

2 PROJECT DESCRIPTION

2.1 INTRODUCTION

This chapter of the EIAR provides a description of all elements of the proposed Derreenacrinnig West Wind Farm (Proposed Development). This is required by Article 5(1)(a) and Annex IV paragraph 1 of the EIA Directive and Article 94 and Schedule 6 of the Planning and Development Regulations 2001 (as amended).

The requirements for the Project Description are outlined below:

- (a) A description of the proposed development comprising information on the Site, design, size and other relevant features of the proposed development.*
- (b) a description of the location of the Project;*
- (c) a description of the physical characteristics of the whole project, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;*
- (d) a description of the main characteristics of the operational phase of the Project (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;*
- (e) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operation phases.*

2.2 OVERVIEW

This chapter of the EIAR provides a description of the existing site and the main components of the proposed Derreenacrinnig West Wind Farm (the Project), all site infrastructure (Site Access Tracks, Temporary Construction Compound, Spoil deposition areas and Biodiversity Enhancement Areas Measures).

The existing environment at the Site consists of; completed civil works, including Turbine Hardstands, substation hardstand, compound hardstand, and internal site tracks.

This EIAR provides details on the construction, operation and Decommissioning of the Project in compliance with the EIA Directive. The Derreenacrinnig West Wind Farm Project consists of the following elements:

- **The Wind Farm:** which includes 3 no. wind turbines, site access roads, Turbine Hardstands, underground cabling, Temporary Construction Compound, and all site infrastructure on the Site. It also includes the provision of biodiversity improvements on site. This element of the Project is defined as the 'Proposed Development' and is

what development consent is sought for. A full summary of the Proposed Development is outlined in section 2.4 of this chapter.

- **Grid Connection Route and Substation:** This chapter also provides a description of the work required along the proposed Grid Connection Route and onsite 20 kV substation. This element of the Project will be assessed within this EIAR.
- **Turbine Delivery Route (TDR):** The Turbine Delivery Route nodes and the route itself will be assessed within this EIAR.

All elements of the Project are outlined in **Figure 2.1**.

This chapter includes an overview of the Project followed by a detailed description of the main components and their method of construction. Measures that have been built into the design of the Project to reduce harmful effects on the environment, also known as 'Embedded Mitigation', measures, are set out in the various technical chapters and in this chapter. In addition to these Embedded Mitigation measures, Chapters 5 to 15 also present mitigation and enhancement measures where specifically relevant to their assessment topic.

This Chapter of the EIAR is supported by Figures in **Volume II** and the following Appendix documents provided in **Volume III**:

- Construction Environmental Management Plan (CEMP) in **Appendix 2.1**

Common acronyms used throughout this EIAR can be found in **Appendix 1.4**.

2.3 STATEMENT OF AUTHORITY

Jennings O'Donovan & Partners Ltd. (JOD) have extensive experience in all aspects of wind farm development, from design and planning stages through to construction. JOD have been active as engineering consultants in the wind energy market in Ireland since 1998 and have completed numerous wind farm projects, varying from single wind turbine installations to large-scale, multi-turbine developments with a total of over 2,000 MW generation capacity.

Evan Concar, M.Sc., B.Sc. is an Environmental Scientist and Planner. He holds a first-class MSc in Climate Change, Agriculture, and Food Security from the University of Galway and a Bachelor (Hons.) Degree of Arts with Geography and Spanish, also from the University of Galway. He is experienced in report writing, EIA Report chapter writing, Planning Compliance, Planning and Environmental Reports, Feasibility Studies, Stakeholder Engagement, and assisting with Project Management.

Breana Coyle BA, MSc MRTPI HD Planning and Environmental Planning Law. Breana has over 15 years' experience in the private sector and has a thorough knowledge of the planning system. Breana holds a MSc in Environmental Planning from Queens University Belfast and a Bachelor of Arts in History & Geography from NUI Galway. She is a Member of the Irish Planning Institute and a Member of the Royal Town Planning Institute. Since joining JOD, she has developed experience in a range of sectors through various projects and planning issues with a current focus within the environmental and renewable energy sector.

Angelika Thiel is an Environmental Scientist with 5 years' experience in Environmental Consultancy and Project Management. She holds a BSc in Geography from the Leibniz University Hannover, Germany. Angelika's key capabilities include Environmental Impact Assessment Reports (EIAR), Appropriate Assessment (AA) screenings, Planning and Environmental Reports, Construction Environmental Management Plans, GIS and Project Management.

David Kiely is a Director of JOD who holds a BE in Civil Engineering from University College Dublin and MSc in Environmental Protection from IT Sligo. He is a Fellow of Engineers Ireland, a Chartered Member of the Institution of Civil Engineers (UK) and has over 40 years' experience. He has extensive experience in the preparation of EIARs and EISs for environmental projects including Wind Farms, Solar Farms, Wastewater Projects, and various commercial developments. David has also been involved in the construction of over 60 wind farms since 1997.

2.4 PROJECT DESCRIPTION

Planning Permission is being sought by the Developer for the construction of 3 No. Wind Turbines, an on-site Electrical Substation, and all ancillary works (Derreenacrinnig West), works along the turbine delivery route (Derreenacrinnig West, Derreenacrinnig East and Castledonovan), and the construction of a Grid Connection between the proposed Derreenacrinnig West Wind Farm substation and the existing Ballylickey 110 kV Electrical Substation, (Derreenacrinnig West, Barnagowlane West, Glanareagh, Gortnacowly, Ards Beg, Ardrah, Laharanshermeen, Maulraha, Maulikeeve, Derryarkane, Capanaboul, Skahanagh, Gortroe, Shandrum Beg, Shandrum More, Dromloughlin, Ballylickey, Crossoge). The Site is approximately 104 hectares within the Redline Boundary.

The Proposed Development will consist of the following:

- Construction of 3 No. wind turbines with an overall ground to blade tip height of 119.3 m with a rotor diameter of 82 m and a hub height of 78.3 m.

- Construction of 1 no. permanent 20 kV Electrical Substation, all associated electrical plant and equipment, all associated underground cabling, and all ancillary structures and works.
- Construction of one Temporary Construction Compound with associated temporary site offices, parking areas and security fencing.
- Upgrade and reuse of existing hardstands.
- Upgrade and reuse of existing internal site access roads.
- Provision of Biodiversity Enhancement Area.
- All associated underground electrical and communications cabling connecting the wind turbines to the wind farm Electrical Substation.
- Construction of approximately 10.75 km of 20 kV overhead line (OHL) Grid Connection, the OHL to be constructed consists of c. 157 wood poles (ranging from 9 m to 15 m above ground) supporting electrical conductor lines and ancillary structures and equipment.
- Installation of approximately 3.3 km of underground cable ducting Grid Connection and associated electrical cabling, and all other ancillary works including joint bays, culverts, marker posts and all associated developments.
- Construction Haul Route works along the L-8767, L-4711, and L-8765.

A 10-year planning permission and 40 -year operational life from the date of commissioning of the entire wind farm is being sought.

However, part of the Electrical Substation and all of the Grid Connection will be owned and operated by ESB networks and as part of the national grid infrastructure, their life can extend beyond the life of the wind farm. Accordingly, permission is sought for the Grid Connection and substation in perpetuity.

2.5 SITE LOCATION AND ENVIRONS

2.5.1 Introduction / Existing Land Use

The Site, as shown in **Figure 2.2**, is located within an agricultural and forested landscape, between Goulanes and Castledonovan, in Co. Cork. The nearest settlement is the village of Drimoleague which is situated 5.1 km to the southeast of the Site. The Site is located 10.5 km north-east of Bantry, Co. Cork and 10.9 km west of Dunmanway. The Site is 14.2 km south-east the county boundary between Cork and Kerry and is 59 km west of Cork City.

The existing environment at the Site consists of; partially completed civil works, including Turbine Hardstands, substation hardstand, compound hardstand, and internal site tracks. The hardstands are constructed to accommodate heavy machinery and the storage of turbine components, while the existing site tracks will accommodate movement across the Site and vehicles during the operational period. The use of this existing infrastructure greatly reduces the additional land take required, reducing ground disturbance and impacts on surrounding habitats.

The red line wind farm Site extends to approximately 104 ha as identified on **Figure 2.2**.

There are 63 houses within 2 km of the proposed turbines. This can be seen in **Figure 2.3**. The closest house to a turbine that is to be assessed as part of this EIAR, is H1. This is located 983 m from T3. All houses located within 2 km of the proposed turbines are shown on **Figure 2.3**.

The Site is located within the townland of Derreenacrinnig West. The Grid Connection development traverses the townlands of Derreenacrinnig West, Barnagowlane West, Glanareagh, Gortnacowly, Ards Beg, Ardrah, Laharanshermeen, Maulraha, Maulikeeve, Derryarkane, Capanaboul, Skahanagh, Gortroe, Shandrum Beg, Shandrum More, Dromloughlin, Ballylickey, Crossoge, in Co. Cork ("the Proposed Development").

Temporary works will be required to accommodate the delivery of the turbine components. These temporary works are included as part of this application and are located in the townlands of Castledonovan, Derreenacrinnig East, and Derreenacrinnig West.

2.5.2 Wind Farms in the Area (Cumulative)

There are 22 wind farms within 20 km of the Site (**Table 2.1**). **Figure 2.4** shows the location of proposed, permitted and operational wind farms within a 20 km radius of the proposed turbines. **Appendix 1.5** provides further information on these wind farms.

The nearest operational wind farm is Milane Wind Farm which is located 5.08 km to the southeast of the Site. The nearest permitted but not yet constructed wind farm is Kealkill 10.8 km to the northwest.

Figure 2.4 shows the location of proposed, permitted and operational wind farms within a 20 km radius of the Site.

Table 2.1: Wind Farms within 20 km of the Proposed Development

No.	Name	District	No. WTG	Easting	Northing	Distance to the Proposed Development (km)	Status
1	Milane Hill	Co. Cork	9	516456	549163	5.08	Operational
2	Dromleena	Co. Cork	9	519913	553712	6.73	Permitted
3	Gortloughra	Co. Cork	8	514007	559976	7.08	Proposed
4	Lahanaght Hill	Co. Cork	5	515877	544950	7.9	Operational
5	Killaveenoge	Co. Cork	10	517987	546463	8.17	Operational
6	Shehy More	Co. Cork	11	517917	562955	9.01	Operational
7	Knockeenboy	Co. Cork	7	521402	548479	9.24	Consented
8	Curraglass	Co. Cork	3	508763	563650	10.02	Consented
9	Glanta Commons	Co. Cork	21	503628	542073	10.08	Operational
10	Currabwee	Co. Cork	7	522944	547643	11.18	Operational
11	Carrigariék	Co. Cork	5	521433	561409	13.45	Operational
12	Carrigariék 2	Co. Cork	3	521137	562173	13.75	Consented
13	Coomatallin Ext	Co. Cork	2	523979	545437	13.86	Consented
14	Coomatallin	Co. Cork	4	524057	544515	14.14	Operational
15	Grousemount	Co. Cork	24	509159	571586	16.76	Operational
16	Derragh	Co. Cork	6	517440	569852	18.77	Operational
17	Cleanrath	Co. Cork	9	520836	570089	18.85	Operational
18	Kilgarvin (Silahertane)	Co. Cork	10	510462	571274	19.01	Operational
19	Reenascreena	Co. Cork	5	528109	541661	19.24	Operational
20	Kilvinane	Co. Cork	3	531685	550740	19.91	Operational
21	Barnastooka	Co. Cork	14	507782	572329	20.01	Operational
22	Gortyrähilly	Co. Cork	14	514680	572167	20.02	Proposed

2.5.3 Land Ownership

The land on which the wind farm development is located is owned by George O'Mahony, a director of Dreenacreenig West Wind Farm Limited.

2.6 WIND RESOURCE

Due to the location, in the south-west of Ireland, and elevation, the Site experiences high average annual wind speeds. The Irish Wind Atlas produced by Sustainable Energy Ireland shows average wind speeds for the country and it shows that wind speeds on the Site are consistent with those that can facilitate a windfarm development (9.10 ms⁻¹ at 75 m, 9.20 ms⁻¹ at 100 m and 9.40 ms⁻¹ at 150 m).

2.7 SITE INFRASTRUCTURE AND CONSTRUCTION

2.7.1 Proposed Layout Design

The layout of the Proposed Development has been designed to minimise the potential environmental effects of the wind farm while utilising the maximum energy yield from the Site's wind resource. The layout design was informed by the following constraints and buffers:

- No works will occur within a distance of at least 50 m from watercourses (excluding watercourse crossings)
- No works will occur within a distance to land drains of at least 20 m
- No works will occur within a distance to archaeological monuments and structures of at least 100 m
- Turbines will be located at least 750 m from inhabited houses
- Avoidance of ground slopes of greater than 10 – 14 %
- Avoidance of existing telecommunications infrastructure and links that traverse the Site
- Avoidance of sensitive habitats, e.g., wet heath/blanket bog and/or watercourses containing Freshwater Pearl Mussel (*Margaritifera margaritifera*)

The overall layout of the Site is shown in **Figure 2.1**. This figure shows the proposed locations of the wind turbines and associated hardstanding areas, Electrical Substation, Temporary Construction Compound, internal access roads and the Site entrance. The ITM and IWG coordinates of the 3 No. turbines are listed in **Table 2.2**.

Table 2.2: Turbine ITM Coordinates

Turbine No.	ITM Easting	ITM Northing	ING Easting	ING Northing	Elevation (m)
T1	510915	551849	110957	051807	387
T2	511370	551918	111412	051876	391

Turbine No.	ITM Easting	ITM Northing	ING Easting	ING Northing	Elevation (m)
T3	511853	552050	111895	052008	352

2.7.2 Wind Turbine

The proposed turbines will be of modern design and will be a three-bladed, rotor upwind of the tower, variable speed, pitched blade regulated machine. Turbine appearance will be a matt non-reflective finish in a white, off-white, or grey colour. The overall foundation-to-tip height will be 119.3 m.

The turbine will have a circular based tower, sitting on a reinforced concrete foundation. The tower will support the nacelle, rotor hub, and rotor blades. Commercial wind turbine towers are made of steel or a hybrid of steel and concrete. The components within the nacelle are mainly metal (steel, copper, aluminium, etc.) with a metal/plastic/glass-reinforced plastic (GRP) body, the blades can be made of a matrix of glass-fibre reinforced polyester or wood-epoxy or similar composite materials.

Each turbine will have a generator with a capacity of approximately 2.3 MW. The turbines may be direct drive machines or may contain a gearbox. The final turbine will be chosen in a competitive tendering process as part of the Project financing process, after all necessary consents have been secured.

A schematic drawing of the candidate turbines is shown on **Figure 2.5**.

The assessment considers and assesses all scenarios within the range of turbine parameters. The range of turbine parameters can be seen in **Table 2.3**.

Table 2.3: Turbine Parameters

Turbine Parameter	Assessment Envelope
Turbine Blade Tip Height	119.3 m
Rotor Diameter	82 m
Hub Height	78.3 m
Turbine Foundations (Med at base)	283.53 m ²

2.7.3 Turbine Hardstands and Turbine Foundations

The Turbine Hardstand is designed to accommodate the delivery, laydown, and assembly of turbine components (in particular, rotor assembly) prior to turbine lifting and assembly and is shown in **Figure 2.6**. The Turbine Hardstands are needed to support the cranes during turbine construction, operational and maintenance and for Decommissioning. The Turbine Hardstands will be constructed first and used to facilitate Turbine Foundation construction, such as steel reinforcement delivery and pouring of concrete.

The total Turbine Hardstands area will be 7,734 m² (2578 m² x 3) and includes the main crane hardstand 2,910 m² (970 m² x 3) the component set down area 840 m² (280 m² x 3), the assembly crane pads 288 m² (96 m² x 3) and the vehicle parking 108 m² (36 m² x 3) as shown in **Figure 2.6**. These areas will consist of hardcore material topped with crushed stone. 'Areas cleared of any obstacles' 3,588 m² (1196 m² x 3) will be left as greenfield areas. Existing stockpiles of crushed rock will be used prior to importing any stone.

The majority of each Turbine Hardstand area has been previously constructed. Completion of the Turbine Hardstands will require the excavation of soils, the laying of a geotextile material on the formation surface and placing engineered stone and a top dressing. The main Turbine Hardstands and associated storage and assembly areas will be approximately 900 mm in depth depending on the local bedrock profile and the varying soil depth.

Each Turbine Foundation will be 19 m in diameter, will have a depth up to 3.0 m deep, will require 528 m³ of concrete, and will require 49.8 t of steel rebar. The Turbine Foundation design will depend on the turbine type and will be decided by the structural engineers at detailed design stage and will be within these design parameters.

The central part of the foundation (plinth) as seen on **Drawing No. 4636-PL-701-01**, will range between 5 m and 6 m in diameter and will be raised from the main Turbine Foundation below ground level. It will encompass a cast-in insert or bolts to connect to the bottom of the turbine tower and reinforced bar structural elements.

The area around and above the Turbine Foundation will be backfilled with compacted stone or crushed rock.

Further geotechnical site investigations will be undertaken post consent to confirm that conditions do not vary from those encountered when initial investigations took place. This will confirm that the mitigation measures to be implemented remain accurate in protecting

the environment. Traditional gravity foundations are considered for EIA purposes. These are concrete structures that depend on their own weight to achieve sufficient stability against overturning and sliding.

The method of construction for a Turbine Foundation is described as follows:

- Install temporary drainage around the perimeter of the excavation
- Excavate peat / soil and rock
- Back fill the foundation with excavated rock, if required
- Form a level working area to build the foundation by placing a 100 mm thick layer of lean-mix concrete
- Install formwork, reinforcement ducting and anchor bolts
- Pour the concrete
- Once the concrete has set/cured and the earthing system is in place, backfill the foundation with suitable excavated material
- Use the soil to build up the area around the Turbine Foundation

2.7.4 Access to the Site

The Site access will be from an existing site entrance on a local road off the L-8767 which will be upgraded to allow abnormal load turbine delivery vehicles, see **Drawing 4636-PL-WF-105**.

The Turbine Delivery Route will begin at Ringaskiddy Port, then onto the N28 heading west, onto the N40, then onto the N25, the N71, then continuing on the R586 onto Dunmanway, then Drimoleague, then on the L4614-0, L-4711 and L-8767 towards the Site.

The delivery of the turbines will require co-ordination with a number of statutory bodies including Cork County Council, An Garda Síochána and delivery details are set out in **Chapter 11: Traffic and Transportation**.

2.7.5 Site Access Tracks (Internal Road Network)

The Site Access tracks are necessary to allow access for cranes and delivery trucks during construction of the Proposed Development and also during servicing/repairs to the wind turbines. The existing Site Access tracks will be used as far as possible to minimise additional land take. These roads will be upgraded as necessary so that the width will be 4.5 m. Site Access tracks will be wider at bends and at passing bay locations where the width will be 5.5 m. Gradients will be limited to no more than 1 in 7 (14 %) and a stone layer

provided, so as to provide a good grip during wet weather. Gradients of existing Site Access Tracks do not exceed this value.

The internal Site Access Tracks were constructed during the first consented planning application. The Site Access Tracks layout avoids environmental constraints and follows the natural contours of the land. Every effort was made to minimise the length of road necessary.

Site Access Tracks will be maintained during the construction phase. This will involve cleaning and surface improvement works. Harmful constituents from fuel spills and drips such as hydrocarbons pose a risk of environmental contamination and also a risk to human health if found in drinking water sources. Stone stockpiled on site will be used to complete the support layers of the tracks but may be finished in a layer of imported stone. All imported stone to the Site will have undergone appropriate quality testing. When weathered, the stone will not contain any constituents which may be harmful to the environment, surface and groundwater in particular. Further details of the prevention of this can be found in the Emergency and Response Management Plan of the CEMP in **Appendix 2.1**.

2.7.6 Electrical Substation, Control Building and Associated Compound

It is proposed to construct one 20 kV Electrical Substation within the Site, as shown on **Figure 2.1**. This will provide a connection point between the wind farm and the Grid Connection point at the existing Ballylickey 110 kV Substation. Electricity transmitted between the turbines and the Electrical Substation on the Site will be at 20 kV. The layout of the Electrical Substation and compound is further detailed in **Figure 2.7**.

The Electrical Substation will serve two main functions:

- 1) provide housing for switchgear, control equipment, monitoring equipment, and storage space necessary for the proper functioning of the wind farm
- 2) allow for metering and for switchgear to connect to the National grid

The control building will contain an ESB room, control room, switchgear room, small store, and an office. The control components will include metering equipment, switchgear, the central computer system, and electrical control panels. The control building will be a single story pitched roof structure with traditional rendered finishes. The appearance and finish of the control building will be similar to an agricultural building with a slated roof and nap plaster finish. It will have a suitably sized footpath around it and an adjacent parking area.

2.7.7 Transformers and Internal Cabling

Each turbine will be connected to the Electrical Substation on site via underground Medium Voltage (MV) 20 kV cables. There will be circa 2.4 km of Wind Farm Internal Cabling. Fibre-optic cables will also connect each wind turbine to the wind turbine control system located within the Control Building. The electrical and fibre-optic cables running from the turbines to the Electrical Substation compound will be run in underground cable ducts within the Site Roads and/or their verges.

2.8 THE PROPOSED GRID CONNECTION

In accordance with the Group Processing Principles set out by the Commission for Energy Regulation (CER), ESB as the Distribution System Operator specified the connection method in the Derreenacrinnig West Wind Farm's ESB Connection Agreement to be via a new dedicated 20 kV connection from the Derreenacrinnig West Wind Farm site to a proposed 20 kV bay which will be constructed within existing Ballylickey Substation. The Grid Connection will be 14.05 km in length, comprising 10.75 km of overhead line, and 3.2 km of underground cable. **Drawing No. 4636-PL-GCR-100-1** to **Drawing No. 4636-PL-GCR-100-20** shows the extent of the Grid Connection route.

2.8.1 Grid Connection

The Grid Connection development traverses the townlands of Derreenacrinnig West, Barnagowlane West, Glanareagh, Gortnacowly, Ards Beg, Ardrah, Laharanshermeen, Maularaha, Maulikeeve, Derryarkane, Cappanaboul, Skahanagh, Gortroe, Shandrum Beg, Shandrum More, Dromloughlin, Ballylicky, Crossoge, in Co. Cork.

Proposed Underground Grid Connection

Six sections of underground ducted line occur along the proposed Grid Connection route these are outlined in **Table 2.4** below.

Table 2.4: Proposed Grid Connection

Grid Connection Area	Details
Area 1 UGC	201.5 m of underground cables from Ballylickey Substation.
Area 2 UGC	624.5 m of underground cable in Crossoge and Dromloughlin townlands.
Area 3 UGC	1081 m of the Grid Connection route will be ducted along the verge of the existing local road at Glencreagh.

Grid Connection Area	Details
Area 4 UGC	112.3 m in the townland of Gortnacowley.
Area 5 UGC	963 m within the carriageway of the road at Glanareagh and 110 m in lands.
Area 6 UGC	113 m of Grid Connection at Derreenacinnig West.

2.8.2 Construction of New 20 kV Grid Connection

The new Grid Connection will be constructed to meet the requirements and specifications of ESB Networks. The proposed 20 kV overhead line conductor construction type is 150 mm² AAAC (All Aluminum Alloy Conductor) designed according to ESB Networks' Functional Design Specification for MV Overhead Lines'. 157 No. standard 20 kV single poles, with an average span distance of 85 m is required. The wooden poles are standard ESB Networks 20 kV wooden poles which vary in length on this project between 9 and 15 m. The top pole diameter varies between 200 mm and 220 mm. The actual height of the pole above ground will typically vary between 8.8 m and 10.7 m but could be higher in some locations due to irregular terrain. On average, between 2.2 to 2.3 m of the pole will not be seen as it will be buried in the ground. **Plate 2.1** below shows the typical structure type to be used on this project.

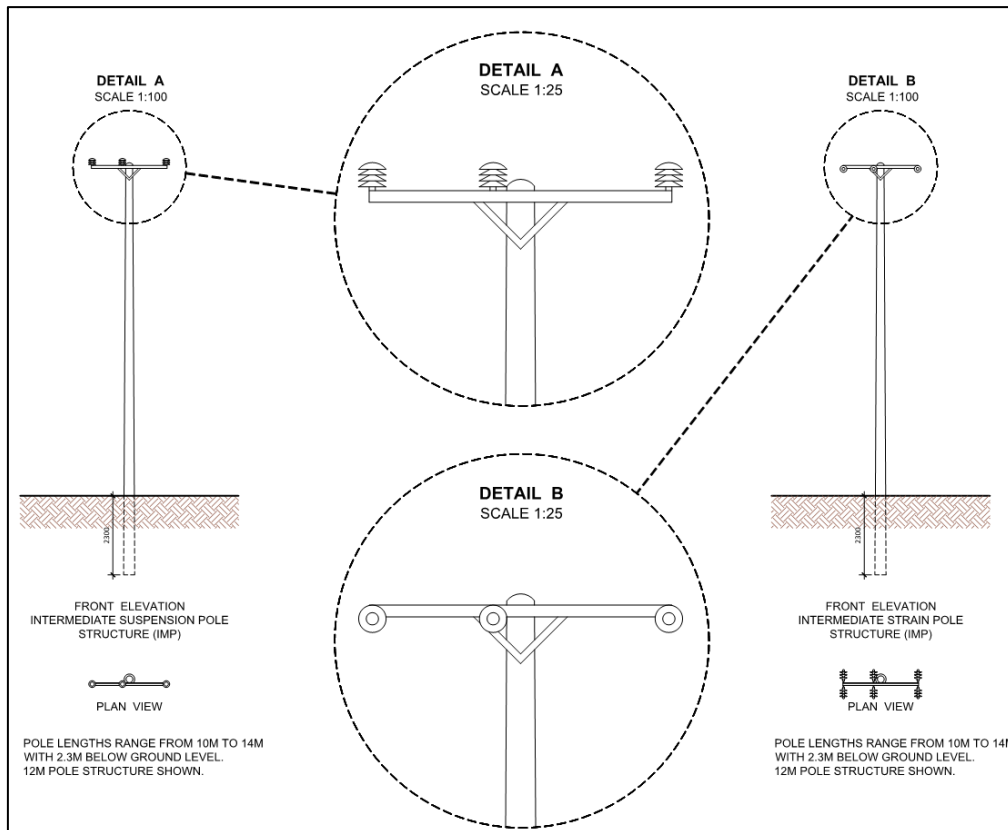


Plate 2.1: Typical 20 kV single circuit overhead power line.



Plate 2.2: Photograph of a Typical 20 kV Pole with Excavation

Pole and line installation work will be standard for a 20 kV ESB overhead line:

- New Poles will be carried from adjacent roadways to each erection site and placed into an excavated hole using a wheeled or tracked excavator fitted with a pole grab attachment.
- The pole hole is manually backfilled and tamped down to a minimum depth of 1.0 m until the backfill is capable of supporting the pole; the excavator then continues the backfilling and tamping.
- Where rock is encountered, the pole hole is formed using a hydraulic rock-breaker attachment mounted on the excavator.
- Where the line changes direction and at pole set locations with poor ground conditions, stay wires will be required. These wires are supported by means of stay blocks, which are made of wooden sleepers and are buried underground.
- Stringing of the conductor involves pulling out polypropylene rope along the route by hand, attaching the conductors and then pulling into position with stringing machine.

The 20 kV underground power cable construction type is 20 kV XLPe cable to be ducted according to ESB Networks' 'Specification for the Installation of Ducts & Structures for Underground 10-20 kV Power Cables & Communication Cable'. The 20 kV power cable will be laid in a single 125 mm diameter uPVC duct in a cable trench.

2.8.2.1 Cable Duct Design (Underground Sections)

The 20 kV power cable will be laid in a cable trench according to:

- ESB Drawing 1A: '20 kV Single Circuit Standard Trench Cross - Section' on page 1 of the ESB specification document. (Note only one 110 mm Communications duct at 750 mm below the finished surface is required for this installation).
- ESB Drawing 2A: '20 kV Single Circuit Joint Bay - Section' on page 1 of the ESB specification document.

The typical trench cable arrangement will be 1 duct for electricity and one for fibre optic. The typical trench dimensions will be 325 mm wide and 950 mm deep following the ESB' Standard Detail for a Single Circuit 20 kV Underground Cable

2.8.3 Joint Bays Locations for the Proposed Grid Connection

Joint Bays are the locations where individual lengths of cables will be joined and are typically 500 to 700 m apart. A joint bay is constructed in a pit. The bay typically is approximately 2.5 metres x 1.815 m x 1.21 m deep. A reinforced concrete slab is constructed in the bay to accommodate the joint enclosure.

The Joint Bay locations have been dictated by suitable terrain and access to facilitate the operation of cable pulling equipment at any phase of the Proposed Development and future operation of the installation in accordance with the ESB own specifications. The locations of these joint bays are highlighted in Drawing No. PL-GCR-100-1 to Drawing No. PL-GCR-100-20.

2.8.3.1 Trench Layout

The trench layout shall be as per the appropriate ESB drawings. The specification of the relevant Local Authorities must be followed for the excavation and Reinstatement of the ducted cable trenches. When the trench has been excavated to the required depth and all loose material and protruding stones have been removed, a bedding layer of sand shall be laid and compacted to a minimum thickness of 50 mm.



Plate 2.3: Typical Trench Construction within roads

2.8.3.2 Ducts

All joining ducts shall be laid in straight lines to even gradients. Once the ducts have been installed and backfilled with lean-mix concrete and with Clause 804 stone the duct run must be thoroughly cleaned by pulling the appropriate size of ESB approved duct brush through the duct.

All Reinstatement works shall be in accordance with the NRA Specification for Road Works, Guideline for Managing Openings in Public Roads¹ and any conditions specified in the Road Opening License.

Details of the construction methodology are summarised below:

- Preparatory Works
 - Preparatory Trial Pit Survey along the cable route
 - Access to the start point and setting out
 - Access to joint bays
 - Silt Attenuation Features and watercourse set back buffer
 - Joint Bay Excavation
- Trenching Works
 - Storage of Materials
 - Trench Operations
 - Managing excess material from trench

2.9 CONSTRUCTION SEQUENCE

The outline construction period and the Contractor's proposed sequence of works will take due cognisance of the requirements of the stipulated Planning Conditions and by the Contractors Contractual obligations. The previously erected overhead lines and poles will have been removed by ESB.

2.9.1 Phasing of Works

Prior to the commencement of construction, the contractor will prepare day to day method statements and work programmes that outline a detailed phasing of works. Due to the nature of the Proposed Development, it is likely that a number of construction crews will be working along the route at any one time. These crews will be suitably spread across the route to ensure that cumulative traffic related impacts are not experienced by local residents, landowners or businesses. ESB Network's Project Manager will ensure that the phasing of work is undertaken in accordance with the prepared method statements and in accordance with a detailed works programme

¹ Department of Transport, Tourism and Sport. Available: https://www.rmo.ie/uploads/8/2/1/0/821068/purple_book_final_version_september_2015.pdf (Accessed 18/06/2025)

2.9.2 Onsite Drainage

The existing surface water runoff is contained within natural and artificial drainage channels that include stream and river waterbodies, drainage ditches, and other minor natural and artificial manmade drainage features.

The Grid Connection route crosses multiple drains, streams and rivers, including the Mealagh River. Much of the Grid Connection route is overhead line (OHL) mounted on single wooden poles, so can be constructed with minimal interaction with the water environment. There are six underground cabling sections proposed along the route (totalling approximately 3,180 m), some of which cross watercourses.

One no. watercourse crossing, a crossing of the Glanareagh Stream will be required along 1 no. section of the underground electrical cable route. The crossings will be via horizontal directional drilling, thus avoiding the need for any instream works for this watercourse crossing. HDD is the practice of drilling holes in a non-vertical direction for the laying of ducts which contain cables beneath features such as a watercourse. The directional drilling commences at the launch pit which is the entry point for pipes and ducts to be placed. Pipes and ducts are brought through the drilled hole to a receiving pit on the opposite side of the hole to the launch pit. The crossings will comprise 4 x 110 mm High Performance Polyethylene (HPPE) pipes/ducts each directionally drilled.

Sustainable Drainage System (SuDS) principles namely separation of overland flow from construction areas, the mimicking of diverted overland flow around construction areas and treatment trains to treat water from construction areas, will all be employed as explained in **Chapter 8: Hydrology and Hydrogeology**.

When heavy rainfall is predicted works will be suspended or scaled back.

2.9.3 Table of Key Development Infrastructure Metrics

The key Proposed Development infrastructure metrics are contained in **Table 2.5**. This table is provided for ease of access to these metrics for reference by the personnel writing the other EIAR Chapters. Metrics for required concrete, steel rebar, crushed stone, and tarmacadam are contained in **Table 2.6**.

Table 2.5: Key Development Infrastructure Metrics

Description	Length [m]	Width [m]	Depth [m]	No.	Area [m ²]	Volume of Excavation [m ³]
Additional Site Access Track Area	N/A	N/A	0.9 m	N/A	622.28 m ²	560.05 m ³
Internal Cabling (power & communications)	2400 m	Single 435 mm	0.9 m	N/A	1,044 m ²	939.6 m ³
Turbine Hardstands – Blade Fingers	12 m	4 m	0.9 m	6	240 m ²	216 m ³
Additional Turbine Hardstand Areas	N/A	N/A	0.9 m	3	771.3 m ²	694.2 m ³
Turning Head Additional Road Widening	N/A	N/A	0.9 m	N/A	97.44 m ²	87.7 m ³
Turbine Foundations (19 m diameter)	N/A	N/A	3 m	3	850.59 m ²	2,551.77 m ³
Electrical Substation Trenching	N/A	N/A	1.5 m	1	20.26 m ²	30.25 m ³
TDR Road Widening Overrun Area	N/A	N/A	0.9 m	N/A	4112.71 m ²	3,701.4 m ³
Site Compound	45 m	30 m	N/A	1	N/A	N/A
Grid Connection	3,205.3 m	0.4 m	1.25 m	6	1,282.12 m ²	1,457.7 m ³

Table 2.6: Estimated Concrete, Steel Rebar and Tarmacadam Values

Description	Excavation Volume	Estimated Materials (E.g. Concrete/Rebar/Bitumen) Volumes	Notes
Additional Site Access Track Area	560.05 m ³	412 m ³	Crushed stone required for a 150 mm finishing layer and up to 510 mm subbase
Internal Cabling (power & communications)	939.6 m ³	885 m ³	Crushed Stone
Turbine Hardstands – Blade Fingers	216 m ³	158 m ³	Crushed stone required for a 150 mm finishing layer and up to 510 mm subbase
Additional Turbine Hardstand Areas	694.2 m ³	509 m ³	Crushed stone required for a 150 mm finishing layer and up to 510 mm subbase
Turning Head Additional Road Widening	87.7 m ³	64 m ³	Crushed stone required for a 150 mm finishing layer and up to 510 mm subbase
Turbine Foundations Excavation (19 m diameter)	2,551.77 m ³	1,800 m ³	Concrete
Turbine Foundation Steel Reinforcement	N/A	149.4t	Steel Rebar
Electrical Substation	30.25 m ³	14 m ³	Reinforced base for equipment
TDR Road Widening Overrun Area Crushed Stone	3,701.4 m ³	1,234 m ³	Crushed Stone

Description	Excavation Volume	Estimated Materials (E.g. Concrete/Rebar/Bitumen) Volumes	Notes
TDR Road Widening Overrun Area Bitumen	3,701.4 m ³	617 m ³	Bitumen
Site Compound	N/A	N/A	N/A
Grid Connection Crushed Stone	1,457.7 m ³	218 m ³	Crushed Stone
Grid Connection Bitumen	1,457.7 m ³	218 m ³	Bitumen to reinstate public roads

2.10 CONSTRUCTION

The first phase of the Proposed Development will comprise the construction phase. This phase will begin with site preparation works and will be complete when the turbines are built and ready for commissioning, and when all wastes have been removed from the Site. For this Proposed Development, it is envisaged that the construction phase will last approximately 16-18 months, with commissioning and site restoration taking approximately 3-4 months. An indicated construction programme is set out at **Table 2.7**.

Table 2.7: Indicative Construction Programme

Activity	Month															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Site Establishment	X															
Internal Access Road Upgrade and Turbine Delivery Route works		X	X	X	X											
Substation & Compound Construction				X	X	X	X									
Substation Electrical Works									X	X	X	X	X	X		
Substation Commissioning										X						

Activity	Month															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Excavation & Construction of Turbine Foundations & Upgrades to Hardstands		X	X	X	X	X	X	X	X							
Internal Cabling Installation								X	X	X						
Turbine Delivery and Erection										X	X					
Grid Connection									X	X	X	X	X			
Energisation														X		
Turbine Commissioning															X	X
Site Restoration															X	X

2.10.1 Construction and Environmental Management Plan (CEMP)

A CEMP is appended to the EIAR in **Appendix 2.1**. The CEMP includes an Emergency Response Plan, Water Quality Management Plan, Waste Management Plan, and Decommissioning Plan. A Traffic Management Plan is included in **Appendix 11.1**. The CEMP includes all the mitigation measures proposed within the EIAR and the NIS related to the Construction Phase. A Summary of all the mitigation measures of the EIAR is included in **Appendix 17.1**.

The CEMP provides a commitment to mitigation and monitoring and reduces the risk of pollution whilst improving the sustainable management of resources. The environmental commitments of the Proposed Development will be managed through the CEMP and will be secured in contract documentation and arrangements for construction and later phases, such that there will be a robust mechanism in place for their implementation. The CEMP addresses the construction phase, and will be continued through to the commissioning, operation, and final Decommissioning phases. An Environmental Manager / Ecological Clerk of Works (ECoW) with appropriate experience having completed a similar role will be appointed for the duration of the construction phase so that the CEMP is effectively implemented.

The following sections describe key activities which, if unmitigated against, may cause harm or nuisance to the public.

2.10.2 Refuelling

Vehicles will be refuelled off-site where possible. For vehicles that require refuelling on-site, fuels will be stored in the Temporary Construction Compound and banded to at least 110 % of the storage capacity of fuels to be stored. Refuelling will take place via a mobile double skinned fuel bowser. The bowser will be a double axel refuelling trailer which will be towed to the refuelling locations by a 4x4 vehicle. The 4x4 will carry, a drip tray, spill kit and absorbent mats in case of any accidental spillages. Only designated competent personnel will refuel plant and machinery on the Site.

2.10.3 Concrete

There will be no concrete batching on the Site. Rather, it will be transported to the Site as it is required. A dedicated, banded area will be created to cater for concrete wash-out and this will be within the Temporary Construction Compound. This will be for the wash-out of the chutes only after the pour. Concrete trucks will then exit the Site and return to the supply plant to wash out the mixer itself.

The main concrete pours at the turbine locations will be planned in advance and proposed mitigation measures (are detailed in **Chapter 8: Hydrology and Hydrogeology**) and are summarised as follows:

- Avoiding large concrete pours, for Turbine Foundations for example, on days when heavy or prolonged rainfall is forecast i.e., 25 mm in a 24-hour period (heavy frontal rainfall lasting most of the day); or rainfall depth greater than monthly average in seven days (prolonged heavy rainfall over a week). Concrete pouring will be avoided during a period in which a Met Éireann Status Red weather event has been implemented.
- Ensuring that all concrete pour areas are dewatered prior to pouring concrete and while the concrete is curing.
- Making covers available so that areas can be covered if heavy rain arrives during the curing process which will prevent runoff of concrete which has a high pH.

2.10.4 Dust Suppression

During periods of dry and windy weather, there is potential for dust to become friable and cause nuisance to nearby residences and users of the local road network. Damping down will be required in this instance to see that dust does not become friable. This is most likely to occur during periods of dry and/or windy weather. This requires wetting the material and ensuring water is supplied at the correct levels for the duration of the work activity.

To reduce mud and debris from getting onto the local road network, a wheel wash facility will be employed at exiting points on-site which will wash mud and debris from vehicles egressing the Site.

2.10.5 Construction Hours

The Proposed Development will have approximately 25 construction workers during the peak of the construction phase. Working hours for construction will be from 07:00 to 19:00 on weekdays, with reduced working hours at weekends, from 08:00 to 13:00 on a Saturday. It should be noted that during the turbine erection phase, operations will need to take place outside those hours with concrete pours commencing at 05:00 and continuing till 16:00, to facilitate Turbine Foundation construction and so that lifting operations are completed safely. Hours of working for Turbine Foundation construction will be agreed with Cork County Council prior to the commencement of Turbine Foundation construction. **Chapter 11: Traffic and Transportation** refers to this in further detail. A detailed Traffic Management Plan (**Appendix 11.1**) will be implemented during the construction phase. This shall be agreed during the planning compliance stage with the Planning Authority so that strict controls described therein are in place with all suppliers coming to the Site.

2.10.6 Construction Compound and Temporary Works Area

The Temporary Construction Compound will be set up upon commencement of the construction phase. The proposed location for the Temporary Construction Compound is south of the turbine locations as shown in **Figure 2.1** and the layout is shown in **Figure 2.8**. The compound will be 45 m by 30 m. The compound will be used as a secure storage area for construction materials and to contain temporary site accommodation units for staff welfare facilities. The compound will contain cabins for offices space, meeting rooms, canteen area, a drying room, parking facilities, and similar personnel facilities.

An area within the compound will be used for the storage of fuel and oils and this will be suitably bunded and the bund will be lined with an impermeable membrane in order to prevent any contamination of the surrounding soils, vegetation and water table. Double protection containers / equipment will be used along with drip trays and details are included in the CEMP, included as **Appendix 2.1**.

During the construction phase, water will be supplied by water bowser. The maximum wastewater production is estimated to be the same as the maximum water consumption (2,000 litres per day)². The Project will include an enclosed wastewater management

² Table 3 of the EPA WW treatment Manual (Treatment systems for Small Communities, Business, Leisure Centres and Hotels), Environmental Protection Agency, 1999. Quarry (excluding canteen) best reflects a construction site. [Available online: https://www.epa.ie/publications/compliance--enforcement/wastewater/EPA_water_treatment_manual_small-comm_business.pdf]

system at the temporary compound (**Drawing No. 4636-PL-500**) capable of handling the demand during the construction phase with 25 construction workers on site at peak. A holding tank is proposed for wastewater management. Wastewater will be removed off-site weekly, by a licensed wastewater disposal company and disposed at an appropriate licenced facility.

2.10.7 Construction of Crane Hardstands and Foundations

The current hardstand areas will be upgraded. Each crane hardstand will be 2,910 m². Foundations will be taken down to competent bearing strata by excavating through the soil, subsoil, and rock if necessary.

The method of construction for Turbine Foundation is described below:

- Install temporary drainage around perimeter of excavation (see **Chapter 8: Hydrology and Hydrogeology** for full details of proposed drainage)
- Excavate soil and rock and temporarily store adjacent to the works
- Form a level working area to build foundation
- Install formwork and reinforcement
- Pour concrete
- Cure concrete
- Once the concrete has set and the earthing system is in place, backfill the foundation with rock
- Use soil to build up the area around the turbine base

2.10.8 Construction Turbine Assembly

Once on Site, the wind turbine components will follow a detailed route and plan to minimise manoeuvring. Components will be placed on Turbine Hardstands prior to assembly. A 'just in time' delivery strategy will be in place for turbine blades to reduce the need for temporary set down areas. One large crane will be required for erecting the turbines, assisted by a smaller crane. The same number of cranes will also be required for maintenance during the operational phase.

The towers will be delivered in sections, and work on assembly will not start until a suitable weather window is available, e.g., Wind Gust Speed Threshold of less than 6 ms⁻¹. The bottom tower section will be bolted onto the concrete foundations. The mid tower section will then be lifted into position and bolted to the bottom tower section. Finally, the top tower section will be lifted into position and bolted to the mid tower section. Three methods can be used to attach the blades:

1. The blades can be attached to the nacelle and hub on the ground. The hub and blades are then lifted as one. The nacelle of a wind turbine houses the drive train and other tower-top components. The hub of the wind turbine connects the blades to the main shaft and ultimately to the rest of the drive train.
2. The hub can be attached to the nacelle and the two blades attached to the hub while the nacelle is on the ground – the "bunny lift". The nacelle is then lifted into position and the third blade lifted into place separately. This requires manoeuvring of several components on the ground and usually the repositioning of cranes.
3. Lifting the nacelle and hub as one unit, as described above and then attaching the blades one at a time, rotating the hub between lifts. The blade lifting operations do not require repositioning of the crane.

The most appropriate method will be decided by the lifting contractor and the turbine manufacturer, prior to turbine erection.

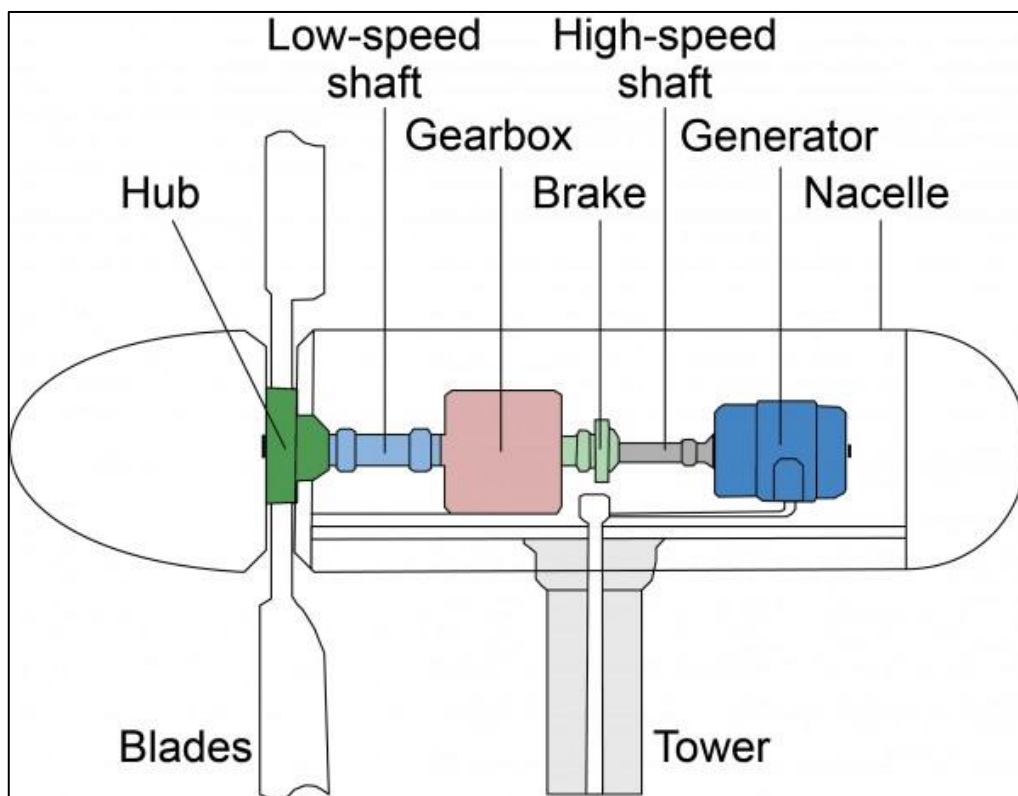


Plate 2.4: Turbine components³ Source: (University of Michigan, 2022)

³ (Michigan, 2022) University of Michigan, 2022. *Center for Sustainable Systems*. [Online] Available at: <https://css.umich.edu/publications/factsheets/energy/wind-energy-factsheet> [Accessed 29 August 2022].

2.10.9 Construction Traffic

It is estimated in **Chapter 11: Traffic and Transport**, that during civil construction, 2,291 fully loaded Heavy Goods Vehicle trips will be required for the Proposed Development.

The peak number of deliveries per day will occur during the concrete pour for Turbine Foundation construction. An estimated 88 concrete deliveries will be required per Turbine Foundation. Other materials will also be delivered on such days, so a realistic estimation of peak deliveries is 100 deliveries per day (for 3 separate days in the construction programme when the Turbine Foundations will be poured). On these concrete pour days, approximately 11-15 deliveries per hour will be required.

2.10.10 Reinstatement and Monitoring

Following completion of construction, all plant and machinery will be removed from the Site. The temporary works/assembly areas needed for the construction period such as blade laydown areas (A cleared, greenfield, flat area to store the blades. It is positioned adjoining the main crane hardstand.), will be reinstated using the original spoil material removed and stockpiled close to the location from where it was excavated as explained in **Chapter 6: Biodiversity and Chapter 7: Land and Soils**. Stockpiles will be restricted to less than 2 m in height and located outside of the surface water buffer zones. All stockpiling locations will be subject to approval by the Site Manager and Project Ecological Clerk of Works (ECoW).

A Habitat Management Plan will be implemented to enhance the cover of semi-natural heath and grassland habitats within the proposed wind farm site. This plan comprises measures for the restoration of an area of existing hardstanding, approximately 0.85 Ha in size, to a mix of heath and acid grassland habitat.

The upgraded local roads along the Turbine Delivery Route will be reinstated (temporary and permanent) in accordance with "Guidelines for Managing Openings in Public Roads", Department of Transport, Tourism and Sport, Second Edition (Rev. 1), April 2017. This will involve full-width resurfacing as part of the permanent Reinstatement to be carried out once commissioning of the wind farm substation is complete.

The grid route will be completed as described in Section 2.8.

The on-site installed drainage network will be left in place. This will be monitored on a quarterly basis to see that it is operating to its stated design purpose. Water monitoring on nearby natural watercourses will be undertaken during and post construction to determine if any pollution has migrated off-site, and if so, implement measures to rectify the impact. Details of this can be found in **Chapter 8: Hydrology and Hydrogeology**.

There will be no Reinstatement works required during the Decommissioning phase.

2.10.11 Construction Supervision and Monitoring

The construction activities will be monitored by a Geotechnical Engineer, a qualified archaeologist and an Ecological Clerk of Works (ECoW). The Geotechnical Engineer will be contracted for the detailed design phase and their services retained throughout the construction and Reinstatement phases. The Geotechnical Engineer will oversee all earthworks and excavation activities and monitor for issues such as ground stability, water ingress into excavations etc. Roles and responsibilities are further detailed in **Appendix 2.1**.

Daily monitoring of excavations by the Geotechnical Engineer will occur during the construction phase. If high levels of seepage inflow occur, excavation work will immediately be stopped and a geotechnical assessment undertaken. Further details of what this will involve are detailed in **Chapter 7: Land and Soils** and **Chapter 8: Hydrology and Hydrogeology**.

The ECoW will be employed prior to the commencement of the construction phase to monitor and review the pollution control measures and working practices during construction and have input into site remediation. The ECoW will have stop work authority if, for example, a sensitive habitat feature is encroached upon or there is the possibility of silt/pollution runoff to natural watercourses.

The potential exists for the presence of unrecorded, sub-surface archaeological features within green field locations in proposed construction areas within the Site. A series of pre-construction and construction phase archaeological investigations under licence by the National Monuments Service will be carried out by a suitably qualified archaeologist. The archaeologist will have responsibility for ensuring that potential archaeological features are protected should any be discovered during excavations. The Site will be accessible to the appointed archaeologist at all times during working hours and the nominated archaeologist will monitor all invasive works.

If any sub-surface archaeological remains are identified during site investigations, they will be cleaned, recorded and left to remain *in situ* within cordoned off areas while the National Monuments Service are notified and consulted in relation to appropriate future mitigation strategies, which may entail preservation *in situ* by avoidance or preservation by record by archaeological excavations.

A Water Quality Management Plan has been prepared as part of **Appendix 2.1** and will be implemented prior to commencement of construction. Regular inspections of the installed drainage system will be undertaken, especially after heavy rainfall events, to check blockages and see that there is no build-up of standing water in any part of the system where it is not designed to be.

Excess build-up of silt will be removed at check dams, attenuation/settlement ponds or any other drainage feature by scraper or excavator and under the supervision of the ECoW.

During the construction phase, field testing and laboratory analysis of a range of parameters with relevant regulatory limits and Environmental Quality Standards will be undertaken for each watercourse close to the Site, and specifically following heavy rainfall events (i.e., weekly, monthly and event based). The locations and further detailed in **Chapter 8: Hydrology and Hydrogeology**.

The CEMP for the Proposed Development sets out the proposed site organisation, sequencing of works, methodologies, mitigation measures and monitoring measures.

The local road network near the Site is used to transport construction materials and will be monitored during construction, so that any damage caused by construction traffic associated with the Proposed Development can be identified and repaired, as local roads are more prone to damage than national roads. Readymix concrete will be sourced from local quarries when required (see locations in **Figure 11.4**) and monitoring, such as visual inspections, will also be undertaken on the route as required. This is detailed and assessed in **Chapter 11: Traffic and Transportation**.

2.10.12 Construction Sequencing

It is envisaged that the following will be the sequence of construction for the Proposed Development:

1. Site Preparation including drainage
2. Completion of Site Roads
3. Contractor Compound and Welfare Facilities
4. Completion of Crane hardstands
5. Turbine Foundations
6. Internal cable ducting
7. Installation of the Grid Connection
8. Erection of wind turbines
9. Commissioning and Energisation

The 20 kV substation will be constructed in parallel with Turbine Hardstands, foundations and ducting.

The first step will be to prepare the Site for construction. This will include implementing the designed drainage measures. The Site Access Roads will then be upgraded. The next step will be to construct the Temporary Construction Compound and Welfare Facilities. The next step will be to prepare the areas of the Site where site infrastructure is to be located by marking out the construction works corridor, the relevant environmental buffer zones.

Following site preparation, upgrades to the crane hard-standing areas for the 3 No. turbines will occur. The 3 No. Turbine Foundations will then be excavated and foundations constructed using reinforcing bar (rebar) and imported concrete. No concrete batching will take place on site.

Following the construction of the Turbine Foundations, internal cable ducting from the turbine locations to the on-site 20 kV substation will be laid in trenches along the constructed access roads.

The last step will be to erect the 3 No. wind turbines on the foundations using two cranes. Commissioning and testing of the turbines can then proceed.

2.10.13 Construction Employment

It is estimated that approximately 35 construction workers will be employed on-site at peak.

2.11 COMMISSIONING

Wind farm commissioning can take in the region of two months to complete from the erection of the final turbine to the commercial exportation of power to the national grid. It involves electrical and mechanical testing and control measures to check that the wind farm will perform and export power to the national grid, as designed and commissioning engineers working through an entire schedule of SCADA (Supervisory Control and Data Acquisition).

2.12 OPERATION AND MAINTENANCE

During the operation of the wind farm, the turbine manufacturer, the wind farm operator, or a service company will carry out regular maintenance of the turbines, Electrical Substation and site infrastructure. Monthly routine inspection and preventative maintenance visits will be necessary to provide for the smooth and efficient running of the wind farm. This will occur

over one day with one vehicle attending the Site. In addition, operation and monitoring activities will be carried out remotely with the aid of computers connected via a telephone broadband link.

2.13 DECOMMISSIONING

The Applicant is applying for a consent for a period of 40 years for the operation of the wind farm. The full description of the Decommissioning is as follows:

- Removal of 3 No. wind turbines.
- Removal of all associated underground electrical and communications cabling connecting the wind turbines to the wind farm substation.
- The Grid Connection will become part of the ESB networks and will become a permanent asset

All other elements of the Proposed Development will remain in-situ. The Site Access Roads and associated drainage systems will serve ongoing forestry and agriculture activity in the area. All other hard surfaced areas will be allowed to revegetate naturally. Based on the experience of the project team monitoring operational wind farm sites throughout the country, the approach of allowing these areas to revegetate naturally has proven to be very successful.

Cranes of similar size to those used for construction will disassemble each turbine using the same crane hardstands. The towers, blades and all above ground components will be removed from site and reused, recycled, or disposed of in a suitably licenced facility. (The financial costs of Decommissioning, at current material values, will be more than met by the recycling value of the turbine components.)

Turbines will be cut on site so as to fit on articulated trucks, therefore allowing the use of the civil construction delivery route to the south for removal.

Potential impacts will be similar to that of the construction phase, albeit to a lesser extent and are described in each chapter of this EIAR.

A Decommissioning plan is included as part of the CEMP in **Appendix 2.1**. Prior to the Decommissioning works, a plan will be submitted to the planning authority for written agreement. The plan will take account of contemporary best practice.

2.14 COMMUNITY BENEFIT

In addition to helping Ireland reduce environmentally damaging fossil fuel emissions and helping avoid significant fines from the EU, Derreenacrinnig West Wind Farm will also contribute positively to the national and regional economy.

A SEAI report indicated that in 2019 wind energy generated 32 % of all electricity, avoided 3.9 million tonnes of CO₂ emissions; and avoided approximately €260 million in fossil fuel imports⁴. Additionally, a report published by Baringa in January 2019 states that:

“Our analysis indicates that the deployment of 4.1 GW of wind generation capacity in Ireland between 2000 and 2020 will result in a total net cost to consumers, over 20 years, of €0.1 bn (€63 million to be exact), which equates to a cost of less than €1 per person per year.”⁵

In addition to the above financial costs and benefits, the Baringa report outlines that wind generation in Ireland avoids:

“33 million tonnes of power sector CO₂ emissions. The total carbon emissions from electricity generation in 2017 was 11.7 Mt, so a saving of 33 Mt is equivalent to almost 3 years of total carbon emissions in the electricity sector today. 137 TWh of fossil fuel consumption at a saving of €2.7 bn. In comparison, Ireland consumed 44 TWh (3814 ktoe) of fossil fuels for electricity generation in 2017, so a saving of 137 TWh is equivalent to 3 years of current fossil fuel consumption for electricity generation.”

The Project has the potential to bring significant positive benefits to local communities. It will support sustainable local employment; it will contribute annual rates to the local authority; and it will provide opportunity for local community investment in the Project in line with the new Renewable Energy Support Scheme (RESS). This is a Government of Ireland initiative that provides support to renewable energy projects in Ireland. A Community Benefit Fund will be put in place for the RESS period (i.e., 15 years of the operation) of the Project to provide direct funding to those areas surrounding the Project. The significant annual community benefit fund will be established in line with Government policy which will include funding for both wider community initiatives and a Near Neighbour scheme focused on houses in close proximity to the Project.

It is anticipated that for each megawatt hour (MWh) of electricity produced by the wind farm, the Project will contribute €2 into a community fund for the RESS period i.e., first 15 years of operation. If this commitment is improved upon in upcoming Government Policy, this will be adjusted accordingly.

⁴ <https://www.seai.ie/publications/Energy-in-Ireland-2020.pdf> [Accessed 08/02/2022]

⁵ <https://windenergyireland.com/images/files/baringa-wind-for-a-euro-report-january-2019.pdf> [Accessed 08/02/2022]

The Project has the potential to make more than €40,000 available per annum in the local area for community funding for the RESS period, consistent with Government Policy. However, the above figure is indicative only and is and will be dependent on the generation capacity of the wind farm which is influenced by a number of factors including:

- Number and type of wind turbines permitted
- Capacity and availability of energy production of the delivered turbines
- Quantity of wind and wind conditions in any given year

2.14.1 Community Engagement

During October 2024 a Public Information Day was held as part of the Public Consultation process. The Proposed Development was advertised in the local community; leaflet drops were carried out to homes within 2 km of the Proposed Development in October 2024. All leaflets contained information such as the scope of the Project, the Project history, potential climate change benefits of the Proposed Development, potential haul routes, and a contact email. The PID was held in the Drimoleague community centre on the 9th of October 2024. An invitation was distributed to all homes within 2 km of the Site. All TDs, Senators and Cllrs in the relevant area were invited to attend the event. This public information day featured information about the Project, the environmental surveys completed to date, photomontages illustrating the visual impact of the turbines from local viewpoints, details of the Project timeline and information on other aspects of wind energy. In total, the public information day was attended by c.50 people.

2.14.2 Fund Usage and Administration

The Community Benefit Fund belongs to the local community surrounding the Proposed Development. The premise of the fund is that it will be used to bring about significant, positive change in the local area. To make this happen, the first step will be to form a benefit fund development working group that clearly represents both the closest neighbours to the Project as well as nearby communities. Workshops will be organised to facilitate consideration of the priorities for the local fund. This group will then work on designing the governance and structure of a community entity that will administer the Community Benefit Fund.

It is acknowledged that the people living closest to a wind farm are the most important stakeholders and a proportion of the Community Benefit Fund will be set aside as a dedicated "Near Neighbour Fund". The exact structure of this will be confirmed as part of the Proposed Development of the overall Community Benefit Fund but would typically provide support of varying degrees for properties up to 2 km from turbines. This is supported

by the requirements set out in the RESS2 and may be adjusted in future RESS schemes that may relate to this Project.

2.14.3 Community Investment

The Renewable Energy Support Scheme (RESS) - RESS-2⁶ sets out that future renewable energy project proposals will enable the possibility for local communities to invest in projects in a meaningful way as a means to directly gain from the financial dividends that a project can provide should it be consented, built and operated.

This element was not included in the RESS-1 or RESS-2 Schemes, but it is expected to form part of later RESS-3 Scheme which will apply to this Project. In preparation for this, the Developer has been working with external agencies to develop workable models of Community Investment.

⁶ <https://www.gov.ie/en/publication/7f0bb-renewable-electricity-support-scheme-2-ress-2/>, Accessed 20/01/2022.

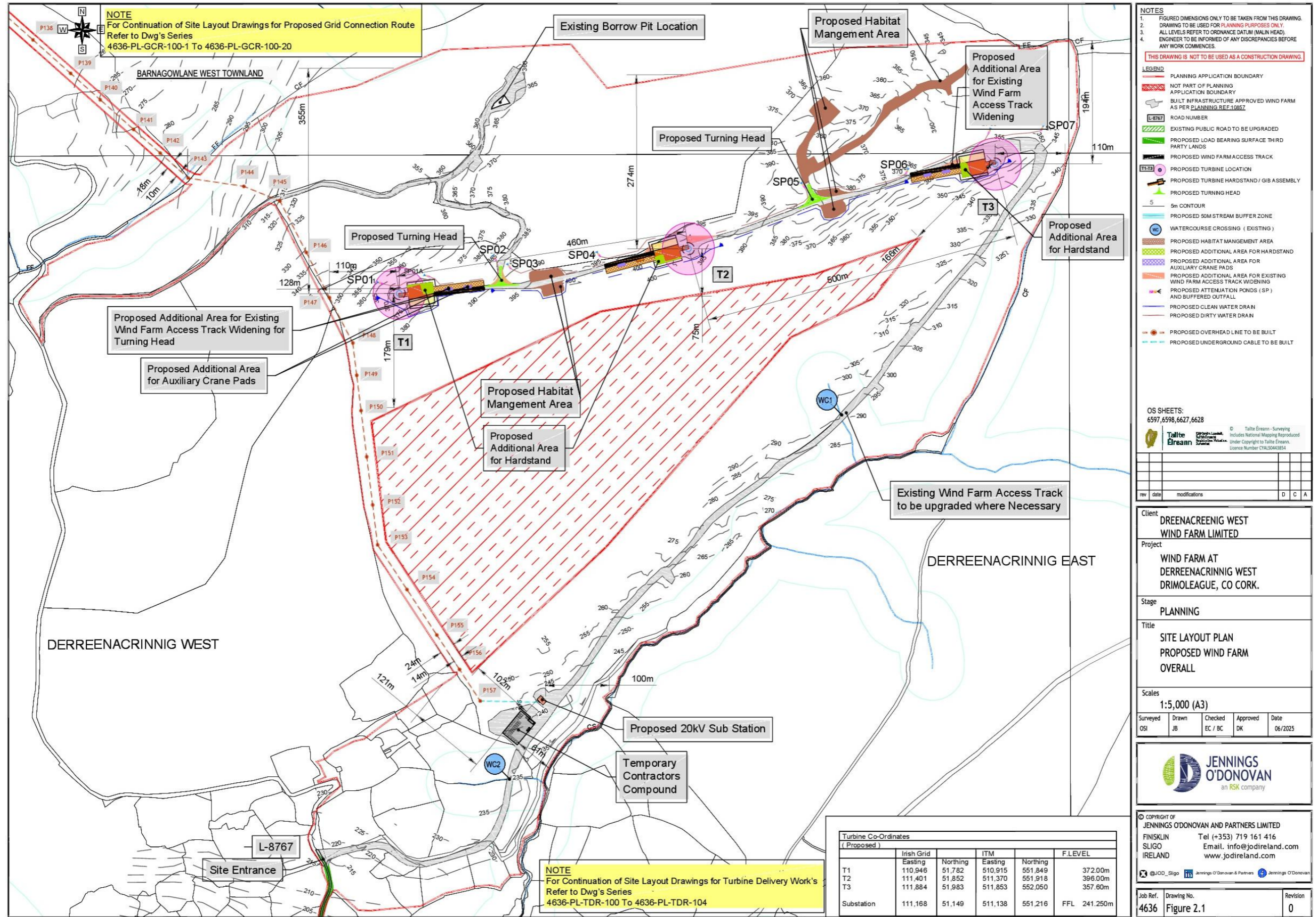


Figure 2.1: Wind Farm Layout

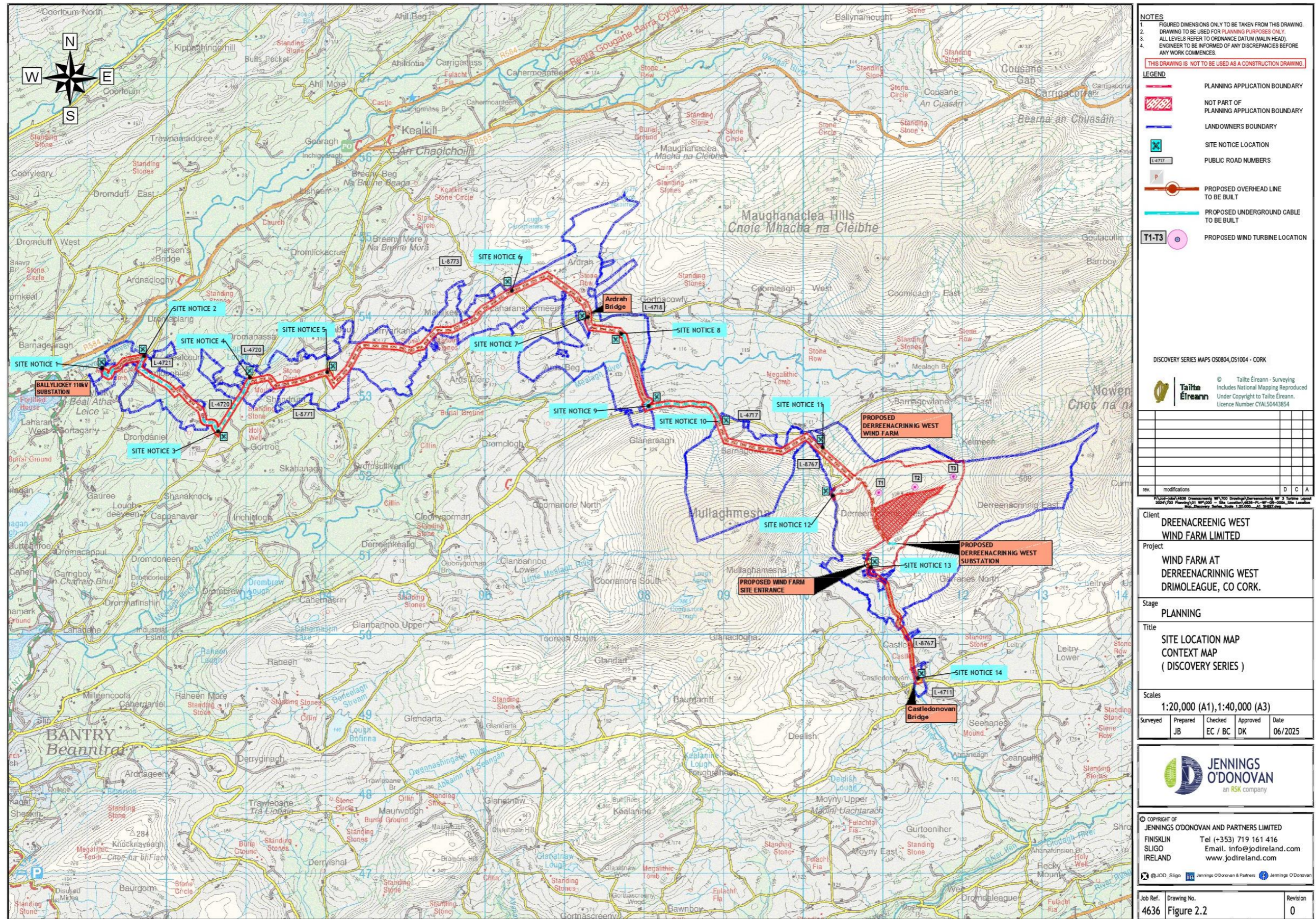
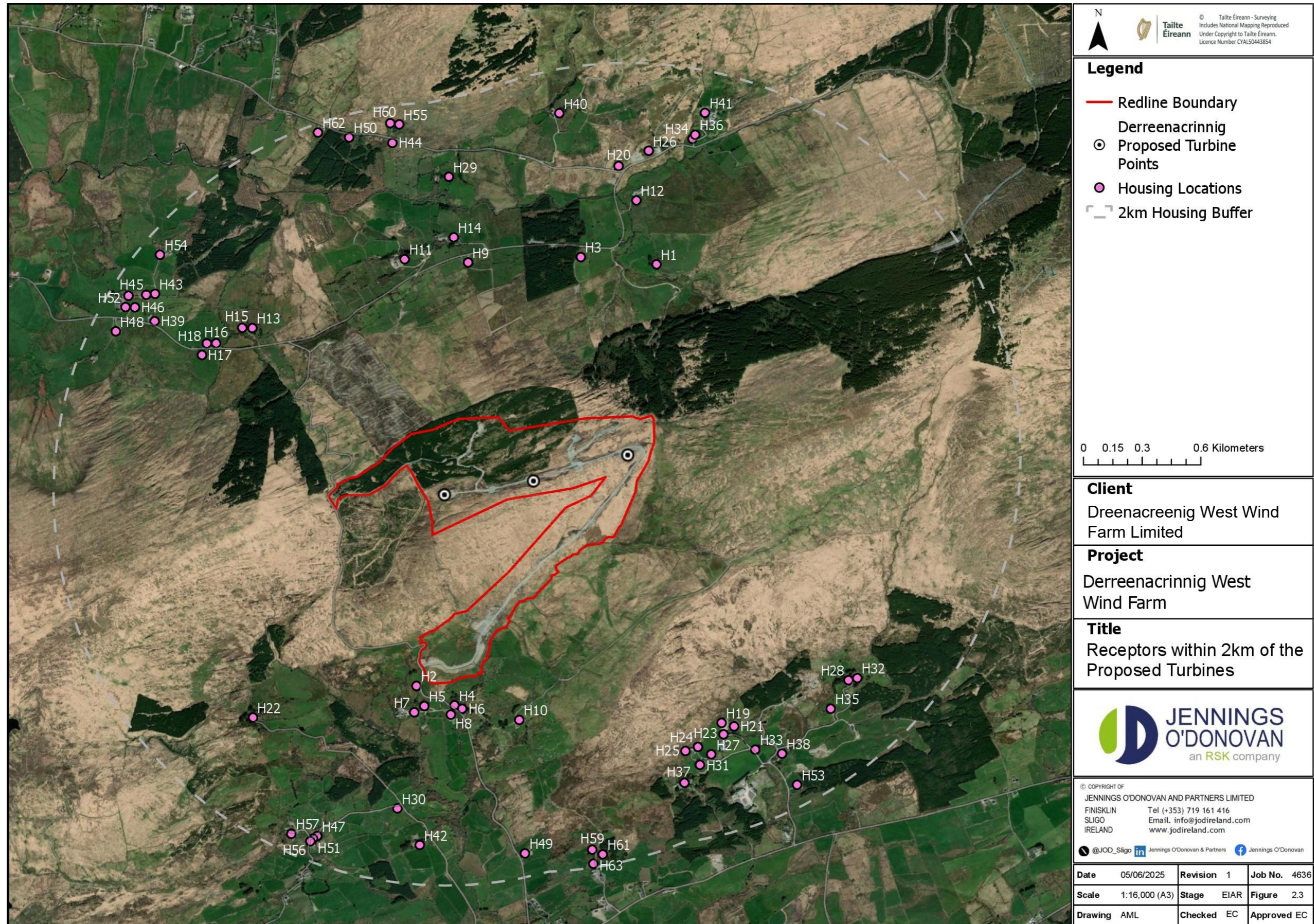







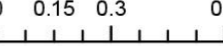
Figure 2.2: Site Location Map





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Legend


- Redline Boundary
-  Derreenacrinnig Proposed Turbine Points
-  Housing Locations
-  2km Housing Buffer

0 0.15 0.3 0.6 Kilometers




Client
Dreenacreenig West Wind Farm Limited

Project
Derreenacrinnig West Wind Farm

Title
Receptors within 2km of the Proposed Turbines


JENNINGS O'DONOVAN
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Date 05/06/2025	Revision 1	Job No. 4636
Scale 1:16,000 (A3)	Stage EIAR	Figure 2.3
Drawing AML	Checked EC	Approved EC

Figure 2.3: Receptors within 2 km of the Site

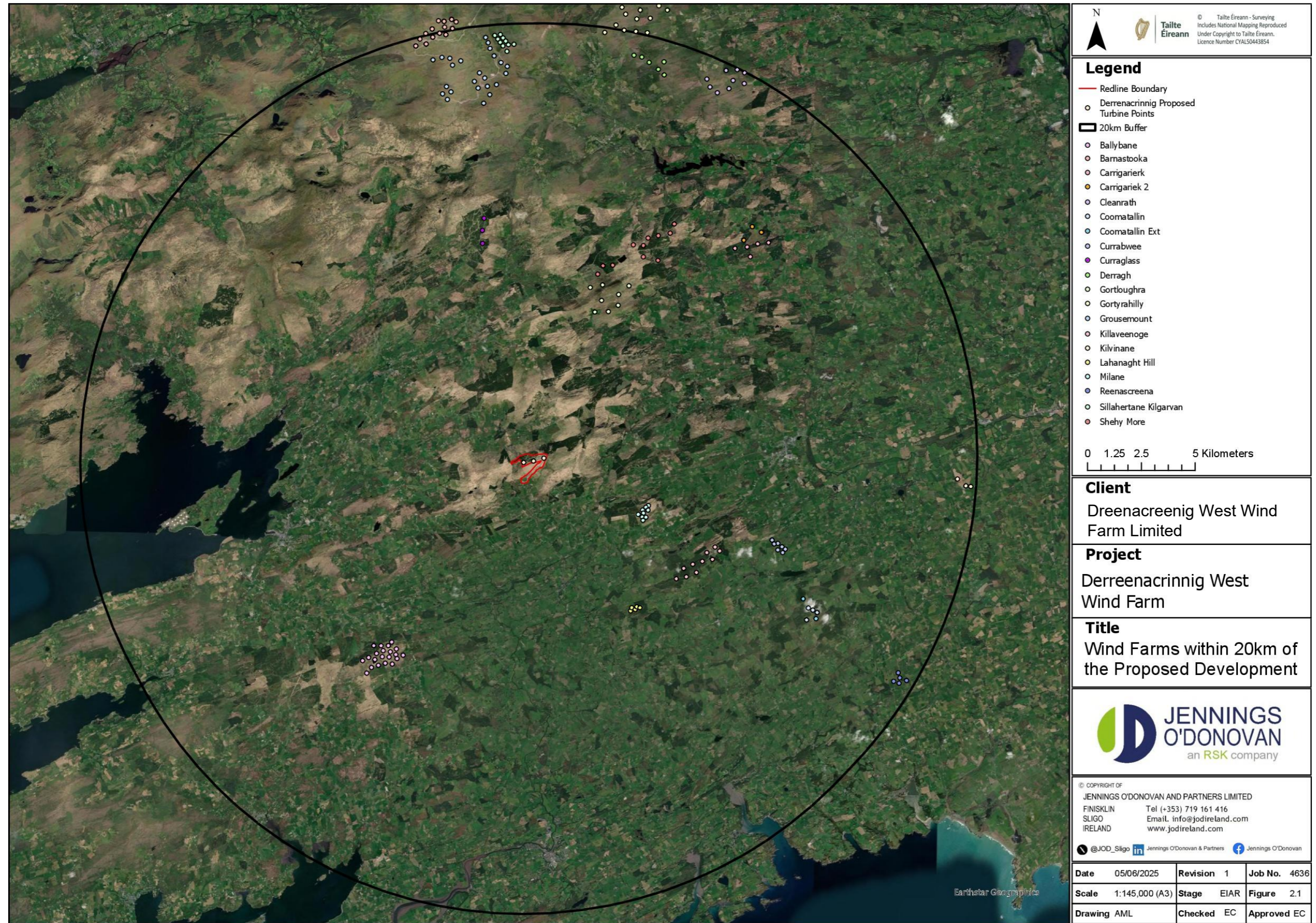


Figure 2.4: Wind Farms within 20 km of the Site

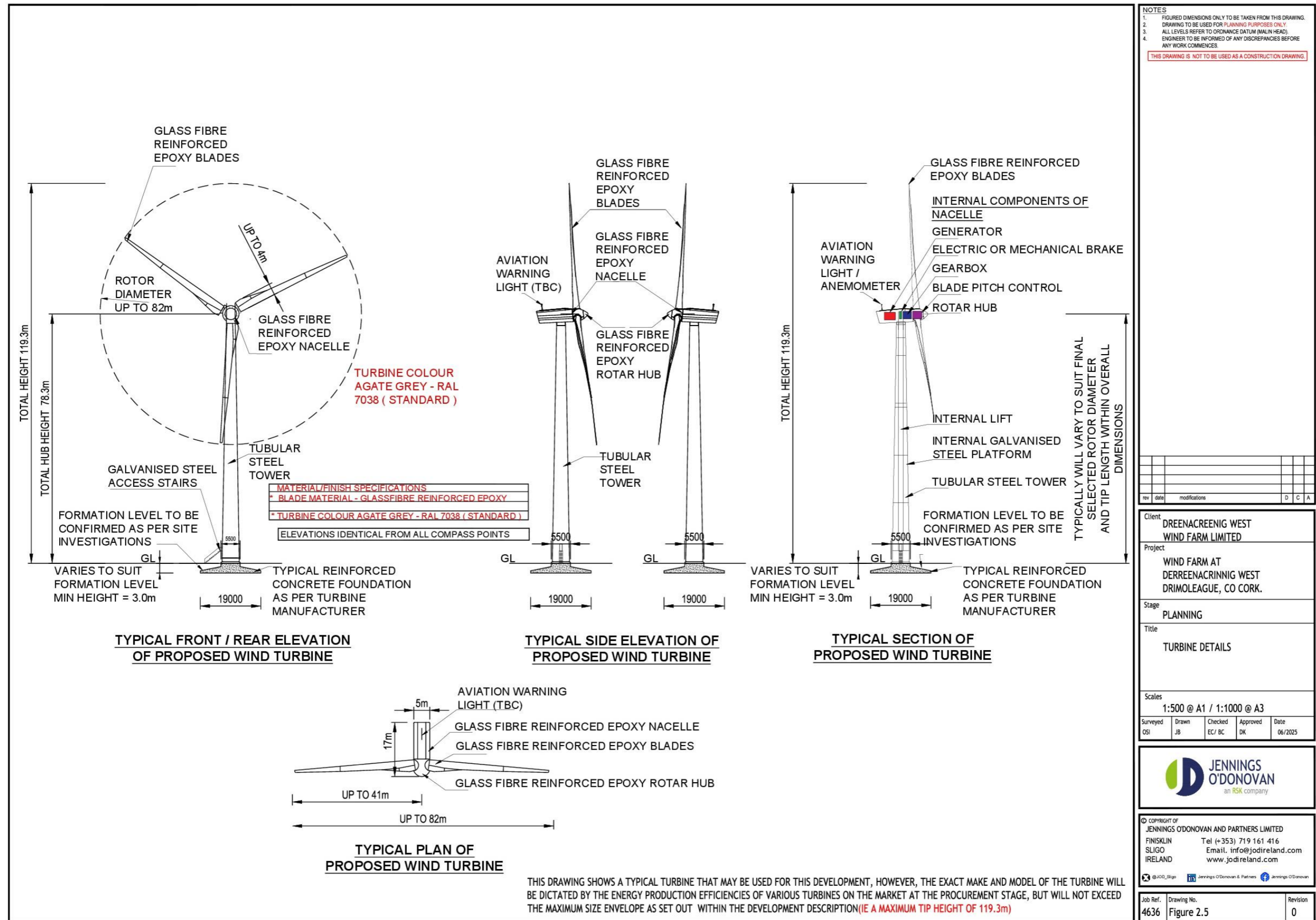


Figure 2.5: Turbine Details

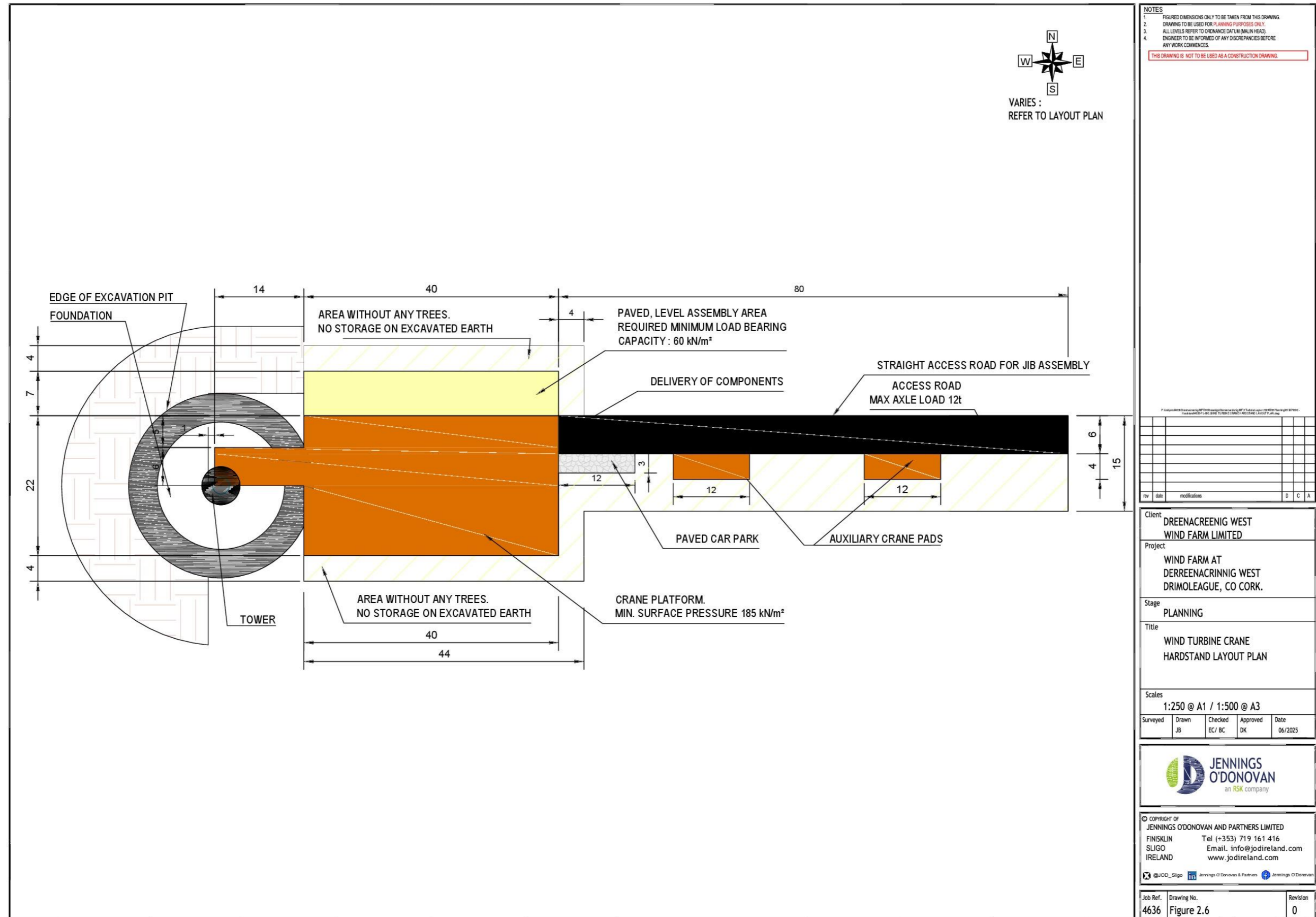


Figure 2.6: Turbine Hardstands

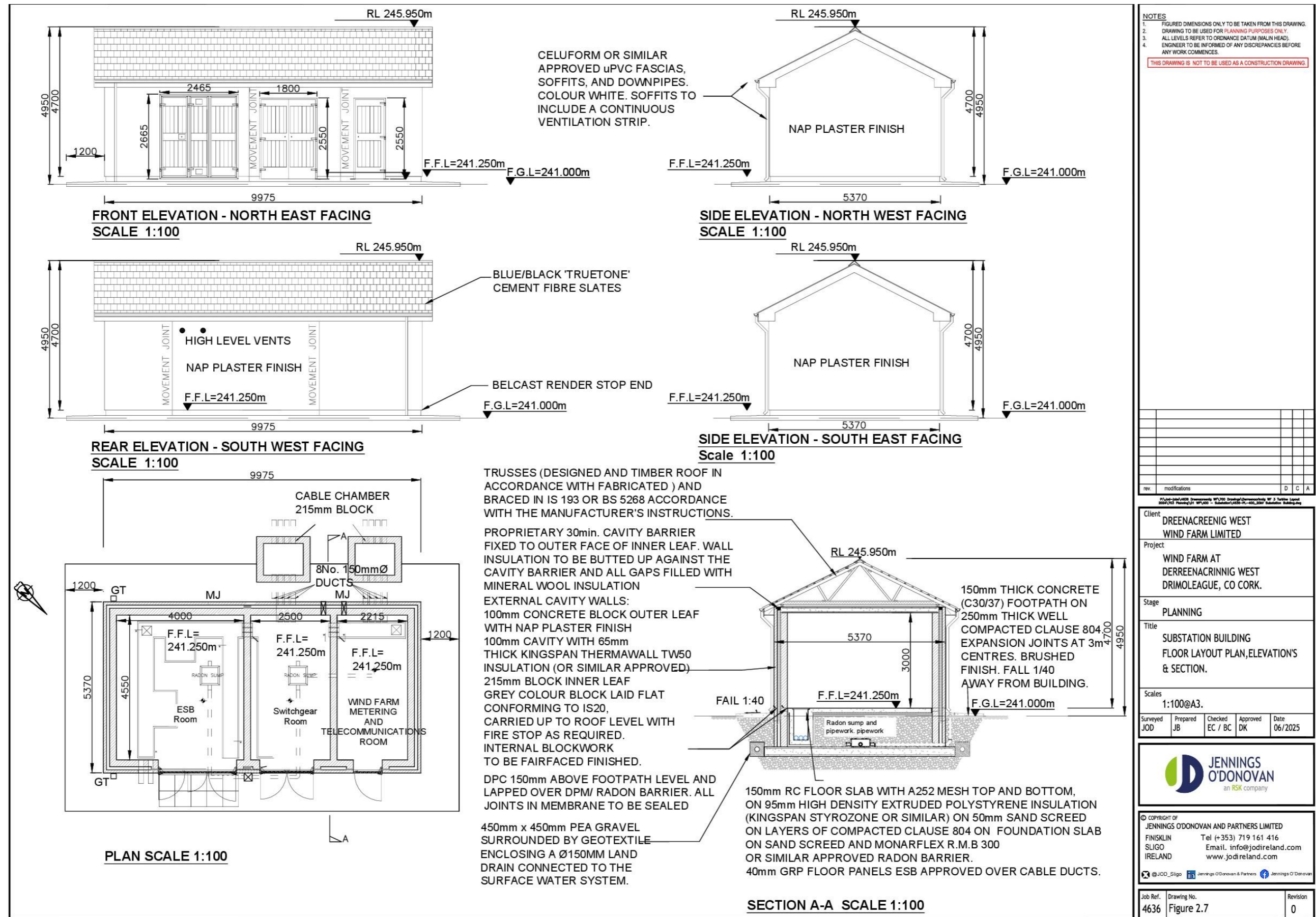


Figure 2.7: Substation Layout

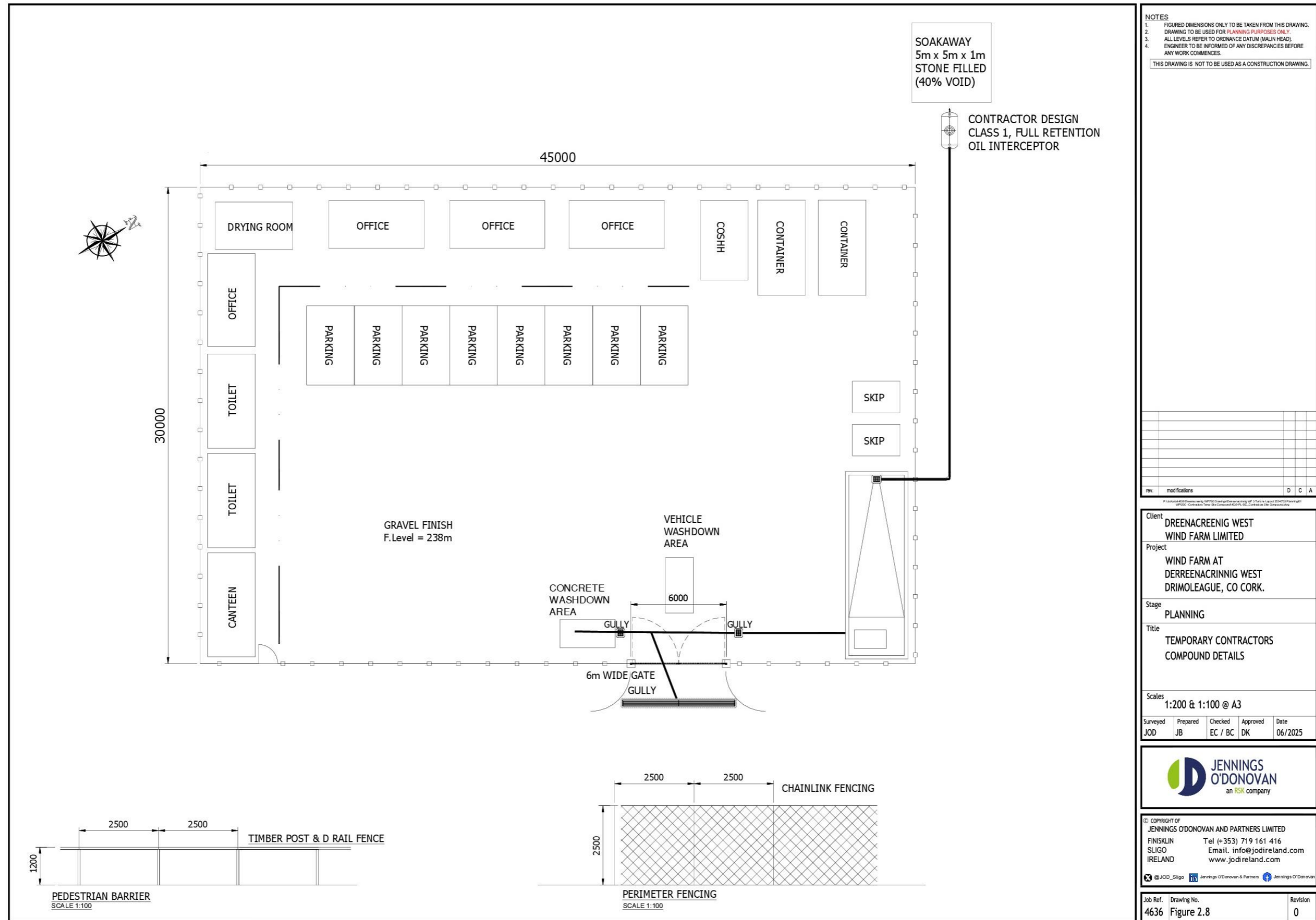


Figure 2.8: Temporary Contractors Compound Details