Foel Fach Wind Farm Limited.

Foel Fach Wind Farm – Environmental Statement Volume III

Appendix 11.1: Transport Assessment

Project Reference: 664094

DECEMBER 2025

Energy for generations

Coriolis Energy

RSK

Pell Frischmann

Foel Fach Wind Farm

Technical Appendix 11.1: Transport Assessment

November 2025

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Prepared for

Foel Fach Wind Farm Limited

22-24 King Street
Maidenhead
Berkshire
SL6 1EF

Prepared by

Pell Frischmann Consultants Limited

First Floor, South Wing
55 Baker Street
London
W1U 8EW

Pell Frischmann

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1 Introduction

1.1 Purpose of the Report

Pell Frischmann Consultants Limited has been commissioned by RSK Environmental Limited on behalf of Foel Fach Wind Farm Limited (hereafter referred to as the 'Applicant'), to prepare a Transport Assessment (TA) supporting a planning application for the proposed Foel Fach Wind Farm (the 'Proposed Development'), located to the north-east of Bala, within the Gwynedd Council administrative area, North Wales.

The purpose of this report is to identify the key transport and access issues associated with the Proposed Development, including the route for abnormal indivisible loads (AILs). The TA evaluates potential traffic impacts and identifies where mitigation works may be required to accommodate predicted construction traffic. However, the detailed design of these mitigation works is beyond the agreed scope of this report. All proposed measures will be agreed with the appropriately local authorities and the Welsh Government prior to the commencement of construction activities and deliveries.

1.2 Report Structure

Following this introduction, the TA report is structured as follows:

- Section two describes the Proposed Development;
- Section three reviews the relevant transport and planning policies;
- Section four sets out the methodology used within this assessment;
- Section five describes the baseline transport conditions;
- Section six describes the trip generation and distribution of traffic in the study area;
- Section seven summarises the traffic impact assessment;
- Section eight considers mitigation proposals for development related traffic within the study network; and
- Section nine summarises the findings of the TA and outlines the key conclusions.

2 Proposed Development

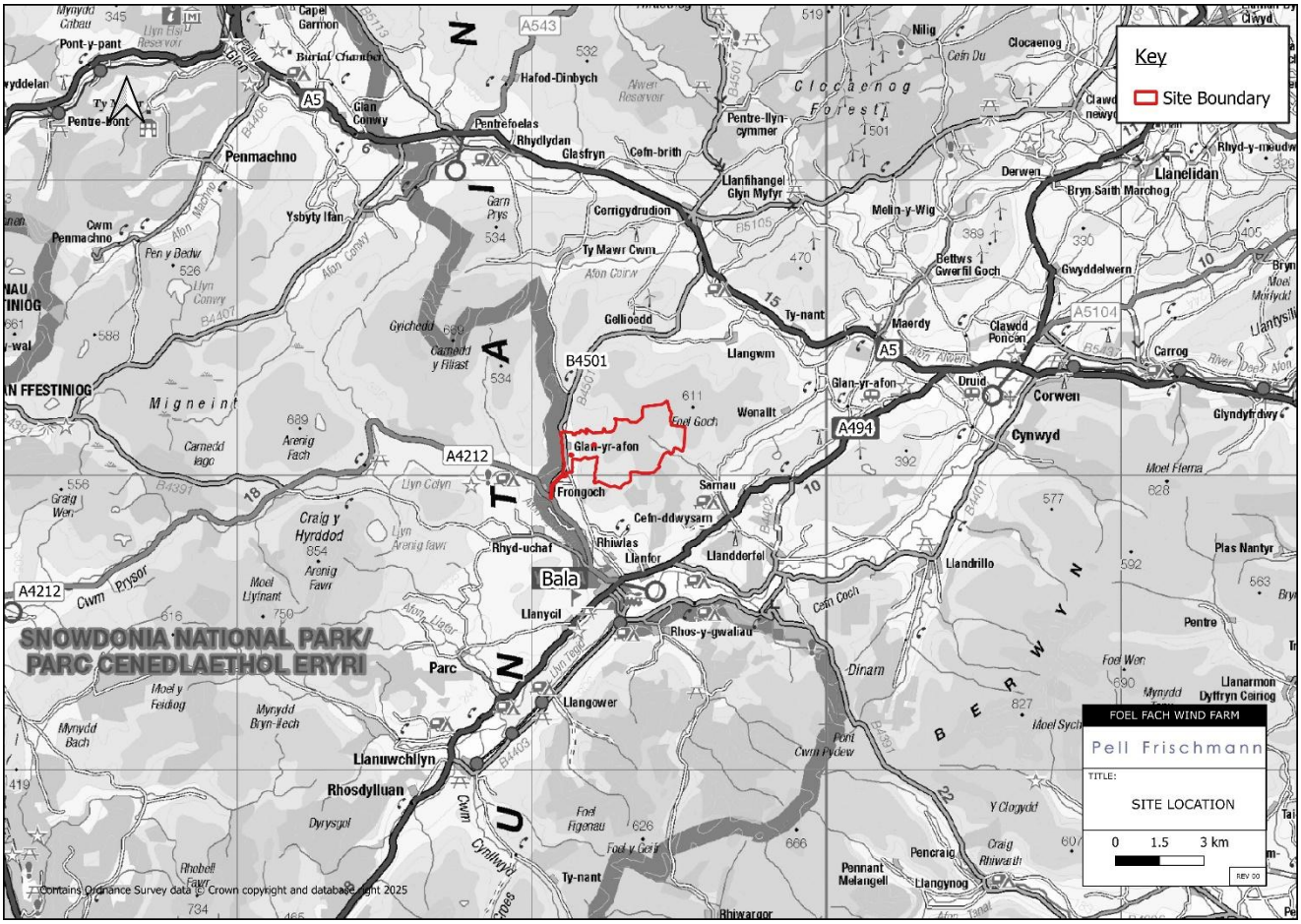
The Application Site (herein 'The Site') comprises over 659 hectares (ha) of land located on grazing moorland, approximately 3.1 kilometres (km) north-east of the town of Bala, Gwynedd, in North Wales, within the administrative boundary of Gwynedd Council.

The Site is located within the Foel Goch Uplands and lies nestled between the peaks of Garnedd Fawr and Moel Emoel. The surrounding area is characterised by upland moorland with grazing land, small areas of commercial forestry, and pasture fields on the lower slopes.

The B4501 bounds the western edge of the Site, linking with the A5 in the north and the A4212 to the south, providing access to the town of Bala.

The location of the Site is shown in **Figure 1**.

Figure 1 Site Location



2.1 Proposed Development

The Proposed Development comprises the construction, operation and decommissioning of 10 wind turbines, a Battery Energy Storage System (BESS), substation and ancillary infrastructure works.

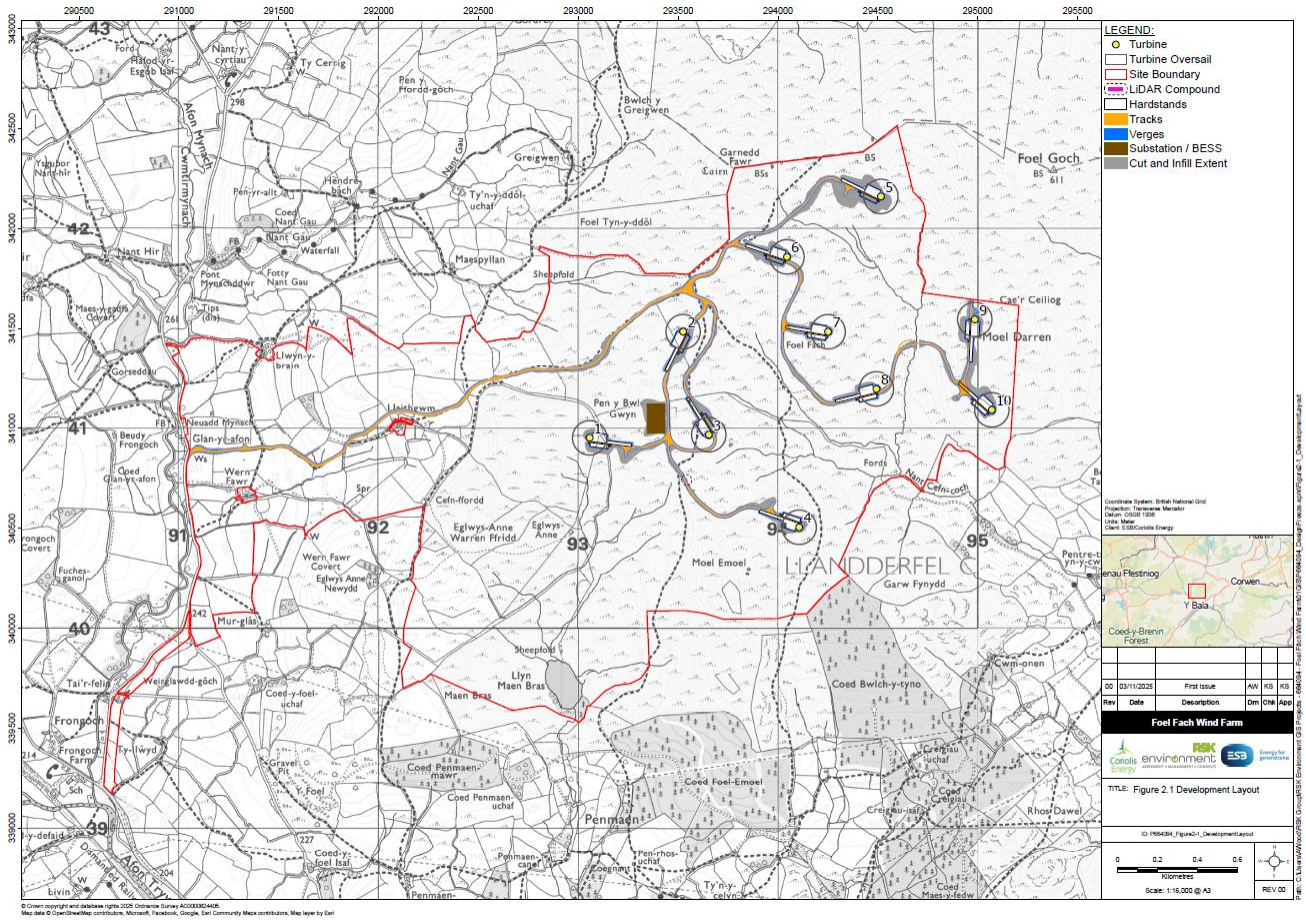
The main components of the Proposed Development include:

- 10, three bladed horizontal axis wind turbines;
- wind turbine foundations and hardstanding areas which will include crane pad hardstanding areas and laydown / storage areas;
- an onsite substation;

- a Battery Energy Storage System (BESS);
- permanent wind monitoring equipment (LIDAR);
- site access improvements, through the upgrading of the existing junction off the B4501;
- onsite access tracks (new roads and upgraded existing roads/tracks), passing places and vehicle turning heads;
- underground power cables linking the wind turbines and the substation;
- watercourse crossings and associated infrastructure;
- drainage systems
- micrositing up to 50 m
- onsite signage
- temporary construction and storage compound;
- temporary working area north of the tracks leading to turbine 9 and turbine 10
- temporary concrete batching compound
- up to five temporary materials/ soil storage areas (if required)
- temporary peat storage area
- creation of temporary borrow pit for the extraction of stone; and
- biodiversity enhancements proposals.

In addition to the above, offsite works will be required, where necessary, as part of the Proposed Development to facilitate the transport of AILs. A complete description of the Proposed Development is provided in **Environmental Statement (ES) Volume II, Chapter 2: Description of the Proposed Development** and shown in **Figure 2**.

Figure 2 Proposed Development



2.2 Access Arrangements

The Proposed Development will be accessed by an upgraded simple priority junction off the B4501 at Glan-yr-afon. The access junction will provide access to the Site for all AILs associated with the turbine deliveries, as well as access for Heavy Goods Vehicles (HGVs) delivering construction materials and general Site traffic. The arrangement of the proposed access is shown in **Figure 3** and **Figure 4** (prepared by Natural Power).

Figure 3 Proposed Site Access – General Arrangement

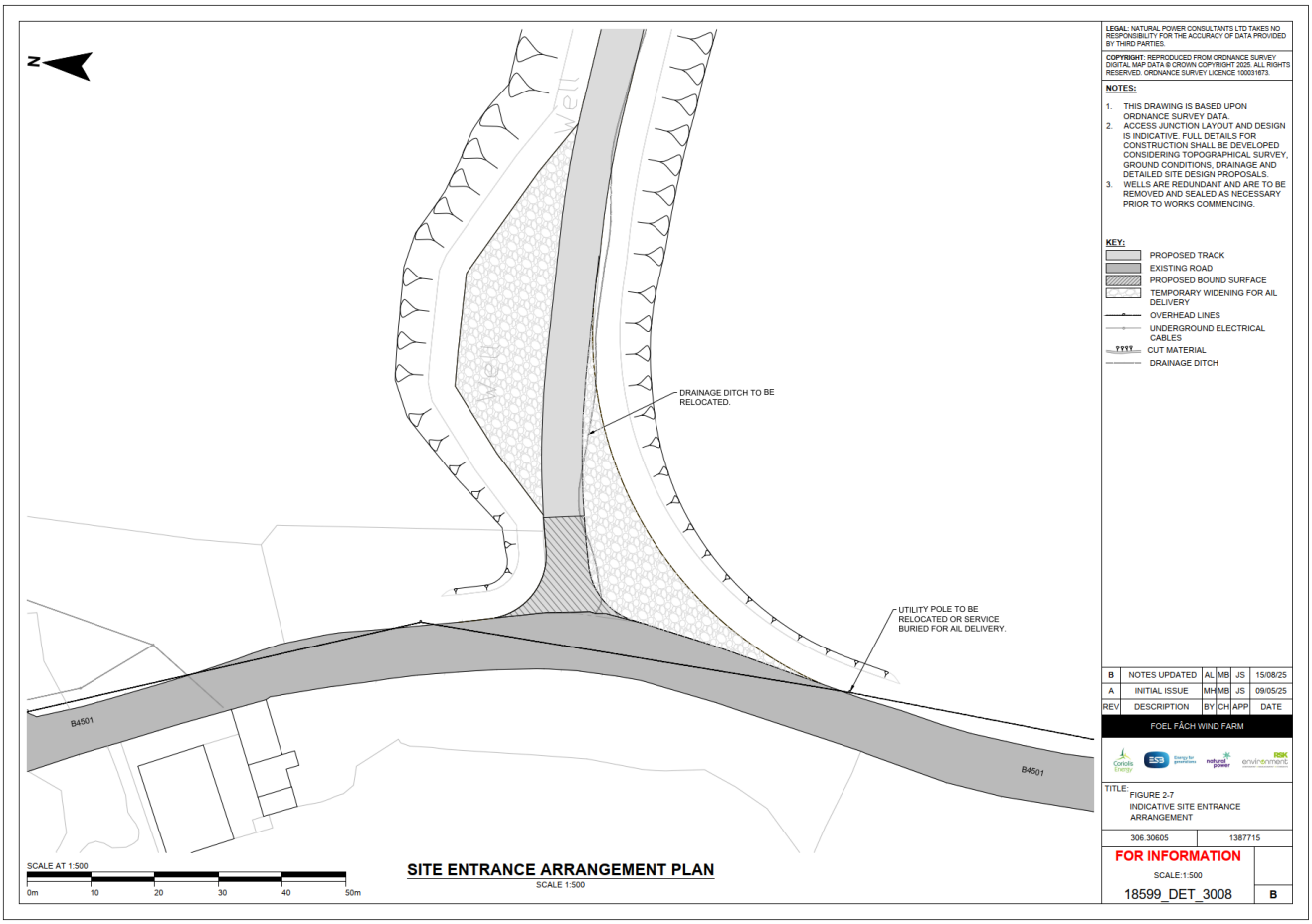
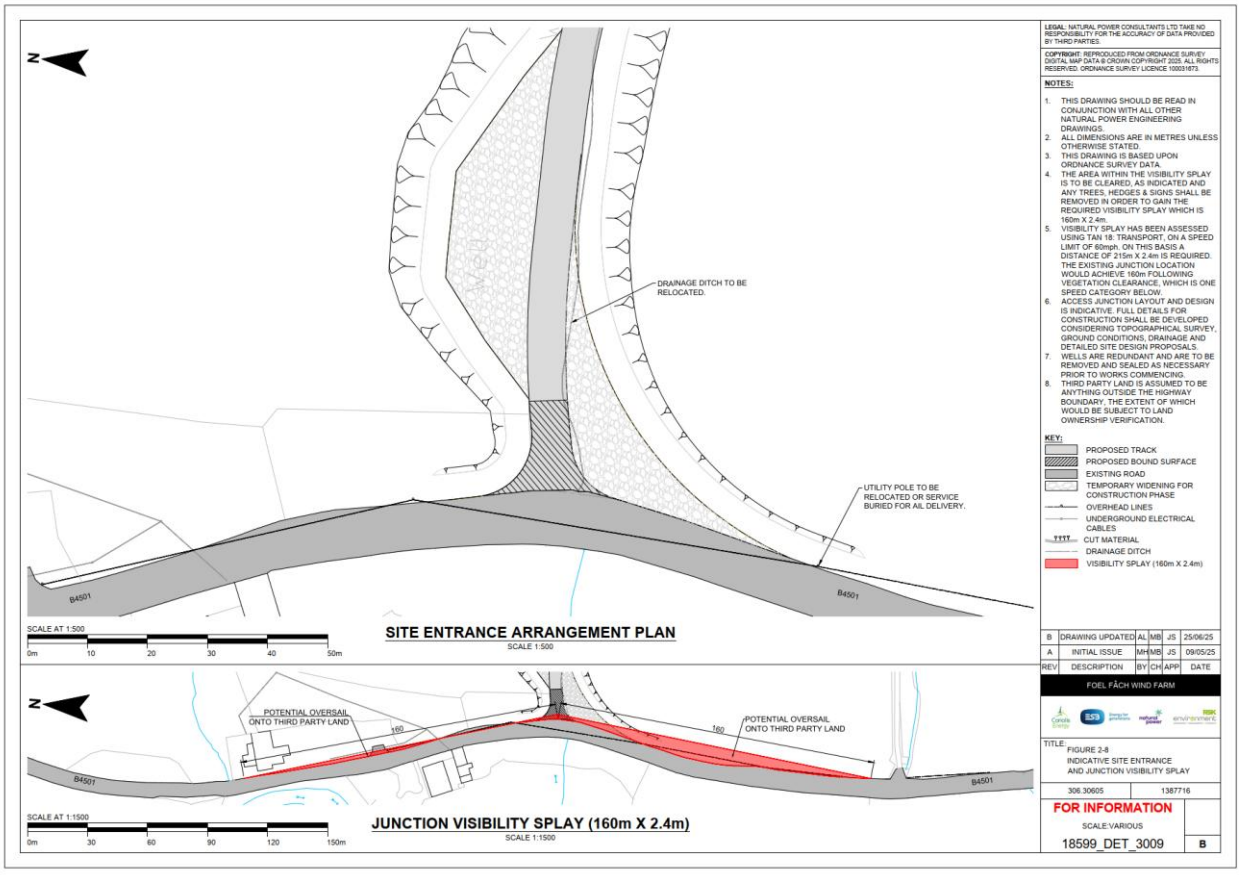


Figure 4 Proposed Site Access – General Arrangement & Visibility Splay



Construction traffic associated with the delivery of materials to the Proposed Development will approach the Site predominantly from the north via the A5 and B4501, although some may also come from the A494, A4212 and B4501 from the south.

All AIL traffic will access from the Port of Entry (PoE) at Liverpool, utilising sections of proven AIL routes used during the construction of other wind farms in the area. The port is the closest suitable port to Site and, as such, in line with the Government's "Water Preferred" policy towards AIL movements.

2.3 Candidate Turbines

The Applicant has indicated that they wish to consider the worst-case components from an Enercon E175 turbine with maximum tip heights of 200 metres (m) and 220 m for the AIL route assessments and for the purposes of the transport works. Pell Frischmann Consultants Limited has contacted Enercon for detailed information regarding the Enercon E175 turbine components in order to undertake the AIL route assessment, however, this information was not provided. Therefore, the Nordex N175 turbine has been used to provide a robust assessment of the AIL route and likely mitigation measures required.

The details of the components available at this time have been provided by Nordex and are detailed in **Table 1**. Information on tower sections for the Nordex N175 are not currently available.

Table 1: Turbine Components Summary

Component	Length (m)	Width (m)	Height / Min Diameter (m)	Weight (t)
Blade	85.66	4.53	4.00	32.70

A detailed Route Survey Report (RSR) has been prepared and appends this TA as **Annex 1**. Within the RSR the worst case tower section has been assessed with the following dimensions 30 m x 4.8 m x 4.8 m.

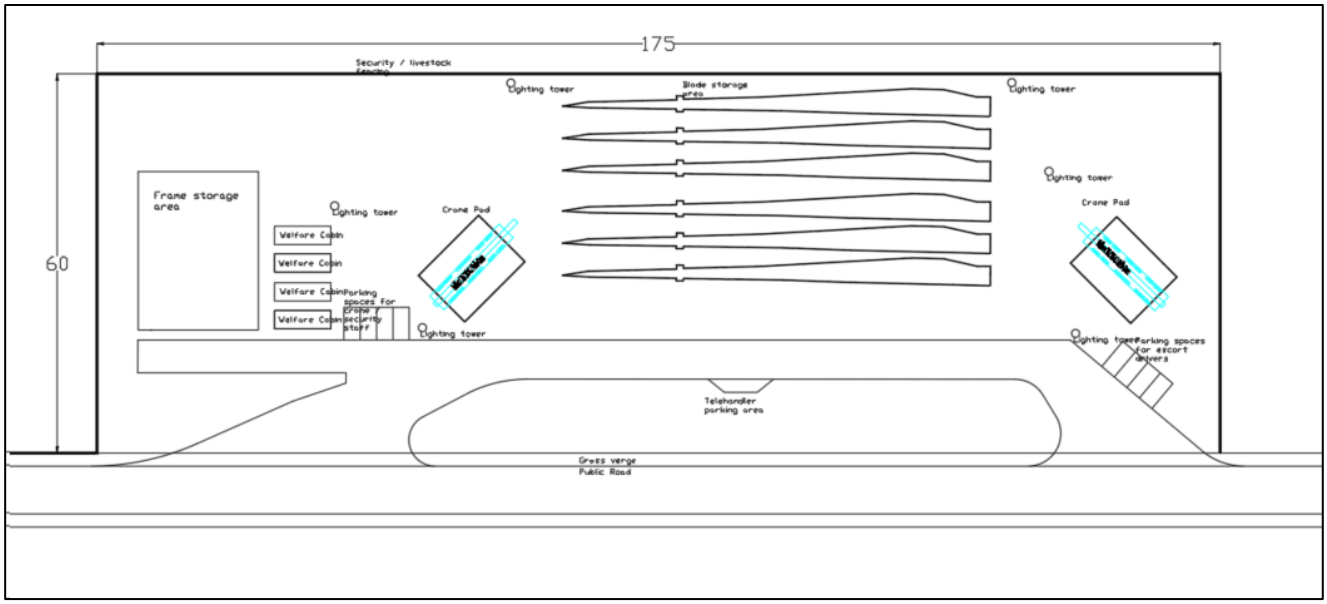
The selection of the final turbine model and specification will be subject to a commercial procurement process following consent of the application. The assumed dimensions may therefore vary slightly from those assumed as part of this report and the associated RSR; however, the turbine tip height will be no greater than 220 m.

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be carried on a Dolly Clamp trailer to reduce the need for mitigation in constrained sections of the route.

It is proposed that all blade loads would be transferred as far as possible utilising the blade Dolly trailer, before being transferred to the Blade Lifting trailer for the final section of the route through to the Proposed Development. The Applicant is currently in discussions with landowners along a section of the A487 to find a suitable location for the transfer area, which would be used to store blades and transfer them from the Dolly Trailer to the blade lifting trailer. The preferred option would be determined post consent and in full consultation with the Local Authority.

The blade transfer area could be indicatively up to circa 200 m x 60 m and would need to include an access junction and two crane pads. Storage for up to six blades may also be available, with all infrastructure designed in accordance with turbine supplier standards. Details of the indicative transfer station are provided below in **Figure 5**.

Figure 5 Indicative Blade Transfer Station



The use of the blade lifting trailer for severely constrained sections of the AIL access route reduces the amount of additional land required and to reduce the extent of associated physical improvements. This trailer can lift blades up to a maximum angle of 60 degrees to clear potential constraints.

Examples of the vehicles and trailers that are likely to transport loads are shown in **Figure 7** to **Figure 9**.

Figure 6 Dolly Clamp Trailer

Figure 7 Blade Lifting Trailer

Figure 8 Tower Trailer

These configurations are subject to confirmation by the chosen haulier at the time of their commissioning.

As the loads are classified as Special Order, due to a rigid length in excess of 30 m, a full Police Escort would be required along the full length of the route.

3 Policy Context

3.1 Introduction

An overview of relevant transport planning policies has been undertaken and is summarised below for national and local government policies.

3.2 National Policy and Guidance

3.2.1 Future Wales – The National Plan 2040 (2021)

Future Wales is the Welsh Government's National Development Framework. It applies the key principles of Planning Policy Wales and establishes where in Wales development should take place and how these places should grow and change. Future Wales is the highest tier of Development Plan.

The Welsh government strongly supports the principles of developing renewable and low carbon energy to meet future demands. Decision makers must give significant weight to the need to meet Wales international commitments to generate 70% of consumed electricity by renewable means by 2030. There is a presumption in favour of large-scale wind energy developments in areas that have been pre-assessed for wind energy by the Welsh Government.

Applications for Developments of National Significance must be determined in accordance with Future Wales.

3.2.2 Planning Policy Wales Edition 12 (2024)

Planning Policy Wales Edition 12 (PPW12) establishes the key principles for the planning system and is a material consideration to the assessment of the development. It establishes what Development Plans and decisions taken by the planning system must achieve and how developments should be shaped to deliver the best possible outcomes. PPW12 informs the preparation of Development Plans and development management decisions.

In relation to Transport Assessments, PPW12 states that:

"Transport Assessments are an important mechanism for setting out the scale of anticipated impacts a proposed development, or redevelopment, is likely to have. They assist in helping to anticipate the impacts of development so that they can be understood and catered for appropriately.

They should cover the transport impacts during the construction phase of the development, as well as when built and in use. Transport Assessments also provide an important basis for the preparation of Travel Plans. Further guidance on Transport Assessments and Travel Plans is contained in TAN 18."

3.2.3 Technical Advice Note 18 Transport (2007)

Technical Advice Note (TAN) 18 was published in March 2007. It describes how to integrate land use and transport planning and explains how transport impacts should be assessed and mitigated.

Key requirements of TAN 18 that are applicable to this development include:

- Ensuring that transport infrastructure or service improvements necessary to serve new development allow existing transport networks to continue to perform their identified functions (para 2.3, page 3).
- Submission of Transport Assessments to accompany planning applications for developments that are likely to result in significant trip generation (para 9.2, page 36).
- Access to be provided that reflects the nature and type of road and the volume and character of traffic likely to use the access and the road (para 9.16, page 39).
- Any works to the trunk road resulting from the development to be constructed to the standards applied to its own schemes (para 9.17, page 39).

- Where transport improvements are required in the vicinity of the scheme and beyond to accommodate trips associated with the development, conditions may be imposed to make its commencement / occupation subject to the completion of those works or a developer may be invited to conclude an agreement under section 278 of the Highways Act 1980 for the provision of highway works (para 9.18, page 40).

3.2.4 Welsh Transport Appraisal Guidance (2017)

Welsh Transport Appraisal Guidance (WelTAG) was published in 2017 and aims to provide a framework for thinking about proposed changes to the transport system and it contains best practice for the development, appraisal and evaluation of proposed transport interventions in Wales.

The document notes that a TA will be required where planning applications for development, including changes of use, fall into the categories identified in TAN 18.

3.3 Local Policy and Guidance

3.3.1 Anglesey and Gwynedd Joint Local Development Plan (2011-2026)

The Anglesey and Gwynedd Joint Local Development Plan (JLDP) (2011-2026) was adopted on 31 July 2017. The document provides a framework for sustainable development within the region, ensuring alignment with national and regional planning policies. The document sets out to balance economic growth, environmental conservation, and social development, particularly in areas of natural significance such as the Snowdonia (Eryri) National Park.

In the context of renewable energy projects, the JLDP recognises the importance of transitioning to low-carbon energy sources to mitigate climate change. Policy ADN1 promotes wind energy development in suitable locations, provided it aligns with the area's landscape and environmental sensitivities. Additionally, Key Issue 24 of the JLDP highlights the need to reduce greenhouse gas emissions and promote renewable energy generation, underscoring the region's commitment to contributing to national carbon reduction targets.

With regards to TAs, the JLDP states:

"Proposals for large-scale development or developments in sensitive areas that substantially increase the number of journeys made by private vehicles will be refused unless they include measures as part of a Transport Assessment and/or a Travel Plan. Where the Transport Assessment reveals the need for a Transport Implementation Strategy this will need to be secured through a planning obligation."

Furthermore, Policy TRA4 underscores the need for developments to be planned and designed to mitigate adverse transport impacts. Proposals that fail to incorporate appropriate transport solutions or that risk harming the safe operation of highways and public transport networks will not be supported.

Following the decision in March 2023 to end the joint planning agreement between Cyngor Gwynedd and Isle of Anglesey County Council, the Gwynedd Planning Policy Service was established. A new Local Development Plan (LDP) is being prepared for the Gwynedd Local Planning Authority area, excluding the Eryri National Park, covering the period 2024–2039.

Until the new LDP is adopted, the Anglesey and Gwynedd Joint Local Development Plan (JLDP) remains the policy framework for planning decisions in the area.

3.3.2 Eryri Local Development Plan 2016–2031

The Eryri Local Development Plan (LDP) 2016–2031, adopted by the Snowdonia National Park Authority (now known as Eryri National Park Authority), outlines a comprehensive framework for sustainable development within the National Park. This document reflects the overarching statutory purposes of the National Park:

- To conserve and enhance its natural beauty, wildlife, and cultural heritage.
- To promote opportunities for the public's understanding and enjoyment of its 'Special Qualities.'

The LDP provides specific guidance on development proposals to ensure they align with the unique environmental and cultural sensitivities of the Park, whilst ensuring that any transport-related activities, including those associated with wind farm developments, align with the National Park's objectives for sustainable growth and conservation. Key considerations relevant to transport for wind farm developments include:

Strategic Policy A: National Park Purposes and Sustainable Development

All proposals must promote sustainable development that furthers National Park purposes while conserving its 'Special Qualities.' Key requirements include:

- Prioritising the protection and enhancement of natural beauty and cultural heritage.
- Promoting efficient land use and inclusive access to services while minimising transport-related environmental impacts.

Strategic Policy B: Major Development

Wind farm proposals are classified as major development due to their scale and potential impacts. Such proposals must demonstrate:

- An overriding national need for development that cannot be met outside the Park.
- A rigorous assessment of impacts on local communities, the environment, and cultural heritage.
- Appropriate and acceptable mitigation measures for any identified adverse effects.

Accessibility and Transport

The LDP emphasises reducing the need for private vehicle use by promoting sustainable transport options. Developments must consider access impacts on sensitive landscapes, with particular attention to maintaining tranquillity and reducing environmental damage from construction traffic.

3.3.3 Snowdonia National Park Authority Supplementary Planning Guidance (SPG)

The Snowdonia National Park Authority Supplementary Planning Guidance (SPG) provides detailed recommendations for implementing the policies set out in the Eryri Local Development Plan (LDP) 2016–2031. The SPG is a vital reference for developers proposing wind farm developments within the National Park, particularly in managing transport-related impacts.

Transport Management Plans (TMPs)

The SPG requires developers to prepare comprehensive Transport Management Plans (TMPs) to address the unique challenges posed by construction traffic within Eryri National Park. These plans must include provisions for identifying abnormal load routes, incorporating any necessary road upgrades or mitigation measures. Developers are also tasked with implementing measures to limit impacts on biodiversity and local communities, ensuring the Park's ecological and cultural integrity is maintained. To further minimise disruption, the SPG recommends enforcing traffic timing restrictions to avoid construction vehicle movements during peak tourist periods, preserving the tranquillity and accessibility of the area for visitors.

Road Network Sensitivity

The SPG emphasises the critical need to identify and consider sensitive routes within the National Park. Transport-related activities associated with wind farm developments must be carefully managed to prevent damage to the physical condition of roads, disturbance to wildlife habitats, or adverse effects on the visual landscape. By focusing on these sensitivities, developers can help protect the Park's 'Special Qualities' and ensure compliance with the National Park Authority's statutory obligations.

Stakeholder Engagement

The guidance strongly encourages developers to engage proactively with key stakeholders, including the Snowdonia National Park Authority, local communities, and relevant highway authorities. Early consultation ensures that potential transport impacts are identified and addressed collaboratively, enabling tailored solutions that align with local and regional objectives.

Construction Phase Restrictions

To safeguard Snowdonia's tourism economy and maintain its tranquillity, the SPG advises limiting construction traffic movements during peak visitor seasons. This approach seeks to balance the needs of development with the National Park's economic reliance on tourism and its commitment to providing a serene environment for residents and visitors alike.

3.3.4 Strategic Traffic Management Plan for Mid Wales Wind Farms (2012)

Renewable UK Cymru's Strategic Traffic Management Plan (sTMP) had previously been developed to address the likely cumulative impacts of the transportation of wind turbine components as AILs to potential wind farms in Mid Wales (the former TAN 8 Strategic Search Areas (SSA) B and C of Mid Wales). Whilst the Proposed Development is not within one of the former SSAs, it is considered relevant, given that sections of the proposed access routes for AIL will share common sections of routes identified within the Plan.

The sTMP set out the general principles for managing the delivery of turbine components as abnormal loads from Ellesmere Port to the proposed Mid Wales wind farms. The sTMP was however based on a 45 m blade length and tower sections up to 4.5 m in width.

The components for the Proposed Development differ from those assessed in the sTMP (longer blade / different tower). Should a Transport Management Plan (TMP) be required for AILs; this can be secured by planning permission based upon the framework details contained in this submission.

It should be noted that AIL deliveries are not currently expected to commence until 2035 and that the road network and operating conditions may have changed significantly in that period. As such, a planning condition to secure a future TMP for AIL traffic is considered to be a suitable and sensible option to pursue between the granting of planning consent and the start of turbine erection.

A TMP is included as a separate report within the application as **Annex 2**.

3.4 Policy and Guidance Summary

On the basis of the following assessment, it is concluded that the Proposed Development will not give rise to any unacceptable transport effects and suitable mitigation is proposed. The Proposed Development is considered to accord with relevant Development Plan policy and national planning policy and guidance provisions.

4 Study Methodology

4.1 Introduction

There are three phases of the Proposed Development, which have been considered in this assessment and are as follows:

- the Construction Phase;
- the Operational Phase; and
- the Decommissioning Phase.

4.2 Project Phases – Transport Overview

Of the three phases, the construction phase is considered to have the greatest impact in terms of transport and potential impacts on the road network and sensitive receptors. Construction plant, bulk materials and wind turbine components will be transported to Site, potentially resulting in a significant increase in traffic on the study network.

The operational phase is restricted to occasional maintenance operations which generate significantly lower volumes of traffic that are not considered to be in excess of daily traffic variation levels on the road network.

The decommissioning phase involves fewer trips on the road network than the construction phase, as minor elements of infrastructure are likely to be left in place, adding to local infrastructure that can potentially be used for further agricultural, or leisure uses in the future.

It should be noted, however, that construction effects are short lived and transitory in nature, whilst the operational phase assessment has been assumed to be based on typical operating conditions with occasional operational and maintenance traffic during the operational life of the Proposed Development.

4.3 Scoping Discussions

The Applicant submitted a request for Scoping in July 2024, with the Scoping Direction received from PEDW in December 2024 in respect of the ES which included a section considering traffic and transport. A full review of that Scoping Direction and other correspondence relating to the scope of the study is provided in the **ES Volume II, Chapter 11: Traffic and Transport.**

5 Baseline Conditions

5.1 Study Determination

The study area has been based on those roads that are expected to experience increased traffic flows associated with the construction of the Proposed Development. The geographic scope was determined through a review of the other developments in the area, Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.

It is estimated that construction personnel will access the Site predominantly from the north via the A5 and B4501. When travelling from large settlements around Wrexham and the surrounding area, personnel will likely travel via wider road network before utilising the A5 and B4501. Alternatively, construction personnel coming from the east can access the Site from the A5 via the A494, A4212 and B4501 through the town of Bala. Personnel coming from the west would likely arrive via the A4212 at Trawsfynydd. It is possible that some construction personnel may reside in local accommodation, outside of larger local settlements during the working week, in which case the traffic effect on the wider road network will be reduced.

The likely PoE used for the discharging of turbine components will be the Port of Liverpool. AILs will travel through to the Site via the A5036, A59, M57, M62, M6, M56, A55, A4087, A487, A470, A4212, and B4501. Full details of the AIL routes are provided later in the report and in the RSR included within **Annex 1**.

As detailed later in the report, there will be a requirement to remove excess material from the Site. Initial reviews of potential destinations for this material has not identified any locations in close proximity to the Site that would be suitable. As such for the purposes of this assessment it has been assumed that all waste material will travel eastbound towards England to where it would be processed and disposed of at suitable locations.

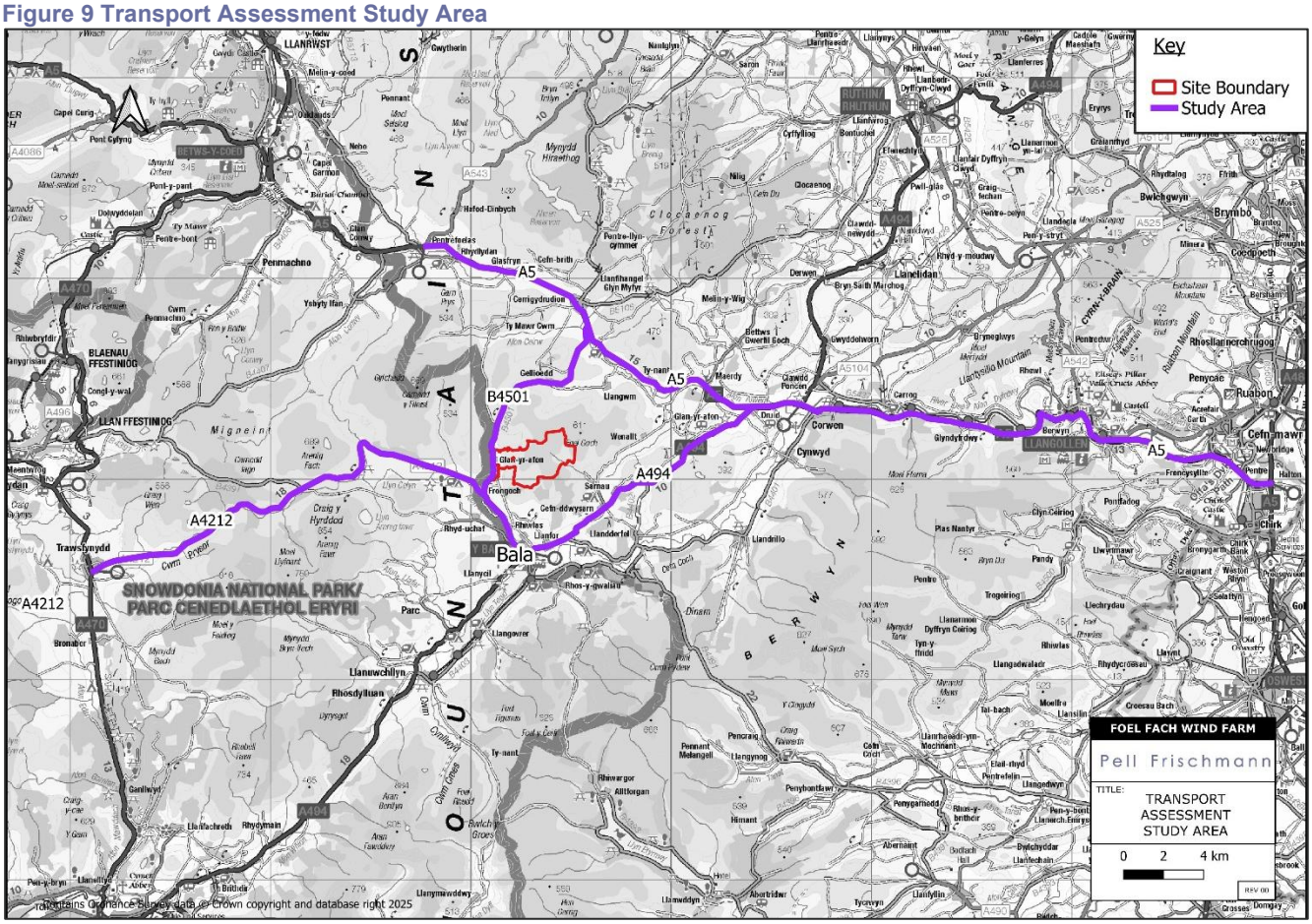
Based on the above, the study area for the assessment has therefore been assumed to be as follows:

- A5 between the A483 / A5 junction south of Wrexham and Pentrefoelas;
- A494 between Bala and its junction with the A5;
- A4212 between Trawsfynydd and Bala; and
- B4501 between its junctions with the A4212 and the A5.

Effects associated with construction traffic generated by the Proposed Development would be most pronounced in close proximity to the Site access junction and on the final approaches to the Site. As vehicles travel away from the Proposed Development, they would disperse across the wider road network, thus diluting any potential effects. It is therefore expected that the effects relating to construction traffic are unlikely to be significant beyond the study area identified above.

The above study area is shown in **Figure 9**.

Figure 9 Transport Assessment Study Area



5.2 Pedestrian and Cyclist Networks

There are limited pedestrian facilities in the immediate vicinity of the Site, reflecting the rural nature of the location. The highest concentration of established pedestrian facilities in the vicinity of the Site are within Frongoch and the larger settlement of Bala.

In addition to the pedestrian facilities within Frongoch and Bala, areas within the study area where pedestrian facilities are located have been detailed below:

- At the junction of the B4501 and A4212, immediately south of Frongoch, there is a footway located on the western edge of the carriageway leading into the village.
- A lit footway is provided on the western side of the carriageway of the A4212 through Frongoch.
- Lit footways are provided on both sides of the A4212 through Bala. A signalised pedestrian crossing is also provided across the A4212 in the vicinity of the Derek Williams Theatre.
- A footway is present alongside the A494 for a distance of approximately 900 m linking Llanfor with Bala to the south.

A review of the Sustrans National Cycle Network (NCN) map[1] indicates that there are no NCN Routes within the immediate vicinity of the Proposed Development. The closest NCN Route to the Proposed Development is NCN Route 82 which runs to the west of the study area within Trawsfynydd. NCN Route 82 is approximately 210 km in length and runs in sections from Bangor to Fishguard.

[1] https://www.sustrans.org.uk/national-cycle-network (Accessed July 2025)

5.2.1 Public Rights of Way

Public Rights of Way (PRoW) are legally protected routes across land, forming part of the public road network, which the public has a right to use. These paths, such as footpaths, bridleways, and byways, are recorded on a local authority's Definitive Map and Statement, specifying the permitted modes of travel. Unlike the general right to roam over Open Access Land, PRoWs require users to stay on the defined route, and any proposed interference with them, such as diversion or closure, necessitates a Public Path Order.

A review of the Gwynedd Council's PRoW plan[2] identifies several PRoWs located within, and in the vicinity of, the Site. These are listed in **Table 2**, while **Figure 10** shows their location relative to the Site. A review of Conwy County Council's PRoW plan[3] indicates that there are no PRoWs within close proximity to the Site.

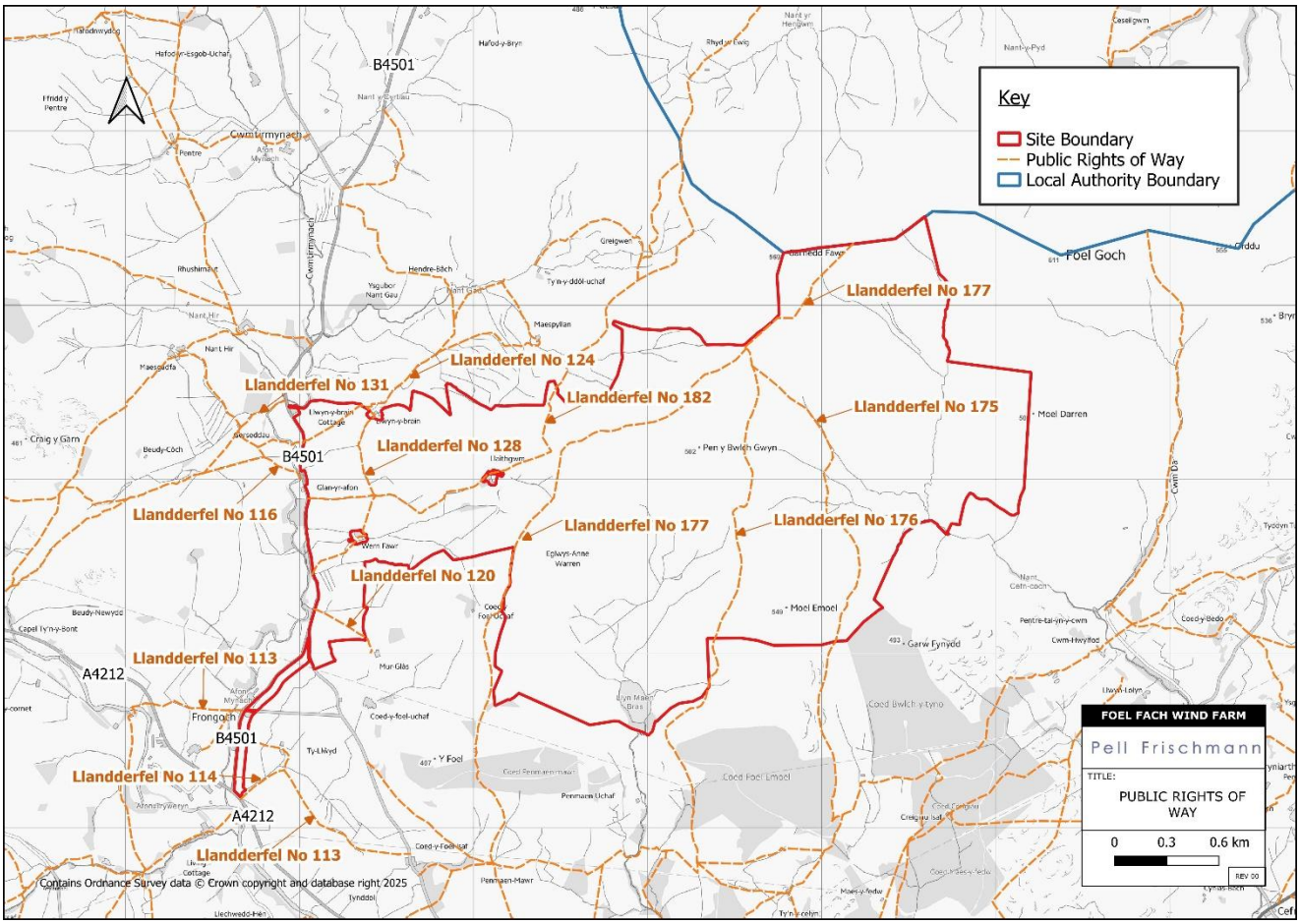
Table 2: Public Rights of Way

Reference	Path Name	Type	Length (m)
46409954	**Llandderfel No 175**	**Footpath**	**2,984**
46409953	**Llandderfel No 176**	**Footpath**	**5,723**
46409939	**Llandderfel No 177**	**Footpath**	**4,795**
46409857	**Llandderfel No 182**	**Footpath**	**3,680**
46409936	**Llandderfel No 128**	**Footpath**	**1,234**
46409859	Llandderfel No 124	Footpath	3,533
46409782	Llandderfel No 131	Footpath	1,773
46409784	Llandderfel No 116	Footpath	1,967
46409999	**Llandderfel No 120**	**Footpath**	**437**
46410048	Llandderfel No 113	Footpath	2,027
46410056	Llandderfel No 114	Footpath	614

** bold indicated PRoW within the Site Boundary*

[2] https://www.gwynedd.llyw.cymru/en/Residents/Parking-roads-and-travel/Public-Rights-of-Way/Public-Rights-of-Way.aspx (Accessed July 2025)
[3] https://www.conwy.gov.uk/en/Resident/Leisure-sport-and-health/Coast-and-Countryside/Public-Rights-of-Way.aspx (Accessed July 2025)

Figure 10 Public Rights of Way



5.3 Common and Open Access Land

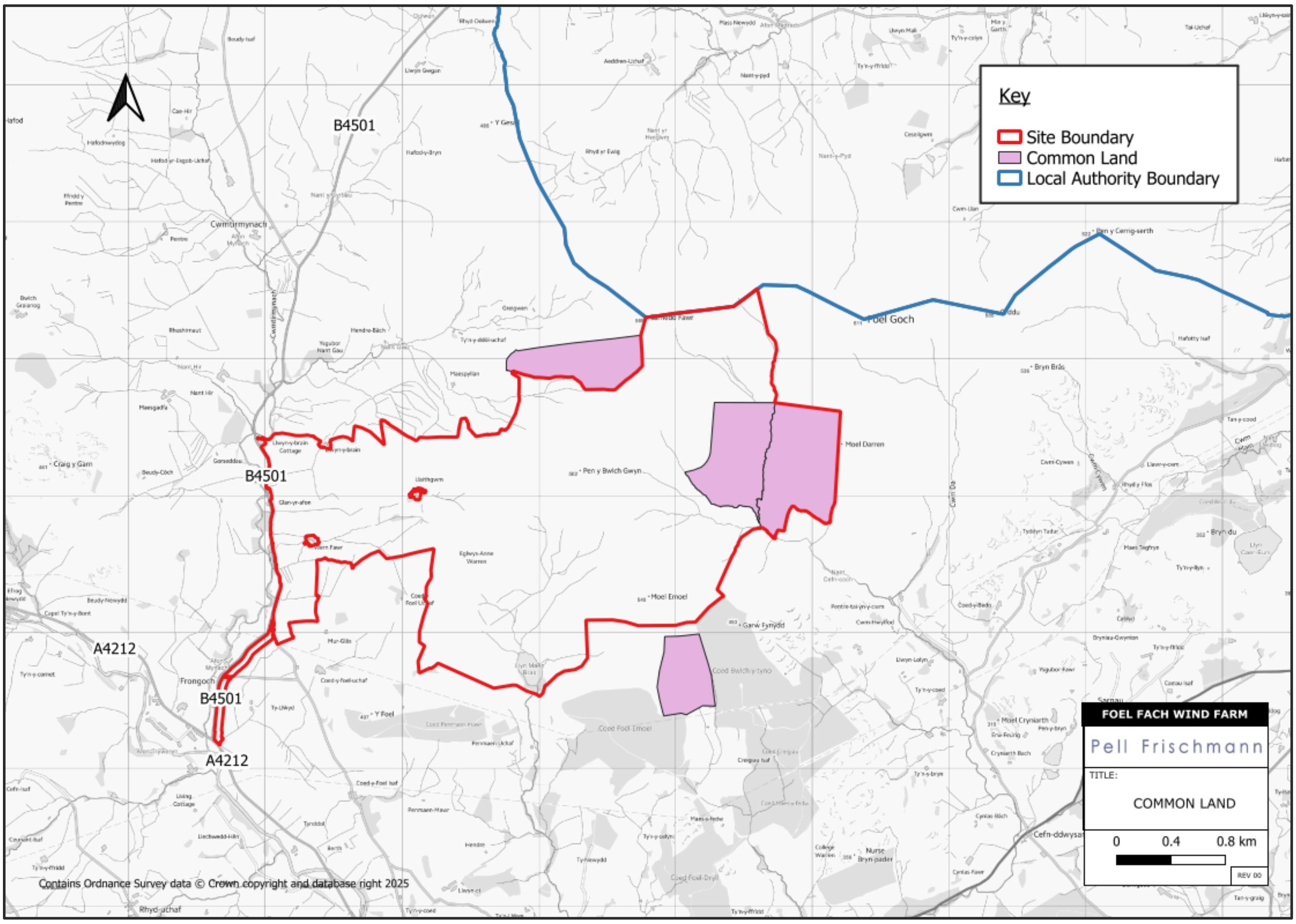
5.3.1 Common Land

Common land refers to land, legally registered, with which specific individuals hold ancient private rights to use another's land for particular purposes, such as grazing animals. While privately owned, most registered common land also has a statutory right of public access on foot under the CRoW Act 2000[4]. It is a highly protected category of land, with any works interfering with common rights or public access typically requiring additional statutory consent from the Welsh Ministers, beyond standard planning permission.

Within the red line planning boundary of the Proposed Development lie two parcels of registered Common Land, as seen in **Figure 11**.

[4] The CRoW Act 2000[4] provides statutory public access to mapped areas of open country and registered common land in Wales. It sets out responsibilities for access management and protects the public's right to access land on foot for recreation.

Figure 11 Common Land



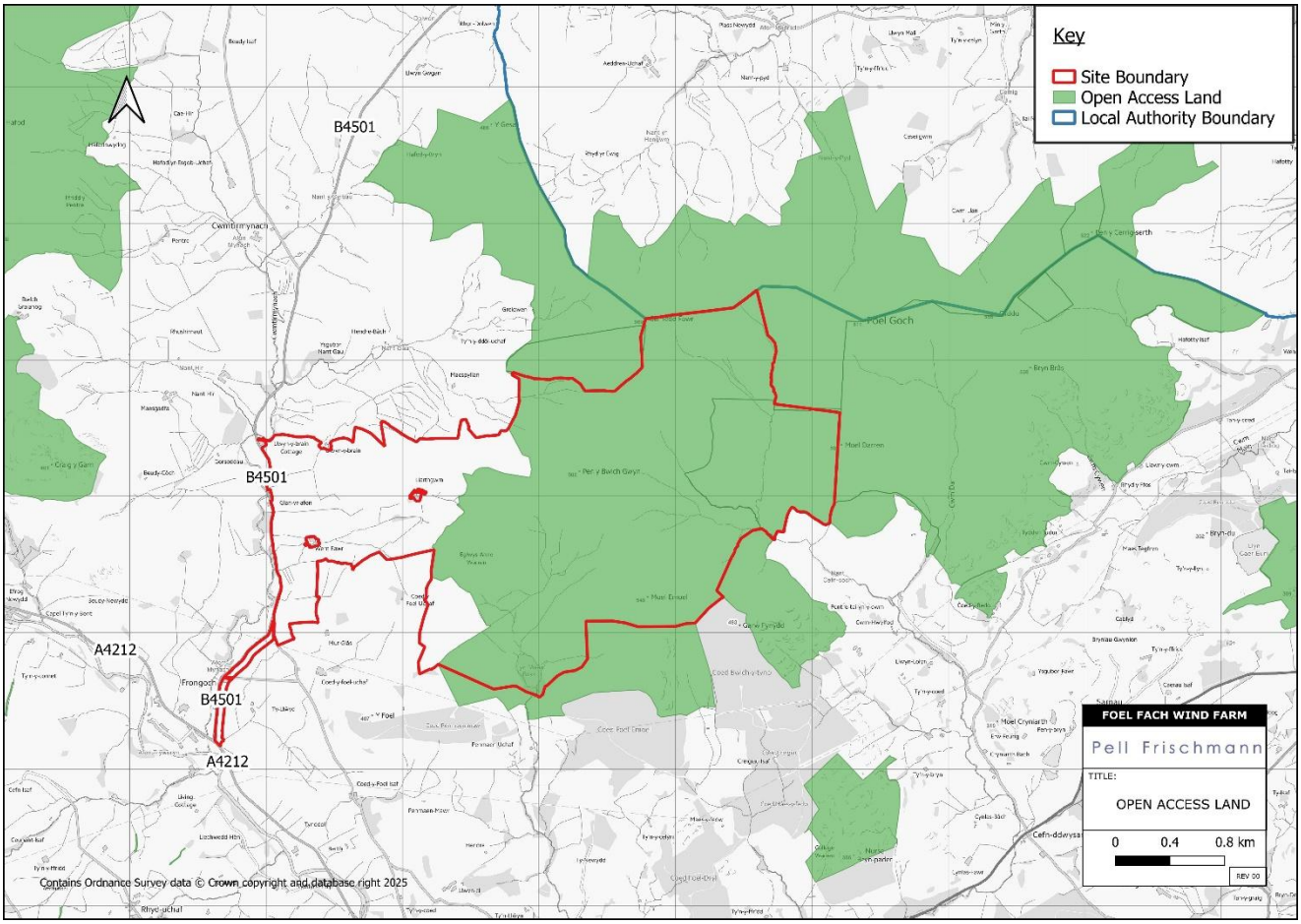
5.3.2 Open Access Land

Open Access Land is land designated under the CRoW Act 2000, granting the public a statutory right of access on foot for recreation. This means people can walk, run, or picnic on the land, staying away from dwellings, gardens, and certain restricted areas.

The key difference between Common Land and Open Access Land lies in the underlying legal basis. Common Land involves specific private rights held by commoners, whereas Open Access Land is primarily defined by the public's statutory right to roam.

More than half of the red line planning boundary of the Proposed Development is made up of Open Access Land, across its eastern extents. The Open Access Land in relation to the Site boundary of the Proposed Development can be seen in **Figure 12**.

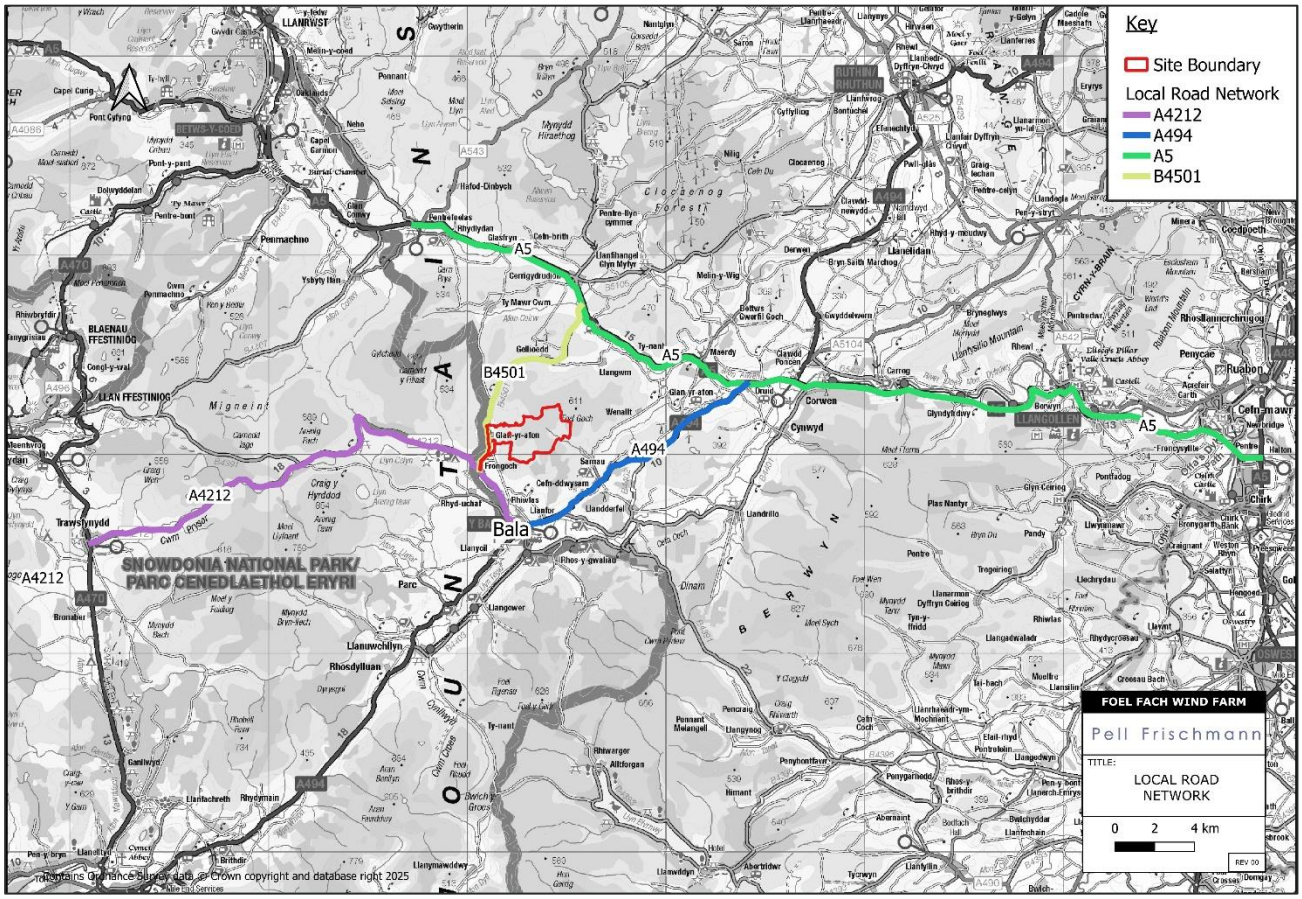
Figure 12 Open Access Land



5.4 Road Access

The location of key roads within the study area and in the vicinity of the Proposed Development are shown in **Figure 13**.

Figure 13 Local Road Network



A5

The A5 Trunk Road extends approximately 391 km from London in the south-east to Holyhead in the north-west. Within the study area, the A5 is predominantly subject to the national speed limit, reducing to 20 miles per hour (mph) in built-up areas. However, some sections, such as the approaches to Glyndyfrdwy, retain a 30 mph limit. The A5 is maintained by the North and Mid Wales Trunk Road Agent (NMWTRA) and appears to be in a generally good condition.

A494

The A494 Trunk Road runs between the M56 motorway (near Mollington and Capenhurst) and the A470 at Dolgellau, Gwynedd. As with the A5, the A494 is generally subject to the national speed limit, with a reduction to 20 mph through built-up areas. Certain locations, including Gwyddelwern, retain a 30 mph limit. The A494 is also maintained by NMWTRA and appears to be in good condition.

A4212

The A4212 is a single carriageway road traversing Eryri National Park, linking Bala with Trawsfynydd along the Afon Tryweryn corridor. Within Bala, Ffrydan Road (A4212) was formerly subject to a 30 mph limit, which has been reduced to 20 mph. Northbound from Bala, the limit increases to the national speed limit before reducing to 40 mph near the junction with the B4501. The A4212 is maintained by Gwynedd Council and appears to be in a generally reasonable condition throughout.

B4501

The B4501 is a single carriageway road connecting Frongoch, located to the south-west of the Proposed Development, with the A5 to the north. In the vicinity of the Proposed Development, the road is subject to the national speed limit, reducing to 40 mph to the south approaching the A4212 junction at Frongoch. The road is unlit throughout. The section between Frongoch and Rhyd-Ddu is maintained by Gwynedd Council, beyond which

responsibility transfers to Conwy County Council. The road appears to be in a generally reasonable condition throughout.

5.5 Existing Traffic Conditions

In order to assess the impact of construction traffic on the study area, an Automatic Traffic Counter (ATC) was deployed on the B4501 between 14 and 20 May 2025 at the following location:

1. B4501 at Glan-yr-afon (Site Access)

The ATC collected vehicle volumes, composition and speed per direction per hour for the seven day period.

To compliment the ATC survey information, Annual Average Daily Traffic (AADT) flows were obtained from the UK Department for Transport (DfT) traffic database[5]. Available 2024 flow information was obtained for all DfT count point locations.

DfT Traffic data has been used for the following locations:

2. A5 between Pentrefoelas and B4501 (Count Site reference: 50507);
3. A4212 between Capel Cerwyn and B4391 (Count Site reference: 644);
4. A4212 between B4392 and Trawsfynydd (Count Site reference: 30666);
5. A5 east of Ty-nant (Count Site reference: 30509);
6. A494 north-west of Glan-yr-afon (Count Site reference: 73352);
7. A494 north-west of Bethel (Count Site reference: 557);
8. A5 west of Tyn-y-cefn (Count Site reference: 10509);
9. A5 at Llidiart-y-Parc (Count Site reference: 40509);
10. A5 west of Berwyn (Count Site reference: 20510);
11. A5 east of Llangollen (Count Site reference: 508); and
12. A5 east of Canal Side (Count Site reference: 99572).

The traffic counters allowed the traffic flows to be split into vehicle classes and the data has been summarised into cars / light good vehicles (LGVs) and HGVs (all goods vehicles >3.5 tonnes gross maximum weight).

A National Road Traffic Forecast (NRTF) Low Growth factor was applied to the 2024 DfT survey data to bring the traffic data up to the base year of 2025. The NRTF Low Growth factor for 2024 to 2025 is 1.005.

These ATC and DfT sites were identified as being areas where sensitive receptors on the access routes would be located. A full receptor sensitivity and effect review is prepared in the **ES Volume II, Chapter 11: Traffic and Transport.**

Figure 14 shows the location of the count points, while **Table 3** summarises the traffic data collected and used in this assessment.

[5] https://roadtraffic.dft.gov.uk/#6/55.254/-11.096/basemap-regions-countpoints [Accessed July 2025]

Figure 14 Traffic Count Locations

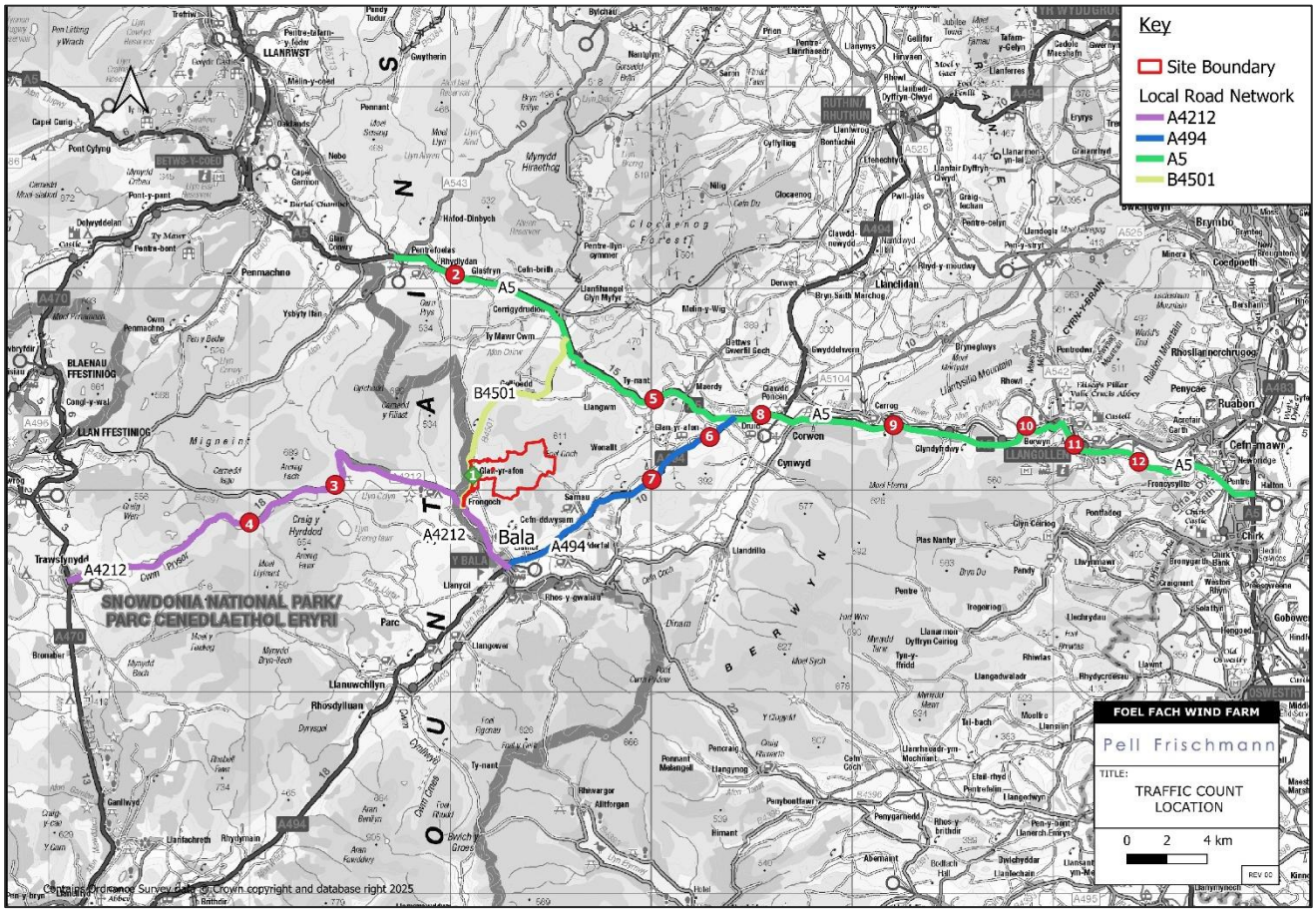


Table 3: 24-hour Average Traffic Data (2025)

Count Ref.	Survey Location	Cars/LGV	HGV	Total
1	B4501 at Glan-yr-afon (Site Access)	1,412	190	1,602
2	A5 between Pentrefoelas and B4501	2,743	130	2,873
3	A4212 between Capel Cerwyn and B4391	2,471	115	2,586
4	A4212 between B4392 and Trawsfynydd	1,783	92	1,875
5	A5 east of Ty-nant	2,860	230	3,090
6	A494 north-west of Glan-yr-afon	4,359	217	4,576
7	A494 north-west of Bethel	4,359	217	4,576
8	A5 west of Tyn-y-cefn	7,817	477	8,294
9	A5 at Llidiart-y-Parc	3,258	385	3,643
10	A5 west of Berwyn	4,304	396	4,700
11	A5 east of Llangollen	4,966	330	5,296
12	A5 east of Canal Side	8,966	381	9,347

Please note that variances may occur due to rounding.

The ATC survey on the B4501 was also used to obtain speed statistics (DfT counts do not provide speed data). The seven-day average and 85th percentile speeds per direction observed at the count site in the vicinity of the Site access is summarised in **Table 4**.

Table 4: Speed Summary

Direction	Mean Speed (mph)	85%ile Speed (mph)	Speed Limit (mph)
B4501 Northbound	33.4	38.3	60
B4501 Southbound	34.4	39.6	60

The speed survey data indicates that on the B4501, in the vicinity of the proposed Site access junction, the 60 mph posted speed limit is being adhered to.

5.6 Accident Review

Personal Injury Accident (PIA) data for the most recent available five-year period covering 01 January 2019 through to the 31 December 2023 was obtained from the online resource CrashMap[6] which uses data collected by the Police about road traffic crashes occurring on Welsh roads, where someone is injured.

TA Guidance[7] requires an analysis of the PIA on the road network in the vicinity of any development to be undertaken for at least the most recent 3-year period, or preferably a 5-year period, particularly if the Site has been identified as being within a high accident area. Whilst the study area has not been identified as having a high accident rate, a five-year review has been undertaken to ensure a comprehensive assessment has been undertaken.

For the purposes of the PIA review, the following road links have been assessed:

- A5 between Corwen and A494;
- A5 between A494 and B4501;
- A5 between B4501 and Pentrefoelas;
- A494 between A5 and Bala;
- A4212 between A494 and B4501;
- A4212 between B4501 and Trawsfynydd;
- B4501 between A4212 and Glan-yr-afon; and
- B4501 between A5 and Glan-yr-afon.

The above road sections are considered to be those which will be subject to the highest levels of construction vehicle activity.

The PIA statistics are categorised into three categories, namely:

- A “Slight” PIA, examples include a sprain, bruise or cut which is not considered to be severe, or slight shock requiring roadside attention;
- A “Serious” PIA, examples include fractures, concussion, internal injuries, crushings, severe cuts and lacerations, severe general shock requiring treatment; and
- A “Fatal” PIA, for those accidents that result in a death.

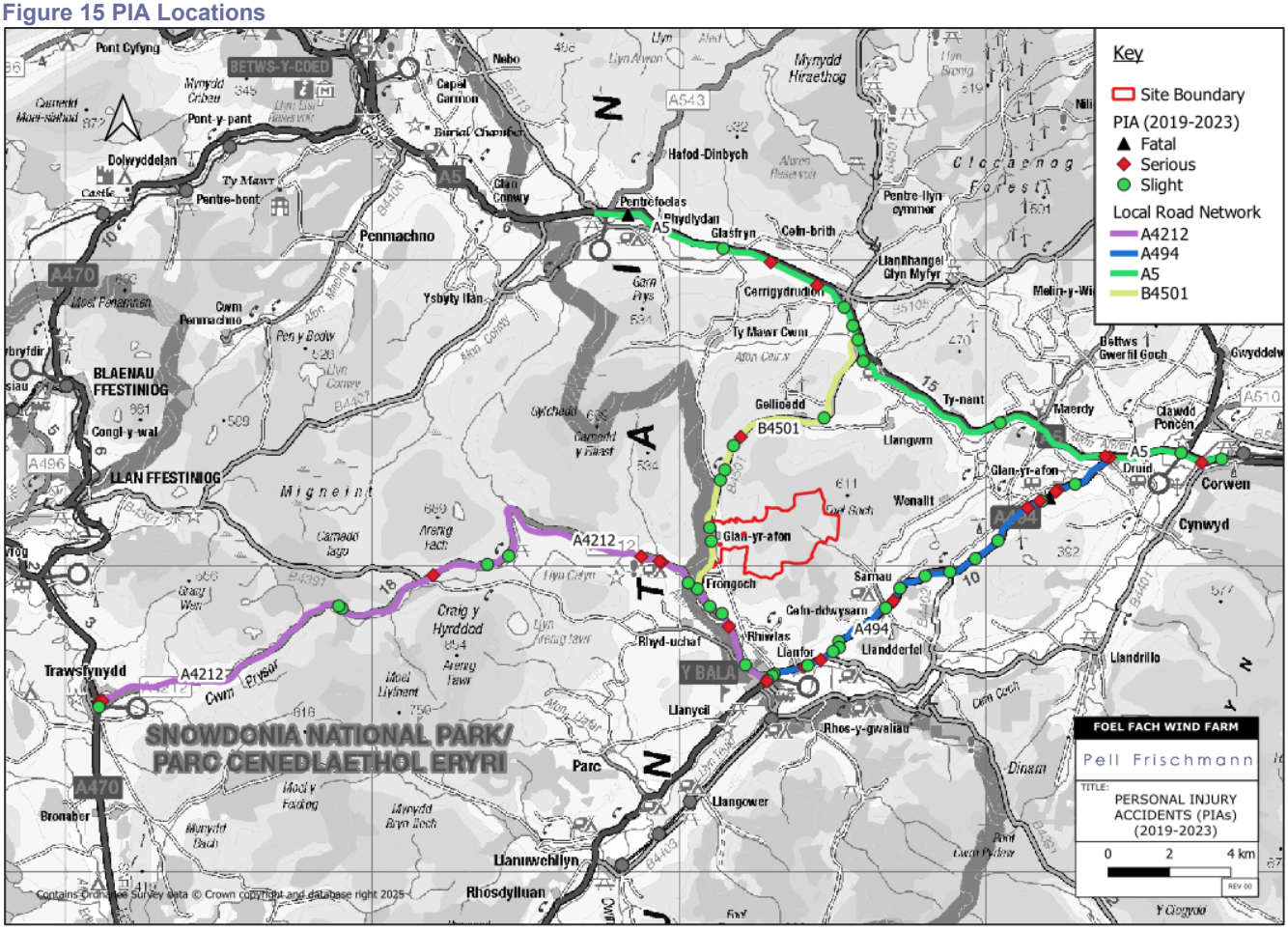
The general locations and severity of the recorded accidents within the study area are summarised in **Table 5**, while **Figure 15** shows their general locations.

[6] CrashMap: https://www.crashmap.co.uk/Search (Accessed July 2025)
[7] https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements (accessed July 2025)

Table 5: Personal Injury Accident Summary

Survey Location	Slight	Serious	Fatal	HGV Incidents
A5 between Corwen and A494	2	3	0	1
A5 between A494 and B4501	3	0	0	0
A5 between B4501 and Pentrefoelas	3	3	1	1
A494 between A5 and Bala	15	8	1	3
A4212 between A494 and B4501	4	1	0	1
A4212 between B4501 and Trawsfynydd	6	6	0	2
B4501 between A4212 and Glan-yr-afon	1	0	0	0
B4501 between A5 and Glan-yr-afon	5	1		1
Total	**39**	**22**	**2**	**8**
Percentage of total accidents	**62%**	**35%**	**3%**	**-**

Figure 15 PIA Locations



A summary of the PIAs recorded on highway links within the study area are as follows:

- A total of 63 accidents were recorded within the reviewed road sections within the latest five-year period.
- Of those 63 accidents, 39 were categorised as “Slight”, 22 were categorised as “Serious”, and there were two fatalities.

A5 between Corwen and A494

- A total of five accidents occurred in this location, two were classified as “Slight” and three as “Serious”.
- One accident involved a pedestrian and an HGV within the village of Corwen. This was classified as “Slight”.
- Three serious accidents involved motorcycles, two occurring at the junction with the A494.
- Of the five accidents, three occurred at junctions and all involved young drivers (under 25).

A5 between A494 and B4501

- A total of three accidents occurred on this section of the A5, all of which were classified as “Slight” in severity.
- Two of the accidents involved motorcycles, with one of these also involving a young driver (under 25).
- One “Slight” accident occurred at the junction with the B4501.

A5 between B4501 and Pentrefoelas

- A total of seven accidents occurred on the A5 between the B4501 and Pentrefoelas. Three PIAs were classified as “Slight” in severity, three were “Serious” and one resulted in a fatality.
- The PIA resulting in a fatality occurred near the village of Pentrefoelas and involved an HGV and motorcycle colliding with other vehicles on the road.

A494 between A5 and Bala

- A total of 24 accidents occurred at this location, 15 were classified as “Slight” and eight as “Serious”. One accident resulted in a fatality.
- One accident involved a pedestrian. This was classed as serious and occurred in the vicinity of Llanfor, near the junction into the town.
- One accident involved an HGV, which also involved a car and motorcycle, and was classed as “Serious”.
- A total of six accidents involved motorcycles, five were classed as “Serious, and one resulted in a fatality. The fatal accident involved a motorcycle colliding with another vehicle.
- Six accidents involved young drivers (under 25), four were “Serious” and two “Slight”.
- Of the 23 accidents recorded, 14 occurred either on a bend or approach to a bend on the carriageway, with the remaining accidents generally occurring in the vicinity of junctions / accesses.
- Four accidents occurred in Bala, around the junction with the A4212, where three “Slight” and one “Serious” accident occurred on the A494 at, or east of the junction with the A4212.

A4212 between A494 and B4501

- A total of five accidents occurred at this location, four were classified as “Slight” and one as “Serious”.
- One accident involved a pedestrian, north of the junction with the A494, outside the Derek Williams Theatre.
- One accident involved an HGV and two other vehicles, including a motorcycle and was “Serious” in severity.
- One accident, which was “Slight” in severity, occurred at the junction with the A4212.

A4212 between B4501 and Trawsfynydd

- A total of 12 accidents occurred on this section of the A4212, six were classified as “Slight” and six as “Serious”.
- HGVs were involved in two of the accidents, one “Serious” and one “Slight”. The “Serious” accident occurred to the north of the junction with the B450 where an HGV collided with a motorcycle.
- One “Slight” accident involved a young driver, two “Serious” accidents involved motorcycles, including the accident previously mentioned.

B4501 between A4212 and Glan-yr-afon

- One accident occurred on the B4501 between Glan-yr-afon and the A4212. This accident was “Slight” in severity and occurred in the vicinity of the proposed Site Access. The accident was a single vehicle accident involving a car.

B4501 between A5 and Glan-yr-afon

- A total of six accidents occurred on this section of the B4501, five were classified as “Slight” and one as “Serious”.
- One “Slight” accident occurred at the bends north of the proposed Site Access.
- The “Serious” accident occurred west of Gellioedd and involved a young driver (under 25). Three other “Slight” accidents also involved young drivers (under 25).
- One “Slight” accident involved an HGV colliding with another vehicle.

PIA Summary

The analysis indicates that there were a total of 63 PIAs recorded along the assessed links within the most recent five-year period. Most recorded accidents were categorised as being "Slight" (62%), with 35% of incidents recorded as "serious" and two resulting in a fatality (3%).

Most accidents occurred on a bend or on approach to a junction, where there is an increased interaction between vehicles.

As there have been two recorded accidents on approach to the proposed Site access junction, it would be proposed to take cognisance of this within the Construction Traffic Management Plan (CTMP) for the Proposed Development, by way of site signage, which will be installed close to the Site access advising other road users of ongoing construction activity, thus increasing awareness and attention of road users.

5.7 Future Baseline Traffic Conditions

5.7.1 2035 Future Baseline Traffic Flows, excluding Committed Development Trips

Construction of the Proposed Development is currently anticipated to commence in 2035 if consent is granted and is anticipated to take approximately 21 months depending on weather conditions and ecological considerations.

To assess the likely effects during the construction, base year traffic flows were determined by applying a NRTF low growth factor to the surveyed traffic flows. The NRTF Low Growth factor for 2025 to 2035 is 1.06. This growth factor has been applied to the 2025 DfT count data and ATC survey data (**Table 3**) to estimate the 2035 Future Year Base traffic flows, as shown in **Table 6**. This will be used in the Construction Peak Traffic Impact Assessment.

Table 6: 24-hour Average Traffic Data (Future Baseline 2035)

Count Ref.	Survey Location	Cars/LGV	HGV	Total
1	B4501 at Glan-yr-afon (Site Access)	1,497	202	1,699
2	A5 between Pentrefoelas and B4501	2,908	138	3,045
3	A4212 between Capel Cerwyn and B4391	2,619	122	2,741
4	A4212 between B4392 and Trawsfynydd	1,890	98	1,988
5	A5 east of Ty-nant	3,032	244	3,275
6	A494 north-west of Glan-yr-afon	4,621	230	4,851
7	A494 north-west of Bethel	4,621	230	4,851
8	A5 west of Tyn-y-cefn	8,286	506	8,792
9	A5 at Llidiart-y-Parc	3,453	408	3,862
10	A5 west of Berwyn	4,562	420	4,982
11	A5 east of Llangollen	5,264	350	5,614
12	A5 east of Canal Side	9,504	404	9,908

Please note that variances may occur due to rounding.

5.7.2 Onshore Wind Farm and Energy Related Planning Applications

A review of Conwy County Borough Council's planning portal[8], Gwynedd Council's planning portal[9] and the Welsh Government's Development of National Significance portal[10] was undertaken to identify any consented developments within the vicinity of the Proposed Development which would generate significant traffic within the same study area and should be included within the assessment.

[8] https://npe.conwy.gov.uk/Northgate/EnglishPlanningExplorer/GeneralSearch.aspx
[9] https://amg.gwynedd.llyw.cymru/planning/index.html?language=en&fa=search
[10] https://www.gov.wales/developments-national-significance-dns-applications

TA Guidance[11] from the UK Government advises that only those projects with extant planning permission or local Development Plan allocations within an adopted or approved plan require to be included in any traffic and transport assessment. Those projects in scoping or at the application stage should not be included in cumulative traffic and transport assessments as they have yet to be determined. When considering traffic impacts specifically in relation to the construction phase of a project, the potential traffic impact is highly speculative and as such, cannot be included in this assessment.

Table 7 shows the relevant consented schemes that have been given further consideration.

Table 7: Summary of Cumulative Wind Farm & Energy Related Developments

Reference	Wind Farm	Distance from Proposed Development	Status	Included as Committed Development
25/2015/0321 / 25/2020/0162	Pant y Maen Wind Farm	≈ 15 km	Consented – 2017 and subsequently in January 2022. Commencement of development no later than five years from the date of consent.	No – Even if construction commences at the end of the commencement period, the development would be completed prior to the commencement of the Project in 2035. Furthermore, there are no common sections of study area.
BERR/2009/0004	Llanbrynmair Wind Farm	≈ 28 km	Originally consented in 2021, however, new scheme for redesigned wind farm currently at Scoping stage	No – New scheme being proposed.
20/1610/REM	Carno III Wind Farm	≈ 45 km	Consented –January 2022. Commencement of development no later than five years from the date of consent.	No – Even if construction commences at the end of the commencement period, the development would be completed prior to the commencement of the Project in 2035. Furthermore, there are no common sections of study area.

Based on the information provided in **Table 7** above, no wind farm or energy developments need to be considered further within the cumulative development assessment within **ES Volume II, Chapter 11: Traffic and Transport.**

Should any other schemes be consented and constructed at the same time as the Proposed Development, or there be any changes to the status of the schemes identified above, the Applicant would welcome the opportunity to engage with other developers in consultation with Gwynedd Council to ensure appropriate traffic management measures would be implemented to minimise any cumulative impacts. Any effects of the multiple Sites being constructed at the same time will be mitigated through the use of an overarching Traffic Management and Monitoring Plan and by introducing a phased delivery plan which will be agreed with local council highway department, NMWTRA and the Police.

Furthermore, it is extremely unlikely that peak traffic conditions would occur should more than one scheme be constructed at the same time, due to differences in construction programmes, material supplies and developer resources.

5.7.3 Other Planning Applications

A review of the relevant planning portals was also undertaken for other any other developments with planning consent, which should be considered within this assessment. The review examined consented developments whose trips are considered significant in scale (i.e., has associated traffic impact of over 10%).

[11] https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements

The use of NRTF growth factors for future background traffic is considered robust for addressing smaller, non-significant traffic generation caused by smaller developments within the study area.

It should be noted that the inclusion of additional traffic trips to the baseline, such as committed development trips, will dilute the potential impact that the Proposed Development will have on the local road network. As such, the approach taken is considered to be an overly robust assessment.

6 Trip Generation and Distribution

6.1 Construction Phase

6.1.1 Trip Derivation

During the 21-month construction period, the following traffic will require access to the Site:

- Staff transport, in either cars or staff minibuses;
- Construction equipment and materials, deliveries of machinery and supplies such as concrete materials and crushed rock;
- Removal of excess waste material from the Site;
- Components relating to the substation, BESS and associated infrastructure;
- AILs consisting of the wind turbine sections and heavy lift cranes; and
- Escort vehicles for AIL deliveries.

Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Development, based on the assumptions detailed in the following sections. It should be noted that there may be variations in the following calculations due to rounding, which are not considered significant.

6.1.2 Construction Staff

Staff will arrive in non-HGV vehicles and, where possible, will be encouraged to car share. The workforce onsite will depend on the activities undertaken, but, based on previous wind farm construction Site experience for a project of this scale which suggests four staff per turbine during the short peak period of construction is likely. The maximum number of staff expected onsite could be around 40 per day.

For the purposes of estimating traffic movements, it was assumed that 60% of staff would be transported by minibus and 40% would arrive by car (single car occupancy was assumed as the worst case at this stage with potentially fewer movements through car sharing).

Based on these assumptions, staff transport cars and light vehicles would account for a maximum of 52 vehicle movements (26 inbound trips and 26 outbound trips) per day during the peak period of construction.

6.1.3 Abnormal Indivisible Loads

The wind turbines are broken down into components for transport to the Site. The nacelle, blade and tower sections are classified as AILs due to their weight, length, width and height when loaded. For the purposes of the assessment, the 'worst case' numbers of components requiring transport are illustrated in **Table 8**.

Table 8: Turbine Components

Component	Number of Components per Turbine
Rotor Blades	3
Tower Sections	5
Nacelle	1
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1
Site Parts	0.25 (parts shared between 4 wind turbines on one delivery)

In addition to the wind turbine deliveries, up to two high-capacity erection cranes would be needed to offload a number of components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that are escorted by boom and ballast trucks to allow full mobilisation on Site. Smaller erector

cranes would also be present to allow the assembly of the main cranes and to ease the overall erection of the wind turbines.

Escort vehicles would accompany the AIL convoys to support the traffic management measures. Up to three vehicles would be deployed and it is assumed that three AIL turbine component loads would be delivered per convoy. This would result in 37 convoys on the network, with a total of approximately 224 escort vehicle movements (112 inbound trips and 112 outbound trips).

Wind turbine components that do not classify as AILs, would be delivered in addition to these, resulting in a further approximately 64 vehicle movements (32 inbound trips and 32 outbound trips). All of these deliveries are expected to occur over a period of approximately five months.

The escort vehicles have been assumed to be police cars and light goods vehicles. Motorcycles may be deployed, depending upon North Wales Police resources.

6.1.4 General Deliveries

Throughout the construction phase, general deliveries will be made to the Site by HGV. These would include fuel, Site office supplies and staff welfare etc. At the height of construction, it is assumed that up to 40 vehicle movements to Site are made (20 inbound trips and 20 outbound trips) per month.

6.1.5 Material Deliveries

Various materials will need to be delivered to Site to construct the Site-based infrastructure. At the outset of the construction works, HGV deliveries will deliver plant and initial material deliveries to the Site to enable the formation of the Site compound and to deliver construction machinery and plant.

The Site is large enough to warrant onsite batching of concrete. All turbine and substation foundation concrete will be mixed onsite, with deliveries of cement powder, water, sand and aggregates being delivered by HGV. For the purpose of this assessment, it is assumed that the cement powder and water (if not sourced from Site) will be delivered from concrete suppliers to the north-east, from suppliers located in the vicinity of Wrexham.

Sand and aggregate not sourced from onsite borrow pits will be delivered by tipper HGV and is expected to come from local quarries. For the purpose of this assessment, it is assumed that these deliveries will be from the north-east. There are a number of potential suppliers in the area, however for the purposes of the assessment, those highlighted in **Table 9** have been assumed as being the most likely source of materials.

Table 9: Supplier Locations

Company Name	Address	Material	Distance*	Route
Cambrian Moel-Y-Fean Quarry	Llandegla, Llangollen, LL20 8DP	Aggregates	41 km	A542, A5104, A494, A5 and B4501.
HV Bowen & Sons	Ballswood Quarry, Gegin Lane, Llay, LL12 0NU	Sand	55 km	B5102, B5430, A525, A5104, A494, A5 and A494.

** distance is based on quarry access to site access*

The estimated total volume of concrete required onsite is 9,891 m³, based upon expected wind turbine foundation, substation foundation, BESS foundations and miscellaneous uses across the Proposed Development. The individual deliveries associated with the raw materials have been estimated and result in inbound trips of 22 cement tankers, 103 sand tippers, 210 aggregate tippers and 126 water tankers. A summary of the vehicle movements associated with the production of concrete onsite is detailed in **Table 10**.

Table 10: Concrete Material Deliveries

Element	Volume / Installation (m³)	Inbound Trips	Total Movements
Cement	2,616	22	44
Water	3,767	126	251
Sand	1,155	103	206

Element	Volume / Installation (m³)	Inbound Trips	Total Movements
Aggregates	2,354	210	420

Steel reinforcement required in the foundations across the Proposed Development for wind turbines, substation etc. are estimated to total 20 tonnes, resulting in a total of two vehicle movements (one inbound trip and one outbound trip).

The proposed access track widths will vary onsite but will generally be in the order of 5 m in width, where it is increased to 7.5 m on the main access track, and would be designed to accommodate 13 tonne axle loads. In addition to the access tracks, crane hardstands will be constructed to enable the wind turbine erection process.

Current estimates indicate that a total of 105,225 m³ of aggregate material will be required across the Site for various construction purposes (excluding cement batching). The borrow pit assessment has confirmed that 18,461 m³ of suitable material is available onsite for construction of the compound area and sections of access track. The remaining aggregate required will be sourced from elsewhere within the Site, as a result of the cut/fill exercise. As such, the only aggregate material that will need to be imported is for the 150 millimetre (mm) running surface layer associated with track construction, which results in a total volume of 28,700 m³ (based on information provided by Natural Power).

The estimate of imported material is detailed in **Table 11**.

Table 11: Aggregate Material Deliveries

Element	Volume / Installation (m³)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Movements
Stone / Aggregates	28,700	63,140	20	3,157	6,314

Note, this excludes aggregate materials required for the onsite concrete batching requirements

Geotextile will be delivered to Site in rolls by HGV, a total of 218 large rolls may be required, which will result in 22 vehicle movements (11 inbound trips and 11 outbound trips).

Cables will connect each wind turbine to the substation compound. Trip estimates for the cable materials are provided below in **Table 12** and **Table 13**. It has been assumed that seven cables are to be provided within each cable trench and will be backfilled with cable sand.

Table 12: Cable Trip Estimate

Element	Total Cable Length (m)	Length per Drum (m)	Number of Drums	Inbound Trips	Total Movements
Cables	8,191	500	115	13	26

Table 13: Cable Sand Trip Estimate

Element	Volume (m³)	Total Weight (t)	Lorry Capacity (t)	Inbound Trips	Total Movements
Cable Sand	8,191	4,423	20	222	444

Ducting will be used to shield the trench and ducting will be used to protect the cable when it runs under roadways, with 26 vehicle movements predicted for ducting materials (13 inbound trips and 13 outbound trips).

One substation building will be constructed on the Site. This will require deliveries of building materials and structural elements and will result in 250 vehicle movements (125 inbound trips and 125 outbound trips). Deliveries associated with the BESS will result in a further 34 HGV vehicle movements (17 inbound trips and 17 outbound trips) for battery, invertor and cabin / building deliveries.

6.1.6 Material Taken Offsite

In addition to the materials being delivered to the Proposed Development, there will be a requirement to remove excess waste material from the Site. It is estimated that in the order of 2,781 m³ of material will be taken offsite and will be processed and disposed of at a suitable location. A final destination of the material has not yet been

confirmed; however, it is assumed to head east towards England. The estimated HGV trips relating to the removal of excess waste material is shown in Table 14.

Table 14: Exported Waste Material

Element	Volume / Installation (m^3)	Total Weight (t)	Lorry Capacity (t)	Outbound Trips	Total Movements
Waste Material	2,781	6,119	20	306	612

The resulting traffic generation estimates have been plotted onto the indicative construction programme to illustrate the peak journeys on the network. **Table 15** illustrates the trip generation throughout the construction programme for each month, showing two-way construction vehicle movements, i.e. an inbound and an outbound trip.

Table 15: Construction Traffic Profile (Two-Way Trips)

Activity	Class	Month											
		1	2	3	4	5	6	7	8	9	10	11	12
Surplus Material Removal	HGV			102	102	102	102	102	102				
Site Establishment & Remediation	HGV	60	40	40									
Plant Deliveries	HGV	40	30										
General Site Deliveries	HGV	40	40	40	40	40	40	40	40	40	40	40	40
Bulk Material Deliveries	HGV			902	902	902	902	902	902	902			
Concrete Batching Deliveries	HGV				77	154	154	154	154	154	77		
Reinforcement	HGV				35		35						
Cable & Ducting Deliveries	HGV						25		25				
Cabling Sand	HGV						44	89	89	89	89	44	
Geotextile Deliveries	HGV			24									
Substation	HGV				63	63		63	63				
BESS	HGV										34		
AIL Cranage	HGV												20
AIL Deliveries	HGV												
AIL Escorts	Car & LGV												
Turbine Fit Out, Commissioning & Performance Testing	Car & LGV												
Staff	Car & LGV	352	880	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144
Total HGV per Month		140	110	1,108	1,218	1,260	1,302	1,349	1,374	1,184	240	84	60
Total Cars / LGV per Month		352	880	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144	1,144
Total Movements per Month		492	990	2,252	2,362	2,404	2,446	2,493	2,518	2,328	1,384	1,228	1,204
Total HGV per Day		**6**	**5**	**50**	**55**	**57**	**59**	**61**	**62**	**54**	**11**	**4**	**3**
Total Cars / LGV per Day		**16**	**40**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**52**
Total per Day		**22**	**45**	**102**	**107**	**109**	**111**	**113**	**114**	**106**	**63**	**56**	**55**

Please note minor variances due to rounding may occur.
Calculations assume that there are 22 working days per month.
Continues over the page.

Activity	Class	Month								
		13	14	15	16	17	18	19	20	21
Surplus Material Removal	HGV									
Site Establishment & Remediation	HGV								70	70
Plant Deliveries	HGV								40	30
General Site Deliveries	HGV	40	40	40	40	40	40	40	40	40
Bulk Material Deliveries	HGV									
Concrete Batching Deliveries	HGV									
Reinforcement	HGV									
Cable & Ducting Deliveries	HGV									
Cabling Sand	HGV									
Geotextile Deliveries	HGV									
Substation	HGV									
BESS	HGV									
AIL Cranage	Car & LGV						20			
AIL Deliveries	HGV	57	57	57	57	57				
AIL Escorts	Car & LGV	45	45	45	45	45				
Turbine Fit Out, Commissioning & Performance Testing	Car & LGV						60	60	60	40
Staff	Car & LGV	1,144	1,144	1,144	1,144	1,144	1,144	880	880	572
Total HGV per Month		97	97	97	97	97	60	40	150	140
Total Cars / LGV per Month		1,189	1,189	1,189	1,189	1,189	1,204	940	940	612
Total Movements per Month		1,286	1,286	1,286	1,286	1,286	1,264	980	1,090	752
Total HGV per Day		**4**	**4**	**4**	**4**	**4**	**3**	**2**	**7**	**6**
Total Cars / LGV per Day		**54**	**54**	**54**	**54**	**54**	**55**	**43**	**43**	**28**
Total per Day		**58**	**58**	**58**	**58**	**58**	**57**	**45**	**50**	**34**

The peak of construction activity is expected to occur in month eight when there will be a total of 2,518 vehicle movements, which equates to 114 vehicle movements per day, comprising 62 two-way HGV movements and 52 two-way car / LGV movements.

This would equate to approximately 11 two-way total vehicles movements or six two-way HGV movements per hour, across a typical 10-hour day, assuming a flat traffic profile i.e. vehicles distributed evenly across the day.

6.1.7 Distribution of Construction Trips

The distribution of construction traffic on the study area will vary depending on the types of loads being transported. The assumptions for the distribution of construction traffic during the construction phase are as follows:

- All construction traffic enters the Site via the B4501 via the proposed access on the B4501 at Glan-yr-afon, including AIL deliveries;
- Deliveries associated with concrete materials, such as cement powder and water, will be sourced from concrete suppliers to the north-east;
- Hardstanding aggregate and concrete aggregate is assumed to be sourced from Cambrian Moel-Y-Fean Quarry, located to the east, as detailed in **Table 9**, travelling through to the Site via the A5 and B4501. Similarly, sand is assumed to be delivered from HV Bowen and Sons in Llay. The contractor will confirm final quarry and material sourcing with Gwynedd Council in the CTMP;
- HGV deliveries associated with cabling, batteries, inverters and associated materials, etc. will arrive predominantly from the east via the A5 and A483 from both the north and south;
- Staff working at the Site are likely to be based locally, with the majority based in Wrexham to the north-east. It is assumed that they will travel to the Site via either via the A55 and B4501, or via the A55, A494, A4212 and B4501; and
- General site deliveries are assumed to arrive predominantly from the east via the A5 and A483 from both the north and south.

In addition to the materials being delivered to the Proposed Development, it is expected that waste material from the excavation of the Site will require to be taken offsite and deposited at one or more quarries. An Excavated Material Options Appraisal has been undertaken by the Applicant which has concluded that there are no quarries within the local vicinity that can accommodate the volume of excavated material expected from the Proposed Development. As a result, for the purposes of this assessment, it has been assumed that excavated material will exit the Site, travelling north on the B4501 before heading eastbound on the A5 until reaching the A483 / A5 junction, south of Ruabon, where they will travel to quarries further afield. The contractor will confirm final quarry and waste material destinations with Gwynedd Council in the CTMP.

For the purposes of preparing this assessment and **ES Volume II, Chapter 11: Traffic and Transport**, it has been assumed that all AIL traffic will access the Site via the following route:

- Loads would exit Port of Liverpool heading south and taking the first exit at the roundabout onto the A5036 eastbound before merging onto the A59 northbound;
- Loads would turn right at Switch Island Junction to join the M57 heading south-east;
- Loads would exit the M57 at Junction 1 to join the M62 eastbound;
- Loads would exit the M62 at Junction 10 to join the M6 southbound;
- Loads would exit the M6 at Junction 20A to join the M56 westbound;
- Loads would exit the M56 at Junction 15 to join the M53 southbound before merging onto the A55 southbound;
- Loads would exit the A55 at Junction 34 to continue on the A55 westbound;
- Loads would exit the A55 at Junction 10 to join the A4087 westbound at Caernarfon Rd Interchange;
- At the roundabout, loads would take the 1st exit onto A487 Y Felinheli Bypass;
- Loads would continue on the A487 before merging onto the A470 southbound;
- At Trawsfynydd, loads would turn left onto the A4212 eastbound;
- At Fron-goch, loads would turn left onto the B4501 northbound;
- Loads would enter the Site access junction to the south of Glen-yr-afon.

The proposed AIL access route is illustrated in **Figure 16** and has been considered, within the AIL RSR, provided in **Annex 1**.

Figure 16 AIL Component Delivery Route

6.1.8 Peak Construction Traffic

Following the distribution and assignment of traffic flows to the study area, the resultant daily traffic during the peak of construction (month eight) are summarised in **Table 16**.

Table 16: Peak Daily Construction Traffic (month eight)

	Survey Location	Cars/LGV	HGV	Total
1	B4501 at Glan-yr-afon (Site Access) North	52	62	114
2	A5 between Pentrefoelas and B4501	-	-	-
3	A4212 between Capel Cerwyn and B4391	-	-	-
4	A4212 between B4392 and Trawsfynydd	-	-	-
5	A5 east of Ty-nant	26	62	88
6	A494 north-west of Glan-yr-afon	26	0	26
7	A494 north-west of Bethel	26	0	26
8	A5 west of Tyn-y-cefn	52	62	114
9	A5 at Llidiart-y-Parc	52	10	62
10	A5 west of Berwyn	52	10	62
11	A5 east of Llangollen	52	10	62
12	A5 east of Canal Side	52	10	62

Note, where road links show no construction traffic, this is due to those road links not being used during the peak month of construction activity.

6.2 Operational Phase

In the operational phase, it is envisaged that the level of traffic associated with the Proposed Development will equate to on average four vehicle trips per week which is considered negligible and therefore no detailed assessment of the operational phase of the Proposed Development is proposed.

6.3 Decommissioning Phase

Prior to decommissioning of the Site, a traffic assessment would be undertaken, and appropriate traffic management procedures followed.

The decommissioning phase would result in fewer trips on the road network than the construction phase as it is considered likely that elements of infrastructure such as access tracks would be left in place and structures may be broken up on Site to allow transport by a reduced number of HGVs.

7 Traffic Impact Assessment

7.1 Construction Impact

Traffic data for the peak month (month eight) was combined with the future baseline year (2035) traffic data to allow a comparison between the baseline results to be made. The increase in traffic volumes is illustrated in percentage increases for each class of vehicle. This is illustrated in **Table 17**.

Table 17: Peak Daily Base + Construction Traffic (month eight)

	Survey Location	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
1	B4501 at Glan-yr-afon (Site Access)	1,549	264	1,813	3%	31%	7%
2	A5 between Pentrefoelas and B4501	2,908	138	3,045	0%	0%	0%
3	A4212 between Capel Cerwyn and B4391	2,619	122	2,741	0%	0%	0%
4	A4212 between B4392 and Trawsfynydd	1,890	98	1,988	0%	0%	0%
5	A5 east of Ty-nant	3,058	306	3,363	1%	25%	3%
6	A494 north-west of Glan-yr-afon	4,647	230	4,877	1%	0%	1%
7	A494 north-west of Bethel	4,647	230	4,877	1%	0%	1%
8	A5 west of Tyn-y-cefn	8,338	568	8,906	1%	12%	1%
9	A5 at Llidiart-y-Parc	3,505	419	3,924	2%	3%	2%
10	A5 west of Berwyn	4,614	430	5,044	1%	2%	1%
11	A5 east of Llangollen	5,316	360	5,676	1%	3%	1%
12	A5 east of Canal Side	9,556	414	9,970	1%	3%	1%

The total traffic movements are predicted to increase by a maximum of 7% on the B4501 at the Site access junction. This section of road will be used by all construction traffic accessing the Site. Aside from the B4501, the next highest total traffic increase is 3% which occurs on the A5 east of Ty-nant, between the A494 and the B4501.

Table 17 shows that highest and second highest HGV traffic movements increase will occur on the B4501 in the vicinity of the Site access junctions and on the A5 east of Ty-nant, where HGV traffic is estimated to increase by 31% and 25%, respectively. This is primarily due to the HGV traffic associated with the import of aggregate material to the Site. To put these increases into perspective, both locations will see an additional 62 two-way HGV movements per day, or approximately six two-way HGV movements per hour, across a typical 10-hour day on Site. This is not considered significant in terms of overall traffic flows.

A review of existing theoretical road capacity has been undertaken using the NESA Manual, formerly part of the Design Manual for Roads and Bridges, Volume 15, Part 5. The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the study area. The results are summarised in **Table 18**.

Table 18: 2035 Future Baseline Peak Daily Traffic Flow Capacity Review

	Survey Location	2035 Future Baseline Flow	2035 Future Baseline + Development Flows	Theoretical Road Capacity (10hr)	Spare Road Capacity %
1	B4501 at Glan-yr-afon (Site Access)	1,699	1,813	16,000	89%
2	A5 between Pentrefoelas and B4501	3,045	3,045	24,000	87%
3	A4212 between Capel Cerwyn and B4391	2,741	2,741	24,000	89%
4	A4212 between B4392 and Trawsfynydd	1,988	1,988	24,000	92%
5	A5 east of Ty-nant	3,275	3,363	24,000	86%
6	A494 north-west of Glan-yr-afon	4,851	4,877	24,000	80%

	Survey Location	2035 Future Baseline Flow	2035 Future Baseline + Development Flows	Theoretical Road Capacity (10hr)	Spare Road Capacity %
7	A494 north-west of Bethel	4,851	4,877	24,000	80%
8	A5 west of Tyn-y-cefn	8,792	8,906	24,000	63%
9	A5 at Llidiart-y-Parc	3,862	3,924	24,000	84%
10	A5 west of Berwyn	4,982	5,044	24,000	79%
11	A5 east of Llangollen	5,614	5,676	24,000	76%
12	A5 east of Canal Side	9,908	9,970	24,000	58%

The results indicate there are no road capacity issues with the addition of construction traffic associated with the Proposed Development and significant spare capacity exists within the local road network to accommodate all construction phase traffic.

8 Proposed Mitigation Measures

8.1 Construction Phase

8.1.1 Construction Traffic Management Plan (CTMP)

During the construction phase, a project website, blog or X (previously Twitter) feed will be regularly updated to provide the latest information relating to traffic movements associated with vehicles accessing the Site. This would be agreed with Gwynedd Council and NMWTRA (if required).

The following measures will be implemented during the construction phase through the CTMP:

- Agree AIL route upgrades and improvements with Gwynedd Council, NMWTRA and any other relevant stakeholders. Works which will be required to facilitate turbine deliveries are outlined in the RSR, which is presented in **Annex 1**;
- Where possible, the detailed design process will minimise the volume of material to be imported to / exported from Site to help reduce HGV numbers;
- A Staff Travel Plan, including transport modes to and from the worksite (including pick up and drop off times);
- A Transport Management Plan for AIL deliveries;
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public highways;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- Wheel cleaning facilities may be established at the Site entrance and blade transfer area, depending on the views of Gwynedd Council;
- Normal Site working hours will be limited to between 08:00 and 18:00 Monday to Friday and 08:30 and 13:00 on Saturdays, though component delivery and turbine erection may take place outside these hours i.e. depending on when police escort is available;
- Appropriate traffic management measures will be put in place on the B4501 leading through to the Site, to avoid conflict with general traffic, subject to the agreement of Gwynedd Council. Typical measures will include HGV turning and crossing signs and / or banksmen at the Site accesses and warning signs;
- Provide construction updates on the project website and via text message to residents within an agreed distance of the Site;
- Adoption of a voluntary reduced speed limits, for example on the B4501 and at other locations to be agreed with Gwynedd Council and NMWTRA; and, if necessary,
- Weekly toolbox talks:
    - All drivers will be required to attend an induction to include:
        - A toolbox talk safety briefing;
        - The need for appropriate care and speed control;
        - A briefing on driver speed reduction agreements (to slow Site traffic at sensitive locations through the villages and towns); and
        - Identification of the required access routes and the controls to ensure no departure from these routes.

As part of the CTMP, which will be provided post consent and secured by condition, an agreement to cover the cost of abnormal wear on the local road network will be required by Gwynedd Council. Video footage of the pre-construction phase condition of the abnormal loads access route and the construction vehicles route will be recorded to provide a baseline of the condition of the road prior to any construction work commencing. This baseline will inform any change in the road condition during the construction phase. Any necessary repairs will be coordinated with Gwynedd Council's highways team. Any damage caused by traffic associated with the Proposed Development during the construction phase that would be hazardous to public traffic will be repaired immediately.

Damage to road infrastructure caused directly by construction traffic will be repaired and street furniture that is removed on a temporary basis will be fully reinstated.

There will be a regular road review and any debris and mud will be removed from the carriageway using an onsite road sweeper to ensure road safety for all road users.

Before the AILs traverse the route from the PoE, the following tasks will be undertaken to ensure load and road user safety:

- Ensure any vegetation which may foul the loads is trimmed back to allow passage;
- Confirm there are no roadworks or closures that could affect the passage of the loads;
- Check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and
- Confirm the police are satisfied with the proposed movement strategy.

8.2 Abnormal Load Transport Management Plan

The TMP provided in **Annex 2** outlines a number of traffic management measures that could help reduce the effect of AIL convoys.

8.3 Outline Access Management Plan (OAMP)

Within the Site, consideration has been given to pedestrians and cyclists alike due to potential interactions between construction traffic, Open Land, PRoWs, cycle routes and public roads. The OAMP in **Annex 3** provides a number of measures that could help reduce the effect of AIL convoys and general construction traffic on the PRoW network.

8.4 Staff Travel Plan

A Staff Travel Plan will be deployed where necessary, to manage the arrival and departure profile of staff and to encourage sustainable modes of transport, especially car-sharing. A package of measures could include:

- Appointment of a Travel Plan Coordinator (TPC);
- Provision of public transport information;
- Mini-bus service for transport of Site staff;
- Promotion of a car sharing scheme;
- Car parking management; and
- Restrictions on parking, for example on the public road network and verges in the vicinity of the Site entrance.

8.5 Operational Phase Mitigation

Site entrance roads will be well maintained and monitored during the operational life of the development. Regular maintenance will be undertaken to keep the Site access track drainage systems fully operational and to ensure there are no run-off issues onto the public road network.

9 Summary and Conclusions

Pell Frischmann Consultants Limited has been commissioned by RSK Environment Limited on behalf of Foel Fach Wind Farm Limited. (the 'Applicant'), to prepare a Transport Assessment for the proposed Foel Fach Wind Farm (the 'Proposed Development'), located to the north-east of Bala, within the Gwynedd Council administrative area, North Wales.

The Proposed Development will be accessed via an upgraded simple priority junction between on the B4501 at Glan-yr-afon. The access junction will provide access to the Site for all abnormal loads associated with the turbine deliveries, as well as access for HGVs delivering construction materials and general site traffic.

Existing traffic data from the DfT was supplemented by an ATC survey on the B4501 in the vicinity of the Site access junction, with the data used to establish a base point for determining the impact during the construction phase and was factored to future levels (2035) to determine the impact of construction traffic on the road network.

The construction traffic will result in a temporary increase in traffic flows on the road network surrounding the Proposed Development. The peak of construction activity is expected to occur in month eight when there will be a total of 2,518 vehicle movements, which equates to 114 vehicle movements per day, comprising 62 two-way HGV movements and 52 two-way car / LGV movements.

This would equate to approximately 11 two-way total vehicles movements or six two-way HGV movements per hour, across a typical 10-hour day, assuming a flat traffic profile i.e. vehicles distributed evenly across the day.

In addition, a review of the theoretical road capacity was undertaken for the study area, which showed that with the addition of construction traffic associated with the Proposed Development, there was significant spare capacity within the road network.

A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of the construction phase traffic flows for both general construction traffic and abnormal loads associated with the delivery of the turbine components. It is considered that these can be secured by condition with Gwynedd Council and NMWTRA.

The Proposed Development will lead to a temporary increase in traffic volumes within the study area during the construction phase only. It is therefore concluded that there are no transport related matters which will preclude the construction of the Proposed Development site.

Annex 1 Route Survey Report

Pell Frischmann

Foel Fach Wind Farm

Annex 1: Abnormal Indivisible Load Route Survey

November 2025

10110041

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Prepared for

Foel Fach Wind Farm Limited

22-24 King Street
Maidenhead
Berkshire
SL6 1EF

Prepared by

Pell Frischmann Consultants Limited

93 George Street
Edinburgh
EH2 3ES

Pell Frischmann

Contents

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Appendices

1 Introduction

1.1 Purpose of the Report

Pell Frischmann Consultants Limited has been commissioned by RSK Environmental Limited on behalf of Foel Fach Wind Farm Limited (hereafter referred to as the 'Applicant'), to prepare a route access review of potential delivery routes for wind turbine Abnormal Indivisible Loads (AIL) associated with the construction and development of Foel Fach Wind Farm, located to the north-east of Glan-yr-afon, Wales.

The Route Survey Report (RSR) has been prepared to help inform the Applicant on the likely issues associated with the development of the Site with regards to off-site transport and access for AIL traffic. The report identifies the key issues associated with AIL deliveries and notes that remedial works, either in the form of physical works or as traffic management interventions will be required to accommodate the predicted loads.

The detailed assessment and subsequent designs of any remedial works are beyond the agreed scope of works between Pell Frischmann Consultants Limited and the Applicant at this point in time.

It is the responsibility of the turbine supplier to ensure that the entirety of the proposed access route is suitable and meets with their satisfaction (depending upon contract). The turbine supplier will be responsible for ensuring that the finalised proposals meet with the appropriate levels of health and safety consideration for all road users and are in line with the relevant legislation at the time of delivery.

2 Site Background

2.1 Site Location

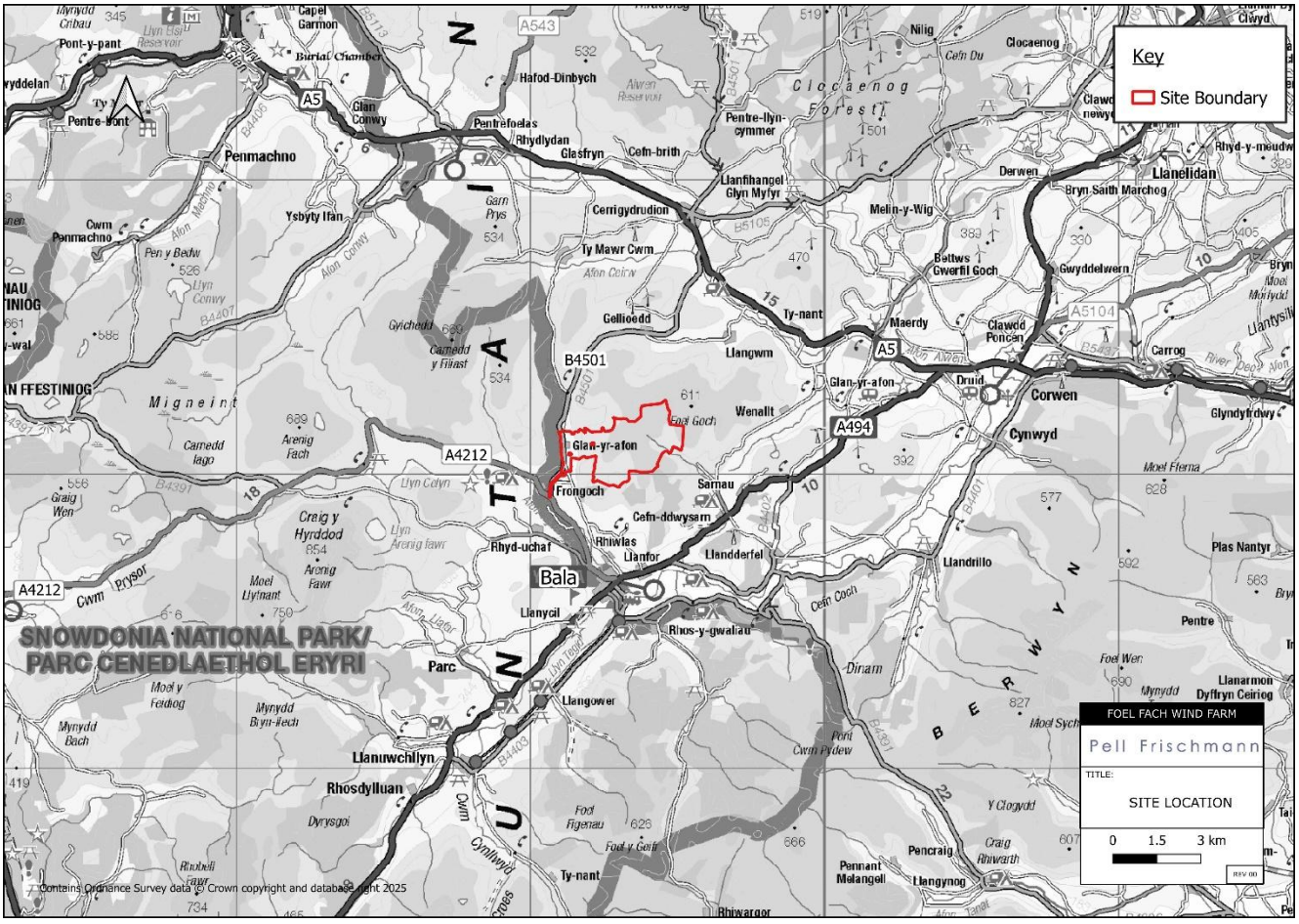
The Application Site (herein 'The Site') comprises over 659 hectares (ha) of land located on grazing moorland, approximately 3.1 kilometres (km) north-east of the town of Bala, Gwynedd, in North Wales, within the administrative boundary of Gwynedd Council.

The Site is located within the Foel Goch Uplands and lies nestled between the peaks of Garnedd Fawr and Moel Emoel. The surrounding area is characterised by upland moorland with grazing land, small areas of commercial forestry, and pasture fields on the lower slopes.

The B4501 bounds the western edge of the Site, linking with the A5 in the north and the A4212 to the south, providing access to the town of Bala.

Figure 2-1 illustrates the general Site location.

Figure 2-1: Site Location Plan



2.2 Candidate Turbine

The Applicant has indicated that they wish to consider the worst-case components from an Enercon E175 turbine with maximum tip heights of 200 metres (m) and 220 m for the AIL route assessments and for the purposes of the transport works. Pell Frischmann Consultants Limited has contacted Enercon for detailed information regarding the Enercon E175 turbine components in order to undertake the AIL route assessment, however, this information was not provided. Therefore, the Nordex N175 turbine has been used to provide a robust assessment of the AIL route and likely mitigation measures required.

The details of the components available at this time have been provided by Nordex and are detailed in **Table 2-1**. Information on tower sections for the Nordex N175 is not currently available.

Table 2-1: Turbine Component Summary

Component	Length [m]	Width [m]	Height / min. diameter [m]	Weight [te]
Blade	85.66	4.53	4.00	32.7

The blade and worst-case tower section has been assessed with the following dimensions 30 m x 4.8 m x 4.8 m have been used for the subsequent assessments of the proposed loads along the access route.

The selection of the final turbine model and specification will be subject to a commercial procurement process following consent of the application. The assumed dimensions may therefore vary slightly from those assumed as part of this report; however, the turbine tip height will be no greater than 220 m.

2.3 Proposed Delivery Equipment

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be carried on a Dolly Clamp trailer to reduce the need for mitigation in constrained sections of the route, shown in **Figure 2-2**.

Figure 2-2: Dolly Clamp Trailer

Where constraints are extreme, loads would be transferred onto a blade lifting trailer, shown in **Figure 2-3** to reduce the amount of additional land required and to reduce the extent of associated physical improvements. This trailer can lift blades up to a maximum angle of 60 degrees to clear potential constraints.

Figure 2-3: Blade Lifting Trailer

Towers would be loaded onto a 4+7 clamp adaptor style trailer shown in **Figure 2-4**, whereas loads such as the hub, nacelle housing and top towers would be carried on a six-axle step frame trailer.

Figure 2-4: Tower Clamp Trailer

These configurations are subject to confirmation by the chosen haulier at the time of their commissioning.

As the worst-case loads are classified as Special Order, due to a rigid length in excess of 30 m, a full Police Escort would be required along the full length of the route.

3 Access Route Review

3.1 Port of Entry

As the loads are classified as Special Order, due to a rigid length in excess of 30 m, in accordance with the Water Preferred Policy Port of Liverpool has been considered Port of Entry (POE) for the Site and all routes assessed within this report originate here. The port has sufficient quay and storage space and is well located for the strategic trunk road network. Loads can be offloaded by geared vessel or onshore mobile cranes and this port has been used for the delivery of components for a number of wind farms and is therefore well-proven as being capable of dealing with AILs of the size considered in this RSR. Birkenhead has been considered previously; however, it is understood that the part of the port proposed for landing components is now being considered for development and as such has not been proposed as POE for the project.

3.2 Proposed Access Route

The proposed access route to Site is detailed below, shown in **Figure 3-1**:

- Loads would exit Port of Liverpool heading south and taking the first exit at the roundabout onto the A5036 eastbound before merging onto the A59 northbound;
- Loads would turn right at Switch Island Junction to join the M57 heading south-east;
- Loads would exit the M57 at Junction 1 to join the M62 eastbound;
- Loads would exit the M62 at Junction 10 to join the M6 southbound;
- Loads would exit the M6 at Junction 20A to join the M56 westbound;
- Loads would exit the M56 at Junction 15 to join the M53 southbound before merging onto the A55 southbound;
- Loads would exit the A55 at Junction 34 to continue on the A55 westbound;
- Loads would exit the A55 at Junction 10 to join the A4087 westbound at Caernarfon Rd Interchange;
- At the roundabout, loads would take the 1st exit onto A487 Y Felinheli Bypass;
- Loads would continue on the A487 before merging onto the A470 southbound;
- At Trawsfynydd, loads would turn left onto the A4212 eastbound;
- At Fron-goch, loads would turn left onto the B4501 northbound; and
- Loads would enter the Site access junction to the south of Glen-yr-afon.

Figure 3-1: Proposed Access Route

3.3 Route Constraints

The constraints noted on the route are provided in **Tables 3-1** and **3-2**. These cover all constraints from the port access gate through to the Site access junction. No consideration of the transport issues within the port or development Site have been undertaken and this includes the design of the Site access junction.

Table 3-1 covers all constraints from the port access gate to a point on the A487 to the west of Penmorfa considerate of blade components loaded onto a dolly clamp trailer and the worst-case tower envelope loaded onto a tower clamp trailer. Due to significant constraints on the route from Penmorfa to Site that would be prohibitive to the delivery of the blades whilst loaded onto a dolly clamp trailer, the blade components are to be transferred onto a blade lifter for onward delivery from Penmorfa to Site. **Table 3-2** covers all constraints from the blade transfer point to Site considerate of a blade lifter and a tower clamp trailer.

Plans illustrating the location of the constraints are provided in **Annex 1.1**.

Table 3-1: Constraint Points and Details (Dolly Clamp Trailer & Tower Clamp Trailer)

POI	Key Constraint	Details
1	**Port of Liverpool Exit**  	Loads will exit the Port of Liverpool and proceed south towards the A565 / A5036 roundabout. The full manoeuvre will be carried out in contraflow with the necessary traffic control measures in place. Vehicular access entering the port will have to be suspended during the operation, which will need to be managed accordingly. A swept path assessment has been undertaken and indicates that loads will overrun and oversail beyond the western kerb on approach to the port entrance canopy. One automated barrier, one lighting column, one camera post, one traffic signal; and sections of fence line and pedestrian guardrail to be removed. Load bearing surface to be laid. Loads will oversail the central splitter island. One barrier support post to be removed. Minimal clearance noted between blades and port entrance canopy. Topographical survey recommended and swept path assessment to be repeated to confirm negotiability. Loads will also oversail beyond western kerb on exit from the port entrance canopy. Two lighting columns and four road signs to be removed. Load bearing surface to be laid. Swept path assessment SK01 is included in **Annex 1.2**. Pell Frischmann Consultants Limited understands that Peel Ports is planning further access enhancements to Seaforth Docks, therefore, the swept path assessment is to be repeated once the scope of the development works is known as these mitigation measures may change.

POI	Key Constraint	Details
2	**A565 / A5036 Roundabout**  	Loads will cross the central reservation onto the southbound carriageway and then take the second exit at the roundabout to join the A5036 eastbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central reservation. Vegetation to be cleared. Load bearing surface to be laid. Loads will oversail the northern verge on entry to the roundabout where a section of pedestrian guardrail is to be removed. Loads will also oversail the northern verge on exit where sections of pedestrian guardrail and wall should be removed. Vegetation pruning is required. Loads to oversail the safety barrier using trailer hydraulics. Swept path assessment SK02 is included in **Annex 1.2**.
3	**A5036 / Ash Road Roundabout** 	Loads will take the second exit at the roundabout to continue on the A5036 eastbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island where a load bearing surface should be laid. Vegetation to be cleared. One lighting column and two sets of chevron signs to be removed. Loads will oversail the northern verge on entry where one lighting column, one traffic signal, one pedestrian crossing call post and sections of pedestrian guardrail should be removed. Loads will oversail the exit splitter island. One traffic signal, one road sign and one bollard should be removed. Loads will also oversail the north-western verge on exit. Vegetation pruning is required. Loads will oversail the safety barrier using trailer hydraulics. Swept path assessment SK03 is included in **Annex 1.2**.
4	**A5036 / A59 Junction** 	Loads will continue straight on to merge onto the A59 northbound. No physical mitigation measures will be required.

POI	Key Constraint	Details
5	**A59 / M57 Switch Island Junction**  	Loads will turn right at Switch Island Junction to join the M57 southbound. Rear vehicle escorts must ensure that trailing traffic does not attempt to merge into or overtake the convoy. The lead police escort must allow the convoy to proceed through the junction in one phase of the traffic signals and one police vehicle must protect the convoy from oncoming traffic. A swept path assessment has been undertaken and indicates that the blade tip will oversail beyond the western kerb on approach to the turn where one lighting column, one traffic signal and one road sign should be removed. Loads will oversail the central reservation where one traffic signal, a section of pedestrian guardrail and one bollard should be removed. Loads will also oversail the central junction island where trees and vegetation are to be cleared. Two lighting columns and one road sign are to be removed. Loads to oversail six electrical boxes and a section of safety barrier using trailer hydraulics. Clearance to be confirmed during test run. Swept path assessment SK04 is included in **Annex 1.2**.
6	**M57 Junction 1 / M62 Junction 6** 	Loads will exit the M57 at Junction 1 to join the M62 eastbound. Vehicle escorts must ensure that the convoy is able to safely merge with M62 traffic and that trailing traffic does not attempt to merge into or overtake the convoy. Police escorts should ensure that Lane 1 is clear for the convoy to join. No physical mitigation measures will be required.
7	**M62 Junction 10 / M6 Junction 21A** 	Loads will exit the M62 at Junction 10 to join the M6 southbound. Vehicle escorts must ensure that the convoy is able to safely merge with M6 traffic and that trailing traffic does not attempt to merge into or overtake the convoy. Police escorts should ensure that Lane 1 is clear for the convoy to join.

POI	Key Constraint	Details
8	**M6 Junction 20A / M56 Junction 9** 	Loads will exit the M6 at Junction 20A to join the M56 westbound. Vehicle escorts must ensure that the convoy is able to safely merge with M56 traffic and that trailing traffic does not attempt to merge into or overtake the convoy. Police escorts should ensure that Lane 1 is clear for the convoy to join.
9	**M56 Junction 15 / M53 Junction 11** 	Loads will exit the M56 at Junction 15 to join the M53 southbound. Vehicle escorts must ensure that the convoy is able to safely merge with M53 traffic and that trailing traffic does not attempt to merge into or overtake the convoy. Police escorts should ensure that Lane 1 is clear for the convoy to join.
10	**M53 / A55 merge** 	Loads will continue straight on from M53 to merge onto A55 southbound. No physical mitigation measures will be required.

POI	Key Constraint	Details
11	**A55 Junction 34 / A494 Slip Road**  	Loads will exit the A55 to join the A494 westbound and the continue straight to re-join the A55 westbound. Vehicle escorts must ensure that the convoy is able to safely merge with A55 traffic and that trailing traffic does not attempt to merge into or overtake the convoy. Police escorts should ensure that Lane 1 is clear for the convoy to join. No physical mitigation measures will be required.
12	**A55 Rhuallt Gradient** 	Loads will continue on A55 westbound past Rhuallt. Warning signage for a 6% downhill section was noted during the Site visit. Abnormal loads should use caution through this section.
13	**A55 Conwy Overbridges** 	Loads will continue on A55 westbound to the south of Llandudno Junction. Loads will pass under several bridges which do not display any height restrictions. Once the final candidate turbine is selected along with the chosen haulier, a full ESDAL consultation should be undertaken to ensure that the proposed loads are able negotiate all bridges and tunnels without restriction.

POI	Key Constraint	Details
14	**A55 Conwy Tunnel** 	Loads will continue on A55 westbound through Conwy Tunnel. There are no height restrictions shown. Once the final candidate turbine is selected along with the chosen haulier, a full ESDAL consultation should be undertaken to ensure that the proposed loads are able to negotiate the tunnel without restriction.
15	**A55 Penmaenbach Tunnel** 	Loads will continue on A55 westbound through Penmaenbach Tunnel. There are no height restrictions shown. Once the final candidate turbine is selected along with the chosen haulier, a full ESDAL consultation should be undertaken to ensure that the proposed loads are able to negotiate the tunnel without restriction.
16	**A55 Puffin Roundabout** 	Loads will take the second exit at Puffin Roundabout to continue on the A55 westbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island. Ground works required to lower raised island to carriageway level. Load bearing surface to be laid. Two sets of chevron signs to be removed. Loads will also oversail the southern verge on approach to and exit from the roundabout with no mitigation measures required. Swept path assessment SK05 is included in **Annex 1.2**.
17	**A55 Pen-y-Clip Tunnel** 	Loads will continue on A55 westbound through Pen-y-Clip Tunnel. There are no height restrictions shown. Once the final candidate turbine is selected along with the chosen haulier, a full ESDAL consultation should be undertaken to ensure that the proposed loads are able to negotiate the tunnel without restriction.

POI	Key Constraint	Details
18	**A55 Llanfairfechan Roundabout** 	Loads will take the second exit at Llanfairfechan Roundabout to continue on the A55 westbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island. Ground works required to lower raised island to carriageway level. Load bearing surface to be laid. Two sets of chevron signs to be removed. Swept path assessment SK06 is included in **Annex 1.2**.
19 & 20	**A55 Junction 10 / A4087 Caernarfon Rd IC**  	Loads will exit the A55 at Junction 10 taking the slip road heading west to enter Caernarfon Rd Interchange roundabout and taking the first exit onto the A4087 westbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail beyond the northern kerb of the slip road. Load bearing surface to be laid. Loads will also oversail beyond the southern kerb of the slip road and will oversail the safety barrier using trailer hydraulics. At the roundabout, loads will overrun and oversail beyond the northern kerb on approach. Load bearing surface to be laid and one road sign to be removed. A new offline track should be created in the southern verge to allow loads to avoid the roundabout junction. A load bearing surface should be laid; and one lighting column and multiple chevron signs should be removed. Escorts should protect the load when leaving and re-joining the main road. Land searches recommended to confirm extent of adopted highway. Swept path assessment SK07 is included in **Annex 1.2**.
21	**A4087 / A487 Roundabout** 	Loads will take the first exit at the roundabout from the A4087 onto the A487. A swept path assessment has been undertaken and indicates that loads will oversail beyond the southern verge on approach to the roundabout. Land searches recommended to confirm extent of adopted highway. Trees and vegetation to be cleared. Two lighting columns to be removed. Loads to oversail safety barrier using trailer hydraulics. Loads will oversail the central roundabout island where trees and vegetation should be cleared. Loads will oversail beyond both kerbs on exit from the roundabout. Two road signs to be removed. Swept path assessment SK08 is included in **Annex 1.2**.

POI	Key Constraint	Details
22	**A487 Plas Menai Roundabout** 	Loads will take the second exit at Plas Menai Roundabout to continue on A487 southbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island where a load bearing surface should be laid. Two sets of lit chevron signs should be removed. Loads will also oversail the eastern verge on entry where one lighting column should be removed. Swept path assessment SK09 is included in **Annex 1.2**.
23	**A487 Cylchfan Cibyn Roundabout** 	Loads will take the second exit at Cylchfan Cibyn Roundabout to continue on A487 southbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island where a load bearing surface should be laid. Two sets of lit chevron signs should be removed. Loads will also oversail the eastern verge on entry with no mitigation measures required. Swept path assessment SK10 is included in **Annex 1.2**.
24	**A487 Meiford Roundabout** 	Loads will negotiate Meiford Roundabout in contraflow to minimise required works and take the second exit to continue on A487 southbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island where a load bearing surface should be laid. Two sets of lit chevron signs should be removed. Swept path assessment SK11 is included in **Annex 1.2**.
25	**A487 Goat Roundabout** 	Loads will negotiate Goat Roundabout in contraflow to minimise required works and take the second exit to continue on A487 southbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island where a load bearing surface should be laid. Two sets of lit chevron signs should be removed. Loads will oversail beyond the western kerb on exit from the roundabout where one lighting column should be removed. Loads will oversail the exit splitter island where one bollard will be oversailed. Loads will also oversail the entry splitter island with no mitigation measures required. Swept path assessment SK12 is included in **Annex 1.2**.

POI	Key Constraint	Details
26	**A487 / Lon Cefn Glyn Roundabout** 	Loads will take the second exit at A487 / Lon Cefn Glyn roundabout to continue on A487 southbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island where a load bearing surface should be laid. One set of lit chevron signs should be removed. Loads will oversail beyond the eastern kerb on entry to and exit from the roundabout with no mitigation measures required. Swept path assessment SK13 is included in **Annex 1.2**.
27	**A487 / Penygroes Roundabout** 	Loads will take the second exit at the A487 / Penygroes Roundabout to continue on A487 southbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island where a load bearing surface should be laid. Two sets of lit chevron signs should be removed. Loads will overrun the exit splitter island where a load bearing surface should be laid. One road sign and one bollard should be removed. Loads will also oversail the eastern verge on exit from the roundabout with no mitigation measures required. Swept path assessment SK14 is included in **Annex 1.2**.
28	**A487 / B4418 Roundabout** 	Loads will negotiate the A487 / B4418 roundabout in contraflow to minimise required works and take the second exit to continue on A487 southbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail the central roundabout island where a load bearing surface should be laid. One set of chevron signs should be removed. Loads will overrun and oversail beyond the western kerb on entry where a load bearing surface should be laid, and one road sign should be removed. Vegetation and trees should be pruned. Loads will oversail beyond the western kerb on exit from the roundabout. One road sign to be removed. Loads will oversail the exit splitter island where one bollard will be oversailed. Loads will also oversail the entry splitter island with no mitigation measures required. Swept path assessment SK15 is included in **Annex 1.2**.
29	**A487 Llanllyfni Overhead Lines** 	Loads will continue on A487 southbound past Llanllyfni. The clearances to overhead power lines at this location and throughout the entire route should be reviewed with the utility provider prior to loads moving to ensure that there is sufficient head height and flashover protection for all temperature ranges.

POI	Key Constraint	Details
30	**A487 Bends North of Bryncir**  	Loads will continue on A487 southbound through some bends to the north of Bryncir. A swept path assessment has been undertaken and indicates that loads will oversail beyond the eastern kerb to the inside of the left-hand bend. Trees and vegetation to be pruned. Loads will also oversail beyond the western kerb to the inside of the right-hand bend with no mitigation measures required. Swept path assessment SK16 is included in **Annex 1.2**.
31	**A487 Golan Vertical Elevation** 	Loads will continue southbound on A487 to the south of Golan. The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.
32	**A487 Garnedd-hir Vertical Elevation** 	Loads will continue southbound on A487 to the south-west of Garnedd-hir. The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.

Table 3-2: Constraint Points and Details (Blade Lifter & Tower Clamp Trailer)

POI	Key Constraint	Details
33	**A487 Penmorfa S-bend**   	Loads will continue on the A487 eastbound around an S-bend through Penmorfa. A swept path assessment has been undertaken and indicates that loads will oversail beyond the northern kerb to the inside of the left-hand bend where a section of pedestrian guardrail should be removed. A steep gradient was noted during the Site visit at this location. Abnormal loads should use caution when navigating this section. Loads will overrun and oversail beyond the northern kerb on exit from the right-hand bend where a load bearing surface should be laid. Loads will also oversail beyond the northern kerb on approach to the bend and beyond the southern kerb to the inside of the bend with no mitigation measures required. All overhead lines through the entire route where the blade is in the raised position should be removed or relocated. Swept path assessment SK17 is included in **Annex 1.2**. Parking restrictions will be required throughout. Temporary Traffic Regulation Order (TTRO) may be required, which can take 12-weeks plus to be processed.
34	**A487 East of Penmorfa Tree Canopy and Gradient** 	Loads will continue on A487 southbound to the east of Penmorfa. The tree canopy should be trimmed to ensure that there is a 5 m clear head height. Trimming works can be subject to ecological time constraints and early engagement with the relevant authority is recommended. A steep downhill gradient was noted during the Site visit at this location. Abnormal loads should use caution when navigating this section.

POI	Key Constraint	Details
35	**A487 Tremadog Roundabout** 	Loads will take the second exit at Tremadog Roundabout to continue on A487 southbound. A swept path assessment has been undertaken and indicates that loads will oversail beyond the northern kerb on entry. One lighting column, trees and all advertisement signs to be oversailed. Loads will overrun and oversail the central roundabout island. Load bearing surface to be laid. Two sets of chevron signs to be removed. Loads will oversail the first exit splitter island. One road sign and one bollard to be oversailed using trailer hydraulics. Loads will also oversail beyond the eastern verge on exit from the roundabout with no mitigation measures required. Swept path assessment SK18 is included in **Annex 1.2**.
36	**A487 Porthmadog Roundabout** 	Loads will take the second exit at Porthmadog Roundabout to continue on A487 eastbound. A swept path assessment has been undertaken and indicates that loads will overrun and oversail two entry splitter islands. Load bearing surface to be laid. Two traffic signals and one bollard to be removed. Loads will overrun and oversail the central roundabout island where a load bearing surface should be laid. One set of chevron signs to be removed. Loads will oversail beyond the northern kerb on entry to the roundabout where one lighting column should be removed. Loads will also oversail beyond the southern kerb on entry. One traffic signal, one road sign and two electrical boxes to be oversailed. Swept path assessment SK19 is included in **Annex 1.2**.

POI	Key Constraint	Details
37	**A487 Minffordd Roundabout**   	Loads will continue on A487 southbound towards Minffordd Roundabout. At the roundabout, loads will take the first exit to continue on A487 eastbound. <u>Blade loads</u> On approach to the roundabout, loads are to travel underneath structure no's A487 413 Bron Turnor Pma Overbridge and A487 412 Ffestiniog Railway Overbridge. The blades should be lowered to pass beneath the structures and high voltage overhead lines. Once beyond the overbridge, loads will take the first exit at Minffordd Roundabout to continue on A487 eastbound. The roundabout is not negotiable for the blade lifter trailer with the blades in the lowered position due to conflict with the overbridge, therefore, blade loads will continue straight onto the central roundabout island where the blades will be raised. Once the blade is raised, the vehicle will reverse before travelling forwards to turn left at the roundabout. <u>Tower loads</u> Loads will take the first exit at the roundabout to continue on A487 eastbound. <u>Mitigation measures</u> A swept path assessment has been undertaken and indicates that loads will overrun and oversail beyond the northern kerb on entry to the roundabout. Load bearing surface to be laid. One lighting column to be removed. Loads will overrun and oversail the central roundabout island. Load bearing surface to be laid. Two sets of chevron signs to be removed. Loads will overrun and oversail the exit splitter island. Load bearing surface to be laid. One road sign and two bollards to be removed. Loads will oversail the entry splitter island. One bollard to be removed. Loads will also oversail beyond the western kerb on approach to the roundabout with no mitigation measures required. High voltage overhead lines pass over the central roundabout island. It is recommended that a topographical survey is completed and the swept path assessment repeated to confirm the vehicle clearances. Police Escorts to hold all other traffic for the duration of the operation. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover. Swept path assessment SK20 is included in **Annex 1.2**.

POI	Key Constraint	Details
38	**A487 Penrhyndeudraeth Overhead Lines** 	Loads will continue on A487 eastbound through Penrhyndeudraeth. All overhead lines through the entire route where the blade is in the raised position should be removed or relocated.
39	**A487 Penrhyndeudraeth Central Splitter Island and Parking Restrictions** 	Loads will continue on A487 eastbound through Penrhyndeudraeth. Loads will overrun the splitter island where a load bearing surface should be laid, and one bollard be removed. Parking restrictions will be required throughout this section. TTRO may be required, which can take 12-weeks plus to be processed.
40	**A487 Penrhyndeudraeth Central Splitter Islands**  	Loads will continue on A487 eastbound exiting Penrhyndeudraeth. Loads will overrun and oversail two splitter islands where load bearing surfaces should be laid, and four bollards be removed.

POI	Key Constraint	Details
41	**A487 Southeast of Llanfrothen RH Bend** 	Loads will continue on A487 eastbound around a right-hand bend to the south-east of Llanfrothen. Full occupation of the carriageway is required with the necessary traffic control measures in place. All overhead lines through the entire route where the blade is in the raised position should be removed or relocated.
42	**A487 Trwyn-y-garnedd LH Bend** 	Loads will continue on A487 eastbound around a left-hand bend at Trwyn-y-garnedd. Full occupation of the carriageway is required with the necessary traffic control measures in place.
43	**A487 Laundry Cottage LH Bend** 	Loads will continue on A487 eastbound around a left-hand bend at Laundry Cottage. A swept path assessment has been undertaken and indicates that loads will oversail beyond the southern kerb on approach to the bend with no mitigation measures required. Parking restrictions will be required throughout the bend. TTRO may be required, which can take 12-weeks plus to be processed. All overhead lines through the entire route where the blade is in the raised position should be removed or relocated. Swept path assessment SK21 is included in **Annex 1.2**.
44	**A487 Tan-y-bwlch Width Restriction** 	Loads will continue on A487 eastbound through Tan-y-bwlch. Full occupation of the carriageway is required with the necessary traffic control measures in place. All overhead lines through the entire route where the blade is in the raised position should be removed or relocated.

POI	Key Constraint	Details
45	**A487 Coed Mawr RH Bend** 	Loads will continue on A487 eastbound around a right-hand bend to the north of Coed Mawr. Full occupation of the carriageway is required with the necessary traffic control measures in place. The tree canopy should be trimmed to ensure that there is a 5 m clear head height. Trimming works can be subject to ecological time constraints and early engagement with the relevant authority is recommended.
46	**A487 Cae'n-y-coed-uchaf S-bend**  	Loads will continue on A487 eastbound around an S-bend at Cae'n-y-coed-uchaf. Due to the presence of high voltage overhead lines crossing the carriageway, blades should be lowered prior to the lines and raised once clear beneath them. A swept path assessment has been undertaken and indicates that loads will oversail beyond the northern kerb and assumed highway limits at the right-hand bend. 15 road signs to be removed and trees to be cleared. Loads will oversail beyond the western kerb at the left-hand bend. Six road signs to be removed. Loads will also oversail beyond the eastern kerb with no mitigation measures required. Swept path assessment SK22 is included in **Annex 1.2**. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover.

POI	Key Constraint	Details
47	**A487 East of Gellilydan S-bend**   	Loads will continue on A487 southbound around an S-bend to the east of Gellilydan. A swept path assessment has been undertaken and indicates that loads will oversail beyond both kerbs through the left-hand bend where ten chevron signs should be removed from the western verge. Land searches recommended to confirm extent of adopted highway. Due to the presence of high voltage overhead lines crossing the carriageway between the two bends, blades should be lowered prior to the lines, but after the embankment to the offside of the left-hand bend. The lowering of the blade may need to be performed gradually so as to not conflict with the embankment and may not need to be lowered to the lowest setting. The blade should be raised following the high voltage overhead lines. Loads will oversail beyond the northern kerb on approach to and around the right-hand bend. Trees to be cleared. Five chevron signs to be removed. Loads to oversail safety barrier. The tree canopy should be trimmed to ensure that there is a 5 m clear head height. Trimming works can be subject to ecological time constraints and early engagement with the relevant authority is recommended. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover. Swept path assessment SK23 is included in **Annex 1.2**.
48	**A487 Pont Tafarn-hely Series of Bends** 	Loads will continue on A487 eastbound around a series of bends at Pont Tafarn-hely. Due to the presence of high voltage overhead lines crossing the carriageway, blades should be lowered prior to the lines and raised once clear beneath them. A swept path assessment has been undertaken and indicates that no further mitigation measures are required. Swept path assessment SK24 is included in **Annex 1.2**.

POI	Key Constraint	Details
49	**A487 / A470 Junction** 	Loads will continue straight from the A487 onto A470 eastbound. No physical mitigation measures will be required.
50	**A470 North of Llyn Trawsfynydd Overhead Lines** 	Loads will continue on A470 southbound to the north of Llyn Trawsfynydd. Due to the presence of high voltage overhead lines crossing the carriageway, blades should be lowered prior to the lines and raised once clear beneath them. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover.
51	**A470 / A4212 Junction** 	Loads will turn left turn left from A470 onto A4212 eastbound using the left-hand only turning lane. A swept path assessment has been undertaken and indicates that loads will oversail beyond the eastern kerb. Two road signs to be removed and vegetation to be pruned. Loads will oversail the central splitter island. Three road signs to be oversailed. All overhead restrictions through the entire route where the blade is in the raised position should be removed or relocated. Swept path assessment SK25 is included in **Annex 1.2**.
52	**A4212 Ty'n-y-griafolen Vertical Elevation** 	Loads will continue on A4212 eastbound past Ty'n-y-griafolen. The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.

POI	Key Constraint	Details
53	**A4212 Cae-glas Vertical Elevation** 	Loads will continue on A4212 eastbound to the south of Cae-glas. The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.
54	**A4212 Glanllafar Vertical Elevation** 	Loads will continue on A4212 eastbound to the south of Glanllafar. The vertical profile of the road at this location is pronounced and should be reviewed during the test run stage to ascertain if tar wedges will be required to prevent grounding.
55	**A4212 Hendre-bryn-crogwydd Gradient** 	Loads will continue on A4212 eastbound past Hendre-bryn-crogwydd. A steep downhill gradient was noted during the Site visit at this location. Abnormal loads should use caution when navigating this section.
56	**A4212 Nant Ddu Overhead Lines** 	Loads will continue on A4212 eastbound to the north of Nant Ddu. Due to the presence of high voltage overhead lines crossing the carriageway, blades should be lowered prior to the lines and raised once clear beneath them. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover.

POI	Key Constraint	Details
57	**A4212 Pont Rhyd-y-fen LH Bend** 	Loads will continue on A4212 eastbound around a left-hand bend at Pont Rhyd-y-fen. Full occupation of the carriageway is required with the necessary traffic control measures in place. All overhead restrictions through the entire route where the blade is in the raised position should be removed or relocated.
58	**A4212 Coed Pand-llwyni Overhead Lines** 	Loads will continue on A4212 eastbound to the west of Coed Pant-llwyni. Full occupation of the carriageway is required with the necessary traffic control measures in place. All overhead restrictions through the entire route where the blade is in the raised position should be removed or relocated.
59	**A4212 Beudy Fron-wen Overhead Lines** 	Loads will continue on A4212 northbound to the north of Beudy Fron-wen. Due to the presence of high voltage overhead lines crossing the carriageway, blades should be lowered prior to the lines and raised once clear beneath them. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover.
60	**A4212 Hafod-wen Overhead Lines** 	Loads will continue on A4212 southbound at Hafod-wen. Due to the presence of high voltage overhead lines crossing the carriageway, blades should be lowered prior to the lines and raised once clear beneath them. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover.

POI	Key Constraint	Details
61	**A4212 Ty-uchaf S-bend**  	Loads will continue on A4212 eastbound around an S-bend at Ty-uchaf. Due to the presence of high voltage overhead lines crossing the carriageway, blades should be lowered prior to the lines and raised once clear beneath them. A swept path assessment has been undertaken and indicates that loads will oversail beyond the southern kerb at the left-hand bend. Trees to be cleared. Section of fence to be removed. 18 bollards to be oversailed. Loads will oversail beyond the northern kerb at the right-hand bend. Trees to be cleared. Section of fence to be removed. Five bollards to be oversailed. Swept path assessment SK26 is included in **Annex 1.2**. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover.
62	**A4212 Ciltalgarth Tree Canopy** 	Loads will continue on A4212 eastbound past Ciltalgarth. The tree canopy should be trimmed to ensure that there is a 5 m clear head height. Trimming works can be subject to ecological time constraints and early engagement with the relevant authority is recommended.
63	**A4212 Pont Hafod Fadog Overhead Restrictions** 	Loads will continue on A4212 eastbound. The tree canopy should be trimmed to ensure that there is a 5 m clear head height. Trimming works can be subject to ecological time constraints and early engagement with the relevant authority is recommended. All overhead restrictions through the entire route where the blade is in the raised position should be removed or relocated.

POI	Key Constraint	Details
64	**A4212 / B4501 Junction** 	Loads will turn left from A4212 onto B4501 northbound. *The available OS mapping does not identify the road edge from this point to the Site entrance. An indicative road edge has been provided for illustration only and all mitigation measures should be confirmed on a topographical survey or during the test run.* A swept path assessment has been undertaken and indicates that loads will overrun and oversail beyond the kerb to the inside of the turn. Land profiled required and a load bearing surface to be laid. Two lighting columns to be removed. Loads will overrun and oversail beyond the eastern kerb on exit from the turn. Load bearing surface to be laid. One utility pole, one lighting column and section of hedge to be removed. Swept path assessment SK27 is included in **Annex 1.2**. Land searches recommended to confirm extent of adopted highway.
65	**B4501 Frongoch Farm Overhead Lines** 	Loads will continue on B4501 northbound past Frongoch Farm. Due to the presence of high voltage overhead lines crossing the carriageway, blades should be lowered prior to the lines and raised once clear beneath them. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover.
66	**B4501 Tai'r-felin RH Bend** 	Loads will continue on B4501 northbound around a right-hand bend at Tai'r-felin. A swept path assessment has been undertaken and indicates that loads will oversail beyond the western kerb where trees and vegetation should be pruned. All overhead restrictions through the entire route where the blade is in the raised position should be removed or relocated. Swept path assessment SK28 is included in **Annex 1.2**.

POI	Key Constraint	Details
67 & 68	**B4501 Mur-glas S-bend**   	Loads will continue on B4501 northbound around an S-bend to the west of Mur-glas. Due to the presence of high voltage overhead lines crossing the carriageway, blades should be lowered prior to the lines and raised once clear beneath them. A swept path assessment has been undertaken and indicates that loads will oversail beyond both kerbs through the right-hand bend where vegetation should be trimmed. Loads will overrun and oversail beyond the eastern kerb through the left-hand bend. Load bearing surface to be laid and ground works required. Section of hedge and fence to be removed. Loads will also oversail beyond the western kerb. Vegetation to be pruned. Swept path assessment SK29 is included in **Annex 1.2**. The tree canopy should be trimmed to ensure that there is a 5 m clear head height. Trimming works can be subject to ecological time constraints and early engagement with the relevant authority is recommended. The required safety clearance to high voltage overhead lines should be confirmed with the utility firms prior to delivery in order avoid the potential for flashover.
69 & 70	**B4501 South-West of Wern Fawr Series of Bends**  	Loads will continue on B4501 northbound around a series of bends to the south-west of Wern Fawr. A swept path assessment has been undertaken and indicates that loads will oversail beyond both kerbs through the first left-hand bend. Vegetation to be pruned. Loads will also oversail beyond both kerbs through the second left-hand bend. To the east of the carriageway, trees and vegetation to be cleared. One utility pole, and sections of stone wall and fence to be removed. Loads will oversail the bridge parapet. Swept path assessment SK30 is included in **Annex 1.2**. The tree canopy should be trimmed to ensure that there is a 5 m clear head height. Trimming works can be subject to ecological time constraints and early engagement with the relevant authority is recommended. All overhead restrictions through the entire route where the blade is in the raised position should be removed or relocated.

POI	Key Constraint	Details
71	**B4501 South of Glan-yr-afon / Site access junction** 	Loads will continue on B4501 northbound and turn right onto the proposed Site access track to the south of Glan-yr-afon. The tree canopy should be trimmed to ensure that there is a 5 m clear head height. Trimming works can be subject to ecological time constraints and early engagement with the relevant authority is recommended. All overhead restrictions through the entire route where the blade is in the raised position should be removed or relocated. Junction amendments required, to be designed and swept path assessment to be undertaken on receipt of design.

3.4 Swept Path Assessment Results and Summary

The detailed swept path drawings for the locations assessed are provided in **Annex 1.2** for review. The drawings in **Annex 1.2** illustrate tracking undertaken for the worst-case loads at each location.

The colours illustrated on the swept paths are:

- Grey / Black – OS / Topographical Base Mapping;
- Green – Vehicle body outline (body swept path);
- Red – Tracked pathway of the wheels (wheel swept path); and
- Purple – The oversail tracked path of the load where it encroaches outwith the trailer (load swept path).

Where mitigation works are required, the extents of overrun and oversail areas are illustrated on the swept path drawings.

Please note that where assessments have been undertaken using Ordnance Survey (OS) base mapping, there can be errors in this data source.

Where provided by the client, topographical data has been utilised. Please note that Pell Frischmann Consultants Limited cannot accept liability for errors on the data source, be that OS base mapping or client supplied data.

3.5 Blade Transfer Point

Due to significant route constraints from Penmorfa to Site, it is proposed that the blades be transhipped from the dolly clamp trailer onto a blade lifter for this section of the route.

No formal transfer point location has been selected at the time of writing this report, however, there are multiple potential locations to either side of the A487 to the west of Penmorfa. Land outwith the Proposed Development boundary would be required, and the landowner(s) should be approached regarding access permission at the earliest opportunity to avoid delays to the project.

Typically, the transfer area will be located adjacent to a straight section of carriageway, which is at the same elevation as the carriageway and somewhat level. A grass field is preferable to an arable field as the ground is likely to be firmer, however, further investigations would need to be undertaken separate to this RSR. Also, a location without overhead utilities is required.

The transfer area would be protected by a security fence, would feature welfare facilities and would have storage for up to six blades to allow for faster delivery should inclement weather delay works. Provision would need to be made for keeping the Site secure including having security personnel on Site, if the area was to be unmanned at any point during the operation. An indicative blade transfer drawing has been prepared and is included in **Annex 1.3**.

Once the blades have been loaded onto the blade lifter for onward delivery, it has been assumed that the blade will be carried in the raised position through all constraint points unless stated otherwise. All overhead utilities and obstructions should be cleared at locations where the blade is raised.

Early engagement with the utility providers should be undertaken at an early stage to ensure that all of the necessary diversions or undergrounding works have been completed prior to deliveries commencing.

3.6 Third-Party Land & Land Ownership

A review of third-party land should be undertaken by the client to ensure that no additional land rights are required to enable deliveries or mitigation works. Pell Frischmann Consultants Limited accepts no responsibility for the accuracy of land ownership assumptions, all of which should be confirmed across the entire access route by a qualified land agent.

The limits of road adoption can vary depending upon the location of the Site and the history of the road agencies involved. The adopted area is generally defined as land contained within a defined boundary where the road agency holds the maintenance rights for the land. In urban areas, this is usually defined as the area from the edge of the footway across the road to the opposing footway back edge.

In rural areas, the area of adoption can be open to greater interpretation as defined boundaries may not be readily visible. In these locations, the general rule is that the area of adoption is between established field boundary lines or a maximum 2 m from the road edge. This can vary between area and location.

3.7 Weight Review

A review of the structures on the proposed access route has been undertaken via the ESDAL (Electronic Service Delivery for Abnormal Loads) database. No constraints were identified on the database at this time, using the Highways Agency website www.esdal.com. This, however, does not confirm the suitability or otherwise of the structures and a full review of these structures will be required with the relevant agencies via the contacts in the database, when the candidate turbine has been confirmed. For information, the relevant ESDAL contacts are noted in **Table 3-3**.

Table 3-3: ESDAL Contacts

Organisation	Email Address
Sefton Metropolitan Borough Council	abnormal.loads@sefton.gov.uk
Merseyside Police	commercial.vehicle.unit@merseyside.police.uk
National Highways North West Region	nwabnormalloadsenquiries@nationalhighways.com
Lancashire Police	AbnormalLoads@Lancashire.police.uk
Greater Manchester Police	abnormal.loads@gmp.police.uk
Cheshire Constabulary	abnormal.loads@cheshire.police.uk
North Wales Police	abnormalloads@northwales.police.uk
North and Mid Wales Trunk Road	abnormalloads@nmwtra.org.uk
Denbighshire County Council	abnormal.loads@denbighshire.gov.uk
Welsh Government	abnormalloads@gov.wales
Gwynedd County Council	LlwythAbnormal@gwynedd.llyw.cymru
Network Rail	AbnormalLoadsEnquiries@networkrail.co.uk
Historic Rail Estate	rsgbrb@jacobs.com

Where responses have been received, these are contained in **Annex 1.4**.

4 Summary

4.1 Summary of Access Review

Pell Frischmann Consultants Limited has been commissioned by RSK Environment Limited on behalf of Foel Fach Wind Farm Limited. (the 'Applicant'), to prepare a route access review of potential delivery routes for wind turbine AILs associated with the construction and development of Foel Fach Wind Farm, located to the north-east of Glan-yr-afon, Wales.

This report identifies the key points and issues associated with the proposed route and outlines the issues that will need to be considered for successful delivery of components.

The access review has been based upon Nordex N175 blade components and a worst case tower and has been undertaken on the basis of the blades loaded onto a dolly clamp trailer and a blade lifter trailer; and the tower sections loaded onto a tower clamp trailer. Due to the transport configurations being classified as Special Order, a full Police escort would be required along the length of the route.

The route from Port of Liverpool to Penmorfa is considered feasible for the loads with the mitigation measures identified as part of this report, however, due to significant constraints, trailer interchange of the blades from the dolly clamp trailer onto a blade lifter trailer is recommended for onward delivery of the blades from Penmorfa to Site. A suitable trailer interchange location has not been proposed as part of this report; however, high-level considerations required to assess this fully have been provided including identifying and contacting the relevant landowner(s) to arrange access permission, etc. Following transhipment, the route from Penmorfa to Site is considered feasible for the loads with the mitigation measures identified as part of this report.

The existing junction from the B4501 onto the proposed Site access track is not currently considered negotiable for the loads, therefore, significant upgrade works are required to accommodate the deliveries. Further investigative and design works are required in order to develop a negotiable Site access junction.

The report is presented for consideration to the Applicant. Various road modifications, structural reviews and interventions are required to successfully access the Site. If these are undertaken, access to the consented wind farm Site is considered feasible.

4.2 Further Actions

The following actions are recommended to pursue the transport and access issues further:

- Prepare detailed mitigation design proposals to help inform the land option / consultee discussions;
- Obtain the necessary land options;
- Undertake discussion with the affected utility providers and roads agencies;
- Obtain the necessary statutory licences to enable the mitigation measures;
- Develop a detailed operational Transport Management Plan to assist in transporting the proposed loads.
- That any necessary topographical surveys are undertaken and the swept path assessments repeated to confirm mitigation measures required;
- A review of axle loading on structures along the entire access route with the various road agencies is undertaken immediately prior to the loads being transported in case of last-minute changes to structures;
- A review of clear heights with utility providers and the transport agencies along the route to ensure that there is sufficient space to allow for loads plus sufficient flashover protection (to electrical installations);
- That any verge vegetation and tree canopies that may foul loads are pruned prior to loads moving;
- That a review of potential roadworks and or closures is undertaken once the delivery schedule is established in draft form;
- That a test run is completed to confirm the route and review any vertical clearance issues; and
- That a condition survey is undertaken to ascertain the extents of road defects prior to loads commencing to protect the developer from spurious damage claims

Annex 1.1 Points of Interest

An electronic version of the POI plans can be found here:

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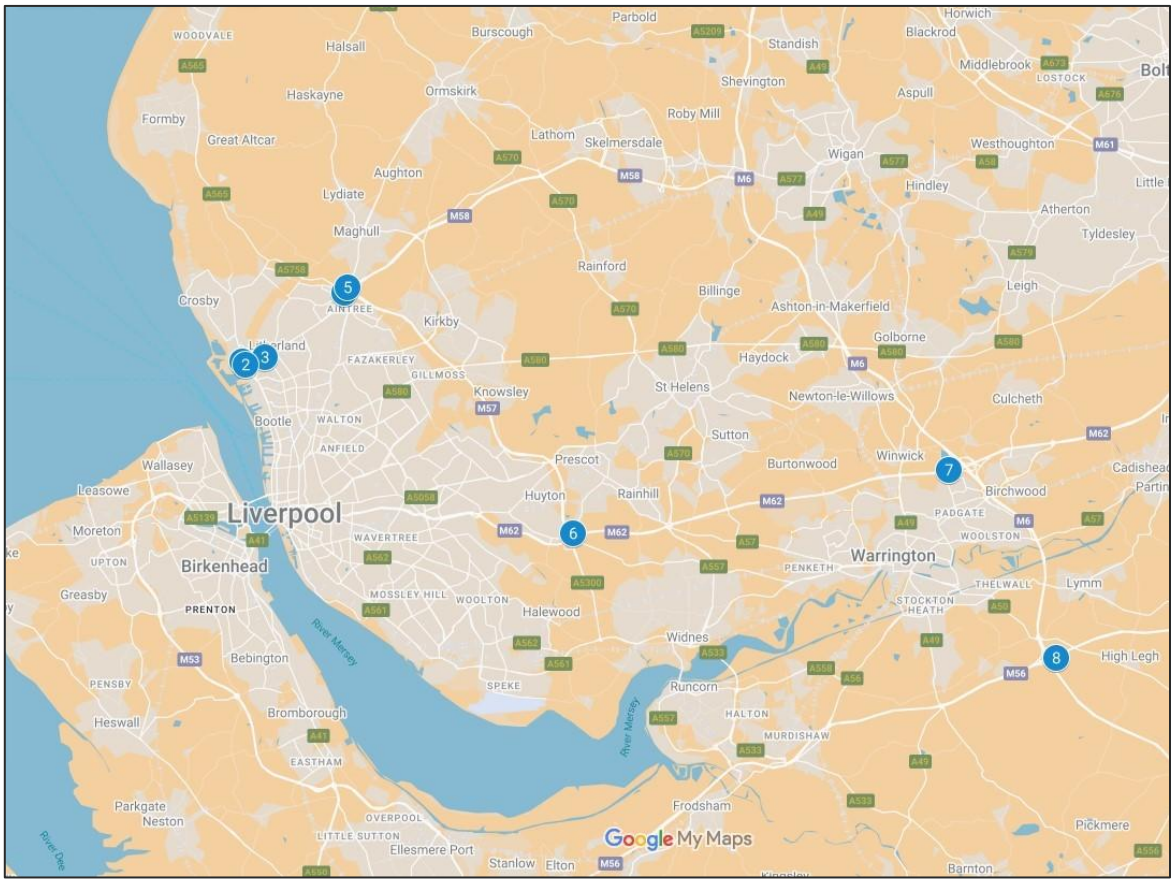

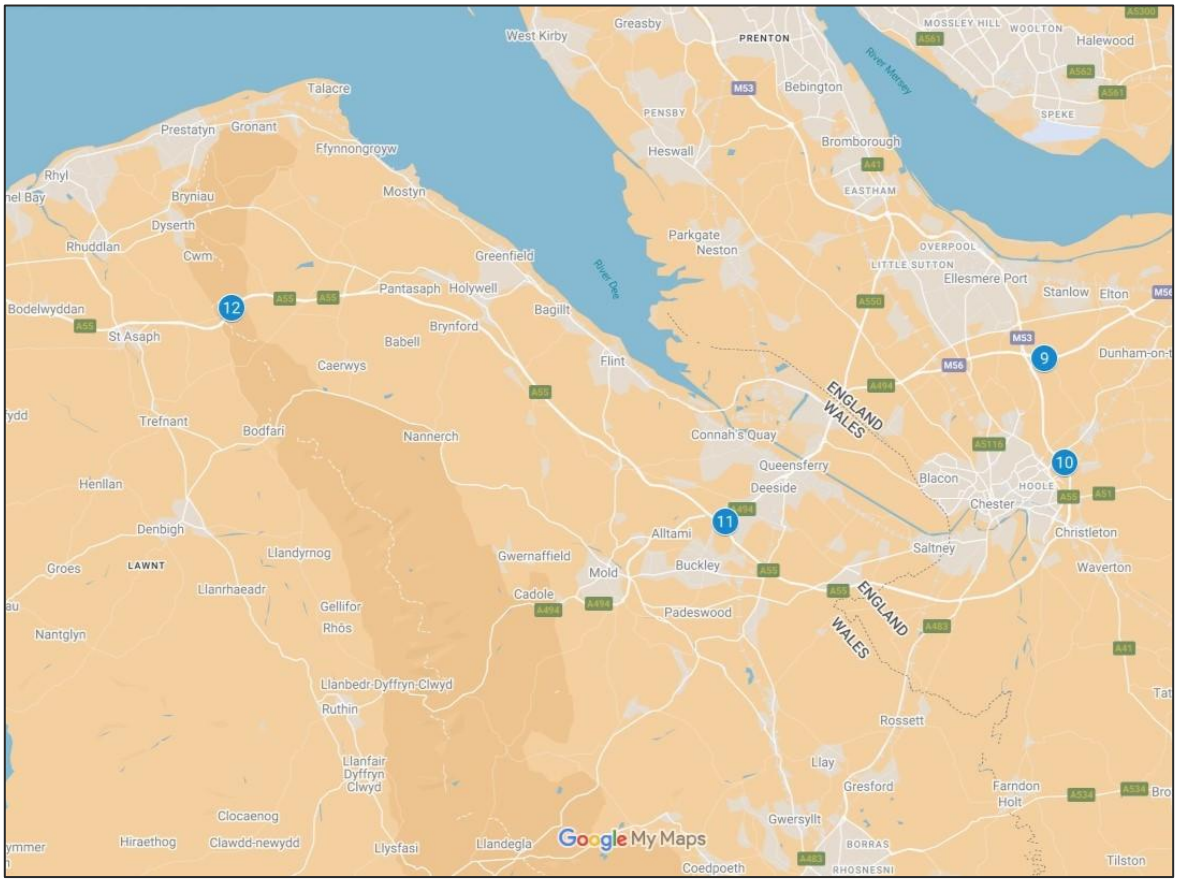


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Conwy
GYFFIN
Capelulo
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Bryn-y-maen
Penmaenmawr
Llechwedd
Menai Strait
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NANT-Y-PANDY
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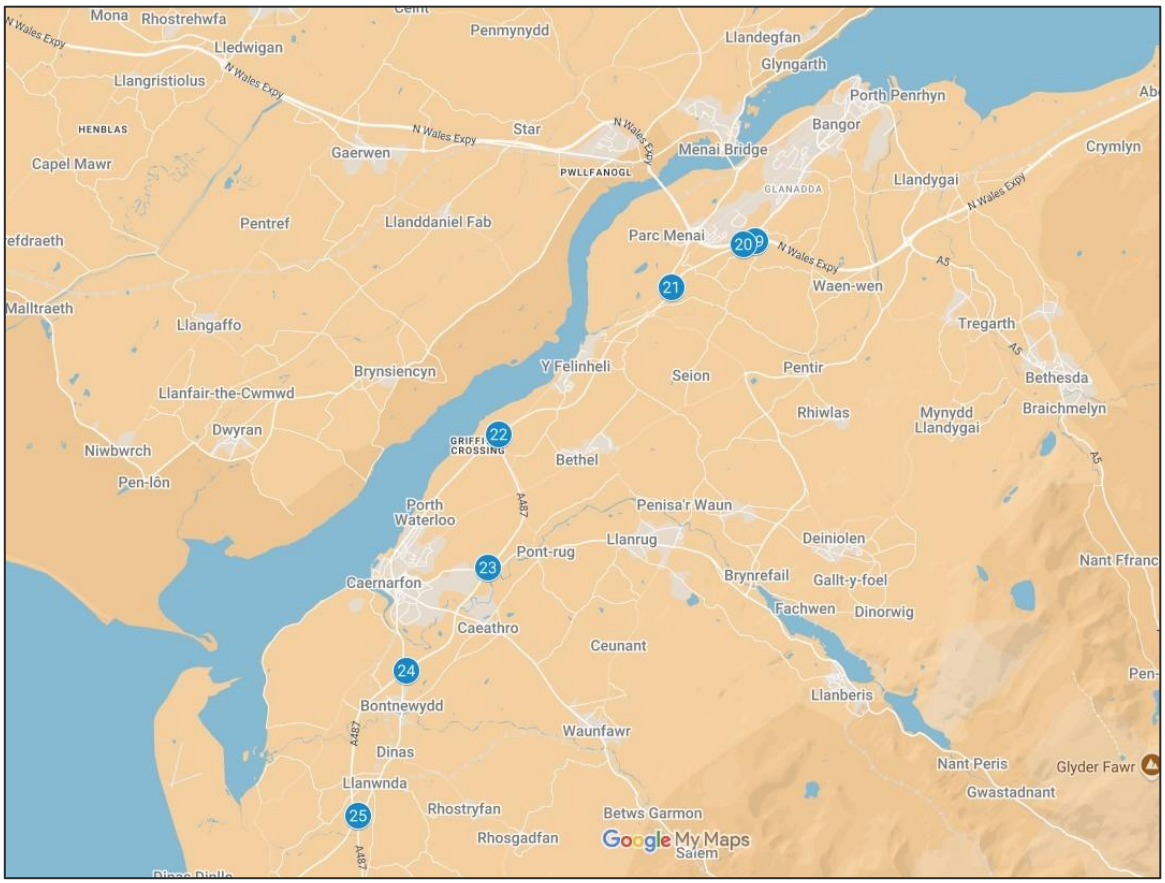
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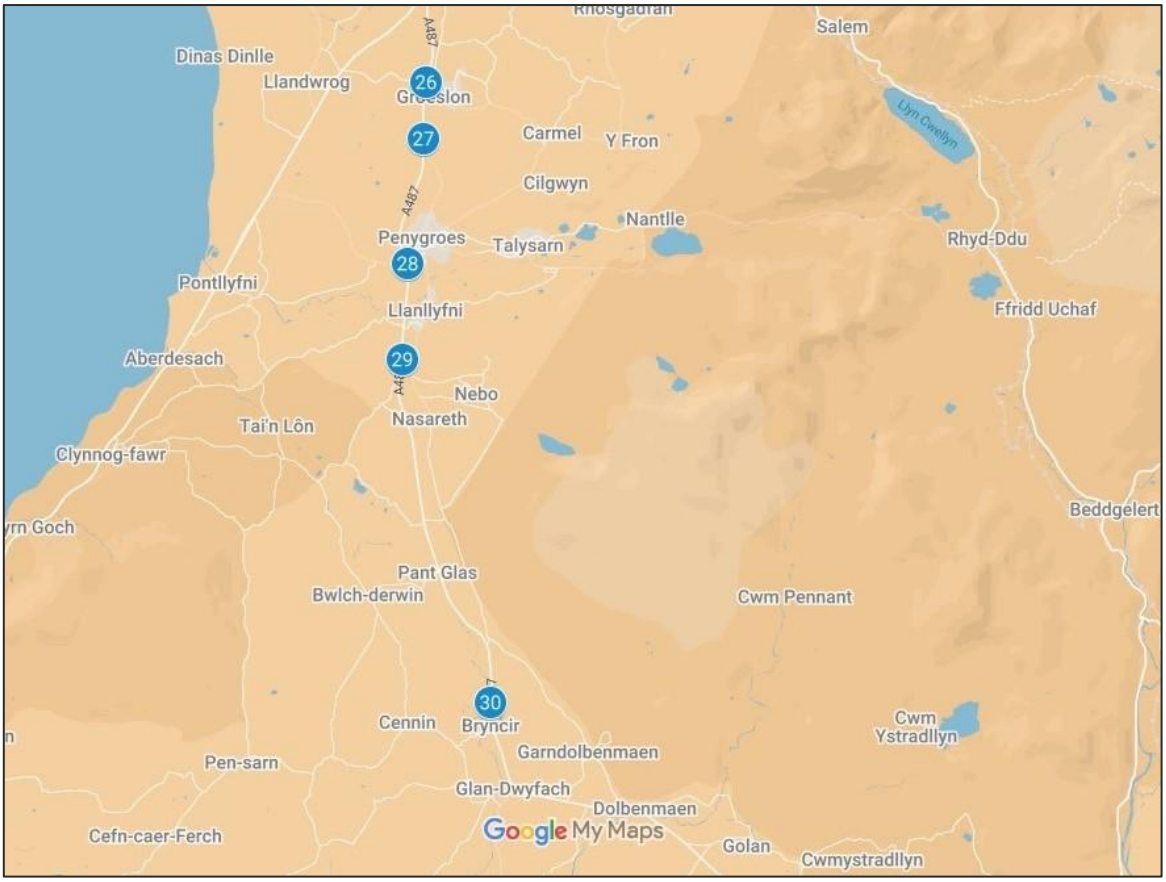
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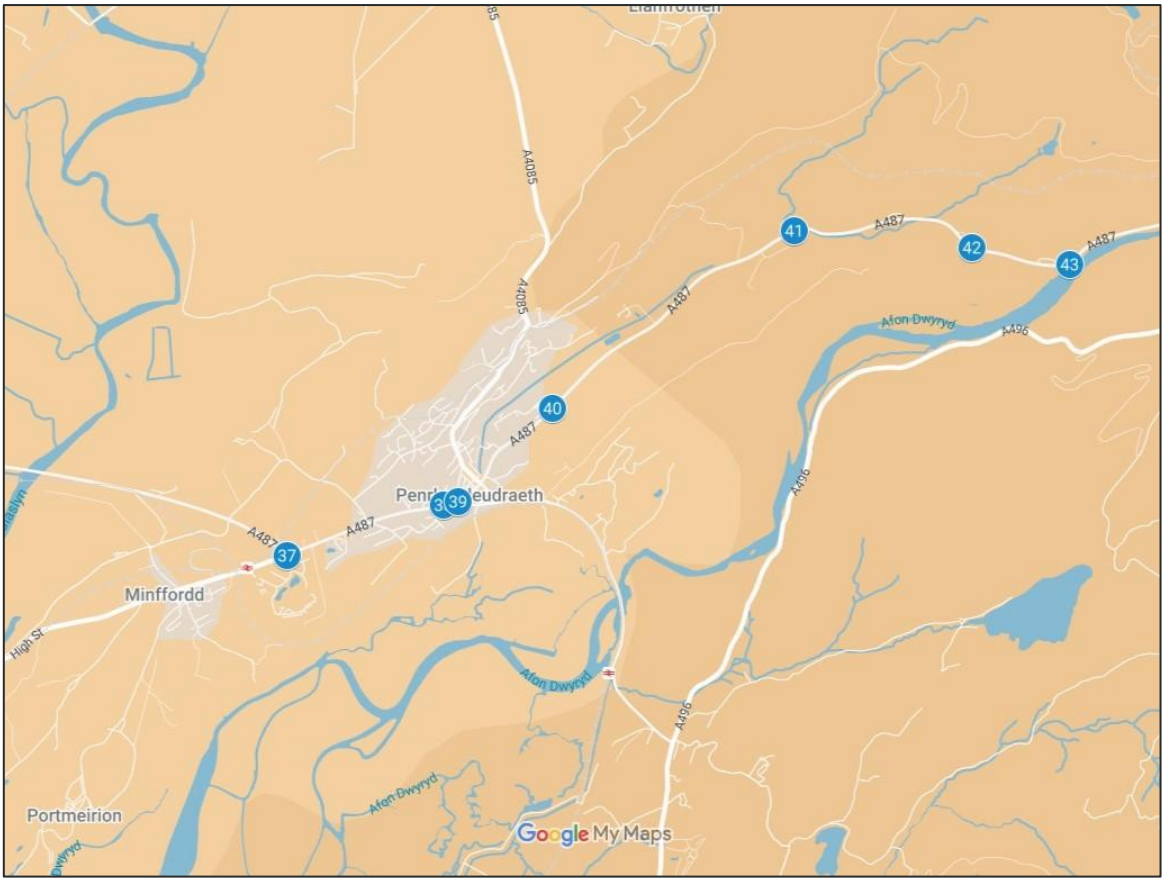
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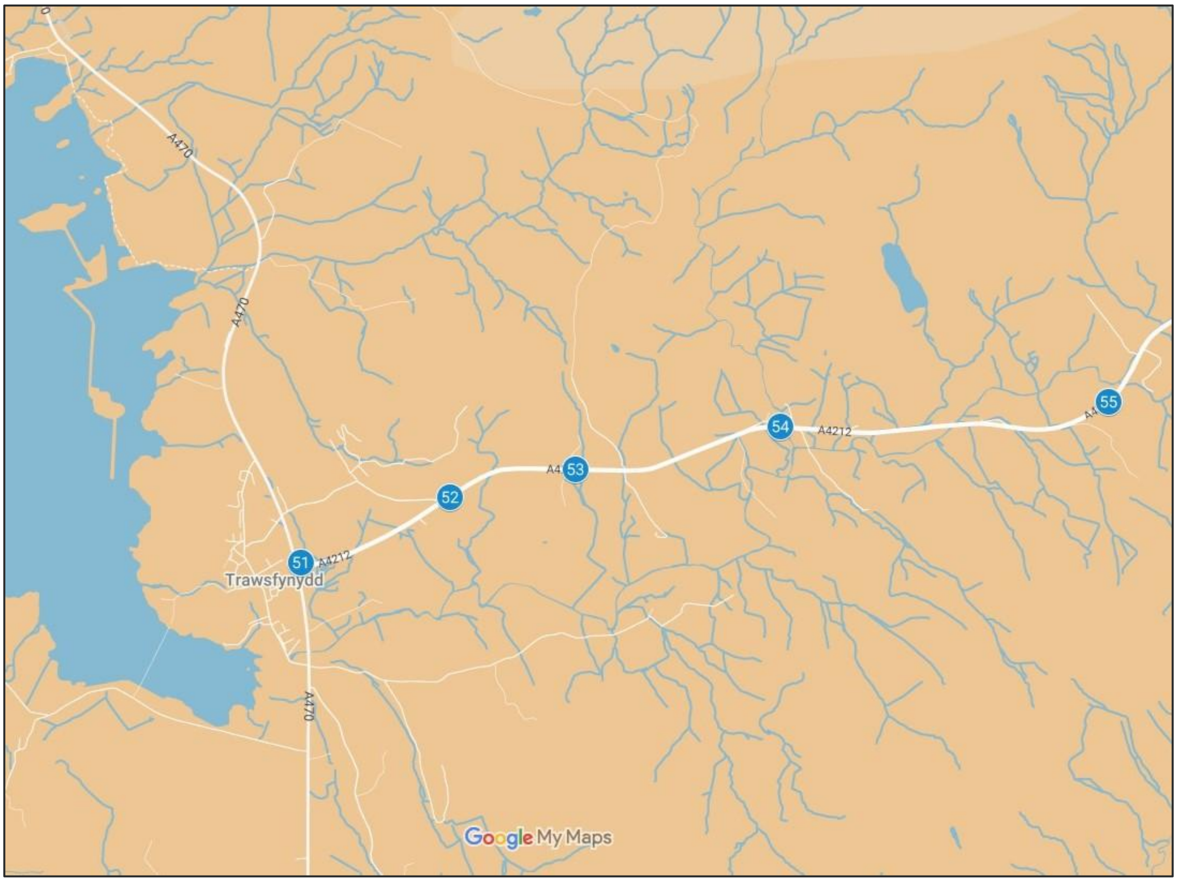
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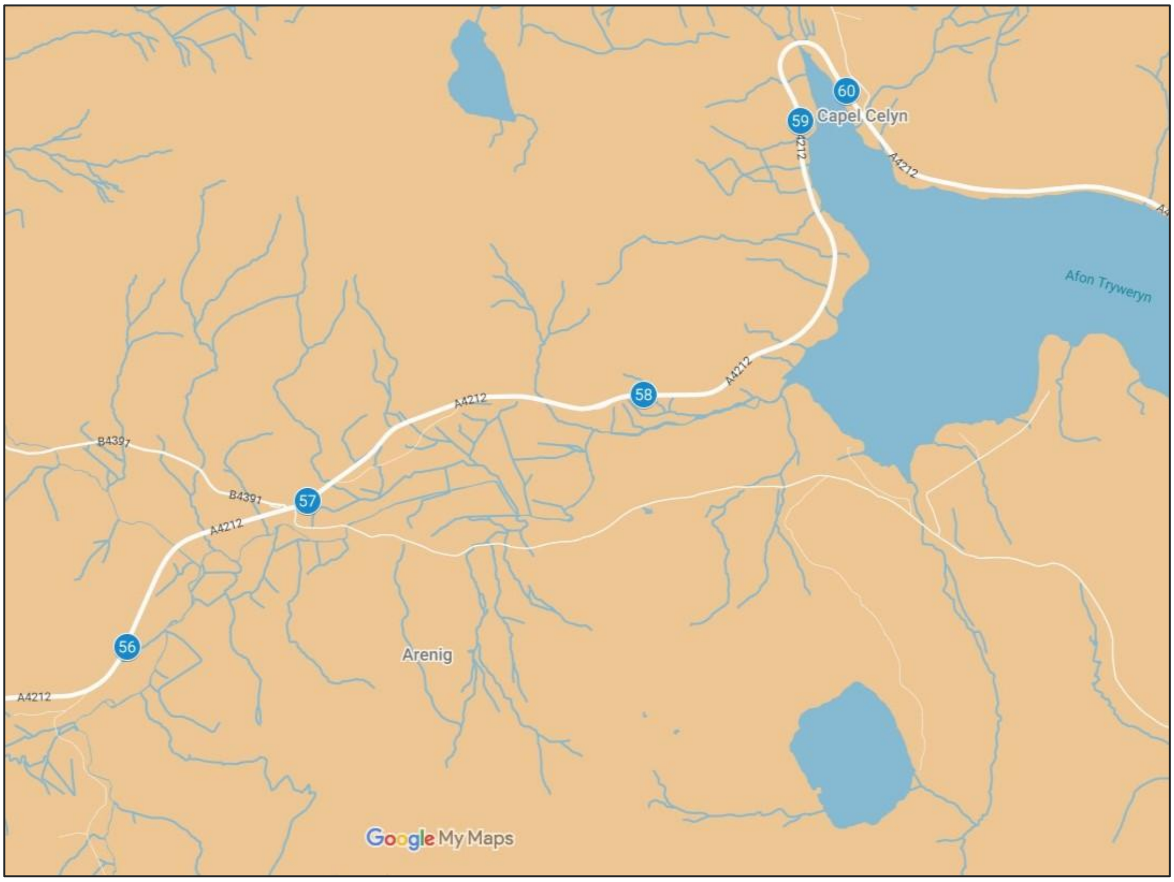
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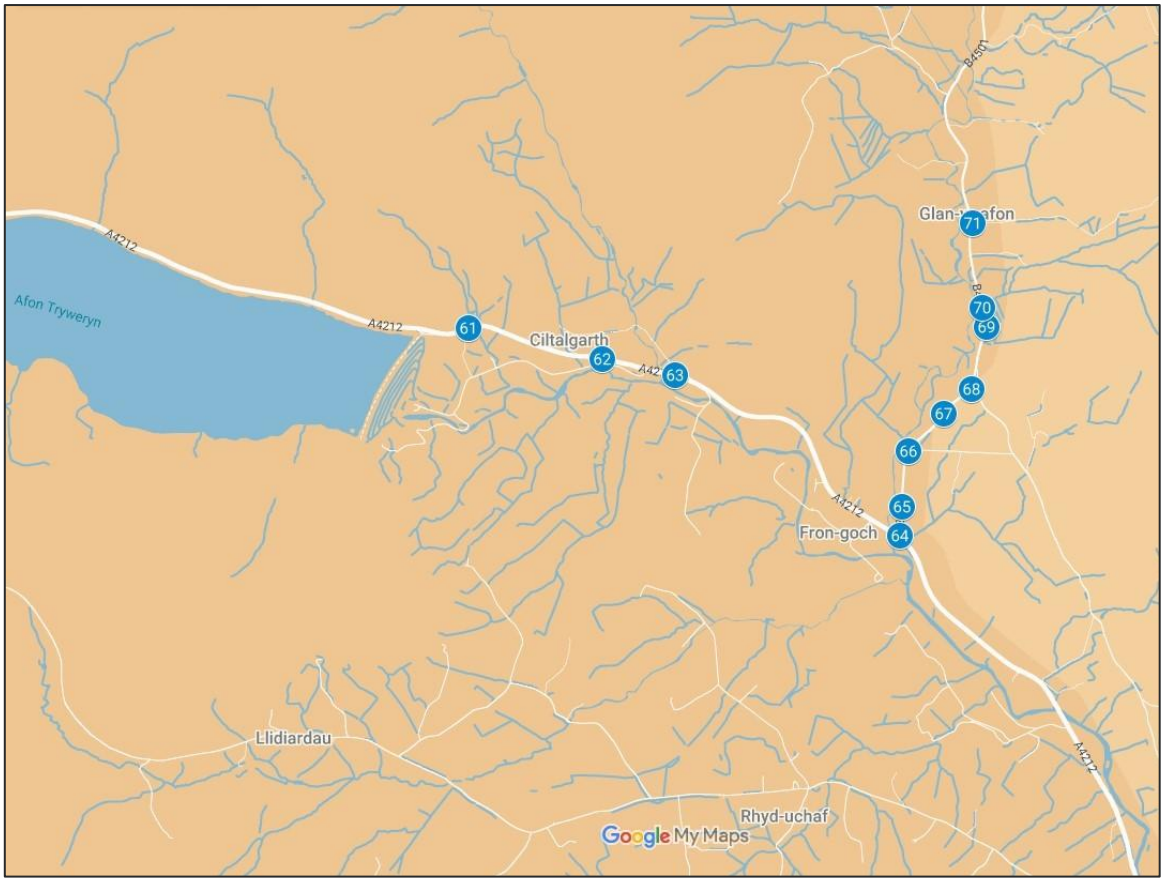
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Annex 1.2 Swept Path Assessments

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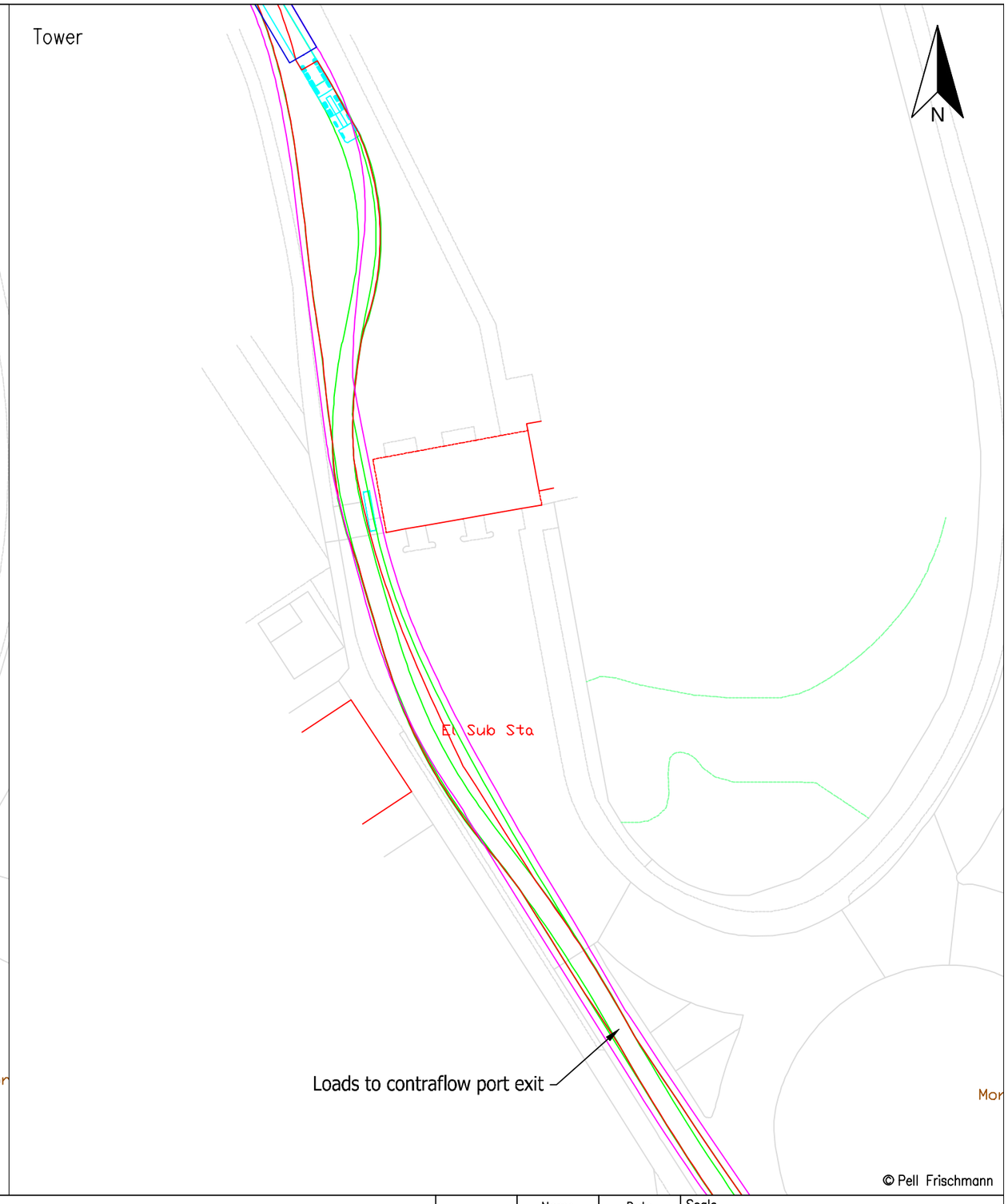
Tower



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: Port of Liverpool Exit

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Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		1

Scale: 1:750 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK01

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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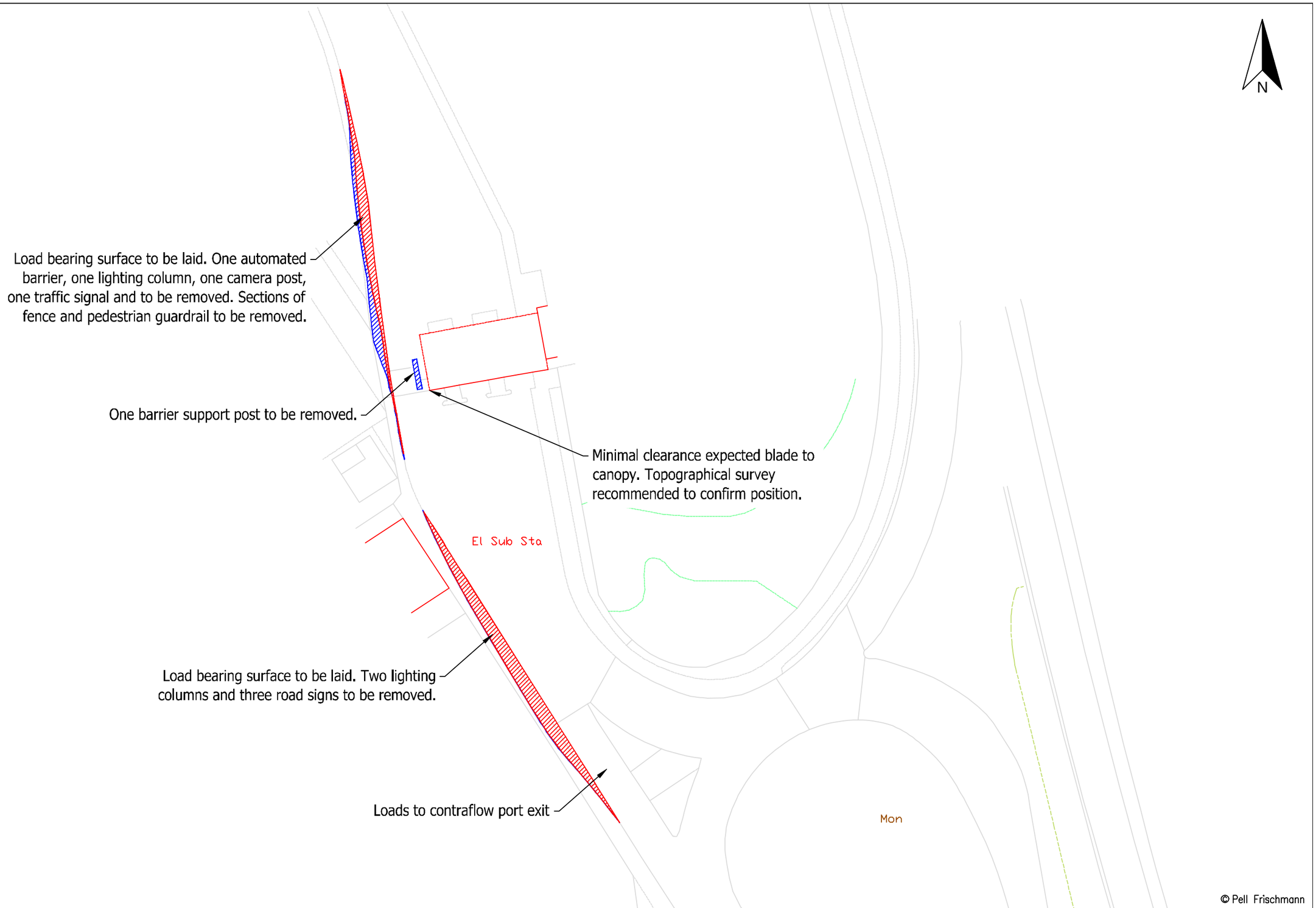
Mitigation



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA; Body SPA; Load SPA; Indicative; Over-run; Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: Port of Liverpool Exit

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		1

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Drawing Status: Draft

Drawing No.: SK01A

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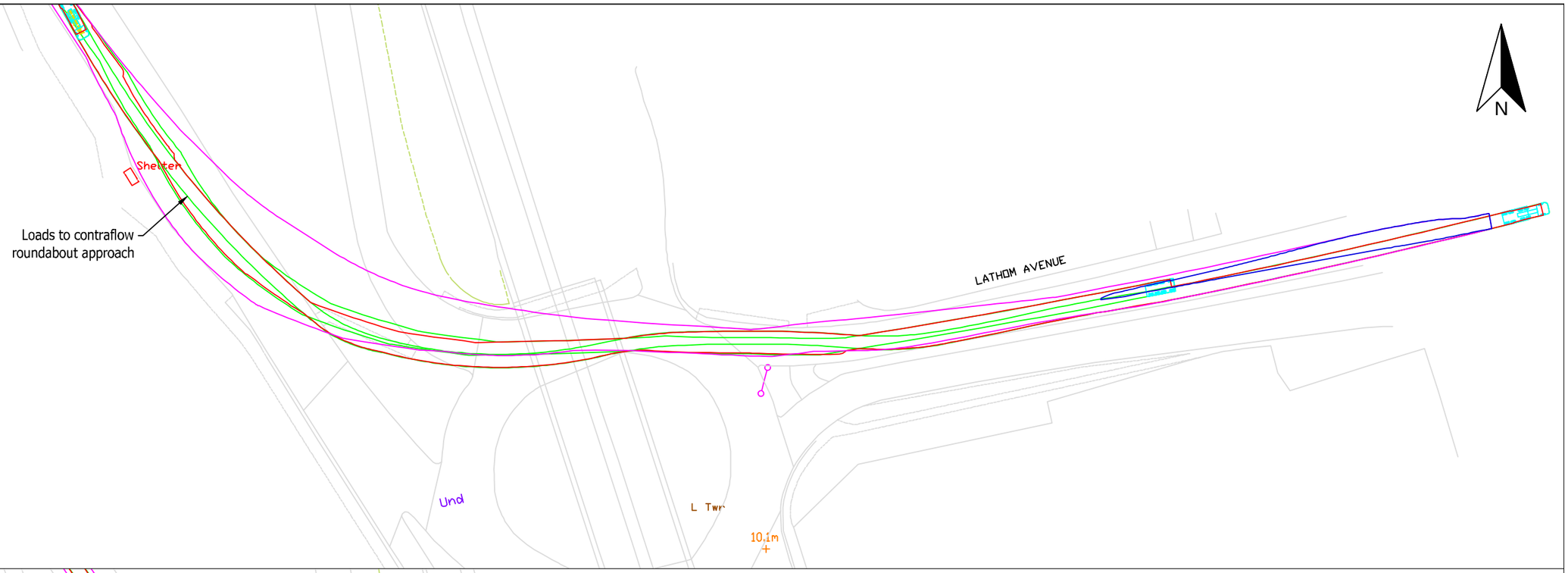

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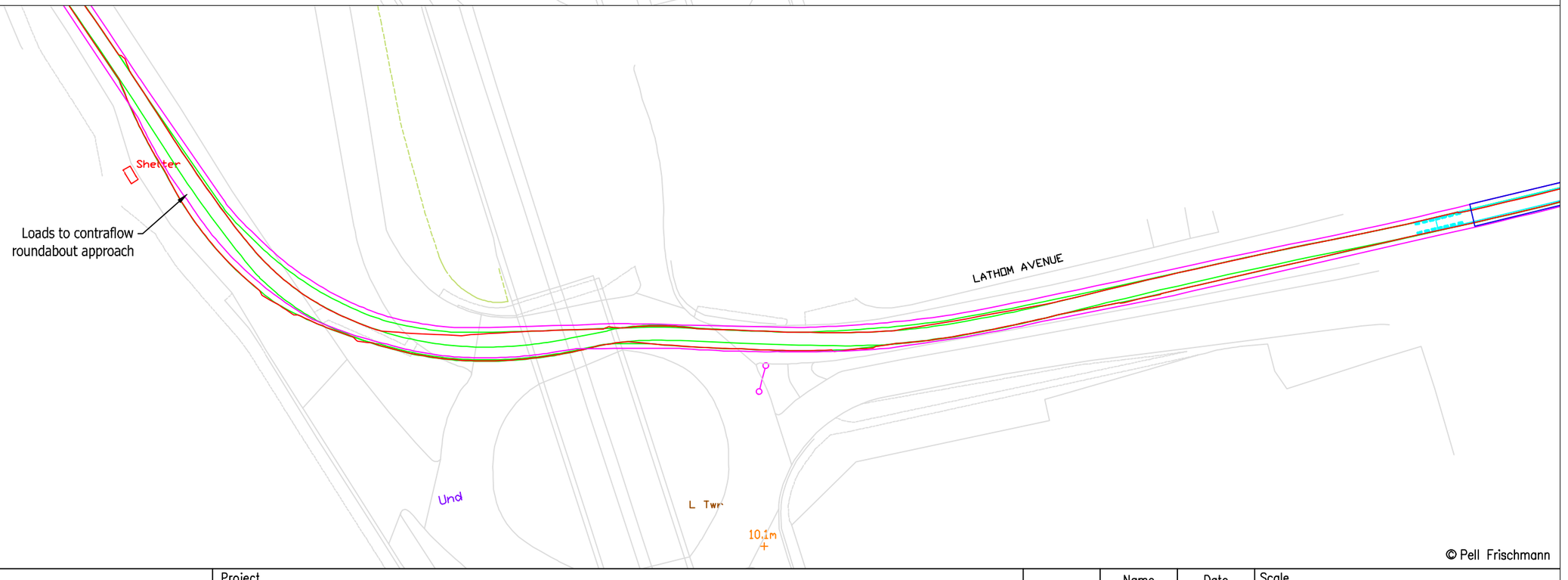

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A565 / A5036 Roundabout

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Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		2

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File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK02

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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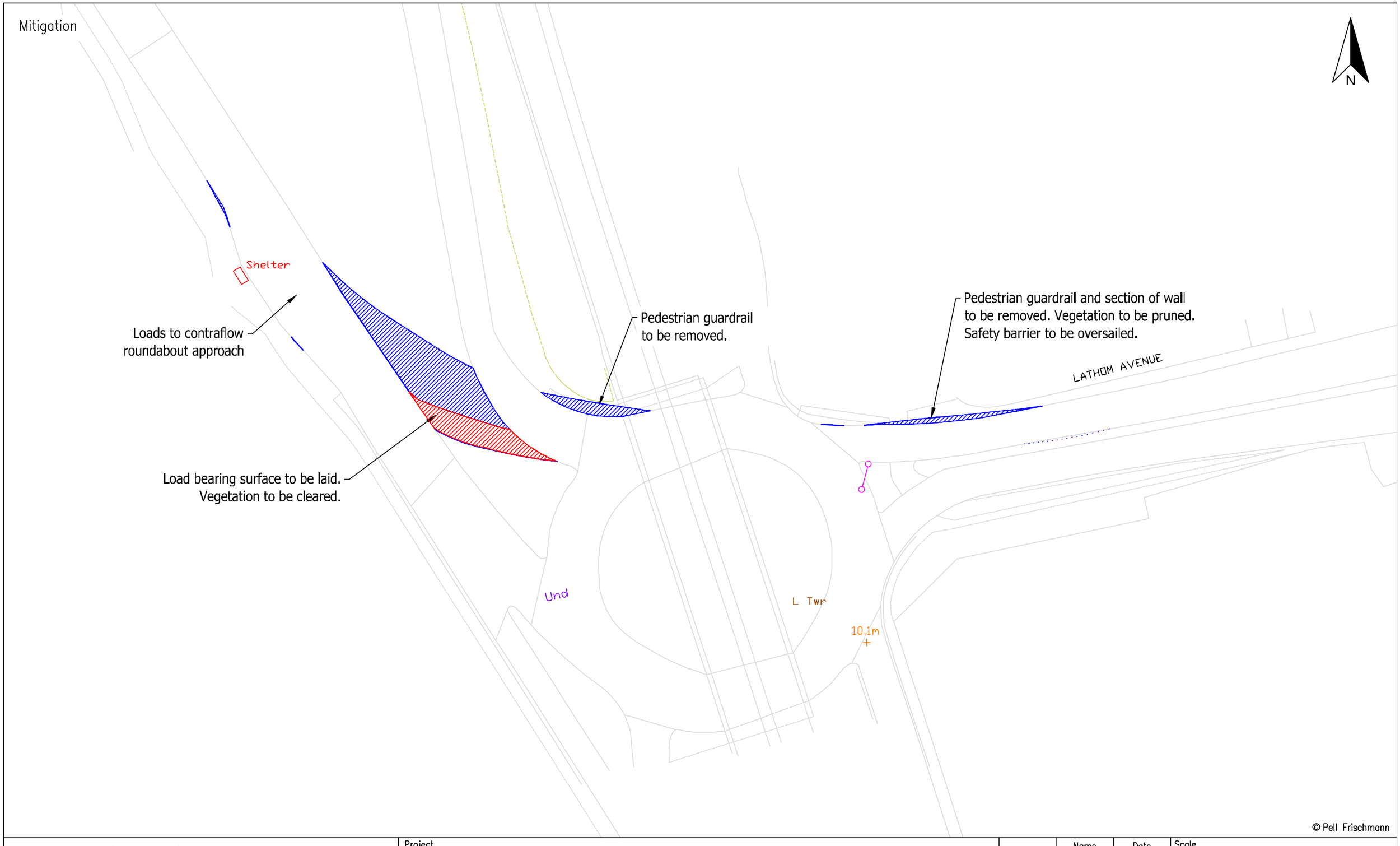
Mitigation



Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A565 / A5036 Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		2

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File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK02A

Notes:
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2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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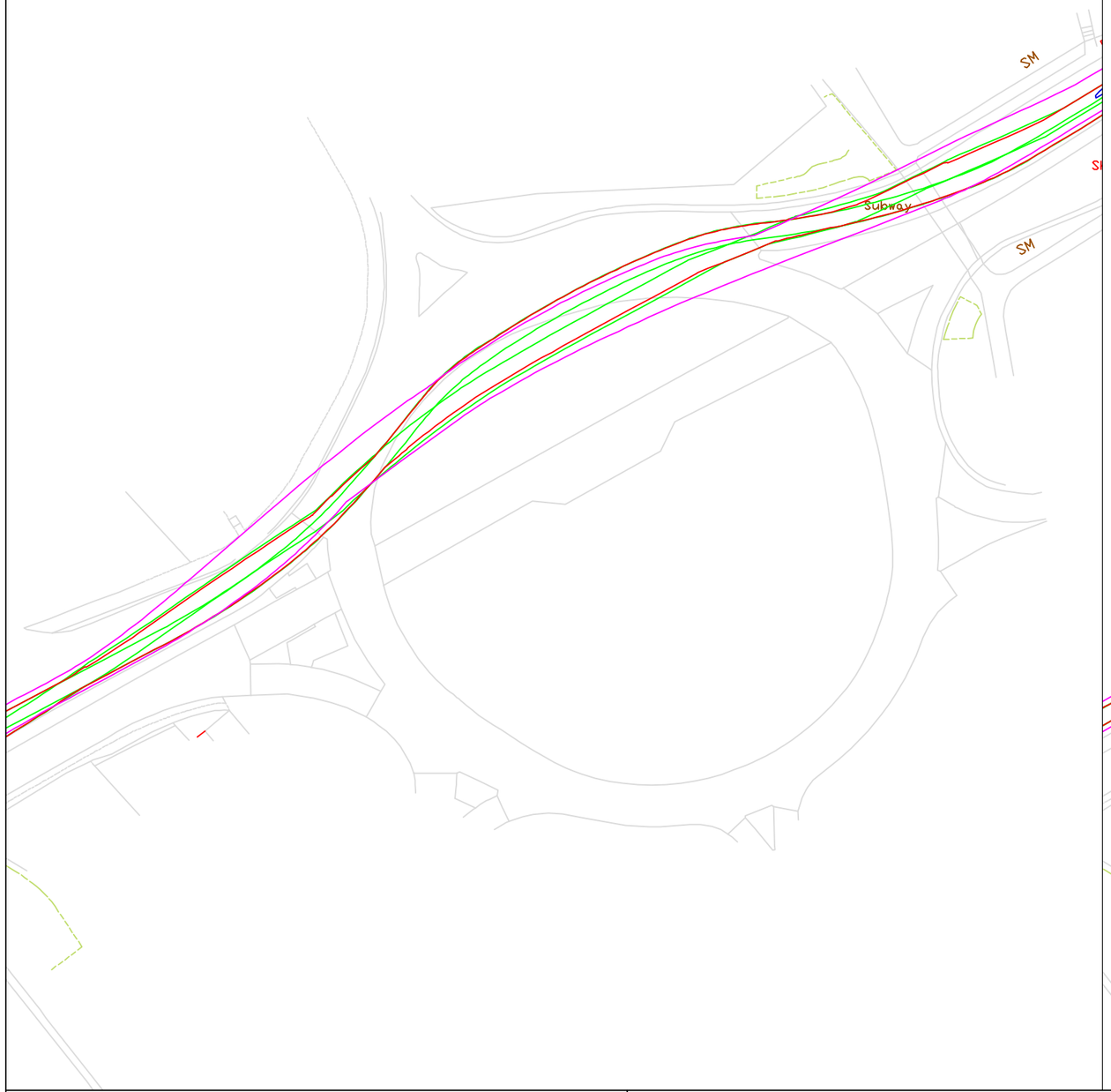
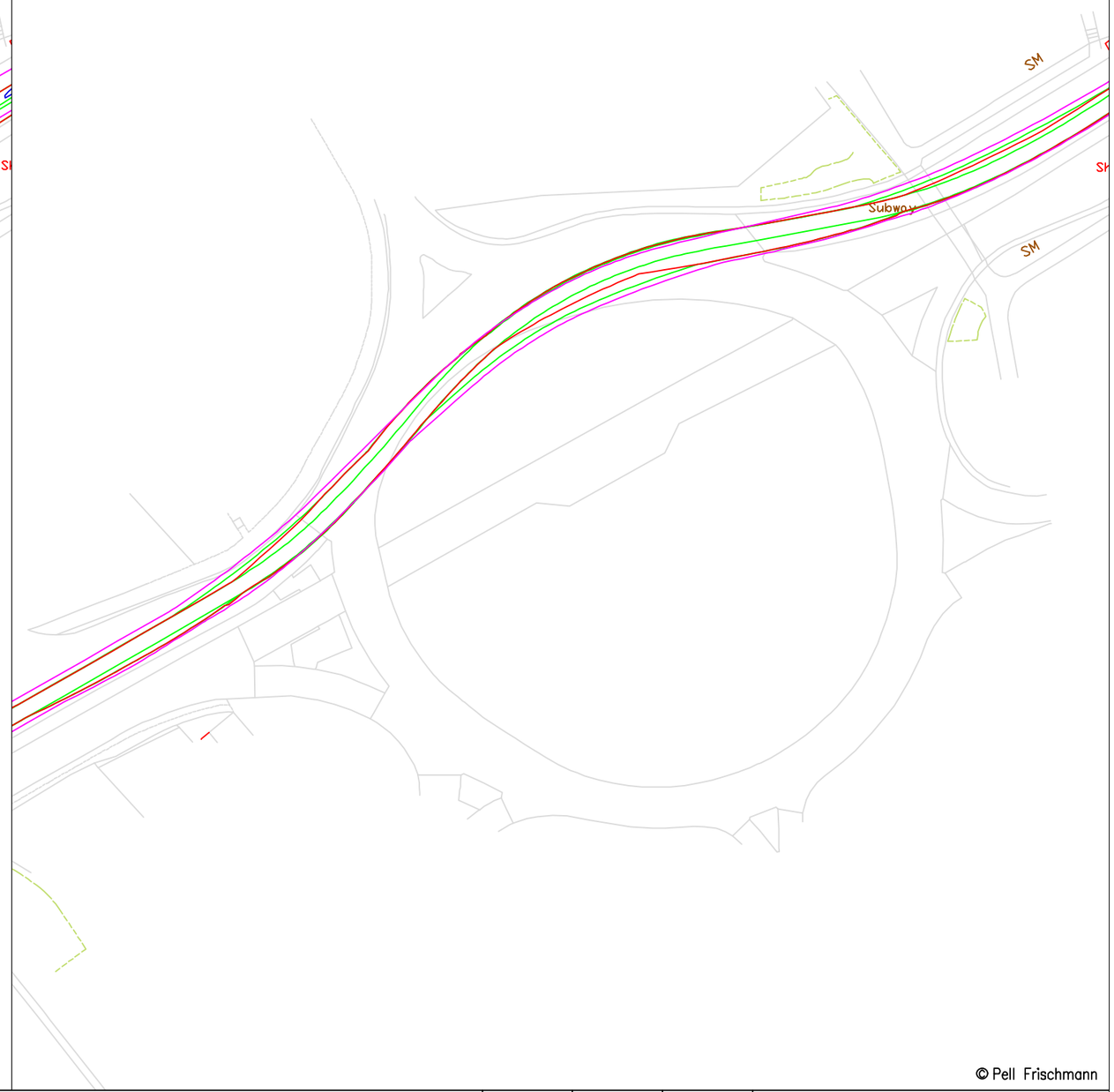
Blade



Tower



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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A5036 / Ash Rd Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		3

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK03

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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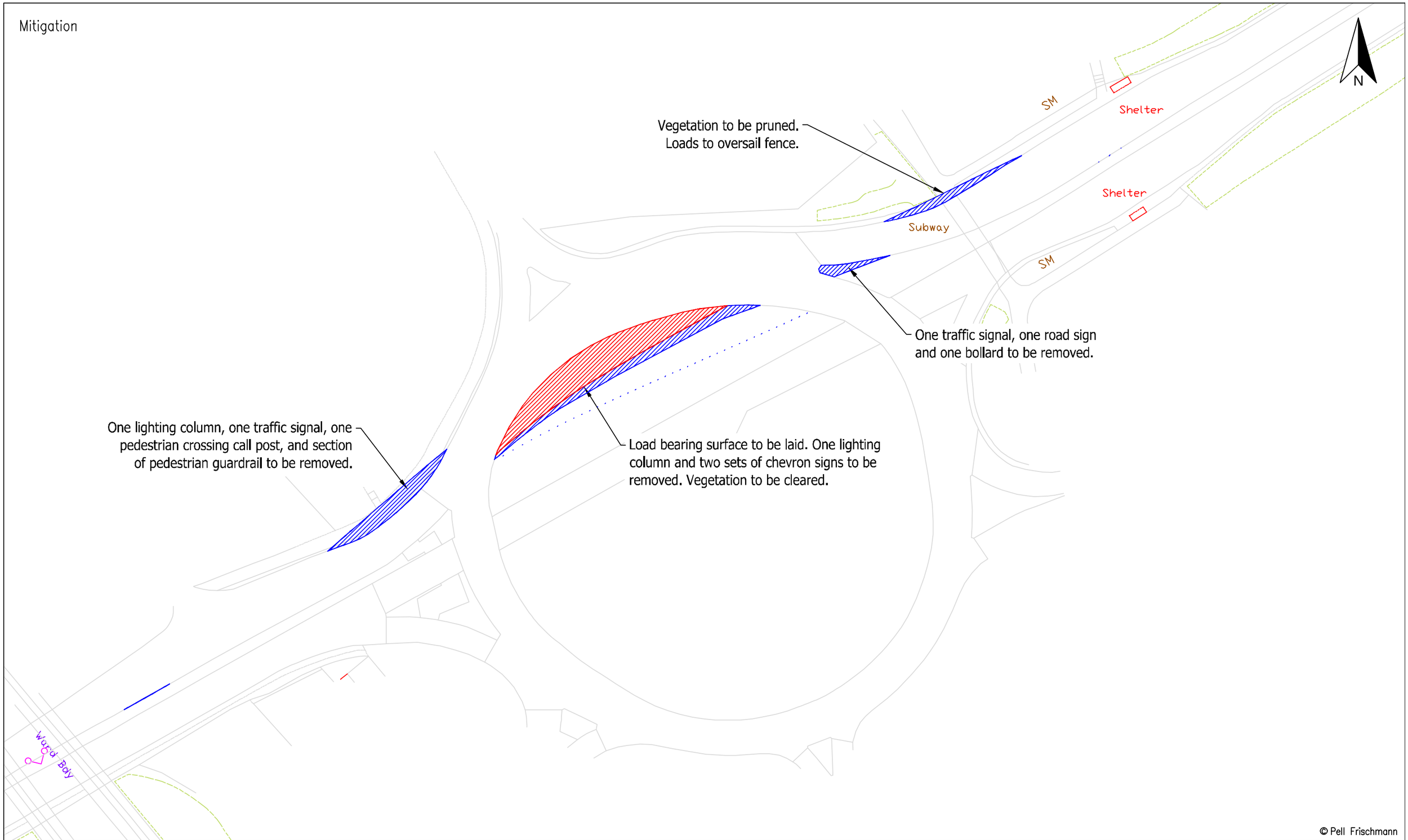
Mitigation



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www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A5036 / Ash Rd Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		3

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK03A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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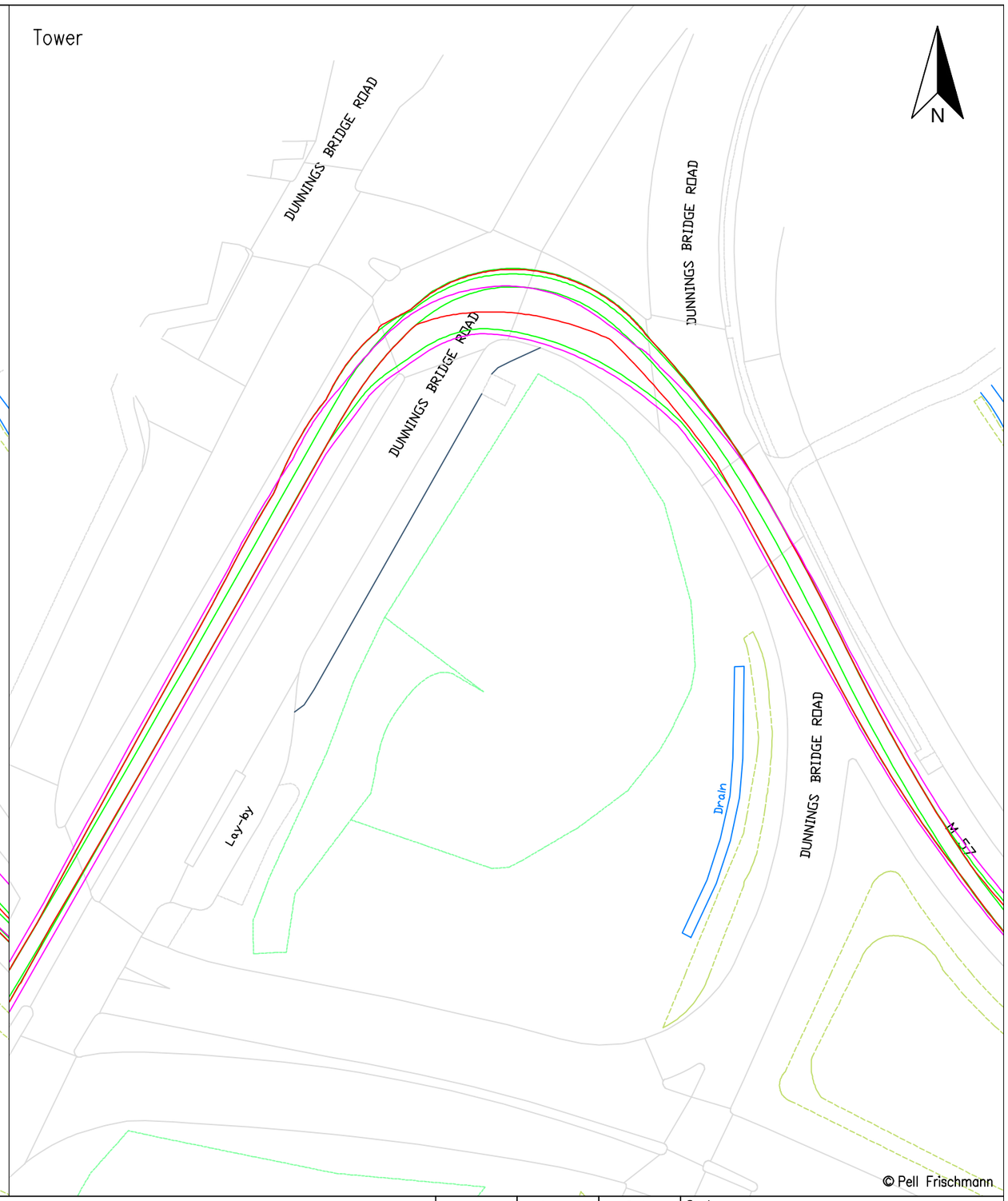
Blade

Tower



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www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A59 / M57 Switch Island Junction

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		5

Scale: 1:1000 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK04

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

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Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A59 / M57 Switch Island Junction

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		5

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK04A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Blade

Tower

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Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A55 Puffin Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		16

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK05

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

Ground works required to lower raised island to carriageway level. Load bearing surface to be laid. Two sets of chevron signs to be removed.

N

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Tel: +44 (0)131 240 1270
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www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A55 Puffin Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		16

Scale: 1:500 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK05A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Blade

Tower

N

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Tel: +44 (0)131 240 1270
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www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A55 Llanfairfechan Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		18

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK06

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Ground works required to lower raised island to carriageway level. Load bearing surface to be laid. Two sets of chevron signs to be removed.

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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A55 Llanfairfechan Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		18

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK06A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Blade

N

Tower

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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A55 Jct 10 / A4087 Caernarfon Rd Interchange

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		19 & 20

Scale: 1:2000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK07

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Load bearing surface to be laid.

Loads to oversail safety barrier.

Load bearing surface to be laid.
One road sign to be removed.

Load bearing surface to be laid. One lighting column and six chevron signs to be removed.

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Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A55 Jct 10 / A4087 Caernarfon Rd Interchange

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		19 & 20

Scale: 1:1000 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK07A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Blade

Tower

N

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Client: Foel Fach Wind Farm Limited

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A4087 / A487 Roundabout

Key: Wheel SPA; Body SPA; Load SPA; Indicative; Over-run; Over-sail

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		21

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK08

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Land searches recommended to confirm the extent of the adopted boundary. Trees and vegetation to be cleared. Two lighting columns to be removed. Loads to oversail safety barrier.

Trees and vegetation to be cleared.

One road sign to be removed.

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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A4087 / A487 Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		21

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK08A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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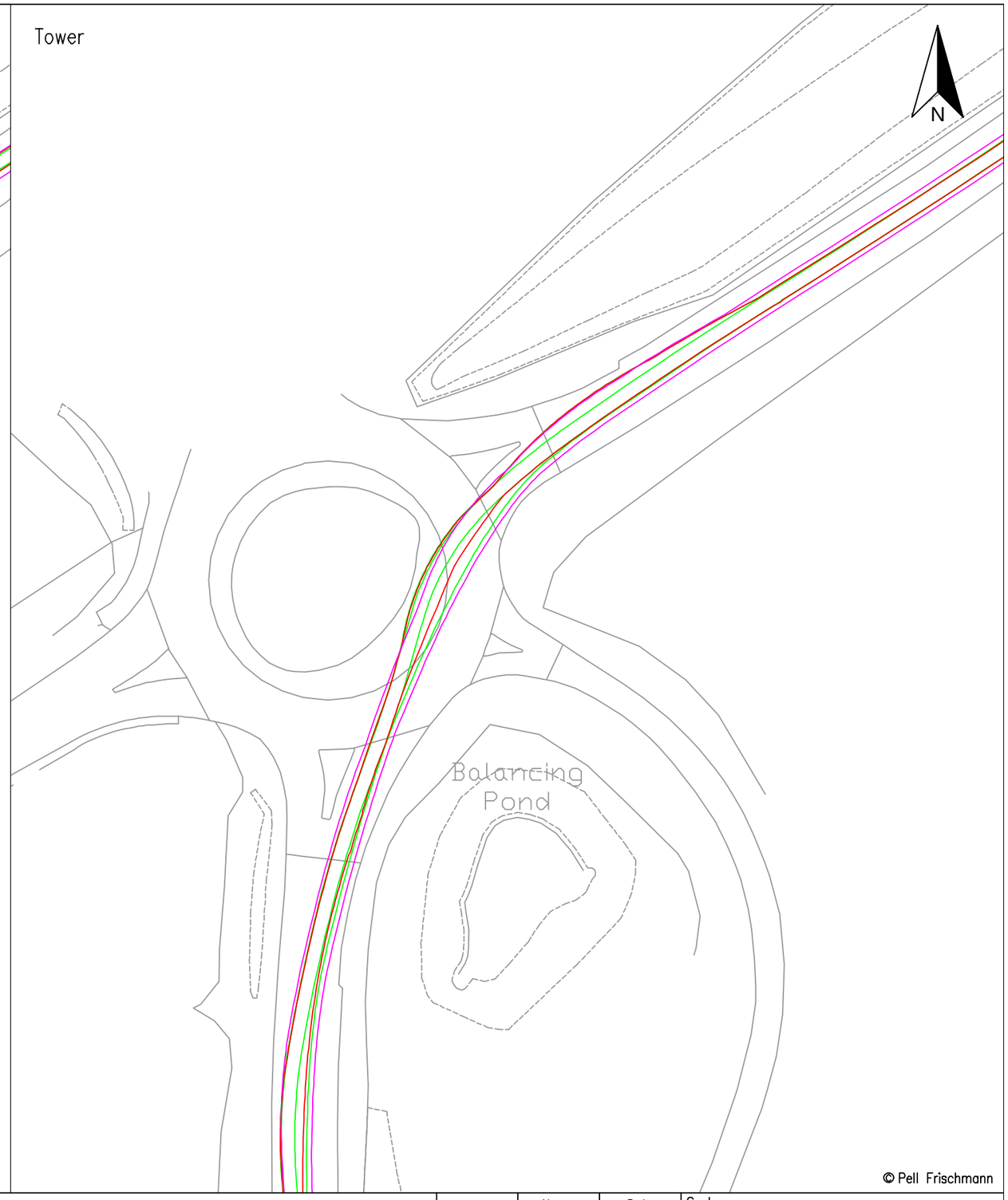
Blade

Tower



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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Plas Menai Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		22

Scale: 1:1000 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK09

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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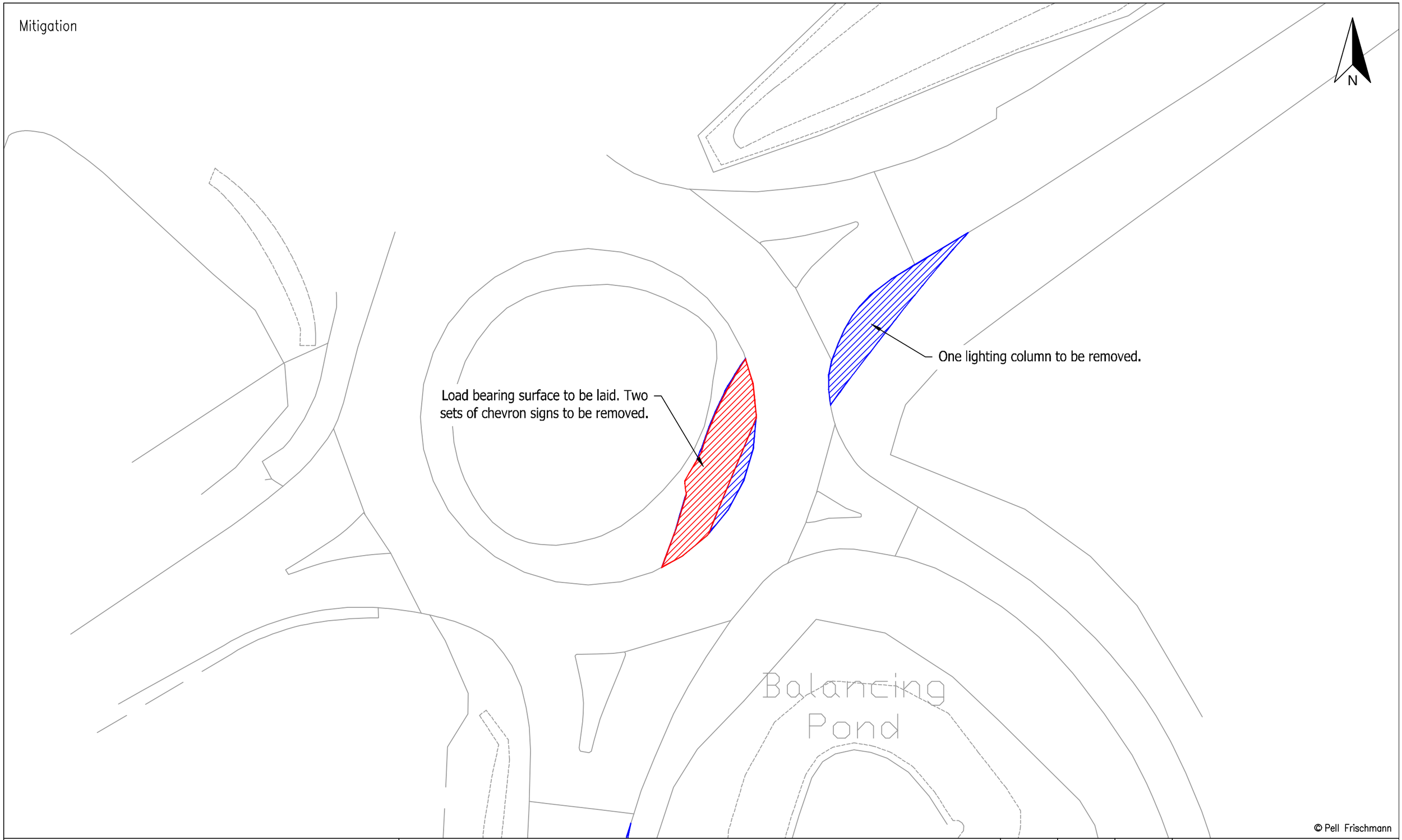

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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Plas Menai Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		22

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK09A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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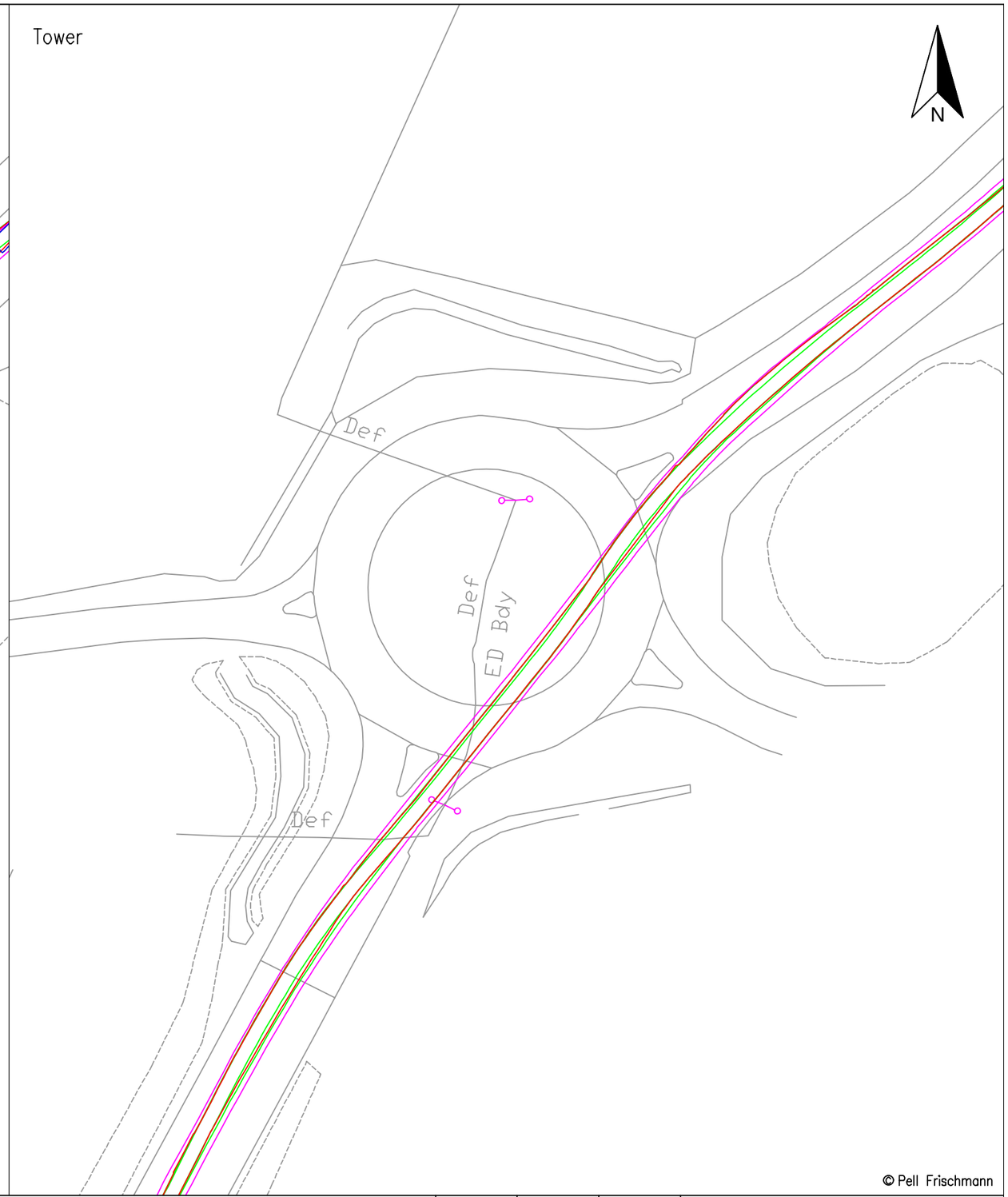
Tower



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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA; Body SPA; Load SPA; Indicative; Over-run; Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Cylchfan Cibyn Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		23

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK10

Notes:
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2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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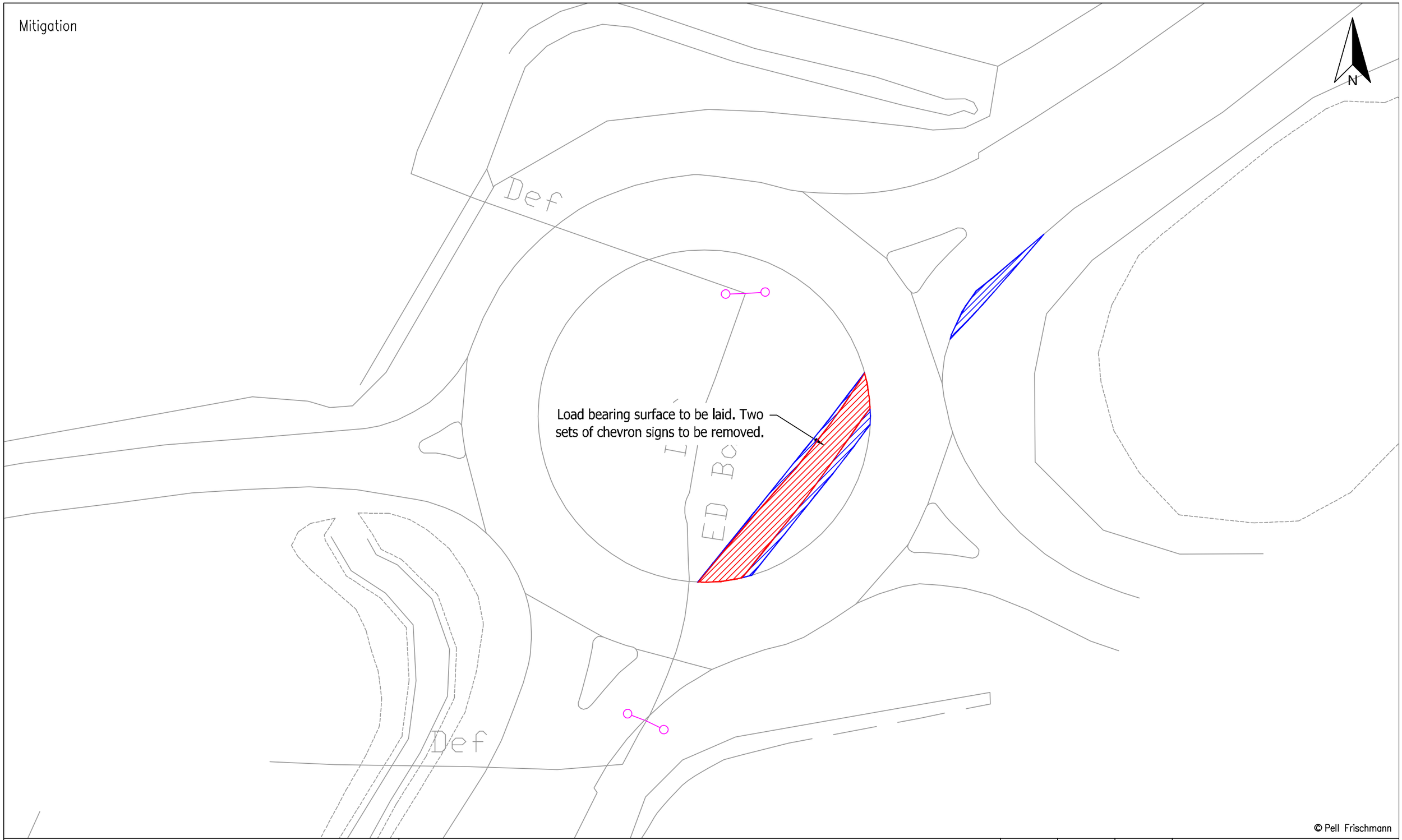
Mitigation



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Tel: +44 (0)131 240 1270
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Cylchfan Cibyn Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		23

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK10A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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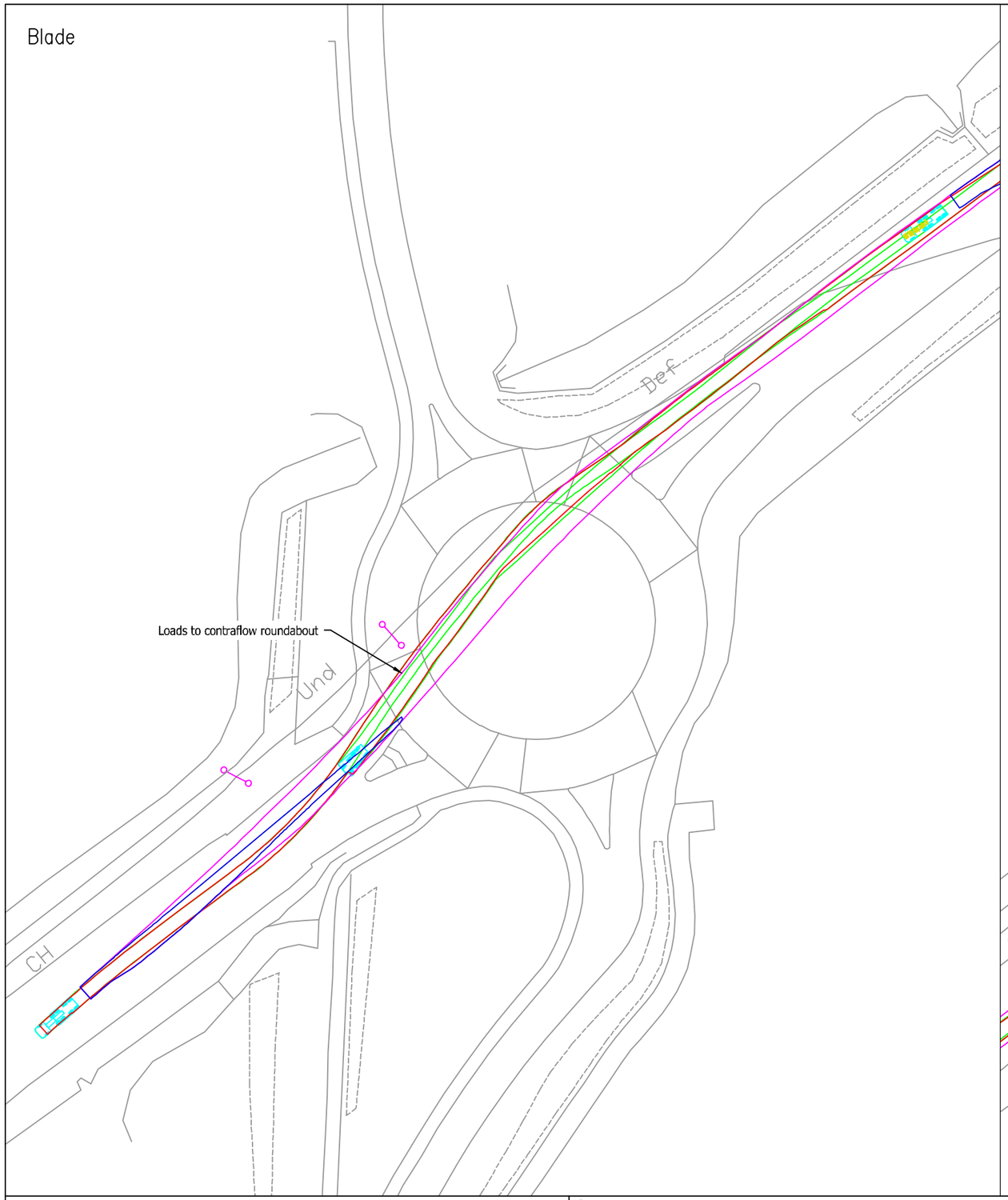
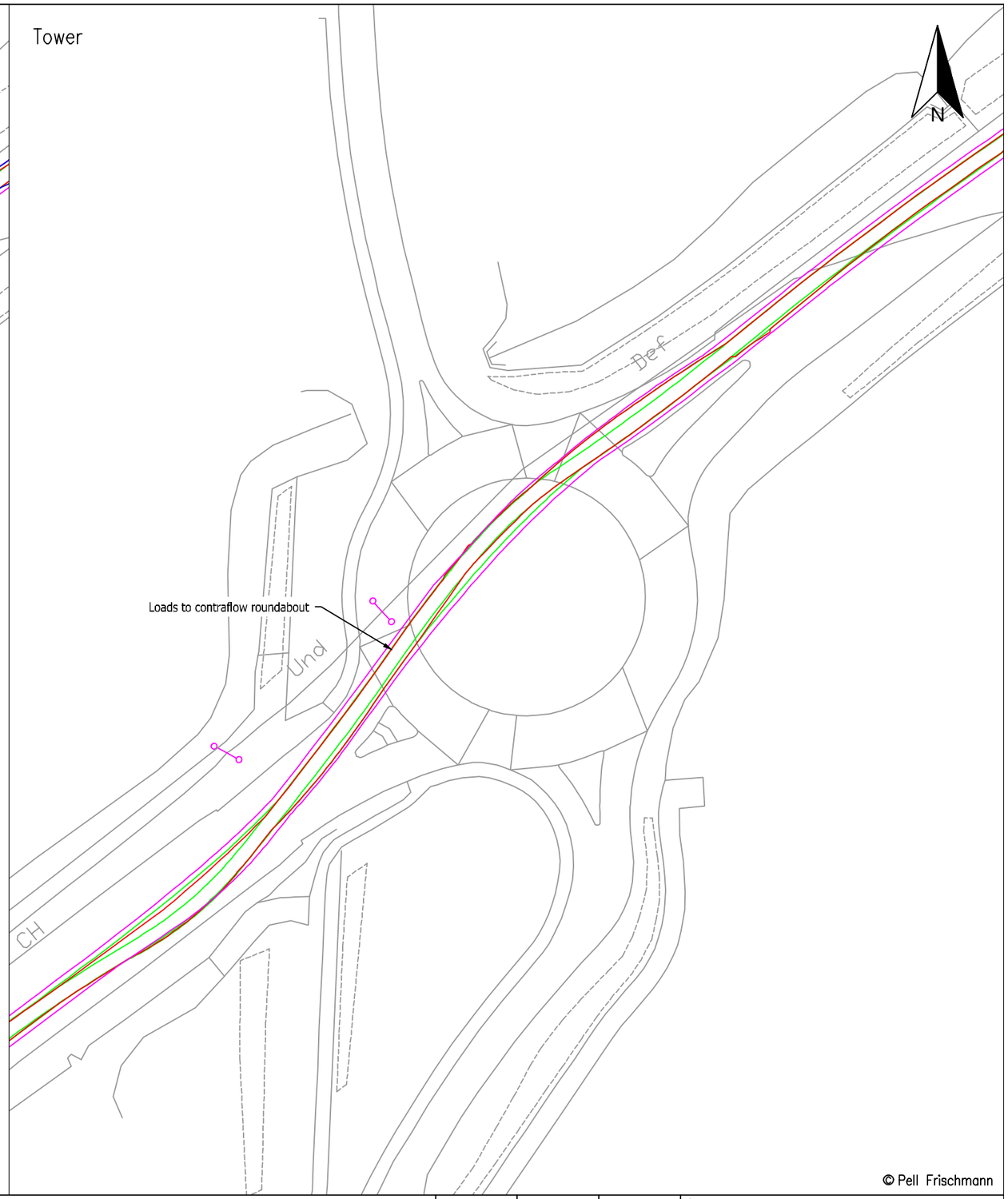


Tower



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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA; Body SPA; Load SPA; Indicative; Over-run; Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Meiford Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		24

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK11

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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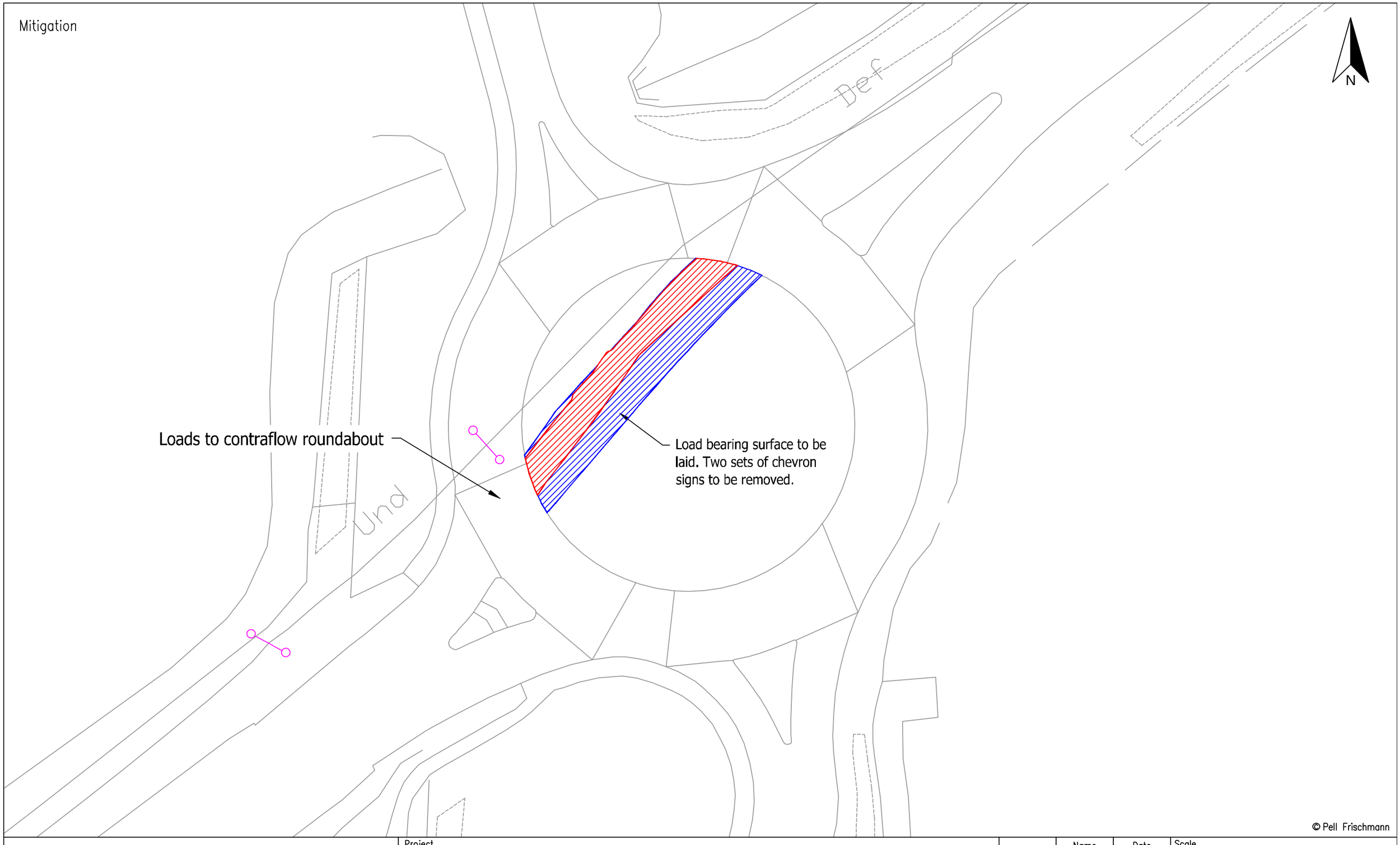

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www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Meiford Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		24

Scale: 1:500 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK11A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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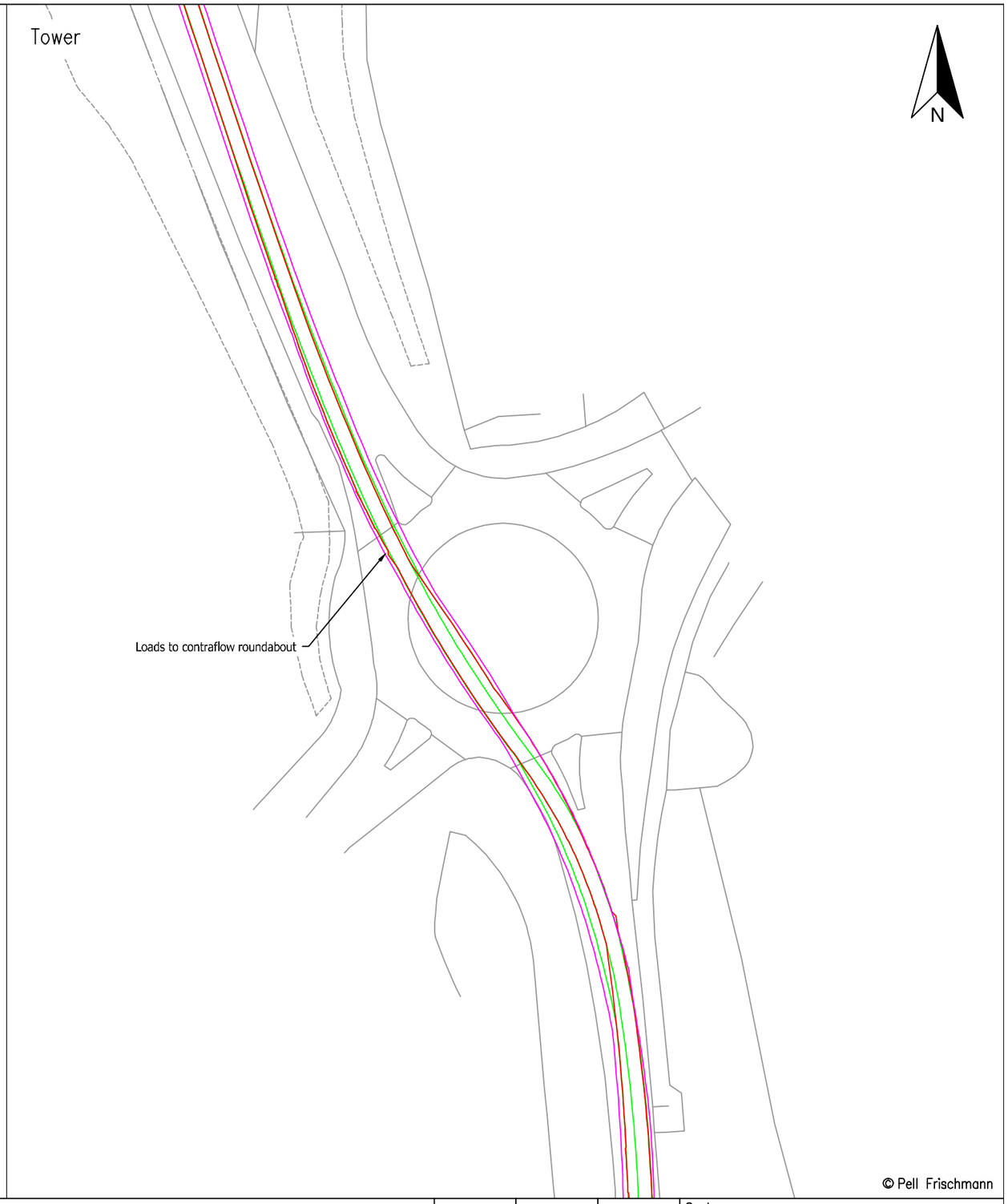
Blade

Tower



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www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Goat Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		25

Scale: 1:1000 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK12

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Goat Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		25

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK12A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Blade

Tower

N

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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 / Lon Cefn Glyn Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		26

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK13

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Load bearing surface to be laid. One set of chevron signs to be removed.

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 / Lon Cefn Glyn Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		26

Scale: 1:750 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK13A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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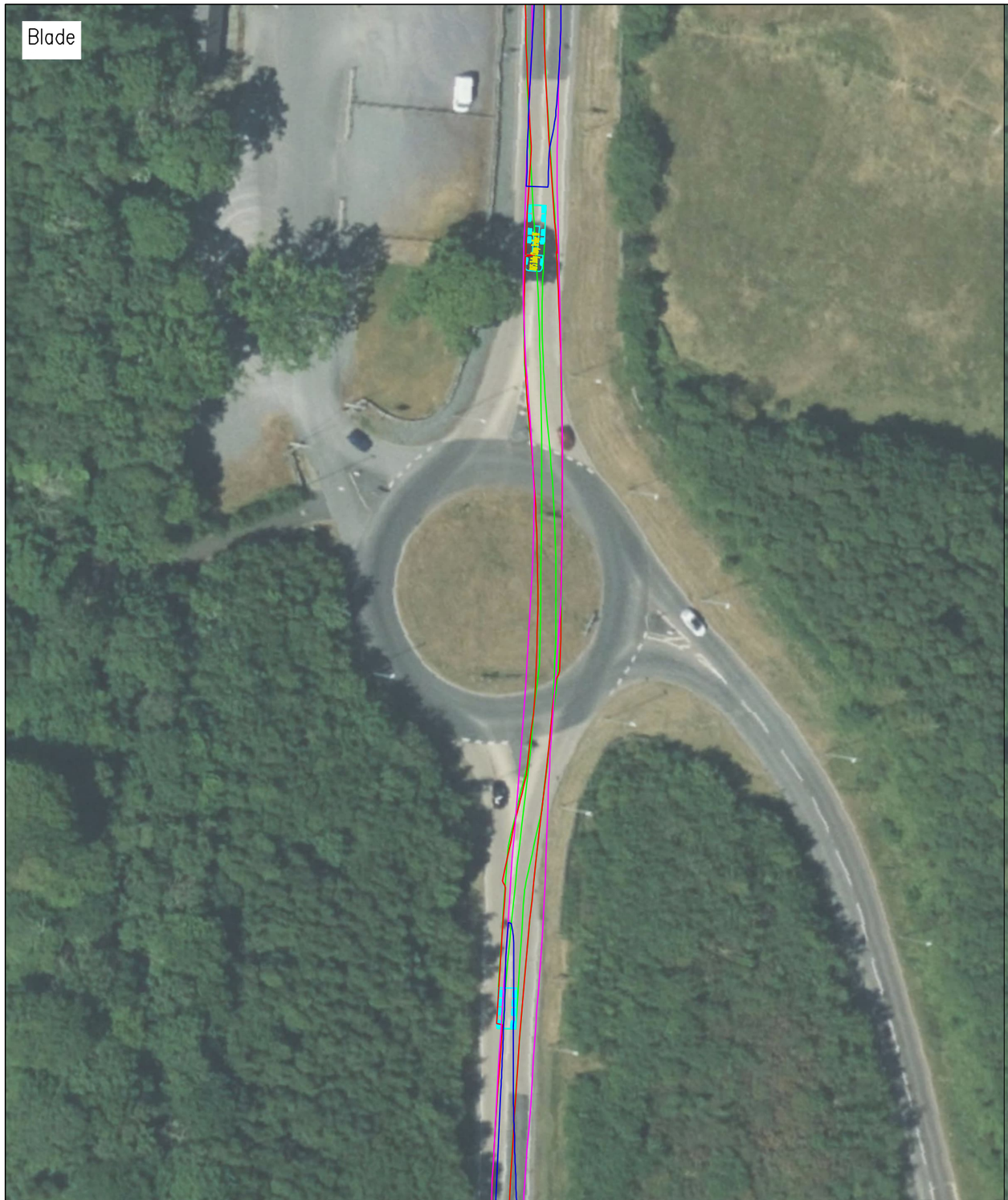

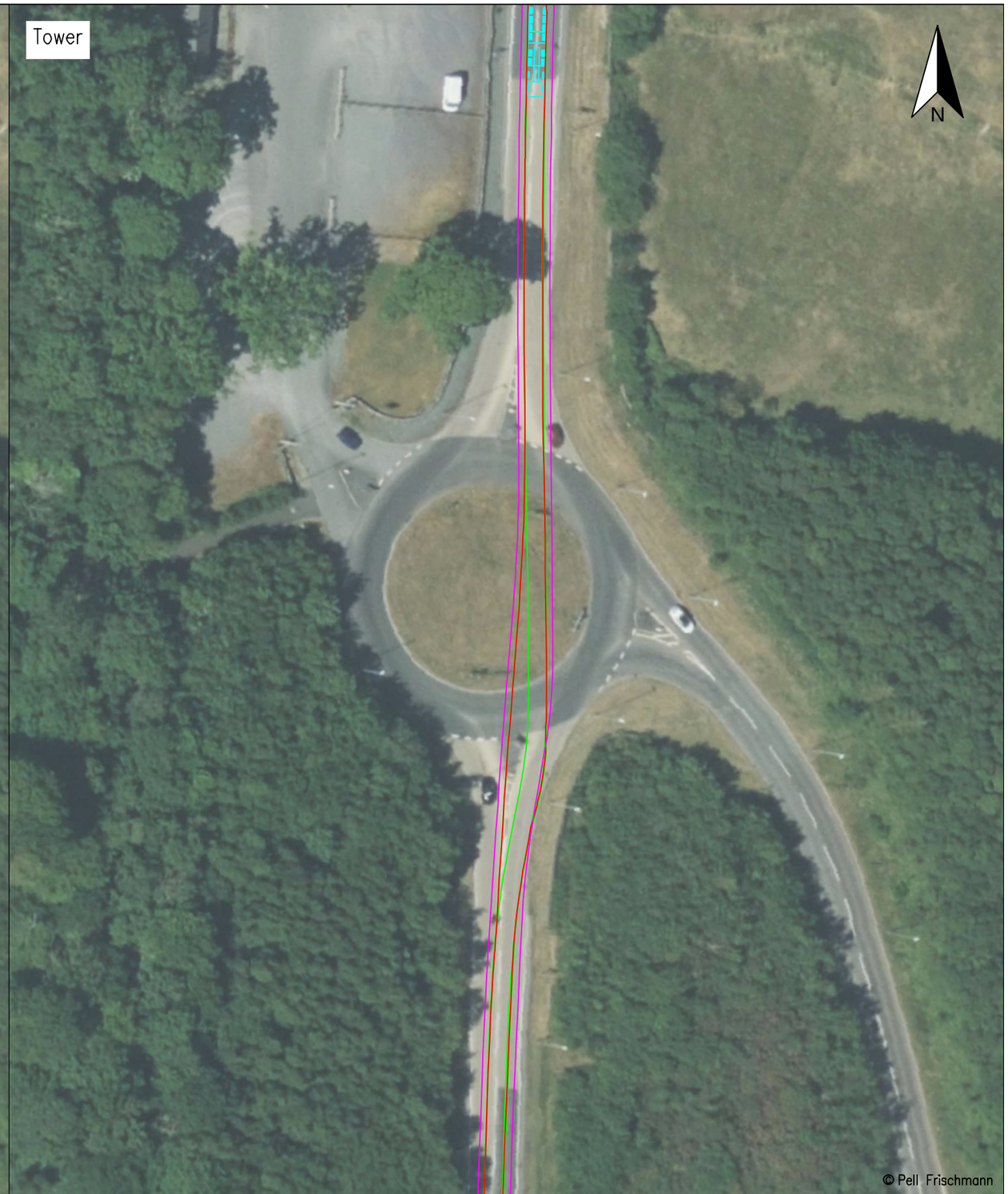

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 / Penygroes Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		27

Scale: 1:750 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK14

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Load bearing surface to be laid. Two sets of chevron signs to be removed.

Load bearing surface to be laid. One road sign and one bollard to be removed.

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 / Penygroes Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		27

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK14A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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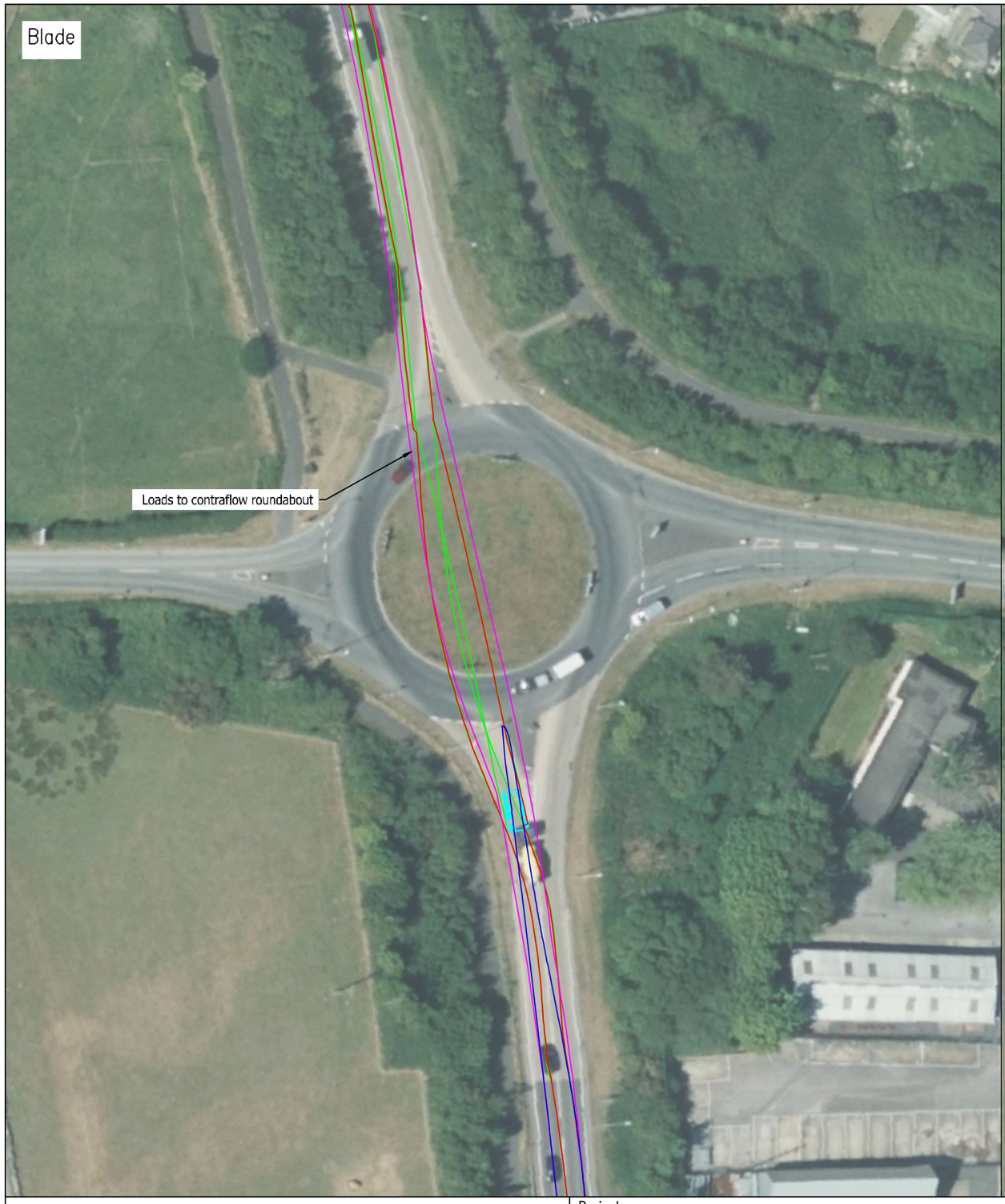

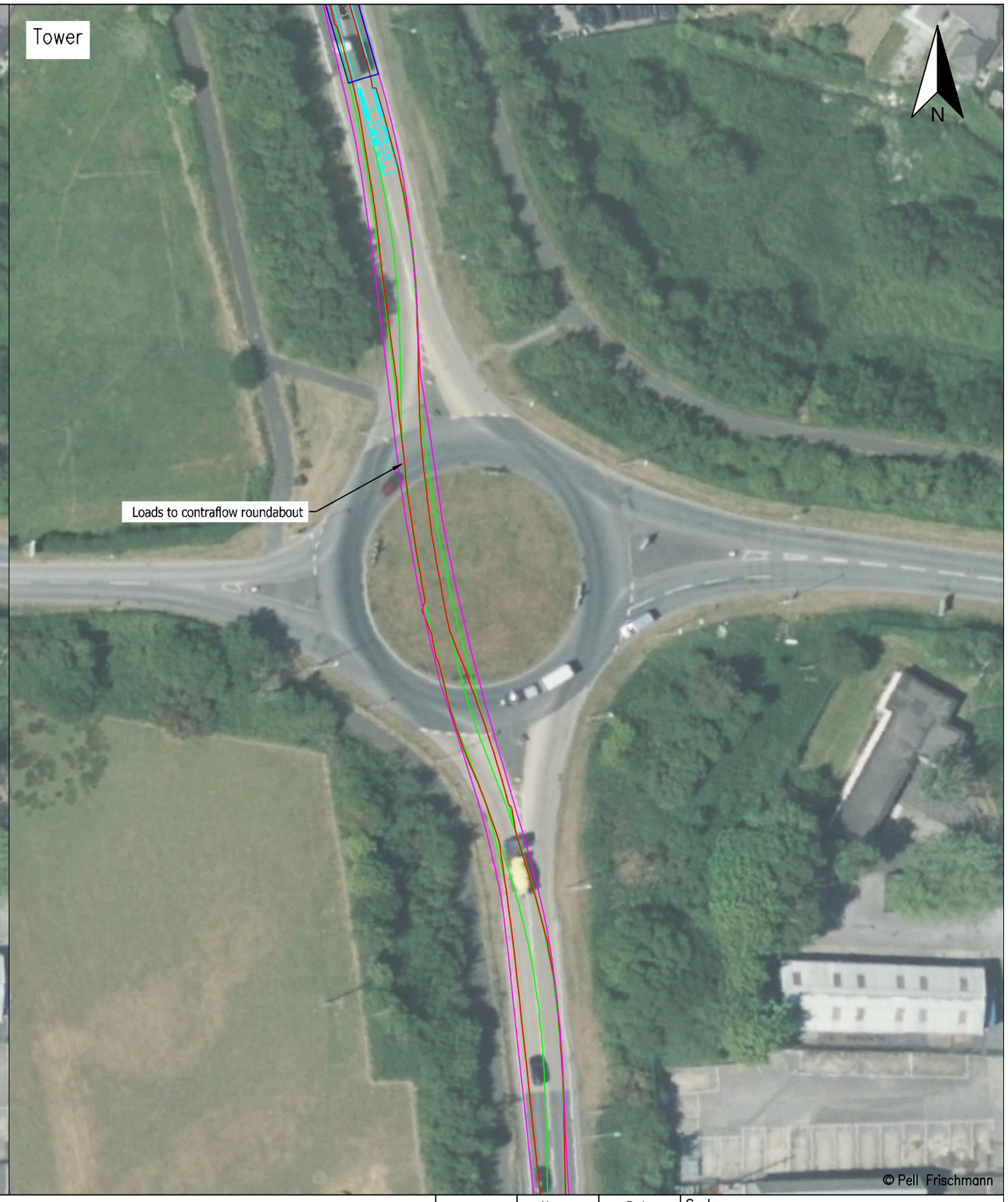

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 / B4418 Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		28

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK15

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Load bearing surface to be laid.
One road sign to be removed.
Trees and vegetation to be pruned.

Loads to contraflow roundabout

Load bearing surface to be laid. One set of chevron signs to be removed.

One bollard to be oversailed.

One road sign to be removed.

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 / B4418 Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		28

Scale: 1:500 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK15A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Bends North of Bryncir

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		30

Scale: 1:2000 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK16

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Trees and vegetation to be pruned

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Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Bends North of Bryncir

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		30

Scale: 1:1500 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK16A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

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Blade
Lifter
RAISED

Tower

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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Penmorfa S-bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		33

Scale: 1:1250 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK17

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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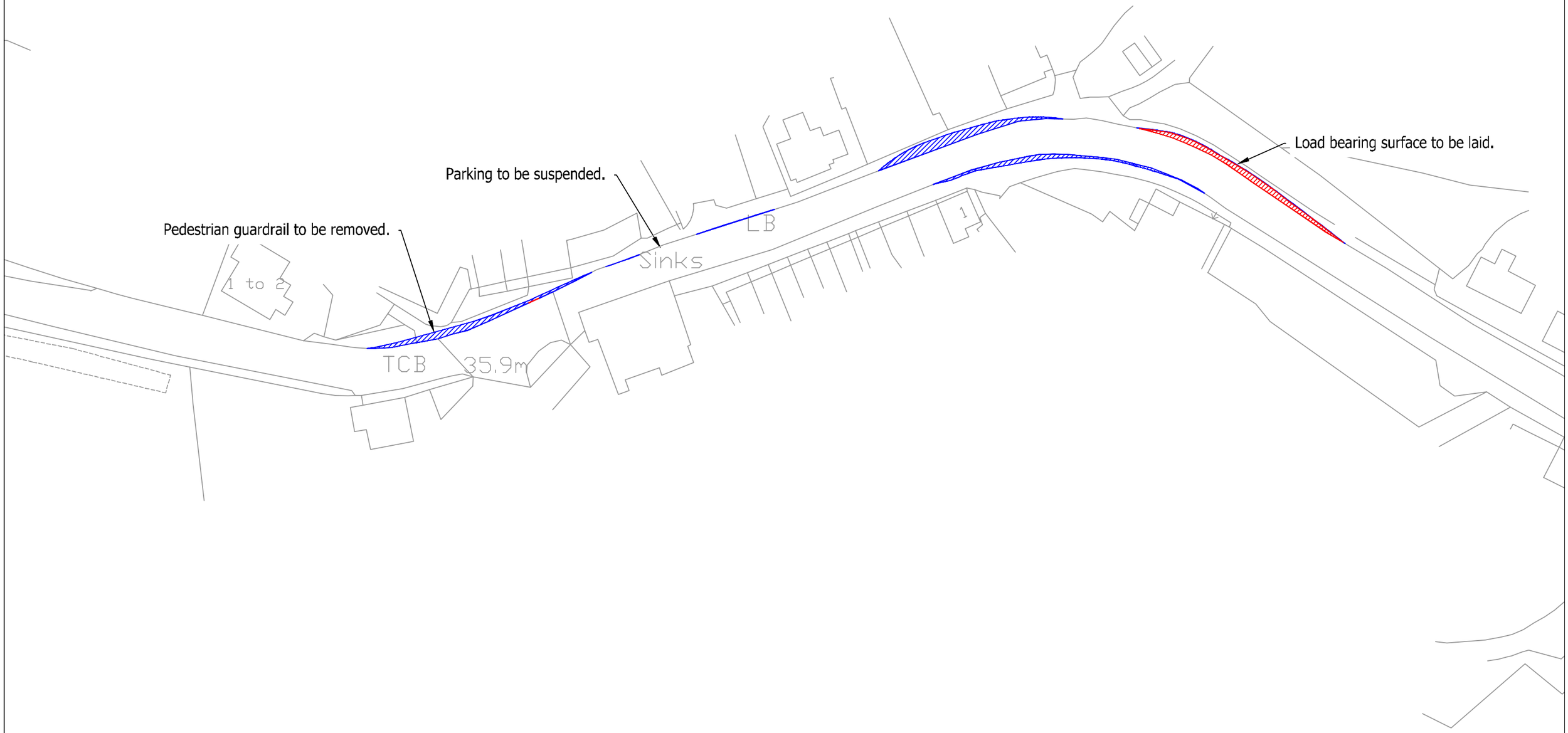
Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Penmorfa S-bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		33

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK17A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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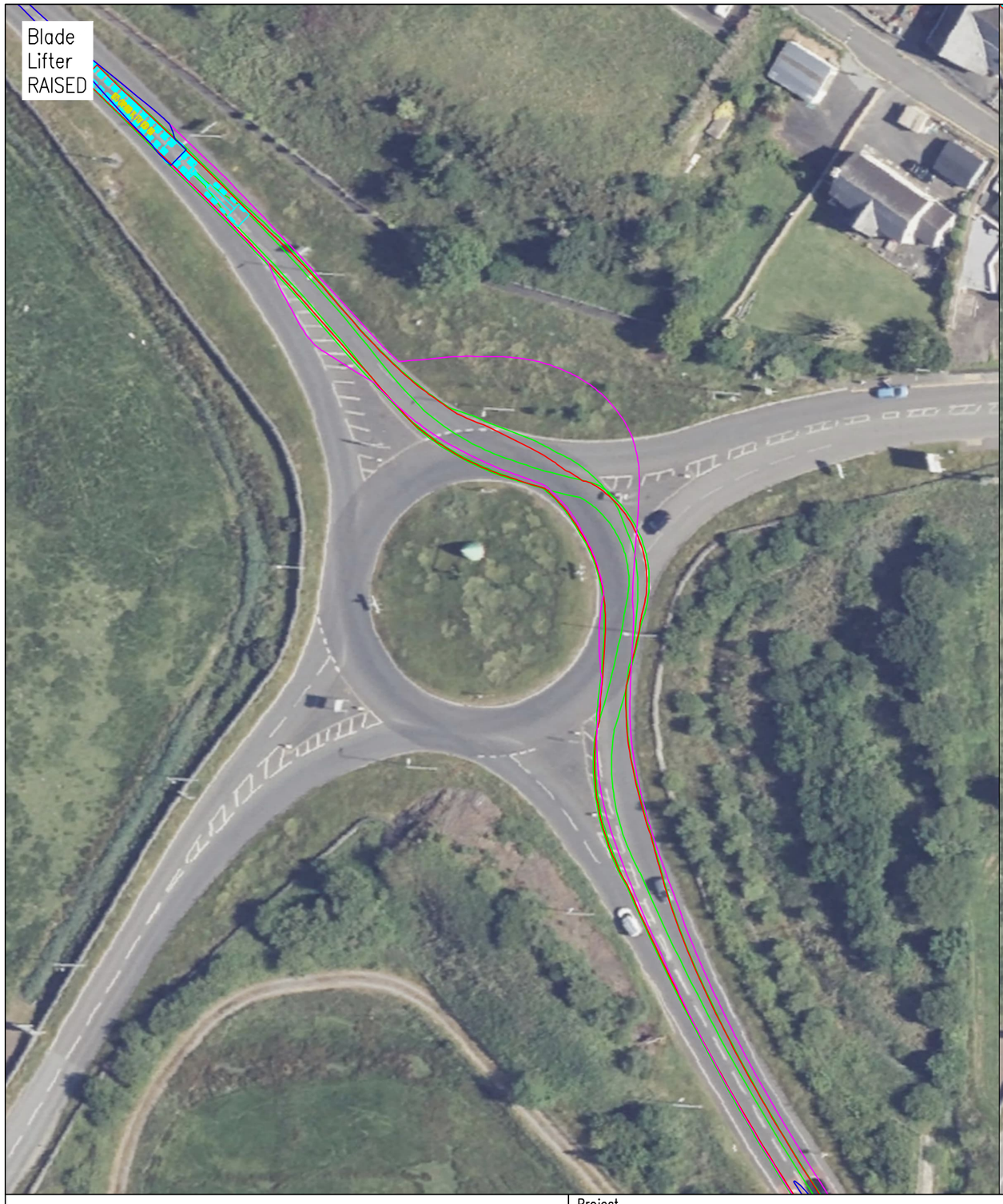

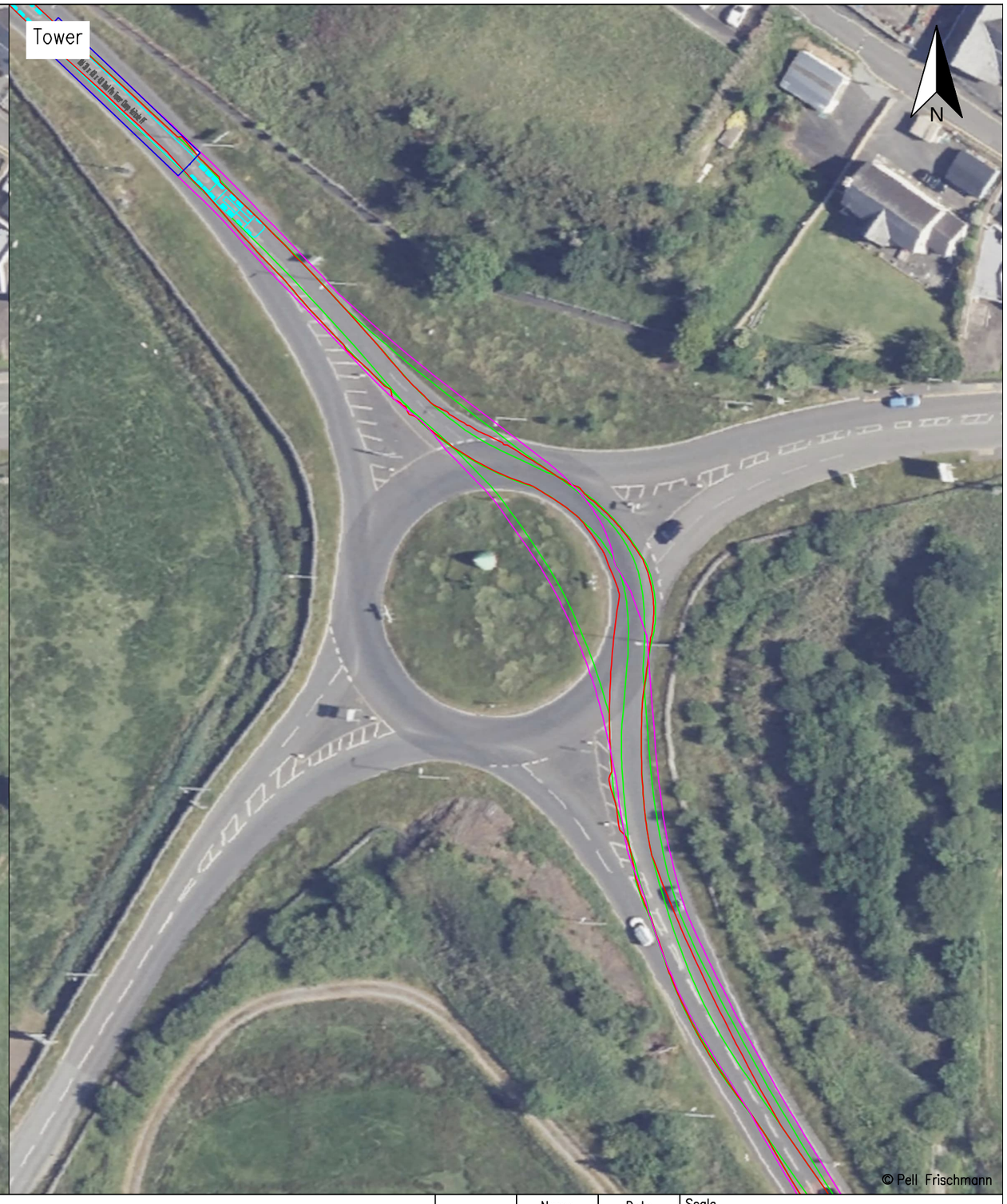

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Tremadog Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		35

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK18

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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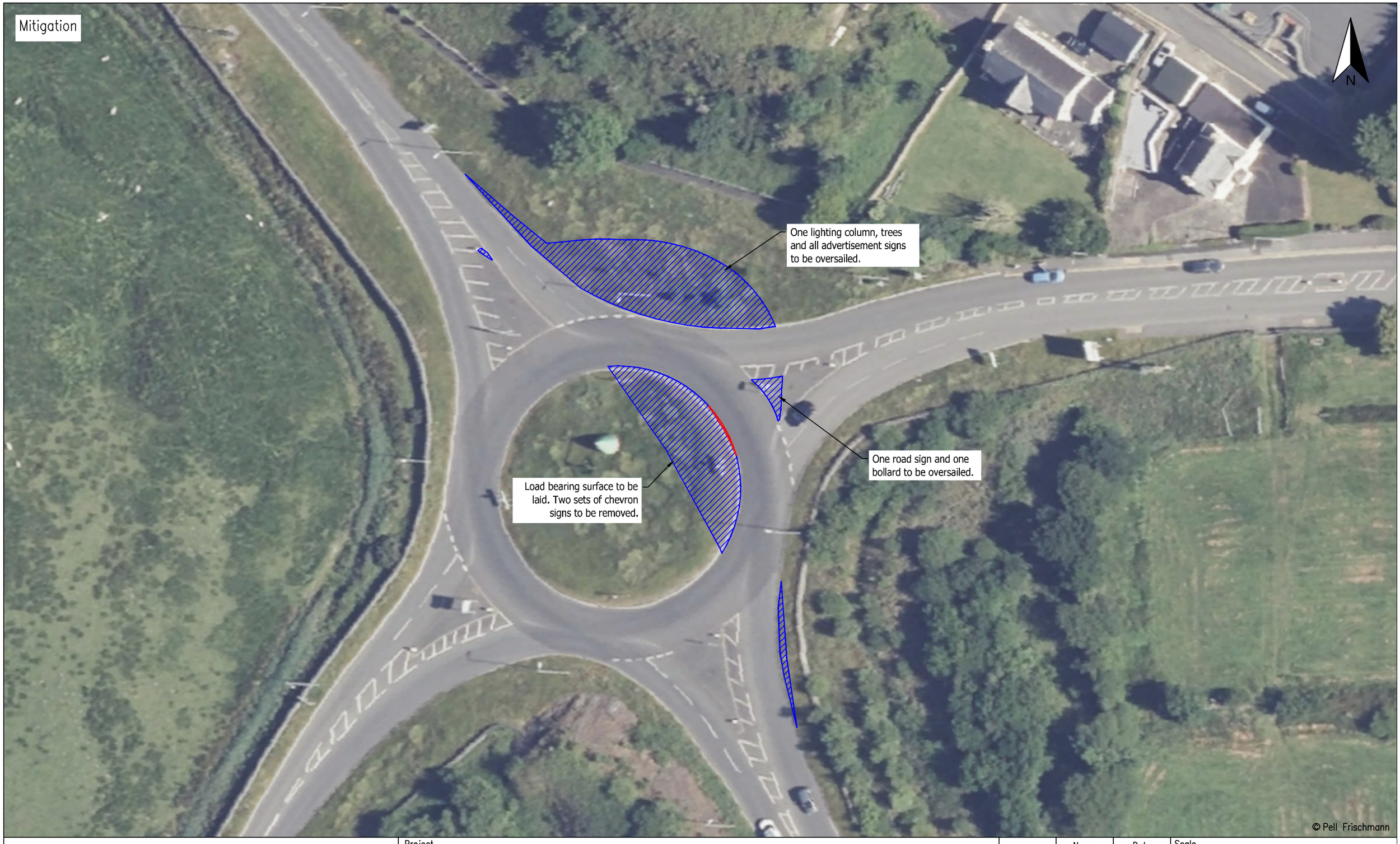
Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Tremadog Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		35

Scale: 1:500 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK18A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Porthmadog Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		36

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK19

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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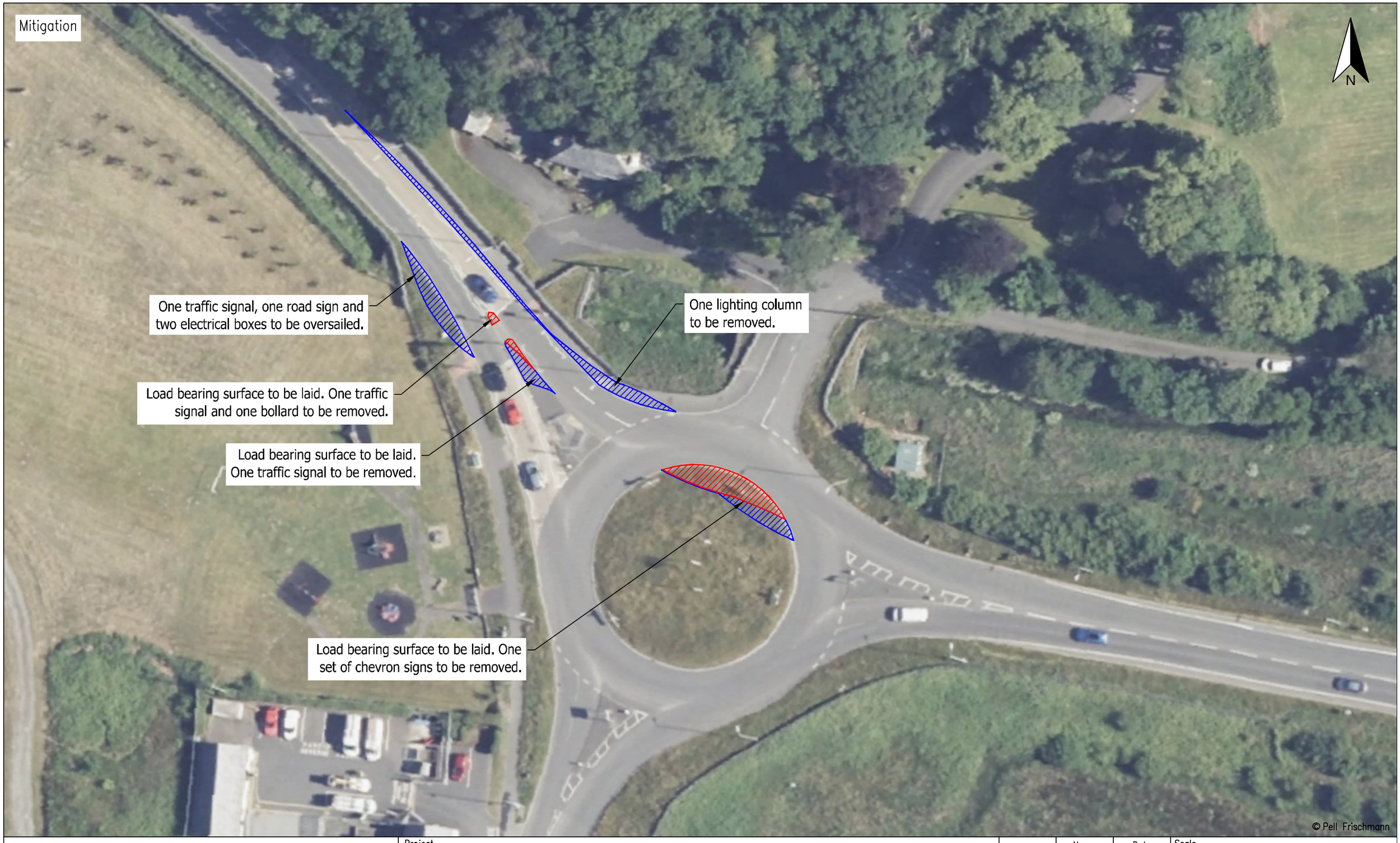

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Porthmadog Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		36

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK19A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Blade
Lifter
FLAT

Structure no. A487 412
Ffestiniog Railway Overbridge

Blades to be lowered beneath overbridge

Indicative high voltage overhead lines.
Topographical survey required to confirm.
Minimum safety clearance to be confirmed.

Blade
Lifter
RAISED

N

Structure no. A487 412
Ffestiniog Railway Overbridge

Blade to be raised once clear of overbridge,
ready to turn left at roundabout

Indicative high voltage overhead lines.
Topographical survey required to confirm.
Minimum safety clearance to be confirmed.

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Minffordd Roundabout

Key: Wheel SPA; Body SPA; Load SPA; Indicative; Over-run; Over-sail

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		37

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK20

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Tower

Structure no. A487 412
Ffestiniog Railway Overbridge

N

Indicative high voltage overhead lines.
Topographical survey required to confirm.
Minimum safety clearance to be confirmed.

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Minffordd Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		37

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK20A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

Structure no. A487 412
Ffestiniog Railway Overbridge

N

One lighting column to be removed.
Load bearing surface to be laid.

One bollard to be removed.

Load bearing surface to be laid. Two sets of lit chevron signs to be removed.

Load bearing surface to be laid. One road sign and two bollards to be removed.

Indicative high voltage overhead lines.
Topographical survey required to confirm.
Minimum safety clearance to be confirmed.

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Minffordd Roundabout

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		37

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK20B

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Blade
Lifter
RAISED

N

Parking to be suspended during movements.

Parking to be suspended during movements.

Tower

Parking to be suspended during movements.

Parking to be suspended during movements.

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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Laundry Cottage LH bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		43

Scale: 1:750 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK21

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

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Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Laundry Cottage LH bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		43

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK21A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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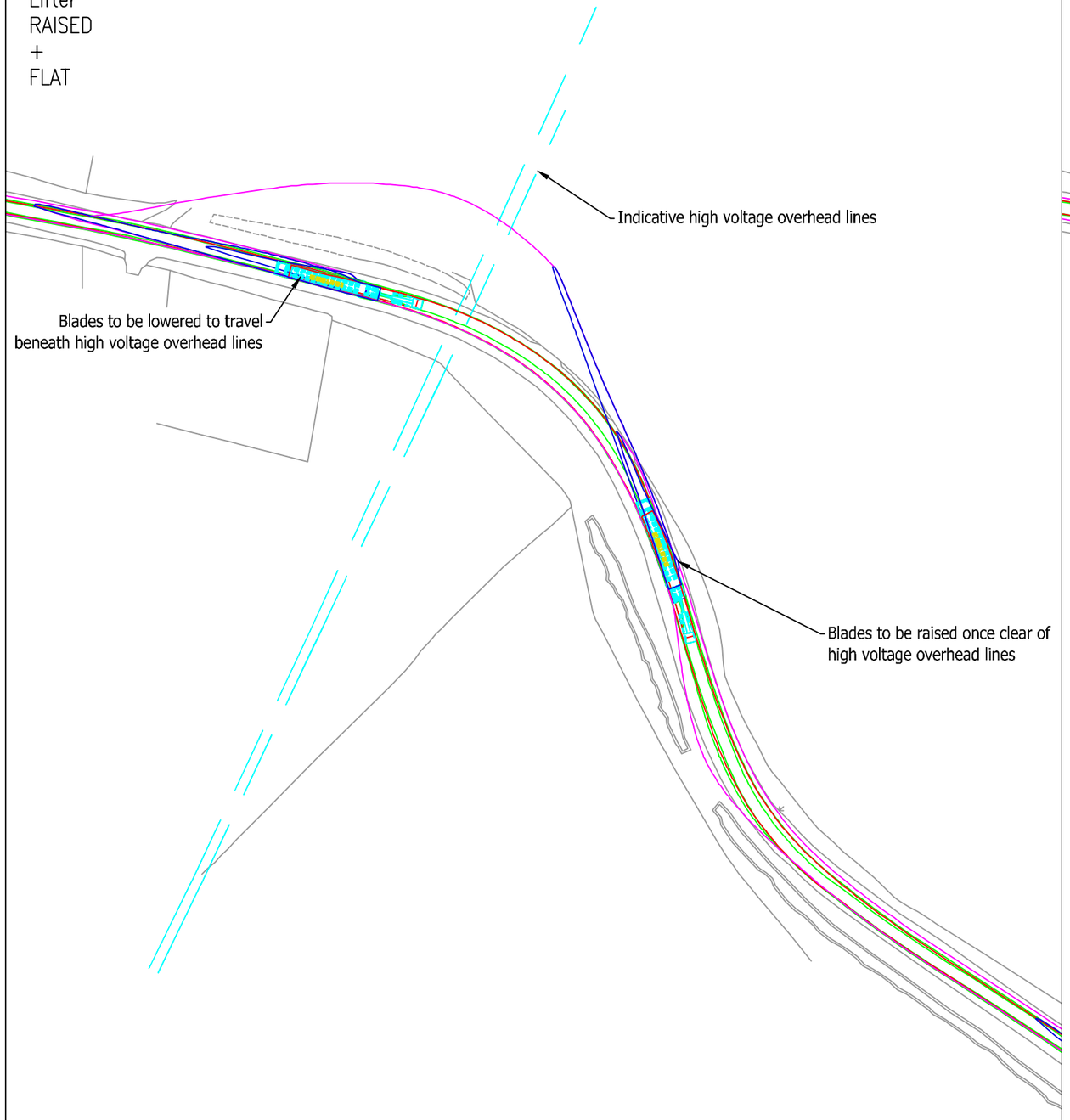
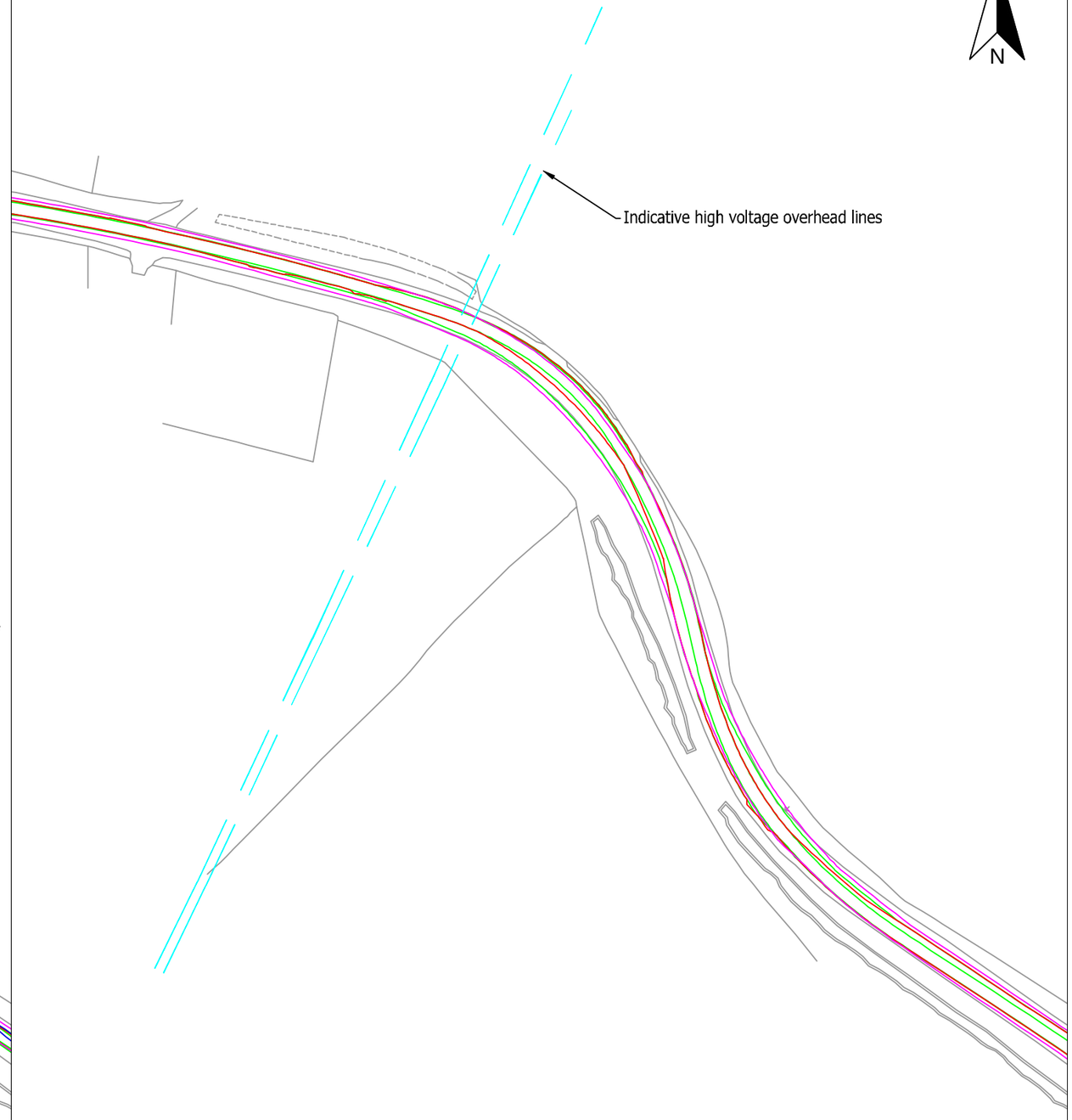
Blade
Lifter
RAISED
+
FLAT



Tower



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Cae n-y-coed-uchaf S-bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		46

Scale: 1:1250 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK22

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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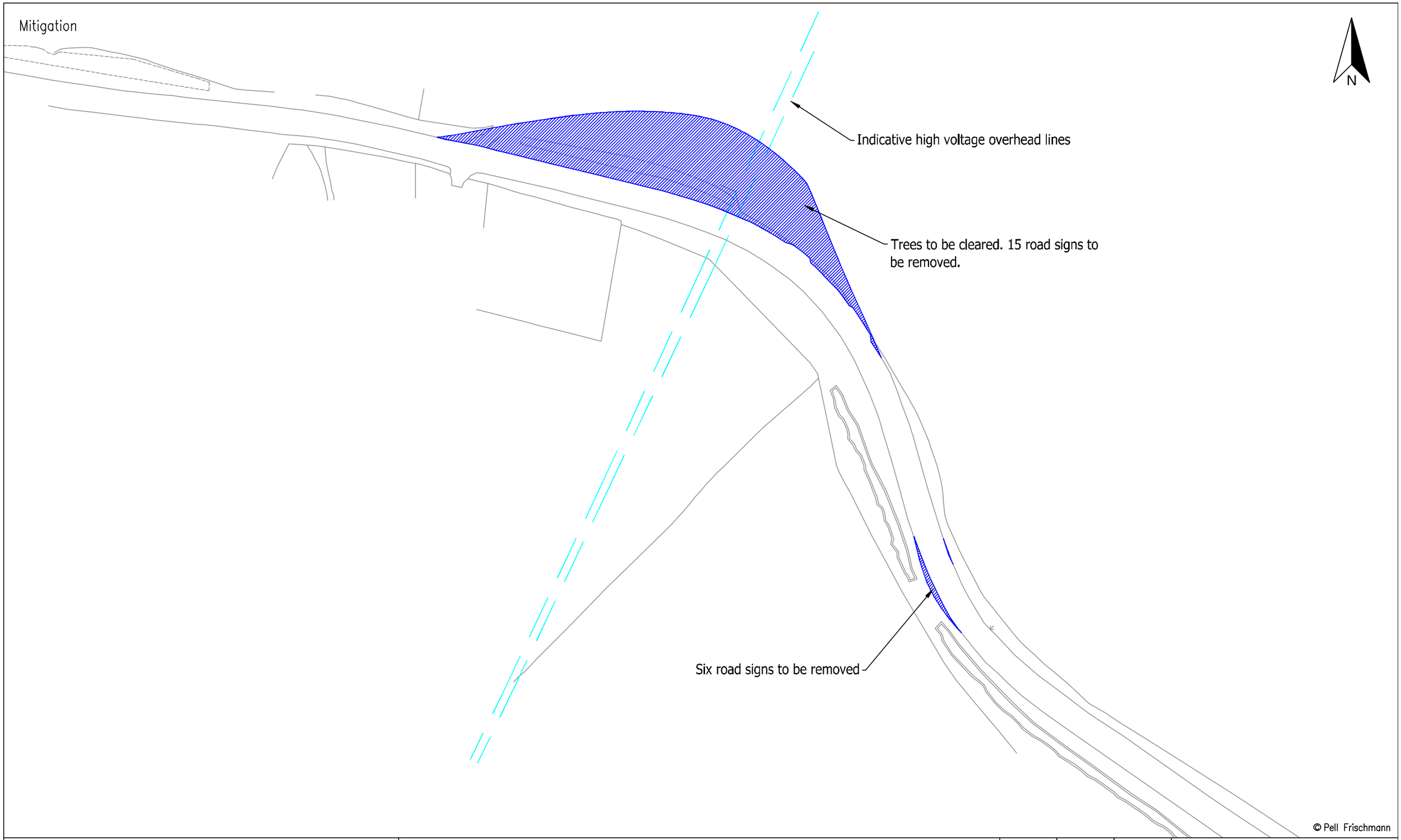
Mitigation



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www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 Cae n-y-coed-uchaf S-bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		46

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK22A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 1

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Blade
Lifter
RAISED
+
FLAT

Blades to be lowered following embankment to travel beneath high voltage overhead lines

Indicative high voltage overhead lines

Blades to be raised once clear of high voltage overhead lines

Track

Tower

N

Indicative high voltage overhead lines

Track

A 487

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 East of Gellilydan S-bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		47

Scale: 1:1250 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK23

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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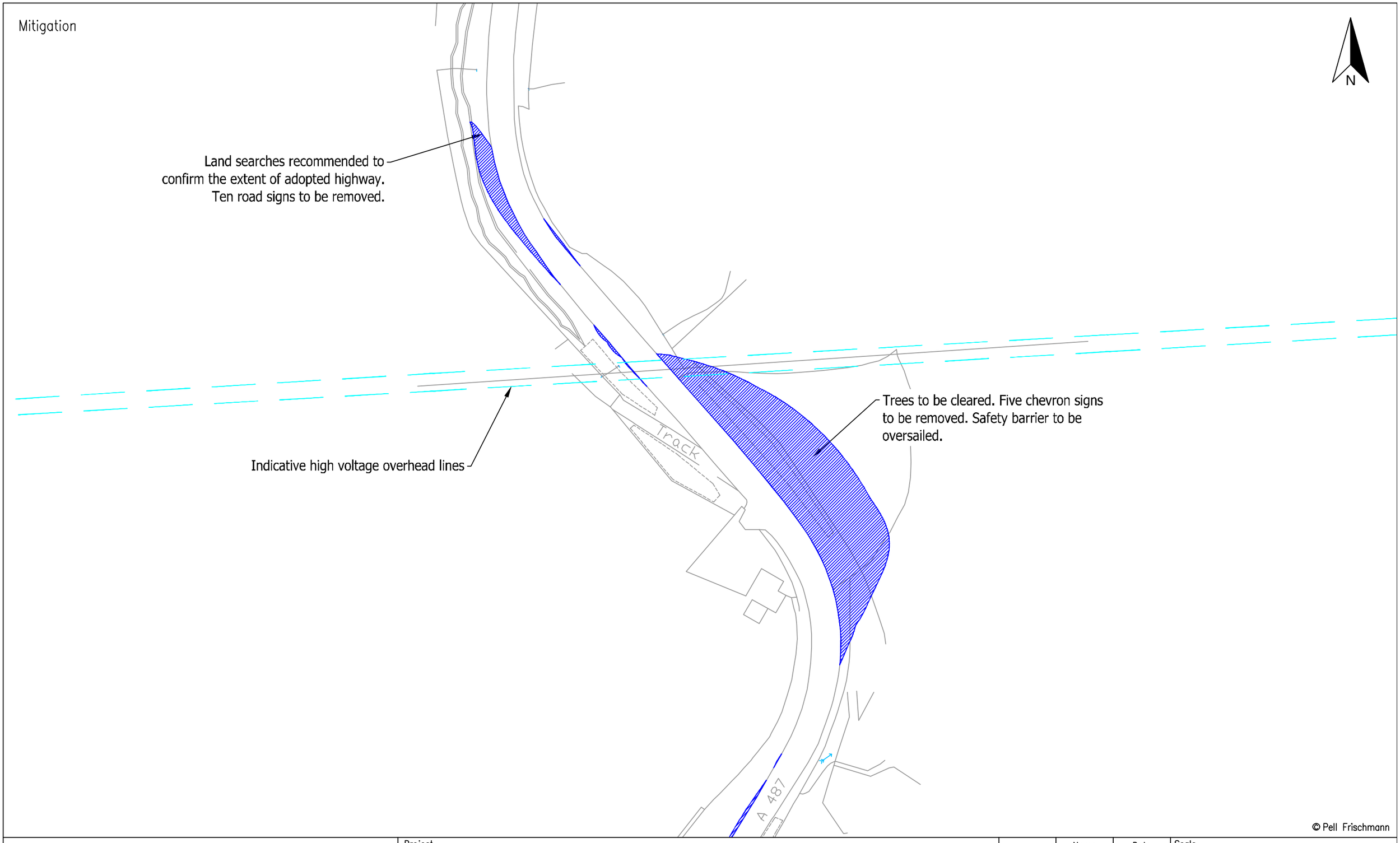
Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A487 East of Gellilydan S-bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		47

Scale: 1:1000 @ A3

File No. 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No. SK23A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 1

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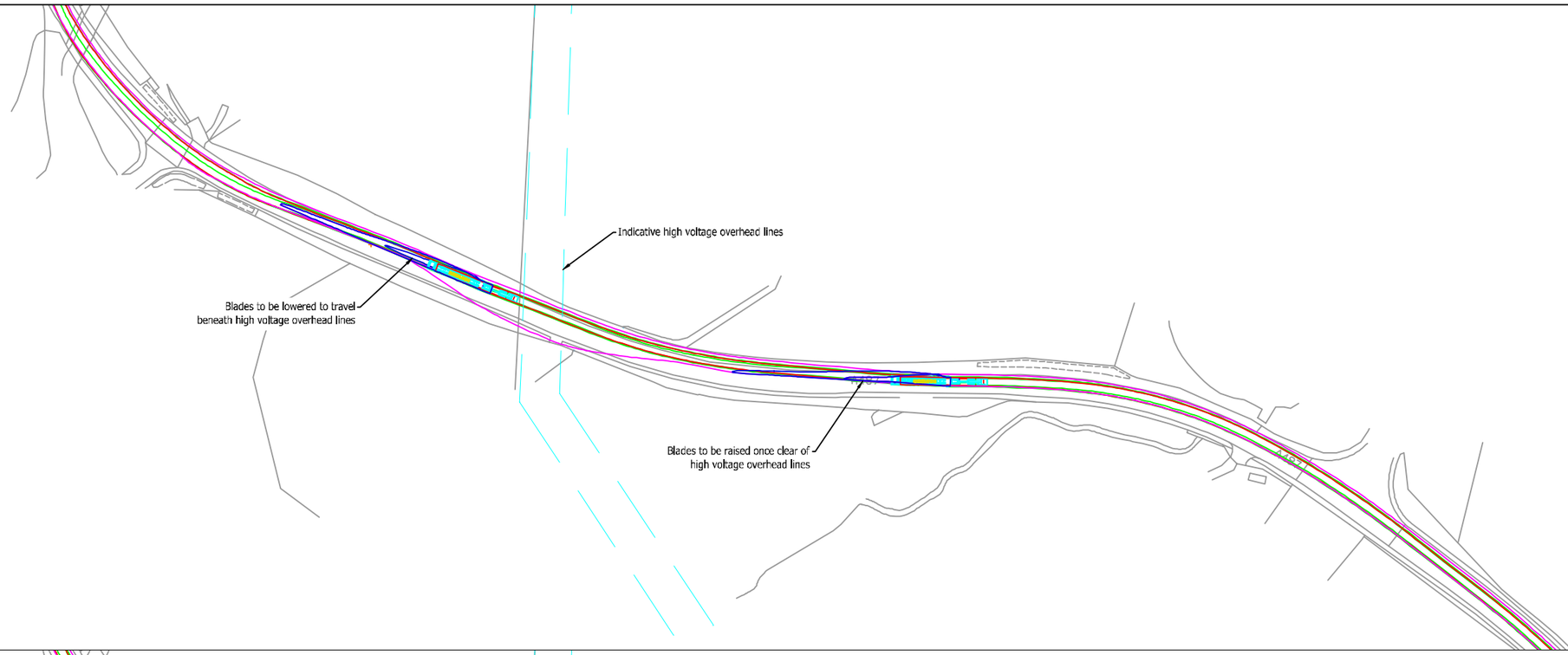
Blade
Lifter
RAISED
+
FLAT



Tower

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Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower — NO MITIGATION

SPA Location: A487 Pont Tafarn-hely series of bends

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		48

Scale: 1:2000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK24

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A470 / A4212 Junction

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		51

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK25

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Two road signs to be removed.
Vegetation to be pruned.

Three road signs to be oversailed.

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
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www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A470 / A4212 Junction

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		51

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK25A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Blade Lifter RAISED + FLAT

Indicative high voltage overhead lines

Blades to be lowered to travel beneath high voltage overhead lines

Blades to be raised once clear of high voltage overhead lines

N

Tower

Indicative high voltage overhead lines

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A4212 Ty-uchaf S-bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		61

Scale: 1:1250 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK26

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Indicative high voltage overhead lines

Trees to be cleared. Fence to be removed. Five bollards to be oversailed.

Trees to be cleared. Fence to be removed. 18 bollards to be oversailed.

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A4212 Ty-uchaf S-bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		61

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK26A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 1

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Blade
Lifter
RAISED

Tower

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www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A4212 / B4501 Junction

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		64

Scale: 1:1000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK27

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

N

Land to be reprofiled. Load bearing surface to be laid. Two lighting columns to be removed. Land searches recommended to confirm the extent of adopted highway.

One utility pole, one lighting column and section of hedge to be removed. Load bearing surface to be laid.

Haulfryn

B 4501

Pell Frischmann
93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: A4212 / B4501 Junction

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		64

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK27A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 1

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Blade
Lifter
RAISED

Tower

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: B4501 Tai'r-felin RH Bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		66

Scale: 1:750 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK28

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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Mitigation

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: B4501 Tai'r-felin RH bend

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		66

Scale: 1:500 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK28A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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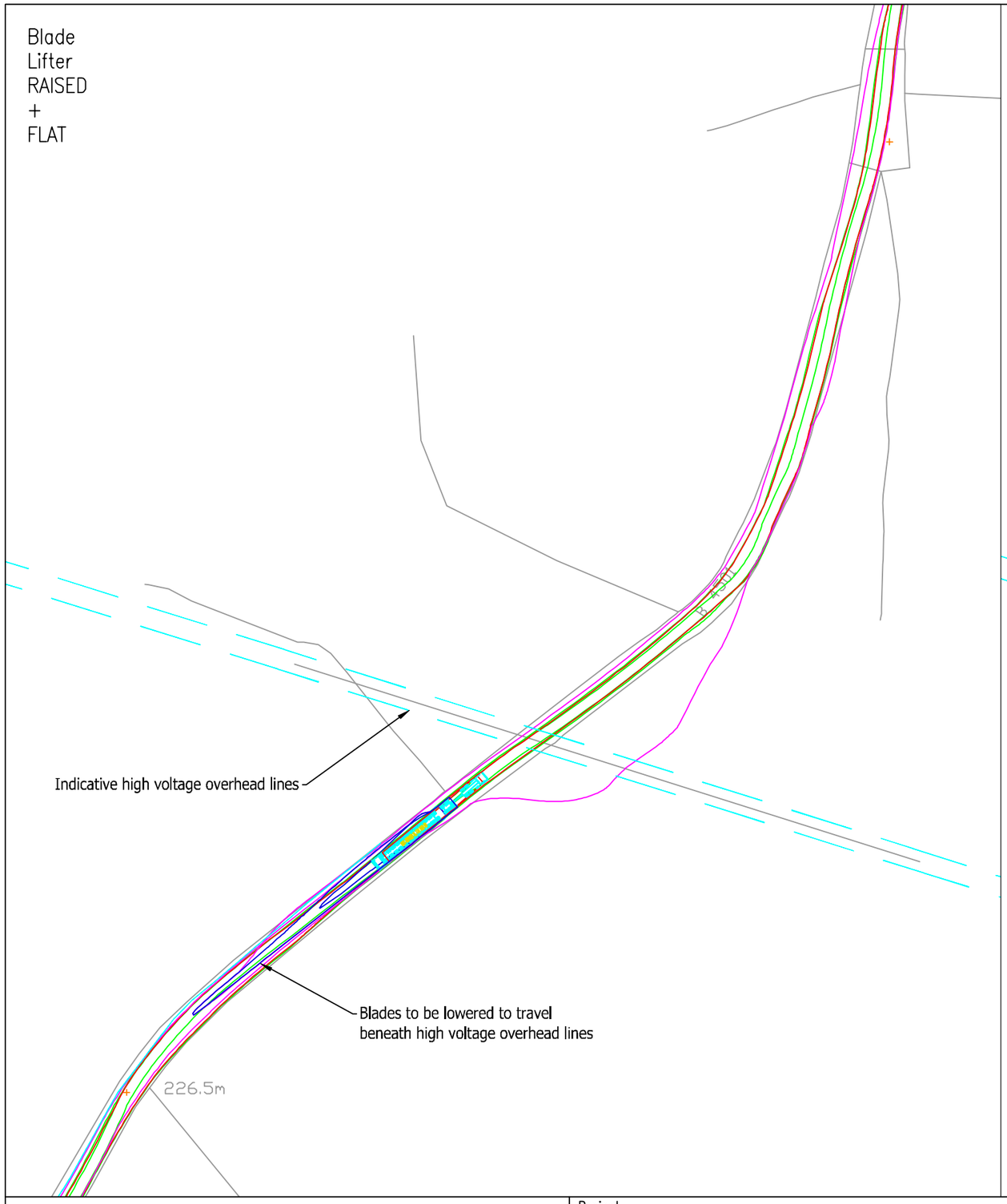
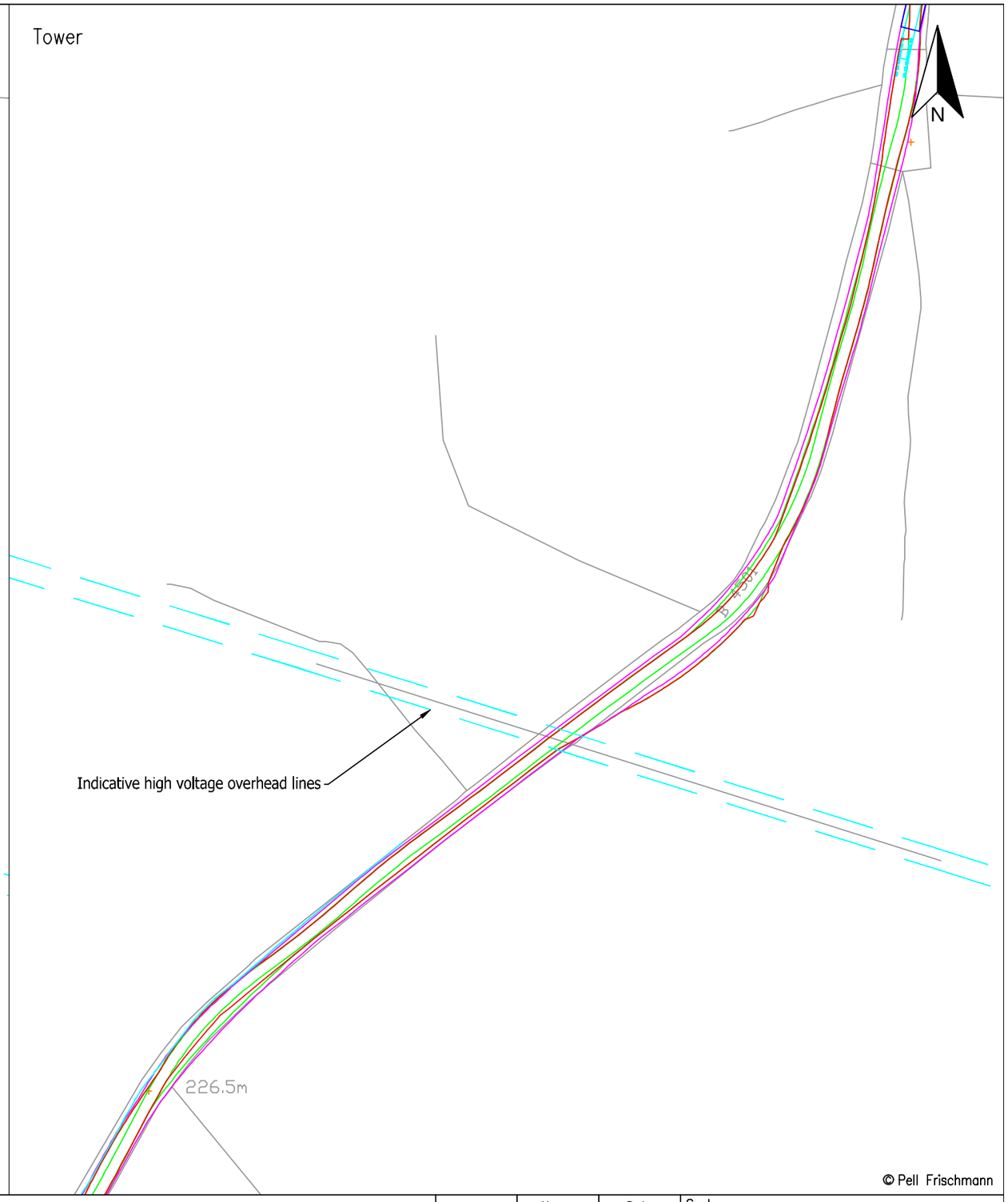
Blade
Lifter
RAISED
+
FLAT



Tower



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Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: B4501 Mur-glas series of bends

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		67 & 68

Scale: 1:1250 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK29

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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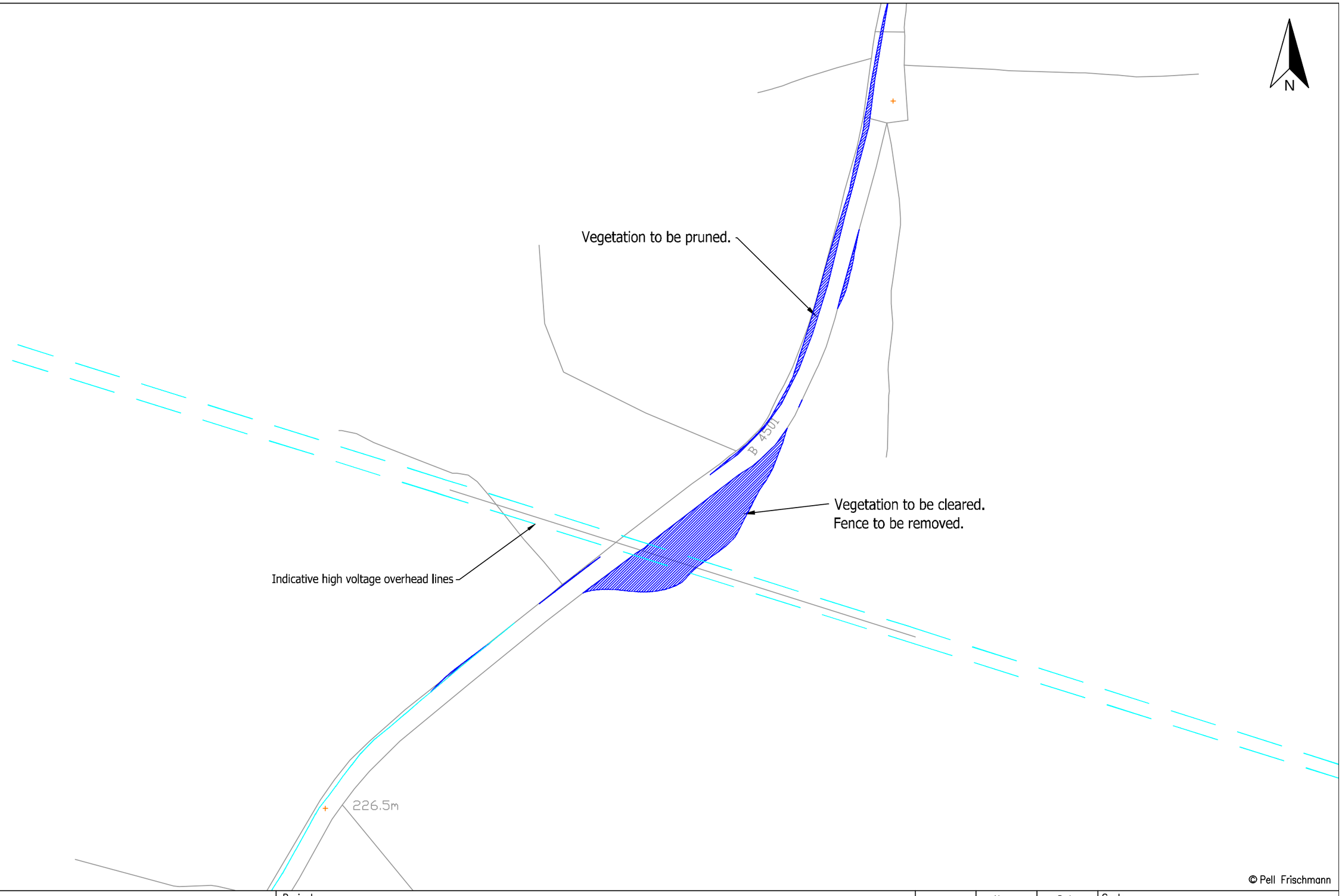
Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: B4501 Mur-glas series of bends

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		67 & 68

Scale: 1:1250 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK29A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 1

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Blade
Lifter
RAISED

Tower

N

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93 GEORGE STREET, EDINBURGH, EH2 3ES
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Email: pfedinburgh@pellfrischmann.com
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Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: B4501 South West of Wern Fawr series of bends

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		69 & 70

Scale: 1:2000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK30

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

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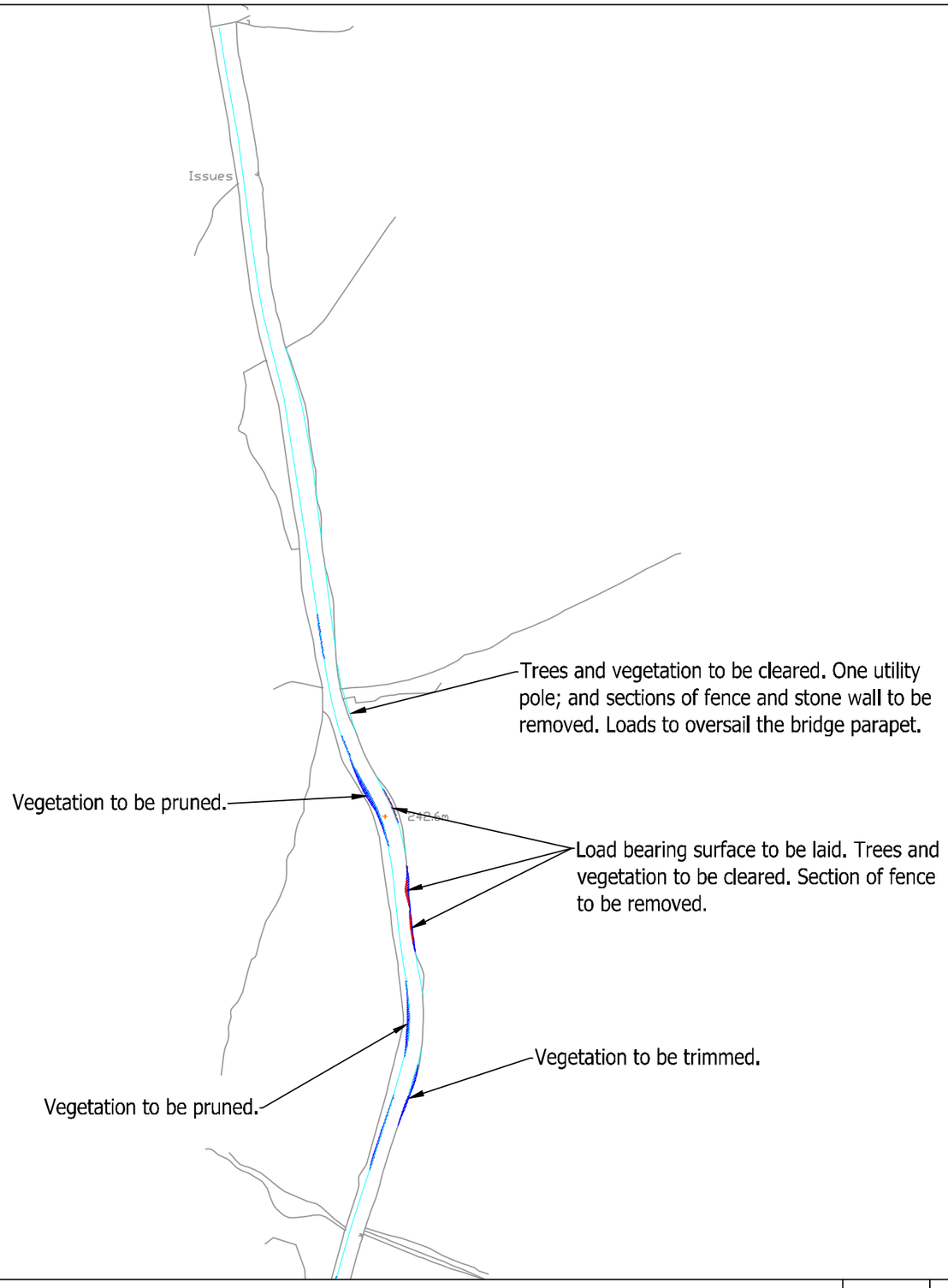
Mitigation



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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Foel Fach Wind Farm Limited

Key: Wheel SPA | Body SPA | Load SPA | Indicative | Over-run | Over-sail

Project: Foel Fach Wind Farm

Drawing Title: Nordex N175 Blade and Tower

SPA Location: B4501 South West of Wern Fawr series of bends

	Name	Date
Drawn	AS	08/04/2025
Designed	AS	08/04/2025
Checked	SJW	10/04/2025
Point of Interest		69 & 70

Scale: 1:2000 @ A3

File No.: 251117 Foel Fach N175 SPA.dwg

Drawing Status: Draft

Drawing No.: SK30A

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 1

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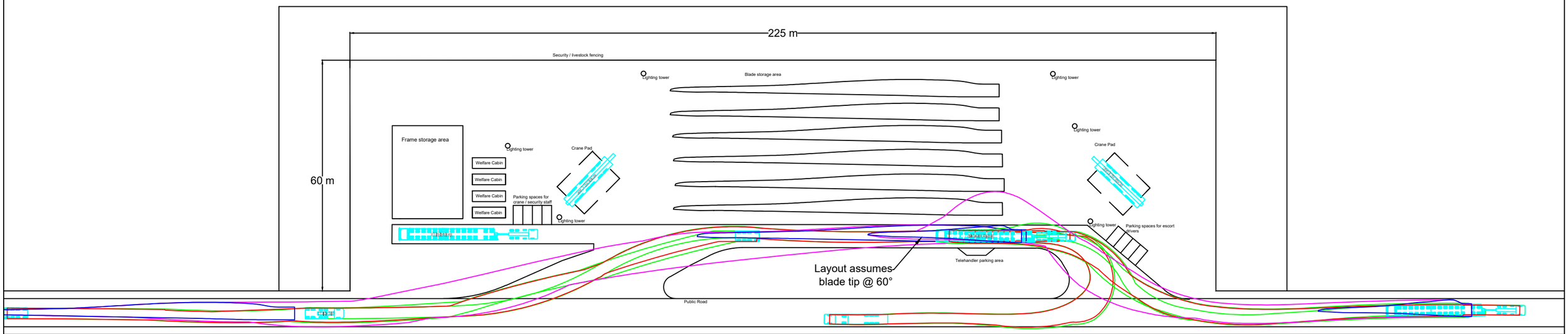
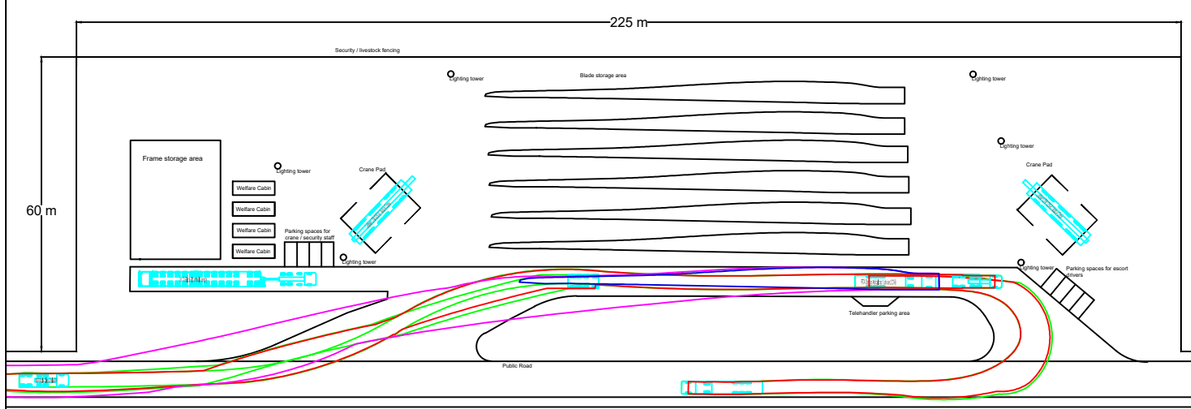
Annex 1.3 Blade Transfer Area Drawing

Overview

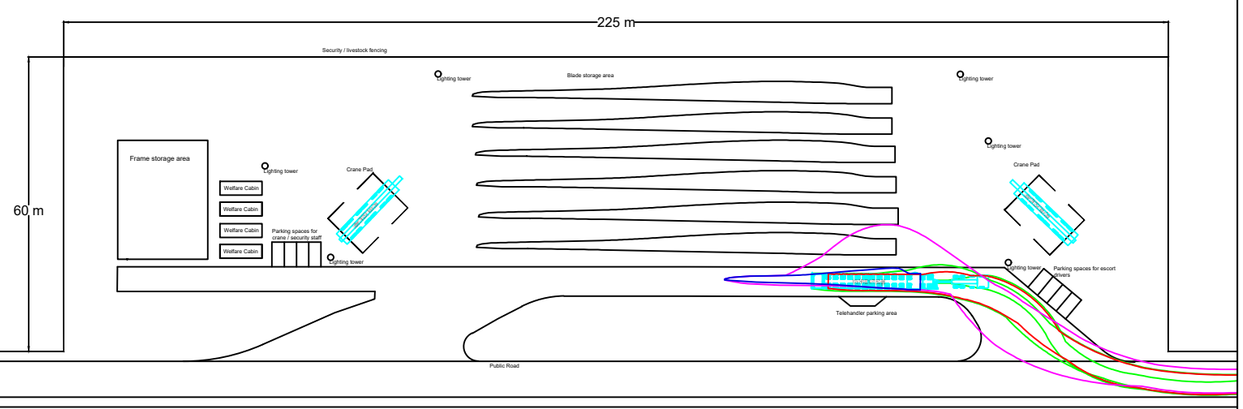


Dolly clamp trailer



Blade delivered on dolly clamp trailer delivery with blade in the flat position.
Blade unloaded by crane and then empty trailer returns to point of origin.

Blade lifter



Blade loaded onto the lifting trailer by crane, blade tip elevated
to 60 degrees and then vehicle departs blade transfer site.

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93 GEORGE STREET, EDINBURGH, EH2 3ES
Tel: +44 (0)131 240 1270
Email: pfedinburgh@pellfrischmann.com
www.pellfrischmann.com

Client: Coriolis Energy Ltd

Key

Wheel SPA	Body SPA	Load SPA	Indicative Road	Over-run	Over-sail

Project: 10110041 Foel Fach Wind Farm

Drawing Title: Nordex N175 Indicative Blade Transfer Area Design

SPA Location: Indicative Blade Transfer Area

	Name	Date
Drawn	SJW	01/05/2025
Designed	SJW	01/05/2025
Checked	GB	02/05/2025
Point of Interest		–

Scale: DNS

File No.: 250501 Foel Fach N175 blade transfer drawing.dwg

Drawing Status: Draft

Drawing No.: BT01

Notes:
1. All mitigation is subject to confirmation through a test run.
2. This is not a construction drawing and is intended for illustration purposes only.

Revision: 0

Annex 1.4 ESDAL Correspondence

From: Adam Stone <AStone@pellfrischmann.com>
Sent: 30 April 2025 12:51
To: abnormal.loads@sefton.gov.uk; commercial.vehicle.unit@merseyside.police.uk; nwabnormalloadsenquiries@nationalhighways.com; AbnormalLoads@Lancashire.police.uk; abnormal.loads@gmp.police.uk; abnormal.loads@cheshire.police.uk; Abnormal loads <Abnormalloads@northwales.police.uk>; abnormalloads@nmwtra.org.uk; abnormal.loads@denbighshire.gov.uk; abnormalloads@gov.wales; LlwythAbnormal@gwynedd.llyw.cymru; AbnormalLoadsEnquiries@networkrail.co.uk; rsgbrb@jacobs.com
Subject: Proposed Wind Farm ESDAL

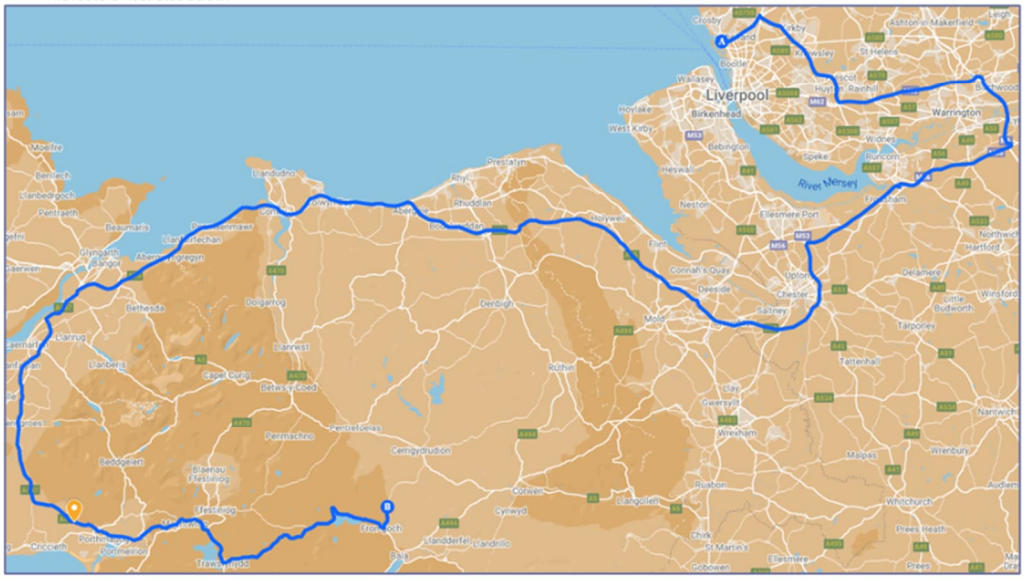
Hello there,

We have been commissioned to undertake a route review for a proposed wind farm development located to the northeast of Glan-yr-afon, Wales

It is proposed that loads will be delivered from Liverpool and would use the following route:

- Loads would exit Port of Liverpool heading south and taking the first exit at the roundabout onto the A5036 eastbound before merging onto the A59 northbound;
- Loads would turn right at Switch Island Junction to join the M57 heading southeast;
- Loads would exit the M57 at Junction 1 to join the M62 eastbound;
- Loads would exit the M62 at Junction 10 to join the M6 southbound;
- Loads would exit the M6 at Junction 20A to join the M56 westbound;
- Loads would exit the M56 at Junction 15 to join the M53 southbound before merging onto the A55 southbound;
- Loads would exit the A55 at Junction 34 to continue on the A55 westbound;
- Loads would exit the A55 at Junction 10 to join the A4087 westbound at Caernarfon Rd Interchange;
- At the roundabout, loads would take the 1st exit onto A487 Y Felinheli Bypass;
- Loads would continue on the A487 before merging onto the A470 southbound;
- At Trawsfynydd, loads would turn left onto the A4212 eastbound;
- At Fron-goch, loads would turn left onto the B4501 northbound;
- Loads would enter the site access junction at Pont Mynachddwr.

- The route is illustrated below:



The longest loads will have a maximum rigid length of 85.66metres (m) along the route. The maximum axle load is 12 tonnes, with the gross vehicle weight of the heaviest load expected to be in the region of 135tonnes. The maximum height is 4.9m, with the widest load at 4.5m.

The assessment is at an early stage at present, though I would be grateful if you could confirm if there are any structures along the route that may present a particular issue. A more detailed assessment will be undertaken once the turbine haulier and turbine model have been selected by the developer.

Kind regards,

Adam

GB **Gordon Beattie**

To: Adam Stone

Reply | Reply all | Forward

Fri 2025-05-09 1:43 PM

Hi Adam

Thank you for your enquiry, it was nice to speak with Sally

There are structures on the National Highways network for the movements which are subject to weight restrictions.

- Waddicar Canal M57 Jct 7-6 requires all loads over 101 Te to be assessed
- Knowsley Wood M57 Jct 5 requires all loads over 115 Te to be assessed
- Sandsfield South M62 Jct 10 / M6 Jct 21A requires all loads over 72 Te to be assessed
- Helsby Junction Viaduct M53 Jct 12-14 requires all loads over 68 Te to be assessed

As we do not have the precise vehicle configuration details that the assessment work requires, it is possible that some of the loads that your project requires may not be accepted across any or all of these structures.

We will need to assess the detailed vehicle configuration and weights to provide a definitive answer.

However, for an enquiry of the nature that you have made regarding potential windfarm developments, we would not undertake full vehicle assessments at this initial stage due to the amount of work and expense incurred.

The loads described fall into the Special Order category and the hauliers must follow the process to gain the required approval.

The email address that you sent to is the National team dealing with Special Orders and they would not respond to a request such as this.
Any further enquiries to the North West region, please use

NWAbnormalLoadsEnquiries@nationalhighways.co.uk

regards

Gordon Beattie MILT
Network Planner- Occupancy
North West Region

Mobile : 07714 846615

National Highways | Newlands | Unit A1 | 6 Brewery Lane | Penrith New Squares | Penrith | Cumbria | CA 11 7FN
National Highways Web: http://www.nationalhighways.co.uk

national highways

AE **Abnormal Loads Enquiries**

To: Adam Stone

Reply | Reply all | Forward

Fri 2025-05-02 11:33 AM

This message needs your attention

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OFFICIAL

Hi Adam

We have no objections to this particular route enquiry as it does not appear to affect any road over rail Network Rail owned structures. Please note this only applies to this route enquiry. We check the load carrying capacity of Network Rail owned road over rail bridges affected. We do not check anything else, including:

* Load carrying capacity of level crossings
* Clearance to bridge parapets
* Clearance under a rail bridge
* Clearance to overhead wires at level crossings

Many Thanks

Sunil Maniraj
Abnormal Loads Clerk
Abnormal Loads Help Desk: 07395 391628
Abnormal Loads Team – Part of the National Records Group

AL **Abnormal Loads**

To: Adam Stone

Reply | Reply all | Forward

Wed 2025-04-30 12:51 PM

Thank you for notifying Lancashire Police of your proposed movement of an Abnormal Load.
Please ensure that the route chosen is suitable and safe for the move to take place.

Reply | Forward

AL **Abnormal loads**

To: Adam Stone

Reply | Reply all | Forward

Mon 2025-05-12 1:33 PM

Afternoon,

Thank you for your e-mail. With regards to structures on your proposed route, please liaise with the structure owners.

Please could consideration be given to the tried and tested routes for nearby windfarms i.e. Clocaenog and Brenig. The route on those occasions was A483, A5, if the B4501 is accessible from the A5 then this may be a more appropriate route.

Kind regards,

Susan Jones
Swyddog Llwythi Anarferol/ Abnormal Loads Officer
Uned Troseddau Ffyrdd | Roads Crime Unit
Gwasanaethau Cefnogi Gweithredol/ Operational Support Services
Heddlu Gogledd Cymru | North Wales Police
e-bost/e-mail: abnormalloads@northwales.police.uk
Ffon Symudol/Mobile: 07974244048

Annex 2 Transport Management Plan

Pell Frischmann

Foel Fach Wind Farm

Annex 2: Transport Management Plan

November 2025

10109372

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Ref. reference. Rev revision. Suit suitability.						

Prepared for

Foel Fach Wind Farm Ltd.

22-24 King Street
Maidenhead
Berkshire
United Kingdom
SL6 1EF

Prepared by

Pell Frischmann Consultants Ltd.

93 George Street
Edinburgh
EH2 3ES

Pell Frischmann

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1 Introduction

1.1 Purpose of the Report

Pell Frischmann Consultants Ltd. has been commissioned by Foel Fach Wind Farm Ltd. (the 'Applicant') to produce a Transport Management Plan (TMP) for the delivery of Abnormal Indivisible Loads (AIL) associated with the construction and development of Foel Fach Wind Farm, located to the northeast of Glan-yr-afon, North Wales.

This report has been prepared in accordance with instructions from the Applicant on the above project details. No liability is accepted for the use of all or part of this report by third parties. This report is © Copyright of Pell Frischmann Consultants Ltd. 2025 and the Applicant. No section of this report may be reproduced without prior written approval.

This document is indicative at this time and it is expected that an updated document will be required via planning conditions should the Proposed Development be consented and following confirmation of the exact candidate turbine and routing option. The report identifies the key points, issues and management proposals associated with the route that may require remedial works to accommodate the predicted loads. The design of any required remedial works, however, are beyond the agreed scope of works currently. It is the responsibility of the turbine supplier to ensure that the access route from the Port of Entry (PoE) to the Application Site (herein "the Site") is fit for purpose and that appropriate consideration for all road users has been made in accordance with the relevant health and safety legislation and ruling transport requirements.

Any required offsite works to facilitate the movement of AILs will be subject to a separate application and do not form part of the current Development of National Significance (DNS) application for the Proposed Development.

Where references are made to work by third parties, Pell Frischmann Consultants Ltd. do not accept any liabilities for these items or issues based upon them.

Whilst this report primarily features the requirements of those loads classed as abnormal under current legislation, it also contains elements relevant for the transport of other non-abnormal turbine components and materials.

This TMP is a live document and if the Proposed Development is approved, will be used in the development of the operational TMP and the TMP issued to AIL and non-AIL contractors. As such, it is important that continuity is provided in this approach to future proof road safety and to discharge Construction Design and Management (CDM) Regulation (2015) requirements to the client team and those authorities that influence the design of traffic management measures.

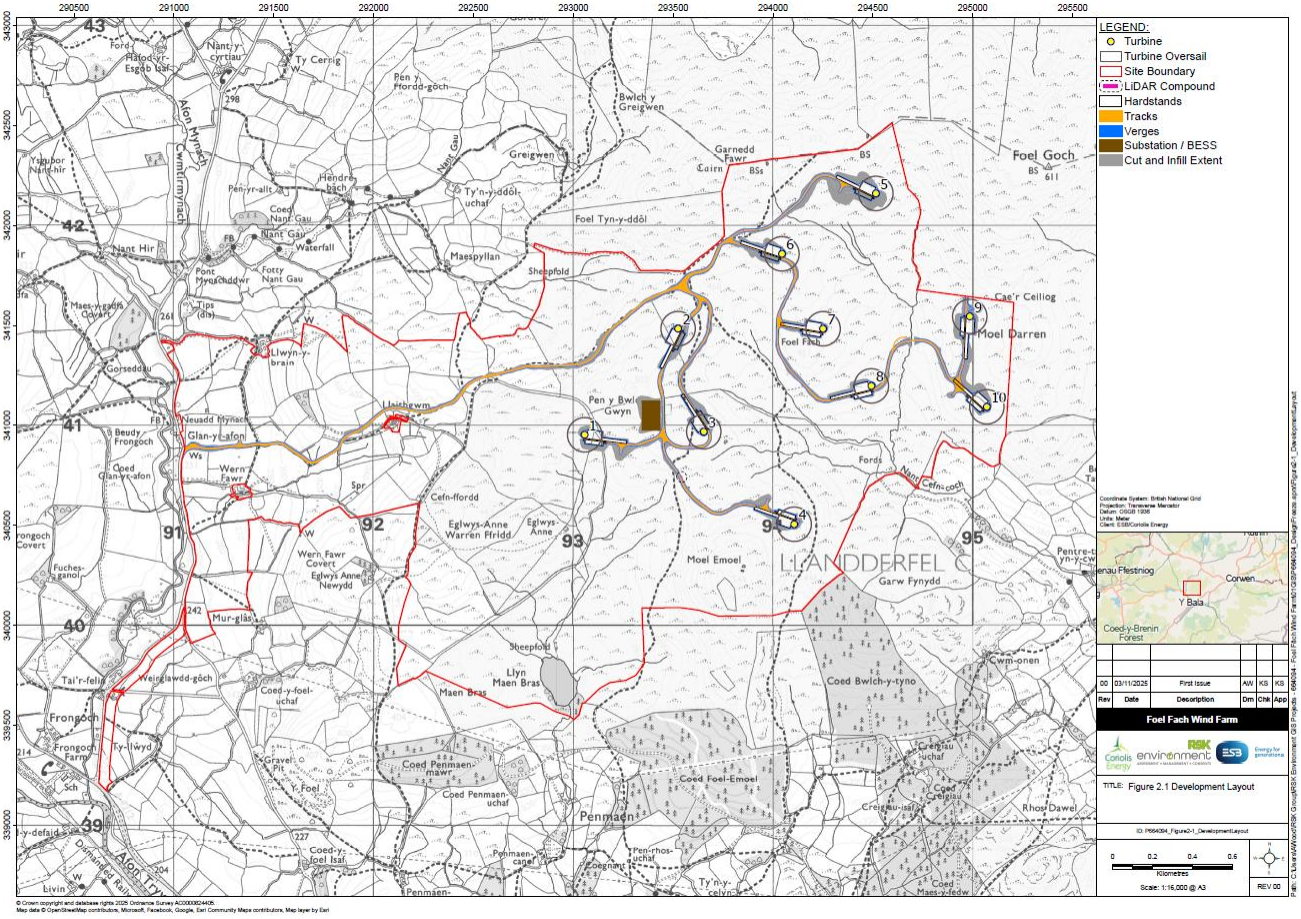
2 Proposed Development

2.1 Site Location

The Proposed Development is located on grazing moorland, approximately 3.1 kilometres (km) north-east of the town of Bala, Gwynedd, North Wales, within the administrative boundary of Gwynedd Council.

The general location of the Proposed Development is presented in **Figure 1**.

Figure 1: Site Location



The Proposed Development will comprise a total of ten wind turbines, with a maximum blade tip height of up to 220 metres (m) as well as an associated grid connection and infrastructure.

2.2 Candidate Turbine

The Applicant has indicated that they wish to consider the worst-case components from an Enercon E175 turbine with maximum tip heights of 200 m and 220 m for the AIL route assessments works and in relation to preparing this TMP. Pell Frischmann Consultants Ltd. has contacted Enercon for detailed information regarding the Enercon E175 turbine components however, this information was not available at this time. Therefore, a Nordex N175 turbine has been used for the purposes of this report, as the largest available turbine that fits within the design envelope.

The details of the components available at this time have been provided by Nordex and are detailed in **Table 1**. Information on tower sections for the Nordex N175 is not currently available.

Table 1: Turbine Component Summary

Component	Length [m]	Width [m]	Height / min. diameter [m]	Weight [te]
Blade	85.66	4.53	4.00	32.7

A detailed Route Survey Report (RSR) has been prepared and appends **ES Volume III, Appendix 11.1: Transport Assessment** as **Annex 1**. Within the RSR the worst case tower section has been assessed with the following dimensions 30 m x 4.8 m x 4.8 m.

The selection of the final turbine model and specification will be subject to a commercial procurement process following consent of the application. The actual dimensions may therefore vary slightly from those assumed as part of this assessment.

The TMP would be finalised once the turbine selection process had been completed.

To ensure this is undertaken, a planning condition will be applied requiring the production of a TMP and all works noted in it, approved by the various road authorities along the route.

It is likely that the turbines used on the Site will be delivered as up to 11 abnormal loads and would be escorted by the police in convoys of between two and three vehicles depending upon the view of the Police. Sections that do not classify as abnormal would not need a police escort and can be escorted by civilian escorts.

Indicative component details are noted in **Table 2.**

Table 2: Indicative Turbine Components

Component	Number of Components per Turbine
Rotor Blades	3
Tower Sections	5
Nacelle	1
Hub	1
Drive Train	1
Nose Cone	1
Transformer	1
Ancillary	1
Site Parts	0.2

All the trailers used in the transport process are specifically designed for the transport of components or feature custom modifications to suit loads. All trailers feature rear-wheel steering; nacelle and tower load adaptor trailers are also equipped with hydraulic lift capabilities to adjust ground clearances.

When not transporting components, the trailers are collapsed so that they do not exceed normal Heavy Goods Vehicle (HGV) dimensions.

The trailers are built to a high standard, and the tractor units are designed for heavy haulage. Regular checks are undertaken on the vehicles on a daily basis as outlined in later sections of the report. As such, the mechanical state of vehicles is kept at a very high level and breakdowns or malfunctions are rare.

Delivery of turbine components for this Site will be the responsibility of the selected turbine manufacturer. The manufacturers select specialised hauliers for the transport of these loads and details of the successful haulier will be made available at the appropriate time.

2.3 Proposed Abnormal Load Delivery Equipment

To provide a robust assessment scenario based upon the known issues along the proposed access routes, a combination of trailer types will be required, particularly for the blade loads.

To provide a robust assessment scenario based on the known issues along the access route, it has been assumed that all blades would be carried on a Dolly Clamp trailer, to reduce the need for mitigation in constrained sections of the route, shown in **Figure 2**

Figure 2: Blade Dolly Clamp Trailer

Where constraints are extreme, loads would be transferred onto a blade lifting trailer, shown in **Figure** 3 to reduce the amount of additional land required and to reduce the extent of associated physical improvements. This trailer can lift blades up to a maximum angle of 60 degrees to clear potential constraints.

Figure 3: **Blade Lifting Trailer**

Towers would be loaded onto a 4+7 clamp adaptor style trailer shown in **Figure 4**, whereas loads such as the hub, nacelle housing and top tower sections would be carried on a six-axle step frame trailer.

Figure 4: Tower Clamp Trailer

2.4 Legislative Background

The UK Government describes an AIL as *"any load that cannot be broken down into smaller loads without undue expense or risk of damage"*. AIL movements remain a reserved matter for the UK parliament.

There are four main pieces of legislation that cover AIL movements as defined by the UK & Welsh Government (WG).

- The Road Vehicles (Construction & Use) Regulation 1986;
  - This covers all aspects of the vehicle set-up from the weights and dimensions through to the braking system and environmental standards;
- The Road Vehicles (Authorised Weight) Regulations 1998;
  - This regulation sets the maximum permissible weight of the vehicle and axle loading of different vehicle categories;
- The Road Vehicles (Authorisation of Special Types) (General) Order 2003;
  - The STGO is for vehicles not covered by either of the above Regulations and covers wind turbine component delivery vehicles which are categorised as N3 for the tractor units and O4 for the specifically designed trailers. It states that the Police, the relevant highway and bridge authorities or the Secretary of State may need to be notified of vehicle movement, dependent on the size of the load.
  - Notifications can be submitted online through the 'National Highway's Electronic Service Delivery for Abnormal Loads (ESDAL) System' or in paper form using the BE16 form for Special Orders; and
- The Road Vehicles Lighting Regulation 1989 (Authorisation of Special Types) (General) Order 2003;
  - This regulation defines whether front, side and rear lamps and reflectors are mandatory and which ones are permitted and which are not permitted.

Applications for a 'Vehicle Special Order' (VSO) should be made to the Vehicle Certification Agency (VCA) and it is recommended that applications should be submitted at least 8 weeks prior to planned vehicle movements.

To support the movement of abnormal loads, the Police may be required to stop other traffic. In order to bolster existing powers, a Temporary Traffic Regulation Order (TTRO) will be required to cover the delivery period to allow the Police to stop and redirect traffic where necessary.

Wherever possible in this study, Pell Frischmann Consultants Ltd. has referred to specific WG guidance on the transport of abnormal wind farm loads.

2.5 Strategic Transport Management Plan

A strategic Transport Management Plan (sTMP) was prepared in 2012 by Renewables UK Cymru (RUK) to support AIL deliveries into the Technical Advice Note 8 (TAN 8), Planning for Renewable Energy Strategic Search Areas. This document was accepted by both the WG and Powys County Council as the agreed strategy for turbine delivery from the north into mid Wales.

The study identified strategic routes within the study area to be used by AIL associated with the construction of wind farm developments. The strategic route has a common section from docks in England, namely:

- M53 – A55 – A483 – A5 – A483 to Welshpool.

From Welshpool, the strategic route diverges into three separate Strategic Search Areas (SSAs), which are as follows:

- B4381 through Welshpool – A458 – SSA B (north);
- A483 to Newtown – A489 Llanidloes Road – A470 – SSA B (south); and
- A483 to Newtown – A489 Kerry Road – the Vastre – A483 – SSA C.

The sTMP has been proven for deliveries for Bryn Blaen, Tir Gwynt and Garreg Lwyd wind farms, with no adverse issues noted on the M53 and A55 sections, in the vicinity of Chester, common to the route used for this Site.

2.6 General Construction Traffic

An estimate of the traffic associated with the construction phase of the Proposed Development has been included in the Environmental Statement **(ES) Volume II, Chapter 11: Traffic and Transport** and in **ES Volume III, Appendix 11.1: Transport Assessment**.

Estimates have been made of the likely number and type of heavy vehicle movements including abnormal loads requiring access to the Site to deliver plant, equipment and materials for the various activities and stages of construction. Access by two-wheeled vehicles (e.g., motorcycles or bicycles) is not included in this assessment.

HGVs are required during the construction process for:

- Mobilisation – the initial delivery of plant and equipment to the Site;
- Daily service and deliveries – for example, the delivery of concrete; and
- Demobilisation - the removal of plant and equipment following construction.

An assessment of the potential traffic and transport effects associated with the construction and operation of the proposed wind farm has been undertaken. This assessment considered existing traffic data, the estimated volume of construction-related vehicle movements, and the application of mitigation measures such as an appropriate TMP and ongoing liaison with the relevant authorities. Based on these considerations, the residual traffic and transport effects are expected to be temporary in nature and have been assessed as **not significant** or likely to result in any lasting impact.

3 Access Strategy

3.1 Site Access Proposals

The Proposed Development will be accessed directly from one access junction on the B4501 at Glan-yr-afon. The access junction to the wind farm tracks will be designed to accommodate all predicted loads and traffic for both the construction and operational phases of the Proposed Development.

The proposed Site access junction can be seen in **Appendix 11.1.**

3.2 Port of Entry

As the loads are classified as Special Order, due to a rigid length in excess of 30 m, in accordance with the Water Preferred Policy, the Port of Liverpool has been considered PoE for the Site the route assessed within this report originates here. The port has sufficient quay and storage space and is well located for the strategic trunk road network. Loads can be offloaded by geared vessel or onshore mobile cranes, and this port has been used for the delivery of components for a number of wind farms and is therefore well-proven as being capable of dealing with AILs of the size considered in this report.

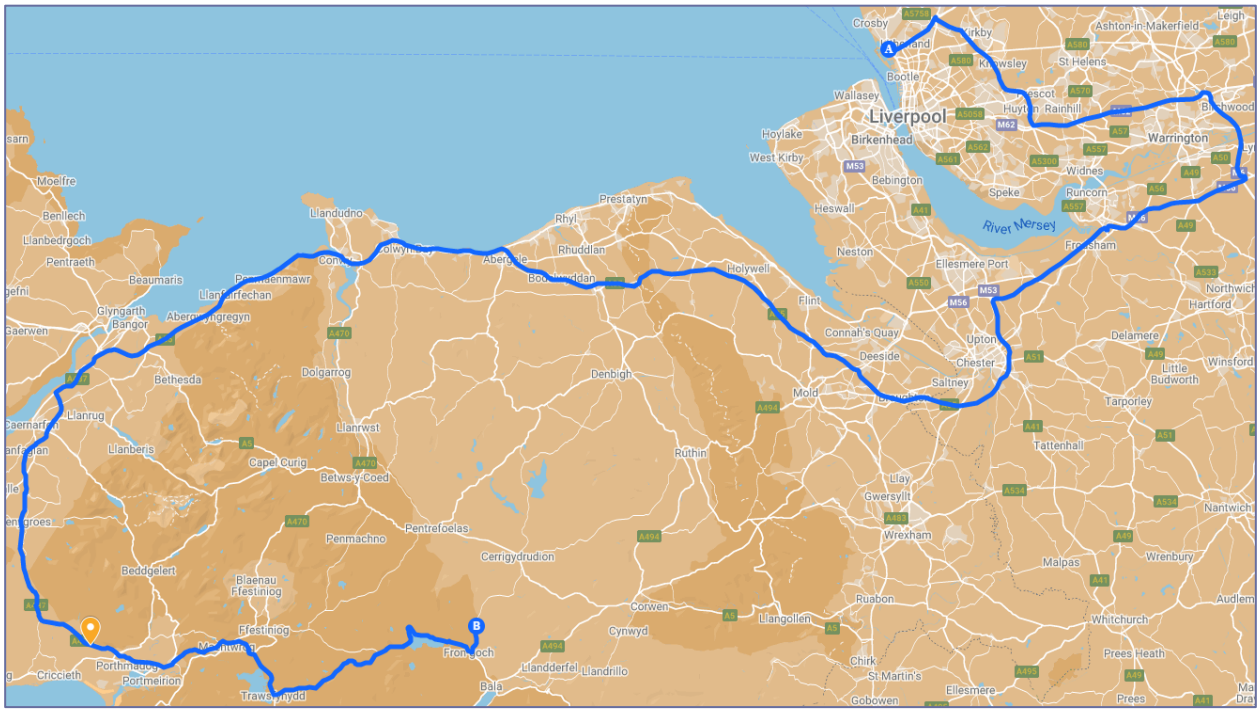
Birkenhead has been considered previously; however, it is understood that the part of the port proposed for landing components is now being considered for re-development and as such has not been proposed as the PoE for the Proposed Development at this time.

3.3 Proposed Access Route

The proposed access route to the Site is detailed below and shown in **Figure 5.**

- Loads would exit Port of Liverpool heading south and taking the first exit at the roundabout onto the A5036; eastbound before merging onto the A59 northbound;
- Loads would turn right at Switch Island Junction to join the M57 heading south-east;
- Loads would exit the M57 at Junction 1 to join the M62 eastbound;
- Loads would exit the M62 at Junction 10 to join the M6 southbound;
- Loads would exit the M6 at Junction 20A to join the M56 westbound;
- Loads would exit the M56 at Junction 15 to join the M53 southbound before merging onto the A55 southbound;
- Loads would exit the A55 at Junction 34 to continue on the A55 westbound;
- Loads would exit the A55 at Junction 10 to join the A4087 westbound at Caernarfon Rd Interchange;
- At the roundabout, loads would take the first exit onto A487 Y Felinheli Bypass;
- Loads would continue on the A487 before merging onto the A470 southbound;
- At Trawsfynydd, loads would turn left onto the A4212 eastbound;
- At Frongoch, loads would turn left onto the B4501 northbound; and
- Loads would enter the Site access junction at Glan-yr-afon.

Figure 5: **Proposed Access Route**



4 Access Constraints

4.1 Route Survey

A detailed Route Survey Report (RSR) from the port access gates through to the Site access junction has been undertaken and is provided in **Annex 1** of **Appendix 11.1**. This includes swept path assessments of the proposed route for the worst-case turbine components.

4.2 Blade Lifting Trailer

Given the constrained nature of the route from Penmorfa through to the Site, it is proposed that the blade lifting trailer would be used from the proposed transfer station at a suitable location off the A470, west of Penmorfa. Blade loads will arrive at the transfer station located on land secured by the Applicant, where they will be removed from the Dolly Clamp trailer and either be stored or fitted to the blade lifter trailers. The transfer between trailers generally takes up to 90 minutes per blade.

Given the likely timescales to transport the blades to the transfer station and to reload them, it is proposed that blades transit through villages along the A487 such as Penrhyndeudraeth at night when traffic volumes and pedestrian movements are low. When loaded with the blades in the upright position, the speed of the loads are between 5-10 miles per hour (mph).

Once on the blade lifter, it is assumed that the blade will be in the raised position at 60 degrees. Therefore, from this point onwards to the Site, all overhead utilities and tree canopy over the road and within the swept path should be cleared. Within villages along the route, all of the required mitigation, including the removal or rerouting of overhead utility lines, will have been undertaken prior to loads moving. Loads will pass through, potentially in a convoy of blade lifter trailers or individually.

Given that construction of the wind farm is likely to be several years from the date of application, further discussions with all relevant stakeholders will be undertaken to confirm the vehicle and convoy movements.

4.3 Traffic Management Areas

While mitigation works will be required to facilitate the delivery of AILs, it should be noted that large sections of the route comprise dual carriageway and consequently there will be no requirement to provide any temporary or new laybys through these sections. Sections of this route from the PoE have been used for the movement of AILs for other wind farm developments. At these locations, trailing traffic can pass the convoy, where the Police deem it appropriate.

To allow for contingency stopover points, it is suggested that the hard shoulder or existing breakdown laybys are used, and these are coned off for AIL use when required, with the coning operated by the convoy traffic management contractors.

Table 3 provides information for each road / route section on the proposed access route, highlighting potential Traffic Management Areas. These locations would be subject to further detailed assessment to confirm their suitability, based on convoy configuration and specific components being transported etc. as some of these would only be suitable for smaller AILs or vehicles travelling through to the Site in smaller convoys.

The locations of the potential traffic management areas are shown in **Annex** .

Table 3: Traffic Management Areas

Road / Route Section	Traffic Management
A5036	Dual carriageway, no temporary / new laybys required.
A59	Dual carriageway, no temporary / new laybys required.
M57	Dual carriageway, no temporary / new laybys required.
M62	Dual carriageway, no temporary / new laybys required.
A5063 / A59	Dual carriageway, no temporary / new laybys required.
M57	Dual carriageway, no temporary / new laybys required.
M62	Dual carriageway, no temporary / new laybys required.
M6	Dual carriageway, no temporary / new laybys required.
M56	Dual carriageway, no temporary / new laybys required.
M53	Dual carriageway, no temporary / new laybys required.
A55	Dual carriageway, no temporary / new laybys required.
A4087	• Point 1: Layby on south side of carriageway (https://maps.app.goo.gl/tJDhzpxJG2Eth6cf7) • Point 2 Layby on north side of carriageway (https://maps.app.goo.gl/Cox5cfGYChFyw3dg9)
A487	• Point 3: Layby south of Bryn-y-wean on east side of carriageway (https://maps.app.goo.gl/ZfEfpGHQqMdtj6vH6) • Point 4: Layby south of Bush Road on west side of carriageway (https://maps.app.goo.gl/sKvLY3yJNQjKD6sy8)
Caernarfon Bypass	• Along this section, the carriageway configuration alternates multiple times between dual carriageway in one direction and single carriageway in the opposite, switching direction at various points along the route. • Point 5: Layby on eastern side of carriageway south west of Penbryn Road overbridge (https://maps.app.goo.gl/U6TFZEVc4VddeKhs8) • Point 6 (layby on western side of carriageway, south west of rail line (https://maps.app.goo.gl/xDpz8o8sLNmBdxr38)
A487	• Point 7: Layby northwest of Penygroes (southbound) (https://maps.app.goo.gl/xoywBzGvtSGuCqddA) • Point 8: Layby northwest of Penygroes (northbound) (https://maps.app.goo.gl/pFfuJh9qXuAtwCmh7) • Point 9: Layby northwest of Nasareth (southbound) (https://maps.app.goo.gl/mkqrAMvs379agNEY9) • Point 10: Layby west of Nasareth (northbound) (https://maps.app.goo.gl/txZcQ54ce5ngTdWQ9) • Point 11: Layby / Bus Stop at Pant Glas (northbound) (https://maps.app.goo.gl/rnJdbAWgfvfXNdaf7) • Point 12: Layby (northbound) (https://maps.app.goo.gl/uk6TZHVdxrCNzivH6) • Point 13: Layby at Derwin Holiday Cottages (northbound) (https://maps.app.goo.gl/uk6TZHVdxrCNzivH6) • Point 14: Layby / Bus Stop at Glan-Dwyfach (westbound) (https://maps.app.goo.gl/GmmhBnyP6C8hX3np8) • Point 15: Layby west of Penmorfa (eastbound) (https://maps.app.goo.gl/S1Gs1HB62AXXDFsY6) • Point 16: Parking Bays eastern edge of Penforma (eastbound) (https://maps.app.goo.gl/vM1aHufvBrEifXkR7) • Point 17: Layby north of Porthmadog Eisteddfod Stone Circle (https://maps.app.goo.gl/27m5Rd4Z2BTGt1X79)
Porthmadog Bypass	• Point 18: Layby east of football grounds (eastbound) (https://maps.app.goo.gl/zpyRyuzX23gzVU6KA) • Point 19: Layby east of football grounds (westbound) (https://maps.app.goo.gl/P9oyFoeJsm5Dfm1H9)
A487	• Point 20: Layby at Penrhyndeudraeth Church (westbound) (https://maps.app.goo.gl/eR4d2CAgKSdeT5EP8) • Point 21: Land east of petrol station

Road / Route Section	Traffic Management
	(https://maps.app.goo.gl/A2h97uzDoySpvQCs9) • Point 22: Layby on north of A487 (eastbound) (https://maps.app.goo.gl/yXCzoFRK7dGPq3rt7) • Point 23: Parking area eastbound (https://maps.app.goo.gl/hSEiZWdyb1QYQ2va9) • Point 24: Parking area eastbound (https://maps.app.goo.gl/RjworCRYSHmBqTcW7) • Point 25: Layby at Plas Tan-y-bwlch (westbound) (https://maps.app.goo.gl/5KJc4bCnZD8rYQgR8) • Point 26: Layby at Plas Tan-y-bwlch (eastbound) (https://maps.app.goo.gl/NPj55NhX8PEivvnp6) • Point 27: Layby (eastbound): (https://maps.app.goo.gl/3Qvj4bcrVxn3B2518)
A470	• Point 28: Layby east of A487 (south-eastbound) (https://maps.app.goo.gl/yukD7McaF1yb63Jh6) • Point 29: Layby east of A487 (south-eastbound) (https://maps.app.goo.gl/rQWRuDQjYd6DBwji8) • Point 30: Layby at Blaenau Ffestiniog Cemetery (north-westbound) (https://maps.app.goo.gl/Sn4ghxsFz6dB3Ssd7) • Point 31: Layby / Bus Stop at Trawsfynydd Power Station (southbound) (https://maps.app.goo.gl/AKvPrZF2orvD4Lxs6) • Point 32: Layby south of Pen Y Gareg Street (southbound) (https://maps.app.goo.gl/Vyd6T2rGFEFqdUE66)
A4212	• Point 33: Layby west of Nant yf Helfa (eastbound) (https://maps.app.goo.gl/Xqndy1tFVEag79fe7) • Point 34: Layby east of Nant yf Helfa (westbound) (https://maps.app.goo.gl/tdpuhmUtGMxC7PK58) • Point 35: Layby at Ally y Gelli (westbound) (https://maps.app.goo.gl/Mykhyq7uSEKuQCvr9) • Point 36: Layby at Fridd Bach (westbound) (https://maps.app.goo.gl/chhZTSs3KKk6McSz8) • Point 37: Layby at Fridd Bach (westbound) (https://maps.app.goo.gl/PM7qe1FVojBknkQu9) • Point 38: Parking area Coed Tyddyn (westbound) (https://maps.app.goo.gl/XyWpW5HLV9bc9Vun7) • Point 39: Layby at Frongoch Internment Camp (southbound) (https://maps.app.goo.gl/ugu45jt8fQ6iCVYu5)
Location Plan: https://www.google.com/maps/d/edit?mid=1rwa8r1WSVdDPsymkhQCglxZlfUbmRVE&usp=sharing	

4.4 Initial Structures Review

A weight review has been undertaken via the ESDAL (Electronic Service Delivery for Abnormal Loads) contacts database using the National Highways website www.esdal.com. All the relevant ESDAL contacts are detailed in **Table 4** and all have been contacted to ascertain if there are any relevant constraints that should be noted.

Table 4: ESDAL Consultees

Organisation	Email Address
Sefton Metropolitan Borough Council	abnormal.loads@sefton.gov.uk
Merseyside Police	commercial.vehicle.unit@merseyside.police.uk
National Highways North West Region	nwabnormalloadsenquiries@nationalhighways.com
Lancashire Police	AbnormalLoads@Lancashire.police.uk
Greater Manchester Police	abnormal.loads@gmp.police.uk
Cheshire Constabulary	abnormal.loads@cheshire.police.uk
North Wales Police	abnormalloads@northwales.police.uk
North and Mid Wales Trunk Road (NMWTRA)	abnormalloads@nmwtra.org.uk
Denbighshire County Council	abnormal.loads@denbighshire.gov.uk
Welsh Government	abnormalloads@gov.wales
Gwynedd Council	LlwythAbnormal@gwynedd.llyw.cymru
Network Rail	AbnormalLoadsEnquiries@networkrail.co.uk
Historic Rail Estate	rsgbrb@jacobs.com

Responses from the ESDAL consultation are included in **Annex** , where received. These will be reconfirmed once the exact turbine model to be used on the Proposed Development has been selected following the commercial tendering process, post consent.

4.5 BE16 Permits and Movement Orders

The BE16 permits and movement orders for the movement of the convoys will be applied for by the haulier, once selected by the successful turbine supply firm. The application will detail the movement dates and will confirm any potential road works conflicts and include a more detailed weight review and assessment with all of the ESDAL contacts noted in the RSR.

Movement orders will be applied for by the haulier following the granting of the BE16 permits and will be agreed with the Police. This will agree the convoy composition and dates / times of transit.

4.6 Use of Banksmen

All steering of loads using manual steering will be undertaken by civilian escort drivers. A suitably qualified and approved contractor will support the manoeuvring of loads in constrained sections. The lead traffic management operative will be in contact with the lead escort driver to arrange communications.

The traffic management contractor will also be required to erect warning road signs (at locations advised by the road agencies), to remove cones from temporary use areas and to remove items such as bollards from the roundabout islands.

4.7 AIL Movement Co-ordinator

The turbine supplier will appoint their haulier in advance of the movements occurring. The haulier will make the various applications for the AIL movements and shall appoint its senior driver or other responsible person as their Movement Co-ordinator.

The Movement Co-ordinator will act as the main point of contact for the Council, NMWTRA, trunk road officers, National Highways, planning authorities and the Police. The Co-ordinator will be in place two months prior to loads moving and will be responsible for the implementation of the TMP and for any changes and/or updates.

4.8 Temporary Traffic Regulation Order

A TTRO will be applied for in advance of the convoy movement to provide further powers to the Police to allow them to escort the abnormal load convoys.

On the trunk road sections of the route, it is likely that existing rolling trunk road orders would be used, and this will be confirmed with the WG prior to the mobilisation phase.

A separate TTRO will be made for the non-trunk road sections of the route with the local authority and will be made at least six months in advance of the first convoy to allow for test runs, as well as the full deliveries.

4.9 Road Condition Review

A before and after condition review of the road infrastructure changed or altered following use by abnormal loads will be undertaken before and after deliveries. Any damage caused will be repaired at the Applicants cost following the post-delivery inspection.

5 Convoy Movement Strategy

5.1 Convoy Management Strategy

The AILs would be transported in a convoy with Police escorts. The convoy would be made up of the following vehicles:

- 3-4 Police outrider motorcyclists, providing close and advance escort protection.
- 1 police command vehicle, providing a control point for the outriders, located at either the front or rear of the convoy, depending upon movement instructions.
- 1 traffic management vehicle (operating in specific sections such as those in urban areas to provide additional traffic management support to the Police) providing traffic management support to the convoy. Please note that this vehicle would be manned by specifically trained personnel to assist with close convoy traffic management. Other traffic management teams could be stationed along the route to assist at specific points where socket signage, etc. is required.
- 2-3 abnormal loads.
- 1 civilian escort. This vehicle is located behind the last abnormal load and provides steersman support to the AIL drivers.

The convoy is controlled by the Police when on the public highway. All movements are under their instruction.

The Police generally look to keep the convoy moving as much as possible and will operate a “rolling roadblock”, by continuing ahead of the convoy and halting oncoming traffic where and when required. Management of oncoming traffic will only be necessary in constrained sections of the route.

Unconstrained sections, where oncoming traffic will be able to pass safely whilst the convoy is moving are referred to as “free running”. Sections where at specified points oncoming traffic will be held by Police to enable the convoy to navigate a constrained length of carriageway are referred to as “held running”.

Oncoming traffic at junctions will be held back by Police escorts to allow the safe passage where loads are manoeuvring. The motorway and dual carriageway sections of the route will not present significant issues for other road users. The loads will remain in Lane 1 or hard shoulders where available. Other road users will be able to safely pass the loads.

Where loads project outside of dual carriageway lanes, the Police have previously advised that they would not wish passing traffic to pass. To overcome this, the Police have indicated that over-sail of hard shoulders / verges is permitted, or that the convoy would stop to allow overtaking where the officer in charge deems it prudent.

5.2 Traffic Management

Hold points are predominantly required at locations wider loads may come into conflict with oncoming HGV traffic. The Freight Transit Association (FTA) advises that an average HGV is 2.55 m wide in the body. The driver’s side wing mirror would account for a further 0.1 m, requiring a minimum clear passage of 2.65 m, assuming the offside mirror can over-sail the verge.

The operation of the hold point would be as follows:

- The advance Police outrider would move ahead of the convoy to the hold point location;
- At the hold point, the outrider would stop oncoming traffic under existing Police powers and the TTRO powers;
- The convoy would progress to the hold point where it would either pass or stop, depending upon the need to release following traffic;
- The held oncoming traffic would then be released under Police control;
- If required, oncoming traffic would be held to allow the release of trailing traffic; and
- The convoy would continue.

Traffic conditions on the day may not require the use of all hold points. The number of hold points provided represents a worst-case example and officers on the day would be free to reduce the points using their judgement of traffic flows.

Strategic layover points to take the entire convoy off the road have been included to allow for driver breaks, and strategic traffic management. There will likely be a requirement to modify these locations to accommodate the larger components and for blade loads, and the configuration of the convoy may need to be changed to those undertaken for shorter blade lengths. It is proposed that this be confirmed post-consent and in full consultation with the Police and WG.

5.3 Delivery Timings

The timings of deliveries have been estimated for non-blade and blade loads. This is due to the changeover from the Dolly Clamp trailer to the blade lifting trailer. Further detail on timings will be confirmed post consent once the turbine selection had been confirmed.

Table 5: Indicative Convoy Timing (Non-Blade Loads)

Location	Time (Non-Blade Loads)	Comments
Depart Liverpool	09:30	Loads will depart the port at 09:30 under escort by Cheshire / Mersey Police.
M6	10:00	N/A
M53, north of Chester	10:40	N/A
A55 at Broughton (arrive)	11:45	Allow 60-minute break from drivers to comply with working time directives and for Police force change to Dyfed-Powys officers.
A55 at Broughton (depart)	12:45	
A4087 at Junction 10	13:45	N/A
A487 (Potential Transfer Station near Penmorfa) Arrive	14:15	Non blade loads to proceed without stopping
Penrhyndeudraeth	14:22	Village Centre
A487 / A4212 Junction	14:40	N/A
A412 Frongoch	15:00	Village Centre
B4501 Site Access Junction	15:05	N/A

The above table has been prepared to show indicative timings for the loads travelling from the PoE through to the Site. Changes to this can be implemented where necessary to avoid specific locations at certain times, for example Frongoch, where the loads would arrive close to school pick up time. As such, changes in the departure time from Broughton could be implemented or traffic management areas to the north of the town used to hold the loads / convoy until such time as it is deemed suitable to continue on to the Site.

The blade lifter operates at a slower speed than the tower deliveries due to the higher centre of gravity. Consequently, a separate set of journey timings has been undertaken. Given the speeds estimated, it is suggested that these movements are undertaken in the early morning, minimising the potential effect on other road users. With this in mind, use of the blade lifter will require the use of two days for deliveries per blade, with blades being transferred at the proposed transfer station on the A487 the day before as per the schedule in **Table 5.**

Further discussion with the Police will be undertaken to review timings for the blade lifter, with travelling at night also being considered.

The blade transit times from the blade transfer area located at the proposed transfer station, west of Penmorfa is provided in **Table 6.**

Table 6: Indicative Convoy Timing (Blade Loads)

Location	Time (Blade Loads)	Comments
A487 (Potential Transfer Station near Penmorfa) Depart	05:00	Depart in the early morning
A487 Minford Roundabout, Penrhyndeudraeth, Arrive	05:23	Blade elevated for the most part, with sections of blade lowered to negotiate overhead structures
A487 Porthmadog to Miniford Roundabout	05:40	Blade lowered
A487 Mniford Roundabout to A487 north of Ceunant Llennyrch Nature Reserve	05:54	Blade lowered
A487 north of Ceunant Llennyrch Nature Reserve to A470 Junction	06:42	Blade elevated
A487 / 470 Junction to A4212 Junction	07:02	Blade lowered
A487 / A4212 Junction to A4212 Capel Celyn	07:52	Blade lowered for the most part, some sections of blade raised to avoid over-sail
A4212 Capel Celyn	08:05	Blade elevated
A4212 Capel Celyn to B4501 Junction	08:25	Blade lowered
B4501 Junction to Site Access Junction	08:46	Blade elevated

The timings would be controlled by the Police and the details provided are an estimate only at this time.

A review of timings will be undertaken once delivery dates have been established to ensure that the proposed journey times will be conducted in daylight hours (unless specific agreement is reached on nighttime deliveries for specific components) and will have a sufficient safety margin. In addition, they will be scheduled as necessary to avoid any particular location and times as necessary, for example school pick up / drop off times.

A review of sensitive locations and journey times will be agreed with the haulier in the finalised TMP, with convoys avoiding peak hour times on the road network.

5.4 Queue Delays

Delays created by wind farm deliveries on routes such as that proposed are generally not unreasonable and no worse than those incurred by the movement of agricultural vehicles or static caravans, both of which regularly use sections of the proposed route, and neither of which are subject to the restrictions that wind turbine loads are placed under.

The temporary inconvenience that could be caused by delivery vehicles must be viewed in the context that the delivery period is restricted to no greater than 20 weeks and is a one-in-40-year event.

During actual deliveries, careful monitoring of trailing traffic will be made by the Police escort who will judge when the convoy is to pull over to allow following traffic to pass. The Police will also review the likely conflicts between the convoy and oncoming traffic where constraints exist. It is suggested that the convoys operate outside the peak times, preferably in the morning to reduce potential conflicts with other road users. Given that the Police will have the final say on convoy movements, it is difficult to further estimate with any degree of certainty the level of delay to other road users at this stage, save to say that any such delay will clearly be limited and well within national guidance[1].

5.5 Advance Warning Signs

Advance warning signs (dual language for those located within Wales) would be installed on the approaches to the affected road network. Temporary signage advising drivers that AILs will be operating could be erected on

[1] Welsh Government Procedure & Advice Guidance (PAG) Welsh Government Motorway and Trunk Road Network 'Pulling Together' Best Practice for Transporting Abnormal Loads in Wales

the non-dual carriageway sections of the route and the roads leading from the PoE. Signs such as the examples shown in **Figure 6** could be installed to help assist drivers and pedestrians.

Figure 6: Indicative Information Signs (Left Vehicular / Right Pedestrian)

The purpose of this type of vehicular signage is to help improve driver information and allow drivers of oncoming traffic to consider proceeding to the nearest convenient passing bay (when directed to by the Police or escorts) or breaking their journey until the convoy has moved on.

The temporary pedestrian warning signs would be erected within urban areas such as Penrhyndeudraeth and Frongoch to alert pedestrians of the proposed loads. The time and date section of the sign could be written in marker pen so as to allow re-use of the sign during the life of the project. The signs would be fixed by means of cable ties (or similar) to existing street furniture or fence posts.

5.6 Public Information

Information on the movement of abnormal load convoys will be provided to local media outlets to help assist the public. Information could be provided to local newspapers and radio stations. These may include:

- BBC Radio Wales;
- BBC Radio Cymru;
- Heart North West Wales / Heart South Wales; and
- The County Times.

It is expected that this level of information will make residents aware of convoy movements and help reduce any potential conflicts.

Pell Frischmann Consultants Ltd. also suggests that the Applicant may wish to consider producing a local newsletter for distribution to properties along the most affected sections of the proposed access route, advising of convoy movements and the measures put in place to ensure the safe and efficient operation of the road network.

Subject to Police approval, it may be possible to provide convoy movement updates on the Police X (previously Twitter) feed. Consultation with the Police will be held on other forms of communication that could also be utilised.

6 Traffic Management Plan

The TMP is, by definition, is a live document and should be updated on a regular basis to reflect changes in road, load and operational conditions that may develop over the delivery period.

In addition to the finalised TMP, a condensed version known as a Driver Information Pack (DIP) will be provided to AIL drivers that sets out all the operational requirements such as:

- Welfare arrangements;
- Incident plans;
- Requirements for Toolbox Talks;
- Weather and road condition checks;
- Safety equipment requirements; and
- Other pertinent safety briefing material.

6.1 Daily Initial Checks

Before the convoys depart the PoE, the lead convoy driver will check weather and traffic conditions and advise colleagues through a “Toolbox Talk”. The following websites provide relevant weather and traffic updates:

Table 7: Daily Initial Check Sources

Traffic updates	Weather conditions
www.traffic-wales.com	www.metoffice.gov.uk
www.theaa.com/traffic-news/index	www.bbc.co.uk/weather
www.bbc.co.uk/travelnews	www.uk.weather.com
www.transportdirect.com	www.weatheronline.co.uk
www.rac.co.uk	

6.2 Potential Urban / Built Up Area Conflict Points

The urban areas along the route pose different challenges for the abnormal loads. Whilst the vehicle speeds will be less than those in the rural or motorway sections of the route, there are more potential conflicts with other road users to be aware of. These include:

- Pedestrians and cyclists;
- Local vehicular traffic;
- Parked vehicles;
- Side junctions, and
- Street furniture.

Within the urban / built up areas, the convoy escorts and other loads will need to be aware of all road and footway users at turn sections within the route.

6.3 Daily Management Updates

Daily updates to the general convoy management will be provided at the daily Toolbox Talks, where drivers and escorts will be fully briefed on the specific requirements of the convoys on that day. During these sessions, the following checks will be made:

- That staff are aware of the TMP and have a copy of the latest version of the DIP in the cab.
- That all staff have the appropriate licences, safety equipment and clothing.
- That all radios and mobile telephones are fully charged and that the correct channels are known.

- That the convoy is aware of its legal responsibilities for the country of operation.
- That drivers are briefed on welfare issues, including provisions for sleep and rest during the day.
- That the convoy is aware of client, haulier and turbine supplier health and safety requirements and method statements.
- That all staff have received an induction on Site rules before entering the Site and that induction is undertaken immediately upon arrival. Details of the induction process are to be provided by the main contractor to the haulier before loads commence.

6.4 Communications Strategy

In order to ensure effective communications during transit, all vehicles within the convoy will be fitted with Citizens Band (CB) radio equipment. The CB units on the transporters will be hard-wired to reduce the risk of power failure during transit. All escort vehicles will be fitted with hand-held battery-powered CB radio sets. Spare sets should be carried to allow communications with the Police during transit, if the Police request it only. In addition to the CB sets, all vehicles will be fitted with hands free mobile phones, to allow contact with third parties without CB devices and that would also act as an alternative form of communication in an emergency. Mobile phones will only be used when stationary.

There will be a communication protocol, between the escorting Police officers and the emergency services so that in the case of a blue light emergency, the convoys would be diverted to the nearest lay-by / hold point area.

In the case of emergency vehicles that need to pass the convoy en-route to a third party emergency, the escorting Police will be informed by radio of the incident and the requirement for vehicles to pass unhindered. At that time, a Police escort vehicle, which is likely to comprise a motorbike, will travel ahead of the convoy to the next convenient holding point(s) at which the convoy could be manoeuvred such that clear passage can be afforded to the emergency vehicle. In the unlikely event that such an area is a considerable distance away, the emergency services will be informed of this and a decision taken concerning the necessity to reroute the emergency vehicle(s). Alternatively, once a sufficiently wide area has been reached, the Police escort will marshal the AIL convoy such that safe and speedy passage is afforded to the emergency vehicle.

This entire process will be controlled by the escorting Police officers, in contact with the emergency services control centre.

6.5 Contingency and Incident Plans

Contingency details for incidents such as tyre punctures, breakdowns and accidents are described below and should be observed. In all situations the safety of personnel and the public is paramount and reasonable steps should be undertaken to ensure safety at the Site. In the event of an incident, it should be reported to the appropriate person immediately.

These items are relevant for both abnormal and non-abnormal loads. Where the Police are escorting, their instructions will take precedence and the lead Police officer must be informed should an issue on transit occur.

In the event of vehicle breakdown or incident the following details from The Highway Code must be observed:

- Try to remove the vehicles off the road if possible. On the motorway / dual carriageway, if possible, depart at the nearest exit or service area. If it is not possible to depart the motorway, pull onto the hard shoulder as far left as possible.
- If on a dual carriageway, try to stop near to an emergency telephone.
- When stopped, close the convoy up to reduce the length where possible.
- Warn other traffic by using hazard warning lights if the vehicles are causing an obstruction.
- Drivers should depart using the left-hand side door. Unless staff are threatened by their situation, all staff should depart the vehicles.
- Use appropriate Personal Protective Equipment (PPE) at all times when outside the vehicle.

- Place a warning triangle on the road at least 100 m behind the last convoy vehicle on the same side of the road. Use the warning cones and flares carried in the escorts to protect the end of the convoy by creating a diagonal around the back of the last vehicle. Always take great care when placing or retrieving them. The Highway Code indicates that a warning triangle should not be used on motorways.
- Consult with the Police escorts to identify what additional warning devices should be deployed.
- Keep sidelights and beacons on.
- No staff should stand between the convoy vehicles and oncoming traffic. Staff should not stand between vehicles in the convoy. Staff should be located at locations where all road users can see them.
- Staff should wait on the verge and where barriers are provided, stay behind them.
- In the event of injuries, do not move injured people unless they are in immediate danger from fire or explosion. Staff must not remove a motorcyclist's helmet unless it is essential to do so and should be prepared to give first aid if appropriately trained.
- In the case of injuries, all staff must stay at the scene until the emergency services arrive.
- In the event of a collision which causes damage or injury to any other person, vehicle, animal or property, the convoy must stop, provide contact details and addresses, provide vehicle registration details to third parties. The police escort should be informed and the incident reported within 24 hours to the local police station.
- In the event of a collision, all staff should obey directions from the escort Police Officers or attending officers.
- In the event of a breakdown, the nature of the breakdown should be reported to the indicated assistance provider. Obtain advice from the haulier Project Manager.
- In the event of a burst tyre the appropriate repair provider should be contacted to come and replace the damaged item. Staff should not attempt to replace any HGV tyres themselves although, if possible, the HGV should continue to the next lay-by if safe to do so in order to reduce delays. A spare wheel can be carried in the escort vehicles to be fitted by a qualified technician to expedite the process.

Where the Police are escorting, their instructions will take precedence, and the lead Police officer must be informed should an issue on transit occur. To ensure the minimum delay and inconvenience, the turbine supplier has recovery agreements set up with suitable contractors along the route.

For minor vehicle faults, repairs could be made at the roadside or existing laybys as per any other road user, with the Police escort helping divert traffic around the temporary restriction along with the traffic management team supporting the convoy. This provision is far in excess of what other HGV users would be able to deploy in an emergency.

In the event of the Police being required for an emergency, the convoy would be stopped at the nearest safe location and the civilian and traffic management contractor deployed to allow traffic to pass in safety using stop / go boards until the Police returned. Such occurrences where all Police officers depart a convoy are exceptionally rare, if not unheard of. It is more likely that the Police escort numbers would reduce, and the convoy continue with a smaller escort.

6.6 Third Party Accident / Breakdown on the Route

In the event of a third-party accident or breakdown on the delivery route, ahead of the AIL convoy, it may be necessary for the convoy to be slowed or temporarily halted until safe passage can be assured. The Police escort would take control of the convoy and monitor manoeuvring of the convoy into a safe location, which would generally comprise the nearest suitable emergency layby or hard shoulder. The convoy would be held at this location until the highway ahead was judged by the police to be sufficiently clear to enable safe passage of the convoy.

Should it be required for loads to be temporarily halted, traffic in the vicinity of the convoy will be marshalled by a combination of the Police and civilian escorts.

If it becomes necessary to halt an AIL convoy overnight, the convoy will be moved to occupy a nearby lay-by, or a series of lay-bys. Security staff will be present to ensure security of loads overnight and temporary signage will

be erected, where necessary, to warn advancing motorists of the presence of the AIL or convoy. Where necessary on safety grounds, traffic will be controlled by means of Police escort staff.

6.7 Equipment Requirements

Each of the convoy vehicles must be suitably equipped with hazard warning devices to warn all other road users. All the tractor, trailer and escort vehicles operating on the project must have the following:

- Tractor units to have beacon bars on the roof and 3M reflective (or similar) markings on both sides
- Trailer units to have amber beacons on the rear with 3M reflective (or similar) markings on both sides
- All escort vehicles will have beacon bars on the roof, with 360 degree motion for all round visibility, and 3M reflective (or similar) markings, and
- Certified cargo lashing straps are to be used at all times. Certification must be carried within the cab and made available for inspection upon request.

All hazard warning equipment must be checked and cleaned at the start of each day. Additional cleaning of the warning equipment may be required throughout the day and must be undertaken when required.

All escort vehicles will carry the following equipment:

- 8 x Reflective Road Cones;
- 1 x Flash Light;
- 1 x Spare High-Vis Waistcoat;
- 8 x Flare Alert Beacons;
- 1 x Auxiliary Rechargeable CB Radio;
- 1 x Spare Hard Hat;
- 2 x Warning Triangles;
- 1 x Fire Extinguisher (dry powder);
- 1 x pack of Disposable Dust Masks;
- 1 x Spill Kit;
- 1 x Van / Truck First Aid Kit;
- 1 x Safety Spectacles;
- 1 x Emergency Hammer; and
- 1 x Roll of Barrier Tape.

All relevant personnel must have the appropriate PPE. All PPE clothing must be “CE” marked to show it meets the European standards and should be appropriate for use in Motorway situations (i.e. must be full coats with reflective bands on the arms). Drivers must be issued with:

- Hard hat (within certification date);
- High-Vis (jacket / coat and trousers);
- Lace up steel toe capped safety boots; and
- Gloves.

6.8 Co-ordinator Role

To provide a contact between the haulier, developer and stakeholders, a Travel Co-ordinator will be appointed by the turbine supplier firm to act as a conduit for information between all interested parties and to make the lines of communication clear and efficient.

The Co-ordinator would liaise with the local authorities to ensure wherever possible, that AIL traffic did not coincide with special events where traffic flows may be sensitive along the route.

6.9 Dates of Movement

The dates for actual movements cannot be practically included in the TMP prior to planning consent being made. In addition, there are many other variables that are associated with AIL movements, including, but not limited to:

- Availability of the Police (not generally known until at least three weeks to loads are due to move);
- Availability of the Site to accept loads (weather and progress dependent);
- Availability of the haulier and their resourcing plan (generally set in discussion with the Police approximately 3 weeks to the start of movements); and
- Weather conditions on the day (loads would not be moving in adverse conditions).

For these reasons, it is not possible to provide a definitive list of dates when loads will be operating at present or a schedule of load movements.

Deliveries are expected to operate on the network Monday – Saturday, with no Sunday movements during the delivery period, consistent with previous agreements with the Police on other projects.

When date details are more confirmed, the Applicant will provide a schedule to all relevant stakeholders detailing the movements. Similar details will be provided by the haulier via the BE16 and Movement Order process.

7 Summary

Pell Frischmann Consultants Ltd. were commissioned by Foel Fach Wind Farm Ltd. to produce a Transport Management Plan for the delivery of abnormal loads associated with the proposed Foel Fach Wind Farm development.

This report identifies the key points and issues associated with the potential access route. It is the responsibility of the wind turbine supplier to ensure that the access route from the PoE to the Site is fit for purpose and that appropriate consideration for all road users has been made in accordance with relevant health and safety legislation and applicable transport regulations.

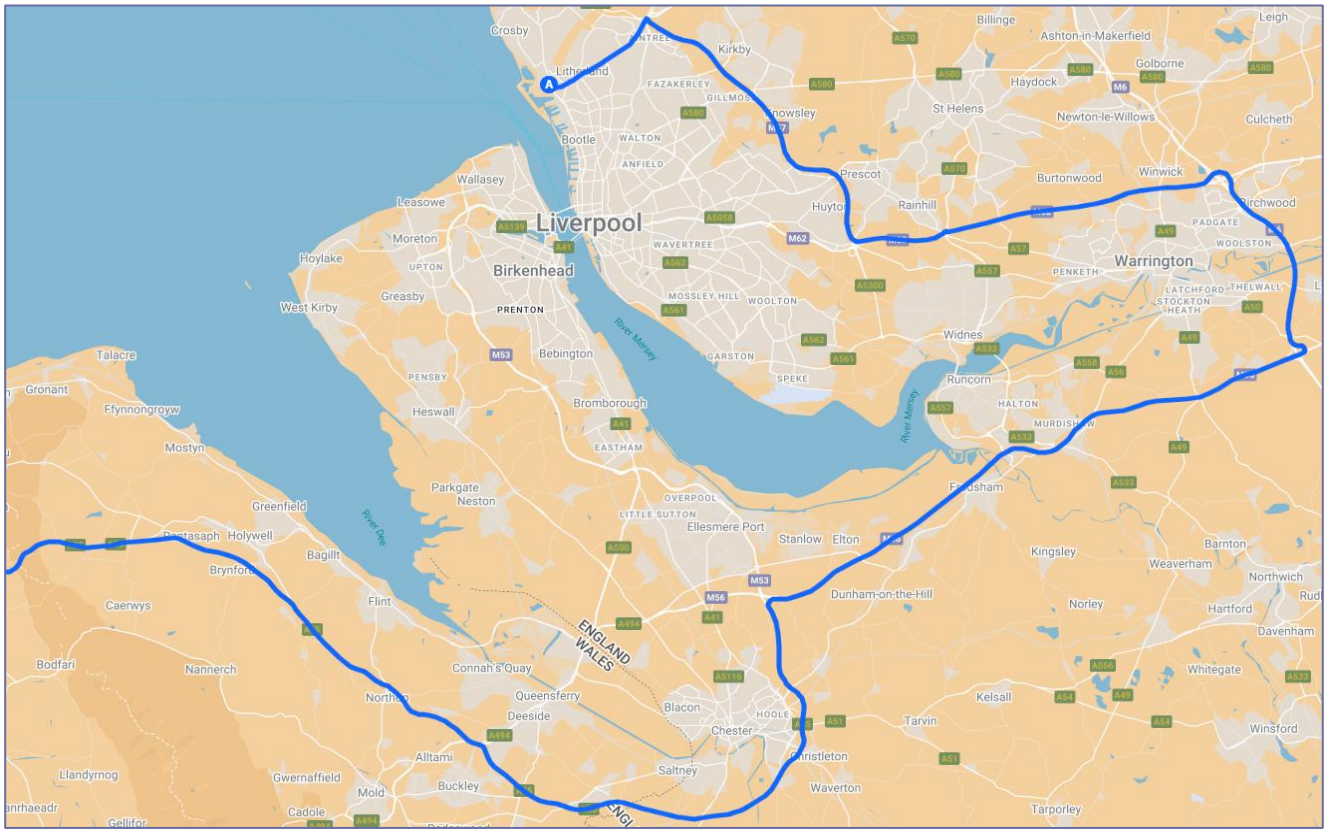
The access review has been undertaken from the Port of Liverpool through to the Site access junction. The access route is suitable for the movement of the anticipated loads, although careful manoeuvring will be required through a number of sections along the route and into the Site access. It is proposed that subject to the Proposed Development being granted planning permission the assessed route will be progressed and used for the delivery of AILs.

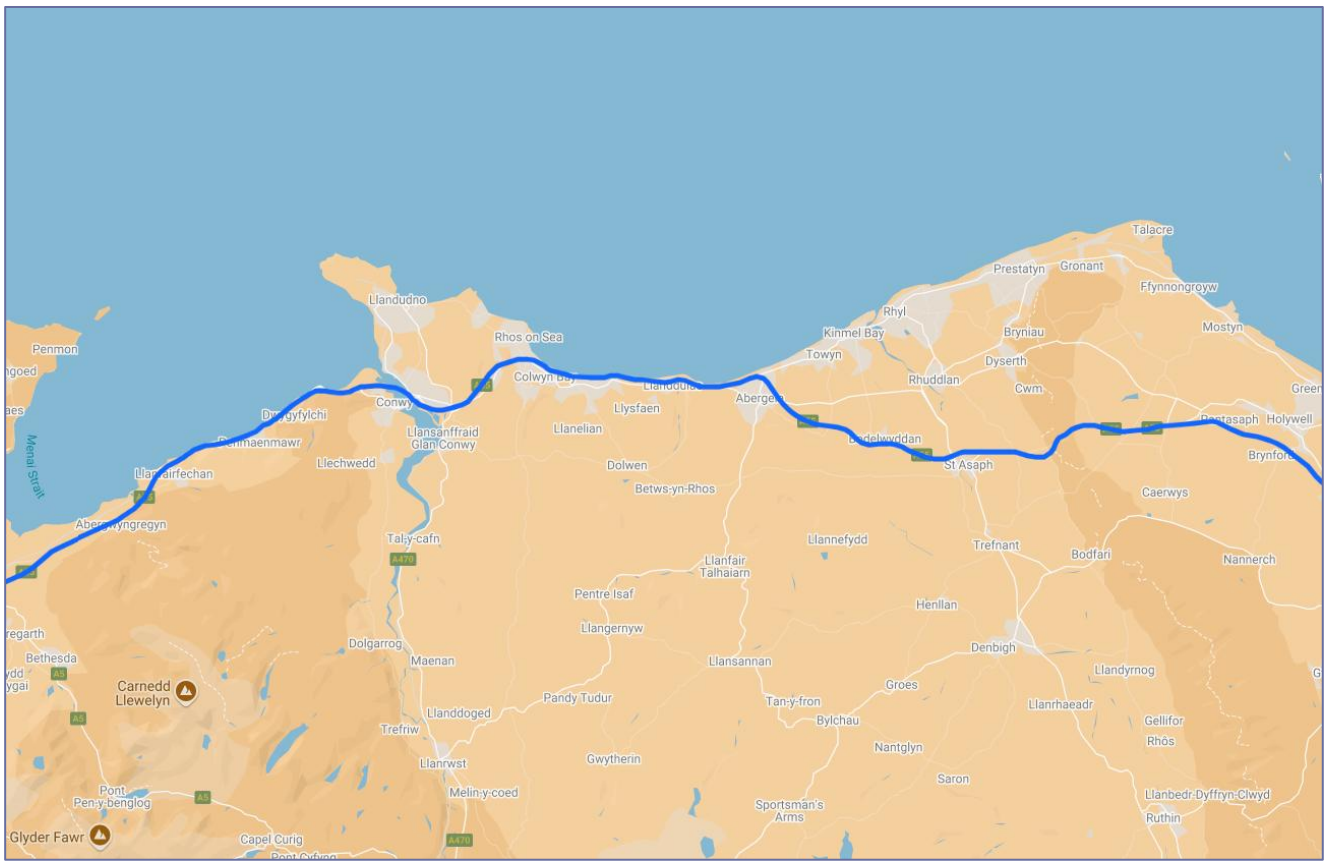
A series of operational measures have also been detailed to further aid the delivery of equipment and to minimise the impact of convoys on the network. These include the provision of warning signs and incident contingency plans.

The temporary inconvenience that could be caused by delivery vehicles must be viewed in the context that the delivery period is restricted to a one-in-40-year event. Police escorts, assisted by civilian escorts, will also ensure road user safety.

Annex 2.1 – Potential Traffic Management Locations

An electronic version of these plans can be found here: Location Plan:
https://www.google.com/maps/d/edit?mid=1rwa8r1WSVdDPsymkhQCglxZlfUbmRVE&usp=sharing

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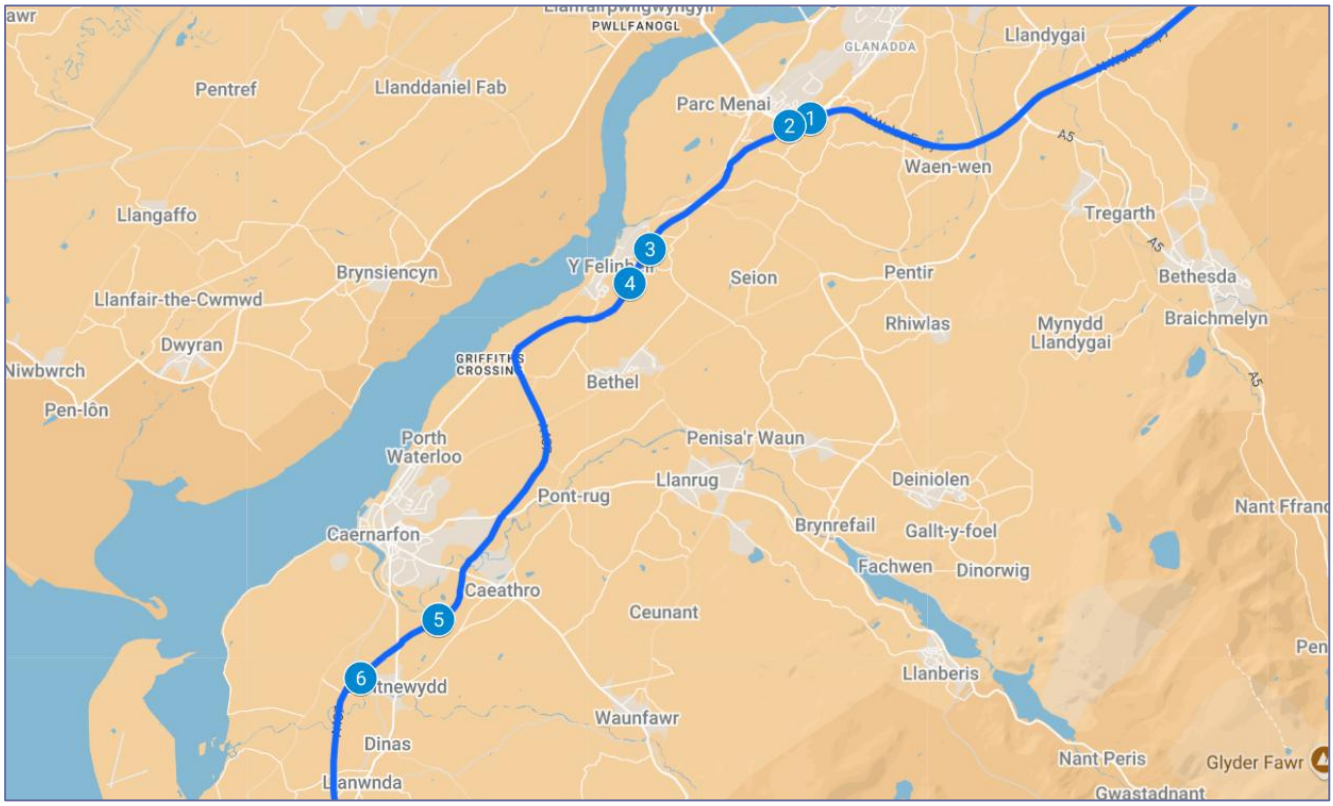
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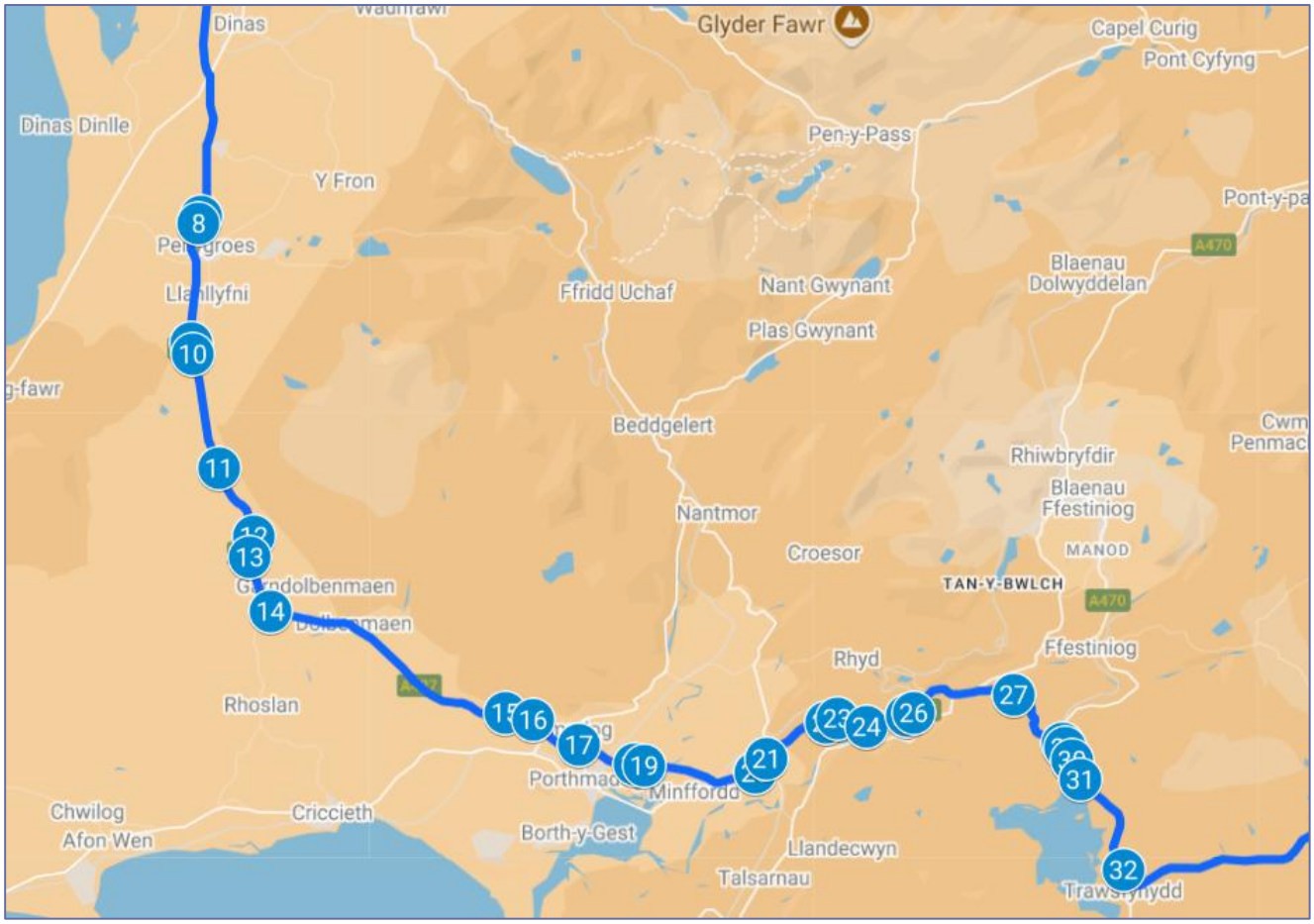
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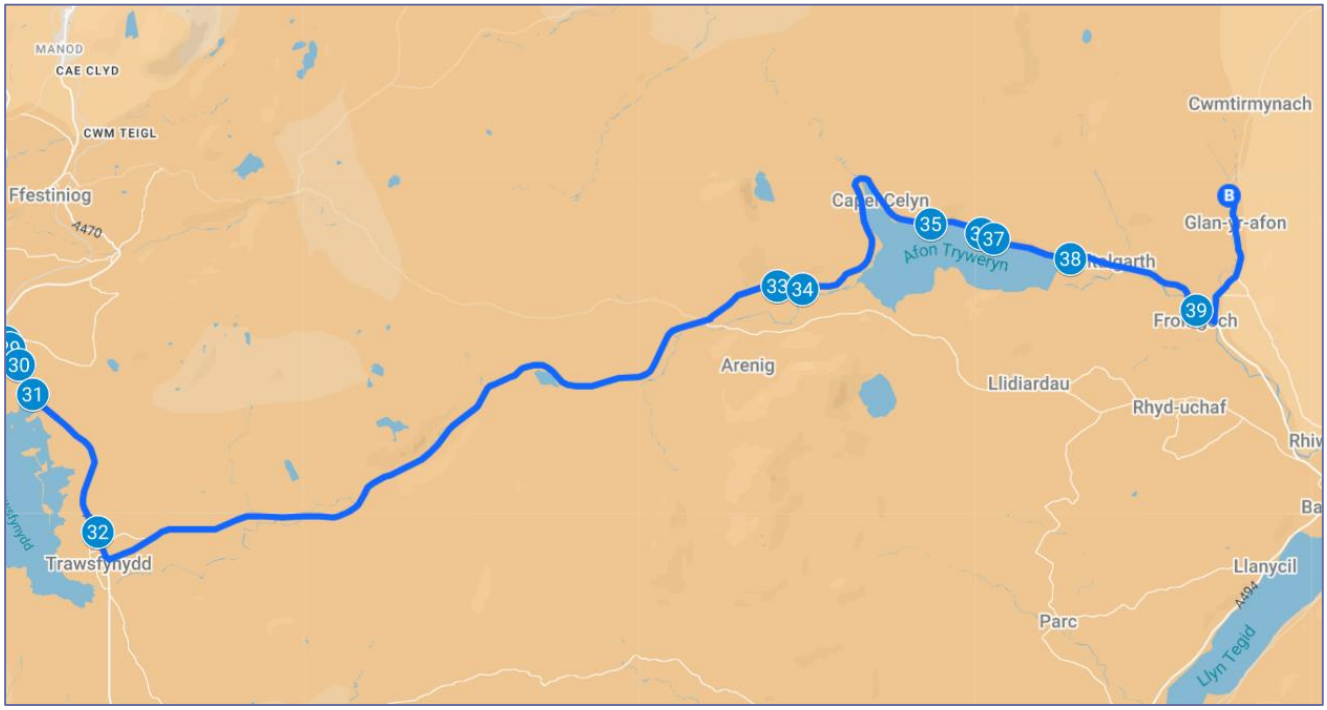
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Llidiardau
Rhyd-uchaf
Trawsfynydd
Llanycil
Parc
A494
Llyn Tegid

Annex 2.2 – ESDAL Correspondence

From: Adam Stone <AStone@pellfrischmann.com>
Sent: Wednesday, April 30, 2025 12:51 PM
To: abnormal.loads@sefton.gov.uk; commercial.vehicle.unit@merseyside.police.uk; nwabnormalloadsenquiries@nationalhighways.com; AbnormalLoads@Lancashire.police.uk; abnormal.loads@gmp.police.uk; abnormal.loads@cheshire.police.uk; abnormalloads@northwales.police.uk; abnormalloads@nmwtra.org.uk; abnormal.loads@denbighshire.gov.uk; abnormalloads@gov.wales; LlwythAbnormal@gwynedd.llyw.cymru; Abnormal Loads Enquiries <AbnormalLoadsEnquiries@networkrail.co.uk>; rsgbrb@jacobs.com
Subject: AB-70763/SM Proposed Wind Farm ESDAL

You don't often get email from astone@pellfrischmann.com. Learn why this is important

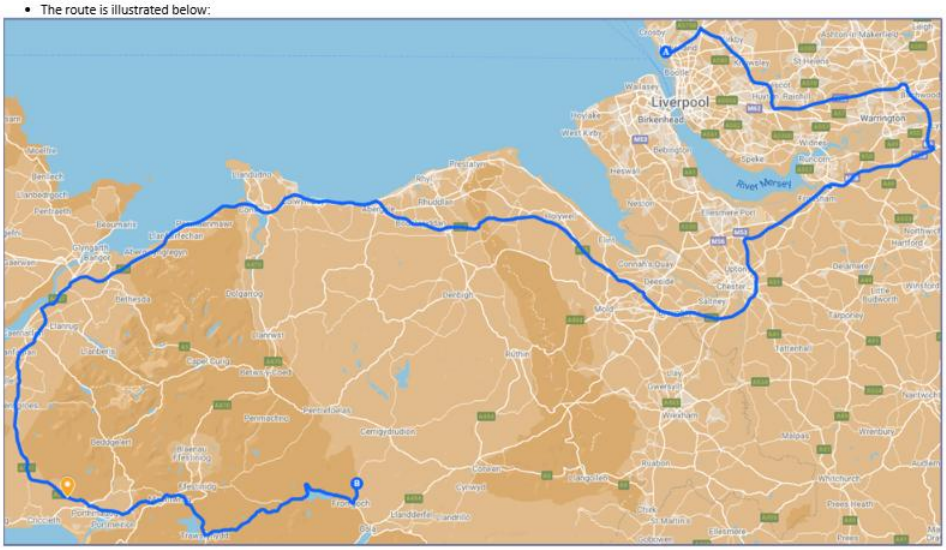
Hello there,

We have been commissioned to undertake a route review for a proposed wind farm development located to the northeast of Glan-yr-afon, Wales

It is proposed that loads will be delivered from Liverpool and would use the following route:

- Loads would exit Port of Liverpool heading south and taking the first exit at the roundabout onto the A5036 eastbound before merging onto the A59 northbound;
- Loads would turn right at Switch Island Junction to join the M57 heading southeast;
- Loads would exit the M57 at Junction 1 to join the M62 eastbound;
- Loads would exit the M62 at Junction 10 to join the M6 southbound;
- Loads would exit the M6 at Junction 20A to join the M56 westbound;
- Loads would exit the M56 at Junction 15 to join the M53 southbound before merging onto the A55 southbound;
- Loads would exit the A55 at Junction 34 to continue on the A55 westbound;
- Loads would exit the A55 at Junction 10 to join the A4087 westbound at Caernarfon Rd Interchange;
- At the roundabout, loads would take the 1st exit onto A487 Y Felinheli Bypass;
- Loads would continue on the A487 before merging onto the A470 southbound;
- At Trawsfynydd, loads would turn left onto the A4212 eastbound;
- At Fron-goch, loads would turn left onto the B4501 northbound;
- Loads would enter the site access junction at Pont Mynachddwr.

- The route is illustrated below:



The longest loads will have a maximum rigid length of 85.66metres (m) along the route. The maximum axle load is 12 tonnes, with the gross vehicle weight of the heaviest load expected to be in the region of 135tonnes. The maximum height is 4.9m, with the widest load at 4.5m.

The assessment is at an early stage at present, though I would be grateful if you could confirm if there are any structures along the route that may present a particular issue. A more detailed assessment will be undertaken once the turbine haulier and turbine model have been selected by the developer.

Kind regards,

Adam

Adam Stone
Associate
93 George Street
Edinburgh
EH2 3ES
T: 0131 240 1270
M: 07731 321509
Pell Frischmann
Excellence through innovation
www.pellfrischmann.com

OFFICIAL

Hi Adam
We have no objections to this particular route enquiry as it does not appear to affect any road over rail Network Rail owned structures. Please note this only applies to this route enquiry.
We check the load carrying capacity of Network Rail owned road over rail bridges affected. We do not check anything else, including:

* Load carrying capacity of level crossings
* Clearance to bridge parapets
* Clearance under a rail bridge
* Clearance to overhead wires at level crossings

Many Thanks

Sunil Maniraj
Abnormal Loads Clerk
Abnormal Loads Help Desk: 07395 391628
Abnormal Loads Team – Part of the National Records Group

GB **Gordon Beattie**

To: Adam Stone

Reply | Reply all | Forward

Fri 2025-05-09 1:43 PM

Hi Adam

Thank you for your enquiry, it was nice to speak with Sally

There are structures on the National Highways network for the movements which are subject to weight restrictions.

- Waddicar Canal M57 Jct 7-6 requires all loads over 101 Te to be assessed
- Knowsley Wood M57 Jct 5 requires all loads over 115 Te to be assessed
- Sandsfield South M62 Jct 10 / M6 Jct 21A requires all loads over 72 Te to be assessed
- Helsby Junction Viaduct M53 Jct 12-14 requires all loads over 68 Te to be assessed

As we do not have the precise vehicle configuration details that the assessment work requires, it is possible that some of the loads that your project requires may not be accepted across any or all of these structures.

We will need to assess the detailed vehicle configuration and weights to provide a definitive answer.

However, for an enquiry of the nature that you have made regarding potential windfarm developments, we would not undertake full vehicle assessments at this initial stage due to the amount of work and expense incurred.

The loads described fall into the Special Order category and the hauliers must follow the process to gain the required approval.

The email address that you sent to is the National team dealing with Special Orders and they would not respond to a request such as this. Any further enquiries to the North West region, please use

NWAbnormalLoadsEnquiries@nationalhighways.co.uk

regards

Gordon Beattie MILT
Network Planner- Occupancy
North West Region

Mobile : 07714 846615

National Highways | Newlands | Unit A1 | 6 Brewery Lane | Penrith New Squares | Penrith | Cumbria | CA 11 7FN
National Highways Web: http://www.nationalhighways.co.uk

national highways

I am a Mental Health First Aider
Contact me or the team if you need help

AL **Abnormal loads**

To: Adam Stone

Reply | Reply all | Forward

Mon 2025-05-12 1:33 PM

Afternoon,

Thank you for your e-mail. With regards to structures on your proposed route, please liaise with the structure owners.

Please could consideration be given to the tried and tested routes for nearby windfarms i.e. Clocaenog and Brenig. The route on those occasions was A483, A5, if the B4501 is accessible from the A5 then this may be a more appropriate route.

Kind regards,

Susan Jones
Swyddog Llwythi Anarferol/ Abnormal Loads Officer
Uned Troseddau Ffyrdd | Roads Crime Unit
Gwasanaethau Cefnogi Gweithredol/ Operational Support Services
Heddlu Gogledd Cymru | North Wales Police
e-bost/e-mail: abnormalloads@northwales.police.uk
Ffon Symudol/Mobile: 07974244048

AL **Abnormal Loads**

Reply | Reply all | Forward

To: Adam Stone

Wed 2025-04-30 12:51 PM

Thank-you for your email.

*****IMPORTANT UPDATES*****

1. General Dispensations are issued at the discretion of the force. Cheshire Constabulary will no longer be providing General Dispensations due to the use of ESDAL to manage all Abnormal Load movements.
2. **No *police escorted* Abnormal Load movements will take place between Thursday 19 December 2024 through to Thursday 2 January 2025**

Thank-you for your cooperation.

If you are emailing regarding an Abnormal Load movement, please ensure that your request has been submitted via ESDAL.

If you are emailing regarding your dispensation application, please be aware that your application document, if completed correctly, will be your dispensation letter.

Kind regards,

Siân Robinson
Abnormal Loads Officer

Cheshire Constabulary HQ | Clemonds Hey| Winsford| Cheshire| CW7 2UA
Mailbox: Abnormal.Loads@cheshire.police.uk

AL **Abnormal Loads**

Reply | Reply all | Forward

To: Adam Stone

Wed 2025-04-30 12:51 PM

Thank you for notifying Lancashire Police of your proposed movement of an Abnormal Load.
Please ensure that the route chosen is suitable and safe for the move to take place.

Annex 3 Outline Access Management Plan

Pell Frischmann

Foel Fach Wind Farm

Annex 3: Outline Access Management Plan (OAMP)

November 2025

10109372

Report Ref.	**Ff Es Volume III, Appendix 11.1 Annex 3 Outline Access Management Plan V1.3**
File Path	**https://pellf.sharepoint.com/sites/EdinburghOfficeTeam/Shared Documents/General/Projects/10109372 RSK Foel Fach/01 - WIP/Reports/OAMP/FF ES Volume III, Appendix 11.1 Annex 3 Outline Access Management Plan V1.3.docx**

Rev	Suit	Description	Date	Originator	Checker	Approver
0		Draft	14/07/2025	L Mackey	S Cochrane	G Buchan
01		Update following client comment	05/09/2025	A Stone	S Cochrane	G Buchan
02		Update following client comment	11/09/2025	A Stone	S Cochrane	G Buchan
03		Update following client comment	14/09/2025	A Stone	S Cochrane	G Buchan
04		Final	31/10/2025	E Moran	S Cochrane	G Buchan
05		Final 2	14/11/2025	E Moran	S Cochrane	G Buchan

Ref. reference. Rev revision. Suit suitability.

Prepared for

Foel Fach Wind Farm Limited

22-24 King Street
Maidenhead
Berkshire
SL6 1EF

Prepared by

Pell Frischmann Consultants Limited

First Floor, South Wing
55 Baker Street
London
W1U 8EW

Pell Frischmann

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Annexes

1 Introduction

1.1 Purpose of the Report

Pell Frischmann Consultants Limited has been commissioned by RSK Environment Limited on behalf of Foel Fach Wind Farm Limited (hereafter referred to as the 'Applicant'), to prepare an Outline Access Management Plan (OAMP) to support a planning application for the proposed Foel Fach Wind Farm (the 'Proposed Development'), located to the north-east of Bala, within the Gwynedd Council administrative area, North Wales.

The purpose of this report is to provide a comprehensive framework for the management of public access and recreational amenities during the construction, operational, and decommissioning phases of the Proposed Development.

1.2 Report Structure

Following this introduction, the OAMP report is structured as follows:

- Section two outlines the methodology, including approach and relevant planning guidance
- Section three outlines the Proposed Development
- Section four establishes the outdoor access baseline conditions
- Section five identifies the potential impacts on the outdoor access baseline
- Section six considers mitigation measures and appropriate monitoring of these
- Section seven summarises enhancement opportunities, and
- Section eight provides a summary.

2 Methodology

2.1 Approach

Recognising the potential for interaction with existing public and permissive access routes, this OAMP outlines an initiative-taking approach to managing safety, minimising disruption, and, where possible, enhancing local recreational opportunities.

The overarching objective of this OAMP is to demonstrate a robust commitment to public safety and access management throughout the project lifecycle. It ensures compliance with relevant legislation and best practice guidance while maintaining flexibility to adapt to site-specific conditions.

2.2 Policy and Guidance

2.2.1 Relevant Policy

Planning Policy Wales (PPW), Edition 12, July 2024[1]

PPW, now in its 12th edition, is the primary land use planning policy document for Wales. It sets the national requirements for land use and planning, aiming to contribute to sustainable development and improve the social, economic, environmental, and cultural well-being of Wales.

PPW emphasises the importance of good design, sustainable management of natural resources, and placemaking, which includes promoting healthier, active, and social places. An OAMP directly supports these goals by managing access, managing safety, and enhancing recreational opportunities as part of a development.

Future Wales: The National Plan 2040[2]

Future Wales, published by the Welsh Government, is the national development framework for Wales, setting out where development should happen. Policy 17 within the framework states that:

"Proposals for renewable and low carbon energy generation from wind or solar technologies and equipment, and associated infrastructure, must respond well to their context and contribute to meeting Welsh Government ambitions for low carbon energy. This includes considering the characteristics of the local landscape and wider visual setting, ensuring effective integration with existing infrastructure, and demonstrating how the scheme minimises adverse impacts on biodiversity and the natural environment, whilst maximising opportunities for enhancement."

The OAMP contributes directly to the objectives of Policy 17 by identifying and managing potential interactions with the existing access network in a manner that supports local placemaking and landscape integration. Through the implementation of proactive measures and the potential to enhance local recreational opportunities, the OAMP demonstrates a commitment to maximising the social and environmental benefits of the scheme, in line with the aims of Future Wales.

Gwynedd Council and Isle of Anglesey Joint Local Development Plan (LDP) 2011–2026[3]

The Joint LDP, adopted by Gwynedd Council and Anglesey County Council, sets out the spatial strategy and planning policies for development across the Gwynedd and Anglesey area, including renewable energy, landscape protection, and recreational access. The plan supports renewable energy development where it respects the natural environment and protects public amenity.

[1] Welsh Government, available at: https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf
[2] Welsh Government, available at: https://www.gov.wales/future-wales-national-plan-2040
[3] Gwynedd Council, available at: https://www.gwynedd.llyw.cymru/en/Council/Documents---Council/Strategies-and-policies/Environment-and-planning/Planning-policy/Anglesey-and-Gwynedd-Joint-Local-Development-Plan-Written-Statement.pdf

The OAMP aligns with LDP objectives by identifying and managing impacts on the local access network and ensuring that Public Rights of Way (PRoWs), permissive routes, and recreational infrastructure are protected or enhanced during the construction phase. Specific reference is made to the visual and recreational sensitivity of Eryri National Park, which the OAMP addresses through route selection, mitigation measures, and liaison with relevant authorities.

Following the end of the joint LDP with Anglesey in March 2023, Gwynedd Council has commenced a standalone LDP process covering the Gwynedd area outside Eryri National Park, set for adoption between 2024–2039. Until adoption, the existing Joint LDP remains in force.

The new LDP will frame policies on renewable energy, landscape protection, public access, and recreation. The OAMP ensures compliance with emerging policy requirements, including protection and enhancement of rights of way, supporting alignment with Gwynedd's emerging planning policy direction.

Eryri (Snowdonia) Local Development Plan (ELDP) 2016–2031 (adopted February 2019) [4]

This statutory plan, adopted on 6 February 2019, provides the development management policy framework for Eryri National Park until 2031. It reinforces the protection of the Park's natural beauty, cultural heritage, and public recreation assets, while supporting appropriate low-carbon development.

The OAMP aligns with ELDP objectives by safeguarding PRoW, recreational access, and common/open access land, and by ensuring that temporary construction impacts are minimised. It also supports biodiversity and landscape objectives through collaborative mitigation with Natural Resources Wales (NRW) and the Park Authority.

Eryri National Park Authority is preparing a replacement Local Development Plan covering 2026–2041. Although the replacement plan is not yet adopted, its emerging themes such as environmental protection, public access enhancement, and sustainable development are already being reflected in the OAMP.

2.2.2 Best Practice Guidance

Technical Advice Note (TAN) 8: Planning for Renewable Energy[5]

This guidance document was initially published by the Welsh Assembly Government, with subsequent updates by the Welsh Government. TAN 8 primarily provided technical advice and guidance on the land use planning considerations of renewable energy developments, particularly large-scale onshore wind farms.

TAN 8 consistently required that renewable energy developments, while necessary, must still be acceptable in terms of their environmental impacts. This broadly includes impacts on public amenity and the enjoyment of the countryside, which are directly managed through an OAMP.

Technical Advice Note (TAN) 16: Sport, Recreation and Open Space[6]

This guidance is also published by the Welsh Assembly Government and provides guidance on the role of the planning system in providing and protecting sport, recreational facilities, and informal open spaces. It states that:

"The planning system has a role in protecting and enhancing open spaces and recreational facilities. Access to a variety of good quality open spaces and opportunities for sport and recreation are vitally important to the health, well-being and quality of life of individuals and communities."

It also states that:

[4] Eryri National Park, available at: https://eryri.gov.wales/wp-content/uploads/2022/01/Cynllun-Datblygu-Lleol-Saesneg.pdf
[5] Welsh Government, available at: https://www.gov.wales/sites/default/files/publications/2018-09/tan8-renewable-energy_0.pdf
[6] Welsh Government, available at: https://www.gov.wales/technical-advice-note-tan-16-sport-recreation-and-open-space

"Local planning authorities should consider the quantity, quality and accessibility of existing open spaces and recreational facilities within their areas and assess the needs and demands for new or improved provision. Planning decisions should aim to safeguard and, where appropriate, enhance existing provision."

The OAMP supports the aims of TAN 16 by identifying potential access constraints and ensuring that PRoW, permissive paths, and other recreational routes are protected or enhanced during construction. Where feasible, the OAMP proposes measures that improve accessibility or the quality of existing routes, thereby contributing positively to community health and well-being in line with TAN 16 principles.

Countryside and Rights of Way Act 2000 (CRoW Act)[7]

The CRoW Act 2000 provides statutory public access to mapped areas of open country and registered common land in Wales. It sets out responsibilities for access management and protects the public's right to access land on foot for recreation.

The OAMP considers any potential interface with CRoW-designated land and sets out measures to maintain access, avoid disruption, and provide clear communication where temporary restrictions are required.

Highways Act 1980[8]

The Highways Act 1980 is the primary legislation governing the creation, maintenance, and management of highways in England and Wales, including PRoWs.

Under the Act, any temporary closure or diversion of a PRoW must be authorised through a formal Public Path Order, which requires consultation with the local highway authority and, where necessary, public notification. These requirements will be reflected in the mitigation measures set out within this OAMP.

2.2.3 Policy and Guidance Summary

It is considered that the Proposed Development will not give rise to any unacceptable impacts to public safety or access, and suitable mitigation is proposed. The Proposed Development is considered to accord with relevant Development Plan policy and national planning policy and guidance provisions.

[7] UK Government, available at: https://www.legislation.gov.uk/ukpga/2000/37/contents
[8] UK Government, available at: https://www.legislation.gov.uk/ukpga/1980/66

3 Proposed Development

3.1 Site Location

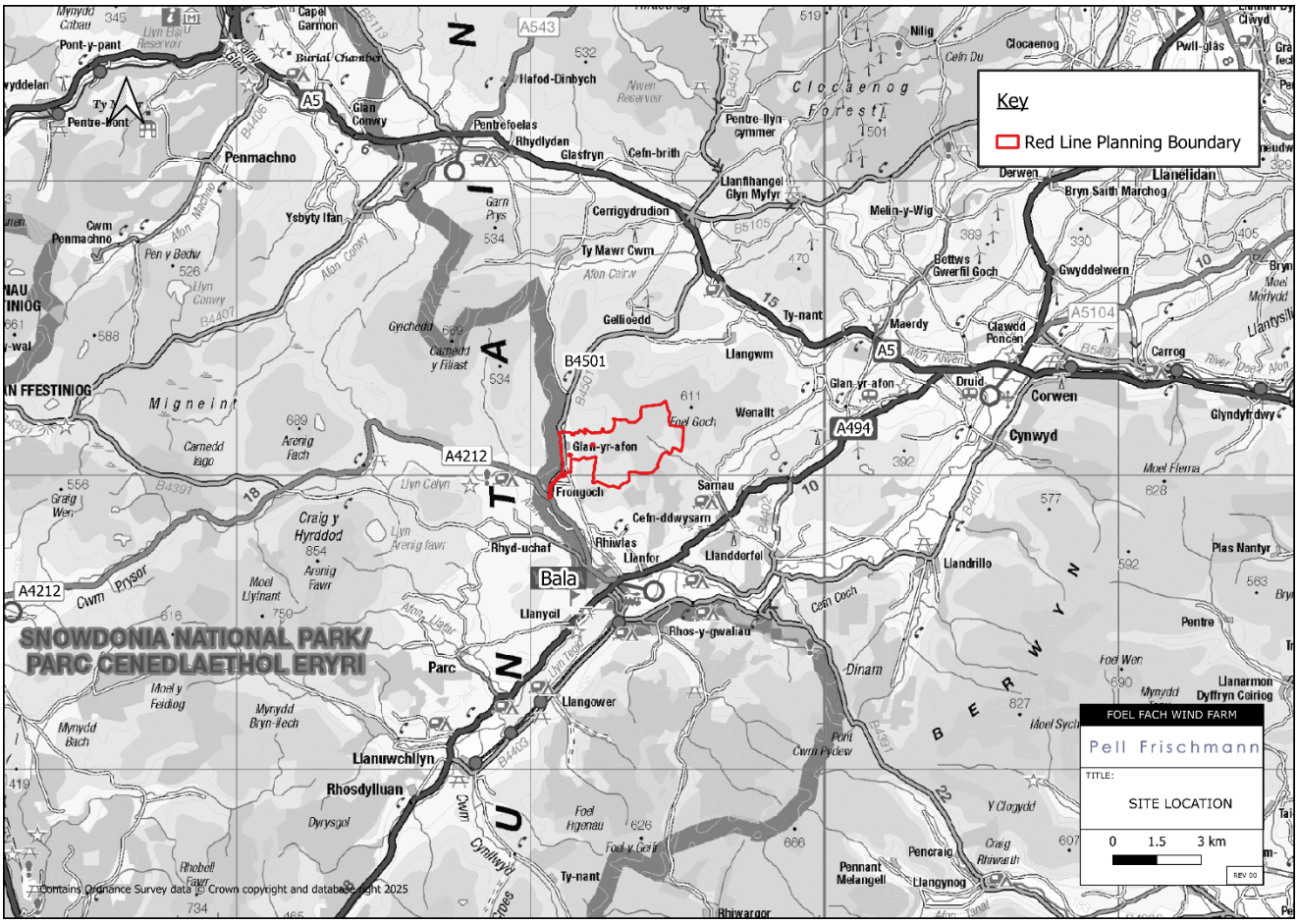
The Proposed Development Application Site comprises 659 hectares (ha) of land located on grazing moorland, approximately 3.1 kilometres (km) north-east of the town of Bala, Gwynedd, in North Wales, within the administrative boundary of Gwynedd Council. The north-eastern edge of the Site follows the Gwynedd Council boundary with Conwy County Borough Council.

The Proposed Development is located within the Foel Goch Uplands, located outside of Eryri National Park being separated by the B4501 transport corridor, and nestled between the peaks of Garnedd Fawr and Moel Emoel. The surrounding area is characterised by upland moorland with grazing land, small areas of commercial forestry, and pasture fields on the lower slopes.

The B4501 bounds the western edge of the Site, linking with the A5 in the north and the A4212 to the south, providing access to the town of Bala.

The location of the Proposed Development is shown in **Figure 1.**

Figure 1 Site Location



3.2 Proposed Development

The Proposed Development comprises the construction, operation and decommissioning of 10 wind turbines, a Battery Energy Storage System (BESS), substation and ancillary infrastructure works.

Access to the Site is to be taken from an upgraded simple priority junction off the B4501 at Glan-yr-afon, located approximately 2 km to the north of its junction with the A4212.

During the 21-month construction phase, the following traffic would require access to the Site:

- Staff transport, either cars or staff minibuses;
- Construction equipment and materials, deliveries of machinery and supplies such as concrete raw materials using Heavy Goods Vehicles (HGV);
- Abnormal Indivisible Loads (AIL) consisting of the wind turbine components and heavy lift crane(s); and
- Escort vehicles for AIL deliveries, generally Light Goods Vehicles (LGV).

Except for the turbine components, the majority of traffic would be normal construction plant and would include grading tractors, excavators, high-capacity cranes, as well as forklifts and dumper trucks. Most of the construction plant deliveries would arrive at Site on low loaders. Bulk materials would generally be delivered on HGV tipper or articulated vehicles.

A complete description of the Proposed Development is provided in the Environmental Statement **(ES) Volume II, Chapter 2: Description of the Proposed Development.**

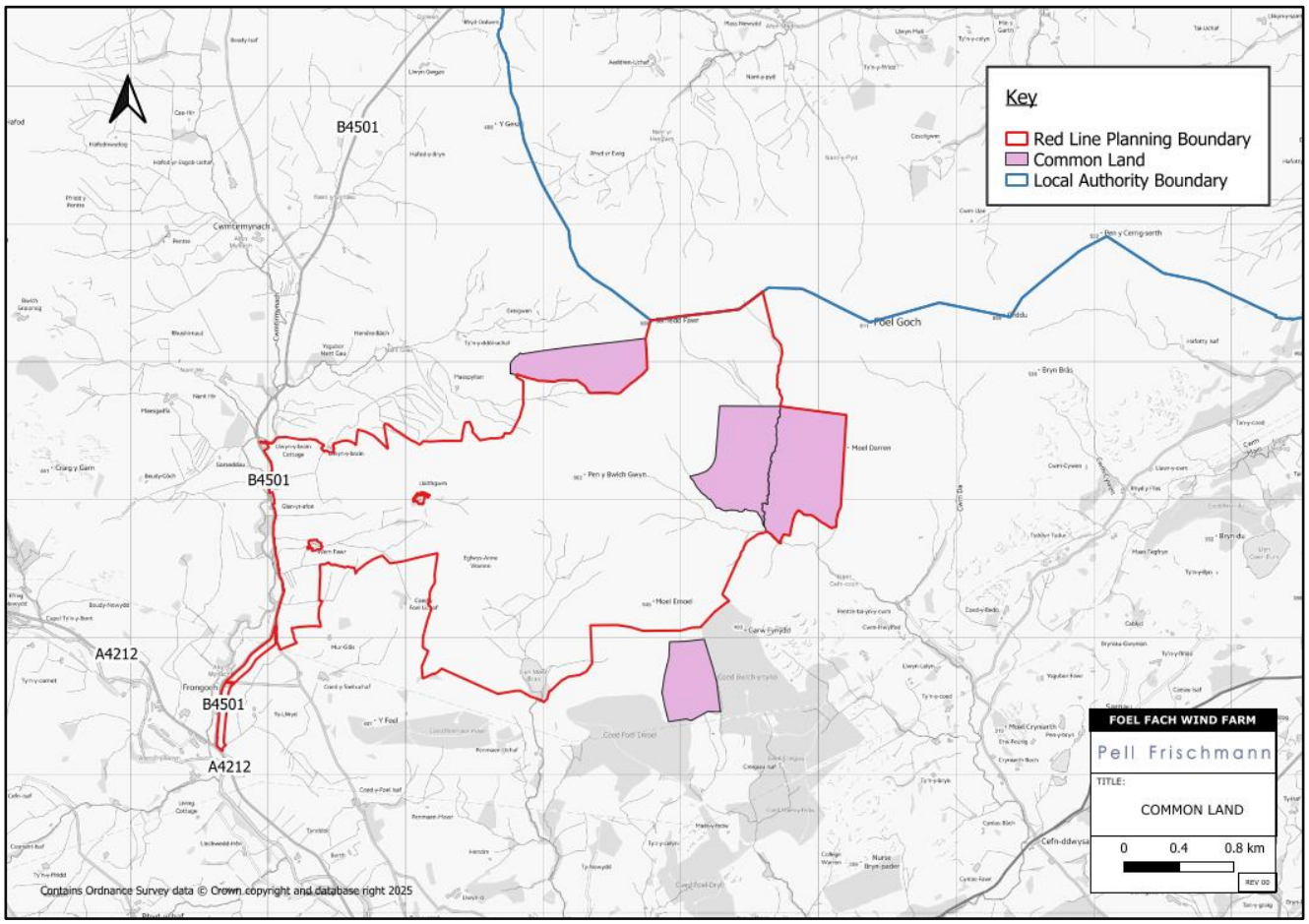
4 Outdoor Access Baseline

4.1 Common Land

Common land refers to land, legally registered, with which specific individuals hold ancient private rights to use another's land for particular purposes, such as grazing animals. While privately owned, most registered common land also has a statutory right of public access on foot under the CRoW Act 2000. It is a protected category of land, with any works interfering with common rights or public access typically requiring additional statutory consent from the Welsh Ministers, beyond standard planning permission.

Within the red line planning boundary of the Proposed Development lie two adjoining parcels of registered Common Land, as seen in **Figure 2.**

Figure 2 Common Land



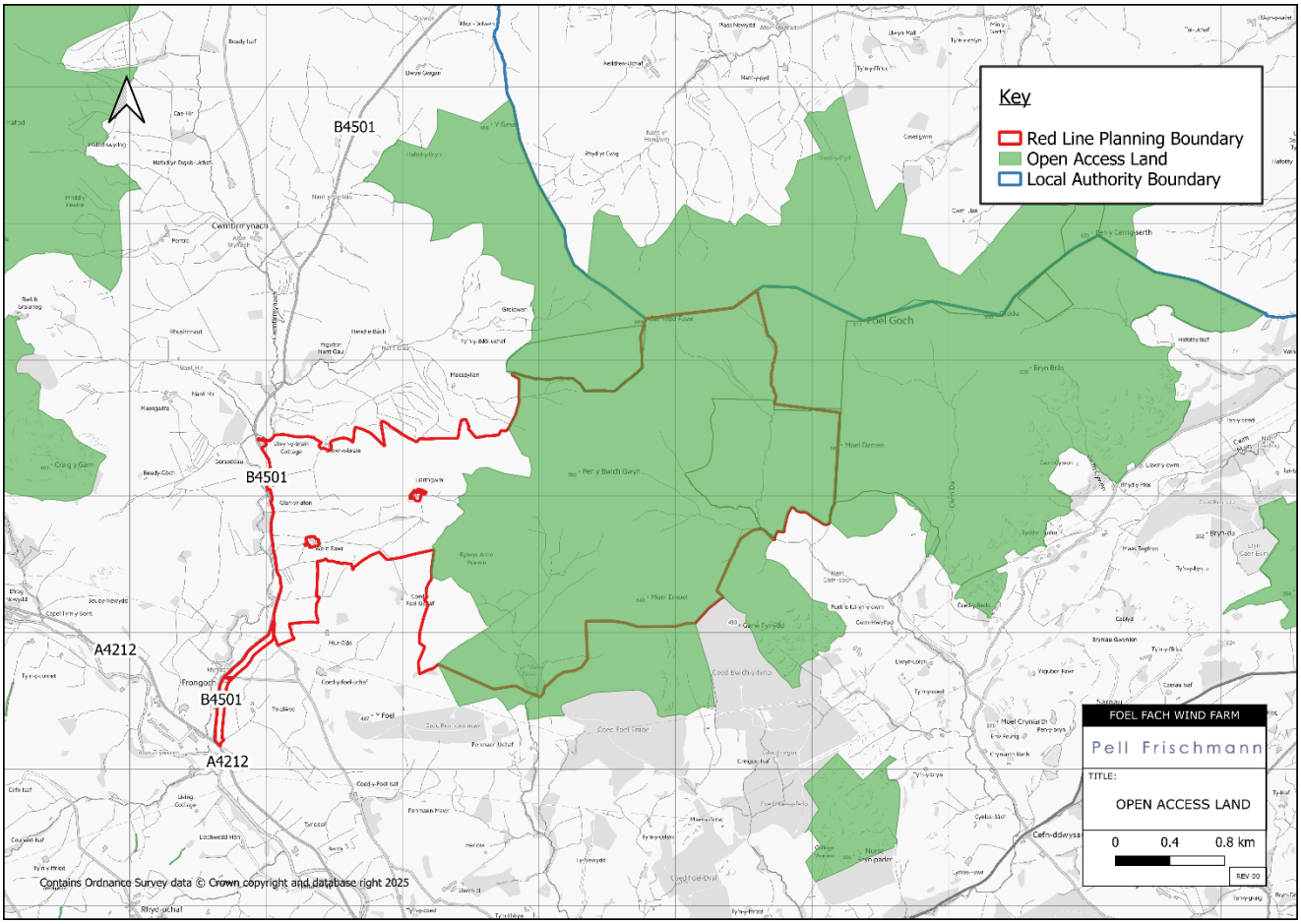
4.2 Open Access Land

Open Access Land is land designated under the CRoW Act 2000, granting the public a statutory right of access on foot for recreation. This means people can walk, run, or picnic on the land, staying away from dwellings, gardens, and certain restricted areas.

The key difference between Common Land and Open Access Land lies in the underlying legal basis. Common Land involves specific private rights held by commoners, whereas Open Access Land is primarily defined by the public's statutory right to roam.

More than half of the red line planning boundary of the Proposed Development is made up of Open Access Land, across its eastern extents. The Open Access Land in relation to the red line planning boundary of the Proposed Development can be seen in **Figure 3.**

Figure 3 Open Access Land



4.3 Public Rights of Way

PRoW are legally protected routes across land, forming part of the public highway network, which the public has a right to use. These paths, such as footpaths, bridleways, and byways, are recorded on a local authority's Definitive Map and Statement, specifying the permitted modes of travel. Unlike the general right to roam over Open Access Land, PRoWs require users to stay on the defined route, and any proposed interference with them, such as diversion or closure, necessitates a Public Path Order.

A review of the Gwynedd Council's PRoW plan[9] identifies several PRoWs located within, and in the vicinity of, the Site. These are listed in **Table 1**, while **Figure 4** shows their location relative to the Site. A review of Conwy County Borough Council's PRoW plan[10] indicates that there are no PRoWs within close proximity to the Site.

Table 1 Public Rights of Way

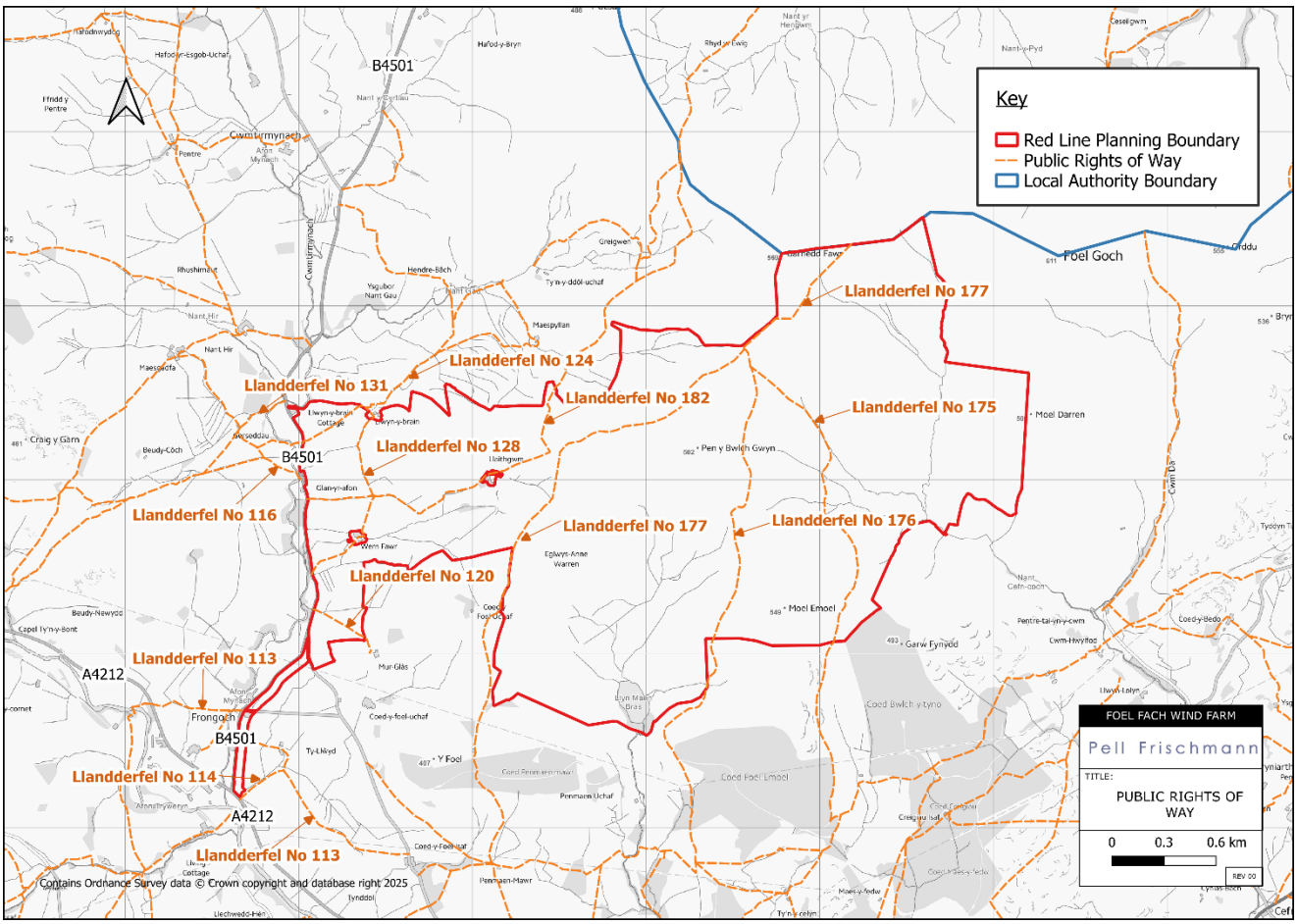
Reference	Path Name	Type	Length (m)
46409954	**Llandderfel No 175**	**Footpath**	**2,984**
46409953	**Llandderfel No 176**	**Footpath**	**5,723**
46409939	**Llandderfel No 177**	**Footpath**	**4,795**
46409857	**Llandderfel No 182**	**Footpath**	**3,680**

[9] https://www.gwynedd.llyw.cymru/en/Residents/Parking-roads-and-travel/Public-Rights-of-Way/Public-Rights-of-Way.aspx
[10] https://www.conwy.gov.uk/en/Resident/Leisure-sport-and-health/Coast-and-Countryside/Public-Rights-of-Way.aspx

Reference	Path Name	Type	Length (m)
46409936	**Llandderfel No 128**	**Footpath**	**1,234**
46409859	Llandderfel No 124	Footpath	3,533
46409782	Llandderfel No 131	Footpath	1,773
46409784	Llandderfel No 116	Footpath	1,967
46409999	**Llandderfel No 120**	**Footpath**	**437**
46410048	Llandderfel No 113	Footpath	2,027
46410056	Llandderfel No 114	Footpath	614

** bold indicated PRoW within the Site Boundary*

Figure 4 Public Rights of Way



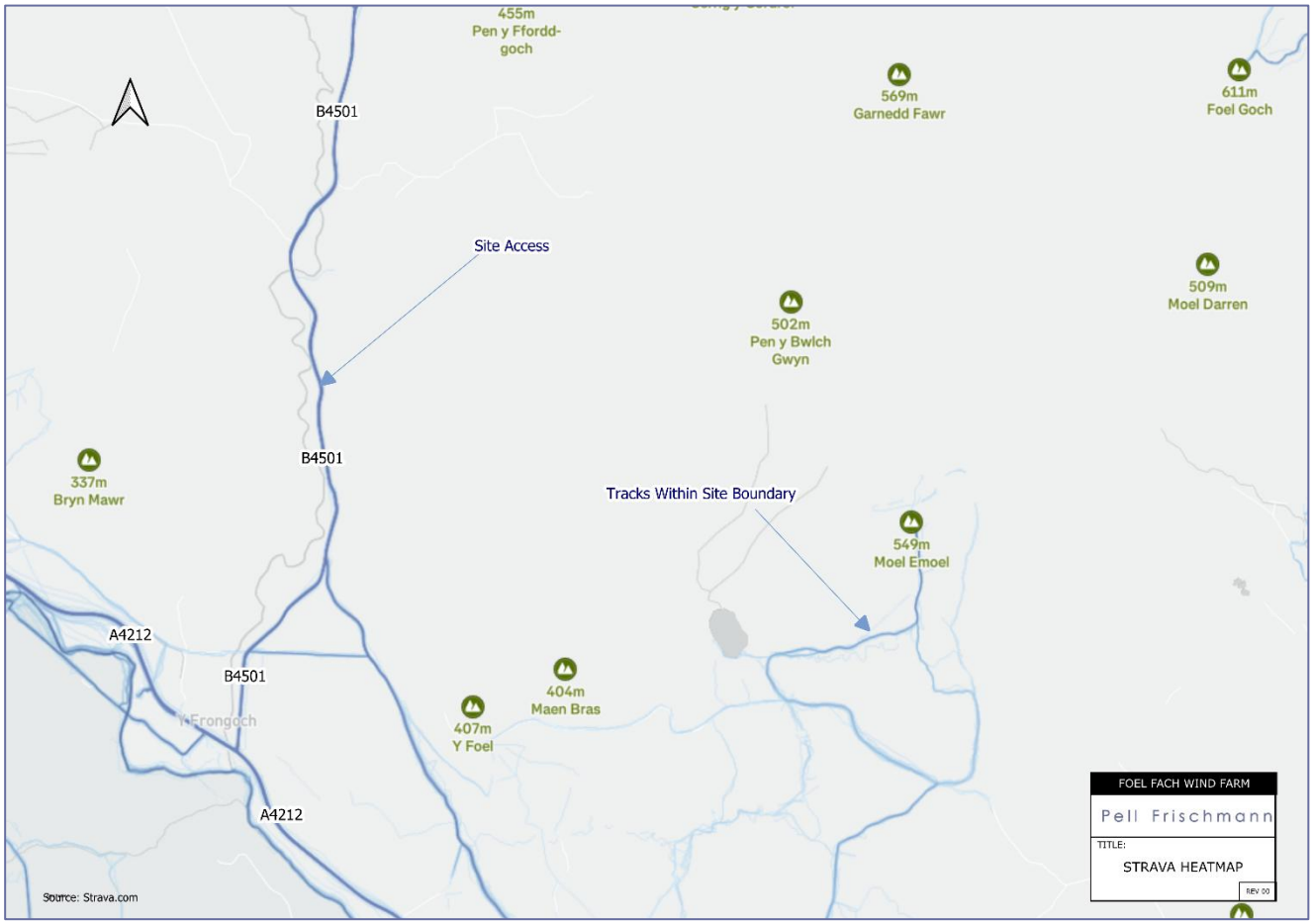
4.4 Existing Network Usage

The usage of the areas of Open Access Land and PRoWs in the vicinity of the Site and within the red line planning boundary of the Proposed Development has been reviewed, by examining the fitness tracking app Strava's Heatmap[11] for the area. This provides an indication of use of the tracks / paths in the study area to give a comparative review of route popularity. The Heatmap shows 'heat' made by aggregated, public activities over the last year and it is updated monthly by Strava.

An extract from the Strava Heatmap is provided in **Figure 5**. The Heatmap includes activity from members of the public using the track / path network for recreation and exercise.

[11] Strava Heatmap, Available at: https://www.strava.com/heatmap [Accessed June 2025]

Figure 5 Strava Heatmap Extract



The Heatmap indicates that a short section of recreational track / path network within the southern extents of the red line planning boundary of the Proposed Development is relatively well used by recreational users walking to Moel Emoel. The brighter lines indicate paths that are more well used, and the darker lines indicate paths that are less well used.

The road network within the vicinity of the Site access shows high levels of use by active travel modes. There also appears to be significant use of paths and areas of Open Access Land along the south, particularly to the south-east, of the red line planning boundary of the Proposed Development.

4.5 Road Network

4.5.1 Public Road Network

There are no public roads within the red line planning boundary of the Proposed Development. There are a number of public roads which route along the edge of the red line planning boundary of the Proposed Development, as follows:

- The B4501 routes along the western edge of the Site.
- A minor, unclassified, road route along the south-western edge of the Site for approximately 300 m known locally as 'Road from Coed-y-foel-uchaf to B4501 Frongoch'.
- The A4212 runs north-west to south-east, connecting Bala and Frongoch with Trawsfynydd to the west, in the vicinity of the Site. The A4212 runs alongside the south-western edge of the red line planning boundary of the Proposed Development for less than 100 m.

4.5.2 Car Parking

There are no public car parking areas located within the red line planning boundary of the Proposed Development.

4.6 Recreational Amenities

There are no recreational amenities available within the red line planning boundary of the Proposed Development.

The National White Water Centre is located less than 2 km west of the red line planning boundary of the Proposed Development, offering water sports and providing a café and picnic area. Other cafés are available within or close to Frongoch. A greater number of amenities are available further south within Bala, providing public toilets, restaurants, and a variety of sports clubs.

4.7 Local Communities

There are no local communities within the red line planning boundary of the Proposed Development. The closest community to the Proposed Development is the village of Frongoch to the south-west of the Site, followed by the small settlement of Cefn-ddwysarn, and the town of Bala to the south.

4.8 Other Land Uses

4.8.1 Hill walking and Mountaineering

Hill walking and mountaineering, beyond the scope of the defined PRoW routes listed above, is available on a number of hills and mountains within the red line planning boundary of the Proposed Development, such as:

- Moel Emoel;
- Y Foel;
- Maen Bras;
- Moel Darren;
- Garnedd Fawr, and
- Pen y Bwlch Gwyn.

4.8.2 Cycling

While there are no formal cycling routes within the red line planning boundary of the Proposed Development, the wider region around Bala offers mountain biking trails, such as Coed y Brenin, and scenic road cycling routes.

4.8.3 Camping

There are no camp sites within the red line planning boundary of the Proposed Development. There are several campsites and glamping sites located close to Llandderfel and Bala to the south of the Site and close to Frongoch to the south-west of the Site. These facilities are expected to attract seasonal visitors, increasing the likelihood of interaction during construction.

4.8.4 Equestrian

While there are no bridleways specifically for equestrian activities within the red line planning boundary of the Proposed Development, there is a bridleway east of Pen y Ffordd-goch, north of the red line planning boundary of the Proposed Development (reference: Llandderfel Bridleway No 124) which links directly into PRoW footpath Llandderfel No 124 within the red line planning boundary of the Proposed Development.

4.8.5 General Outdoor Recreation

Given the location of the Site and the proximity to camp sites nearby, it is likely that the area within the vicinity of the Site supports activities such as picnicking, wildlife watching and photography.

5 Potential Access Impacts

5.1 Construction Phase

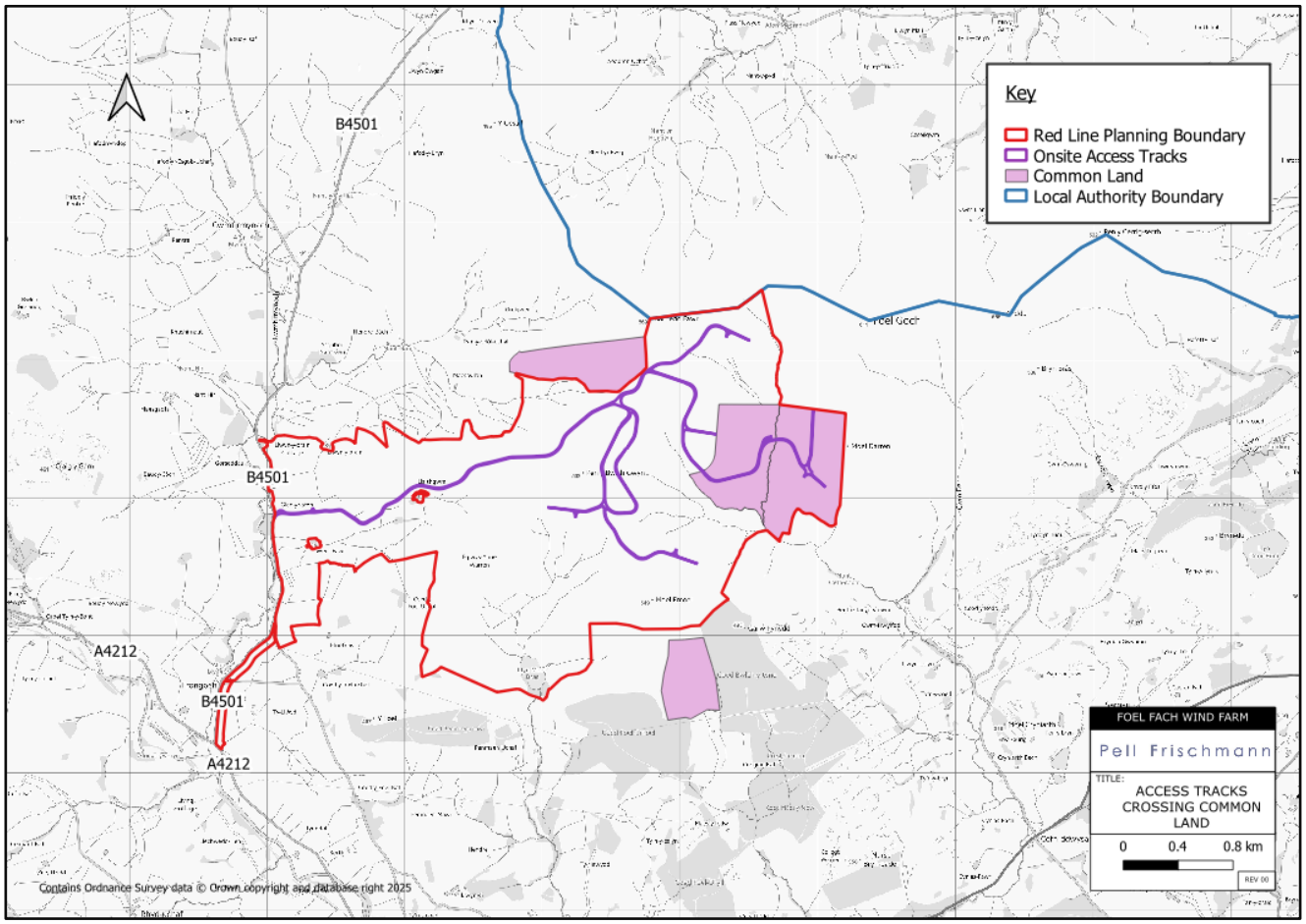
The construction phase is anticipated to present the most substantial, albeit temporary, impacts on public access and amenity. These may include:

- Direct Safety Risks:
  - Vehicle-User Conflict: Increased risk of collisions between construction vehicles (HGVs, AILs, cars / LGVs) and recreational users (walkers, cyclists, horse riders) on shared access tracks or public roads.
  - Working Area Hazards: Risks from excavations, moving plant, overhead lifting operations, falling objects (e.g., during turbine erection), borrow pit excavation operations and material storage within or adjacent to active construction zones.
- Access Restrictions & Severance:
  - Temporary Closures: Full or partial temporary closures or restrictions of PRoW, Common Land, or Open Access Land for health and safety reasons, particularly surrounding turbine erection areas, borrow pits, and active track construction.
  - Diversions: Requirement for diversions that may increase journey length, alter gradient or reduce amenity.
  - Physical Barriers: Fencing, gates or other physical barriers to prevent unauthorised access into hazardous areas, potentially leading to perceived or actual severance of routes.
- Disruption to Amenity & Experience:
  - Noise & Vibration: From construction plant, vehicle movements; impacting the tranquillity of recreational areas.
  - Dust & Mud: Generated by construction traffic, affecting air quality and surface conditions on shared routes.
  - Visual Intrusion: Presence of construction machinery, Site compounds and partial structures impacting the landscape character during recreational pursuits.
  - Reduced Enjoyment: Overall diminishment of the recreational experience due to the industrial nature of construction.
- Impacts specific to AIL Movements:
  - Road Delays: Short-term, intermittent or significant delays on public roads to facilitate AIL passage, affecting all road users.
  - Third-Party Land Encroachment: Temporary use of verges, private drives, or field edges during AIL movements that may impact local access or require specific permissions.

5.1.1 Common Land Impacted

The access tracks used by construction traffic within the red line planning boundary of the Proposed Development are entirely within areas of Common Land, as shown in **Figure 6.**

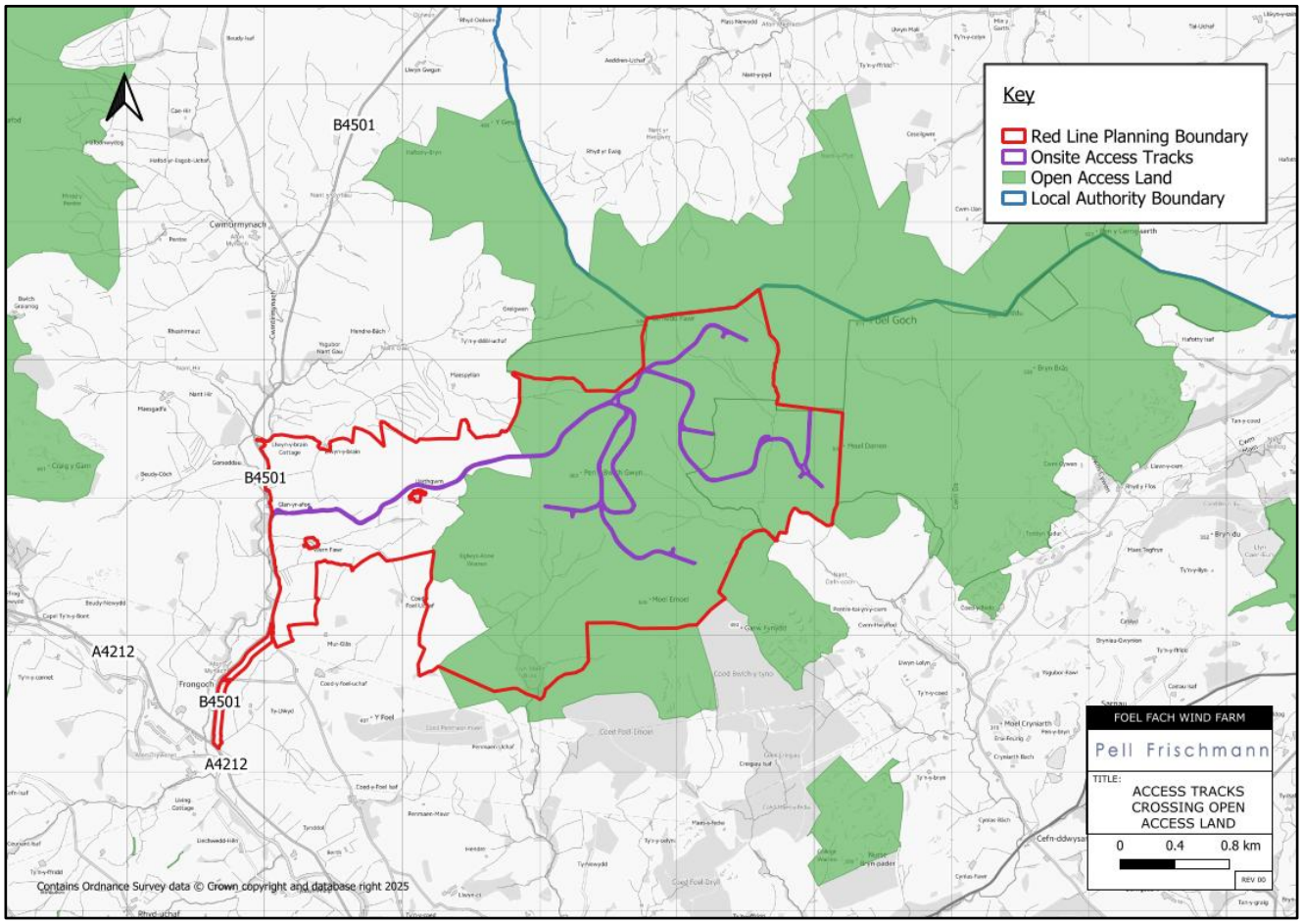
Figure 6 Access Tracks Crossing Common Land



5.1.2 Open Access Land Impacted

The access tracks used by construction traffic within the red line planning boundary of the Proposed Development are largely within areas of Open Access Land, as shown in **Figure 7.** This impacts the public using Open Access Land for hiking, mountaineering, users of camp sites and general outdoor recreation.

Figure 7 Access Tracks Crossing Open Access Land



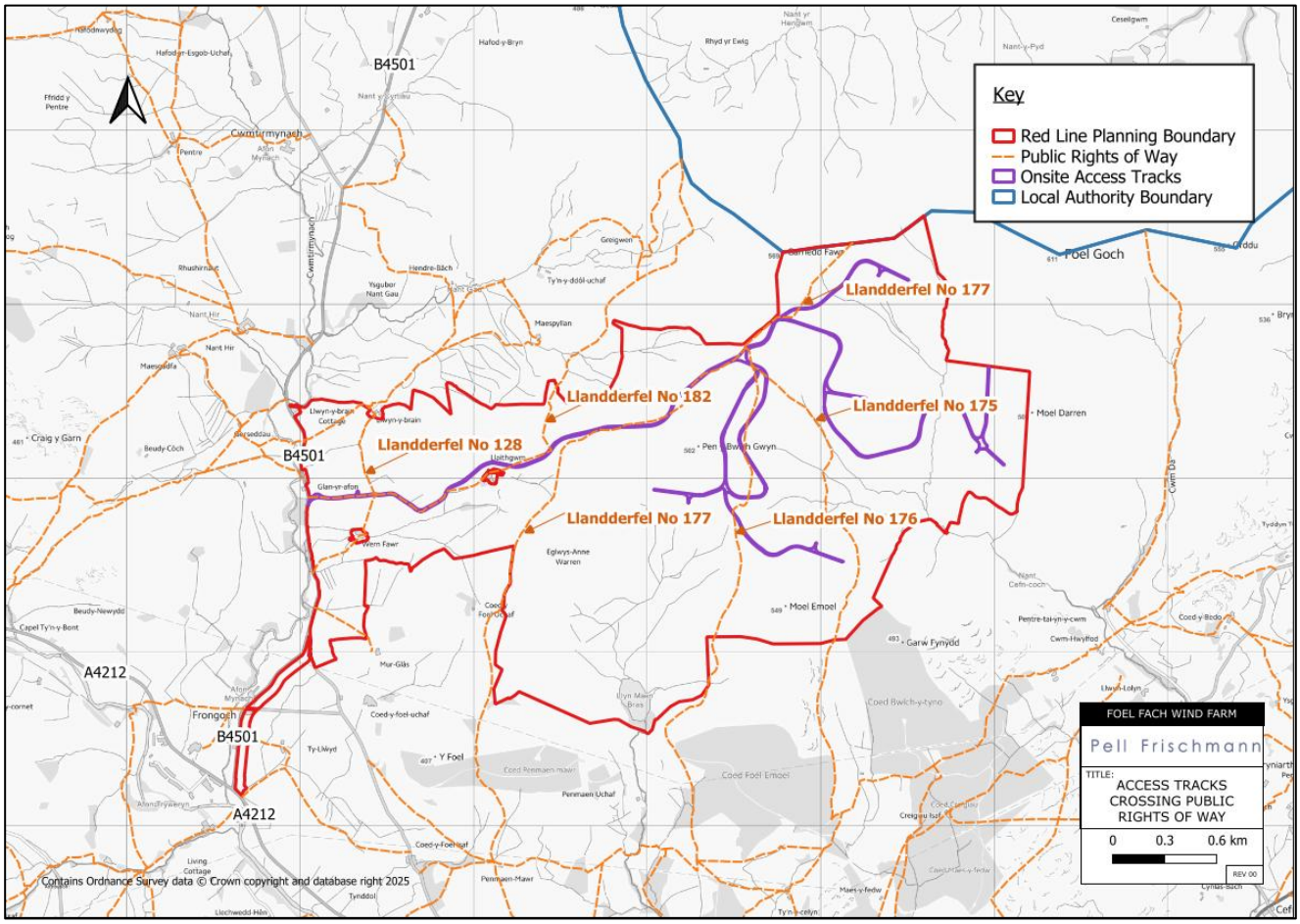
5.1.3 Public Rights of Way Impacted

The access tracks used by construction traffic within the red line planning boundary of the Proposed Development cross over the following PRoWs:

- Llandderfel No 175, footpath;
- Llandderfel No 176, footpath;
- Llandderfel No 177, footpath;
- Llandderfel No 182, footpath;
- Llandderfel No 128, footpath; and
- Llandderfel No 120, footpath.

The location of the PRoWs in relation to the onsite access tracks is shown in **Figure 8.**

Figure 8 Access Tracks Crossing Public Rights of Way



5.1.4 Potential Impacts on Users

Table 2 summarises the potential impacts on users of the area which have been identified within the construction phase of the Proposed Development.

Table 2 Potential Impacts During the Construction Phase

User	Potential Impact
Walkers – Open Access Land	**Vehicle-User Conflict:** Increased risk of collision between construction vehicles and walkers on Open Access Land given it is not necessarily on specific paths for construction workers to be aware of. **Working Area Hazards:** Risk of injury of walker close to active construction areas. **Temporary Closures:** Temporary closures or restrictions of areas of Open Access Land for health and safety reasons, particularly surrounding turbine erection areas, borrow pits, and active track construction. **Diversions**: Any physical works (new tracks, turbine bases, compound, borrow pits, temporary fences) on Open Access Land may limit or obstruct this general right of access requiring walkers to re-route. **Noise & Vibration**: Increased noise from construction plant, vehicle movements in areas of Open Access Land close to construction areas. **Dust & Mud:** Generated by construction traffic, affecting air quality and surface conditions on areas of Open Access Land used by construction traffic. **Visual Intrusion:** Presence of construction machinery, Site compound, and partial structures impacting the landscape character during recreational pursuits. **Reduced Enjoyment:** Overall diminishment of the recreational experience due to the industrial nature of construction.
Walkers - PRoW	**Temporary Closures:** Full or partial temporary closures of PRoWs for health and safety reasons, particularly surrounding turbine erection areas, borrow pits, and access track construction.

User	Potential Impact
	Vehicle-User Conflict: Increased risk of collisions between construction vehicles (HGVs, AILs, cars / LGVs) and walkers on PRoWs crossed by construction traffic. **Noise & Vibration**: Increased noise from construction plant, vehicle movements, and blasting, on PRoWs close to construction areas. **Dust & Mud:** Generated by construction traffic, affecting air quality and surface conditions on PRoWs crossed by construction traffic. **Visual Intrusion:** Presence of construction machinery, Site compound, and partial structures impacting the landscape character during recreational pursuits. **Reduced Enjoyment:** Overall diminishment of the recreational experience due to the industrial nature of construction.
Cyclists	**Road Delays**: The majority of cycling within the vicinity of the Site occurs on local public roads, which may be impacted by delays. **Vehicle-User Conflict:** Increased risk of collisions between construction vehicles and cyclists on public roads in the vicinity of the Site. **Noise & Vibration**: From additional construction vehicle movements along the public road network within the study area. **Dust & Mud:** Generated by construction traffic, affecting air quality and surface conditions on the public road network within the study area.
Horse Riders	**Noise & Vibration:** The bridleway to the north of the red line planning boundary of the Proposed Development may be impacted by noise from construction plant, vehicle movements with the potential to panic or frighten the horse. **Dust & Mud:** Generated by construction traffic, affecting air quality and surface conditions on bridleway close to the red line planning boundary of the Proposed Development. **Visual Intrusion:** Presence of construction machinery, Site compound, and partial structures impacting the landscape character during equestrian activities. **Reduced Enjoyment:** Overall diminishment of the recreational experience due to the industrial nature of construction.
Public Road Network	**Vehicle-User Conflict:** Increased risk of collisions between construction vehicles and public road users. **Road Delays**: Short-term, intermittent or significant delays on public roads to facilitate AIL passage, affecting all road users. **Noise & Vibration**: From additional construction vehicle movements along the public road network within the study area. **Dust & Mud:** Generated by construction traffic, affecting air quality and surface conditions on the public road network within the study area.
Car Parking	No impacts given there are no public car parks within the red line planning boundary of the Proposed Development.
Users of Camp Sites & General Outdoor Recreation	**Visual Intrusion**: Presence of construction machinery, Site compounds, and partial structures impacting the landscape character for those staying in nearby camp sites. **Reduced Enjoyment:** Overall diminishment of the recreational experience due to the industrial nature of construction.
Local Communities	**Vehicle-User Conflict:** Increased risk of collisions between construction vehicles and pedestrians within local communities within the study area. **Noise & Vibration**: From additional construction vehicle movements passing through communities within the study area. **Dust & Mud:** Generated by construction traffic, affecting air quality and surface conditions on the public roads in communities within the study area.

5.2 Operational Phase

The Proposed Development is expected to operate over a period of 40 years. The operational phase is restricted to occasional maintenance operations which generate low volumes of traffic that are not considered to be in excess of daily traffic, as such the potential impacts on walking and cycling routes in the vicinity of the public road are considered minimal.

It is expected that these low volumes of operation traffic will also have a minimal impact within the Site.

Table 3 summarises the potential impacts which have been identified within the operational phase of the Proposed Development.

Table 3 Potential Impacts During the Operational Phase

User	Potential Impact
Walkers – Open Access Land	During most of the operational phase, no impacts are anticipated. However, significant maintenance, for example blade replacement could cause temporary, localised disruptions similar to those during construction, but over a much smaller area and for a significantly shorter duration. Topple hazard of wind turbines for people using Open Access Land is considered very low, but it is a recognised planning and safety issue. Modern turbines are designed and certified to strict engineering standards, with multiple safeguards against structural failure, so complete collapse is extremely rare.
Walkers - PRoW	During most of the operational phase, no impacts are anticipated. However, significant maintenance could cause temporary, localised disruptions similar to those during construction, but over a much smaller area and for a significantly shorter duration. Topple hazard of wind turbines for people using PRoW are considered very low, but it is a recognised planning and safety issue. Modern turbines are designed and certified to strict engineering standards, with multiple safeguards against structural failure, so complete collapse is extremely rare.
Cyclists	During most of the operational phase, no impacts are anticipated in relation to cyclists who may wish to make use of the onsite infrastructure. However, significant maintenance could cause temporary, localised disruptions similar to those during construction, but over a much smaller area and for a significantly shorter duration. Topple hazard of wind turbines for cyclists using the onsite infrastructure is considered very low, but it is a recognised planning and safety issue. Modern turbines are designed and certified to strict engineering standards, with multiple safeguards against structural failure, so complete collapse is extremely rare.
Horse Riders	A perceived negative impact exists for some equestrians when horse and carriage riders are within 200 m of a turbine, primarily due to the potential for blade and shadow movement to startle or frighten their animals. For the most part, the operational phase will be free of other impacts, with the exception of those arising from significant maintenance work which will have a similar impact on horse riders as those during construction, but over a much smaller area and for a significantly shorter duration.
Public Road Network	No impact.
Car Parking	No impact.
Users of Camp Sites & General Outdoor Recreation	During most of the operational phase, no impacts are anticipated. However, significant maintenance could cause temporary, localised disruptions similar to those during construction, but over a much smaller area and for a significantly shorter duration.
Local Communities	No impact.

5.3 Decommissioning Phase

The potential impacts during the decommissioning phase can only be fully assessed closer to that period, 40 years on from the completion of the Proposed Development. It would therefore be proposed that an updated Access Management Plan (AMP) would be undertaken at that time, if deemed necessary by Gwynedd Council.

6 Mitigation & Monitoring

6.1 Construction Phase

6.1.1 Common and Open Access Land Users

Within the red line planning boundary of the Proposed Development lie two parcels of registered Common Land, and a large area of Open Access Land, therefore there lies a responsibility of the Applicant to manage the statutory public access rights.

Maintaining the use of Open Access Land by the public during construction poses significant challenges to visitor safety and Site control. Given that users may not adhere to designated routes, it becomes difficult to prevent them from entering active construction zones. While allowing public access is preferred where feasible, the paramount concern for health and safety dictates that visitors cannot be permitted in close proximity to construction activities.

Therefore, the statutory right to 'open air recreation' under the CRoW Act, along with any permissive access for horse riders and cyclists, will be temporarily suspended within a designated Public Access Management Area (PAMA) for the duration of the Proposed Development's construction phase. This measure is essential to protect the health and safety of Common and Open Access Land users. Notifications of this temporary suspension will be prominently displayed on notices surrounding the Proposed Development Site, and on the Natural Resources Wales (NRW) and the Proposed Development websites. Permissive rights for cyclists and horse riders will be temporarily withdrawn by NRW during construction and reinstated upon completion.

The areas of Common Land and Open Access Land impacted by onsite access tracks is illustrated in **Figure 6** and **Figure 7,** respectively.

6.1.2 PRoW Users

Where a PRoW would lead users into direct conflict with construction activities, it will be closed for the duration of the construction phase. PRoWs which are crossed by onsite access tracks are as follows:

- Llandderfel No 175, footpath;
- Llandderfel No 176, footpath;
- Llandderfel No 177, footpath;
- Llandderfel No 182, footpath;
- Llandderfel No 128, footpath; and
- Llandderfel No 120, footpath.

These PRoWs relative to the onsite access tracks are illustrated in **Figure 8.**

However, any passable PRoWs that does not lead directly into a construction area and is not used by construction vehicles will remain open, except when construction activities are occurring at specific crossing points. Formal consent for any temporary closure of PRoWs will be agreed with the relevant local authorities. Once construction is complete, these PRoWs can be re-opened.

While the aim is to retain access to as many PRoWs as possible during the construction phase, the right to wander from the PRoWs will be prohibited under the temporary CRoW Act closure. The use of any PRoW within the PAMA will remain strictly limited to the PRoW itself, without broader CRoW or permissive use. This will be reinforced by signage at entry points to the PAMA and other means of communication.

Where PRoWs are closed, new temporary path diversions will be implemented to ensure safe and efficient connections. To facilitate potential diversions, options for temporary closure of footpaths and trails will be explored with the relevant local authorities. All PRoWs will be surveyed and upgraded as necessary before construction begins to allow multi-user passage and will be maintained for the lifetime of the Proposed Development.

The diversion and closure of footpaths will be signed and publicised on relevant project and local authority websites. Signs will also clearly indicate the location of the Proposed Development construction works and the access tracks to be used by construction traffic. These signs will be regularly checked and maintained for the duration of the construction period.

The Applicant will be responsible for addressing all related issues, including the erection, maintenance, and management of necessary infrastructure such as signage and barriers.

Any PRoWs within the PAMA identified as being closed during the construction phase will be inspected prior to closure. Once the construction phase is complete, these will be re-surveyed, and any necessary work carried out to ensure they are returned to an agreed condition with the relevant local planning authority.

All PRoWs within the PAMA that have remained open during the construction phase will be inspected, monitored, and maintained as necessary throughout the construction period. Once the construction phase is complete, all PRoW paths/roads will be returned to an agreed state.

6.1.3 Public Access Management

To ensure clear accountability for public access and safety within the areas of Common Land and Open Access Land within the red line planning boundary of the Proposed Development, a PAMA should be defined. This area will generally align with the construction working footprint but will also encompass any existing paths that might otherwise become dead ends. The Applicant will assume responsibility for managing this PAMA throughout the construction phase. Once the Proposed Development is operational, responsibility for the PAMA will revert to NRW and relevant private landowners, with the exception of any areas permanently leased by the Applicant, which will remain under their control. NRW will retain responsibility for the Common Land and Open Access Land outside the PAMA throughout all phases of the Proposed Development.

For health and safety reasons during the construction phases, the statutory right to ‘open air recreation’ under the CRoW Act, along with any permissive access rights for cyclists and horse riders, will be temporarily suspended within the designated PAMA. The remainder of this document primarily focuses on access management within this PAMA. Access to the broader areas outside the PAMA will continue to be managed by NRW, though the Proposed Development will provide information regarding any restrictions impacting these wider areas.

The Applicant will adopt a collaborative approach with NRW to manage all access restrictions and diversions across the interface between the PAMA and the wider network. Any path or road entering the PAMA will be clearly marked, an information point will be provided, and the entry point may be temporarily blocked if deemed appropriate for safety. Specific details regarding these measures are outlined further in this document. All necessary signage will be funded directly from the Proposed Development construction budget and will be used to inform the public about usable routes and potential construction hazards as required.

6.1.4 Construction Areas

All construction compounds (including batching plant), borrow pit, and turbine foundations will be fenced when actively being worked, as will any open excavations. If, after implementing the proposed mitigation measures, a risk assessment identifies the need for additional mitigation, further measures will be considered. These may include deploying banksmen when heavy plant machinery is operating during the construction of new tracks and the widening of existing tracks, and when construction traffic is anticipated to be intensive. If deemed necessary, 24-hour security, such as driving patrols, may be in place at construction sites within the PAMA during all construction activities.

Associated lighting (where necessary), gated entrances, and Site fencing will be in place from the very beginning of the construction work. All plant, equipment, and welfare units will be securely shut down, locked, and parked within the fenced area when not in use, wherever possible. If plant and equipment at working areas cannot be returned to a compound overnight, it will be locked in a safe condition and immobilised, where feasible.

6.1.5 Crossing of PRoW by Construction Traffic

The proposed access routes for the Proposed Development wind turbines will intersect with PRoWs. Mitigation measures are proposed to ensure public health and safety.

There may be locations within the Proposed Development's PAMA where PRoWs will remain open but will be crossed over by construction vehicles.

Any such crossing points will be fully signed and guarded in accordance with '*Safety at Street Works and Road Works: A code of practice*'[12] and Chapter 8 of the '*Traffic Signs Manual and Guidance for Safer Temporary Traffic Management*'.[13] All approaches to these crossing points will feature warning signs for walkers, cyclists, horse riders, and construction vehicles. Additionally, signs will be erected at all entrances to the Site indicating the location of construction works and the specific access tracks designated for construction traffic. When crossing points are not safe for public access, they will be temporarily closed off with appropriate signage.

Where access tracks, used by construction traffic, are accessible from a PRoW, lockable barriers or appropriate fencing will be used to prevent members of the public from entering construction areas. Barriers will be erected on each side of the crossing point, parallel to the track, to guide pedestrians to the designated safe crossing point where necessary, where PRoW users will have priority. These crossing points will be maintained in a clean and obstruction-free state, regularly inspected for signage, fencing, and footpath surface integrity. Where footpaths cross in areas of poor visibility, the visibility will be improved, or the footpath will be diverted to a new temporary crossing point with better visibility.

All construction staff will undergo an induction to alert them to the presence of recreational users in the vicinity of the Site and to the environmental, health, and safety measures required. All delivery drivers and plant operators will receive brief "toolbox talks" on the location of footpath crossing points and the safety procedures adopted for them.

All operatives and delivery drivers will be instructed to advise Site management of any deterioration in crossing point safety. All operatives and delivery drivers will be required to maintain a speed limit of 15 miles per hour (mph), reducing this speed further when passing pedestrians, cyclists, or riders using crossing points. This speed limit will be rigorously enforced.

If, following the implementation of the above mitigation measures, a risk assessment indicates that additional mitigation is required, further measures will be considered, which may include the use of banksmen. Banksmen would control PRoW crossings when working in a particular area or when construction traffic is anticipated to be heavy.

6.1.6 Equestrian

The British Horse Society has previously made recommendations on the interactions between HGV traffic and horses. Horses are normally nervous of large vehicles, particularly when they do not often meet them. Horses are flight animals and will run away in panic if really frightened. Riders will do all they can to prevent this but, should it happen, it could cause a serious accident for other road users, as well as for the horse and rider.

The main factors causing fear in horses in this situation are:

- Something approaching them, which is unfamiliar and intimidating
- A large moving object, especially if it is noisy
- Lack of space between the horse and the vehicle
- The sound of air brakes, and
- Anxiety on the part of the rider.

[12] Safety at Street Works and Road Works – A Code of Practice, Department for Transport, 2013
[13] Traffic Safety Measures and Signs for Road Works and Temporary Situations, Department for Transport, 2009

The British Horse Society has previously recommended the following actions that will be included in the Site training for all HGV staff:

- On seeing riders approaching, drivers must slow down and stop, minimising the sound of air brakes, if possible.
- If the horse still shows signs of nervousness while approaching the vehicle, the engine should be shut down (if it is safe to do so).
- The vehicle should not move off until the riders are well clear of the back of the HGV.
- If drivers are wishing to overtake riders, please approach slowly or even stop in order to give riders time to find a gateway or lay by where they can take refuge and create sufficient space between the horse and the vehicle. Because of the position of their eyes, horses are very aware of things coming up behind them.
- All drivers delivering to the Site must be patient. Riders will be doing their best to reassure their horses while often feeling a high degree of anxiety themselves.

Training for staff working at the Site will advise staff on how to react properly if encountering equestrians on the access route.

6.1.7 Public Road Network

While the full extent of temporary works is yet to be determined, it is anticipated that all public roads surrounding the Site will remain open throughout the construction phase. All work within the public road network will be undertaken by authorised contractors, fully complying with the Highways Act 1980 and local policy. A comprehensive Construction Traffic Management Plan (CTMP) will be developed to ensure the safe and efficient transportation of turbine components and all other construction materials and personnel to the Proposed Development during the construction phase. This CTMP will incorporate any specific requirements identified by the relevant authorities and will satisfy all planning conditions related to traffic and transport.

6.1.8 Users of Camp Sites & General Outdoor Recreation

During the construction phase of the Proposed Development, NRW may need to restrict the location and timing of certain recreational activities that require an activity permit. The risk assessments currently prepared for these activities will need to account for the proposed construction activities and will be agreed with NRW, as is current practice.

Ongoing discussions with local access officers, NRW, local community groups, and other user groups will continue to help integrate the construction proposals with the needs of those who use the Open Access Land for recreation.

Other informal uses of the Open Access Land, such as camping, may be prevented due to the temporary suspension of these rights. Activities will only be possible along the open PRoW. However, activities requiring permissions for areas outside the PAMA, within the remainder of the Open Access Land, may still occur at NRW's discretion.

6.1.9 Access for Emergency Vehicles

Any visitor to the Open Access Land or PRoWs will follow the same emergency procedures as they do currently. The emergency services will be fully informed about the construction of the Proposed Development, including details of AIL movements and any access restrictions in place within the vicinity of the Site.

Prior to construction, in accordance with The Construction (Design and Management) Regulations (CDM) Regulations 2015[14], the Principal Contractor for the Site will produce a comprehensive construction phase plan. This plan will include emergency procedures specific to the construction works and will be shared with the emergency services. Keys to any locked gates at access points to the forests will also be provided to the emergency services.

[14] The Construction (Design and Management) Regulations 2015, Secretary of State for Work and Pensions

An Outline Emergency Response Plan (ERP) will be prepared specifically for the Proposed Development construction phase. This outline ERP will detail the procedures to be adopted in the event of an environmental emergency during the construction period. The ERP's objectives are to provide guidance and information on actions to be taken by personnel involved in the construction process during an environmental incident. The plan will identify clear procedures to be followed in the event of any incident with the potential to cause environmental harm.

Furthermore, comprehensive guidance and procedures for all health and safety related incidents will be contained within the Construction Health and Safety Plan for the Proposed Development, which is expected to be prepared by the applicant's appointed Principal Contractor.

6.1.10 Proposed Signage

Restricted access and minor diversion sign plate examples are provided in **Annex 3.1**. All direction signs will be green and will have text height of 75 millimetres (mm) to allow easy viewing.

The principal contractor will enforce Site-specific speed limits, reinforced through advisory signage and weekly toolbox talks. Site exit signage will remind drivers of local speed restrictions and the presence of vulnerable road users.

In addition, the principal contractor will post a plan of the Site at the entrance points to the Site each week highlighting areas where works are ongoing to help advise path users.

6.2 During Operation

Following the commissioning of the Proposed Development, the temporary suspension of CRoW Act and permissive access rights will be lifted, and all PRoWs closed during construction will be reopened.

Should significant maintenance be required during the operational phase, mitigation measures similar to those employed during construction will be applied to direct impacts on PRoW, where appropriate. Any such temporary disruption will be highly localised to the maintenance area and of a much shorter duration compared to the construction phase.

Recognising that some equestrians perceive turbines to have a negative impact when horse riders and carriage drivers pass within 200 m, due to the potential for blade and shadow movement to startle animals, signage will be installed to warn riders. This signage will be placed at relevant locations, alerting equestrians and other users to the presence of turbines.

6.3 During Decommissioning

A decommissioning plan will be produced for agreement with Gwynedd Council prior to decommissioning commencing. It is expected that decommissioning will not cause as much disruption as construction. It is impossible to say at this stage what recreational activities will be taking place within the vicinity of the Site, as such it is proposed that a further OAMP is produced in advance of decommissioning.

7 Enhancement

7.1 Proposed Network Opportunities

It is proposed that the Site access tracks will be available for full public use for non-motorised users upon completion of the construction and commissioning phases.

At crossing points, information signs will be provided with a "*You are Here*" marker to support wayfinding around the Site. The format of the information board would be circulated to Gwynedd Council for their agreement prior to their deployment at Site.

At the Site access, the access track would be gated to prevent unauthorised vehicle access to the wind farm tracks.

When operational and maintenance traffic is operating on the Site, they will be subject to a 15 mph speed limit and will be required to use their hazard warning lights or display a flashing beacon when operating on the tracks to aid and alert other users.

The Proposed Development also presents opportunities for access enhancements, which could result in long-term benefits for the local community and visitors. Key enhancement opportunities include:

- Improvements to Existing Access Tracks, and
- Improvements to PRoWs within the red line planning boundary of the Proposed Development.

7.2 Ongoing Maintenance

The crossing points and Site access tracks will be fully maintained for the operational phase of the Proposed Development. This is a requirement of ensuring safe and efficient access to the turbines and other infrastructure in the area.

Works requiring major lifting exercises are extremely rare during the operational phase of wind farms. In the event of a crane lift event, a safe working area would be provided and advance notice provided to active travel users. The extent of the safe working area will depend upon the nature of the works.

Should works require the creation of a safe working area that impinges on access, the wind farm operator will consult with Gwynedd Council to advise of the issue and the timing of any exclusion zone. Given the lead time to arrange spare parts, crane hire and technician availability, it is likely that several weeks' notice can be provided.

Access for cranes the size required onsite would also require an AIL permit which can take up to eight weeks' notice to process.

During the actual works, an exclusion zone would be created in line with Health and Safety Executive (HSE) regulations and the turbine maintenance providers safety rules. These are likely to include barriers, warning signs and fencing.

8 Summary

Pell Frischmann Consultants Limited has been commissioned by RSK Environment Limited on behalf of Foel Fach Wind Farm Limited, to prepare an Outline Access Management Plan for the proposed Foel Fach Wind Farm, located to the north-east of Bala, within the Gwynedd Council administrative area, North Wales.

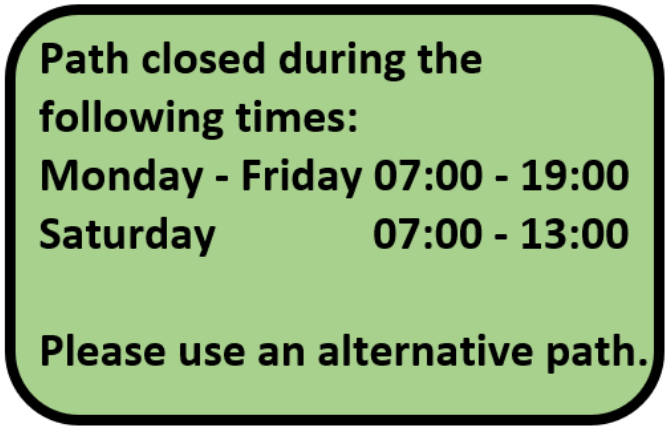
A review of the land surrounding the Proposed Development Site found that the Site has two parcels of Common Land and more than half of the red line planning boundary of the Proposed Development is made up of Open Access Land. A review of existing paths in the area found that there are a number of Public Right of Way (PRoW) footpaths located within the red line planning boundary of the Proposed Development Site and in the wider vicinity of the Site, connecting to a wider network of PRoW footpaths and bridleways surrounding the Site.

A series of measures are proposed to help mitigate and offset the impacts of both the construction and operational phase traffic flows on Open Access Land and the PRoW network in close proximity to the Site.

It is considered that the information provided, will provide the basis for a full Outdoor Access Management Plan to be prepared post consent, which can be secured by an appropriately worded planning condition.

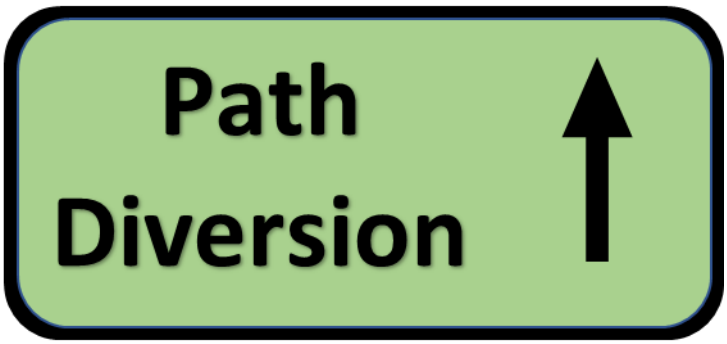
Annex 3.1: Indicative Diversion Sign Plates

Path Restrictions Signage:

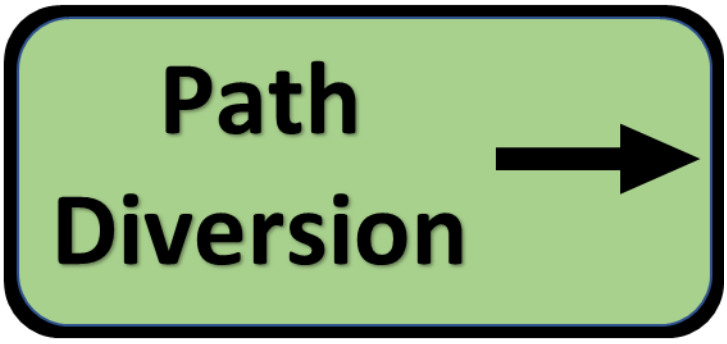


Diversion Signage:

Sign Type 1



Sign Type 2



Sign Type 3

General Information Sign Example:

Foel Fach Wind Farm

Walkers, Cyclists and Horse Riders

Access to the path is being managed during the wind farm construction works.
Please be aware that the path passes through a wind farm construction site. For your safety, please follow to the subsequent guidance:

- Please follow the signage and remain on the path or the approved diversion route at all times.
- Please follow verbal guidance from any wind farm construction personnel along the path.
- Please be aware that other users and construction vehicles or heavy plant such as excavators or dump trucks may also be on the path.
- If you meet any construction plant working on the path, please ensure the operator stops the machine and waves you past. Never assume that the operator has seen you!

Know the code before you go: www.naturalresources.wales

If you have any queries, please call 07XXXXXXXXX

Thank you for keeping all path users safe.