



COTSWOLD
TRANSPORT
PLANNING

Low Carbon Farming 2 Ltd

Proposed Commercial Glasshouse and Packing
Facility, Five Fords, Wrexham

Transport Statement

July 2020





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1 Introduction

Introduction

- 1.1 Cotswold Transport Planning (CTP) Ltd has been instructed by Low Carbon Farming 2 Ltd to prepare a Transport Statement (TS) in support of a planning application for a Commercial Glasshouse and Packhouse Facility (CGPF) adjacent to Five Fords Wastewater Treatment Works (FFWTW) in Marchwiel, Wrexham.

Brief

- 1.2 Planning permission is sought for the construction of a CGPF c.16ha in area on a parcel of undeveloped land to the east of FFWTW. The development proposal comprises two glasshouses (each approx. 8ha in area), a 6160 square metre (sq.m) gross floor area (GFA) packhouse and ancillary facilities such as welfare, an energy centre, water and CO₂ storage tanks, customer and DNO substations, heat exchanger building and CO₂ recovery plant, closed irrigation system (reservoirs) and associated parking.
- 1.3 This TS considers the transportation matters associated with the operation of the proposed CGPF, including the associated HGV movements and staff trips to and from the development proposal.
- 1.4 Further details of the proposal and the technology used together with the proposed site layout are included within the supporting documents, submitted separately with the planning application.

Scope of Report

- 1.5 The following key highway and transportation issues are examined in detail in this TS:
- i) Suitability of the local highway network and its safety record;
 - ii) Review of the site sustainability;
 - iii) Review of relevant transport planning policy / guidance;
 - iv) Description of development proposals; and
 - v) The forecast trip attraction of the development proposal.
- 1.6 This TS concludes that the site can be suitably accessed and may be accommodated without detriment to the operational safety or capacity of the local highway network. It is therefore concluded that there are no valid highway or transportation reasons, which should prevent the proposed development of the site.



2 The Site and Local Highway Network

Site Location and Composition

- 2.1 The application site is situated on a parcel of undeveloped land approximately 45 hectares (ha) in area to the east of FFWTW in Marchwiell, Wrexham.
- 2.2 The site is bound to the north by Cefn Road, to the east by Sesswick Way, to the south by undeveloped land, and to the west by FFWTW and its associated access road.
- 2.3 The wider area is characterised by the settlements of Marchwiell c.1km to the southwest, Wrexham c.3km to the northwest, whilst Wrexham Industrial Estate is located c.1.5km to the northeast (all distances measures approximately from the centre of the site as the crow flies).
- 2.4 The site benefits from three existing field gate access points; one vehicle access is located at the north-western boundary of the application site and two others which are located at the eastern boundary of the application site.
- 2.5 An indicative site location plan is provided below in **Figure 2.1**. The site boundary is shown in red.



Figure 2.1: Indicative application site location plan.



Local Highway Network

Existing Site Access Arrangements

- 2.6 As previously detailed, the application site benefits from three existing access points; the primary vehicle access being located at the north-western boundary of the site and is served from the FFWTW Access Road, whilst two additional vehicle accesses / egresses are located at the eastern boundary of the application site, which are both served from Sesswick Way. All three are in the form of field gates. The primary access field gated being 8m wide with the other two being 4.5m wide.
- 2.7 **Figure 2.2** illustrates the existing primary site access.



Figure 2.2: Indicative application site location plan.

FFWTW Access Road

- 2.8 The FFWTW Access Road is located to the northwest / west of the application site and runs in a north to south and then east to west alignment. The primary site access is located on the outside of a bend where junction visibility is more than adequate given the FFWTW access road is subject to a 10mph speed limit. The road has an approximate carriageway width of 6.7m.



- 2.9 At its northern extent, it forms the minor arm of a priority junction with Cefn Road and, at its south-western extent, it provides vehicular access to the FFWTW facility.
- 2.10 **Figure 2.3** illustrates a typical section of the FFWTW access road between the site access and Cefn Road.



Figure 2.3: Indicative application site location plan.

- 2.11 It should be noted that the FFWTW Access Road crosses a modern bridge within the vicinity of its junction with Cefn Road. This bridge does not have a signed weight limit. It is envisaged that the size and weight of vehicles associated with the application site shall be similar to those associated with the nearby FFWTW facility (HGVs were observed from site visits) and therefore are considered to suitable to use this route to access / egress the development proposal without detriment to the structural integrity of the bridge crossing.



- 2.12 CTP have made enquiries of the highway authority to determine whether there are any weight limits or traffic regulation orders (TROs) associated with the bridge. At the time of writing this has not been confirmed. Notwithstanding this, the applicant has confirmed that it is proposed that obligations are shared with Welsh Water in respect of the maintenance of the FFWTW access road.

Cefn Road

- 2.13 Cefn Road is located to the north of the application site and runs in a southeast to northwest alignment. It has an approximate carriageway width of 7m and is subject to a 40mph speed limit.
- 2.14 At its south-eastern extent, it forms the western arm of the Five Fords roundabout junction and, to the northwest, it provides a link to Wrexham.
- 2.15 A shared use footway/cycleway is provided adjacent to the northern side of Cefn Road. This forms part of Active Travel Route INM-Wrex-WIE-C015 and is illustrated on the extract of Wrexham County Borough Council's (WCBC) Active Travel Integrated Network Map included within **Appendix A**.

Sesswick Way

- 2.16 Sesswick Way is located to the east of the application site and runs in a north to south alignment. It varies in width from approximately 7.5m to 11.5m and is subject to the National Speed Limit, which reduces to 40mph and 30mph speed limits at its northern and southern extents respectively.
- 2.17 At its northern extent, it forms the southern arm of the Five Fords roundabout junction and, at its southern extent, it forms the northern arm of the roundabout junction with the A525.

Public Rights of Way

- 2.18 A Public Right of Way crosses the application site, although is not directly affected by the development proposal. Marchwiell Footpath 39 runs in a broadly east-west alignment from Sesswick Way to the FFWTW access road. It then turns just west of the primary site access to run north south along an existing track which will be retained. The existing boundary hedgerow between the proposed development and the public footpath will be retained. To the southwest, it provides a link to the main settlement of Marchwiell, whilst to the northeast it provides a link to Wrexham industrial Estate.



- 2.19 An extract of the local PROW network is illustrated in **Appendix A** of this report.
- 2.20 The applicant has confirmed that at this stage, it is envisaged that reasonable screening will be provided, where necessary along the footpath in the form of infill hedgerow and a new tree line.

Local Highway Safety

Introduction

- 2.21 Due to Wrexham County Borough Council (WCBC) not being able to provide detailed Personal Injury Collision (PIC) data for the most recently available three-year period at the time of writing due to the ongoing COVID19 pandemic, CTP has been advised by WCBC to undertake a local highway safety assessment via interrogating the CrashMap database.
- 2.22 The correspondence with WCBC, in addition to a map extract of the most recent three-year period available (i.e. 2016 to end 2018), is provided in **Appendix B**.
- 2.23 This review confirmed that no recorded PIAs occurred within the study area within the three-year study period.
- 2.24 Therefore, CTP considers that there are no overriding or unexpected highway safety patterns or concerns within the vicinity of the site which need to be considered as part of this assessment.

Proximity to Local Services and Amenities

- 2.25 Existing services and amenities typically required on a daily basis are located within both the village of Marchwiell and Wrexham town centre, which are approximately 3.8km and 4.6km from the application site respectively.
- 2.26 Marchwiell benefits from a convenience store, primary school and public transport links typically found within a village (i.e. local bus stops), whilst Wrexham town centre and its associated suburbs (i.e. King's Hill and Hightown) benefits from a larger range of recreational and educational establishments, a hospital and more substantial public transport links associated with a large town (i.e. railway station, bus station and stops). The nearest convenience store to the application site is the Pentre Maelor post office, approximately 1.3km from the primary site access. This is located to the northeast of the site close to Wrexham industrial estate.



Public Transport Accessibility

- 2.27 The nearest public bus stops (i.e. 'Pentre Maelor, Bridge Road South') are located approximately 1.4km to the northeast of the application site on Bridge Road South – the northern arm of the Five Fords roundabout which leads to Wrexham Industrial Estate.
- 2.28 Both the north-eastbound bus stop comprises a flag and pole, hardstanding area and a layby, whilst the south-westbound bus stop comprises a hardstanding area with no other provision.
- 2.29 A summary of the service that operates at these stops is provided below in **Table 2.1**, whilst the full timetables are provided in **Appendix C**.

Service	Route / Destinations Served	Days	First Service	Approx. Daily Frequency	Last Service
41A	Wrexham to Redwither Tower	Monday to Saturday	05:45	Every hour	17:55
	Redwither Tower to Wrexham	Monday to Saturday	06:10	Every hour	18:17

Table 2.1: Summary of bus services which serve at the Pentre Maelor, Bridge Road South bus stops (source: <https://www.traveline.cymru>).

- 2.30 **Table 2.1** demonstrates that Bus Service 41A operates regularly between the settlements of Wrexham and Redwither Tower and does so via travelling past the application site on Cefn Road. Therefore, it is considered staff may travel to / from the proposed CGPF via public transport, in favour of travelling via private, single occupancy car journeys, should bus stops be provided near the site.



Summary

- 2.31 The site is considered to be accessible for staff of the proposed CGPF - depending on shift patterns - to travel to and from by modes of transport other than the private car as there are regular bus services to Marchwiel, Wrexham and surrounding areas, should bus stops be provided near the site.
- 2.32 Given the necessary location of the development, it is unlikely that many journeys will be made to the site by employees or visitors on foot. However, the settlements of Marchwiel, Kings Hill, Hightown and Wrexham are all located within a 5km distance of the site, which is considered within reasonable cycling distance. Considering the residential areas, amenities and services in proximity to the application site, journeys by such modes of transport on a daily basis would not necessarily be lengthy.



3 Relevant Transportation Planning Guidance

3.1 The relevant transportation policies are set out in the following National and Local documents:

- i) Planning Policy Wales (PPW) (2018);
- ii) TAN18 – Transport (2007);
- iii) North Wales Joint Local Transport Plan (2015); and
- iv) Wrexham Local Development Plan 2 (2013 to 2028).

3.2 The main thrust of recent national and local policy guidance is to:

- i) make effective and efficient use of land;
- ii) reduce car dependency;
- iii) promote sustainable development by making walking and cycling trips easier and encouraging trips by public transport.

PPW (2018)

3.3 Paragraph 4.1.10 states *‘Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services’.*

3.4 Paragraph 4.1.11 confirms that a sustainable transport hierarchy should be followed for new development giving priority to walking, cycling and public transport prior to considering private motor vehicles, with Ultra Low Emission Vehicles having an important role to play in rural areas.

3.5 Paragraph 4.1.6 acknowledges that *‘different approaches to sustainable transport will be required in different parts of Wales, particularly in rural areas, and new development will need to reflect local circumstances. For example, a planning authority wishing to grow a rural village, despite it having limited public transport accessibility, could apply the transport hierarchy by: first considering how the location and design of new development could encourage walking and cycling to shops and services in the village centre; then consider whether new development could be located near a bus stop or enable improvements to the bus service; before finally considering the needs of private motor vehicles, including measures to encourage the use of Ultra Low Emission Vehicles’.*



- 3.6 Paragraph 4.1.32 makes reference that new development should be integrated with active travel networks whilst paragraph 4.1.35 notes that development should be located where there is, or can be, good access to public transport.
- 3.7 Paragraph 103 acknowledges that 'opportunities to maximise sustainable transport solutions will vary from urban to rural areas'. To determine if a development is sustainable, the location of the site must be considered.

The Suitability of the Development Proposals

- 3.8 Given the nature of the proposed development, it is considered that it is well located in terms of its proximity to the local distributor road to accommodate HGVs; residential areas which could be drawn upon in terms of employment; public transport links; and services / amenities located within local settlements (i.e. Marchwiel, Wrexham and the Industrial Estate). This will ensure that the distance that employees of the CGPF have to travel will be minimised. The development is also adjacent to an existing Active Travel Route which encourages the potential for trips to the proposal by sustainable modes of transport.
- 3.9 **Chapter 2** confirms that there are no existing highway safety issues on the local road network in the vicinity of the site and that the existing FFWTW road already accommodates HGVs, and **Chapter 4** confirms that the proposed site access arrangements are suitable for the type of development proposed.
- 3.10 It is concluded that the development of the site is generally consistent with the policies of local and national government, given the type of use.



4 Development Proposals

The Development Proposal

- 4.1 Planning permission is sought for the construction of a CGPF c.16ha in area on a parcel of undeveloped land to the east of FFWTW. The development proposal comprises two glasshouses (each 8ha in area), a c.6160 square metre (sq.m) gross floor area (GFA) packhouse and ancillary facilities such as welfare, an energy centre, water and CO₂ storage tanks, customer and DNO substations, heat exchanger building and CO₂ recovery plant, closed irrigation system (reservoirs) and associated parking.
- 4.2 A central access path connects both the glasshouses, which allows for staff to transport the cultivated goods from the southern glasshouse to the distribution / loading area in the packhouse, via the northern glasshouse.
- 4.3 The proposed site layout plan is illustrated in **Appendix D**.
- 4.4 The applicant has advised that the development proposal shall employ a total of 180 members of staff across the entire site during peak season. However, the applicant has also advised that, typically, outside of peak season, this will reduce to a total of 150 members of staff.
- 4.5 The typical hours of operation for the site shall be 06:00 to 18:00 Monday to Friday. Although, during peak season, some additional weekend working will occur between 06:00 and 15:00.

Site Access Arrangements

Vehicle Access / Egress

- 4.6 The primary access for all modes of transport is from the FFWTW Access Road as discussed in **Chapter 2**. This access will be upgraded to provide a bound surface and 2.4m x 25m junction visibility splays with the FFWTW, with such splays being more than adequate for a road subject to a 15mph speed limit. The drawings included in **Appendix E** confirm that the access is suitable to accommodate the swept path of a 16.5m maximum legal articulated HGV, the largest vehicle which will be associated with the site.

The two existing field accesses with Sesswick Way will be retained although will not actively serve the development. They may be used during the construction phase. subject to a Construction Traffic Management Plan.



Junction Suitability Assessment(s)

- 4.7 In order to determine the suitability of the access arrangements, all of the site accesses have been subject to visibility splay assessments.
- 4.8 Automatic Traffic Count (ATC) surveys were installed on Cefn Road (ATC 1) and Sesswick Way (ATC 2) in the vicinity of the site access / egress junctions by 360 TSL, an independent traffic surveyor, between Friday 15th May and Thursday 21st May, 2020. Traffic Survey Data, including installed locations is included as **Appendix F**.
- 4.9 It is noted that Wales was in the lockdown phase of the COVID19 pandemic at the time of the traffic surveys with all but essential travel prohibited. As a result, traffic flows will be much lower than pre-pandemic levels and traffic speeds are likely to be higher because of the reduced traffic flows. Notwithstanding this, junction visibility splays have been calculated based on the recorded 85th percentile speeds.
- 4.10 As all recorded 85th percentile speeds were above 40mph, DMRB parameters to used to inform the SSD. Desirable Minimum SSD values have been used for Sesswick Way given it is subject to the National Speed Limit and a new purpose-built link road. Absolute Minimum SSD parameters have been used for Cefn Road as it is an existing historic road subject to a 40mph speed limit.
- 4.11 The parameters used to determine the required visibility splays is provided in **Table 4.1** and **Table 4.2**.

ATC 1 - Cefn Road		
Parameters	Eastbound	Westbound
85 th Percentile Speed	48.1mph	47.6mph
Reaction Time	2 seconds	2 seconds
Deceleration Time	3.68 seconds	3.68 seconds

Table 4.1: Parameters used to determine visibility splay requirements at the FFWTW Access Road / Cefn Road junction.

- 4.12 Based on the parameters detailed in **Table 4.1**, the FFWTW Access Road / Cefn Road junction requires a 2.4m x 108m visibility splay to the west (left) and a 2.4m x 106m visibility splay to the east (right).



ATC 2 - Sesswick Way		
Parameters	Northbound	Southbound
85 th Percentile Speed	60.8mph	60.4mph
Reaction Time	2 seconds	2 seconds
Deceleration Time	2.45 seconds	2.45 seconds

Table 4.2: Parameters used to determine visibility splay requirements at the Sesswick Way junctions.

- 4.13 Based on the parameters detailed in **Table 4.2**, the Sesswick Way junctions requires a 2.4m x 203m visibility splay to the north (left) and a 2.4m x 206m visibility splay to the south (right).
- 4.14 All visibility splays are achievable between the minor arms (i.e. the site access / egresses) and major arms (i.e. Cefn Road and Sesswick Way) and are within the extent of the adopted highway or land under the control of the applicant. Some localised trimming of hedgerows and scrub vegetation may be required to enable the visibility splays to be achieved from the Cefn Road access. From site observations, this appears achievable and vegetation may have become overgrown due to a reduction of cutting and verge maintenance during COVID19 pandemic.
- 4.15 The access arrangement drawings, which demonstrate the required visibility splays, are provided in **Appendix E**.

Internal Site Layout

- 4.16 All areas on site to be used by HGVs will be concrete, including the access road, turning area and 10no HGV loading bays adjacent to the packhouse, which will be sunk 0.95m below ground level. A staff and visitor parking area will be surfaced with compacted stone hardstanding.
- 4.17 The swept path analysis drawings, which illustrate the internal access road / internal layout is suitable to accommodate a 16.5m maximum legal articulated HGV and all servicing vehicles, are provided in **Appendix G**.
- 4.18 The tracking drawings show HGVs routing left in and right out at the junction with Cefn Road. This is in accordance with signed routes to Wrexham Industrial Estate on local distributor roads in the vicinity.



- 4.19 An HGV routing management plan will be adopted by the development to advise all haulage companies of the route to access the development, thus to avoid the need for HGVs to arrive or depart on Cefn Road west of the FFWTW junction.
- 4.20 The HGV Routing Management Plan could be secured by planning condition if considered necessary by highway officers.

Parking Provision

Staff / Visitor Parking

- 4.21 2011 Travel to Work census data has been interrogated using the DataShine website for the 'Wrexham 016' middle layer super output area, which is the area in which the site is located.
- 4.22 The census data indicates that 79.2% of people travel to work in this super output area by car (driving). On this basis, considering the maximum number of staff to be employed during peak season at the CGPF (i.e. 180), 143 staff car parking spaces shall be required.
- 4.23 It is considered that the CGPF shall only be associated with a small number of visitors throughout the day (detailed further in **Chapter 5**).
- 4.24 The CGPF is proposed to have a total of 145 parking spaces, which is considered to be sufficient to accommodate demand (detailed further in **Chapter 5**). The proposed car parking provision is further justified on the basis that the Wrexham 016 area is largely a rural area, within which, the development site is located in a more sustainable area close to both Wrexham and the Industrial Estate, thus the propensity for trips by more sustainable and active travel modes is greater.
- 4.25 In order to encourage travel by modes associated with ultra low emissions, a total of 5% of the car parking provision will be equipped with electric car charging points with cabling and ducting (passive provision) put in place for an additional 5% of car parking spaces for installation of chargers as needed in the future.
- 4.26 36 secure and covered cycle parking spaces will be provided in the form of 18 Sheffield stands. This equates to provision for approximately 20% of the peak workforce to encourage trips to be made to the development by cycle. Ease of access to the existing off-carriageway footway/cycleway on Cefn Road should assist in encouraging trips to be made by cycle.



HGV Parking / Loading Bays & Waiting Areas

- 4.27 The CGPF is proposed to have ten HGV loading bays. This is sufficient to accommodate demand (detailed further in **Chapter 5**).

Off-Site Highway Works

- 4.28 In order to encourage travel to and from the site by sustainable modes of transport, the applicant is prepared to provide a financial contribution or to enter into an S278 Agreement to provide new east and westbound bus stops on Cefn Road in the vicinity of its junction with the FFWTW Access Road. This will enable trips to be made by staff to the CGPF by the bus services that pass the site regularly on Cefn Road, as detailed in **Chapter 2**.
- 4.29 Indicative locations, for approval with the highway authority, of where new bus stops could be located on Cefn Road, are shown on the plans included within **Appendix E**.



5 Forecast Trip Attraction

Introduction

- 5.1 The proposed trip attraction of the site has been calculated on a 'first principles' approach. This is based on information provided to the applicant by companies who have experience in the operation of CGPFs.

Forecast Trip Attraction

Staff & Visitors

- 5.2 Based on the census analysis in **Chapter 4**, during peak season, a total of 143 (of 180) staff associated with the proposed CGPF are envisaged to drive to work by car, which equates to 286 two-way vehicle trips. However, on average throughout the majority of the year, a total of 119 (of 150) staff associated with the proposed CGPF are envisaged to drive to work by car, which equates to 238 two-way vehicle trips
- 5.3 Further to the above, some employees may make journeys off-site as part of their employment or at lunchtime, although, the number of trips is likely to be relatively low and occur outside of peak hours. It is estimated that 10 staff associated with the proposed CGPF shall depart and return to the site throughout the day, which equates to 20 two-way vehicle trips.
- 5.4 The applicant has confirmed that the CGPF is unlikely to attract many daily visitors. However, CTP have allowed for five visitors per day, which equates to 10 two-way vehicle trips.
- 5.5 A summary of the forecast number of staff / visitor two-way vehicle trips is provided below in **Table 5.1**.

Period	Two-Way Trips
Peak (i.e. June, July August)	316
Average (i.e. September to May)	268

Table 5.1: Summary of forecast staff / visitor two-way trips per day.



Heavy Goods Vehicles

- 5.6 Based on information provided by the applicant, a summary of the forecast number of two-way HGV trips associated with the CGPF is provided below in **Table 5.2**. The precise number of vehicle trips depends partly on the type of crop grown as each will have a different maximum yield and different packing requirement and volume. It also depends on the time of the year as the number of vehicle trips will vary, particularly in peak growing season.

Month	HGV Collections	HGV Two-Way Trips (Per Day)
January	8	16
February	8	16
March	20	40
April	40	80
May	40	80
June	45	90
July	45	90
August	45	90
September	20	40
October	20	40
November	20	40
December	8	16
Average	30	60

Table 5.2: Summary of forecast HGV collections and two-way trips per day each month.



- 5.7 As detailed above in **Table 5.2**, the proposed CGPF is forecast to attract a maximum of 90 two-way HGV trips per day during its peak season of operation, whilst it will attract, on average, around 60 HGV two-way trips each day throughout the year. This equates to an average of eight HGVs arriving / departing the site each hour during peak operation and an average of five HGVs arriving / departing the site each hour during an average day throughout the year.

Total Trips

- 5.8 A summary of the total number of vehicle trips associated with the proposed CGPF is provided below in **Table 5.3**.

Period	Daily Staff / Visitor Trips	Daily HGV Two-Way Trips	Daily Total Trips
Peak (i.e. June, July, August)	316	90	406
Average (i.e. September to May)	268	60	328

Table 5.3: Summary of peak and average staff / visitor and HGV two-way trips associated with the proposed CGPF.

- 5.9 As detailed in Table 5.3, the proposed CGPF is likely to be associated with approximately 406 daily vehicle movements during peak season (i.e. throughout June, July and August), of which 90 shall be HGV trips. However, on average, the proposed CGPF is likely to be associated with approximately 328 daily vehicle movements, of which 60 shall be HGV trips. This is considered a worst-case scenario as the applicant has confirmed from discussions with commercial glasshouse operators elsewhere, a large number of car sharing takes place between employees and also as this is based on the maximum number of staff employed at the site, which will not occur all year round.

Trip Impact

- 5.10 The forecast maximum number of daily HGV movements (i.e. 90 two-way trips) are based on peak productivity and provide a worst-case scenario. In reality, there may be less HGV movements associated with the application site (i.e. average of 60 HGV two-way trips each day across the year), depending on the type of crop grown as each will have a different maximum yield, packing requirement and volume.



- 5.11 The majority of the HGV movements detailed above shall occur outside of both the typical AM and PM peak periods (i.e. 08:00 to 09:00 and 17:00 to 18:00), where the impact of the HGV trips would be at their greatest; and
- 5.12 The swept path analysis drawings demonstrate that there is sufficient capacity to accommodate multiple HGVs within the curtilage of the site due to the design of the internal access road / site layout.
- 5.13 However, notwithstanding the above, the applicant is willing to accept a condition that formally restricts HGVs from arriving and departing the site during the surveyed weekday AM and PM peak hours in order to minimise impact on the operation of the local highway network.
- 5.14 In terms of the parking demand associated with the CGPF, it is envisaged that the quantum of staff / visitor parking proposed (145) shall be able to accommodate demand during peak period, whilst there are sufficient HGV loading bays (10) to accommodate the average number of HGV arrivals each hour during peak operation (9), assuming no HGV deliveries during the AM and PM peak hour. There is ample hard standing within the application site to allow for additional HGVs to wait if all loading bays are occupied at the same time, which is unlikely.
- 5.15 Therefore, no vehicles associated with the application site shall be forced to park or manoeuvre in proximity to the public highway.

Summary

- 5.16 In summary, it is envisaged that the site access arrangements and the internal layout / parking provision shall all serve to accommodate the forecast trip attraction of the proposed CGPF and thus there shall not be a significant impact on the safety and operation of the local highway network.



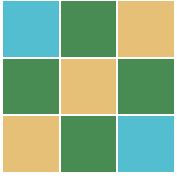
6 Summary and Conclusions

Summary

- 6.1 Cotswold Transport Planning (CTP) Ltd has been instructed by Low Carbon Farming 2 Ltd to prepare a Transport Statement (TS) in support of a planning application for a Commercial Glasshouse and Packhouse Facility (CGPF) adjacent to Five Fords Wastewater Treatment Works (FFWTW) in Marchwiel, Wrexham.
- 6.2 Planning permission is sought for the construction of a CGPF c.16ha in area on a parcel of undeveloped land to the east of FFWTW. The development proposal comprises two glasshouses (each approx. 8ha in area), a c.6160 square metre (sq.m) gross floor area (GFA) packhouse and ancillary facilities such as welfare, an energy centre, water and CO₂ storage tanks, customer and DNO substations, heat exchanger building and CO₂ recovery plant, closed irrigation system (reservoirs) and associated parking.
- 6.3 This TS considers the transportation matters associated with the operation of the proposed CGPF, including the associated HGV movements and employee trips to and from the development.
- 6.4 This TS has demonstrated the following:
- i) The local highway network is considered to operate efficiently and safely and there are no existing highway safety patterns or problems at the site access or in the vicinity of the site;
 - ii) The site access arrangements and the internal layout are appropriate to serve the development proposal;
 - iii) Parking provision is considered to be suitable to accommodate staff / visitor demand, therefore, mitigating against overspill parking occurring within / on the local highway network; and
 - iv) The forecast trip attraction arising from the development proposal will not result in a detrimental impact on the safe and efficient operation of the local highway network.

Conclusion

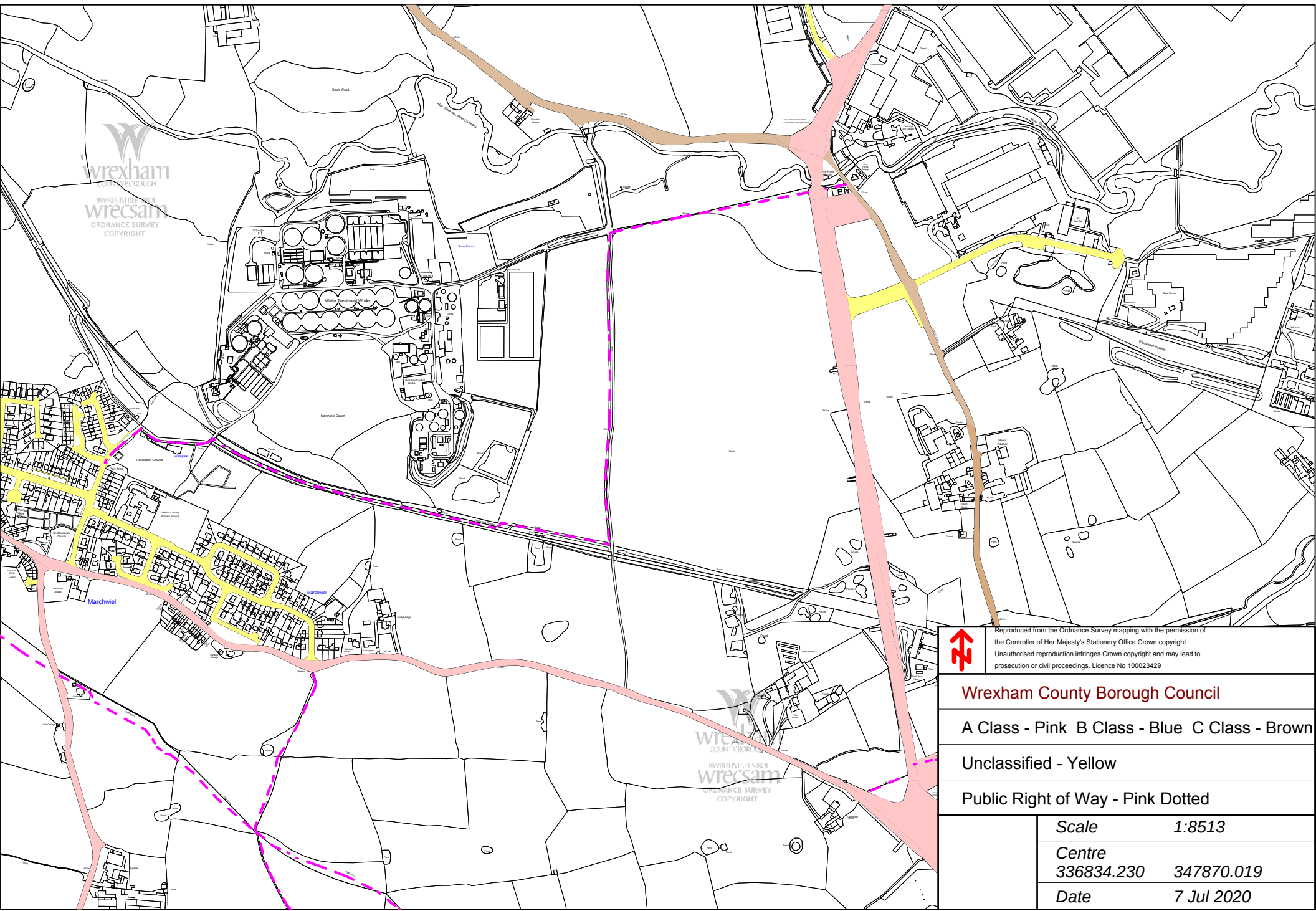
- 6.5 This TS concludes that the site can be suitably accessed and can be accommodated without detriment to the operational safety or capacity of the local highway network. It is therefore concluded that there are no valid highway or transportation reasons which should prevent the proposed development of the site.



COTSWOLD TRANSPORT PLANNING

Appendix A

Public Right of Way, Adopted Highway
Boundary & Active Travel Integrated
Network Map





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Wrexham County Borough Council

A Class - Pink B Class - Blue C Class - Brown

Unclassified - Yellow

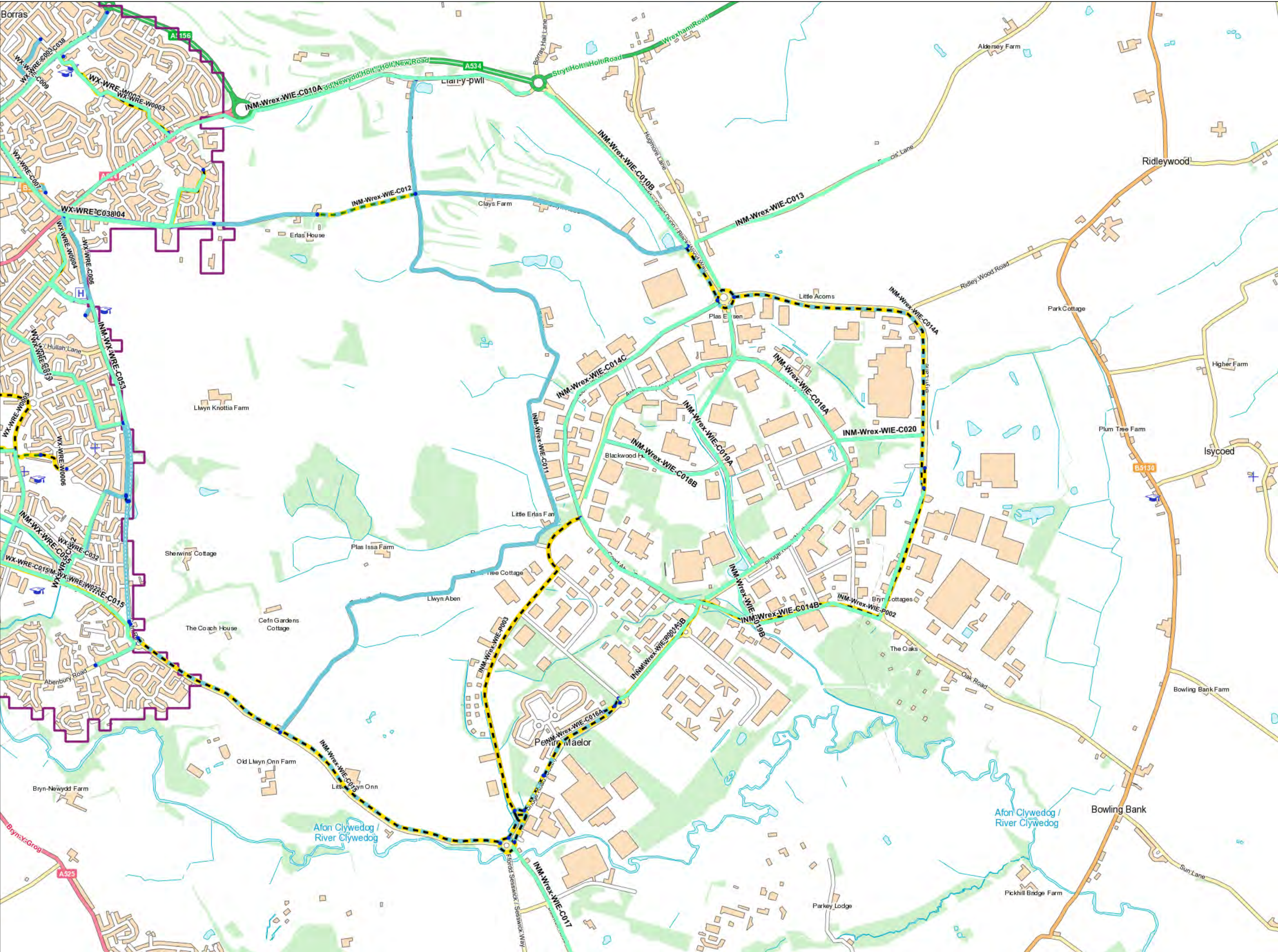
Public Right of Way - Pink Dotted

Scale	1:8513
Centre	336834.230 347870.019
Date	7 Jul 2020

Wrexham Industrial Estate

Produced by the Active Travel web site. Gynhyrchwyd gan y wefan Teithio Llesol.

Wrexham County Borough Council
The Guildhall
Queens Square
Wrexham, LL11 1AY



Legend / Eglurhæð

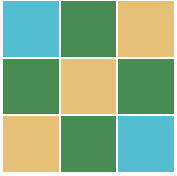
Active Travel Route / Llwybr Teithio Lleso

- Undefined path design / Dyluniad llwybr heb ei ddiffinio
- Footpath (away from road) / Llwybr troed (i ffwrdd o'r ffordd)
 - Footway (alongside road) / Troedffordd (ochr yn ochr â ffordd)
 - Cycle track (away from road) / Trac beicio (i ffwrdd o'r ffordd)
 - Cycle track (alongside road) / Trac beicio (ochr yn ochr â ffordd)
 - Shared use foot/cycle path (away from road) / Llwybr cerdded/beicio a rennir (i ffwrdd o'r ffordd)
 - Shared use foot/cycle path (alongside road) / Llwybr cerdded/beicio a rennir (ochr yn ochr â ffordd)
 - Segregated foot/cycle path (away from road) / Llwybr cerdded/beicio wedi'i wahanu (i ffwrdd o'r ffordd)
 - Segregated foot/cycle path (alongside road) / Llwybr cerdded/beicio wedi'i wahanu (ochr yn ochr â ffordd)
 - Cycle route (on road, not segregated) / Lôn feicio (ar y ffordd, heb ei gwahanu)
 - Cycle lane (on road, segregated) / Lôn feicio (ar y ffordd, wedi'i gwahanu)
 - Pedestrian zone / Airdal cerdded
 - Pedestrian and cycle zone / Airdal cerdded a beicio
 - Road without footway / Ffordd heb droedffordd
- Line end points / Pwyntiau diwedd llinell
- Integrated Network / Rhwydwaith Integredig
- Integrated Network Walking
- Integrated Network Cycling
- Integrated Network Shared Use
- Built-up Areas / Ardaloedd Adeiledig

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Er bod Llywodraeth Cymru wedi gwneud pob ymdrech i sicrhau bod y wybodaeth ar y wefan hon yn gywir ac yn gyffwrdd, mae Llywodraeth Cymru yn cymryd unrhydd gyfrifoldeb am unrhyw wybodaeth anghywir. Lliniwyd y map a hawliau taircwm cyhoeddus, RHTT yr AO, Llywyrab Trefol RHTT yr AO a data sŷn deillio o aerofotograff ar ddydd wedi' ategu gan arolwg maes. Yn y map ar-lein yn darparu canllaw yn unig ac nid yw cofnod cyfreithliol.





COTSWOLD
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Appendix B

Wrexham County Borough
Council Personal Injury Collision
Data Correspondence &
CrashMap Extract

Matt Mauler

From: Graham Lloyd <Graham.Lloyd@wrexham.gov.uk>
Sent: 01 June 2020 12:10
To: Matt Mauler
Cc: Darren Green
Subject: RE: Personal Injury Collision Data Request: Sesswick Way and Local Highway Network

Hi Matt,

I am ok thanks,

I am sorry to say that I am working from home due to the guidance and I have no access to any data I can only point you towards crash map which will give you some data.

STAY SAFE

Regards
Graham

From: Matt Mauler [mailto:matthew@cotswoldtp.co.uk]
Sent: 01 June 2020 11:42
To: Graham Lloyd
Cc: Mike Fuller
Subject: FW: Personal Injury Collision Data Request: Sesswick Way and Local Highway Network

Good morning Graham,

I hope all is well?

Could you please provide me with an update on this data request at your earliest convenience?

Any issues please let me know.

Kind regards

Matt Mauler BSc (Hons) MSc
Transport Planner



Tel: (01242) 523696 Web: www.cotswoldtp.co.uk

PLEASE NOTE: Our office address has changed and all future mail should now be addressed to:
Cotswold Transport Planning Ltd, CTP House, Knapp Road, Cheltenham, Gloucestershire, GL50 3QQ

Office Locations:
Cheltenham – 01242 523696

Bristol – 01179 595883
Bedford – 01234 339751



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From: Matt Mauler
Sent: 14 May 2020 16:41
To: graham.lloyd@wrexham.gov.uk
Cc: Mike Fuller <mike@cotswoldtp.co.uk>
Subject: Personal Injury Collision Data Request: Sesswick Way and Local Highway Network

Good afternoon,

I hope this finds you well.

I write to request the accident data for the most recent **5 year period** for the site attached. The data should include a location plan/plot and a brief description of the accident including severity.

I understand that there may be a charge for this information and we would appreciate if you could confirm this by reply prior to proceeding.

Kind regards

Matt Mauler BSc (Hons) MSc
Transport Planner



Tel: (01242) 523696 Web: www.cotswoldtp.co.uk

PLEASE NOTE: Our office address has changed and all future mail should now be addressed to:
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Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

Ewch i weld - mi fedrwch chi dalu, rhoi gwybod, gwneud cais, dweud eich dweud, a dod o hyd i wybodaeth ar-lein yn www.wreccsam.gov.uk. Arbedwch bapur - meddyliwch cyn argraffu!

Mae'r neges e-bost hon ac unrhyw atodiadau wedi eu bwriadu ar gyfer yr unigolyn neu'r sefydliad y?i cyfeirir atynt yn unig. Am yr amodau llawn yngl?n ? chynnwys a defnyddio?r neges e-bost hon, ac unrhyw atodiadau, cyfeiriwch at www.wreccsam.gov.uk/top_navigation/disclaimersw.htm

We welcome correspondence in Welsh. We will respond to any correspondence in Welsh and this will not lead to any delay.

Take a look - you can pay, report, request, have your say and find information online at www.wrexham.gov.uk. Save paper - think before you print!

This e-mail message and any attachments are intended solely for the individual or organisation to whom it is addressed. For full conditions in relation to content and use of this e-mail message and any attachments, please refer to www.wrexham.gov.uk/top_navigation/disclaimers.htm

Map

Satellite



Incident Severity



Slight Serious Fatal

Location: cefn road, wrexham

Years

3 of 21 years selected

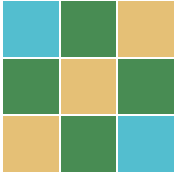
Severity

- | | |
|---------|-------------------------------------|
| Fatal | ☒ |
| Serious | ☒ |
| Slight | ☒ |

Casualty Types:

All Casualty Types

Vehicles Involved:



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Appendix C

Bus Timetables

Redwither Tower - Wrexham

Monday to Friday (Excluding Bank Holidays) (Inbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM														
Ridley View, Redwither Tower	0605	0700	0750	0850	0950	1050	1150	1250	1350	1450	1550	1710	1810	
Pentre Maelor	0610	0705	0757	0857	0957	1057	1157	1257	1357	1457	1557	1717	1817	
The Dunks, Queensway West	0615	0710	0802	0902	1002	1102	1202	1302	1402	1502	1602	1722	1822	
Wrexham, Bus Station, Bay 6	0625	0720	0812	0912	1012	1112	1212	1312	1412	1512	1612	1732	1832	

Wrexham - Redwither Tower

Monday to Friday (Excluding Bank Holidays) (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM														
Wrexham, Bus Station, Bay 6	0530	0630	0725	0825	0925	1025	1125	1225	1325	1425	1525	1645	1740	
The Dunks, Queensway West	0540	0640	0735	0835	0935	1035	1135	1235	1335	1435	1535	1655	1750	
Pentre Maelor	0545	0645	0740	0840	0940	1040	1140	1240	1340	1440	1540	1700	1755	
Ridley View, Redwither Tower	0550	0650	0747	0847	0947	1047	1147	1247	1347	1447	1547	1707	1802	

Redwither Tower - Wrexham

Saturday (Inbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM														
Ridley View, Redwither Tower	0605	0700	0750	0850	0950	1050	1150	1250	1350	1450	1550	1650	1810	
Pentre Maelor	0610	0705	0757	0857	0957	1057	1157	1257	1357	1457	1557	1657	1817	
The Dunks, Queensway West	0615	0710	0802	0902	1002	1102	1202	1302	1402	1502	1602	1702	1822	
Wrexham, Bus Station, Bay 6	0625	0720	0812	0912	1012	1112	1212	1312	1412	1512	1612	1712	1832	

Wrexham - Redwither Tower

Saturday (Outbound)

Operator: ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM ACYM														
Wrexham, Bus Station, Bay 6	0530	0630	0725	0825	0925	1025	1125	1225	1325	1425	1525	1625	1725	
The Dunks, Queensway West	0540	0640	0735	0835	0935	1035	1135	1235	1335	1435	1535	1635	1735	
Pentre Maelor	0545	0645	0740	0840	0940	1040	1140	1240	1340	1440	1540	1640	1740	
Ridley View, Redwither Tower	0550	0650	0747	0847	0947	1047	1147	1247	1347	1447	1547	1647	1747	

Service 41A (ACAO041A)

Timetable valid from 2nd January 2019 until further notice

Service 41A (ACAO041A)

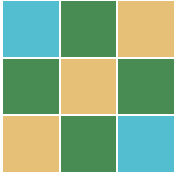
Timetable valid from 2nd January 2019 until further notice

Service 41A (ACAO041A)

Timetable valid from 2nd January 2019 until further notice

Service 41A (ACAO041A)

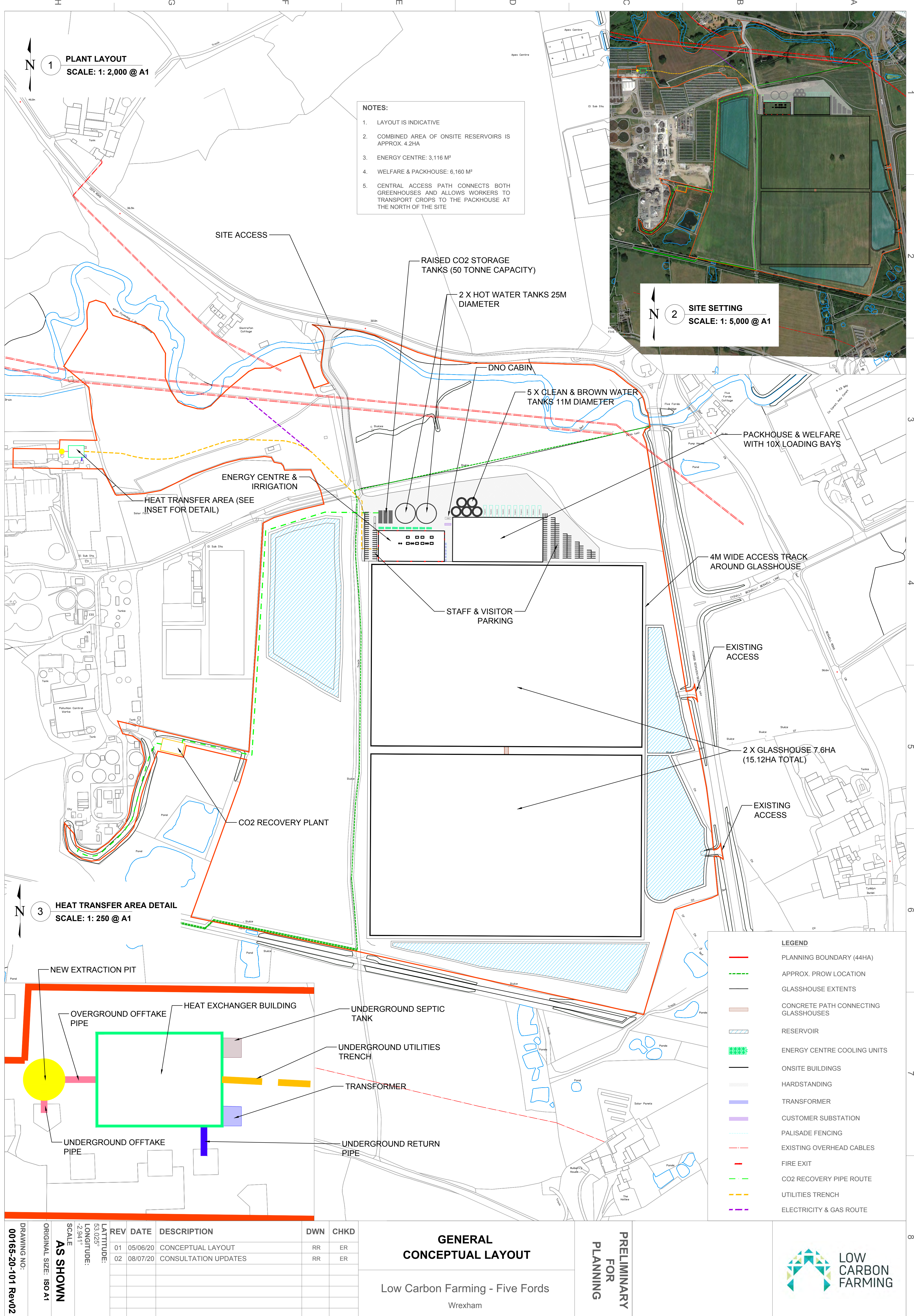
Timetable valid from 2nd January 2019 until further notice

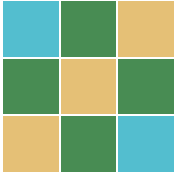


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Appendix D

Proposed Site Layout Plan

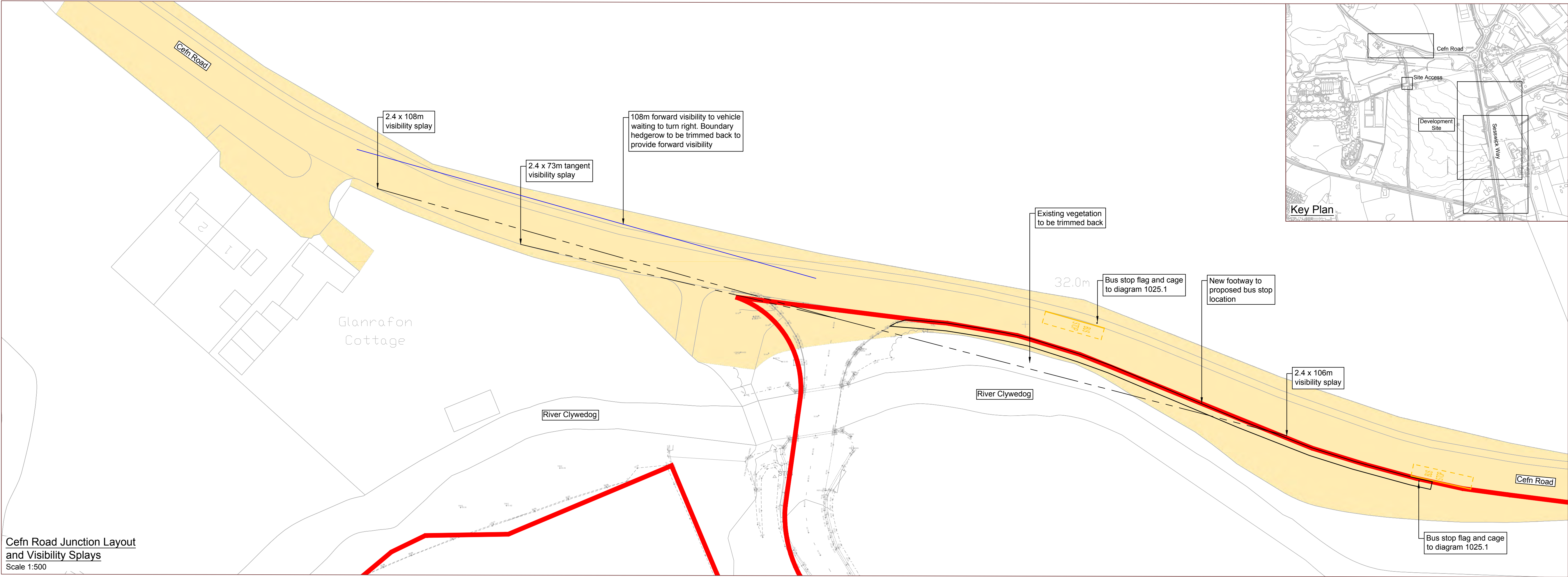




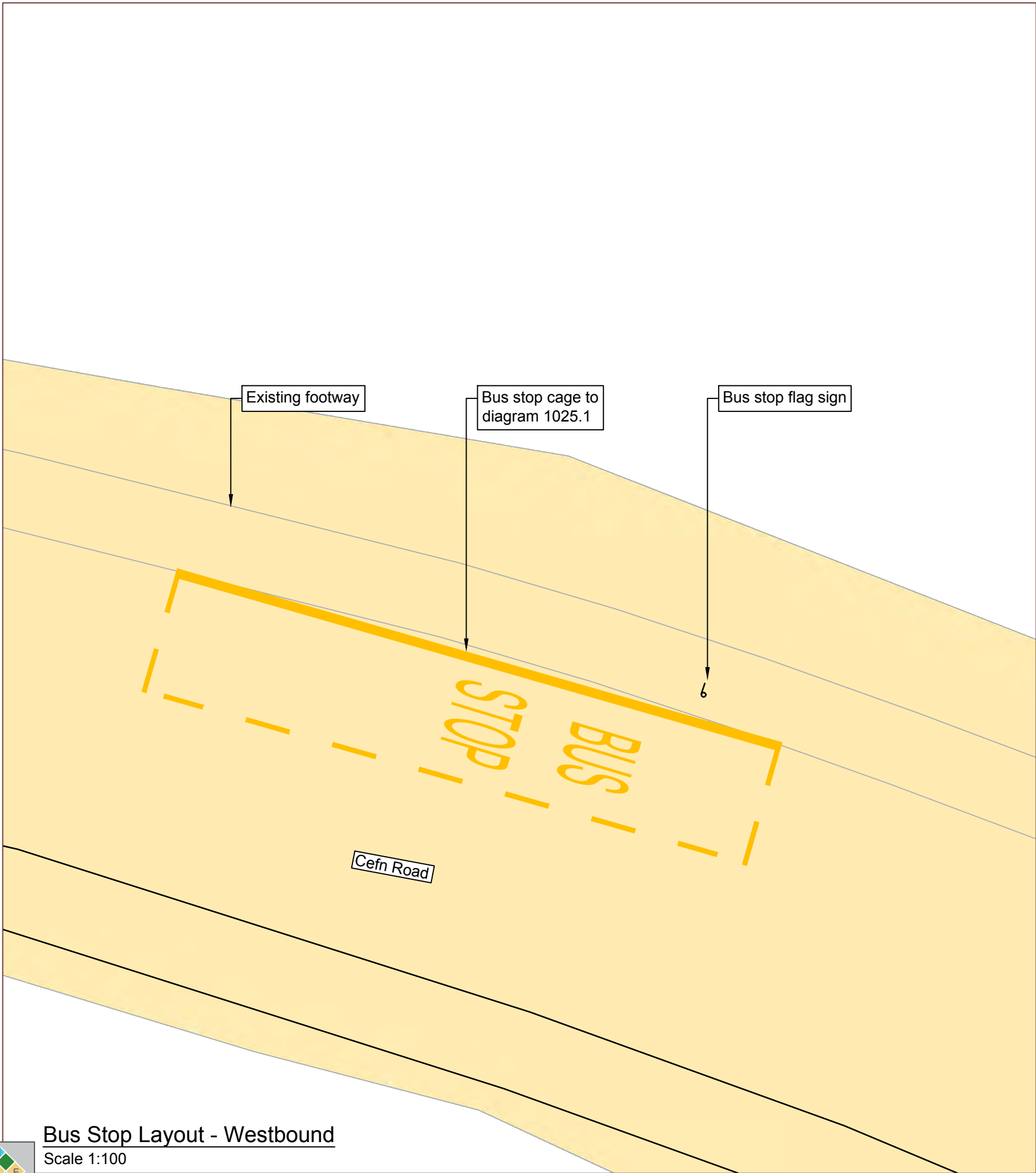
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Appendix E

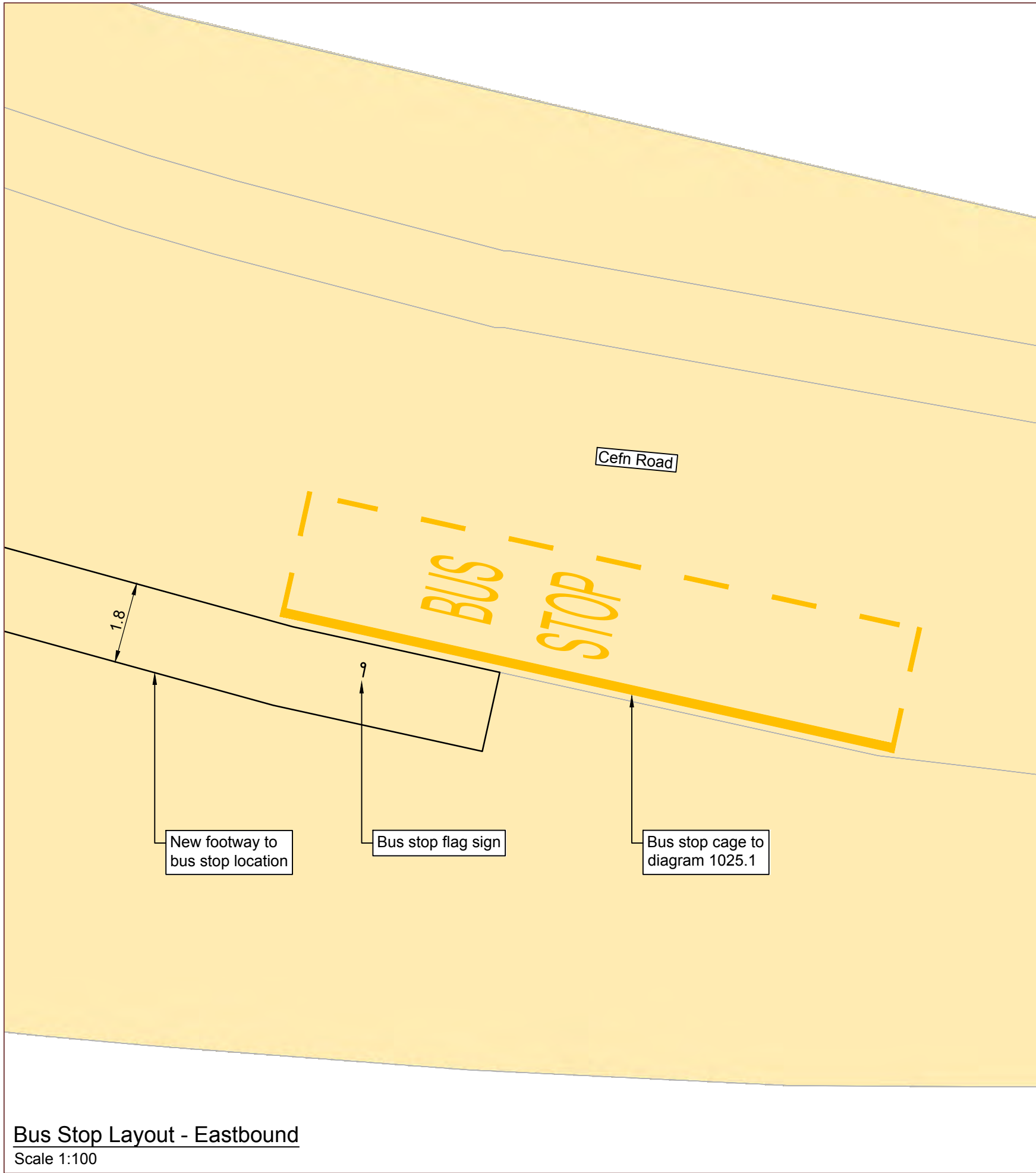
Access Arrangement & Visibility
Splay Assessment Drawing



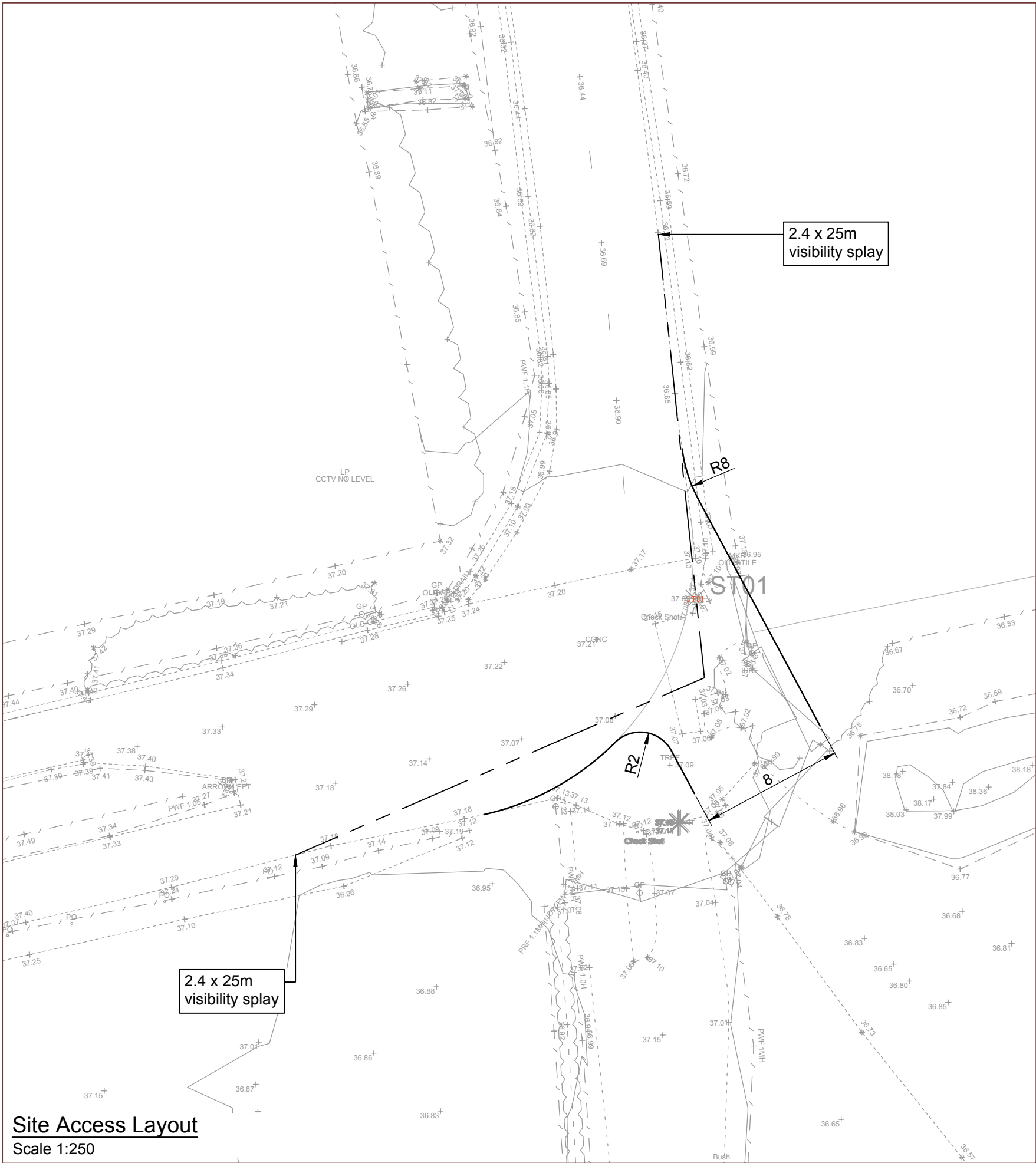
Cefn Road Junction Layout and Visibility Splays
Scale 1:500



Bus Stop Layout - Westbound
Scale 1:100



Bus Stop Layout - Eastbound
Scale 1:100



Site Access Layout
Scale 1:250

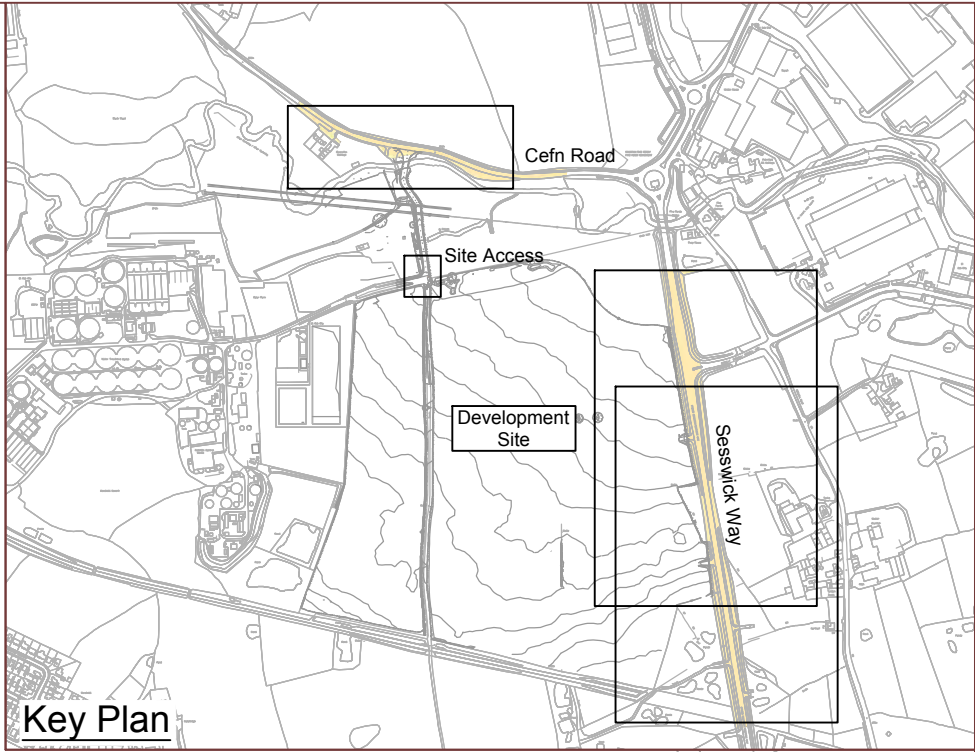
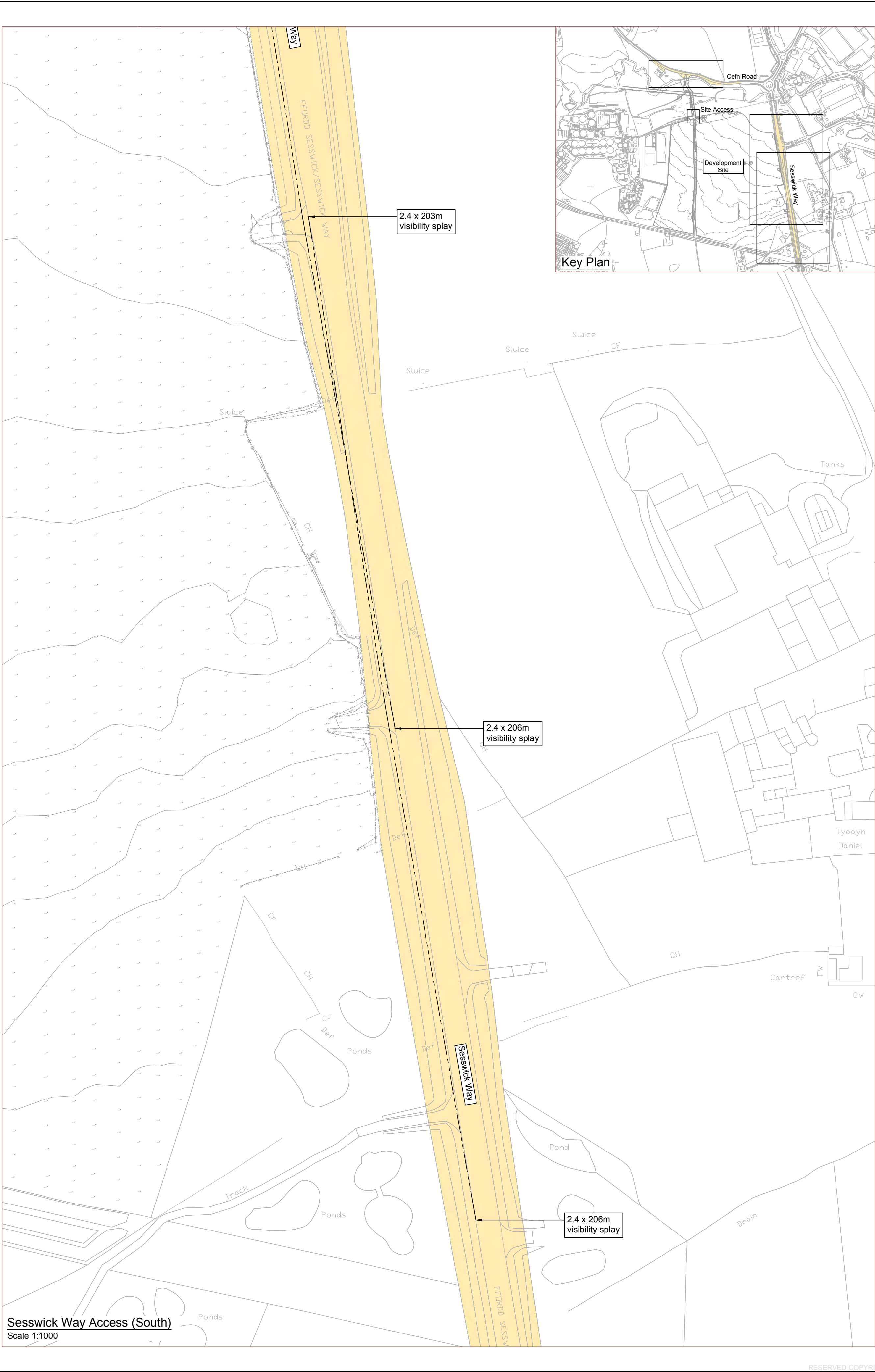
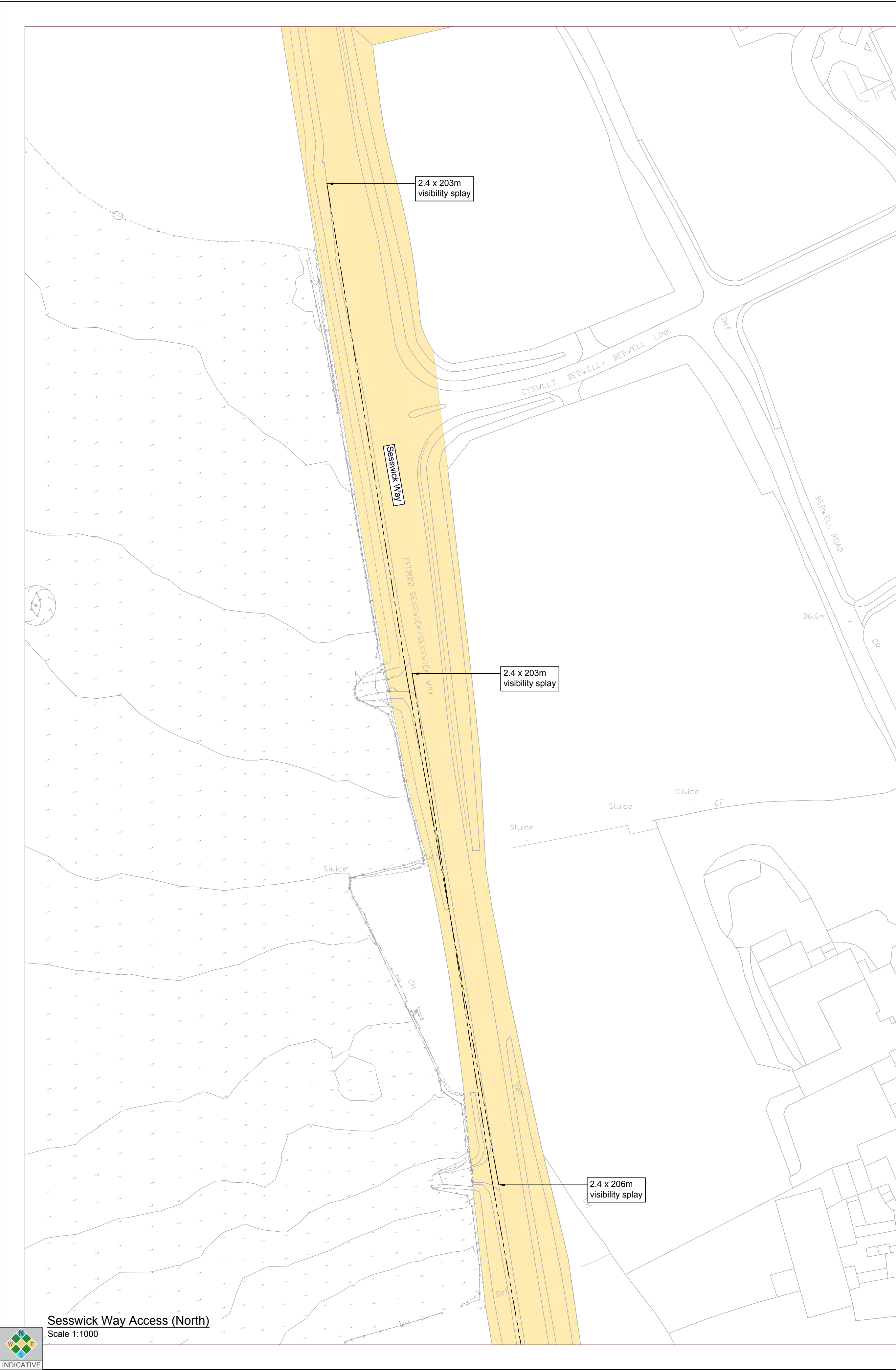
Notes:

- Do not scale from this drawing. All dimensions are in metres, unless stated otherwise.
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Key:

- Extent of highway maintainable at public expense
- Application red line boundary

A	13.07.20	Highway and application boundaries added.	OAS	MF
Rev	Date	Details	Drawn By	Checked By
COTSWOLD TRANSPORT PLANNING				
CLIENT: Low Carbon Farming 2 Ltd				
PROJECT: Commercial Glasshouse Cefn Road Wrexham				
TITLE: Cefn Road Access Appraisal, Bus Stop Locations and Site Access				
STATUS: INFORMATION				
SCALE @ A1: As shown	DATE: 04/06/20	DRAWN: OAS	CHECKED: MF	APPROVED: MF
JOB NO: CTP-20-537	DRAWING NO: SK02	REVISION: A		



Notes:

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Key:

Extent of highway maintainable at public expense

Rev	Date	Details	Drawn By	Checked By

CLIENT:
Low Carbon Farming 2 Ltd

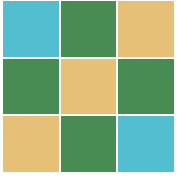
PROJECT:
**Commercial Glasshouse
Cefn Road
Wrexham**

TITLE:
**Sesswick Way Accesses
Appraisal**

STATUS:
INFORMATION

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
As shown	08/06/20	OAS	MF	MF

JOB NO:	DRAWING NO:	REVISION:
CTP-20-537	SK03	-



COTSWOLD
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Appendix F

ATC Data

Wrexham, Southern Site

Channel: Southbound

	Fri May 15	Sat May 16	Sun May 17	Mon May 18	Tue May 19	Wed May 20	Thu May 21	5-Day Ave.	7-Day Ave.
00:00	10	5	4	6	7	9	7	8	7
01:00	3	7	5	2	9	5	4	5	5
02:00	4	3	1	8	7	7	10	7	6
03:00	8	6	3	5	13	12	14	10	9
04:00	13	10	6	24	10	15	8	14	12
05:00	39	13	10	46	52	54	44	47	37
06:00	47	24	21	57	53	50	50	51	43
07:00	67	29	18	70	69	80	79	73	59
08:00	70	29	20	67	85	77	59	72	58
09:00	71	44	28	68	79	61	83	72	62
10:00	89	38	36	79	91	87	83	86	72
11:00	109	66	34	101	100	97	98	101	86
12:00	126	71	58	118	132	119	126	124	107
13:00	191	63	45	108	102	131	132	133	110
14:00	140	58	63	142	130	143	136	138	116
15:00	161	58	53	119	128	126	163	139	115
16:00	182	37	57	257	221	237	252	230	178
17:00	184	70	61	276	292	264	275	258	203
18:00	87	42	40	92	144	88	93	101	84
19:00	54	26	33	59	63	45	60	56	49
20:00	36	26	23	26	36	47	29	35	32
21:00	25	14	17	37	36	35	30	33	28
22:00	14	8	9	14	16	16	26	17	15
23:00	17	2	9	10	9	8	13	11	10
Total									
12H(7-19)	1477	605	513	1497	1573	1510	1579	1527	1251
16H(6-22)	1639	695	607	1676	1761	1687	1748	1702	1402
18H(6-24)	1670	705	625	1700	1786	1711	1787	1731	1426
24H(0-24)	1747	749	654	1791	1884	1813	1874	1822	1502
AM Peak	11:00 109	11:00 66	10:00 36	11:00 101	11:00 100	11:00 97	11:00 98	11:00 101	11:00 86
PM Peak	13:00 191	12:00 71	14:00 63	17:00 276	17:00 292	17:00 264	17:00 275	17:00 258	17:00 203

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Channel: Northbound

	Fri May 15	Sat May 16	Sun May 17	Mon May 18	Tue May 19	Wed May 20	Thu May 21	5-Day Ave.	7-Day Ave.
00:00	11	6	4	15	6	1	8	8	7
01:00	17	10	1	3	4	14	3	8	7
02:00	10	7	2	8	7	9	11	9	8
03:00	16	11	2	11	9	10	12	12	10
04:00	26	11	1	11	18	19	16	18	15
05:00	96	37	26	88	104	117	103	102	82
06:00	127	50	23	103	122	121	111	117	94
07:00	270	48	20	283	302	296	278	286	214
08:00	200	56	25	224	220	217	201	212	163
09:00	85	53	26	91	104	102	100	96	80
10:00	102	42	32	108	85	84	81	92	76
11:00	105	56	40	101	96	111	90	101	86
12:00	113	70	55	118	113	129	150	125	107
13:00	137	56	43	112	116	106	130	120	100
14:00	91	47	44	106	117	107	130	110	92
15:00	77	64	40	81	102	111	106	95	83
16:00	82	44	47	90	89	87	93	88	76
17:00	88	49	54	82	75	77	83	81	73
18:00	42	30	49	63	60	57	74	59	54
19:00	34	25	30	46	53	46	41	44	39
20:00	20	17	25	30	30	30	40	30	27
21:00	30	9	18	16	31	17	24	24	21
22:00	7	11	11	10	9	9	19	11	11
23:00	10	5	4	10	3	7	13	9	7
Total									
12H(7-19)	1392	615	475	1459	1479	1484	1516	1466	1203
16H(6-22)	1603	716	571	1654	1715	1698	1732	1680	1384
18H(6-24)	1620	732	586	1674	1727	1714	1764	1700	1402
24H(0-24)	1796	814	622	1810	1875	1884	1917	1856	1531
AM Peak	07:00 270	08:00 56	11:00 40	07:00 283	07:00 302	07:00 296	07:00 278	07:00 286	07:00 214
PM Peak	13:00 137	12:00 70	12:00 55	12:00 118	14:00 117	12:00 129	12:00 150	12:00 125	12:00 107

360 TSL Ltd

Channel: Total Flow

	Fri May 15	Sat May 16	Sun May 17	Mon May 18	Tue May 19	Wed May 20	Thu May 21	5-Day Ave.	7-Day Ave.
00:00	21	11	8	21	13	10	15	16	14
01:00	20	17	6	5	13	19	7	13	12
02:00	14	10	3	16	14	16	21	16	13
03:00	24	17	5	16	22	22	26	22	19
04:00	39	21	7	35	28	34	24	32	27
05:00	135	50	36	134	156	171	147	149	118
06:00	174	74	44	160	175	171	161	168	137
07:00	337	77	38	353	371	376	357	359	273
08:00	270	85	45	291	305	294	260	284	221
09:00	156	97	54	159	183	163	183	169	142
10:00	191	80	68	187	176	171	164	178	148
11:00	214	122	74	202	196	208	188	202	172
12:00	239	141	113	236	245	248	276	249	214
13:00	328	119	88	220	218	237	262	253	210
14:00	231	105	107	248	247	250	266	248	208
15:00	238	122	93	200	230	237	269	235	198
16:00	264	81	104	347	310	324	345	318	254
17:00	272	119	115	358	367	341	358	339	276
18:00	129	72	89	155	204	145	167	160	137
19:00	88	51	63	105	116	91	101	100	88
20:00	56	43	48	56	66	77	69	65	59
21:00	55	23	35	53	67	52	54	56	48
22:00	21	19	20	24	25	25	45	28	26
23:00	27	7	13	20	12	15	26	20	17
Total									
12H(7-19)	2869	1220	988	2956	3052	2994	3095	2993	2453
16H(6-22)	3242	1411	1178	3330	3476	3385	3480	3383	2786
18H(6-24)	3290	1437	1211	3374	3513	3425	3551	3431	2829
24H(0-24)	3543	1563	1276	3601	3759	3697	3791	3678	3033
AM Peak	07:00 337	11:00 122	11:00 74	07:00 353	07:00 371	07:00 376	07:00 357	07:00 359	07:00 273
PM Peak	13:00 328	12:00 141	17:00 115	17:00 358	17:00 367	17:00 341	17:00 358	17:00 339	17:00 276

360 TSL Ltd



Wrexham, Southern Site

	Total Volume	LIGHT	OGV1	OGV2	BUS
Fri 15 May	1747	1323	287	124	13
Sat 16 May	749	612	92	40	5
Sun 17 May	654	552	56	45	1
Mon 18 May	1791	1360	283	132	16
Tue 19 May	1884	1401	306	158	19
Wed 20 May	1813	1386	285	127	15
Thu 21 May	1874	1426	287	131	30
5 Day Ave.	1822	1379	290	134	19
7 Day Ave.	1502	1151	228	108	14

360 TSL Ltd

0

	Total Volume	LIGHT	OGV1	OGV2	BUS
Fri 15 May	1796	1421	254	102	19
Sat 16 May	814	670	102	39	3
Sun 17 May	622	545	58	19	0
Mon 18 May	1810	1401	293	98	18
Tue 19 May	1875	1448	284	128	15
Wed 20 May	1884	1453	301	110	20
Thu 21 May	1917	1470	300	120	27
5 Day Ave.	1856	1439	286	112	20
7 Day Ave.	1531	1201	227	88	15

360 TSL Ltd

0

	Total Volume	LIGHT	OGV1	OGV2	BUS
Fri 15 May	3543	2744	541	226	32
Sat 16 May	1563	1282	194	79	8
Sun 17 May	1276	1097	114	64	1
Mon 18 May	3601	2761	576	230	34
Tue 19 May	3759	2849	590	286	34
Wed 20 May	3697	2839	586	237	35
Thu 21 May	3791	2896	587	251	57
5 Day Ave.	3678	2818	576	246	38
7 Day Ave.	3033	2353	455	196	29

360 TSL Ltd

Wrexham, Southern Site

Channel: Southbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10Mph	Bin 2 10-<15	Bin 3 15-<20	Bin 4 20-<25	Bin 5 25-<30	Bin 6 30-<35	Bin 7 35-<40	Bin 8 40-<45	Bin 9 45-<50	Bin 10 50-<55	Bin 11 55-<60	Bin 12 =>60
Fri 15 May	1747	60.5	51.3	9.9	4	18	8	28	113	234	340	447	282	230	43	0
Sat 16 May	749	62.5	51.4	11.8	1	30	7	15	31	66	140	180	136	123	20	0
Sun 17 May	654	62.2	50.3	12.8	5	33	5	7	34	87	115	144	105	97	22	0
Mon 18 May	1791	58.9	50.0	9.8	5	19	13	38	163	243	372	438	300	167	33	0
Tue 19 May	1884	59.5	50.3	10.5	10	38	12	40	113	245	398	475	300	220	33	0
Wed 20 May	1813	59.8	50.5	10.4	6	30	18	43	109	246	374	408	323	221	35	0
Thu 21 May	1874	59.4	50.5	10.3	2	43	21	33	97	243	384	478	334	203	36	0
5 Day Ave.	1822	59.6	50.5	10.2	5	30	14	36	119	242	374	449	308	208	36	0
7 Day Ave.	1502	60.4	50.6	10.8	5	30	12	29	94	195	303	367	254	180	32	0

360 TSL Ltd

Channel: Northbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10Mph	Bin 2 10-<15	Bin 3 15-<20	Bin 4 20-<25	Bin 5 25-<30	Bin 6 30-<35	Bin 7 35-<40	Bin 8 40-<45	Bin 9 45-<50	Bin 10 50-<55	Bin 11 55-<60	Bin 12 =>60
Fri 15 May	1796	59.7	52.9	7.6	0	0	2	6	37	182	422	518	380	204	45	0
Sat 16 May	814	61.9	53.0	9.3	1	6	4	11	29	70	153	222	173	120	25	0
Sun 17 May	622	63.2	53.4	10.0	0	8	5	8	18	51	111	167	131	93	30	0
Mon 18 May	1810	59.5	52.6	7.7	0	5	4	11	34	173	428	564	357	198	36	0
Tue 19 May	1875	59.8	52.2	8.5	0	8	10	20	48	221	413	535	356	222	42	0
Wed 20 May	1884	61.3	53.6	8.1	0	5	4	14	43	150	356	575	419	271	47	0
Thu 21 May	1917	60.3	52.8	8.8	0	18	7	20	41	182	386	567	400	248	48	0
5 Day Ave.	1856	60.1	52.8	8.2	0	7	5	14	41	182	401	552	382	229	44	0
7 Day Ave.	1531	60.8	52.9	8.6	0	7	5	13	36	147	324	450	317	194	39	0

360 TSL Ltd

Channel: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10Mph	Bin 2 10-<15	Bin 3 15-<20	Bin 4 20-<25	Bin 5 25-<30	Bin 6 30-<35	Bin 7 35-<40	Bin 8 40-<45	Bin 9 45-<50	Bin 10 50-<55	Bin 11 55-<60	Bin 12 =>60
Fri 15 May	3543	59.9	52.1	8.8	4	18	10	34	150	416	762	965	662	434	88	0
Sat 16 May	1563	62.2	52.2	10.6	2	36	11	26	60	136	293	402	309	243	45	0
Sun 17 May	1276	62.7	51.8	11.7	5	41	10	15	52	138	226	311	236	190	52	0
Mon 18 May	3601	59.2	51.3	8.9	5	24	17	49	197	416	800	1002	657	365	69	0
Tue 19 May	3759	59.6	51.3	9.6	10	46	22	60	161	466	811	1010	656	442	75	0
Wed 20 May	3697	60.4	52.1	9.4	6	35	22	57	152	396	730	983	742	492	82	0
Thu 21 May	3791	59.8	51.7	9.7	2	61	28	53	138	425	770	1045	734	451	84	0
5 Day Ave.	3678	59.8	51.7	9.3	5	37	20	51	160	424	775	1001	690	437	80	0
7 Day Ave.	3033	60.5	51.8	9.8	5	37	17	42	130	342	627	817	571	374	71	0

360 TSL Ltd

Wrexham, Cefn Road

Channel: Westbound

	Fri May 15	Sat May 16	Sun May 17	Mon May 18	Tue May 19	Wed May 20	Thu May 21	5-Day Ave.	7-Day Ave.
00:00	6	2	2	2	17	21	11	11	9
01:00	4	8		3	5	1	2	3	4
02:00	7	4	3	2	2	4	4	4	4
03:00	5	8	4	1	7	3	5	4	5
04:00	17	16	7	14	21	21	19	18	16
05:00	66	28	20	38	53	46	47	50	43
06:00	107	84	47	94	107	103	93	101	91
07:00	98	35	23	86	84	89	102	92	74
08:00	67	31	12	68	60	73	73	68	55
09:00	75	49	28	83	83	68	75	77	66
10:00	87	67	43	100	87	87	77	88	78
11:00	112	82	45	91	80	92	93	94	85
12:00	142	109	61	145	129	157	153	145	128
13:00	244	83	50	153	169	150	145	172	142
14:00	207	95	57	216	223	205	215	213	174
15:00	186	68	65	195	191	182	198	190	155
16:00	184	66	76	267	257	262	278	250	199
17:00	204	104	75	243	317	239	260	253	206
18:00	150	109	111	146	273	152	144	173	155
19:00	86	53	49	79	87	70	87	82	73
20:00	39	30	37	47	47	45	57	47	43
21:00	38	15	12	30	34	33	40	35	29
22:00	42	11	8	69	67	61	54	59	45
23:00	21	2	8	20	17	21	18	19	15
Total									
12H(7-19)	1756	898	646	1793	1953	1756	1813	1814	1516
16H(6-22)	2026	1080	791	2043	2228	2007	2090	2079	1752
18H(6-24)	2089	1093	807	2132	2312	2089	2162	2157	1812
24H(0-24)	2194	1159	845	2192	2417	2185	2250	2248	1892
AM Peak	11:00 112	06:00 84	06:00 47	10:00 100	06:00 107	06:00 103	07:00 102	06:00 101	06:00 91
PM Peak	13:00 244	12:00 109	18:00 111	16:00 267	17:00 317	16:00 262	16:00 278	17:00 253	17:00 206

360 TSL Ltd

Channel: Eastbound

	Fri May 15	Sat May 16	Sun May 17	Mon May 18	Tue May 19	Wed May 20	Thu May 21	5-Day Ave.	7-Day Ave.
00:00	8	1	3	2	7	6	6	5	5
01:00	8	3	1	4	5	5	2	5	4
02:00	5	3	1	7	2	3	4	4	4
03:00	29	21	15	28	29	27	31	29	26
04:00	27	6	9	32	27	32	27	29	23
05:00	256	92	79	280	266	272	258	266	215
06:00	194	81	51	191	203	205	204	199	161
07:00	233	39	30	268	276	275	272	265	199
08:00	144	57	33	164	159	183	177	165	131
09:00	105	59	30	87	106	92	97	97	82
10:00	82	47	53	89	90	94	99	91	79
11:00	136	67	48	112	106	107	135	119	102
12:00	115	82	67	121	107	126	135	121	108
13:00	200	93	60	187	198	173	215	195	161
14:00	120	65	80	155	146	133	132	137	119
15:00	125	87	79	105	96	127	128	116	107
16:00	85	52	65	91	85	89	93	89	80
17:00	145	116	97	140	137	137	157	143	133
18:00	81	68	82	99	90	83	93	89	85
19:00	46	42	33	52	45	47	48	48	45
20:00	28	23	22	27	33	33	30	30	28
21:00	33	14	21	37	43	48	47	42	35
22:00	15	13	6	11	18	11	9	13	12
23:00	5	2	7	7	9	6	8	7	6
Total									
12H(7-19)	1571	832	724	1618	1596	1619	1733	1627	1385
16H(6-22)	1872	992	851	1925	1920	1952	2062	1946	1653
18H(6-24)	1892	1007	864	1943	1947	1969	2079	1966	1672
24H(0-24)	2225	1133	972	2296	2283	2314	2407	2305	1947
AM Peak	05:00 256	05:00 92	05:00 79	05:00 280	07:00 276	07:00 275	07:00 272	05:00 266	05:00 215
PM Peak	13:00 200	17:00 116	17:00 97	13:00 187	13:00 198	13:00 173	13:00 215	13:00 195	13:00 161

360 TSL Ltd

Channel: Total Flow

	Fri May 15	Sat May 16	Sun May 17	Mon May 18	Tue May 19	Wed May 20	Thu May 21	5-Day Ave.	7-Day Ave.
00:00	14	3	5	4	24	27	17	17	13
01:00	12	11	3	7	10	6	4	8	8
02:00	12	7	4	9	4	7	8	8	7
03:00	34	29	19	29	36	30	36	33	30
04:00	44	22	16	46	48	53	46	47	39
05:00	322	120	99	318	319	318	305	316	257
06:00	301	165	98	285	310	308	297	300	252
07:00	331	74	53	354	360	364	374	357	273
08:00	211	88	45	232	219	256	250	234	186
09:00	180	108	58	170	189	160	172	174	148
10:00	169	114	96	189	177	181	176	178	157
11:00	248	149	93	203	186	199	228	213	187
12:00	257	191	128	266	236	283	288	266	236
13:00	444	176	110	340	367	323	360	367	303
14:00	327	160	137	371	369	338	347	350	293
15:00	311	155	144	300	287	309	326	307	262
16:00	269	118	141	358	342	351	371	338	279
17:00	349	220	172	383	454	376	417	396	339
18:00	231	177	193	245	363	235	237	262	240
19:00	132	95	82	131	132	117	135	129	118
20:00	67	53	59	74	80	78	87	77	71
21:00	71	29	33	67	77	81	87	77	64
22:00	57	24	14	80	85	72	63	71	56
23:00	26	4	15	27	26	27	26	26	22
Total									
12H(7-19)	3327	1730	1370	3411	3549	3375	3546	3442	2901
16H(6-22)	3898	2072	1642	3968	4148	3959	4152	4025	3406
18H(6-24)	3981	2100	1671	4075	4259	4058	4241	4123	3484
24H(0-24)	4419	2292	1817	4488	4700	4499	4657	4553	3839
AM Peak	07:00 331	06:00 165	05:00 99	07:00 354	07:00 360	07:00 364	07:00 374	07:00 357	07:00 273
PM Peak	13:00 444	17:00 220	18:00 193	17:00 383	17:00 454	17:00 376	17:00 417	17:00 396	17:00 339

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Wrexham, Cefn Road

Channel: Westbound						Channel: Eastbound						Channel: Total Flow					
	Total Volume	LIGHT	OGV1	OGV2	BUS		Total Volume	LIGHT	OGV1	OGV2	BUS		Total Volume	LIGHT	OGV1	OGV2	BUS
Fri 15 May	2194	1940	209	14	31	Fri 15 May	2225	1909	262	18	36	Fri 15 May	4419	3849	471	32	67
Sat 16 May	1159	1061	80	3	15	Sat 16 May	1133	1017	100	2	14	Sat 16 May	2292	2078	180	5	29
Sun 17 May	845	774	58	5	8	Sun 17 May	972	886	74	1	11	Sun 17 May	1817	1660	132	6	19
Mon 18 May	2192	1964	192	19	17	Mon 18 May	2296	2009	256	11	20	Mon 18 May	4488	3973	448	30	37
Tue 19 May	2417	2177	199	18	23	Tue 19 May	2283	2018	229	15	21	Tue 19 May	4700	4195	428	33	44
Wed 20 May	2185	1945	199	20	21	Wed 20 May	2314	2038	235	13	28	Wed 20 May	4499	3983	434	33	49
Thu 21 May	2250	1988	206	36	20	Thu 21 May	2407	2116	252	11	28	Thu 21 May	4657	4104	458	47	48
5 Day Ave.	2248	2003	201	21	22	5 Day Ave.	2305	2018	247	14	27	5 Day Ave.	4553	4021	448	35	49
7 Day Ave.	1892	1693	163	16	19	7 Day Ave.	1947	1713	201	10	23	7 Day Ave.	3839	3406	364	27	42

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Wrexham, Cefn Road

Channel: Westbound

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10Mph	Bin 2 10-<15	Bin 3 15-<20	Bin 4 20-<25	Bin 5 25-<30	Bin 6 30-<35	Bin 7 35-<40	Bin 8 40-<45	Bin 9 45-<50	Bin 10 50-<55	Bin 11 55-<60	Bin 12 =>60
Fri 15 May	2194	47.7	40.8	6.8	1	12	4	43	266	765	613	303	124	41	22	0
Sat 16 May	1159	48.4	40.9	7.5	2	16	6	22	145	343	327	183	76	31	8	0
Sun 17 May	845	48.7	40.9	7.5	0	10	7	20	109	250	228	128	72	13	8	0
Mon 18 May	2192	46.4	40.0	6.4	2	8	4	73	303	779	613	290	89	18	13	0
Tue 19 May	2417	47.4	40.9	6.5	1	14	5	38	271	806	761	335	137	31	18	0
Wed 20 May	2185	47.7	41.0	6.6	1	20	11	31	237	678	691	348	127	36	5	0
Thu 21 May	2250	47.2	40.5	6.6	0	15	9	63	292	719	666	331	121	24	10	0
5 Day Ave.	2248	47.3	40.6	6.6	1	14	7	50	274	749	669	321	120	30	14	0
7 Day Ave.	1892	47.6	40.7	6.8	1	14	7	41	232	620	557	274	107	28	12	0

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Channel: Eastbound

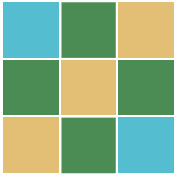
	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10Mph	Bin 2 10-<15	Bin 3 15-<20	Bin 4 20-<25	Bin 5 25-<30	Bin 6 30-<35	Bin 7 35-<40	Bin 8 40-<45	Bin 9 45-<50	Bin 10 50-<55	Bin 11 55-<60	Bin 12 =>60
Fri 15 May	2225	48.0	40.6	7.1	1	10	30	50	255	804	548	323	138	49	17	0
Sat 16 May	1133	49.3	41.2	7.9	0	14	19	20	145	311	307	171	105	30	11	0
Sun 17 May	972	50.2	41.4	8.9	0	22	20	21	115	256	234	154	91	41	18	0
Mon 18 May	2296	47.2	40.4	6.8	0	18	20	47	276	802	654	304	127	35	13	0
Tue 19 May	2283	47.6	40.6	7.0	0	20	32	60	222	772	673	313	141	34	16	0
Wed 20 May	2314	47.5	40.5	7.1	0	28	27	54	248	768	675	333	119	49	13	0
Thu 21 May	2407	47.2	40.3	6.9	0	23	24	49	299	829	672	339	128	27	17	0
5 Day Ave.	2305	47.5	40.5	7.0	0	20	27	52	260	795	644	322	131	39	15	0
7 Day Ave.	1947	48.1	40.7	7.4	0	19	25	43	223	649	538	277	121	38	15	0

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Channel: Total Flow

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <10Mph	Bin 2 10-<15	Bin 3 15-<20	Bin 4 20-<25	Bin 5 25-<30	Bin 6 30-<35	Bin 7 35-<40	Bin 8 40-<45	Bin 9 45-<50	Bin 10 50-<55	Bin 11 55-<60	Bin 12 =>60
Fri 15 May	4419	47.8	40.7	6.9	2	22	34	93	521	1569	1161	626	262	90	39	0
Sat 16 May	2292	48.8	41.1	7.7	2	30	25	42	290	654	634	354	181	61	19	0
Sun 17 May	1817	49.5	41.2	8.3	0	32	27	41	224	506	462	282	163	54	26	0
Mon 18 May	4488	46.8	40.2	6.6	2	26	24	120	579	1581	1267	594	216	53	26	0
Tue 19 May	4700	47.5	40.7	6.7	1	34	37	98	493	1578	1434	648	278	65	34	0
Wed 20 May	4499	47.6	40.7	6.9	1	48	38	85	485	1446	1366	681	246	85	18	0
Thu 21 May	4657	47.2	40.4	6.7	0	38	33	112	591	1548	1338	670	249	51	27	0
5 Day Ave.	4553	47.4	40.6	6.8	1	34	33	102	534	1544	1313	644	250	69	29	0
7 Day Ave.	3839	47.9	40.7	7.1	1	33	31	84	455	1269	1095	551	228	66	27	0

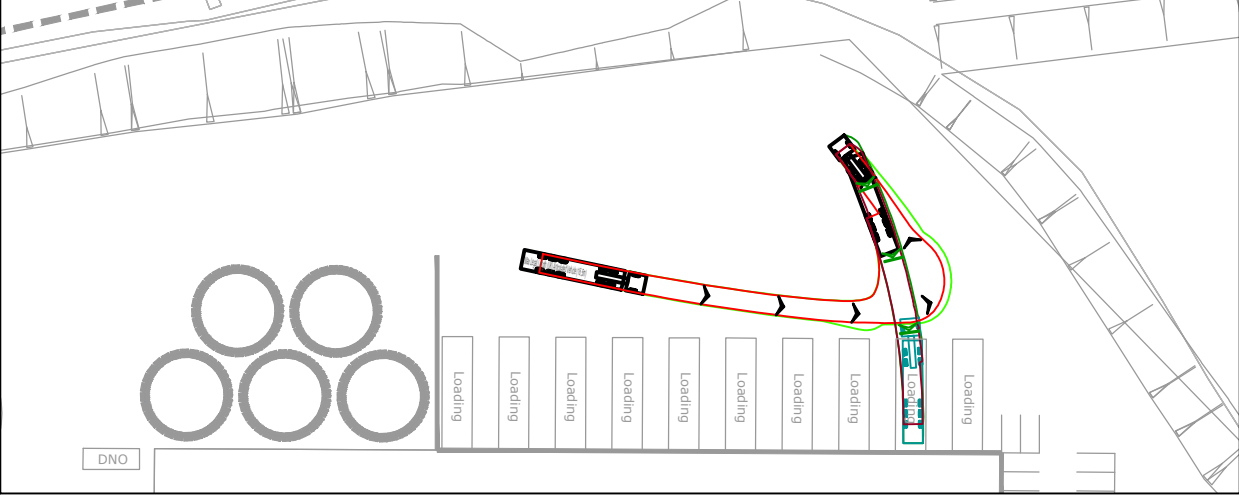
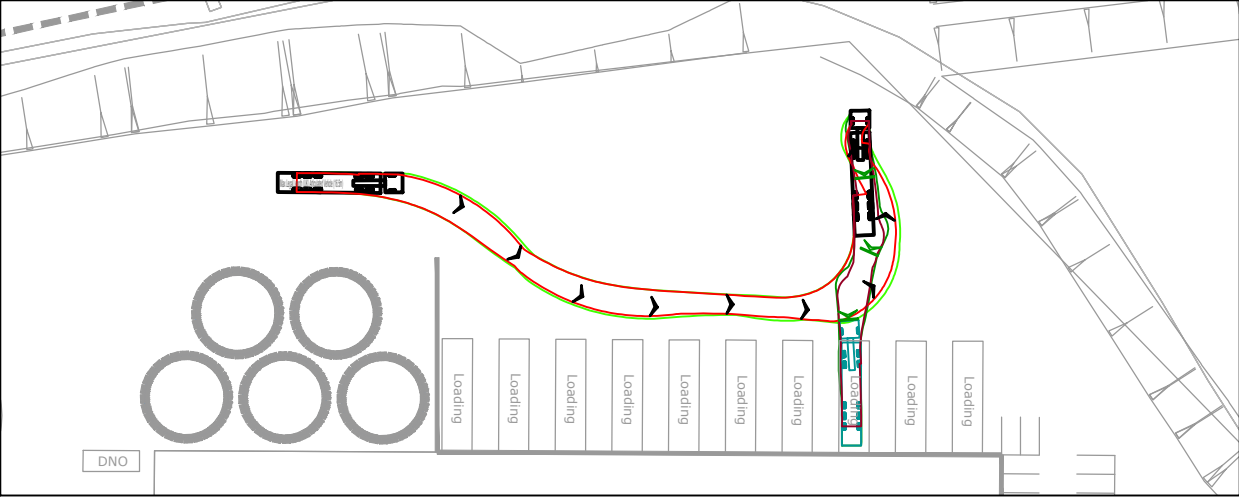
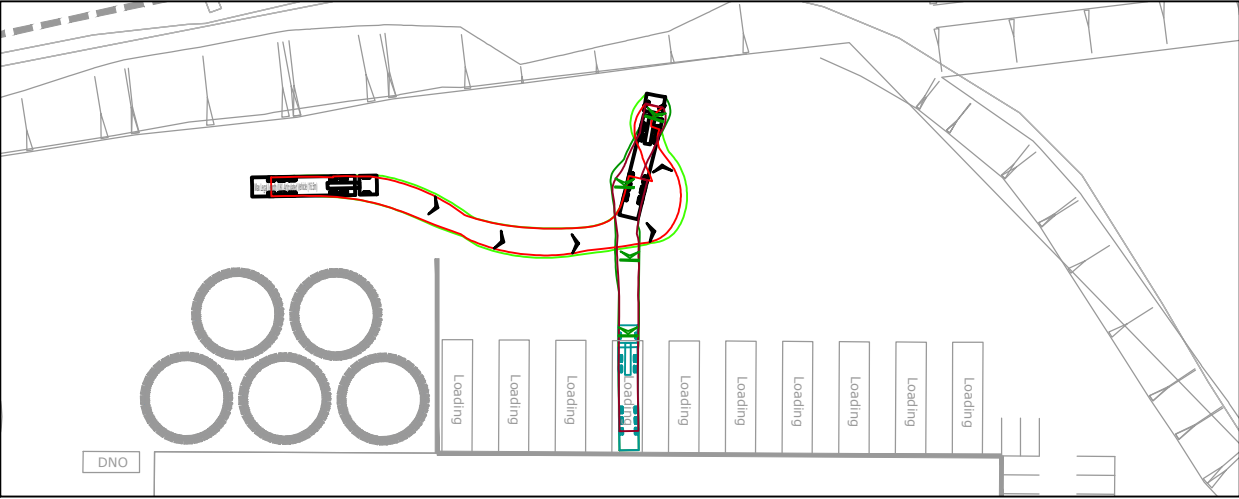
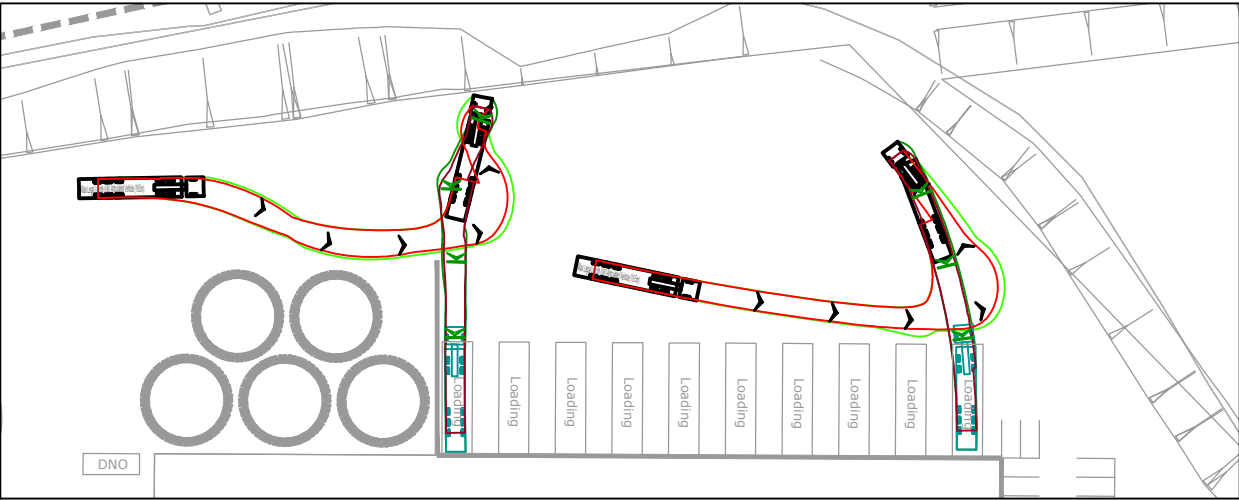
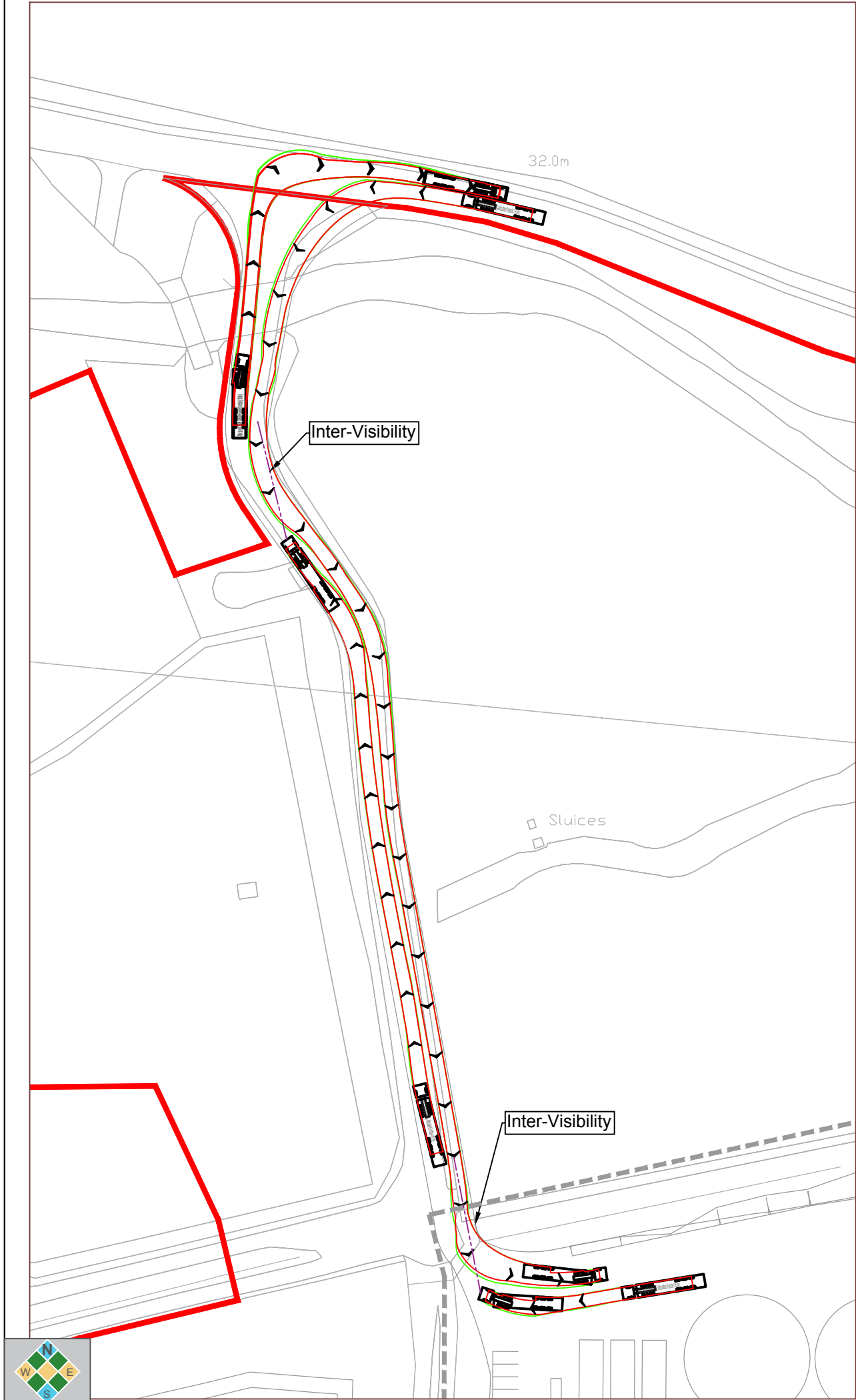
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Appendix G

Swept Path Analysis Drawings



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Notes:

1. Do not scale from this drawing. All dimensions are in metres, unless stated otherwise.
2. This drawing is based on the Architects layout received from LCF on 08 July 2020.
3. Ordnance Survey, (c) Crown Copyright 2020. All rights reserved. Licence number 100022432.
4. Drawing to be read in conjunction with all other drawings. Any discrepancies are to be reported to the engineer 5 working days in advance of undertaking any work.

Rev	Date	Details	Drawn by	Checked by
B	09.07.20	Updated Layout	OAS	MF
A	08.06.20	Updated Layout	BF	MF



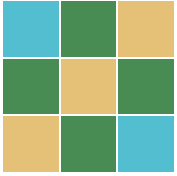
CLIENT:
Low Carbon Farming 2 Ltd

PROJECT:
Proposed Commercial
Glasshouse, Cefn Road,
Wrexham

TITLE:
Swept path Analysis -
Maximum Legal Articulated
Lorry

STATUS:
PLANNING

SCALE @ A3: 1:1000	DATE: 08.06.20	DRAWN: BF	CHECKED: MF	APPROVED: MF
JOB NO: CTP-20-537	DRAWING NO: SP01	REVISION: B		



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