

# Existing - 2026 Base, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Southern	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 91% of the total flow for the roundabout for one or more time segments]
Warning	Pedestrian Crossing	1 - Southern - 3 - Watford Road - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Linked Roundabout	1 - Southern - 3 - Watford Road	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked roundabouts	1 - Southern	U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results.
Warning	Linked Roundabout	2 - Northern - 3 - Watford Road	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked roundabouts	2 - Northern	U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern	Mini-roundabout		1, 2, 3	78.49	F
2	Northern	Mini-roundabout		1, 2, 3	92.96	F

### Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		-20	2 - Northern - 2 - Tippendell Ln

## 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)	Run automatically
D4	2026 Base	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - Southern	3 - Watford Road	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - Northern	3 - Watford Road	1	3	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Southern	1 - Watford Road (S)		ONE HOUR	✓	856	100.000
	2 - Chiswell Green Ln		ONE HOUR	✓	149	100.000
	3 - Watford Road	✓				
2 - Northern	1 - Watford Road (N)		ONE HOUR	✓	735	100.000
	2 - Tippendell Ln		ONE HOUR	✓	420	100.000
	3 - Watford Road	✓				

### Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - Southern	1 - Watford Road (S)		
	2 - Chiswell Green Ln		
	3 - Watford Road	[ONEHOUR]	0.00
2 - Northern	1 - Watford Road (N)		
	2 - Tippendell Ln		
	3 - Watford Road		

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Watford Road (S)	2 - Chiswell Green Ln	3 - Watford Road	
1 - Southern	From	1 - Watford Road (S)	1	75	780
		2 - Chiswell Green Ln	49	0	100
		3 - Watford Road	543	111	1

### Demand (Veh/hr)

		To			
		1 - Watford Road (N)	2 - Tippendell Ln	3 - Watford Road	
2 - Northern	From	1 - Watford Road (N)	0	193	542
		2 - Tippendell Ln	304	5	111
		3 - Watford Road	803	72	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Watford Road (S)	2 - Chiswell Green Ln	3 - Watford Road	
1 - Southern	From	1 - Watford Road (S)	0	0	2
		2 - Chiswell Green Ln	0	0	0
		3 - Watford Road	1	0	0

### Heavy Vehicle Percentages

		To			
		1 - Watford Road (N)	2 - Tippendell Ln	3 - Watford Road	
2 - Northern	From	1 - Watford Road (N)	0	1	1
		2 - Tippendell Ln	1	0	0
		3 - Watford Road	2	0	0

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Southern	1 - Watford Road (S)	1.06	139.59	38.8	F	785	1178
	2 - Chiswell Green Ln	0.64	37.86	1.6	E	137	205
	3 - Watford Road	0.57	7.01	1.3	A	599	898
2 - Northern	1 - Watford Road (N)	1.01	99.32	22.4	F	674	1012
	2 - Tippendell Ln	1.14	255.02	34.2	F	385	578
	3 - Watford Road	0.74	11.15	2.8	B	808	1211

### Main Results for each time segment

#### 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsigna level servi
1 - Southern	1 - Watford Road (S)	644	161	82		912	0.707	635	437	0.0	2.3	12.623	B
	2 - Chiswell Green Ln	112	28	580		397	0.283	111	137	0.0	0.4	12.507	B
	3 - Watford Road	485	121	37	0.00	1210	0.401	482	654	0.0	0.7	4.931	A
2 - Northern	1 - Watford Road (N)	553	138	58		815	0.679	545	821	0.0	2.0	13.005	B
	2 - Tippendell Ln	316	79	403		515	0.614	310	200	0.0	1.5	17.143	C
	3 - Watford Road	655	164	228		1297	0.505	651	485	0.0	1.0	5.539	A

#### 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsigna level servi
1 - Southern	1 - Watford Road (S)	770	192	99		902	0.854	759	524	2.3	5.0	23.545	C
	2 - Chiswell Green Ln	134	33	693		327	0.409	133	165	0.4	0.7	18.407	C
	3 - Watford Road	580	145	45	0.00	1204	0.482	579	781	0.7	0.9	5.748	A
2 - Northern	1 - Watford Road (N)	661	165	69		808	0.818	653	982	2.0	4.0	22.163	C
	2 - Tippendell Ln	378	94	482		465	0.812	369	240	1.5	3.6	34.907	D
	3 - Watford Road	782	196	272		1258	0.622	780	580	1.0	1.6	7.487	A

#### 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsigna level servi
1 - Southern	1 - Watford Road (S)	942	236	114		892	1.057	867	608	5.0	23.8	74.150	F
	2 - Chiswell Green Ln	164	41	792		266	0.617	161	189	0.7	1.5	33.281	D
	3 - Watford Road	670	167	54	0.00	1197	0.560	669	899	0.9	1.2	6.791	A
2 - Northern	1 - Watford Road (N)	809	202	79		801	1.010	763	1111	4.0	15.5	60.316	F
	2 - Tippendell Ln	462	116	564		414	1.118	400	279	3.6	19.1	124.949	F
	3 - Watford Road	900	225	295		1238	0.727	896	670	1.6	2.6	10.420	B

**17:45 - 18:00**

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level serv
1 - Southern	1 - Watford Road (S)	942	236	117		890	1.059	883	621	23.8	38.8	139.589	F
	2 - Chiswell Green Ln	164	41	806		257	0.638	163	193	1.5	1.6	37.864	E
	3 - Watford Road	684	171	55	0.00	1197	0.572	684	915	1.2	1.3	7.013	A
2 - Northern	1 - Watford Road (N)	809	202	81		800	1.011	782	1130	15.5	22.4	99.317	F
	2 - Tippendell Ln	462	116	577		405	1.141	402	285	19.1	34.2	255.016	F
	3 - Watford Road	916	229	296		1237	0.741	915	684	2.6	2.8	11.148	B

**18:00 - 18:15**

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level serv
1 - Southern	1 - Watford Road (S)	770	192	111		894	0.861	872	583	38.8	13.3	113.415	F
	2 - Chiswell Green Ln	134	33	796		263	0.508	136	186	1.6	1.1	28.746	D
	3 - Watford Road	648	162	46	0.00	1203	0.539	649	887	1.3	1.2	6.496	A
2 - Northern	1 - Watford Road (N)	661	165	79		802	0.824	728	1117	22.4	5.7	59.618	F
	2 - Tippendell Ln	378	94	538		430	0.878	418	269	34.2	24.1	250.340	F
	3 - Watford Road	888	222	308		1226	0.724	888	648	2.8	2.7	10.667	B

**18:15 - 18:30**

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level serv
1 - Southern	1 - Watford Road (S)	644	161	90		907	0.710	687	476	13.3	2.6	19.213	C
	2 - Chiswell Green Ln	112	28	628		368	0.305	115	150	1.1	0.4	14.369	B
	3 - Watford Road	526	131	39	0.00	1209	0.435	527	704	1.2	0.8	5.298	A
2 - Northern	1 - Watford Road (N)	553	138	64		811	0.682	567	944	5.7	2.2	15.503	C
	2 - Tippendell Ln	316	79	419		505	0.627	405	212	24.1	1.8	62.458	F
	3 - Watford Road	705	176	298		1235	0.571	710	526	2.7	1.4	6.929	A

# Existing - 2026 Base + Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Southern	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 83% of the total flow for the roundabout for one or more time segments]
Warning	Pedestrian Crossing	1 - Southern - 3 - Watford Road - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Linked Roundabout	1 - Southern - 3 - Watford Road	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	2 - Northern - 3 - Watford Road	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked roundabouts	2 - Northern	U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern	Mini-roundabout		1, 2, 3	50.92	F
2	Northern	Mini-roundabout		1, 2, 3	105.03	F

### Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		-21	2 - Northern - 2 - Tippendell Ln

## 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)	Run automatically
D5	2026 Base + Dev	AM	ONE HOUR	07:30	09:00	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - Southern	3 - Watford Road	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - Northern	3 - Watford Road	1	3	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Southern	1 - Watford Road (S)		ONE HOUR	✓	772	100.000
	2 - Chiswell Green Ln		ONE HOUR	✓	278	100.000
	3 - Watford Road	✓				
2 - Northern	1 - Watford Road (N)		ONE HOUR	✓	673	100.000
	2 - Tippendell Ln		ONE HOUR	✓	469	100.000
	3 - Watford Road	✓				

### Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - Southern	1 - Watford Road (S)		
	2 - Chiswell Green Ln		
	3 - Watford Road	[ONEHOUR]	0.00
2 - Northern	1 - Watford Road (N)		
	2 - Tippendell Ln		
	3 - Watford Road		

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Watford Road (S)	2 - Chiswell Green Ln	3 - Watford Road	
1 - Southern	From	1 - Watford Road (S)	1	186	585
		2 - Chiswell Green Ln	101	0	177
		3 - Watford Road	447	173	0

### Demand (Veh/hr)

		To			
		1 - Watford Road (N)	2 - Tippendell Ln	3 - Watford Road	
2 - Northern	From	1 - Watford Road (N)	0	220	453
		2 - Tippendell Ln	299	4	166
		3 - Watford Road	619	144	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Watford Road (S)	2 - Chiswell Green Ln	3 - Watford Road	
1 - Southern	From	1 - Watford Road (S)	0	1	2
		2 - Chiswell Green Ln	0	0	0
		3 - Watford Road	4	2	0

### Heavy Vehicle Percentages

		To			
		1 - Watford Road (N)	2 - Tippendell Ln	3 - Watford Road	
2 - Northern	From	1 - Watford Road (N)	0	2	4
		2 - Tippendell Ln	3	0	3
		3 - Watford Road	2	1	0

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Southern	1 - Watford Road (S)	1.00	85.96	20.1	F	708	1063
	2 - Chiswell Green Ln	0.83	52.15	4.1	F	255	383
	3 - Watford Road	0.57	7.37	1.3	A	567	850
2 - Northern	1 - Watford Road (N)	1.00	94.72	19.3	F	618	926
	2 - Tippendell Ln	1.15	274.71	40.2	F	430	646
	3 - Watford Road	0.66	8.52	1.9	A	697	1045

### Main Results for each time segment

#### 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level servi
1 - Southern	1 - Watford Road (S)	581	145	127		884	0.657	574	404	0.0	1.8	11.342	B
	2 - Chiswell Green Ln	209	52	436		487	0.430	206	265	0.0	0.7	12.707	B
	3 - Watford Road	458	115	76	0.00	1155	0.397	456	566	0.0	0.7	5.133	A
2 - Northern	1 - Watford Road (N)	507	127	110		770	0.658	499	676	0.0	1.8	12.991	B
	2 - Tippendell Ln	353	88	337		541	0.653	346	272	0.0	1.8	17.896	C
	3 - Watford Road	565	141	224		1298	0.436	562	459	0.0	0.8	4.874	A

#### 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level servi
1 - Southern	1 - Watford Road (S)	694	174	153		868	0.800	687	485	1.8	3.6	19.146	C
	2 - Chiswell Green Ln	250	62	521		434	0.576	248	318	0.7	1.3	19.104	C
	3 - Watford Road	548	137	91	0.00	1144	0.479	547	678	0.7	0.9	6.024	A
2 - Northern	1 - Watford Road (N)	605	151	132		756	0.800	598	810	1.8	3.6	21.807	C
	2 - Tippendell Ln	422	105	403		499	0.845	411	326	1.8	4.3	37.307	E
	3 - Watford Road	677	169	266		1260	0.538	676	549	0.8	1.1	6.148	A

#### 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level serv
1 - Southern	1 - Watford Road (S)	850	212	175		853	0.996	808	562	3.6	14.2	53.331	F
	2 - Chiswell Green Ln	306	77	613		377	0.812	297	370	1.3	3.5	41.241	E
	3 - Watford Road	629	157	109	0.00	1131	0.556	628	801	0.9	1.2	7.140	A
2 - Northern	1 - Watford Road (N)	741	185	155		742	0.999	701	929	3.6	13.6	58.775	F
	2 - Tippendell Ln	516	129	473		455	1.134	444	383	4.3	22.5	130.157	F
	3 - Watford Road	800	200	287		1241	0.645	798	630	1.1	1.8	8.075	A

#### 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level serv
1 - Southern	1 - Watford Road (S)	850	212	179		851	0.999	827	573	14.2	20.1	85.964	F
	2 - Chiswell Green Ln	306	77	627		368	0.831	304	378	3.5	4.1	52.146	F
	3 - Watford Road	641	160	111	0.00	1129	0.568	641	820	1.2	1.3	7.372	A
2 - Northern	1 - Watford Road (N)	741	185	159		740	1.002	718	947	13.6	19.3	94.723	F
	2 - Tippendell Ln	516	129	484		448	1.152	446	393	22.5	40.2	267.766	F
	3 - Watford Road	818	205	288		1240	0.660	818	642	1.8	1.9	8.519	A

#### 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level serv
1 - Southern	1 - Watford Road (S)	694	174	170		857	0.810	755	534	20.1	4.9	45.025	E
	2 - Chiswell Green Ln	250	62	573		402	0.622	259	352	4.1	1.7	26.662	D
	3 - Watford Road	609	152	95	0.00	1141	0.534	609	737	1.3	1.2	6.782	A
2 - Northern	1 - Watford Road (N)	605	151	144		749	0.808	662	891	19.3	4.9	52.360	F
	2 - Tippendell Ln	422	105	447		472	0.894	460	359	40.2	30.5	274.712	F
	3 - Watford Road	736	184	297		1231	0.598	738	610	1.9	1.5	7.318	A

08:45 - 09:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsigna level servi
1 - Southern	1 - Watford Road (S)	581	145	144		874	0.665	593	449	4.9	2.1	13.290	B
	2 - Chiswell Green Ln	209	52	450		478	0.438	213	286	1.7	0.8	13.774	B
	3 - Watford Road	513	128	78	0.00	1153	0.445	515	585	1.2	0.8	5.655	A
2 - Northern	1 - Watford Road (N)	507	127	115		766	0.661	518	772	4.9	2.0	15.138	C
	2 - Tippendell Ln	353	88	350		533	0.663	466	284	30.5	2.3	93.608	F
	3 - Watford Road	584	146	301		1228	0.476	586	515	1.5	0.9	5.631	A



# Existing - 2026 Base + Dev, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Southern	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 88% of the total flow for the roundabout for one or more time segments]
Last Run	Last Run	1 - Southern - 2 - Chiswell Green Ln - Capacity	Pedestrian Crossing causes blocking on previous arm due to traffic queuing to leave the junction in 4 timesegment(s).
Warning	Linked Roundabout	1 - Southern - 3 - Watford Road	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked roundabouts	1 - Southern	U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results.
Warning	Linked Roundabout	2 - Northern - 3 - Watford Road	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked roundabouts	2 - Northern	U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern	Mini-roundabout		1, 2, 3	159.76	F
2	Northern	Mini-roundabout		1, 2, 3	171.10	F

### Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		-26	2 - Northern - 2 - Tippendell Ln

## 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)	Run automatically
D6	2026 Base + Dev	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - Southern	3 - Watford Road	2	3	Simple (vertical queueing)	Normal	0	100.00	
2 - Northern	3 - Watford Road	1	3	Simple (vertical queueing)	Normal	0	100.00	

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Southern	1 - Watford Road (S)		ONE HOUR	✓	892	100.000
	2 - Chiswell Green Ln		ONE HOUR	✓	213	100.000
	3 - Watford Road	✓				
2 - Northern	1 - Watford Road (N)		ONE HOUR	✓	759	100.000
	2 - Tippendell Ln		ONE HOUR	✓	463	100.000
	3 - Watford Road	✓				

### Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
1 - Southern	1 - Watford Road (S)		
	2 - Chiswell Green Ln		
	3 - Watford Road	[ONEHOUR]	60.00
2 - Northern	1 - Watford Road (N)		
	2 - Tippendell Ln		
	3 - Watford Road		

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1 - Watford Road (S)	2 - Chiswell Green Ln	3 - Watford Road	
1 - Southern	From	1 - Watford Road (S)	1	109	782
		2 - Chiswell Green Ln	71	0	142
		3 - Watford Road	546	175	1

### Demand (Veh/hr)

		To			
		1 - Watford Road (N)	2 - Tippendell Ln	3 - Watford Road	
2 - Northern	From	1 - Watford Road (N)	0	193	566
		2 - Tippendell Ln	304	5	154
		3 - Watford Road	818	99	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Watford Road (S)	2 - Chiswell Green Ln	3 - Watford Road	
1 - Southern	From	1 - Watford Road (S)	0	0	2
		2 - Chiswell Green Ln	0	0	0
		3 - Watford Road	1	0	0

### Heavy Vehicle Percentages

		To			
		1 - Watford Road (N)	2 - Tippendell Ln	3 - Watford Road	
2 - Northern	From	1 - Watford Road (N)	0	1	1
		2 - Tippendell Ln	1	0	0
		3 - Watford Road	2	0	0

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Southern	1 - Watford Road (S)	1.15	293.85	74.2	F	819	1228
	2 - Chiswell Green Ln	0.91	102.07	6.1	F	195	293
	3 - Watford Road	0.61	7.75	1.5	A	653	980
2 - Northern	1 - Watford Road (N)	1.06	148.70	36.4	F	696	1045
	2 - Tippendell Ln	1.27	529.43	62.6	F	425	637
	3 - Watford Road	0.71	10.01	2.4	B	839	1258

### Main Results for each time segment

#### 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsigna level servi
1 - Southern	1 - Watford Road (S)	672	168	129		883	0.760	660	454	0.0	3.0	15.395	C
	2 - Chiswell Green Ln	160	40	580		371	0.432	157	209	0.0	0.7	16.644	C
	3 - Watford Road	533	133	53	45.17	1199	0.445	530	684	0.0	0.8	5.358	A
2 - Northern	1 - Watford Road (N)	571	143	78		803	0.712	562	830	0.0	2.3	14.449	B
	2 - Tippendell Ln	349	87	420		504	0.691	340	220	0.0	2.1	21.021	C
	3 - Watford Road	685	171	227		1298	0.527	680	533	0.0	1.1	5.785	A

#### 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsigna level servi
1 - Southern	1 - Watford Road (S)	802	200	154		867	0.925	781	542	3.0	8.1	35.330	E
	2 - Chiswell Green Ln	191	48	687		300	0.638	188	249	0.7	1.6	31.146	D
	3 - Watford Road	634	159	64	53.94	1191	0.532	633	811	0.8	1.1	6.432	A
2 - Northern	1 - Watford Road (N)	682	171	92		794	0.860	671	983	2.3	5.1	27.135	D
	2 - Tippendell Ln	416	104	501		453	0.918	399	262	2.1	6.4	53.971	F
	3 - Watford Road	812	203	266		1264	0.642	809	634	1.1	1.8	7.875	A

#### 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsigna level servi
1 - Southern	1 - Watford Road (S)	982	246	172		856	1.147	847	608	8.1	41.8	120.200	F
	2 - Chiswell Green Ln	235	59	745		261	0.897	222	274	1.6	4.8	73.657	F
	3 - Watford Road	707	177	75	66.06	1183	0.598	705	891	1.1	1.5	7.523	A
2 - Northern	1 - Watford Road (N)	836	209	101		788	1.060	766	1058	5.1	22.5	80.331	F
	2 - Tippendell Ln	510	127	572		409	1.247	404	295	6.4	32.9	197.337	F
	3 - Watford Road	892	223	270		1261	0.708	890	707	1.8	2.3	9.634	A

**17:45 - 18:00**

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level serv
1 - Southern	1 - Watford Road (S)	982	246	175		854	1.149	853	619	41.8	74.2	255.135	F
	2 - Chiswell Green Ln	235	59	750		258	0.909	229	278	4.8	6.1	102.072	F
	3 - Watford Road	717	179	77	66.06	1181	0.607	716	902	1.5	1.5	7.747	A
2 - Northern	1 - Watford Road (N)	836	209	103		788	1.061	780	1067	22.5	36.4	148.698	F
	2 - Tippendell Ln	510	127	583		402	1.267	401	300	32.9	60.0	431.157	F
	3 - Watford Road	902	226	268		1262	0.715	902	716	2.3	2.4	9.963	A

**18:00 - 18:15**

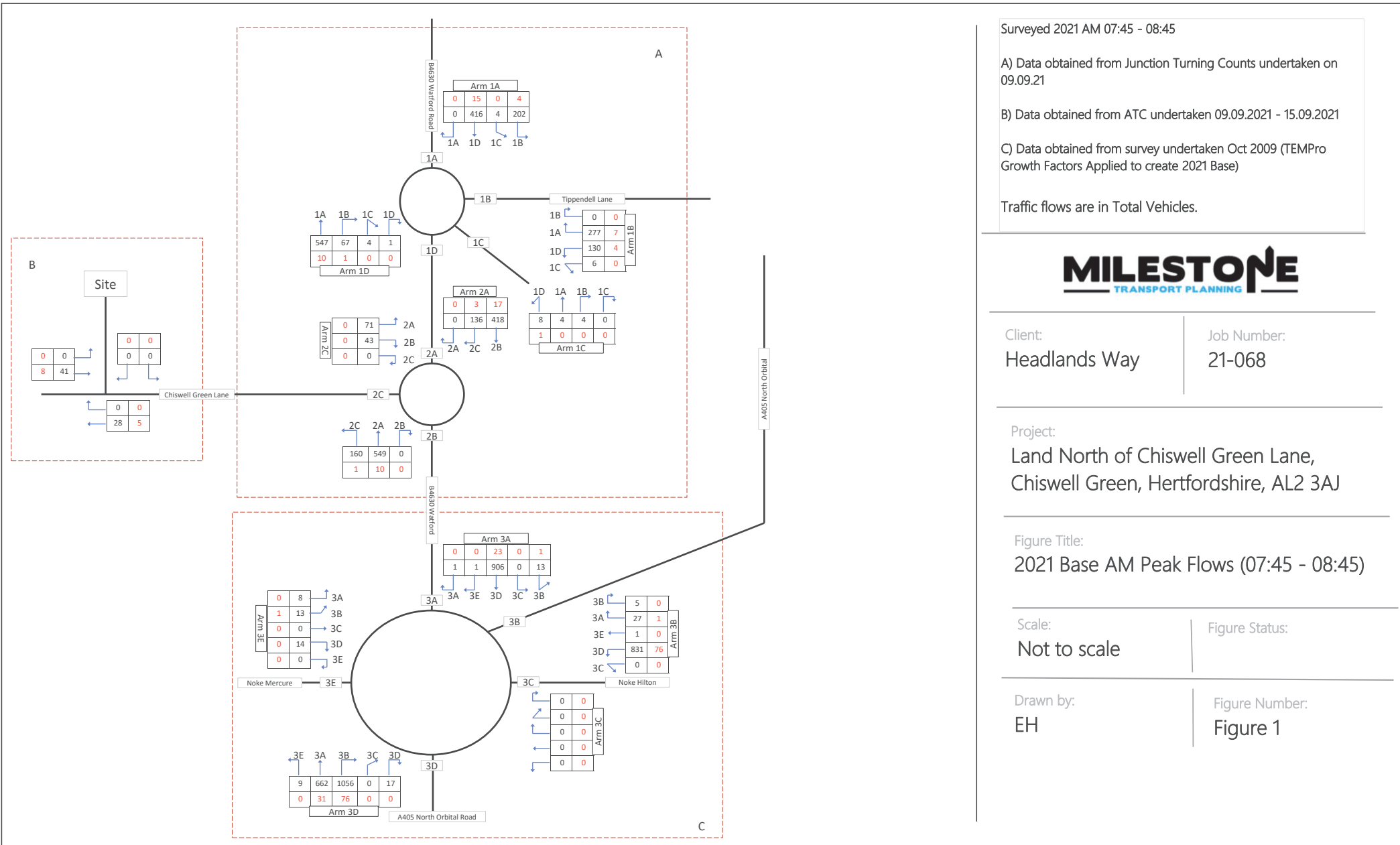
Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level serv
1 - Southern	1 - Watford Road (S)	802	200	173		856	0.937	844	605	74.2	63.6	293.846	F
	2 - Chiswell Green Ln	191	48	742		265	0.723	204	275	6.1	3.0	65.693	F
	3 - Watford Road	709	177	69	53.94	1187	0.597	709	877	1.5	1.5	7.535	A
2 - Northern	1 - Watford Road (N)	682	171	100		789	0.865	768	1049	36.4	14.9	125.802	F
	2 - Tippendell Ln	416	104	574		408	1.020	406	294	60.0	62.6	529.428	F
	3 - Watford Road	878	219	271		1260	0.697	878	709	2.4	2.4	9.455	A

**18:15 - 18:30**

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsign level serv
1 - Southern	1 - Watford Road (S)	672	168	151		869	0.773	856	526	63.6	17.6	175.840	F
	2 - Chiswell Green Ln	160	40	752		261	0.615	166	255	3.0	1.7	39.545	E
	3 - Watford Road	619	155	56	45.17	1197	0.517	621	861	1.5	1.1	6.268	A
2 - Northern	1 - Watford Road (N)	571	143	99		790	0.723	620	1077	14.9	2.8	26.259	D
	2 - Tippendell Ln	349	87	463		477	0.730	470	256	62.6	32.3	367.549	F
	3 - Watford Road	863	216	313		1222	0.706	863	619	2.4	2.4	10.011	B



## Appendix 14



Surveyed 2021 AM 07:45 - 08:45

A) Data obtained from Junction Turning Counts undertaken on 09.09.21

B) Data obtained from ATC undertaken 09.09.2021 - 15.09.2021

C) Data obtained from survey undertaken Oct 2009 (TEMPro Growth Factors Applied to create 2021 Base)

Traffic flows are in Total Vehicles.



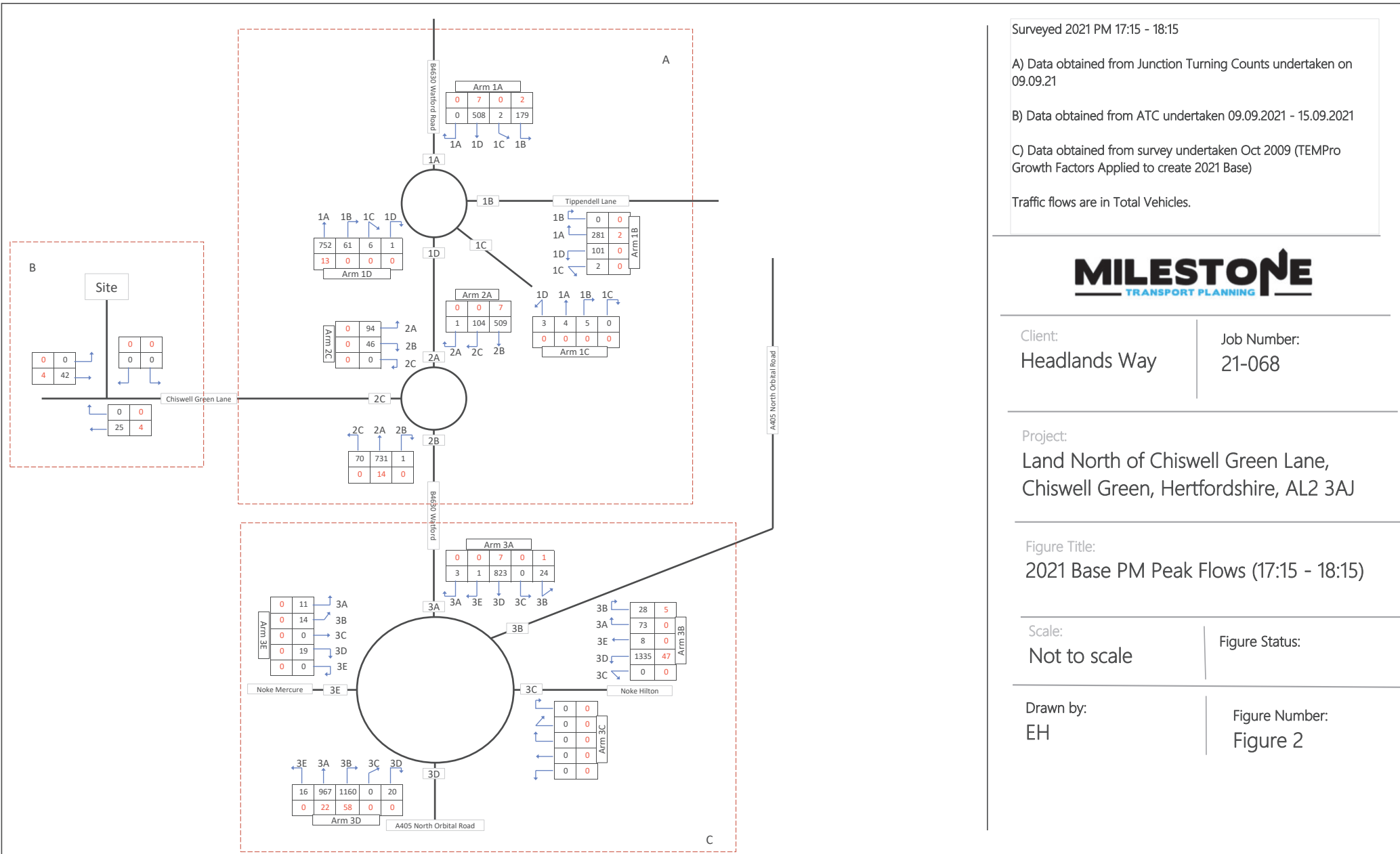
Client: Headlands Way  
Job Number: 21-068

Project: Land North of Chiswell Green Lane, Chiswell Green, Hertfordshire, AL2 3AJ

Figure Title: 2021 Base AM Peak Flows (07:45 - 08:45)

Scale: Not to scale  
Figure Status:

Drawn by: EH  
Figure Number: Figure 1



Surveyed 2021 PM 17:15 - 18:15

A) Data obtained from Junction Turning Counts undertaken on 09.09.21

B) Data obtained from ATC undertaken 09.09.2021 - 15.09.2021

C) Data obtained from survey undertaken Oct 2009 (TEMPro Growth Factors Applied to create 2021 Base)

Traffic flows are in Total Vehicles.



Client:  
Headlands Way

Job Number:  
21-068

Project:  
Land North of Chiswell Green Lane,  
Chiswell Green, Hertfordshire, AL2 3AJ

Figure Title:  
2021 Base PM Peak Flows (17:15 - 18:15)

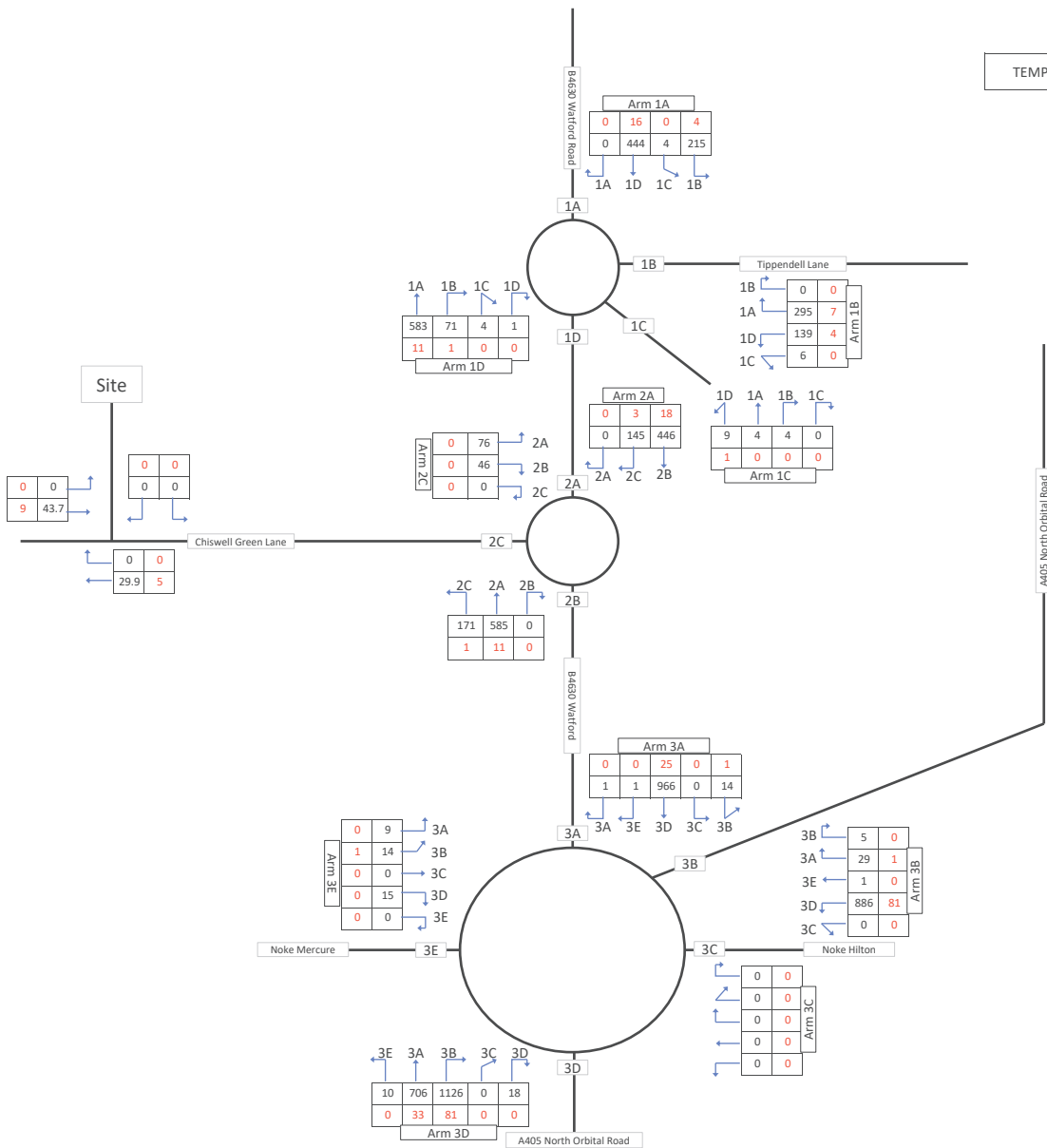
Scale:  
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Figure Status:

Drawn by:  
EH

Figure Number:  
Figure 2

TEMPro Growth Factor 1.0663



2026 Base AM 07:45 - 08:45

Traffic flows are in Total Vehicles.



Client:  
Headlands Way

Job Number:  
21-068

Project:  
Land North of Chiswell Green Lane,  
Chiswell Green, Hertfordshire, AL2 3AJ

Figure Title:  
2026 Base AM Peak Flows

Scale:  
Not to scale

Figure Status:

Drawn by:  
EH

Figure Number:  
Figure 3



TEMPro Growth Factor	1.0672
----------------------	--------

2026 Base PM 17:15 - 18:15

Traffic flows are in Total Vehicles.



Client:  
Headlands Way

Job Number:  
21-068

Project:  
Land North of Chiswell Green Lane,  
Chiswell Green, Hertfordshire, AL2 3AJ

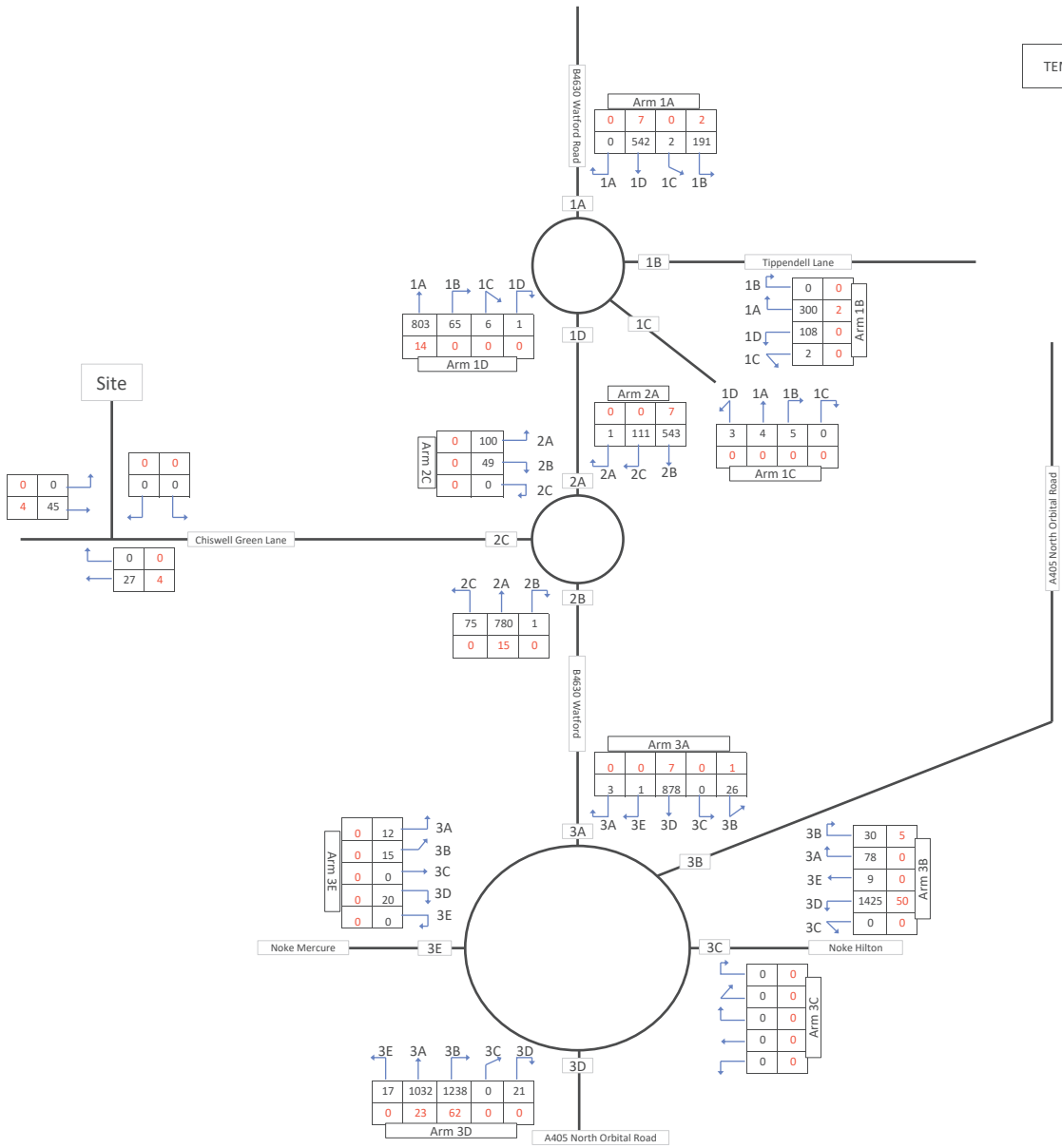
Figure Title:  
2026 Base PM Peak Flows

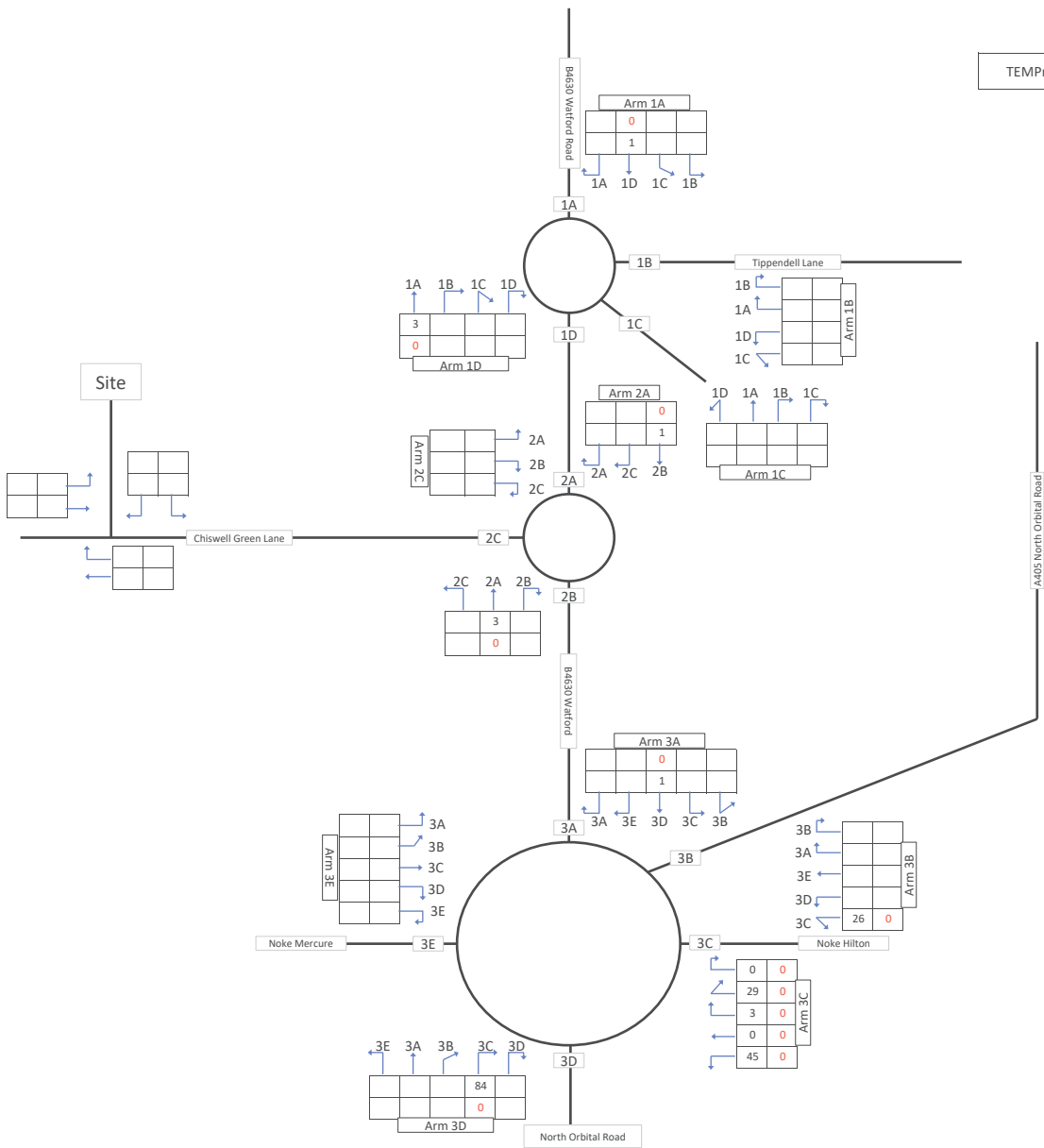
Scale:  
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Figure Status:

Drawn by:  
EH

Figure Number:  
Figure 4





Committed Developments 2026, Noke Hilton Hotel. AM Peak  
 Forecasted 2014 -> 2026



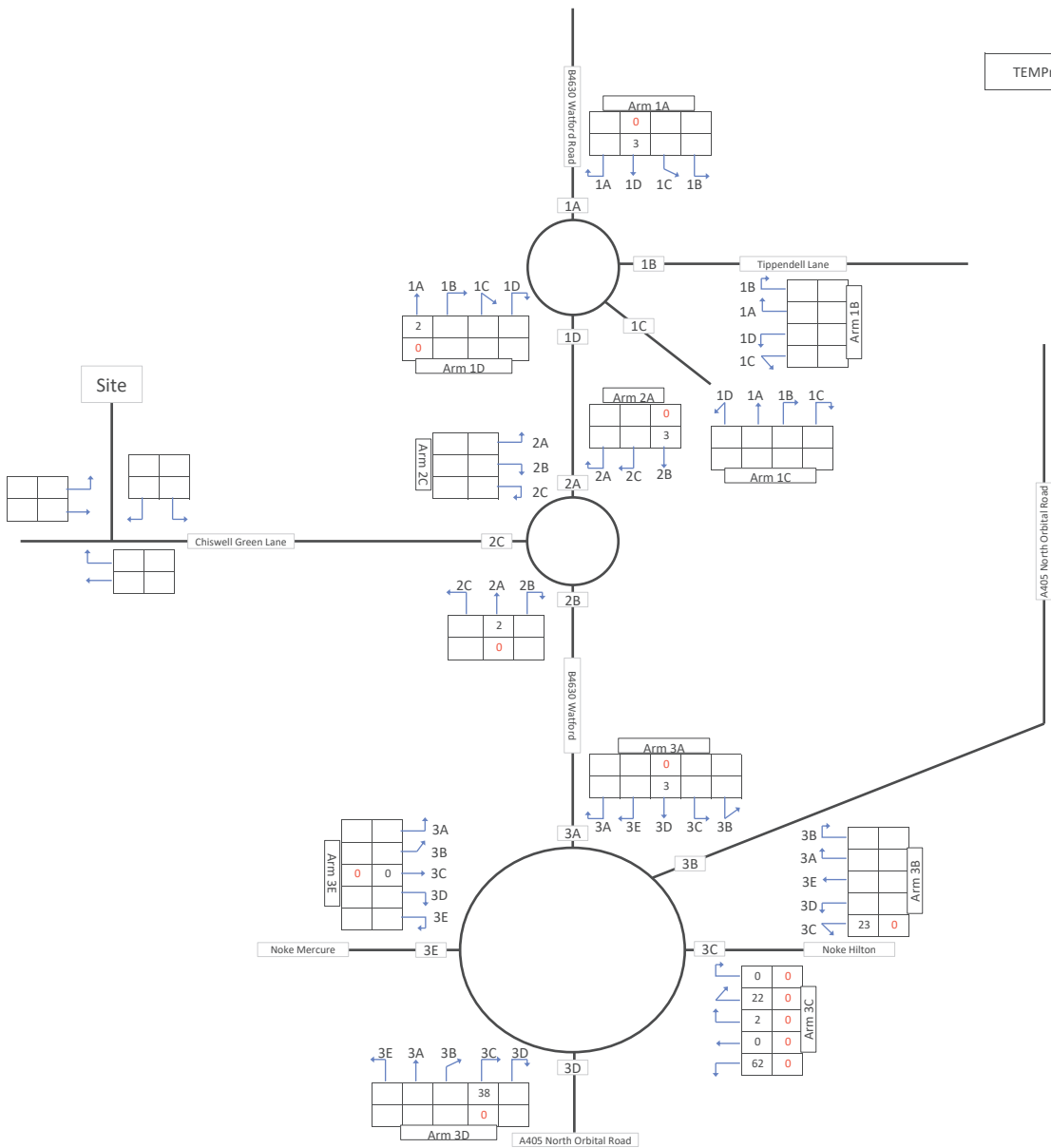
Client: Headlands Way | Job Number: 21-068

Project: Land North of Chiswell Green Lane, Chiswell Green, Hertfordshire, AL2 3AJ

Figure Title: 2026 AM Peak - Committed Development

Scale: Not to scale | Figure Status:

Drawn by: E Hill | Figure Number: Figure 5



Committed Developments 2026 - Noke Hilton Hotel, AM Peak

Forecasted 2014 -> 2026



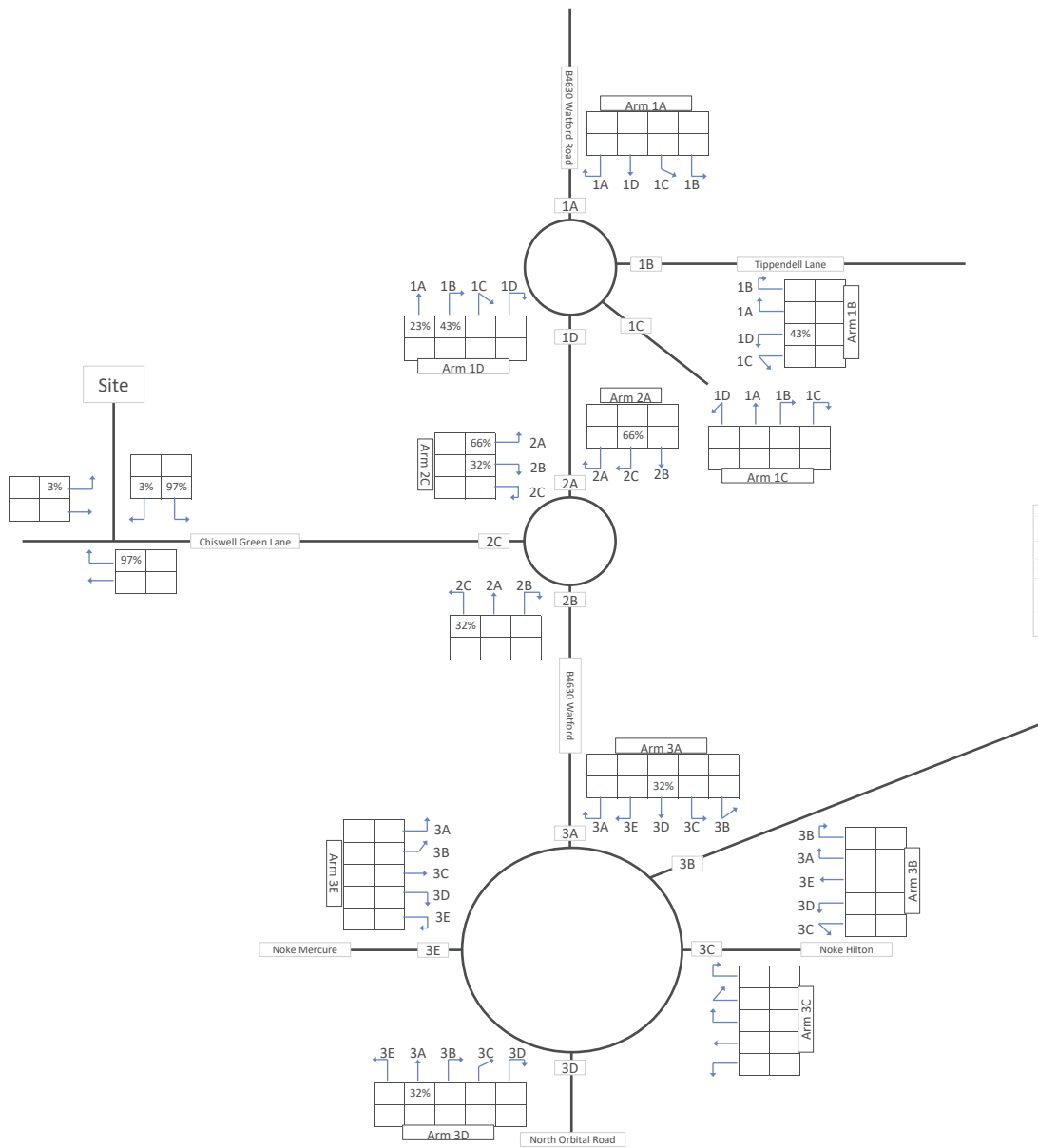
Client: Headlands Way | Job Number: 21-068

Project: Land North of Chiswell Green Lane, Chiswell Green, Hertfordshire, AL2 3AJ

Figure Title: 2026 PM Peak - Committed Developments

Scale: Not to scale | Figure Status:

Drawn by: E Hill | Figure Number: Figure 6



Development flows based on Census Travel to Work from St Albans 020 MSOA.

Values demonstrate factor of movements



Client:  
Headlands Way

Job Number:  
21-068

Project:  
Land North of Chiswell Green Lane,  
Chiswell Green, Hertfordshire, AL2 3AJ

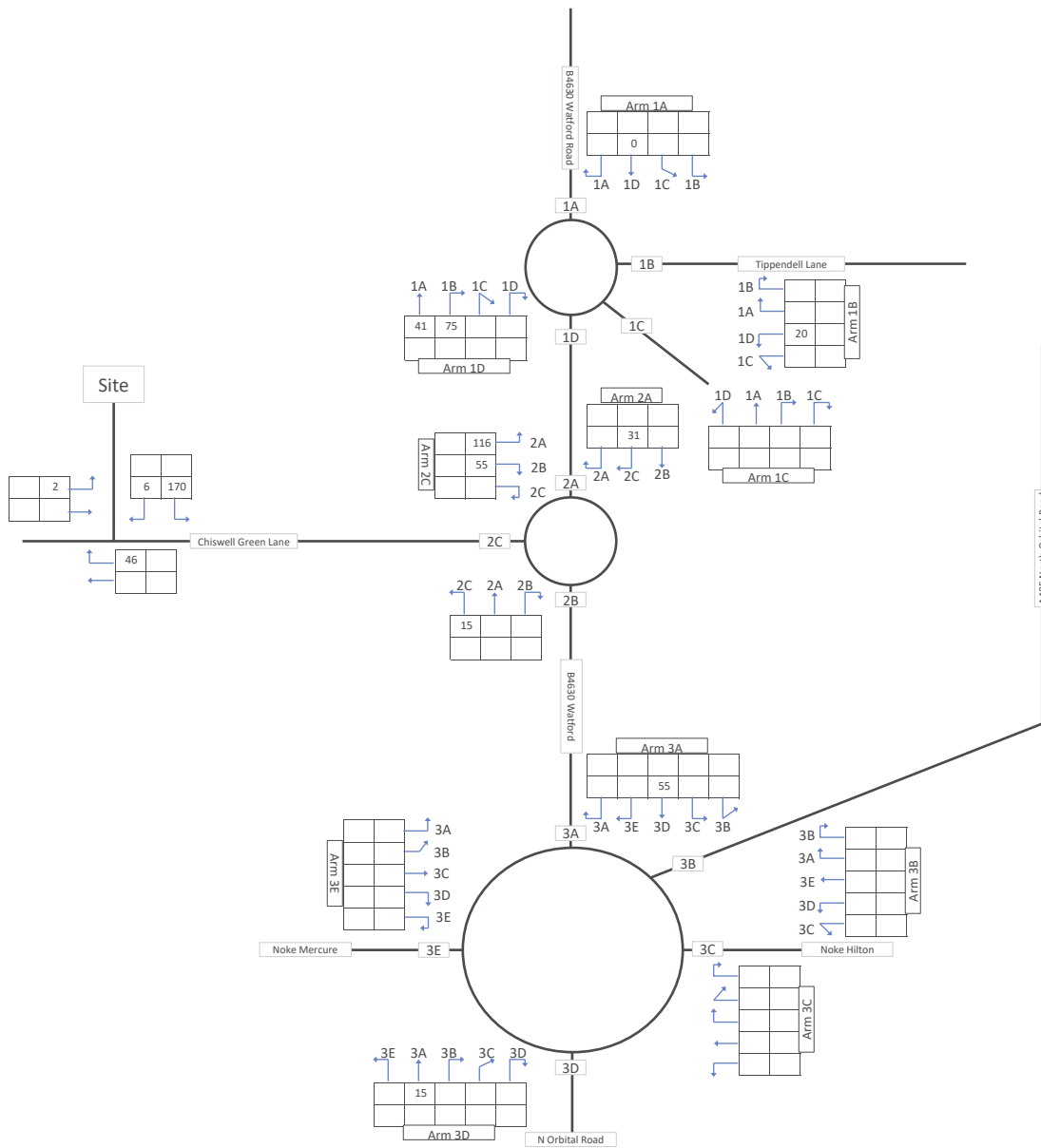
Figure Title:  
Development Flow Distribution

Scale:  
Not to scale

Figure Status:

Drawn by:  
EH

Figure Number:  
Figure 7



Development movements - based on Census Travel to Work from St Albans 020 MSOA and TRICS trip generation.

AM Peak Period 0745 - 0845



Client:  
Headlands Way

Job Number:  
21-068

Project:  
Land North of Chiswell Green Lane,  
Chiswell Green, Hertfordshire, AL2 3AJ

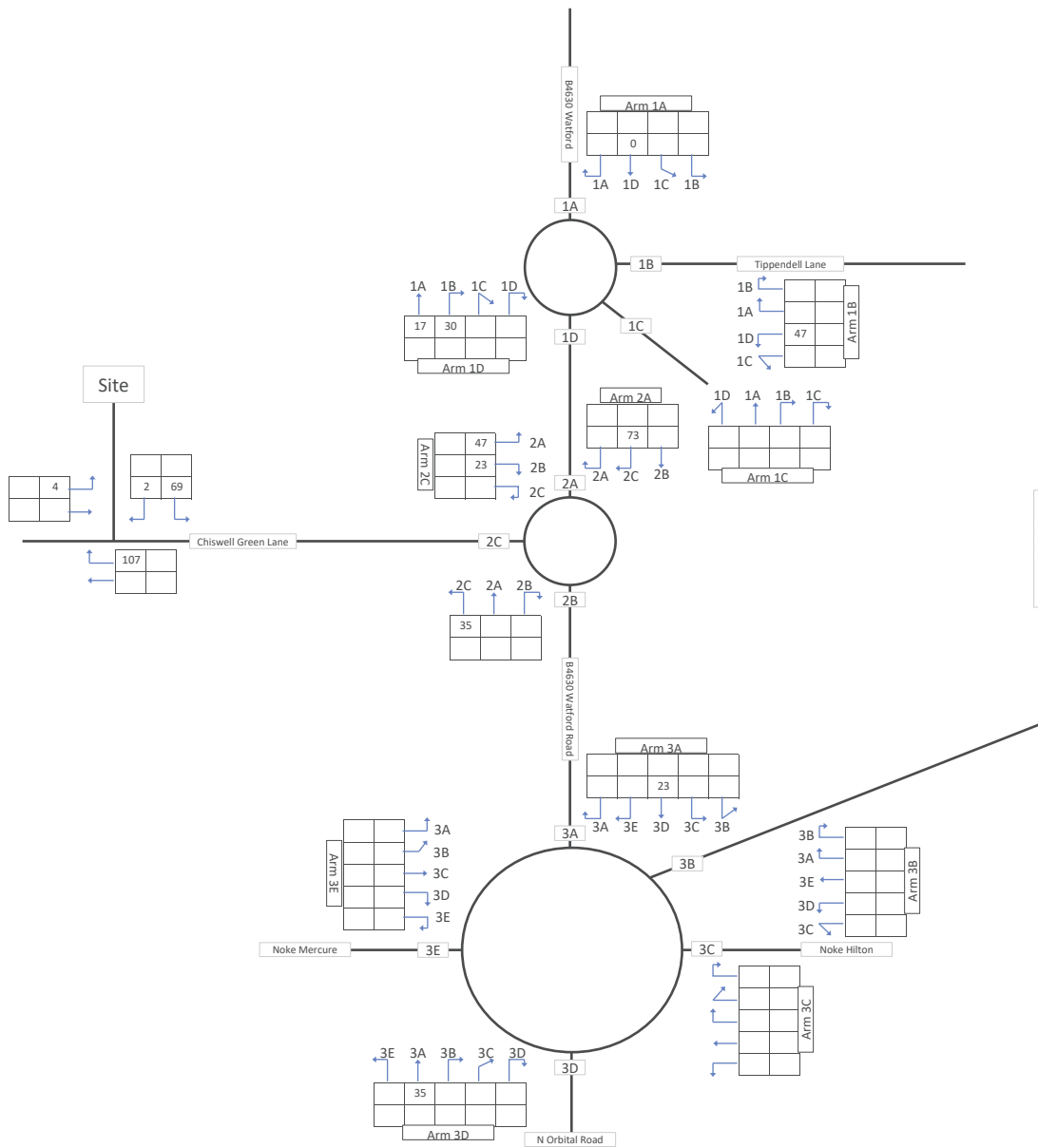
Figure Title:  
Development AM Peak Flows

Scale:  
Not to scale

Figure Status:

Drawn by:  
EH

Figure Number:  
Figure 8



Development flows based on Census Travel to Work from St Albans 020 MSOA.

PM Peak Period 1715 - 1815



Client:  
Headlands Way

Job Number:  
21-068

Project:  
Land North of Chiswell Green Lane,  
Chiswell Green, Hertfordshire, AL2 3AJ

Figure Title:  
Development PM Peak Flows

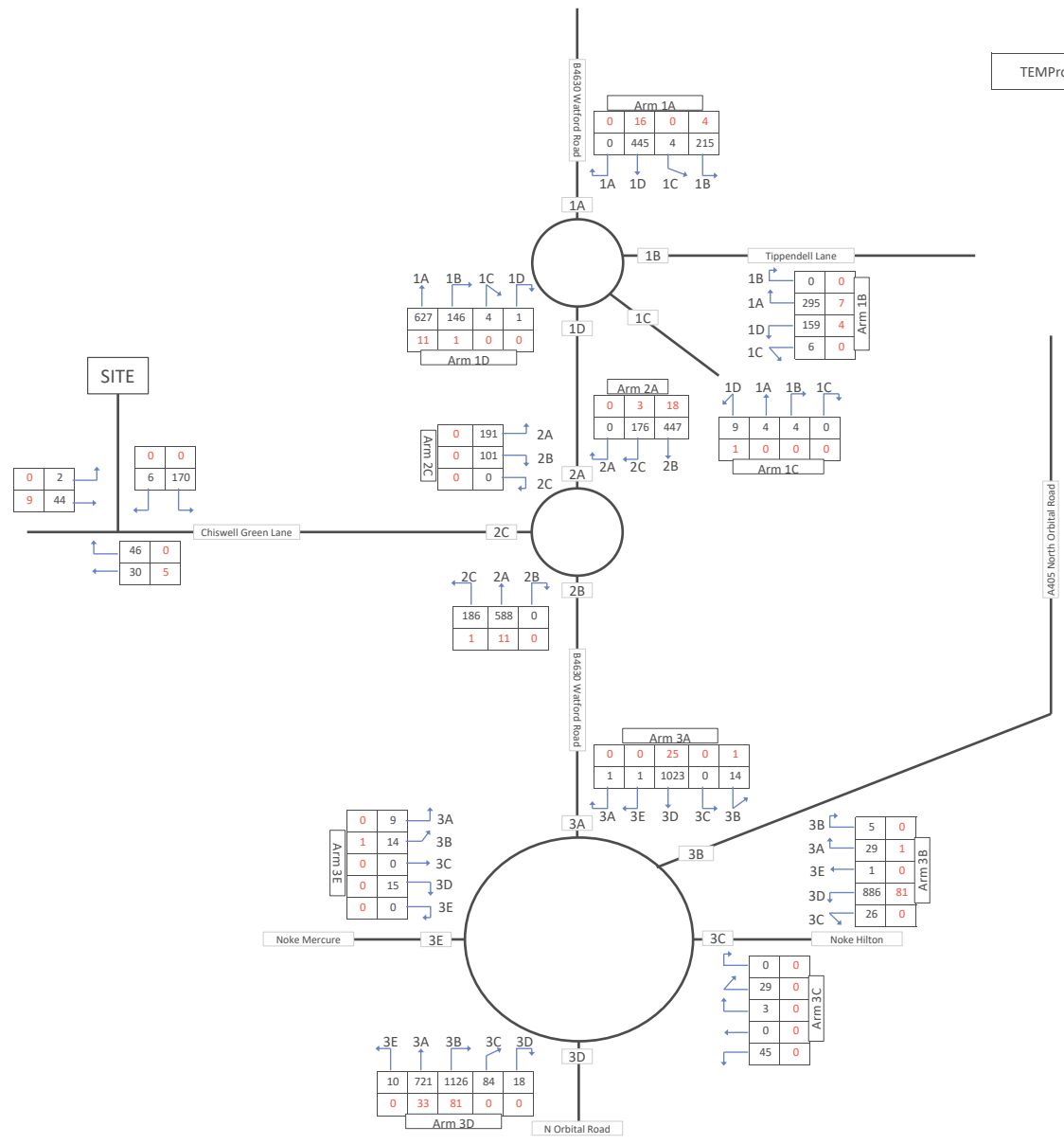
Scale:  
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Figure Status:

Drawn by:  
EH

Figure Number:  
Figure 9

TEMPro Growth Factor 1.0663



Projected 2026 Baseline AM : 0715 - 0815

Traffic flows are in Total Vehicles.



Client: Headlands Way Limited

Job Number: 21-068

Project: Land North of Chiswell Green Lane, Chiswell Green, Hertfordshire, AL2 3AJ

Figure Title: 2026 Base + Committed Dev + Development Flows AM Peak Flows

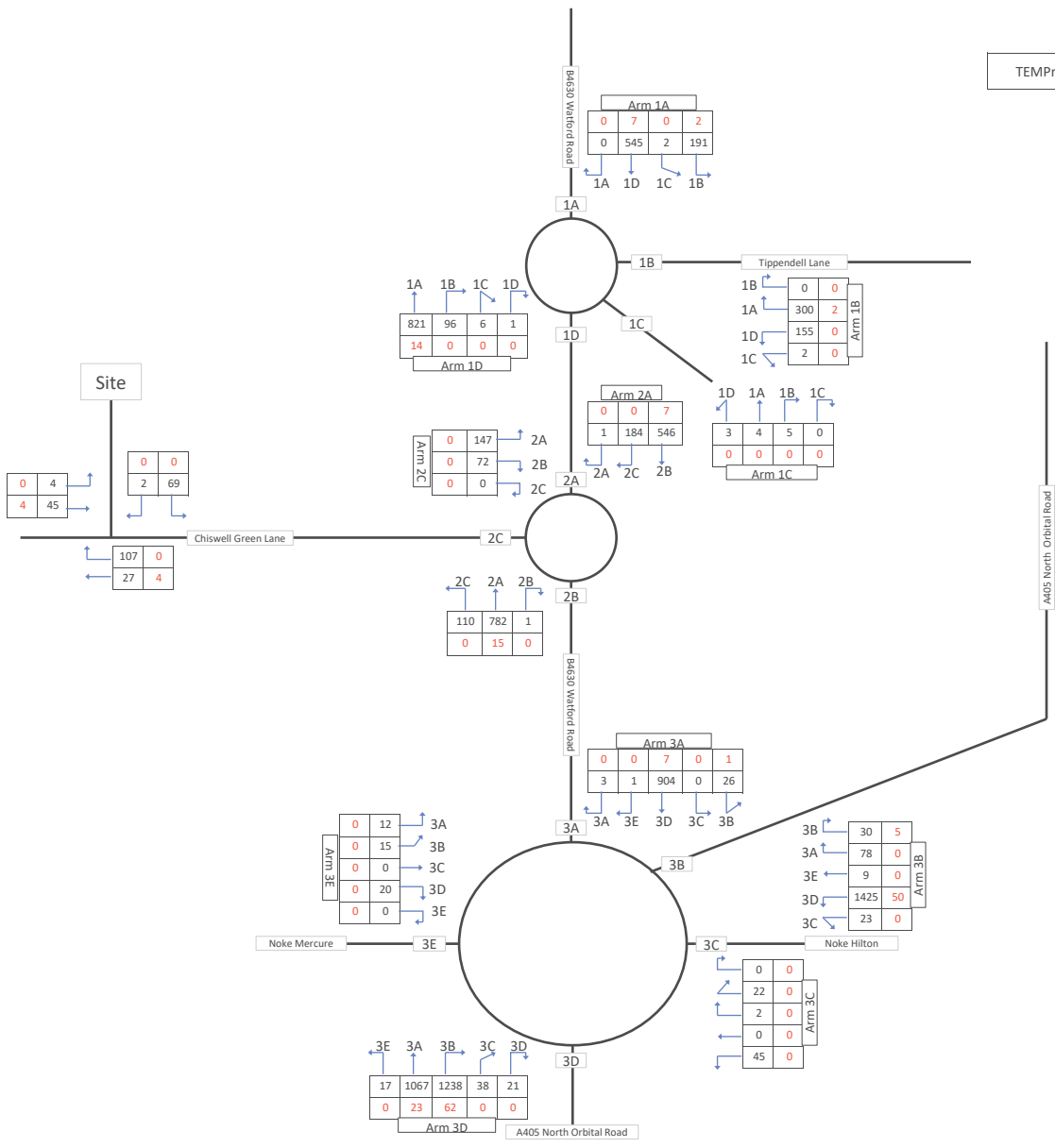
Scale: Not to scale

Figure Status:

Drawn by: EH

Figure Number: Figure 10

TEMPro Growth Factor	1.0663
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Projected 2026 AM : 1745 - 1845

Traffic flows are in Total Vehicles.



Client:  
Headlands Way  
Limited

Job Number:  
21-068

Project:  
Land North of Chiswell Green Lane,  
Chiswell Green, Hertfordshire, AL2 3AJ

Figure Title:  
2026 Base + Committed Dev +  
Development Flows PM Peak Flows

Scale:  
Not to scale

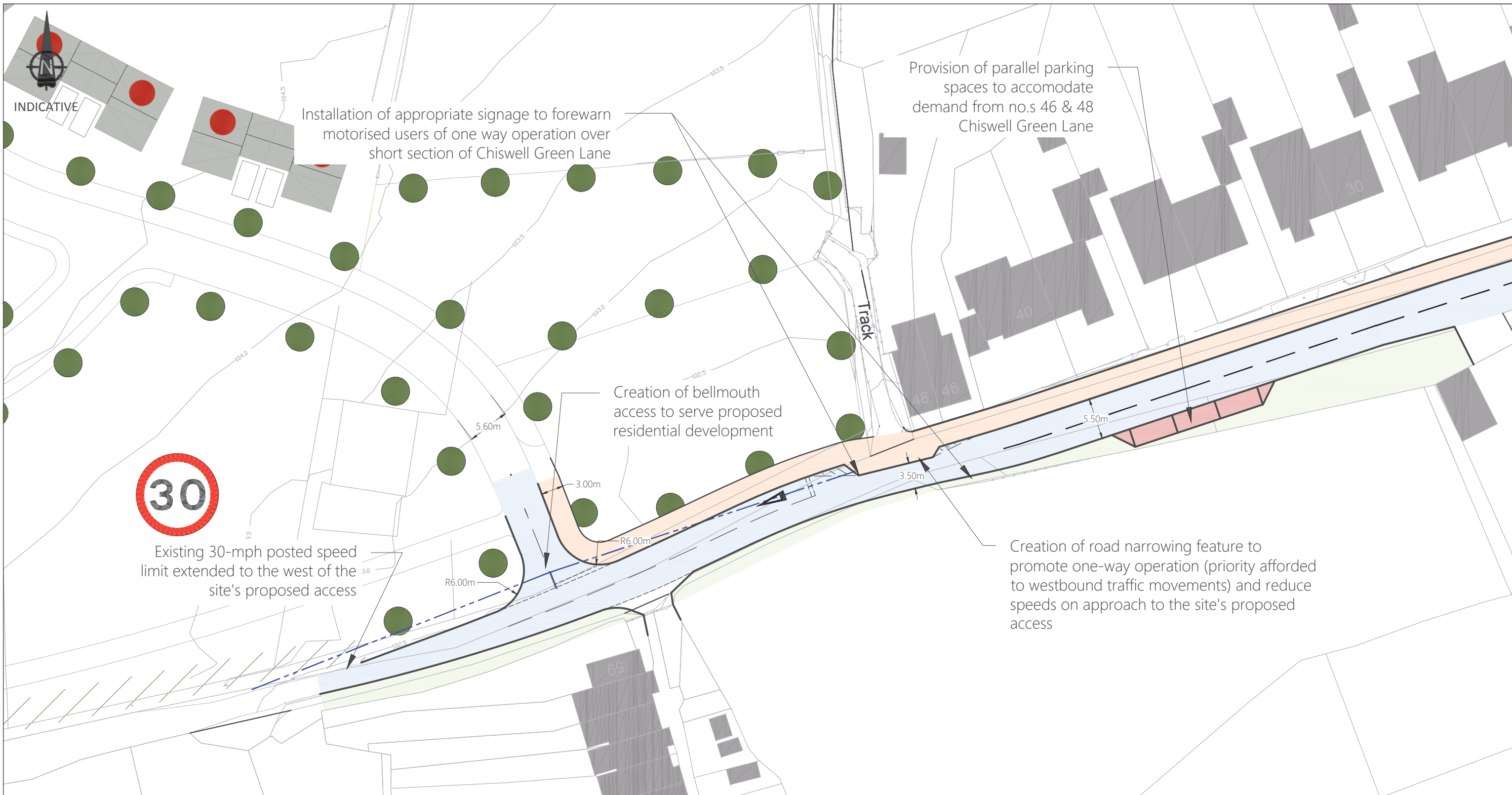
Figure Status:

Drawn by:  
EH







Figure Number:  
Figure 11



Drawings



**Notes**  
Do not scale from this drawing. All dimensions shown are in metres unless noted otherwise.

 Proposed Shared Foot/Cycleway	 Proposed Parking Spaces	 Visibility Splay (2.4-metres x 43-metres)
 Proposed Realigned Carriageway	 Highway Boundary Extent	
 Highway Verge		

Drawing Revisions			
Rev.	Drn.	Date:	Details
-	OH	20/04/2021	First issue
A	EH	27/07/2017	Updated Layout w/ Topo Survey Base
B	EH	11/11/2021	Updated Layout Plan

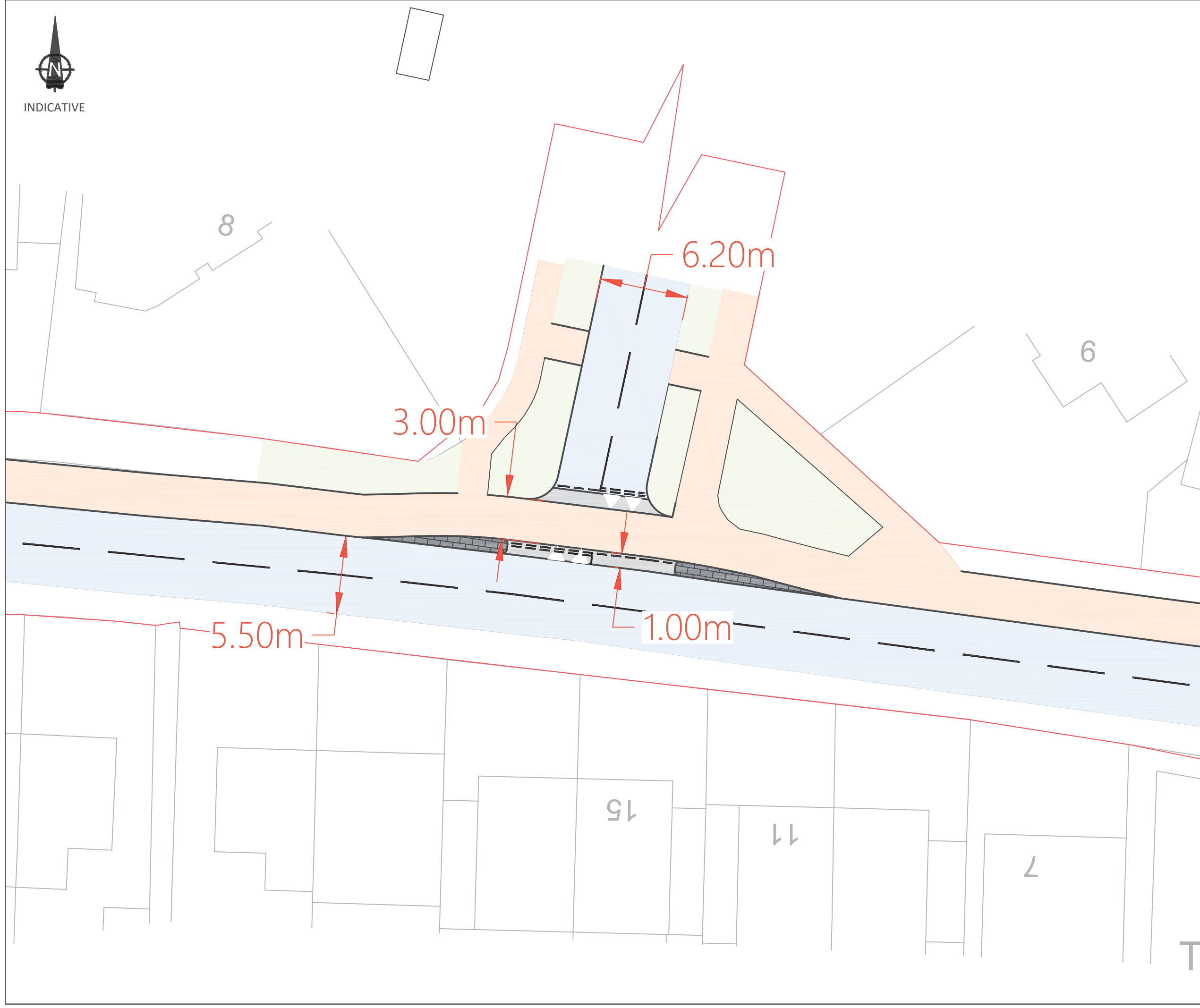
  

Client	
Headlands Way Limited	
Project	
Land North of Chiswell Green Lane, Chiswell Green, Hertfordshire, AL2 3AJ	

Title	
Proposed Access Arrangements	
 Abbey House, 282 Farnborough Rd, Farnborough, Hants GU14 7NA Tel: 01483 397888 Gateshead IBC, Mulgrave Terrace, Gateshead, NE8 1AN Tel: 0191 338 7220	
Drawing Number:	Scale:
21086 001	1:500 @ A3
	Revision: B



INDICATIVE



- Notes  
Do not scale from this drawing. All dimensions shown are in metres unless noted otherwise.
- Proposed Shared Foot/Cycle Path
  - Proposed Realigned Carriageway
  - Highway Verge
  - Highway Boundary Extent

Ordnance Survey Licence number: 100057360

Drawing Revisions

Rev.	Drm:	Date:	Details	Chk:
-	EH	11/11/2021	First issue	TW

Client  
Headlands Way Limited

Project  
Land North of Chiswell Green Lane, Chiswell Green, Hertfordshire, AL2 3AJ

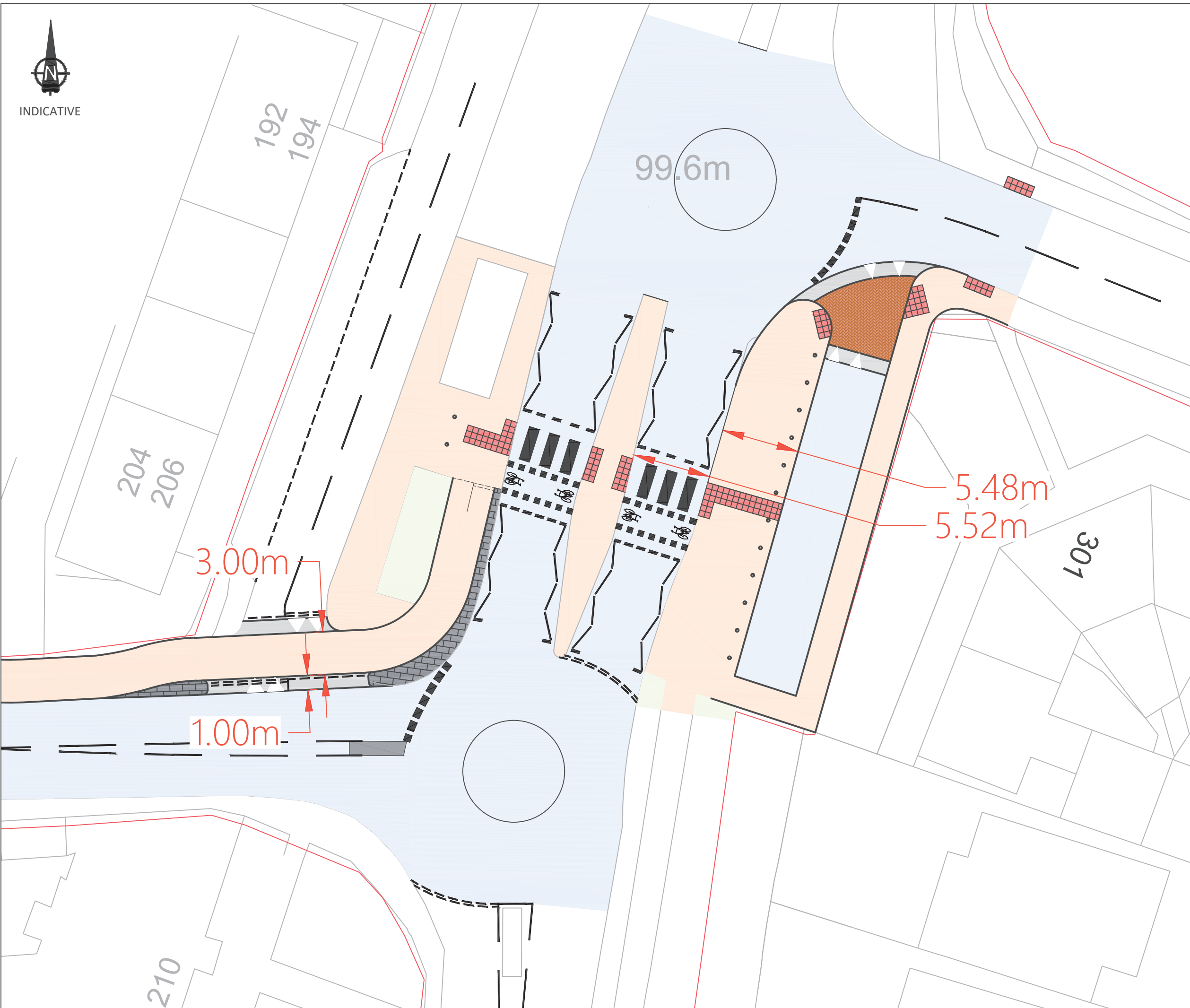
Title  
Proposed Foot/Cycle Enhancements (Sheet 1 - Stanley Ave)

**MILESTONE**  
TRANSPORT PLANNING  
Abbey House, 282 Farnborough Rd, Farnborough, Hants GU14 7NA  
Tel: 01483 397888  
Gateshead IBC, Mulgrave Terrace, Gateshead, NE8 1AN  
Tel: 0191 338 7220  
web: www.milestonetp.co.uk







Drawing Number:	Scale:
21086 002	1:250 @ A3
Revision:	-



INDICATIVE



Notes  
Do not scale from this drawing. All dimensions shown are in metres unless noted otherwise.

-  Proposed Shared Foot/Cycle Path
-  Proposed Realigned Carriageway
-  Proposed Highway Verge
-  Highway Boundary Extent
-  Shared Space Raised Table
-  Tactile Paving

Ordnance Survey Licence number: 100057360

Drawing Revisions

Rev:	Drn:	Date:	Details	Chk:
-	EH	10/11/2021	First issue	TW

Client

Headlands Way Limited

Project

Land North of Chiswell Green Lane, Chiswell Green, Hertfordshire, AL2 3AJ

Title

Proposed Highway Amendments (Sheet 2 - Watford Rd Junction)



Abbey House, 282 Farnborough Rd, Farnborough, Hants GU14 7NA  
 Tel: 01483 397888  
 Gateshead IBC, Mulgrave Terrace, Gateshead, NE8 1AN  
 Tel: 0191 338 7220  
 web: www.milestonetp.co.uk

Drawing Number:

21086 002

Scale:

1:250 @ A3

Revision:

-

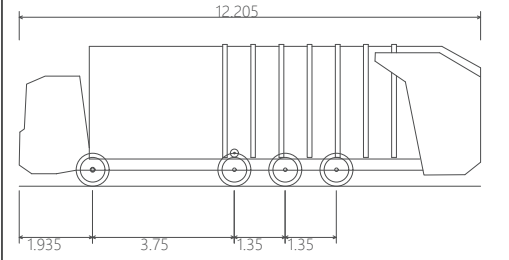




INDICATIVE



Notes  
Do not scale from this drawing. All dimensions shown are in metres unless noted otherwise.



Merc Eonic	
Overall Length	12.205m
Overall Width	2.640m
Overall Body Height	3.750m
Min Body Ground Clearance	0.302m
Max Track Width	2.500m
Lock to lock time	4.00s
Max Wheel Angle	45.70°

Ordnance Survey Licence number: 100057360

Drawing Revisions				
Rev.	Drn.	Date:	Details	Chk.
-	JO	01/07/2021	First issue	TW
A	EH	11/11/2021	Updated Layout Plan	TW

Client  
Headlands Way Limited

Project  
Land North of Chiswell  
Green Lane, Chiswell Green,  
Hertfordshire, AL2 3AJ

Title  
Swept-Path Analysis - Refuse  
Vehicle

**MILESTONE**  
TRANSPORT PLANNING  
Abbey House, 282 Farnborough Rd, Farnborough, Hants GU14 7NA  
Tel: 01483 397888  
Gateshead IBC, Mulgrave Terrace, Gateshead, NE8 1AN  
Tel: 0191 338 7220  
web: www.milestonetp.co.uk

Drawing Number:	Scale:
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Revision:	A

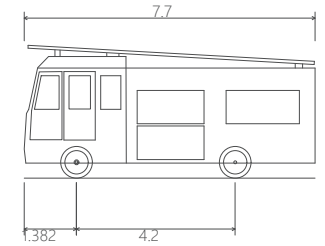




INDICATIVE



Notes  
Do not scale from this drawing. All dimensions shown are in metres unless noted otherwise.



Dennis Sabre Fire Tender (LWB)  
Overall Length 7.700m  
Overall Width 2.430m  
Overall Body Height 3.512m  
Min Body Ground Clearance 0.397m  
Track Width 2.380m  
Lock to lock time 5.00s  
Kerb to Kerb Turning Radius 7.400m

Ordnance Survey Licence number: 100057360

Drawing Revisions

Rev.	Drn.	Date:	Details	Chk.
-	JO	01/07/2021	First issue	TW
A	EH	11/11/2021	First issue	TW

Client  
McPartland Planning Limited

Project  
Land North of Chiswell Green Lane, Chiswell Green, Hertfordshire, AL2 3AJ

Title  
Swept-Path Analysis (Fire Tender)



Abbey House, 282 Farnborough Rd, Farnborough, Hants GU14 7NA  
Tel: 01483 397888  
Gateshead IBC, Mulgrave Terrace, Gateshead, NE8 1AN  
Tel: 0191 338 7220  
web: www.milestonetp.co.uk

Drawing Number: 21086/TK02  
Scale: 1:1250 @ A3  
Revision: A