LLŶR FLOATING OFFSHORE WIND PROJECT

Llŷr 1 Floating Offshore Wind Farm

Environmental Statement

Volume 6: Appendix 13E – Project Erebus Outline Construction Traffic Management Plan

August 2024

Prepared by: Llŷr Floating Wind Ltd

FLOVENTIS ENERGY

Document Status

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Prepared by	AECOM
Prepared for	Llŷr Floating Wind Limited
Approved by	Jay Hilton-Miller

Glossary of project terms

Term	Definition
The Applicant	The developer of the Project, Llŷr Floating Wind Limited.
Array	All wind turbine generators, inter array cables, mooring lines, floating sub-structures and supporting subsea infrastructure within the Array Area, as defined, when considered collectively, excluding the offshore export cable(s).
Array Area	The area within which the wind turbine generators, inter array cables, mooring lines, floating sub-structures and supporting subsea infrastructure will be located.
Floventis Energy	A joint venture company between Cierco Ltd and SBM Offshore Ltd of which Llŷr Floating Wind Limited is a wholly owned subsidiary.
Landfall	The location where the offshore export cable(s) from the Array Area, as defined, are brought onshore and connected to the onshore export cables (as defined) via the transition joint bays.
Llŷr 1	The proposed Project, for which the Applicant is applying for Section 36 and Marine Licence consents. Including all offshore and onshore infrastructure and activities, and all project phases.
Marine Licence	A licence required under the Marine and Coastal Access Act 2009 for marine works which is administered by Natural Resources Wales (NRW) Marine Licensing Team on behalf of the Welsh Ministers.
Offshore Development Area	The footprint of the offshore infrastructure and associated temporary works, comprised of the Array Area and the Offshore Export Cable Corridor, as defined, that forms the offshore boundary for the S36 Consent and Marine Licence application.
Offshore Export Cable	The cable(s) that transmit electricity produced by the WTGs to landfall.
Offshore Export Cable Corridor (OfECC)	The area within which the offshore export cable circuit(s) will be located, from the Array Area to the Landfall.
Onshore Development Area	The footprint of the onshore infrastructure and associated temporary works, comprised of the Onshore Export Cable Corridor and the Onshore Substation, as defined, and including new access routes and visibility splays, that forms the onshore boundary for the planning application.
Onshore Export Cable(s)	The cable(s) that transmit electricity from the landfall to the onshore substation.
Onshore Export Cable Corridor (OnECC)	The area within which the onshore export cable circuit(s) will be located.
proposed Project	All aspects of the Llŷr 1 development (i.e. the onshore and offshore components).
Onshore Substation	Located within the Onshore Development Area, converts high voltage generated electricity into low voltage electricity that can be used for the grid and domestic consumption.
Section 36 consent	Consent to construct and operate an offshore generating station, under Section 36 (S.36) of the Electricity Act 1989. This includes deemed planning permission for onshore works.

Project Erebus

Outline Construction Traffic Management Plan

Blue Gem Wind Ltd

Job No:	1028722
Doc Ref:	RPT-TC-006
Revision:	B
Revision Date:	20 September 2021

Project title	Project Erebus	**Job Number**
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Revision Ref	Issue Date	Purpose of issue / description of revision
—	17/08/2021	Draft for comment
A	23/08/2021	Second draft for review
B	20/09/21	Third draft for review

Document Validation (latest issue)

Contents

1.0 Introduction

This outline Construction Traffic Management Plan (CTMP) has been prepared by Cundall on behalf of Blue Gem Wind Ltd for Project Erebus. Project Erebus comprises construction, operation and decommissioning of a Floating Offshore Wind development in the Celtic Sea and the associated onshore infrastructure for grid connection at Pembroke Power Station.

The cable's landfall will be in the vicinity of West Angle Bay and route for approximately 14.8km through Castlemartin Peninsula to a proposed substation provided in the vicinity of Pembroke Power Station. Figure 1.1 shows the proposed route of the cable and associated substation site location.

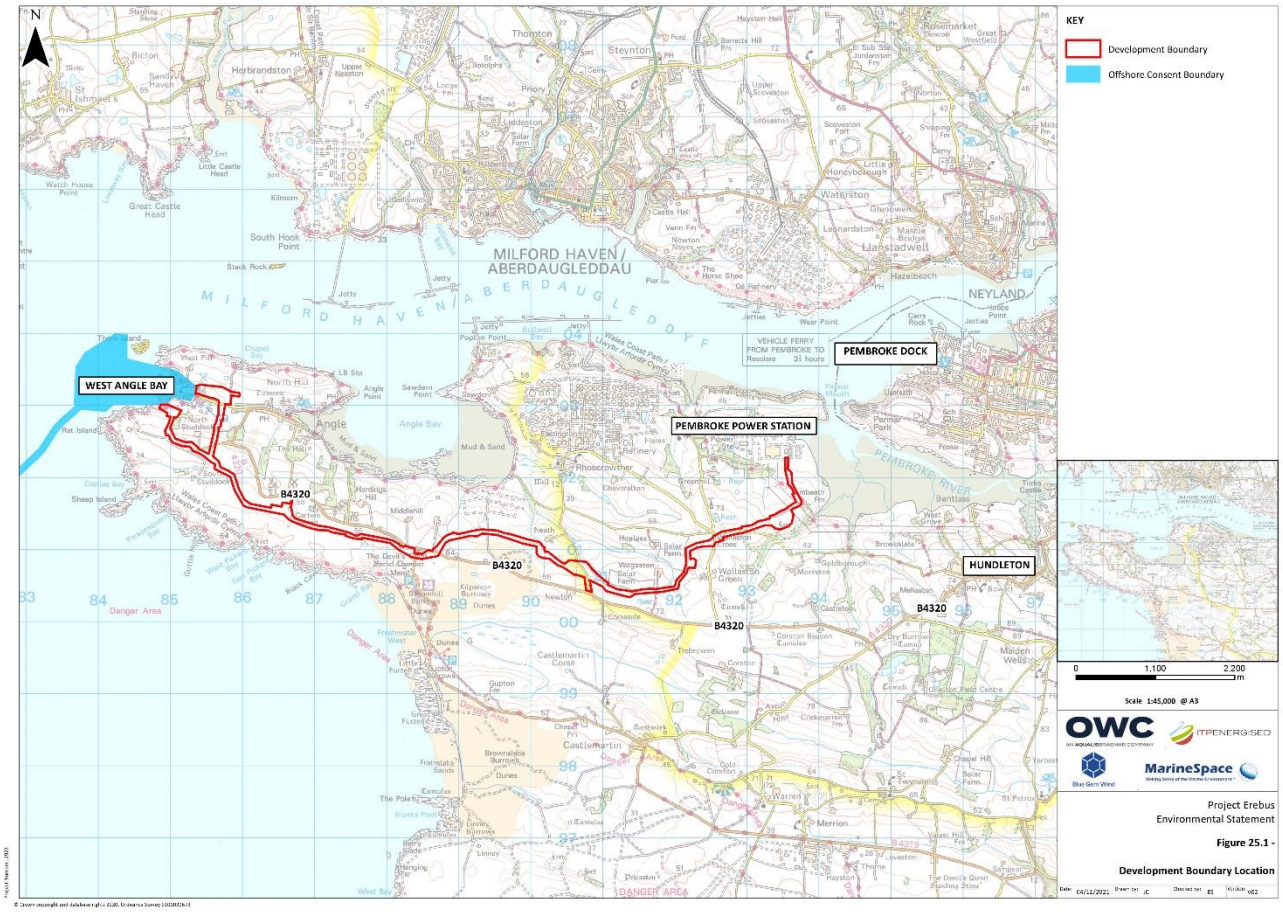

Figure 1.1 Site Context

It should be noted that whilst the landfall location has yet to be finalised, with the two potential options shown in Figure 1.1, the principles identified within this outline CTMP will apply to both.

This outline CTMP summarises a review of the local highway network to determine its suitability to accommodate HGV and abnormal load movements associated with construction of the proposed substation and installation of the associated onshore cable and landfall, in addition to quantifying the level of traffic generated by construction and operational / maintenance activities.

The outline CTMP identifies a range of measures and incentives which could be implemented in association with the planned construction activities, and it is expected that a final Plan will be prepared by the contractor(s) appointed by the Applicant to deliver the works. The final CTMP will be implemented by a future contractor in consultation with Pembrokeshire County Council (PCC) Highways, to agree the measures and incentives to be implemented to mitigate the impact of construction traffic on the operation of the local highway network.

2.0 Proposed Development

2.1 Introduction

An application is being submitted for consent to develop and operate an offshore wind farm to include the following components:

- Between 6 and 10 floating Wind Turbine Generators (WTGs), with a total capacity up to 96 MW , and the associated semi-submersible platforms and mooring infrastructure;
- Array cables and a single offshore export cable to landfall;
- Onshore cabling between landfall and the grid connection; and
- Onshore substation at the grid connection point.

The substation will include the following components:

- 66 kV Point-on-Wave (POW) Switchgear;
- Harmonic Filters;
- Reactive Compensation;
- 132/66 kV Transformer;
- 132 kV Switchgear; and
- A control, protection and welfare building.

The transformer is the largest component measuring 4m in width, 8.5m in length and 5m in height. The component has a weight of approximately 90 tonnes and will be transported to the onshore substation site as an abnormal load.

The length of the cable installation will require multiple sites to be established between the landfall and substation, with the locations of these sites to be defined following the appointment of a contractor. Construction of the site compounds and cable installation will be supported by the following key activities:

- Access junction and track construction;
- Hard standing installation; and
- Welfare unit installation.

The landfall site will also accommodate a drilling rig with associated facilities supporting its operation.

The cable installation is supported by the delivery of cable drums which have a 4.5m diameter and an approximate 30 tonne weight in addition to requiring delivery of yellow plant to support cable installation activities. The size of the cable drums will also require these to be transported to site as abnormal loads.

This CTMP focusses on the onshore development elements, reviewing the impact of the substation's construction and onshore cable's installation on the local transport network. The swept-path analysis which has been presented within this study has been based on the transformer which is the largest component requiring to be transferred to the sites.

2.2 Vehicle Access

Figure 2.1 shows the location of the onshore substation site and onshore cable installation route in relation to the local highway network.

Figure 2.1 Onshore Substation Site Location and Onshore Cable Route

Figure 2.2 shows the proposed access arrangements for construction vehicles, identifying the routes which it is proposed to use to accommodate abnormal loads including transformers, cable drums and larger yellow plant, in addition to the routes only suitable for smaller construction vehicles between Pembroke Dock and the onshore substation site.

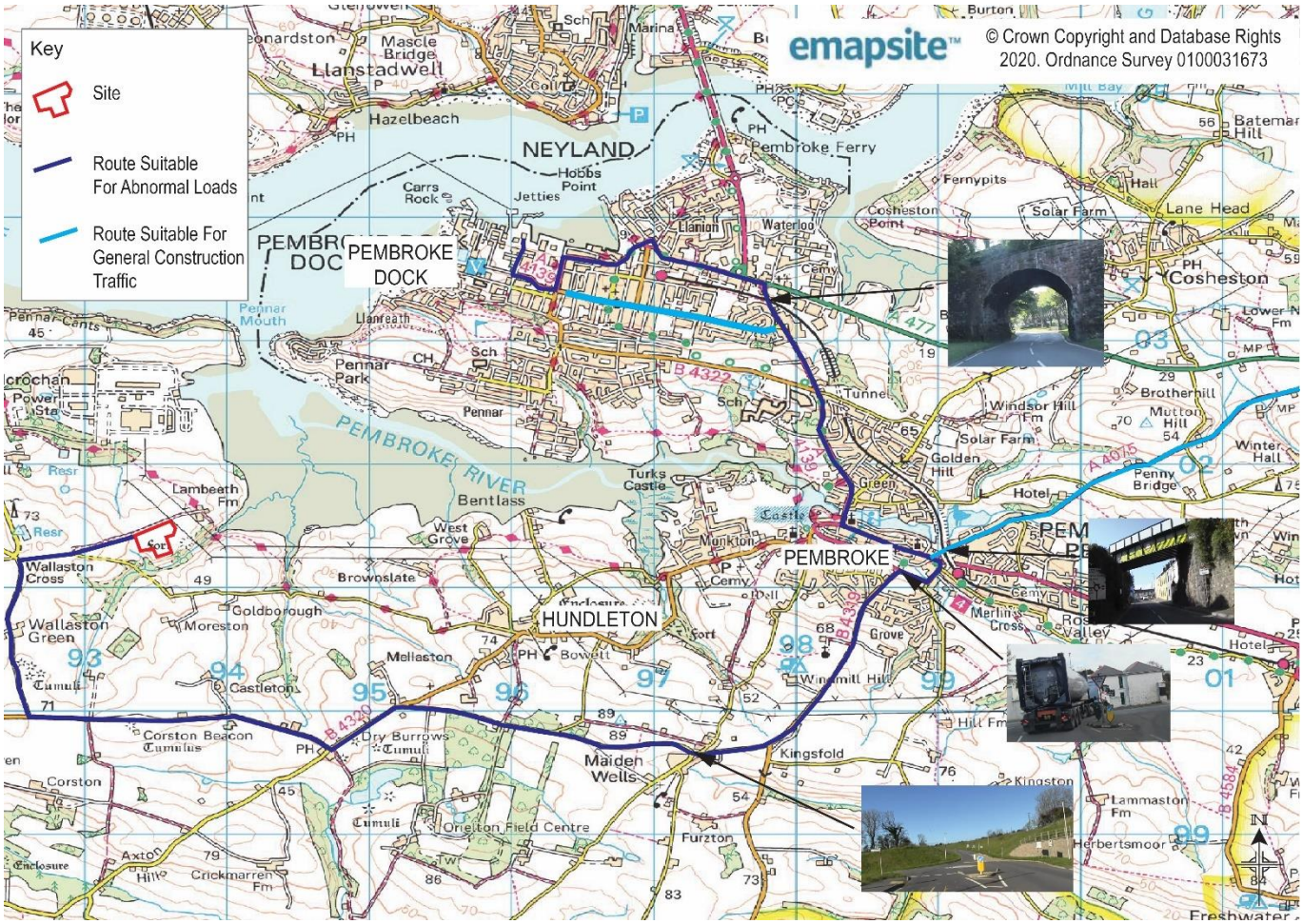

Figure 2.2 Onshore Substation Vehicle Access Routes

Figure 2.3 shows the route available for traffic supporting onshore cable installation activities and the formation of the landfall to the west of the B4320 / C3101 junction.

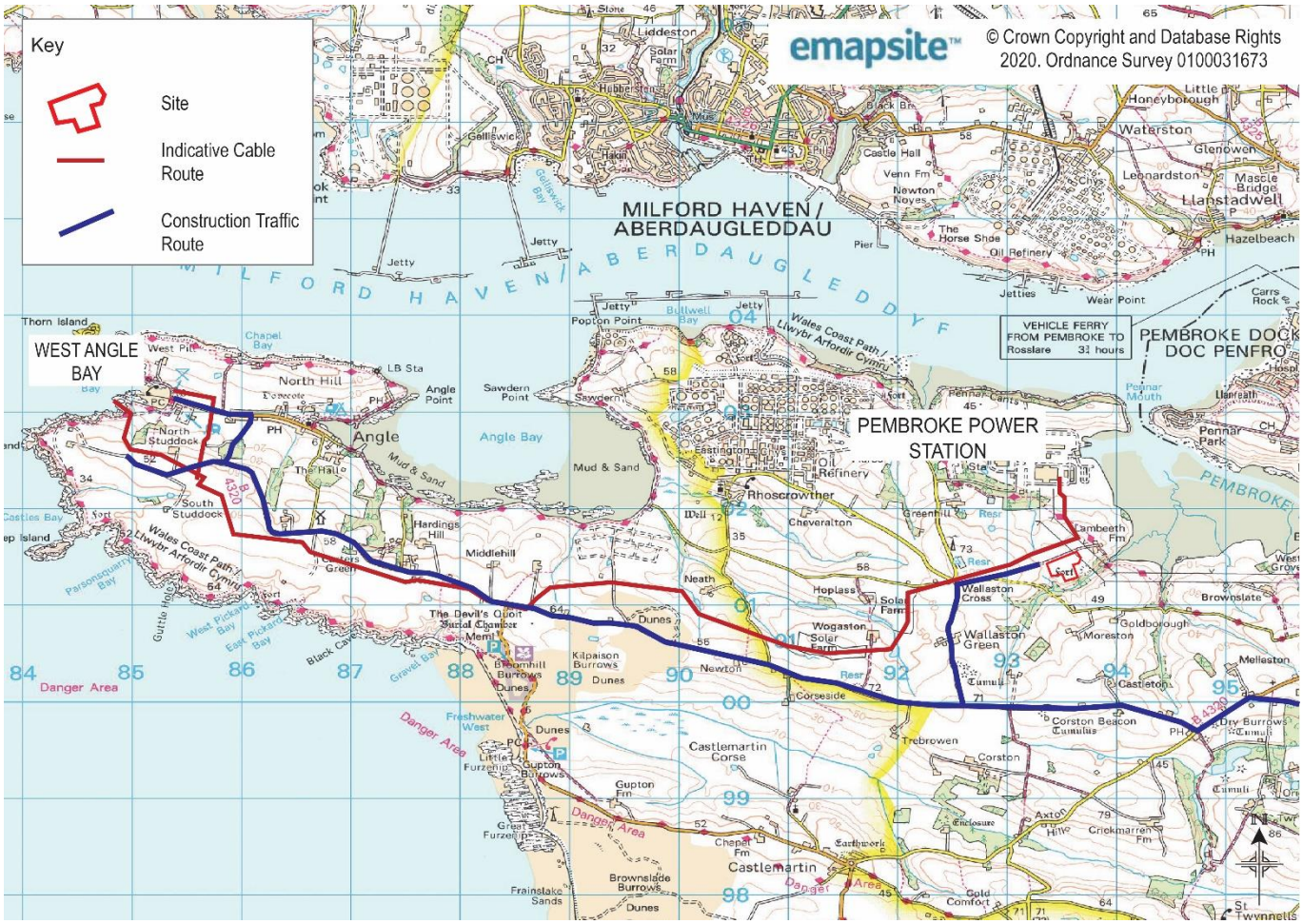

Figure 2.3 Onshore Cable Installation and Landfall Construction Vehicle Access Routes

The onshore substation site is located adjacent to Pembroke Power Station and close to Valero Oil Refinery, with the local highway network therefore already accommodating larger vehicle movements. There are, however, a number of potential pinch points located between the strategic road network and the substation site. The following sections review the route options in detail, identifying potential mitigation measures where appropriate. The review has been based on a video survey undertaken in October 2020. A further review has been undertaken of the route used to access the onshore cable installation and landfall sites.

The review has also been informed by initial consultation with Pembrokeshire County Council and a local heavy haulage firm (Smiths Heavy Haulage), in addition to being supported by a topographical survey of the Ferry Lane rail bridge to demonstrate the suitability of the route to accommodate a high abnormal load. It has been assumed that all abnormal loads will pass through Pembroke Docks and require to be escorted between the docks and the site.

2.2.1 Route through Pembroke from Pembroke Dock to A4139 / A4075 Junction

2.2.1.1 Pembroke Docks to the A477

The main vehicular access from Pembroke Docks is provided via the A4139 which has a reasonable carriageway width between the docks and its junction with the A477. The A4139 includes Commercial Row, Western Way and London Road. The roundabouts at the western and eastern end of London Road appear to be of a reasonable size able to accommodate the largest abnormal load passing through.

Whilst Bush Street provides a more direct route for smaller construction vehicles and employees to access Ferry Lane, larger vehicles would be discouraged from using this alternative route.

2.2.1.2 A477 to Main Street

The A477 / A4139 junction is signalised and whilst the majority of vehicles will be able to pass through the junction without requiring an escort, the largest abnormal load anticipated to be associated with construction activities (a 90t transformer), will require to access the A1439 by passing through the junction on the west side of the island to travel south along the northbound slip lane. The results of an AutoTrack analysis demonstrating this manoeuvre is achievable is shown in Figure 2.4, with the output provided at a larger scale in Appendix A.

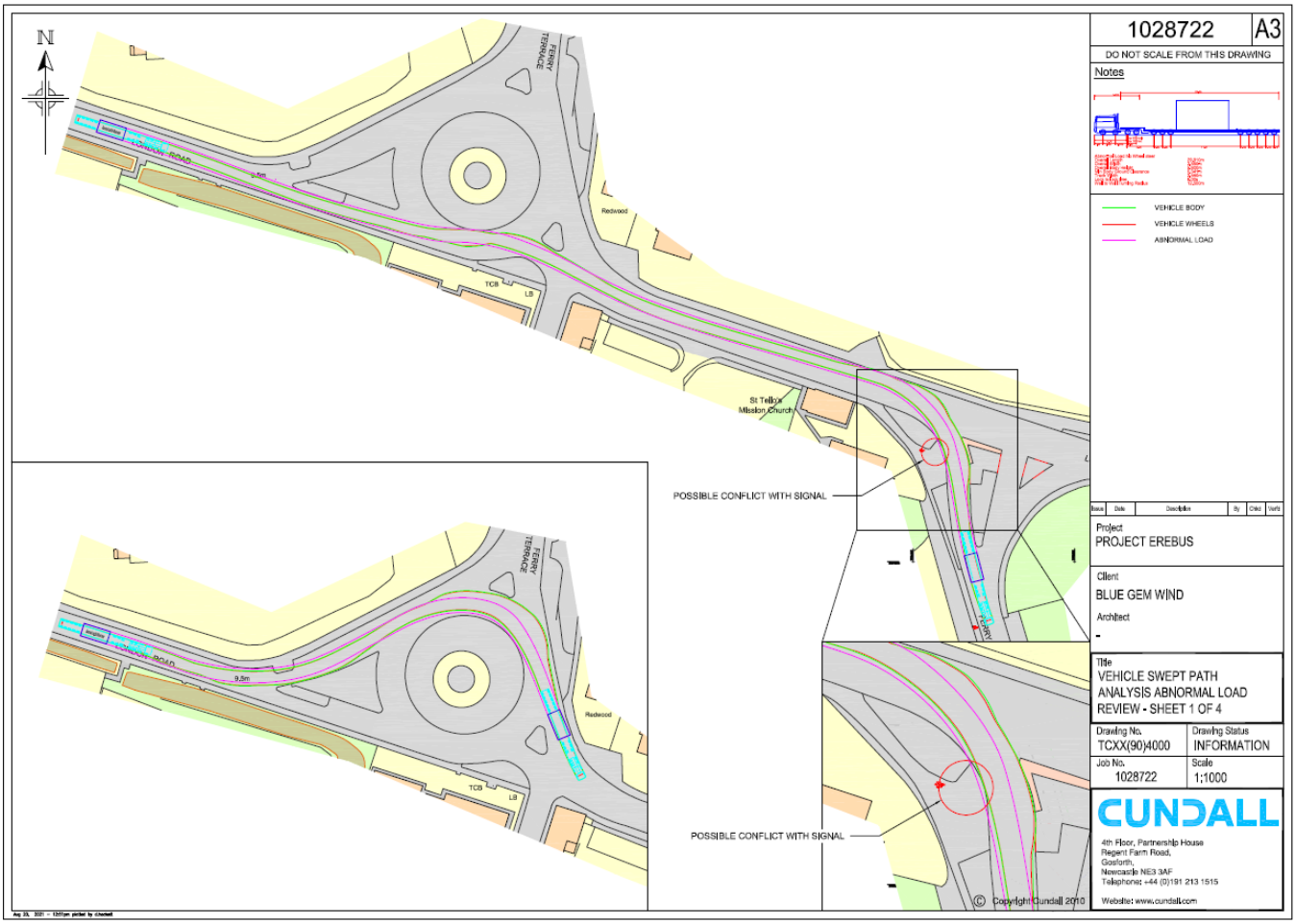

Figure 2.4 A477 Junctions with London Road and Ferry Lane

As can be seen from the results of the analysis, the abnormal load can pass either side of the London Road roundabout's central island although there may be a requirement to temporary remove a separate push button actuator for the pedestrian crossing located immediately to the west of the carriageway or adjacent pedestrian guardrail to enable the largest abnormal load to pass. However, the actuator appears to be installed on a pole mounted within a socket allowing for temporary removal to enable larger loads to pass through the junction.

Figure 2.5 shows a screenshot from the route review of the Ferry Lane rail bridge which has no visible height or width restrictions.

Figure 2.5 Ferry Lane Rail Bridge

Consultation with Network Rail confirmed that whilst the bridge had been surveyed to provide a 6m clearance, it has been struck twice since the survey was undertaken in 2010. A topographical survey has therefore been undertaken to determine the exact clearance under the structure and Figure 2.6 summarises the clearance height recorded by the survey in addition to the results of a review of the available clearance in relation to the anticipated height of the transformer (5.6m).

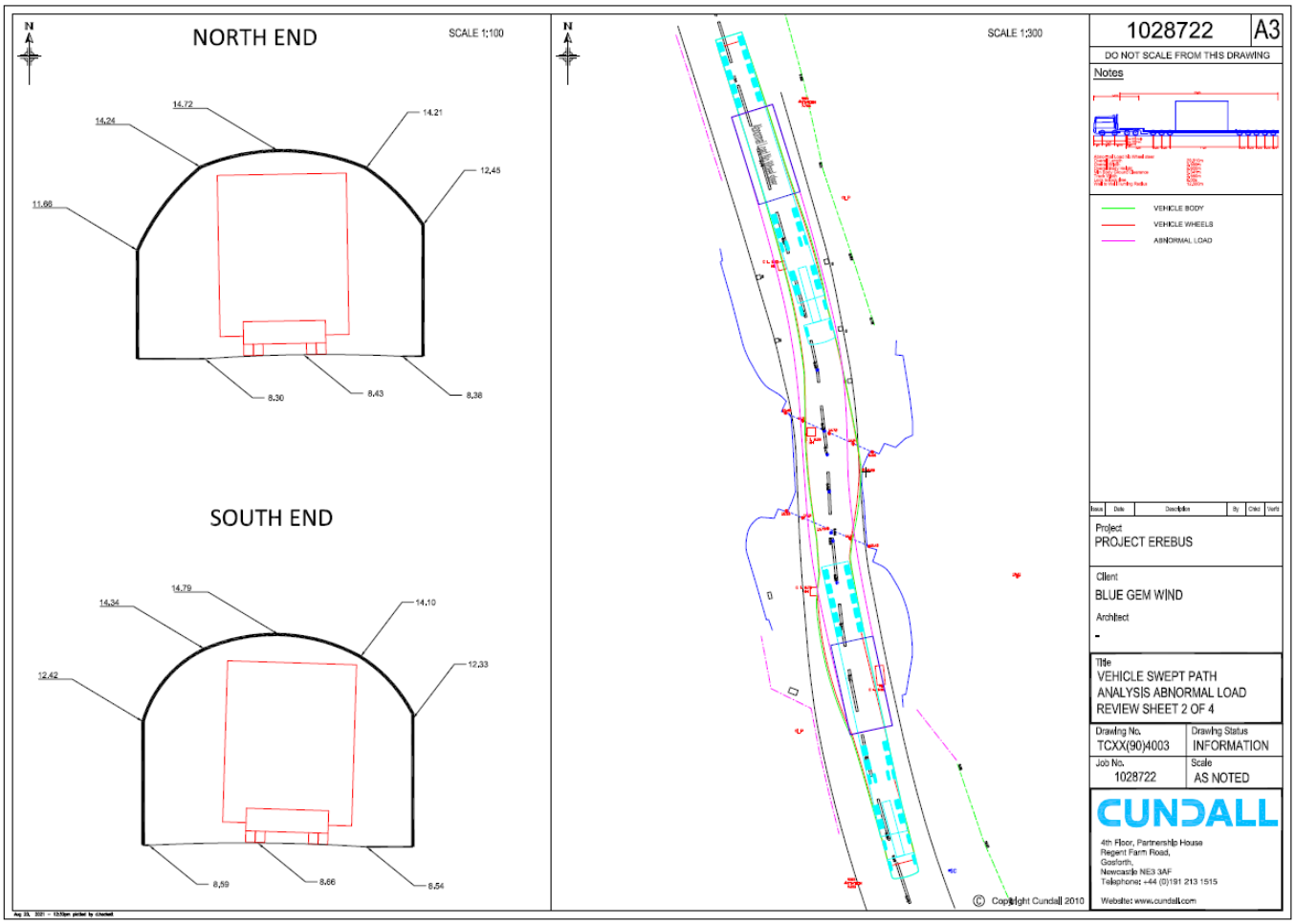

Figure 2.6 Ferry Lane Bridge Clearance Review

The topographical survey contractor confirmed that there is a '*fluent profile between entrance arch and the exit arch'* with the internal arches not protruding into this profile.

Smiths Heavy Haulage identified the specification of low loader required to accommodate the 5m high transformer to inform the review of clearance available under the Ferry Lane rail bridge. The returned specification is included within Appendix B and provides a vehicle able to carry the transformer at a height of 0.6m above the carriageway to keep the load as low as possible. The analysis presented in Figure 2.6 demonstrates that there is sufficient clearance (a minimum of 0.27m) for the abnormal load to pass under the structure with the vehicle travelling along the centre of the carriageway. The manoeuvre must, however, be undertaken at low speed and under supervision to ensure that the load does not strike the bridge structure.

The majority of the A4139 south of the rail bridge is of a good standard and is signed to be restricted to access only for vehicles over 7.5t to the south of Buttermilk Lane. This restriction is, however, only in place to dissuade larger vehicles from using the route through the town centre rather than there being any physical restrictions on its use by larger vehicles. PCC's Bridge Engineer (Neil Morgan) suggested that the route, including Mill Bridge on Northgate Street, should be able to accommodate the heaviest load required to be delivered to the sites (the 90t transformer) and the haulage contractor confirmed that there was flexibility in the configuration of the tractor / trailer unit to reduce the axle loads if required.

2.2.1.3 Main Street to the A4075 Junction

Main Street is subject to one-way operation along its whole length and whilst its width is reasonable and its alignment is relatively straight, on-street parking restricts the available width at various locations between Northgate Street and the A4075 junction. It is, however, considered that existing restrictions should minimise the potential for this to have an impact on the ability for the road to accommodate abnormal load movements.

2.2.2 Route through Pembroke from A477 (East) to A4139

The A4075 is signed to Valero Oil Refinery from the A477, with the two roads interchanging via a large priority junction supported by single lane dualling. The A4075 is of a good standard being supported by waiting restrictions in the vicinity of the Holyland Road rail bridge which is signed to provide a maximum clearance height of 4.5m over the carriageway. The form of the bridge is shown in Figure 2.7.

Figure 2.7 Holyland Road Rail Bridge

The height restriction is clearly signed from the wider highway network and whilst it will not restrict the majority of vehicle types from accessing the site via this route, it will prevent abnormal loads from using this route.

2.2.3 Route from Pembroke to Site

2.2.3.1 A4139 to B4319

Whilst the A4139 is of a reasonable standard to the south of its junction with the A4075, the alignment of Lamphey Road / Well Hill will require abnormal loads to be escorted to enable the vehicles to use both sides of the carriageway. This is

confirmed by an AutoTrack analysis of this section of the route, the results of which are summarised in Figure 2.8, with the output provided at a larger scale in Appendix A

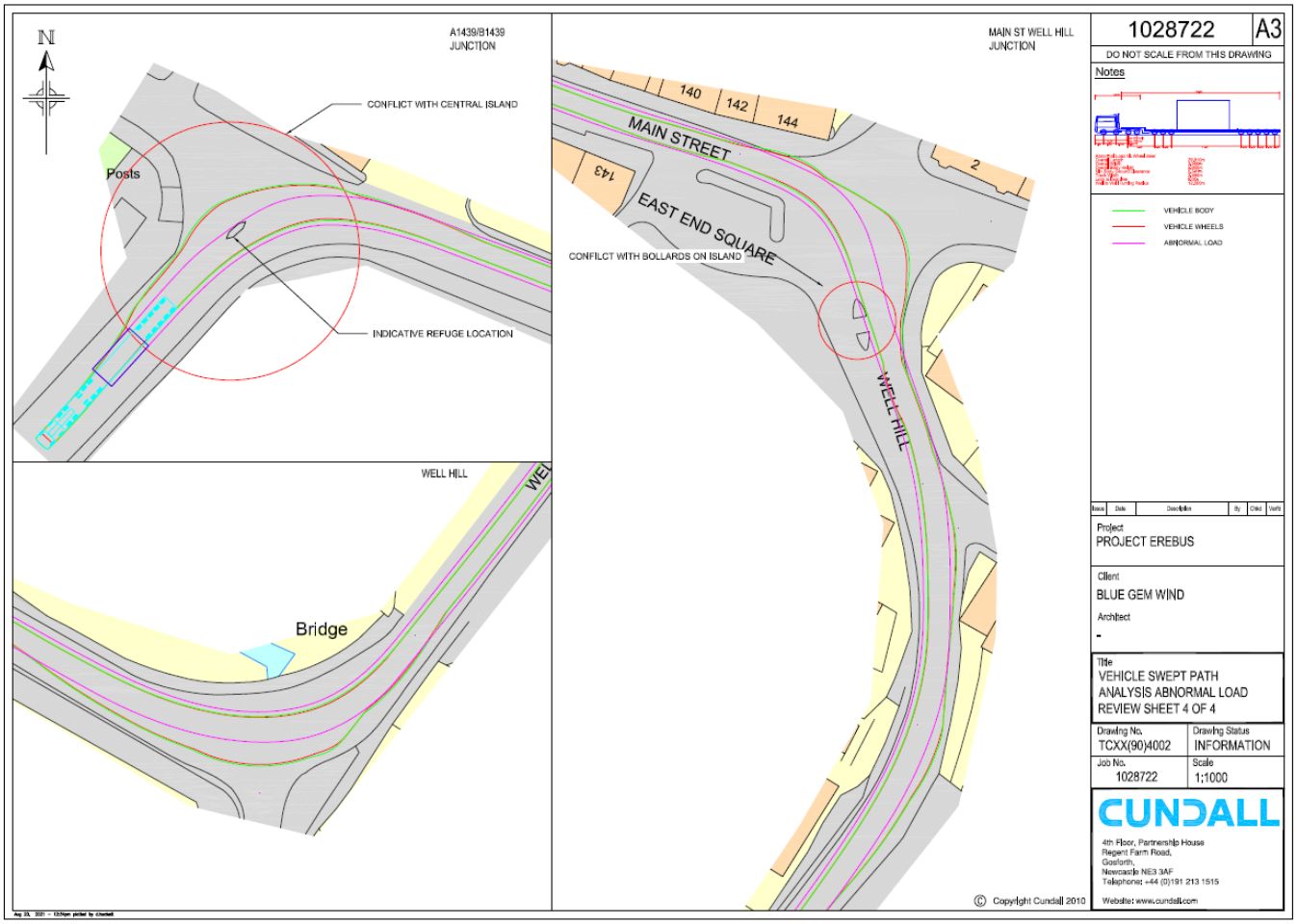

Figure 2.8 Lamphey Road / Well Hill and the A4139 / B4319 Junction

The AutoTrack analysis was extended south to include the A4319 / B4319 priority junction, with the results summarised in Figure 2.8. The analysis confirms that the vehicle accommodating the largest anticipated load (the transformer) will be required to pass over the refuge provided on the B4319 immediately to the south of the A4139. As shown in Figure 2.9, the refuge contains a give way sign and collapsible bollards, with all appearing to be mounted in a manner which supports their removal to accommodate larger vehicles overrunning the refuge.

Figure 2.9 A4319 / B4319 Junction

2.2.3.2 B4319 / Clay Lane / B4320

The route between the A4319 and Pembroke Power Station / Valero Oil Refinery has been improved over a number of years to accommodate larger vehicle movements associated with their maintenance and operation. Improvements have included the following:

- B4319 / Clay Lane altered junction priority;
- Maiden Wells Bypass; and
- B4320 / C3101 altered junction priority.

Whilst a mini-roundabout is provided at the eastern end of the Maiden Wells Bypass, as shown in Figure 2.10, it is supported by removable bollards supporting the passage of abnormal loads through the junction.

Figure 2.10 Maiden Wells Bypass

The B4319 / Clay Lane / B4320 is predominantly rural in nature and of a good standard able to accommodate both general construction traffic and abnormal loads between the A4319 and the C3101.

2.2.3.3 C3101 / Goldborough Road

The unclassified C3101 supports access to Pembroke Power Station and Valero Oil Refinery and is of a good standard. As previously highlighted, the B4320 / C1301 junction has recently been altered to provide priority for vehicles accessing the power station and oil refinery from the east.

The C3101 interchanges with Goldborough Road via a ghost island priority controlled junction, with the latter road restricted to approximately 3m in width. However, the road is to be improved in association with the consented Greenlink development.

The improvements will also support construction vehicles supporting the substation's construction and it is therefore not proposed to implement any further alterations to the local highway network in association with the current proposals.

2.2.4 Route to Access Cable Installation and Landfall Sites

Whilst the majority of traffic will be generated by the onshore substation's construction, traffic will also be generated by the installation of the onshore cable and associated landfall.

The locations of the cable installation sites have yet to be defined although the installation route follows the alignment of the following roads from which the site accesses will be taken:

- C3101;
- B4320; and
- Unclassified road providing access to North and South Studdock from B4320.

The B4320 is of a reasonable standard between its junction with the C3101 and the unclassified road providing access to the eastern end of Angle. The road is between 5 and 5.5m in width and on a reasonable alignment. To the west of this, the road reduces to approximately 3m in width and is supported by passing places.

The B4320 turns back on itself via a hairpin bend located at the junction supporting access to North and South Studdock although the widened carriageway at this location provides sufficient space for larger vehicles to negotiate the bend.

The unclassified road which provides access from Angle to the West Angle Bay car park is approximately 4m in width, with a number of locations where oncoming vehicles can pass between the village and the car park.

2.2.5 Vehicle Access Summary

A detailed review of the potential access routes has been undertaken to support this study. The review has been supported by initial consultation with PCC and a haulage contractor in addition to a topographical survey of the Ferry Lane rail bridge and a swept-path analysis of potential pinch points within Pembroke.

The review has confirmed that there are two main options for construction traffic to pass through Pembroke either via the A4139 or the A4075. Whilst the Pembroke – Carmarthen rail line crosses both routes, the western crossing has been surveyed to ensure that there is sufficient clearance over the carriageway to enable the largest anticipated abnormal load to pass under the structure.

Whilst there is a potential requirement to temporarily remove a small number of items of street furniture at the A477 / Ferry Lane, A4139 / B4319 junction and the Clay Lane mini-roundabout in Maiden Wells, the majority, if not all, of the posts and bollards have been installed in a manner to support easy removal.

The highway network is of a good standard between Pembroke and Pembroke Power Station, supporting convenient access to the onshore substation site. The road network to the east of the C3101 is also being improved in association with the adjacent development, to support construction activities, and this will also benefit the proposed development.

To the west of the C3101, the standard of the B4320 is reduced, becoming a single track road between the eastern access to Angle and the village itself. Whilst the level of construction traffic associated with constructing the landfall and western section of the onshore cable will be far lower than that associated with the onshore substation's construction, operations will be managed to minimise the impact of construction traffic on the operation of the local highway network.

2.3 Construction

2.3.1 Construction Programme

As this outline CTMP has been prepared in advance of a contractor being appointed to support the project, Blue Gem Wind Ltd have provided an indication of the number of vehicular generated trips likely to be associated with construction activities.

It is anticipated that the proposed substation and on-shore cable will require an 18 month construction period. A proportion of construction trips will be made by HGV, with the larger vehicles associated with the delivery of stone for substation construction purposes in addition to supporting the onshore cable installation.

HGVs will also be used to transport yellow plant to the sites and haul larger components including transformers and cable drums as abnormal loads. Construction workers will access the sites in cars and small vans.

Table 2.1 summarises the total number of daily trips associated with each element of construction activities.

	Element	Total Trips	HGVs
0 – 9 months	Substation	40	18
	Cable Installation	10	5
9 – 18 months	Substation	30	5
	Cable Installation	10	5

Table 2.1 Daily Construction Trip Estimate By Element

The summary presented in Table 2.1 is considered to represent an average operational day and there may be short periods, including during site setup activities, which will generate an increased number of vehicle trips. As previously highlighted, there will also be a requirement for the substation transformer and cable drums to be transported to the sites as abnormal loads, with these vehicles being escorted and likely to be travelling during the overnight period to minimise their impact on the operation of the local highway network.

It is considered that the level of HGV trips associated with the cable installation will reduce once the results of the Ground Investigation survey become available, as the estimate is currently based on an assumption that a large proportion of the excavated soil is unsuitable to use to backfill the trench, instead requiring to be disposed of outwith the sites.

2.3.2 Construction Hours

It is proposed that construction and civil works will be restricted in time to Monday to Saturday with the working day likely to be a minimum of 12 hours in duration, with a proportion of activities potentially requiring 24 hour working. This will be finalised once a Principal Contractor has been appointed and agreed with PCC prior to the commencement of construction activities.

2.3.3 Construction Movements

As highlighted in Table 2.1, it is anticipated that the greatest number of vehicles will be generated during the initial 9 month period of construction activities, with a total of 50 vehicles accessing the substation and cable installation sites on a daily basis, with 23 of these being HGVs. It is expected that the majority of employee trips will access and leave the sites prior to 07:00 and after 19:00, with the majority of HGVs accessing the sites between these hours to coincide with the planned 12 hour working day.

With this in mind, it is assumed that the 27 non-HGV trips access the sites before 07:00, with the 23 HGVs regularly accessing the sites throughout the 12 hours. This would result in an average of two HGVs accessing and leaving the sites in any one hour.

2.3.4 Construction Workers

Construction traffic will comprise cars / vans associated with construction workers accessing the sites, HGVs delivering construction materials and plant, and abnormal loads delivering the main substation components and cable drums. Working hours are expected to be between 7am to 7pm Monday to Saturday with workers therefore arriving and departing outwith the peak hours associated with the adjacent highway network's operation. Workers will be encouraged to car share where possible, to minimise the impact on the operation of the adjacent highway network.

2.4 Operational Phase

The offshore wind farm development is anticipated to be operational for a period of 25 years. There will be no workers based on site and trips to the onshore substation will therefore be limited to maintenance activities. These trips will access the site from the C3101 and Goldborough Road and typically be made by small vans and not by HGVs.

Abnormal load / HGV access would only be required if a substantial maintenance issue were to occur which required a large component to be replaced within the substation. The mitigation measures identified within this report would be put in place should there be a requirement for HGVs to access the site. This is however, not expected within the 25 year operational period of the Proposed Development.

2.5 Decommissioning Phase

At the end of the operational life of the offshore wind farm, the substation components will either be refurbished, replaced or removed from the onshore substation site using the measures identified within this report to support construction activities.

3.0 Mitigation Measures

3.1 Introduction

This chapter sets out the mitigation measures that could be implemented during the construction, operational and decommissioning phases of the Proposed Development. As previously highlighted, this is an outline CTMP and it is expected that a final Plan will be prepared by the contractor(s) appointed by the Applicant to deliver the works.

3.2 Construction Phase

3.2.1 On-site HGV Deliveries

During the construction phase, the following measures will be implemented to support abnormal load and HGV deliveries to the sites:

- Signage will be erected on the C3101 in the vicinity of its junction with Goldborough Road, on Goldborough Road and on the unclassified road supporting access to the onshore substation site, highlighting the potential for drivers to meet construction related traffic. An initial signage strategy is identified in Figure 3.1;
- Temporary speed limits will be implemented on the route from the C3101 to the onshore substation site;
- Pembrokeshire County Council will be contacted to provide advance warning of the intention to use the identified routes to accommodate abnormal loads;
- Dyfed-Powys Police will be consulted to agree the most appropriate times for abnormal loads to deliver components to the onshore substation site and identify any specific sections of the route requiring police assistance;
- Route plans will be prepared and distributed to contractors prior to construction activities commencing to ensure that vehicles stay on the key access routes identified in Figure 2.2;
- Abnormal load movements will be escorted along the length of the access route to manage the interaction with general traffic and mitigate the impact of identified constraints;
- A 30mph speed limit will be implemented in the vicinity of the onshore substation site; and
- Wheel washing facilities will be provided on-site for vehicles to reduce the amount of mud and debris on the public highway network.

Figure 3.1 identifies a potential signage strategy to be implemented in the vicinity of the onshore substation site to support construction traffic movements.

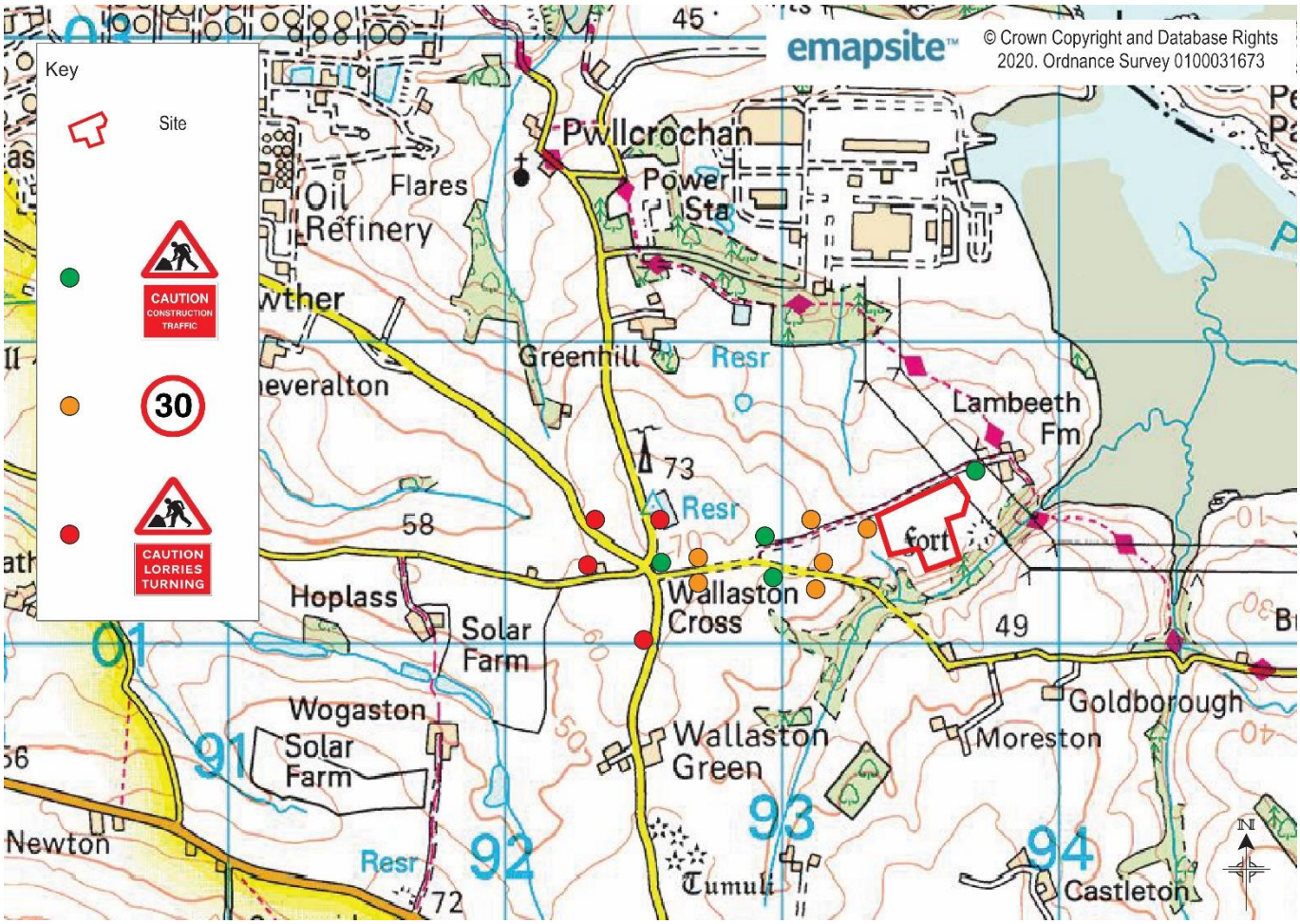

Figure 3.1 Onshore Substation Construction Indicative Signage Strategy

Whilst the site locations associated with installation of the onshore cable have yet to be determined, Figure 3.2 identifies a potential signage strategy to be implemented at each location where the access connects to the public highway network.

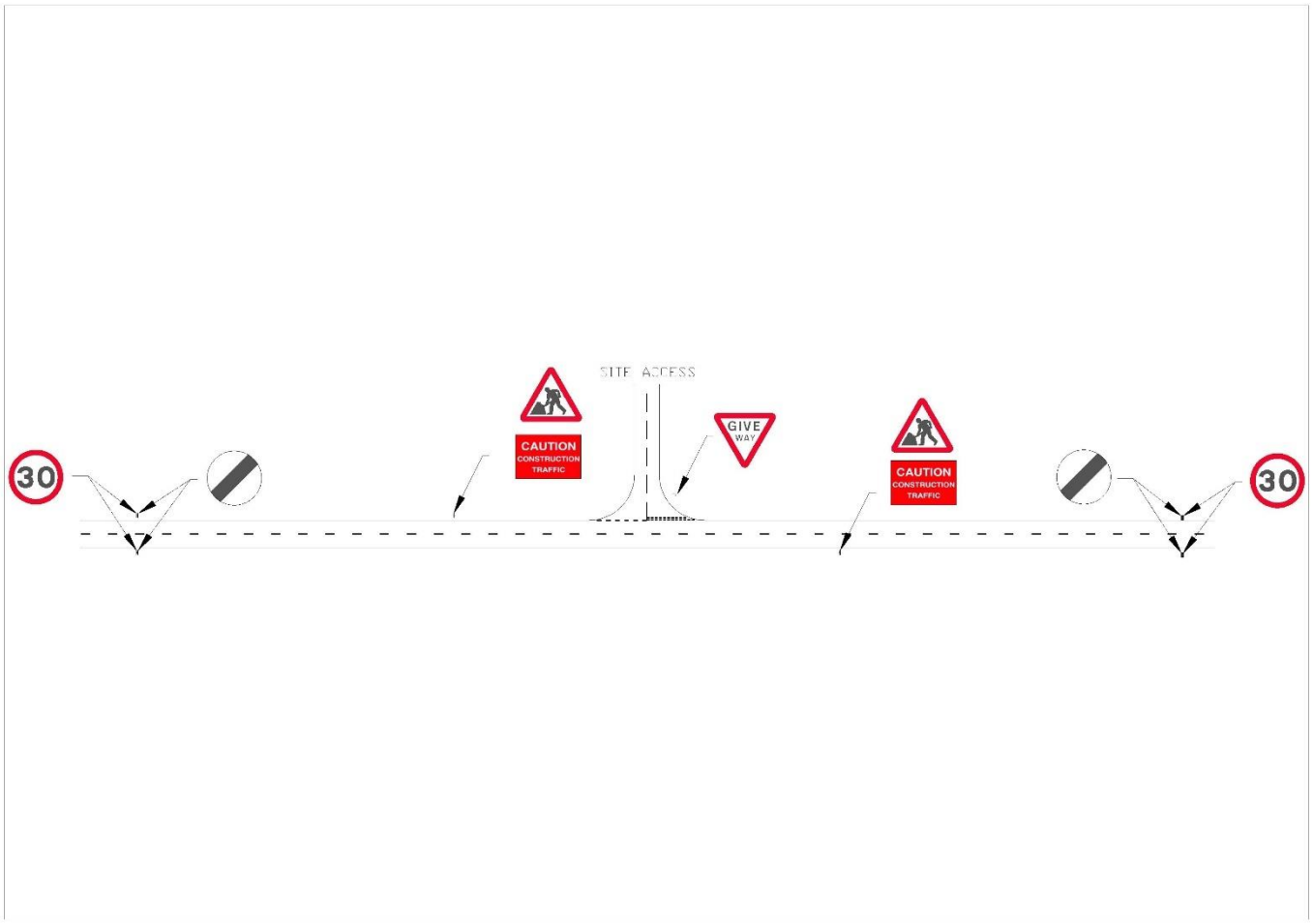

Figure 3.2 Onshore Cable Installation Site Access Indicative Signage Strategy

A strategy for the measures and incentives to be implemented in association with the final CTMP will be developed in consultation with key stakeholders including PCC.

3.2.2 HGV Routing

HGV deliveries will access the onshore substation site using the following routes:

- From Pembroke Docks – A477 – A4139 – B4319 – Clay Lane – B4320 – C3101 – Goldborough Road; and
- From A477 East – A4075 - A4139 – B4319 – Clay Lane – B4320 – C3101 – Goldborough Road.

HGVs would continue west on the B4320 when accessing the majority of cable installation sites and the landfall site.

Abnormal loads are expected to be transported to the area via Pembroke Docks with all travelling to the sites via the A4139.

Contractors will be provided with the route plan prior to the commencement of deliveries. A route agreement will be signed by contractors to ensure the agreed HGV routes are adhered to. Signage will be erected along the construction route in the immediate vicinity of the sites identifying any hazards to drivers and highlighting the potential of general traffic meeting construction vehicles.

3.2.3 Construction Workers

Parking for construction workers will be accommodated within the substation site and within individual site compounds set up to accommodate cable installation activities, with parking therefore not having an impact on the adopted highway network. Workers will be encouraged to car share when accessing the sites, to minimise the impact of these movements on the adjacent road network.

3.3 Operational Phase

The number of vehicle trips generated during the operational phase of the development, will be negligible and limited to cars / vans associated with substation maintenance activities. The measures identified within this outline CTMP would be implemented in the event of major unforeseen maintenance / repairs requiring HGVs to access the onshore substation site.

3.4 Decommissioning phase

Traffic generated by decommissioning of the substation will be less than during the construction period. The outline CTMP would be updated prior to decommissioning to reflect conditions at the time, but is likely to include measures similar to those proposed for construction.

4.0 Summary and Conclusions

4.1 Summary

This outline Construction Traffic Management Plan has been prepared by Cundall on behalf of Blue Gem Wind Ltd for Project Erebus which supports construction of a Floating Offshore Wind development in the Celtic Sea and the associated onshore infrastructure for grid connection at Pembroke Power Station.

The substation's construction and associated on-shore cable / landfall installation is anticipated to generate additional construction vehicle movements, including those delivering substation components as abnormal loads to the site. The development is anticipated to require an 18 month construction period and be supported by 12 hour working days thereby minimising the impact of construction traffic on the operation of the local highway network in its peak hours.

The development is forecast to generate a maximum of 50 two-way daily movements during the busiest months, with 23 of these movements generated by HGVs. The greatest proportion of construction traffic will be generated by the onshore substation's construction, with a reduced number of trips generated by the onshore cable and landfall installation. It is anticipated that a total of 5 abnormal loads would additionally be required to support the delivery of larger substation components, including a transformer, and cable drums to support the on-shore cable installations.

A detailed review of the potential access routes has been undertaken to support this study. The review has been supported by initial consultation with PCC and a haulage contractor, in addition to a topographical survey of the Ferry Lane rail bridge and a swept-path analysis of potential pinch points to support abnormal load movements through Pembroke. The review did not identify any significant issues requiring to be addressed to accommodate abnormal loads, with all street furniture being able to be temporarily removed to enable the largest loads to pass.

The highway network is of a good standard between Pembroke and the onshore substation site, being improved in recent years to support larger vehicles accessing the nearby power station and oil refinery. The standard of the B4320 reduces to the west of its junction with the C3101 although it is considered that it will be able to accommodate the minimal number of trips associated with construction activities which will use this section of the network to access onshore cable installation sites and the landfall site.

This outline CTMP sets out a number of potential measures for use during the construction period, to mitigate the impact of construction vehicles on the operation of the adjacent highway network. A test run should be undertaken to validate the results of the presented swept-path analysis prior to the commencement of operations.

4.2 Conclusions

Construction activities associated with the Proposed Development are forecast to generate the majority of trips prior to and following the morning and evening peak periods of local highway network operation when workers access and leave the sites. The sites will also be supported by HGV movements are it is anticipated that there will be a requirement for 2 HGVs to access the sites each hour with a 12 hour working day. This level of generation will have a negligeable impact on the operation of the local and wider highway networks.

It is considered that the implementation of the identified measures will adequately mitigate the impact of construction traffic associated with the development of the Project Erebus development and minimise the impact on the adjacent highway network.

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