Mullaghclogher Wind Farm

Design & Access Statement



power for good

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1. Introduction

The Proposed Development

This Design and Access Statement has been prepared by RES Ltd in support of a full planning application for Mullaghclogher Wind Farm, hereinafter referred to as the Proposed Development, located in the townlands of Carrickayne, Legnahappoge, Glengarrow, Stroanback and Doorat, 4KM North East of Plumbridge, Northern Ireland. Please see **Figure 1: Site Location.**

The Proposed Development comprises up to 11 three-bladed horizontal axis wind turbines, each up to 180 m maximum tip height; associated external electricity transformers; underground cabling; access tracks; turning heads; crane hardstandings; control building and substation compound, battery energy storage containers, off-site areas of widening to the public road and all ancillary works. During construction and commissioning there would be a number of temporary works including a construction compound with car parking; temporary parts of crane hardstandings; welfare facilities. The purpose of the development is for the generation of electricity.

The Proposed Development is shown in **Figure 2: Infrastructure Layout.**

The Applicant

RES is the world's largest independent renewable energy company. At the forefront of the industry for over 40 years, RES has delivered more than 23GW of renewable energy projects across the globe and supports an operational asset portfolio exceeding 12GW worldwide for a large client base. RES is active in 14 countries working across onshore and offshore wind, solar, energy storage, green hydrogen and transmission and distribution.

RES has developed 26 onshore wind farms in Northern Ireland totalling in excess of 400MW and operates over 134MW of wind capacity across Northern Ireland including the Craiggore and Evishagaran Wind Farms in Co. Derry/Londonderry, constructed in 2022, and Murley Mountain Wind Farm in County Tyrone, in 2023.

The Requirement for a Design & Access Statement

This statement is provided in accordance with Section 40 (3a&b) of the Planning Act (Northern Ireland) 2011 and Article 6b of the Planning (General Development Procedure) Order (Northern Ireland) 2015, which require applications for Major Developments, or applications within a designated area and comprising a building or buildings where the floor space created exceeds 100 m^2, to be accompanied by a Design and Access Statement. The Proposed Development is a Major Development application. The Proposed Development includes a wind farm substation compound

containing a control building which result in the creation of circa 136.45m^2 of floor space.

The requirement for Design and Access Statements is in response to the recognised need to secure positive place making, incorporating good design and access and contributing towards the government objective of promoting sustainable development. A Design and Access Statement should:

- Explain the design principles and concepts that have been applied to the development;
- Demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account;
- Explain the policy or approach adopted to access and in particular, how the policies relating to access to, from and within the development have been taken into account;
- Demonstrate how policies relating to access in the local development plan have been taken into account and any specific issues which might affect access to the development for disabled people have been addressed;
- Describe how features which ensure access to the development for disabled people will be maintained;
- State what if any consultation has been undertaken on issues relating to access to the development and what account has been taken of the outcome of any such consultation;
- Explain how any specific issues which might affect access to the development have been addressed; and
- Explain the design principles and concepts that have been applied to take into account environmental responsibility.

This Design and Access Statement will therefore demonstrate that the Proposed Development is responsive to both its surrounding context and local development plan policies incorporating the requirements as laid out in Article 6 of the Planning (General Development Procedure) Order (Northern Ireland) 2015 and Development Management Practice Note 12 – Design and Access Statement (April 2015).

2. Development Context

Physical Context

8.1 The application site is located in the townlands of Carrickayne, Legnahappoge, Glengarrow, Stroanback and Doorat, 4KM North East of Plumbridge, Northern Ireland. The site is located in the central western part of the Sperrin Area of Outstanding Natural Beauty (AONB) on upland grazing land. Key watercourse receptors relating to the proposed development are the Upper Burn Dennett River, the Eden River, and

the Glenelly River, together with a series of small tributary streams which drain the area within the Site Boundary.

The Site can be accessed via the Carrickayne Road. The location of the Proposed Development is shown in **Figure 1: Site Location**.

Planning Policy Context

PPS 1 – General Principles (March 1998)

PPS 1 sets out the general principles that the Department observes in making development management decisions and also establishes the requirement to secure high quality design in new developments with a desire to ensure that the relationship with surrounding spaces is considered.

PPS 3 – Access, Movement and Parking (February 2003)

Policy AMP 2 states that "Planning permission will only be granted for a development proposal involving direct access, or the intensification of the use of an existing access, onto a public road where such access will not prejudice road safety or significantly inconvenience the flow of traffic".

PPS 13: Transportation and Land use

Planning Policy Statement, PPS 13 "Transportation and Land Use" has been prepared to assist in the implementation of the RDS. It will guide the integration of transportation and land use, particularly through the preparation of development plans and transport plans. It will also be a material consideration in dealing with individual planning applications and appeals. The main objective of PPS13 is to integrate planning and transport at the national, regional, strategic and local level and to promote "a modern, sustainable, safe transportation system which benefits society, the economy and the environment and which actively contributes to social inclusion and everyone's quality of life."

PPS 21 – Sustainable Development in the Countryside (June 2010)

Policy CTY1 states that non-residential development in the countryside will only be permitted if there are overriding reasons why the development is essential in that location. It goes onto to state that renewable energy projects are acceptable in the countryside with the proposed buildings in this instance required for the operation of the Proposed Development. The policy also requires that appropriate proposals for drainage and access are included.

Policy CTY14 states that a new building in the countryside will be unacceptable where it

Is unduly prominent in the landscape; or
Results in suburban style development; or
It does not respect traditional patterns or settlement; or

It creates or adds ribbon development; or
The impact of ancillary works would damage the rural character.

Planning Strategy for Rural Northern Ireland

Policy DES 4 Areas of Outstanding Natural Beauty requires that development proposals within an AONB should be sensitive to the distinctive character of the area. In applying this, account should be given to the economic and social well-being of those living within the AONB and the needs of local communities. Respect should be given to the traditional architectural styles and settlement patterns in these areas.

Building on Tradition – A sustainable Design Guide for the Northern Ireland Countryside (May 2012)

This document is intended to support PPS 21 and offer guidance on its implementation. The relevant sections are 4, relating to visual integration and 6, on new buildings in the countryside.

Local Policy

The proposed 11 turbines fall within the Derry City & Strabane District Council area. The Site is located within the Sperrin's Area of Outstanding Natural Beauty (AONB). The relevant local development plans is the Strabane Area Plan (1986-2001),
The purpose of the Strabane Area Plan (1986-2001) is to set out the broad land-use and policy framework for the physical development of the Strabane District. It aims to create urban and rural environments which will make a positive contribution to an improvement in the quality of life in the District. Whilst significantly dated (published in January 1989) it remains the extant plan for the area. The application site falls outside of any defined settlements in the Plan and as such falls within the countryside. The District Council is currently preparing a new Local Development Plan (LDP) for the Borough up to 2032. In the interim, the current Area Plans are the Derry Area Plan 2011 and the Strabane Area Plan 1986 – 2001. The latter Plan covers Mullaghclogher and the surrounding area. The Development falls within An Area of Outstanding Natural Beauty (Sperrins) in so far as set out above under the consideration against PPS2 Policy NH6.

3. Design Statement

Site Selection

RES considers a range of potential factors when selecting a wind farm site. The following are key attributes that contribute to a viable site, which the application site possesses:

- Wind Speeds/Energy Yields: Sufficiently high wind speeds to ensure energy production from the wind turbines that would yield an adequate return on investment
- Planning: A site which complies with planning policy and in particular, avoids unacceptable effects on areas designated by statutory agencies; maintains appropriate distances from dwellings to avoid unduly impacting local amenity and; avoids impeding or interfering with major electromagnetic transmission and airport communication systems
- Area of Site: A site must have sufficient area to accommodate the number of wind turbines required for economic viability
- Access: Adequate vehicular access to a site using existing roads wherever possible to minimise the amount of civil works, particularly during the construction phase

Local Terrain and Topography: Terrain and topography affect wind flow across a site and need to be considered in relation to turbine performance, specification and life-span

- Ground Conditions: A site must have suitable ground conditions for the construction of wind turbine foundations, erection of the machines and the provision of access tracks and cables.

Design Strategy

Design Principles

The design of the Proposed Development was optimised in order to produce a layout that maximises the use of the land available for wind power generation balanced against the overall environmental impact of the development.

The following design principles were applied:

- The turbines must be separated by specific distances both perpendicular to, and in line with, the prevailing wind direction to minimise turbulent interaction between the wind turbines (i.e. wake effect). This needs to be considered to balance turbine performance with energy extraction, and to protect the life-span of the turbines. Spacing requirements vary between turbine manufacturers and are also subject to wind conditions
- The turbines must be located at a distance sufficiently far from occupied residential property to ensure adherence to relevant noise criteria and to ensure that shadow flicker impacts are minimised
- The turbines should be located in order to avoid and/or minimise potential effects on environmentally sensitive features (ecology, archaeology, hydrology etc.)
- Landscape and visual design considerations should be taken into account, including relationships with adjacent wind farm developments

- Utilisation of existing infrastructure should be implemented whenever possible to avoid unnecessary development
- Mitigation by design should be the principle method of reducing potential environmental impacts
- All site infrastructure should be designed as efficiently as possible to reduce the overall extent of development whilst maximising the renewable energy generation potential.

For the Proposed Development, the upland nature of the application site created a number of sensitivities that needed to be carefully addressed through appropriate design of the wind farm. The basis of the design process is the evaluation of the various constraints that were identified through the environmental surveying that was undertaken, and consideration of landscape and visual effects. The following sections identify potential issues and outline how these have been addressed through appropriate design.

Key Considerations

Following consultation and baseline characterisation of the site, the following key environmental issues have been identified:

- Landscape and visual, including relationship with neighbouring wind farms
- Archaeology and cultural heritage
- Peatland and vegetation
- Fauna, including ornithology and fisheries
- Geology and the water environment
- Noise and shadow flicker
- Traffic and transport

The issues listed above will be considered through design with the aim of designing out significant effects. Where it is not possible to mitigate by design, the issues were considered further as part of the Environmental Impact Assessment (EIA), described in the Environmental Statement (ES).

A key tool in the design process is the combined constraints drawing which integrates all potential constraints that need to be considered in the design process. The finalised Combined Constraints and Infrastructure map is shown as Figure 4.

The combined constraints drawing is iteratively updated as new information from surveys, site visits and consultation is received. The following surveys informed the combined constraints drawing and design evolution process:

- Breeding and wintering bird survey
- Ornithological vantage point survey
- Phase 1 habitat survey and National Vegetation Classification (NVC) Phase 2 survey
- Terrestrial fauna surveys

- Fisheries survey
- Peat probing, peat management plan and peat slide risk assessment
- Hydrology assessment
- Archaeology and cultural heritage surveys
- Landscape field survey
- Transport and traffic reconnaissance trip

In addition, a number of multidisciplinary site walk-overs were arranged by RES, involving engineering, ecology, peatland, geology and water environment specialists to collaboratively review the layout in response to the combined constraints, discuss interrelationships and mitigation, resolve potential conflicts and agree actions for further assessment. This ensured that interrelationships were thoroughly considered in the design of the layout.

Turbine Layout Evolution

There were four principle iterations of the turbine layout, shown in Figure 3: Turbine Layout Evolution, which were developed at the following stages in the project process:

- Initial feasibility/screening stage, when turbines were located based on preliminary constraints only, with baseline environmental surveys underway but not yet completed.
- EIA baseline data stage, when layouts were developed in response to baseline survey information and resulting constraint information.
- Further environmental assessment and refinement, when further, more detailed assessment was carried out on specific topics or issues highlighted and refinements were made to the layout as a result.

Initial Feasibility Stage

At the beginning of the development process an initial layout was produced to show the maximum potential extent of the development within the space available and in accordance with the design principles and preliminary environmental information, prior to baseline surveys being completed. The layouts were informed by the following constraints:

- Preliminary ecological constraints
- Preliminary watercourse buffers
- Topography
- Separation from housing
- Tip height + 10% to public roads, in accordance with the Best Practice Guidance to PPS 18[1].

[1] Best Practice Guidance to Planning Policy Statement 18: Renewable Energy, DOE Planning & Environmental Policy Group, August 2009.

This identified that the Site could potentially accommodate 14 turbines, to be further refined throughout the EIA process. This is layout 1 in Figure 3.

EIA Baseline Data Stage

Combined Constraints

Detailed environmental and technical surveys were completed to characterise the baseline environmental conditions on the site and associated study areas, as described in more detail in chapters 4 to 13 of the ES. Any constraints to development, or avoidance areas, resulting from the baseline surveys were used to build up the combined constraints drawing.

Key constraints informing the layout are listed in the following sections. Further details on baseline surveys and mitigation by design are included in each technical chapter of the ES (Chapters 4 to 13).

The final Combined Constraints are shown in **Figure 4** (Combined Constraints and Infrastructure).

Water Environment and Fisheries

Following the baseline survey the hydrology consultant recommended watercourse buffers of 50 m and 10 m depending on the sensitivity of the watercourse, which were agreed as appropriate by the fisheries consultant.

Terrestrial Fauna

A 25 m buffer was applied to a badger setts identified through the baseline surveys. Note that these are not marked on **Figure 3** as their location is confidential.

Bat buffers of 50 m were added to major watercourses, as advised by the ecological consultant. This achieves a 50 m buffer between the blade tip and the watercourse feature, in line with Bat Conservation Trust guidance. This is based on an assumed blade length of up to 74m, hub height of up to 105m and maximum feature height of 5 m.

S. pratensis was thinly recorded within areas of rush pasture throughout the extent of the site, and no devils- bit scabious was recorded. Therefore, the site is deemed to have negligible breeding potential for marsh fritillary butterfly.

Vegetation and Peat Stability Assessments

Areas of potentially active peat and species rich grassland were mapped as initial avoidance areas, as recommended by the vegetation and peatland consultant.

Following baseline peat probing and peat slide risk assessment, areas of deeper peat were avoided to limit excavation and spoil generation. Areas identified as medium and high peat instability were identified and avoided.

Public Roads and Overhead Electricity Lines

Buffers were applied to nearby public roads in line with the Best Practice Guidance to PPS18 which recommends a setback distance of at least tip height plus 10% between turbines and roads.

Landscape & Visual

Zone of Theoretical Visibility (ZTV) visualisations were prepared in order to indicate where all, or part of, the Proposed Wind Farm Development is likely to be visible from. The ZTV is first used to assist the identification of areas with theoretical visibility and the location of viewpoints as part of the baseline landscape and visual assessment. It is then used to aid the assessment of visual effects because the turbines would be the most visible element of the Proposed Wind Farm Development, particularly during the operational period. As described in earlier sections they are also useful in considering the height and geometry of the turbine model selected.

At an early stage of the EIA process a provisional list of viewpoints was created, from which provisional wirelines were generated, which were used to identify any potential landscape and visual issues with the turbine layout, as well as from the effects of the wind farm as a whole.

The presence of outlying turbines was addressed in the iterative design process and efforts were made to minimise instances where turbines were located at some distance or at noticeably different heights from the grouping of turbines in order to create a compact layout that minimised the geographical extent and variable height within the Proposed Development whilst also maintaining an evenly spaced layout where turbine heights instances of stacking where also minimised.

Multidisciplinary Site Walkover

A multidisciplinary site walk-over was arranged by RES, involving development, ecology, engineering, and construction to collaboratively review and refine the layout, discuss interrelationships and mitigation, resolve potential conflicts and agree actions for further assessment.

Layout 4 on Figure 3 Turbine Layout Evolution represents the result of this stage.

Further assessment and refinement stage

The turbine layout was reviewed and refined in response to further assessment actions identified by consultant review and from the collaborative site visits, including the following:

- Noise assessment, based on the background noise survey
- Shadow flicker assessment
- Archaeological assessment

- Further ecological assessment
- Further peat stability assessment
- Engineering considerations

Peat stability

Following the baseline stage, a second phase of peat probing was carried out the layout, and an outline peat slide risk assessment and peat management plan were prepared. As a result of recommendations in the outline peat slide risk assessment the locations of T4, and T5 were adjusted to occupy shallower peat, T2 and T8 were rotated to have a residual orientation which was more suitable in areas of more shallow peat, and T7 was recommended for removal from the development.

Refinements were also made to infrastructure, which are detailed later in this chapter.

Archaeology and Cultural Heritage

In consultation with the Archaeology and Cultural Heritage consultant the layout of Proposed Development has been designed to avoid significant effects on archaeological heritage assets in conjunction with appropriate mitigation.

Chapter 5: Archaeology & Cultural Heritage of the ES considers in detail the impact of the Proposed Development on the setting of a number of assets.

Noise and Shadow Flicker Assessments

Layout 3 was further reviewed following assessments for noise and shadow flicker on nearby receptors. As a result, T7 **(Layout 3, Figure 3.1)** was recommended for removal, in order to increase the separation distance to houses, reduce noise and shadow flicker impacts. Full details of the noise and shadow flicker assessments are given in Chapters 11 and 13 respectively. Both chapters conclude that with appropriate mitigation there would be no significant effects on surrounding properties.

Multidisciplinary Site Walkover

A follow up multidisciplinary site walk-over was arranged by RES, involving development, engineering, and construction to collaboratively review and refine the layout, discuss interrelationships and mitigation, resolve potential conflicts and agree actions for further assessment. Following this walkover, it was noted that T10 **(Layout 2, Figure 3.1)** was located within a proximity to a watercourse and would have required a second major water crossing to enable access to it. T10 was recommended for removal.

Layout 4 on Figure 3 shows the resulting layout.

Final Turbine Layout

The final turbine layout is shown in Layout 4 of Figure 3 and consists of 11 turbines of up to 180m tip height. The final layout, including turbines and infrastructure along with the Combined Constraints is shown in Figure 4.

A 50 m micrositing radius was applied to each of the turbines. The extent of this micrositing area was then reduced such that the micrositing avoids any of the combined constraints. The final micrositing areas are included in **Figure 2: Infrastructure Layout.**

Turbine Selection

A landscape consultant was involved throughout the design process to provide advice regarding turbine height, as well as site suitability, scale of the development and cumulative effects. A full Landscape and Visual Impact Assessment (LVIA) of the Proposed Wind Farm Development in included in ES Chapter 4.

A Zone of Theoretical Visibility diagram (ZTV) was initially prepared as part of internal project discussions to illustrate the potential hub-height visibility of a 12-turbine scheme as part of this process. It showed that there would be theoretical hub height visibility across 41.37% of the 30 km Study Area. Whilst the reduction in the number of proposed turbines is the result of other site constraints rather than any attempt to mitigate overall visual effects by a reduction in the number of turbines, it has further reduced theoretical visibility by 10.64% and the final 11-turbine layout would only be visible to hub height across 30.73% of the 30 km Study Area, which is a substantial reduction.

The Baseline Assessment identified parts of the Study Area most likely to contain key visual receptors, the potential sensitivity of either the location and / or the visual receptors likely to be present and those areas likely to experience visibility of the Proposed Development due to the theoretical levels of visibility indicated by the ZTV diagrams. This resulted in the selection of PVPs including:

- Locations within the Sperrin AONB because it is statutorily designated as nationally recognised high-quality landscapes and will attract visitors by virtue of this designation and contain various visitor amenity sites and attractions. Visual receptors present at these locations are likely to be highly sensitive;
- Residential properties and the rural road network in close proximity to the Proposed Development where viewers may either be static or obtain views for prolonged periods of time and where the Proposed Development may form a key element in these views;
- Areas of settlement where viewers may also be static and obtain views for long periods of time and where the landscape in proximity to the Proposed

Development is likely to form a key element within the landscape setting for these settlements;

- Locations from public rights of way, scenic drives and cycling routes where viewers are likely to be present for the primary purpose of appreciating scenic views. Such locations include: the Ulster Way, International Appalachian Trail and other footpaths which cross the Study Area from north east to south west; the National Cycle Network; and four scenic driving routes which cover various parts of the Sperrin AONB and its setting;
- The primary and secondary road network taking visitors to, from and across the AONB, some of which are classified as scenic driving routes, and others which provide access to some of the key visitor attractions within the AONB.

These locations guided the selection of Provisional Viewpoints (PVPs). The initial desk-based selection of PVPs, including the selection criteria used, is described in Technical Appendix 4.4 and illustrated on Figure 4.3. Sixty-three PVP locations were identified and analysed through the production of a preliminary ZTV diagram. Draft wirelines for all these locations were prepared and checked by site visits to confirm the nature of receptors and potential visibility of the Proposed Development. These draft wirelines were used as working documents and are not reproduced in this LVIA but they were used to form a detailed understanding of the nature of visibility throughout the Study Area and to inform the selection or non-selection of PVPs as shortlisted viewpoints.

Following the initial assessment,19 Viewpoints were shortlisted for detailed analysis in the LVIA. They include a proportionate number of locations which are intended to be representative of typically occurring views within the Study Area, views experienced by key visual receptors, and also views from specific locations that merit inclusion in the LVIA by virtue of their contribution to the key landscape and visual qualities of the Study Area.

As a result of the design iteration process, a tip height of up to 180m was deemed to be acceptable.

Infrastructure Design Evolution

The infrastructure design has evolved through the EIA process as illustrated in **Figure 7: Infrastructure Design Evolution, Designs 1 to 4.** Design 4 is the final design, which forms Figure 2 Infrastructure Layout.

Engineering considerations

The following general principles were taken into consideration when designing the supporting infrastructure:

- Maximise use of existing infrastructure to reduce land take
- Avoidance of environmental and technical constraints
- Design of the track layout to follow natural contours as far as possible, in order to avoid unnecessary amounts of excavation and reduce adverse hydrological impacts
- Minimisation of the overall length of access track
- Minimisation of the number of watercourse crossings, as far as possible
- Avoidance of steep slope areas to minimise earthworks
- Incorporation of measures to improve the visual appearance of the scheme, including reinstatement of some elements of temporary infrastructure following the construction period, reinstatement of road widening areas, and consultation with the landscape consultant on the position of the control room and substation building and energy storage area.

As well as the turbine positions, the layout of infrastructure was also a key consideration in the collaborative site walkovers described earlier in this chapter.

Key adjustments in response to constraints made through the design evolution are summarised in the following sections.

Vegetation and Peatland

Following the advice of the vegetation and peatland specialist a number of refinements were made to the track layout in order to minimise impacts to blanket bog habitats, including the following:

- Re-alignment of track to T2 to avoid peat habitat
- Re- alignment of track to T4 & T5 to avoid peat habitat
- Track moved further south-east from T3 to T8 to avoid peat habitat
- Track redesign, between T6, T7 (Design 1, Figure 3.3) to reduce the amount of earthworks required and excavation of peat habitat

In line with recommendations in Chapter 6: Vegetation and Peatland and Technical **Appendix 10.4**: Peat Management Plan, consideration was given to the use of floated track in areas of where peat depths exceeded 1 m, particularly within areas of Northern Ireland Priority Habitat. As well as reducing impacts on surrounding habitat the use of floated track reduces quantities of excavated peat. As such the amount of floated track proposed has increased through the infrastructure design iterations, with the final proposal shown on **Design 4 of Figure 4**. which is also included in **Figure 2: Infrastructure Layout**.

Water Environment

The location and nature of watercourse crossings were reviewed with the hydrology and fisheries consultants. Following the mitigation detailed in ES Chapter 9: Fisheries and ES Chapter 10: Geology & Water Environment,

A number of refinements were made to avoid and reduce potential effects as far as possible, including the following:

- Realignment of site entrance to avoid hydrological features
- Removal of track (subsequent to the removal of T10) to access T10 (See **Figure 7, Design 2**) due to proximity to hydrological feature
- Location of substation, temporary construction compound and BESS relocated to avoid hydrological features and peat habitat

Site Entrance Location

The site entrance is located to the South of the Carrickayne road. There has been 2 different iterations of the site entrance location, however this has always been accessed via the Carrickayne road. Local movement to the site entrance such as can be seen in Design 1, to Design 2 in Figure 3.3 Infrastructure Design Evolution; this was due to the proximity of the site entrance to hydrological features. The site entrance was moved West to avoid the need to construct watercourse crossings and unnecessary associated construction or excavation works.

Temporary Construction Compound

In all 4 of the iterations of the infrastructure design evolution (**Figure 7**) the Temporary construction compound has relocated slightly. However, through the course of the design evolution the location of the temporary construction compound was moved further South to a flatter area of ground, that was not subject to any areas of deep peat and had minimal proximity watercourses within the total development area, in order to reduce excavation and spoil generation, whilst remaining outside environmental constraints.

Control Building and Substation and Battery Energy Storage

The control building has relocated throughout the design of the proposed wind farm. However through the course of the design evolution the location of the control building, substation and battery energy storage compound was moved to a flatter area of ground, that was not subject to any areas of deep peat, and had minimal proximity to watercourses, in order to reduce excavation and spoil generation, whilst remaining outside environmental constraints.

Final Infrastructure Layout

The final infrastructure layout is shown in **Figure 2 Infrastructure Layout** Once finalised, the Planning Application Boundary was drawn, ensuring sufficient space within the boundary for all features.

The final Infrastructure Layout and combined constraints is shown in **Design 4**, **Figure 7**.

4. Access Statement

A full assessment of the potential impact of the Proposed Development on traffic and transport is provided in **ES Volume 2, Chapter 12: Traffic and Transport**, the assessment has been prepared in line with Policy AMP 6 of PPS3.

The following key considerations were taken into account during the design and assessment of access arrangements for the Proposed Development, including relevant policy and guidance:

- Access routes for abnormal indivisible loads (AIL), normal construction traffic and associated road improvements
- The type and volume of traffic generated by the Development
- Identification of sensitive/critical locations along the delivery route
- Assessment of construction, operation and decommissioning traffic impacts
- Outline of suitable mitigation measures and the evaluation of residual impacts
- Cumulative impact of surrounding consented and proposed developments
- DOE – Planning Policy Statement 3 - Access, Movement and Parking (2005)
- DOE - Planning Policy Statement 18: Renewable Energy (2009)
- DOE - Best Practice Guidance to Planning Policy Statement 18 'Renewable Energy' (2009)
- IEMA - Guidelines for the Environmental Assessment of Road Traffic (2023)

A summary of consultation responses and proposed mitigation measures are included in **ES Volume 2, Chapter 12: Traffic & Transport**.

Site Entrance

The site entrance is located on the Carrickayne Road. It is designed accordingly therefore no widening works will be required however the gates and some fencing may be removed temporarily to facilitate oversail of the turbine components. These will be reinstated following turbine delivery.

The proposed site entrance has been constructed in accordance with the requirements of Development Control Advice Note (DCAN) 15, 2nd Edition.

As specified in DCAN 15, visibility splays measuring 160m x 4.5m are provided in both directions. Automated Traffic Count data on Carrickayne Road indicates the average 85th percentile over 7 days is 48.9mph, therefore the 160m visibility splay for the 60mph traffic speed has been adopted. Following construction, the site entrance will be reinstated to the gate and fencing originally installed.

Site tracks

The construction of 9.4km of new site tracks will be used to access the site to both construct and operate the proposed development.

Delivery Routes

Turbine delivery

Specialist vehicles are required to transport components to the site. One vehicle would transport turbine blades, while another type would transport the tower sections. Swept path analyses have been undertaken for blade and tower delivery to determine the works required to allow passage through pinch-points on the route as illustrated in ES Vol 4 **Appendix 12.1**.

The proposed delivery route for large turbine components (abnormal loads) from the A6 before taking the turn off onto the Baranilt Road. Passing through Claudy, before turning left onto the Learmount Road, then a right onto the Longland road at Ballyrory. The route takes a left turn after the Ballynacross road. The road continues on, before passing onto the Aghafad road the site is proposing the development of a new access track from the Aghafad road, onto the the Lisnaragh road, and continuing South towards the site before making a lefthand turn onto a connecting road which brings the deliveries to the Carrickayne road.

An assessment has been carried out in which the delivery route originates from Londonderry Port and Harbour Commissioners (Foyle Port) for full feasibility study.

The route from Londonderry Port and Harbour Commissioners (Foyle Port) is shown in **Figure 5**: Turbine Delivery Route.

The proposed return route for the delivery vehicles is similar to the proposed delivery route noted above. Once the turbine components have been delivered, the vehicles will be shortened so they are no longer than a typical articulated HGV.

Where required, approval to temporarily remove street furniture (for the minimum period as is reasonably practical), will be obtained from the appropriate bodies prior to deliveries post planning consent.

Works with third party land, either temporary road widening or vegetation removal to facilitate delivery of the components, will be required along the turbine delivery

route. Widening works will include the installation of hardstand areas and vegetation trimming to facilitate the passage of the vehicles and turbine components.

Widening areas will be laid with a suitable hardstand, and then reinstated once turbine delivery has been undertaken. If road widenings require the removal of boundary features such as fences, trees or hedgerows, these will be reinstated at suitable locations. Reinstatement will also be applied to any street furniture which may be removed on a temporary basis. In the unlikely event that a replacement blade is required during the operational phase of the wind farm, the widenings will need to be reopened temporarily, after which they will be reinstated.

Normal HGV Delivery

Normal HGV deliveries of concrete and stone respectively will also utilise the B48 but could do so from either direction dependant on the source of material and subject to confirmation with DfI Roads. Indicative HGV routes between the B48 and the Site are illustrated in **Figure 6: HGV Routes.**

Sources of material will be confirmed prior to construction. No passing bays will be required as the roads are two-way with adequate passing provided. Where agreed by Dfl Roads, circular HGV haul routes may be implemented for the construction phase of the project

The abnormal normal load route and the HGV routes have been assessed as acceptable in the ES **Vol 2 Chapter 12 Transport and Traffic.** Taking into account the existing vehicle movements on the affected roads, and the proposed type and frequency of vehicle numbers, it is considered that with the appropriate mitigation measures as set out above, there will be no significant impacts.

Car Parking

A temporary Construction compound will be present throughout the duration of the enabling and construction works providing adequate car parking for all onsite staff. Staff numbers during the operational phase will be limited due to minimal on-site staff requirements however car parking provision will be accommodated within the site.

Disability access

Disabled access to the buildings within the Proposed Development will be provided via ramps and suitable parking will be provided, consideration has been given to Policy AMP1 of PPS 3.

5. Sustainability

Sustainable design refers to the selection of an appropriate site for a particular development whilst ensuring that the architectural style is suitable for the site, so that the development will not detract from the sense of place. It incorporates the use of environmentally friendly materials and construction techniques as well as resource efficiency, all of which will help to minimise environmental impact whilst conserving local character and enhancing the viability of local communities.

The Design Statement section of this report details how the site was selected as appropriate and describes how the layout of the Proposed Development has been carefully designed in order to minimise environmental effects.

In addition, the Proposed Development incorporates a host of mitigation measures as recommended in the technical chapters of the Environmental Statement Volume 2 (Main Report), further reducing environmental effects and incorporating best practice. Key measures include the following:

An Outline Habitat Management Plan has been prepared to restore and enhance blanket bog and heathland habitats on site (ES Volume 4 Technical Appendix 6.2)

The Site will adopt a surface water management plan/site drainage design using the principles of Sustainable Drainage, promoting the principles of on-site retention of flows and use of buffers and other silt removal techniques. All drainage-related mitigation measures proposed will be encompassed by a robust and proven Sustainable Drainage System (SuDS) design which will be used to control drainage and silt management on the Site. An outline Surface Water Management Plan (SWMP), and Flood Risk Drainage Assessment Plan has been prepared (Contained within ES Volume 4 Technical Appendix 10.1 & 10.2).

An Outline Construction Environmental Management Plan (oCEMP) (Contained within ES Volume 4 Technical Appendix 1.5) is included within the Environmental Statement and a Construction and Decommissioning Method Statement (CDMS) will be prepared if planning consent is granted. The CEMP and CDMS would be agreed with the planning authority and would describe the detailed methods of construction and working practices, work to reinstate the site following completion of construction activities and methods to reinstate the site post operation.

The total megawatt (MW) capacity of the Proposed Development will be confirmed pre-construction however for the purposes of the assessment of socioeconomic effects 6MW capacity turbines have been assumed, based on a turbine model typical of the turbine size being applied for. This would give a total installed capacity of 66MW.

The proposed development would aid the Northern Ireland Assembly in meeting its climate target of 80 percent of electricity demand being met by renewable energy by 2030. With an estimated annual electricity production of almost 280 GWh, the

proposed wind farm could provide electricity equivalent to the needs of over 80,000 homes each year, or almost 10 percent of the total current housing stock across Northern Ireland. Additionally, the proposed wind farm could reduce CO_2 emissions by 118,000 tonnes each year.

The proposed wind farm is estimated to involve a capital spend of approximately £101 million in nominal prices. Of this total, £35 million would be realised within the regional economy. The projected construction phase is estimated to create or sustain 290 total (direct, indirect and induced) job years of employment, £8.1 million of wages, and £20.3 million of GVA to the Northern Irish economy.

The estimated total (direct, indirect, and induced) annual benefits realised in Northern Ireland by the operational phase of the proposed wind farm includes 9 jobs, £280,000 of wages, and £840,000 in GVA.

For further details see ES Volume 2 (Main Report) Chapter 14: Socioeconomic.

Potential effects on local residents in terms of noise, shadow flicker, traffic and transport, have been considered in the design of the Proposed Development and assessed in the ES. Predicted effects were found to be acceptable with incorporation of the proposed mitigation.

RES is committed to finding effective and appropriate ways of consulting with all its stakeholders, including local residents and community organisations, and believes that the views of local people are an integral part of the development process. RES engaged early with the local community to facilitate a constructive consultation process. The consultation process assisted RES in gaining a greater understanding of any concerns the community may have and allowed us to consider these aspects as part of the environmental assessment process.

Through the consultation process, we have taken the opportunity to engage with interested parties to facilitate public understanding of the potential impacts and benefits of the Proposed Development. A Pre-Application Community Consultation (PACC) Report has been submitted with the planning application.

6. Conclusion

This Design and Access Statement has presented the final design of the Proposed Development. It explains the design principles and concepts that have been applied to the development, demonstrating the steps taken to appraise the context of the development and how the design of the development takes that context into account whilst ensuring adherence with all relevant policies.

It has explained the approach adopted for access and in particular, how the policies relating to access to, from and within the Proposed Development have been taken into account. Arrangements relating to access to the development for disabled people

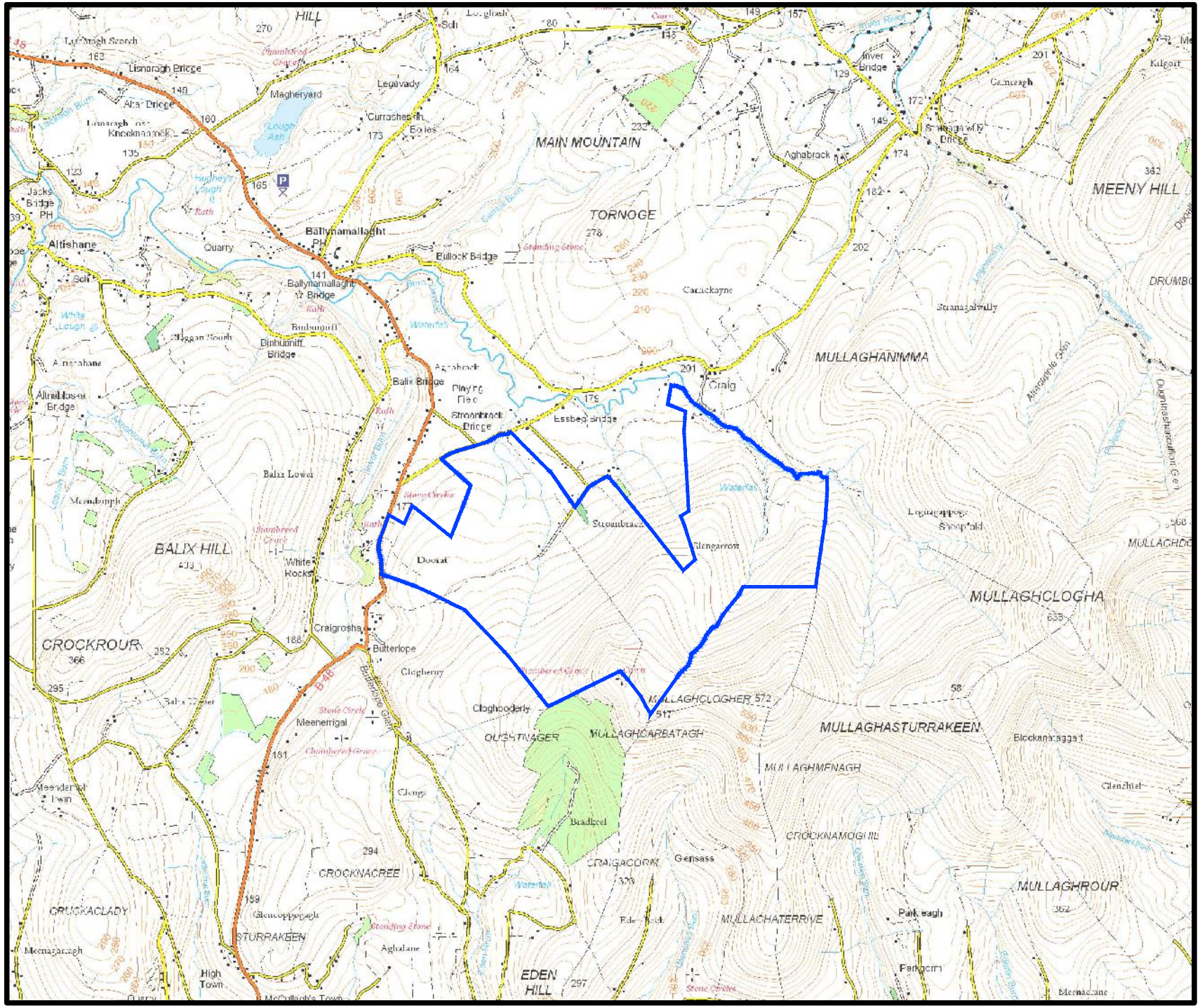
have been addressed. It has also outlined the consultation process and its effects on the design.

It has explained the design principles and concepts that have been applied to take into account environmental responsibility. In all instances sustainability has been considered to ensure the selection of an appropriate site for the development whilst ensuring the wind farm layout and architectural style of the buildings are suitable for the site, so that the development will not detract from the sense of place. The design has also considered the use of environmentally friendly materials and construction techniques, as well as resource efficiency, all of which will help to minimise environmental impact whilst conserving local character and enhancing the viability of local communities.

The resulting Proposed Development layout includes the following features:

- A layout which minimised the geographical extent and variable height within the Proposed Development whilst also maintaining an evenly spaced layout where turbine heights instances of stacking where also minimised;
- Reduction of impacts on environmental, technical and engineering constraints and sensitivities identified through site survey and consultation;
- Reduction in overall land take and ground disturbance through careful design of site infrastructure including tracks and crane hardstandings;
- A building that is integrated and sympathetic to its setting in the surrounding landscape;
- A development which is sustainable and environmentally responsible.

Figures



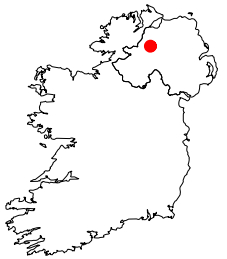
MULLAGHCLOGHER WIND FARM

FIGURE 1

SITE LOCATION

KEY

LAND UNDER APPLICANT CONTROL



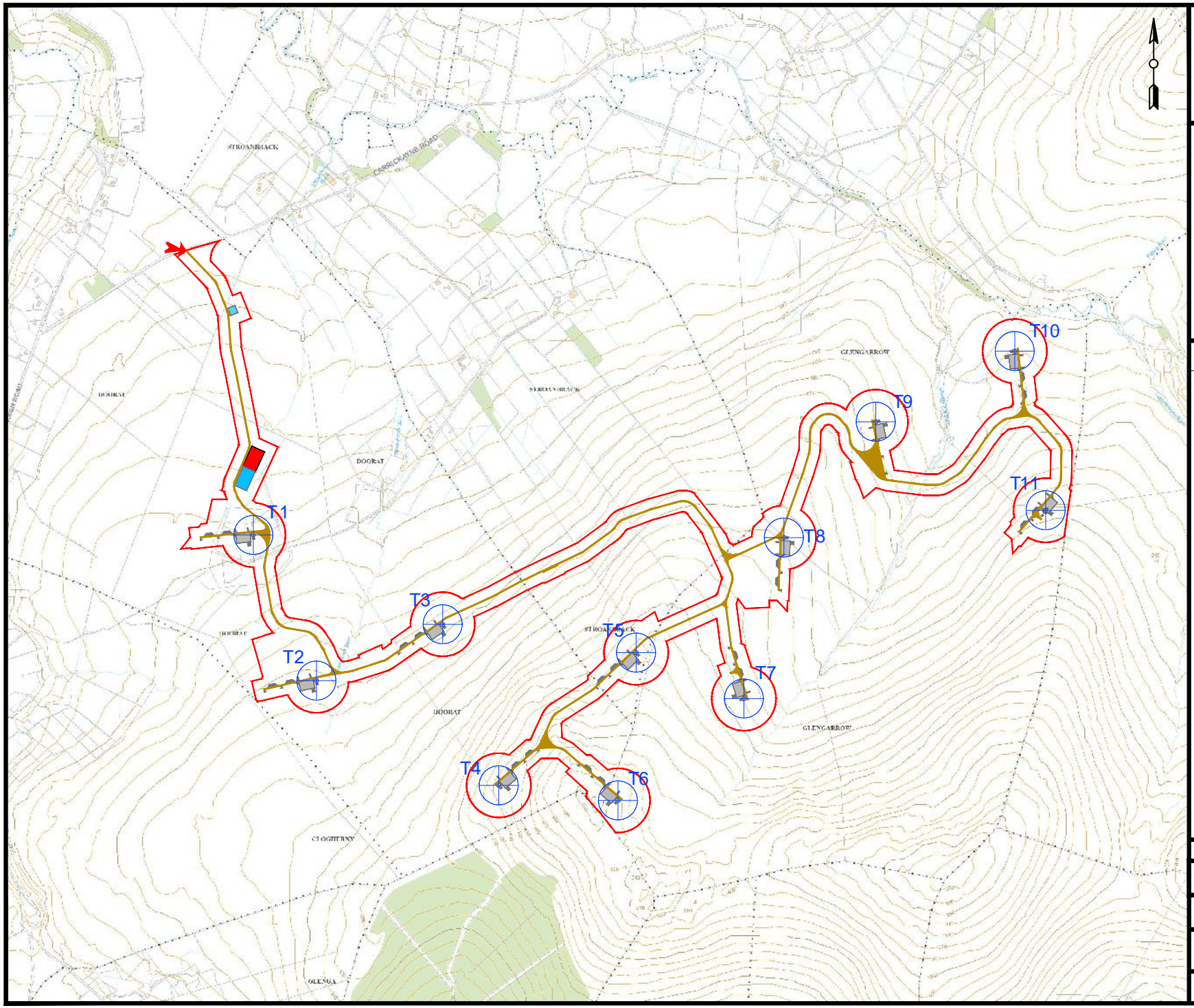
SITE LOCATION - NOT TO SCALE

LAYOUT DWG	T-LAYOUT NO.
N/A	N/A

DRAWING NUMBER	REV
04398-RES-MAP-DR-XX-001	4

SCALE - AS SHOWN @ A4

DESIGN & ACCESS STATEMENT 2025



MULLAGHCLOGHER WIND FARM

FIGURE 2

INFRASTRUCTURE LAYOUT

KEY:

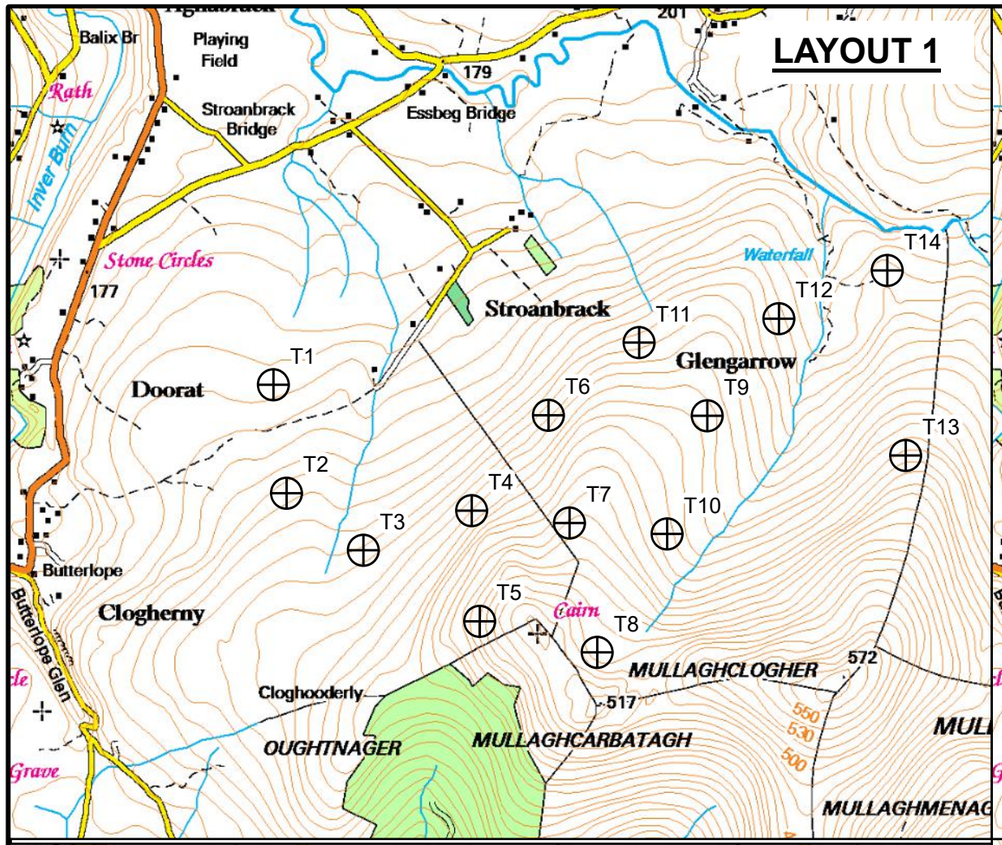
- PLANNING APPLICATION BOUNDARY
- TURBINES
- UPGRADED SITE TRACKS
- NEW SITE TRACKS
- WATERCOURSE CROSSING
- CRANE HARDSTANDING AREA
  - PERMANENT
  - TEMPORARY
- TEMPORARY ENABLING WORKS COMPOUND
- TEMPORARY CONSTRUCTION COMPOUND/ PERMANENT BATTERY STORAGE COMPOUND
- SUBSTATION COMPOUND
- SITE ENTRANCE

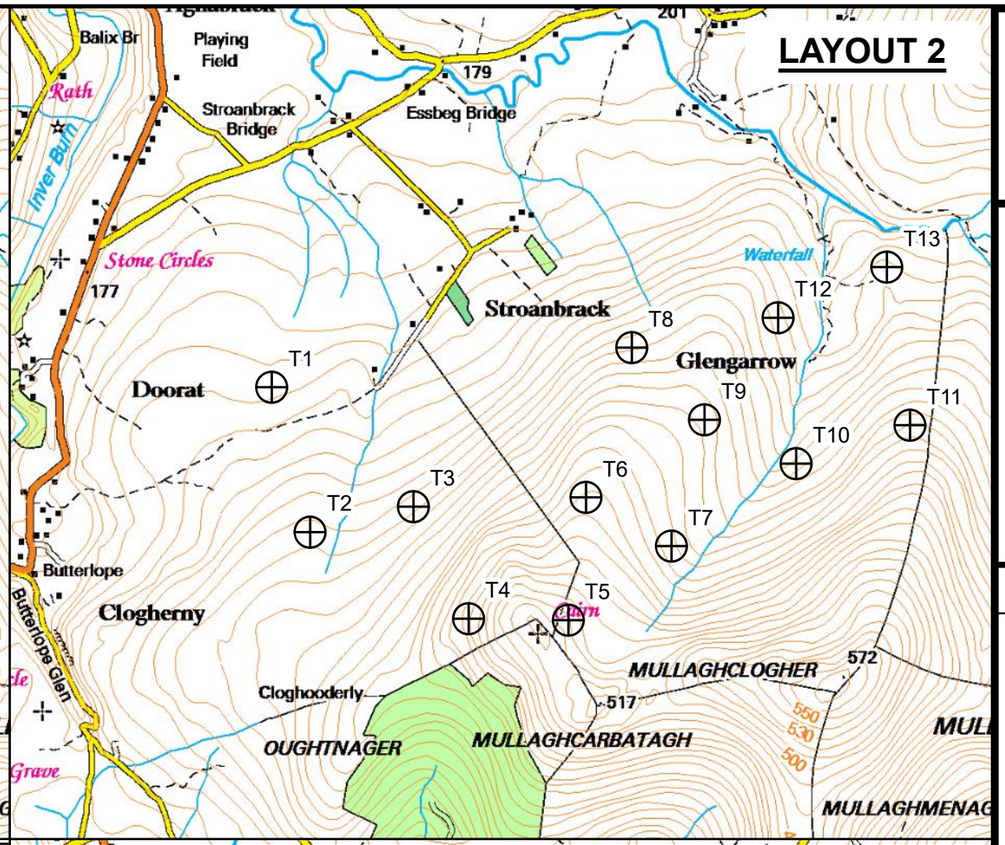
LAYOUT DWG	T-LAYOUT NO.
N/A	N/A

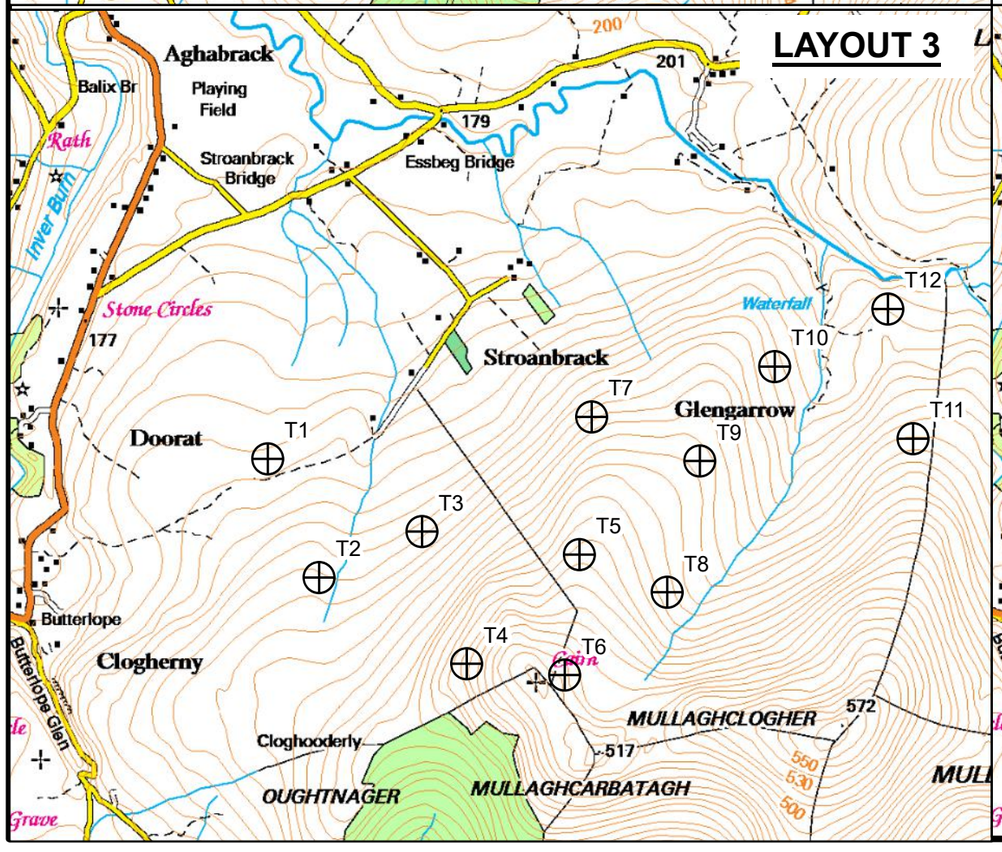
DRAWING NUMBER	REV
04398-RES-LAY-DR-PE-001	1

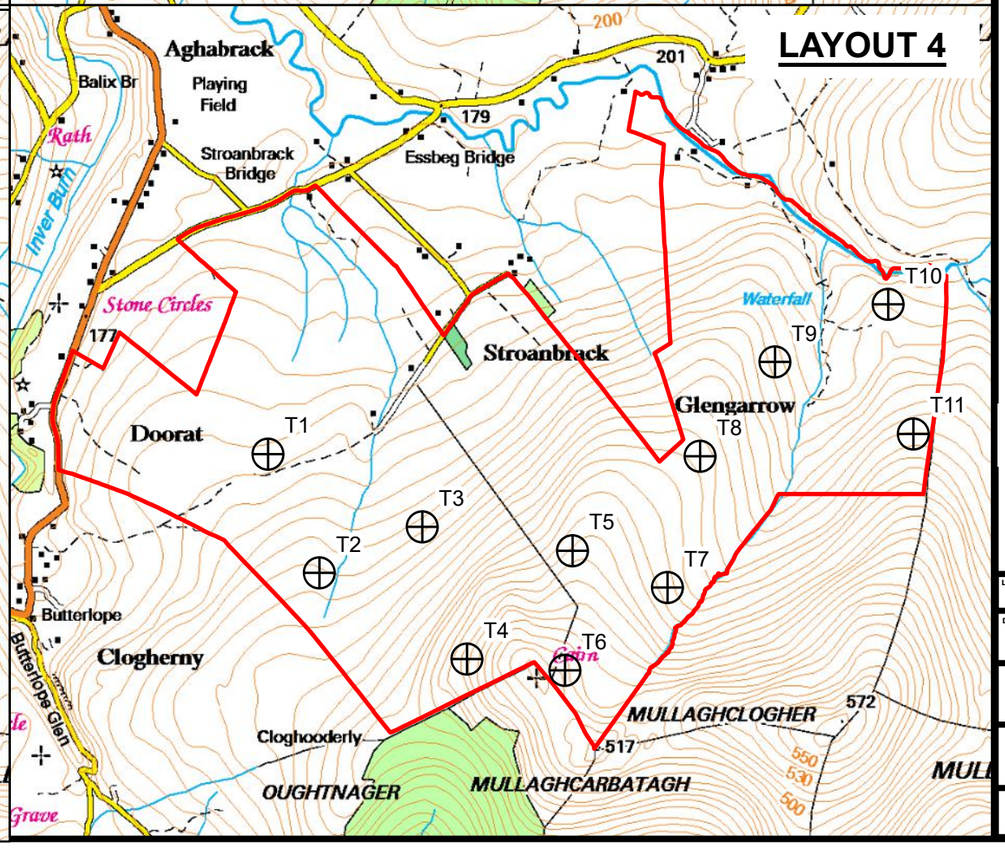
SCALE - 1:20,000 @ A4

DESIGN & ACCESS STATEMENT 2025









MULLAGHCLOGHER

FIGURE 3

TURBINE LAYOUT EVOLUTION

⊕ TURBINE LOCATIONS

SITE BOUNDARY

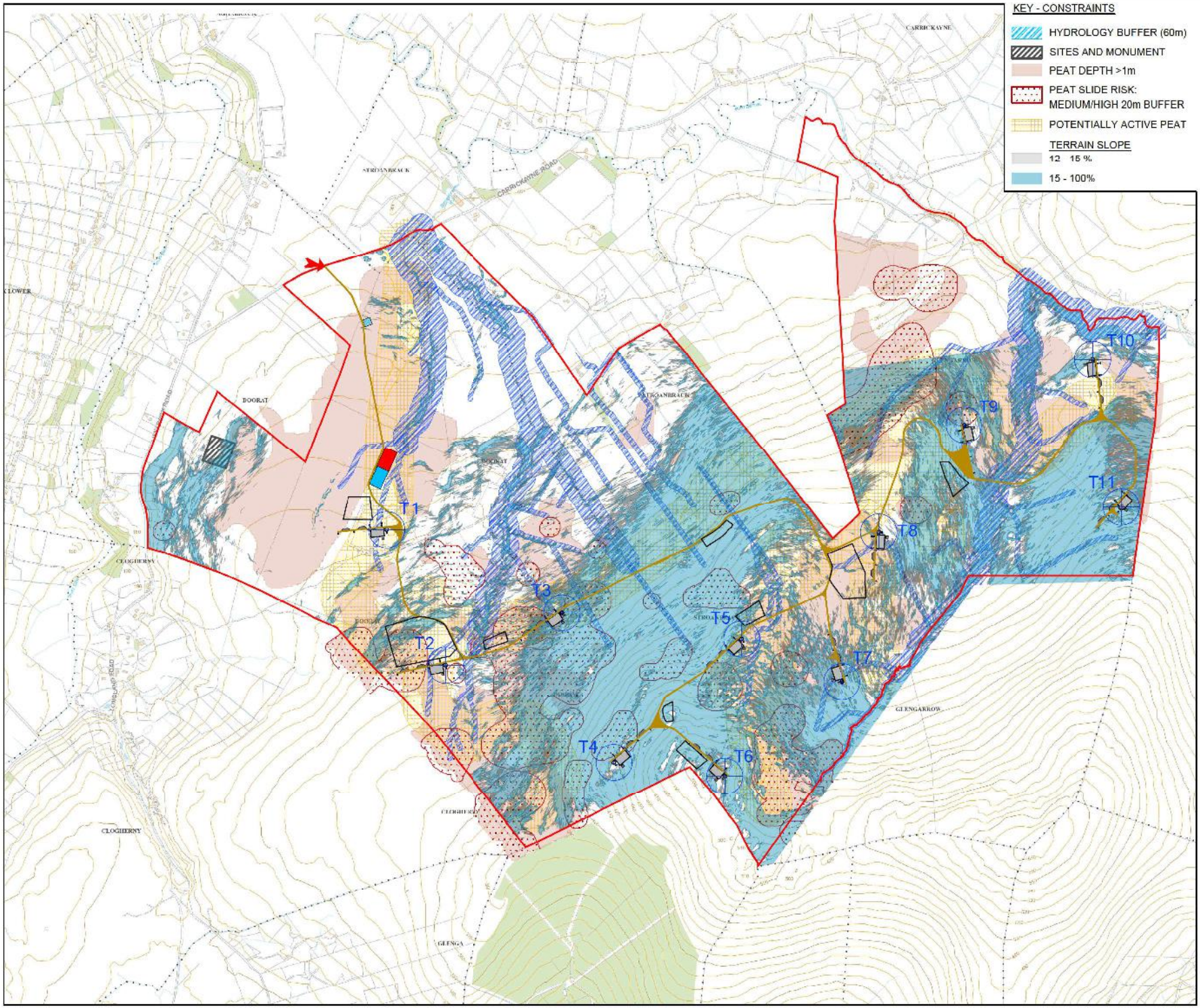
SITE LOCATION - NOT TO SCALE

LAYOUT DWG	T-LAYOUT NO.
N/A	Various

DRAWING NUMBER **04398-RES-LAY-DR-TE-007**

SCALE - 1:29,000 @ A3

DESIGN AND ACCESS STATEMENT **2025**



MULLAGHCLOGHER WIND FARM

FIGURE 3

COMBINED CONSTRAINTS & INFRASTRUCTURE LAYOUT

KEY:

- SITE BOUNDARY
- TURBINES
- UPGRADED SITE TRACKS
- NEW SITE TRACKS
- WATERCOURSE CROSSING
- CRANE HARDSTANDING AREA
  - PERMANENT
  - TEMPORARY
- TEMPORARY ENABLING WORKS COMPOUND
- TEMPORARY CONSTRUCTION COMPOUND
- BATTERY STORAGE COMPOUND
- SUBSTATION COMPOUND
- SITE ENTRANCE

N/A	N/A
04398-RES-LAY-DR-XX-001	1

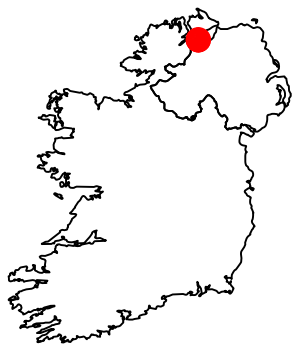
SCALE - 1:15,000 @ A3

DESIGN & ACCESS STATEMENT 2025

KEY:

PROPOSED DELIVERY ROUTE

PLANNING APPLICATION BOUNDARY



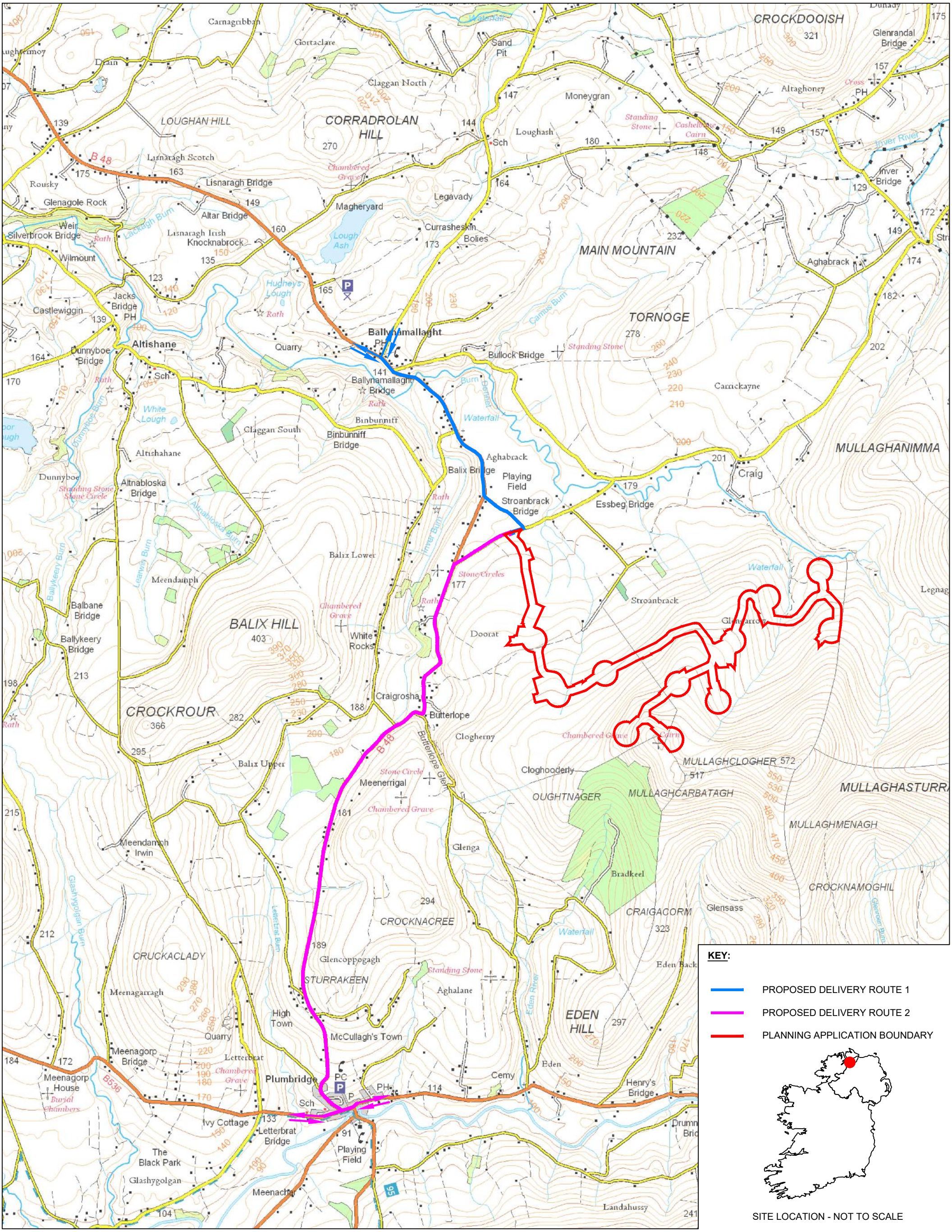
SITE LOCATION - NOT TO SCALE

MULLAGHCLOGHER WIND FARM
FIGURE 5

TURBINE DELIVERY ROUTE

DRAWING NUMBER: 04398-RES-ACC-DR-LO-006	REV: 1
LAYOUT DWG: N/A	T-LAYOUT NO.: N/A
SCALE: 1:75,000 @ A3	

DESIGN & ACCESS STATEMENT 2025



KEY:

- PROPOSED DELIVERY ROUTE 1
- PROPOSED DELIVERY ROUTE 2
- PLANNING APPLICATION BOUNDARY

SITE LOCATION - NOT TO SCALE

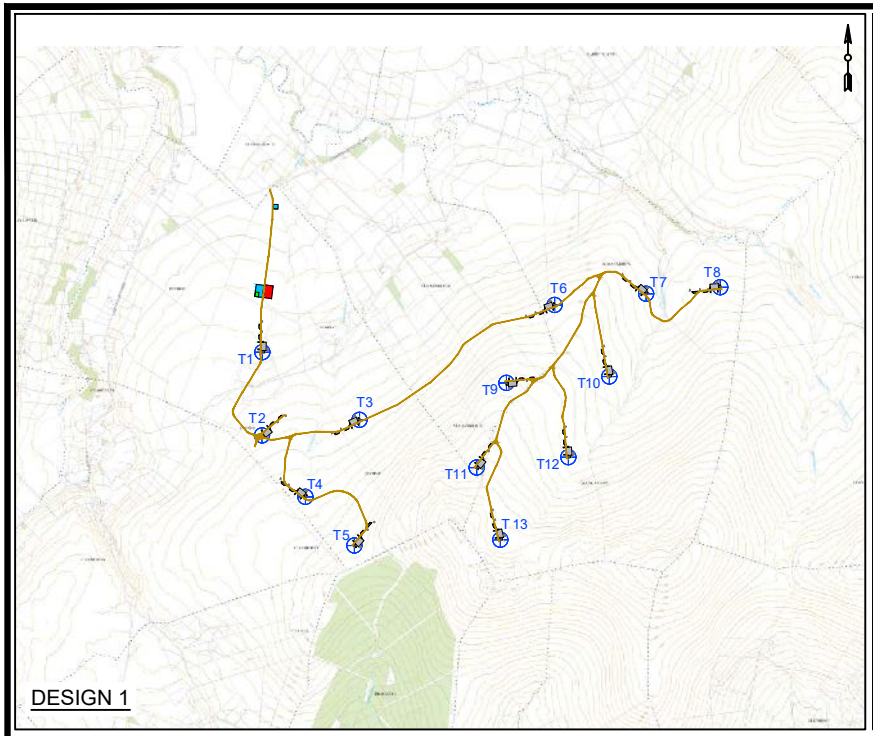
MULLAGHCLOGHER WIND FARM

FIGURE 6

HGV DELIVERY ROUTES

DRAWING NUMBER	REV
04398-RES-ACC-DR-LO-012	1
LAYOUT DWG: N/A	T-LAYOUT NO.: N/A
SCALE: 1:35,000 @ A3	

DESIGN & ACCESS STATEMENT 2025



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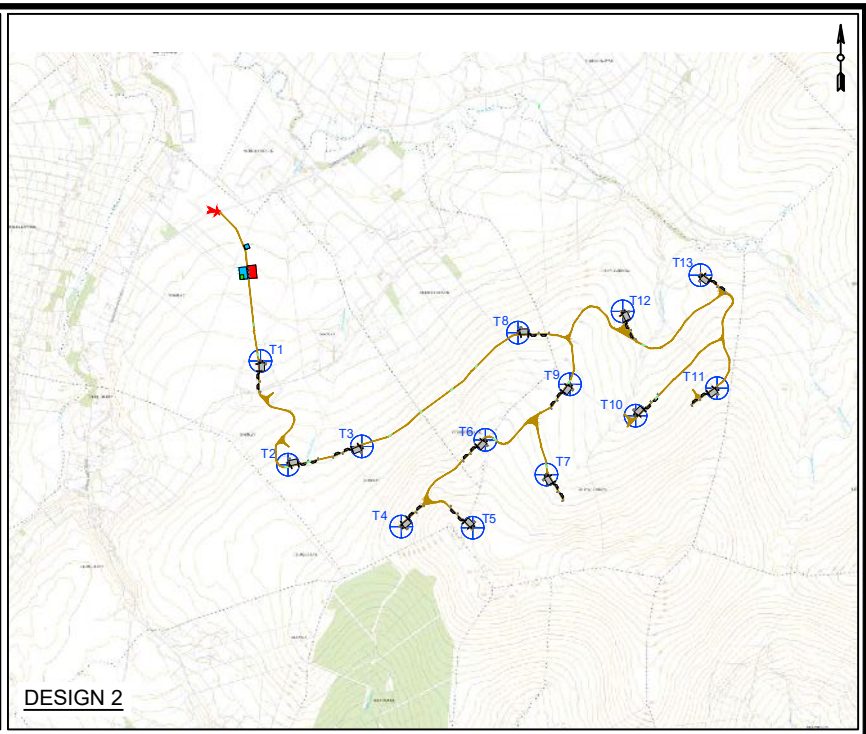

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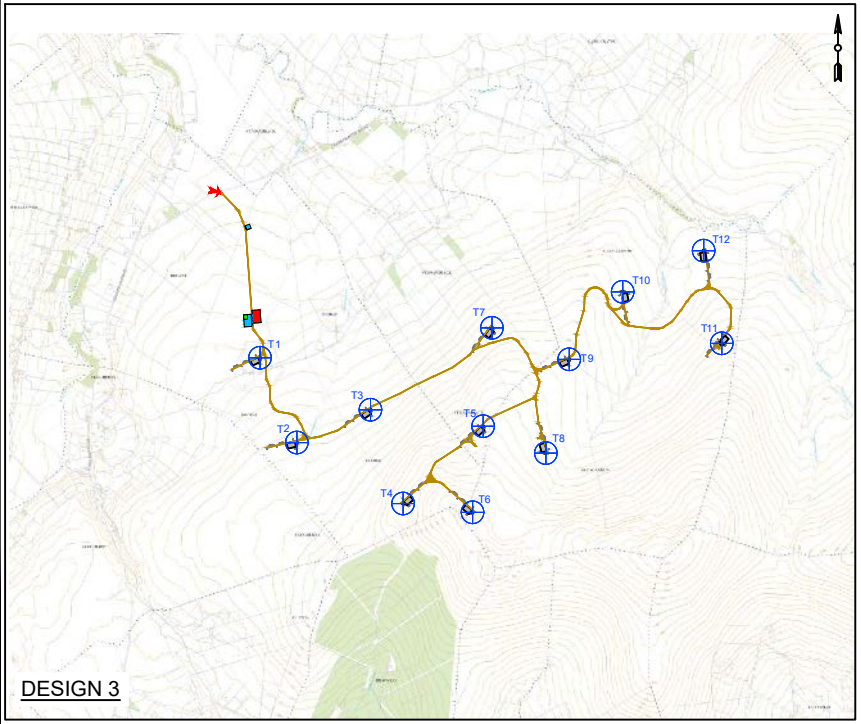

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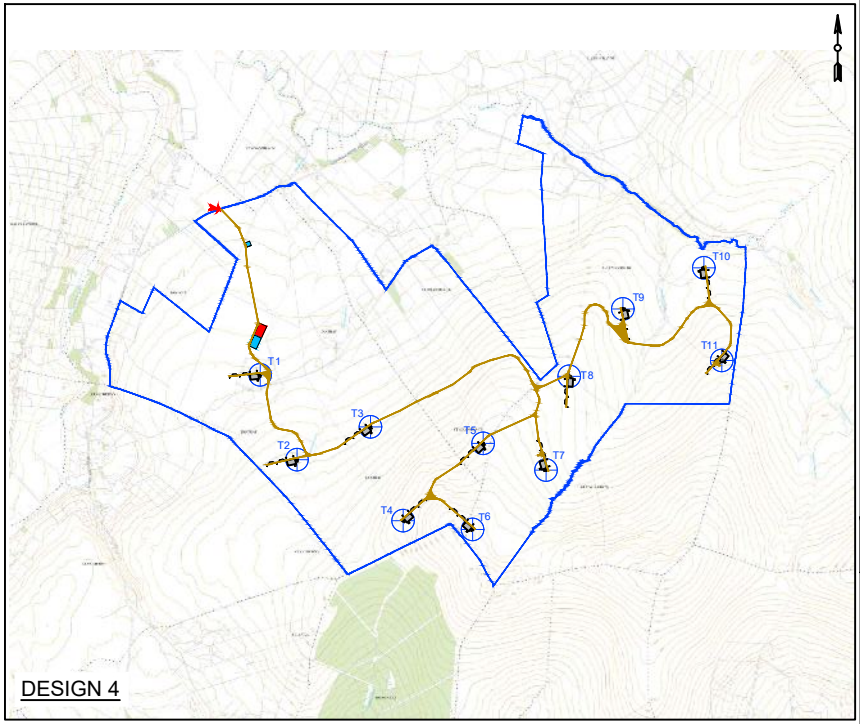

DESIGN 4

MULLAGHCLOGHER WIND FARM

FIGURE 7

INFRASTRUCTURE DESIGN EVOLUTION

KEY:

- LAND UNDER APPLICANT CONTROL
- TURBINES
- UPGRADED SITE TRACKS
- NEW SITE TRACKS
- WATERCOURSE CROSSING
- CRANE HARDSTANDING AREA
  - PERMANENT
  - TEMPORARY
- TEMPORARY ENABLING WORKS COMPOUND
- TEMPORARY CONSTRUCTION COMPOUND/ PERMANENT BATTERY STORAGE COMPOUND
- SUBSTATION COMPOUND
- SITE ENTRANCE

LAYOUT DWG	T-LAYOUT NO.
N/A	N/A

DRAWING NUMBER	REV
04398-RES-LAY-DR-PT-001	1

SCALE - 1:50,000 @ A4

DESIGN & ACCESS STATEMENT 2025