# Construction Transport Management Plan

**Two wind turbines, up to 135m to tip, at Dubbers China-Clay Works, Nanpean, St. Stephen-in-Brannel, PL26 8XT**

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# 1. Introduction

## 1.1 General

This document presents a Construction Traffic Management Plan (CTMP) for the proposed two wind turbines, up to 135m to tip, at Dubbers China-Clay Works, Nanpean, St. Stephen-in-Brannel, PL26 8XT.

The aim of the CTMP is to identify the high-level philosophy for the management of construction traffic and abnormal load deliveries associated with the construction of the Proposed Development. It is intended to be a working document that will be developed further and agreed with Cornwall Council prior to construction.

This report will document the travel logistics of construction traffic and turbine components from the A30 to land at Dubbers China-Clay Works, Nanpean, St. Stephen-in-Brannel, PL26 8XT, providing supplementary information to support the Environmental Statement.

The CTMP will assess the traffic impacts associated with the construction and operation of the proposed wind turbines on Land at Dubbers.

During the operational stage of the Proposed Development, traffic to the site will be minimal. On occasion a visit to the site by maintenance personnel, using light vehicles such as a light van or a 4x4 may be required. There may be a requirement for abnormal loads to access the site during operation in the unlikely event of a repair or major component replacement, but this eventuality is not expected.

Upon decommissioning of the wind turbines, there may be further impact on road traffic during the removal of equipment and building materials from the Site but this is not expected to be more than the construction phase.

Each Abnormal Load Movement will be planned and notified to every local council, road, and police authority according to the requirements of the Abnormal Indivisible Loads (AIL) Roads Vehicles (Authorisation of Special Types) (General) Order 2003.

## 1.2 The Proposed Development

The Proposed Development is for two wind turbines with a maximum tip height of 135m located approximately 5.7km northwest of St Austell, Cornwall.

The Proposed Development includes the construction of an internal access track, crane hardstanding and turbine foundations, see plan **PR4269-IFP-LP-D, Appendix B.**

The proposed turbine locations are shown in **Figure 1.**

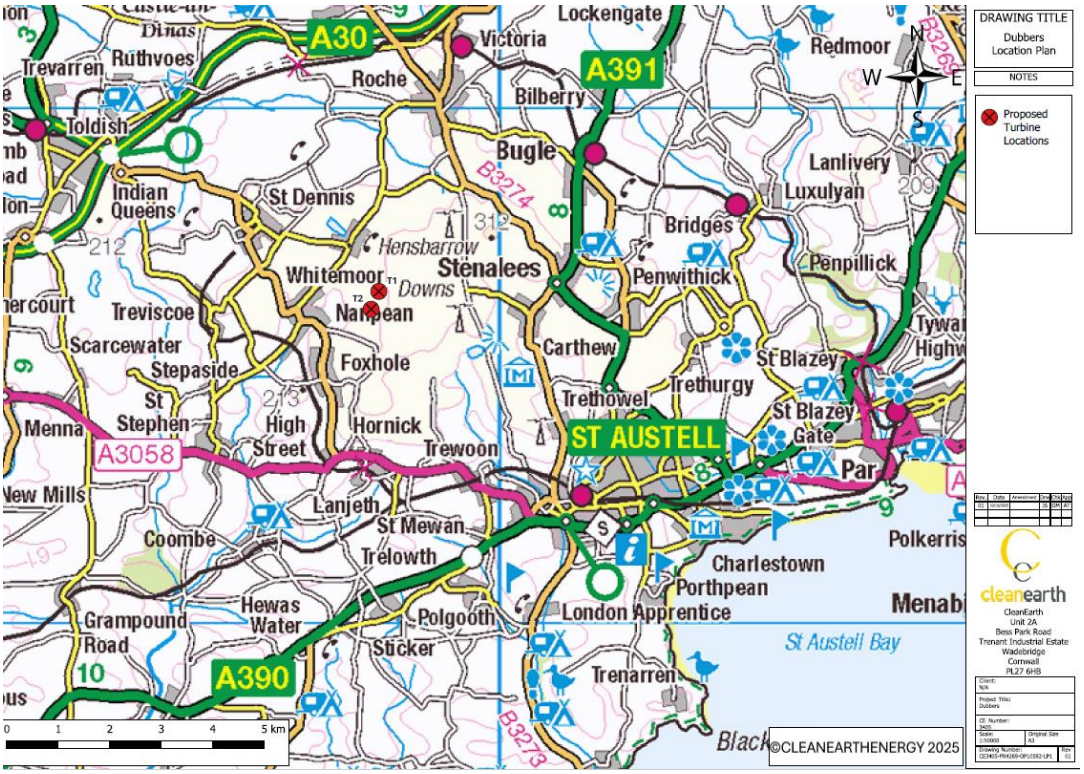



***Figure 1**: The Proposed Turbine Locations*

# 2. Construction Traffic

## 2.1 Programme

Subject to successfully securing planning permission, the Applicant intends to construct the development in an approximate construction programme of approximately 6-9 months.

## 2.2 General Construction Traffic

Estimates of traffic generation of the proposed development have been calculated based on consideration of the following construction activities:

- Highway modifications to facilitate abnormal load access;
- Site establishment, compound setup and delivery of welfare facilities;
- Delivery of aggregate and construction of new on-site access tracks;
- Construction of crane hardstanding, laydown areas and auxiliary crane pads;
- Construction of turbine foundations and substation;
- Installation of on-site electrical and communication infrastructure; and
- Reinstatement and removal of construction and welfare equipment.

**Table 1** below gives a breakdown of the vehicle type and number of movements associated with each construction activity.

| Task | Vehicle Type | Frequency | HGV movements |
|---|---|---|---|
| Highway modifications | N/A | 0 | 0 |
| Site establishment and plant delivery | Flatbeds, low loaders, tankers | 15 | 30 |
| Construction of access tracks and crane hardstanding | 20t stone wagons | 220 | 440 |
| Foundation reinforcement | Flatbed wagons | 10 | 20 |
| Foundation concrete | 8m3 Concrete wagons | 82 | 164 |
| Installation of onsite electrical infrastructure | Various | 10 | 20 |
| **Total** | | **312** | **624** |

***Table 1**: Breakdown of general construction vehicle movements*

It is considered that this represents a prudent approach, and it is likely that following completion of an intrusive ground investigation, identification of suitable borrow pit

locations will significantly reduce the number of vehicle movements. Planning permission for any borrow pits will be sought by way of a separate application.

## 2.3 Turbine Installation

The turbine components: generators, nacelles, hubs, turbine blades and tower sections will contribute to an estimated 52 HGV movements. The longest component, the turbine blade will be a maximum of 57.5m in length.

Two cranes are required for the installation of each turbine, and whilst these are not categorised as abnormal loads, their movement is considered as part of the turbine delivery sequence.

**Table 2** below gives a breakdown of the proposed turbines component delivery vehicles and crane movements.

| **Turbine Equipment** | | |
|---|---|---|
| Component | Frequency | HGV Movements |
| Steel Tower Anchors | 1 | 2 |
| Main Crane | 1 | 2 |
| Support Crane | 1 | 2 |
| Support Vehicle | 6 | 12 |
| Converters/Cabinets/Accessories | 1 | 2 |
| **Turbine Components** | | |
| Generators | 2 | 4 |
| Nacelles/Hubs/Small Parts | 2 | 4 |
| Turbine Blades | 6 | 12 |
| Tower Sections | 6 | 12 |
| **Total** | **26** | **52** |

*Table 2: Breakdown of turbine component deliveries*

## 2.4 Construction Programme

Using the above information, an indicative construction programme has been calculated and presented as a number of deliveries per month in **Table 3.**

| Phase | Construction Programme - HGV Monthly Breakdown | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Month | | | | | | | | | Total |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Site establishment, plant, fuel | 15 | 10 | 5 | | | | | | | 30 |
| Access track | | 0 | 0 | | | | | | | |
| Crane Hardstanding | | | 260 | 260 | | | | | | 540 |
| Turbine Foundations | | | | 220 | 220 | | | | | 440 |
| Electrical Installation | | | | | | 20 | | | | 20 |
| Turbine Installation | | | | | | 20 | | | | 20 |
| Total | 15 | 10 | 265 | 480 | 220 | 40 | | | | |

***Table 3:*** *Approximate construction programme*

## 3. Dimensions and Weights of Turbine Components

**Table 4** below gives a breakdown of the proposed turbine component dimensions.

| Turbine 135m Tip Height, 76.5m Hub Height | | | | | |
|---|---|---|---|---|---|
| Building Block Section | Quantity | Length (m) | Width (m) | Height (m) | Maximum Weight (kg) |
| Tower Foundation Section | 2 | 4.30 | 4.30 | 1.80 | 20,000 |
| Tower Section 1 | 2 | 12.14 | 4.30 | 4.30 | 65,000 |
| Tower Section 2 | 2 | 16.83 | 4.30 | 4.30 | 63,000 |
| Tower Section 3 | 2 | 20.95 | 4.30 | 4.30 | 59,000 |
| Tower Section 4 | 2 | 18.59 | 3.26 | 3.26 | 35,000 |

| | | | | | |
|---|---|---|---|---|---|
| **Nacelle** | 2 | **8.11** | **4.31** | **3.92** | 37,300 |
| **Generator Group Variant 1** | 2 | **5.50** | **5.20** | **3.40** | 100,000 |
| **Generator Group Variant 2** | 2 | **4.00** | **4.00** | **3.00** | 32,000 |
| | | **5.50** | **5.20** | **3.00** | 68,000 |
| **Blades** | 6 | **57.5** | **4.32** | **3.12** | 23,500 |
| **Rotor Unit** | 6 | **4.72** | **5.34** | **4.00** | 45,000 |
| | Among the converter, other small parts, components and tools will have to be packaged and transported to the site. These will likely all be loaded onto one HGV | | | | |

***Table 4**: Turbine Component Dimensions*

# 4. Transport Routes

## 4.1 General Construction Traffic

The route of general construction traffic will depend on the location from which materials are sourced, however it is anticipated that all material deliveries will arrive via A30 and A391 (Roche Bypass). Construction deliveries will be restricted to these routes where practical and suppliers will be briefed accordingly.

The use of minor and unclassified roads will be avoided.

## 4.2 Abnormal Loads

Abnormal Indivisible Loads (AIL) will arrive the A30 westbound, the route will take the first exit at Victoria Interchange and go straight over at the roundabout to join the A391.

- The route will continue on the road and cross straight over the first roundabout, and again, straight over for the second roundabout.
- On the third roundabout, the third exit is used to access Hensbarrow Hill Rd.
- It then bears right at the signposted junction for Brookland Sand & Aggregates.
- From here, loads will turn right onto site.

- Loads will continue along the unclassified haul roads to reach the development area.

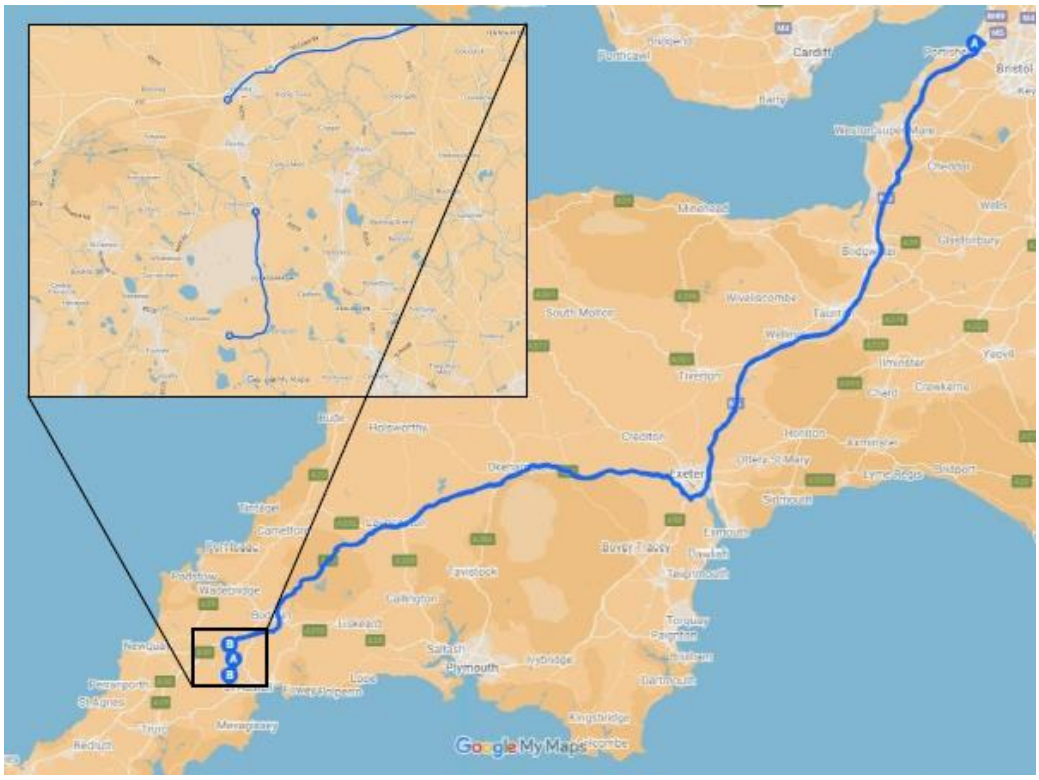



***Figure 2**: The Proposed Route*

## 4.3 Swept Path Analysis

Swept path analysis has been conducted for a number of points of interest (POI) on the abnormal load transport route. These are summarised in **Table 5** below and shown within **Appendix A, B, C, D and E** as prepared by Pell Frischmann.

| POI Ref | Location | Assessment Outcome | Mitigation |
|---|---|---|---|
| POI6 | A30 / A391 Roundabout | Requires oversail on highways land surrounding the roundabout. | |
| POI7 | A391 / B3274 Roundabout | Requirement to oversail land on inside and offside of corner. Street furniture to be removed and vegetation to be trimmed. | Landowner access right for oversail and vegetation trimming. Street furniture to be removed. |

| | | | |
|---|---|---|---|
| POI8 | A391 / Tregoss Rd / Harmony Rd Roundabout | Requirement to oversail land on inside and offside of corner. Street furniture to be removed and vegetation to be trimmed. | Landowner access right for oversail and vegetation trimming. Street furniture to be removed. |
| POI9 | A391 / Hensbarrow Hill Rd Roundabout | Loads will navigate roundabout in a counterflow manner and oversail inside and offside of corner. Street furniture to be removed and vegetation to be trimmed. | Landowner access right for oversail and vegetation trimming. Street furniture to be removed. |

***Table 5**: Pinch-point Description and Mitigation Measures*

## 4.4 Site Entrance

The existing entrance off Hensbarrow Hill Road and Imerys haul roads will be used to reach the development area.

Horizontal visibility splays for the site entrance are presented in **Appendix E** of this CTMP as well as **Appendix B** of the Environmental Statement, **PR4269-IFP-ENTP-C**. A Y-distance of 215m either side of the site entrance has been considered in the absence of a 7-day traffic speed survey.

# 5. Mitigation Measures

There are a number of traffic management measures proposed to minimise the effect of general construction traffic on the road network. Many of these measures can also be applied to the movement of abnormal loads. The measures are described in the below section.

## 5.1 Measures to Minimise Volume of Imported and Exported material

Following receipt of planning approval, a full site investigation will be conducted, including exploration for suitable material for use on access tracks and crane hardstanding. Using site material would significantly reduce the number of vehicle movements required for imported stone.

Geogrids will be used to minimise road and hardstanding thicknesses, thus reducing the overall requirement for imported material.

Excavated material will be reused and landscaped on site following construction.

## 5.2 Measures to Reduce Dust and Debris

Works will be planned such that there is no requirement for vehicles used for travel on the public road network to drive over unsealed ground, thus reducing the potential for the deposition of stones, mud and dust beyond the site boundary. Further mitigation measures will be implemented as follows:

- On site wheel washing facilities located near the site entrance to remove dirt and mud from the wheels of delivery vehicles
- As far as reasonably practicable, HGVs carrying aggregate to and from site will be covered during transport
- Mechanical road sweeping will be carried out as necessary to remove mud and debris from the surface of the local road network
- An onsite drainage system will prevent runoff from newly constructed access tracks and hardstanding from reaching the local road network

## 5.3 Traffic Signage and Markings

Temporary construction site signage will be positioned on the local road network on the approach to the Proposed Development site to direct construction traffic and warn road users of construction activities and associated construction vehicles. The exact nature and location of the signage will be agreed with Cornwall Council prior to construction activity on site.

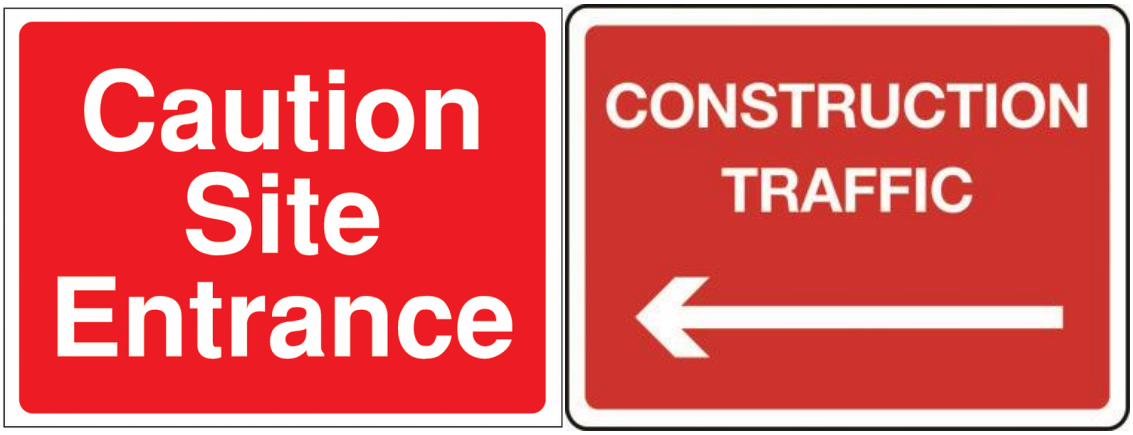



***Figure 3:*** *Examples of construction traffic signage*

## 5.4 Working Hours

The proposed working hours during the construction phase of the development are 0730 – 1800 hours. Although out of hours (1800 – 0730) working will not be normally required, certain works may have to be undertaken during this period.

Abnormal load deliveries will be scheduled outside of peak travel hours to minimise disruption to other road users.

## 5.5 Contractor Parking

During the busiest points of construction, expected during the concreting phases, it is anticipated the number of contractors is unlikely to exceed thirty individuals. Contractor parking will be entirely on site within the construction compound. Parking beyond the site boundary, on the local road network, will be prohibited.

## 5.6 Notifications to Local Authorities and Police Forces.

The appointed haulage contractor will be responsible for obtaining the required permits and publicising the details of abnormal load movements in line with the minimum required notice period as stated in the regulations for construction and use and the Road Vehicles (Authorisation of Special Types) (General) Order 2003 for indivisible loads.

## 5.7 Measures to minimise the requirement for road modifications

Superwing Carrier blade trailers will be used, with a wheelbase and platform height that can be modified during transport, which will reduce the requirement for corner modifications and the removal of low-level street furniture.

# 6. Conclusion

This report documents the travel logistics of construction traffic and turbine components from A30 leading to Dubbers entrance point providing supplementary information to support the Environmental Statement.

The route of general construction traffic will depend on the location from which materials are sourced, however it is anticipated that most material deliveries will arrive via the A391.

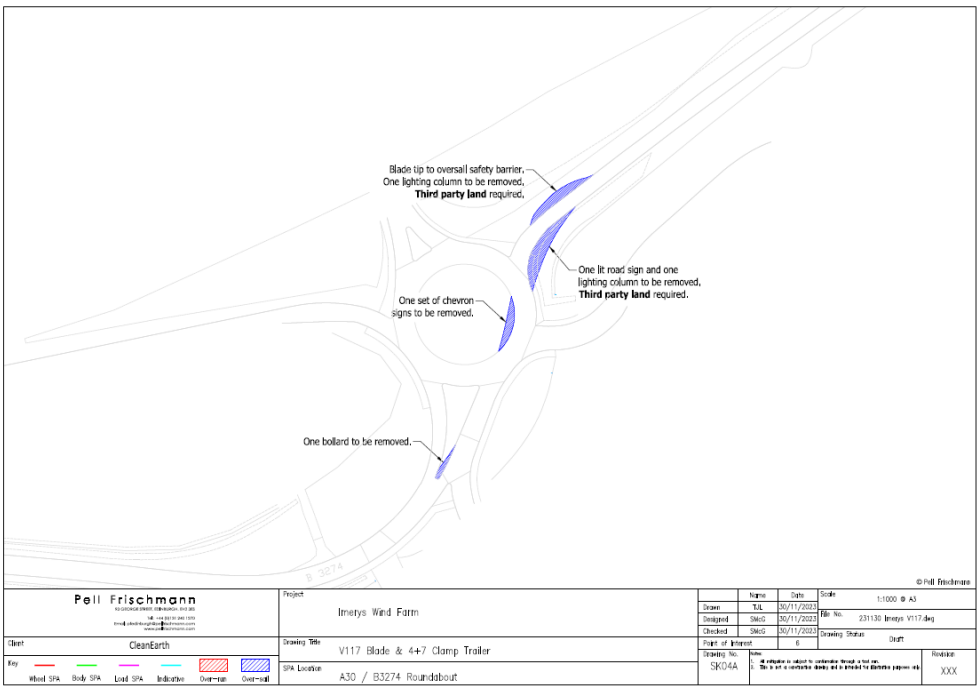
The turbine components: generators, nacelles, hubs, turbine blades and tower sections will contribute to an estimated 52 HGV movements.

Consideration of adequate visibility splays have been provided, as well as the proposition of the required signage and traffic management procedures to ensure any potential impact to existing road users is minimised.

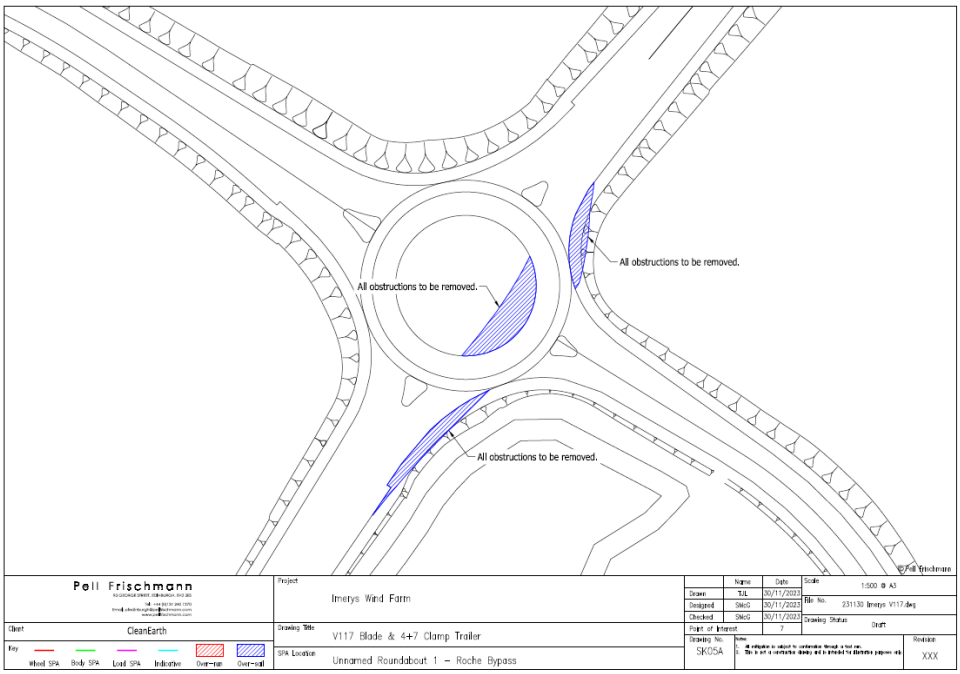
On the basis of the above, it is **not deemed** that the potential impact relating to construction traffic over the construction period would be significant. Any major impacts would be of short duration, for example during abnormal load movements.

# 7. Appendix

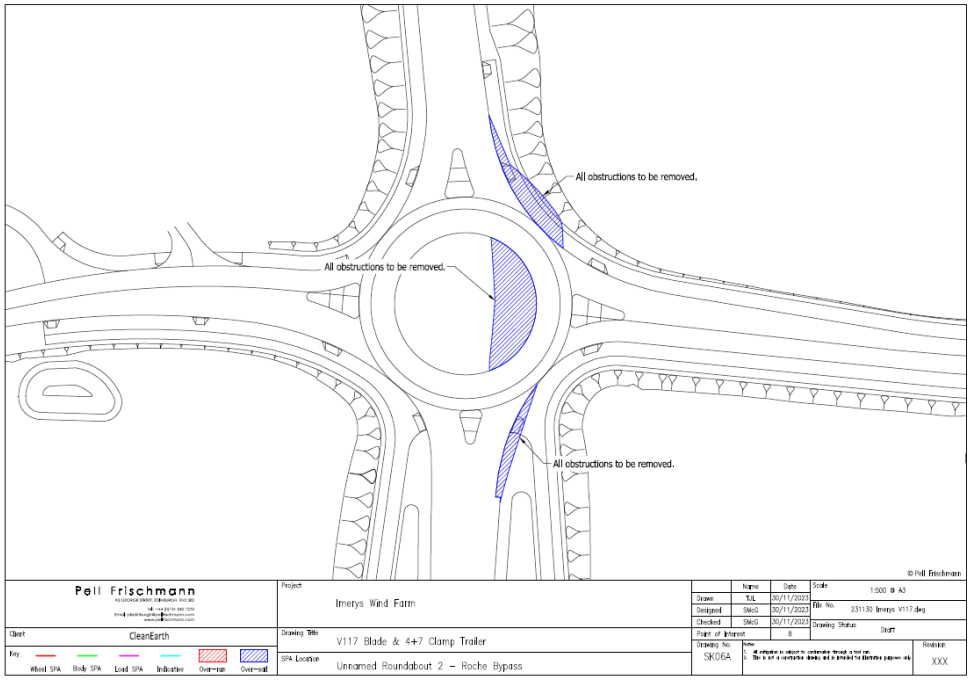
## APPENDIX A: Swept Path Analysis (SPA) - POI 6



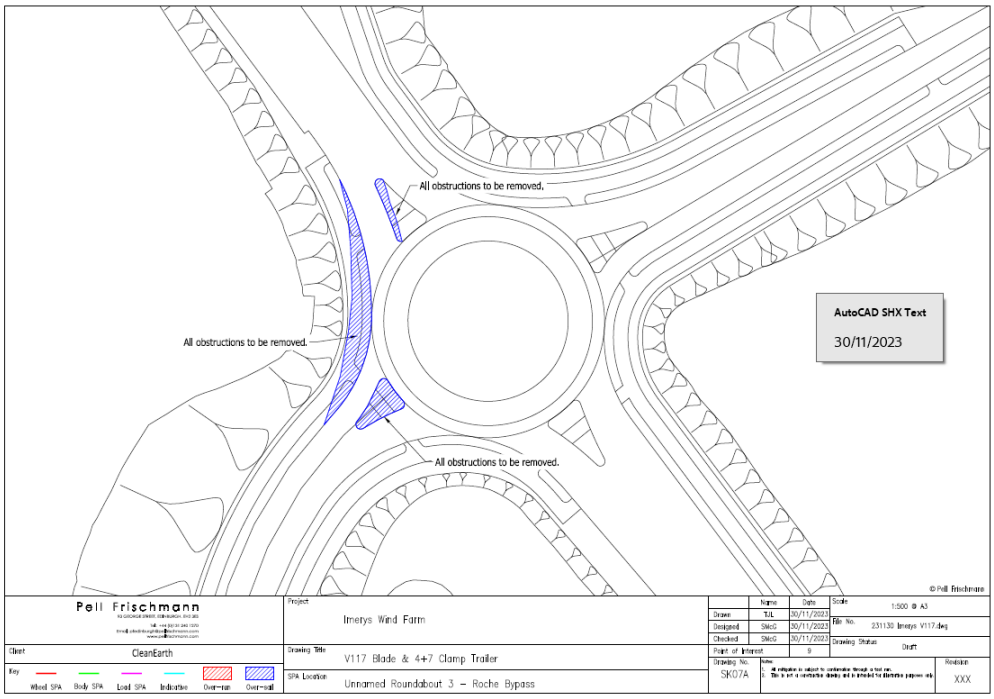

## APPENDIX B: Swept Path Analysis (SPA) - POI 7



## APPENDIX C: Swept Path Analysis (SPA) - POI 8




## APPENDIX D: Swept Path Analysis (SPA) - POI 9



## APPENDIX E: SITE ENTRANCE VISIBILITY SPLAY