Appendix 28-3:
Design Report

ORIEL WINDFARM
OFFSHORE RENEWABLE ENERGY

A TETRA TECH COMPANY

JERA NEX BP

Energy for generations

ORIEL WIND FARM PROJECT

Environmental Impact Assessment Report - Addendum
Appendix 28-3: Design Report

MDR1520C
EIAR – Appendix 28-3
A1 C01
December 2025

Contents

Units

Unit	Description
m	Metre (distance)
km	Kilometre (distance)
km/h	Kilometre per hour (speed)
MW	Mega Watts

1 INTRODUCTION

1.1 Project Overview

General Scheme Overview

The Oriel Wind Farm Project will comprise of onshore and offshore infrastructure including 25 offshore wind turbines, a 16km offshore cable, and 20.1km of underground onshore cables (three high voltage power cables and two fibre optic communication cables) which will be installed in the same trench and buried for the entirety of this length. The cables will pass under the M1 motorway just north of the Charleville Intersection, and then run alongside the N33 before terminating and connecting to the national grid at a new substation located just off the N33, east of Ardee in Co. Louth.

Figure 1-1: Scheme Location

The project supports Ireland's commitment to decarbonisation and energy security by adding significant renewable capacity with minimal road network impact. The onshore electrical infrastructure will be designed for a service life of 40 years, aligning with long-term maintenance strategies. Continued stakeholder collaboration and rigorous design controls will guide the project through construction to successful commissioning, delivering economic, environmental, and social benefits to the region.

Scheme Description as it relates to the National Road Network

The Project's interactions with the National Road Network include:

- Installing the new cables under the M1 motorway, just north of the M1/N33 Charleville Intersection (Junction 14). These cables will be installed using Horizontal Directional Drilling (HDD) construction methods, with launch and reception pits located outside the existing M1 road boundary fence. *As such this will not affect the layout or operation of the M1 or the Charleville Intersection and therefore will not be discussed further in this Design Report.*

- Installing approx. 5km of underground cables and associated joint bays (at approximately 700m centres) in the northern verge of the existing N33, from a point adjacent to the Charleville Interchange to a new substation location approx. 3km east of Ardee, in the townland of Stickillin. Approx. 3.1km of this trenching/cabling and 5 of the joint bays will be located at the back of the existing verge (inside the road boundary), while the remaining 1.9km of trenching/cabling and 3 joint bays will be in the existing verge but offset from the edge of pavement and existing drainage network.

- Construction of a new substation at Stickillin, which will be accessed from the N33 via an existing farm access. This access will be reconfigured to operate as left-in left-out (in accordance with TII

Publication DN-GEO-03060) in order to avoid the need for right turning manoeuvres onto and off the N33. The substation will be unmanned, however maintenance visits will be required involving a single vehicle, typically six to eight times per month.

- Installing a new fibre optic cable across the existing N33 just west of the Charleville Intersection. *As this will not affect the layout or operation of the N33, the M1 or the Charleville Intersection it will not be discussed further in this Design Report.*

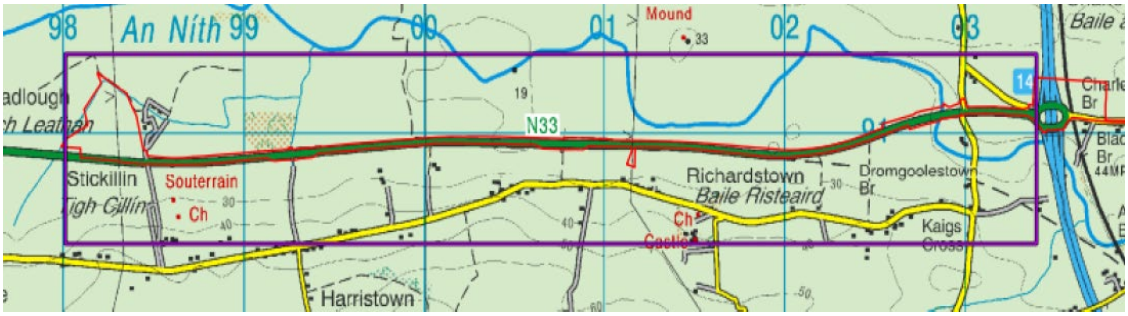


Figure 1-2: N33 Section Map

Construction related issues associated with the above, including maintaining critical traffic flows and ensuring the safety of all road users, will be addressed by a comprehensive Construction Traffic Management Plan. Notwithstanding this, the following points are noted:

- No new access points onto the National Road will be created.
- Three existing farm/field accesses along the N33 will be used to facilitate the construction. During the construction stage these will operate as left-in left-out to avoid right turning onto or off the N33.
- One of these accesses, an existing farm access, will be reconfigured and used post-construction for maintenance access to the new substation. The increase in traffic at this access is considered negligible (typically a single vehicle, six to eight times per month) when compared to the N33 traffic flows.
- The M1 motorway, and the off-ramps and rotary carriageway of the Charleville intersection will be proactively monitored during the works to ensure operation and road safety are not affected.
- Trenching along the N33 will be carefully planned and executed in order to minimise traffic disruptions and to avoid future settlement issues. Two-way flow on the N33 will be maintained at all times. There will be no negative impact on existing N33 road embankments, structures, or drainage systems. Some planting will be removed to facilitate the works. Any roadside furniture which needs to be temporarily removed (e.g. VRS or traffic signs) will be reinstalled in accordance with TII Publications.
- All works affecting the national road network will comply with TII publications technical standards and specifications.
- Once the works are completed the future maintenance of the national roads will not be affected.

1.2 This Design Report

This report has been prepared in accordance with DN-GEO-03030.

The Project is not a national road project nor is it being funded by TII (it is being promoted, funded and delivered by Oriel Wind Farm Ltd). For the purposes of this Design Report, the Project as it relates to the national road is being considered as a 'Local Improvement Scheme' with a total scheme budget of less than €5m.

2 COLLISION HISTORY

2.1 Network-Wide Road Safety Assessment

The N33 has a Network-Wide Road Safety Assessment (NWA) classification of 3, which is the medium safety (or medium risk) category. This is typical of many single carriageway national roads which have at-grade junctions.

2.2 Collision History

The most recent Collision History (2019 to 2024) for the N33 has been sourced from TII and indicates the following:

- 2 fatal collisions (involving head-ons, one in 2021 and one in 2022)
- 1 serious injury collision (also involving a head-on in 2022)
- 7 minor injury collisions (two were single vehicle collisions, four involved 2 or more vehicles, and one was a head-on)
- 56 material damage only collisions

A map indicating the locations of the various collision types for this 6-year period is shown below. While there is a spread across 7.6km length of the route, there are concentrations (clusters) at the existing junctions along the N33 route.

Figure 2-1: Collision Locations *(TII)*

In terms of month of the year, March, April and July were the months that saw the fatal or serious collisions taking place. The months which saw the highest overall number of collisions regardless of type were June (7), July (8) and August (9).

In terms of road surface condition, 82% of all collisions recorded occurred in dry conditions. Also, 61% of collisions happened in daylight conditions with good visibility.

Based on most recent collision rate data (available from data.gov.ie) the collision rate along the N33 is 'twice below' the reference rate for a typical single carriageway.

3 PROJECT OBJECTIVES

3.1 Overall Objective

The overall objective of the Project is to accelerate renewable electricity generation as part of Ireland's Climate Action Plan.

3.2 Safety Objectives

The safety objectives relating to the permanent works on national roads, and the N33 in particular, are as follows:

- Provide a safe left-in left-out access layout for vehicles turning onto and off the N33 for the new substation to reduce the likelihood of collisions associated with right turning manoeuvres.
- Ensure vulnerable road users not negatively affected by the proposed reconfiguration of the existing farm access on the N33.
- Ensure that any works in the verge of the N33 do not promote any unsafe parking.

4 EXISTING CONDITIONS

4.1 Traffic Speeds

The posted speed limit of the N33 is (the default) 100km/h. The indicative operational speed of this section of the network is between 85 and 100km/h immediately west of the M1, and then between 70 and 85km/h for the remainder across to Ardee (as per DN-REQ-03079).

A traffic survey was carried out in late 2019 as part of the project and which included speed surveys. The average and 85th percentile speeds of traffic using the eastbound carriageway were shown to be 86.2 and 95.5km/h respectively, and 103.3 and 116.6km/h respectively on the westbound carriageway.

4.2 Traffic Volumes

The 2019 traffic survey showed that the N33 mainline has an annual average daily traffic (AADT) of 13,061. No turning movements were recorded for the three existing farm / field accesses which will be utilised for the project.

It is noted that the TII automated traffic counter (Ref: TMU N33 000.0 E) located on the N33 between Ardee and the M1 motorway recorded an AADT of 13,844 for 2024.

4.3 Horizontal Alignment

The existing N33 has a prolonged straight horizontal alignment between Ardee and the Charleville Interchange serving the M1 motorway. Any horizontal curves are large and have no negative impact on forward or overtaking visibility requirements.

4.4 Vertical Alignment

The N33 has a largely flat vertical alignment with no significant crest or sag curves.

Figure 4-1: Overview of N33 between M1 and proposed substation site at Stickillin.

4.5 Cross Section, Crossfall & Superelevation

Cross Section - The N33 is a wide Type 1 single carriageway with an approximately 7.5m wide lanes and wide hard shoulders (approximately 2.9 – 3.3m in width) and generous level grass verges. The route boundary has timber post and rail fences which bound with agricultural lands on both sides.

Crossfall - Given the route's straight alignment the road profile has a normal crossfall of 2.5% from the centreline of the N33.

Superelevation – Not applicable.

4.6 Junctions & Accesses

In the vicinity of Ardee the existing N33 has three roundabouts, connecting to the N2, the N52, and O'Carroll Street which leads to the centre of the town. For the approx. 6.6 km rural section of the N33 between Ardee and the Charleville interchange there are three at-grade priority ghost island junctions - one serving the R170 just east of Ardee, and two (forming a staggered junction) with the L2214 to Stabannan and the L2226 to Dromin, approx. 350m west of the Charleville interchange.

Figure 4-2: Overview of N33 junctions *(Google Maps)*

Between the M1 and the proposed onshore substation site at Stickillin, along the N33, there are 12 existing field entrances and one farm access. It is this farm access which is being proposed for refiguration and to serve as the access to the proposed substation.

Figure 4-3: Existing farm access on the N33 at Stickillin *(Google Maps)*

4.7 Facilities for Vulnerable Road Users

The N33 is a mainly a rural national road. For the section affected by the proposed Project, there are currently no dedicated facilities for pedestrians or cyclists other than the existing hard shoulder.

4.8 Visibility & Sightlines

Due to its straight alignment visibility for drivers travelling along the N33 is good. This allows for full overtaking in both directions (Stopping Sight Distance (SDD) for 100km/h is 215m and Full Overtaking Sight Distance (FOSD) for 100km/h is 560m), and achieving the requirements set out in DN-GEO-03031 Rural Road Link Design.

Visibility for drivers exiting from the existing priority junctions is also good.

Visibility for vehicles using the existing field and farm direct accesses is also good however vegetation growth in the verge has the potential to partially obstruct this if not adequately maintained.

4.9 Land Use

The land use either side of the N33 along the onshore cable route is mainly agricultural.

4.10 Services

There are multiple existing services along the section of the N33 as follows:

- MV OHLs are present just west of the M1/Exit 14 for Ardee. A short section of LV OHLs are also present just after the exit. A short section MV/LV UGC is present here also.
- MV OHLs cross the cable route (north to south) on the N33 approximately 0.26km west of the junction for Dromin L2214 / Stabannan L2226.
- A 110 kV HV OHL traverses the cable route on the N33 approximately 2.8km east of the substation site.
- At the substation site, a section of MV OHL is present, a section of MV/LV UGC is present here also, crossing the N33 connecting with MV OHLs to the south.
- A 220 kV HV OHL and associated tower traverses the cable route (north to south) approximately 80m west of the substation site.

4.11 Ground Investigation, Soil Classification

Available data sourced from the Geological Survey of Ireland indicates that from the M1 motorway to Stickillin and the surrounding areas, the existing soils are of deep well drained mineral (mainly basic), derived from mainly calcareous materials (BminDW)(Limestone, Grey Brown Podzolics, Brown Earths) that are occasionally interrupted with relatively small inclusions of alluvium (AluvMIN)(Mineral alluvium).

The bedrock consists of green-grey greywackes with quartzose fine sandstone to siltstone units. Further east for the remaining section of the road the formation consists of calcareous grey wacke and banded mudstone.

There are presently no records of geo-hazards such as landslides that would cause concern. The nearest landslide event to the proposed onshore infrastructure is located 14km south of the onshore cable route.

The western section of onshore cable route, including the section along the N33 road, has a dense borehole occurrence. This section includes four boreholes drilled to the bedrock (no. 8865, no. 88706, no. 88707 and no. 88709) and describes the subsoils as mostly stiff, grey to brown, silty gravely clay. Depth to bedrock in these boreholes, is in the range of between 1.65- 5.5 mbgl) respectively and representing low to medium permeability subsoils.

5 ENVIRONMENTAL, ARCHAEOLOGICAL AND OTHER CONSTRAINTS

5.1 Appropriate Assessment

A report for the purposes of Appropriate Assessment was carried out for the Project (for both onshore and offshore infrastructure). A Natura Impact Statement was prepared and concluded that there would be no adverse effects on European sites.

5.2 Ecological Assessment

An Ecological Impact Assessment was carried on the onshore infrastructure for the Project including the onshore cable route along the N33 and at the onshore substation site. An assessment of the impact caused by removal and/or fragmentation of important ecological features has been undertaken and concluded no significant effects.

5.3 Other Environmental Surveys

The aforementioned Ecological Impact Assessment included an assessment of habitats, protected flora, bats, invasive alien species, birds, badgers, otter, fish and invertebrates.

5.4 Archaeological Constraints

Whilst there are nine recorded RMP sites along the onshore cable route along the length of the N33, all nine were discovered and fully excavated as part of the construction of the N33.

6 PROPOSED DESIGN

6.1 General

While the Project is not considered to be a road development project, the following proposed changes affect the N33 National Road:

- New underground cables and joint bays being installed within the verge / adjacent to the road boundary fence line.
- Using three existing farm/field accesses to facilitate works during the construction stage.
- Using / improving an existing farm access at Stickillin for maintenance access to the proposed substation.

6.2 Land Acquisition

Not applicable.

6.3 Horizontal Alignment

The horizontal alignment of the existing N33 will remain unchanged.

6.4 Vertical Alignment

The vertical alignment of the existing N33 will remain unchanged.

6.5 Cross Section, Crossfall & Superelevation

The cross section and crossfall of the existing N33 will remain unchanged.

6.6 Facilities for Vulnerable Road Users

The facilities available for Vulnerable Road Users on the existing N33 will remain unchanged.

6.7 Junctions & Accesses

There are no new junctions or accesses proposed as part of the Project.

However, three existing farm/field accesses are going to be used during construction, and one of these will be used during the operation stage, as outlined in Table 5-1.

Table 5-1 Details of existing accesses to be used for the Project

Jnc No	Description	Location	Function	Operation
1	Existing Farm & Proposed Onshore Substation entrance	1600 m east of N33 Ardee Roundabout	Main access to the proposed substation (for both construction and operational stages). Will continue to be used as farm access also.	Left in – left out
2	Existing Field and Proposed Temporary Access No. 1	850m from M1	Existing field access to be used as temporary access to support works at the River Dee.	Left in – left out

Jnc No	Description	Location	Function	Operation
3	Existing Field and Proposed Temporary Access No. 2	140 m west of M1	Existing field access to be used as temporary access to allow works west of the Charleville Intersection.	Left in – left out

During the construction stage all of the above three accesses will operate as left-in and left-out and this will be set out in the Construction Traffic Management Plan.

During the operational stage, reconfigured Junction No. 1 serving the existing farm and the new substation will also operate as left-in and left-out. This reconfigured direct access layout will be designed in accordance with the geometric standards for an altered access (Figure 6.1 Access Layout 3 – Left In/Left Out) as set out in DN-GEO-03060 Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions).

This left-in and left-out arrangement is considered appropriate following consultation with TII and given that there are two roundabouts, one at either end of the N33 which can accommodate the turning of vehicles without crossing the N33 traffic lanes and given the low number of vehicles anticipated. The reconfigured layout makes allowances for vulnerable road users to continue to use the existing hard shoulder.

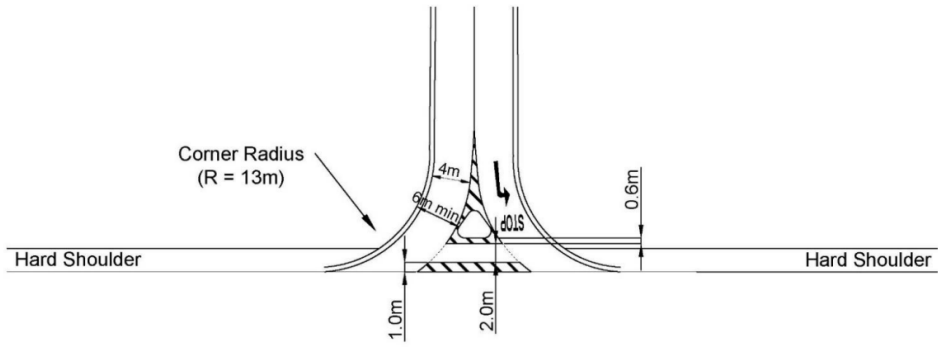


Figure 6-1: Extract from DN-GEO-03060 - Left In/Left Out Access Layout *(TII)*

6.8 Visibility and Sightlines

The visibility splays for the above existing accesses have been assessed for envelopes of 3.0m x 215m including to the high object of 1.05m, and it has been confirmed that visibility is available as per the requirements of Table 5.5 and Table 5.4 of DN-GEO-03060.

This assessment is shown on drawings included in Appendix 5-9 Construction Traffic Management Plan (Dwg MDR1520B-ROS0OO-XX-DR-C-DG000-01 & 02).

It is noted that visibility for maintenance access to/from the new substation during the operation stage will need to be maintained as necessary by the ESB Networks operator in consultation with Louth County Council.

6.9 Drainage

The existing drainage of the N33 will remain unchanged. The reconfigured farm access will have kerbs and gullies provided. The gullies will connect to a carrier drain that will transmit runoff into the drainage system for the proposed substation. As such the capacity of the existing N33 drainage system will not be affected.

Where roadside drainage is interfered with as part of the trenching or cabling works, it will be protected, or if deemed necessary reinstated or replaced, in accordance with TII Publications.

6.10 Pavement

The existing N33 pavement will remain unchanged. Any pavements constructed or repaired or tied in at the reconfigured direct access (serving the existing farm and new substation) will be in accordance with TII Publications.

6.11 Safety Barrier Risk Assessment and Provision

The proposed works are not adding any new potential hazards into the road cross section within the clear zone and therefore a formal vehicle restraint risk assessment has not been carried out.

However some existing vehicle restraint systems may need to be temporarily taken down to facilitate trenching and cabling works in the verge of the N33. Any existing systems that are taken down, adjusted or impacted by the installation of the proposed works will be reinstated on a like for like basis in accordance with TII Publications.

Although not anticipated, where existing wide verges are to be cleared and the existing post and rail boundary fences need to be replaced, they will be replaced with post and tensioned mesh fencing in accordance with standard detail CC-SCD-00320.

6.12 Traffic Signs and Road Markings

The existing traffic signs and road markings relating to the N33 mainline will remain unchanged. Any existing traffic signs or markings that are impacted by the works will be reinstated on a like for like basis in accordance with TII Publications and the Traffic Signs Manual.

New stop markings and associated stop sign will be provided as per TII Publication DN-GEO-03060 for the reconfigured farm access in order to implement the left-in left-out access layout. Any new signs and markings will be provided in accordance with the Traffic Signs Manual.

6.13 Accommodation Works

There will be no accommodation works other than reinstating any fencing or gates as part of temporary works. All such works will be located at the back of the verge of the N33 and set back outside the clear zone.

6.14 Lighting

Not Applicable as there is no lighting along the existing rural section of the N33 (except on the immediate approach and at the M1 Charleville Intersection). No new lighting is proposed.

6.15 Structures

The onshore cable route along the N33 diverts away from the grass verge at the River Dee, where it will be installed under the river using directional drilling (HDD). As a result, there will be no impact on the existing River Dee bridge structure. No other national road structures will be impacted.

6.16 Departures from Standard

There are no departures or relaxations being proposed for the N33 as part of this Project.

7 ROAD SAFETY AUDIT

An independent **Stage 1 Road Safety Audit** was carried out in January 2025 for the works relating to national roads in accordance with the requirements of TII Publications GE-STY-01024. The purpose of the audit was to identify any features of the proposed scheme that could be removed or modified in order to improve road safety.

Four problems were identified by the audit. Two of the problems related to visibility from existing accesses, one related to turning movements of HGVs into the substation site, and one related to junction priority at the substation access itself, off the N33. All problems and recommendations were accepted by the Design Team and have been or will be incorporated into the design should consent be approved. The audit report has been finalised and uploaded onto the TII RSAAS. A copy of the audit report is contained in Appendix B.

TII subsequently conducted **shadow Road Safety Audit** in May 2025. It identified 6 issues including: restricting accesses to left-in, left-out movements only; the need to assess visibility of these accesses; and potential parking on joint bays and hard standing areas. The recommendations were all accepted by the Design Team and have been or will be incorporated into the design. A summary of the shadow audit findings and the Design Team's response is also contained in Appendix B.

8 TOTAL SCHEME BUDGET

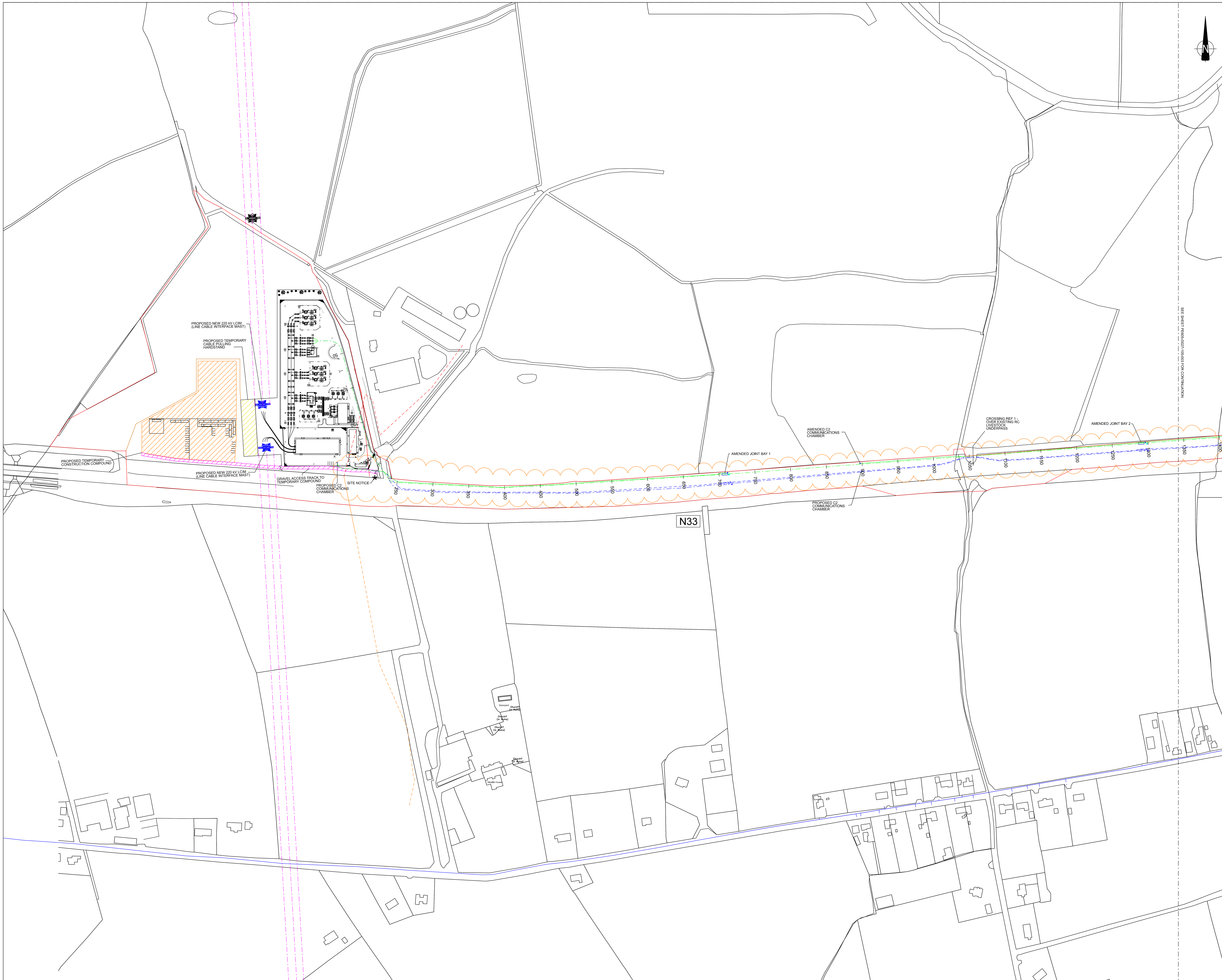
Not Applicable.

9 PROJECT APPRAISAL BALANCE SHEET

Not Applicable.

APPENDIX A – DESIGN DRAWINGS

Drawings are to scale at A1.



KEY PLAN

2 3 4 5 6 7 8 9 10 11 12 13

LEGEND

- APPLICATION BOUNDARY
- PROPOSED 220 kV ONSHORE CABLE ROUTE
- PROPOSED FIBRE CABLE ROUTE
- AMENDED 220 kV ONSHORE CABLE ROUTE
- AMENDED FIBRE CABLE ROUTE
- EXISTING HIGH VOLTAGE OVERHEAD LINE
- EXISTING MEDIUM VOLTAGE OVERHEAD LINE
- EXISTING LOW VOLTAGE OVERHEAD LINE
- EXISTING MEDIUM VOLTAGE UNDERGROUND CABLE
- EXISTING LOW VOLTAGE UNDERGROUND CABLE
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING STORM WATER DRAIN
- EXISTING HIGH PRESSURE TRANSMISSION GAS MAIN
- EXISTING TELECOMS OVERHEAD LINE
- EXISTING TELECOMS UNDERGROUND CABLE
- 8 m / 2.5 m AMENDED JOINT BAY
- AMENDED C2 CHAMBER
- AMENDED LINK BOX CHAMBER
- 8 m / 2.5 m PROPOSED JOINT BAY
- PROPOSED C2 CHAMBER
- PROPOSED LINK BOX CHAMBER
- EXISTING HV MAST
- PROPOSED NEW LINE CABLE INTERFACE MAST (LCIM)

NOTES :

1. FOR PLANNING PURPOSES ONLY, NOT FOR CONSTRUCTION
2. ALL DIMENSIONS IN METERS, UNLESS OTHERWISE NOTED
3. THE CABLE SHALL BE INSTALLED WITHIN THE SITE BOUNDARY. THE FINAL ALIGNMENT WITHIN THE SITE BOUNDARY SHALL BE DETERMINED FOLLOWING DETAILED DESIGN, WHICH WOULD PROCEED POST-PLANNING.
4. THE SITE BOUNDARY IS THE EXTENT OF THE PROPOSED PROJECT SITE. IT SHOULD BE ASSUMED TO EXTEND TO THE EDGE OF THE CARRIAGEWAY ALONG PUBLIC ROADS, EXCEPT WHERE OTHERWISE INDICATED.
5. 220 kV CABLES TO BE INSTALLED AS PER DRAWING PE605-D027-083-001 (LATEST REVISION), WHICH IS A TYPICAL TRENCH LAYOUT. THE OVERALL DEPTH, WIDTH AND FORMATION OF THE TRENCH MAY CHANGE, DEPENDING ON GROUND CONDITIONS AND DETAILED DESIGN.
6. THE UTILITIES RECORDS SHOWN ARE THE RECORDS ONLY IN THE IMMEDIATE VICINITY OF THE SITE BOUNDARY

NOTE: REVISION CLOUDS HIGHLIGHT THE DESIGN CHANGES AS PART OF THE RESPONSE TO RFI

SCALE BAR: 0 50 100 150 200 250 m

REV.	DATE	REVISION DESCRIPTION	DRN	PROD	VER	APP
005		ADDED REVISION CLOUDS & ANNOTATION				
004	04/12/25	UPDATED CHAINAGE	NB	NB	RD	MH
003	11/11/25	UPDATED CABLE ROUTE ON N33	NB	NB	RD	MH
002	16/10/25	UPDATED PLANNING BOUNDARY	NB	NB	RD	MH
001	20/02/24	UPDATED PLANNING BOUNDARY & WITH RPS COMMENTS	NB	NB	RD	MH
000	31/01/24	FIRST ISSUE	NB	NB	RD	MH

PURPOSE OF ISSUE - PRELIMINARY UNLESS INDICATED

CLIENT APPROVAL [ ] PLANNING [X] TENDER [ ] CONSTRUCTION [ ] AS-BUILT [ ]

Client: ORIEL WINDFARM LIMITED

Project: ORIEL WIND FARM PROJECT

Contract:

Drawing Title: EXISTING UTILITIES AND PROPOSED DEVELOPMENT SHEET 2 OF 13

Production Unit: Civil, Environmental and Renewable Engineering

Engineering and Major Projects,
One Dublin Airport Central, Dublin Airport,
Cloghran, Co. Dublin, K67 XF72, Ireland.
Tel: +353 (0)1 703 8000 Web: www.esb.ie
Engineering and Major Projects is a division of ESB

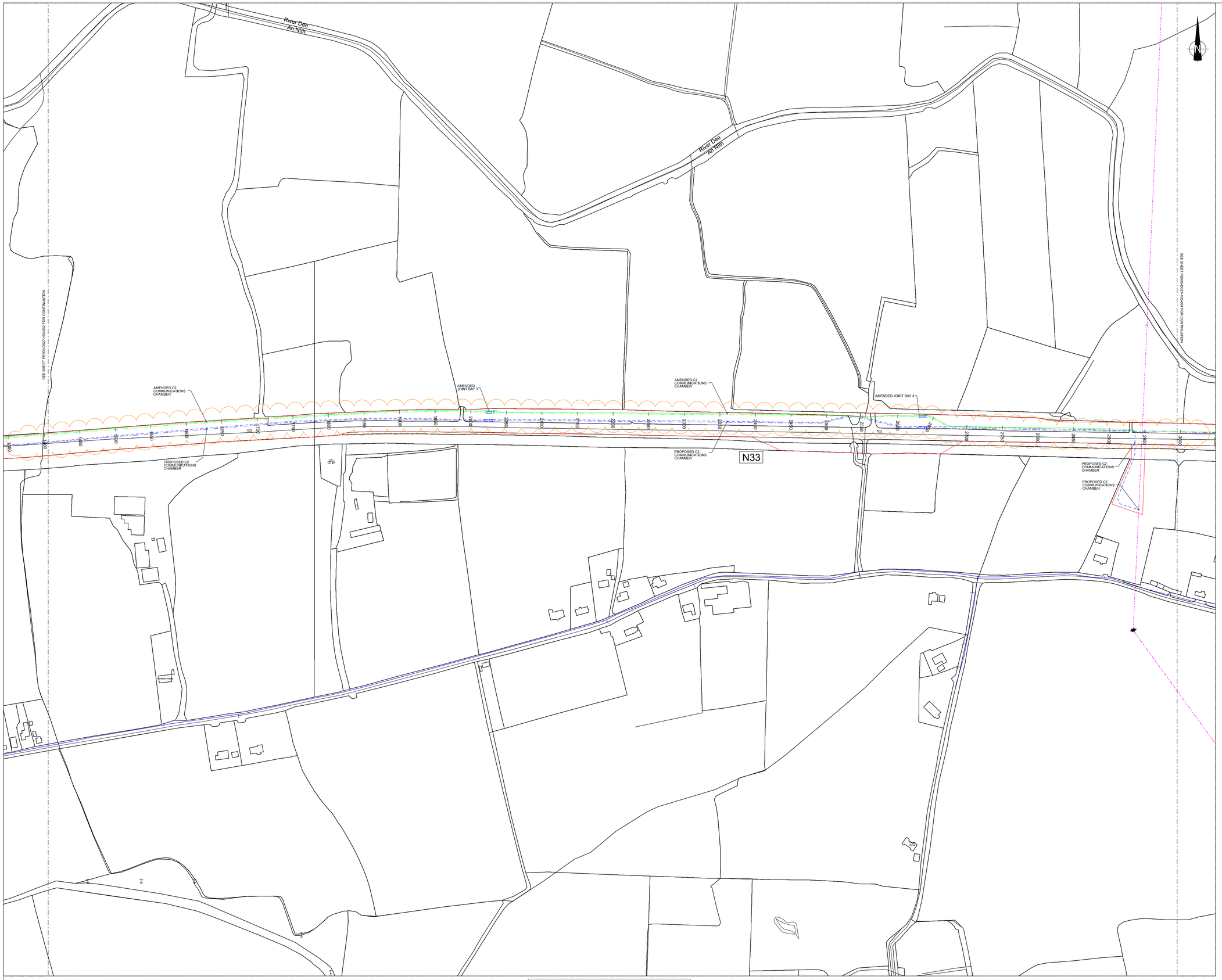
Energy for generations

DRAWN	PRODUCED	VERIFIED	APPROVED	APPROVAL DATE
Bell_N	Bell_Neil	R.Doyle	M.Hogan	17/12/2025

CLIENT REF	No. OF SHTS	SIZE	SCALE
TC228657	2/13	A1	1:2500

DRAWING NUMBER: PE605-D027-105-002-005 (SHEET / REV)

ORDNANCE SURVEY IRELAND MAP SHEET 2010



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- EXISTING HV WOODPOLE SET

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REV.	DATE	REVISION DESCRIPTION	DRN	PROD	VER	APP
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003	08/12/25	UPDATED CHAINAGE	NB	NB	RD	MH
002	11/11/25	UPDATED CABLE ROUTE ON N33	NB	NB	RD	MH
001	16/10/25	UPDATED PLANNING BOUNDARY & WITH RPS COMMENTS	NB	NB	RD	MH
000	31/01/24	FIRST ISSUE	NB	NB	RD	MH

PURPOSE OF ISSUE - PRELIMINARY UNLESS INDICATED

CLIENT APPROVAL ☐ PLANNING [X] TENDER ☐ CONSTRUCTION ☐ AS-BUILT ☐

Client: ORIEL WINDFARM LIMITED

Project: ORIEL WIND FARM PROJECT

Contract:

Drawing Title: EXISTING UTILITIES AND PROPOSED DEVELOPMENT SHEET 3 OF 13

Production Unit: Civil, Environmental and Renewable Engineering

Energy for generations

Engineering and Major Projects,
One Dublin Airport Central, Dublin Airport,
Cloghran, Co. Dublin, K67 XF72, Ireland.
Tel: +353 (0)1 703 8000 Web: www.esb.ie
Engineering and Major Projects is a division of ESB

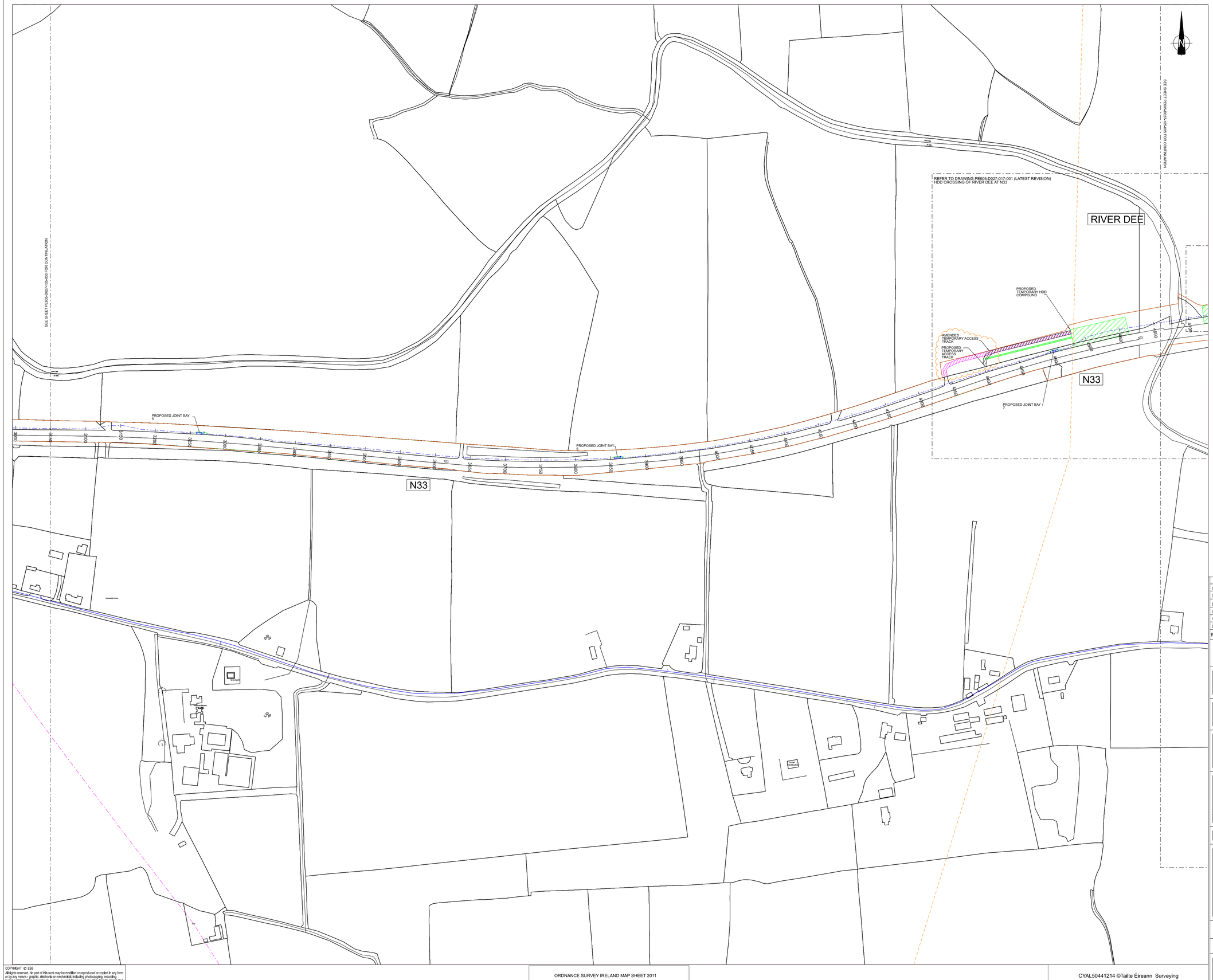
DRAWN	PRODUCED	VERIFIED	APPROVED	APPROVAL DATE
Begley_G	Bell_Neil	R.Doyle	M.Hogan	17/12/2025

CLIENT REF	No. OF SHTS	SIZE	SCALE
TC228657	3/13	A1	1:2500

DRAWING NUMBER (SHEET / REV): PE605-D027-105-003-004

ORDNANCE SURVEY IRELAND MAP SHEET 2011

CYAL50441214 ©Tailte Éireann Surveying



KEY PLAN

2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13

LEGEND

- APPLICATION BOUNDARY
- PROPOSED 220 kV ONSHORE CABLE ROUTE
- PROPOSED FIBRE CABLE ROUTE
- PROPOSED TEMPORARY ACCESS TRACK
- AMENDED TEMPORARY ACCESS TRACK
- EXISTING HIGH VOLTAGE OVERHEAD LINE
- EXISTING MEDIUM VOLTAGE OVERHEAD LINE
- EXISTING LOW VOLTAGE OVERHEAD LINE
- EXISTING MEDIUM VOLTAGE UNDERGROUND CABLE
- EXISTING LOW VOLTAGE UNDERGROUND CABLE
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING STORM WATER DRAIN
- EXISTING HIGH PRESSURE TRANSMISSION GAS MAIN
- EXISTING TELECOMS OVERHEAD LINE
- EXISTING TELECOMS UNDERGROUND CABLE
- PROPOSED JOINT BAY (8 m × 2.5 m)
- PROPOSED C2 CHAMBER
- PROPOSED LINK BOX CHAMBER

NOTES :

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4. THE SITE BOUNDARY IS THE EXTENT OF THE PROPOSED PROJECT SITE. IT SHOULD BE ASSUMED TO EXTEND TO THE EDGE OF THE CARRIAGEWAY ALONG PUBLIC ROADS, EXCEPT WHERE OTHERWISE INDICATED.
5. 220 kV CABLES TO BE INSTALLED AS PER DRAWING PE605-D027-083-001 (LATEST REVISION), WHICH IS A TYPICAL TRENCH LAYOUT. THE OVERALL DEPTH, WIDTH AND FORMATION OF THE TRENCH MAY CHANGE, DEPENDING ON GROUND CONDITIONS AND DETAILED DESIGN.
6. THE UTILITIES RECORDS SHOWN ARE THE RECORDS ONLY IN THE IMMEDIATE VICINITY OF THE SITE BOUNDARY

NOTE: REVISION CLOUDS HIGHLIGHT THE DESIGN CHANGES AS PART OF THE RESPONSE TO RFI

REFERENCE DRAWINGS:
PE605-D027-017-001 RIVER DEE HDD CROSSING N33 BRIDGE

SCALE BAR:
0 50 100 150 200 250 m

REV.	DATE	REVISION DESCRIPTION	DRN	PROD	VER	APP
005		ADDED REVISION CLOUDS & ANNOTATION				
004	08/12/25	UPDATED CHAINAGE	NB	NB	RD	MH
003	11/11/25	UPDATED CABLE ROUTE ON N33	NB	NB	RD	MH
002	16/10/25	UPDATED ACCESS TRACKS AS PER SPA	NB	NB	RD	MH
001	27/02/24	UPDATED AS PER COMMENTS FROM RPS	NB	NB	RD	MH
000	31/01/24	FIRST ISSUE	NB	NB	RD	MH

PURPOSE OF ISSUE - PRELIMINARY UNLESS INDICATED

CLIENT APPROVAL ☐ PLANNING ☒ TENDER ☐ CONSTRUCTION ☐ AS-BUILT ☐

Client: ORIEL WINDFARM LIMITED

Project: ORIEL WIND FARM PROJECT

Contract:

Drawing Title: EXISTING UTILITIES AND PROPOSED DEVELOPMENT SHEET 4 OF 13

Production Unit: Civil, Environmental and Renewable Engineering

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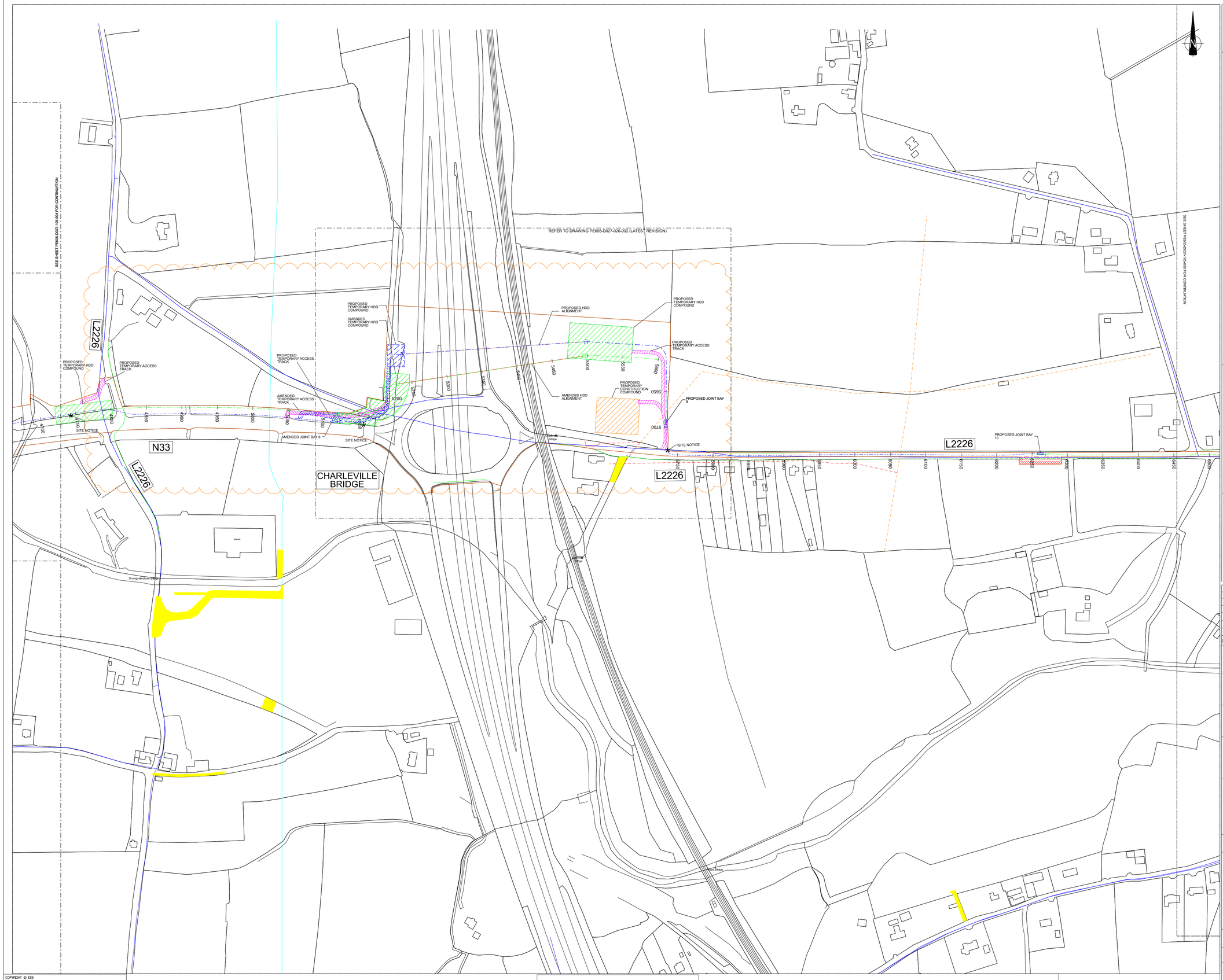
DRAWN	PRODUCED	VERIFIED	APPROVED	APPROVAL DATE
Begley_G	Bell_Neil	R.Doyle	M.Hogan	17/12/2025

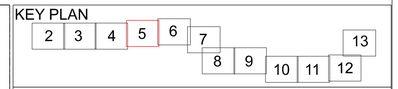
CLIENT REF	No. OF SHTS	SIZE	SCALE
TC228657	4/13	A1	1:2500

DRAWING NUMBER: PE605-D027-105-004-005 (SHEET / REV)

ORDNANCE SURVEY IRELAND MAP SHEET 2011



KEY PLAN



LEGEND

- APPLICATION BOUNDARY
- PROPOSED 220 kV ONSHORE CABLE ROUTE
- AMENDED 220 kV ONSHORE CABLE ROUTE
- PROPOSED HDD HORIZONTAL ALIGNMENT
- AMENDED HDD HORIZONTAL ALIGNMENT
- PROPOSED TEMPORARY HORIZONTAL DIRECTIONAL DRILL COMPOUND
- PROPOSED TEMPORARY ACCESS TRACK
- AMENDED TEMPORARY ACCESS ROAD
- EXISTING HIGH VOLTAGE OVERHEAD LINE
- EXISTING MEDIUM VOLTAGE OVERHEAD LINE
- EXISTING LOW VOLTAGE OVERHEAD LINE
- EXISTING MEDIUM VOLTAGE UNDERGROUND CABLE
- EXISTING LOW VOLTAGE UNDERGROUND CABLE
- EXISTING WATER MAIN
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NOTE: REVISION CLOUDS HIGHLIGHT THE DESIGN CHANGES AS PART OF THE RESPONSE TO RFI

REFERENCE DRAWINGS:

PE605-D027-026-002 M1 & RAIL LINE PROPOSED HDD ALIGNMENT

PE605-D027-017-000 RIVER DEE HDD CROSSING N33 BRIDGE

SCALE BAR:

0 50 100 150 200 250 m

REV.	DATE	REVISION DESCRIPTION	DRN	PROD	VER	APP
005		ADDED REVISION CLOUDS & ANNOTATION				
004	04/11/25	UPDATED HDD ALIGNMENT AT M1 & CHAINAGE	NB	NB	RD	MH
003	04/11/25	UPDATED ROUTE ON N33	NB	NB	RD	MH
002	16/10/25	UPDATED ACCESS TRACKS AS PER SPA	NB	NB	RD	MH
001	28/02/24	UPDATED AS PER RPS COMMENTS	NB	NB	RD	MH
000	31/01/24	FIRST ISSUE	NB	NB	RD	MH

PURPOSE OF ISSUE - PRELIMINARY UNLESS INDICATED

CLIENT APPROVAL ☐ PLANNING ☒ TENDER ☐ CONSTRUCTION ☐ AS-BUILT ☐

Client: ORIEL WINDFARM LIMITED

Project: ORIEL WIND FARM PROJECT

Contract:

Drawing Title: EXISTING UTILITIES AND PROPOSED DEVELOPMENT SHEET 5 OF 13

Production Unit: Civil, Environmental and Renewable Engineering

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Begley_G	Bell_Neil	R.Doyle	M.Hogan	17/12/2025

CLIENT REF	No. OF SHTS	SIZE	SCALE
TC228657	5/13	A1	1:2500

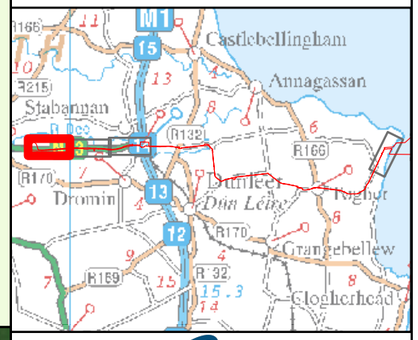
DRAWING NUMBER: PE605-D027-105-005-005 (SHEET / REV)

Legend

- Planning Application Boundary
- Proposed Amended Onshore Cable Route
- Proposed Onshore Cable Route
- Proposed Joint Bay Locations
- Proposed Transition Joint Bay Option One
- Proposed Transition Joint Bay Option Two
- Line Cable Interface Mast (LCIM)
- Compound 1 - GIS
- Compound 2 - AIS
- Cable Pulling Temporary Hardstand
- Temporary Construction Compound (substation)
- Temporary Construction Compound (underground cable installation)
- Temporary Storage Area
- Temporary Construction Area
- Amended Temporary Accesses
- Proposed Temporary Accesses

Note: The Applicant has proposed an amended onshore cable route (between the onshore substation and joint bay 4; and the section between L2226 and the M1 (at joint bay 8)) and also amended two temporary accesses (onto the N33) in response to a further info

Data Sources: OWL; OSi.



Client

ORIEL WINDFARM
OFFSHORE RENEWABLE ENERGY

Project

Oriel Wind Farm Project

Title

Figure 5A-16: Onshore Cable Route

Map 1 of 12

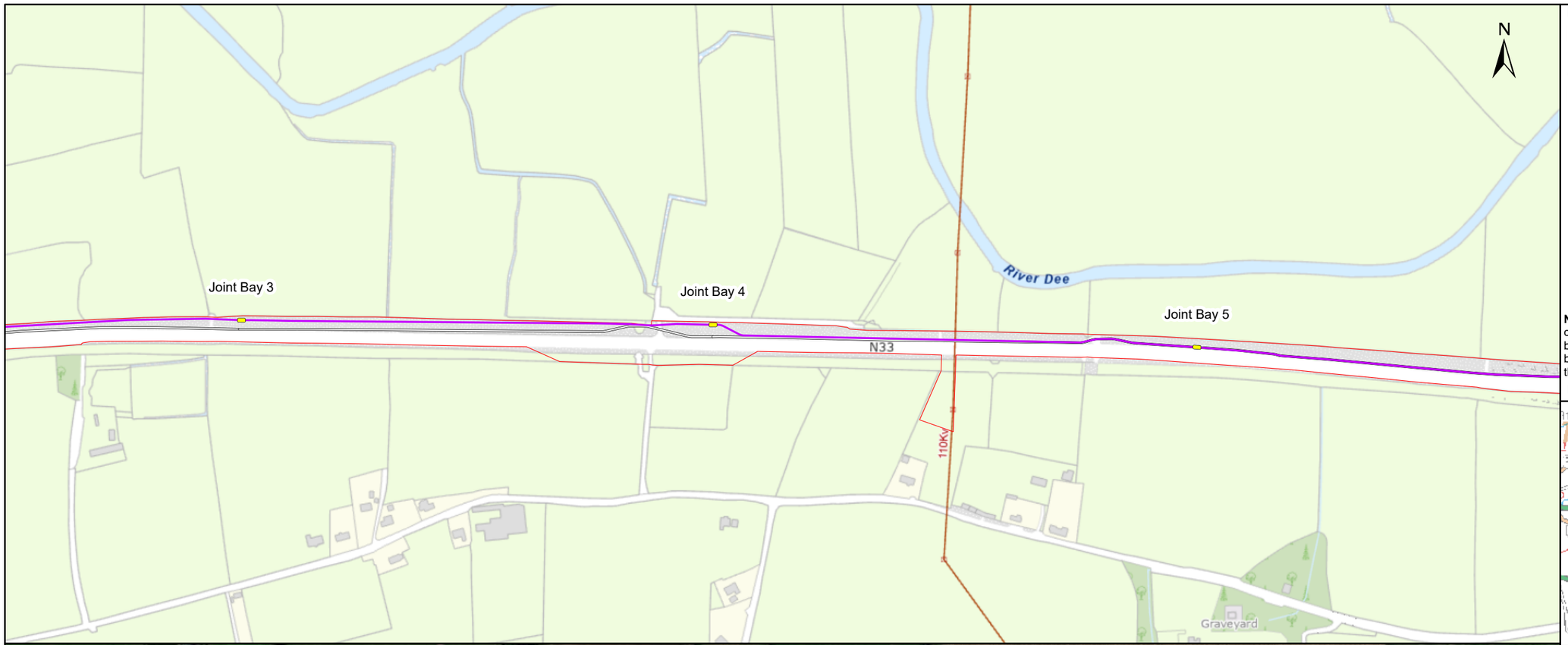
RPS
A TETRA TECH COMPANY

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

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

Issue Details

Drawn By: NR	**Project No.** MDR1520c
Checked By: CC	**File Ref:**
Approved By: CC	MDR1520c-RPS-AP-XX-D-Z-0037.S0.P01
Scale: 1:6,000 @ A3	**Projection:**
Date: 11/12/2025	ITM (IRENET95)

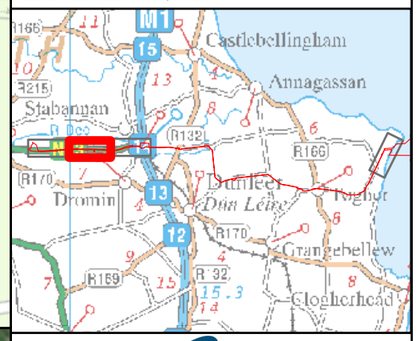


Legend

- Planning Application Boundary
- Proposed Amended Onshore Cable Route
- Proposed Onshore Cable Route
- Proposed Joint Bay Locations
- Proposed Transition Joint Bay Option One
- Proposed Transition Joint Bay Option Two

Note: The Applicant has proposed an amended onshore cable route (between the onshore substation and joint bay 4; and the section between L2226 and the M1 (at joint bay 8)) and also amended two temporary accesses (onto the N33) in response to a further info

Data Sources: OWL; OSi.



Client

ORIEL WINDFARM
OFFSHORE RENEWABLE ENERGY

Project

Oriel Wind Farm Project

Title

Figure 5A-16: Onshore Cable Route

Map 2 of 12

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A TETRA TECH COMPANY

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Dun Laoghaire,
Co Dublin,
Ireland.

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

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Scale: 1:6,000 @ A3	**Projection:**
Date: 11/12/2025	ITM (IRENET95)

Legend

- Planning Application Boundary
- Proposed Amended Onshore Cable Route
- Proposed Onshore Cable Route
- Proposed Joint Bay Locations
- Proposed Transition Joint Bay Option One
- Proposed Transition Joint Bay Option Two
- Temporary Construction Compounds
- Amended Proposed HDD Compounds
- Proposed HDD Compounds
- Amended Temporary Accesses
- Proposed Temporary Accesses
- High Pressure Transmission Gas Main
- Onshore Cable Crossing 1-8

Note: The Applicant has proposed an amended onshore cable route (between the onshore substation and joint bay 4; and the section between L2226 and the M1 (at joint bay 8)) and also amended two temporary accesses (onto the N33) in response to a further info

Data Sources: OWL; OSi.

Client

ORIEL WINDFARM
OFFSHORE RENEWABLE ENERGY

Project

Oriel Wind Farm Project

Title

Figure 5A-16: Onshore Cable Route

Map 3 of 12

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Scale: 1:6,000 @ A3	**Projection:**
Date: 11/12/2025	ITM (IRENET95)

APPENDIX B – ROAD SAFETY AUDIT (& SHADOW AUDIT SUMMARY)

ORIEL WIND FARM PROJECT:
N33 ONSHORE CABLE INSTALLATION

Stage 1 Road Safety Audit

MDR1520CRp0005
Stage 1 Road Safety Audit
S4.P01
14 Apr 2025

rpsgroup.com

Contents

Appendices

1 INTRODUCTION

This Stage 1 Road Safety Audit report was prepared in response to a commission from Oriel Windfarm Limited for the N33 section of the Oriel Windfarm Project, which involves trenching and cabling installation works along the verge of the existing N33 National Primary route, and the construction of a substation just off the N33 east of Ardee, County Louth.

1.1 Audit Team Members

The Road Safety Audit team consists of:

Team Leader: **Shane Fanning** BA Civil Eng, BAI, BEng, CEng MIEI, Cert Comp RSA

RPS Consulting Engineers Ltd.

TII Auditor Approval Ref: SF 259694

Team Member: **Junru Ling** ME BE MIEI

RPS Consulting Engineers Ltd.

TII Auditor Approval Ref: JL 655873

1.2 Audit Information

The information supplied for this audit is listed in **Appendix A**. The information provided was considered adequate for the purposes of carrying out the road safety audit as requested.

The Road Safety Audit comprised of an examination of the site by the audit team members in daylight on 30th Jan 2025. The weather on the day of the site visit was dry, and road surfaces were predominantly dry with frost patches at certain locations. The traffic conditions on site were considered light.

This Stage 1 Road Safety Audit has been carried out in accordance with the requirements of TII Publication GE-STY-01024 December 2017 - Road Safety Audits, contained in the Safety (STY) stream of the General (GE) activities pillar of the Transport Infrastructure Ireland (TII) Publications.

A Road Safety Audit Feedback Form is attached in **Appendix B** to this report which lists the problems identified and this form requires completion by the Design Team Leader. If any of the recommendations within this safety audit report are not accepted, a written response is required, stating reasons for non-acceptance. Comments (if any) made within the report under the heading of Observation are intended to be for information only. Written responses to Observations are not required.

No previous RSAs were carried out on the scheme.

2 SCHEME DETAILS

2.1 Background to the Project

The Oriel Wind Farm Project will comprise of onshore and offshore infrastructure and includes 25 offshore wind turbines, a 16 km offshore cable, and 20.1 km of underground onshore cables (three) which will be installed in the same trench and buried for the entirety of this length, and connect to an onshore substation located just off the N33.

2.2 Location and Description of Site

The location of the overall scheme is shown below.

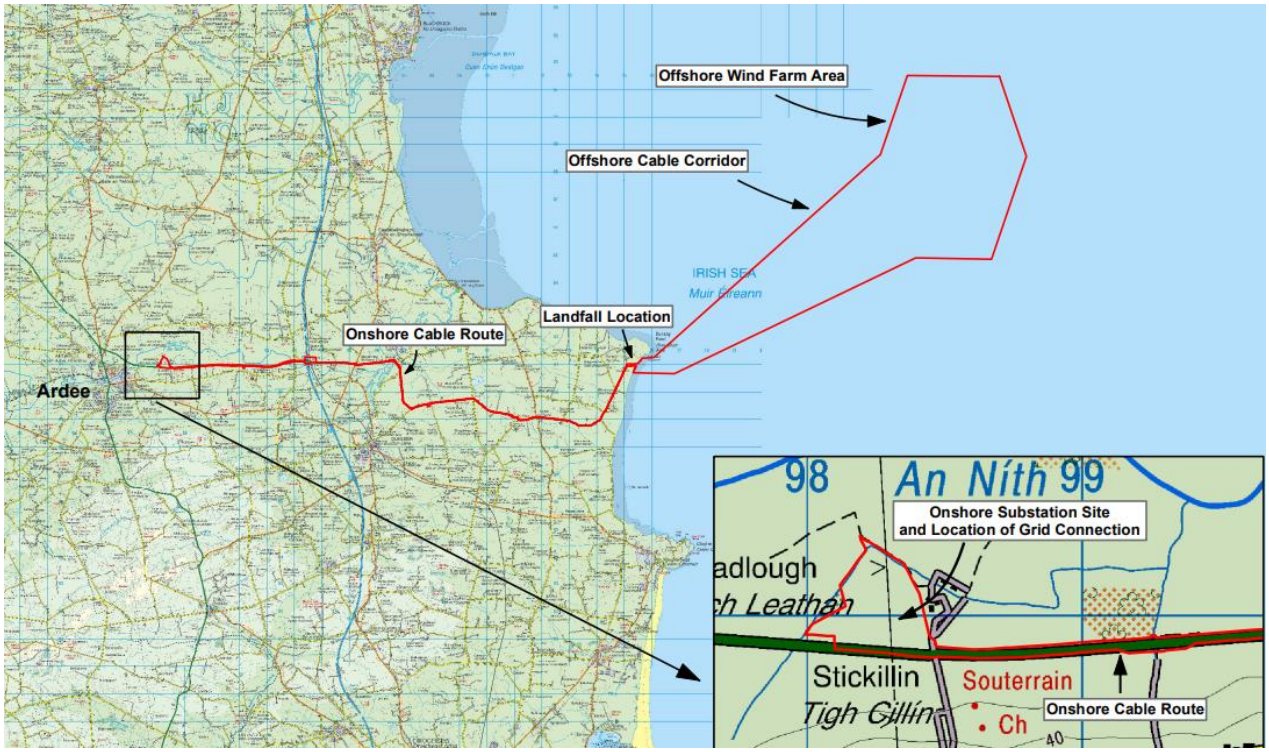


Figure 2.1 – Location Map

The section of the N33 (which is the subject of this RSA) affected by the trenching and cabling works, and which will serve the access to the new substation, runs from its junction with the M1 (Junction 14, Charleville Interchange) to the townland of Stickillin, as shown below in Figure 2.2.

Figure 2.2 – N33 Section Map

It is noted that the proposed scheme does not involve any permanent change to the existing N33 alignment or its cross section. The trenching and cabling installation works will take place in the existing verge. Any road furniture affected by these works will be repaired or replaced on a like for like basis. The existing access being used for the proposed substation will be improved.

2.3 Existing Context

The trenching and cabling installation works will be within the existing road boundary of the N33, and specifically within the northern verge. The N33 is a wide single carriageway national primary road with a posted speed limit of 100km/h. The N33 has vegetated verges with semi-mature hedgerow, which also contain road furniture including (in places) lighting columns, vehicle restraint systems, traffic signs, bridge parapets, etc.

The new substation will utilise an existing access which currently serves an agricultural premises. This access lane will be improved as part of the works.

2.4 Proposed Scheme / Scope of Works

The following is a brief summary of the proposed works along the N33:

Cabling and Trenching

- This section of cable route runs from the onshore substation to Joint Bay No. 8 and will involve trenching, ducting, and joint bay installation approximately 4.9km 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 underground directional drilled (HDD) crossings: one under the River Dee crossing on the N33, and one under the existing M1 mainline, north-facing ramps, and the existing 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 also 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 temporary traffic management, subject to temporary traffic management design by the contractor.
- It is anticipated that trenching, ducting, and joint bay installation along the 4.9km section of the N33 will take approximately 9 to 12 months – see Figure 2.3. 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 6 months of activities will involve cable pulling, cable jointing, backfilling and reinstatement of Joint Bays.

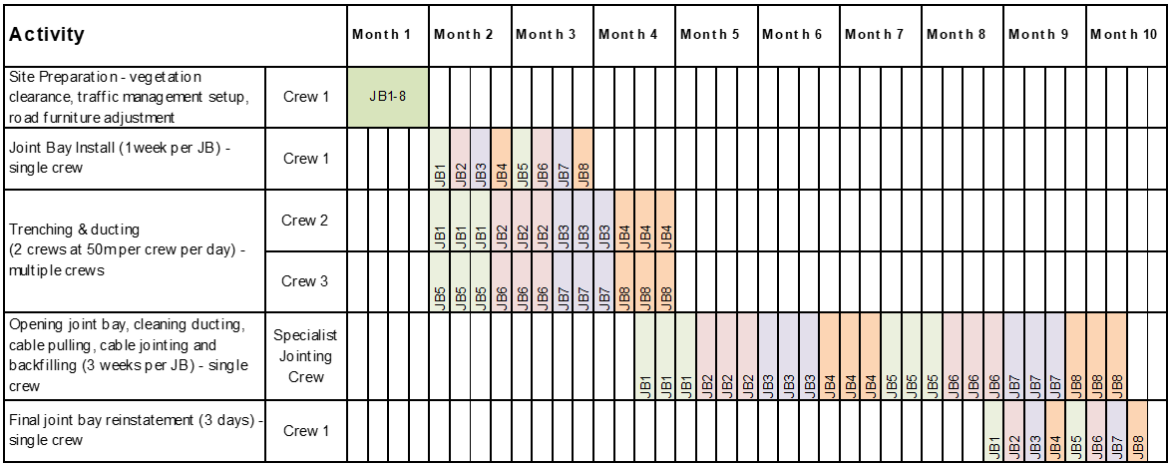


Figure 2.3 – N33 Construction Programme

Onshore Substation

- The construction of a substation will connect the Oriel Wind Farm in to the existing 'Woodland to Louth' 220 kV overhead transmission power line which traverses the site.

- The onshore substation will consist of three compounds and common areas. Compound 1 is the onshore transmission connection which is contained in a two storey GIS building; Compound 2 is for the offshore transmission system which contains single storey control and statcom buildings and associated infrastructure (switch gear, transformers etc.) and there is an entrance compound (Compound 3) which contains a telecommunications building and standby diesel generator. The existing pylon will be replaced with two loop in pylons for the connection to the existing transmission grid.
- The existing entrance and access lane serving the substation site from the N33 will be reconfigured, including widening the existing entrance and re-grading the existing lane to accommodate deliveries.
- Hedge trimming will be carried out to accommodate required visibility splays.

3 TRAFFIC & COLLISION INFORMATION

3.1 Traffic Data

The following summarises the traffic data, including forecasted vehicle movements arising from construction activities.

Table 3-1 – Extract from the scheme's CTMP: 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)
N33	13,061 (5.8%)	202	13,131 (6.2%)

Table 3-2 – Traffic Data Counts (from https://trafficdata.tii.ie)

Location	TII TMU N33 000.0 E (On the N33 between Ardee and M01, Richardstown, Co. Louth)	
Year	*AADT*	*% HGV*
2024	13,941	7.5%

Table 3-3 – 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	4.4km	3 months – River Dee Crossing

3.2 Collision History

Collision information presented below was sourced from the Project's Traffic and Transport Assessment Report. No collision clusters were identified along the onshore cable route on the N33.

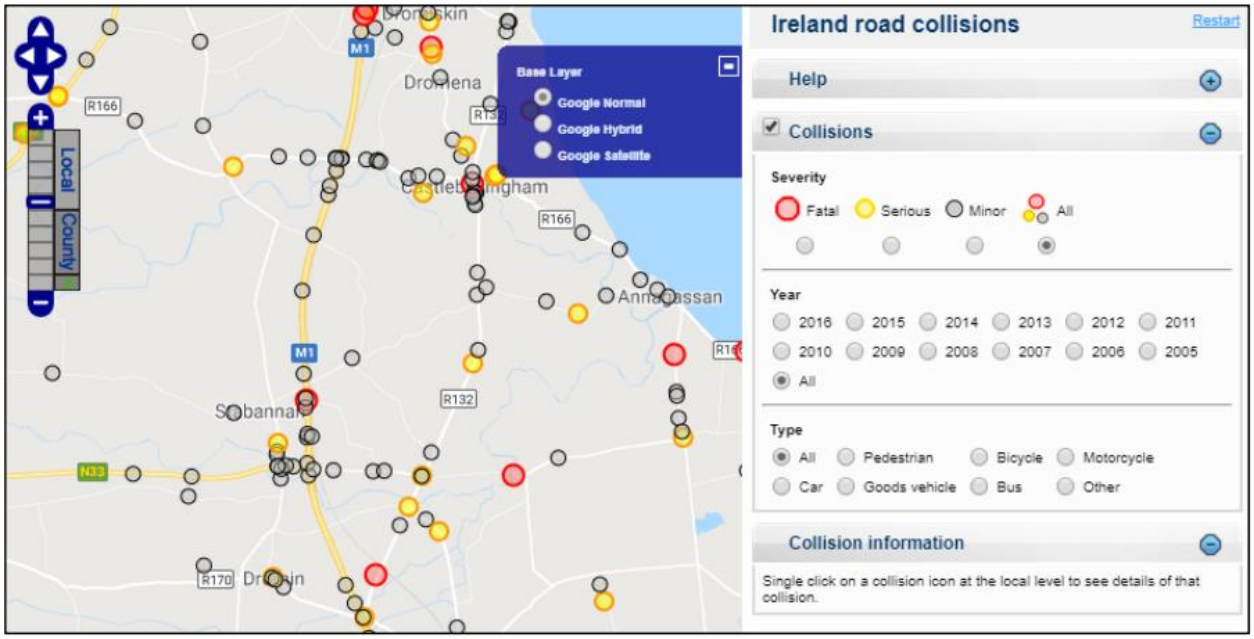


Figure 3.1 – Collision Data (from Figure 28-3 of the project's TTA)

4 ITEMS ARISING FROM STAGE 1 ROAD SAFETY AUDIT

4.1 Problem 4.1

Location: Proposed access to the proposed M1/Railway HDD Exit Pit compound

Summary: Visibility of vehicular traffic exiting the M1 Junction 14.

The proposed site entrance to the western HDD compound is located approximately 150m west of the existing roundabout. It is unclear if this site entrance is permanently required for maintenance works. The lack of visibility of vehicles exiting the roundabout at speed may lead to an increased risk of side-on or rear-end collisions with maintenance vehicles exiting and turning right onto the N33, particularly larger slow moving vehicles exiting right.

Recommendation:

It is recommended an assessment of visibility to be carried out for this site entrance, and that method statements should be employed for maintenance vehicles to restrict them from turning right onto the N33, but instead turn out left and use the M1 rotary junction roundabout.

4.2 Problem 4.2

Location: Scheme wide

Summary: Restricted Visibility of existing farm entrances

Some of the existing farm entrances along the N33 appeared to have restricted visibility. If these accesses are to be used for construction or maintenance of the cable routes, there is a risk of side-on or rear-end collisions between N33 traffic and construction vehicles exiting these assesses.

Recommendation:

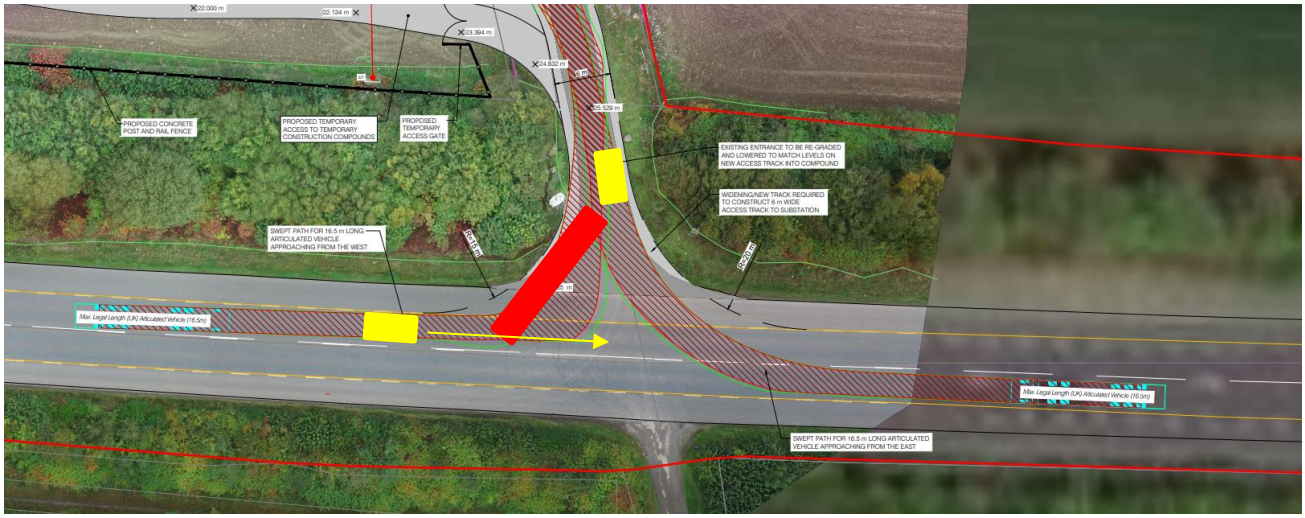
It is recommended an assessment of visibility to be carried out for these site entrances if construction and maintenance access is required.

4.3 Problem 4.3

Location: Proposed Entrance into the substation

Summary: Articulated HGV entering the substation partially blocking the eastbound lane of N33

At the proposed site entrance at the substation, the proposed widened track appears to be of insufficient width to accommodate two-way vehicular movements. In the situation that a HGV entering the site encounters the oncoming traffic exiting the farm/the substation, the HGV may be partially blocking the N33 eastbound carriageway lane to yield to oncoming traffic. This could lead to rear-end collision between N33 eastbound traffic and the yielding HGV, or head collision if traffic swerves to avoid the yielding HGV and crosses into the opposing N33 lane.



Recommendation:

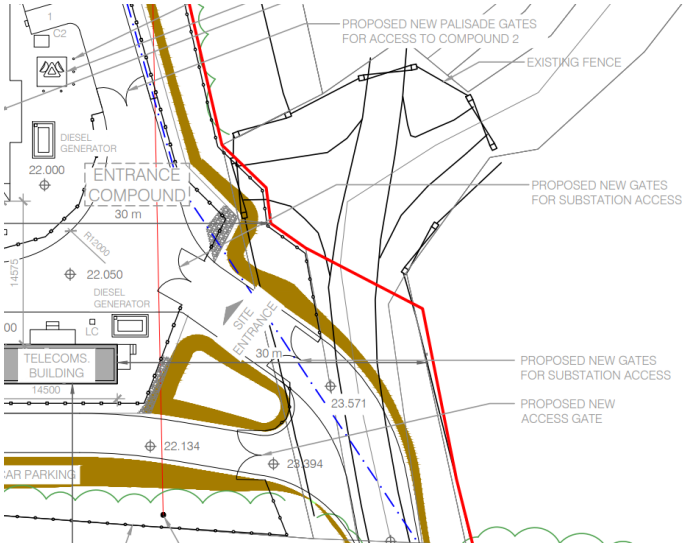
The access arrangements should be designed so as to provide adequate facilities to ensure that the all vehicles turning into the substation entrance will not impede in anyway, the N33 traffic.

4.4 Problem 4.4

Location: Proposed Entrance into the substation

Summary: No defined priority for existing private accesses

There appears to be multiple existing farm accesses/domestic entrance at the location where the entrance gate is being proposed for the substation. Lack of the definition of priority at this location could lead to confusion between users and lead to potential collisions.



Recommendation:

Consider measures to define priority for all users.

5 OBSERVATIONS UNDER STAGE 1 ROAD SAFETY AUDIT

5.1 Observation

Two existing farm underpasses are present along this section of N33, between proposed Joint Bay1 an Joint Bay 2 and between proposed Joint Bay 3 and Joint 4. Existing safety barriers are provided along the back of the hard shoulder and need to be retained at all times.

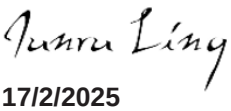
5.2 Observation

Existing chamber with chamber lid higher than the verge is present at the proposed widened access track to the substation.

6 AUDIT STATEMENT

We certify that we have examined the drawings and other information listed in Appendix A and visited the site during the day of the 30th January 2025. The examination has been carried out with the sole purpose of identifying any features of the scheme that could be removed or modified in order to improve road safety.

The problems identified have been noted in this report together with suggestions for road safety improvement, which we recommend should be studied for improvement. The road safety audit has been conducted by the persons named below who have no involvements in the design of the scheme.

Shane Fanning	**Signed:**	
(Audit Team Leader)	**Date:**	**17/2/25**
Junru Ling	**Signed:**	
(Audit Team Member)	**Date:**	**17/2/2025**

Appendix A

List of Drawings/Documents Audited

Table A.1 – List of Drawings / Documents Audited

- MDR1520CRP0003 S3.P01 - Stage 1 RSA Brief
- B39 PE605-D027-073-002 JOINT BAY GENERAL ARRANGEMENT
- B40 PE605-D027-071-002 COMMUNICATIONS CHAMBER
- B41 PE605-D027-072-002 LINK BOX CHAMBER
- B42 PE605-D027-083-001 TRENCH SECTION 700MM WIDE
- B43 PE605-D027-111-001 TRENCH SECTION 1.5M WIDE
- C01 PE605-D027-038-003 ONSHORE SUBSTATION SITE LOCATION
- C02 PE605-D027-038-028 ONSHORE-SUBSTN EXISTING SITE LAYOUT
- C04 PE605-D027-038-004 ONSHORE SUBSTN PROPOSED SITE LAYOUT
- C06 PE605-D027-038-005 ONSHORE SUBSTN SECTIONS SHEET 1 OF 2
- C07 PE605-D027-038-006 ONSHORE SUBSTN SECTIONS SHEET 2 OF 2
- C25 PE605-D027-038-023 ONSHORE SUBSTN LIGHTS ROAD AND TRACK
- C26 PE605-D027-038-018 ONSHORE SUBSTN ENTRANCE MODIFICATIONS
- C27 PE605-D027-038-025 ONSHORE SUBSTN TEMPORARY COMPOUNDS
- MDR1520c-RPS-AP-XX-D-Z-0002.S0.P01 Road Safety Audit - Study Area
- MDR1520c-RPS-AP-XX-D-Z-0003.S0.P02 N33 Revised Cable Route
- MDR1520c-RPS-AP-XX-D-Z-0004.S0.P02 N33 Revised Cable Route - Zoom

Appendix B

Audit Feedback Form

Appendix B - Road Safety Audit Feedback Form

(From online TII RSAAS)

Feedback Form

N33 County Louth, Oriel Wind Farm Project: Onshore Cable Installation: Stage 1

Paragraph no. in safety audit report	Problem accepted	Recommended measure accepted	Alternative measures	Alternative measures accepted
4.1	No	No	This access will be under TTM during the construction period. It is not required for maintenance works and it will be returned to its existing function as an agricultural field access. Post-construction yearly or 3-yearly monitoring visits (by a 2-man crew on foot) will be required to Joint Bay 8.	Yes
4.2	Yes	Yes	4.2 Yes Yes Visibility assessments have been carried out for all N33 access points. It is noted that during construction all movements in and out of the side will be under full TTM and will involve left-in left-out restrictions. It is also noted that these existing field entrances are intended to be used for construction vehicles to access the works from the hard shoulder (which will be part of the protected works site) rather than access the N33.	Yes
4.3	Yes	No	HGVs will only use this access during the construction stage, during which TTM will be in place to ensure movements in/out do not stop on or block the N33. It is not considered necessary to cater for 2-way traffic in the permanent operational situation due to low volumes of movements and small sized vehicles.	Yes
4.4	Yes	Yes	Layout will be amended to give priority to the existing agricultural business.	Yes

Signed off by designer (Doyle. Robert (Engineering and Major Projects))
Signed off by team leader (Fanning, Shane)
Signed off by client (Richard Church)

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Enda Murphy
Senior Engineer
Louth County Council
County Hall,
Millennium Centre,
Dundalk, Co Louth,
A91 KFW6

Dáta|Date
9th May 2025

Ár dTag|Our Ref.
TII24-128130

Re: - Strategic Infrastructure Development Oriel Windfarm Ref no OA15.319799 Oriel Windfarm

Dear Enda,

TII Road Safety Team has undertaken a Shadow Audit of the Stage 1 Road Safety Audit for the proposed N33 Onshore Cable Installation aspect of the Oriel Wind Farm Project in Co. Louth issued by Sharefile in April 2025. TII makes the following recommendations and actions:

Item Number	Description of Issue	Recommendation
1 to 4	Hazards associated with right turns off and onto N33	Any traffic associated with the proposed development and its ongoing use and maintenance should be restricted to Left-in, Left-out movements only. This includes all future traffic, however infrequent.
2, 4 & 6	Visibility	All locations requiring ongoing access along the N33, however infrequent, should have a visibility assessment. There may need to be an ongoing programme for vegetation maintenance.
5	Joint Bays are located in close proximity to the road pavement and the vegetation clearance associated with their provision may encourage parking in the verge, potentially on top of the access chamber	The designer should bear this in mind before finalising the design and specifications (road user safety implications and potential damage implications).
6	It is not clear what the ongoing access requirements will be and whether hard standing areas should be provided	The designer should bear this in mind before finalising the design and specifications (road user safety implications and potential damage implications).

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

Yours sincerely

Tara Spain, Head of Land Use Planning

Design Team Response to TII Shadow Road Safety Stage 1

Item No	Description of Issue	TII Recommendation	Design Team Response
1 to 4	Hazards associated with **right turns** off and onto N33	Any traffic associated with the proposed development and its ongoing use and maintenance **should be restricted to Left-in, Left-out movements only**. This includes all future traffic, however infrequent.	Agreed and accepted. The access and egress for each of the 3 existing access points on the N33 to be utilised during the construction stage will be operated as Left-in Left-out. This will be implemented and enforced as part of the CTMP (Construction Traffic Management Plan). The most westerly of these existing accesses (a farm access, located in the townland of Stickillin) will also be used during the operation stage for occasional maintenance access to the new substation. The access layout will be reconfigured to comply with the Left-in Left-out layout as specified in TII Publication DN-GEO-03060.
2, 4 & 6	**Visibility**	All locations requiring ongoing access along the N33, however infrequent, **should have a visibility assessment**. There may need to be an ongoing **programme for vegetation maintenance**.	Agreed and accepted. Full visibility assessments have been carried out for all 3 access points on the N33 in accordance with TII Publication DN-GEO-03060. The necessary visibility envelopes are available and will be maintained by the Works Contractor during the construction stage. This will be implemented and enforced as part of the CTMP. Visibility for maintenance access to/from the new substation during the operation stage will be maintained as necessary by the ESB Operator in consultation with Louth County Council.
5	Joint Bays are located in close proximity to the road pavement and the vegetation clearance associated with their provision may encourage **parking in the verge**, potentially on top of the access chamber	The designer should bear this in mind before finalising the design and specifications (road user safety implications and potential damage implications).	Noted. Joint Bays will be covered and the existing verge reinstated following construction. As such they will not be any more attractive for parking than the existing verge. The Joint Bay chambers are designed to take a vehicle load should this occur for any reason.
6	It is not clear what the ongoing access requirements will be and whether **hard standing areas** should be provided.	The designer should bear this in mind before finalising the design and specifications (road user safety implications and potential damage implications).	Noted. Joint Bays will not require ongoing or regular access. They bays will only need to be accessed in the event of a cable failure which is highly unlikely. As such no hardstanding areas are required.