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Environmental Impact Assessment Report (EIAR)

Cunlaghfadda Green
Energy Project, Co. Mayo

Chapter 4 – Description of the Proposed
Project



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4.

DESCRIPTION OF THE PROPOSED PROJECT

4.1

Introduction

This section of the Environmental Impact Assessment Report (EIAR) describes the Proposed Project and all its component parts. The Proposed Project will be subject to a dual consenting process, with elements relating to the Proposed Grid Connection being subject to a planning application under Section 182A of the Planning and Development Act, 2000, as amended. Elements relating to the Proposed Wind Farm will be subject to a separate planning application under Section 34 of the Planning and Development Act, 2000, as amended. The planning application for development relating to the Proposed Grid Connection will be submitted to An Coimisiún Pleanála (ACP), while the planning application for development relating to the Proposed Wind Farm will be submitted to Mayo County Council. This EIAR accompanies both applications and assesses both the Proposed Wind Farm and the Proposed Grid Connection. Further detail in relation to the dual consenting process is provided in Chapter 1 of this EIAR.

The Proposed Development description for elements of the Proposed Wind Farm planning application to Mayo County Council, appears in the public notices as follows:

The development will consist of the provision of the following:

- i. 7 no. wind turbines with a top of foundation to blade tip height of 160 metres; a rotor blade diameter of 136 metres; and hub height of 92 metres; 1 no. meteorological mast with a height of 92 metres and subsequent decommissioning of the wind turbines and meteorological mast following a thirty five-year operational life from the date of full commissioning of the wind turbines;
- ii. Turbine and meteorological mast foundations and associated temporary and permanent hard-standing areas;
- iii. All associated underground electrical and communications cabling and subsequent decommissioning of all underground cabling within the site connecting the turbines to a proposed 110kV substation following a thirty five-year operational life from the date of full commissioning of the wind turbines;
- iv. 1 no. temporary construction compound;
- v. Upgrade and widening of existing internal tracks and provision of new permanent and temporary site access tracks and all associated site drainage;
- vi. Upgrade and temporary road widening works along the L15053 and provision of 1 no. passing bay;
- vii. 1 no. new temporary site entrance off the L1505 in the townland of Knockroe to accommodate the delivery of abnormal loads and construction phase traffic;
- viii. 1 no. new permanent site entrance in the townlands of Cunlaghfadda and Cloonbaul;
- ix. 1 no. borrow pit;
- x. 10 no. peat and spoil management areas;
- xi. 2 no. temporary security cabins;
- xii. Tree felling and vegetation removal;
- xiii. Biodiversity enhancement areas;
- xiv. Site drainage;
- xv. Site fencing, gates and signage; and
- xvi. All related site works above and below ground and all ancillary development.

The development description for elements of the Proposed Grid Connection planning application to ACP will appear in the public notices as follows:

The development will consist of the provision of the following:

- i. 1 no. 110kV electrical substation compound consisting of 2 no. single storey control buildings with welfare facilities, all associated electrical plant and apparatus, lightning masts, fencing and access gates, signage, underground cabling, and 2no. wastewater holding tanks;
- ii. The installation of c. 982 metres of 110kV underground cabling, 2 no. new end masts with a height of c. 16 metres and associated hard-standing areas to facilitate the new 'loop-in/loop-out' connection into the existing Castlebar to Cloon 110kV overhead line;
- iii. A telecommunications tower with a height of 36 metres and associated foundation, hard-standing area, fencing and access gate;
- iv. A temporary construction compound;
- v. Provision of new permanent and temporary construction site access tracks;
- vi. Tree felling and vegetation removal;
- vii. Site drainage;
- viii. and
- ix. All related site works above and below ground and all ancillary development.

This application seeks a ten-year planning permission and a 35-year operational life from the date of commissioning of the entire wind farm.

Section 1.1.1 of Chapter 1 of this EIAR provides a definition of the various project references used throughout the document. The 'Proposed Project', which encompasses the 'Proposed Wind Farm' and 'Proposed Grid Connection' has been assessed within this EIAR. The Proposed Project is located within the EIAR Site Boundary or the 'Site' which measures approximately 165 hectares (ha). The Proposed Project layout is illustrated in Figure 4-1.

All elements of the Proposed Project are provided in the list above, and described in this chapter, have been assessed as part of this EIAR.

4.2

Site Location

The Site is located within a rural, agricultural setting in Co. Mayo, approximately 5.3km northwest of the town of Claremorris, and 16km southeast of the town of Castlebar. The nearest Natura 2000 site to the Site, i.e., Special Area of Conservation (SAC) or Special Protection Area (SPA), is the River Moy SAC which is located approximately 2.2km west of the nearest proposed turbine (T1). Elevations within the Site are relatively flat and low-lying, ranging from approximately 60mOD (metres above Ordnance Datum) to 70mOD.

The Proposed Grid Connection includes for underground 110kV electrical cabling from the proposed onsite 110kV substation, in the townland of Cloonbaul, Co. Mayo to connect into the existing Cloon - Castlebar 110kV Overhead Line (OHL) which runs from the northwest to the southeast adjacent to the site in the townland of Cloonbaul, Co. Mayo. The Proposed Grid Connection will facilitate the connection of the Proposed Wind Farm to the national electricity grid. The OHL will be broken with 2 no. new end masts (lattice-type towers) to facilitate the connection to the proposed onsite substation via the underground electricity cabling. The Proposed Grid Connection is located entirely within private land. The nearest Natura 2000 site to the Proposed Grid Connection is the River Moy SAC, which is located approximately 2.1km west of the Proposed Grid Connection. Please see Section 4.4.2 for further details on the Proposed Grid Connection underground electrical cabling.

Current land-use on the Site is predominantly agricultural pastures and rough grazing, with areas of turbary lands used for private peat cutting and private forestry also present. Current land-use along the Proposed Grid Connection comprises pastures and private land principally used by agriculture. Land-use in the wider landscape comprises a mix of pastoral agriculture and low-density residential.

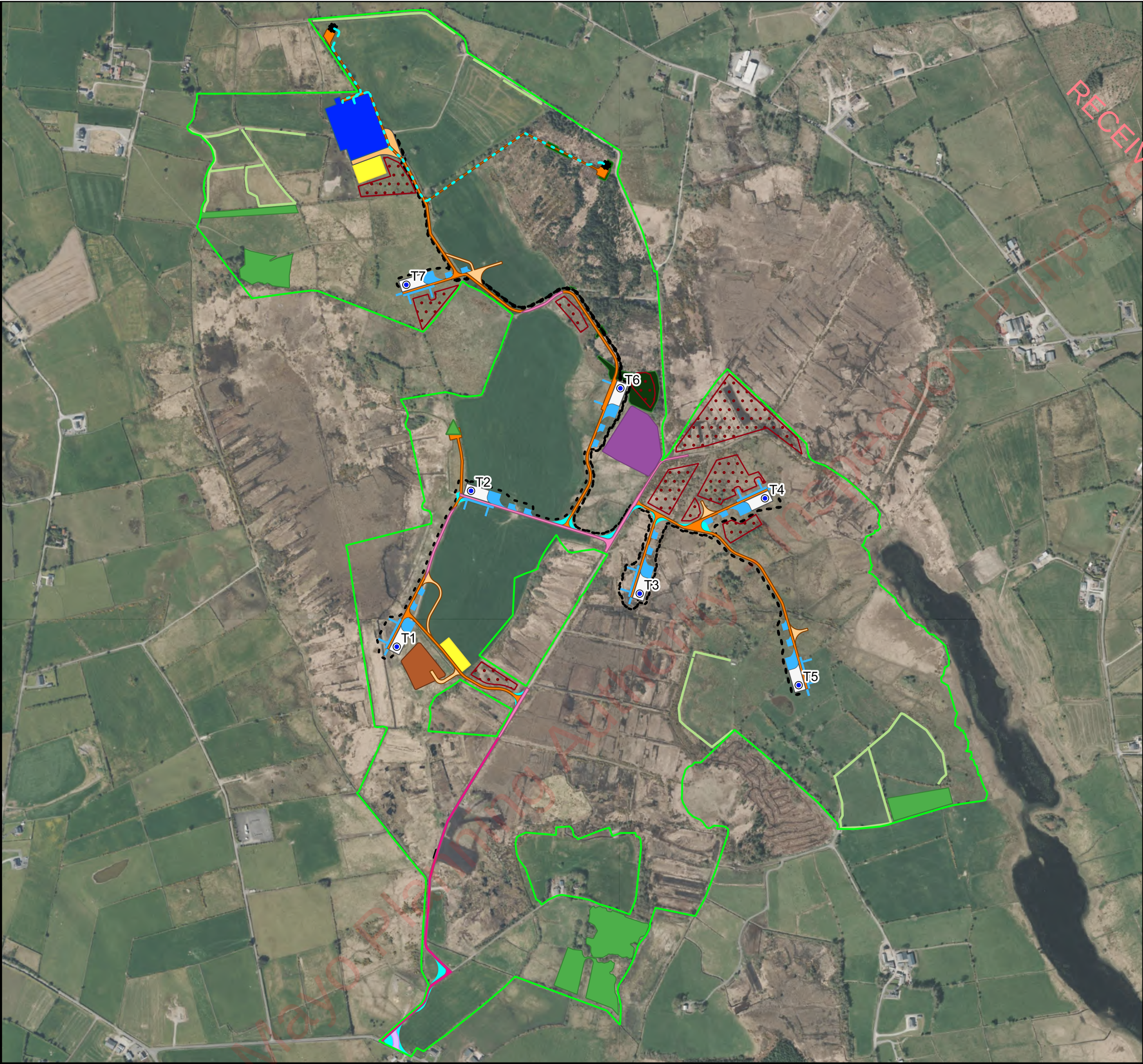
The existing uses of the Site will continue in conjunction with the Proposed Project.

Proposed Project Layout

The layout of the Proposed Wind Farm is shown on Figure 4-2. Detailed drawings of the Proposed Wind Farm can be found in Appendix 4-1. Figure 4-3 illustrates the Proposed Grid Connection, and detailed drawings of the grid connection (which is subject to a separate S182A Application to ACP) can be found in Appendix 4-2.

The Proposed Project has been designed to minimise potential environmental effects, while at the same time maximising the energy yield of the wind resource passing over the Site. A constraints study, as described in Chapter 3 of this EIAR, has been carried out to ensure that turbines and ancillary infrastructure are located in the most appropriate areas of the Site, making use of the existing access tracks within the Site where appropriate, thereby minimising the extent of proposed new access tracks required. Similarly, as described in Section 3.2.7 of this EIAR, a route selection constraints study was undertaken to ensure that the most appropriate route for the Proposed Grid Connection was selected.

The overall layout of the Proposed Project is shown on Figure 4-1, this illustrates the Proposed Wind Farm and the Proposed Grid Connection. This drawing shows the proposed locations of the 7 no. wind turbines and associated hardstands, the proposed onsite 110kV substation, the grid connection cabling route and end masts, meteorological (met) mast, peat and spoil management areas (PSMAs), the onsite borrow pit, temporary construction compounds, access tracks, hardstand areas and the proposed construction site entrance. Detailed site layout drawings of the Proposed Project are included in Appendix 4-1 of this EIAR.



Map Legend

EIAR Site Boundary

Proposed Turbines

Proposed Turbine Hardstands

Temporary Hardstand Areas

Proposed Borrow Pit

Peat and Spoil Management Areas

Proposed Met Mast

Proposed Internal Cables

Proposed Felling

Proposed 110kV Substation

Proposed Construction Compound

Proposed 110kV Grid Connection Cable Route

Proposed End Masts

Proposed Upgrade to Existing Access Tracks

Proposed New Access Tracks

Proposed Upgrade to Public Road

Temporary Construction Tracks

Temporary Site Entrance

Temporary Widening Areas

Proposed Passing Bay

Proposed Marsh Fritillary Enhancement Areas

Proposed Woodland Planting

Linear Planting and Enhancement

N

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E

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Drawing Title

Proposed Project

Project Title

Proposed Cunlaghfadda Green Energy Project

Drawn By

NS

Checked By

ÓM

Project No.

220825

Drawing No.

Figure 4-1

Scale

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Date

2026-04-24

MKO

MKO

MKO

Planning and Environmental Consultants

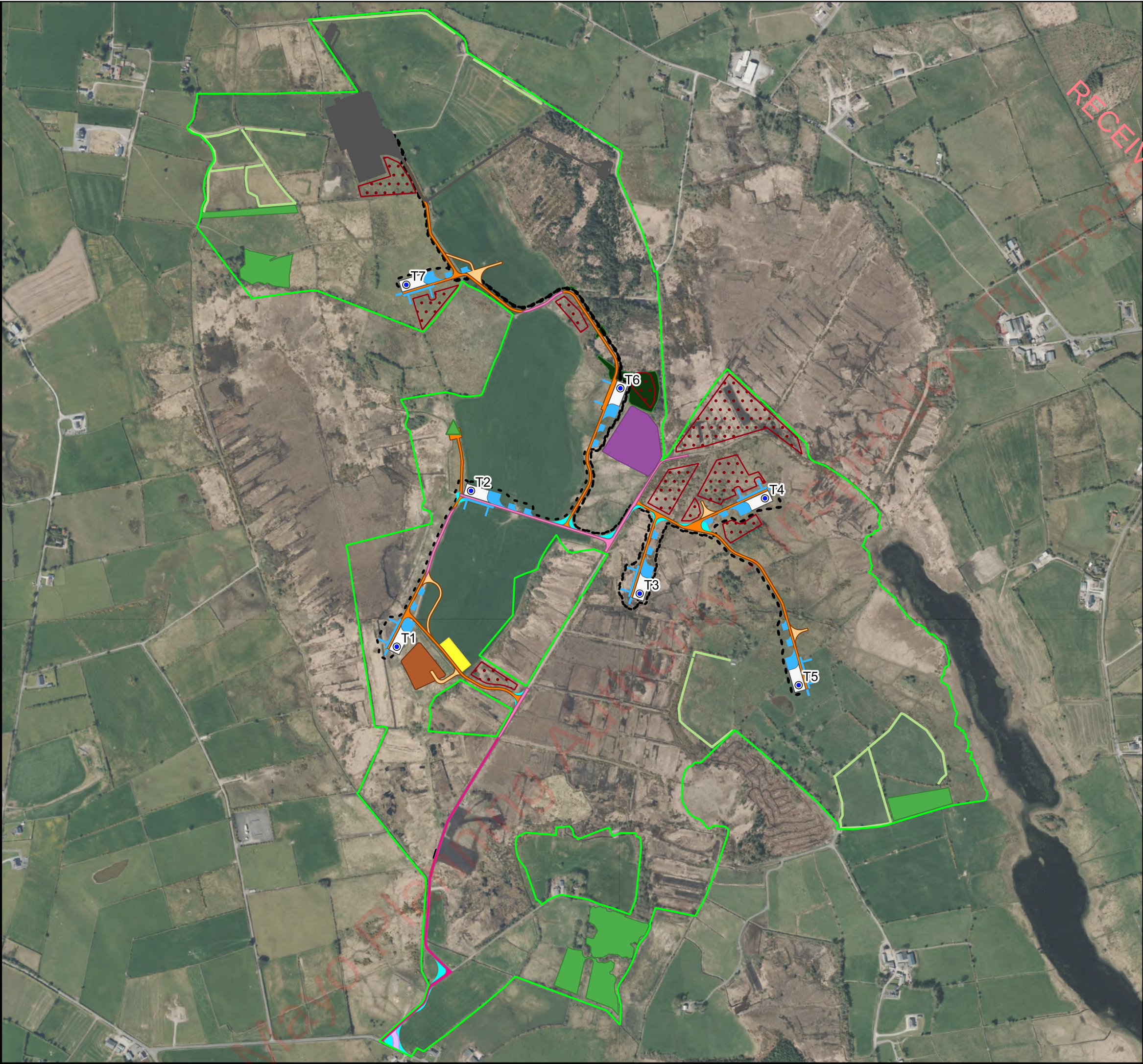
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Map Legend

EIAR Site Boundary

Proposed Turbines

Proposed Turbine Hardstands

Temporary Hardstand Areas

Proposed Borrow Pit

Peat and Spoil Management Areas

Proposed Met Mast

Proposed Internal Cables

Proposed Felling

Proposed Upgrade to Existing Access Tracks

Proposed New Access Tracks

Proposed Upgrade to Public Road

Temporary Construction Tracks

Temporary Site Entrance

Temporary Widening Areas

Proposed Passing Bay

Proposed Marsh Fritillary Enhancement Areas

Proposed Woodland Planting

Linear Planting and Enhancement

Separate S182a Infrastructure

N

O

Z

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Drawing Title

Proposed Wind Farm

Project Title

Proposed Cunlaghfadda Green Energy Project

Drawn By

NS

Checked By

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Project No.

220825

Drawing No.

Figure 4-2

Scale

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Date

2026-05-02

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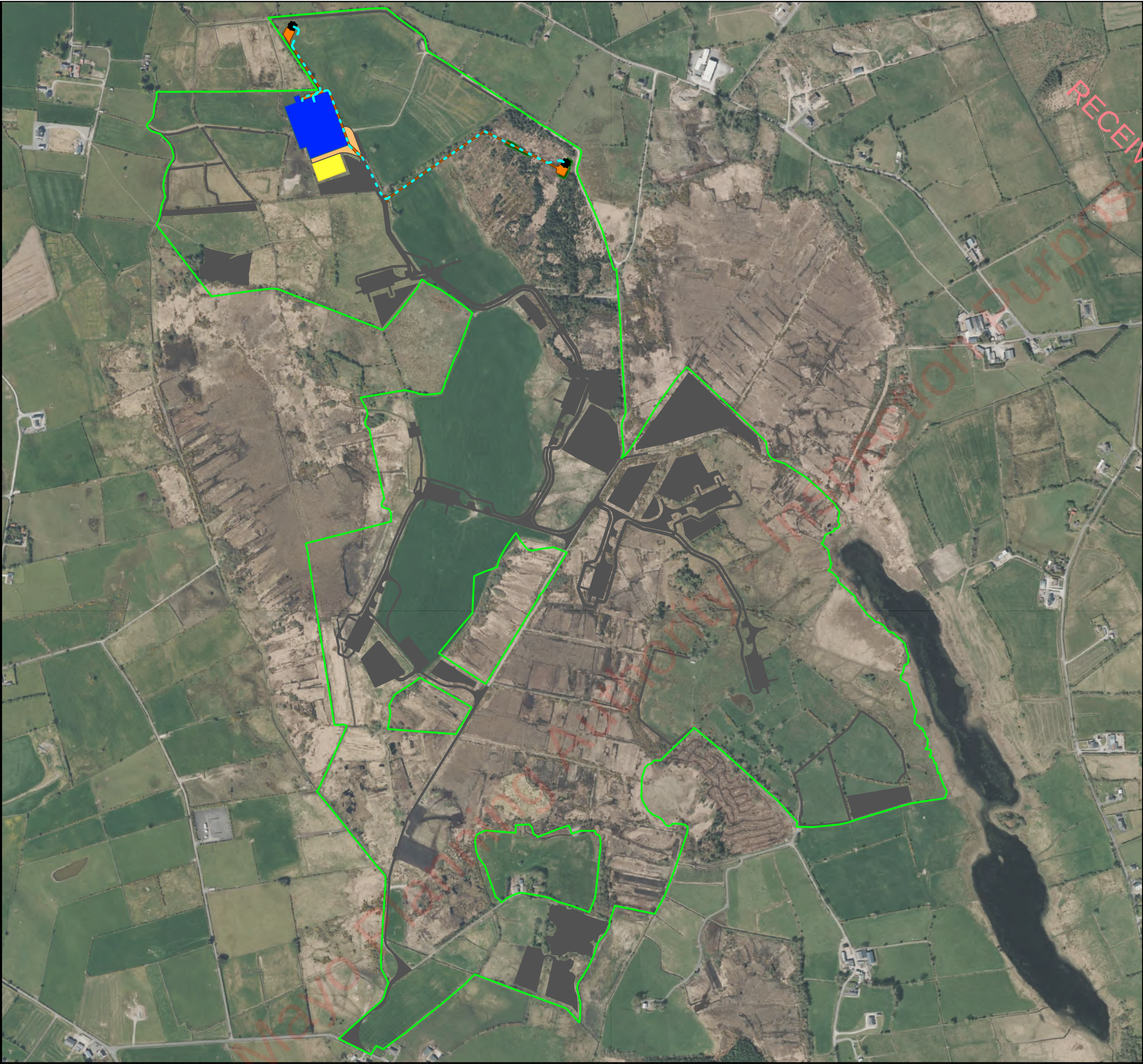
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Map Legend

- EIAR Site Boundary
- Proposed 110kV Substation
- Proposed Temporary Construction Compound
- Proposed 110kV Underground Grid Connection
- Proposed End Masts
- Proposed Felling
- Proposed Temporary Construction Tracks
- Proposed New Tracks
- S34 Infrastructure

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Drawing Title
Proposed Grid Connection

Project Title
Proposed Cunlaghfadda Green Energy Project

Drawn By NS	Checked By RK
Project No. 220825	Drawing No. Figure 4-3
Scale 1:8,000	Date 2026-05-02

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4.4

Proposed Project Components

This section of the EIAR describes the components of the Proposed Project. Section 4.4.1 provides a description of components relating to the Proposed Wind Farm and Section 4.4.2 provides a description of components relating to the Proposed Grid Connection. Descriptions of components relating to the Proposed Project (i.e. both the Proposed Wind Farm and Proposed Grid Connection) are provided in Section 4.4.3.

Further details regarding Site Activities (Section 4.5), Access and Transportation (Section 4.6), Site Drainage (Section 4.7), Construction Management (Section 4.8) and Construction Methodologies (Section 4.9) are provided subsequently in this chapter.

4.4.1

Proposed Wind Farm

4.4.1.1

Wind Turbines

4.4.1.1.1

Turbine Locations

The Proposed Wind Farm layout has been optimised using industry standard wind farm design software (WindPro) to maximise the energy yield from the Proposed Wind Farm, while maintaining sufficient distances between the proposed turbines to ensure turbulence and wake effects do not compromise turbine performance. The ITM Grid Reference coordinates of the proposed turbine locations are listed in Table 4-1 below. The final finished top of foundation level of the turbine foundations will be determined by the actual ground conditions at each proposed turbine location and may differ slightly from those levels listed in Table 4-1. This difference will be negligible and will not impact any assessments carried out as part of this EIAR.

Table 4-1 Proposed Wind Turbine Locations and Top of Foundation level

Turbine	ITM X	ITM Y	Top of Foundation Levels (metre OD)
1	528306	777860	63m
2	528467	778197	69m
3	528831	777975	59m
4	529101	778181	59m
5	529174	777777	63m
6	528789	778419	60m
7	528327	778643	66m

4.4.1.1.2

Site Investigation

As part of the design process for the Proposed Project, numerous intrusive site investigations were undertaken across the Site, to provide detail and clarity on the nature and extent of subsoils and bedrock as a means of characterising the Site. This assisted in providing additional information on the most suitable location for turbines and associated infrastructure.

Geotechnical ground investigations (i.e. trial pitting and rotary core borehole drilling) were undertaken at the Site on the 4th, 5th October 2023 and 14th, 15th August 2024, by Ground Investigations Ireland Ltd (GII) under the supervision of Hydro-Environmental Services (HES). The combined geological and hydrological dataset collected from the geotechnical ground investigations and from ground truthing site walkovers completed by HES, Fehily Timoney & Company Ltd. (FTC) and MKO has been used in the preparation of this EIAR Chapter.

The objectives of the intrusive site investigations included mapping the subsoil lithology for all proposed turbines and other key locations (i.e. internal access tracks and the proposed onsite 110kV substation), and assessing the underlying bedrock. This data was used to inform the final layout of the Site.

In summary, site investigations included the following:

- A total of 28 no. trial pits at all proposed turbine locations and at other key locations (i.e. access tracks, substation and borrow pit location) to investigate the underlying mineral soil lithology and subsoil/bedrock interface;
- 1 rotary core borehole at proposed borrow pit location;
- Logging of subsoil exposures across the site where mineral soils were exposed;
- Mineral subsoils and peat were logged according to BS: 5930.

Ground investigation in the form of trial pits were carried out on the Site, and rotary coring at the proposed borrow pit location was undertaken. The combined geological and hydrological dataset collected from the geotechnical ground investigations and from ground truthing site walkovers completed by HES, GII, FTC, and MKO have been used in the preparation of this EIAR Chapter.

The 28 no. trial pits were carried out at various locations across the Site in order to provide information on the ground conditions and underlying bedrock at turbine locations, along access tracks, and to investigate the potential to develop borrow pits within the Site. The 1 no. rotary core borehole was carried out to establish overburden conditions and rockhead and to establish the nature and integrity of the underlying bedrock at the proposed borrow pit location, and gain an understanding of the groundwater regime within the Site. Subsequent laboratory testing included the classification testing for overburden material and determination of dry density/moisture content relationship. The data obtained from the ground investigations and laboratory testing was used to inform the final layout of the Proposed Project. Further details on the ground investigations, including detailed results of the surveys, are provided in Appendix 4-3: Peat and Spoil Management Plan.

The complete geotechnical ground investigations were carried out in accordance with IS EN 1997-2 and BS5930:2015+A1:2020 Code of Practice for Ground Investigations with precedence given to IS EN 1997-2 where applicable.

4.4.1.1.3 Turbine Type

Wind turbines use the energy from the wind to generate electricity. A wind turbine, as shown in Plate 4-1 below, consists of four main components:

- Foundation unit;
- Tower;
- Nacelle (turbine housing); and,
- Rotor.



Plate 4-1 Wind Turbine Components

The proposed wind turbines to be installed on the Site will have the following dimensions:

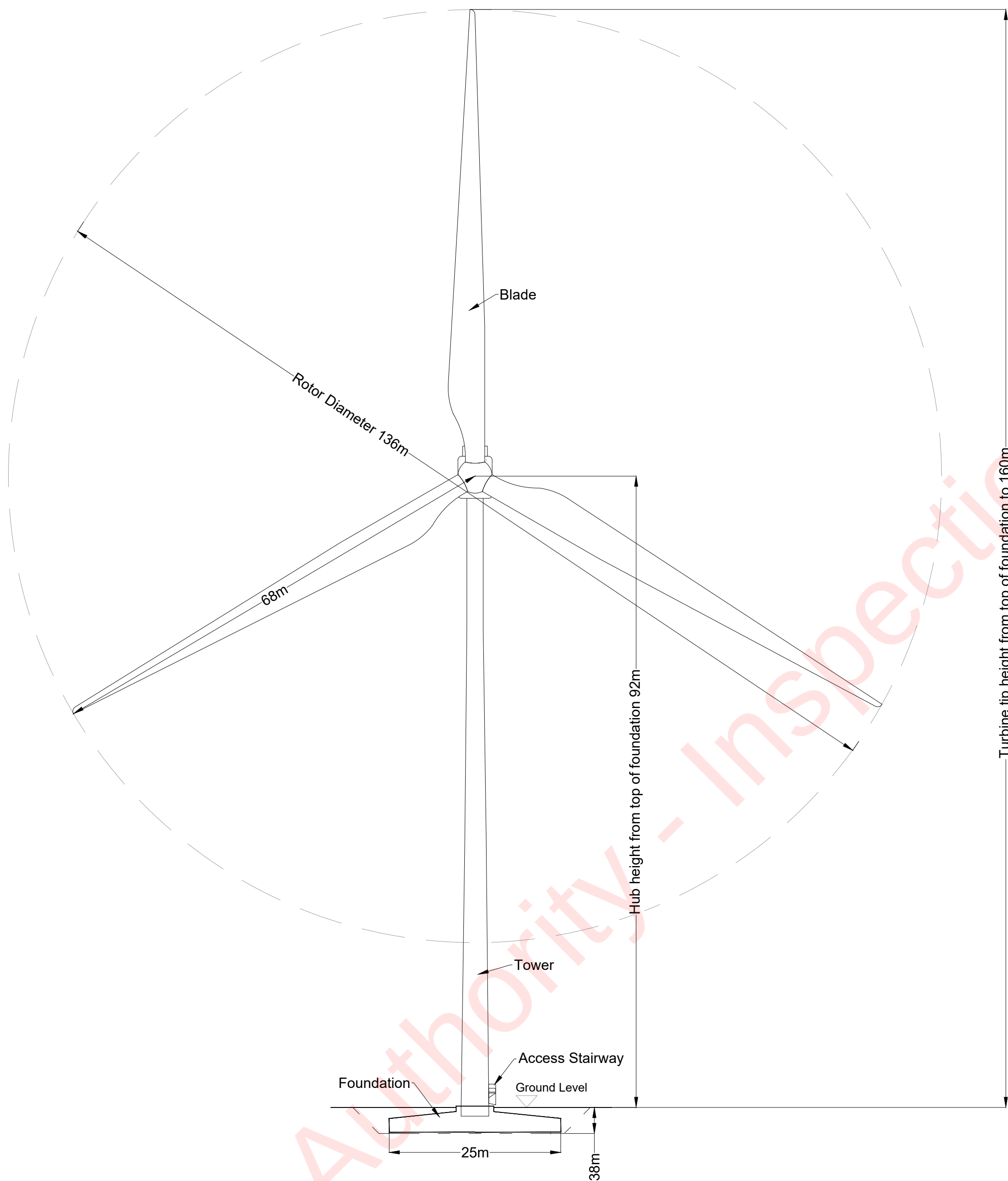
- > Turbine Tip Height of 160 metres;
- > Hub Height of 92 metres; and,
- > Rotor Diameter of 136 metres.

Modern wind turbines from the main turbine manufacturers have evolved to share a common appearance and other major characteristics. The wind turbines that will be installed on the Site will be conventional three-blade turbines, which will be geared to ensure the rotors of all turbines rotate in the same direction at all times.

For the purposes of this EIAR, the above turbine dimensions have been selected and considered in the relevant sections of the EIAR. Turbine design parameters have a bearing on the assessment of shadow flicker, noise, visual impact, traffic and transport and ecology (specifically birds), as addressed elsewhere in this EIAR.

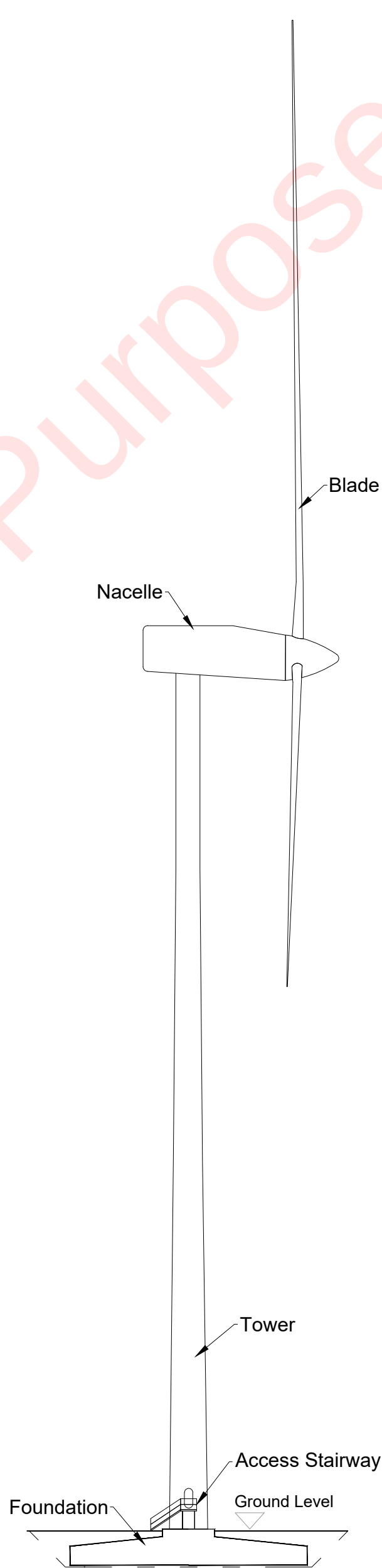
The turbines will be multi-ply coated to protect against corrosion. It is proposed that the turbines would be of a light grey colour to blend into the sky background to minimise visual impact as recommended in the 2006 WEDGs and 'The Influence of Colour on the Aesthetics of Wind Turbine Generators' (ETSU, 1999).

A drawing of the proposed wind turbine is shown in Figure 4-4. Figure 4-4 also shows the turbine base layout, including turbine foundation, hardstanding area, assembly area, access track and surrounding works area. The individual components of a geared wind turbine nacelle and hub are shown in Figure 4-5 below.



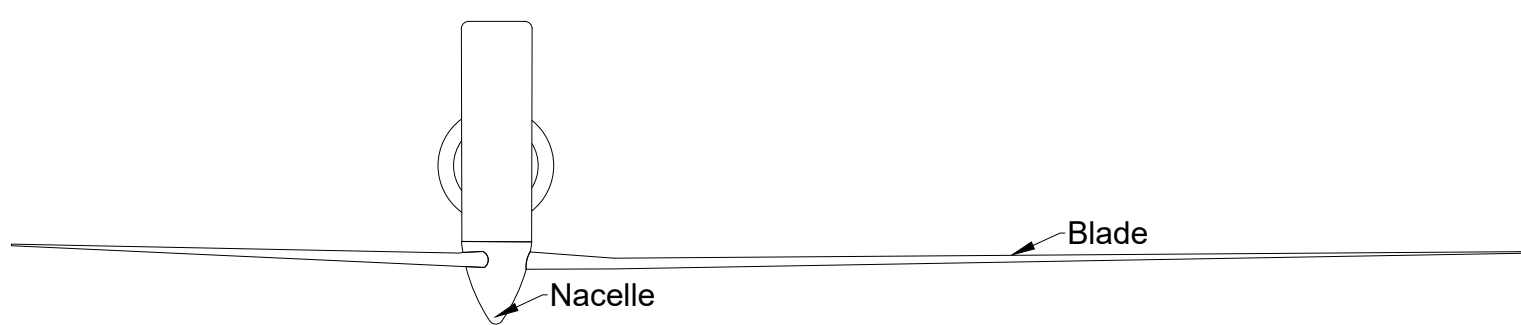
Front/Sectional
Elevation

Scale 1:500



Side/Section
Elevation

Scale 1:500



Plan

Scale 1:500

Drawing Notes

- Proposed wind turbines to have a maximum ground to blade tip height of 160m, rotor diameter of 136m and hub height of 92m

PROJECT TITLE: Cunlaghfadda Green Energy Project			
DRAWING TITLE: Wind Turbine Elevations and Plan			
PROJECT No.: 220825	DRAWING No.: Figure 4-4	SCALE: 1:500 @ A1	
DRAWN BY: FB	CHECKED BY: GO	DATE: 14.05.2026	REVISION: P01



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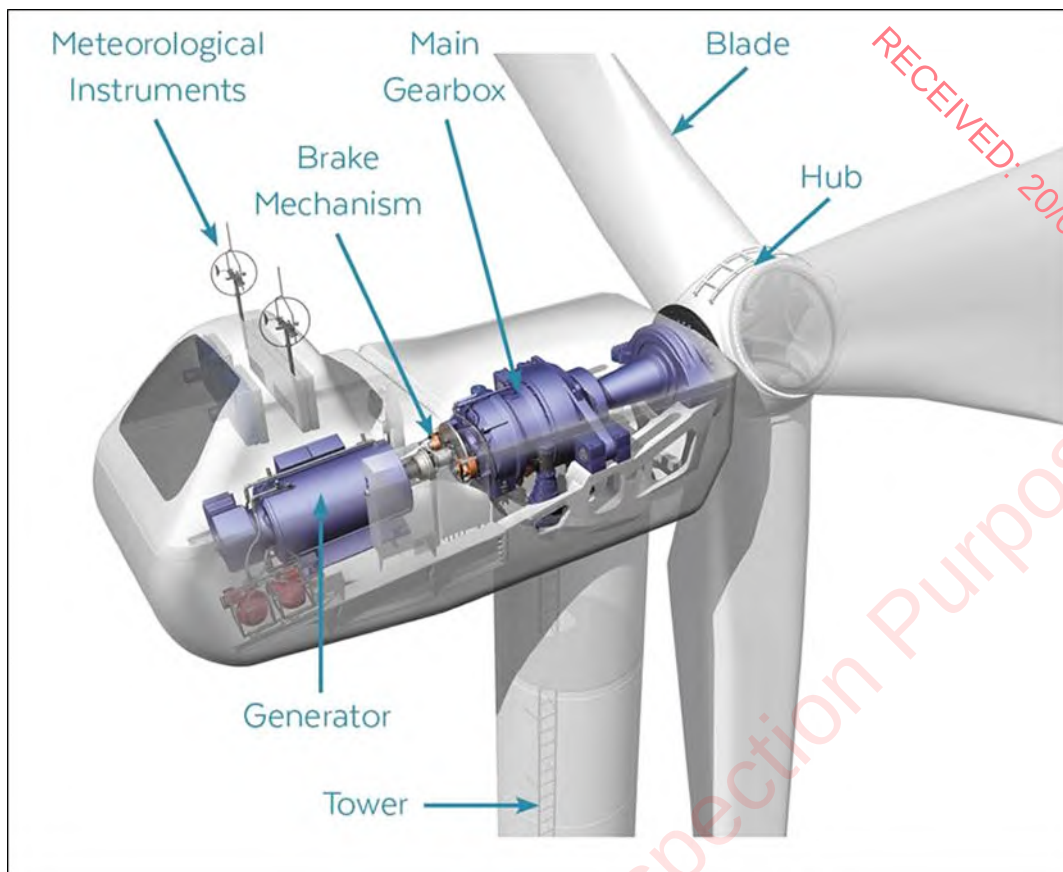
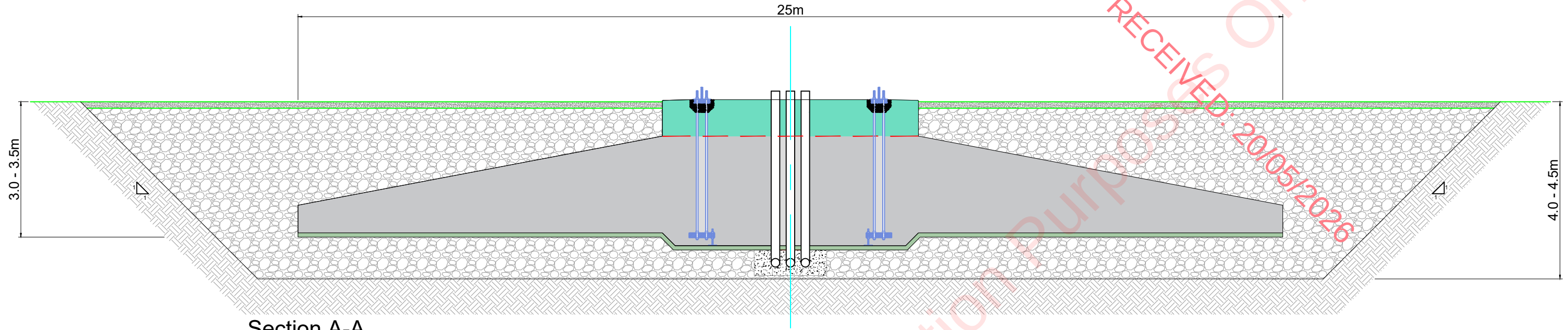


Figure 4-5 Turbine nacelle and hub components

4.4.1.1.4 Turbine Foundations

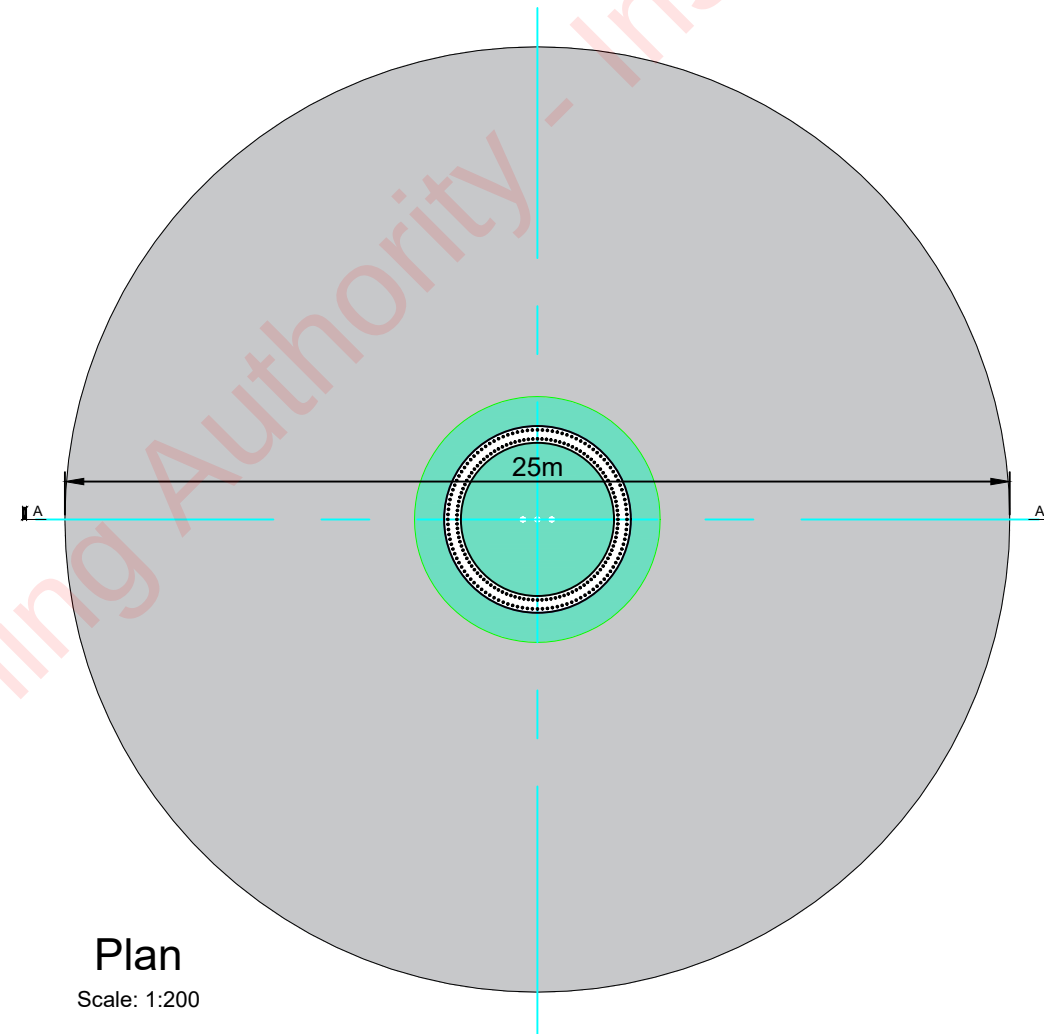
Each wind turbine is secured to a reinforced concrete foundation that is installed below the finished ground level. The size of the foundation will be dictated by the turbine manufacturer. Different turbine manufacturers use circular turbine foundations with some variation, depending on the requirements of the final turbine supplier, however, a foundation area large enough to accommodate modern turbine models has been assessed in this EIAR adopting a precautionary approach. The turbine foundation transmits any load on the wind turbine into the ground. The maximum horizontal and vertical extent of the turbine foundation will be approximately 25m and 3.5m respectively, which has been assessed in the EIAR and is shown in Figure 4-6.

After the foundation level of each turbine has been formed on competent strata (i.e., bedrock or sublayer of sufficient load bearing capacity), the turbine “Anchor Cage” (anchors the first section of the turbine tower to the foundation) is levelled, and reinforcing steel is built up around and through the anchor cage. The outside of the foundation is shuttered with demountable formwork to allow the pouring of concrete and is backfilled accordingly with appropriate granular fill to finished surface level (Plate 4-2 and Plate 4-3 below).



Section A-A

Scale 1:100



Plan

Scale: 1:200

PROJECT TITLE:			
Cunlaghfadda Green Energy Project			
DRAWING TITLE:			
Gravity Foundation Details			
PROJECT No.:	DRAWING No.:	SCALE:	
220825	Figure 4-6	As shown @ A3	
DRAWN BY: FB	CHECKED BY: GO	DATE: 14.05.2026	REVISION: P01



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Plate 4-2 Turbine Base Anchor Cage surrounded by reinforcing steel.



Plate 4-3 Finished Turbine Base

4.4.1.1.5 Hard Standing Areas

Hard standing areas consisting of levelled and compacted granular fill are required around each turbine base to facilitate access, turbine assembly and turbine erection. The hard-standing areas are used to accommodate cranes used in the assembly and erection of the turbine, offloading and storage of turbine components, and generally to provide a safe, level working area around each turbine position. The hard-standing areas are extended to cover the turbine foundations once the turbine foundation is in place. All crane hardstand areas will be designed taking account of the loadings provided by the turbine manufacturer and will consist of a compacted stone structure. The main body of the crane

hardstands (i.e. permanent footprint not including the blade fingers and crane pads) will be constructed in a similar manner to the excavated site roads. The turbine hardstand area will measure approximately 25m x 50m. Please see Figure 4-4 for further detail.

The precise sizes, arrangement and positioning of hard standing areas are dictated by turbine manufacturers. The hard-standing area is intended to accommodate a crane during turbine assembly and erection. The layout represents the full extent of the hard standing areas but may be subject to optimisation according to the turbine manufacturer's specific requirements. Please see Section 4.9.3.2.2 below for construction methodology of turbine hardstand areas.

Figure 4-6 shows a turbine base layout (Turbine No. 1), including turbine foundation, hard standing area, blade lay-down area, access track and surrounding works area. The proposed hard standing areas for each individual turbine are shown as part of the detailed layout drawings included in Appendix 4-1 and using the precautionary principle, represent the maximum sizes required.

A temporary construction area has been identified around each of the proposed turbines hardstand areas which include for the provision of crane pads and blade fingers; these areas will be utilised during the construction phase to facilitate all works with the construction of the proposed turbines and associated infrastructure. These temporary construction areas are shown within the planning drawings included as Appendix 4-1 to this EIAR.

4.4.1.1.6 **Assembly Area**

Levelled assembly areas will be located on either side of the hard-standing area as shown on Figure 4-6 above. These assembly areas are required for offloading turbine blades, tower sections and hub from trucks until they are ready to be lifted into position by cranes and to assist the main crane during turbine assembly. The layout represents the full extent of the assembly areas but may be subject to optimisation according to the turbine manufacturer's specific requirements. The extent of the area required for the assembly areas is shown on Figure 4-6 and the detailed site layout drawings in Appendix 4-1.

4.4.1.1.7 **Generating Capacity**

Modern onshore wind turbine generators currently have a typical generating capacity in the 4 to 7 MW range, with the generating capacity continuing to evolve upwards as technology improvements are achieved by the turbine manufacturers. Turbines of the exact same make, model and dimensions can have different generating potential depending on the capacity of the electrical generator installed in the turbine nacelle. The exact generating capacity of the installed turbine will be designed to match the wind regime on the Site and will be determined by the selected manufacturer. For the purposes of this EIAR, a rated generating capacity of 4.5MW has been chosen to calculate the potential capacity of the proposed 7 no. turbine renewable energy development, which would result in an estimated installed capacity of 31.5 MW.

Based on this estimated installed capacity, the Proposed Wind Farm therefore has the potential to produce 96,579 MWh (Megawatt hours) of electricity per year, based on the following calculation:

$A \times B \times C = \text{Megawatt Hours of electricity produced per year}$

where: A = The number of hours in a year: 8,760 hours

B = The capacity factor, which takes into account the intermittent nature of the wind, the availability of wind turbines and array losses etc. A capacity factor of 35%¹ is used here.

C = Rated output of the wind farm: 31.5 MW

The 96,579 MWh of electricity produced by the Proposed Wind Farm would be sufficient to supply approximately 19,542 Irish households with electricity per year, based on the average Irish household using 4.942 MWh of electricity² (this latest figure is based on an average of the household energy usage between 2005-2022, as available on the SEAI 'Ireland's energy statistics – Residential' online data tool).

The 2022 Census of Ireland recorded a total of 52,114 occupied households in Co. Mayo. Per annum, based on a capacity factor of 35%, the Proposed Project would therefore produce sufficient electricity for the equivalent of 37% of the households in Co. Mayo.

4.4.1.2 **Underground Electrical (20/33kV) and Communications Cabling**

Each turbine and the meteorological mast (refer to Section 4.4.1.3 below) will be connected to the on-site 110kV electricity substation (part of the Proposed Grid Connection) via underground 20/33 kV (kilovolt) electricity cabling. Fibre-optic cables will also connect each wind turbine and the met mast to the proposed onsite 110kV substation. The electricity and fibre-optic cabling connecting to the proposed on-site 110kV substation compound will be run in cable ducts approximately 1.2 metres beneath ground level, along the sides of access track or under the access tracks. The route of the cable ducts will follow the access track to each turbine location and are illustrated on the site layout drawings included as Appendix 4-1; the exact number and configuration of cable ducting may vary within the cabling trench. Figure 4-7 below shows two variations of a typical cable trench, one for off-access track trenches and one for on-access track trenches. The cabling may be placed on either side of the access tracks, on both sides of the access track and/or within the access track. The exact configuration of the underground cabling will be set by the requirements of the electrical designers at detailed design stage.

Clay plugs (water flow barrier) will be installed at regular intervals of not greater than 50 metres along the length of the trenches where required to prevent the trenches becoming conduits for runoff water. Backfill material will be compacted in layers with approved engineer's specified material, which may be imported onto the Site should sufficient volumes of suitable material not be encountered during the excavation phase of the trenches.

4.4.1.3 **Meteorological Mast**

One meteorological (met) mast is proposed as part of the Proposed Wind Farm. The met mast will be equipped with wind monitoring equipment at various heights. The proposed met mast will be located at E528428, N778335 (ITM), as shown on the Proposed Project layout drawing in Figure 4-1 above and in the detailed site layout drawings included as Appendix 4-1 of this EIAR. The mast will be a free-standing slender lattice structure 92 metres in height. The mast will be constructed on a hard-standing area sufficiently large to accommodate the equipment that will be used to erect the mast. The proposed meteorological mast is shown in Figure 4-8.

¹ Enduring Connection Policy 2.4 Solar and Wind Constraints Report: Assumptions and Methodology < [ECP.2.4-Solar-and-Wind-Constraints-Report-Assumptions-and-Methodology-v1.1.pdf](#) > The Subject Development is located within the A wind region for Ireland with an associated capacity factor of 35%.

² SEAI Energy and Data Insights 'Ireland's energy statistics – Residential' online data tool. Available at: <https://www.seai.ie/data-and-insights/seai-statistics/residential>

4.4.1.4 Temporary Construction Compound

A temporary construction compound measuring approximately 1,875m² in area will be located in the southern section of the Site, approximately 130m from the site entrance.

The location of the proposed construction compound is shown on the Proposed Project layout drawing in Figure 4-1. The layout of this construction compound is shown on Figure 4-9 below.

The temporary construction compound will include a bunded refuelling and containment area for the storage of lubricants, oils and site generators etc, and full retention oil interceptor, waste storage area, temporary site offices, staff facilities and car-parking areas for staff and visitors. Temporary port-a-loo toilets and toilets located within a staff portacabin will be used during the construction phase.

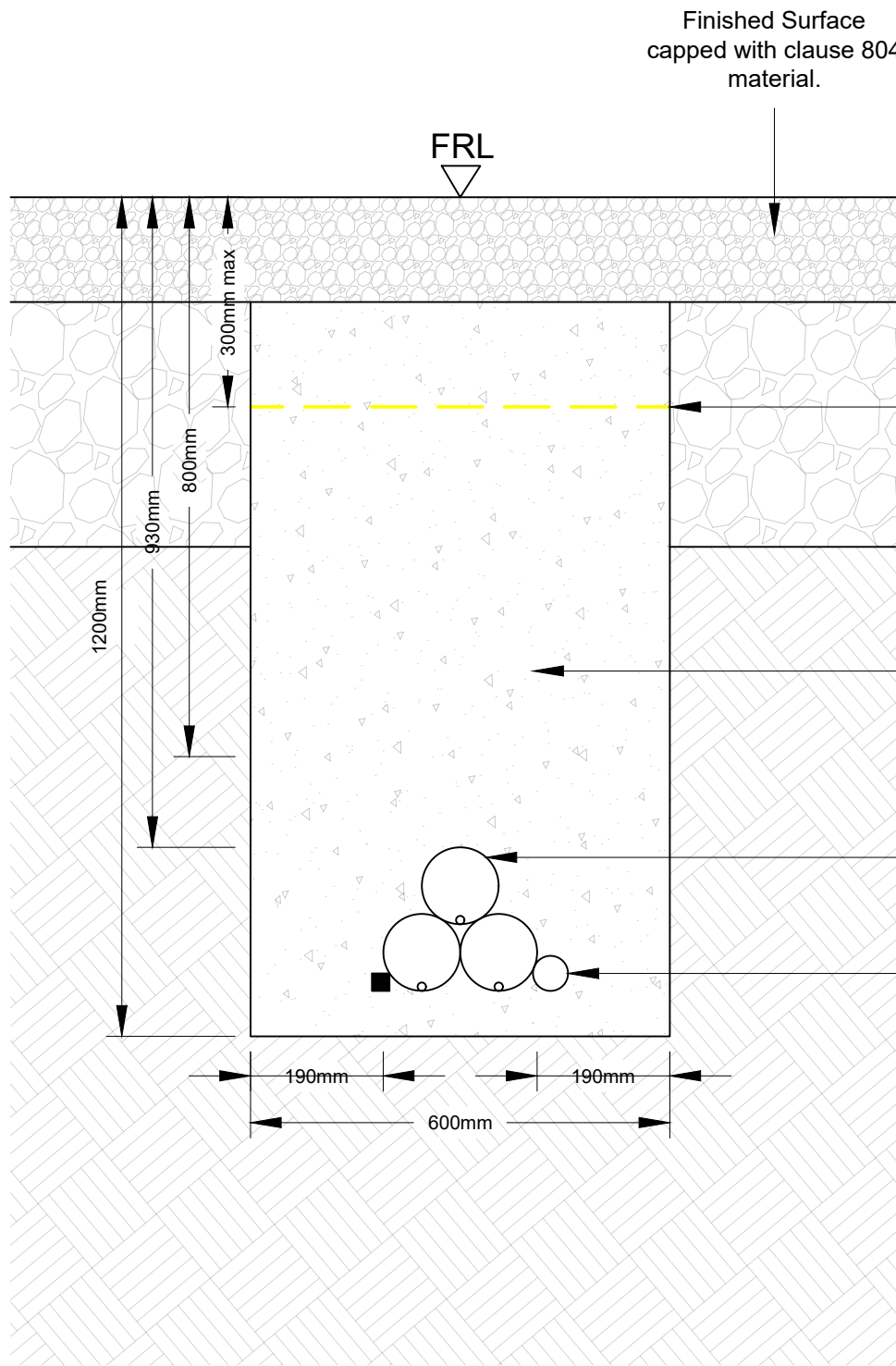
Wastewater from staff toilets will be directed to a sealed storage tank, with all wastewater being tankered off site by a permitted waste collector to wastewater treatment plants. There will also be a water supply on site for hygiene purposes, by way of a temporary storage tank.

The temporary construction compound will be removed as part of the post-construction reinstatement works of the Proposed Wind Farm. The concrete foundations of the compound will be left in situ and will be left to revegetate naturally.

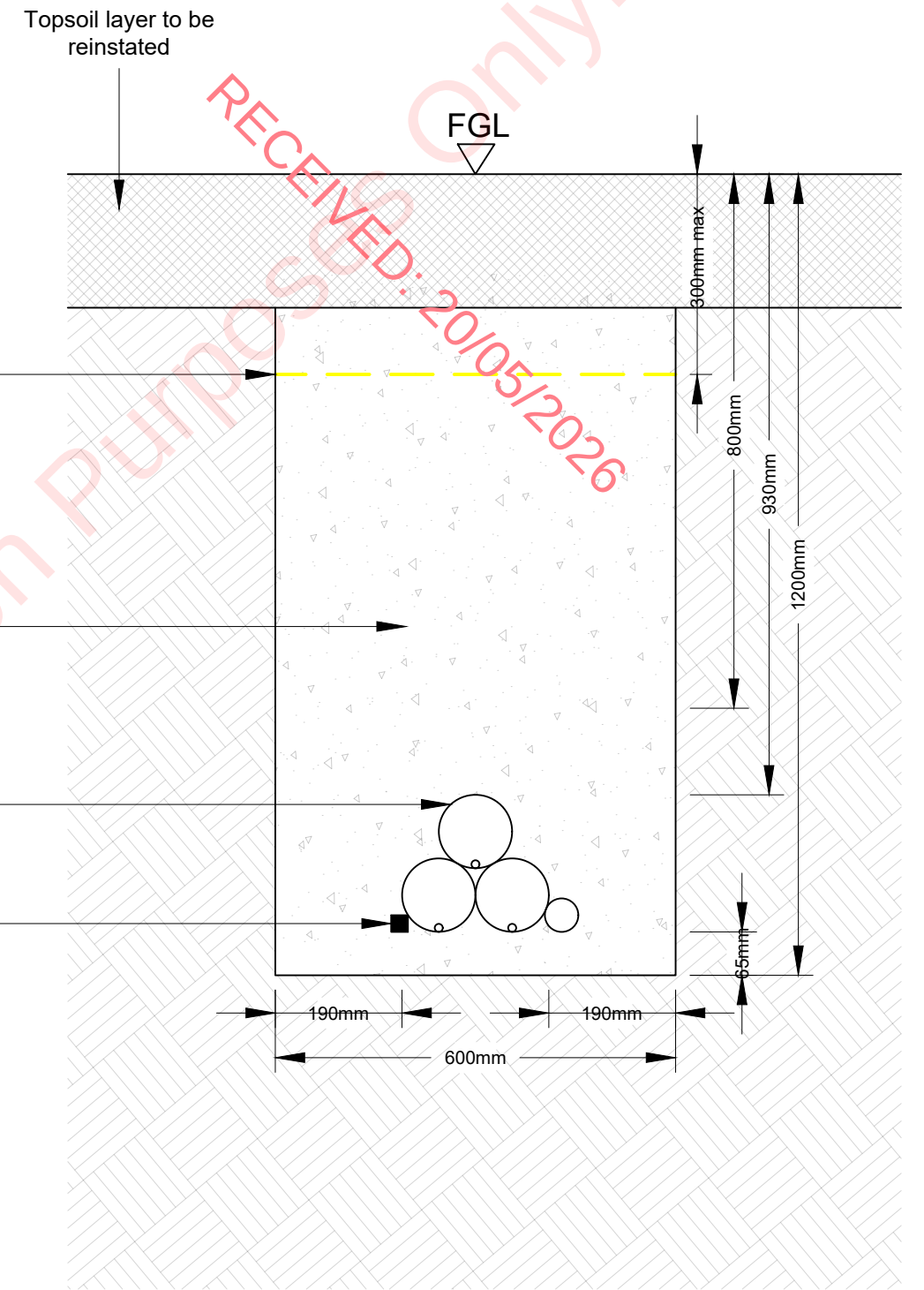
A temporary construction compound will also be located at the proposed onsite 110kV substation and will form part of a separate Section 182A application for the Proposed Grid Connection. Please see section 4.4.2.3 for details.

4.4.1.5 Temporary Security Cabins

There will be 2 no. temporary security cabins with traffic barriers for the control of traffic into and out of the wind farm site during the construction phase, one of which will be located approximately 281m east of T01 at the internal wind farm access junction, and the second of which will be located approximately 615m north of this, approximately 243m west of T04. The detail of the proposed security cabin is shown in Figure 4-10.



20/33kV Cable - On Track Trench Detail - Cross Section

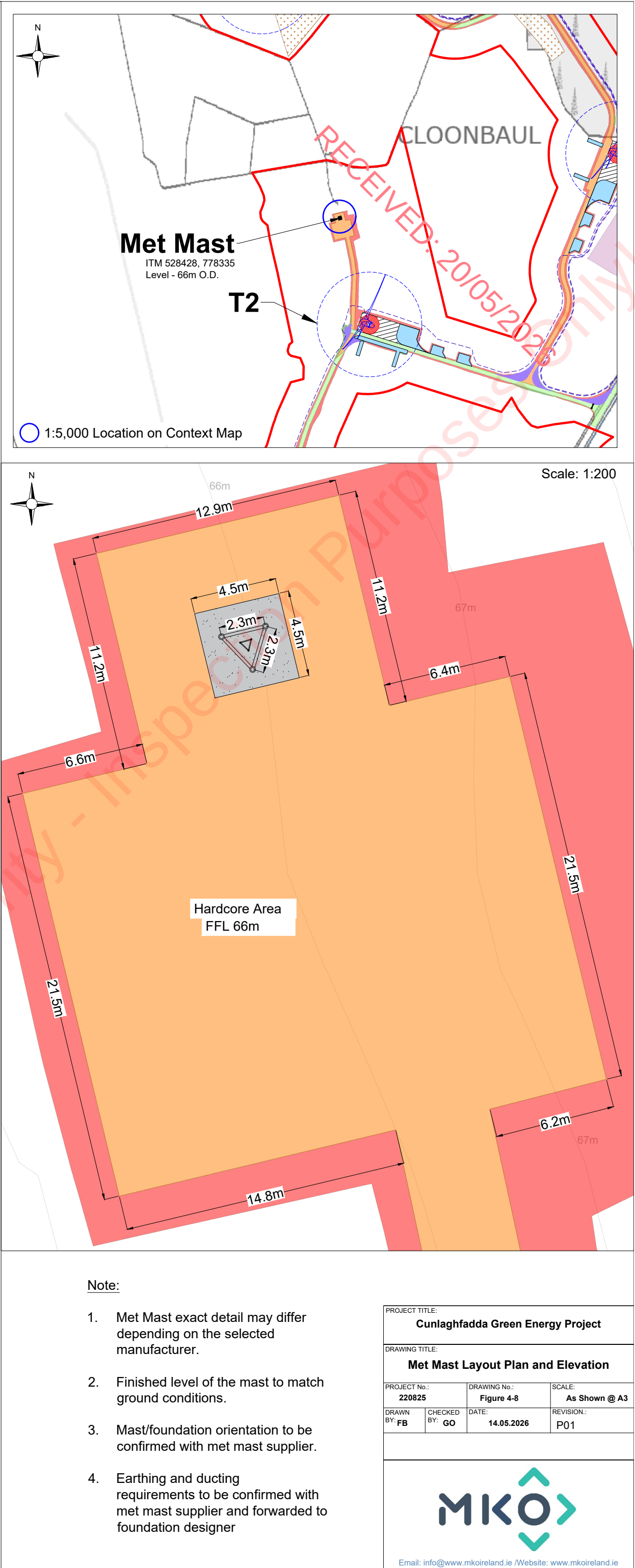
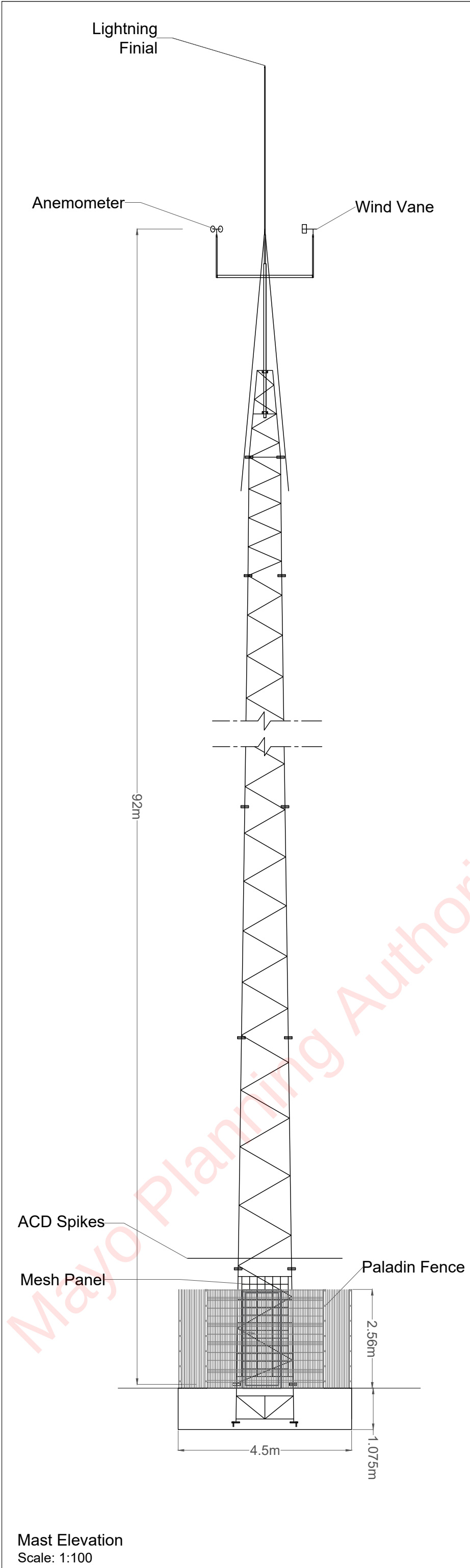


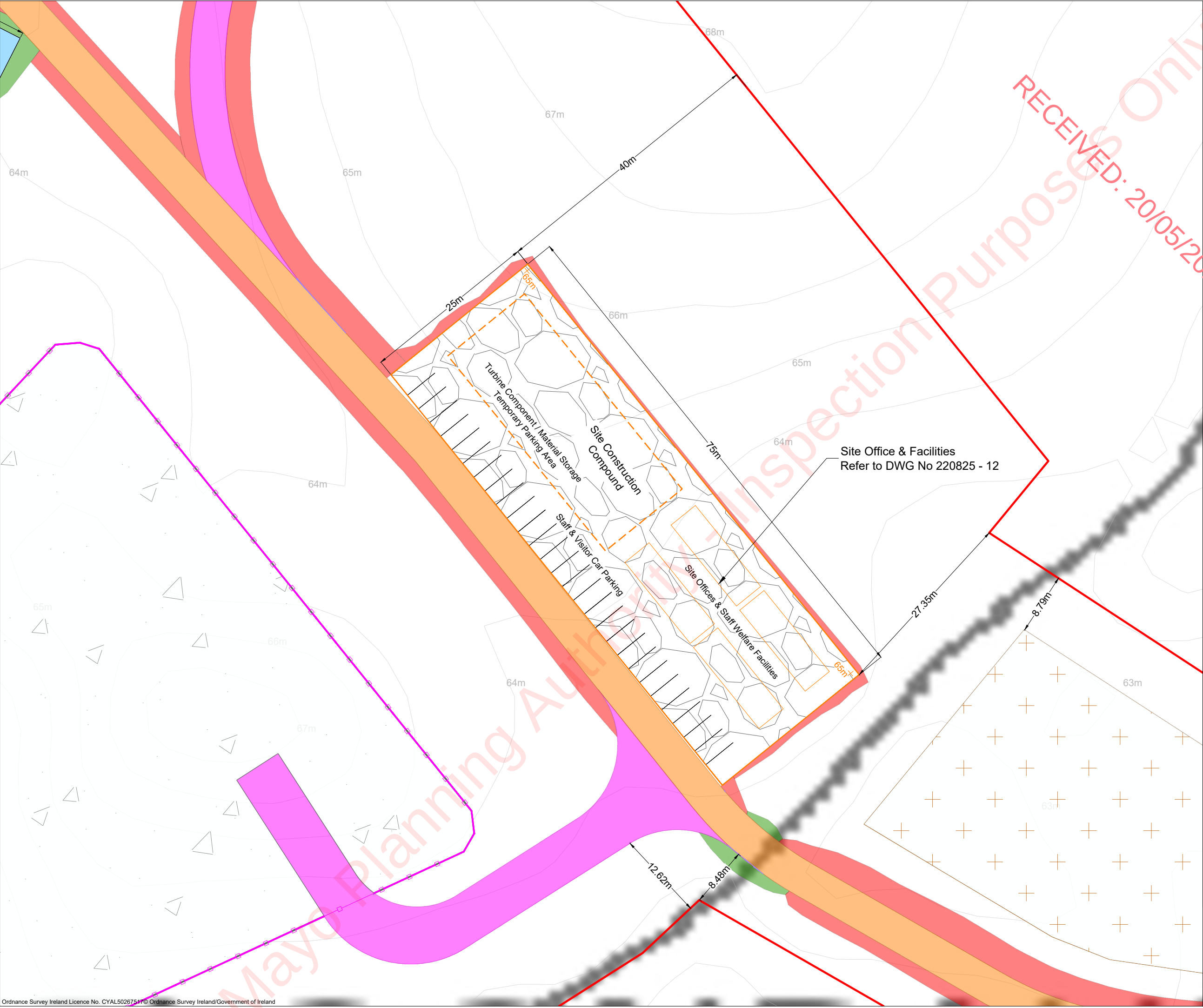
20/33kV Cable - Off Track Trench Detail - Cross Section

PROJECT TITLE:			
Cunlaghfadda Green Energy Project			
DRAWING TITLE:			
20/33kV Cable Trench Sections			
PROJECT No.:	DRAWING No.:	SCALE:	
220825	Figure 4-7	1: 10 @ A3	
DRAWN BY:	CHECKED BY:	DATE:	REVISION.:
FB	GO	14.05.2026	P01



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 7. Layout plans show typical Turbine rotor diameter as per turbine drawing.
 8. Final levels may vary depending on local ground conditions.

- Drawing Legend**
- Planning Application Boundary
 - Proposed new access track (permanent)
 - Temporary Construction Tracks
 - Peat and Spoil Management Areas
 - Temporary Construction Compound
 - Borrow Pit
 - Cut
 - Fill
 - Temporary Hardstand Areas
 - Borrow Pit Fence



PROJECT TITLE:
Cunlaghfadda Green Energy Project

DRAWING TITLE:
Temporary Construction Compound

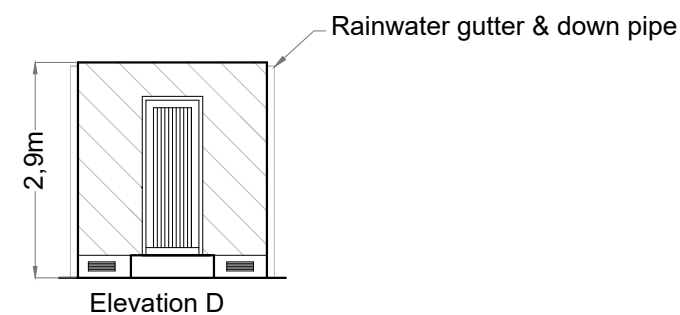
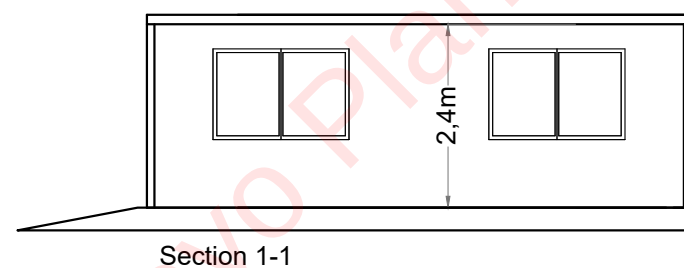
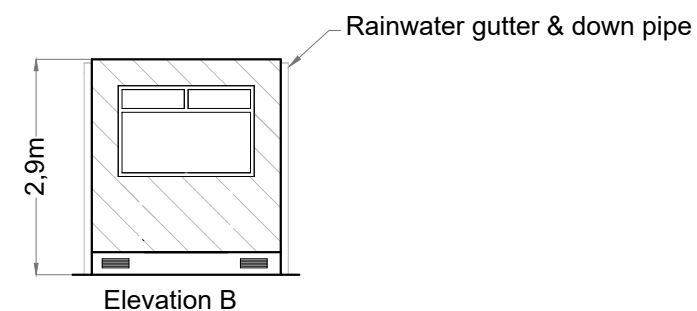
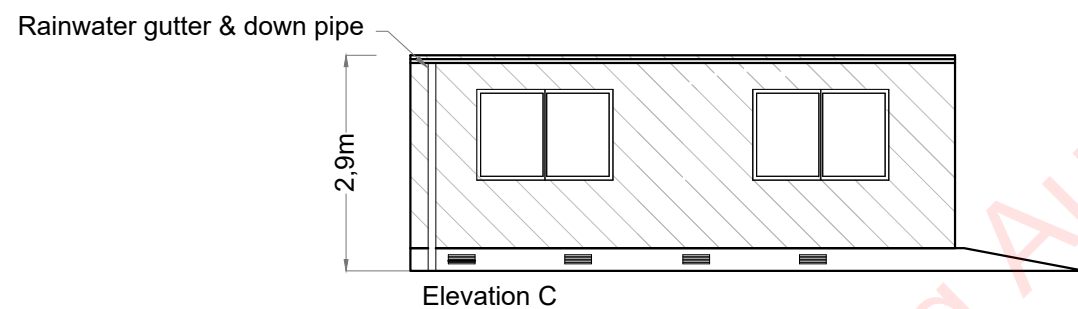
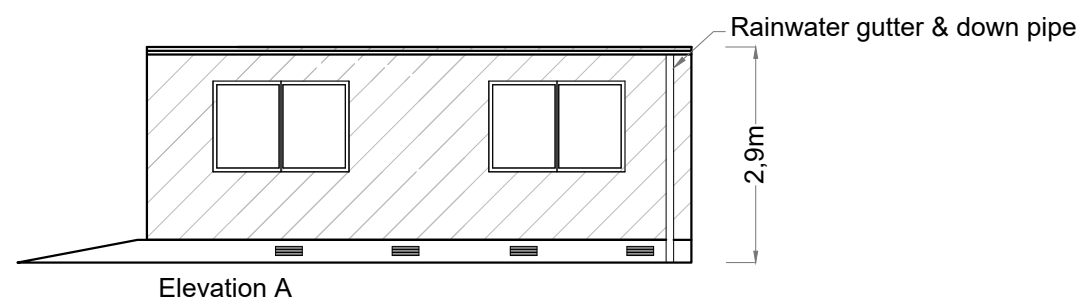
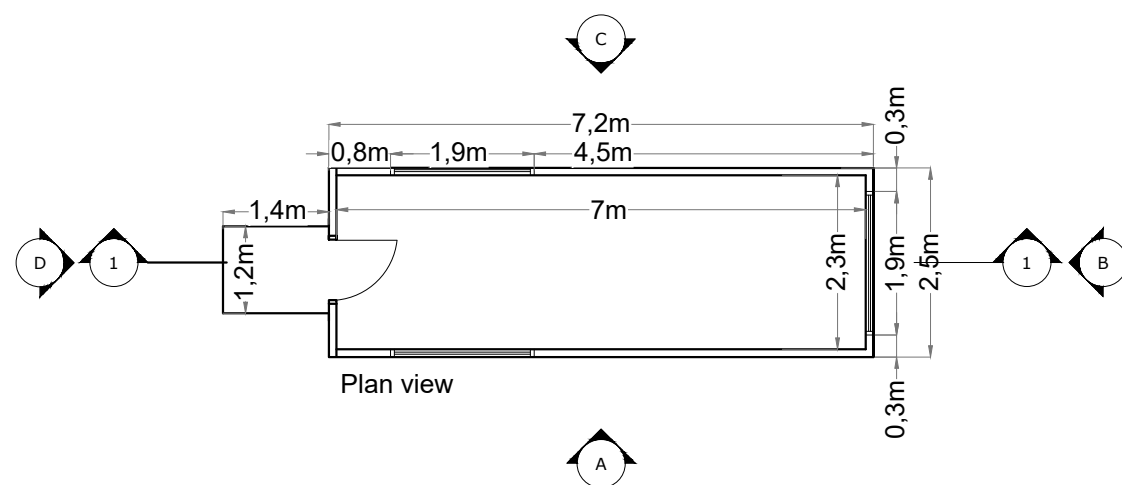
PROJECT No.: 220825	DRAWING No.: Figure 4-9	SCALE: 1:500 @ A3
DRAWN BY: FB	CHECKED BY: GO	DATE: 14.05.2026
		REVISION: P01

OS SHEET No.:
2209,2210,2273,2274



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Note:
All dimensions are in meters, unless noted otherwise.
All dimensions to be checked on site and any discrepancy to be reported to the engineer.
Figured dimensions only to be used, drawings not to be scaled. If in doubt ask.
For illustration purposes only. Exact size and appearance of unit subject to manufacturer selection.



PROJECT TITLE: Cunlaghfadda Green Energy Project			
DRAWING TITLE: Security Cabin Detail			
PROJECT No.: 220825	DRAWING No.: Figure 4-10	SCALE: 1:100 @ A3	
DRAWN BY: FB	CHECKED BY: GO	DATE: 14.05.2026	REVISION.: P01



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4.4.1.6 Borrow Pit

It is estimated that approx. 54,000m³ of stone material will be required to construct the Proposed Wind Farm. It is intended to obtain materials (approx. 16,000m³) for the construction of the Proposed Wind Farm from the proposed on-site borrow pit (with the remaining 38,000m³ to come from local licenced quarries). Please see Figure 4-11 for details of the proposed borrow pit. The proposed on-site borrow pit is located directly to the southeast of T1 and measures approximately 5,525m² with a volume of 16,000m³. Please see Appendix 4-3 for further detail.

Access to the borrow pit will be via the temporary construction track, constructed according to the methodology in Section 4.9.3.2.2. Post-construction, the borrow pit will be backfilled with excavated peat and spoil, with the majority of the material backfilled with non-peat spoil, then reseeded or left to vegetate naturally.

The extraction of material from the borrow pit is a construction phase activity only of the Proposed Wind Farm which will be a temporary operation run over a short period of time. Hardcore materials will be extracted from the borrow pit (and some turbine locations, if necessary), principally by means of rock breaking. Depending on the hardcore volume, blasting may also be used as a more effective rock extraction method, capable of producing significant volumes of rock in a matter of milliseconds. These two methods are discussed below. The processing and crushing of cobbles and boulders may be required to achieve the grading requirements for use in construction. The potential noise and vibration impact on sensitive receptors associated with the rock extraction measures, are assessed in Chapter 12 of this ELAR. Post-construction, any unsafe areas around the borrow pit area will be permanently secured, and a stock-proof fence will be erected around the borrow pit area to prevent access to this area. Appropriate health and safety signage will also be erected on this fencing and at locations around the fenced area.

The estimated volume of crushed stone to be extracted from the borrow pit and required for the construction of the Proposed Project is approx. 16,000m³. This is the anticipated maximum volume; however, the actual volumes to be removed from the borrow pit will be confirmed at the time of construction and following detailed pre-construction site investigation works.

4.4.2 Proposed Grid Connection

As discussed above in section 4.1.1, the Proposed Grid Connection will be subject to a separate planning application under Section 182A of the Planning and Development Act, 2000 (as amended). The Proposed Grid Connection is detailed in Appendix 4-2 of this EIAR.

4.4.2.1 Onsite 110kV Electrical Substation

It is proposed to construct a 110kV substation within the Site as shown in Figure 4-2. The proposed 110kV substation is located at the northwest of the Site, in the townland of Cloonbaul. The construction and exact layout of electrical equipment in the on-site electricity substation will be to Eirgrid/ESB Networks specifications. Access to the substation will be through internal wind farm access tracks which are accessed from the L-15053 to the south of the Site. Upon decommissioning of the Proposed Wind Farm, the 110kV substation within Cloonbaul townland will remain in situ and form part of the national grid infrastructure.

The footprint of the proposed onsite 110kV substation compound measures approximately 12,405m² in area and will include 2 no. control buildings and the electrical substation components necessary to consolidate the electrical energy generated by each wind turbine, and export that electricity from the proposed onsite 110kV substation to the national grid. The layouts and elevations of the proposed onsite 110kV substation are shown on Figure 4-12 - 4-14.

Further details regarding the connection between the proposed onsite 110kV substation and the national electricity grid are provided in Section 4.9.2 below.

The proposed onsite 110kV substation compound will include steel palisade fencing (approximately 2.6 metre high or as otherwise required by ESB), and internal fences will also segregate different areas within the main substation. Please see Figure 4-15 for fencing details.

4.4.2.2 Wind Farm Control Buildings

Two substation control buildings will be located within the substation compound. The Transmission System Operator (TSO) Control Building will measure approximately 437.5m². The Independent Power Producer (IPP) Control Building will measure approximately 2164m². The layouts of the control buildings are shown on Figure 4-16 and Figure 4-17.

The substation control buildings will include staff welfare facilities for the operational phase of the project. Bottled water will be supplied for drinking, if required. Toilet facilities will be installed with a low-flush cistern and low-flow wash basin. Due to the specific nature of the Proposed Grid Connection, there will be a very small water requirement for occasional toilet flushing and hand washing and therefore the water requirement of the control buildings does not necessitate a potable source. It is proposed to either harvest rainwater from the roofs of the buildings or, alternatively, install a groundwater well adjacent to the substation in accordance with the Institute of Geologists Ireland, *Guide for Drilling Wells for Private Water Supplies* (IGI, 2007). The well will be flush to the ground and covered with a standard manhole. A pump house is not required as an in-well pump will direct water to a water tank within the roof space of the control building.

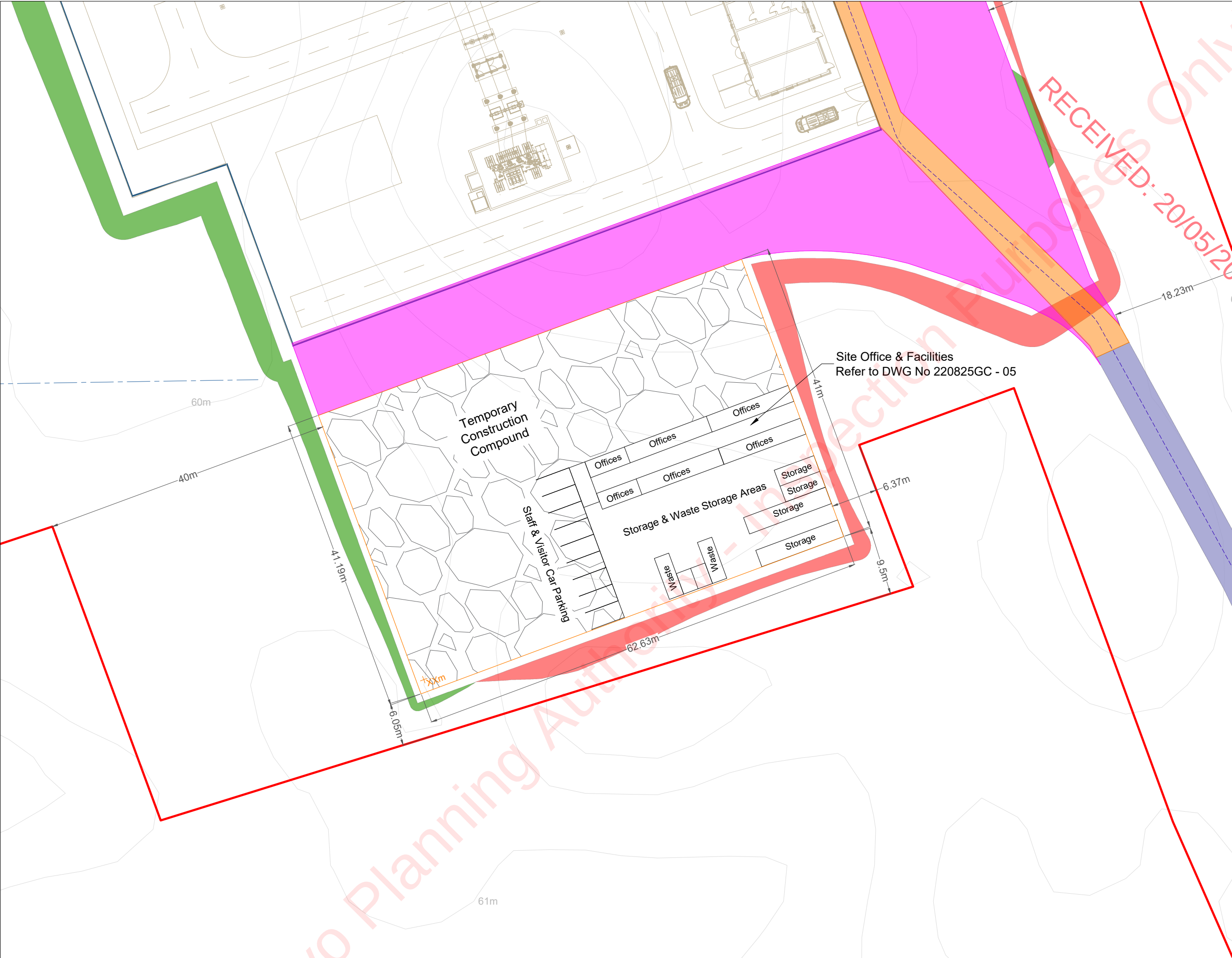
It is not proposed to treat wastewater on-site. Wastewater from the staff welfare facilities in the control buildings will be managed by means of a sealed underground storage tank, with all wastewaters being tankered off site by a permitted waste collector to a licenced wastewater treatment plant.

Such a proposal for managing the wastewater arising on-site has become almost standard practice on wind farm sites, which are often proposed in areas where finding the necessary percolation requirements for on-site treatment would be challenging and has been accepted by numerous Planning Authorities and An Coimisiún Pleanála as an acceptable proposal.

The proposed wastewater storage tank will be fitted with an automated alarm system that will provide sufficient notice that the tank requires emptying. Full details of the proposed tank alarm system can be submitted to the Planning Authority in advance of any works commencing on-site. The wastewater storage tank alarm will be part of a continuous stream of data from the sites' turbines, wind measurement devices and electricity substation that will be monitored remotely 24 hours a day, 7 days per week. Only waste collectors holding valid waste collection permits under the Waste Management (Collection Permit) Regulations, 2007 (as amended), will be employed to transport wastewater away from the substation underground storage tank to a licensed waste water facility.

4.4.2.3 Substation Temporary Construction Compound

The proposed onsite 110kV substation will require its own separate temporary construction compound. This temporary construction compound will measure approximately 2,400m² in area and will be located directly adjacent to the 110kV substation to the southwest. This construction compound will include a bundled refuelling and containment area for the storage of lubricants, oils and site generators etc, and full retention oil interceptor, waste storage area, temporary site offices, staff facilities and car-parking areas for staff and visitors. Temporary port-a-loo toilets and toilets located within a staff portacabin will be used during the construction phase. Wastewater from staff toilets will be directed to a sealed storage tank, with all wastewaters being tankered off site by a permitted waste collector to wastewater treatment plants. There will also be a water supply on site for hygiene purposes, by way of a temporary storage tank. Please see Figure 4-18 for further detail.



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7. Layout plans show typical Turbine rotor diameter as per turbine drawing.
8. Final levels may vary depending on local ground conditions.

- Drawing Legend**
- Planning Application Boundary
 - Proposed new access track (permanent)
 - Temporary Construction Tracks
 - Temporary Construction Compound
 - Cut
 - Fill
 - Wind Farm Elements
(Not subject of this planning application)
 - Electrical Cable Trench

PROJECT TITLE:
Cunlaghfadda Green Energy Project

DRAWING TITLE:
Temporary Construction Compound

PROJECT No.: 220825	DRAWING No.: Figure 4-18	SCALE: 1:500 @ A3
DRAWN BY: FB	CHECKED BY: GO	DATE: 20.05.2026
		REVISION: D02

OS SHEET No.:
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4.4.2.4 Grid Connection Underground Cabling

It is proposed to construct the grid connection underground cable route between the proposed onsite 110kV substation and the existing Cloon - Castlebar 110kV overhead line (OHL). The grid connection underground cabling route will consist of 2 no. underground cables.

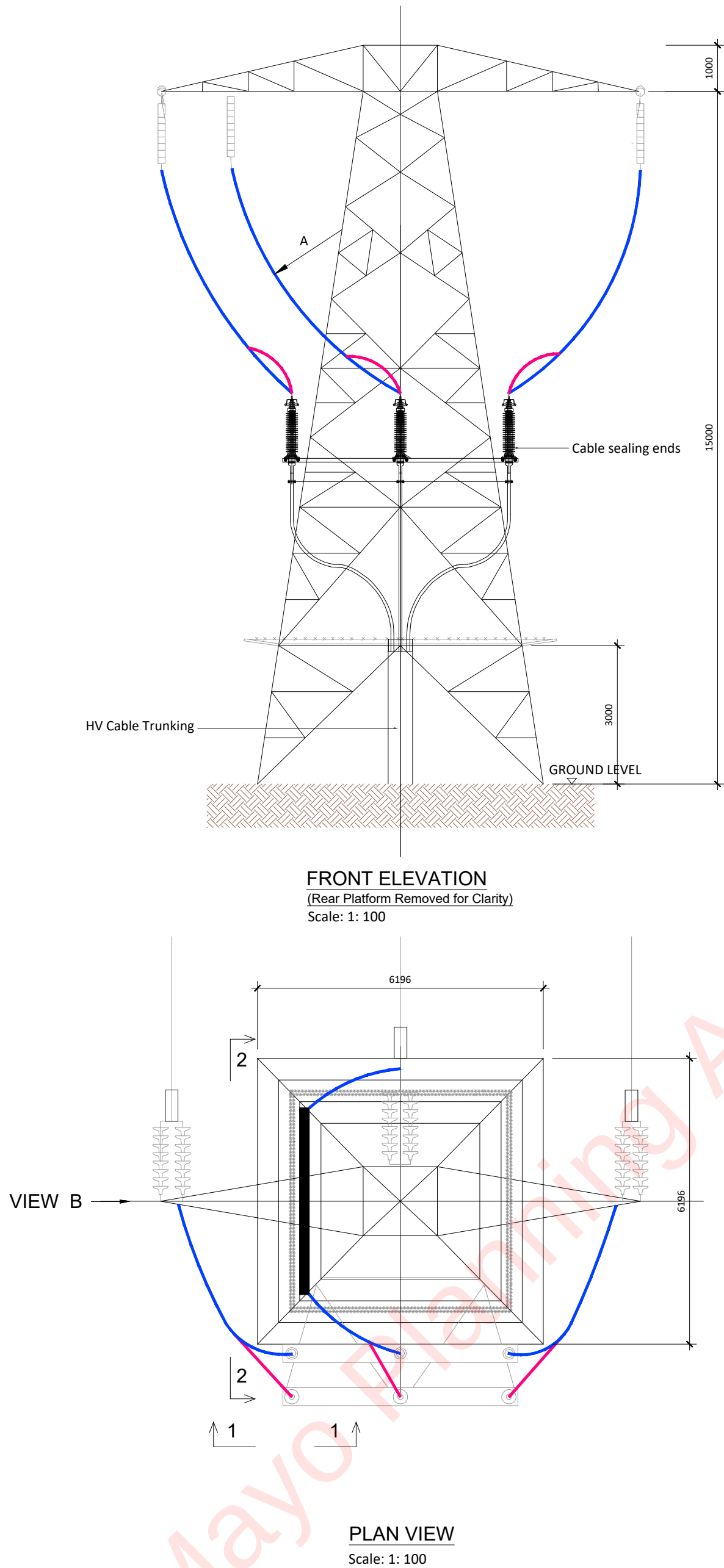
This underground cabling route connection is located within private agricultural land and will be c. 982m in length. The OHL will be broken with 2 no. new end masts (lattice-type towers) to facilitate the connection to the proposed onsite substation via the underground electricity cabling route. The two proposed end masts will be located adjacent to existing masts and therefore, no new landform will be introduced. Once constructed, electricity on the Cloon- Castlebar 110kV OHL will be transmitted through the proposed substation, hence the 'loop-in/loop-out' nature of the proposed 110kV substation.

The methodology for construction of the Proposed Grid Connection underground electrical component is presented in Section 4.9.2 below. The underground electrical cabling route is illustrated in Figure 4-1 and 4-3. 110kV grid connection cabling trench cross sections are shown in Figure 4-19 and Figure 4-20.

4.4.2.5 End Masts

As detailed above, two proposed end masts (lattice type towers) will be required to connect the on-site 110kV substation to the existing Cloon- Castlebar 110kV OHL. These end masts will be located immediately beneath the existing OHL. Please see Figure 4-3 for location details and Appendix 4-2. The existing OHL conductor will be terminated at these masts to facilitate a new OHL loop connection following the proposed c.982m underground grid connection route leading to the on-site 110kV substation. 3 existing wooden polesets located underneath the existing Cloon- Castlebar (Pole 103, 104 and 105) will need to be removed post construction to facilitate the new loop-in grid connection. Please see section 4.9.2.3 for the construction methodology for the new loop in tower structures. Please see Figure 4-21 for details.

* Please note that Conductors are not shown for clarity of Structure display.



Head Office
Beenreigh, Abbeydorney,
Tralee, Co. Kerry, Ireland
Tel: 00353 66 7135710

PROJECT

Cunlaghfadda Green
Energy Project

CLIENT

CONSULTANTS

NOTES: -

- This drawing is to be read in conjunction with relevant engineering drawings, specifications and reports
- Dimensions are in millimeters, unless noted otherwise
- Drawings are not to be scaled use figured dimensions only

LEGEND: -

Figure 4-21

ISSUE/REVISION		
I/R	DATE	DESCRIPTION
P3	16.04.26	Issued for Planning
P2	11.03.26	Issued for Planning
P1	09.01.26	Issued for Planning
P0	09.02.24	Issued for Planning

PROJECT NUMBER

05-981

SHEET TITLE

110kV End Mast
(Type 1493ET)

SHEET NUMBER

05981-DR-113

4.4.3 Proposed Project

4.4.3.1 Site Access Tracks

4.4.3.1.1 Access Track Construction Types

To provide access within the Site between the Proposed Grid Connection and Proposed Wind Farm infrastructure, existing access tracks will need to be upgraded, and new access tracks will need to be constructed. The construction methodology and specifications outlined in the FTC Peat and Spoil Management Plan will be applied when constructing the Site access tracks.

FTC were appointed to assess the existing ground conditions and specify the type of access track required to access all locations onsite. The access track construction design has taken into account the following key factors as stated in the FTC Peat and Spoil Management Plan in Appendix 4-3:

1. *Buildability considerations;*
2. *Making use of existing infrastructure where possible;*
3. *Minimising excavation arisings;*
4. *Peat stability;*
5. *Serviceability requirements for construction and wind turbine delivery and maintenance vehicles;*
6. *Requirement to minimise disruption to peat hydrology.*

Whilst the above key factors are used to determine the access track design, the actual construction technique employed for a particular length of access track will be determined on the prevailing ground conditions encountered along that length of access track.

The Proposed Project makes use of the existing access track network insofar as possible. It is proposed to upgrade approximately 1km of existing site access tracks, and to construct approximately 3.7km of new access tracks as part of the Proposed Project. It is also proposed to upgrade approximately 772m of the existing L15053 public road. As part of the access track network, approximately 615m of temporary construction tracks will be constructed as part of the Proposed Project. Furthermore, there is 0.37ha of temporary widening areas proposed as part of the construction phase. These temporary construction tracks and widening areas will be utilised during the construction phase for the purpose of delivering turbine components and abnormal loads. These tracks and widening areas will be covered over and reseeded or allowed to naturally revegetate following the construction phase of the Proposed Project. Following that, permanent operational tracks will be used during the operational phase of the Proposed Project. If there is turbine maintenance required during the operational phase that requires the use of any temporary construction tracks or widening areas, these areas may be reinstated as required. Some temporary construction tracks or widening areas may also need to be reinstated as part of the decommissioning phase. This decision will be made at the time of decommissioning in line with best practise at the time and will be assessed as part of a decommissioning plan.

The access track construction techniques to be considered are as follows:

- > Upgrades of Existing Access Tracks and Public Road (L15053)
- > Construction of New Floating Tracks
- > Construction of New Excavated Tracks

Upgrade of Existing Access Tracks and Public Road (L15053)

As noted above, approximately 772m of existing public road (L15053) and 1km of existing access tracks will be upgraded as part of the Proposed Project construction phase. The existing access tracks at the Site have been constructed using a combination of founded and floating construction techniques. The general construction methodology for upgrading of existing sections of access tracks or roads, as presented in FTC's *Peat & Spoil Management Plan* in Appendix 4-3 of this EIAR, is summarised in Section 4.8.1.2.1 below. Sections of access track undergoing upgrades are shown in Figure 4-22 and Figure 4-23 below.

Construction of New Floating Tracks

As noted above, approximately 3.7km of new access tracks will be constructed in order to facilitate the Proposed Project; with approximately 0.7km being new floating tracks. The general construction methodology for the construction of new floating tracks, as presented in FTC's *Peat & Spoil Management Plan* in Appendix 4-3 of this EIAR, is summarised in Section 4.8.1.2.2 below. Sections of New Floating Tracks are shown in Figure 4-25 below.

Construction of New Excavated Tracks

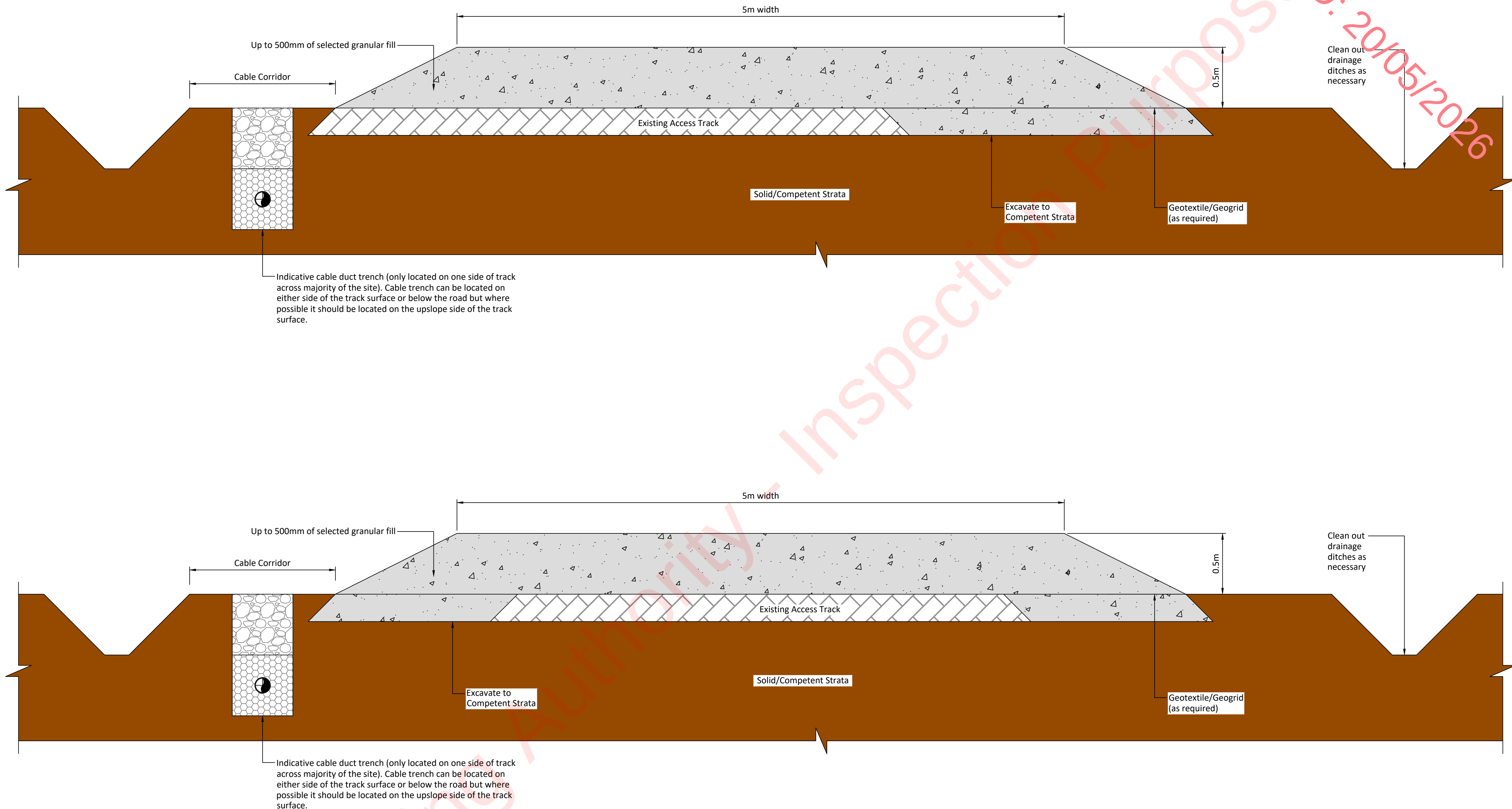
As noted above, approximately 3.7km of new access tracks will be constructed in order to facilitate the Proposed Project; with approximately 2.5km being new excavated tracks.

Approximately 615m of temporary construction tracks will be constructed as part of the Proposed Project, this consisting of new excavated tracks. Should these temporary access tracks be required for the operational phase for any maintenance required, these tracks will be reinstated as appropriate.

The general construction methodology for the construction of new excavated tracks, as presented in FTC's *Peat & Spoil Management Plan* in Appendix 4-3 of this EIAR, is summarised in Section 4.8.1.2.2 below. Sections of New Excavated Tracks are shown in Figure 4-24 below.

4.4.3.1.2 **Passing Bay**

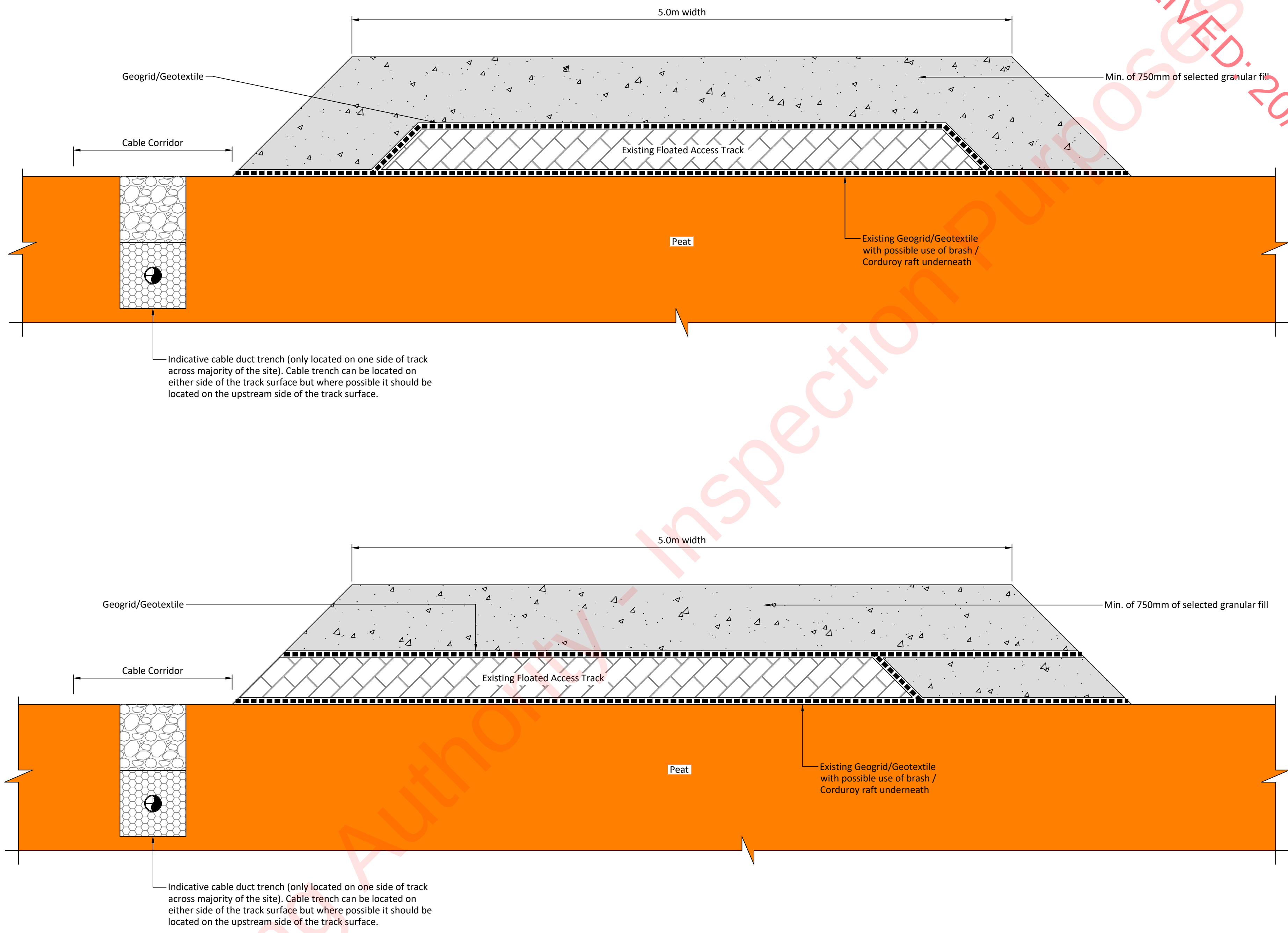
It is proposed to construct a passing bay along the proposed access track network in order to allow construction traffic to safely pass each other while travelling in opposite directions. Areas such as wide junctions and proposed hardstands will also be used as passing bays throughout the construction phase of the Proposed Wind Farm.



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B	FOR INFORMATION	BDH	05.12.25

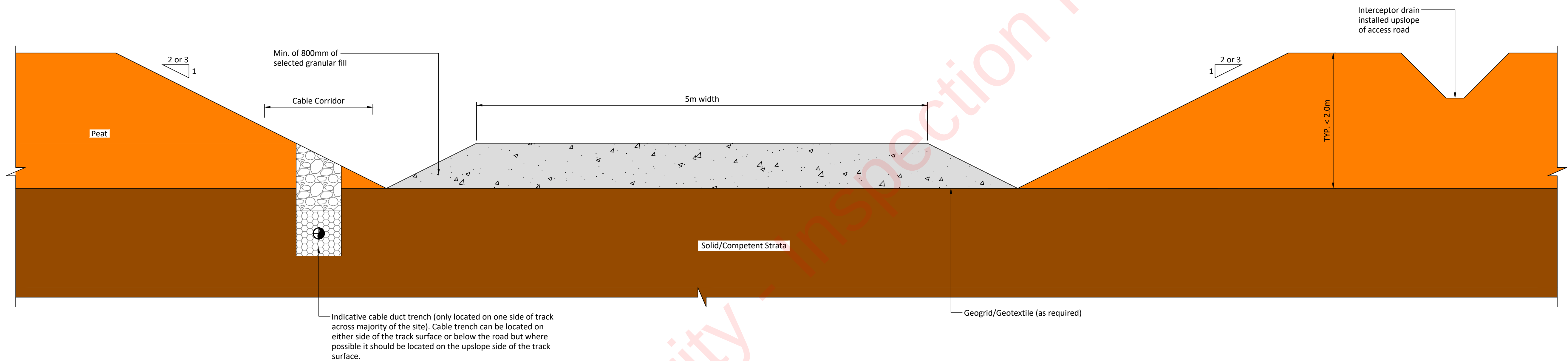
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CUNLAGHFADDA GREEN ENERGY PROJECT	MKO		
SHEET	Date 05.12.25	Project number P23-270	Scale (@ A1) 1:20
TYPE A - UPGRADE OF EXISTING FOUNDED ACCESS TRACK	Drawn by POR	Drawing Number	Rev
	Checked by IH	Figure 4-22	B



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Rev.	Description	App By	Date
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B	FOR INFORMATION	BDH	05.12.25
C	FOR INFORMATION	BDH	28.04.26

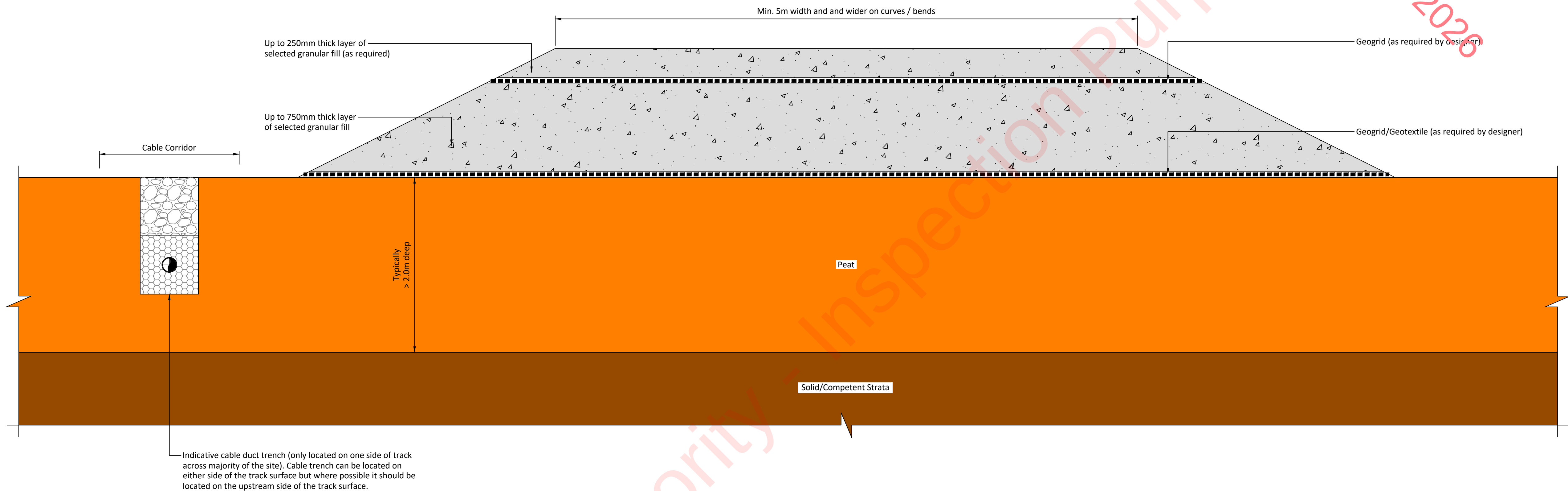
PROJECT	CLIENT		
CUNLAGHFADDA GREEN ENERGY PROJECT	MKO		
SHEET	Date28.04.26	Project numberP23-270	Scale (@ A1)1:20
TYPE B – UPGRADE OF EXISTING FLOATING ACCESS TRACK	Drawn byPOR	Drawing Number	Rev
	Checked byIH	Figure 4-23	C



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Rev.	Description	App By	Date
A	FOR INFORMATION	IH	06.03.24
B	FOR INFORMATION	BDH	05.12.25

PROJECT	CLIENT		
CUNLAGHFADDA GREEN ENERGY PROJECT	MKO		
SHEET	Date 05.12.25	Project number P23-270	Scale (@ A1) 1:25
TYPE C – NEW EXCAVATE AND REPLACE ACCESS TRACK	Drawn by POR	Drawing Number Figure 4-24	Rev B
	Checked by IH		



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Rev.	Description	App By	Date
A	FOR INFORMATION	IH	06.03.24
B	FOR INFORMATION	BDH	05.12.25

PROJECT	CUNLAGHFADDA GREEN ENERGY PROJECT			CLIENT			MKO			
SHEET	TYPE D – NEW FLOATING ACCESS TRACK			Date	05.12.25	Project number	P23-270		Scale (@ A1)	
				Drawn by	POR	Drawing Number				Rev
				Checked by	IH	Figure 4-25				B

4.4.3.2 Biodiversity Management and Enhancement Plan

A Biodiversity Management and Enhancement Plan (BMEP) has been prepared for the Proposed Project and is included as Appendix 6-4 of this EIAR. This plan has been developed to offset the loss of habitats identified within the Site and further enhance the biodiversity of the Site and its environs. These enhancement measures have also been considered in the landscape & visual assessment which is included at Chapter 13 Landscape & Visual, of this EIAR. Similarly, the enhancement proposals have been considered in relation to the existing drainage on the site and in the drainage design for the Proposed Project, which has been prepared by Hydro Environmental Services Ltd. (HES) and is included in Appendix 4-4 of this EIAR.

High value habitats were identified during initial habitat surveys of the Site and transition mire and quaking bog and *Molinia* meadow. The Proposed Project has been designed to avoid these areas and where they are located adjacent to proposed works areas, fencing will be implemented with appropriate signage prohibiting entrance to the areas.

4.4.3.2.1 Proposed Enhancement Measures

Planting and Bolstering of Treeline and Hedgerow

The field boundaries within the Site are largely delineated by mature (managed and unmanaged) hedgerow and treeline habitats. It is anticipated approximately 1.256 of linear habitat will be permanently removed to accommodate the Proposed Project, including turbines and associated bat buffers, wind farm roads and other key infrastructure.

It is proposed to plant approximately 2,500m of new and bolstered hedgerow and treeline habitat within the Site. The hedgerow planting areas are depicted on Figure 3-2 of Appendix 6-4 and have been strategically chosen to link up existing areas of bat activity. The hedgerows will be replanted within suitable areas and in consultation with the landowners who are supportive of the hedgerow planting proposals.

Species selected will be indigenous to the local area. The ideal native hedge is made up of approx. 75% hawthorn and 25% of at least four other species (NBDC, 2022). When planting new hedgerows, plants will be closely spaced (a maximum of 50cm apart) and planted in a staggered row. The new hedgerow will need to be protected from poaching by livestock, through the erection of new stockproof fencing where required, which should be at least 1m away from the hedge, and on each side if required.

In the north of the Site, bolstering of an existing treeline is proposed to the west of the area of Annex I *Molinia* meadow. In order to avoid tracking or excessive trampling through the *Molinia* meadow habitat, tree planting activities in this area will be accessed and conducted from the western side of the treeline, through the improved wet grassland in that area, wherever possible. If required to be accessed from the east, no vehicles or machinery will be permitted to drive through the area of *Molinia* meadow, with works and transport being undertaken on foot, and with the appointed ecologist present.

Hedgerow Management and Monitoring

Management measures for hedgerow post replanting include:

- Hedgerows are to be trimmed on a 3 to 5-year rotation to maximise structural diversity and to prevent over-trimming,
- Hedgerows are to reach approx. 2.5m height with an 'A' shape,
- Hedgerows cutting is to be carried out between November and January. This will avoid the bird nesting season (March 1st to August 31st) and will avoid impacts on foraging pollinators,

- It is expected that ivy will self-colonise, and this will be retained where possible,
- Grassy margins will be retained to preserve flowering ground flora and pollinator foraging habitat,
- The use of fertilisers, slurry, herbicides and pesticides will be avoided, in line with NBDC guidance on the management of wind farms for pollinators (NBDC, 2022).

Newly planted hedgerows and planted trees will be inspected following the main growing season (i.e. in September) for the first five years of growth, where the requirement for replacement planting will be assessed. If any trees are dead or damaged these will be replaced using the same species within the next planting season.

Planting of Native Woodland

It is proposed to plant 3.5ha of native trees within the Site as shown on Figure 3-2 of Appendix 6-4 of the EIAR. Over time these areas will establish into native woodland and scrub. Planting and establishment of woodland within the woodland planting areas will follow the recommendations and specifications of the native woodland scheme.

Areas of proposed planting over peaty soils will be composed of downy birch (*Betula pubescens*), Scot's pine (*Pinus sylvestris*), pedunculate oak (*Quercus robur*) and rowan (*Sorbus aucuparia*). Minor species (i.e. less frequent species) will be comprised of grey willow (*Salix cinerea*) and eared willow (*Salix aurita*) where wetter conditions occur locally within the planting areas. It is not proposed to undertake any drainage to facilitate the planting of the woodlands within the Site, with the species chosen tailored to the prevailing conditions on the Site.

Areas of proposed planting over well drained mineral soils will be composed of pedunculate oak (40%), with downy birch (20%), hazel (*Corylus avellana*) (20%) and hawthorn (5%) scattered throughout. Wild cherry (*Prunus avium*) (5%) will be planted in groups of 5 to 10 trees. Minor species (10%) are to comprise at least three of the following, positioned alongside planned woodland edges and glades: holly (*Ilex aquifolium*), spindle (*Euonymus europaeus*), rowan, crab apple (*Malus sylvestris*) and alder (*Alnus glutinosa*).

Trees will be of native origin and will be of advanced nursery stock where possible to allow for a varied age structure within the area of woodland to be created. The areas for planting have been strategically chosen to link up with identified bat commuting corridors within the Site and will provide enhanced habitat foraging area relative to the existing habitats within the Site.

Native Woodland Management and Monitoring

In order to facilitate the successful establishment of the new trees to be planted within the Site, the following measures are proposed:

- New tree planting will be kept weed and litter free until the new plants are established, particularly from ruderal weeds. Healthy growth will be maintained by allowing the plant to occupy as much of the planting areas as possible to allow them to achieve as close their natural form as possible.
- During spring and autumn maintenance periods all trees and plants will be checked and adjusted/replaced as required, soil firmed, and any dead wood present removed back to healthy tissue and mulch added if required. Where tree guards are no longer required these will be removed to avoid damage to the tree.
- During the first growing season, all standard trees/ semi-mature trees will be watered regularly during any prolonged dry periods during the growing season (i.e. in April, May, June, July and August). During the second growing season the trees will be kept well-watered as often as required, particularly during June, July and August.

Newly planted native woodland will be monitored following the main growing season (i.e. in September) for the first five years of growth, where the requirement for replacement planting will be assessed. If any trees are dead or damaged these will be replaced using the same species within the next planting season.

Enhancement of *Molinia* Meadow Habitats

The Proposed Project has been designed such that existing areas of *Molinia* meadow and breeding marsh fritillary habitat have been avoided and retained. It is further proposed to enhance the existing area of degraded *Molinia* meadow habitat to the southeast of Turbine 6, comprising 1.16ha. This area is illustrated in Figure 3-2 of Appendix 6-4 of the EIAR. It is proposed to manage this area to encourage greater floral species diversity and assist it to revert back to higher quality *Molinia* meadow habitat. These enhancement measures will also serve to create an additional area of suitable breeding habitat, in *Good Condition* as per NBDC guidelines, for marsh fritillary butterfly. This area lies within 300 metres of the area of confirmed breeding habitat for marsh fritillary and will therefore create additional 'stepping stone' habitat which is key for the survival of the meta populations of the species and to increase its distribution across the landscape.

It is proposed to implement a suitable management regime in the *Molinia* meadows/marsh fritillary enhancement areas via grazing. The aim will be to create an uneven patchwork of short and long vegetation by the end of the grazing period. The habitat enhancement measures will commence at the start of the operational stage to reduce disturbance to livestock from construction and to avoid any potential access issues. On a broader scale, the aim is to create a connected network of grasslands suitable for marsh fritillary within the Site.

Molinia Meadow Management and Monitoring

It is proposed to implement a suitable management regime in the *Molinia* meadows/marsh fritillary enhancement areas via grazing. The aim will be to create an uneven patchwork of short and long vegetation by the end of the grazing period.

The following management measures are proposed:

- Sheep grazing is unsuitable for habitat enhancement as they avoid grazing of *Molinia* and will graze selectively for flowers. Grazing by traditional breeds³ of cattle or horses, or donkeys are more commonly used for habitat enhancement purposes, as they are less selective grazers than sheep. The vegetation structure created by the grazing of cattle is the most suitable to the enhancement of habitat for marsh fritillary butterfly, as their grazing behaviour leaves both tufts of ungrazed vegetation and short grazed areas (Byrne and Moran, 2018; Initiative for Nature, Conservation Cymru, 2021; Martin *et al.*, 2023; Northern Ireland Environment Agency, 2020; Phelan *et al.*, 2021).
- A low stocking level of 0.2-0.4LU/ha is recommended⁴. However, the stocking rate is to be subject to monitoring and altered as required. The goal is to have a structured sward between 12 and 25cm in height.
- An additional area within the same field within the site comprising 2.03ha of wet grassland habitat to the south of the habitat enhancement area will also be available for grazing to avoid issues with overstocking the area for habitat enhancement.
- Supplementary feeding (if required), and water trough placement is to be provided only on the additional area of wet grassland to the south of the habitat enhancement

³ Ireland has nine native traditional breeds recognised by the Department of Agriculture, Food and the Marine (DAFM): the Connemara pony, Kerry bog pony, Irish Draught horse, Galway sheep, Old Irish Goat, and the cattle breeds Kerry, Dexter, Droimeann and Irish Moiled cattle.

⁴ Irish Native Rare Breed Society: Conservation Grazing Stocking Rates and Timing. Accessed at: <https://inrbs.ie/conservation-grazing-stocking-rates-and-timing/>

- area to prevent excessive poaching and nutrient enhancement within the area of Molinia meadow to be enhanced.
- Due to the wet nature of the Site, and the small area available for conservation grazing, grazing should be limited to spring and summer. This can be revised if necessary following the monitoring of the management measure proposed.
- Mowing will be avoided in this area, unless recommended following monitoring of the proposed management regime. Mowing can be utilised as a once-off option for rehabilitation of overgrown areas but is not a viable long-term management option as it removes variations in sward height required to create a suitable habitat structure for marsh fritillary butterfly (Phelan *et al.*, 2021).
- No fertiliser, slurry or pesticide usage will be permitted in the habitat enhancement area. Herbicide use will be avoided, unless required as part of invasive species management.
- No reseedling with perennial rye grass will be permitted in the habitat enhancement area.
- Field operations such as rush or scrub control should only be carried out November to February when caterpillars are in hibernation and less subject to disturbance, and outside of bird nesting season.

A site-specific monitoring and evaluation programme will be implemented to ensure that the success of the proposed measures remains long-term. The proposed management actions will be conveyed to each of the landowners and management alterations implemented as required to achieve the targets of the management plan. Measures may include:

- Alterations to stocking densities, and/or timing of grazing.
- Removal of scrub in areas of excessive scrub encroachment.
- Propagation of devil's bit scabious plant through seed collection or green hay strewing from areas where the plant is present on the Site to establish more plants throughout the Site if required. Seed collection will be undertaken outside of areas with marsh fritillary larval webs present.

Monitoring surveys will also include presence/absence surveys for marsh fritillary. Further detail on the monitoring proposals can be found in Appendix 6-4 of the EIAR.

4.4.3.2.2 **Summary**

The BMEP sets out the measures to be implemented to ensure that the Proposed Project will result in a net gain in biodiversity, specifically, a larger area coverage of suitable breeding marsh fritillary habitat, as well as a net gain in native woodland and hedgerow habitats.

The Mayo County Development Plan 2022-2028 (MCDP) was comprehensively reviewed, with particular reference to Policies and Objectives that relate to biodiversity, protected species and designated sites. In line with the County Development Plan, the BMEP associated with the Proposed Project sets out measures to enhance biodiversity within the Site. As a result, suitable habitat for the population of marsh fritillary within the Site is proposed, in addition to native woodland planting and a net gain in linear habitats. Detailed mitigations and enhancement proposals are in place to protect bats, their roosts and commuting corridors in line with the Development Plan. A summary of key policies and objectives relating to biodiversity that align with the Proposed Project is discussed in further detail in Section 6.62 of Chapter 6 Biodiversity.

The BMEP has set out measures to be implemented during establishment and management phases to ensure that the measures are successful, as well as regularly monitoring by an ecologist to ensure the success of the habitat restoration measures.

4.4.3.3 Tree Felling and Scrub Removal

Tree felling will be required within and around the Proposed Project infrastructure footprint to allow for the construction of the turbine bases, access tracks, underground cabling, and the other ancillary infrastructure. Further details on tree felling required within and around the development footprint is detailed in Chapter 6 of this EIAR.

Approximately 0.7 hectares of conifer plantation (WD4) will be felled to accommodate Proposed Project infrastructure. Of this, 0.6 ha relates to the Proposed Wind Farm infrastructure and 0.1 ha relates to the Proposed Grid Connection infrastructure.

Approximately 2.5ha of scrub and mosaics of scrub will be permanently lost to facilitate the Proposed Project. Approximately 1,256 linear metres of hedgerows and treeline will also be permanently removed to facilitate the construction of access tracks and ancillary infrastructure, and to achieve the required bat foraging buffers from the proposed turbines.

Please see Chapter 6 for further details regarding felling at the Site.

Figure 4-26 shows the extent of the conifer forestry, scrub loss and linear habitat loss to be permanently felled/removed as part of the Proposed Project.

The 0.7ha of conifer forestry felling required as part of the Proposed Project will be the subject of a Limited Felling Licence (LFL) application to the Forest Service in accordance with the Forestry Act 2014 and the Forestry Regulations 2017 (SI 191/2017) and as per the Forest Service's policy on granting felling licenses for wind farm developments. The policy requires that a copy of the planning permission for the Proposed Project be submitted with the felling licence application; therefore, the felling licence cannot be applied for until such time as planning permission is obtained for the Proposed Project.

4.4.3.3.1 Forestry Replanting

In line with the Forest Service's published policy on granting felling licences for wind farm developments, areas cleared of forestry for access tracks, and any other wind farm-related uses will have to be replaced by replanting at an alternative site or sites. The Forest Service policy requires replacement or replanting on a hectare for hectare basis for the felling carried out as part of the Proposed Project.

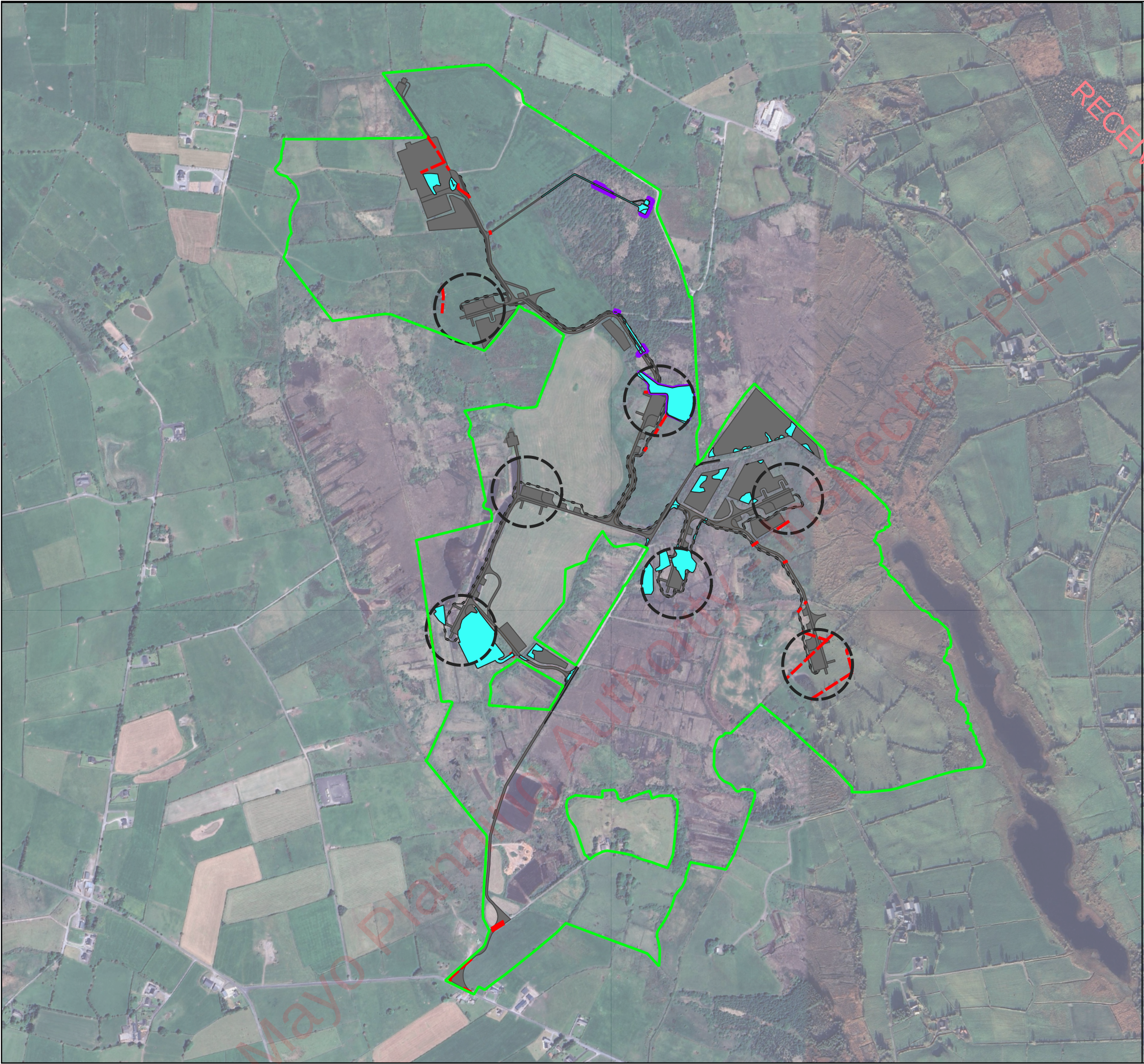
The identified 0.7ha of conifer forestry that will be permanently felled for the Proposed Project will be replaced or replanted on a hectare for hectare basis as a condition of any felling licence that will be issued in respect of the Proposed Project. Replanting is a requirement of the Forestry Act and is primarily a matter for the statutory licensing processes that are under the control of the Forest service. The replacement of the felled forestry as part of the Proposed Project may occur on any lands, within the State benefitting from Forest Service Technical Approval⁵ for afforestation, should the Proposed Project receive planning permission. Under the Forestry Regulations 2017, all applications for licences for afforestation require the prior written approval (technical approval) of the Minister for Agriculture, Food and the Marine. Before the Minister can grant approval, he/she must first determine if the project is likely to have significant effects on the environment (for EIA purposes) and shall assess if the development, individually or in combination with other plans or projects is likely to have a significant effect on a European site (for Habitats purposes).

The Applicant commits to replanting the 0.7ha of conifer plantation, outside the hydrological catchments within which the Site is located. On this basis, it is unlikely that there will be any significant cumulative effect associated with the replanting of 0.7ha of conifer plantation. Therefore, the forestry

⁵ All proposed forestry developments where the area involved is greater than 0.1 hectare must receive the prior written approval of the Forest Service. The application for approval is known as Pre-Planting Approval – Form 1.

replanting is not considered further in the impact assessment chapters of this EIAR. In addition, the Applicant commits to not commencing the Proposed Project until both a felling and afforestation licence(s) is in place and, therefore, this ensures the afforested lands are identified, assessed and licenced appropriately by the relevant consenting authority.

As identified in Section 4.4.1.8 below, approximately 2.5km of linear habitat will be planted and enhanced as part of the Proposed Project. The 2.5ha permanent loss of scrub habitat will be offset by the proposed native woodland replanting identified in Section 4.4.1.8 below; please see Appendix 6-2 Bat Survey Report and Appendix 6-4 BMEP for further information.



Map Legend

- EIAR Site Boundary
- Proposed Project Infrastructure
- 85m Bat Felling Buffer
- Conifer Felling
- Linear Habitat Loss
- Scrub and Mosaic Scrub Habitat Loss



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Drawing Title
Proposed Forestry Felling and Scrub Removal

Project Title
Proposed Cunlaghfadda Green Energy Project

Drawn By JA	Checked By NS
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Project No. 220825	Drawing No. Figure 4-26
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Scale 1:9,000	Date 2026-04-15
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4.4.3.4 Watercourse / Culvert Crossings

The Site is extensively drained by a network of natural watercourses and manmade land drains. The following EPA Mapped watercourse flows through the Site:

- Meander River – flows within the southeast of the Site (c.372m southwest of T5) and is hydrologically connected to the River Moy SAC

No new natural watercourse crossings are required within the Site to facilitate the construction of the Proposed Project.

However, there are several field drains within the Site which will be crossed by appropriately sized pipe crossings.

All new proposed culverts and proposed culvert upgrades at field drain crossings required for the Proposed Project will be suitably sized for the expected peak flows in the relevant drain.

Some culverts may be installed to manage drainage waters from works areas of the Proposed Wind Farm, particularly where the waters have to be taken from one side of an existing track to the other for discharge. The size of culverts will be influenced by the depth of the track or road sub-base. In all cases, culverts will be oversized to allow mammals to pass through the culvert. Culverts will be constructed as per the methodology detailed in Section 4.8.1.4. All culverts will be inspected regularly to ensure they are not blocked by debris, vegetation or any other material that may impede conveyance. An unmapped watercourse is also located along the proposed Turbine Delivery Route at the location of the junction of the L1505 and L1506 roads. At this location, in order to accommodate turbine delivery vehicles, accommodation works will be required which include the extension of the existing culvert.

Please see Figure 4-27 below for design details.

FINISHED SURFACE
CAPPED WITH CLAUSE
804 MATERIAL

YELLOW MARKER
WARNING TAPE
ACROSS FULL WIDTH
OF TRENCH

TRENCH BACKFILL
AS PER ENGINEER'S
REQUIREMENTS

POWER DUCTS

COMMUNICATION
DUCTS

GALVANISED STEEL PLATE

FRL

WELL COMPACTED
GRANULAR BACKFILL

Culvert Crossing - Longitudinal Section
SCALE 1:50

TRENCH BACKFILLED AS
PER ENGINEER'S
REQUIREMENTS

POWER DUCTS

EARTH CONDUCTOR

FRL

FINISHED SURFACE
CAPPED WITH CLAUSE
804 MATERIAL.

YELLOW MARKER WARNING TAPE.
ACROSS FULL WIDTH OF TRENCH

GALVANISED
STEEL PLATE

WELL COMPACTED
GRANULAR BACKFILL

COMMUNICATION DUCT

Culvert Crossing - Cross Section
SCALE 1:20

PROJECT TITLE:			
Cunlaghfadda Green Energy Project			
DRAWING TITLE:			
Standard 33kV Culvert Crossing			
PROJECT No.:	DRAWING No.:	SCALE:	
220825	Figure 4-27	As Shown @ A3	
DRAWN BY:	CHECKED BY:	DATE:	REVISION.:
FB	GO	14.05.2026	P01



Email: info@www.mkoireland.ie / Website: www.mkoireland.ie

4.4.4 Quantities of Peat, Spoil, Sand and Stone

4.4.4.1 Peat and Spoil Management Plan

The construction of the Proposed Project will require the excavation of peat and spoil. The quantities of peat and spoil, requiring management on the Site has been calculated, as presented in Table 4-2 below. The quantities were calculated by FTC as part of the *Peat and Spoil Management Plan* included as Appendix 4-3 of this EIAR.

Table 4-2 Peat and Spoil Volumes requiring management

Development Component	Proposed Dimensions	Peat Volume (m3) (approx.)	Spoil Volume (m3) (approx.)
Proposed Wind Farm			
7 no. Turbines and Hardstanding Areas (including temporary hardstand areas)	25m diameter excavation footprint for turbine foundation with 75 x 35m hardstand area.	19,800	26,000
Access Tracks (Inclusive of temporary construction tracks and widening areas)	Assumed 5m running surface with 6m wide development footprint.	8,900	4,400
Temporary Construction Compound	Hardstanding area of 25 x 75m.	450	450
Borrow Pit	85m x 65m	1,500	13,000
Meteorological Mast	25 x 30m hardstanding area.	200	800
Total Proposed Wind Farm		30,850	44,650
Proposed Grid Connection			
110kV Substation	Hardstanding area of 105 x 125m	2,600	14,400
Access Tracks (Inclusive of temporary construction tracks)	Assumed 3m running surface with 4m wide development footprint.	300	300
Temporary Construction Compound	Hardstanding area of 40 x 60m	550	550