



Coed-Ely Solar Farm

CTMP

*For Rhondda Cynon Taf County Borough
Council (RCTCBC)*

Date *6 July 2023*

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1. Introduction and background

1.1 Introduction

1.1.1 Hydrock has prepared a Construction Traffic Management Plan (CTMP) in support of a proposed solar farm at Coed-Ely, Porth in Wales on behalf of Rhondda Cynon Taf County Borough Council (RCTCBC).

1.1.2 The approved site layout is attached in Appendix A .

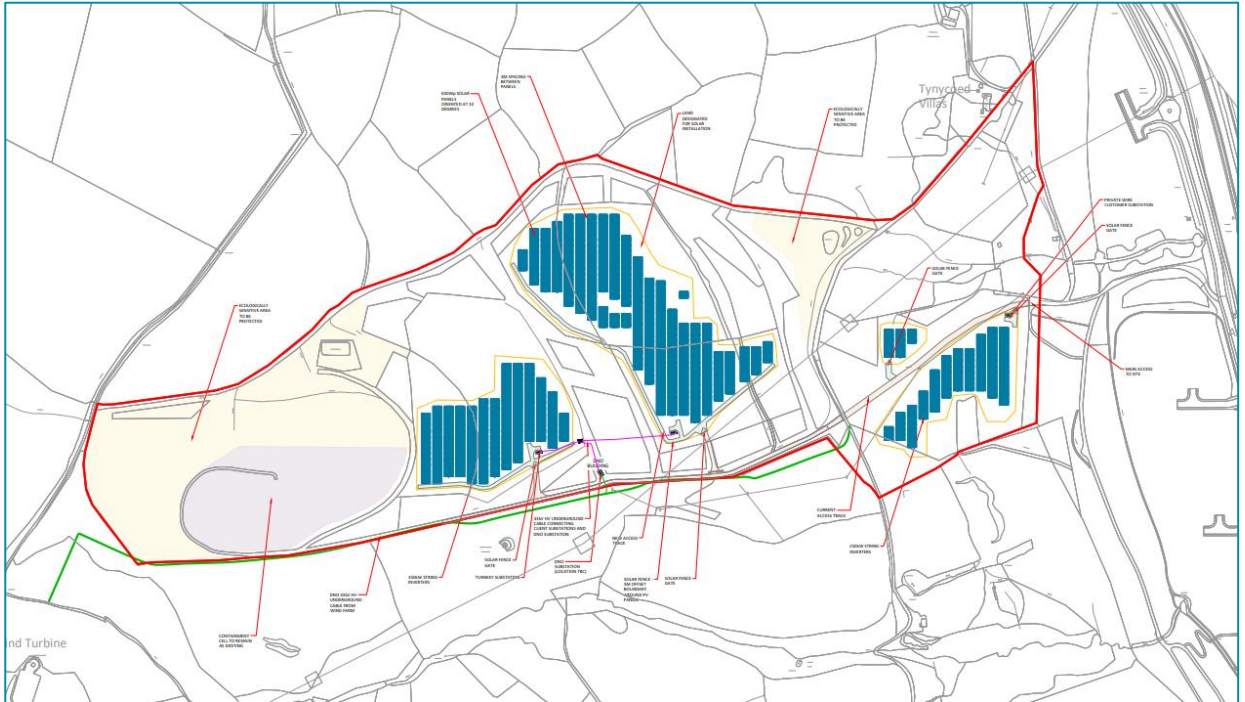


Figure 1.1: Proposed site layout

1.2 Summary

1.2.1 This CTMP aims to ensure that the impacts of construction traffic movements associated with the development are managed in a manner that minimises negative impacts on local highway users, existing highway infrastructure and the wider environment.

1.2.2 Consideration will need to be given to how construction traffic will reach the site from the Strategic Road Network (SRN), and how to minimise any impact construction traffic may have on neighbouring communities.

1.2.3 It is recognised that the temporary construction phase of the development needs to be carefully managed.

1.2.4 The purpose of a CTMP is to identify suitable and safe routes that can accommodate the movements associated with construction material during the construction phase, and to establish measures to reduce any interruption and/or delay to existing vehicle traffic so as to ensure that the impacts of construction traffic in the vicinity of the site and on the surrounding highway network are kept to a minimum.

1.2.5 The primary considerations for the routing strategy are as follows:

- » To use the shortest route from the access point of the site to the Strategic Road Network (SRN);

- » As far as possible use 'A' roads as a first priority followed by 'B' roads, 'C' roads and then 'unclassified roads';
- » Where possible avoid single carriageway roads unless these provide direct access to the construction site; and;
- » To avoid settlements and sensitive receptors to minimise impact on villages and towns and sensitive road users.

1.2.6 The Transport Implementation Strategy for the construction, operational and decommissioning phase has been included within the Transport Statement, submitted as a separate document to support this planning application (27541-HYD-XX-XX-RP-TP-4001).

2. Site location

2.1 Site location and general description

2.1.1 The proposed development site is located at the former coal tip site on land located on the edge of the village of Coed-Ely and Tonyrefail; the site is situated approximately 1km to the southwest of Coed-Ely village, 2km south of Tonyrefail and 9.3km to the northeast of Bridgend. The site is situated within the county borough of Rhondda Cynon Taf in the south-east of Wales.

2.1.2 The development site is bounded by agricultural fields to the north, south, east and west, with the A4119 located approximately 500m to the east of the site.

2.1.3 The site in its local context can be seen in Figure 2.1.

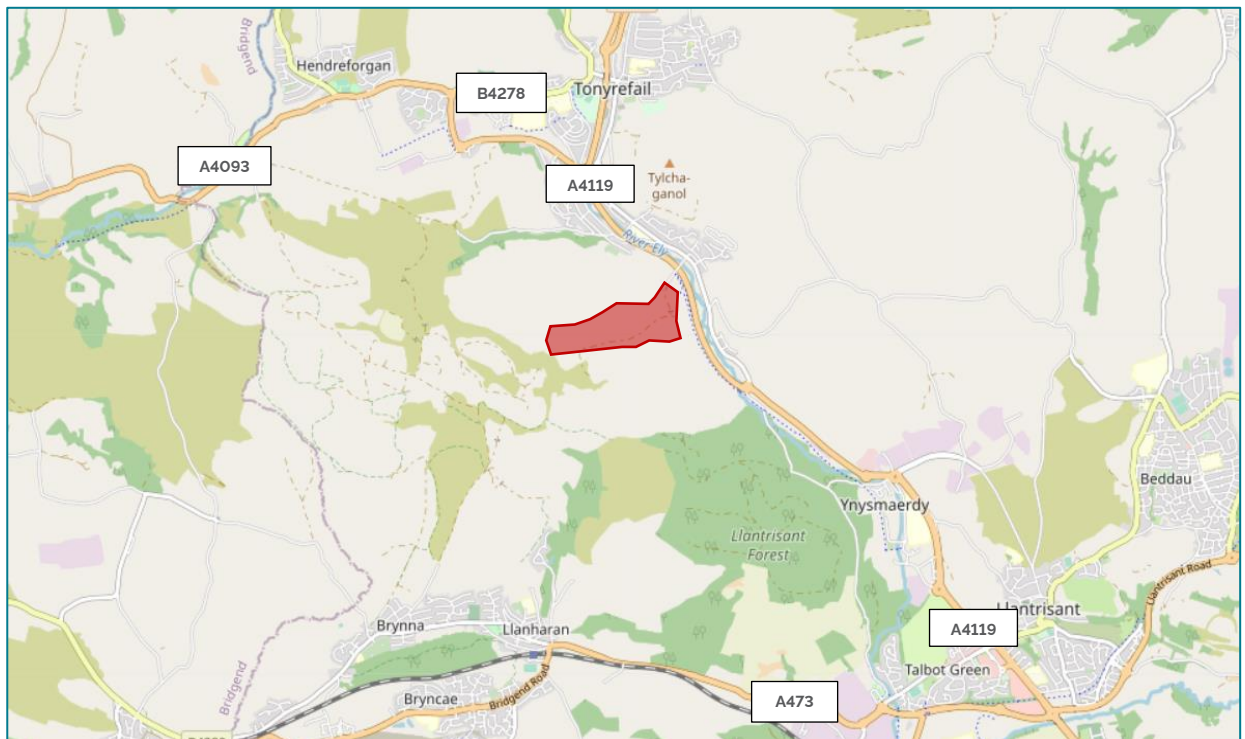


Figure 2.1: Site location in its local context

3. Proposed access and construction routes

3.1 Access arrangements

- 3.1.1 A planning application (planning ref: 17/0493/10) for a single wind turbine of maximum 126m to blade tip, along with associated infrastructure including a crane pad, access track and electrical housing was granted approval in March 2018, with its access leading from the unnamed access road to the proposed solar farm site.
- 3.1.2 In October 2018, a planning application (planning ref: 18/1161/10) was submitted for a proposed new section of track and upgrades to an existing track to accommodate the delivery of the single wind turbine positioned on land at Graig Fatha Farm (planning ref: 17/0493/10), and was granted permission on 20th December 2018.
- 3.1.3 A location plan showing the full extents of these tracks is shown in Figure 3.1 and Figure 3.2.

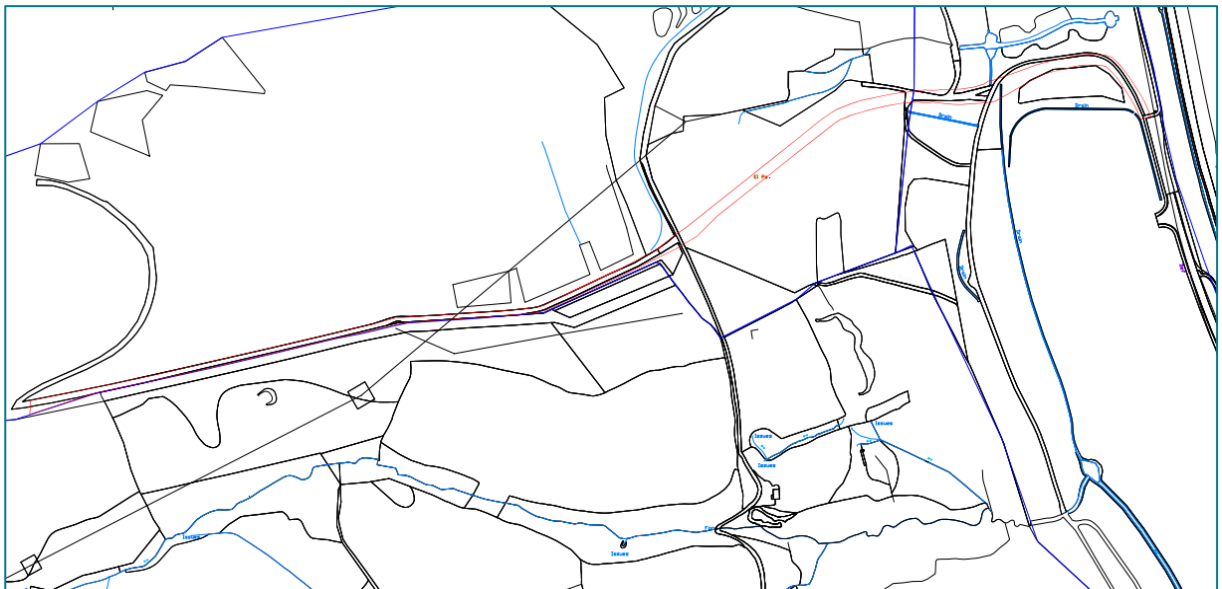


Figure 3.1: Extent of approved new section of tracks and upgrades



Figure 3.2: Approved plan of new and upgraded tracks

- 3.1.4 It is understood that the new access track and required upgrades is complete as part of planning application 18/1161/10.

- 3.1.5 The unnamed access road is shown as the 'Existing Access' on Figure 3.2, and connects to the A4119/Ely Valley Road roundabout junction and will provide access to the proposed solar farm site. The carriageway has been built to accommodate large vehicles, suitable for turbine and solar delivery, with a width of c.7.3m. It currently serves an alcohol distillery warehouse.
- 3.1.6 Access to the proposed solar farm will be via the agreed route facilitating access to the approved Graig Fatha Wind Turbine; therefore, the proposed access has been approved by RCTCBC and infrastructure has been provided as part of planning application 18/1161/10. This is suitable to accommodate the construction traffic and future maintenance of the site.

3.2 Proposed Routes

- 3.2.1 The site will be accessed from the unnamed two-way single carriageway just east of the site which will act as the route for all vehicles to access the site. It forms a junction with the A4119/Ely Valley Road/A4119 Ely Valley Road 3-arm roundabout junction at its southern extent.
- 3.2.2 Vehicles approaching from the north will route via the A4119 which forms the northern arm of the A4119/Ely Valley Road/A4119 Ely Valley Road 3-arm roundabout junction; vehicles will exit the roundabout (third exit) and route along the newly built access road to the right where they will turn left via the site access.
- 3.2.3 Vehicles routing from the south, east and west will be the M4 which forms a junction with the A4119 via the Miskin Interchange roundabout at J34.
- 3.2.4 All vehicles approaching from the east, south and west will route via the A4119 northbound on approach to Coed-Ely. The A4119 forms the southern arm of the A4119/Ely Valley Road/A4119 Ely Valley Road 3-arm roundabout junction; vehicles will exit the roundabout (first exit) and route along the newly built access road to the right where they will turn left via the site access.
- 3.2.5 The routes outlined have been checked to confirm that there are no weight, height or width limits that would otherwise preclude the use of this route. It does however remain the driver's responsibility to ensure their vehicle can safely negotiate the prescribed route.
- 3.2.6 All of the above links avoid the routing of traffic through densely populated residential areas with construction movements confined to appropriate roads including 'A' roads.
- 3.2.7 All of the above links avoid the routing of traffic through densely populated residential areas with construction movements confined to appropriate roads including 'A' roads
- 3.2.8 The construction vehicle routes are shown below in Figure 3.3

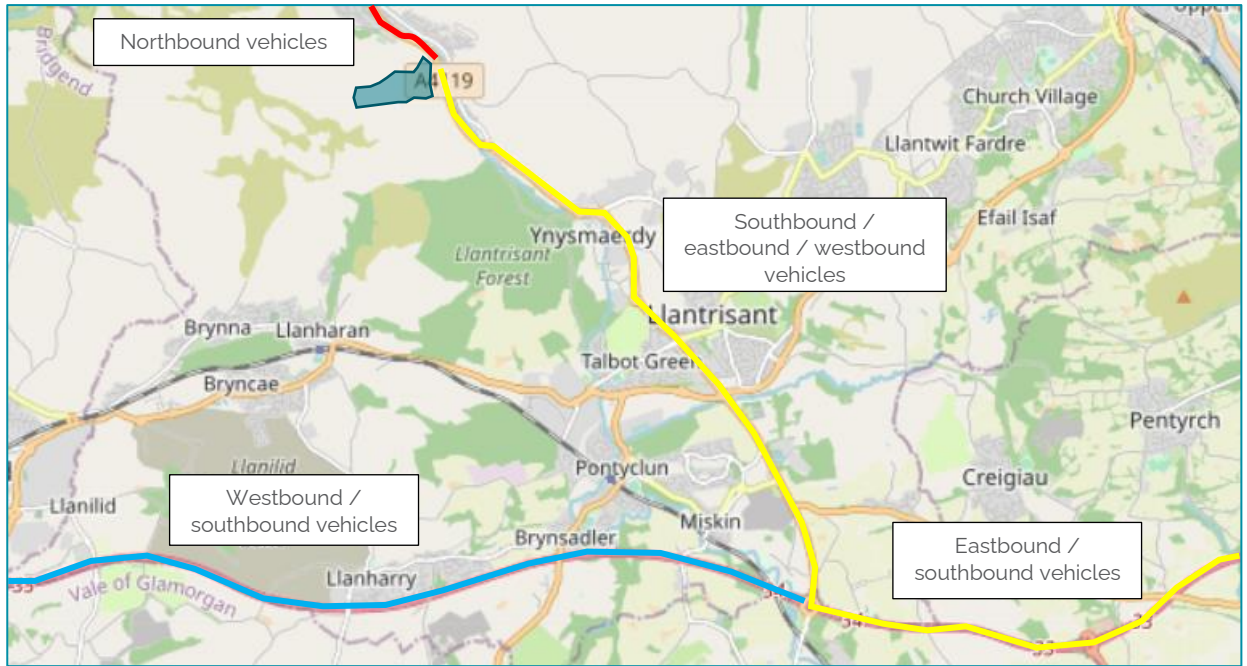


Figure 3.3: Construction Vehicle Routes

4. Construction programme and vehicle movements

4.1 Construction programme and duration

- 4.1.1 Based on the typical duration of the construction period of a solar farm of this size, the construction period is expected to be c.5 months, including pre-preparation of the site, fencing, assembly, deliveries and installation of photovoltaic panels and grid connection.
- 4.1.2 The first four weeks of the construction phase would see the site pre-construction to create the construction compound, welfare facilities and future maintenance routes around the site.
- 4.1.3 The main stage of construction phase would last for c.4 months and would include the arrival of the photovoltaic modules, materials, inverters, cable, trackway, and removal of waste whilst the final phase would see visits made by smaller vehicles for staff on the site. All plant and materials not required for maintenance and repair and any temporary works will be dismantled and removed within two months of the site becoming operational.
- 4.1.4 Plant and materials will be delivered via the proposed construction site access.

4.2 Construction traffic movements

- 4.2.1 This CTMP will be in place throughout the ground clearance and new development construction. The clear intent will be to minimise adverse impacts on the surrounding area.
- 4.2.2 The main construction phase is anticipated to last four months. And the main elements of the construction phase include:
- » solar photovoltaic (PV) panel installation;
 - » transformers;
 - » perimeter fencing;
 - » trackway;
 - » installation of security and monitoring CCTV;
 - » underground cabling to connect the panels to the proposed substation; and
 - » substation compound (for both the Developer and the Distribution Network Operator (DNO)).
- 4.2.3 The construction phase includes the preparation of the site, the erection of security fencing, assembly and erection of the PV strings, installation of the inverters/transformers and grid connection.
- 4.2.4 The construction period will include the use of HGVs to bring the equipment onto the site and this will be strictly managed to ensure that vehicle movement is controlled and kept to a minimum.
- 4.2.5 It should be noted that unlike wind farms, for the construction of a solar farm there is no requirement for any Abnormal Invisible Loads [AIL] deliveries to the site. The components which are required to construct the solar farm will arrive in 40ft containers via 16.5m long articulated vehicles.
- 4.2.6 In total the solar farm is constructed from 10,681 'models'; a 40ft container can accommodate 527 models equating to a total of 36 two-way HGV movements (18 HGV deliveries) during the construction period.

- 4.2.7 In addition, it is anticipated that c.14 flatbed deliveries will be required for the transportation of structures, equating to 28 two-way HGV movements.
- 4.2.8 The largest item to be delivered to the site is the Distribution Network Operator's (DNO) switchgear cabinet, which connects the underground grid connection cable of the solar farm to the distribution network. It is typically 9m long, 3m wide and 4m high. The cabinet is typically delivered by the smallest possible vehicle, which could be a 12m rigid lorry. A total of one delivery is required.
- 4.2.9 In addition, the site will contain 2 inverter stations. These are around 6m long, 2.5m high and 2.5m wide. Typically, inverter stations are delivered by a 10m long rigid lorry. It is assumed that the inverters would be transported individually due to their weight and as such this would equate to a total of two deliveries.
- 4.2.10 A total of 4 HIAB truck lifts/cranes will be required for the sub transformers and approximately 11 HGVs for cables (based on the calculation of approximately one HGV per 500m of cable).
- 4.2.11 The above totals approximately 100 two-way HGV movements over the duration of the 4-month construction phase, equating to less than one HGV delivery per day. It is however noted that there will be periods where there is greater intensity as it is unlikely that the anticipated trip generation will be distributed evenly across the construction phase; nevertheless, the level of traffic during the main construction phase is not material and would not affect traffic or safety conditions in the local area particularly as the movements would be managed by the CTMP, including measures such as banksmen at the site accesses.
- 4.2.12 A maximum of up to 40 construction workers are anticipated to be on site during peak times during the construction period. A temporary construction compound will be provided and will provide storage, parking for contractors and a turning area for HGVs.
- 4.2.13 The location where staff will travel from is unknown at this stage as it will depend on the appointed contractor. However, it is envisaged that a number of the non-local workforce will stay at local accommodation and be transported to the site by minibuses to minimise the impact on the strategic and local highway network.

5. Construction traffic management

5.1 Construction traffic hours

- 5.1.1 Confirmation of the restrictions on construction vehicle delivery hours will be set out following the appointment of the contractor.
- 5.1.2 In order to minimise the disruption to general traffic movements along the surrounding road network during the AM and PM peak hours, restrictions on times and days when construction traffic vehicles can access the site are proposed.
- 5.1.3 Hours of construction will be from 0700 to 1800 Monday to Friday and between 0700 to 1700 on Saturdays. Deliveries would be scheduled to avoid the highway network peak hours between 0800 to 0900 in the morning and 1700 to 1800 in the afternoon.
- 5.1.4 Except in case of emergency, any work required to be undertaken outside of the core working hours (not including repairs or maintenance) will be agreed with Highland Council prior to undertaking the works.

5.2 Construction Vehicle Arrivals and Storage

- 5.2.1 Site deliveries will adopt a 'just in time' arrangement whenever practical so as to minimise queuing and on-site storage requirements. Deliveries to the site will be staged with drivers given specific time windows for arrival and these will be recorded within the booking system by the site manager. This will prevent convoying of vehicles to and from the site and ensure that construction traffic does not queue on the local highway network.
- 5.2.2 Prior to arrival on-site, drivers of vehicles will be instructed to call ahead to confirm they will arrive during their allocated timeslot. If there are any issues with arriving during the allocated time, drivers will be instructed to contact the site manager as soon as this is known to obtain another timeslot. A number of spare slots will be reserved throughout the day to maintain flexibility.
- 5.2.3 During the twelve-hour delivery period, there will be suitable capacity to accommodate the anticipated number of arrivals per day on the peak days of delivery.
- 5.2.4 The laydown area will accommodate HGV vehicular movements and act as a temporary storage facility, allowing for the lay-down of construction equipment and other supplies. Smaller vehicles will then transport this equipment directly to the site, continuing on the same access road.
- 5.2.5 The laydown area will consist of temporary ground re-enforcements due to the small number of vehicle movements expected on site.
- 5.2.6 A proposed drawing illustrating the laydown area and swept path manoeuvres of a 16.5m articulated vehicle and a 12m rigid truck is demonstrated in Appendix B.
- 5.2.7 The above vehicles are expected to be the largest vehicles associated with the construction of the solar farm and the swept paths demonstrate that they can safely enter the laydown area, manoeuvre within, and exit in a forward gear.

5.3 Vehicle Access and Driver Information

- 5.3.1 The construction access point is proposed in the same location as the vehicular access for the proposed development, as detailed in Section 3.1.

- 5.3.2 The site is a large site, layout attached as Appendix A, and therefore a vehicle turning area will be provided on-site for vehicles to enter and exit the site in a forward gear.
- 5.3.3 As set out within Health and Safety Executive (HSE) guidance, the Banksman directing vehicle movements (signallers) will be trained and authorised to do so. On the rare occasions when reversing is required and in addition to a competent Banksman directing vehicle movements consistent with HSE guidance, consideration will be given to:
- » Aids for drivers - mirrors, CCTV cameras or reversing alarms that can help drivers see movement all-round the vehicle
 - » Lighting - so that drivers and pedestrians on shared routes can see each other easily. Lighting may be needed after sunset or in bad weather
 - » Clothing - pedestrians on site should wear high-visibility clothing
- 5.3.4 To avoid construction traffic congestion and nuisance to the surrounding area, all supplies and contractors will be made aware of the prescribed construction routes and time slot allocated within the booking system.
- 5.3.5 Access to the site will be appropriately signed to avoid congestion or queuing onto the highway. The site entrance will also be maintained and kept clean and clear.
- ## 5.4 Proposed Site Layout and Compound
- 5.4.1 The materials storage, site welfare and delivery area will be accommodated on-site within the construction compound.
- 5.4.2 The contractor will implement a clear and concise construction warning signage scheme on-site to assist in internal traffic control and separate construction vehicles and pedestrians.
- 5.4.3 Signage will also identify the site office and parking areas for workers, site visitors and delivery vehicles.
- 5.4.4 The site will have secure perimeters to protect the community and pedestrians on adjacent footways from construction work and vehicle movements.

6. Construction workforce

6.1 Numbers of workers and parking

- 6.1.1 The level of construction workers on-site will vary during each phase of construction. It is envisaged that workers will travel mainly by private vehicle, although sustainable transport options will be encouraged and promoted, including car sharing.
- 6.1.2 However, some construction workers will require access to tools and materials which are usually stored within vehicles and as such, some workers will need to travel by vehicle and park on-site. To accommodate this, there will be a suitable amount of parking provision for worker vehicles. This will be carefully managed to ensure that these vehicles are booked into the site in advance and on arrival.

6.2 Sustainable travel opportunities

- 6.2.1 The client will ensure that where reasonable and practicable local labour and sub-contractors will be utilised for the duration of construction, thus minimising distances travelled on the network and maximising opportunities to consider alternative modes of transport to the site. As it is envisaged that workers will mainly travel by private vehicle, sustainable travel will be best achieved through the promotion of car sharing.

7. Traffic noise and environmental impact mitigation

7.1 Introduction

7.1.1 This section sets out specific measures to be adopted to mitigate construction impacts in pursuance of the Environmental Code of Construction Practice.

7.2 Construction Traffic Noise

7.2.1 The Environmental Protection Authority released the "Environmental Criteria for Road Traffic Noise" in May 1999. The policy sets out noise criteria applicable to different road classifications for the purpose of defining traffic noise impacts. The following will be applied during construction to minimise the traffic noise impacts:

- » Apply and strictly adhere to low-speed limits within the site and within the vicinity of the site onto Link Road
- » As far as possible, ensure all contractor vehicles are fitted with adequate noise control equipment in good working order
- » Large vehicles will not arrive or leave the site at noise sensitive times
- » Ensure no parking or queuing of construction traffic on surrounding roads.

7.3 Environmental Conditions

7.3.1 The potential exists for mud to be spread onto the surrounding highway network. As such, measures will be implemented to minimise this as far as possible. Measures will include (but are not limited to):

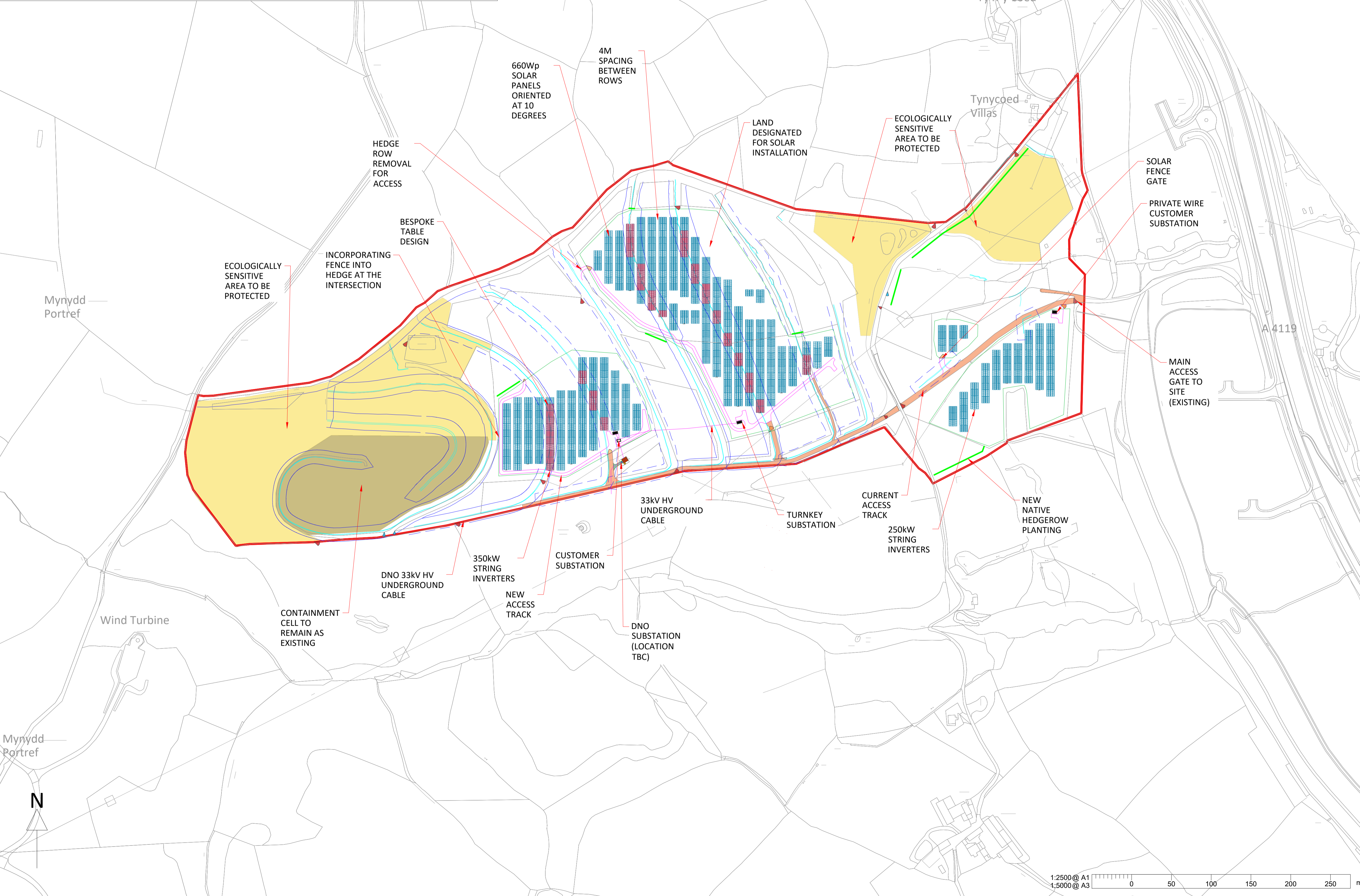
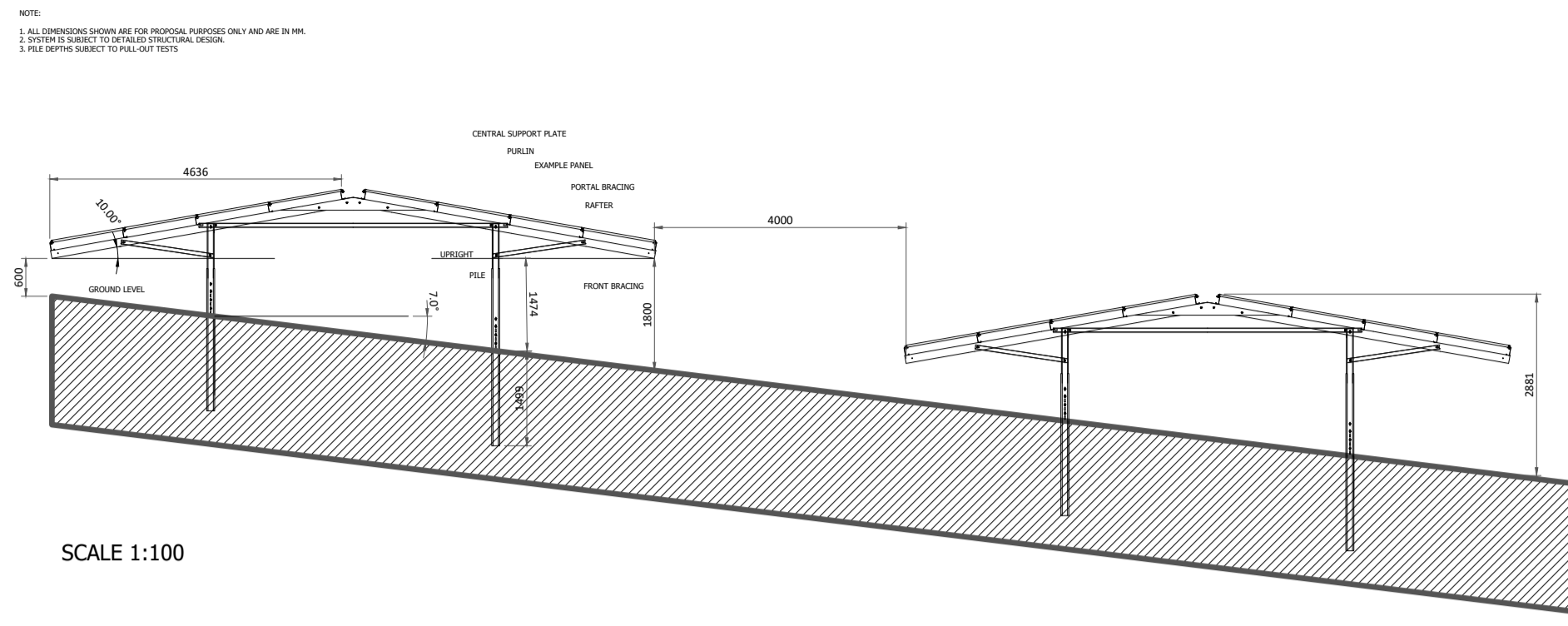
- » Use of an approved mechanical water-assisted road sweeper to clean the site of any mud or debris deposited by site vehicles within the vicinity of the site. The road sweeper is to be available whenever needed and will be properly used and maintained
- » The avoidance of dry sweeping large areas
- » Provision of wheel washing on all site exits and lorry jet washing facilities (to include rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practical)
- » Adequate sheeting of vehicles carrying waste materials
- » A water bowser will be present on site to aid in dust control, should this be a likely issue - this may well depend on the time of year in which construction takes place
- » Measures will be taken to ensure that mud and debris is not swept into gullies

7.3.2 Dust control will be best achieved at source, and if possible, activities will be carried out in a manner so as to preclude dust generation.

7.3.3 If dust is generated, steps will be taken to protect workers in the vicinity who shall, as a minimum, be issued with dust masks. Dust will, if possible, be contained in the location in which it is generated, and be controlled and managed therein.

Appendix A Proposed Site Layout

SECTION VIEW OF TABLES



- KEY PLAN**
- NEW ACCESS TRACK TO BE CONSTRUCTED
 - CURRENT ROADS/ACCESS TRACK
 - ORDINARY WATER COURSE (OWC)
 - 8M BOUNDARY AROUND OWC
 - SITE RED LINE BOUNDARY
 - SOLAR FENCE / NEW NATIVE HEDGEROW
 - SOLAR FARM GATE / EXISTING GATE / NEW GATE
 - DNO SUBSTATION
 - GRID CONNECTED SCHEME SUBSTATION
 - PRIVATE WIRE SCHEME SUBSTATION
 - GRID CONNECTED SCHEME CUSTOMER SUBSTATION
 - BESPOKE TABLE DESIGN WITH DIFFERING PILE WIDTHS

- NOTES**
- PV PANEL SPECIFICATIONS: 660Wp (1303MM X 2384MM)
 - GRID CONNECTED SCHEME CAPACITY: 6.05MWp (9168PANELS X 660Wp)
 - PRIVATE WIRE SCHEME CAPACITY: 1.20MWp (1824 PANELS X 660Wp)
 - INVERTER MODULE SPECIFICATIONS: 4X250KW (PRIVATE WIRE), 14X350KW (GRID CONNECTED SCHEME)
 - SITE CONNECTION CAPACITIES: 5.0MWac (GRID CONNECTED), 1.0MWac (PRIVATE WIRE)
 - BACKGROUND IS FROM ORDINANCE SURVEY (OS) AND IS LICENSED, BY OS, UNDER THE PSMA MEMBER LICENSE TO USE LICENSED DATA FOR ITS LICENSED USE. THE LICENSOR IS THE PLANNING AUTHORITY, RHONDDA CYNON TAF.
 - WATERCOURSE MITIGATION STRATEGY TBC BY NRW
 - SOLAR FENCE AT AVERAGE 5M OFFSET FROM TABLES

REVISIONS

REV	ISSUED FOR INFORMATION	GT	DATE	BF	DATE	TS	DATE
P05	ISSUED FOR INFORMATION	GT	02/06/23	BF	02/06/23	TS	02/06/23
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REVISION NOTES/COMMENTS

REV	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

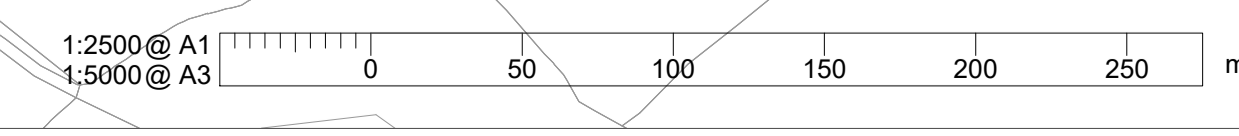
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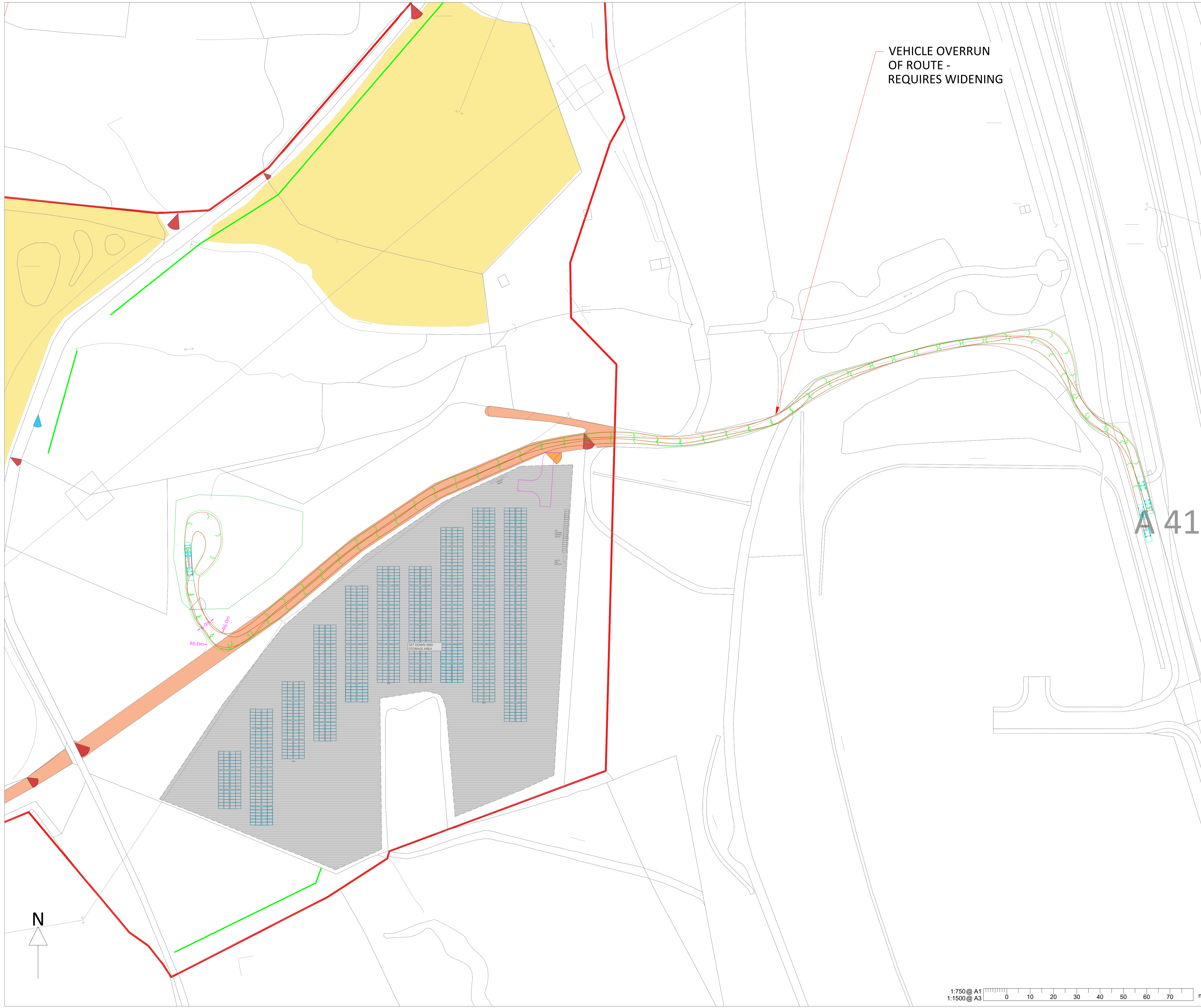
PROJECT
Coed-Ely Solar

TITLE
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DRAWING NO. (PROJECT CODE-ORIGINATOR ZONE-LEVEL-TYPE-ROLE-NUMBER) 27541-HYD-XX-XX-DR-Y-002		REVISION P05	



Appendix B Laydown Area Access Arrangement and Swept Paths



VEHICLE OVERRUN
OF ROUTE -
REQUIRES WIDENING

KEY PLAN

□ TEMPORARY SITE SET DOWN / STORAGE

NOTES

Swept path analysis has been tracked using a 16.5m max legal HGV and a 12m rigid lorry. This is subject to extended topography.

Rigid Truck

Overall Length 12.000m
 Overall Width 2.500m
 Overall Body Height 3.928m
 Min Body Ground Clearance 0.412m
 Track Width 2.471m
 Lock to lock time 6.00s
 Kerb to Kerb Turning Radius 11.900m

REVISIONS

REV	ISSUED FOR INFORMATION	GT	DATE	BF	DATE	TS	DATE
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CLIENT
Rhondda Cynon Taf County Borough Council

PROJECT
Coed-Ely Solar

TITLE
Temporary Site Set Down and Proposed Swept Path Analysis

HYDROCK PROJECT NO. 27541 SCALE @ A1 1:750

STATUS DESCRIPTION SUITABLE FOR INFORMATION	STATUS S2
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