

## **Visual Impact Provision (VIP)**

### **Peak District (East) Project**

## **Outline Landscape and Ecological Management Plan**

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## 1 INTRODUCTION

### 1.1 The Landscape and Ecological Management Plan

1.1.1 This Landscape and Ecological Management Plan (here on referred to as the LEMP) has been prepared to supplement the information contained within the Environmental Assessment Report prepared for the Visual Impact Provision (VIP) Peak District (East) Project (here on referred to as the 'Proposed Project').

1.1.2 This document sets out the principles of what, how and when mitigation and enhancement measures will be implemented on the Proposed Project. The LEMP is support by a series of plans (Appendix 1) which show the locations of where these measures will be adopted at each key stage of the Proposed Project. These plans include:

- Figures 1.1 – 1.3 – Ecological Mitigation During Construction (Cable Undergrounding Phase<sup>1</sup>);
- Figures 2.1 – 2.4 – Ecological Mitigation During Construction (OHL Removal Phase);
- Figure PDD-33492-LAY-FIGURE 2.4: Combined Working Areas within Wogden Foot Local Wildlife Site;
- P10727-00-001-105, P10727-00-001-106 & P10727-00-001-107 – Landscape masterplans; and
- Off-site landscape plans (Not currently included, areas under discussion with landowners prior to final confirmation).

1.1.3 This is a combined document with a habitat-led approach, which takes account of ecology and landscape requirements together.

1.1.4 This document builds upon the ecological survey results collected for the Environmental Assessment Report, and the ecological mitigation and enhancement measures deemed appropriate for the potential impacts identified, taking into account the anticipated landscape effects and reinstatement requirements.

### 1.2 VIP Peak District (East) Project

1.2.1 The Proposed Project aims to reduce the visual impact of National Grid's OHL in and around the village of Dunford Bridge within the Peak District National Park, by removing a section of OHL and replacing it with electric cables buried underground. The Proposed Project will make use of a £500m allocation by Ofgem to carry out work to help reduce the impact of existing transmission lines in English and Welsh Areas of Outstanding Natural Beauty (AONBs) and National Parks.

1.2.2 The Proposed Project includes the following main components:

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<sup>1</sup> Includes Sealing End Compound (SEC), Trans Pennine Trail Diversion and Northern Access Road and replacement Pylon 4ZO157R construction phases

- Removal of the existing Dunford Bridge SEC to a depth of approximately 1.1m below ground level, (the existing tunnel shaft cap will be lowered, and mounding created over the shaft which will be surrounded by gabion baskets).
- Removal of the existing section of OHL including approximately eight pylons (one of which will be replaced, see replacement tension pylon below) and 2km of OHL.
- Underground cable 'here on referred to as the Cable Corridor' approximately 1.8km in length along the Trans Pennine Trail from the entrance of the Woodhead Tunnel to a proposed new SEC.
- Construction of a new SEC and replacement Tension Pylon (with the circuits terminating onto two full tension gantries within the SEC) to connect the Cable Corridor to the remaining existing OHL. A permanent access off the Trans Pennine Trail will be required to the proposed SEC. The proposed SEC is located within Wogden Foot Local Wildlife Site (LWS) and the replacement tension pylon (Pylon 4ZO157R) is located approximately 40m north east of the SEC on the northern side of the River Don (outside Wogden Foot LWS).
- Temporary laydown areas, access tracks and site offices to facilitate construction activities.
- Construction and removal of a temporary Trans Pennine Trail diversion for use during the construction phase of the Proposed Project. The diversion will involve the use of two bridges, one being a permanent replacement of an existing bridge; the other a temporary bridge to cross over the River Don. The diversion is proposed in farmland immediately north of the River Don. Following construction, a stretch of approximately 410m of the diversion surface would will be retained permanently to the east and west of the replacement permanent bridge.

1.2.3 Further details of the Proposed Project and the allocation made by Ofgem are provided in Sections 1 and 2 of the Environmental Assessment Report.

### 1.3 Purpose and aims of the LEMP

1.3.1 This Outline LEMP has been produced to collate and expand on the ecological and landscape mitigation measures included in the Environmental Assessment Report, setting out the location of mitigation measures and at what stage of the Proposed Project these will be implemented. The measures set out in this LEMP have been discussed with relevant stakeholders involved and agreement in principle sought from Barnsley Metropolitan Borough Council, Peak District National Park Authority, Yorkshire Wildlife Trust and Natural England.

1.3.2 The LEMP includes the following:

- An outline of the landscape and ecological features to be managed on site;
- An outline of how such features will be managed appropriately during the different stages of the Proposed Project taking into consideration the landscape management objectives identified within:

- the strategy for Landscape Character Area B1: Upland Don River Valley (Barnsley Borough Landscape Character Assessment, (2002) (and 2016 review));
- the strategy for the Landscape Character Type Moorland Slopes and Cloughs (Peak District National Park Landscape Strategy and Action Plan 2009 – 2019 (Peak District National Park, 2009));
- the South Yorkshire Green Infrastructure Strategy, 2011
- Mitigation and enhancement measures for habitats of botanical and faunal interest;
- Measures to maintain and establish woodland to mitigate against adverse landscape and visual effects;
- Mitigation and enhancement measures for birds including notable species, such as willow tit;
- Mitigation and enhancement measures for bats;
- Precautionary mitigation measures for reptiles;
- Mitigation measures for otter, fish and aquatic macroinvertebrates associated with the River Don and tributaries;
- Avoidance and control measures for invasive non-native plants;
- Landscape and ecological planting and habitat management plans;
- Details of monitoring of the flora and fauna on site post-construction;
- An outline of key roles and responsibilities for the implementation of these measures and future site management; and
- A commitment to a five-year monitoring<sup>2</sup> and management programme which would commence on the completion of the Proposed Project.

1.3.3 The key in principal objectives of this Outline LEMP are provided in Table 1.1.

## 1.4 Structure of the Plan

1.4.1 The management plan is set out as follows:

- Section 2: Pre-construction – provides detail of what additional survey effort and mitigation measures will be undertaken prior to site establishment and construction;
- Section 3: Site Establishment– provides detail of what survey effort and mitigation measures will be undertaken during site establishment;

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<sup>2</sup> This excludes habitats within Wogden Foot Local Wildlife Site (LWS) where an extended period of 7 years monitoring (subject to review after 5 years) will be adopted.

- Section 4: Construction – provides detail of what mitigation measures will take place during the construction phase;
- Section 5: Post-construction – provides detail of what reinstatement and mitigation measures will take place following construction; and
- Section 6: Monitoring- provides details of management and monitoring to take place following construction and reinstatement.
- Section 7: Enhancement - provides a summary of proposed additional habitat enhancement measures.
- Section 8: Provides a summary of the mitigation measures proposed in each phase of the Proposed Project.
- Section 9: Provides details of the implementation timetable.

1.4.2 Each of these sections of the management plan are broken down by the main project components, as follows:

- Trans Pennine Trail (Cable Corridor, including National Grid Compound at Dunford Bridge and laydown areas);
- Trans Pennine Trail Diversion (including River Don crossing and two bridges but excluding section of the Trans Pennine Trail diversion within the LWS);
- Construction of SEC within Wogden Foot LWS and associated construction/laydown areas, Pylon 4ZO158 removal area, and section of Trans Pennine Trail diversion within Wogden Foot LWS;
- Construction of replacement Pylon 4ZO157R
- Decommissioning of the existing SEC and pylon 4ZO164R removal;
- Pylon and OHL Removal (4ZO163 to 4ZO157);
- Northern access route (AP7) from Brook Hill Lane (excluding Bridge 1 and 2 as already covered under Trans Pennine Trail diversion); and
- Where appropriate, off-site habitat improvement measures (under discussion).

## **1.5 Key Habitat and Species**

1.5.1 Environmental surveys have been undertaken for the Proposed Project, including Phase 1 and 2 ecological surveys and landscape and visual field surveys and assessment. These are reported in full within the Environmental Assessment Report. A list of relevant baseline reports is provided in Chapter 7 (Ecology) of the Environmental Assessment Report.

1.5.2 As detailed in Chapter 6 (Landscape and Visual) and Chapter 7 (Ecology) of the Environmental Assessment Report, the key adverse impacts anticipated from the Proposed Project on ecological features and landscape elements which require mitigation and are to be managed on site are:

- The temporary loss and disturbance of habitats / ecological features / landscape elements (e.g. stone walls and vegetation cover including trees and shrubs) due to the construction land-take (i.e. vegetation removal for site establishment,

- creation of temporary access tracks and laydown areas to facilitate construction activities);
- Fragmentation of habitats or severance or alteration of ecological and landscape corridors i.e. the Trans Pennine Trail woodland corridor during construction and in the short to medium term post-construction until replacement planting matures;
  - Temporary impacts on adjacent habitats (and protected/ notable ecological species that use them) and land use receptors for example ecological and human receptors through noise and / or visual disturbance during construction;
  - The creation of habitat following the removal of existing National Grid infrastructure, including the existing SEC at Dunford Bridge, east of the Woodhead Tunnel and seven pylons (including foundations removed to a depth between 1.1 and 1.4m but excluding foundations at Pylon 4ZO158 in Wogden Foot which will be left in situ); and,
  - The permanent loss of habitat / landscape elements (vegetation cover including trees and shrubs) within Wogden Foot LWS due to the land-take associated with the operation of the SEC and its permanent access track.

## **1.6 LEMP Objectives**

- 1.6.1 The overall landscape and ecological objectives for each key project component of the Proposed Project is provided in Table 1.1 below.

**Table 1.1: Key Objectives of the LEMP**

| Target Feature                          | Objectives                                                                                                                                                                      | Project Component                                          |                                            |                                         |                           |                                    |                                    |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|-----------------------------------------|---------------------------|------------------------------------|------------------------------------|
|                                         |                                                                                                                                                                                 | Cable Corridor – Existing Trans Pennine Trail <sup>a</sup> | Trans Pennine Trail Diversion <sup>b</sup> | SEC within Wogden Foot LWS <sup>c</sup> | Existing SEC <sup>d</sup> | Pylon and OHL Removal <sup>e</sup> | Northern Access Route <sup>f</sup> |
| General                                 | To maintain the conservation status of habitats and fauna.                                                                                                                      | Project Wide                                               |                                            |                                         |                           |                                    |                                    |
| General                                 | To ensure the Proposed Project results in a net gain for biodiversity.                                                                                                          | Project Wide                                               |                                            |                                         |                           |                                    |                                    |
| General                                 | To retain a wooded landscape character along the Upper Don Valley                                                                                                               | Project Wide                                               |                                            |                                         |                           |                                    |                                    |
| Habitats                                |                                                                                                                                                                                 |                                                            |                                            |                                         |                           |                                    |                                    |
| Habitats (General)                      | To minimise temporary disturbance effects upon notable habitats by ensuring habitats are appropriately restored.                                                                | Project Wide                                               |                                            |                                         |                           |                                    |                                    |
| Invasive non-native species             | Avoidance of the spread and future control of non-native invasive species (INNS) during the construction and operation of the Proposed Project.                                 | YES                                                        |                                            |                                         |                           |                                    |                                    |
| River Don and associated riparian fauna | Protection of River Don habitat and associated avoidance of effects upon riparian and aquatic species including otter, aquatic macro-invertebrates and fish.                    | YES                                                        | YES                                        | YES                                     |                           | YES                                |                                    |
| Grassland                               | To minimise temporary loss and disturbance to notable areas of grassland.                                                                                                       | YES                                                        |                                            | YES                                     |                           |                                    |                                    |
| Grassland                               | To reinstate the areas of unimproved grassland affected by the Proposed Project.                                                                                                | YES                                                        | YES                                        | YES                                     |                           | YES                                |                                    |
| Grassland                               | To enhance existing grassland and reinstate the former SEC site with species rich grassland habitat once SEC is removed.                                                        |                                                            |                                            |                                         | YES                       |                                    |                                    |
| Trees                                   | To minimise the loss of linear habitat corridor alongside the River Don and Trans Pennine Trail to reduce fragmentation effects for mobile fauna including willow tit and bats. | YES                                                        | YES                                        | YES                                     |                           | YES                                |                                    |

| Target Feature     | Objectives                                                                                                                                                                         | Project Component                                          |                                            |                                         |                           |                                    |                                    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------|-----------------------------------------|---------------------------|------------------------------------|------------------------------------|
|                    |                                                                                                                                                                                    | Cable Corridor – Existing Trans Pennine Trail <sup>a</sup> | Trans Pennine Trail Diversion <sup>b</sup> | SEC within Wogden Foot LWS <sup>c</sup> | Existing SEC <sup>d</sup> | Pylon and OHL Removal <sup>e</sup> | Northern Access Route <sup>f</sup> |
| Trees              | To retain and reinstate a mosaic of woodland scrub, and grassland areas within Wogden Foot LWS, based on the ratios of temporary and permanent loss of trees, scrub and grassland. |                                                            |                                            | YES                                     |                           |                                    |                                    |
| Trees              | To replace trees removed during construction, both within the Proposed Project boundary and also at selected off-site areas (subject to agreement).                                | Project Wide                                               |                                            |                                         |                           |                                    |                                    |
| Trees              | To diversify existing coniferous woodland around Winscar Reservoir/ Dunford Bridge (subject to agreement).                                                                         | Project Wide Mitigation and Enhancement                    |                                            |                                         |                           |                                    |                                    |
| Trees              | Ensure trees to be retained are protected, including their root zones, throughout construction.                                                                                    | Project Wide                                               |                                            |                                         |                           |                                    |                                    |
| Landscape Features | To restore or compensate for the loss of established landscape features (such as stone walls and drainage ditches).                                                                | YES                                                        | YES                                        |                                         |                           | YES                                | YES                                |
| Trees              | To ensure the establishment of robust and healthy replacement trees.                                                                                                               | Project Wide                                               |                                            |                                         |                           |                                    |                                    |
| Fauna              |                                                                                                                                                                                    |                                                            |                                            |                                         |                           |                                    |                                    |
| All Fauna          | To reduce disturbance effects upon faunal species during construction.                                                                                                             | Project Wide                                               |                                            |                                         |                           |                                    |                                    |
| Birds              | To avoid direct effects upon nesting birds (including willow tit and ground-nesting species).                                                                                      | Project Wide                                               |                                            |                                         |                           |                                    |                                    |
| Birds              | To maintain the local conservation status of willow tit                                                                                                                            | YES                                                        | YES                                        | YES                                     |                           |                                    |                                    |
| Bats               | To ensure protection of roosting bats in accordance with legislative requirements.                                                                                                 | YES                                                        | YES                                        |                                         |                           | YES                                |                                    |
| Bats               | Avoidance of removal of trees with potential to support roosting bats.                                                                                                             | YES                                                        | YES                                        | YES                                     |                           | YES                                |                                    |
| Reptiles           | To avoid/minimise effects on reptile and their habitat.                                                                                                                            | YES                                                        | YES                                        |                                         |                           | YES                                |                                    |

<sup>a</sup> Cable Corridor, including National Grid Compound at Dunford Bridge and laydown areas (400kV Cable (Undergrounding))

<sup>b</sup> Includes the River Don crossing and two bridges but excluding Trans Pennine Trail diversion within the LWS (Trans Pennine Trail Diversion – Subject to Planning Application)

<sup>c</sup> Construction of SEC within Wogden Foot LWS and associated construction/laydown areas, Construction of Pylon 4ZO157R, Pylon 4ZO158 removal area, and section of Trans Pennine Trail diversion within Wogden Foot LWS (Wogden Foot SEC – Subject to Planning Application/ Trans Pennine Trail Diversion – Subject to Planning Application)

<sup>d</sup> Decommissioning of the existing SEC and pylon 164R removal (Removal of Existing Infrastructure (VIP subsection))

<sup>e</sup> Pylon and OHL Removal (4ZO163 to 4ZO157) (Removal of Existing Infrastructure (VIP subsection))

<sup>f</sup> Northern access route (AP7) from Brook Hill Lane (excluding Bridge 1 and 2 as already covered under Trans Pennine Trail diversion) (includes Access Point 7 and Northern Access Road – Subject to Planning Application)

## 1.7 Roles and Responsibilities

- 1.7.1 The overall roles and responsibilities of the various parties required to enable the successful implementation of the LEMP are described below. Appendix 2 identifies the anticipated division of responsibilities for specific LEMP related activities, based on the current anticipated programme for Principal Contractor award and construction activities/sequencing.

### ***National Grid***

- Adhere to UK and European Legislation and Guidelines;
- Supply relevant data as appropriate to the relevant stakeholders, the Principal Contractor and its Ecological Clerk of Works (ECoW) and Landscape Clerk of Works (LCoW);
- Ensure adequate provision is given to provide sufficient supervision of implementation and reinstatement;
- Ensure monitoring of the ecological and landscape restoration works is undertaken and that the LEMP is reviewed and updated as appropriate; and,
- Liaise regularly with the relevant stakeholders regarding the results of the monitoring and the success of the reinstatement effort.

### ***Principal Contractor***

- Adhere to the requirements of the LEMP;
- Adhere to UK and European legislation and guidelines;
- Appoint an ECoW and LCoW and liaise with National Grid representatives as appropriate;
- Provide all relevant information to National Grid and their representatives;
- Provide a detailed programme for the Proposed Project; and,
- Diligently execute the works in accordance with the approved drawings and specifications.

- 1.7.2 As outlined above it would be the responsibility of the Principal Contractor to appoint an ECoW and LCoW as follows:

- ECoW and LCoW to be appointed at the start of construction to regularly monitor, advise and report on identified works;
- ECoW and LCoW to help interpret and communicate the requirements of the LEMP to the Principal Contractor;
- ECoW and LCoW to coordinate and supervise the installation and ongoing maintenance of the landscape and ecological mitigation, unless otherwise specified in the anticipated division of responsibilities (Appendix 2) ;
- ECoW and LCoW to provide the overall direction for the implementation and performance of the LEMP;
- ECoW and LCoW to provide assistance to the landscape contractor, ensuring adherence to legislation, guidance and the LEMP;

- ECoW and LCoW to liaise between National Grid and contractor on an agreed regular basis with respect to progress and the status of the landscape and ecological mitigation;
- ECoW and LCoW to ensure that monitoring is undertaken and fully documented and reported (alongside National Grid) until project completion; and,
- ECoW and LCoW to review and make recommendations regarding appropriate changes to the maintenance and management programme and update the LEMP as appropriate.

## 2 PRE-CONSTRUCTION

### 2.1 Introduction

2.1.1 The actions outlined below have been identified as requiring completion prior to construction commencing. The location of where these actions should be adopted/ features are shown on Figures 1.1 – 1.3 (construction phase) and 2.1 – 2.4 (OHL removal phase).

### 2.2 General Project Wide

#### *Pre-construction Ecology Surveys*

2.2.1 A pre-construction walkover survey will be undertaken approximately 6 months in advance of the commencement of pre-construction work to confirm baseline conditions remain and identify any further implications for licensing and programme e.g. to identify any newly identified badger setts or the presence of invasive species. Appendix 2 identifies the anticipated party responsible for the pre-construction walkover in each area, based on the anticipated programme of works.

### 2.3 Trans Pennine Trail (Cable Corridor)

#### *Invasive Plant Species*

2.3.1 To facilitate the construction within the National Grid Compound at Dunford Bridge, an area of rhododendron may need to be removed and appropriately managed. The locations for the removal and treatment of rhododendron are illustrated in Figures 1.1 and 2.1.

2.3.2 The removal and management approach will be based upon the following principles:

- Mechanical cutting and chipping of plants, including root material where possible;
- Treatment of any retained stumps with appropriate herbicide;
- Cut and chipped plant material will either be:
  - A) removed off site to a suitable waste facility (licensed to receive invasive plant species material); or
  - B) if a suitable location can be agreed, the plant material will be burnt on site.

2.3.3 To facilitate the installation of the cables at Dunford Bridge, a small area (approximately 2m x 2m) of Japanese knotweed may need to be removed and appropriately managed. The location for the removal of Japanese knotweed is illustrated on Figures 1.1 and 2.1.

2.3.4 Given the nature of the stand i.e. newly formed and a relatively small contained area, and that it is predominantly located within /directly adjacent to the proposed cable installation corridor, the approach for its removal and management is likely to be based upon the following principals:

- Direct mechanical excavation of the contaminated soil containing the roots (termed as rhizomes) of the plant and any above ground plant material;
- Spraying/chemical control of the plant in advance of excavation (where timescales allow) to avoid further spread and reduce the vigour of the plant; and

- Appropriate offsite disposal of the plant material and contaminated soil (containing the roots/rhizomes) to a suitable waste facility (licensed to receive invasive plant species material).

- 2.3.5 The final details of removal of rhododendron and Japanese knotweed will be detailed in an Invasive Plant Control and Treatment Strategy, which will be prepared by an appropriately experienced specialist appointed by National Grid. The strategy will be developed at least six months in advance of the commencement of the construction phase to allow sufficient time to agree and implement the strategy.
- 2.3.6 Depending on specific factors, such as whether the removed embankment material will be re-used on-site (as per best practice) or removed to landfill, or the Japanese knotweed root zone can be entirely avoided or the stand has spread further prior to the pre-construction phase, control and treatment methods will vary. These will be defined in the above strategy and communicated to the ECoW, Principal Contractor and any relevant authorities.
- 2.3.7 In principle the rhododendron plants could be removed during any part of the year, however it would be preferable to remove stands within the working areas overwinter between September and March to avoid conflict with nesting birds which may be using the rhododendron. Japanese knotweed is best removed when the above ground stand is visible/actively growing in period May to September. This does not conflict with bird nesting and the stand is highlight likely given its limited size and disturbed nature to support nesting birds.

### **Bats**

- 2.3.8 One confirmed roost site is known to exist within a culvert beneath the Trans Pennine Trail (Clough Beck Culvert as shown on Figure 1.1 and Figure 2.1). Based on the project cable design it is proposed that the height of the existing ground above the culvert will be raised therefore it is not anticipated that there will be direct impacts upon the confirmed bat roost.
- 2.3.9 As a precaution, preconstruction bat surveys will be undertaken at both the confirmed roost and potential roost sites (culverts) located along the Trans Pennine Trail (as identified in the Environmental Assessment Report and shown on Figures 1.1 – 1.3). These surveys will be conducted between May and September within the year prior to the start of construction in the Cable Corridor. A period of at least 3 months prior to Cable Corridor works commencing will be adopted for the production of a method statement/licence application in the event additional bats roosts were identified which could not be avoided.
- 2.3.10 No ecological licensing is currently anticipated to be required for other project components. The final requirement (if any) for a formal Natural England derogation licence is based upon the anticipated level of disturbance and the importance of the roost. Cognisance must also be given to the use of this roost, or other suitable features, as hibernation roosts.
- 2.3.11 If the disturbance is such that it would result in a significant effect upon the ability of bats to occupy the roost (and survive/breed), a bat licence will be required. The results of the surveys will be used to inform the production of a Natural England licence application. In the event it can be determined the level of disturbance can be sufficiently mitigated such that the threshold for licensing is not reached, the mitigation measures will be undertaken using the adoption of a non-licensed Method Statement approach.

2.3.12 If required, mitigation measures will be secured through a European Protected Species (EPS) licence mitigation strategy (or a non-licensable method statement) to ensure:

- No direct effect upon the roost site which could result in direct injury or killing of a bat;
- A buffer zone to the roost (e.g. at the culvert entrances) is maintained through the construction period and that no activities result in a restriction / obstruction of access by bats to the roost(s);
- Significantly noisy and vibrating activities (e.g. piling or similar) are avoided within direct proximity to/ directly above a confirmed bat roost. This would not include general vehicle movement along the electric cable construction corridor along the Trans Pennine Trail; and,
- As deemed necessary following the completion of the pre-construction surveys, provision of supplementary roost sites comprising of bat boxes or bricks to be installed as far in advance of commencement of electric cable installation as practical. Suitable locations away from working areas will be agreed with stakeholders and Natural England as part of the licence application.

#### ***Grassland (Seed Harvesting)***

2.3.13 Seed harvesting from the areas of notable grassland to be affected by electric cable installation (and associated compound/ laydown) works as shown on Figures 1.1, 1.3 and 1.3 should be undertaken. The methodology for seed harvesting will be agreed in principle with Barnsley Metropolitan District Council and Peak District National Park Authority in advance of the works commencing. Seed is recommended to be harvested from the following notable grassland to be affected by the project:

- Areas of grassland located at entrance to Trans Pennine Trail (south east of the car park) within the Cable Corridor; and
- Grassland within the working areas (laydown, Trans Pennine Trail diversion, pylon removal area and SEC) within Wogden Foot LWS.

2.3.14 Seed harvesting will also be undertaken from unaffected grassland such as the remainder of the grassland areas in the eastern part of Wogden Foot LWS and from areas of grassland to be retained and protected at Dunford Bridge which are considered to be of greater diversity. Seed harvesting in these unaffected areas of grassland will be undertaken sensitively and will not result in a detrimental effect upon the remainder on the LWS (or other areas of grassland) but will seek to collate a diverse composition of seed distinct to the LWS.

2.3.15 Seed harvesting would be conducted in the suitable period (between June and end of August approximately) prior to the start of the compound set up or electric cable installation works commencing, and where possible over two seasons to optimise the seed base taken. This is currently proposed for summer 2019 and summer 2020. For relatively small grassland areas, for example at Dunford Bridge, seed harvesting could be achieved by methods such as using a small agricultural mower and / or manual cutting and collecting the cuttings by hand. However, specialist machinery can simplify this task and it may be prudent to procure a local specialist company for this task.

- 2.3.16 Harvested seed must be processed, dried and stored until the receptor areas would be available. The drying process requires dedicated facilities and it is recommended that a local expert company should be brought in to assist with this process. Once dry the seed can be stored on site (or in a suitable off site area) in suitable sealed containers (to remain viable seed must be protected from getting damp and being eaten by mice etc.). Stored in this way will ensure that the seeds remain viable for use following the period of construction.
- 2.3.17 Receptor areas will include the areas to be temporarily affected by compounds/ laydown areas used for the cable installation as shown on Figure 1.1a. Where cable installation works were completed in initial section of the working area at Dunford Bridge the seed could be sown (in combination with purchased seed mixes where required) earlier than awaiting the completion of the cable installation works along the Trans Pennine Trail. Harvested seed will not be used along the entire length of the reinstated Trans Pennine Trail cable corridor. This will be sown with a suitably appropriate commercially seed source. It may be preferable to allow some areas to recolonise naturally.
- 2.3.18 If seed harvesting and storage is found to be unfeasible, or stored seed loses viability/ is spoiled, a good quality pre-prepared seed mix with comparable species composition (and ideally with seeds of local provenance) will be used.

***Other Landscape Features - Stone Walls and Water Features***

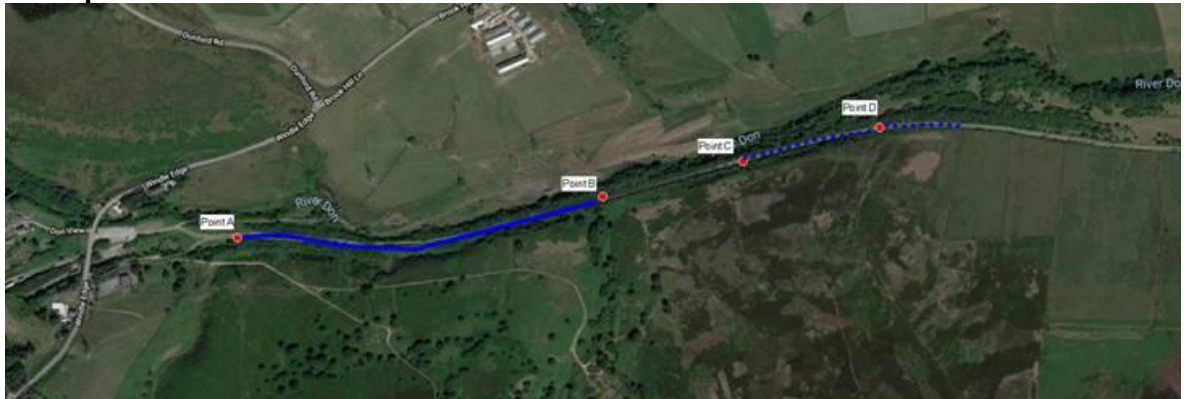
- 2.3.19 A pre-construction survey will identify and record the condition of stone walls and other features that are to be protected and/ or reinstated. This includes a small waterfall and drainage ditch that runs alongside the Trans Pennine Trail. Plate 1 below represents an example of the small waterfall feature, which is to be protected (approximate Grid Reference SE 16256 02382).

**Plate 1: Small waterfall feature to be protected**



- 2.3.20 A pre-construction survey will identify and record the condition of the existing drainage ditch present alongside the Trans Pennine Trail as shown approximately on the image below (Plate 2). This ditch will be removed and temporarily culverted to facilitate construction. Section A to B is approximately 640 m and Section C to D approximately 260 m in length.

**Plate 2: Aerial image showing existing approximate locations/length of drainage ditch present**



## 2.4 Trans Pennine Trail Diversion

### **Bats**

- 2.4.1 In the unlikely event that trees identified as having high or moderate potential to support roosting bats (see Figures 1.1a - 1.3a) cannot be entirely avoided by the Trans Pennine Trail diversion, these will be subject to a pre-construction bat survey. This survey will comprise aerial tree climbing inspection and / or nocturnal surveys. The nocturnal surveys would be conducted within the period May – September prior to vegetation clearance which is proposed to be undertaken wherever possible during the winter period.
- 2.4.2 Where roosting bats are confirmed, options to avoid direct loss of the roost will be sought i.e. pruning rather than felling. If this is not possible mitigation measures will be subject to a Natural England EPS licence (as detailed in Section 2.3). In brief, mitigation measures for trees are likely to involve the exclusion of the roost prior to destruction, and / or section felling under the supervision of a bat licensed ecologist along with provision of an alternative roost (depending on the type of roost identified).

### **Otter Survey**

- 2.4.3 No features were recorded as being present alongside or within close proximity to the Trans Pennine Trail diversion which showed evidence of use by otter or which have the required characteristics to be holts or couch sites. However, a pre-construction survey will be undertaken approximately 6 months in advance of the commencement of Trail Diversion works at watercourse crossing points (Bridges 1 and 2 as shown on Figures 1.1a and 1.3a) plus 200m up and down stream to reaffirm the absence of any otter holt or couch sites.
- 2.4.4 In the unlikely event that an otter holt is identified and direct effects upon it cannot be avoided, an EPS licence will be sought, and appropriate mitigation implemented. Mitigation would include the appropriate timing of works, the use of stand-offs and, where appropriate, the provision of replacement habitat (e.g. alternative holt or lay-up areas).

### **Other Landscape Features - Stone Walls**

- 2.4.5 A pre-construction survey will identify and record the condition of stone walls and other features that are to be protected and/ or reinstated.

## 2.5 SEC in Wogden Foot LWS

### ***Botanical Survey***

- 2.5.1 A pre-construction re-assessment survey of Wogden Foot LWS will be undertaken to confirm botanical baseline condition of the habitats. This will be undertaken during the period between June – end July in the year prior to the start of construction. The survey should be conducted following the methodology as used for the botanical surveys conducted for the purposes of the Environmental Assessment Report and will focus on the areas of the LWS which will be affected by the Proposed Project.
- 2.5.2 The survey will be undertaken by an appropriately experienced ecologist and shall record the abundance and coverage of notable botanical species. This survey shall to inform future monitoring and to establish an up to date baseline from which to inform future monitoring and management of the LWS. On the basis of this information the measures contained within this LEMP will be reviewed to ensure that they remain appropriate.

### ***Grassland (Seed Harvesting)***

- 2.5.3 As detailed above in Section 2.3, a specialist habitat contractor is to be sourced to undertake seed harvesting. The methodology for seed harvesting will be agreed in principle with Barnsley Metropolitan District Council in advance of the works commencing. The seed harvesting will focus on areas of grassland to be lost to the Proposed Project and / or the most diverse areas of grassland sward within the LWS (as identified by the botanical survey undertaken to inform the assessment).

### ***Otter Survey***

- 2.5.4 A pre-construction otter survey of the River Don will be undertaken approximately 6 months in advance of the commencement of SEC construction work (if not already completed for purposes of Trial Diversion works). This will be required as construction of the SEC (including vegetation clearance) will take place within 10m of the banks of the River Don, to avoid adverse disturbance impacts upon potential otter refuges. The survey will cover this area of the bank (i.e. that which falls within 10m of the works) plus 200m up and down stream to reaffirm the absence of any otter holt or couch sites.
- 2.5.5 This survey may have already been conducted for the purposes of the Trans Pennine Trail diversion crossing in which case the results of the surveys would inform the mitigation requirements for both components of the project.
- 2.5.6 In the unlikely event that an otter holt is identified and direct effects upon it cannot be avoided, an EPS licence will be sought, and appropriate mitigation implemented. Mitigation would include the appropriate timing of works, the use of stand-offs and, where appropriate, the provision of replacement habitat (e.g. alternative holt or lay-up areas).

## 2.6 Construction of Pylon 4ZO157R

- 2.6.1 A pre-construction otter survey of the River Don will be undertaken approximately 6 months in advance of the commencement of the Pylon 4ZO157R construction work (if not already completed for purposes of any other element). It may be the case this is conducted in combination with the otter survey required for the SEC construction as detailed above.

### ***Other Landscape Features - Stone Walls***

- 2.6.2 A pre-construction survey will identify and record the condition of stone walls and other features that are to be protected and/ or reinstated.

## **2.7 Decommission of the Existing SEC and Pylon 4ZO164R Removal**

### ***2.7.1 Preconstruction Survey***

- 2.7.2 Where the initial site-wide walkover is conducted more than 12 months prior to the start of OHL removal works a further walkover will be conducted. This will be undertaken to reaffirm the absence of badger setts, invasive plants and inform the mitigation actions to be conducted for the OHL removal phase.

## **2.8 Pylon and OHL Removal (4ZO163 to 4ZO157)**

### ***2.8.1 Preconstruction Survey***

- 2.8.2 The overall pre-construction ecology walkover survey conducted will encompass this area, and in particular will cover the moorland habitats within the designated boundary of Western Moors LWS (Pylon 4ZO162 and Pylon 4ZO163) and any additional access tracks (not previously constructed for any other component of the Proposed Project) require construction to facilitate pylon removal.
- 2.8.3 Where the initial site-wide walkover is conducted more than 12 months prior to the start of OHL removal works a further walkover will be conducted. This will be undertaken to reaffirm the absence of badger setts, invasive plants and inform the mitigation actions to be conducted for the OHL removal phase.

### ***Other Landscape Features - Stone Walls***

- 2.8.4 A pre-construction survey will identify and record the condition of stone walls and other features that are to be protected and/ or reinstated.

## **2.9 Northern Access Route (AP7)**

### ***2.9.1 Preconstruction Survey – Nesting Birds***

- 2.9.2 The overall pre-construction ecology walkover survey will encompass the route of the access road and adjacent habitat that is suitable for ground nesting bird species, in particular curlew (*Numenius arquata*) and lapwing (*Vanellus vanellus*). The presence of any confirmed or potential active nests will be noted and used to inform appropriate avoidance measures during the subsequent phases of the Proposed Project.
- 2.9.3 Specific consideration will be given to the potential presence of ground-nesting bird species in proximity to the proposed northern access route AP7. This will comprise the following measures:
- Removal of any suitable nesting habitat within the proposed access track corridor which could support non-ground nesting species within period start October 2019 to end February 2020 (no potential for willow tit is present in these areas) in advance of access track works commencing;
  - Access track works are due to commence within the bird nesting season (1 March to end of August) so fencing of the access track corridor (~12m maximum wide) with stock proof post and wire fencing (1m/1.2m high) will be undertaken in advance at the latest of 1<sup>st</sup> March. The fencing would enclose the land within the track corridor which would initially act as a partial deterrent to the use of the

areas by ground nesting species. Ground nesting species which could be present, such as Curlew and lapwing prefer to have an open aspect from their nest sites and are unlikely to seek to use the area within the fenced corridor to establish a nest site given the availability of unaffected habitats in the local area.

- In addition to the fencing 'ticker type' reflective/noisy tape or other deterrent type measures would be installed on /alongside the fencing to further discourage birds from establishing nesting sites within the fenced area;
- Prior to the proposed start of construction of the track (in June based on current programme dates) weekly bird visual checks would be conducted along the track corridor to reaffirm the absence of nesting birds within this area;
- In the unlikely event a nest is identified within the fenced track corridor National Grid would seek to microsite the access track route within the fenced area to avoid the nest site (in the event that works cannot be delayed until nesting had finished (post fledging of young)); and
- Ecological supervision would be undertaken during the track construction to reaffirm the absence of nesting birds within the fenced working area when the track is constructed.

#### ***Other Landscape Features - Stone Walls***

- 2.9.4 A pre-construction survey will identify and record the condition of stone walls and other features that are to be protected and/ or reinstated.

### 3 SITE ESTABLISHMENT

#### 3.1 Introduction

- 3.1.1 The activities outlined below have been identified as requiring completion during the site establishment phase.

#### 3.2 General Project Wide

##### ***Environmental Management***

- 3.2.1 Site establishment will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) and implemented by the Principal Contractor.
- 3.2.2 A biosecurity protocol, which will form part of the Invasive Plant Control and Treatment Strategy will be adopted across the site by the Principal Contractor. All staff will be briefed during the induction process on the need to ensure that machinery and equipment is pre-checked to avoid the spread and introduction of invasive plant species when working on site.

##### ***Defining the Working Area***

- 3.2.3 Habitats which will not be impacted by the Proposed Project will be protected from construction activities by erecting temporary fencing. This will prevent construction activities extending outside of the construction working area. The area required to facilitate construction activities will be reduced to as minimum an area that is safely possible. Fencing will be kept *in situ* until completion of the construction phase of the Proposed Project.

##### ***Nesting Birds***

##### ***General***

- 3.2.4 Where possible, vegetation which has the potential to support nesting birds will be removed outside of the bird breeding season (generally considered to be from 1st March until the end of August). Where this is not possible, vegetation will be examined for active nests by the ECoW immediately prior to removal. If active nests are found to be present, the ECoW will establish exclusion zones of an appropriate size for the species identified until such time as they consider the breeding attempt(s) to have finished.

##### ***Willow Tit***

- 3.2.5 As willow tit can commence nesting earlier in the year, where possible, vegetation which has the potential to support willow tit (within Wogden Foot and along the Trans Pennine Trail Cable Corridor) will be removed within period 1<sup>st</sup> September and end of January. Where this is not possible, vegetation will be examined/surveyed for active nests by the ECoW prior to removal. If evidence of nesting is identified, the ECoW will establish exclusion zones of an appropriate size for the species identified until such time as they consider the breeding attempt(s) to have finished.
- 3.2.6 Where appropriate, any additional consideration for specific nesting bird species, including willow tit, during each phase of the works are detailed in the text below.

##### ***Trees***

- 3.2.7 The loss of trees and woodland have been avoided where ever possible as part of the design of the Proposed Project. Trees to be retained are to be protected in accordance with BS5387/ the Arboriculture Assessment and Root Protection Plan for the entirety of the works.
- 3.2.8 Buffer zones to protect trees and their root zones adjacent to the working areas will be established prior to the commencement of each phase of works. These will be at least a distance to ensure the trees will not be damaged as informed by the Arboriculture Assessment and Root Protection Plan (see Appendix 7M of the Environmental Assessment Report). The extent of the working area will be clearly delineated to avoid encroachment into the established tree protection area and, where required, fencing will remain in place until the works are complete.
- 3.2.9 Where the route conflicts with parts of the RPA of a tree then suitable methods of construction will be used that follow the requirements as set out in the Arboricultural Assessment. In any areas where root pruning (i.e. in case of mature trees adjacent to the construction works which may be subject to hand digs) has been undertaken an Arboriculturalist will provide specific recommendations on post-construction tree management based on the extent of root loss that has occurred. This is likely to include varying degrees of crown reduction (to address stability and root shoot ratio).
- 3.2.10 Where appropriate, any additional considerations for trees during each phase of works are detailed in the text below.

### **3.3 Trans Pennine Trail (Cable Corridor)**

#### ***Invasive Plant Species***

- 3.3.1 As detailed in Section 2, the Invasive Plant Control and Treatment Strategy will be implemented at least 6 months in advance of works by the Principal Contractor and / or specialist invasive weed contractor. Biosecurity measures will be described in the Strategy and adopted during the construction phase of the Proposed Project to avoid the spread of the rhododendron and Japanese knotweed. The material or soils containing invasive plants which need to be transported off site will be subject to an appropriate waste transfer certificate to an appropriately licensed facility by an appropriately licensed waste carrier.

#### ***Nesting Willow Tit***

- 3.3.2 Vegetation clearance will avoid the removal of dead tree stumps or rooting dead wood suitable to support willow tit nests wherever possible. Where avoidance is not possible, removal of potential willow tit nest sites will be undertaken between 1<sup>st</sup> September and end of January (to avoid the specific breeding season of this species). Such activities will be advised and supervised by the ECoW.
- 3.3.3 Tree stumps / other rotting wood features suitable for nesting willow tit will be removed and, where possible, immediately relocated within suitable habitat nearby (which will be undisturbed by the Proposed Project). The stumps will either be hammered securely into the ground or strapped to retained trees.
- 3.3.4 If immediate relocation of the stumps is not practical, such features should be temporarily stored at site on pallets for reinstatement at the earliest opportunity prior to final completion of the Proposed Project (see Section 5.3).

#### ***Reptiles***

- 3.3.5 Surveys have concluded that no more than a small population of common lizard are likely to be present within habitats within the electric cable installation corridor and associated compound / laydown areas. A precautionary mitigation approach will be adopted to address the low risk of reptiles being present / gaining access into working areas and in turn to avoid direct killing or injury.
- 3.3.6 Sensitive removal of areas of long grassland, bracken and scrub habitats will be undertaken by strimming to 10cm above ground level before being excavated. The extent of these habitats within the working area will be re-affirmed by the ECoW prior to commencement.
- 3.3.7 Following strimming, all arising will be removed from the working area to an area of retained habitat. After a period of 2 hours (to allow reptiles to displace from the working area) a finger-tip search conducted by the ECoW to confirm the absence of reptiles or any other suitable reptile habitat from the working area.
- 3.3.8 In the event that reptiles or suitable reptile habitat (e.g. a place of shelter) are present then the ECoW will advise on any additional measures to ensure that reptiles are protected. Once absence is confirmed then excavation may proceed.
- 3.3.9 Features / habitats suitable to provide refuge for reptiles which may be within working areas and cannot be avoided e.g. stone walls, brash, log piles, ant hills and layers of dead bracken, will be dismantled by hand under the supervision of the ECoW. This will only be completed during suitable weather conditions (dry and temperatures 9°C or above) in the active reptile period prior to the start of works (in any phase), i.e. mid-March to mid-October, inclusive. Features such as stone walls or log piles could be removed in the active reptile period in several months in advance of the work commencing to remove the potential for them to be used for hibernation.
- 3.3.10 Any reptiles caught during the dismantling of refuges will be relocated to suitable habitat away from the working area, e.g. Western Moors LWS to the south of the Trans Pennine Trail, which is a large area of suitable habitat and may reasonably be expected to have more than sufficient carrying capacity to receive small numbers of additional reptiles.

### **Bats**

- 3.3.11 As noted in the Environmental Assessment Report and in section 2, above, one confirmed bat roost exists within disturbance distance (in Cough Beck Culvert). Based on current information it is anticipated that there will be no direct or indirect impacts upon the confirmed bat roost.
- 3.3.12 The status of bat roosts will be re-evaluated by pre-construction surveys as detailed in section 2. Cognisance must also be given to the use of this roost, or other suitable features, as hibernation roosts. In the event that updated survey confirm that significant disturbance (or destruction) of this roost (or any others subsequently recorded) is confirmed as likely, works will need to be conducted under an EPS licence. This licence will require implementation of mitigation measures which will be specific to the roost and dependent on bat species roosting, number of bats present and the type of roost. In the event it can be determined the level of disturbance can be sufficiently mitigated such that the threshold for licensing is not reached, the mitigation measures will be undertaken using the adoption of a non-licensed Method Statement approach.

- 3.3.13 If required, mitigation measures will be secured through a European Protected Species (EPS) licence mitigation strategy (or a non-licensable method statement) to ensure:
- No direct effect upon the roost site which could result in direct injury or killing of a bat;
  - A buffer zone to the roost (e.g. at the culvert entrances) is maintained through the construction period and that no activities result in a restriction / obstruction of access by bats to the roost(s);
  - Significantly noisy and vibrating activities (e.g. piling or similar) are avoided within direct proximity to/ directly above a confirmed bat roost. This would not include general vehicle movement along the electric cable construction corridor along the Trans Pennine Trail; and,
  - As deemed necessary following the completion of the pre-construction surveys, provision of supplementary roost sites comprising of bat boxes or bricks to be installed as far in advance of commencement of electric cable installation as practical. Suitable locations away from working areas will be agreed with stakeholders and Natural England as part of the licence application

### ***Trees***

- 3.3.14 Trees, scrub and young woodland present on the embankments of the River Don, the craggy slopes to south of the Trans Pennine Trail and along the Trans Pennine Trail corridor which are out of the working area will be retained. This is to provide a habitat corridor for birds including willow tit and other mobile species such as foraging and commuting bats, otter and small mammals. It will also ensure landscape connectivity of the woodland which is considered to be a characteristic of this landscape.

### ***Grassland (Dunford Bridge)***

- 3.3.15 As detailed in Section 2, the areas of notable grassland at this location will have been subject to, where necessary and possible, seed harvesting prior to site establishment.
- 3.3.16 Areas of grassland outside the Cable Corridor working areas which are to be retained and protected will be subject to creation of delineation *barriers* (and where appropriate, such as during periods of dry weather, protection membranes will be installed to avoid any indirect effects of dust spill). There are small areas of grassland which are outside the Cable Corridor itself but are within working areas or will be used for laydown purposes during the works. A protective membrane e.g. geotextile or reinforced grass protector layer (specification to be agreed) will be installed over notable grassland within working areas to provide an initial protective layer before establishment of laydown areas. The purpose of this is to increase the likelihood that the seed bank within the top soil and root zone is retained and remains viable. The protective layer will be kept in place for the minimum period possible and removed completely following the period of works. Where areas are to be used for lighter equipment other types of porous / mesh membranes would be used, where possible.

### ***Preservation of Other Landscape Features - Stone Walls and Water Features***

- 3.3.17 Stone walls and water features of amenity/ visual interest located along the Trans Pennine Trail corridor such as the small waterfall shown in Plate 1 (Section 2.3), will

be fenced off from construction activities where feasible and preserved where possible.

- 3.3.18 The drainage ditch which is located alongside (on south side) the existing Trans Pennine Trail, and which will need to be culverted during the construction phase of the cable installation works, will be reinstated post construction.

### **3.4 Trans Pennine Trail Diversion**

#### ***Reptiles***

- 3.4.1 Surveys have concluded that no more than a small population of common lizard are present within habitats through which the Trans Pennine Trail diversion will be constructed. A precautionary approach will be adopted to address the low risk of reptiles being present/ gaining access into working areas and in turn to avoid direct killing or injury.
- 3.4.2 Sensitive removal of areas of long grassland, bracken and scrub habitats will be undertaken by strimming to ground level before being excavated. The extent of these habitats within the working area will be re-affirmed by the ECoW prior to commencement.
- 3.4.3 Following strimming, all arising will be removed from the working area to an area of retained habitat. After a period of 2 hours (to allow reptiles to displace from the finger-tip search conducted by the ECoW to confirm the absence of reptiles or any other suitable reptile habitat from the working area.
- 3.4.4 In the event that reptiles or suitable reptile habitat (e.g. a place of shelter) are present then the ECoW will advise on any additional measures to ensure that reptiles are protected. Once absence is confirmed then excavation may proceed.
- 3.4.5 Features /habitats suitable to provide refuge for reptiles which may be within working areas and cannot be avoided e.g. stone walls, brash, log piles, ant hills or layers of dead bracken, will be dismantled by hand under the supervision of the ECoW. This will only be completed during suitable weather conditions (bright spells with little wind and when temperatures 9°C or above) in the active reptile period, i.e. mid-March to mid-October, inclusive
- 3.4.6 Any reptiles caught during the dismantling of refuges will be relocated to suitable habitat away from the working area, e.g. rough grassland around the Yorkshire Water facility, which is considered to have sufficient carrying capacity to receive small numbers of additional reptiles.

#### ***River Don and associated riparian and aquatic species***

- 3.4.7 Minor watercourses (or field drains) along the Trans Pennine Trail diversion will be traversed using existing or strengthened crossing point / bridges or following the installation of pipe culvert bridges.
- 3.4.8 An exclusion zone of 5m to the water's edge of the River Don will be maintained during construction and operation of the Trans Pennine Trail diversion, excluding the areas at and around Bridge crossings 1 and 2 where bank reinforcement measures may be required.
- 3.4.9 Where works are adjacent to watercourses, appropriate fencing will be installed temporarily along their edge to prevent plant tracking down slopes damaging riparian vegetation or to prevent silt laden runoff flowing untreated into the watercourse.

- 3.4.10 Access beneath Bridge 2 will be provided between the bridge footings and the waters' edge to allow movement by riparian species, such as otter.

### **3.5 SEC in Wogden Foot LWS**

- 3.5.1 The Principal Contractor in co-ordination with the ECoW will physically set out the areas required for construction and laydown areas within Wogden Foot LWS. Areas outside the fenced working area will therefore be protected from construction activities. Certain specific areas to be retained and protected including waterbodies and vegetated mounds located to the east of the SEC, will also be fenced off to ensure no access by construction vehicles or personnel. The combined working area (all project phases) is shown on Figure PDD-33492-LAY-FIGURE 2.4 (Appendix 1).

#### ***Nesting Willow Tit***

- 3.5.2 Vegetation clearance will avoid the removal of dead tree stumps or rooting dead wood suitable to support willow tit nests wherever possible. Where avoidance is not possible, removal of potential willow tit nest sites will be undertaken between 1st September and end of January (to avoid the specific breeding season of this species). Such activities will be advised and supervised by the ECoW. Where this is not possible, vegetation will be examined/surveyed for active nests by the ECoW prior to removal. If evidence of nesting is identified, the ECoW will establish exclusion zones of an appropriate size for the species identified until such time as they consider the breeding attempt(s) to have finished.
- 3.5.3 Tree stumps / other rotting wood features suitable for nesting willow tit will be removed and, where possible, immediately relocated within suitable habitat nearby (which will be undisturbed by the Proposed Project). The stumps will either be hammered securely into the ground or strapped to retained trees.
- 3.5.4 If immediate relocation of the stumps is not practical, such features should be temporarily stored at site on pallets for reinstatement at the earliest opportunity prior to final completion of the Proposed Project (see Section 5.3).

#### ***Grassland***

##### ***Proposed SEC site***

- 3.5.5 Given the shallow nature of the topsoil present within the Wogden Foot LWS it is not likely that grassland habitat can be removed from the SEC construction footprint as formal turves. The top (and sub soil) is likely to comprise a significant proportion of ballast / stone material. Subject to any restrictions on the re-use of potentially contaminated material, the approach for translocation of grassland habitat which will be permanently lost to facilitate the construction of the SEC, permanent access track (and cable installation corridor within Wogden Foot LWS), will be based upon the translocation of soil material containing the existing grassland seed bank.
- 3.5.6 Subject to any restrictions on the re-use of potentially contaminated material, topsoil and ballast material removed to facilitate the construction of the SEC and permanent access road could be retained and stored in an appropriate laydown area until it can be used as part of the restoration of grassland and short ephemeral habitats within Wogden Foot LWS (and/or elsewhere on the Proposed Project e.g. existing SEC once removed or at Winscar laydown area).
- 3.5.7 Appropriate measures for soil translocation (if not restricted due to potential contamination) are detailed below:

- Where appropriate, topsoil and ballast material (subject to contamination constraints) removed to facilitate the construction of the SEC and permanent access road will be retained and stored in an appropriate laydown/compound area (specific location to be confirmed) until it can be used as part of the restoration of grassland and short ephemeral habitats within Wogden Foot LWS;
- Soils will be stripped using an excavator with a toothless bucket;
- The top 40cm of topsoil will be stripped separately from any underlying topsoil material. The separated topsoil material will be stored in mounds that are no greater than 1m in height and 5m in width;
- Stored soils will be sealed (the surface will be compacted) to protect from leaching / erosion; and
- The excavator will work in strips no wider than the reach of the arm. As soils are to be stored, both layers will be removed before commencing the next strip, so machines do not run on topsoil.

3.5.8 Where it is not appropriate to use soil translocation as a method for reinstatement (e.g. due to the restrictions of contaminated soils), then reinstatement will rely upon the re-seeding of soils using harvested seed from the LWS.

**Wogden Foot Laydown Area**

3.5.9 The existing grassland (and scrub/woodland) seed bank and top soil / ballast will be retained *in situ* within areas to be used temporarily for laydown (and for the pylon 4ZO158 removal). A protective terram layer (to reflect works type) will be installed over the extent of the proposed laydown area to the west of the SEC, and areas to be used for the removal of Pylon 4ZO158. This will be installed following completion of the vegetation clearance (to be undertaken in the winter period) assuming the laydown areas and SEC works will commence soon after.

3.5.10 In the event that there is a delay of more than a couple of weeks between vegetation clearance and the laydown area being established by the Principal Contractor, the installation of the protective terram layer should be delayed in order to minimise the total period of time the membrane is installed and the area, particularly the grassland areas is covered.

**Scrub**

3.5.11 Selected examples of mature shrubs from the area of affected scrub within Wogden Foot LWS that are to be lost will be temporarily translocated to a receptor area elsewhere within the LWS. The following details the method for scrub translocation:

- Where possible translocation will be undertaken in the period 1<sup>st</sup> September to end January (to avoid nesting willow tit and other nesting birds). Where this is not possible, vegetation will be examined/surveyed for active nests by the ECoW prior to removal. If evidence of nesting is identified, the ECoW will establish exclusion zones of an appropriate size for the species identified until such time as they consider the breeding attempt(s) to have finished.;
- The receptor will be located in close proximity to existing scrub and selected to ensure that there is adequate depth of soil;
- Translocation will be undertaken under the supervision of the ECoW during suitable weather conditions (i.e. not after periods of heavy rain); and

- Following the works, the translocated scrub will be planted back in the laydown area. If this is not appropriate new scrub planting will be undertaken in the laydown and other temporary working areas (subject to the final agreed landscape plan).

### ***River Don and associated riparian and aquatic species***

- 3.5.12 A buffer zone (excluding areas directly associated with new OHL installation and Bridge 2 construction) between the SEC construction activities and the River Don will be established prior to the commencement of the SEC construction work. This will seek to ensure appropriate pollution prevention control measures are implemented. The steep embankment located within Wogden Foot LWS north of the SEC location comprising semi mature and mature trees will be retained (excluding the section directly beneath the re-aligned OHL for safety reasons). Fencing will be installed to delineate the extent of the SEC, access road and the Trans Pennine Trail diversion and to avoid encroachment by construction activities.

## **3.6 Construction of Pylon 4ZO157R**

- 3.6.1 A buffer zone (of at least 3m) will be established on the northern bank of the river Don prior to the commencement of the Pylon 4ZO157R construction work to ensure the protection of the watercourse (similar to that detailed above on the southern bank during the SEC works)

## **3.7 Decommissioning of the Existing SEC and Pylon 4ZO164R Removal**

- 3.7.1 No specific ecological mitigation other than general measures is currently considered necessary.

## **3.8 Pylon and OHL Removal (4ZO163 to 4ZO157)**

### ***Western Moors LWS***

- 3.8.1 The Principal Contractor, in combination with the ECoW will physically set out the areas within the moorland habitat of Western Moors LWS that are required for removal of Pylon 4ZO162. Areas outside the fenced working area will therefore be protected from construction activities.

### ***Reptiles***

- 3.8.2 Sensitive removal of areas of long grassland, bracken and scrub habitats will be undertaken by strimming to ground level in advance of works. The extent of these habitats within the working area will be re-affirmed by the ECoW prior to commencement.
- 3.8.3 Following strimming, all arising will be removed from the working area to an area of retained habitat. After a period of 2 hours (to allow reptiles to displace from the working area) a finger-tip search conducted by the ECoW to confirm the absence of reptiles or any other suitable reptile habitat from the working area.
- 3.8.4 In the event that reptiles or suitable reptile habitat (e.g. a place of shelter) are present then the ECoW will advise on any additional measures to ensure that reptiles are protected. Once absence is confirmed then further works may proceed.
- 3.8.5 Features / habitats suitable to provide refuge for reptiles which may be within working areas and cannot be avoided e.g. stone walls, brash, log piles, ant hills and layers of dead bracken, will be dismantled by hand under the supervision of the ECoW. This

will only be completed during suitable weather conditions (bright spells with little wind and when temperatures 9°C or above) in the active reptile period, i.e. mid-March to mid-October, inclusive.

- 3.8.6 Any reptiles caught during the dismantling of refuges will be relocated to suitable habitat away from the working area, e.g. Western Moors LWS to the south of the Trans Pennine Trail, which is a large area of suitable habitat and may reasonably be expected to have more than sufficient carrying capacity to receive small numbers of additional reptiles.

## 4 CONSTRUCTION

### 4.1 Introduction

4.1.1 The activities outlined below have been identified as requiring completion during the construction phase. The location of where these activities will be adopted are shown on Figures 1.1a – 1.3a (construction phase) and Figures 2.1a – 2.4a (OHL Removal Phase).

### 4.2 General Project Wide

#### *Environmental Management*

4.2.1 The following actions will be included in the CEMP and implemented by the Principal Contractor.

- Site staff will be briefed on any ecological issues affecting the Proposed Project during the site induction. The specific mitigation to be implemented and methods of working to be adopted should form part of a regular 'tool box talk'. The talk will consider sensitive habitats and protected / priority species in specific area of works and will be conducted by the ECoW;
- Demarcation of sensitive areas and predefined works areas will have been undertaken as part of the site establishment works. Movement of staff and machinery will be restricted to within predefined works areas. Exclusion zones will be established where required around sensitive ecological features so that these features are not inadvertently damaged during the works. Movement of heavy plant during construction will also avoid areas where trees, woodland and scrub are to be retained in order to prevent root compaction and accidental damage;
- Measures will be employed to ensure that fugitive dust emissions are minimised during the construction works;
- All site compounds and access tracks will be of the minimum size required for safe working. These will be fenced to prevent encroachment of machinery and materials onto adjacent vegetation. Stockpiling of materials will be restricted to specific areas. Waste materials will be removed from the site and disposed of at the earliest opportunity and will not be stockpiled;
- Fuel, oil and other potential pollutants will be stored in bunded tanks in a designated site compound area as specified in the CEMP. Oil absorbent material will be stored on site and any spillages cleared up immediately;
- Measures will be employed in order to deal with any potential pollution incidents efficiently especially near watercourses, water bodies and sensitive habitats;
- The ECoW will be consulted before any work that requires a change to the prescribed habitat management in this document or alteration of a habitat is undertaken; and
- Adoption of pollution prevention and control measures as detailed in the CEMP to avoid indirect effects upon the River Don and associated aquatic habitats.

**Birds**

- 4.2.2 Piling activities which may be required for the construction of the SEC (and Bridge 1 and Bridge 2) will not be undertaken within the period from 1st April and end of July in order to avoid disturbance upon breeding birds.

**Habitat Protection (Including Trees)**

- 4.2.3 Retained habitats will be protected from construction activities during the construction phase of the Proposed Project using fencing. Demarcation fencing will be checked on a regular basis by the ECoW/ Principal Contractor. The protection of trees that are to be retained will comply with the requirements of BS5387:2012 as specified in the Arboricultural Assessment and accompanying Tree Protection Plan.

**Fauna**

- 4.2.4 Excavations will either be covered at night where practical to help prevent badgers (and other wildlife) becoming trapped inside or a means of egress provided such as ramps (for example, a scaffolding board) or sloped sides at intervals to allow any trapped wildlife to escape.
- 4.2.5 To reduce any potential effects upon sensitive fauna using the River Don, including otter and foraging and commuting bats, any lighting required during construction will be directional and low-level (whilst adhering to health and safety standards). Although this applies to all areas, this is particularly relevant to the Trans Pennine Trail diversion, in particular the river Don (Bridge 2) crossing.

**4.3 Trans Pennine Trail (Cable Corridor)****Invasive Species**

- 4.3.1 Biosecurity measures will be adopted during the construction phase of the Proposed Project (as defined in the Invasive Plant Control and Treatment Strategy) to avoid the spread of non-native species of plants. This will include ensuring that soils containing rhododendron seed or Japanese knotweed root /rhizomes are not spread within the working area. Suitable control measures will involve the checking and washing down of operational equipment and footwear in designated areas.

**4.4 Trans Pennine Trail Diversion****Birds**

- 4.4.1 Piling activities which may be required for the construction of Bridge 1 and Bridge 2 will not be undertaken within the period from 1st April and end of July in order to avoid disturbance upon breeding birds.

**4.5 SEC in Wogden Foot LWS****Birds**

- 4.5.1 Piling activities which may be required for the construction of the SEC will not be undertaken within the period from 1st April and end of July in order to avoid disturbance upon breeding birds.

**4.6 Decommission of the Existing SEC and Pylon 4ZO164R Removal**

- 4.6.1 No specific mitigation beyond the project-wide measures are required for this phase of the project.

## **4.7 Pylon and OHL Removal (4ZO163 to 4ZO157)**

### ***Flora and Fauna***

- 4.7.1 Supervision of the access track construction (or installation of temporary access measures e.g. trackway) by the ECoW in sensitive habitats, including Pylons 4ZO162 and 4ZO163 within or within proximity to Western Moors LWS.
- 4.7.2 Activities involving construction vehicles in adverse weather conditions (such as periods of continual rainfall) which may have significantly affected ground conditions will be monitored to avoid further disturbance to habitats and ground substrate. Existing access routes, including any existing watercourse crossing, should be used wherever possible to access towers and a buffer be retained alongside water course where access route run alongside them. Where appropriate, and as advised by the supervising ecologist, temporary ground protection measures (inert ground protections mat's or similar) will be implemented to protect the existing soils, particularly where peat substrates may be present e.g. pylon 4ZO162 and associated access track. Any ground protection measures will be removed at the earliest opportunity following the completion of construction.
- 4.7.3 As committed to at the site establishment phase (Section 3.2) throughout the entire project measures to avoid potential direct effects upon nesting will be adopted. Prior to the commencement of the OHL removal phase a walkthrough of pylon access routes and working areas will be conducted by the ECoW to assess the potential risk of nesting (including ground nesting) birds. Where programme allows access route for pylon and OHL removal will be installed outside of the bird nesting season. Where this is not possible habitat will be removed outside of the bird nesting season within pylon removal working areas (at each pylon base) and along access routes to render these areas unsuitable for nesting.

## **4.8 Northern Access Route (AP7)**

### ***Nesting Birds***

- 4.8.1 The measures to deter ground-nesting birds on the northern access route (i.e. fencing and ticker-tape as described in Section 3.8) will be maintained throughout the construction period. The route of the access corridor and adjacent habitat will be monitored by the ECoW at regular (monthly) intervals throughout the nesting period (1<sup>st</sup> March to 31<sup>st</sup> August) for any evidence of active nests. In the unlikely event that any active nests are confirmed in close proximity to the access route then additional mitigation may be required, such as minor route adjustments to increase stand-offs and minimise the risk of nest failure.

## 5 POST-CONSTRUCTION

### 5.1 Introduction

- 5.1.1 The activities outlined below have been identified as requiring completion post-construction during the reinstatement phase (monitoring is addressed separately in Section 6). The location of where these activities will be adopted are shown on the ecological mitigation plans (Figure 1.1a – 1.3a and 2.1a – 2.4a), the Landscape Masterplans (P10727-00-001-105/106/107) and Off-site Landscape Plans – not included as areas under discussion and yet to be completed).

### 5.2 General Project Wide

- 5.2.1 Works are to be undertaken in accordance with the CEMP.

#### **Habitats**

- 5.2.2 Unless indicated otherwise in each specific section below, the habitats lost across the Proposed Project will be replaced on a like-for-like basis. This is most applicable to the habitats that are of lower ecological interest, such as semi-improved / improved grassland or arable. Whilst these habitats are widespread and of limited botanical diversity, they still provide suitable habitat for some notable species, such as brown hare and ground nesting birds e.g. lapwing and curlew. The like-for-like replacement of these habitats will ensure that the continuity of this habitat type for the fauna present, including notable species.

#### **Trees (Off-Site)**

- 5.2.3 The loss of trees across all areas of the Proposed Project will be addressed through re-planting of native woodland and trees. Opportunities for further compensatory tree planting that is relevant to the Proposed Project as a whole and could be achieved through off-site planting is currently under discussion with landowners.

### 5.3 Trans Pennine Trail (Cable Corridor)

#### **Invasive Species**

- 5.3.1 The Invasive Plant Control and Removal Strategy will include a period of aftercare in the post-construction phase of the Proposed Project. Actions to avoid the further spread of Rhododendron and Japanese knotweed within National Grid owned / controlled land will be secured through the strategy. Appropriate measures will include herbicide (glyphosate or equivalent) treatment of any retained rhododendron stumps that show signs of re-growth and treatment of any new growth of Japanese knotweed plants.

#### **Trees**

- 5.3.2 Where possible trees removed to allow construction of the electric cable will be replaced *in situ*. As detailed in the Landscape Masterplan (P10727-00-001-106), a native woodland mix incorporating shrub and groundcover planting would be utilised. The species mix responds to the mix of native woodland already present along the Trans Pennine Trail, but also introduce other appropriate native species.
- 5.3.3 All planting will be sourced from locally grown nurseries where possible. Deep rooted trees and shrubs cannot be planted on or within 3m of the Cable equipment to avoid the risk of damage to the Cable's by tree roots, however some shallow rooted species may be possible.

5.3.4 A LCoW/ Landscape Architect will undertake a site walkover visit, post construction, to identify opportunities for 'gapping up' of areas where tree and scrub cover adjacent to working area has been retained and also opportunities for opening up discrete views. Where any notable gaps in the existing woodland are identified along the Trans Pennine Trail appropriate infill planting will be considered to strengthen landscape character and reinforce the connectivity of the linear corridor for willow tit and other notable fauna, such as bats. In selected locations the existing trees adjacent to the Trans Pennine Trail will be thinned; this will both increase the extent of diverse grassland habitat and also open up discrete views of the surrounding landscape to enhance the visual amenity experienced by people using the Trans Pennine Trail. The extent of gapping up and thinning will be carefully selected to ensure that habitat connectivity is maintained for flora and fauna, for example by ensuring there remain contiguous stretches of woodland cover along the Trans Pennine Trail.

5.3.5 Deadwood from tree felling will either be retained in discrete habitat log and brash piles to improve overall habitat diversity, or, where appropriate, used to create potential nesting habitat for willow tit (see below).

#### ***Grassland***

5.3.6 Reinstatement and enhancement of grassland at Dunford Bridge previously identified as being of notable botanical interest (as shown on Figure 1.1) will be carried out following construction. Rotovation of areas where membrane was deployed (if required) and re-seeding (using harvested seed if still viable or suitable seed mix of local provenance) of grassland on laydown area and wider verge area and / or where trees cannot be planted (i.e. over the installed electric cables).

5.3.7 Areas alongside the reinstated Trans Pennine Trail no longer subject to shading by overhanging trees or scrub encroachment will be targeted for grassland enhancement. These will be reinstated by reseedling with an appropriate wildflower seed mix. Nutrient-poor conditions will be maintained to ensure similar botanical conditions will be created to those currently present.

#### ***Birds (Willow Tit)***

5.3.8 Tree stumps/ sections suitable to support willow tit nest which have been removed during the pre-construction phase (or newly sourced sections of tree stump/ uprights trunks), and which could not feasibly be immediately re-located outside disturbance distance of works within suitable habitat, will be reinstated in suitable locations within retained woodland/ scrub area alongside the Trans Pennine Trail. The stumps will either be hammered securely into the ground or strapped to retained trees.

5.3.9 A number of bird boxes (at least 5) with small entrance holes (25 – 28mm) that are suitable for tit species will be located in sheltered areas of retained woodland along the Trans Pennine Trail that falls within the boundary of the Proposed Project. These boxes may provide alternative habitat for species that may otherwise compete with willow tit for the natural nest sites.

#### ***Restoration of Landscape Features – Stone Walls and Water Features***

5.3.10 Where it has not been possible to preserve stone walls, water features and other features of amenity/ visual interest located along the Trans Pennine Trail corridor such as the small ditch and mounding associated with the small waterfall shown in

Plate 1 (Section 2.3), these will be reinstated (drainage officer at BMBC to be consulted regarding reinstatement of the ditch).

- 5.3.11 The existing drainage ditches will be culverted during construction. Two sections will be reinstated as an open ditch post construction and the aim will be to replicate the current baseline conditions in terms of recreating the current width, depth and bank profile. Plates 3 and 4 below show the current typical profile of the ditch. Where space and hydrology constraints allow, there may be possibility to create small pools along the length of the reinstated ditch to enhance opportunities for macrophytes and aquatic invertebrates.

**Plates 3 and 4: Existing ditch - typical profile and width (looking eastwards)**



## 5.4 Trans Pennine Trail Diversion

### ***River Don and associated aquatic habitats***

- 5.4.1 The bank top and land adjacent to bridge crossings (particularly Bridge 2) will be reinstated following construction and following removal of the bridge. The proposed working method will ensure that water flow (and passage by fish) is not impeded or reduced downstream of the crossing point.
- 5.4.2 Banks will be reinstated and re-profiled as required following construction of the Trans Pennine Trail diversion.

## 5.5 SEC in Wogden Foot LWS

- 5.5.1 The details of landscape proposals within Wogden Foot LWS, including the species mixes proposed, are illustrated in the Landscape Plan (Figure P10727-00-001-107). The proposed balance of replacement planting/ wildflower seeding in Wogden Foot has been designed to re-create a mosaic of habitats broadly in line with the ratio of habitats lost, due to the Proposed Project, within Wogden Foot. This is based on the following ratios:
- approximately 60% of the proposed replacement habitat within Wogden Foot LWS will comprise woodland/ woodland edge/ scrub to provide compensatory habitat for willow tit. Some of these areas will also include translocation of existing mature scrub species excavated from affected areas of Wogden Foot LWS prior to construction.

- approximately 40% of the proposed replacement habitat within Wogden Foot LWS will comprise wildflower grassland including a mix of acid and neutral grassland utilising seedbank harvested from site prior to commencement of construction.

### ***Trees & Scrub***

- 5.5.2 All planting of trees and scrub will be of local provenance and to be sourced from locally grown nurseries where possible. The mature scrub previously translocated within the LWS (section 3.5), will also now be re-instated back amongst the blocks of newly planted trees and scrub.
- 5.5.3 The margins of the SEC will also be planted with native trees and shallow rooted shrubs (which is also a requirement of essential landscape mitigation around the SEC). Where appropriate, other areas of disturbed ground will be permitted to establish with naturally colonised scrub to maintain the overall habitat mosaic.
- 5.5.4 The design of small blocks of scrub will assist in the re-establishment of the tight mosaic of habitats for which the LWS is designated. Overall the mix of different ages of scrub, both newly planted, re-instated and naturally colonised, will add to the diversity of habitat structure in the LWS.

### ***Grassland***

- 5.5.5 The neutral grassland habitat will be reinstated from the seed bank within topsoil material removed and stored from the location of the proposed SEC compound (subject to no restrictions relating to potentially contaminated material). This will be applied in order to restore areas of proposed grassland, including mound features (see below), within the LWS boundary. As detailed in Section 3.5, the re-laying of these soils will be completed as follows:
- The re-laying of soils on restoration will also be undertaken in strips the working width of the arm of the excavator;
  - The lower topsoil will be placed first and then the upper topsoil;
  - The soils can be laid using a toothed bucket, so the layers are 'keyed in' to each other;
  - No machinery will run on the re-laid soils; and
  - The laying of soils will be arranged as far as it practicable in a manner that replicates the existing topography (including the vegetated mounds shown on the landscape plan).
- 5.5.6 Following the removal of terram membrane, which was installed in the laydown area to protect the soil seed bank, grassland recolonisation will be assisted through the application of harvested seed. Subject to ground conditions, the soil in these areas may also require preparatory rotavating.

### ***Reinstatement of mound features***

- 5.5.7 The botanically rich vegetated mound features which are characteristic of Wogden Foot LWS provide an important habitat for invertebrates. The mound features will be recreated following construction activities. The areas for siting of replacement features include areas cleared of scrub which are less botanically diverse, and the mounds used for screening around the proposed SEC. For the latter the features will

form a part of the larger overall bund, establishing a mix of scrub (in more nutrient rich soils) and open areas similar to that already present in the LWS.

- 5.5.8 Material to create these features would need to ensure that the overall characteristics of the substrate are not significantly altered to retain the target grassland habitat and nutrient poor conditions. Where contamination issues limit the re-use of material from Wogden Foot LWS, then consideration should be given to the importing of inert materials, including nutrient-poor subsoils or aggregate.
- 5.5.9 The structure of the features should ensure that the surface is created from nutrient-poor soils, and over-laid with a depth of 50-100mm of aggregate, rubble or similar<sup>3</sup> (inert off-site material may be used where required). Consideration should be given to the seeding of these areas with the larval foodplants of notable butterflies, particularly for common bird's-foot trefoil (*Lotus corniculatus*) for dingy skipper (*Erynnis tages*). These nutrient-poor areas will be located so that they are south-facing wherever possible to maximise the amount of incident light, which will benefit both invertebrates and reptiles.

#### ***Birds (Willow Tit)***

- 5.5.10 Tree stumps/ sections suitable to support willow tit nest which have been removed during the pre-construction phase (or newly sourced sections of tree stump/ uprights trunks), and which could not feasibly be immediately re-located outside disturbance distance of works within suitable habitat, will be reinstated in suitable locations within retained woodland/scrub area of Wogden Foot LWS. The stumps will either be hammered securely into the ground or strapped to retained trees.
- 5.5.11 A number of bird boxes (at least 5) with small entrance holes (25 – 28mm) that are suitable for tit species will be located in sheltered areas of retained woodland/ scrub within the LWS. These boxes may provide alternative habitat for species that may otherwise compete with willow tit for the natural nest sites.

### **5.6 Construction of Pylon 4ZO157R**

- 5.6.1 Habitats (prominently improved grassland) disturbed by the Pylon 4ZO157R construction works (and access route) will be fully reinstated to their original condition.

### **5.7 Decommissioning of the Existing SEC and Pylon 4ZO164R Removal**

- 5.7.1 The Existing SEC and Pylon 4ZO164R located at the western end of the Proposed Project close to the entrance to Woodhead Tunnel will be removed as part of the Proposed Project. The existing tunnel shaft cap will be lowered, and mounding created over the shaft which will be surrounded by gabion baskets approximately 1m in height and width.
- 5.7.2 The remaining land, within ownership of National Grid, will be available for habitat creation and enhancement. This land (including the wider area owned by National Grid outside the existing SEC) will be established as a mix of species-rich grassland,

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<sup>3</sup> <https://www.buglife.org.uk/sites/default/files/Managing%20brownfields%20for%20butterflies.pdf> [accessed 31.10.18]

woodland and scrub. Broadleaved tree planting along the edges, which was established as part of the planting (when the SEC was extended as part of a previous refurbishment conducted by National Grid), will also be retained.

- 5.7.3 The details of landscape proposals in the location of the existing SEC and Pylon 4ZO164R are illustrated in the Landscape Plan P10727-00-001-105.
- 5.7.4 The areas of species-rich grassland will be established on the nutrient-poor subsoils exposed during decommissioning of the existing SEC. The grassland will be seeded either using harvested seed from the Proposed Project or, if this is not available, using an appropriate neutral grassland mix of local provenance. Any nutrient-rich soils from areas of retained grassland will either be preferentially planted with trees and scrub, or where this is not possible the soils will be deep ploughed prior to grassland seeding in order to mix topsoils and subsoils, thereby achieving more nutrient poor conditions.
- 5.7.5 Native tree and shrub planting at the edges of the grassland will establish a more diverse 'edge' structure with the adjacent woodland block. This betterment of the overall structural diversity of habitats present will provide opportunities for a range of flora and fauna, including invertebrates, bats and birds of the woodland edge.

## 5.8 Pylon and OHL Removal (4ZO163 to 4ZO157)

### ***Habitats (General)***

- 5.8.1 Habitats disturbed during the pylon and OHL removal stage, including those of Western Moors LWS, will be fully reinstated as outlined in Table 5.1 below:

**Table 5.1: Pylon Removal and Restoration**

| OHL Removal/ Working Area | Reinstatement Proposals                                                                                                                                                                         |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pylon 4ZO163              | To be reinstated to pastoral field/ species rich neutral grassland (Western Moors LWS)                                                                                                          |
| Pylon 4ZO162              | To be reinstated and natural re-colonisation to dry heath/acid grassland habitat (Western Moors LWS). Dry heath/acid grassland sowing may subject to level of disturbance may also be required. |
| Pylon 4ZO161              | To be reinstated to pastoral field/ species rich neutral grassland                                                                                                                              |
| Pylon 4ZO160              | To be reinstated to pastoral field/ species rich neutral grassland                                                                                                                              |
| Pylon 4ZO159              | To be reinstated to pastoral field/ species rich neutral grassland                                                                                                                              |
| Pylon 4ZO158              | To be reinstated to scrub/ grassland as per Landscape Plan                                                                                                                                      |

| OHL Removal/ Working Area | Reinstatement Proposals                                            |
|---------------------------|--------------------------------------------------------------------|
| Pylon 4ZO157              | To be reinstated to pastoral field/ species rich neutral grassland |

### ***Western Moors LWS***

- 5.8.2 Seed will not be applied to the areas of moorland habitat from Western Moors LWS that fall within the working area (the habitats and seed are entirely different from one another). Given the small areas affected these habitats will be reinstated through natural regeneration once the temporary access roads and crane pad working areas are removed. Where it is preferred a dry heath/acid grassland seed sourced from an appropriate supplier could be sown in these areas.

## **5.9 Northern Access Route (AP7)**

### ***Habitats (General)***

- 5.9.1 Habitats disturbed across the northern access route will be fully reinstated to their original condition.

## **6 MONITORING**

### **6.1 Introduction**

- 6.1.1 The activities outlined below have been identified as requiring management and monitoring post-construction and reinstatement.
- 6.1.2 The results of monitoring would inform a review of this LEMP within the five year plan period and agree where any changes and/ or remedial actions are required and the timescales for these.

### **6.2 General Project Wide**

#### ***Trees***

- 6.2.1 Replacement planting shall be monitored for a period of five years from the end of construction.
- 6.2.2 During this time, any plants which have failed to establish will be replaced during the next available planting season, weeds removed, and herbicide applied if required. Tree guards will also be maintained. To ensure the chances of the repeat failure of replacement species are minimised regular maintenance (at least six monthly) will occur. This will ensure planting density is sufficient to provide an adequate screening and reach reinstatement efforts.
- 6.2.3 An appropriately qualified person will be responsible for making regular visits to weed, prune, water and care for the newly establishing plants for the five year period.
- 6.2.4 The success of the planting and the maintenance and management requirements will be monitored on an annual basis over the five year monitoring period and recommendations for any changes made.
- 6.2.5 Areas of planting found not to be thriving will be treated to such additional works, e.g. replacement planting, as are required to rectify the situation within the next appropriate season.
- 6.2.6 Trees which have been retained and protected alongside the electric cable installation corridor, as well as where tree planting which may have been completed will require monitoring to check condition following reinstatement. A programme of inspections by a qualified arboriculturist will be undertaken to inform any necessary work to retained trees following completion of the work. This will be undertaken following removal of Tree Protection Fencing and then a year after to assess any impacts as a result of the works. Further inspection dates may be recommended at the second inspection (BS5837:2012).

### **6.3 Trans Pennine Trail (Cable Corridor)**

#### ***Invasive Plant Species***

- 6.3.1 A suitably qualified ecologist will make annual checks of the Trans Pennine Trail within the Proposed Project to confirm the absence of rhododendron and Japanese knotweed with reference to the Invasive Plant Control and Treatment Strategy. Rhododendron or Japanese knotweed re-growth within National Grid working areas will be managed through removal by hand (rhododendron) or by treatment with an appropriate herbicide (glyphosate or similar). Where the removal of soils or roots is required this will be treated as detailed in Section 2.3.

- 6.3.2 The need for continued monitoring of invasive plant re-growth will be reviewed at the end of the five year management period.

#### ***Habitats***

- 6.3.3 Habitats reinstated following the completion of the electric cable installation along the Trans Pennine Trail will be subject to monitoring in order to ensure these are successfully reinstated and restored as a minimum to the pre-construction condition / status. The areas which will be subject to monitoring are the grassland areas at Dunford Bridge and grassland verges alongside the reinstated Trans Pennine Trail where reseeded and translocation of topsoil material has taken place (identified as 'proposed grassland' in the Landscape Masterplan (P10727-00-001-106).
- 6.3.4 In order to provide sufficient time for recovery it is proposed that grassland monitoring would be conducted for a period of five years, with surveys being conducted in Years one, three, and five years` post-construction. Monitoring will be completed by a suitably qualified botanist during June-July in each monitoring year. The condition of the grassland will be assessed by determining the relative abundance and coverage of each species present.

#### ***Birds (Willow Tit)***

- 6.3.5 Monitoring surveys of willow tit along the Trans Pennine Trail will assess the status of the species in line with the five year monitoring period for willow tit in Wogden Foot LWS and will inform the mitigation and management strategy for willow tit at the LWS (and also the associated River Don corridor alongside) (Section 6.5).
- 6.3.6 Surveys would follow the methodology as agreed with stakeholders at the pre-planning stage in order that results are comparable. This method involved the completion of habitat mapping and territory and nest site mapping in February and March 2017.
- 6.3.7 A monitoring survey immediately post-construction is not likely to allow sufficient time for any potentially displaced birds to recolonise and therefore it is proposed the monitoring would be undertaken in Years two and five post construction. The survey would be conducted by a suitably qualified ornithologist.

#### ***Bats***

- 6.3.8 Bat monitoring of roost sites along the Trans Pennine Trail may be required as part of the Natural England derogation licence (if this is deemed to be required). The methodology for this would be agreed by Natural England if required as part of the licence application procedure and detailed within the bat licence method statement. Monitoring surveys (if required) would need to be conducted on the roost site(s) and seek to determine status and usage by bats following the completion of construction works. The exact period of monitoring would depend on the status of roost affected and the level of impact, but a typically monitoring may require annual surveys for period up to 5 years post-construction within the main roosting season May – August. This may be completed by use of either manual and/ or remote recording of activity. Survey would be managed and led by the named licensed bat ecologist.

#### ***Watercourses***

- 6.3.9 All watercourses are to be monitored for a period of five years including inspecting upstream and downstream for signs of erosion/slumping of banks. In areas where

this may have occurred, remedial works to be carried out following consultation with the landowner.

#### **6.4 Trans Pennine Trail Diversion**

- 6.4.1 No requirement for specific ecological post-construction monitoring is necessary.

#### **6.5 SEC in Wogden Foot LWS**

- 6.5.1 Post construction monitoring of Wogden Foot LWS will be undertaken focused on areas of the LWS which have been reinstated / created.

##### ***Grassland***

- 6.5.2 Reinstated grassland areas (and mound features) will be monitored at Wogden Foot LWS for a period of 7 years with surveys being conducted in Years one, three, five and seven.
- 6.5.3 Monitoring will be completed by a suitably qualified botanist during June-July in each year. The condition of the grassland will be assessed by determining the relative abundance and coverage of positive indicator species present. The encroachment of scrub into grassland habitats will also be evaluated by comparing the ratio of coverage of these habitat types within the LWS boundary. Monitoring will also record the presence of other negative condition indicator species, such as broad-leaved dock (*Rumex obtusifolius*) or nettle (*Urtica dioica*), which may require remedial removal / treatment.
- 6.5.4 Monitoring will also include inspecting for signs of settlement and/or drainage issues. In areas where this may have occurred, remedial works will be carried out following consultation with the landowner. Regular maintenance visits (every six months at least) will be made to weed, mow, water and care for the newly establishing habitats within this monitoring period.
- 6.5.5 Following each monitoring visit the management plan for grassland habitats within the LWS will be reviewed and updated as required.

##### ***Birds (Willow Tit)***

- 6.5.6 A programme of post construction monitoring for willow tit will be undertaken within Wogden Foot LWS. This post-construction monitoring will inform how appropriate management measures for this species will be conducted.
- 6.5.7 Surveys would follow the methodology as agreed with stakeholders at the pre-planning stage in order that results are comparable. This method involved the completion of habitat mapping and territory and nest site mapping in February and March 2017.
- 6.5.8 Annual monitoring for willow tit post construction is not likely to be warranted following Year one given the timescales for habitat to establish but will be conducted in Years two and five post-construction to assess the use of habitat within Wogden Foot LWS (and the Trans Pennine Trail) as habitats begin to re-establish. The survey would be conducted by a suitably qualified ornithologist.

#### **6.6 Construction of Pylon 4ZO157R**

- 6.6.1 No requirement for specific ecological post-construction monitoring is necessary.

**6.7 Decommission of the Existing SEC and Pylon 4ZO164R Removal*****Habitats (Grassland)***

- 6.7.1 Reinstated grassland habitats will be monitored similarly to those being reinstated within Wogden Foot LWS (See Section 6.5 above). Monitoring of reinstated/created habitats will be included in the five year monitoring programme and would depend on the habitats being created.

**6.8 Pylon and OHL Removal (4ZO163 to 4ZO157)*****Western Moors LWS***

- 6.8.1 Monitoring will be completed by a suitably qualified botanist during June - July in Years two and five. The condition of the grassland and heathland will be assessed by determining the relative abundance and coverage of each species present.
- 6.8.2 Following each monitoring visit the management plan for grassland and heathland habitats within the LWS will be reviewed and updated as required.

**6.9 Northern Access Route (AP7)**

- 6.9.1 No requirement for post construction monitoring has been deemed necessary.

## 7 ENHANCEMENT

### 7.1 Introduction

7.1.1 Additional enhancement measures are outlined below.

### 7.2 Trans Pennine Trail (Cable Corridor)

7.2.1 Following completion of the Cable installation a number of measures to enhance the corridor for protected and notable species will be undertaken including:

- Creation of log/ brash piles using vegetation removed to enhance the presence of refuges for small mammals, bird and refuges/ hibernation sites for reptiles and amphibians;
- Provision of wider grassland verge / banks planted with appropriate wildflower (in areas of low traffic from cyclists or walkers) to enhance the botanical value and in turn increase value for terrestrial invertebrates;
- Potential targeted removal of scrub and tall ruderal in areas outside of the working area to further enhance the botanical value of the grassland verges;

### 7.3 Trans Pennine Trail Diversion

7.3.1 No enhancement measures are proposed.

### 7.4 SEC in Wogden Foot LWS

7.4.1 Removal of selected areas of scrub from other parts of Wogden Foot LWS to reduce level of scrub encroachment upon grassland within wider LWS could be undertaken if deemed beneficial by stakeholders. The removal of scrub in selected agreed areas would seek to enhance the botanical value of the grassland which is currently decreasing due to effects of shading of scrub and continual grazing.

7.4.2 Tree stumps removed that are not yet suitable for use by willow tit will be retained wherever possible and / or reinstated into suitable alternative area outside the working area (further east within Wogden Foot LWS). Alternatively, sections of tree stump/ uprights trunks with holes and cavities (sourced from on-site tree felling or from a suitable supplier) suitable for nesting may be installed within the LWS. Ideally the latter should be sited during autumn/ early winter and in advance of site mobilisation and laydown set up within Wogden Foot LWS (following vegetation clearance within the SEC and laydown area). This will provide alternative/ supplementary nesting habitat for willow tit.

7.4.3 Planting of scrub in other parts of the LWS to benefit willow tit will be considered. If deemed beneficial by stakeholders other measures, will be considered such as provision of supplementary nest sites (boxes or stumps), bird feeders or the creation of small wet scrapes (shallow hollows in the ground that would retain rainwater) which would further enhance the habitat for this species.

7.4.4 Subject to agreement with stakeholders, the woody vegetation cleared from the LWS will either be removed entirely from the site, burned at an appropriate location on site or used to create discrete log pile refugia, for example around the pond located to the east of the proposed SEC. It will not be possible to retain/ store all of the removed vegetation within the wider Wogden Foot LWS without causing a detrimental effect to the grassland sward the following spring/ summer (and in future years).

Opportunities exist to translocate logs from removed trees to other areas proposed for habitat creation/ enhancement e.g. within existing or proposed woodland areas, such as along the Trans Pennine Trail or at the location of the existing SEC.

## **7.5 Decommission of the Existing SEC and Pylon 4ZO164R Removal**

7.5.1 As detailed in section 5.7 enhancement will be achieved through reinstatement of the land to pastoral field/species rich grassland and proposed woodland edge planting to diversify the existing boundary.

## **7.6 Pylon and OHL Removal (4ZO163 to 4ZO157)**

7.6.1 No enhancement measures are proposed.

## **7.7 Northern Access Route (AP7)**

7.7.1 No enhancement measures are proposed.

## **8 SUMMARY OF MITIGATION**

### **8.1 Introduction**

- 8.1.1 Table 8.1 below provides a summary of each of the Proposed Project components and the ecological or landscape features requiring mitigation / management and monitoring during each phase of the Proposed Project.

**Table 8.1: Summary of Actions by Project Component and Stage**

| Project Component                                                                                          | Pre-Construction<br>(Section 2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Site Establishment<br>(Section 3)                                                                                                                                                                                                                                                                                                                                                               | Construction<br>(Section 4)                                                                                                                                                                                                                                                                                     | Post Construction<br>(Section 5)                                                                                                                                                                                                                                                     | Monitoring<br>(Section 6)                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Wide                                                                                               | <p>Environmental/ ECoW to implement measures secured through the final agreed CEMP and this accompanying LEMP.</p> <p>Pre-construction walkover to confirm baseline conditions remain and identify any further implications for licensing and programme, e.g. new badger sett (six months prior to Start On Site (SOS) in each phase)</p> <p>Protection of retained habitats – habitats not impacted by the Proposed Project will be protected through the clear delineation of working areas and the use of temporary fencing which will be retained in situ until completion of the construction phase of the Proposed Project</p> <p>Protection of trees – In accordance with BS5837:2012; buffer zones to be established during all phases to delineate trees/woodland to be retained and protected prior to establishment of working areas. Fencing will be retained in situ until completion of the construction phase of the Proposed Project</p> <p>Fauna - Nesting birds – In the location of all Project Component Areas where vegetation removal is required, any vegetation which has the potential to support nesting birds is to be removed outside of the bird breeding season (1<sup>st</sup> March – end of August). Where this is not possible, immediately prior to removal the vegetation will be examined for active nests by the ECoW. Any active nests will be avoided until dependant young have fledged. Willow Tit - In areas highlighted with potential to support willow tit, scrub vegetation and nesting features will be removed outside the period 1<sup>st</sup> February to end August to take account of earlier nesting season of this species.</p> <p>Fauna – Nesting Birds - Piling activities which may be required for the construction of the Proposed Project will not be undertaken within the period from 1st April and end of July in order to avoid disturbance upon breeding birds.</p> <p>Fauna - Otter and Bats - Any lighting required during construction of will be directional and low-level.</p> <p>Fauna - Badger and other wildlife - All excavations will either be covered at night where practical to help prevent badgers (and other wildlife) becoming trapped inside or a means of egress provided such as ramps (for example, a scaffolding board) or sloped sides at intervals to allow any trapped wildlife to escape.</p> <p>Reinstatement - habitats will be replaced on a like-for-like basis unless otherwise stated below.</p> |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                         |
| Trans Pennine Trail (Cable Corridor, including National Grid Compound at Dunford Bridge and laydown areas) | <p><u>Invasive plant species</u> (National Grid Compound) - Pre-construction survey and preparation of detailed control and removal strategy for rhododendron and Japanese knotweed.</p> <p><u>Bats</u>- Preconstruction surveys for bats (culverts beneath the Trans Pennine Trail). Preparation of licence application or non-</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p><u>Invasive plant species</u> (National Grid Compound) – Implementation of control and removal strategy for rhododendron and Japanese knotweed including implementation of biosecurity measures.</p> <p><u>Birds (willow tit)</u> – Identification of willow tit features to be avoided. Where these cannot be avoided suitable nest site features (dead stumps) should be removed under</p> | <p><u>Invasive plant species</u> (National Grid Compound) – If not already conducted at the site establishment stage, implementation of control and removal strategy for invasive plants including implementation of biosecurity measures.</p> <p><u>Bats</u>- Implementation of bat mitigation measures as</p> | <p><u>Invasive plant species</u> (National Grid Compound) – Review of control and removal strategy for rhododendron and Japanese knotweed. Aftercare actions to be adopted.</p> <p><u>Trees</u>- Replanting of native trees which would be subject to aftercare and maintenance.</p> | <p><u>Invasive plant species</u> (National Grid Compound) - Post construction monitoring of invasive plant species within National Grid land.</p> <p><u>Habitats/ Landscape Features</u> - Post construction monitoring of reinstated habitats/ landscape features.</p> |

| Project Component                                                                                       | Pre-Construction<br>(Section 2)                                                                                                                                                                                                                                                                                                                                                                                              | Site Establishment<br>(Section 3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Construction<br>(Section 4)                                                                                                                                                | Post Construction<br>(Section 5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Monitoring<br>(Section 6)                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                         | <p>licenced method statement as appropriate (if required).</p> <p><u>Grassland</u> - Seed harvesting to be undertaken where possible from specified notable areas of grassland at Dunford Bridge within Cable Corridor and from within footprint of SEC within Wogden Foot LWS.</p> <p><u>Other Habitat Features/Landscape Features</u> – Recording of stone walls and other features to be retained such as waterfalls.</p> | <p>supervision between start September and end January (and in advance of wider vegetation clearance preferably) for relocation of temporary storage.</p> <p><u>Reptiles</u>- strimming of scrub and rough grassland and hand removal of suitable refuge features.</p> <p><u>Bats</u>- Implementation of bat mitigation measures required in advance of the main construction phase as detailed in licence/non-licence method statement.</p> <p><u>Trees</u> – Retained contiguous corridor of trees along the Trans Pennine Trail to maintain connectivity for fauna, including bats and willow tit</p> <p><u>Grassland (Dunford Bridge)</u> – delineate specified notable areas to be avoided by construction activity. Install protective membranes over notable grassland within works areas.</p> <p><u>Other Habitat Features/Landscape Features</u> – protect any water course features to be retained such as waterfalls.</p> | <p>detailed in licence/non-licence method statement.</p>                                                                                                                   | <p><u>Grassland</u>- Reinstatement and reseedling/replanting of grassland at Dunford Bridge. Rotovation of areas where membrane was deployed (if required).</p> <p><u>Birds (willow tit)</u>- reinstate features removed which are suitable for nesting willow tit (if not relocated previously) and provision of nest boxes for competing species.</p> <p><u>Other Habitat Features/Landscape Features</u> – Reinstatement/restoration of other habitat features/landscape elements such as stone walls and waterfall features. Partial reinstatement of drainage ditch feature.</p> | <p><u>Birds Monitoring (Willow Tit)</u>- in combination with monitoring along within Wogden Foot LWS (see below).</p> <p><u>Bat</u>- mitigation measures including monitoring to be agreed as part of licence (if required).</p> <p><u>Watercourses</u> – Watercourses monitored for a period of 5 years. If required, remedial works to be completed in consultation with the landowner</p> |
| Trans Pennine Trail Diversion (including River Don crossing and two bridges but excluding Trans Pennine | <p><u>Bats</u> – Survey of affected trees that have moderate or high potential. Preparation of licence application or non-licenced method statement as appropriate (if required).</p>                                                                                                                                                                                                                                        | <p><u>Reptiles</u>- strimming of scrub and rough grassland and hand removal of suitable refuge features.</p> <p><u>River Don</u> – delineate a buffer between SEC works and the River Don.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p><u>Other Fauna</u> - Where lighting is required during construction this should be sensitive / directional lighting directed away from the river wherever possible.</p> | <p><u>River Don/ Aquatic Habitats</u>- Reinstatement of bankside habitats disturbed by works related to the bridges.</p> <p><u>Grassland</u>- Reinstatement of habitats along the Trans</p>                                                                                                                                                                                                                                                                                                                                                                                           | <p><u>Watercourses</u> – Watercourses monitored for a period of 5 years, which will include inspection for signs of erosion/slumping of banks. If required, remedial works</p>                                                                                                                                                                                                               |

| Project Component                                                                                                                                                                      | Pre-Construction<br>(Section 2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Site Establishment<br>(Section 3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Construction<br>(Section 4) | Post Construction<br>(Section 5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Monitoring<br>(Section 6)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| Trail diversion within the LWS).                                                                                                                                                       | <p><u>Otter</u> - Pre-construction survey on sections to be affected by diversion (River Don crossings). Preparation of licence application if required.</p> <p><u>Other Habitat Features/Landscape Features</u> – Recording of stone walls and other features to be retained.</p>                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             | Pennine Trail diversion once removed. Likely to revert to agricultural/grazing use.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | to be completed in consultation with the landowner.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Construction of SEC within Wogden Foot LWS and associated construction/lay down areas, Pylon 4ZO158 removal area, and section of Trans Pennine Trail diversion within Wogden Foot LWS. | <p><u>Habitats (Botanical Survey)</u> - Pre-construction condition assessment survey to inform future monitoring/set an up to date baseline.</p> <p><u>Grassland (Seed Harvesting) Habitat mitigation strategy</u> to be programmed. Seed removal/hay cutting options to be undertaken in appropriate season (June/July) in advance of establishment of laydown/working areas.</p> <p><u>Otter</u>– Pre-construction survey on River Don within proximity to SEC (if not already conducted for other project components).</p> | <p><u>Habitat</u>– set out areas required for construction and fence off habitat out with these areas to avoid entry.</p> <p><u>Birds (willow tit)</u> - Removal of dead wood stumps and any features suitable to support nesting willow tit outside nesting season. Provision of alternative willow tit nest site features in unaffected areas away from working area.</p> <p><u>Habitats/ Grassland</u> - Ecological Clerk of Works (ECOW) to oversee establishment of laydown area. Installation of ground protection measures in laydown area. Soil translocation or re-seeding of grassland as appropriate.</p> <p><u>Scrub</u> – Translocation of mature scrub to retained habitats of LWS</p> <p><u>River Don</u> – delineate a buffer between SEC works and the River Don.</p> |                             | <p><u>Tree/ Scrub/ Grassland mosaic</u> – reinstatement of mosaic of habitats within Wogden Foot LWS to be reinstated to reflect balance of habitats lost. Vegetation will be of local provenance and would be subject to aftercare and ongoing maintenance.</p> <p><u>Mound Features</u> – establishment of mounds to re-create and enhance the post-industrial habitats of Wogden Foot LWS that provide habitats for notable invertebrates</p> <p><u>Birds (Willow Tit)</u> – Replacement of willow tit nest sites using re-instated or newly sourced stumps. Provision of nest box scheme to provide alternative nest sites for competing species</p> | <p><u>Grassland</u> – Suitably qualified botanist to monitor grassland condition, including scrub encroachment, in June – July. Inspection for signs of settlement / drainage issues. Remedial action and feedback to management plan as required.</p> <p><u>Birds (willow tit)</u>- Program of post-construction monitoring period for willow tit. Period to be agreed with stakeholders. The purpose is to review status of willow tit and use of habitat affected by Proposed Project in Wogden Foot and along the Trans Pennine Trail.</p> |

| Project Component                                             | Pre-Construction<br>(Section 2)                                                                                                                                                                                                                                                                                                                                                           | Site Establishment<br>(Section 3)                                                                    | Construction<br>(Section 4)                                   | Post Construction<br>(Section 5)                                                                                                                                                                                                                 | Monitoring<br>(Section 6)                                                                                                              |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
|                                                               |                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                      |                                                               | <u>Habitats/ Grassland</u> - Grassland habitat reinstated from the seed bank within stored topsoil assisted by harvested seed. The soil may also require preparatory rotavating.                                                                 |                                                                                                                                        |
| Construction of Pylon 4ZO157R                                 | <u>Otter</u> – Pre-construction survey on River Don within proximity to SEC (if not already conducted for other project components).<br><br><u>Other Habitat Features/ Landscape Features</u> – Recording of stone walls and other features to be retained.                                                                                                                               | <u>River Don</u> – delineate a buffer between Pylon 4ZO157 works and access route and the River Don. |                                                               | <u>Habitats</u> - Reinstatement of habitats along access tracks and within pylon construction working areas.                                                                                                                                     |                                                                                                                                        |
| Decommissioning of the existing SEC and pylon 4ZO164R removal | The Project-wide pre-construction ecology walkover survey will encompass OHL removal works areas. Where this is conducted more than 12 months prior to the start of OHL removal works a further walkover will be conducted. This will be undertaken to reaffirm the absence of badger setts, invasive plants and inform the mitigation actions to be conducted for the OHL removal phase. |                                                                                                      |                                                               | <u>Species rich grassland, woodland and scrub</u> – Establishment of grassland on nutrient-poor soils using harvested seed or seed mix of local provenance. Native trees and shrubs planted which would be subject to aftercare and maintenance. | <u>Habitats (Grassland)</u> - Suitably qualified botanist to monitor grassland condition, including scrub encroachment, in June – July |
| Pylon and OHL Removal (                                       | The Project-wide pre-construction ecology                                                                                                                                                                                                                                                                                                                                                 | <u>Western Moors LWS</u> – EcoW and Principal Contractor to set out                                  | <u>Flora and Fauna General</u> –EcoW supervision of potential | Habitats - Reinstatement of habitats along access tracks                                                                                                                                                                                         | <u>Western Moors LWS</u> - Monitoring will be                                                                                          |

| Project Component                                                                                                                   | Pre-Construction<br>(Section 2)                                                                                                                                                                                                                                                                                                                                                                                                                                             | Site Establishment<br>(Section 3)                                                                                                                                                    | Construction<br>(Section 4)                                                                                                                                                                                                                                                                        | Post Construction<br>(Section 5)                                                                                               | Monitoring<br>(Section 6)                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4ZO163 to 4ZO157)                                                                                                                   | <p>walkover survey will encompass OHL removal works areas. Where this is conducted more than 12month prior to the start of OHL removal works a further walkover will be conducted. This will be undertaken to reaffirm the absence of badger setts, invasive plants and inform the mitigation actions to be conducted for the OHL removal phase.</p> <p><u>Other Habitat Features/ Landscape Features</u> – Recording of stone walls and other features to be retained.</p> | <p>fencing of working area within moorland habitat of Western Moors</p> <p><u>Reptiles</u>- strimming of scrub and rough grassland and hand removal of suitable refuge features.</p> | <p>access routes required through sensitive habitats including those within Western Moors LWS. Micro-siting to avoid features/habitats of greater botanical interest will be adopted where possible. Monitoring of adverse weather on ground conditions.</p>                                       | <p>and within pylon removal working areas.</p> <p><u>Western Moors LWS</u> - Seeds not to be used within Western Moors LWS</p> | <p>completed by a suitably qualified botanist during June-July in each year. The condition of restored grassland will be assessed by determining the relative abundance and coverage of each species present.</p> |
| Northern access route (AP7) from Brook Hill Lane (excluding Bridge 1 and 2 as already covered under Trans Pennine Trail diversion). | <p>The Project-wide pre-construction ecology walkover survey will encompass this area. Where this is conducted more than 12 months prior to the start of OHL removal works a further walkover will be conducted. This will be undertaken to reaffirm the absence of badger setts, invasive plants and inform the mitigation actions.</p> <p><u>Nesting Birds</u> – Specific measures adopted to mitigate potential effects upon ground nesting birds</p>                    |                                                                                                                                                                                      | <p><u>Nesting Birds</u></p> <p>Measures to deter ground-nesting birds on the northern access route (i.e. fencing and ticker-tape as described in Section 3.8) will be maintained throughout the construction period. Monitoring by the ECoW during the construction period will be undertaken.</p> | <p><u>Habitats (General)</u> – All habitats to be reinstated to their original condition.</p>                                  |                                                                                                                                                                                                                   |

| Project Component                                        | Pre-Construction<br>(Section 2)                                                                                                                                                                                                                                                                                                                                                                                                                         | Site Establishment<br>(Section 3) | Construction<br>(Section 4) | Post Construction<br>(Section 5)                                                                                                                                                      | Monitoring<br>(Section 6)                                                      |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
|                                                          | <p>(curlew and lapwing) along access route. Removal of vegetation along access corridor prior to nesting season, fencing of corridor with use of 'ticker tape' and regular checks to re-affirm absence of nesting birds. Supervised micro-siting of track in the event that active nests are observed within the fenced area.</p> <p><u>Other Habitat Features/Landscape Features</u> – Recording of stone walls and other features to be retained.</p> |                                   |                             |                                                                                                                                                                                       |                                                                                |
| Off-site habitat improvement measures (under discussion) |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                   |                             | Off-site Rhododendron removal. Off-site tree planting. Planted trees would be subject to aftercare and maintenance. Improvement of existing plantation woodland and moorland habitat. | <u>Tree planting</u> - Post construction monitoring of off-site tree planting. |

## **9 IMPLEMENTATION**

### **9.1 Timetable**

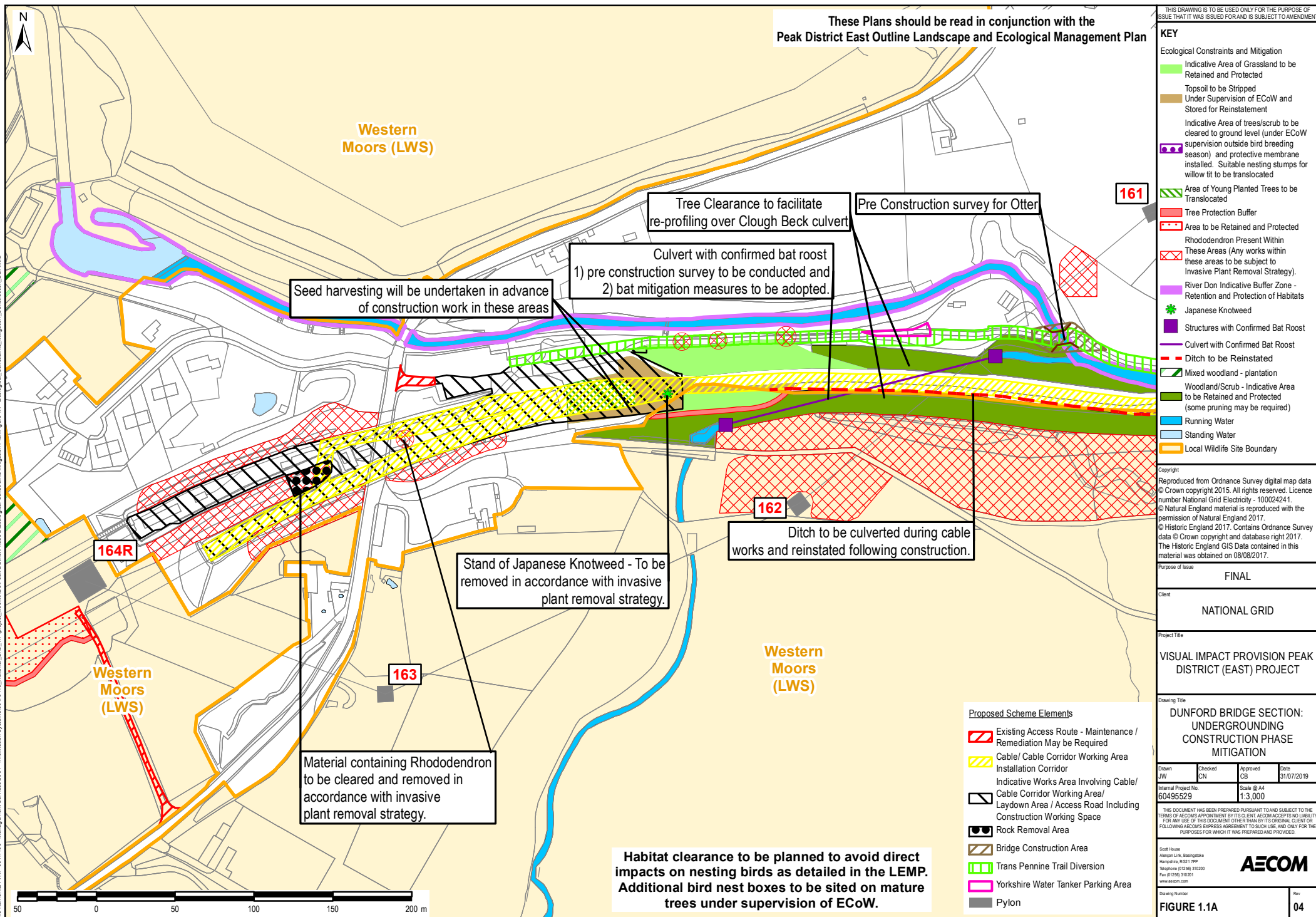
- 9.1.1 A detailed implementation timetable for all required mitigation measures will be produced once a construction start date has been confirmed and in conjunction with the Principal Contractor.
- 9.1.2 Ecological mitigation will commence prior to construction at the appropriate time for each of the identified species. Construction will comprise three main activities; civil and enabling works, mechanical and electrical build, and commissioning. The Trans Pennine Trail diversion and northern access road will be the first components to be constructed. Construction of the SEC will also commence early in the programme. The phasing of the reinstatement works will commence in the first appropriate planting season following site restoration.
- 9.1.3 Programmes for landscape maintenance, and ecological and landscape monitoring for years one to five (seven in Wogden Foot) following construction will be developed. Monitoring will generally focus on two elements; periodic condition assessments (landscape monitoring) and annual botanical surveys (ecological monitoring).
- 9.1.4 Aftercare and maintenance/management activities will include replacement of defective plant/grass areas, weed control, pruning, watering and feeding to be undertaken in reinstated and newly planted areas on an ongoing basis over the five year period. Maintenance is expected to cease in areas where successful reinstatement has been achieved.
- 9.1.5 The maintenance and monitoring programmes will be regularly reviewed by National Grid and consultees to ensure they are fit for purposes given the level of reinstatement.

## 10 REFERENCES

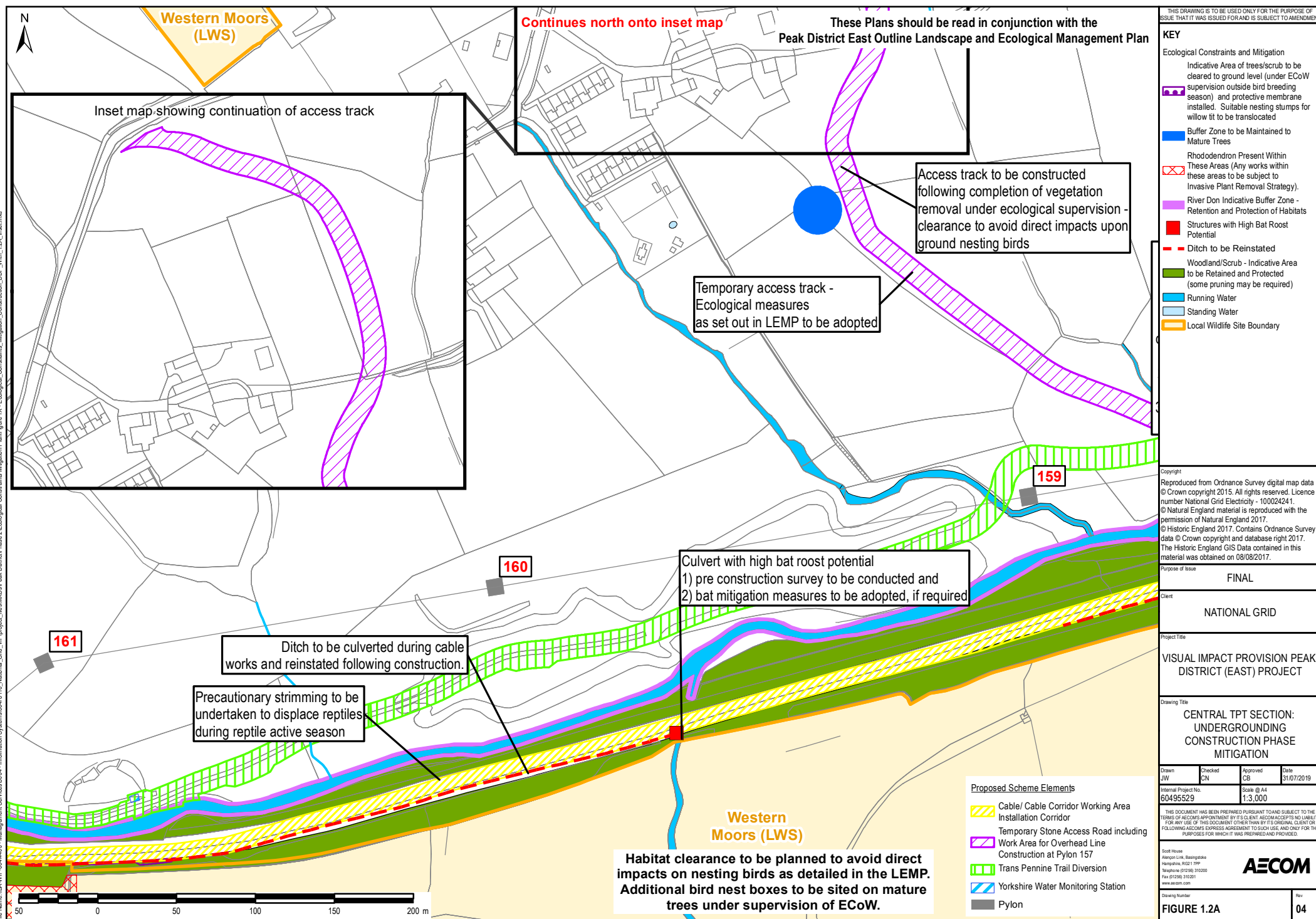
- AECOM (2017) Peak District (East) Visual Impact Provision (VIP) Project Appendix 7E Bat Survey Report. May 2017.
- AECOM (2016) Peak District (East) Visual Impact Provision (VIP) Project Appendix 7B Breeding Bird Survey Report. March 2017.
- AECOM (2016) Peak District (East) Visual Impact Provision (VIP) Project Appendix 7F Reptile Report. December 2016.
- AECOM (2016) Peak District (East) Visual Impact Provision (VIP) Project Appendix 7A Botanical Survey Report. July 2017.
- AECOM (2016) Peak District (East) Visual Impact Provision (VIP) Project Appendix 7D Badger Survey Report Contains Confidential Species Information. December 2016.
- AECOM (2016) Peak District (East) Visual Impact Provision (VIP) Project Appendix 7G Water Vole and Otter Report. December 2016.
- AECOM (2016) Peak District (East) Visual Impact Provision (VIP) Project Appendix 7H Invertebrate Report. January 2017.
- AECOM (2016) Peak District (East) Visual Impact Provision (VIP) Project Appendix 7C Great Crested Newt Survey Report. June 2017.
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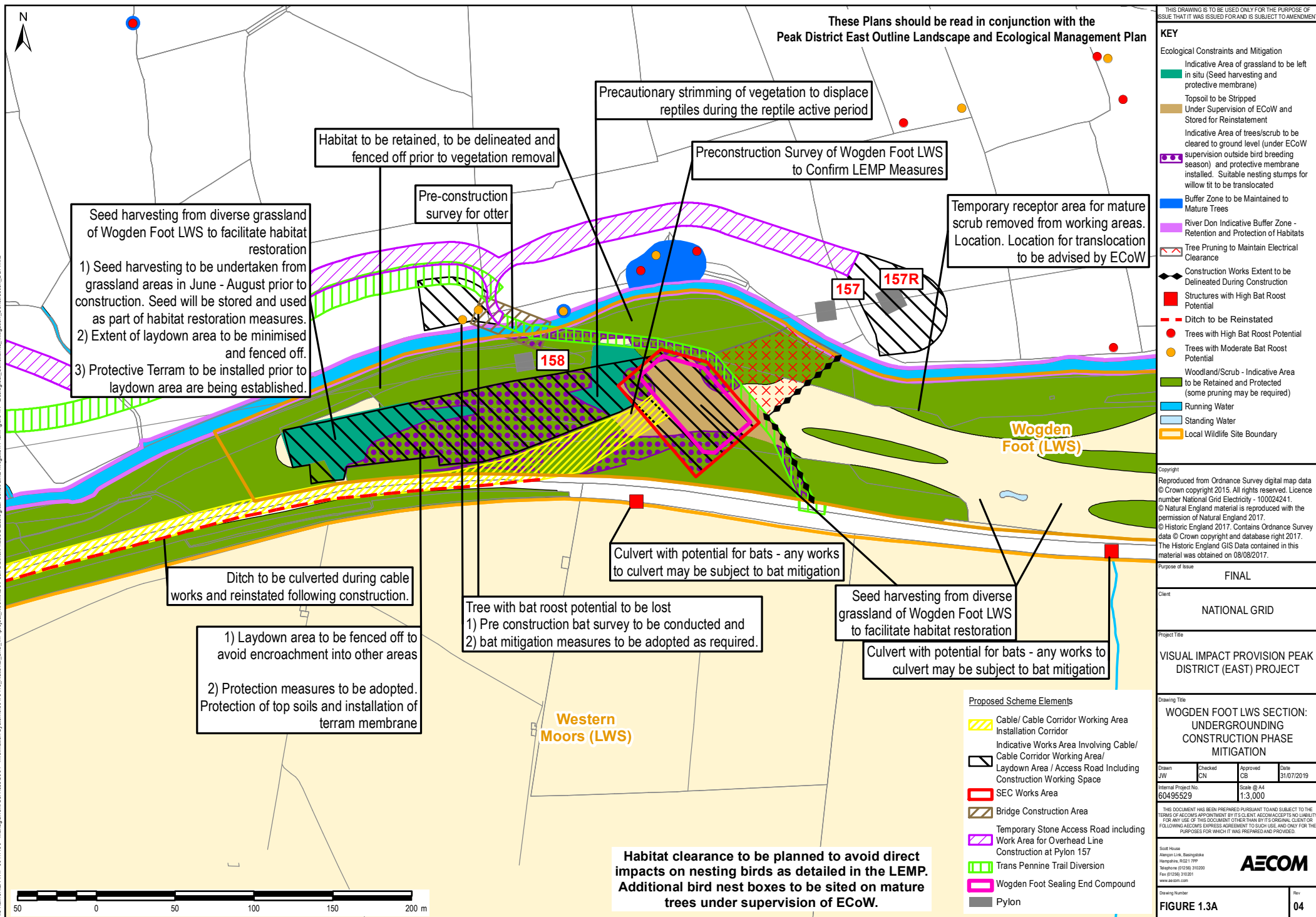
## Appendix 1: Figures

- Figure 1.1A- 1.3A: Ecological Mitigation During Construction (Cable Undergrounding Phase)
- Figure 2.1A- 2.4A: Ecological Mitigation During Construction (OHL Removal Phase)
- Figure PDD-33492-LAY-FIGURE 2.4: Combined Working Areas within Wogden Foot Local Wildlife Site
- P10727-00-001-105, P10727-00-001-106, P10727-00-001-107 – Landscape Masterplans

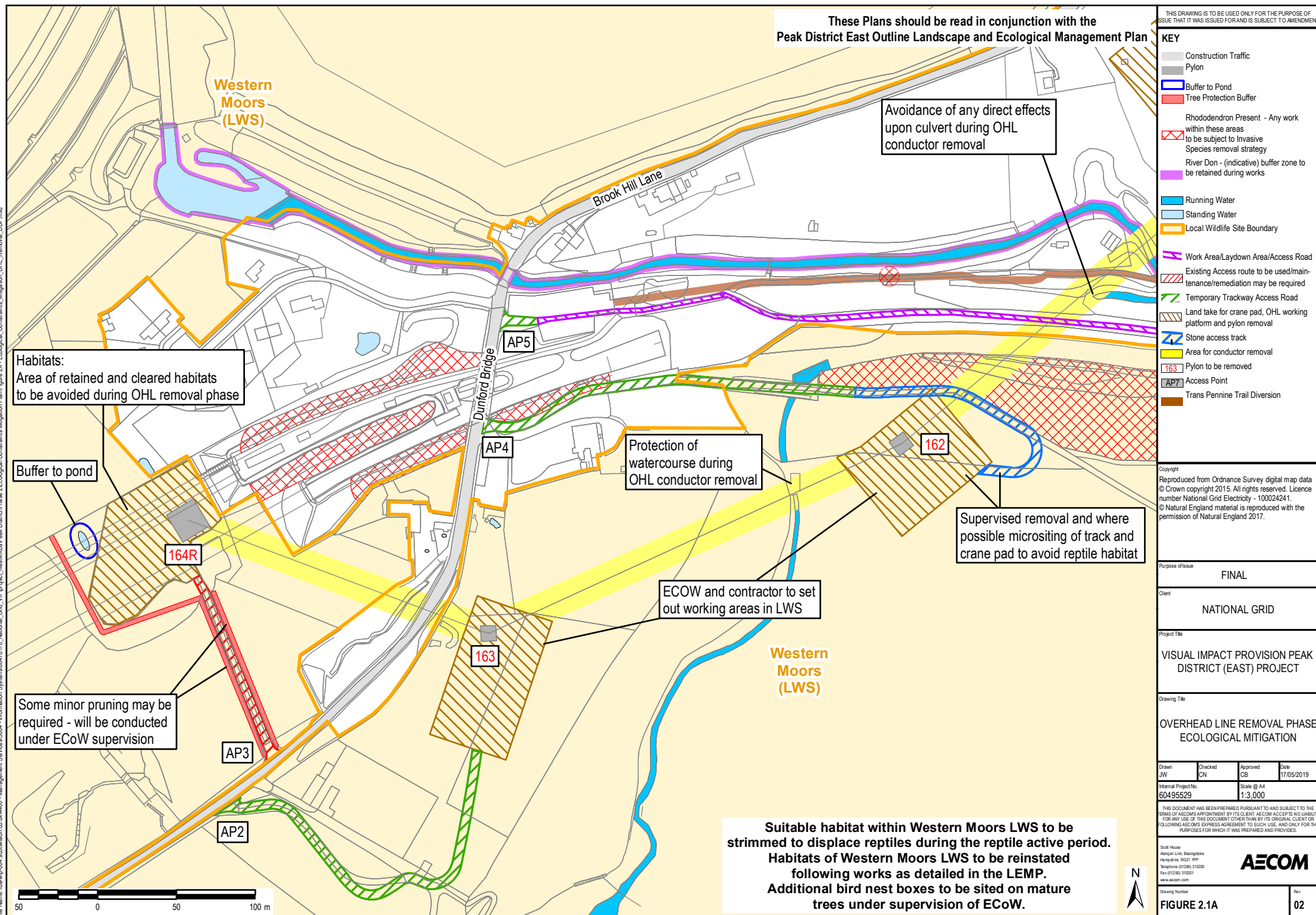


File Name: IBA-WP-0044400 - Management Services 6004 - Information Systems\Peak District\Phase 2\Ecological Constraints Mitigation Construction DGP - Wm. 1.2A - final.mxd





File Name: I:\aawp-004\_southwin.co.uk\4400 - Management Services\5004 - Information Systems\Peak District Phase 2\Ecological Constraints Mitigation Plan\Figure 2X - Ecological Constraints Mitigation OHL Removal DDP.mxd

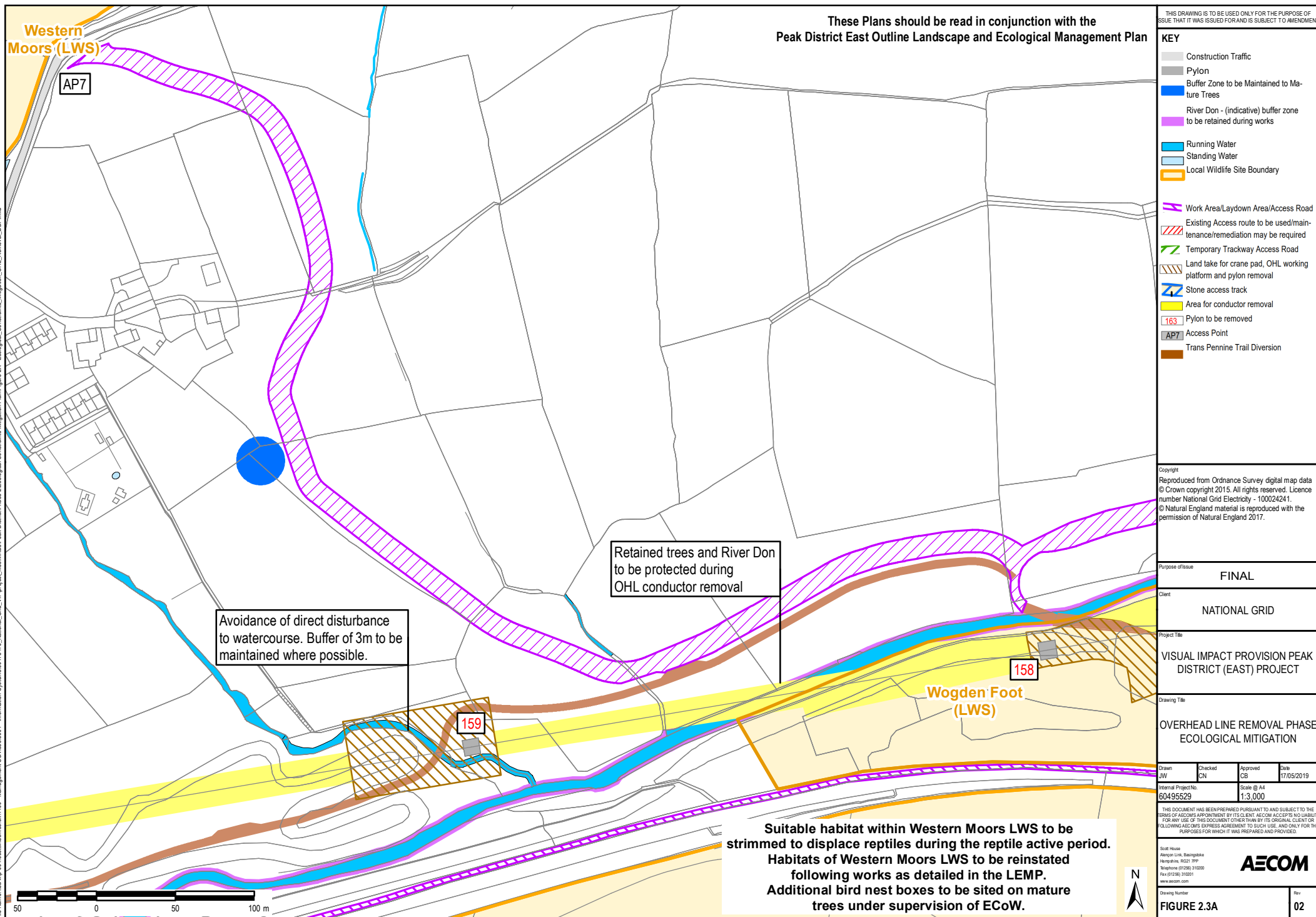


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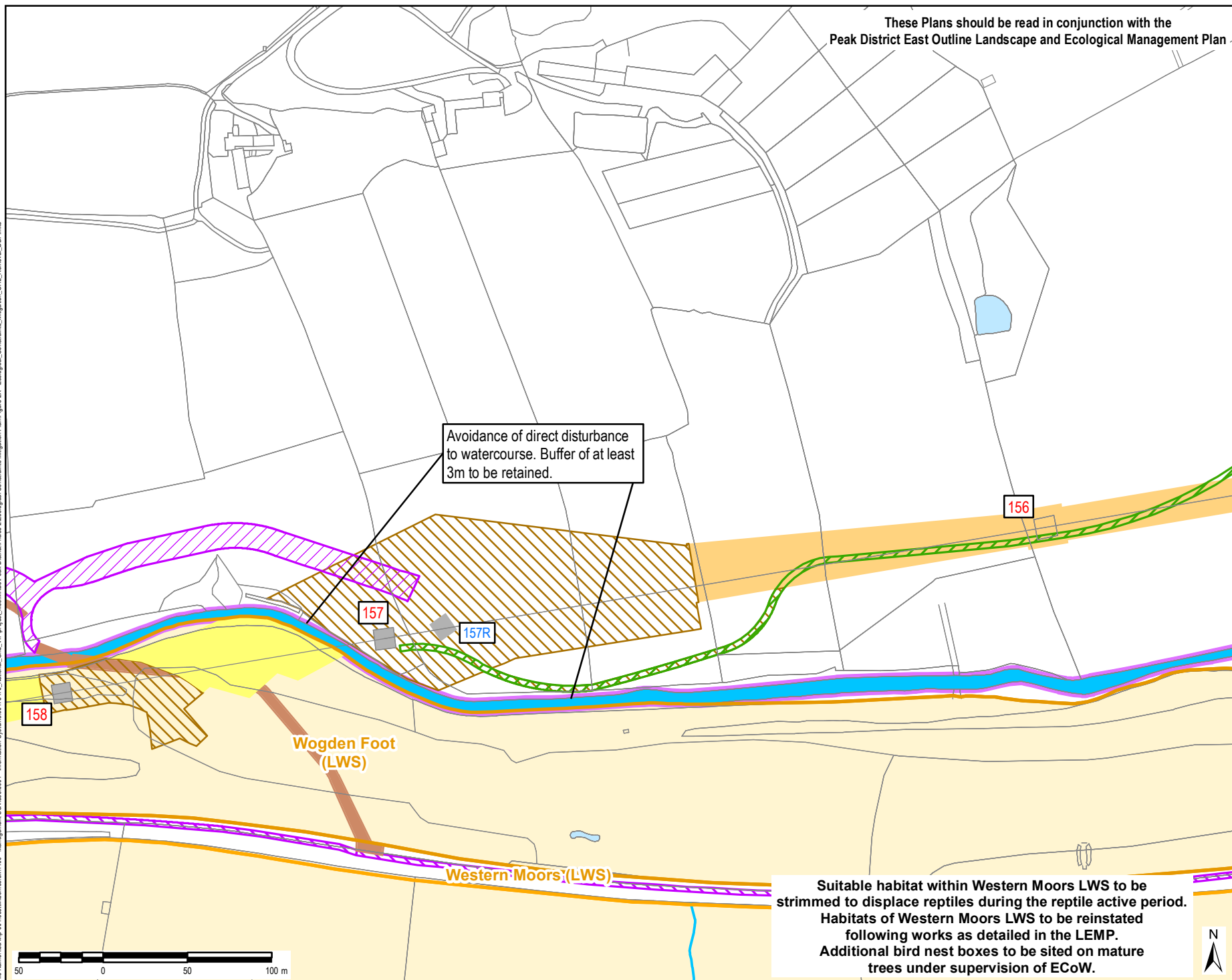
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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------|
| <b>KEY</b>                                                                                                                                                                                                                                                                                                                         |                                                                                                          |                       |                             |
|                                                                                                                                                                                                                                                 | Construction Traffic                                                                                     |                       |                             |
|                                                                                                                                                                                                                                                 | Pylon                                                                                                    |                       |                             |
|                                                                                                                                                                                                                                                 | Rhododendron Present - Any work within these areas is to be subject to Invasive Species removal strategy |                       |                             |
|                                                                                                                                                                                                                                                 | River Don - (indicative) buffer zone to be retained during works                                         |                       |                             |
|                                                                                                                                                                                                                                                 | Running Water                                                                                            |                       |                             |
|                                                                                                                                                                                                                                                 | Standing Water                                                                                           |                       |                             |
|                                                                                                                                                                                                                                                 | Local Wildlife Site Boundary                                                                             |                       |                             |
|                                                                                                                                                                                                                                                 | Work Area/Laydown Area/Access Road                                                                       |                       |                             |
|                                                                                                                                                                                                                                                 | Existing Access route to be used/maintenance/remediation may be required                                 |                       |                             |
|                                                                                                                                                                                                                                                 | Temporary Trackway Access Road                                                                           |                       |                             |
|                                                                                                                                                                                                                                                 | Land take for crane pad, OHL working platform and pylon removal                                          |                       |                             |
|                                                                                                                                                                                                                                                 | Stone access track                                                                                       |                       |                             |
|                                                                                                                                                                                                                                                 | Area for conductor removal                                                                               |                       |                             |
|                                                                                                                                                                                                                                                 | Pylon to be removed                                                                                      |                       |                             |
|                                                                                                                                                                                                                                                 | Access Point                                                                                             |                       |                             |
|                                                                                                                                                                                                                                                 | Trans Pennine Trail Diversion                                                                            |                       |                             |
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| <p>Purpose/Issue</p> <p><b>FINAL</b></p>                                                                                                                                                                                                                                                                                           |                                                                                                          |                       |                             |
| <p>Client</p> <p><b>NATIONAL GRID</b></p>                                                                                                                                                                                                                                                                                          |                                                                                                          |                       |                             |
| <p>Project Title</p> <p><b>VISUAL IMPACT PROVISION PEAK DISTRICT (EAST) PROJECT</b></p>                                                                                                                                                                                                                                            |                                                                                                          |                       |                             |
| <p>Drawing Title</p> <p><b>OVERHEAD LINE REMOVAL PHASE ECOLOGICAL MITIGATION</b></p>                                                                                                                                                                                                                                               |                                                                                                          |                       |                             |
| Drawn<br>JW                                                                                                                                                                                                                                                                                                                        | Checked<br>CN                                                                                            | Approved<br>CB        | Date<br>17/05/2019          |
| Internal Project No.<br>60495529                                                                                                                                                                                                                                                                                                   |                                                                                                          | Scale @ A4<br>1:3,000 |                             |
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| <p>Scot Route<br/>Ayrton Link, Eastingdale<br/>Haggsdale, RD21 7PP<br/>Telephone (01236) 310200<br/>Fax (01236) 310201<br/>www.aecom.com</p> <p><b>AECOM</b></p>                                                                                                                                                                   |                                                                                                          |                       | <p>Rev</p> <p><b>02</b></p> |
| <p>Drawing Number</p> <p><b>FIGURE 2.2A</b></p>                                                                                                                                                                                                                                                                                    |                                                                                                          |                       |                             |

**Suitable habitat within Western Moors LWS to be  
strimmed to displace reptiles during the reptile active period.  
Habitats of Western Moors LWS to be reinstated  
following works as detailed in the LEMP.  
Additional bird nest boxes to be sited on mature  
trees under supervision of ECoW.**

File Name: I:\aewp-004\_south\on co.uk\4400 - Management Services\5004 - Information Systems\Peak District Phase 2\Ecological Constraints Mitigation Plan\Figure 2X - Ecological Constraints Mitigation\_OHL Removal\_DDP.mxd



File Name: l:\aewp-004\_southwin.co.uk\4400 - Management Services\5004 - Information Systems\60178 116\_National\_Grid\_V1\Project\_116\MXDs\Peak District Phase 2\Ecological Constraints Mitigation Plant\Figure 2X - Ecological Constraints Mitigation\_OHL Removal\_DDP.mxd



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**KEY**

- Pylon
- River Don - (indicative) buffer zone to be retained during works
- Running Water
- Standing Water
- Local Wildlife Site Boundary
- Work Area/Laydown Area/Access Road
- Existing Access route to be used/maintenance/remediation may be required
- Temporary Trackway Access Road
- Land take for crane pad, OHL working platform and pylon removal
- Stone access track
- Area for conductor removal
- Pylon to be removed
- Access Point
- Trans Pennine Trail Diversion

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Purpose of Issue  
**FINAL**

Client  
**NATIONAL GRID**

Project Title  
**VISUAL IMPACT PROVISION PEAK DISTRICT (EAST) PROJECT**

Drawing Title  
**OVERHEAD LINE REMOVAL PHASE ECOLOGICAL MITIGATION**

|                                  |               |                       |                    |
|----------------------------------|---------------|-----------------------|--------------------|
| Drawn<br>JW                      | Checked<br>CN | Approved<br>CM        | Date<br>17/05/2019 |
| Internal Project No.<br>60495529 |               | Scale @ A4<br>1:3,000 |                    |

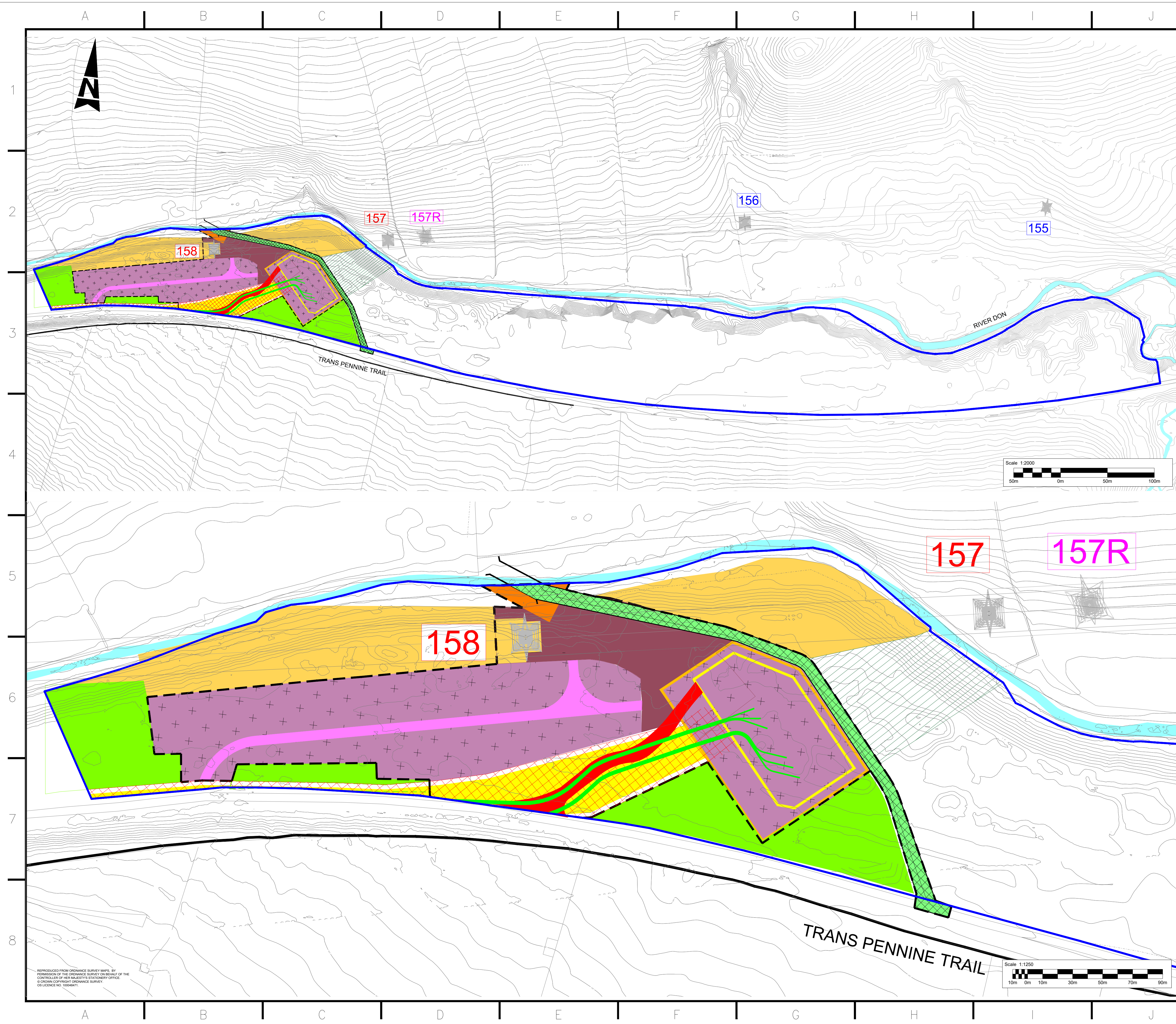
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**AECOM**

Drawing Number  
**FIGURE 2.4A**

Rev  
**02**



- NOTES
1. ALL MEASUREMENTS ARE IN METRES UNLESS OTHERWISE STATED.
  2. DURING INSTALLATION OF NEW OHL CONDUCTORS FROM TOWER 157, AN ALTERNATIVE ROUTE FOR THE TPT DIVERSION WILL BE REQUIRED AROUND THE SEC FOR APPROXIMATELY 2 WEEKS. THIS WILL BE CONFIRMED BY THE CONTRACTOR BUT WILL BE ACCOMMODATED WITHIN THE WORKING AREA SHOWN.

|                                                                                                                         |                                                                                                                                                           |         |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| KEY:                                                                                                                    |                                                                                                                                                           |         |
| LOCAL WILDLIFE SITE BOUNDARY (TOTAL 116748m²) [Solid Blue Line]                                                         |                                                                                                                                                           |         |
| INDICATIVE WORKING AREA INCLUDING CABLE / ACCESS ROAD AND CONSTRUCTION WORKING SPACE (TOTAL 17546m²) [Dashed Blue Line] |                                                                                                                                                           |         |
| [Orange Box]                                                                                                            | INDICATIVE AREA REQUIRED TO CONSTRUCT TEMPORARY BRIDGE                                                                                                    | 299m²   |
| [Green Box]                                                                                                             | TRANS PENNINE TRAIL DIVERSION                                                                                                                             | 1337m²  |
| [Yellow Box]                                                                                                            | INDICATIVE WORKS AREA INVOLVING CABLE / ACCESS ROAD INCLUDING CONSTRUCTION WORKING SPACE                                                                  | 2356m²  |
| [Pink Box]                                                                                                              | INDICATIVE ACCESS ROAD (4m WIDE)                                                                                                                          | 931m²   |
| [Orange Box]                                                                                                            | SEC REQUIRED CONSTRUCTION AREA                                                                                                                            | 3771m²  |
| [Purple Box]                                                                                                            | INDICATIVE WORKS/LAYDOWN AREA                                                                                                                             | 11730m² |
| [Red Box]                                                                                                               | PERMANENT ACCESS ROAD (5m WIDE)                                                                                                                           | 580m²   |
| INDICATIVE WORKING AREA REQUIRED FOR OVERHEAD LINE REMOVAL (TOTAL 5441m²)                                               |                                                                                                                                                           |         |
| [Dark Purple Box]                                                                                                       | INDICATIVE OVERHEAD LINE WORK AREA                                                                                                                        | 2863m²  |
| [Green Box]                                                                                                             | INDICATIVE TREE PRUNING AREA TO ENABLE ELECTRICAL CLEARANCE TO BE ACHIEVED FROM THE NEW DOWNLEAD SPAN 157R - GANTRIES.                                    | 2323m²  |
| [Orange Box]                                                                                                            | AREA FOR CONDUCTOR REMOVAL. CONDUCTOR TO BE LOWERED AND CUT INTO SECTIONS TO ENABLE REMOVAL FROM SITE. NO TREES PLANNED TO BE REMOVED DURING THESE WORKS. | N/A     |
| OTHER AREAS                                                                                                             |                                                                                                                                                           |         |
| [Yellow Box]                                                                                                            | SEALING END COMPOUND BUILT FOOTPRINT                                                                                                                      | 2193m²  |
| [Green Line]                                                                                                            | INDICATIVE CABLE ROUTE                                                                                                                                    |         |
| [Green Box]                                                                                                             | TREES TO BE RETAINED                                                                                                                                      |         |
| [Red Box]                                                                                                               | PYLON TO BE REMOVED                                                                                                                                       |         |
| [Pink Box]                                                                                                              | NEW PYLON                                                                                                                                                 |         |
| [Black Line]                                                                                                            | LOCATION OF TEMPORARY BRIDGE                                                                                                                              |         |
| [Red Box]                                                                                                               | NO TREE ZONE                                                                                                                                              |         |
| [Blue Line]                                                                                                             | RIVER DON                                                                                                                                                 |         |

|     |                                   |       |       |       |          |
|-----|-----------------------------------|-------|-------|-------|----------|
| P4  | MODIFIED IN LINE WITH NG COMMENTS | MAC   | CN    | CN    | 31.05.19 |
| P3  | MODIFIED IN LINE WITH NG COMMENTS | MAC   | CN    | CN    | 20.05.19 |
| P2  | MODIFIED IN LINE WITH NG COMMENTS | MAC   | CN    | CN    | 14.05.19 |
| P1  | FIRST ISSUE                       | MAC   | CN    | CN    | 30.04.19 |
| Rev | Description                       | Cre'd | Chk'd | App'd | Date     |

Master Scheme No:  
33492

Sub-Scheme No:  
-

Site:  
400KV OHL

Scheme Name:  
VISUAL IMPACT PROVISION - WORK PACKAGE 1  
PEAK DISTRICT NATIONAL PARK

Document Title:  
  
COMBINED WORKING AREAS WITHIN WOGDEN  
FOOT LOCAL WILDLIFE SITE

Created by:  
M.CONWAY

Date:  
30/04/19

Checked by:  
C.NUNN

Date:  
30/04/19

Approved by:  
C.NUNN

Date:  
30/04/19

Development Eng:  
D.SPURR

Document Type:  
2D DRAWING

Scale:  
AS SHOWN

Format:  
A1

Sheet(s):  
1 OF 1

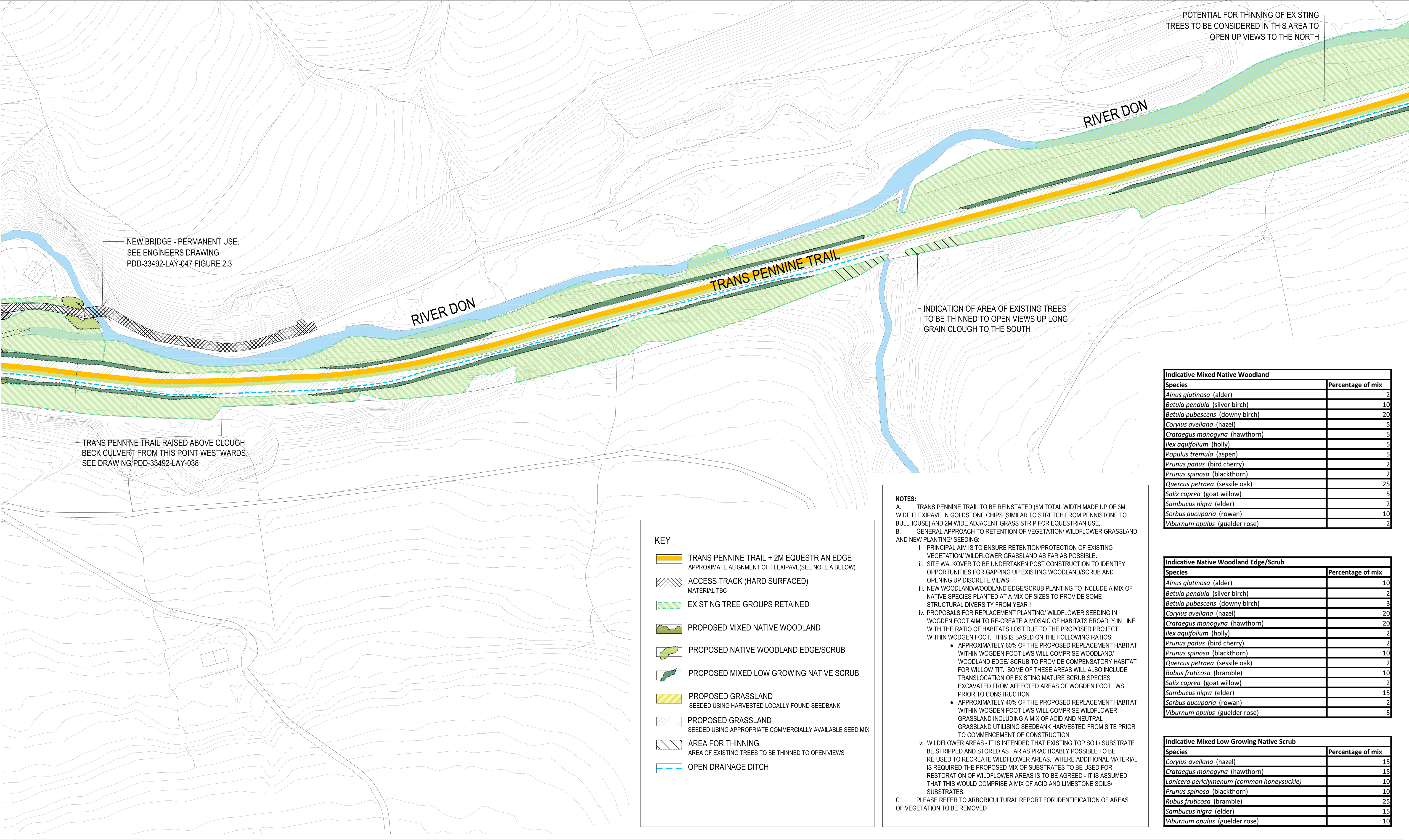
Rev:  
P4

National Grid Document Number:  
PDD-33492-LAY-FIGURE 2.4

FEED Document Number:

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- KEY**
- TRANS PENNINE TRAIL + 2M EQUESTRIAN EDGE  
APPROXIMATE ALIGNMENT OF FLEXIPAVE(SEE NOTE A BELOW)
  - ACCESS TRACK (HARD SURFACED)  
MATERIAL TBC
  - EXISTING TREE GROUPS RETAINED
  - PROPOSED MIXED NATIVE WOODLAND
  - PROPOSED NATIVE WOODLAND EDGE/SCRUB
  - PROPOSED MIXED LOW GROWING NATIVE SCRUB
  - PROPOSED GRASSLAND  
SEEDED USING HARVESTED LOCALLY FOUND SEEDBANK
  - PROPOSED GRASSLAND  
SEEDED USING APPROPRIATE COMMERCIALY AVAILABLE SEED MIX
  - AREA FOR THINNING  
AREA OF EXISTING TREES TO BE THINNED TO OPEN VIEWS
  - OPEN DRAINAGE DITCH

**NOTES:**

A. TRANS PENNINE TRAIL TO BE REINSTATED (5M TOTAL WIDTH MADE UP OF 3M WIDE FLEXIPAVE IN GOLDSTONE CHIPS (SIMILAR TO STRETCH FROM PENNISTONE TO BULLHOUSE) AND 2M WIDE ADJACENT GRASS STRIP FOR EQUESTRIAN USE.

B. GENERAL APPROACH TO RETENTION OF VEGETATION/ WILDFLOWER GRASSLAND AND NEW PLANTING/ SEEDING:

i. PRINCIPAL AIM IS TO ENSURE RETENTION/PROTECTION OF EXISTING VEGETATION/ WILDFLOWER GRASSLAND AS FAR AS POSSIBLE.

ii. SITE WALKOVER TO BE UNDERTAKEN POST CONSTRUCTION TO IDENTIFY OPPORTUNITIES FOR GAPPING UP EXISTING WOODLAND/SCRUB AND OPENING UP DISCRETE VIEWS

iii. NEW WOODLAND/WOODLAND EDGE/SCRUB PLANTING TO INCLUDE A MIX OF NATIVE SPECIES PLANTED AT A MIX OF SIZES TO PROVIDE SOME STRUCTURAL DIVERSITY FROM YEAR 1

iv. PROPOSALS FOR REPLACEMENT PLANTING/ WILDFLOWER SEEDING IN WODGEN FOOT AIM TO RE-CREATE A MOSAIC OF HABITATS BROADLY IN LINE WITH THE RATIO OF HABITATS LOST DUE TO THE PROPOSED PROJECT WITHIN WODGEN FOOT. THIS IS BASED ON THE FOLLOWING RATIOS:

- APPROXIMATELY 60% OF THE PROPOSED REPLACEMENT HABITAT WITHIN WODGEN FOOT LWS WILL COMPRISE WOODLAND/ WOODLAND EDGE/ SCRUB TO PROVIDE COMPENSATORY HABITAT FOR WILLOW TIT. SOME OF THESE AREAS WILL ALSO INCLUDE TRANSLOCATION OF EXISTING MATURE SCRUB SPECIES EXCAVATED FROM AFFECTED AREAS OF WODGEN FOOT LWS PRIOR TO CONSTRUCTION.
- APPROXIMATELY 40% OF THE PROPOSED REPLACEMENT HABITAT WITHIN WODGEN FOOT LWS WILL COMPRISE WILDFLOWER GRASSLAND INCLUDING A MIX OF ACID AND NEUTRAL GRASSLAND UTILISING SEEDBANK HARVESTED FROM SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

v. WILDFLOWER AREAS - IT IS INTENDED THAT EXISTING TOP SOIL/ SUBSTRATE BE STRIPPED AND STORED AS FAR AS PRACTICABLY POSSIBLE TO BE RE-USED TO RECREATE WILDFLOWER AREAS. WHERE ADDITIONAL MATERIAL IS REQUIRED THE PROPOSED MIX OF SUBSTRATES TO BE USED FOR RESTORATION OF WILDFLOWER AREAS IS TO BE AGREED - IT IS ASSUMED THAT THIS WOULD COMPRISE A MIX OF ACID AND LIMESTONE SOILS/ SUBSTRATES.

C. PLEASE REFER TO ARBORICULTURAL REPORT FOR IDENTIFICATION OF AREAS OF VEGETATION TO BE REMOVED

| Indicative Mixed Native Woodland      |                   |
|---------------------------------------|-------------------|
| Species                               | Percentage of mix |
| <i>Alnus glutinosa</i> (alder)        | 2                 |
| <i>Betula pendula</i> (silver birch)  | 10                |
| <i>Betula pubescens</i> (downy birch) | 20                |
| <i>Corylus avellana</i> (hazel)       | 5                 |
| <i>Crataegus monogyna</i> (hawthorn)  | 5                 |
| <i>Ilex aquifolium</i> (holly)        | 5                 |
| <i>Populus tremula</i> (aspen)        | 5                 |
| <i>Prunus padus</i> (bird cherry)     | 2                 |
| <i>Prunus spinosa</i> (blackthorn)    | 2                 |
| <i>Quercus petraea</i> (sessile oak)  | 25                |
| <i>Salix caprea</i> (goat willow)     | 5                 |
| <i>Sambucus nigra</i> (elder)         | 2                 |
| <i>Sorbus aucuparia</i> (rowan)       | 10                |
| <i>Viburnum opulus</i> (guelder rose) | 2                 |

| Indicative Native Woodland Edge/Scrub |                   |
|---------------------------------------|-------------------|
| Species                               | Percentage of mix |
| <i>Alnus glutinosa</i> (alder)        | 10                |
| <i>Betula pendula</i> (silver birch)  | 2                 |
| <i>Betula pubescens</i> (downy birch) | 3                 |
| <i>Corylus avellana</i> (hazel)       | 20                |
| <i>Crataegus monogyna</i> (hawthorn)  | 20                |
| <i>Ilex aquifolium</i> (holly)        | 2                 |
| <i>Prunus padus</i> (bird cherry)     | 2                 |
| <i>Prunus spinosa</i> (blackthorn)    | 10                |
| <i>Quercus petraea</i> (sessile oak)  | 2                 |
| <i>Rubus fruticosus</i> (bramble)     | 10                |
| <i>Salix caprea</i> (goat willow)     | 2                 |
| <i>Sambucus nigra</i> (elder)         | 15                |
| <i>Sorbus aucuparia</i> (rowan)       | 2                 |
| <i>Viburnum opulus</i> (guelder rose) | 5                 |

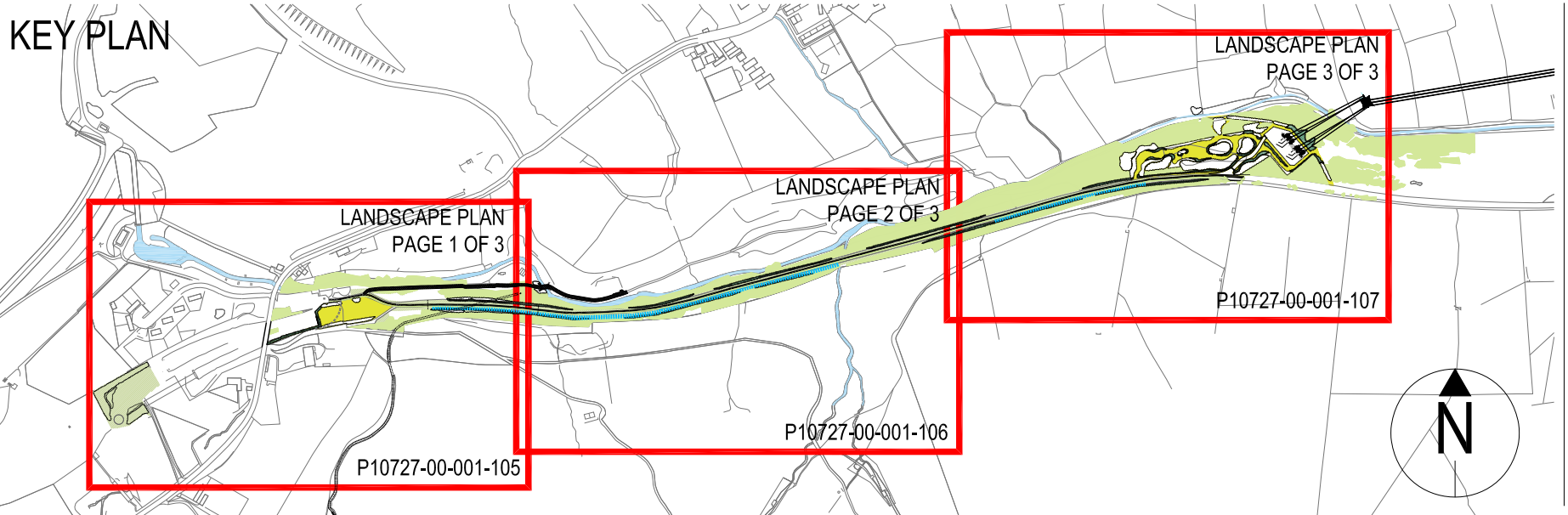
| Indicative Mixed Low Growing Native Scrub         |                   |
|---------------------------------------------------|-------------------|
| Species                                           | Percentage of mix |
| <i>Corylus avellana</i> (hazel)                   | 15                |
| <i>Crataegus monogyna</i> (hawthorn)              | 15                |
| <i>Lonicera periclymenum</i> (common honeysuckle) | 10                |
| <i>Prunus spinosa</i> (blackthorn)                | 10                |
| <i>Rubus fruticosus</i> (bramble)                 | 25                |
| <i>Sambucus nigra</i> (elder)                     | 15                |
| <i>Viburnum opulus</i> (guelder rose)             | 10                |

| rev | details                                              | by | date     |
|-----|------------------------------------------------------|----|----------|
| 01  | Alterations following comments                       | RH | 28.11.18 |
| 02  | Alterations following comments                       | RG | 28.11.18 |
| 03  | Layout adjusted to accommodate cable installation    | NG | 26.03.19 |
| 04  | Issue for Planning: Additional comments incorporated | NG | 01.04.19 |
| 05  | Issue for Planning: Text and and hatch revisions     | KH | 24.07.19 |
|     |                                                      |    |          |
|     |                                                      |    |          |
|     |                                                      |    |          |
|     |                                                      |    |          |
|     |                                                      |    |          |

**Notes**

- Do not scale from drawing, use figured dimensions only.
- All dimensions to be checked onsite.
- Topography data is taken from drawings by RSK and Siemens.

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Project title  
**Visual Impact Provision (VIP)  
Peak District (East) Project**

Drawing title  
**Landscape Masterplan (2 of 3)**

Drawing number  
**P10727-00-001-106 05**

Revision

Drawing Status  
**FOR PLANNING**

Date  
30.10.18

Scale  
1:1000 @ A1

Drawn  
RH

Checked  
RG

NationalGrid

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## Appendix 2: Proposed Schedule of Responsibilities

| Item | Task                                                              | LEMP Section Ref                   | Phase relevant to | Timing restriction                                                                                                        | Anticipated date required based on contract award          | Responsibility                                                                                                                                                                                                                                                                                                                                                                                   |
|------|-------------------------------------------------------------------|------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | Appoint ECoW                                                      | 1.7, 4.2.1                         | All               | At contract award                                                                                                         | April 2020                                                 | Principal Contractor                                                                                                                                                                                                                                                                                                                                                                             |
| 2.   | Pre-Construction Walkover (landscape features)                    | 2.3.19, 2.4.5, 2.6.2, 2.8.4, 2.9.4 | Pre-Construction  | Advised to be undertaken 6 months prior to start on site                                                                  | Required at varying stages depending on area of work.      | Principal Contractor (including LCoW)                                                                                                                                                                                                                                                                                                                                                            |
| 3.   | Pre-construction walkover (Ecological)                            | 2.2.1, 2.7.3, 2.8.2                | Pre-Construction  | Advised to be undertaken 6 months prior to start on site in each area in case any protected species licences are required | Required at varying stages depending on area of work.      | Anticipated that National Grid will undertake at:<br><br>Dunford Bridge compound; northern access road; and Trans Pennine Trail diversion and bridges.<br>Then handed over to the Principal Contractor (including ECoW) who would undertake at:<br><br>All other areas including Trans Pennine Trail, Wogden Foot, proposed SEC site, existing SEC sites, existing OHL pylons and access tracks. |
| 4.   | Rhododendron removal at Dunford Bridge compound (required if rock | 2.3.1 – 2.3.7 (see also 3.3.1,     | Pre-construction  | Minimum of 6 months prior to construction. Removal can be done any time although                                          | Survey August 2019<br><br>Rhododendron removal Winter 2019 | National Grid to carry out survey and remove if required.                                                                                                                                                                                                                                                                                                                                        |

| Item | Task                                                               | LEMP Section Ref        | Phase relevant to | Timing restriction                                                                                               | Anticipated date required based on contract award                                                                                                   | Responsibility                                                                                                                                                                       |
|------|--------------------------------------------------------------------|-------------------------|-------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | removal is needed) and Japanese knotweed removal at Dunford Bridge | 4.3.1, 5.3.1 and 6.3.1) |                   | preferable September – March to avoid conflict with nesting birds (rhododendron only)                            | Japanese knotweed removal<br>May – September 2020                                                                                                   |                                                                                                                                                                                      |
| 5.   | Bat Surveys at confirmed and potential roost sites, inc trees      | 2.3.8, 2.4.1, 3.11      | Pre-construction  | Between May – September                                                                                          | Survey May - September 2019<br>Survey May – September 2020                                                                                          | 2019 survey (National Grid)<br>2020 survey (Principal Contractor) (including ECoW)                                                                                                   |
| 6.   | Bat licence application                                            | 2.3.9                   | All               | Licence application (if required) or method statement approximately 6 months prior to start on site in that area | If required for Trans Pennine Trail diversion, bridges or northern access road January 2020<br>If required for cable installation or SEC April 2020 | If required for Trans Pennine Trail diversion, bridges or northern access road - National Grid<br>If required for cable installation or SEC – Principal Contractor (including ECoW). |
| 7.   | Implementation of Bat mitigation measures (if required)            | 2.3.9                   | All               | To be confirmed                                                                                                  | Implementation of Method Statement/Licence                                                                                                          | Principal Contractor (including ECoW)                                                                                                                                                |
| 8.   | Seed harvesting                                                    | 2.3.12, 2.5.3           | All               | June – end of August                                                                                             | Summer 2019<br>Summer 2020                                                                                                                          | 2019 – National Grid<br>2020 – Principal Contractor (including ECoW)                                                                                                                 |

| Item | Task                                                                                                                                                                                                   | LEMP Section Ref                                                 | Phase relevant to                | Timing restriction                                                                                                                               | Anticipated date required based on contract award                                  | Responsibility                                                                                                                                                |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9.   | Otter surveys                                                                                                                                                                                          | 2.4.3, 2.5.4                                                     | Pre-construction                 | Can be conducted year round.<br><br>Advised to be undertaken 6 months in advance of the commencement of each stage of works where applicable.    | February 2020                                                                      | National Grid                                                                                                                                                 |
| 10.  | Botanical survey of Wogden foot                                                                                                                                                                        | 2.5.1                                                            | Pre-construction                 | June – end July in year prior to start of construction works.                                                                                    | June 2020                                                                          | Principal Contractor (including ECoW)                                                                                                                         |
| 11.  | Defining and maintaining working areas, erection of construction fencing, buffer zones around trees, water features (waterfall, ditches), 5m exclusion zone of R. Don, protection of retained habitats | 3.2.2, 3.2.6, 3.3.14, 3.3.17, 3.4.7, 3.5.1, 3.5.12, 3.7.1, 4.2.2 | Site establishment, Construction | North access track fencing and ticker tape to be carried out before 1 <sup>st</sup> March 2020 at latest, outside of ground nesting bird season. | Northern access road March 2020, followed by various dates from June 2020 onwards. | Northern access track fencing/ticker tape - National Grid in conjunction with Principal Contractor.<br><br>Other areas Principal Contractor (including ECoW). |
| 12.  | Nesting bird habitat removal                                                                                                                                                                           | 3.2.3, 3.8.1                                                     | Site establishment               | Outside of bird breeding season (March – end of August) or if not                                                                                | Various                                                                            | Dunford Bridge portal, northern access road, Trans Pennine Trail diversion and bridges – National Grid.                                                       |

| Item | Task                                                                  | LEMP Section Ref    | Phase relevant to  | Timing restriction                                                                                                                                                                                   | Anticipated date required based on contract award | Responsibility                                      |
|------|-----------------------------------------------------------------------|---------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------|
|      |                                                                       |                     |                    | possible vegetation to be checked by ECOW immediately prior to removal.<br><br>For areas used by willow tit the bird breeding season should be classed as 1 <sup>st</sup> February to end of August. |                                                   | Other areas – Principal contractor (including ECoW) |
| 13.  | Removal of rotting / dead wood suitable for willow tit nests          | 3.3.2, 3.5.2        | Site establishment | Start of September – end of January avoiding willow tit breeding season.                                                                                                                             | Start of September 2020                           | Principal Contractor (including ECoW)               |
| 14.  | Strimming of reptile habitats i.e. long grass land, bracken and scrub | 3.3.5, 3.4.1, 3.7.2 | Site establishment | Suitable weather conditions Mid March – Mid October within active reptile period.                                                                                                                    | Various depending on area                         | Principal Contractor (including ECoW)               |
| 15.  | Removal of reptile refuge features                                    | 3.3.9, 3.4.5, 3.7.5 | Site establishment | Suitable weather conditions Mid March – Mid October within active reptile period.                                                                                                                    | Various depending on area                         | Principal Contractor (including ECoW)               |
| 16.  | Installation of protective membrane                                   | 3.3.16              | Site establishment | Not specifically time dependant but will only be possible once                                                                                                                                       | September 2020                                    | Principal Contractor (including ECoW)               |

| Item | Task                                                                           | LEMP Section Ref | Phase relevant to  | Timing restriction                                       | Anticipated date required based on contract award | Responsibility                        |
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|      | over notable grassland                                                         |                  |                    | seed harvesting and scrub clearance has been undertaken. |                                                   |                                       |
| 17.  | Minor water courses to be traversed by crossing points or pipe culvert bridges | 3.4.7            | Site establishment | Not time dependent                                       | Summer 2020                                       | Principal Contractor (including ECoW) |
| 18.  | Retention of topsoil and ballast removed to facilitate construction            | 3.5.6            | Site establishment | Not time dependent                                       | Various depending on area                         | Principal Contractor (including ECoW) |
| 19.  | Translocation of mature shrubs                                                 | 3.5.11           | Site establishment | Undertaken in Autumn/ Winter period.                     | September 2020                                    | Principal Contractor (including ECoW) |
| 20.  | Application of the CEMP                                                        | 4.2.1            | Construction       | Not time dependent                                       | Throughout duration of works                      | Principal Contractor (including ECoW) |
| 21.  | Excavations to be either covered at night, or include means of egress          | 4.2.3            | Construction       | Not time dependent                                       | Throughout duration of works                      | Principal Contractor (including ECoW) |
| 22.  | Adoption of biosecurity measures                                               | 4.3.1            | Construction       | Not time dependent                                       | Throughout duration of works                      | Principal Contractor (including ECoW) |

| Item | Task                                                                      | LEMP Section Ref                                              | Phase relevant to | Timing restriction                                      | Anticipated date required based on contract award | Responsibility                                           |
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| 23.  | Monitoring of access track construction and construction vehicle activity | 4.7.2                                                         | Construction      | Not time dependent                                      | Summer 2020                                       | Principal Contractor (including ECoW)                    |
| 24.  | ECOW monitoring of retained habitats and work areas                       | 4.8.1                                                         | Construction      | Monthly through nesting period (March – end of August). | From April 2020                                   | Principal Contractor (including ECoW)                    |
| 25.  | Replacement of lost habitats on site                                      | 5.2.2                                                         | Post construction | Not time dependent                                      | On completion of works                            | Principal Contractor (including ECoW)                    |
| 26.  | Replacement of lost trees on site                                         | 5.2.3, 5.3.4, 5.5.2                                           | Post construction | Not time dependent                                      | On completion of works                            | On site – Principal Contractor (including ECoW and LCoW) |
| 27.  | Post- construction walkover by Landscape Architect                        | 5.3.4                                                         | Post construction | Not time dependent                                      | On completion of works                            | Principal Contractor (including ECoW and LCoW)           |
| 28.  | Reinstatement and Enhancement of habitats                                 | 5.2.2, 5.3.2 – 5.3.11, all of 5.4, 5.5, 5.6, 5.7, 5.8 and 5.9 | Post construction | Not time dependent                                      | On completion of works                            | Principal Contractor (including ECoW and LCoW)           |

| Item | Task                                             | LEMP Section Ref                                                      | Phase relevant to | Timing restriction                                                                                    | Anticipated date required based on contract award | Responsibility |
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|      |                                                  | 5.2.3 – 5.2.8 and 5.3.1 including off site tree planting<br>Section 7 |                   | Not time dependent                                                                                    |                                                   | National Grid  |
| 29.  | Post construction ecological monitoring/ surveys | Section 6 (all)                                                       | Post construction | 5 year period following end of construction, 7 years for Wogden foot and grassland at Dunford Bridge. | Post Construction                                 | National Grid  |