TRANSPORT ASSESSMENT
BARUGH GREEN ROAD, BARNSLEY
AVANT HOMES

December 2024

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Notice

Contents

1. INTRODUCTION

INTRODUCTION

1.1 TPS Transport Consultants Ltd (TPS) has been appointed by Avant Homes to prepare a Transport Assessment to support a planning application for residential development on land to the south of the A635 Barugh Green Road, Barugh Green, Barnsley.

SITE LOCATION AND DEVELOPMENT PROPOSALS

1.2 The site is located approximately 700m east of Barugh Green village centre and 3.7km northwest of Barnsley town centre. The site is currently agricultural land and is bound by the A635 Barugh Green Road to the north, residential dwellings to the east and agricultural land to the south and west. The site location is shown in **Figure 1.1**, below, whilst the proposed site layout is provided at **Appendix A**.

Figure 1.1: Site Location

(Source: Google Earth)

1.3 This application is for 155 dwellings, on land that is allocated for mixed use within the Barnsley Local Plan (adopted 2019), forming part of a large allocation, Site MU1 – Land south of

Barugh Green Road, which has an indicative capacity of 1,700 dwellings and 43 ha of employment land.

1.4 Access to the site will be taken from a new priority T-junction with the A635 Barugh Green Road, on the northern boundary, which will be bound by 2m wide footways to both sides. To the east of the site access there will be a 3m wide shared footway/cycle path, running north-south through the site. Additional 3m wide footway/cycle paths run east-west to the north and south of the site, providing future cycle connections to the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan.

PLANNING HISTORY

1.5 It is understood that an application was previously submitted (and withdrawn) for a residential development of 140 dwellings with associated landscaping, infrastructure and open space by Countryside Properties in 2020 (ref. 2020/0977) on the site. Prior to the application being withdrawn no comment was provided by the Local Highway Authority.

1.6 The proposed development site is allocated within the Barnsley Local Plan as MU1 "Land south of Barugh Green Road" which has an indicative capacity of 1,700 dwellings and has been outlined for mixed use development. Illustrated in the Barnsley West Masterplan Framework (MU1) prepared by Bond Bryan in 2019, there are four parcels of land (including the proposed site) under private ownership, with the remainder of the allocated site under Strata Sterling Barnsley West Ltd control. It should be noted that the remaining allocation is being developed separately by Strata Sterling Barnsley West Ltd and the scheme being brought forwards by Avant sits separate from the surrounding development of the allocation.

REPORT STRUCTURE

1.7 Following this introductory section:

- **Section 2** describes the transport planning policy context within which the proposals will be assessed;
- **Section 3** details the accessibility of the development site by non-car modes;
- **Section 4** describes the existing highway network in the vicinity of the development and key routes to the site, with reference to historic road safety records;

- **Section 5** summarises the trip generation associated with the development proposals, and the anticipated trip distribution, by way of a Gravity Model;
- **Section 6** considers the impact of the development at the site access junction and at other off-site junctions;
- **Section 7** considers the access, parking and servicing arrangements; and
- **Section 8** offers a summary and conclusion.

2. POLICY CONTEXT

INTRODUCTION

2.1 This section of the Transport Assessment identifies the policy context within which the development proposals have been assessed; it clearly demonstrates how the proposed development would contribute to the overarching principles of national and local transport policy.

NATIONAL POLICY CONTEXT

National Planning Policy Framework (NPPF – DCLG, December 2024)

2.2 The revised National Planning Policy Framework was published in December 2024 and sets out the government's planning policies for England and how these are expected to be applied. It continues to encourage development through the planning system, with a presumption in favour of sustainable development. Paragraph 109 states that "Transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places. This should involve:

a) Making transport considerations an important part of early engagement with local communities;

b) Ensuring patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places;

c) Understanding and addressing the potential impacts of development on transport networks; and

d) Realising opportunities from existing or proposed transport infrastructure, and changing transport technology and usage – for example in relation to the scale, location or density of development that can be accommodated;

e) Identifying and pursuing opportunities to promote walking, cycling and public transport use; and

f) Identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains."

2.3 Paragraph 115 highlights that "in assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a) Sustainable transport modes are priorities taking account of the vision for the site, the type of development and its location;

b) Safe and suitable access to the site can be achieved for all users;

c) The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and

d) Any significant impacts from the development on the transport network (in terms of capacity and congestions), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach."

2.4 Paragraph 116 states that: "*Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios.*"

2.5 Paragraph 117 sets outs that applications for development should:

a) Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) Allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

2.6 Paragraph 118 suggests that *"all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a vision-led transport statement or transport assessment so that the likely impacts of the proposal can be assessed and monitored."*

2.7 This Transport Assessment will demonstrate that the development proposals take full advantage of existing facilities for sustainable travel, locally, and will not result in a significant traffic impact on the local road network, therefore, satisfying the requirements of NPPF.

LOCAL POLICY

2.8 The proposed development site is allocated within the Barnsley Local Plan as MU1 "Land south of Barugh Green Road" which has an indicative capacity of 1,700 dwellings and has been outlined for mixed use development. For completeness, relevant policy set out in the Barnsley Local Plan is highlighted below.

Barnsley Local Plan (2019)

2.9 The Barnsley Local Plan was adopted in January 2019 and sets out the local planning policy for the future development of Barnsley up to 2033. The objectives of the Local Plan are:

- **Policy SD1 Presumption in Favour of Sustainable Development:** *When considering development proposals we will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. We will work proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.*
- **Policy T2 Accessibility Priorities:** *Working with city region partners and other stakeholders transport investment will be set out in Transport Strategy programmes focused on development-transport corridors as shown in the Accessibility Priorities diagram below to:*
    - *Improve sustainable transport and circulation in the Accessibility Improvement Zone (AIZ) area particularly between Principal Towns;*
    - *Implement transport network improvements as supported by evidence from modelling, feasibility studies, consultation, surveys, community engagement etc;*

- *Facilitate sustainable transport links to and from existing and proposed employment, interchange, community and leisure and tourism facilities in the borough, including provision for car parking and enhancing the non car role of the transport corridor shown on the Accessibility Priorities diagram as 'potential enhanced road based public transport corridor';*
- *Promote high quality public transport linking the AIZ to significant places of business, employment and national / international interchange in the Leeds - Sheffield City Region corridor including neighbouring Wakefield, Kirklees, Doncaster, Sheffield and Rotherham; and*
- *Improve direct public transport and freight links to London, Manchester, other Core Cities, national / international interchanges and the Humber ports.*

- **Policy T3 New Development and Sustainable Travel:** *New developments will be expected to:*
  - *Be located and designed to reduce the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists;*
  - *Provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people set out in the relevant Supplementary Planning Document;*
  - *Provide a transport statement or assessment in line with guidance set out in the National Planning Policy Framework and guidance including where appropriate regard for cross boundary local authority impacts; and*
  - *Provide a travel plan statement or a travel plan in accordance with guidance set out in the National Planning Policy Framework including where appropriate regard for cross boundary local authority impacts. Travel plans will be secured through a planning obligation or a planning condition.*
- **Policy T4 New Development and Transport Safety:** *New development will be expected to be designed and built to provide all transport users within and surrounding the development with safe, secure and convenient access and movement.*

  If a development is not suitably served by the existing highway, or would create or add to problems of safety or the efficiency of the highway or any adjoining rail

infrastructure for users, we will expect developers to take mitigating action or to make a financial contribution to make sure the necessary improvements go ahead. Any contributions will be secured through a planning obligation or planning condition.

- **Policy T5 Reducing the Impact of Road Travel:** *We will reduce the impact of road travel by:*
    - *Developing and implementing robust, evidence based air quality action plans to improve air quality; and*
    - *Working with our sub regional partners, fleet and freight operators to improve the efficiency of vehicles and goods delivery, and reduce exhaust emissions; and Implementing measures to ensure the current road system is used efficiently.*

2.10 Specifically in relation to the site allocation, the Local Plan sets out the following:

Site MU1 Land South of Barugh Green Road: *The site is proposed for mixed use predominantly for housing and employment. The indicative number of dwellings proposed on this site is 1,700. These are included in the housing numbers for Urban Barnsley in the housing chapter.*

43 ha of employment land is proposed on the site and is included in the employment land figures in the Urban Barnsley section of the Economy chapter.

The development will be subject to the production and approval of a Masterplan Framework covering the entire site which seeks to ensure that the employment land is developed within the plan period, that community facilities come forward before completion of the housing and that development is brought forward in a comprehensive manner.

Relevant to this document, the development will be expected to:

- Provide a primary school on the site;
- Provide on and off-site highway infrastructure works, including a link road (Claycliffe Link) and improvements at Junction 37 as necessary;
- Provide small scale convenience retail and community facilities in compliance with Local Plan policy TC5 Small Local Shops;
- Provide accessible public open space; and

- Protect the routes of the Public Rights of Way that cross the site, and make provision for these as part of any proposal.

2.11 The proposed development takes account of the overarching local policy context by providing a development that is well located to encourage trips by alternative modes of travel to the private car. The development is well located to take advantage of the facilities which have are committed to be developed as part of the wider site allocation, such as a primary school and local facilities.

SUMMARY

2.12 This Transport Assessment will demonstrate that the development proposals take full advantage of existing facilities for sustainable travel, locally, and will not result in a significant traffic impact on the local road network, therefore, satisfying the requirements of NPPF and local planning policy.

3. ACCESSIBILITY

INTRODUCTION

3.1 This section of the Transport Assessment describes the existing infrastructure that will facilitate and encourage trips to the site by foot, bicycle or public transport, rather than by car. It also considers any specific barriers to sustainable travel and how these are to be addressed, where appropriate.

ACTIVE TRAVEL OPTIONS

Pedestrian Access

3.2 The Institution for Highways and Transportation (IHT) offers guidance on walking distance by journey purpose, this is summarised in **Table 3.1** below.

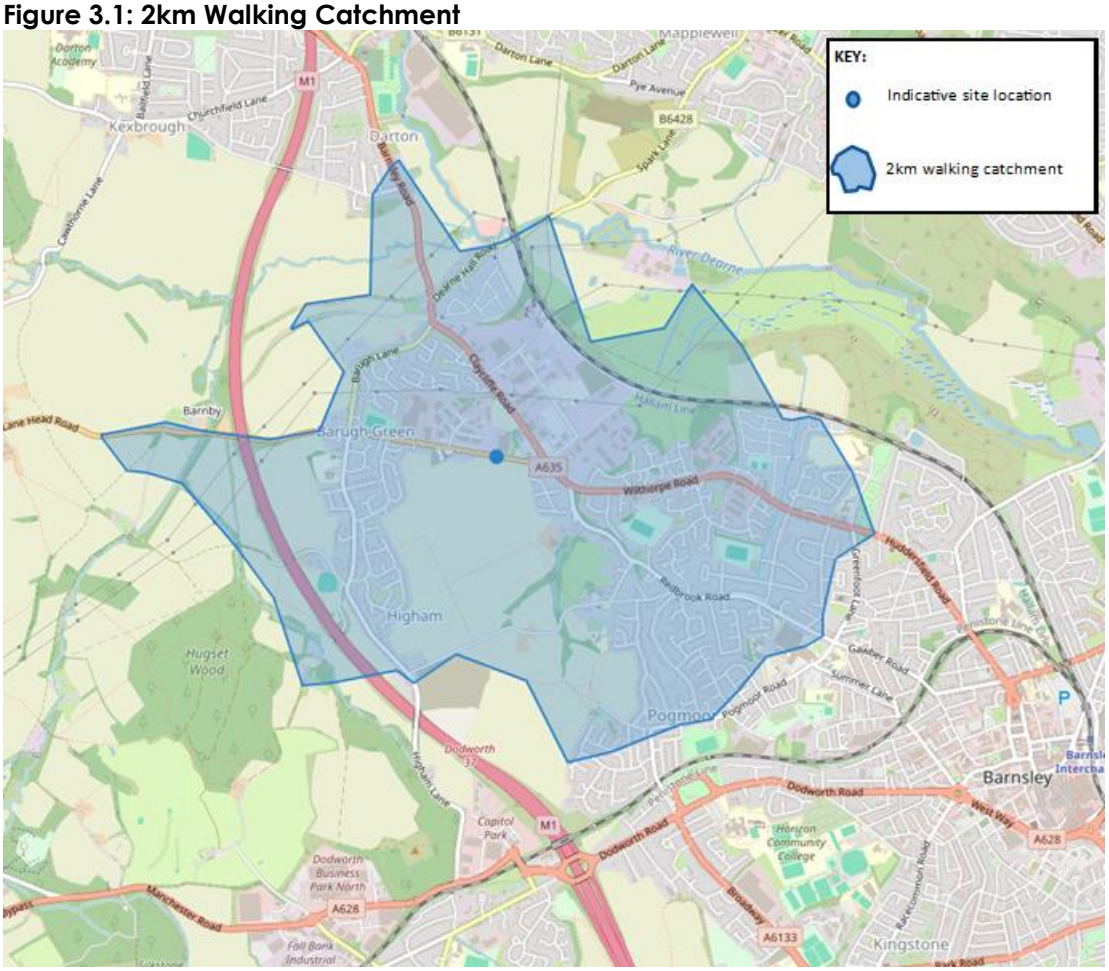
Table 3.1: Walking Distances by Journey Type

Criteria	Town Centres	Commuting / School	Elsewhere
Desirable	200m	500m	400m
Acceptable	400m	1000m	800m
Preferred Maximum	800m	2000m	1200m

(Source: IHT)

3.3 As **Table 3.1** shows, a 2km catchment is the preferred maximum walking distance for 'commuting / school'. A 2km walking catchment from the site includes Barugh Green, Higham and Pogmoor. The 2km walking catchment is illustrated in **Figure 3.1**, overleaf.

Figure 3.1: 2km Walking Catchment



(Source: Open Street Map)

3.4 Pedestrian access to the site will be taken via the proposed vehicular access from the A635 Barugh Green Road, to the north. The access is to be bound 2m wide footways with dropped kerbs and tactile paving supporting pedestrian movement east-west along the south side of the carriageway, tying in with the existing provision along the A635 Barugh Green Road. As part of the proposed access junction works, a dropped kerb crossing with tactile paving and a pedestrian refuge island will be provided to the east of the access junction, facilitating north/south movement across Barugh Green Road.

3.5 To the east of the site access there will be a 3m wide shared footway/cycle path, running north-south through the site. Additional 3m wide footway/cycle paths run east-west to the north and south of the site, providing future cycle connections to the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan.

3.6 Approximately 200m east of the proposed site access, the A635 Barugh Green Road widens to two-lanes on approach to a 4-arm roundabout junction which gives access north via the A637 Claycliffe Road, east via Whaley Road and south, via the A635 Wilthorpe Road. Pedestrian refuge islands comprising dropped kerbs and tactile paving are in place on all approaches, assisting pedestrian movement across the junction. From this junction, the A635 Wilthorpe Road extends south before diverting east, towards Redbrook and Wilthorpe; residential dwellings take direct frontage access along both sides of the carriageway.

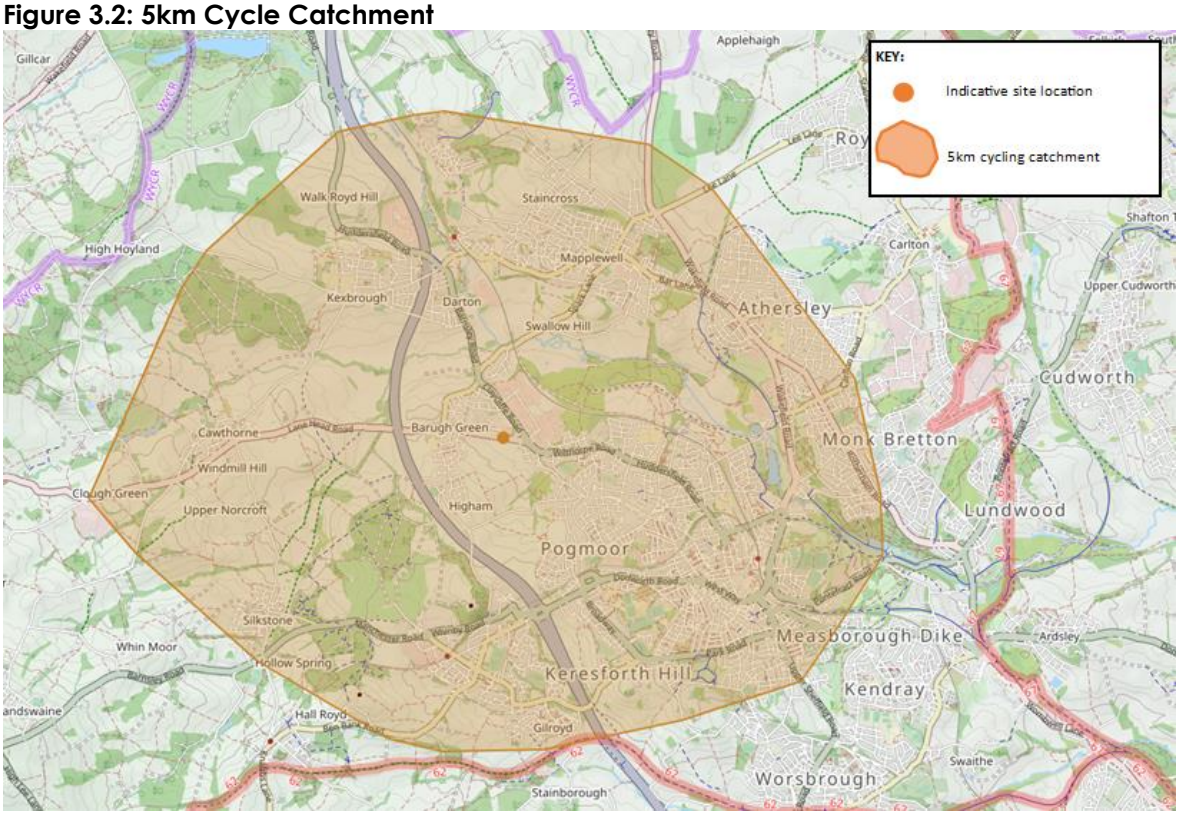
3.7 From the proposed site access, the A635 Barugh Green Road extends west for approximately 800m, after which the A635 forms the major arm of a signalised crossroads junction which gives access north towards Barugh Green and its associated residential area, south towards Higham and west towards Cawthorne.

3.8 Signalised pedestrian crossings are in place on all approaches, with footways and street lighting in place on both sides of the carriageway. Residential dwellings take direct frontage access in the vicinity of the junction, with traffic calming measures in the form of speed humps in place to the south, on Higham Common Road. Walking distances to a number of key local destinations from the site have been provided in the later part of this section.

Cycle Access

3.9 Cycling can be a substitute for car trips, particularly those of up to 5km, as well as forming part of longer journeys by public transport. Cycling, therefore, plays an important role in reducing the need to travel by car. As well as the areas encompassed in the walking catchment shown in **Figure 3.1**, the 5km cycling catchment area from the site includes the entirety of Barnsley town centre, Darton, Silkstone, Cawthorne, Pogmoor, and parts of Athersley and Monk Bretton. **Figure 3.2,** overleaf, illustrates a 5km cycle catchment from the site.

Figure 3.2: 5km Cycle Catchment



(Source: Open Street Map)

3.10 The site is located an approximate 15 minute cycle distance from Barnsley town centre, making this a realistic alternative to the private car for accessing employment and leisure facilities in the town centre, as well as additional public transport services, at the bus station and rail station.

3.11 The closest National Cycle Network (NCN) Route to the site is NCN Route 62 which can be accessed in a 5km (24-minute) cycle via Redbrook Road. As previously mentioned, there will be 3m wide shared footway/cycle paths throughout the site, providing future cycle connections to the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan.

3.12 It is recognised that there are limited formal cycle facilities and routes in the vicinity of the site. However, given the location of the site in relation to Barnsley town centre, it is expected that some residents could utilise cycling for access to employment and leisure opportunities.

LOCAL PUBLIC TRANSPORT OPTIONS

Local Bus Services

3.13 There are a number of bus stops located within a short walk of the site. The closest bus stop are located on the A635 Barugh Green Road, approximately 100m / 140m east of the site. Located on both sides of the carriageway, both stops comprise a shelter, seating and timetable information. Further stops can be accessed approximately 400m / 450m west of the site in Barugh Green village centre. **Figure 3.3,** below, illustrates the location of these bus stops, whilst **Table 3.2** summarises the services that can be accessed from them.

Figure 3.3: Bus Stop Locations

(Source: Google Maps)

Table 3.2: Bus Services

Service		Frequency		
		Weekday	Saturday	Sunday
Barugh Green Road				
93	Barnsley (Circular)	60 mins	60 mins	-
94/A	Barnsley Interchange – Denby Dale	120 mins	120 mins	-
95	Barnsley Interchange – Kexborough	30 mins	30 mins	-
96B	Barnsley Interchange – Wakefield	120 mins	120 mins	120 mins
353	Barnsley - Holmfirth	3 Services*	-	-

412	Barnsley – Penistone Grammar	1 AM / 1 PM Service	-	-

(Source: Public Transport Operator Websites) *Monday, Wednesday, Friday

3.14 As can be seen in **Table 3.2,** Barugh Green Road is served by 3-5 separate services per hour, providing services to key destinations, including Barnsley and Wakefield. It is, therefore, expected that residents could make use of the bus services to travel to destinations further afield.

Rail Services

3.15 The closest railway station to the site is Barnsley Interchange, located approximately 3.8km southeast of the site. Accessible in an 18-minute cycle via Redbrook Road, Barnsley Interchange can also be accessed in a 24-minute multi-modal journey via 93/94/95/96 bus service, accessible on the A635 Barugh Green Road.

3.16 Barnsley Interchange benefits a range of facilities such as accessible ticket machines, waiting rooms and 24 cycle storage spaces. The station benefits from level access to both platforms 2 platforms and is served by approximately 6-8 trains per hour, to a number of regional and national destinations such as Sheffield, Huddersfield and Leeds. **Table 3.3**, below, outlines the key destinations accessible from Barnsley Interchange.

Table 3.3: Barnsley Interchange railway station services

Destination	Frequency
Leeds (Express) via Wakefield Kirkgate	2 per hour
Leeds (Slow) via Castleford	1 per hour
Sheffield (Express) via Meadowhall	1 per hour
Sheffield (Slow) via Wombwell, Chapeltown and Meadowhall	1 per hour
Huddersfield	1 per hour
Nottingham via Sheffield & Chesterfield	1 per hour
Lincoln via Sheffield, Worksop & Gainsborough Lea	1 per hour

(Source: National Rail)

LOCAL AMENITIES

3.17 **Table 3.4**, overleaf, provides a summary of local facilities which are available within the preferred maximum walking (2km) or cycling (5km) distances of the site, with approximate journey times. Measurements are taken from the proposed vehicular access, from the A635 Barugh Green Road. It should be noted that, as part of the wider MU1 'Land South of Barugh Green Road' site, the proposals comprise mixed use development and are expected to

provide a primary school, small scale convenience, retail and community facilities and employment facilities, as well as access to public open space. The above will all be accessible within the preferred maximum walking and cycling distances.

Table 3.4: Local Facilities

Amenity	Distance	Walk Time	Cycle Time
Chestnut Tree Pub/Restaurant	350m	5 mins	1 min
Aldi	400m	5 mins	1 min
Claycliffe Business Park	400m	6 mins	2 mins
Barugh Green Recreation Ground	650m	10 mins	3 mins
One Stop Convenience Store	700m	10 mins	3 mins
Little India Takeaway	750m	11 mins	3 mins
Cawthorne Road Day Nursery	800m	12 mins	4 mins
Barugh Surgery	850m	13 mins	4 mins
Pharmacy Wise Barugh Green	900m	13 mins	4 mins
Barugh Green Primary School	1.0km	15 mins	5 mins
The Royal Pub & Restaurant	1.2km	17 mins	4 mins
Sainsbury's Local	1.2km	19 mins	8 mins
The Crown & Anchor Pub	1.3km	18 mins	5 mins
Vets for Pets	1.3km	19 mins	5 mins
The Pantry & Gawber Post Office	1.4km	22 mins	10 mins
Barnsley Business & Innovation Centre	1.5km	22 mins	9 mins
Higham Cricket Club	1.5km	23 mins	9 mins
Tesco Express	1.6km	23 mins	9 mins
Barnsley Hospital	1.8km	28 mins	12 mins
Summer Lane Primary School	2.0km	32 mins	12 mins

(Source: Google Maps)

SUMMARY

3.18 Overall, it is considered that there are good opportunities for walking and cycling locally, with good pedestrian infrastructure surrounding the site. Furthermore, bus stops are located within convenient walking distance of the site, giving access to local and regional destinations. Trips to and from the proposed development site can, therefore, easily be undertaken by sustainable modes of travel, thus minimising the use of the private car.

4. LOCAL HIGHWAY NETWORK

INTRODUCTION

4.1 This section of the Transport Assessment considers the nature of the existing highway network and summarises the historic accident data for the area surrounding the site.

HIGHWAY NETWORK

4.2 A description is provided below of the local highway network in the immediate vicinity of the site; for ease, it is also shown in **Figure 4.1**.

Figure 4.1: Existing Highway Network

(Source: Google Maps)

4.3 The site will take vehicular access from the A635 Barugh Green Road, on the northern boundary, via a new priority T-junction. The development proposals comprise a 3m wide right turn ghost island for eastbound vehicles, with a pedestrian refuge island comprising dropped kerbs and tactile paving proposed to the east of the junction, supporting pedestrian movement north-south. In the vicinity of the site, the A635 Barugh Green Road is subject to a 40mph speed limit and is bound by footways and street lighting on both sides.

4.4 Running broadly east-west for approximately 1.0km, the A635 Barugh Green Road forms the major arm of a number of priority T-junctions along its length. Approximately 280m west of the proposed site access, Cannon Way takes access to the north, giving access north

towards Claycliffe Business Park; access is supported by a right turn ghost island with central hatching separating the two lanes of traffic. It should be noted that as part of the access proposals for the Strata Sterling Barnsley West scheme this junction is currently being converted to a four arm roundabout junction, with the southern arm providing access to the wider allocation and Cannon Way forming the northern arm of the junction.

4.5 Approximately 200m east of the proposed site access, the A635 Barugh Green Road widens to two lanes on approach to a 4-arm roundabout junction which gives access north onto the A637 Claycliffe Road, west via Whaley Road and south via the A635 Wilthorpe Road. The A637 Claycliffe Road is approximately 10m wide and subject to a 40mph speed limit, with footways and street lighting on both sides.

4.6 From the roundabout junction, Claycliffe Road runs broadly north-south for approximately 900m, forming the major arm of a number of priority T-junctions along its length. Whaley Road extends east, away from the roundabout junction, giving access to industrial units and business units on both sides, along its length. Approximately 9m wide, Whaley Road is bound by footways and street lighting on both sides, with no parking restrictions in place along its length.

4.7 To the south of the roundabout junction, the A635 Wilthorpe Road extends south before diverting east, towards Redbrook and Wilthorpe. In the vicinity of the junction, the carriageway is bound by footways and street lighting on both sides, with residential dwellings taking direct frontage access to the south. After 150m, the A635 Wilthorpe Road forms the major arm of a priority T-junction with Redbrook Road which extends south towards Gawber and Barnsley town centre. Bound by footways and street lighting on both sides, the carriageway is subject to a 40mph speed limit.

4.8 Back to the site, the A635 Barugh Green Road extends west for approximately 800m before forming the major arm of a signalised crossroads junction which gives access north towards Barugh Green, south towards Higham and west towards Cawthorne. Bound by footways and street lighting on all approaches, pedestrian movement across the junction is supported by dropped kerbs and tactile paving. Double yellow line parking restrictions are in place in the vicinity of the junction. From this junction, the A635 extends west onto Cawthorne Road which is bound by footways and street lighting on both sides; the footway on the south side of the carriageway terminates after 90m. Past this point, signage indicates vehicles are subject to national speed limit, as the carriageway extends west towards Cawthorne.

ROAD SAFETY

4.9 Accident data for the most recent 5-year period (2018 - 2022) has been obtained from www.crashmap.co.uk for the highway network surrounding the site. Crashmap offers a definitive map of the official road collision statistics. The locations and severity of the recorded accidents in the vicinity of the site are shown in **Figure 4.2**, below.

Figure 4.2: Study Area

(Source: Google Maps)

4.10 As can be seen in Figure 4.2, a total of 11 accidents have been recorded within the study area, within the most recent 5-year period, which equates to an average of 2.2 accidents per year. Of the accidents recorded, 8 were slight in nature and 3 were serious; no fatalities were recorded in the study area. It is also noted that there have been no accidents on the site frontage or on the western approach to the roundabout to the east, suggesting there are no existing highway safety issues which would be exacerbated by the development proposals.

4.11 At the A635 / A637 roundabout junction, to the east of the site, 4 accidents were recorded across the study period. The first accident occurred in 2018 and involved 1 goods vehicle, resulting in 1 casualty suffering slight injuries. Two separate accidents involving 2 cars were recorded in 2020, the first of which resulted in 2 casualties suffering slight injuries; the other accident resulted in 1 casualty suffering serious injuries. To the south of the roundabout junction, an accident in 2022 involving 2 cars and 1 pedal cyclist led to 1 casualty suffering slight injuries.

4.12 Along the A635 Barugh Green Road, 2 serious accidents were recorded. The first involved 2 cars and resulted in 2 casualties, whereas the other involved 1 car and 1 pedestrian. At the signalised crossroads junction, to the west of the site, 5 accidents were recorded across the most recent 5-year study period. All 5 accidents were slight in nature, with 2 recorded in 2018, 2 in 2019 and 1 in 2022. Of these accidents, only 1 accident (in 2018) involved a vulnerable road user, as 1 pedal cyclist suffered slight injuries in a collision with a car.

4.13 It is considered that the level of accidents recorded over the most recent 5-year period does not indicate that there is an existing road safety issue in the vicinity of the site.

5. TRIP GENERATION AND DISTRIBUTION

INTRODUCTION

5.1 This section of the Transport Assessment considers the likely trip generation associated with the development proposals.

TRIP GENERATION

5.2 The TRICS database has been interrogated to derive representative trip rates associated with the proposed 155 dwellings; the following TRICS parameters have been selected:

- Land Use: Residential, Houses Privately Owned;
- Range: 80 – 250 dwellings;
- Date Range: 01/01/2016 – 14/11/2023; and
- Location: Edge of Town.

5.3 **Table 5.1** summarises the trip rates and resultant trip generation, whilst the full TRICS output is provided at **Appendix B.**

Table 5.1: Proposed Vehicle Trip Rates

Land Use	AM Peak			PM Peak		
	Arrival	Departure	Two-Way	Arrival	Departure	Two-Way
Trip Rates	0.139	0.364	0.503	0.330	0.154	0.484
Trip Generation	22	56	78	51	24	75

(Source: TRICS)

5.4 As can be seen in **Table 5.1**, the proposals are anticipated to generate 78 two-way vehicle trips in the AM peak hour and 75 two-way vehicle trips in the PM peak hour.

TRIP DISTRIBUTION

5.5 Trips associated with the development have been assigned to the local highway network using a gravity model, based on Census 2011 'Location of usual residence and place of work' data for MSOA Barnsley 012, within which the site is located.

5.6 **Table 5.2**, overleaf, provides a summary of the gravity model, whilst the full calculations are provided at **Appendix C.**

Table 5.2: Summary of Trip Distribution

Route	%
A635 Barugh Green Road (Eastbound)	85%
A635 Barugh Green Road (Westbound)	15%

(Source: Consultant Calculation)

5.7 Flow diagrams provided at **Appendix D** show the distribution in **Table 5.2,** represented graphically. This trip distribution has been applied to the predicted trip generation, set out in **Table 5.1** and can be seen on the flow diagram attached at **Appendix E**.

MATERIALITY

5.8 In order to understand the potential impact of the development proposals, an assessment of the uplift in movements as a consequence of the development has been undertaken and is presented in **Table 5.3**, below.

Table 5.3: Number of Development Trips by Junction

Junction	Trips	
	AM	PM
Site Access / A635 Barugh Green Road	78	75
A637 / A635 / Whaley Road Roundabout Junction	67	64
A635 / B6428 / Higham Common Road Crossroads Junction	11	11

(Source: Consultant Calculation)

5.9 A threshold of an uplift of 30 or more two-way trips associated with the development proposals has been applied; beyond this, the uplift in traffic flows is not be considered to be material. Based upon this threshold, and for completeness, further consideration will be given to the impact of the development proposals at the following junctions:

- Site Access / A635 Barugh Green Road;
- A637 / A635 / Whaley Road Roundabout Junction; and
- A635 / B6428 / Higham Common Road Crossroads Junction.

6. OPERATIONAL ASSESSMENTS

INTRODUCTION

6.1 This section of the Transport Assessment considers operational assessments of a number of junctions on the local road network, as well as the site access. These assessments also consider the development traffic associated with the proposed development of the surrounding MU1 application, as detailed in the Transport Assessment prepared by Fore Consulting in support of the wider application.

6.2 In order to demonstrate the impact of the development proposals on highway capacity. The following junctions have been assessed:

- Site Access / A635 Barugh Green Road;
- A637 / A635 / Whaley Road Roundabout Junction; and
- A635 / B6428 / Higham Common Road Crossroads Junction.

6.3 Beyond the junctions modelled as part of this Transport Assessment, traffic will dissipate, such that it doesn't have a material impact elsewhere on the highway network.

BASE SURVEY DATA

6.4 Fully classified turning counts have been undertaken at the junctions identified above, in order to establish a base situation. The surveys covered the periods 07:00-10:00 and 15:30-18:30 and were undertaken on Tuesday 29th April 2024. An analysis of the turning count data identifies that the network peak hours were 07:45-08:45 and 16:45-17:45. The full traffic count data is included at **Appendix F,** and the surveyed peak hour flows are illustrated in figures provided at **Appendix G.**

NTM ADJUSTED TEMPRO GROWTH RATES

6.5 In line with industry standard methodology, the assessments consider a design year 5 years post submission of the planning application, i.e. 2029. To establish the likely traffic growth from the 2024 base traffic flows to a future year of 2029, the TEMPro 7.2 table "RTF 2018 Scenario 1" has been used. The growth factors obtained from Tempro are set out in **Table 6.1,** overleaf.

Table 6.1: NTM Adjusted TEMPro Growth Rates

Amenity	AM	PM
Barnsley 012	1.0394	1.0398

(Source: TEMPro)

COMMITTED DEVELOPMENT

6.6 To account for the development traffic associated with the proposed development of the surrounding MU1 application, the total development flows for the application, included within the Fore Consulting Transport Assessment (7 July 2021) have been utilised. These have been taken from Figures 41 and 42, submitted as part of the Transport Assessment. Flow diagrams are provided at **Appendix H,** which show traffic growthed to the design year of 2029 and include the committed development as described above.

6.7 It should be noted that this presents a robust assessment of background traffic growth, given that the traffic associated with MU1 would be taken account of in the Tempro background traffic growth rates, owing to its allocation in the Local Plan.

MODELLING SCENARIOS

6.8 The junctions will be assessed in the following scenarios:

- 2029 AM and PM Base + Committed Development; and
- 2029 AM and PM Base + Committed Development + Development.

OPERATIONAL ASSESSMENTS

6.9 Junctions modelling software has been used to assess the operation of all junctions; the results are summarised for each junction in turn below. The Junctions software predicts the Ratio of Flow to Capacity (RFC) on each approach / turning movement and resultant queue length. An RFC value of less than 0.85 is generally accepted as indicating that a junction is operating within theoretical capacity. The full model outputs are provided at **Appendix I**.

6.10 With regard to signalised junctions, Linsig predicts the Degree of Saturation (DoS) as a percentage. A DoS of 90% is considered to demonstrate the practical capacity of a junction.

Site Access / A635 Barugh Green Road

6.11 The results of the assessments of the proposed site access on the A635 Barugh Green Road is summarised in **Table 6.2,** below; the full modelling outputs are provided at **Appendix I.**

Table 6.2: Site Access / A635 Barugh Green Road

	2029 Base + CD + Dev			
	AM Peak		PM Peak	
	RFC	Q	RFC	Q
Site Access – Barugh Green Road East	0.02	0.02	0.01	0.01
Site Access – Barugh Green Road West	0.16	0.19	0.08	0.08
Barugh Green Road West - Site Access	0.01	0.01	0.02	0.02

(Source: Junctions 8)

6.12 As can be seen in **Table 6.2,** the junction of the Site Access / A635 Barugh Green Road is predicted to operate well within its practical capacity (RFC of less than 0.85) in both the AM and PM peak hours.

Barugh Green Road / Wilthorpe Road Roundabout Junction

6.13 **Table 6.3,** below, summarises the results of the assessment of the Barugh Green Road / Wilthorpe Road roundabout junction; the full modelling outputs are provided at **Appendix I.**

Table 6.3: Barugh Green Road / Wilthorpe Road Roundabout Junction

	2029 Base + CD				2029 Base + CD + Dev			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
Claycliffe Road	0.77	3.26	0.68	2.05	0.79	3.70	0.69	2.20
Whaley Road	0.18	0.22	0.24	0.32	0.19	0.23	0.25	0.33
Wilthorpe Road	0.79	3.64	0.84	5.04	0.80	3.86	0.87	6.06
Barugh Green Road	0.63	1.66	0.47	0.86	0.67	2.03	0.48	0.93

(Source: Junctions 8)

6.14 As can be seen in **Table 6.3,** the Barugh Green Road / Wilthorpe Road roundabout junction is predicted to operate broadly in line with its practical capacity (RFC of less than 0.85), with a maximum RFC of 0.87 with the development trips, in the design year of 2029. It is not considered that this impact is material, as the RFC is still below 1.00.

A635 / B6428 / Higham Common Road Crossroads Junction

6.15 **Table 6.4,** below, summarises the results of the operational assessment of the A635 / B6428 / Higham Common Road crossroads junction, in the 2029 Base and the 2029 Base + Development scenarios, in order to demonstrate the impact of the development traffic on this junction. The full outputs are attached at **Appendix I.**

Table 6.4: A635 / B6428 / Higham Common Road Crossroads Junction

	2029 Base				2029 Base + Dev			
	AM Peak		PM Peak		AM Peak		PM Peak	
	DoS	MMQ	DoS	MMQ	DoS	MMQ	DoS	MMQ
Barugh Lane	68.4%	9.7	79.7%	11.4	68.4%	9.7	79.7%	11.4
Barugh Green Road	50.0%	6.6	81.5%	13.9	50.5%	6.7	81.8%	14.0
Higham Common Road	42.7%	5.5	55.9%	8.2	43.0%	5.6	56.5%	8.4
Cawthorne Road	70.5%	12.8	64.3%	10.2	70.7%	12.8	64.6%	10.3
PRC over all lanes	**27.7%**		**10.5%**		**27.3%**		**10.0%**	

(Source: Junction 8)

6.16 As can be seen in **Table 6.3,** the A635 / B6428 / Higham Common Road crossroads junction is predicted to operate within its practical capacity (DoS of less than 90%) with or without the development trips, in the design year of 2029. The development will have limited impact on the PRC over all lanes and does not result in a material impact in queueing at the junction.

SUMMARY

6.17 Capacity assessments have been undertaken for the site access junction and two off-site junctions where the development proposals were identified as potentially having a material impact. The modelling results indicate all junctions will operate satisfactorily in both peak hours with the addition of the development traffic in both the current and design year and, therefore, no mitigation works are required.

7. PARKING AND SERVICING

INTRODUCTION

7.1 This section of the Transport Assessment considers the proposed access, parking and servicing arrangements for the site.

ACCESS

7.2 As can be seen from the site layout, provided at **Appendix A**, vehicular access to the proposed development will be taken via a new priority T-junction on the northern boundary of the site, from the A635 Barugh Green Road. Shown at **Appendix J**, the proposed access benefits from a 3m wide right turn ghost island and has been designed in line with the requirements of DMRB. Bound by 2m wide footways and street lighting on both sides, dropped kerbs and tactile paving are proposed to support pedestrian movement east-west, along the A635 Barugh Green Road. Furthermore, a pedestrian refuge island comprising dropped kerbs and tactile paving is proposed immediately east of the proposed access junction, supporting pedestrian movement north-south.

7.3 Illustrated at **Appendix J,** 2.4m x 120m visibility splays can be achieved from the Site Access junction, in line with the posted 40mph speed limit along the A635 Barugh Green Road.

7.4 The primary route into the site will be 6m wide and bound by a 3m wide footway/cycle path to the east, separated from the carriageway by a grass verge, and a 2m wide footway to the west. Past this point, internal carriageways will be 5.5m wide, with dwellings taking direct frontage access on both sides; the carriageway is to be bound by footways and street lighting along its length. Additional 3m wide footway/cycle paths run east-west to the north and south of the site, providing future cycle connections to the existing residential area to the east, as well as the wider allocation to the south and east, in line with the MU1 Masterplan.

PARKING

7.5 Car parking standards for new residential developments in Barnsley are provided by Barnsley Metropolitan Borough Council in the Barnsley Local Plan – Parking SPD, adopted in November 2019. For ease, these can be summarised as:

- 1-2 bed dwellings – 1 car parking space;
- 3+ bed dwellings – 2 car parking spaces;

- 1 visitor car parking space per 4 dwellings (subject to layout); and
- 1 secure cycle space per dwelling (in garage or separate secure covered area within plot).

7.6 As can be seen from the layout provided at **Appendix A**, parking is provided in line with local parking standards; an electric vehicle charging point is provided for each dwelling in line with building regulations. With regard to cycle parking, where dwellings do not provide a garage, alternative storage will be provided in the form of a shed, in order to provide sufficient space(s) per dwelling.

SERVICING

General Servicing and Refuse Collection

7.7 General servicing and delivery access will take place from the roadside within the development. Waste will be collected by Barnsley Metropolitan Borough Council. The swept path analysis, undertaken within the site, shown on drawings provided at **Appendix K,** demonstrates that an 11.6m refuse vehicle can manoeuvre within the site and egress in forward gear, with minimum requirement for reversing throughout the site.

Fire Appliance Access

7.8 Manual for Streets (MfS) indicates that the access requirements for emergency vehicles are generally stipulated by the Fire Service. Table 8 of the *The Building* Regulations *2010 'Fire Safety' (2019 edition, incorporating the 2020 amendments) Approved Document B Section 5 'Access and Facilities for the Fire and Rescue Service'*, sets out that a minimum road width of 3.7m be provided and turning facilities should be provided in any cul-de-sac that is more that 20m long. Fire tenders and emergency vehicles will access the site from the A635 Barugh Green Road and can utilise the turning arrangements throughout the site to access all dwellings.

8. SUMMARY AND CONCLUSIONS

8.1 TPS has prepared this Transport Assessment to accompany a planning application for 155 dwellings on land to the south of the A635 Barugh Green Road, Barugh Green, Barnsley. The following summarises the key points:

- The proposals are in keeping with both the local and national transport and land use planning policy agenda;
- The site benefits from good connectivity with the facilities and amenities in the surrounding area, with numerous opportunities for residents to travel by non-car modes;
- An analysis of historic accident data suggests that there are no accident trends that might be exacerbated by the addition of development-related traffic;
- The development proposals are anticipated to generate 78 two-way vehicle trips in the AM peak hour and 75 two-way vehicle trips in the PM peak hour;
- Operational assessments of the local highway network have been undertaken based on 2024 survey data, growthed to a future year of 2029 using NTM adjusted TEMPro growth rates;
- The operational assessments demonstrate that the local highway network has sufficient capacity to accommodate the predicted trip generation of the proposed development;
- The servicing arrangements for the site have been considered; swept path analysis has been undertaken of the proposed turning heads throughout the site, to demonstrate that a refuse vehicle will be able to enter and exit the site in forward gear; and
- Car parking and cycle parking will be provided to meet Barnsley Metropolitan Borough Council parking standards.

CONCLUSION

8.2 Given the above, it is considered that the proposals will not result in a 'severe residual cumulative impact' (the test set out in NPPF); indeed, they will be complementary to the prevailing policy agenda. As such, there are no substantive highway grounds why the development should not be granted consent.

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REPORT APPENDICES

Appendix A

Indicative Site Layout

Appendix B

TRICS Output

Calculation Reference: AUDIT-640801-240521-0515

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	5 days
	EX	ESSEX	2 days
	HC	HAMPSHIRE	4 days
	HF	HERTFORDSHIRE	1 days
	KC	KENT	2 days
	SC	SURREY	1 days
	SP	SOUTHAMPTON	1 days
	WB	WEST BERKSHIRE	1 days
	WS	WEST SUSSEX	6 days
04	EAST ANGLIA		
	NF	NORFOLK	8 days
	SF	SUFFOLK	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days
11	SCOTLAND		
	AS	ABERDEENSHIRE	1 days

Primary Filtering selection:

Parameter: No of Dwellings
Actual Range: 80 to 250 (units:)
Range Selected by User: 80 to 250 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 14/11/23

Selected survey days:

Monday	7 days
Tuesday	9 days
Wednesday	10 days
Thursday	6 days
Friday	2 days

Selected survey types:

Manual count	30 days
Directional ATC Count	4 days

Selected Locations:

Edge of Town	34

Selected Location Sub Categories:

Residential Zone	30
Village	1
Out of Town	3

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	8 days - Selected
Servicing vehicles Excluded	37 days - Selected

Secondary Filtering selection:

Use Class:

C3	34 days

Population within 500m Range:
All Surveys Included

Population within 1 mile:

1,001 to 5,000	4 days
5,001 to 10,000	8 days
10,001 to 15,000	11 days
15,001 to 20,000	6 days
20,001 to 25,000	5 days

Population within 5 miles:

5,001 to 25,000	7 days
25,001 to 50,000	2 days
50,001 to 75,000	3 days
75,001 to 100,000	4 days
100,001 to 125,000	2 days
125,001 to 250,000	12 days
250,001 to 500,000	4 days

Car ownership within 5 miles:

0.6 to 1.0	6 days
1.1 to 1.5	24 days
1.6 to 2.0	4 days

Secondary Filtering selection (Cont.):

Travel Plan:		
Yes	26 days	
No	8 days	
PTAL Rating:		
No PTAL Present	33 days	
2 Poor	1 days	
Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 AS-03-A-02 MIXED HOUSES ABERDEENSHIRE
FARROCHIE ROAD
STONEHAVEN

Edge of Town
Residential Zone
Total No of Dwellings: 131
Survey date: WEDNESDAY 20/04/22 Survey Type: MANUAL

2 ES-03-A-03 MIXED HOUSES & FLATS EAST SUSSEX
SHEPHAM LANE
POLEGATE

Edge of Town
Residential Zone
Total No of Dwellings: 212
Survey date: MONDAY 11/07/16 Survey Type: MANUAL

3 ES-03-A-05 MIXED HOUSES & FLATS EAST SUSSEX
RATTLE ROAD
NEAR EASTBOURNE
STONE CROSS
Edge of Town
Residential Zone
Total No of Dwellings: 99
Survey date: WEDNESDAY 05/06/19 Survey Type: MANUAL

4 ES-03-A-07 MIXED HOUSES & FLATS EAST SUSSEX
NEW ROAD
HAILSHAM
HELLINGLY
Edge of Town
Residential Zone
Total No of Dwellings: 91
Survey date: THURSDAY 07/11/19 Survey Type: MANUAL

5 ES-03-A-08 MIXED HOUSES & FLATS EAST SUSSEX
WRESTWOOD ROAD
BEXHILL

Edge of Town
Residential Zone
Total No of Dwellings: 110
Survey date: WEDNESDAY 12/10/22 Survey Type: MANUAL

6 ES-03-A-10 MIXED HOUSES & FLATS EAST SUSSEX
WATERGATE
BEXHILL-ON-SEA

Edge of Town
Residential Zone
Total No of Dwellings: 139
Survey date: THURSDAY 28/09/23 Survey Type: MANUAL

7 EX-03-A-02 DETACHED & SEMI-DETACHED ESSEX
MANOR ROAD
CHIGWELL
GRANGE HILL
Edge of Town
Residential Zone
Total No of Dwellings: 97
Survey date: MONDAY 27/11/17 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 EX-03-A-03 MIXED HOUSES ESSEX
KESTREL GROVE
RAYLEIGH

Edge of Town
Residential Zone
Total No of Dwellings: 123
Survey date: MONDAY *27/09/21* *Survey Type: MANUAL*

9 HC-03-A-28 MIXED HOUSES & FLATS HAMPSHIRE
EAGLE AVENUE
WATERLOOVILLE
LOVEDEAN
Edge of Town
Residential Zone
Total No of Dwellings: 125
Survey date: MONDAY *08/11/21* *Survey Type: MANUAL*

10 HC-03-A-33 MIXED HOUSES & FLATS HAMPSHIRE
CROW LANE
RINGWOOD
CROW
Edge of Town
Residential Zone
Total No of Dwellings: 195
Survey date: TUESDAY *04/07/23* *Survey Type: MANUAL*

11 HC-03-A-34 MIXED HOUSES & FLATS HAMPSHIRE
STONEHAM LANE
EASTLEIGH

Edge of Town
Residential Zone
Total No of Dwellings: 243
Survey date: TUESDAY *14/11/23* *Survey Type: MANUAL*

12 HC-03-A-36 MIXED HOUSES & FLATS HAMPSHIRE
HAVANT ROAD
EMSWORTH

Edge of Town
Residential Zone
Total No of Dwellings: 145
Survey date: TUESDAY *12/09/23* *Survey Type: MANUAL*

13 HF-03-A-03 MIXED HOUSES HERTFORDSHIRE
HARE STREET ROAD
BUNTINGFORD

Edge of Town
Residential Zone
Total No of Dwellings: 160
Survey date: MONDAY *08/07/19* *Survey Type: MANUAL*

14 KC-03-A-04 SEMI-DETACHED & TERRACED KENT
KILN BARN ROAD
AYLESFORD
DITTON
Edge of Town
Residential Zone
Total No of Dwellings: 110
Survey date: FRIDAY *22/09/17* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

15 KC-03-A-10 MIXED HOUSES KENT
HEADCORN ROAD
STAPLEHURST

Edge of Town
Residential Zone
Total No of Dwellings: 106
Survey date: TUESDAY 09/05/23 Survey Type: MANUAL

16 NF-03-A-13 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 198
Survey date: TUESDAY 11/09/18 Survey Type: DIRECTIONAL ATC COUNT

17 NF-03-A-15 MIXED HOUSES & FLATS NORFOLK
SILFIELD ROAD
WYMONDHAM

Edge of Town
Out of Town
Total No of Dwellings: 235
Survey date: THURSDAY 20/09/18 Survey Type: DIRECTIONAL ATC COUNT

18 NF-03-A-32 MIXED HOUSES & FLATS NORFOLK
HUNSTANTON ROAD
HUNSTANTON

Edge of Town
Residential Zone
Total No of Dwellings: 164
Survey date: WEDNESDAY 21/09/22 Survey Type: DIRECTIONAL ATC COUNT

19 NF-03-A-33 MIXED HOUSES NORFOLK
LONDON ROAD
ATTLEBOROUGH

Edge of Town
Residential Zone
Total No of Dwellings: 143
Survey date: THURSDAY 29/09/22 Survey Type: MANUAL

20 NF-03-A-34 MIXED HOUSES NORFOLK
NORWICH ROAD
SWAFFHAM

Edge of Town
Out of Town
Total No of Dwellings: 80
Survey date: TUESDAY 27/09/22 Survey Type: MANUAL

21 NF-03-A-35 MIXED HOUSES & FLATS NORFOLK
REPTON AVENUE
NORWICH

Edge of Town
Residential Zone
Total No of Dwellings: 116
Survey date: WEDNESDAY 28/09/22 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

22 NF-03-A-39 MIXED HOUSES NORFOLK
HEATH DRIVE
HOLT

Edge of Town
Residential Zone
Total No of Dwellings: 212
Survey date: TUESDAY *27/09/22* *Survey Type: MANUAL*

23 NF-03-A-48 MIXED HOUSES NORFOLK
BRANDON ROAD
SWAFFHAM

Edge of Town
Residential Zone
Total No of Dwellings: 181
Survey date: THURSDAY *19/09/19* *Survey Type: DIRECTIONAL ATC COUNT*

24 SC-03-A-05 MIXED HOUSES SURREY
REIGATE ROAD
HORLEY

Edge of Town
Residential Zone
Total No of Dwellings: 207
Survey date: MONDAY *01/04/19* *Survey Type: MANUAL*

25 SF-03-A-10 TERRACED & SEMI-DETACHED SUFFOLK
LOVETOFTS DRIVE
IPSWICH
WHITEHOUSE
Edge of Town
Residential Zone
Total No of Dwellings: 149
Survey date: TUESDAY *22/06/21* *Survey Type: MANUAL*

26 SP-03-A-02 MIXED HOUSES & FLATS SOUTHAMPTON
BARNFIELD WAY
NEAR SOUTHAMPTON
HEDGE END
Edge of Town
Out of Town
Total No of Dwellings: 250
Survey date: TUESDAY *12/10/21* *Survey Type: MANUAL*

27 ST-03-A-07 DETACHED & SEMI-DETACHED STAFFORDSHIRE
BEACONSIDE
STAFFORD
MARSTON GATE
Edge of Town
Residential Zone
Total No of Dwellings: 248
Survey date: WEDNESDAY *22/11/17* *Survey Type: MANUAL*

28 WB-03-A-03 MIXED HOUSES WEST BERKSHIRE
DORKING WAY
READING
CALCOT
Edge of Town
Residential Zone
Total No of Dwellings: 108
Survey date: FRIDAY *09/09/22* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

29 WS-03-A-08 MIXED HOUSES WEST SUSSEX
ROUNDSTONE LANE
ANGMERING

Edge of Town
Residential Zone
Total No of Dwellings: 180
Survey date: THURSDAY *19/04/18* *Survey Type: MANUAL*

30 WS-03-A-12 MIXED HOUSES WEST SUSSEX
MADGWICK LANE
CHICHESTER
WESTHAMPNETT
Edge of Town
Village
Total No of Dwellings: 152
Survey date: WEDNESDAY *16/06/21* *Survey Type: MANUAL*

31 WS-03-A-13 MIXED HOUSES & FLATS WEST SUSSEX
LITTLEHAMPTON ROAD
WORTHING
WEST DURRINGTON
Edge of Town
Residential Zone
Total No of Dwellings: 197
Survey date: WEDNESDAY *23/06/21* *Survey Type: MANUAL*

32 WS-03-A-14 MIXED HOUSES WEST SUSSEX
TODDINGTON LANE
LITTLEHAMPTON
WICK
Edge of Town
Residential Zone
Total No of Dwellings: 117
Survey date: WEDNESDAY *20/10/21* *Survey Type: MANUAL*

33 WS-03-A-17 MIXED HOUSES & FLATS WEST SUSSEX
SHOPWHYKE ROAD
CHICHESTER

Edge of Town
Residential Zone
Total No of Dwellings: 86
Survey date: WEDNESDAY *01/03/23* *Survey Type: MANUAL*

34 WS-03-A-19 MIXED HOUSES & FLATS WEST SUSSEX
TURNERS HILL ROAD
EAST GRINSTEAD

Edge of Town
Residential Zone
Total No of Dwellings: 92
Survey date: MONDAY *15/05/23* *Survey Type: MANUAL*

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	34	153	0.090	34	153	0.293	34	153	0.383
08:00 - 09:00	34	153	0.139	34	153	0.364	34	153	0.503
09:00 - 10:00	34	153	0.139	34	153	0.174	34	153	0.313
10:00 - 11:00	34	153	0.132	34	153	0.149	34	153	0.281
11:00 - 12:00	34	153	0.140	34	153	0.149	34	153	0.289
12:00 - 13:00	34	153	0.154	34	153	0.155	34	153	0.309
13:00 - 14:00	34	153	0.163	34	153	0.159	34	153	0.322
14:00 - 15:00	34	153	0.167	34	153	0.197	34	153	0.364
15:00 - 16:00	34	153	0.256	34	153	0.176	34	153	0.432
16:00 - 17:00	34	153	0.264	34	153	0.163	34	153	0.427
17:00 - 18:00	34	153	0.330	34	153	0.154	34	153	0.484
18:00 - 19:00	34	153	0.267	34	153	0.140	34	153	0.407
19:00 - 20:00	1	97	0.062	1	97	0.052	1	97	0.114
20:00 - 21:00	1	97	0.031	1	97	0.021	1	97	0.052
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.334			2.346			4.680

Parameter summary

Trip rate parameter range selected:	80 - 250 (units:)
Survey date date range:	01/01/16 - 14/11/23
Number of weekdays (Monday-Friday):	38
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	7
Surveys manually removed from selection:	0

Appendix C

Gravity Model

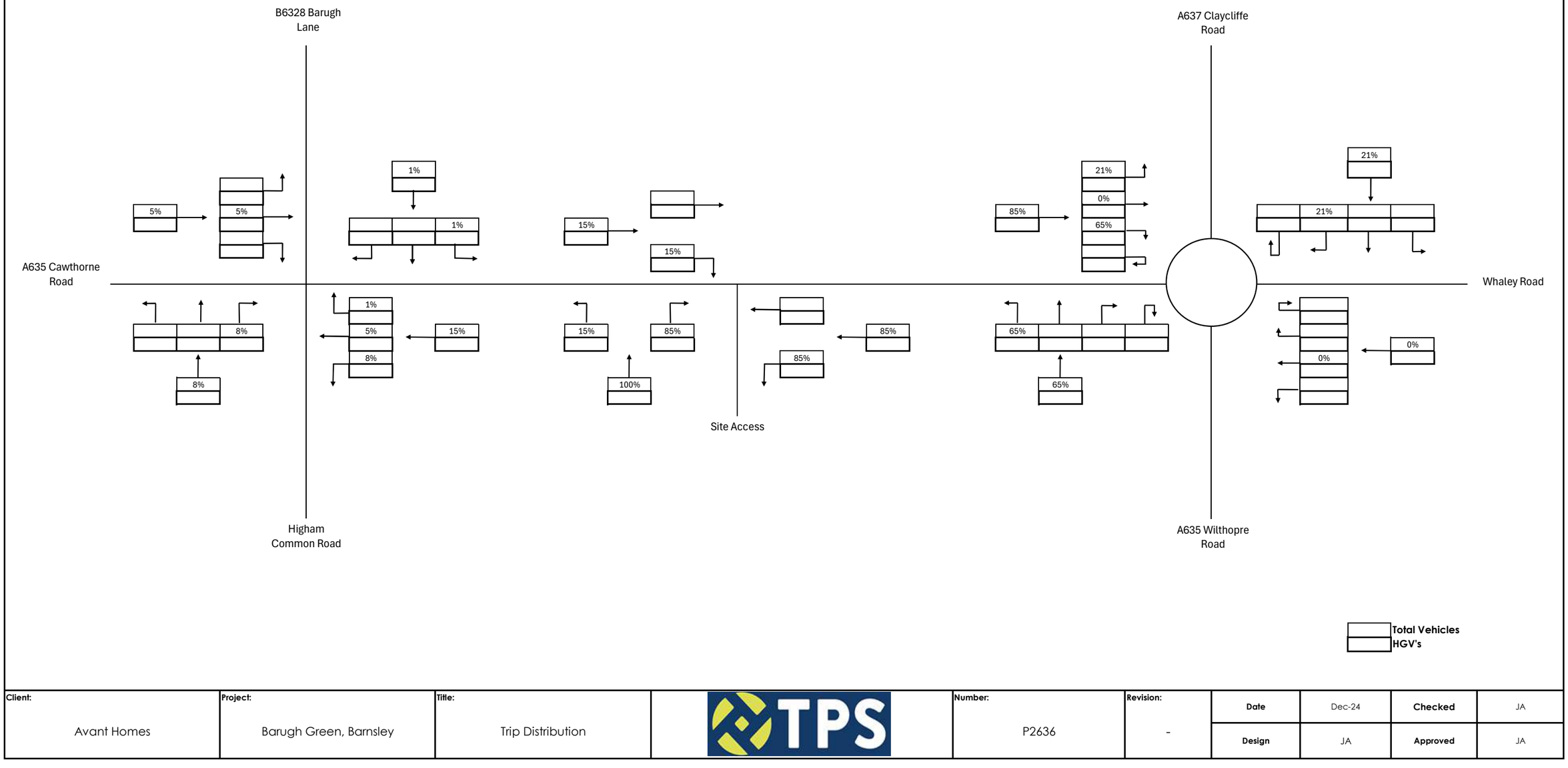
155 Dwellings

Route		%	AM			PM			AADT
			IN	OUT	2-WAY	IN	OUT	2-WAY	24 HR
			0.139	0.364	0.503	0.33	0.154	0.484	-
			22	56	78	51	24	75	698
1	North at Roundabout	21%	4	12	16	11	5	16	145
2	East at Roundabout	0%	0	0	0	0	0	0	0
3	South at Roundabout	65%	14	36	50	33	15	49	451
4	North at Crossroads	1%	0	1	1	1	0	1	8
5	West at Crossroads	5%	1	3	4	3	1	4	36
6	South at Crossroads	8%	2	5	6	4	2	6	58
		100%	22	56	78	51	24	75	698

Junctions		%	IN	OUT	2-WAY	IN	OUT	2-WAY	AADT
1	Roundabout (to the east)	85%	18	48	67	44	20	64	596
2	Crossroads (to the west)	15%	3	8	11	7	3	11	102

Appendix D

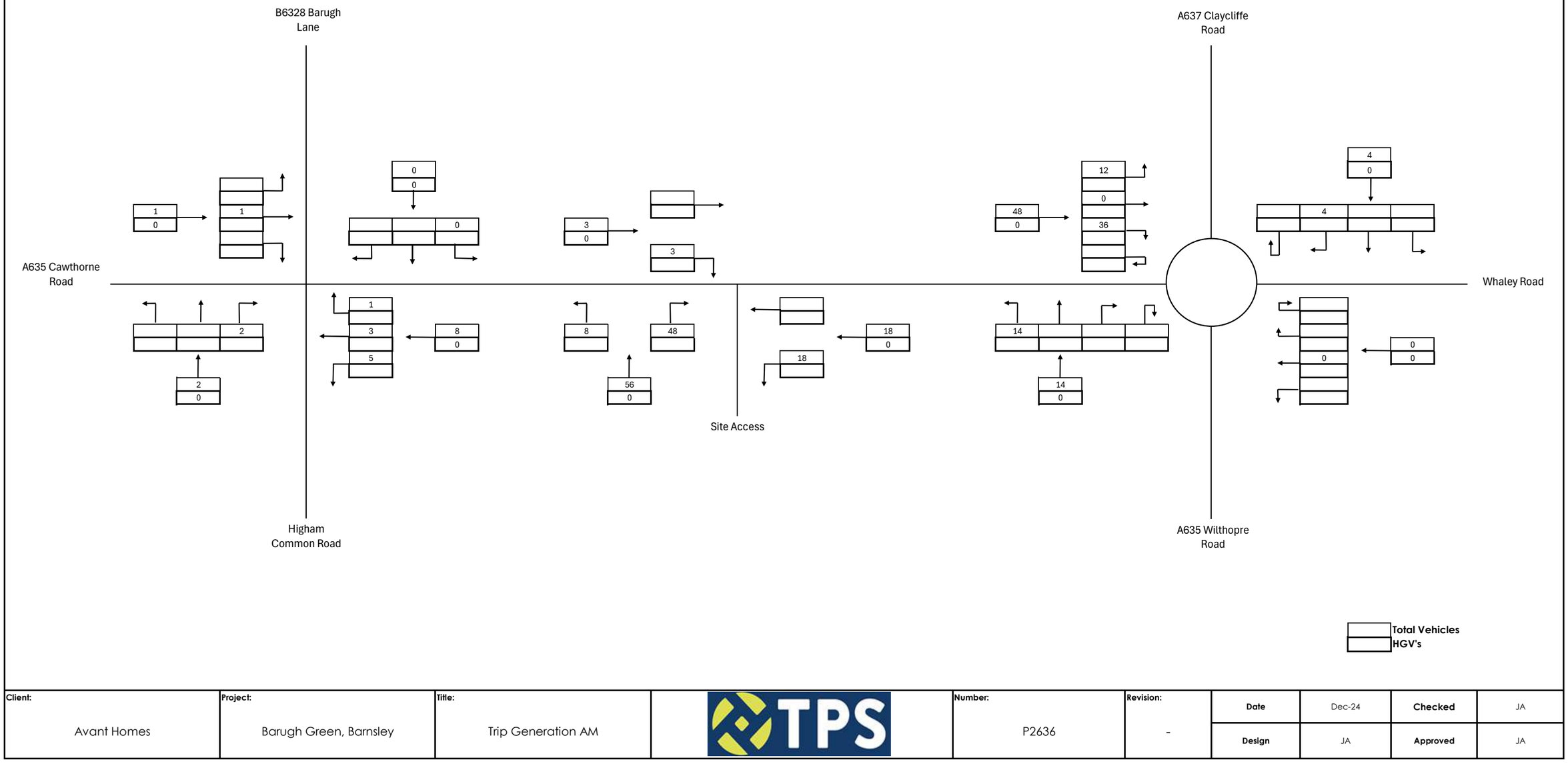
Trip Distribution Flows



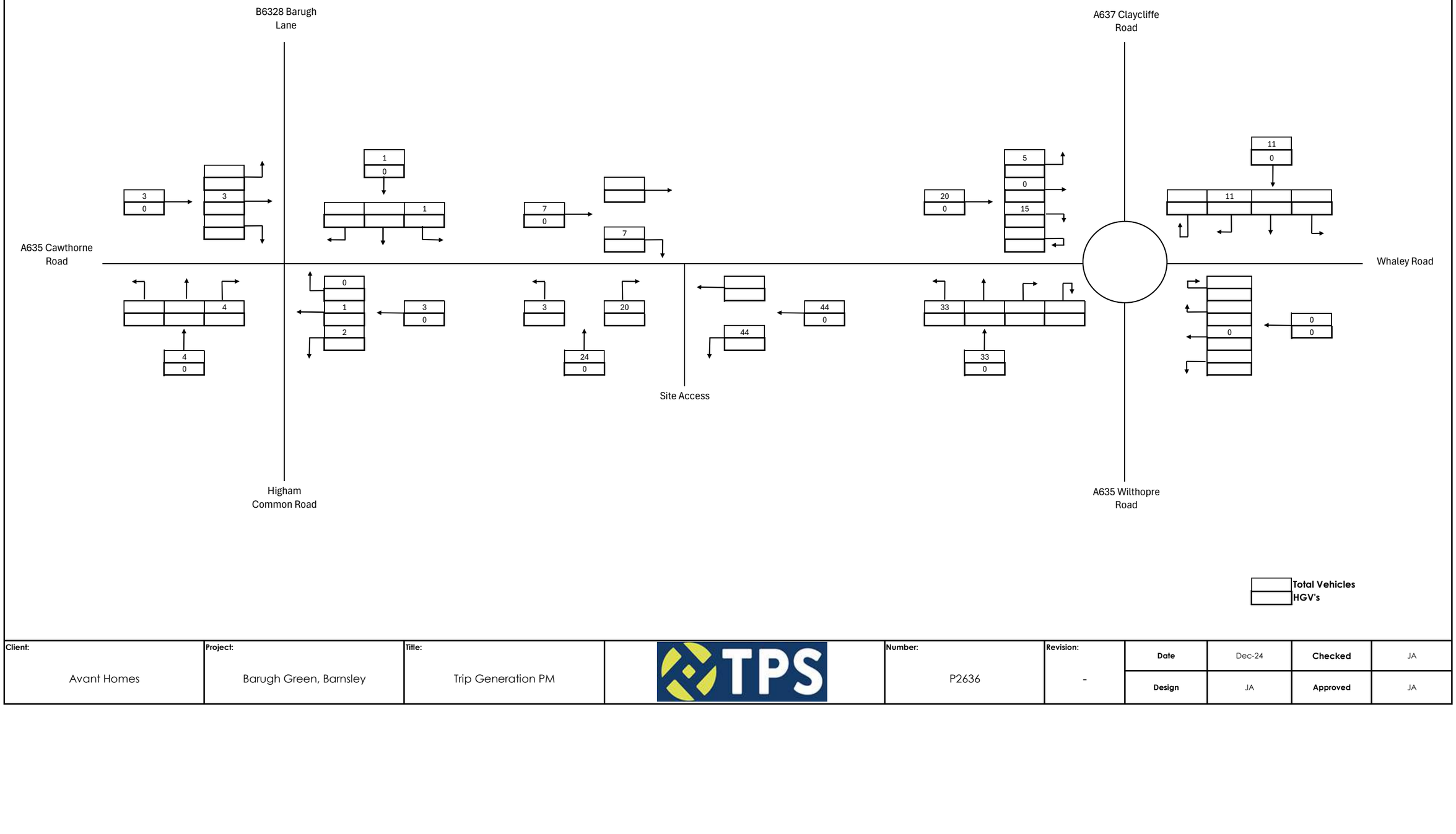
Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	Trip Distribution	TPS	P2636	-	Design	JA	Approved	JA

Appendix E

Trip Generation Flows



Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	Trip Generation AM	TPS	P2636	-	Design	JA	Approved	JA



Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	Trip Generation PM	TPS	P2636	-	Design	JA	Approved	JA

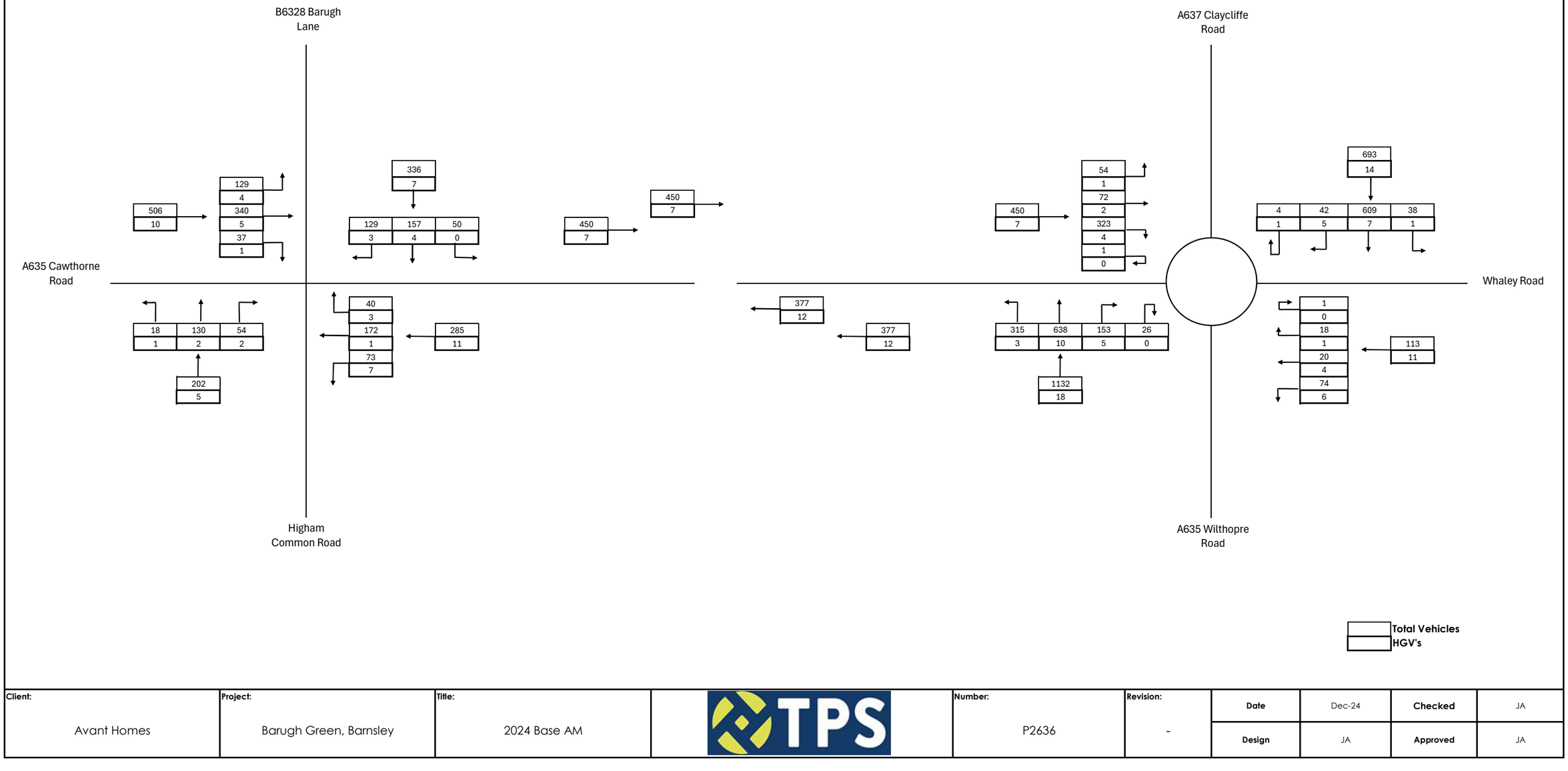
Appendix F

Count Data

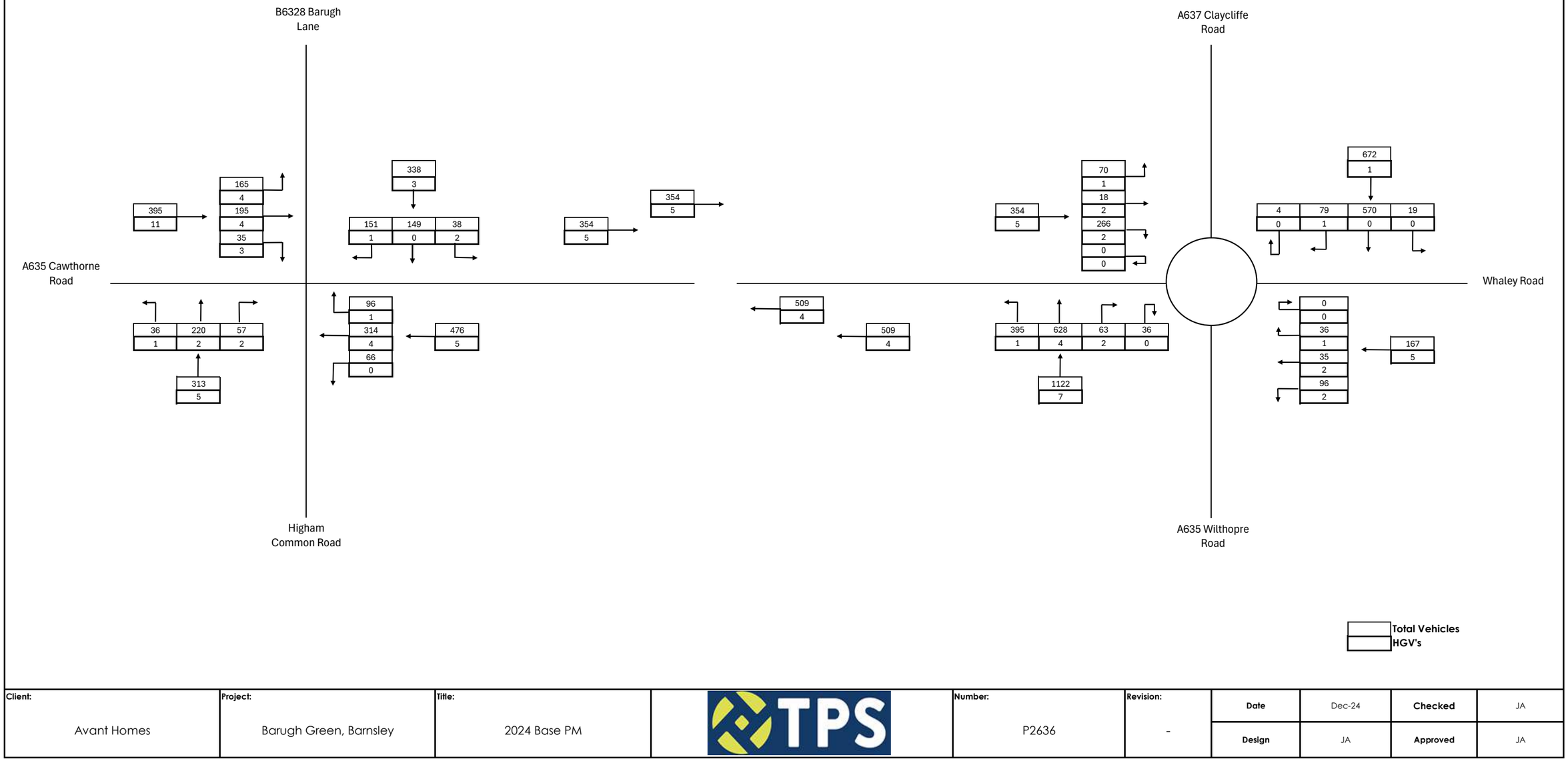
https://www.dropbox.com/scl/fo/pe1c3q966udmt1nir14ff/AIDGlDUuREGDwxZ_-N378f0?rlkey=gs73fx7ed45e6pukstxifdja8&dl=0

Appendix G

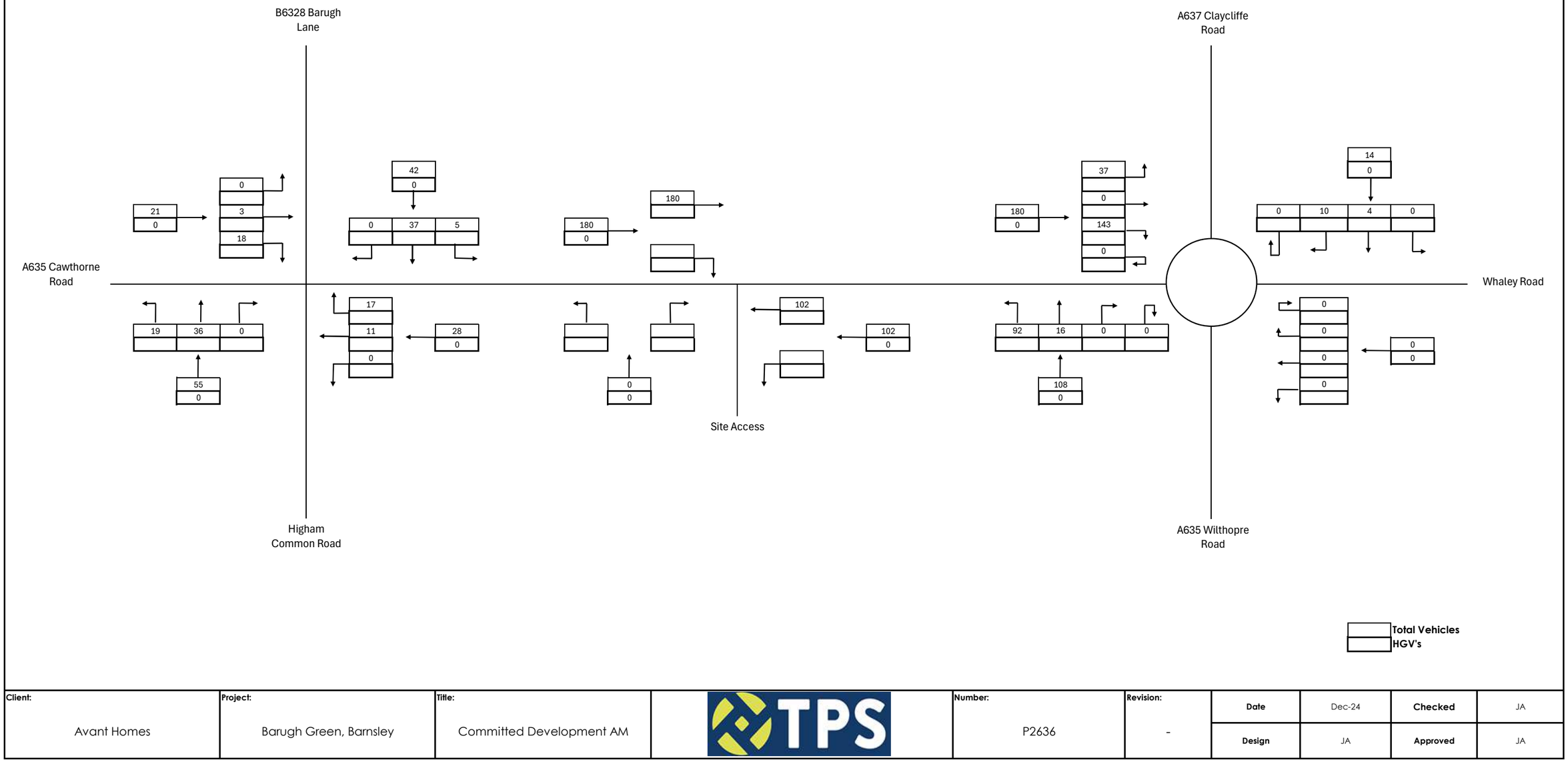
2024 Base and CD Flows



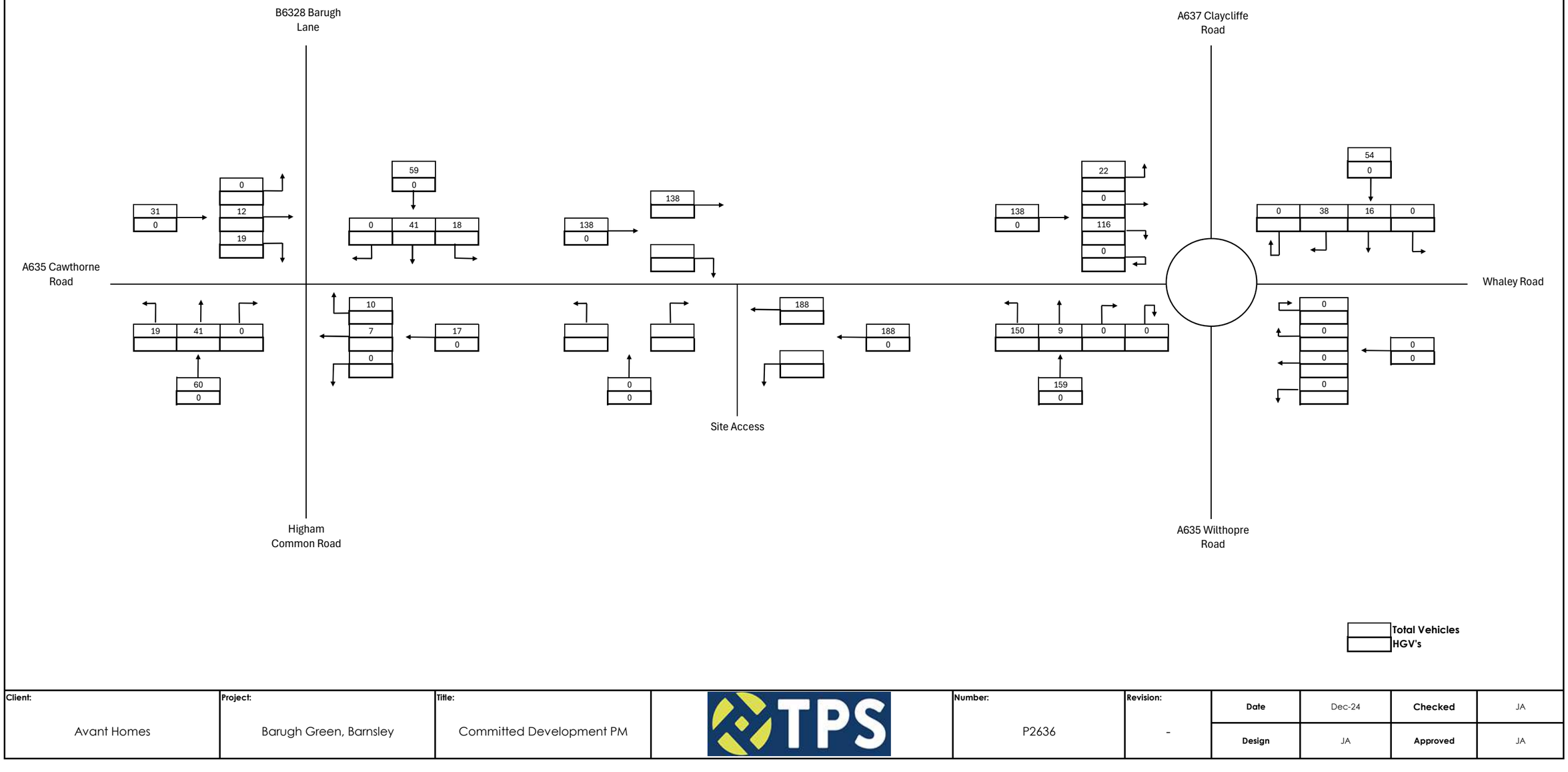
Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	2024 Base AM	TPS	P2636	-	Design	JA	Approved	JA



Client:	Project:	Title:		Number:	Revision:				
Avant Homes	Barugh Green, Barnsley	2024 Base PM	TPS	P2636	-	Date	Dec-24	Checked	JA
						Design	JA	Approved	JA



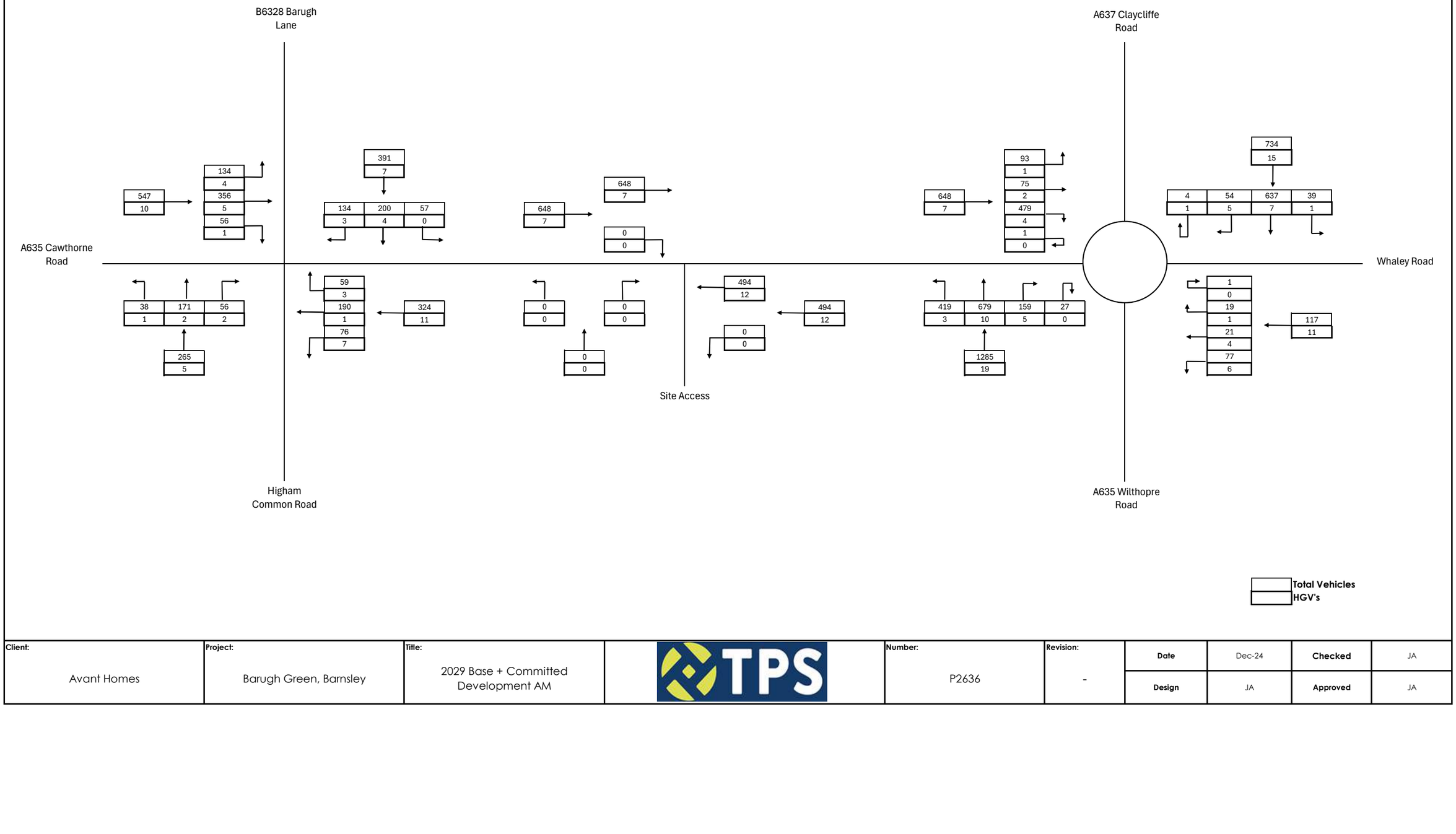
Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	Committed Development AM	TPS	P2636	-	Design	JA	Approved	JA



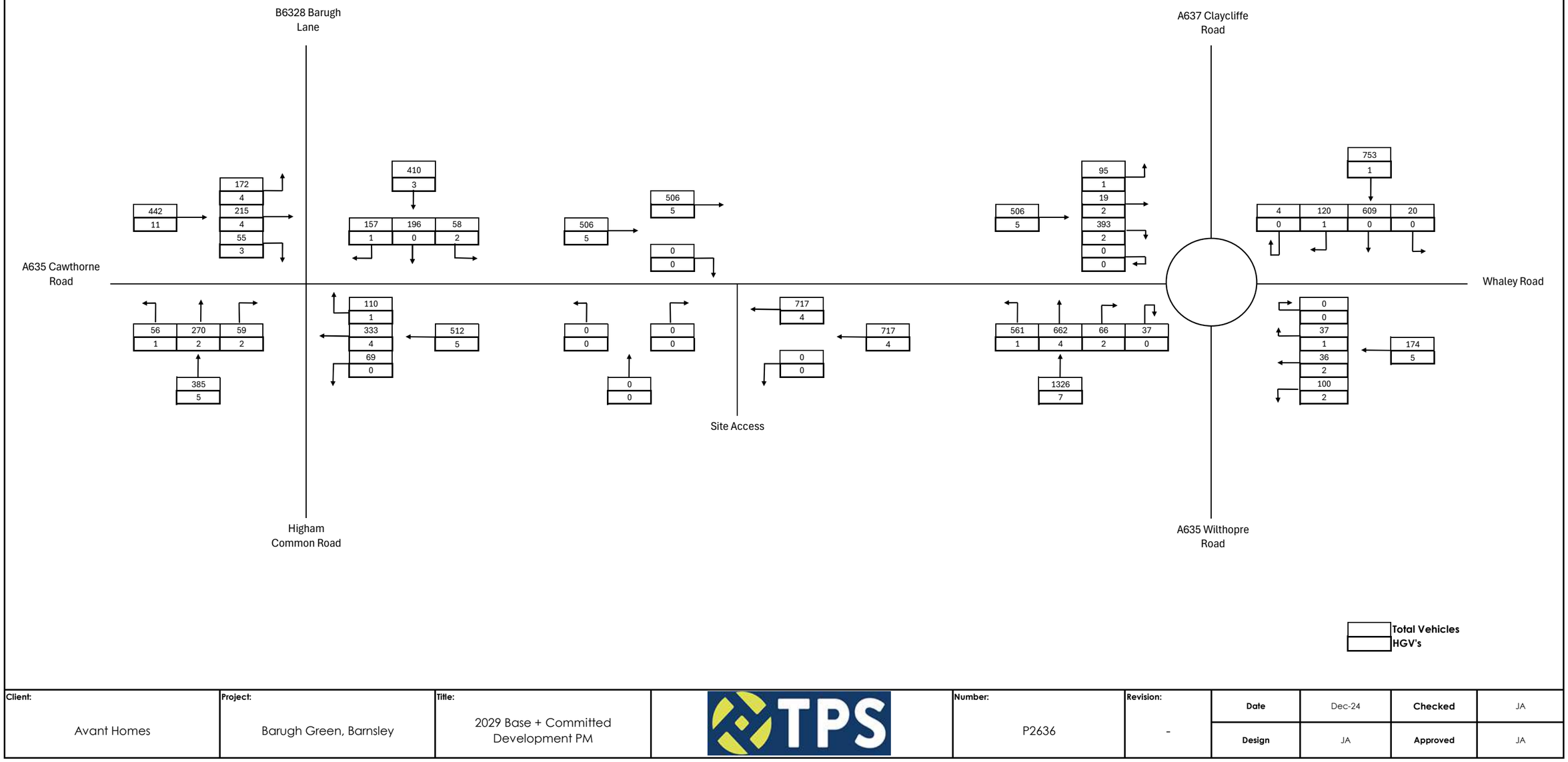
Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	Committed Development PM	TPS	P2636	-	Design	JA	Approved	JA

Appendix H

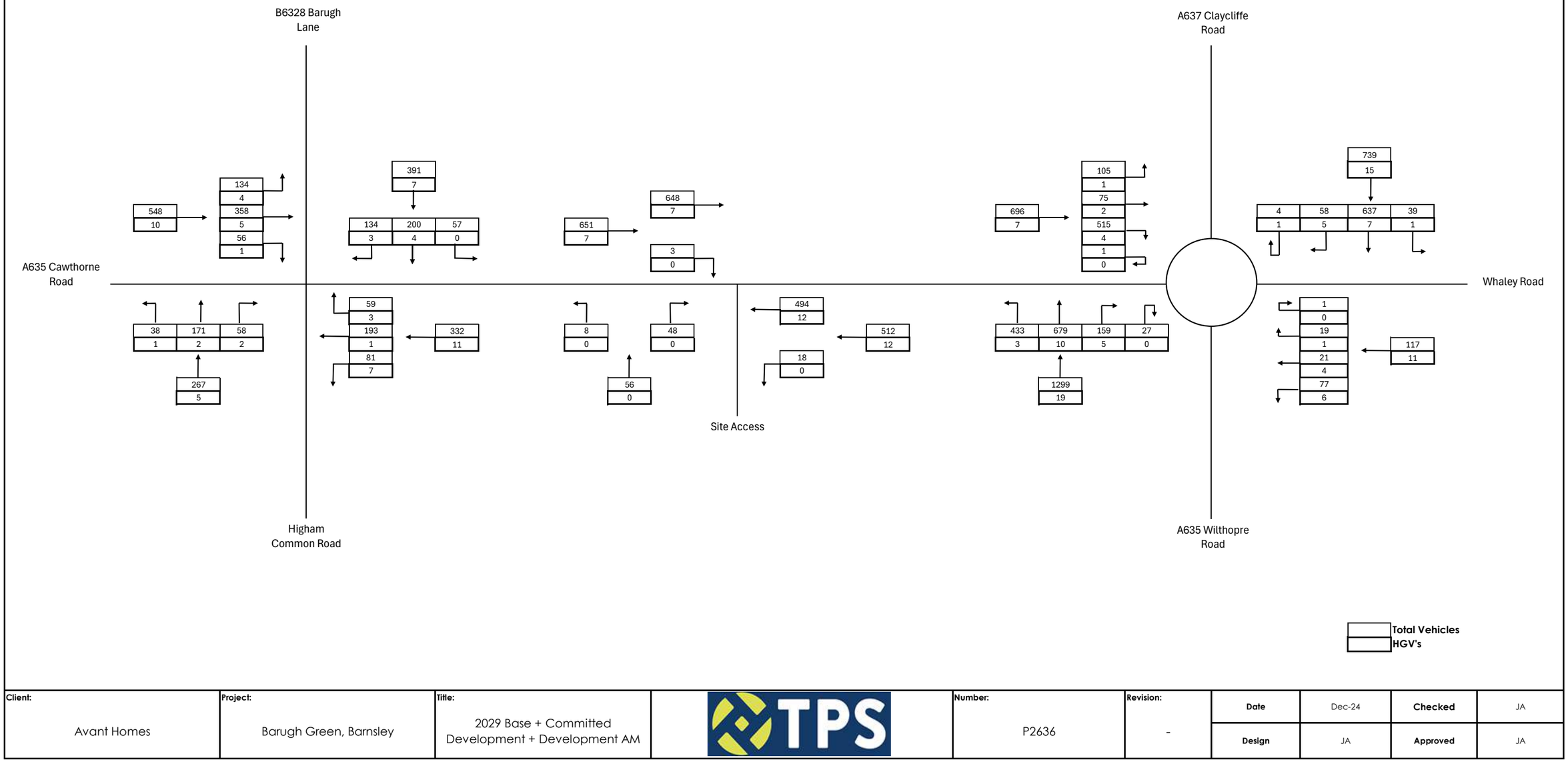
Committed Development (CD), 2029 Base + CD and 2029 Base CD + Development Flows



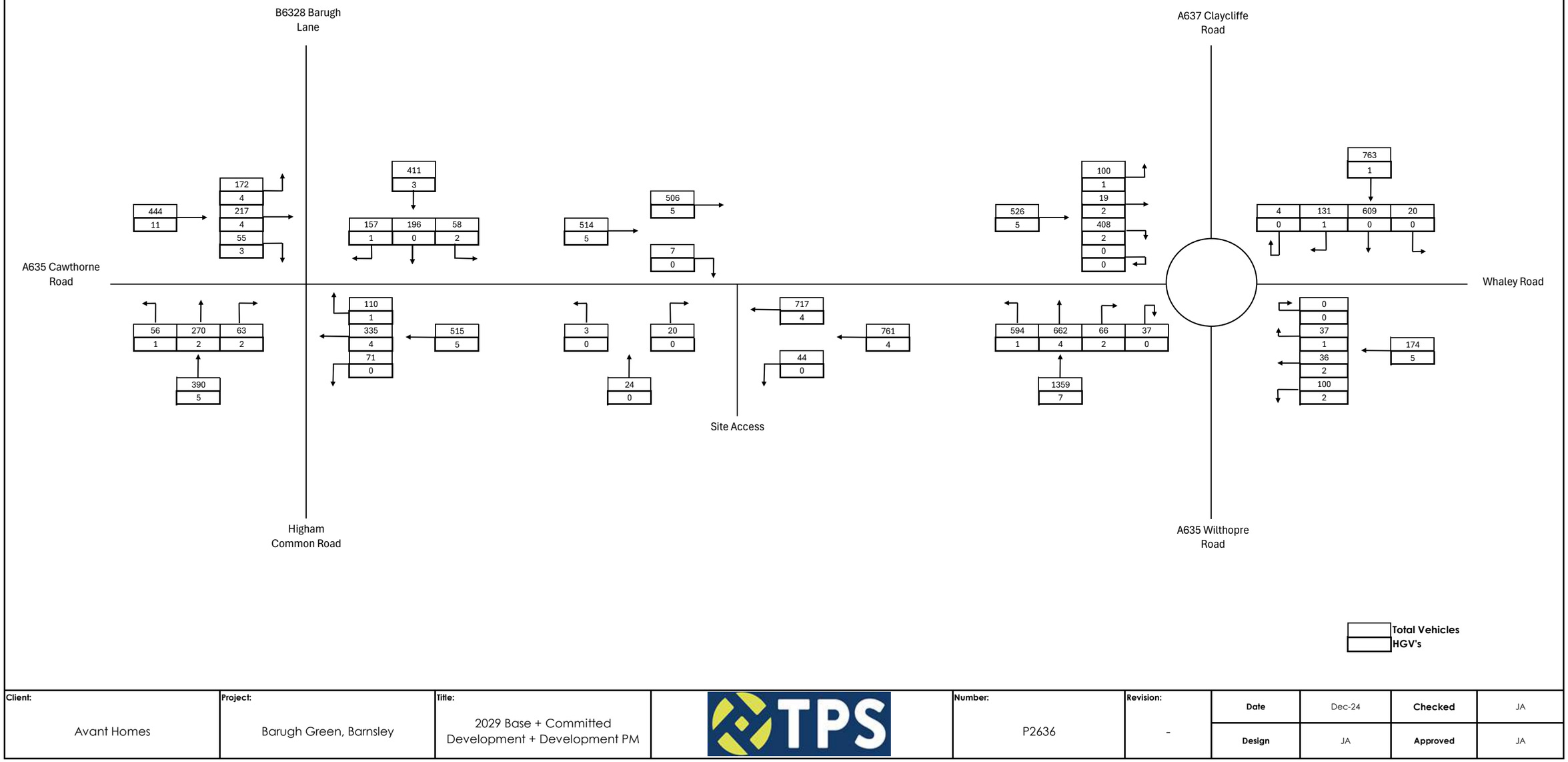
Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	2029 Base + Committed Development AM	TPS	P2636	-	Design	JA	Approved	JA



Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	2029 Base + Committed Development PM	TPS	P2636	-	Design	JA	Approved	JA



Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	2029 Base + Committed Development + Development AM	TPS	P2636	-	Design	JA	Approved	JA



Client:	Project:	Title:		Number:	Revision:	Date	Dec-24	Checked	JA
Avant Homes	Barugh Green, Barnsley	2029 Base + Committed Development + Development PM	TPS	P2636	-	Design	JA	Approved	JA

Appendix I

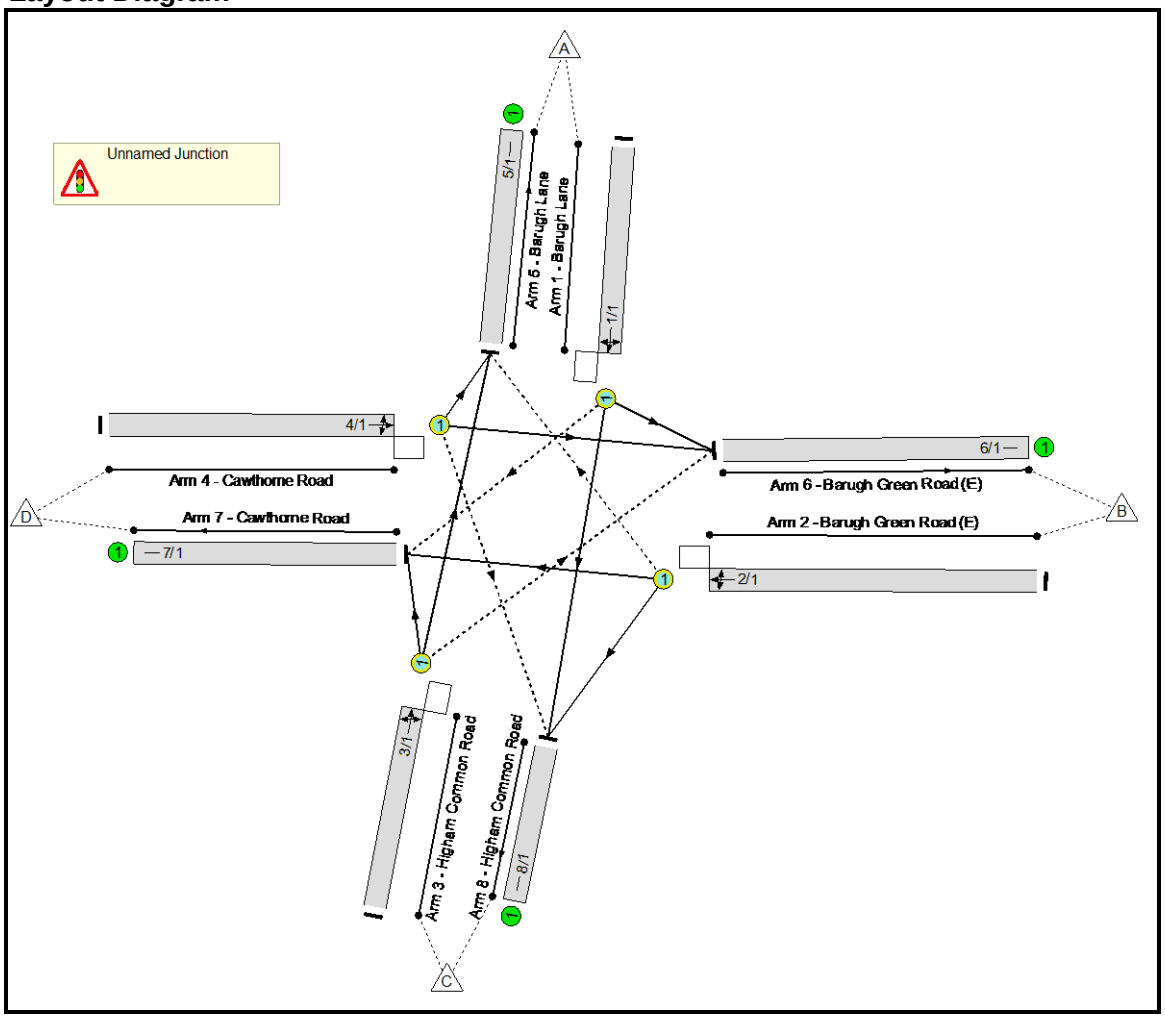
Junction Modelling Output

Full Input Data And Results

User and Project Details

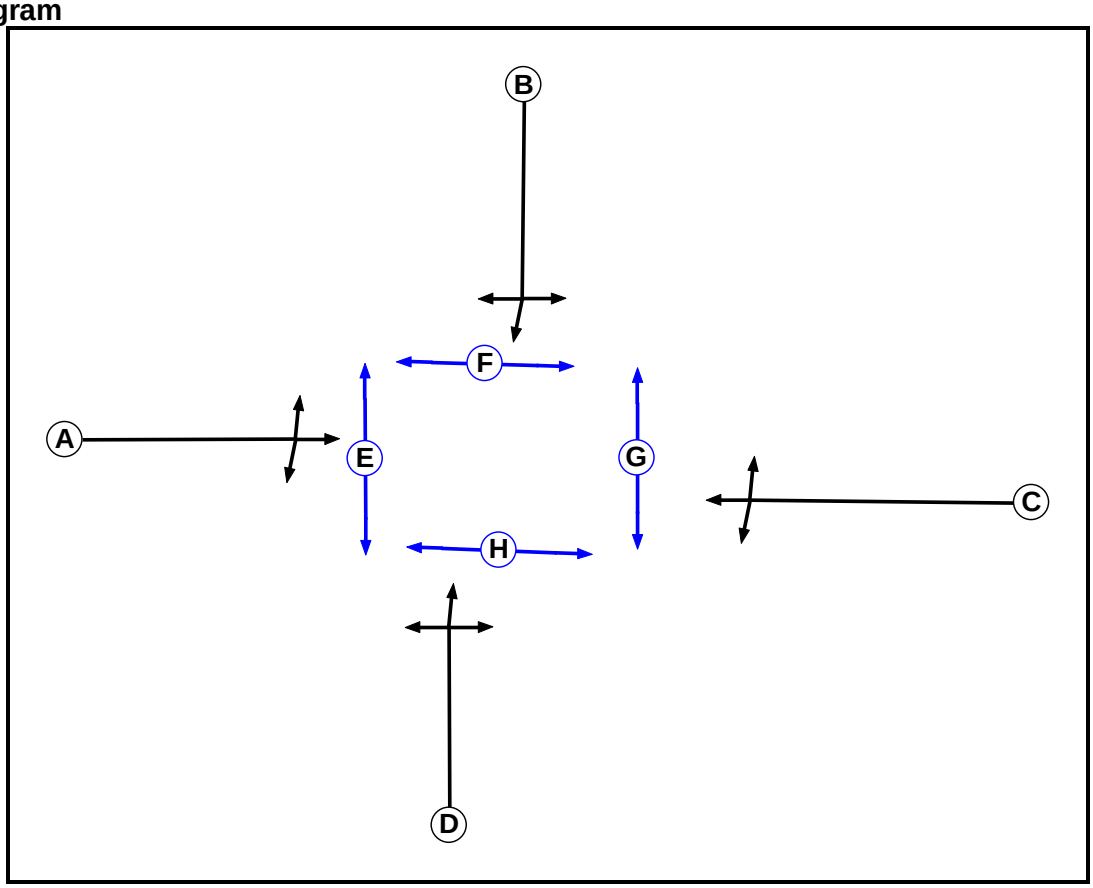
Project:	**Barugh Green Road**
Title:	**Barugh Green Crossroads**
Location:	
Client:	Avant Homes
Checked By:	JT
Checked By Date:	JT
Additional detail:	
File name:	Barugh Green Road_Cawthorne Road.lsg3x
Author:	JT
Company:	TPS Consultants Ltd
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7
H	Pedestrian		7	7

Full Input Data And Results

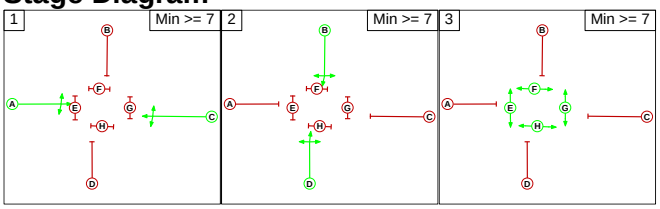
Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		6	-	6	6	6	6	6
	B	6		6	-	6	6	6	6
	C	-	6		6	6	6	6	6
	D	6	-	6		6	6	6	6
	E	6	6	6	6		-	-	-
	F	6	6	6	6	-		-	-
	G	6	6	6	6	-	-		-
	H	6	6	6	6	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	B D
3	E F G H

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		6	6
	2	6		6
	3	6	6	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction

Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (Barugh Lane)	7/1 (Right)	1439	0	3/1	1.09	To 5/1 (Ahead) To 7/1 (Left)	2.00	2.00	0.50	2	2.00
2/1 (Barugh Green Road (E))	5/1 (Right)	1439	0	4/1	1.09	To 5/1 (Left) To 6/1 (Ahead)	2.00	4.00	0.50	2	2.00
3/1 (Higham Common Road)	6/1 (Right)	1439	0	1/1	1.09	To 6/1 (Left) To 8/1 (Ahead)	2.00	2.00	0.50	2	2.00
4/1 (Cawthorne Road)	8/1 (Right)	1439	0	2/1	1.09	To 7/1 (Ahead) To 8/1 (Left)	2.00	3.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Barugh Lane)	O	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Left	9.00
											Arm 7 Right	17.00
											Arm 8 Ahead	Inf
2/1 (Barugh Green Road (E))	O	C	2	3	60.0	Geom	-	4.30	0.00	Y	Arm 5 Right	15.00
											Arm 7 Ahead	Inf
											Arm 8 Left	12.00
3/1 (Higham Common Road)	O	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	15.00
											Arm 7 Left	10.00
4/1 (Cawthorne Road)	O	A	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 5 Left	10.00
											Arm 6 Ahead	Inf
											Arm 8 Right	16.00
5/1 (Barugh Lane)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Barugh Green Road (E))	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Cawthorne Road)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Higham Common Road)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2029 Base + CD AM'	08:00	09:00	01:00	
2: '2029 Base + CD PM'	16:00	17:00	01:00	
3: '2029 Base + CD + Development AM'	08:00	09:00	01:00	
4: '2029 Base + CD + Development PM'	16:00	17:00	01:00	

Scenario 1: '2029 Base AM ' (FG1: '2029 Base + CD AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	57	204	137	398
	B	62	0	83	191	336
	C	173	58	0	39	270
	D	138	361	57	0	556
	Tot.	373	476	344	367	1560

Traffic Lane Flows

Lane	Scenario 1: 2029 Base AM
Junction: Unnamed Junction	
1/1	398
2/1	336
3/1	270
4/1	556
5/1	373
6/1	476
7/1	367
8/1	344

Full Input Data And Results

Lane Saturation Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Barugh Lane)	3.50	0.00	Y	Arm 6 Left	9.00	14.3 %	1864	1864
				Arm 7 Right	17.00	34.4 %		
				Arm 8 Ahead	Inf	51.3 %		
2/1 (Barugh Green Road (E))	4.30	0.00	Y	Arm 5 Right	15.00	18.5 %	1949	1949
				Arm 7 Ahead	Inf	56.8 %		
				Arm 8 Left	12.00	24.7 %		
3/1 (Higham Common Road)	3.00	0.00	Y	Arm 5 Ahead	Inf	64.1 %	1836	1836
				Arm 6 Right	15.00	21.5 %		
				Arm 7 Left	10.00	14.4 %		
4/1 (Cawthorne Road)	4.50	0.00	Y	Arm 5 Left	10.00	24.8 %	1973	1973
				Arm 6 Ahead	Inf	64.9 %		
				Arm 8 Right	16.00	10.3 %		
5/1 (Barugh Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barugh Green Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Cawthorne Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Higham Common Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2029 Base PM' (FG2: '2029 Base + CD PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	60	196	158	414
	B	111	0	69	337	517
	C	272	61	0	57	390
	D	176	219	58	0	453
	Tot.	559	340	323	552	1774

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2029 Base PM
Junction: Unnamed Junction	
1/1	414
2/1	517
3/1	390
4/1	453
5/1	559
6/1	340
7/1	552
8/1	323

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Barugh Lane)	3.50	0.00	Y	Arm 6 Left	9.00	14.5 %	1858	1858
				Arm 7 Right	17.00	38.2 %		
				Arm 8 Ahead	Inf	47.3 %		
2/1 (Barugh Green Road (E))	4.30	0.00	Y	Arm 5 Right	15.00	21.5 %	1970	1970
				Arm 7 Ahead	Inf	65.2 %		
				Arm 8 Left	12.00	13.3 %		
3/1 (Higham Common Road)	3.00	0.00	Y	Arm 5 Ahead	Inf	69.7 %	1846	1846
				Arm 6 Right	15.00	15.6 %		
				Arm 7 Left	10.00	14.6 %		
4/1 (Cawthorne Road)	4.50	0.00	Y	Arm 5 Left	10.00	38.9 %	1929	1929
				Arm 6 Ahead	Inf	48.3 %		
				Arm 8 Right	16.00	12.8 %		
5/1 (Barugh Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barugh Green Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Cawthorne Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Higham Common Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2029 Base + Dev AM ' (FG3: '2029 Base + CD + Development AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin		Destination				
		A	B	C	D	Tot.
	A	0	57	204	137	398
	B	62	0	88	194	344
	C	173	60	0	39	272
	D	138	363	57	0	558
	Tot.	373	480	349	370	1572

Traffic Lane Flows

Lane	Scenario 3: 2029 Base + Dev AM
Junction: Unnamed Junction	
1/1	398
2/1	344
3/1	272
4/1	558
5/1	373
6/1	480
7/1	370
8/1	349

Full Input Data And Results

Lane Saturation Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Barugh Lane)	3.50	0.00	Y	Arm 6 Left	9.00	14.3 %	1864	1864
				Arm 7 Right	17.00	34.4 %		
				Arm 8 Ahead	Inf	51.3 %		
2/1 (Barugh Green Road (E))	4.30	0.00	Y	Arm 5 Right	15.00	18.0 %	1948	1948
				Arm 7 Ahead	Inf	56.4 %		
				Arm 8 Left	12.00	25.6 %		
3/1 (Higham Common Road)	3.00	0.00	Y	Arm 5 Ahead	Inf	63.6 %	1835	1835
				Arm 6 Right	15.00	22.1 %		
				Arm 7 Left	10.00	14.3 %		
4/1 (Cawthorne Road)	4.50	0.00	Y	Arm 5 Left	10.00	24.7 %	1973	1973
				Arm 6 Ahead	Inf	65.1 %		
				Arm 8 Right	16.00	10.2 %		
5/1 (Barugh Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barugh Green Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Cawthorne Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Higham Common Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2029 Base + Dev PM' (FG4: '2029 Base + CD + Development PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	60	196	158	414
	B	111	0	71	339	521
	C	272	65	0	57	394
	D	176	221	58	0	455
	Tot.	559	346	325	554	1784

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2029 Base + Dev PM
Junction: Unnamed Junction	
1/1	414
2/1	521
3/1	394
4/1	455
5/1	559
6/1	346
7/1	554
8/1	325

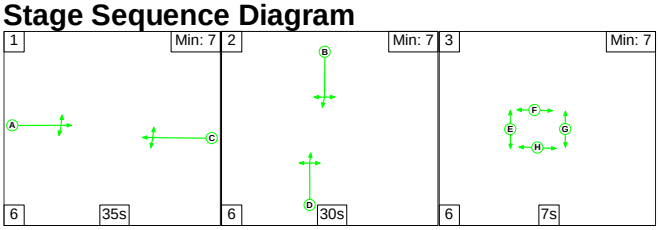
Lane Saturation Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Barugh Lane)	3.50	0.00	Y	Arm 6 Left	9.00	14.5 %	1858	1858
				Arm 7 Right	17.00	38.2 %		
				Arm 8 Ahead	Inf	47.3 %		
2/1 (Barugh Green Road (E))	4.30	0.00	Y	Arm 5 Right	15.00	21.3 %	1969	1969
				Arm 7 Ahead	Inf	65.1 %		
				Arm 8 Left	12.00	13.6 %		
3/1 (Higham Common Road)	3.00	0.00	Y	Arm 5 Ahead	Inf	69.0 %	1845	1845
				Arm 6 Right	15.00	16.5 %		
				Arm 7 Left	10.00	14.5 %		
4/1 (Cawthorne Road)	4.50	0.00	Y	Arm 5 Left	10.00	38.7 %	1930	1930
				Arm 6 Ahead	Inf	48.6 %		
				Arm 8 Right	16.00	12.7 %		
5/1 (Barugh Lane Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Barugh Green Road (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Cawthorne Road Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (Higham Common Road Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2029 Base AM ' (FG1: '2029 Base + CD AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

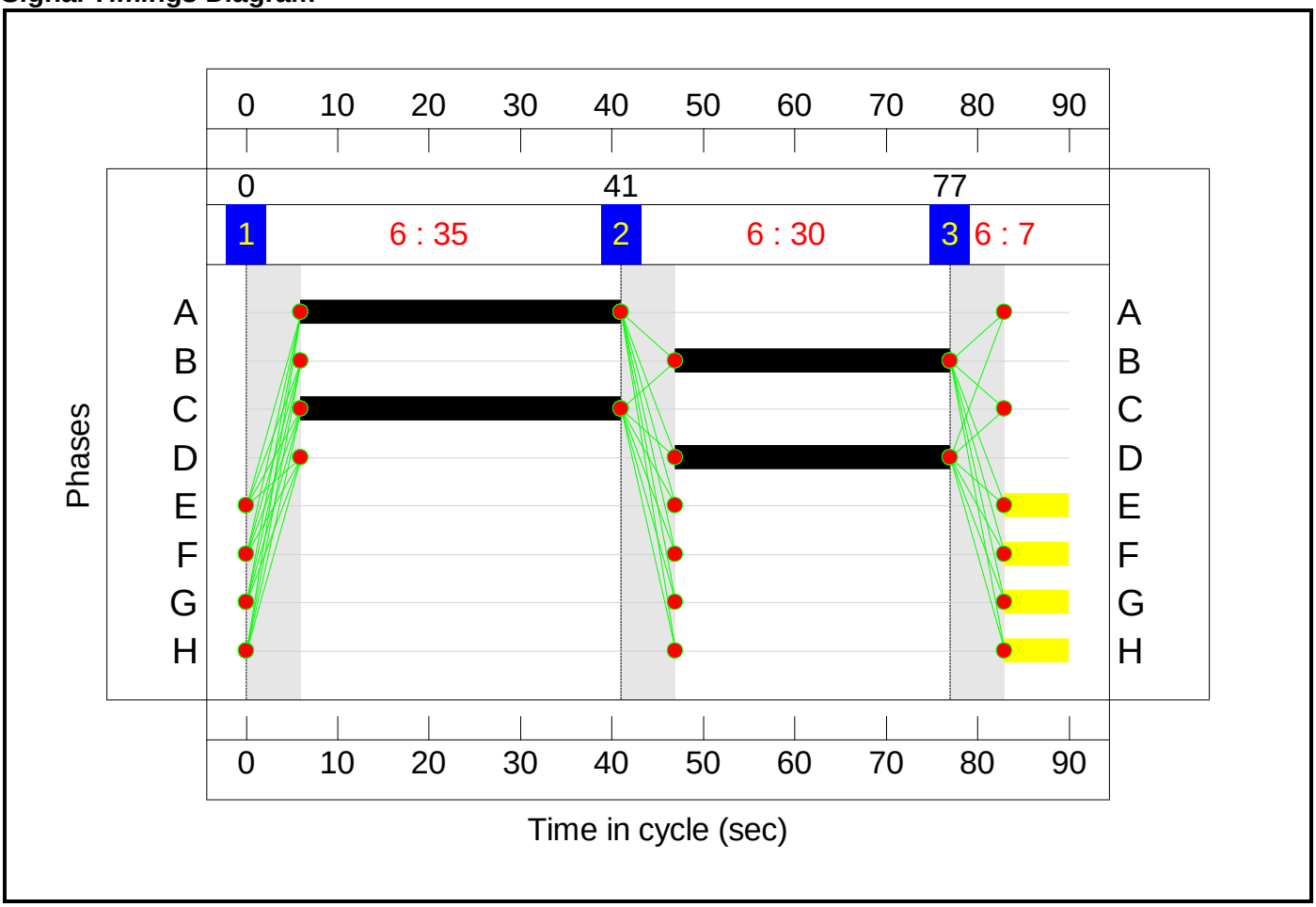


Full Input Data And Results

Stage Timings

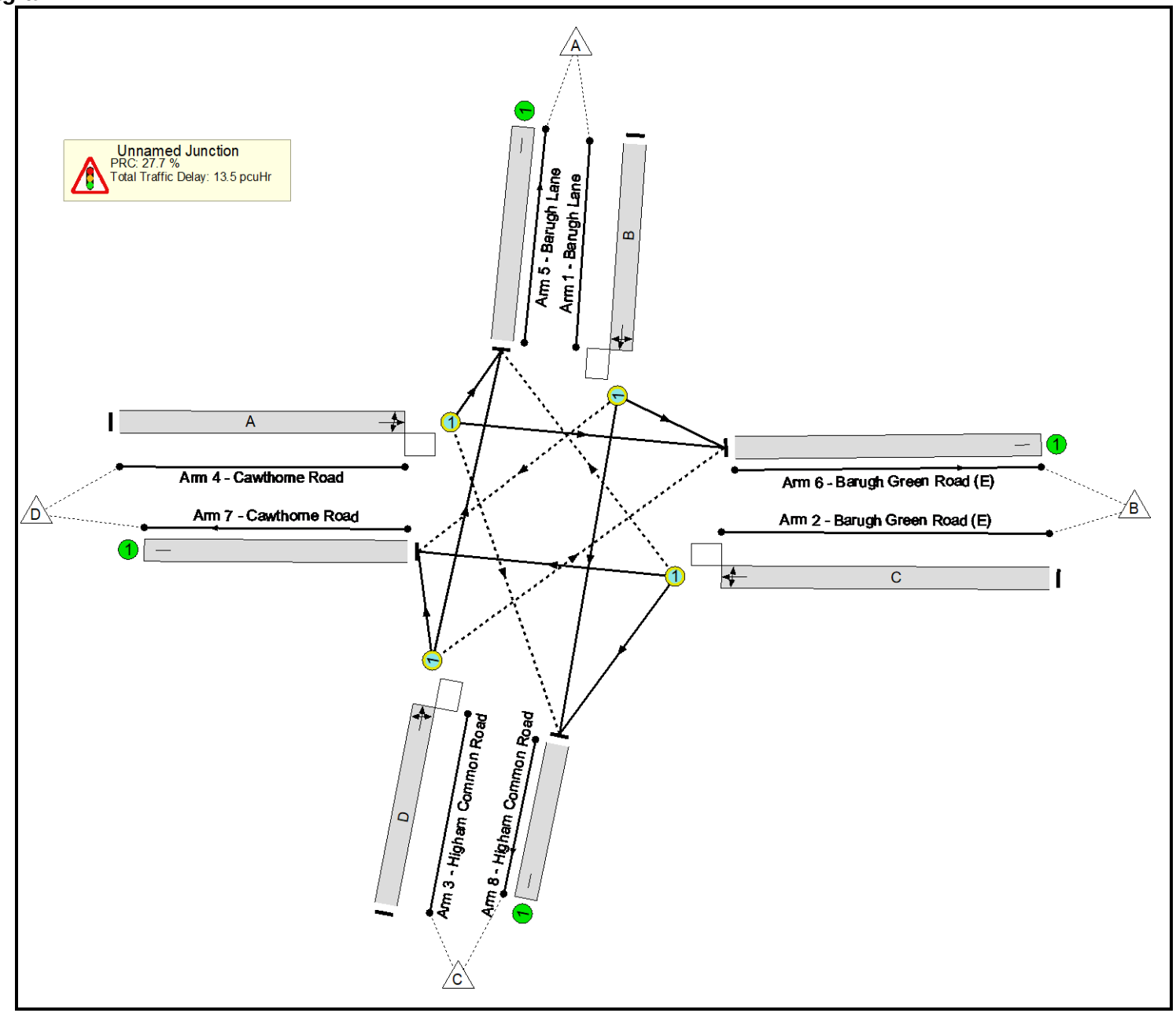
Stage	1	2	3
Duration	35	30	7
Change Point	0	41	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barugh Green Crossroads	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.5%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.5%**
1/1	Barugh Lane Left Right Ahead	O	N/A	N/A	B		1	30	-	398	1864	582	68.4%
2/1	Barugh Green Road (E) Right Ahead Left	O	N/A	N/A	C		1	35	-	336	1949	672	50.0%
3/1	Higham Common Road Ahead Right Left	O	N/A	N/A	D		1	30	-	270	1836	632	42.7%
4/1	Cawthorne Road Left Ahead Right	O	N/A	N/A	A		1	35	-	556	1973	789	70.5%
5/1	Barugh Lane	U	N/A	N/A	-		-	-	-	373	Inf	Inf	0.0%
6/1	Barugh Green Road (E)	U	N/A	N/A	-		-	-	-	476	Inf	Inf	0.0%
7/1	Cawthorne Road	U	N/A	N/A	-		-	-	-	367	Inf	Inf	0.0%
8/1	Higham Common Road	U	N/A	N/A	-		-	-	-	344	Inf	Inf	0.0%

Full Input Data And Results

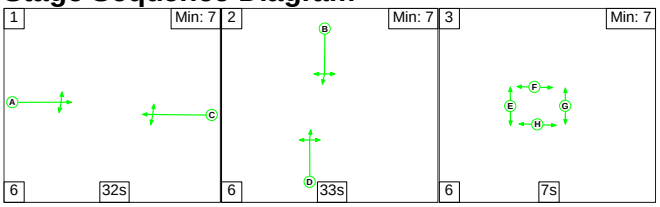
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barugh Green Crossroads	**-**	**-**	**314**	**0**	**0**	**9.8**	**3.1**	**0.5**	**13.5**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**314**	**0**	**0**	**9.8**	**3.1**	**0.5**	**13.5**	**-**	**-**	**-**	**-**
1/1	398	398	137	0	0	2.8	1.1	0.2	4.1	36.7	8.6	1.1	9.7
2/1	336	336	62	0	0	1.8	0.5	0.2	2.6	27.6	6.1	0.5	6.6
3/1	270	270	58	0	0	1.7	0.4	0.1	2.1	28.5	5.2	0.4	5.5
4/1	556	556	57	0	0	3.5	1.2	0.0	4.7	30.5	11.6	1.2	12.8
5/1	373	373	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	476	476	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	367	367	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	344	344	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 27.7 Total Delay for Signalled Lanes (pcuHr): 13.47 Cycle Time (s): 90
PRC Over All Lanes (%): 27.7 Total Delay Over All Lanes(pcuHr): 13.47

Full Input Data And Results

Scenario 2: '2029 Base PM' (FG2: '2029 Base + CD PM', Plan 1: 'Network Control Plan 1')

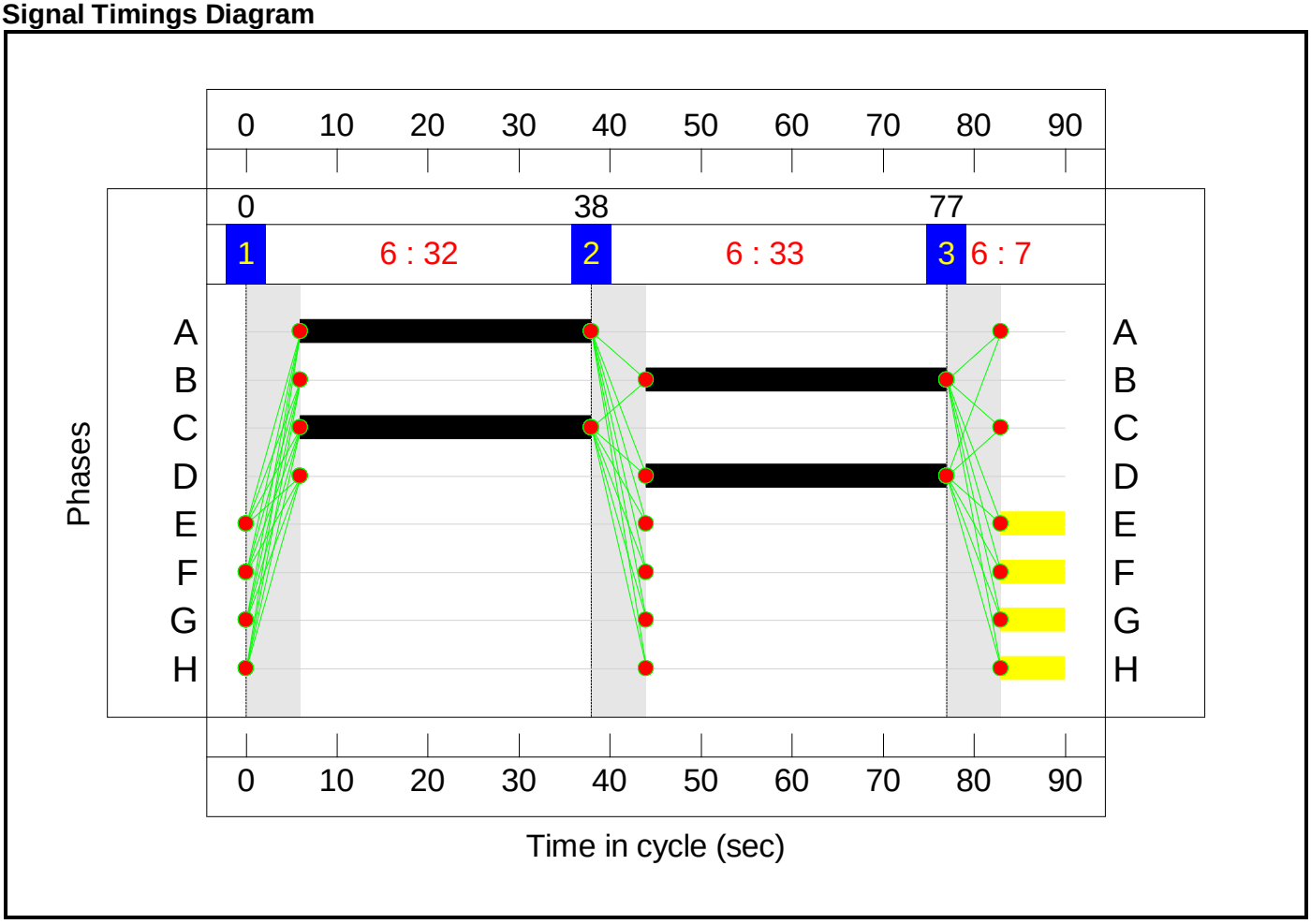
Stage Sequence Diagram



Stage Timings

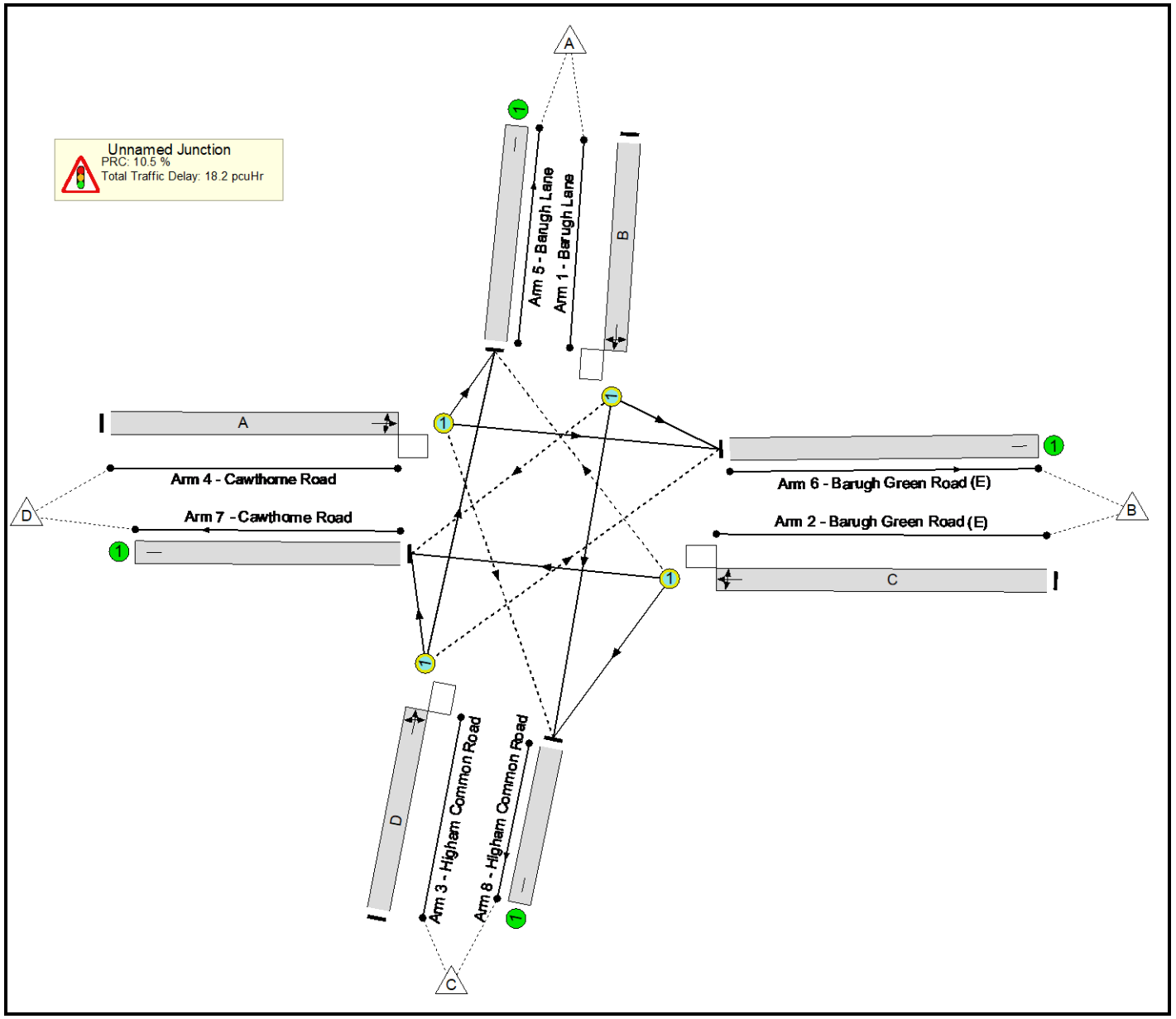
Stage	1	2	3
Duration	32	33	7
Change Point	0	38	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barugh Green Crossroads	-	-	**N/A**	-	-		-	-	-	-	-	-	**81.5%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**81.5%**
1/1	Barugh Lane Left Right Ahead	O	N/A	N/A	B		1	33	-	414	1858	519	79.7%
2/1	Barugh Green Road (E) Right Ahead Left	O	N/A	N/A	C		1	32	-	517	1970	635	81.5%
3/1	Higham Common Road Ahead Right Left	O	N/A	N/A	D		1	33	-	390	1846	697	55.9%
4/1	Cawthorne Road Left Ahead Right	O	N/A	N/A	A		1	32	-	453	1929	704	64.3%
5/1	Barugh Lane	U	N/A	N/A	-		-	-	-	559	Inf	Inf	0.0%
6/1	Barugh Green Road (E)	U	N/A	N/A	-		-	-	-	340	Inf	Inf	0.0%
7/1	Cawthorne Road	U	N/A	N/A	-		-	-	-	552	Inf	Inf	0.0%
8/1	Higham Common Road	U	N/A	N/A	-		-	-	-	323	Inf	Inf	0.0%

Full Input Data And Results

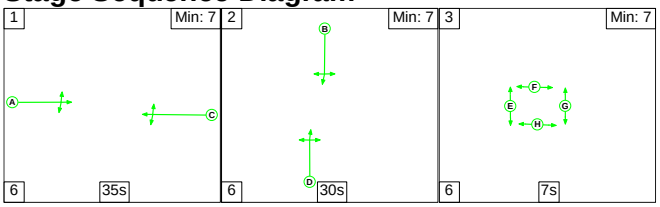
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barugh Green Crossroads	**-**	**-**	**388**	**0**	**0**	**11.9**	**5.5**	**0.8**	**18.2**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**388**	**0**	**0**	**11.9**	**5.5**	**0.8**	**18.2**	**-**	**-**	**-**	**-**
1/1	414	414	158	0	0	2.9	1.9	0.3	5.2	44.9	9.5	1.9	11.4
2/1	517	517	111	0	0	3.6	2.1	0.3	6.0	42.1	11.8	2.1	13.9
3/1	390	390	61	0	0	2.4	0.6	0.0	3.0	28.1	7.6	0.6	8.2
4/1	453	453	58	0	0	3.0	0.9	0.1	4.0	31.8	9.3	0.9	10.2
5/1	559	559	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	340	340	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	552	552	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	323	323	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 10.5 Total Delay for Signalled Lanes (pcuHr): 18.24 Cycle Time (s): 90
PRC Over All Lanes (%): 10.5 Total Delay Over All Lanes(pcuHr): 18.24

Full Input Data And Results

Scenario 3: '2029 Base + Dev AM ' (FG3: '2029 Base + CD + Development AM', Plan 1: 'Network Control Plan 1')

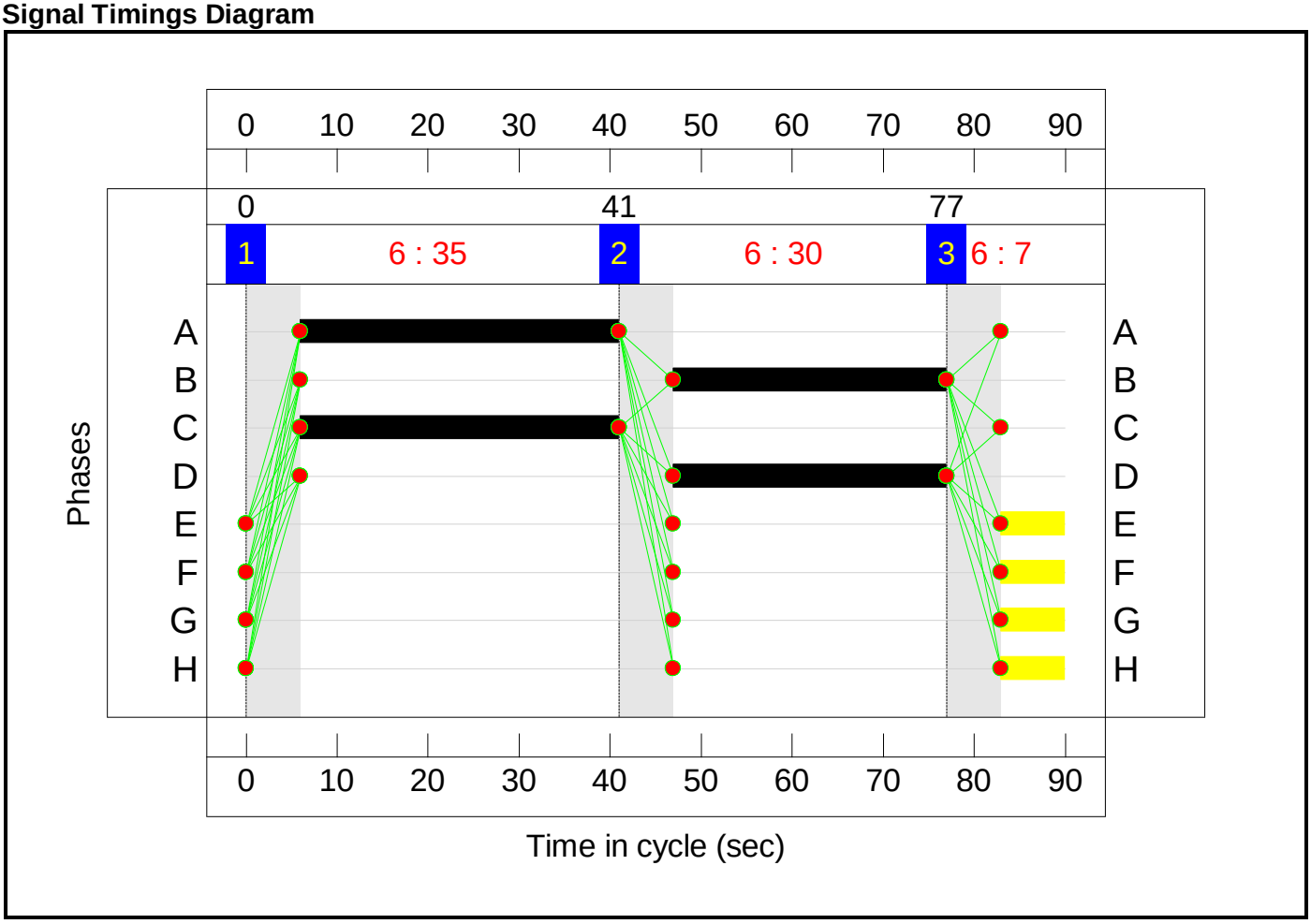
Stage Sequence Diagram



Stage Timings

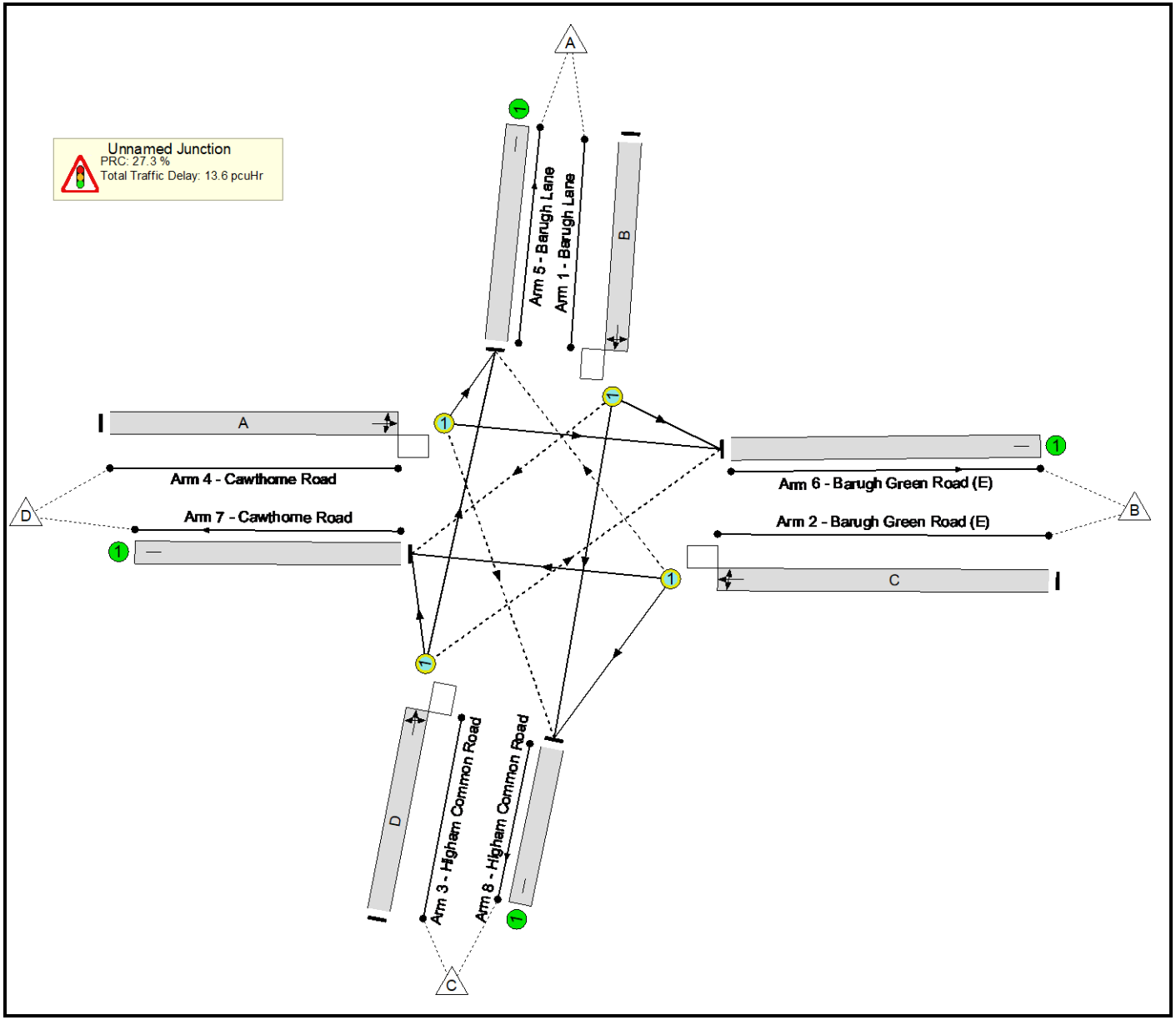
Stage	1	2	3
Duration	35	30	7
Change Point	0	41	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barugh Green Crossroads	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.7%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.7%**
1/1	Barugh Lane Left Right Ahead	O	N/A	N/A	B		1	30	-	398	1864	582	68.4%
2/1	Barugh Green Road (E) Right Ahead Left	O	N/A	N/A	C		1	35	-	344	1948	682	50.5%
3/1	Higham Common Road Ahead Right Left	O	N/A	N/A	D		1	30	-	272	1835	632	43.0%
4/1	Cawthorne Road Left Ahead Right	O	N/A	N/A	A		1	35	-	558	1973	789	70.7%
5/1	Barugh Lane	U	N/A	N/A	-		-	-	-	373	Inf	Inf	0.0%
6/1	Barugh Green Road (E)	U	N/A	N/A	-		-	-	-	480	Inf	Inf	0.0%
7/1	Cawthorne Road	U	N/A	N/A	-		-	-	-	370	Inf	Inf	0.0%
8/1	Higham Common Road	U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%

Full Input Data And Results

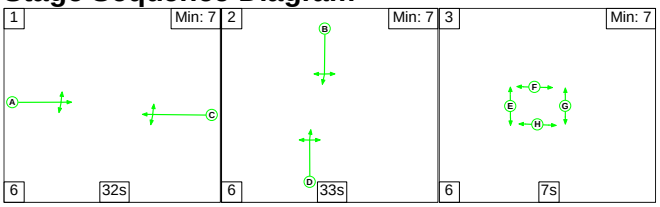
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barugh Green Crossroads	**-**	**-**	**316**	**0**	**0**	**9.9**	**3.1**	**0.5**	**13.6**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**316**	**0**	**0**	**9.9**	**3.1**	**0.5**	**13.6**	**-**	**-**	**-**	**-**
1/1	398	398	137	0	0	2.8	1.1	0.2	4.1	36.7	8.6	1.1	9.7
2/1	344	344	62	0	0	1.9	0.5	0.2	2.6	27.6	6.2	0.5	6.7
3/1	272	272	60	0	0	1.7	0.4	0.1	2.2	28.6	5.2	0.4	5.6
4/1	558	558	57	0	0	3.5	1.2	0.1	4.7	30.6	11.6	1.2	12.8
5/1	373	373	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	480	480	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	370	370	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	349	349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 27.3 Total Delay for Signalled Lanes (pcuHr): 13.60 Cycle Time (s): 90
PRC Over All Lanes (%): 27.3 Total Delay Over All Lanes(pcuHr): 13.60

Full Input Data And Results

Scenario 4: '2029 Base + Dev PM' (FG4: '2029 Base + CD + Development PM', Plan 1: 'Network Control Plan 1')

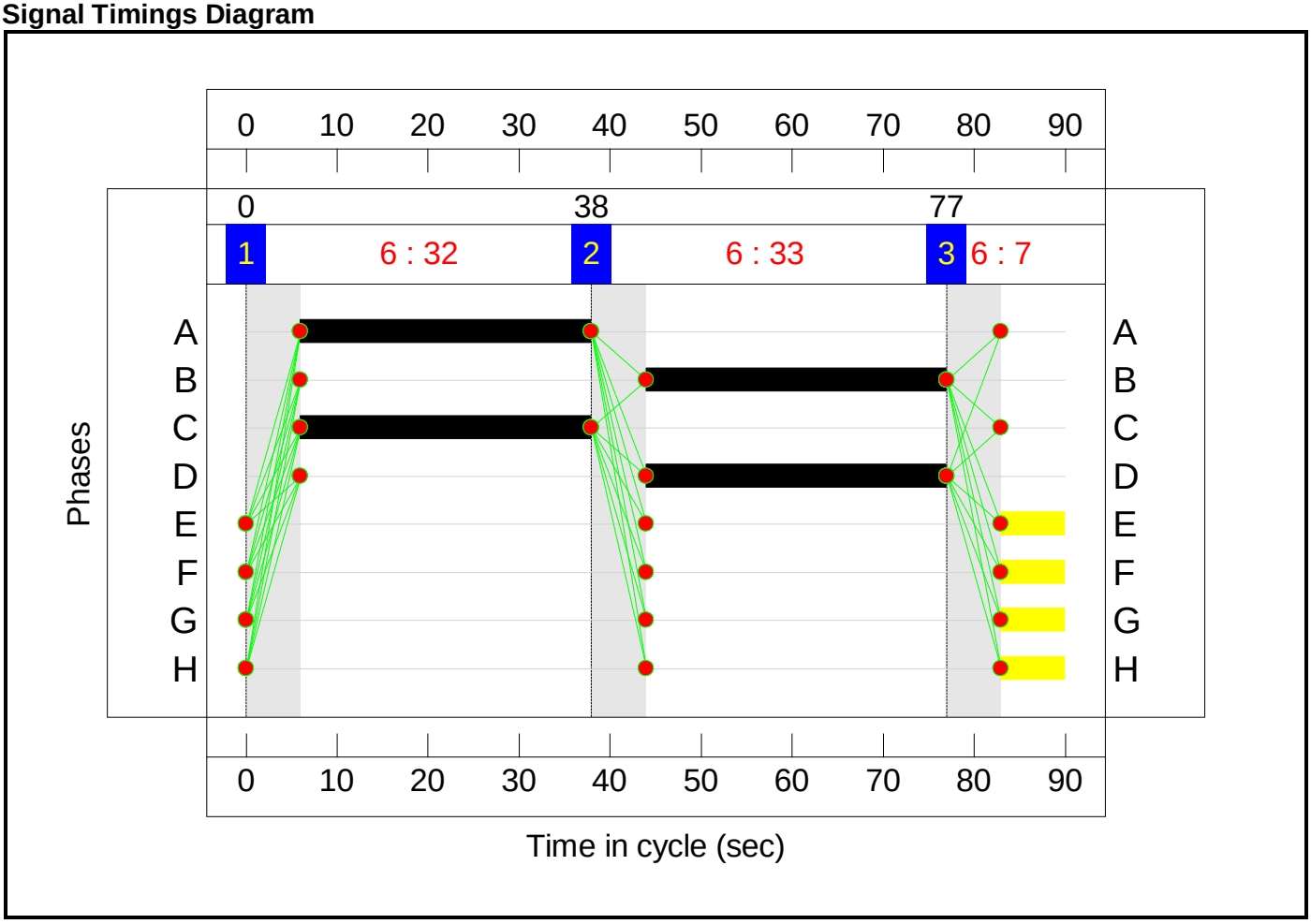
Stage Sequence Diagram



Stage Timings

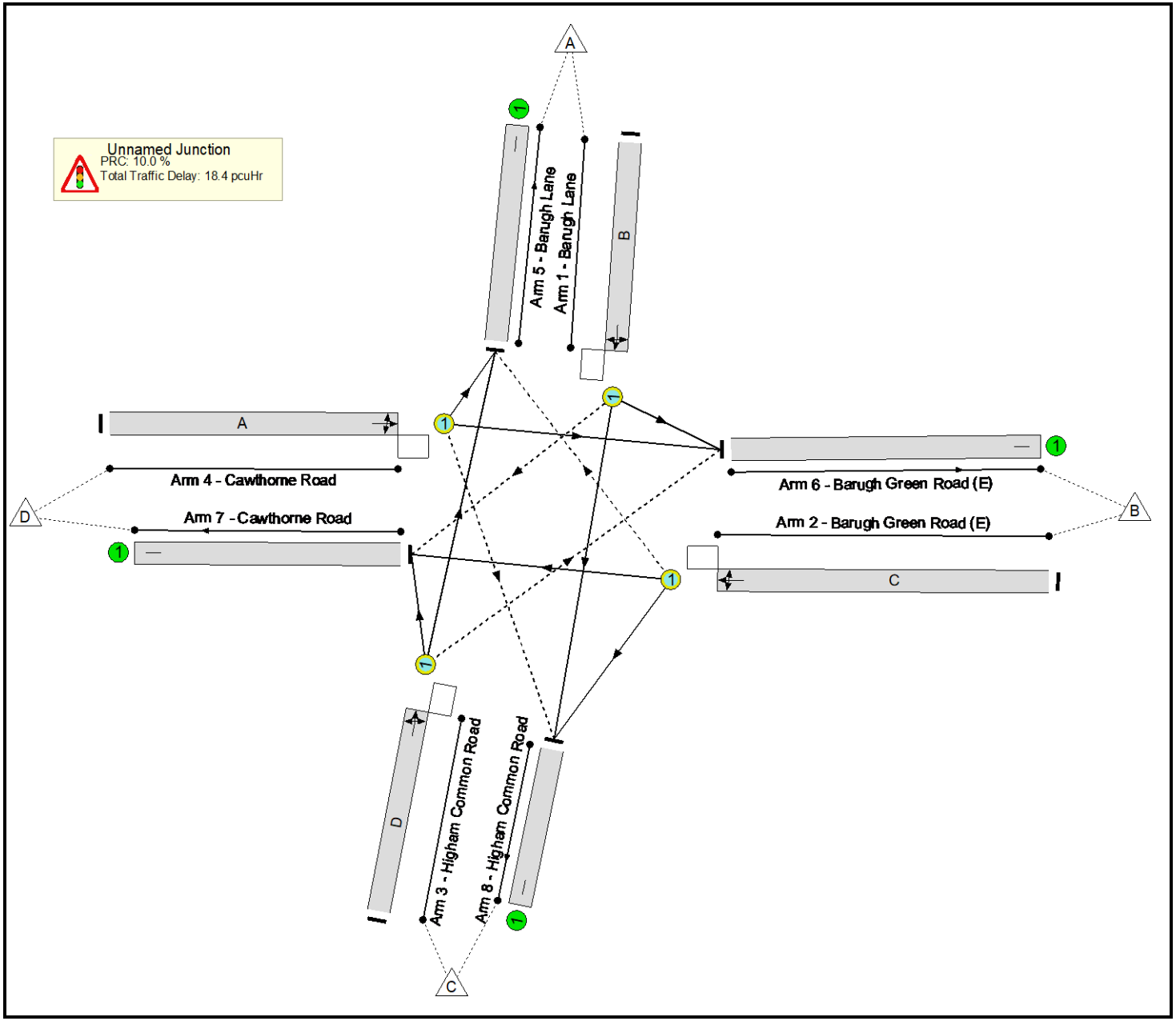
Stage	1	2	3
Duration	32	33	7
Change Point	0	38	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Barugh Green Crossroads	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.8%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.8%**
1/1	Barugh Lane Left Right Ahead	O	N/A	N/A	B		1	33	-	414	1858	519	79.7%
2/1	Barugh Green Road (E) Right Ahead Left	O	N/A	N/A	C		1	32	-	521	1969	637	81.8%
3/1	Higham Common Road Ahead Right Left	O	N/A	N/A	D		1	33	-	394	1845	697	56.5%
4/1	Cawthorne Road Left Ahead Right	O	N/A	N/A	A		1	32	-	455	1930	705	64.6%
5/1	Barugh Lane	U	N/A	N/A	-		-	-	-	559	Inf	Inf	0.0%
6/1	Barugh Green Road (E)	U	N/A	N/A	-		-	-	-	346	Inf	Inf	0.0%
7/1	Cawthorne Road	U	N/A	N/A	-		-	-	-	554	Inf	Inf	0.0%
8/1	Higham Common Road	U	N/A	N/A	-		-	-	-	325	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Barugh Green Crossroads	**-**	**-**	**392**	**0**	**0**	**12.0**	**5.6**	**0.8**	**18.4**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**392**	**0**	**0**	**12.0**	**5.6**	**0.8**	**18.4**	**-**	**-**	**-**	**-**
1/1	414	414	158	0	0	2.9	1.9	0.3	5.2	45.0	9.5	1.9	11.4
2/1	521	521	111	0	0	3.7	2.2	0.3	6.1	42.3	11.9	2.2	14.0
3/1	394	394	65	0	0	2.4	0.6	0.0	3.1	28.2	7.8	0.6	8.4
4/1	455	455	58	0	0	3.0	0.9	0.1	4.0	31.9	9.4	0.9	10.3
5/1	559	559	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	346	346	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	554	554	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	325	325	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 10.0 Total Delay for Signalled Lanes (pcuHr): 18.41 Cycle Time (s): 90
PRC Over All Lanes (%): 10.0 Total Delay Over All Lanes(pcuHr): 18.41

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: Barugh Green Road_Wilthorpe Road RBT.arc8
Path: C:\Users\micro\Dropbox\Project Files & Management\TPS Project Files\P2636. Barugh Green, Barnsley\Technical\Junction Modelling
Report generation date: 16/12/2024 09:19:48

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	A1 - 2029 B + CD					
Claycliffe Road	3.26	14.70	0.77	2.05	9.03	0.68
Whaley Road	0.22	5.68	0.18	0.32	5.83	0.24
Wilthorpe Road	3.64	9.34	0.79	5.04	12.77	0.84
Barugh Green Road	1.66	8.42	0.63	0.86	5.56	0.47
	A1 - 2029 B + CD + D					
Claycliffe Road	3.70	16.66	0.79	2.20	9.57	0.69
Whaley Road	0.23	5.94	0.19	0.33	6.01	0.25
Wilthorpe Road	3.86	9.81	0.80	6.06	15.10	0.87
Barugh Green Road	2.03	9.59	0.67	0.93	5.75	0.48

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

"D1 - 2029 B + CD, AM " model duration: 07:30 - 09:00
"D2 - 2029 B + CD, PM" model duration: 16:30 - 18:00
"D3 - 2029 B + CD + D, AM" model duration: 07:30 - 09:00
"D4 - 2029 B + CD + D, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 16/12/2024 09:19:44

File summary

Title	Barugh Green Road / Wilthorpe Road
Location	Barugh Green, Barnsley
Site Number	
Date	16/12/2024
Version	
Status	(new file)
Identifier	
Client	Avant Homes
Jobnumber	P2636
Enumerator	JT
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2029 B + CD, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Barugh Green Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 B + CD, AM	2029 B + CD	AM		ONE HOUR	07:30	09:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				10.37	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Claycliffe Road	1	Claycliffe Road	
Whaley Road	2	Whaley Road	
Wilthorpe Road	3	Wilthorpe Road	
Barugh Green Road	4	Barugh Green Road	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
Claycliffe Road	0.00	99999.00		0.00
Whaley Road	0.00	99999.00		0.00
Wilthorpe Road	0.00	99999.00		0.00
Barugh Green Road	0.00	99999.00		0.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Claycliffe Road	3.90	5.90	12.00	12.50	35.00	19.00	
Whaley Road	4.70	5.60	9.00	15.00	35.00	25.00	
Wilthorpe Road	3.00	7.50	25.00	74.00	35.00	19.00	
Barugh Green Road	3.70	8.00	45.00	10.00	35.00	65.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Claycliffe Road		(calculated)	(calculated)	0.632	1590.842
Whaley Road		(calculated)	(calculated)	0.638	1632.403
Wilthorpe Road		(calculated)	(calculated)	0.716	1905.194
Barugh Green Road		(calculated)	(calculated)	0.611	1757.942

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Claycliffe Road	ONE HOUR	✓	748.00	100.000
Whaley Road	ONE HOUR	✓	129.00	100.000
Wilthorpe Road	ONE HOUR	✓	1302.00	100.000
Barugh Green Road	ONE HOUR	✓	655.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	5.000	40.000	644.000	59.000
	Whaley Road	20.000	1.000	83.000	25.000
	Wilthorpe Road	689.000	164.000	27.000	422.000
	Barugh Green Road	94.000	77.000	483.000	1.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	0.01	0.05	0.86	0.08
	Whaley Road	0.16	0.01	0.64	0.19
	Wilthorpe Road	0.53	0.13	0.02	0.32
	Barugh Green Road	0.14	0.12	0.74	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	1.000	1.000	1.000	1.000
	Whaley Road	1.000	1.000	1.000	1.000
	Wilthorpe Road	1.000	1.000	1.000	1.000
	Barugh Green Road	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	0.0	0.0	0.0	0.0
	Whaley Road	0.0	0.0	0.0	0.0
	Wilthorpe Road	0.0	0.0	0.0	0.0
	Barugh Green Road	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
Claycliffe Road	0.77	14.70	3.26	B	686.38	1029.57	157.88	9.20	1.75	157.89	9.20
Whaley Road	0.18	5.68	0.22	A	118.37	177.56	13.90	4.70	0.15	13.90	4.70
Wilthorpe Road	0.79	9.34	3.64	A	1194.74	1792.11	190.77	6.39	2.12	190.79	6.39
Barugh Green Road	0.63	8.42	1.66	A	601.04	901.56	91.98	6.12	1.02	91.98	6.12

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	563.13	140.78	559.81	605.51	564.26	0.00	1234.14	892.39	0.456	0.00	0.83	5.314	A
Whaley Road	97.12	24.28	96.71	211.29	912.79	0.00	1049.87	602.10	0.093	0.00	0.10	3.774	A
Wilthorpe Road	980.21	245.05	975.73	926.37	83.13	0.00	1845.68	1695.76	0.531	0.00	1.12	4.116	A
Barugh Green Road	493.12	123.28	490.81	379.90	678.96	0.00	1343.10	994.12	0.367	0.00	0.58	4.213	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	672.44	168.11	670.38	724.87	675.58	0.00	1163.78	892.39	0.578	0.83	1.34	7.265	A
Whaley Road	115.97	28.99	115.81	252.96	1093.00	0.00	934.86	602.10	0.124	0.10	0.14	4.395	A
Wilthorpe Road	1170.47	292.62	1168.01	1109.26	99.55	0.00	1833.93	1695.76	0.638	1.12	1.74	5.385	A
Barugh Green Road	588.83	147.21	587.67	454.79	812.77	0.00	1261.34	994.12	0.467	0.58	0.87	5.335	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	823.56	205.89	816.35	885.22	825.36	0.00	1069.09	892.39	0.770	1.34	3.15	13.862	B
Whaley Road	142.03	35.51	141.71	308.82	1332.89	0.00	781.77	602.10	0.182	0.14	0.22	5.622	A
Wilthorpe Road	1433.53	358.38	1426.23	1353.12	121.48	0.00	1818.24	1695.76	0.788	1.74	3.56	9.017	A
Barugh Green Road	721.17	180.29	718.09	555.22	992.49	0.00	1151.53	994.12	0.626	0.87	1.64	8.247	A

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	823.56	205.89	823.09	889.43	828.93	0.00	1066.84	892.39	0.772	3.15	3.26	14.698	B
Whaley Road	142.03	35.51	142.02	310.41	1341.61	0.00	776.20	602.10	0.183	0.22	0.22	5.676	A
Wilthorpe Road	1433.53	358.38	1433.20	1361.46	122.17	0.00	1817.74	1695.76	0.789	3.56	3.64	9.340	A
Barugh Green Road	721.17	180.29	721.06	558.07	997.30	0.00	1148.59	994.12	0.628	1.64	1.66	8.415	A

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	672.44	168.11	679.88	730.83	680.67	0.00	1160.56	892.39	0.579	3.26	1.40	7.603	A
Whaley Road	115.97	28.99	116.28	255.21	1105.34	0.00	926.99	602.10	0.125	0.22	0.14	4.443	A
Wilthorpe Road	1170.47	292.62	1177.86	1121.08	100.54	0.00	1833.22	1695.76	0.638	3.64	1.79	5.555	A
Barugh Green Road	588.83	147.21	591.92	458.83	819.57	0.00	1257.18	994.12	0.468	1.66	0.89	5.437	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	563.13	140.78	565.34	609.90	568.32	0.00	1231.58	892.39	0.457	1.40	0.85	5.422	A
Whaley Road	97.12	24.28	97.28	212.89	920.77	0.00	1044.78	602.10	0.093	0.14	0.10	3.802	A
Wilthorpe Road	980.21	245.05	982.82	934.24	83.82	0.00	1845.20	1695.76	0.531	1.79	1.14	4.188	A
Barugh Green Road	493.12	123.28	494.34	382.75	683.88	0.00	1340.09	994.12	0.368	0.89	0.59	4.264	A

Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	11.99	0.80	5.314	A	A
Whaley Road	1.49	0.10	3.774	A	A
Wilthorpe Road	16.26	1.08	4.116	A	A
Barugh Green Road	8.40	0.56	4.213	A	A

Queueing Delay results: (07:45-08:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	19.33	1.29	7.265	A	A
Whaley Road	2.08	0.14	4.395	A	A
Wilthorpe Road	25.10	1.67	5.385	A	A
Barugh Green Road	12.63	0.84	5.335	A	A

Queueing Delay results: (08:00-08:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	42.69	2.85	13.862	B	B
Whaley Road	3.23	0.22	5.622	A	A
Wilthorpe Road	49.36	3.29	9.017	A	A
Barugh Green Road	23.29	1.55	8.247	A	A

Queueing Delay results: (08:15-08:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	48.29	3.22	14.698	B	B
Whaley Road	3.33	0.22	5.676	A	A
Wilthorpe Road	54.16	3.61	9.340	A	A
Barugh Green Road	24.81	1.65	8.415	A	A

Queueing Delay results: (08:30-08:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	22.37	1.49	7.603	A	A
Whaley Road	2.20	0.15	4.443	A	A
Wilthorpe Road	28.22	1.88	5.555	A	A
Barugh Green Road	13.84	0.92	5.437	A	A

Queueing Delay results: (08:45-09:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	13.20	0.88	5.422	A	A
Whaley Road	1.57	0.10	3.802	A	A
Wilthorpe Road	17.67	1.18	4.188	A	A
Barugh Green Road	9.01	0.60	4.264	A	A

(Default Analysis Set) - 2029 B + CD, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Barugh Green Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 B + CD, PM	2029 B + CD	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				9.98	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Claycliffe Road	1	Claycliffe Road	
Whaley Road	2	Whaley Road	
Wilthorpe Road	3	Wilthorpe Road	
Barugh Green Road	4	Barugh Green Road	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
Claycliffe Road	0.00	99999.00		0.00
Whaley Road	0.00	99999.00		0.00
Wilthorpe Road	0.00	99999.00		0.00
Barugh Green Road	0.00	99999.00		0.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Claycliffe Road	3.90	5.90	12.00	12.50	35.00	19.00	
Whaley Road	4.70	5.60	9.00	15.00	35.00	25.00	
Wilthorpe Road	3.00	7.50	25.00	74.00	35.00	19.00	
Barugh Green Road	3.70	8.00	45.00	10.00	35.00	65.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Claycliffe Road		(calculated)	(calculated)	0.632	1590.842
Whaley Road		(calculated)	(calculated)	0.638	1632.403
Wilthorpe Road		(calculated)	(calculated)	0.716	1905.194
Barugh Green Road		(calculated)	(calculated)	0.611	1757.942

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Claycliffe Road	ONE HOUR	✓	754.00	100.000
Whaley Road	ONE HOUR	✓	178.00	100.000
Wilthorpe Road	ONE HOUR	✓	1333.00	100.000
Barugh Green Road	ONE HOUR	✓	512.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	4.000	20.000	609.000	121.000
	Whaley Road	38.000	0.000	102.000	38.000
	Wilthorpe Road	666.000	68.000	37.000	562.000
	Barugh Green Road	96.000	21.000	395.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	0.01	0.03	0.81	0.16
	Whaley Road	0.21	0.00	0.57	0.21
	Wilthorpe Road	0.50	0.05	0.03	0.42
	Barugh Green Road	0.19	0.04	0.77	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	1.000	1.000	1.000	1.000
	Whaley Road	1.000	1.000	1.000	1.000
	Wilthorpe Road	1.000	1.000	1.000	1.000
	Barugh Green Road	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	0.0	0.0	0.0	0.0
	Whaley Road	0.0	0.0	0.0	0.0
	Wilthorpe Road	0.0	0.0	0.0	0.0
	Barugh Green Road	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
Claycliffe Road	0.68	9.03	2.05	A	691.88	1037.83	114.22	6.60	1.27	114.23	6.60
Whaley Road	0.24	5.83	0.32	A	163.34	245.00	19.58	4.80	0.22	19.58	4.80
Wilthorpe Road	0.84	12.77	5.04	B	1223.18	1834.78	240.58	7.87	2.67	240.61	7.87
Barugh Green Road	0.47	5.56	0.86	A	469.82	704.73	53.23	4.53	0.59	53.24	4.53

Main Results for each time segment

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	567.65	141.91	564.75	602.37	390.60	0.00	1343.93	938.43	0.422	0.00	0.72	4.604	A
Whaley Road	134.01	33.50	133.44	81.67	873.68	0.00	1074.83	473.50	0.125	0.00	0.14	3.822	A
Wilthorpe Road	1003.55	250.89	998.55	856.52	150.60	0.00	1797.39	1649.11	0.558	0.00	1.25	4.479	A
Barugh Green Road	385.46	96.37	383.93	540.11	609.04	0.00	1385.82	1110.34	0.278	0.00	0.38	3.589	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	677.83	169.46	676.40	721.05	467.62	0.00	1295.23	938.43	0.523	0.72	1.08	5.808	A
Whaley Road	160.02	40.00	159.79	97.77	1046.25	0.00	964.69	473.50	0.166	0.14	0.20	4.471	A
Wilthorpe Road	1198.34	299.58	1195.21	1025.69	180.36	0.00	1776.09	1649.11	0.675	1.25	2.03	6.164	A
Barugh Green Road	460.28	115.07	459.67	646.57	729.00	0.00	1312.52	1110.34	0.351	0.38	0.54	4.218	A

Main results: (17:00-17:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	830.17	207.54	826.43	879.23	571.70	0.00	1229.44	938.43	0.675	1.08	2.02	8.850	A
Whaley Road	195.98	49.00	195.52	119.28	1278.85	0.00	816.26	473.50	0.240	0.20	0.31	5.796	A
Wilthorpe Road	1467.66	366.92	1456.38	1253.88	220.49	0.00	1747.36	1649.11	0.840	2.03	4.85	11.929	B
Barugh Green Road	563.72	140.93	562.44	788.38	888.49	0.00	1215.08	1110.34	0.464	0.54	0.86	5.504	A

Main results: (17:15-17:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	830.17	207.54	830.04	884.84	573.54	0.00	1228.28	938.43	0.676	2.02	2.05	9.031	A
Whaley Road	195.98	49.00	195.97	119.97	1283.61	0.00	813.21	473.50	0.241	0.31	0.32	5.831	A
Wilthorpe Road	1467.66	366.92	1466.91	1258.31	221.28	0.00	1746.80	1649.11	0.840	4.85	5.04	12.770	B
Barugh Green Road	563.72	140.93	563.69	793.50	894.69	0.00	1211.29	1110.34	0.465	0.86	0.86	5.558	A

Main results: (17:30-17:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	677.83	169.46	681.58	728.97	470.32	0.00	1293.53	938.43	0.524	2.05	1.12	5.919	A
Whaley Road	160.02	40.00	160.48	98.74	1053.16	0.00	960.29	473.50	0.167	0.32	0.20	4.503	A
Wilthorpe Road	1198.34	299.58	1210.02	1032.13	181.51	0.00	1775.26	1649.11	0.675	5.04	2.12	6.497	A
Barugh Green Road	460.28	115.07	461.55	653.79	737.74	0.00	1307.18	1110.34	0.352	0.86	0.55	4.264	A

Main results: (17:45-18:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	567.65	141.91	569.16	607.15	393.02	0.00	1342.40	938.43	0.423	1.12	0.74	4.664	A
Whaley Road	134.01	33.50	134.24	82.30	879.88	0.00	1070.88	473.50	0.125	0.20	0.14	3.845	A
Wilthorpe Road	1003.55	250.89	1006.92	862.44	151.67	0.00	1796.62	1649.11	0.559	2.12	1.28	4.579	A
Barugh Green Road	385.46	96.37	386.10	544.52	614.07	0.00	1382.74	1110.34	0.279	0.55	0.39	3.616	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	10.53	0.70	4.604	A	A
Whaley Road	2.08	0.14	3.822	A	A
Wilthorpe Road	18.05	1.20	4.479	A	A
Barugh Green Road	5.62	0.37	3.589	A	A

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	15.75	1.05	5.808	A	A
Whaley Road	2.91	0.19	4.471	A	A
Wilthorpe Road	29.17	1.94	6.164	A	A
Barugh Green Road	7.88	0.53	4.218	A	A

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	28.56	1.90	8.850	A	A
Whaley Road	4.59	0.31	5.796	A	A
Wilthorpe Road	65.06	4.34	11.929	B	B
Barugh Green Road	12.46	0.83	5.504	A	A

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	30.60	2.04	9.031	A	A
Whaley Road	4.72	0.31	5.831	A	A
Wilthorpe Road	74.48	4.97	12.770	B	B
Barugh Green Road	12.92	0.86	5.558	A	A

Queueing Delay results: (17:30-17:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	17.41	1.16	5.919	A	A
Whaley Road	3.08	0.21	4.503	A	A
Wilthorpe Road	33.98	2.27	6.497	A	A
Barugh Green Road	8.41	0.56	4.264	A	A

Queueing Delay results: (17:45-18:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	11.39	0.76	4.664	A	A
Whaley Road	2.19	0.15	3.845	A	A
Wilthorpe Road	19.84	1.32	4.579	A	A
Barugh Green Road	5.94	0.40	3.616	A	A

(Default Analysis Set) - 2029 B + CD + D, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Barugh Green Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 B + CD + D, AM	2029 B + CD + D	AM		ONE HOUR	07:30	09:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				11.36	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Claycliffe Road	1	Claycliffe Road	
Whaley Road	2	Whaley Road	
Wilthorpe Road	3	Wilthorpe Road	
Barugh Green Road	4	Barugh Green Road	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
Claycliffe Road	0.00	99999.00		0.00
Whaley Road	0.00	99999.00		0.00
Wilthorpe Road	0.00	99999.00		0.00
Barugh Green Road	0.00	99999.00		0.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Claycliffe Road	3.90	5.90	12.00	12.50	35.00	19.00	
Whaley Road	4.70	5.60	9.00	15.00	35.00	25.00	
Wilthorpe Road	3.00	7.50	25.00	74.00	35.00	19.00	
Barugh Green Road	3.70	8.00	45.00	10.00	35.00	65.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Claycliffe Road		(calculated)	(calculated)	0.632	1590.842
Whaley Road		(calculated)	(calculated)	0.638	1632.403
Wilthorpe Road		(calculated)	(calculated)	0.716	1905.194
Barugh Green Road		(calculated)	(calculated)	0.611	1757.942

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Claycliffe Road	ONE HOUR	✓	752.00	100.000
Whaley Road	ONE HOUR	✓	129.00	100.000
Wilthorpe Road	ONE HOUR	✓	1316.00	100.000
Barugh Green Road	ONE HOUR	✓	703.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	5.000	40.000	644.000	63.000
	Whaley Road	20.000	1.000	83.000	25.000
	Wilthorpe Road	689.000	164.000	27.000	436.000
	Barugh Green Road	106.000	77.000	519.000	1.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	0.01	0.05	0.86	0.08
	Whaley Road	0.16	0.01	0.64	0.19
	Wilthorpe Road	0.52	0.12	0.02	0.33
	Barugh Green Road	0.15	0.11	0.74	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	1.000	1.000	1.000	1.000
	Whaley Road	1.000	1.000	1.000	1.000
	Wilthorpe Road	1.000	1.000	1.000	1.000
	Barugh Green Road	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	0.0	0.0	0.0	0.0
	Whaley Road	0.0	0.0	0.0	0.0
	Wilthorpe Road	0.0	0.0	0.0	0.0
	Barugh Green Road	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
Claycliffe Road	0.79	16.66	3.70	C	690.05	1035.07	172.22	9.98	1.91	172.24	9.98
Whaley Road	0.19	5.94	0.23	A	118.37	177.56	14.38	4.86	0.16	14.38	4.86
Wilthorpe Road	0.80	9.81	3.86	A	1207.58	1811.38	199.27	6.60	2.21	199.30	6.60
Barugh Green Road	0.67	9.59	2.03	A	645.09	967.63	108.13	6.70	1.20	108.14	6.71

Main Results for each time segment

Main results: (07:30-07:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	566.15	141.54	562.71	614.45	591.14	0.00	1217.15	894.13	0.465	0.00	0.86	5.473	A
Whaley Road	97.12	24.28	96.70	211.26	942.58	0.00	1030.86	596.54	0.094	0.00	0.10	3.852	A
Wilthorpe Road	990.75	247.69	986.15	953.17	86.12	0.00	1843.55	1694.03	0.537	0.00	1.15	4.176	A
Barugh Green Road	529.26	132.31	526.67	393.35	678.92	0.00	1343.12	1002.84	0.394	0.00	0.65	4.382	A

Main results: (07:45-08:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	676.03	169.01	673.80	735.56	707.74	0.00	1143.44	894.13	0.591	0.86	1.42	7.629	A
Whaley Road	115.97	28.99	115.80	252.92	1128.62	0.00	912.13	596.54	0.127	0.10	0.14	4.519	A
Wilthorpe Road	1183.06	295.76	1180.48	1141.31	103.12	0.00	1831.38	1694.03	0.646	1.15	1.79	5.508	A
Barugh Green Road	631.98	158.00	630.60	470.89	812.71	0.00	1261.38	1002.84	0.501	0.65	0.99	5.694	A

Main results: (08:00-08:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	827.97	206.99	819.50	898.00	864.18	0.00	1044.55	894.13	0.793	1.42	3.53	15.444	C
Whaley Road	142.03	35.51	141.69	308.62	1375.06	0.00	754.85	596.54	0.188	0.14	0.23	5.869	A
Wilthorpe Road	1448.94	362.24	1441.06	1391.03	125.72	0.00	1815.20	1694.03	0.798	1.79	3.77	9.424	A
Barugh Green Road	774.02	193.50	770.03	574.64	992.14	0.00	1151.74	1002.84	0.672	0.99	1.99	9.334	A

Main results: (08:15-08:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	827.97	206.99	827.31	902.61	868.51	0.00	1041.82	894.13	0.795	3.53	3.70	16.656	C
Whaley Road	142.03	35.51	142.02	310.39	1385.43	0.00	748.24	596.54	0.190	0.23	0.23	5.937	A
Wilthorpe Road	1448.94	362.24	1448.56	1400.89	126.55	0.00	1814.60	1694.03	0.798	3.77	3.86	9.808	A
Barugh Green Road	774.02	193.50	773.85	577.85	997.27	0.00	1148.61	1002.84	0.674	1.99	2.03	9.594	A

Main results: (08:30-08:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	676.03	169.01	684.88	742.07	713.88	0.00	1139.56	894.13	0.593	3.70	1.49	8.066	A
Whaley Road	115.97	28.99	116.31	255.42	1143.33	0.00	902.74	596.54	0.128	0.23	0.15	4.580	A
Wilthorpe Road	1183.06	295.76	1191.06	1155.33	104.31	0.00	1830.53	1694.03	0.646	3.86	1.86	5.697	A
Barugh Green Road	631.98	158.00	636.01	475.43	819.94	0.00	1256.96	1002.84	0.503	2.03	1.02	5.833	A

Main results: (08:45-09:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	566.15	141.54	568.57	619.04	595.64	0.00	1214.31	894.13	0.466	1.49	0.88	5.597	A
Whaley Road	97.12	24.28	97.29	212.94	951.27	0.00	1025.31	596.54	0.095	0.15	0.11	3.881	A
Wilthorpe Road	990.75	247.69	993.49	961.70	86.86	0.00	1843.02	1694.03	0.538	1.86	1.17	4.252	A
Barugh Green Road	529.26	132.31	530.72	396.39	683.96	0.00	1340.04	1002.84	0.395	1.02	0.66	4.455	A

Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	12.41	0.83	5.473	A	A
Whaley Road	1.52	0.10	3.852	A	A
Wilthorpe Road	16.66	1.11	4.176	A	A
Barugh Green Road	9.39	0.63	4.382	A	A

Queueing Delay results: (07:45-08:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	20.35	1.36	7.629	A	A
Whaley Road	2.14	0.14	4.519	A	A
Wilthorpe Road	25.91	1.73	5.508	A	A
Barugh Green Road	14.42	0.96	5.694	A	A

Queueing Delay results: (08:00-08:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	47.30	3.15	15.444	C	B
Whaley Road	3.37	0.22	5.869	A	A
Wilthorpe Road	51.93	3.46	9.424	A	A
Barugh Green Road	28.01	1.87	9.334	A	A

Queueing Delay results: (08:15-08:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	54.53	3.64	16.656	C	B
Whaley Road	3.48	0.23	5.937	A	A
Wilthorpe Road	57.34	3.82	9.808	A	A
Barugh Green Road	30.21	2.01	9.594	A	A

Queueing Delay results: (08:30-08:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	23.93	1.60	8.066	A	A
Whaley Road	2.27	0.15	4.580	A	A
Wilthorpe Road	29.29	1.95	5.697	A	A
Barugh Green Road	15.97	1.06	5.833	A	A

Queueing Delay results: (08:45-09:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	13.71	0.91	5.597	A	A
Whaley Road	1.60	0.11	3.881	A	A
Wilthorpe Road	18.15	1.21	4.252	A	A
Barugh Green Road	10.13	0.68	4.455	A	A

(Default Analysis Set) - 2029 B + CD + D, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Barugh Green Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 B + CD + D, PM	2029 B + CD + D	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	1,2,3,4				11.29	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
Claycliffe Road	1	Claycliffe Road	
Whaley Road	2	Whaley Road	
Wilthorpe Road	3	Wilthorpe Road	
Barugh Green Road	4	Barugh Green Road	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
Claycliffe Road	0.00	99999.00		0.00
Whaley Road	0.00	99999.00		0.00
Wilthorpe Road	0.00	99999.00		0.00
Barugh Green Road	0.00	99999.00		0.00

Roundabout Geometry

Name	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
Claycliffe Road	3.90	5.90	12.00	12.50	35.00	19.00	
Whaley Road	4.70	5.60	9.00	15.00	35.00	25.00	
Wilthorpe Road	3.00	7.50	25.00	74.00	35.00	19.00	
Barugh Green Road	3.70	8.00	45.00	10.00	35.00	65.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Claycliffe Road		(calculated)	(calculated)	0.632	1590.842
Whaley Road		(calculated)	(calculated)	0.638	1632.403
Wilthorpe Road		(calculated)	(calculated)	0.716	1905.194
Barugh Green Road		(calculated)	(calculated)	0.611	1757.942

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Claycliffe Road	ONE HOUR	✓	765.00	100.000
Whaley Road	ONE HOUR	✓	178.00	100.000
Wilthorpe Road	ONE HOUR	✓	1366.00	100.000
Barugh Green Road	ONE HOUR	✓	532.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	4.000	20.000	609.000	132.000
	Whaley Road	38.000	0.000	102.000	38.000
	Wilthorpe Road	666.000	68.000	37.000	595.000
	Barugh Green Road	101.000	21.000	410.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	0.01	0.03	0.80	0.17
	Whaley Road	0.21	0.00	0.57	0.21
	Wilthorpe Road	0.49	0.05	0.03	0.44
	Barugh Green Road	0.19	0.04	0.77	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	1.000	1.000	1.000	1.000
	Whaley Road	1.000	1.000	1.000	1.000
	Wilthorpe Road	1.000	1.000	1.000	1.000
	Barugh Green Road	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To			
		Claycliffe Road	Whaley Road	Wilthorpe Road	Barugh Green Road
From	Claycliffe Road	0.0	0.0	0.0	0.0
	Whaley Road	0.0	0.0	0.0	0.0
	Wilthorpe Road	0.0	0.0	0.0	0.0
	Barugh Green Road	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
Claycliffe Road	0.69	9.57	2.20	A	701.98	1052.97	120.66	6.88	1.34	120.67	6.88
Whaley Road	0.25	6.01	0.33	A	163.34	245.00	20.03	4.90	0.22	20.03	4.90
Wilthorpe Road	0.87	15.10	6.06	C	1253.47	1880.20	274.66	8.76	3.05	274.69	8.77
Barugh Green Road	0.48	5.75	0.93	A	488.17	732.26	56.73	4.65	0.63	56.74	4.65

Main Results for each time segment

Main results: (16:30-16:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	575.93	143.98	572.93	606.02	401.81	0.00	1336.84	933.75	0.431	0.00	0.75	4.695	A
Whaley Road	134.01	33.50	133.43	81.65	893.09	0.00	1062.44	469.29	0.126	0.00	0.14	3.872	A
Wilthorpe Road	1028.40	257.10	1023.07	867.70	158.83	0.00	1791.50	1642.94	0.574	0.00	1.33	4.654	A
Barugh Green Road	400.52	100.13	398.90	572.97	608.92	0.00	1385.89	1127.16	0.289	0.00	0.40	3.641	A

Main results: (16:45-17:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	687.72	171.93	686.19	725.36	481.05	0.00	1286.75	933.75	0.534	0.75	1.13	5.978	A
Whaley Road	160.02	40.00	159.79	97.75	1069.49	0.00	949.87	469.29	0.168	0.14	0.20	4.555	A
Wilthorpe Road	1228.01	307.00	1224.46	1039.06	190.21	0.00	1769.04	1642.94	0.694	1.33	2.22	6.567	A
Barugh Green Road	478.26	119.56	477.60	685.86	728.81	0.00	1312.64	1127.16	0.364	0.40	0.57	4.307	A

Main results: (17:00-17:15)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	842.28	210.57	838.15	883.43	587.93	0.00	1219.18	933.75	0.691	1.13	2.16	9.347	A
Whaley Road	195.98	49.00	195.50	119.14	1306.94	0.00	798.33	469.29	0.245	0.20	0.32	5.966	A
Wilthorpe Road	1503.99	376.00	1489.82	1269.96	232.48	0.00	1738.78	1642.94	0.865	2.22	5.76	13.735	B
Barugh Green Road	585.74	146.44	584.35	835.29	887.01	0.00	1215.98	1127.16	0.482	0.57	0.92	5.686	A

Main results: (17:15-17:30)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	842.28	210.57	842.12	890.13	590.02	0.00	1217.86	933.75	0.692	2.16	2.20	9.569	A
Whaley Road	195.98	49.00	195.97	119.95	1312.20	0.00	794.97	469.29	0.247	0.32	0.33	6.009	A
Wilthorpe Road	1503.99	376.00	1502.80	1274.78	233.38	0.00	1738.13	1642.94	0.865	5.76	6.06	15.101	C
Barugh Green Road	585.74	146.44	585.70	841.73	894.45	0.00	1211.43	1127.16	0.484	0.92	0.93	5.753	A

Main results: (17:30-17:45)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	687.72	171.93	691.86	734.94	484.13	0.00	1284.80	933.75	0.535	2.20	1.17	6.114	A
Whaley Road	160.02	40.00	160.50	98.89	1077.09	0.00	945.01	469.29	0.169	0.33	0.21	4.593	A
Wilthorpe Road	1228.01	307.00	1242.93	1046.07	191.53	0.00	1768.10	1642.94	0.695	6.06	2.33	7.042	A
Barugh Green Road	478.26	119.56	479.65	695.04	739.42	0.00	1306.16	1127.16	0.366	0.93	0.58	4.364	A

Main results: (17:45-18:00)

Name	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
Claycliffe Road	575.93	143.98	577.54	611.12	404.38	0.00	1335.21	933.75	0.431	1.17	0.77	4.762	A
Whaley Road	134.01	33.50	134.25	82.32	899.60	0.00	1058.29	469.29	0.127	0.21	0.15	3.896	A
Wilthorpe Road	1028.40	257.10	1032.25	873.86	159.99	0.00	1790.67	1642.94	0.574	2.33	1.37	4.770	A
Barugh Green Road	400.52	100.13	401.21	577.94	614.30	0.00	1382.60	1127.16	0.290	0.58	0.41	3.669	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	10.88	0.73	4.695	A	A
Whaley Road	2.11	0.14	3.872	A	A
Wilthorpe Road	19.19	1.28	4.654	A	A
Barugh Green Road	5.92	0.39	3.641	A	A

Queueing Delay results: (16:45-17:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	16.43	1.10	5.978	A	A
Whaley Road	2.97	0.20	4.555	A	A
Wilthorpe Road	31.71	2.11	6.567	A	A
Barugh Green Road	8.36	0.56	4.307	A	A

Queueing Delay results: (17:00-17:15)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	30.46	2.03	9.347	A	A
Whaley Road	4.72	0.31	5.966	A	A
Wilthorpe Road	75.59	5.04	13.735	B	B
Barugh Green Road	13.35	0.89	5.686	A	A

Queueing Delay results: (17:15-17:30)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	32.82	2.19	9.569	A	A
Whaley Road	4.87	0.32	6.009	A	A
Wilthorpe Road	89.09	5.94	15.101	C	B
Barugh Green Road	13.88	0.93	5.753	A	A

Queueing Delay results: (17:30-17:45)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	18.26	1.22	6.114	A	A
Whaley Road	3.14	0.21	4.593	A	A
Wilthorpe Road	37.86	2.52	7.042	A	A
Barugh Green Road	8.95	0.60	4.364	A	A

Queueing Delay results: (17:45-18:00)

Name	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
Claycliffe Road	11.80	0.79	4.762	A	A
Whaley Road	2.22	0.15	3.896	A	A
Wilthorpe Road	21.22	1.41	4.770	A	A
Barugh Green Road	6.27	0.42	3.669	A	A

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.6.541 [19821,26/11/2015]

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: Barugh Green Road_Site Access.arc8
Path: C:\Users\micro\Dropbox\Project Files & Management\TPS Project Files\P2636. Barugh Green, Barnsley\Technical\Junction Modelling
Report generation date: 16/12/2024 09:13:09

» (Default Analysis Set) - 2029 B + CD + D, AM
» (Default Analysis Set) - 2029 B + CD + D, PM

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	A1 - 2029 B + CD + D					
Stream B-C	0.02	7.06	0.02	0.01	7.73	0.01
Stream B-A	0.19	12.89	0.16	0.08	13.37	0.08
Stream C-A	-	-	-	-	-	-
Stream C-B	0.01	6.71	0.01	0.02	7.74	0.02
Stream A-B	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-

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

"D3 - 2029 B + CD + D, AM " model duration: 07:30 - 09:00
"D4 - 2029 B + CD + D, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 16/12/2024 09:13:08

File summary

Title	Baurgh Green Road / Site Access
Location	Barugh Green, Barnsley
Site Number	
Date	16/12/2024
Version	
Status	(new file)
Identifier	
Client	Avant Homes
Jobnumber	P2636
Enumerator	TPS
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2029 B + CD + D, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Site Access - Minor Arm Geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 B + CD + D, AM	2029 B + CD + D	AM		ONE HOUR	07:30	09:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C		11.79	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Barugh Green Road East	A	Barugh Green Road East		Major
Site Access	B	Site Access		Minor
Barugh Green Road West	C	Barugh Green Road West		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Barugh Green Road West	7.00		0.00	✓	3.00	100.00		

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	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)
Site Access	One lane plus flare				10.00	4.40	3.00	2.75	2.75	✓	1.00	120	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	604.387	0.105	0.266	0.167	0.380
1	B-C	686.475	0.101	0.254	-	-
1	C-B	686.890	0.255	0.255	-	-

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Barugh Green Road East	ONE HOUR	✓	524.00	100.000
Site Access	ONE HOUR	✓	56.00	100.000
Barugh Green Road West	ONE HOUR	✓	658.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		Barugh Green Road East	Site Access	Barugh Green Road West
From	Barugh Green Road East	0.000	18.000	506.000
	Site Access	48.000	0.000	8.000
	Barugh Green Road West	655.000	3.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		Barugh Green Road East	Site Access	Barugh Green Road West
From	Barugh Green Road East	0.00	0.03	0.97
	Site Access	0.86	0.00	0.14
	Barugh Green Road West	1.00	0.00	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		Barugh Green Road East	Site Access	Barugh Green Road West
From	Barugh Green Road East	1.000	1.000	1.000
	Site Access	1.000	1.000	1.000
	Barugh Green Road West	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		Barugh Green Road East	Site Access	Barugh Green Road West
From	Barugh Green Road East	0.0	0.0	0.0
	Site Access	0.0	0.0	0.0
	Barugh Green Road West	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B-C	0.02	7.06	0.02	A	7.34	11.01	1.22	6.66	0.01	1.22	6.66
B-A	0.16	12.89	0.19	B	44.05	66.07	12.16	11.04	0.14	12.16	11.04
C-A	-	-	-	-	601.04	901.56	-	-	-	-	-
C-B	0.01	6.71	0.01	A	2.75	4.13	0.44	6.41	0.00	0.44	6.41
A-B	-	-	-	-	16.52	24.78	-	-	-	-	-
A-C	-	-	-	-	464.31	696.47	-	-	-	-	-

Main Results for each time segment

Main results: (07:30-07:45)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	6.02	1.51	5.98	0.00	575.15	0.010	0.00	0.01	6.324	A
B-A	36.14	9.03	35.76	0.00	418.15	0.086	0.00	0.09	9.406	A
C-A	493.12	123.28	493.12	0.00	-	-	-	-	-	-
C-B	2.26	0.56	2.24	0.00	586.47	0.004	0.00	0.00	6.161	A
A-B	13.55	3.39	13.55	0.00	-	-	-	-	-	-
A-C	380.94	95.24	380.94	0.00	-	-	-	-	-	-

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	7.19	1.80	7.18	0.00	552.12	0.013	0.01	0.01	6.605	A
B-A	43.15	10.79	43.02	0.00	382.01	0.113	0.09	0.13	10.620	B
C-A	588.83	147.21	588.83	0.00	-	-	-	-	-	-
C-B	2.70	0.67	2.69	0.00	566.98	0.005	0.00	0.00	6.379	A
A-B	16.18	4.05	16.18	0.00	-	-	-	-	-	-
A-C	454.88	113.72	454.88	0.00	-	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	8.81	2.20	8.79	0.00	518.90	0.017	0.01	0.02	7.056	A
B-A	52.85	13.21	52.61	0.00	332.02	0.159	0.13	0.19	12.871	B
C-A	721.17	180.29	721.17	0.00	-	-	-	-	-	-
C-B	3.30	0.83	3.30	0.00	540.03	0.006	0.00	0.01	6.706	A
A-B	19.82	4.95	19.82	0.00	-	-	-	-	-	-
A-C	557.12	139.28	557.12	0.00	-	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	8.81	2.20	8.81	0.00	518.74	0.017	0.02	0.02	7.058	A
B-A	52.85	13.21	52.84	0.00	332.03	0.159	0.19	0.19	12.894	B
C-A	721.17	180.29	721.17	0.00	-	-	-	-	-	-
C-B	3.30	0.83	3.30	0.00	540.03	0.006	0.01	0.01	6.706	A
A-B	19.82	4.95	19.82	0.00	-	-	-	-	-	-
A-C	557.12	139.28	557.12	0.00	-	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	7.19	1.80	7.21	0.00	551.88	0.013	0.02	0.01	6.608	A
B-A	43.15	10.79	43.39	0.00	382.02	0.113	0.19	0.13	10.639	B
C-A	588.83	147.21	588.83	0.00	-	-	-	-	-	-
C-B	2.70	0.67	2.70	0.00	566.98	0.005	0.01	0.00	6.379	A
A-B	16.18	4.05	16.18	0.00	-	-	-	-	-	-
A-C	454.88	113.72	454.88	0.00	-	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	6.02	1.51	6.03	0.00	574.87	0.010	0.01	0.01	6.330	A
B-A	36.14	9.03	36.27	0.00	418.17	0.086	0.13	0.10	9.429	A
C-A	493.12	123.28	493.12	0.00	-	-	-	-	-	-
C-B	2.26	0.56	2.26	0.00	586.47	0.004	0.00	0.00	6.163	A
A-B	13.55	3.39	13.55	0.00	-	-	-	-	-	-
A-C	380.94	95.24	380.94	0.00	-	-	-	-	-	-

Queueing Delay Results for each time segment

Queueing Delay results: (07:30-07:45)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.15	0.01	6.324	A	A
B-A	1.35	0.09	9.406	A	A
C-A	-	-	-	-	-
C-B	0.06	0.00	6.161	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (07:45-08:00)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.19	0.01	6.605	A	A
B-A	1.83	0.12	10.620	B	B
C-A	-	-	-	-	-
C-B	0.07	0.00	6.379	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (08:00-08:15)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.25	0.02	7.056	A	A
B-A	2.69	0.18	12.871	B	B
C-A	-	-	-	-	-
C-B	0.09	0.01	6.706	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (08:15-08:30)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.26	0.02	7.058	A	A
B-A	2.81	0.19	12.894	B	B
C-A	-	-	-	-	-
C-B	0.09	0.01	6.706	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (08:30-08:45)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.20	0.01	6.608	A	A
B-A	2.00	0.13	10.639	B	B
C-A	-	-	-	-	-
C-B	0.07	0.00	6.379	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (08:45-09:00)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.16	0.01	6.330	A	A
B-A	1.48	0.10	9.429	A	A
C-A	-	-	-	-	-
C-B	0.06	0.00	6.163	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

(Default Analysis Set) - 2029 B + CD + D, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Site Access - Minor Arm Geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2029 B + CD + D, PM	2029 B + CD + D	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C		11.50	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description	Arm Type
Barugh Green Road East	A	Barugh Green Road East		Major
Site Access	B	Site Access		Minor
Barugh Green Road West	C	Barugh Green Road West		Major

Major Arm Geometry

Name	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
Barugh Green Road West	7.00		0.00	✓	3.00	100.00		

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

Minor Arm Geometry

Name	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	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)
Site Access	One lane plus flare				10.00	4.40	3.00	2.75	2.75	✓	1.00	120	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	605.019	0.105	0.266	0.168	0.381
1	B-C	684.561	0.100	0.254	-	-
1	C-B	686.890	0.255	0.255	-	-

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Barugh Green Road East	ONE HOUR	✓	765.00	100.000
Site Access	ONE HOUR	✓	23.00	100.000
Barugh Green Road West	ONE HOUR	✓	518.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - (untitled) (for whole period)

		To		
		Barugh Green Road East	Site Access	Barugh Green Road West
From	Barugh Green Road East	0.000	44.000	721.000
	Site Access	20.000	0.000	3.000
	Barugh Green Road West	511.000	7.000	0.000

Turning Proportions (PCU) - (untitled) (for whole period)

		To		
		Barugh Green Road East	Site Access	Barugh Green Road West
From	Barugh Green Road East	0.00	0.06	0.94
	Site Access	0.87	0.00	0.13
	Barugh Green Road West	0.99	0.01	0.00

Vehicle Mix

Average PCU Per Vehicle - (untitled) (for whole period)

		To		
		Barugh Green Road East	Site Access	Barugh Green Road West
From	Barugh Green Road East	1.000	1.000	1.000
	Site Access	1.000	1.000	1.000
	Barugh Green Road West	1.000	1.000	1.000

Heavy Vehicle Percentages - (untitled) (for whole period)

		To		
		Barugh Green Road East	Site Access	Barugh Green Road West
From	Barugh Green Road East	0.0	0.0	0.0
	Site Access	0.0	0.0	0.0
	Barugh Green Road West	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B-C	0.01	7.73	0.01	A	2.75	4.13	0.50	7.20	0.01	0.50	7.20
B-A	0.08	13.37	0.08	B	18.35	27.53	5.21	11.36	0.06	5.21	11.36
C-A	-	-	-	-	468.90	703.35	-	-	-	-	-
C-B	0.02	7.74	0.02	A	6.42	9.64	1.16	7.20	0.01	1.16	7.20
A-B	-	-	-	-	40.38	60.56	-	-	-	-	-
A-C	-	-	-	-	661.60	992.40	-	-	-	-	-

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	2.26	0.56	2.24	0.00	538.26	0.004	0.00	0.00	6.715	A
B-A	15.06	3.76	14.90	0.00	390.43	0.039	0.00	0.04	9.582	A
C-A	384.71	96.18	384.71	0.00	-	-	-	-	-	-
C-B	5.27	1.32	5.23	0.00	540.28	0.010	0.00	0.01	6.728	A
A-B	33.13	8.28	33.13	0.00	-	-	-	-	-	-
A-C	542.81	135.70	542.81	0.00	-	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	2.70	0.67	2.69	0.00	509.34	0.005	0.00	0.01	7.104	A
B-A	17.98	4.49	17.92	0.00	348.77	0.052	0.04	0.05	10.880	B
C-A	459.38	114.84	459.38	0.00	-	-	-	-	-	-
C-B	6.29	1.57	6.28	0.00	511.82	0.012	0.01	0.01	7.120	A
A-B	39.56	9.89	39.56	0.00	-	-	-	-	-	-
A-C	648.16	162.04	648.16	0.00	-	-	-	-	-	-

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	3.30	0.83	3.30	0.00	468.94	0.007	0.01	0.01	7.731	A
B-A	22.02	5.51	21.91	0.00	291.18	0.076	0.05	0.08	13.363	B
C-A	562.62	140.66	562.62	0.00	-	-	-	-	-	-
C-B	7.71	1.93	7.69	0.00	472.48	0.016	0.01	0.02	7.745	A
A-B	48.44	12.11	48.44	0.00	-	-	-	-	-	-
A-C	793.84	198.46	793.84	0.00	-	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	3.30	0.83	3.30	0.00	468.86	0.007	0.01	0.01	7.732	A
B-A	22.02	5.51	22.02	0.00	291.18	0.076	0.08	0.08	13.374	B
C-A	562.62	140.66	562.62	0.00	-	-	-	-	-	-
C-B	7.71	1.93	7.71	0.00	472.48	0.016	0.02	0.02	7.745	A
A-B	48.44	12.11	48.44	0.00	-	-	-	-	-	-
A-C	793.84	198.46	793.84	0.00	-	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	2.70	0.67	2.70	0.00	509.22	0.005	0.01	0.01	7.106	A
B-A	17.98	4.49	18.08	0.00	348.78	0.052	0.08	0.06	10.891	B
C-A	459.38	114.84	459.38	0.00	-	-	-	-	-	-
C-B	6.29	1.57	6.31	0.00	511.82	0.012	0.02	0.01	7.123	A
A-B	39.56	9.89	39.56	0.00	-	-	-	-	-	-
A-C	648.16	162.04	648.16	0.00	-	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
B-C	2.26	0.56	2.26	0.00	538.11	0.004	0.01	0.00	6.720	A
B-A	15.06	3.76	15.11	0.00	390.43	0.039	0.06	0.04	9.594	A
C-A	384.71	96.18	384.71	0.00	-	-	-	-	-	-
C-B	5.27	1.32	5.28	0.00	540.28	0.010	0.01	0.01	6.728	A
A-B	33.13	8.28	33.13	0.00	-	-	-	-	-	-
A-C	542.81	135.70	542.81	0.00	-	-	-	-	-	-

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.06	0.00	6.715	A	A
B-A	0.57	0.04	9.582	A	A
C-A	-	-	-	-	-
C-B	0.14	0.01	6.728	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (16:45-17:00)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.08	0.01	7.104	A	A
B-A	0.78	0.05	10.880	B	B
C-A	-	-	-	-	-
C-B	0.18	0.01	7.120	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:00-17:15)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.10	0.01	7.731	A	A
B-A	1.17	0.08	13.363	B	B
C-A	-	-	-	-	-
C-B	0.24	0.02	7.745	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:15-17:30)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.11	0.01	7.732	A	A
B-A	1.21	0.08	13.374	B	B
C-A	-	-	-	-	-
C-B	0.25	0.02	7.745	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:30-17:45)

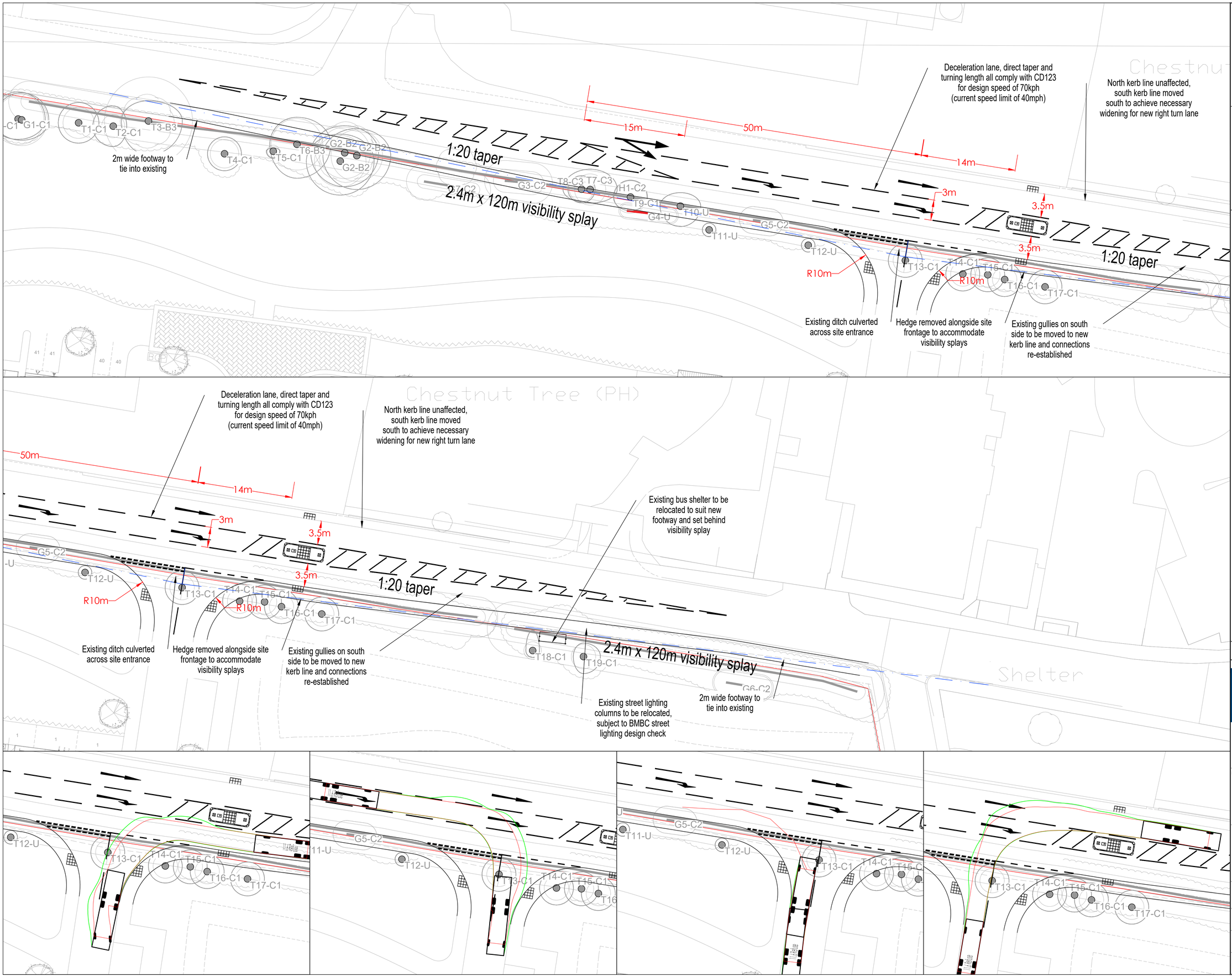
Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.08	0.01	7.106	A	A
B-A	0.85	0.06	10.891	B	B
C-A	-	-	-	-	-
C-B	0.19	0.01	7.123	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Queueing Delay results: (17:45-18:00)

Stream	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
B-C	0.06	0.00	6.720	A	A
B-A	0.63	0.04	9.594	A	A
C-A	-	-	-	-	-
C-B	0.15	0.01	6.728	A	A
A-B	-	-	-	-	-
A-C	-	-	-	-	-

Appendix J

Proposed Site Access Arrangements / Visibility Splays



Standard Notes

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and specification.
2. This drawing should not be scaled.

Location Plan

Notes and Keys

Date	Rev	Description	Drawn	Chkd
17.12.24	A	Site layout plan updated to final layout	JA	JT

TPS

ADDRESS
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Project

Proposed residential development,
Avant Homes,
Barugh Green Road, Barnsley

Title

Proposed right turn ghost island general arrangement drawing

Status

INFORMATION

Scale @ A1	Date Created	Drawn	Checked
1:250	17.05.24	JT	JT

TPS Project Number		Revision
P2636		B

Drawing Number

D - 1001

Standard Notes

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and specification.
2. This drawing should not be scaled.

Location Plan

Notes and Keys

Date	Rev	Description	Drawn	Chkd
17.12.24	A	Updated in line with final layout	JA	JT

TPS

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Project
Barugh Green
Barnsley

Title
Visibility Splays and Forward Visibility in line with 20mph speed limit

Status
INFORMATION

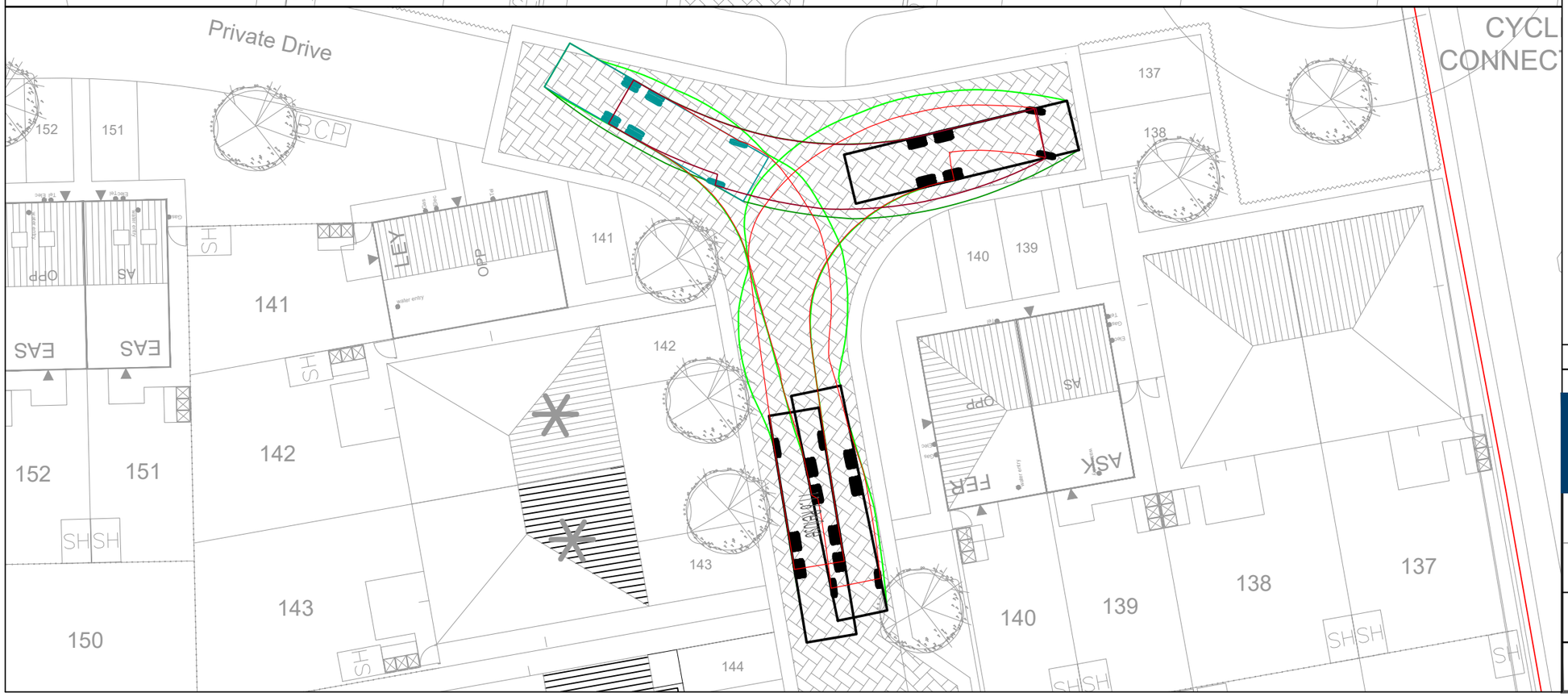
Scale @ A1	Date Created	Drawn	Checked
	05/12/24	JA	JT

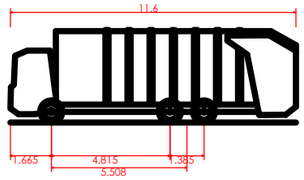
TPS Project Number		Revision
P2636		A

Drawing Number
P2636 - V - 1001

Appendix K

Swept Path Analysis





11.6 Refuse	
Overall Length	11.600m
Overall Width	2.550m
Overall Body Height	3.760m
Min Body Ground Clearance	0.312m
Track Width	2.550m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	10.150m

Date	Rev	Description	Drawn	Chkd
17.12.24	A	Updated in line with final layout	JA	JT

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Project

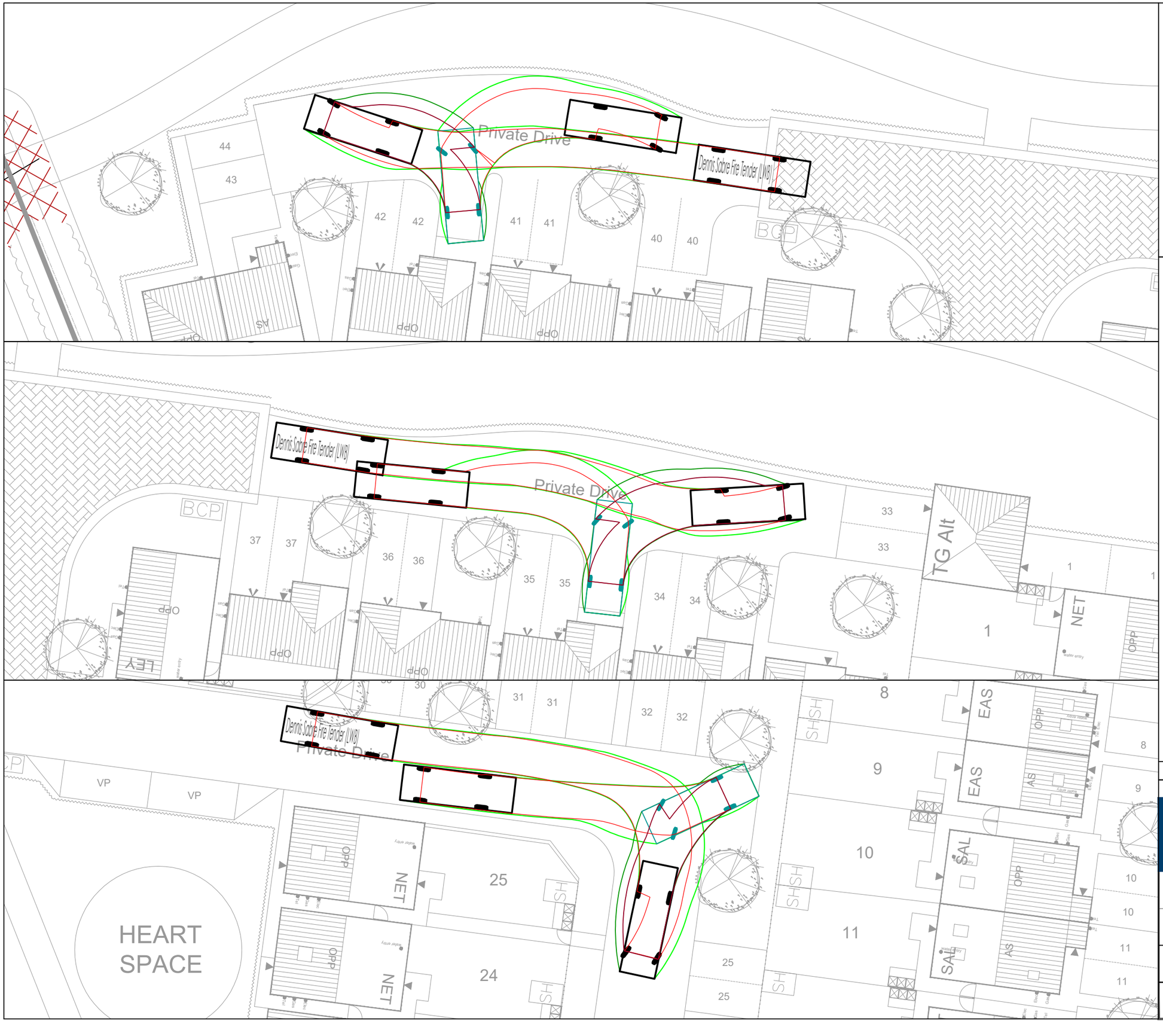
Barugh Green, Barnsley

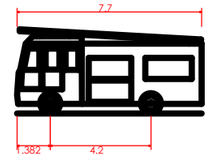
Title

Swept Path Analysis - 11.6m Refuse Vehicle

Date	Designed by	Checked by
05/12/24	JA	JT

Drawing Number	Scale @ A3	Revision
P2636 - T - 1001	1:250	A





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

Date	Rev	Description	Drawn	Chkd
17.12.24	A	Updated in line with final layout	JA	JT

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Project

Barugh Green, Barnsley

Title

Swept Path Analysis - Fire Tender

Date	Designed by	Checked by
05/12/24	JA	JT

Drawing Number	Scale @ A3	Revision
P2636 - T - 1002	1:250	A