

BHLARAI DH WIND FARM EXTENSION DESIGN & ACCESS STATEMENT

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1. Introduction

This Design and Access Statement (DAS) describes the design process and the resultant development proposals for the Bhlaraidh Wind Farm Extension (the Proposed Development), located on the Glenmoriston Estate, near Invermoriston, Highlands. The DAS accompanies the Section 36 application submitted to Scottish Ministers via the Scottish Government Energy Consents Unit (ECU), submitted by SSE Generation Limited (the 'Applicant'), seeking permission to construct and operate the Proposed Development.

The purpose of this DAS is to provide information on the principles and approach that have guided the design process. This DAS provides a description of the design evolution of the proposed layout and the alternatives studied, demonstrates how the Site and its surroundings have been fully assessed to ensure that the final design solution is the most suitable for the Site and fully takes into account the effects of the development on the environment. It describes the starting point for the Proposed Development design, and subsequent alterations to the layout that were made in response to the issues that were identified through the consultation and appraisal process. Details are also provided on the access arrangements to the Site.

This DAS should be read in conjunction with the Environmental Impact Assessment Report (EIA Report), which also contains information on the design strategy (Chapter 2), predicted landscape and visual effects (Chapter 8), traffic and access related effects (Chapter 12), and includes a Transport Assessment (Appendix 12.1).

The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2008 require applications for 'major' development to be supported by a Design and Access Statement. Although not a requirement under Section 36 of the Electricity Act 1989 (as amended), the Applicant has opted to provide one as a good practice measure. Planning guidance notes on Design and Access Statements have been taken into consideration when preparing this DAS, notably Planning Advice Note (PAN) 68 (Scottish Government, 2003). PAN 68 states that a DAS should include:

- background information;
- site details;
- site and area appraisals;
- design principles;
- public involvement;
- programme; and
- design solution.

2. Background Information

2.1 Name of the Scheme

The Proposed Development is called Bhlaraidh Wind Farm Extension.

2.2 The Applicant

The Applicant is part of SSE Renewables, a leading developer, owner and operator of onshore and offshore wind farms in the UK and Ireland, with a vision to make renewable energy the foundation of a zero-carbon world. Part of the FTSE-listed SSE plc, the Applicant's strategy is to drive the transition to a low-carbon future through the world class development, construction and operation of their fleet of onshore and offshore wind energy generation sites, and flexible hydro.



The Applicant operates the largest onshore wind energy fleet in the UK and Ireland, with almost 2GW of installed green energy capacity and another 1GW in development. The Applicant has around 600MW of operational offshore wind capacity including a share of Scotland's current largest, Beatrice (588MW). They aim to be the largest and most efficient developer and operator of onshore and offshore wind in the UK and Ireland with a development pipeline of over 7GW they have made the commitment to treble their renewable energy output by 2030. SSE Renewables continues to take forward development options for new onshore wind farms and extensions to existing wind farms and is well placed to take advantage of any future opportunities as they emerge.

The Applicant is committed to supporting local supply chains. Their Responsible Procurement Charter and Procurement Policy both highlight the importance of sustainable supply chains. Key to this is sharing economic opportunities with the people and businesses close to their operations. As well as working with communities directly, the Applicant has a structured approach to engaging with its strategic suppliers and looks to them to form constructive local relationships so that communities gain from the Applicant's significant capital investments. The Applicant recognises that it must be an active contributor to the communities it is part of and has an on-going commitment to share value where it has been created.

SSE Renewables' Community Investment Funds support a diverse range of community projects near their renewable developments. In 2019/20, SSE Renewables provided its largest ever award, with £600,000 granted to build the Fort Augustus Medical Centre in the Great Glen, Scotland. In 2019/20 the Applicant invested over £8m supporting over 1000 projects in communities across the UK and Ireland, this brings the Applicant's total investment in communities over the past six years to around £40m.



3. Site Details

3.1 Location

The Proposed Development Site is located adjacent to the 32 turbine Bhlaraidh Wind Farm (the Operational Development), on the Glenmoriston Estate, near Invermoriston, Highlands (the Site) (refer to **Figure 1**). It will extend the Operational Development onto the adjoining land to the east (the Turbine Development Area). The British National Grid (BNG) reference for the centre point of the Turbine Development Area is 239512, 820991.

3.2 Description

The Site is located west of Loch Ness and the Great Glen, on an area of high rocky plateau. This open, undulating moorland features several rocky outcrops, small hills, many lochs, lochans, watercourses, areas of bog, tracks, hydroelectric infrastructure and turbines of the Operational Development.

Outwith the Site there are several distinctive summits, including Meall Fuar-mhonaidh which slopes steeply down to the Great Glen. To the west, this plateau transitions to a rugged, exposed landscape of large mountains and small lochs, while to the north there is the wooded Glen Urquhart and the farmed broad Strathglass valley. Glen Moriston is located to the south.

The low lying areas of the glens and river valleys contain the majority of settlement and transport infrastructure. There is very little settlement in higher level areas and land use tends to be limited to grazing (sheep and deer) and country pursuits (e.g. shooting and fishing). Man-made features in the area include transmission towers (particularly those of the Beaully-Denny overhead line) and wind turbines.

3.3 History

The Site has been historically used for rough grazing (sheep and deer), and country pursuits (e.g. shooting and fishing).

The western part of the Site contains infrastructure related to the Operational Development and the Livishie hydroelectric power scheme.

There are no known heritage assets within the Site.

4. Site and Area Appraisals

4.1 Site Selection

As an extension to the Applicant's Operational Development, the Site is well known to the Applicant. Therefore, during the site selection process, they were well aware of the many attributes that make the Site an excellent wind farm location. These include:

- can positively contribute towards 2045 net zero emissions target and the climate emergency;
- knowledge from the Operational Development survey work suggested no or limited ornithological or ecological impacts would be expected;
- a location with no aviation and radar constraints;
- no forestry or replanting requirements;
- no identified cultural heritage assets (scheduled monuments, battlefields or designed gardens and landscapes) on the site;



- the site sits within a single landscape character area, Rocky Moorland Plateau, which is suitable for development;
- the site is outwith the Highland Council Special Landscape Area – Loch Ness and Duntelchaig;
- an excellent and proven wind resource;
- sufficient grid capacity within the vicinity;
- the presence of the extensive network of existing access roads associated with the Operational Development and the Livishie hydroelectric power scheme. Therefore, reducing the requirements for new track;
- the presence of existing infrastructure which would be reused, including former hydroelectric scheme borrow pits and, construction compounds of the Operational Development, reducing the requirement for new infrastructure;
- opportunity to concentrate wind farms in a landscape that has already accommodated wind turbines and has the capacity to accommodate further development;
- can provide socio-economic benefits to the local area;
- a location that is well separated from residential receptors;
- the infrastructure footprint would be located outwith nationally and internationally important cultural heritage, ornithological and landscape designations (and Wild Land); and
- the relative ease of delivery of turbine components.

4.2 Area Appraisal

4.2.1 Residential Receptors

There are no residential properties within the Site. The closest residence is 2.4km from the nearest proposed turbine.

4.2.2 Landscape and Visual Context

The Site is not covered by any national or regional landscape policy designations. However, landscape designations and other areas of varying landscape importance are present in the wider area. The areas identified as having the potential to be affected by the Proposed Development and which are included in the detailed Landscape and Visual Assessment in EIAR Chapter 8, are:

- Glen Affric National Scenic Area (NSA);
- Special Landscape Areas (SLAs): The Loch Ness and Duntelchaig SLA, and Strathconon Monar and Mullardoch SLA; and
- Wild Land Areas (WLAs): The Central Highlands WLA (No. 24), and Braeroy-Glenshirra-Creag Meagaidh WLA (No. 19).

There are other NSAs, SLAs, WLAs and Gardens and Designed Landscapes (GDLs) within the wider area, in addition to the Cairngorm National Park (CNP), however there was not considered to be any potential for those to be significantly affected by the Proposed Development.

The Proposed Development is located within the Landscape Character Type (LCT) identified by SNH (2019) as Rocky Moorland Plateau – Inverness (LCT 222). This LCT is characterised by open, gently rolling and undulating moorland plateaux with distinct edges, containing small hills formed by rocky outcrops and low areas of varying scale. There is an overall sense of scale, openness, exposure and degree of remoteness on the open plateau within this LCT, where there are extensive views of the surrounding landform.

The wider study area is characterised by extensive areas of upland which are segmented by deep valleys containing the majority of settlement and transportation routes. As a result, views from properties, roads, and tourism developments, obtained by the largest numbers of people, are usually contained within, or



directed along, these valleys. From upland areas, more expansive and elevated views are obtained both overlooking the settled glens and across the upland plateaux and summits of surrounding mountains or recreational routes.

Further details of the landscape and visual context of the Site has been provided in EIA Report Chapter 8.

4.2.3 Transport and Access

It is proposed that all abnormal turbine loads will originate from either Kyleakin/Kyle of Lochalsh or Inverness and would access the Site via the A82/A87/A887 and the Operational Development access junction off the A887. Further details are provided in EIA Report Chapter 12 (Traffic and Transport).

Access to the Site would be taken directly from the Operational Development access track and an existing access track on the south of the Site which services the Livishie hydroelectric power scheme. The existing hydroelectric access track would, where necessary, be upgraded to enable HGV and turbine load access. New access tracks will connect the proposed turbine locations to the existing track network.

4.2.4 Public Access and Pathways

There are no core paths that pass through the Site, however there are existing paths and tracks within the site boundary which may be used by walkers, cyclists and equestrians. Parts of each of these routes coincide with sections of access track used for the Operational Development, Livishie Hydro Scheme and Glenmoriston Estate. These are detailed in Table 1 below.

Table 1 Recreational Routes

Recreational Routes	Description
Loch á Chràthaich to Right of Way (RoW)1 (WAN 1)	A 4x4 estate/hydro track of approximately 4km in length. Used by pedestrians and cyclists. Potentially used by equestrians.
WAN1 to Alltigh (WAN 2)	A 4x4 estate/hydro track of approximately 15km in length. Used by pedestrians and cyclists. Potentially used by equestrians.
Path HI71	Track leading from Bhlaraidh to Loch ma Stac to River Enrick. The section of the track from Loch ma Stac to Bhlaraidh is used to service the hydro scheme and by Glenmoriston Estate. A short section (1,234m) follows part of the existing wind farm access track immediately north of Bhlaraidh settlement.

An outline Outdoor Access Plan (OAP) has been prepared by the Applicant to provide all Site specific access arrangements as requested by The Highland Council (THC) in their scoping response. The OAP identifies all mitigation and management measures as proposed to maintain access during construction and ensure the safety of the general public.

Twelve recreational trails have been identified within 15km of the Site, including four long-distance trails. These are the Great Glen Way, the Loch Ness 360, the Scottish National Trail and the Affric Kintail Way. The closest of these are the Great Glen Way and the Loch Ness 360, which are approximately 5km to the south of the Proposed Development at their closest point at Invermoriston.

5. Design Principles

5.1 Introduction

As part of the EIA process, design iterations were prepared and considered for the turbine locations and on-site ancillary infrastructure. To establish the most appropriate development layout, potential environmental impacts and their effects, physical constraints and project economics were taken into account. Information



was collated from desktop information, field surveys, the EIA Scoping Opinion, consultation with statutory and non-statutory consultees, local planning policy, planning conditions and recent case law. This information provided the baseline from which site issues and sensitivities could be identified and highlighted for further detailed assessment and given priority in influencing the layout iterations of the Proposed Development. The design evolution process is described in detail below.

5.2 Key Design Considerations

The design process of the Proposed Development took into consideration the following planning policy, environmental considerations, technical considerations and consultation activities.

5.2.1 Planning Policy

A separate Planning Statement has been prepared to support the application and should be referred to for a detailed appraisal of relevant planning policy. A summary of the planning policy context is provided below.

5.2.1.1 National

The National Planning Framework 3 (NPF3) was laid in the Scottish Parliament on 23 June 2014 and is currently under review (Scottish Government, 2014). This framework sets out a long-term vision for the development of Scotland, with a focus on supporting sustainable economic growth and the transition to a low carbon economy. NPF3 is the spatial framework that informs development and investment decisions of the Scottish Government and guides Scotland's spatial development over the next 20 to 30 years. A consultation draft of NPF4 is due to be issued in Autumn 2021, with a final version of NPF4 published for approval and adoption in Spring 2022.

Scottish Planning Policy (SPP) was published by the Scottish Government in June 2014 and sets out national policies for land use planning (Scottish Government, 2014). Guidance regarding renewable energy including onshore wind farms is contained within the renewable energy section of the document.

The Scottish Government published Onshore Wind Policy Statement in December 2017 (Scottish Government, 2017) alongside the Scottish Energy Strategy (Scottish Government, 2017). It considers the various issues facing the sector and actions being taken to mitigate these concerns. The Scottish Energy Strategy sets a 2030 target for the equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied by renewable sources.

5.2.1.2 Local Planning Policy

The Site lies entirely within the jurisdiction of THC. The Proposed Development would be considered against the following Local Development Plan documents.

The Highland Wide Local Development Plan (HwLDP), adopted in 2012, provides the local planning framework for the area and provides the general policy context against which the Proposed Development will be assessed. The key HwLDP policy in relation to the Proposed Development is Policy 67 – Renewable Energy Developments. This policy states that renewable energy development proposals should be well related to the source of the primary renewable resources that are needed for their operation.

Other key policies from the HwLDP that will be considered include: Policy 28 (Sustainable Design); Policy 30 (Physical Constraints); Policy 36 (Development in the Wider Countryside); Policy 51 (Trees and Development); Policy 55 (Peat and Soils); Policy 56 (Travel); Policy 57 (Natural, Built, and Cultural Heritage); Policy 58 (Protected Species); Policy 59 (Other Important Species); Policy 60 (Other Important Habitats); Policy 61 (Landscape); Policy 62 (Geodiversity); Policy 63 (Water Environment); Policy 64 (Flood Risk); Policy 66 (Surface Water Drainage); Policy 69 (Electricity Transmission Infrastructure); and Policy 77 (Public Access).

THC has prepared Supplementary Guidance (SG), of particular relevance being the Onshore Wind Energy SG (November 2016). It sets the main spatial framework for determining onshore wind energy proposals in line with Section 22 of the Town and Country Planning (Scotland) Act 1997 as amended by the Planning etc. (Scotland) Act 2006.



The Proposed Development lies partially in Group 2 (where wind farms may be acceptable in some circumstances), and partially in Group 3 (where wind farms are likely to be acceptable, subject to detailed consideration) (SPP 2014).

5.2.2 Environmental Considerations

Key environmental constraints and opportunities to be considered in the design process were identified through a combination of desk based research, site surveys and stakeholder consultation. The following design principles were adopted during the design iterations:

- maintain a suitable separation distance from residential properties to minimise potential noise, flicker, air quality and visual amenity impacts;
- where practicable avoid deep peat, areas of elevated peat slide risk, and high quality and active peatland;
- avoid designated and protected sites, as far as practicable;
- avoid or minimise impacts on sensitive identified ecological habitats and species;
- maintain appropriate buffers to ornithological interests;
- sensitively site to avoid or minimise setting effects on heritage assets;
- minimise the number of watercourse crossings and buffer surface watercourses shown on OS 1:50,000 scale mapping to 50m where practicable;
- ensure that the Proposed Development is compatible with the Operational Development and other cumulative developments; and
- consider landscape character and visual amenity including avoiding inconsistent turbine spacing, such as relatively large gaps, outliers or excessive overlapping turbines to minimise visual confusion and ensure a balance / compact array from key views.

5.2.3 Technical Considerations

The design process also considered technical constraints and opportunities and adopted the following design principles:

- maximise wind yield and maintain adequate spacing between turbines;
- utilise existing tracks and infrastructure, where practical, in order to reduce the footprint of the Proposed Development;
- where practical, balance cut and fill requirements to minimise on site borrow pit requirements;
- utilisation of on site borrow pits to reduce requirement to source and import materials;
- optimisation of cabling layout to reduce land take requirement and optimise performance; and
- consideration of suitability of ground conditions and topography, including slope stability and peat slide risk, to optimise engineering feasibility.

5.2.4 Consultation Activities

In accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended), the Applicant requested an EIA Scoping Opinion from the ECU in July 2019 through the submission of an EIA Scoping Report. The ECU consulted with a variety of statutory and non-statutory consultees before providing an EIA Scoping Opinion in September 2019. This information has been used to inform the design of the Proposed Development and the scope of the EIA.

Direct consultation has been undertaken with consultees throughout the EIA process, details of which are provided in each technical chapter of the EIA Report as relevant.



5.2.4.1 Public Community Involvement

The Applicant has engaged with the public throughout the design of the Proposed Development. In line with good practice for the consenting stage of major development projects as set out within the Planning Circular 3/2013 'Development Management Procedures' (Scottish Government, 2013), a programme of pre-application community engagement has been undertaken by the Applicant.

Despite COVID-19 restrictions, the Applicant has made significant efforts to distribute project information to the community in both digital and non-digital formats to ensure accessibility to as wide an audience as possible. A virtual public exhibition was well advertised through a mail drop of newsletters to over 2,000 addresses, adverts and a published article in the local newspaper, email updates to the local Community Councils and politicians. The Applicant has also provided several different means of community engagement and feedback to ensure that all members of the community were afforded a suitable method to contact the project team or raise queries.

This consultation allowed local residents to provide their opinions and raise any concerns about the principle and design of the Proposed Development. Full details of public consultation undertaken are provided in the Pre-Application Consultation Report.

5.3 Proposed Development Layout Iterations

Following the design principles above, the Applicant has undertaken multiple design iterations of all aspects of the Proposed Development including the turbine and infrastructure layouts. This Section describes the principal design iterations that have been undertaken as the Applicant has sought to achieve a viable design that maximises the renewable electricity generation from the Site, whilst minimising any adverse effects to the environmental characteristics of the Site identified above.

5.3.1 Layout A (EIA Scoping)

Layout A is the EIA Scoping Layout (July 2019) and consisted of 20 turbine locations.

The initial layout which was submitted with the EIA Scoping Report consisted of up to 20 wind turbines (**Figure 2**). This layout was based on an initial high-level review of LVIA constraints prior to the completion of the suite of environmental surveys for the EIA. These reviews considered the visibility from key locations of a range of potential tip heights, and the visual fit with the Operational Development.

5.3.2 Layout B

Layout B is the December 2019 layout and consisted of 20 turbine locations.

Following the completion of environmental survey work over the summer of 2019, "No-Build" areas were identified in December 2019, i.e. unfeasible locations for wind farm infrastructure identified on the basis of civil engineering or wind resource constraints (e.g. slope/topography and wind turbulence, shear etc). The Applicant utilised wind resource assessment software to optimise a 20 turbine layout (refer to **Figure 3**) within the remaining area available, respecting the "No-Build" areas generated through the environmental and engineering surveys.

5.3.3 Layout C

Layout C is a second December 2019 layout and consisted of 20 turbine locations with indicative access tracks.

An engineering review of buildability and civil engineering suitability of turbine locations was undertaken to produce track alignments in December 2019. Turbines (T1, T2, T5, T9, T15, T17 and T18) were subsequently moved to reflect more buildable locations to accommodate turbine, hardstanding and track alignment (refer to **Figure 4**).

5.3.4 Layout D

Layout D is the February 2020 layout and consisted of 18 turbine locations.



A review of potential landscape and visual impacts, particularly visibility from Meall Fuar-mhonaigh and Suidhe (viewpoints 3 and 5) led to an additional area in the south-east of the site being added to the “No-Build” layer in February 2020. The layout was “re-optimised” across the remaining area of the Site based on known constraints and the layout reduced to 18 turbines (refer to **Figure 5**).

5.3.5 Layout E

Layout E in April 2020 consisted of 18 turbine locations and an indicative substation location.

A Design Workshop in April 2020 with the EIA project team and members of the Applicant’s project team was undertaken to review and refine Layout D. The resulting layout aimed to maximise the generation capabilities of the Site whilst taking into account environmental and engineering constraints. Changes included refinement to spacing of turbines to reduce clustering effects to benefit landscape and visual, minor movements to turbine positions and track alignments to avoid buffers around watercourses and waterbodies, bat and ornithology buffers and deep peat based on preliminary survey data. Details of these changes are provided in EIA Report Chapter 2. Turbine and infrastructure locations were refined and the resulting layout is shown in **Figure 6**.

This layout informed detailed survey requirements in summer 2020, including watercourse crossings, peat probing and peatland assessment.

5.3.6 Layout F

Layout F is the September 2020 layout which consisted of 18 turbine locations and associated infrastructure including indicative substation, access track, borrow pit and hardstanding locations.

Refinement of the red line boundary in September 2020 following a land ownership review led to relocation of Turbines 6 and 17. The location of the access tracks, substation, borrow pit search areas, compounds and batching plant were refined following geology and detailed peat surveys. Refer to **Figure 7**.

5.3.7 Layout G

A further Design Workshop was held in December 2020, with follow up refinements made in January 2021. This included input from all project environmental consultants and a further civil and electrical engineering review. The civil engineering review included detailed 3D modelling of the proposed layout. This was undertaken to provide a more accurate model for the assessment and refinement of vertical alignment, earthworks balance, aggregate requirements, and calculation of peat excavation volumes. The electrical engineering review identified two cross-country cable routes which optimise the electrical cabling array arrangements and result in overall reduction in cable lengths, ground disturbance and fewer watercourse crossings.

The design workshop considered all survey data including further peat probing, hydrology surveys and peatland condition assessments completed in the summer of 2020. Changes were undertaken in order to refine the turbine layout to benefit landscape and visual effects, avoid priority peatland habitats, avoid pockets of deep peat, minimise peat excavation and ground disturbance and to reduce the number of watercourse crossings.

Track alignment has endeavoured to follow the most direct route possible while considering all identified environmental constraints. Where the most direct route has not been taken (i.e. track to T13 and track to T14) all possible alternative routes were investigated however significant topographical constraints precluded alternative approaches.

The outcome of the final design workshop and further refinements resulted in:

- A minor adjustment to the location of Turbine 15 to avoid deep peat.
- Some minor localised amendments to track alignments and hardstanding orientations (e.g. Turbines 6 and 4) to avoid direct or indirect effects on areas of deep peat, high quality and active blanket bog, and localised areas with networks of bog channels as identified in the hydrology survey and peatland condition assessment.



- Minor adjustments to, and a resizing of one of the borrow pit search areas.
- Minor track realignments to avoid watercourse crossings (e.g. at Turbine 4 approach and north of Turbine 7).

The substation footprint was also adjusted to ensure a realistic worst-case is considered in the EIA.

The resulting layout is considered to be the best viable option with respect to civil engineering feasibility and considering all environmental constraints. Layout G is the final layout which is described in Section 6 below and for which the Applicant is applying for consent. Refer to **Figure 8**.

6. Design Solution

The Proposed Development comprises a generating station, consisting of a wind farm with up to 18 wind turbines of up to a maximum 180m height from ground to blade tip when vertical supported by ancillary development. The total installed generation capacity of the Proposed Development is anticipated to be in excess of 100MW. This is an indicative capacity; actual installed capacity may be greater or less dependent on turbine model selection. Turbine model selection would be through a competitive tender process that would take place post-consent. Ancillary elements proposed include the following:

- permanent and temporary crane hardstandings;
- access tracks;
- drainage;
- watercourse crossings;
- on-site substation;
- underground cabling;
- a LiDAR.
- two temporary construction compounds;
- a batching plant; and
- borrow pits (eight search areas).

The Proposed Development layout is shown in **Figure 8**. Further details of the Proposed Development's infrastructure are provided within Chapter 2 of the EIA Report.

7. Programme

7.1 Construction

The on-site construction period for the Proposed Development is expected to take approximately 18 months and includes reinstatement of all temporary working areas.

Normal construction hours will be between 07:00 to 19:00 Mondays to Fridays and 07:00 to 14:00 Saturdays. There shall be no construction traffic movements to or from the Site outwith these hours or on Sundays or bank holidays. In the event of work being required outwith these hours, e.g. abnormal load deliveries, commissioning works or emergency mitigation works, the Planning Authority will be notified prior to these works taking place wherever possible. Provision of construction updates on the project website and information to be distributed to residents within an agreed distance of the site.

Operation of crushing equipment located within / next to borrow pits will generally be limited to 08:00 to 18:00 hours Mondays to Fridays and 08:00 to 13:00 on Saturdays, with no operation on Sundays or bank holidays.



Any blasting on-site shall only take place between the hours of 10:00 to 16:00 on Mondays to Fridays inclusive and 10:00 to 12:00 on Saturdays with no blasting taking place on a Sunday or bank holidays unless otherwise approved in advance in writing by the Planning Authority.

Table 1 below shows the indicative construction programme.



Table 1 – Indicative Construction Programme

Task	Month																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Establish Site Compound	█	█																
Borrow Pit Operation Period		█	█	█	█	█	█	█	█									
Reinstatement & Restoration		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Access Track Construction		█	█	█	█	█	█	█	█									
Turbine Base / Hardstandings			█	█	█	█	█	█	█									
Concrete Deliveries					█	█	█	█	█									
Cable Delivery & Installation					█	█	█	█	█	█								
Turbine Delivery & Installation						█	█	█	█	█	█	█						
Wind Farm Testing & Commissioning													█	█	█	█	█	█



7.2 Operation

The operational lifespan of the Proposed Development will be 50 years, after which it would be appropriately decommissioned.

8. Conclusion

This Design and Access Statement provides an overview of the design process undertaken by the Applicant for the Proposed Development. It summarises the relevant planning policy, environmental and technical considerations; consultation activities; the design approach and the final design solution.

The final layout has been informed by a robust environmental assessment and design iteration process, taking into account physical constraints and potential environmental, landscape and visual impacts and their effects. The information used to inform the design iteration process included consultation responses received, baseline data and the impact assessments undertaken.

The final layout comprises up to 18 turbines of up to maximum 180m height from ground to blade tip, and their associated infrastructure, as shown in **Figure 8**.

The Proposed Development layout is considered to represent the most appropriate design, taking into account potential environmental impacts and physical constraints, while maximising the renewable energy generating capability of the Site.

9. References

Scottish Government (1997). Town and Country Planning (Scotland) Act 1997. Available at: <https://www.legislation.gov.uk/ukpga/1997/8/contents>.

Scottish Government (2003). Planning Advice Note 68: Design Statements. Available at: <https://www.gov.scot/publications/planning-advice-note-68-design-statements/>

Scottish Government (2008). The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2008. Available at: <https://www.legislation.gov.uk/ssi/2008/432/contents/made>

Scottish Government (2013). Planning Circular 3/2013: Development Management Procedures. Available at: <https://www.gov.scot/publications/planning-series-circular-3-2013-development-management-procedures/>

Scottish Government (2014). Scottish Planning Policy. Available at: <https://www.gov.scot/publications/scottish-planning-policy/>

Scottish Government (2014). National Planning Framework 3. A Plan for Scotland: Ambition, Opportunity, Place. Available at: <https://www.gov.scot/publications/national-planning-framework-3>

Scottish Government (2017). Onshore Wind Policy Statement. Available at: <https://www.gov.scot/publications/onshore-wind-policy-statement-9781788515283/>

Scottish Government (2017). Scottish Energy Strategy: The future of energy in Scotland. Available at: <https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/>

The Highland Council (2012). Highland-Wide Local Development Plan. Available at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan

The Highland Council (2016). Onshore Wind Energy Supplementary Guidance. Available at: https://www.highland.gov.uk/directory_record/712079/onshore_wind_energy



The Highland Council (2017). Onshore Wind Energy Supplementary Guidance. Addendum Supplementary Guidance: 'Part 2b'. Available at:

https://www.highland.gov.uk/directory_record/712079/onshore_wind_energy

UK Government (1989). Electricity Act 1989. Available at:

<https://www.legislation.gov.uk/ukpga/1989/29/contents>.

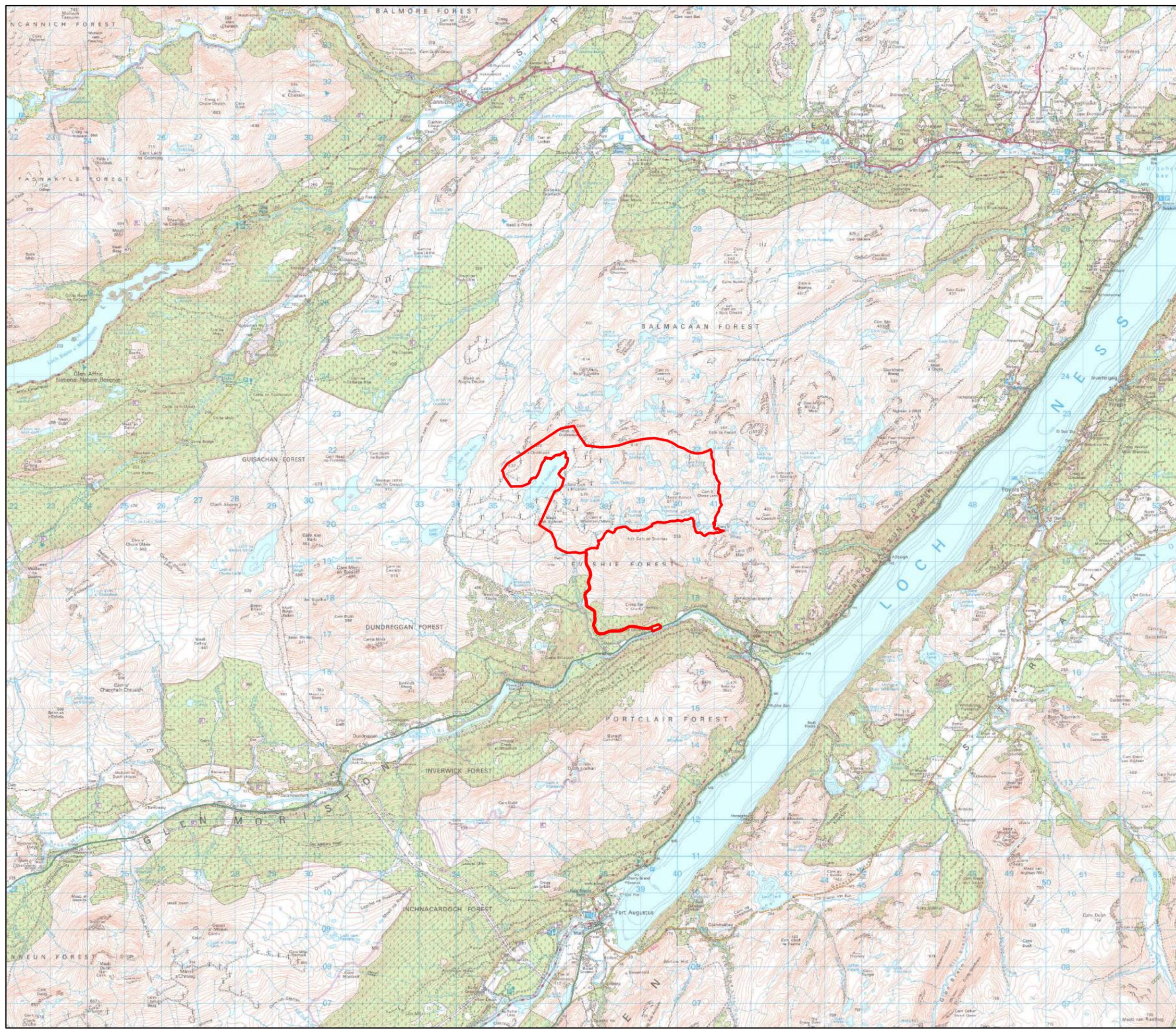


Figures

- Figure 1: Site Location Plan
- Figure 2: Layout A (EIA Scoping)
- Figure 3: Layout B
- Figure 4: Layout C
- Figure 5: Layout D
- Figure 6: Layout E
- Figure 7: Layout F
- Figure 8: Layout G / Proposed Development Layout

Key

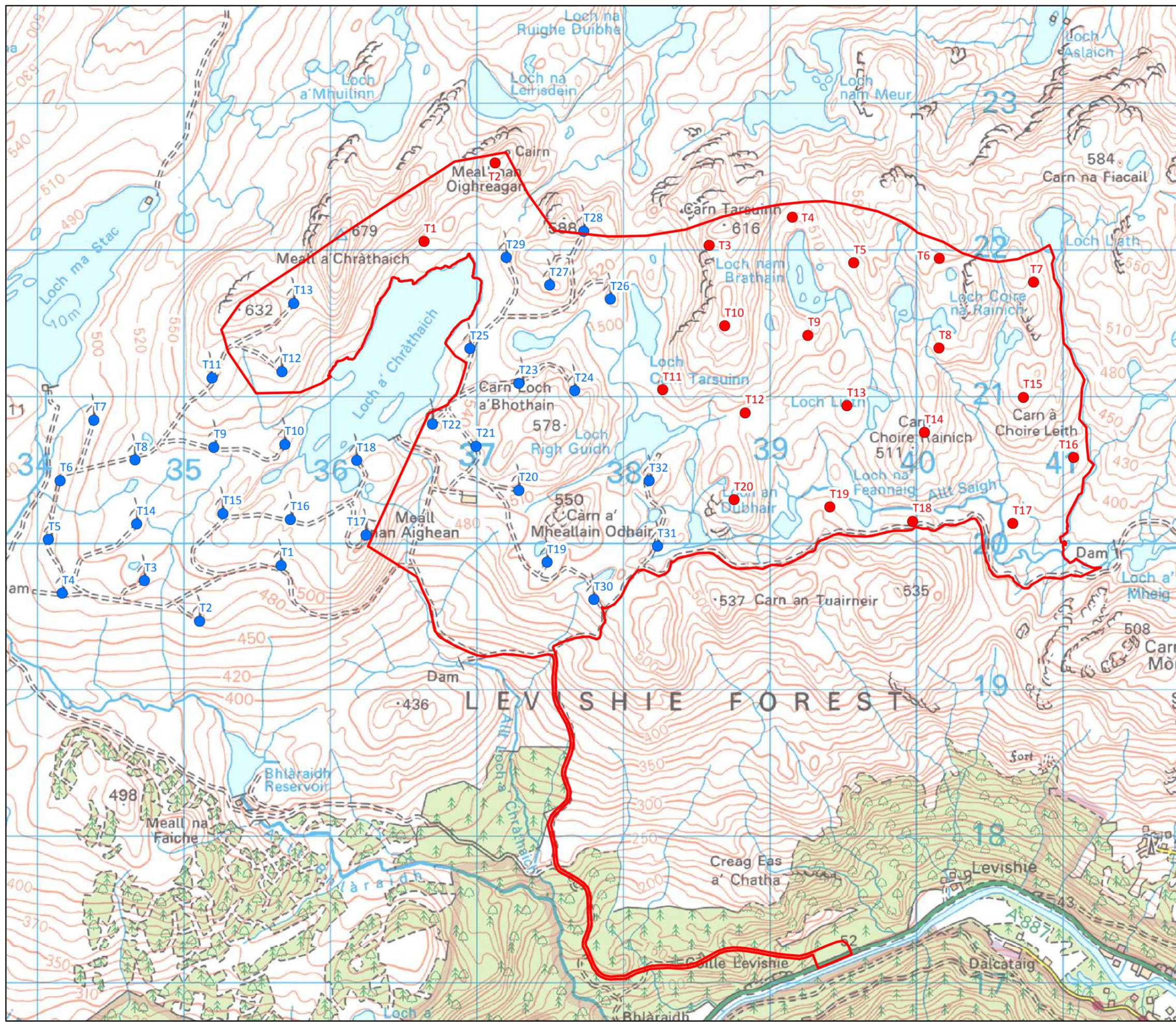
 Site Boundary



Scale 1:100,000@ A3
 Km
 0 0.75 1.5

Figure 1
Site Location Plan

**Bhlaraidh Wind Farm Extension
 Design & Access Statement**



- Site
- Layout A (Scoping)
- Operational

Scale 1:25,000 @ A3

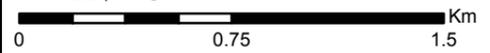
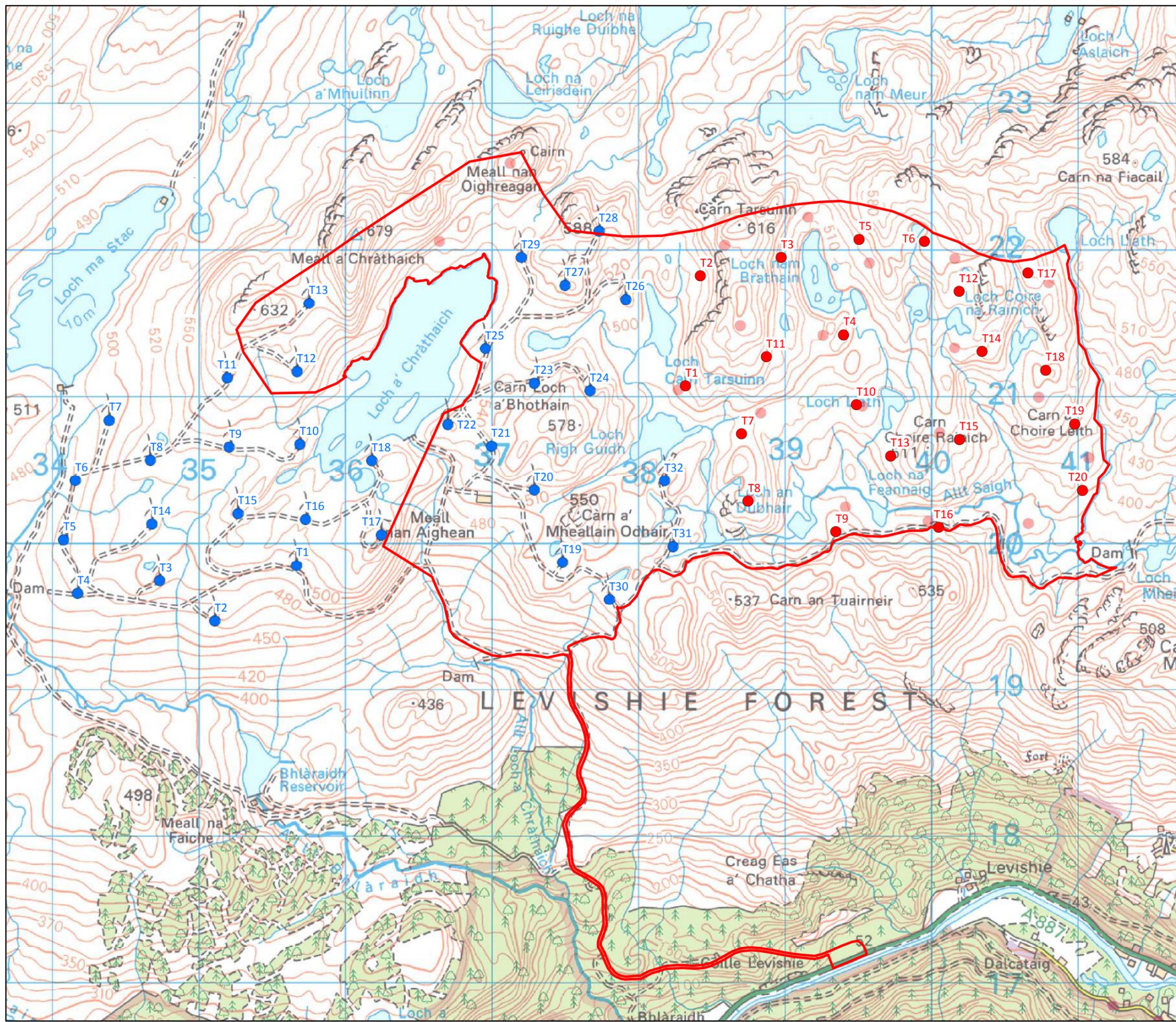



Figure 2
Layout A (Scoping)

Bhlaraidh Wind Farm Extension
Design & Access Statement



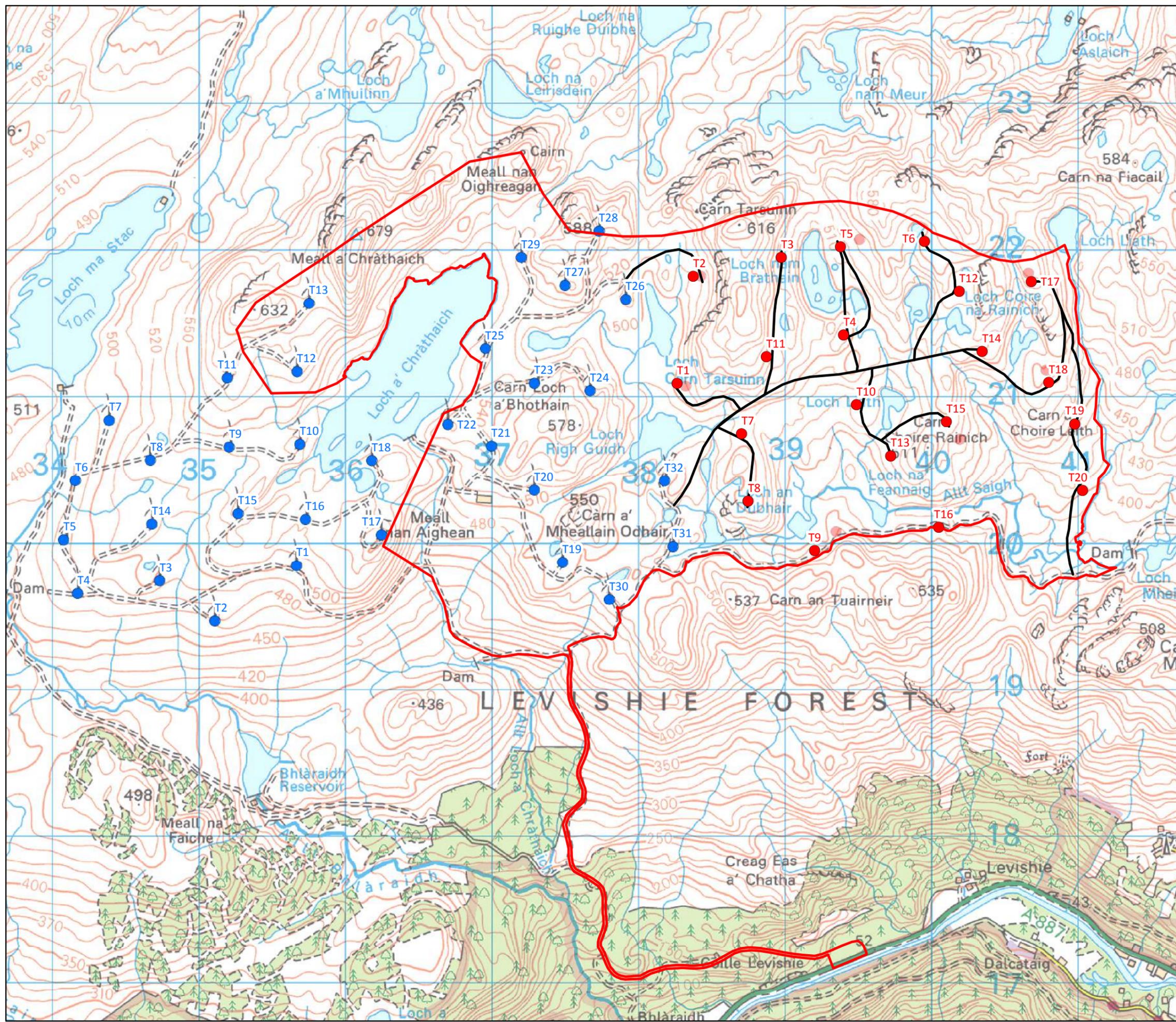
- Key**
- Site Boundary
 - Layout B Turbines
 - Layout A (Scoping) Turbines
 - Operational Turbines

Scale 1:25,000 @ A3



Figure 3
Layout B

Bhlaraidh Wind Farm Extension
Design & Access Statement



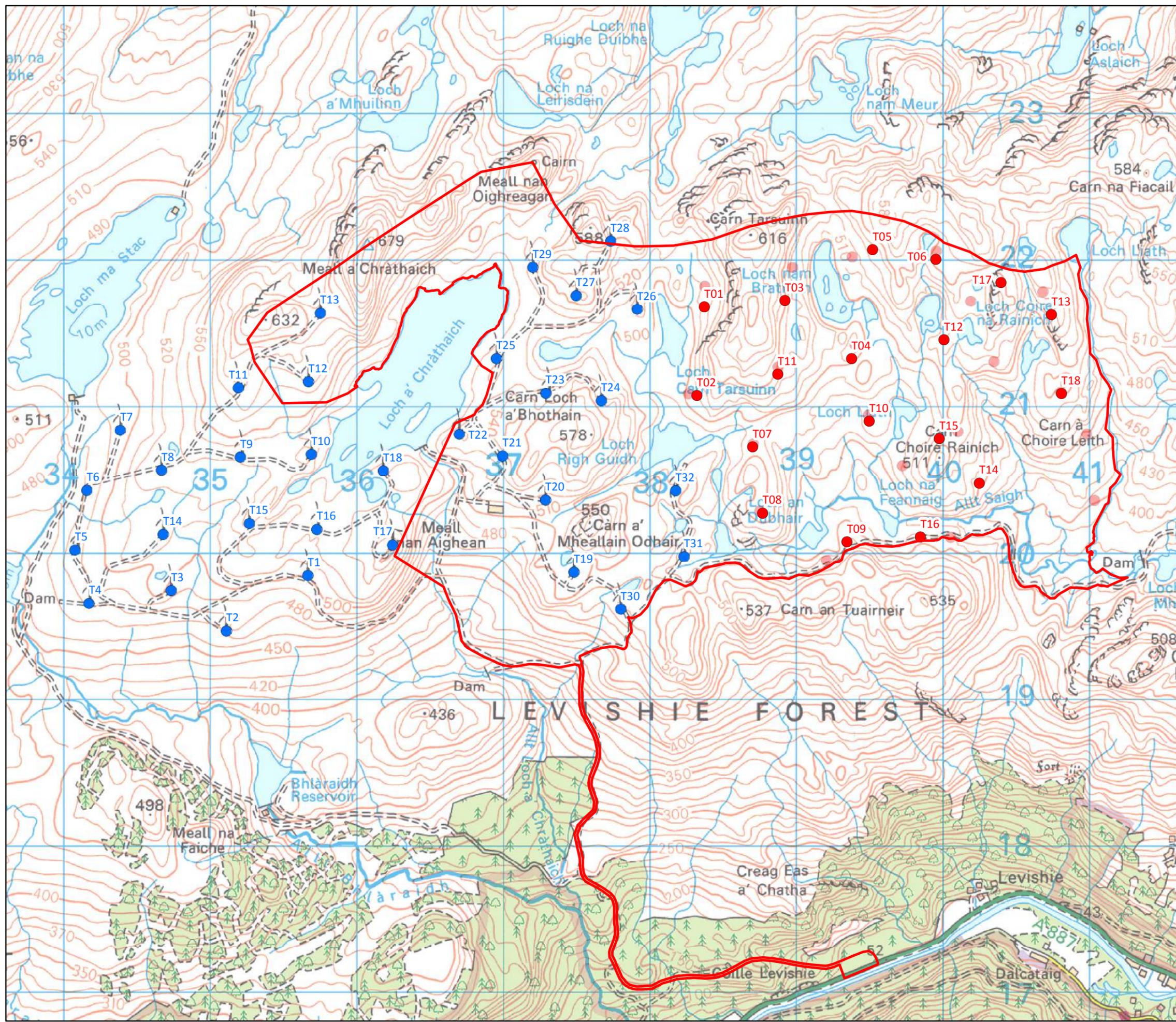
- Site Boundary
- Layout C Turbines
- Access Track (New)
- Layout B Turbines
- Operational Turbines

Scale 1:25,000 @ A3



Figure 4
Layout C

Bhlaraidh Wind Farm Extension
Design & Access Statement



- Key**
- Site Boundary
 - Layout D Turbines
 - Layout C Turbines
 - Operational Turbines

Scale 1:25,000 @ A3

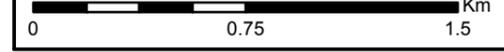
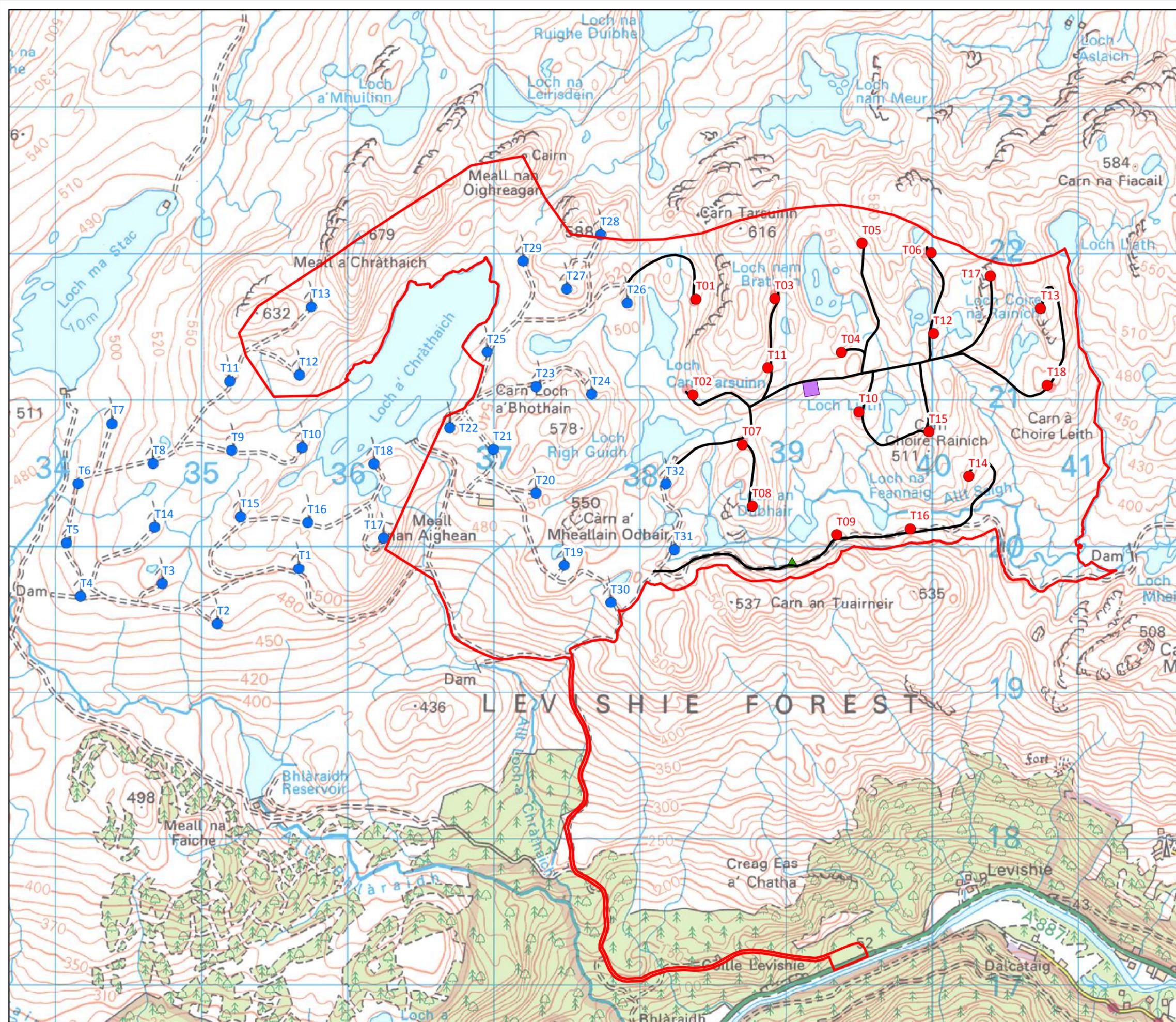



Figure 5
Layout D

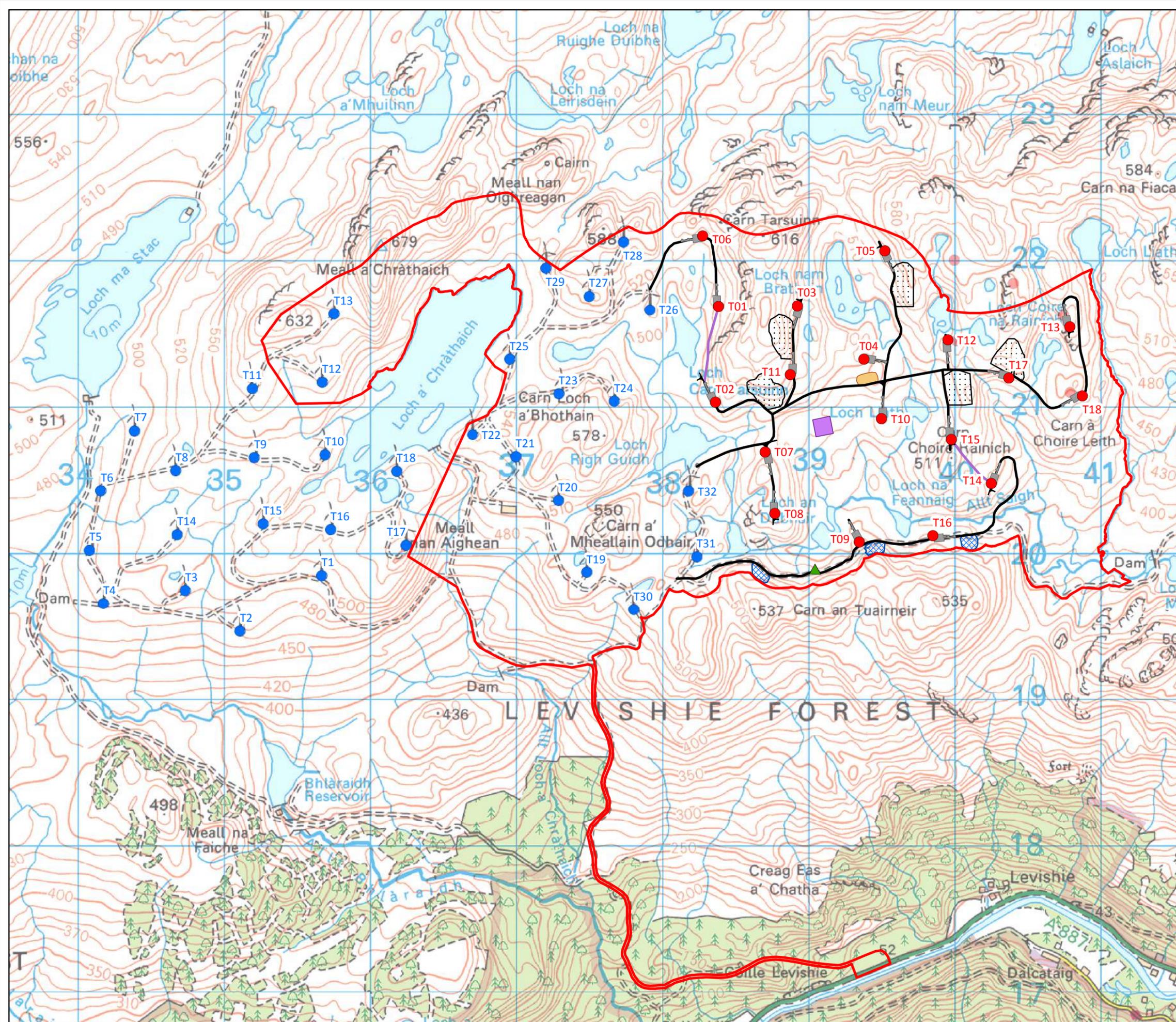


- Key**
- Site Boundary
 - Layout E Turbines
 - Indicative New Access
 - Indicative Substation
 - ▲ Indicative LiDAR
 - Layout D Turbines
 - Operational Turbines

Scale 1:25,000 @ A3



Figure 6
Layout E
Bhlaraidh Wind Farm Extension
Design & Access Statement



Key

- Site Boundary
- Layout F Turbines
- Hardstanding
- ▲ Indicative LiDAR
- Indicative New Access Track
- Hydro Borrow Pit Search Area
- Borrow Pit Search Area
- Batching Plant Search Area
- Substation
- Layout E Turbines
- Operational Turbines

Scale 1:25,000 @ A3

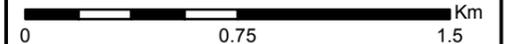
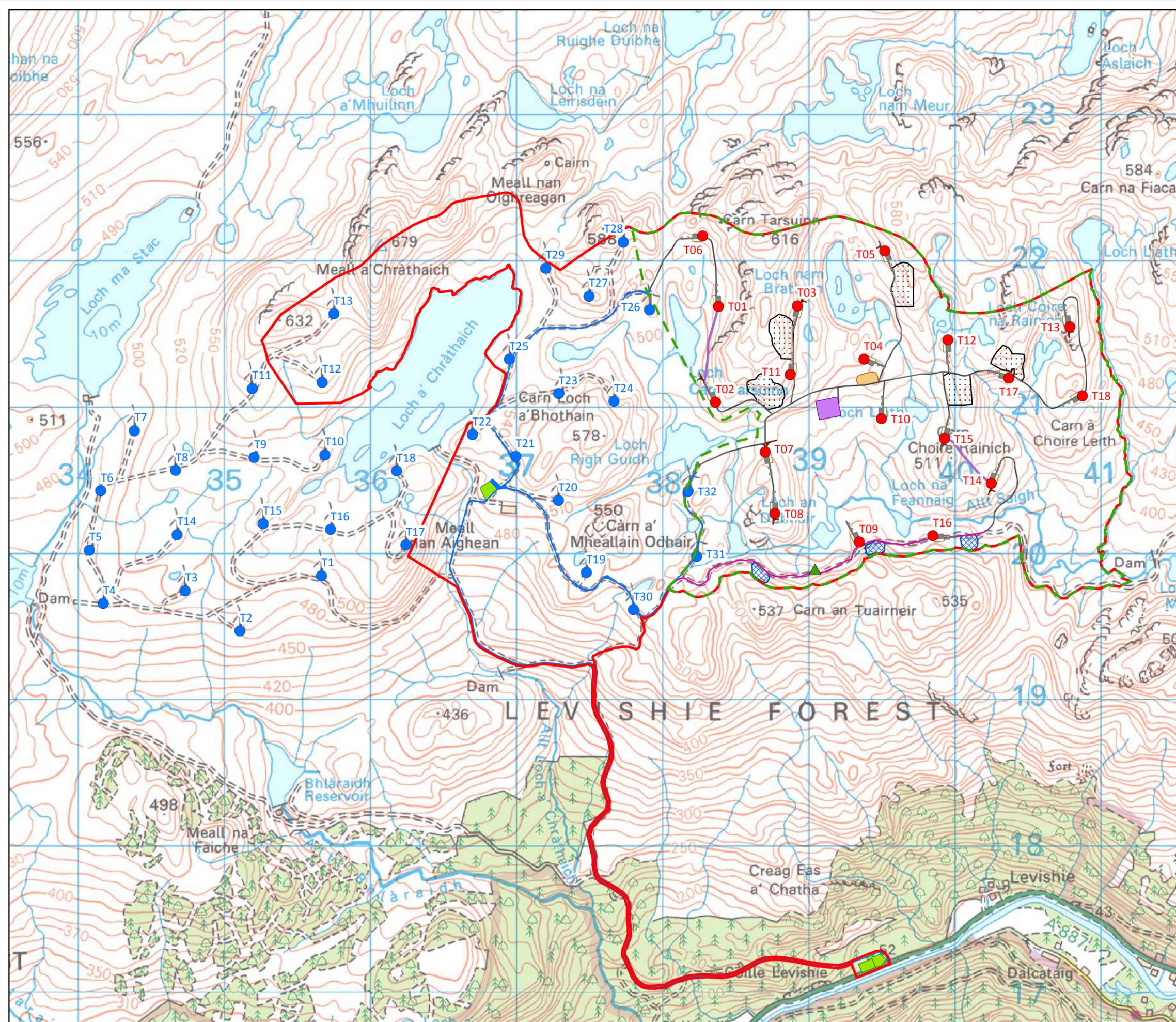


Figure 7
Layout F

Bhlaraidh Wind Farm Extension
Design & Access Statement



- Turbine Development
- Site Boundary
- Proposed Development Turbines
- Operational Development Turbines
- Permanent Hardstanding
- Temporary Hardstanding
- LiDAR
- Existing hydro track for upgrade
- New Track
- Access route via existing wind farm track
- Turning Heads
- Indicative Cross Country Cable Route
- Temporary Construction Compound
- Substation
- Hydro Borrow Pit Search
- Borrow Pit Search
- Batching Plant Search

Scale 1:25,000 @ A3



Figure 8
Proposed Development Layout
Bhlaraidh Wind Farm Extension
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