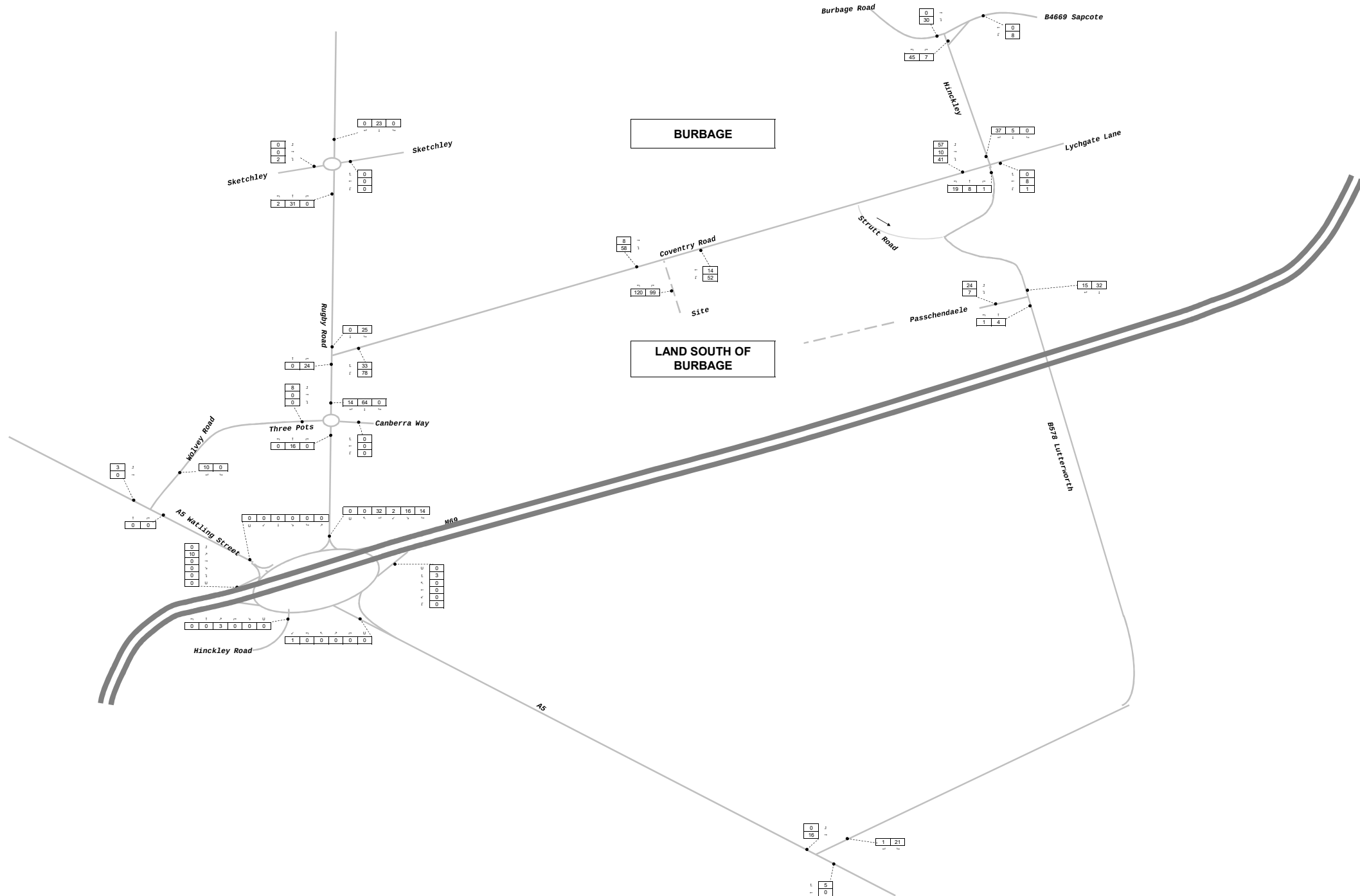


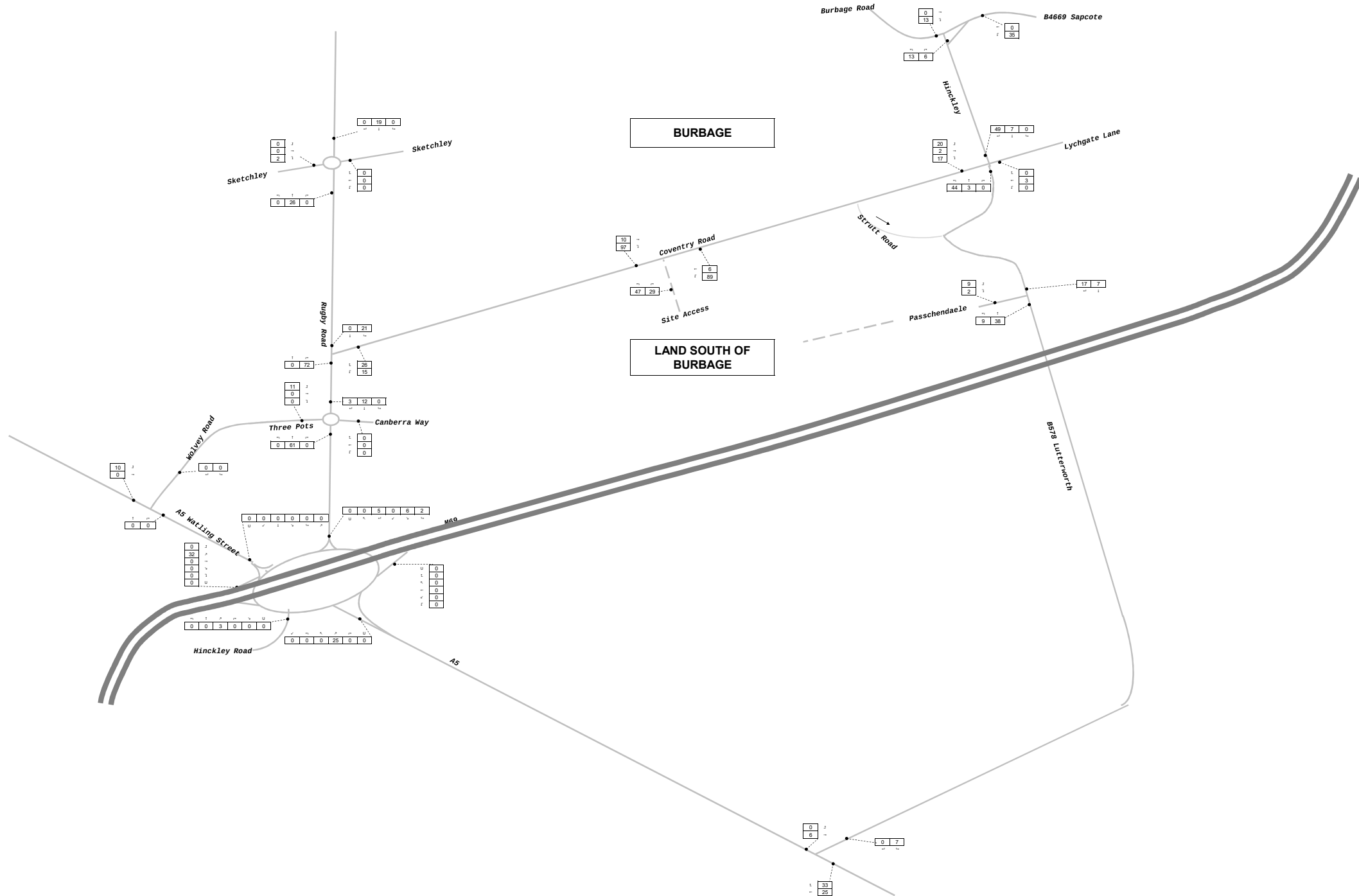


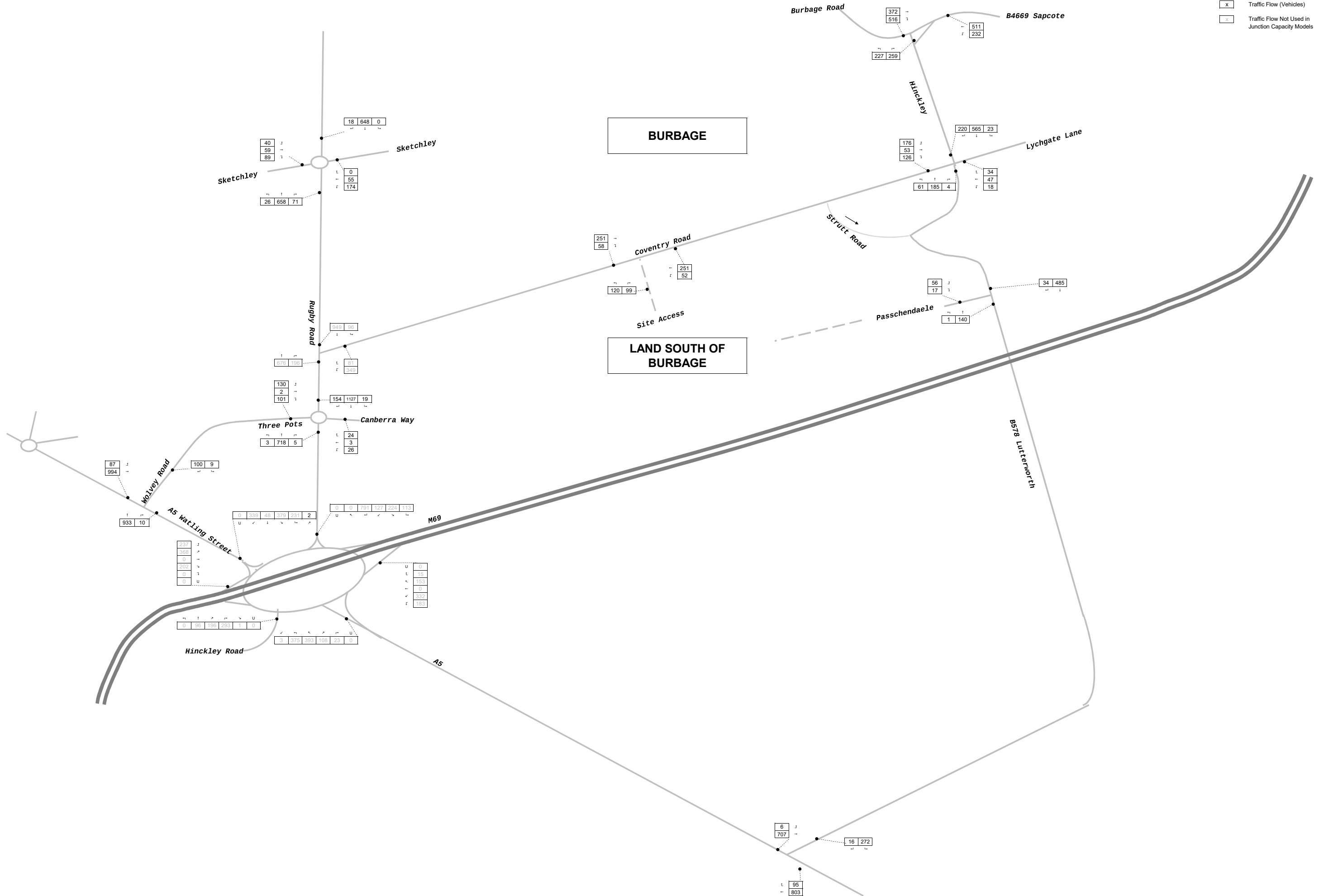












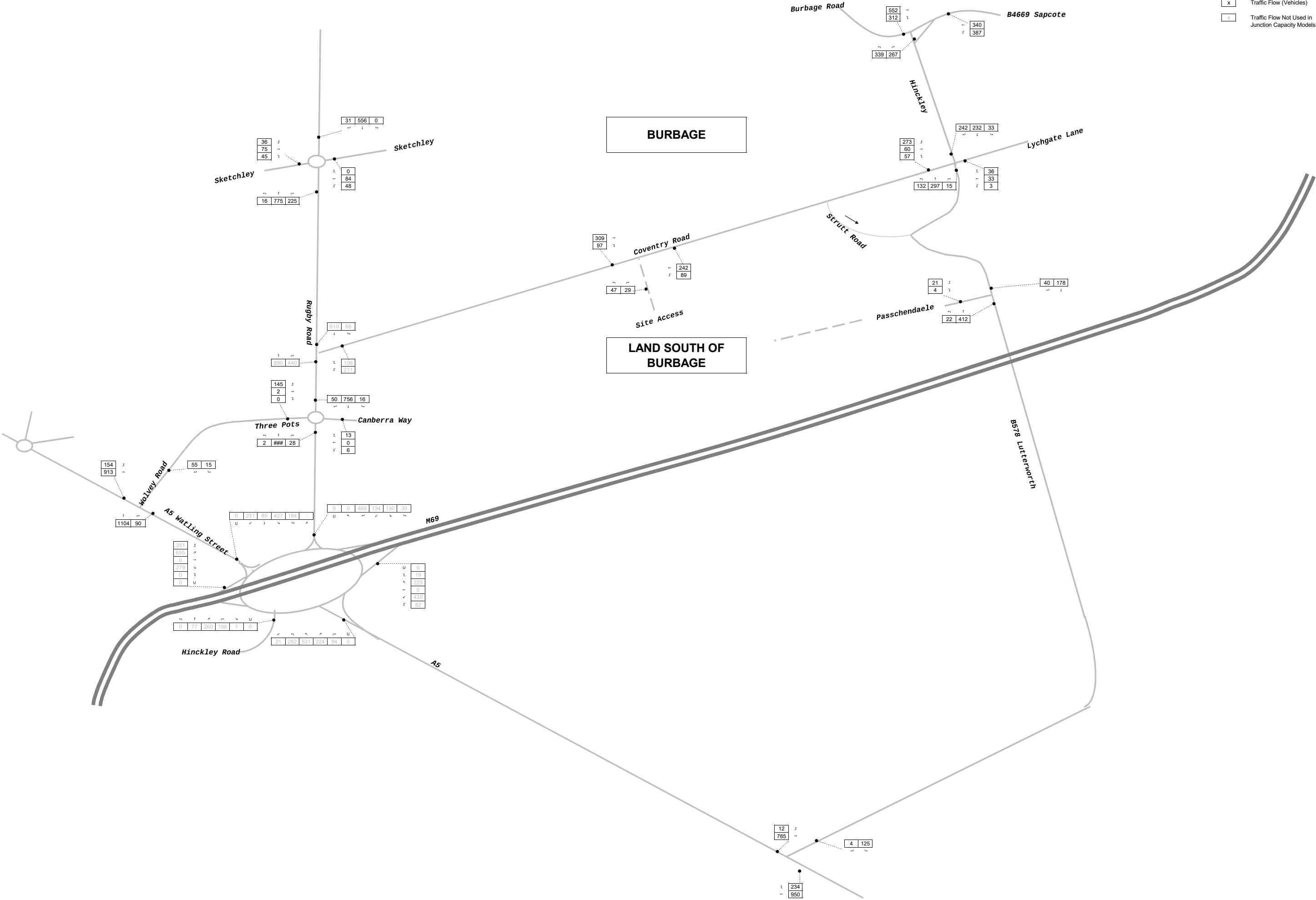
Key

x

Traffic Flow (Vehicles)

x

Traffic Flow Not Used in Junction Capacity Models



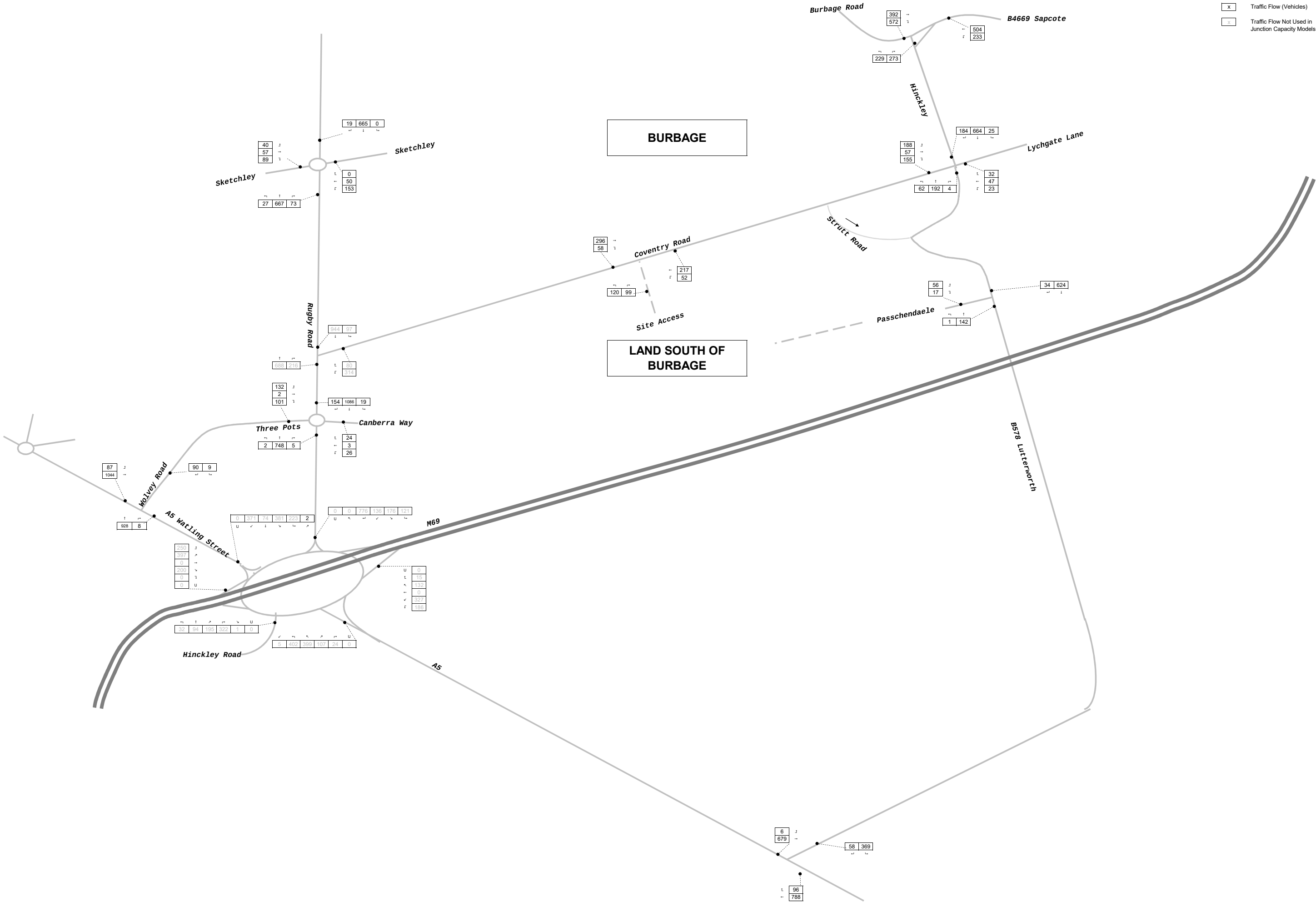
Key

x

Traffic Flow (Vehicles)

x

Traffic Flow Not Used in Junction Capacity Models



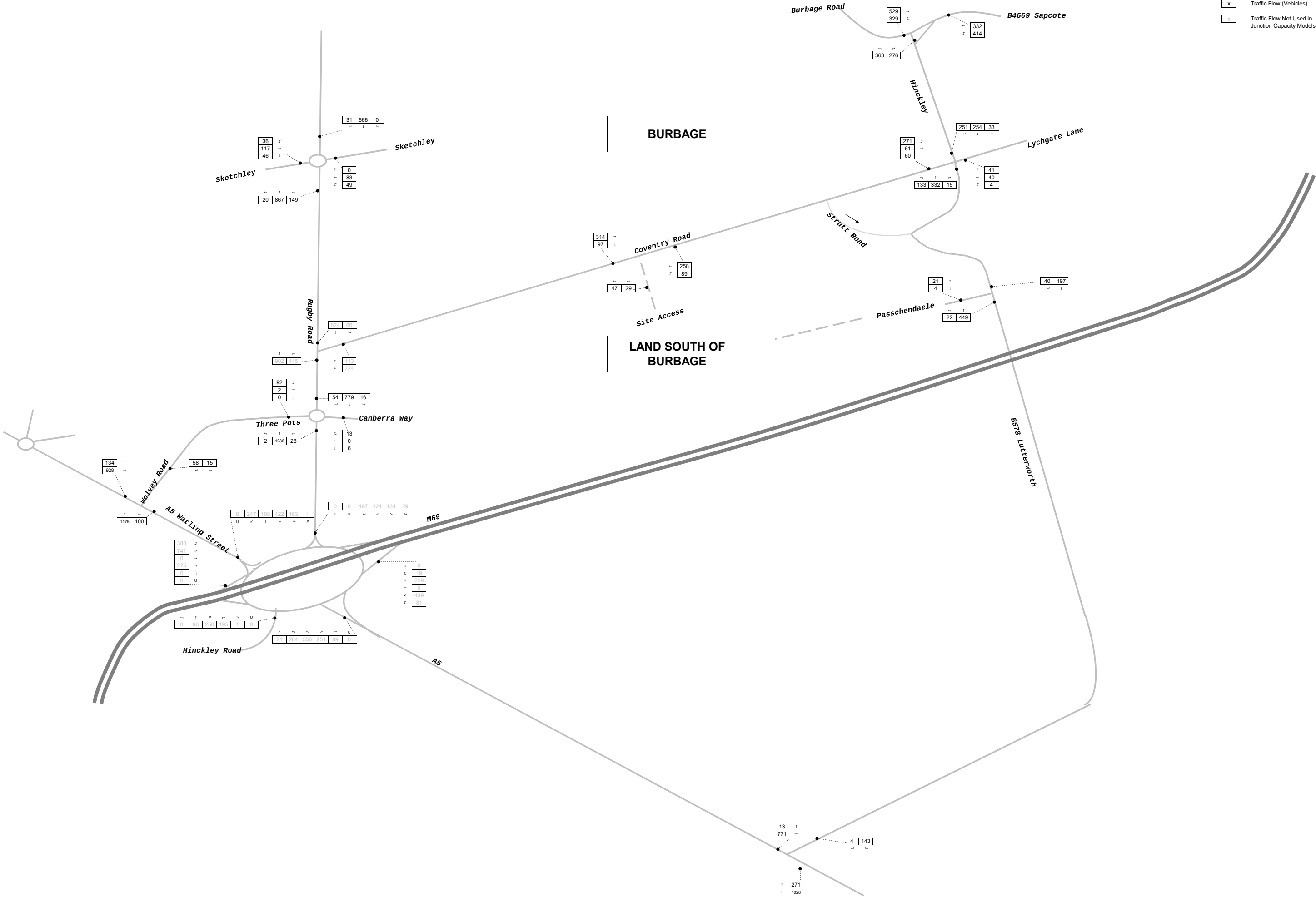
Key

x

Traffic Flow (Vehicles)

x

Traffic Flow Not Used in Junction Capacity Models

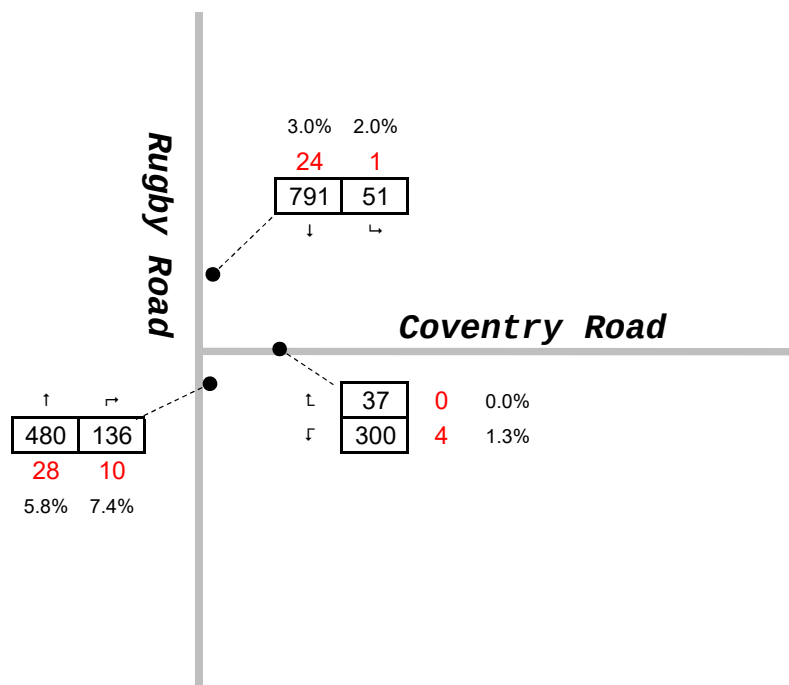


Road Type	TEMPro v7.2c		TEMPro v8.1	
	AM	PM	AM	PM
2023 - 2026				
Principal / A-Road	1.0214	1.0211	1.0126	1.0133
Trunk	1.0255	1.0253	1.0234	1.0241
Motorway	1.0366	1.0363	1.0304	1.0312
2023 - 2031				
Principal / A-Road	1.0547	1.0549	1.0586	1.0610
Trunk	1.0655	1.0656	1.0888	1.0913
Motorway	1.0930	1.0932	1.1180	1.1205

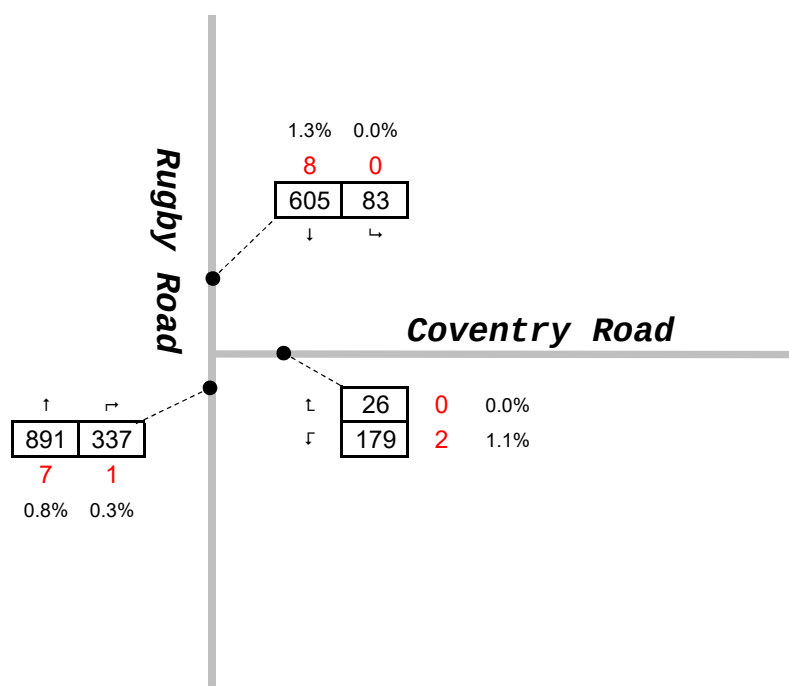
Key

X All Vehicles
X HGVs
 x.x% HGV Percentage

AM (08:00 - 09:00)



PM (17:00 - 18:00)





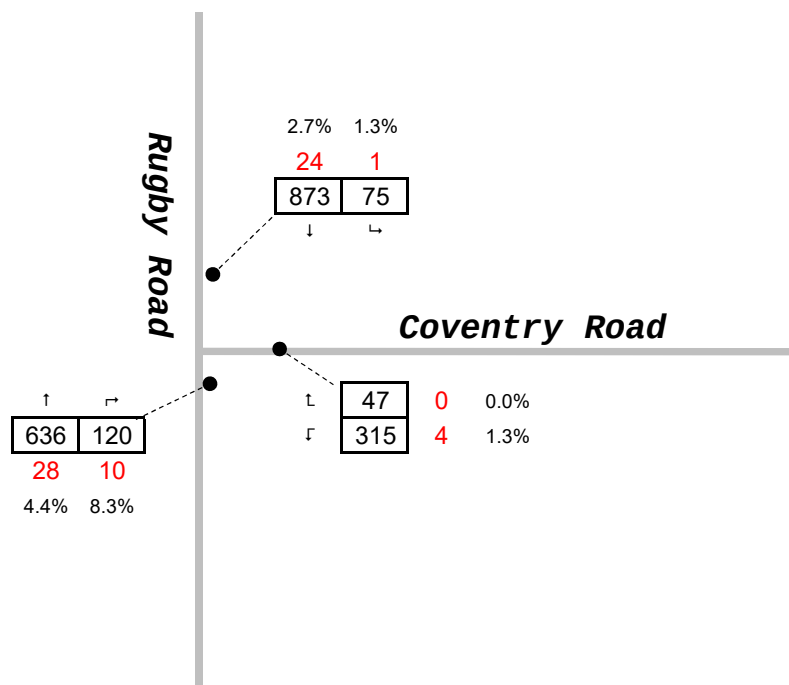
s

centage

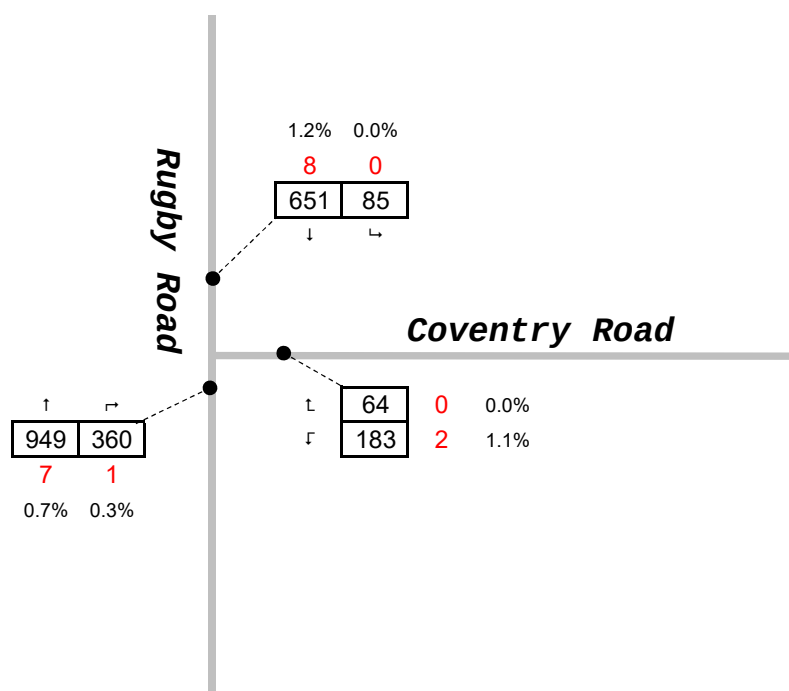
Key

X All Vehicles
X HGVs
 x.x% HGV Percentage

AM (08:00 - 09:00)



PM (17:00 - 18:00)





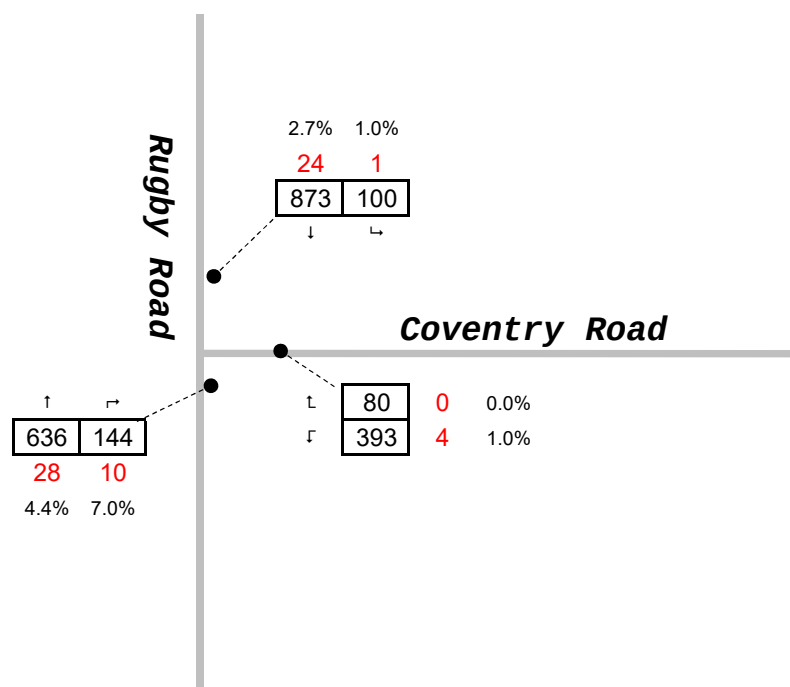
s

centage

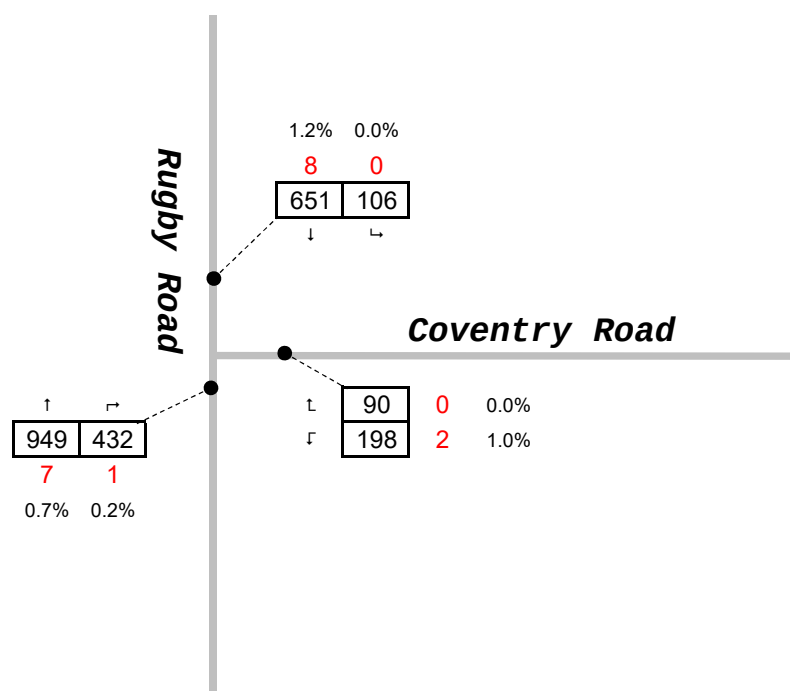
Key

X All Vehicles
X HGVs
x.x% HGV Percentage

AM (08:00 - 09:00)



PM (17:00 - 18:00)



V

s

centage

B4109 Rugby Road / Coventry Road LinSig Matrix - Vehicles to PCUs Calculations

08:00 - 09:00

Area: Road Network
A: B4109 Rugby Road (Southbound)
B: Coventry Road
C: B4109 Rugby Road (Northbound)

PCU Factor

2023					
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100

2025 Opening Year					
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100

2025 Opening Year + Bus					
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100
PCU	0	1	2	3	1000
1	0	0	0	0	100
2	0	0	0	0	100
3	0	0	0	0	100
1000	0	0	0	0	100

08:00 - 09:00

PCU Factor
2.3

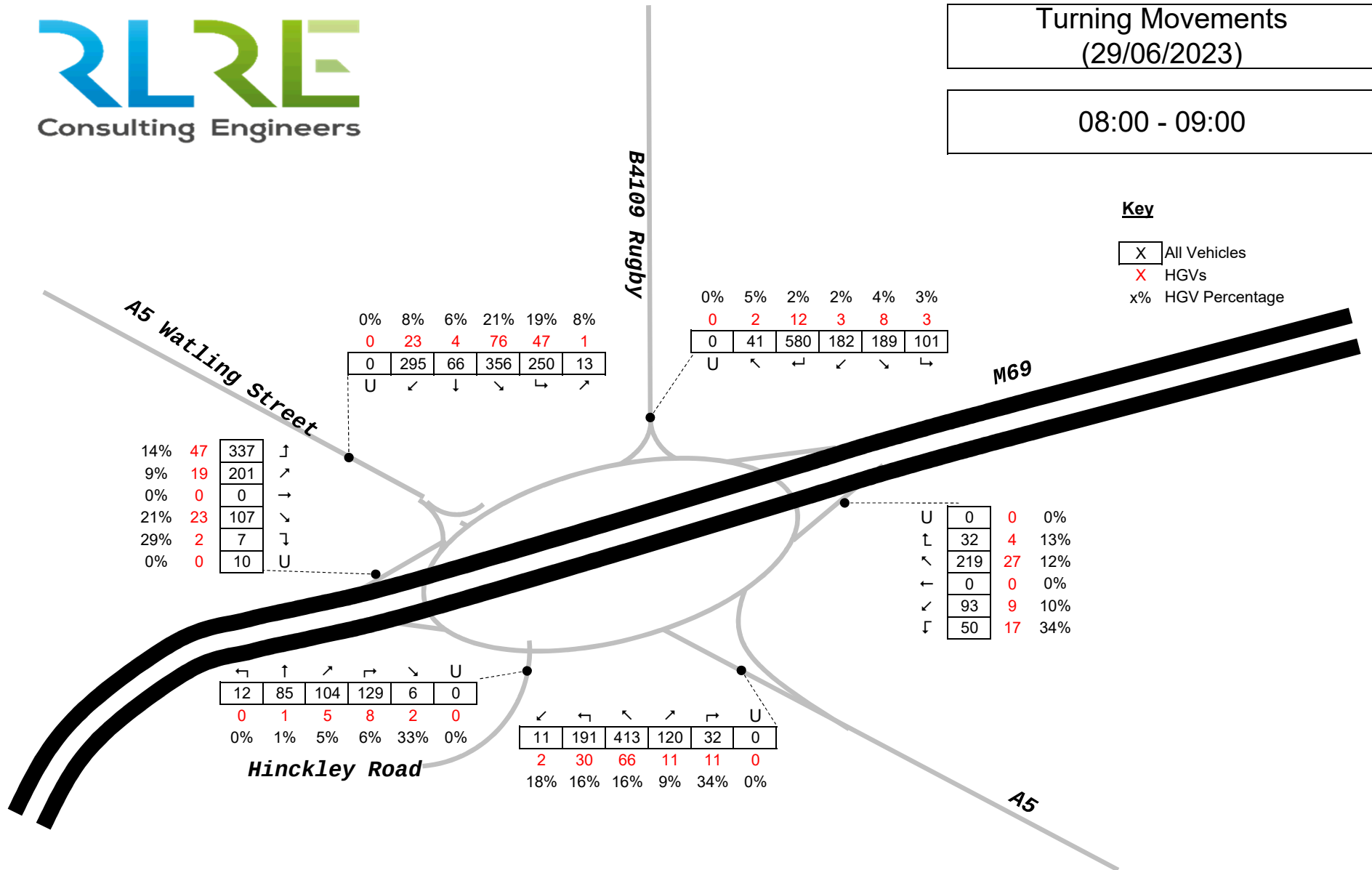
2008 Operating Year - May					
ALL units	A	B	C	D	Target
A	100	100	104.7	76.7	100
B	100	100	100	100	100
C	100	100	100	100	100
D	100	100	100	100	100
Targets	A	B	C	D	Target
A	100	100	100	100	100
B	100	100	100	100	100
C	100	100	100	100	100
D	100	100	100	100	100
UNITED AIR GROUP	A	B	C	D	Target
A	100	100	100	100	100
B	100	100	100	100	100
C	100	100	100	100	100
D	100	100	100	100	100
ALL unit mission status	A	B	C	D	Target
A	100	100	104.7	76.7	100
B	100	100	100	100	100
C	100	100	100	100	100
D	100	100	100	100	100
Targets	A	B	C	D	Target
A	100	100	100	100	100
B	100	100	100	100	100
C	100	100	100	100	100
D	100	100	100	100	100

Turning Movements
(29/06/2023)

08:00 - 09:00

Key

- X All Vehicles
X HGVs
x% HGV Percentage

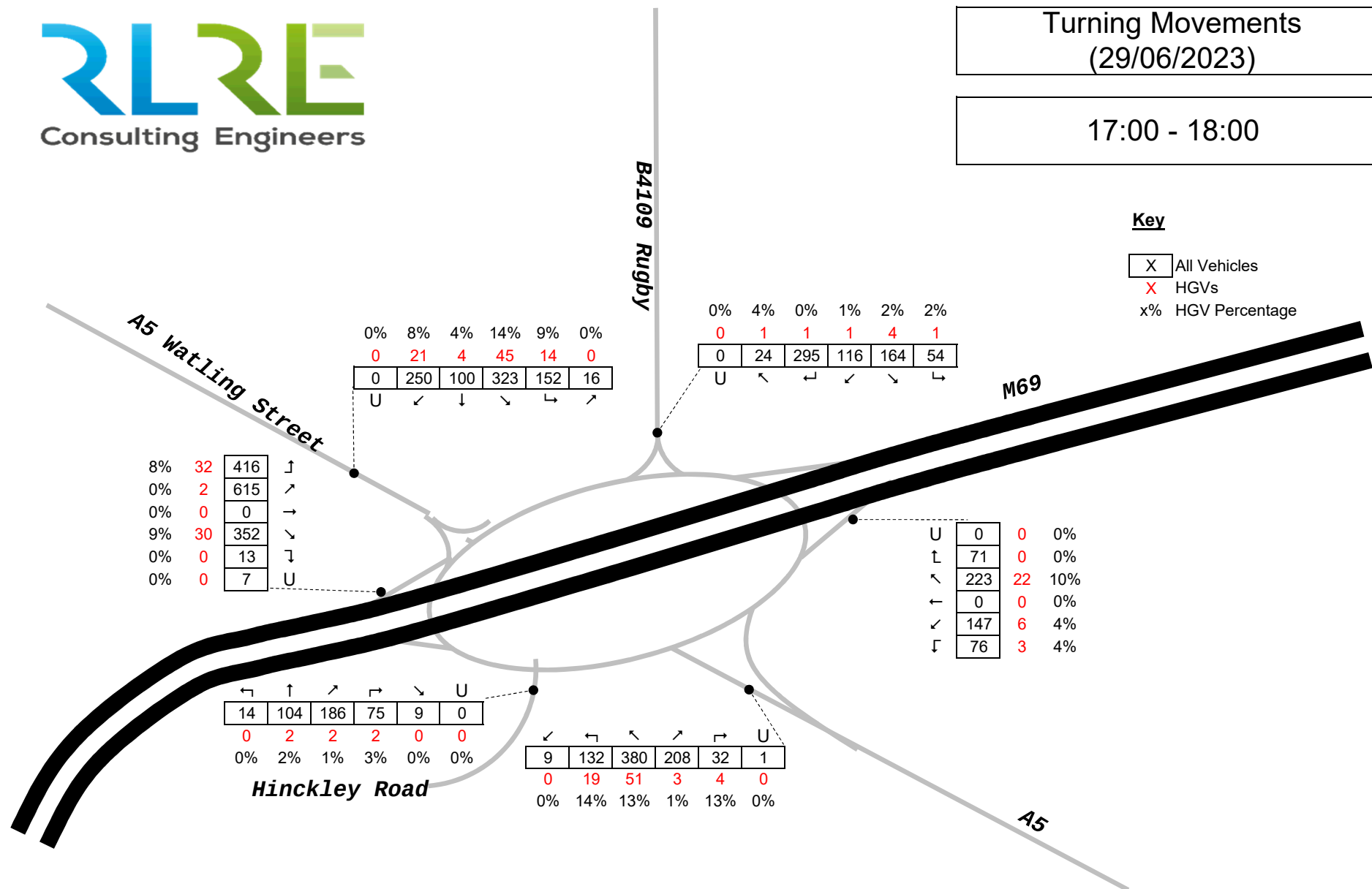


Turning Movements (29/06/2023)

17:00 - 18:00

Key

- X All Vehicles
- X HGVs
- x% HGV Percentage

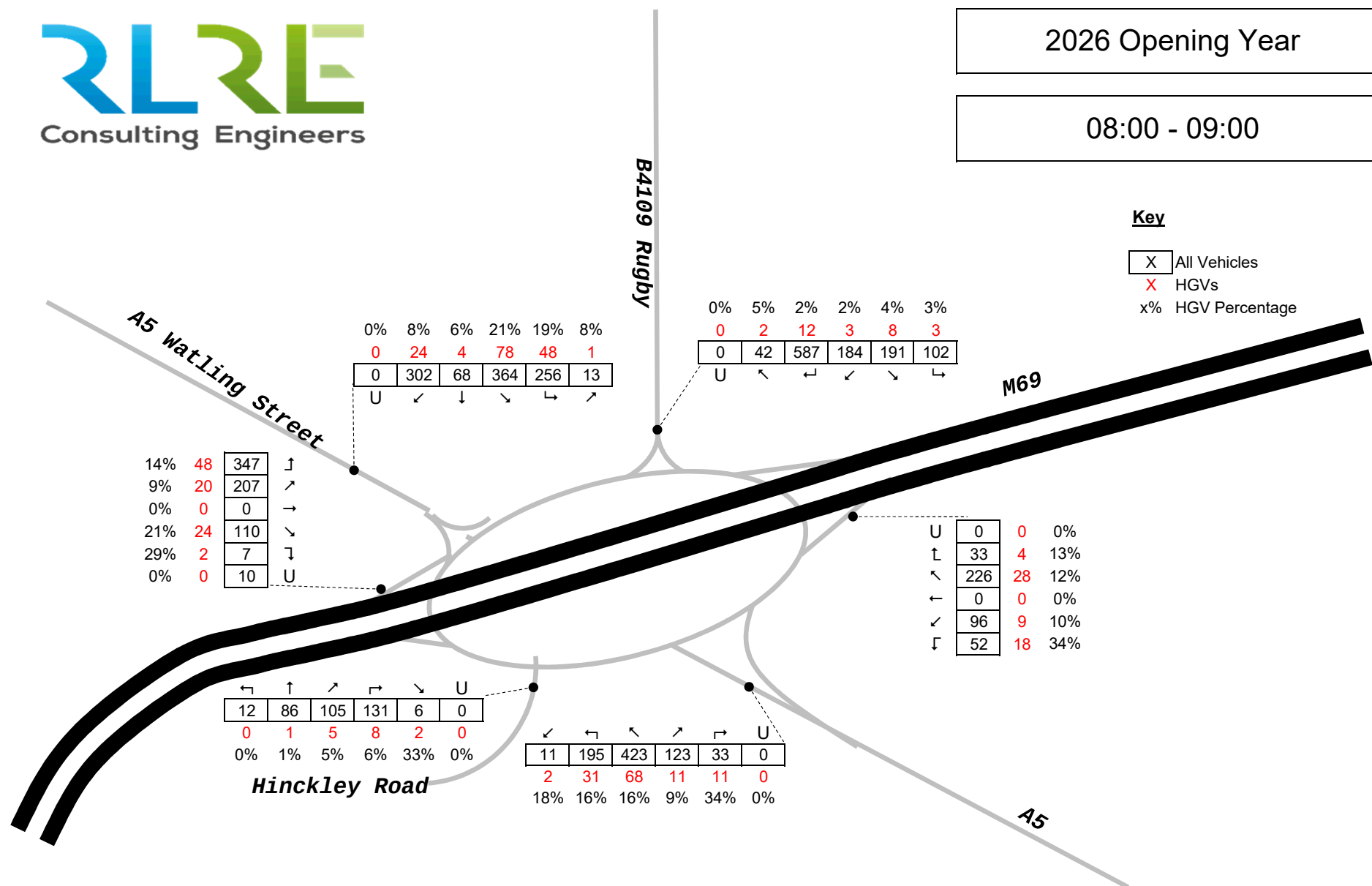


2026 Opening Year

08:00 - 09:00

Key

- X All Vehicles
X HGVs
x% HGV Percentage

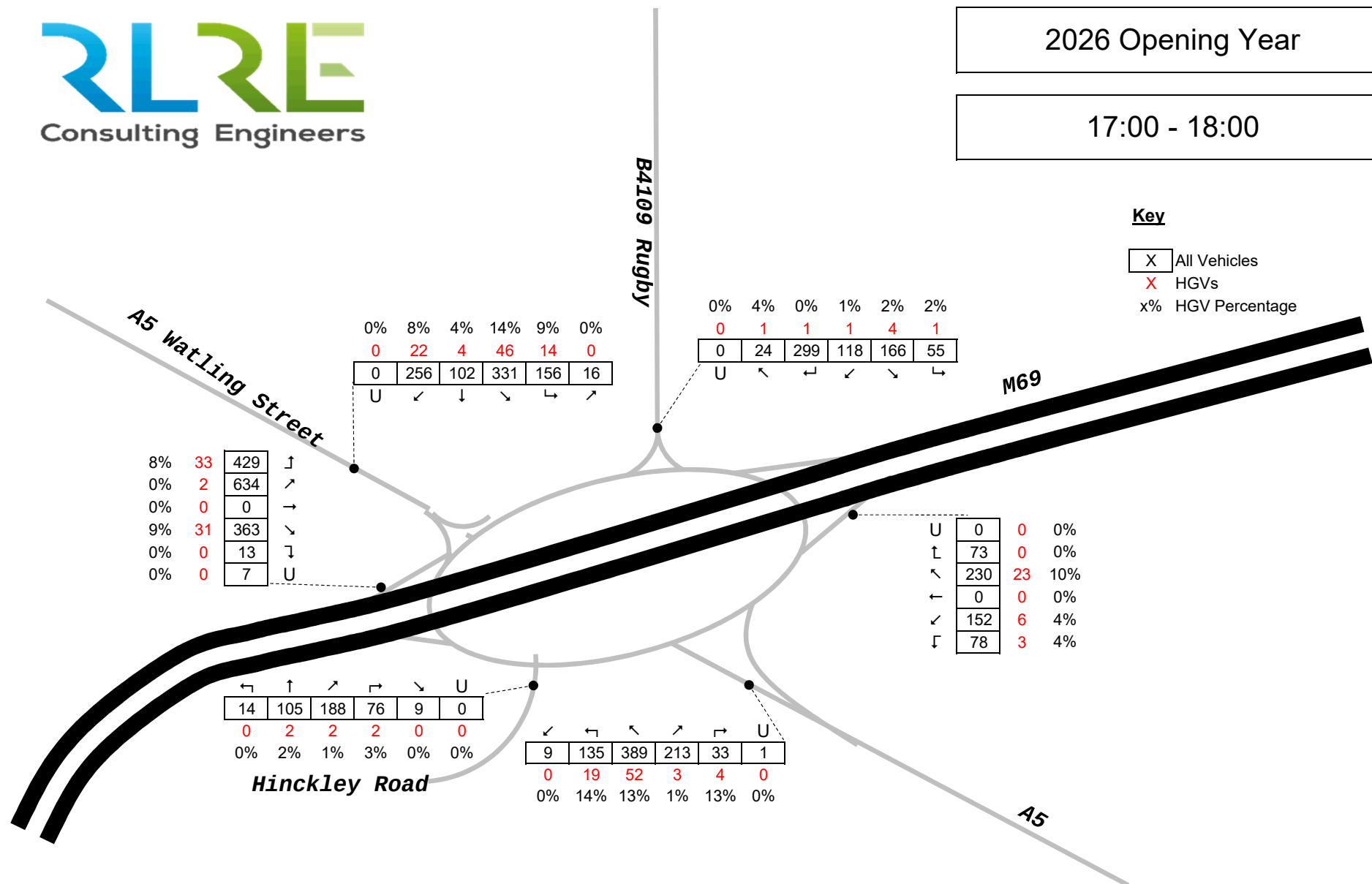


2026 Opening Year

17:00 - 18:00

Key

- X All Vehicles
X HGVs
x% HGV Percentage

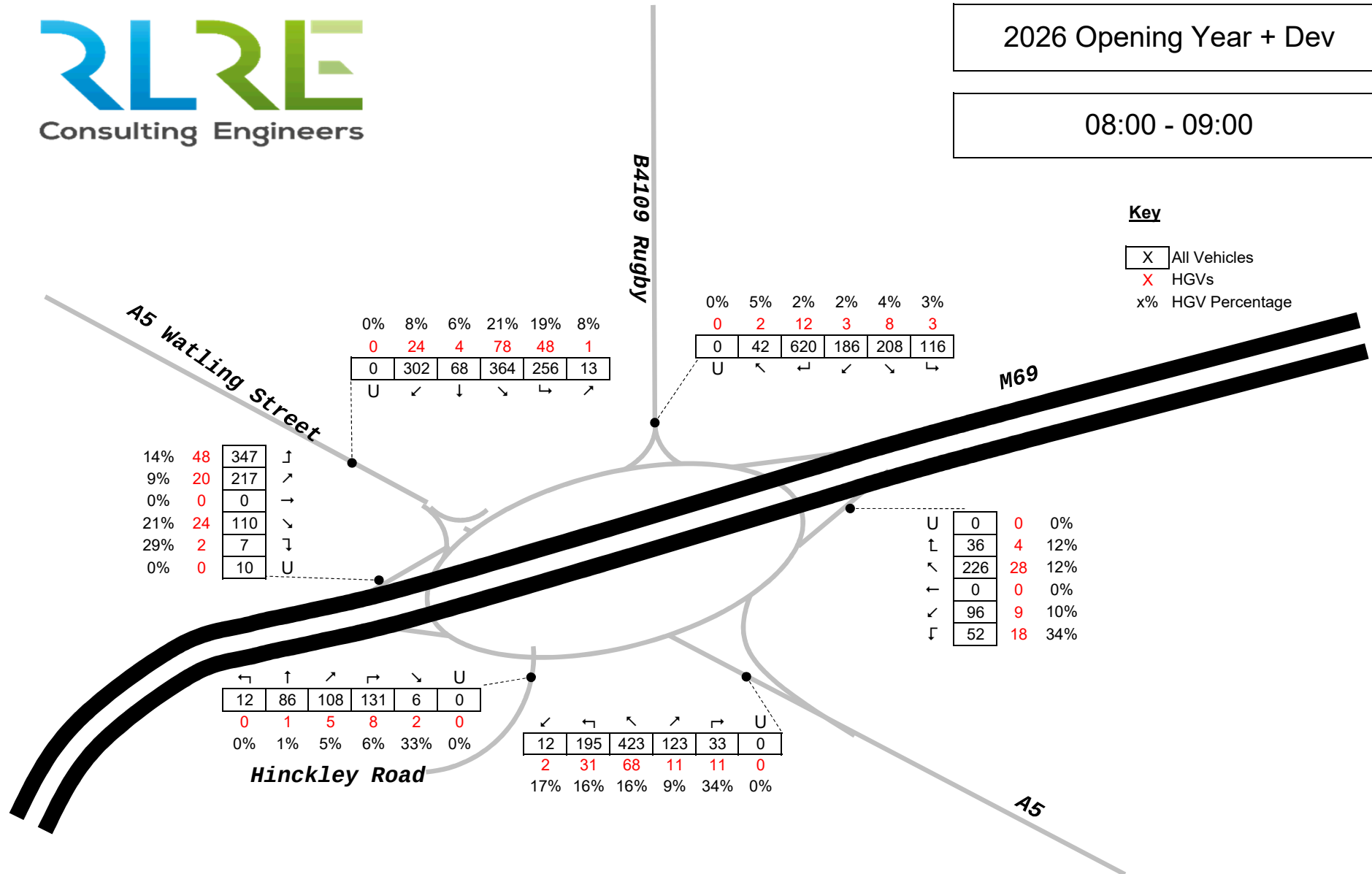


2026 Opening Year + Dev

08:00 - 09:00

Key

X All Vehicles
X HGVs
x% HGV Percentage

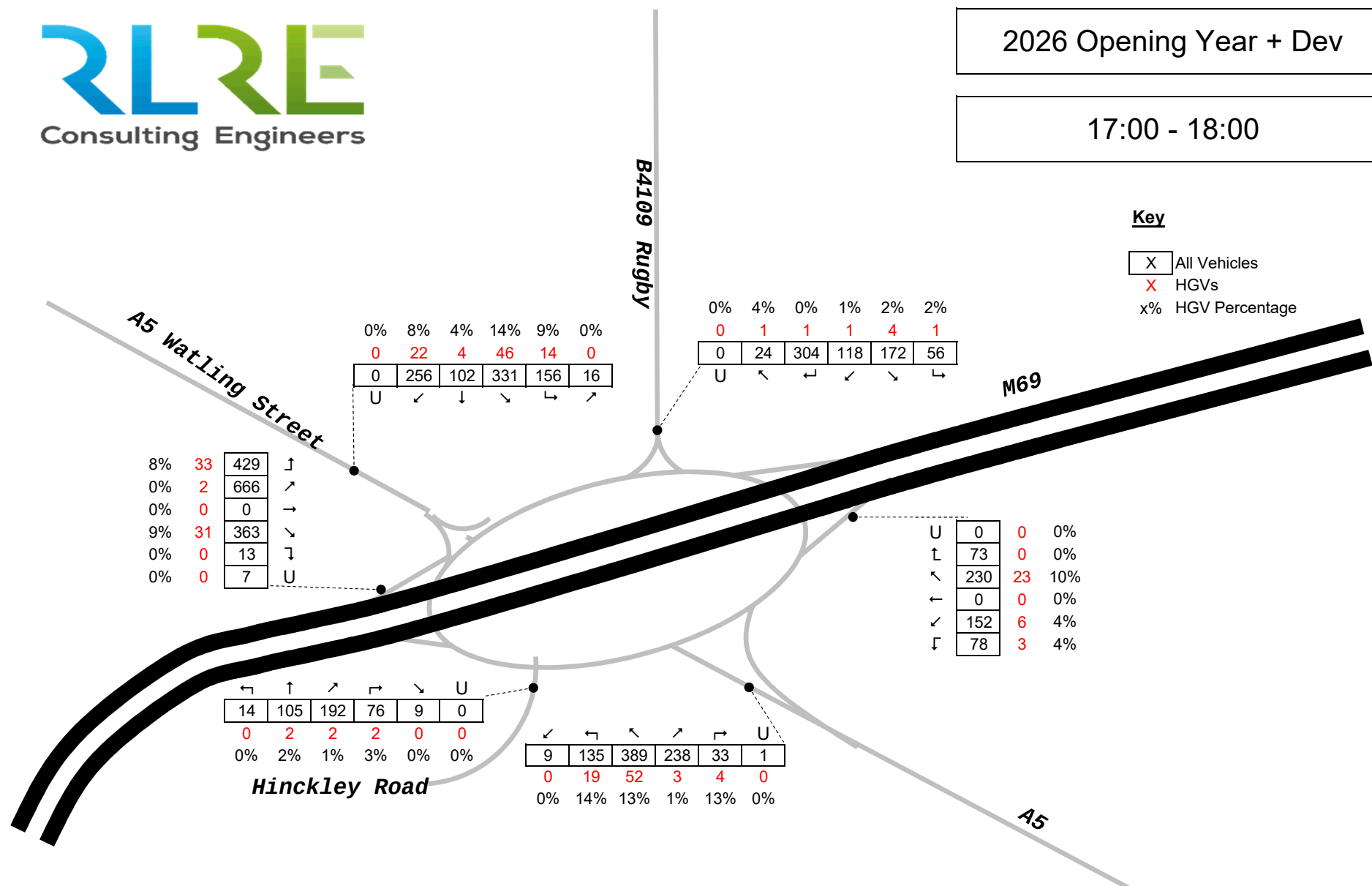


2026 Opening Year + Dev

17:00 - 18:00

Key

X All Vehicles
X HGVs
x% HGV Percentage

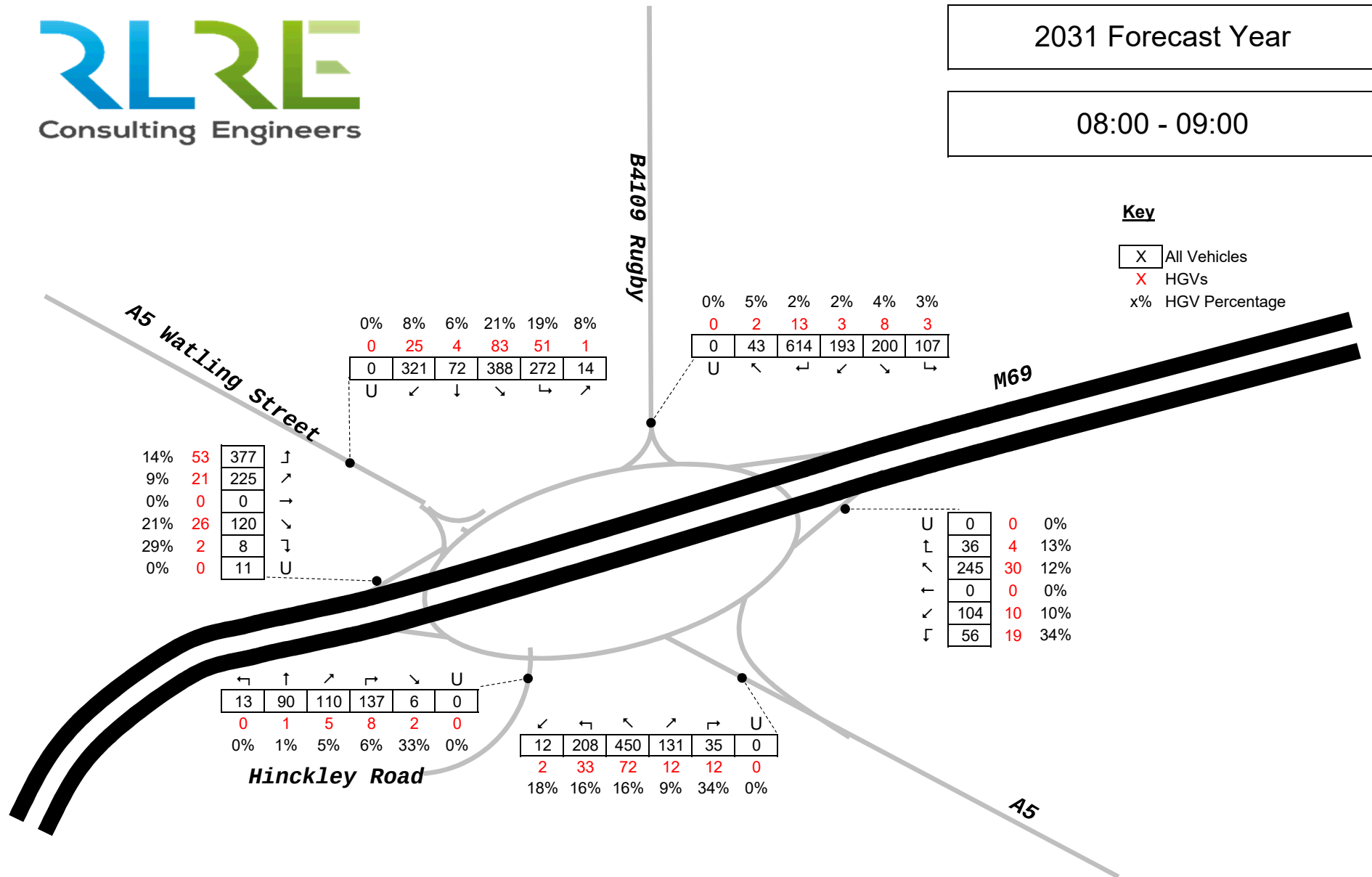


2031 Forecast Year

08:00 - 09:00

Key

- X All Vehicles
X HGVs
x% HGV Percentage

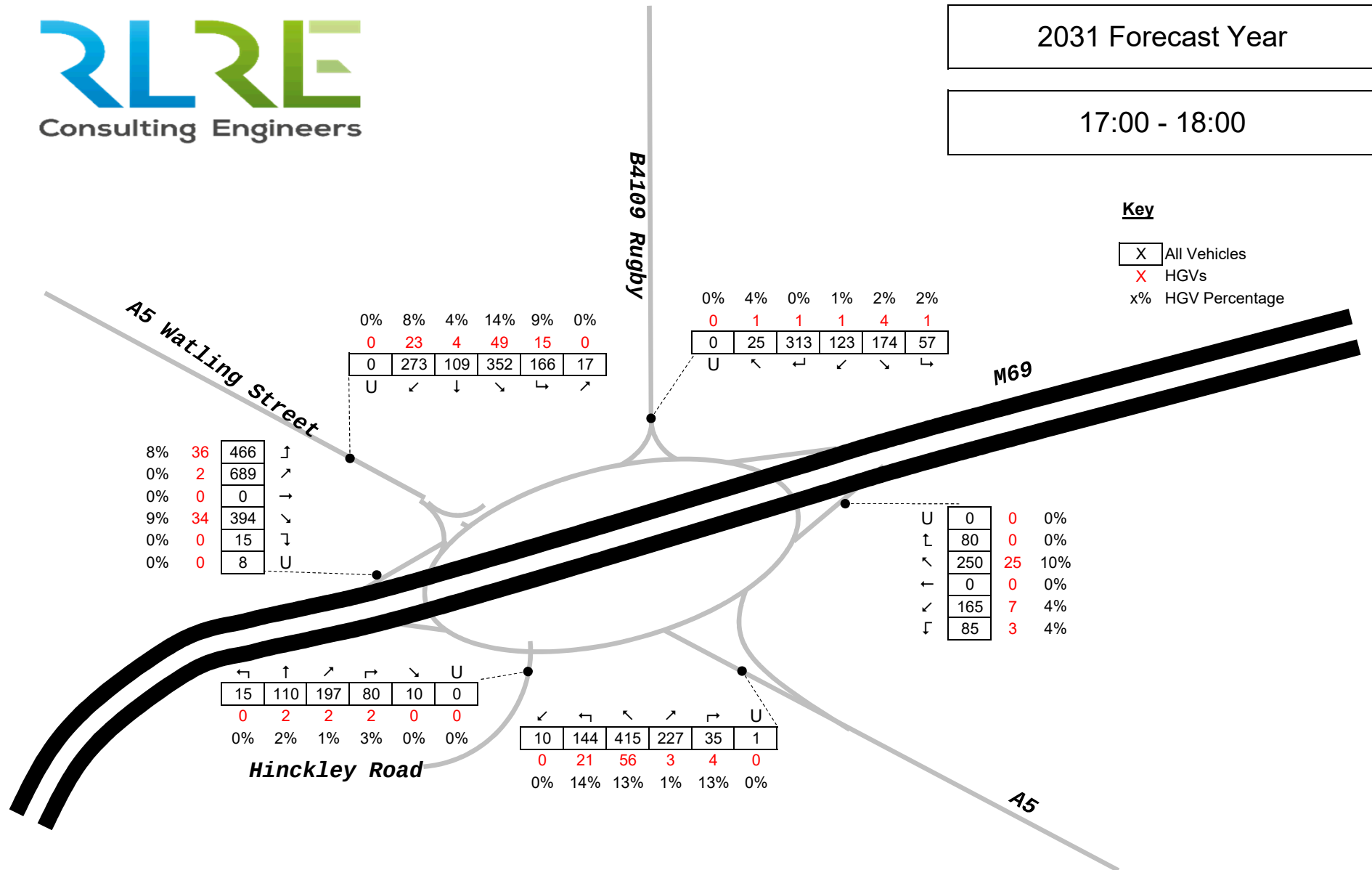


2031 Forecast Year

17:00 - 18:00

Key

- X All Vehicles
X HGVs
x% HGV Percentage

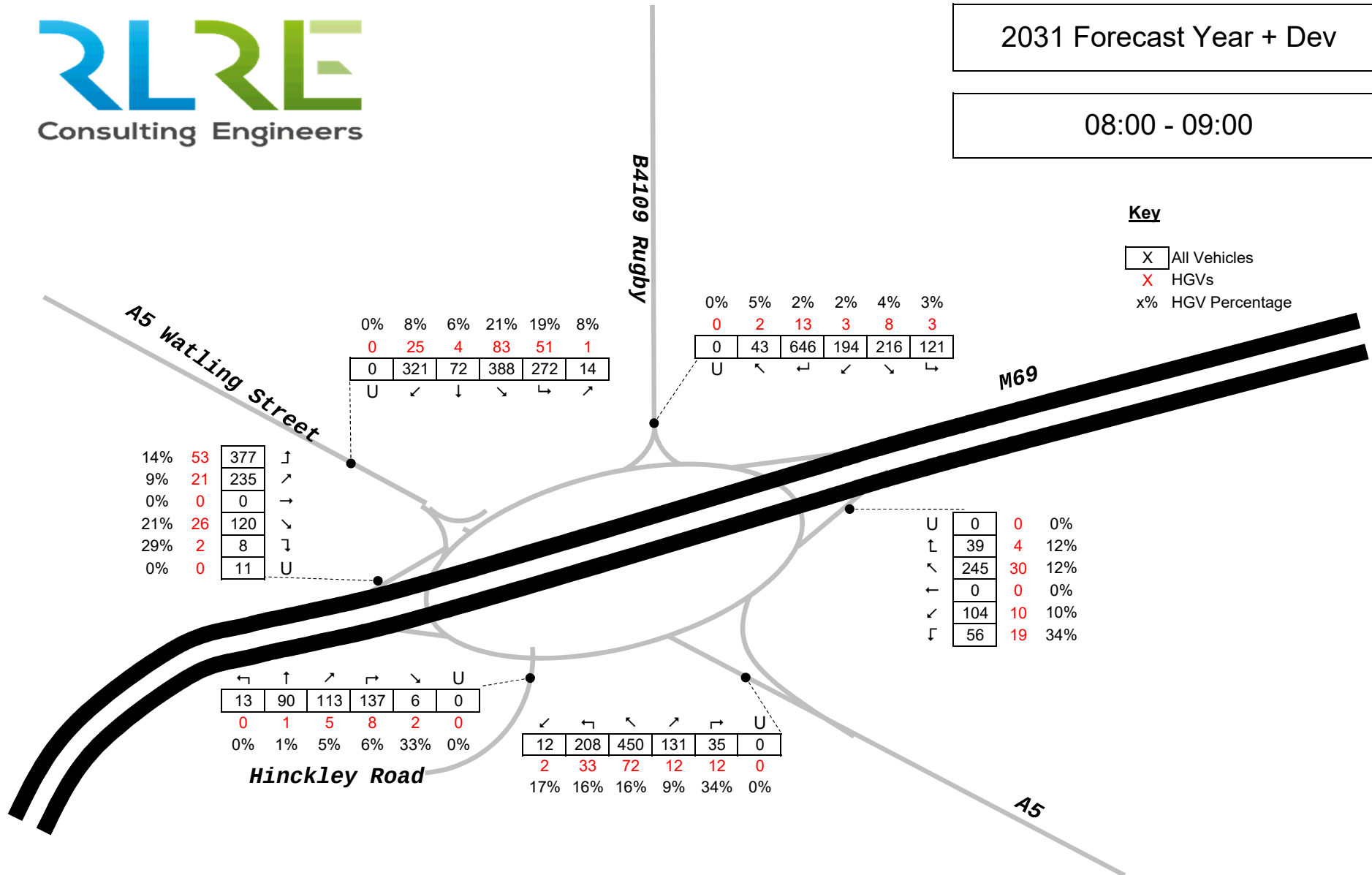


2031 Forecast Year + Dev

08:00 - 09:00

Key

X All Vehicles
X HGVs
x% HGV Percentage

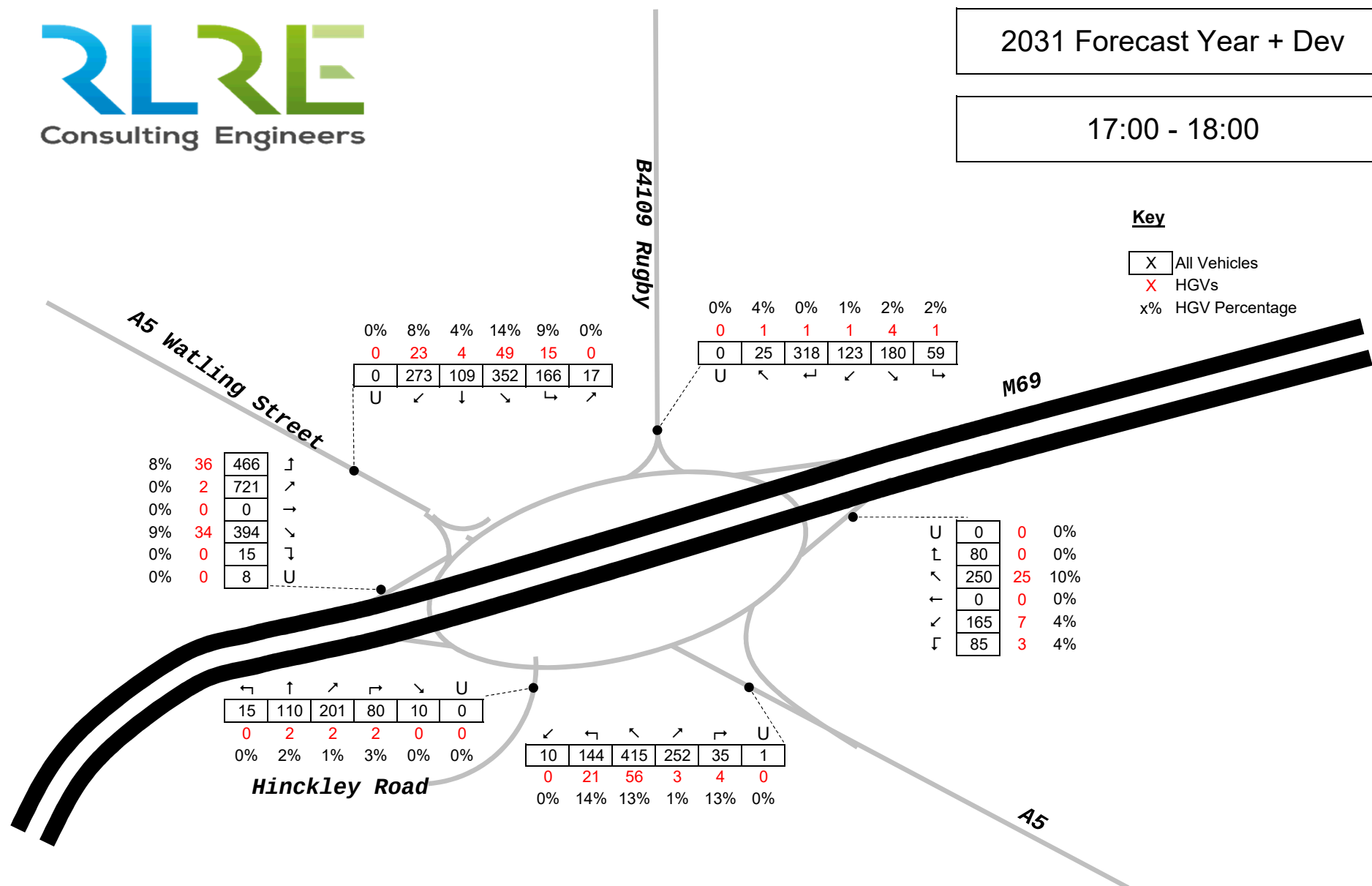


2031 Forecast Year + Dev

17:00 - 18:00

Key

X All Vehicles
X HGVs
x% HGV Percentage



08:00 - 09:00

2007 Population Value = 100%						
Age Group	Male	Female	Total	Male	Female	Total
0-4	1.1	1.1	2.2	1.1	1.1	2.2
5-9	1.1	1.1	2.2	1.1	1.1	2.2
10-14	1.1	1.1	2.2	1.1	1.1	2.2
15-19	1.1	1.1	2.2	1.1	1.1	2.2
20-24	1.1	1.1	2.2	1.1	1.1	2.2
25-29	1.1	1.1	2.2	1.1	1.1	2.2
30-34	1.1	1.1	2.2	1.1	1.1	2.2
35-39	1.1	1.1	2.2	1.1	1.1	2.2
40-44	1.1	1.1	2.2	1.1	1.1	2.2
45-49	1.1	1.1	2.2	1.1	1.1	2.2
50-54	1.1	1.1	2.2	1.1	1.1	2.2
55-59	1.1	1.1	2.2	1.1	1.1	2.2
60-64	1.1	1.1	2.2	1.1	1.1	2.2
65-69	1.1	1.1	2.2	1.1	1.1	2.2
70-74	1.1	1.1	2.2	1.1	1.1	2.2
75-79	1.1	1.1	2.2	1.1	1.1	2.2
80-84	1.1	1.1	2.2	1.1	1.1	2.2
85-89	1.1	1.1	2.2	1.1	1.1	2.2
90-94	1.1	1.1	2.2	1.1	1.1	2.2
95-99	1.1	1.1	2.2	1.1	1.1	2.2
100+	1.1	1.1	2.2	1.1	1.1	2.2

2007 Population Value = 100%						
Age Group	Male	Female	Total	Male	Female	Total
0-4	1.1	1.1	2.2	1.1	1.1	2.2
5-9	1.1	1.1	2.2	1.1	1.1	2.2
10-14	1.1	1.1	2.2	1.1	1.1	2.2
15-19	1.1	1.1	2.2	1.1	1.1	2.2
20-24	1.1	1.1	2.2	1.1	1.1	2.2
25-29	1.1	1.1	2.2	1.1	1.1	2.2
30-34	1.1	1.1	2.2	1.1	1.1	2.2
35-39	1.1	1.1	2.2	1.1	1.1	2.2
40-44	1.1	1.1	2.2	1.1	1.1	2.2
45-49	1.1	1.1	2.2	1.1	1.1	2.2
50-54	1.1	1.1	2.2	1.1	1.1	2.2
55-59	1.1	1.1	2.2	1.1	1.1	2.2
60-64	1.1	1.1	2.2	1.1	1.1	2.2
65-69	1.1	1.1	2.2	1.1	1.1	2.2
70-74	1.1	1.1	2.2	1.1	1.1	2.2
75-79	1.1	1.1	2.2	1.1	1.1	2.2
80-84	1.1	1.1	2.2	1.1	1.1	2.2
85-89	1.1	1.1	2.2	1.1	1.1	2.2
90-94	1.1	1.1	2.2	1.1	1.1	2.2
95-99	1.1	1.1	2.2	1.1	1.1	2.2
100+	1.1	1.1	2.2	1.1	1.1	2.2

2007 Population Value = 100%						
Age Group	Male	Female	Total	Male	Female	Total
0-4	1.1	1.1	2.2	1.1	1.1	2.2
5-9	1.1	1.1	2.2	1.1	1.1	2.2
10-14	1.1	1.1	2.2	1.1	1.1	2.2
15-19	1.1	1.1	2.2	1.1	1.1	2.2
20-24	1.1	1.1	2.2	1.1	1.1	2.2
25-29	1.1	1.1	2.2	1.1	1.1	2.2
30-34	1.1	1.1	2.2	1.1	1.1	2.2
35-39	1.1	1.1	2.2	1.1	1.1	2.2
40-44	1.1	1.1	2.2	1.1	1.1	2.2
45-49	1.1	1.1	2.2	1.1	1.1	2.2
50-54	1.1	1.1	2.2	1.1	1.1	2.2
55-59	1.1	1.1	2.2	1.1	1.1	2.2
60-64	1.1	1.1	2.2	1.1	1.1	2.2
65-69	1.1	1.1	2.2	1.1	1.1	2.2
70-74	1.1	1.1	2.2	1.1	1.1	2.2
75-79	1.1	1.1	2.2	1.1	1.1	2.2
80-84	1.1	1.1	2.2	1.1	1.1	2.2
85-89	1.1	1.1	2.2	1.1	1.1	2.2
90-94	1.1	1.1	2.2	1.1	1.1	2.2
95-99	1.1	1.1	2.2	1.1	1.1	2.2
100+	1.1	1.1	2.2	1.1	1.1	2.2

M69 Junction 1 LinSig Matrix - Vehicles to PCUs

17:00 - 18:00

Arm	Road Name
A	M69 Westbound offslip
B	A5 (South-East) approach
C	Hinckley Road approach
D	M69 Eastbound offslip
E	A5 (North-West) approach
F	B4109 Rugby Road approach

PCU Factor

2.3

2023				
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All Veh	A	B	C	D
A	0	76	147	0
B	32	1	9	132
C	75	9	0	14
D	0	352	13	7
E	152	323	100	250
F	54	164	116	295
Total	313	925	385	698

HGVs	A	B	C	D
A	0	3	6	0
B	4	0	0	19
C	2	0	0	0
D	0	30	0	0
E	14	45	4	21
F	1	4	1	1
Total	21	82	11	41

HGVs as PCUs	A	B	C	D
A	0	7	14	0
B	9	0	0	44
C	5	0	0	0
D	0	69	0	0
E	32	104	9	48
F	2	9	2	2
Total	48	189	25	94

All Veh minus HGVs	A	B	C	D
A	0	73	141	0
B	28	1	9	113
C	73	9	0	14
D	0	322	13	7
E	138	278	96	229
F	53	160	115	294

Total	292	843	374	657
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PCUs	A	B	C	D
A	0	80	155	0
B	37	1	9	157
C	78	9	0	14
D	0	391	13	7
E	170	382	105	277
F	55	169	117	296
Total	340	1032	399	751

Calculations

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E	F	Total
223	71	517
380	208	762
104	186	388
416	615	1403
0	16	841
24	0	653
1147	1096	4564

E	F	Total
22	0	31
51	3	77
2	2	6
32	2	64
0	0	84
1	0	8
108	7	270

E	F	Total
51	0	71
117	7	177
5	5	14
74	5	147
0	0	193
2	0	18
248	16	621

E	F	Total
201	71	486
329	205	685
102	184	382
384	613	1339
0	16	757
23	0	645

		2026
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All Veh	A	B
A	0	78
B	33	1
C	76	9
D	0	363
E	156	331
F	55	166
Total	319	948

HGVs	A	B
A	0	3
B	4	0
C	2	0
D	0	31
E	14	46
F	1	4
Total	21	84

HGVs as PCUs	A	B
A	0	7
B	9	0
C	5	0
D	0	71
E	33	106
F	2	9
Total	49	194

All Veh minus HGVs	A	B
A	0	75
B	29	1
C	74	9
D	0	332
E	141	285
F	54	162

1039	1089	4294
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E	F	Total
252	71	557
446	212	862
107	189	396
458	618	1486
0	16	950
25	0	663
1287	1105	4915

Total	298	864
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PCUs	A	B
A	0	82
B	38	1
C	79	9
D	0	403
E	174	391
F	56	171
Total	347	1058

Opening Year

C	D	E	F	Total
152	0	230	73	533
9	135	389	213	780
0	14	105	188	393
13	7	429	634	1447
102	256	0	16	861
118	299	24	0	662
394	712	1178	1125	4676

C	D	E	F	Total
6	0	23	0	32
0	19	52	3	79
0	0	2	2	6
0	0	33	2	66
4	22	0	0	86
1	1	1	0	8
11	42	111	7	277

C	D	E	F	Total
14	0	52	0	74
0	45	120	7	181
0	0	5	5	14
0	0	76	5	152
9	49	0	0	198
2	2	2	0	19
26	97	255	16	637

C	D	E	F	Total
145	0	207	73	501
9	116	337	210	702
0	14	103	186	387
13	7	396	632	1381
98	235	0	16	775
117	298	23	0	654

All Veh
A
B
C
D
E
F
Total

HGVs
A
B
C
D
E
F
Total

HGVs as PCUs
A
B
C
D
E
F
Total

All Veh minus HGVs
A
B
C
D
E
F

383	670	1067	1118	4399
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C	D	E	F	Total
160	0	259	73	575
9	160	457	217	883
0	14	108	191	401
13	7	472	637	1533
108	284	0	16	973
119	300	26	0	672
409	766	1322	1135	5037

Total

PCUs
A
B
C
D
E
F
Total

2026 Opening Year + Dev

A	B	C	D	E	F	Total
0	78	152	0	230	73	533
33	1	9	135	389	238	806
76	9	0	14	105	192	396
0	363	13	7	429	666	1479
156	331	102	256	0	16	861
56	172	118	304	24	0	674
321	954	394	716	1178	1186	4749

A	B	C	D	E	F	Total
0	3	6	0	23	0	32
4	0	0	19	52	3	79
2	0	0	0	2	2	6
0	31	0	0	33	2	66
14	46	4	22	0	0	86
1	4	1	1	1	0	8
21	84	11	42	111	7	277

A	B	C	D	E	F	Total
0	7	14	0	52	0	74
9	0	0	45	120	7	181
5	0	0	0	5	5	14
0	71	0	0	76	5	152
33	106	9	49	0	0	198
2	9	2	2	2	0	19
49	194	26	97	255	16	637

A	B	C	D	E	F	Total
0	75	145	0	207	73	501
29	1	9	116	337	235	727
74	9	0	14	103	190	390
0	332	13	7	396	664	1413
141	285	98	235	0	16	775
55	168	117	303	23	0	666

299	870	383	674	1067	1179	4472
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A	B	C	D	E	F	Total
0	82	160	0	259	73	575
38	1	9	160	457	242	908
79	9	0	14	108	194	404
0	403	13	7	472	669	1564
174	391	108	284	0	16	973
58	177	119	305	26	0	684
349	1064	409	771	1322	1195	5109

2031 Forecast Year

All Veh	A	B	C	D	E	F
A	0	85	165	0	250	80
B	35	1	10	144	415	227
C	80	10	0	15	110	197
D	0	394	15	8	466	689
E	166	352	109	273	0	17
F	57	174	123	313	25	0
Total	338	1017	421	753	1267	1210

HGVs	A	B	C	D	E	F
A	0	3	7	0	25	0
B	4	0	0	21	56	3
C	2	0	0	0	2	2
D	0	34	0	0	36	2
E	15	49	4	23	0	0
F	1	4	1	1	1	0
Total	23	90	12	45	119	8

HGVs as PCUs	A	B	C	D	E	F
A	0	8	15	0	57	0
B	10	0	0	48	128	8
C	5	0	0	0	5	5
D	0	77	0	0	82	5
E	35	113	10	53	0	0
F	2	10	2	2	2	0
Total	53	208	28	103	274	18

All Veh minus HGVs	A	B	C	D	E	F
A	0	82	158	0	225	80
B	31	1	10	123	359	224
C	77	10	0	15	108	195
D	0	361	15	8	430	687
E	151	303	105	250	0	17
F	56	170	122	312	24	0

Total	315	926	409	708	1147	1203
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PCUs	A	B	C	D	E	F
A	0	90	173	0	282	80
B	41	1	10	171	487	231
C	82	10	0	15	113	200
D	0	438	15	8	513	692
E	186	416	115	303	0	17
F	59	180	124	314	27	0
Total	367	1134	437	811	1422	1220

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2031 Forecast Year + Dev				
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Total
579
832
412
1572
918
693
5005

All Veh	A	B	C	D
A	0	85	165	0
B	35	1	10	144
C	80	10	0	15
D	0	394	15	8
E	166	352	109	273
F	59	180	123	318
Total	339	1022	422	757

Total
35
84
6
72
92
8
297

HGVs	A	B	C	D
A	0	3	7	0
B	4	0	0	21
C	2	0	0	0
D	0	34	0	0
E	15	49	4	23
F	1	4	1	1
Total	23	90	12	45

Total
80
193
15
165
211
20
683

HGVs as PCUs	A	B	C	D
A	0	8	15	0
B	10	0	0	48
C	5	0	0	0
D	0	77	0	0
E	35	113	10	53
F	2	10	2	2
Total	53	208	28	103

Total
545
748
405
1500
826
684

All Veh minus HGVs	A	B	C	D
A	0	82	158	0
B	31	1	10	123
C	77	10	0	15
D	0	361	15	8
E	151	303	105	250
F	58	175	122	317

4708

Total	316	932	409	713
-------	-----	-----	-----	-----

Total
624
941
420
1665
1037
704
5391

PCUs	A	B	C	D
A	0	90	173	0
B	41	1	10	171
C	82	10	0	15
D	0	438	15	8
E	186	416	115	303
F	60	185	125	319
Total	369	1140	437	815

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E	F	Total
250	80	579
415	252	857
110	201	415
466	721	1604
0	17	918
25	0	705
1267	1271	5078

E	F	Total
25	0	35
56	3	84
2	2	6
36	2	72
0	0	92
1	0	8
119	8	297

E	F	Total
57	0	80
128	8	193
5	5	15
82	5	165
0	0	211
2	0	20
274	18	683

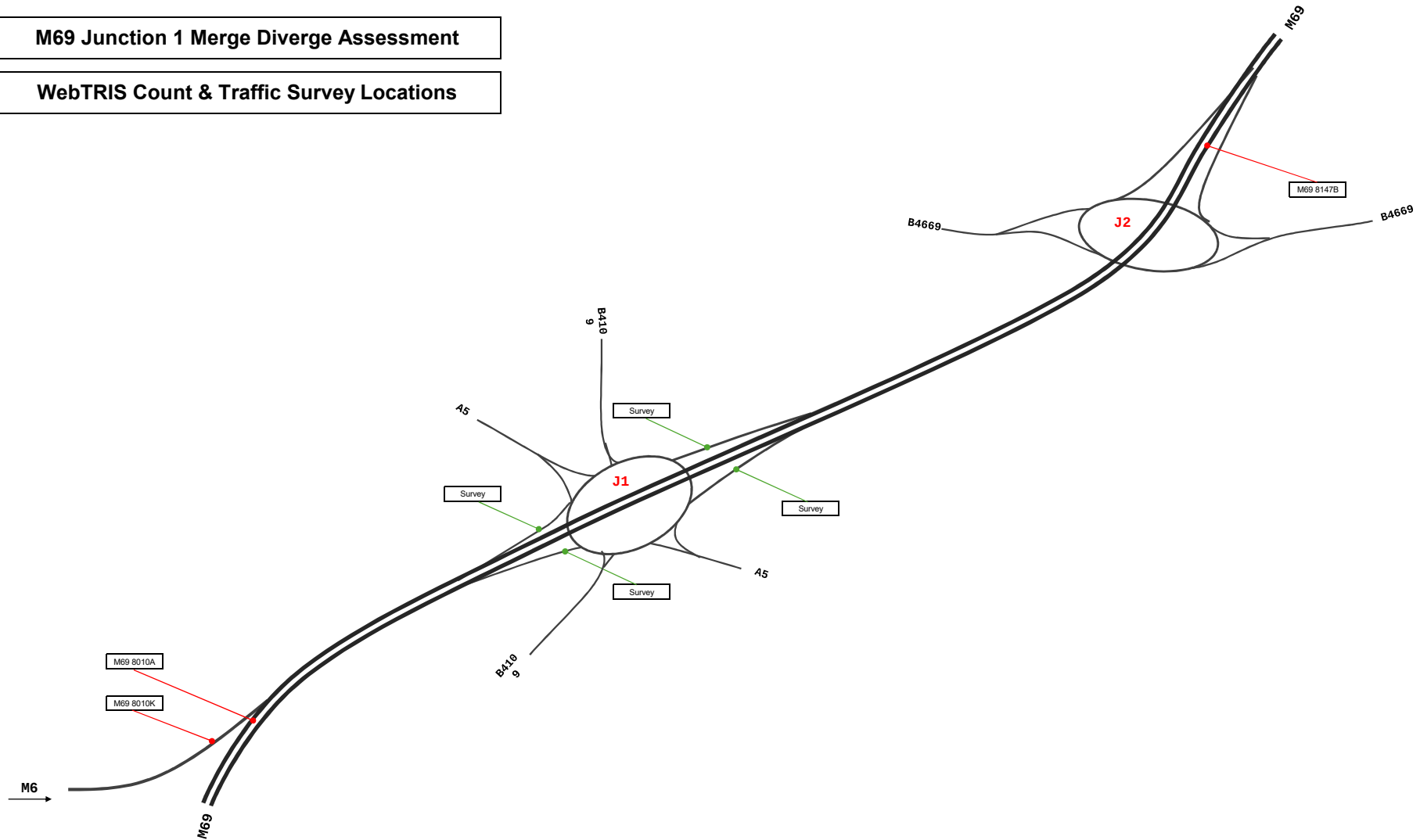
E	F	Total
225	80	545
359	249	773
108	199	409
430	719	1532
0	17	826
24	0	697

1147	1263	4781
------	------	------

E	F	Total
282	80	624
487	257	966
113	203	423
513	724	1697
0	17	1037
27	0	716
1422	1281	5464

M69 Junction 1 Merge Diverge Assessment

WebTRIS Count & Traffic Survey Locations



Thu 29 Jun 2023	00:00 - 01:00	01:00 - 02:00	02:00 - 03:00	03:00 - 04:00	04:00 - 05:00
M69/8147B	214	160	141	179	270
M69/8010K	252	130	85	137	153
M69/8010A	109	62	70	88	106

05:00 - 06:00	06:00 - 07:00	07:00 - 08:00	08:00 - 09:00	09:00 - 10:00	10:00 - 11:00
783	2178	2745	2246	2034	1705
384	861	1255	1092	1004	897
229	540	1052	866	822	813

11:00 - 12:00	12:00 - 13:00	13:00 - 14:00	14:00 - 15:00	15:00 - 16:00	16:00 - 17:00
1624	1706	1819	1805	1963	2081
811	963	1106	1275	1393	1703
746	892	1050	1313	1533	1699

17:00 - 18:00	18:00 - 19:00	19:00 - 20:00	20:00 - 21:00	21:00 - 22:00	22:00 - 23:00
2022	1753	1173	942	721	567
1649	1232	805	652	518	451
1642	1346	775	512	381	327

23:00 - 00:00 Total

420	31251
350	19158
174	17147

Flows

	2023		2026		2026
	AM	PM	AM	PM	AM
M69/8147B	2246	2022	2314	2085	2314
M69/8010K	1092	1649	1125	1700	1125
M69/8010A	866	1642	892	1693	892
SWB Offslip	394	517	406	533	409
SWB Onslip	1088	698	1107	712	1140
NEB Offslip	662	1403	682	1447	693
NEB Onslip	512	313	521	319	535
M69 SWB	1852	1505	1908	1552	1908
M69 NEB (Before J1)	1958	3291	2018	3394	2018
M69 NEB	1296	1888	1335	1947	1335

Merge	2021				
	AM		PM		A
	Mainline	Slip	Mainline	Slip	Mainline
NEB On Slip	1296	512	1888	313	1335
SWB On Slip	1852	1088	1505	698	1908

Diverge	2021				
	AM		PM		A
	Mainline	Slip	Mainline	Slip	Mainline
NEB Off Slip	1296	662	1888	1403	1335
SWB Off Slip	1852	394	1505	517	1908

+Dev	2031		2031+Dev	
PM	AM	PM	AM	PM
2085	2511	2266	2511	2266
1700	1221	1848	1221	1848
1693	968	1840	968	1840
533	440	579	443	579
716	1167	753	878	757
1479	740	1572	751	1604
321	551	338	564	339
1552	2071	1686	2071	1686
3394	2189	3688	2189	3688
1947	1449	2116	1449	2116

2026			2026+Dev				
M	PM		AM		PM		A
Slip	Mainline	Slip	Mainline	Slip	Mainline	Slip	Mainline
521	1947	319	1335	535	1947	321	1449
1107	1552	712	1908	1140	1552	716	2071

2026			2026+Dev				
M	PM		AM		PM		A
Slip	Mainline	Slip	Mainline	Slip	Mainline	Slip	Mainline
682	1947	1447	1335	693	1947	1479	1449
406	1552	533	1908	409	1552	533	2071

Growth Factors

2023	M69 (Motorway)	
	AM Peak	PM Peak
2026	1.0304	1.0312
2031	1.1180	1.1205

2031			2031+Dev			
M	PM		AM		PM	
Slip	Mainline	Slip	Mainline	Slip	Mainline	Slip
551	2116	338	1449	564	2116	339
1167	1686	753	2071	878	1686	757

2031			2031+Dev			
M	PM		AM		PM	
Slip	Mainline	Slip	Mainline	Slip	Mainline	Slip
740	2116	1572	1449	751	2116	1604
440	1686	579	2071	443	1686	579

	X	Y	
2023	1296	662	
2026	1335	682	
2026+Dev	1335	693	
2031	1449	740	
2031+Dev	1449	751	

NO

3.2

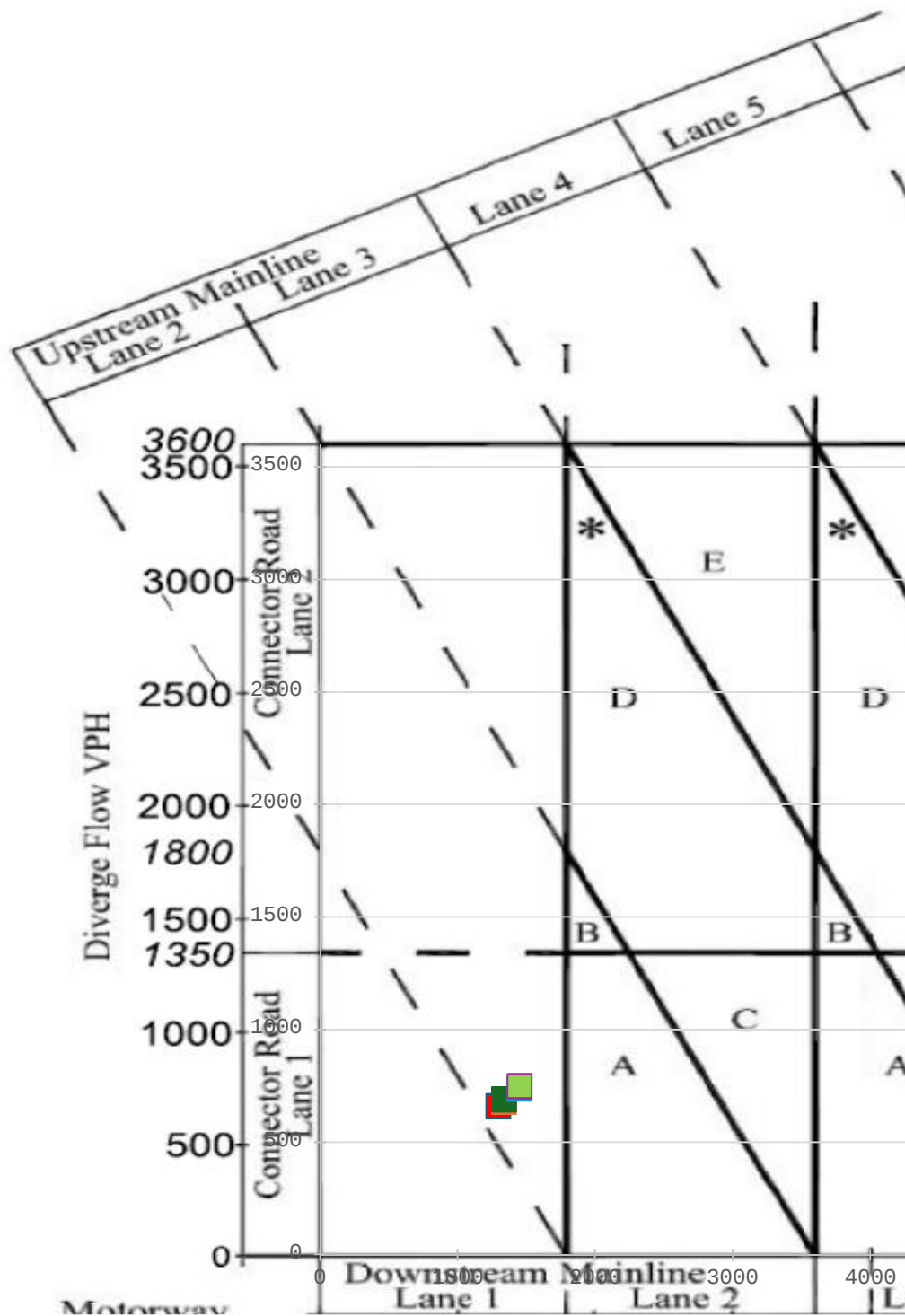
3.2

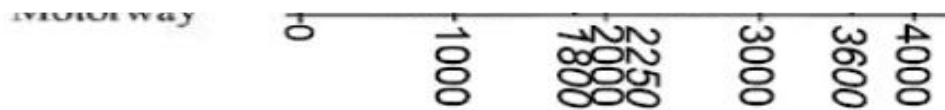
NO

3.2

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Figure 3.26b Motorway diverging



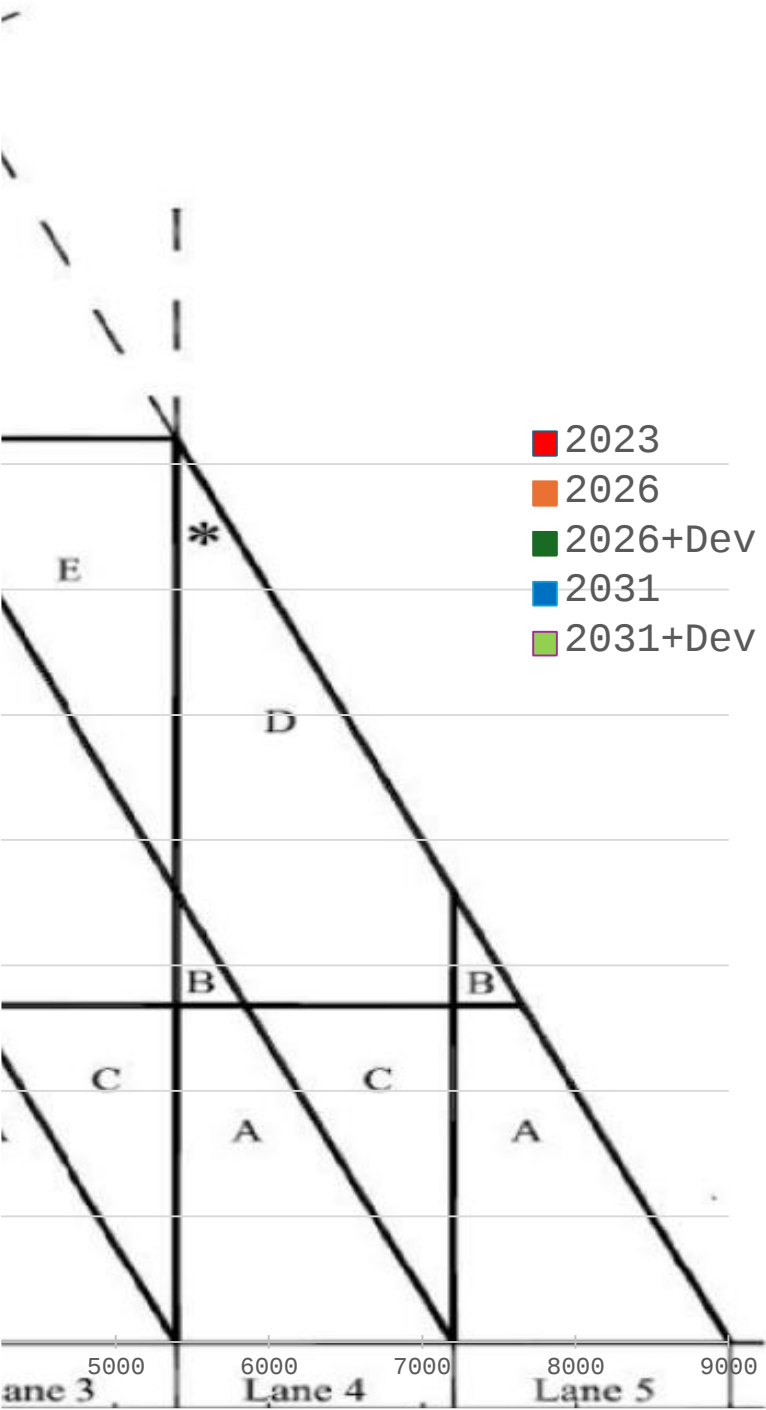


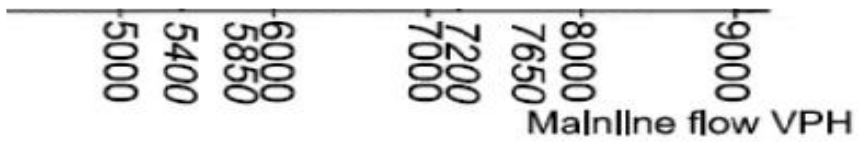
- NOTE *As an example of how to use Figures 3.24a and 3.24b, if downstream mainline flow is 4000 vph, this would give a 3-lane upstream.*
- 6.1 Where the flows are in the region indicated by the * symbol, an extended auxiliary lane should be provided in the upstream direction.
- 6.2 A diverge layout that offers a higher level of capacity than Layout A, for example Layout C instead of Layout A.
- NOTE *A diverge layout that offers less capacity than the worst case, for example Layout C instead of Layout E.*
- 7 For 3-lane diverges from the main carriageway, Layout F is preferred.

M69 Junction 1 North-Eastbound AM Diverge Assessment

3. Full grade separation

ing diagram





f the diverge flow is 2000 vph and the
 : Type D layout with 3 lanes downstream and 4

bol in Figures 3.25b and Layout D option 2 is to
 instead of a taper diverge.

n the worst case peak flow may be provided,

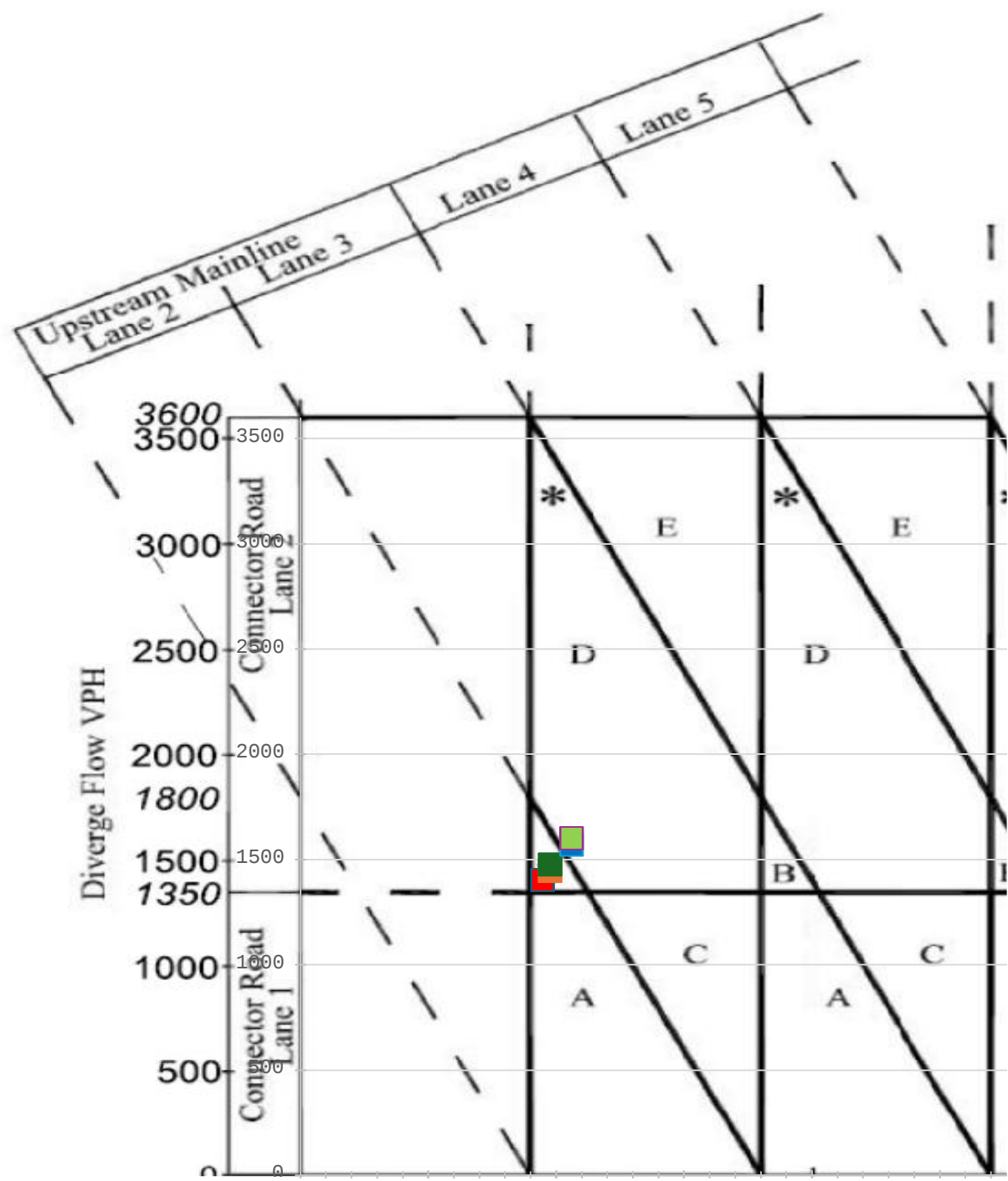
case peak flow cannot be used, such as a

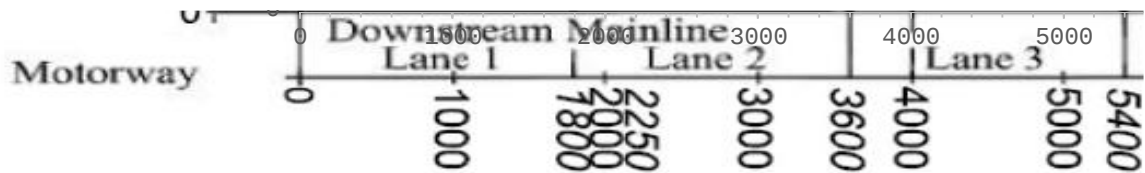
± or G shall be used based on the number of

	X	Y
2023	1888	1403
2026	1947	1447
2026+Dev	1947	1479
2031	2116	1572
2031+Dev	2116	1604

<i>NOTE</i>	A c h
3.26.1	V t
3.26.2	A f
<i>NOTE</i>	A L
3.27	F

Figure 3.26b Motorway diverging diagram





As an example of how to use Figures 3.24a and 3.24b, if the diverge downstream mainline flow is 4000 vph, this would give a Type D layout with an auxiliary lane upstream.

Where the flows are in the region indicated by the * symbol in Figure 3.24b, an extended auxiliary lane should be provided instead of a standard auxiliary lane.

A diverge layout that offers a higher level of capacity than the worst case peak flow layout, for example Layout C instead of Layout A.

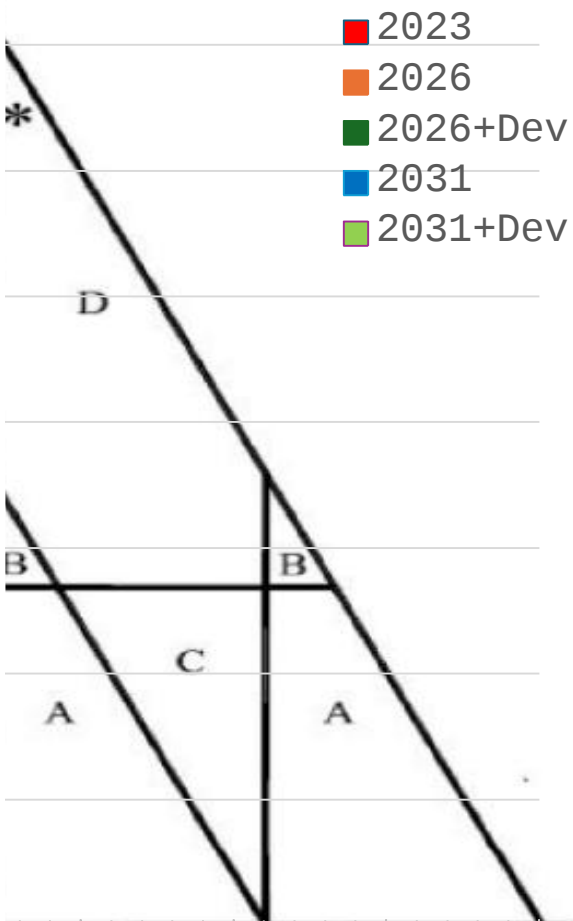
A diverge layout that offers less capacity than the worst case peak flow layout, for example Layout E instead of Layout C.

For 3-lane diverges from the main carriageway, Layout F or G shall be used.

M69 Junction 1 North-Eastbound PM Diverge Assessment

ade separa

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6000	7000	8000	9000
Lane 4		Lane 5	
6000	7200	8000	9000
5850	7000	7650	
Mainline flow VPH			

pe flow is 2000 vph and the
out with 3 lanes downstream and 4

es 3.25b and Layout D option 2 is to
a taper diverge.

t case peak flow may be provided,

flow cannot be used, such as a

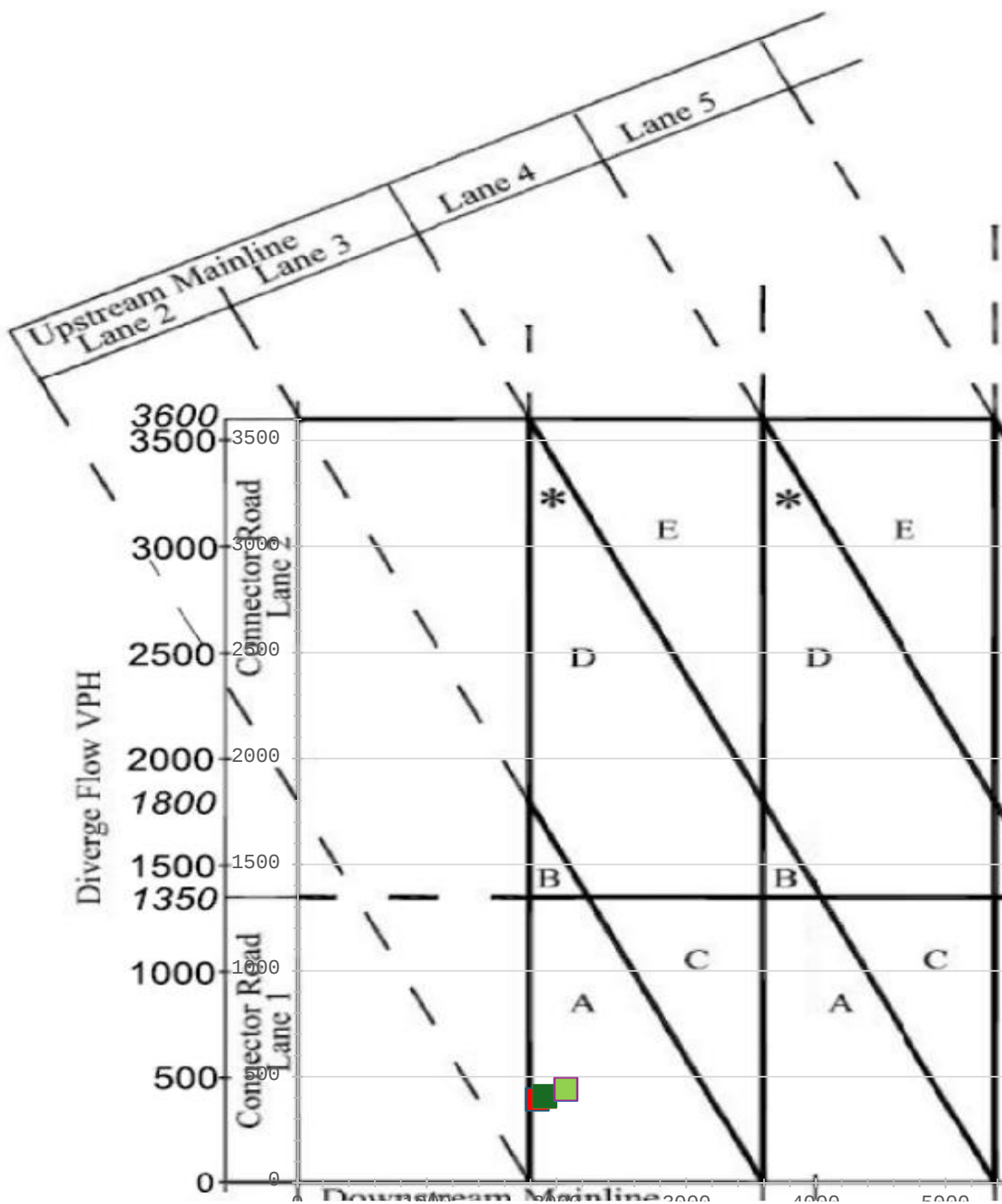
l be used based on the number of

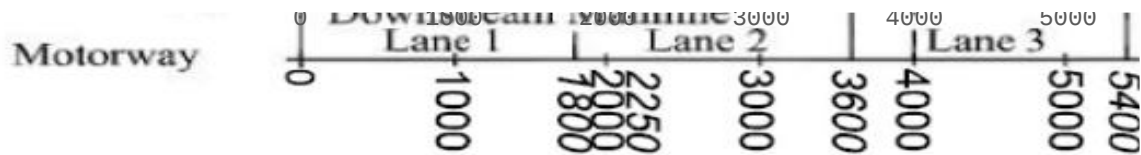
CD 122 Versi

	X	Y	
2023	1852	394	
2026	1908	406	
2026+Dev	1908	409	
2031	2071	440	
2031+Dev	2071	443	

<i>NOTE</i>	/
	(
	/
3.26.1	\
	l
3.26.2	/
	f
<i>NOTE</i>	/
	l
3.27	l

Figure 3.26b Motorway diverging diagram





As an example of how to use Figures 3.24a and 3.24b, if the diverge downstream mainline flow is 4000 vph, this would give a Type D layout with 3 lanes upstream.

Where the flows are in the region indicated by the * symbol in Figure 3.24b, an extended auxiliary lane should be provided instead of a standard auxiliary lane.

A diverge layout that offers a higher level of capacity than the worst case peak flow for example Layout C instead of Layout A.

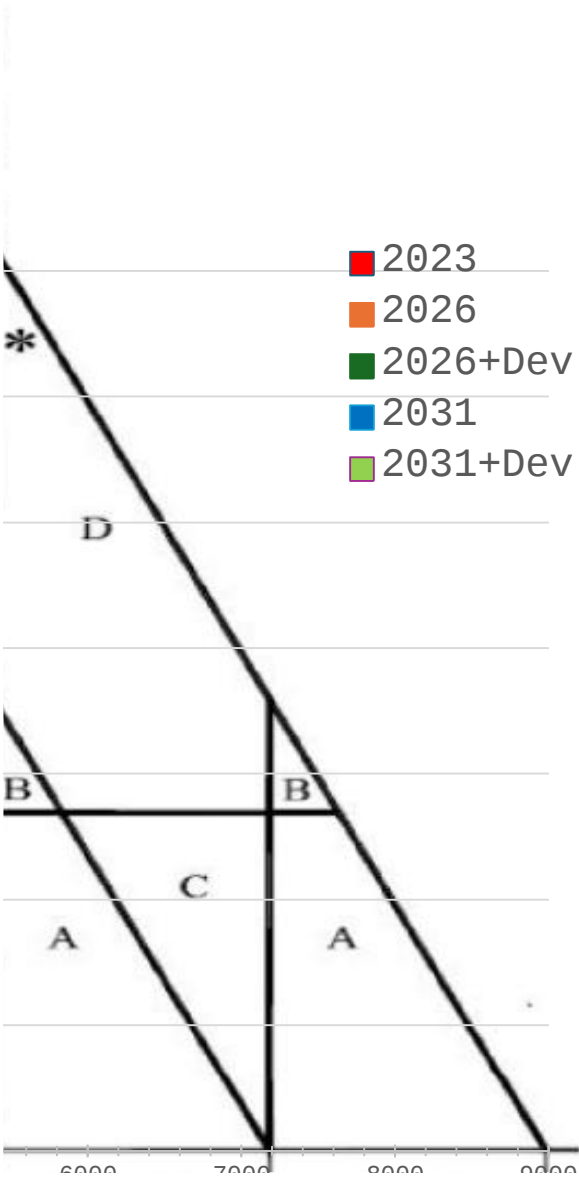
A diverge layout that offers less capacity than the worst case peak flow for example Layout E instead of Layout C.

For 3-lane diverges from the main carriageway, Layout F or G shall be used.

**M69 Junction 1 South-
Westbound AM Diverge
Assessment**

ade separa

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	6000		7000		8000		9000
	Lane 4				Lane 5		
	6000		7200		8000		9000
	5850		7000		7650		
	Mainline flow VPH						

ge flow is 2000 vph and the
yout with 3 lanes downstream and 4

res 3.25b and Layout D option 2 is to
a taper diverge.

st case peak flow may be provided,

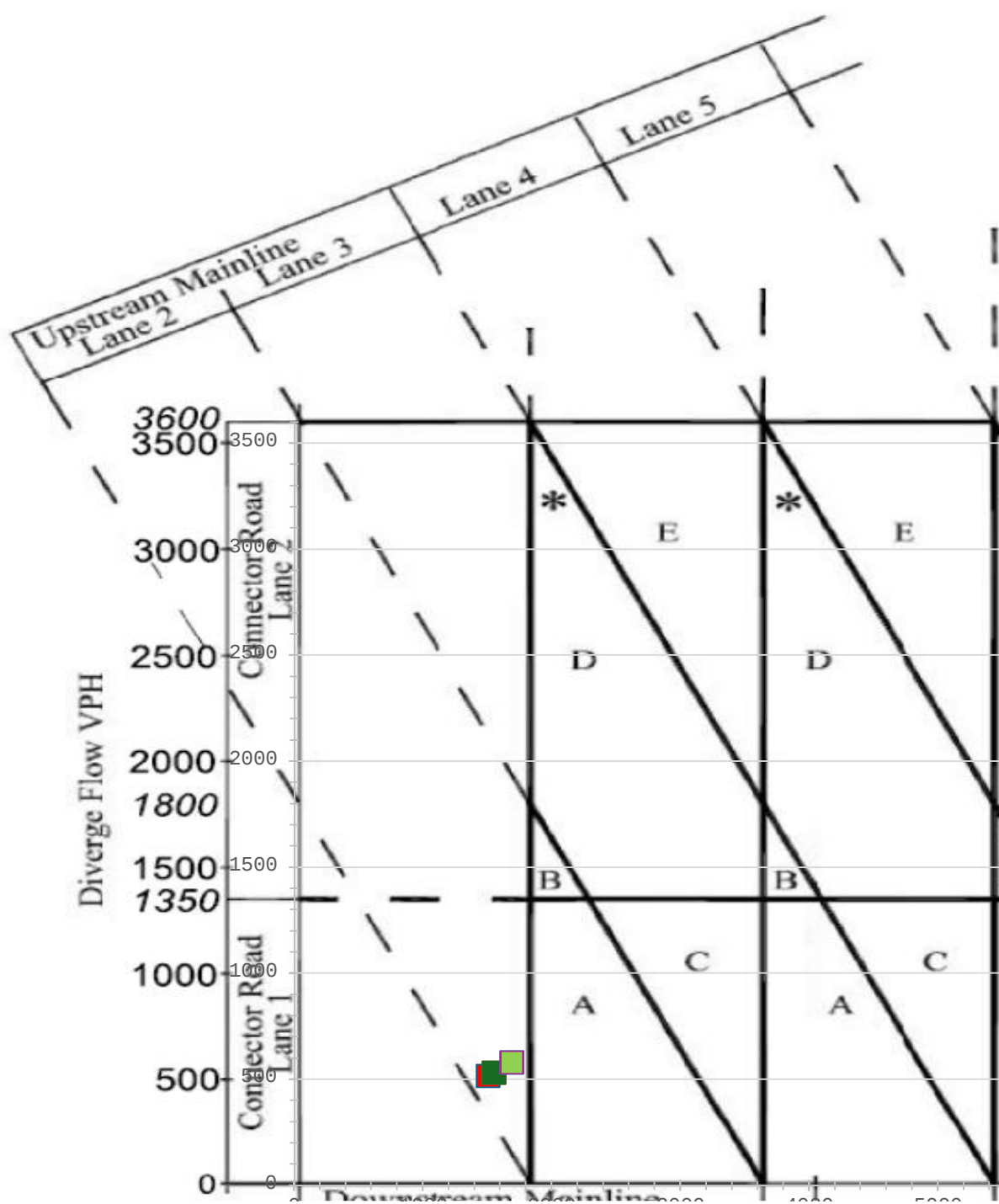
flow cannot be used, such as a

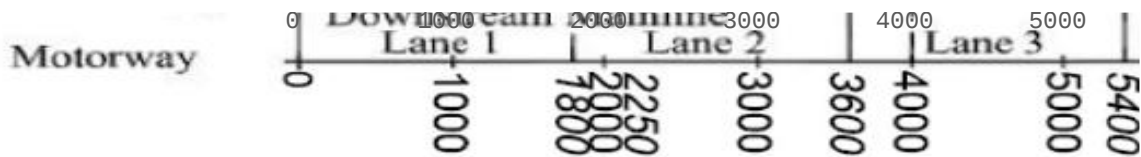
ll be used based on the number of

	X	Y
2023	1505	517
2026	1552	533
2026+Dev	1552	533
2031	1686	579
2031+Dev	1686	579

<i>NOTE</i>	/
	c
	/
3.26.1	\
	t
3.26.2	/
	f
<i>NOTE</i>	/
	L
3.27	f

Figure 3.26b Motorway diverging diagram





As an example of how to use Figures 3.24a and 3.24b, if the diverge downstream mainline flow is 4000 vph, this would give a Type D layout with 3 lanes upstream.

Where the flows are in the region indicated by the * symbol in Figure 3.24b, an extended auxiliary lane should be provided instead of a standard auxiliary lane.

A diverge layout that offers a higher level of capacity than the worst case peak flow for example Layout C instead of Layout A.

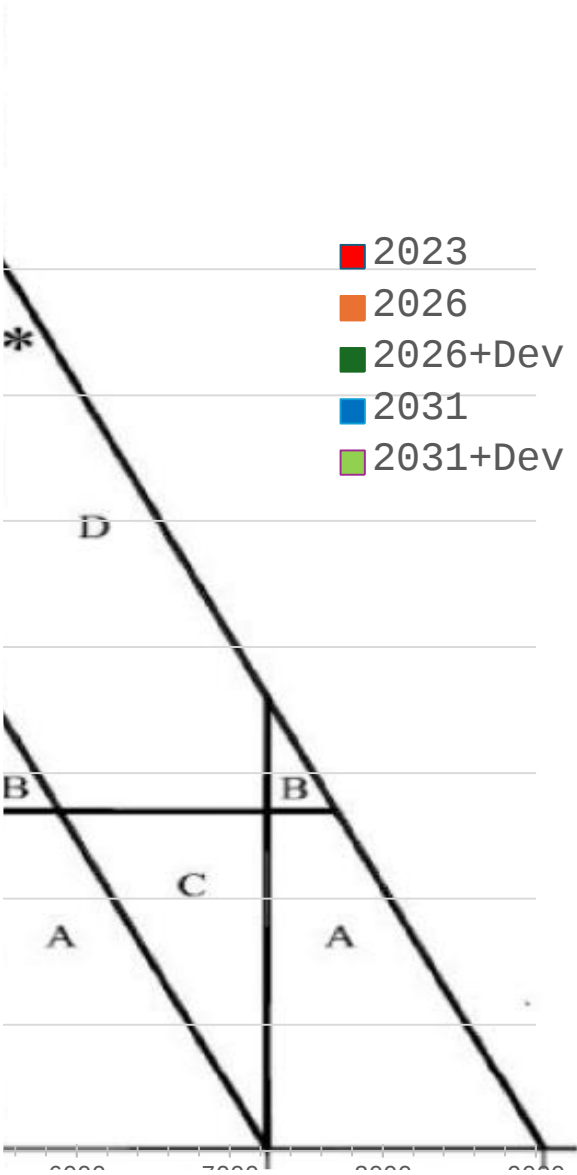
A diverge layout that offers less capacity than the worst case peak flow for example Layout C instead of Layout E.

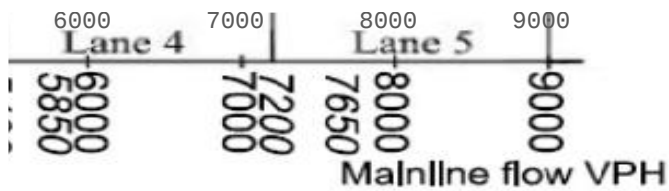
For 3-lane diverges from the main carriageway, Layout F or G shall be used.

**M69 Junction 1 South-
Westbound PM Diverge
Assessment**

ade separa

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ge flow is 2000 vph and the
yout with 3 lanes downstream and 4

res 3.25b and Layout D option 2 is to
a taper diverge.

it case peak flow may be provided,

flow cannot be used, such as a

I be used based on the number of

CD 122 Vers

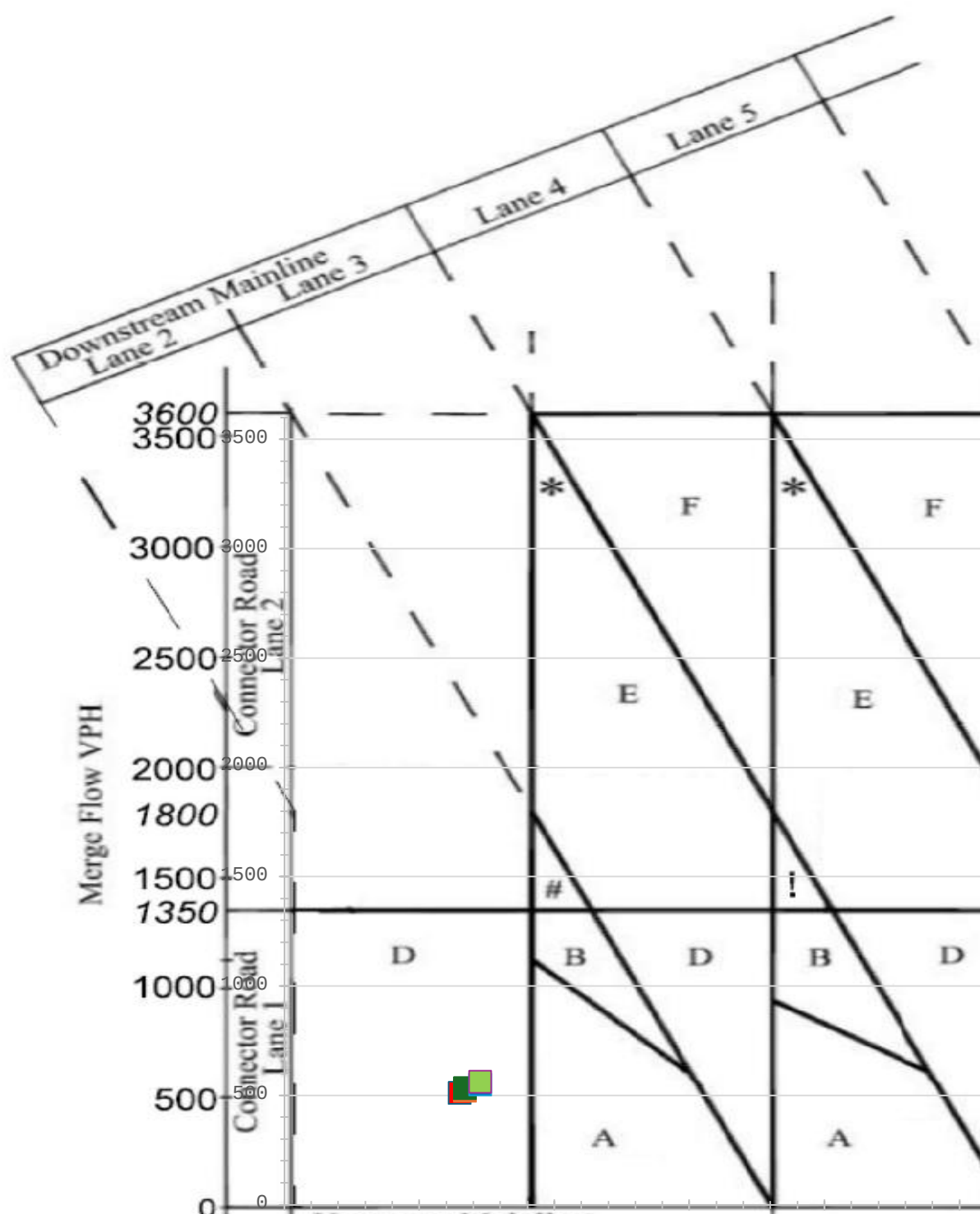
	X	Y
2023	1296	512
2026	1335	521
2026+Dev	1335	535
2031	1449	551
2031+Dev	1449	564

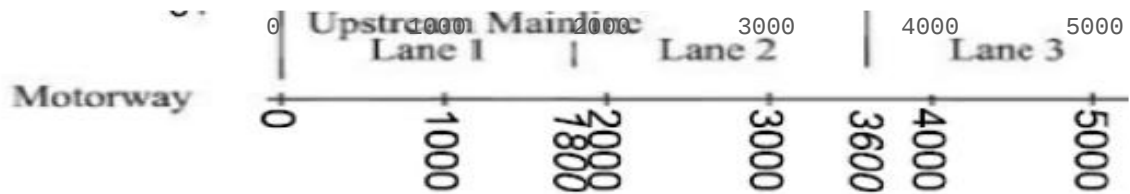
NOTE 1

NOTE 2

NOTE 3

Figure 3.12b Motorway merging diagram





As an example of how to use Figures 3.12a and 3.12b, if the merge mainline flow is 4000 vph, this would give a Type E layout with 3 lanes downstream.

On Figures 3.12a and 3.12b, the # symbol indicates areas of uncertainty upstream and downstream provision and the ability for the mainline.

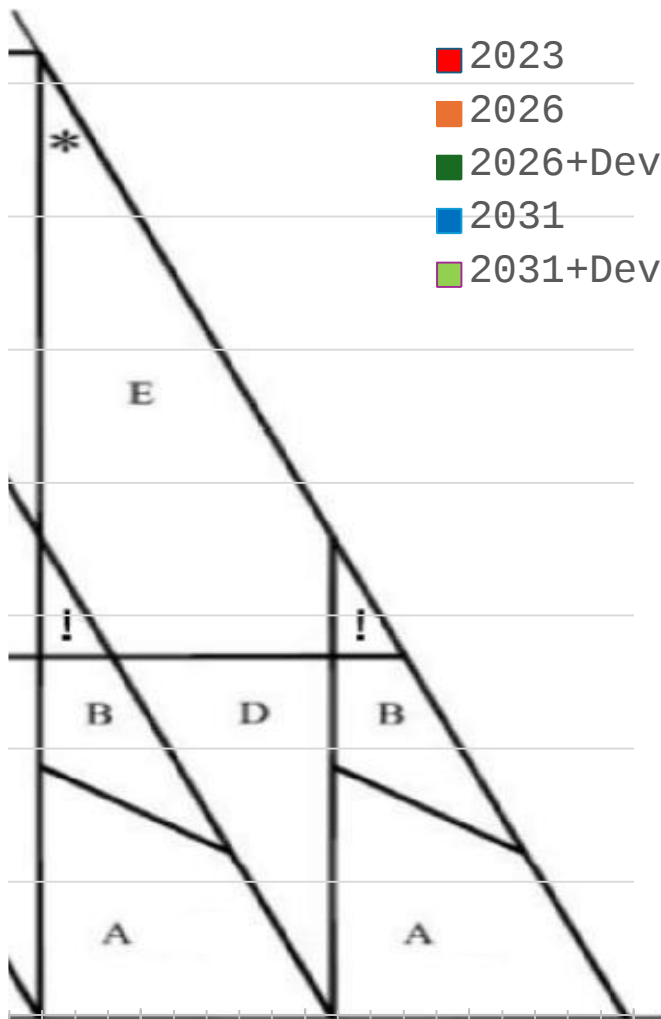
On Figures 3.12a and 3.12b, the ! symbol indicates that the minimum

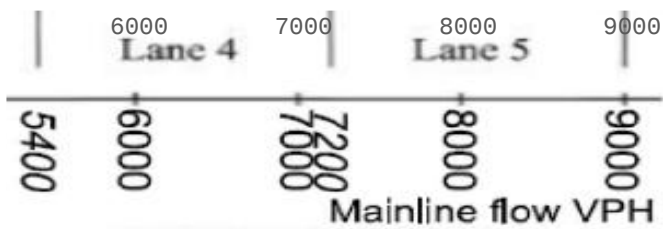
- 1) Layout C for rural roads; or,
- 2) Layout A Option 2 for urban roads.

M69 Junction 1 North-Eastbound AM Merge Assessment

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the flow is 2000 vph and the upstream
lanes upstream and 4 lanes

ertainty and the choice depends on the
e to accept the flows from the merge.

um layout to be provided is:

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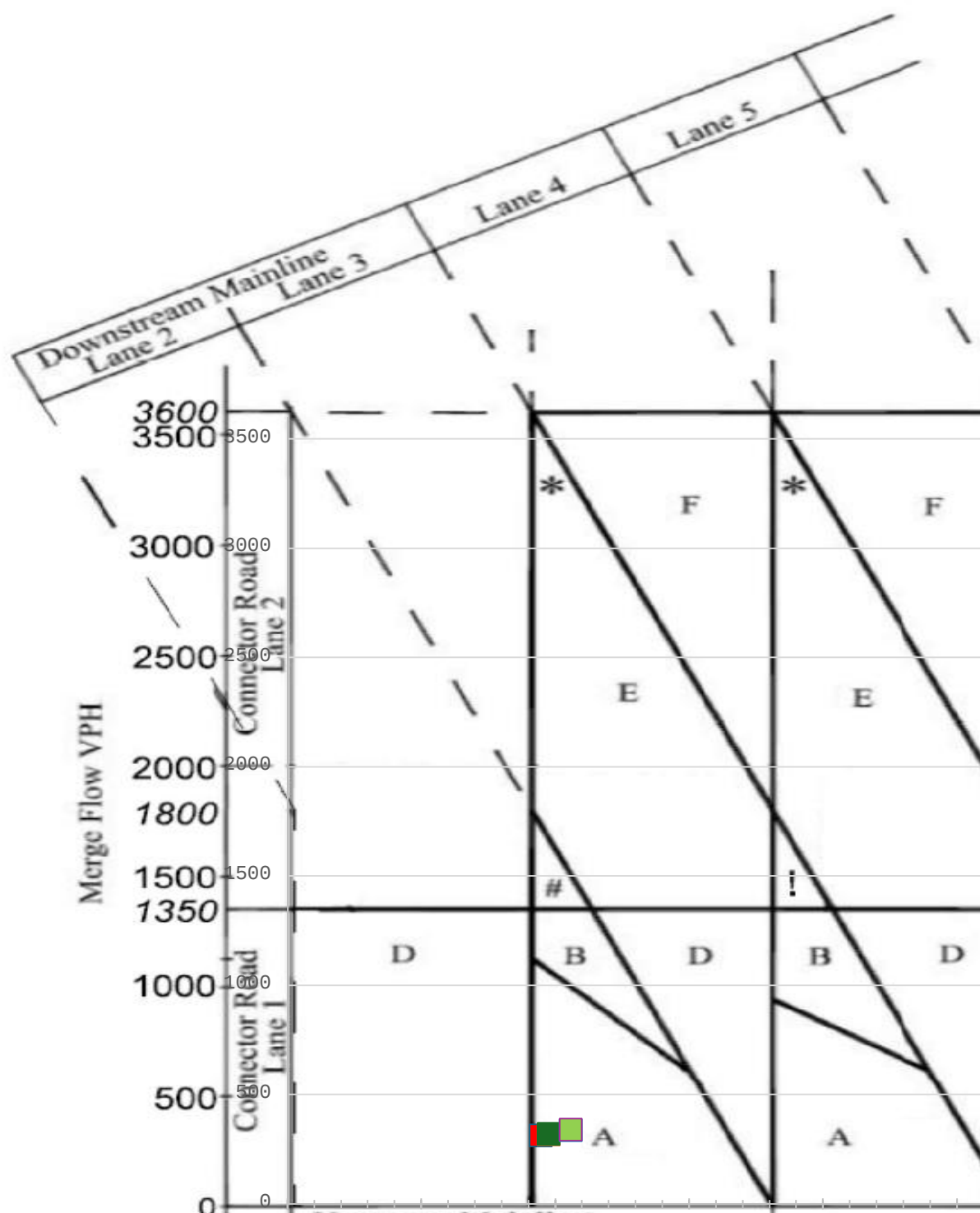
	X	Y	
2023	1888	313	
2026	1947	319	
2026+Dev	1947	321	
2031	2116	338	
2031+Dev	2116	339	

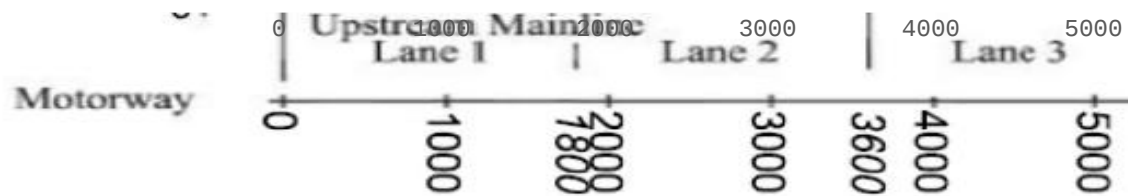
NOTE 1

NOTE 2

NOTE 3

Figure 3.12b Motorway merging diagram





As an example of how to use Figures 3.12a and 3.12b, if the merge mainline flow is 4000 vph, this would give a Type E layout with 3 lanes downstream.

On Figures 3.12a and 3.12b, the # symbol indicates areas of uncertainty upstream and downstream provision and the ability for the mainline.

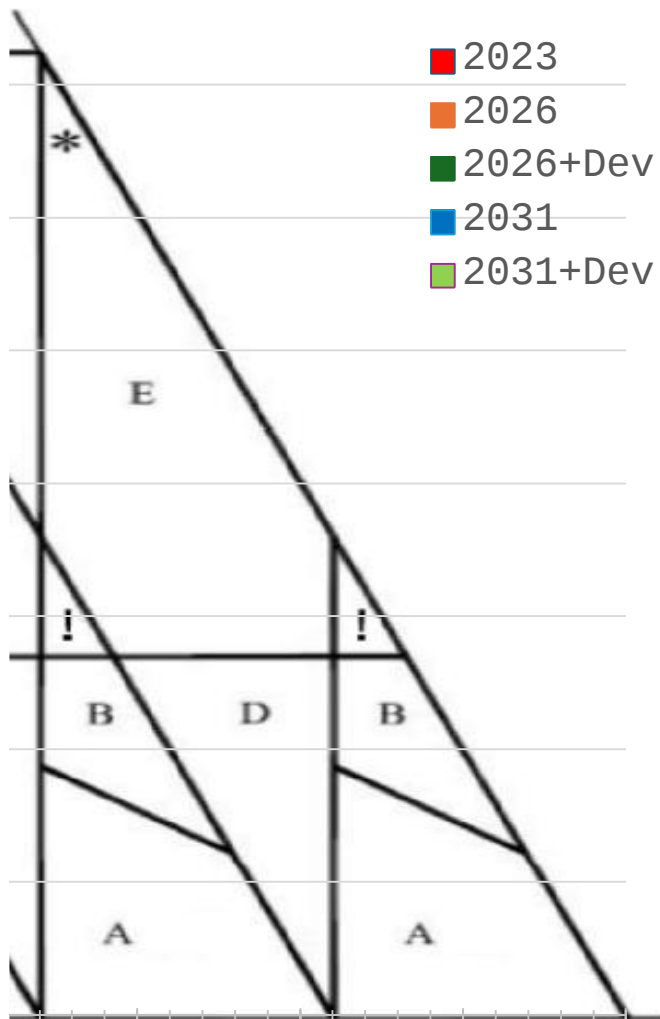
On Figures 3.12a and 3.12b, the ! symbol indicates that the minimum

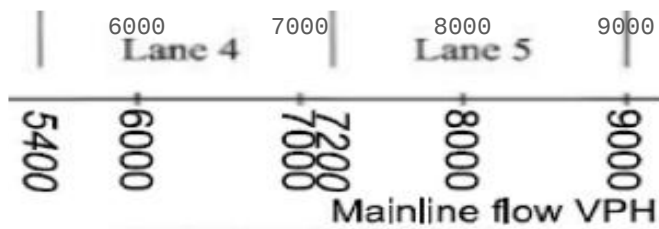
- 1) Layout C for rural roads; or,
- 2) Layout A Option 2 for urban roads.

M69 Junction 1 North-Eastbound PM Merge Assessment

ade separ

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the flow is 2000 vph and the upstream
lanes upstream and 4 lanes

ertainty and the choice depends on the
e to accept the flows from the merge.

um layout to be provided is:

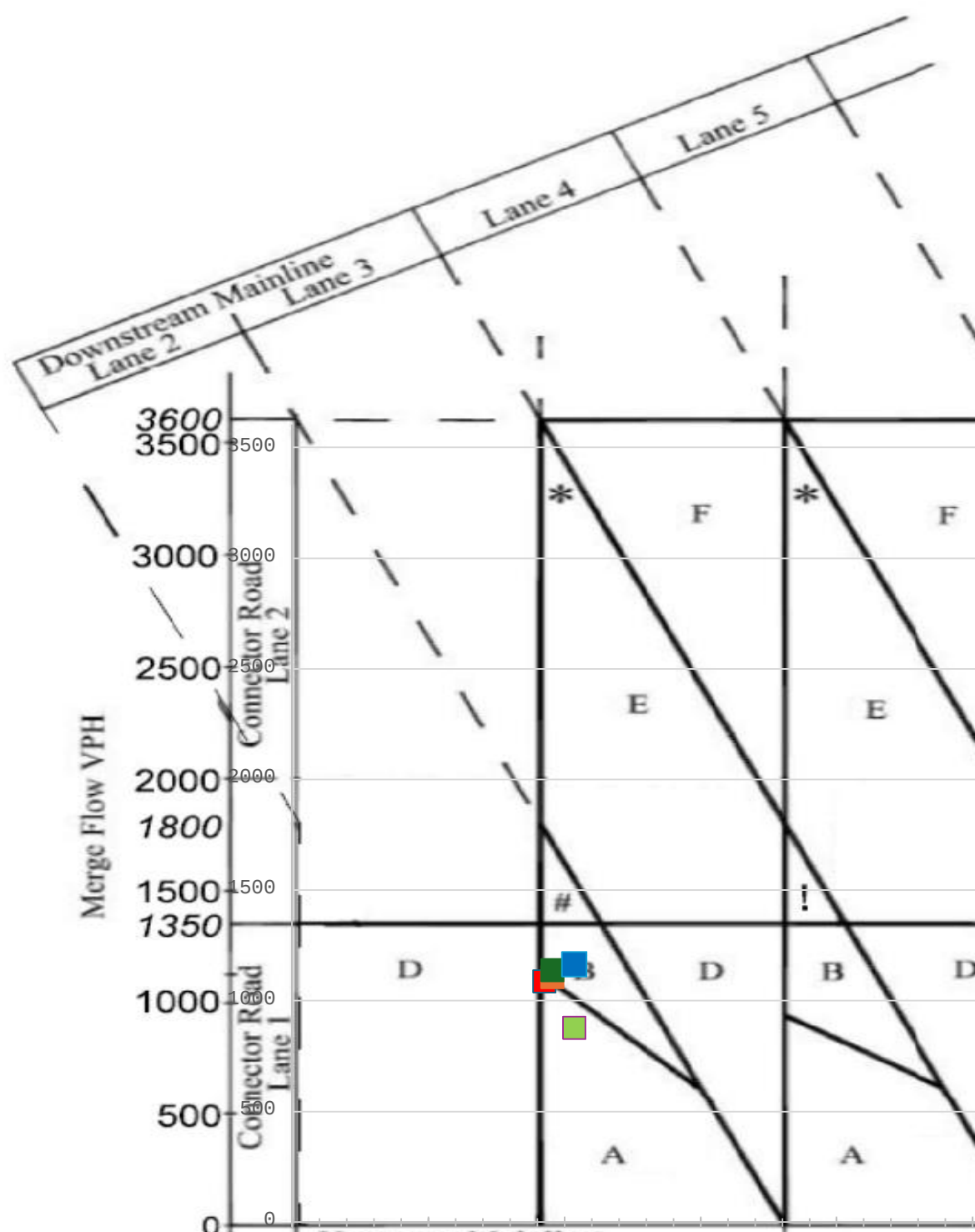
	X	Y
2023	1852	1088
2026	1908	1107
2026+Dev	1908	1140
2031	2071	1167
2031+Dev	2071	878

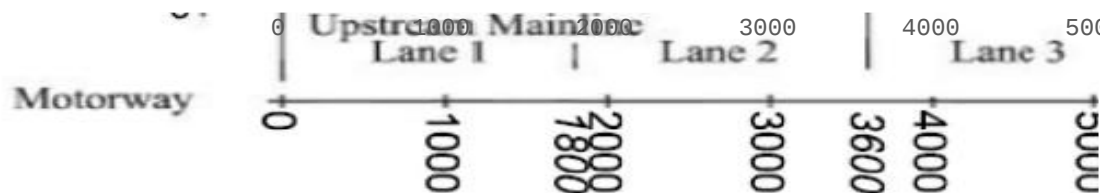
NOTE 1

NOTE 2

NOTE 3

Figure 3.12b Motorway merging diagram





As an example of how to use Figures 3.12a and 3.12b, if the mainline flow is 4000 vph, this would give a Type E layout with 3 downstream.

On Figures 3.12a and 3.12b, the # symbol indicates areas of uncertainty upstream and downstream provision and the ability for the mainline.

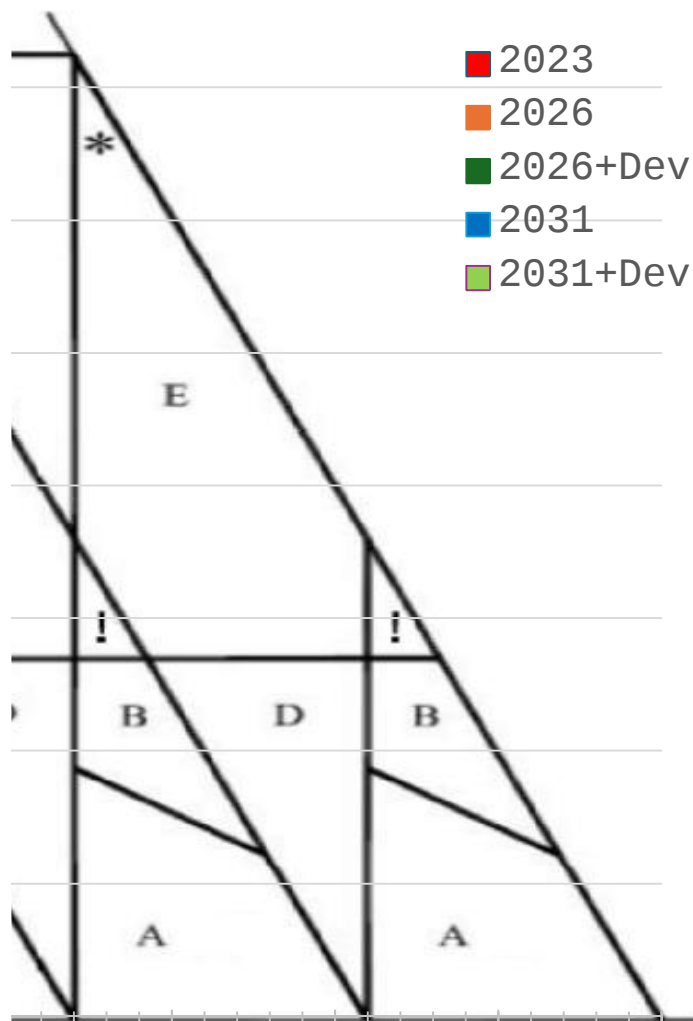
On Figures 3.12a and 3.12b, the ! symbol indicates that the minimum

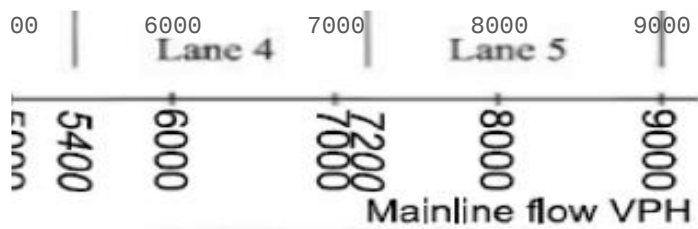
- 1) Layout C for rural roads; or,
- 2) Layout A Option 2 for urban roads.

M69 Junction 1 South-Westbound AM Merge Assessment

grade separ

am





merge flow is 2000 vph and the upstream lanes upstream and 4 lanes

certainty and the choice depends on the line to accept the flows from the merge.

imum layout to be provided is:

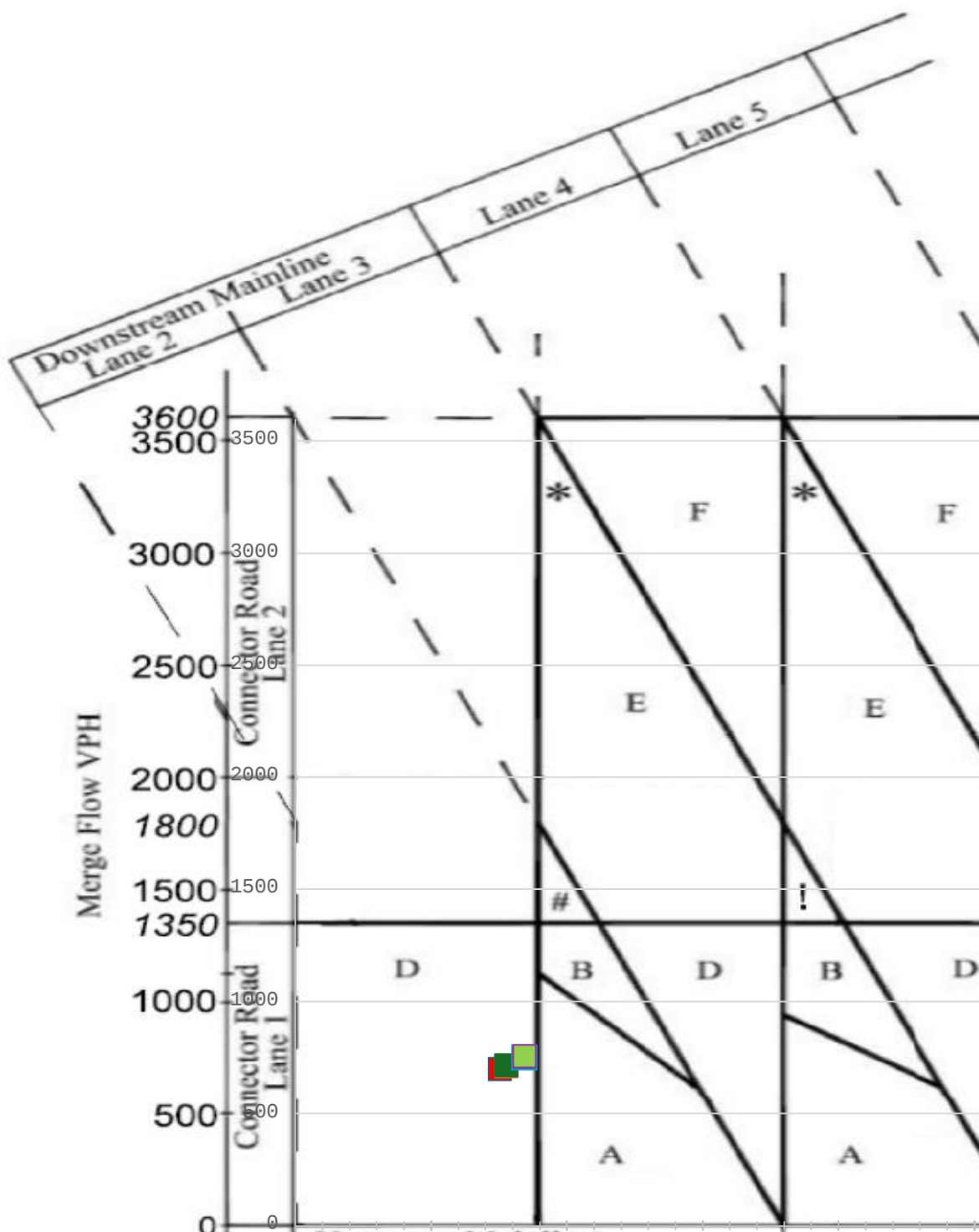
	X	Y
2023	1505	698
2026	1552	712
2026+Dev	1552	716
2031	1686	753
2031+Dev	1686	757

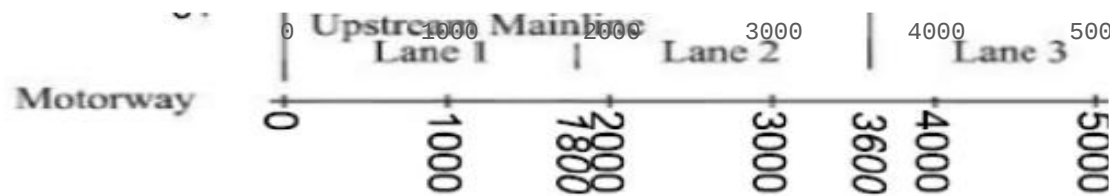
NOTE 1

NOTE 2

NOTE 3

Figure 3.12b Motorway merging diagram





As an example of how to use Figures 3.12a and 3.12b, if the mainline flow is 4000 vph, this would give a Type E layout with 3 lanes downstream.

On Figures 3.12a and 3.12b, the # symbol indicates areas of uncertainty upstream and downstream provision and the ability for the mainline.

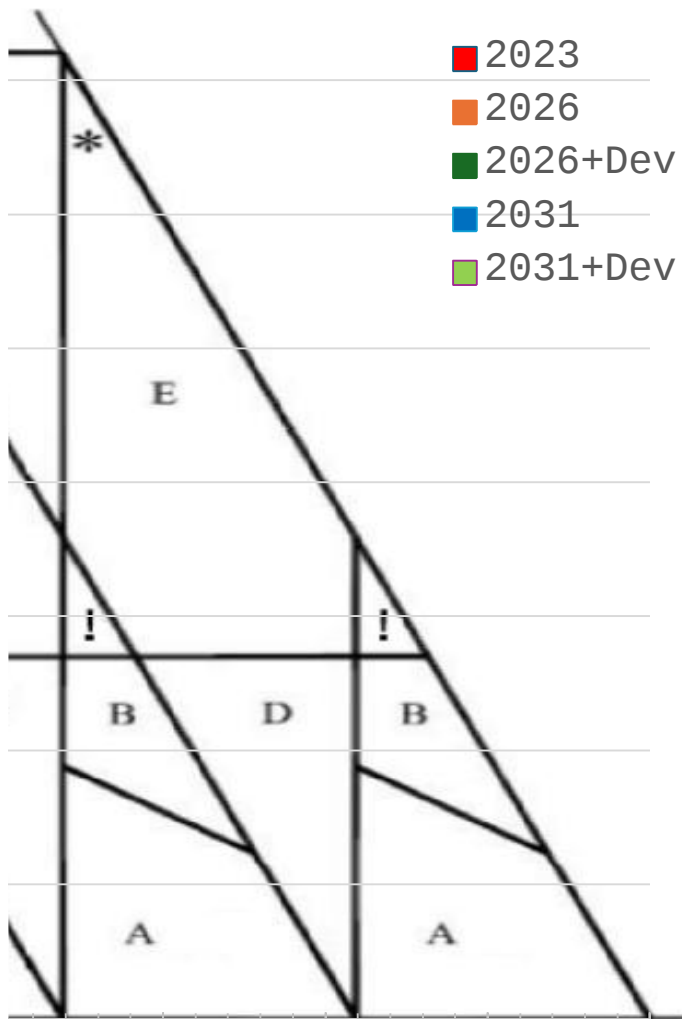
On Figures 3.12a and 3.12b, the ! symbol indicates that the minimum

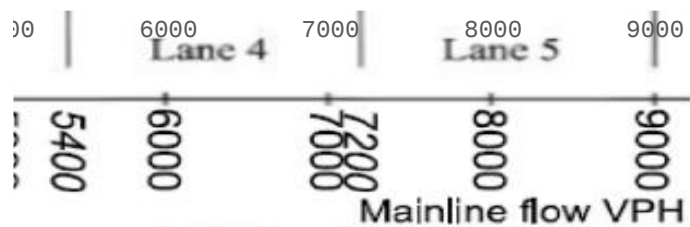
- 1) Layout C for rural roads; or,
- 2) Layout A Option 2 for urban roads.

M69 Junction 1 South-Westbound PM Merge Assessment

grade separa

m





ge flow is 2000 vph and the upstream
lanes upstream and 4 lanes

ertainty and the choice depends on the
ne to accept the flows from the merge.

mum layout to be provided is:
