Siderise Insulation, Forge Road Industrial Estate, Maesteg

lime TRANSPORT

Transport Assessment

Siderise Insulation

May 2021

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1 Introduction

1.1 Background

1.1.1 Lime Transport has been commissioned by Siderise Insulation Ltd to produce a Transport Assessment in support of a planning application for an extension to their existing production facilities and the construction of a new building to provide increased production floorspace and office and training facilities on adjoining land at Forge Industrial Estate, Maesteg.

1.1.2 The existing facility is located along High Street, Forge Industrial Estate, within the town of Maesteg, in Bridgend County Borough Council. The site location is shown in **Figure 1.1** below.

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Figure 1.1 Site location

1.2 Development proposals

1.2.1 As part of the development, it is proposed to:

- Expand the existing Siderise Industrial facility, which is located along the eastern side of High Street, Forge Industrial Estate, to provide:

- *A new floor area of 633m^2, of which 208m^2 will replace the existing building that will be demolish. This will provide a net gain of 425m^2.*

- Develop a new production facility, located on a parcel of land at the south-east corner of High Street, Forge Industrial Estate, to provide:
  - *A new commercial units of approximately 2,000m^2, which will comprise additional production floorspace, office accommodation and training facilities.*

1.2.2 The location of the existing and proposed facilities is shown in below.

1.2.3 Further details of the development proposals, including access arrangements, proposed car and cycle parking provision together with the delivery and servicing strategy is set out in Chapter 4.

1.3 Scope of Transport Assessment

1.3.1 The scope of this Transport Assessment has been based on the guidance within the Department for Transport's *'Transport Evidence Bases in Plan Making and Decision Taking. 2015'*, together with an initial discussion with the Local Highway Authority. Following this introductory section, the scope of the report includes:

- Details of public transport, walk and cycle accessibility;
- Estimates of the likely person trip generation (by mode) for the proposed development, based the likely number of staff to be employed on-site and a review census data to determine mode of travel;
- A review of five years' personal injury collision data within the area immediately surrounding the site;
- Estimates the likely impact of the proposed development for the anticipated years of opening and years of opening plus five and ten years, based on Tempro/NTM growth factors;
- Assess the impact of the proposed development at the following junctions:
  - *Junction 1: High Street/Forge Road Industrial Estate priority junction*
  - *Junction 2: Forge Road Industrial Estate/ Heol Ty Gwyn priority junction*
  - *Junction 3: Heol Ty Gwyn/ B4282 Neath Road priority junction*
- Identify any mitigation measures where necessary, including a summary of the Travel Plan and Transport Implementation Strategy.

1.4 Structure of the report

1.4.1 The purpose of this Transport Assessment is to detail the likely transport characteristics of the proposed development in order to identify the potential impact on the surrounding transport network, and to detail any mitigation measures should these be required.

1.4.2 Following this introductory section, the report is structured as follows:

- Section 2 sets out the policy context for the development;
- Sections 3 identifies the accessibility of the site and reviews personal injury accident data within the study area;
- Section 4 describes the development proposals, including the access to the site;
- Section 5 predicts the likely travel characteristics of the development;
- Section 6 assesses the impact of the proposed development on the surrounding highway network and highlights mitigation measures where required, including the development of a site wide travel plan;
- Section 7 outlines the Transportation Implementation Strategy; and,
- Section 8 summarises the findings of the report.

2 Policy context

2.1 Introduction

2.1.1 This section of the report reviews the relevant national, regional and local planning policies relating to transport, and includes:

- Future Wales - The National Plan 2040
- The Wales Spatial Plan – People, Places and Future;
- Planning Policy Wales;
- One Wales; Connecting the Nation;
- Technical Advice Note (TAN) 18 - Transport; and,
- Bridgend County Borough Council Local Development Plan 2013

2.2 Future Wales - The National Plan 2041

2.2.1 Future Wales – The National Plan 2041, released in February 2021, is a national development framework, setting the direction for development in Wales to 2040. The document sets out the Welsh Government's twenty year plan for shaping the future growth and development of the country, stating that:

> *'Managing change and planning development that will last for generations is one of the most important responsibilities of government.'*

2.3 Wales Spatial Plan – People, Places, Futures

2.3.1 The Wales Spatial Plan – People, Places Future (WSP) was originally adopted by the National Assembly for Wales in November 2004, and updated in 2008 to bring the WSP into line with One Wales [see below] and to give status to the area work which has developed over the previous two years.

2.3.2 In Wales, spatial planning is the consideration of what can and should happen where. It is a principle of the WSP that development should be sustainable. Sustainable development is about improving wellbeing and quality of life by integrating social, economic and environmental objectives in the context of more efficient use of natural resources.

2.3.3 The purpose of the WSP is to ensure that what is done in the public, private and third sectors in Wales is integrated and sustainable, and that actions within an area support each other and jointly move towards a shared vision for Wales and for the different parts of Wales.

Achieving sustainable development

2.3.4 The WSP states that:

'Citizens must be able to access job opportunities and public services – health, social services, education, etc – if equality of opportunity is to be successfully promoted in Wales. This is a particular concern for those who face barriers to accessibility, such as people on low incomes, young and old people, disabled people and those living in rural areas.'

2.3.5 The WSP also states that:

'In the context of responding to and mitigating the effects of climate change, the Wales Spatial Plan supports the development of spatially targeted responses. These include reducing the need to travel by co-locating jobs, housing and services, for instance, and changing behaviour in favour of 'greener' modes of travel, such as car sharing, public transport, walking and cycling.'

2.4 Planning Policy Wales –Edition 11

2.4.1 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Assembly Government. It is supplemented by a series of Technical Advice Notes (TANs). Procedural advice is given in circulars and policy clarification letters.

Movement

2.4.2 At paragraph 3.12, PPW states *that 'Good design is about avoiding the creation of car-based developments. It contributes to minimising the need to travel and reliance on the car, whilst maximising opportunities for people to make sustainable and healthy travel choices for their daily journeys. Achieving these objectives requires the selection of sites which can be made easily accessible by sustainable modes as well as incorporating appropriate, safe and sustainable links (including active travel networks) within and between developments using legal agreements where appropriate'*.

2.4.3 At paragraph 3.45, PPW states that '*spatial strategies should support the objectives of minimising the need to travel, reducing reliance on the private car and increasing walking, cycling and use of public transport.'*

2.4.4 At paragraph 4.1.1, PPW states that '*the planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport. By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution.'*

2.4.5 At paragraph 4.1.3, PPW states that '*Land use and transport planning must be integrated. The planning system must ensure it enables integration*:

- *within and between different types of transport;*
- *between transport measures and land use planning;*

- *between transport measures and policies to protect and improve the environment; and,*
- *between transport measures and policies for education, health, social inclusion and wealth creation.'*

Sustainable transport

2.4.6 At paragraph 4.1.8, PPW states that '*The Welsh Government is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the well-being of Future Generations Act.'*

2.4.7 At paragraph 4.1.11, PPW states that '*it is Welsh Government policy to require the use of a sustainable transport hierarchy in relation to new development, which prioritises walking, cycling and public transport ahead of the private motor vehicles. The transport hierarchy recognises that Ultra Low Emission Vehicles also have an important role to play in the decarbonisation of transport, particularly in rural areas with limited public transport services.'*

2.4.8 Finally, at paragraph 4.1.12, PPW states that '*The sustainable transport hierarchy* [see Figure 2.1 below*] should be used to reduce the need to travel, prevent car-dependent developments in unsustainable locations, and support the delivery of schemes located, designed and supported by infrastructure which prioritises access and movement by active and sustainable transport*.'

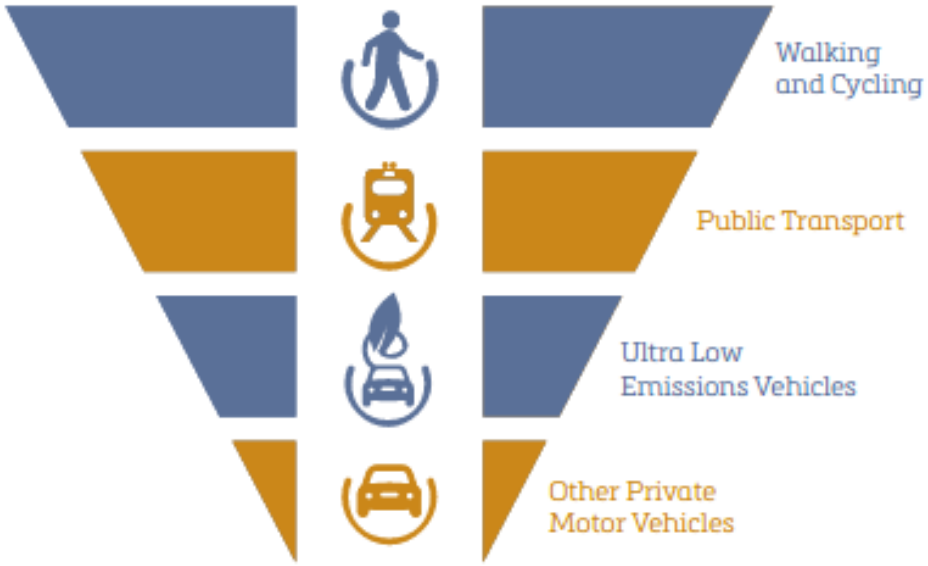

Figure 2.1 The sustainable transport hierarchy for planning

Parking

2.4.9 As stated in PPW (Edition 10) *'Car parking provision is a major influence on how people choose to travel and the pattern of development. Where and how cars are parked can in turn be a major factor in the quality of a place'*.

2.4.10 It is important to recognise that *'a design-led approach to the provision of car parking should be taken, which ensures an appropriate level of car parking is integrated in a way which does not dominate the development'*.

2.4.11 PPW highlights that parking provision should take into consideration the site location and access to local facilities, '*Parking provision should be informed by the local context, including public transport accessibility, urban design principles and the objective of reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport'. PWW encourages that 'Planning authorities must support schemes which keep parking levels down, especially off-street parking, when well designed'*.

2.4.12 Local authorities will need to ensure that their parking standards reflect local transport provision '*Parking standards should be applied flexibly and allow for the provision of lower levels of parking and the creation of high quality places'*.

2.5 One Wales: Connecting the Nation

2.5.1 National transport policy for Wales is specified within the Wales Transport Strategy, One Wales: Connecting the Nation, which is supplemented by a series of Technical Advice Notes (TANs).

2.5.2 The goal of One Wales: Connecting the Nation is to:

> ***'Promote sustainable transport networks that safeguard the environment while strengthening our country's economic and social life. The transport strategy identifies a series of high-level outcomes and sets out the steps to their delivery. The One Wales programme is working to achieve a nation with access for all, where travelling between communities and accessing services, jobs and facilities in different parts of Wales is both easy and sustainable, and which support the growth of our economy.'***

2.5.3 The policy aims to promote active travel (walking and cycling) for short journeys to promote healthy lifestyle. In addition to active travel, the use of public transport is also promoted.

2.6 Technical Advice Note (TAN18)

2.6.1 TAN 18 identifies that Planning Policy Wales and the Wales Transport Strategy both aim to secure the provision of transport infrastructure and services, which improve accessibility, build a stronger economy, improve road safety and foster more sustainable communities.

2.6.2 To achieve this and the core objectives, the following initiatives relevant to the proposed development are:

- Reducing the need to travel;
- Promoting walking and cycling;
- Managing parking provision; and,
- Encouraging the location of development near other related uses to encourage multi-purpose trips.

2.7 Wales Active Travel Act (2013)

2.7.1 The Active Travel Act (2013), encourages local authorities to promote active travel, such as walking and cycling, and to improve active travel routes in regard to the needs of walkers and cyclists. The Act also encourages local authorities to improve the highway to enhance the provision for cyclists and pedestrians.

2.7.2 The Active Travel Act makes provision for:

- Approved maps of existing active travel routes and related facilities in the local authority's area;
- Approved integrated network maps of the new and improved active travel routes and related facilities needed to create integrated networks of active travel routes and related facilities in a local authority's area;
- Requiring local authorities to have regard to integrated network maps in preparing transport policies and to ensure that there are new and improved active travel routes and related facilities;
- Requiring the Welsh Ministers to report on active travel in Wales;
- Requiring the Welsh Ministers and local authorities, in the performance of functions under the Highways Act 1980, to take reasonable steps to enhance the provision made for walkers and cyclists and to have regard to the needs of walkers and cyclists in the exercise of certain other functions; and,
- Requiring the Welsh Ministers and local authorities to exercise their functions under the Act so as to promote active travel journeys and secure new and improved active travel routes and related facilities.

2.8 Bridgend County Borough Council Local Development Plan 2006-2021 (Adopted Plan September 2013)

2.8.1 Bridgend County Borough Council Local Development Plan (LDP) sets outs the Plan Objectives and Vision that will be delivered through four strategic LDP objectives, these seek to address the national, regional and local issues facing the County Borough. '*These four strategic objectives are at the centre of the LDP and form the basis for its policy development, as set out below:*

- *To produce high quality sustainable Places;*
- *To protect and enhance the Environment;*
- *To spread prosperity and opportunity through Regeneration;*
- *To create safe, healthy and inclusive Communities.'*

2.8.2 The following specific objectives have been identified to achieve the visions sets out above. The policies relevant to this planning application is set out below:

- To produce high quality sustainable Places
  - *'To revitalise Maesteg by recognising its role as the principal settlement serving the Llynfi Valley which has the potential capacity and infrastructure to accommodate future growth. (NR1, NR4, LS3, LS10, LS12, LS18, LS20)*
  - *To promote sustainable and attractive valley settlements with improved access to jobs and services. (NR4, NR5, LS3, LS9, LS10, LS12, LS18, LS20)*
  - *To reduce traffic growth, congestion and commuting levels whilst promoting the safe and efficient use of the transport network. (LS6, LS7)*
  - *To support integrated transport solutions and measures that will encourage modal shift to more sustainable forms of transport for people and freight. (LS6, LS7)'*
- To spread prosperity and opportunity through Regeneration
  - *'To build a more diverse, dynamic and self reliant economy and business environment. (NR1, NR2, NR6, LS16, LS17, LS18)*
  - *To provide a realistic level and variety of employment land to facilitate the delivery of high quality workspaces and job opportunities. (NR1, NR2, LNR6, LS16, LS17, LS18)*
  - *To support viable town and district centres in the County Borough which are attractive and economically successful. (LS19, LS20)'*
- To create safe, healthy and inclusive Communities
  - *'To* provide a land use framework that recognises the needs of deprived areas within the County Borough, which affords those communities the opportunities to tackle the sources of their deprivation. (NR4, NR6, LS12. LS17)'

2.8.3 Forge Industrial Estate is located as an employment site within the LDP as the Maesteg and Llynfi Valley Strategic Regeneration Growth Area.

3 Existing situation and accessibility

3.1 Site location

3.1.1 This section of the Transport Assessment describes the existing transport network within the vicinity of the site, detailing the accessibility by walking, cycling, public transport as well as the local highway network.

3.1.2 The proposed development is located on Forge Road Industrial Estate, off High Street, approximately 600 north of Maesteg town centre.

3.1.3 The location of the development site together with the local highway network is shown in Figure 3.1 below.

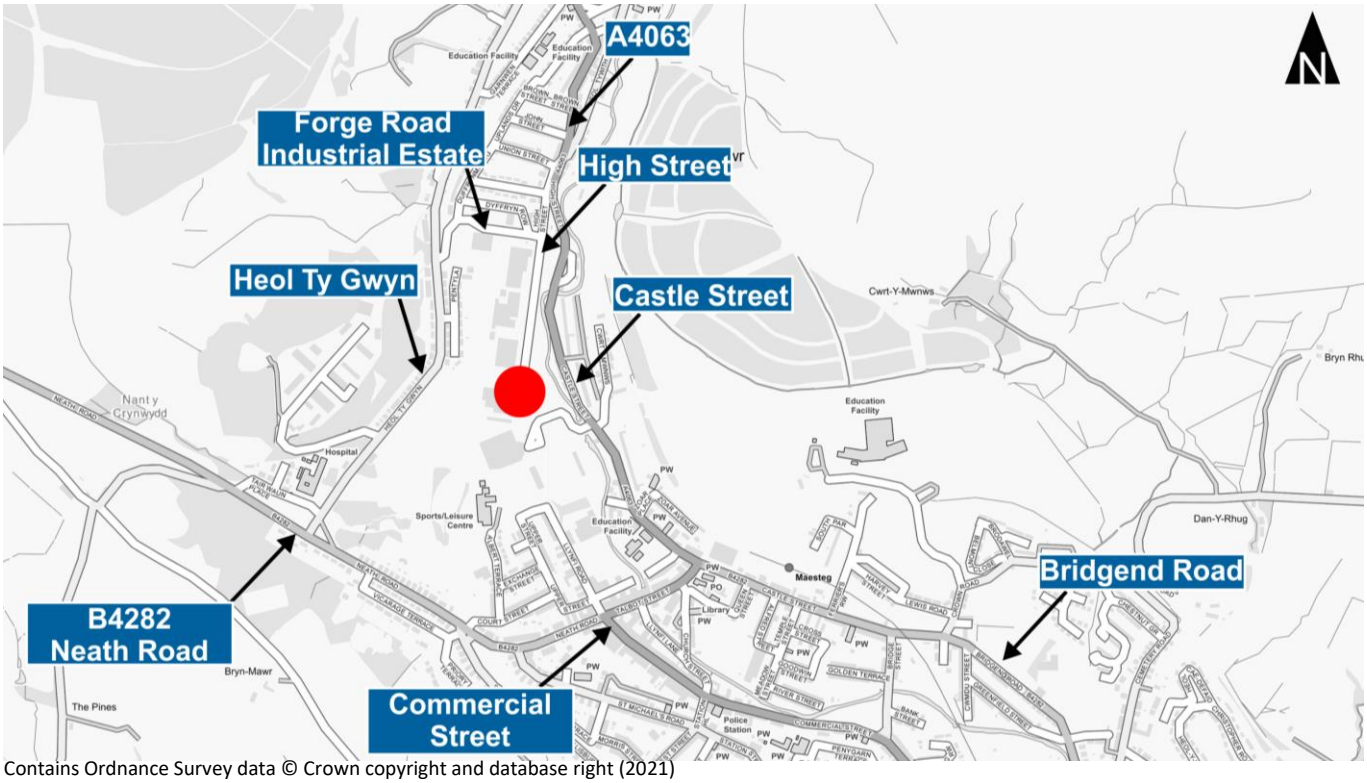

Figure 3.1 Local highway network

3.2 Travel characteristics

3.2.1 Travel characteristics of the existing population, including travel to work and car ownership statistics, has been obtained from the 2011 Census.

Travel to work

3.2.2 Due to the type of development, travel to work data has been obtained for:

- Those that live within Maesteg and travel to work; and,
- Those that travel to Maesteg to work.

3.2.3 Table 3.1 below sets out how people that live within Maesteg and the surrounding area travel to work. This data sets out the travel to work mode split for those that live within the Lower Super Output Area (LSOA), in which the site is located, the Middle Super Output Area (MSOA) and Bridgend County Borough Council. This data excludes those that work from home and those that are not in employment.

Table 3.1 Mode split for journey to work (those that live in Maesteg)

	Mode split (%)		
	(LSAO 002C)	(MSOA 002)	Bridgend County
Train	3	3	3
Bus, minibus or coach	1	2	3
Driving a car or van	78	71	75
Passenger in a car or van	5	9	8
Bicycle	0	0	1
On foot	12	12	9
Other	1	2	2

3.2.4 It can be seen from the table above that 78% of existing residents that live within the lower super output area, in which the site is located, travel to work by car (as driver), with a further 5% travelling as a passenger. It can also be seen that 12% of residents walk to work and 4% travel by public transport (bus or train).

3.2.5 Table 3.2 below sets out sets out how people who work within Maesteg travel to work.

Table 3.2 Mode split for journey to work (those that work in Maesteg)

	Mode split (%) Travel to Maesteg
Car driver	62
Car passenger	7
Bus	4
Walk	21
Other	7

3.2.6 It can be seen from the table above that 62% of employees that work within Maesteg travel to work by car (as driver), with a further 4% travelling as a passenger. It can also be seen that 21% of employees walk to work. This reflects the number of people that live and work within the Maesteg, with census data showing that 23% of people that live within the Maesteg also work within the same area of Maesteg.

Car ownership

3.2.7 The average car ownership rate for Bridgend as a whole is 1.22 vehicles per household. Within the Lower Super Output Area (LSOA), in which the site is located, the car ownership rate is slightly lower, at 1.02 vehicles per household.

3.3 Connectivity

3.3.1 This site is accessible by walking, cycling and public transport, as described in the following paragraphs.

3.3.2 The Chartered Institution of Highways and Transportation (CIHT) guidelines *'Providing for Journeys on Foot'* indicates that the desirable walking distance for commuting and school journeys is 500m, the acceptable walking distance is 1km and 2km is the preferred maximum. The CIHT guidelines indicate that the desirable walking distance for 'Elsewhere', including local amenities, is 400m, the acceptable walking distance is 800m and 1.2km is the preferred maximum.

3.3.3 The site is located within close proximity of Maesteg town centre, approximately 1km south-east of the site. The site is located within a populated residential area, which also benefits from a range of retail amenities, Sport Centres, Pharmacy, recreation grounds, financial services and public transport facilities within walking distance of the development site.

Walking

3.3.4 There are a number of pedestrian facilities in the immediate vicinity of the site, including:

- A PRoW along the eastern side of the development site which provides an off road pedestrian footpath connection to the Tesco supermarket located approximately 200m south-west of the development site. This route provides step-free access which is lit;
- This PRoW also provides a connection to the bus stop located within Tesco car park, and to the A4063, Castle Street, which provides pedestrian access into Maesteg town centre and the train station;
- Footway provision along the western side of High Street, which has dropped kerbs and tactile paving at major junctions. This provides connections to Heol-Ty-Gwyn to the west and the A4063 to the north.

Cycling

3.3.5 The location of local cycle routes within close proximity of the site is shown in **Figure 3.2** below.

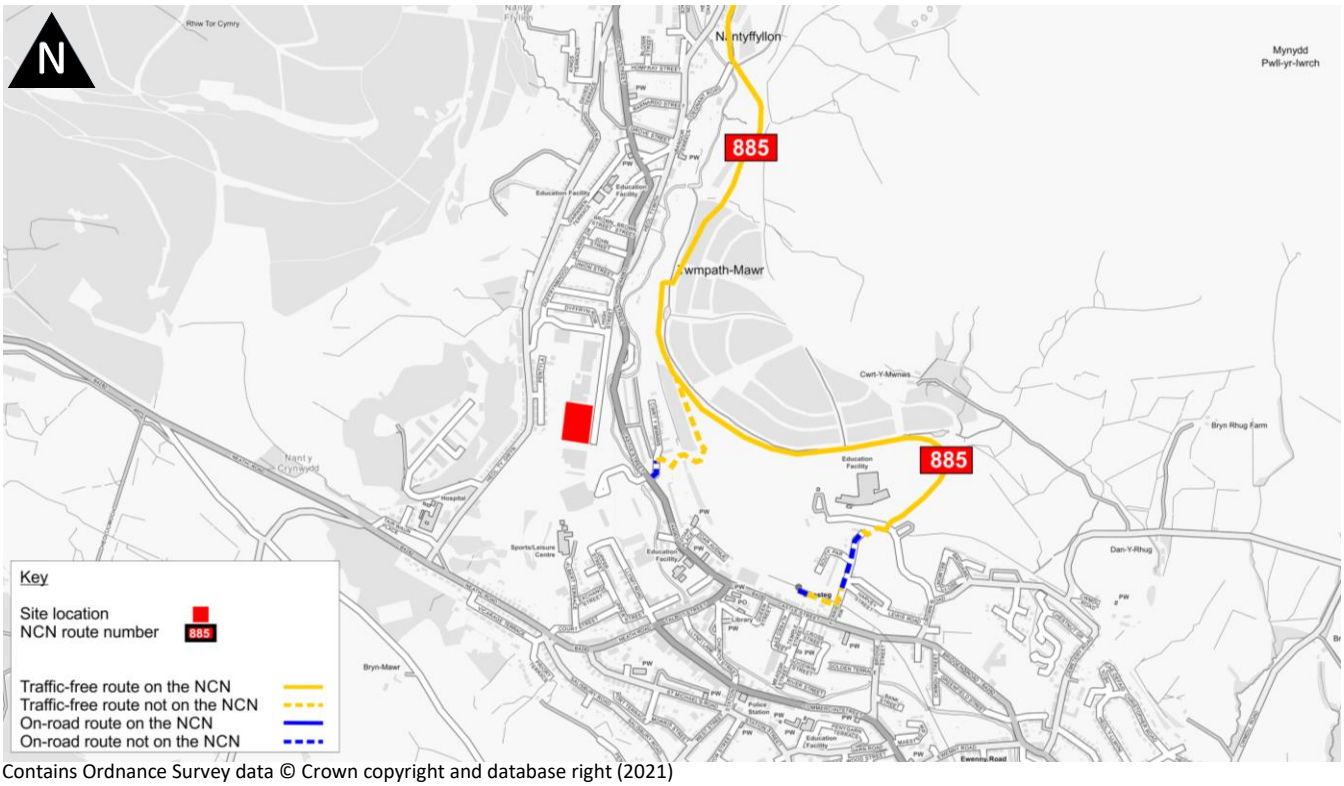

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Figure 3.2 Cycle routes in the vicinity of the site

3.3.6 The nearest cycle route to the site is National Cycle Network (NCN) 885, which is a traffic free route providing connections to Castle Street and Maesteg train station to the south, and to Cymmer approximately 5k north of the site. NCN 885 also joins with NCN 887 within Cymmer, which provides connections to Pontrhydyfen, Cwmavon and Port Talbot, via an off-road route along the River Avon.

Bus services

3.3.7 The nearest bus stop to the site is located along Garn Road, approximately 300m north of the site. The location of the bus stops, together with bus routes that call at these stops is shown in Figure 3.3 and detailed in Table 3.3 below.

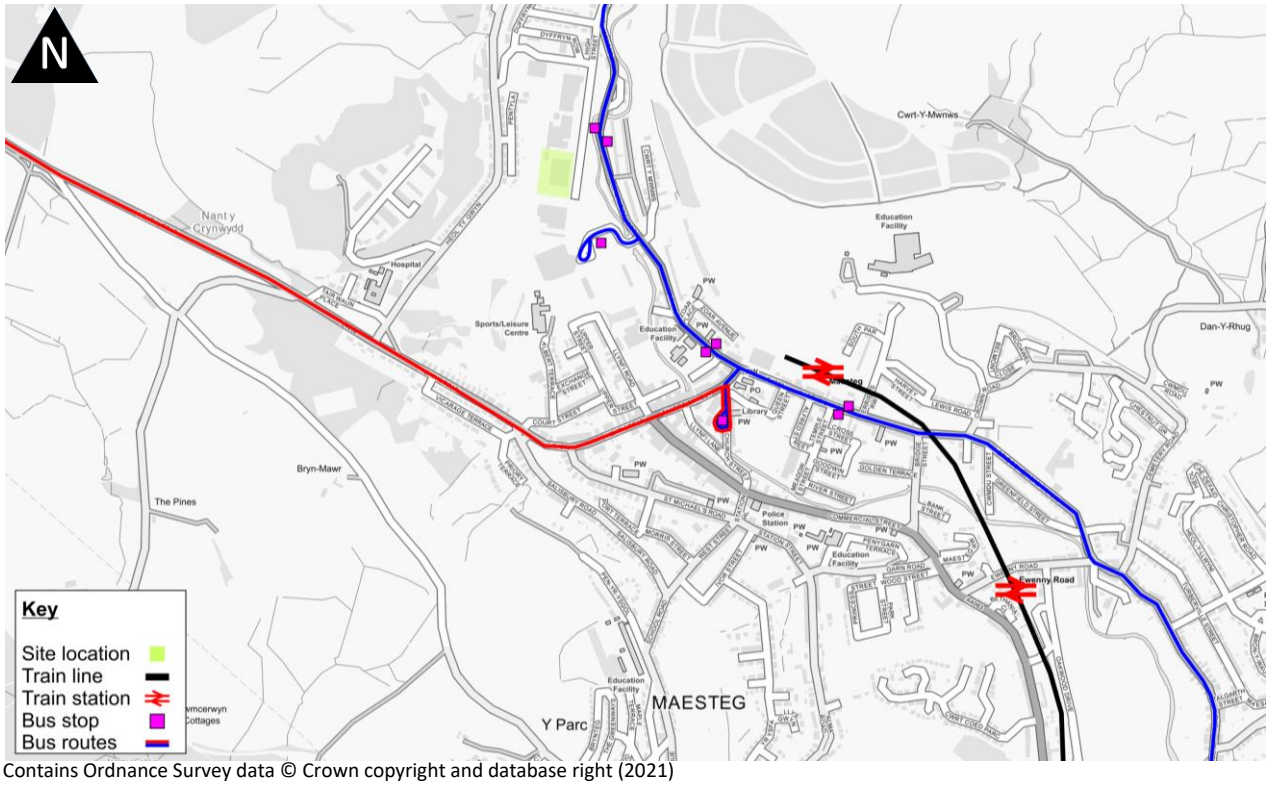

Figure 3.3 Public transport infrastructure in the vicinity of the site

Table 3.3 Summary of bus stops and routes

Route no.	Distance (m)	Route	Frequency Monday to Saturday
Maesteg, Tesco			
70 71	300	Cymmer – Bridgend	Every 20 minutes
Haselbury Road, Silver Street			
X3	770	Port Talbot – Maesteg	Every hour

Railway services

3.3.8 Maesteg is nearest train station to the site located approximately 1km south-east of the development (a 13 minute walk). Maesteg railway station is one of two railway stations that serve the town of Maesteg. The station is the terminus of the Maesteg Line, which provides connections to Gloucester, calling at Maesteg (Ewenny Road), Bridgend, Pontyclun, Cardiff Central, Newport and Chepstow. One train a hour departs Maesteg train station every hour, with a journey time of approximately 20 minutes to Bridgend and 50 minutes to Cardiff Central.

3.3.9 Maesteg Train Station is managed by Transport for Wales (TfW), and provides free parking for 12 vehicles. The station is accessible via bus service 70 which is accessible from the Tesco bus stop.

3.4 Local highway network

3.4.1 The local highway network is illustrated in Figure 3.1 and summarised in Table 3.4 below.

Table 3.4 Description of local highway network

Road name	Description
High Street	
Description	Single carriageway providing connections of Forge Industrial Estate, which is part of the adopted highway network.
Carriageway width	6m
Speed limit	30 mph
Street lighting	Yes
Crossing facilities	Dropped kerbs and tactile paving located at major junctions and the access to industrial units
Bus route	No
Character	Single carriageway with a footway along the western side of High Street to provide pedestrian access from the A4063 to the north and Heol-Ty Gwyn to the west. The road has a number of industrial units fronting the carriageway, which form Forge Industrial Estate.
On-street parking	No parking restrictions

3.5 Personal injury collisions

3.5.1 Personal injury collision data has been obtained for the period 2016 to 2020 for the study area surrounding the development. The study area included as part of the collision investigation is shown in Figure 3.5 below, with the number and severity of casualties sustained outlined in Table 3.5 below.

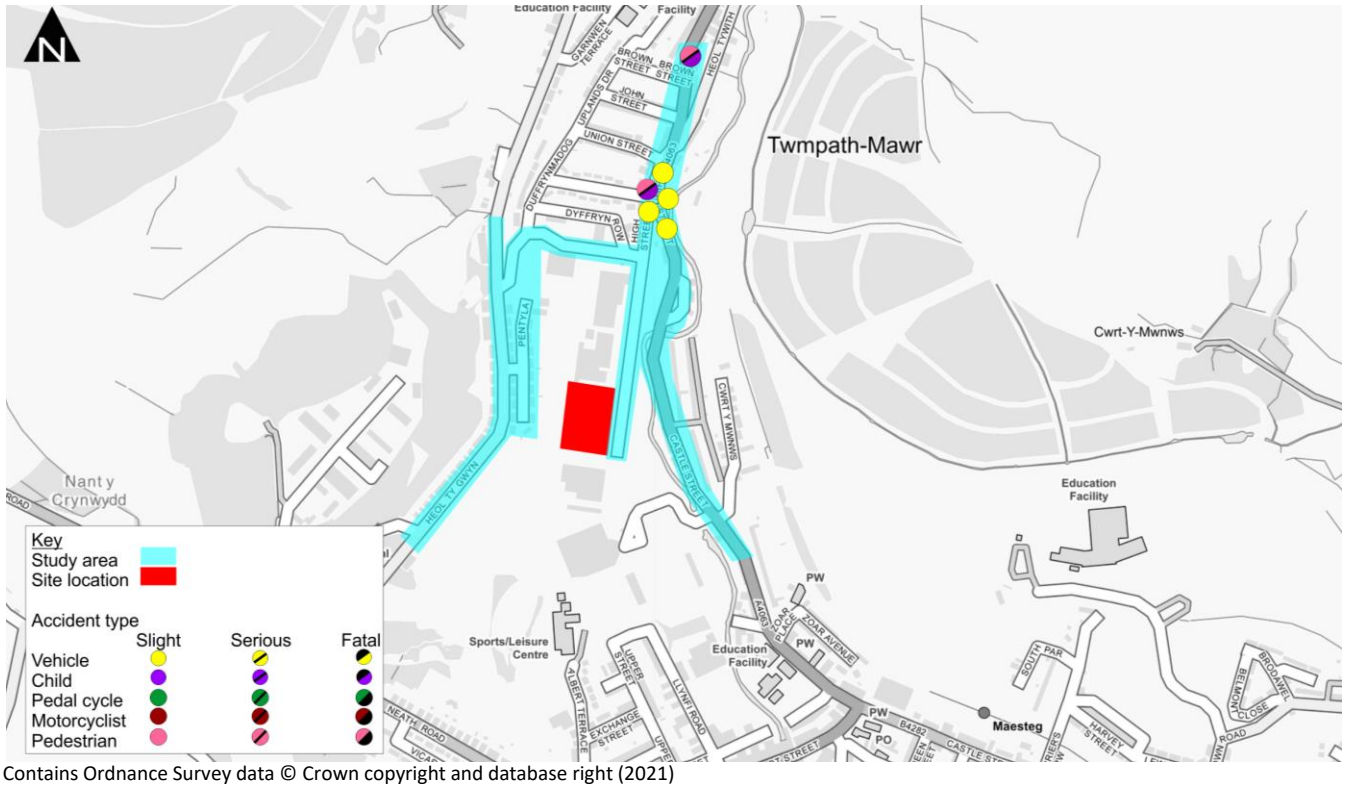

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Figure 3.5 Study area for personal injury collisions

Table 3.5 Number and severity of casualties

Year	No. of accidents resulting in personal injury			Total number of casualties	No. of accidents involving vulnerable users			
	Fatal	Serious	Slight		Cyclist	Child	Motorcycle	Pedestrians
2016	0	0	1	1	0	1	0	1
2017	0	0	0	0	0	0	0	0
2018	0	0	1	1	0	1	0	1
2019	0	0	4	5	0	0	0	0
2020	0	0	0	0	0	0	0	0
Total	0	0	6	7	0	2	0	2

3.5.2 It can be seen from the table above that a total of six collisions have occurred within the study area over the most recent five-year period. A total of five collisions occurred at the A4063/High Street/ Heol Tywith junction. All five collisions resulted in slight injuries being sustained, with two involving a child pedestrian.

4 Development proposals

4.1 Introduction

4.1.1 Lime Transport has been appointed by Siderise Insulation Ltd to produce a Transport Assessment in support of the expansion of their existing production facilities and construction of additional production facilities, office accommodation and training facilities at Forge Industrial Estate, Maesteg, Bridgend.

4.2 Development proposals

4.2.1 The proposed development comprises:

- An extension to the existing Siderise Industrial unit located along the eastern side of High Street, Forge Industrial Estate, to provide:
  - *A new floor area of 633m^2, of which 208m^2 will replace the existing building that will be demolished, to provide a net gain of 425m^2.*
- Develop a new Insulation unit, located on a parcel of land within the south-east corner of High Street, Forge Industrial Estate, to provide:
  - *A new commercial unit of approximately 2,000m^2, consisting of a combination of industrial and office use.*

4.2.2 The development proposals are shown in **Figure 4.1** below.

Figure 4.1 Proposed site layout: Proposed extension and new building

4.3 Staff generation

4.3.1 The existing Siderise Insulation unit currently employs at total of 117 people. **Table 4.1** below sets out the existing and proposed staff that are likely to be employed as part of the total development.

Table 4.1 employment details

	Existing number of staff	No. of additional staff	Total
Manufacturing & Operations	41	26	67
Customer Services & Internal Sales	29	2	31
Technical Services	20 (including 4 site services engineers not based at Maesteg)	4 (plus an additional 2 site services engineers not based at Maesteg)	26
Finance	5	1	6
HR / IT / PMO	5	2	7
Sales & Marketing UK	9 (only 2 based at Maesteg)	1 (not based at Maesteg)	10
Overseas based sales and technical teams	8	-	8
Total	117	38	155

Existing building

4.3.2 As part of the extension works of the existing building it is proposed to install a second manufacturing line, that will be more efficient than the existing one and more than double the capacity.

4.3.3 As part of the extension to the existing building a total of four additional operative staff will be required per shift, with two shifts being undertaken every day Monday-Friday, generating a total of eight additional staff.

Proposed development

4.3.4 The proposed development will consist of both a manufacturing use and a Training Centre. The likely number of staff generated by the proposed development is set out in more detail below.

- Manufacturing: 5 operatives and 1 supervisor per shift, with shifts a day. Furthermore, a total of four additional warehouse operatives will be required which will include the unloading and storing of raw materials, line feeding of raw materials to the point of manufacture, moving finished goods and the loading of delivery vehicles. This will generate a total of 12 staff;
- Maintenance and facilities team: Two additional team members;
- Training Centre: One additional training member, plus an administrator role;
- Product time: One external sales person, but this is unlikely to be based at Maesteg;
- Technical engineers: Two technical engineers based at Maesteg, and two located off-site;
- Customer services department: an additional two members of staff;
- Finance team: one member of staff; and,

- The creation of two apprentice roles in both the IT team and our HR team.

Training and development

4.3.5 As part of the new building development, it is proposed that a proportion of build will be allocated to Training and Development.

4.3.6 It is anticipated that the Training Centre will be focus on small groups, with a maximum of eight attendees. It is anticipated that occasionally larger seminars will be carried out for bigger groups, a maximum of 25 attendees, however, this will occur much more irregularly.

Shift pattern

4.3.7 The existing Siderise Insulation unit operates under a shift pattern which is likely to continue as part of the proposed development. The shift patterns for the employees are set out below:

- Manufacturing and operations
  - *Day shift 6am-2pm (total of 34 staff); and,*
  - *Evening shift (total of 34 staff): 2pm-10pm*
- Other, including Sales, Finance, Technical Services and Training:
  - *Day shift 8am-5pm (a total of approximately of 88 staff, with approximately 76 staff located at Maesteg)*

4.4 Access

4.4.1 Vehicle and pedestrian access will be gained via the existing access road through Forge Industrial. The extension of the existing building will be accessed via the existing priority junction, with a new priority junction created to access the new development site.

4.4.2 The strict application of Design Manual for Roads and Bridges to non-trunk road is rarely appropriate for highway design in built-up areas, regardless of traffic volume. Manual for Streets states that:

> *'... it is, therefore, appropriate that as a starting point for any scheme affecting non-truck roads, design should start with Manual for Streets.'*

4.4.3 The required visibility splay at the site access onto High Street is presented in Appendix A. This shows that a 2.4m x 43m visibility, based on the posted speed limit for the 30mph, can be achieved for southbound traffic, in accordance with Manual for Streets, can be achieved.

4.4.4 The access road is designed in accordance with Manual for Streets with a 5.5m carriageway and a 2m footway on either side of the carriageway.

4.4.5 Swept path analysis has been carried out of a range of vehicles manoeuvring at the site access and on-site is presented in Appendix B, including:

- A large articulated vehicle;
- 10m rigid; and,
- 7.5 tonne panel van

4.4.6 As part of the development it is proposed to provide pedestrian footpaths that will connect to the existing PRoW that runs along the eastern boundary of the new building.

4.5 Parking

Car parking

4.5.1 As part of the development, it is proposed to provide car and cycle parking in accordance with Bridgend County Borough Council Parking Guidelines (SPG 17) adopted September 2011. The required car parking provision for the proposed developments within Maesteg is shown in Table 4.2 below.

Table 4.2 Car parking requirements: Zone 4

Land use	Floor space	Operational requirements		Non-operational requirements	
		Standard	Required	Standard	Required
Existing site					
Industrial	+ 425m^2	10% of floor area	100m^2	1 spacer per 120m^2	4 spaces
Additional site					
Industrial	966m^2	10% of floor area	150m^2	1 space per 120m^2	8 spaces
Office and training facility	1,021m^2	N/A		1 space per 60m^2	17 spaces

4.5.2 As part of the development it is proposed to provide a total of 64 car parking spaces, including two accessible car parking spaces. The number of car parking spaces proposed represents an over-provision, which reflects the location of the proposed development and the likely maximum number of staff to be on-site at any one time.

4.5.3 It is also proposed to provide an additional service yard/ Articulated Vehicle turning area within the new development site with a total floor area of approximately 600m^2 to accommodate operational requirements.

4.5.4 Swept path analysis has been carried out of a Volkswagen Touran manoeuvring on-site, as presented in Appendix C.

Cycle parking

4.5.5 The required cycle parking standards for a B1 office use, located within Maesteg is shown in Table 4.3 below.

Table 4.3 Cycle parking requirements zones 4 to 6: B1 Business Offices 2

Land use	Long stay	Short stay	Total requirement	Total provision
Existing site				
Industrial	1 stand per 500m^2	1 stand per 1,000m^2	1	1
Additional sit				
Industrial	1 stand per 500m^2	1 stand per 1,000m^2	3	3
Office and training facility	1 stand per 200m^2	1 stand per 1,000m^2	6	6

4.5.6 As part of the development, it is proposed to provide a total of 10 long stay cycle parking spaces, which is in accordance with the parking standards. These will be provided in the form of Sheffield Stands, and will be located adjacent to the main entrance to the new building.

4.5.7 The level of secure cycle parking, together with the close proximity to Maesteg town centre and the existing cycle routes surrounding the site, is likely to encourage sustainable travel for employees to the development, with 23% of existing residents both living and working within Maesteg.

4.6 Delivery and servicing

Operational servicing

4.6.1 As set out above, it is proposed to provide a service yard/ Articulated Vehicle turning area within the new development site with a total floor area of approximately 600m^2, which will to accommodate operational requirements.

4.6.2 Furthermore, as part of the extension to the existing building a new covered canopy with open ends will be used to provide protected access between the existing units and allow for loading and unloading of trucks undercover.

Refuse

4.6.3 As part of the development proposals, the on-site layout has been designed to accommodate the swept path of a large articulated vehicle and large refuse vehicle manoeuvring through the site.

4.6.4 Refuse storage points have been located through the site within a recommended walk distance for both employees of the commercial units and refuse operatives.

5 Transport characteristics

5.1 Introduction

5.1.1 In order to assess the impact of the proposed development at Forge Industrial Estate on the existing highway network, it is necessary to assess the number of vehicle trips generated by the proposed development. This section therefore outlines the methodology used to predict the person trip generation (by mode).

5.2 Staff trips

5.2.1 As outlined in Chapter 4 above it is anticipated that the proposed development is likely to employ up to 155 staff. As part of the development it is also proposed to provide a Training Centre to accommodate up to eight trainees at any one time. It is unlikely that training will be undertaken every day, however, to anticipate a worse-case scenario, the training and development aspect of the development as has been included within the likely trip generations.

5.2.2 A summary of the likely shift patterns is set out below, with:

- Manufacturing and operations
  - *Approximately 34 staff working the early shift 6am-2pm; and,*
  - *Approximately 34 staff working the late shift: 2pm-10pm.*
- Other, including Sales, Finance, Technical Services and Training:
  - *Approximately 88 staff working the day shift 8am-5pm*
  - *Approximately 8 trainees during the day shift 8am-5pm*

5.2.3 Based on the shift change times, it is considered that the manufacturing and operations staff are unlikely to have an impact during typical network peak hour periods as staff will arrive on-site outside of the morning and evening peak hours. Therefore, this has been excluded from the peak hour traffic distribution.

Training and development

5.2.4 As set out in Chapter 4 above, as part of the new building, it is proposed that a proportion of this will accommodate Training and Development.

5.2.5 It is anticipated that the training and development will be focused on small groups, with a maximum of eight attendees. It is anticipated that occasionally larger seminars will be carried out for bigger groups, a maximum of 25 attendees, however, it is likely that this will be much more irregular.

5.2.6 In practice, it is unlikely that training will be undertaken every day. However, to anticipate a worse-case scenario, it has been assumed that all of these trainees will drive to site, with a total of eight visitors associated the Training and Development of the new building.

Likely trip generation

5.2.7 The likely travel to work data has been obtained from the Census data set out in Chapter 3 which highlights the likely mode share for those that travel to Maesteg to work. If we assume that 62% of staff will travel to the site by car, Table 5.1 below outlines the anticipated vehicle arrivals and departures throughout the day.

Table 5.1 Anticipated mode of transport for employees

5.2.8 Table 5.1 shows that the proposed development at Forge Road Industrial Estate is likely to generate a total of 120 vehicle movements (two-way) throughout the day, with a total of 60 vehicle movements (two way) in the AM and peak, and a total of 60 vehicle movements (two way) in the PM peak.

	Total no. staff	Bus, minibus or coach	Driving a car or van	Passenger in a car or van	Walking
AM (7am-8am) Arrivals	96	4	60	7	20
		4%	*62%*	*7%*	*21%*
PM (5pm-6pm) Departures	96	4	60	7	20
		4%	*62%*	*7%*	*21%*
Total	-	8	120	14	40

5.2.9 Walking is anticipated to be the second most popular mode of transport with 21% of employees likely to walk to work.

5.3 Assignment and distribution of development generated traffic

5.3.1 The distribution of development generated traffic has been based on the 2011 Journey to Work census data for the Lower Super Output area in which the site is located.

5.3.2 Each destination has been assigned routes based on the most direct and appropriate direction of travel. The distribution of development generated traffic flows during the AM and PM peak period is presented in full in Appendix D and summarised in Table 5.2 below.

Table 5.2 Distribution of development generated traffic

Description	% of traffic	AM peak		PM peak	
		Arrival	Depart	Arrival	Depart
Neath Road B4282 Southbound	60	36	0	0	36
Neath Road B4282 Northbound	15	9	0	0	9
Heol Ty Gwyn Northbound	24	15	0	0	15
	100	60	0	0	60

5.4 Calculated 2021 traffic flows

5.4.1 Due to the current Covid travel restrictions in place in Wales, an alternative methodology has been agreed with the local highway authority to establish 2021 traffic flows through the highway network.

5.4.2 It was agreed that the freely available DfT traffic survey, obtained for B4282, Neath Road, and undertaken in 2019, would be used to factor up traffic surveys undertaken in April 2021. It was shown, however, that the 2021 survey data carried out is higher than the 2019 data factored to 2021, therefore, the 2021 survey flows were used as the base data.

5.5 Base traffic flows

5.5.1 As outlined in section 1, the impact of the proposed development has been assessed for 2023, 2028, and 2033 future year scenarios to coincide with the anticipated completion date, 'year of completion + 5 years' and 'year of completion + 10 years'.

5.5.2 In order to obtain the base traffic flows (i.e. with no development traffic) in 2023, 2028 and 2033, the 2021 calculated traffic flows were factored using locally adjusted NTM growth factors. The factors applied to the calculated 2021 flows are identified in Table 5.4 below.

Table 5.4 NTM growth factors

Period	NTM growth factors
2021 to 2023	
Weekday AM	1.0196
Weekday PM	1.0192
2021 to 2028	
Weekday AM	1.065
Weekday PM	1.0641
2021 to 2033	
Weekday AM	1.1097
Weekday PM	1.1091

5.5.3 It should be noted that the above growth factors include committed development within the local area, as the factors are based on the most recent planning data contained in the Local Plan. The 2019, 2021, 2023, 2028 and 2033 base flows are set out in Appendix E.

Final future traffic flows

5.5.4 The final future traffic flows have been obtained by combining the development generated traffic flows (identified in Appendix D), with the 2023, 2028 and 2033 base traffic flows (identified in Appendix E) and presented in full in Appendix F.

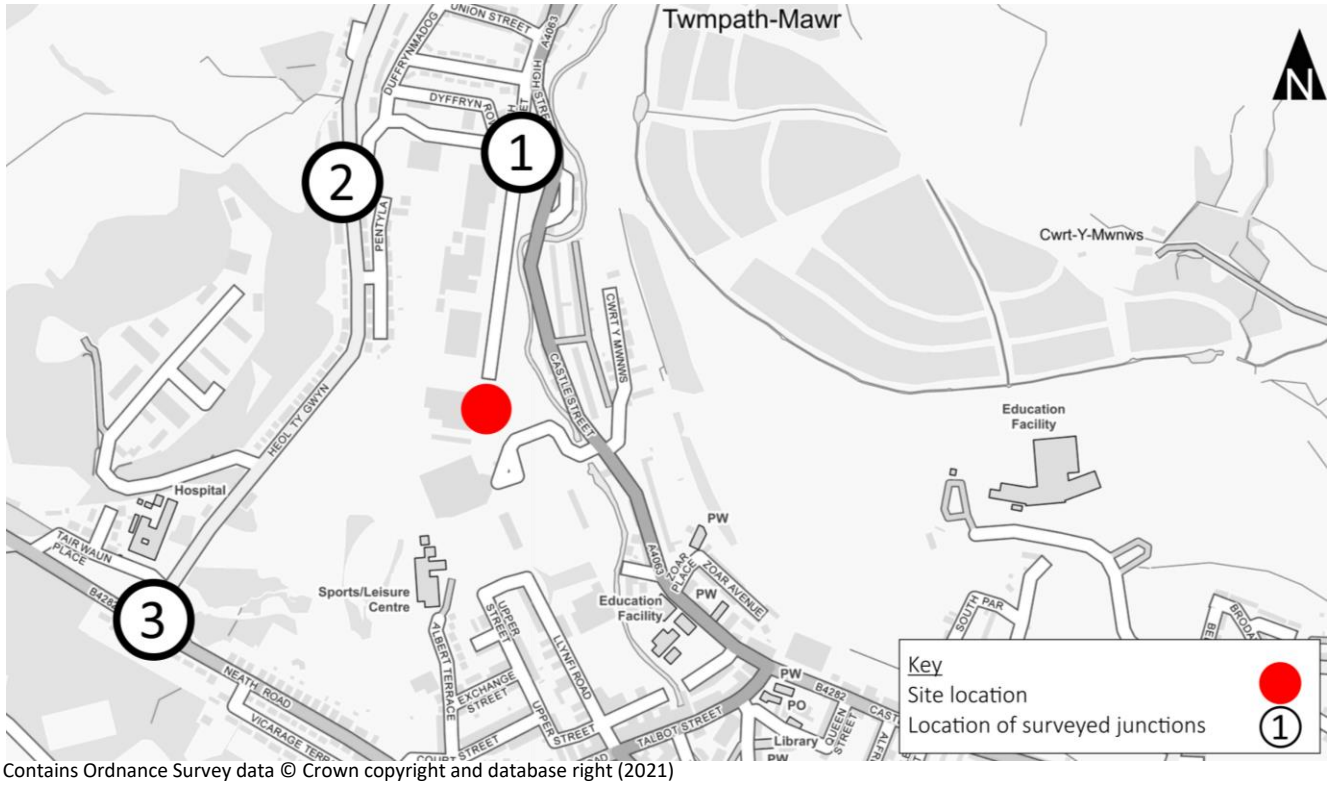
6 Impact of development generated traffic flows

6.1 Introduction

6.1.1 This section of the report considers the potential impact of the development proposals on the surrounding highway network, as agreed with the Local Highway Authority, which includes:

- *Junction 1: High Street/Forge Road Industrial Estate priority junction*
- *Junction 2: Forge Road Industrial Estate/ Heol Ty Gwyn priority junction*
- *Junction 3: Heol Ty Gwyn/ B4282 Neath Road priority junction*

6.1.2 The location of each of these junctions is shown in **Figure 6.1** below.



Contains Ordnance Survey data © Crown copyright and database right (2021)

Figure 6.1 Location of surveyed junctions

6.2 Percentage impact analysis

6.2.1 In order to determine the impact of the proposed development at each junction, a percentage impact assessment has been undertaken based on the likely trip rates generation outlined in Table 5.4 above. The percentage impact assessment is summarised in **Table 6.1** below, and a more detailed percentage impact assessment at each junction is outlined in **Appendix G**.

Table 6.1 Percentage impact assessment

		Junction 1				Junction 2				Junction 3			
		Base	Dev	Base + Dev	%inc.	Base	Dev	Base + Dev	%inc.	Base	Dev	Base + Dev	%inc.
2021	AM	51				433				1260			
	PM	138				483				1317			
2023	AM	52	60	112	*53.57*	441	60	501	*11.96*	1285	45	1330	*3.42*
	PM	141	60	201	*29.90*	492	60	552	*10.86*	1342	45	1388	*3.28*
2028	AM	54	60	114	*52.49*	461	60	521	*11.51*	1342	45	1387	*3.28*
	PM	147	60	207	*29.01*	514	60	574	*10.45*	1401	45	1447	*3.14*
2033	AM	57	60	117	*51.46*	481	60	541	*11.10*	1398	45	1444	*3.15*
	PM	153	60	213	*28.16*	536	60	596	*10.07*	1461	45	1506	*3.02*

6.2.2 In accordance with Technical Advice Note (TAN) 18 – Transport:

> *'… an increase in turning movements in the order of 5% as material in most cases, that is a 5% increase of traffic using any link of the junction.'*

6.2.3 Therefore, the impact of development generated traffic at junctions one and two have been assessed in more detail below.

6.3 Junction capacity analysis

High Street/Forge Road Industrial Estate priority junction

6.3.1 The operation of the existing junction (refer to Figure 6.2 for the junction layout) has been assessed for both the AM and PM peak periods, using the TRL program Junctions 9 PICADY. The results of the analysis are summarised in Table 6.2 below and presented in full in Appendix H.

Figure 6.2 High Street/Forge Road Industrial Estate priority junction

Table 6.2 High Street/Forge Road Industrial Estate priority junction

	Base				Base + development			
	AM		PM		AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)
2021								
Forge Road	0.07	<1	0.10	<1				
2023								
Forge Road	0.07	<1	0.10	<1	0.18	<1	0.10	<1
2028								
Forge Road	0.08	<1	0.10	<1	0.18	<1	0.10	<1
2033								
Forge Road	0.08	<1	0.11	<1	0.19	<1	0.11	<1

6.3.2 It can be seen from the table above that the existing priority junction has sufficient capacity to accommodate the proposed development, with a maximum RFC of 0.19 and a maximum queue of less than one vehicle on the High Street approach in the 2033 AM peak period.

Forge Road Industrial Estate/ Heol Ty Gwyn priority junction

6.3.3 The operation of the existing junction (refer to Figure 6.3 for the junction layout) has been assessed for both the AM and PM peak periods, using the TRL program Junctions 9 PICADY. The results of the analysis are summarised in Table 6.3 below and presented in full in Appendix I.

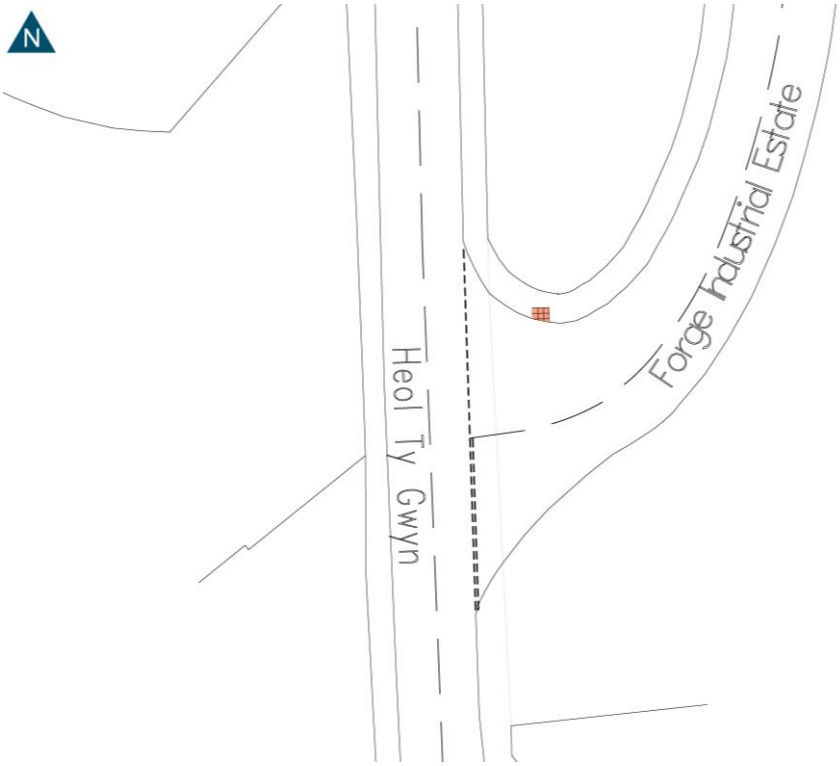


Figure 6.3 High Street/ Heol Ty Gwyn priority junction

Table 6.3 High Street/ Heol Ty Gwyn priority junction

	Base				Base + development			
	AM		PM		AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)	RFC	Queue (PCU)
2021								
Forge Road	0.11	<1	0.09	<1				
Heol Ty Gwyn	0.13	<1	0.17	<1				
2023								
Forge Road	0.11	<1	0.10	<1	0.11	<1	0.20	<1
Heol Ty Gwyn	0.13	<1	0.17	<1	0.23	<1	0.17	<1
2028								
Forge Road	0.11	<1	0.10	<1	0.11	<1	0.20	<1
Heol Ty Gwyn	0.14	<1	0.19	<1	0.24	<1	0.19	<1
2033								
Forge Road	0.12	<1	0.10	<1	0.12	<1	0.21	<1
Heol Ty Gwyn	0.15	<1	0.20	<1	0.25	<1	0.20	<1

6.3.4 It can be seen from the table above that the existing priority junction has sufficient capacity to accommodate the proposed development, with a maximum RFC of 0.25 and a queue of less than one vehicle on Heol Ty Gwyn in the 2033 AM peak period.

6.4 Summary

6.4.1 Based on the analysis it is anticipated that the proposed development can be accommodated within the existing highway network, without the need for any mitigation measures. Furthermore, the junction capacity analysis considered the impact of the total employment site on the surrounding highway network, whereas, the proposed extension and new building development will only generate an additional 38 staff, with only 10 staff working an 8am-5pm dayshift, likely to have an impact of the typical network peak hour periods.

6.4.2 It is also considered that the impact of the proposed development can be further reduced through the implementation of a robust employee Travel Plan.

7 Transport implementation strategy

7.1 Introduction

7.1.1 In accordance with TAN 18, a Transport Implementation Strategy needs to be included in the Transport Assessment process, which sets the objectives and targets relating to managing travel demand.

7.1.2 Table 7.1 over the page outlines the Transport Implementation Strategy for the proposed development, which provides additional details on the measures outlined in Section 4. These measures are organised into four categories and includes likely timescale for implementation. The three categories are:

- Pedestrian, cyclists and public transport user;
- Travel Plan; and,
- Car based user provision.

Table 7.1 Transportation implementation strategy

	Measure	Commentary	Timescale for implementation
Pedestrian users provision			
A	Provision pedestrian footway throughout the development site to connect to the existing footway along the northern side of the access road.	This is likely to be a condition of consent, with details submitted to and approved in writing by the local planning authority.	This will need to be completed prior to the beneficial occupation of the site.
B	Provision of a network of pedestrian routes between the site and the surrounding network.		
C	Provision of 'Active Travel' information within Employees Travel Plan Welcome Pack, including walk distances/times to local amenities and facilities within 2km, highlighting the benefits of walking to work.		
Cycle users			
A	Provision of secure cycle parking spaces in accordance with the adopted parking standards.	This is likely to be a condition of consent, with details submitted to and approved in writing by the local planning authority	This will need to be completed prior to the beneficial occupation of the site.
B	Provision of 'Active Travel' information within the Employees Travel Plan Welcome Pack, including cycle distances/times from local amenities and facilities within the vicinity of the site, as well as neighbouring settlements, and public transport facilities.		This will need to be completed prior to the beneficial occupation of the site.
Public transport users			
A	Provision of public transport information within Employees Travel Plan Welcome Pack, including the nearest bus stops, routes to/from the town centre and timetables.	This is likely to be a condition of consent, with details submitted to and approved in writing by the local planning authority.	This will be provided beyond first occupation of the site.
Travel Plan			
A	Encouraging the use of more sustainable modes (walking, cycling car sharing and public transport)	This is likely to be a condition of consent, with details submitted to and approved in writing by the local planning authority.	The Travel Plan will need to be completed prior to 50% occupation of the site.
B	Setting mode share targets		
C	On-going monitoring		

8 Conclusions

8.1 Summary

8.1.1 Lime Transport has been commissioned by Siderise Insulation Ltd to produce a Transport Assessment in support of a planning application for an extension to their existing production facilities and the construction of a new building to provide increased production floorspace and office and training facilities on adjoining land at Forge Industrial Estate, Maesteg.

8.1.2 The scope of the Transport Assessment has been discussed and agreed with Bridgend County Borough Council Local Highway Authority, and includes an assessment of the impact at the following junctions:

- Junction 1: High Street/Forge Road Industrial Estate priority junction
- Junction 2: Forge Road Industrial Estate/ Heol Ty Gwyn priority junction
- Junction 3: Heol Ty Gwyn/ B4282 Neath Road priority junction

8.2 Development proposals

8.2.1 The proposed development comprises:

- An extension to the existing Siderise Industrial unit located along the eastern side of High Street, Forge Industrial Estate, to provide:
  - *A new floor area of 633m^2, of which 208m^2 will replace the existing building that will be demolished, to provide a net gain of 425m^2.*
- Develop a new Insulation unit, located on a parcel of land within the south-east corner of High Street, Forge Industrial Estate, to provide:
  - *A new commercial unit of approximately 2,000m^2, consisting of a combination of industrial and office use.*

Pedestrian and vehicular access

8.2.2 Vehicle and pedestrian access will be gained via the existing priority junction located off High Street, gained via Forge Road Industrial Estate, Maesteg. The access road is designed in accordance with Manual for Streets with a 5.5m carriageway and a 2m footway on either side of the carriageway.

8.2.3 Visibility splays have been carried out which show that the required visibility splay can be achieved.

8.2.4 It is proposed that a network of pedestrian footpaths will be provided internally throughout the site, which will be agreed at the detailed design stage.

Car parking

8.2.5 As part of the development, it is proposed to provide car and cycle parking in excess of Bridgend County Borough Council parking standards. The number of car parking spaces proposed represents an over-provision, which reflects the location of the proposed development and the likely maximum number of staff to be on-site at any one time.

8.3 Travel characteristics

Trip generation

8.3.1 The likely trip generation has been based on the likely number of staff that will be employed as part of the proposed development, and visitors to the development. based on this information it is likely the proposed development will generate up to 155 staff working on site, together with a Training Centre which is likely to accommodate up to eight trainees. It is unlikely that training will be undertaken every day, however, to anticipate a worse-case scenario, the training and development aspect of the development as has been included within the likely trip generations.

8.3.2 A summary of the likely shift patterns is set out below, with:

- Manufacturing and operations
  - *Approximately 34 staff working the early shift 6am-2pm; and,*
  - *Approximately 34 staff working the late shift: 2pm-10pm.*
- Other, including Sales, Finance, Technical Services and Training:
  - *Approximately 88 staff working the day shift 8am-5pm*
  - *Approximately 8 trainees during the day shift 8am-5pm*

8.3.3 Based on the shift change times, it is considered that the manufacturing and operations staff are unlikely to have an impact during typical network peak hour periods as staff will arrive on-site outside of the morning and evening peak hours. Therefore, this has been excluded from the peak hour traffic distribution.

8.3.4 This shows that the proposed development at Forge Road Industrial Estate is likely to generate a total of 120 vehicle movements (two-way) throughout the day, with a total of 60 vehicle movements (two way) in the AM and peak, and a total of 60 vehicle movements (two way) in the PM peak.

8.3.5 Walking is anticipated to be the second most popular mode of transport with 21% of employees likely to walk to work.

Distribution

8.3.6 The distribution of development generated traffic has been based on the 2011 Journey to Work census data. Each destination was assigned routes based on the most direct and appropriate direction of travel.

Traffic flows

8.3.7 Due to the travel restrictions in place, a methodology for establishing 2021 traffic flows was agreed with Bridgend County Council. This was based on a combination of DfT traffic survey from 2019 and 2021 survey data. However, the 2021 survey flows were higher than the 2019 factored flow, therefore the survey data has been used as the base data.

8.3.8 In order to obtain the base traffic flows (i.e. with no development traffic) in 2023, 2028 and 2033, the traffic flows have been factored using locally adjusted NTM growth factors.

8.4 Likely impact

8.4.1 A junction capacity analysis carried out at all four junctions indicates that there is sufficient capacity to accommodate the likely increase in traffic flows, together with development generated traffic for the 5 and 10 years post-opening future scenarios.

8.4.2 Furthermore, the impact of the proposed development could be further reduced through the implementation of a travel plan.

8.5 Conclusions

8.5.1 This Transport Assessment considers the impact of the development at the existing Siderise Insulation site on Forge Industrial Estate, Maesteg. The report reviews the existing conditions and likely transport impact associated with the development. It concludes that the development will not have a significant impact on the transport network and can be accommodate in terms of safety and capacity.

Appendices

Appendix A

THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS. DO NOT SCALE FROM THIS DRAWING.

NOT FOR CONSTRUCTION

GENERAL NOTES

1. This drawing to be read in conjunction with all relevant civil engineering drawings.

LEGEND

Rev	Date	Description	Drawn	Check

lime TRANSPORT

5A Andrews Buildings
Penarth, CF64 2AA
Tel 029 2070 0924

mail@limetransport.com
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Drawing Status
PRELIMINARY

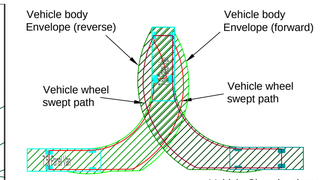
Project
Siderise Insulation
Forge Road Industrial Estate
Maesteg

Title
2.4m x 43m visibility splay
at the access to the proposed
development along Forge Road

Drawing No
21019.OS.101.01

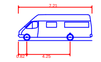
Date 26.2.2021
Scale 1:100@A1
Drawn ECC
Checked ABR
Project No **21019**
Client Project No
Revision

Appendix B



Vehicle Chassis, shown at start & end of path and change of direction(forward).

Vehicle Chassis, shown at start & end of path and change of direction(reverse).



7.5t Panel Van	
Overall Length	7.210m
Overall Width	2.192m
Overall Body Height	2.514m
Min Body Ground Clearance	0.265m
Track Width	2.050m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	7.400m

NOT FOR CONSTRUCTION

GENERAL NOTES

1. This drawing to be read in conjunction with all relevant civil engineering drawings.

LEGEND

Rev	Date	Description	Drawn	Check

5A Andrews Buildings
Penarth, CF64 2AA
Tel 029 2070 0924

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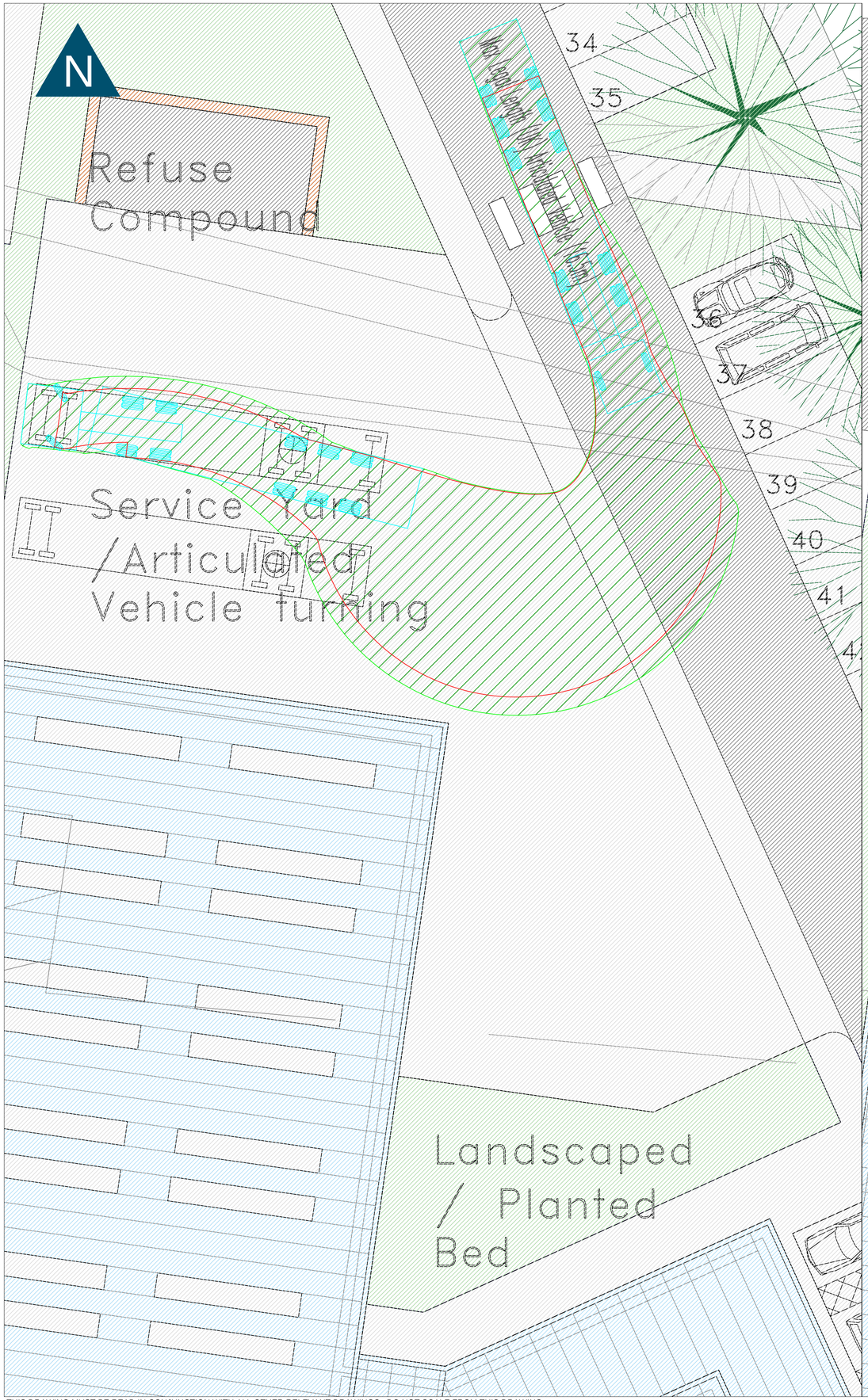
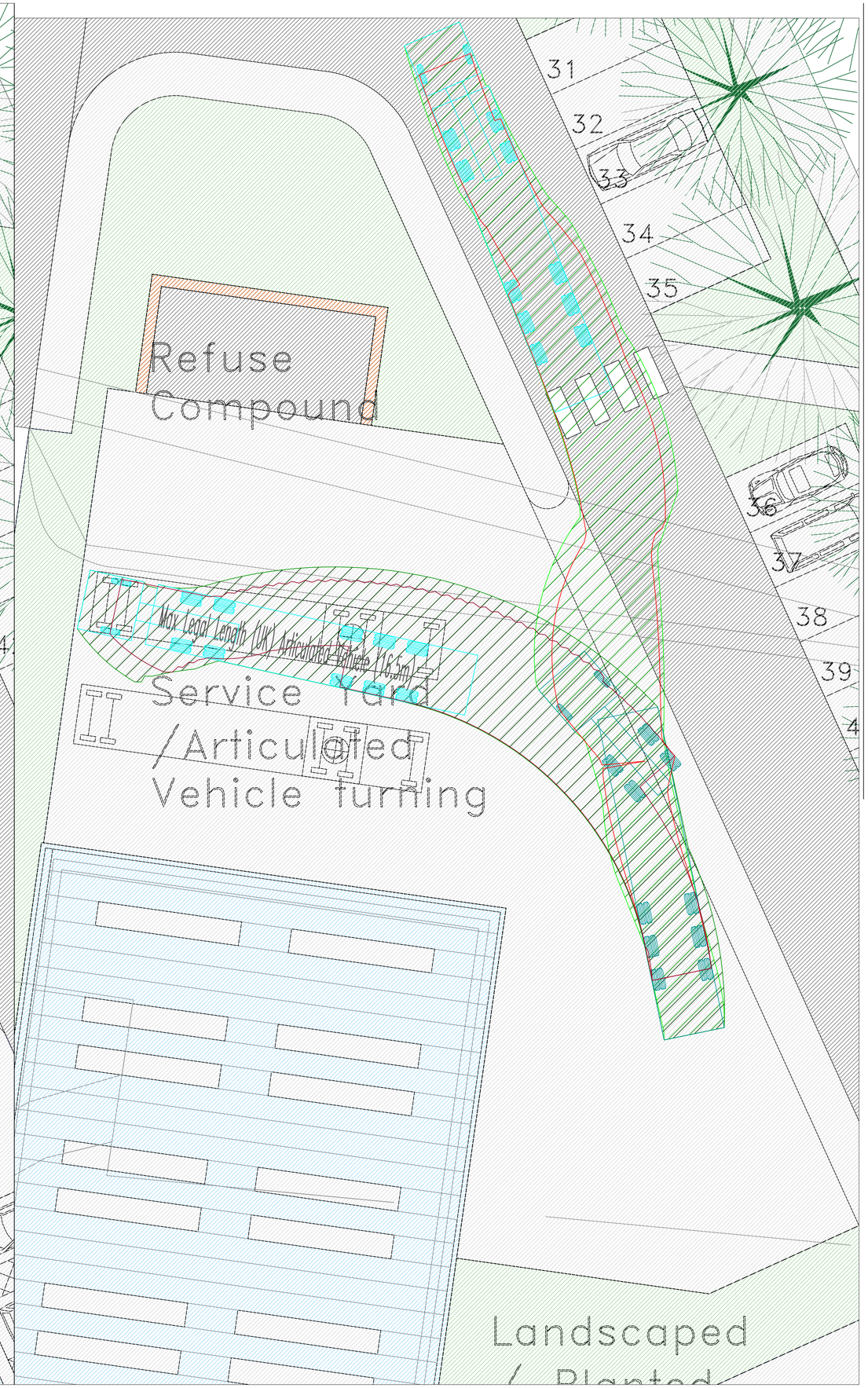
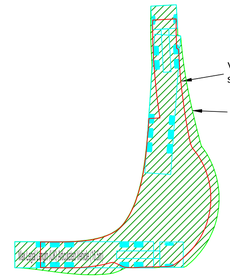
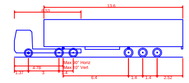
Drawing Status	Date 26.2.2021
PRELIMINARY	Scale 1:100@A1
Project	Drawn ECC
Siderise Insulation Forge Road Industrial Estate Maesteg	Checked ABR
	Project No **21019**
Title	Client Project No
Swept path analysis 7.5 tonne pannel van manoeuvring at site access	Revision
Drawing No	
21019.OS.101.07	







Vehicle Chassis, shown at start & end of path and change of direction(reverse).



Max Legal Length (UK) Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	6.530m

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GENERAL NOTES

1. This drawing to be read in conjunction with all relevant civil engineering drawings.

LEGEND

Rev	Date	Description	Drawn	Check

lime TRANSPORT

5A Andrews Buildings
Penarth, CF64 2AA
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www.limetransport.com

Drawing Status: PRELIMINARY

Date: 26.2.2021
Scale: 1:100@A1
Drawn: ECC
Checked: ABR

Project:
Siderise Insulation
Forge Road Industrial Estate
Maesteg

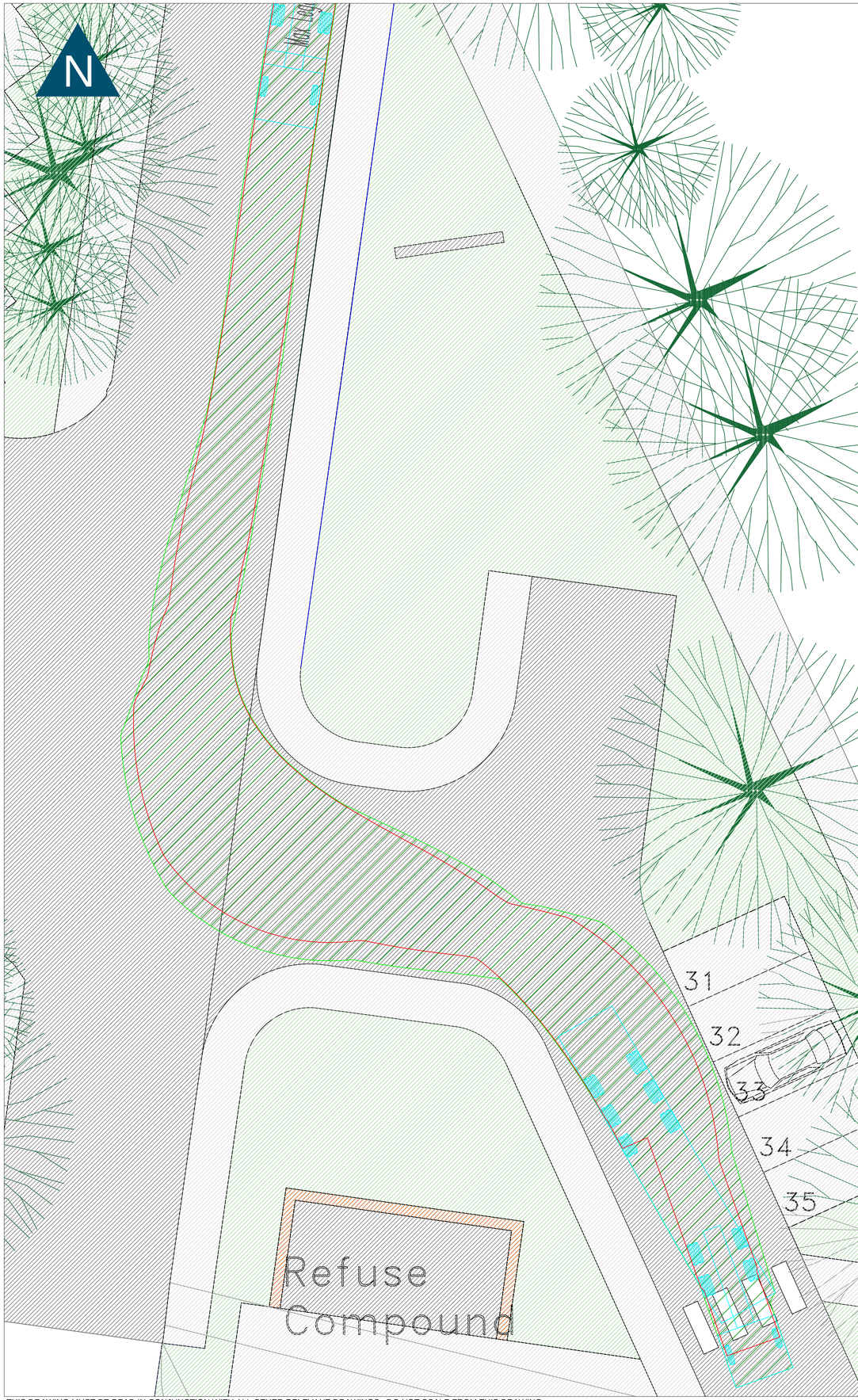
Project No: **21019**

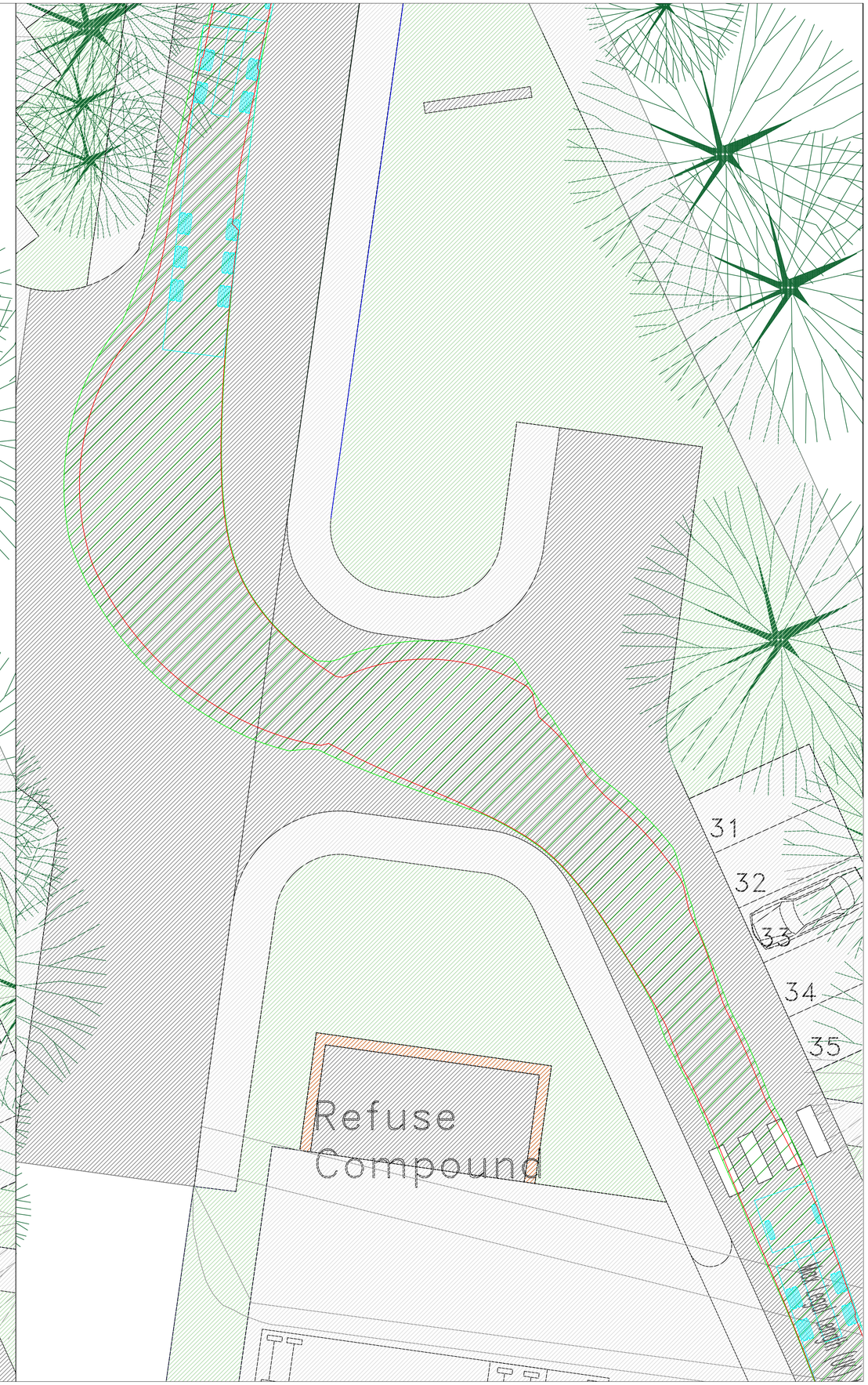
Title:
Swept path analysis
Large Articulated Vehicle
manoeuvring within Service Yard

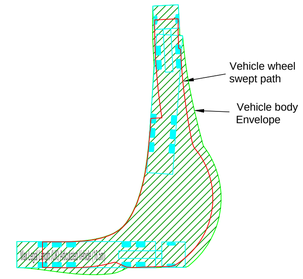
Client Project No:

Revision:

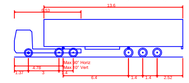
Drawing No:
21019.OS.101.05







Vehicle Chassis, shown at
start & end of path and
change of direction(reverse).



Max Legal Length (UK) Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	6.530m

NOT FOR CONSTRUCTION

GENERAL NOTES

1. This drawing to be read in conjunction with all relevant civil engineering drawings.

LEGEND

Rev	Date	Description	Drawn	Check

lime TRANSPORT

5A Andrews Buildings
Penarth, CF64 2AA
Tel 029 2070 0924

mail@limetransport.com
www.limetransport.com

Drawing Status: PRELIMINARY

Date: 26.2.2021

Scale: 1:100@A1

Project:
Siderise Insulation
Forge Road Industrial Estate
Maesteg

Drawn: ECC

Checked: ABR

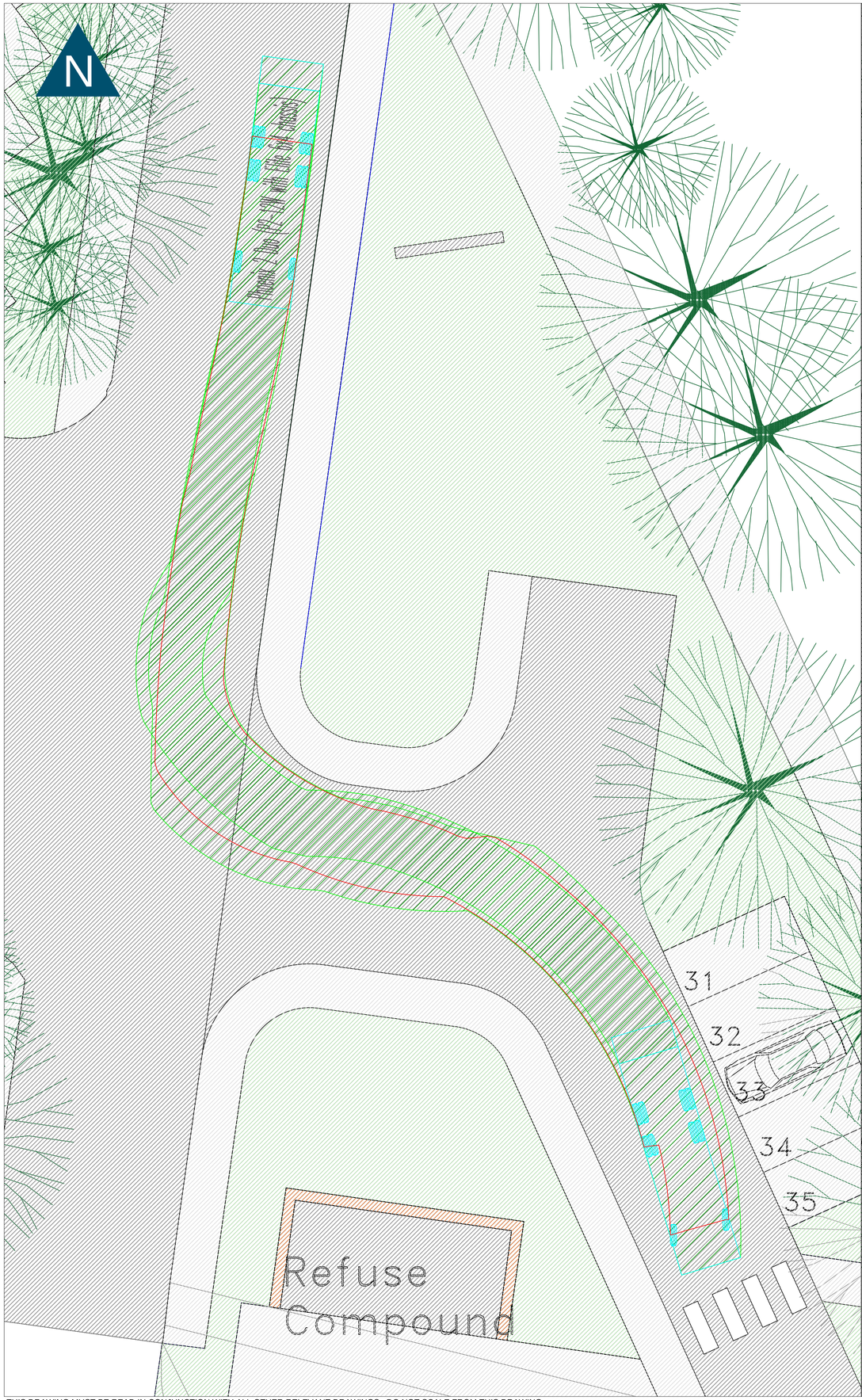
Project No: **21019**

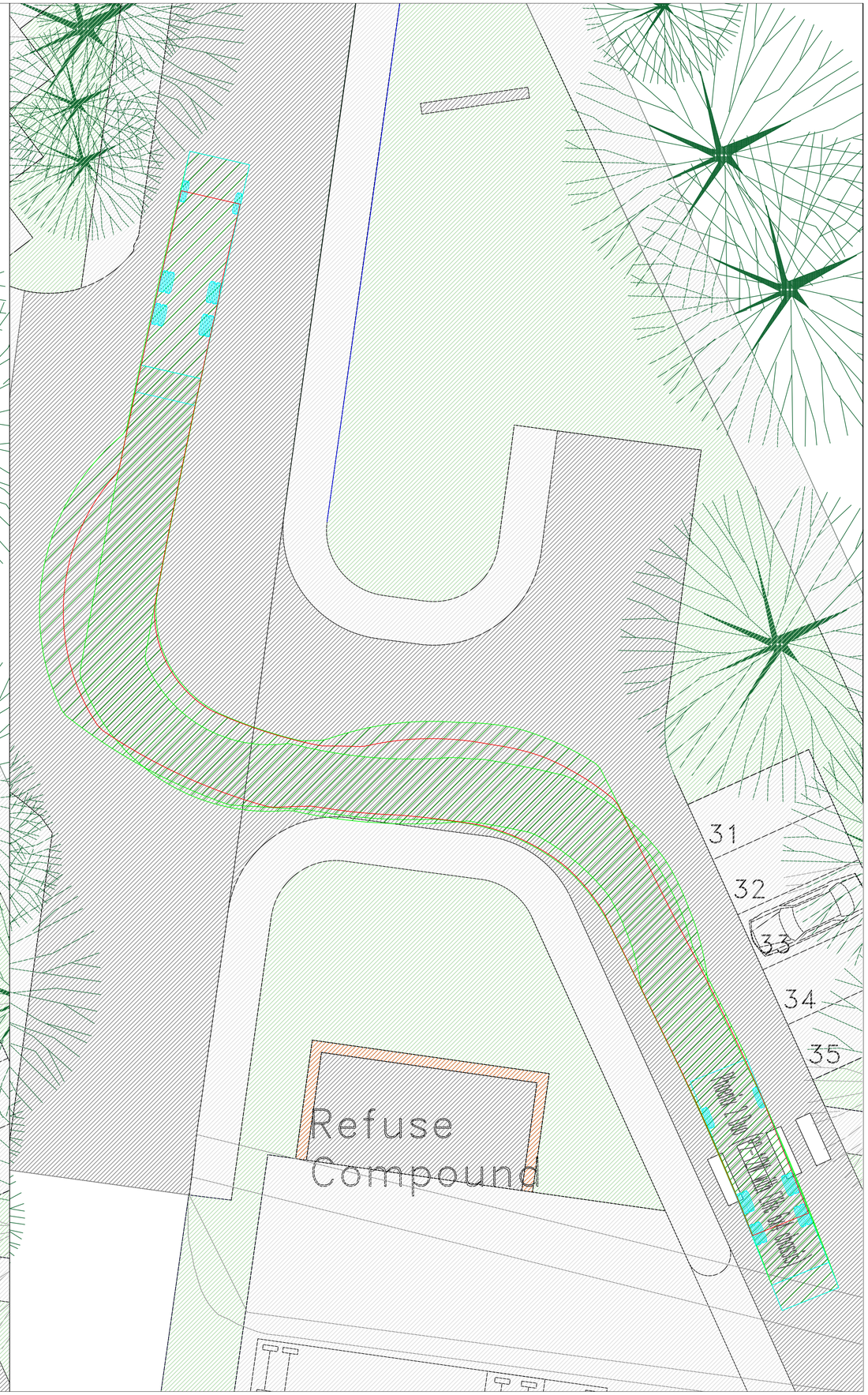
Title:
Swept path analysis
Large Articulated Vehicle

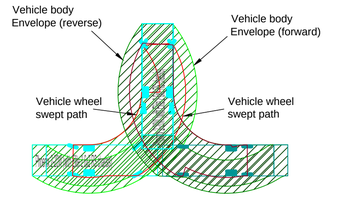
Client Project No:

Revision:

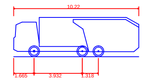
Drawing No:
21019.OS.101.05







Vehicle Chassis, shown at start & end of path and change of direction(forward).



Vehicle Chassis, shown at start & end of path and change of direction(reverse).

Phoenix 2-20W (with Elite 2 6x2 RS chassis)

Overall Length	10.220m
Overall Width	2.530m
Overall Body Height	3.211m
Min Body Ground Clearance	0.416m
Track Width	2.530m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	6.800m

NOT FOR CONSTRUCTION

GENERAL NOTES

1. This drawing to be read in conjunction with all relevant civil engineering drawings.

LEGEND

Rev	Date	Description	Drawn	Check

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5A Andrews Buildings
Penarth, CF64 2AA
Tel 029 2070 0924

mail@limetransport.com
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Drawing Status: PRELIMINARY

Date: 26.2.2021

Scale: 1:100@A1

Project: Siderise Insulation
Forge Road Industrial Estate
Maesteg

Drawn: ECC

Checked: ABR

Project No: **21019**

Title: Swept path analysis
10m rigid vehicle
manoeuvring at site access

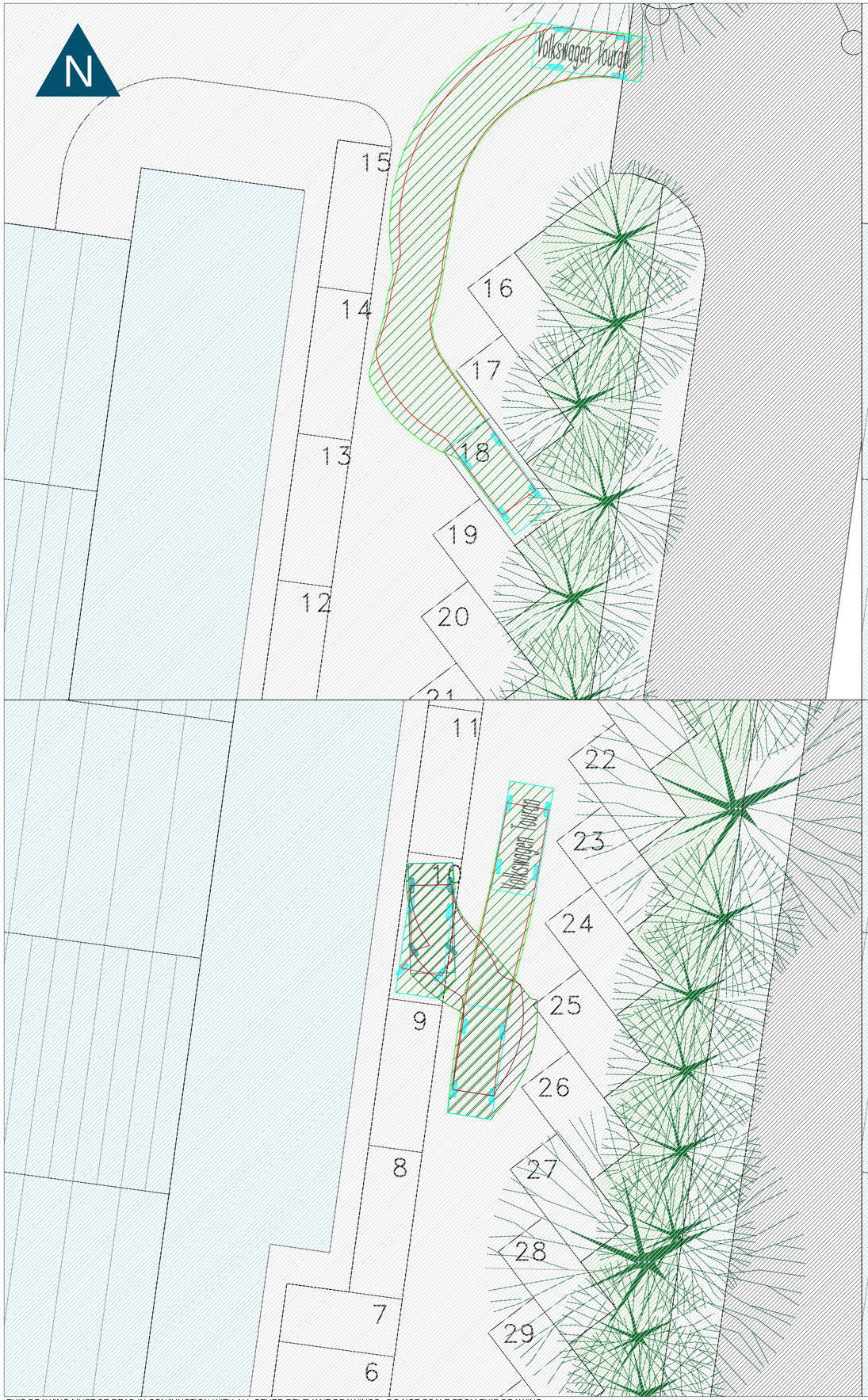
Client Project No:

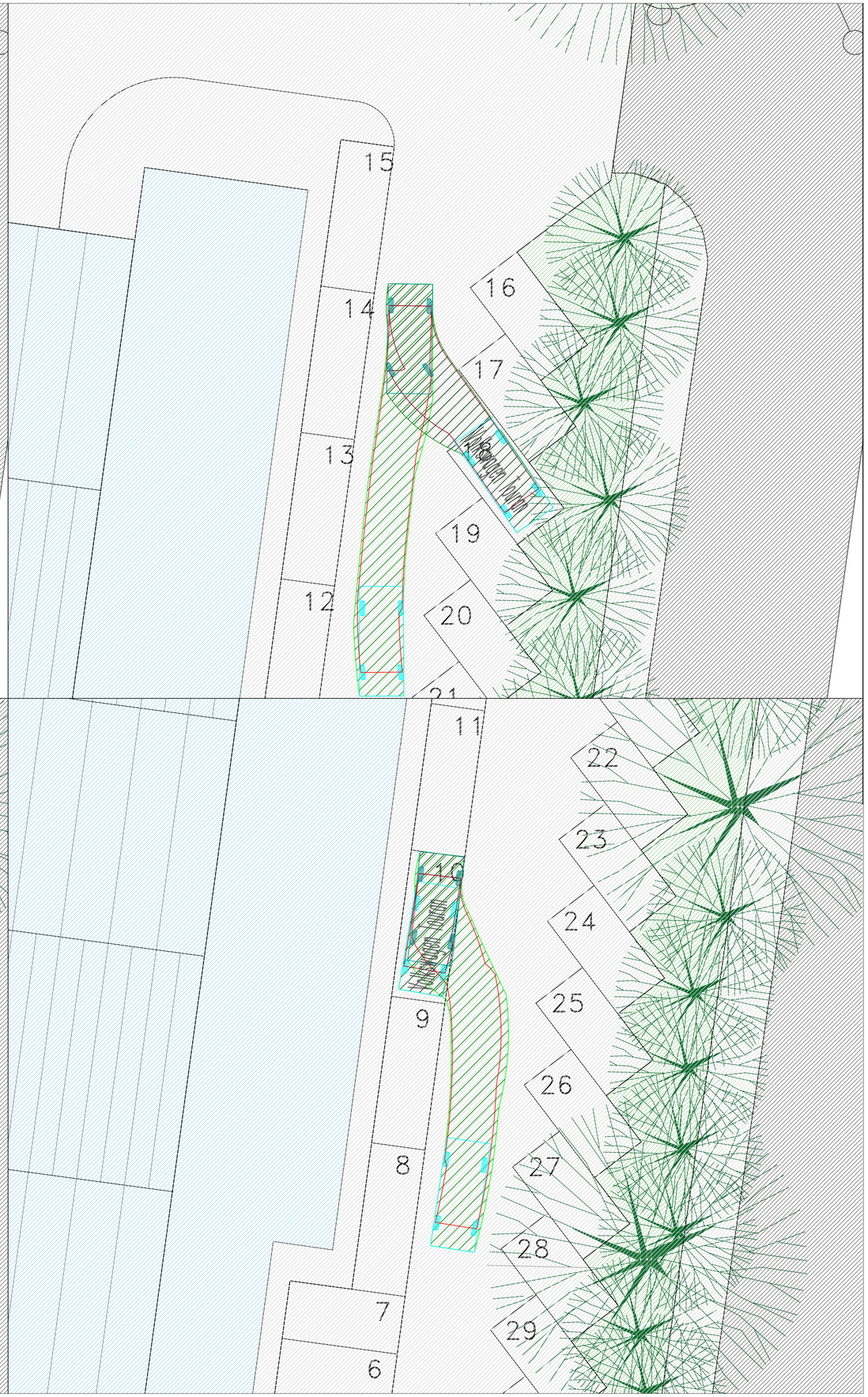
Revision:

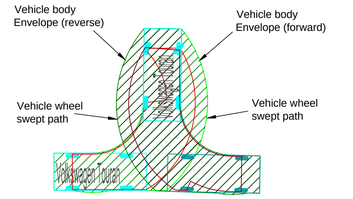
Drawing No: 21019.OS.101.08

THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS. DO NOT SCALE FROM THIS DRAWING.

Appendix C







Vehicle Chassis, shown at start & end of path and change of direction(forward).

Vehicle Chassis, shown at start & end of path and change of direction(reverse).

Volkswagen Touran	
Overall Length	4.534m
Overall Width	1.829m
Overall Body Height	1.491m
Min Body Ground Clearance	0.253m
Max Track Width	1.734m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.042m

NOT FOR CONSTRUCTION

GENERAL NOTES

1. This drawing to be read in conjunction with all relevant civil engineering drawings.

LEGEND

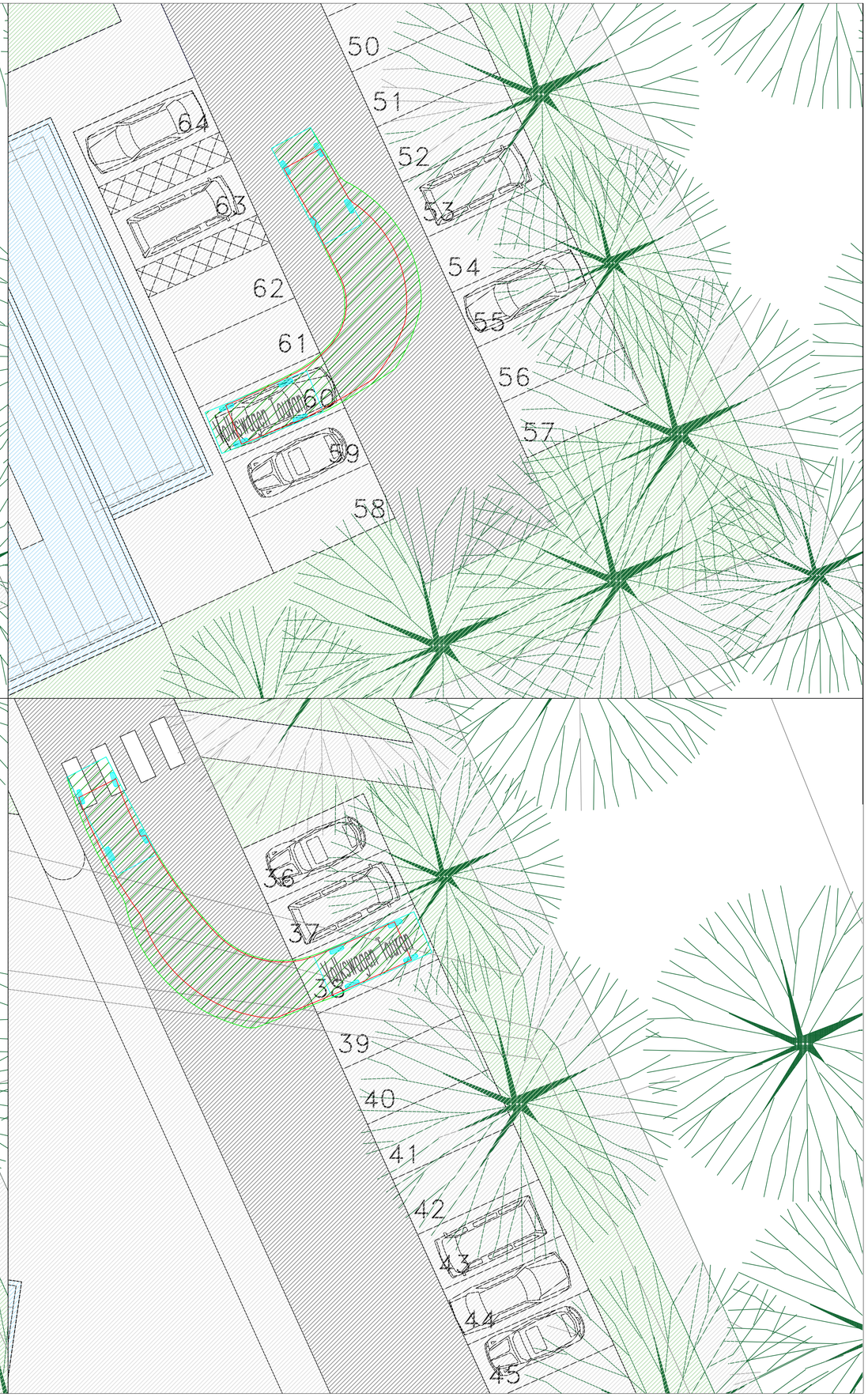
Rev	Date	Description	Drawn	Check

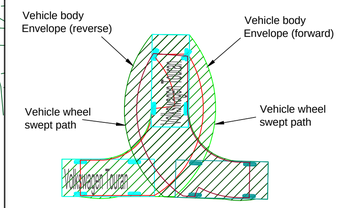
lime TRANSPORT

5A Andrews Buildings
Penarth, CF64 2AA
Tel 029 2070 0924

mail@limetransport.com
www.limetransport.com

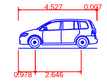
Drawing Status	PRELIMINARY
Date	26.2.2021
Scale	1:100@A1
Drawn	ECC
Checked	ABR
Project	Siderise Insulation Forge Road Industrial Estate Maesteg
Project No	**21019**
Title	Swept path analysis Volkswagen Touran
Client Project No	
Revision	
Drawing No	21019.OS.101.04





Vehicle Chassis, shown at start & end of path and change of direction(forward).

Vehicle Chassis, shown at start & end of path and change of direction(reverse).



Volkswagen Touran	
Overall Length	4.534m
Overall Width	1.829m
Overall Body Height	1.491m
Min Body Ground Clearance	0.253m
Max Track Width	1.734m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.042m

NOT FOR CONSTRUCTION

GENERAL NOTES

1. This drawing to be read in conjunction with all relevant civil engineering drawings.

LEGEND

Rev	Date	Description	Drawn	Check

lime TRANSPORT

5A Andrews Buildings
Penarth, CF64 2AA
Tel 029 2070 0924

mail@limetransport.com
www.limetransport.com

Drawing Status: PRELIMINARY

Date: 26.2.2021

Scale: 1:100@A1

Drawn: ECC

Checked: ABR

Project: Siderise Insulation
Forge Road Industrial Estate
Maesteg

Project No: **21019**

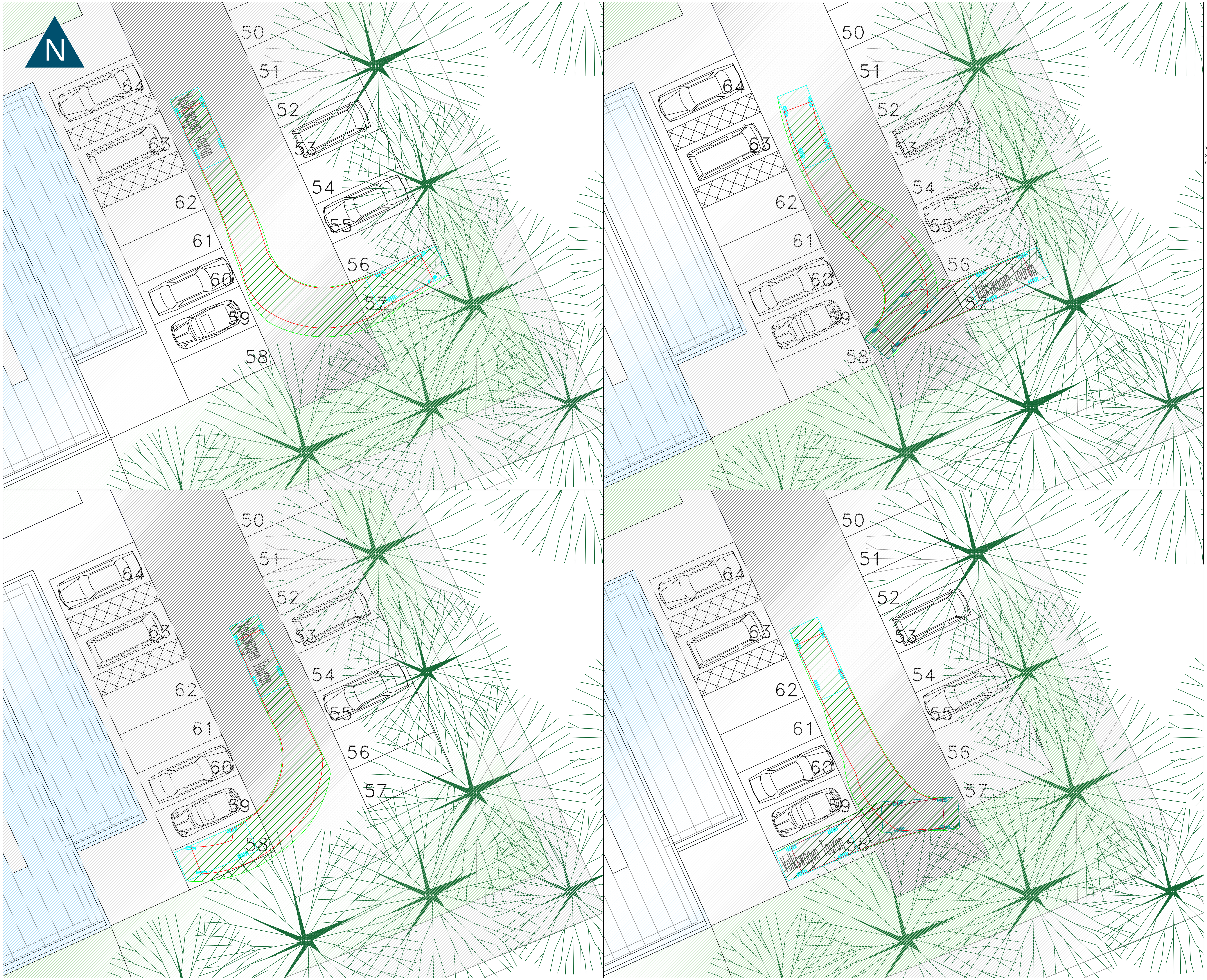
Client Project No:

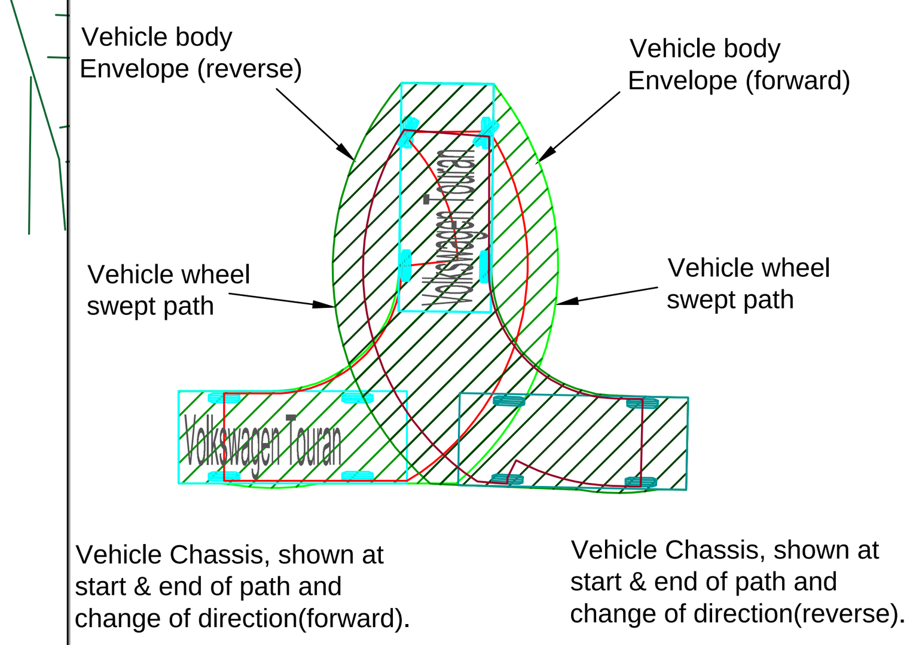
Title: Swept path analysis
Volkswagen Touran

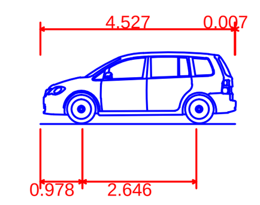
Revision:

Drawing No: 21019.OS.101.03

THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS. DO NOT SCALE FROM THIS DRAWING.







Volkswagen Touran	
Overall Length	4.534m
Overall Width	1.829m
Overall Body Height	1.491m
Min Body Ground Clearance	0.253m
Max Track Width	1.734m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.042m

NOT FOR CONSTRUCTION

GENERAL NOTES

1. This drawing to be read in conjunction with all relevant civil engineering drawings.

LEGEND

Rev	Date	Description	Drawn	Check

lime TRANSPORT
5A Andrews Buildings
Penarth, CF64 2AA
Tel 029 2070 0924
mail@limetransport.com
www.limetransport.com

Drawing Status: PRELIMINARY

Date: 26.2.2021

Scale: 1:100@A1

Drawn: ECC

Checked: ABR

Project: Siderise Insulation
Forge Road Industrial Estate
Maesteg

Project No: **21019**

Client Project No:

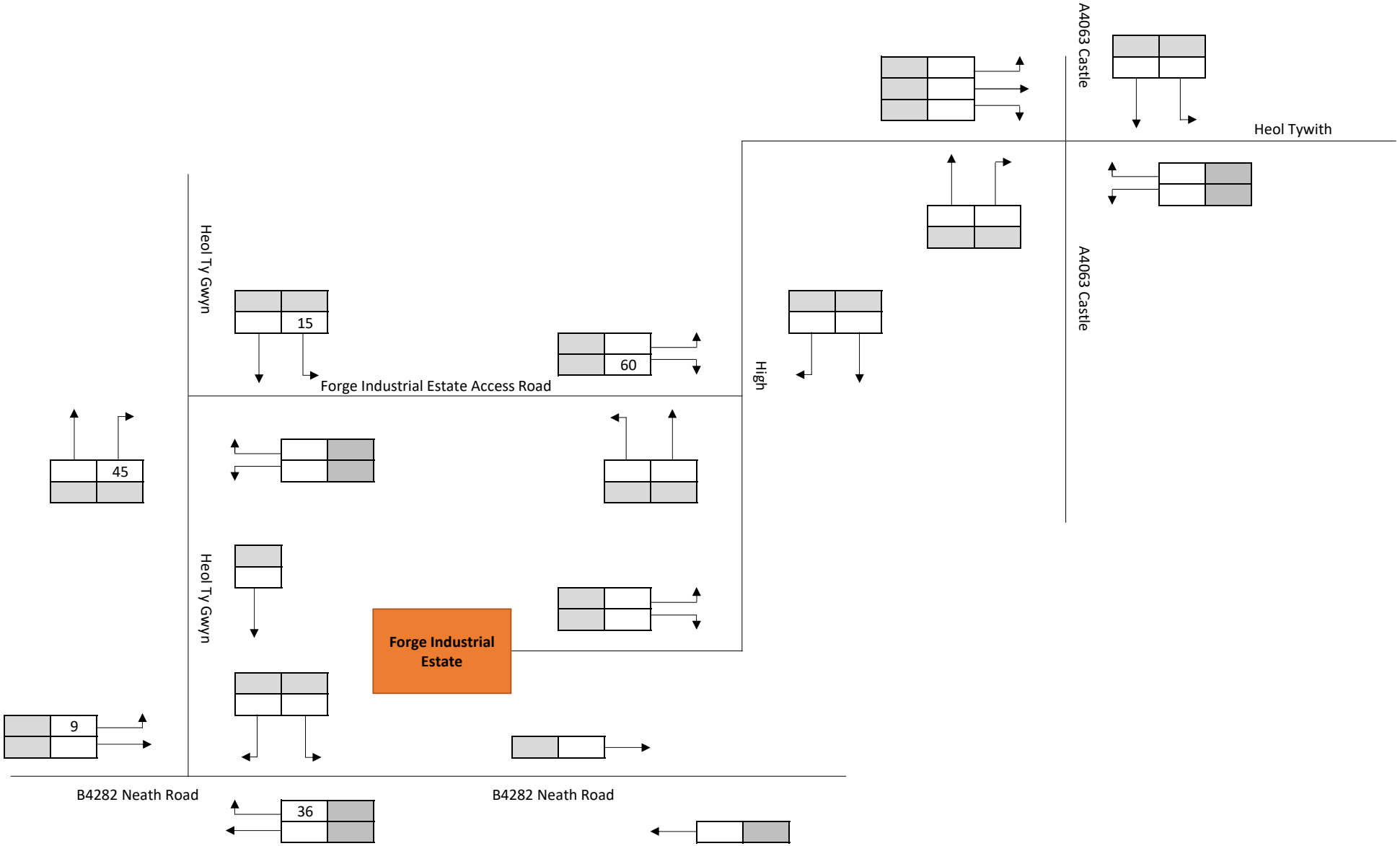
Title: Swept path analysis
Volkswagen Touran

Revision:

Drawing No: 21019.OS.101.02

THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS. DO NOT SCALE FROM THIS DRAWING.

Appendix D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A4063 Castle
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High
45
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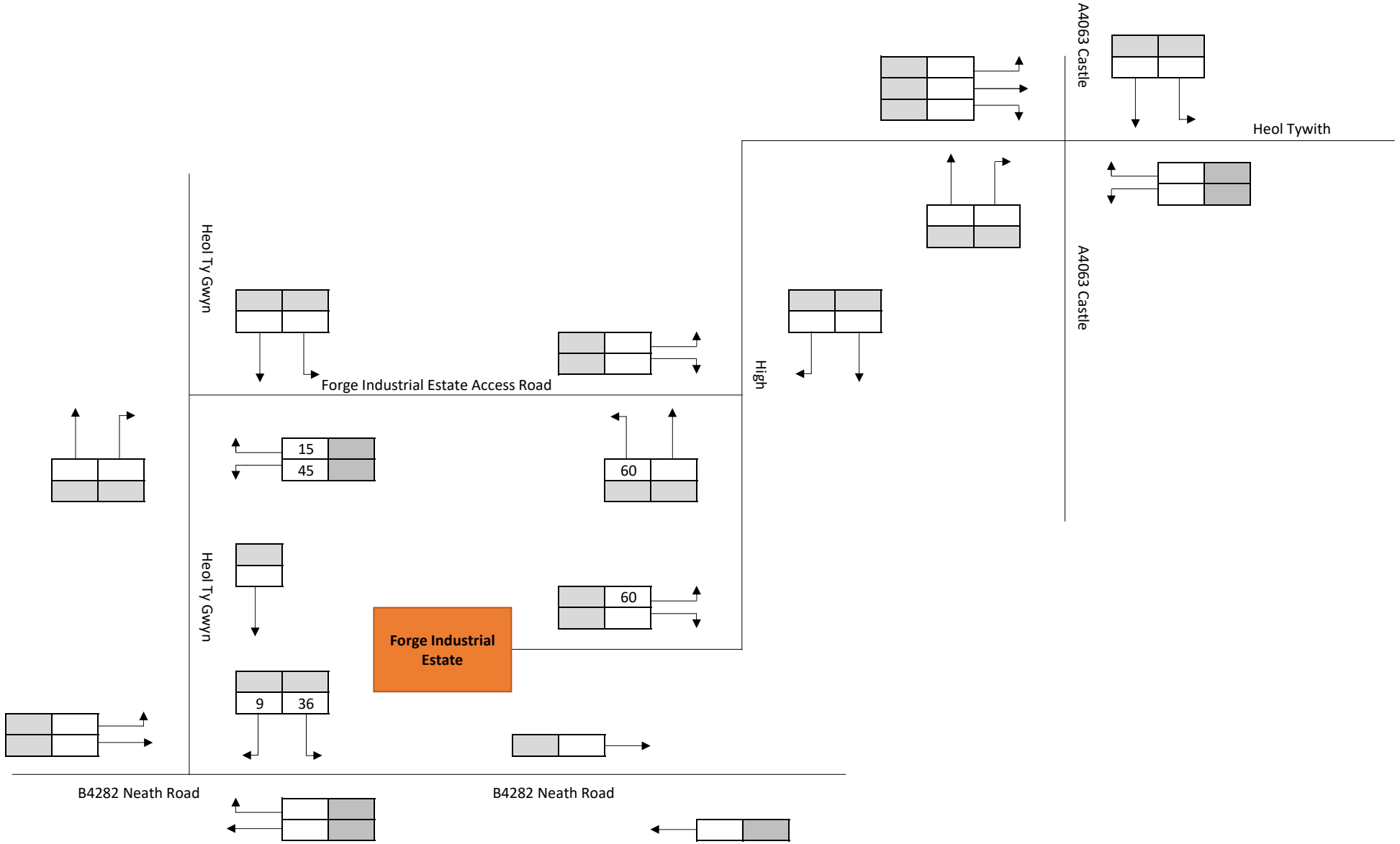
Forge Industrial Estate
9
B4282 Neath Road
36
B4282 Neath Road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Heol Ty Gwyn
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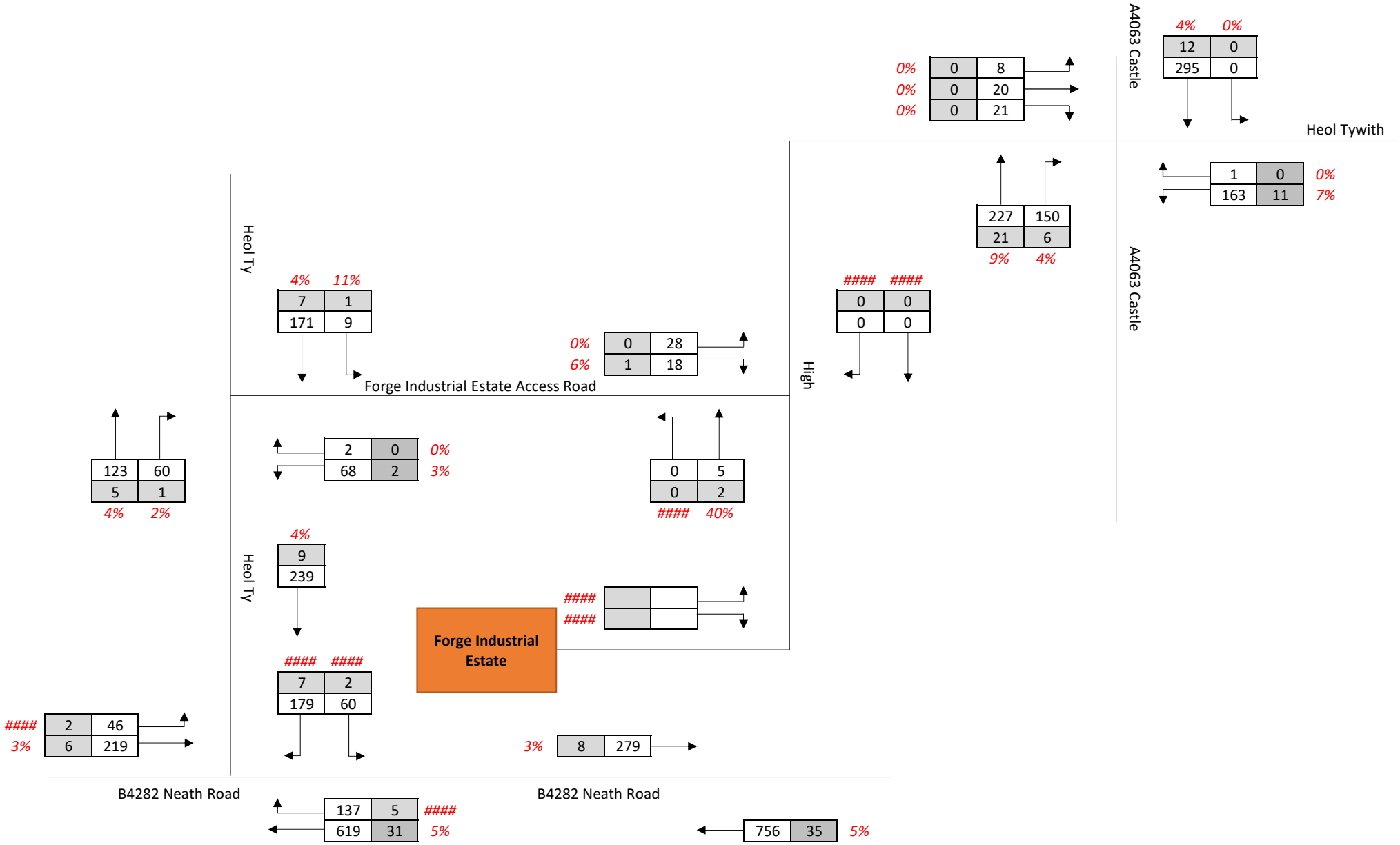
Forge Industrial Estate
9
36
B4282 Neath Road
B4282 Neath Road

Appendix E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High
Heol Ty
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
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0 8
0 20
0 21
4% 0%
12 0
295 0
1 0 0%
163 11 7%
227 150
21 6
9% 4%
####
0 0
0 0
4% 11%
7 1
171 9
0% 0
6% 1 28
18
2 0 0%
68 2 3%
123 60
5 1
4% 2%
0 5
0 2
40%
4%
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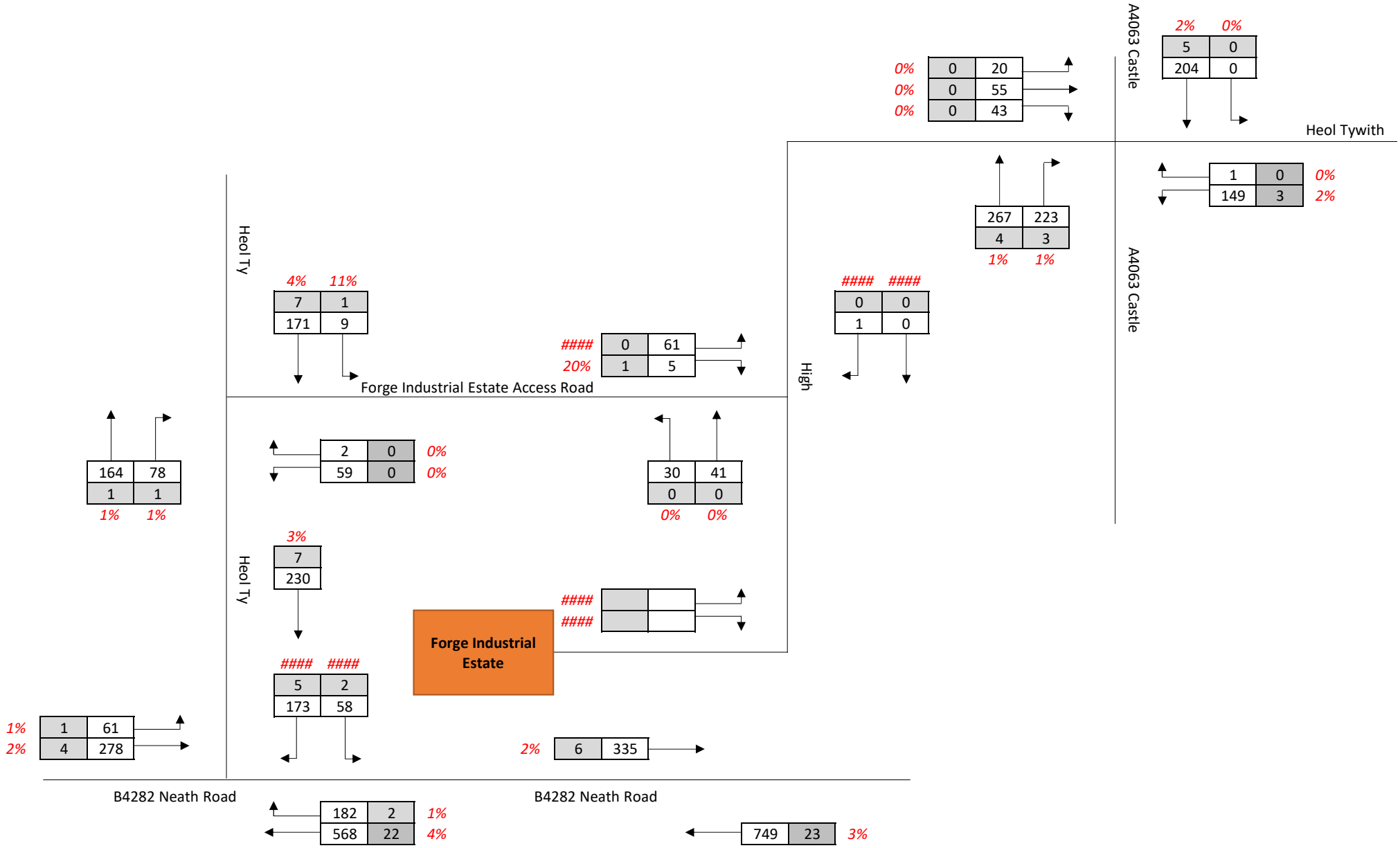
2021 AM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Heol Tywith
A4063 Castle
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Forge Industrial Estate Access Road
High
Heol Ty
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
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0% 0 55
0% 0 43
2% 0%
5 0
204 0
1 0 0%
149 3 2%
267 223
4 3
1% 1%
####
0 0
1 0
4% 11%
7 1
171 9
0 61
20% 1 5
2 0 0%
59 0 0%
164 78
1 1
1% 1%
30 41
0 0
0% 0%
3%
7
230
####
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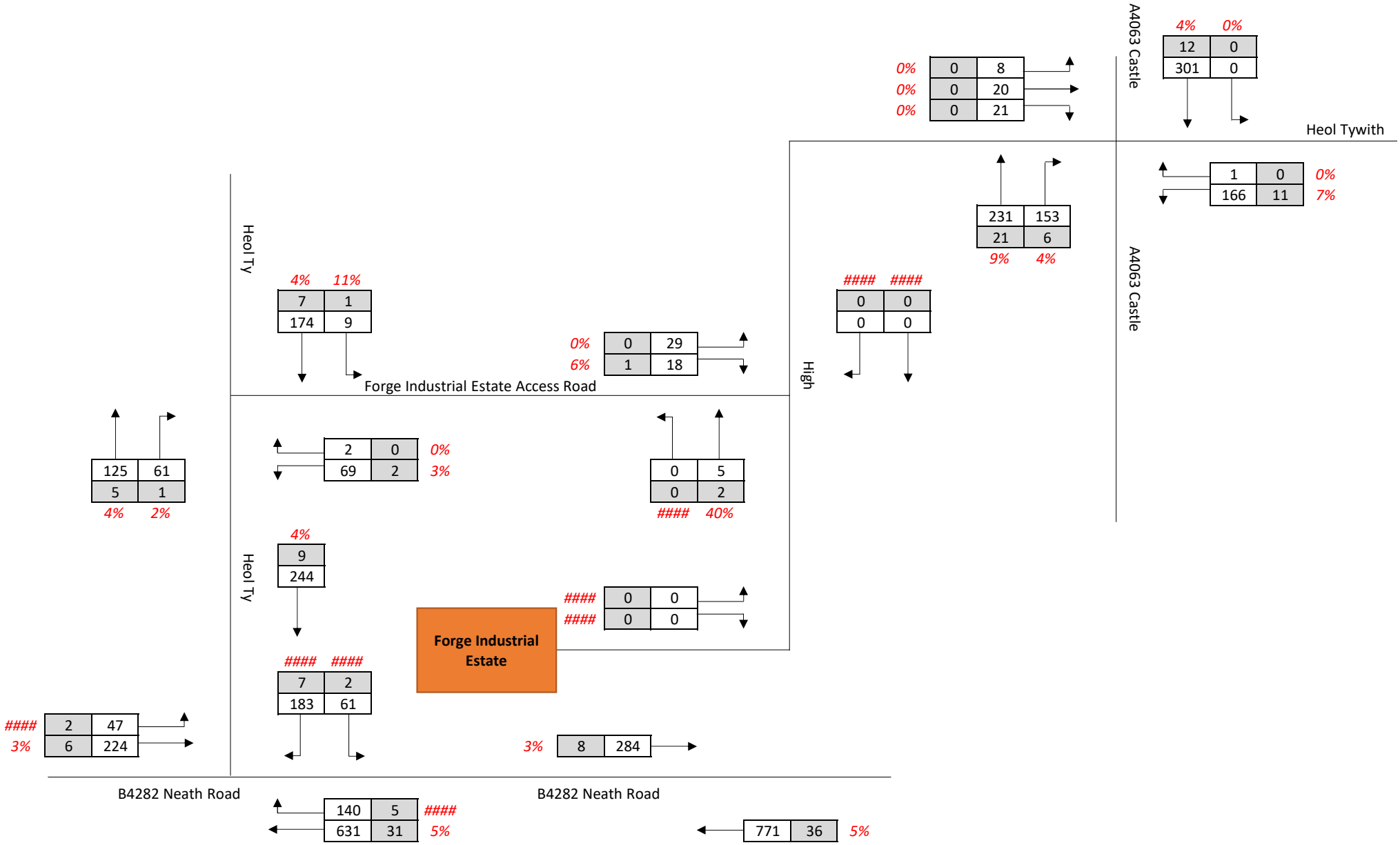
749 23 3%

2021 PM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A4063 Castle
Heol Ty
Forge Industrial Estate Access Road
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Heol Ty
Forge Industrial Estate
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B4282 Neath Road
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0 21
4% 0%
12 0
301 0
231 153
21 6
9% 4%
1 0 0%
166 11 7%
####
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0 0
4% 11%
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174 9
0% 0 29
6% 1 18
125 61
5 1
4% 2%
2 0 0%
69 2 3%
0 5
0 2
40%
4%
9
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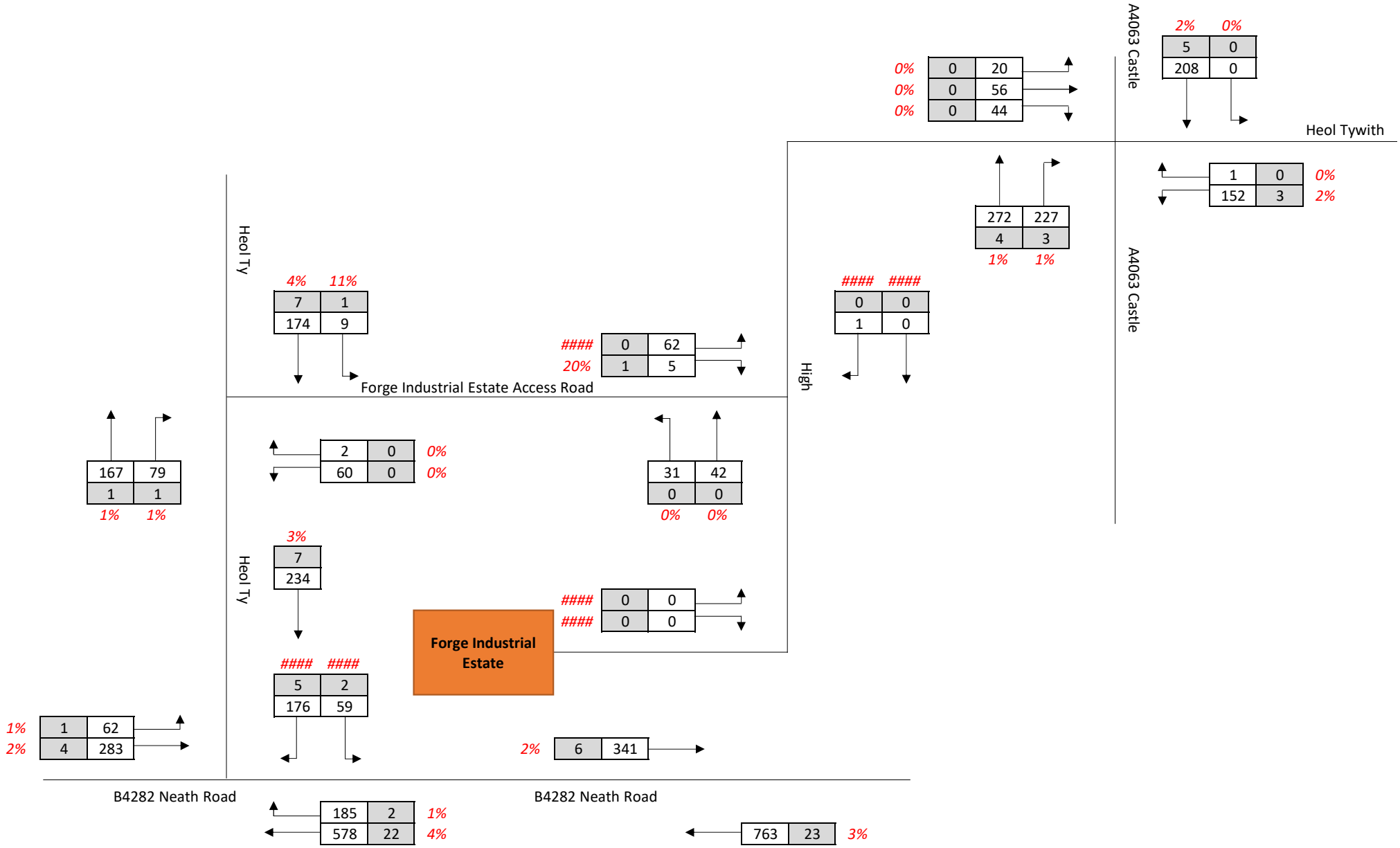
2023 AM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Heol Ty
Forge Industrial Estate
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B4282 Neath Road
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2% 0% 5 0 208 0
1 0 152 3 0% 2%
272 227 4 3 1% 1%
0 0 1 0
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20% 0 62 1 5
2 0 60 0 0% 0%
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167 79 1 1 1% 1%
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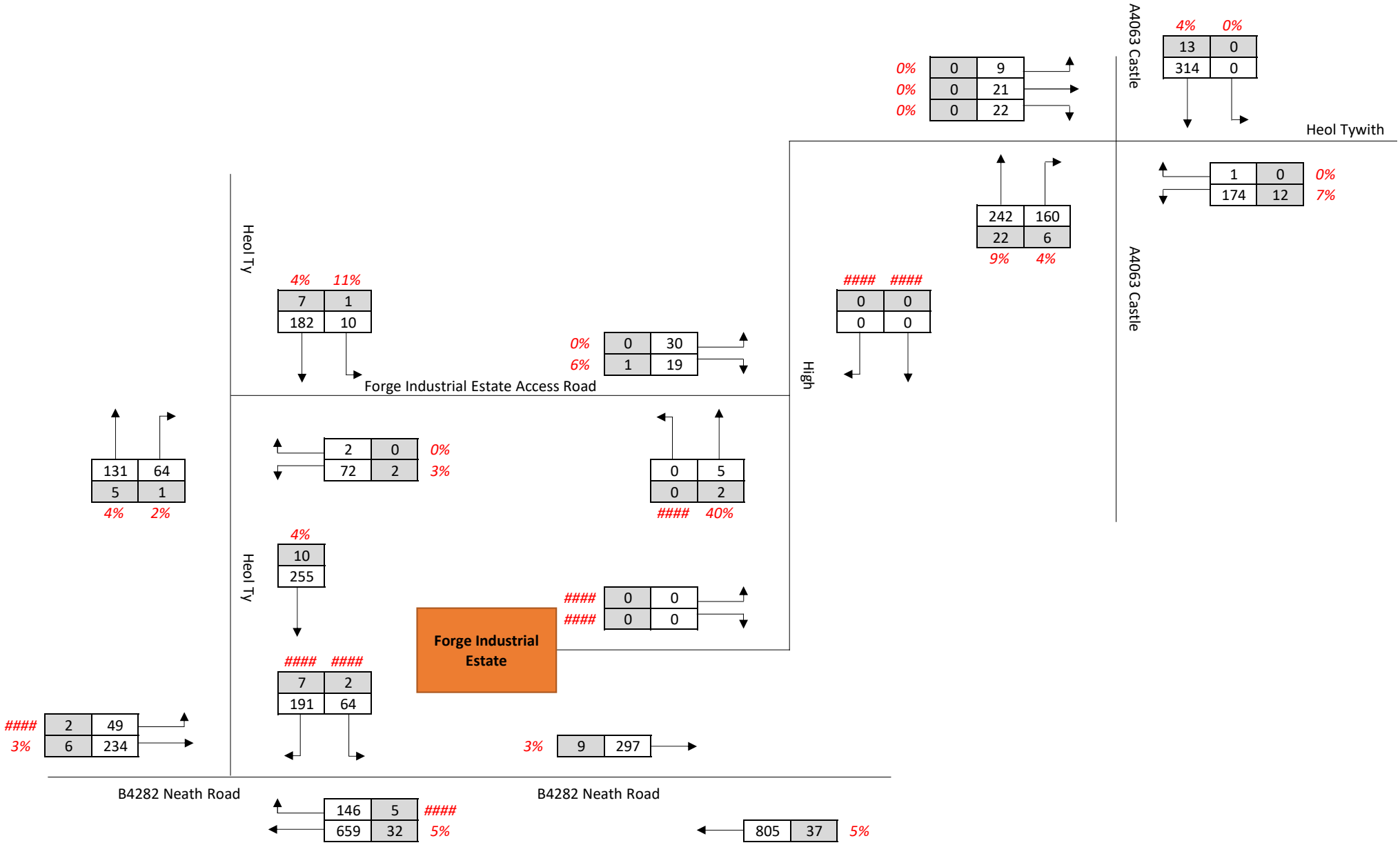
2023 PM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Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
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0% 0 21
0% 0 22
4% 0%
13 0
314 0
1 0 0%
174 12 7%
242 160
22 6
9% 4%
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4% 11%
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182 10
0% 0 30
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40%
131 64
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4%
10
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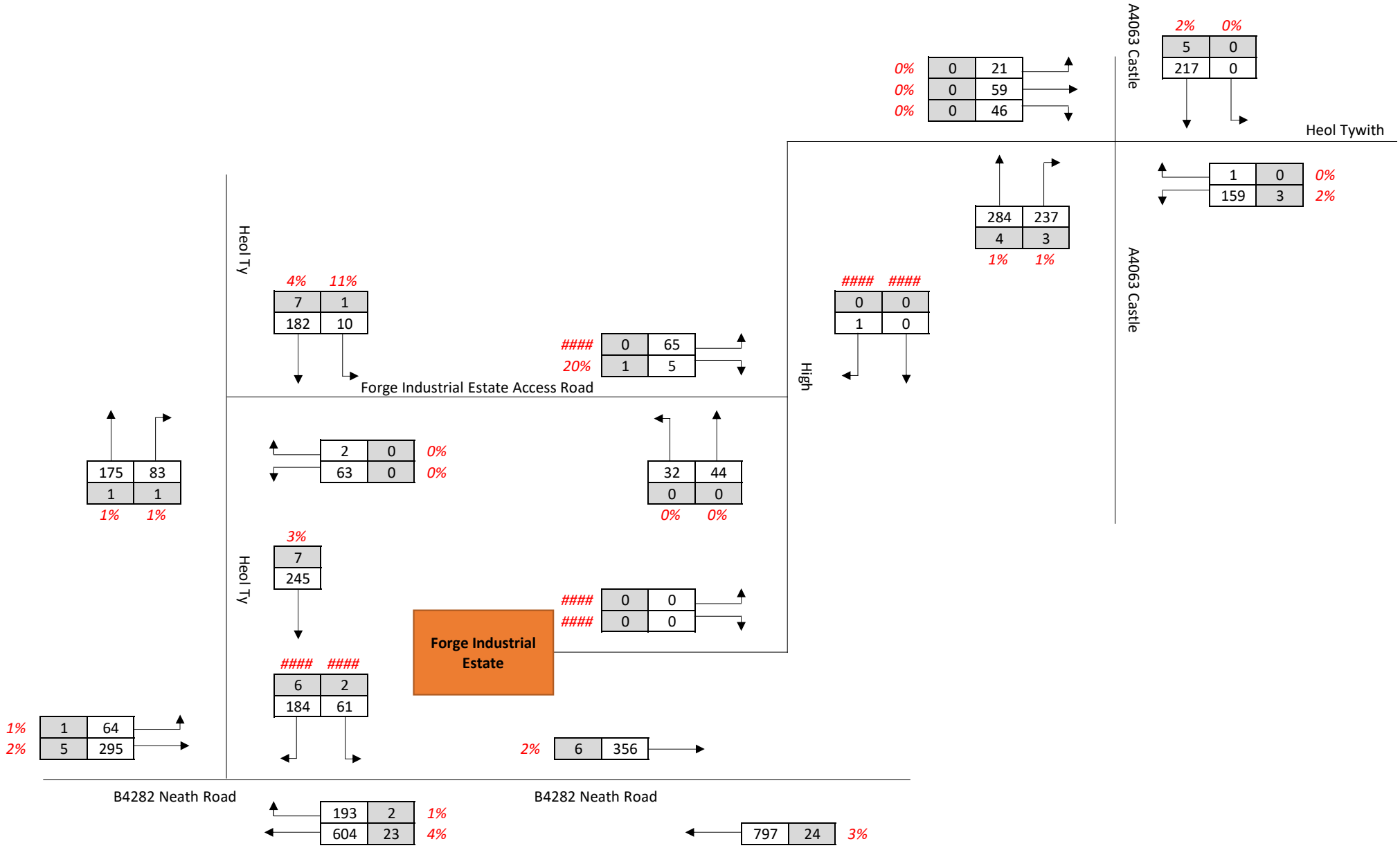
2028 AM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B4282 Neath Road
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0 21
0 59
0 46
2% 0%
5 0
217 0
1 0 0%
159 3 2%
284 237
4 3
1% 1%
####
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3%
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604 23 4%
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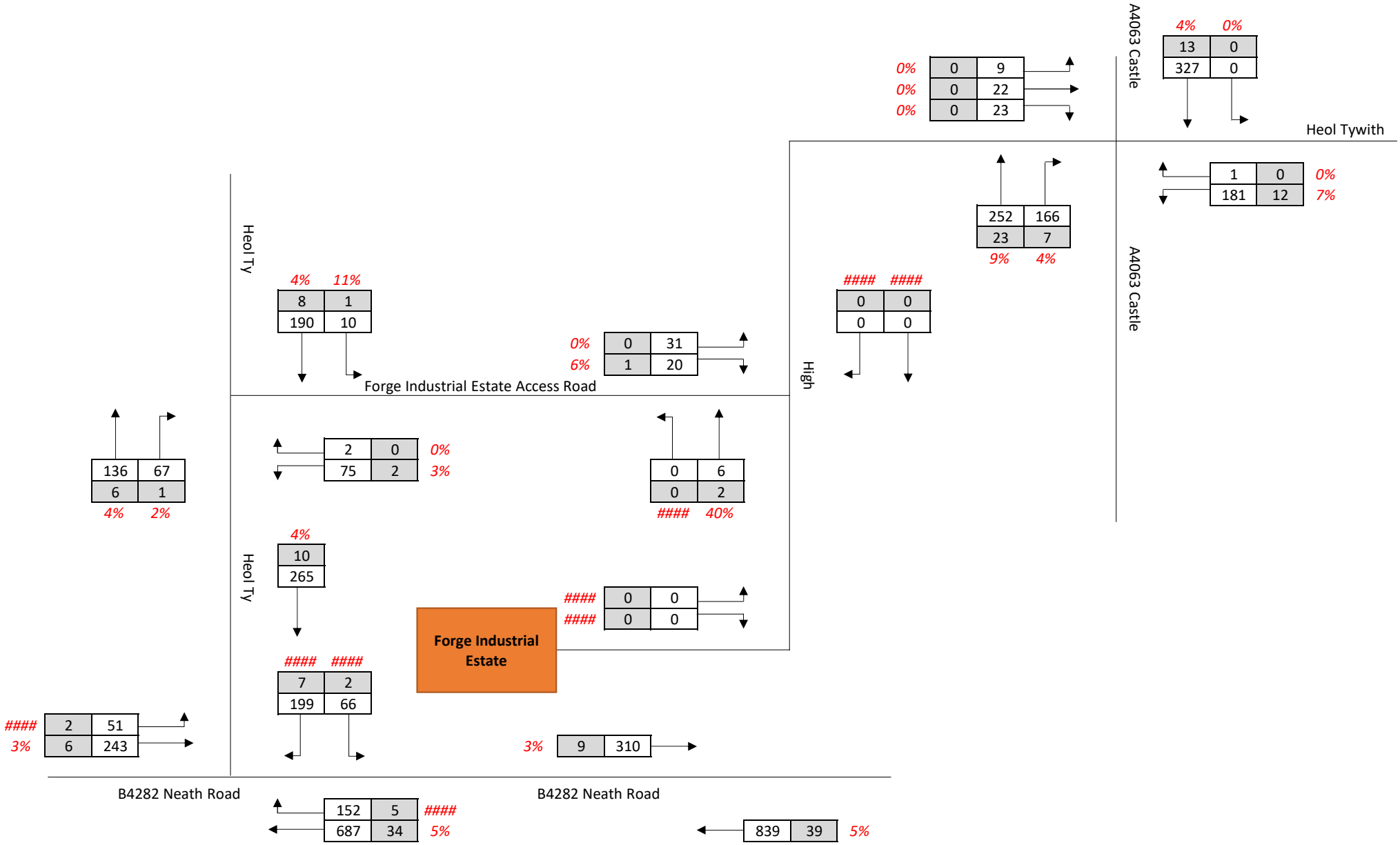
2028 PM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High
Heol Ty
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
0% 0% 0%
0 9
0 22
0 23
4% 0%
13 0
327 0
1 0 0%
181 12 7%
252 166
23 7
9% 4%
####
0 0
0 0
4% 11%
8 1
190 10
0% 0 31
6% 1 20
2 0 0%
75 2 3%
136 67
6 1
4% 2%
0 6
0 2
40%
4%
10
265
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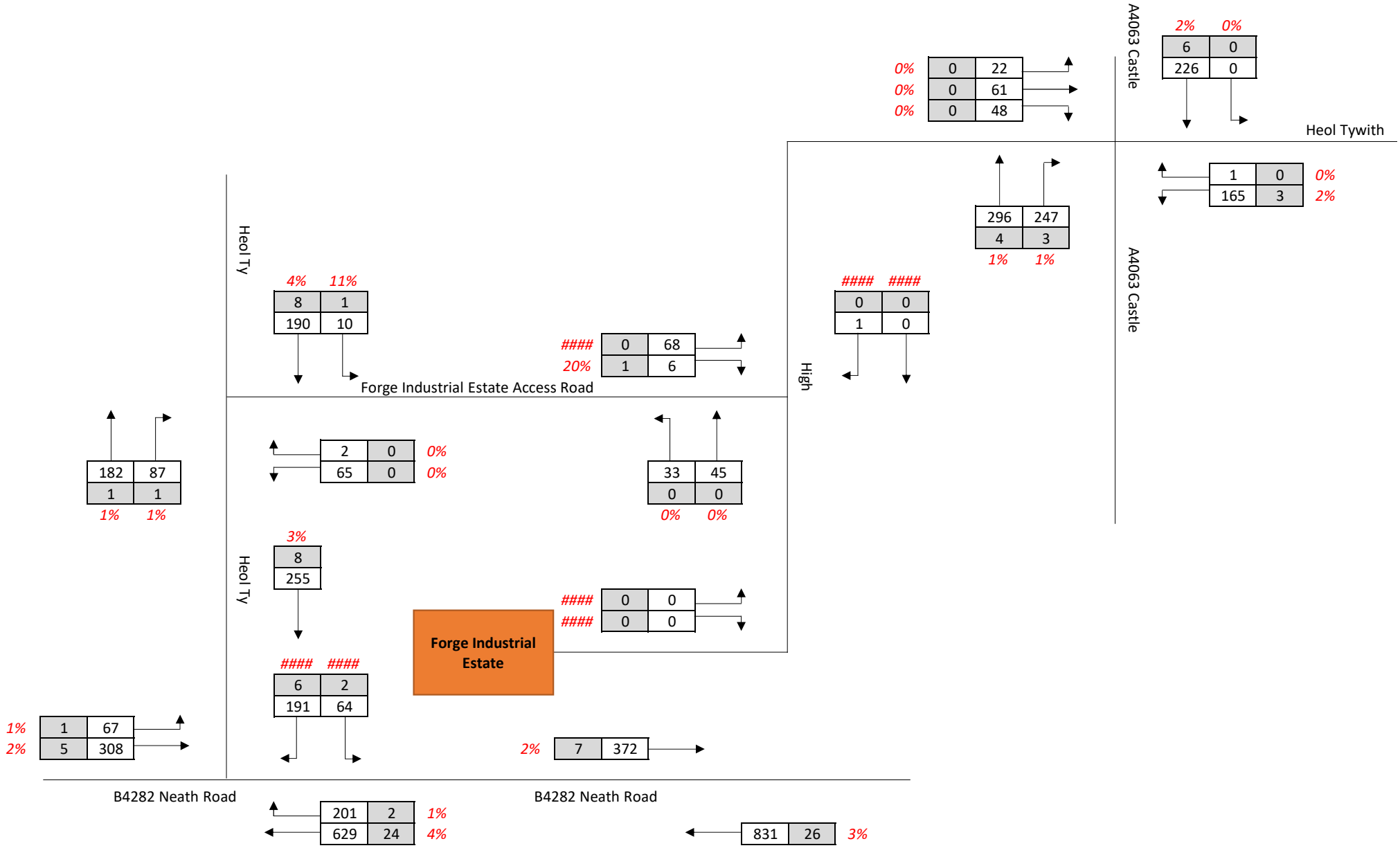
2033 AM


A4063 Castle
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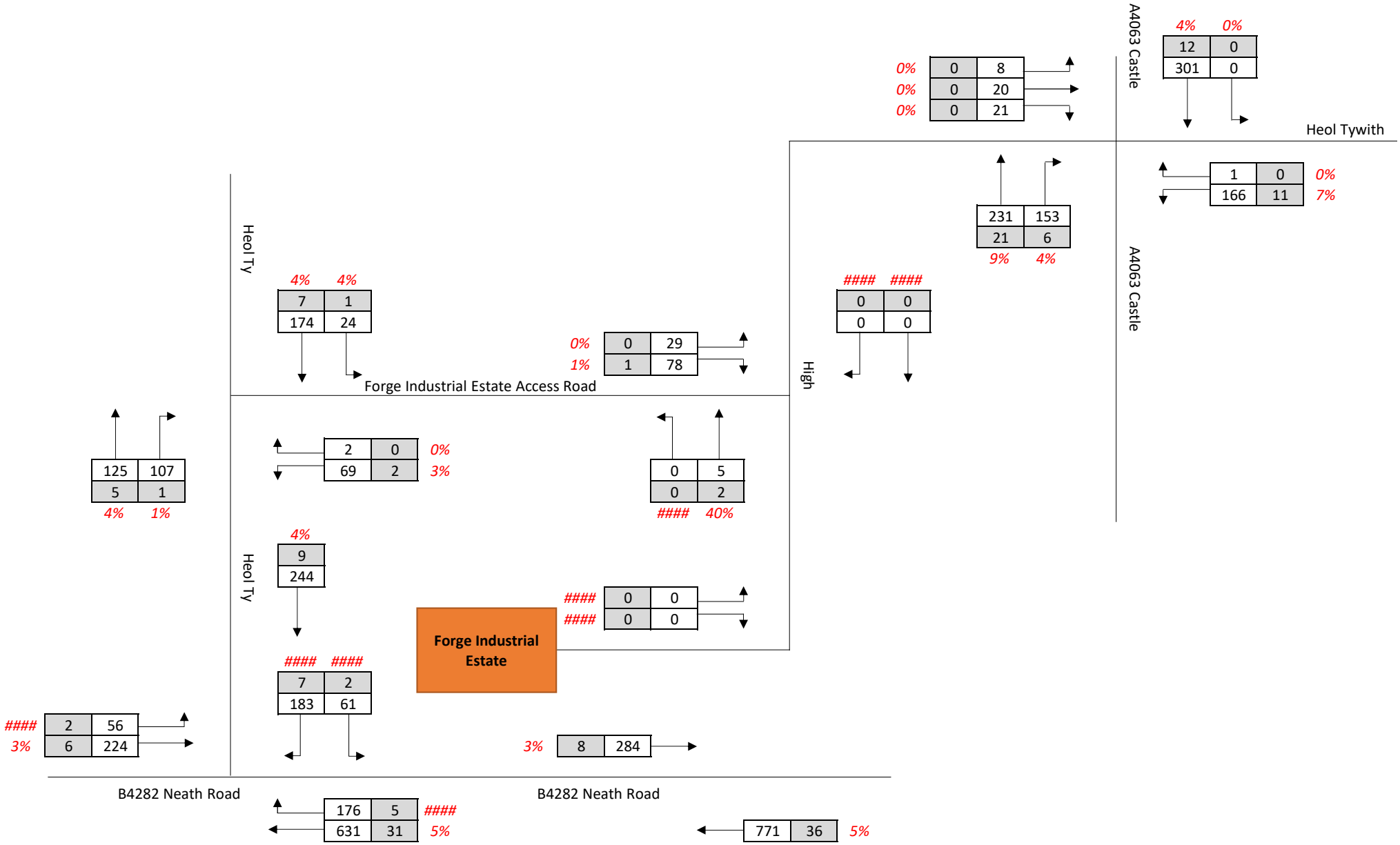
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
2033 PM

Appendix F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High
Heol Ty
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
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12 0
301 0
0% 0 8
0% 0 20
0% 0 21
1 0 0%
166 11 7%
231 153
21 6
9% 4%
####
0 0
0 0
4% 4%
7 1
174 24
0% 0 29
1% 1 78
125 107
5 1
4% 1%
2 0 0%
69 2 3%
0 5
0 2
40%
4%
9
244
0 0
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3% 8 284
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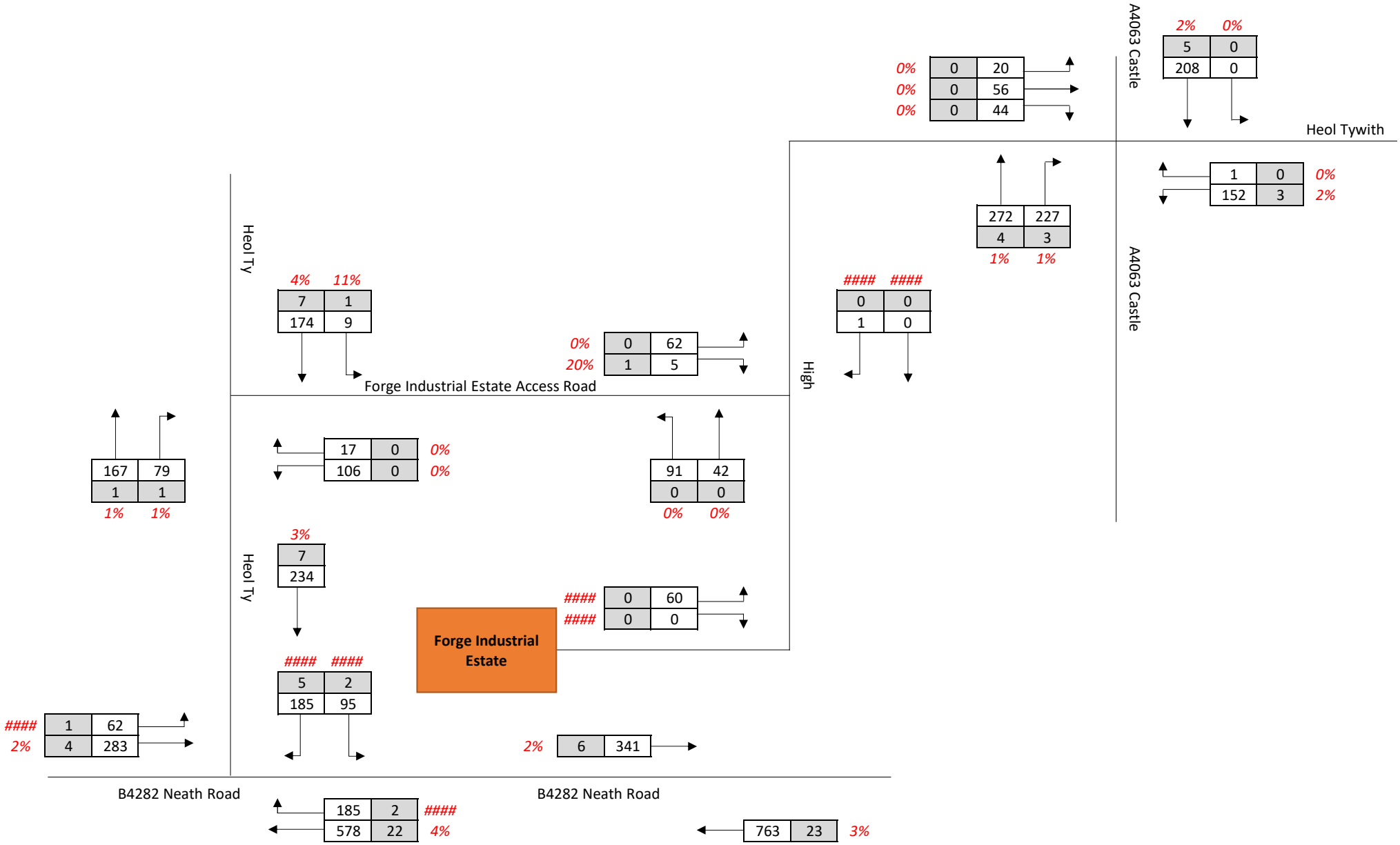
631 31 5%
771 36 5%

2023 AM+Dev.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A4063 Castle
Heol Ty
Forge Industrial Estate Access Road
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Heol Ty
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
2%
0%
5
0
208
0
0%
0%
0%
0
20
0
56
0
44
1
0
152
3
0%
2%
272
227
4
3
1%
1%
4%
11%
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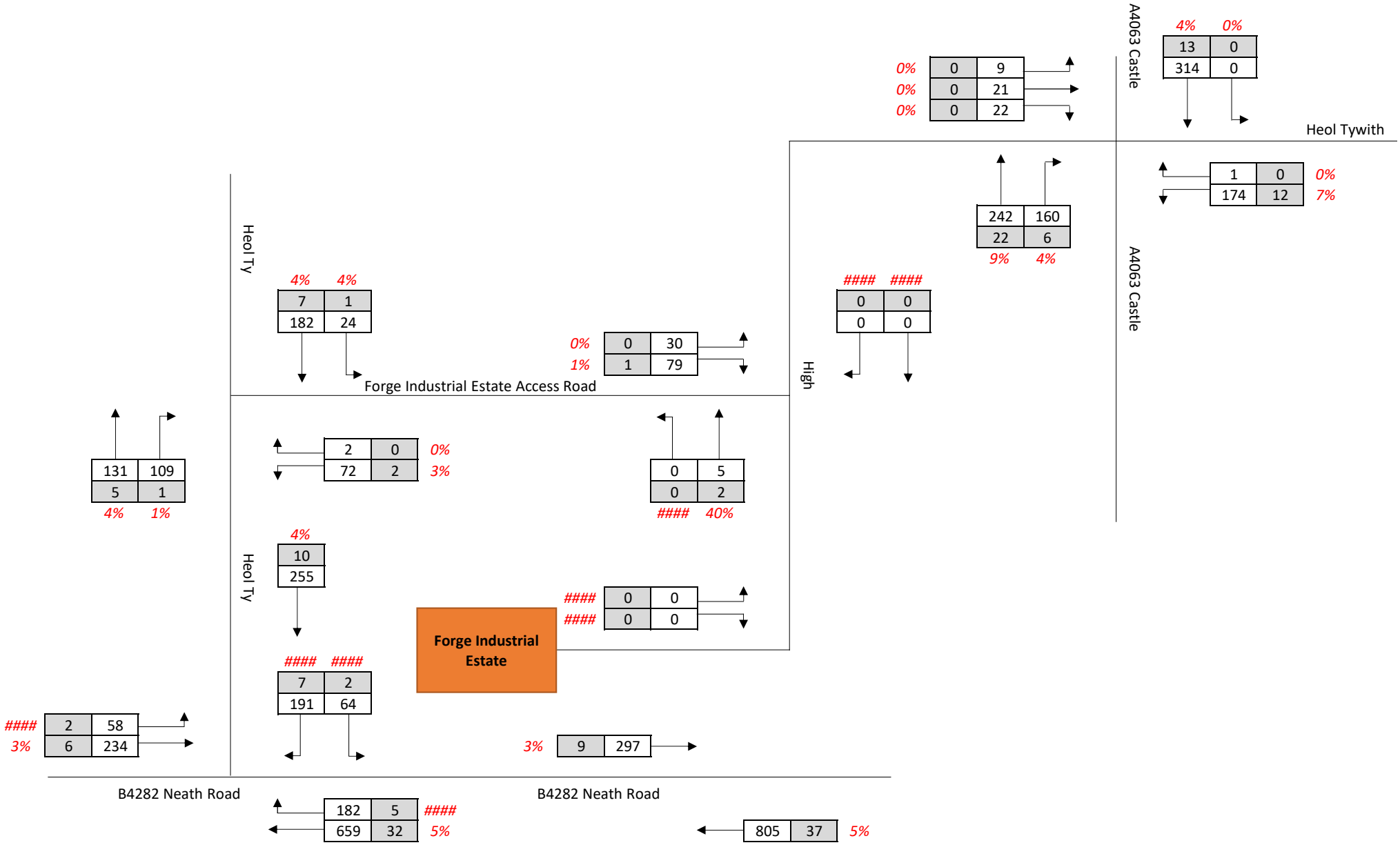
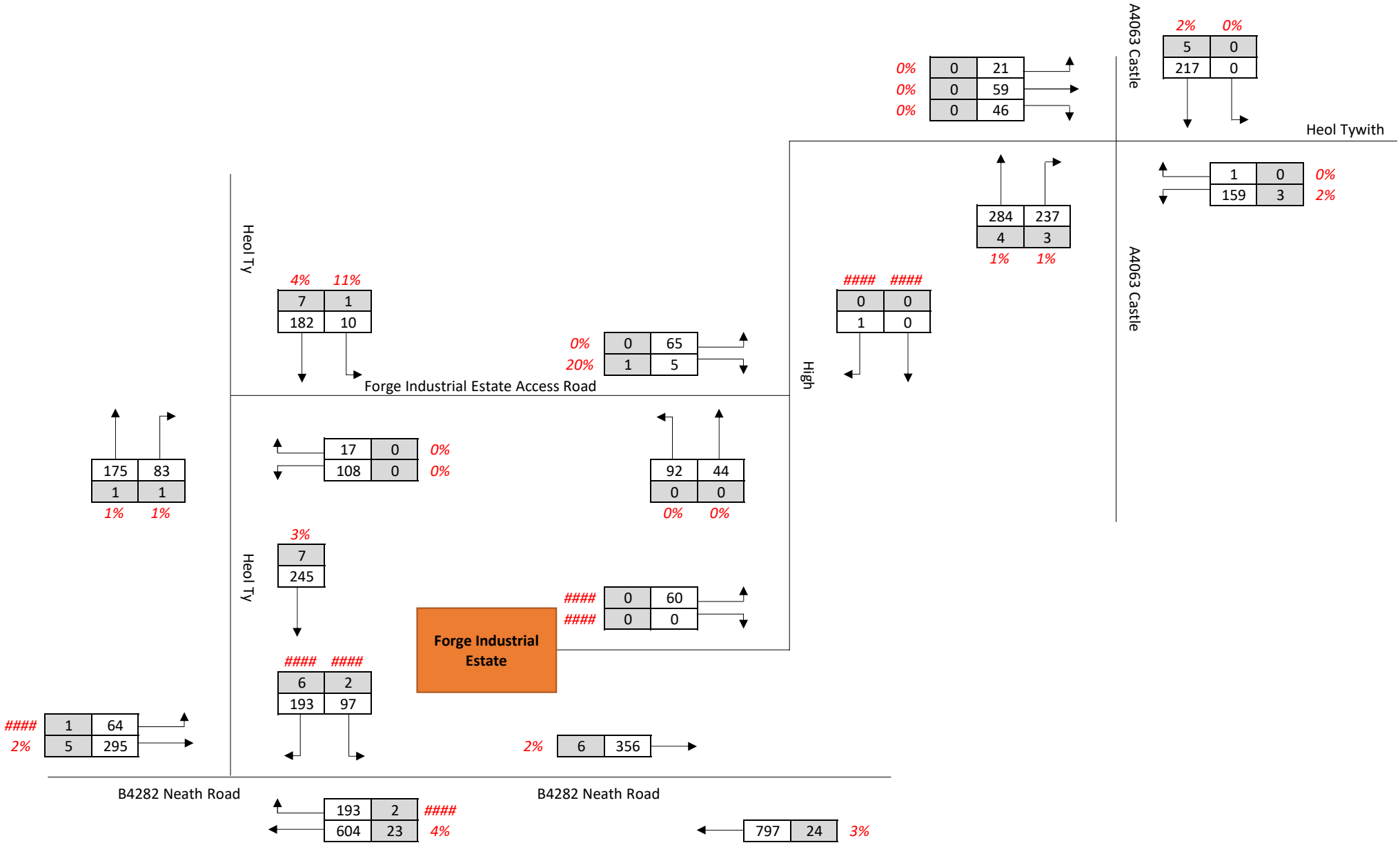
174
9
0%
20%
0
62
1
5
####
####
0
0
1
0
167
79
1
1
1%
1%
17
0
106
0
0%
0%
91
42
0
0
0%
0%
3%
7
234
####
####
0
60
0
0
####
####
5
2
185
95
####
2%
1
62
4
283
2%
6
341
185
2
578
22
####
4%
763
23
3%

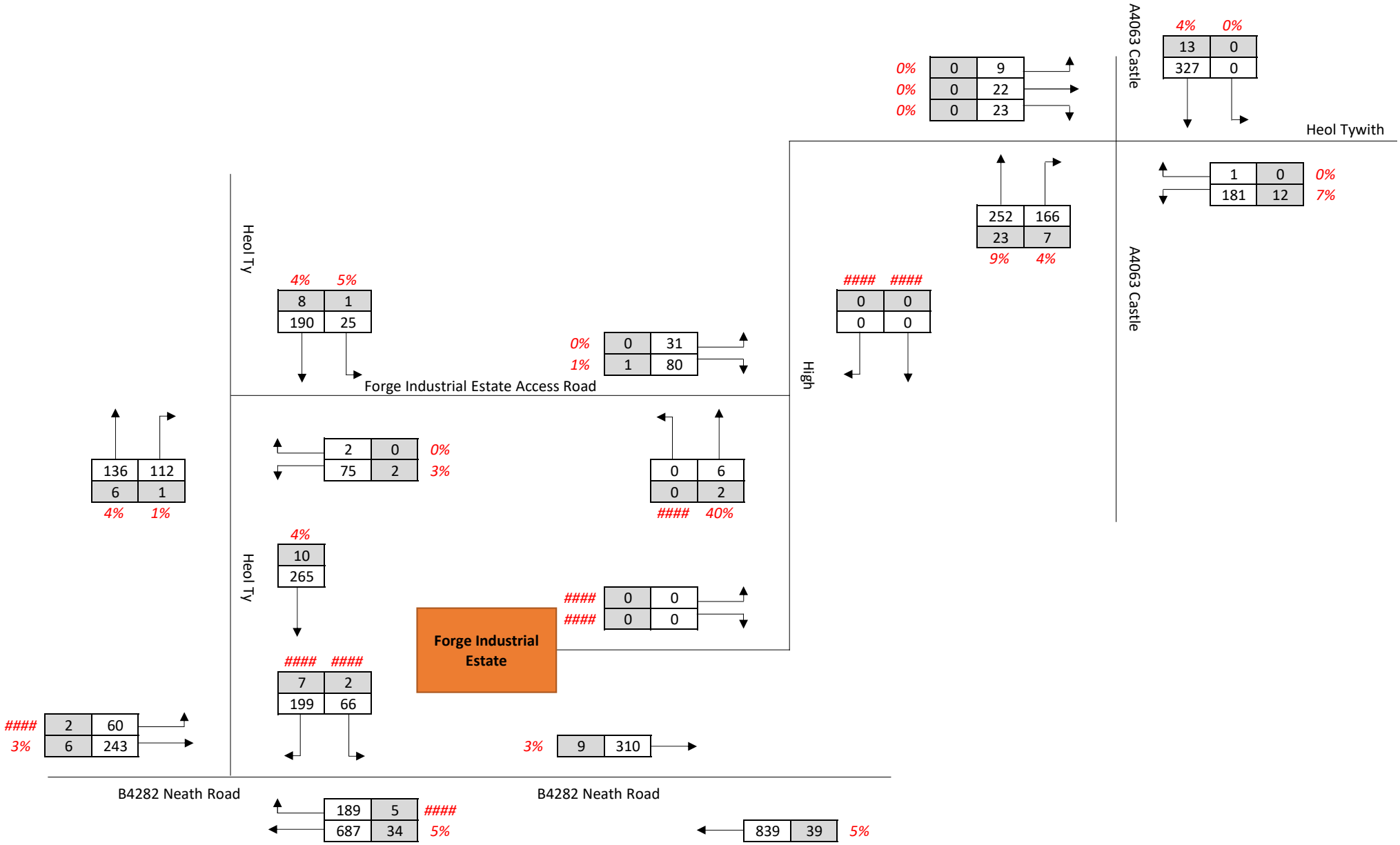
2023 PM+Dev.


A4063 Castle
Heol Tywith
A4063 Castle
Heol Ty
Forge Industrial Estate Access Road
High
Heol Ty
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road

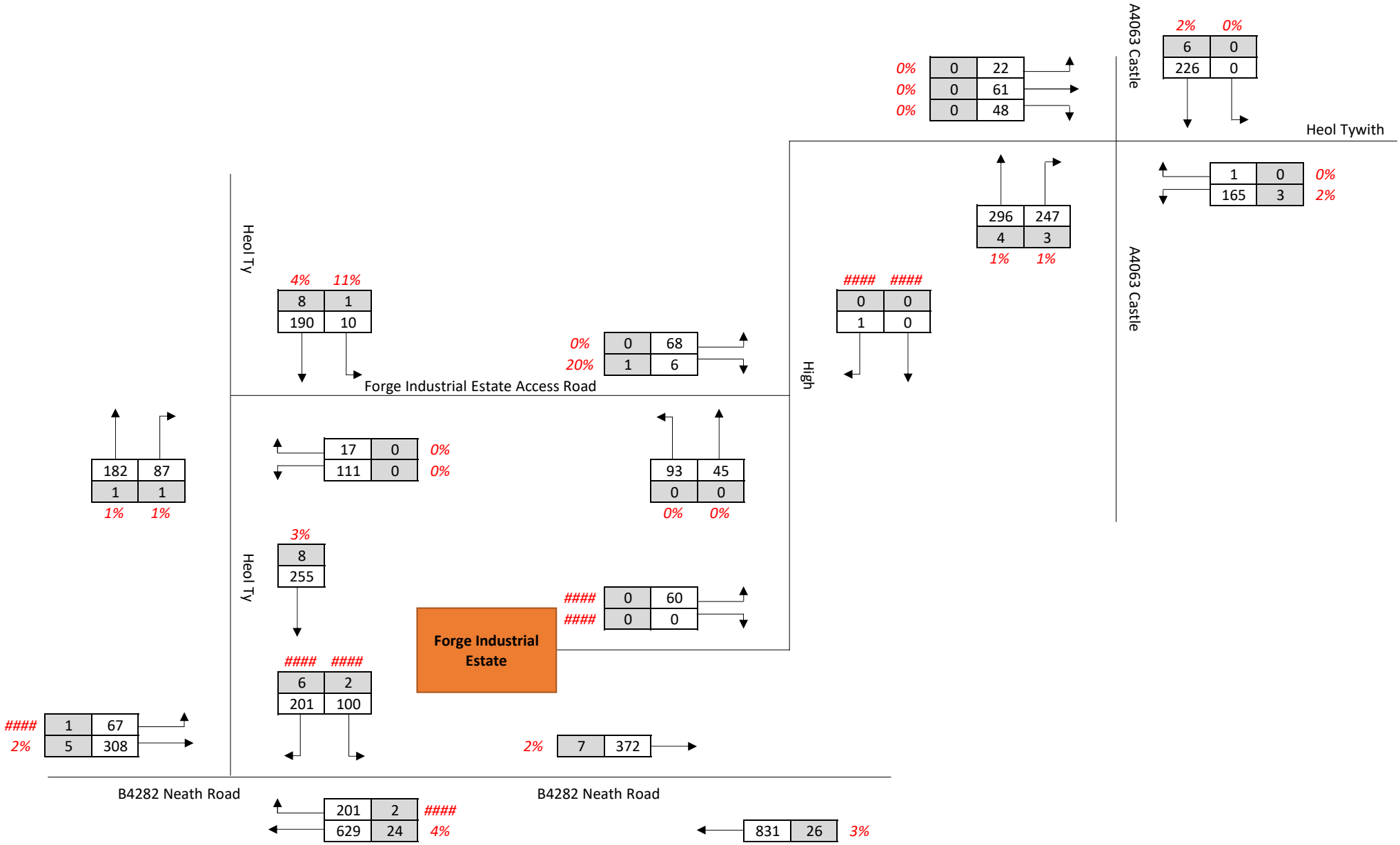
2028 AM+Dev.


A4063 Castle
Heol Tywith
A4063 Castle
Heol Ty
Forge Industrial Estate Access Road
High
Heol Ty
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
0% 0 21
0% 0 59
0% 0 46
2% 0%
5 0
217 0
1 0 0%
159 3 2%
284 237
4 3
1% 1%
####
0 0
1 0
4% 11%
7 1
182 10
0% 0 65
20% 1 5
175 83
1 1
1% 1%
17 0 0%
108 0 0%
92 44
0 0
0% 0%
3%
7
245
0 60
0 0
####
6 2
193 97
1 64
2% 5 295
2% 6 356
193 2 ####
604 23 4%
797 24 3%

2028 PM+Dev.


A4063 Castle
Heol Tywith
A4063 Castle
Heol Ty
Forge Industrial Estate Access Road
High
Heol Ty
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
0% 0% 0%
0 9
0 22
0 23
4% 0%
13 0
327 0
1 0 0%
181 12 7%
252 166
23 7
9% 4%
####
0 0
0 0
4% 5%
8 1
190 25
0% 0 31
1% 1 80
2 0 0%
75 2 3%
0 6
0 2
40%
136 112
6 1
4% 1%
4%
10
265
####
0 0
0 0
####
7 2
199 66
2 60
3% 6 243
3% 9 310
189 5 ####
687 34 5%
839 39 5%

2033 AM+Dev.


A4063 Castle
Heol Tywith
A4063 Castle
Heol Ty
Forge Industrial Estate Access Road
High
Heol Ty
Forge Industrial Estate
B4282 Neath Road
B4282 Neath Road
2% 0%
6 0
226 0
0% 0 22
0% 0 61
0% 0 48
1 0 0%
165 3 2%
296 247
4 3
1% 1%
####
0 0
1 0
4% 11%
8 1
190 10
0% 0 68
20% 1 6
17 0 0%
111 0 0%
182 87
1 1
1% 1%
93 45
0 0
0% 0%
3%
8
255
0 60
0 0
####
6 2
201 100
1 67
2% 5 308
2% 7 372
201 2 ####
629 24 4%
831 26 3%

2033 PM+Dev.

Appendix G

Total at junction		Junction 1				Junction 2				Junction 3			
		Base	Dev	Base + Dev	% inc.	Base	Dev	Base + Dev	% inc.	Base	Dev	Base + Dev	% inc.
2021	AM	51				433				1260			
	PM	138				483				1317			
2023	AM	52	60	112	53.57%	441	60	501	11.96%	1285	45	1330	3.42%
	PM	141	60	201	29.90%	492	60	552	10.86%	1342	45	1388	3.28%
2028	AM	54	60	114	52.49%	461	60	521	11.51%	1342	45	1387	3.28%
	PM	147	60	207	29.01%	514	60	574	10.45%	1401	45	1447	3.14%
2033	AM	57	60	117	51.46%	481	60	541	11.10%	1398	45	1444	3.15%
	PM	153	60	213	28.16%	536	60	596	10.07%	1461	45	1506	3.02%

Junction 1 High Street/Forge Road Industrial Estate priority junction
Junction 2 Forge Road Industrial Estate/ Heol Ty Gwyn priority junction
Junction 3 Heol Ty Gwyn/ B4282 Neath Road priority junction

Appendix H

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Junction 1 High Street - Forge Road Industrial Estate.j9
Path: Z:\Lime\Projects\2021\21019 Siderise Insulation, Forge Road, Maesteg\Analysis
Report generation date: 25/05/2021 11:05:34

Summary of junction performance

	AM					PM				
	Q (PCU)	Delay (s)	RFC	LOS	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Res Cap
	2021									
Stream B-AC	0.1	5.47	0.07	A	900 %	0.1	5.29	0.10	A	648 %
Stream C-AB	0.0	0.00	0.00	A	[]	0.0	0.00	0.00	A	[Stream B-AC]
	2023									
Stream B-AC	0.1	5.47	0.07	A	900 %	0.1	5.30	0.10	A	636 %
Stream C-AB	0.0	0.00	0.00	A	[]	0.0	0.00	0.00	A	[Stream B-AC]
	2028									
Stream B-AC	0.1	5.49	0.08	A	900 %	0.1	5.33	0.10	A	605 %
Stream C-AB	0.0	0.00	0.00	A	[]	0.0	0.00	0.00	A	[Stream B-AC]
	2033									
Stream B-AC	0.1	5.52	0.08	A	900 %	0.1	5.38	0.11	A	569 %
Stream C-AB	0.0	0.00	0.00	A	[]	0.0	0.00	0.00	A	[Stream B-AC]
	2023+DEV									
Stream B-AC	0.2	6.71	0.18	A	372 %	0.1	5.36	0.10	A	576 %
Stream C-AB	0.0	0.00	0.00	A	[Stream B-AC]	0.0	0.00	0.00	A	[Stream B-AC]
	2028+DEV									
Stream B-AC	0.2	6.73	0.18	A	364 %	0.1	5.39	0.10	A	550 %
Stream C-AB	0.0	0.00	0.00	A	[Stream B-AC]	0.0	0.00	0.00	A	[Stream B-AC]
	2033+DEV									
Stream B-AC	0.2	6.75	0.19	A	355 %	0.1	5.45	0.11	A	519 %
Stream C-AB	0.0	0.00	0.00	A	[Stream B-AC]	0.0	0.00	0.00	A	[Stream B-AC]

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	25/05/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-U7G8RPA\Andy
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2023+DEV	PM	ONE HOUR	17:00	18:30	15	✓

2023+DEV, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.80	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	576	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	High Street South		Major
B	Forge Road Industrial Estate Access		Minor
C	High Street North		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			50.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	5.00	50	50

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	622	0.113	0.287	0.180	0.409
1	B-C	787	0.121	0.305	-	-
1	C-B	603	0.234	0.234	-	-

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

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

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

Traffic Demand

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	133	100.000
B		ONE HOUR	✓	67	100.000
C		ONE HOUR	✓	1	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	91	42
	B	5	0	62
	C	0	1	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	0	0
	B	1	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.10	5.36	0.1	A	61	92
C-AB	0.00	0.00	0.0	A	0	0
C-A					0	0
A-B					84	125
A-C					39	58

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13	754	0.067	50	0.0	0.1	5.119	A
C-AB	0	0	580	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	69	17			69				
A-C	32	8			32				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	60	15	750	0.080	60	0.1	0.1	5.221	A
C-AB	0	0	575	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	82	20			82				
A-C	38	9			38				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	74	18	745	0.099	74	0.1	0.1	5.364	A
C-AB	0	0	569	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	100	25			100				
A-C	46	12			46				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	74	18	745	0.099	74	0.1	0.1	5.364	A
C-AB	0	0	569	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	100	25			100				
A-C	46	12			46				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	60	15	750	0.080	60	0.1	0.1	5.224	A
C-AB	0	0	575	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	82	20			82				
A-C	38	9			38				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13	754	0.067	51	0.1	0.1	5.126	A
C-AB	0	0	580	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	69	17			69				
A-C	32	8			32				

Appendix I

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Junction 2 Forge Road Industrial Estate-Heol Ty Gwyn priority junction.j9
Path: Z:\Lime\Projects\2021\21019 Siderise Insulation, Forge Road, Maesteg\Analysis
Report generation date: 26/05/2021 14:38:38

Summary of junction performance

	AM					PM				
	Q (PCU)	Delay (s)	RFC	LOS	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Res Cap
	2021									
Stream B-AC	0.1	5.60	0.11	A	288 %	0.1	5.54	0.09	A	214 %
Stream C-AB	0.2	6.35	0.13	A	[Stream C-AB]	0.3	6.39	0.17	A	[Stream C-AB]
	2023									
Stream B-AC	0.1	5.62	0.11	A	282 %	0.1	5.55	0.10	A	217 %
Stream C-AB	0.2	6.37	0.13	A	[Stream C-AB]	0.3	6.34	0.17	A	[Stream C-AB]
	2028									
Stream B-AC	0.1	5.67	0.11	A	264 %	0.1	5.61	0.10	A	195 %
Stream C-AB	0.2	6.40	0.14	A	[Stream C-AB]	0.3	6.44	0.19	A	[Stream C-AB]
	2033									
Stream B-AC	0.1	5.73	0.12	A	249 %	0.1	5.65	0.10	A	182 %
Stream C-AB	0.2	6.44	0.15	A	[Stream C-AB]	0.3	6.49	0.20	A	[Stream C-AB]
	2023+DEV									
Stream B-AC	0.1	5.65	0.11	A	168 %	0.2	6.58	0.20	A	200 %
Stream C-AB	0.4	7.25	0.23	A	[Stream C-AB]	0.3	6.39	0.17	A	[Stream B-AC]
	2028+DEV									
Stream B-AC	0.1	5.70	0.11	A	161 %	0.3	6.64	0.20	A	191 %
Stream C-AB	0.4	7.27	0.24	A	[Stream C-AB]	0.3	6.44	0.19	A	[Stream B-AC]
	2033+DEV									
Stream B-AC	0.1	5.75	0.12	A	153 %	0.3	6.71	0.21	A	182 %
Stream C-AB	0.4	7.33	0.25	A	[Stream C-AB]	0.3	6.49	0.20	A	[Stream B-AC]

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	25/05/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	DESKTOP-U7G8RPA\Andy
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2033+DEV	PM	ONE HOUR	17:00	18:30	15	✓

2033+DEV, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.71	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	182	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	Heol Ty Gwyn North		Major
B	Forge Road Industrial Estate Access		Minor
C	Heol Ty Gwyn South		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			50.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	5.00	50	50

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	622	0.113	0.287	0.180	0.409
1	B-C	787	0.121	0.305	-	-
1	C-B	603	0.234	0.234	-	-

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

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

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

Traffic Demand

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	200	100.000
B		ONE HOUR	✓	128	100.000
C		ONE HOUR	✓	269	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	10	190
	B	17	0	111
	C	182	87	0

Vehicle Mix

HV %s

		To		
		A	B	C
From	A	0	0	0
	B	1	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.21	6.71	0.3	A	117	176
C-AB	0.20	6.49	0.3	A	107	161
C-A					140	209
A-B					9	14
A-C					174	262

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	96	24	704	0.137	96	0.0	0.2	5.915	A
C-AB	83	21	662	0.125	82	0.0	0.2	6.207	A
C-A	120	30			120				
A-B	8	2			8				
A-C	143	36			143				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	115	29	693	0.166	115	0.2	0.2	6.230	A
C-AB	103	26	674	0.154	103	0.2	0.2	6.313	A
C-A	138	35			138				
A-B	9	2			9				
A-C	171	43			171				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	141	35	678	0.208	141	0.2	0.3	6.708	A
C-AB	135	34	691	0.196	135	0.2	0.3	6.481	A
C-A	161	40			161				
A-B	11	3			11				
A-C	209	52			209				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	141	35	678	0.208	141	0.3	0.3	6.714	A
C-AB	135	34	691	0.196	135	0.3	0.3	6.488	A
C-A	161	40			161				
A-B	11	3			11				
A-C	209	52			209				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	115	29	693	0.166	115	0.3	0.2	6.241	A
C-AB	104	26	674	0.154	104	0.3	0.2	6.327	A
C-A	138	35			138				
A-B	9	2			9				
A-C	171	43			171				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	96	24	704	0.137	97	0.2	0.2	5.933	A
C-AB	83	21	662	0.125	83	0.2	0.2	6.226	A
C-A	120	30			120				
A-B	8	2			8				
A-C	143	36			143				