

Llandyfaelog Substation Transport Statement

On behalf of **National Grid Electricity Transmission**
nationalgrid

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1 Introduction

1.1.1 Stantec UK Limited (Stantec) has been appointed by National Grid Electricity Transmission (National Grid), hereby referred to as 'the Applicant', to produce a Transport Statement to support the planning application to be submitted to Carmarthenshire County Council (CCC) for the development of Llandyfaelog Substation, hereby referred to as 'the Proposed Development'. The Proposed Development consists of a new 400kV substation, approximately six kilometres south of Carmarthen, and is hereby referred to as 'the Site'.

1.2 Project Description

1.2.1 The Proposed Development is comprised of the following principal elements:

- Construction of a single level platform (260 metres by 640 metres) on which an Air Insulated Substation (AIS) is sited measuring 155 metres by 602 metres
- Bellmouth access to the A484 with an operational access road to connect the platform to the A484
- Modification works to the existing 400kV Overhead Line (OHL) to connect the substation to the existing OHL involving the installation of two new towers (pylons) and one replacement tower (pylon) circa 18 metres and 62 metres
- Associated drainage, and hard and soft landscaping

1.2.2 The location of the Proposed Development is shown in Figure 1-1, with a larger version provided in Appendix A.

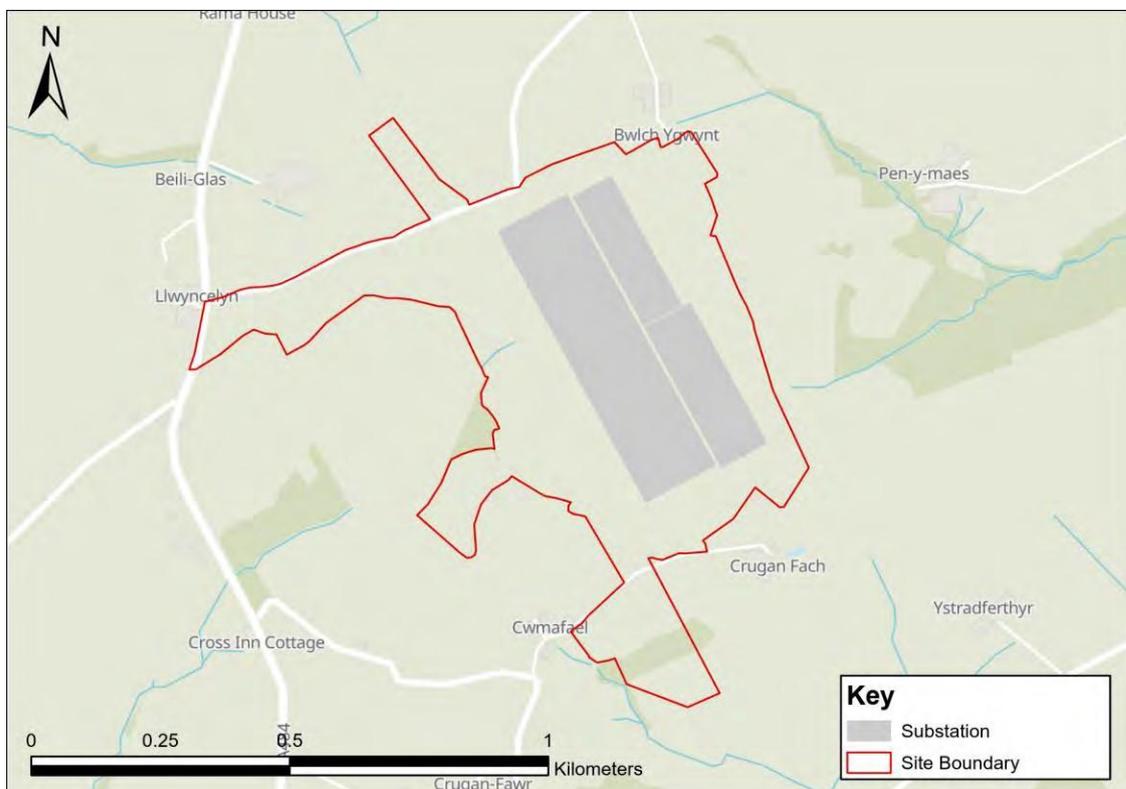


Figure 1-1: AIS Substation Compound

- 1.2.3 Short sections of new 400kV OHL and associated equipment will be required to connect the new substations to the existing OHL network. Existing 132kV OHLs crossing the Site will be diverted by NGED. These works are to be consented separately by NGED whilst specific details are not yet known, the replacement lines are assumed to be undergrounded.
- 1.2.4 The proposed Substation will be unmanned during operation. Welfare and Office facilities are included for staff as there will be the requirement for routine site visits for inspection and maintenance.

1.3 Overview and Structure of Transport Statement

- 1.3.1 The TS is divided into the following chapters:
- The remainder of **Chapter 1** summarises the Site context, background, and Proposed Development
 - **Chapter 2** summarises the existing national, regional, and local planning policy that informs the approach and methodology of this TS.
 - **Chapter 3** outlines baseline conditions on-site and existing accessibility by all modes of transport
 - **Chapter 4** details the methodology and results of the trip generation and distribution for the Project Period, plus an overview of the Traffic Impact Assessment
 - **Chapter 5** details the approach to the Site access proposed in both the construction and operational phases of development.
 - **Chapter 6** details the construction phase and an overview of the Construction Traffic Management Plan
 - **Chapter 7** summarises and concludes the TS.
- 1.3.2 An outline Construction Traffic Management Plan (oCTMP) has been produced to accompany this TS and should be read in conjunction with this document.

1.4 Background

- 1.4.1 The Site is located in Llandyfaelog, approximately six kilometres south of Carmarthen, Carmarthenshire, southwest Wales, and is wholly within the administrative boundary of Carmarthenshire County Council. The site has historically been utilised for agricultural purposes, comprising agricultural fields. The Site is located to the east of the navigable river Towy.

1.5 Site Context

- 1.5.1 The Site covers a total area of approximately 52 hectares (ha) and comprises of several agricultural fields, in use as grazing and arable farm land.
- 1.5.2 The elevation profile of the Site is fairly flat with slight changes in elevation occurring towards the south of the Site. The Site is screened by a range of natural landscaping including trees and large hedges.

1.5.3 There are two existing National Grid High Voltage Overhead Lines (OHLs) crossing the site. The Site and its surrounding context is shown in



1.5.4 Figure 1-2.



Figure 1-2 Site Context

2 Policy

2.1 Introduction

- 2.1.1 This section has been prepared to consider policy relevant to transport matters for the Proposed Development of the Llandyfaelog Substation Site.

2.2 National Policy

Planning Policy Wales 2024

- 2.2.1 Planning Policy Wales (PPW) sets out the Welsh Government's land use planning policies and provides the framework for sustainable development across Wales. The latest edition (Edition 12, updated July 2024) aligns with the Well-being of Future Generations (Wales) Act 2015 and promotes placemaking, environmental protection, economic growth, and community well-being. It guides planning decisions through a holistic approach that integrates social, economic, environmental, and cultural considerations to support resilient and inclusive places.

- 2.2.2 Paragraphs 4.1.56 and 4.1.57 of Planning Policy Wales (Edition 12, February 2024) includes the following policy regarding Transport Assessments:

“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.

Planning applications for developments, including changes of use, falling into the categories identified in TAN 18: Transport must be accompanied by a Transport Assessment. In addition, in areas where the transport network is particularly sensitive, planning authorities should consider requiring Transport Assessments for developments which fall outside of the thresholds set out in TAN 18. Transport Assessments can be required for any proposed development if the planning authority considers that there is a justification or specific need. Transport Assessments provide the basis for negotiation on scheme details, including the level of parking, and measures to improve walking, cycling, and public transport access, as well as measures to limit or reduce levels of air and noise pollution. 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.”

- 2.2.3 This policy document establishes the importance of assessing the impact of the Proposed Development traffic, and the need to consider construction traffic. To satisfy this policy the Applicant has committed to submitting this Transport Statement and oCTMP.

Planning Policy Wales Technical Advice Note 18: Transport

- 2.2.4 Technical Advice Note 18 (TAN 18) supports the aims of Planning Policy Wales by providing detailed guidance on integrating transport and land use planning to promote sustainable travel and reduce car dependency. It helps implement Planning Policy Wales's overarching goals for sustainable development and well-connected communities.

- 2.2.5 Paragraph D.4 identifies the thresholds of development for which a transport assessment would be required. The Proposed Development does not fall into the identified thresholds, and therefore a Transport Assessment is not required for this Proposed Development. However, a Transport Statement has been produced.

Future Wales: The National Plan 2040

- 2.2.6 Future Wales: The National Plan is Wales' national development framework ('Future Wales'), setting the direction for development in Wales to 2040. It has development plan status and provides a strategy for addressing key national priorities through the planning system, including sustaining, and developing a vibrant economy, and achieving decarbonisation and climate resilience.
- 2.2.7 Policy 17 of The National Plan supports new strategic grid infrastructure that is designed to minimise visual impact on nearby communities. The Welsh Government has stated it will work with stakeholders including National Grid to transition into a multi-vector grid network and reduce the barriers to the implementations of new grid infrastructure.

Traffic Management Act 2004

- 2.2.8 The Traffic Management Act 2004 is a UK law that aims to improve traffic flow and reduce congestion on roads. It places a duty on local authorities to manage their road networks effectively.
- 2.2.9 Part 2 of the Traffic Management Act sets out the responsibility of Local Traffic Authorities to manage traffic networks within their geographical area of responsibility. This includes efficient use of the highway network and the requirement to take measures to minimise contributions to traffic congestion.
- 2.2.10 This Transport Statement and the accompanying oCTMP provide justification for how traffic associated with the Proposed Development can be efficiently managed. Together, they support compliance with the duties placed on local authorities under the Traffic Management Act 2004, particularly in relation to minimising congestion and ensuring the effective operation of the surrounding highway network.

2.3 Local Policy

Carmarthenshire Local Development Plan 2006 – 2021

- 2.3.1 The Carmarthenshire Local Development Plan was formally adopted on 10 December 2014 and sets out the Authority's policies and proposals for the future development and use of land.
- 2.3.2 "Policy TR1: Primary and Core Road Networks" supports development proposals that do not impede traffic flow or compromise safety on the primary and core road networks. The policy aims to safeguard the functionality and safety of these strategic routes, ensuring that new developments integrate effectively with the existing transport infrastructure.
- 2.3.3 The Proposed Development aligns with the principles of Policy TR1 by ensuring that access arrangements are designed to maintain safe and efficient traffic movement. The scheme will not introduce adverse impacts on the primary or core road networks and will be developed in a manner that supports the continued functionality and safety of the surrounding transport infrastructure.
- 2.3.4 "Policy TR2: Location of Development - Transport Considerations" outlines criteria for assessing the transport implications of development proposals, which are the following:
- It is located in a manner consistent with the plans strategic objectives, its settlement framework and its policies and proposals;
 - It is accessible to non-car modes of transport including public transport, cycling, and walking;

- Provision is made for the non-car modes of transport and for those with mobility difficulties in the design of the proposal and the provision of on-Site facilities;
 - Travel Plans have been considered and where appropriate incorporated.
- 2.3.5 Given the nature of the Site, some of the specific provisions of Policy TR2 are not directly applicable. However, the Proposed Development will broadly support the policy's principles. It will be designed to ensure safe access and will not negatively impact the surrounding transport network.
- 2.3.6 Policy TR3 "Highways in Developments" promotes the development of transport infrastructure that enhances accessibility, safety, and sustainability. It supports schemes that improve walking, cycling, and public transport networks, and encourages developments that reduce reliance on private vehicles while integrating effectively with existing transport systems.
- 2.3.7 The Transport Statement upholds Policy TR3 by demonstrating that the proposed substation development meets appropriate access and safety standards. It outlines visibility splays and access arrangements that support safe vehicle movements and maintain connectivity with the surrounding road network. These provisions ensure the scheme integrates effectively with existing infrastructure and aligns with the strategic transport objectives of the plan.
- 2.3.8 Policy GP1 "Sustainability and High-quality Design" sets out criteria to ensure that all development proposals contribute positively to the built and natural environment. It promotes high-quality design that respects local character, enhances sustainability, and supports safe, accessible, and inclusive places. The policy is used to assess whether proposals meet standards for visual impact, energy efficiency, and integration with surrounding areas.
- 2.3.9 The Transport Statement supports Policy GP1 by demonstrating that the substation development includes safe, well-designed access arrangements. It details visibility splays and vehicle movements in Chapter 6, presents Personal Injury Collision (PIC) data analysis in Section 3.5, and assesses traffic volumes against baseline flows in Chapter 5, all of which contribute to a safe and context-sensitive transport strategy.

2.4 Carmarthenshire Local Development Plan 2018 - 2033

- 2.4.1 The Carmarthenshire Revised Local Development Plan (rLDP) 2018-2033 is currently undergoing independent examination and has not yet been formally adopted. Nonetheless, the rLDP sets out strategic principles that are material considerations in planning decisions. In terms of transport, the plan promotes a transition toward sustainable and low-carbon mobility, including support for active travel, public transport integration, and reducing reliance on private vehicles. While the site itself is a substation and not situated in a highly connected location, these principles remain relevant in guiding infrastructure development, particularly where it supports wider network resilience, renewable energy integration, and sustainable transport systems.

3 Baseline Conditions

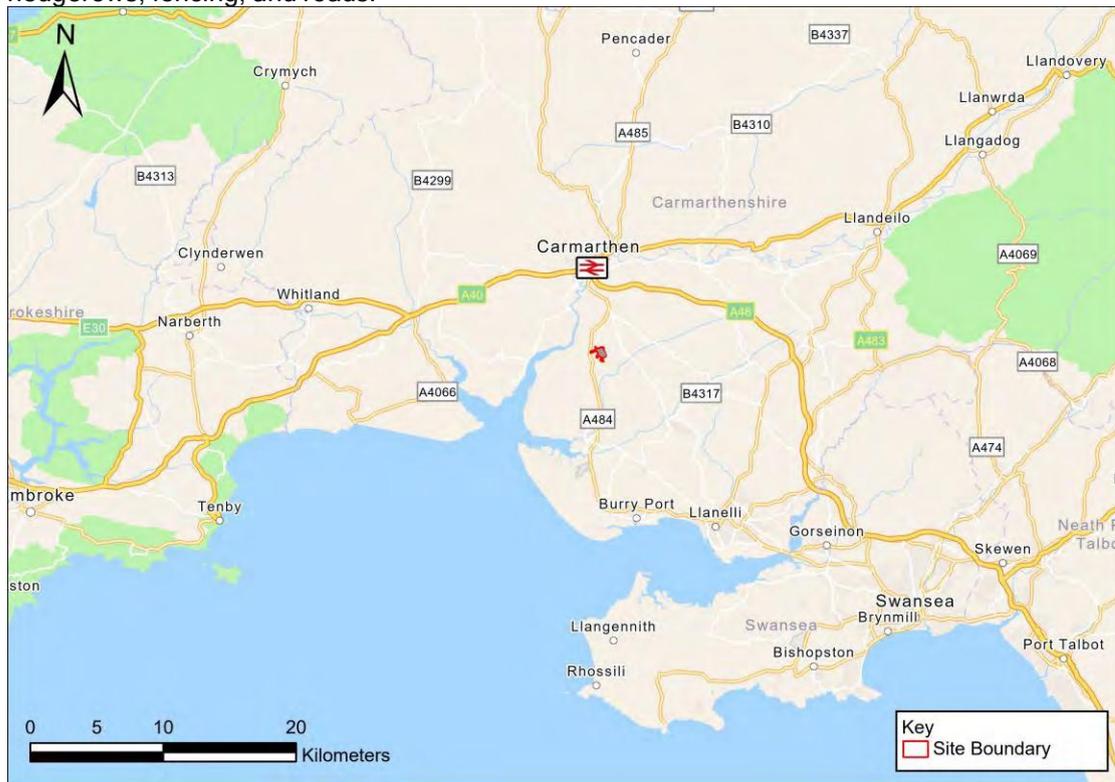
3.1 Introduction

- 3.1.1 This chapter provides a detailed review of the predominant transport conditions within the vicinity of the Site. This includes the existing use of the Site, the local and strategic networks providing access to the Site and accident data review.
- 3.1.2 The baseline review provides the context for the detailed assessment of the likely impact of the Proposed Development and of the potential enhancements that may be required in order to deliver a development that is sustainable in transport terms.
- 3.1.3 This chapter considers the following elements:
- Site location and current use;
 - Site access arrangements;
 - Existing conditions of the local transport network across different modes;
 - Local highway network performance;
 - Road safety.

3.2 Site Location and Current Use

- 3.2.1 The Site is situated approximately 6 kilometres south of the town Carmarthen. The closest residential areas to the Site are:
- Idole - approximately two kilometres to the north;
 - Cwmffrwd - approximately 3.5 kilometres to the north;
 - Llandyfaelog - approximately 1.5 kilometres to the south;
 - Other residential dwellings and farmhouses, which are sparsely located around the surrounding area.
- 3.2.2 The Proposed Development is on land to the east of A484 and is approximately five kilometres south of A48. The Site is bound to the north by the C2074 which is roughly 650 metres long, that connects to the A484 via a priority junction in Upland Arms. The Site's existing land use comprises agricultural fields, bound by a mixture of woodland trees,

hedgerows, fencing, and roads.



3.2.3 Figure 3-1 places the Site in a regional context and shows it in relation to locations including Pembroke, Milford Haven, Llanelli, and Swansea.

3.2.4 The main strategic routes to the area near the Site are:

- A48 towards Carmarthen to the west and Gloucester to the east. This route links to Newport, Cardiff, and Swansea.
- A40 towards Goodwick, Pembrokeshire to the west and London to the east. This route links to Oxford, Cheltenham, Gloucester, and Brecon.
- Pensarn Roundabout connects A484 with A40 and A48 at the western terminus of the A48, where that road meets the A40.

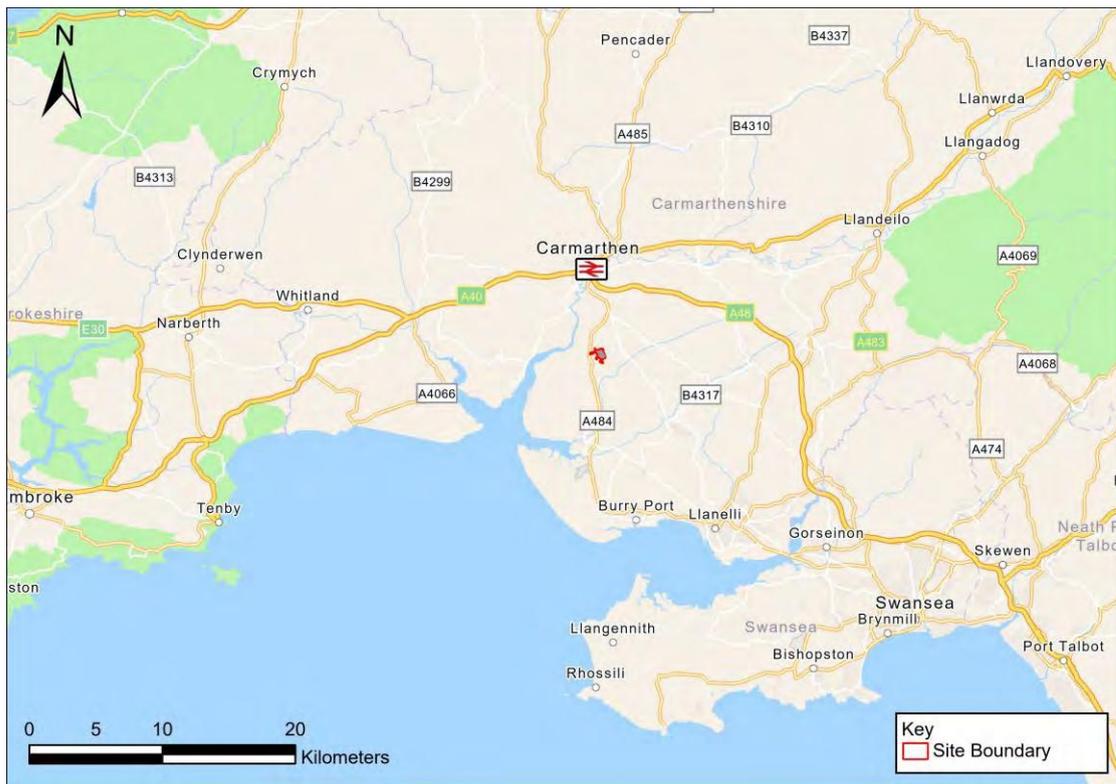


Figure 3-1: Regional Site Plan

3.3 Existing Conditions of Local Transport Network

Highway Network

- 3.3.1 The Site is located to the east of A484, which runs north to south between Cardigan to the north and Swansea to the south via Llanelli and Carmarthen. The A484 is a single carriageway road, beginning in the south at a roundabout with the A483 near Fforestfach, and ending in the north at a roundabout adjacent to the Cardigan bypass's Priory Bridge, on the A487. Speed limits along the section of A484 in relatively close proximity to the Site vary between 40mph and 50mph, with a section of 30mph when entering the built-up area of Cwmffrwd.
- 3.3.2 The A40 lies approximately 5.5 kilometres north of the Site and forms a vital east-west strategic corridor across South Wales. To the east, the A48 provides direct access to the M4 motorway, facilitating efficient connections towards major urban centres including Newport, Cardiff, and beyond to London. Travelling west, the A40 links seamlessly with Haverfordwest and the broader Pembrokeshire region, supporting both regional and long-distance travel. As a dual carriageway with national speed limits for much of its route, the A40 serves as a key artery for commercial, commuter, and leisure traffic, significantly enhancing connectivity and accessibility for the area surrounding the Site.
- 3.3.3 The B4309 runs approximately 1.75 kilometres to the east of the Site and connects to the A484 approximately three kilometres to the north of the Site. The B4309 is a single carriageway road with continuous road markings and runs south to Llanelli. Speed limits along B4309 are 50mph on the section between Cloigyn and A484, lowering to 40mph and further to 30mph when approaching Pontantwn.
- 3.3.4 The B4306 connects to the B4309 at a T-junction approximately 2.75 kilometres northeast of the Site, and runs southeast to Hendy, Llanelli. The B4306 is a single-carriageway road with continuous road markings and speed limits of 50mph, lowering to 30mph with speed cameras

when approaching Crwbin. There are multiple cattle grids along the B4306 and signs for crossing animals.

- 3.3.5 The Site is located approximately five kilometres south of A48, which is a trunk road that runs east to west between Highnam and Carmarthen and is a key connector between Newport, Cardiff, Port Talbot, and Swansea. A48 is a dual carriageway with national speed limits.
- 3.3.6 Other roads surrounding the Site consist of rural and agricultural roads with intermittent road markings. Many of these roads are bordered by hedgerows and fencing onto agricultural land.

Railway Access

- 3.3.7 The closest railway stations to the Site are Ferryside, situated approximately six kilometres to the south-west, and Carmarthen, around six kilometres to the north. Ferryside offers hourly services operated by Transport for Wales, including routes towards Carmarthen and Cardiff Central, as well as less frequent connections to Swansea, Milford Haven, Pembroke Dock, Fishguard Harbour, Tenby, and Manchester Piccadilly.
- 3.3.8 Both stations are located on the West Wales Line, but their roles and service levels differ. Carmarthen serves as a regional transport hub, acting as a terminus for numerous routes with frequent trains to Swansea, Cardiff, and further destinations such as Manchester and London. Ferryside, by contrast, is a smaller local stop mainly served by trains running between Pembroke Dock, Milford Haven, and Swansea. While both stations have links to nearby locations like Kidwelly, Whitland, and Llanelli, Carmarthen offers more comprehensive facilities and a broader timetable. A summary of services from Ferryside and Carmarthen is provided in Table 3-1. The location of the Ferryside and Camarthan Railway Stations are shown in Figure 3-2.

Table 3-1 Railway Services from Ferryside and Carmarthen Railway Stations

Station	Destination	Frequency (Mon–Sat)	Avg Journey Time (Mon–Sat)	Frequency (Sun/Bank Hol)	Avg Journey Time (Sun/Bank Hol)
Ferryside	Carmarthen	Hourly	~10 minutes	Every 2 hours	~10 minutes
	Swansea	Every 1-2 hours	~50 minutes	Every 2-3 hours	~55 minutes
	Pembroke Dock	Limited (2-3/day)	~1 hr 30 mins	Very limited	~1 hr 35 mins
	Milford Haven	Limited (2-3/day)	~1 hr 40 mins	Very limited	~1 hr 45 mins
Carmarthen	Swansea	Hourly	~50 minutes	Every 1-2 hours	~55 minutes
	Cardiff Central	Hourly	~1 hr 50 mins	Every 2 hours	~2 hrs
	Manchester Piccadilly	1-2/day (direct)	~4 hrs 30 mins	Limited	~4 hrs 45 mins
	London Paddington	1-2/day (via Swansea)	~4 hrs 30 mins	Limited	~4 hrs 45 mins

Bus Access

- 3.3.9 The nearest bus stop to the Site is the Llandyfaelog Upland Arms bus stop, located to the west of the Site along A484.
- 3.3.10 As of August 2025, bus service 198, operated by Morris Travel, runs between Four Roads and Carmarthen Bus Station. This service operates four times daily, with no service on Sundays.
- 3.3.11 In addition, bus service X11, operated by First Cymru, runs between Swansea Bus Station and Carmarthen Bus Station. The X11 offers a twice-hourly service from 06:15 to 18:15 also with no service on Sundays. These services are summarised in Table 3-2 and their locations are shown in Figure 3-2.

Table 3-2 Bus Services from Llandyfaelog Upland Arms Bus Stop

Bus Stop / Service	Location / Route	Operator	Frequency	Sunday Service
198	Four Roads ↔ Carmarthen Bus Station	Morris Travel	4 times daily	No
X11	Swansea Bus Station ↔ Carmarthen Bus Station	First Cymru	Twice hourly (06:15-18:15)	No

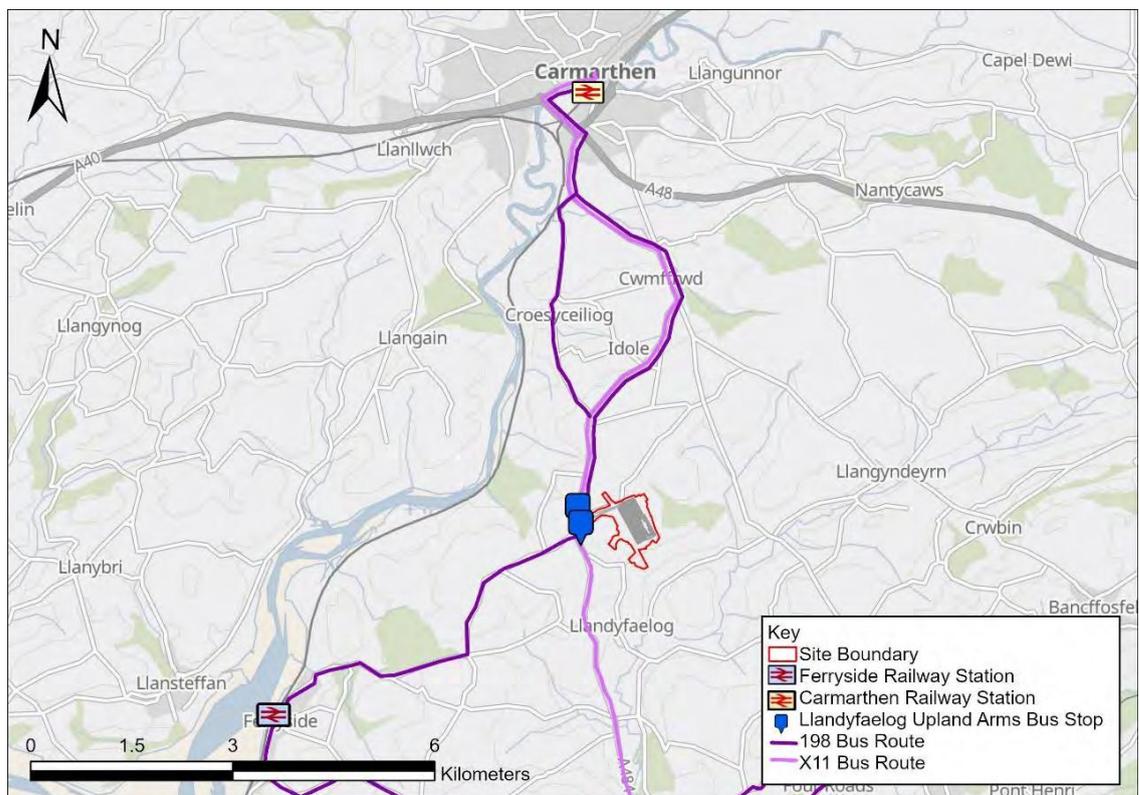


Figure 3-2 Public Transport Services in Site Vicinity

Cycle and Pedestrian Network

- 3.3.12 The National Cycle Network Route 4 (NCN 4) runs to the west of the site, connecting Ferryside and Carmarthen. While the section of the A484 adjacent to the site is not formally

designated as part of NCN 4, it is likely used by cyclists as a link between defined segments of the route. The nearest designated sections of NCN 4 are located on Carmarthen Road in Ferryside and along the northern stretch of the A484. The location of NCN 4 is shown in Figure 3-3.

3.3.13 The Public Right of Way (PRoW) network in the site's vicinity are listed below and shown in Figure 3-3. Footpath 29/14/2 crosses the southern part of the site boundary, running east to west. However, this footpath does not traverse the completed Proposed Development within the boundaries of the site itself.

- PRoW 29/10/1 - to the northeast of the Site
- PRoW 29/13/1 - to the east of the Site
- PRoW 29/14/1 & 2 - to the south and east of the Site and intersecting the Site
- PRoW 29/15/1 - to the east of the Site
- PRoW 29/16/1 - to the south of the Site
- PRoW 29/18/1 - to the south of the Site
- PRoW 29/19/1 - to the south of the Site

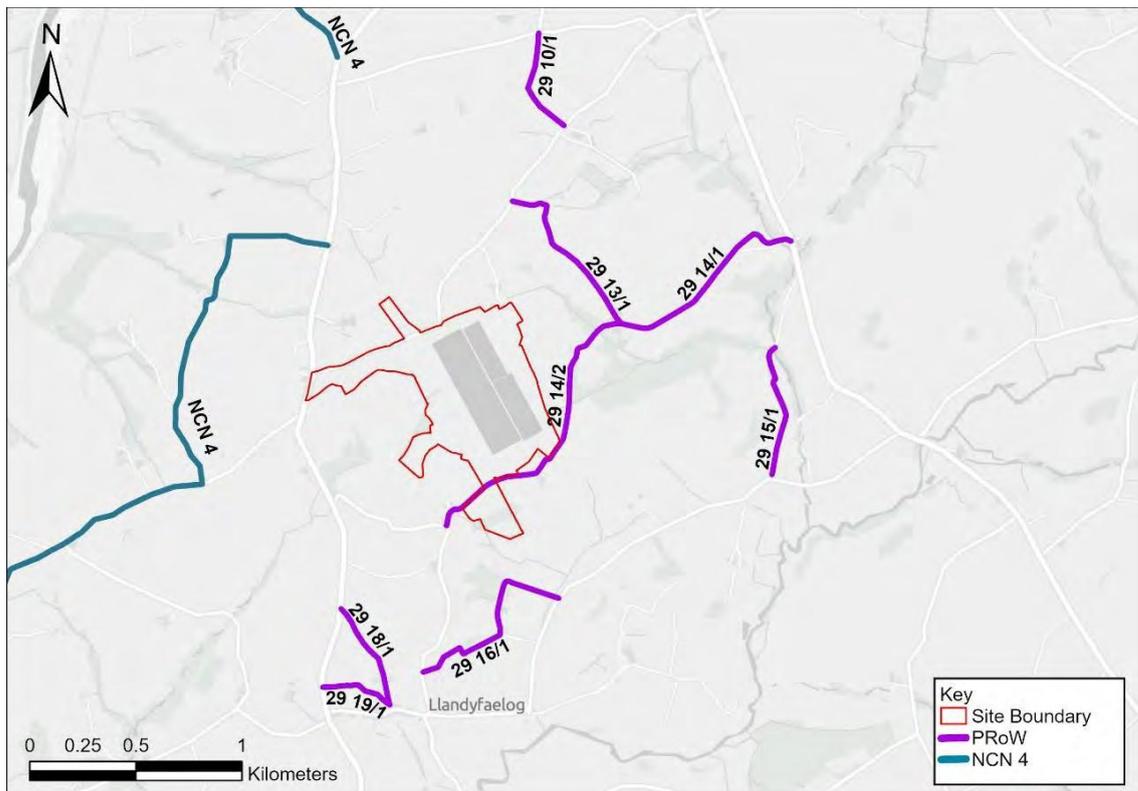


Figure 3-3 Walking and Cycling networks in Vicinity of the Site

3.4 Local Amenities

3.4.1 Along the route to the Site, amenities are limited. Meithrinfa Liliwenfach and Cywion Bach Nursery are situated approximately 4 kilometers and 2.75 kilometres north of the Site and

accessible via the A484. Additionally, Coleg Sir Gar – Pibwrlwyd is located approximately 5 kilometres to the north also along the A484. There is also a pub and church in Llandyfaelog village approximately 1.5km south of the site. Beyond these, key amenities such as primary and secondary schools, local shops, and community facilities are primarily available in Carmarthen.

3.5 Local Highway Network Performance

- 3.5.1 Initial ATC surveys were conducted between 06 July 2023 and 12 July 2023 to establish the baseline traffic flows along the A484, the main route connecting the Site to the Strategic Road Network (SRN). The survey results provided an overview of the traffic flows and patterns on the A484 prior to the confirmation of the Site access road location.
- 3.5.2 Further ATC surveys were undertaken between 12 June 2024 and 18 June 2024 to assess the traffic flows of the road network in the direct vicinity of the newly confirmed location for the proposed Site access road. The ATC survey locations were positioned on the A484 and C2074.
- 3.5.3 Additionally, a Junction Turning Count (JTC) survey was undertaken on 12 June 2024 at the A484 / C2074 junction to understand the traffic flows and distribution at the A484 / C2074 junction, near to the Site access. The JTC and recent ATC contributed to determining the suitability of the C2074 as a potential access road for staff vehicles to the Site.

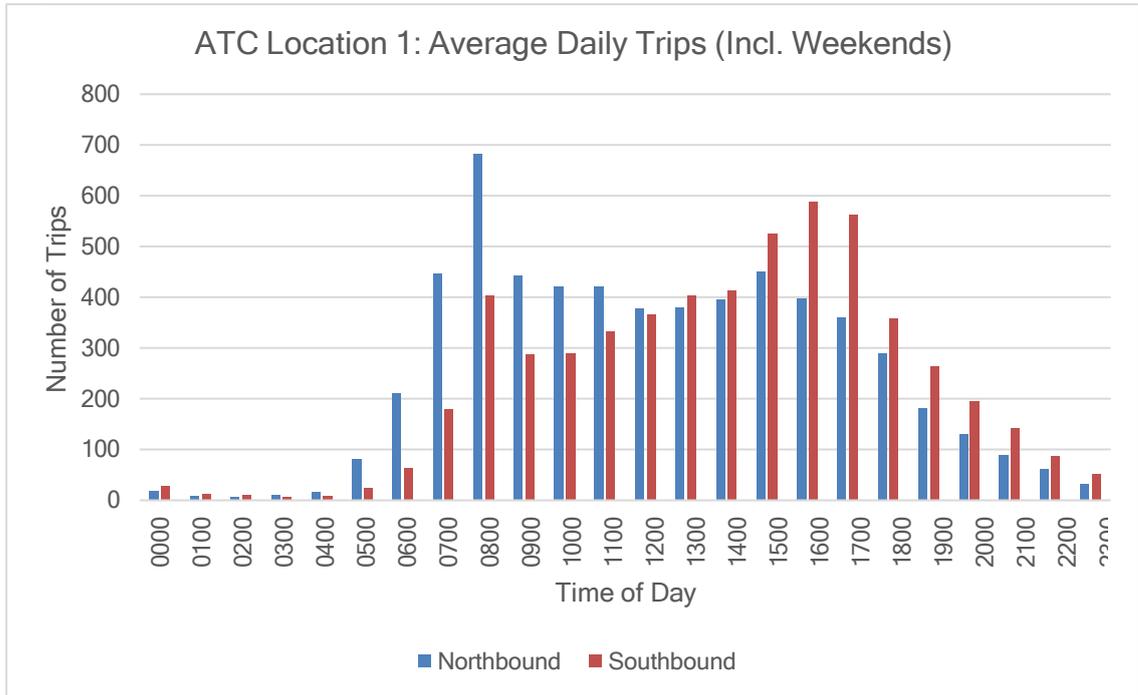
July 2023 ATC Survey Results

- 3.5.4 The surveys were undertaken between 06 July 2023 and 12 July 2023. The three ATC survey locations were as follows:
 - ATC Location 1: Parc Pensarn A484 (51.842128, -4.309767)
 - ATC Location 2: Cwmffrwd A484 (51.827311, -4.286308)
 - ATC Location 3: Upland Arms A484 (51.806792, -4.303773)

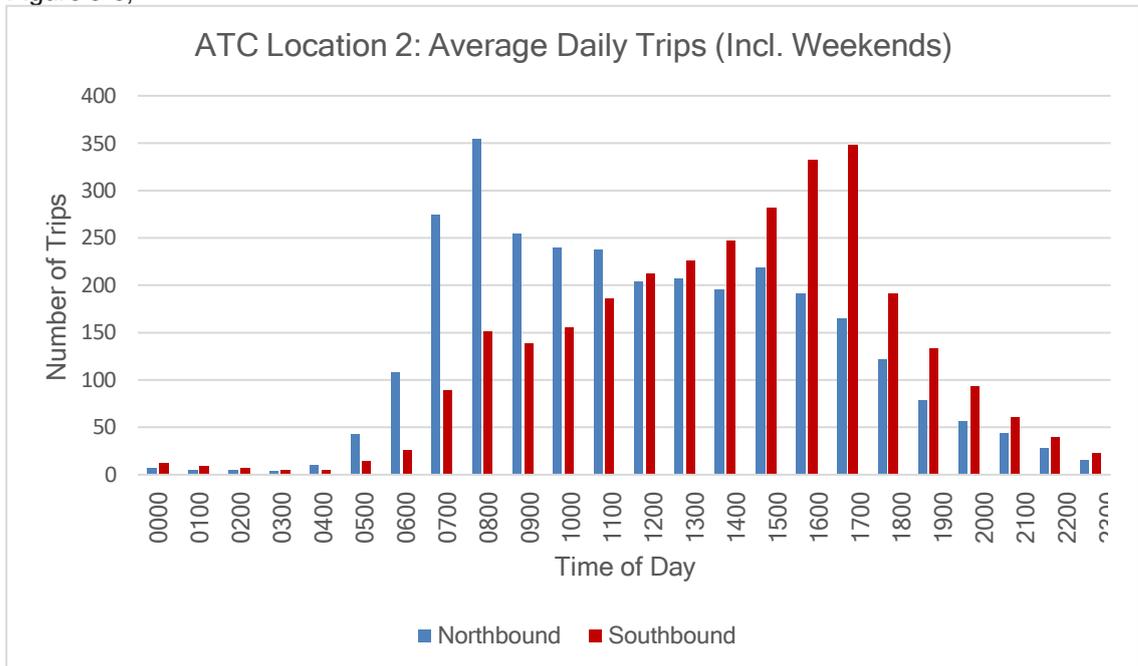


Figure 3-4: July 2023 ATC Survey Locations

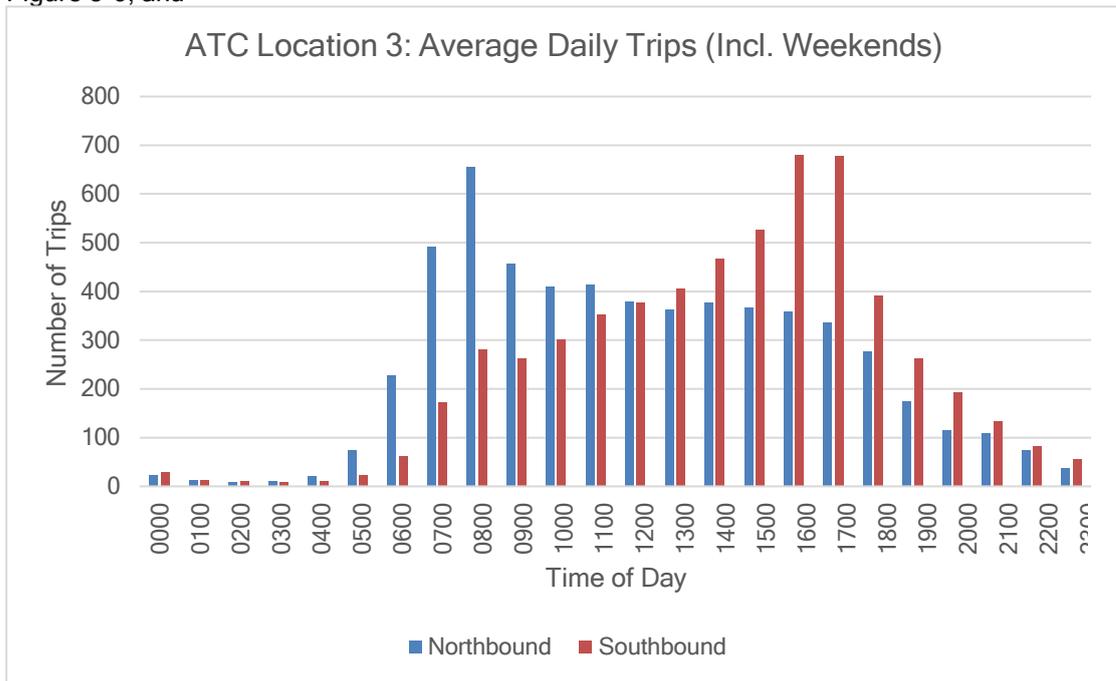
3.5.5 The average daily trips (including weekends) by time of day for ATC Locations 1, 2 and 3 are outlined in



3.5.6 Figure 3-5,



3.5.7 Figure 3-6, and



3.5.8 Figure 3-7 below.

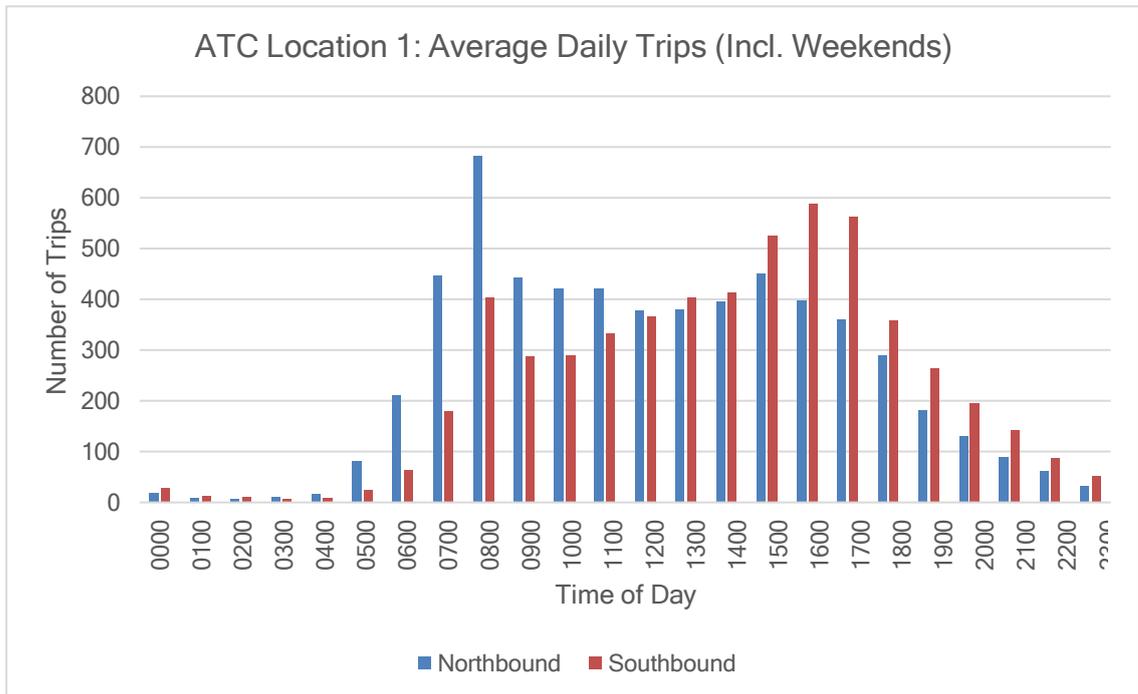


Figure 3-5: ATC Location 1: Average Daily Trips (Incl. Weekends) – Northbound and Southbound

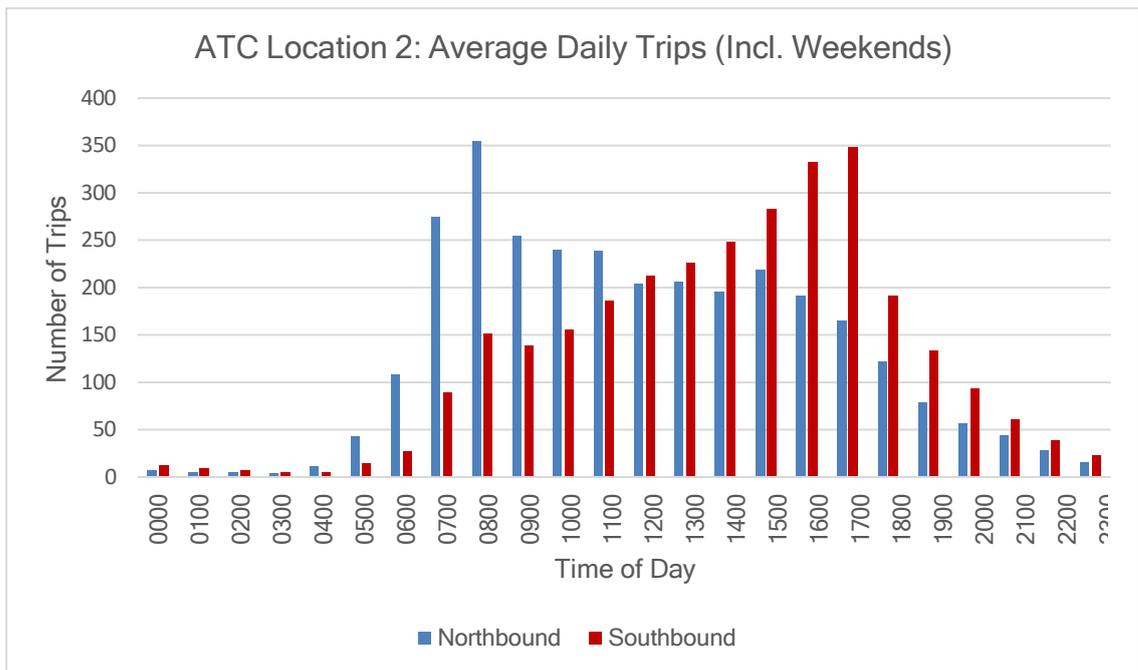


Figure 3-6: ATC Location 2: Average Daily Trips (Incl. Weekends) - Northbound and Southbound

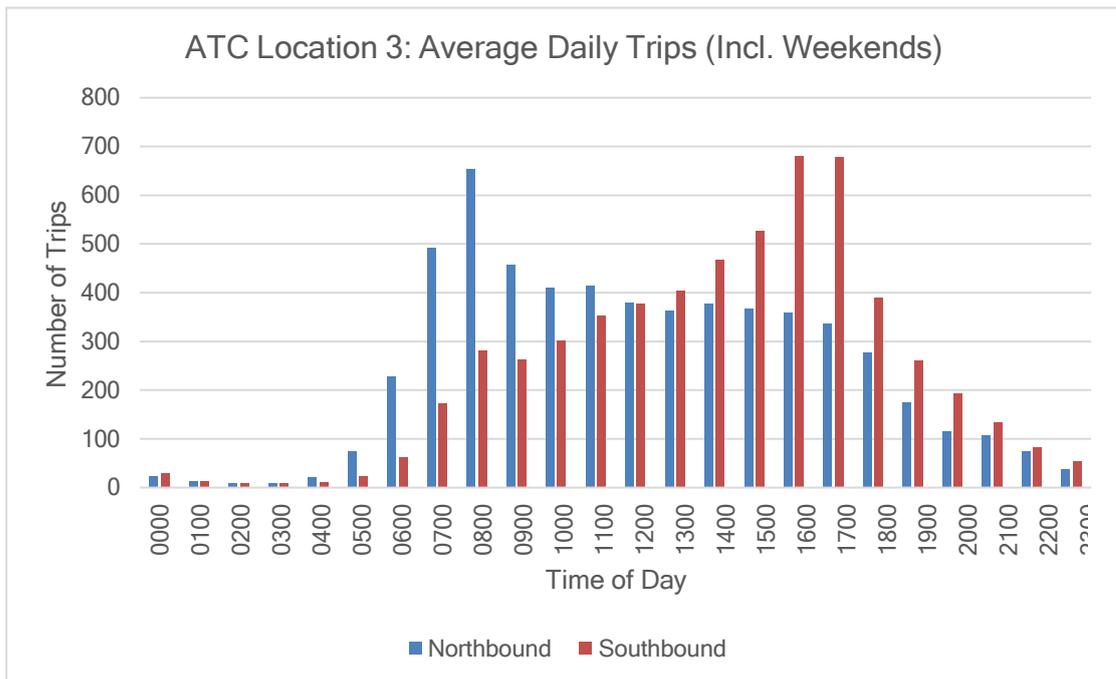


Figure 3-7: ATC Location 3: Average Daily Trips (Incl. Weekends) - Northbound and Southbound

- 3.5.9 The baseline data shows the observed traffic flows are at a level expected for a road of this nature. The traffic flow at ATC Location 3 is, however, lower compared to ATC Location 1 and 2 due to traffic diverging off A484 onto B4306 and B4309 to the south of Cwmffrwd.
- 3.5.10 As shown, there are clear peak periods in the AM and PM along A484. There is a pronounced tidal flow of vehicles travelling northbound in the morning, and southbound in the afternoon. This is likely due to the population and employment centres located further north, such as Carmarthen, as well as access to A40 and A48.

The average vehicle speed by time of day is outlined in

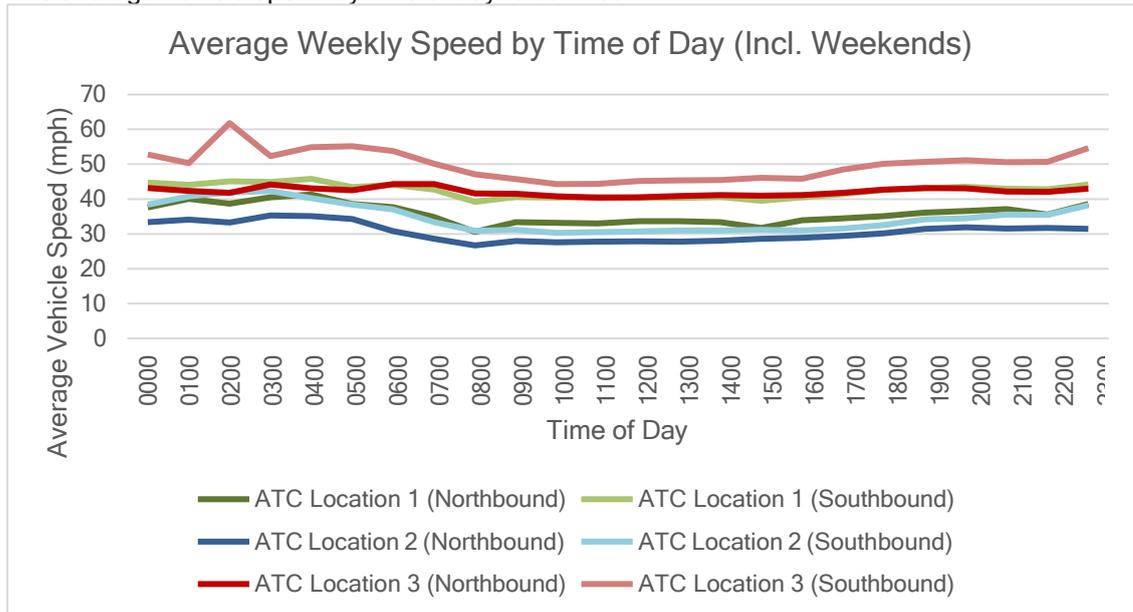


Figure 3-8 (including weekends) below.

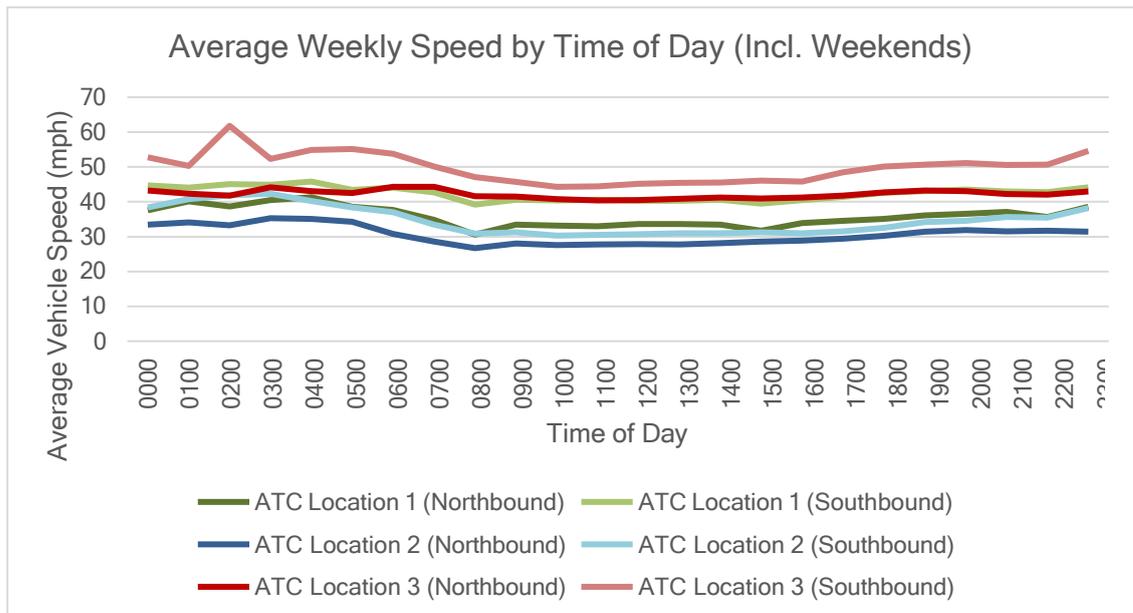


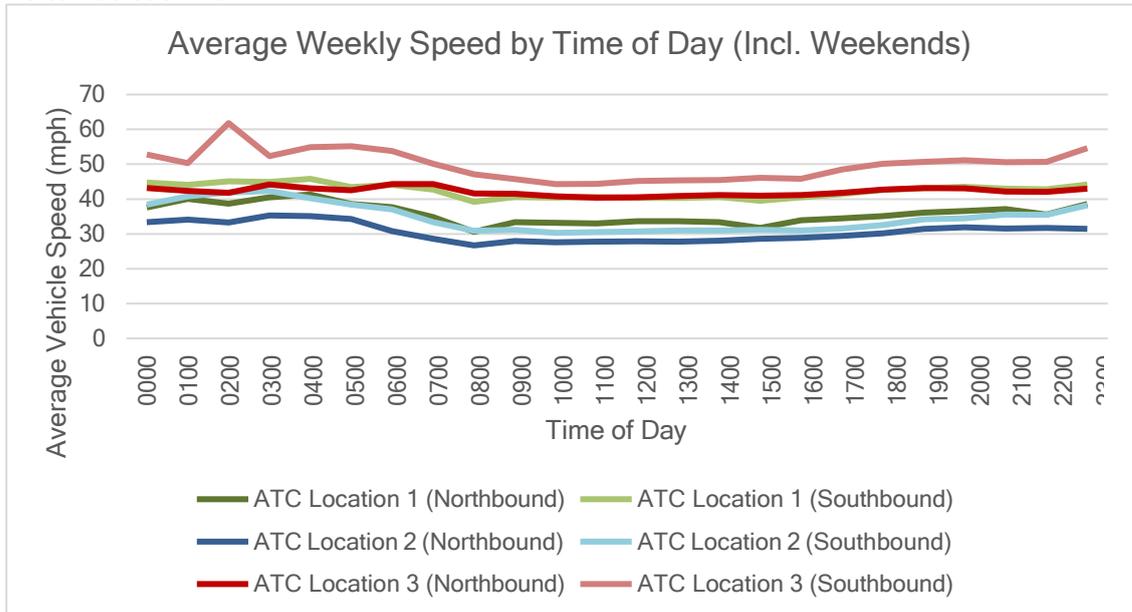
Figure 3-8: ATC Location 1, 2 and 3: Average Vehicle Speed by Time of Day (Incl. Weekends)

3.5.11 The speed limit varies on A484 between the ATC locations:

- ATC Location 1: 40mph
- ATC Location 2: 30mph
- ATC Location 3: 50mph

3.5.12 Between ATC Location 1 and Location 2 the speed limit increases from 40mph to 50mph before decreasing to 30mph at Cwmffrwd. Between ATC Location 2 and 3 the speed limit increases to 40mph and then 50mph at Upland Arms.

3.5.13 As can be seen from



3.5.14 Figure 3-8, the average vehicle speeds on A484 have a large range due to the varied speed limits. The speeds for each ATC location are relatively consistent throughout the day and increase during the evening and overnight. Small dips can generally be seen in the AM and PM peak relative to the tidal flow of traffic. ATC Location 3, which is closest to the Site, speeds are shown to be below 50mph between 7am and 7pm which is considered positive from a road safety point of view and for turning movements to and from the A484.

June 2024 ATC Survey Results

3.5.15 The surveys were undertaken between 12 June 2024 and 18 June 2024. The two ATC locations were as follows:

- ATC Location 1: Uplands Arms C2074 (51.796709, -4.303321)
- ATC Location 2: Uplands Arms A484 (51.795403, -4.304910)

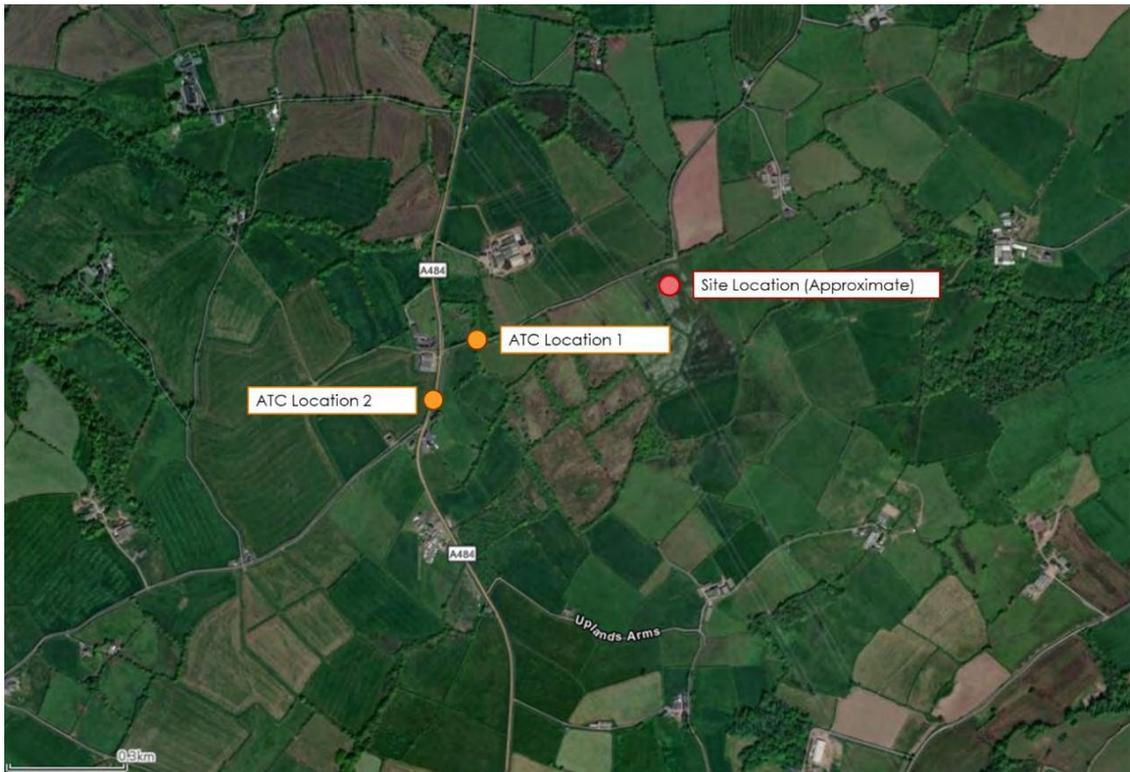
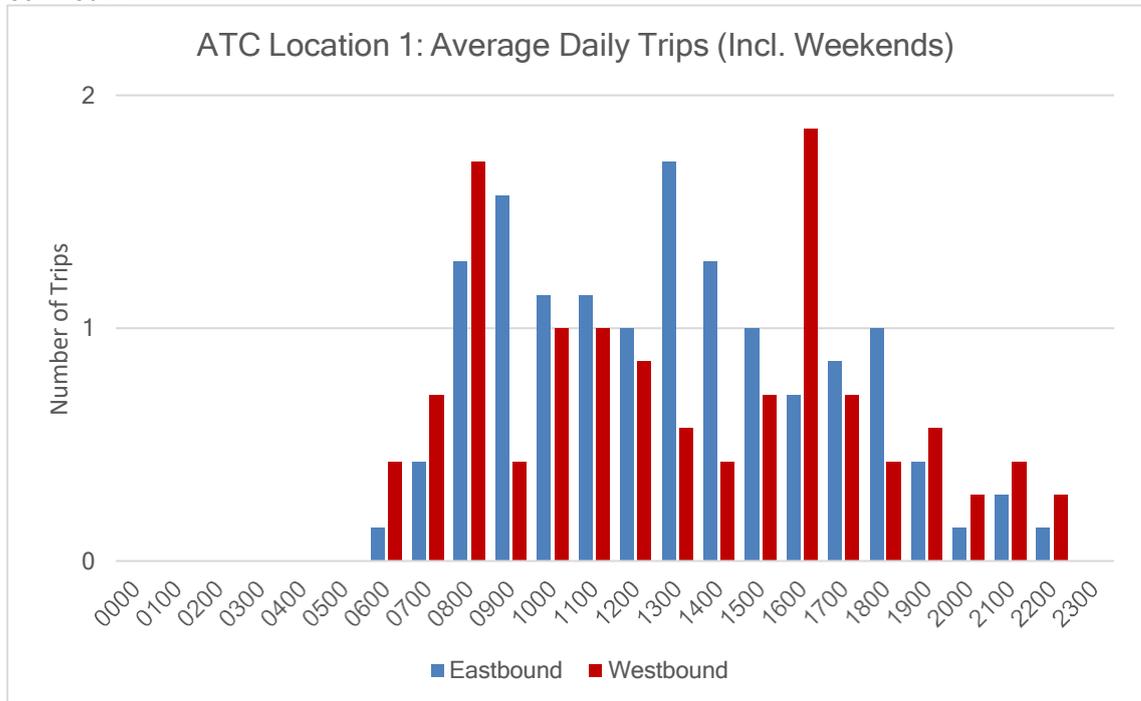


Figure 3-9: June 2024 ATC Survey Locations

3.5.16 The average daily trips (including weekends) by time of day for ATC Locations 1 and 2 are outlined in



3.5.17 Figure 3-10 and

3.5.18 Figure 3-11 below.

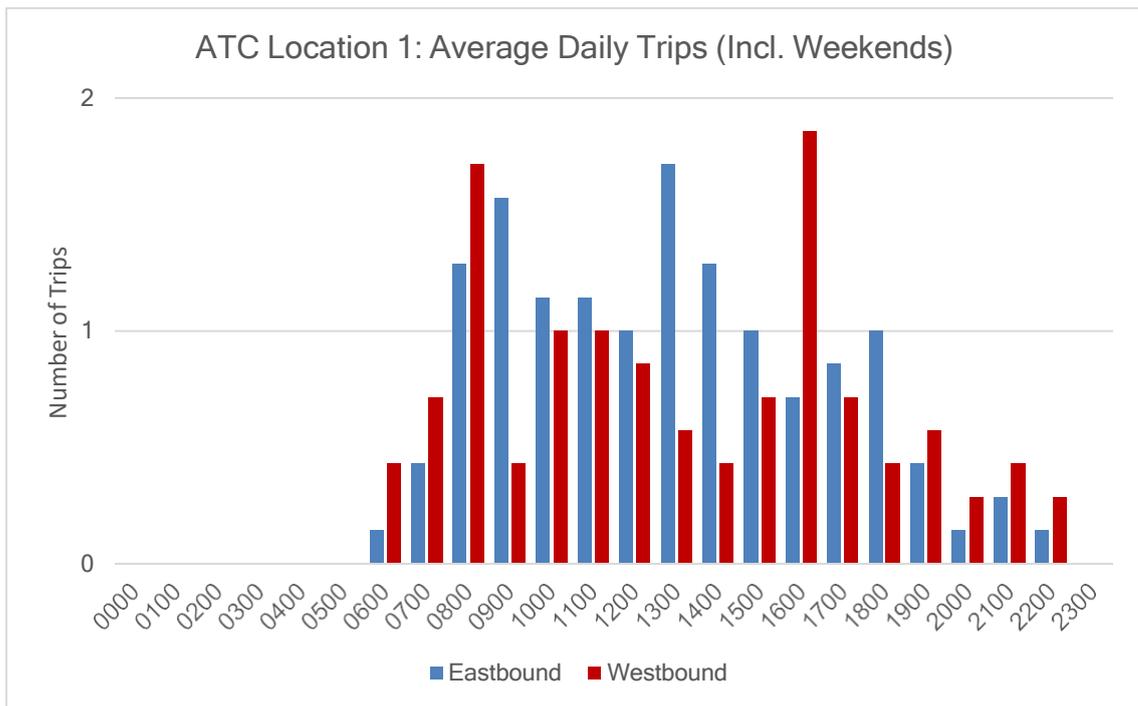


Figure 3-10: ATC Location 1: Average Daily Trips (Incl. Weekends) - Eastbound and Westbound

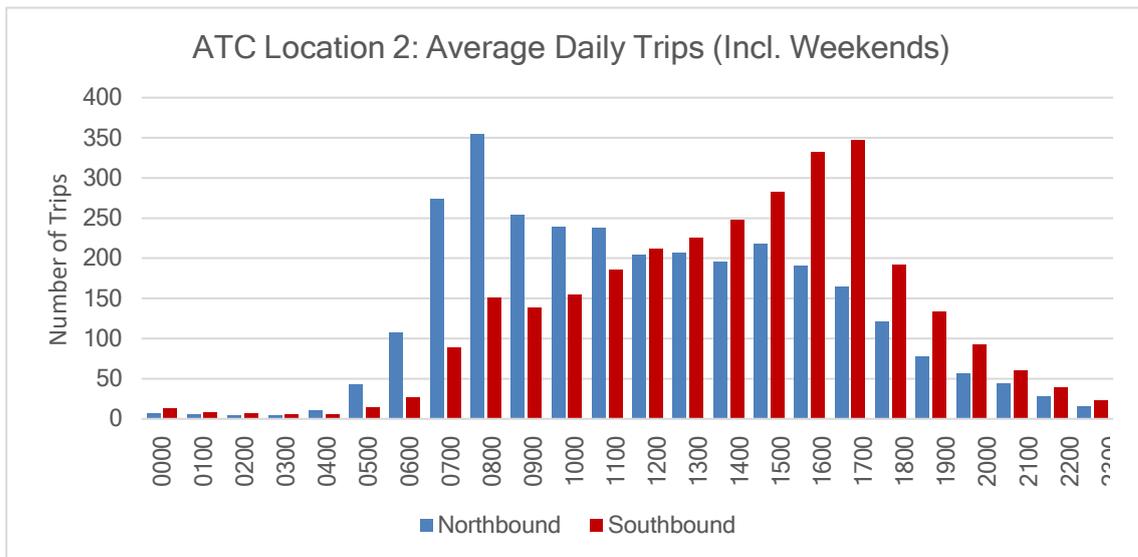
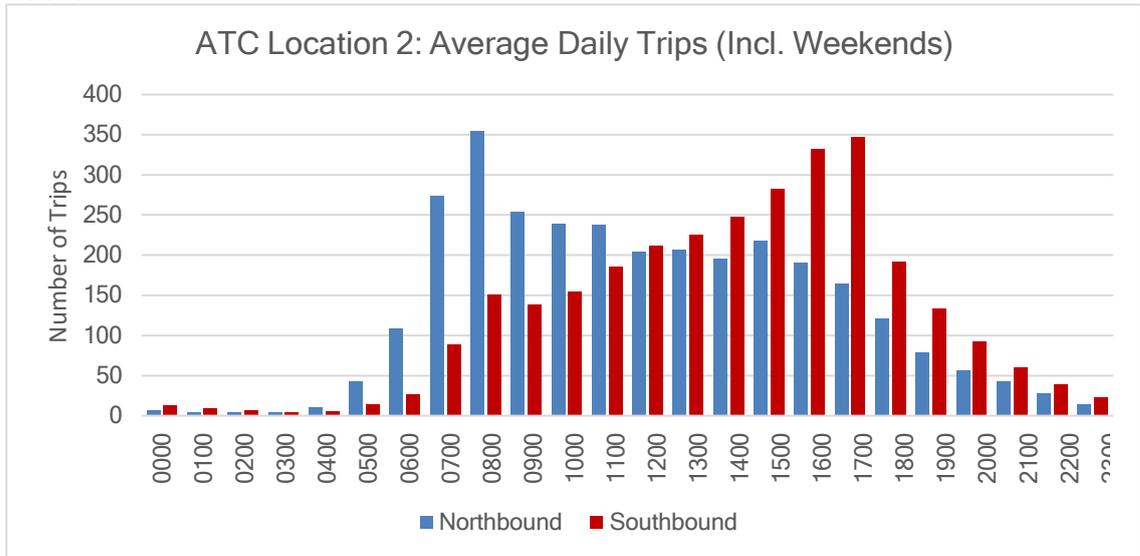


Figure 3-11: ATC Location 2: Average Daily Trips (Incl. Weekends) – Northbound and Southbound

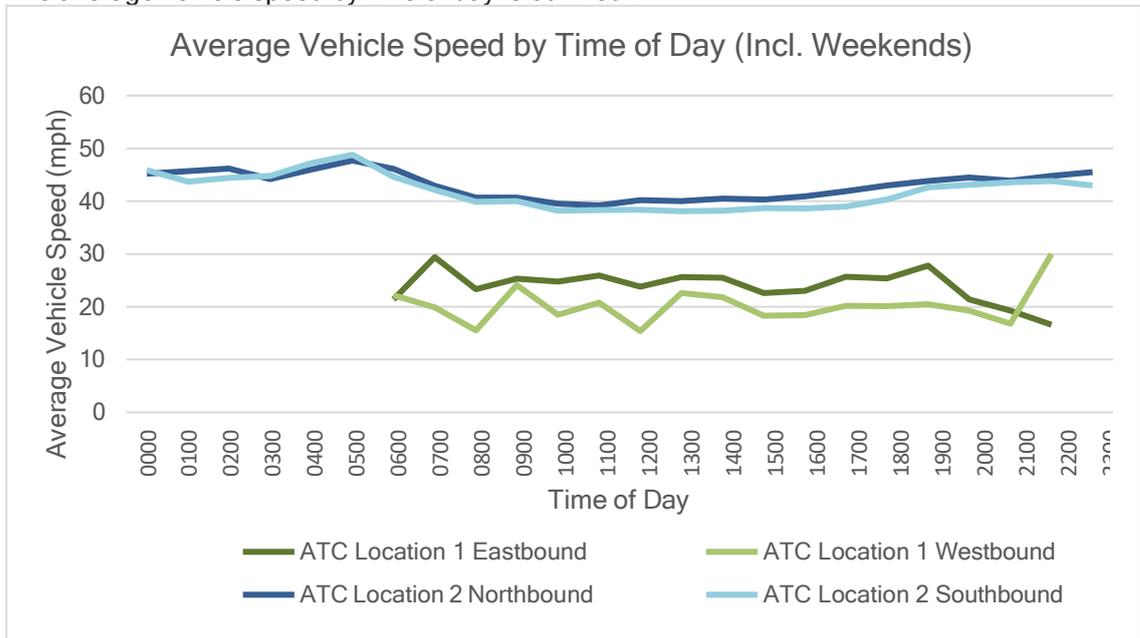
3.5.19 The baseline data shows that the traffic flows on the C2074 are very low, which is expected as it is a narrow country road that does not connect to any large settlements. There are no clear peak periods, and the traffic flows are relatively similar for both eastbound and westbound directions.

3.5.20 As shown in



3.5.21 Figure 3-11, the traffic flows on the A484 at ATC Location 2 are at the level expected for a road of this nature. It is worth noting that this traffic flow does not surpass the traffic flows observed further north on the A484, as per the July 2023 ATC surveys. There are clear peak periods in the AM and PM and a noticeable tidal flow of vehicles travelling northbound in the morning, and southbound in the afternoon. This is likely due to the population and employment centres located to the north in Carmarthen and the access to the A40 and A48.

3.5.22 The average vehicle speed by time of day is outlined in



3.5.23 Figure 3-12 (including weekends).

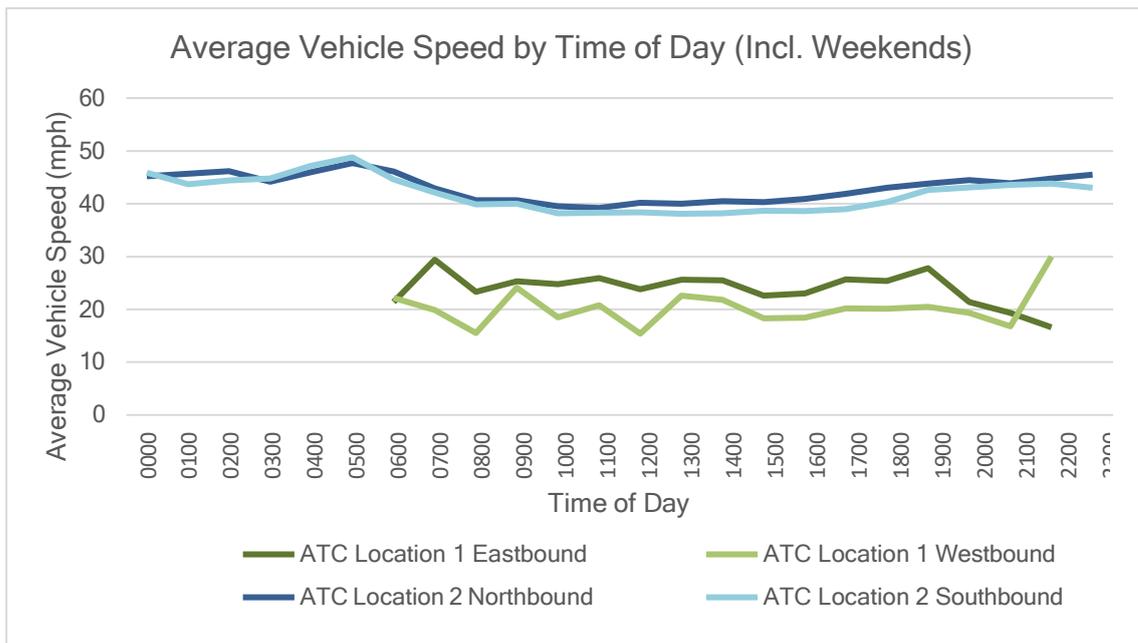
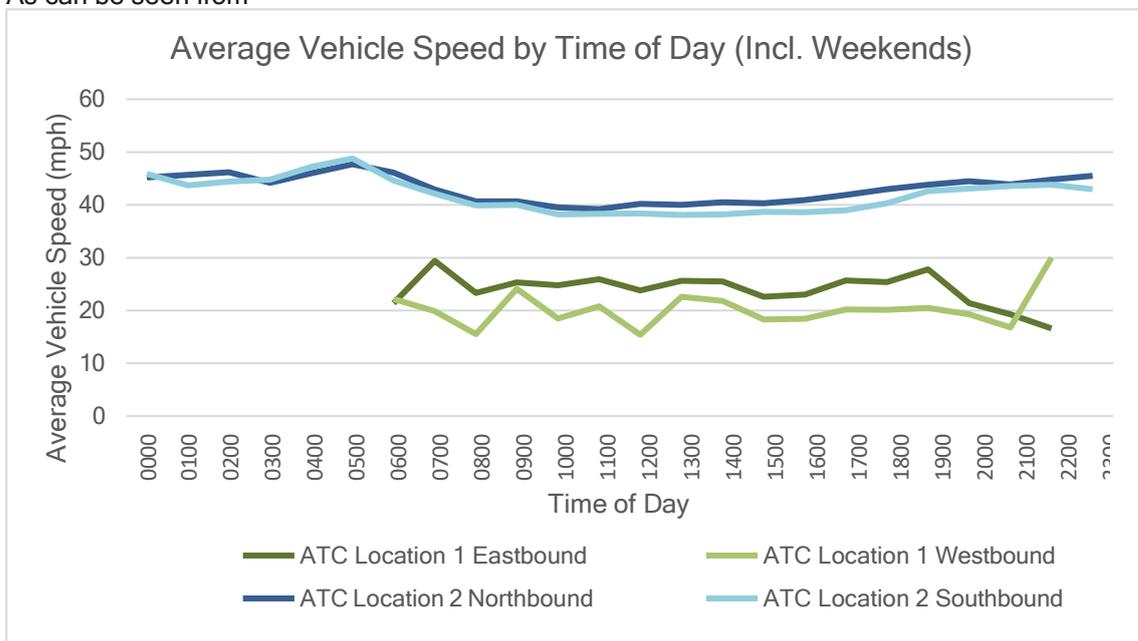


Figure 3-12: ATC Location 1 and 2: Average Vehicle Speed by Time of Day (Incl. Weekends)

3.5.24 The C2074 at ATC Location 1 is subject to the national speed limit. The speed limit on the A484 at ATC Location 2 is 50mph but drops to 40mph for the upcoming bend to the south.

As can be seen from

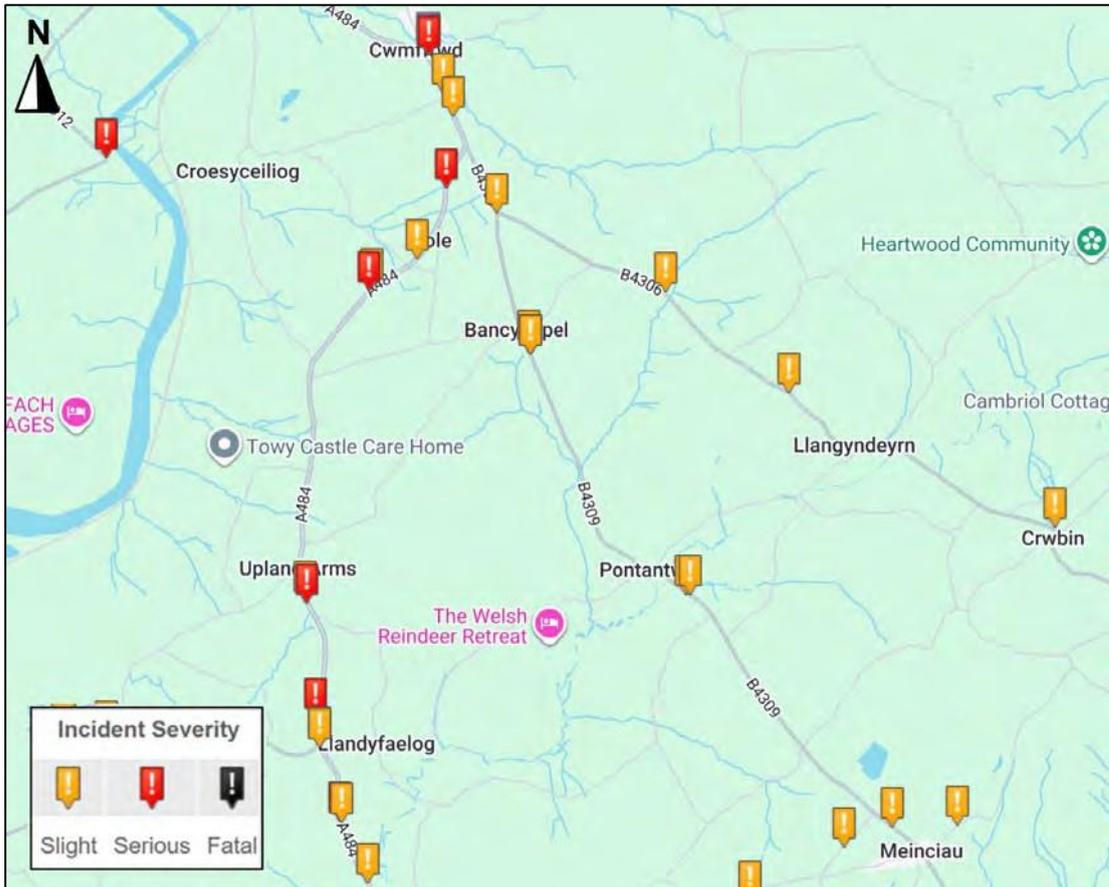


3.5.25 Figure 3-12, the vehicle speeds at ATC Location 1 range from 15mph to 30mph, with generally higher speeds observed in the eastbound direction. These speeds are significantly lower than the national speed limit, likely due to the road's narrow width and potential limitations in forward visibility caused by bends in the road and roadside vegetation.

3.5.26 At ATC Location 2, the vehicle speeds range from 38mph to 49mph. The speed is relatively consistent throughout the day at approximately 40mph and increases overnight and early in the morning.

3.6 Road Safety

3.6.1 DfT Collision Data was analysed in the area surrounding the Site between 2020 and 2024. Figure 3-13 below outlines the collision data for roads in proximity of the Site.



Source: www.crashmap.co.uk. Data Source: DfT Road Safety Data. Background map: Google

Figure 3-13: DfT Collision Data for Roads in Close Proximity of Site

3.6.2 Table 3-3 below summarises the accident data for sections of A484, B3409, and B4306 in close proximity to the Site.

Table 3-3: DfT Collision Data for Roads in Close Proximity of Site

Road	Total Collisions	% Slight	% Serious	% Fatal
A484 (between Cwmffrwd and Llandyfaelog)	13	62	38	0
B4309 (between A484 and Meinciau)	6	100	0	0
B4306 (between B4309 and Bancffosfelen)	3	100	0	0

3.6.3 Although there have been a small number of serious incidents recorded along the A484, it is notable that only two of these has taken place within the last two years, with the remaining incidents occurring over two years ago. There have also been no fatal incidents in the entire

study area in the most recent five years. This indicates that there are currently no significant safety concerns on the local road network.

4 Trip generation

4.1 Introduction

- 4.1.1 Trip generation for the Proposed Development for construction and operation has been undertaken using a first principles approach based on information supplied by National Grid and professional judgement in regard to transport and logistic requirements for the Site.
- 4.1.2 Trip generation using standard transport planning techniques was not undertaken as insufficient examples of comparator sites are available from industry sources such as the TRICS Database.

4.2 Operational Trip Generation

- 4.2.1 During the operational phase of the Proposed Development, it is expected that the Site will be unmanned and therefore operational traffic movements associated with staff personnel will be negligible.
- 4.2.2 During an average week it is anticipated that two operational vehicle visits (four movements) by car or LGV are expected. Based on previous experience it is also anticipated that additional maintenance will be required for six weeks per year with 10 small vehicles (car or LGV) (20 movements) and three HGVs per day (six movements).

4.3 Construction Trip Generation

- 4.3.1 It is anticipated that the highest level of trip generation will be during the construction phase. The construction phase is anticipated to last approximately 49 months. Please refer to the supporting oCTMP for further detailed information on the construction programme.
- 4.3.2 It is expected that a range of construction vehicle types would access the Site to enable construction of the Proposed Development. This includes but is not limited to the following:
- Light Goods Vehicles (LGVs) i.e. vans and small flatbeds – movements for plant maintenance, PPE, fixings/small components, sundry items, welfare supplies, couriers, post/parcels;
 - Heavy Goods Vehicles (HGVs) i.e. 2 - 6 axle rigid or articulated lorries and mobile cranes - movements of materials/component deliveries, plant deliveries, spoil removal, concrete, aggregate supplies, cabling, containerised equipment, fencing etc;
 - Abnormal Indivisible Loads (AILs) i.e. up to a 32 – axle girder frame trailer with two drive units and a total combined weight (AIL and load) of approx. 390te. Approximate dimensions of 90 metres length, 5 metres width, and 4.75 metres height.
- 4.3.3 While the precise construction working hours are yet to be formally confirmed, it is anticipated that operations will follow standard industry practice for a development of this nature. Working hours are expected to be:
- Monday to Friday from 08:00 to 18:00; and
 - Saturday from 08:00 to 13:00
- 4.3.4 For the purposes of the trip generation calculations, it has been assumed that construction workers will be on site during these hours and that arrivals and departures of construction vehicles, including all HGV movements, will also occur within this timeframe. However, due to

the location of two nurseries and the college along the A484 HGV movements will be restricted to avoid education drop off and pick up times. Further detail can be found in the oCTMP.

- 4.3.5 A benchmarking exercise was undertaken considering previous National Grid substation developments as well estimates on materials volumes and equipment requirements specific to the Site. It is recognised that a flat profile across the programme is unlikely and there will be peaks in activity associated with overlaps in the construction programme and more transport intensive activities taking place.
- 4.3.6 The anticipated construction trip generation is summarised in Table 4-1.

Table 4-1 Anticipated Construction Trip Generation

Movements	Average		Peak	
	Daily Construction Vehicle Movements	Daily Construction Staff Movements	Daily Construction Vehicle Movements	Daily Construction Staff Movements
Arrival	7	31	35	125
Departure	7	31	35	125
Total	14	62	70	250

- 4.3.7 Table 4-1 shows there are 14 construction vehicle movements and 62 staff movements on an average day. There is a peak of 70 construction vehicle movements and 250 staff movements per day, which is only for a single month of activity at the beginning of the programme. This is linked to site set up and the construction of the access road.
- 4.3.8 During the latter phases of the construction, which would involve connection, commissioning and demobilisation followed by landscaping work, the Applicant has indicated that there would be limited HGV movements. The works required would be carried out by individual personnel doing electrical and commissioning work over a period of seven months.
- 4.3.9 It should be noted that the trip generation is indicative at this stage and will be refined through the production of a final CTMP secured by condition following planning consent and the appointment of a Principal Contractor. Staff movements are expected to be significantly lower than initial estimates when factoring in the use of minibuses, car sharing, and work vans, which have been considered under a worst-case scenario assumption.
- 4.3.10 Further information on the initial profile of the construction and staff vehicle movements has been developed in Section 6 of the oCTMP and a Framework Construction Worker Travel Plan (FCWTP)

4.4 Decommissioning

- 4.4.1 The substation installation is designed as a permanent yet fully removable asset, with all equipment and structures capable of being dismantled and taken off the Site at the end of their operational life (estimated at approximately 60 years). Any extension beyond this period would be determined by future network requirements and market conditions. The installation process for substation apparatus has been carefully planned to allow for straightforward decommissioning, ensuring that all above-ground components can be safely and efficiently removed with minimal disruption, reflecting the nature of the Proposed Development as a grid infrastructure project.

- 4.4.2 Should the Proposed Development be decommissioned, all above ground structures would be removed from the Site. The decision on how much of the below ground infrastructure would be retained would be agreed with the landowner and any other interested parties, accounting for decommissioning methods and timescales at the time.

- 4.4.3 The number of vehicle movements associated with the decommissioning phase is not anticipated to exceed that set out for the construction phase. In terms of vehicle trip generation, it is anticipated that the decommissioning method would be similar to construction but in reverse. Therefore, similar vehicles numbers are anticipated subject to changes in technology and construction techniques.

5 Traffic Impact Assessment

5.1.1 This section considers the impact on the road network during the construction and operation of the Proposed Development.

5.2 Safety

5.2.1 The road safety data for years 2019-2023 has been obtained and analysed. As noted in Section 3.6, there are no notable safety concerns relating to A484, B4309 or B4306 in the surrounding area to the Site.

5.3 Operation

5.3.1 Once operational, it is expected that the Site will be unmanned and therefore operational traffic movements associated with staff personal will be negligible. The Proposed Development will require inspection and maintenance of the substation equipment, and this would equate to approximately eight LGV operational visits (16 movements) per month. It is also anticipated that additional maintenance is required for six weeks per year with 10 small vehicles (car or LGV) (20 movements) and three HGVs per day (six movements).

5.3.2 The vehicle movements associated with inspections and maintenance visits to the Site would have an imperceptible impact on the highway network and would be considerably less than daily variation in traffic flows. Inspection and maintenance visits would still be timed to avoid network peak hours where possible.

5.4 Construction

5.4.1 As shown in Section 4.3 the construction vehicle trip gen estimates for average and peak days are:

- **Average:** 14 construction vehicle movements (7 arrivals, 7 departures) and 62 staff movements (31 arrivals, 31 departures).
- **Peak:** 70 construction vehicle movements (35 arrivals, 35 departures) 250 construction staff movements (125 arrivals, 125 departures).

5.4.2 The impact of the Proposed Development on the A484, the main road serving site traffic, has been assessed. Both northbound and southbound movements were analysed using 24-hour vehicle flow data to capture peak and off-peak conditions, enabling a robust evaluation of traffic volumes and junction performance.

5.4.3 To assess the effect of construction traffic on the local road network, a 24-hour construction traffic profile has been compared to the baseline flows, as outlined in Section 3.5. This allows for direct comparison of total volumes and highlights the proportional increase from site-related movements.

5.4.4 The analysis is based on several key assumptions regarding construction traffic:

- An 80/20% north-south split has been applied to vehicle routing to and from the Site during the construction period. This is based on the trunk road network (A40, A48) being located to the north of the Site at Carmarthen via the A484 and providing the likeliest access route. The 20% southern split acknowledges that Burry Port and Llanelli are located to the south of the Site and could be trip origins.

- As noted in Section 4 construction working hours are 08.00 – 18.00. It is therefore assumed that staff will arrive at Site from 7am for the start of the working day. This means staff travel would occur between 07.00 – 08.00 when baseline traffic flows are relatively low and before the AM network peak.
- Staff are then expected to depart Site in a staggered nature across the afternoon, depending on site activities and operational requirements, rather than concentrated within the PM peak hour.

5.4.5 The proportionate increase in traffic on the local road network during the peak construction period is shown in Table 5-1.

Table 5-1 Proportionate Increase in Traffic Flows from Proposed Development during the Peak Construction Period

Time	Baseline (ATC Site 2 – A484)		Peak Construction Profile		Baseline + Peak Construction Profile		Percentage Increase	
	NB	SB	NB	SB	NB	SB	NB	SB
0000	7	12			7	12	0%	0%
0100	5	9			5	9	0%	0%
0200	4	6			4	6	0%	0%
0300	4	5			4	5	0%	0%
0400	10	5			10	5	0%	0%
0500	43	14			43	14	0%	0%
0600	108	26			108	26	0%	0%
0700	274	89	28	103	302	192	10%	116%
0800	355	151	3	3	358	154	1%	2%
0900	254	138	3	3	257	141	1%	2%
1000	239	155	3	3	242	158	1%	2%
1100	238	186	3	3	241	189	1%	2%
1200	204	212	3	3	207	215	1%	1%
1300	206	226	3	3	209	229	1%	1%
1400	195	247	3	3	198	250	1%	1%
1500	218	282	3	3	221	285	1%	1%
1600	191	332	36	11	227	343	19%	3%
1700	165	348	36	11	201	359	22%	3%
1800	121	191	36	11	157	202	30%	6%
1900	78	133			78	133	0%	0%
2000	57	93			57	93	0%	0%
2100	44	61			44	61	0%	0%
2200	28	39			28	39	0%	0%
2300	15	23			15	23	0%	0%
Total	3063	2983	160	160	3223	3143	5%	5%

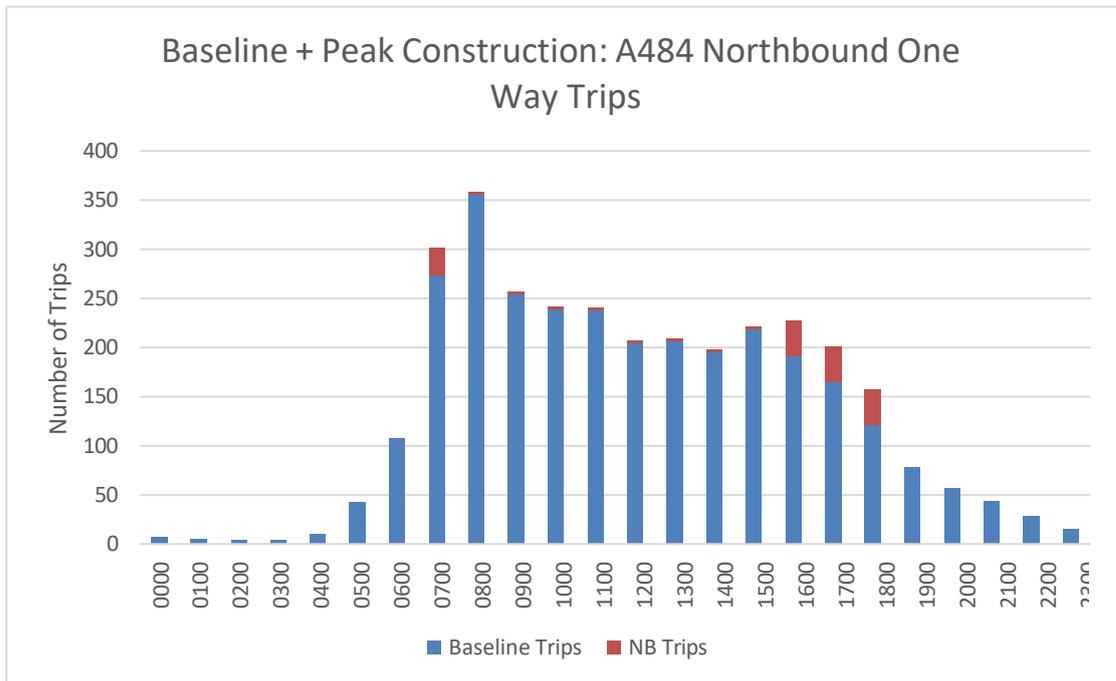


Figure 5-1 Baseline + Peak Construction: A484 Northbound One Way Trips

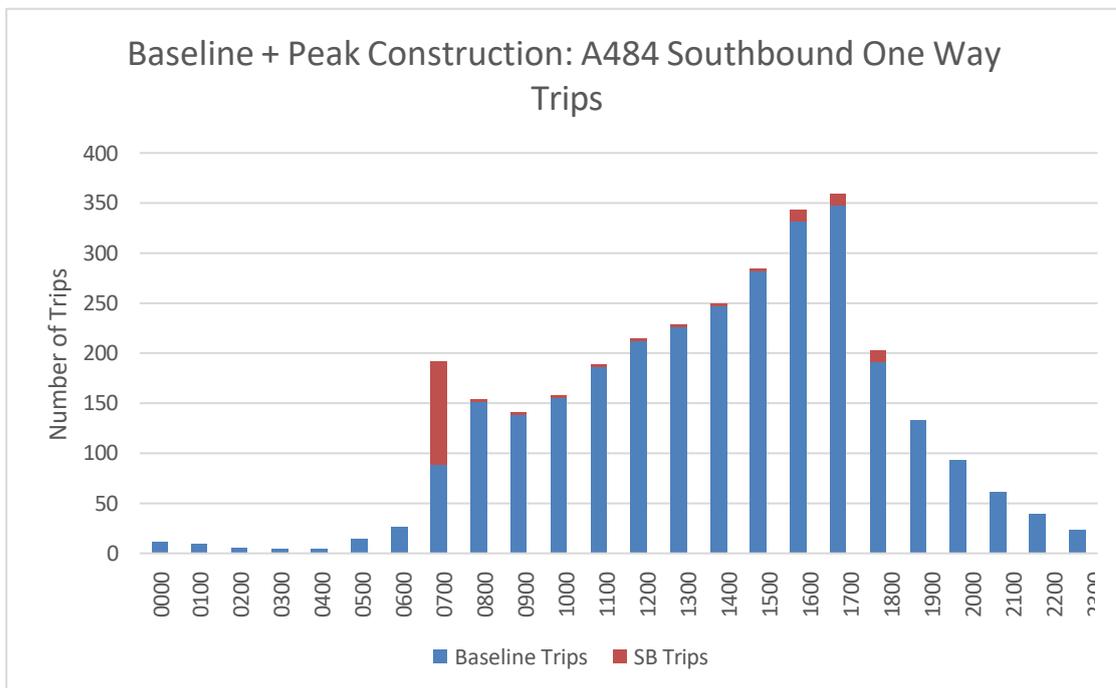


Figure 5-2 Baseline + Peak Construction: A484 Southbound One Way Trips

5.4.6 Figure 5-1 and Figure 5-2 show baseline flows plus peak construction vehicle trips on the A484. They confirm the tidal nature of baseline flows (Northbound AM, Southbound PM) and show that construction vehicle movements associated with the Proposed Development will predominantly be travelling in the opposite direction during peak network hours.

- 5.4.7 Table 5-1 illustrates that southbound traffic volumes increased significantly, with a 116% rise observed between 07.00 – 08.00. This increase aligns with construction staff arriving at Site before starting work at 08.00.
- 5.4.8 Although the increase in traffic volumes from 07.00 – 08.00 seems significant, this is mainly due to the low baseline flow identified on the A484. The percentage rise appears large because the starting point is so modest, yet the actual number of vehicles remains low. It is also important to note that the vehicles contributing to this increase are cars and vans, rather than HGVs. As a result, there is no substantial impact on overall traffic flow or road capacity during the morning peak period.
- 5.4.9 From 10:00 to 15:00, traffic volume changes were minimal, with increases generally remaining below 3%. In the evening peak period between 16:00 and 18:00, northbound traffic volumes increased moderately, reaching up to 30% at 18:00. This aligns with when staff are expected to leave the Site.
- 5.4.10 Across the full day, northbound traffic volumes increased by 5%, while southbound volumes also rose by 5%. As noted in Section 3.5, baseline traffic volumes on the affected roads are low, so any significant increase in flows from the Site is expected. Despite the percentage increases, the absolute number and type of vehicles per hour remains small and is unlikely to result in congestion. This is also within the bounds of typical daily variation on the road network of +/- 10%.
- 5.4.11 The average proportionate increase in traffic on the local road network across the whole construction period is shown in Table 5-2 and displayed visually in Figure 5-3 and Figure 5-4.

Table 5-2 Average Proportionate Increase in Traffic Flows from Proposed Development Across the Whole Construction Period

Time	Baseline (ATC Site 2 – A484)		Peak Construction Profile		Baseline + Peak Construction Profile		Percentage Increase	
	NB	SB	NB	SB	NB	SB	NB	SB
0000	7	12			7	12	0%	0%
0100	5	9			5	9	0%	0%
0200	4	6			4	6	0%	0%
0300	4	5			4	5	0%	0%
0400	10	5			10	5	0%	0%
0500	43	14			43	14	0%	0%
0600	108	26	0	0	108	26	0%	0%
0700	274	89	7	26	281	115	3%	29%
0800	355	151	1	1	356	152	0%	0%
0900	254	138	1	1	255	139	0%	0%
1000	239	155	1	1	240	156	0%	0%
1100	238	186	1	1	239	187	0%	0%
1200	204	212	1	1	205	213	0%	0%
1300	206	226	1	1	207	227	0%	0%
1400	195	247	1	1	196	248	0%	0%
1500	218	282	1	1	219	283	0%	0%
1600	191	332	9	3	200	335	5%	1%
1700	165	348	9	3	174	351	5%	1%
1800	121	191	9	3	130	194	7%	1%

1900	78	133			78	133	0%	0%
2000	57	93			57	93	0%	0%
2100	44	61			44	61	0%	0%
2200	28	39			28	39	0%	0%
2300	15	23			15	23	0%	0%
Total	3063	2983	39	39	3102	3022	1%	1%

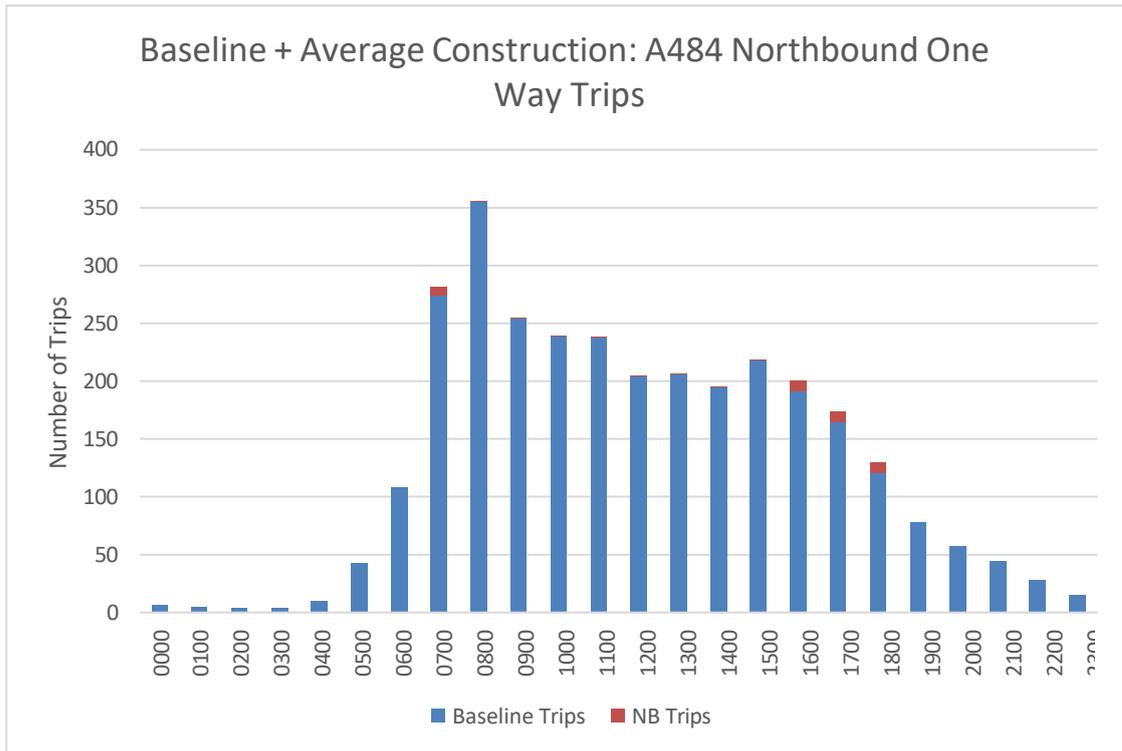


Figure 5-3 Baseline + Average Construction: A484 Northbound One Way Trips

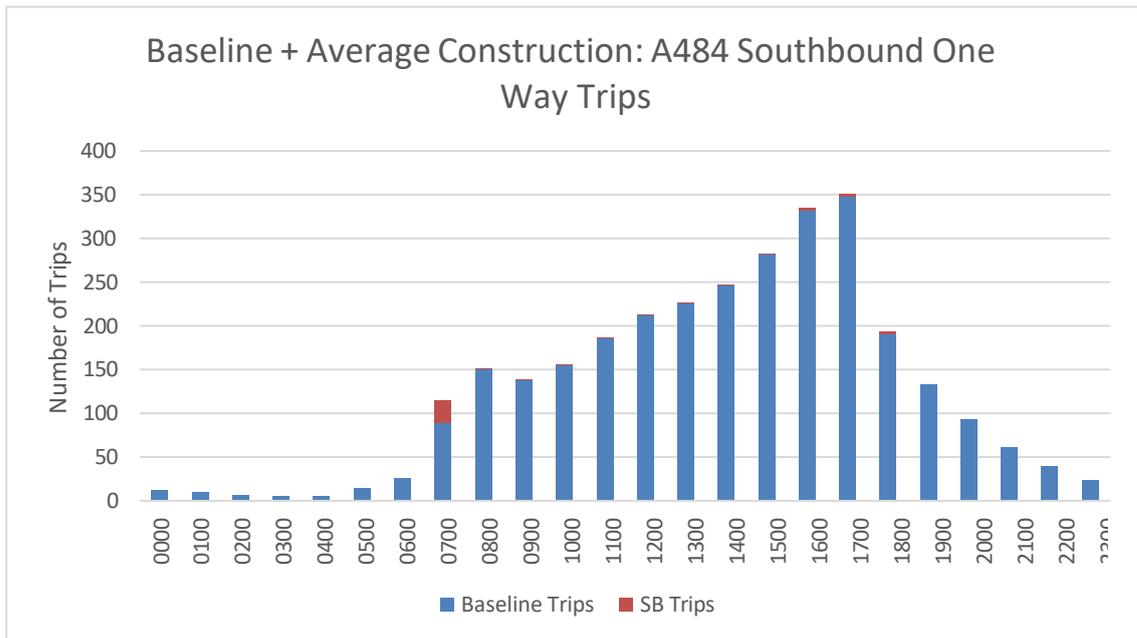


Figure 5-4 Baseline + Average Construction: A484 Southbound One Way Trips

- 5.4.12 Table 5-2 illustrates that southbound traffic volumes increase by 29% between 07.00 – 08.00. These figures reflect average conditions, corresponding with the typical pattern of staff arrivals at the Site throughout construction. Importantly, the vehicles contributing to these increases are cars and vans, rather than HGVs, and as such, these average flow increases do not lead to any substantial impact on overall traffic flow or road capacity.
- 5.4.13 In the evening peak period between 16.00 and 18.00, average northbound traffic volumes increased moderately, reaching up to 7% at 18.00. This aligns with when staff are expected to leave the Site.
- 5.4.14 Across the full day, northbound traffic volumes increased by 1%, while southbound volumes also increase by 1%. As with the analysis of the traffic in the peak construction period, average baseline traffic volumes on the affected roads are low, so any significant increase in flows from the Site is expected. Despite the percentage increases, the average absolute number and type of vehicles per hour remains small and is unlikely to result in congestion across the entire construction period.
- 5.4.15 Overall, the volume of construction-related trips is anticipated to remain low in relation to the existing background traffic on the local network. Even during the initial months, when construction activity will be at its peak, the absolute increase in traffic is expected to be modest given the already low baseline flows. Accordingly, for the majority of the construction period, the additional vehicle movements associated with the works are likely to have only a minor impact on the local road network and are not expected to result in any congestion or significant operational issues.

5.5 Decommissioning

- 5.5.1 The decommissioning phase is anticipated to be similar to the construction phase, but in reverse. As such, similar impacts are anticipated subject to changes in technology and construction techniques.

5.6 Local Developments

- 5.6.1 A review of Carmarthenshire County Council records show that, at present, no planning applications have been identified within the surrounding area to the Site that would coincide with the Proposed Development. Therefore, no cumulative assessment has been undertaken.

6 Access Strategy

6.1 Introduction

6.1.1 This section considers the approach to accessing the Site in the construction, operational and decommissioning phases of the Proposed Development.

6.2 Abnormal Indivisible Loads (AILs)

6.2.1 Construction access must facilitate delivery of the largest substation components to the Site, including transformers. National Grid have indicated that the largest component to be brought to Site will be the Supergrid Transformers. The likely weight and dimensions of the transformers and the associated AIL vehicle configuration are set out below.

- **Largest associated load:** single component transformer weighing approximately 220te with dimensions of 3.5m width and 4.7m height. There will be 7-8 transformer units required for the substation subject to final design. The inclusion of up to two reactive compensators is also being assessed.
- **Vehicle combination:** Up to 32-axle girder frame trailer and two number drive units. Total combined weight (vehicle and load) approx. 390te. Approximate dimensions 90m length, 5m width and 4.75m height.

6.2.2 The vehicle profile of an Abnormal Load Carrier, which is the largest vehicle expected on site, is shown in Figure 6-1.

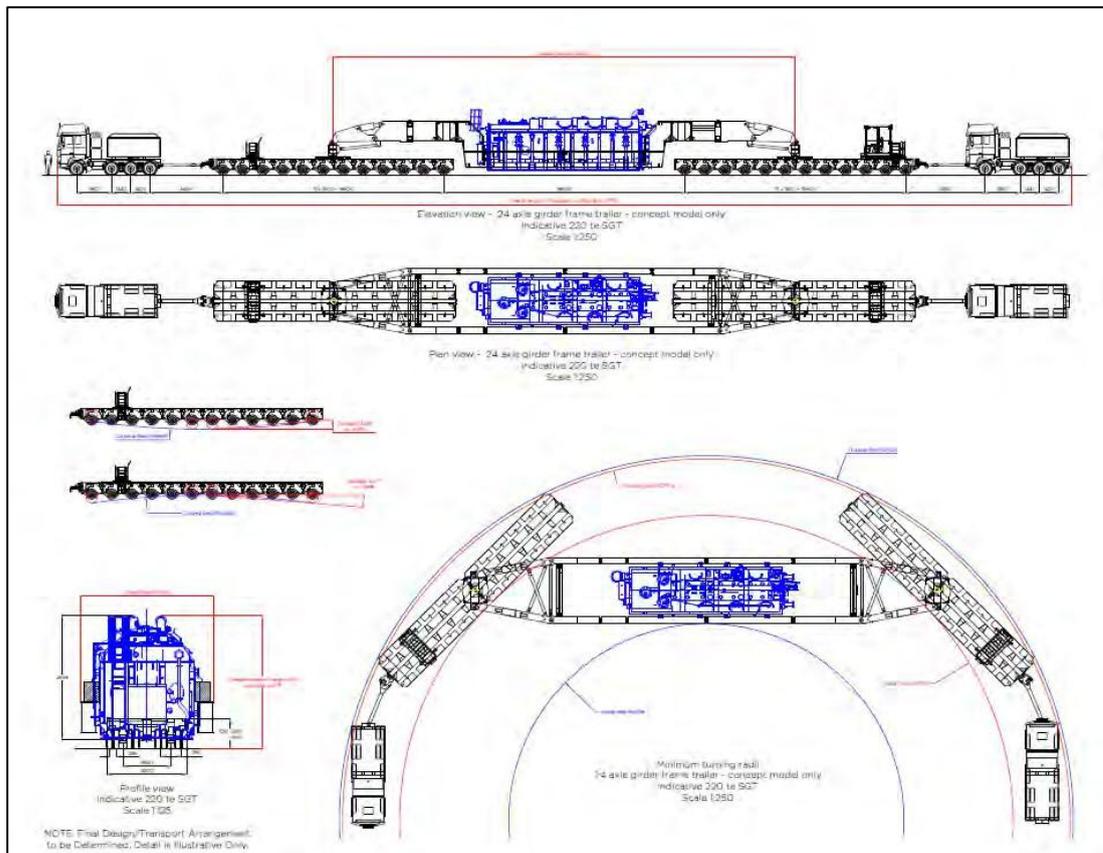


Figure 6-1 Abnormal Load Carrier Combination

- 6.2.3 It is anticipated that the transformers will arrive at Pembroke Dock via ship and will travel to the Site via the A4139, A477, A40 and A484 to the new access road. Figure 6-2 outlines this proposed route for the AILs. This route is subject to ongoing discussions with South Wales Trunk Road Agency (SWTRA).
- 6.2.4 AIL planning specialists Wynns Ltd undertook a negotiability study of the AIL access requirements to Site including swept path analysis. A copy of the report can be found in Appendix B.

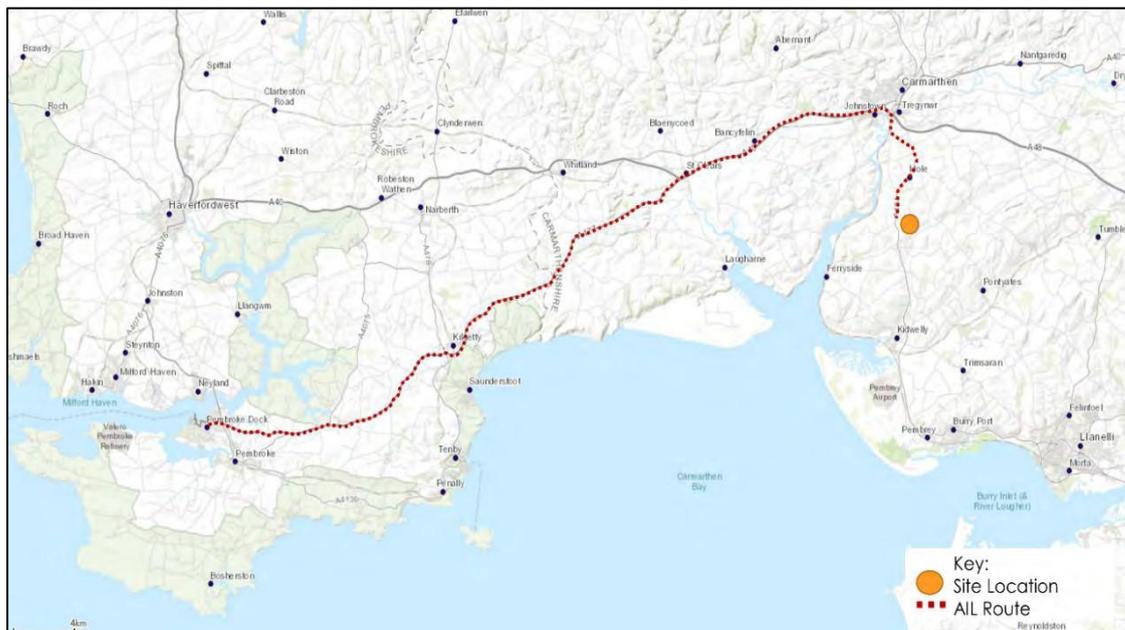


Figure 6-2: Proposed Route for AILs from Pembroke Docks to the Site

- 6.2.5 The Site requires permanent vehicular access to enable regular inspection and maintenance of the substation equipment. There may also be a need in the future to replace or upgrade the substation components. Permanent and construction access to the Site would be taken from the A484 which lies some 600m to the west.

6.3 Access Road

- 6.3.1 Accessing the Site will necessitate the construction of a new access road extending from the A484 to the substation Site area, located approximately 600 metres to the east. It is intended that this access road be constructed for use during the construction phase and subsequently maintained as a permanent route for ongoing operational and maintenance requirements.
- 6.3.2 To determine the alignment of the access road to the Proposed Development an optioneering exercise was undertaken to identify the space envelope that is required to allow for the AIL movement to and from the Site. The route optioneering considered a variety of factors including land ownership, road construction consent, road safety, road buildability and cost, vehicle manoeuvring (swept path analysis), alignment, topography, ecology, drainage, heritage, air quality and noise.
- 6.3.3 The preferred route reflects engineering, regulatory, and stakeholder priorities. It is proposed that the selected Site access road will have a width of six metres and will traverse through fields south of the C2074.
- 6.3.4 The site access route from the A484 to the substation, shown within the wider context of the site, is illustrated in Figure 6-3. Additionally, Appendix C provides a concept drawing of a

potential junction arrangement for the new access road and the A484 including visibility splays.

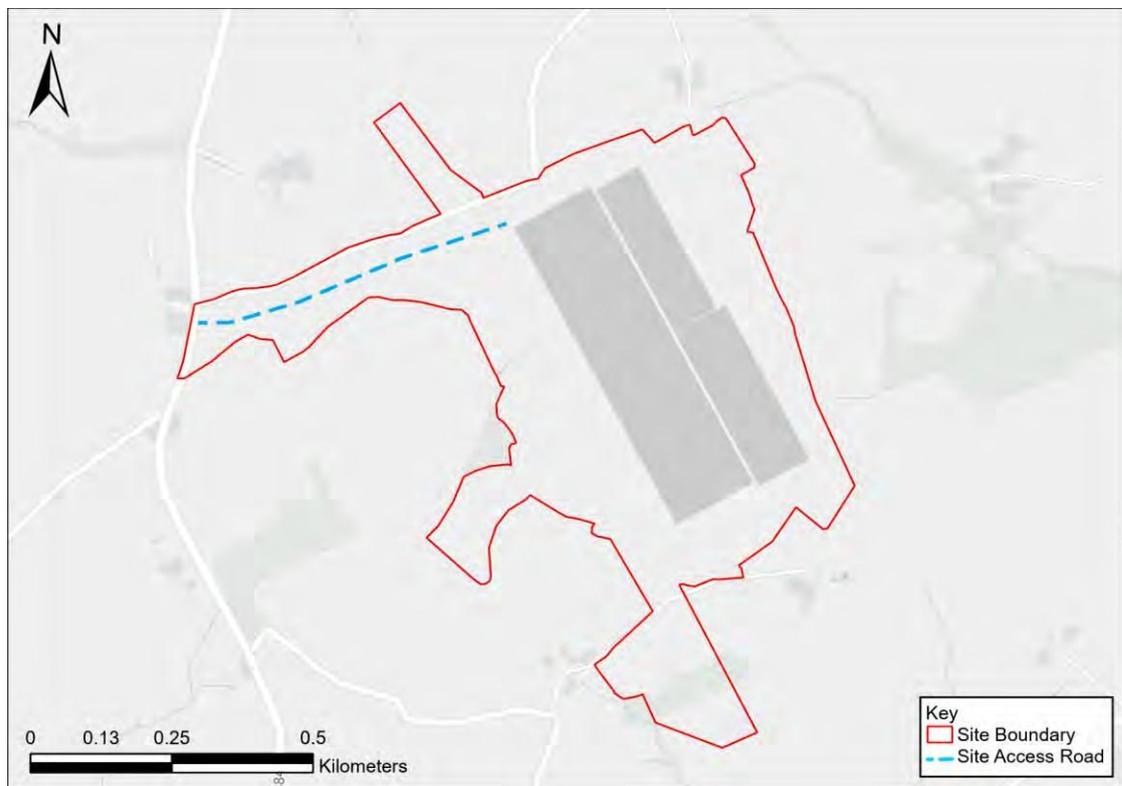


Figure 6-3: Site Access

6.4 Access to Residential Dwelling

Existing access arrangements

- 6.4.1 Part of the western side of the Site abuts the boundary of a single residential dwelling some 170m south of the existing C2074 road on the eastern side of the A484. The dwelling has two access points - the first access is directly on to the A484 in close proximity to the dwelling itself; the second access is via a gravel access track that runs north to south from the dwelling to the C2074 parallel to the A484. The gravel access track then joins the C2074 in close proximity to the junction between the C2074 and A484.

Construction phase

- 6.4.2 The proposed new access road for the substation will bisect the gravel access track. During construction of the access road and substation it is proposed that the access to the dwelling is either via existing access directly on to the A484 or when necessary, via the gravel access track across the front of the construction access. During construction working hours this movement will need to be managed subject to agreement by the Principal Contractor and the resident. This is to ensure road safety can be maintained and to avoid potential conflict with construction vehicles. Outside of construction working hours this process is not considered necessary.

Operational phase

- 6.4.3 During operation the substation will not be manned and will only require a few maintenance visits per month by van or 4x4 and occasional visits by HGV for equipment replacement. Therefore, once operational it is considered that access to the dwelling via the gravel track

can be re-established. This would require a managed access arrangement that allows access to/from the dwelling via the new access road for the substation. A concept access arrangement plan is provided in Appendix C indicates the proposed access point with a gate on the south side of the new access road. The access gate for the gravel track would be positioned in front of the main access gate for the substation and would be sufficiently set back (approx. 10m) from the kerb line of the access road to allow the vehicle making the manoeuvre to be off the carriageway of the new access road. This arrangement would also allow the gravel track to the north of the new access road and the existing junction between the gravel track and the C2074 to be removed. The access arrangement will be developed and agreed with CCC and the landowner as the project progresses.

6.5 Temporary Traffic Management

- 6.5.1 It should also be noted that during construction appropriate Temporary Traffic Management (TTM) in the vicinity of the Site access on the A484 will also be in place. This will include measures such as temporary speed reduction to 30 or 40mph under a Temporary Traffic Regulation Order or advisory speed limits as part of TTM signage scheme. It could also include the use of temporary traffic controls or traffic lights to manage vehicles turning movements to/from site, or other such measures to protect the integrity of the public highway and the safety of road users. The appropriate TTM will be discussed and agreed with CCC as part of the preparation of the detailed CTMP once the Principal Contractor has been appointed and following detailed design.

7 Outline Construction Traffic Management Plan

7.1.1 To help manage construction vehicle and staff movements an oCTMP has been produced. A summary of the headlines of the oCTMP is provided below.

7.1.2 The construction programme for the substation and associated infrastructure will be approximately 49 months and will consist of the following (but not limited) activities:

- Creation of the Site access from public highway, including installation of a robust main entrance gate designed to accommodate AILs and a secure pedestrian gate for staff and visitors. The positioning and specification of these gates are determined by both traffic flow requirements and security needs, ensuring safe, efficient entry and exit.
- Installation of electrified security fencing, typically reaching a height of 3.4 metres, will encompass the substation perimeter, integrating advanced security features. The fence will be equipped with infra-red security lighting for enhanced visibility during night-time operations and closed-circuit television cameras strategically placed to monitor vulnerable access points and ensure comprehensive surveillance. The security system's layout considers local wildlife corridors and the need to minimise ecological disturbance.
- Deployment of diesel generators as backup power sources ensures uninterrupted operation of critical systems during outages or maintenance periods. These generators are housed within acoustic enclosures to reduce noise impact on nearby residential areas and natural habitats, and are connected to the site's emergency power grid with automatic transfer switches to guarantee seamless power transition.
- Installation of essential utilities, including fresh water supply, sewage and drainage systems designed to handle both construction-phase demand and long-term operational needs. Telecommunications infrastructure, such as fibre optic cabling, and the provision of low voltage power supplies, will be integrated throughout the site to support communications, remote monitoring, and control systems for both safety and operational efficiency.
- Laying of a metalled internal access road, approximately 6 metres wide, is planned to facilitate movement of heavy vehicles and equipment within the site. Adjacent hard standing areas are constructed to accommodate delivery vehicles, mobile cranes and the safe storage of substation equipment such as transformers and switchgear. The road's alignment is optimised to minimise disruption to local topography and drainage patterns, with geotextile membranes and culverts installed where necessary to protect against soil erosion and flooding.
- Delivery and erection of additional towers positioned according to detailed engineering surveys to ensure optimal connection with the existing OHL infrastructure.
- Installation of new 400kV towers is undertaken to facilitate the diversion of existing transmission lines into the newly constructed substation. This may require temporary modifications or strengthening of existing towers, as well as the deployment of specialist lifting and rigging equipment. Works are scheduled to minimise downtime and ensure continuous grid connectivity.
- Setting up of busbars, switchgear, and associated control and protection equipment involves coordinated installation and testing phases. These systems are central to the safe and reliable transfer of electricity, and their configuration is tailored to support high-voltage operations and future upgrades. Integration of advanced protection relays and monitoring equipment supports both operational efficiency and compliance with regulatory standards.

- Construction of the substation platform and compound encompass extensive earthworks to level and prepare the ground, robust foundations designed for heavy electrical equipment, and the assembly of structural steelwork for buildings and bays. The control building, transformer bays, and associated support infrastructure incorporate sustainable building practices such as rainwater harvesting and energy-efficient lighting.

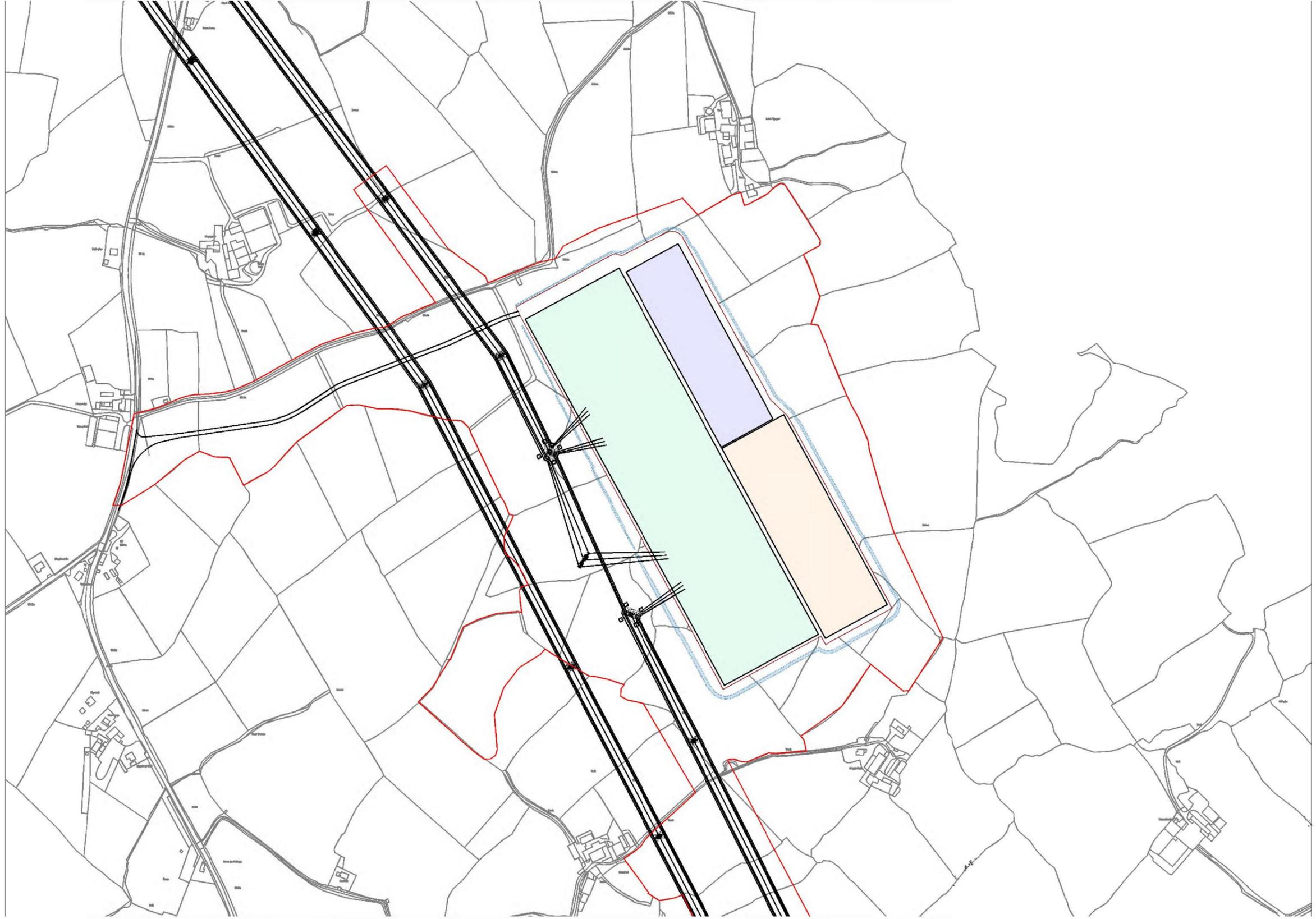
7.1.3 The oCTMP provides a framework for management of construction vehicles associated with the Proposed Development. It is anticipated that a detailed CTMP will be produced as a Condition of the planning consent once a Principal Contractor has been appointed. The oCTMP has been produced utilising best practice and guidance including the Transport for London (TfL), Construction Logistics Planning Guidance 2019 and includes the following sections:

- **Context, Considerations, and Challenges** - provides an overview of the Site, nature of the Proposed Development and parking, public transport, and walking / cycling access;
- **Construction Programme and Methodology** - provides information on the construction programme, stages, and methods of construction;
- **Vehicle Routeing and Access** - provides details on strategic and local vehicle routes for construction vehicle movements and the Site access / egress arrangements;
- **Strategies to Reduce Impacts** - outlines the planned measures that will be used, and indicating how construction vehicles will be managed to / from and on-Site;
- **Estimated Vehicle Movements** - provides a construction vehicle trip generation profile for the duration of the construction programme;
- **Implementing, Monitoring, and Updating** - identifies how the implementation of the oCTMP will be monitored and managed.

8 Conclusion

- 8.1.1 This Transport Statement prepared by Stantec on behalf of National Grid Electricity Transmission ('National Grid') examines and addresses all aspects of traffic and transport associated with the Proposed Development of the Llandyfaelog Substation.
- 8.1.2 The policy chapter sets out the relevant local and national guidance, demonstrating that the Proposed Development will be fully compliant with applicable policies. It explores the alignment of the Proposed Development with local and national objectives and highlights measures incorporated to meet planning requirements. In doing so, it provides assurance that all necessary standards will be met, supporting the overall suitability of the site for its intended use.
- 8.1.3 The assessment of existing conditions indicates the Site is suitable for construction activities related to the Proposed Development. Its direct access to the A484 and wider road network supports both construction and operational traffic. Additionally, PIC data reveals no current road safety concerns at the site.
- 8.1.4 The report presents a construction trip generation profile, offering an account of the expected traffic volumes throughout the project's duration. This demonstrates that the overall average trip generation and peak trip generation (which occurs over a short time period) is acceptable compared to existing traffic flows and can be accommodated within the capacity of the existing road network without adverse effects.
- 8.1.5 The access strategy provides details on the types of vehicles anticipated, including the AIL vehicle profile, and explains the approach for AILs entering the site. It describes the new site access point from the A484 and outlines how access will be maintained for the nearby dwelling during both the construction and operational phases.
- 8.1.6 This Transport Statement details the scope of an oCTMP prepared in support of the Proposed Development. The oCTMP establishes a structured framework for overseeing construction vehicle movements linked to the project. Following the appointment of a Principal Contractor, it is expected that a comprehensive Construction Traffic Management Plan (CTMP) will be developed as a planning condition.
- 8.1.7 In summary, the comprehensive measures and strategic planning detailed in this report confirm that the Proposed Development will not result in significant detriment to the local transport network. Through the application of best practice methodologies and proactive mitigation, the project can proceed responsibly and efficiently, safeguarding the interests of all road users.

Appendix A Indicative Site Layout



Appendix B Negotiability Study of the AIL Access Requirements to Site



Abnormal Indivisible Load Access to proposed Llandyfaelog Substation – 220te transformers

Prepared for National Grid





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Executive Summary

This report considers marine and land transport feasibility investigations into achieving access for transformers at 220te nett and 178te nett for future delivery to a proposed new National Grid (NG) Substation to be known as Llandyfaelog, which is located approximately 6miles south of Carmarthen, South Wales.

It is understood that there are to be 4 x 460MVA Super Grid Transformers (SGTs) and also 3 x 240MVA SGTs delivered with the first delivery due in approximately 2027.

Due to the overall transport weight of the load being considered (plus carrying trailer) being in excess of 150te gross weight, the move will require a Special Order from National Highways (NA). It should be noted that Government policy is to maximise the use of water for the movement of Special Order (above 150te gross) AIL's wherever possible. NH require that access via the nearest available water access should be considered, as NG would be required to deliver via the nearest available marine offloading point that is practicable for AIL delivery in line with the requirements of the Department for Transport's Water Preferred Policy to deliver Special Order Abnormal Indivisible Loads (AIL). NH Abnormal Loads Team have provided an Agreement in Principle (AiP) for Special Order deliveries to the proposed substation via Pembroke Dock as detailed in AIP Reference Number 894 dated 21.08.24.

At the commencement of the feasibility studies, there were various sites under consideration as the location for the new substation. This meant that options further to the east were investigated including with possible access from Swansea Docks. As the Llandyfaelog site has now been determined, to the west of the overall study area, the access from Swansea and the east is no longer considered. Further information on the issues associated with access from the east can be made available if required but is not thought necessary at this time as an agreed route from Pembroke Dock has been confirmed.

Pembroke Docks remains suitable for the shipment of the transformers via various methods of offloading and is well established for deliveries of AILs such as transformers and project cargo.

The road route from Pembroke to Llandyfaelog was initially rejected by the South Wales Trunk Road Agency (SWTRA) who required a number of bridges to be assessed. The preferred route detailed from Pembroke via the A477 and A40 to the A484 has been approved by all structural stakeholders in terms of structural clearance. However, this was only achieved following assessment of 8 SWTRA structures on the A477 and A40. These have all been confirmed as accessible via a comparative load assessment against their recorded capacities of the bridges crossed for 24/28 axle girder frame trailers based on 220te nett SGT weight.

Following these assessments, undertaken by Aecom, to meet the technical requirements of SWTRA, it has been confirmed the route below from Pembroke has been confirmed as able to accommodate the proposed loads of up to 220te nett.

Exit Docks & Continue Western Way
Continue A3139 London Road
Continue A477 London Road
Continue A477 eastbound to St Clears
Merge A40 eastbound to Carmarthen
Turn right A484
Turn left at OS Ref SN 4117 1338 Unclassified towards Bwlch Y Gwynt .
Note new access road to be constructed.



It should be noted that SWTRA may require that in the event that the final trailer arrangements selected for actual delivery various from those included in the assessment process that a review of suitability may be required, but no major issues are expected. It is recommended that the appointed haulage contractor is encouraged to submit the formal Special Order notification as soon as possible when final movement dates are known to ensure this process is managed in acceptable timescales.

The route from Pembroke to the A484 is regarded as negotiable with street furniture removal and careful traffic management as detailed. The A484 south from Carmarthen is also negotiable to the point where a new access road is to be created east from the A484 to the new substation. The existing unclassified road is not suitable for access.

The 460MVA Hyundai transformer is also unusually wide and is now understood to be in the region of 6.2m m as per the Hyundai Drawing No TL3972-A02-R00. This requires additional consideration in negotiability requirements.

No specific review of site access is included in the report although it is understood NG are to construct a new substation access road that travels east from the A484 to the substation. Wynns have been involved with initial advice on the new bellmouth and road alignment but have not seen the final design of the access road. This should be confirmed by NG as able to accommodate the AILs vehicles.

The report is intended to be a summary of the Abnormal Indivisible Load (AIL) route access at the current time and is not a guarantee that the route will be cleared in the future. Specific movements will need to be assessed at the time on an individual basis. If any further information is required, it is available on request.



1. Introduction

- 1.1. This report considers marine and land transport feasibility investigations into achieving access for transformers at 220te nett and 178te nett for future delivery to a proposed new National Grid (NG) Substation to be known as Llandyfaelog, which is located approximately 6miles south of Carmarthen, South Wales.
- 1.2. It is understood that there are to be 4 x 460MVA Super Grid Transformers (SGTs) and also 3 x 240MVA SGTs delivered with the first delivery due in approximately 2027.
- 1.3. This report is a summary of the status of the current AIL access investigations to the proposed site and seeks to present the situation as it presently stands. The issues highlighted in this report as risks to achieving AIL access in the future, will need to be revisited and progressed as the scheme develops.
- 1.4. This investigation considers the possible land transport routes from Pembroke Dock. Formal movement applications will be necessary upon appointment of a haulage contractor.
- 1.5. As the transformers are destined for a new substation yet to be constructed, no detailed review of site access within the substation layout is included, this will need to be considered along with a detailed appraisal of the technical requirements for handling transformers on-site as the scheme progresses. However, under separate cover Wynns Ltd have provided advice to NG on possible site access road requirements.
- 1.6. The report is intended to be a summary of the AIL route access at the current time and is not a guarantee that the route will be cleared in the future. Specific movements will need to be assessed at the time on an individual basis. If any further information is required, it is available on request.
- 1.7. The report considers access to the proposed Substation site in terms of AIL transportation only and no consideration of wider traffic and transport is discussed.

2. National Highways Agreement in Principle and Legislative Requirements

2.1. *Definition of Abnormal Indivisible Load (AIL)*

- 2.1.1. The Department for Transport, of which National Highways (NH), is a government-owned company with responsibility for managing the core road network in England, state that the strict definition of an AIL refers to a load which cannot, without undue expense or risk of damage, be divided into two or more loads for the purpose of carriage on roads and which, owing to its dimensions or weight, cannot be carried on a vehicle which complies in all respects with the 'standard vehicle regulations' these are:
 - The Road Vehicles (Construction and Use) Regulations 1986 (as amended)
 - The Road Vehicles (Authorised Weight) Regulations 1998 (as amended)
 - The Road Vehicles Lighting Regulations 1989 (as amended).
- 2.1.2. All equipment should be stripped of their ancillaries before they are transported. NH will only accept that further dismantling is not required where it cannot be economically achieved due to the requirement for its construction within specific factory environments or where extremely high tolerances have to be maintained.
- 2.1.3. In Wales the trunk road network is managed by Welsh Government but Special Order movement permissions are still administered by NH AIL Team in Birmingham.



2.2. *Legislation*

- 2.2.1. Conventional heavy goods vehicles have an operating weight limit of 44 tonnes. The category known as abnormal indivisible loads (AIL) covers those vehicles where the gross weight exceeds 44 tonnes. An Abnormal Load is defined as that which cannot be carried under Construction and Use (C&U) Regulations. Items which, when loaded on the load carrying vehicle exceed the weights encompassed by the C&U Regulations, but do not exceed Special Order Permission Limits, are governed by Special Types General Order (STGO) categories 1 to 3 depending on size.
- 2.2.2. Where dimensions exceed 6.1m in width, 30m in rigid length or 150 tonnes gross weight, Special Order from NH is required.
- 2.2.3. Special Order category AIL movements are authorised by the NH Abnormal Loads team, based in Birmingham. This is further discussed in section 2.3.
- 2.2.4. STGO loads orders grant consent for loads that satisfy the following criteria:
- | | |
|---------------------------|---|
| <u>Category 1 weight</u> | 44 – 50 tonnes and 11.5te axle weights |
| <u>Category 2 weight</u> | 50 – 80 tonnes and 12.5te axle weights |
| <u>Category 3 weight</u> | 80 – 150 tonnes and 16.5te axle weights |
| <u>Width Restriction</u> | 3.0m (C&U) –5m (VR1 Required)– 6.1m (SO required) |
| <u>Length Restriction</u> | 18.65m (C&U) – 30.0m (SO required) |
- 2.2.5. As the load will be above 150te gross, a Special Order permit and Agreement in Principle (AiP) would be required from NH. This would require the loads to be moved from the nearest available port, in line with the Department for Transport (DfT) 'Water Preferred Policy'.

2.3. *Water Preferred Policy Requirements*

- 2.3.1. The Department for Transport has adopted a 'water-preferred' policy for the transport of AILs. This means that, where an application is sought for the movement of a Special Order or VR1 category load (more than 5.0m width) by road, the Department, via NH, will turn down the application where it is feasible for a coastal or inland waterway route to be used instead of road. NH advise that this decision is based on a number of factors including whether the load is divisible, the availability of a suitable route, the amount of traffic congestion that is likely to be caused and the justification for the load to be moved. The NH Abnormal Loads Team is the department responsible for the authorisation of Special Order AIL's and government policy is that the closest available port of access should be used for the delivery of such oversize items.
- 2.3.2. NH Abnormal Loads Team have provided an Agreement in Principle (AiP) for Special Order deliveries to the proposed substation via Pembroke Dock as detailed in AIP Reference Number 894 dated 21.08.24.



3. Abnormal Indivisible Load Movements - Highways Act 1980

3.1. *Recovery of Excessive Maintenance Costs - Section 59 Agreements*

3.1.1. Section 59 of the Highways Act 1980 allows the highways authority to raise a charge against a user of the highway to cover repair works necessitated by excessively heavy or unusual loads being carried on the road by that user. This provision is typically used where the passage of heavy lorries to and from industrial premises or building sites causes excessive damage to the road, requiring expensive remedial works by the Council. Under Section 59, the Council may charge on such costs to the organisation responsible for the damage, the amount payable being calculated as the excess cost of repair compared to normal maintenance costs for the road. Rather than wait to be charged such excessive repair costs, the Council and the third party may enter into an agreement under Section 59 whereby the third party accepts liability and makes payment of an agreed sum to the Council to cover the excessive repair costs.

3.2. *The Removal and Replacement of Street Furniture*

3.2.1. Where the removal and replacement of street furniture is required for the mobilisation of out of gauge vehicles into existing sites then these are generally managed under Temporary Traffic Regulation Order (TTRO) and Street Works Legislation. These are normally, but not necessarily, organised by the haulage contractor. These requirements are generally to ensure that the supervisors and operatives are competent and that the works will be carried out to a prescribe standard with the appropriate traffic management in place. In some circumstances the Highway Authority or LA will insist that their preferred contractors will carry out such work.

4. Transport Configurations

4.1. Based on the information available to date the heaviest transformers initially considered within this report is assumed to be 220te nett for 460MVA transformers although it is understood that the design of the new units has been confirmed as the Hyundai SGT shown in Drawing Number TL3972-A02-R00, which shows a transport weight of 213.3te.

4.2. There is also a requirement to consider a second a weight of 178te for standard bulk purchase 240MVA transformers.

4.3. At these dimensions it is not possible to transport the transformer under the regulations governing Construction and Use (C&U) vehicles (44 tonne gross, 18.65m long and 2.9m wide) it is also not possible within the Special Types General Order (STGO) regulations as a Category 3 load (80-150te gross) as the gross load will be in excess of 150te. It will therefore be necessary to comply with legislation regarding Special Order movements and to be delivered via the nearest port of delivery.

4.4. Based on information available at the commencement of the study works 5 potential trailer arrangements were initially considered as detailed below:

- 16 axle girder frame trailer AL50 at 275.2te gross weight as provided by Mammoet (240MVA SGTS).
- 18 axle girder frame trailer AL50 at 281.2te gross weight as provided by Mammoet (240MVA SGTS).
- 16 axle girder frame trailer at 264.8te gross weight as provided by Allelys (240MVA SGTS).
- 20 axle girder frame trailer at 312.5te gross weight as provided by Colletts. (240MVA SGTS).



- 20 axle girder frame trailer at 359te gross (Wynns drawing Number 23-1156.TC01 for 220te nett load) (460MVA SGTs).

- 4.5. Based on information available at this moment in time it is assumed that the road transport configuration would consist of a ballast tractor pulling a 20/24 axle girder frame trailer for the 460MVA SGTs.
- 4.6. At the time of the works commencing there were three main haulage contractors with equipment able to carry the transformers in the UK, Allelys Heavy Haulage Ltd, Collett & Sons Heavy Haulage and Mammoet. In 2024 Allelys purchased the Mammoet trailers and presently there are just two providers of girder frame trailers in the UK. There are options to procure from Ireland and Europe that can be explored, if necessary, but this is not discussed further here.
- 4.7. Allelys have also made some changes to how they arrange the frame trailers and it will be necessary to confirm exact loaded trailer arrangements prior to use.
- 4.8. The 460MVA Hyundai transformer is also unusually wide and is now understood to be in the region of 6.2m m as per the Hyundai Drawing No TL3972-A02-R00. This requires additional consideration in negotiability requirements.
- 4.9. The loaded trailer arrangements are commercially sensitive and should not be disclosed to other parties. A selection of indicative trailer arrangements relevant to this project are attached within Appendix 3 as Drawings:
- 23-1156.TC01 (20 axle trailer)
 - 23-1156.TC02 (24 axle trailer)
 - 23-1156.TC03 (20 axle trailer)
 - 23-1156.TC04 (24 axle trailer)
- 4.10. As is detailed in Section 6, as additional assessment were required on the A477 and A40, additional trailers have also been presented for consideration in the assessment process.

5. Marine Access

5.1. Pembroke Dock

- 5.1.1. Pembroke Port has been facilitated many major projects through the port, the most recent being two 500 tonne petrochemical vessels to the Valero refinery on the Milford Haven, and the outbound shipments of the Murco refinery heavy lifts which were all transhipped from Ro/Ro to heavy lift for deep sea shipment to Pakistan.
- 5.1.2. Pembroke commercial port is operated by Milford Haven Port Authority. There are three quays in total. Number 1 Quay is used for heavy lifts.
- 5.1.3. Number 1 quay is some 180 metres in length and has a maintained depth of approximately 8 metres alongside. There was a controlling depth of approximately 5 metres on approach so vessels may need to arrive over high water. A review of Pembroke port recent dredging operations will confirm.
- 5.1.4. The port has been used for the three main modes of heavy lift shipping and is suitable for Heavy Lift Vessels, Roll-on/Roll-Off and Coaster, and Mobile Crane Operations.
- 5.1.5. In summary, there are no restrictions or issues for shipment through Pembroke Port.

5.2. *Potential Beach Landing at Ferryside*

- 5.2.1. A survey was undertaken of Ferryside Beach in order to meet with the requirements of the water preferred policy detailed in Section 2, but also as contingency against there being significant structural issues on the possible routes between Pembroke and Swansea to the possible substation locations being considered at the commencement of the study. This was to consider access from the River Towy.
- 5.2.2. Beach landing at Ferryside is not recommended due to the issues shown below which include the beach geography, egress from the beach, egress onto the public road and the restrictive road widths required to be negotiated to reach the main A484 and the proposed substation.



Photograph 1

Ferryside Beach. Note the raised beach which drops off at low water to the river channel. Beach landing would involve a high degree of civil works to enable.



Photograph 2

View of Ferryside beach from the main access/car park. A beach landing would require the access off the beach to overcome the level change seen here in the foreground which would include significant civil works.



Photograph 3

Ferryside beach looking east towards the beach egress and showing the gradient that would need to be coped with to get from the sea going vessel to the road. Not to be underestimated.



Photograph 4

Access to/from the beach, taken in the opposite direction to picture 2. If a solution can be engineered to land and get up off the beach, the loaded vehicle would enter from behind the camera and move east towards the level crossing and the road network beyond.



Photograph 5

Looking towards the level crossing from Eva Terrace. There is insufficient room for a frame trailer to egress the beach and turn right without contact with the crossing stairways and infrastructure.



Photograph 6

Looking towards Eva Terrace and to the right, Port way. The surveyor recommends a frame trailer cross over Eva Terrace and into Portway in reverse and then drive forward to the right which would minimise street furniture removal at this junction. Swept Path Assessments (SPA's) would be needed to include the height of the retaining wall shown here in the foreground.



Photograph 7

Unclassified Carmarthen Road heading north east from Ferryside at approximate OS Reference SN 3722 1101, Brooklands. Note the restricted width river bridge and level change. SPA needed, but probable removal of offside bridge furniture and subject to structural checking.

- 5.2.3. This bridge is known as Ystrad, Ferryside (Reference C2057/09) and is within the ownership of Carmarthenshire County Council (CCC) and has an advised span of 2.6m. No specific approach to CCC has been made to confirm the structural suitability of this bridge as the overall route is not considered suitable in terms of negotiability for either girder frame or flattop trailers when other routes from the A40 to the north exist but it is not on a route ever used for heavy AILs and as such is unlikely to be suitable without further assessment work.
- 5.2.4. Note the presence of overhead wires and services which would complicate any possible consideration of temporary access arrangements such as temporary bridging equipment that could be considered in the event the bridge was assessed and found to not be structurally acceptable to proposed loads.



Photograph 8

Reverse view of the Ystrad, Ferryside bridge at Brookside on Carmarthen Road. Structural check would be needed, and railings would require removal.



Photograph 9

Carmarthen Road near Is-coed wood. The road is narrow with wires crossing in several areas. A brook is running to the right of the carriageway, and any AIL vehicle would take up the entire road width and several SPA's would be required to confirm remedial works required.



Photograph 10

Continuation of Carmarthen Road at approximate OS Ref SN 3741 1113. The brook can be seen on the right, and it is probable that further survey work would be needed due the proximity of the loaded trailer axles to the edge of the road and subsequent loading charge into the brook retaining wall.



5.2.5. The above limitations to the physical negotiability of the route are considered to be significant and not easily overcome and the route is not discussed further in this report although additional information can be made available if needed. As a route from Pembroke has been identified this is not recommended for further consideration (See sections 6 and 7).

6. Structural Information

6.1. *Route from Pembroke Dock to Llandyfaelog*

6.1.1. The route to from Pembroke is shown below.

Exit Docks & Continue Western Way
Continue A3139 London Road
Continue A477 London Road
Continue A477 eastbound to St Clears
Merge A40 eastbound to Carmarthen
Turn right A484
Turn left at OS Ref SN 4117 1338 Unclassified towards Bwlch Y Gwynt .
Note new access road to be constructed.

6.1.2. South Wales Trunk Road Agency (SWTRA) are responsible for the A477 and A40 trunk road from Pembroke to Carmarthen. They advised that a structural screening exercise was required on all of the structures on the proposed route. This was undertaken by Aecom and provided to NG previously (Report 60685775-BR-CAR-SW-SCR-001-Rev 0 dated December 2023 refers).

6.1.3. This report filtered out most of the smaller span structures which were acceptable from all loaded trailer arrangements. However, it was deemed that an additional 8 structures needed more detailed structural assessment. All of these structures passed the detailed assessment process although A40 797 Pont Lesneven (TOWY) bridge (over the river immediately to the south of Carmarthen) was only cleared on a selection of trailers, with the 20 axle arrangement and one of the 24 axle trailers for the 220te nett load failing.

6.1.4. The structures assessed in more detailed are shown in Table 1 below with comments as to the loads approved and any noted cautions but in summary, after a long and costly assessment process SWTRA have approved the loads for both 178te and 220te nett.

Table 1. SWTRA Structures Assessed By Aecom for SGT loads

Reference	Structure Name	HB Rating	Trailers Cleared	Notes
A40 795	Railway Carmarthen	HA + 45 HB	Allelys 220Te-24ax Allelys 220Te-28ax Allelys 220Te-32ax Allelys 220Te-24ax (wide) Mammoet 220Te-24ax Wynns 220Te-24ax Wynns 220Te-20ax	<p>AIL vehicles must travel in the centre of the carriageway upon approach and over the structure.</p> <p>The AIL vehicle speed must be restricted to 10mph.</p> <p>The AIL vehicles are to be escorted on approach, while crossing, and departing the structure with all other traffic kept clear.</p> <p>The AIL vehicle axles are to be hydraulically controlled to ensure the wheels always carry equal weight and</p>



Reference	Structure Name	HB Rating	Trailers Cleared	Notes
				axle spacings are to be fixed and independently certified
A40 797	Pont Lesnevm (TOWY)	HA + 45 HB	Allelys 220Te-24ax Allelys 220Te-28ax Allelys 220Te-32ax Allelys 220Te-24ax (wide) Wynns 220Te-24ax	Wynns 220Te-20ax unacceptable. Mammoet 220Te-24ax unacceptable. All other cautions as above
A40 830	Railway U/B (Sarnau)	HA + 45 HB	Allelys 220Te-24ax Allelys 220Te-28ax Allelys 220Te-32ax Allelys 220Te-24ax (wide) Mammoet 220Te-24ax Wynns 220Te-24ax Wynns 220Te-20ax	All other cautions as above
A40 860	Afon Cywyn	HA + 45 HB	Allelys 220Te-24ax Allelys 220Te-28ax Allelys 220Te-32ax Allelys 220Te-24ax (wide) Mammoet 220Te-24ax Wynns 220Te-24ax Wynns 220Te-20ax	All other cautions as above
A40 890	Dewi Fawr U/B	HA + 45 HB	Allelys 220Te-24ax Allelys 220Te-28ax Allelys 220Te-32ax Allelys 220Te-24ax (wide) Mammoet 220Te-24ax Wynns 220Te-24ax Wynns 220Te-20ax	All other cautions as above
A40 895	Afon Cynin U/B	HA + 45 HB	Allelys 220Te-24ax Allelys 220Te-28ax Allelys 220Te-32ax Allelys 220Te-24ax (wide) Mammoet 220Te-24ax Wynns 220Te-24ax Wynns 220Te-20ax	All other cautions as above
A477 10	Pont Newydd	HA or 45 HB	Allelys 220Te-24ax Allelys 220Te-28ax Allelys 220Te-32ax Allelys 220Te-24ax (wide) Mammoet 220Te-24ax Wynns 220Te-24ax Wynns 220Te-20ax	All other cautions as above
A477 21	St 13 Afon Hydfron Underbridge	SV 196	Allelys 220Te-24ax Allelys 220Te-28ax Allelys 220Te-32ax Allelys 220Te-24ax (wide) Mammoet 220Te-24ax Wynns 220Te-24ax Wynns 220Te-20ax	All other cautions as above

6.1.5. The Aecom assessment reports (Dated October 2024) have been presented to NG under separate cover and are not attached to this report due to file size but can be made available if required.

6.1.6. It should be noted that SWTRA may require that in the event that the final trailer arrangements selected for actual delivery various from those included in the assessment

process that a review of suitability may be required but no major issues are expected. It is recommended that the appointed haulage contractor is encouraged to submit the formal Special Order notification as soon as possible when final movement dates are known to ensure this process is managed in acceptable timescales.

- 6.1.7. Pembrokeshire County Council (PCC) have confirmed that the route out of Pembroke Dock to the A487 trunk road is acceptable for the proposed loads in terms of structures.
- 6.1.8. Carmarthenshire County Council (CCC) have advised (29.06.23) the section of the route on the A484 has 3 identified known Highway Structures along this section. None are regarded as an issue. These are small spans:
1. A476-5 – Nant Glas Church, Cross Hands (Culvert) – 900mm I.D concrete pipe.
 2. RSA476-040 – 34/36 Llannon Road (Retaining Wall) – 1m average retained height RC Wall.
 3. A476_4 – Gate House Llannon (Small Culvert) – 375mm I.D concrete pipe.
- 6.1.9. No specific comments have been obtained from the police forces on the proposed route.

7. Route Negotiability

7.1. *Route from Pembroke Docks to Llandyfaelog*

- 7.1.1. This route is detailed in the notes and photographs below.



Photograph 11

Pembroke port main gate access, Front Street. Vehicle moves towards the camera and turns left onto the A4139 Western Way.



Image Source: Google Streetview

Photograph 12

Western Way/London Road Roundabout. Girder frame trailers move away from the camera, entering the roundabout and exiting via London Road.



Photograph 13

A4139 London Road. Vehicle moves away from camera and continues A4139 London Road. The A4139 London Road is a single carriageway in each direction and as such, the girder frame trailer will occupy both lanes requiring careful traffic management.



Photograph 14

A477 London Road Roundabout. Surveyor recommends the roundabout is taken in contraflow with traffic halted and the girder frame trailer moved under police escort. This is shown to the right of the photograph into the flow of cars, which will make for easier negotiability.

- 7.1.2. The A477 east to the A40 at St Clears and then Carmarthen is negotiable. The route via the A477 is single two way carriageway with intermediate dual carriageways and several roundabouts, all of which are negotiable with furniture removed as appropriate to transporter length and width. The AIL will be taking up the entire road for the non dualled sections and careful traffic management will be needed. There are several laybys that can be used to relive traffic subject to agreement with SWTRA and the police.
- 7.1.3. The route from the A40/A48/A474 roundabout via the A484 is discussed in the following notes and photographs.



Photograph 15

A484 exit, vehicle moves away from the camera. Negotiable.



Photograph 16

Keep left and traffic lights, street furniture removal required.

- 7.1.4. If the load is in excess of 5 meters wide a shunt at the previous main roundabout and temporary wrong side travel may be feasible to the next roundabout south. Exact requirements to be confirmed by appointed haulage contractor after consultation with police. Careful consideration of traffic management required.



Photograph 17

A484 Morrisons roundabout. Vehicle moves away from the camera. Negotiable. Could possibly be in contraflow if shunt previously described is utilised to reduce street furniture removal.



Photograph 18

A484 Morrisons roundabout, Vehicle moves away from, considered negotiable.



Photograph 19

Vehicle exits the roundabout and continues ahead, considered negotiable.



Photograph 20

Approaching second A484 roundabout, vehicle moves away from the camera, considered negotiable with the removal of the chevrons in the centre of the roundabout.



Photograph 21

A484 roundabout, vehicle moves away from the camera, considered negotiable.



Photograph 22

A484 driving through Cwmffrwd, Vehicle moves away from the camera. Negotiable with full occupation of the road. The load will occupy both lanes for the whole length of the A484 and traffic management and escort requirements will need to be carefully considered and managed with the police.



Photograph 23

Keep left approaching Cwmffrwd, curb side may require plating and centre island street furniture removed.



Photograph 24

Second keep left in Cwmffrwd, curb side may require plating and centre island street furniture removed.



Photograph 25

A484, vehicle moves away from the camera, considered negotiable.



Photograph 26

A484, vehicle moves away from the camera, considered negotiable.



Photograph 27

A484, vehicle moves away from the camera, considered negotiable.



Photograph 28

A484 driving through Idole, vehicle moves away from the camera. Negotiable.



Photograph 29

A484, vehicle moves away from the camera. Negotiable.



Photograph 30

A484, vehicle moves away from the camera. Negotiable.



Photograph 31

A484, vehicle moves away from the camera. Tree pruning may be required depending on growth at time of movement.



Photograph 32

A484, vehicle moves away from the camera and approaching left turn towards proposed site.



Photograph 33

Left turn off A484, vehicle moves away from the camera. Not accessible for AILs in the current alignment.

- 7.1.5. The left turn from the A484 is not negotiable and remedial works will be necessary to enable the loads to access this turn and from this point east towards the proposed substation location. The section of road will also be expected to require upgrades for wider Construction and Use traffic associated with the construction of the substation.
- 7.1.6. NG are understood to be constructing a new access road to the substation that travels east from this point. This has been discussed in separate Swept Path Assessment drawings and is not detailed in this report.



8. Summary

- 8.1. The NH Abnormal Loads Team has provided Agreement in Principle (AIP) which confirms the preferred port of access to be via Pembroke Dock, dated 21.08.24 (AIP Reference 894).
- 8.2. Pembroke Docks remains suitable for the shipment of the transformers via various methods of offloading and is well established for deliveries of AILs such as transformers and project cargo.
- 8.3. The preferred route detailed via the A477 and A40 to the A484 has been approved by all structural stakeholders in terms of structural clearance. However, this was only achieved following assessment of the 8 SWTRA structures on the A477 and A40. These have all been confirmed as accessible via a comparative load assessment against their recorded capacities of the bridges crossed for 24/28 axle girder frame trailers based on 220te nett SGT weight.
- 8.4. It should be noted that SWTRA may require that in the event that the final trailer arrangements selected for actual delivery various from those included in the assessment process that a review of suitability may be required but no major issues are expected. It is recommended that the appointed haulage contractor is encouraged to submit the formal Special Order notification as soon as possible when final movement dates are known to ensure this process is managed in acceptable timescales.
- 8.5. At the commencement of the feasibility studies, there were various sites under consideration as the location for the new substation. This meant that options further to the east were investigated including with possible access from Swansea Docks. As the Llandyfaelog site has now been determined, to the west of the overall study area, the access from Swansea and the east is no longer considered. Further information on the issues associated with access from the east can be made available if required but is not thought necessary at this time as an agreed route from Pembroke Dock has been confirmed.
- 8.6. The 460MVA Hyundai transformer is also unusually wide and is now understood to be in the region of 6.2m m as per the Hyundai Drawing No TL3972-A02-R00. This requires additional consideration in negotiability requirements. The route to the A484 is regarded as negotiable with street furniture removal and careful traffic management.
- 8.7. No specific issues have been identified by the police although a police escort would be required for movement the with private escort arrangements also in place and it is recommended that further discussions are undertaken with respect to confirming escort requirements prior to deliveries with the relevant police forces. Very careful consideration on escort requirements will be needed and where traffic must be halted, consultation with the police is necessary as only police escorts can manage the movement. Private escorts are not allowed to direct traffic.
- 8.8. No specific review of site access is included in the report although it is understood NG are to construct a new substation access road that travels east from the A484 to the substation. The existing unclassified road is not suitable for access.



Appendix 1

Maps



Key

	Route 1
	Points of interest

B		
A		
O	06.10.25	First Issue
Rev	Date	Amendments:

Revisions



Wynns Ltd.
Independent
Transportation
Engineers

Shaftesbury House, 2 High Street, Eccleshall,
Stafford, ST21 6BZ. Tel: (01785) 850411

Client:	National Grid Hams Offices Hams Lane Coleshill B46 1AW
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Project:	Proposed Llandyfaelog Substation
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Title:	Map 1 – Routes to Llandyfaelog Proposed Substation Location.
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Drawing Status:	Final Report
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Scale (A4):	Drawn by:	Checked by:
NTS	BD	ARP

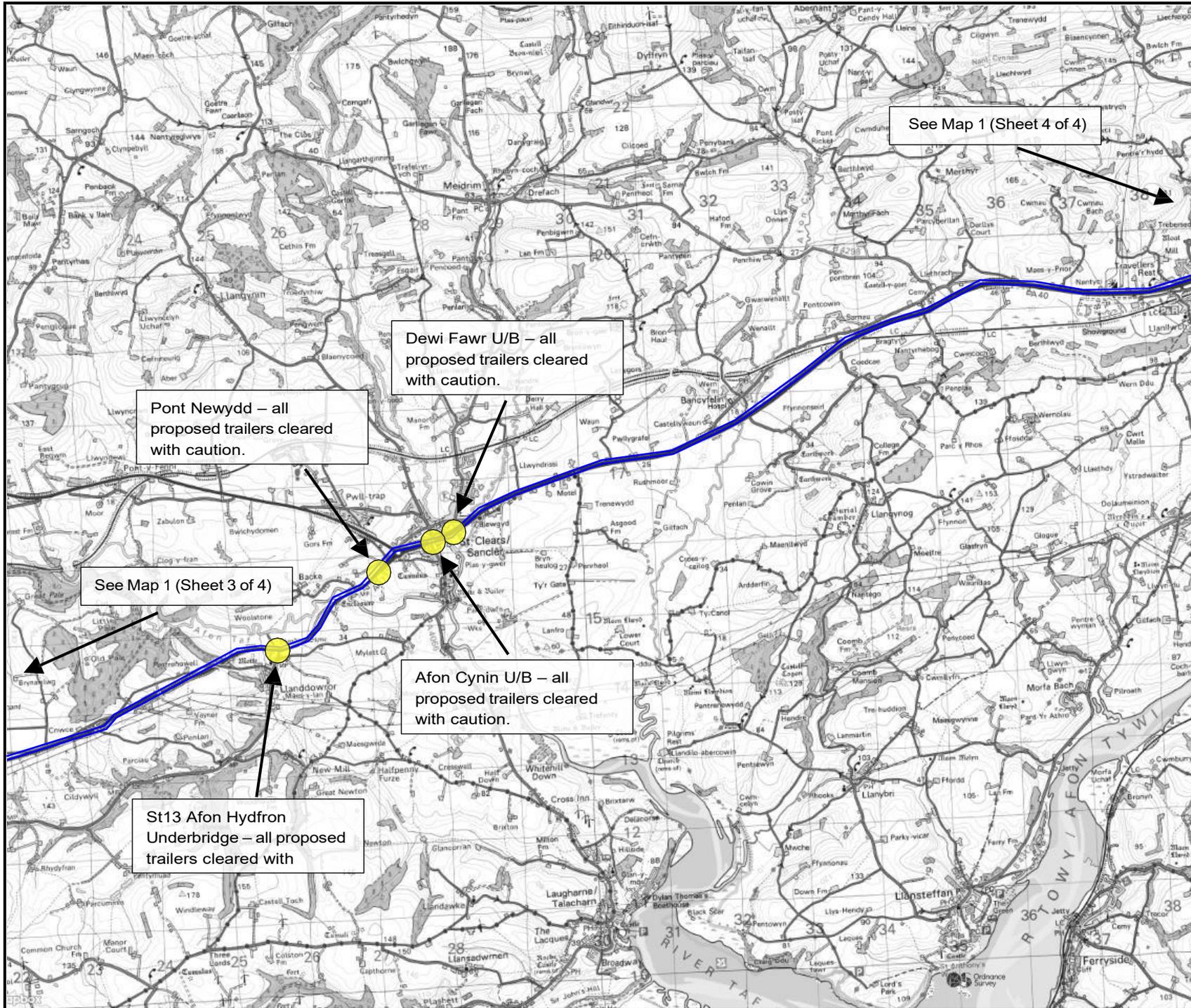
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Key		
	Route 1	
	Points of Interest	
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A		
O	06.10.25	First Issue
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Revisions		
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Shaftesbury House, 2 High Street, Eccleshall, Stafford, ST21 6BZ. Tel: (01785) 850411		
Client:	National Grid Hams Offices Hams Lane Coleshill B46 1AW	
Project:	Proposed Llandyfaelog Substation	
Title:	Map 1 – Routes to Llandyfaelog Proposed Substation Location.	
Drawing Status:	Final Report	
Scale (A4): NTS	Drawn by: BD	Checked by: ARP
Ref No.: 23-156 Map 1	Sheet: 2 of 4	Rev.: 0
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Key

	Route 1
	Points of Interest

B		
A		
0	06.10.25	First Issue
Rev	Date	Amendments:

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Wynns Ltd.
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Client:	National Grid Hams Offices Hams Lane Coleshill B46 1AW
---------	--

Project:	Proposed Llandyfaelog Substation
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Title:	Map 1 – Routes to Llandyfaelog Proposed Substation Location.
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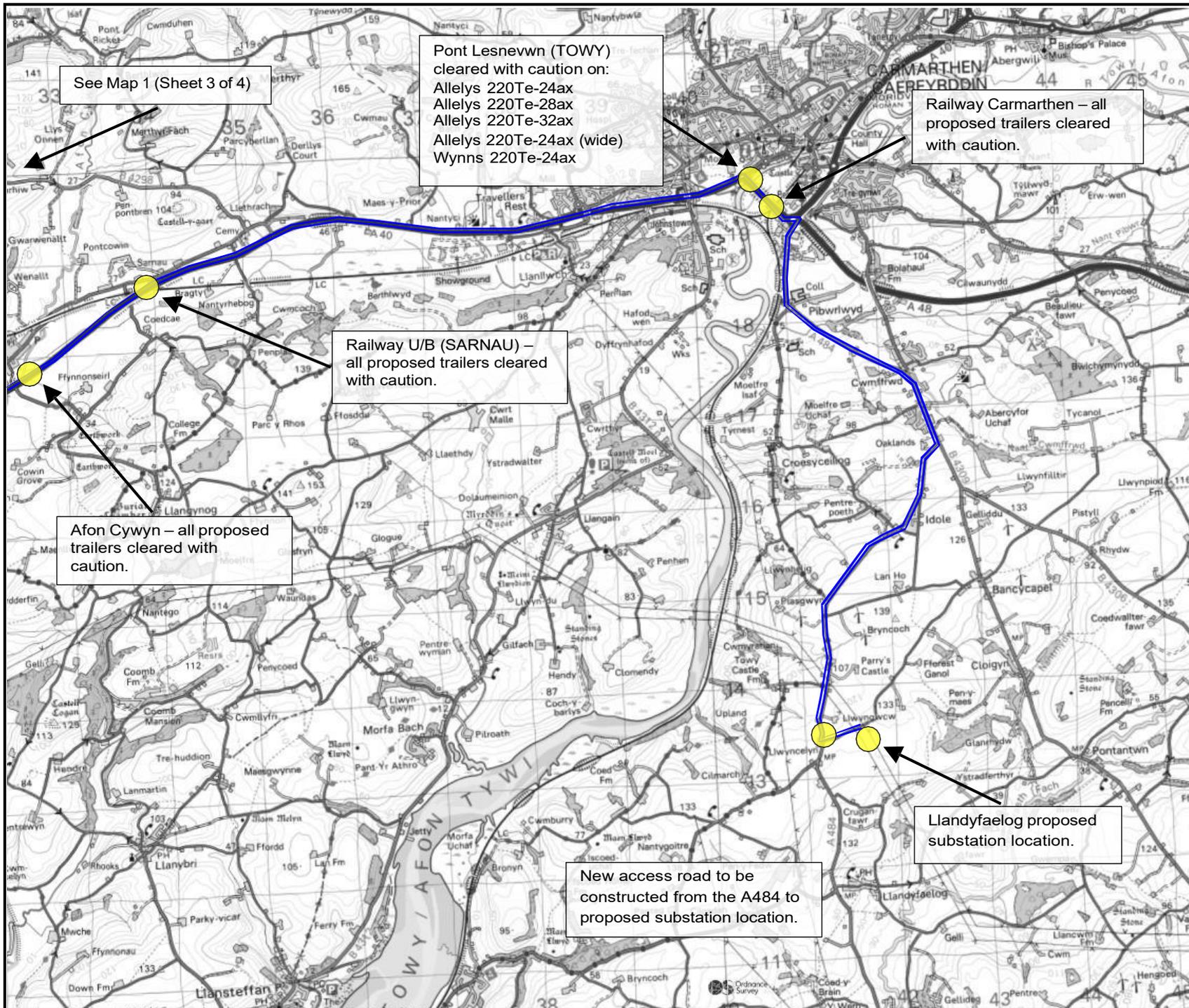
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NTS	BD	ARP

Ref No.:	Sheet:	Rev.:
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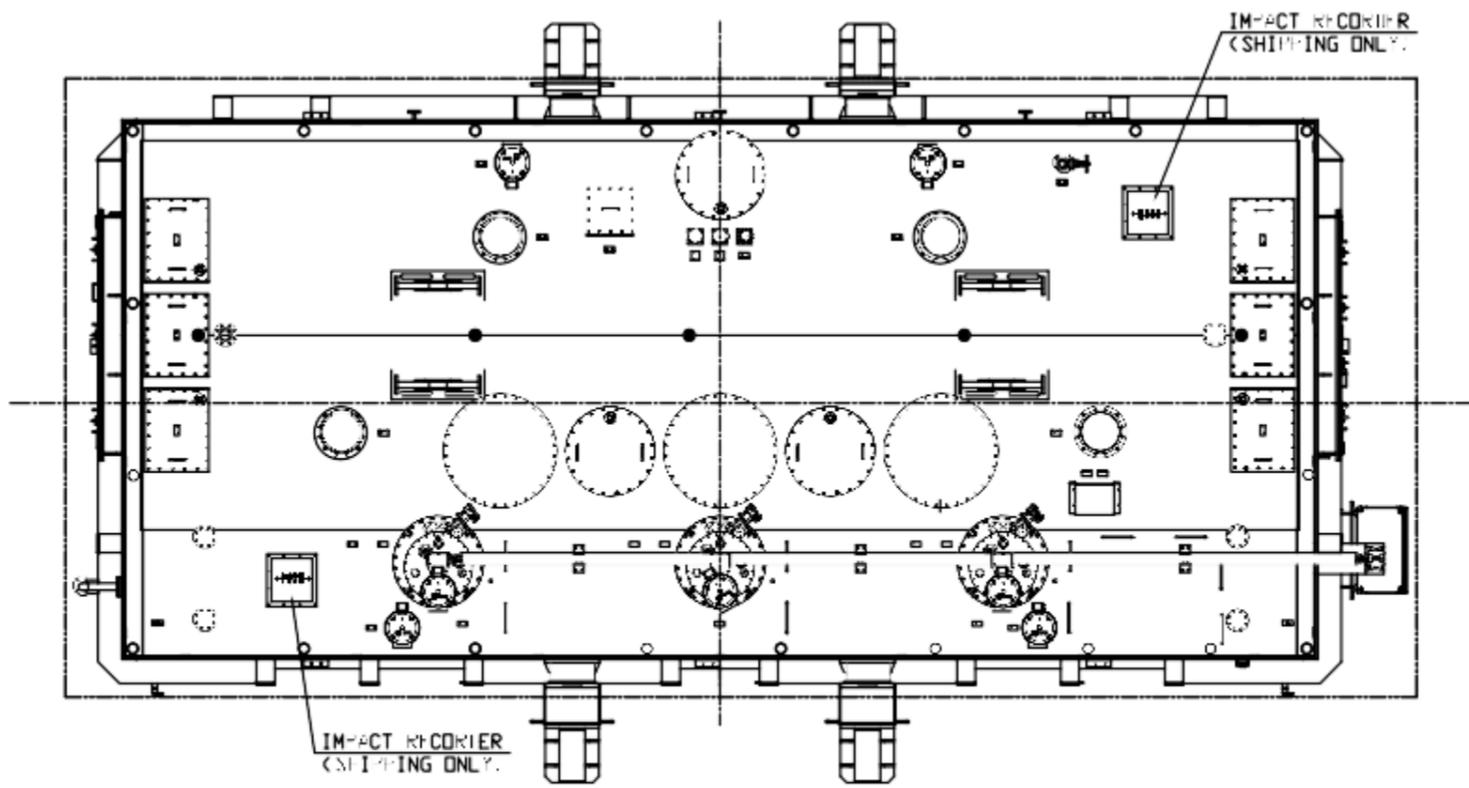


Key		
	Route 1	
	Points of Interest	
B		
A		
O	06.10.25	First Issue
Rev	Date	Amendments:
Revisions		
		Wynns Ltd. Independent Transportation Engineers
Shaftesbury House, 2 High Street, Eccleshall, Stafford, ST21 6BZ. Tel: (01785) 850411		
Client:	National Grid Hams Offices Hams Lane Coleshill B46 1AW	
Project:	Proposed Llandyfaelog Substation	
Title:	Map 1 – Routes to Llandyfaelog Proposed Substation Location.	
Drawing Status:	Final Report	
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Appendix 2

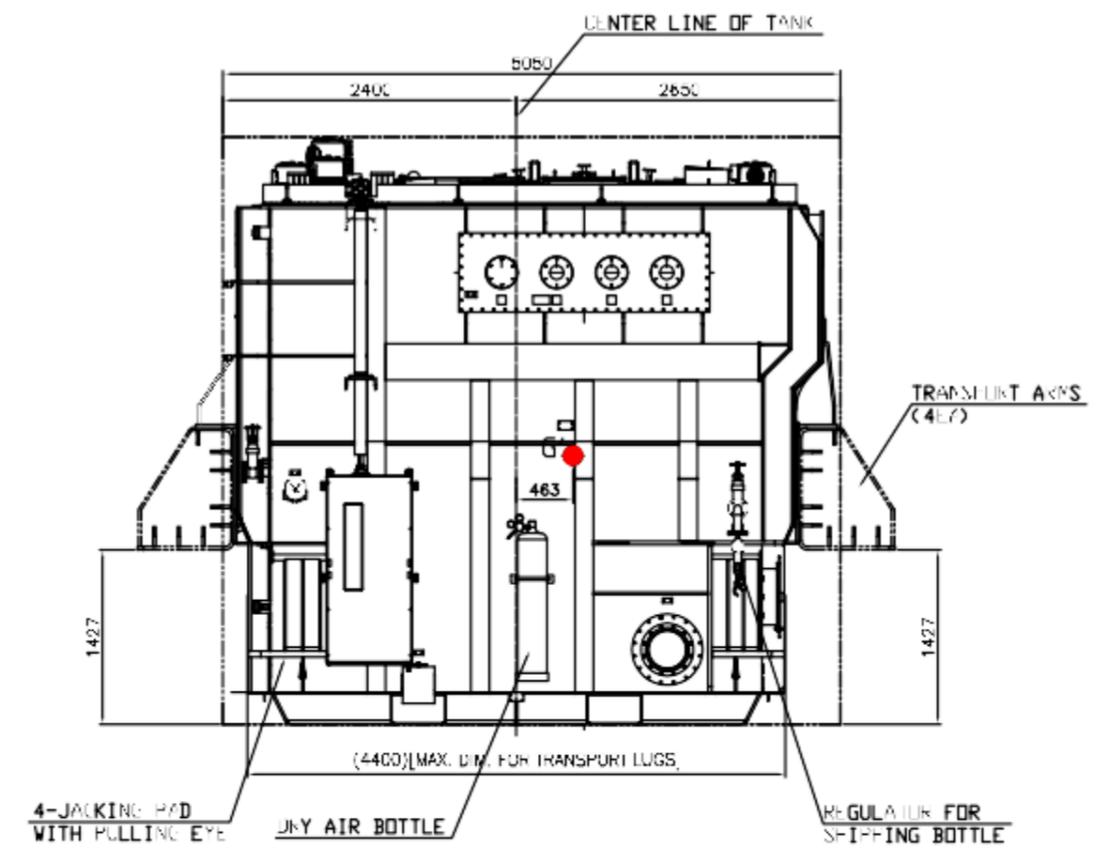
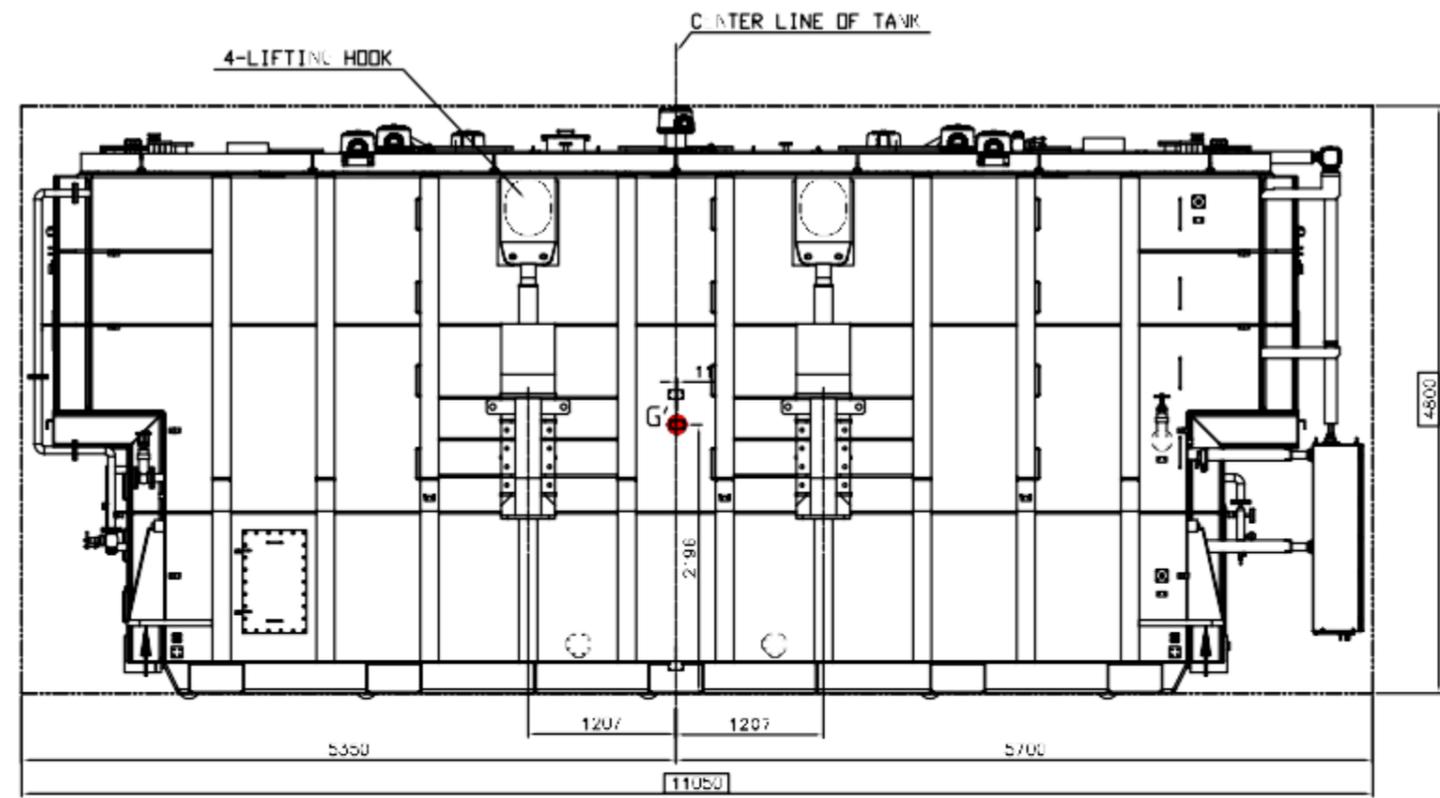
Transformer Drawings



- [Note]
1. While in transit, operate impact recorders after checking the battery and paper.
 2. When unloading the TR, make sure the following.
 - 1) The jacking pads are properly fitted.
 - 2) Place lifting jacks only under the jacking pads.

SHIPPING(MAIN BODY)	
DIMENSION	SIZE L11050XW5050(4400)XH4800
WEIGHT (WITHOUT OIL)	213,500KG

OVERALL DIMENSION TOLERANCE : $\pm 2\%$
 G : CENTER OF GRAVITY (SHIPPING OF MAIN BODY)
 ↑ : JACKING POINT



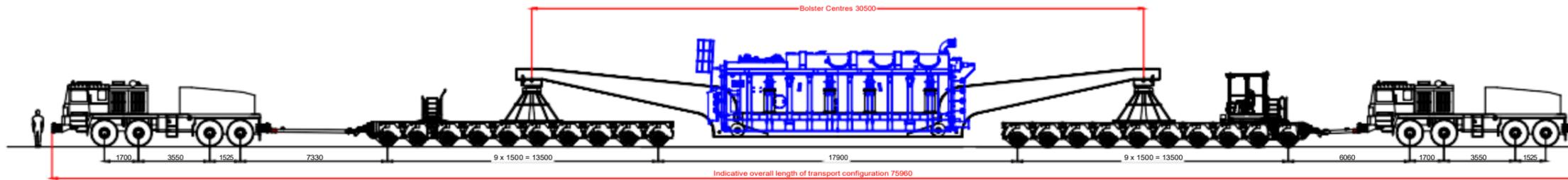
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CONTRACT NO. -		CONTRACTOR PROJECT NO.	
DATE 20240528	UNIT mm	CONTRACTOR DRAWING NO. TL3972-A02	
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NG Drawing No.		-	
Sheet	1 / 1	Revision	0

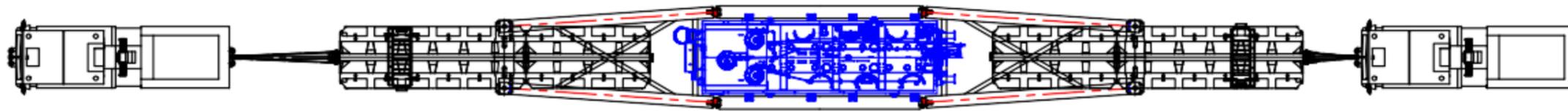


Appendix 3

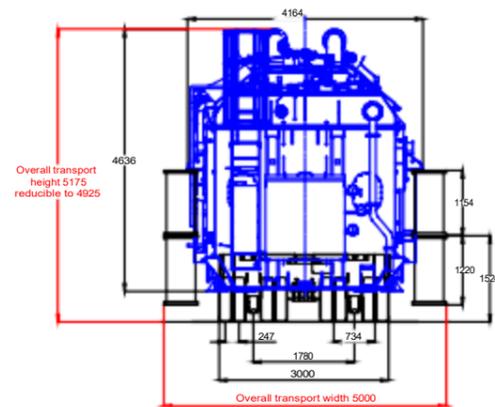
Trailer Arrangement Drawings



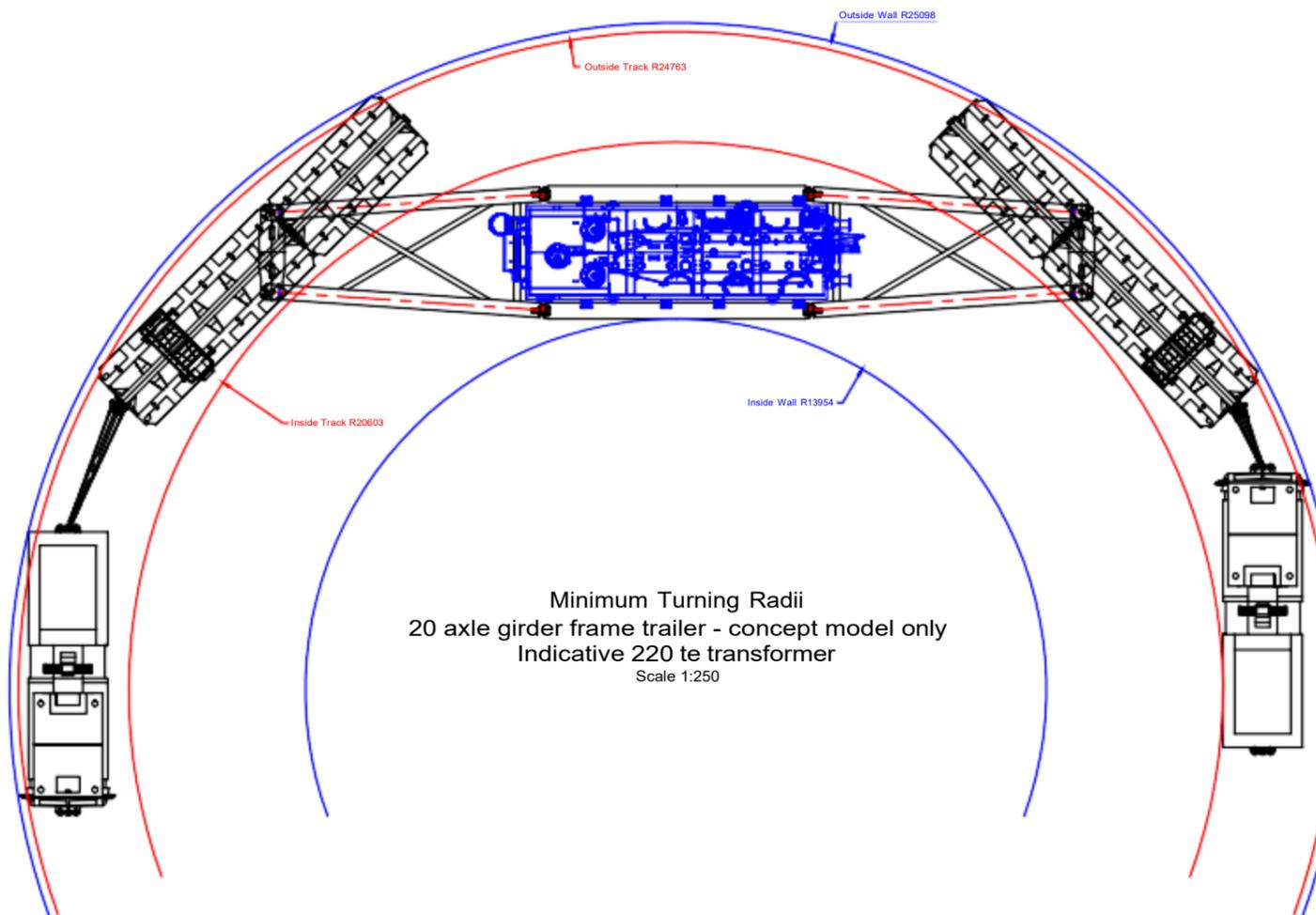
Elevation view - 20 axle girder frame trailer - concept model only
Indicative 220 te transformer
Scale 1:250



Plan view - 20 axle girder frame trailer - concept model only
Indicative 220 te transformer
Scale 1:250



Profile view
Scale 1:125



Minimum Turning Radii
20 axle girder frame trailer - concept model only
Indicative 220 te transformer
Scale 1:250

Load table

20 axle girder frame trailer	
Self weight of transformer	220.0 te
Self weight of trailer	139.2 te
Self weight of aux. steelwork (for L&S)	0.0 te
Total combined weight	359.2 te
Load per trailer	179.60 te
Load per axle line	17.96 te
Load per axle	8.98 te
Load per wheel (4 per axle)	2.25 te
Overall ground bearing pressure	4.43 te/m ²
Tractor(s) (48 te)	
Front axle	8.0 te
Second steer	8.0 te
Rear axle	16.0 te
Rear axle	16.0 te

Notes:

[1] The figures shown above are representative of the transport configuration portrayed. However, as tractor and trailer arrangements vary then the loads and dimensions indicated should be treated as probable values.

[2] Actual dimensions, including axle spacing and mean running height, may vary slightly depending on manufacturer of trailer deployed.

[3] All linear measures in millimetres unless stated otherwise.

Rev.	Date	Amendments
1		
0	30.03.23	Issued for comment

Revisions

Prepared by:



Shaftesbury House, 2 High Street,
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Tel: (01785) 850411

Independent Transportation Engineers

Client:



Project:

Carmarthen

Title:

Indicative transport configuration
Conceptual 220 te transformer carried within
20 axle girder frame trailer
showing minimum turning radii

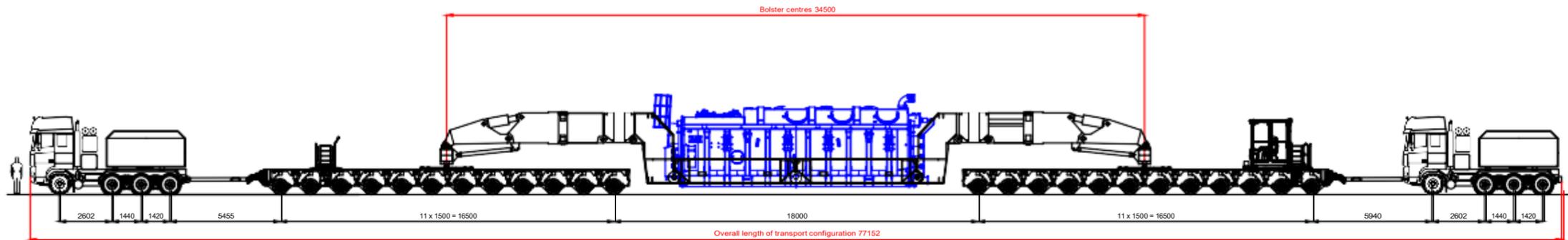
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Final report

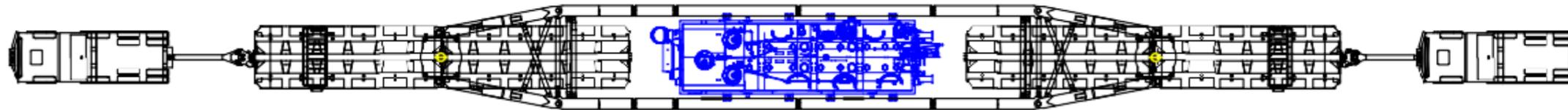
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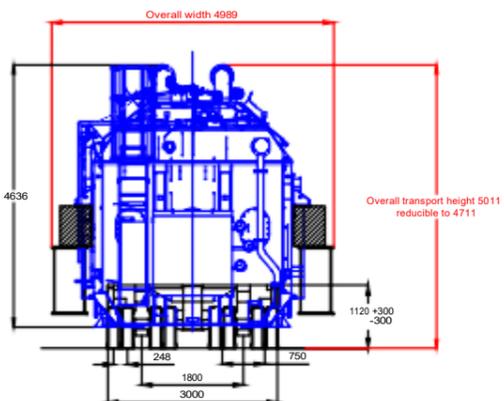
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Elevation view - 24 axle girder frame trailer - concept model only
 Indicative 220 te SGT
 Scale 1:250

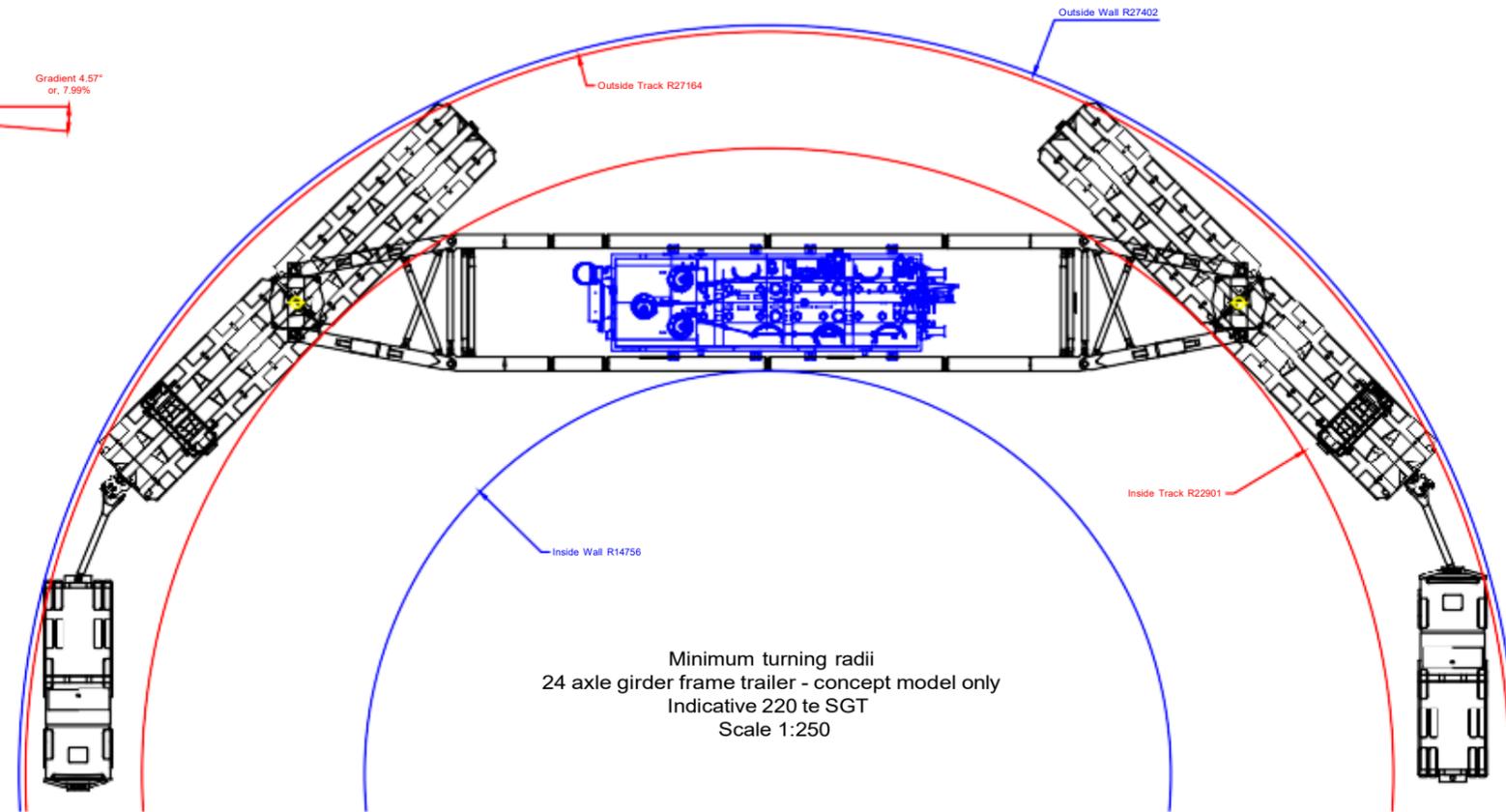


Plan view - 24 axle girder frame trailer - concept model only
 Indicative 220 te SGT
 Scale 1:250



Profile view
 Indicative 220 te SGT
 Scale 1:125

NOTE: Final Design/Transport Arrangement to be Determined. Detail is Illustrative Only.



Load Table

24 axle girder frame trailer

Self weight of transformer	220.00 te
Self weight of trailer	172.12 te
Self weight of aux. steelwork (for L&S)	0.0 te
Total combined weight	392.12 te
Load per trailer	196.06 te
Load per axle line	16.33 te
Load per axle	8.17 te
Load per wheel (4 per axle)	2.04 te
Overall ground bearing pressure	3.92 te/m ²

Tractor(s) (42 te)

Front axle	8.0 te
Second steer	10.0 te
Rear axle	12.0 te
Rear axle	12.0 te

Notes:-

[1] The figures shown above are representative of the transport configuration portrayed. However as tractor and trailer arrangements vary then the loads and dimensions indicated should be treated as probable values.

[2] Actual dimensions, including axle spacing and mean running height, may vary slightly depending on manufacturer of trailer deployed.

[3] All linear measures in millimeters unless stated otherwise.

[4] Transformer drawing indicative only.

1		
0	01.12.23	Issued for comment
Rev.	Date	Amendments

Revisions

Prepared By:



Shaftesbury House, 2 High Street,
 Eccleshall, Stafford, ST21 6BZ
 Tel: (01785) 850411

Independent Transportation Engineers

Client:



Project:

Carmarthen

Title:

Indicative transport configuration
 Conceptual 220 te transformer carried within
 24 axle girder frame trailer
 showing minimum turning radii

Drawing Status:

Final Report

Scale (A3):

As shown

Drawn By:

MTO

Checked By:

ARP

DWG. No:

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Sheet:

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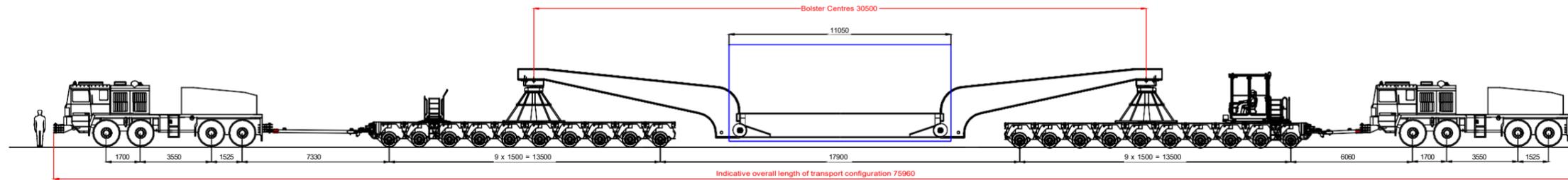
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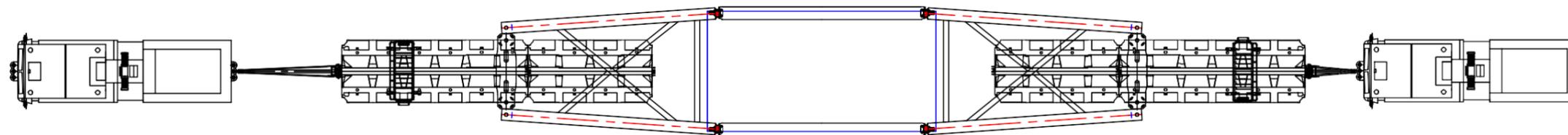
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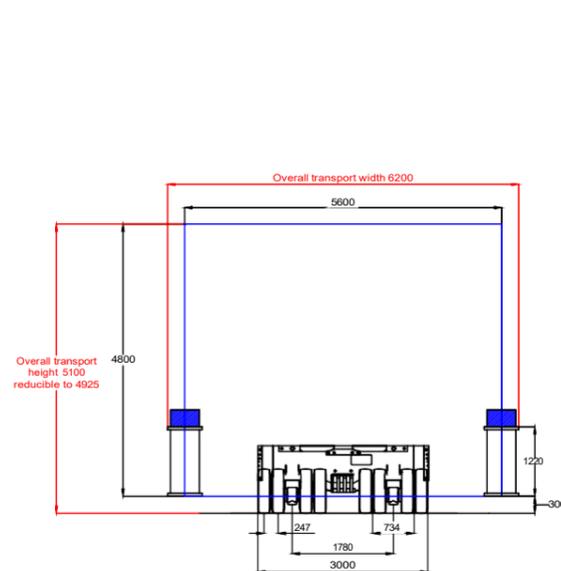
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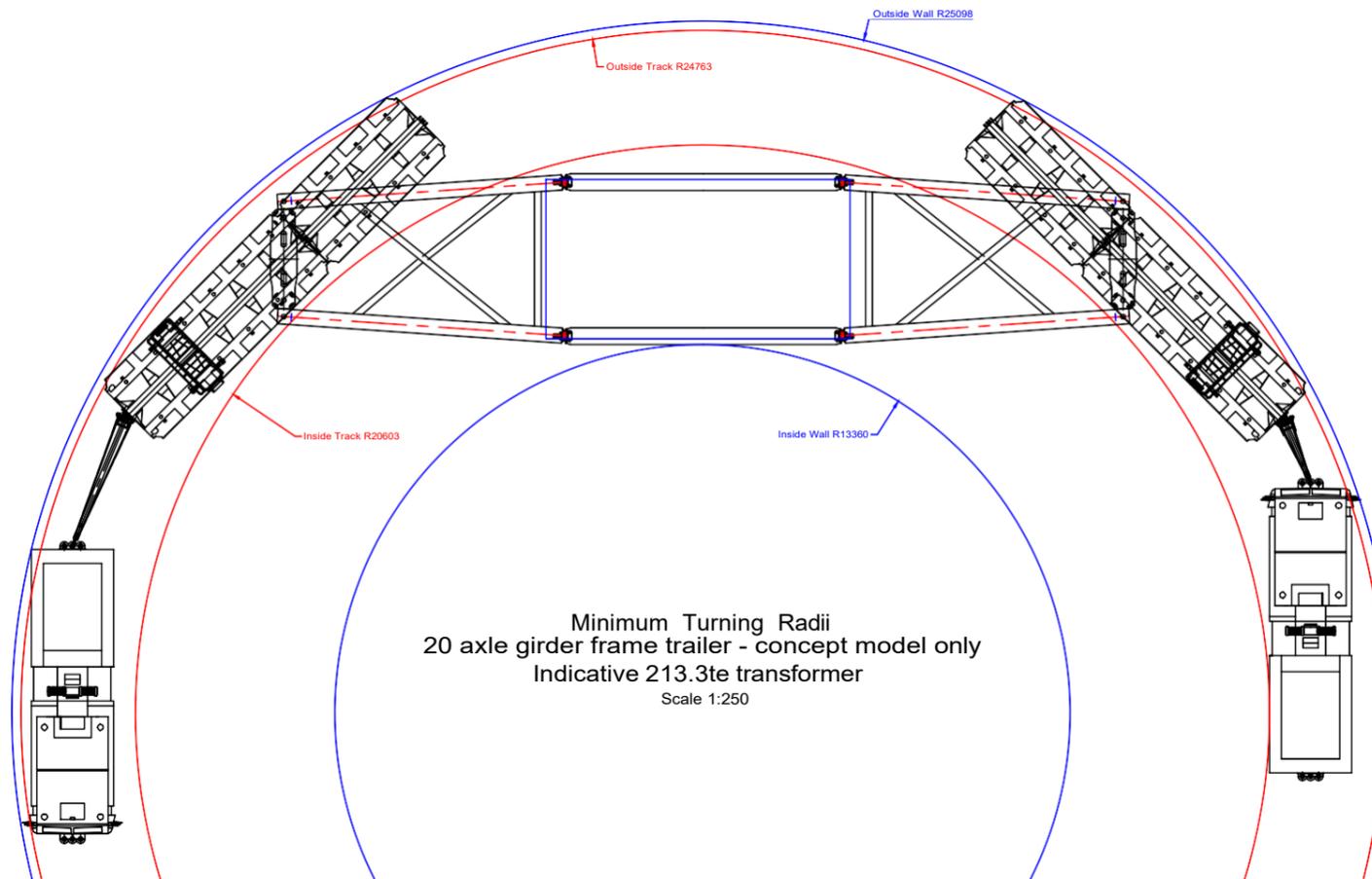
Elevation view - 20 axle girder frame trailer - concept model only
Indicative 213.3te transformer
Scale 1:250



Plan view - 20 axle girder frame trailer - concept model only
Indicative 213.3te transformer
Scale 1:250



Profile view
Scale 1:125
Note: Transport Lugs/Packing Arrangements to be Confirmed, Additionally, CoG to be Confirmed to Ensure Suitability of Arrangement.



Minimum Turning Radii
20 axle girder frame trailer - concept model only
Indicative 213.3te transformer
Scale 1:250

Load table

20 axle girder frame trailer	
Self weight of transformer	213.3 te
Self weight of trailer	139.2 te
Self weight of aux. steelwork (for L&S)	0.0 te
Total combined weight	352.5 te
Load per trailer	176.25 te
Load per axle line	17.63 te
Load per axle	8.81 te
Load per wheel (4 per axle)	2.20 te
Overall ground bearing pressure	4.35 te/m ²

Tractor(s) (48 te)

Front axle	8.0 te
Second steer	8.0 te
Rear axle	16.0 te
Rear axle	16.0 te

Notes:

[1] The figures shown above are representative of the transport configuration portrayed. However, as tractor and trailer arrangements vary then the loads and dimensions indicated should be treated as probable values.

[2] Actual dimensions, including axle spacing and mean running height, may vary slightly depending on manufacturer of trailer deployed.

[3] All linear measures in millimetres unless stated otherwise.

1		
0	03.10.25	Issued for comment
Rev.	Date	Amendments

Revisions

Prepared by:



Shaftesbury House, 2 High Street,
Eccleshall, Stafford, ST21 6BZ
Tel: (01785) 850411

Independent Transportation Engineers

Client:

nationalgrid

Project:

Llandyfaelog

Title:

Indicative transport configuration
Conceptual 213.3te 460MVA transformer carried
within 20 axle girder frame trailer
showing minimum turning radii

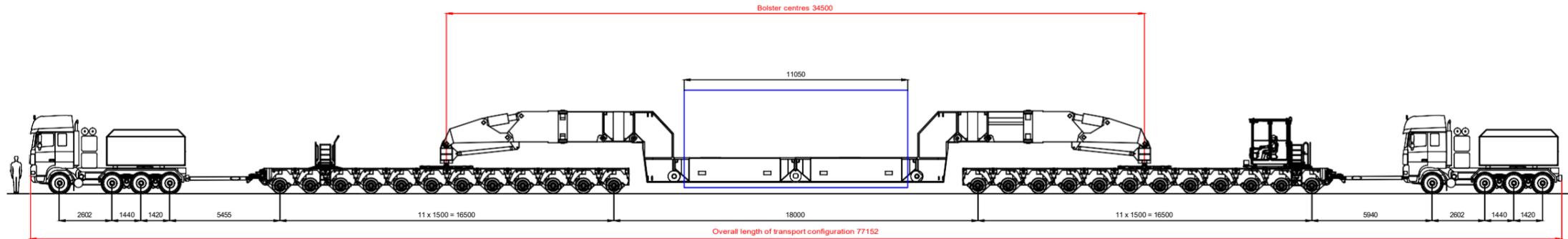
Drawing status:

Final report

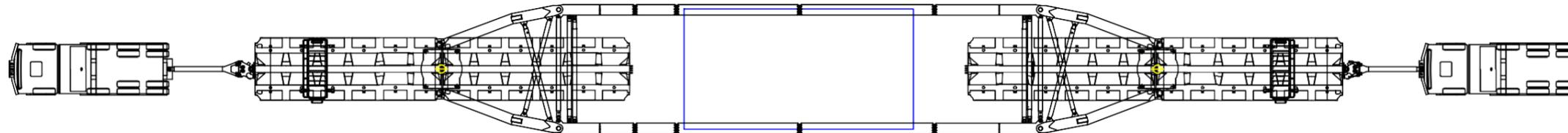
Scale (A3): As shown	Drawn By: MTO	Checked By: ---
Dwg. no: 23-1156.TC03	Sheet: 1 of 1	Rev: 0

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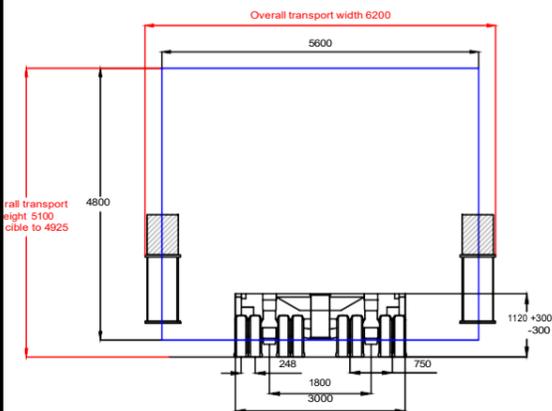
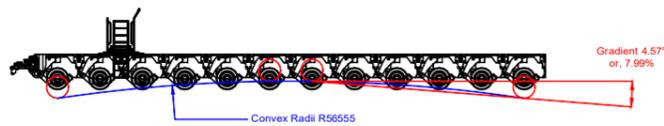
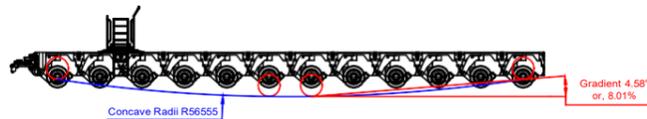
P:\Clients\Existing Clients\National Grid Company\Proposed New sites Investigations\23-1156 Llandyfaelog (was Carmarthen)\Transport Configurations\23-1156.TC03 Llandyfaelog 213.3te SGT 20 axle girder frame (6.20m Wide). R0.dwg



Elevation view - 24 axle girder frame trailer - concept model only
 Indicative 213.3te SGT
 Scale 1:250

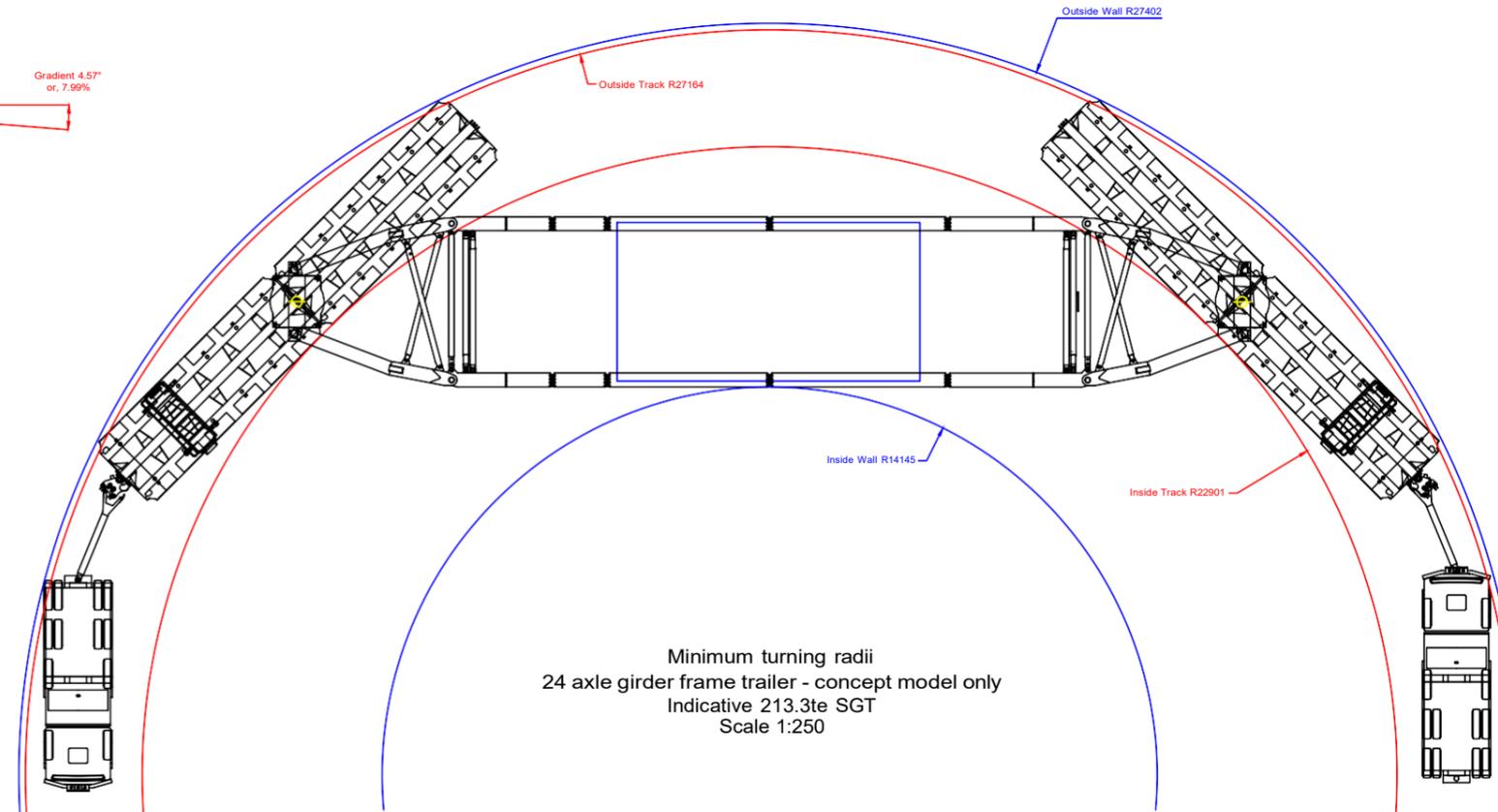


Plan view - 24 axle girder frame trailer - concept model only
 Indicative 213.3te SGT
 Scale 1:250



Profile view
 Indicative 213.3te SGT
 Scale 1:125

Note: Transport Lugs/Packing Arrangements to be Confirmed, Additionally, CoG to be Confirmed to Ensure Suitability of Arrangement.



Minimum turning radii
 24 axle girder frame trailer - concept model only
 Indicative 213.3te SGT
 Scale 1:250

AutoCAD SHX Text

C

Load Table

24 axle girder frame trailer

Self weight of transformer	213.3 te
Self weight of trailer	172.12 te
Self weight of aux. steelwork (for L&S)	0.0 te
Total combined weight	385.42 te
Load per trailer	192.71 te
Load per axle line	16.05 te
Load per axle	8.03 te
Load per wheel (4 per axle)	2.00 te
Overall ground bearing pressure	3.89 te/m ²

Tractor(s) (42 te)

Front axle	8.0 te
Second steer	10.0 te
Rear axle	12.0 te
Rear axle	12.0 te

Notes:-

[1] The figures shown above are representative of the transport configuration portrayed. However as tractor and trailer arrangements vary then the loads and dimensions indicated should be treated as probable values.

[2] Actual dimensions, including axle spacing and mean running height, may vary slightly depending on manufacturer of trailer deployed.

[3] All linear measures in millimeters unless stated otherwise.

[4] Transformer drawing indicative only.

1		
0	03.10.25	Issued for comment
Rev.	Date	Amendments

Revisions

Prepared By:



Shaftesbury House, 2 High Street,
 Eccleshall, Stafford, ST21 6BZ
 Tel: (01785) 850411

Independent Transportation Engineers

Client:



Project:

Llandyfaelog

Title:

Indicative transport configuration
 Conceptual 213.3te 460MVA transformer carried
 within 24 axle girder frame trailer
 showing minimum turning radii

Drawing Status:

Final Report

Scale (A3): As shown	Drawn By: MTO	Checked By: ---
DWG. No: 23-1156.TC04	Sheet: 1 of 1	Rev: 0

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P:\Clients\Existing Clients\National Grid Company\Proposed New sites Investigations\23-1156 Llandyfaelog (was Carmathen)\Transport Configurations\23-1156.TC04 Llandyfaelog 213.3te SGT 24 axle girder frame (6.20m Wide). R0.dwg



Appendix 4 Selected Correspondence



Our ref: AIP 894
Your ref: Llandyfaelog

Andy Pearce
Wynns Limited
Shaftesbury House
High Street
Eccleshall
Staffordshire
ST21 6BZ

Sarah Hollender
Strategy and Customer Manager National
Highways
9th Floor, The Cube
199 Wharfside Street
Birmingham
B1 1RN

21st August 2024

Dear Andy,

AGREEMENT IN PRINCIPLE 894: Pembroke to Llandyfaelog

Further to your email dated 20th August 2024, requesting provision of an AIP for future abnormal load moves into Llandyfaelog (formally Carmarethen) Substation.

I can confirm that an AIP can be provided for the movement of 7 x transformers from Pembroke Dock.

4 x Transformers with nett weight 220te.
3 x Transformers with nett weight 174te.

Delivery dates approximately 2026.

This will of course be subject to formal application nearer the time at which time National Highways will consult with all relevant parties and take into consideration their views and requirements.

Consequently, any Special Order issued is likely to include specific requirements relating to the day(s) on which movements will be authorised. The Special Order may also prescribe specific times during the day or night when movement will be permitted (which may take into account seasonal variations in traffic) in order to minimise traffic congestion, and disruption to other road users.

It is proposed that this AIP should be valid for a period of least seven years but with the proviso that should a nearer, suitable access become apparent, or prove to be feasible in that time, National Grid will undertake to investigate and assess its potential for future use, with a view to that new facility becoming the agreed access point for any future deliveries

I trust this information is sufficient for your purposes, but please do not hesitate to get in touch if you require anything further.

Yours sincerely
Sarah Hollender
Email: sarah.hollender@nationalhighways.co.uk

Andy Pearce

From: TS Abnormal Loads <AbnormalLoads@carmarthenshire.gov.uk>
Sent: 29 June 2023 17:00
To: Andy Pearce
Cc: Cumming, Matthew
Subject: RE: AIL Access Study – National Grid Proposed Camarthen Substation - FAO Ben Morris (Senior Engineer (Structures))
Attachments: Abnormal Load Review - Highway Structures.docx; AIL Route Investigation 2023.pdf

Hi Andy,

I can confirm that there is one structure 'Pont y Pentre' on the B4306 at grid ref: 253425, 209460 which has an assessed rating of 18Tonnes. This bridge is programmed to be replaced on the 7th August 2023 and the road will be closed for a period of 8 weeks during these works.

The haulier will need to confirm that they can navigate the route successfully.

See attached a drafted a report outlining all identified Highway Structures along the routes put forward for review.

Regards

Ben

From: Andy Pearce <andy.pearce@wynnslimited.com>
Sent: Thursday, June 8, 2023 11:08 AM
To: TS Abnormal Loads <abnormalloads@carmarthenshire.gov.uk>
Cc: Cumming, Matthew <Matthew.Cumming@nationalgrid.com>
Subject: FW: AIL Access Study – National Grid Proposed Camarthen Substation - FAO Ben Morris (Senior Engineer (Structures))
Importance: High

You don't often get email from andy.pearce@wynnslimited.com. [Learn why this is important](#)

Hi Ben,

Any feedback on this yet in terms of structures? I have tried to call you a couple of times on 01267 228307 but the number seems to no longer be working?

Many thanks

Andy Pearce

From: Andy Pearce
Sent: Thursday, June 1, 2023 4:10 PM
To: TS Abnormal Loads <AbnormalLoads@carmarthenshire.gov.uk>
Subject: RE: AIL Access Study – National Grid Proposed Camarthen Substation - FAO Ben Morris

Hi Ben,

Any feedback on this yet in terms of structures?

Andy Pearce

From: Morgan, Neil <Neil.Morgan@pembrokeshire.gov.uk>
Sent: 20 April 2023 08:19
To: Andy Pearce
Subject: RE: AIL Access Study – National Grid Proposed Camarthen Substation

If you have received this email in error, please notify us and delete it from your computer immediately. Os ydych chi wedi derbyn yr e-bost hwn trwy gamgymeriad, byddwch cystal â rhoi gybod inni a'i ddileu ar unwaith oddi ar eich cyfrifiadur.

Andy

Route 4 – No structures affected in Pembrokeshire.

Regards

Neil Morgan
Bridge Engineer
01437 776153

From: Andy Pearce <andy.pearce@wynnslimited.com>
Sent: 19 April 2023 14:53
To: rsgbrb <rsgbrb@jacobs.com>; Abnormal Loads Enquiries <AbnormalLoadsEnquiries@networkrail.co.uk>; Abnormal Loads <Abnormal.Loads@canalrivertrust.org.uk>; Abloads <abloads@pembrokeshire.gov.uk>
Subject: AIL Access Study – National Grid Proposed Camarthen Substation

EXTERNAL EMAIL – Exercise care with links and attachments E-BOST ALLANOL – Byddwch yn ofalus wrth agor dolenni ac atodiadau.

Dear All,

I am reasonably sure that none of you has any structure on the proposed routes shown below in South Wales to a proposed new National Grid Camarthen Substation but could you just confirm if that understanding is correct. If not and I have missed something please let me know and I will send specific loaded trailer details to you for consideration but I do not wish to bother you unnecessarily. We are of course Special Order weight with nett transformers of 178te or 220te loaded onto girder frame trailers.

Thanks for your assistance.

Route 1 from Swansea and via M4 Junction 48

Leave Swansea Docks via Kings Road

Turn right Langdon Road

Turn left towards Fabian Way

Turn left A483 Fabian Way

Turn right East Bank Way

Reverse back over New Cut Bridge onto Quay Parade to crossover

Pull forward and continue A483 New Cut Road

(Note – The above shunt is historical. It may now be able to turn right to A483 New Cut Road following changes to road alignments and this will be confirmed in route surveys)

Continue B4489 Llangyfelach Street

Continue B4489 Northbound to M4 junction 46

Turn left and join M4 westbound

Continue M4 to junction 48
Turn left A4138
Turn Right, Dafen Road/Llethri Road, B4303
Turn Right, Swiss Valley, A476
Bear Left B4306
Turn Left to Unclassified, Heol Bethel,
Proposed National Grid Carmarthen Sub-station to the left. (SN 51611 09404)

Route 2 from Swansea from A48 Cross Hands Roundabout

As route 1 above on M4 and then continue to A48 westbound
Turn Left, Bryngwili Road, A476
Bear Left, Llannon Road, A476
Turn Right, B4306
Note: vehicle to travel in reverse or tractors change end at B4306 junction
Re-join route 1 above

Route 3 from Swansea to M4 at junction 42

Leave Swansea Docks via Kings Road
Turn right Langdon Road
Turn left towards Fabian Way
Turn right A483 Fabian Way and continue to M4 junction 42
Turn left M4 westbound and continue to junction 46
Merge with routes 1 and 2 above

Route 4 from Pembroke Dock

Exit Docks & Continue Western Way
Continue A3139 London Road
Continue A477 London Road
Continue A477 eastbound to St Clears
Merge A40 eastbound to Camarthen
Turn right A48
Continue A48 to M4 to junction 48
Turn left A4138 and join route 1 above

Potential Routes to Proposed National Grid Camarthen Substation Location 2 West

OS Grid Reference: SN 41615 13475
Route 6 from Swansea
As route 2 above to A48
Continue A48 Camarthen
Turn Left A484
Turn Left at OS Ref SN 4117 1338 Unclassified towards Bwlch Y Gwynt
Proposed National Grid Carmarthen Sub-station to the right. (SN 41615 13475)

Route 7 from Pembroke

As route 4 above from Pembroke to A40 at Camarthen
Turn right A484
Turn Left at OS Ref SN 4117 1338 Unclassified towards Bwlch Y Gwynt
Proposed National Grid Carmarthen Sub-station to the right. (SN 41615 13475)

Kind Regards

Andy Pearce

General Manager (IOSH)

Tel: + 44 (0)1785 850411

Mobile: + 44 (0)7834 621269

Email: andy.pearce@wynnslimited.com



Shaftesbury House, 2 High Street, Eccleshall, Staffordshire, ST21 6BZ

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Rydym yn croesawu gohebiaeth yn Gymraeg a Saesneg a byddwn yn ymateb cyn pen 15 diwrnod gwaith fan bellaf. Byddwn yn ymateb yn yr un iaith â'r ohebiaeth a dderbyniwyd (oni bai eich bod yn gofyn i ni wneud yn wahanol). Os am gael copi mewn print bras, fformat hawdd ei ddeall, Braille, sain neu iaith arall, cysylltwch â'r sawl a anfonodd yr e-bost hwn.

Cyngor Sir Benfro: [Gwefan](#) | [Cysylltwch â ni](#) | [Rhybudd Preifatrwydd](#)

Appendix C Concept Access Arrangement Plan



LEGEND

- BELLMOUTH
- VISIBILITY
- ROAD
- BELLMOUTH EXISTING FOOTPATH
- BELMOUTH EXISTING FOOTPATH
- ENVIRONMENT
- SWALE



EXISTING ACCESS TRACK

1800

1800

A154

C2074



Master Scheme No: 101256 Sub-Scheme No: 207820 Site: LLANDYFAELOG SUBSTATION
 Scheme Name: **NEW LLANDYFAELOG SUBSTATION**

Document Title: **PROPOSED BELLMOUTH PLAN**

Created by: LW	Date: 31/10/2025	Checked by: MK	Date: 31/10/2025	Approved by: JC	Date: 31/10/2025
Development: D BANHAM	Document Type: DWG	Scale: 1:500	Format: A1	Sheet(s): 01 OF 01	Rev: B

National Grid Document Number: **PDD-101256-LAY-096**
 FEED Document Number: **331201448-STN-13-XX-LAY-TC-017**

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