Environmental Impact Assessment Report
Volume 3, Appendix 26.2: Abnormal Load Route Assessment

MarramWind Offshore Wind Farm

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MarramWind

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Contents

1. Introduction

1.1 Background

1.1.1.1 This Abnormal Load Route Assessment (ALRA) has been prepared to support **Volume 1, Chapter 26: Traffic and Transport** of the Environmental Impact Assessment (EIA). This Appendix should also be read in conjunction with:

- **Appendix 26.1: Transport Assessment**; and
- **Volume 4: Outline Construction Traffic Management Plan** (CTMP).

1.1.1.2 An Abnormal Load (AL) is a vehicle and load combination that exceeds the standard legal limits for weight, length, or width, making it too large or heavy to be carried on a conventional vehicle without special arrangements. Included in ALs are Abnormal Indivisible Loads (AIL) which refers to a specific load which cannot without undue expense or risk of damage be divided into smaller parts for the purpose of being transported by road.

1.1.1.3 This ALRA only considers delivery of the maximum sizes of ALs which relate to the onshore infrastructure elements of the Project and specifically the delivery of the following during the construction stage:

- **300t Transformer (AIL)** – delivered to the onshore substations;
- **Cable Drums (AL)** – delivered to various access point (AP) along onshore export cable corridor;
- **Horizontal Directional Drilling (HDD or similar trenchless technique) Rigs (MEGA) (AL)** - delivered to the landfall(s) locations; and
- **HDD (or similar trenchless technique) Rigs (MAXI) (AL)** - delivered to various access points along onshore export cable corridor.

1.1.1.4 Construction of the onshore substations will require the delivery of transformers which form part of the onshore substation's infrastructure. Due to the size and weight of the onshore substation's transformer components, their delivery to the onshore substations will be required as an AIL.

1.1.1.5 There are also up to multiple trenchless crossing locations along the onshore export cable corridor, further detailed is provided in **Appendix 4.1: Crossing Register** of the EIA report, where HDD (or similar trenchless technique) rigs are required. Two different sizes of HDD (or similar trenchless technique) rigs have been considered in this assessment, MAXI and MEGA, with the latter being utilised for landfall(s) construction and the former for the onshore export cable corridor construction. These are considered to be the largest and heaviest HDD (or similar trenchless technique) rigs anticipated to be used for trenchless crossing construction activities. Additional to the HDD (or similar trenchless technique) rig, the onshore export cable corridor will also require cable drum deliveries to be made for cable pulling.

1.1.1.6 As an assumption in absence of a named construction port, the delivery of transformers to the onshore substations has been assumed within this assessment to originate from marine delivery berths at the port in Peterhead.

1.1.1.7 The proposed port of entry and AL delivery route will be finalised following consultation with Transport Scotland and Aberdeenshire Council. Formal movement applications (the application process for movement of any type of ALs on road networks) will be necessary upon appointment of a specialist haulage contractor by the Applicant with associated

detailed movement programme. These will be completed through the National Highways (NH) Electronic Service Delivery for Abnormal Loads (ESDAL) system.

1.1.1.8 Cable drums associated with the installation of electric cabling along the onshore export cable corridor are also expected to be classified as ALs due to their potential transport size and weight being in excess of the threshold for the abnormal load criteria. The cable drums will be transported by low loader Heavy Good Vehicles rather than specialist transport vehicles however, these will need to be transported along smaller roads than the transformers.

1.1.1.9 Traffic management arrangements will be necessary prior to movements (under police escort) as it is likely that there will be locations where the full extent of the carriageway will be required for ALs to transit, especially on single carriageway sections of the road network or in urban locations where street furniture may need to be removed. The exact requirements will be determined when AL delivery specifications and requirements are confirmed and an appointed haulage contractor confirms street furniture removal requirements, escorts, movement timings and other logistical details prior to delivery.

1.2 Purpose of this report

1.2.1.1 The purpose of this report is to provide an assessment of the feasibility of the delivery of ALs from anticipated trip origins to the expected delivery points. The assessment is based on detailed vehicle swept path analysis (SPA) using computer vehicle tracking software, AutoTrack.

1.2.1.2 As requested by Transport Scotland during stakeholder feedback, SPA has been undertaken for the delivery of ALs along the local and trunk road network to the access points of working areas indicatively shown in **Volume 2, Figure 4.1: Onshore Red Line Boundary and indicative onshore infrastructure layout**.

1.3 Study approach

1.3.1.1 This AL assessment has been informed by a desktop study. A desktop study has been undertaken to review the proposed AL routes from port to the landfall(s) site, onshore export cable corridor and onshore substations and has been based on Ordnance Survey (OS, 2025) and Google Maps Street View (Google, 2023a) (Google, 2023b).

1.3.1.2 As a result of the desktop study, the proposed AL delivery routes has been assessed for its suitability to accommodate ALs required for the onshore infrastructure elements of the Project. This has involved undertaking preliminary SPA at identified pinch points in order to identify any third-party land requirements and any potential accommodation work for AL vehicles and reinstatement work following the completion of AL deliveries.

1.4 Structure of Abnormal Load Route Assessment

1.4.1.1 The abnormal load route assessment is structured as follows:

- **Section 2** – A description of the timescales, abnormal load requirements and construction activities of the Project;
- **Section 3** – Describes the legislative context and statutory bodies involved in deliveries of abnormal loads;
- **Section 4** – Outlines the methodology for undertaking the abnormal load route assessment;

- **Section 5** – SPA which outlines the findings and route appraisal of the swept path analysis;
- **Section 6** – Describes the management strategy and enforcement of the abnormal load delivery;
- **Section 7** – Conclusions and next steps which outlines the conclusions of the abnormal load route assessment and sets out the next steps;
- **Appendix A – Figures**; and
- **Appendix B – Swept Path Analysis**.

2. The Project

2.1 Onshore elements of the Project

2.1.1.1 The Project's onshore infrastructure, located landward of Mean Low Water Springs (MLWS) includes:

- landfall(s) – the infrastructure associated with landfall located above MLWS;
- underground onshore export cables running from the landfall(s) to the onshore substations;
- three onshore substations co-located at one site;
- underground grid connection cables connecting the onshore substations to the grid connection point at Scottish and Southern Electricity Network (SSEN) Netherton Hub; and
- tie-in to grid connection point (SSEN substation at the SSEN Netherton Hub, which is a separate project and does not form part of the consenting applications that this EIA relates to).

2.1.1.2 Further details on the onshore infrastructure are provided in **Volume 1, Chapter 3: Project Description**. The locations of the onshore infrastructure are shown in **Volume 2, Figure 4.1**.

2.2 Project timescales

2.2.1.1 The overall duration of construction of the offshore infrastructure is anticipated to be up to 12 years. This will be subject to the final grid connection date, supply chain discussions and further site surveys (pre-consent).

2.2.1.2 A shorter period within the 12 years is expected for construction of the onshore infrastructure; in the range of up to nine years.

2.2.1.3 The Project will be delivered in phases, which are reflected in the indicative construction programme. It is anticipated that construction of the Project would commence in 2030.

2.2.1.4 Detailed programming of the works would be the responsibility of the Principal Contractor in agreement with the Applicant.

2.2.1.5 It is anticipated that the first phase of the Project would become operational in 2037 following commissioning of the wind turbine generators for the first phase. It is anticipated the second phase of the Project would become operational in 2040 and the third phase in 2043. The operational lifetime of the Project for each phase is expected to be around 35 years.

2.2.1.6 The decommissioning stage will commence at the end of the operational lifetime of the Project. The decommissioning duration of the onshore infrastructure may take the same amount of time as construction of the Project, up to nine years, although this indicative timing may reduce.

2.3 Abnormal loads

2.3.1.1 An abnormal load is classified by the Driver and Vehicle Standards Agency (DVSA) as a vehicle that meets any of the following:

- weight over 44,000kg;
- an axle load of more than 10,000kg for a single non-driving axle of 11,500kg for a single driving axle;
- width over 2.9 metres (m); and
- rigid length over 18.65m.

2.3.1.2 Construction of the Project will generate abnormal load movements, primarily related to the transportation of cable drums, transformers and HDD (or similar trenchless technique) rigs. These three ALs are considered to be the largest and heaviest to be transported to site, represent a maximum design scenario and the inclusion of which accounts for a robust assessment.

2.3.1.3 Other abnormal loads could also be delivered as part of the construction such as cranes and piling rigs to the onshore substation however, these are not included within this assessment as they are anticipated to be smaller or lighter than the maximum design scenario.

2.3.1.4 In all cases, abnormal loads will be transported by specialist hauliers and subject to Road Vehicles (Construction & Use) Regulations 1986 and Road Vehicles (Authorised of Special Types (General) Order 2003 (STGO). These require hauliers to notify the police, roads and bridge authorities prior to the movement of abnormal loads. This will be completed through the NH EDSAL.

2.3.1.5 All abnormal load movements will be subject to the delivery routing contained within **Section 4** and management / enforcement controls outlined in **Section 6** of this document.

2.3.1.6 Furthermore, to minimise disruption and maintain safety there is a requirement for all abnormal load movements to be restricted to outside of peak traffic hours and avoidant of darkness in some rural areas. The abnormal loads will be accompanied by an escort vehicle and early notice of two clear working days is required when notifying Police Scotland regarding escort.

2.3.1.7 It is expected that the four types of ALs will require to be transported to various elements of the Project as shown in **Table 2.1**.

2.3.1.8 To ensure robustness of the assessment, the dimensions of each of the ALs are reflective of the largest configuration of loads that is likely to be used for the construction works however, the actual size and type of loads will be subject to availability, and further detailed assessment of hauliers.

Table 2.1 Project's AL requirement

AL type	Project element
Super grid transformer	Onshore substations.
Cable drum	Landfall(s), onshore export cable corridor and onshore substations.
HDD (or similar trenchless technique) rig (MEGA)	Landfall(s).
HDD (or similar trenchless technique) rig (MAXI)	Onshore export cable corridor and onshore substations.

2.3.2 Onshore substations transformer

2.3.2.1 The largest component requiring delivery to the onshore substations will be the transformers. There will be multiple transformers required at the onshore substations.

2.3.2.2 This weight is considered indicative of the size of abnormal loads likely to require delivery to the onshore substations and would be above the legal limit of 44 tonnes for transportation of loads on public roads. Above 44 tonnes, special provisions are required for the delivery of loads.

2.3.2.3 The weight and dimensions are subject to change following the award of final manufacturing contract, but the dimensions highlighted in **Table 2.2** which have been used for this ALRA is assumed to be adequately robust.

Table 2.2 Transformer maximum design parameters

Transformer parameter	Dimension amount (load + vehicle)
Overall length	88.8m
Overall width	6.6m
Overall height	5.5m
Weight	>300,000kg

2.3.2.4 It is anticipated that the transformers will be delivered on a girder frame trailer in a similar fashion to what is shown in **Plate 2.1**.

Plate 2.1 Onshore substations transformer delivery vehicle example

2.3.3 Cable drum

2.3.3.1 Cable drums are large components which are expected to be delivered by low loaders to the landfall(s), onshore substations and along the onshore export cable corridor. For the purposes of this assessment, dimensions of the largest expected cable drum for the Project are shown in **Table 2.3**.

Table 2.3 Cable drum maximum design parameters

Cable drum dimension	Dimension amount (load + vehicle)
Overall width	4.6m
Overall length	26.1m
Total weight	80 tonnes
Cable Drum capacity	2,000m

2.3.3.2 The weight and dimensions are subject to change following the award of final manufacturing contract, but this is assumed to be robust for this assessment. It is anticipated that the cable drums will be delivered on a low loader flat trailer in a similar fashion as shown in **Plate 2.2**.

Plate 2.2 Cable drum delivery vehicle example

2.3.4 HDD (or similar trenchless technique) rigs

2.3.4.1 HDD (or similar trenchless technique) Rigs are large drilling rigs used for HDD (or similar trenchless technique), a trenchless method for installing underground infrastructure, like cables, without large-scale excavation. These HDD (or similar trenchless technique) rigs are needed at the landfall(s), onshore export cable corridor and the onshore substation. Two different size of rigs are anticipated to be used for the trenchless crossings, with both expected to be delivered via low loaders. The maximum dimensions of the two HDD (or similar trenchless technique) rigs are summarised **Table 2.4** and are based on the Vemeer D550 (MAXI) and the Vemeer D1000X900 (MEGA) models.

2.3.4.2 HDD (or similar trenchless technique) MAXI models may sometimes not need to be transported as an abnormal load. However, this is subject to specifics around exact models being used. For robustness and the purposes of this assessment, a larger model meeting the abnormal load criteria has been selected.

Table 2.4 HDD (or similar trenchless technique) rig maximum design parameters

HDD (or similar trenchless technique) MAXI (load + vehicle)	
Overall length	29.0m
Overall width	2.85m
Overall height	3.7m
Total weight	>47.6 tonnes
HDD (or similar trenchless technique) MEGA (dimensions of drill rack, largest component)	
Overall length	32.0m
Overall width	2.85m
Overall height	3.5m
Total weight	>45.8 tonnes

2.3.4.3 It is anticipated that a MEGA HDD (or similar trenchless technique) rig will only be used at the landfall(s) while a MAXI HDD (or similar trenchless technique) rig is expected to be used along the onshore export cable corridor for trenchless crossings. It is anticipated that the HDD (or similar trenchless technique) rigs will be delivered on a low loader flat trailer in a similar fashion to what is shown in **Plate 2.3**.

Plate 2.3 HDD (or similar trenchless technique) rig delivery vehicle example

2.3.4.4 It is proposed to use the permanent AP from the A950 to the onshore substations for ALs with additional temporary surfacing infrastructure.

3. Legislative and Procedural Guidelines

3.1 Introduction

3.1.1.1 An AL is a vehicle and load combination that exceeds the standard legal limits for weight, length, or width. The vehicle and its load are classed as an abnormal load when it has:

- a weight of more than 44,000kg;
- an axle load of more than 10,000kg for a single non-driving axle and 11,500kg for a single driving axle;
- a width of more than 2.9m; or
- a rigid length of more than 18.65m.

3.1.1.2 Transport Scotland is a central government-operated authority which is responsible for managing the public trunk road network within Scotland on behalf of the Scottish Government.

3.1.1.3 The Road Vehicles (Construction & Use) Regulations 1986 (C&U) describes the different types and classification of permitted vehicles for use on the road, for example motor cars, motorbikes, buses, lorries, mobile cranes, and tracked vehicles. It also states the maximum dimensions for each type of vehicle, its gross weight, number of axles, braking system, type of tyres, maximum speed, exhaust system and mirrors.

3.1.1.4 The Road Vehicles (Authorised Weight) Regulations 1998 (AW) details the imposed maximum weight (gross and per axle) of different types of vehicles relating to the number of axles within each category of vehicle.

3.1.1.5 Vehicles not conforming to the regulations specified above are subject to regulations outlined within the Road Vehicles (Authorisation of Special Types) (General) Order 2003 (STGO). It specifies when the Police, Roads Authority or Secretary of State (SOS) is to be notified of an intended vehicle movement, and the number of days' notice required before the movement takes place.

3.1.1.6 The following sections show how the legislative and procedural guidelines apply to the Project and the deliveries of ALs.

3.2 Special Types General Order (STGO) – AL Regulations

3.2.1.1 An AL transport vehicle which does not comply with the Road Vehicles (Authorisation of Special Types) (General) Order 2003 (STGO) would require a special order issued by:

- Transport Scotland on abnormal loads not covered by C&U and STGO; or
- the Vehicle Certification Agency (VCA) on special vehicles and divisible loads outside the scope of C&U and STGO.

3.2.1.2 In addition to the above, hauliers are generally advised to inform statutory authorities if total vehicle heights are likely to exceed 5.0m (although it should be noted that there is no legal overall laden height restriction but Transport Scotland state this should not exceed 4.95m).

3.2.1.3 STGO vehicles are further categorised into three weight categories, as follows:

- **Category 1** - Maximum Gross Weight: 50,000kg, C&U Regulation axle limit (46,000kg if the combination has less than 6 axles and does not comply in all other respects with the Authorised Weight Regulations);

- **Category 2** - Maximum Gross Weight: 80,000kg, 12,500kg axle limit; and
- **Category 3** - Maximum Gross Weight: 150,000kg, 16,000kg axle limit.

3.2.1.4 For all categories, the following advice is provided with regards to width:

- loads wider than 5m can only be conveyed if authorised by special order (the VR1 procedure under STGO). The VR1 must be carried on the vehicle and at least 10 days notification is required prior to the movement date; and
- the load cannot exceed 6.1m width under STGO Regulations.

3.2.1.5 For all categories, the following advice is provided with regards to length:

- the overall length of the vehicle(s) and load may be up to 30m, or greater if authorised by special order from the SOS. In any combination of vehicles on which a load rests, including any articulated vehicle, the 30m does not include the length of the drawing vehicle; and
- an articulated vehicle or trailer, which is abnormal only in respect of length for carrying indivisible loads of exceptional length, can operate under normal C&U Regulations.

3.2.1.6 With regards to speeds, those that apply to each of the weight categories are set out in **Table 3.1**.

Table 3.1 Speed restrictions for AL vehicle categories

AL category	Motorway	Dual carriageway	Other roads
Category 1	60mph	50mph	40mph
Category 2 - 3	40mph	35mph	33mph

3.2.1.7 It should be noted that although the speeds referenced above are the legal limits, the actual achievable speed of the vehicle configuration may be lower.

3.3 Special orders

3.3.1.1 To apply for a VR1, the following information will need to be supplied to Transport Scotland:

- name and address of person / organisation making the application;
- details of persons / organisations who will be using the vehicles, if different from the previous;
- the number of vehicles involved;
- type of vehicles involved, their make, model, registration, and / or chassis (serial) numbers of motor vehicles or trailers. These will be listed on any order issued;
- details of the vehicles for example, number of axles, individual axle weights, and gross vehicle weights (both in kg), plus dimensions (in m);
- in the case of vehicle combinations, overall weights (in kg) and dimensions (in m); and
- details of the C&U Regulations with which the vehicles do not comply and the reasons why they cannot comply: The Regulations are specified on the VR1, and it should be

made clear that failure to comply with non-specified Regulations or supplying incorrect data would invalidate the VR1.

3.3.1.2 On receipt of the application, the VCA will evaluate the application and contact the applicant should further information be required. Various organisations including the Police, Local Authorities, and other interested parties, both within and outside of the Transport Scotland may be consulted; especially in respect of the conditions to be imposed. Following receipt of all information, and assuming that there are no technical reasons or objections from any of the parties consulted, the VR1 will be prepared and dispatched by email within ten working days.

3.3.1.3 VR1s are issued for varying periods of time at the discretion of the relevant authorities. Typically, they are issued for a period of up to five years. The following sets out the speed limits of VR1 loads:

- articulated vehicles weighing between 150 and 250 tonnes: 25mph;
- draw-bar trailer vehicles weighing between 150 and 250 tonnes: 20mph;
- girder frame trailers: 12mph; and
- girder frame trailers: 12mph.

3.4 Notification requirements

3.4.1.1 The pre-journey notification requirement will be five working days prior notice to the Police, Roads Authorities and Bridge Owners such as Network Rail, whereas it is ten weeks to Transport Scotland.

4. Abnormal load routing

4.1 Overview

4.1.1.1 This Section describes the approach undertaken to identify potential routes to transport the largest ALs to the access points identified within **Appendix 26.1**. Routes have been assessed against the type of road, horizontal alignment, settlement patterns, and available height and weight restrictions in order to identify pinch points.

4.1.1.2 A 'pinch point' is defined as a location where constraints relating to each of the design characteristics referenced below are likely to prevent or significantly impede abnormal load access.

- horizontal road alignment;
- vertical road alignment; and
- weight / height restrictions.

4.2 Trip origin

4.2.1.1 At the time of writing, the origin of the AL deliveries are unknown; however, it is anticipated that these could be delivered along the trunk road network via the most suitable route. It has been assumed that all ALs, except for the transformer, will route from the A90(T) south of Peterhead to the access points which provide access to the onshore construction working areas within the Onshore Red Line Boundary as identified in **Volume 2, Figure 4.1**. For the purpose of this assessment, the transformer is assumed to be delivered by sea to the South Base port in Peterhead to the onshore substation via the trunk road network.

4.2.1.2 It is anticipated that a combined inbound and outbound journey will be required at some of the locations in the case of the HDD (or similar trenchless technique) rigs and cable drums.

4.3 Assessment approach

4.3.1.1 A desktop assessment has been undertaken using Ordnance Survey (OS, 2025), Google Maps Street View and has considered road type, horizontal and vertical alignment, settlement presence and available height and weight restrictions.

4.3.1.2 The assessment route has been selected based on the consideration of the above, and the suitability of each route will depend on the final vehicle specification chosen by the Haulage Contractor deemed suitable.

4.4 Land ownership

4.4.1.1 Adopted roads are those managed and maintained by the local roads' authority. Limits of road adoption can vary. According to Roads (Scotland) Act 1984, within urban areas, the adopted area is generally the made land contained within a boundary where the road agency holds the maintenance rights for the land. At a high level this is usually the footway back edge across the road to the opposite footway / edge.

4.4.1.2 In rural areas, the limits of adoption are open to greater interpretation as defined boundaries which are not readily visible. In these locations, it is considered that the area of adoption is between established fence / hedge lines (if present) or a maximum of 2 m from the road's

edge. At this indicative stage, the assessment is using this interpretation of limits of adoption.

4.5 Proposed AL routes

4.5.1.1 The proposed delivery routes for each of the ALs are shown in **Appendix A, Figures 1** to **3** and summarised in **Table 4.1**, each of which have been assessed separately.

Table 4.1 Proposed AL route summary

Abnormal Load	Road	Associated AP	Route description
Transformers	B9178	N/A	Delivery to originate from port at Peterhead, South Base, before heading west along the B9178 to Invernettie Roundabout.
	A90(T)	N/A	The vehicle will continue straight ahead through Invernettie Roundabout along A90(T) to Howe O'Buchan Roundabout.
	A950	APSS (onshore substations).	Vehicle will turn left at Howe O'Buchan Roundabout and head west along A950 to onshore substation site access.
Cable drums	A90(T)	AP02, AP03, AP04, AP05, AP06, AP07.	Deliveries to arrive from the A90(T) from the south. They will then turn left at Invernettie Roundabout and continue along the A90(T) north to the various access points.
	U32B	AP01	Vehicles will turn right onto the U32B and head east towards Scotstown Beach and potential landfall(s) location.
	C5B	AP08, AP09.	Vehicles will turn left from A90(T) onto C5B towards AP08 & AP09.
	A950	AP18, APSS, AP20.	Vehicles will turn left at Howe O'Buchan Roundabout and head west along the A950 to further access points.
	U50B	AP14, AP15, AP16, AP17.	Vehicles will turn onto U50B to access points located on this road and further north.
	C43B	AP12, AP13.	Vehicles will turn right onto C43B to reach AP12 & AP13.
	U45B	AP10, AP11.	Vehicles will turn left onto C43B then right onto U45B, before heading north on the U45B to the access points.
	U63B	AP19	Vehicles will turn left onto U63B from the A950 to access points located on this road.
	C56B	AP21	Vehicles will turn left onto C56B from the A950 to access points located on this road.
HDD (or similar trenchless	A90(T)	AP5, AP6.	Vehicles will arrive from the south via the A90(T), turning left at Invernettie Roundabout to continue on the A90(T) to the access points northwest of Peterhead.

Abnormal Load	Road	Associated AP	Route description
technique) Rig (MEGA)	U32B	AP01	Vehicles will turn right onto the U32B and head east towards Scotstown Beach and potential landfall(s) HDD (or similar trenchless technique) compounds.
HDD (or similar trenchless technique) Rig (MAXI)	A90(T)	AP03, AP05, AP06.	Vehicles will arrive from the south via the A90(T), turning left at Invernettie Roundabout to continue on the A90(T) to the access points northwest of Peterhead.
	C5B	AP09	Vehicles will turn left from the A90(T) onto the C5B towards AP09.
	A950	AP18, AP20, APSS.	Vehicle will turn left at Howe O'Buchan Roundabout and head west along A950 to access points.
	U50B	AP14, AP15.	Vehicles will turn left from the A950 onto the U50B to HDD (or similar trenchless technique) compounds and access points located along this road.
	C43B	AP12, AP13.	Vehicles will turn right onto C43B to reach AP12 & AP13.
	U45B	AP10, AP11.	Vehicles will turn left onto C43B then right onto U45B, before heading north on the U45B to the access points
	U63B	AP19	Vehicles will turn left onto U63B from the A950 to access points located on this road.
	C56B	AP21	Vehicles will turn left onto C56B from the A950 to access points located on this road.

4.5.1.2 Initial points of interest (POIs) or Pinch Points have been identified through a review of google Streetview on each of these routes with the location shown in **Appendix A, Figure 4**. These delivery routes are assessed further through SPA (**Section 5**).

5. Route Appraisal

5.1 Structures and restriction

5.1.1.1 As part of the AL routing, a number of bridge structures are required to be crossed. These involve underbridges on the smaller roads, and larger bridges on the local and strategic road network. Due to the historic development of similar projects, ALs occasionally route across the region for a variety of operators, for example, construction sites, oil and gas, shipyards, and infrastructure projects.

5.1.1.2 Information on structures and restrictions have been sourced from the ESDAL portal which holds information on structure type, restrictions and relevant management authorities. Identified structures that may need crossing are shown in **Table 5.1** Identified road structures summary.

Table 5.1 Identified road structures summary

ESRN	Name	Structure Type	Road	Restrictions / Issues
N/A	South Scotstown	Culvert, Underbridge	U32B	No signed constraints or restriction. Assessment required in regard to parapet height and exact width of bridge carriageway.
S-NK100516-1	Links Road	Culvert, Underbridge	A90 (T)	No signed constraints or restriction. No issues anticipated.
S-NK106501-1	Cuttie Burn	Culvert, Underbridge	A90 (T)	No signed constraints or restriction. No issues anticipated.
S-NK105490-1	Hall Moss	Culvert, Underbridge	A90 (T)	No signed constraints or restriction. No issues anticipated.
S-NK109483-1	Inverguie	Road Bridge, Underbridge	A90 (T)	Linear Constraint (C1-10006632-P1): Weight restriction, 48,000kgs. Assessment required in regard to reinforcement works, parapet height and exact width of bridge carriageway. If thorough structural assessment confirms that this is an issue for AL routing, it is considered that the weight of the cable drums can be reduced through smaller cable deliveries. Additionally, if required, mitigation measures could involve the Applicant considering the use of other ports of entry north of Peterhead for this purpose.

ESRN	Name	Structure Type	Road	Restrictions / Issues
S-NK087479-1	Westerton of Barnyards	Road Bridge, Underbridge	U45B	No signed constraints or restriction. Assessment required in regard to parapet height and exact width of bridge carriageway. May be avoided through use of haul road from C5B.
S-NK088470-1	Smiddy Hill	Road Bridge, Underbridge	U50B	No signed constraints or restriction. Assessment required in regard to parapet height and exact width of bridge carriageway.
S-NK080464-1	Longhill Culvert (A950)	Culvert, Underbridge	A950	No signed constraints or restriction. No issues anticipated.
S-NK066463-1	Bridge of Faichfield	Road Bridge, Underbridge	A950	No signed constraints or restriction. No issues anticipated.
S-NK108444-1	Wellington	Culvert, Underbridge	A90 (T)	No signed constraints or restriction. No issues anticipated.
S-NK111442-1	Upperton	Culvert, Underbridge	A90 (T)	No signed constraints or restriction. No issues anticipated.
S-NK113441-1	Upperton II	Culvert, Underbridge	A90 (T)	No signed constraints or restriction. No issues anticipated.
S-NK125441-1	Sandford	Road Bridge, Underbridge	B9178	No signed constraints or restriction. No issues anticipated.

5.1.1.3 It is considered that most of the structures along the routes are short span and therefore should be suitable for alternative engineering solutions if a structural assessment finds this to be necessary.

5.1.1.4 A number of bridge structures are expected to be crossed which may need detailed structural assessment prior to use for AL delivery. Inverugie Bridge (S-NK109483-1) located along the A90(T) northwest of Peterhead, is the only bridge that has a stated weight restriction on it and is likely to require reinforcement works prior to any AL deliveries at this location. Currently, the only AL elements routing over this bridge are anticipated to be HDD (or similar trenchless technique) rigs and cable drums.

5.1.1.5 As identified in **Table 2.2** to **Table 2.4** it considered that only the cable drums currently appear to surpass the weight restriction of the bridge, with this to be confirmed once the transporter vehicle axle configuration is finalised and structural assessment has been undertaken. If thorough structural assessment confirms that this is an issue for cable drum routing, it is considered that the weight of the cable drums can be reduced through smaller

cable deliveries. Additionally, if required, mitigation measures could involve the Applicant considered the use of other ports of entry north of Peterhead for this purpose.

5.2 Swept path assessment

5.2.1.1 As previously stated, initial points of interest (POIs) or pinch points have been identified through a review of google Streetview, of which the resulting indicative routes are shown in **Section 4**. The locations of the POIs are shown in **Appendix A**, **Figure 4: Points of interest locations.**

5.2.1.2 The following section provides further detail on the POIs identified on the assessment routes including identification of the location, obstacles and potential embedded environmental measures required for the AL transfer vehicles to safely manoeuvre between the trunk road network and their destinations.

5.2.1.3 For the purpose of this assessment, it has been assumed that the ALs would, where necessary, straddle both running lanes on carriageway sections.

5.2.1.4 The severity of each constraint has been graded to indicate the estimated extent of mitigation works required. The following risk grading system has been used:

- **Grey**: No identified constraints (i.e. Subject to consultation and agreement with local planning authority);
- **Green**: Minor works (i.e. localised carriageway widening / over-run area, cut-back vegetation, remove debris etc.);
- **Amber**: Moderate works (i.e. fixed object removal including street signs / street furniture, removing trees, earthworks required etc.);
- **Red**: Major works (i.e. construction of new structures / road sections, public road improvement (PRIs), major earthworks, third-party land requirements etc.); and
- **Black**: Potential unresolvable issues with no current viable solution with current load size and method of transport.

5.2.1.5 Risk has been assessed in terms of enabling works time and complexity.

5.2.1.6 Swept Path Analysis have been undertaken along the AL delivery routes and formed the basis for assessing POIs. Drawing results of the SPA are included in **Appendix B,** with a full summary of assessment findings for all POIs provided in **Table 5.2**.

5.2.1.7 It should be noted that, although SPA has been undertaken for the entirety of the AL delivery routes, drawings included in **Appendix B** are focussed on at key POIs which require visual aid to convey the key impacts, therefore SPA are not provided in **Appendix B** for the following POIs:

- POIs where no issues have been identified; and
- Longer road link POIs where exact impact is not considered bound to a specific location (for example, repeated vehicle over-sail).

Table 5.2 Abnormal load assessment summary

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
Transformers						
T01	Road Link	B9178	Between South Base and Invernettie Roundabout.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway, on third party land, at multiple points along the section.	Red	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey. The works may require third-party land, with land ownership searches required to confirm ownership at this location. Alternative routing options from the port in Peterhead are possible which may avoid the need for third party land which may impact the RAG rating positively however, this would require further assessment.
T02	Junction	Invernettie Roundabout	Straight ahead from the B8179 onto the A90(T).	The analysis shows that the vehicle will over-run and over-sail the centre of roundabout, the traffic island on the eastern arm and a section of grass verge on the western arm of the roundabout.	Amber	Vehicle to travel wrong way around roundabout to minimise impact on road infrastructure and to utilise existing over-run area on centre of roundabout. Additional over-run and over-sail areas required on the traffic island on the eastern arm and section of grass verge on the western arm. The need and exact extents of the works will need to be confirmed by a topographical survey.
T03	Road Link	A90(T)	Between Invernettie Roundabout and Howe O'Buchan Roundabout.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
				multiple points along the section.		
T04	Junction	Howe O'Buchan Roundabout	Left turn from the A90(T) onto the A950.	The analysis shows that the vehicle will over-run and over-sail the centre of roundabout and the traffic island on the western arm of the Roundabout. The vehicle will also over-sail sections of grass verge on both the western and southern arm of the roundabout	Amber	Vehicle to utilise existing over-run area on centre of roundabout with additional over-run area required on the traffic island on the western arm. Over-sail areas also required on the southern and western arm. The need and exact extents of the works will need to be confirmed by a topographical survey.
T05	Road Link	A950	Between Howe O'Buchan Roundabout and onshore substation site access point.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
Cable drums						
CD01	Junction	Invernettie Roundabout	Left turn to continue on A90 (T).	The analysis shows that the vehicle may be required to over-sail the grass verge on the	Green	No mitigation required as suitable over-sail area available for the vehicle.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
				western arm of the roundabout.		
CD02	Junction	Howe O'Buchan Roundabout	Straight ahead to continue on A90 (T).	The analysis did not identify any constraints at this junction for this vehicle.	Grey	No mitigation required
CD03	Junction	A90 (T) / A982	Left turn from the A90 (T) onto the A982.	The analysis did not identify any constraints at this junction for this vehicle.	Grey	No mitigation required
CD04	Junction	A90 (T) / C5B	Left turn from the A90 (T) onto the C5B.	The analysis did not identify any constraints at this junction for this vehicle.	Grey	No mitigation required
CD05	Road Link	C5B	Between A90 (T) and Access Points.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
CD06	Junction	A90 (T) / U32B	Right turn from the A90 (T) onto the U32B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
				junction to make the turn.		
CD07	Road Link	U32B	Between the A90 (T) and landfall(s) Access Point.	The analysis shows that the carriageway appears to vary in width, with the vehicle required to over-run and over-sail on the adjacent verges at multiple points along this section.	Red	Road widening, within the adopted road boundary, at multiple points over an approx. 600m section to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works may require third-party land, with land ownership searches required to confirm ownership at this location. Impact may be mitigated by delivery of smaller cable drums which would reduce weight and width requirements potentially not encroaching on third party land. This would positively improve RAG rating.
CD08	Structure (South Scotstown)	Annachie Burn Crossing	Bridge over Annachie Burn along U32B.	The analysis shows that the vehicle will be required to over-sail the bridge parapet.	Red	Topographical survey and information of bridge parapet height required to confirm extents of over-sail and determine if there is suitable clearance for the vehicle to over-sail. Impact may be mitigated by delivery of smaller cable drums which would reduce weight and width requirements potentially not encroaching on third party land. This would positively improve RAG rating.
CD09	Junction	A950 / U50B	Right turn from the A950 onto the U50B.	The analysis shows that the vehicle will be required to over-sail the verge of the junction to make the turn.	Green	No mitigation required as suitable over-sail area available for the vehicle.
CD10	Road Link	U50B	Between the A950 and the C43B.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
				multiple points along the section.		
CD11	Structure (S-NK088470-1)	Smiddyhill Underbridge	Bridge crossing Waterway.	The analysis did not identify any constraints at this location for this vehicle.	Grey	No mitigation required.
CD12	Junction	U50B / C43B	Right turn onto C43B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the junction to make the turn.	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.
CD13	Road Link	C43B (East)	Between the U50B and the ECC Access Points.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
CD14	Junction	U50B / C43B	Left turn onto C43B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the junction to make the turn.	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
CD15	Road Link	C43B (West)	Between the U50B and the U45B.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
CD16	Junction	C43B / U45B	Right turn from the C43B onto the U45B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the junction to make the turn.	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.
CD17	Road Link	U45B	Between the C43B and Johnstone Farm.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
CD18	Structure (S-NK087479-1)	Westerton of Barnyards Underbridge	Bridge crossing core path.	The analysis shows that the vehicle will over-sail the parapets on both sides of the bridge.	Red	Topographical survey and information of bridge parapet height required to confirm extents of over-sail and determine if there is suitable clearance for the vehicle to over-sail. It is envisaged that abnormal load vehicles can utilise various haul road from the U50B and C43B to avoid driving over this structure which would positively affect the current RAG rating.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
CD19	Junction	Right turn on U45B	Right turn to continue on U45B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the junction to make the turn.	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.
CD20	Road Link	U45B	Between Johnston Farm and Access Points.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
CD21	Junction	A950 / U63B	Left turn from the A950 onto the U63B.	The analysis shows that the vehicle may be required to over-sail the grass verge on the western side of the U63B to complete the movement.	Green	No mitigation required as suitable over-sail area available for the vehicle.
CD22	Road Link	U63B	Between the A950 and the Access Point.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
CD23	Junction	A950 / C56B	Left turn from the A950 onto the C56B.	The analysis did not identify any constraints at this junction for this vehicle.	Grey	No mitigation required.
CD24	Road Link	C56B	Between the A950 and the Access Point.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at the southern section of the road.	Green	Provide over-sail area at southern section of road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
CD25	Structure (S-NK109483-1)	A90 (T)	Inverugie Bridge.	Analysis of the geometry of this structure has proved that there are no constraints for this vehicle, with this to be confirmed through topographical survey. This structure has been included as a POI as this is the only structure with weight restriction.	Amber	Potential for reduction of the weight of the cable drums to be reduced through smaller cable drum deliveries. Additionally, if required, mitigation measures could involve the Applicant considering the use of other ports of entry north of Peterhead for this purpose.
HDD (or similar trenchless technique) Rigs						
R01	Junction	A90 (T)	Invernettie Roundabout.	The analysis did not identify any	Grey	No mitigation required.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
				constraints at this junction for this vehicle.		
R02	Junction	A90 (T)	Howe O'Buchan Roundabout.	The analysis did not identify any constraints at this junction for this vehicle.	Grey	No mitigation required.
R03	Junction	A90 (T) / A982	A90 (T) / A982 junction.	The analysis did not identify any constraints at this junction for this vehicle.	Grey	No mitigation required.
R04	Junction	A90 (T) / C5B	A90 (T) / C5B junction.	The analysis did not identify any constraints at this junction for this vehicle.	Grey	No mitigation required.
R05	Junction	A90 (T) / U32B	Right turn from the A90 (T) onto the U32B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the junction to make the turn.	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.
R06	Road Link	U32B	Between the A90 (T) and landfall(s) Access Point.	The analysis shows that the carriageway appears to vary in width, with the	Red	Road widening within the adopted road boundary, at multiple points over an approx. 300m section on this section to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
				vehicle required to over-run and over-sail on the adjacent verges at multiple points along this section.		The works may require oversail on third-party land, with land ownership searches required to confirm ownership at this location.
R07	Structure (South Scotstown)	Annachie Burn Crossing	Bridge over Annachie Burn.	The analysis shows that the vehicle will be required to over-sail the bridge parapet.	Red	Topographical survey and information of bridge parapet height required to confirm extents of over-sail and determine if there is suitable clearance for the vehicle to over-sail.
R08	Junction	A950 / U50B	Right turn from the A950 onto the U50B.	The analysis shows that the vehicle will be required to over-sail the verge of the junction to make the turn.	Green	No mitigation required as suitable over-sail area available for the vehicle.
R09	Road Link	U50B	Between the A950 and the C43B.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
R10	Structure (S-NK088470-1)	Smiddyhill Underbridge	Bridge crossing Waterway.	The analysis did not identify any constraints at this location for this vehicle.	Grey	No mitigation required.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
R11	Junction	U50B / C43B	Right turn onto C43B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the junction to make the turn in both directions.	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.
R12	Road Link	C43B (East)	Between the U50B and the onshore export cable corridor access points.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
R13	Junction	U50B / C43B	Left turn onto C43B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the junction to make the turn in both directions.	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.
R14	Junction	C43B / U45B	Right turn from the C43B onto the U45B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the junction to make the turn.	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
R15	Structure (S-NK087479-1)	Westerton of Barnyards Underbridge	Bridge crossing core path.	The analysis did not identify any constraints at this location for this vehicle.	Grey	No mitigation required.
R16	Junction	Right turn on U45B	Right turn to continue on U45B.	The analysis shows that the vehicle will be required to over-run and over-sail the verges of the junction to make the turn.	Amber	Junction widening required to accommodate the vehicle, although the need and exact extents of the works will need to be confirmed by a topographical survey. The works appear to be able to be accommodated within the adopted road boundary without a requirement for third party land.
R17	Road Link	U45B	Between Johnston Farm and Access Points.	The analysis shows that the vehicle may be required to over-sail the verges on both sides of the carriageway at multiple points along the section.	Green	Provide over-sail areas at multiple points along this section of the road to accommodate the vehicle. The need and exact extents of the works will need to be confirmed by a topographical survey.
R18	Junction	A950 / U63B	A950 / U63B junction.	The analysis did not identify any constraints at this junction for this vehicle.	Grey	No mitigation required.
R19	Junction	A950 / U56B	A950 / U56B junction.	The analysis did not identify any constraints at this junction for this vehicle.	Grey	No mitigation required.

POI	Constraint type	Location	Description	SPA results	RAG	Potential mitigation
R20	Structure (S-NK109483-1)	A90 (T)	Inverugie Bridge.	Analysis of the geometry of this structure has proved that there are no constraints for this vehicle, with this to be confirmed through topographical survey. This structure has been included as a POI as this is the only structure with weight restriction.	Amber	Potential for reduction of the weight of the cable drums to be reduced through smaller cable drum deliveries. Additionally, if required, mitigation measures could involve the Applicant considering the use of other ports of entry north of Peterhead for this purpose.

5.3 Consultation

5.3.1.1 In terms of agreeing the delivery routes, Aberdeenshire Council and other relevant stakeholders will be consulted and any routes agreed before any trial run. The AL suppliers and vehicles specifications are yet to be confirmed. Therefore, the AL assessment identifies the potential embedded environmental measures indicatively required at a number of locations that may be required. All relevant permits for abnormal load transportation will be arranged prior to commencement of deliveries.

5.3.1.2 A Section 48 Agreement of the Roads (Scotland) Act 1984 will be secured between the relevant local road authority and the Applicant to cover the associated road works, needed to facilitate the delivery of the abnormal loads. The local planning authorities' roads officers will be contacted in due course.

6. Management Strategy

6.1 Introduction

6.1.1.1 It is essential that the movements are thoughtfully planned and undertaken to ensure they progress safely on the road network.

6.1.1.2 Those responsible for transporting abnormal loads by road are required by law to plan and execute each movement in agreement with relevant authorities to ensure the incident-free passage of every load from origin to destination.

6.1.1.3 An Outline CTMP has been prepared separately covering the construction of the Project (**Volume 4: Outline Construction Traffic Management Plan**). The Outline CTMP is a live outline document, fixed at the time of submission to inform the EIA and is intended to be expanded into a detailed CTMP. The indicative measures proposed will be developed and expanded as the project progresses up to the construction stage. The Outline CTMP will be further developed by the Principal Contractor, in conjunction with local planning authorities and other appropriate stakeholders.

6.1.1.4 The following sets out the general traffic management strategy that would be employed by the Principle Contractor.

6.2 Route enforcement

6.2.1.1 The AL route identified will be strictly enforced unless further notification is given. All main and sub-contracting companies involved in the Project will be monitored to ensure they follow the correct routes and do not use other ‘shortcuts’. The routes will be clearly defined in all sub-contracts and clearly signposted for all drivers to see. Any contractor not adhering to the relevant route guidance will be disciplined. Onsite monitoring and spot checks will assist in this.

6.3 Timing of movements

6.3.1.1 Deliveries shall only take place during the hours agreed with the Police and the relevant road authority. Deliveries would be timed to avoid the morning or afternoon school run periods or other predictable peak traffic periods. Deliveries are expected to take place during weekdays, however, if deliveries are required at weekends approval in principle should be sought from the local planning authorities and the Police.

6.4 Escorts

6.4.1.1 Where applicable, abnormal loads shall all be escorted in accordance with the relevant roads’ authorities. The escorting will be undertaken by the haulage contractor. Where it has been identified that traffic will need to be temporarily stopped, then a Police escort will be required. Convoys would typically comprise no more than two abnormal vehicles and shall be escorted by Police and / or haulier escort vehicles, as appropriate.

6.5 Temporary closures and Traffic Regulation Order

6.5.1.1 At the discretion of the haulage contractor, temporary road closures may be required in order to deliver some of the larger abnormal loads. The haulage contractor will liaise with

the local community, businesses and key services to ensure they are fully informed in advance should a road closure scheme be required.

6.5.1.2 Any required temporary traffic regulation orders will be obtained prior the transport of the abnormal loads.

6.6 Lighting, signing and marking

6.6.1.1 Lighting, signing, and marking will be in accordance with:

- Code of Practice Lighting and Marking for Special Order, VR1, STGO and C&U loads (Highways England, *n.d*); and
- Using abnormally large or heavy vehicles on the road.

6.7 Public communication strategy

6.7.1.1 The delivery of abnormal loads is likely to cause some delay to local road users and, in some cases, restrict access along certain routes. To ensure residents, local business and key services are made aware of such restrictions, the Principal Contractor will implement a comprehensive communications strategy, which could include, but is not limited to; letter drops, radio spots, notices within local papers, temporary road signage, website updates on a project website and other social media outlets.

7. Summary

7.1.1.1 The abnormal load route assessment identifies that the various ALs can be successfully routed along the trunk road network and local roads to the indicative access points located in proximity to the construction working areas, with the provision of potential mitigation works identified within this assessment. The report identifies key POIs along the route, presenting where SPA of the pinch points has been undertaken and illustrating where accommodation works are necessary. The results of the SPA will need to be confirmed by topographical surveys, trial runs and revisited and reviewed once exact vehicle specifications have been determined.

7.1.1.2 The assessment identifies constraints regarding some of the structures on the assessment routes; however it is considered that further consultation with Aberdeenshire Council would be necessary and that some of these structures may potentially require detailed assessment as the Project progresses through to delivery.

7.1.1.3 A number of bridge structures are expected to be crossed which may need detailed structural assessment prior to use for AL delivery. Inverugie Bridge (S-NK109483-1) located along the A90(T) northwest of Peterhead, is the only bridge that has a stated weight restriction on it and is likely to require reinforcement works prior to any AL deliveries at this location. It is considered that only the cable drums currently appear to surpass the weight restriction of the bridge, with this to be confirmed once the transporter vehicle axle configuration is finalised and structural assessment has been undertaken. If thorough structural assessment confirms that this is an issue for cable drum routing, it is considered that the weight of the cable drums can be reduced through smaller cable deliveries. Additionally, if required, mitigation measures could involve the Applicant considered the use of other ports of entry north of Peterhead for this purpose.

8. References

Highways England, (n.d.). *Code of Practice: Lighting and Marking for Special Order, VR1, STGO and C&U Loads.* [online] Available at: https://assets.publishing.service.gov.uk/media/5a819a8640f0b62302698324/Lighting_and_marking_COP_for_SO_VR1_STGO_and_CU_loads_HE_rebranding_v1.pdf [Accessed: 26 August 2025].

Roads (Scotland) Act 1984 (1984 c. 54). [online] Available at: https://www.legislation.gov.uk/ukpga/1984/54/contents [Accessed: 26 August 2025].

The Road Vehicles (Authorisation of Special Types) (General) Order 2003 (2003 No. 1998). [online] Available at: https://www.legislation.gov.uk/uksi/2003/1998/contents [Accessed: 26 August 2025].

The Road Vehicles (Authorised Weight) Regulations 1998 (1998 No. 3111). [online] Available at: https://www.legislation.gov.uk/uksi/1998/3111/contents/made [Accessed: 26 August 2025].

The Road Vehicles (Construction and Use) Regulations 1986 (1986 No. 1078). [online] Available at: https://www.legislation.gov.uk/uksi/1986/1078/contents [Accessed: 26 August 2025].

9. Glossary and Abbreviations

9.1 Abbreviations

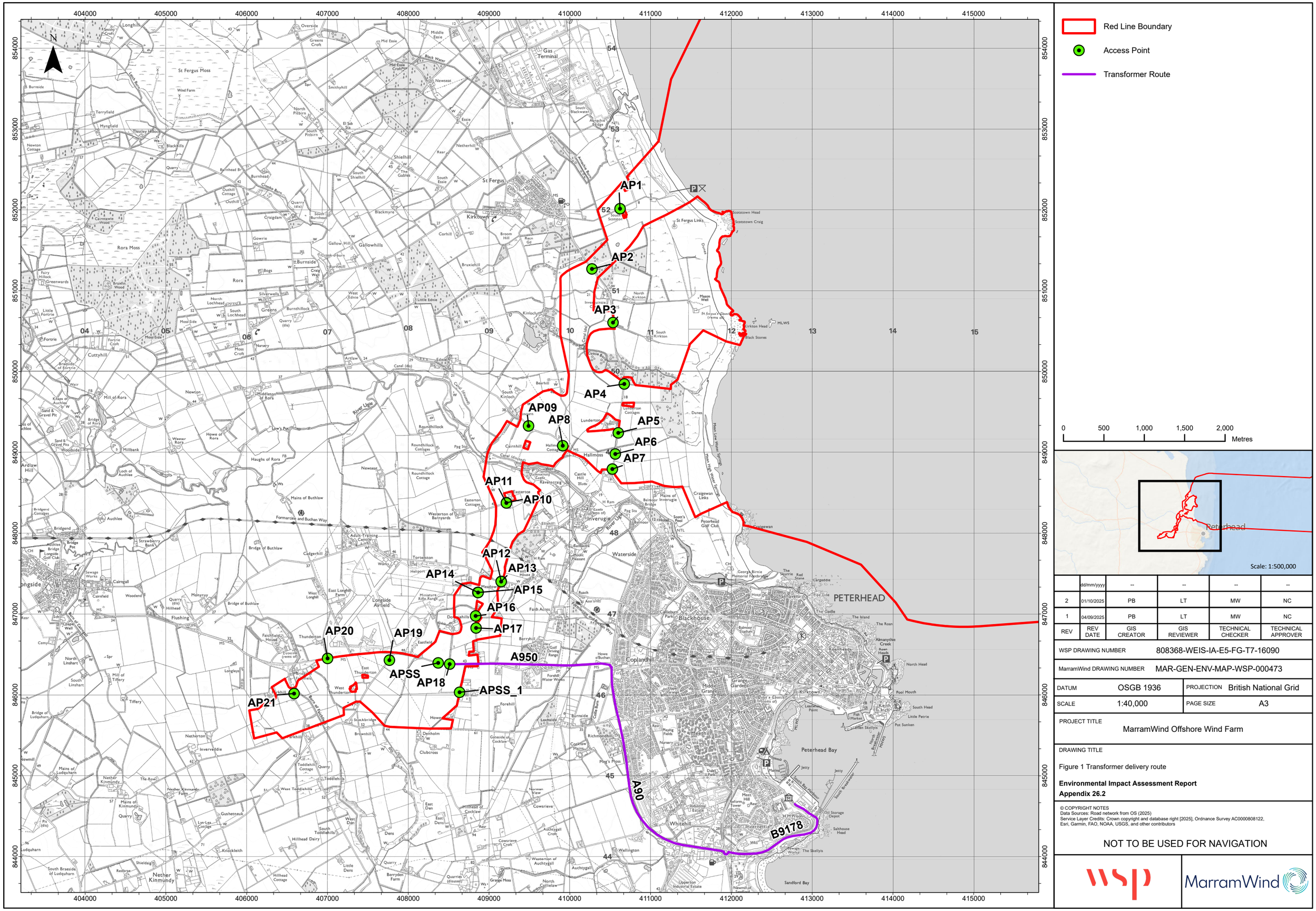
Acronym	Definition
AIL	Abnormal Indivisible Load
AP	Access Point
ALRA	Automatic Traffic Counter
C&U	Construction & Use
CTMP	Construction Traffic Management Plan
EIA	Environmental Impact Assessment
ESDAL	Electronic Service Delivery for Abnormal Loads
HDD	Horizontal Directional Drilling
Kg	Kilograms
m	metres
MLWS	Mean Low Water Springs
OS	Ordnance Survey
SOS	Secretary of State
SPA	Swept Path Analysis
SSEN	Scottish and Southern Electricity Network
STGO	Special Types (General) Order
VCA	Vehicle Certification Agency

9.2 Glossary of terms

Term	Definition
Abnormal Load	Is a vehicle and load combination that exceeds the standard legal limits for weight, length, or width, making it too large or heavy to be carried on a conventional vehicle without special arrangements.
Construction Traffic Management Plan	A document outlining how to manage vehicle and pedestrian movements around a construction site to minimize disruption and enhance safety.

Term	Definition
Department for Transport	The government department responsible for the transport network in the UK.
ESDAL	Online system provided by National Highways for hauliers to plan routes, and for police, bridge owners, and highway authorities to manage and receive notifications for the movement of abnormally large vehicles and loads on the road network in England, Scotland, and Wales.
Cable Drum	Cylindrical reel used for winding, storing, transporting, and dispensing the export cables.
Horizontal Directional Drilling	A surface-launched machine that installs underground utilities like pipes and cables using a steerable trenchless method
Heavy Goods Vehicle	Is defined as a commercial vehicle with a gross weight exceeding 3,500kg (3.5 tonnes).
Swept Path Analysis	A process of digitally simulating a vehicle's turning and manoeuvring through a site or route to ensure it has enough physical space to navigate safely and efficiently.
Transformer	An electrical device within an electrical substation that changes the voltage of the electrical energy, stepping it up or down as needed for transmission, distribution, and use by consumers.
Transport Scotland	The national transport agency of Scotland, established by the Transport Scotland Act 2005 as an Executive Agency of the Scottish Government.

Appendix A
Figures



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MarramWind DRAWING NUMBER	MAR-GEN-ENV-MAP-WSP-000473		
DATUM	OSGB 1936	PROJECTION	British National Grid
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PROJECT TITLE

MarramWind Offshore Wind Farm

DRAWING TITLE

Figure 1 Transformer delivery route

Environmental Impact Assessment Report
Appendix 26.2

NOT TO BE USED FOR NAVIGATION

wsp

MarramWind

Red Line Boundary

Access Point

Cable Drum Route

0 500 1,000 1,500 2,000 Metres

Peterhead

Scale: 1:500,000

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
	dd/mm/yyyy	--	--	--	--
2	01/10/2025	PB	LT	MW	NC
1	04/09/2025	PB	LT	MW	NC

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PROJECT TITLE

MarramWind Offshore Wind Farm

DRAWING TITLE

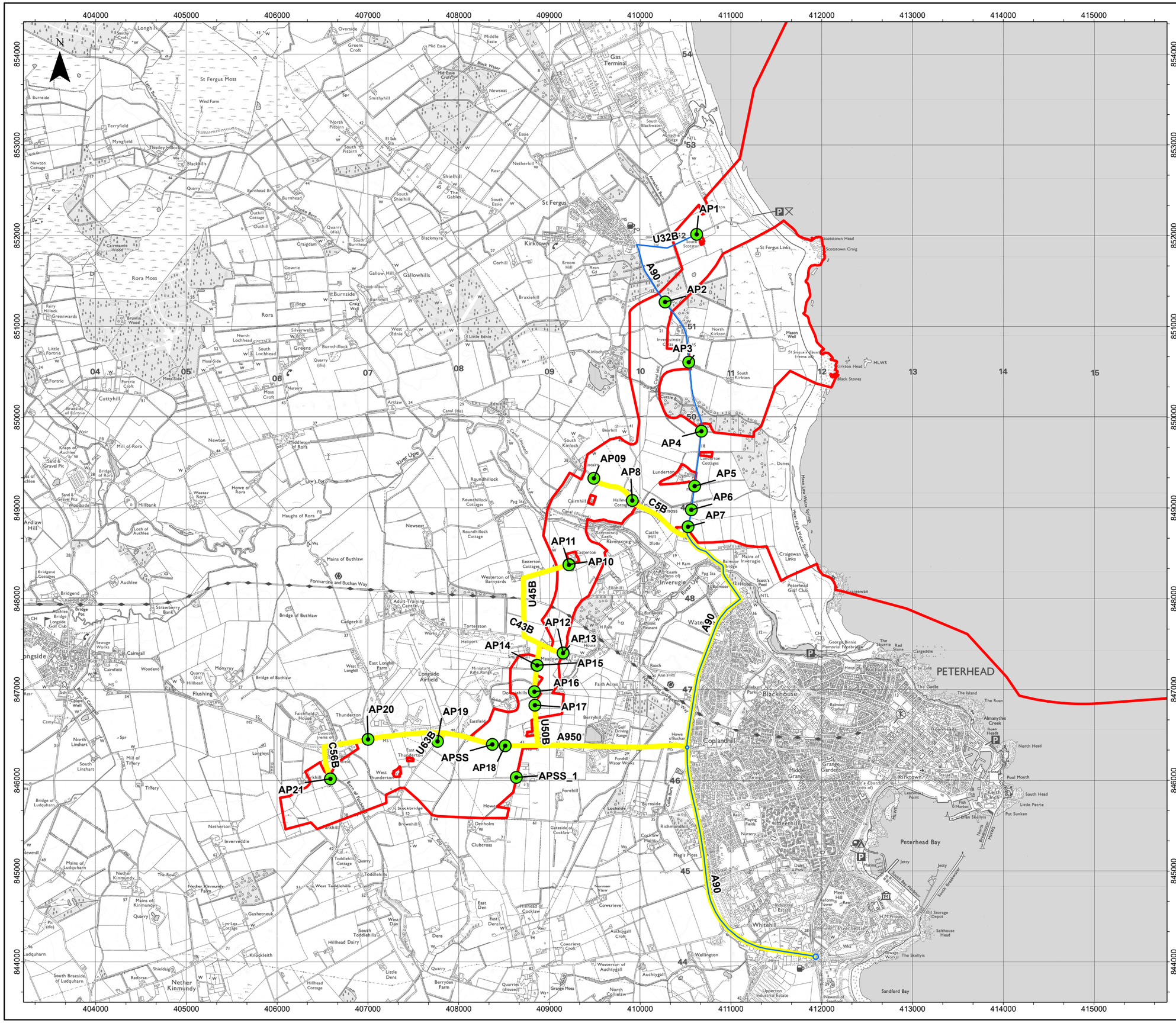
Figure 2 Cable drum delivery route

Environmental Impact Assessment Report
Appendix 26.2

NOT TO BE USED FOR NAVIGATION

wsp

MarramWind



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SCALE	1:40,000	PAGE SIZE	A3

PROJECT TITLE

MarramWind Offshore Wind Farm

DRAWING TITLE

Figure 3 Horizontal directional drilling (or similar trenchless technique) rigs delivery routes

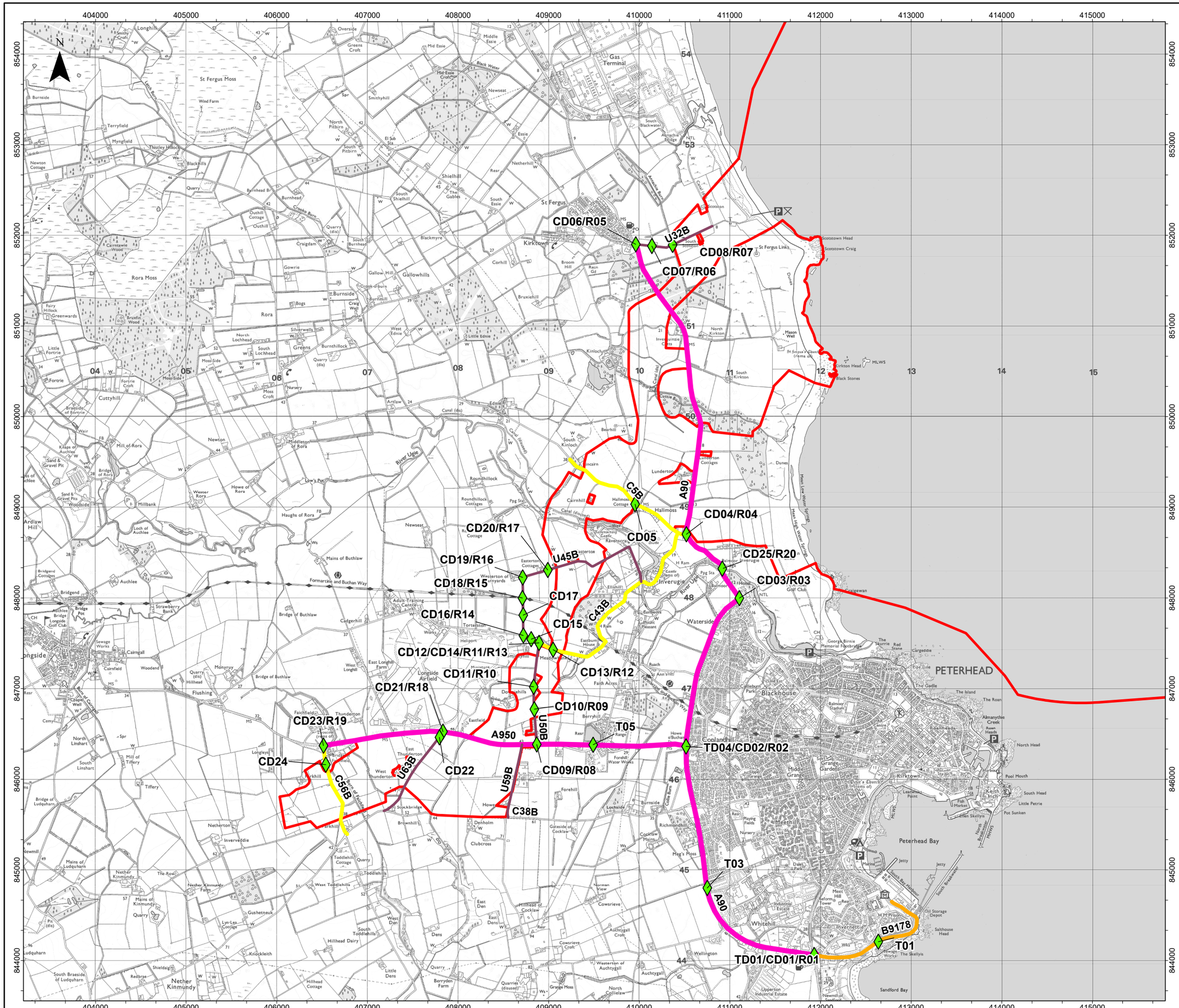
Environmental Impact Assessment Report

Appendix 26.2

NOT TO BE USED FOR NAVIGATION

wsp

MarramWind



Red Line Boundary

Study Network

- A Road
- B Road
- Classified Unnumbered
- Unclassified

Abnormal POIs

REV	REV DATE	GIS CREATOR	GIS REVIEWER	TECHNICAL CHECKER	TECHNICAL APPROVER
	dd/mm/yyyy	--	--	--	--
2	01/10/2025	PB	LT	MW	NC
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PROJECT TITLE

MarramWind Offshore Wind Farm

DRAWING TITLE

Figure 4 Points of interest locations

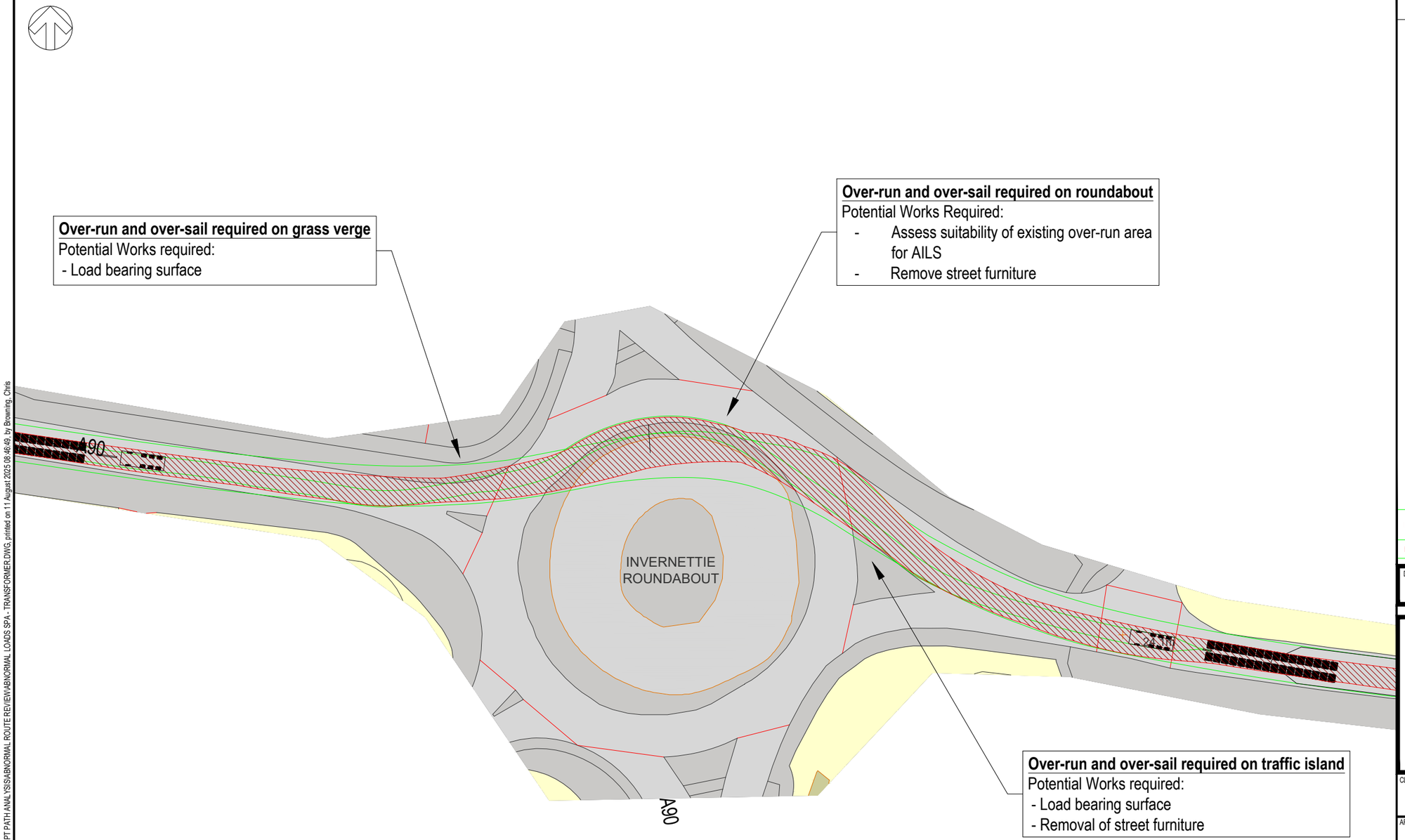
Environmental Impact Assessment Report
Appendix 26.2

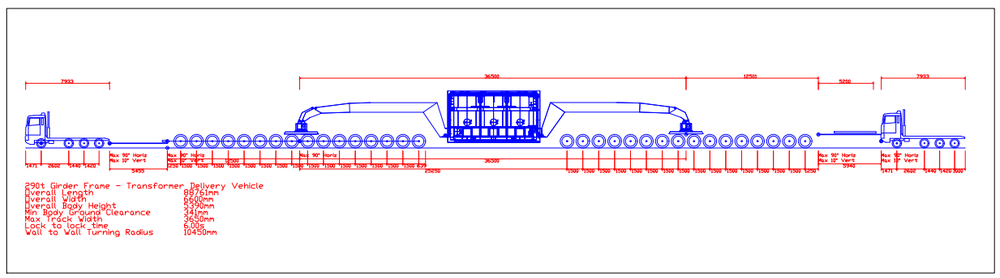
NOT TO BE USED FOR NAVIGATION

wsp

MarramWind

Appendix B
Swept Path Analysis





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VEHICLE OUTLINE

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DRAWING STATUS: FOR ISSUE

7 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH, UK
T+ 44 (0) 131 344 2300, F+ 44 (0) 131 344 2301
wsp.com

CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI T02 - A90 (T)
INVERNETTIE ROUNDABOUT

SCALE @ A2:	CHECKED:		APPROVED:
N/A	PW		PW
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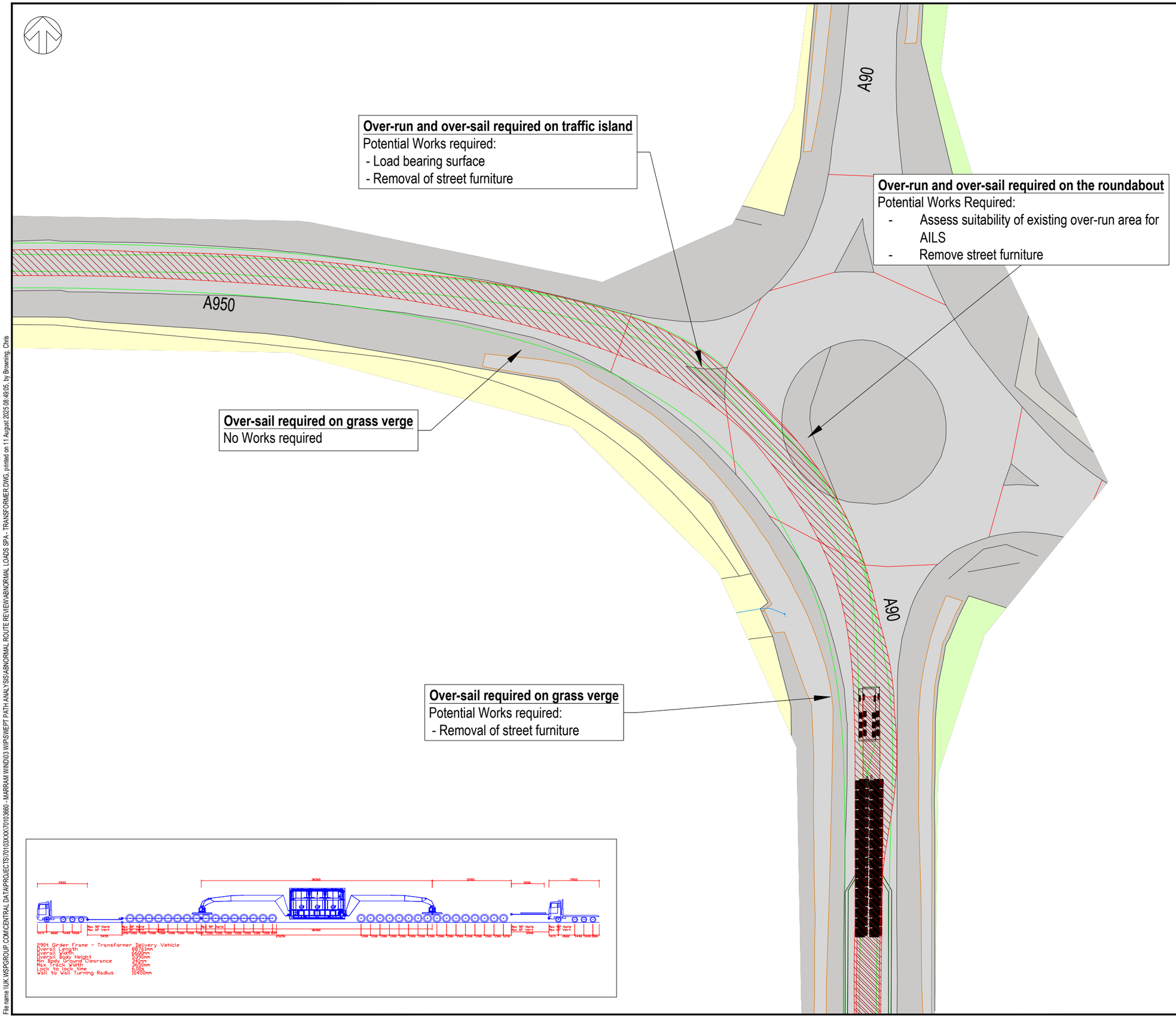

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DRAWING STATUS: FOR ISSUE

7 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH, UK
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wsp.com

CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI T04 - A90 (T) HOWE O'BUCHAN ROUNDABOUT

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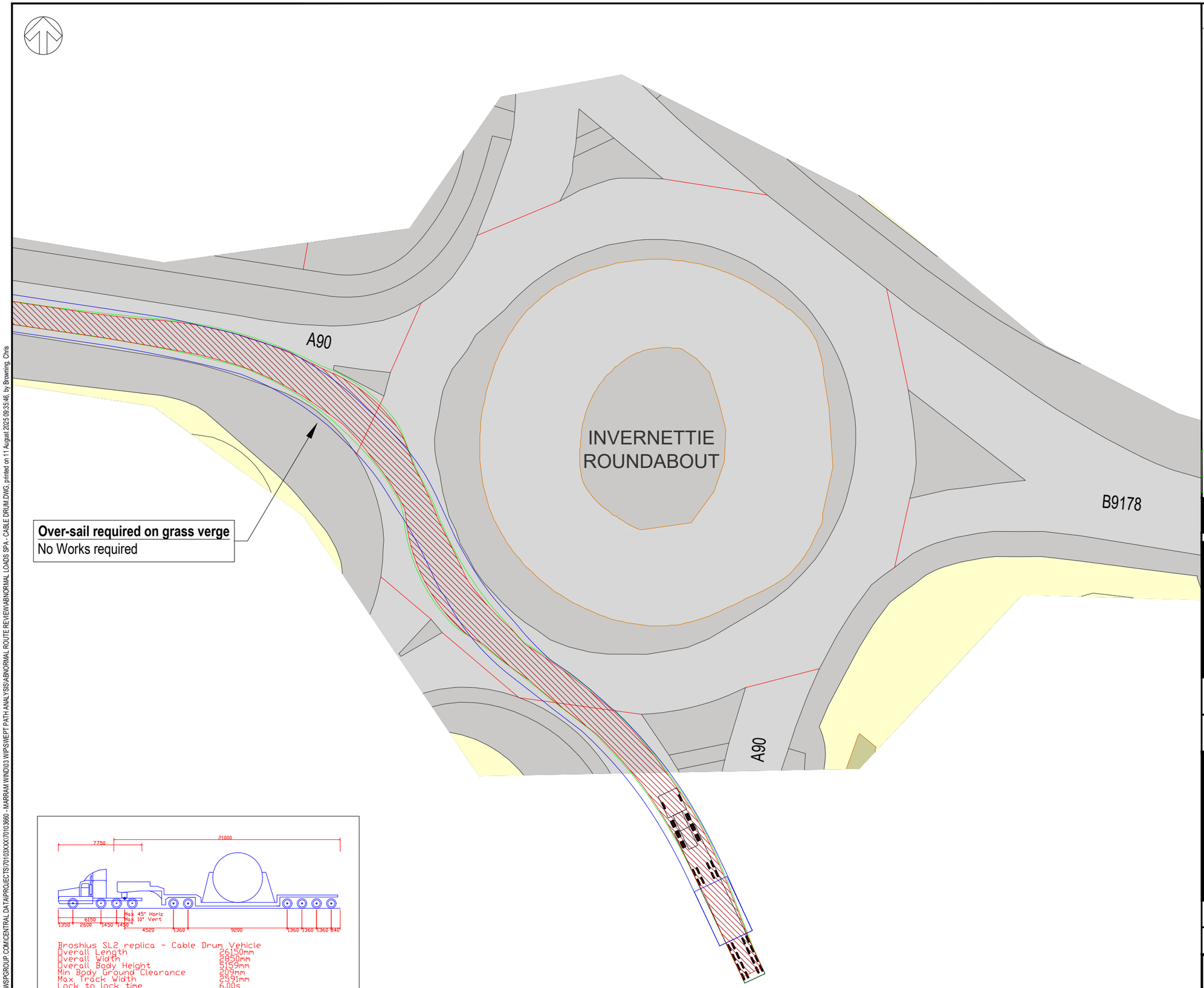
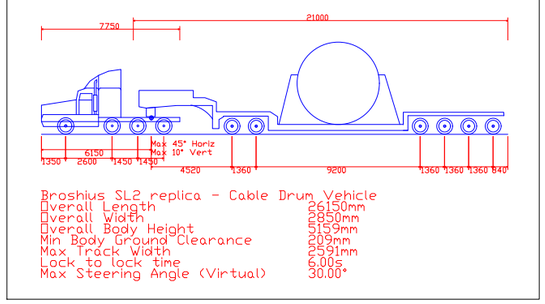


Over-sail required on grass verge
No Works required



Broshius SL2 replica - Cable Drum Vehicle

Overall Length	26150mm
Overall Width	2950mm
Overall Body Height	5159mm
Min Body Ground Clearance	209mm
Max Track Width	2591mm
Lock to lock time	6.00s
Max Steering Angle (Virtual)	30.00°

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
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7 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH, UK
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CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI CD01 - A90 (T)
INVERNETTIE ROUNDABOUT

SCALE @ A2:	CHECKED:	APPROVED:
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UK0041808.9006	AM	AM	AUGUST 2025

DRAWING No: UK0041808.9006-SPA-CD01 REV: P01

Shelter

A90

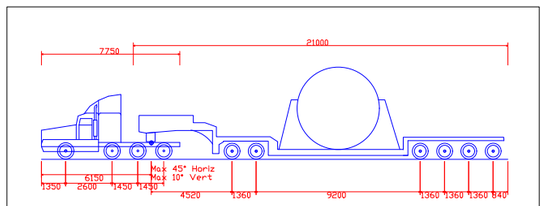
U32B

Over-sail required on grass verge
No works required

Over-sail required on grass verge
Potential Works required:
- Removal of street furniture

Over-run and over-sail required on grass verge
Potential Works required:
- Load bearing surface
- Removal of street furniture

A90



Broshius SL2 replica - Cable Drum Vehicle	
Overall Length	26150mm
Overall Width	2950mm
Overall Body Height	5159mm
Min Body Ground Clearance	297mm
Max Track Width	2591mm
Lock to lock time	6.00s
Max Steering Angle (Virtual)	30.00°

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
P01	11/08/2025	CB	SPA – CABLE DRUM	AM	PW

DRAWING STATUS: FOR ISSUE

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7 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH, UK
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CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI CD06 - A90 (T) / U32B junction

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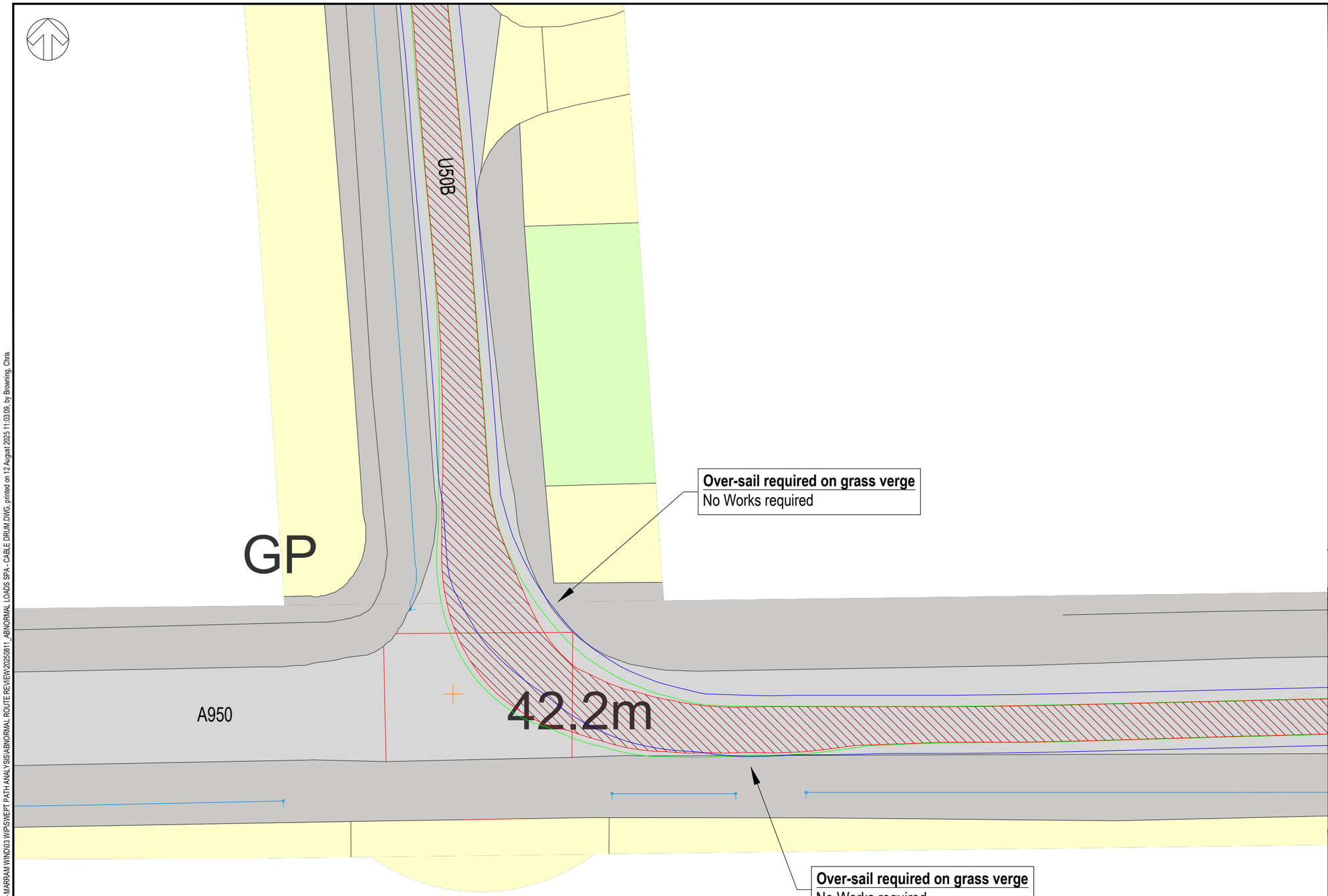

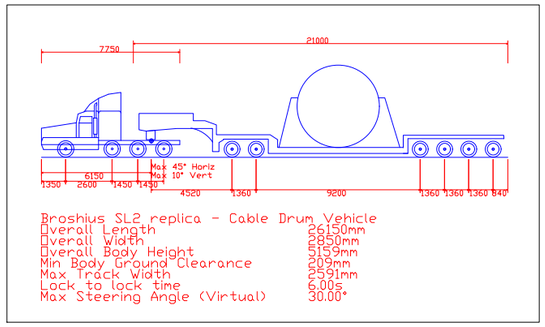

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wsp.com

CLIENT: MarramWind JV

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PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI CD09 - A950 / U50B Junction

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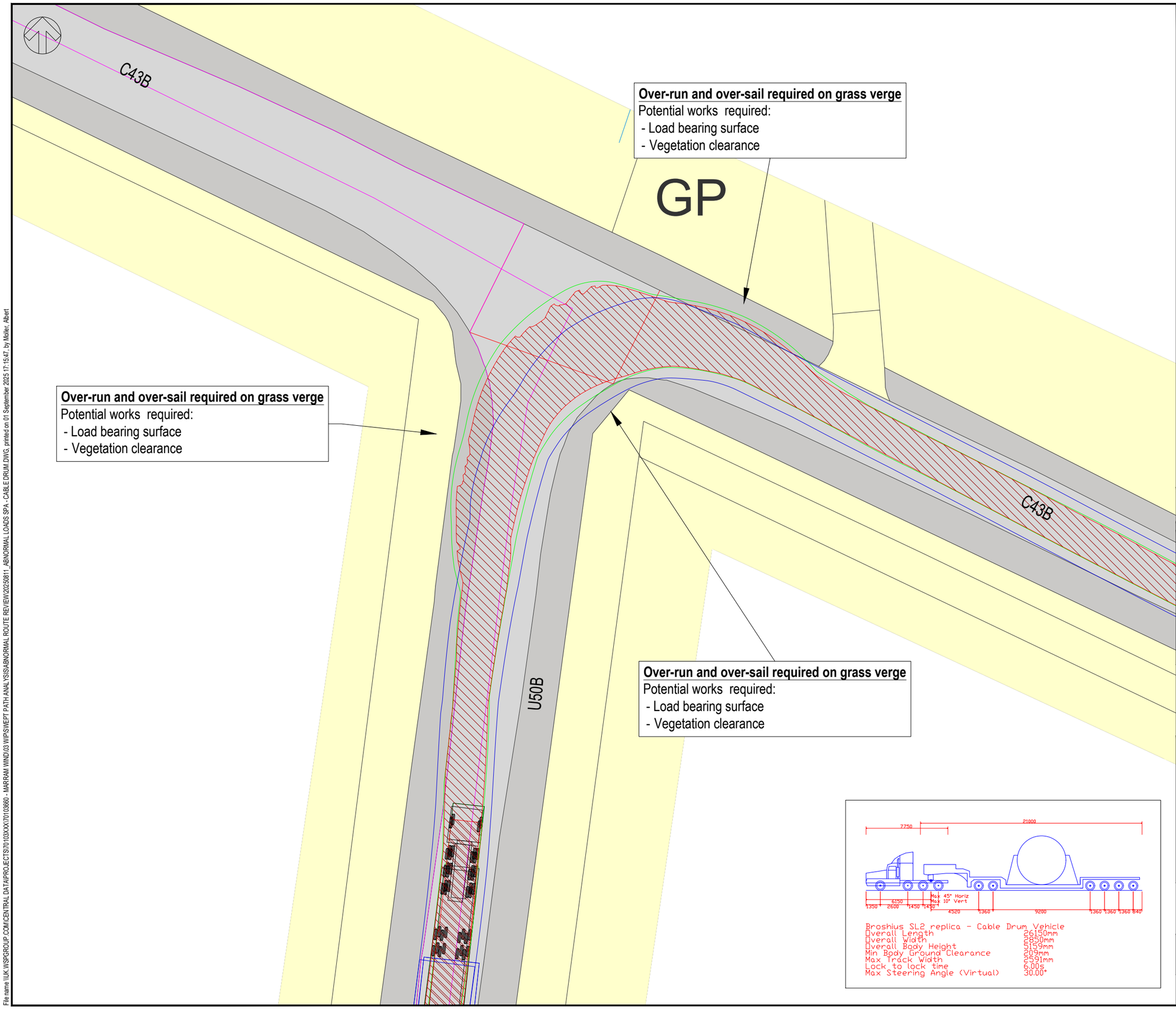

Over-run and over-sail required on grass verge
Potential works required:
- Load bearing surface
- Vegetation clearance

Over-run and over-sail required on grass verge
Potential works required:
- Load bearing surface
- Vegetation clearance

Over-run and over-sail required on grass verge
Potential works required:
- Load bearing surface
- Vegetation clearance

Broshius SL2 replica - Cable Drum Vehicle	
Overall Length	26150mm
Overall Width	2850mm
Overall Body Height	5159mm
Min Body Ground Clearance	209mm
Max Track Width	2591mm
Lock to lock time	6.00s
Max Steering Angle (Virtual)	30.00°

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
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CLIENT:

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI CD12 - U50B / C43B
Junction (Right turn)

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UK0041808.9906	AM	AM	August 25

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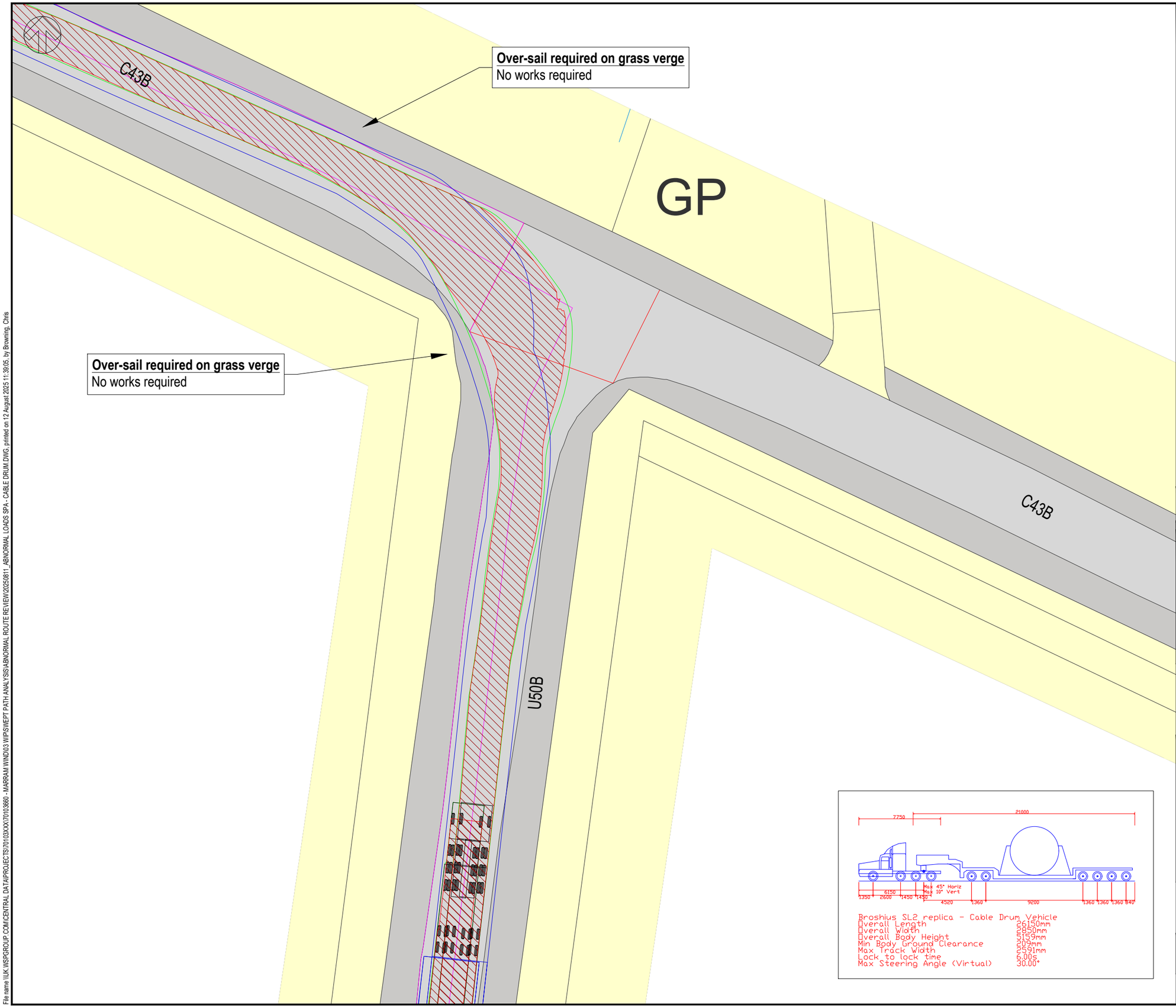

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REV	DATE	BY	DESCRIPTION	CHK	APP
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CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI CD14 - U50B / C43B Junction (Left turn)

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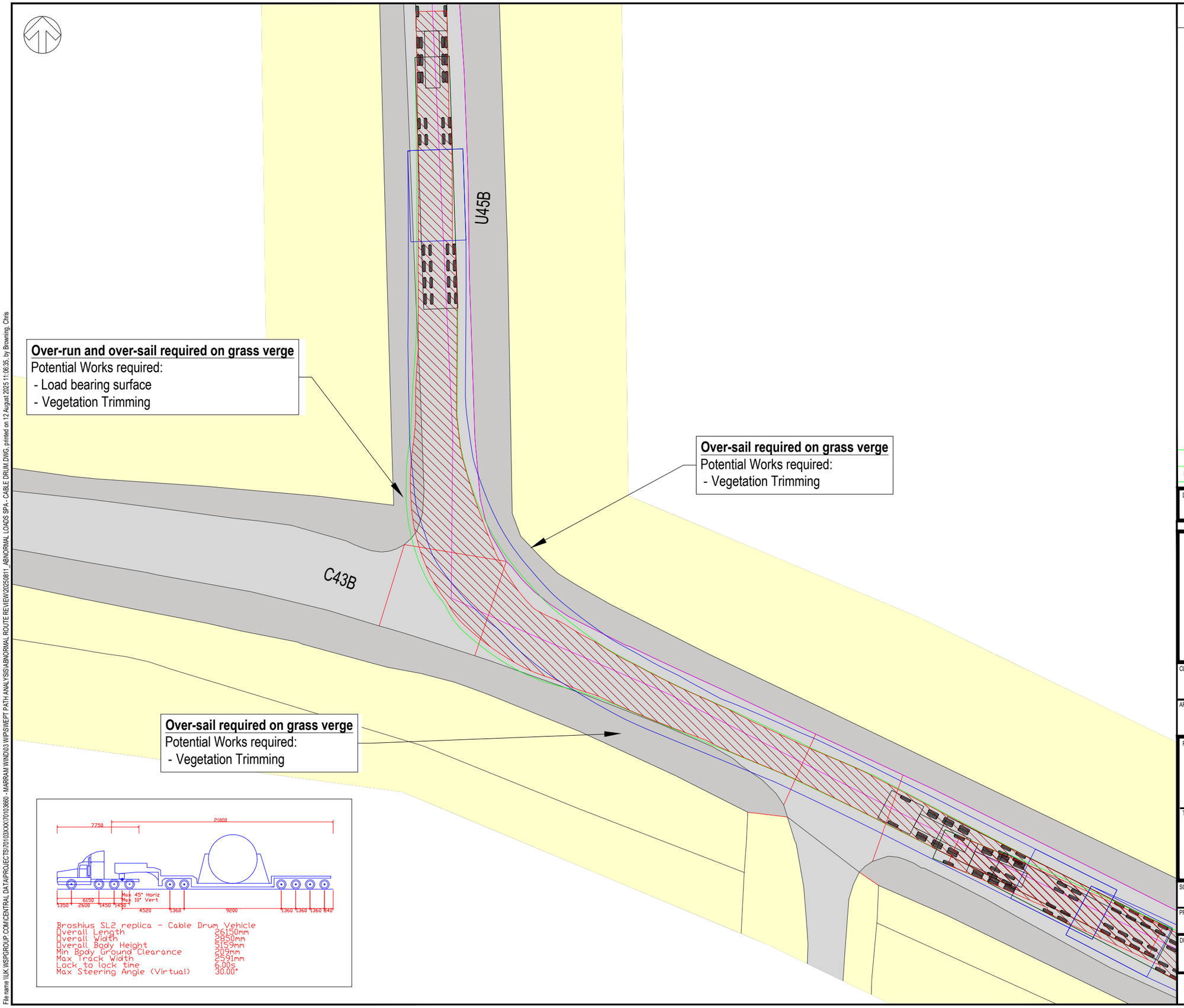

Broshius SL2 replica - Cable Drum Vehicle	
Overall Length	26150mm
Overall Width	2850mm
Overall Body Height	5159mm
Min Body Ground Clearance	209mm
Max Track Width	2591mm
Lock to lock time	6.00s
Max Steering Angle (Virtual)	30.00°

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
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DRAWING STATUS: FOR ISSUE

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wsp.com

CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI CD16 - C43B / U45B Junction

SCALE @ A2:	CHECKED:	APPROVED:
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PROJECT No:	DESIGNED:	DRAWN:	DATE:
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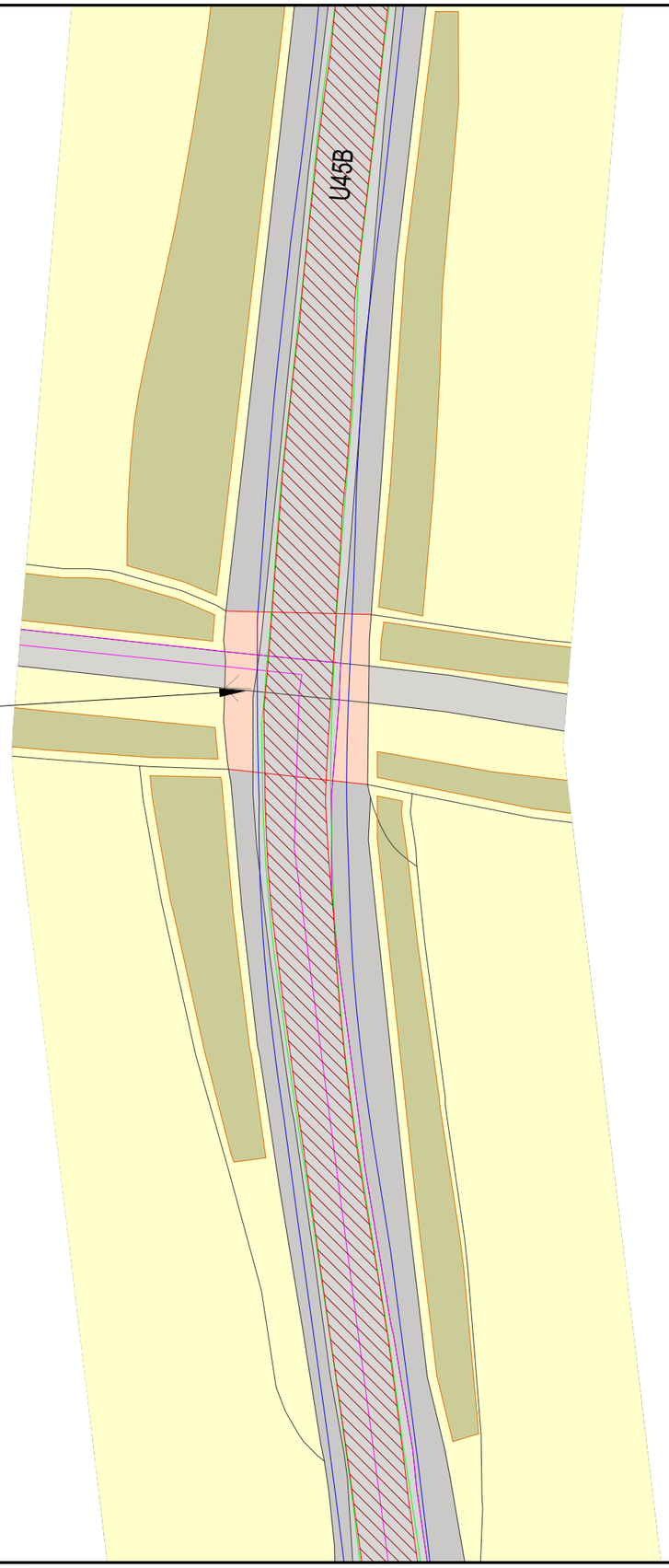
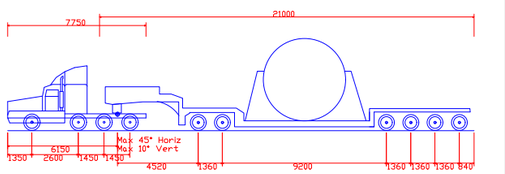


Over-sail required on bridge parapets

Potential Works required:

- Review of bridge parapet heights to assess if suitable clearance for vehicle



Broshius SL2 replica - Cable Drum Vehicle	
Overall Length	26150mm
Overall Width	5850mm
Overall Body Height	5159mm
Min Body Ground Clearance	209mm
Max Track Width	2591mm
Lock to lock time	6.00s
Max Steering Angle (Virtual)	30.00°

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
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DRAWING STATUS: FOR ISSUE

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7 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH, UK
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wsp.com

CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI CD18 - Westerton of Barnyards Underbridge

SCALE @ A2:	CHECKED:	APPROVED:
N/A	PW	PW

PROJECT No:	DESIGNED:	DRAWN:	DATE:
UK0041808.9006	AM	AM	AUGUST 2025

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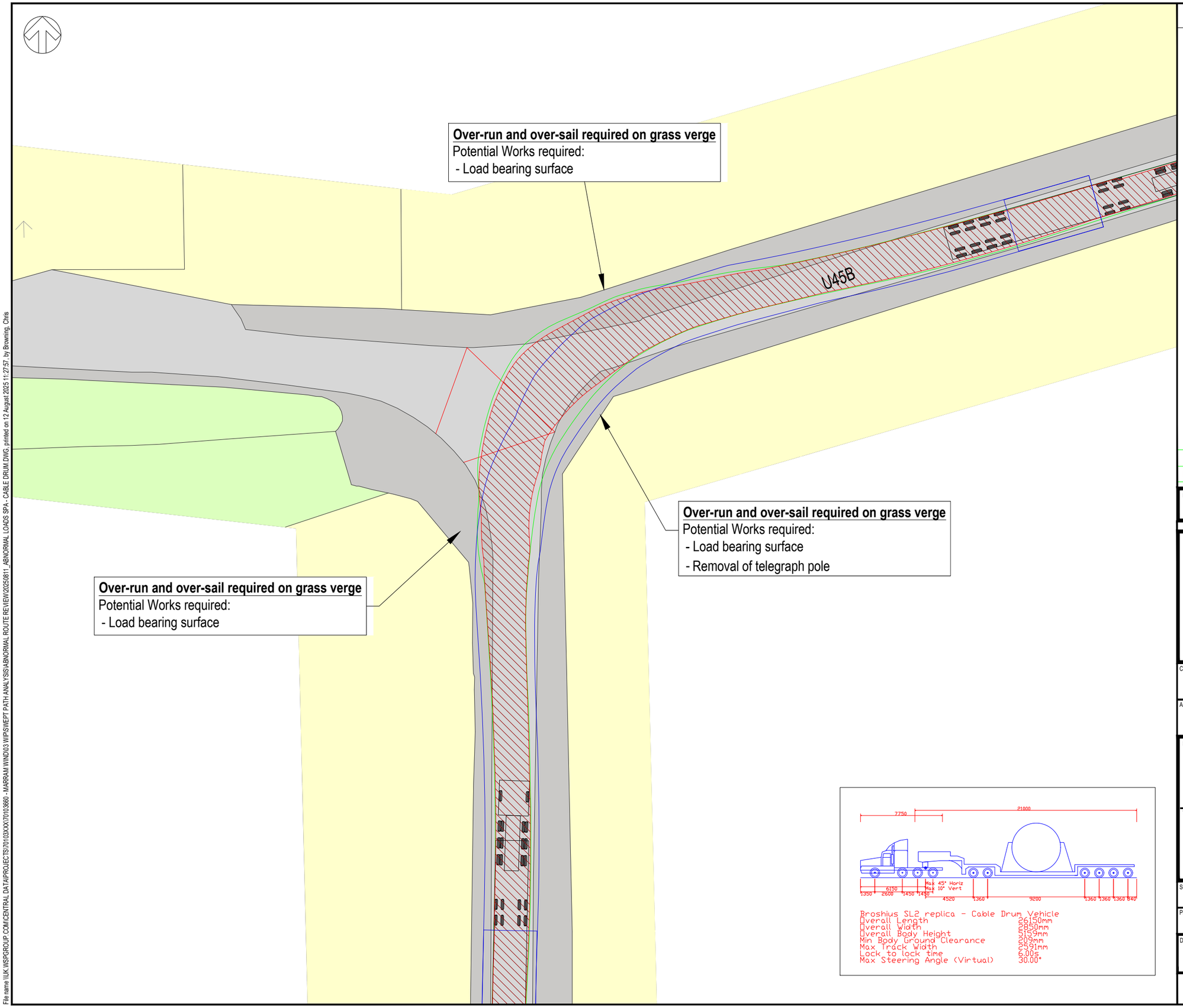

DO NOT SCALE

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WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
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DRAWING STATUS: FOR ISSUE

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7 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH, UK
T+ 44 (0) 131 344 2300, F+ 44 (0) 131 344 2301
wsp.com

CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI CD19 - Right Turn on U45B

SCALE @ A2:	CHECKED:		APPROVED:
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PROJECT No:	DESIGNED:	DRAWN:	DATE:
UK0041808.9006	AM	AM	AUGUST 2025

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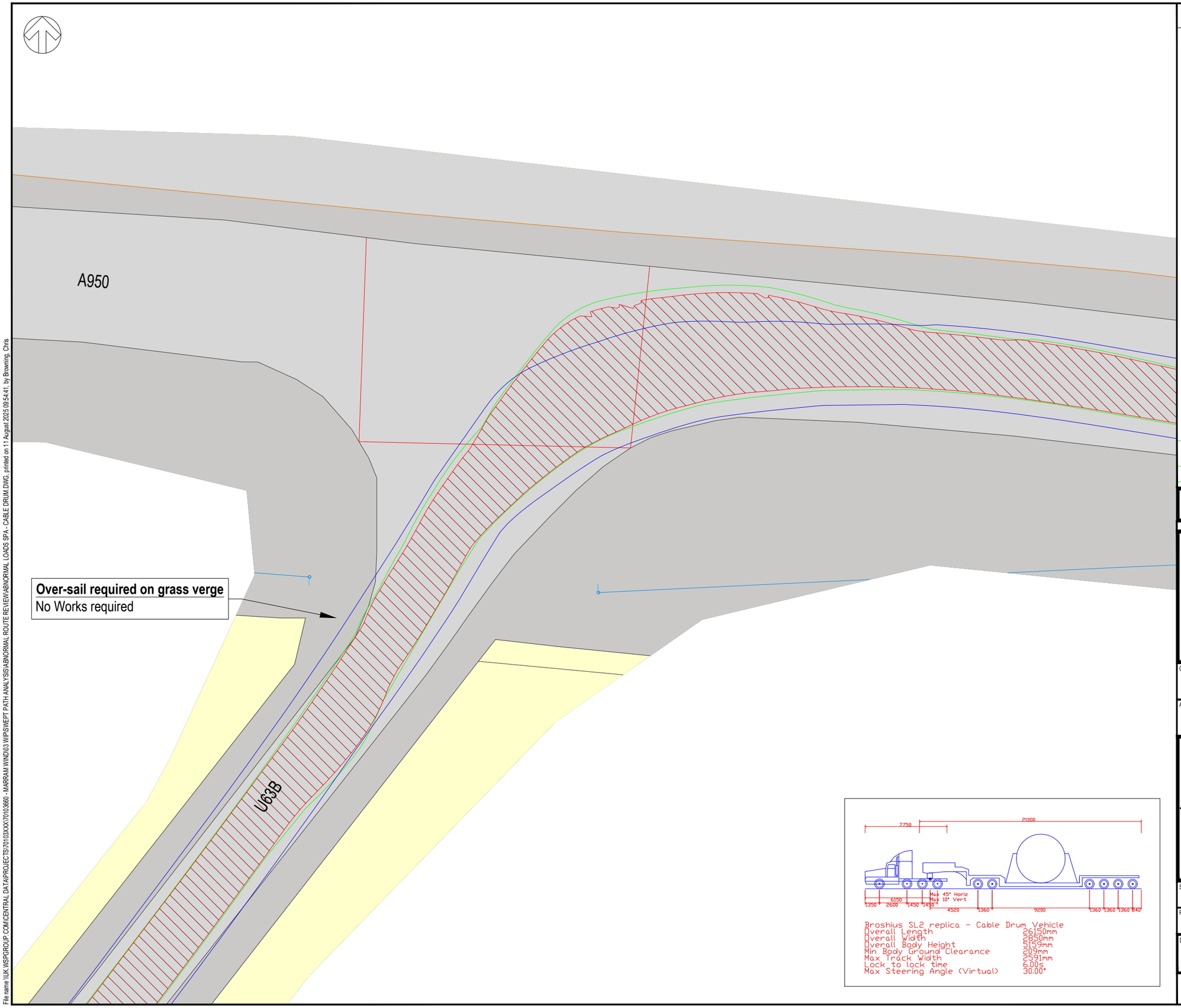

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
P01	11/08/2025	CB	SPA – CABLE DRUM	AM	PW

DRAWING STATUS: FOR ISSUE

Broshius SL2 replica - Cable Drum Vehicle	
Overall Length	26150mm
Overall Width	2850mm
Overall Body Height	5159mm
Min Body Ground Clearance	209mm
Max Track Width	2591mm
Lock to lock time	6.00s
Max Steering Angle (Virtual)	30.00°

wsp

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T+ 44 (0) 131 344 2300, F+ 44 (0) 131 344 2301
wsp.com

CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI CD21 - A950 / U63B Junction

SCALE @ A2:	CHECKED:		APPROVED:
N/A	PW		PW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
UK0041808.9006	AM	AM	AUGUST 2025

DRAWING No:	REV:
UK0041808.9006-SPA-CD21	P01

Shelter

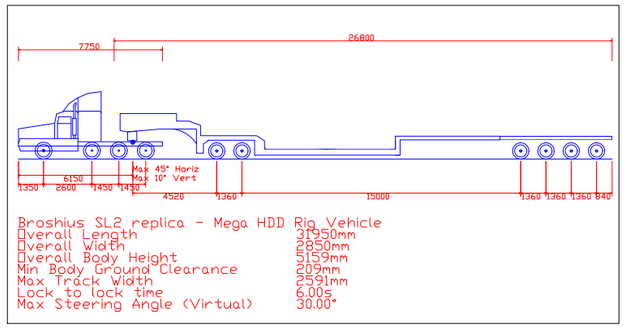
A90

U32B

Over-run and over-sail required on grass verge
Potential works required:
- Load bearing surface

Over-run and over-sail required on grass verge
Potential works required:
- Load bearing surface
- Removal of street furniture

Over-run and over-sail required on grass verge
Potential works required:
- Load bearing surface
- Removal of street furniture



Broshius SL2 replica - Mega HDD Rig Vehicle

Overall Length	31950mm
Overall Width	2850mm
Overall Body Height	5159mm
Min Body Ground Clearance	209mm
Max Track Width	2591mm
Lock to lock time	6.00s
Max Steering Angle (Virtual)	30.00°

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
P01					

DRAWING STATUS: FOR ISSUE

wsp

7 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH, UK
T+ 44 (0) 131 344 2300, F+ 44 (0) 131 344 2301
wsp.com

CLIENT:

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI R06 - A90 (T) / U32B Junction

SCALE @ A2:	CHECKED:	APPROVED:
N/A	PW	PW

PROJECT No:	DESIGNED:	DRAWN:	DATE:
UK0041808.9006	AM	AM	August 25

DRAWING No: UK0041808.9006-SPA-R06 REV: P01

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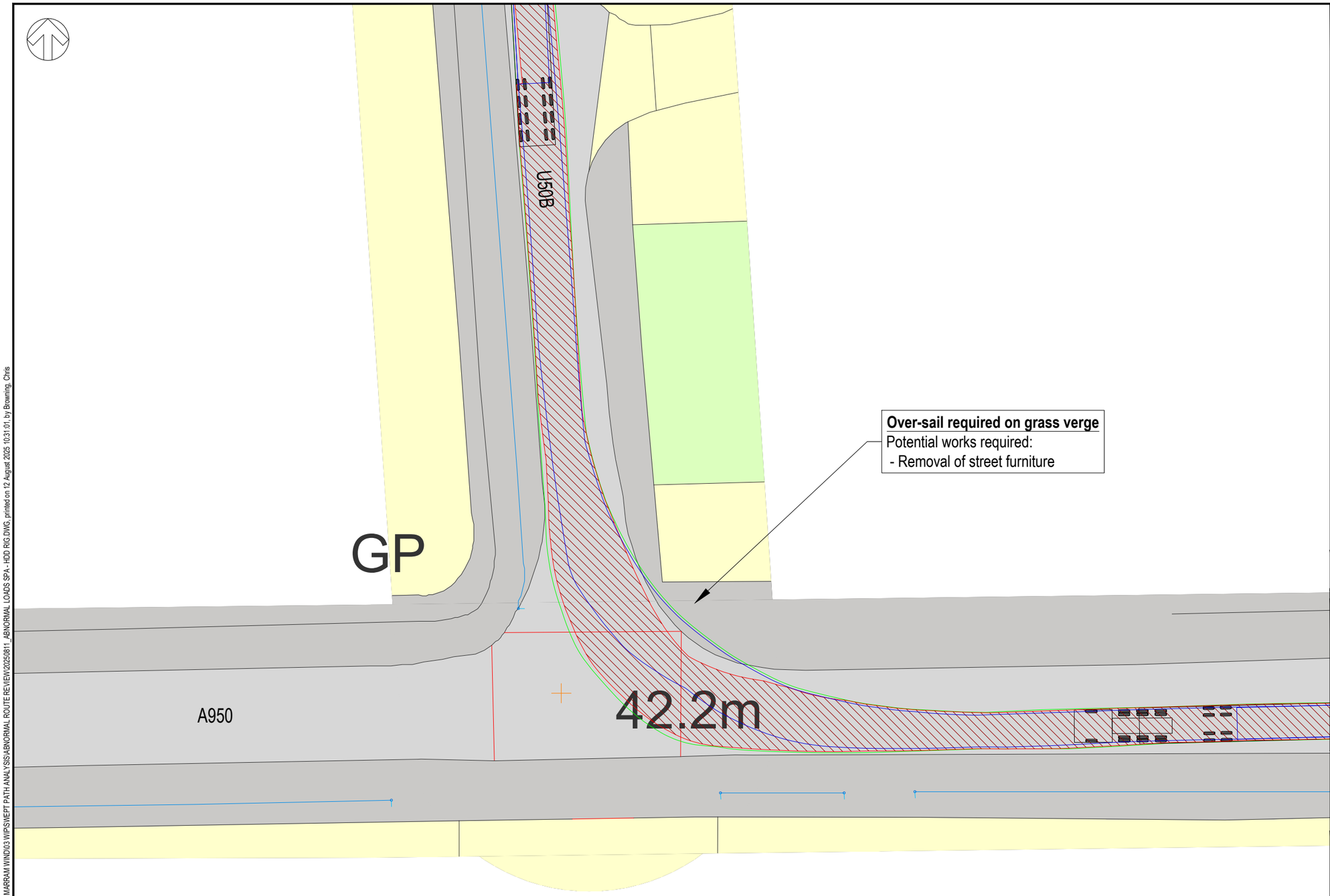

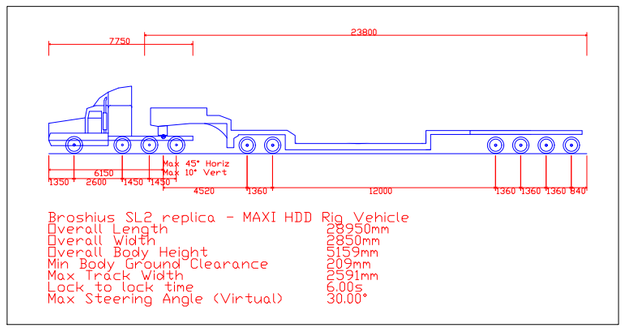

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
P01					

DRAWING STATUS: FOR ISSUE

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7 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH, UK
T+ 44 (0) 131 344 2300, F+ 44 (0) 131 344 2301
wsp.com

CLIENT: MarramWind JV

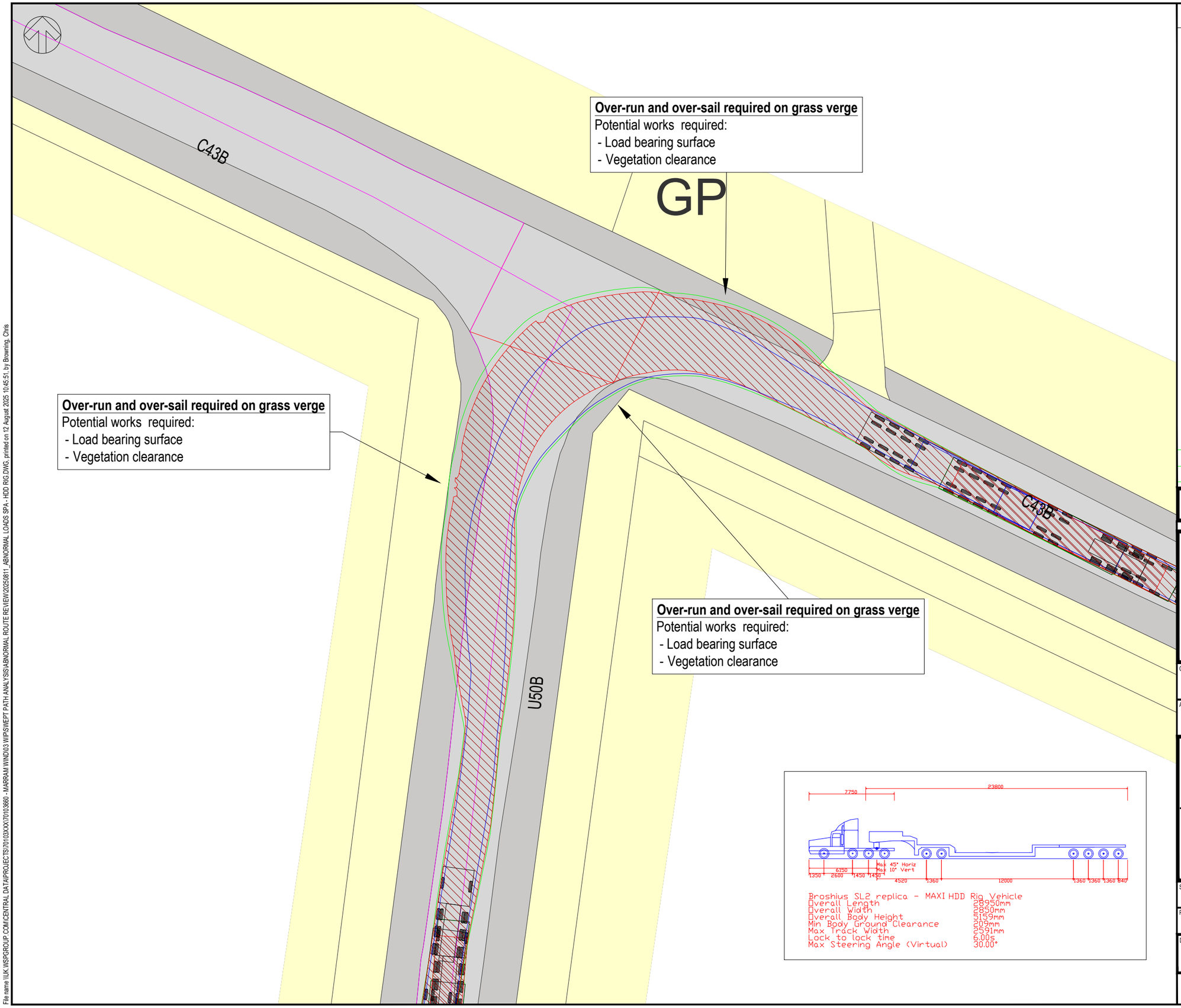
ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI R08 - A950 / U50B Junction

SCALE @ A2:	CHECKED:		APPROVED:
N/A	PW		PW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
UK0041808.9006	AM	AM	AUGUST 2025

DRAWING No: UK0041808.9006-SPA-R08 REV: P01



Over-run and over-sail required on grass verge
Potential works required:
- Load bearing surface
- Vegetation clearance

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- Vegetation clearance

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Potential works required:
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- Vegetation clearance

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
P01					

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CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI R11 - U50B / C43B Junction (Right turn)

SCALE @ A2:	CHECKED:		APPROVED:
N/A	PW		PW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
UK0041808.9006	AM	AM	AUGUST 2025

DRAWING No: UK0041808.9006-SPA-R11 REV: P01

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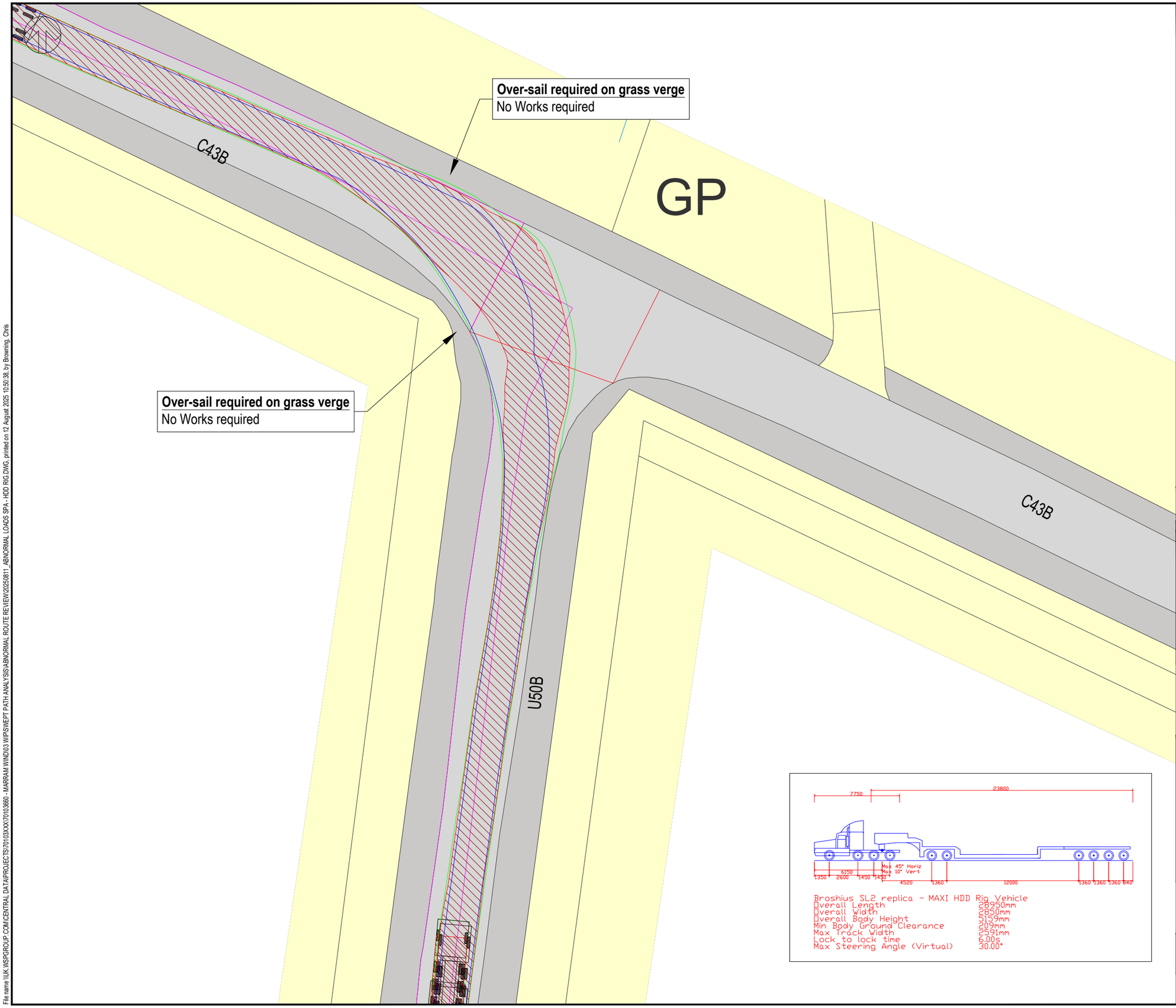

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
P01					

DRAWING STATUS: FOR ISSUE

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CLIENT: MarramWind JV

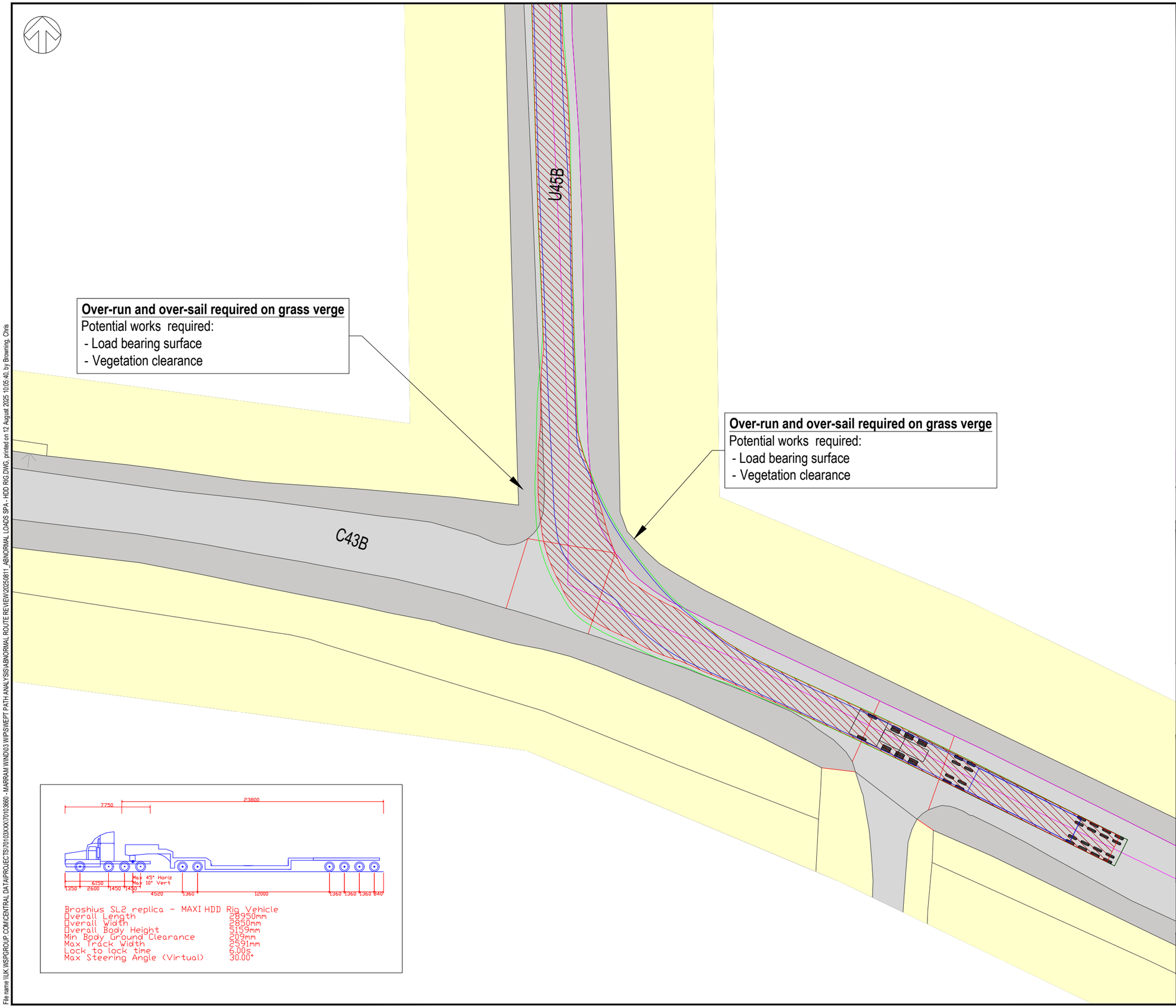
ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI R13 - U50B / C43B Junction (Left turn)

SCALE @ A2:	CHECKED:		APPROVED:
N/A	PW		PW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
UK0041808.9006	AM	AM	AUGUST 2025

DRAWING No:	REV:
UK0041808.9006-SPA-R13	P01



Over-run and over-sail required on grass verge
Potential works required:
- Load bearing surface
- Vegetation clearance

Over-run and over-sail required on grass verge
Potential works required:
- Load bearing surface
- Vegetation clearance

Broshius SL2 replica - MAXI HDD Rig Vehicle

Overall Length	28950mm
Overall Width	2850mm
Overall Body Height	5159mm
Min Body Ground Clearance	209mm
Max Track Width	2591mm
Lock to lock time	6.00s
Max Steering Angle (Virtual)	30.00°

DO NOT SCALE

KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
P01					

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CLIENT: MarramWind JV

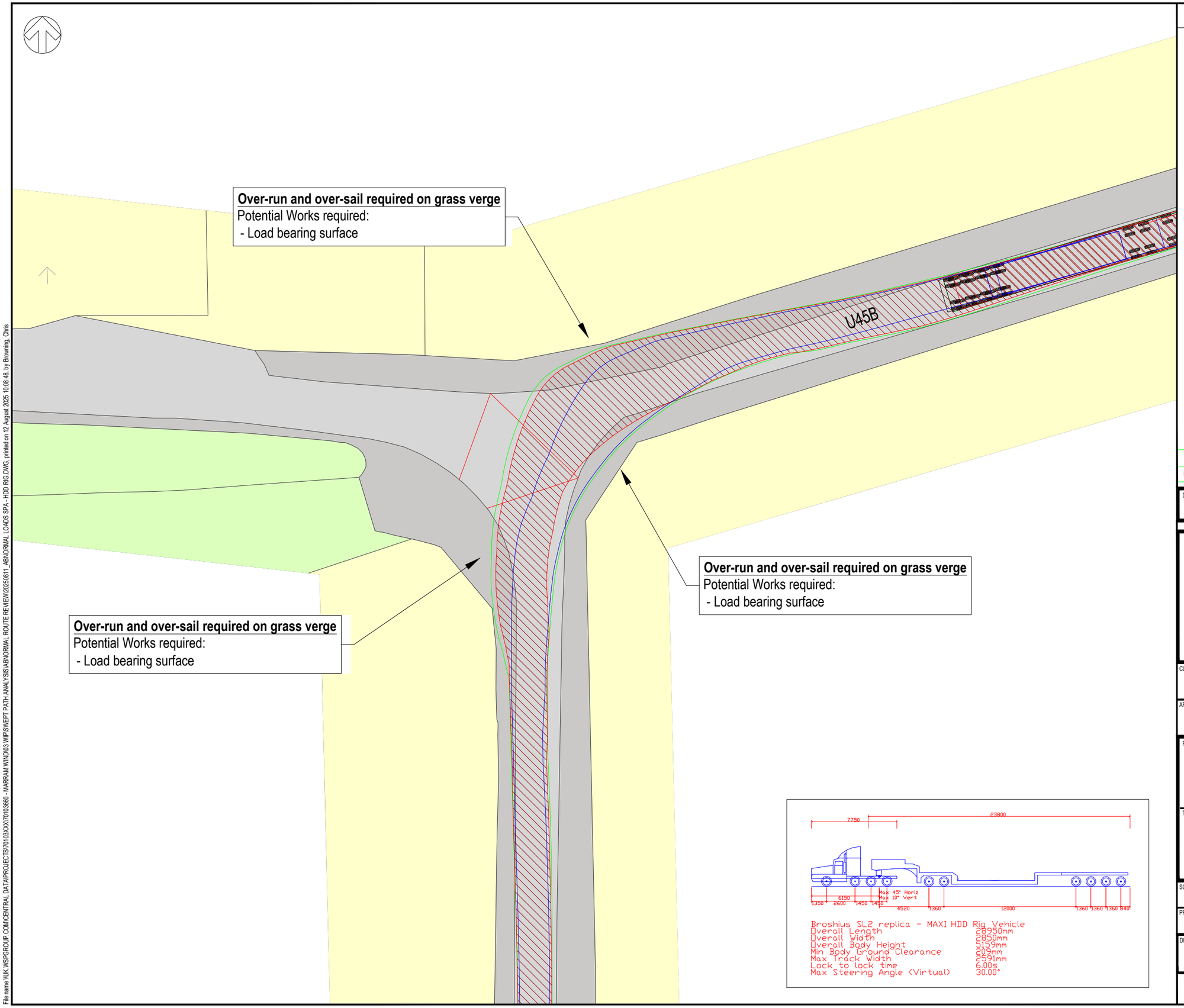
ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI R14 - C43B / U45B Junction

SCALE @ A2:	CHECKED:		APPROVED:
N/A	PW		PW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
UK0041808.9006	AM	AM	AUGUST 2025

DRAWING No:	REV:
UK0041808.9006-SPA-R14	P01



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KEY

WHEEL OUTLINE

VEHICLE OUTLINE

LOAD OUTLINE

REV	DATE	BY	DESCRIPTION	CHK	APP
P01					

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wsp.com

CLIENT: MarramWind JV

ARCHITECT:

PROJECT: MARRAM OFFSHORE WIND FARM

TITLE: POI R16 - Right turn on U45B

SCALE @ A2:	CHECKED:		APPROVED:
N/A	PW		PW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
UK0041808.9006	AM	AM	AUGUST 2025

DRAWING No: UK0041808.9006-SPA-R16 REV: P01

MarramWind