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Visual Impact Provision – Peak District (East) National Park Project

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OUTLINE ARCHAEOLOGICAL WRITTEN SCHEME OF INVESTIGATION

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1 INTRODUCTION

1.1 Project Background

1.1.1 The Visual Impact Provision (VIP) Project represents a major opportunity to conserve and enhance the natural beauty, wildlife and environmental heritage within our most protected landscapes by relocating above ground electrical infrastructure such as overhead lines (OHL), underground. The project will make use of a £500m allocation by Ofgem to carry out work to help reduce the impact of existing transmission lines in English and Welsh Areas of Outstanding Natural Beauty (AONBs) and National Parks. In 2014, National Grid identified twelve transmission lines in eight AONBs and National Parks as having the most significant visual impact.

1.1.2 In September 2015 the Project's Stakeholder Advisory Group considered a wide range of factors and recommended four schemes be taken forward for potential engineering work, one of which is the Peak District (East) National Park Project.

1.1.3 The Peak District (East) National Park Project is hereon referred to as the 'Proposed Project'.

1.1.4 The potential archaeological effects are described in the Environmental Assessment Report produced for the Proposed Project (RSK, 2019).

1.1.5 In this document 'the Proposed Project' comprises:

- Cable installation including ground preparatory works;
- Removal of the VIP Subsection (the existing overhead line);
- Construction of a Sealing End Compound (SEC);
- Construction of new tower 4ZO157R;
- Construction of a temporary diversion of the Trans Pennine Trail (TPT);
- Construction of temporary and permanent bridged water crossings; and
- Any temporary works areas and access tracks.

1.1.6 The programme of archaeological mitigation works includes suitable and proportionate measures and procedures developed in consultation with the archaeological advisors to Barnsley Metropolitan Borough Council (BMBC advisors the South Yorkshire Archaeological Service – SYAS) and the Peak District National Park Authority (PDNPA) and will be carried out as a staged process during construction enabling works.

1.1.7 Results of the fieldwork described in this Archaeological Written Scheme of Investigation (WSI) and carried out during the preconstruction and construction stages of the Proposed Project will be reported on separately (see Part 10), and provided to the following parties:

- BMBC;
- SYAS;
- PDNPA;
- the South Yorkshire Sites and Monuments Record (SYSMR);
- Peak District Historic Buildings, Sites and Monuments Record ('HBSMR'); and
- The Archaeological Data Service online grey literature report library ('OASIS').

1.1.8 Results will be provided to the SYSMR and HBSMR in digital format for addition to their respective datasets.

1.2 Objectives

1.2.1 The objectives of the programme of archaeological work are to:

- Define the extent of the known, and identify any previously unknown archaeological remains that could be impacted during the course of the Proposed Project construction works;
- Ensure appropriate mitigation measures are implemented to consist of either 'preservation *in situ*' or 'preservation 'by record' (excavation and recording) where the former is not feasible; and
- Contribute to the body of knowledge on archaeological remains in the area.

1.3 Document Definition

1.3.1 This Archaeological WSI commits National Grid and their Principal Contractor to a programme of archaeological mitigation to offset potential effects upon the historic environment as a result of the Proposed Project. This document identifies specific locations and defines detailed strategies to be implemented prior to and during the construction phase for:

- Roles, responsibilities and decision-making (Parts 1.4 and 3.2)
- Earthwork Survey (Part 7.1)
- Condition Surveys (Part 7.2)
- Preservation *in Situ* (Part 7.3)
- Archaeological Watching Brief (Part 7.4)

1.4 Roles and Responsibilities

1.4.1 This Archaeological Written Scheme of Investigation (WSI) addresses the scope of any archaeological mitigation to be carried out during the preconstruction and construction phases.

1.4.2 This document includes a review of baseline information from an Environmental Assessment Report (RSK, 2019) against the results of all completed surveys in order to present an updated section on archaeological potential, with updated research aims.

Consultation

1.4.3 The methods described in this Archaeological WSI are in response to, and have been developed in consultation with, SYAS and PDNPA.

1.4.4 This document will be monitored and updated throughout the consents and post-consent process to ensure that the scheme of investigation is appropriate to the final design of the Proposed Project, and as each stage of work is completed.

Personnel

1.4.5 This document has been prepared by RSK Environment (RSK) on behalf of National Grid (NG).

1.4.6 The Principal Contractor (PC) will, in some cases, provide a health and safety overview of some high-risk tasks.

1.4.7 A nominated Archaeological Clerk of Works (ACoW), an experienced and appropriately qualified archaeologist and Member of the Chartered Institute for Archaeologists (CIfA), will be appointed by the Principal Contractor to act as a single point of contact, and monitor the archaeological mitigation works on behalf of NG.

1.4.8 An Archaeological Contractor (AC) will be engaged by National Grid and/or the Principal Contractor to implement the measures defined in this Archaeological WSI (see 'Resourcing' for individual mitigation measures, Section 7). Appropriately experienced specialists will provide relevant on-site and post excavation (assessment and analysis) support if required.

1.5 Standards

1.5.1 In format and content, this Archaeological WSI conforms with best practice and guidance outlined in:

- Chartered Institute for Archaeologists *Code of Conduct* (CIfA, 2014);
- *Standards and Guidance for Archaeological Excavation* (CIfA; 2014);
- *Standards and Guidance for Archaeological Watching Brief* (CIfA; 2014); and
- *MoRPHE (Management of Research Projects in the Historic Environment, Project Planning Note (PPN) 3: Archaeological Excavation* (Historic England, 2008).

2 OUTLINE STRATEGY

2.1.1 In accordance with *MoRPHE PPN 3: Archaeological Excavation* (Historic England, 2008) five stages of the archaeological assessment and mitigation strategy are specified which will take place prior to, during and after Project construction.

2.2 Stage 1: Project Planning

2.2.1 The strategy and programme outlined in this Archaeological WSI represents Stage 1: Project Planning and provides a suitable and proportionate framework for the archaeological assessment and mitigation for the area physically affected by the Proposed Project.

2.3 Stage 2: Pre-construction/Construction-phase Fieldwork

Archaeological Assessment Techniques

2.3.1 Archaeological assessment has been undertaken during the preparation of the Environmental Assessment Report, comprising:

- Desk-based assessment;
- Walkover survey;
- LiDAR survey and assessment; and
- Watching brief during Ground Investigations.

2.3.2 These assessments have helped to define the archaeological potential of the area affected by the Proposed Project in order that detailed further assessment and mitigation measures can be defined.

2.3.3 The proposed staged programme of mitigation in this Archaeological WSI comprises:

- *Earthwork survey (Part 7.1)*- undertaking a measured survey of upstanding remains prior to alteration to provide a permanent record of their pre-development state ('Preservation by Record');

- *Condition survey (Part 7.2)*- a photographic and written record of the condition of assets prior to potential alteration during the construction phase ('Preservation by Record');

- *Preservation in situ (Part 7.3)*- securing protective measures through signage, barriers or surface matting to protect assets during the construction phase ('Preservation *in situ*'); and

- *Archaeological watching brief (Part 7.4)*- monitoring of Project groundworks by a professional archaeologist during the construction phase where these may affect known assets of low significance, or in areas in which archaeological remains may be present ('Preservation by Record').

Archaeological Mitigation Techniques

2.3.4 All heritage assets and project groundworks requiring archaeological mitigation are shown in Figure 1. Photographs of all heritage assets described in the text are included in Appendix 2 and their locations indicated on Figure 1.

Preservation 'in Situ' (see Part 7.3)

2.3.5 In line with national guidance and current best practice, it is preferable that, where possible, significant archaeological features identified during any stage of the Proposed Project may be preserved *in situ* by means of a local engineering variation to the Proposed Project infrastructure.

2.3.6 There are no designated heritage assets or archaeological features identified as having high significance within the boundary of the Proposed Project automatically warranting preservation *in situ*. However, protection is proposed for assets of uncertain importance in order to offset any potential unforeseen loss of significance. These comprise:

- earthwork features at Stony Gate (RSK 024), during construction of the access and working area for Pylon 4ZO163 including crane pad; and
- an oval feature (RSK 065), during construction of access to Pylons 4ZO156-155.

Preservation 'by Record' (see Part 7.1, 7.2 and 7.4)

2.3.7 A documentary record of our past is not as valuable as retaining the heritage asset, however, where preservation *in situ* is not warranted or achievable, archaeological mitigation will be achieved through preservation 'by record'.

2.3.8 The National Planning Policy Framework (NPPF, 2019) paragraph 199 states that, '*where the loss of the whole or a material part of a heritage asset's significance is justified, developers are required to record and advance understanding of the significance of the heritage asset before it is lost and to make this evidence (and any archive generated) publicly accessible*'.

2.3.9 Three forms of preservation by record are proposed, comprising earthwork survey, condition survey and archaeological watching brief.

2.3.10 Earthwork surveys will be undertaken in advance of construction commencing for:

- the Woodhead Tunnel portal (RSK 016); and
- Woodhead Tunnel spoil tips (RSK 020).

2.3.11 Condition surveys will be undertaken of:

- stone bridge abutments (RSK 088) prior to construction of permanent replacement Bridge 1 (see 'timing', 7.2.4 below);
- dry-stone wall (RSK 007) prior to construction of access for removal of Pylon 4ZO162; and
- dry-stone walls to be breached by accesses as necessary during the works as indicated in Figure 1.

2.3.12 An archaeological watching brief will be implemented during construction groundworks as follows:

- Installation of the Trans Pennine Trail diversion;
- Buried cable installation in the vicinity of RSK 017 Dunford Bridge Station;
- Establishment of the working area footprint for Pylon 4ZO157R;
- Construction of temporary accesses and working areas where these require groundworks, including the northern access road

2.3.13 For archaeological sites discovered during the construction phase, further detailed excavation strategies may be required that take account of relevant research aims and that are proportionate to both the nature and level of the asset's significance and the extent of the loss of significance. Any additional strategies would be determined by the ACoW in consultation with stakeholders and the Archaeological Contractor.

Reinstatement

2.3.14 On completion of construction works, temporary working areas will be reinstated. Reinstatement measures will not include any intrusive activities in areas of known buried archaeology and where preservation *in situ* has been used.

2.4 Stages 3 – 5: Post-excavation Assessment and Reporting (see Part 9)

2.4.1 All archaeological work will be subject to an appropriate staged programme of post excavation assessment (where relevant) and reporting. Based on the known archaeological potential of the Proposed Project area it is possible that single-phase reporting on each stage of fieldwork will be sufficient. However, unexpected discoveries may require an iterative programme of reporting as follows:

Stage 3: Assessment of Potential for Analysis

2.4.2 Prepare an assessment of findings and project design for post-excavation assessments (depending on the significance of the findings), presented in an Updated Archaeological Project Design document within 12 weeks following completion of all archaeological site works.

Stage 4: Analysis and Report Preparation

2.4.3 Carry out specialist analysis and conservation of artefacts and environmental samples, in accordance with recommendations of the Assessment Stage 3. The programme will be determined on the basis of the archaeological findings.

Stage 5: Public Dissemination

2.4.4 Prepare and publish an integrated report of the results of the mitigation phase to a degree proportionate to significance; deposit archive at an agreed repository or repositories; and publicly promote results of the mitigation in accessible format(s) (see Part 10).

3 MONITORING

3.1 Review

3.1.1 Each stage of work presented in this Archaeological WSI has been drafted in consultation with and provided to the 'archaeological monitors' (BMBC, SYAS and PDNPA) for approval in advance of the works.

3.1.2 Inspections and any action required will be undertaken in accordance with measures described in this Archaeological WSI.

3.1.3 BMBC, SYAS and PDNPA will be informed of commencement of all stages of the archaeological work and will be responsible for the sign-off of fieldworks and associated documentation, including the Archaeological Contractor's task-specific method statements (when available). Details of the Archaeological Contractor and the nominated Archaeological Clerk of Works will be provided to BMBC, SYAS and PDNPA.

3.1.4 BMBC, SYAS and PDNPA will be kept informed of progress during the course of all archaeological works through regular written updates by the ACoW, and at each construction and post-construction stage the opportunity to monitor the archaeological works will be afforded to ensure compliance with the Archaeological WSI.

3.1.5 The results of each stage will be fully reported and provided to BMBC, SYAS, PDNPA, South Yorkshire Sites and Monuments Record (SYSMR) and Peak District Historic Buildings, Sites and Monuments Record (PDHBSMR).

3.2 Decision-Making

3.2.1 If hitherto unknown archaeological remains are encountered during construction phase groundworks, the archaeological monitors will be consulted to agree 'significance' and an appropriate mitigation strategy, which would require either preservation 'by record' or preservation *in situ*. Heritage 'significance' may be defined by either national factors (based on Criteria for Assessing the National Importance of Monuments (DCMS, 2010)), or regional and local factors. (e.g. through comparison with resource assessments and research priorities in the Yorkshire Archaeological Research Framework).

3.2.2 The mitigation strategy will take account of the following factors:

- The density and physical extent of any archaeological deposits;
- The location of deposits within the land-take of the Proposed Project; and
- The (potential) significance of the archaeological deposits.

3.2.3 Where the conservation of the whole or a material part of a heritage asset's significance is justified (i.e. for assets of demonstrably equivalent significance to a designated heritage asset), and where achievable, mitigation through preservation *in situ* will be considered.

3.2.4 The decision as to whether preservation *in situ* should be undertaken would be made in agreement between National Grid (represented by the ACoW if necessary) and the archaeological monitors, taking into account other physical, ecological and environmental constraints.

3.2.5 The 'spot-dating' of artefacts and samples, and specialist opinion on the state of preservation and significance of anticipated remains is likely to be necessary in order to inform the decision-making process.

4 RESEARCH AIMS

4.1.1 The South Yorkshire archaeological research framework is under development, therefore following the advice of consultees, the research aims of the Peak District (East) National Park Project have been framed with reference to the agendas developed for West Yorkshire and the East Midlands. Primary research aims (or foci) for periods most likely to be represented within the project area are reproduced below.

4.2 West Yorkshire Archaeology Advisory Service: Research Agenda

- *Early Prehistoric Periods*

  - Research into the nature of and potential locations of highly significant sites – i.e. high-resolution sites (e.g. in the uplands) and sites with a range of preservation conditions (e.g. wetlands in the lowlands and cave sites) would be important, perhaps using a model from the North East Mesolithic Project (funded by English Heritage).
  - Very little is known about the archaeological resource beyond the limited 'windows' of erosion/collection/development. There is a need for research into the surviving resource and its potential, i.e. upland sites and their distribution and the potential for a broad range of preservation conditions in certain lowland situations. Paleoenvironmental work is also limited to certain locations and accurately dated pollen cores, particularly in association with archaeological sites, are needed to build up our understanding of Mesolithic landscapes.
  - Focused dating programmes for existing sites and detailed assemblage studies would be invaluable. Relevant grey literature might also be made more accessible to the public domain.
  - Raw material studies are urgently needed to inform discussions of mobility patterns.
  - Detailed environmental reconstruction, limits of glaciations, periods of potential habitation are needed to allow a link between key changes in cultural features and environments, as well as to inform discussions of human impacts on environments. There is also an urgent need for detailed predictions of potential peat erosion patterns (e.g. with climate change) and their impact on sites.
  - Detailed analysis of Mesolithic-Neolithic transition sites (e.g. on Rombalds Moor and Marsden Moor) is needed to inform us of the regional impact of the Neolithic
  - There is an urgent need for detailed excavations to characterise activities and move away from 'assemblage only' focused research, as well as contributing to discussions of the use of the upland and the nature of occupation/settlement.
  - There is a need to identify issues of recognition of the potential symbolic/non-functional nature of deposits (e.g. March Hill Top hearth, or microlith 'caches', Stonehouse 2001).
  - Public liaison and involvement is vital in encouraging local amateurs to report finds of Mesolithic material.

- *Later Prehistoric Periods*

  - To what extent is there an earlier Neolithic in West Yorkshire?
  - Is the middle and later Neolithic absent from western West Yorkshire?
  - Where is the later Bronze Age settlement in West Yorkshire?
  - Identification of an earlier pre-Roman Iron Age horizon

- In the upland areas attention should focus on survey of IA earthwork sites with the aim of identifying potential sequences which might be confirmed by limited excavation, an approach which should also be applied to earthworks surviving in woodland areas on Coal Measures and Magnesian Limestone.
- To what extent is the pattern of use of Later IA pottery and other artefacts similar to, or different from, that seen in adjoining regions?
- In addition to extra-regional comparisons, specific retrieval and analysis techniques may be necessary in order to make best use of the evidence.
- Despite the extent of recent excavation there has been very limited recovery of palaeoenvironmental evidence, a reflection of cropmark sites and well drained soils. There may be opportunities for the recovery of better information from buried soils on earthwork sites. Faunal assemblages from ditches, pits and other features may differ significantly and should be processed so as to identify differences. The possibility that plant macrofossil assemblages may share these differences should also be borne in mind.
- All reports on pre-Roman Iron Age pottery assemblages should include clear definitions of fabric types and their relative proportions by sherd count and weight and if possible minimum number of vessels. Reports should contain illustrations of all diagnostic pottery and other finds.

- *Medieval Rural Settlement*

- Whatever the type of dispersed settlement – whether an ordinary farm, or a grange or a seigneurial enterprise – its significance can best be understood in its relation to the wider landscape, the lands and other resources its occupants exploited. Therefore, documentary research is essential to place them in their social and economic setting.
- Though a few manorial sites have been investigated in West Yorkshire, they form a resource which is still poorly understood, especially in terms of their origins and early development. Archaeological evidence of monastic granges is almost non-existent, and any opportunity should be taken to rectify this. But the greatest gap is in our understanding of the lives of the ordinary medieval farmers in what is now West Yorkshire: the forms, construction and functions of their buildings, and their general level of material culture. It is particularly important to be able to relate such evidence to that of their successors in the 16th and 17th centuries.

4.3 East Midlands Archaeological Research Framework

- *Early Prehistoric Periods*

- What can we deduce about the transition from late-glacial to early post-glacial hunter-gatherer societies?
- What can analyses of sites contribute to studies of continuity and change during the Mesolithic period?
- How may we elucidate further the transition from the later Mesolithic to the earlier Neolithic?
- How were sites distributed across low-lying and upland areas, and in particular how many sites might be concealed beneath alluvium, colluvium and other masking deposits or beneath the sea?
- How can HER records be updated to permit study of changing activity patterns between the earlier and later Mesolithic periods?

- How far may studies of the size, shape and locational characteristics of lithic scatters and analyses of the associated lithic artefacts contribute to the identification of site types in the later and earlier Mesolithic?
- What range of structural remains may survive on open-air sites across the region (particularly below alluvium and other masking deposits)?
- Can we refine further by detailed typological analyses of survey and excavation the chronology of Mesolithic lithic industries, and in particular those overlapping Late Upper Palaeolithic and earlier Neolithic traditions?
- How far may radiocarbon dating contribute to refinement of lithic artefact chronologies?
- Can we elucidate the potential impact of environmental change upon lithic artefact technology?
- Can we shed further light upon variations in the lithic assemblages surviving in earlier and later Mesolithic industries?
- How precisely can we define the sources of lithic raw materials and the routes of movement of raw materials and/or finished artefacts?
- What can analyses of cave deposits, palaeochannel fills, upland peats and other deposits with potential for preserved pollen, charcoal and other organic remains contribute to studies of the earliest stages of woodland clearance and plant domestication?
- How can we maximise the potential of palaeochannels, upland or coastal peats and other organically rich deposits as sources of data on Early Holocene landscapes and changes in subsistence strategies and diet?

- *Later Prehistoric Periods*

- How may the region's remarkable variety of upland, lowland and coastal landscapes be surveyed in ways that would permit recognition of significant intra-regional variations in land use?
- Can we identify locations with a high potential for elucidating variations in arable, pasture and woodland cover between ecological zones (e.g. palaeochannels; upland peats)?
- Can we further refine our knowledge of the selective use of particular landscapes for ritual, agriculture and other activities?
- How significant were river-crossing or confluence zones as foci for monument complexes?
- Can we chart more closely the processes of woodland clearance and agricultural intensification, their impact upon alluviation and colluviation, and variations between different areas?
- How may diet and land-use have varied over time and between different ecological zones? Can we identify specialist pastoral zones and elucidate coastal resource exploitation strategies?
- How may agricultural changes have impacted upon settlement patterns? Can the relationship between sedentary and mobile economies be clarified, and how did this vary spatially and over time?
- What was the impact of climate change upon farming practices, especially in upland areas such as the Derbyshire Peak?

- *High Medieval Period- Rural Settlement*

- How can we elucidate further the development of nucleated villages, and in particular the contribution of the Danelaw to changes in village morphology?

- How can we shed further light upon the origin and development of dispersed hamlets and farms in champion and pastoral areas?
- How can we improve our understanding of the form, evolution and functions of buildings within rural settlements and establish the extent of surviving medieval fabrics?
- Can we clarify further the processes of settlement desertion and shrinkage, especially within zones of dispersed settlement?
- Can we shed further light upon the origins and development of the open-field system and its impact upon agricultural practices?
- Can we establish the character and extent of the field systems of non-champion landscapes (e.g. upland Derbyshire)?
- What can we deduce about changes in woodland management and animal or crop husbandry (including new crops, crop rotation, field systems, more intensive cultivation of clay soils and larger animals, particularly sheep)?
- What can environmental remains teach us about diet and living conditions in urban, rural and coastal communities?
- What may fish bones and other environmental data contribute to studies of the exploitation and distribution of freshwater and marine fish?
- How best may we enhance study of the origins and development of early land reclamation and drainage, particularly in Lincolnshire?

- *Post Medieval*

- How can we improve our understanding of the early landscapes of enclosure and improvement and the interrelationship between arable, pasture, woodland, commons and waste?
- How did water management and land drainage change the landscape during this period?
- What changes and improvements occurred in animal husbandry and the use of animals (e.g. new breeds, traction and traded animal products)?
- What garden plants and crops were grown in the countryside and urban market gardens, and what new types were introduced?

4.3.1 The project research agenda will be reviewed, and any other relevant research objectives will be defined as the mitigation works are underway in light of specific findings.

4.3.2 Appropriate specialists (including the Historic England Regional Science Advisor) will be consulted as necessary during the mitigation stages to ensure that the project addresses relevant national, regional and local objectives. The research aims will be kept under review during the process of writing the Updated Project Design for post-excavation assessment as required (MoRPHE Stage 3).

5 PROJECT DESCRIPTION

5.1 Location

5.1.1 The VIP Subsection is approximately 2km in length and runs eastwards from the existing Dunford Bridge Sealing End Compound (SEC) near the eastern entrance of the Woodhead Tunnel (Pylon 4ZO164R). It crosses the Peak District National Park boundary and continues north over the Upper Don River and the Trans-Pennine Trail, south of the hamlet of Townhead towards Castle Hill.

5.2 Principal Elements

5.2.1 The undergrounding of the VIP Subsection includes the following main elements that comprise the Proposed Project:

- Removal of the existing Dunford Bridge SEC to a depth of 1.1m below ground level. The existing tunnel shaft cap will be lowered, and mounding created over the shaft for landscaping purposes. Gabion baskets (of approximately 1m in height and width) will be used to protect the shaft from any vehicle access.
- Removal of the existing VIP Subsection including eight pylons (one of which will be replaced, see replacement tension pylon below) and 2km of OHL (shown on Plate 2.1 above).
- An underground electricity cable ‘here on referred to as the Cable Corridor’ of approximately 1.8km beneath the route of the Trans Pennine Trail from the entrance of the Woodhead Tunnel to a proposed new SEC.
- Construction of a new SEC within Wogden Foot Local Wildlife Site (LWS) and a separate replacement tension pylon located approximately 40m north east of the SEC on the northern side of the River Don, close to the location of the existing pylon 4ZO157. Within the SEC the circuits will terminate onto two full tension gantries 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.
- Temporary laydown areas, access tracks (including from the highway Windle Edge and Brook Hill Lane), to the pylons to be removed and along the Trans Pennine Trail to the SEC at Wogden Foot as well as site offices will be required to facilitate construction activities.
- Construction and removal of a temporary Trans Pennine Trail diversion for use during the construction phase of the Proposed Project. The diversion will involve the use of two bridges, one being a permanent replacement of an existing bridge; the other a temporary bridge to cross over the River Don. The diversion is proposed in farmland immediately north of the River Don.

5.3 Site Boundary

5.3.1 The ‘Site Boundary’ is the boundary of the Proposed Project, encompassing all temporary and permanent works (equivalent to the planning redline boundary). The ‘cable corridor’ contains the buried cable.

5.4 Activities with the Potential to Affect the Historic Environment

5.4.1 Project groundworks that require mitigation include, but are not limited to:

- The removal of rock within the Woodhead Tunnel portal to accommodate the Cable Corridor;
- Stripping of overburden in the area of the current Trans Pennine Trail car park;
- The excavation of trenches for the installation of the Cable;
- Installation of control cabinets;
- Temporary underground diversion of a drainage ditch to the south of the Trans Pennine Trail;
- Installation of temporary Trans Pennine Trail Diversion;
- Construction of temporary and permanent bridges to facilitate construction of temporary Trans Pennine Trail Diversion; and
- The construction of temporary access tracks, crane pads and overhead line working areas for the construction of Pylon 4ZO157R and removal of the existing infrastructure within the VIP subsection

5.4.2 The locations of these activities are shown on Figure 1.

6 ARCHAEOLOGICAL POTENTIAL

6.1.1 The archaeological potential of the area of the Proposed Project is described in detail in the baseline section of Chapter 8 of the Environmental Assessment Report (EAR). This Archaeological WSI should be read in conjunction with that report.

6.1.2 In summary, the assessments undertaken in support of the EAR indicate a low potential for archaeological (or palaeoenvironmental) remains of Prehistoric, Romano British, Early Medieval or Medieval date to be present within the area of the Proposed Project.

6.1.3 The temporary Trans Pennine Trail diversion and temporary accesses/working areas on the north side of the River Don have the potential to encounter previously unknown archaeological remains within areas of ‘greenfield’ land take. However, existing information indicates that any potential is likely to be localised and would constitute unexpected remains.

6.1.4 Potential is high for the presence of industrial-period remains, including those associated with the Sheffield, Ashton Under Lyne and Manchester Railway, Dunford Bridge Station and the Woodhead Tunnel construction. There is also a high potential for encountering field boundaries (both buried boundary ditches and standing boundary walls) associated with early post medieval and later land enclosure.

7 ARCHAEOLOGICAL MITIGATION METHODOLOGIES

- *Earthwork survey*- undertaking a measured survey of upstanding remains prior to alteration to provide a permanent record of their pre-development state ('Preservation by Record');

- *Condition survey*- a rapid photographic and written record of the condition of assets prior to construction ('Preservation by Record');

- *Preservation in situ*- securing protective measures through signage, barriers or surface matting to protect assets during the construction phase; and

- *Watching brief*- monitoring of Project groundworks by a professional archaeologist during the construction phase where these may affect known assets of low significance, or in areas in which archaeological remains may be present ('Preservation by Record').

7.1 Earthwork survey

Definition

7.1.1 An archaeological earthwork survey is a non-intrusive measured topographical, photographic and written survey within defined limits, creating a record of the ground morphology and any upstanding features of historical and archaeological interest, including dimensions and levels. Results are illustrated and described in a report.

Aims and Objectives

7.1.2 The aim of an earthwork survey of upstanding remains is to provide a permanent record of their pre-development state, prior to any alteration ('Preservation by Record').

7.1.3 The objectives of the earthwork survey are therefore to:

- Examine the subject earthworks on site and to create a written descriptive and photographic record;
- To create a measured topographic survey of the earthworks, either through analysis of existing detailed LiDAR data or undertaking a site-based GPS survey.
- Prepare a report on the survey; and
- Deposit the report with the SYSMR, PDHBSMR and OASIS online grey literature report library.

Timing and Scope

7.1.4 The earthwork surveys will be undertaken and reported in advance of any enabling or construction groundworks for the Proposed Project.

7.1.5 Earthwork surveys will be undertaken for

- the Woodhead Tunnel portal (RSK 016); and
- Woodhead Tunnel spoil tips (RSK 020).

Resourcing

7.1.6 Earthwork surveys will be commissioned by National Grid and implemented by the Archaeological Contractor.

Methodology

7.1.7 Earthwork surveys will be subject to a task-specific archaeological method statement and risk assessment (RAMS), prepared by the AC in response to this WSI, which will be provided to the BMBC, SYAS and PDNPA for approval. The surveys may be combined as a single phase of work.

7.1.8 The limits of the survey area will be defined and agreed prior to mobilisation of the site works. Each asset will be visited, described, photographed and surveyed.

7.1.9 The descriptive record will comprise a summary of the earthwork form, materials and appearance, alongside any relevant geological data and historical information drawn from historic mapping and documentary records.

7.1.10 The photographic record will comprise high resolution (16MP or higher) digital images taken in dual RAW and TIFF format.

7.1.11 The topographic survey may take the form of a metric survey (undertaken using reflectorless total station or similar), or the processing and presentation of existing LiDAR data. Outputs will comprise georeferenced contour/hillshade plots referenced to the Ordnance Survey National Grid, and levels relative to Ordnance Datum.

Deliverables

7.1.12 A stand-alone report will be produced containing a description of the survey area(s), an interpretation of any features, the aims and objectives of the survey, the methodology employed and a description of the results. The report will include supporting maps, photographs and drawings as appropriate.

7.1.13 Copies of the report will be issued to BMBC, SYAS and PDNPA for comment prior to finalising.

7.1.14 The final report will be deposited with the SYSMR and PDHBSMR. An OASIS summary sheet will be completed, and the final report uploaded to the OASIS online Grey Literature Report Library.

7.2 Condition survey

Definition

7.2.1 A condition survey is a descriptive, photographic and written survey within defined limits, creating a record of the existing state of a particular heritage asset or assets prior to construction. The results are illustrated and described in a report.

Aims and Objectives

7.2.2 The aim of a condition survey is to provide a record of the pre-development state of identified heritage assets, prior to any potential alteration during the construction phase (‘Preservation by Record’).

7.2.3 The objectives of the condition survey are therefore to:

- Examine the subject assets on site and to create a written descriptive and photographic record;
- Prepare a report on the survey; and
- Deposit the report with the SYSMR, PDHBSMR and OASIS online grey literature report library.

Timing and Scope

7.2.4 The condition surveys will be undertaken and reported in advance of any enabling or construction groundworks for the Proposed Project.

7.2.5 For standing structures subjected to condition survey, the scope will conform to the specification for a Level 2 Historic Building Record as defined in Historic England's *Understanding Historic Buildings: A Guide to Good Recording Practice* (2016).

7.2.6 Condition surveys will be undertaken for:

- Stone bridge abutments (RSK 088) prior to construction of permanent replacement Bridge 1;
- Dry-stone wall (RSK 007) prior to construction of access for removal of Pylon 4ZO162; and
- Any other dry-stone walls breached by accesses as necessary for construction (see Figure 1).

Resourcing

7.2.7 Condition surveys will be commissioned by National Grid and implemented by the Archaeological Contractor.

Methodology

7.2.8 Condition surveys will be subject to a task-specific archaeological method statement and risk assessment (RAMS), prepared by the AC in response to this WSI, which will be provided to the BMBC, SYAS and PDNPA for approval. The surveys may be combined as a single phase of work.

7.2.9 Each asset will be visited, described, photographed and drawn.

7.2.10 The descriptive record will comprise a summary of the asset appearance, materials and condition, and historical interpretive information drawn from historic mapping and documentary records.

7.2.11 The photographic record will comprise high resolution (16MP or higher) digital images taken in dual RAW and TIFF format.

7.2.12 The drawn record will comprise measured and annotated sketches of plans, elevations and profiles.

Deliverables

7.2.13 A stand-alone report will be produced containing a description of the assets surveyed, the aims and objectives of the survey, the methodology employed and a description of the results. The report will include supporting maps, photographs and drawings as appropriate.

7.2.14 Copies of the report will be issued to BMBC, SYAS and PDNPA for comment prior to finalising.

7.2.15 The final report will be deposited with the SYSMR and PDHBSMR. An OASIS summary sheet will be completed, and the final report uploaded to the OASIS online Grey Literature Report Library.

7.3 Preservation *in Situ*

7.3.1 The preferred method of mitigation will be the preservation *in situ* of archaeological deposits, the requirements of which will be implemented in advance of and during the construction phase.

Definition

7.3.2 Successful implementation of a programme of preservation *in situ* results in heritage assets remaining unaltered throughout and beyond implementation of the Project. This requires prior identification, communication of requirements to the PC, and protection of their physical remains throughout the construction and reinstatement phase of the Project.

Aims and Objectives

7.3.3 It is the aim of the programme of archaeological assessments to identify heritage assets for which preservation *in situ* is essential, and ensure the Proposed Project is designed to achieve this.

Timing and Scope

7.3.4 Preservation *in situ* may be applied to heritage assets identified at any stage of the Proposed Project.

7.3.5 Agreed heritage assets that have been identified/defined through previous assessment will be protected during construction through a programme of survey and demarcation prior to enabling or construction works.

7.3.6 Preservation *in situ* particularly applies to known surface and extant heritage assets in the vicinity of VIP Subsection towers to be removed as part of the Proposed Project.

7.3.7 If hitherto unknown archaeological remains are encountered during construction groundworks, BMBC, SYAS and PDNPA will be consulted to agree 'significance' and the appropriate mitigation, which would require either preservation 'by record' or preservation *in situ*. Heritage 'significance' may be defined by either national factors (based on Criteria for Assessing the National Importance of Monuments (DCMS, 2010)), or regional and local factors.

7.3.8 The decision as to whether preservation *in situ* should be undertaken would be made in agreement between National Grid (represented by the ACoW if necessary), BMBC, SYAS and PDNPA, taking into account other physical, ecological and environmental constraints.

7.3.9 The 'spot-dating' of artefacts and samples, and specialist opinion on the state of preservation and significance of anticipated remains is likely to be necessary in order to inform the decision-making process.

Protection of Heritage Assets

7.3.10 Protection is proposed for the Stony Gate Earthworks (RSK 024) during construction of the access and working area for Pylon 4ZO163, and an oval feature (RSK 065) during construction of access to Pylons 4ZO156-4ZO155.

7.3.11 In respect of RSK 024 this should involve the installation under archaeological supervision of sand bags to either side of the earthworks and use of suitable overlying trackway panels to protect them from damage through heavy vehicle movements during decommissioning of Pylon 4ZO163.

7.3.12 In respect of RSK 065, the location of the oval feature should be surveyed by a qualified archaeologist immediately prior to construction, and a 2m standoff to the south of the feature marked with temporary fencing to signal the position during temporary access to Pylons 4ZO156 and 4ZO155.

Resourcing

7.3.13 The locating of heritage assets requiring protection during construction will commissioned by the PC and will be carried out by the ACoW and the Archaeological Contractor.

7.3.14 The decision as to where/whether preservation *in situ* should be undertaken would be made by National Grid in consultation with the ACoW, BMBC, SYAS and PDNPA (see decision-making Part 3.2).

7.3.15 It will be the responsibility of the PC to provide and erect secure fencing around areas defined for preservation *in situ*.

Methodology

7.3.16 In respect of RSK 065, a buffer of 5m will be measured from the asset by the Archaeological Contractor, marked, and HERAS fenced by the PC throughout the duration of the construction and reinstatement Project stages. In respect of RSK 024 the earthworks will be protected from plant traffic using sand bags and trackway panels.

7.3.17 For previously unrecorded heritage assets (unexpected remains), where the conservation of the whole or a material part of a heritage asset's significance is justified (i.e. for assets of demonstrably equivalent significance to a designated heritage asset), and where preservation *in situ* is achievable, one or more of the following preservation *in situ* techniques will be considered. Note that this is only likely to apply within land to the north of the River Don:

- Avoidance
  - Localised variation in the route of the temporary Trans Pennine Trail Diversion, accesses or working areas to avoid an identified area of archaeological sensitivity;

- Protection
  - Laying a suitable protective layer over an area of archaeological sensitivity for the duration of construction works. Suitable protective layers can include bog mats or geotextile membranes; and
  - Delineating areas of archaeological sensitivity with temporary fencing and signage where a variation in reinstatement practice should be adopted, such as avoidance of sub-soil ripping.

7.3.18 As necessary, site visits will be made to the site of any on-going archaeological mitigation (preservation in situ) by the ACoW, BMBC, SYAS, PDNPA and others as appropriate.

Toolbox talks

7.3.19 The location of heritage assets to be preserved *in situ* located adjacent to or within construction areas will be included on PC works drawings displayed in site offices, including restrictions to construction methods. The Archaeological Contractor will implement toolbox talks as necessary to ensure PC site staff are aware of the drawings and the location of heritage assets to be protected.

7.4 Archaeological Watching Brief

Definition

7.4.1 An archaeological watching brief is defined as the observation, by an appropriately qualified archaeologist, of third-party activities which may impact upon or expose archaeological remains during on-site construction activities.

7.4.2 During an archaeological watching the depth of excavation will not be defined by the Archaeological Contractor.

7.4.3 The archaeological presence will be carefully coordinated and explicitly targeted to maximise archaeological recovery through monitoring of PC groundworks most likely to reveal archaeological remains.

7.4.4 Wherever archaeological remains are identified or suspected by the watching brief archaeologist(s), the archaeological methodology will be reviewed, in accordance with the agreed decision-making procedures (see Part 3.2).

7.4.5 Accordingly, a watching brief is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

Aims and Objectives

7.4.6 The aim of the archaeological watching brief is to identify, then highlight the need for preservation, either 'by record' or *in situ*, any archaeological remains that may otherwise be altered, damaged or destroyed by construction works.

7.4.7 The objectives of the watching brief are to flag the need for recording, which will provide data on the date, character, quality, survival and extent of archaeological deposits within the working area.

Timing and Scope

7.4.8 The PC will facilitate access for the Archaeological Contractor to observe any construction-phase groundwork activities being undertaken by the PC and according to the project specification, if they are deemed by the ACoW to potentially have a direct effect on archaeological remains.

7.4.9 Programme information will be provided to the ACoW by the PC, and lines of communication established between parties in order to inform decision-making regarding site attendance.

7.4.10 Specific areas in which watching brief is to be implemented include:

- Excavation works within the Cable Corridor (the existing Trans Pennine Trail) in the vicinity of RSK 017 Dunford Bridge Station, in order to make a permanent record of any surviving structures which may be present in this location;
- Groundworks (topsoil stripping) for the installation of the Trans Pennine Trail Diversion where there is a potential for previously unrecorded assets to be affected;
- Establishment of the working area footprint for Pylon 4ZO157R in order to make a record of any previously unknown archaeological remains;
- During the construction of temporary accesses and working areas where these require ground to be broken, at the following locations:
    - RSK 007 Drystone wall and unknown assets- access to Pylon 4ZO162;
    - RSK 043 and 044 and unknown assets- access to Pylon 4ZO161;

- RSK 020 and unknown assets- access and working area Pylon 4ZO160;
- RSK 020 and unknown assets- access and working area Pylon 4ZO159;
- Unknown assets- access and working area Pylon 4ZO158;
- Unknown assets and RSK 056, 057, 052, 087- access from Access Point 7 to working area for Pylon 4ZO157/157R; and
- RSK 054, 059 and unknown assets- access Pylon 4ZO156-155

Resourcing

7.4.11 The ACoW will be notified of the groundworks programme in advance of the works, who in turn will notify the AC.

7.4.12 The watching brief will be commissioned by the PC and shall be undertaken by appropriately qualified professional archaeologists.

7.4.13 Should multiple machines be excavating at any one time it may require more than one watching brief archaeologist to monitor progress.

Methodology

7.4.14 Daily site diaries will be maintained by the watching brief archaeologists, recording both negative and positive archaeological information; and progress reports will be submitted to the ACoW.

7.4.15 During a watching brief the AC will not define the depth/extent of excavation/groundworks, but only observe works being carried out according to the PC project specification; however, the AC will be permitted to request for excavation works to pause in order to allow the inspection of exposed deposits of archaeological potential. Adequate time will be afforded to the archaeologist to characterise any archaeological remains present before groundworks continue in that area.

7.4.16 It is expected that overburden is removed as ‘cleanly’ as possible in watching brief areas, leaving a surface suitable for the identification of any significant archaeological remains present.

7.4.17 Following/during topsoil stripping, if archaeological potential is confirmed by the AC, all groundworks in the vicinity will cease, the area of interest will be fenced off by the AC.

7.4.18 A back-acting machine with toothless ditching bucket will be made available by the PC in order to remove further overburden, to a depth as specified by the Archaeological Contractor, until sufficient visibility is achieved to enable archaeological excavation and recording to accepted standards (see below). The PC will provide a back-acting machine fitted with a toothless bucket as convenient but within 48 hours in order to fully strip and define the identified area of archaeological remains, and in advance of any further construction impact.

7.4.19 If exposed archaeological remains cannot be recorded by the Archaeological Contractor within the existing construction programme, the area will be fenced off, and groundworks within the fenced area will be suspended until a strategy has been agreed with the ACoW and the PC. The PC may continue their works according to their specification outside the fenced area.

7.4.20 If significant finds/features are identified during the watching brief, a suitable programme of mitigation would be agreed with the ACoW, BMBC, SYAS and PDNPA. If necessary (based on significance- see Part 3.2), a strategy may be defined in a site- and task-specific WSI and RAMS in advance of any excavation works.

7.4.21 As necessary (in the event of significant archaeological findings), site visits will be made to the site of any on-going archaeological mitigation by the ACoW, BMBC, SYAS and PDNPA, and others as appropriate.

Watching Brief Recording Standards

7.4.22 All exposed features will be sampled/investigated sufficient to achieve the objectives of the watching brief, with an emphasis placed on understanding the relationships between structures where intersections occur, the profiles of cut features and the characteristics of any fills and finds. As a general approach, the following feature percentages will be investigated (subject to review of specific circumstances on site):

- 50% of all discreet features initially (half section or quadrant depending on size),
- at least 20% of all linears; 50% of enclosures
- 50-100% structures or occupation features e.g. hearths, floors, middens
- 50-100% of layers or features relating to industrial activity
- 100% all remains relating to funerary or ritual activity.

7.4.23 Additional excavation may be required following consultation.

7.4.24 The archaeological features will be recorded using a standard pro-forma recording system, including drawings, textual description and photographs. Remains will be located by reference to the OS National Grid using DGPS or similar.

7.4.25 The photographic record will comprise high-resolution digital images (16MP or higher) taken in dual RAW and TIFF format with a supporting index.

7.4.26 The drawn record will comprise hand-drawn plans of the Site at a suitable scale, typically plans at scale 1:50 for area locations, 1:20 for features, and sections at scale 1:10.

7.4.27 Any significant artefacts will be recovered and recorded with reference to context and location.

7.4.28 All artefacts will be labelled, packed and stored in appropriate materials and conditions to ensure that no deterioration occurs. All artefact/ecofact processing/storage will be carried out in accordance with UKIC (United Kingdom Institute for Conservation) principles of archaeological conservation and will accord with relevant Chartered Institute for Archaeologists' Guidelines on Finds Work (2014).

Human Remains

7.4.29 Any finds of human remains during the course of the Proposed Project will be left in situ, covered and protected and the Coroner will be notified.

7.4.30 If removal is agreed it will take place under appropriate regulations (normally a licence is required from the Ministry of Justice) and with due regard for health and safety issues and the requirements of the Burial Act 1857.

Environmental Sampling

7.4.31 Palaeoenvironmental samples will be taken where possible/appropriate, and according to standard and accepted environmental sampling policies outlined in the Chartered Institute for Archaeologists *Standard and Guidance* documents, and the Historic England guidance *Environmental Archaeology; A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (second edition) (2011).

7.4.32 Bulk environmental soil samples for charred plant macrofossils, small animal bones, and other artefacts will be collected from appropriate, well-sealed and dated/datable archaeological contexts. Samples of 40 litres will be collected, or 100% of smaller contexts.

7.4.33 For deposits where anaerobic preservation is identified, 20 litre bulk samples will be collected for the retrieval of uncharred plant macrofossils and insects.

7.4.34 Appropriate provision will be ensured for the application of scientific dating techniques.

7.4.35 Where necessary, the regional Historic England Science Advisor will be consulted.

Small finds policy

7.4.36 All artefacts identified during the course of the site work will be collected, processed, sorted, quantified, recorded, labelled, packed and stored appropriately. The treatment of artefacts and environmental samples will be in accordance with the CIfA's Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials (2014).

7.4.37 Sufficient artefacts will be retained to elucidate the date and function of the feature or deposit. If unsure as to the date of the context, all artefacts will be retained for further assessment.

7.4.38 Artefacts will be bagged by archaeological context. The location of special (or 'small') finds will be three-dimensionally recorded.

7.4.39 Excavated spoil will be examined for artefacts and these will be retained and recorded, except for material of a modern date which will be noted but not retained.

7.4.40 Contingency will be made for external specialist advice and conservation needs on-site should unexpected, unusual or extremely fragile and delicate objects be recovered. X-raying and storing of metalwork and other delicate objects will be undertaken by an appropriate external specialist facility.

Treasure

7.4.41 If any objects are recovered that are deemed to potentially qualify as treasure, the Archaeological Contractor will consult with the South & West Yorkshire Portable Antiquities Scheme Liaison Officer (Amy Downes 0113 535 1073) to determine the object's status. Objects that qualify as treasure will be will be notified to the local coroner within fourteen days of discovery, in accordance with The Treasure Act 1996 Code of Practice (Revised).

Toolbox talks

7.4.42 The AC will implement toolbox talks, held with the PC to develop a protocol and lines of communication to enable access to observe any construction-phase groundwork activities being undertaken by the PC.

7.4.43 The PC will be requested not to track over or otherwise obscure areas stripped of topsoil until they have been ‘signed off’ by the AC, wherever possible.

7.4.44 In addition it will be made clear that should the watching brief identify archaeological remains, further construction works in the area must cease until a mitigation methodology has been agreed.

8 HEALTH, SAFETY, ENVIRONMENT AND QUALITY CONTROLS

8.1.1 All work will be carried out in accordance with the *Health and Safety at Work Act* 1974; the *Health and Safety Management Regulations* 1992, and in accordance with SCAUM (standing conference of archaeological unit managers) *Health and Safety Manual in Field Archaeology* (2007).

8.1.2 All companies working on the project will adhere to National Grid quality, health, safety and environment controls.

8.1.3 The Archaeological Contractor will supply a copy of their RAMS to National Grid and PCs before commencement of any fieldwork. The RAMS document will be read by each of the archaeology field team and will retain a copy on their person/vehicle during site works, for reference. The RAMS will incorporate an interface between health and safety of the Archaeological Contractor and that of the PC and National Grid, and will be communicated at start-up meetings, through induction and regular toolbox talks throughout the construction phase.

8.1.4 All work on site will be undertaken strictly in accordance with any site- and task-specific WSI and RAMS, which will include assess site- and task-specific Health and Safety risks.

9 POST-EXCAVATION PROGRAMME (ASSESSMENT, ANALYSIS, REPORTING AND PUBLICATION)

9.1 Methodology & Guidance

9.1.1 Management of the post-excavation stage of assessment will follow guidelines specified in MoRPHE PPN 3: Archaeological Excavation (Historic England, 2008) as appropriate and commensurate to the findings of the fieldwork phase of this project.

9.1.2 Five stages have been specified:

- Stage 1: project planning
- Stage 2: fieldwork
- Stage 3: assessment of potential for analysis ('Updated Project Design')
- Stage 4: analysis and report preparation
- Stage 5: dissemination

9.1.3 This document and the Archaeological Assessments undertaken in support of the Environmental Assessment Report comprise Stage 1.

9.1.4 Mitigation fieldworks, along with the resulting deliverables, comprise Stage 2.

9.1.5 Stage 3 involves an objective assessment of the results of these planning/fieldwork stages in order to ascertain the appropriate level of post-excavation analysis and reporting. This stage culminates in the production of a post-excavation assessment report.

9.1.6 Subsequent stages involve carrying out the work identified within the assessment report Updated Project Design, and culminate in a final report and project archive (Stages 4 and 5).

9.1.7 If Research Questions have been defined by this stage then the post-excavation assessment strategy will review these in light of the fieldwork findings and set out a revised series of aims.

Post-excavation Assessment Report – Stage 3

9.1.8 The level of post-excavation analysis and reporting for the purposes of the work will be commensurate to the findings of the fieldwork and sufficient to establish the character, scale, date range, artefactual and palaeoenvironmental potential and overall significance of the remains.

9.1.9 The style and format of the post-excavation assessment report will include as a minimum the following:

- A location plan of working areas and/or other fieldwork;
- Plans and sections of features located at an appropriate scale;
- Section drawings showing depth of deposits including the present ground level with Ordnance Datum, vertical and horizontal scale;
- A summary statement of the results;
- A table summarising the features, classes and numbers of artefacts contained within, spot dating of significant finds and an interpretation;
- Assessment of samples taken for environmental analysis; and
- An interpretation of the archaeological findings both within the Site Boundary and within their wider landscape setting.

9.1.10 Artefact analysis will be sufficient to establish date ranges of archaeological deposits, a general assessment of the types of pottery and other artefacts to assist in

characterising the archaeology, and to establish the potential for all categories of artefacts should further archaeological work be necessary.

9.1.11 In the event that no significant archaeological remains (or remains of limited archaeological significance) are recorded, reporting may comprise this single stage assessment.

Conservation and Scientific Analysis of Small-Finds

9.1.12 All retained finds will be processed in accordance with the Chartered Institute for Archaeologists' *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Material* (CIfA 2014).

9.1.13 In consultation with National Grid, BMBC, SYAS and PDNPA, specialist work on metalwork, bone (including worked bone, human remains and other organic remains), industrial waste, ceramic material, glass and lithic material will be carried out by suitable specialists, monitored by the ACoW.

9.1.14 In consultation with National Grid, BMBC, SYAS and PDNPA, the ACoW will advise on the implementation of passive conservation for smaller objects pending more detailed conservation strategies. National Grid will fund a professional conservation assessment of assemblages.

9.1.15 Objects that require immediate conservation or specific storage conditions will be dealt with immediately in line with *First Aid for Finds* (Watkinson and Neal 1998). The Archaeological Contractor will make a full record of any treatment given and these records will form part of the archive.

9.1.16 In the event of the discovery of unexpected, unusual or extremely fragile and delicate objects and deposits the Archaeological Contractor will notify National Grid and the ACoW immediately. Any additional work required to recover, record, analyse, conserve and archive such objects and deposits will be agreed with National Grid.

Post-excavation Analysis Report – Stage 4

9.1.17 The work undertaken during this stage of the project will be carried out according to the recommendations contained within the post-excavation assessment report, and may include requirements for publication.

9.1.18 A stand-alone draft report will be produced for each stage of fieldwork. Each report will include a clear statement of the archaeological value of the results, and their significance in the context of the region.

Final Reporting / Publication / Production of Site Archive - Stage 5

9.1.19 On completion of the project, the draft reports would be appropriately synthesised into a single final document, the results related to the relevant known archaeological information held in the SYSMR and PDHBSMR, and subsequently submitted to both repositories.

9.1.20 If merited by findings, articles would be published in a range of journals and publications, suitable to the significance of the finding, and according to recommendations made in the post-excavation assessment, analysis and reporting.

9.1.21 A full archive including plans, photographs, written material, artefacts, ecofacts, palaeoenvironmental samples, and any other material resulting from the project will be prepared within an agreed timescale after the completion of the fieldwork stage of project. The standards will conform to best practice detailed in *Archaeological*

Archives (Brown 2007) and *Guidelines for the Preparation of Excavation Archives for Long-Term Storage* (UKIC 1990).

9.1.22 All plans, photographs and descriptions will be labelled and cross-referenced.

9.1.23 All 'digitally born' data (e.g. GIS data, photographs, survey files) will be digitally archived with a Trusted Digital Archive, nominally the Archaeological Data Service. Should new sites be identified during the course of the works, a suitable database structure will be agreed in advance with the SYSMR and PDHBSMR.

9.1.24 The physical site archive is likely to comprise paper site records, hand drawn plans, artefacts and ecofacts. Arrangements will be made with the nominated recipient museum(s) (anticipated to be Experience Barnsley/Barnsley Museum Service) subject to their confirmation that they will accept the deposition, or another suitable archive repository for details of the requirements of title transfer and copyright to the museum.

9.1.25 In response to this, the designated repository will make available local standards for the submission of an archaeological archive where needed. Once this is confirmed and arrangements are made for the deposition of the archive, the designated repository will allocate the archive a unique museum identity number (accession number). The designated repository will only retain the finds and environmental archive, along with supporting paper and digital archive where necessary. The designated repository will then become responsible for managing and curating the collection.

9.1.26 The Contractor will adhere to South Yorkshire Archaeology Service standards and guidelines on the completion and deposition of archaeological archives, as set out on their website) https://www.sheffield.gov.uk/home/planning-development/south-yorkshire-archaeology-service/guidance-for-archaeological-projects). This will include ensuring the archive information is included on the project Completion Form, and details of the archive location included in the archaeological fieldwork report in accordance with the Good Practice Guide (*ibid*).

9.1.27 All artefacts recovered are the property of the landowner. The Archaeological Contractor, on behalf of National Grid, will seek permission from the landowner to donate any finds prior to depositing the archive.

9.1.28 Every effort will be made to obtain the agreement of the landowners for the deposition of the full site archive, and transfer of title with the agreed repository, to be confirmed.

Programme for publication

9.1.29 Any final publication (should this be warranted) will be available in the public domain within 5 years following completion of the site work.

10 PUBLIC PROMOTION

10.1 Construction Phase

10.1.1 Should sufficiently significant archaeological remains be identified, for which the most appropriate method for informing the public would be to view the remains ‘first-hand’, archaeological 'open days' may be carried out by the ACoW and/or the Archaeological Contractor familiar with the project findings in accordance with access restrictions, on-site health and safety regulations, and site- and task-specific risk-assessments (RAMS).

10.1.2 Open days may be carried out in advance of the preservation *in situ* of significant archaeological deposits, and only where the opportunity to observe the archaeological excavation would be possible.

10.2 Post-construction

10.2.1 The potential for adding pubic benefit to the project through the popular publication of the survey results would also be considered as part of the programme of post excavation work.

10.2.2 National Grid would be responsible for disseminating findings through public engagement by the ACoW and/or members of the AC familiar with the project findings, likely to consist of presentations at schools, universities and/or local societies with a vested interest in one or any of the areas affected by the project.

REFERENCES

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APPENDIX 1: FIGURES

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RSK 087: Watching brief during construction

RSK 020: Earthwork survey to be undertaken of Woodhead Tunnel Spoil Tips prior to construction. Watching brief to be undertaken during construction of Trans-Pennine Train Diversion

RSK 044: Watching brief during construction

RSK 043: Watching brief during construction

Trans-Pennine trail car park - watching brief during stripping of overburden

RSK 016: Earthwork survey of Woodhead Tunnel Portal to be undertaken prior to construction/removal of rock

Watching brief during excavation of trenches for installation of cable

RSK 024: Area of earthworks at Stony Gate to be protected from plant movements during removal of Pylon 4ZO 163 using sandbags /trackway panels. No ground-breaking.

Watching brief during installation of Trans-Pennine trail diversion

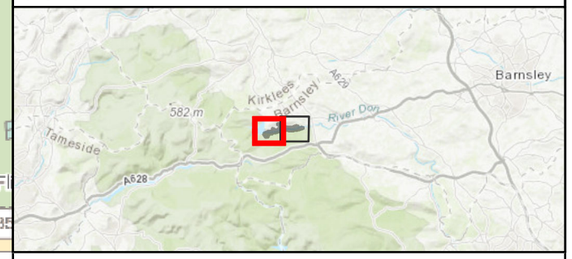
RSK 088: Condition survey of stone bridge abutments in location of permanent replacement Bridge 1 to be undertaken prior to construction

RSK 007: Condition survey of relict drystone wall. Watching brief to be undertaken during construction

RSK 087 RSK 020 RSK 044 RSK 043 RSK 088 RSK 016 RSK 007 RSK 024

1 2 3 4 5 10

Overview



Legend

- Site Boundary
- Watching Brief During Construction

Mitigation Type

- Condition Survey
- Watching Brief
- Condition Survey & Watching Brief
- Earthwork Survey
- Earthwork Survey & Watching Brief
- Protection
- Dry Stone Wall Breach
- Aerial Photo Location
- Photo Location

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Rev	Description	Cre'd	Chk'd	App'd	Date
01	Add Photo Points	AW	LH	SR	05/04/2019
00	First Draft	NH	LH	SR	05/04/2019

nationalgrid

Master Scheme No:	Sub-Scheme No:	Site:
-	-	Peak District

Scheme Name: Visual Impact Provision (VIP) Peak District (East) Project

Document Title:

Figure 1: Archaeological Mitigation Plan

Created by:	Date:	Checked by:	Date:	Approved by:	Date:
N Hogben	05/04/2019	L.Hayes	05/04/2019	S.Rotherham	05/04/2019

Development Eng:	Document Type:	Scale:	Format:	Sheet(s):	Rev:
	-	1:7,500	A3	1 of 2	01

National Grid Document Number:

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FEED Document Number:

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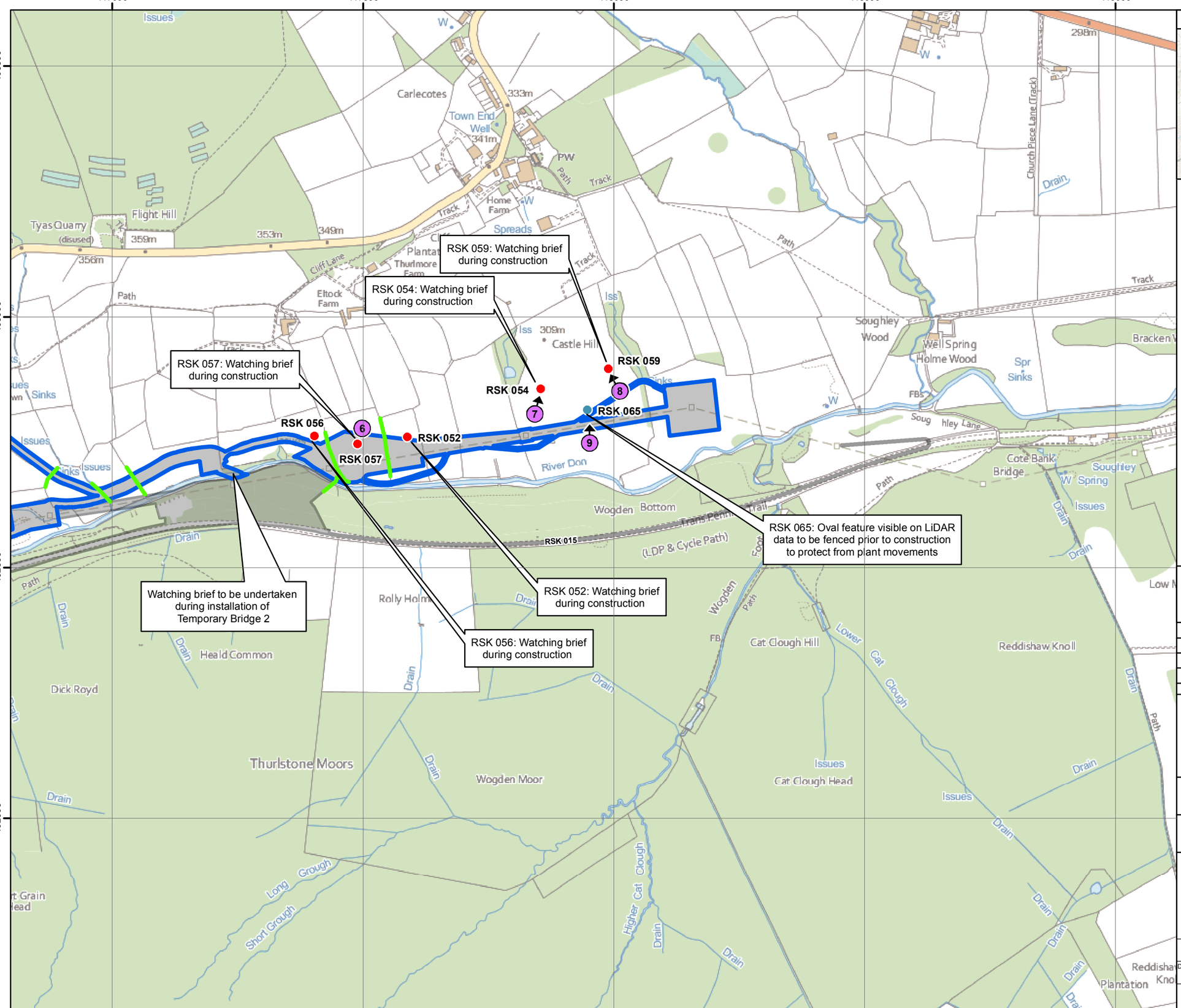
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APPENDIX 2: PLATES



Plate 1: RSK 007 Remnant dry-stone wall boundary adjacent to Pylon 4ZO162



Plate 2: RSK 016 rocky embankment within Woodhead Tunnel Portal



Plate 3: RSK 020 spoil tips from the construction of the Woodhead Tunnel



Plate 4: RSK 024 Stony Gate Earthworks adjacent to Pylon 4ZO163

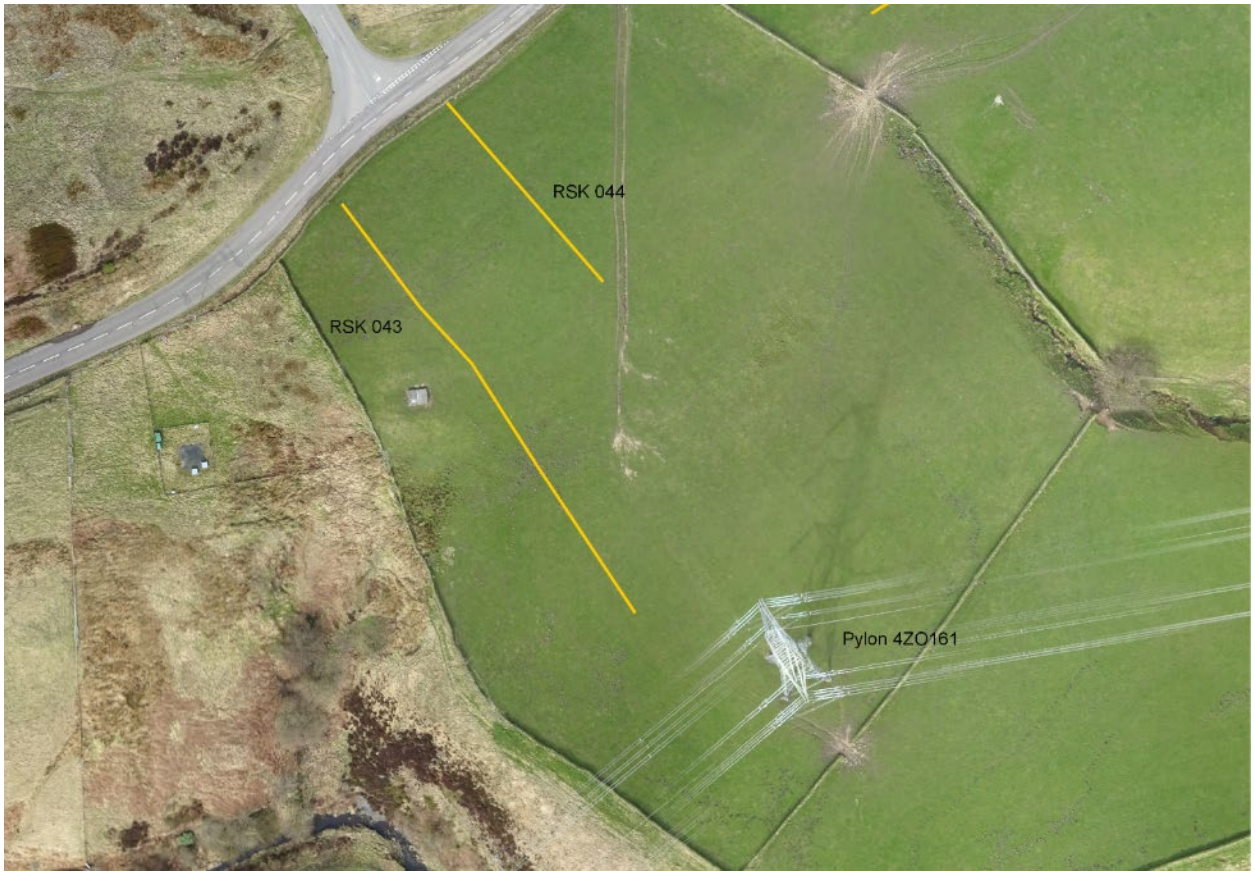


Plate 5: RSK 043 and RSK 044 relict field boundaries within field close to Pylon 4ZO161

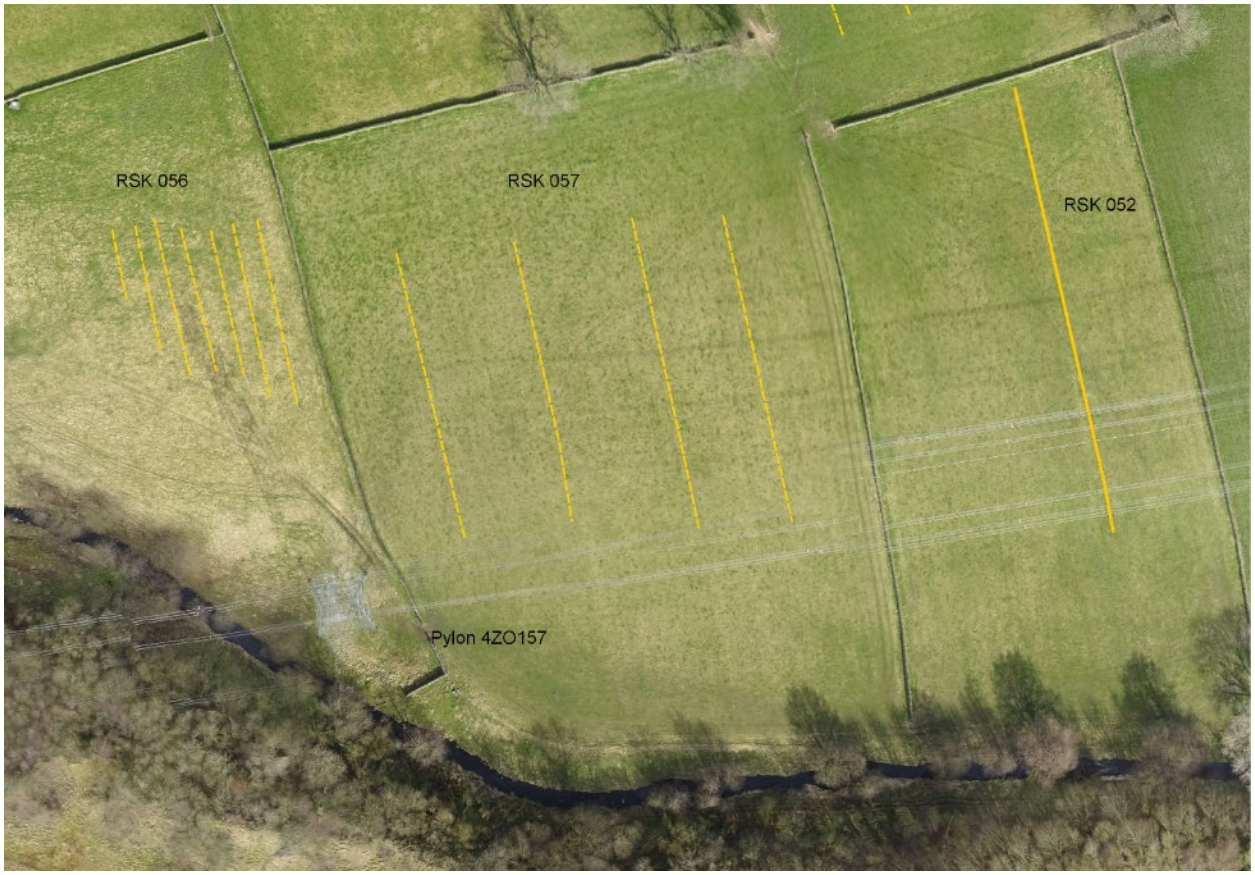


Plate 6: RSK 052 relict field boundary and RSK 056 and 057 ridge and furrow



Plate 7: RSK 054 Relict field boundary running down western flank of Castle Hill (intersects Site Boundary at NGR 417875,402772)



Plate 8: RSK 059 ridge and furrow earthworks on eastern flank of Castle Hill



Plate 9: RSK 065 oval feature (LiDAR anomaly) at base of Castle Hill slope



Plate 10: RSK 087 collapsed drystone wall



Plate 11: RSK 088 stone bridge abutments beneath modern timber bridge supports

APPENDIX 3: SCHEDULE OF RESPONSIBILITIES

Item	Task	WSI Section Ref	Phase relevant to	Timing restriction	Anticipated date required based on contract award	Responsibility
1.	Appoint Archaeological clerk of works	1.4.7	All	At contract award	April 2020	Principal Contractor
2.	Appoint Archaeological Contractor	1.4.8	All	At contract award	April 2020	Principal Contractor (Excluding the pre-construction earthwork and condition surveys for which an Archaeological Contractor will be secured by National Grid pre contract award)
3.	Earthwork survey	2.3.3, 2.3.10, 7.1	Pre-construction	n/a	March 2020	National Grid (To be undertaken pre contract award)
4.	Condition Survey	2.3.3, 2.3.11, 7.2	Pre-construction	n/a	March 2020	National Grid (To be undertaken pre contract award)
5.	Preservation in Situ	2.3.3, 2.3.6, 7.3	Site establishment	Prior to construction in specific areas	Various	Principal Contractor
6.	Archaeological watching brief	2.3.3, 2.3.12, 7.4	Site establishment/ construction/ post-construction	At contract award	April 2020	Principal Contractor

Item	Task	WSI Section Ref	Phase relevant to	Timing restriction	Anticipated date required based on contract award	Responsibility
7.	Develop excavation/mitigation strategy for archaeological sites discovered during construction	2.3.13, 3.2.1, 7.3.7	Site establishment/ construction	At contract award	April 2020	Principal Contractor
8.	Undertake post excavation assessment where relevant of archaeological work	2.4.1, 2.4.2, 9	All	Within 12 weeks post completion of all archaeological site works	Throughout construction if required	Principal Contractor
9.	Communication of any archaeological work to relevant stakeholders	3.1	All	N/A	Throughout construction	Principal Contractor
10.	Archaeological open days (if required)	10.1	Construction	N/A	Throughout construction if required	Principal Contractor
11.	Analysis and Publication of Archaeological survey results	2.4.3, 2.4.4, 10.2	Post-construction	Post construction.	Programme would be determined by post excavation assessment as above	Principal Contractor