nationalgrid

Visual Impact Provision (VIP)

Peak District (East) Project

Landscape and Ecological Management Plan

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Appendix 1 – Figures
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TABLE OF AMENDMENTS

Section Reference	Detail of Amendments
1.1.2	Update to Landscape Drawing Reference and note that figures 1.1-1.3 and 2.1-2.3 have been updated
1.1.5	Details of off-site enhancement
1.2.1	Update to planning condition details
1.2.2	Amendment to scope to remove lowering of existing shaft cap at existing SEC (beyond planning application boundary)
1.3.2	Details of requirement of LEMP for planning conditions
1.3.3	Details added of Willow Tit Enhancement
1.5.2	Details of surveys undertaken by Morgan Sindall to date
Table 1.1	Removed tree planting at Winscar reservoir and included reference to off-site proposals at Hartcliff, Penistone. Updated to include reference to the willow tit enhancement areas
1.7	Update of roles and responsibilities to reflect appointment of Morgan Sindall
2.2.1	Update of pre-construction surveys undertaken by Morgan Sindall in 2020
2.2.2-2.2.6	Details of badger mitigation required should badgers be identified during the project
2.27-2.2.10	Details of Great Crested Newt surveys undertaken to date and details of precautionary methods
2.3.1-2.3.6	Update of invasive species surveys and works undertaken by Morgan Sindall and National Grid in 2019 and 2020
2.3.8-2.3.15	Update of bat surveys and findings undertaken by Morgan Sindall in 2020 and details of precautionary methods
2.3.16-2.3.23	Update to seed harvesting proposals and works undertaken by Morgan Sindall in 2020
2.3.25	Amendment to Trans Pennine Trail ditch proposal
2.4.1-2.4.2	Update of bat surveys and findings undertaken by Morgan Sindall in 2020

Section Reference	Detail of Amendments
2.4.3-2.4.5	Update of otter surveys and findings undertaken by Morgan Sindall in 2020
2.5.1-2.5.2	Update of botanical surveys and findings undertaken by Morgan Sindall in 2020
2.5.3	Update to seed harvesting proposals and works undertaken by Morgan Sindall in 2020
2.5.4	Update of otter surveys and findings undertaken by Morgan Sindall in 2020
2.9.2-2.9.3	Update to nesting bird mitigation
3.2.2	Reference added to National Grid Invasive Species Assessment and Biosecurity Management Plan for biosecurity purposes
3.2.4	Amendment to nesting bird mitigation
3.2.5	Amendment to nesting Willow Tit mitigation
3.2.7-3.2.8	References added for Morgan Sindall Arboricultural Method Statement and Tree Protection Plans
3.3.1	Reference added to National Grid Invasive Species Assessment and Biosecurity Management Plan for biosecurity purposes
3.3.5-3.3.6	Update of reptile surveys and findings undertaken by Morgan Sindall in 2020 and details of precautionary methods
3.3.7-3.3.9	Update of bat surveys and findings undertaken by Morgan Sindall in 2020
3.3.13	Update to drainage ditch works
3.4.1	Update of reptile surveys and findings undertaken by Morgan Sindall in 2020
3.4.4	Reference to Morgan Sindall documentation
3.4.6-3.4.9	Update of aquatic surveys and findings undertaken by Morgan Sindall in 2020 and details of precautionary methods

Section Reference	Detail of Amendments
3.5.8	Amendments regarding the potential use of bespoke commercial seed following consultation with stakeholders
3.5.11	Inclusion of bare earth trial plots to monitor and inform reinstatement
3.5.12	Update to shrub translocation methodology to be undertaken by Morgan Sindall
3.8.1	Details of minimising working area added
3.8.2	Reference added to precautionary approach for reptiles
4.2.2 (also referred to at 4.4.1 and 4.5.1)	Piling activities (may be required for the SEC and bridges) have been programmed to avoid the period 1st April – end of July to avoid potential disturbance on breeding birds. Should the programme change as a result of a delay (e.g. prolonged adverse weather) this may require revisiting.
4.2.3	References added for Morgan Sindall Arboricultural Method Statement
4.3.1	Reference added to National Grid Invasive Species Assessment and Biosecurity Management Plan for biosecurity purposes
5.2.3	Additional details of offsite landscaping and planting for the project
5.3.2	Additional clarification added on planting
5.3.4	Amendments regarding use of dead wood along the TPT
5.3.5	Amendments regarding reinstatement of grassland at Dunford Bridge
5.3.8 (also referenced at 5.7.1)	Details added regarding location of bird boxes to be agreed with ECoW
5.3.10	Amendment to Trans Pennine Trail ditch proposal
5.5.1-5.5.2	Amendment of planting ratio as per consultee planning representation comments and details added regarding mound reinstatement

5.5.8-5.5.9	Update to use of harvested seed following consultation with stakeholders
5.7.1	Amendment to scope at existing SEC to remove lowering of existing shaft cap
5.8	Updated table on reinstatement for Pylon removal
5.9.1	Amendments regarding reinstatement of the habitats on Northern Access Road
6.1.3	Additional details of habitat condition monitoring to be undertaken as part of BNG proposals
6.2.10 (and 6.4.3)	Details added regarding management of seeded grassland areas to promote wildflower species
6.2.11	Details added of provision of post construction monitoring information to LPA
6.2.15	Details added of provision of post construction monitoring information to LPA
6.4.5	Updated to note that following each monitoring visit the management proposals within the LEMP for grassland habitats in the LWS will be reviewed and modified if required.
6.4.6	Details added of provision of post construction monitoring information to LPA
6.4.10	Details added of provision of post construction monitoring information to LPA
6.6.2	Details added of provision of post construction monitoring information to LPA
6.7.3	Details added of provision of post construction monitoring information to LPA
7.4.1-7.4.2	Addition of Willow Tit enhancement works to be undertaken by Morgan Sindall. Removed text scrub clearance in the wider LWS which would have removed willow tit habitat.
Table 8.1	Table amended to reflect updates in document

Section Reference	Detail of Amendments
Appendix 1	Figures 1.1-1.3 and 2.1-2.3 updated
Appendix 2	Update of programme dates for surveys and works to be undertaken

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 'Project').

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

- Figures 1.1 – 1.3 – Ecological Mitigation During Construction (Cable Undergrounding Phase[1]) – updated December 2020 (see Appendix 1);
- Figures 2.1 – 2.4 – Ecological Mitigation During Construction (OHL Removal Phase) – updated December 2020 (see Appendix 1);
- Figure PDD-33492-LAY-FIGURE 2.4: Combined Working Areas within Wogden Foot Local Wildlife Site (see Appendix 1);
- 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10; and
- Arboricultural Method Statement (Reference: 16866-RSK-1406-XX-MS-X-000001) and Tree Protection Plans (Reference: 16866-RSK-1406-XX-PL-X-000002.

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 following the planning application submission, and the ecological mitigation and enhancement measures deemed appropriate for the potential impacts identified, taking into account the anticipated landscape effects and reinstatement requirements.

1.1.5 The measures for habitat reinstatement, restoration and creation as set out in this LEMP form the basis of the credits which will be achieved within the extents of the Site boundary (On-Site) for Biodiversity Net Gain (BNG) as detailed in the Biodiversity Net Gain Report prepared in Peak District (East) Project Biodiversity Net Gain Assessment (AECOM, April 2020). However, this LEMP does not include the entirely separate Off-Site enhancement measures which will be adopted to achieve further BNG credits and deliver a net gain. These Off-site enhancement measures have been secured at Crow Edge Quarry and are outlined within the Crow Edge Outline Habitat Management Plan (AECOM, 2020). BNG condition monitoring is separate,

[1] Includes Sealing End Compound (SEC), Trans Pennine Trail Diversion and Northern Access Road and replacement Pylon 4ZO157R construction phases

will extend beyond the timeframe adopted in this LEMP and will be committed to via a separate BNG condition monitoring programme.

1.2 VIP Peak District (East) Project

1.2.1 The Project aims to reduce the visual impact of National Grid's overhead line (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. It was granted full planning permission at committee in May 2020 by Peak District National Park Authority (Planning Application Ref NP/B/0819/0885 - (decision notice issued 08.10.20) and by Barnsley Metropolitan Borough Council in June 2020 (Planning Application Ref 2019/1013 (decision notice issued 21.09.20) subject to the completion of a Section 106 legal agreement for BNG and a number of conditions. These include Condition 8 in which prior to development commencing, the final LEMP shall be submitted to and agreed in writing by the Local Planning Authority (LPA) in the interests of conserving and enhancing biodiversity. The Project will make use of part 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 Project includes the following main components:

- Removal of the existing Dunford Bridge Sealing End Compound (SEC) to a depth of approximately 1.1m below ground level.
- 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 (TPT) 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 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 will be retained permanently to the east and west of the replacement permanent bridge.

1.2.3 Further details of the 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 An Outline LEMP was initially 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 project these will be implemented. The measures set out in this Outline LEMP were discussed with the 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 Following planning approval, the Outline LEMP (August 2019) has been updated to form this LEMP for submission to discharge Planning Condition 8.

1.3.3 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 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;
- Details of the additional willow tit enhancement proposal off site at the eastern end of Wogden Foot LWS;
- 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[2] and management programme which would commence on the completion of the project.

1.3.4 The key in principal objectives of this 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 details of surveys and mitigation measures have been completed to date and what additional surveys and measures are to 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;
- 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 project.
- Section 9: Provides details of the implementation.

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); and

[2] 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.

- Northern access route (AP7) from Brook Hill Lane (excluding Bridge 1 and 2 as already covered under Trans Pennine Trail diversion).

1.5 Key Habitat and Species

1.5.1 Environmental surveys have been undertaken for the project, including Phase 1 and 2 ecological surveys and landscape and visual field surveys and assessment. Those undertaken in advance of the planning submission were reported in full within the Environmental Assessment Report. A list of relevant baseline reports was provided in Chapter 7 (Ecology) of the Environmental Assessment Report.

1.5.2 Further pre-construction environmental surveys have been undertaken by National Grid's appointed contractor, Morgan Sindall, following submission of the planning application. Details of survey methodologies, results and evaluation is detailed within RSK's Ecological Constraints Report (Document Reference: 16866-RSK-1405-XX-RP-G-030001). However, details of findings and suggested mitigation following the surveys undertaken to date are detailed throughout this document and include:

- Arboricultural review;
- Invasive species review;
- Aquatic macro-invertebrates;
- Aquatics – fish habitat survey;
- Bats – trees, structures and transect surveys;
- Badgers – walkover;
- Otters – walkover;
- Reptiles – presence / absence;
- Water voles – walkover; and
- Botanical – NVC and willow tit enhancement.

1.5.3 As detailed in Chapter 6 (Landscape and Visual) and Chapter 7 (Ecology) of the Environmental Assessment Report, the key adverse impacts anticipated from the 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 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[a]	*Trans Pennine Trail Diversion*[b]	*SEC within Wogden Foot LWS*[c]	*Existing SEC*[d]	*Pylon and OHL Removal*[e]	*Northern Access Route*[f]
General	To contribute to maintaining the conservation status of habitats and fauna.	**Project Wide**					
General	To ensure the 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 of the 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 and monitor the areas of unimproved grassland affected by the 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[a]	*Trans Pennine Trail Diversion*[b]	*SEC within Wogden Foot LWS*[c]	*Existing SEC*[d]	*Pylon and OHL Removal*[e]	*Northern Access Route*[f]
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 on an approximate 2:1 basis, both within the project boundary and at selected off-site areas (as detailed in the separate Off-Site Tree Planting Proposals (Areas 5a and 5B) at Hartcliff, Penistone).	**Project Wide**					
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 contribute to maintaining the local conservation status of willow tit by provision of alternative nesting habitat, enhancement areas and future monitoring.	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	

[a] Cable Corridor, including National Grid Compound at Dunford Bridge and laydown areas (400kV Cable (Undergrounding))
[b] 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

[c] 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)
[d] Decommissioning of the existing SEC and pylon 164R removal (Removal of Existing Infrastructure (VIP subsection))
[e] Pylon and OHL Removal (4ZO163 to 4ZO157) (Removal of Existing Infrastructure (VIP subsection))
[f] 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 and construction activities/sequencing.

National Grid

- Adhere to UK and European Legislation and Guidelines;
- Supply relevant data as appropriate to the relevant stakeholders, Morgan Sindall 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 with the relevant stakeholders regarding the results of the monitoring and the success of the reinstatement effort.

Morgan Sindall

- 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 Project; and,
- Diligently execute the works in accordance with the approved drawings and specifications.

1.7.2 As outlined above Morgan Sindall has appointed an ECoW and LCoW to undertake tasks 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 Morgan Sindall;
- 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 An initial pre-construction walkover survey was undertaken in Spring 2020 with subsequent surveys undertaken through 2020 and proposed in 2021 in advance of the commencement of pre-construction work. Such surveys have been undertaken to confirm baseline conditions as highlighted at planning stage remain and identify any further implications for licensing and programme.

Badgers

2.2.2 No badger field signs were identified during surveys however there is a risk badgers may create setts within the proposed working area or use the working area when foraging or travelling through their territory.

2.2.3 As part of the role undertaken by the ECoW, any 'unworked' area or area of the site which has been left unworked for greater than three weeks will be thoroughly checked for large animal burrows and badger field signs prior to works.

2.2.4 In the event any large animal burrows are found during the works, all work within 30m of the burrow must cease until further surveys are completed by an ecologist.

2.2.5 In the event a badger sett is found within 30m of the working area and cannot be avoided, a licence will be required from Natural England for sett destruction. The badgers will need to be excluded prior to destruction and must take place between 1 July and 30 November.

2.2.6 During construction, any deep, steep-sided excavations should have means of escape placed overnight i.e. ramps, to avoid unintentionally trapping badgers, or any other animals.

Great Crested Newts

2.2.7 Previous surveys undertaken between November 2015 and May 2017, identified nine waterbodies within 500m of proposed working area and further tenth pond just outside 500m from the working area. All ten ponds were subject to a habitat suitability index survey and were deemed suitable for great crested newts (GCN). Surveys were undertaken again in 2019, following a desk study to identify any potential new ponds.

2.2.8 All ten waterbodies have returned negative eDNA survey results in 2016 and when repeated in 2019 two ponds were dry at the time of the survey, two were deemed unsuitable, and the remaining six produced a negative result.

2.2.9 All ten waterbodies were subject to another habitat suitability index assessment in April 2020 which provided the same habitat classification results as the 2019 survey. A further habitat suitability assessment is proposed ahead of construction in March 2021, followed by eDNA surveys as required. Until these surveys have been completed, works at the site should proceed on the basis that GCN may be present

at the site, and therefore the following precautions, as set out in RSK's Ecological Constraints Report, should be followed:

- All works in areas suitable for hibernating GCN (i.e. within 250 m of ponds containing great crested newts) must be carried out during the active period (mid-March to October inclusive). No works which will disturb habitat that might be used by hibernating GCN should take place between November and mid-March (inclusive). The ECoW responsible for overseeing the method statement will be identified and will brief all site staff. The briefing will include information on the identification of GCN and what to do if any are found;
- Vegetation which will be disturbed or lost to the works will be cut to 15 cm under the supervision of the ECoW after a thorough search for GCN. This will be carried out a minimum of one week prior to the works commencing;
- Any suitable refuges (debris, piles of logs or brash) will be avoided where possible. If this is not possible, a destructive search of the refuges will be carried out. This will be supervised by the ECoW;
- Vehicles leaving the area should be confined to haulage routes which have previously been cleared of vegetation and are unsuitable for GCN;
- Any material or excavated spoil stored on the site should be stored on hard standing. If this is not possible, it should be stored on pallets to raise it off the ground. Any waste material should be stored in a designated skip prior to removal from the site;
- If any GCN are found during the site works, then works must stop and a suitably qualified ecologist should be contacted, and a European protected species licence will likely be required prior to works recommencing.

2.2.10 However, eDNA surveys are expected to be undertaken in April 2021 with results to anticipated to be received in advance of the commencement of works.

2.3 Trans Pennine Trail (Cable Corridor)

Invasive Plant Species

2.3.1 An Invasive Species Assessment and Biosecurity Management Plan has been prepared by Aecom, on behalf of National Grid, which details the extent of Rhododendron and Japanese Knotweed and provides details on management, treatment and control options to prevent the spread of these species. This document has been utilised by National Grid and Morgan Sindall in 2019 and 2020 to manage invasive species on site and will continue to be the signposting document throughout the project.

2.3.2 As highlighted during the above, Rhododendron is present on National Grid land located at Dunford Bridge thus this area has been treated in November 2019 and July 2020 by National Grid to prevent the potential spread of the species. Works included clearing stands of Rhododendron with hand tools and chipping the material on site and removing to a licensed waste facility for disposal and spraying stands with herbicide. Further visits are planned to ensure the control of Rhododendron in the National Grid compound for the duration of the project.

2.3.3 Morgan Sindall have undertaken hand clearance of Rhododendron stands along the Trans Pennine Trail and the diversion route in May 2020 with vegetation cut down to ground level and arisings fly-chipped and left in situ with appropriate waste exemptions for treatment and mulch in place from the Environment Agency. Works also included the herbicide treatment of Rhododendron stands and installation of root plugs on all cut stands to minimise regrowth.

2.3.4 In 2021, Morgan Sindall will undertake further management and treatment of Rhododendron stands along the Trans Pennine Trail and the diversion route as per methods as detailed above in line with the Invasive Species Assessment.

2.3.5 In 2021, a small area of Japanese Knotweed, located at Dunford Bridge, will be treated and removed by Morgan Sindall using herbicide and mechanical excavation of the contaminated soil containing rhizomes and any above ground plant material. All plant material and contaminated soil shall be removed off site and taken for disposal at an appropriately licensed and suitable waste facility.

2.3.6 Biosecurity methods as detailed within National Grid Invasive Species Assessment and Biosecurity Management Plan shall be followed when working in areas with invasive species to prevent spread with the following measures to be implemented:

- All appropriate site personnel shall be made aware of the locations of invasive species and informed of the necessary precautions required to prevent spread;
- Plant and machinery should be prevented from driving within areas which might contain invasive species contaminated soil; and
- Any vehicles, equipment and clothing that may have come into contact with potentially contaminated soils should be inspected and thoroughly cleaned prior to leaving the area.

Bats

2.3.7 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.

2.3.8 As a precaution, pre-construction bat surveys have been 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 b1.1 – 1.3). These surveys were conducted between May and September 2020 as part of surveys being undertaken within the year prior to the start of construction in the Cable Corridor.

2.3.9 In addition to the known roost site in Section 2.3.7, two additional roosts were identified within the culverts beneath the trail at the eastern end of Wogden Foot LWS as shown on Figure 1.3. However, it is noted that these are outwith the current planned working area thus not anticipated that there will be direct impacts upon the roost however awareness of this roost will be paramount.

2.3.10 No ecological licensing is currently anticipated to be required for the project however 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 Due to the level of bat activity recorded across the site and the three separate bat roosts identified as detailed above, a Bat Method Statement forms Appendix H of the RSK Ecological Constraints Report (Document Reference: 16866-RSK-1405-XX-RP-G-030001 in order to ensure mitigation and avoidance measures are implemented to ensure that any risk of affecting bats and their roosts is avoided.

2.3.12 The method statement shall be reviewed following additional surveys during the 2021 bat survey season which could not be undertaken in the 2020 active period due to landowner and access constraints.

2.3.13 The following precautionary measures are detailed within the RSK Bat Method Statement:

- All personnel on site shall be briefed by a Natural England bat licenced ecologist regarding the potential and known presence of bats and where they may be found at the site;
- The ecology team shall be included within work proposal discussions and task scheduling to ensure specific work tasks can be undertaken at the most appropriate time of year to reduce ecological impact;
- An accurate weekly work schedule must be provided to the ecologist at least 48hrs in advance of work, to ensure the appropriate level of ecological support can be provided. In the event the work schedule changes, the ecologist should be informed immediately;
- All work, where possible, shall be undertaken during daylight hours. In the event that night-time works is required, all lighting should be managed and directed away from trees and habitats which could be used by bats;
- All lighting should be turned off when not in use, any lighting which is required for security purposes should be hooded and directed away from structures and trees and away from areas assessed as key bat foraging and commuting routes. The ecologist should be informed of any lighting proposals in advance of onsite installation to ensure ecological impact is minimised;
- All machinery and generators shall be turned off after each shift, particularly at night, and all machinery switched off when not in use to reduce background noise and disturbance;
- Machinery and generators should not be left idling to extensive periods of time and no machinery should be parked close to a structure or tree with bat roosting suitability without prior consent from the bat licenced ecologist
- All deliveries and machinery would not be stored adjacent to commuting or foraging habitat or to trees, structures with roosting features;
- Machinery should (where possible) have rubber tracks to reduce noise and vibration as much as possible;
- Tree protection zones should be installed around all retained trees as per arboricultural documentation however protection zones should also be installed around structures assessed as suitable for roosting bats and the

known bat roosts. An example of appropriate protection zone is the use of installing temporary post and rope fencing to prevent unauthorised access;

- Vegetation clearance is to be minimised across the project in accordance with approved plans submitted and approved by all stakeholders with clearance recommended to be undertaken between October and March when bats are least active or in hibernation. Undertaking the work during this period will also reduce the potential impact on nesting birds and other wildlife;
- The working width along the TPT should ensure a strip of trees and vegetation are retained on both sides of the trail with no significant gaps to ensure bats can still use the TPT when foraging and commuting;
- Vegetation surrounding culvert inlets and outlets should be maintained and vegetation clearance should not remove the connectivity to a recorded roost or hibernation site, unless discussed and approved by Natural England;
- No activities which result in a restriction / obstruction of access by bats to the roosts should be undertaken, such as felling vegetation over the culvert inlets/outlets;
- A Natural England Level 2 or above bat licenced ecologist should be present during all vegetation clearance within 15 meters of tree with bat roosting potential or confirmed roost site within a structure;
- All trees assessed as suitable for roosting bats even those which have had the appropriate surveys completed during 2020, should be thoroughly inspected by a Natural England Level 2 (or above) bat licensed ecologist immediately before felling or pruning works. Where the tree cannot be thoroughly inspected from ground level, a tree climbing survey should be undertaken by two climbing trained, bat licensed ecologists.
- In the event a bat is found during a pre-fell survey the tree must remain undisturbed until a Natural England license is granted, and appropriate mitigation is installed. The tree containing the bat roost as well as the vegetation or habitat connecting the bat roost must remain clearly marked and undisturbed by installing an appropriate protection zone;
- All vegetation clearance must be done using hand tools only, unless agreed with the ecologist and all equipment must be switched off when not in use. Chainsaws, brushcutters or strimmers should not be used directly outside known bat roost culvert inlets or outlets or structures suitable for hibernating bats. Non powered vegetation clearance tools should be used in these areas;
- Cleared vegetation should be stacked into dead hedges or linear windrows where possible and where access allows in agreement with stakeholders. Any surplus vegetative material which cannot be used beneficially for ecological enhancement or habitat improvement will be removed from site;
- Measures related to minimise risk of disturbance to bats roosting inside Clough Beck Culvert includes significantly raising the ground above and approximately 10m either side of the culvert to increase the soil depth between the culvert and the working corridor. This will reduce noise and vibration inside the culvert barrel. The use of machinery when undertaking

these works should be limited to rubber tracked mini-diggers and where possible hand tools should be used instead of machinery;

- Additionally, all machinery passing over the culvert must be rubber tracked and anti-vibration track matting such as that often used on railway crossings, should be installed above and 10 metres either side of the culvert. Soil should be compacted along the edge of the track matting to reduce noise and vibration when tracking on and off the matting, as well as reducing the risk of animals entering underneath;
- No work should be undertaken inside or directly outside the culvert entrances known to be inhabited by roosting bats or structures suitable for hibernating bats;
- Netting or similar material should not be erected outside the culvert inlets or outlets or draped over structures such as bridges due to the risk of entrapment;
- Signs identifying the known bat roost should not be erected due to the risk of disturbance caused by the general public;
- Significantly noisy and vibrating activities (e.g. piling or similar) should be avoided directly above the culverts or within close enough proximity to cause disturbance. The proximity to the roost sites and potential hibernation sites in which works should be carried out should be decided on site by the ecologist to ensure the roost and potential hibernation sites remain unaffected;
- A bat licenced ecologist should be on site during all works within 30metres of a known bat roost or structure assessed as potentially suitable for bat hibernation to ensure the precautionary measures are implemented and works do not cause disturbance to the roost sites.

2.3.14 However, 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 surveys undertaken throughout the course of the project will be used to inform the production of a Natural England licence application.

2.3.15 Unless a Natural England EPS licence is needed for the works, there is no requirement for the creation of appropriate bat roosting habitat. However, to compensate for the potential loss of trees with bat roosting suitability and increase the bat roosting opportunities on site, bat boxes are to be installed in agreement with the ECoW and native wildflower and shrub mixes are planted in line with the 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10 to improve bat foraging opportunities along the TPT.

Grassland (Seed Harvesting)

2.3.16 Seed harvesting from suitable areas of notable grassland to be affected by electric cable installation (and associated compound/ laydown) is proposed. The methodology for seed harvesting has been agreed in principle with Barnsley Metropolitan District Council and Peak District National Park Authority in advance of the works commencing. Liaison has also been undertaken with Yorkshire Wildlife Trust. Seed is proposed to be harvested from the following notable grassland to be affected by the project:

- Grassland within the working areas (laydown) within Wogden Foot LWS (Area 1) with particular emphasis on significant seed-bearing species such as *Centaura nigra* (Knapweed) and *Galium verum* (Ladies bedstraw) with smaller amounts of *Lotus corniculatus* and *L. pedunculatus* (Common birdsfoot trefoil and greater birdsfoot trefoil). These are all late flowering therefore harvest date must be aligned to ensure these species are harvested appropriately.
- Grassland east of the proposed SEC site at Area 3.

2.3.17 A first round of seed harvesting has been undertaken in Area 1 (as per Plate 1 below) by Morgan Sindall's appointed contractor RSK Habitat Management and appointed specialist sub-contractor Emorsgate in Summer 2020 ensuring the capture of late flowering species such as Common Knapweed.

Plate 1: Areas highlighted with potential for seed harvesting



2.3.18 Seed harvesting options will be reassessed in 2021 for Areas 1, and 3 to optimise opportunities as some of these areas are considered to be of greater diversity. Seed harvesting will be undertaken sensitively and will not result in a detrimental effect upon the reminder on the LWS (or other areas of grassland) but will seek to collate a diverse composition of seed distinct to the LWS.

2.3.19 Grassland at Dunford Bridge (previously referred to as Area 4) was considered for seed harvesting with stakeholders. This has subsequently been excluded from the proposals following feedback from Barnsley MBC that this area is understood to have been previously sown with a commercial seed mix and should not be relied on as a good seed source. The area of the SEC site (Area 2) has also been excluded as not suitable following assessment by RSK Habitat Management.

2.3.20 Harvested seed will be processed, dried and stored at an appropriate cold storage location by RSK Habitats appointed specialist sub-contractor, Emorsgate, until the receptor areas are available and have been managed and treated appropriately ahead of sowing taking place. Storage in this way will ensure that the seeds remain viable for use following the period of construction.

2.3.21 Receptor areas will include the areas to be temporarily affected by compounds/ laydown areas and the cable installation in Wogden Foot LWS as shown on Figure 1.1a. Harvested seed will not be used along the Trans Pennine Trail cable corridor This will be sown with a suitably appropriate commercially seed source as per 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10

2.3.22 If the quantity of seeds collected is not enough to cover the area required for reseeding in Wogden Foot LWS (although not deemed likely), ecological stakeholders have advised that this should be left to recolonise naturally. This would require consideration of the future grazing regime, encroachment of non-target /invasive species and the need to undertake remedial removal of these as the grassland is colonising. Should this request from stakeholders change, it would be possible to mix harvested seeds with a grass seed mix such as Emorsgate EG1 (General Purpose Meadow Grass Mixture) designed to produce a low growing and flower friendly sward as per the Landscape Management and Maintenance Plan (RSK, 2021). Using this grass seed mix would reduce dominance of annual weeds such as dock, thistle and nettle. The objective of using the topsoil seedbank and harvested seeds is to assist in preserving the unique grassland that has developed over time.

2.3.23 If soil translocation or seed harvesting is not possible, deemed to have failed, and/or natural generation is no longer considered to be the best option in Wogden Foot LWS, it would be possible to source a bespoke seed mix based on the existing botanical composition of Wogden Foot LWS (established from harvested seeds and botanical surveys) and provide suitable habitat for flora and fauna associated with the LWS to flourish. A suitable mix would be agreed with ecological stakeholders.

Other Landscape Features - Stone Walls and Water Features

2.3.24 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 and to the south of the Trans Pennine Trail. Plate 2 below represents an example of the small waterfall feature, which is to be protected (approximate Grid Reference SE 16256 02382).

Plate 2: Small waterfall feature to be protected



2.3.25 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 3). Due to site constraints, the existing ditch shall be replaced by a new drainage ditch to reflect the same hydrological profile to facilitate construction and operation of the cable route.

Plate 3: Aerial image showing existing approximate locations of drainage ditch present located between Point A-B and Point C-D



2.4 Trans Pennine Trail Diversion

Bats

2.4.1 Where trees as previously identified as having high or moderate potential to support roosting bats (as per Figures 1.1a - 1.3a) cannot be entirely avoided by the Trans Pennine Trail diversion, these have been subject to pre-construction bat surveys of aerial climbing inspection and / or nocturnal surveys undertaken between in May – September 2020. No roosting bats were identified thus no constraints to the works.

2.4.2 Should any roosting bats be confirmed in future, options to avoid direct loss of the roost will be sought i.e. pruning rather than felling and precautionary measures detailed in Section 2.3.13 will be followed as per the RSK Bat Method Statement. If this is not possible, works may 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).

Otters

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. A pre-construction otter survey has been undertaken in Summer 2020 and has reaffirmed the absence of any otter holt or couch sites. Surveys will be updated by the on-site ECoW in early 2021 to reaffirm absence ahead of construction works.

2.4.4 Although no holts or other evidence of otter was found during surveys, it is possible that the species uses the watercourses for foraging or commuting. The RSK Ecological Constraints Report (Document Reference: 16866-RSK-1405-XX-RP-G-030001) details the following mitigation measures to ensure that any risk of impacting otter is avoided:

- As a precaution, works occurring within 5m of a watercourse should be undertaken under the supervision of an ECoW. The ECoW will check the affected stretch of watercourse prior to any works beginning in these areas to ensure that otter are present and at risk of harm/disturbance; and

2.4.5 To reduce potential impact on otter, night-time works should only be undertaken when necessary (and in line with approved working hours with the Council) and no lighting, including security lighting should be directed along the watercourse. 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

2.4.6 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 has been undertaken in Summer 2020 to confirm botanical baseline condition of the habitats. The survey has been conducted following the methodology used for the botanical surveys conducted for the purposes of the Environmental Assessment Report and has focused on the areas of the LWS which will be affected by the project.

2.5.2 The survey has been undertaken by an appropriately experienced ecologist and has recorded the abundance and coverage of notable botanical species. This survey has provided up to date baseline information to inform future monitoring and management of the LWS.

Grassland (Seed Harvesting)

2.5.3 As mentioned previously, RSK Habitat Management have been appointed by Morgan Sindall to undertake works detailed in Section 2.3. The methodology for seed harvesting has been 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 project and / or the most diverse areas of grassland sward

within the LWS (as identified by the botanical survey undertaken to inform the assessment).

Otters

2.5.4 A pre-construction otter survey of the River Don has been undertaken in Summer 2020 covering the area of the bank (i.e. that which falls within 10m of the works) plus 200m up and down stream and has reaffirmed the absence of any otter holt or couch sites. Surveys will be updated by the on-site ECoW in early 2021 to reaffirm absence ahead of construction works. Although no holts or other evidence of otter was found during surveys, mitigation measures detailed in Section 2.4.4 shall be followed.

2.5.5 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 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 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 project) that 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 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 Pre-construction ecology walkover surveys will be undertaken immediately prior to the commencement of works by the ECoW on site and 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 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. Subject to land access being in place in advance of construction, it is proposed the following measures be undertaken:

- Removal of any suitable nesting habitat within the proposed access track corridor which could support non-ground nesting species within period start October 2020 to end February 2021 (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 with stock proof post and wire fencing (1m/1.2m high) will be undertaken as soon as land access

agreements allow. Methods to dissuade birds from nesting on the ground, such as strimming of long grass, shall be utilised prior to installation of fencing if required. 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 May 2021 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).

3.2.2 As detailed in Section 2.3, the National Grid Invasive Species Assessment and Biosecurity Management Plan details biosecurity methods which will be adopted across the site by Morgan Sindall. 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 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 reduce to as minimum an area that is safely possible. Fencing will be kept *in situ* until completion of the construction phase of the 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, then affected areas should be checked by an ecologist 48 hours before works take place. If active nests are found to be present, the ECoW will establish exclusion zones of an appropriate size for the species identified and the nest should then be left undisturbed until the young have fledged as determined by the ecologist.

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 LWS and along the Trans Pennine Trail Cable Corridor) will be removed within period 1st September and end of January. Where this is not possible, then affected areas should be checked by an ecologist 48 hours before works take place. If active nests are found to be present, the ECoW will establish exclusion zones of an appropriate size for the species identified and the nest should then be left undisturbed until the young have fledged as determined by the ecologist.

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 wherever possible as part of the design of the project. Trees to be retained are to be protected in accordance with

Morgan Sindall Arboricultural Method Statement (Reference: 16866-RSK-1406-XX-MS-X-000001) and Tree Protection Plans (Reference: 16866-RSK-1406-XX-PL-X-000002).

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 Morgan Sindall Arboricultural Method Statement (Reference: 16866-RSK-1406-XX-MS-X-000001) and Tree Protection Plans (Reference: 16866-RSK-1406-XX-PL-X-000002). 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 Root Protection Area (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 2.3, control of invasive species will be undertaken in line with National Grid Invasive Species Assessment and Biosecurity Management Plan with biosecurity measures described to be adopted during the construction phase of the project to avoid the spread of the Rhododendron and Japanese Knotweed.

Nesting Willow Tit

3.3.2 Vegetation clearance will avoid the removal of dead tree stumps or rotting 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 in line with Section 3.2.5.

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 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 project (see Section 5.3).

Reptiles

3.3.5 Surveys undertaken in Summer 2020 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.

3.3.6 Although the risk is low, the RSK Ecological Constraints Report (Document Reference: 16866-RSK-1405-XX-RP-G-030001) details the following mitigation measures to ensure that any risk of reptiles being present / gaining access into working areas and in turn to avoid direct killing or injury is minimised:

- Mitigation using a two-stage strimming approach is appropriate. All site preparation works in suitable reptile areas should only be carried out during the reptile active period (April to September inclusive). Due to the risk of nesting birds during this period, vegetation should be cut between March to September to no lower than 15cm. The clearance required below 15cm can then be removed during the reptile active period after a thorough finger-tip search by an ecologist immediately prior to works;
- An ECoW will be present during all site clearance works and will provide a toolbox talk to all site staff. The briefing will include information on the identification of the reptile species present and what to do if a reptile is found at the site;
- Vegetation which will be crossed by the development footprint will be cut to 15cm under the supervision of the ECoW. This will be carried out a minimum of two weeks prior to the works commencing. After two weeks, the remaining vegetation will be cut to ground level;
- The working area will then be maintained in such a way that the vegetation is not allowed to regrow above ground height;
- Any suitable refuges (debris, piles of logs or brash) will be avoided in the working area where possible. If this is not possible, a destructive search of the refuges will be carried out. This will be supervised by the ECoW;
- Vehicles leaving the area should be confined to haulage routes which have previously been cleared of vegetation;
- Any materials or excavated spoil stored on the site should be stored on hard standing. If this is not possible, they should be stored on pallets or by other methods to raise them off the ground where possible. Alternatively, topsoil or subsoil could be stored in compacted mounds and covered to prevent access by reptiles. Any waste material should be stored in a designated skip prior to removal from the site;
- Any excavations left open overnight should be covered where possible. The excavations should be checked for reptiles before work starts each morning;
- If any reptiles are found incidentally during the site works after mitigation measures are completed, all relevant works must stop and a suitably qualified ecologist should be contacted;
- 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 of 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; and

- 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

3.3.7 As noted in the Environmental Assessment Report and detailed in section 2 above, updated surveys have confirmed that three bat roosts exist within or close to the proposed working area for the project. Based on current information it is anticipated that there will be no direct or indirect impacts upon the bat roosts however there will be ongoing liaison with the ECoW with regards to design and works in this area.

3.3.8 Cognisance must be given to the use of the roosts, or other suitable features, as hibernation roosts. In the event that updated surveys or working methodologies confirm that significant disturbance (or destruction) of these roosts (or any others subsequently recorded) is confirmed as likely then a EPS licence will be required. 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.

3.3.9 However, 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 detailed in Section 2.3.13 will be followed as per the RSK Bat Method Statement.

Trees

3.3.10 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)

3.3.11 Areas of grassland outside the Cable Corridor working areas which are to be retained and protected will be subject to creation of delineation *barrie*rs (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 topsoil 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

3.3.12 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.

3.3.13 The drainage ditch which is located alongside (on south side) the existing Trans Pennine Trail will be replaced by a new drainage ditch to reflect the same hydrological profile to facilitate construction and operation of the cable route.

3.4 Trans Pennine Trail Diversion

Reptiles

3.4.1 Surveys undertaken in Summer 2020 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 with the west of the route most affected. 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 as detailed in Section 3.3.6.

River Don and associated riparian and aquatic species

3.4.2 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.

3.4.3 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.

3.4.4 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. This will be in line with Morgan Sindall's Water Management Plan and Soil Management Plan for the project which will be developed and implemented ahead of commencement of construction works.

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

3.4.6 A pre-construction water vole survey of the River Don and associated watercourses has been undertaken in Summer 2020 covering the area of the bank and has reaffirmed the absence of water vole presence. Whilst the majority of watercourses were deemed unsuitable during surveys, it is possible that the species uses the watercourses. The RSK Ecological Constraints Report (Document Reference: 16866-RSK-1405-XX-RP-G-030001) details the following mitigation measures to ensure that any risk of impacting water vole is avoided:

- As a precaution, works occurring within 5m of a watercourse should be undertaken under the supervision of an ECoW. The ECoW will check the

affected stretch of watercourse prior to any works beginning in these areas to ensure that water vole are present and at risk of harm/disturbance;

- In the unlikely case that water vole are found at the time of works, works should stop and, depending on the circumstances of the findings, a protected species licence from Natural England may be required before works again proceed.

3.4.7 Due to the installation of crossing points as part of the Trans Pennine Trail diversion, aquatic macroinvertebrate communities within the river have been surveyed by Morgan Sindall in 2020 to establish baseline conditions in line with prior surveys undertaken by Aecom in Spring 2017. Survey findings indicate that the species present are largely common and widespread with high taxon richness. Communities present are adapted to high flow velocities and highly sensitive to organic pollution and excess sedimentation therefore RSK Ecological Constraints Report (Document Reference: 16866-RSK-1405-XX-RP-G-030001) details the following mitigation measures:

- Appropriate mitigation and control measures shall be agreed in liaison with the ECoW;
- Minimising bed disturbance and movement or change of substrate;
- Maintaining river flow where possible to support the macroinvertebrate assemblages present. Biotic scores indicate very fast flows characterised by the communities present; and
- Minimising sediment erosion, input and transportation into the channel. Biotic scores for all sites indicated macroinvertebrate communities associated with no or minimal sedimentation.

3.4.8 Although no white-clawed crayfish were encountered during the macroinvertebrate surveys, habitat within the River Don and Town Beck are considered suitable to support them. Works within the channel or to the riverbanks should consider crayfish. An ecologist with a white clawed crayfish licence should be present when works take place adjacent to watercourses and, if deemed necessary, conduct a search within the works area prior to work commencing.

3.4.9 The River Don contains aquatic habitats which are capable of supporting a variety of different fish species/life stages including but not limited to brown trout, European eel, stone loach, bullhead, minnow and lamprey sp. To avoid disturbance to spawning fish, instream works should ideally be undertaken outside fish spawning seasons which for salmonids, such as brown trout, is November – January. Other fish species which may be encountered within the watercourse i.e. stone loach, bullhead, lamprey sp. and minnow typically spawn between March – June so this period should also be avoided where possible. Any works in the watercourses will be discussed with the ECoW and should incorporate appropriate control measures to minimise disturbance and to prevent mobilisation of sediment downstream which could negatively impact fish communities as detailed above. Measures should also be included to prevent any other pollutants (e.g. fuel) entering the watercourse as detailed within the CEMP.

3.5 SEC in Wogden Foot LWS

3.5.1 Morgan Sindall 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.

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 located within working areas which cannot be avoided will be undertaken between 1st September and end of January (to avoid the specific breeding season of this species). Where this is not possible, vegetation will be checked for active nests by the ECoW prior to removal and if evidence of nesting is identified, the ECoW will establish exclusion zones as per Section 3.2.5.

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 project (including the wider Wogden Foot LWS to the east of the proposed SEC). The stumps will either be hammered securely into the ground or strapped to retained or existing trees/mature scrub. Suitable locations would be along the banks of the River Don within existing mature scrub within the Wogden Foot LWS boundary.

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 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 project e.g. existing SEC once removed).

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 soil translocation is not possible 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. As mentioned in Section 2, it was requested by stakeholders that commercial seed is not used within Wogden Foot LWS. However should the seed harvesting not be successful or it is determined that natural regeneration is not the best option, it would be possible to source a bespoke seed mix based on the existing botanical composition of Wogden Foot LWS (established from harvested seeds and botanical surveys) and provide suitable habitat for flora and fauna associated with the LWS to flourish. A suitable mix would be agreed with ecological stakeholders.

Wogden Foot Laydown Area

3.5.9 The existing grassland (and scrub/woodland) seed bank and topsoil / 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 Morgan Sindall, the installation of the protective terram layer should be delayed in order to minimise the length of time the area is covered.

3.5.11 An opportunity to investigate the underlying seed bank/substrate composition within Wogden Foot LWS to inform the future reinstatement of the habitats has been suggested by Barnsley MBC as part of pre application consultation. The purpose of this is to determine how the grassland sward may recolonise naturally over time given the relatively unknown and different species composition of the substrate/soil within Wodgen Foot LWS. In order to do this, it is proposed that a number of small trial plots will be created (e.g. 3 no. 3mx3m) outside of the project working areas in the early stages of construction. These trial plots would seek to create similar conditions to those within the working areas once the sward/topsoil has been removed and help determine what seed bank may then establish and colonise naturally. Just the very

top layer of topsoil/ballast would be scraped off and then the resulting plot would be protected from disturbance during construction. The plots would be monitored initially in the first 2/3 years to inform the likely conditions within the working areas to be restored. They would also be monitored as part of the grassland monitoring period (7 years within Wogden Foot LWS) to inform the future management of the restored habitat (e.g. highlighting the potential need to control non target species, any remedial actions or timescales for colonisation.

Shrub

3.5.12 Where possible selected examples of mature shrubs located within Wogden Foot LWS which would otherwise be lost due to the project will be temporarily translocated to suitable receptor areas elsewhere within the LWS, providing conditions and individuals allow. The individuals will be translocated into appropriate areas as to not impact grassland habitats within the LWS. The following details the method for translocation:

- Where possible translocation will be undertaken in the period 1st 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;
- Formative pruning will be undertaken of individual shrubs and trees that have been identified as having the potential to be translocated to facilitate a successful translocation;
- Individual receptor pits will be created and excavated to approximately 2m x 2m x 2m and will be a sufficient depth and width to accommodate the translocated rootball and will be filled with P4 water retention polymer and slow release fertilizer, to help aid with the successful establishment of newly translocated material;
- Individuals will be translocated using a specialist skid-steer mounted tree spade, with the trees translocated as intact rootballed trees;
- Newly translocated trees will be watered in, to help aid their establishment and facilitate a successful translocation.
- Following completion of works, where possible and conditions allow, the translocated individuals will be planted back in the laydown area. If this is not deemed feasible at the time or unlikely to prove successful, new planting will be undertaken in the laydown and other temporary working areas in line with 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10.

River Don and associated riparian and aquatic species

3.5.13 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 are currently considered necessary.

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

Western Moors LWS

3.8.1 Morgan Sindall, in combination with the ECoW, will review and set out the areas within the moorland habitat of Western Moors LWS that are required for removal of Pylon 4ZO162 with the extent of the working area being minimised as reasonably practicable to facilitate works whilst protecting the habitat. Areas outside the fenced working area will 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. A precautionary approach as detailed in Section 3.3.6 will be adopted to address the low risk of reptiles being present in working areas and in turn to avoid direct killing or injury.

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 Morgan Sindall.

- Site staff will be briefed on any ecological issues affecting the project during the site induction. The specific mitigation to be implemented and methods of working to be adopted should form part of a regular 'toolbox 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), have been programmed, and will make all attempts, to avoid the period from 1st April and end of July in order to avoid potential disturbance on breeding birds. Should the programme change as a result of delays due to prolonged adverse weather for example, then this may require revisiting.

Habitat Protection (Including Trees)

4.2.3 Retained habitats will be protected from construction activities during the construction phase of the project using fencing. Demarcation fencing will be checked on a regular basis by the ECoW/ Morgan Sindall. The protection of trees that are to be retained will comply with the requirements of BS5387:2012 as specified in the Morgan Sindall Arboricultural Method Statement.

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 As detailed in Section 2.3, control of invasive species will be undertaken in line with National Grid Invasive Species Assessment and Biosecurity Management Plan with biosecurity measures detailed to be adopted during the construction phase of the project 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.

4.4 Trans Pennine Trail Diversion

Birds

4.4.1 Piling activities which may be required for the construction of the SEC (and Bridge 1 and Bridge 2), have been programmed, and will make all attempts, to avoid the period from 1st April and end of July in order to avoid potential disturbance on breeding birds. Should the programme change as a result of delays due to prolonged adverse weather for example, then this may require revisiting.

4.5 SEC in Wogden Foot LWS

Birds

4.5.1 Piling activities which may be required for the construction of the SEC (and Bridge 1 and Bridge 2), have been programmed, and will make all attempts, to avoid the period from 1st April and end of July in order to avoid potential disturbance on breeding

birds. Should the programme change as a result of delays due to prolonged adverse weather for example, then this may require revisiting.

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 watercourses where access routes 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 birds 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 routes for pylon and OHL removal will be installed outside of the bird nesting season. Where this is not possible, suitable 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 project construction period. The route of the access corridor and adjacent habitat will be monitored by the ECoW at regular (weekly) intervals throughout the nesting period (1st March to 31st 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) and the Landscape Plans (16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10).

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 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 project will be addressed through re-planting of native woodland and trees both on and off site of at least a 2:1 ratio. In addition to on-site tree planting as shown on the 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10, further compensatory off-site tree planting has also been agreed at two additional areas (termed as Area 5A and Area 5B) close to Hartcliffe, Penistone equating to the planting of approximately 2.3 ha of broadleaved trees.

5.3 Trans Pennine Trail (Cable Corridor)

Trees (On site)

5.3.1 Where possible trees removed to allow construction of the electric cable will be replaced *in situ* as detailed in the 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10, 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 introduces other appropriate native species.

5.3.2 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 cables by tree roots, however some shallow rooted species such as hedge species are possible where a hedge/thin strip of planting is required across the cable for screening purposes (such as for screening the SEC). This has been taken into account in 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10. Additional off-site tree replacement planting is also proposed as referred to above at 5.2.3.

5.3.3 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.

5.3.4 Deadwood from tree felling will either be retained in discrete habitat log and brash piles along the verges/grassland corridor of the re-instated Trans Pennine Trail to improve overall habitat diversity, or, where appropriate, used to create potential nesting habitat for willow tit (see below). Any surplus vegetative material which cannot be used beneficially for ecological enhancement or habitat improvement will be removed from site.

Grassland

5.3.5 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. Rotivation of areas where a membrane was deployed (if required) and re-seeding with a bespoke seed mix of local provenance of grassland on the laydown area and wider verge area and / or where trees cannot be planted (i.e. over the installed electric cables).

5.3.6 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 reseeding 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)

5.3.7 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.

5.3.8 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 project. These boxes may provide alternative habitat for species that may otherwise compete with willow tit for the natural nest sites. Locations of boxes will be agreed with the ECoW prior to placement.

Restoration of Landscape Features – Stone Walls and Water Features

5.3.9 Where it is 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).

5.3.10 To facilitate construction and operation of the cable route and due to site constraints, the existing ditch shall be replaced by a new drainage ditch to reflect the same hydrological profile and baseline conditions of the existing ditch in terms of width, depth and bank profile. Such works will be undertaken in line with advice from the ECoW to ensure the new ditch reflects the same ecological opportunities as the existing although it is to be noted that there is minimal ecological presence at this time.

Plates 4 and 5: 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 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10. 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 project, within Wogden Foot. This is based on the following ratios:

- approximately 50% 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 50% 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.

5.5.2 Details of proposed mounding in Wogden Foot LWS is illustrated within 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10 and 16866-RSK-0608-XX-SP-X-000001 Landscape Specification. If contamination issues limit the re-use of material from Wogden Foot LWS, then consideration will be given to the importing of inert materials, including nutrient-poor subsoils or aggregate.

Trees & Scrub

5.5.3 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.

5.5.4 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.

5.5.5 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

5.5.6 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 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 is practicable in a manner that replicates the existing topography where possible and engineering restrictions do not apply.

5.5.7 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.

5.5.8 If the quantity of seeds collected is not enough to cover the area required for reseeding in Wogden Foot LWS (although not deemed likely), ecological stakeholders have advised that this should be left to recolonise naturally. This would require consideration of the future grazing regime, encroachment of non-target /invasive species and the need to undertake remedial removal of these as the grassland is colonising. Should this request from stakeholders change, it would be possible to mix harvested seeds with a grass seed mix such as Emorsgate EG1 (General Purpose Meadow Grass Mixture) designed to produce a low growing and flower friendly sward as per the Landscape Management and Maintenance Plan (RSK, 2021). Using this grass seed mix would reduce dominance of annual weeds such as dock, thistle and nettle. The objective of using the topsoil seedbank and harvested seeds is to assist in preserving the unique grassland that has developed over time.

5.5.9 If soil translocation or seed harvesting is not possible, deemed to have failed, and/or natural generation is no longer considered to be the best option in Wogden Foot LWS, it would be possible to source a bespoke seed mix based on the existing botanical composition of Wogden Foot LWS (established from harvested seeds and botanical surveys) and provide suitable habitat for flora and fauna associated with the LWS to flourish. A suitable mix would be agreed with ecological stakeholders.

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. Locations of boxes will be agreed with the ECoW prior to placement.

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 project close to the entrance to Woodhead Tunnel will be removed as part of the project.

5.7.2 The remaining land, within ownership of National Grid, will be subject to habitat creation measures. This land (including the wider area owned by National Grid outside the existing SEC) will be established as a mix of species-rich grassland, 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 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10.

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 using an appropriate wildflower grassland. 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 to their existing condition in liaison with landowners as proposed in Table 5.1 below:

Table 5.1: Pylon Removal and Restoration

OHL Removal/ Working Area	Reinstatement Proposals
Pylon 4ZO163	To be reinstated to semi improved neutral grassland (Western Moors LWS)
Pylon 4ZO162	Natural re-colonisation proposed for dry heath/acid grassland habitat (Western Moors LWS). Dry heath/acid grassland seed mix could be used if deemed preferable post construction dependent on the level of disturbance and/or due to landowner requirements.
Pylon 4ZO161	To be reinstated to neutral grassland (improved grassland)
Pylon 4ZO160	To be reinstated to general grazing neutral grassland (improved grassland)
Pylon 4ZO159	To be reinstated to semi improved neutral grassland
Pylon 4ZO158	Area to be reinstated to a mosaic of scrub/ grassland/woodland as per Landscape Plan within Wogden Foot. Pylon foundations being retained may limit woodland planting.
Pylon 4ZO157	To be reinstated to neutral grassland (improved grassland)

Pylon 4ZO162 Western Moors LWS

5.8.2 It is proposed that seed will not be applied to the areas of moorland habitat from Western Moors LWS that fall within the working area for pylon 4ZO162 (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. A dry heath/acid grassland seed mix could be used if deemed preferable post construction dependent on the level of disturbance and/or landowner requirements.

5.9 Northern Access Route (AP7)

Habitats (General)

5.9.1 Grassland disturbed /temporarily removed across the extent of the northern access route will be fully reinstated to its original condition; improved/poor semi improved grassland.

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 identify where any changes and/ or remedial actions may be required.

6.1.3 As referenced at 1.1.5 BNG condition monitoring is separate, will extend beyond the timeframe adopted in this LEMP and will be committed to via a separate BNG condition monitoring programme.

6.2 General Project Wide

Trees

6.2.1 General on site replacement planting shall be monitored for a period of five to 10 years from the end of construction in line with Landscape Management and Maintenance Plan (Document Reference: 16866-RSK-0608-XX-PL-X-000001) and Landscape Specification (Document Reference: 16866-RSK-0608-XX-SP-X-000001).

6.2.2 During the first 5 years, any plant or seedings 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 (as detailed in the Landscape Management and Maintenance Plan) 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).

6.2.7 For all new trees and woodland areas that fall within the Barnsley Metropolitan Borough Council planning application boundary, planning condition 18 requires the provision of a management and maintenance plan for a minimum of ten years. Details are provided within the Landscape Management and Maintenance Plan (Document

Reference: 16866-RSK-0608-XX-PL-X-000001). Trans Pennine Trail (Cable Corridor)

Invasive Plant Species

6.2.8 In accordance with the Landscape Management and Maintenance Plan, invasive species such as Rhododendron identified growing within any of the re-planted areas while being monitored will be removed. The remains of these species should also be removed from the site.

Habitats

6.2.9 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 reseeding has taken place in line with the 16866-RSK-0608-XX-DR-X-000001-8 Soft Landscape Design Sheets 1 to 10.

6.2.10 In order to provide sufficient time for recovery, it is proposed that grassland monitoring (outside of Wogden Foot LWS) 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. Management of the seeded grassland areas are to be managed as a traditional hay meadow, in line with the Landscape Management and Maintenance Plan, to promote the establishment of wildflower species.

6.2.11 The post construction monitoring reports will be provided to the LPA within 6 months of the end of the monitoring year periods one, three and five. This should include raw species data populated on a reporting spreadsheet to assist uploading to Barnsley Biological Records Centre.

Birds (Willow Tit)

6.2.12 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).

6.2.13 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.

6.2.14 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.

6.2.15 The post construction monitoring reports will be provided to the LPA within 6 months of the end of the monitoring year periods two and five. This should include raw species data populated on a reporting spreadsheet to assist uploading to Barnsley Biological Records Centre.

Bats

6.2.16 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

6.2.17 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.

6.3 Trans Pennine Trail Diversion

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

6.4 SEC in Wogden Foot LWS

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

Grassland

6.4.2 Reinstated grassland areas will be monitored at Wogden Foot LWS for a period of 7 years with surveys being conducted in Years one, three, five and seven.

6.4.3 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 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. Management of the seeded grassland areas are to be managed as a traditional hay meadow, in line with the Landscape Management and Maintenance Plan, to promote the establishment of wildflower species.

6.4.4 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 (in line with the Landscape Management and Maintenance Plan) will be made to weed, mow, water and care for the newly establishing habitats within this monitoring period.

6.4.5 Following each monitoring visit, the management proposals within this LEMP and the Landscape Management and Maintenance Plan for the grassland habitats in the LWS will be reviewed and modified if required.

6.4.6 The post construction monitoring reports will be provided to the LPA within 6 months of the end of the monitoring year periods one, three and five. This should include raw species data populated on a reporting spreadsheet to assist uploading to Barnsley Biological Records Centre.

Birds (Willow Tit)

6.4.7 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.

6.4.8 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.

6.4.9 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.

6.4.10 The post construction monitoring reports will be provided to the LPA within 6 months of the end of the monitoring year periods two and five. This should include raw species data populated on a reporting spreadsheet to assist uploading to Barnsley Biological Records Centre.

6.5 Construction of Pylon 4ZO157R

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

6.6 Decommission of the Existing SEC and Pylon 4ZO164R Removal

Habitats (Grassland)

6.6.1 Reinstated grassland habitats will be monitored at years 2 and 5.

6.6.2 The post construction monitoring reports will be provided to the LPA within 6 months of the end of the monitoring year periods two and five. This should include raw species data populated on a reporting spreadsheet to assist uploading to Barnsley Biological Records Centre.

6.7 Pylon and OHL Removal (4ZO162 to 4ZO163)

Western Moors LWS

6.7.1 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.

6.7.2 Following each monitoring visit the management plan for grassland and heathland habitats within the LWS will be reviewed and updated as required.

6.7.3 The post construction monitoring reports will be provided to the LPA within 6 months of the end of the monitoring year periods two and five. This should include raw species data populated on a reporting spreadsheet to assist uploading to Barnsley Biological Records Centre.

6.8 Northern Access Route (AP7)

6.8.1 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; and
- 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.

7.3 Trans Pennine Trail Diversion

7.3.1 No enhancement measures are proposed.

7.4 SEC in Wogden Foot LWS

7.4.1 An area 'referenced as the red area' located to the eastern end of Wogden Foot LWS has been identified for enhancement as per the Willow Tit Enhancement Plan (Document Reference: 16866-RSK-1405-XX-PL-G-030006). The dense scrub will be subject to thinning to open up the canopy and allow the understory to establish. In addition, part of the area will be fenced (post and wire with rabbit netting as a minimum) to exclude stock from grazing within this area to remove disturbance and allow the understory to establish. This has been agreed with BMBC and Yorkshire Wildlife Trust.

7.4.2 In addition, 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 The 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 where possible) could be included in other parts of the LWS to further enhance the habitat for this species. Such measures will be agreed with the ECoW and stakeholders prior to installation.

7.4.4 Subject to agreement with stakeholders, the woody vegetation cleared from the LWS will either be removed entirely from the 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. Such measures will be agreed with the ECoW and stakeholders prior to installation. Any surplus vegetative material which cannot be used beneficially for ecological enhancement or habitat improvement will be removed from site.

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 project components and the ecological or landscape features requiring mitigation / management and monitoring during each phase of the project.

Table 8.1: Summary of Actions by Project Component and Stage

Project Component	Pre-Construction (Section 2)	Site Establishment (Section 3)	Construction (Section 4)	Post Construction (Section 5)	Monitoring (Section 6)
Project Wide	Environmental/ECoW to implement measures secured through the final agreed CEMP and this accompanying LEMP. Pre-construction walkover to confirm baseline conditions remain and identify any further implications for licensing and programme. Protection of retained habitats – habitats not impacted by the 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 project Protection of trees (in line with Morgan Sindall Arboricultural Method Statement (Reference: 16866-RSK-1406-XX-MS-X-000001) and Tree Protection Plans (Reference: 16866-RSK-1406-XX-PL-X-000002) – 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 project. 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 (1st 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 1st February to end August to take account of earlier nesting season of this species. Fauna – Nesting Birds - Piling activities which may be required for the construction of the project have been programmed to and will make all attempts to be undertaken outside the period from 1st April and end of July in order to avoid potential disturbance upon breeding birds. Should the programme change as a result of delays due to prolonged adverse weather for example, then this may require further consideration Fauna - Otter and Bats - Any lighting required during construction of will be directional and low-level. Fauna – Reptiles – precautionary strimming is required to dissuade reptiles from working areas. Fauna – Great Crested Newts (GCN) – eDNA surveys to be undertaken in April 2021 with anticipated results prior to commencement of works however should any initial works be required ahead of results then works to proceed under precautionary methods as detailed in LEMP. 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. Reinstatement - habitats will be replaced on a like-for-like basis unless otherwise stated below or in the Landscape Management & Maintenance Plan.				
Trans Pennine Trail (Cable Corridor, including National Grid Compound at Dunford Bridge	Invasive plant species (National Grid Compound) - Pre-construction survey and preparation of detailed control and removal strategy for Rhododendron and Japanese Knotweed.	Invasive plant species (All relevant areas) – Implementation of control and removal strategy for Rhododendron and Japanese Knotweed including implementation of biosecurity measures.	Invasive plant species (All relevant areas) – Continuation of control and removal strategy for invasive plants including implementation of biosecurity measures.	Trees- Replanting of native trees which would be subject to aftercare and maintenance. Grassland- Reinstatement and reseeding/replanting of grassland at Dunford Bridge.	Habitats/ Landscape Features - Post construction management of reinstated trees, habitats/ landscape features as per the LMMP (5 years).

Project Component	**Pre-Construction** (Section 2)	**Site Establishment** (Section 3)	**Construction** (Section 4)	**Post Construction** (Section 5)	**Monitoring** (Section 6)
and laydown areas)	Bats- Preconstruction surveys for bats (culverts beneath the Trans Pennine Trail). Preparation of licence application or non-licenced method statement as appropriate (if required). Grassland - Seed harvesting to be undertaken where possible from specified notable areas of grassland within Wogden Foot LWS. Other Habitat Features/ Landscape Features – Recording of stone walls and other features to be retained such as waterfalls.	Birds (willow tit) – Identification of willow tit features to be avoided. Where these cannot be avoided suitable nest site features (dead stumps) should be removed under supervision between start September and end January (and in advance of wider vegetation clearance preferably) for relocation of temporary storage. Reptiles- strimming of scrub and rough grassland and hand removal of suitable refuge features. Bats- Implementation of bat mitigation measures required in advance of the main construction phase as detailed in licence/non-licence method statement where required. Trees – Retained contiguous corridor of trees along the Trans Pennine Trail to maintain connectivity for fauna, including bats and willow tit Grassland (Dunford Bridge) – delineate specified notable areas to be avoided by construction activity. Install protective membranes over notable grassland within works areas. Other Habitat Features/ Landscape Features – protect any water course features to be retained such as waterfalls.	Bats- Implementation of bat mitigation measures as detailed in licence/non-licence method statement where required.	Rotivation of areas where membrane was deployed (if required). Birds (willow tit)- reinstate features removed which are suitable for nesting willow tit (if not relocated previously) and provision of nest boxes for competing species. Other Habitat Features/ Landscape Features – Reinstatement/restoration of other habitat features/ landscape elements such as stone walls and waterfall features.	Grassland – Suitably qualified botanist to monitor grassland condition in June – July in years 1, 3 and 5. Birds Monitoring (Willow Tit)- in combination with monitoring along within Wogden Foot LWS in years 2 and 5 (see below). Bat- monitoring may be agreed as part of licence (if licence required). Watercourses – Watercourses monitored for a period of 5 years. If required, remedial works to be completed in consultation with the landowner

Project Component	**Pre-Construction** (Section 2)	**Site Establishment** (Section 3)	**Construction** (Section 4)	**Post Construction** (Section 5)	**Monitoring** (Section 6)
		Flora and Fauna General– Ensure ECoW walkover prior to ensure no new ecological constraints of transient species such as badgers and ECoW supervision where deemed necessary for sensitive habitats.			
Trans Pennine Trail Diversion (including River Don crossing and two bridges but excluding Trans Pennine Trail diversion within the LWS).	Bats – Survey of affected trees that have moderate or high potential. Preparation of licence application or non-licenced method statement as appropriate (if required). Otter - Pre-construction survey on sections to be affected by diversion (River Don crossings). Preparation of licence application if required. Other Habitat Features/ Landscape Features – Recording of stone walls and other features to be retained.	Reptiles- strimming of scrub and rough grassland and hand removal of suitable refuge features. River Don – delineate a buffer between SEC works and the River Don. Flora and Fauna General– Ensure ECoW walkover prior to ensure no new ecological constraints of transient species such as badgers and ECoW supervision where deemed necessary for sensitive habitats. Bats- Implementation of bat mitigation measures required as detailed in licence/non-licence method statement where required. Aquatic Species - Implementation of mitigation measures to minimise impacts/disturbance of species and avoid of instream works during fish spawning seasons where possible.	Other Fauna - Where lighting is required during construction this should be sensitive / directional lighting directed away from the river wherever possible. Aquatic Species - Implementation of mitigation measures to minimise impacts/disturbance of species and avoid of instream works during fish spawning seasons where possible.	River Don/ Aquatic Habitats- Reinstatement of bankside habitats disturbed by works related to the bridges. Grassland- Reinstatement of habitats along the Trans Pennine Trail diversion once removed. Will revert to agricultural/grazing use.	Watercourses – Watercourses monitored for a period of 5 years, which will include inspection for signs of erosion/slumping of banks. If required, remedial works to be completed in consultation with the landowner.
Construction of SEC within Wogden Foot LWS and	Habitats (Botanical Survey) - Pre-construction condition assessment survey to	Habitat– set out areas required for construction and fence off habitat out with these areas to avoid entry.	Willow Tit Enhancement works at the eastern end of Wogden Foot (red area) when programme and conditions	Tree/ Scrub/ Grassland mosaic – reinstatement of mosaic of habitats within Wogden Foot LWS to be	Post construction management of reinstated trees and habitats (between

Project Component	**Pre-Construction** (Section 2)	**Site Establishment** (Section 3)	**Construction** (Section 4)	**Post Construction** (Section 5)	**Monitoring** (Section 6)
associated construction/lay down areas, Pylon 4ZO158 removal area, and section of Trans Pennine Trail diversion within Wogden Foot LWS.	inform future monitoring/set an up to date baseline. Grassland (Seed Harvesting) Habitat mitigation strategy to be programmed. Seed removal/hay cutting options to be undertaken in appropriate season (June-September) in advance of establishment of laydown/working areas. Otter– Pre-construction survey on River Don within proximity to SEC (if not already conducted for other project components).	Trial plots to be created outside working areas to monitor bare earth colonisation to inform reinstatement. Birds (willow tit) - 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. Habitats/ Grassland - 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. Shrub – Translocation of mature shrub to retained habitats of LWS River Don – delineate a buffer between SEC works and the River Don. Flora and Fauna General– Ensure ECoW walkover prior to ensure no new ecological constraints of transient species such as badgers and ECoW supervision where deemed necessary for sensitive habitats.	allow during construction period.	reinstated to reflect balance of habitats lost. Vegetation will be of local provenance and would be subject to aftercare and ongoing maintenance. Birds (Willow Tit) – Replacement of willow tit nest sites using re-instated or newly sourced stumps. Provision of nest box scheme to provide alterative nest sites for competing species Habitats/ Grassland - Grassland habitat reinstated from the seed bank within stored topsoil assisted by harvested seed. The soil may also require preparatory rotavating.	5 and 10 years) as per the LMMP. Grassland – Suitably qualified botanist to monitor grassland condition, including scrub encroachment, in June – July in years 1, 3, 5 and 7. Inspection for signs of settlement / drainage issues. Remedial action and feedback to management plan as required. Bird Monitoring (Willow Tit)- Post-construction monitoring at years 2 and 5. The purpose is to review status of willow tit and use of habitat affected by project in Wogden Foot and along the Trans Pennine Trail.
Construction of Pylon 4ZO157R	Otter – Pre-construction survey on River Don within proximity to SEC (if not already conducted for other project components).	River Don – delineate a buffer between Pylon 4ZO157 works and access route and the River Don.		Habitats - Reinstatement of habitats along access tracks and within pylon construction working areas.	

Project Component	Pre-Construction (Section 2)	Site Establishment (Section 3)	Construction (Section 4)	Post Construction (Section 5)	Monitoring (Section 6)
	Other Habitat Features/ Landscape Features – Recording of stone walls and other features to be retained.				
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.			Species rich grassland, woodland and scrub – 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.	Habitats (Grassland/trees) - Post construction management of reinstated trees, habitats/ landscape features (5 years). Suitably qualified botanist to monitor grassland condition, including scrub encroachment, in June – July 2 and 5.
Pylon and OHL Removal (4ZO163 to 4ZO157)	The Project–wide pre-construction ecology 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.	Western Moors LWS – EcoW and Morgan Sindall to set out fencing of working area within moorland habitat of Western Moors Reptiles- strimming of scrub and rough grassland and hand removal of suitable refuge features.	Flora and Fauna General– EcoW supervision of potential 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.	Habitats - Reinstatement of habitats along access tracks and within pylon removal working areas. Western Moors LWS (Pylon 4ZO163) - natural re-colonisation proposed for dry heath/acid grassland habitat (Western Moors LWS). Dry heath/acid grassland mix could be used if deemed preferable post construction dependent on the level of disturbance and/or landowner requirements.	Western Moors LWS only (Pylon 4ZO162 and Pylon 4ZO163) - Monitoring will be completed by a suitably qualified botanist during June-July in years 2 and 5.

Project Component	**Pre-Construction** (Section 2)	**Site Establishment** (Section 3)	**Construction** (Section 4)	**Post Construction** (Section 5)	**Monitoring** (Section 6)
	Other Habitat Features/ Landscape Features – Recording of stone walls and other features to be retained.				
Northern access route (AP7) from Brook Hill Lane (excluding Bridge 1 and 2 as already covered under Trans Pennine Trail diversion).	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. Nesting Birds – Specific measures adopted to mitigate potential effects upon ground nesting birds (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. Other Habitat Features/ Landscape Features –	Flora and Fauna General– Ensure ECoW walkover prior to ensure no new ecological constraints of transient species such as badgers and ECoW supervision where deemed necessary for sensitive habitats.	Nesting Birds 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.	Habitats (General) – All habitats to be reinstated to their original condition.	

Project Component	**Pre-Construction** (Section 2)	**Site Establishment** (Section 3)	**Construction** (Section 4)	**Post Construction** (Section 5)	**Monitoring** (Section 6)
	Recording of stone walls and other features to be retained.				

9 IMPLEMENTATION

9.1 Timetable

9.1.1 A detailed implementation timetable for all required mitigation measures will be produced by Morgan Sindall once a construction start date has been confirmed.

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 have been developed (Table 8.1 and 16866-RSK-0608-XX-PL-X-000001 Landscape Management and Maintenance Plan). 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 as required to ensure they are fit for purposes given the level of reinstatement.

10 REFERENCES

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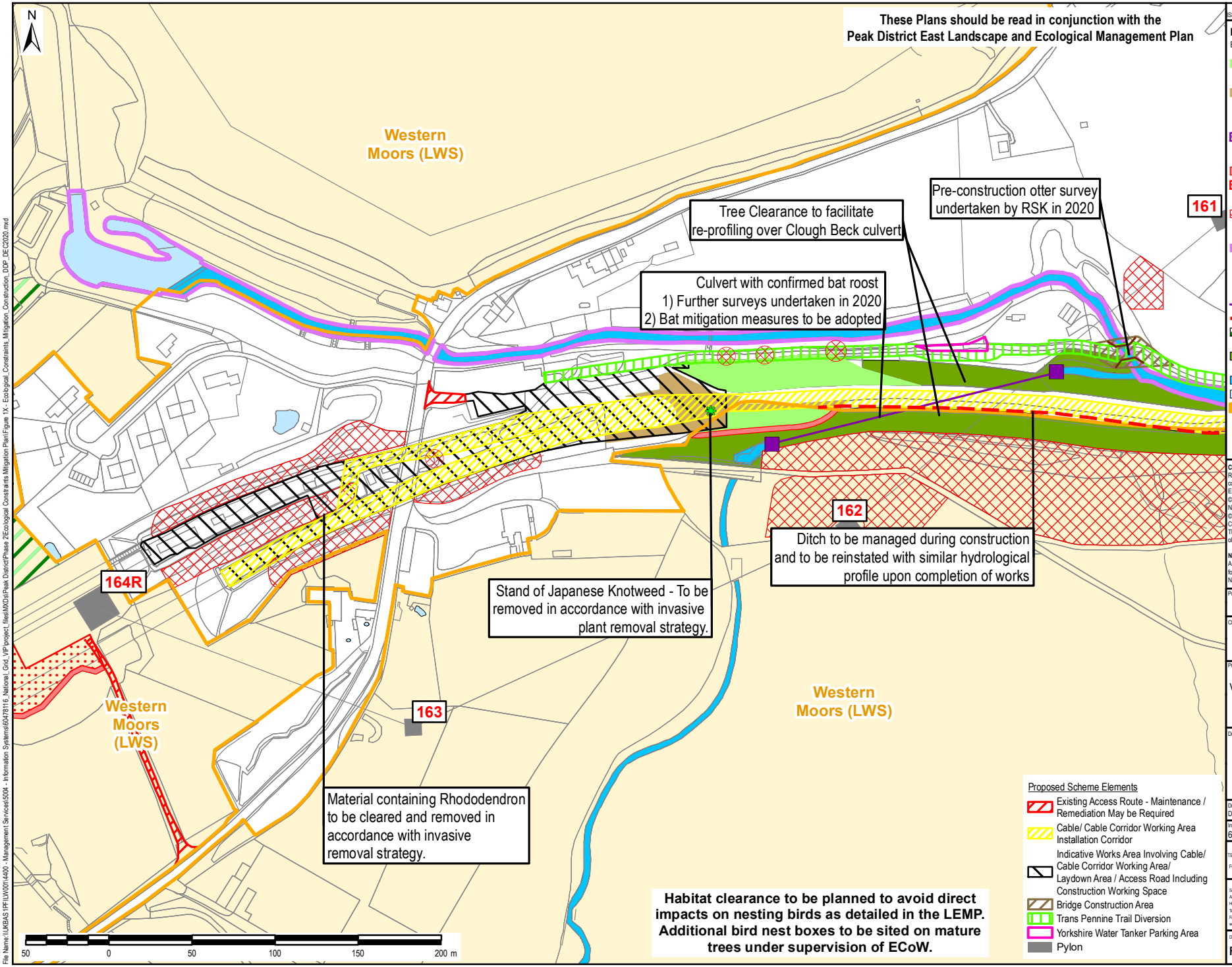
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RSK ADAS Ltd (2021) Arboricultural Method Statement Visual Impact Provision (VIP) Peak District East. February 2021.

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



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KEY

Ecological Constraints and Mitigation

- Indicative Area of Grassland to be Retained and Protected
- Topsoil to be Stripped Under Supervision of ECoW and Stored for Reinstatement (as required)
- Indicative Area of trees/scrub to be cleared to ground level (outside bird breeding season) and protective membrane installed. Suitable nesting stumps for willow tit to be translocated
- Tree Protection Buffer
- Area to be Retained and Protected
- Rhododendron Present Within These Areas (Any works within these areas to be subject to Invasive Plant Removal Strategy).
- River Don Indicative Buffer Zone - Retention and Protection of Habitats
- Japanese Knotweed
- Structures with Confirmed Bat Roost
- Culvert with Confirmed Bat Roost
- Ditch to be Reinstated
- Mixed woodland - plantation
- Woodland/Scrub - Indicative Area to be Retained and Protected (some pruning may be required)
- Running Water
- Standing Water
- Local Wildlife Site Boundary

Proposed Scheme Elements

- Existing Access Route - Maintenance / Remediation May be Required
- Cable/ Cable Corridor Working Area Installation Corridor
- Indicative Works Area Involving Cable/ Cable Corridor Working Area/ Laydown Area / Access Road Including Construction Working Space
- Bridge Construction Area
- Trans Pennine Trail Diversion
- Yorkshire Water Tanker Parking Area
- Pylon

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

Drawing Title: DUNFORD BRIDGE SECTION: UNDERGROUNDING CONSTRUCTION PHASE MITIGATION

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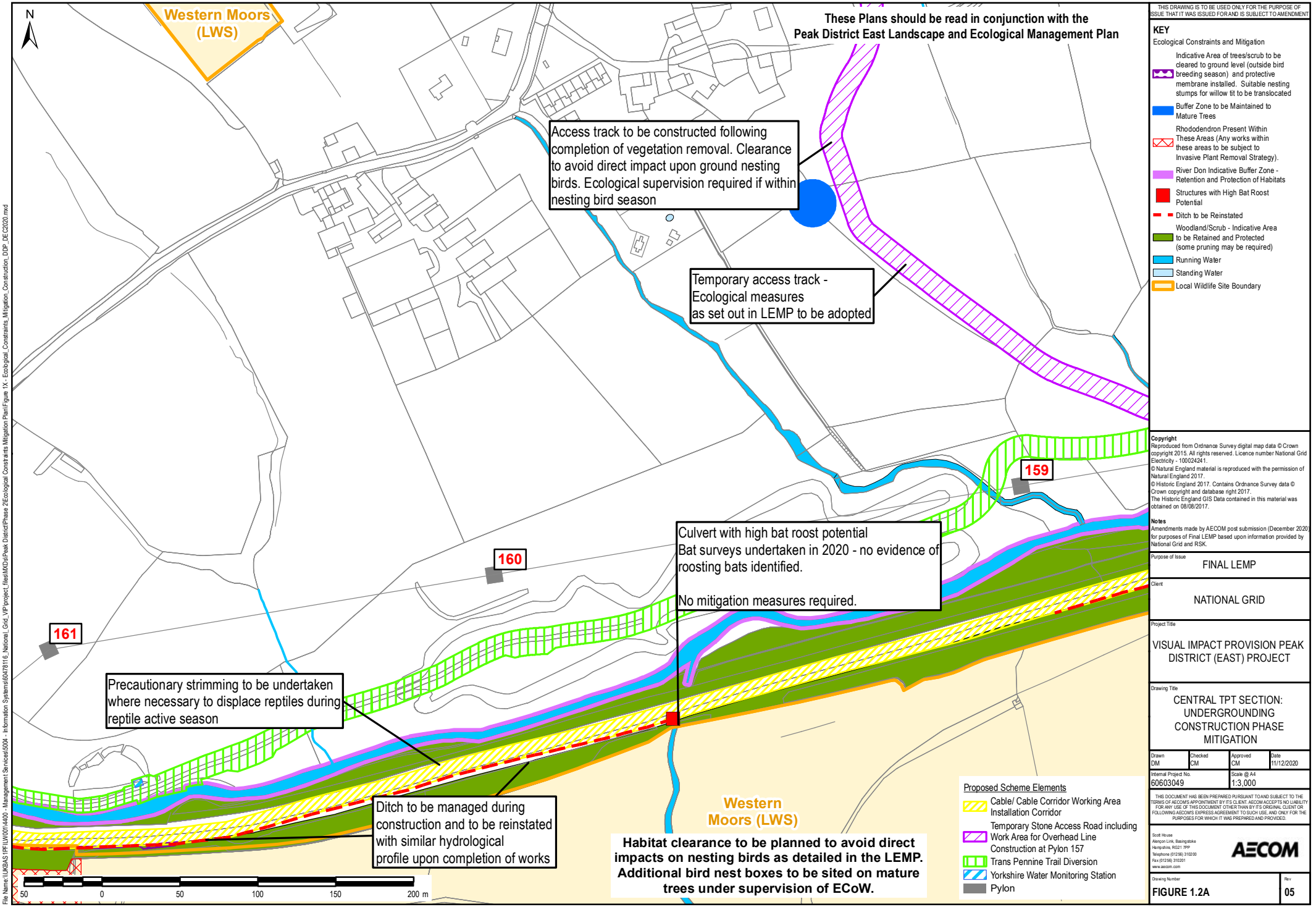
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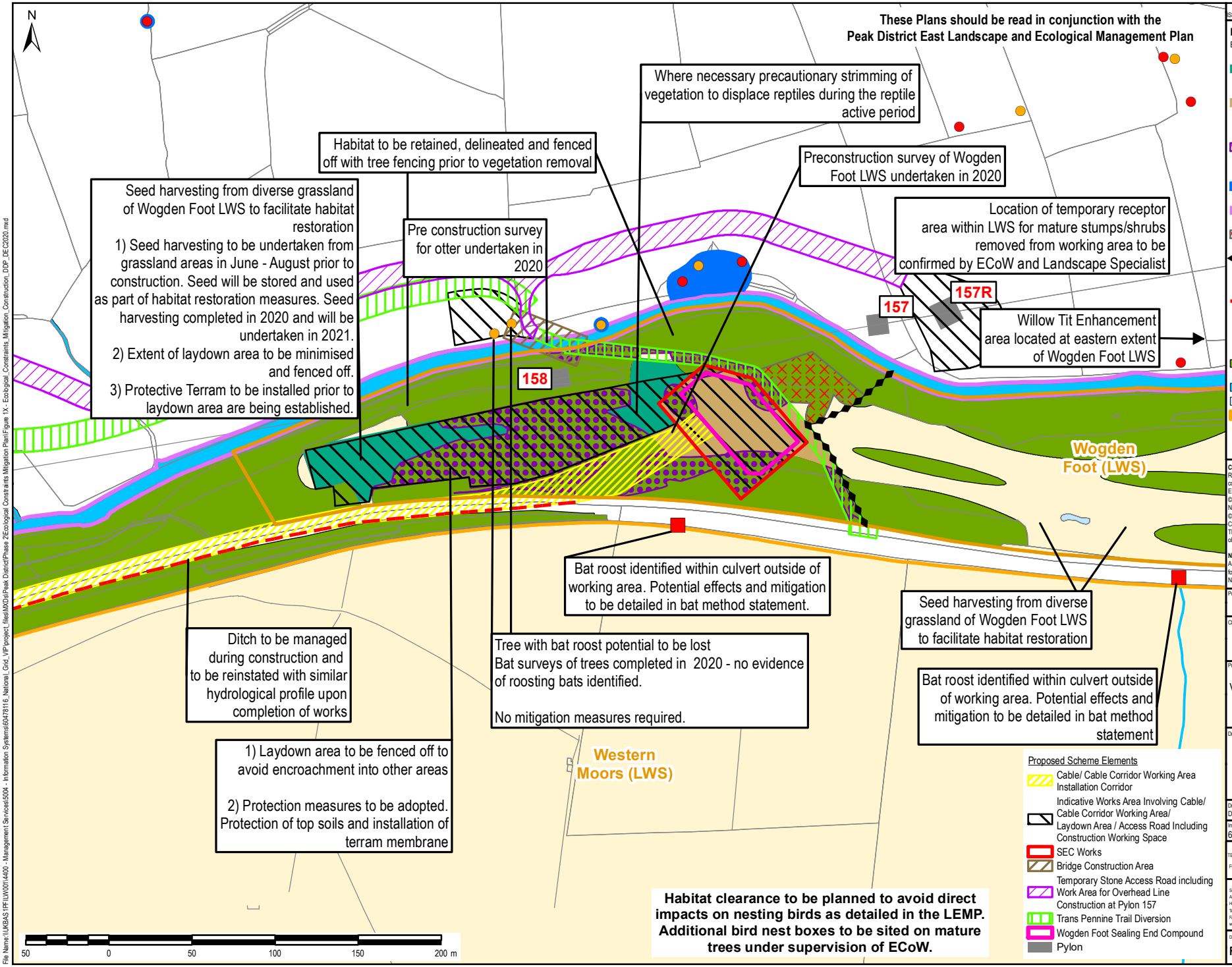
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KEY

Ecological Constraints and Mitigation

- Indicative Area of grassland to be left in situ (Seed harvesting and protective membrane)
- Topsoil to be Stripped Under Supervision of ECoW and Stored for Reinstatement (as required)
- Indicative Area of trees/scrub to be cleared to ground level (outside bird breeding season) and protective membrane installed. Suitable nesting stumps for willow tit to be translocated
- Buffer Zone to be Maintained to Mature Trees
- River Don Indicative Buffer Zone - Retention and Protection of Habitats
- Tree Pruning/removal as required to Maintain Electrical Clearance
- Construction Works Area to be Delineated During Construction
- Structures with High Bat Roost Potential
- Ditch to be Reinstated
- Trees with High Bat Roost Potential
- Trees with Moderate Bat Roost Potential
- Woodland/Scrub - Indicative Area to be Retained and Protected (some pruning may be required)
- Running Water
- Standing Water
- Local Wildlife Site Boundary

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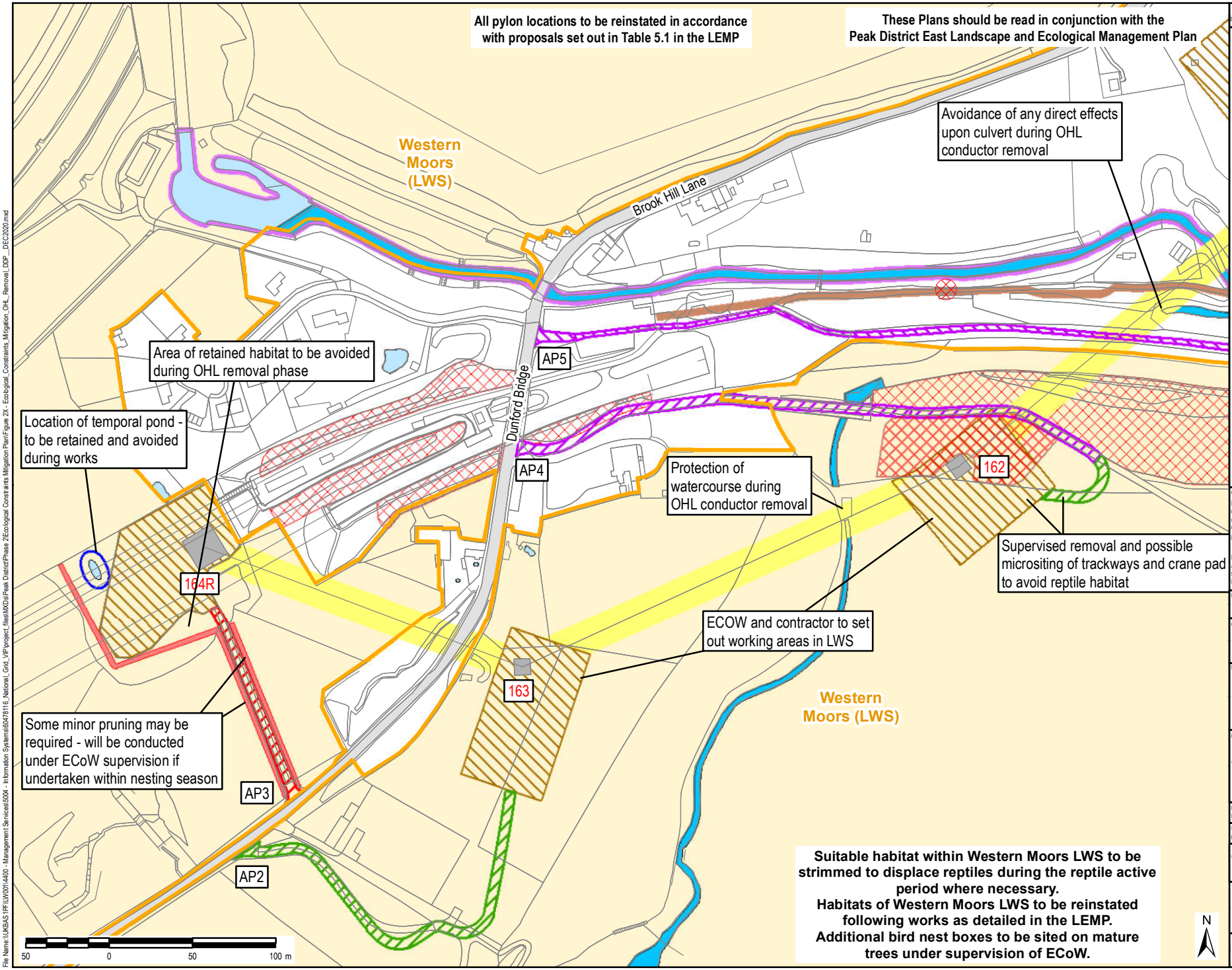
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KEY

- Construction Traffic
- Pylon
- Buffer to Pond
- Tree Protection Buffer
- Rhododendron Present Within These Areas (Any works within these areas to be subject to Rhododendron Removal Strategy)
- River Don Indicative Buffer Zone - Retention and Protection of Habitats
- Running Water
- Standing Water
- Local Wildlife Site Boundary
- Area for Conductor Removal
- Temporary Diversion of Trans Pennine Trail Diversion
- Existing Access Road
- Land Take for Crane Pad, OHL Working Platform and Pylon Removal
- Existing Stone Access Road
- Approximate Route of Temporary Trakway Access Road
- Work Area / Laydown Area / Access Road

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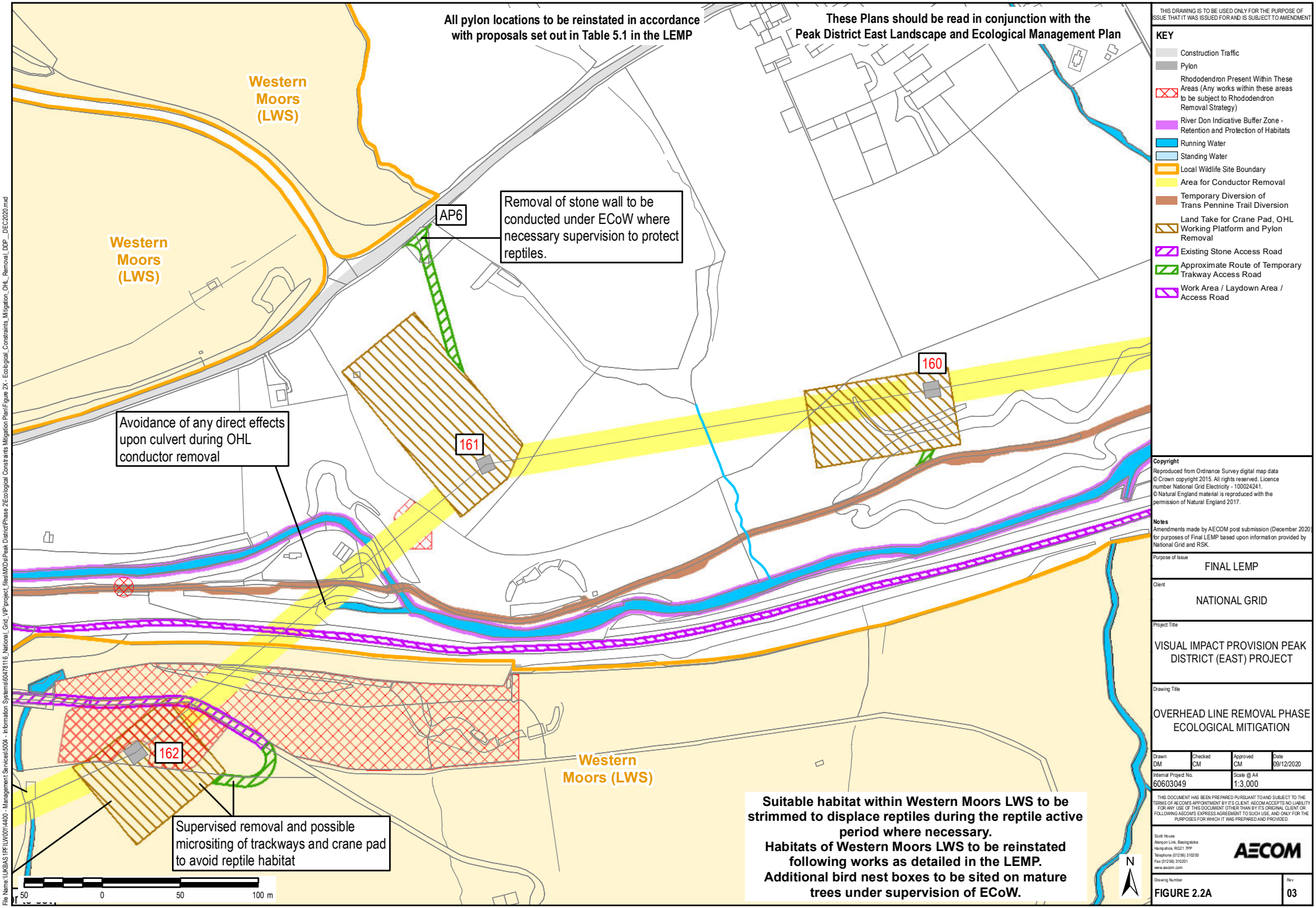
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KEY

- Construction Traffic
- Pylon
- Rhododendron Present Within These Areas (Any works within these areas to be subject to Rhododendron Removal Strategy)
- River Don Indicative Buffer Zone - Retention and Protection of Habitats
- Running Water
- Standing Water
- Local Wildlife Site Boundary
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- Land Take for Crane Pad, OHL Working Platform and Pylon Removal
- Existing Stone Access Road
- Approximate Route of Temporary Trakway Access Road
- Work Area / Laydown Area / Access Road

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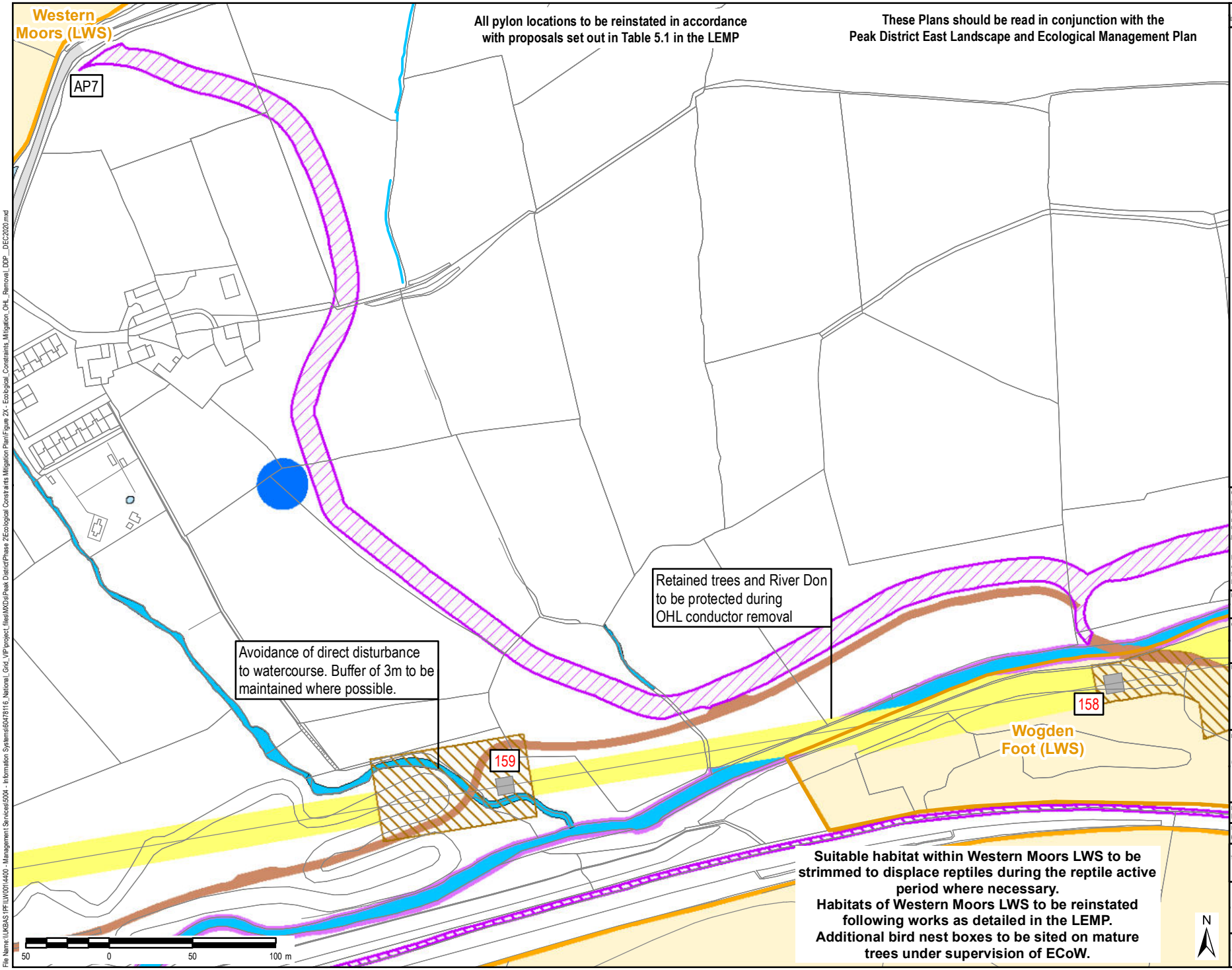
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KEY

- Construction Traffic
- Pylon
- Buffer Zone to be Maintained to Mature Trees
- River Don Indicative Buffer Zone - Retention and Protection of Habitats
- Running Water
- Standing Water
- Local Wildlife Site Boundary
- Area for Conductor Removal
- Temporary Diversion of Trans Pennine Trail Diversion
- Land Take for Crane Pad, OHL Working Platform and Pylon Removal
- Temporary Stone Access Road including Work Area for Overhead Line Construction at Pylon 157
- Work Area / Laydown Area / Access Road

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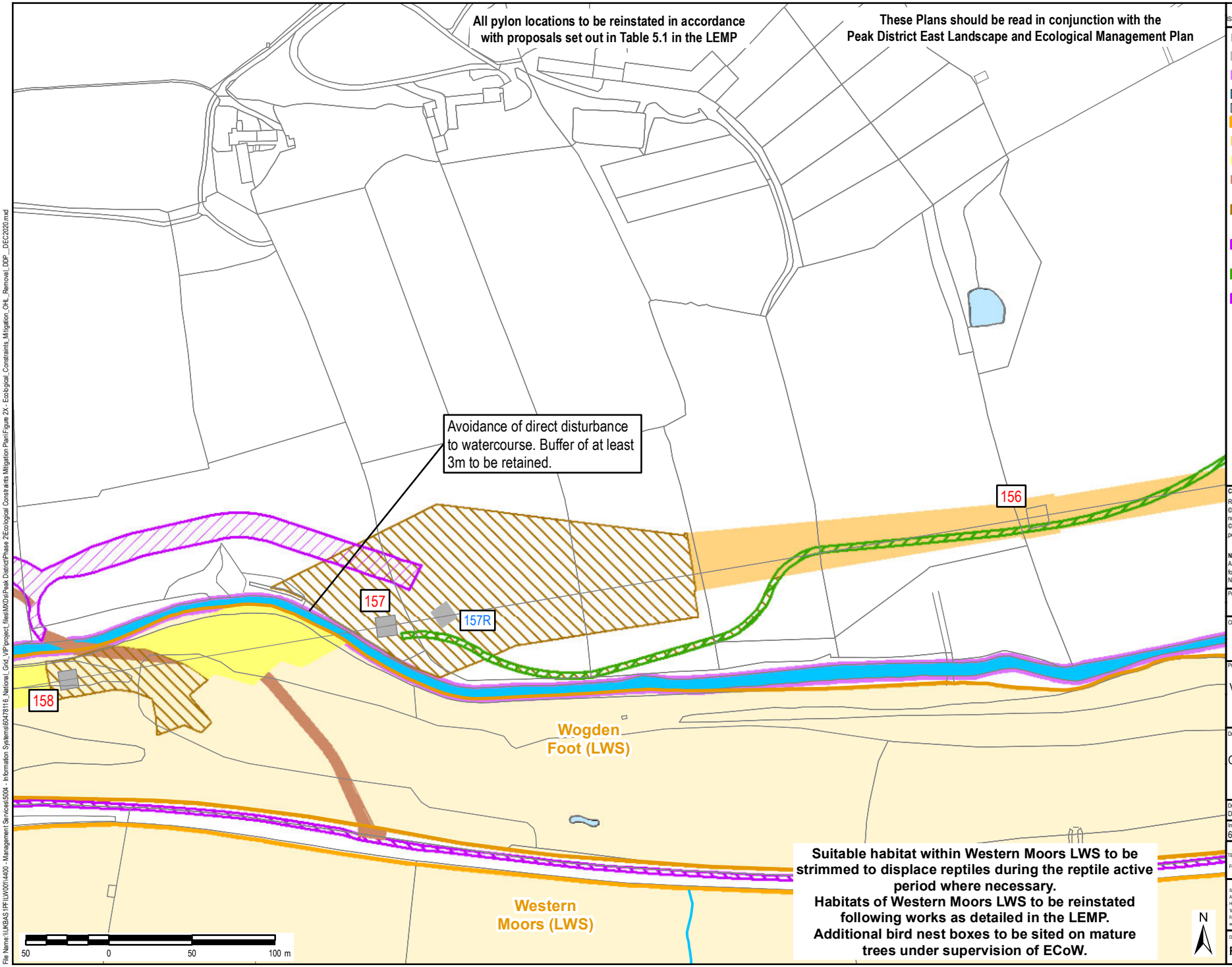
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Rev: 03

File Name:\\UKBAS1PFIL\W0014400 - Management Services\5004 - Information Systems\60478116_National_Grid_VIP\project_files\MXD\Peak District\Phase 2\Ecological Constraints Migration Plan\Figure 2X - Ecological_Constraints_Mitigation_OHL_Removal_DDP_DEC2020.mxd



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KEY

- Pylon
- River Don Indicative Buffer Zone - Retention and Protection of Habitats
- Running Water
- Standing Water
- Local Wildlife Site Boundary
- Area for Conductor Refurbishment (155 - 157)
- Area for Conductor Removal
- Temporary Diversion of Trans Pennine Trail Diversion
- Land Take for Crane Pad, OHL Working Platform and Pylon Removal
- Temporary Stone Access Road including Work Area for Overhead Line Construction at Pylon 157
- Approximate Route of Temporary Trakway Access Road
- Work Area / Laydown Area / Access Road

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Notes
Amendments made by AECOM post submission (December 2020) for purposes of Final LEMP based upon information provided by National Grid and RSK.

Purpose of Issue: FINAL LEMP

Client: NATIONAL GRID

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

Drawing Title: OVERHEAD LINE REMOVAL PHASE ECOLOGICAL MITIGATION

Drawn	Checked	Approved	Date
DM	CM	CM	09/12/2020

Internal Project No.	Scale @ A4
60603049	1:3,000

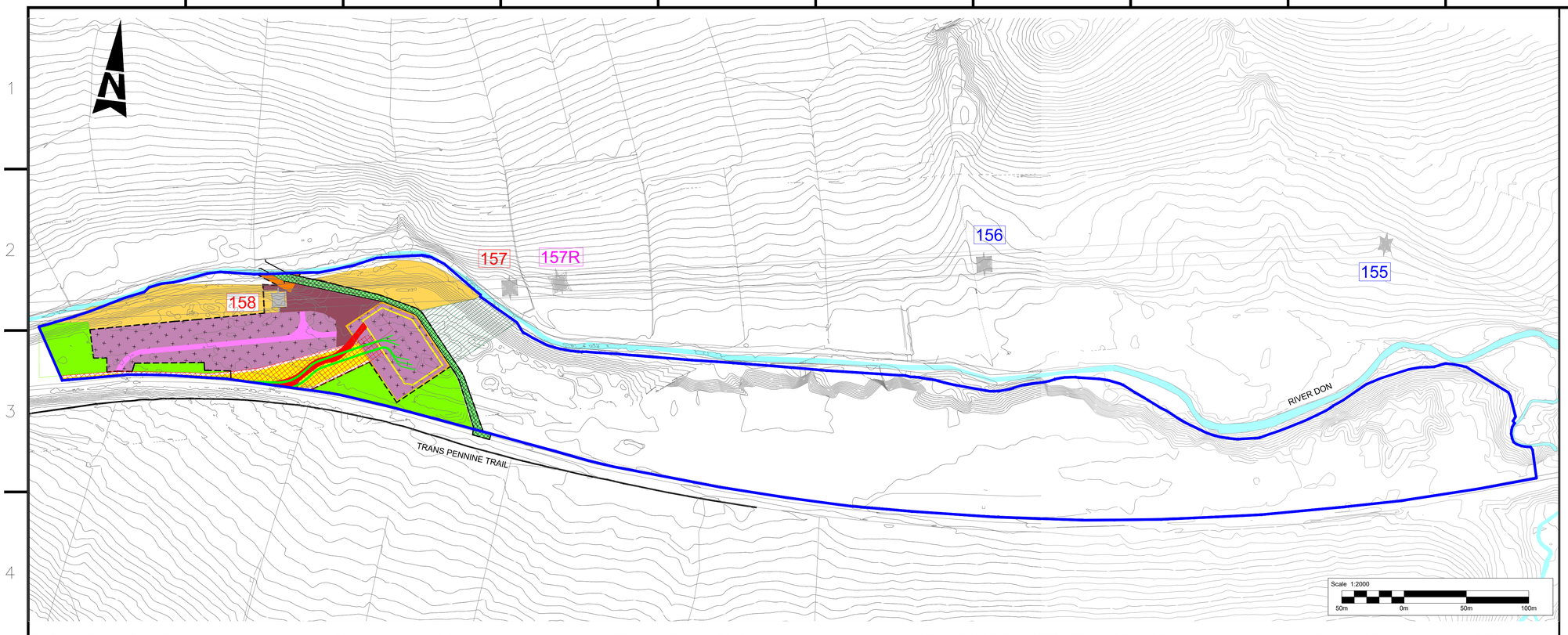
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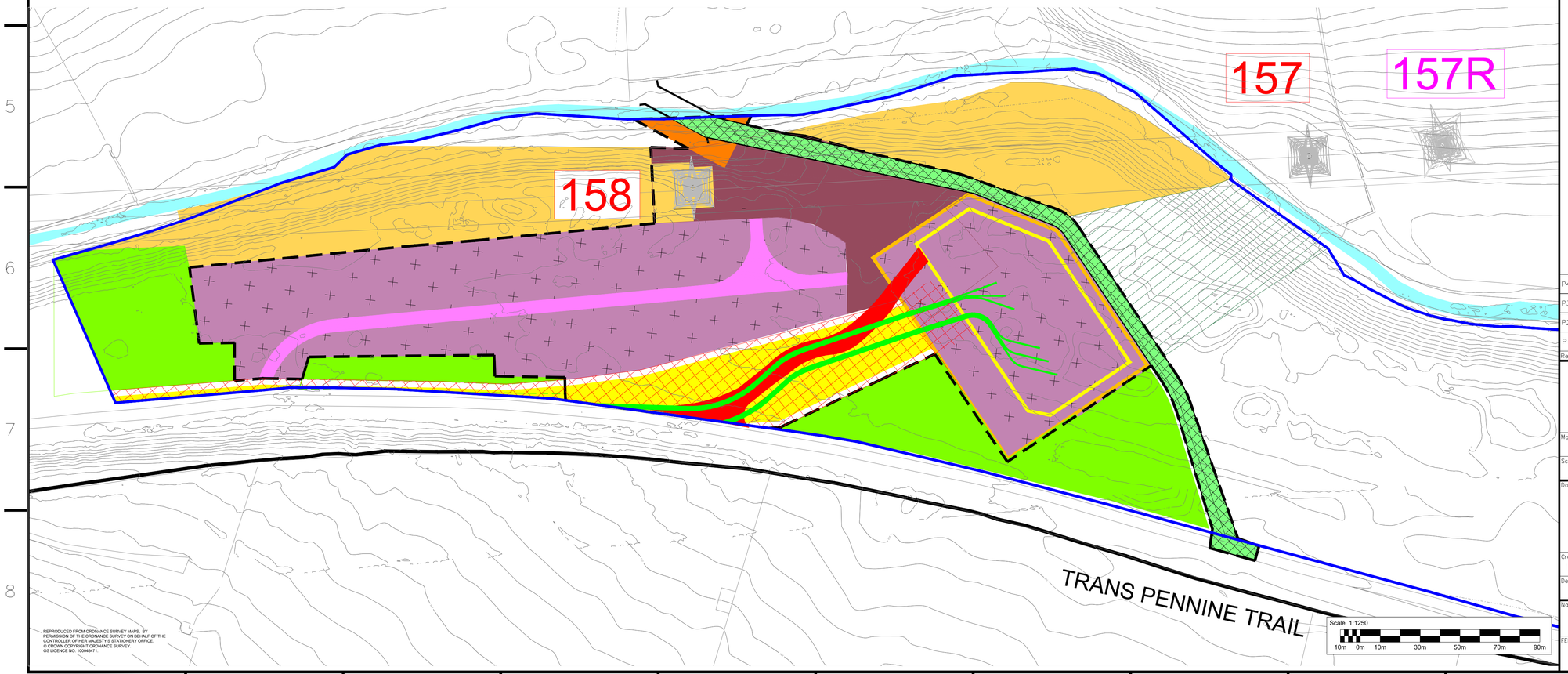
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NOTES

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)		
INDICATIVE WORKING AREA INCLUDING CABLE / ACCESS ROAD AND CONSTRUCTION WORKING SPACE (TOTAL 17546m²)		
	INDICATIVE AREA REQUIRED TO CONSTRUCT TEMPORARY BRIDGE	299m²
	TRANS PENNINE TRAIL DIVERSION	1337m²
	INDICATIVE WORKS AREA INVOLVING CABLE / ACCESS ROAD INCLUDING CONSTRUCTION WORKING SPACE	2356m²
	INDICATIVE ACCESS ROAD (4m WIDE)	931m²
	SEC REQUIRED CONSTRUCTION AREA	3771m²
	INDICATIVE WORKS/LAYDOWN AREA	11730m²
	PERMANENT ACCESS ROAD (5m WIDE)	580m²
INDICATIVE WORKING AREA REQUIRED FOR OVERHEAD LINE REMOVAL (TOTAL 5441m²)		
	INDICATIVE OVERHEAD LINE WORK AREA	2863m²
	INDICATIVE TREE PRUNING AREA TO ENABLE ELECTRICAL CLEARANCE TO BE ACHIEVED FROM THE NEW DOWNLEAD SPAN 157R - GANTRIES.	2323m²
	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		
	SEALING END COMPOUND BUILT FOOTPRINT	2193m²
	INDICATIVE CABLE ROUTE	
	TREES TO BE RETAINED	
157	PYLON TO BE REMOVED	
157R	NEW PYLON	
	LOCATION OF TEMPORARY BRIDGE	
	NO TREE ZONE	
	RIVER DON	

Rev	Description	Cre'd	Chk'd	App'd	Date
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

nationalgrid

Master Scheme No:	Sub-Scheme No:	Site:
33492	–	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:	Date:	Checked by:	Date:	Approved by:	Date:
M.CONWAY	30/04/19	C.NUNN	30/04/19	C.NUNN	30/04/19

Development Eng:	Document Type:	Scale:	Format:	Sheet(s):	Rev:
D.SPURR	2D DRAWING	AS SHOWN	A1	1 OF 1	P4

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

FEED Document Number:

Appendix 2: Proposed Schedule of Responsibilities

Item	Task	LEMP Section Ref	Phase relevant to	Timing requirement/restriction	Anticipated date required based on current programme	Responsibility
1.	Appoint ECoW	1.7, 4.2.1	All	At contract award	April 2020	Morgan Sindall
2.	Pre-Construction Walkover (landscape features)	2.3.24, 2.4.6, 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.	Morgan Sindall (including LCoW)
3.	Pre-construction walkover (Ecological)	2.2.1, 2.7.2, 2.8.2	Pre-Construction	Advised to be undertaken prior to commencement of work in each area in line with species timing constraints in case any protected species licences are required	Required at varying stages depending on area of work. Preliminary walkover undertaken in Spring/Summer 2020 however will continue to be undertaken throughout project as and when works commence in different areas.	Morgan Sindall (including ECoW)
4.	Rhododendron removal at Dunford Bridge compound	2.3.1 – 2.3.2 (see also 3.3.1 and 4.3.1)	Pre-construction	Minimum of 6 months prior to construction. Removal can be done any time although preferable September – March to avoid conflict with nesting birds (Rhododendron only)	Survey August 2019 Rhododendron removal at National Grid Dunford Bridge compound has been undertaken Winter 2019 and July 2020 and will be ongoing as required.	National Grid to undertake Rhododendron mitigation works within compound at Dunford Bridge

Item	Task	LEMP Section Ref	Phase relevant to	Timing requirement/restriction	Anticipated date required based on current programme	Responsibility
5.	Rhododendron removal/treatment (e.g. along TPT and diversion) and Japanese Knotweed removal at Dunford Bridge (current stand JK1)	2.3.1 – 2.3.6 (see also 3.3.1 and 4.3.1)	Pre-construction	Minimum of 6 months prior to construction. Removal can be done any time although preferable September – March to avoid conflict with nesting birds (Rhododendron only)	Rhododendron removal undertaken in July 2020 and will be ongoing as required. Japanese Knotweed works to be undertaken early 2021.	Morgan Sindall
6.	Bat Activity and Transect surveys at confirmed and potential roost sites, inc trees	2.3.8, 2.4.1	Pre-construction	Between May – September	Survey May – September 2020 Survey May – September 2021	2020 and 2021 survey (Morgan Sindall) (including ECoW)
7.	Bat licence application (if required)	2.3.14	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 – early 2021 If required for cable installation or SEC – Summer 2021	Morgan Sindall (including ECoW).
8.	Implementation of Bat mitigation measures or precautionary	2.3.11 – 2.3.13	All	To be confirmed	Implementation of Method Statement/Licence – late 2021/2022	Morgan Sindall (including ECoW)

Item	Task	LEMP Section Ref	Phase relevant to	Timing requirement/restriction	Anticipated date required based on current programme	Responsibility
	working methods (if required)					
9.	Seed harvesting	2.3.16 – 2.3.23, 2.5.3	All	June - September	Summer 2020 Summer 2021	Morgan Sindall (including ECoW)
10.	Otter surveys and mitigation	2.4.3 – 2.4.5, 2.5.4	Pre-construction	Can be conducted year-round.	Summer 2020	Morgan Sindall (including ECoW)
11.	eDNA surveys for Great Created Newts and mitigation	2.2.9	Pre-construction	April – June	April 2021	Morgan Sindall (including ECoW)
12.	Botanical survey of Wogden foot	2.5.1 – 2.5.2	Pre-construction	June – end July in year prior to start of construction works.	July 2020	Morgan Sindall (including ECoW)
13.	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	3.2.3, 3.2.7, 3.3.11, 3.3.12, 3.4.4, 3.5.1, 3.5.13, 3.6.1, 3.8.1, 4.2.3	Site establishment, Construction	Northern access track fencing and ticker tape to be installed as soon as land access agreements allow (approx. early 2021).	Northern access road early 2021, followed by various dates from June 2021 onwards.	Morgan Sindall (including ECoW)

Item	Task	LEMP Section Ref	Phase relevant to	Timing requirement/restriction	Anticipated date required based on current programme	Responsibility
14.	Nesting bird habitat removal	2.9.3, 3.2.4 – 3.2.5	Site establishment	Outside of bird breeding season (March – end of August) or if not possible vegetation to be checked by ECOW immediately prior to removal. For areas used by willow tit the bird breeding season should be classed as 1st February to end of August.	Various – commencing January 2021.	Morgan Sindall (including ECoW)
15.	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.	Early 2021 outside of nesting bird season	Morgan Sindall (including ECoW)
16.	Strimming of reptile habitats i.e. long grass land, bracken and scrub	3.3.6, 3.4.1, 3.8.2	Site establishment	Suitable weather conditions Mid-March – Mid October within active reptile period.	Various depending on area	Morgan Sindall (including ECoW)
17.	Removal of reptile refuge features	3.3.6, 3.4.1, 3.8.2	Site establishment	Suitable weather conditions Mid-March – Mid October within active reptile period.	Various depending on area	Morgan Sindall (including ECoW)

Item	Task	LEMP Section Ref	Phase relevant to	Timing requirement/restriction	Anticipated date required based on current programme	Responsibility
18.	Installation of protective membrane over notable grassland	3.3.11	Site establishment	Not specifically time dependant but will only be possible once seed harvesting and scrub clearance has been undertaken.	Late 2021 if required	Morgan Sindall (including ECoW)
19.	Minor watercourses to be traversed by crossing points or pipe culvert bridges	3.4.7 – 3.4.9	Site establishment	Not time dependent (avoiding of appropriate fish spawning season as detailed in Section 3.4.9)	Mid-late 2021 (however to note any instream works need to be discussed with ECoW and avoid appropriate fish spawning season where possible)	Morgan Sindall (including ECoW)
20.	Retention of topsoil and ballast removed to facilitate construction	3.5.6	Site establishment	Not time dependent	Various depending on area	Morgan Sindall (including ECoW)
21.	Translocation of mature scrub stumps/standing dead wood	3.5.12	Site establishment	Undertaken in winter period.	Late 2021	Morgan Sindall (including ECoW)
22.	Trial plots to monitor bare earth colonisation to inform reinstatement.	3.5.11	Site establishment	Not time dependent	Late 2021	Morgan Sindall (including ECoW)

Item	Task	LEMP Section Ref	Phase relevant to	Timing requirement/restriction	Anticipated date required based on current programme	Responsibility
23.	Application of the CEMP	4.2.1	Construction	Not time dependent	Throughout duration of works	Morgan Sindall (including ECoW)
24.	Excavations to be either covered at night, or include means of egress	4.2.4	Construction	Not time dependent	Throughout duration of works	Morgan Sindall (including ECoW)
25.	Adoption of biosecurity measures	4.3.1	Construction	Not time dependent	Throughout duration of works	Morgan Sindall (including ECoW)
26.	Monitoring of access track construction and construction vehicle activity	4.7.2	Construction	Not time dependent	Summer 2021	Morgan Sindall (including ECoW)
27.	ECOW monitoring of retained habitats and work areas	4.7.2 – 4.7.3	Construction	Monthly through nesting period (March – end of August).	From April 2021	Morgan Sindall (including ECoW)
28.	Replacement of lost habitats on site	5.2.2	End of construction	Not time dependent	On completion of works	Morgan Sindall (including ECoW)
29.	Replacement of lost trees on site	5.2.3, 5.3.1 – 5.3.4, 5.5.3 – 5.5.5	End of construction	Not time dependent	On completion of works	On site – Morgan Sindall (including ECoW and LCoW)
30.	Post- construction walkover by Landscape Architect	5.3.3	End of construction	Not time dependent	On completion of works	Morgan Sindall (including ECoW)

Item	Task	LEMP Section Ref	Phase relevant to	Timing requirement/restriction	Anticipated date required based on current programme	Responsibility
31.	Reinstatement and Enhancement of habitats	5.2.2, 5.3.1 – 5.3.10, all of 5.4, 5.5, 5.6, 5.7, 5.8 and 5.9 Section 7	End of construction	Not time dependent	On completion of works	Morgan Sindall (including ECoW)
		5.2.3 off site tree planting		Not time dependent	2021/2022	National Grid
32.	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. 10 years for trees within planning application boundary.	Post Construction	National Grid
33.	Willow Tit Habitat Enhancement Measures	7.4.1 – 7.4.2	During Construction and Reinstatement Phase	To be progressed during construction but avoiding willow tit breeding season.	During construction	Morgan Sindall