

# Appendix 5-9

# Construction Traffic Management Plan





# ORIEL WIND FARM PROJECT

## Environmental Impact Assessment Report Appendix 5-9: Construction Traffic Management Plan (CTMP)

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## ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

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## ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

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# 1 INTRODUCTION

## 1.1 Overview

This Construction Traffic Management Plan (CTMP) has been prepared for the Oriel Wind Farm Project (hereafter referred to as 'the Project'). It considers the potential impacts of construction related traffic generated as part of the Project and sets out the measures considered necessary to ensure that such traffic will be managed and monitored safely and efficiently throughout the construction phase. An assessment of the traffic impacts on the local network is provided in volume 2C, chapter 28: Traffic and Transport.

It will be the responsibility of the appointed Contractor to further update this CTMP prior to the commencement of the construction phase. The Contractor will be required to agree the contents of the CTMP with both Louth County Council (LCC) and An Garda Síochána before the commencement of works on site. The Contractor will fully implement and maintain the CTMP throughout the construction phase.

## 1.2 Purpose and scope

This CTMP seeks to demonstrate how the works can be delivered in a logical, considerate, and safe sequence with the incorporation of specific measures to mitigate and reduce possible impacts which may occur during the construction of the Project.

The objectives of this CTMP are to:

- Outline minimum traffic management measures to be implemented for the works;
- Demonstrate to the Contractor and suppliers the need to adhere to the relevant guidance documentation for such works; and
- Provide the basis for the preparation of an updated CTMP by the appointed Contractor to carry out the works.

If approval is granted for the Project, the CTMP will address the requirements of any relevant conditions, including any additional mitigation measures which are conditioned. The Employer's Representative will be responsible for ensuring that the Contractor manages the construction activities in accordance with the CTMP.

## 1.3 Implementation

Key to the implementation of the CTMP is the appointment of a suitably experienced and qualified person on-site (nominated by the Contractor) who will supervise the implementation of the plan. They will liaise with and update the supervising Employer's Representative team on the operation of the CTMP and any proposed improvements.

All site personnel will be responsible for following good practice and will be encouraged to provide feedback and suggestions for improvements. Site personnel will also be required to comply with the requirements of the Project's CTMP.

## 1.4 Document revision(s)

The CTMP will be subject to on-going reviews, regular auditing and site inspections throughout the construction phase of the Project.

All the information required to further develop the CTMP will be highlighted in the specification for the construction contract. The Contractor will be required to include further details and/or confirmation, as described below. It will be a requirement of the contract, that the Contractors updated CTMP be prepared prior to commencement of construction.

## ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

# 2 PROJECT DESCRIPTION

This CTMP focuses on the land-based onshore infrastructure of the Project and the impacts these works will generate on the existing road network. The onshore infrastructure consists of:

- **The onshore cable route:** This is where the onshore underground cable and its associated underground components (joint bays and link boxes) will be located; and
- **The onshore substation site:** This is where the onshore substation as well as the connections to the existing electricity Transmission System (National Grid) will be located.

The construction activities required at the construction compounds are also considered in this CTMP.

Other construction activities that are not included in this CTMP include:

- **The offshore wind farm area:** The offshore wind farm area is located in the western Irish Sea, off the coast of County Louth (approximately 22 km east of Dundalk town centre and 18 km east of Blackrock). The closest wind turbine will be approximately 6 km from the closest shore on the Cooley Peninsula. This is where the offshore wind farm components will be located, which will include offshore foundations, the wind turbines, inter-array cables and offshore substation as well as a short section of the offshore cable; and
- **The offshore cable corridor:** The offshore cable corridor extends approximately 16 km southwest from the wind farm area to the landfall south of Dunany Point.

## 2.1 Onshore infrastructure

The offshore cable will connect to onshore cables (three onshore cables to be installed in separate ducts within the same approximately 1 m wide trench) at the Transition Joint Bay (TJB) which will transfer the power onwards to the onshore substation. The onshore cables will be buried for the entirety of their length from the TJB to the onshore substation. The onshore cable route consists primarily of a 4 to 5 m working corridor along public roads. A wider temporary working area will be required at locations where the onshore cable diverts off the existing road network to adjacent agricultural fields (approximately 10 to 20 m wide), to provide access for the construction of the onshore cable at the following locations:

- Landfall location;
- Port Stream at Togher;
- Port Stream at Clonmore;
- River Dee at Drumcar Bridge;
- M1 and Dublin-Belfast Rail Line at Charleville;
- River Dee on the N33 at Richardstown; and
- Fibre optic cable connections on the N33.

The full road width will be required for the cable crossing at Salterstown Stream.

Joint bays (JBs) will be required along the onshore cable route to connect the sections of cable. These are typically concrete lined chambers, that provide a clean and dry environment for jointing the sections of cable together. JB dimensions are typically 8 m long, approximately 2.5 m wide and approximately 2.5 m deep and are designed to be protected with the ground reinstated following installation. A total of 29 JBs (and one transition joint bay) are required along the onshore cable route. Most of the JBs are proposed to be located below the public road. A total of 5 number JBs will be located at the edge of agricultural fields. The JBs will

## **ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN**

be protected and the ground reinstated with the field being available for agricultural use. JB's will only require access in the event of a cable failure requiring replacement.

Link boxes (LBs) will also be required along the onshore cable route adjacent to each joint bay. These are smaller pits compared to JB's, which house connections between the cable shielding, joints for fibre optic cables and other auxiliary equipment. The ground above the link boxes will also be reinstated, however, they will be finished with manhole covers for access during the operational phase.

The installation of the onshore cable is expected to take up to 27 months in total (Figure 2-2) (including site preparation activities and reinstatement). Construction is expected to be carried out by two teams, working on different sections of the route. A contractor carrying out standard 220 kV trenching and ducting specification will complete between 30 to 50 linear metres of trench in a roadway per day depending on the ground conditions.

### **2.1.1 Onshore cable route**

The underground cables will be installed within a single trench in an onshore cable route that connects the transition pit to the onshore substation site at Stickillin, east of Ardee on the N33. The route is approximately 20.1 km in length. It commences at the laneway that runs along the southern boundary of Dunany Demesne and follows local roads heading south through the townlands of Roadstown, Mitchelstown and Port before heading westwards on local roads through Boycetown, Togher and Clonmore. At Keenan's Cross, it continues westwards through Tullydonnell before heading northwards through Corstown.

The onshore cable route then crosses the River Dee at Drumcar Bridge and continues along local roads, heading in a westerly direction. At Mullincross, the onshore cable crosses the R132, and then at Charleville the route passes under the M1 motorway and the Dublin to Belfast Rail Line. It then follows the N33 and crosses the River Dee for a second time before continuing westwards to tie-in to the existing overhead line at the onshore substation site, in the townland of Stickillin. The onshore cable route can be divided into seven sections along the road network as shown in Figure 2-1 and listed below:

- N33;
- L-2226 (Mullincross/Drumcar Road);
- L-6238 (Castlethomas/Drumcar Road);
- L-2239 Togher Road (Keenan's Cross to Drumcar Road);
- L-2240 Togher Road (Keenan's Cross to Coast Road);
- L-2221 Coast Road; and
- L-6223 Dunany Road.

### **2.1.2 Onshore substation site**

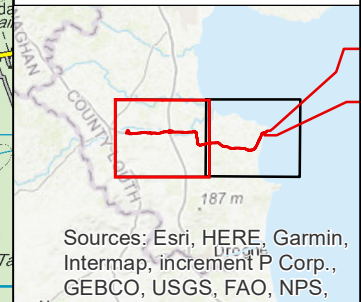
The onshore substation will be located in an agricultural field in the townland of Stickillin. The field has an existing access from the N33 national road, as shown in Figure 2-1. It is located approximately 3 km east of the town of Ardee, County Louth.

The site for the onshore substation compound is approximately 3 hectares in area and is located to the east of the existing overhead line. The onshore substation site will occupy approximately 1/3 of the existing agricultural field.



- Legend**
- Planning Application Boundary
  - + Landfall Location
  - ▲ Joint Bay with Passing Bay (Single Lane/Signal Controlled)
  - ▲ Joint Bay with no Passing Bay (Traffic Management Control)

Data Sources: OWL, Tailte Éireann.



Client



**ORIEL WINDFARM**  
OFFSHORE RENEWABLE ENERGY

Project  
**Oriel Wind Farm Project**

Title **Figure 2-1**  
**Road network directly impacted by the onshore cable route (including location of joint bays)**  
Map 1 of 2

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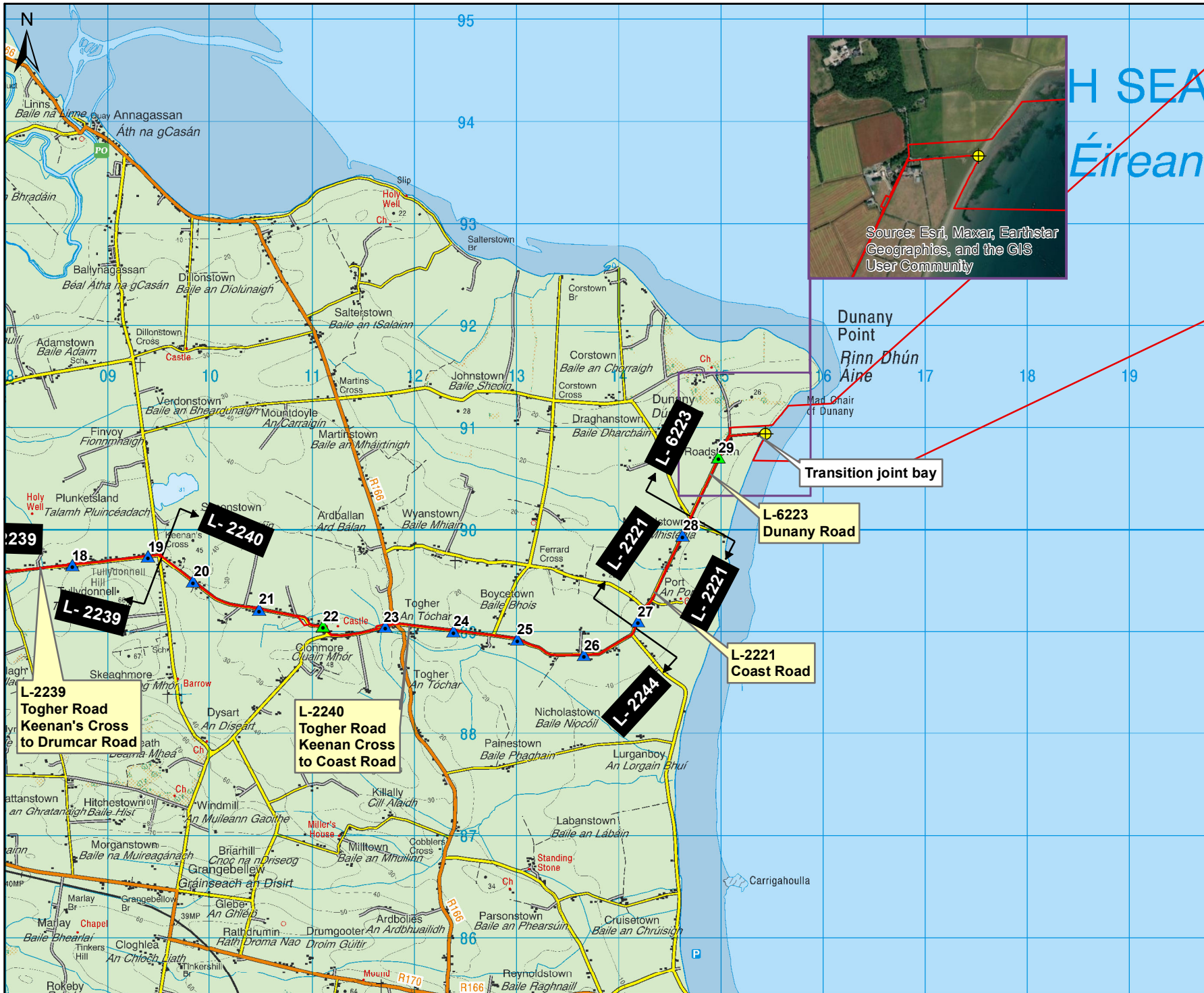
West Pier Business Campus,  
Dun Laoghaire,  
Co Dublin,  
Ireland.

Tel: +353 (0) 1 4882900  
Email: ireland@rpsgroup.com  
Web Page: rpsgroup.com/ireland

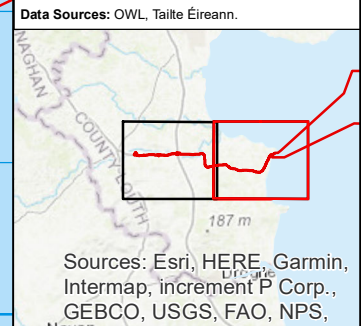
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Drawn By: NR	Project No. MDR1520B
Checked By: HF	File Ref:
Approved By: CC	MDR1520B/Arg/024F02
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- Legend**
- Planning Application Boundary
  - + Landfall Location
  - ▲ Joint Bay with Passing Bay (Single Lane/Signal Controlled)
  - ▲ Joint Bay with no Passing Bay (Traffic Management Control)



Client



**ORIEL WINDFARM**  
OFFSHORE RENEWABLE ENERGY

Project  
**Oriel Wind Farm Project**

Title  
**Figure 2-1  
Road network directly impacted  
by the onshore cable route (including  
location of joint bays)**  
Map 2 of 2

**rps**  
A TETRA TECH COMPANY

West Pier Business Campus,  
Dun Laoghaire,  
Co Dublin,  
Ireland.

Tel: +353 (0) 1 4882900  
Email: ireland@rpsgroup.com  
Web Page: rpsgroup.com/ireland

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Checked By: HF	File Ref:
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### 2.2 Construction programme

A high-level indicative construction programme for the Project is presented in Figure 2-2 below. The programme illustrates the likely duration of the major installation tasks.

**ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN**

Year		Year 1 - 2025				Year 2 - 2026				Year 3 - 2027				Year 4 - 2028			
Quarter		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>No.</b>	<b>Offshore Infrastructure</b>																
1	Foundations Installation																
2	Offshore Substation Installation																
3	Offshore Export Cables Installation																
4	Inter-Array Cables Installation																
5	WTG Installation																
<b>No.</b>	<b>Onshore Substation</b>																
1	Site Preparation																
2	Civil Construction																
3	Electrical Installation																
4	OHL Loop-in Works																
5	Substation Energisation																
<b>No.</b>	<b>Onshore Cable Installation</b>																
1	Trenching and Ducting																
2	Landfall Installation																
3	Cable Pulling and Cable Jointing																
4	Passing Bay and Joint Bay reinstatements																

**Figure 2-2: Construction programme.**

## ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

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### 2.3 Overview of construction

As outlined in volume 2A, chapter 5: Project Description of the EIAR; the construction phase of the Project will comprise a number of activities for the installation of offshore and onshore infrastructure. The onshore infrastructure will consist of onshore cables and an onshore substation.

The onshore construction phase will include the following:

- **Onshore cable installation:**
  - Trenching and ducting including joint bays, link boxes and communication chambers;
  - Passing bays and traffic management;
  - Watercourse and infrastructure crossings;
  - Horizontal directional drilling (HDD); and
  - Temporary construction compounds;
  - Demobilise temporary construction compound and offices; and
  - Reinstatement.
- **Onshore substation construction:**
  - Site mobilisation;
  - Entrance reconfiguration;
  - Temporary construction compound;
  - Earthworks (cut and fill) to level the ground surface;
  - Importation of materials and equipment to the site;
  - Construction of drainage system;
  - Construction of substation compounds 1 and 2;
    - Compound 1 - 220kV gas insulated switchgear (GIS) substation building;
    - Compound 2 will contain outdoor air insulated switchgear (AIS).
  - Demobilise temporary construction compound and offices;
  - Erect gates and signs; and
  - Reinstatement.

#### 2.3.1 Overview of onshore cabling construction works

It is anticipated that trenching, ducting and joint bay installation will be completed by two teams working simultaneously at two different work sites along the cable route (approximately 10 km apart). The final work schedule will be determined by the contractor. An example schedule is that Crew 1 start at the onshore substation off the N33 and continue to complete the route until Joint Bay No. 15 along the L-6238 Castlethomas/Drumcar Road. Crew 2 start at Joint Bay No. 16 along the L-6238 Castlethomas/ Drumcar Road and continue to complete the works to complete the route to landfall location at Dunany Point. The cable route and JB locations are shown in Figure 2-1 above.

## ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

The cable route comprises the installation of 20.1 km of cable and 29 JBs (and the Transition Joint Bay i.e. JB 30). Each segment of ducting between joint bays is approximately 700 m long, refer to Figure 2-3 for a typical 220 kV installation.

- Trenching and ducting will take place at a rate of 30 to 50 m/day – approximately 14 days per 700 m segment;
- Joint bays are typically pre-cast. Joint bay excavation, installation and backfill with temporary reinstatement – three days per joint bay.



**Figure 2-3: Typical 220 kV installation.**

Each individual segment and joint bay will require approximately 17 days (between 3 to 4 weeks for excavation/installation/backfill) to complete.

There are five number Horizontal Directional Drilling (HDD) locations that will be completed by a separate specialist subcontractor. These works will be incorporated into the programme but won't impact on the overall programme duration.

A small civil engineering works crew will assist the duct cleaning and proving subcontractor. It is estimated that the cable cleaning and proving will take between 3 to 5 days per joint bay.

During the trenching and ducting a small civil crew will also be on site to complete the traffic passing bay installation. Traffic passing bays are only required at 16 of the joint bays locations and it is estimated to take

## ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

5 days per traffic passing bay. Refer to section 2.3.2 below for traffic passing bay arrangements. Refer to Figure 2-4 for a typical joint bay installation.



**Figure 2-4: Typical Joint bay installation.**

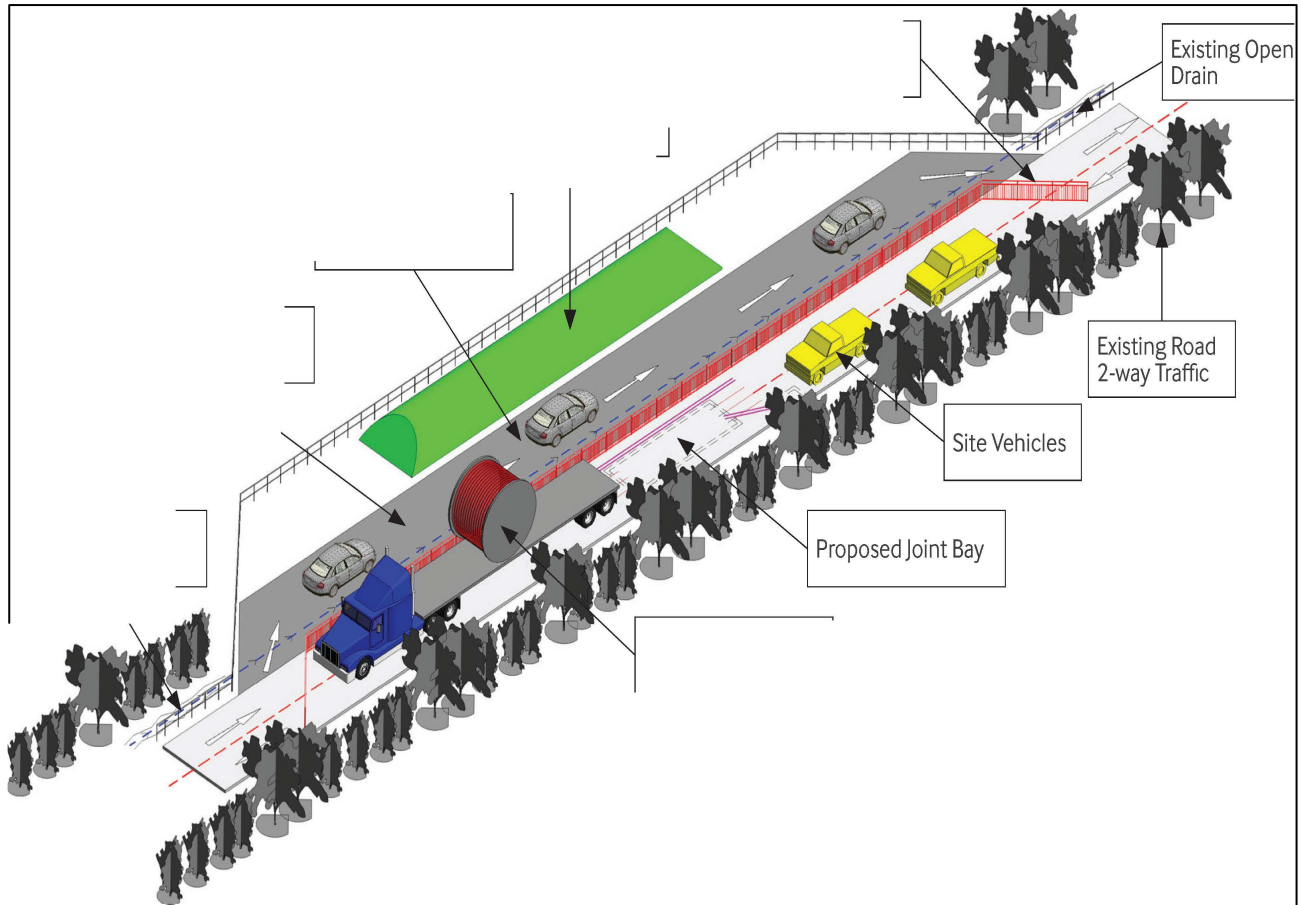
Cable pulling and jointing works are estimated to take 15 days per joint bay. This will consist of a small civil crew assisting the cable installation subcontractor by opening the joint bays for cable pulling and reinstating after and cable jointing works.

Reinstatement of the traffic passing bays and final joint bay reinstatement is estimated to take 5 days per JB.

### 2.3.2 Joint bay (JB) and temporary traffic passing bay locations

Of the 29 locations for JBs and the single transition JB, 16 locations along the cable route will require temporary traffic passing bays to maintain through traffic on the existing road network. These will be installed adjacent to joint bays to enable through traffic during the construction and cable installation at the joint bays. A typical design of the traffic passing bay arrangement is presented in Figure 2-5 below. Locations for these traffic passing bays are identified in Figure 2-1 above. The remaining JBs are located either off-road or on the wide N33 primary road, avoiding the requirement for temporary traffic passing bays.

## ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN



**Figure 2-5: Traffic passing bay typical arrangement.**

Traffic management procedures will be required when installing the cable within the existing road network. Access for through traffic will be maintained along all roads during construction, through the provision of the temporary traffic passing bays. Where needed, advisory diversions (i.e. not a road closure but an alternate option to avoid delays at stop/go boards) avoiding the live works will be signed in accordance with Chapter 8 of the Department of Transport's Traffic Signs Manual (TSM) (2019). Local access to properties will be maintained by the contractor at all times. For the Regional Roads (R132 and R166) to the east of the M1, temporary traffic lights or a "stop and go" traffic management system may be used for the duration of the works, resulting in a lane closure.

### Traffic management measures subsequent to road diversions

The installation of the JB's along the cable route may include the construction of a temporary traffic passing bay. The temporary traffic passing bays will have traffic management control via a single lane/ signal controlled system. Other activities such as cable pulling, cable jointing and joint bay backfilling and reinstatement will take place later in the programme. The traffic passing bays will be operational and can facilitate the movement of traffic through the works and therefore no advisory traffic diversions will be required for these activities.

## ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

### 3 PROPOSED CONSTRUCTION TRAFFIC GENERATION

#### 3.1 Overview

The potential impacts of the Project on the road network during the construction phases are as follows:

- Impacts during construction due to the excavation of materials in order to facilitate construction;
- Impacts associated with the importing of construction materials, equipment, etc to the works areas, and the relevant movements of delivery and construction vehicles;
- Impacts during construction due to road closures, lane closures and diversions;
- Construction staff commuting to and from the construction site, compounds and working areas; and
- General service traffic associated with construction activities (i.e. plant deliveries, visitors, traffic between compounds and working areas, etc.).

The assessment of the impact of the Project on the local network is provided in full in volume 2C, chapter 28: Traffic & Transport.

#### 3.2 Traffic generation from the Project

As outlined in section 28.7.8 of chapter 28: Traffic and Transport; Automatic Traffic Counters (ATC) were positioned on the sections of road that will be impacted by the onshore cable route to provide adequate baseline traffic flow data. The ATC recorded the volumes, type and speeds of vehicles travelling in both directions. These surveys provide a profile of the traffic flow over a seven-day timeframe and provide adequate baseline data to establish the Annual Average Daily Traffic (AADT) on each of the roads. This allowed a Weekly Average Daily Traffic (WADT) and Annual Average Daily Traffic (AADT) to be determined.

The potential number of construction vehicles for the onshore cable and onshore substation construction phases are outlined in Table 28-15 and Table 28-16 of chapter 28 of the EIAR. As described in section 2.3.1 it is proposed that two teams will work simultaneously at two different work sites along the cable corridor (approximately 10 km apart). As outlined in section 28.8.1 of Chapter 28 of the EIAR each works site will generate 16 No. Light Vehicle (LV) Movements Per Day and 26 No. Heavy Vehicle (HV) Movements Per Day. It is estimate that the onshore substation construction will generate 80 No. Light Vehicle (LV) Movements Per Day and 80 No. Heavy Vehicle (HV) Movements Per Day.

The impact of additional construction related vehicles on the existing traffic volumes during the construction phase is outlined in Table 28-23 of Chapter 28 of the EIAR and is presented below in Table 3-1.



**ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN**
**Table 3-1: Impact of the significance of the effect due to additional construction vehicles on existing traffic volumes.**

Road Section	Existing AADT (%HV)	Potential Daily Construction Movements	AADT during works (%HV)	Overall % Impact	Magnitude of Impact	Sensitivity of the Receptors	Significance of the Effects
N33	13,061 (5.8%)	202	13,131 (6.2%)	1.5%	Negligible	High	Slight
L-2226 Mullinscross/ Drumcar Road (west of the R132)	2,396 (3.6%)	42	2,430 (4.7%)	1.7%	Negligible	Medium	Imperceptible
L-2226 Mullinscross/ Drumcar Road (east of the R132)	1,668 (4.2%)	42	1,702 (5.8%)	2.5%	Negligible	Low	Imperceptible
L-6238 Castlethomas/ Drumcar Road	444 (4.6%)	42	478 (10.1%)	8.8%	Low	Low	Imperceptible
L-2239 Togher Road (Drumcar Road to Keenans Cross)	1325 (1.5%)	42	1,359 (3.5%)	3.1%	Negligible	Low	Imperceptible
L-2240 Togher Road (Keenan's Cross to Coast Road) – west of the R166	765 (1.0%)	42	799 (4.5%)	5.3%	Low	Low	Imperceptible
L-2240 Togher Road (Keenan's Cross to Coast Road) – east of the R166	489 (1.9%)	42	523 (7.1%)	8.1%	Low	Low	Imperceptible
L-2221 Coast Road	248 (1%)	42	282 (10.6%)	14.9%	Medium	Low	Slight

**ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN**

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## **4 Construction Traffic Management Plan**

This section describes the measures that will be implemented to manage traffic on the road network during the construction of the onshore infrastructure. The Contractor will be required to ensure that the contents of this CTMP are further developed prior to the commencement of works and in accordance with the commitments made in the EIAR and any relevant conditions of permission. The CTMP will be termed a 'Live Document', such that any changes to the outline construction programme or operations can be incorporated into the CTMP.

The Contractor will also agree and implement monitoring measures to confirm the effectiveness of the mitigation measures outlined in the CTMP.

The contractor will apply to the relevant road authority (LCC or Transport Infrastructure Ireland (TII)) for a road opening licence for consent to allow works to be carried out on a public road. The contractor will comply with restrictions and/or conditions relating to the road opening licence.

### **4.1 Onshore cable works**

A total of 12 number advisory traffic diversions are proposed along the cable route for through traffic, as discussed below in section 4.1.1. All road sections along the cable route will be kept open for through traffic and traffic managed. It is not intended to close any sections of road to local traffic with access to properties to be maintained at all times. Construction works on all roads to the east of the M1 are expected to have single file controlled traffic with stop/go boards or temporary traffic lights.

A total of 3 number proposed traffic diversions are required along the cable route, these are Diversions 1, 14 and 15, as discussed below in section 4.1.1. It is not intended to close any sections of road to local traffic with access to properties to be maintained at all times.

Table 4-1 below provides a summary of the advisory diversion routes and an approximate timeline of when they will be in place. These timelines are subject to change based on the number of construction crews working on site and the provision of a detailed traffic management plan.

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**Table 4-1: Advisory diversion routes for each road section.**

Road section	Joint bay	Diversion route	Advisory diversion route length (approx.)	Approximate time and activities
N33	JB No. 1 – 8	Diversion 1: L-2215 Diversion via L-6246 and L-6227.	4.4 km	2 days - River Dee Crossing.
L-2226 Mullinscross / Drumcar Road	JB No. 9 – 11	Diversion 2 and Diversion 3: Diversion A – R132 Diversion B – L-6287(Dromin Manor)	A – 4.5 km B – 3.0 km	10 weeks – trenching & ducting, joint bay installation, passing bay installation, 1 no. HDD
	JB No. 11 – 13	Diversion 4: Diversion via the L-6238 Castlethomas/Drumcar Road, L-2239 Mountain View Road and the R132	7.0 km	6 weeks – trenching & ducting, joint bay installation, passing bay installation, 1 no. HDD
L-6238 Castlethomas /Drumcar Road	Up to JB No. 14	Diversion 5: Diversion with the R132, L-2239 Mountain View Road and the L6225/L-2250 through Finvoy Cross	9.5 km	2 weeks – trenching & ducting, joint bay installation, passing bay installation
	JB No. 14 – 16	Diversion 6: Diversion via the L-2226, R132, L-2239 Mountain View Road and L6225/L-2250 through Finvoy Cross and Drumcar Road.	6.5 km	7 weeks – trenching & ducting, joint bay installation, passing bay installation, 1 no. HDD
L-2239 Togher Road – Keenan’s Cross to Drumcar Road	JB No. 16 – 17	Diversion 7 and Diversion 8: Diversion via the L-6238 Castlethomas/Drumcar Road, L-2226, L-2250 through Finvoy Cross.	7.9 km	3 weeks – trenching & ducting, joint bay installation, passing bay installation
	JB No. 17 – 19		6.4 km	7 weeks – trenching & ducting, joint bay installation, passing bay installation
L-2239 Togher Road – Keenan’s Cross to Coast Road	JB No. 20 – 22	Diversion 9: Diversion via the L-2250 and the L-6241 Clonmore Road	3.5 km	8 weeks – trenching & ducting, joint bay installation, passing bay installation
	JB No. 22 – 23	Diversion 10: Diversion via the L6225/L-2250 Finvoy Cross, Martinstown Crossroads, L-2226 through Finvoy Cross.	5.5 km	4 weeks – trenching & ducting, joint bay installation, 1 no. HDD, passing bay installation
	JB No. 23 – 24	Diversion 11: Diversion via the R166, L-6242 (west of Ferrard’s Cross) and the L-6222.	3 km	5 weeks – trenching & ducting, joint bay installation, passing bay installation

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Road section	Joint bay	Diversion route	Advisory diversion route length (approx.)	Approximate time and activities
	JB No. 25 – 26	Diversion 12: Diversion via the L-6222, L-6242 (east of Ferrard's Cross) and the L-2221 (Coast Road).	2 km	6 weeks – trenching & ducting, joint bay installation, passing bay installation
L-2221 Coast Road	JB No. 27 – 28	Diversion 13: Diversion via L-2221 (Coast Road), L-6222 Ferrard's Cross, L-2240 (Togher Road) and L-2244 (Port Road).	5.9 km	5 weeks – trenching & ducting, joint bay installation, passing bay installation
L-6223 Dunany Road	JB No. 28 to beyond JB No. 29	Diversion 14: Diversion via Dunany Equestrian Centre (Local Access only)	3 km	3 weeks – trenching & ducting, joint bay installation, passing bay installation
	JB No. 30 (transition joint bay) to Landfall location	Diversion 15: Alternative beach access via. Port Beach along L-2244.	N/A	2 weeks – trenching & ducting and joint bay installation

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### 4.1.1 Proposed traffic management

#### 4.1.1.1 N33 - Two-way traffic maintained

The N33 is a National Primary Road that connects the M1 (at Junction 14, Charleville Interchange) to the N2 at Ardee. This section of the cable route runs from the onshore substation to Joint Bay No. 8 and will involve trenching, ducting, and joint bay installation approximately 5.5 km linearly from west to east along the N33. It is proposed to keep two lanes open during the works with one hard shoulder closure and partial lane closure. Two-way traffic flow will be maintained in both directions. Temporary Traffic Management will move linearly along the road with the works. No traffic passing bays are proposed for this road section.

There are two proposed HDD crossings in this section of the cable route: the River Dee crossing, and the M1/railway crossing. The River Dee crossing will be completed offline with an advisory diversion route for a section of the L-2215 Local Road adjacent to the N33. The M1/railway crossing is offline and no advisory road diversions are required.

There is one proposed fibre communications crossing perpendicular to the N33. It is anticipated that the trenching and ducting works will be carried out using two-way traffic temporary traffic management, subject to temporary traffic management design by the contractor.

It is anticipated that trenching, ducting, and joint bay installation along the 5.5 km section of the N33 will take approximately 6 months. The first 3 months of disruption will be as a result of the trenching, ducting and joint bay installation of Joint Bay No. 1 to Joint Bay No. 8. During this time the work related to the 2 no. HDD locations will also be completed. The remaining 3 months of activities will involve cable pulling, cable jointing, backfilling and reinstatement of JBAs.

#### Diversion 1

For Diversion 1 a section of the L-2215 Local Road will need to be closed (2-day temporary road closure) while the cable route crosses the L-2215 to access the field east of the River Dee to complete the River Dee HDD crossing, except for local access. The L-2215 Local Road has average paved width of 5.0 m. The proposed diversion route is via the L-6246 Local Road (5.0 m wide, including a rail crossing with 4.64 m height restriction) and L-6227 Local Road (3.0 m wide). It is anticipated that the diversion will be in place for 2 days. Figure 4-1 below shows the proposed L-2215 Local Road diversion route.

The contractor will apply to LCC for a temporary road closure. The contractor will comply with restrictions and/or conditions relating to the temporary road closure.

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**Figure 4-1: Diversion 1 (Source: Google My Maps).**

**4.1.1.2 L-2226 (Mullinscross/Drumcar Road) - Single lane/ signal controlled system**

The L-2226 Mullinscross/Drumcar Road section of the cable route runs from Joint Bay No. 9 to Joint Bay No. 13. The Mullinscross/Drumcar Road extends from the Charleville Interchange Roundabout to Mullinscross.

Trenching and ducting, joint bay installation, traffic passing bay installation and the M1/railway HDD crossing activities will take place between the Charleville Roundabout Interchange (Joint Bay No. 9) and Joint Bay No. 11 (west of R132). It is anticipated that for the section of cable from Joint Bay No. 9 to Joint Bay No. 11, the diversion will be in place for approximately 10 weeks.

Trenching, ducting, joint bay, traffic passing bay installation and completion of the second River Dee HDD crossing will take place between Joint Bay No. 11 and Joint Bay No. 13 (east of R132). It is anticipated that for the section of cable from Joint Bay No.11 to Joint Bay No. 13, the advisory traffic diversion will be in place for approximately 6 weeks.

**Diversion 2 to Diversion 4**

The L-2226 Mullinscross/Drumcar Road will have advisory traffic diversions for through traffic during the works. The L-2226 Local Road an average paved width of 6.0 m. Temporary traffic management will be modified as the works progress linearly along the cable route, until the traffic passing bays are installed. The M1/railway HDD crossing is located between Joint Bay No. 8 and Joint Bay No. 9. This will be completed offline in the adjacent fields and will have no impact on the local road network except for when the cable route re-joins the road close to Joint Bay No. 9.

For Diversion 2 and Diversion 3 as works progress from Joint Bay No. 9 to Joint Bay No. 11, a section of the L-2226 Local Road will have traffic management in place with a lane closure after the Charleville Interchange roundabout. Advisory traffic diversions for through traffic will be in place when active works are in progress up to Joint Bay No. 11, next to Dorian’s Bar. There are two advisory traffic diversion routes depending on the

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direction of traffic. The first advisory traffic diversion route is: traffic travelling west to go southbound on the M1 will be re-directed via the R211 and R132. This is shown as diversion route A.

The second advisory diversion route is: traffic travelling southbound on the M1 and traffic coming from the N33 heading west, will have advisory traffic diversions onto the L2214 (4.1 m wide) and Dromin Manor (4.5 m wide, with a narrow single lane bridge (rail crossing) along the route). Traffic travelling west towards the N33 or to go northbound on the M1 will have advisory traffic diversions along this route. This is indicated as diversion route B. Figure 4-2 and Figure 4-3 below shows the advisory L-2226 Local Road traffic diversion route.

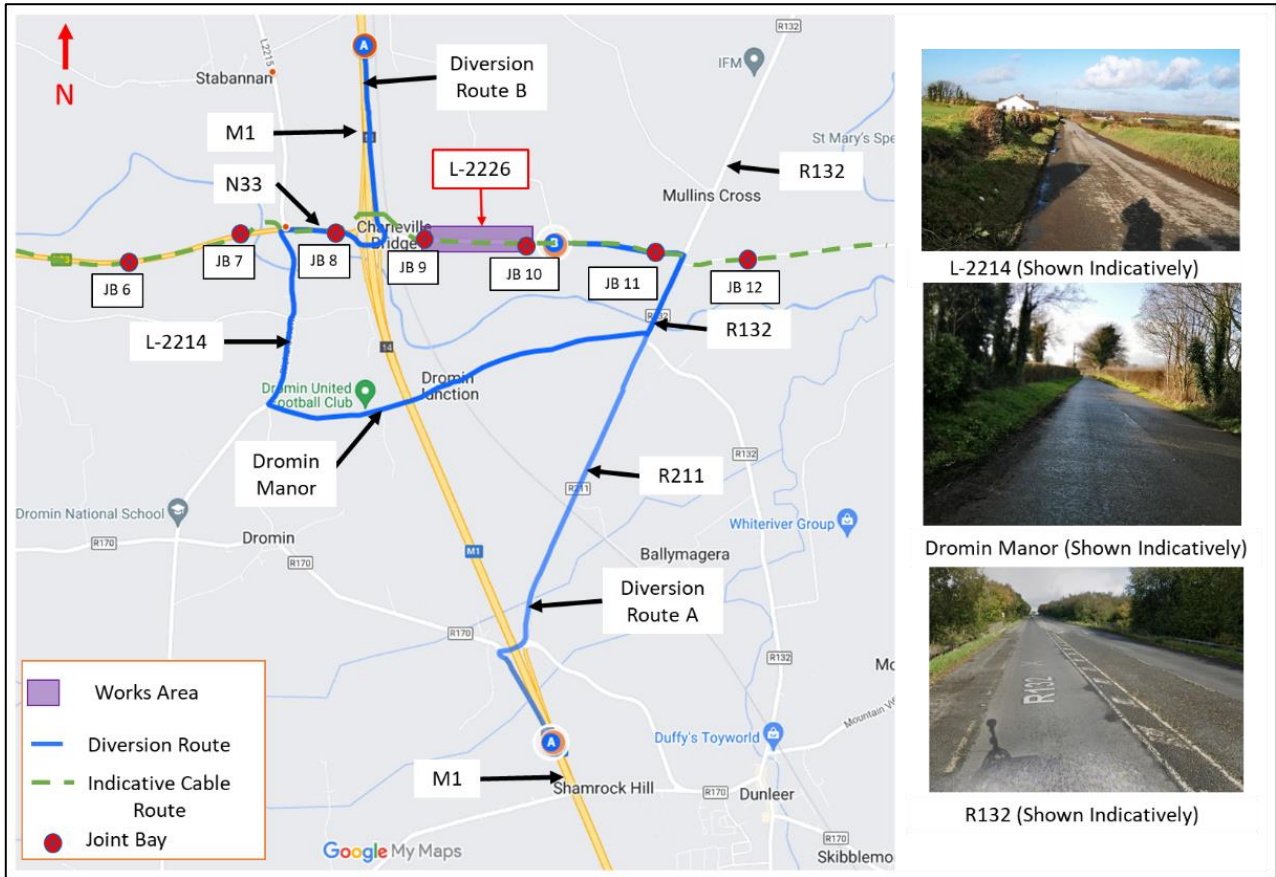


Figure 4-2: Diversion 2 - Joint Bay No. 9 to Joint Bay No. 10 (Source: Google My Maps).

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**Figure 4-3: Diversion 3 - Joint Bay No. 10 to Joint Bay No. 11 (Source: Google My Maps).**

For Diversion 4 as the works progress past Joint Bay No. 11, the traffic management measures and advisory traffic diversions will be modified. A Stop and Go system will be required while the works cross the R132. Once the works cross the R132, the advisory traffic diversion route is via the R132 Regional Road (6.0 m wide), L-2239 Mountain View Road (5.5 m wide, including a rail crossing with 4.07 m height restriction) and the L-6238 Castlethomas/Drumcar Road (4.8 m to 5.5 m wide). Figure 4-4 below shows the advisory L-2226 Local Road diversion route.



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**Figure 4-4: Diversion 4 - Joint Bay No. 12 to Joint Bay No. 13 (Source: Google My Maps).**

There are two schools located in the vicinity of these works; Scoil Bhríde National School and Scoil Uí Mhuirí. The diversion routes for these works are not anticipated to have a significant impact on the schools, but it is recommended that they be discussed with the schools to determine if there is any impact on bus routes/access. The sequencing of the works could be altered to ensure that works take place during school holidays.

**Traffic Management Measures Subsequent to Road Diversions**

The installation of the JBs along this section of the cable route will include the construction of a temporary traffic passing bay. The temporary traffic passing bays will have traffic management control via a single lane/signal controlled system. Other activities such as cable pulling, cable jointing and joint bay backfilling and reinstatement will take place later in the programme. The traffic passing bays will be operational and can facilitate the movement of traffic through the works and therefore no advisory traffic diversions will be required for these activities.

**4.1.1.3 L-6238 Castlethomas/Drumcar Road - Single lane/ signal controlled system**

The L-6238 Castlethomas/Drumcar Road section of the cable route runs from Joint Bay No. 14 to Joint Bay No. 16 and will involve trenching and ducting, joint bay installation, and traffic passing bay installation.

It is anticipated that for the section of cable route up to Joint Bay No. 14, the advisory traffic diversion will be in place for approximately 2 weeks. For the section of route between Joint Bay No. 14 and Joint Bay No. 16 the advisory traffic diversion is anticipated to be in place for 7 weeks.

**Diversion 5 and Diversion 6**

The L-6238 Castlethomas/Drumcar Road will have advisory traffic diversions for through traffic during the works. The L-6238 Castlethomas/Drumcar Road has an average paved width of between 4.8 m to 5.5 m

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(with a localised minimum of 3.5 m). Temporary traffic management will be modified as the works progress linearly along the cable route, until the traffic passing bays are installed.

For Diversion 5 as works progress from Joint Bay No. 13 to Joint Bay No. 14, a section of the L-6238 Castlethomas/Drumcar Road will have traffic management in place with a lane closure during the works. The advisory traffic diversion route is via the R132 (6.0 m wide), L-2239 Mountain View Road (5.5 m wide) and the L6225/L-2250 through Finvoy Cross (5.5 m wide). Figure 4-5 below shows the advisory L-6238 Local Road traffic diversion route.



**Figure 4-5: Diversion 5 - Joint Bay No. 13 to Joint Bay No. 14 (Source: Google My Maps).**

For Diversion 6 as works progress between Joint Bay No. 14 and Joint Bay No. 16, a section of the L-6238 Castlethomas/Drumcar Road will have traffic management in place with a lane closure during the works. The advisory traffic diversion route is via the R132 (6.0 m wide), L-2239 Mountain View Road (5.5 m wide) and the L6225/L-2250 through Finvoy Cross (5.5 m wide). Figure 4-6 below shows the advisory L-6238 Local Road traffic diversion route.

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**Figure 4-6: Diversion 6 - Joint Bay No. 14 to Joint Bay No. 16 (Source: Google My Maps).**

There are five schools located in the vicinity of these works. For Scoil Bhride National School, Scoil Uí Mhuirí, St Colmcille National School and St Mary’s Special School, the diversion routes for these works are not anticipated to have a significant impact on the schools, but it is recommended that they be discussed with the schools to determine if there is any impact on bus routes/access. The sequencing of the works could be altered to ensure that works take place during school holidays.

For St Finians National School the works programme will be structured to ensure that any works on the cable corridor that could cause traffic to divert past St Finian’s National School would be programmed to be done during school holidays.

**Traffic Management Measures Subsequent to Road Diversions**

The installation of the JBs along this section of the cable route will include the construction of a temporary traffic passing bay. The temporary traffic passing bays will have traffic management control via a single lane/ signal controlled system. Other activities such as cable pulling, cable jointing and joint bay backfilling and reinstatement will take place later in the programme. The traffic passing bays will be operational and can facilitate the movement of traffic through the works and therefore no advisory traffic diversions will be required for these activities.

**4.1.1.4 L-2239 Togher Road (Keenan’s Cross to Drumcar Road) - Single lane/ signal controlled system**

The L-2239 Togher Road (Keenan’s Cross to Drumcar Road) section of the cable route runs from Joint Bay No. 16 to Joint Bay No. 19 and will involve trenching, ducting, joint bay and traffic passing bay installation.

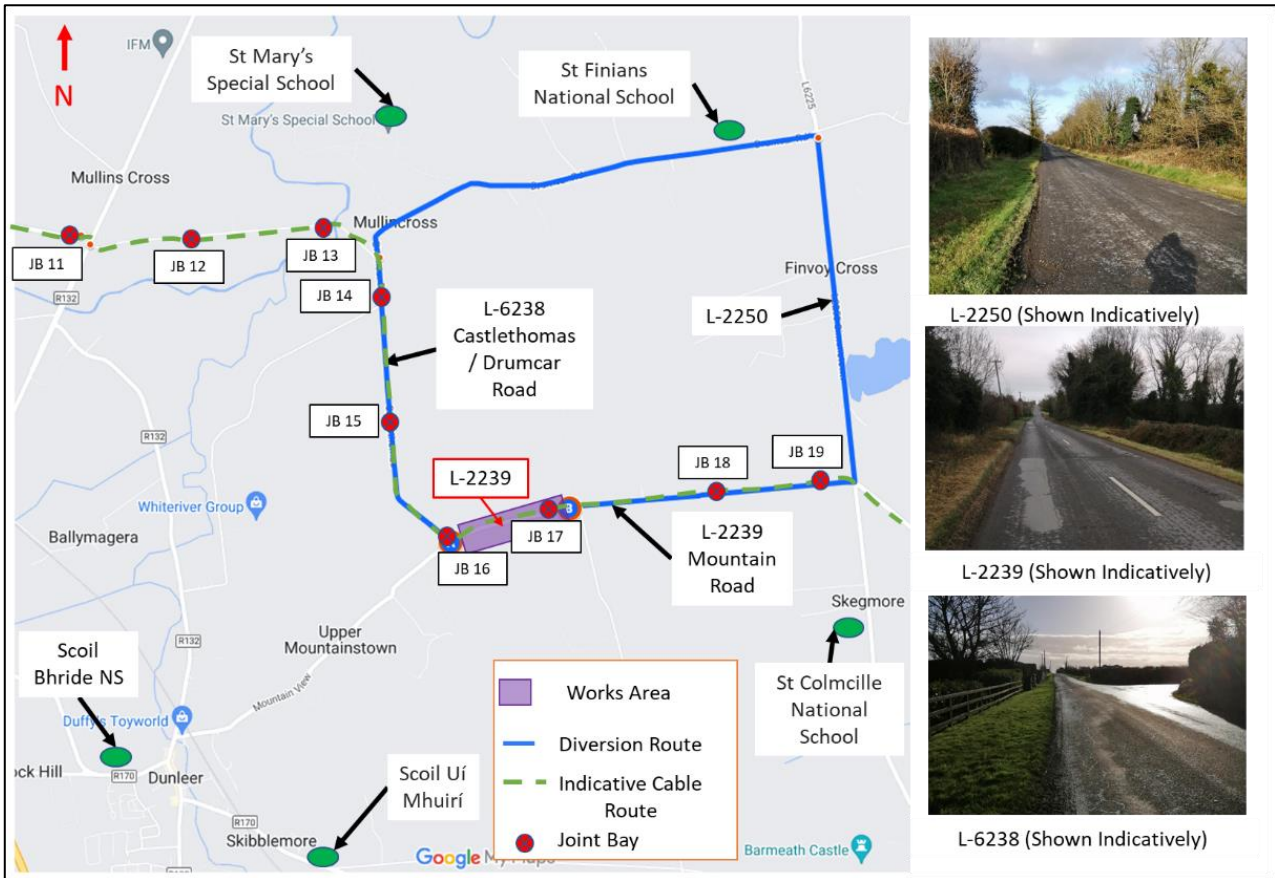
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It is anticipated that for the section of cable route from Joint Bay No. 16 to Joint Bay No. 17, the advisory traffic diversion will be in place for approximately 3 weeks. For the section of route from Joint Bay No. 17 to Joint Bay No. 19, the advisory traffic diversion is anticipated to be in place for approximately 7 weeks.

**Diversions 7 and Diversion 8**

The L-2239 Local Road will have advisory traffic diversions for through traffic during the works. The L-2239 Togher Road (Keenan’s Cross to Drumcar Road) has an average paved width of between 5.0 m to 5.5m. Temporary traffic management will be modified as the works progress linearly along the cable route, until the traffic passing bays are installed.

For Diversion 7 as works progress from Joint Bay No. 16 to Joint Bay No. 17, a section of the L-2239 Togher Road will have traffic management in place with a lane closure during the works. The advisory traffic diversion route is via the L-6238 Castlethomas/Drumcar Road (4.8 m to 5.5 m wide), Drumcar Road (5.5 m wide), and L-6225/ L-2250 Finvoy Cross (5.5 m wide). Figure 4-7 below shows the advisory L-2239 Local Road traffic diversion route.



**Figure 4-7: Diversion 7 - Joint Bay No. 16 to Joint Bay No. 17 (Source: Google My Maps).**

For Diversion 8 as works progress from Joint Bay No. 17 to Joint Bay No. 19, a section of the L-2239 Togher Road will have traffic management in place with a lane closure during the works. The advisory traffic diversion route is via the L-2239 Togher Road (5.0 m to 5.5 m wide), L-6238 Castlethomas/Drumcar Road (4.8 m to 5.5 m wide), Drumcar Road (5.5 m wide) and L-6225/ L-2250 Finvoy Cross (5.5 m wide). Figure 4-8 below shows the advisory L-2239 Local Road traffic diversion route.

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**Figure 4-8: Diversion 8 - Joint Bay No. 17 to Joint Bay No. 19 (Source: Google My Maps).**

There are five schools located in the vicinity of these works. For Scoil Bhride National School, Scoil Uí Mhuirí, St Colmcille National School and St Mary’s Special School, the diversion routes for these works are not anticipated to have a significant impact on the schools, but it is recommended that they be discussed with the schools to determine if there is any impact on bus routes/access. The sequencing of the works could be altered to ensure that works take place during school holidays.

For St Finians National School the works programme will be structured to ensure that any works on the cable corridor that could cause traffic to divert past St Finian’s National School would be programmed to be done during school holidays.

**Traffic Management Measures Subsequent to Road Diversions**

The installation of the JBs along this section of the cable route will include the construction of a temporary traffic passing bay. The temporary traffic passing bays will have traffic management control via a single lane/ signal controlled system. Other activities such as cable pulling, cable jointing and joint bay backfilling and reinstatement will take place later in the programme. The traffic passing bays will be operational and can facilitate the movement of traffic through the works and therefore no advisory traffic diversions will be required for these activities.

**4.1.1.5 L-2240 Togher Road (Keenan’s Cross to Coast Road) - Single lane/ signal controlled system**

The L-2240 Togher Road (Keenan’s Cross to Coast Road) section of the cable route runs from Joint Bay No. 20 to Joint Bay No. 26. For the section of cable route between Joint Bay No. 20 and Joint Bay No. 23, the following activities will take place; trenching and ducting, joint bay installation, traffic passing bay installation and the Togher Road water course HDD crossing. It is anticipated that for the section of cable from Joint Bay No. 20 to Joint Bay No. 22, advisory traffic diversions will be in place for approximately 8 weeks and for the

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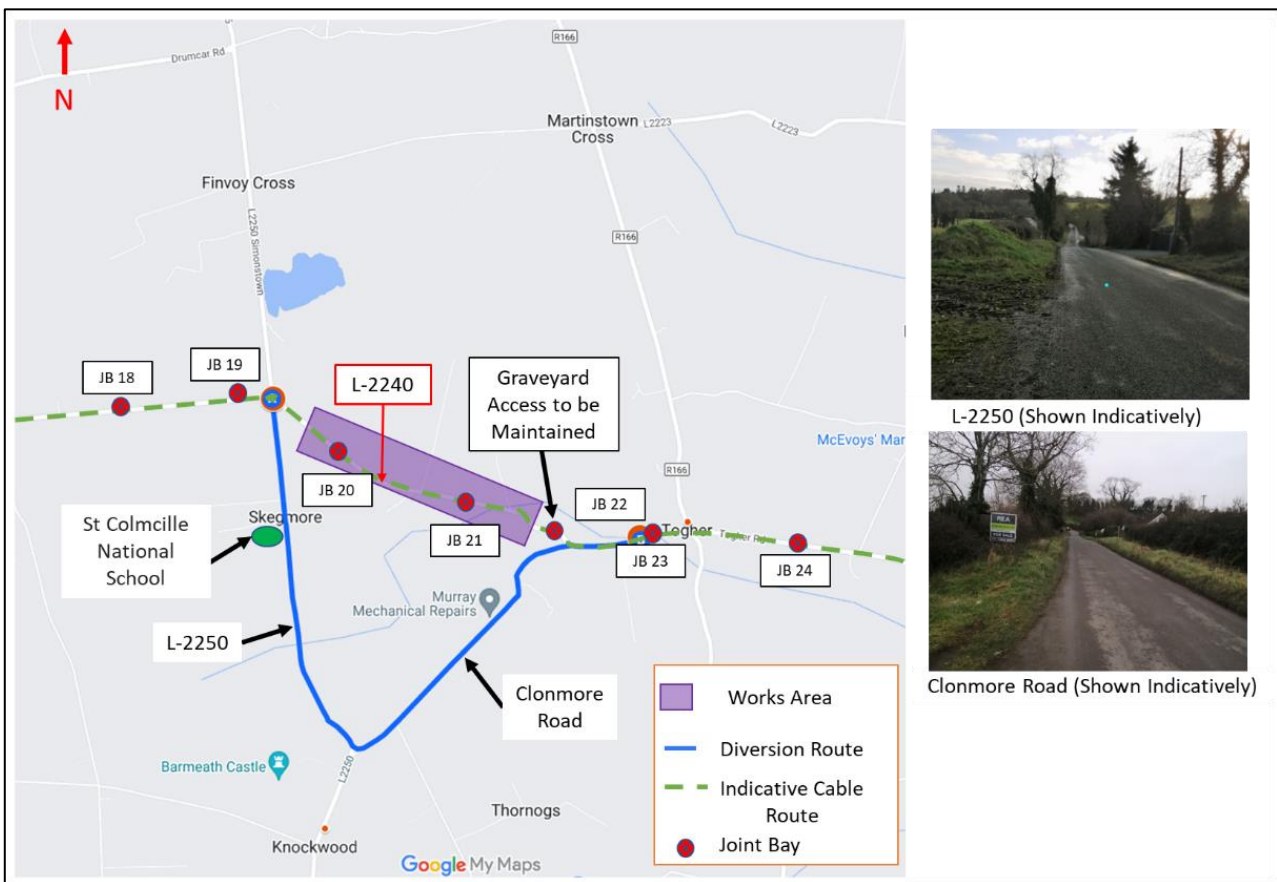
section of cable between Joint Bay No. 22 and Joint Bay No. 23 advisory traffic diversions will be in place for approximately 4 weeks.

For the section of cable between Joint Bay No. 23 and Joint Bay No. 26, the following activities will take place; trenching and ducting, joint bay and traffic passing bay installation. It is anticipated that for the section of cable up to Joint Bay No. 24, advisory traffic diversions will be in place for approximately 5 weeks and for the section of cable between Joint Bay No. 25 and 26 advisory traffic diversions will be in place approximately 6 weeks.

**Diversion 9 to Diversion 12**

The L-2240 Togher Road (Keenan’s Cross to Coast Road) will have advisory traffic diversions for through traffic during the works. The L-2240 Togher Road (Keenan’s Cross to Coast Road) has an average paved width of approximately 5.5 m. The road runs through Togher, a small village with a pub, newsagents and petrol station located at the crossroads with the R166 Regional Road. Temporary traffic management will be modified as the works progress linearly along the cable route, until the traffic passing bays are installed.

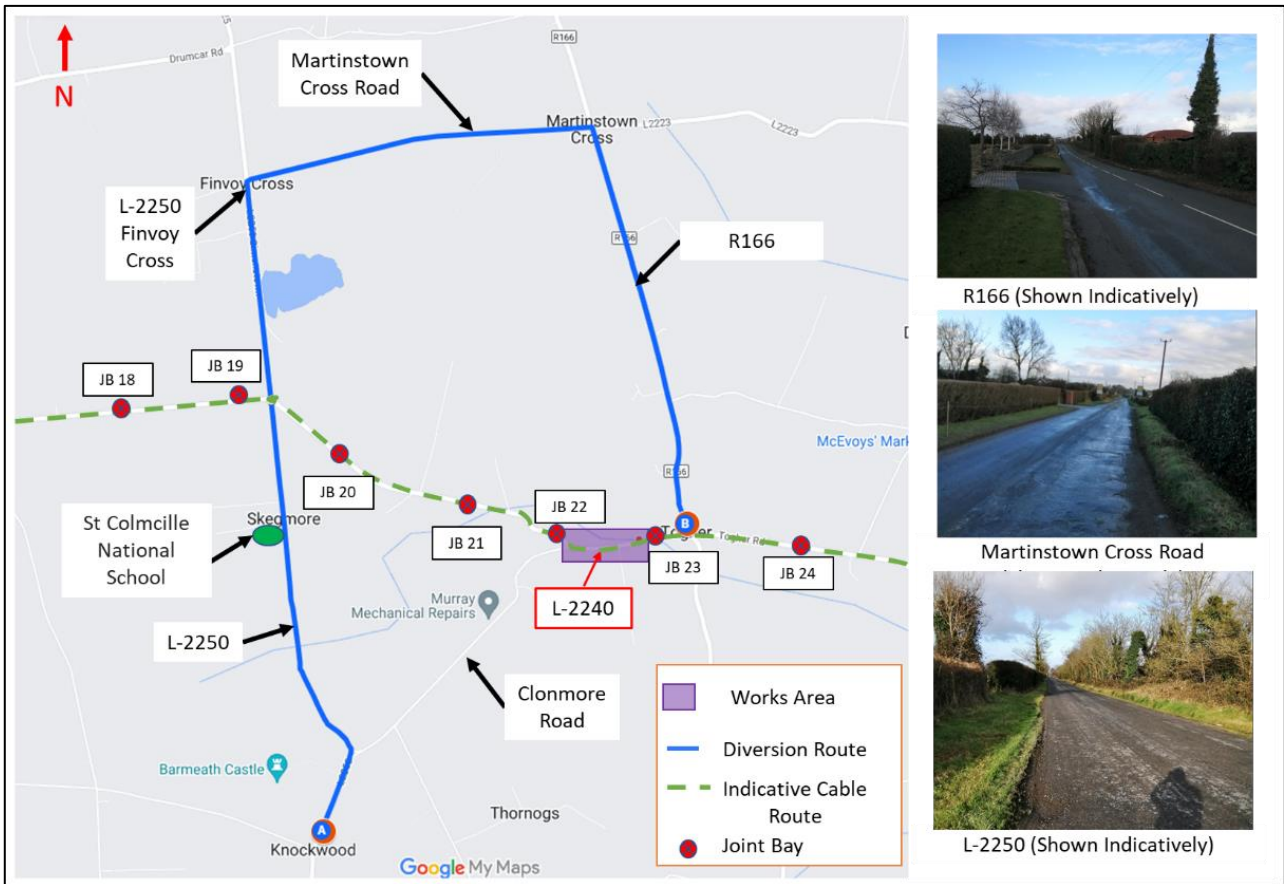
For Diversion 9 as works progress from Joint Bay No. 19 to Joint Bay No. 22, a section of the L-2240 Togher Road (Keenan’s Cross to Coast Road) will have traffic management in place with a lane closure during the works. The advisory traffic diversion route is via the L2250 Local Road (5.2 m wide) and Clonmore Local Road (4.0 m to 5.0 m wide). There is a graveyard located after Joint Bay No. 21. Access to the graveyard will be maintained at all times during the works. Figure 4-9 below shows the advisory L-2240 Local Road traffic diversion route.



**Figure 4-9: Diversion 9 - Joint Bay No. 19 to Joint Bay No. 22 (Source: Google My Maps).**

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For Diversion 10 as the works progress from Joint Bay No. 22 to Joint Bay No. 23, a section of the Togher Road will have traffic management in place with a lane closure during the works. The advisory traffic diversion route is via the L2250 road (5.2 m wide), L6225/Finvoy Cross (5.5 m wide), Martinstown Cross Road (4.0 m wide) and the R166 Regional Road. The Port Stream crossing on the Togher Road is located just before Joint Bay No. 23. This crossing is proposed to be HDD. These works will be scheduled alongside the trenching and ducting works. During the works access to the shops and the pub at the crossroads with the R166 Regional Road will be maintained. However, it is anticipated that a Stop/Go arrangement or temporary traffic lights will be put in place during the works at this intersection. Figure 4-10 below shows the advisory L-2240 Local Road traffic diversion route.



**Figure 4-10: Diversion 10 - Joint Bay No. 22 to Joint Bay No. 23 (Source: Google My Maps).**

For Diversion 11 as the works progress from Joint Bay No. 23 to beyond Joint Bay No. 24, a section of the L-2240 Togher Road will have traffic management in place with a lane closure during the works. The advisory traffic diversion route is via the R166 Regional Road and Ferrards Cross (4.5 m wide). Figure 4-11 below shows the advisory L-2240 Local Road traffic diversion route.

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**Figure 4-11: Diversion 11 - Joint Bay No. 23 to Joint Bay No. 24 (Source: Google My Maps).**

For Diversion 12 as the works progress from Joint Bay No. 25 to Joint Bay No. 26, a section of the L-2240 Togher will have traffic management in place with a lane closure during the works. The advisory traffic diversion route is via Ferrards Cross (4.5 m wide). Figure 4-12 below shows the advisory L-2240 Local Road traffic diversion route.



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**Figure 4-12: Diversion 12 - Joint Bay No. 25 to Joint Bay No. 26 (Source: Google My Maps).**

There is one school located in the vicinity of these works, for St Colmcille National School the works programme will be structured to ensure that any works on the cable corridor that could cause traffic to divert traffic past St Colmcille National School would be programmed to be done during school holidays.

**Traffic Management Measures Subsequent to Road Diversions**

The installation of the JBs along this section of the cable route will include the construction of a temporary traffic passing bay. The temporary traffic passing bays will have traffic management control via a single lane/ signal controlled system. Other activities such as cable pulling, cable jointing and joint bay backfilling and reinstatement will take place later in the programme. The traffic passing bays will be operational and can facilitate the movement of traffic through the works and therefore no advisory traffic diversions will be required for these activities.

**4.1.1.6 L-2221 Coast Road - Single lane/ signal controlled system**

The L-2221 Coast Road and serves a number of individual residential developments. This section of the cable route is from Joint Bay No. 27 to Joint Bay No. 28 and will involve trenching, ducting, joint bay and traffic passing bay installation.

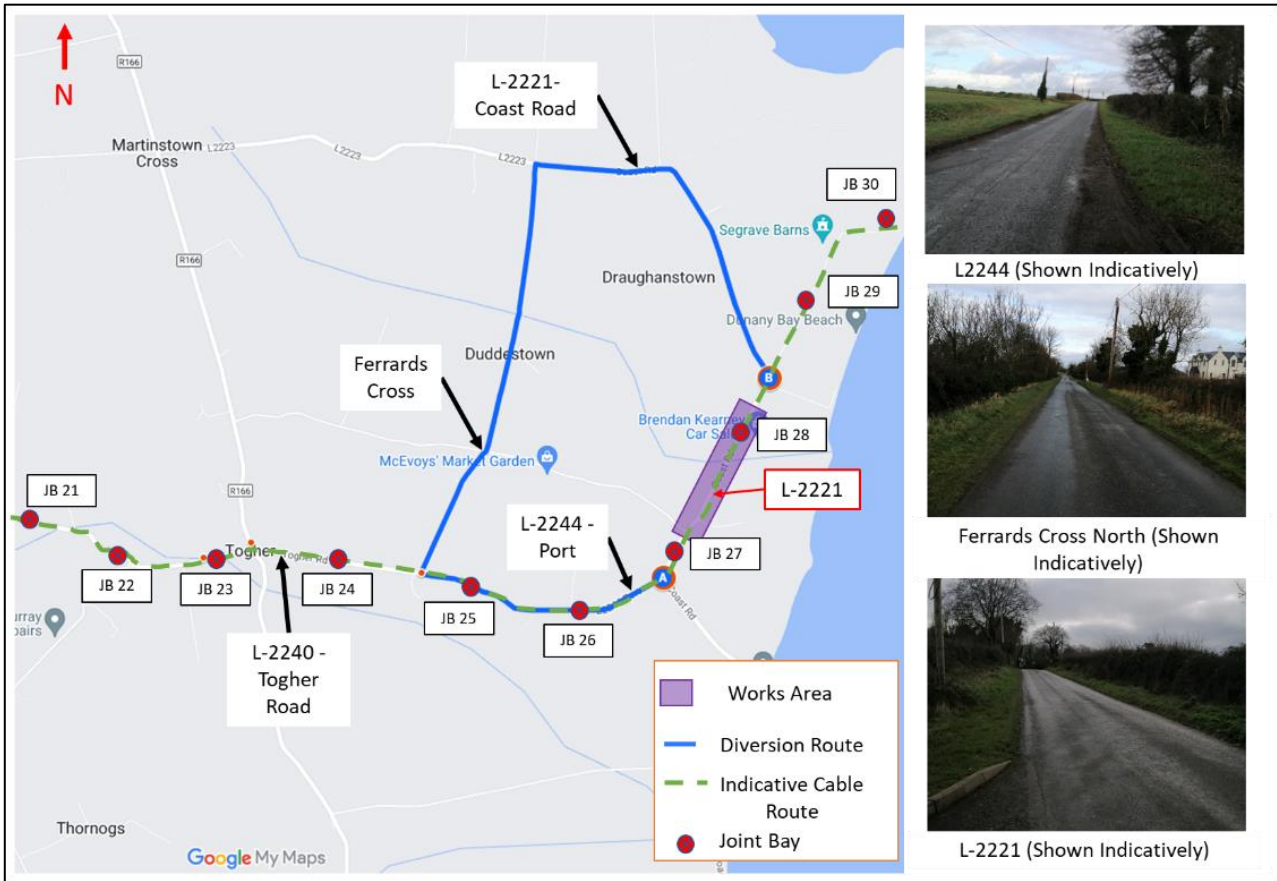
It is anticipated that for this section of the route an advisory traffic diversion will be in place for approximately 5 weeks. Between Joint Bay No. 27 to Joint Bay 28, the cable crosses Salterstown Stream. The full road width will be required to facilitate this cable crossing. This will result in a road closure for 2 days. The contractor will apply to LCC for a temporary road closure. The contractor will comply with restrictions and/or conditions relating to the temporary road closure.

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**Diversion 13**

The L-2221 Coast Road will have advisory traffic diversions for through traffic during the works. The L-2221 Coast Road has an average paved width of 4.0 m. Temporary traffic management will be modified as the works progress linearly along the cable route, until the traffic passing bays are installed.

For Diversion 13 a section of the L-2221 Coast Road will have traffic management in place with a lane closure during the works. The advisory traffic diversion route is via the L-2221 Coast Road (4.5 m wide), L-6222 Ferrard’s Cross (4.0 m wide) and L-2240 (Togher Road)/ L-2244 (Port Road) (4.0 m wide). Figure 4-13 below shows the advisory L-2221 Local Road traffic diversion route.



**Figure 4-13: Diversion 13 - Joint Bay No. 27 to Joint Bay No. 28 (Source: Google My Maps).**

**Traffic Management Measures Subsequent to Road Diversions**

The installation of the JBs along this section of the cable route will include the construction of a temporary traffic passing bay. The temporary traffic passing bays will have traffic management control via a single lane/ signal controlled system. Other activities such as cable pulling, cable jointing and joint bay backfilling and reinstatement will take place later in the programme. The traffic passing bays will be operational and can facilitate the movement of traffic through the works and therefore no advisory traffic diversions will be required for these activities.

**4.1.1.7 L-6223 Dunany Road - Single lane/ signal controlled system**

The L-6223 Dunany Road is a cul-de-sac that provides access to a number of residents/farmyards. This section of the cable route runs from Joint Bay No. 28 to the landfall location at Dunany Point and will involve trenching, ducting, joint bay and traffic passing bay installation.

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It is anticipated that for the section of cable between Joint Bay No. 29 and Joint Bay No. 30, the proposed traffic diversion will be in place for approximately 3 weeks. Works from Joint Bay No. 30 and the landfall will result in the beach access road being closed. This road closure will be in place for 2 weeks plus the additional time for the works related to the offshore cable.

The contractor will apply to LCC for a temporary road closure. The contractor will comply with restrictions and/or conditions relating to the temporary road closure.

**Diversion 14 and Diversion 15**

The L-6223 Dunany Road has an average paved width of 3.1 m. Temporary traffic management will be modified as the works progress linearly along the cable route, until the traffic passing bays are installed.

For Diversion 14 as works progress from Joint Bay No. 28 to Joint Bay No. 30, a section on the L-6223 Local Road will be closed except for local access. Joint Bay No. 29 will be installed offline in an adjacent field. Local access is to be maintained to Ash Tree Barn and farmyards along the road during the works. There is no diversion route using the public road network for the L-6223 Local Road. An agreement will be made with Dunany Equestrian Centre to divert local traffic only through their private access roads (3.0 m wide). Figure 4-14 below shows the proposed L-6223 Local Road diversion route.



**Figure 4-14: Diversion 14 - Joint Bay No. 28 to Joint Bay No. 30 (Source: Google My Maps).**

For Diversion 15 as works progress past Joint Bay No. 30 to Dunany Point, a section of the L-6223 Local Road will be closed except for local access. An alternative access point to the beach will be delineated through road signage. Figure 4-15 below shows the proposed L-6223 Local Road diversion route.

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Figure 4-15: Diversion 15 – Alternative beach access (Source: Google My Maps).

### Traffic management measures subsequent to road diversions

The installation of the JBs along this section of the cable route will include the construction of a temporary traffic passing bay. The temporary traffic passing bays will have traffic management control via a single lane/signal controlled system. Other activities such as cable pulling, cable jointing and joint bay backfilling and reinstatement will take place later in the programme. The traffic passing bays will be operational and can facilitate the movement of traffic through the works and therefore no advisory traffic diversions will be required for these activities.

## 4.2 Temporary construction compounds

The Project will comprise seven construction compounds along the cable route, as illustrated in Figure 4-16 below. Table 4-2 shows a summary of the activities that will be carried out at each of the compound locations. The construction compound at the site of the proposed onshore substation will incorporate the following provisions: site offices, stores, delivery and offloading areas, welfare facilities, parking areas and security accommodation. All HDD compounds will incorporate the following provisions: delivery and offloading area for the HDD equipment and goods, welfare facilities and parking for worker vehicles.

Haul routes have been identified for the four number temporary construction compounds that will be used for storage activities (construction compounds at the site of the proposed onshore substation, M1/Rail HDD, adjacent to JB17 and the landfall location). Most of the delivery of materials and other infrastructure associated with the Project will be carried out using standard Heavy Vehicles (HV). The largest HV used during general deliveries will be a 16.5 m articulated vehicle. There may be specific components for the onshore substation that will be oversize loads. This is likely to include some of the transformers or other switch gear. The number of oversize loads is anticipated to be low (typically less than 5 no.) for the onshore substation only. Deliveries to the site will adhere to the hierarchy of roads where possible utilising motorways

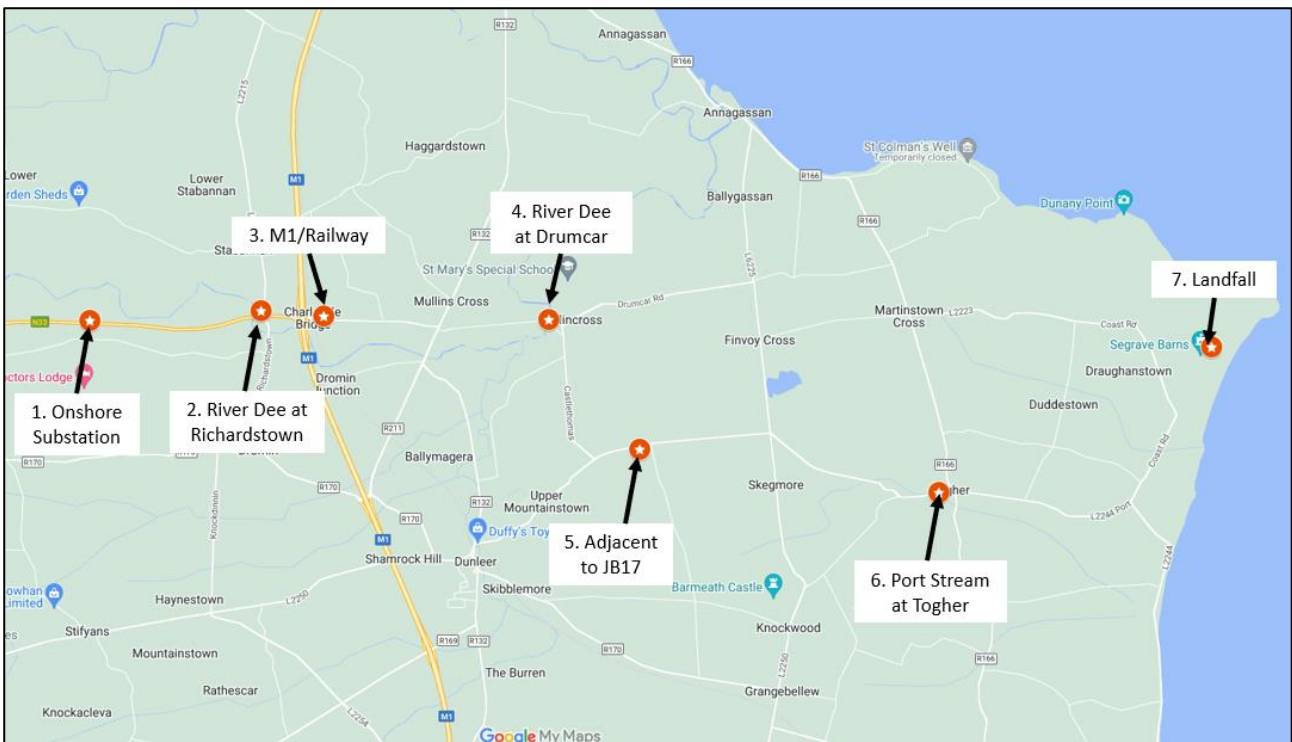
**ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN**

where available, then National Primary and Secondary Roads, Regional Roads then Local Roads. It is proposed that the road network along the cable route is utilised as part of the haul routes.

Main project components will be delivered to the construction compounds from a port on the island of Ireland. Vehicles will not be permitted to queue along the haul route / cable route at the site entrances. All drivers are to comply with the rules of the road and behave courteously at all times.

The works outlined below (in sections 4.2.1 to 4.2.7), which are required to improve visibility splay and facilitate site access and egress will be planned and operated in accordance with Chapter 8 of the Department of Transport’s Traffic Signs Manual (TSM) and its accompanying Design and Operation Guidance documents (2019).

All temporary construction compounds and temporary access will be removed and the location fully reinstated once all construction activities have been completed.



**Figure 4-16: Location of construction compounds (Source: Google My Maps).**

**Table 4-2: Location of temporary construction compounds and proposed activities.**

No.	Temporary Construction Compound Location	Proposed activities	New Temporary Access Required
1	Onshore substation	Storage, welfare, offices	No
2	River Dee at Richardstown	HDD Compound	West – Yes East – No
3	M1/Railway	Storage & HDD compound	West – Yes East – No

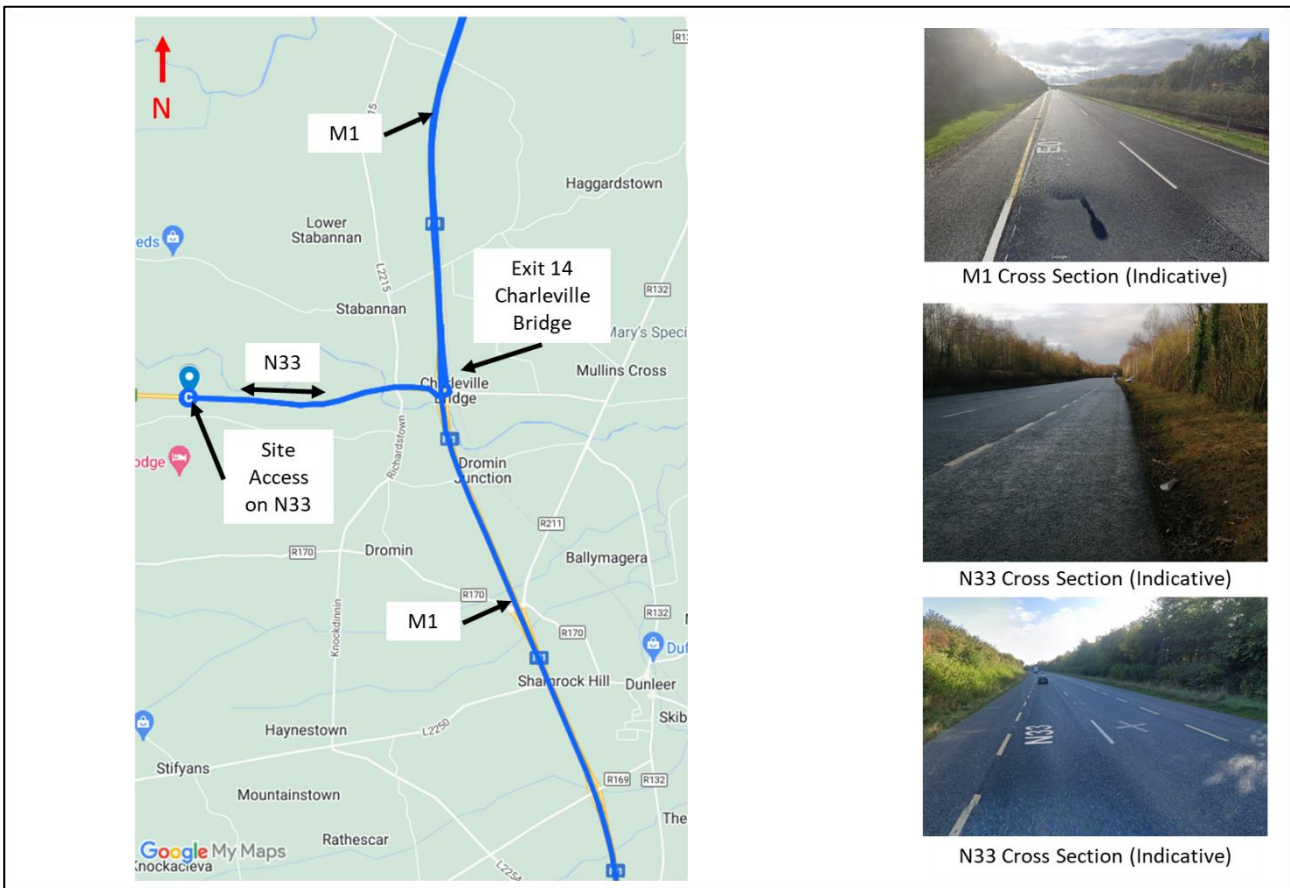
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No.	Temporary Construction Compound Location	Proposed activities	New Temporary Access Required
4	River Dee at Drumcar	HDD Compound	West – No East – Yes
5	Adjacent to JB17	Storage	Yes
6	Port Stream at Togher	HDD Compound	West – Yes East – Yes
7	Landfall	Storage	Yes

**4.2.1 Onshore substation compound No. 1**

**4.2.1.1 Haul route**

The proposed haul route to the Onshore Substation compound involves routing construction traffic via the M1 and N33. The proposed haul route is shown below in Figure 4-17.



**Figure 4-17: Onshore Substation Compound (Source: Google My Maps).**

## ORIEL WIND FARM PROJECT – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

### 4.2.1.2 Access and egress

A sightline assessment of the existing access on the N33 National Road has been undertaken by the ESB and the result of this analysis is shown in Appendix A. The access was checked in accordance with TII Publication DN-GEO-03060 - *Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions)* (June 2017) using a relaxation 'x' distance of 2.4 m (National Roads). The sightline assessment demonstrates that the required junction visibility splay of 215 m is achievable along the N33 with minor hedge trimming.

### 4.2.1.3 Swept path analysis

A swept path analysis was undertaken by the ESB at the existing access along the N33. This analysis modelled the turning path of a standard 16.5 m articulated HV vehicle entering and exiting the site. The results of this analysis are shown in Appendix A.

A new track/widening is required to accommodate this standard HV vehicle movement. A section of the existing access track is also required to be regraded.

## 4.2.2 River Dee at Richardstown N33 compound No. 2

### 4.2.2.1 Access and egress

A sightline assessment of the proposed entry and exit for the temporary construction compounds at River Dee at Richardstown was undertaken and the result of this analysis is shown in Appendix A. These include River Dee at Richardstown West and River Dee at Richardstown East temporary construction compounds.

Temporary construction compound River Dee at Richardstown West access was checked in accordance with TII Publication DN-GEO-03060 - using a relaxation 'x' distance of 2.4 m (National Roads). The sightline assessment demonstrates that the required junction visibility splay of 215 m is achievable in both directions along the N33.

Temporary construction compound River Dee at Richardstown East access was checked in accordance with TII Publication DN-GEO-03060 - using a relaxation 'x' distance of 2.0 m (Regional & Local Roads). The sightline assessment demonstrates that a junction visibility splay of 160 m is achievable to the north with minor hedge trimming. A visibility splay of 55 m is achieved to the south. The visibility splay to south intersects with the junction with the N33.

### 4.2.2.2 Swept path analysis

A swept path analysis was undertaken of these temporary construction compounds accesses. This analysis modelled the turning path of a standard 16.5 m articulated HV vehicle entering and exiting the River Dee at Richardstown West and River Dee at Richardstown East temporary construction compounds. The results of this analysis are shown within Appendix A.

At River Dee at Richardstown West, to accommodate a standard 16.5 m articulated HV vehicle on the existing access road, a new 6.0 m wide temporary access with an over-run strip is required. An over-run strip is the portion of the road (at the junction) that is designed to accommodate the swept path movement of the HV.

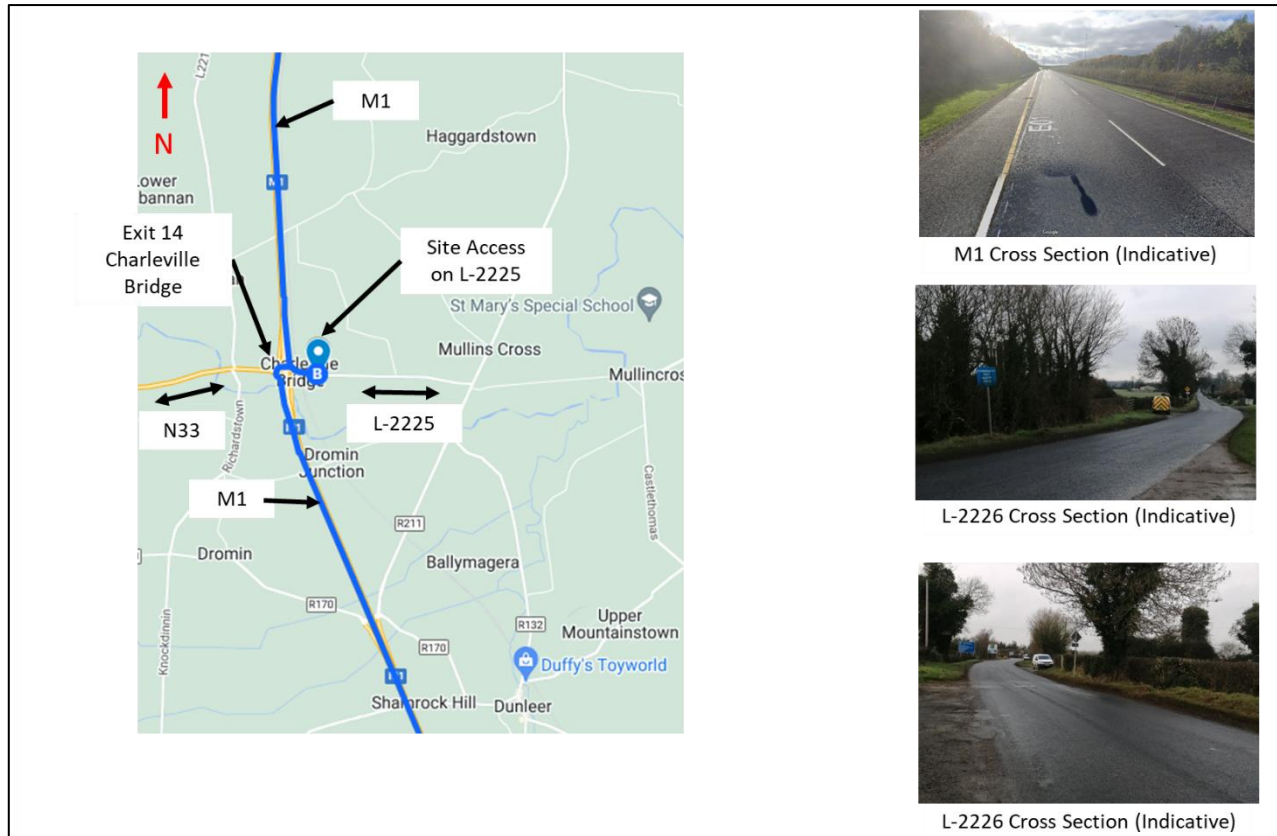
At River Dee at Richardstown East, to accommodate a standard 16.5 m articulated HV vehicle on the existing access, the use of the existing 7.0 m wide access along the L-2215 Local Road is sufficient.

## 4.2.3 M1/Railway compound No. 3

### 4.2.3.1 Haul route

The proposed haul route to the M1/Railway Compound involves routing construction traffic via the M1 and L-2226 (Mullinscross/Drumcar Road). The proposed haul route is shown below in Figure 4-18.

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**Figure 4-18: M1/Railway Compound (Source: Google My Maps).**

### 4.2.3.2 Access and egress

A sightline assessment of the proposed entry and exit for the temporary construction compounds at M1/Railway was undertaken and the result of this analysis is shown in Appendix A. These include the M1/Railway West and M1/Railway East temporary construction compounds.

Temporary construction compound M1/Railway West access was checked in accordance with TII Publication DN-GEO-03060 - using a relaxation 'x' distance of 2.4 m (National Roads). The sightline assessment demonstrates that a junction visibility splay of 215 m is achievable to the west. A visibility splay of 101 m is achieved to the east. The visibility splay to the east intersects with Charleville Bridge roundabout.

Temporary construction compound M1/Railway East access was checked in accordance with TII Publication DN-GEO-03060 - using a relaxation 'x' distance of 2.0 m (Regional & Local Roads). The sightline assessment demonstrates that a junction visibility splay of 160 m is achievable to the west. A visibility splay of 160 m is achievable to the east with minor hedge trimming.

### 4.2.3.3 Swept path analysis

A swept path analysis was undertaken of these temporary construction compounds accesses. This analysis modelled the turning path of a standard 16.5 m articulated HV vehicle entering and exiting the M1/Railway West and M1/Railway East temporary construction compounds. The results of this analysis are shown within Appendix A.

At the M1/Railway West, to accommodate a standard 16.5 m articulated HV vehicle on the existing access road, a new 6.0 m wide temporary access with an over-run strip is required.

At the M1/Railway East, to accommodate a standard 16.5 m articulated HV vehicle on the existing access road, the use of the existing 9.6 m wide access along the L-2226 Local Road is sufficient.



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### 4.2.4 River Dee at Drumcar compound No. 4

#### 4.2.4.1 Access and egress

A sightline assessment of the proposed entry and exit for the temporary construction compounds at River Dee at Drumcar was undertaken and the result of this analysis is shown in Appendix A. These include the River Dee at Drumcar West and River Dee at Drumcar East temporary construction compounds.

Temporary construction compound River Dee at Drumcar West access was checked in accordance with TII Publication DN-GEO-03060 - using a relaxation 'x' distance of 2.0 m (Regional & Local Roads). The sightline assessment demonstrates that a junction visibility splay of 160 m is achievable to the west with hedge trimming. A visibility splay of 95 m is achieved to the east. The visibility splay to the east intersects with Drumcar Bridge along the L-2226 Local Road.

Temporary construction compound River Dee at Drumcar East access was checked in accordance with TII Publication DN-GEO-03060 - using a relaxation 'x' distance of 2.0 m (Regional & Local Roads). The sightline assessment demonstrates that a junction visibility splay of 141 m is achieved to the northwest. The visibility splay to the northwest intersects with Drumcar Bridge along the L-2226 Local Road. A visibility splay of 160 m is achievable to the southeast with minor hedge trimming along the L-2226 Local Road.

#### 4.2.4.2 Swept path analysis

A swept path analysis was undertaken of these temporary construction compounds accesses. This analysis modelled the turning path of a standard 16.5 m articulated HV vehicle entering and exiting the River Dee at Drumcar West and River Dee at Drumcar East temporary construction compounds. The results of this analysis are shown within Appendix A.

At the River Dee at Drumcar West, to accommodate a standard 16.5 m articulated HV vehicle on the existing access road, the use of an existing 7.0 m wide access along the L-2226 Local Road requires an over-run strip.

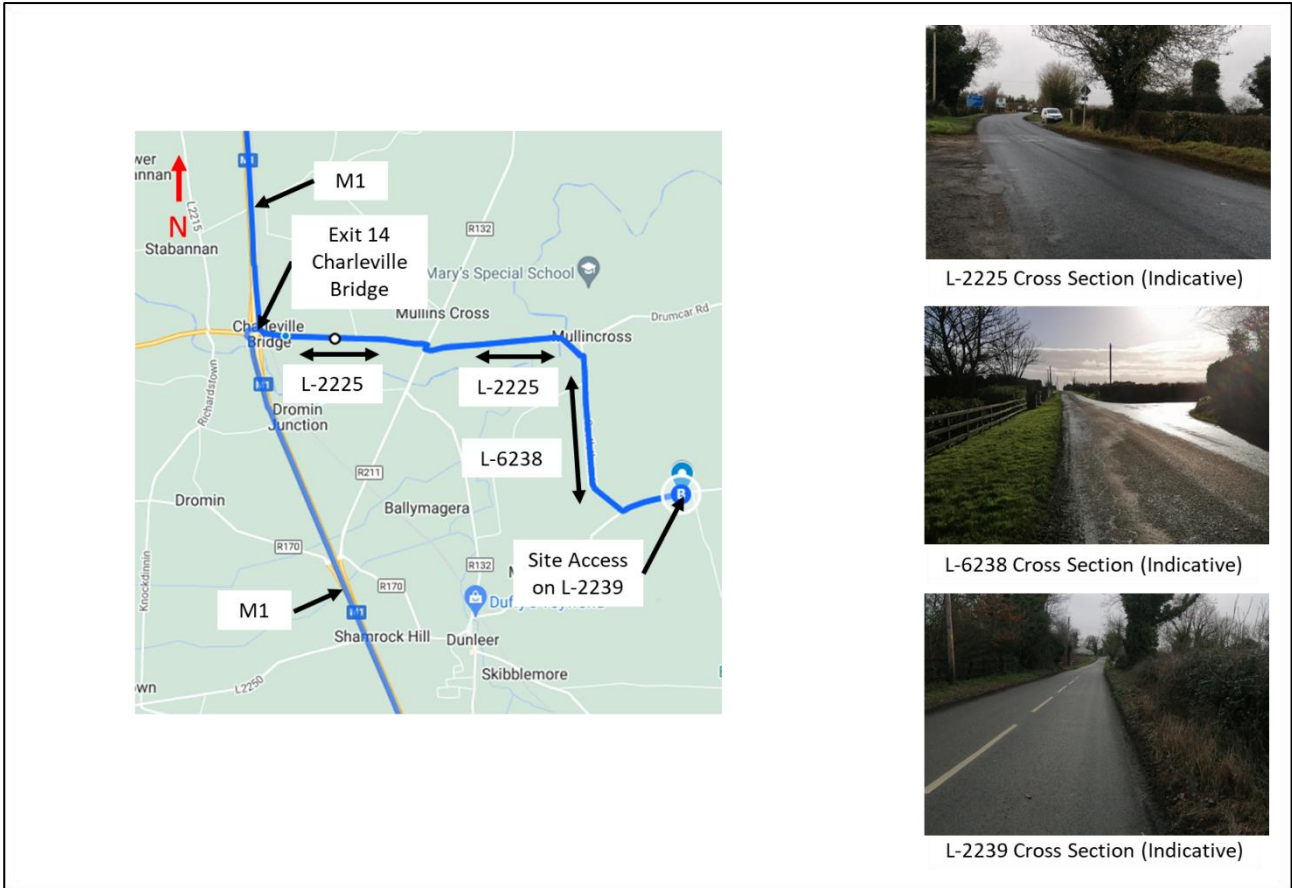
At the River Dee at Drumcar East, to accommodate a standard 16.5 m articulated HV vehicle on the existing access road, a new 7.0 m wide temporary access with an over-run strip is required.

### 4.2.5 Adjacent to Joint Bay No. 17 compound No. 5

#### 4.2.5.1 Haul route

The proposed haul route to the adjacent to JB No. 17 compound involves routing construction traffic via the M1, L-2226 (Mullinscross/Drumcar Road), L-6238 and L-2239. The proposed haul route is shown below in Figure 4-19.

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**Figure 4-19: Compound adjacent to JB17 (Source: Google My Maps).**

**4.2.5.2 Access and egress**

A sightline assessment of the proposed temporary construction compound adjacent to JB No. 17 was undertaken and the result of this analysis is shown in Appendix A.

Temporary construction compound adjacent to JB No. 17 access was checked in accordance with TII Publication DN-GEO-03060 - using a relaxation 'x' distance of 2.0 m (Regional & Local Roads). The sightline assessment demonstrates that a junction visibility splay of 160 m is achievable to the west with minor hedge trimming. A visibility splay of 103 m is achievable to the east with minor hedge trimming subject to a section of the hedge being removed for the construction of a passing bay along the L-2239 Local Road. The visibility splay to the east intersects with a junction along the L-2239 Local Road.

**4.2.5.3 Swept path analysis**

A swept path analysis was undertaken of the temporary construction compound access. This analysis modelled the turning path of a standard 16.5 m articulated HV vehicle entering and exiting the adjacent to JB No. 17 temporary construction compound. The results of this analysis are shown within Appendix A.

At adjacent to JB17 temporary construction compound, to accommodate a standard 16.5 m articulated HV vehicle on the existing access road, a new 6.0 m wide temporary access with an over-run strip is required in the area where a passing bay is also required.

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### 4.2.6 Port Stream at Togher compound No. 6

#### 4.2.6.1 Access and egress

A sightline assessment of the proposed entry and exit for the temporary construction compounds at Port Stream at Togher was undertaken and the result of this analysis is shown in Appendix A. These include the Port Stream West and Port Stream East temporary construction compounds.

Temporary construction compound Port Stream West was checked in accordance with TII Publication DN-GEO-03060 - using a relaxation 'x' distance of 2.0 m (Regional & Local Roads). The sightline assessment demonstrates that a junction visibility splay of 160 m is achievable to the west with hedge trimming. A visibility splay of 160 m is achievable to the east subject to a section of the hedge being removed for the construction of a passing bay along the L-2239 Local Road.

Temporary construction compound Port Stream East was checked in accordance with TII Publication DN-GEO-03060 - using a relaxation 'x' distance of 2.0 m (Regional & Local Roads). The sightline assessment demonstrates that a junction visibility splay of 160 m is achievable to the west subject to a section of the hedge being removed for the construction of a passing bay along the L-2239 Local Road. A visibility splay of 91 m is achieved to the east. The visibility splay intersects with the junction with the R166 Regional Road.

#### 4.2.6.2 Swept path analysis

A swept path analysis was undertaken of these temporary construction compounds accesses. This analysis modelled the turning path of a standard 16.5 m articulated HV vehicle entering and exiting the Port Stream West and Port Stream East temporary construction compounds. The results of this analysis are shown within Appendix A.

At Port Stream West, to accommodate a standard 16.5 m articulated HV vehicle on the existing access road, a new 6.0 m wide temporary access with an over-run strip is required.

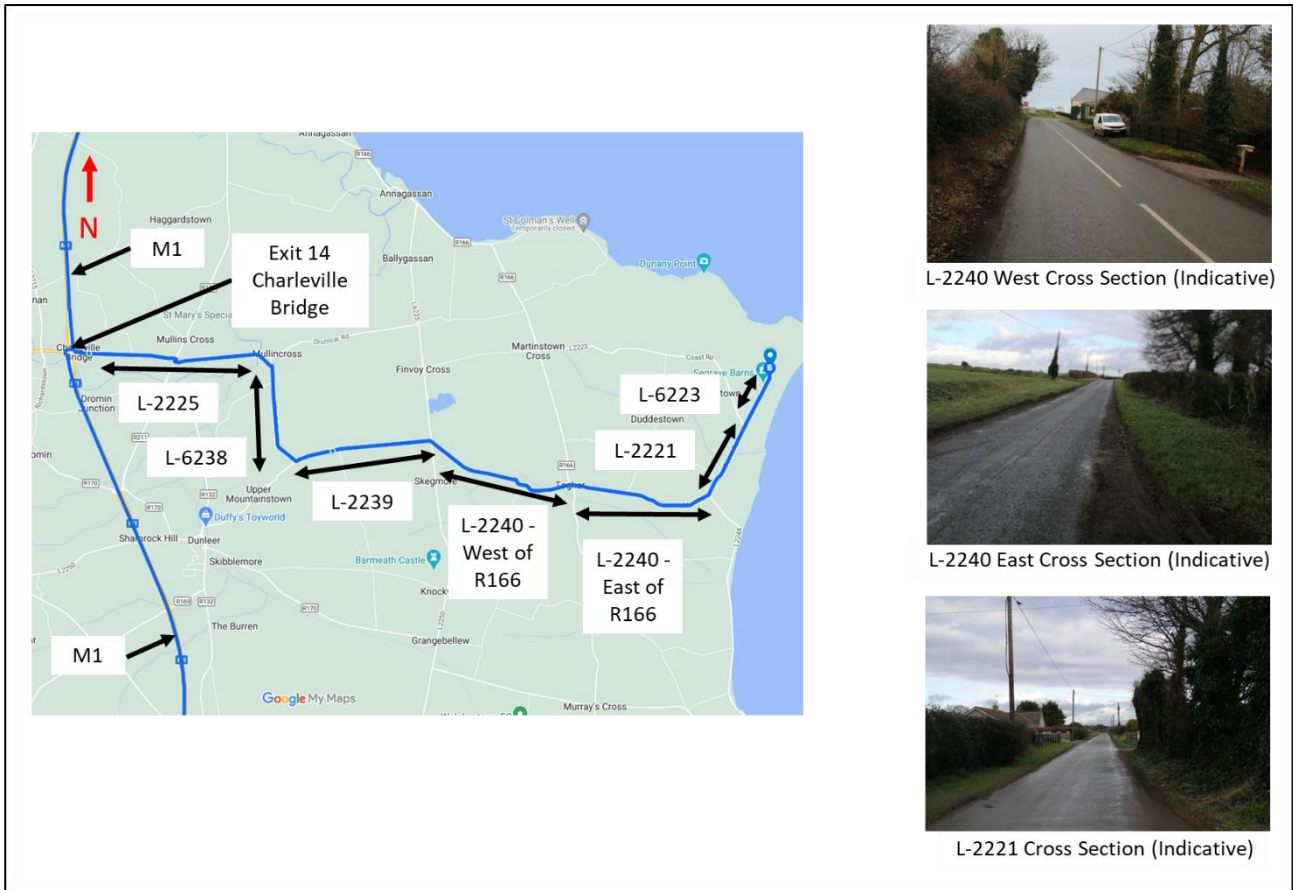
At Port Stream East, to accommodate a standard 16.5 m articulated HV vehicle on the existing access road, a new 6.0 m wide temporary access with an over-run strip is required.

### 4.2.7 Landfall compound No. 7

#### 4.2.7.1 Haul route

The proposed haul route to the Landfall compound involves routing construction traffic via the M1, L-2226, L-6238, L-2239, L-2240, L-2244, L-2221 and L-6223. The proposed haul route is shown below in Figure 4-20.

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**Figure 4-20: Landfall Compound (Source: Google My Maps).**

**4.2.7.2 Access and egress**

The temporary construction compound at the Landfall site will be accessed via an internal private access road on the Dunany Equestrian Centre estate. A sightline assessment of the proposed temporary construction compound access for Landfall was undertaken, and the result of this analysis is shown in Appendix A.

For completeness, TII Publication DN-GEO-03060 was used to assess the access sightlines on the internal private access road.

Using TII Publication DN-GEO-03060 and a relaxation ‘x’ distance of 2.0 m (Regional & Local Roads), a junction visibility splay of 41 m is achieved to the south and a junction visibility splay of 160 m is achieved to the north of the proposed temporary access.

**4.2.7.3 Swept path analysis**

A swept path analysis was undertaken of the proposed temporary access (which is via an internal private access road on the Dunany Equestrian Centre estate). This analysis modelled the turning path of a standard 16.5 m articulated HV vehicle entering and exiting the Landfall compound. To accommodate a standard 16.5m articulated HV vehicle, a new 6.0 m wide temporary access with an over-run strip is required. The results of this analysis are shown within Appendix A.

**4.3 Programming**

In order to reduce impacts on local communities and residents adjacent to the Project, the Contractor will:

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- Liaise with both Louth County Council (LCC) and Oriel Windfarm Limited to co-ordinate access and egress to the site;
- Schedule deliveries to and from the construction compounds such that traffic volumes on the surrounding road network are kept to a minimum;
- Develop a construction phase programme for the duration of the works;
- Incorporate any specific construction moratoria (for example, certain busy periods) as indicated by LCC into the construction programme; and
- A project community liaison officer will be appointed by the contractor to interact with members of the local community to ensure that deliveries will not conflict with sensitive events such as funerals.

### 4.4 Working hours

Hours of construction (associated lighting) will be as follows:

- Monday to Saturday (inclusive) - 8:00am to 6:00pm; and
- Sunday and Bank Holidays - no operations and no associated lighting other than that required for security or safety.

Specific activities such as large concrete pours or delivery of large equipment (e.g. transformers) which require specific road control may occur outside these hours. Consent would be sought from the local authority and affected local stakeholders informed prior to these activities. Any works on public roads outside normal working hours will be subject to consultation with LCC and An Garda Síochána.

### 4.5 Temporary traffic management

The Contractor will undertake consultation with the relevant authorities for the purpose of identifying and agreeing signage requirements. Such signage shall be installed prior to works commencing on site.

The Contractor will provide advanced warning signs in accordance with Chapter 8 of the Department of Transport's Traffic Signs Manual (TSM) and its accompanying Design and Operation Guidance documents. The Contractor will also further develop this CTMP and issue it to LCC for agreement prior to the commencement of works on site. This CTMP will be developed by a qualified Temporary Traffic Management (TTM) designer in accordance with Chapter 8 of the TSM.

The Contractor will provide, erect, and maintain dedicated signage along all public roads affected by the works to ensure the smooth and safe control of traffic entering and exiting the works area and diversion routes. All temporary traffic signs will conform to TSM Chapter 8. All signs will be reflectorised and adequately illuminated by night in a manner approved by the Employer's Representative and the Contractor will keep these signs clean and legible at all times.

No parking, unloading or blockages will occur on the access route adjacent to construction compounds. Such vehicles will be immediately requested to move to avoid impeding traffic flow.

### 4.6 Site management of construction phase vehicles

The Contractor will ensure the safe and efficient management of site related traffic during construction. This will involve progressing the works with reasonable skill, care, diligence and proactively managing the works in a manner most likely to ensure the safety and welfare of those carrying out the construction works. Each element of the works will be constantly under review to ensure the safety and accessibility throughout the works.

If issues arise pertaining to construction traffic on site, the measures outlined in this plan will be reviewed and updated accordingly.

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The Contractor will ensure that all aspects of the works comply with good industry practice, codes of practice, statutory instruments, and all necessary consents.

### 4.6.1 Visitors

Visitors to site must first report to the onshore substation compound office for induction and sign in. Visitors will be directed to the compound car park (at the onshore substation site) and shown the designated area to park their vehicle. Visitors must be supervised at all times whilst on site and sign out when leaving. Visitors will be accompanied to all other sites where necessary.

### 4.6.2 Plant and equipment

The Contractor will ensure that all plant, equipment, and vehicles used during the works are operated by suitably competent personnel.

- Plant and equipment will only be operated by persons who have been trained in their specific use, and in possession of the appropriate Construction Skills Certification Scheme (CSCS) card;
- All work equipment has been tested and inspected in compliance with regulatory and site requirements;
- All plant will be inspected prior to use;
- All equipment will be checked before use and any defects reported;
- A banksman/ spotter will always be present for reversing site vehicles;
- All site construction plant will have a flashing beacon when in use;
- All guards and auxiliary devices will be in position on equipment;
- If required, barriers will be installed around equipment to protect others; and
- Manufactures instructions will be followed at all times.

### 4.6.3 Unauthorised arrivals

In the instance where any person enters the site unintentionally, they will not be permitted access unless authorised by site management.

Such persons will be instructed to turn in a safe manner to exit the site.

### 4.6.4 Compound car park/site offices

The Contractor will define designated parking bays within the site compound at the onshore substation site (no. 1). A reverse in/drive out policy will also be enforced within the car park. Reverse only signs will be erected to ensure all vehicles are reversed into the parking bay.

Once exiting the compound, all vehicles will stop and must yield to all traffic approaching either way. Directional and regulatory signage will be erected on exit of the compound.

### 4.6.5 Deliveries

Any deliveries to the compounds will be notified in advance to allow for staggered times into the compounds. This action will aim to prevent congestion at the construction compound entrances and any resulting queues forming along the cable route. All deliveries will be controlled by a delivery booking system which will ask delivery drivers to arrive at a designated time.

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### 4.7 Road condition

The extent of the heavy vehicle traffic movements and the nature of the cargo may potentially create impact on the local public road network through:

- Fugitive losses from wheels, trailers, or tailgates; and
- Localised areas of subgrade and wearing surface damage or failure.

The Contractor will ensure that:

- The Contractor will take all reasonable measures while transporting waste or any other materials likely to cause fugitive losses from a vehicle during transportation to and from site, including but not limited to:
  - Covering of all waste or materials with suitably secured tarpaulin / covers to prevent loss; and
  - Utilisation of enclosed units to prevent loss.
- The roads forming part of the haul route will be monitored visually throughout the construction phase and a truck mounted vacuum mechanical sweeper will be assigned to roads along the haul route as required.

In addition, the Contractor will:

- Undertake a survey / inspection of the roads forming the haul routes prior to the construction phase to record the condition of these roads at that particular time;
- Such survey will comprise, as a minimum, video footage which shall confirm the condition of the road corridor immediately prior to commencement of construction. This will include footage of the road surface course, the appearance and condition of boundary treatments and the condition of any overhead services that will be crossed; and
- Throughout the course of the construction phase, ongoing visual inspections and monitoring of the haul roads will be undertaken to ensure any damage caused by construction traffic is recorded and that LCC is notified.

Upon completion of construction, the survey / inspection carried out at preconstruction phase will be repeated and a comparison of the pre and post construction road conditions will be carried out. Where such comparative assessments identify a section of road as having been damaged or as having deteriorated as a result of construction traffic, the road surface will be reinstated to the standard required and in accordance with the requirements of LCC and TII..

### 4.8 Recommended traffic management speed limits

Adherence to posted / legal speed limits will be emphasised to all staff and suppliers during induction training.

### 4.9 Road cleaning

The Contractor will ensure that road sweeping is undertaken to remove any project related dirt, debris and material deposited on the surrounding road network and along the haul route by construction / delivery vehicles. Road sweepers will dispose of material following sweeping of the road network, to a licensed waste facility.

### 4.10 Vehicle cleaning

The Contractor will provide wheel washing facilities, and any other necessary measures to remove mud and organic material from vehicles exiting the site.

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### 4.11 Enforcement of CTMP

Throughout the construction phase, the Contractor will ensure that all project staff and material suppliers adhere to this CTMP. The Contractor will define and implement monitoring measures to confirm the effectiveness of the CTMP and compliance will be monitored by the Employer's Representative. Regular inspections / spot checks will also be carried out to ensure that all project staff and material suppliers follow the agreed measures adopted in the CTMP.

### 4.12 Noise and vibration

The Contractor will ensure that noise and vibration levels from the construction traffic will not result in a nuisance to the area surrounding the permitted site. During the construction works the Contractor will use best practice and all required mitigation measures to prevent or minimise noise and vibration levels from construction traffic.

If significant noise or vibration activities are to be carried out, the Contractor will appoint a site representative who will be responsible for matters relating to noise and vibration. Such mitigation measures may include:

- Avoiding unnecessary idling and revving;
- Limiting or banning the use of horns; and
- Avoiding excessive braking or accelerating.

The Contractor will closely monitor noise and vibration generated by construction traffic and implement appropriate mitigation measures and further monitor the effectiveness of such measures.

### 4.13 Emergency procedures during construction

The Contractor will maintain contact details of key personnel and will also outline emergency procedures and drills.

The Contractor will ensure that unobstructed access is provided along the local public road to all emergency vehicles in particular at the construction compounds accesses.

The Contractor will provide LCC and An Garda Síochána with contact details of the Contractor's personnel responsible for construction traffic management.

In the case of a traffic or road related emergency the following procedure shall be followed:

- Emergency Services will be contacted immediately by dialling 112 or 999;
- Exact details of the emergency / incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner;
- The emergency will then be reported to the Construction Site Manager and the Safety Officer;
- All construction traffic shall be notified of the incident (where such occurs off site);
- Where required, appointed site first aiders will attend the emergency immediately; and
- The Safety Officer will ensure that the Emergency Services are en-route.

### 4.14 Communication

The Contractor will ensure that close communication with LCC and An Garda Síochána is maintained throughout the construction phase. Such communications shall include:



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- Submissions of proposed TTM measures for LCC comment and approval;
- An Garda Síochána must be consulted prior to the implementation of traffic control in accordance with Chapter 8 of the TSM.
- Ongoing reporting relating to the condition of the road network and updates to construction programming; and
- Information relating to local and community events that could conflict with proposed TTM measures and construction traffic, in order to implement alternative measures to avoid such conflicts.

The Contractor will also ensure that the local community is informed of proposed traffic management measures in advance of their implementation. Such information shall be disseminated by delivering leaflets to houses and businesses in the local area. Such information will contain contact information for members of the public to obtain additional information and to provide additional knowledge such as local events, sports fixtures, etc. which may conflict with proposed traffic management measures.

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### 5 Conclusions

This CTMP will form part of the construction contract and is designed to reduce possible impacts which may occur during the construction phase of the Project.

The Contractor will ensure that the contents of this CTMP are implemented during the construction phase.

This CTMP will remain a 'live' document throughout the construction phase and the Contractor will develop the CTMP in line with any changes to the construction programme of sequence of operations.

The Contractor will update the CTMP prior to commencement of construction, will keep the CTMP updated throughout, will agree the CTMP with LCC and An Garda Síochána and will fully implement the CTMP.

The Employer's Representative will be responsible for ensuring that the Contractor manages the construction activities in accordance with this CTMP and will ensure that any conditions of planning are incorporated into the site specific CTMP.

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### References

Department of Transport Tourism and Sport (DTTS) (2019). Traffic Signs Manual.

TII Publication DN-GEO-03060 - Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions) (June 2017).

# Appendix A

## Swept Path Analysis (SPA) and Visibility Splay



**LEGEND:**

[Red line]	APPLICATION BOUNDARY
[Green line]	215 m VISIBILITY ENVELOPE
[Grey line]	WIDENING/NEW ACCESS TRACK REQUIRED
[Black line]	EXISTING ENTRANCE
[Red dot]	EXISTING ELECTRICITY POLE
[Green line]	EXISTING OVERHEAD ELECTRICITY LINE
[Green line]	PROPOSED PALISADE FENCE
[Black line]	CONCRETE POST AND RAIL FENCE
[Blue line]	PROPOSED TRACK LEVELS



**NOTES:**

- ALL DIMENSIONS ARE IN METRES. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS.
- PROVISIONS HAVE BEEN MADE IN THE DESIGN TO ACCOMMODATE ABNORMAL LOADS THAT INCLUDE THE TRANSFORMER AND REACTOR DELIVERY. A FINAL SWEEP PATH ANALYSIS WILL BE REQUIRED ONCE A HAULER HAS BEEN APPOINTED TO DETERMINE IF ANY ADDITIONAL MODIFICATIONS WILL BE REQUIRED.

**SWEEP PATH LEGEND:**

[Blue hatched area]	WHEEL SWEEP PATH
[Green hatched area]	VEHICLE BODY OVERSAIL
[Red hatched area]	LOAD OVERSAIL



TABLE EREANN 1:2500 VECTOR FILE NUMBER 2018 & TABLE EREANN 1:2500 VECTOR FILE NUMBERS 2018 - A & 2018 - C ARE SHOWN ON THE DRAWING

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REV	DATE	REVISION DESCRIPTION	DRN	PROJ	VER	APP
4		PROJECT TITLE REVISED	SB			
3	21.08.23	STORAGE AREA REMOVED	SB	SB	SD	JML
2	12.07.21	COMPOUNDS & APPLICATION BOUNDARY REVISED, NOTE ADDED, EAST HATCHES REMOVED	SB	SB	SD	JML
1	21.06.22	ACCESS TRACK & PROPOSED LEVELS ADDED, PLANNING APPLICATION BOUNDARY UPDATED	LMM	LM	SD	JML
0	15.12.20	INITIAL VERSION	LMM	RM	SD	DC

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PURPOSE OF ISSUE: PRELIMINARY UNLESS INDICATED  
DESIGN APPROVAL:  PLANNING  TENDER  CONSTRUCTION  AS-BUILT

CLIENT: Oriel Windfarm Limited

PROJECT: Oriel Wind Farm Project

CONTRACT: ONSHORE SUBSTATION PROPOSED SITE ENTRANCE MODIFICATIONS INCLUDING VISIBILITY SPLAYS

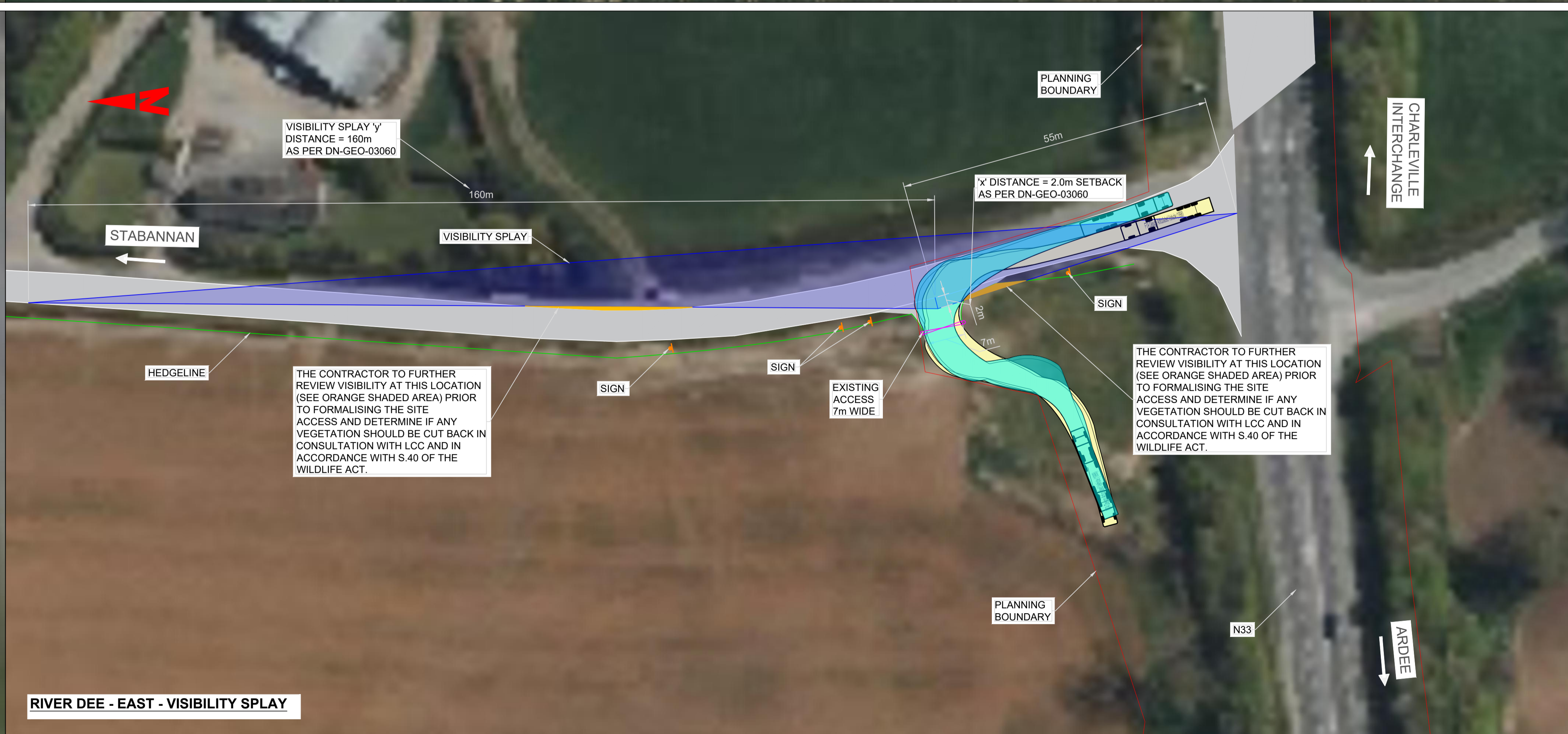
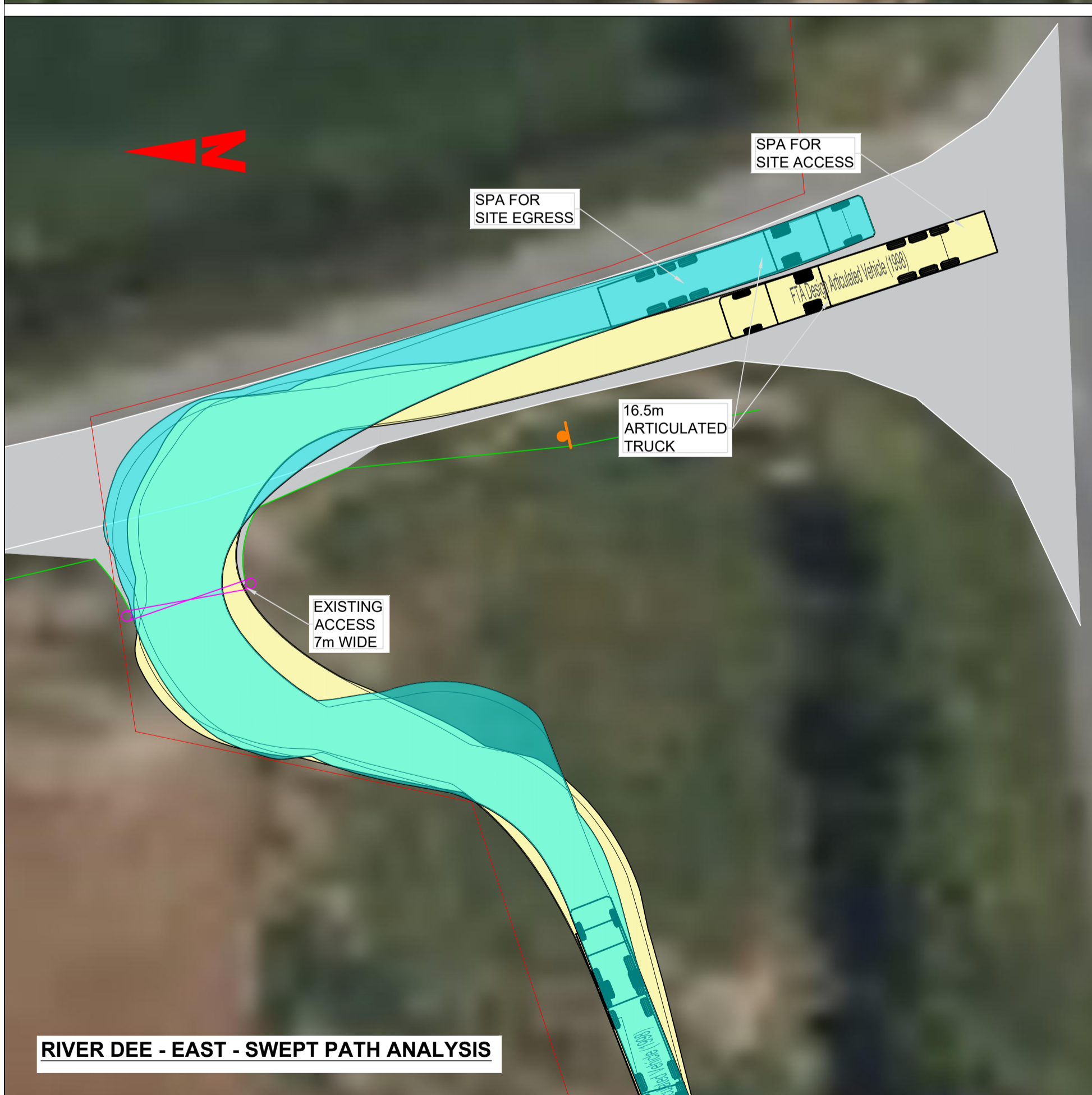
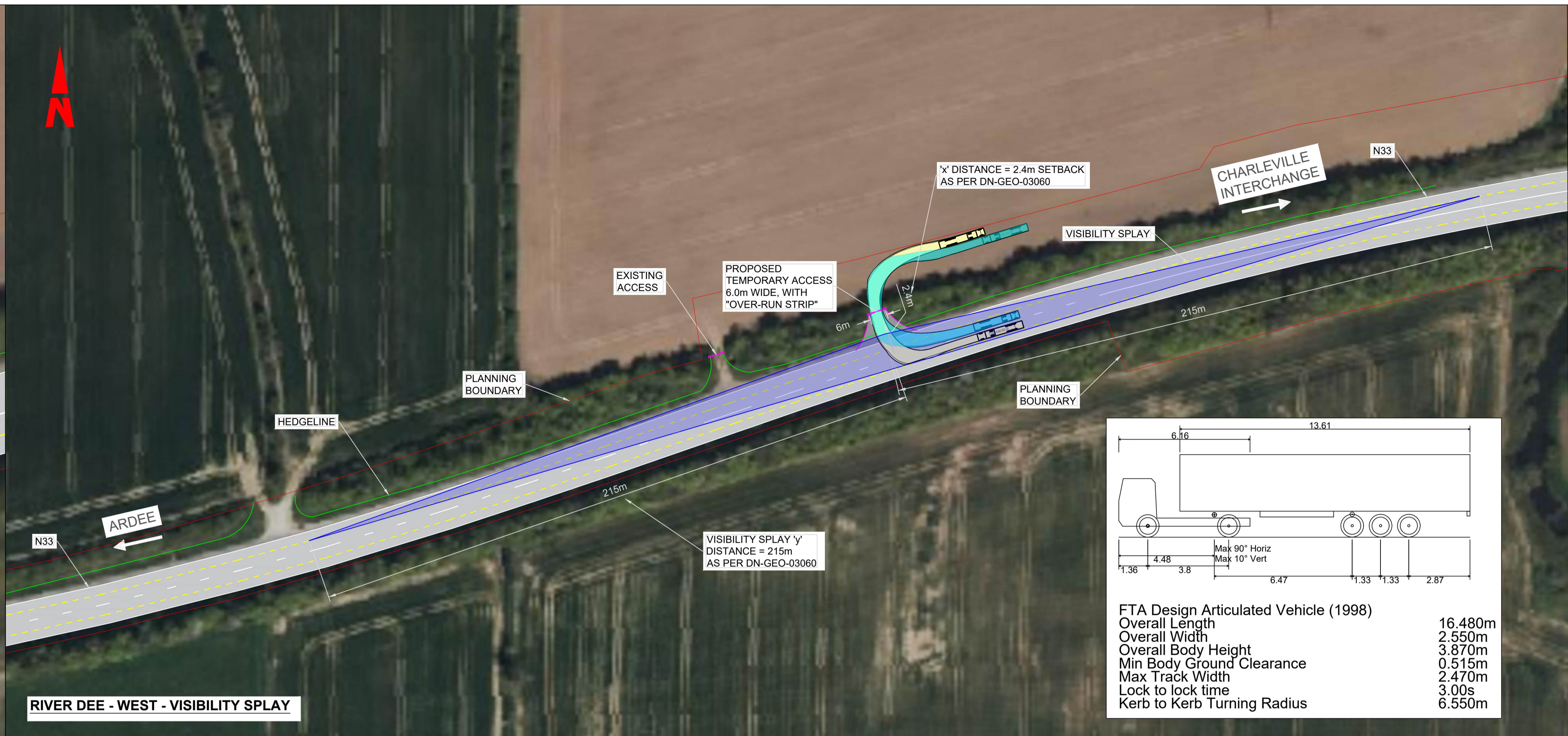
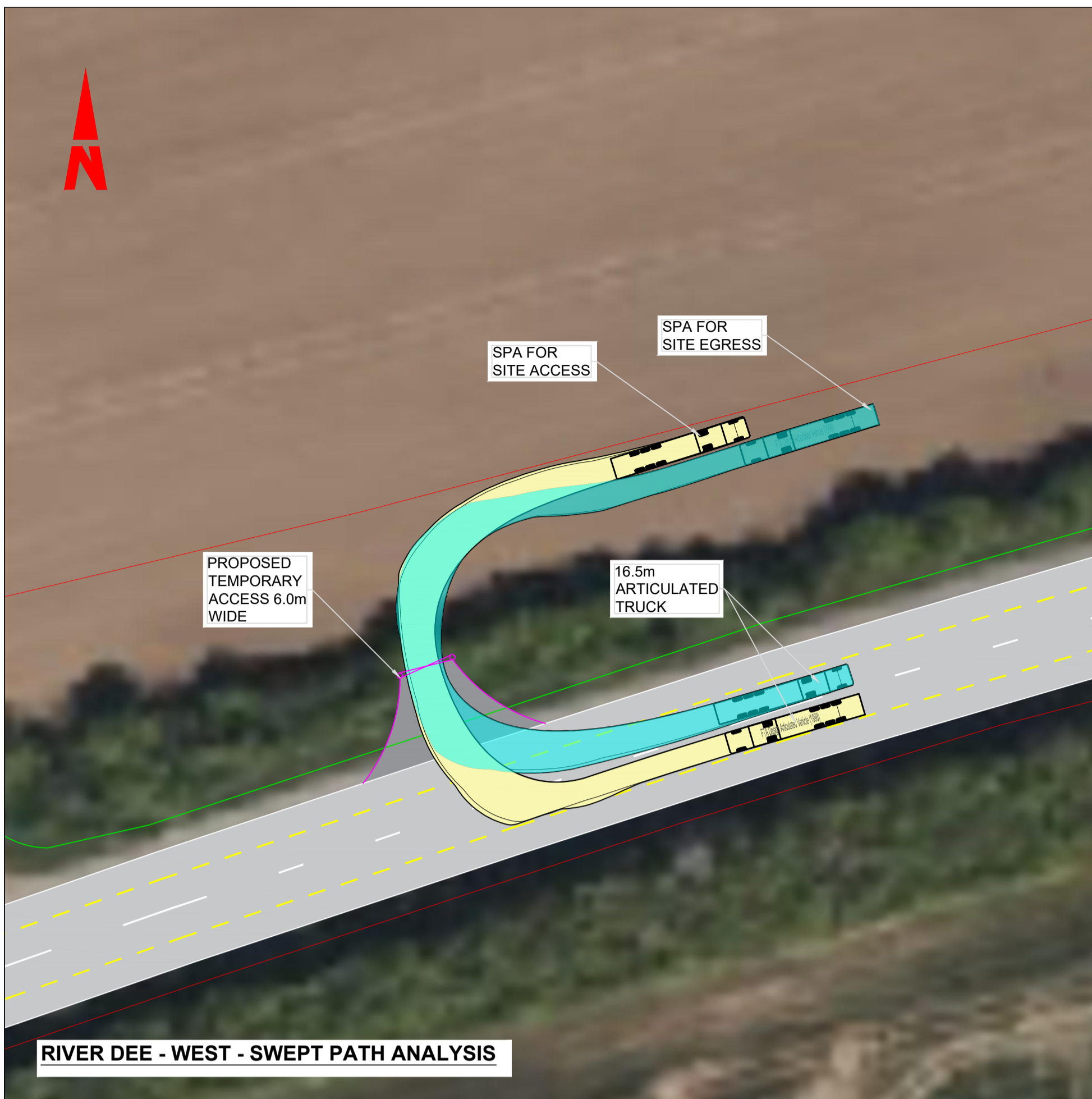
PRODUCTION UNIT: Civil, Environmental and Renewable Engineering

**ESB** Engineering and Major Projects, One Dublin Airport Central, Dublin Airport, Cloughrue, Co. Dublin, K12 JF72, Ireland. Tel: +353 01 733 8000 Web: www.esb.ie

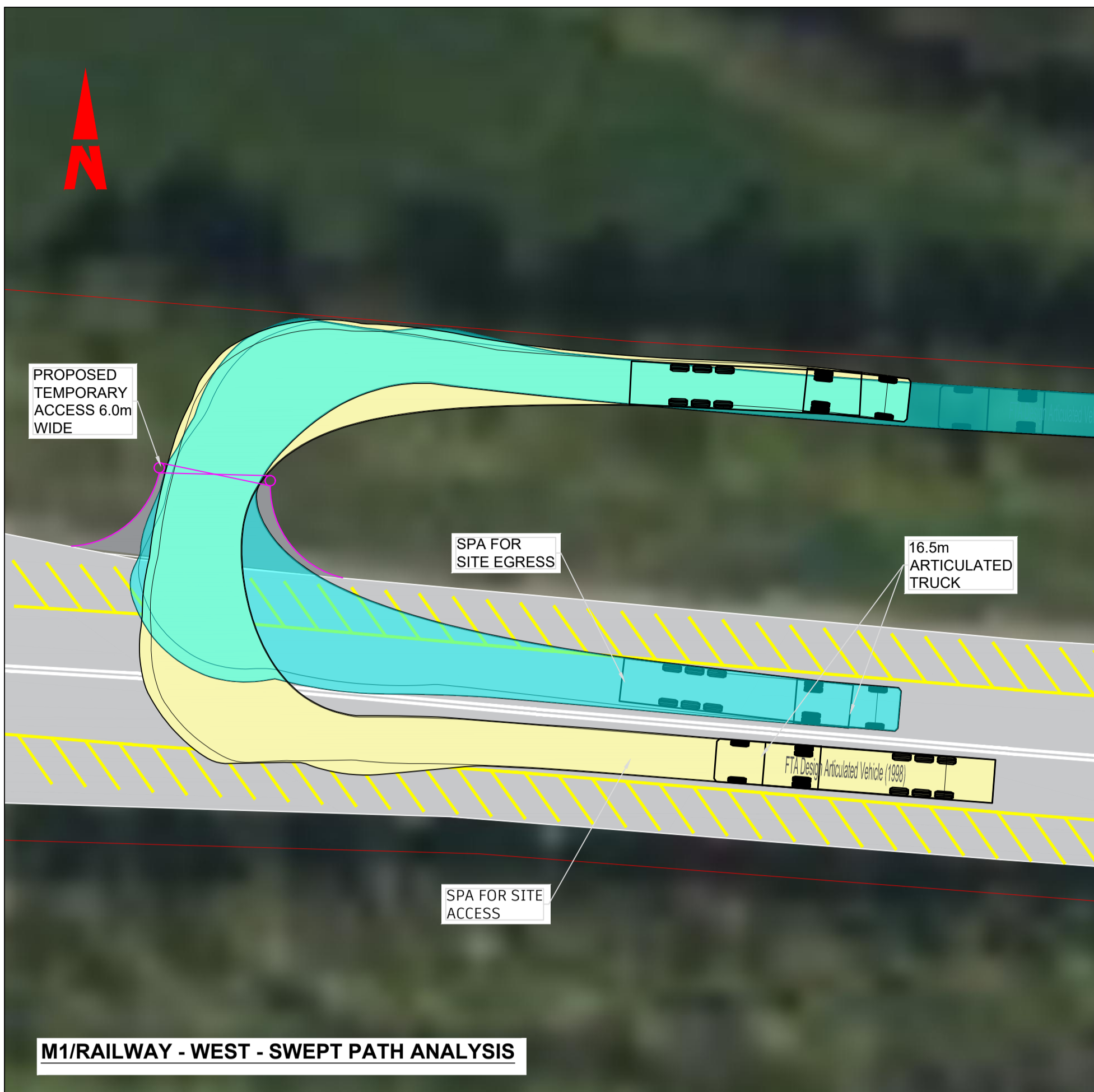
**Energy for generations** Engineering and Major Projects is a division of ESB.

DRAWN	PRODUCED	VERIFIED	APPROVED	APPROVAL DATE
S. Butler	S. Butler	S. Donnelly	J. McLaughlin	21/02/2024
CLIENT REF	NO. OF SHEETS	SIZE	SCALE	
TC223815	1	A0	As Shown	

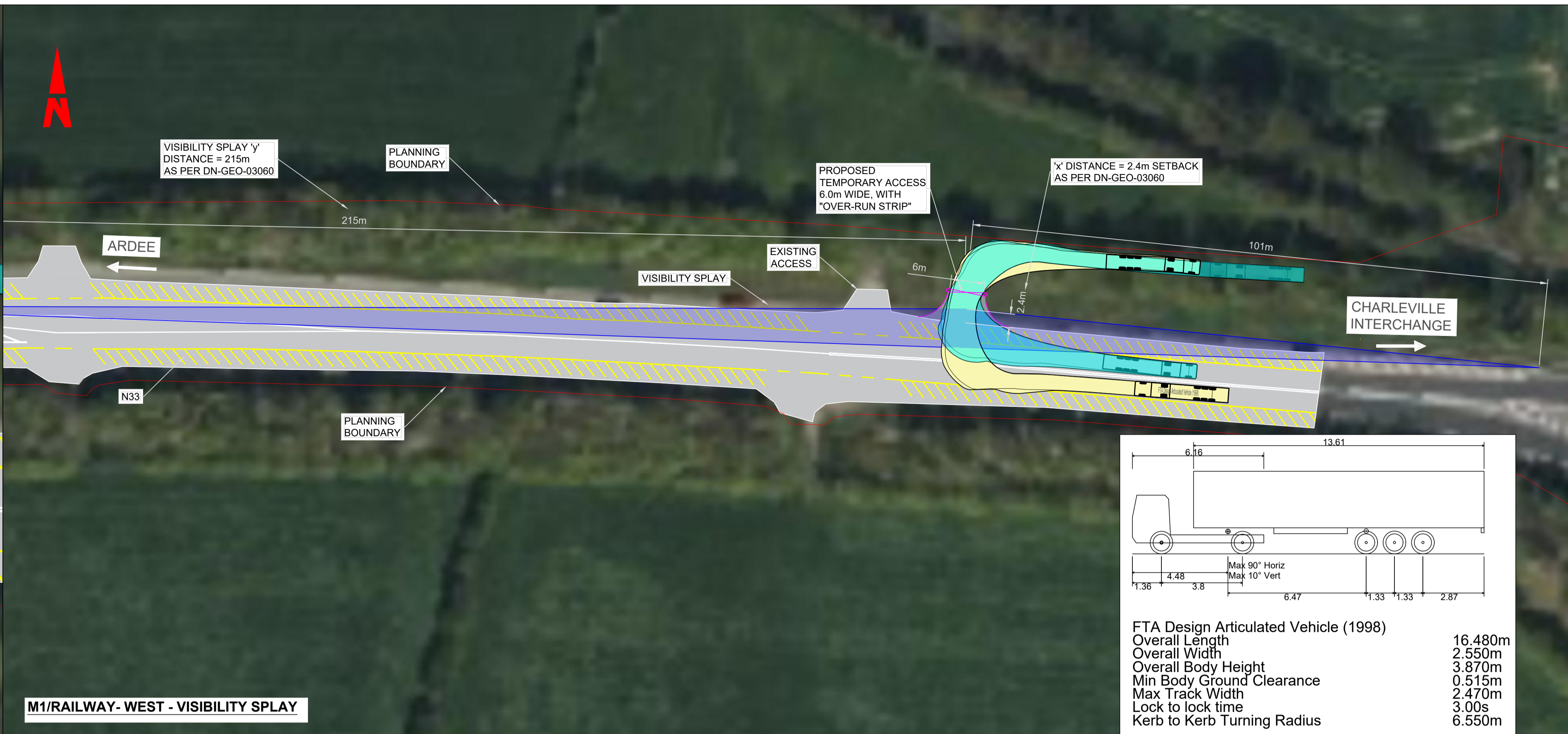
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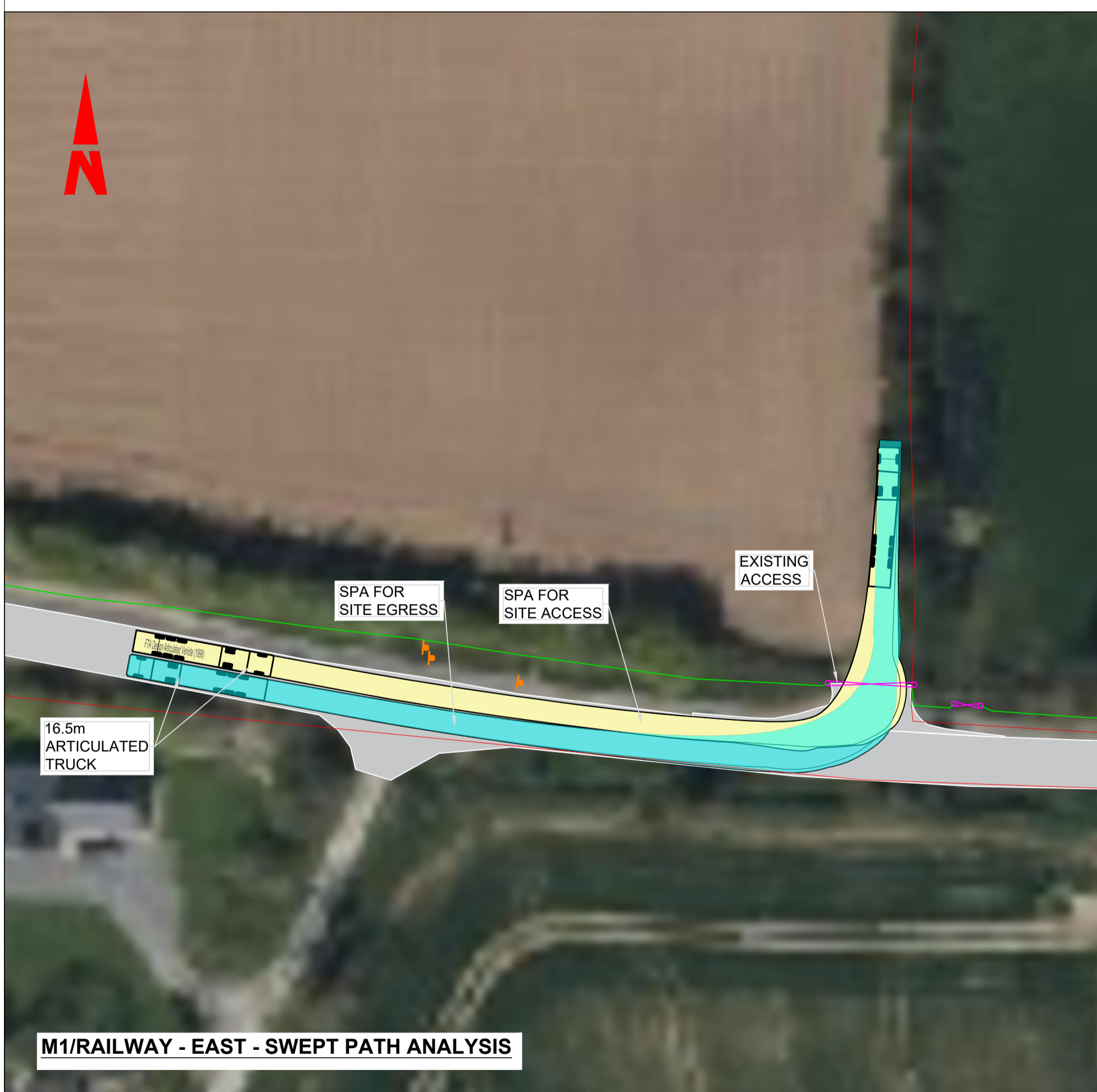
Client 	General Notes (i) Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors from the use of these files, either by human error by the recipient, listing of the un-dimensioned measurements, compatibility with the recipients software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site. (ii) DO NOT SCALE, use figured dimensions only.	(iii) This drawing is the property of RPS, it is a project confidential classified document. It must not be copied used or its contents divulged without prior written consent. The needs and expectations of client and RPS must be considered when working with this drawing. (iv) Information including topographical survey, geotechnical investigation and utility detail used in the design have been provided by others. (v) All Levels refer to Ordnance Survey Datum, Malin Head.	Rev Date Dwg Ck'd	27.02.24 RPS MW	FINAL	RPS	Model File Identifier N/A	Scale N.T.S. @ A1 N.T.S. @ A3	Project ORIEL WIND FARM PROJECT PHASE 3
			Created on JANUARY 2023	Title RIVER DEE AT RICHARDSTOWN SWEEP PATH ANALYSIS (SPA) AND VISIBILITY SPLAY	Sheets 01 of 06	File Identifier MDR1520B-RPS-00-XX-DR-C-DG0001-01	Status A1	Rev C01	



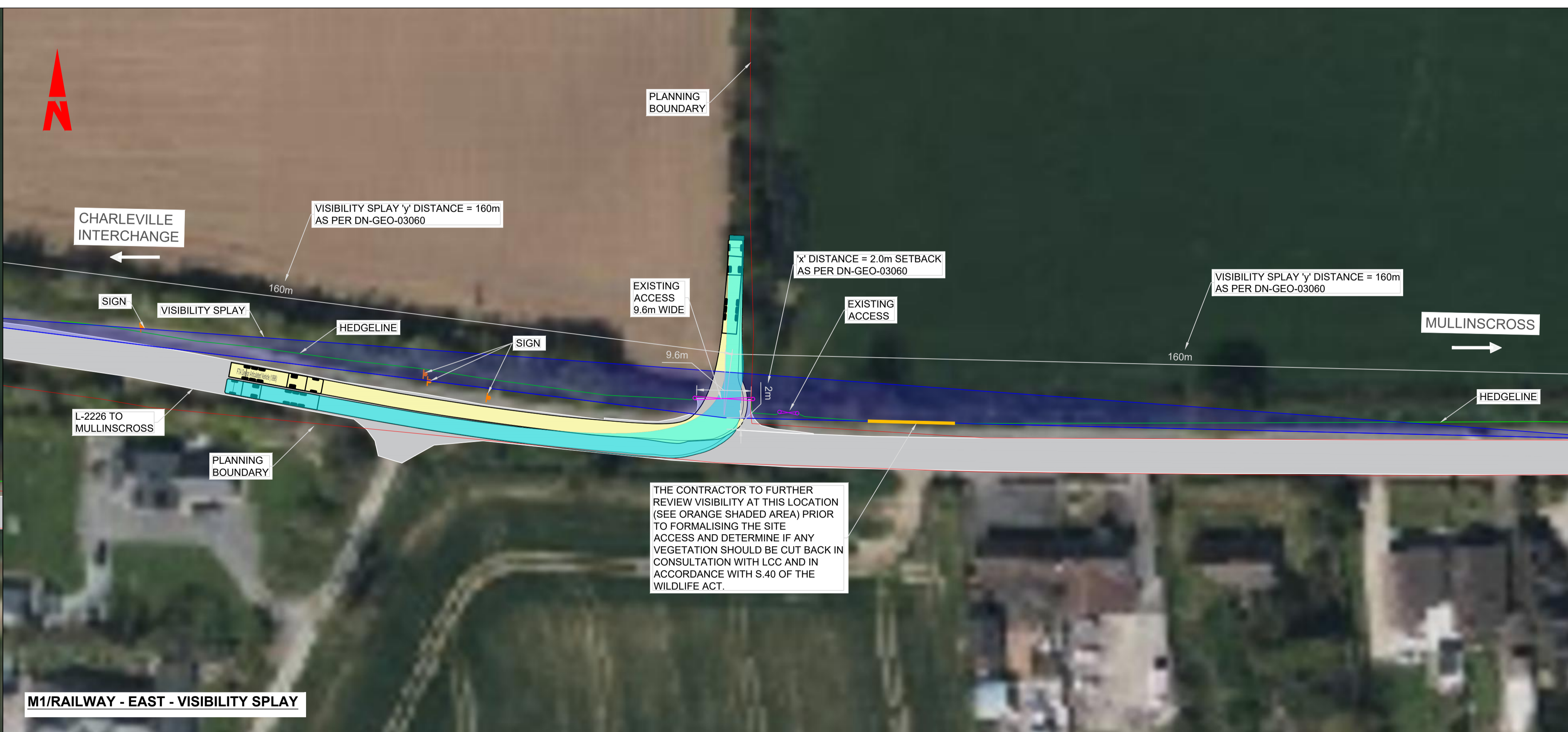
M1/RAILWAY - WEST - SWEEP PATH ANALYSIS



M1/RAILWAY - WEST - VISIBILITY SPLAY

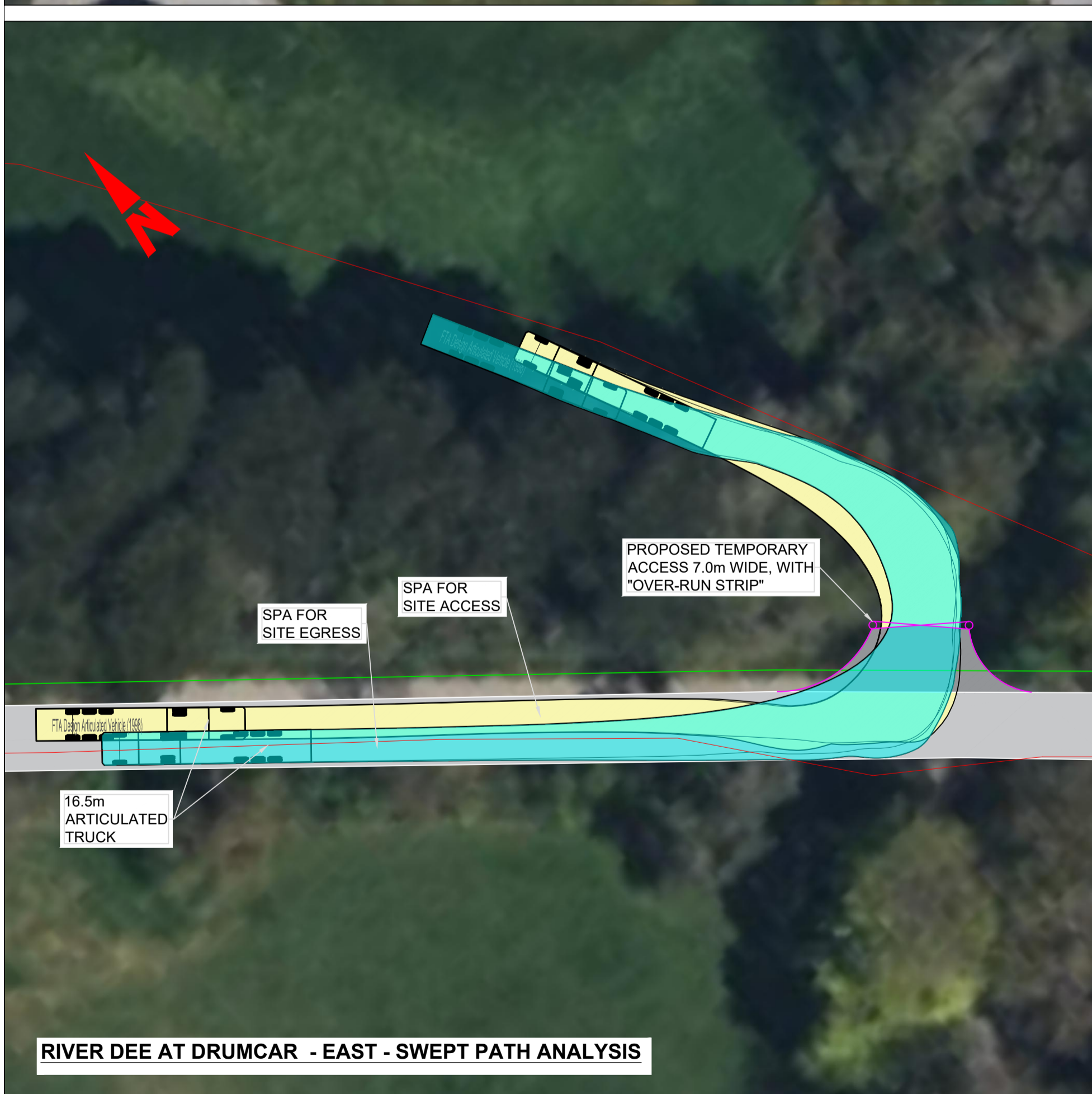
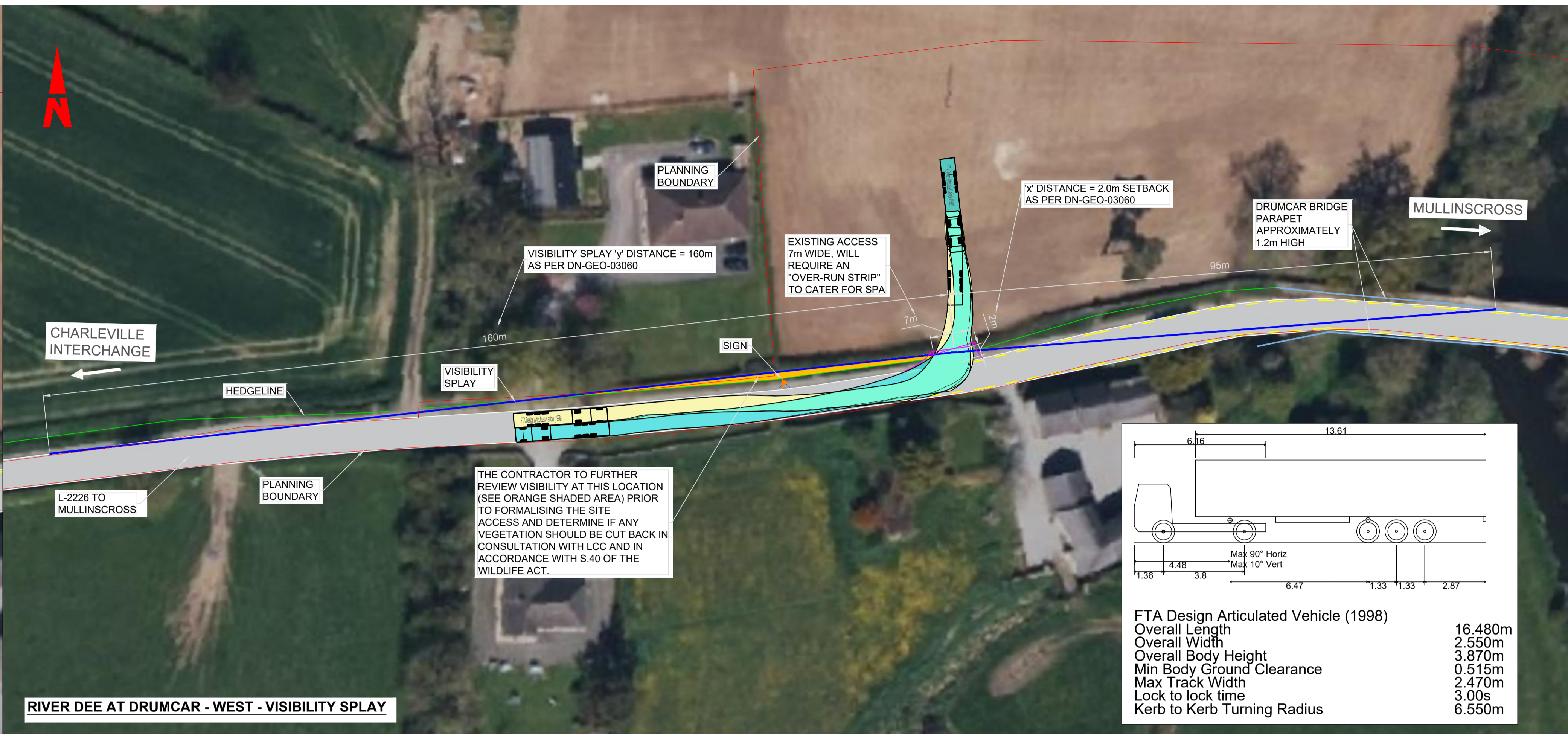
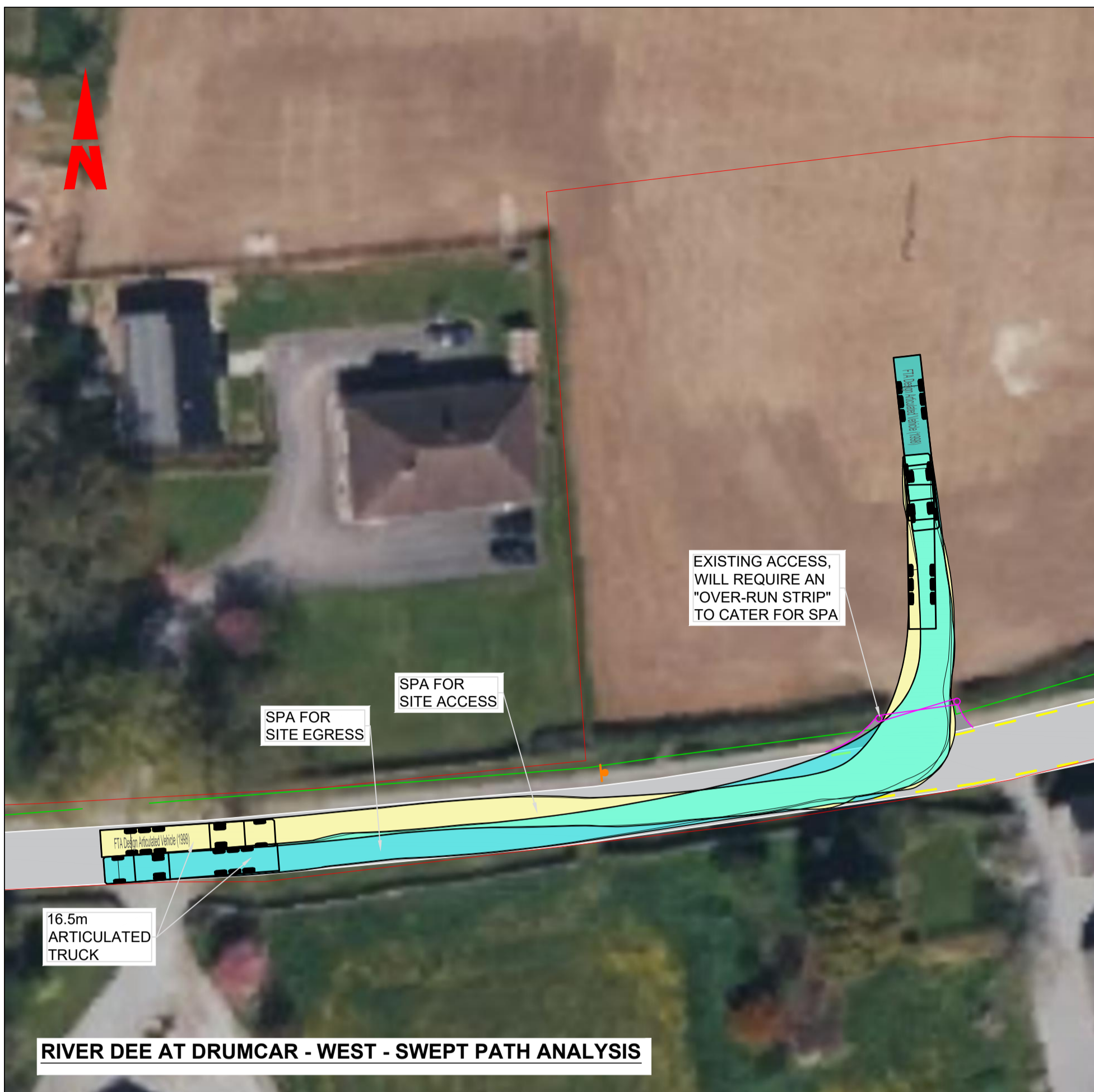


M1/RAILWAY - EAST - SWEEP PATH ANALYSIS



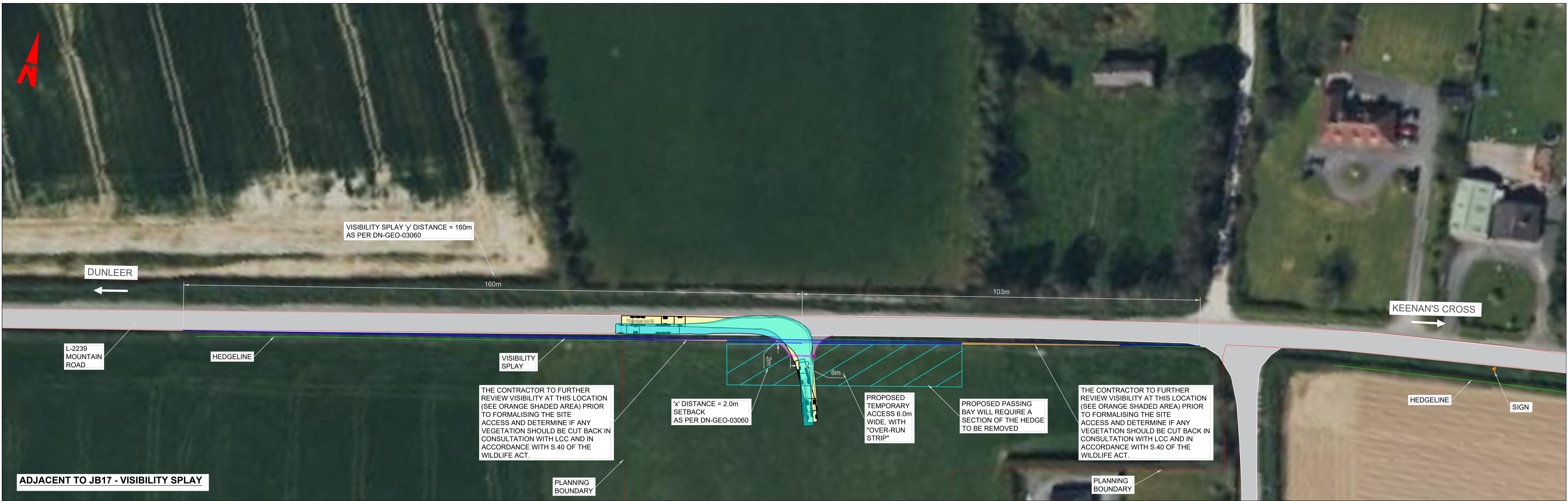
M1/RAILWAY - EAST - VISIBILITY SPLAY

Client		<p>General Notes</p> <p>(i) Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors from the use of these files, either by human error by the recipient, listing of the un-dimensioned measurements, compatibility with the recipients software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site.</p> <p>(ii) DO NOT SCALE, use figured dimensions only.</p>	<p>(iii) This drawing is the property of RPS, it is a project confidential classified document. It must not be copied or its contents divulged without prior written consent. The needs and expectations of client and RPS must be considered when working with this drawing.</p> <p>(iv) Information including topographical survey, geotechnical investigation and utility detail used in the design have been provided by others.</p> <p>(v) All Levels refer to Ordnance Survey Datum, Malin Head.</p>	<table border="1"> <tr> <th>Rev</th> <th>Date</th> <th>By</th> <th>App</th> <th>Amendment / Issue</th> </tr> <tr> <td>A1.C01</td> <td>27.02.24</td> <td>RW, MW</td> <td>RPS</td> <td>FINAL</td> </tr> </table>	Rev	Date	By	App	Amendment / Issue	A1.C01	27.02.24	RW, MW	RPS	FINAL		Scale	N.T.S. @ A1 N.T.S. @ A3	Project	ORIEL WIND FARM PROJECT PHASE 3
Rev					Date	By	App	Amendment / Issue											
A1.C01	27.02.24	RW, MW	RPS	FINAL															
Created on	JANUARY 2023	Title	M1/RAILWAY SWEEP PATH ANALYSIS (SPA) AND VISIBILITY SPLAY																
Sheets	02 of 06	File Identifier	MDR1520B-RPS-00-XX-DR-C-DG0001-02	Status	A1	Rev	C01												



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													Created on	JANUARY 2023	Title	RIVER DEE AT DRUMCAR SWEEP PATH ANALYSIS (SPA) AND VISIBILITY SPLAY		
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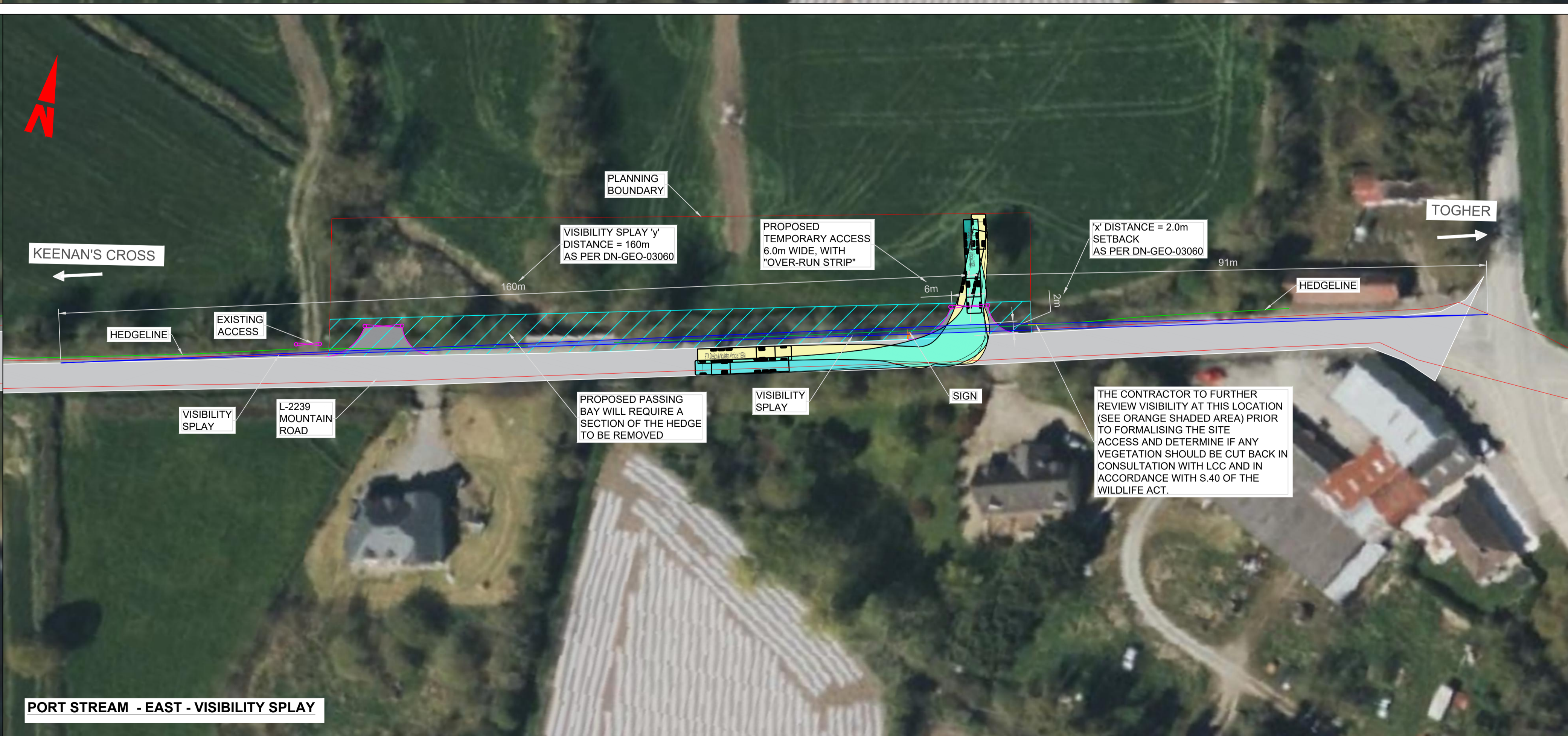
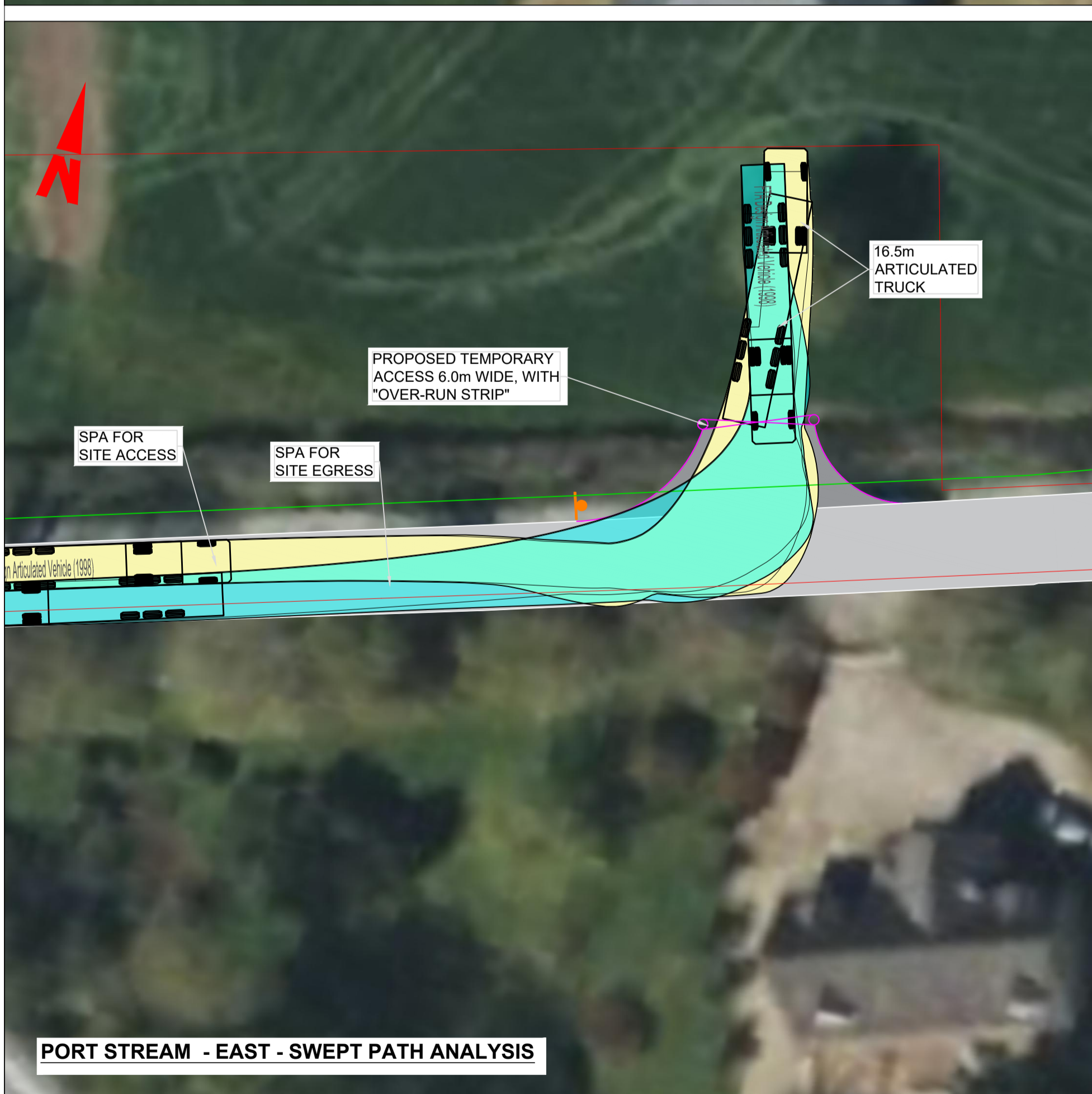
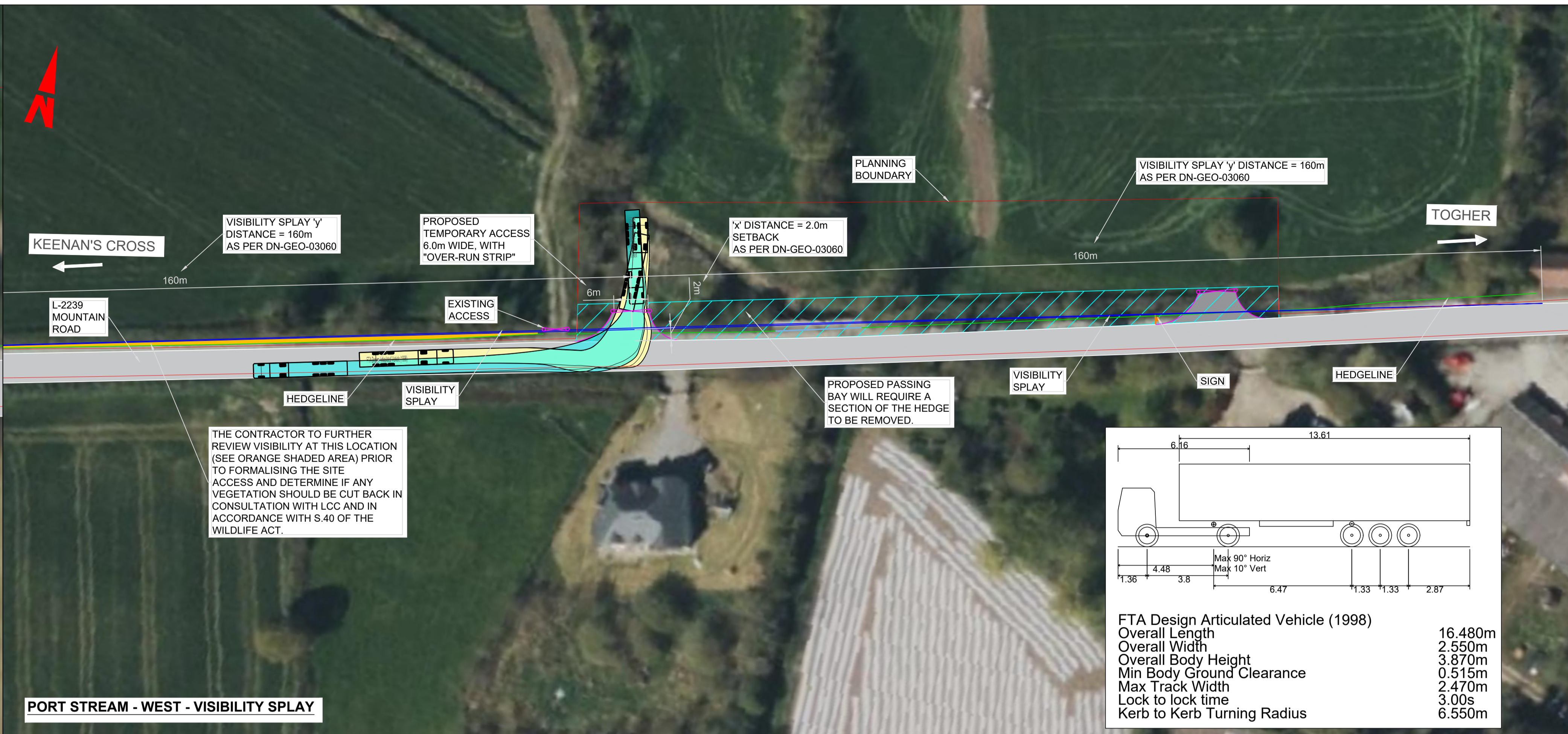
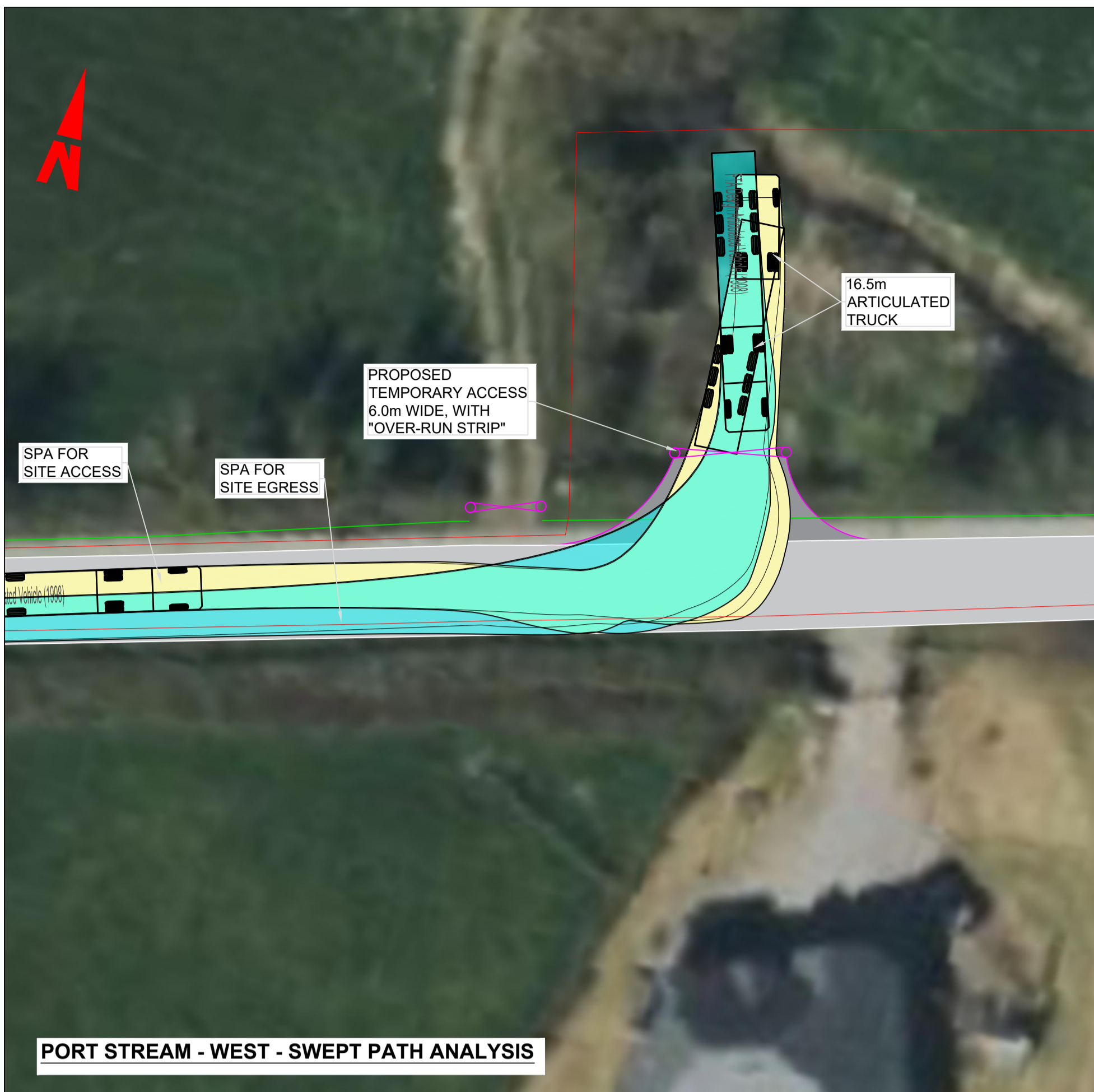


ADJACENT TO JB17 - VISIBILITY SPLAY



ADJACENT TO JB17 - SWEEP PATH ANALYSIS

Client		<p>General Notes</p> <p>(i) Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors from the use of these files, either by human error by the recipient, listing of the un-dimensioned measurements, compatibility with the recipients software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site.</p> <p>(ii) DO NOT SCALE, use figured dimensions only.</p>	<p>(iii) This drawing is the property of RPS, it is a project confidential classified document. It must not be copied or its contents divulged without prior written consent. The needs and expectations of client and RPS must be considered when working with this drawing.</p> <p>(iv) Information including topographical survey, geotechnical investigation and utility detail used in the design have been provided by others.</p> <p>(v) All Levels refer to Ordnance Survey Datum, Malin Head.</p>	<table border="1"> <tr> <th>Rev</th> <th>Date</th> <th>Drn Chk</th> <th>Amendment / Issue</th> <th>App</th> </tr> <tr> <td>A1.C01</td> <td>27.02.24</td> <td>RW, MW</td> <td>FINAL</td> <td>RPS</td> </tr> </table>	Rev	Date	Drn Chk	Amendment / Issue	App	A1.C01	27.02.24	RW, MW	FINAL	RPS		Scale	N.T.S. @ A1 N.T.S. @ A3	Project	ORIEL WIND FARM PROJECT PHASE 3
					Rev	Date	Drn Chk	Amendment / Issue	App										
A1.C01	27.02.24	RW, MW	FINAL	RPS															
Created on	JANUARY 2023	Title	ADJACENT TO JB17 SWEEP PATH ANALYSIS (SPA) AND VISIBILITY SPLAY	Model File Identifier	N/A	File Identifier	MDR1520B-RPS-00-XX-DR-C-DG0001-04	Status	A1	Rev	C01								



Client	Oriel Windfarm	Project	ORIEL WIND FARM PROJECT PHASE 3					
Scale	N.T.S. @ A1 N.T.S. @ A3	Title	PORT STREAM AT TOGHER SWEEP PATH ANALYSIS (SPA) AND VISIBILITY SPLAY					
Created on	JANUARY 2023	Sheets	05 of 06	File Identifier				
General Notes	(i) Hard copies, dxf and pdf will form a controlled issue of the drawing. All other formats (dwg etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipient's own risk. RPS will not accept any responsibility for any errors from the use of these files, either by human error by the recipient, listing of the un-dimensioned measurements, compatibility with the recipient's software, and any errors arising when these files are used to aid the recipient's drawing production, or setting out on site. (ii) DO NOT SCALE, use figured dimensions only.	(iii) This drawing is the property of RPS, it is a project confidential classified document. It must not be copied or its contents divulged without prior written consent. The needs and expectations of client and RPS must be considered when working with this drawing. (iv) Information including topographical survey, geotechnical investigation and utility detail used in the design have been provided by others. (v) All Levels refer to Ordnance Survey Datum, Malin Head.	Rev	Date	Dwg. Chk	App	Model File Identifier	N/A
			A1.C01	27.02.24	RW, MW	FINAL	RPS	



FTA Design Articulated Vehicle (1998)	
Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.550m



Client				<p>General Notes</p> <p>(i) Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipients own risk. RPS will not accept any responsibility for any errors from the use of these files, either by human error by the recipient, listing of the un-dimensioned measurements, compatibility with the recipients software, and any errors arising when these files are used to aid the recipients drawing production, or setting out on site.</p> <p>(ii) DO NOT SCALE, use figured dimensions only.</p>		<p>(iii) This drawing is the property of RPS, it is a project confidential classified document. It must not be copied or its contents divulged without prior written consent. The needs and expectations of client and RPS must be considered when working with this drawing.</p> <p>(iv) Information including topographical survey, geotechnical investigation and utility detail used in the design have been provided by others.</p> <p>(v) All Levels refer to Ordnance Survey Datum, Malin Head.</p>				<p>Scale N.T.S. @ A1 N.T.S. @ A3</p> <p>Created on JANUARY 2023</p> <p>Sheets 06 of 06</p>		<p>Project ORIEL WIND FARM PROJECT PHASE 3</p> <p>Title LANDFALL SWEEP PATH ANALYSIS (SPA) AND VISIBILITY SPLAY</p>	
Rev	Date	Drawn By	Checked By	Amendment / Issue	App	Model File Identifier	File Identifier	Status	Rev				
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