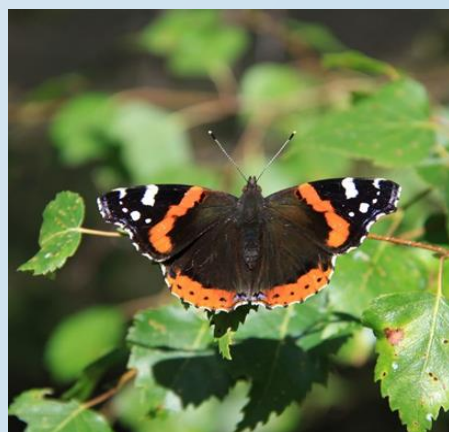




Mynydd Llanhilleth Wind Farm

Appendix 12A: Abnormal
Indivisible Load (AIL) Access
Study



August 2024

Report for

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1. Introduction

1.1 Introduction

- 1.1.1 WSP UK Ltd have been commissioned by Pennant Walters Limited ('the Applicant') to undertake an Abnormal Indivisible Load (AIL) access study for the delivery of AILs associated with Mynydd Llanhilleth Wind Farm, also referred to as 'the Proposed Development'.
- 1.1.2 The Proposed Development comprises of up to seven wind turbines and all infrastructure required to transmit the power generated by the turbines to the national grid network.

1.2 Purpose of Report

- 1.2.1 The purpose of this AIL access study is to provide the Applicant with information concerning the practicalities of delivering AILs between Swansea Port and the Proposed Development site's access point.
- 1.2.2 Though several AIL components (nacelle, hub, tower) will need to be delivered to the Site, as a worst-case scenario a transporter (rear steer) with a 65.5m turbine blade has been considered to assess the preferred AIL route. Swept Path Analysis (SPA) of the pinch points along the preferred AIL route have been included within this report.
- 1.2.3 In summary this report provides information on the following items:
- Transfer vehicle and AIL specifications;
 - Transfer routes considered within this assessment; and
 - Next steps.
- 1.2.4 This is a dynamic document and will continue to be updated as the project develops.

1.3 Study Approach

- 1.3.1 A desktop review was initially undertaken to identify the preferred AIL route from Swansea port to the Proposed Development. At this stage the carriageway of the M4 is considered to be acceptable for AIL vehicle movements, however for the remainder of the route both horizontal and vertical clearance for the Abnormal Load travel was considered. Aspects such as bridge headroom, road width, load, and weight restrictions which are known and considered to be a constraint to the abnormal load deliveries have been marked as pinch points.
- 1.3.2 On identified pinch points, detailed SPA has subsequently been performed to assess the impact of AIL deliveries on the existing road infrastructure and any third-party land. Based on the SPAs, potential mitigation works have been identified.

1.4 Report Structure

- 1.4.1 The scope of this study is structured as follows:
- **Chapter 2 Site Context and AIL Transfer Vehicles Specifications:** provides the Site location and context, identifies the proposed transport vehicle for the blade, along with details on axle spacing/loading;

- **Chapter 3 Legislative and Procedural Guidelines:** provides an overview of the relevant guidance and procedural documentation used to determine the category of AIL vehicle and respective requirements concerning notification procedures, speed limits and escorts;
- **Chapter 4 Route Option:** provides an outline of the port of entry and identified route along the strategic, regional, and local road network to the Proposed Development;
- **Chapter 5 Route Option Appraisal:** provides an assessment of the route option, identifying pinch points, constraints, and potential mitigation requirements;
- **Chapter 6 Management Strategy:** details the general arrangement measures that will be adhered to during the transfer of AILs; and
- **Chapter 7 Summary:** provides a summary of the route option identified.

1.4.2 All information presented within this assessment, including the AIL and vehicle specifications, is based on the best available information at this time and may be subject to change following the appointment of a haulage contractor. This assessment does however represent a 'worst case' scenario, meaning any change to the AIL/vehicle specification should not cause any issues at a later stage.

1.4.3 Any intended changes will be forwarded to the relevant highway authorities for consideration.

2. Site Context and AIL Transfer Vehicles Specifications

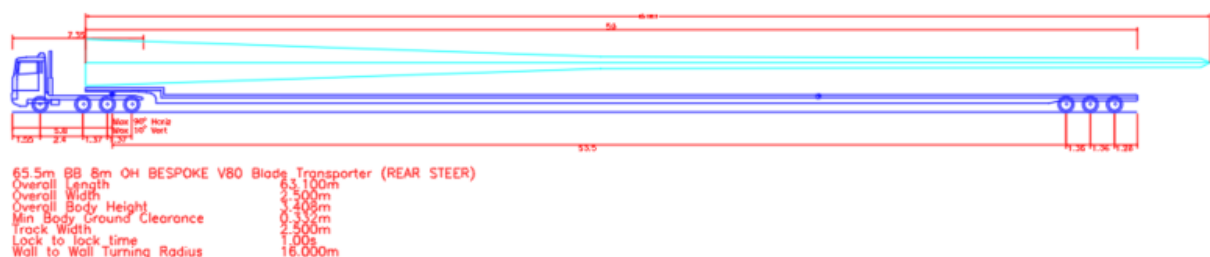
2.1 Site Context

- 2.1.1 The Site lies between the Blaenau Gwent County Borough Council (BGCBC) and Torfaen County Borough Council (TCBC) administrative areas, and its boundary is located approximately 1km from the western edge of Pontnewynydd (located 493931.43 m Easting, and 5728565.96 m Northing). The eastern section of the Site is separated from the town's western boundary by approximately a 1km buffer of mature trees. The villages of Brynithel and Llanhilleth are located approximately 0.75km to the west of Site at its closest point, at an elevation approximately 329m lower than the Site.
- 2.1.2 The Site is surrounded to the west and south by the A467 and to the east by the A4043. The Site is accessed from an existing unnamed adopted road which routes between Farm Road and Blaen-y-Cwm Road. The A4043 connects the Site to the strategic road network at the A465 via the B4246, and the M4 to south via the A4042.
- 2.1.3 The Proposed Development is to construct and operate a wind farm of up to seven turbines and associated infrastructure including access tracks, foundation, cabling, substation and connection to grid distribution system.

2.2 AIL Transfer Vehicles Specifications

- 2.2.1 The type of transfer vehicle being considered in this assessment is a 65.5m blade transporter with rear steer. The vehicle configuration used to transfer the blade will ultimately be decided by the appointed haulier, however, the configurations selected are considered to be a robust representation for the purposes of this assessment.
- 2.2.2 Confirmation/guidance would be sought from the appointed haulier during a trial run. **Figure 2.1** illustrates the dimensions of vehicle with load and **Table 2.1** summarises the vehicle specification.

Figure 2.1 Blade Transporter Vehicle Specification



Source: Autodesk Vehicle Tracking, 2019

Table 2.1 Blade Transporter Details

Parameter	Measurement
Overall Length	63.10m
Overall Width	2.50m
Overall Body Height	3.408m
Min Body Ground Clearance	0.332m
Track Width	2.50m
Lock to lock time	1.00s
Wall to Wall Turning Radius	16.00m
Tractor	
Type:	Tractor (with driver-controlled steering)
Body style:	Articulated Vehicle Tractor (Medium)
Classification	Autodesk
Datum:	Front Primary Axle
Front Axle(s):	1 Ackerman (axles fixed, wheels turn)
Primary Front Axle Offset:	0.000m
Effective Front Axle Offset:	0.000m (Auto Calculated)
Maximum Wheel Angle:	45.000deg (Any Front Wheel)
Status:	Active Non Self-Steered
Track Width:	2.500m
Total Wheels:	2 (positioned at the ends of the axle)
Tyre Width:	0.250m (Auto Calculated - proportion of Track Width)
Tyre Diameter:	0.875m (Auto Calculated - proportion of Track Width)
Rear Axle(s):	3 Fixed (All axles identical)
Primary Rear Axle Offset:	2.400m (Innermost Axle behind Front Primary Axle)
Effective Rear Axle Offset:	3.770m (Auto Calculated)
Maximum Wheel Angle:	Unlimited
Rear Axle Spacing:	1.370m

Parameter	Measurement
Status:	Active Non Self-Steered
Track Width:	2.500m
Total Wheels:	4 (positioned at the ends of the axle)
Tyre Width:	0.250m (Auto Calculated - proportion of Track Width)
Tyre Diameter:	0.875m (Auto Calculated - proportion of Track Width)
Steering: Front Axle(s):	
Minimum Wall / Wall Turning Radius:	16.000m (based upon body only)
Calculated Maximum Wheel Angle:	16.500deg
Lock to Lock Time (Fwd/Rev):	1.0sec / 1.0sec Driver / Pilot
Driver Offset Longitudinally:	-0.050m (in front of Front Primary Axle)
Driver / Pilot Offset Laterally:	-0.600m (Right of Centreline)
Driver Height:	2.600m (Above ground level)
Front coupling:	None
Rear coupling:	Generic
Coupling Offset:	4.050m (behind Front Primary Axle)
Coupling Height:	1.000m
Capability:	Can tow or be towed Max.
Horizontal Articulation Angle:	90.000deg
Max. Vertical Articulation Angle:	10.000deg
Blade Transporter (REAR STEER) Trailer	
Type:	Trailer (no driver-controlled steering)
Body style:	Low Loader Trailer
Classification	(Unspecified)
Datum:	Front coupling
Maximum Articulation Angle:	90deg (to previous unit)
Front Axle(s):	None
Rear Axle(s):	3 Tandem bogies (multiple pivots) (All axles identical)
Primary Rear Axle Offset:	62.000m (Innermost Axle behind Front coupling)

Parameter	Measurement
Effective Rear Axle Offset:	64.720m (Auto Calculated)
Maximum Wheel Angle:	30.000deg (Any Rear Wheel)
Rear Axle Spacing:	1.360m
Linkage:	Rear axles linked to front axles Basis
Angle of rear wheels	
Rule 1:	Forwards and reverse from 0.00deg, 100.00 based upon Straights
Status:	Active Non Self-Steered
Track Width:	2.500m
Total Wheels:	4 (positioned at the ends of the axle)
Tyre Width:	0.250m (Auto Calculated - proportion of Track Width)
Tyre Diameter:	0.875m (Auto Calculated - proportion of Track Width)
Front coupling:	Generic
Coupling Offset:	0.000m (in front of Front coupling)
Coupling Height:	0.438m (Auto Calculated - proportion of Tyre Diameter)
Capability:	Can tow or be towed Max. Horizontal
Articulation Angle:	90.000deg
Max. Vertical Articulation Angle:	10.000deg
Rear coupling	Generic
Coupling Offset:	48.100m (behind Front coupling)
Coupling Height:	0.875m (Auto Calculated - proportion of Tyre Diameter)
Capability:	Can tow or be towed Max. Horizontal Articulation
Angle:	90.000deg
Max. Vertical Articulation Angle:	10.000deg

3. Legislative and Procedural Guidelines

3.1 Introduction

- 3.1.1 An abnormal indivisible load is a type of load that cannot be divided into two or more loads for transportation by road. The vehicle and its load is classed as an abnormal load when it has:
- A weight of more than 44,000kg;
 - An axle load of more than 10,000kg for a single non-driving axle and 11,500kg for a single driving axle;
 - A width of more than 2.9 metres; and
 - A rigid length of more than 18.65 metres.
- 3.1.2 The Road Vehicles (Construction & Use) Regulations 1986 (C&U) describes the different types and classification of permitted vehicles for use on the road, for example motor cars, motorbikes, buses, lorries, mobile cranes, and tracked vehicles. It also states the maximum dimensions for each type of vehicle, its gross weight, number of axles, braking system, type of tyres, maximum speed, exhaust system and mirrors.
- 3.1.3 The Road Vehicles (Authorised Weight) Regulations 1998 (AW) details the imposed maximum weight (gross and per axle) of different types of vehicles relating to the number of axles within each category of vehicle.
- 3.1.4 Vehicles not conforming to the Regulations specified above are subject to those outlined within Road Vehicles (Authorisation of Special Types) (General) Order 2003 (STGO). It specifies when the Police, Roads Authority or Secretary of State is to be notified of an intended vehicle movement, and the number of days' notice required before the movement takes place.

3.2 Special Types General Order (STGO) – Abnormal Indivisible Load Regulations

- 3.2.1 An AIL transport vehicle which does not comply with the Road Vehicles (Authorisation of Special Types) (General) Order 2003 (STGO) would require a special order issued by:
- South Wales Trunk Road Agent or National Highways on abnormal loads not covered by C&U and STGO; or
 - the Vehicle Certification Agency (VCA) on special vehicles and divisible loads outside the scope of C&U and STGO.
- 3.2.2 In addition to the above, hauliers are generally advised to inform statutory authorities if total vehicle heights are likely to exceed 5.0m (although it should be noted that there is no legal height restriction).
- 3.2.3 STGO vehicles are further categorised into three weight categories, as follows:
- Category 1 - Maximum Gross Weight: 50,000 kg, C&U Regulation axle limit (46,000 kg if the combination has less than 6 axles and does not comply in all other respects with the Authorised Weight Regulations);
 - Category 2 - Maximum Gross Weight: 80,000 kg, 12,500 kg axle limit; and

- Category 3 - Maximum Gross Weight: 150,000 kg, 16,000 kg axle limit.

3.2.4 For all categories, the following advice is provided with regards to width:

- A vehicle, locomotive or trailer may be up to 3.0m wide and subject to certain qualifications, this limit may be exceeded if it is necessary for the safe carriage of the load;
- Loads wider than 5m can only be conveyed if authorised by special order (the VR1 procedure under STGO). The VR1 must be carried on the vehicle and at least 10 days notification is required prior to the movement date; and
- The load cannot exceed 6.1m width under STGO Regulations.

3.2.5 For all categories, the following advice is provided with regards to length:

- The overall length of the vehicle(s) and load may be up to 30m, or greater if authorised by special order from the Secretary of State (SOS). In any combination of vehicles on which a load rests, including any articulated vehicle, the 30m does not include the length of the drawing vehicle; and
- An articulated vehicle or trailer, which is abnormal only in respect of length for carrying indivisible loads of exceptional length, can operate under normal C&U Regulations.

3.2.6 With regards to speeds, those that apply to each of the weight categories are set out in **Table 3.1**.

Table 3.1 Speed Restrictions

	Motorways	Dual Carriageways	Other
Category 1	60mph	50mph	40mph
Category 2	40mph	35mph	35mph
Category 3	40mph	35mph	30mph

Source: Drivers and Vehicle Standards Agency, 2018¹

3.2.7 It should be noted that although the speeds referenced above are the legal limits, the actual achievable speed of the vehicle configuration may be lower.

3.3 Welsh Government Procedure and Advice Guidance (PAG)

3.3.1 The Welsh Government Procedure and Advice Guidance (PAG) – ‘Pulling Together’ Best Practice for Transporting Abnormal Loads in Wales, defines the statutory process for planning and organising safe and effective abnormal load movements in agreement with all relevant authorities and organisations. **Table 3.2** and **Table 3.3** provide the abnormal load legal categorisation and the actions required depending on the vehicle and load width, length and weight. The highlighted row and column in the following tables represents the category of the proposed AIL delivery.

¹ Drivers and Vehicles Standards Agency, 2018. Special types enforcement guide (Online) Available at: <https://www.gov.uk/government/publications/special-types-enforcement-guide/special-types-enforcement-guide> (Accessed September 2024).

Table 3.2 Abnormal load legal category by size/weight combination

Gross weight	Axle weight	Load Dimensions				
		W ≤2.9m L ≤18.65m	W >2.9m L >18.65m	W >4.3m L >27.4m	W >5m L >27.4m	W >6.1m L >30m
≤44,000kg	≤11,500kg	C&U	C&U	STGO Category 1	STGO Category 1	Special Order
>44,000kg	≤11,500kg	STGO Category 1	STGO Category 1	STGO Category 1	STGO Category 1	Special Order
>50,000kg	>11,500	STGO Category 2	STGO Category 2	STGO Category 2	STGO Category 2	Special Order
>80,000kg	>12,500	STGO Category 3	STGO Category 3	STGO Category 3	STGO Category 3	Special Order
>150,000kg	>16,500kg	Special Order	Special Order	Special Order	Special Order	Special Order

Key: = Abnormal load legislation

Table 3.3 Pre-journey notification requirements by abnormal load category

Gross weight	Axle weight	Load Dimensions				
		W ≤2.9m L ≤18.65m	W >2.9m L >18.65m	W >4.3m L >27.4m	W >5m L >27.4m	W >6.1m L >30m
≤44,000kg	≤11,500kg	N/A	Police – 2d			
>44,000kg	≤11,500kg		Police – 2d HA&BO – 2d		Police – 2d HA&BO – 2d NH – 2w	
>50,000kg	>11,500		Police – 2d HA&BO – 2d			
>80,000kg	>12,500		Police – 2d HA&BO – 5d		Police – 2d HA&BO – 5d NH – 2w	
>150,000kg	>16,500kg					Police – 5d HA&BO – 5d NH – 10w

Key: = Abnormal Load legislation = VR1 form notice = C&U
 = STGO C1 = STGO C2 = STGO C3 = Special Order

HA&BO = Highway Authority and other Bridge Owners NH = National Highways

3.3.2 **Table 3.2** and **Table 3.3** shows that the proposed AIL delivery will require Special Order and will need to comply with pre-journey notification requirements.

Special Orders

- 3.3.3 To apply for a Vehicle Special Orders (VSO), the following information will need to be supplied to the Department for Transport (DfT):
- Name and address of person/organisation making the application;
 - Details of persons/organisations who will be using the vehicles, if different from the previous;
 - The number of vehicles involved;
 - Type of vehicles involved, their make, model, registration, and/or chassis (serial) numbers of motor vehicles or trailers. These will be listed on any order issued;
 - Details of the vehicles e.g. number of axles, individual axle weights, and gross vehicle weights (both in kg), plus dimensions (in m);
 - In the case of vehicle combinations, overall weights (in kg) and dimensions (in m); and
 - Details of the C&U Regulations with which the vehicles do not comply and the reasons why they cannot comply: The Regulations are specified on the VSO, and it should be made clear that failure to comply with non-specified Regulations or supplying incorrect data would invalidate the VSO.
- 3.3.4 On receipt of the application, the Vehicle Certification Agency (VCA) will evaluate the application and contact the applicant should further information be required. Various organisations including the Police, Local Authorities, and other interested parties, both within and outside of the DfT may be consulted; especially in respect of the conditions to be imposed. Following receipt of all information, and assuming that there are no technical reasons or objections from any of the parties consulted, the VSO will be prepared and dispatched by email within 10 working days.
- 3.3.5 VSOs are issued for varying periods of time at the discretion of the DfT. Typically, they are issued for a period of up to five years.
- The following sets out the speed limits of VSO loads:
- Articulated vehicles weighing between 150 and 250 tonnes: 25 mph;
 - Draw-bar Trailer vehicles weighing between 150 and 250 tonnes: 20 mph; and
 - Girder frame trailers: 12 mph.

Notification Requirements

- 3.3.6 The pre-journey notification requirement is five days prior notice to the Police, Highway Authorities and Bridge Owners such as Network Rail, whereas it is ten weeks to National Highways.
- 3.3.7 The Highway Authority South Wales Trunk Road Agent preferred method of receiving notifications is on the Electronic Service Delivery for Abnormal Loads (ESDAL) website².
- 3.3.8 Gwent Police, South Wales Police and Dyfed Powys Police are the police forces to be notified before the journey is made.

² Traffic Wales (2022). SWTRA street works and abnormal loads | Traffic Wales. (Online) Available at: <https://traffic.wales/swtra-street-works-and-abnormal-loads?msclkid=04e89b78add511ecac1b83cef40903fa> (Accessed September 2024).

3.4 Guidance on the movement of Abnormal Indivisible Loads (ACPO 2010)

- 3.4.1 Guidance on the movement of Abnormal Indivisible Loads (ACPO 2010) has been issued by the Association of Chief Police Officer (ACPO) of England, Wales & Northern Ireland and sets the general rules for escorting abnormal loads on roads in England, Wales and Northern Ireland.
- 3.4.2 The purpose of this document is to assist individual Constabularies concerning the movement of abnormal loads.
- 3.4.3 Section 2.14 of the ACPO (2010) states that:
- “An escort or escort vehicle is not defined in legislation and there is no legal requirement for any abnormal loads to be escorted. There is however a requirement for loads of certain dimensions to have an attendant. SOS (2003) permits the attendant to be in an accompanying vehicle, which may for practical purposes be considered an ‘Escort Vehicle’”.*
- 3.4.4 Section 2.16 of the ACPO (2010) lists the dimensions of vehicles that are currently self or privately escorted as follows:
- Motorways:
 - ▶ Width over 4.6m wide;
 - ▶ Weight over 130 tonnes; and
 - ▶ Length - no overall policy (load, route and dimensions considered).
 - All other roads:
 - ▶ Width over 4.1m wide;
 - ▶ Weight over 100tonnes; and
 - ▶ Length over 27.4m rigid length.
- 3.4.5 These dimensions are a general guide and police officers retain the right to vary them as considered necessary.
- 3.4.6 Where there is a requirement to stop or control traffic for the purposes of undertaking a specific manoeuvre, Sections 2.21 and 2.22 of the ACPO (2010) state:
- “An escort driver or any other person or attendant to the abnormal load does not have any legislative powers to stop and control other road users. A Police authority will not accredit an escort driver or any other person with powers to stop and control traffic to facilitate the movement of an abnormal load.*
- The appointed haulier will, therefore, confirm the above with all relevant Police Constabularies prior to transfer.”*
- 3.4.7 In accordance with the above, where the stopping of traffic or other road is required, a Police escort will be utilised. In all other instances, self/private escort will be utilised.

4. Route Options

4.1 Introduction

- 4.1.1 This section describes the approach undertaken to identify the route to transport wind turbine blades from Swansea Docks (the port of entry) to the Proposed Development. The preferred route has been assessed against the type of road, horizontal alignment, settlement patterns, and available height and weight restrictions in order to identify pinch points.
- 4.1.2 A 'pinch point' is defined as a location where constraints relating to each of the design characteristics referenced below are likely to prevent or significantly impede abnormal load access.
- Horizontal road alignment;
 - Vertical road alignment; and
 - Weight/height restrictions.

4.2 Assessment Approach

- 4.2.1 Potential AIL delivery routes to the Proposed Development were initially identified through discussion with the Applicant and desktop analysis of the highway network between Swansea Docks and the Proposed Development.
- 4.2.2 The desktop assessment has been undertaken using Ordnance Survey (OS) maps, Google Earth Pro, Google Street View and Google Maps and has considered road type, horizontal and vertical alignment, settlement patterns and available height and weight restrictions.
- 4.2.3 Preferred routes were selected based on the consideration of the above, in addition to the likelihood of upgrade works and third-party land being required.

4.3 Ports of Entry

- 4.3.1 Best practice guidelines set by South Wales Trunk Road Agent and National Highways state that, where possible, the nearest port to the proposed development should be used when investigating the transportation of AILs.
- 4.3.2 The port of Swansea will be used for the delivery of the AILs. The Port of Swansea is one of South Wales's major ports and is well connected to the M4.
- 4.3.3 Newport has not been considered as a possible port of entry as this port doesn't have the capability to handle wind farm related abnormal loads. The seaport of Swansea was identified as appropriate as it has been frequently used for the delivery of wind turbine components in this region, including for developments such as Pant y Wal Wind Farm

4.4 Preferred Route Identification

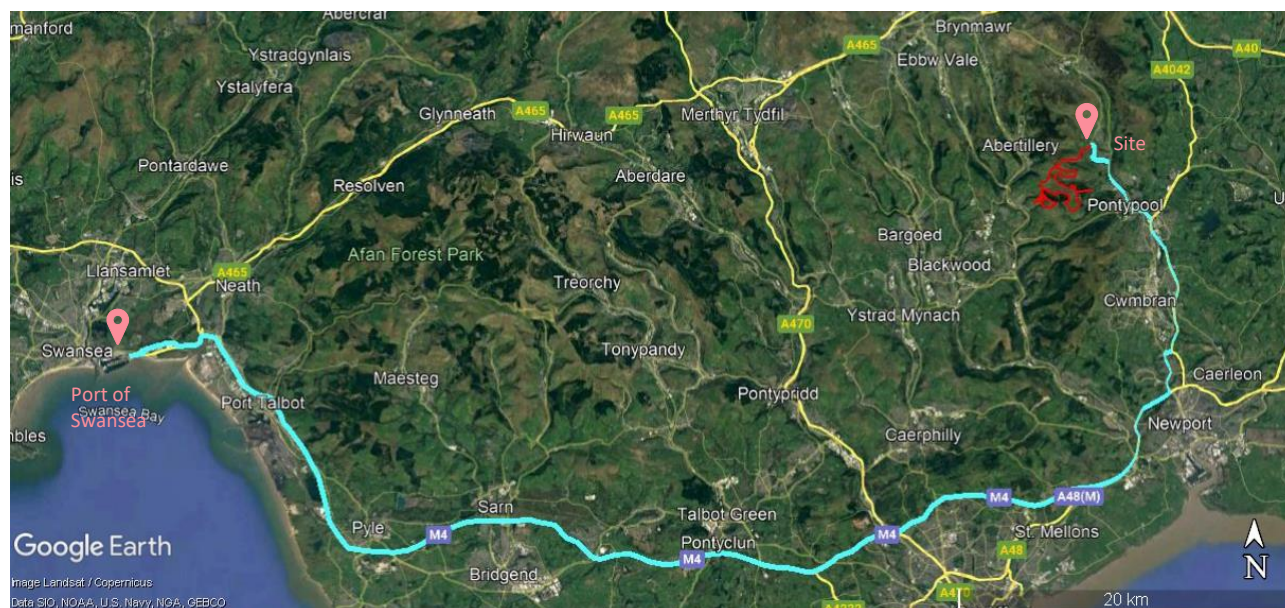
- 4.4.1 The preferred route from the Port of Swansea and the SRN has been identified using Ordnance Survey (OS) maps, Google Earth Pro, Google Street View and Google Maps.

4.5 Preferred Route Option

4.5.1 **Figure 4.1** illustrates the preferred route option to the Proposed Development that has been considered as part of this assessment. One preferred option has been identified for the transportation of the wind turbine blades. The route is as follows:

- Preferred Route Option – Routing from the Port of Swansea, accessing the Proposed Development via M4 - A4051 - A4042 - A4042 Turnpike Road - A472 - A4043 – B4246 – Farm Road – Unnamed Adopted Road - Site.

Figure 4.1 AIL Delivery Route



4.6 Local Road Network (LRN)

Unnamed Adopted Road between Farm Road and Blaen-Y-Cwn Road

4.6.1 An adopted road routes between Farm Road and Blaen-Y-Cwn Road providing a link between Talywain and the villages of Llanhilleth, Aberbeeg and Bryntihel. The adopted road is surfaced and constrained in nature with road widths which vary between approximately 3 – 5 metres. The horizontal alignment is constrained in various locations where trees/vegetation exist close to the carriageway edge and/or where tight bends are provided. As the adopted road rises towards higher ground a gated cattle grid is provided within the carriageway.

Blaen-Y-Cwn Road

4.6.2 Blaen – Y – Cwn Road is an adopted road which routes between St Illtyd and Cefn Crib Road. The road is located within a rural area, is surfaced and road widths are between 4.5 to 7 metres. Typically, farmland abuts the carriageway on the western side of the road and trees abut the carriageway on the eastern side.

Farm Road

- 4.6.3 Farm Road is a single carriageway road which routes between the B4246 at Talywain and British Road. The road is rural in nature with verges and vegetation along both sides of the carriageway. No streetlighting, road centreline or footways are provided.

B4246

- 4.6.4 The B4246 is a single-carriageway road and provides access to the Site. The B4246 routes from a T-Junction near the mid length of the A4043 (Broad Street) connecting directly to the B4246 (Union Street). The B4246 travels north-west from this junction on a slight incline onto Foundry Road to Lodge Road, to Church Road, to Commercial Road, the Site access point is at the crossroads of Commercial Road, Pysgah Road, Albert Road, and Farm Road. Along the B4246 the speed limit is 30mph in the vicinity of the existing Site access onto Farm Road.
- 4.6.5 Footways are provided on both sides of the carriageway from the A4043/B4246 junction. Along the B4246 there is regular street lighting and pedestrian crossings with tactile paving.

A4043

- 4.6.6 The A4043 is a single-carriageway road within the study area. The A4043 has a north-west/south-east orientation, and it passes through multiple settlements to the north of the Site including Cwmavon, Blaenavon, and Govilon. It forms a roundabout junction with the A472 at its southern extent and then heads east to another roundabout connecting with the A4042 which in turn connects to the M4 to the south. This is a key road for accessing the A465 to north and M4 to the south. The A4043 operates under the national speed limit. Routing north of the Site the speed limit varies between 30mph/40mph.
- 4.6.7 There are footways and street lighting provided on the A4043 in the vicinity of the B4246.

4.7 Strategic road network

- 4.7.1 The Strategic Road Network (SRN) comprises the routes of national strategic importance (motorways and trunk roads), which are operated and maintained by South Wales Trunk Road Agency in the vicinity of the Site.
- 4.7.2 The A465 and M4 are the strategic roads in the vicinity of the Site. The A4043 via the B4246 and A4042 via the A4043/A472 provide a route from the Site to the A465 (north) and M4 (south). The A465 runs between Llandarcy, Swansea Bay (M4 junction 43) and Hereford, England. The M4 is a long-distance route between Swansea and London. These routes provide a route from the Site to major settlements and Swansea seaport.

5. Route Appraisal

5.1 Introduction

- 5.1.1 The following section provides further detail on the preferred route option. This includes identification of the location, obstacle and potential mitigation measures required for the AIL transfer vehicle to safely manoeuvre between the port of origin to the accesses to the proposed development for AILs. Supporting photographic evidence is included within **Annex A**.
- 5.1.2 For the purpose of this assessment, it has been assumed that the AIL would straddle both running lanes on dual carriageway sections.
- 5.1.3 Due to the size and nature of the M4, it is assumed that there are no constraints to impede AILs on the section of the haulage route between Swansea port and the M4 (Newport). Therefore, the route assessment commences from M4 Junction 26.

5.2 Route Appraisal

- 5.2.1 Preferred Route: Swansea Docks M4 - A4051 - A4042 - A4042 Turnpike Road - A472 - A4043 – B4246 – Farm Road – Unnamed Adopted Road - Site.
- 5.2.2 Junction 42 of the M4 has not been included within this assessment as the access slip road onto the M4 eastbound carriageway appears to have been improved and is considered to be acceptable to accommodate the worst case AIL vehicle arrangement. Once a final wind turbine option and blade size is selected, a trial run will identify any outstanding issues at this location.

Table 5.1 Route Appraisal

Pinch Point No.	Direction of Travel	Location	Photo Set (Ref No)	Highway Authority	Issue	Comment
1	Left turn	M4 Junction 26	Photograph 1	Newport	M4 bridge abutment constraints	SPA recommended
2	Right turn	A4051 Malpas Road/ A4051 Ffordd Cwmbrân Road/ Newport Road/A4042	Photograph 2	Torfaen	Central island, splitter island and street furniture constraint	SPA recommended
3	Left turn	A4042/A4042/A4042	Photograph 3	Torfaen	Central island, splitter island and street furniture constraint	SPA recommended
4	Left turn and right turn(roundabout)	A4042/Newport Road/Llanfdechfa Way/Turnpike Road/Crown Road Roundabout	Photograph 4	Torfaen	Central island, splitter island and street furniture constraint	SPA recommended

Pinch Point No.	Direction of Travel	Location	Photo Set (Ref No)	Highway Authority	Issue	Comment
5	Straight ahead	A4042 Turnpike Road/ Croesyceiliog Bypass/ Caerleon Road Roundabout	Photograph 5	Torfaen	Central island, splitter island and street furniture constraint	SPA recommended
6	Straight ahead	A4042/The Herbert Road/ Croesyceiliog Bypass Roundabout	Photograph 6	Torfaen	Central island, splitter island and street furniture constraint	SPA recommended
7	Straight ahead	A4042/A4051/A4042/ Newport Road Roundabout	Photograph 7	Torfaen	Central island, splitter island and street furniture constraint	SPA recommended
8	Left turn	A4042/A472/ A4042 Roundabout	Photograph 8	Torfaen	Central island, splitter island and street furniture constraint	SPA recommended
9	Right Turn	A472/A472/ A4043 Roundabout	Photograph 9	Torfaen	Central island, splitter island and street furniture constraint	SPA recommended
10	Straight ahead	A4043/highstreet/A 4043 Roundabout	Photograph 10	Torfaen	Existing street furniture constraint, Central Island, several splitter islands	SPA recommended
11	Straight ahead	A4043/Riverside Road /A4043 Roundabout	Photograph 11	Torfaen	Existing street furniture constraint, Central Island, several splitter islands	SPA recommended
12	Left Turn	Snatchwood road/B4246	Photograph 12	Torfaen	Existing street furniture constraint: Central Island, several splitter islands	SPA recommended
13	Straight ahead	B4262/B4246 road	Photograph 12 Photograph 13	Torfaen	Existing street furniture	SPA recommended

Pinch Point No.	Direction of Travel	Location	Photo Set (Ref No)	Highway Authority	Issue	Comment
14	Straight ahead	B4246/Lodge Road/B4246	Photograph 12 Photograph 14	Torfaen	Existing Street Furniture, narrow road, bounded by steep wall and fencing	SPA recommended
15	Right turn	B4246 at junction with The Promenade	Photograph 12 Photograph 15	Torfaen	Contraflow needed	SPA recommended
16	Bend to left	B4246 junction/Commercial Road/B4246	Photograph 12 Photograph 16	Torfaen	Existing street furniture	SPA recommended
17	Left Turn	B4246 through car park to Farm Road	Photograph 12 Photograph 17	Torfaen	Existing street furniture, Low wall, car park with telephone pole on corner.	SPA recommended
18	Right turn and left turn	Farm Road junction with Unnamed Adopted Road	Photograph 18a and 18b	Torfaen	Constrained carriageway width and constrained horizontal alignment.	SPA recommended
19	Bend to the left and bend to the right	Unnamed Adopted Road heading west	Photograph 19a and 19b	Torfaen	Constrained carriageway width and constrained horizontal alignment. Embankment near the carriageway.	SPA recommended
20	Bend to the left and bend to the right	Unnamed Adopted Road heading west	Photograph 20a and 20b	Torfaen	Constrained carriageway width and constrained horizontal alignment. Cattle grid provided within the carriageway.	SPA recommended
21	Vehicle heading westbound on straight section	Unnamed Adopted Road heading west	Photograph 21	Torfaen	Constrained carriageway width and constrained horizontal alignment.	SPA recommended

Pinch Point No.	Direction of Travel	Location	Photo Set (Ref No)	Highway Authority	Issue	Comment
22	Vehicle heading westbound on straight section	Unnamed Adopted Road heading west	Photograph 22	Torfaen	Constrained carriageway width and constrained horizontal alignment.	SPA recommended
23	Bend to the left	Unnamed Adopted Road heading west/south west	Photograph 23	Torfaen	Constrained carriageway width and constrained horizontal alignment. Embankment adjacent to the carriageway on both sides of the bend.	SPA recommended
24	Vehicle heading south westbound on straight section	Unnamed Adopted Road heading south west	Photograph 24	Torfaen	Constrained carriageway width.	SPA recommended
25	Bend to the left	Unnamed Adopted Road heading south west/south	Photograph 25	Torfaen	Constrained carriageway width and constrained horizontal alignment.	SPA recommended
26	Vehicle exits site and heads westbound to turbine 8	Blaen-y-Cwm Road	Photograph 26	Torfaen	Constrained carriageway width, AIL vehicle required to make right turn out if site at this location.	SPA recommended

5.3 Further Assessment of Route

Swept Path Analysis

- 5.3.1 The detailed SPA results, in the form of the SPA drawings for the 65.5m wind turbine blade transporter, are presented in **Annex B. Table 5.2** summarises the expected mitigation works.

Table 5.2 Preferred AIL Route Option SPA Summary

Pinch Point No.	Location	Drawing Number/Name	Indicative Works
Pinch Point 1	M4 Junction 26	807095-WOOD-DR-OT-00005_P01	Temporary dismounting of sign posts and lighting columns is required.
Pinch Point 2	A4051 Malpas Road/ A4051 Ffordd Cwmbran Road/ Newport Road/A4042	807095-WOOD-DR-OT-00006_P01	Temporary dismounting of sign posts, and road barriers is required. Contra-flow movement around the roundabout is required. Temporary hardstanding area on the splitter island is required.
Pinch Point 3	A4042/A4042/A4042	807095-WOOD-DR-OT-00007_P01	No Impact Expected
Pinch Point 4	A4042/Newport Road/Llanfrenchfa Way/Turnpike Road/Crown Road Roundabout	807095-WOOD-DR-OT-00008_P01	Temporary dismounting of sign posts and lighting columns is required. Temporary hardstanding area on the central island is required.
Pinch Point 5	A4042 Turnpike Road/ Croesyceiliog Bypass/ Caerleon Road Roundabout	807095-WOOD-DR-OT-00009_P01	Temporary dismounting of sign posts is required.
Pinch Point 6	A4042/The Herbert Road/ Croesyceiliog Bypass Roundabout	807095-WOOD-DR-OT-00010_P01	Temporary dismounting of sign posts and lighting columns is required. Temporary provision of a hardstanding area on the central island is required.
Pinch Point 7	A4042/A4051/A4042/ Newport Road Roundabout	807095-WOOD-DR-OT-00011_P01	Temporary dismounting of lighting columns is required.
Pinch Point 8	A4042/A472/ A4042 Roundabout	807095-WOOD-DR-OT-00012_P01	Temporary dismounting of sign post and lighting column is required.
Pinch Point 9	A472/A472/ A4043 Roundabout	807095-WOOD-DR-OT-00013_P01	Temporary removal of dreamboat sculptures is required. Temporary removal of lighting columns, reflectors, traffic signal post, bollard is required. Contraflow movement required. Temporary provision of hardstanding area is required.
Pinch Point 10	A4043/highstreet/A4043 Roundabout	807095-WOOD-DR-OT-00014_P01	Temporary dismount of signposts, lighting columns, bollards is required. A temporary hardstanding area is required.
Pinch Point 11	A4043/Riverside Road /A4043 Roundabout	807095-WOOD-DR-OT-00015_P01	Temporary removal of traffic sign posts is required. Temporary provision of

Pinch Point No.	Location	Drawing Number/Name	Indicative Works
			hardstanding area on central island is required.
Pinch Point 12	Snatchwood Road A4043/B4246 T-Junction	807095-WOOD-DR-OT-00016_P01	Temporary removal of traffic signposts, lighting columns, bus shelter, bollard and street furniture is required. Temporary removal of pedestrian refuge island.
Pinch Point 13	B4246 Westbound	807095-WOOD-DR-OT-00017_P01	No impact expected
Pinch Point 14	B4246 Lodge Road Westbound	807095-WOOD-DR-OT-00018_P01	No impact expected.
Pinch Point 15	B4246 at junction with The Promenade heading northbound	807095-WOOD-DR-OT-00019_P01	Trimming vegetation, Temporary removal of lighting columns and telegraph pole is required. Vehicle body and blade overhang required into third party land (residential property) on the south western side of the B4246/ Church Road junction). Wheel overrun will also require temporary provision of hardstanding area within the third party land parcel.
Pinch Point 16	B4246 Commercial Road Heading Northbound	807095-WOOD-DR-OT-00020_P01	No Impact expected
Pinch Point 17	B4246 through car park to Farm Road	807095-WOOD-DR-OT-00001_P01.01	Temporary removal of traffic signposts, lighting columns and telegraph pole is required. Trimming of vegetation required Temporary provision of hardstanding area is required.
Pinch Point 18	Farm Road to unnamed adopted road	807095-WOOD-DR-OT-00021_P01	Temporary removal of telegraph pole. Trimming of vegetation for overhang and provision of hardstanding area required for vehicle overrun around bends.
Pinch Point 19	unnamed adopted road	807095-WOOD-DR-OT-00022_P01	Trimming of vegetation for overhang and provision of hardstanding area required for vehicle overrun around bends. Embankment to be removed to accommodate overrun on the northern side of the carriageway and fence to be dismantled to accommodate vehicle body overhang.
Pinch Point 20	unnamed adopted road	807095-WOOD-DR-OT-00023_P01	Trimming of vegetation for overhang and provision of hardstanding area required for vehicle overrun around bends. Cattle grid required to be

Pinch Point No.	Location	Drawing Number/Name	Indicative Works
			provided with protection and adjacent gates to be temporarily dismantled.
Pinch Point 21	unnamed adopted road	807095-WOOD-DR-OT-00024_P01	Trimming of vegetation for overhang and provision of hardstanding area required for vehicle overrun. Embankment to be removed to accommodate overhang.
Pinch Point 22	unnamed adopted road	807095-WOOD-DR-OT-00025_P01	Blade and body overhang, no impact expected.
Pinch Point 23	unnamed adopted road	807095-WOOD-DR-OT-00026_P01	Provision of hardstanding area required for vehicle overrun. Earthworks required to remove embankment on the inside of the bend.
Pinch Point 24	unnamed adopted road	807095-WOOD-DR-OT-00027_P01	Provision of hardstanding area required for vehicle overrun.
Pinch Point 25	unnamed adopted road	807095-WOOD-DR-OT-00028_P01	Provision of hardstanding area required for vehicle overrun.
Pinch Point 26	Blaen-y-Cwn Road	807095-WOOD-DR-OT-00029_P01	Provision of hardstanding area required for vehicle overrun. Adequate access track and AIL overrun area required as AIL egresses from site onto Blaen-y-Cwn Road.

5.3.2 During the delivery of AILs rolling roadblocks would be implemented where required.

6. Consultation

- 6.1.1 In terms of AIL delivery route, SWTRA and other relevant highway authorities (Blaenau Gwent County Borough Council and Torfaen County Borough Council) will be consulted before the trial run. The wind turbine component supplier and transporter are yet to be identified. The AIL assessment identified temporary mitigation measures were required at a number of junctions. All relevant permits for abnormal load transportation will be arranged prior to commencement of deliveries.
- 6.1.2 A Section 278 Agreement of the Highways Act 1980 will be secured between the relevant local highways authorities and the developer to cover the associated highway works, needed to facilitate the delivery of the abnormal loads. The appropriate officer at each highways authority will be contacted in due course.

7. Management Strategy

7.1 Introduction

- 7.1.1 It is essential that the movements are thoughtfully planned and undertaken to ensure they progress safely on the highway.
- 7.1.2 Those responsible for transporting abnormal loads by road are required by law to plan and execute each movement in agreement with relevant authorities to ensure the incident-free passage of every load from origin to destination
- 7.1.3 The Welsh Government Procedure and Advice Guidance (PAG) document which aims to summarise the legal process which must be followed in the planning and execution of all abnormal load movements on trunk roads within Wales and to clarify the roles and responsibilities of the various parties involved
- 7.1.4 There is no legal height limit for vehicles but, wherever possible, the overall height of a vehicle and load should not exceed 4.95m so that the maximum use can be made of the motorway and trunk road network. This will ensure that loads are less than 5.03m in height, which is the minimum maintained headroom requirement on highways in the UK. In addition to the mitigation measures on the route, the following will be undertaken prior to transporting the abnormal load:
- Notify South Wales Trunk Road Agent;
 - Advance warning to the police (Gwent Police, South Wales Police, Dyfed Powys Police); and
 - Advance warning to bridge owner Network Rail at Hardwick Gyratory.
- 7.1.5 An Outline Construction Traffic Management Plan (CTMP) has been prepared separately covering the construction of the proposed development. This Outline CTMP is a working document which sets out the principles by which traffic travelling to the Site should be managed, but it will require final confirmation of its suitability following the appointment of the Principal Contractor and relevant suppliers. The Outline CTMP will be reviewed and updated when necessary to incorporate any comments and additional mitigation measures which may be required to address comments received from key stakeholders in the future.
- 7.1.6 The following sets out the general traffic management strategy that would be employed by the contractor.

7.2 Route Enforcement

- 7.2.1 The routes identified in this document will be strictly enforced unless further notification is given. All main and sub-contracting companies involved in the project will be monitored to ensure they follow the correct routes and do not use other 'shortcuts'. The routes will be clearly defined in all sub-contracts and clearly signposted for all drivers to see. Any contractor not adhering to the relevant route guidance will be disciplined. Onsite monitoring and spot checks will assist in this.

7.3 Timing of Movements

- 7.3.1 Deliveries shall only take place during the hours agreed with the Police and the relevant Highways Authority. Deliveries would be timed to avoid the morning or afternoon school run periods or other predictable peak traffic periods. Deliveries are expected to take place during weekdays, however, if deliveries are required at weekends approval in principle should be sought from the relevant Roads Authority and the Police.

7.4 Escorts

- 7.4.1 Where applicable, abnormal loads shall all be escorted in accordance with the relevant highway authorities. The escorting will be undertaken by the haulage contractor. Where it has been identified that traffic will need to be temporarily stopped, then a Police escort will be required. Convoys would typically comprise no more than two abnormal vehicles and shall be escorted by Police and/or haulier escort vehicles, as appropriate.

7.5 Temporary Closures and Traffic Regulation Order

- 7.5.1 At the discretion of the haulage contractor, temporary road closures may be required in order to deliver some of the larger abnormal loads. The haulage contractor will liaise with the local community, businesses and key services to ensure they are fully informed in advance should a road closure scheme be required.
- 7.5.2 Any required Temporary Traffic Regulation Orders (TTRO) will be obtained prior the transport of the abnormal loads.

7.6 Notification

- 7.6.1 All key stakeholders, which include the Local and Strategic Highways Authorities, would be notified prior to the movement of any abnormal loads. The appointed haulage contractor will be responsible for notifying the relevant stakeholders.
- 7.6.2 After the confirmation of haulier appointment and other related information, pre-notifications and consultations where possible will be undertaken.
- 7.6.3 Notifications will be made using the Electronic Service Delivery for Abnormal Loads (ESDAL)³.
- 7.6.4 VR1 and Special-order movements will take place when an explicit written approval is received as required by legislation.

7.7 Lighting, Signing and Marking

- 7.7.1 Lighting, signing, and marking will be in accordance with:
- Code of Practice Lighting and Marking for Special Order, VR1, STGO and C&U loads⁴; and

³ Department for Transport. (2024). ESDAL abnormal load notification. (Online) Available at: <https://www.gov.uk/esdal-abnormal-load-notification?> (September 2024).

⁴ Highways England. (2016). Lighting and marking for abnormal loads vehicles code of practice. (Online) Available at: <https://www.gov.uk/government/publications/lighting-and-marking-for-abnormal-loads-vehicles-code-of-practice> (September 2024).

- Using abnormally large or heavy vehicles on the road⁵.

7.8 Public Communication Strategy

- 7.8.1 The delivery of abnormal loads is likely to cause some delay to local road users and, in some cases, restrict access along certain routes. To ensure residents, local business and key services are made aware of such restrictions, the principal contractor will implement a comprehensive communications strategy, which could include, but is not limited to; letter drops, radio spots, notices within local papers, temporary road signage, website updates on a project website and other social media outlets.

⁵ National Highways. (2018). Special types enforcement guide. (Online) Available at: <https://www.gov.uk/government/publications/special-types-enforcement-guide/special-types-enforcement-guide> (Accessed 4 April 2022).

8. Summary

- 8.1.1 The AIL access study indicates that a 65.5m long turbine blade can be successfully transferred from Swansea port to the Site with the provision of accommodation works to those identified within this study. The report identifies key pinch points along the route, presents the SPA of the pinch points identified and identifies potential mitigation measures. It is also concluded that other AIL components related to the Proposed Development can be transferred by providing the suggested mitigation measures, as the blade SPA show a worst-case scenario.
- 8.1.2 The results of the 65.5m SPA will need to be confirmed by trial run.

Annex A

Photographs to Accompany Table 5.1 and 5.2

Photograph 1: M4 Junction 26



Source: Google Street view, 2022

Photograph 2: A4051 Malpas Road/ A4051 Ffordd Cwmbrân Road/ Newport Road/A4042



Source: Google Street view, 2022

Photograph 3: A4042/A4042/A4042



Source: Google Street view, 2022

Photograph 4: A4042/Newport Road/Llanfrenchfa Way/Turnpike Road/Crown Road Roundabout



Source: Google Street view, 2022

Photograph 5: A4042 Turnpike Road/ Croesyceiliog Bypass/ Caerleon Road Roundabout



Source: Google Street view, 2022

Photograph 6: A4042/The Herbert Road/ Croesyceiliog Bypass Roundabout



Source: Google Street view, 2022

Photograph 7: A4042/A4051/A4042/ Newport Road Roundabout



Source: Google Street view, 2022

Photograph 8: A4042/A472/ A4042 Roundabout



Source: Google Street view. 2022

Photograph 9: A472/A472/ A4043 Roundabout



Source: Google Street view, 2022

Photograph 10: A4043/Highstreet/A4043 Roundabout



Source: Google Street view, 2022

Photograph 11: A4043/Riverside Road /A4043 Roundabout



Source: Google Street view, 2022

Photograph 12: Snatchwood road A5/B4246



Source: Google Street view, 2022

Photograph 13: B4262/B4246 road



Source: Google Street view, 2022

Photograph 14: B4246/Lodge Road/B4246



Source: Google Street view, 2022

Photograph 15: B4246 at junction with The Promenade



Source: Google Street view, 2022

Photograph 16: B4246 junction/Commercial Road/B4246



Source: Google Street view, 2022

Photograph 17: B4246 through car park to Farm Road



Source: Google Street view, 2022

Photograph 18a: Farm Road to Unnamed adopted highway.



Photograph 18a: Farm Road to Unnamed adopted highway.



Photograph 19a: Unnamed adopted highway.



Photograph 19b: Unnamed adopted highway.



Photograph 20a: Unnamed adopted highway.



Photograph 20b: Unnamed adopted highway.



Photograph 21: Unnamed adopted highway.



Photograph 22: Unnamed adopted highway.



Photograph 23: Unnamed adopted highway.



Photograph 24: Unnamed adopted highway.



Photograph 25: Unnamed adopted highway.

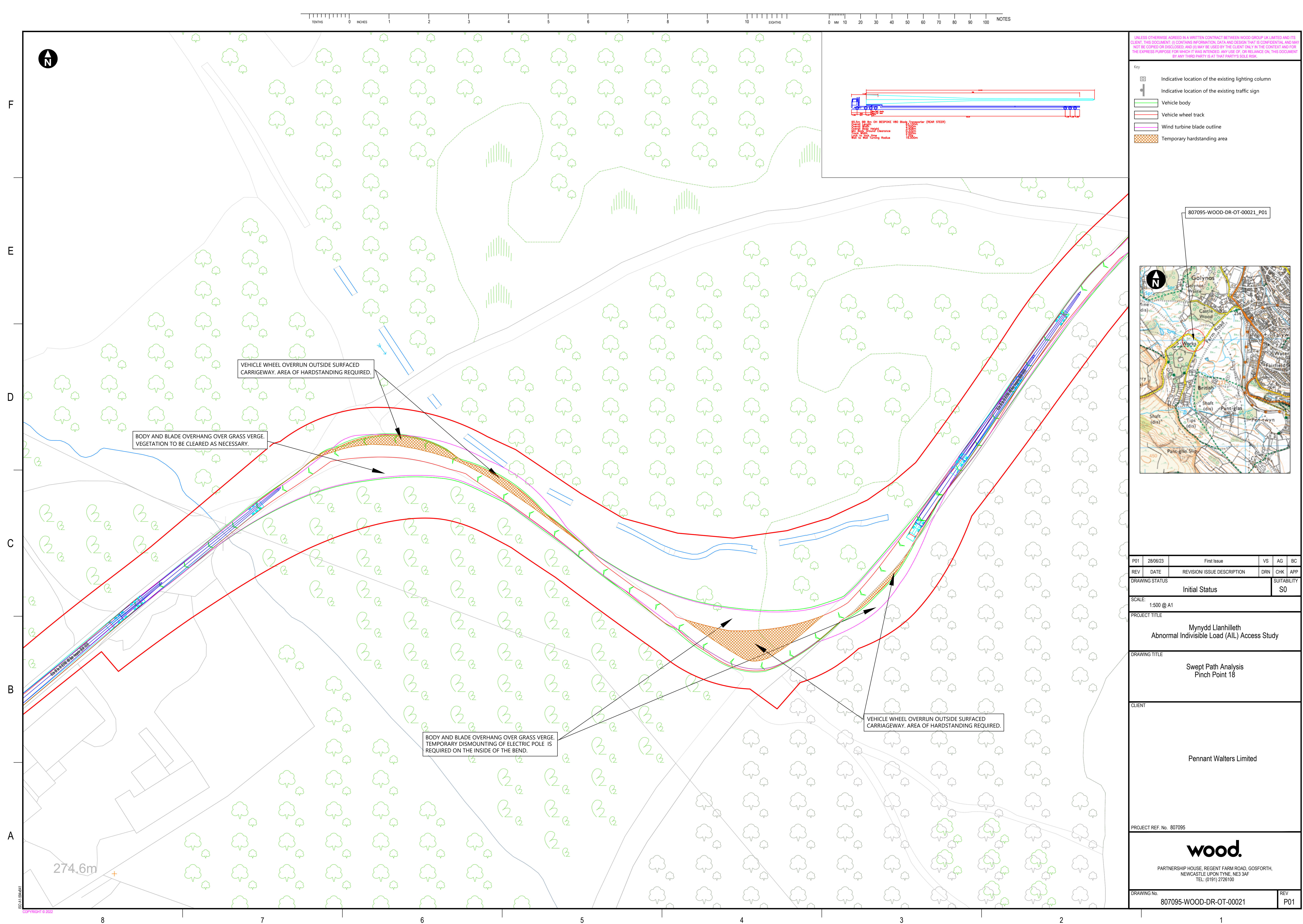


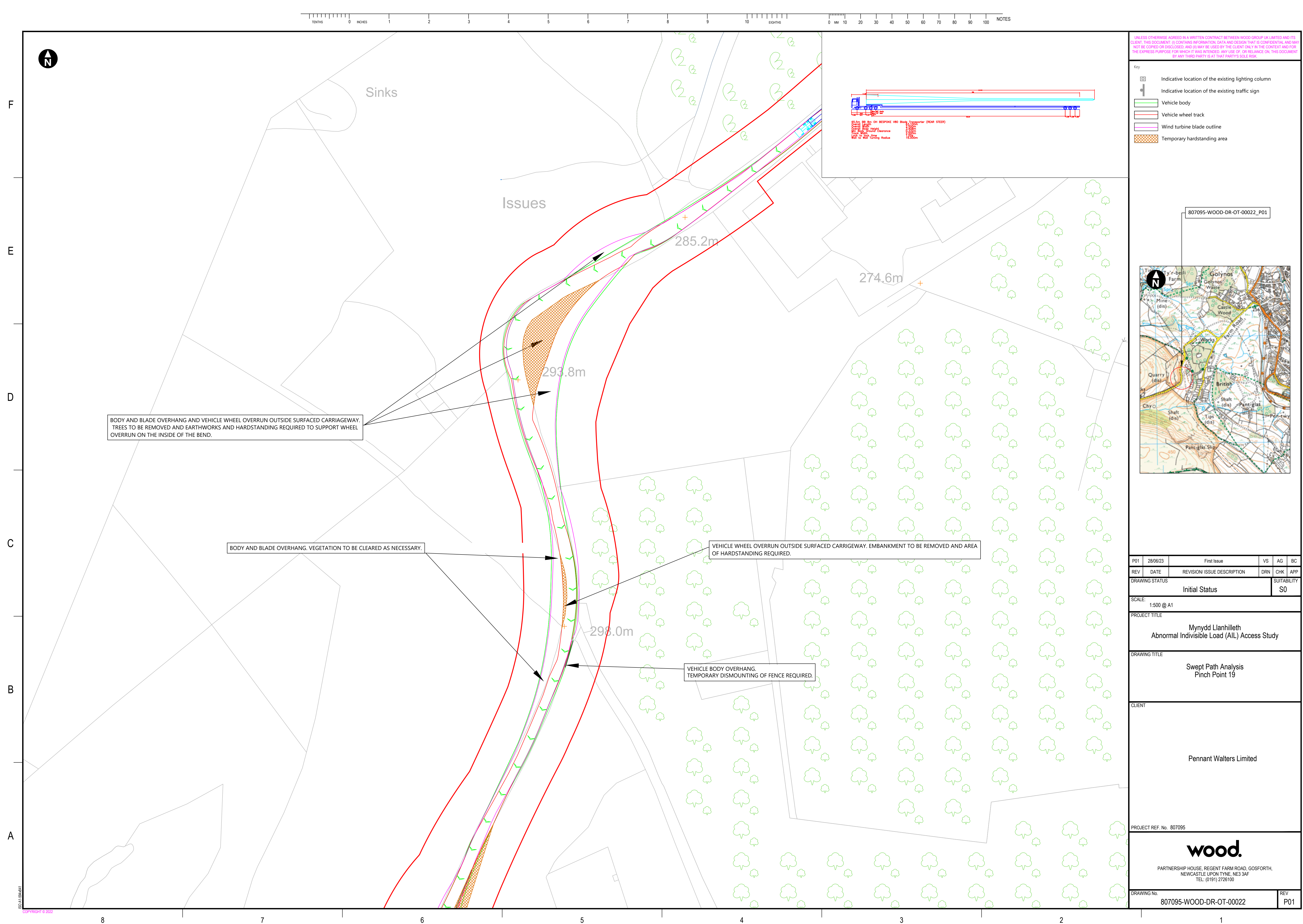
Photograph 26: Site Egress to Blaen-y-Cwn Road.

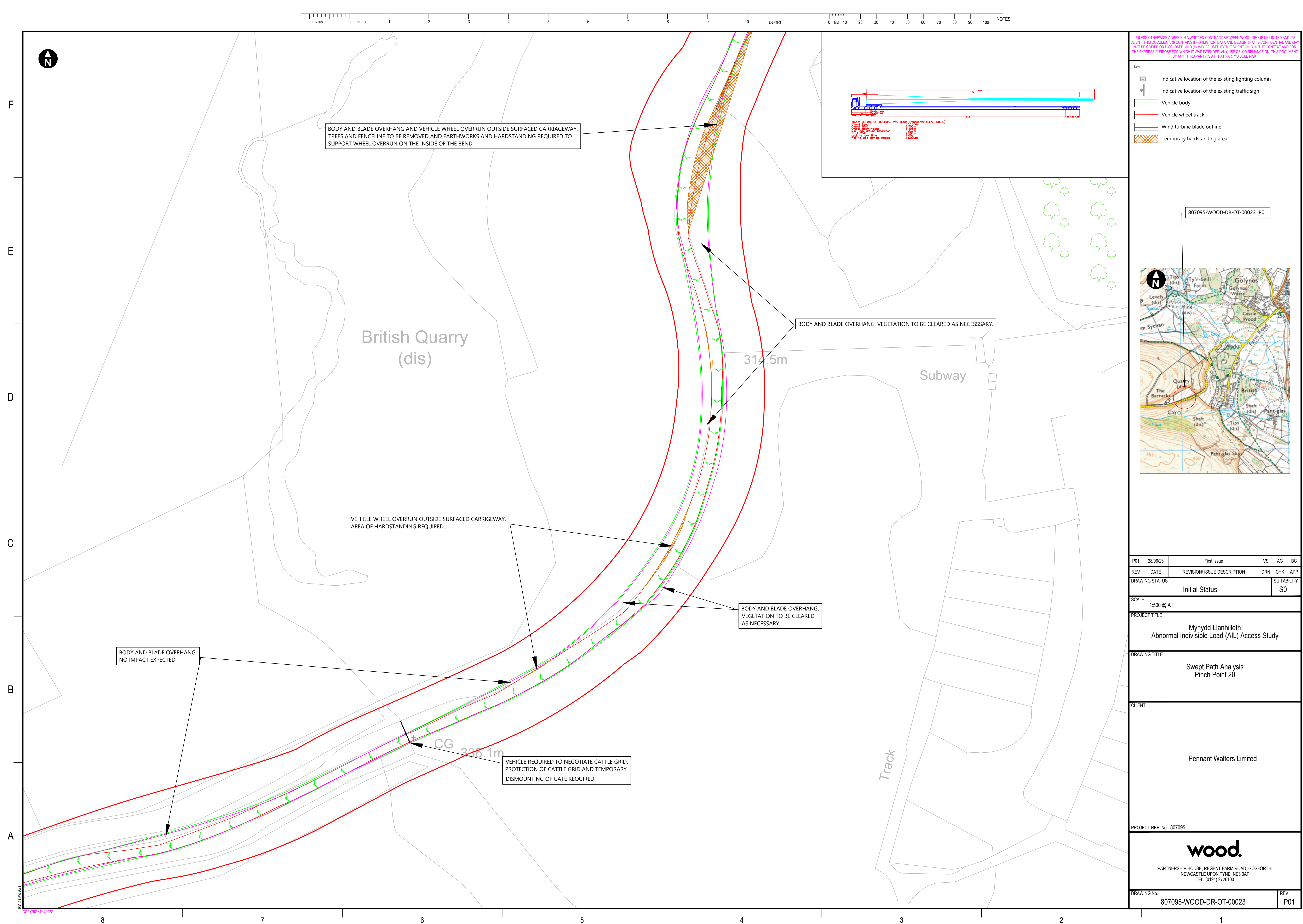


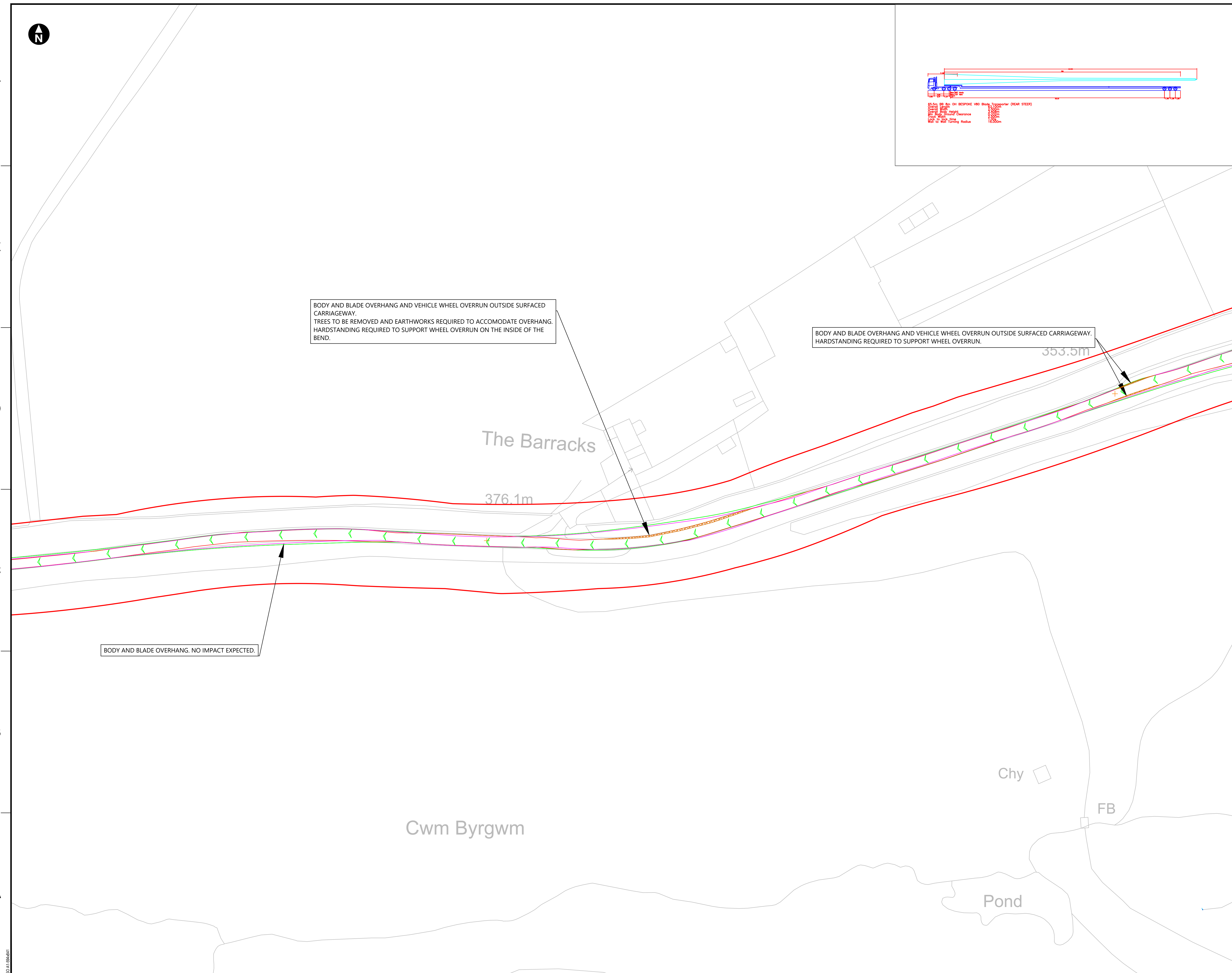
Annex B

Swept Path Analysis Plans









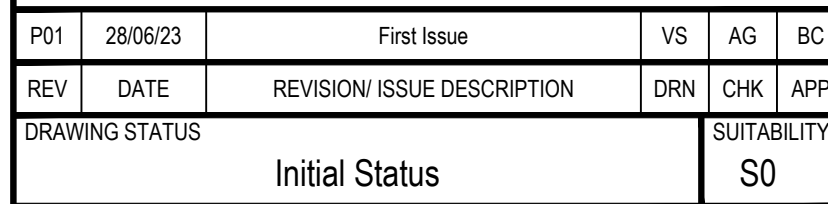






Key

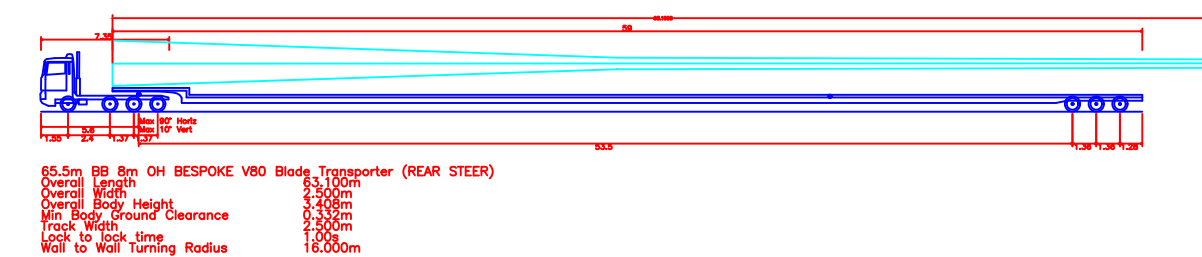
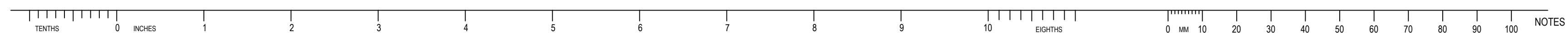
	Indicative location of the existing lighting column
	Indicative location of the existing traffic sign
	Vehicle body
	Vehicle wheel track
	Wind turbine blade outline
	Temporary hardstanding area



PROJECT TITLE	Mynydd Llanhilleth Abnormal Indivisible Load (AIL) Access Study
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Key

 Indicative location of the existing lighting column

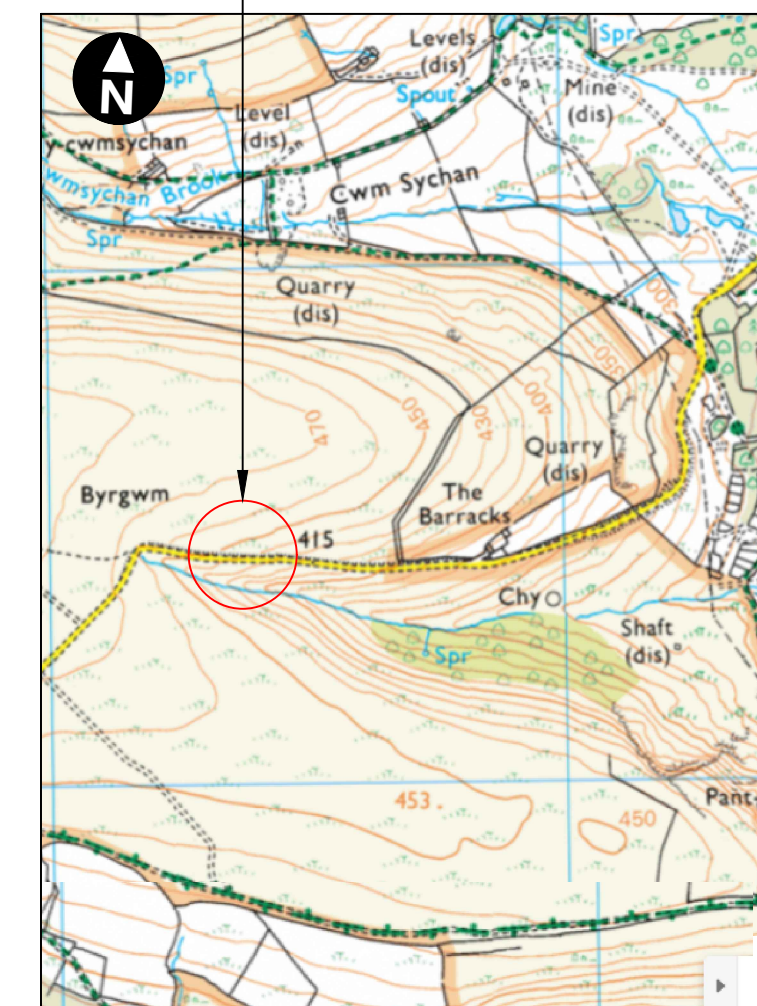
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 Vehicle body

 Vehicle wheel track

 Wind turbine blade outline
 Temporary hardstanding area

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BODY AND BLADE OVERHANG. NO IMPACT EXPECTED.

BODY AND BLADE OVERHANG. NO IMPACT EXPECTED.

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REV	DATE	REVISION/ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS				SUITABILITY	
Initial Status				S0	

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PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 22

CLIENT

Pennant Walters Limited

PROJECT REF. No. 807095

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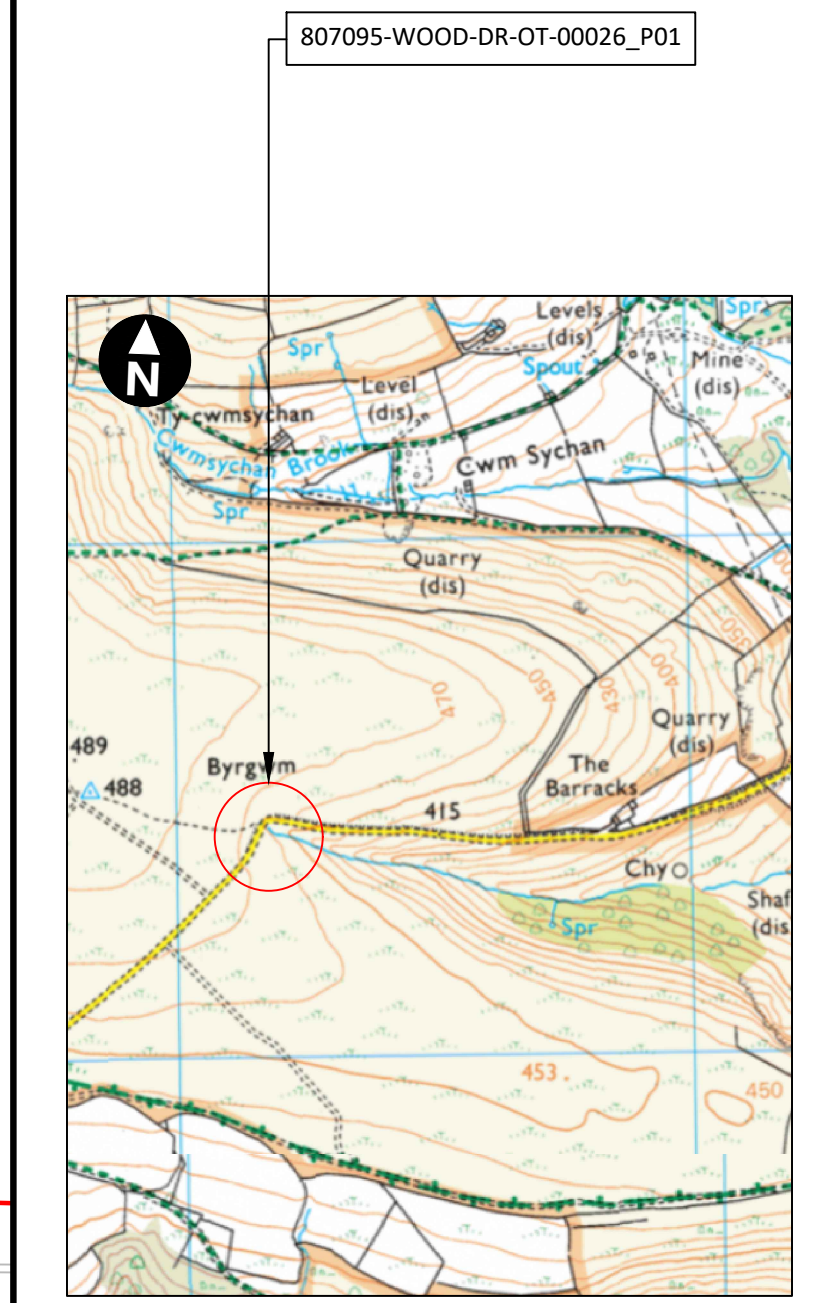
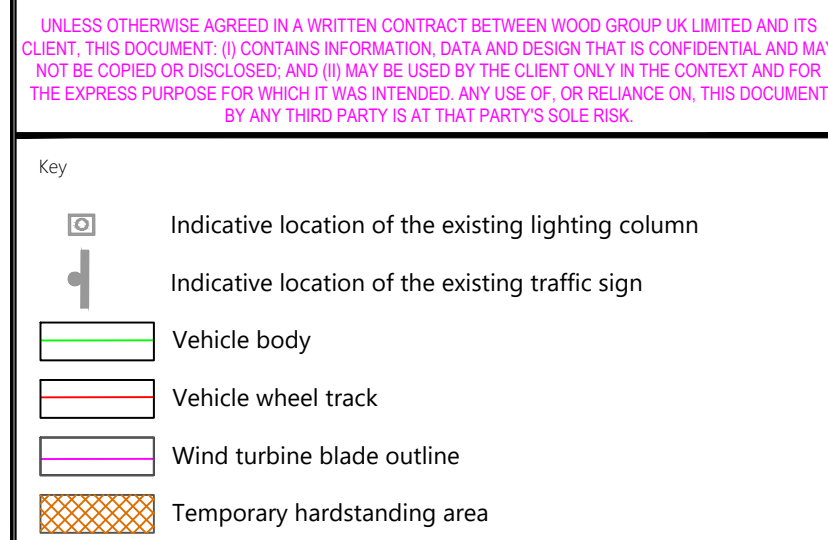
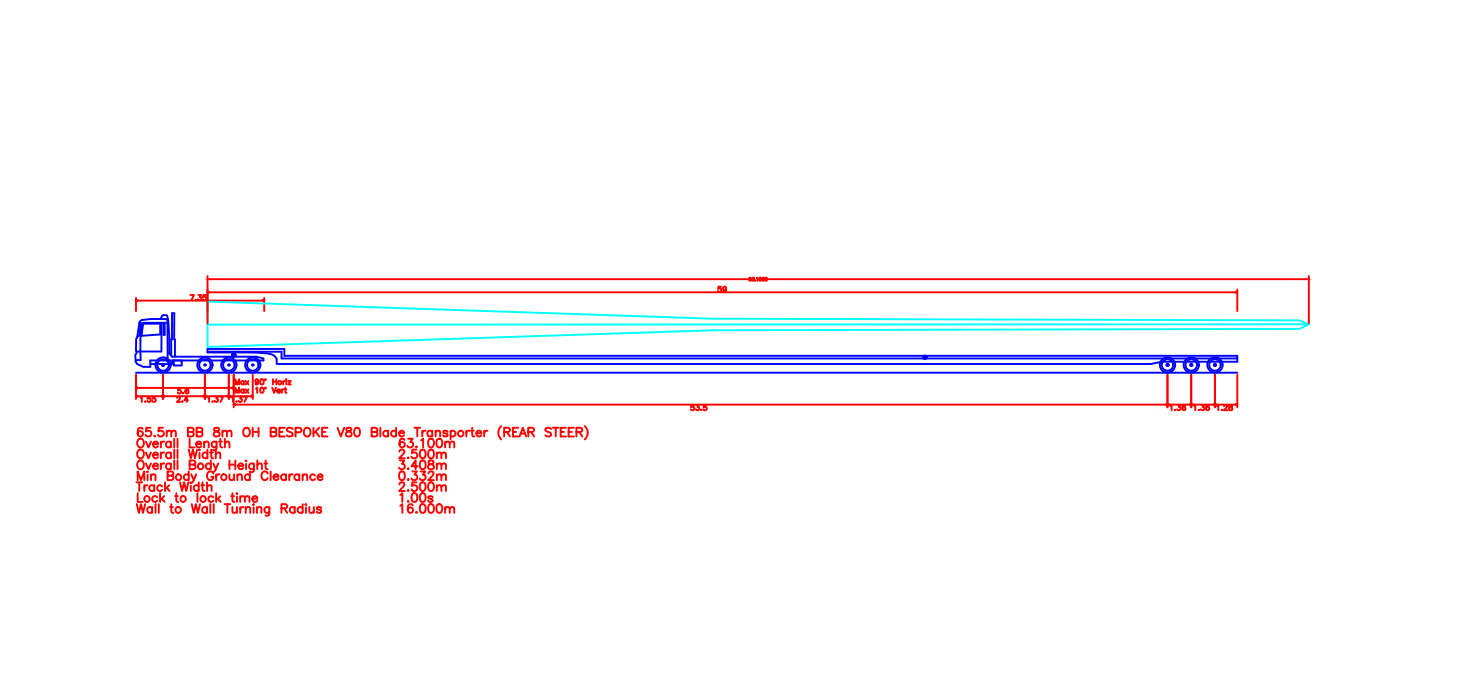
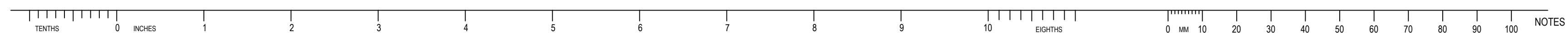
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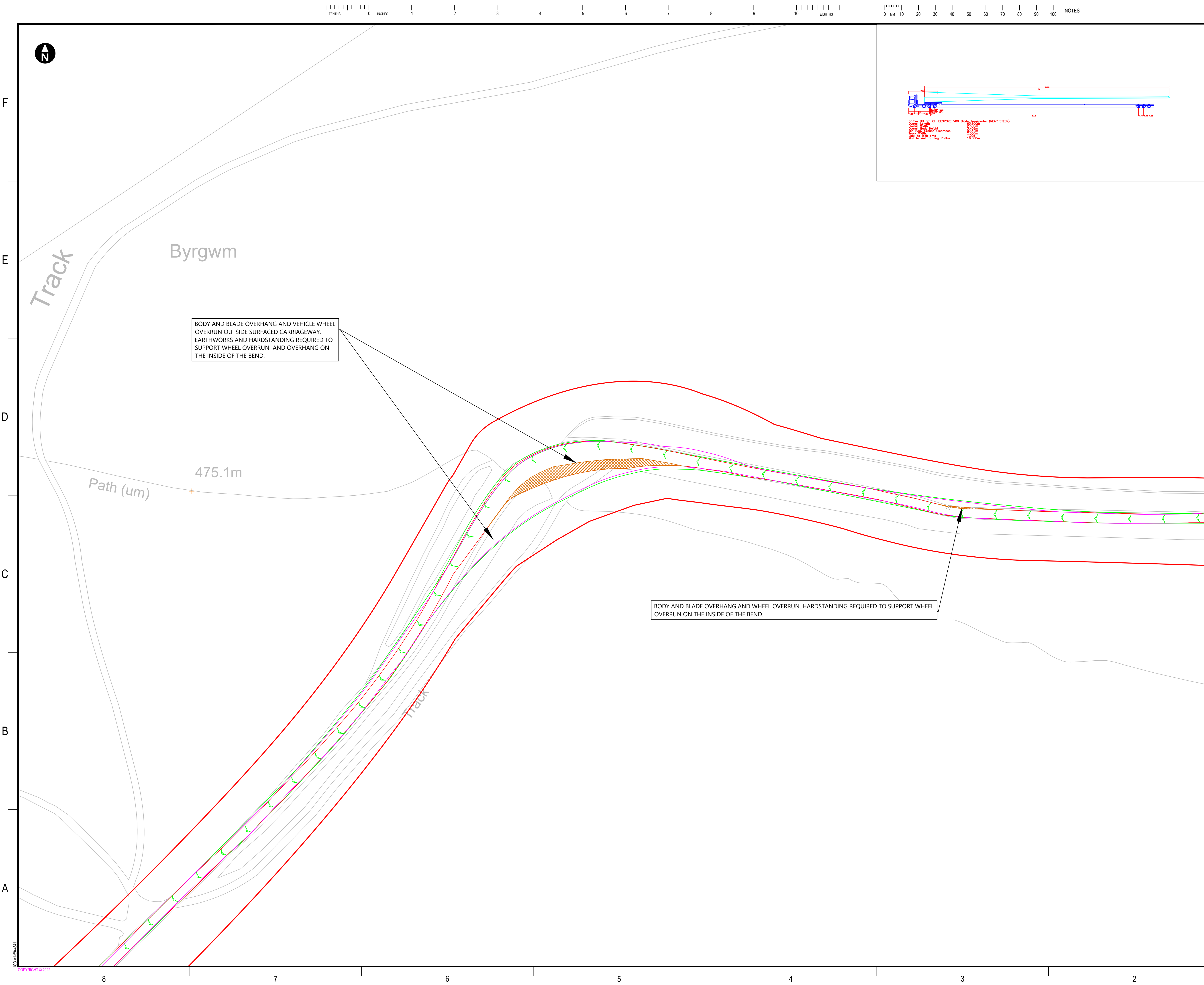
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Mynydd Llanhilleth Abnormal Indivisible Load (AIL) Access Study
DRAWING TITLE
Swept Path Analysis Pinch Point 23

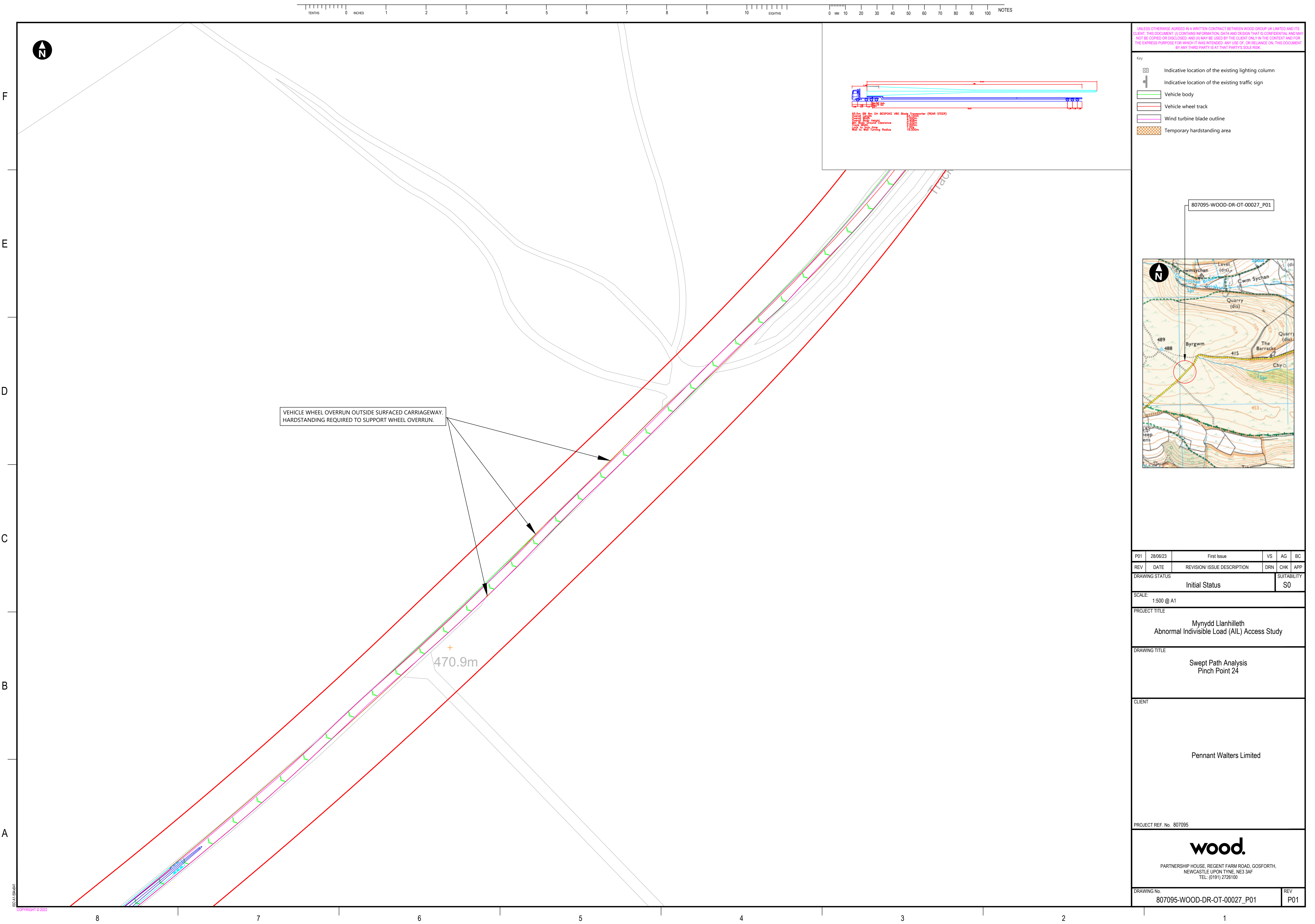
CLIENT
Pennant Walters Limited
PROJECT REF. No. 807095

wood.

PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH,
NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2728100

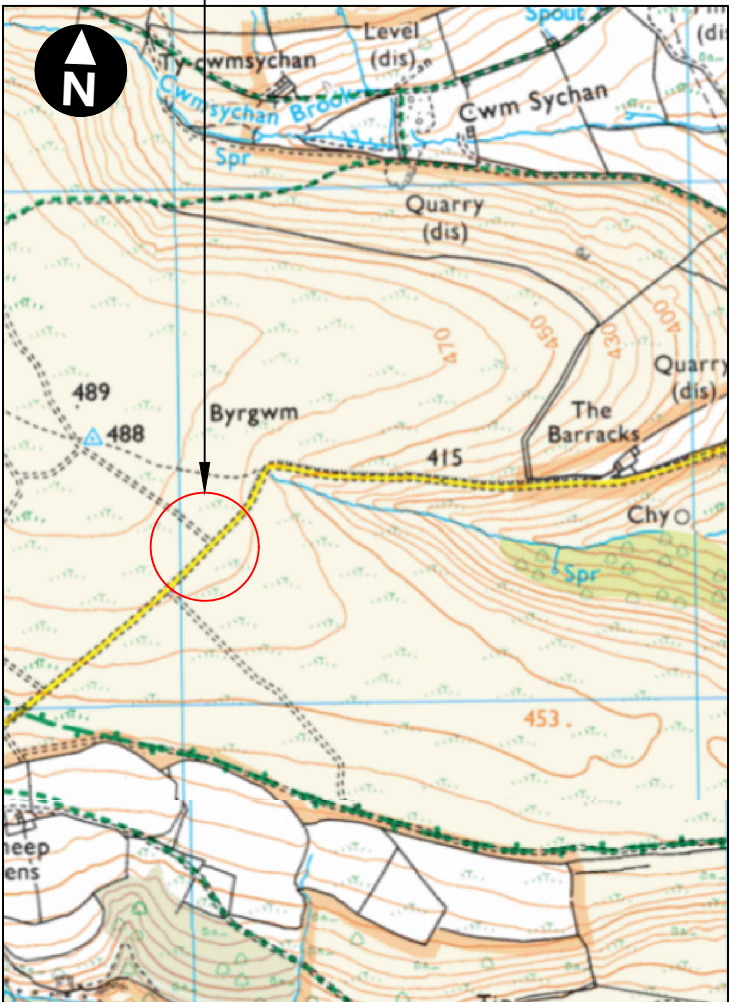
DRAWING No.	807095-WOOD-DR-OT-00026_P01	REV	P01
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- Key
- Indicative location of the existing lighting column
 - Indicative location of the existing traffic sign
 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area



P01	28/06/23	First Issue	VS	AG	BC
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 24

CLIENT

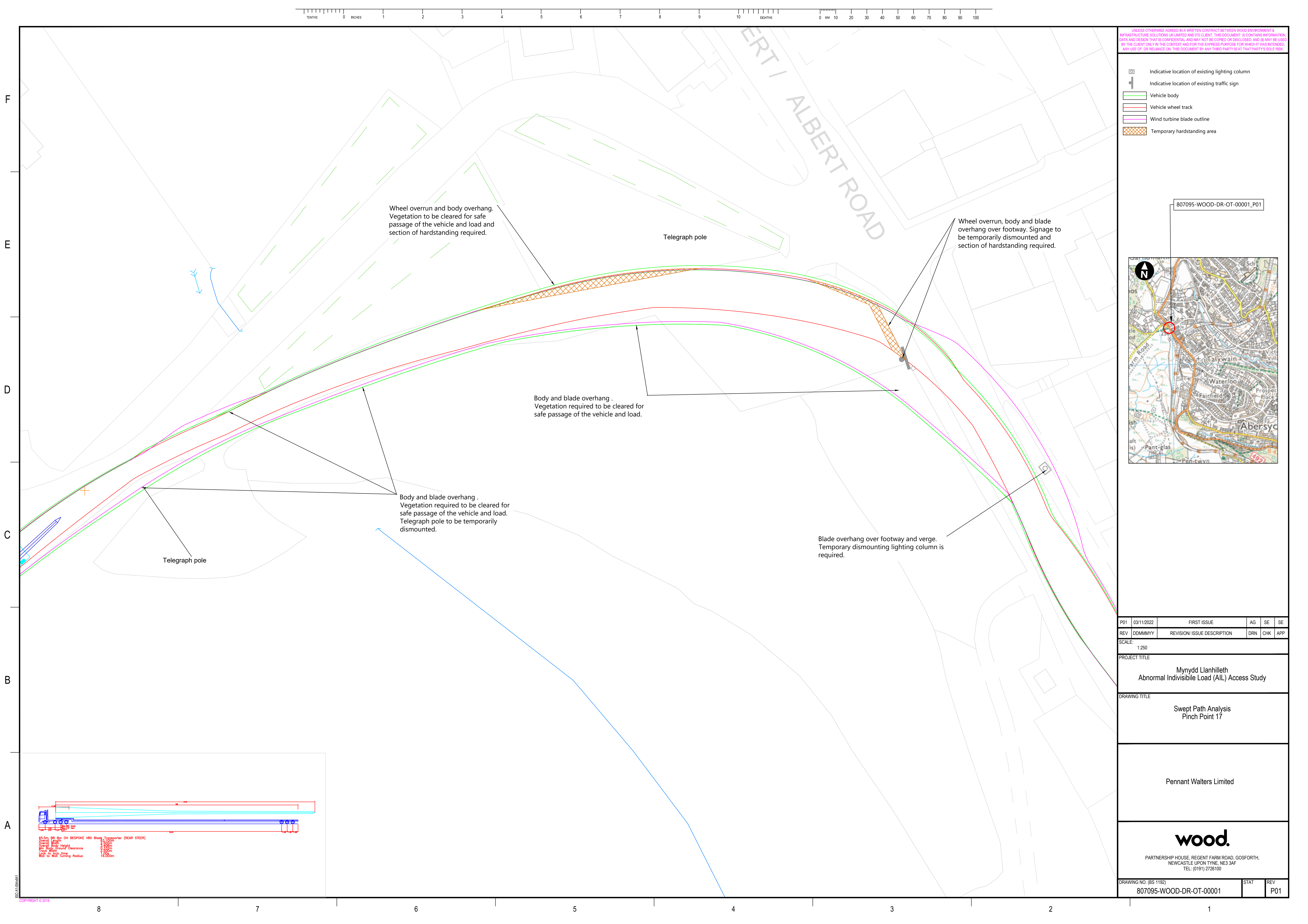
Pennant Walters Limited

PROJECT REF. No. 807095

wood.
PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH,
NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2726100

DRAWING No. 807095-WOOD-DR-OT-00027_P01

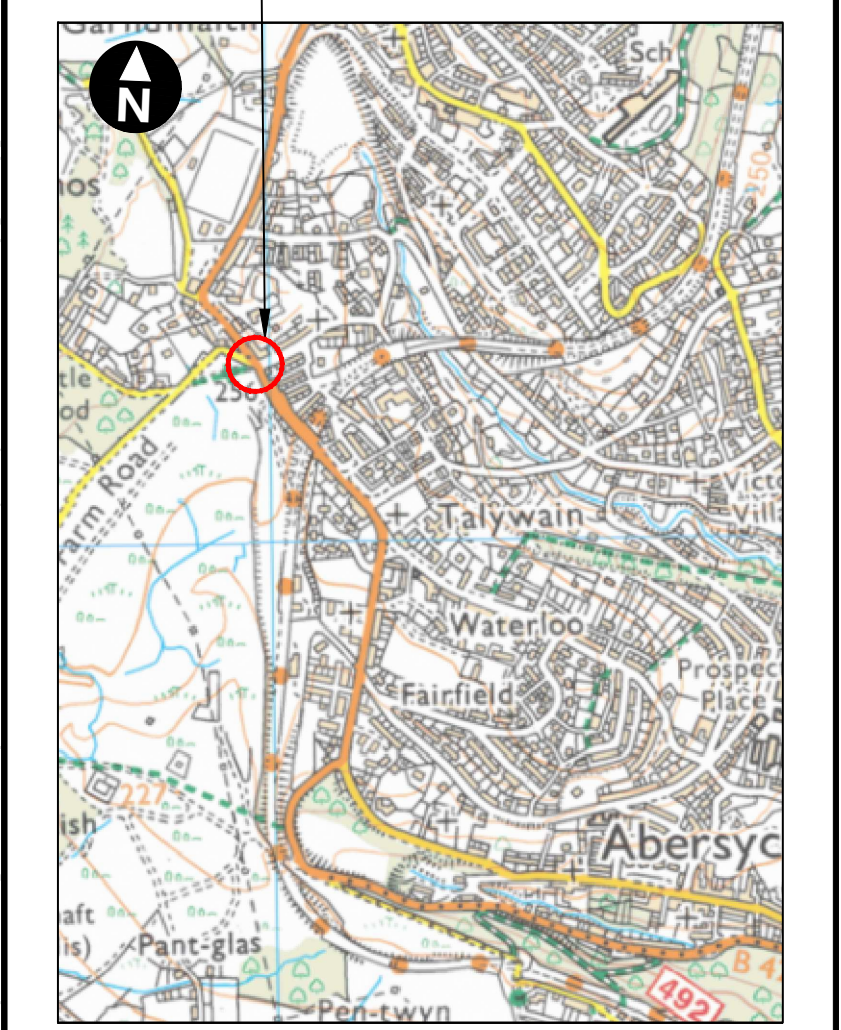
REV P01



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- Indicative location of existing lighting column
- Indicative location of existing traffic sign
- Vehicle body
- Vehicle wheel track
- Wind turbine blade outline
- Temporary hardstanding area

807095-WOOD-DR-OT-00001_P01



P01	03/11/2022	FIRST ISSUE	AG	SE	SE
REV	DDMMYY	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
SCALE: 1:250					
PROJECT TITLE Mynydd Llanhilleth Abnormal Indivisible Load (AIL) Access Study					
DRAWING TITLE Swept Path Analysis Pinch Point 17					
Pennant Walters Limited					
wood. PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH, NEWCASTLE UPON TYNE, NE3 3AF TEL: (0191) 2726100					
DRAWING NO. (BS 1192) 807095-WOOD-DR-OT-00001			STAT	REV	P01

Wheel overrun and body overhang.
Vegetation to be cleared for safe
passage of the vehicle and load and
section of hardstanding required.

Telegraph pole

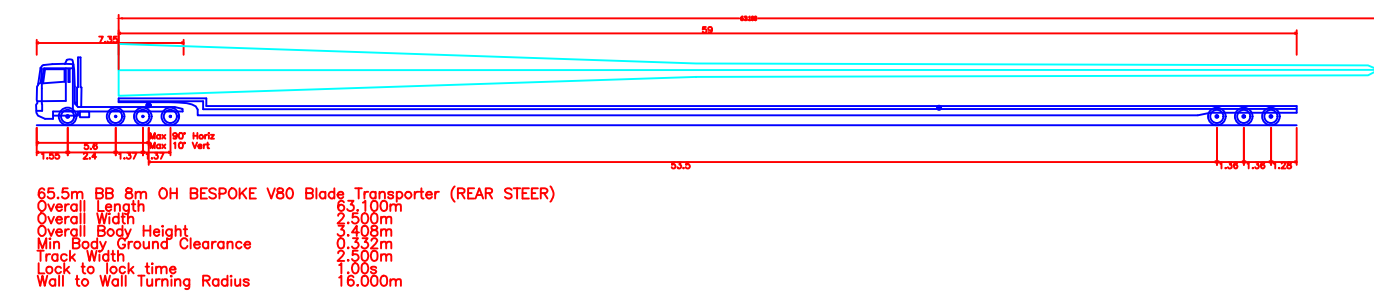
Wheel overrun, body and blade
overhang over footway. Signage to
be temporarily dismantled and
section of hardstanding required.

Body and blade overhang .
Vegetation required to be cleared for
safe passage of the vehicle and load.

Body and blade overhang .
Vegetation required to be cleared for
safe passage of the vehicle and load.
Telegraph pole to be temporarily
dismounted.

Blade overhang over footway and verge.
Temporary dismantling lighting column is
required.

Telegraph pole



85.5m BB 8m OH BESPOKE V80 Blade Transporter (REAR STEER)
Overall Length 85.5m
Overall Width 3.0m
Max. Height 3.0m
Max. Weight 10.0t
Max. Ground Clearance 1.2m
Max. Turning Radius 16.000m
WGL to WGL Turning Radius 16.000m



	
PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH, NEWCASTLE UPON TYNE, NE3 3AF TEL: (0191) 2726100	
DRAWING No. 807095-WOOD-DR-OT-00005	REV P01

DRAWING No.	REV
807095-WOOD-DR-OT-00005	P01

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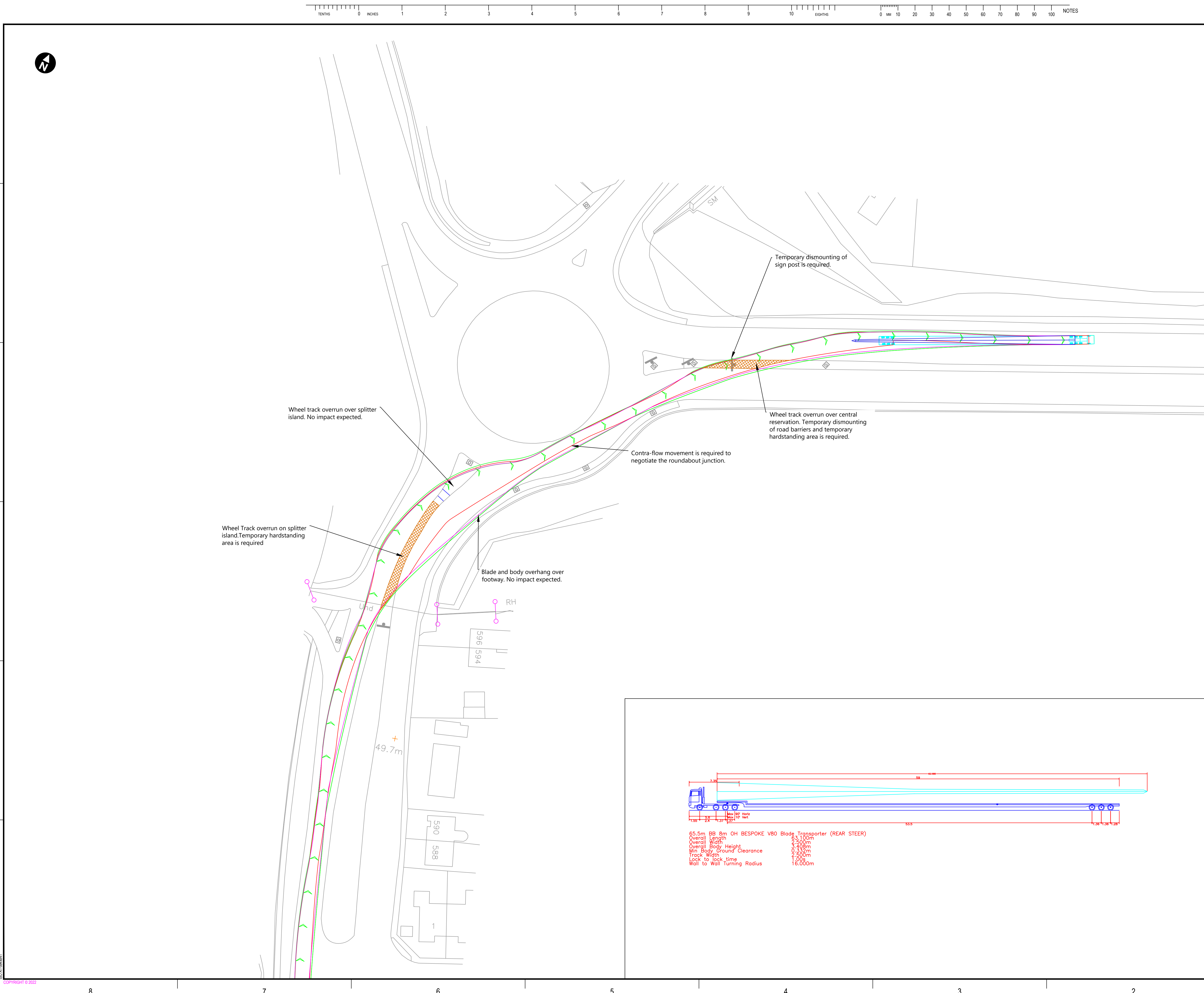
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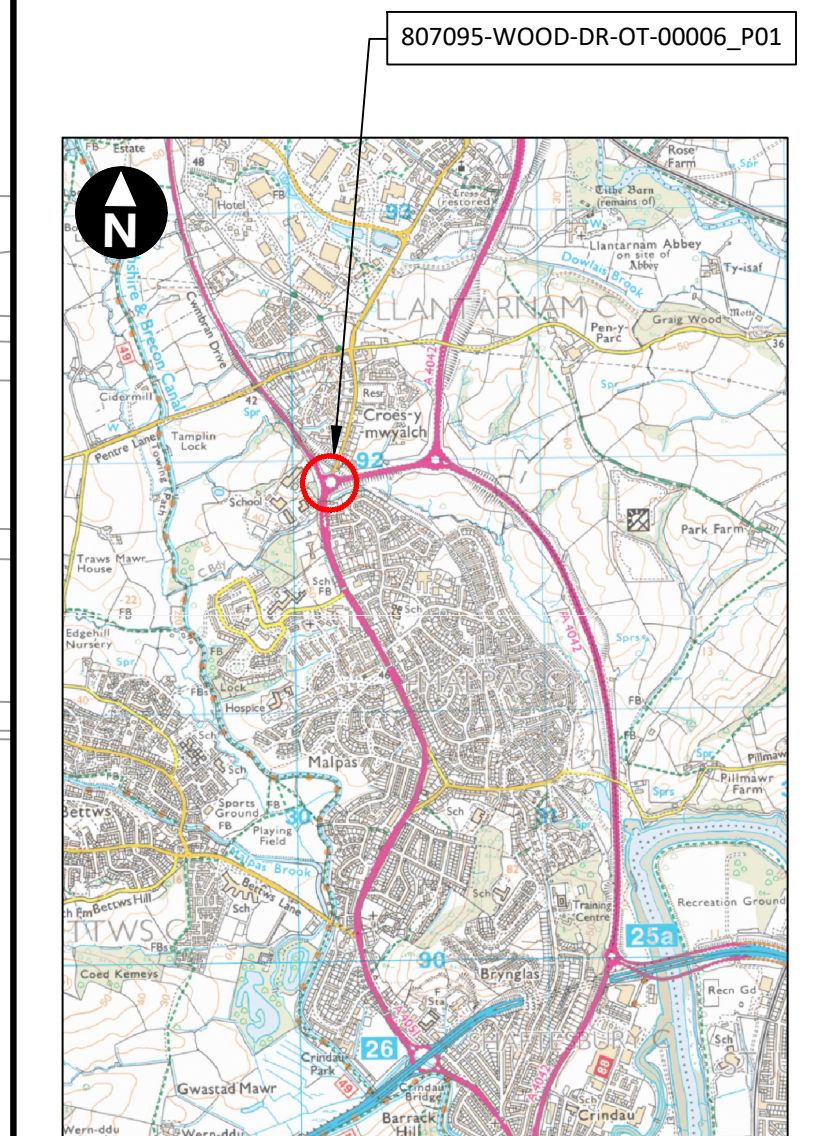
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- Key
- Indicative location of the existing lighting column
 - Indicative location of the existing traffic sign
 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 2

CLIENT

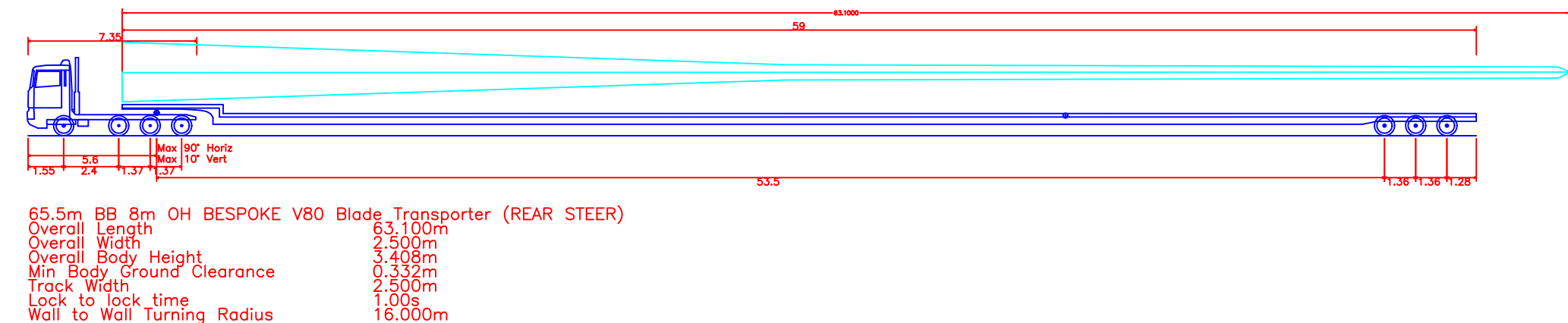
Pennant Walters Limited

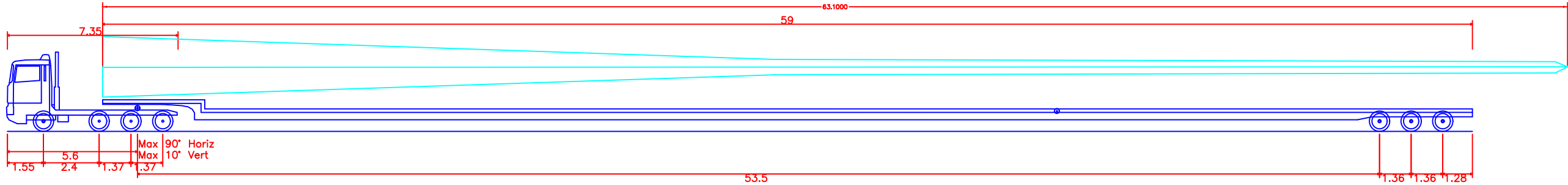
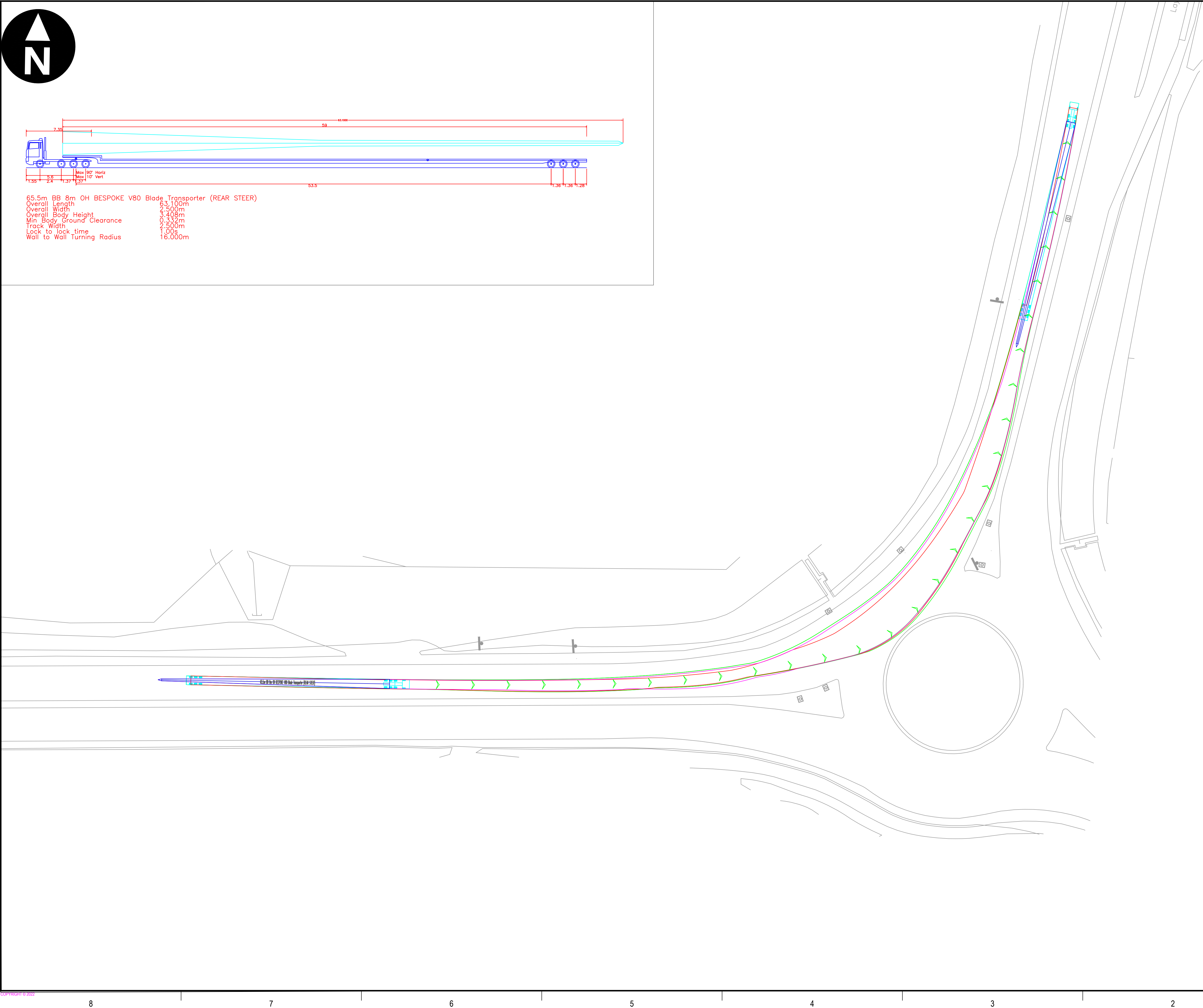
PROJECT REF. No. 807095

wood.

PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH,
NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2726100

DRAWING No.	REV
807095-WOOD-DR-OT-00006	P01



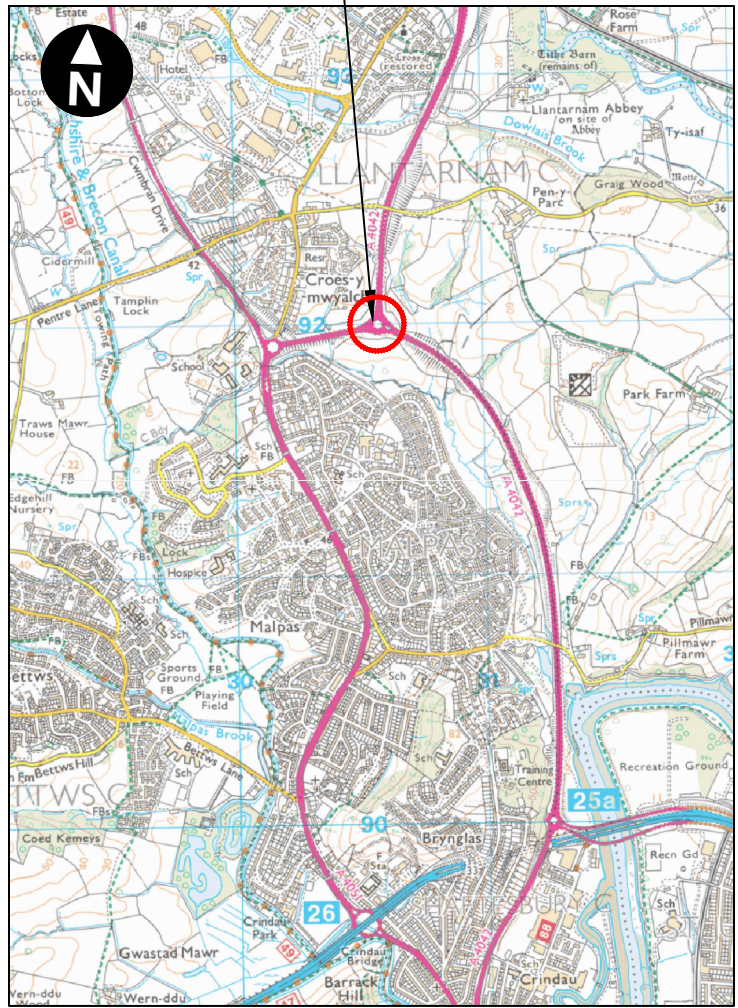


65.5m BB 8m OH BESPOKE V80 Blade Transporter (REAR STEER)
Overall Length 65.500m
Overall Width 2.500m
Overall Body Height 3.408m
Min Body Ground Clearance 0.332m
Track Width 2.500m
Lock to lock time 1.00s
Wall to Wall Turning Radius 16.000m

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- Key
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 - Indicative location of the existing traffic sign
 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area

807095-WOOD-DR-OT-00007_P01



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1:500 @ A1

PROJECT TITLE
Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

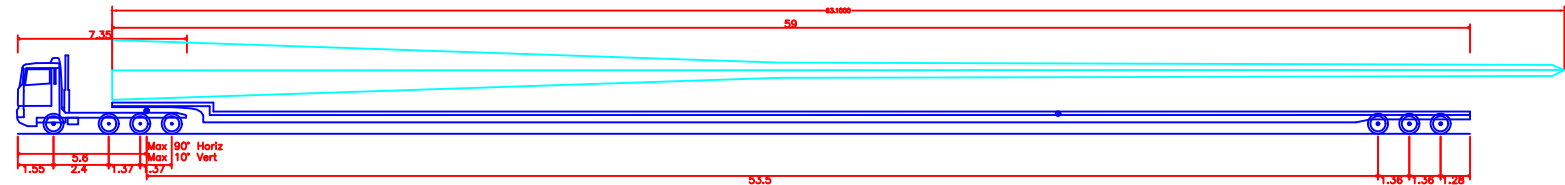
DRAWING TITLE
Swept Path Analysis
Pinch Point 3

CLIENT
Pennant Walters Limited

PROJECT REF. No. 807095

wood.
PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH,
NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2726100

DRAWING No.	REV
807095-WOOD-DR-OT-00007	P01



65.5m BB 8m OH BESPOKE V80 Blade Transporter (REAR STEER)
Overall Length 65.500m
Overall Width 8.000m
Overall Body Height 4.250m
Min. Body Ground Clearance 0.252m
Lock to Lock time 13.360m
Wall to Wall Turning Radius 16.000m

TURNPIKE ROAD

Def

GP Body

Wheel track overrun over central island.
Temporary hardstanding area is required.

Body and blade overhang over central island.
Temporary dismantling of sign post is required.

Wheel track overrun over verge.
Temporary hardstanding area is required.

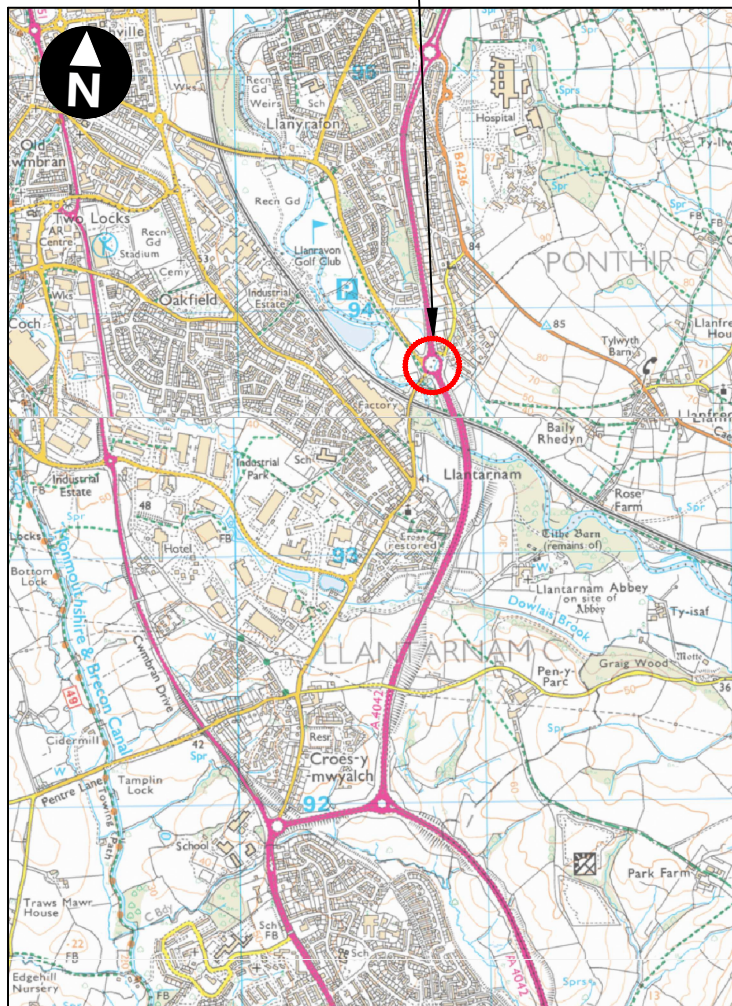
Body and blade overhang assumed to be within highway boundary.
Temporary dismantling of lighting columns is required.

Blade and body overhang over central reservation. No impact expected.

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- Key
- Indicative location of the existing lighting column
 - Indicative location of the existing traffic sign
 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area

807095-WOOD-DR-OT-00008_P01



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Carn Y Cefn
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 4

CLIENT

Pennant Walters Limited

PROJECT REF. No. 807095

wood.

PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH,
NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2726100

DRAWING No. 807095-WOOD-DR-OT-00008

REV P01



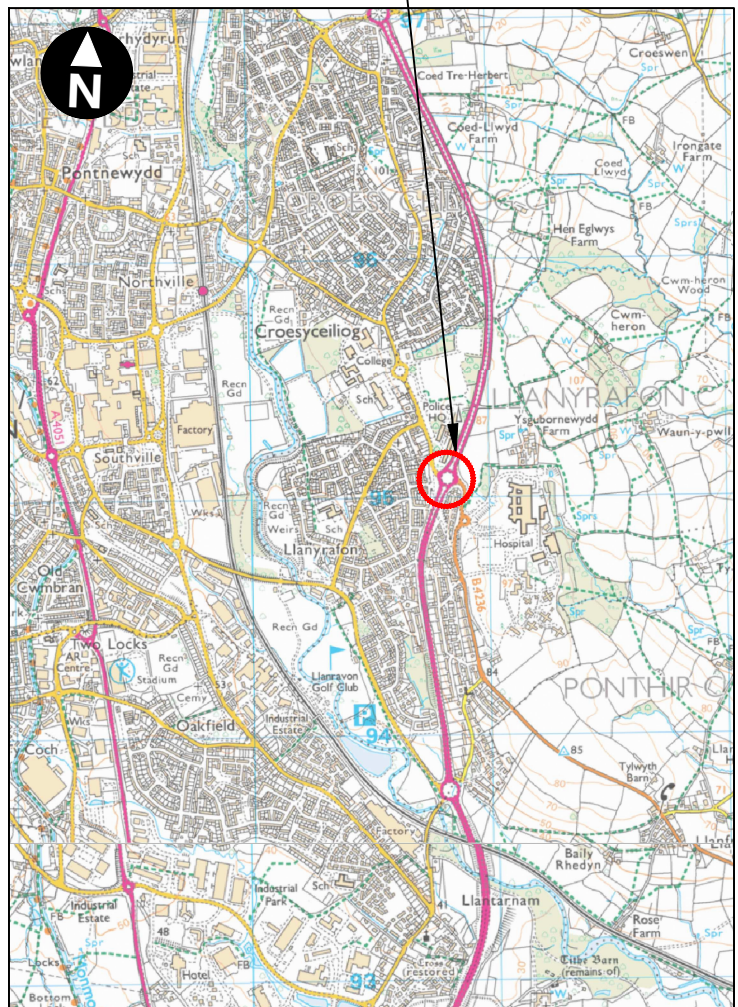
Key

•

Vehicle wheel track

 Temporary hardstanding area

807095-WOOD-DR-OT-00009_P01



P01	02/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS				SUITABILITY	
Initial Status				S0	

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis Pinch Point 5

CLIENT

Pennant Walters Limited

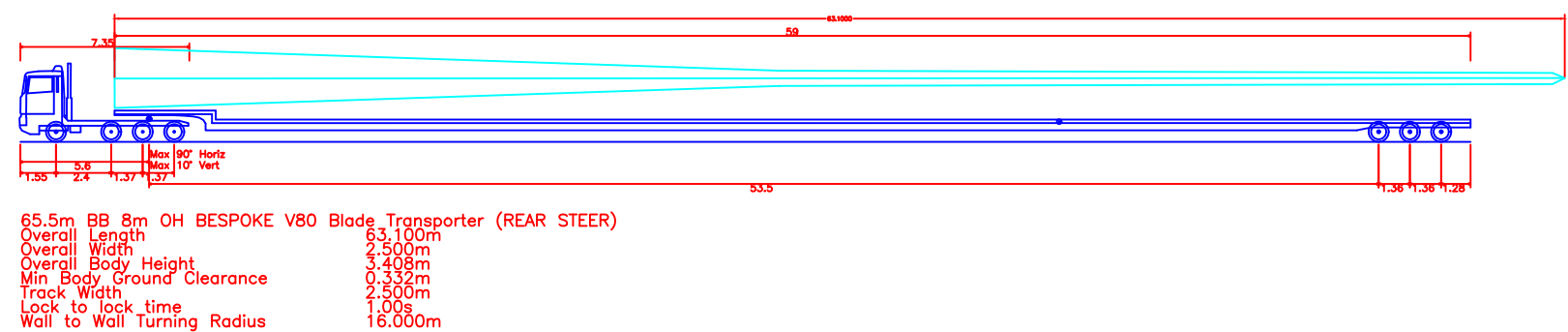
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wood.

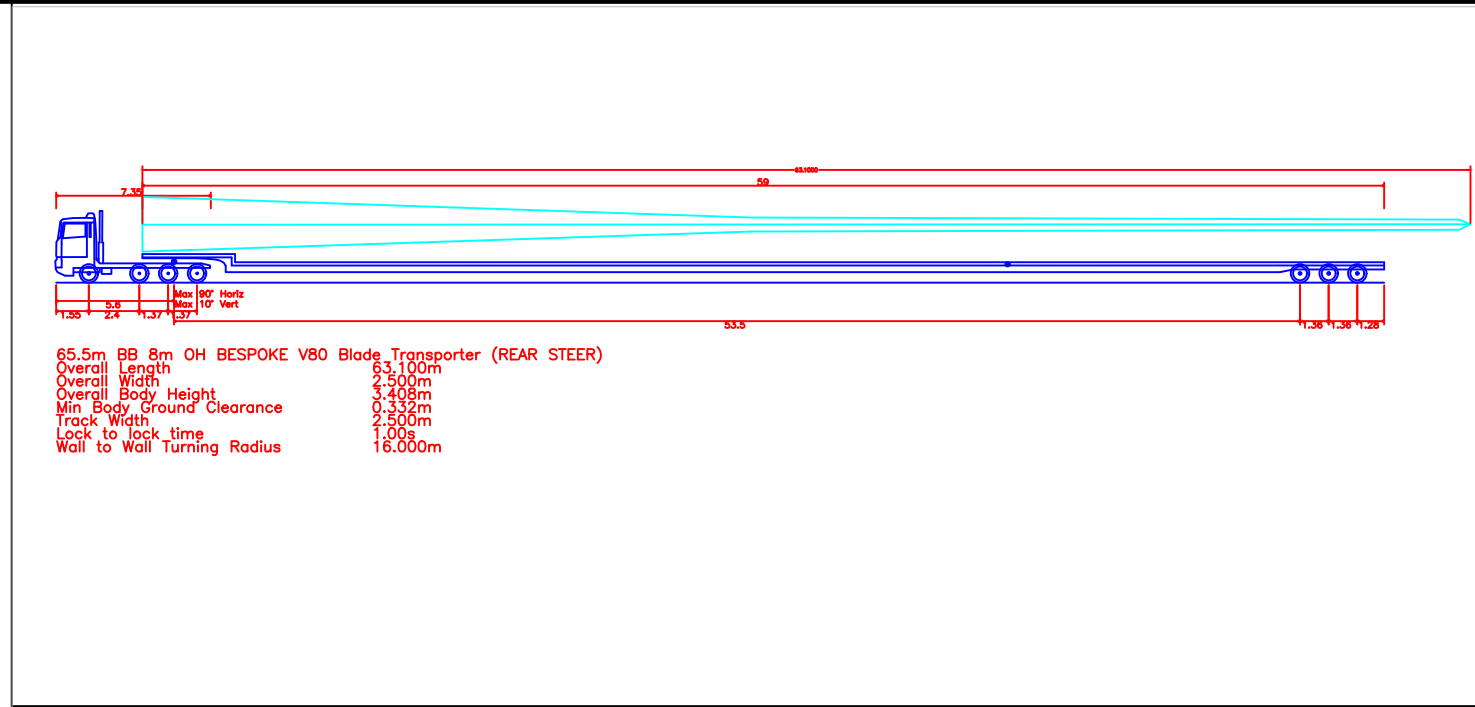
PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH,
NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2726100

DRAWING No. 807095-WOOD-DR-OT-00009

REV
P01



65.5m	BB 8m	OH	BESPOKE	V80	Blade Transporter (REAR STEER)
Overall Length					6.500m
Overall Width					2.500m
Overall Body Height					3.408m
Min Body Ground Clearance					0.332m
Track Width					2.500m
Lock to lock time					1.00s
Wall to Wall Turning Radius					16.000m



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- Key
- Indicative location of the existing lighting column
 - Indicative location of the existing traffic sign
 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area

Body and blade overhang over grass verge.
Temporary dismounting of sign post is required.

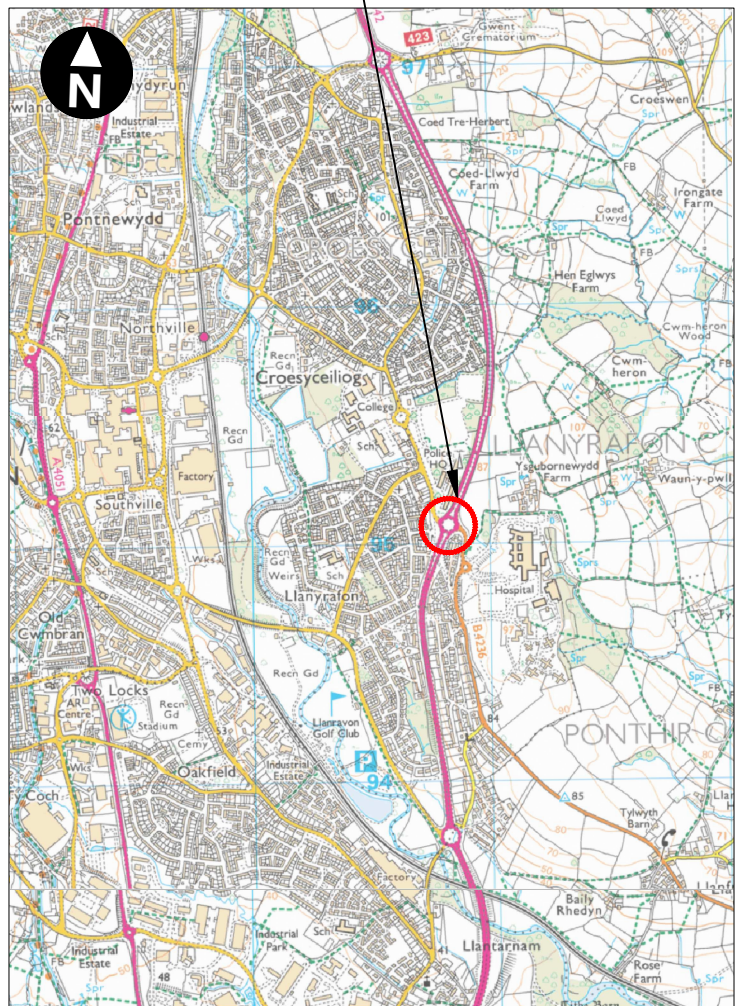
Blade overhang over splitter island.
No impact expected.

Temporary dismounting of sign posts
is required.

Wheel track overrun over central island.
Temporary hardstanding area is required.

Body and blade overhang over footpath and
grass verge. Temporary dismounting of lighting
column is required.

Blade overhang over splitter island.
No impact expected.



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1: 500 @ A1

PROJECT TITLE

Mynydd Carn Y Cefn
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 6

CLIENT

Pennant Walters Limited

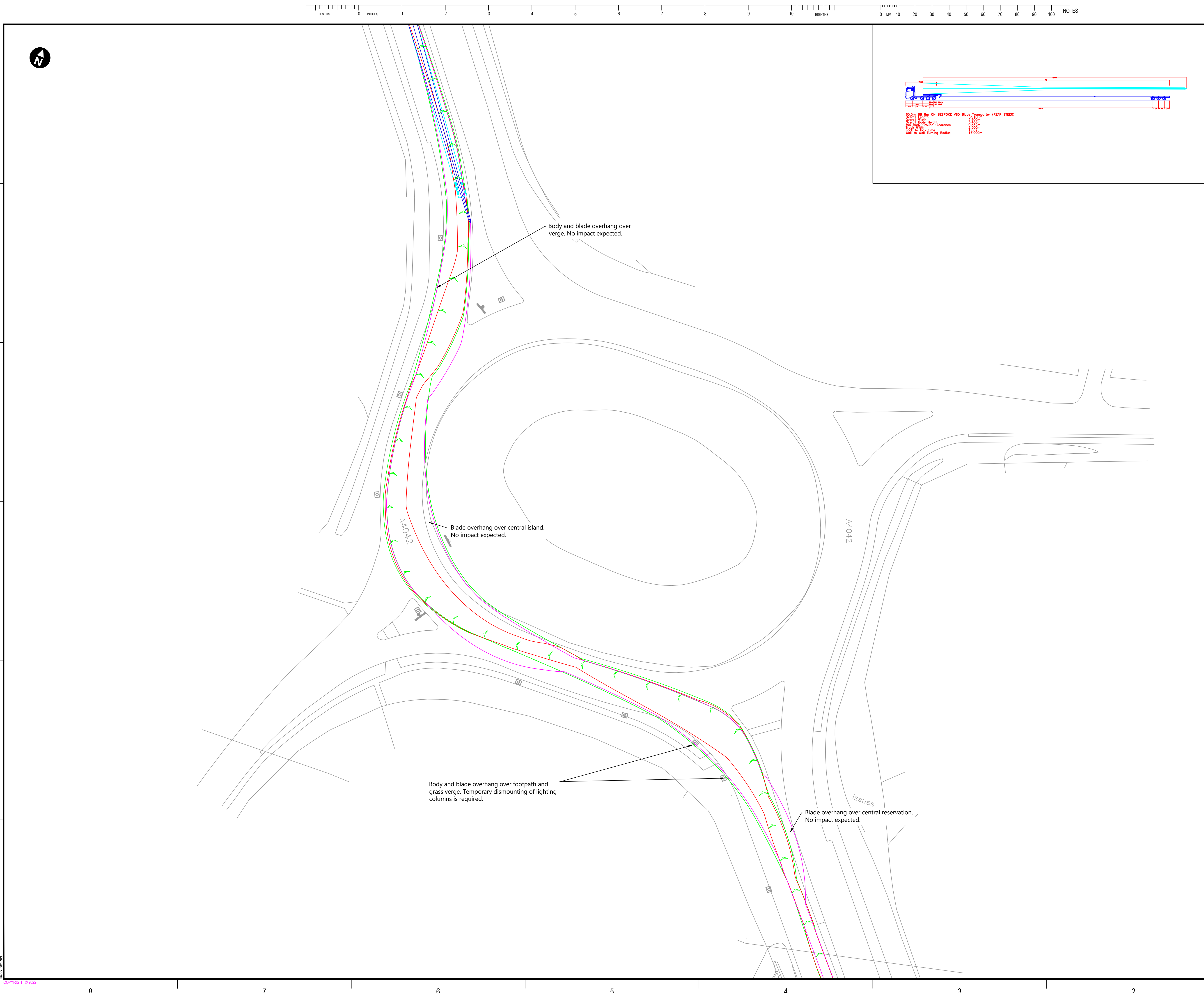
PROJECT REF. No. 807095

wood.

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NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2726100

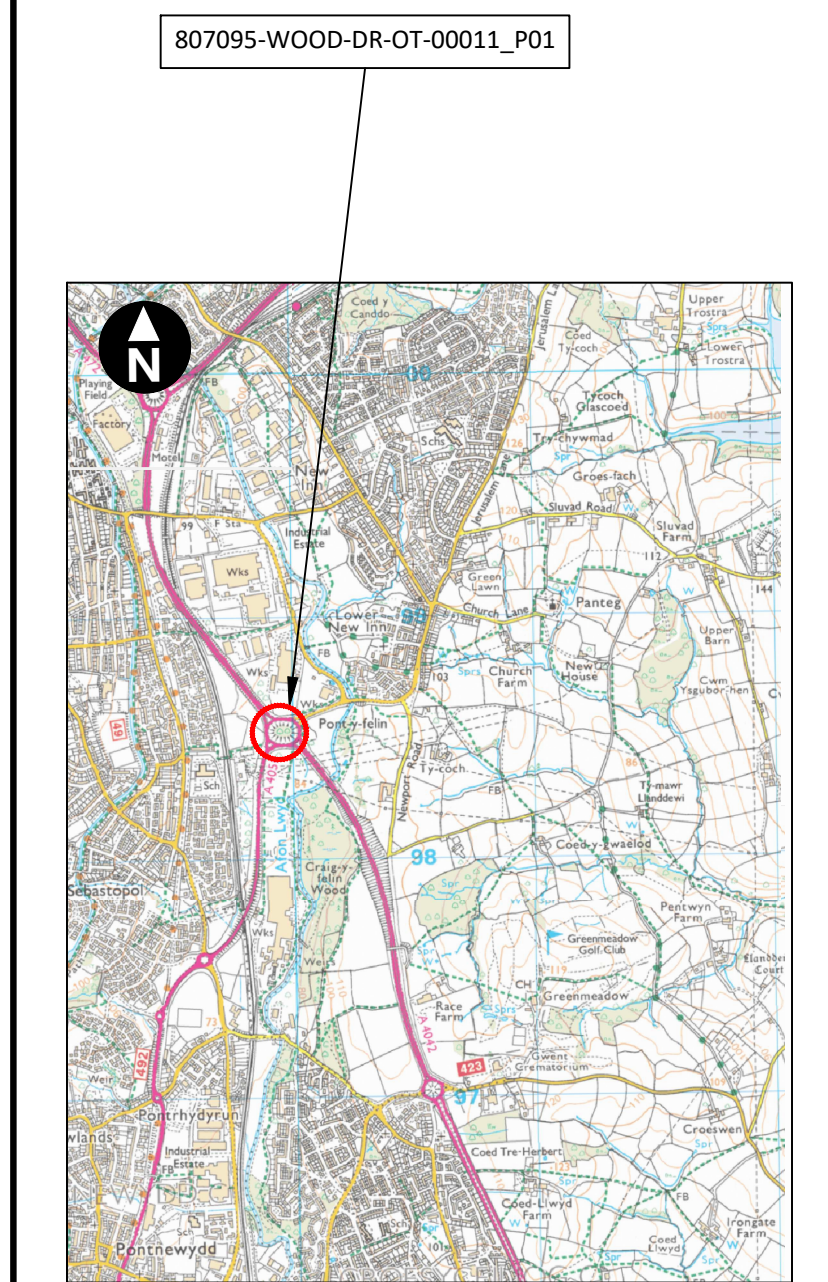
DRAWING No.	REV
807095-WOOD-DR-OT-00010	P01

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- Key
- Indicative location of existing lighting column
 - Indicative location of existing traffic sign
 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 7

CLIENT

Pennant Walters Limited

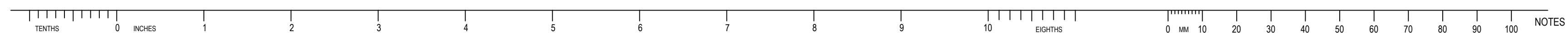
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wood.

PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH,
NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2726100







DRAWING No.	807095-WOOD-DR-OT-00011	REV	P01
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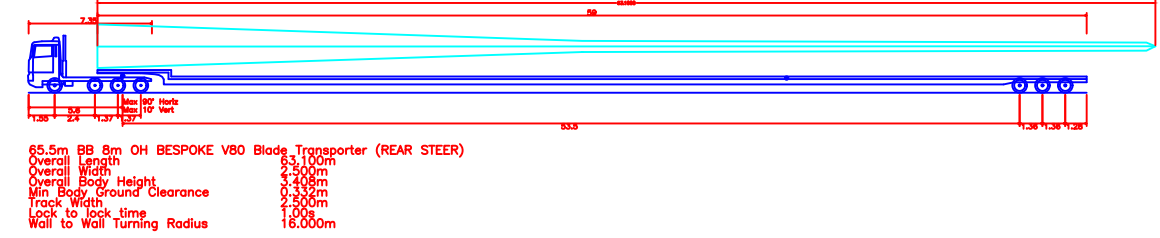
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807095-WOOD-DR-OT-00013	P01



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Key

	Indicative location of the existing lighting column
	Indicative location of the existing traffic sign
	Vehicle body
	Vehicle wheel track
	Wind turbine blade outline
	Temporary hardstanding area



Body and blade overrun over splitter island.
Temporary dismounting of sign post and bollard is required.

- Wheel track run over splitter island.
- Temporary dismounting of sign post and temporary hardstanding is required.

- Body and blade overrun over splitter island.
- Temporary dismounting of sign post and bollard is required.



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS				SUITABILITY	
Initial Status				S0	

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis Pinch Point 10

CLIENT

Pennant Walters Limited

PROJECT REF. No. 807095

wood.

PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH,
NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2726100

DRAWING No.

807095-WOOD-DR-OT-00014

EV

P01

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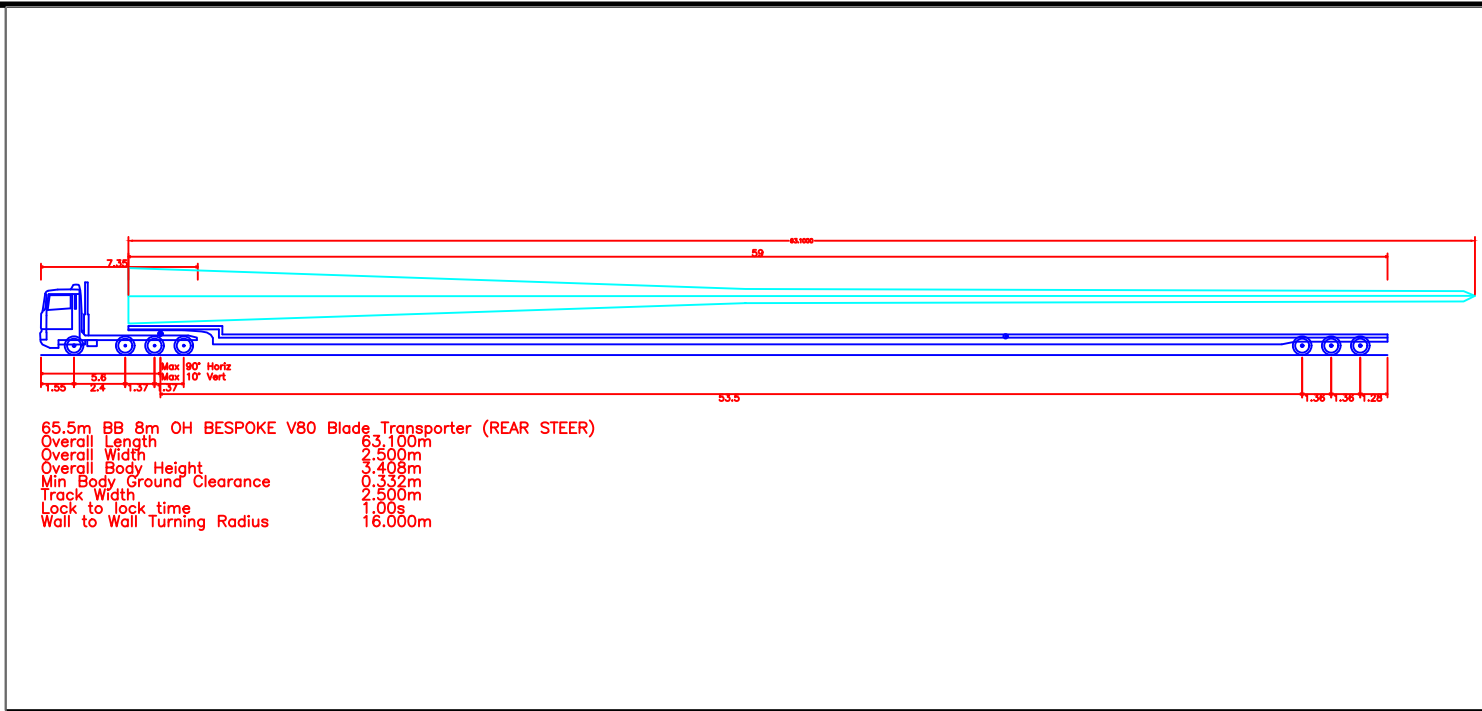
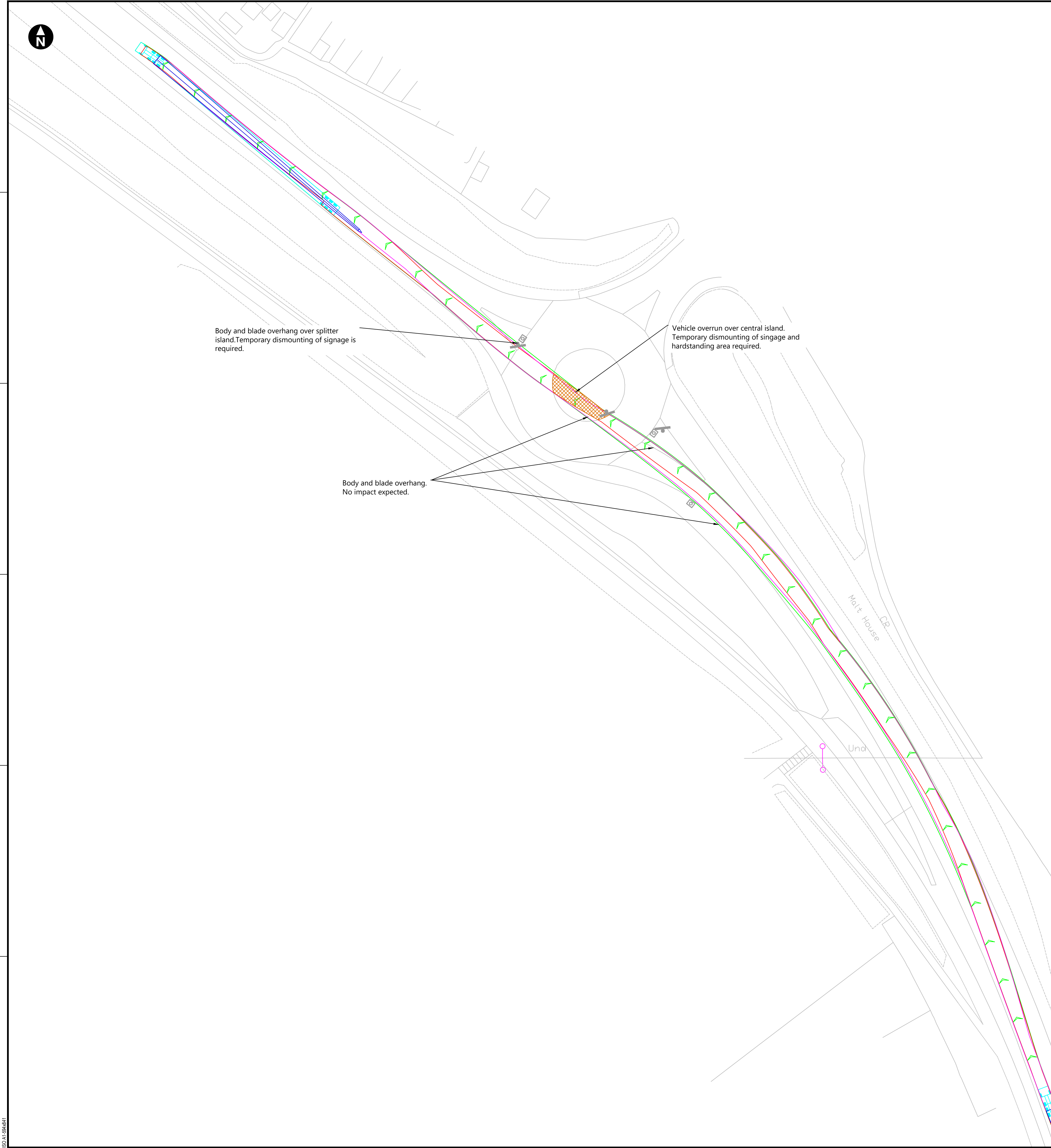
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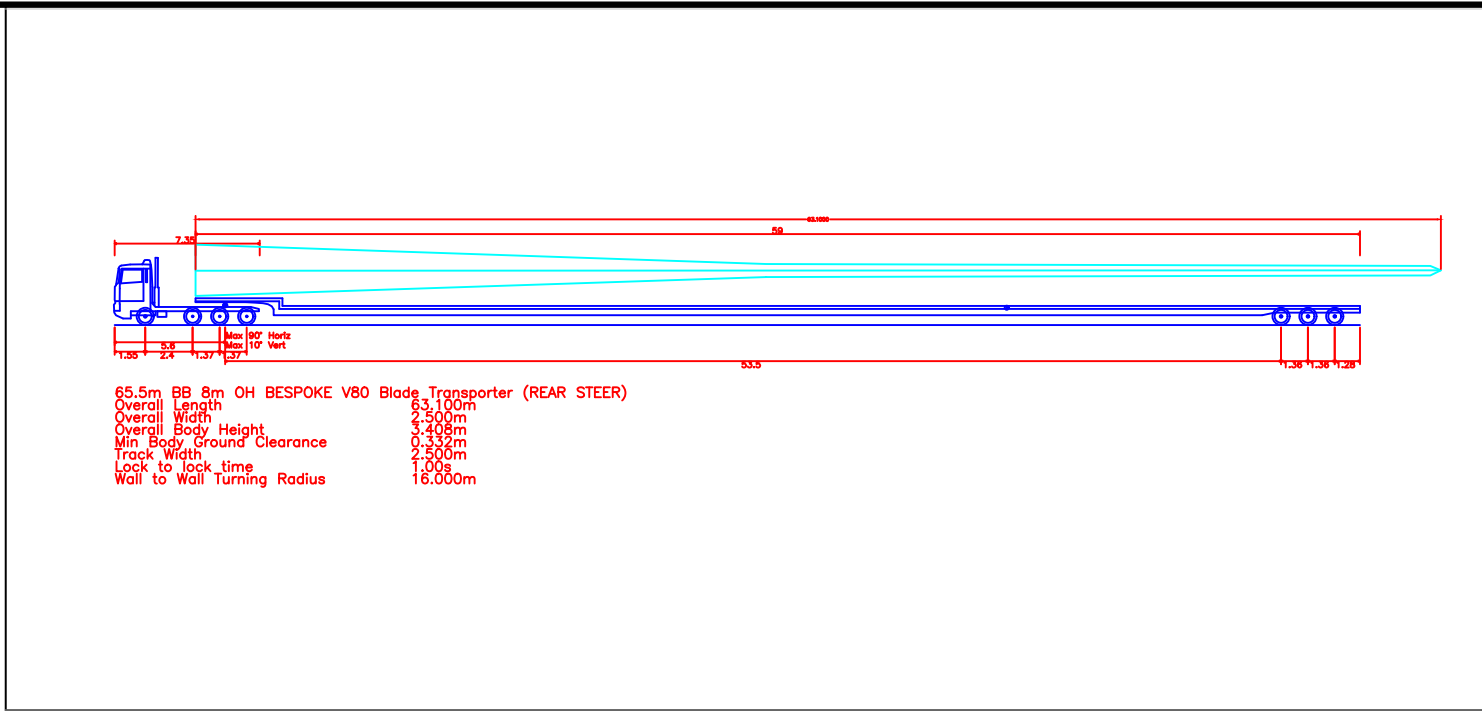
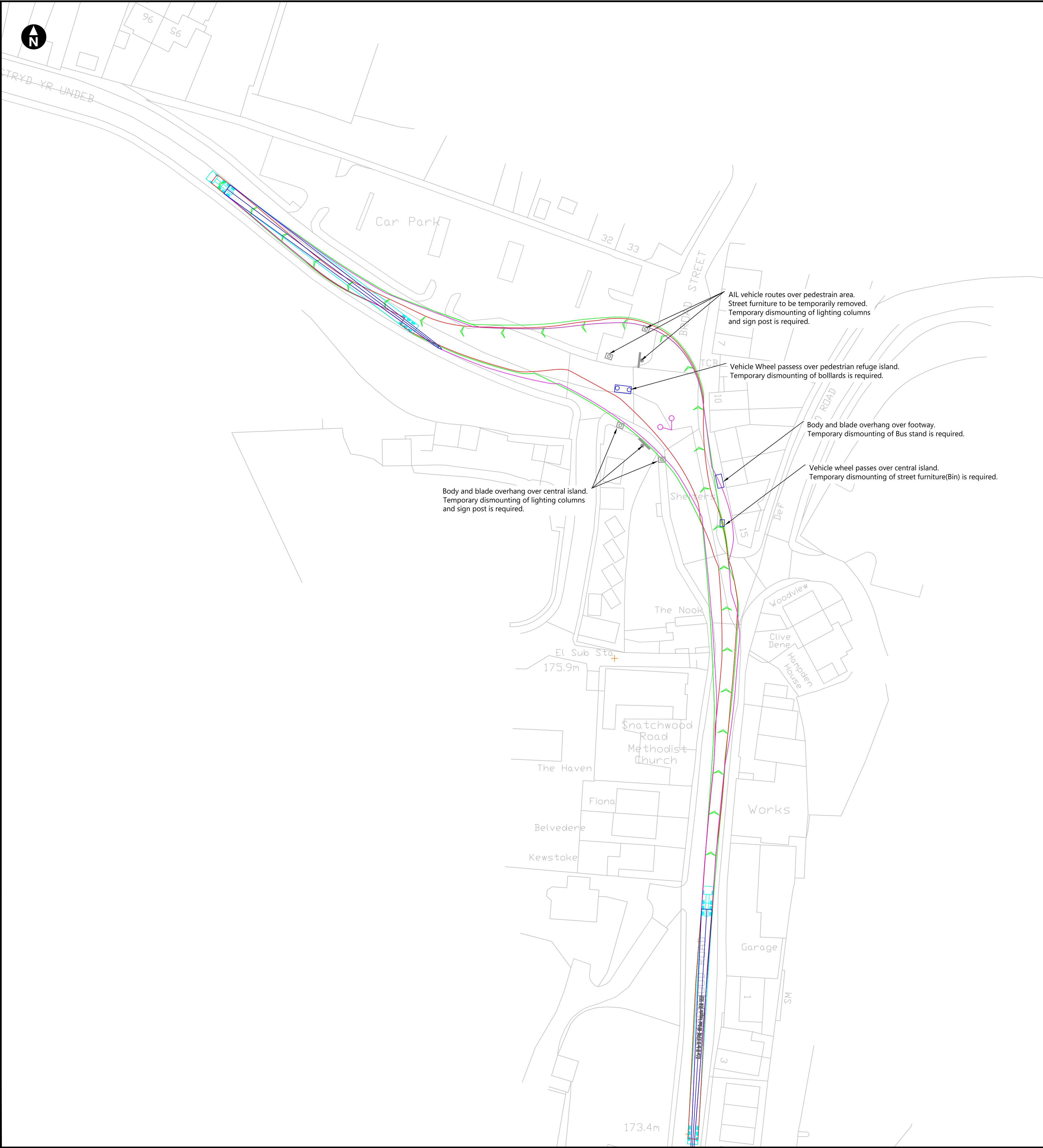
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Key

- Indicative location of the existing lighting column
- Indicative location of the existing traffic sign
- Vehicle body
- Vehicle wheel track
- Wind turbine blade outline
- Temporary hardstanding area

807095-WOOD-DR-OT-00015

P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0
SCALE: 1:500 @ A1					
PROJECT TITLE					
Mynydd Llanhilleth Abnormal Indivisible Load (AIL) Access Study					
DRAWING TITLE					
Swept Path Analysis Pinch Point 11					
CLIENT					
Pennant Walters Limited					
PROJECT REF. No. 807095					
wood. PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH, NEWCASTLE UPON TYNE, NE3 3AF TEL: (0191) 2726100					
DRAWING No. 807095-WOOD-DR-OT-00015					REV P01



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Key

- Indicative location of the existing lighting column
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- Vehicle body
- Vehicle wheel track
- Wind turbine blade outline
- Temporary hardstanding area

807095-WOOD-DR-OT-00016_P01

P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0
SCALE: 1:500 @ A1					
PROJECT TITLE					
Mynydd Llanhilleth Abnormal Indivisible Load (AIL) Access Study					
DRAWING TITLE					
Swept Path Analysis Pinch Point 12					
CLIENT					
Pennant Walters Limited					
PROJECT REF. No. 807095					
wood. PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH, NEWCASTLE UPON TYNE, NE3 3AF TEL: (0191) 2726100					
DRAWING No. 807095-WOOD-DR-OT-00016					REV P01

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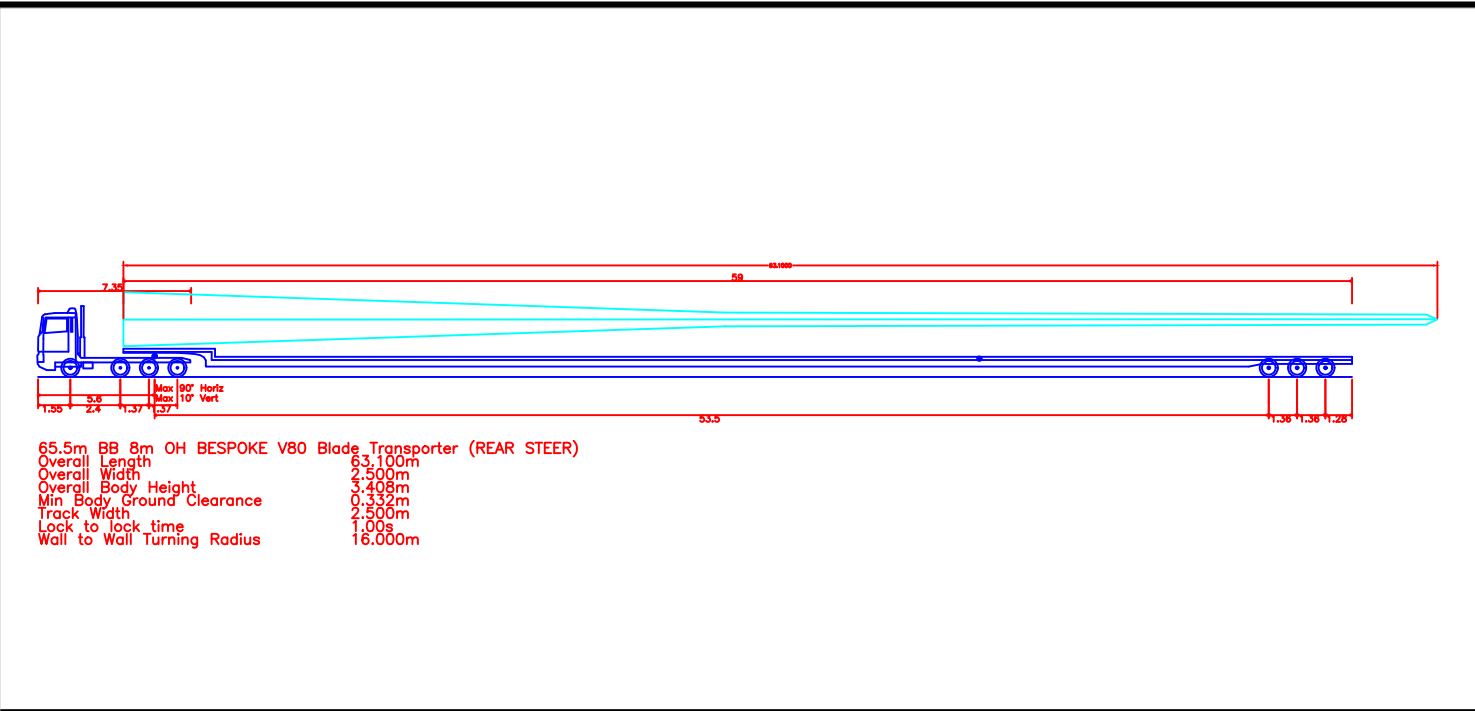
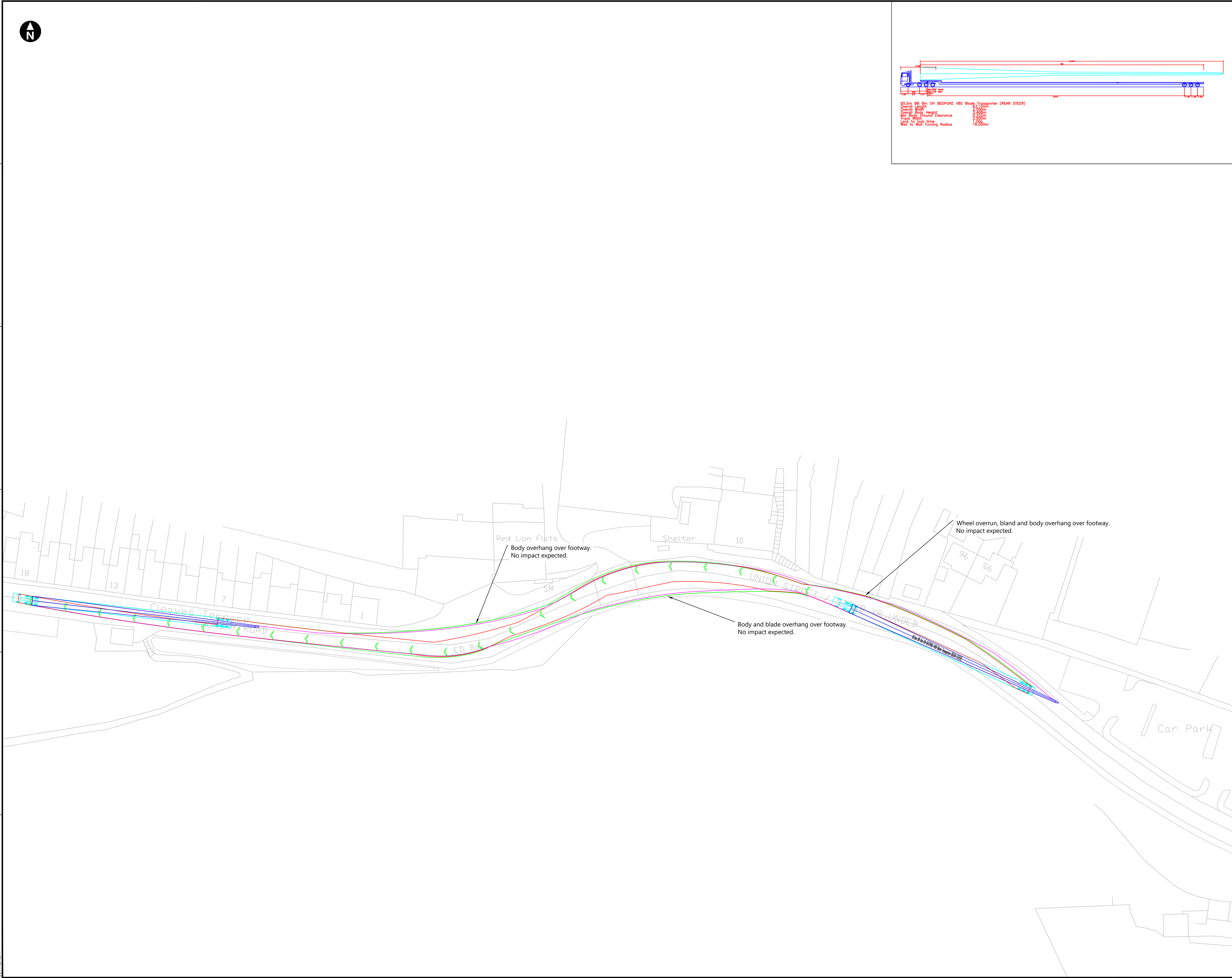
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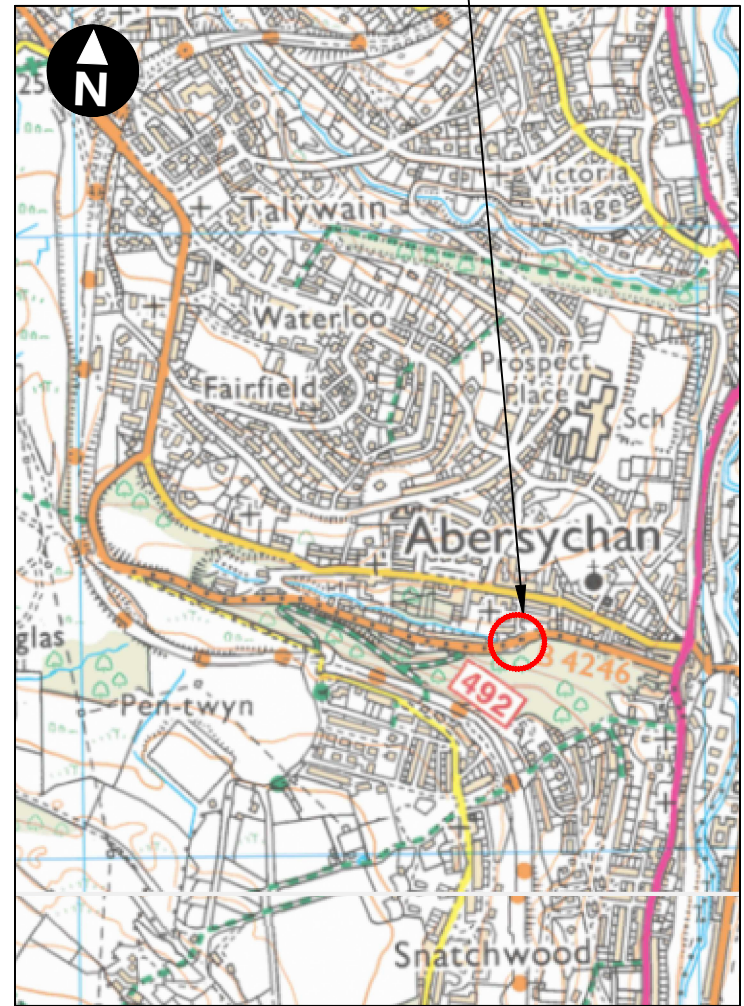
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- Key
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 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area

807095-WOOD-DR-OT-00017_P01



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 13

CLIENT

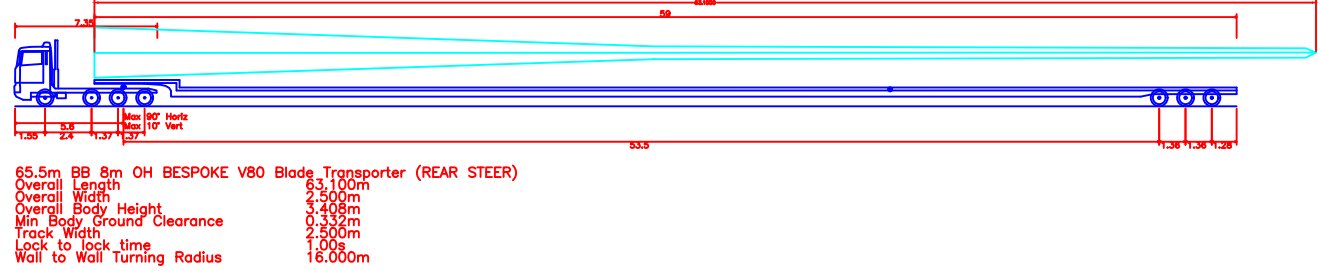
Pennant Walters Limited

PROJECT REF. No. 807095

wood.

PARTNERSHIP HOUSE, REGENT FARM ROAD, GOSFORTH,
NEWCASTLE UPON TYNE, NE3 3AF
TEL: (0191) 2726100

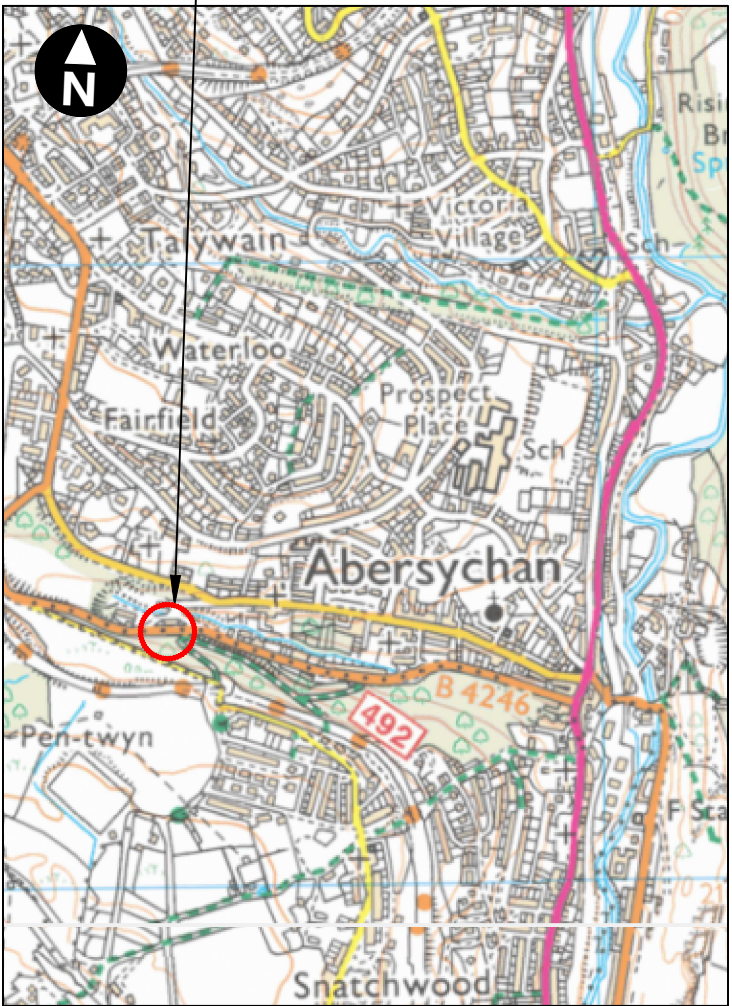
DRAWING No.	807095-WOOD-DR-OT-00017	REV	P01
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- Key
- Indicative location the existing lighting column
 - Indicative location the existing traffic sign
 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area

807095-WOOD-DR-OT-00018_P01



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 14

CLIENT

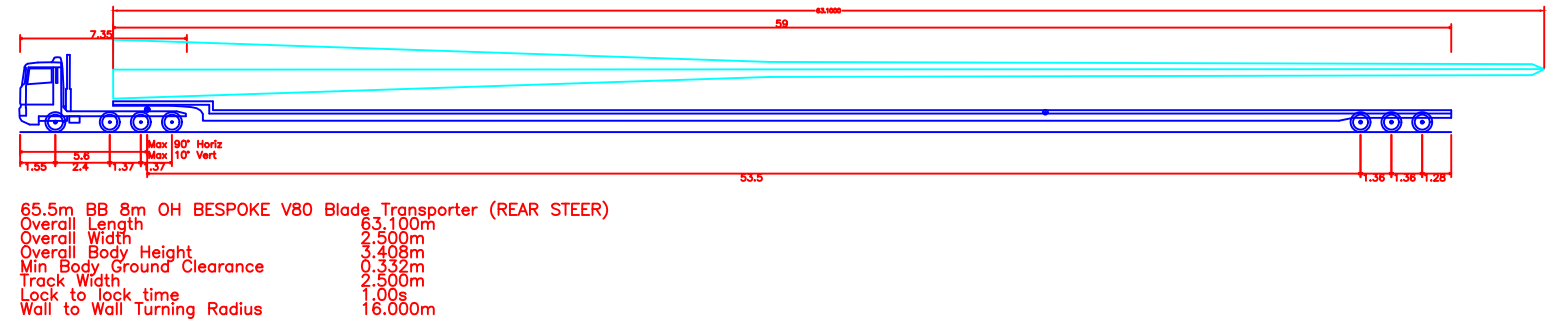
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wood.

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DRAWING No.	807095-WOOD-DR-OT-00018	REV	P01
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- Key
- Indicative location of the existing lighting column
 - Indicative location of the existing traffic sign
 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 15

CLIENT

Pennant Walters Limited

PROJECT REF. No. 807095

wood.

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TEL: (0191) 2726100

DRAWING No. 807095-WOOD-DR-OT-00019

REV P01

Wheel overrun, body and blade overhang over footway. No impact expected.

Body and blade overhang over footway. Telegraph pole with streetlighting required to be temporarily dismantled.

Wheel overrun, body and blade overhang over footway and into third party land.

Body and blade overhang over footway and into vegetation. Trimming back of vegetation is required to ensure safe passage of the vehicle and load.

Body and blade overhang footway and into vegetation. Temporary dismantling of street sign and trimming back is required of vegetation to ensure safe passage of the vehicle and load.

Wheel overrun, temporary hardstanding area required. Section of barrier to be temporarily dismantled.

F

E

D

C

B

A

F

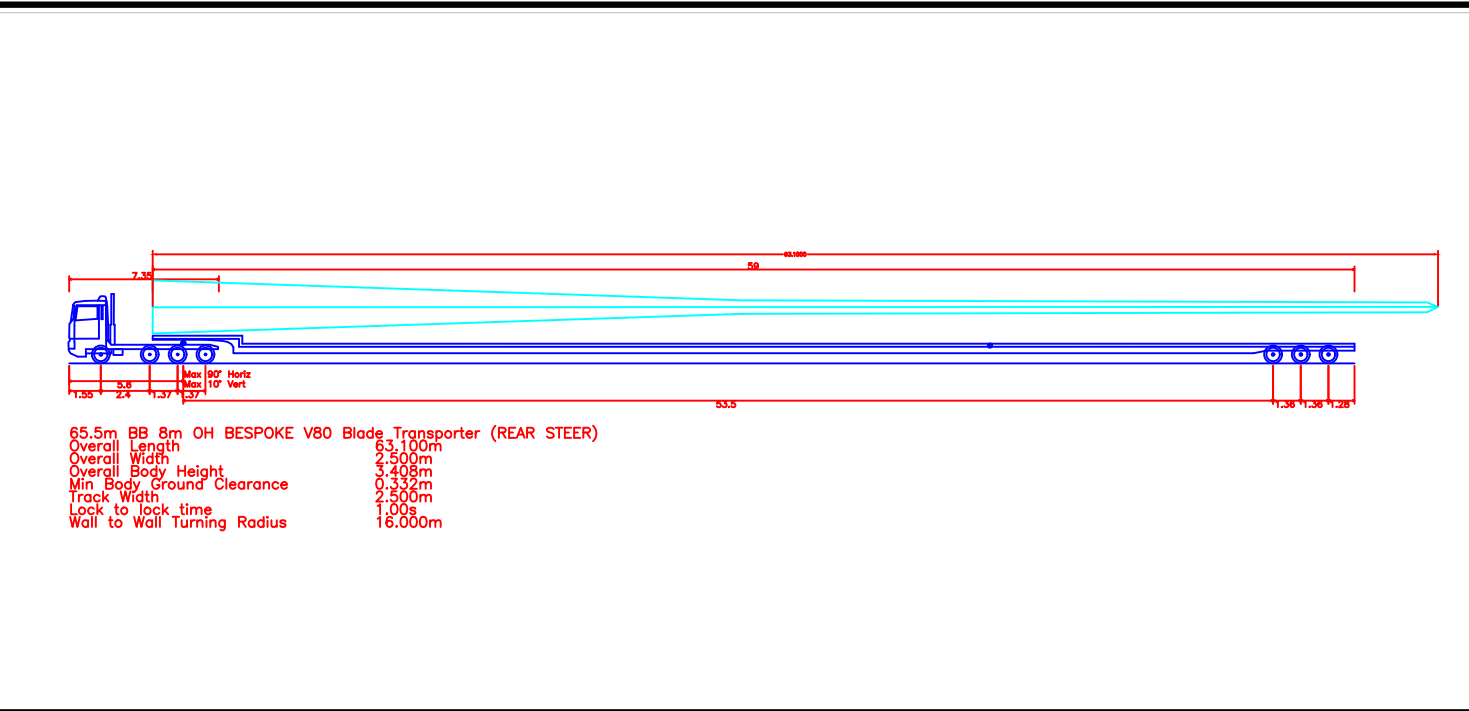
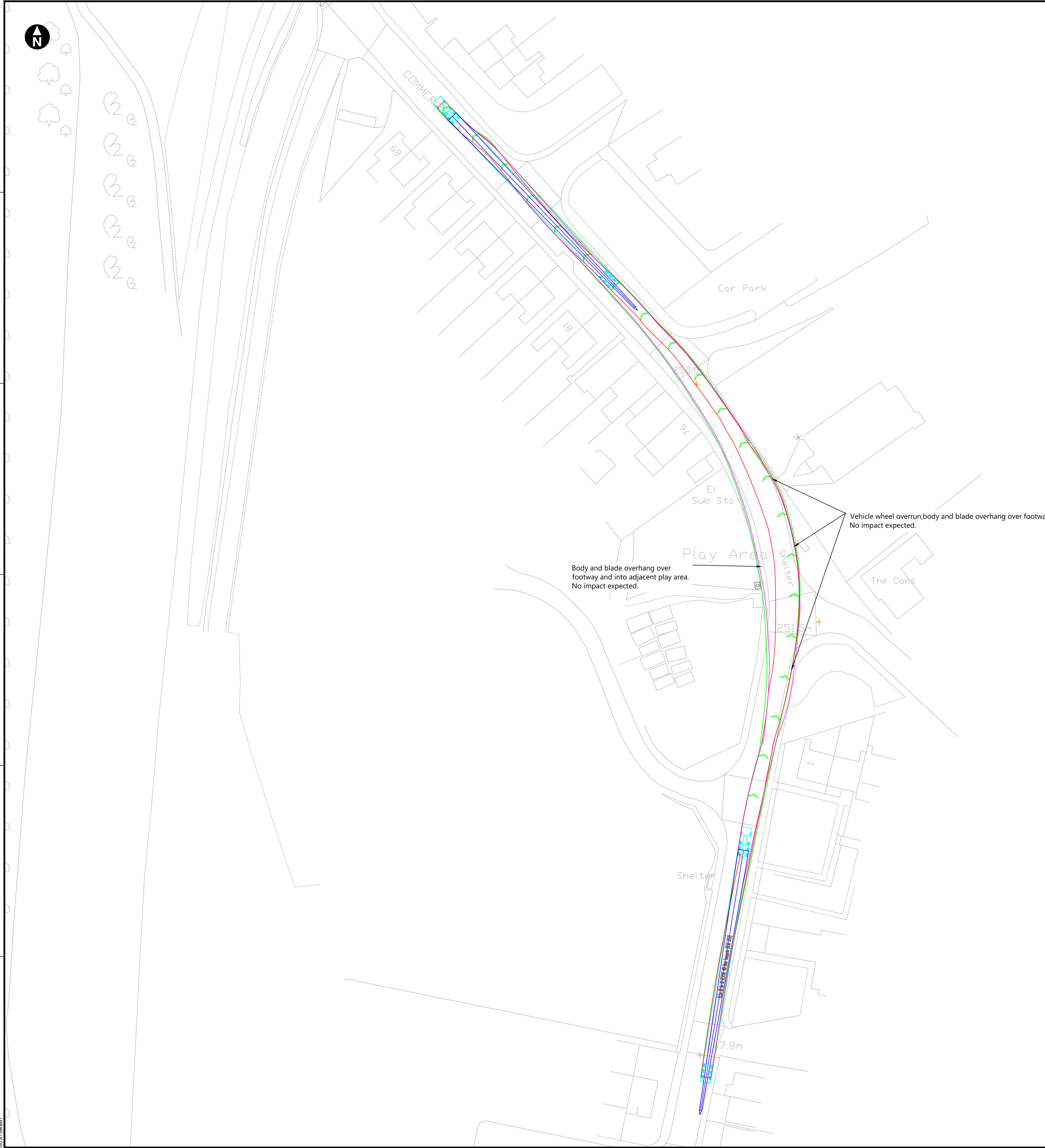
E

D

C

B

A



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- Key
- Indicative location of existing lighting column
 - Indicative location of existing traffic sign
 - Vehicle body
 - Vehicle wheel track
 - Wind turbine blade outline
 - Temporary hardstanding area



P01	03/11/22	First Issue	VS	AG	SE
REV	DATE	REVISION/ISSUE DESCRIPTION	DRN	CHK	APP
DRAWING STATUS					SUITABILITY
Initial Status					S0

SCALE: 1:500 @ A1

PROJECT TITLE

Mynydd Llanhilleth
Abnormal Indivisible Load (AIL) Access Study

DRAWING TITLE

Swept Path Analysis
Pinch Point 16

CLIENT

Pennant Walters Limited

PROJECT REF. No. 807095

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DRAWING No.	807095-WOOD-DR-OT-00020	REV	P01
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