

SP Energy Networks

Hawick Substation to V Route 132kV Grid Works Routeing and Consultation Report

Final report

Prepared by LUC

May 2024



**SP ENERGY
NETWORKS**

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Chapter 1

Introduction

Purpose of this Report

1.1 This document has been prepared by LUC on behalf of SP Energy Networks (SPEN). It relates to the environmental appraisal of two new 132 kilovolt (kV) overhead lines (OHLs) supported on wood poles connecting the existing circuits of the V route to the existing substation at Hawick (hereinafter referred to as the 'Hawick 132kV Project'). The Hawick 132kV Project is located wholly within the Scottish Borders Council (SBC) area, as shown on **Figure 1.1**. The location of the Hawick 132kV Project is herein referred to as the 'Site'.

1.2 This report presents the findings of the environmental review of the SPEN proposals, culminating with the description of the 'proposed route' for the two new OHL connections. This report also sets out the process for the consultation which will be undertaken. This process is designed to gather feedback from statutory consultees and local residents, to inform the subsequent stages of the Hawick 132kV Project.

The Need for the Hawick 132kV Project

1.3 The Hawick 132kV Project involves reinforcement of the transmission network. The proposal is to reconfigure Hawick 132kV substation such that Hawick can be supplied from Galashiels and establish the Hawick / Galashiels 132kV circuit No.1 and No.2. Works at Galashiels will be required to terminate the double circuit from Hawick post reconfiguration.

SPEN's Statutory and License Duties

1.4 As transmission licence holder for southern Scotland, SPEN¹ is required under Section 9(2) of the Electricity Act 1989 ('the Electricity Act') to:

- develop and maintain an efficient, co-ordinated and economical system of electricity transmission; and
- facilitate competition in the supply and generation of electricity.

¹ SPEN owns and operates the electricity transmission and distribution networks in central and southern Scotland through its wholly-owned subsidiaries SP Transmission plc (SPT) and SP Distribution plc (SPD). SPT is the holder of a transmission licence. The references

within this report to SPEN in the context of statutory and licence duties and the application for section 37 consent below should be read as applying to SPT.

1.5 SPEN is required in terms of its statutory and licence obligations to ensure that the system is fit for purpose through appropriate reinforcements to accommodate contracted capacity.

1.6 Schedule 9 of the Electricity Act imposes a further statutory duty on SPEN to take account of the following factors in formulating proposals for the installation of overhead transmission lines.

- *“(a) to have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features or special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and*
- *(b) to do what it reasonably can to mitigate any effects which the proposals would have on the natural beauty of the countryside or any such flora, fauna, features, sites, buildings or objects.”*

1.7 SPEN’s ‘Schedule 9 Statement’ sets out how it will meet the duty placed upon it under Schedule 9. The Statement also refers to the application of best practice methods to assess the environmental impacts of proposals and to identify appropriate mitigation measures.

1.8 As a result of the above, SPEN is required to identify electrical connections that meet the technical requirements of the electricity system, which are economically viable, and cause on balance, the least disturbance to both the environment and the people who live, work and enjoy recreation within it.

The Development and Consenting Process

1.9 The Hawick 132kV Project comprises three key phases:

- Phase One: Routeing and Consultation;
- Phase Two: Environmental Appraisal; and
- Phase Three: Application for Consent.

Phase One: Routeing and Consultation

1.10 This report relates to Phase One, which comprises an environmental review of SPENs technical design for the two new 132kV OHLs to inform a final design which minimises effects on the environment to establish a ‘preferred’ route for the OHLs.

1.11 SPEN is committed to ongoing consultation with interested parties, including local communities. Whilst there is no statutory requirement to consult during the early routeing

stages, SPEN nonetheless considers it good practice to introduce consultation at this stage.

Phase Two: Environmental Appraisal

1.12 The Hawick 132kV Project could be considered an EIA development under Schedule 2 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (‘the EIA Regulations’). However, due to its nature, size and location with regard to the selection criteria for screening Schedule 2 development presented as Schedule 3 (Regulation 7(2)(a)) of the EIA Regulations, an EIA may not be required.

1.13 Following confirmation of the proposed routes, to determine whether the Hawick 132kV Project is an EIA development, and therefore an EIA is required, SPEN will submit a request for a Screening Opinion to the Scottish Ministers in accordance with Regulation 8(1) of the EIA Regulations. The request will be accompanied by the relevant information in accordance with Regulation 8(2) and 8(3) and will take into account the selection criteria in Schedule 3 and the findings of the work undertaken to date as part of the routeing process.

1.14 Should the Scottish Ministers determine that the Hawick 132kV Project is not EIA development and that subsequent provisions of the EIA Regulations do not apply, SPEN will undertake an environmental appraisal in relation to key topics (to be agreed with consultees) and prepare a supporting Environmental Report to accompany the Section 37 applications.

Phase Three: Application for Consent

1.15 SPEN will apply to the Scottish Ministers for consent under Section 37 of the Electricity Act, as amended, to install and keep installed, the proposed 132kV OHLs. In conjunction with the Section 37 application, SPEN will apply for deemed planning permission under Section 57(2) of the Town and Country Planning (Scotland) Act 1997, as amended, for any ancillary development such as access tracks or substation facilitation works. The Environmental Report will accompany the application.

Stakeholder Engagement

1.16 Stakeholder engagement, including public involvement, is an important component of the Scottish planning and consenting system. SPEN is keen to engage with key stakeholders including local communities and others who may have an interest in the Hawick 132kV Project. This engagement process begins at the early stages of

development of a project and continues into construction once consent has been granted.

1.17 SPEN's approach to stakeholder engagement for major electrical infrastructure projects is outlined in Chapter 2 of the SPEN document 'Approach to Routeing and Environmental Impact Assessment'². SPEN aims to ensure effective, inclusive and meaningful engagement with the public, local communities statutory and other consultees and interested parties through the key engagement steps set out below:

- **Obtaining feedback on emerging route designs:** This document has been prepared to gather feedback on the emerging project details. It will be issued to statutory consultees, and made available on SPEN's website, with its availability advertised in the press. SPEN will also be consulting directly with local residents and landowners who may be affected or have a view on the proposals.
- **The Environmental Appraisal stage:** The results of stakeholder engagement are taken into consideration and used to confirm the 'proposed routes' for progression to the Environmental Appraisal and Section 37 application stage. Further consultation may be carried out during the design and environmental appraisal stage, including additional information gathering.

The Structure of the Report

1.18 This report comprises of the following chapters:

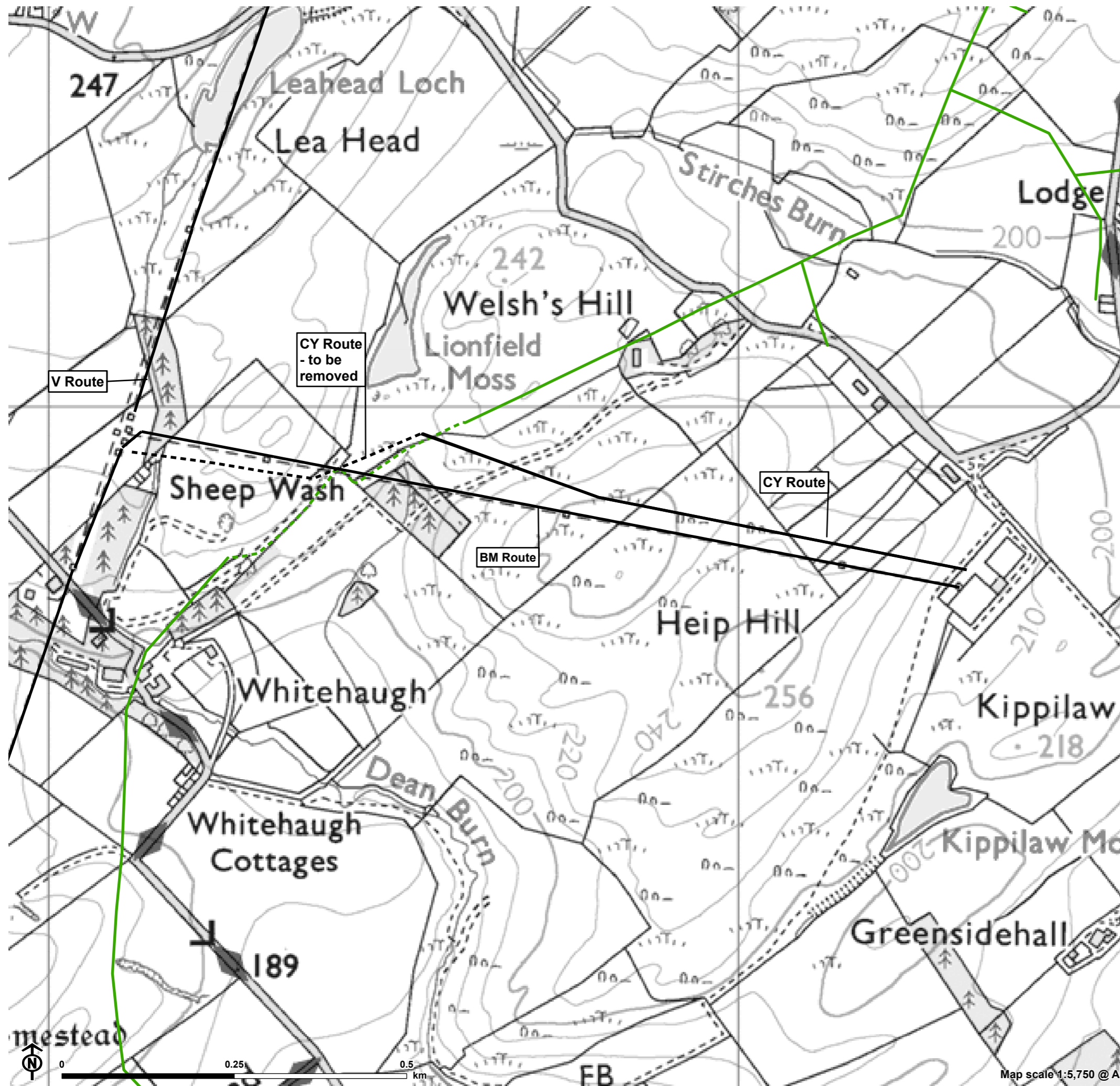
- **Chapter 1:** Introduction;
- **Chapter 2:** Project Description;
- **Chapter 3:** Environmental Review of OHL Routes; and
- **Chapter 4:** Consultation Process and Next Steps.

1.19 This report is also supported by figures as listed in the contents page above.

² SP Energy Networks (2021) Approach to Routeing and Environmental Impact Assessment. Available [online] at:

https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing_Document_2nd_version.pdf

Figure 1.1: Location



Chapter 2

Project Description

Connection Requirements

2.1 A new 132kV OHL approximately 0.4 kilometres (km) in length is required to connect the existing wood pole CY6 to a steel tower which forms part of the existing V route. This is shown as Route 'a' on **Figure 2.1a**. Another new 132kV OHL, approximately 1.3 km in length, is required to connect the existing Hawick substation to a steel tower which forms part of the existing V route. This is shown as Route 'b' on **Figure 2.1a**. The associated infrastructure required to construct Routes 'a' and 'b' is shown on **Figure 2.1b**.

2.2 As part of the wider works at the Site, wood poles CY1 – CY5 which form part of the existing CY route will be removed, as shown on **Figures 2.1a-b**. The removal of this section of the CY route does not form part of the Hawick 132kV Project which considers Route 'a' and Route 'b' only, however, working areas and access tracks associated with CY1 – CY5 are shown on the figures to more accurately reflect the overall development at the Site. Environmental surveys relating to CY1 – CY5 will be undertaken prior to them being removed.

2.3 A small extension is also required to Hawick substation.

Overhead Line Infrastructure

2.4 With an OHL of this nature, conductors (or wires) are suspended at a specified height above ground, incorporating minimum safety clearances and supported by wooden poles, spaced at intervals.

2.5 Conductors can be made either of aluminium or steel strands. These connections will each include one three-phase circuit with no earth wire and one of the phase conductors will incorporate a fibre optic cable for communication purposes.

2.6 Conductors are strung from insulators attached to the steelwork at the top of the pole and prevent the electric current from crossing to the pole body.

Wood Pole Structure

2.7 The proposed OHLs will be constructed using the Trident 'H' wood pole design with galvanised steelwork on top supporting aluminium conductors on insulators.

2.8 The proposed design is described below, and examples of typical pole designs are shown on **Figure 2.2**.

2.9 Wood poles can be used for single circuit lines operating at 132kV. Wood poles are fabricated from pressure impregnated softwood, treated with a preservative to prevent damage to structural integrity.

2.10 There are three types of wood pole structure, in terms of appearance:

- *Intermediate*: where the pole structure is part of a straight-line section;
- *Angle*: where there is a horizontal or vertical deviation in line direction of a specified number of degrees; and
- *Terminal*: where the overhead line terminates into a substation or on to an underground cable section via a separate cable sealing end compound or platform.

2.11 The maximum allowable angle deviations on single wood pole designs is 30 degrees, with deviations up to 75 degrees being permitted on double 'H' poles. **Figure 2.2** illustrates both the single and H pole variants of the intermediate and angle poles.

Wood Pole Heights and Span Lengths

2.12 The 132kV OHLs will be supported on trident wood poles. The typical height of trident poles above ground (including steel work and insulators) varies from 11 metres (m) to 16 m. In terms of the technical specification, the wood pole length range for trident poles is 10 m – 22 m. Once foundation depth (2.5 m) is subtracted and insulator height (1.6 m) included, the potential range of heights above ground is 9.1 m – 21.1 m.

2.13 The section of OHL between wood poles is known as the 'span', with the distance between them known as the 'span length'. Span lengths between wood poles average between 80 m to 100 m but can be increased if there is a requirement to span a larger distance due to the presence of a feature in the landscape such as a river or loch.

2.14 Wood poles are used to regulate the statutory clearances required for conductor height, which is determined the voltage of the OHLs (the higher the voltage, the greater the safety clearance that will be required) and the span length between wood poles.

Wood Pole Colouring

2.15 Wood poles are dark brown when first erected and weather to a silver/grey after a period of about five years.

2.16 The wood pole top cross-arms are galvanised steel and support the aluminium conductors on stacks of grey insulator discs. Both the steelwork and aluminium will weather and darken after a few years.

Construction Process

2.17 The construction of OHLs requires additional temporary infrastructure such as temporary accesses to pole locations. All have limited maintenance requirements, and all are subject to well-established procedures for dismantling/decommissioning.

Wood Pole Construction

2.18 The construction of the OHL will follow a well-established sequence of activities as outlined below:

- preparation of accesses and felling of woodland to allow safe operation of the OHL;
- excavation of foundations;
- delivery of wood poles;
- erection of wood poles;
- delivery of conductor drums and stringing equipment;
- insulators and conductor erection and tensioning; and
- clearance and reinstatement.

2.19 Prior to constructing the OHL, temporary working areas around each pole location will be required for foundation excavation and pole erection. Any vegetation that requires removal will be removed or lopped. Following commissioning of the OHLs, all equipment and temporary access of construction areas will be removed with the land being reinstated to as similar a condition as possible prior to the works having taken place.

2.20 The erection of the wood poles will require a small excavation to allow the pole brace block and/or steel foundation braces to be positioned in place. A typical pole excavation will be 3 m² by 2 m deep. The excavated material will be sorted and stored and used for backfilling purposes. No concrete is required.

2.21 Poles are erected in sections, i.e. between angle support poles and/or terminal support poles. The insulator fittings, and wood poles forming the pole support, will be assembled local to the pole site and lifted into position utilising a tracked excavator which excavates the foundations. The pole foundation holes will then be backfilled, and the pole stay wire supports attached to the ground in preparation for conductor stringing, erection and tensioning.

Access

2.22 Temporary accesses to all pole locations will be taken from the existing main road network wherever feasible, with the use of selected unclassified roads also likely to be

required. The use of existing tracks and watercourse crossings will be maximised, with the upgrading of these where necessary.

2.23 The initial preference when taking temporary access is to use low ground pressure vehicles and plant. Where access is required to be taken through any sensitive areas identified during the environmental appraisal process, other less intrusive methods such as temporary steel matting, or timber roadways may be employed.

2.24 The use of temporary stone tracks is unlikely for the construction of wood pole connections. However, if small sections are required, all temporary tracks will be removed after commissioning with land being restored to as close to its former condition as possible.

Temporary Working

2.25 Temporary working areas will be required for the duration of the construction works. Temporary vehicular access is required to every pole location. Wood pole locations will have a working area of approximately 20 m x 20 m and could also extend to accommodate conductor pulling if required. Working areas for wood pole connections involve roped off areas around each pole. No hardstandings are required.

2.26 In some cases, the shape or size of the working area will be determined by nearby environmental or land use constraints, identified during the EIA process / prior to construction. Each working area will be taped off to delineate the area for environmental protection reasons.

2.27 Following the completion of the construction works, the temporary working areas will be reinstated and restored to former conditions.

Construction Timescales

2.28 Construction and erection of a standard single pole generally takes approximately half a day depending on ground conditions and location, i.e. it may take more hours if the ground is softer. Angle poles and H-poles can take longer due to the need for 'stay wires' to stabilise the pole in the ground.

Operation and Maintenance

2.29 Whilst most OHL components are maintenance free, exposed elements which suffer from corrosion, wear, deterioration and fatigue may require inspection and periodic maintenance. OHL cables generally require refurbishment after approximately 40 years, which is the expected lifespan of the connection.

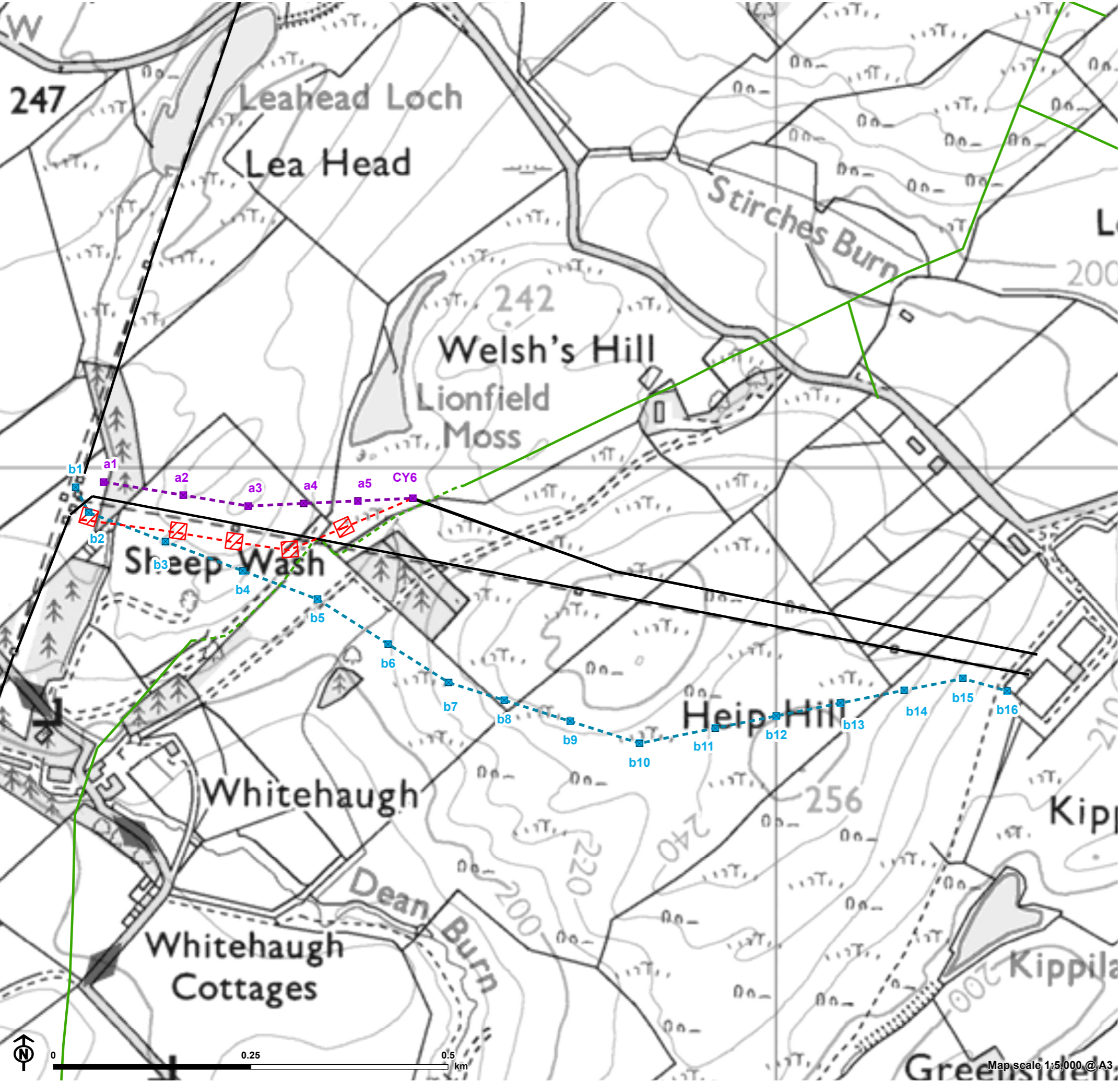
2.30 Any felled wayleave areas will also have to be managed to maintain the required clearances whilst the connection

remains in service. Walkover surveys or flyovers will identify where there is a requirement to clear wayleaves of new growth.

Decommissioning

2.31 When the operational life of the proposed OHL comes to an end, it is possible that the line may be re-equipped with new conductors and insulators and refurbished. Alternatively, the OHL may be decommissioned fully.

Figure 2.1a: Proposed Routes



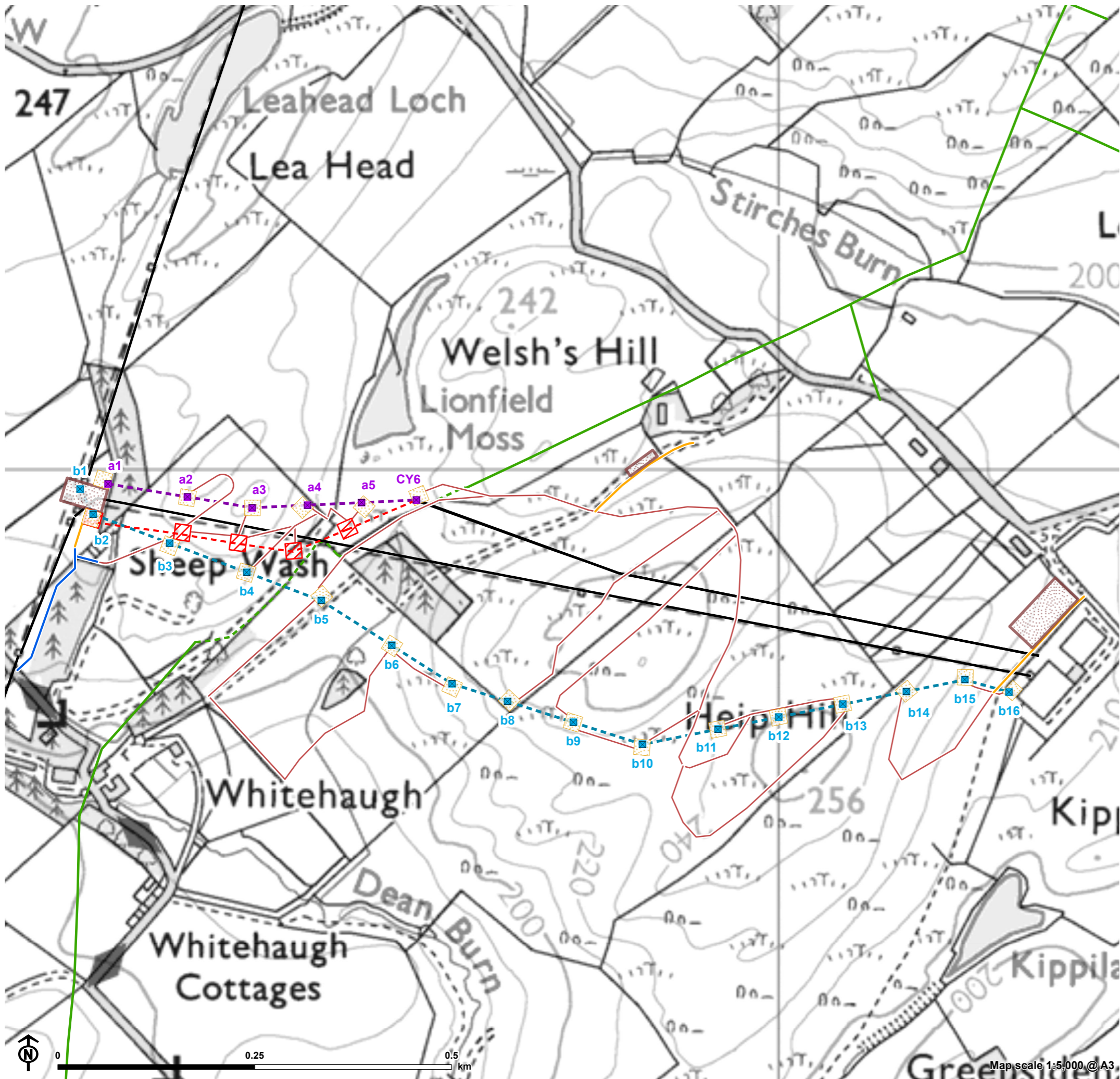


Figure 2.1b: Proposed Routes and Associated Infrastructure

Proposed overhead line routes and associated infrastructure

- Route 'a' (wood pole a1-a5 and CY6)
- Route 'b' (wood pole b1-b16)
- Route 'a' proposed OHL
- Route 'b' proposed OHL
- Existing track
- Temporary all-terrain vehicle access
- Temporary stone access
- Temporary laydown/construction area
- Temporary working area

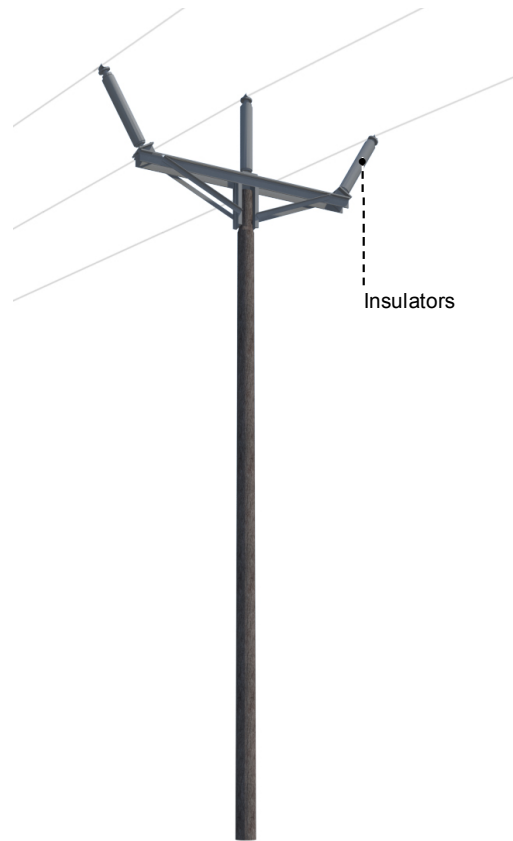
CY route to be removed

- CY route
- CY temporary working area

Existing network

- 132kV overhead line (OHL)
- 11kV overhead line (OHL)
- 11kV underground cable (UGC)

Figure 2.2: Typical Wood Pole (Component Parts of 132kV 'Trident' Design Wood Pole)



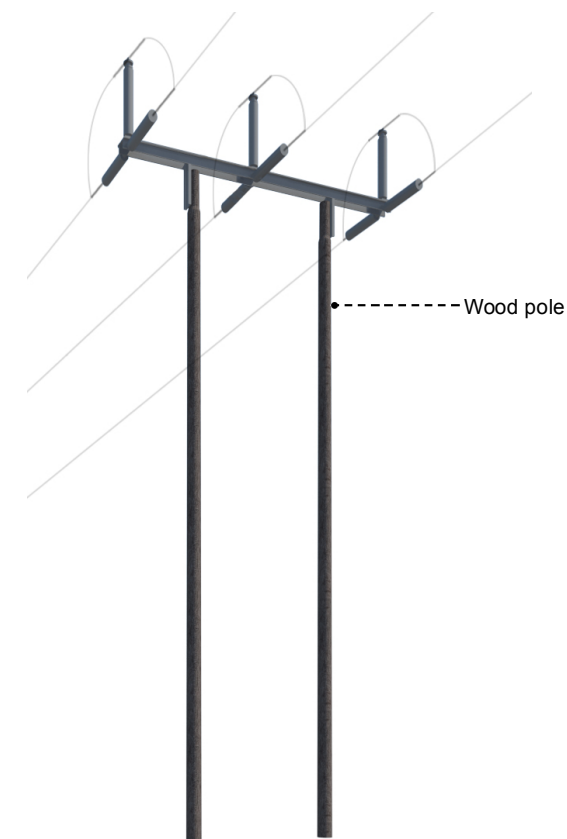
Component parts of 132kV 'Trident' design wood pole: Intermediate



Component parts of 132kV 'Trident' design wood pole: Angle



Component parts of 132kV 'Trident' design wood pole: Intermediate (H pole)



Component parts of 132kV 'Trident' design wood pole: Angle (H pole)



Component parts of 132kV 'Trident' design wood pole: Terminal (H pole)

Chapter 3

Environmental Review of OHL Routes

SPEN's Approach to Initial OHL Route Design

3.1 In June 2021, SPEN published the second version of the Approach to Routeing and Environmental Impact Assessment document outlining the approach taken to routeing transmission infrastructure³.

3.2 The routeing process is iterative, and the steps outlined below may be re-visited several times. The outcome of each step is subject to a technical and, where relevant, consultation, 'check' with key stakeholders including the public, prior to commencing the next step. Professional judgement is used to establish explicitly the balance between technical, economic viability and environmental factors.

3.3 As such, a well-routed line considers other environmental and technical considerations and will avoid, wherever possible, areas of high amenity value.

Approach to Review of Potential Environmental Effects

3.4 The approach to routeing an OHL is based on the premise that one of the major effects of an OHL is visual and that the degree of visual intrusion can be reduced by careful routeing. A reduction in visual intrusion can be achieved by routeing the OHL to fit the topography, by using topography and trees to provide screening and/or backclothing, and by routeing the line at a distance from settlements and roads. However, other environmental issues also play a key role in this process, including (in no hierarchical order):

- landscape and visual amenity;
- forestry and woodland (including areas of ancient and native broadleaf woodland);
- hydrology, hydrogeology, geology (such as carbon-rich soils and deep peat) and water resources;
- biodiversity; and
- cultural heritage.

³ SP Energy Networks (2021) Approach to Routeing and Environmental Impact Assessment. Available [online] at:

https://www.spenergynetworks.co.uk/userfiles/file/SPEN_Approach_to_Routeing_Document_2nd_version.pdf

3.5 To inform the environmental review of the two proposed OHLs and associated wood pole locations, the following background environmental information was collated via desk based information supplemented by site visits in 2022 and 2023.

Landscape and Visual Amenities

3.6 The study area (defined as a 1 km radius around the Hawick 132kV Project) falls wholly within the administrative area of SBC. The study area is located in the low hills just north of Hawick in the Teviot Valley and comprises upland and upland fringe areas centred on Welsh's Hill (242 m above ordnance datum (AOD)). To the north of Welsh's Hill is the Stirches Burn, and to the south is Dean Burn. The burns flow in shallow valleys south to the River Teviot. To the south-west is Wiltonburn Hill (282 m AOD) and to the west and north is undulating moorland. To the south the land slopes down to the River Teviot. The hills in the study area have a distinctive pattern of ridges running south-west to north-east. Rocky outcrops are frequent on steeper slopes.

3.7 The study area is rural, and land use is pastoral. Semi-improved grassland is found on upper slopes, and better quality pasture is found in the valleys. Gorse clumps occur on steeper slopes. Small blocks of conifers are found throughout the study area. Broadleaf trees are clustered around Whitehaugh on the Dean Burn, and at the convent at Stirches. There are small lochans and mosses on the hills that feed the two burns.

3.8 Minor roads lead up both valleys, serving the farms and houses in the area. There are no through-routes across the study area. The closest houses are at South Deeside Road to the north, and at Whitehaugh to the south. The edge of Hawick is to the south-east. Most houses in the town face in to the Teviot Valley, and away from the hills. Existing infrastructure comprises 11kV and 132kV OHLs carried on steel towers and wood poles. These cross the study area with the 132kV OHLs linking to the substation west of Stirches.

3.9 The Cross-Borders Drove Road long-distance route follows minor roads and tracks through the western part of the study area. The Borders Abbey Way long distance route follows minor roads north from Hawick in the east of the study area.

3.10 The upland part of the study area is within the Rocky Upland Fringe Landscape Character Type (LCT). The key characteristics for this LCT include the "distinctive, irregular, strongly undulating and angular landform", as well as its

strong sense of place. The Teviot Valley to the south-east is within the Pastoral Upland Fringe Valley LCT.

3.11 There are no landscape designations within the study area. The Teviot Valleys Special Landscape Area is 2 km to the north-east.

Biodiversity

3.12 An initial ecological walkover was undertaken by LUC in March 2022, to identify any species or habitats that could be a constraint to the Hawick 132kV Project. A Biodiversity Net Gain (BNG) survey was then undertaken in October 2023, to update the ecological baseline⁴.

3.13 Both surveys involved a walkover of all land within the Site, with a focus on the area directly underneath the proposed OHLs. A breeding bird survey was also carried out between April and July 2023 to appraise the breeding bird community on the Site.

Habitats

3.14 The proposed pole locations are not located within any areas designated for nature conservation interest and are also not located within an Environmentally Sensitive Area.

3.15 The majority of the habitats onsite were common lowland, agricultural landscapes, heavily modified by land management practices. The most dominant habitats within the Site included improved grassland or semi-improved neutral grassland pasture. Livestock (i.e. sheep and horses) have access to the majority of the Site, and as a result the sward is short with little ecological diversity. A small area of marshy grassland was recorded within the west of the Site.

3.16 Large, continuous stands of gorse were recorded in drifts across the grassland habitats. Gorse stands were being actively removed by the landowner, and as a result more acidic species were beginning to regenerate where gorse had been removed.

3.17 Several stands of woodland were located within the Site:

- A stand of broadleaved woodland containing mature beech *Fagus sylvatica* (NT 48466 15771).
- Two small stands of conifer plantation containing Scot's pine *Pinus sylvestris* (NT 48446 15731 and NT 48189 15988).
- Two stands of mixed woodland plantation, containing sycamore *Acer pseudoplatanus*, oak *Quercus* sp., ash

⁴ A standalone BNG report, summarising the results of the BNG survey, will be provided separately.

Fraxinus excelsior, birch *Betula* sp. and Scot's pine (NT 48562 15838 and NT 48125 15858).

3.18 Two watercourses run through the Site (see descriptions under **Hydrology and Peat** section below).

Protected Species

Bat Roost Potential (BRP)

3.19 The woodland blocks identified above were each assessed for their bat roosting potential (BRP). The stand of mature beech, within the centre of the Site, was initially deemed as having 'Low' BRP during the ecological walkover in 2022. However, upon revisiting the Site as part of the BNG survey in 2023, this was updated to 'Moderate' BRP⁵ due to a number of broken branches, splits and cracks which appear to have resulted as an aftermath of storms post the 2022 visit (see **Figure 3.1**).

3.20 The rest of the woodland blocks were deemed to have 'Negligible' BRP due to a lack of potential roosting features.

Badger

3.21 Evidence of badger *Meles meles* was recorded throughout the Site. Therefore, a further species-specific survey was undertaken in June 2022 to determine the status of the protected species within the surrounding area.

3.22 Due to the risk of persecution, information related to badger is **confidential** and is not discussed within this report. A standalone **confidential** report detailing information will be submitted separately to NatureScot and SBC.

3.23 Badger are not discussed further within this report.

Otter and Water Vole

3.24 The watercourses within the Site were unsuitable for both otter *Lutra lutra* and water vole *Arvicola amphibius* due to their limited width and depth. Foraging resources were also reduced due to a lack of vegetation within the watercourses. Sheltering opportunities were also severely restricted due to the exposed embankments.

3.25 As a result, otter and water vole are not discussed further and are not considered to be a constraint to the development.

Great Crested Newt (GCN)

3.26 A Habitat Suitability Index (HSI) assessment was undertaken on all three ponds within the Site to determine

their suitability for GCN *Triturus cristatus*. All three HSI scores were <0.50, indicating that pond suitability was 'poor' for the species.

3.27 As a result, GCN are not discussed further and are not considered to be a constraint to the development.

Birds

3.28 Breeding bird surveys recorded several breeding species within 250 m of the OHLs, including four species on the Red-list of Birds of Conservation Concern (BoCC)⁶: skylark, starling, linnet and yellowhammer. A number of other breeding species were also present, including a pair of oystercatchers. None of the species recorded are known to be susceptible to effects associated with operational OHLs. Measures will be put in place to safeguard breeding birds during the construction phase of the Hawick 132kV Project.

Hydrology and Peat

Hydrology

3.29 Watercourses and water features at the Site were identified using Ordnance Survey (OS) mapping, aerial imagery and verified onsite during a hydrology walkover undertaken in March 2022. The proposed OHLs cross two unnamed watercourses which drain small lochs to the north of the OHLs (Leahead Loch to the west and Lionfield Moss to the east) (**Figure 3.1**). Both watercourses flow in a southerly direction before joining the Cala Burn/Dean Burn south of the proposed OHLs.

3.30 Details of both watercourses are provided below:

- The watercourse draining Leahead Loch is a 0.1-0.5 m wide channel north of the proposed OHLs which then enters a low-lying marsh area approximately 14 m east of pole a1 and approximately 25 m east of pole b2. Further downstream, the channel is culverted under a footpath and track, with an area of marshy ponded water between the two culverted sections. Downstream of the proposed OHLs the channel becomes better defined and is approximately 0.6 m wide.
- The watercourse draining Lionfield Moss leaves the loch via a long culvert beneath the agricultural land. It does not discharge above ground until approximately 25 m south of the proposed Route 'a' and rises as a poorly defined approximately 0.7 m wide channel. Further south, as the watercourse flows through an area of

⁵ BCT Guidance has since been updated (as of September 2023). While this report uses 3rd Edition terminology, the outcome of the surveys remains unchanged.

⁶ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. The

status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747. Available [online] at <https://britishbirds.co.uk/content/status-our-bird-populations>.

woodland, it enters two small man-made ponds with culverts draining them. South of the ponds, the watercourse becomes a well-defined approximately 0.6 m wide channel, with a gravel and cobble bed.

Flood Risk

3.31 Based on a review of SEPA Future Flood Maps, there are areas of predicted surface water flooding along the low-lying parts of both watercourses, constrained close to the channels:

- near existing V route steel towers in the marshy area near the westernmost watercourse; and
- along the channel of the easternmost watercourse, which drains Lionfield Moss.

3.32 Based on an initial review, the proposed OHL wood poles are outwith the predicted flood extents.

Geology

3.33 The British Geological Survey (BGS) 1:50k Bedrock maps indicate the Site is composed of sedimentary rocks of the Hawick Group Wacke formation.

3.34 The BGS 1:50k Superficial Deposits map indicates that the Site is covered by one main drift deposit type, which is Devensian Till of glacial origin, comprising a wide range of sedimentary till deposits from the Quaternary period.

Hydrogeology

3.35 The BGS hydrogeology map shows that the Site is located on a low productivity aquifer (Class 2C) with flow being identified throughout fractures and discontinuities. The greywackes are highlighted with limited groundwater capacity in the near surface weathered zone and in secondary fractures.

Peat

3.36 The NatureScot (2016) Carbon and Peatland Map is a GIS dataset that indicates the likely presence of carbon-rich soils, deep peat and priority peatland habitat at a broad scale across Scotland.

3.37 Based on a review of the Carbon and Peatland Map, there is no peat present near the proposed OHL routes, with the soils classed as mineral soils, comprising either 'Brown Earths' or 'Noncalcareous Gleys'.

3.38 The James Hutton Institute Soil Map of Scotland indicates that the underlying soils are mainly brown earth soils of the Ettrick soil association. The soils are imperfectly drained.

3.39 No peat was observed during the Site walkover and therefore no peat depth surveys were undertaken.

Private Water Supplies (PWS)

3.40 SBC were contacted to request private water supply (PWS) data within close proximity to the proposed OHLs. The council provided their PWS database, which includes all PWS known to them and properties supplied, although exact National Grid References (NGRs) were not provided by the council.

3.41 Nearby properties that are supplied by a PWS are shown in **Figure 3.1**, however, at the time of writing source locations are unknown. Based on a review of the data there are only two properties supplied by a PWS within 250 m of the Route 'b'. These are Greendale and Whitehaugh Farm to the south of the proposed routes. The two properties are both supplied by the Whitehaugh PWS, which is fed by a groundwater spring; the location of the spring source is unknown at the time of writing. Consultation with the landowner is currently being undertaken to locate the source and inform the design. Questionnaires have been distributed to properties within the surrounding area to identify source locations of the supplies.

Cultural Heritage

3.42 Route 'a' and Route 'b' are proposed to be situated in agricultural land used primarily for rough grazing. There is an existing OHL supported on steel towers located between both of these routes (BM Route) and an existing OHL supported on wood poles (CY Route) which is being partially re-sited via Route 'a'.

3.43 A review of available information was undertaken to determine whether there were any known cultural heritage assets (hereinafter 'assets') within proximity to either of the proposed routes. Historic Environment Scotland's (HES) databases, the Historic Environment Record (HER) and cartography were consulted with no known assets identified within either proposed route. A Site walkover survey undertaken in March 2022 identified three non-designated assets which were all upstanding or visible. A disused quarry (WK1) was found 15 m south of pole b3 of Route 'b' and appears on the First Edition Ordnance Survey (OS) map, dated 1863. The other two were in proximity to proposed Route 'a'. The first a disused quarry (WK2) adjacent to Lionfield Moss, 30 m north of pole a5, and the second an area of post-medieval rig and furrow (WK3) on the southern slope of Welsh's Hill where CY6 is located. There are existing poles within the area of rig and furrow.

3.44 It is not anticipated that there will be any direct effects (damage or loss) occurring to either of the quarries identified (WK1 and WK2). The area of rig and furrow will receive a

direct effect by Route 'b' should any works be required at existing pole CY6. The locations of WK1, WK2 and WK3 are shown on **Figure 3.1**.

3.45 It is anticipated that there will be effects as a consequence of setting change to three assets as a result of the Hawick 132kV Project. These are Greenside Hall (HM-1), Wiltonburn Hill (Canmore 54124) and Coldhouse Kip (Canmore 54118) with further details included within **Table 3.1** below. However, as these are assets of low to negligible importance, and setting makes a very limited contribution to that importance, it is not anticipated that this change to their setting would be significant. It would not alter the ability to understand or appreciate the assets' cultural significance.

3.46 It is recommended that known assets identified are avoided for siting infrastructure on where possible.

Forestry and Woodland

3.47 Forest and woodland areas within each of the proposed routes were identified through the use of aerial photography combined with digital data available from NatureScot and Scottish Forestry (SF). The following areas were mapped to inform the appraisal:

- National Forest Inventory (NFI) areas (i.e. commercial forestry);
- Ancient Woodland Inventory (AWI) sites; and
- Native Woodland Survey of Scotland (NWSS) sites.

3.48 Presence of forestry was also confirmed onsite during surveys carried out in March 2022.

3.49 There are no areas of AWI or NWSS located within the Site. A block of NFI woodland is located near the centre of the Site, however, neither Route 'a' or Route 'b' are proposed in this area. This was identified onsite as being mixed woodland plantation.

3.50 An area of woodland is also located immediately east of pole a1. According to the NFI, this has been felled to accommodate the existing OHL infrastructure, however, as shown on the aerials and confirmed onsite, a small strand of coniferous trees remains immediately east of pole a1. Felling may therefore be required to accommodate the proposed OHL (Route 'a') between poles a1 and a2.

3.51 Another strand of woodland containing broadleaved species was identified onsite to the west of pole b6. Although pole b6 does not appear to be located within this strand of woodland, felling may be required to accommodate the OHL between poles b5 and b6.

3.52 The final design of the Hawick 132kV Project will seek to avoid felling of any woodland, where possible.

Environmental Review Findings

Table 3.1 below sets out the advice on the proposed routes/wood pole locations for OHL Routes 'a' and 'b'. The advice was informed by desk-based information and the field survey work in 2022 and 2023.

Table 3.1: Feedback on SPEN proposed Route 'a' and Route 'b'

Feature	Location	Constraint	Mitigation / Design Consideration
Landscape			
Uneven, rugged terrain with rock outcrops	Generally between substation and V route.	Visibility of poles against skyline as seen from minor road / properties to the south.	Avoid placing poles on small crags / local high points. If possible, move pole b4 slightly further north to avoid local high point.
Otherwise, routeing appears to respond appropriately to landform. The closest poles are unlikely to be skylined from properties at Whitehaugh.			
Hydrology			
Unnamed watercourse draining Leahead Loch (culverted in places)	East of poles a1 and b2.	The unnamed watercourse is approximately 14 m east of pole a1 and approximately 25 m east of pole b2. The watercourse is relatively small (<0.6 m wide), however, a larger	If technically feasible, wood poles (and working areas) should be moved further to the west away from the watercourse.

Chapter 3

Environmental Review of OHL Routes

Hawick Substation to V Route 132kV Grid Works
May 2024

Feature	Location	Constraint	Mitigation / Design Consideration
		buffer would be preferred from a pollution control perspective, especially if the construction working area around the wood poles is considered.	Based on the size of the watercourse, a buffer of at least 12 m to the construction working areas would be defensible. No significant effects are predicted.
Unnamed watercourse draining Lionfield Moss (culverted in places)	West of pole b6.	The unnamed watercourse is approximately 40 m west of pole b6. The watercourse is relatively small (<0.6 m wide).	Based on the size of the watercourse, a buffer of at least 12 m to the construction working area would be defensible and the current location is likely to be acceptable based on recent consultation with SEPA. No significant effects are predicted.
Private Water Supplies	South of pole b4.	Two properties that are supplied by a PWS are within 250 m of the proposed Route 'b' and may be affected during construction. The Whitehaugh PWS supplies the two properties via a groundwater spring source; the location of the source is unknown at the time of writing. Consultation with the landowner is currently being undertaken to locate the source and inform the design. PWS questionnaires have been distributed to relevant properties to identify source locations of the supplies.	The supplied properties are at least 230 m south of the proposed Route 'b'. It is considered unlikely that there will be any significant effects, however, the PWS source location will be confirmed following receipt of the completed PWS questionnaires.
Biodiversity			
Habitat	Routes 'a' and 'b'.	The routes are located on homogenous rough pastureland with scattered gorse scrub, and the occasional plantation woodland stand. Route 'a' is proposed to pass through a small area of coniferous woodland between poles a1 and a2. This stand of woodland provides some ecological value as it offers opportunities for nesting birds in an otherwise homogenous, exposed landscape.	If possible, poles a1 and a2 should be moved south to avoid the stand of coniferous woodland. The habitat to the south of the woodland is improved grassland with little ecological value. If technically feasible, poles a1 and a2 should be moved further south to avoid felling woodland.
Bats	Pole footprint – all poles.	Currently, proposed pole b6 is within 30 m of a stand of trees with Moderate BRP. Further surveys will be required if the trees are to be removed to facilitate the works, as defined by BCT guidelines ⁷ .	Pole b6 is within 30 m of the stand of Moderate BRP trees. If the trees are being retained, no further surveys are required.

⁷ Bat Conservation Trust (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). Available [online] at: <https://cdn.bats.org.uk/uploads/pdf/Resources/For-professionals/Bat-Survey-Guidelines-4th-edition-AMENDED-27.03.24.pdf?v=1711530492> [Accessed: March 2024]

Feature	Location	Constraint	Mitigation / Design Consideration
			If the trees are being removed to facilitate the OHL, further surveys will be required.
Cultural Heritage			
Heritage assets within 1 km radius ⁸ – NB: only assets with the potential to experience effects are listed.			
Designated Assets			
It is not anticipated that any designated assets would experience effects as a consequence of the Hawick 132kV Project.			
Non-designated assets – in order of distance from OHL			
Greenside Hall – small hamlet and farmstead shown on 1863 OS map. A mix of late 18 th to early 19 th century cottage and farm buildings. Also a number of more modern buildings.	Approximately 560 m south-southeast of pole b15.	Non-designated hamlet of local importance. The heritage significance of the asset derives primarily from its historic interest in relation to the early development of Hawick, and association with other improvement farmsteads in the area. Key to the setting of the asset is its association with surrounding fields, proximity to Hawick, mix of agricultural buildings and dwellings and relationship with other local farmsteads.	Routes 'a' and 'b' will be visible from this hamlet and although there is an existing power line and steel towers in place, the proximity of the hamlet to the development will have individual and cumulative effects, however these are unlikely to be significant.
Wiltonburn Hill – remains of a farmstead situated on the east side of Wiltonburn Hill. Measures circa 46 m by 31 m and located at a height of 244 m AOD. A site survey in 1956 identified some surviving stonework and entrances on the west and south sides of the enclosure. Two hut circles are recorded at the east end (Canmore). The present condition is unknown, although very visible on modern aerials and LiDAR (Canmore 54124).	Approximately 900 m south-southwest of pole b2.	Non-designated prehistoric enclosed settlement. Considered to be of regional importance in terms of understanding the distribution of prehistoric settlement in the area. Heritage significance derives primarily from the archaeological interest of the site. Key to the setting of the asset is its upland location, providing visibility out in all directions, as well as access to Wilton Burn. The asset is potentially also intervisible with Coldhouse Kip and Wilton enclosure.	Routes 'a' and 'b' will be visible from the site and likely to result in minor change to the contextual and visual setting of the asset, albeit seen in the context of the existing steel towers of the V route.
Coldhouse kip – enclosed settlement visible on aerials and LIDAR. Situated on a north-east/south-west ridge at a height of	Approximately 920 m north of poles a1/b1.	Non-designated late prehistoric enclosed settlement. Considered to be of regional importance in terms of understanding the distribution of prehistoric settlement in the area.	Trees around Priestrig farmstead and along Leahead Loch, together with the local topography should screen Routes 'a' and 'b' from view.

⁸ No effects on setting are anticipated >1km in distance.

Chapter 3

Environmental Review of OHL Routes

Hawick Substation to V Route 132kV Grid Works
May 2024

Feature	Location	Constraint	Mitigation / Design Consideration
275 m AOD (Canmore 54118).		<p>Heritage significance derives primarily from its archaeological interest.</p> <p>Key to the setting of the asset is its upland location, providing visibility out in all directions and relationship with surrounding relic field systems. The asset is potentially also intervisible with Wiltonburn hill and Wilton enclosure.</p>	<p>If visible, the proposed new OHLs will result in some change to the setting of the asset. Given this is seen in the context of the steel towers of the existing V route, coupled with the distance from the Site, significant effects are unlikely.</p>

Proposed OHL Design for Consultation

3.53 Following the environmental review, modifications to the design were made by SPEN where technically feasible, taking into account the environmental feedback outlined within **Table 3.1** above. The modified design also included proposed locations for the associated temporary construction infrastructure including working areas around the pole locations, laydown/construction areas and access tracks.

3.54 The modified design was then subject to a second environmental review, the findings of which are summarised in **Table 3.2** below. The environmental feedback was then used by SPEN to further refine the design, taking into account environmental considerations, which resulted in the final proposed design for the Hawick 132kV Project, as shown in **Figure 2.1b**.

Table 3.2: Environmental Feedback on the Modified Design

Feature	Location	Design Constraint	Mitigation / Design Consideration
Cultural Heritage			
Existing dry stone wall	Immediately north-northeast of pole a4 and approximately 2.5 m south-southeast of the northern-most pole storage/laydown area.	The pole storage/laydown area and working area around pole a4 is located within close proximity to the existing dry stone wall.	Where technically feasible, the laydown area and pole a4 should be moved further away from the dry stone wall to avoid accidental damage during construction. The recommended setback distance from the dry stone wall should be the topple distance of the pole plus the width of the construction machinery that will be manoeuvring around.
Hydrology			
Lionfield Moss pond	Approximately 7 m east of the pole storage/laydown area north-northeast of pole a4.	The laydown area is located within close proximity (approximately 7 m) to the waterbody.	From both a pollution prevention (and flood risk) perspective it is recommended that the laydown area is moved slightly further away from the pond to the west. A buffer of at least 10-12 m from the pond would be more suitable.
Unnamed watercourse draining Leahead Loch	Approximately 3 m east of the working areas for poles a1 and b2.	The working areas for poles a1 and b2 are in close proximity (approximately 3 m) to a small watercourse and marshy area to the east.	It is recommended that the working areas are moved to the west, so that there is a greater buffer between the working areas and the watercourse.

3.55 A summary of the design changes made by SPEN to take account of the environmental feedback set out in **Table 3.2** which resulted in the current proposed design for the Hawick 132kV Project is provided below:

- The indicative working areas around poles a1 and b1 were moved further west so that they are now located >12 m from the unnamed watercourse draining Leahead Loch, located approximately 13 m and 16 m from the watercourse, respectively.
- The indicative working area around pole b6 was designed so that it is located >12 m from the unnamed watercourse draining Lionfield Moss, located approximately 24 m from the watercourse.

- The working area surrounding pole a4 was moved further away from the dry stone wall to reduce risk of accidental damage.
- The northern-most proposed pole storage/laydown area was relocated so that it is no longer near the existing stone wall or Lionfield Moss pond.

3.56 The proposed design, as shown on **Figure 2.1b**, is considered to be the most technically and economically viable whilst causing the least disturbance to the environment and to people. The proposed Route 'a' and Route 'b' will be taken forward for stakeholder and public consultation.

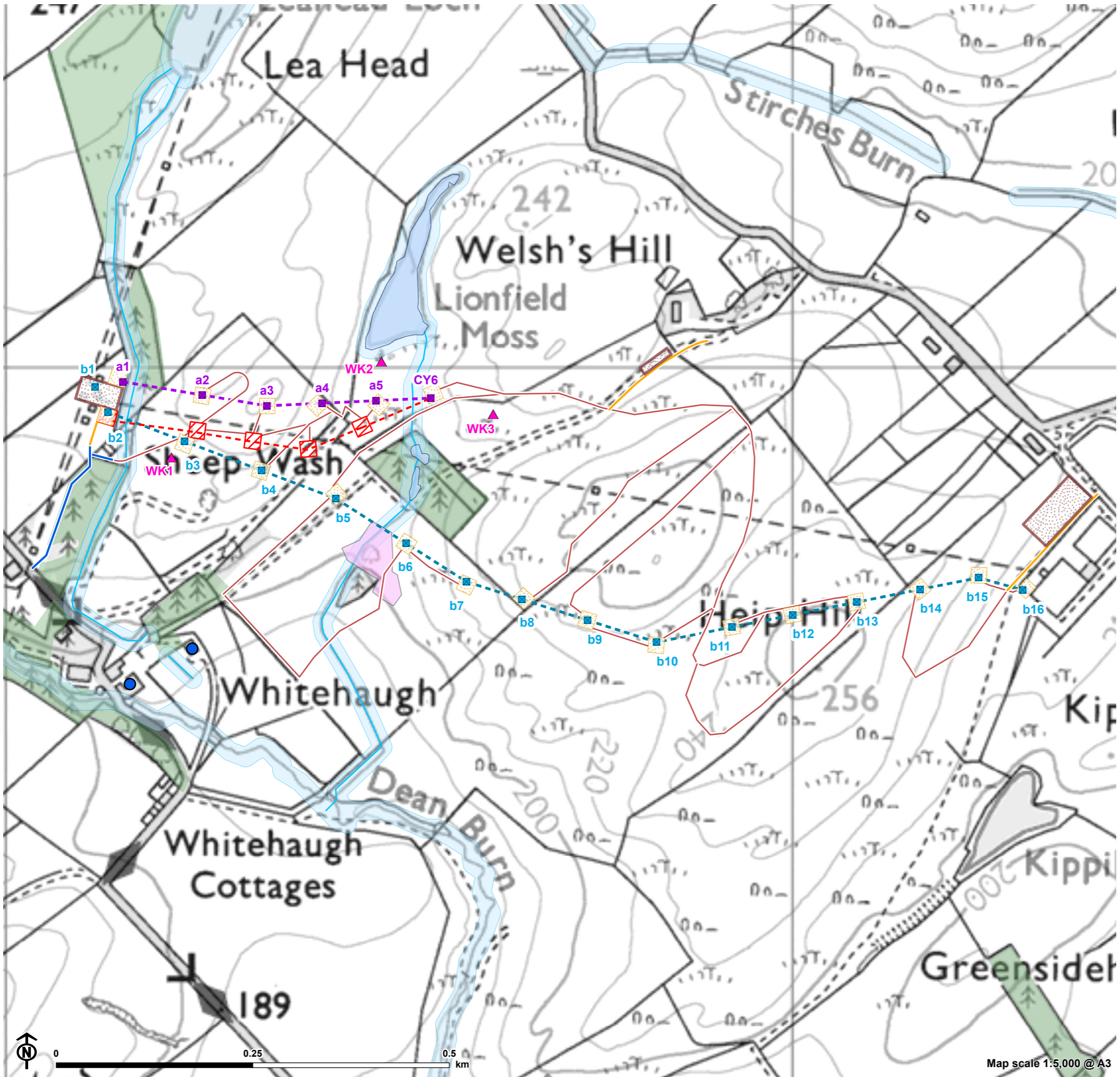


Figure 3.1: Environmental Considerations

Proposed overhead line routes and associated infrastructure

- Route 'a' (wood pole a1-a5 and CY6)
- Route 'b' (wood pole b1-b16)
- Route 'a' proposed OHL
- Route 'b' proposed OHL
- Existing track
- Temporary all-terrain vehicle access
- Temporary stone access
- Temporary laydown/construction area
- Temporary working area

CY route to be removed

- CY route
- CY temporary working area

Environmental Considerations

- Non-Designated Heritage Assets (WK1, WK2 and WK3)
- Moderate BRP area
- National Forest Inventory (NFI)
- HSI pond
- Private water supply (PWS)
- 24m buffer of watercourses/ waterbodies

Chapter 4

Consultation Process and Next Steps

Consultation Proposals

4.1 SPEN attaches great importance to the effect that its works may have on the environment and local communities and is very keen to hear the views of local people to help it develop the project in the most appropriate way. SPEN wishes to consult with relevant stakeholders to gain their views on the identified proposed routes for the Hawick 132kV Project and any other issues, suggestions or feedback.

4.2 Given the limited scale of the project, it is proposed to focus this consultation on statutory consultees including community councils and the immediate surrounding receptors made up of mainly rural properties and farms. The consultation will run from **20th May to 19th June** and feedback will inform the final design of the route.

4.3 Prior to the consultation event, an advert will appear in the Border Telegraph followed by an advert in The Hawick Paper, providing information on the project and the consultation. Project leaflets will also be distributed to local properties in proximity to the Hawick 132kV Project (see further information below).

Sources of Information

4.4 The principal sources of information regarding the consultation will comprise downloadable versions of the assessment report, project leaflet and SPEN website. A hardcopy of the assessment report will be made available viewing at Hawick Library.

Project Leaflet

4.5 Leaflets will be distributed to local properties and will include details of the project, the consultation process, how to find out more and how to submit comments. Email correspondence will also be sent to relevant stakeholders advising them of the consultation and seeking their views on the proposals. Stakeholders will include (but not limited to) Scottish Borders Council, the Scottish Environment Protection Agency (SEPA), NatureScot, Historic Environment Scotland (HES), Transport Scotland, Scottish Forestry and the local community councils.

Project Website

4.6 The main project information will be hosted on the SPEN website:
http://spenergynetworks.co.uk/pages/overhead_line_connections_from_hawick_substation_to_v_route.aspx. This will go live on 20th May and will contain publicly available consultation documents for viewing or download.

Consultation Documents

4.7 Hardcopies of the consultation documents will be lodged at a publicly accessible information point for public inspection from **20th May until 19th June** (during normal opening hours) for those who do not have access to the internet or would prefer to see the documents in person. Details of this information point is listed below and in other consultation materials.

Public Viewing Location

- Hawick Library, North Bridge St, Hawick, TD9 9QT

How People can make Comments

4.8 People will be able to submit comments by email or in writing. The closing date for sending responses to SPEN will be **midnight on 19th June**. Following this date, the information will remain accessible online (on the project website) and available to download.

4.9 Comments at this stage are informal and are made to allow SPEN to determine whether changes to the routes are necessary. An opportunity to comment formally to the Scottish Government (via the Energy Consents Unit) will follow at a later stage once the application is submitted to them.

Email

4.10 A project-specific email address has been created to allow for written responses to be received no later the deadline above: Hawick-VRoute@spenergynetworks.co.uk.

In Writing

4.11 SPEN will also accept comments relating to the specific focus of this round of consultation in writing. Letters are to be posted to the following address no later than the deadline above:

Hawick 132kV Project
SP Energy Networks
55 Fullarton Drive
Glasgow
G32 8FA

4.12 If contacting SPEN by post, people are advised to allow up to 7 days for these to be received. It may not be possible to consider comments received after this date.

Next Steps

4.13 The responses received from the consultation process and stakeholder engagement will be considered in combination with the findings of this report to enable SPEN to confirm the proposed routes for progression to the Environmental Appraisal and Section 37 application stage.

4.14 Further consultation may be carried out during the design and Environmental Appraisal stage⁹, including additional information gathering.

4.15 Comments at this stage are made to SPEN and not to the Scottish Government or local authority. As noted, an opportunity to comment formally to the Scottish Government (via the Energy Consents Unit) will follow at a later stage in the process.

⁹ Where applicable.