




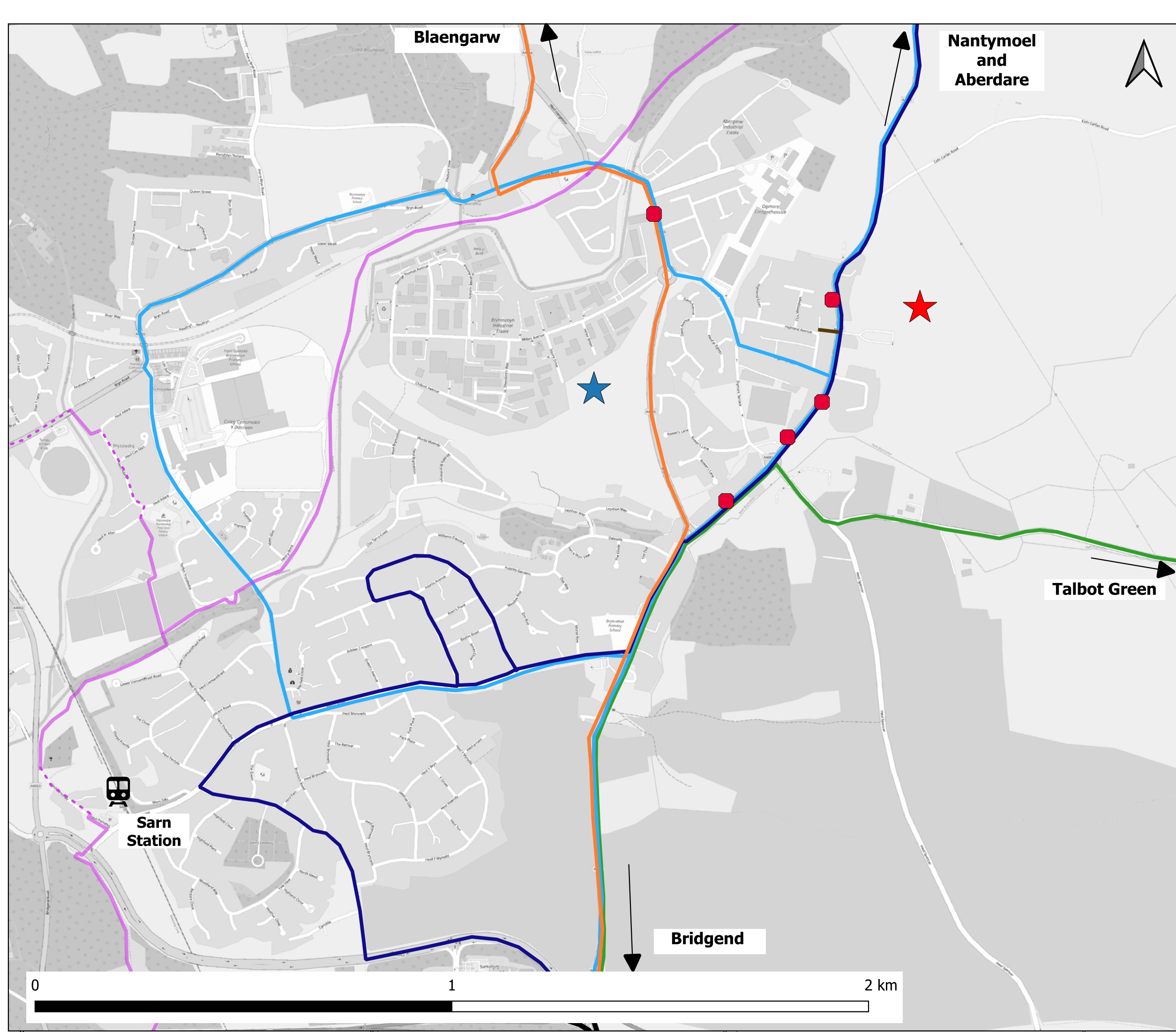
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Legend












-  Solar Farm Site
-  Local Road Network
-  M4 Junction 36 (Sarn Interchange)



Client: Marubeni
 Project: JNY11534
 Title: Solar Farm Local Road Network
 Status: Preliminary
 Drawn by: CR
 PM/Checked by: EON
 Project Number: JNY11534
 Scale@A3
 Date Created: 31/10/2022
 Figure Number: 3
 Rev: 01

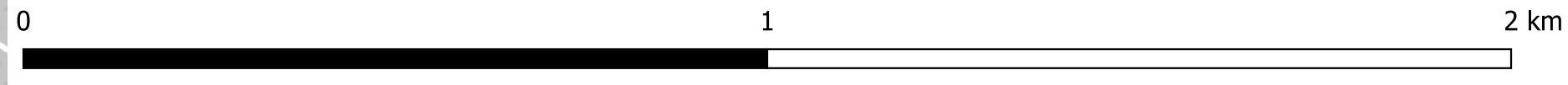


Legend

-  Solar Farm Site
-  Hydrogen Production Facility Site
-  Nearby Bus Stops
-  Nearby Train Station
-  Public Footway
-  65 Bus Route
-  72 Bus Route
-  74 Bus Route
-  172 Bus Route
-  National Cycle Network Route 4 On Road
-  National Cycle Network Route 4 Traffic free



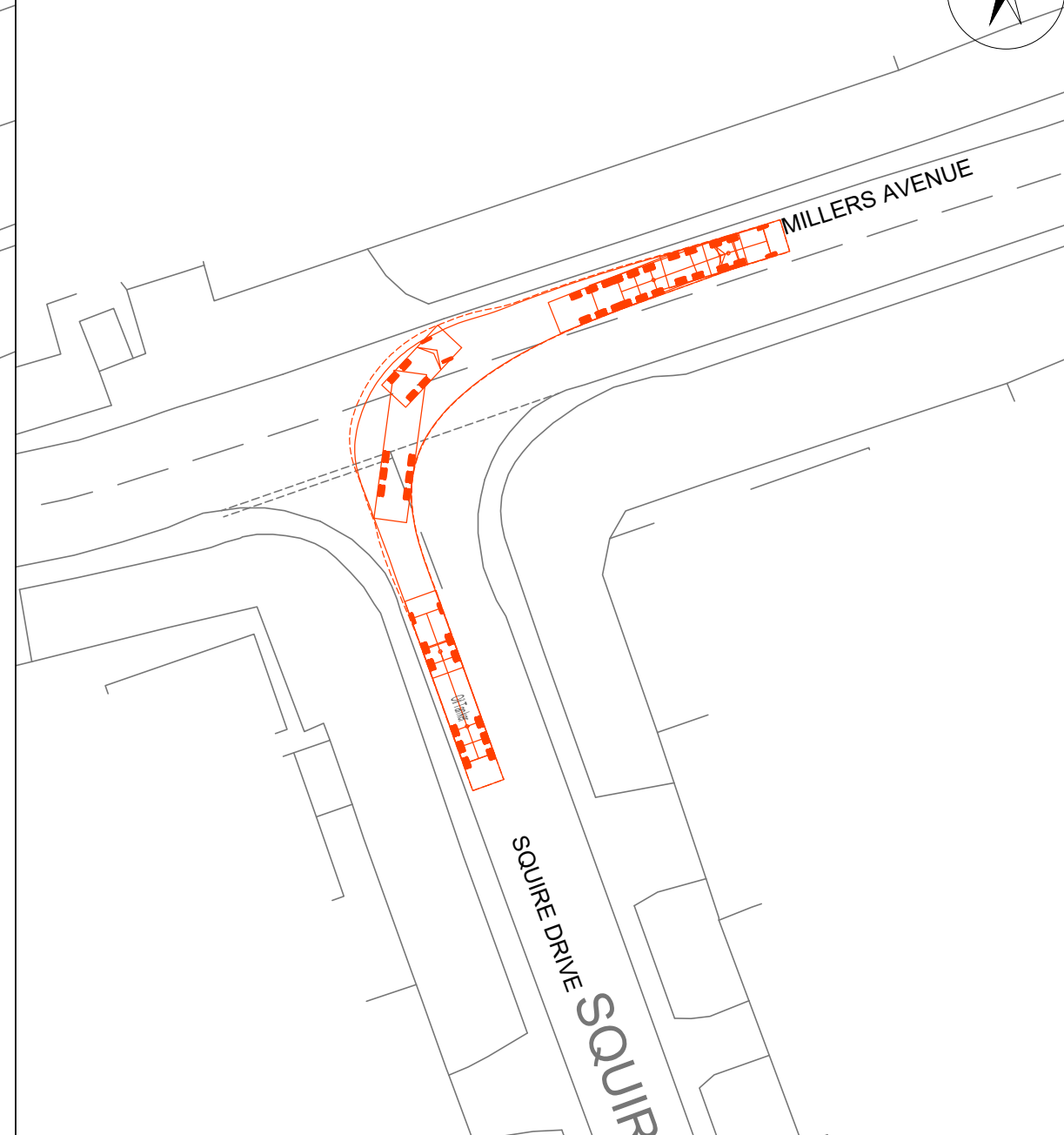
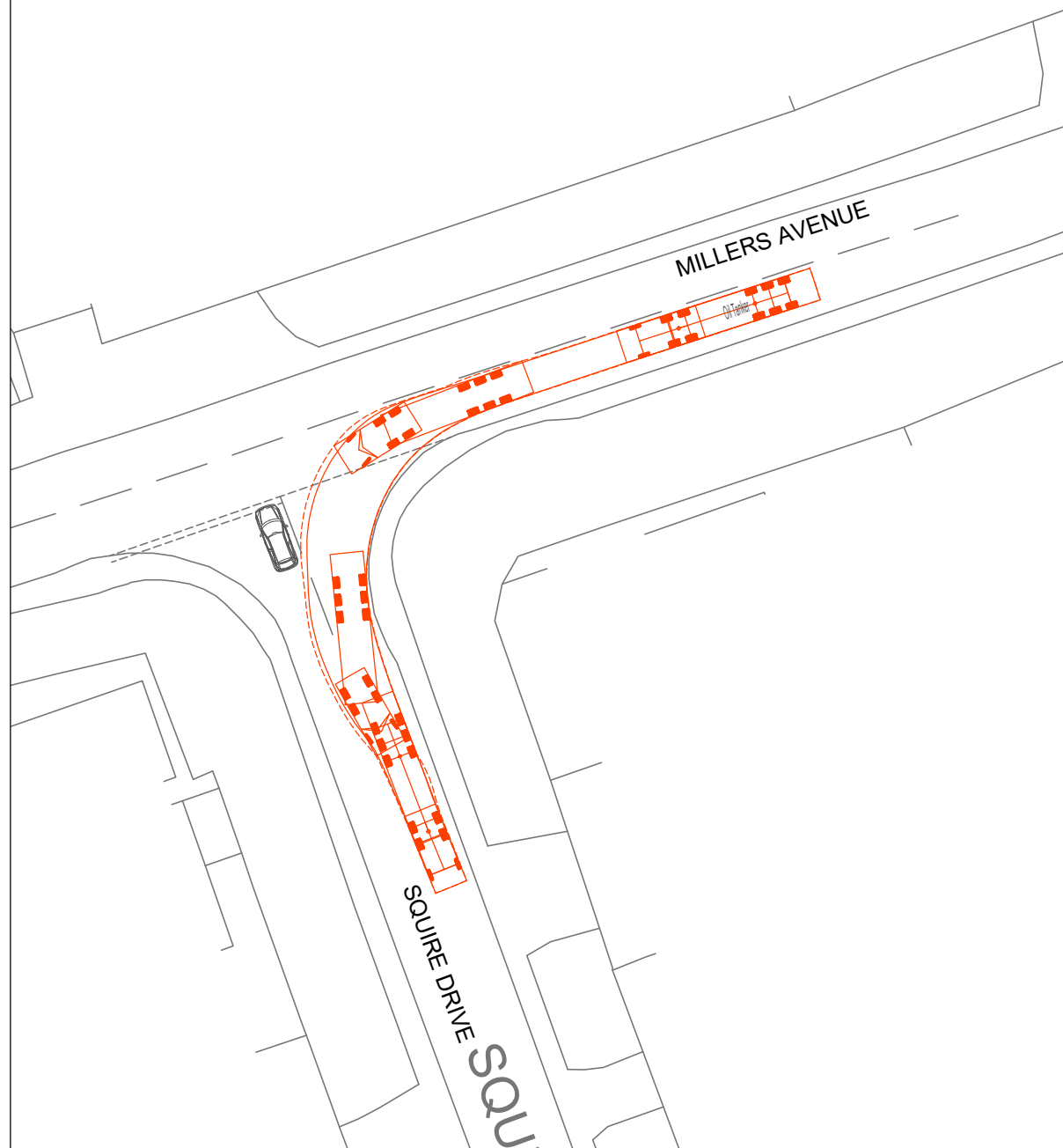
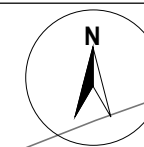
Client: Marubeni
 Project: JNY11534
 Title: Public Transport Accessibility, and Walking and Cycling routes in the vicinity of the site
 Status: Preliminary
 Drawn by: CR
 PM/Checked by: EON
 Project Number: JNY11534
 Scale@A3
 Date Created: 02/11/2022
 Figure Number: 4
 Rev: 01



Appendix C – Access Drawings and Swept Path

Vehicle Access

Vehicle Egress

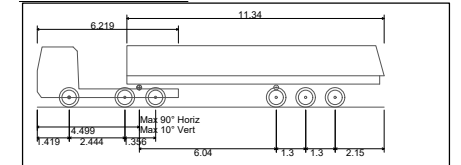


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NOTES

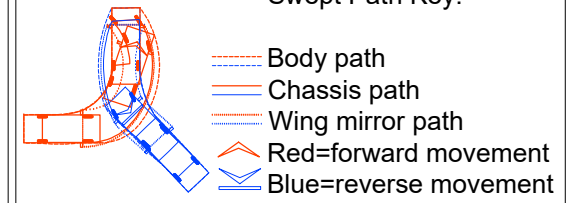
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Vehicle Profile



Oil Tanker	
Overall Length	15.289m
Overall Width	2.500m
Overall Body Height	2.704m
Min Body Ground Clearance	0.419m
Track Width	2.450m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.670m

Swept Path Key:



Rev	Description	By	CB	Date



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Client Client

Project HyBont Marubeni

Title Site 1 Access
15.3m Tanker
Swept Path Analysis

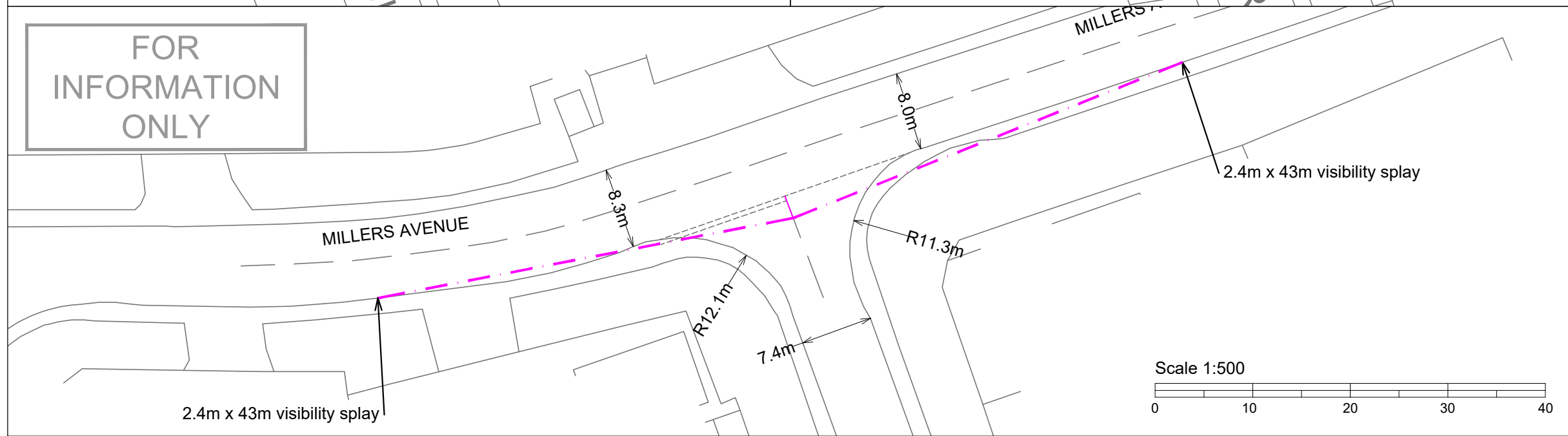
Status Drawn By PM/Checked by
PRELIMINARY AJ -

Project Number Scale @ A3 Date Created
JNY11534 1:### 08/11/22

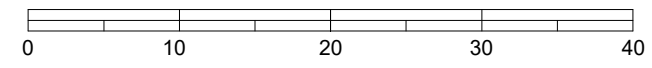
RPS Drawing/Figure Number Rev
JNY11534-01 -

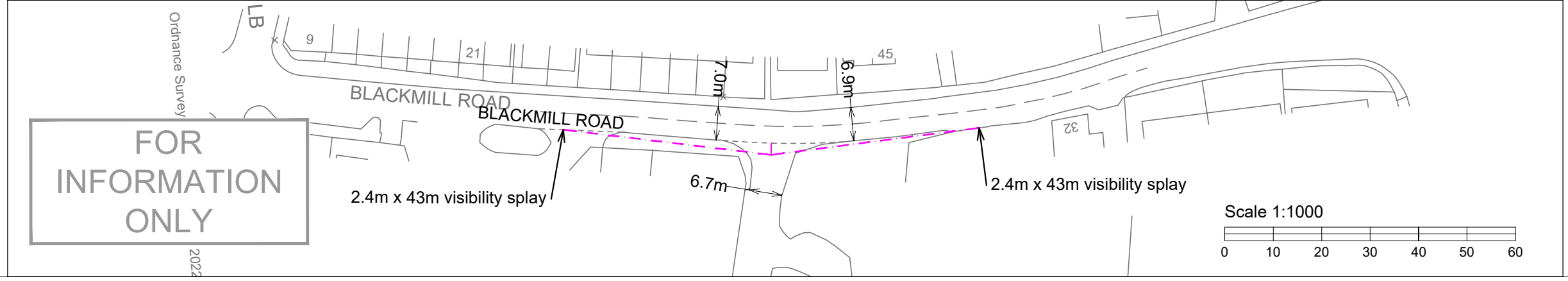
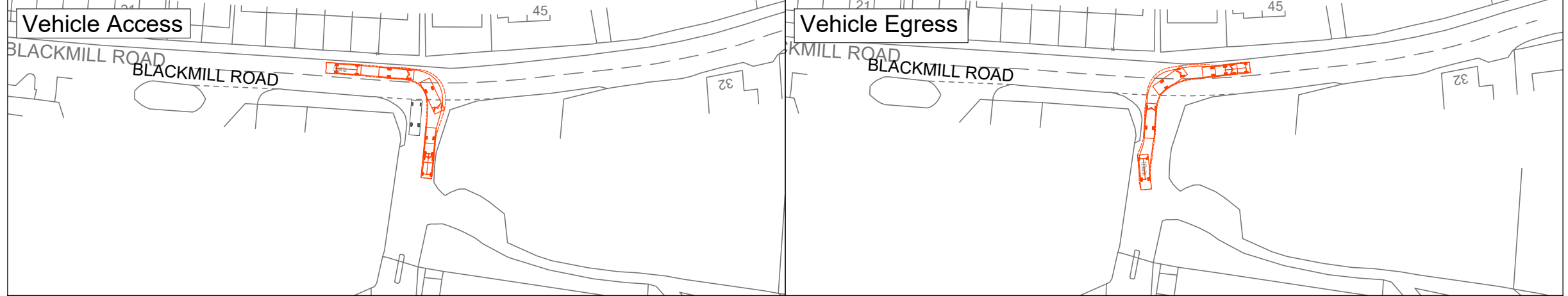
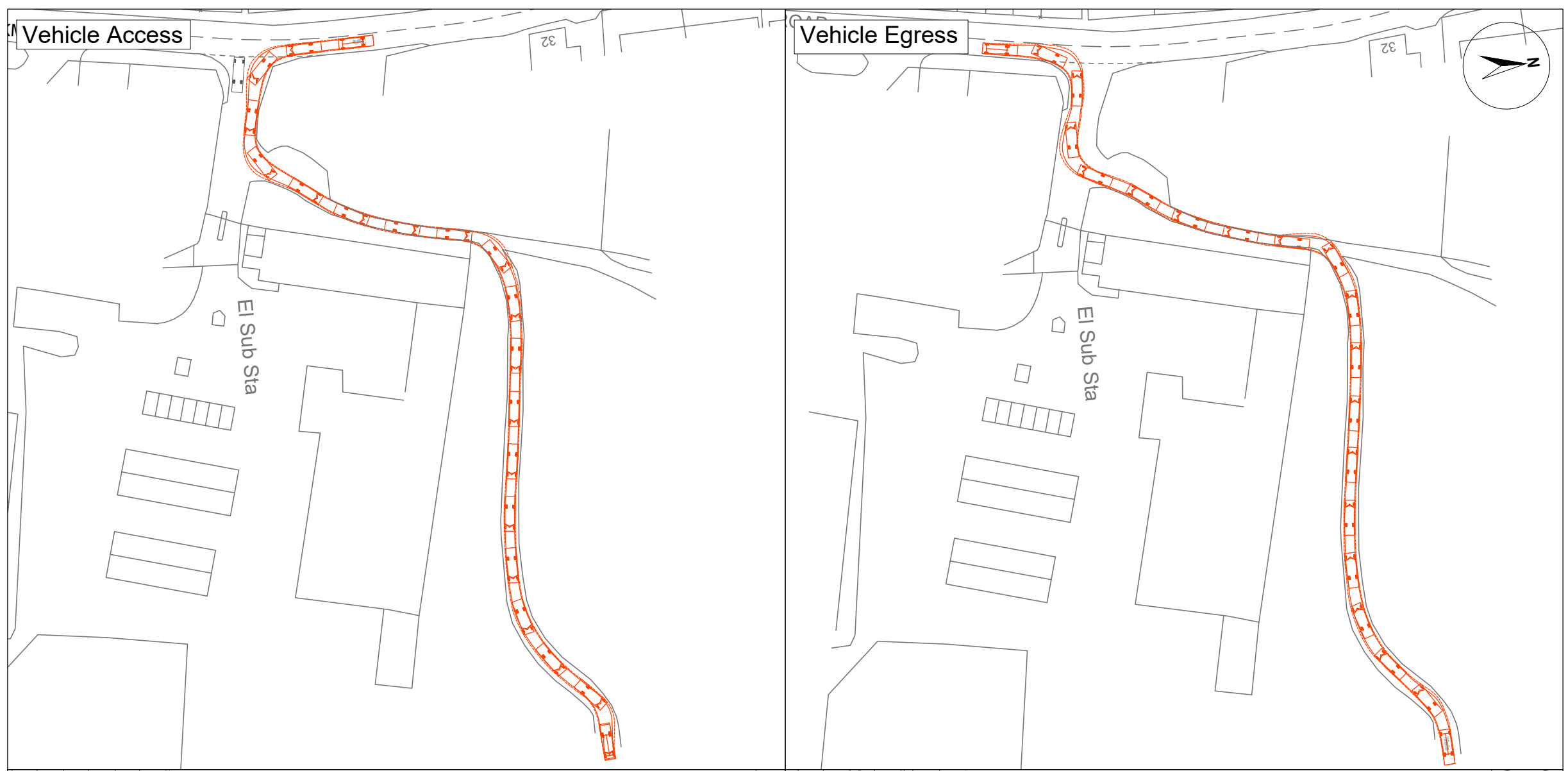
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Scale 1:500



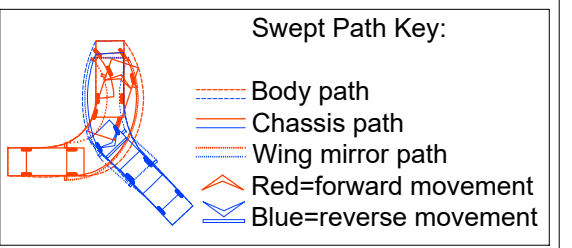


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Vehicle Profile

7.5t Panel Van	7.210m
Overall Length	2.192m
Overall Width	2.544m
Overall Body Height	0.316m
Min Body Ground Clearance	1.865m
Track Width	4.00s
Lock to lock time	7.400m
Kerb to Kerb Turning Radius	



Rev	Description	By	CB	Date



20 Farringdon Street, London EC4A 4AB
 T: +44(0)20 3691 0500 E: transport@rpsgroup.com

Client Client

Project HyBont Marubeni

Title Site 2 Access
 7.5tn Panel Van
 Swept Path Analysis

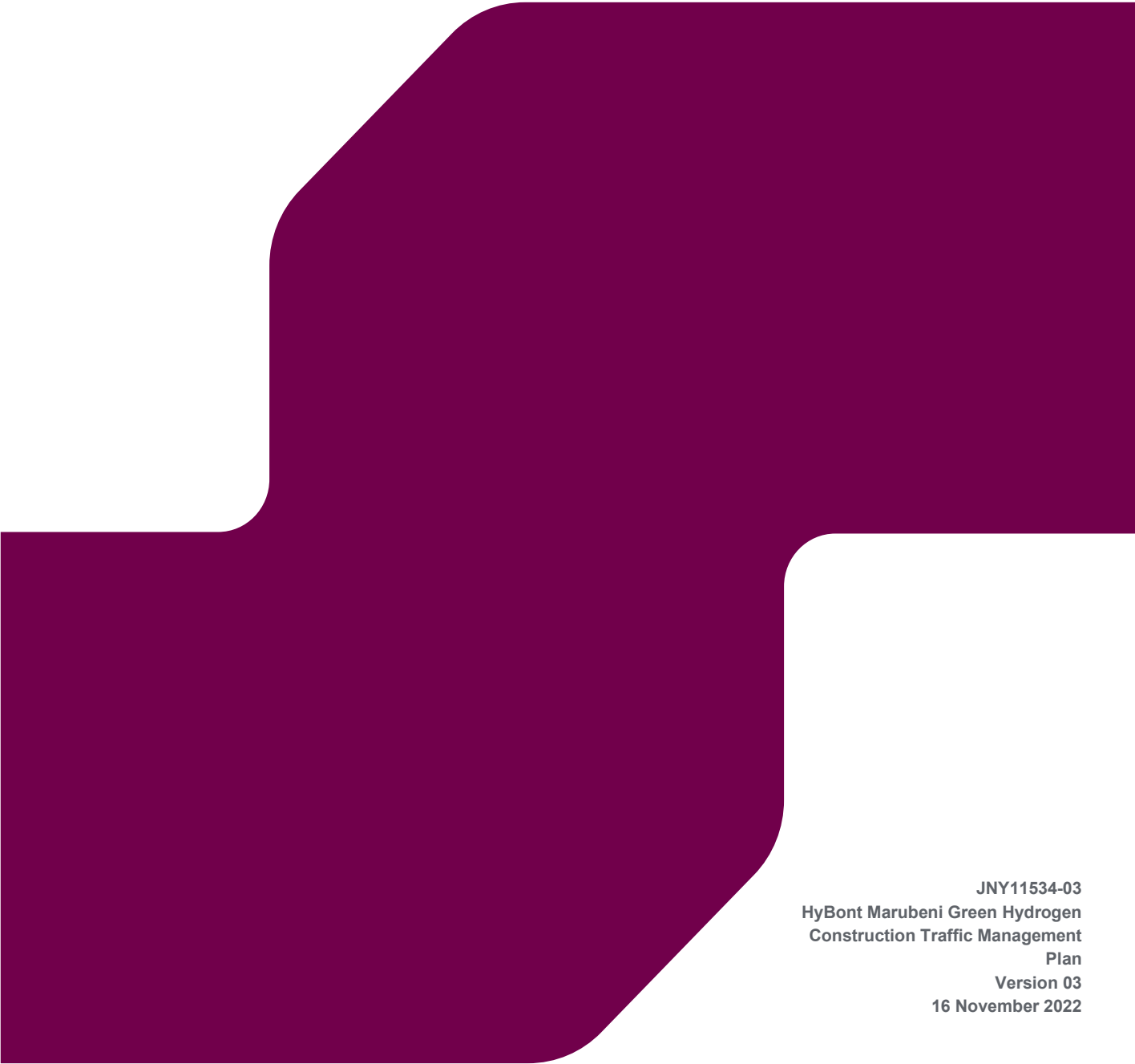
Status	Drawn By	PM/Checked by
PRELIMINARY	AJ	-
Project Number	Scale @ A3	Date Created
JNY11534	1:500	08/11/22
RPS Drawing/Figure Number		Rev
JNY11534-02		-

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Appendix D – CTMP Reports

HYBONT MARUBENI GREEN HYDROGEN

Construction Traffic Management Plan



JNY11534-03
HyBont Marubeni Green Hydrogen
Construction Traffic Management
Plan
Version 03
16 November 2022

Document Status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
03	Planning Application	Charlotte Routledge	Emma O'Neill	Emma O'Neill	16 November 2022

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Prepared by:

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3	PROPOSED DEVELOPMENT AND ACCESS ARRANGEMENTS	4
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6	SUMMARY AND CONCLUSION	16

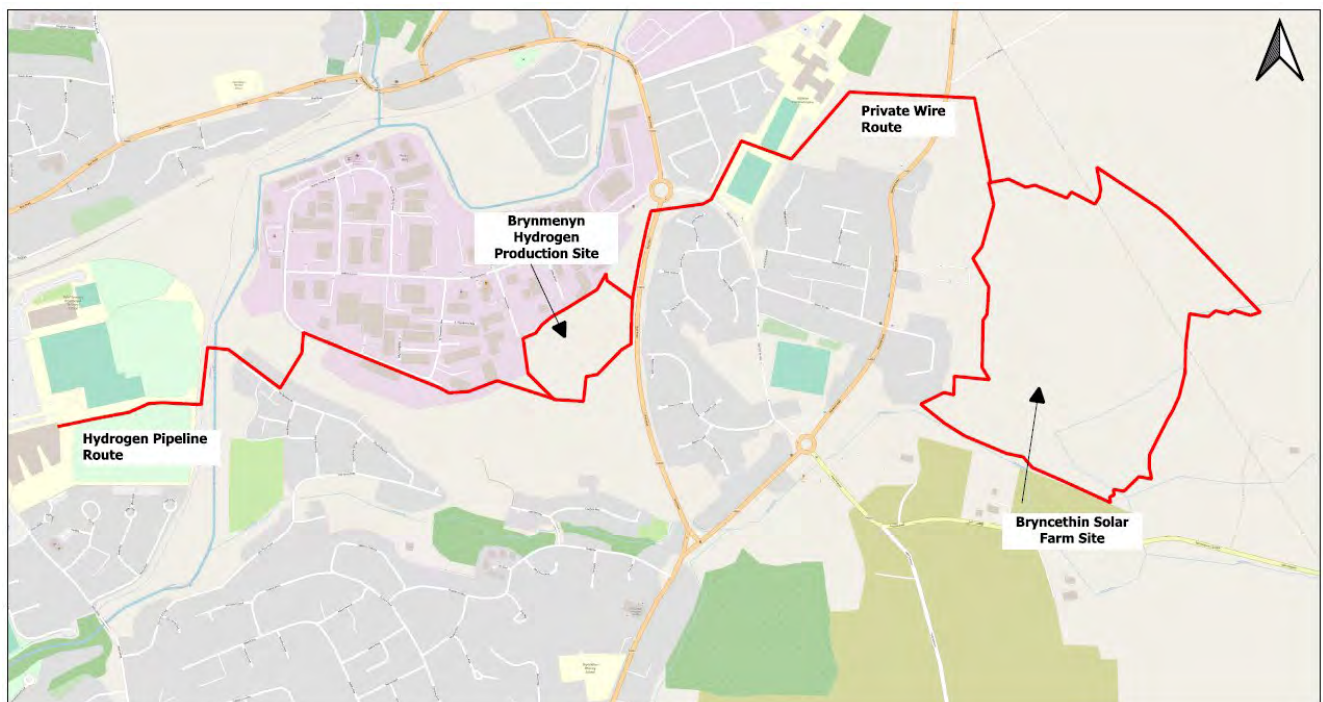
Appendices

APPENDIX 1 – VEHICLE SWEPT PATH (SQUIRE DRIVE)

1 INTRODUCTION

- 1.1 RPS have been commissioned by Marubeni Europower Ltd (the applicant) to produce a Construction Traffic Management Plan (CTMP) to accompany a planning application for a new green hydrogen scheme at Brynmenyn in Bridgend.
- 1.2 The 1ha site is located to the south of Brynmenyn, a small village 5km north of Bridgend. The site which is located approximately 2km north of J36 of the M4, is bound to the south by open agricultural land, the east by the A4065, and the north and west by Brynmenyn Industrial Estate.
- 1.3 There are two separate sites associated with the overall proposals, the first is for a new hydrogen production facility, the second is for a small solar farm. The energy produced from the Solar Farm will be used to generate hydrogen for the production facility. They will only be linked via an electrical wire, connecting the two sites. (Further detail on this is included within the full application and accompanying Transport Statement RPS Report JNY11534 -01).
- 1.4 While it is apparent that both the Solar Farm and Hydrogen Production Facility are intrinsically linked operationally, they are located on different sites, approximately 1km apart. Therefore separate CTMPs have been produced which assess the impacts of both the Solar Farm and Green Hydrogen facility on a standalone basis during the construction phases. This CTMP relates solely to the Green Hydrogen facility.
- 1.5 Figure 1 below shows the site location of the proposed Green Hydrogen Production facility in relation to the proposed Solar Farm.

Figure 1: Site Location



- 1.6 Access to the Hydrogen facility during the construction phase will be promoted from the Brynmenyn Industrial Estate, via Squire Drive or Chilcott Avenue. Both roads, are internal industrial roads, which currently serve other industrial units and are suitable for HGV traffic.

Report Purpose

- 1.7 This CTMP has been prepared to ensure traffic management practices and necessary arrangements are in place throughout the construction period. All proposed Heavy Goods Vehicles (HGV) haulage routes presented in this plan are subject to approval by BCBC.
- 1.8 This CTMP identifies measures that aim to minimise the effect of construction traffic on the surrounding road network with respect to potential temporary changes to vehicular traffic and pedestrian movements.

Report Structure

- 1.9 This CTMP is structured as follows
- **Section 2: Baseline Conditions** - Describes the existing site and the surrounding areas transport and highway characteristics;
 - **Section 3: Proposed Development and Access** - Provides an overview of the proposed development, the construction scheme overview, and the indicative construction programme;
 - **Section 4: Construction Traffic Trip Generation** - This section of the report sets out the estimated volume and type of vehicles that will be generated throughout the construction phase of the development
 - **Section 5: Construction Mitigation Measures** – Sets out the mitigation measures that will be adopted by employees during construction to minimise the impact of construction on local residents, businesses, and the local highway network; and
 - **Section 6: Summary and Conclusion** – Summarises the key points in this CTMP and provides a final conclusion.

2 BASELINE CONDITIONS

Context

- 2.1 This section provides information on the existing site and the surrounding area with a focus on local highway infrastructure and accessibility.

Pedestrian and Cycle Accessibility

- 2.2 The proposed development site is located within Bryncethin and can be easily accessed by sustainable means. The development site benefits from existing pedestrian infrastructure within its immediate vicinity providing continuous links to local residential areas, convenience stores and bus stops.

Public Transport

- 2.3 The proposed development site is accessible by public transport. The nearest bus stops to the proposed Hydrogen Production Facility are located along the A4065 approximately 600m north of the site. Bus routes 72 and 172 both stop here and provide a half hourly service to Porthcawl, Bridgend, Aberdare and Blaengarw.
- 2.4 The nearest train station is Sarn railway station, which is located approximately 2.5km from the development site, equating to approximately 30-minute walk or 10-minute cycle. Travel to Maesteg, Cheltenham Spa and Cardiff Central can be accessed by Sarn railway station.

Local Road Network Infrastructure

- 2.5 The proposed Hydrogen Production Facility is located to the immediate south of Brynmenyn Industrial Estate, During the construction phases, access to the site will be promoted from two locations, Chilcott Avenue and Squire Drive.
- 2.6 Chilcott Avenue and Squires Drive are both purpose-built Industrial Estate Roads which are regularly used by HGV's and serve multiple manufacturing and storage facilities.

Millers Avenue

- 2.7 Chillcott Avenue and Squires Drive lead onto Millers Avenue, which is the main access road through Brynmenyn Industrial Estate. Millers Avenue has a carriage width of approximately 7.5m, and wide footways on both sides of its carriageway. It is subject to a 30mph speed limit and runs on an east to west alignment from the A4065 / Millers Avenue / Ogmores Terrace roundabout.

The A4065

- 2.8 The A4065 is one of the main routes through the village of Brynmenyn. It runs from its junction with the A061 to Tondu, a small village west of Brynmenyn. The A4065 benefits from a wide 7.5m carriageway and footpath along one side of its carriageway.

Personal Injury Accident History

- 2.9 Collision data in the vicinity of the proposed development site has been obtained by RPS from CrashMap and analysed for the latest complete five-year period (2017 - 2021).
- 2.10 The data shows that there was one accident recorded in 2019 along the A4065, this was a slight accident, involving one vehicle and resulting in one casualty. On this basis, it is considered that the adjoining highway network currently operates with no significant highway safety issues which could be exacerbated by the development.

3 PROPOSED DEVELOPMENT AND ACCESS ARRANGEMENTS

Development Proposals

- 3.1 The proposed Hydrogen Production Facility will comprise of electrolyzers that generate hydrogen from electrical power by splitting water, hydrogen storage, and a hydrogen refuelling station. The site is 1ha in size, with a large proportion of the site used for roads and paving to allow adequate access for refuelling of heavy vehicles.

Construction Access

- 3.2 All construction traffic will access the site from Brynmenyn Industrial Estate, via either Chilcott Avenue or Squires Drive, these arrangements will be agreed with highways officers at BCBC prior to commencement. Both are internal industrial roads, which currently serve other industrial units within the Estate
- 3.3 RPS Drawing Number JNY11534 – 0001 included as Appendix A shows a 16.5m articulated HGV accessing and egressing the site via Squire Drive without issue. This vehicle is likely to be the largest vehicle on site during the construction period. Access to the site via Chilcott Avenue is through a simple extension of the existing route and does not result in HGV's requiring to manoeuvre through any junctions.
- 3.4 Internal access tracks will be required during the construction phase. The tracks will be constructed using permeable aggregate. It is envisaged that the site will not generate a significant number of HGV movements therefore, to reduce unnecessary land requirements, articulated and rigid HGVs will utilise the width of the access tracks and management measures will be implemented to mitigate any potential conflicts.
- 3.5 A construction compound will provide an area for loading and unloading of vehicles and will provide a turning area to allow vehicles to exit the site in forward gear. All delivery drivers and construction workers will be advised of the construction routes prior to making their delivery or commencing work.
- 3.6 Post-construction, the access from Chilcott Avenue will be stopped up, and permanent access promoted from Squire Drive. Further details on the permanent access arrangements are included in the accompanying Transport Statement RPS Report JNY1534-01).
- 3.7 It is also proposed that temporary signage be located in the vicinity of the site accesses during the construction period to warn drivers of the site entrance.

3.8 Examples of temporary signage is shown below in **Figure 2**.

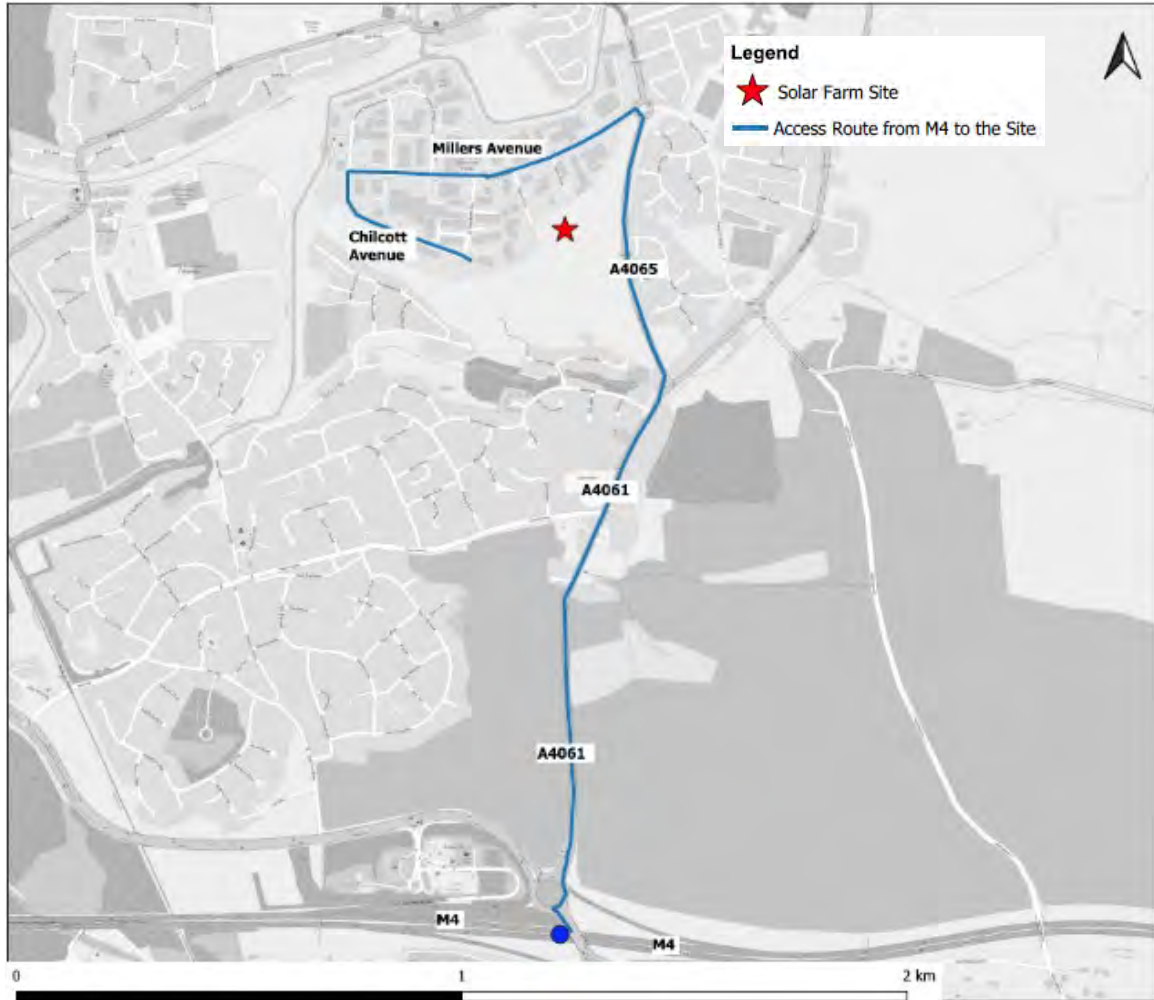
Figure 2: Temporary Signage at Site Access and Public Highway



Construction Routing

- 3.9 The details of the proposed construction routing will be agreed with Bridgend County Borough Council prior to commencement of construction works. However, it is likely that the vast majority of construction trips (especially HGVs) will arrive to the site from the south via the M4. Vehicles can access the motorway at J36 which routes directly onto the A4061, from the A4061, vehicles would use the A4065 to access the Industrial Estate, and then route directly through onto Chilcott Avenue or Squires Drive.
- 3.10 The motorway is part of the strategic road network and therefore suitable for larger vehicles.
- 3.11 All construction traffic routing from the south will utilise the below access route, shown graphically in **Figure 3**.

Figure 3: Construction Access Route (M4 J36 to Site Access)



Route Management

- 3.12 It is considered appropriate to avoid routes where vulnerable road users and construction vehicles could conflict. Likewise, it is considered appropriate to avoid routes where scheduled road works and construction vehicles could conflict.
- 3.13 All construction workers and suppliers will be advised to use the PIEFreight Journey Planner www.freightjourneyplanner.com which is designed to help freight operators plan their route for a specified size of vehicle and identify where to stop legally.
- 3.14 The Site Manager or Banksman will keep up to date on scheduled roadworks, events, and incidents in the area. Any major roadworks or events on the preferred route that result in the deviation of the preferred route will be agreed with officers at Bridgend County Borough Council in advance where feasible.

Route Compliance

- 3.15 Use of the agreed vehicle route for HGV's should be accepted in the main, by the contractor and should be communicated to all individuals associated with the works. It is envisaged that this information will be communicated in the form of a leaflet or email and will include information with regard to times of operation, delivery routes, the call up procedure and delivery slot information.

- 3.16 Any repeated non-compliance of the proposed construction route could result in disciplinary procedures or the termination of the workers / supplier's contract.

Control of Deliveries

- 3.17 All deliveries should be controlled by a delivery booking system which will distribute deliveries across the week and across working hours. Deliveries should not be accepted outside of their designated timeslot, and such deliveries will be asked to re-book, unless there is capacity to accommodate within the specified loading area.
- 3.18 On a weekly basis the Site Manager should evaluate details of the daily profile of deliveries proposed for the upcoming week. Hauliers will be required to contact the site on a daily basis and indicate their delivery schedule for the following day. The proposed deliveries will be checked against the weekly delivery schedule. This will be overseen by the Site Manager to ensure that HGV deliveries are scheduled, ensuring that there is always space at the site to accommodate the necessary plant and deliveries.
- 3.19 When planning deliveries, the following will be considered:
- All deliveries to the site should be restricted to the timings set out within this document;
 - Deliveries will be permitted only in the specified loading area on site; and
 - Material storage areas will be prepared on-site in advance of deliveries to minimise loading and unloading times.
- 3.20 It is anticipated that all deliveries to the site will be organised to take place between the hours of 08:00 - 18:00, Monday to Friday and 08:00 - 14:00 Saturday (subject to confirmation / approval from BCBC Where feasible the contractor will seek to minimise deliveries during the weekday peak hours (08:00- 09:00 and 17:00-18:00).
- 3.21 Sufficient time will be given between deliveries to allow for any delays as a result of the delivery vehicle getting stuck in traffic or the loading/ unloading taking longer than expected and to avoid any vehicles waiting on the surrounding highway network.
- 3.22 The following measures will be implemented to reduce the number of vehicle movements to the site:
- 'Backloading' vehicle operation, where site delivery vehicles are utilised to remove waste materials from the site as part of the same trip, where possible; and
 - Practical re-use of any aggregates on site and recycling of material, where possible.
- 3.23 With proper planning and an efficient delivery schedule, unnecessary vehicle trips to the site will be kept to a minimum.

Construction Programme and Phasing

- 3.24 The proposed construction is scheduled to last up to 21 months. The construction programme and phasing is at present unknown, when a contractor has been established, full details of the construction phasing and programme will be provided to BCBC for approval.

Enabling Works

Site Preparation

- 3.25 Site setup is likely to occur for a period of two to three weeks. Site setup is important to mitigating any impacts on the surrounding highway network as well as neighbouring residents and businesses.
- 3.26 The site will remain presentable and tidy at all times. Hoarding or Heras fencing will be erected along perimeters of the site. The fencing will comply with the Health and Safety Authority requirements; and will be well maintained throughout the works to ensure public safety. Further details on the type of fencing proposed, will be provided when a contractor is appointed.
- 3.27 Building inspections to identify hazardous material/asbestos will be undertaken. The purpose of the hoarding is to provide additional security, both to prevent unauthorised personnel from accessing the site as well as providing suitable segregation between pedestrians and the work being undertaken. lockable gates will be at the entrance to the vehicular access to prevent unauthorised vehicles entering the site.

Site Office

- 3.28 Site accommodation and welfare facilities will be located on site in portable cabins erected on the site on concrete pads.

Potential Impact on Utilities

- 3.29 Utility service diversions and temporary service connections should be carried out during the initial stages of the enabling works. The exact location of these services will not be known until a survey has been carried out post planning.
- 3.30 Prior to works commencing, any existing utility services should be identified and disconnected across the site. Safe access routes would also be identified for vehicles and pedestrians across the site.

Delivery of Plant and Materials

- 3.31 All materials and plant associated with the development process will be stored within the footprint of the site. A loading and unloading area for plant and materials will be provided within the site. It is anticipated that the majority of deliveries will be made via articulated and rigid HGVs.
- 3.32 The following non-road mobile machinery is likely to be used on site:
- Breaker
 - Dumper trucks
 - Tower / Mobile Cranes
 - Drills / Cutters
 - Fork Lift Truck

4 CONSTRUCTION TRAFFIC GENERATION

- 4.1 This section of the report sets out the estimated volume and type of vehicles that will be generated throughout the construction phase of the development.
- 4.2 It should be noted that the construction programme and corresponding construction traffic strategy are at present unknown. Following the appointment of a construction contractor full details of the construction programme will be communicated to Bridgend County Borough Council (BCBC) for review.

Construction Vehicles

- 4.3 The trip generation potential of the construction phase of development has been informed through discussion with the Applicant and our experience of delivering similar developments in the United Kingdom.
- 4.4 The construction period is anticipated to last for up to 21 months, with the following types of vehicles expected on site during the construction period
- Rigid HGV
 - 80 tonne Crane
 - 10t-20t HGV
 - Articulated / Rigid HGV
- 4.5 The majority of materials and plant delivery is to be transported to the site via articulated and rigid HGVs.
- 4.6 Deliveries will vary in amount per day during the construction period. It is likely that HGV trips would peak during the site levelling and preparation period, when materials are being removed from site. This set up period is likely to last approximately one month. During this period, it is anticipated that there could be up to 50 tipper trucks on site each day. This peak however would be temporary and short lived.

There will be an average of 20 deliveries (10 inbound plus 10 outbound movements) per day over the 21 month period. It is envisaged that the majority of movements would be Monday to Friday with only a limited number of movements on a Saturday.

Dwell Times

- 4.7 Delivery vehicles are likely to attend the Site for approximately one hour per vehicle. There will be sufficient space within the curtilage of the Site compounds to ensure that no vehicles would have to wait on the surrounding highway network.
- 4.8 Further measures that will be employed to control the number and frequency of vehicles arriving at the Site are detailed further in Chapter 5.

Construction Staff

- 4.9 During construction, there is a balance to be made between the intensity of on-site activity and duration of activity. However, the Applicant estimates that there may be up to a maximum of 50 staff on site per day. The Applicant's experience of similar developments elsewhere suggests that car sharing is prevalent within the construction industry and can reduce the number of cars on site to 25. This will be achieved through management of staff travel patterns and actively encouraging car sharing.

4.10 All staff are anticipated to arrive at the construction Site during the 30-minute period preceding the start of the operating day (i.e. 07:30 to 08:00 Monday to Saturday) and depart during the 30 minute period that follows the end of the operating day (i.e. 18:00 to 18:30 Monday to Friday and 13:00 to 13:30 on Saturdays). Staff trips are likely to travel to / from different origins / destinations and hence spread their movement across the highway network.

4.11 Provision will be made to enable all vehicles to park within the construction compound to avoid obstruction to the operation of the public highway and this shall be strictly enforced.

Traffic Impact

4.12 2021 Annual Average Daily Flow (AADF) data for the A4065 has been obtained from DfT (<https://roadtraffic.dft.gov.uk/>). There was only one available count within proximity of the proposed hydrogen facility. This was located to immediate north of the A4065 / Millers Avenue / Ogmores Terrace Roundabout, and while it is noted that this location is not fully applicable to the development, it will provide a good representation of traffic flows along the A4065.

4.13 The 2021 AADF data for the A4065 is summarised below in Table 1.

Table 1 – 2021 AADF for the A4065

Location	Count ID	Car / LGV's	HGV's	Total
A4065 (NB)	40635	4,318	112	4,430
A4065 (SB)	40635	4,306	105	4,411
Total	40635	8,624	217	8,841

4.14 Estimated trip generation during construction of the proposed development calculates that average two way movements would equate to 20 HGVs and 50 two way car movements. All construction traffic has been assigned in a southbound direction towards to the Motorway, against traffic data collected to the north of the A4065 / Millers Avenue / Ogmores Terrace Roundabout. This results in an overly robust assessment, and is summarised below in Table 2

Table 2 – Construction Traffic Flows

Location	Count ID	Car / LGV's	HGV's	Total
A4065	40635	50 (0.6%)	20 (9.2%)	70 (0.7%)

4.15 The above changes in traffic flows along the A4065 represent a negligible change in traffic flows. These predicted increases are well below the 'Guidelines for the Environmental Assessment of Road Traffic' which suggest two broad rules that can be used as a screening process to identify the appropriate extent of the assessment area. These are:

- **Rule 1** – Include highway links where traffic flows would increase by more than 30% (or the number of HGVs would increase by more than 30%); and
- **Rule 2** – Include any other specifically sensitive areas where traffic flows would increase by 10% or more." Therefore, the construction traffic as a result of the development will not create a significant impact on the local highway network.

5 CONSTRUCTION TRAFFIC MITIGATION

General

5.1 This section of the Construction Management Plan sets out the mitigation measures that could be employed during construction to minimise the impact of construction traffic on the local residents, businesses, and the local highway network.

Construction Manager

5.2 There will be a designated Site Manager to deal with any complaints and enquiries from the general public and any other interested parties. Any changes to the designated Site Manager will be notified to BCBC.

5.3 The details of the Site Manager (including a 24-hour phone number) will be provided to BCBC prior to activities beginning on-site. The Site Manager's details will also be advertised at the site entrance.

5.4 The Site Manager for the project will undertake the transport co-ordination role for the site. In this respect, their main responsibilities should include:

- Managing the implementation of the Construction Management Plan;
- Vehicle scheduling;
- Informing local residents, and BCBC of the commencement of construction works;
- Informing local residents and BCBC of any major or noise intensive works associated with the construction of the site to avoid / minimise disruption;
- Checking for scheduled road works, special events and incidents on [Roadworks and road closures](#) | [Traffic Wales](#) websites;
- Handling any complaints; and
- Acting as a point of contact for employees, contractors, BCBC, and the general public.

5.5 The Site Manager should be responsible for keeping neighbours within the site's vicinity informed of the construction progress. In this respect, the Site Manager should ensure that there is adequate liaison between the following key stakeholders throughout the construction period:

- The Contractor;
- The Developer;
- Site neighbours;
- BCBC; and
- Other local stakeholders such as emergency services or local transport providers.

5.6 Regular review meetings and telecommunication should be held between the Site Manager and local authority. It is envisaged that update meetings/ telecommunication should be held on an ad-hoc basis with an update provided to BCBC approximately every 6 weeks. Furthermore, the Site Manager should provide any monitoring data, delivery schedules, complaints, or breaches of agreements to BCBC if requested.

Subcontractors

5.7 Individual subcontractors involved in activities such as waste removal should be required to incorporate the relevant requirements from the CTMP into their activities as well as statutory

requirements. Any potential sub-contractors will be required to show how they will comply with the CTMP and how targets will be achieved and impacts minimised.

Good Neighbours Policy

- 5.8 The contractor will strive to be 'Good Neighbours', with systems employed to ensure local issues are understood. As part of this, the contractor could sign up to the Considerate Constructor Scheme (CCS).
- 5.9 Communication with local residents and businesses will begin prior to commencement of construction and will be provided with information on the planned construction including times and contact details by a senior manager based on site.
- 5.10 An induction specific to the development site will be provided to all personnel before construction commences. This will incorporate health and safety, on-site construction works and issues and sensitivities in the context of the surrounding community.

Dust and Dirt Control

- 5.11 The control of dust and dirt is a prime concern for all construction projects, particularly during periods of dry and windy weather. Best practice guidance 'Dust and Air Mitigation Measures' guidance provided by the Institute for Air Quality Management will be utilised to control dust.
- 5.12 Mud and debris on the road is regarded as one of the main environmental nuisances and safety problems arising from construction sites. All HGVs removing spoil from the site will be fully sheeted to minimise the risk of any mud over spilling onto the highway.
- 5.13 Further to this, all skips and storage area for cement, sand and fine aggregates will be sheeted / covered when not in use. All HGVs serving the site will be required to ensure that their wheels have been cleared of mud and debris, with wheel washing facilities provided on site. Similarly, provision will be made for cleaning of the road whenever required.
- 5.14 Pavements and carriageway fronting the access used for the construction will be swept daily, and the need for this will be continuously monitored throughout the day, in light of site operations and weather conditions. Goods, waste material and wheelbarrows will be secured and covered prior to being transported to and from the site to prevent the escape of debris and dust.
- 5.15 The contractor will ensure that the area around the site including the public highway is regularly and adequately swept to prevent any accumulation of dust and dirt.
- 5.16 The Site Manager will undertake daily inspections of the site and the roads surrounding the site to ensure that dust control measures are complied with. The Site Manager will record and respond to all dust and air quality pollutant emissions complaints and will maintain a log of any complaints and any action taken to resolve the issues.
- 5.17 The frequency of site inspections will increase when activities with a high potential to produce dust are being carried out as well as during periods of prolonged dry or windy conditions.

Fuel Consumption / Emissions

- 5.18 The contractor will strive to procure local contractors for the project, thereby minimising transport costs and impact on the local environment. The use of the booking system for deliveries will also help to ensure that the construction site is serviced in an efficient manner which will help to minimise the number of vehicle movements that would be generated.
- 5.19 A further measure that will be employed is encouraging all delivery vehicles to switch off engines as they are waiting at the site, thereby preventing unnecessarily idling vehicles.

Mud on Roads

- 5.20 A wheel cleaning procedure will be used in order to mitigate the amount of mud that could potentially be deposited on the highways by vehicles exiting the site. An area close to the site exit will be utilised for wheel washing prior to vehicles leaving site. A power washer will be used to wash off any mud from the vehicle's wheels, with excess mud/slurry being collected and disposed of.
- 5.21 The wheel wash station will remain on site until the development is complete. The proposed wheel cleaning procedure will consist of:
- Before leaving the site, vehicles will be inspected for any heavy deposit left on wheels. If present, these will be removed manually.
 - Following inspection, all wheels are to be washed down using a high-pressure jet wash until clear of all deposits.
 - Vehicles will be permitted to leave site following approval of the site manager / site representative that the above steps have been completed to a satisfactory standard.
- 5.22 The site will be kept as free of mud as is practical during ground working operations. Machine and wagon trafficking around the site will be kept to a minimum in order to reduce the effects of rain on 'broken' ground.
- 5.23 The construction site access into the site will be secured. The site will be secured whenever construction personnel are not present. Site contact details and out of hours emergency contact details will also be prominently displayed on site hoardings. Daily inspections will be undertaken in the vicinity of the site and on footways to check for potential hazards (including blocked footways and the build-up of rubbish).

Pedestrian Safety Measures

- 5.24 Pedestrian safety throughout the construction programme will be paramount. To ensure pedestrian safety during loading and unloading activity, a Banksman / traffic marshal should be present to minimise the likelihood of conflict with pedestrians. Warning signage will be provided locally to the site to ensure that vehicles, pedestrians, and cyclists are aware that construction activity is taking place. The site will be properly secured, helping to ensure that pedestrians and the general public cannot access the construction site unauthorised.

Additional Measures

- 5.25 Site contact details and out of hours emergency contact details will also be prominently displayed on site hoardings. Daily inspections should be undertaken in the vicinity of the site and on footways to check for potential hazards (including blocked footways and the build-up of rubbish).
- 5.26 Heavy goods vehicles associated with the construction of the development must:
- Have Side Guards fitted, unless it can be demonstrated to the reasonable satisfaction of the Employer, that the Lorry will not perform the function for which it was built, if Side Guards are fitted;
 - Have a close proximity warning system fitted comprising of a front mounted, rear facing CCTV camera (or Fresnel Lens where this provides a reliable alternative), a Close Proximity

Sensor, an in-cab warning device (visual or audible) and an external warning device to make the road user in close proximity aware of the driver's planned manoeuvre;

- Have a Class VI Mirror; and
- Bear prominent signage on the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.

5.27 The Site Manager should ensure that all contractors and fleet operators at the site sign with vehicles over 3.5 tonnes will be required to have the vulnerable road user safety kit fitted, as outlined in **Figure 4**

Figure 4: Safety Measures



5.28 The Site Manager should undertake checks of vehicles accessing the site. In the event that a vehicle arrives at the site and is not fitted with the above safety kit then the vehicle may be refused entry and a non-conformance report completed.

5.29 The Site Manager / Contractor should ensure that all contractors and fleet operators accessing the site have received the correct level of training and have had driver license checks.

Engagement with Local Residents and Sensitive Sites

5.30 The applicant, or applicant representative, will liaise with all neighbouring residents and businesses to ensure they are aware of the construction programme and the development proposals. Communication with local residents and businesses will begin prior to commencement of construction. The appointed Main Contractor will be required to follow best practice 'Considerate Constructor' guidelines and should appoint a Community Liaison Officer (CLO).

5.31 The CLO could initially host and attend community meetings. Following the initial meetings, the CLO will compile a list of stakeholders in the area. These stakeholders will be kept informed of progress and planned works on the site through the publication and distribution of progress newsletters which should include details of updates to the construction programme.

5.32 Adjacent residents and businesses will be provided with information on the planned construction including times and contact details by the CLO. They will be given the contact details of the developer and will be invited to raise any issues during the construction works. Additionally, the contractor's contact details will be provided on the outside of the site perimeter.

5.33 An induction specific to the development site will be provided to all personnel before construction commences. This will incorporate health and safety; on-site construction works and issues and sensitivities in the context of the surrounding community particularly in relation to local schools.

Construction Travel Plan

- 5.34 The contractor will be encouraged as part of the contract to introduce a Travel Plan for its staff to limit the number of private car trips to the site. The Travel Plan will form part of the final Construction Management Plan and will be agreed with BCBC prior to works beginning on site.
- 5.35 There is good accessibility between the site and public transport links which serve the area suggesting that some staff could be encouraged to travel to work sustainably.
- 5.36 The construction site will provide facilities to encourage sustainable travel such as drying area, storage facilities and secure bike parking. Where staff are required to travel to site by car, they will be encouraged to do so outside the peak traffic hours.

6 SUMMARY AND CONCLUSION

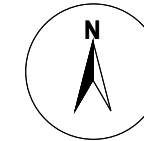
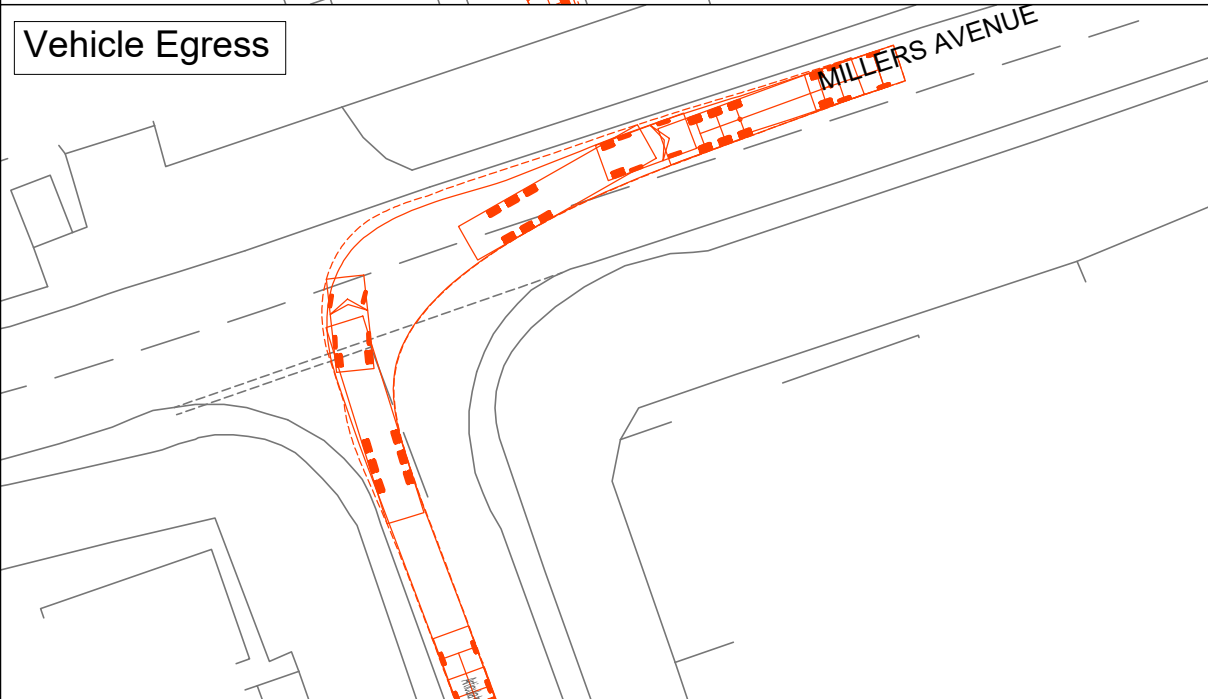
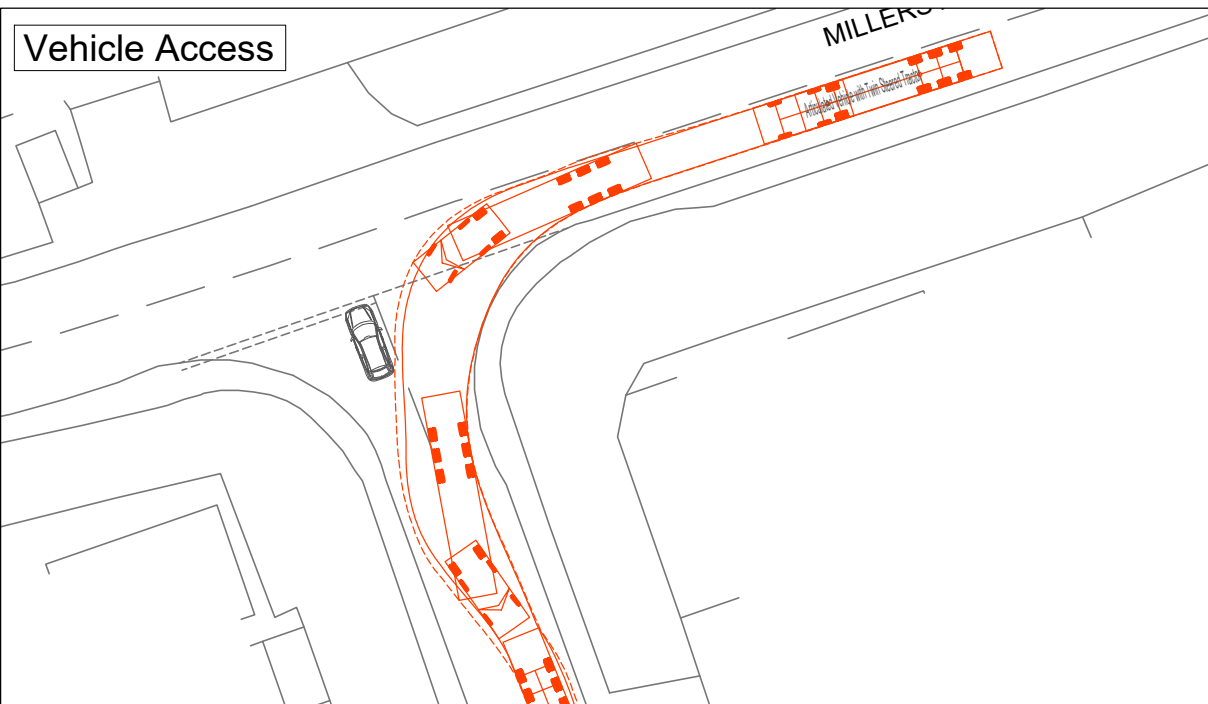
- 6.1 RPS has been commissioned by Marubeni (the applicant) to produce a Construction Traffic Management Plan (CTMP) to accompany a planning application for a new green hydrogen scheme at Brynmenyn in Bridgend.
- 6.2 The proposed Hydrogen Production Facility will comprise of electrolyzers that generate hydrogen from electrical power by splitting water, hydrogen storage, and a hydrogen refuelling station. The site is 1ha in size, with a large proportion of the site used for roads and paving to allow adequate access for refuelling of heavy vehicles
- 6.3 The 1ha site is located to the south of Brynmenyn, a small village 5km north of Bridgend. The site which is located approximately 2km north of J36 of the M4, is bound to the south by open agricultural land, the east by residential land, and the north and west by Brynmenyn Industrial Estate.
- 6.4 All construction traffic will access the site from Brynmenyn Industrial Estate, via either Squire Drive or Chilcott Avenue, internal industrial roads, which currently serves other industrial units within the Estate
- 6.5 The application is yet to be determined, on that basis, all exacting details on how construction will be progressed are as yet unknown. Notwithstanding the contractor (when instructed) will adhere to all the principles of construction set out within this plan.
- 6.6 Information regarding the timescales of construction will be communicated before construction commences. Any significant changes in the build program will also be communicated to Bridgend County Borough Council.
- 6.7 The vast majority of construction trips (especially HGVs) will arrive to the site from the south via the M4. Vehicles can access the motorway at J36 which routes directly onto the A4061, from the A4061, vehicles would use the A4065 to access the Industrial Estate, and then route directly through onto Chilcott Avenue or Squire Drive. Vehicles will then be met by a banksman before being directed into a dedicated unloading area, vehicles will then load / unload before exiting the site via the same routes. Use of the agreed vehicle routes will be communicated to all individuals associated with the works.
- 6.8 All construction vehicles accessing the site should book in advance with the Site Manager who will keep a record of the schedule and all deliveries. A Banksman will be on hand to oversee any manoeuvring that does need to occur as well as the loading/ unloading of deliveries. The Banksman will also ensure that, appropriate pedestrian and road safety information is relayed to local users and vehicle checks are made.
- 6.9 The construction process will be managed by the designated Site Manager. Any changes to the designated Site Manager will be notified to BCBC. Their responsibilities will include acting as a point of contact for the local authority, stakeholders and members of the public. Further to this they will also be responsible for delivery scheduling, construction route compliance and managing other contractors employed on-site.

Conclusion

- 6.10 Overall it is considered that the measures and control processes outlined in this Construction Traffic Management Plan are appropriate to overcome the identified constraints associated with the site

Appendices

Appendix 1 – Vehicle Swept Path (Squire Drive)

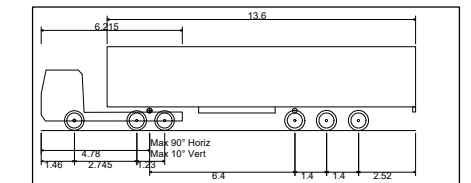


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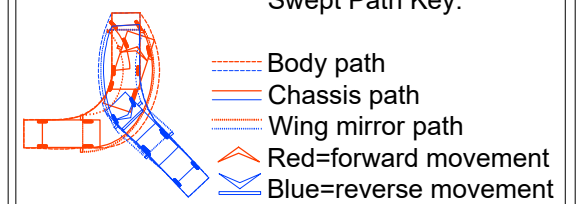
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Vehicle Profile



Articulated Vehicle with Twin Steered Tractor	16.500m
Overall Length	2.550m
Overall Width	3.691m
Overall Body Height	0.426m
Min Body Ground Clearance	2.500m
Max Track Width	6.00s
Lock to lock time	6.987m

Swept Path Key:



Rev	Description	By	CB	Date



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Client Client

Project HyBont Marubeni

Title Site 1 Access
 16.5m Articulated Vehicle
 Swept Path Analysis

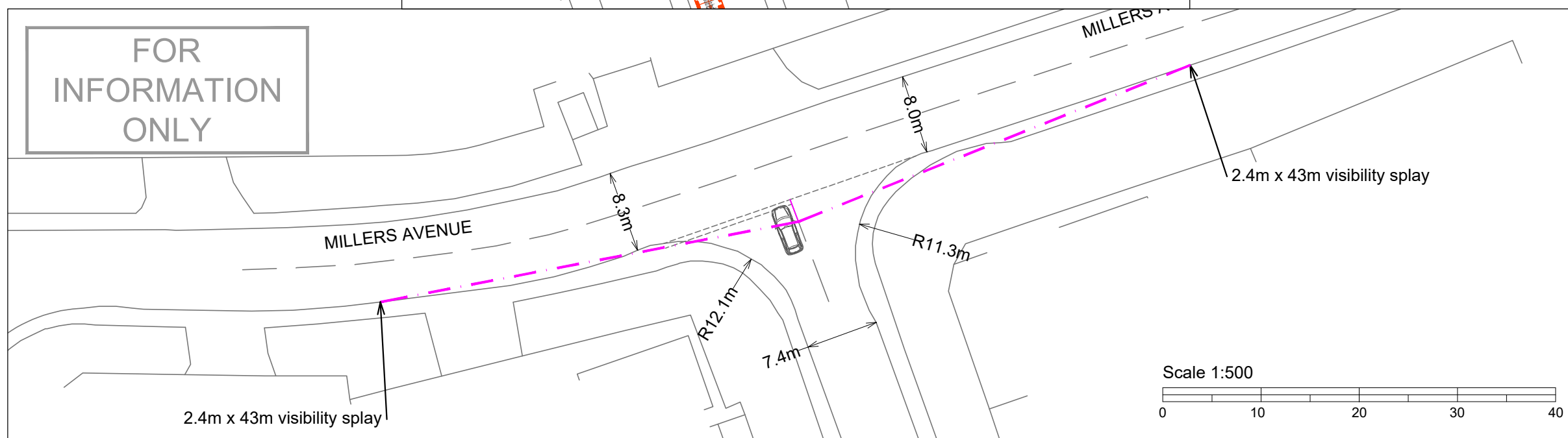
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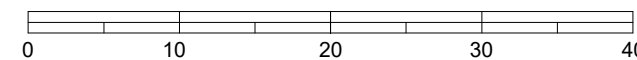
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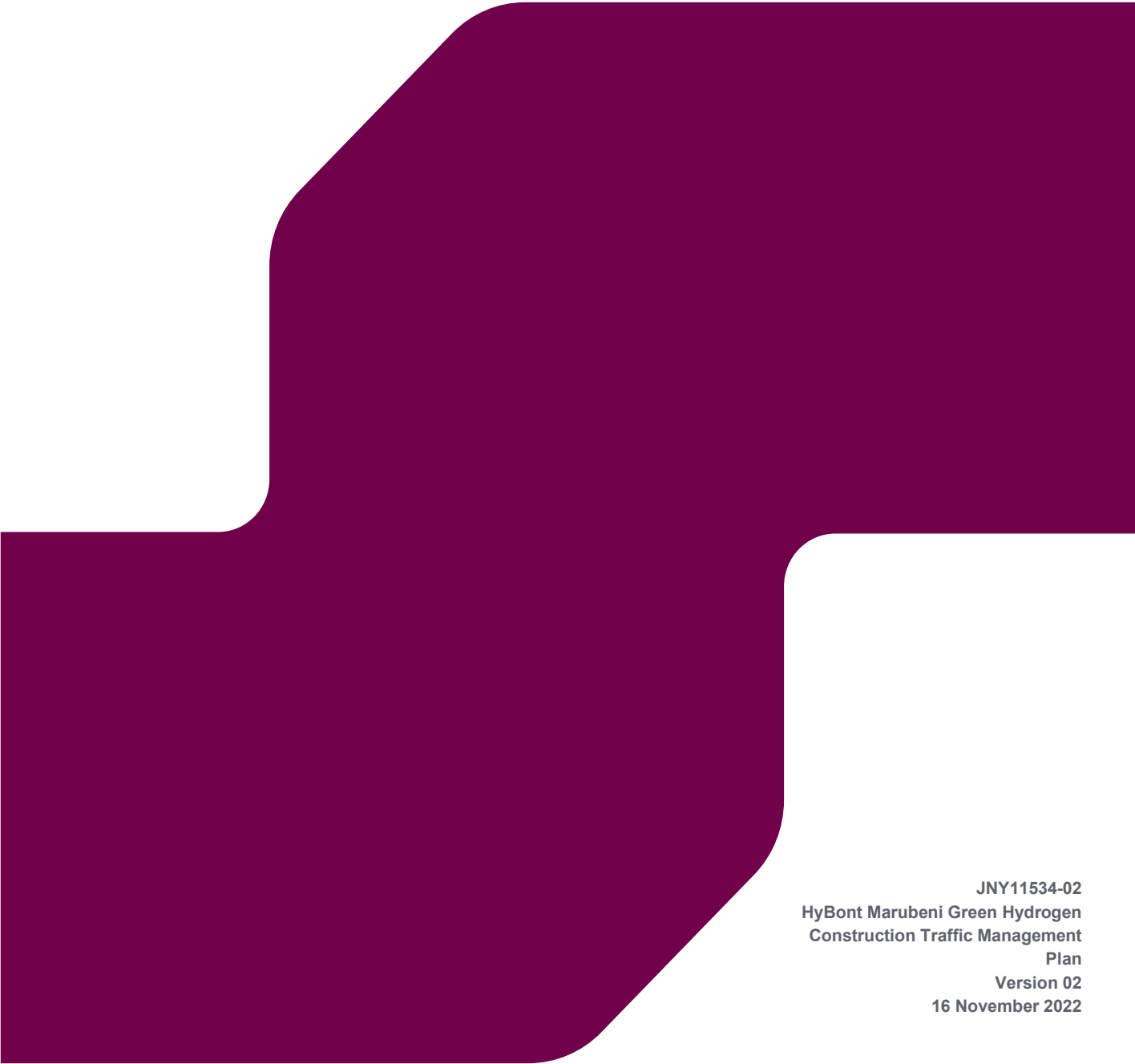


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HYBONT MARUBENI GREEN HYDROGEN

Construction Traffic Management Plan



JNY11534-02
HyBont Marubeni Green Hydrogen
Construction Traffic Management
Plan
Version 02
16 November 2022

Document Status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
02	Planning Application	Charlotte Routledge	Emma O'Neill	Emma O'Neill	16 November 2022

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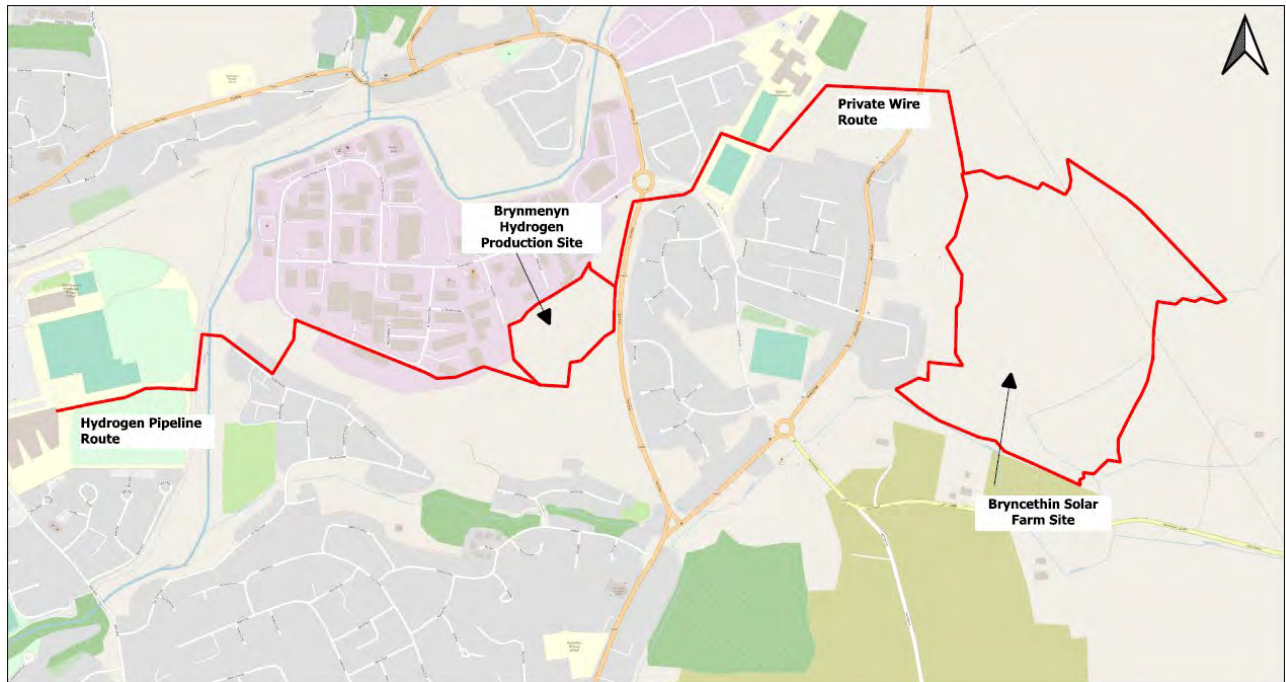
Appendices

APPENDIX A –ACCESS DESIGN AND SWEEP PATH

1 INTRODUCTION

- 1.1 RPS have been commissioned by Marubeni Europower Ltd (the applicant) to produce a Construction Traffic Management Plan (CTMP) to accompany a planning application for a new green hydrogen scheme at Bride's Minor, Bryncethin in Bridgend.
- 1.2 The 8ha site is located to the east of Bryncethin, a small village, 5km north of Bridgend. The site which is located approximately 2km north of J36 of the M4, is bound to the north, south and east by open agricultural land, the Bridgend County Borough Council (BCBC) Bryncethin Depot and Trade Centre forms the sites western boundary.
- 1.3 The proposed Solar Farm includes an array of ground-mounted solar panels and ancillary infrastructure including inverters (likely to be mounted behind the panels), transformer units, electrical infrastructure, switch gear and substation, and temporary construction compounds. It is anticipated that the useful life of the proposed development would be 25 -30 years.
- 1.4 It is predicted that the Solar Farm would have a potential annual yield of approximately 5,700 MWh and will be connected electrically via a private wire to a hydrogen production facility electrolyser located at the Brynmenyn Industrial Estate. (Further detail on this is included within the full application and accompanying Transport Statement RPS Report JNY11534 -01).
- 1.5 While it is apparent that both the Solar Farm and Hydrogen Production Facility are intrinsically linked operationally, they are located on different sites, approximately 1km apart. Therefore separate CTMPs have been produced which assess the impacts of both the Solar Farm and Green Hydrogen facility on a standalone basis during the construction phases.
- 1.6 This CTMP relates solely to the Solar Farm, where it is considered that the construction period will have more significant impact on the local network than during the operational phases, where the amount of traffic generated is likely to be minimal.
- 1.7 Figure 1 below shows the site location of the proposed Solar Farm in relation to the proposed Green Hydrogen facility.

Figure 1: Site Location



- 1.8 Access to the Solar Farm will be promoted via the BCBC Bryncethin Depot and Trade Centre which is accessed from the A4061 Blackmill Road.

Report Purpose

- 1.9 This CTMP has been prepared to ensure traffic management practices and necessary arrangements are in place throughout the construction period. All proposed Heavy Goods Vehicles (HGV) haulage routes presented in this plan are subject to approval by BCBC.
- 1.10 This CTMP identifies measures that aim to minimise the effect of construction traffic on the surrounding road network with respect to potential temporary changes to vehicular traffic and pedestrian movements.

Report Structure

- 1.11 This CTMP is structured as follows
- **Section 2: Baseline Conditions** - Describes the existing site and the surrounding areas transport and highway characteristics;
 - **Section 3: Proposed Development and Access** - Provides an overview of the proposed development, the construction scheme overview, and the indicative construction programme;
 - **Section 4: Construction Traffic Trip Generation** - This section of the report sets out the estimated volume and type of vehicles that will be generated throughout the construction phase of the development
 - **Section 5: Construction Mitigation Measures** – Sets out the mitigation measures that will be adopted by employees during construction to minimise the impact of construction on local residents, businesses, and the local highway network; and

-
- **Section 6: Summary and Conclusion** – Summarises the key points in this CTMP and provides a final conclusion.

2 BASELINE CONDITIONS

Context

- 2.1 This section provides information on the existing site and the surrounding area with a focus on local highway infrastructure and accessibility.

Site Location

- 2.2 The 8ha site is located to the east of Bryncethin, a small village, 5km north of Bridgend. The site which is located approximately 2km north of J36 of the M4, is bound to the north, south and east by open agricultural land, the BCBC Bryncethin Depot and Trade Centre forms the sites western boundary.
- 2.3 Access to the Solar Farm will be promoted via the BCBC Bryncethin Depot and Trade Centre which is currently accessed from the A4061 Blackmill Road.

Pedestrian and Cycle Accessibility

- 2.4 The proposed development site is located within Bryncethin and can be easily accessed by sustainable means. The development site benefits from existing pedestrian infrastructure within its immediate vicinity providing continuous links to local residential areas, convenience stores and bus stops.
- 2.5 On the A4061 Blackmill Road approaching the Ogmere Terrace / A4061 Blackmill Road / Heol Spencer / A4061 roundabout, there is a blue shared cycleways / footways sign on the eastern side of the carriageway. This is accompanied by wide pavements, approximately 3.5m in width allowing a safe cycle route separated from the traffic.

Public Transport

- 2.6 There is an existing bus stop also located along Blackmill Road, approximately 100m south of the proposed Solar Farm. Three buses stop along Blackmill Road, providing a combined peak frequency of four buses per hour to Bridgend, Nantymoel, Porthcawl and Aberdare.
- 2.7 The nearest train station is Sarn railway station, which is located approximately 2.5km from the access to the Solar Farm, equating to a 28-minute walk or 8-minute cycle. Travel to Maesteg, Cheltenham Spa and Cardiff Central can be accessed by Sarn railway station.

Local Road Network Infrastructure

A4061 Blackmill Road

- 2.8 The Solar Farm will be located to the immediate east of the A4061 Blackmill Road with access promoted through the existing BCBC Bryncethin Depot. The new Solar Farm will be accessed from Blackmill Road, which is effectively the village high street with basic amenities, such as corner shop and small convenience store. Blackmill Road runs on a north to south alignment past the proposed Solar Farm development, has a carriage width of approximately 6.5m and footway along the western side of its carriageway.

Personal Injury Accident History

- 2.9 Collision data in the vicinity of the proposed development site has been obtained by RPS from CrashMap and analysed for the latest complete five-year period (2017 - 2021).

-
- 2.10 The collision history has been reviewed along the Blackmill Road, from its junction with Heol Spencer in the south to Cefn Carfan Road in the north.
- 2.11 The data shows that there were six slight accidents recorded during this period, this equates to just over one accident each year.
- 2.12 There were two accidents recorded at the Blackmill Road / Ceol Soencer / Ogmored Terrace Roundabout, one in 2018 and one in 2017. One slight accident occurred in 2018 at the Blackmill Road / Dennis Place junction. There were two slight accidents recorded along the Blackmill Road, one in 2020 close to the bus stop, involving two vehicles and resulting in one slight casualty, The other was recorded outside 34 Blackmill Road, involving one vehicle and resulting in one casualty. The final collision occurred at the Cefn Carfan Road / Blackmill Road junction, involving two vehicles and resulting in five casualties.
- 2.13 The data shows that there is no inherent trend on accident locations, and none occurred in the vicinity of the proposed Solar Farm access. On this basis, it is considered that the adjoining highway network currently operates with no significant highway safety issues which could be exacerbated by the development.

3 PROPOSED DEVELOPMENT AND ACCESS ARRANGEMENTS

Development Proposals

- 3.1 The proposed Solar Farm includes an array of ground-mounted solar panels and ancillary infrastructure including inverters (likely to be mounted behind the panels), transformer units, electrical infrastructure, switch gear and substation, and temporary construction compounds. It is anticipated that the useful life of the proposed development would be 25 -30 years.
- 3.2 It is predicted that the Solar Farm would have a potential annual yield of approximately 5,700 MWh and will be connected electrically via a private wire to the proposed hydrogen production facility electrolyser located at the Brynmenyn Industrial Estate. (Further detail on this is included within the full application and overarching Transport Statement RPS Report JNY11534 -01).

Construction Access

- 3.3 All construction traffic will access the site via the existing BCBC Bryncethin Depot and Trade Centre which is accessed from the A4061 Blackmill Road. Access into the development is fairly constrained, therefore during the construction phases, all vehicles will route through the BCBC Depot car park, accessing the Solar Farm compound via a secure gate. Vehicles will egress the site in the same manner.
- 3.4 RPS Drawing Number JNY11534 – 04 included as Appendix A shows a 16.5m articulated HGV accessing and egressing the site without issue. This vehicle is likely to be the largest vehicle on site during the construction period.
- 3.5 Internal access tracks will be required during the construction phase. The tracks will be constructed using permeable aggregate. It is envisaged that the site will not generate a significant number of HGV movements therefore, to reduce unnecessary land requirements, articulated and rigid HGVs will utilise the width of the access tracks and management measures will be implemented. Further detail on this will be provided when a contractor has been appointed and internal access tracks established.
- 3.6 A construction compound will provide an area for loading and unloading of vehicles and will provide a turning area to allow vehicles to exit the site in forward gear. All delivery drivers and construction workers will be advised of the construction routes prior to making their delivery or commencing work.

Access Visibility

- 3.7 The existing access design is shown on Drawing JNY11534 -04 included as **Appendix A**. This shows visibility splays of 2.4m x 43m can be achieved in both a northbound and southbound direction.
- 3.8 It is also proposed that temporary signage be located in the vicinity of the site access during the construction period to warn drivers of the site entrance, additional signage on Blackmill Road will advise motorists of HGVs turning through the site access,
- 3.9 Examples of temporary signage is shown below in **Figure 2**.

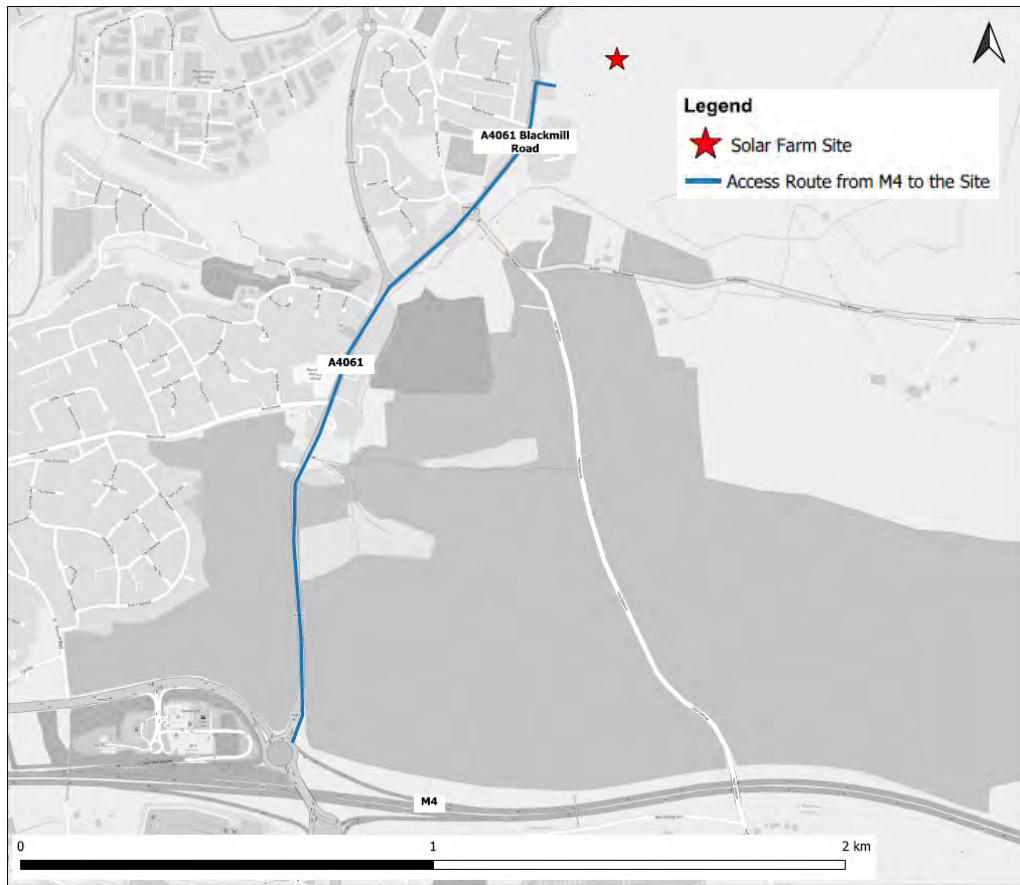
Figure 2: Temporary Signage at Site Access and Public Highway



Construction Routing

- 3.10 The details of the proposed construction routing will be agreed with Bridgend County Borough Council prior to commencement of construction works. The site is fairly constrained with regards to routing options, with all traffic associated with the Solar Farm having to access and egress via the A4061 Blackmill Road.
- 3.11 It is likely that the vast majority of construction trips (especially HGVs) will arrive to the site from the south via the M4. Vehicles can access the motorway at J36 which routes directly onto the A4061. The motorway is part of the strategic road network and therefore suitable for larger vehicles. All construction traffic routeing from the south will utilise the below access route, shown graphically in **Figure 3**.

Figure 3: Construction Access Route (M4 J36 to Site Access)



Route Management

- 3.12 It is considered appropriate to avoid routes where vulnerable road users and construction vehicles could conflict. Likewise, it is considered appropriate to avoid routes where scheduled road works and construction vehicles could conflict.
- 3.13 All construction workers and suppliers will be advised to use the PIEFreight Journey Planner www.freightjourneyplanner.com which is designed to help freight operators plan their route for a specified size of vehicle and identify where to stop legally.
- 3.14 The Site Manager or Banksman will keep up to date on scheduled roadworks, events, and incidents in the area. Any major roadworks or events on the preferred route that result in the deviation of the preferred route will be agreed with officers at Bridgend County Borough Council in advance where feasible.

Route Compliance

- 3.15 Use of the agreed vehicle route for HGV's should be accepted in the main, by the contractor and should be communicated to all individuals associated with the works. It is envisaged that this information will be communicated in the form of a leaflet or email and will include information with regard to times of operation, delivery routes, the call up procedure and delivery slot information.
- 3.16 Any repeated non-compliance of the proposed construction route could result in disciplinary procedures or the termination of the workers / supplier's contract.

Control of Deliveries

- 3.17 All deliveries should be controlled by a delivery booking system which will distribute deliveries across the week and across working hours. Deliveries should not be accepted outside of their designated timeslot, and such deliveries will be asked to re-book, unless there is capacity to accommodate within the specified loading area.
- 3.18 On a weekly basis the Site Manager should evaluate details of the daily profile of deliveries proposed for the upcoming week. Hauliers will be required to contact the site on a daily basis and indicate their delivery schedule for the following day. The proposed deliveries will be checked against the weekly delivery schedule. This will be overseen by the Site Manager to ensure that HGV deliveries are scheduled, ensuring that there is always space at the site to accommodate the necessary plant and deliveries.
- 3.19 When planning deliveries, the following will be considered:
- All deliveries to the site should be restricted to the timings set out within this document;
 - Deliveries will be permitted only in the specified loading area on site; and
 - Material storage areas will be prepared on-site in advance of deliveries to minimise loading and unloading times.
- 3.20 It is anticipated that all deliveries to the site will be organised to take place between the hours of 08:00 - 18:00, Monday to Friday and 08:00 - 14:00 Saturday (subject to confirmation / approval from BCBC Where feasible the contractor will seek to minimise deliveries during the weekday peak hours (08:00- 09:00 and 17:00-18:00).
- 3.21 Sufficient time will be given between deliveries to allow for any delays as a result of the delivery vehicle getting stuck in traffic or the loading/ unloading taking longer than expected and to avoid any vehicles waiting on the surrounding highway network.
- 3.22 The following measures will be implemented to reduce the number of vehicle movements to the site:
- 'Backloading' vehicle operation, where site delivery vehicles are utilised to remove waste materials from the site as part of the same trip, where possible; and
 - Practical re-use of any aggregates on site and recycling of material, where possible.
- 3.23 With proper planning and an efficient delivery schedule, unnecessary vehicle trips to the site will be kept to a minimum.

Construction Programme and Phasing.

- 3.24 The proposed construction is scheduled to last up to 6 months (24 weeks). The construction can broadly be split into the following phases:
- **Site Setup** – including construction compounds, site tracks, perimeter fencing, site welfare facilities;
 - **Solar Arrays** – including setting out positions, installing piles, constructing framework, putting modules onto framework;
 - **Ancillary Buildings** – aggregate subbase construction, inverter, battery and switchgear unit placement;
 - **Cabling and Ducting** – including installing AC cables, DC mains, earthing system and ducts;
 - **Commissioning** – including connecting LV DC and AC and overall commissioning; and

- **Construction Completion** – including removal of temporary facilities and grounds restoration and planting.

3.25 It should be noted however that the construction programme may be subject to change prior to work commencing on site.

Enabling Works

Site Preparation

- 3.26 Site setup is likely to occur for a period of one to two weeks. Site setup is important to mitigating any impacts on the surrounding highway network as well as neighbouring residents and businesses.
- 3.27 The site will remain presentable and tidy at all times. Hoarding or Heras fencing will be erected along perimeters of the site. The fencing will comply with the Health and Safety Authority requirements; and will be well maintained throughout the works to ensure public safety. Further details on the type of fencing proposed, will be provided when a contractor is appointed.
- 3.28 Building inspections to identify hazardous material/asbestos will be undertaken. The purpose of the hoarding is to provide additional security, both to prevent unauthorised personnel from accessing the site as well as providing suitable segregation between pedestrians and the work being undertaken. Lockable gates will be at the entrance to the vehicular access to prevent unauthorised vehicles entering the site.

Site Office

- 3.29 Site accommodation and welfare facilities will be located on site in portable cabins erected on the site on concrete pads.

Potential Impact on Utilities

- 3.30 Utility service diversions and temporary service connections should be carried out during the initial stages of the enabling works. The exact location of these services will not be known until a survey has been carried out post planning.
- 3.31 Prior to works commencing, any existing utility services should be identified and disconnected across the site. Safe access routes would also be identified for vehicles and pedestrians across the site.

Delivery of Plant and Materials

- 3.32 All materials and plant associated with the development process will be stored within the footprint of the site. A loading and unloading area for plant and materials will be provided within the site. It is anticipated that the majority of deliveries will be made via articulated and rigid HGVs.
- 3.33 The following non-road mobile machinery is likely to be used on site:
- Breaker
 - Dumper trucks
 - Tower / Mobile Cranes
 - Drills / Cutters
 - Fork Lift Truck

4 CONSTRUCTION TRAFFIC GENERATION

- 4.1 This section of the report sets out the estimated volume and type of vehicles that will be generated throughout the construction phase of the development.
- 4.2 It should be noted that the construction programme and corresponding construction traffic strategy may be subject to change following the appointment of a construction contractor and prior to work commencing on site. Any substantial changes in the build program and / or number of vehicular movements will be communicated to Bridgend County Borough Council (BCBC) in advance.

Construction Vehicles

- 4.3 The trip generation potential of the construction phase of development has been informed through discussion with the Applicant on the anticipated construction programme and is based on experience of delivering similar developments in the United Kingdom.
- 4.4 The construction period is anticipated to last for up to six months. **Table 1** below provides an overview of the types of construction vehicles expected on site.

Table 1: Construction HGVs

Item	Vehicle Type
Solar Panels	Rigid HGV
Mounting System	Rigid HGV
Prefabricated Buildings	Articulated / Rigid HGV
Unloading Buildings	80 tonne Crane
Cables	Rigid HGV
Fencing	Rigid HGV
Small Deliveries	Rigid HGV
Plant Delivery	10t-20t HGV (normally Rigid HGV)

- 4.5 The majority of materials and plant delivery is to be transported to the site via articulated and rigid HGVs.
- 4.6 The construction period is estimated to last for up to 6 months (24 weeks), with deliveries fluctuating within this period. It is envisaged that the majority of movements would be Monday to Friday with only a limited number of movements on a Saturday. Deliveries will vary in amount per day during the construction period with an average of six deliveries (six inbound plus six outbound movements) per day over the 24-week period.

Dwell Times

- 4.7 Delivery vehicles are likely to attend the Site for approximately one hour per vehicle. There will be sufficient space within the curtilage of the Site compounds to ensure that no vehicles would have to wait on the surrounding highway network.
- 4.8 Further measures that will be employed to control the number and frequency of vehicles arriving at the Site are detailed further below.

Construction Staff

- 4.9 During construction, there is a balance to be made between the intensity of on-site activity and duration of activity. However, the Applicant estimates that there may be up to a maximum of 40 staff on site per day. The Applicant's experience of similar developments elsewhere suggests that car sharing is prevalent within the construction industry and can reduce the number of cars on site to 20. This will be achieved through management of staff travel patterns and actively encouraging car sharing.
- 4.10 All staff are anticipated to arrive at the construction Site during the 30-minute period preceding the start of the operating day (i.e. 07:30 to 08:00 Monday to Saturday) and depart during the 30 minute period that follows the end of the operating day (i.e. 18:00 to 18:30 Monday to Friday and 13:00 to 13:30 on Saturdays). Staff trips are likely to travel to / from different origins / destinations and hence spread their movement across the highway network.
- 4.11 Provision will be made to enable all vehicles to park within the construction compound to avoid obstruction to the operation of the public highway and this shall be strictly enforced.

Traffic Impact

- 4.12 2021 Annual Average Daily Flow (AADF) data for the A4061 has been obtained from DfT (<https://roadtraffic.dft.gov.uk/>). The count was undertaken to the immediate south of the A4061/ Heol Spencer / Ogmores Terrace junction, and therefore is well located to provide detail on traffic impact during construction.
- 4.13 The 2021 AADF data for the A4061 is summarised below in Table 2.

Table 2 – 2021 AADF for the A4061

Location	Count ID	Car / LGV's	HGV's	Total
A4061 (Combined)	78428	11,539	298	11,837

- 4.14 Estimated trip generation during construction of the proposed development calculates that average two way movements would equate to 12 HGVs and 40 two way car movements. All construction traffic has been assigned in a southbound direction towards to the Motorway. The results are summarised below in Table 3.

Table 3 – Construction Traffic Flows

Location	Count ID	Car / LGV's	HGV's	Total
A4061	78428	40 (0.3%)	12 (4%)	32 (0.3%)

- 4.15 The above changes in traffic flows along the A4061 represent a negligible change in traffic flows. These predicted increases are well below the 'Guidelines for the Environmental Assessment of Road Traffic' which suggest two broad rules that can be used as a screening process to identify the appropriate extent of the assessment area. These are:
- **Rule 1** – Include highway links where traffic flows would increase by more than 30% (or the number of HGVs would increase by more than 30%); and
 - **Rule 2** – Include any other specifically sensitive areas where traffic flows would increase by 10% or more." Therefore, the construction traffic as a result of the development will not create a significant impact on the local highway network.

Maintenance

- 4.16 Once operational, the proposed Development will not require significant maintenance, except for occasional visits made by 4x4 vehicles or panel van vehicles.
- 4.17 The impact of maintenance vehicles is negligible given the infrequent nature of maintenance visits.

Decommissioning

- 4.18 The proposed use is temporary and reversible, and the land will be restored to agriculture at the end of the Farm's life which is estimated to be between 25 and 30 years. After the expected life of the project, the Solar Farm can be dismantled, and the components recycled. The site can be reclaimed and returned to its original state.
- 4.19 The decommissioning of the proposed Development will be expected to generate a similar (or fewer) number of trips as the construction phase, since there is not the same requirement to transport the material separately. The traffic associated with the decommissioning phase will be discussed with the Highway Authority prior to commencement, and appropriate measures will be agreed as necessary at that time.
- 4.20 The decommissioning phase is expected to take less time than the construction and will consist of the exact opposite construction sequence: starting with disconnecting the plant from the grid, removing the ancillary units, opening of trenches to remove DC and / or AC cables, disconnecting all solar modules, removing the modules and dismantling the supporting structure.

5 CONSTRUCTION TRAFFIC MITIGATION

General

5.1 This section of the Construction Management Plan sets out the mitigation measures that could be employed during construction to minimise the impact of construction traffic on the local residents, businesses, and the local highway network.

Construction Manager

5.2 There will be a designated Site Manager to deal with any complaints and enquiries from the general public and any other interested parties. Any changes to the designated Site Manager will be notified to BCBC.

5.3 The details of the Site Manager (including a 24-hour phone number) will be provided to BCBC prior to activities beginning on-site. The Site Manager's details will also be advertised at the site entrance.

5.4 The Site Manager for the project will undertake the transport co-ordination role for the site. In this respect, their main responsibilities should include:

- Managing the implementation of the Construction Management Plan;
- Vehicle scheduling;
- Informing local residents, and BCBC of the commencement of construction works;
- Informing local residents and BCBC of any major or noise intensive works associated with the construction of the site to avoid / minimise disruption;
- Checking for scheduled road works, special events and incidents on [Roadworks and road closures](#) | [Traffic Wales](#) websites;
- Handling any complaints; and
- Acting as a point of contact for employees, contractors, BCBC, and the general public.

5.5 The Site Manager should be responsible for keeping neighbours within the site's vicinity informed of the construction progress. In this respect, the Site Manager should ensure that there is adequate liaison between the following key stakeholders throughout the construction period:

- The Contractor;
- The Developer;
- Site neighbours;
- BCBC; and
- Other local stakeholders such as emergency services or local transport providers.

5.6 Regular review meetings and telecommunication should be held between the Site Manager and local authority. It is envisaged that update meetings/ telecommunication should be held on an ad-hoc basis with an update provided to BCBC approximately every 6 weeks. Furthermore, the Site Manager should provide any monitoring data, delivery schedules, complaints, or breaches of agreements to BCBC if requested.

Subcontractors

5.7 Individual subcontractors involved in activities such as waste removal should be required to incorporate the relevant requirements from the CTMP into their activities as well as statutory

requirements. Any potential sub-contractors will be required to show how they will comply with the CTMP and how targets will be achieved and impacts minimised.

Good Neighbours Policy

- 5.8 The contractor will strive to be 'Good Neighbours', with systems employed to ensure local issues are understood. As part of this, the contractor could sign up to the Considerate Constructor Scheme (CCS).
- 5.9 Communication with local residents and businesses will begin prior to commencement of construction and will be provided with information on the planned construction including times and contact details by a senior manager based on site.
- 5.10 An induction specific to the development site will be provided to all personnel before construction commences. This will incorporate health and safety, on-site construction works and issues and sensitivities in the context of the surrounding community.

Dust and Dirt Control

- 5.11 The control of dust and dirt is a prime concern for all construction projects, particularly during periods of dry and windy weather. Best practice guidance 'Dust and Air Mitigation Measures' guidance provided by the Institute for Air Quality Management will be utilised to control dust.
- 5.12 Mud and debris on the road is regarded as one of the main environmental nuisances and safety problems arising from construction sites. All HGVs removing spoil from the site will be fully sheeted to minimise the risk of any mud over spilling onto the highway.
- 5.13 Further to this, all skips and storage area for cement, sand and fine aggregates will be sheeted / covered when not in use. All HGVs serving the site will be required to ensure that their wheels have been cleared of mud and debris, with wheel washing facilities provided on site. Similarly, provision will be made for cleaning of the road whenever required.
- 5.14 Pavements and carriageway fronting the access used for the construction will be swept daily, and the need for this will be continuously monitored throughout the day, in light of site operations and weather conditions. Goods, waste material and wheelbarrows will be secured and covered prior to being transported to and from the site to prevent the escape of debris and dust.
- 5.15 The contractor will ensure that the area around the site including the public highway is regularly and adequately swept to prevent any accumulation of dust and dirt.
- 5.16 The Site Manager will undertake daily inspections of the site and the roads surrounding the site to ensure that dust control measures are complied with. The Site Manager will record and respond to all dust and air quality pollutant emissions complaints and will maintain a log of any complaints and any action taken to resolve the issues.
- 5.17 The frequency of site inspections will increase when activities with a high potential to produce dust are being carried out as well as during periods of prolonged dry or windy conditions.

Fuel Consumption / Emissions

- 5.18 The contractor will strive to procure local contractors for the project, thereby minimising transport costs and impact on the local environment. The use of the booking system for deliveries will also help to ensure that the construction site is serviced in an efficient manner which will help to minimise the number of vehicle movements that would be generated.
- 5.19 A further measure that will be employed is encouraging all delivery vehicles to switch off engines as they are waiting at the site, thereby preventing unnecessarily idling vehicles.

Mud on Roads

- 5.20 A wheel cleaning procedure will be used in order to mitigate the amount of mud that could potentially be deposited on the highways by vehicles exiting the site. An area close to the site exit will be utilised for wheel washing prior to vehicles leaving site. A power washer will be used to wash off any mud from the vehicle's wheels, with excess mud/slurry being collected and disposed of.
- 5.21 The wheel wash station will remain on site until the development is complete. The proposed wheel cleaning procedure will consist of:
- Before leaving the site, vehicles will be inspected for any heavy deposit left on wheels. If present, these will be removed manually.
 - Following inspection, all wheels are to be washed down using a high-pressure jet wash until clear of all deposits.
 - Vehicles will be permitted to leave site following approval of the site manager / site representative that the above steps have been completed to a satisfactory standard.
- 5.22 The site will be kept as free of mud as is practical during ground working operations. Machine and wagon trafficking around the site will be kept to a minimum in order to reduce the effects of rain on 'broken' ground.
- 5.23 The construction site access into the site will be secured. The site will be secured whenever construction personnel are not present. Site contact details and out of hours emergency contact details will also be prominently displayed on site hoardings. Daily inspections will be undertaken in the vicinity of the site and on footways to check for potential hazards (including blocked footways and the build-up of rubbish).

Pedestrian Safety Measures

- 5.24 Pedestrian safety throughout the construction programme will be paramount. To ensure pedestrian safety during loading and unloading activity, a Banksman / traffic marshal should be present to minimise the likelihood of conflict with pedestrians. Warning signage will be provided locally to the site to ensure that vehicles, pedestrians, and cyclists are aware that construction activity is taking place. The site will be properly secured, helping to ensure that pedestrians and the general public cannot access the construction site unauthorised.

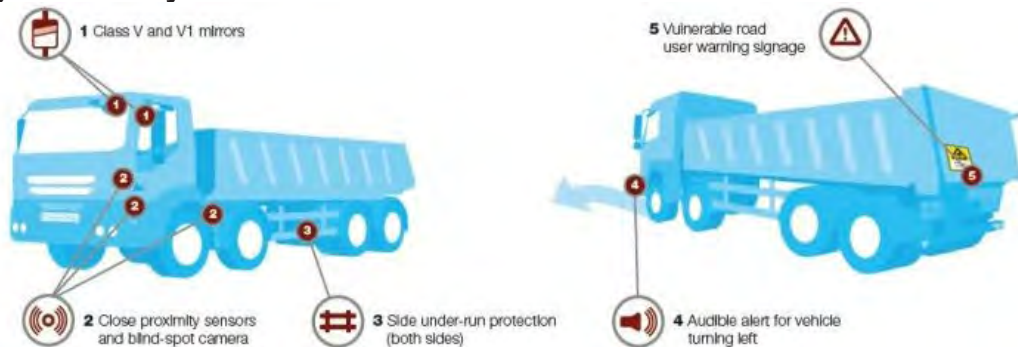
Additional Measures

- 5.25 Site contact details and out of hours emergency contact details will also be prominently displayed on site hoardings. Daily inspections should be undertaken in the vicinity of the site and on footways to check for potential hazards (including blocked footways and the build-up of rubbish).
- 5.26 Heavy goods vehicles associated with the construction of the development must:
- Have Side Guards fitted, unless it can be demonstrated to the reasonable satisfaction of the Employer, that the Lorry will not perform the function for which it was built, if Side Guards are fitted;
 - Have a close proximity warning system fitted comprising of a front mounted, rear facing CCTV camera (or Fresnel Lens where this provides a reliable alternative), a Close Proximity Sensor, an in-cab warning device (visual or audible) and an external warning device to make the road user in close proximity aware of the driver's planned manoeuvre;
 - Have a Class VI Mirror; and

- Bear prominent signage on the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.

5.27 The Site Manager should ensure that all contractors and fleet operators at the site sign with vehicles over 3.5 tonnes will be required to have the vulnerable road user safety kit fitted, as outlined in **Figure 4**.

Figure 4: Safety Measures



5.28 The Site Manager should undertake checks of vehicles accessing the site. In the event that a vehicle arrives at the site and is not fitted with the above safety kit then the vehicle may be refused entry and a non-conformance report completed.

5.29 The Site Manager / Contractor should ensure that all contractors and fleet operators accessing the site have received the correct level of training and have had driver license checks.

Engagement with Local Residents and Sensitive Sites

5.30 The applicant, or applicant representative, will liaise with all neighbouring residents and businesses to ensure they are aware of the construction programme and the development proposals. Communication with local residents and businesses will begin prior to commencement of construction. The appointed Main Contractor will be required to follow best practice 'Considerate Constructor' guidelines and should appoint a Community Liaison Officer (CLO).

5.31 The CLO could initially host and attend community meetings. Following the initial meetings, the CLO will compile a list of stakeholders in the area. These stakeholders will be kept informed of progress and planned works on the site through the publication and distribution of progress newsletters which should include details of updates to the construction programme.

5.32 Adjacent residents and businesses will be provided with information on the planned construction including times and contact details by the CLO. They will be given the contact details of the developer and will be invited to raise any issues during the construction works. Additionally, the contractor's contact details will be provided on the outside of the site perimeter.

5.33 An induction specific to the development site will be provided to all personnel before construction commences. This will incorporate health and safety; on-site construction works and issues and sensitivities in the context of the surrounding community particularly in relation to local schools.

Construction Travel Plan

5.34 The contractor will be encouraged as part of the contract to introduce a Travel Plan for its staff to limit the number of private car trips to the site. The Travel Plan will form part of the final Construction Management Plan and will be agreed with BCBC prior to works beginning on site.

5.35 There is good accessibility between the site and public transport links which serve the area suggesting that some staff could be encouraged to travel to work sustainably.

- 5.36 The construction site will provide facilities to encourage sustainable travel such as drying area, storage facilities and secure bike parking. Where staff are required to travel to site by car, they will be encouraged to do so outside the peak traffic hours.

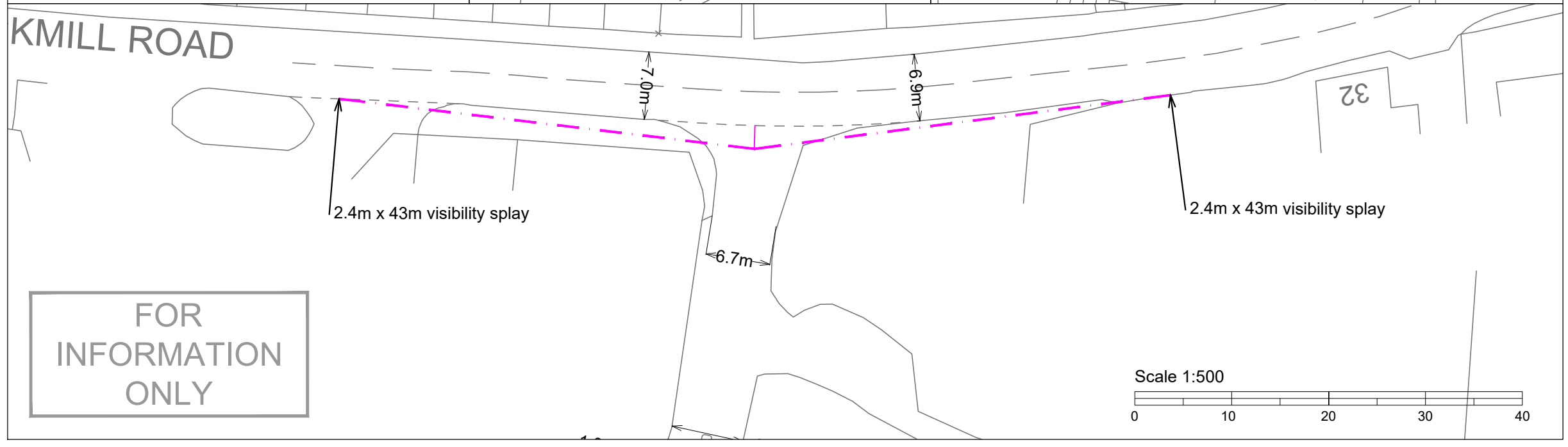
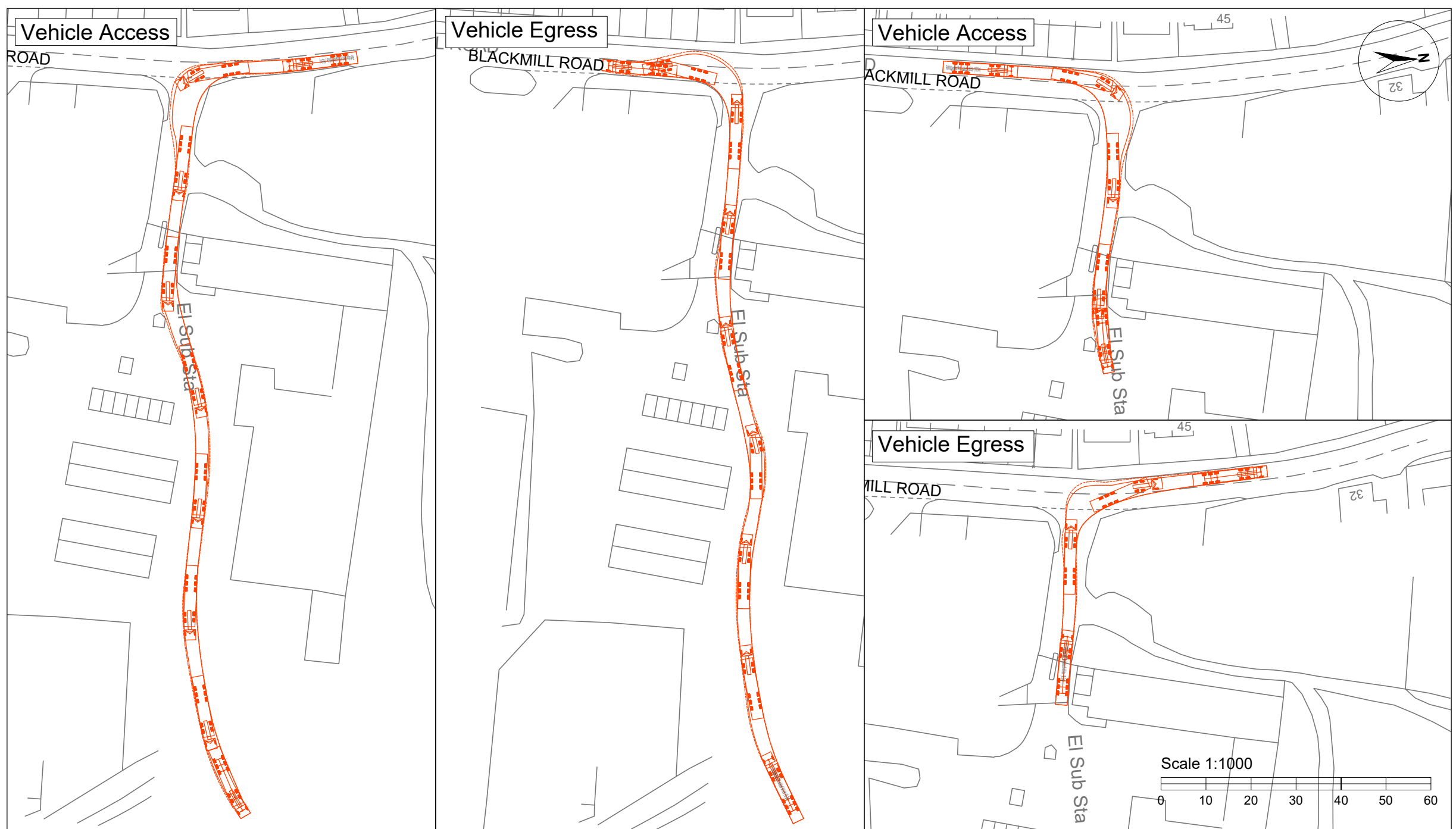
6 SUMMARY AND CONCLUSION

- 6.1 RPS has been commissioned by Marubeni Europower Ltd (the applicant) to produce an outline Construction Traffic Management Plan (CTMP) to detail the construction processes for a new Solar Farm scheme at Bride's Minor, Bryncethin in Bridgend.
- 6.2 It is predicted that the Solar Farm would have a potential annual yield of approximately 5,700 MWh and will be connected electrically via a private wire to a hydrogen production facility electrolyser located at the Brynmenyn Industrial Estate.
- 6.3 The 8ha site is located to the east of Bryncethin, a small village, 5km north of Bridgend. The site is located approximately 2km north of J36 of the M4. Access to the Solar Farm will be promoted via the BCBC Bryncethin Depot and Trade Centre which is accessed from the A4061 Blackmill Road.
- 6.4 The application is yet to be determined, on that basis, all exacting details on how construction will be progressed are as yet unknown. Notwithstanding the contractor (when instructed) will adhere to all the principles of construction set out within this plan.
- 6.5 Information regarding the timescales of construction will be communicated to before construction commences. Any significant changes in the build program will be communicated to Bridgend County Borough Council also.
- 6.6 In the majority, all construction traffic accessing the site will be routed via J36 of the M4, and along the A4061 Blackmill Road. Vehicles will then be met by a banksman before being directed into a dedicated unloading area, vehicles will then load / unload before exiting the site via the same route. Use of the agreed vehicle routes will be communicated to all individuals associated with the works.
- 6.7 All construction vehicles accessing the site should book in advance with the Site Manager who will keep a record of the schedule and all deliveries. A Banksman will be on hand to oversee any manoeuvring that does need to occur as well as the loading/ unloading of deliveries. The Banksman will also ensure that, appropriate pedestrian and road safety information is relayed to local users and vehicle checks are made.
- 6.8 The construction process will be managed by the designated Site Manager. Any changes to the designated Site Manager will be notified to BCBC. Their responsibilities will include acting as a point of contact for the local authority, stakeholders and members of the public. Further to this they will also be responsible for delivery scheduling, construction route compliance and managing other contractors employed on-site.

Conclusion

- 6.9 Overall it is considered that the measures and control processes outlined in this Construction Traffic Management Plan are appropriate to overcome the identified constraints associated with the site.

Appendix A –Access Design and Swept Path

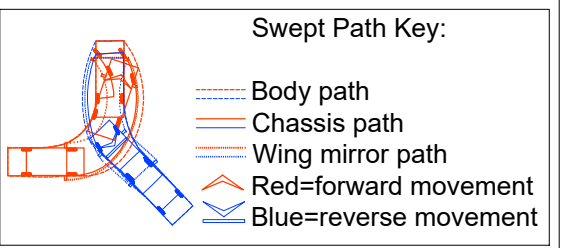
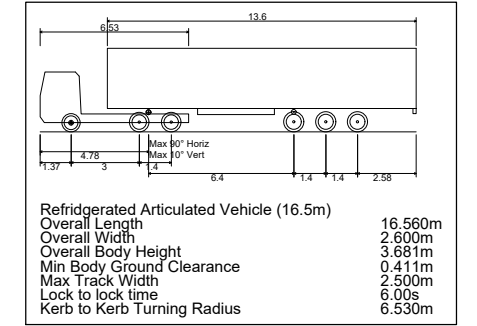


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Vehicle Profile



Rev	Description	By	CB	Date



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Client Client

Project HyBont Marubeni

Title Site 2 Construction Access
16.5m Articulated Vehicle
Swept Path Analysis

Status	Drawn By	PM/Checked by
PRELIMINARY	AJ	-
Project Number	Scale @ A3	Date Created
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