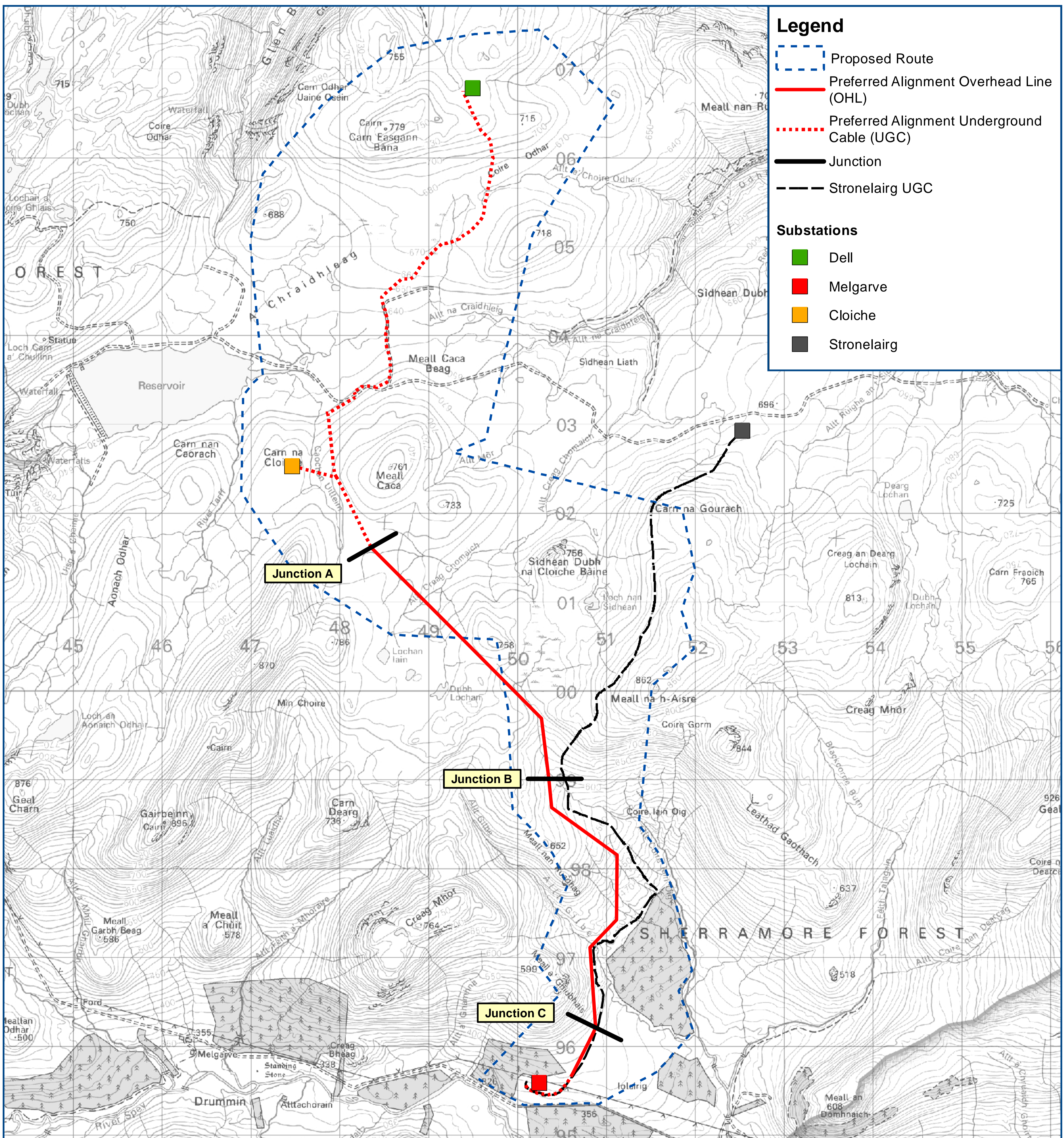


## **ANNEX C (2 OF 2): MELGARVE CLUSTER PROJECT: ALIGNMENT STAGE EXHIBITION BOARDS – FEBRUARY 2023**

# Cloiche and Dell alignment selection consultation

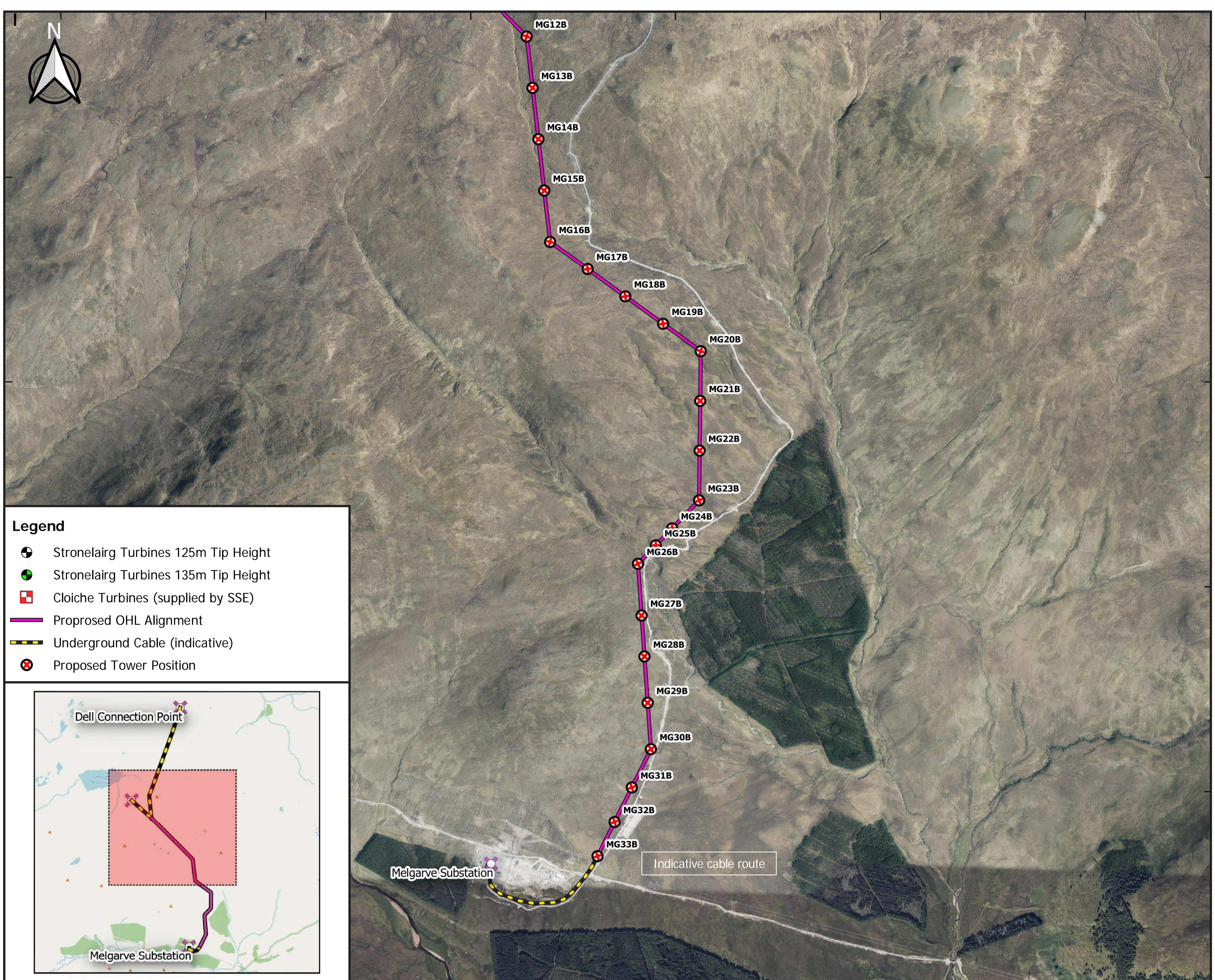
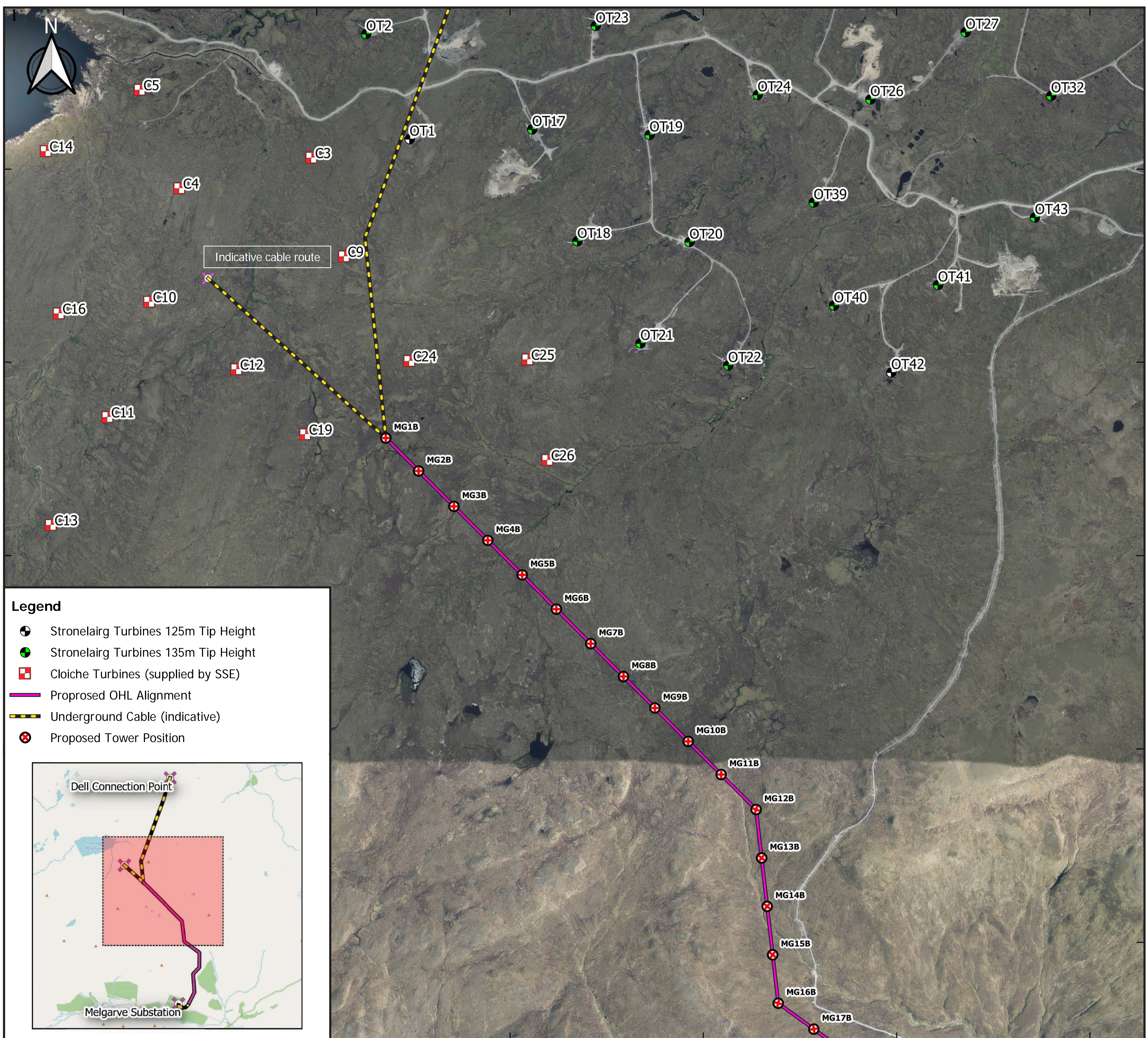
Following detailed consideration of the various options SSEN Transmission have selected the following preferred alignment (which is shown on the map below):



This includes a mixture of UGC (through the existing Stronelairg wind farm where it is proposed to run alongside the existing/proposed access roads from Dell to Cloiche) and OHL from Junction A off the plateau, on the more direct southerly alignment (S1-OHL-1A). The route will continue via OHL between Junction B and C on the western alignment before reverting to UGC to cross under the Beauty–Denny powerline on the approach to Melgarve substation.

This preferred alignment has been selected on the basis that they are considered to provide an optimum balance of environmental, technical and other factors. Environmentally whilst the OHL sections of this alignment may be less preferable from a landscape and ornithological standpoint, it would minimise potential disturbance to peatland habitats and watercourses by the OHL spanning over sensitive areas. Environmentally, the differences between alignments and technology choices are subtle due to these competing benefits/disbenefits. Engineering-wise this represents a technologically feasible, constructable and reliable solution which can make use of existing access roads as far as junction B, and from Cloiche northwards. The differences between alignments in engineering terms are more absolute. Some issues have been experienced with cabling in this vicinity and future maintenance issues would be minimised by this technology choice and alignment. More widely this route represents value for money, whilst respecting all the technological and environmental constraints of the area.

# Proposed tower positions



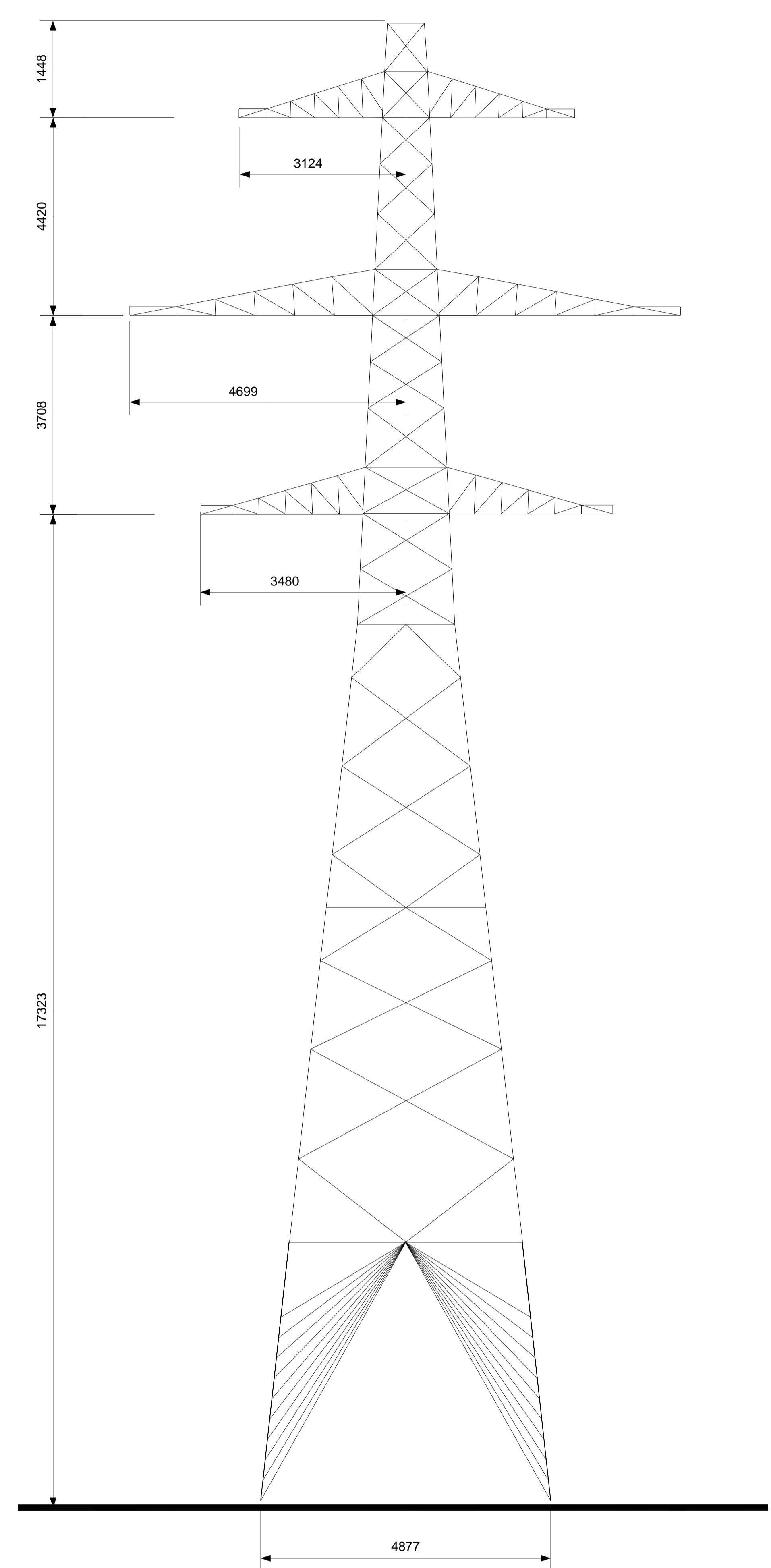
# Technical considerations

## OHL technology

The connection of Dell and Cloiche wind farms into Melgarve substation were initially proposed to be via two new 132kV single circuit OHLs but following stakeholder feedback, and due to technical constraints within the wind farm, it is now proposed the connections are via a combined solution of UGC and a new 132kV double circuit lattice tower OHL.

An underground cable connection from Dell and Cloiche substation is required due to the proximity and wake effect of the wind turbines on the OHL. Both UGC connections will merge to one point out of the wake effect zone and need to transition onto to a Double circuit OHL (at Junction A).

An example of the proposed tower type is shown on the right. As Cloiche and Dell wind farms follow the same preferred alignment, this gave the opportunity to combine both onto one OHL. This tower type was selected due to the high altitude involved. 132kV circuits can be strung on wood pole trident structures, which are smaller and less visible in the landscape. However, these structures are not suitable for these connections, due both to the high capacity of the connection required and the high wind, ice and snow loadings that they would be subjected to.



For construction, access roads are likely to be required to each tower location and these will be predominantly made of stone to allow safe access to the construction sites. Design development will establish the extent of permanent access tracks required. Concrete foundations will then be installed at each leg and covered over with soil and turf. The tower steelwork will then be delivered and assembled on site and erected using a crane. The conductor and earth wire will then be installed in sections before connecting into the proposed UGC sealing end compounds.

The Dell and Cloiche connections will then need to transition onto an UGC again to cross underneath the existing Beaulay–Denny OHL and connect into Melgarve substation. It is proposed that the OHL will terminate into cable sealing end compounds\* and then UGCs will be installed into the Melgarve substation (\*this consists of a terminal tower that allows the OHL conductor to connect onto a UGC).

The preferred OHL alignment has the benefit of an existing access track that can be utilised for construction for some of its length, is more direct and the terrain is generally less steep than other routes.

### The overhead line route options were evaluated in terms of the following engineering considerations:

- Major crossings such as overhead lines (132kV, 275kV, 400kV, HVDC), rail, bridges, rivers, canals, oil and gas pipelines or hydro pipelines;
- Road crossings;
- Elevation;
- Contaminated land;
- Flooding;
- Terrain;
- Peat;
- Access;
- 132kV Angle Towers;
- Proximity (inc. to existing wind farms)

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# Technical considerations

## Underground cable

### Cloiche and Dell wind farm connection

The Cloiche and Dell wind farms connect to the OHL circuit via the use of underground cable to junction A where both will enter a cable sealing end compound and transition onto OHL. Cable is being used for this section due to the potential impact of wake on OHL circuits when they are within three rotor diameters of wind turbines.

The Dell cable is expected to be approximately 6.2km in length and use a single cable per phase\* 630mm<sup>2</sup> aluminium cable\*\*. The Cloiche cable is expected to be 1.3km in length and use a single cable per phase\* 2000mm<sup>2</sup> copper cable\*\*.

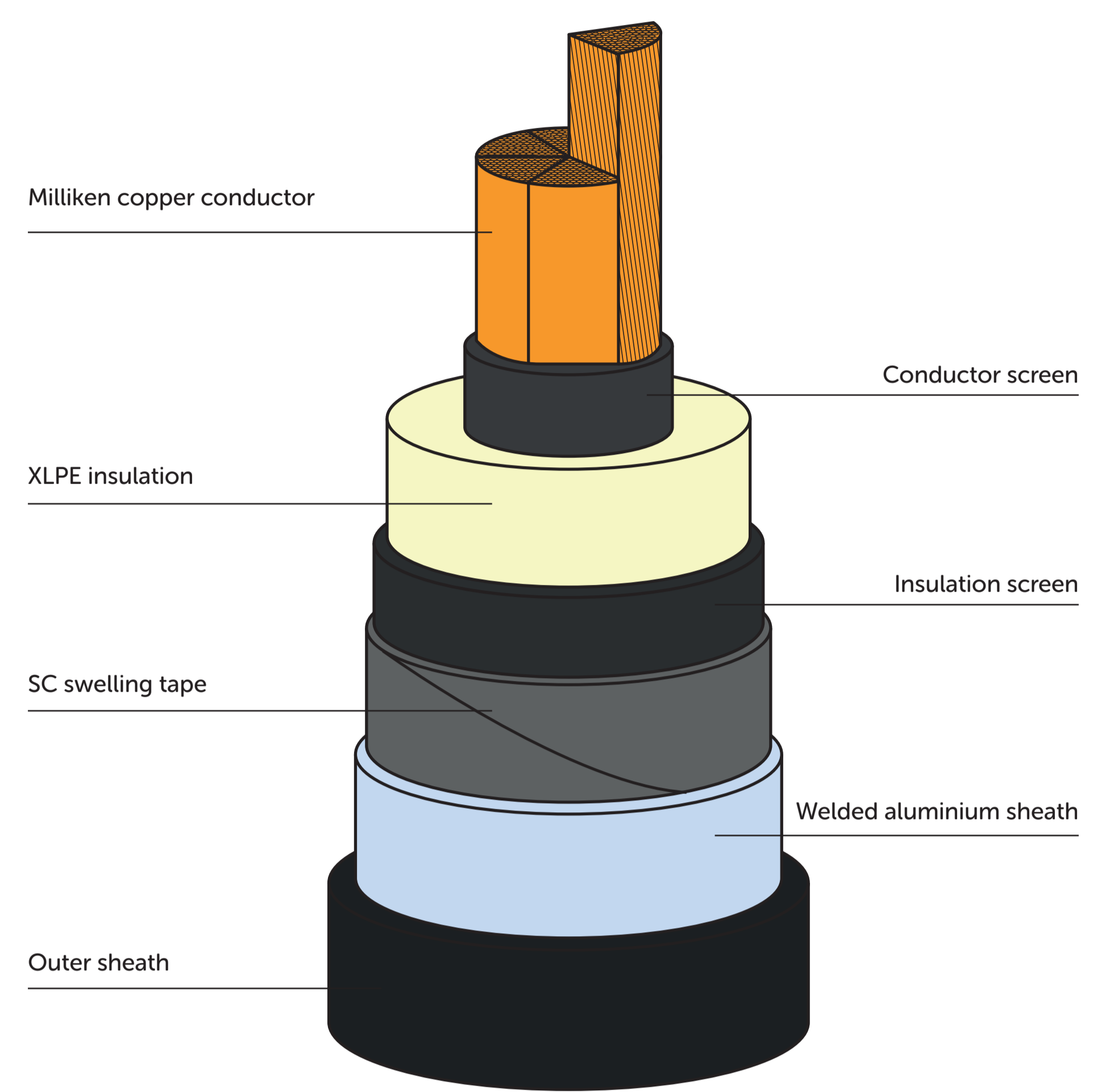
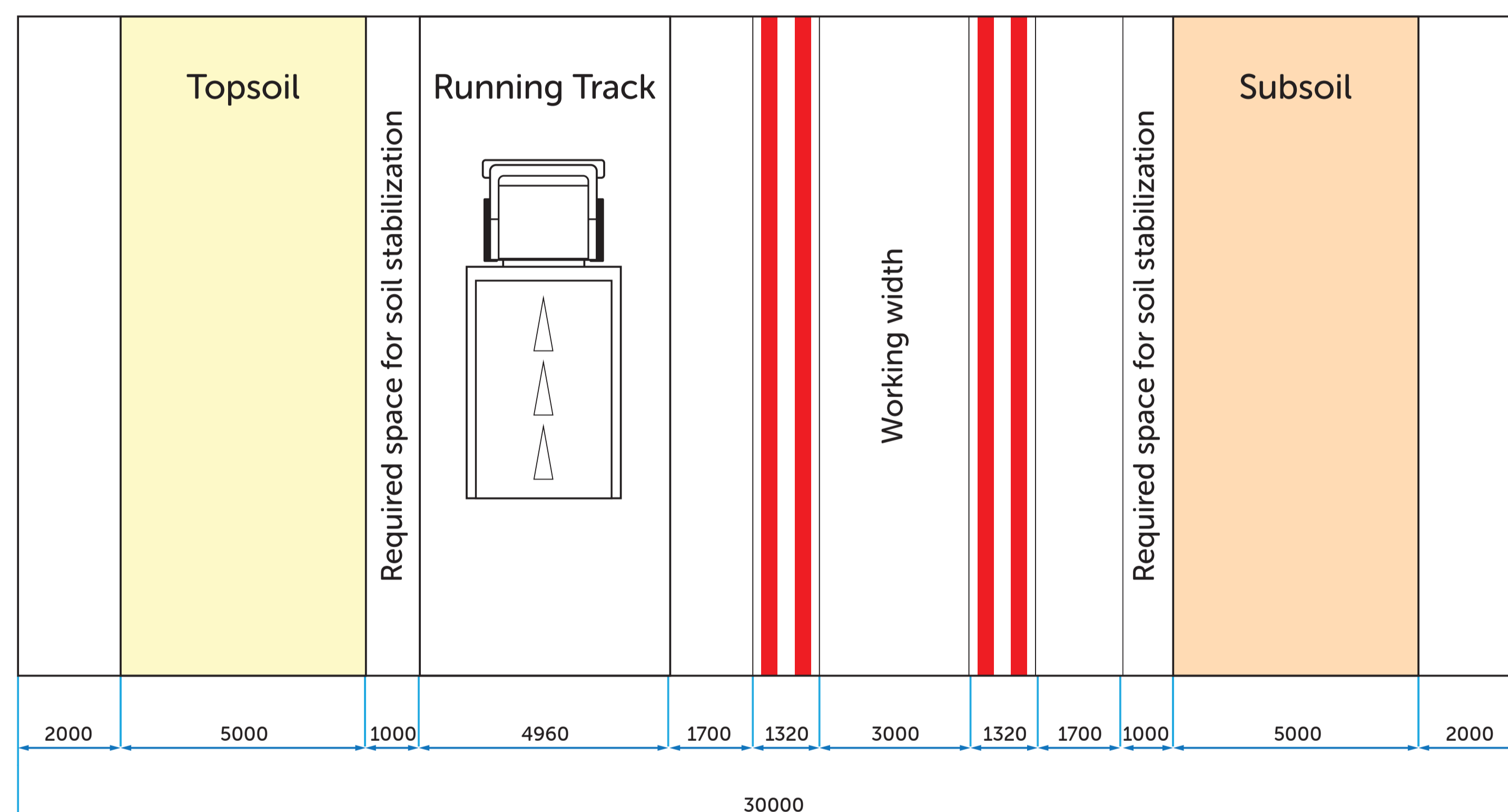
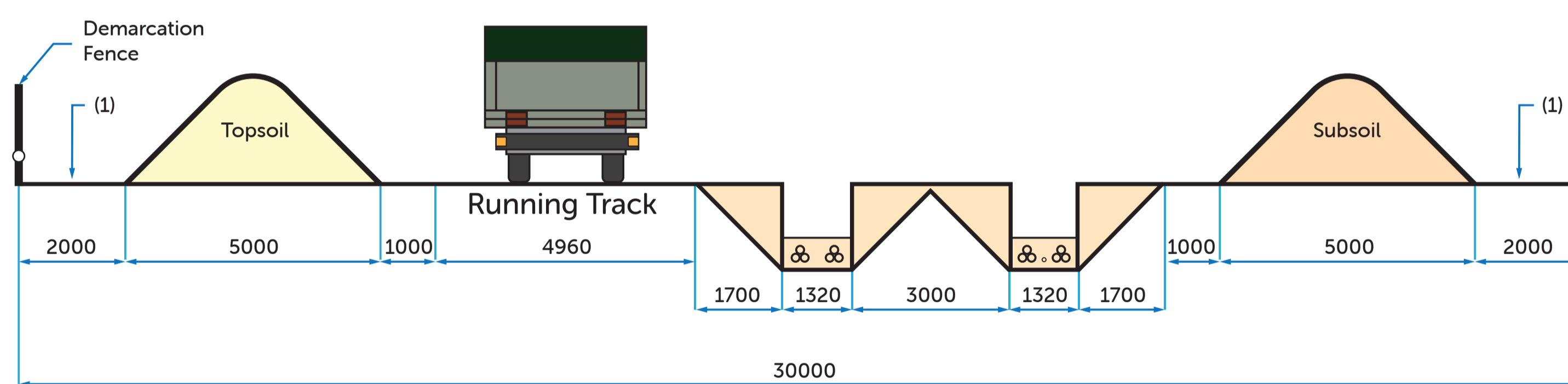
Where the OHL circuits approach Melgarve, the connection reverts to underground cable to cross under the existing Beaully Denny OHL and enter the substation. The OHL will transition to underground cable via a cable sealing end compound at Junction C and the cable\*\*\* will be approx. 1.1km in length passing to the East of Melgarve substation and loop into the site from the south.

It is proposed that the cable section near Melgarve will be accessed for construction/maintenance via the existing Stronelaig access track. Design development will establish the extent of any permanent access tracks required for operational maintenance purposes of the cable section connecting both wind farms to Junction A.

\*HV circuits are comprised of 3 phases.

\*\* Cable size/type determined based on the required load and the cable route at this stage and subject to revision as the project develops and detailed design studies continue.

\*\*\*The cable used to enter Melgarve will match that of the connections from the wind farms to Junction A.



### The UGC alignment options were considered in terms of the following:

- Major crossings eg. OHL (132kV and above), rail, loch, rivers/canals/streams, motorways/major roads, pipelines/cables, bridges;
- Elevation;
- Contaminated land;
- Flooding;
- Terrain;
- Rock;
- Peat;
- Access;
- Angles of deviation;
- Cable Haul Road;
- Proximity to wind farms.

The drawing to the left shows an indicative construction corridor for a double circuit cable installation including running track for vehicles and separate storage areas for topsoil and subsoil. The 30m corridor width required is more impactful on Protected Species, habitats and watercourses than OHL. The 30m corridor width required is more impactful on protected species, habitats and watercourses than OHL.

# OHL/UGC consents and environmental considerations

**The Dell and Cloiche connection OHL sections into Melgarve substation require consent by the Scottish Ministers under Section 37 of the Electricity Act 1989 (as amended), referred to as “S37 consent”, prior to construction commencing.**

Underground cables can be installed as Permitted Development under Class 40 of the Town & Country Planning (General Permitted Development) (Scotland) Order 1992 (as amended). Permitted development rights only apply where the works can be shown to have no significant environmental impact on designated areas and assets.

Where access tracks are required to facilitate installation of cable, planning permission will be required from the Highland Council under the Town & Country Planning (Scotland) Act 1997.

The development of SSEN Transmission’s projects is undertaken via a systematic process and includes stakeholder consultation at key stages. In this case, where notable concerns were raised about the preferred technology type, SSEN Transmission has revisited the preferred technical solution.

SSEN Transmission’s license obligations are to develop an efficient, co-ordinated and economical system of electricity transmission. As such SSEN Transmission is obliged to seek the most cost-effective solution, which is usually an OHL connection.

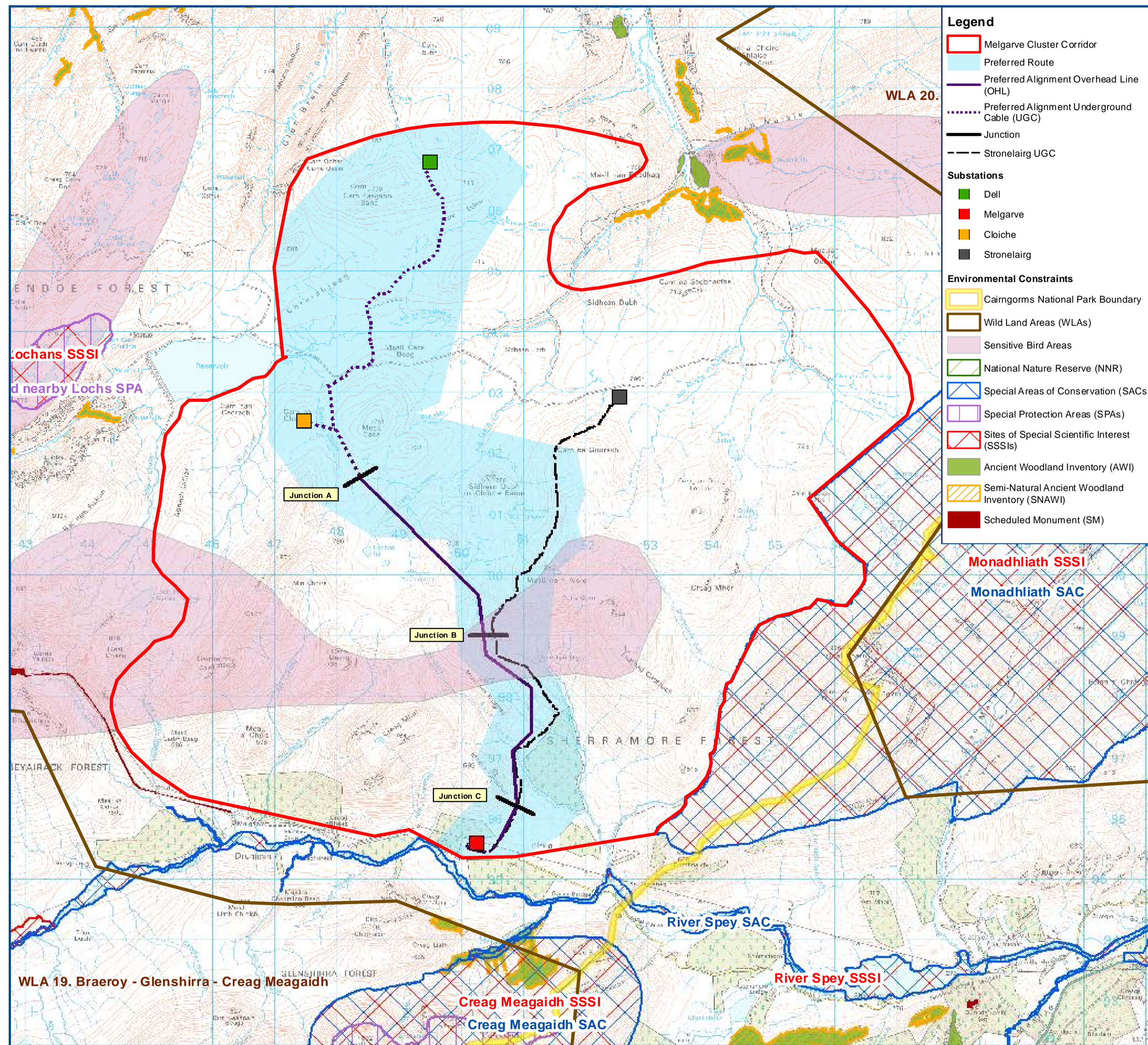
Key environmental sensitivities for the development of the Dell and Cloiche connections are potential adverse effects to landscape and visual amenity,

sensitive peatland habitats, protected species, Ornithology (including Golden Eagle and Slavonian Grebe) and cultural heritage. Whilst some issues are more impacted upon by an OHL proposals (landscape and visual/ornithological), other factors are more affected by the introduction of UGC (sensitive habitats, peatland). This makes the assessment of preferred alignments and technology choices difficult as differences are subtle, and associated with pros and cons.

Following extensive survey work and assessment of options against environmental information gathered to date, and considering engineering and other factors, our preferred alignment is however considered to balance out these competing factors and reduce impacts on peatland habitats, protected species and watercourses.

Once the proposed alignment is selected, SSEN Transmission will progress detailed engineering design and further detailed environmental assessments to identify key issues of concern, identify potential effects and mitigate those which are deemed to be significant effects through detailed alignment selection and the Environmental Impact Appraisal (EIA) process.

**The drawing below provides the environmental setting and the Preferred alignment:**



## The next steps in the consenting process are to:

- Conclude alignment options assessment;
- Undertake EIA screening and scoping (if EIA required);
- Undertake detailed environmental assessments and reporting on the preferred technical solution;
- Submit an application to the Scottish Ministers for S37 consent for Dell and Cloiche;
- Submit planning applications for access tracks where required.

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# What happens now and how do I have my say?

**We understand and recognise the value of the feedback provided by members of the public during all engagements and consultations. Without this valuable feedback, the project development team would be unable to progress projects and reach a balanced proposal.**

We are keen to receive your views and comments in regards to the following questions:

- Has the need for the project been clearly explained?
- Are there any additional factors, or environmental features, that you consider important and should be brought to the attention of the project team?
- Have we been clear in providing the reasons for selecting our preferred alignment?
- Have we explained the approach taken to select the preferred alignment adequately?
- Do you have any other comments regarding the alignment?
- Overall, how do you feel about the Melgarve Cluster project?



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The accessibility and language support options provided by 'Recite Me' include text-to-speech functionality, fully customisable styling features, reading aids, and a translation tool with over 100 languages, including 35 text-to-speech.

Please select "Accessibility" on our website to try out our inclusive toolbar."

## Comments

Your views and comments can be provided to the project team by completing a feedback form or by writing to Louise Anderson, Community Liaison Manager.

We will be seeking feedback from the members of the public and Statutory Bodies by **10 March 2023**.

All received feedback will be assessed and the proposed options adapted where necessary.



## Feedback


Feedback can be submitted online via the project website or via the project Community Liaison Manager:

**Louise Anderson**  
Lead Community Liaison Manager



 [louise.anderson@sse.com](mailto:louise.anderson@sse.com)

 **T:** +44(0)1738 457 495  
 **M:** +44(0) 7384 454 233

 Grampian House,  
200 Dunkeld Road,  
Perth, PH1 3GH

## Additional information

Information will also be made available via the project webpage and social media channels:

### Project website:

[ssen-transmission.co.uk/projects/project-map/melgarve-cluster/](https://ssen-transmission.co.uk/projects/project-map/melgarve-cluster/)

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