



National Grid

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

Written Scheme of Investigation

P20-135

Report No. 16866-RSK-1405-XX-PL-G-030001

JANUARY 2021

RSK

RSK GENERAL NOTES

Project No.: P20-135

Title: Visual Impact Provision-Peak District (East) National Park Project: Written Scheme of Investigation

Client: National Grid

Date: 12/01/2021

Office: Helsby

Status: Rev 02 (Client and Consultee Comments Incorporated)

Author	<u>Mark Adams</u>	Technical reviewer	<u>Laurence Hayes</u>
Signature		Signature	
Date:	<u>08/12/20</u>	Date:	<u>12/01/21</u> <u>Updated 27/01/21</u>

RSK Environment Ltd (RSK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and RSK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by RSK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of RSK and the party for whom it was prepared.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

CONTENTS

1	INTRODUCTION	1
2	ARCHAEOLOGICAL BACKGROUND.....	3
3	MITIGATION STRATEGY	4
4	AIMS AND OBJECTIVES	8
	Archaeological Earthwork Survey.....	8
	Condition Survey	8
	Preservation in Situ.....	8
	Watching Brief	8
	Research Aims	9
5	METHODOLOGY	14
	Standards	14
	Roles and Responsibilities	14
	Monitoring	15
	Health and Safety, Preparation and Access.....	15
	Pre-Construction Fieldwork Methodologies.....	16
	Archaeological Earthwork Survey.....	16
	Condition Survey	17
	Preservation in Situ.....	18
	Archaeological Watching Brief Methodology	19
6	REPORTING	24
	Earthwork Survey Report.....	24
	Condition Survey Report.....	24
	Watching Brief Report.....	24
7	ARCHIVE.....	27
8	PUBLIC PROMOTION	30
9	STAFFING AND PROGRAMME.....	31
10	REFERENCES	33
	APPENDIX 1 PHOTOGRAPHS.....	34
	FIGURES	41

TABLES

Table 1: Headland Archaeology Post Excavation and Specialist Staff.....	31
---	----

1 INTRODUCTION

Project Background

- 1.1 This document is a written scheme of investigation (WSI) for a programme of archaeological works to be implemented at the Peak District (East) National Park Visual Impact Provision Project. It has been commissioned by Morgan Sindall Construction & Infrastructure Ltd and has been prepared by RSK (Headland) on behalf of National Grid.
- 1.2 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.
- 1.3 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.
- 1.4 The Peak District (East) National Park Project is hereon referred to as the 'Project'.
- 1.5 In this document 'the 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.
- 1.6 The potential archaeological effects are described in the Environmental Assessment Report produced for the Project (RSK, 2019).
- 1.7 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 (Figure 1).

Planning Background

- 1.8 Planning permission for the Sealing End Compound, TPT diversion (including 2 bridges) and northern access road was granted at Committee in May 2020 by Peak District

National Park Authority (Planning Application Ref NP/B/0819/0885 – Decision Notice dated 08.10.20) and approved by Barnsley Metropolitan Borough Council at Committee in June 2020 (Planning Application Ref 2019/1013 - Decision Notice issued 21.09.20), subject to a number of planning conditions and the completion of a Section 106 legal agreement relating to Biodiversity Net Gain.

1.9 Condition 6 of the Barnsley approval states:

No development, including any demolition and groundworks, shall take place until a Written Scheme of Investigation (WSI) that sets out a strategy for archaeological investigation has been submitted to and been approved in writing by the Local Planning Authority. The WSI shall include:

The programme and method of site investigation and recording.

The requirement to seek preservation in situ of identified features of importance.

The programme for post-investigation assessment.

The provision to be made for analysis and reporting.

The provision to be made for publication and dissemination of the results.

The provision to be made for deposition of the archive created.

Nomination of a competent person/persons or organisation to undertake the works.

The timetable for completion of all site investigation and post-investigation works.

Thereafter the development shall only take place in accordance with the approved WSI and the development shall not be brought into use until the Local Planning Authority has confirmed in writing that the requirements of the WSI have been fulfilled or alternative timescales agreed for its fulfilment.

Reason: To ensure that any archaeological remains present, whether buried or part of a standing building, are investigated and a proper understanding of their nature, date, extent and significance gained, before those remains are damaged or destroyed and that knowledge gained is then disseminated.

1.10 As part of the submitted planning documents, an outline WSI was prepared which set out detailed proposals for archaeological mitigation across the project, developed in consultation with both the South Yorkshire Archaeology Service (SYAS) and Peak District National Park Authority (PDNPA) (RSK, 2019). This WSI has therefore been prepared in accordance with measures specified in the outline archaeological WSI and is submitted in partial fulfilment of Condition 6 as above, for those aspects that fall under the planning consent.

2 ARCHAEOLOGICAL BACKGROUND

- 2.1 The archaeological potential of the area of the Project is described in detail in the baseline section of Chapter 8 of the Environmental Assessment Report (EAR, National Grid 2020). This Archaeological WSI should be read in conjunction with that report.
- 2.2 Assessments undertaken in support of the EAR included full archaeological and built heritage desk-based assessment, watching briefs during geotechnical site investigations, site walkovers and a LiDAR assessment. These indicated 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 Project.
- 2.3 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 of low significance.
- 2.4 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.

3 MITIGATION STRATEGY

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

- Removal of the existing Dunford Bridge SEC to a depth of 1.1m below ground level.
- Removal of the existing VIP Subsection including eight pylons (one of which will be replaced, see replacement tension pylon below) and 2km of OHL.
- 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 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 new 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 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.

3.2 The 'Site Boundary' is the boundary of the Project, encompassing all temporary and permanent works. The 'cable corridor' contains the buried cable.

3.3 In light of these works and the assessed archaeological potential, groundworks for the Project that require archaeological mitigation include:

- Stripping of overburden in the area of the current Trans Pennine Trail car park;
- 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.

3.4 The locations of these activities are shown on Figure 1 at the end of this WSI.

Mitigation Strategy

3.5 In accordance with MoRPHE PPN 3: Archaeological Excavation (Historic England, 2008), five stages of the archaeological assessment and mitigation strategy were specified in

the outline WSI to take place prior to, during and after construction. This is summarised below

Stage 1: Project Planning

- 3.6 The strategy and programme outlined in this WSI forms Stage 1: Project Planning, providing a suitable and proportionate framework for the archaeological assessment and mitigation for the area physically affected by the Project.

Stage 2: Pre-construction/Construction-phase Fieldwork

- 3.7 Archaeological assessment undertaken during the preparation of the Environmental Assessment Report comprised:
- Desk-based assessment;
 - Walkover survey;
 - LiDAR survey and assessment; and
 - Watching brief during Ground Investigations.
- 3.8 These assessments helped to define the archaeological potential of the area affected by the Project in order that detailed further assessment and mitigation measures could be defined.
- 3.9 The staged programme of mitigation in this Archaeological WSI therefore comprises:
- 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 photographic and written record of the condition of assets prior to potential alteration during the construction phase ('Preservation by Record');
 - Preservation in situ - securing protective measures through signage, barriers or surface matting to protect assets during the construction phase ('Preservation in situ'); and
 - Archaeological 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').

Archaeological Mitigation Techniques

- 3.10 All heritage assets and project groundworks requiring archaeological mitigation are shown in Figure 1. Photographs of heritage assets described in the text are included in Appendix 1 and their locations indicated on Figure 1 at the end of this WSI.

Preservation 'in Situ'

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

- 3.12 There are no designated heritage assets or archaeological features identified as having high significance within the boundary of the 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'

- 3.13 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'.

- 3.14 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'.

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

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

- Woodhead Tunnel spoil tips (RSK 020).

- 3.16 Due to changes to the final construction design, an earthwork survey of the Woodhead Tunnel portal (RSK 016) specified in the Outline WSI is no longer required.

- 3.17 Condition surveys will be undertaken of:

- 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
- dry-stone walls to be breached by accesses as necessary during the works as indicated in Figure 1.

- 3.18 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

- 3.19 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 Headland Archaeology (see below).

Reinstatement

- 3.20 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 and no archaeological works will be required in these areas.

Stages 3-5 Post-excavation Assessment and Reporting

- 3.21 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 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

- 3.22 Prepare an assessment of findings and a 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

- 3.23 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

- 3.24 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 6.13).

4 AIMS AND OBJECTIVES

Archaeological Earthwork Survey

- 4.1 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').
- 4.2 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 South Yorkshire Sites and Monuments Record, Peak District HBSMR and OASIS online grey literature report library.

Condition Survey

- 4.3 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').
- 4.4 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 South Yorkshire Sites and Monuments Record, Peak District HBSMR and OASIS online grey literature report library.

Preservation in Situ

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

Watching Brief

- 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.
- 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.

Research Aims

- 4.8 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 were summarised in the outline WSI and for reference are reiterated below.
- 4.9 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.
- 4.10 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).

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.

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?

5 METHODOLOGY

Standards

- 5.1 RSK/Headland is a Registered Organisation (RO) with the Chartered Institute for Archaeologists (CIfA). All archaeological works will be supervised by appropriately qualified professionals with relevant experience, who are members of the CIfA at a commensurate level.
- 5.2 The programme of archaeological mitigation works described in this document includes suitable and proportionate measures and procedures developed in consultation with the archaeological advisors to Barnsley Metropolitan Borough Council (BMBC advisors are 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.
- 5.3 All work will be carried out in accordance with the following regulations and guidance:
- Chartered Institute for Archaeologists Code of Conduct (CIfA, 2019);
 - Standards and Guidance for Archaeological Excavation (CIfA; 2014, updated 2020);
 - Standards and Guidance for an Archaeological Watching Brief (CIfA; 2014, updated 2020); and
 - MoRPHE (Management of Research Projects in the Historic Environment, Project Planning Note (PPN) 3: Archaeological Excavation (Historic England, 2008).

Roles and Responsibilities

- 5.4 Morgan Sindall has been appointed by National Grid to undertake construction of the Project (the 'Principal Contractor', 'PC'). The Principal Contractor will provide all necessary welfare, site security, plant and attendances relevant to the archaeological works specified in this WSI.
- 5.5 RSK/Headland has been appointed to implement archaeological mitigation measures in compliance with Condition 6 of consent for the Project, including the preparation of this WSI. RSK/Headland will provide suitably qualified and experienced personnel to undertake the mitigation works on site (see Staffing below). In addition, RSK/Headland will provide a nominated professional archaeologist to act as Archaeological Clerk of Works (ACoW), overseeing the archaeological mitigation works.
- 5.6 RSK/Headland is responsible for undertaking the stages of work described in this WSI, and for the preparation of RAMS documentation for each stage of work for the Principal Contractor prior to works commencing.
- 5.7 Appropriately experienced specialists within RSK/Headland will provide relevant on-site and post excavation (assessment and analysis) support as required.

Monitoring

- 5.8 The programme of archaeological work will be monitored on behalf of the Barnsley Metropolitan Borough Council (BMBC) by the Archaeological Monitors: South Yorkshire Archaeology Service (SYAS) and the Peak District National Park Authority (PDNPA).
- 5.9 Inspections and any action required will be undertaken in accordance with measures described in this Archaeological WSI.
- 5.10 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 (when available). Task-specific RAMS will be provided to SYAS and PDNPA for information.
- 5.11 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 this Archaeological WSI.
- 5.12 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).

Health and Safety, Preparation and Access

- 5.13 RSK/Headland operates in accordance with the health and safety procedures as set out in:
 - The Health and Safety Work Act (1974) and related legislation; and
 - The Federation of Archaeological Managers and Employers' Health and Safety Manual (2010).
- 5.14 Prior to commencing work on site, a health and safety risk assessment will be prepared by RSK/Headland, to be read and acknowledged by all site staff. Measures will be introduced to mitigate or control all identified hazards.
- 5.15 The risk assessment will include for the following (not exhaustive):
 - Covid-19
 - Social distancing will be practiced at all stages of the project, from travel, fieldworks, and on-site welfare facilities.
 - Staff to use, and regularly disinfect, personal hand tools
 - Utilities/Services
 - It will be the responsibility of the Principal Contractor to identify and plan for avoidance of all utilities and services.
 - It will be the responsibility of the Principal Contractor to issue any required permits to dig, involving (as a minimum) the following protocol:
 - A pre-start walkover will be carried out, up-to-date utilities plans will be checked against excavation locations, a utility detection of excavation locations may be required, and Cable Avoidance Tool (CAT) (and genny, if necessary) by a trained and responsible person will be

implemented. All plant and vehicle movements in the vicinity of overhead infrastructure to be appropriately controlled.

- Personal Protective Equipment
 - Necessary personal protective clothing and equipment, including hard hats, eye protection, full orange hi-vis clothing, reflective jackets, CUT-5 gloves and protective footwear will be used at all times on site.
 - Appropriate measures will be taken to ensure the health and safety of any staff who may come into contact with contaminants; measures may include on-site adaptation of the agreed works.
- Competencies
 - All site staff, including subcontractors, machine operators and visitors, will prove that they have the necessary competencies (e.g. CITB training for machine operators, CSCS/EUSR for site personnel) and any other necessary health and safety qualifications.
- Welfare
 - On-site welfare facilities will be made available for the use of the site archaeologists by the Principal Contractor, the main works compound based at the Dunford Bridge Car Park.
- Security
 - Site security, including appropriate segregation of works areas from the public, will be provided by the Principal Contractor.

Access

- 5.16 A pre-start meeting will be held, as necessary, with the Principal Contractor to confirm site access and access between works locations, including any satellite parking locations.
- 5.17 The archaeologists will conform to the Principal Contractor's arrangements for site inductions, signing in procedures, parking, walking and vehicle movement routes.

Pre-Construction Fieldwork Methodologies

Archaeological Earthwork Survey

- 5.18 Earthwork survey will be undertaken and reported in advance of any enabling or construction groundworks for the Project. The work will be undertaken with two archaeologists in attendance, and is anticipated to be completed within one day.
- 5.19 Earthwork survey will be undertaken for the Woodhead Tunnel spoil tips (RSK 020), located on the north side of the River Don in the location of the temporary Trans-Pennine Trail diversion.¹ The asset will be visited, described with text notes on pro-forma recording forms, and photographed.

¹ Note that an earthwork survey of the Woodhead Tunnel Portal, previously identified in the Outline WSI, is now no longer required. Changes to the Project methodology has resulted in there being no impact to the bank between the two tunnel entrances.

- 5.20 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.
- 5.21 The photographic record will comprise high resolution (16MP or higher) digital images taken in dual RAW and TIFF format.
- 5.22 The topographic survey will take the form of the processing and presentation of existing LiDAR data which was flown specifically for the project. The data was captured by drone alongside high-resolution orthorectified aerial imagery. Data accuracy is 100mm horizontal resolution and $\pm 10\text{mm}$ (solid surfaces)/ 50mm (agricultural surfaces).
- 5.23 Outputs will comprise georeferenced contour/hillshade plots referenced to the Ordnance Survey National Grid, and levels relative to Ordnance Datum.
- 5.24 The report will be provided to BMBC, SYAS and PDNPA for information when complete, and will be submitted with the final report on completion of all stages of archaeological work (see Section 6).

Condition Survey

- 5.25 Condition surveys will be undertaken and reported in advance of any enabling or construction groundworks for the Project. The work will be undertaken with two archaeologists in attendance, and is anticipated to be completed within two days.
- 5.26 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).
- 5.27 For standing structures subjected to condition survey, the recording 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).
- 5.28 Each asset will be visited, described, photographed and drawn.
- 5.29 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.
- 5.30 The photographic record will comprise high resolution (16MP or higher) digital images taken in dual RAW and TIFF format. Photographs will include a suitably sized and positioned metric scale.
- 5.31 The drawn record will comprise measured and annotated hand-drawn sketches of plans, elevations and profiles.
- 5.32 The report will be provided to BMBC, SYAS and PDNPA for information when complete, and will be submitted with the final report on completion of all stages of archaeological work (see Section 6).

Preservation in Situ

- 5.33 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. This will be supervised in the field by Headland Archaeology
- 5.34 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 Principal Contractor, and protection of their physical remains throughout the construction and reinstatement phase of the Project.
- 5.35 Preservation in situ may be applied to heritage assets identified at any stage of the Project.
- 5.36 Agreed heritage assets that have been identified/defined through previous assessment will be protected during construction through a programme of demarcation prior to enabling or construction works (see *Protection of Heritage Assets* below).
- 5.37 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.
- 5.38 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.
- 5.39 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

- 5.40 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.
- 5.41 In respect of RSK 024 Stony Gate Earthworks, the Principal Contractor will install 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. The protective measures will be installed under archaeological supervision.
- 5.42 In respect of RSK 065, the location of the oval feature will be located on the ground using a navigation-grade hand held GPS by a qualified archaeologist prior to construction, and a 2m standoff to the south of the feature marked with temporary fencing (stakes and barrier tape) to signal the position during temporary access to Pylons 4ZO156 and 4ZO155.

- 5.43 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
i.e. Localised variation of working areas to avoid an identified area of archaeological sensitivity;
 - Protection
i.e. 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.
- 5.44 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.
- 5.45 Toolbox talks: The location of heritage assets to be preserved in situ located adjacent to or within construction areas will be included on the Principal Contractor's works drawings displayed in site offices, including restrictions to construction methods. Headland Archaeology will implement toolbox talks to ensure the Principal Contractor's site staff and other subcontractors are aware of the drawings and the location of heritage assets to be protected.

Archaeological Watching Brief Methodology

General Arrangements

- 5.46 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. 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.
- 5.47 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

- 5.48 The RSK/Headland ACoW will be notified of the groundworks programme in advance of the works by the Principal Contractor, who will arrange for site attendance by suitably qualified archaeological personnel. The archaeological presence will be carefully coordinated and explicitly targeted to maximise archaeological recovery through monitoring of groundworks most likely to reveal archaeological remains.
- 5.49 The Principal Contractor will facilitate access for the site archaeologist(s) to observe the groundwork activities being undertaken.
- 5.50 During the watching brief the attending archaeologist(s) will not define the depth/extent of excavation/groundworks, but only observe works being carried out according to the Principal Contractor's project specification.
- 5.51 Work will be carried out by mechanical excavators fitted with toothless ditching buckets. Should multiple machines be excavating at any one time, additional archaeologists will attend site to monitor progress if the works cannot be adequately monitored by a single person.
- 5.52 The archaeologist(s) will request that excavation works 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.
- 5.53 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. Plant movements will be planned to avoid tracking over recently exposed surfaces before they have been 'signed off' as clear of archaeology.
- 5.54 Following/during topsoil stripping, if archaeological potential is confirmed by Headland Archaeology, all groundworks in the vicinity will cease, the area of interest will be fenced off using temporary barriers (crowd barriers or posts/barrier tape). If exposed archaeological remains cannot be adequately recorded within the existing watching brief arrangements, work will be suspended until a strategy has been agreed with the ACoW and the Principal Contractor, in consultation with the Archaeological Monitors. The Principal Contractor may continue their works according to their specification outside the fenced area.
- 5.55 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,

a strategy may be defined in a site- and task-specific WSI and RAMS in advance of any excavation works.

Recording

- 5.56 Daily site diaries and watching brief record sheets will be maintained by the watching brief archaeologists, recording both negative and positive archaeological information; and progress reports will be submitted to the ACoW.
- 5.57 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.
- 5.58 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 discrete features initially (half section or quadrant depending on size),
 - at least 20% of all linear features; 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.
- 5.59 Additional excavation may be required following consultation.
- 5.60 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.
- 5.61 The photographic record will comprise high-resolution digital images (16MP or higher) taken in dual RAW and TIFF format with a supporting index.
- 5.62 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.
- 5.63 Any significant artefacts will be recovered and recorded with reference to context and location.
- 5.64 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

- 5.65 Any finds of human remains during the course of the Project will be left in situ, covered and protected and the Coroner will be notified.
- 5.66 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

- 5.67 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).
- 5.68 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.
- 5.69 For deposits where anaerobic preservation is identified, 20 litre bulk samples will be collected for the retrieval of uncharred plant macrofossils and insects.
- 5.70 Appropriate provision will be ensured for the application of scientific dating techniques.
- 5.71 Where necessary, the regional Historic England Science Advisor will be consulted.

Small finds policy

- 5.72 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 ClfA's Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials (2014).
- 5.73 Sufficient artefacts will be retained to determine 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.
- 5.74 Artefacts will be bagged by archaeological context. The location of special (or 'small') finds will be three-dimensionally recorded.
- 5.75 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.
- 5.76 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

- 5.77 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 notified to the local coroner within fourteen days of discovery, in accordance with The Treasure Act 1996 Code of Practice (Revised).

Toolbox talks

- 5.78 Headland Archaeology 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.
- 5.79 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.
- 5.80 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.

6 REPORTING

6.1 On completion of each stage of works a separate report describing the results will be prepared. These will cover the following:

- Earthwork Survey;
- Condition Survey; and
- Watching Brief Results.

Earthwork Survey Report

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

6.3 Copies of the report will be issued to BMBC, SYAS and PDNPA for comment prior to finalising. The final report will be issued alongside the condition survey and watching brief reports on completion of all stages of archaeological work to enable full discharge of Condition 6 of the Barnsley planning approval.

6.4 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.

Condition Survey Report

6.5 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.

6.6 Copies of the report will be issued to BMBC, SYAS and PDNPA for comment prior to finalising. The final report will be issued alongside the earthwork survey and watching brief reports on completion of all stages of archaeological work to enable full discharge of Condition 6 of the Barnsley planning approval.

6.7 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.

Watching Brief Report

6.8 On the completion of the fieldwork, the site records will be checked and cross referenced. Any artefacts and samples recovered will be sent along with contextual information to the relevant specialists for analysis.

6.9 If samples with palaeoenvironmental potential are considered worthy of processing and reporting, this will not be commissioned until the necessity for this has been specified.

6.10 The final report will accord with the '*Post-Excavation Assessment Report – Stage 3*' noted in paragraphs 9.1.8 - 9.1.11 of the outline WSI. In the event that no significant

archaeological remains (or remains of limited archaeological significance) are recorded, reporting may comprise a single stage. In the event that significant/unexpected discoveries are made during the watching brief, it may be the case that a two-phase reporting process is required, with a preliminary assessment report produced setting out the requirements for more detailed analysis and reporting. The requirement for this will be discussed with the Archaeological Monitors in light of specific findings.

- 6.11 The report will be submitted alongside the earthwork and condition survey reports on completion of all stages of archaeological, to enable full discharge of Condition 6 of the Barnsley planning approval. The report will contain:
- a non-technical summary;
 - a table of contents;
 - an introduction with acknowledgements, including a list of all those involved in the project and the location and description of the fieldwork area;
 - a statement of the project aims and objectives;
 - an account of the investigation methodology undertaken, and an assessment of its effectiveness;
 - a description of the archaeological findings;
 - plans and section drawings at appropriate scales;
 - other maps, plans, drawings and photographs as appropriate;
 - a description of any finds and palaeoenvironmental samples collected including an exposition of the methodologies employed, a statement on the presence or absence of material and an assessment of preservation. An interpretation of the finds including reference to any unusual or important features of the assemblage will also be included. Specialist assessments of all important groups of finds, materials and samples as necessary, including proposals for any proportionate further analysis;
 - a discussion and assessment of the results with a statement of the heritage significance of any identified archaeological features/sites on a local/regional/national scale;
 - a bibliography of sources consulted; and
 - a list of contents of the project archive and a statement of its location/proposed repository.
- 6.12 Any observations on the content of the final report made by the client and the Local Authority Archaeologist will be taken into account before the final version is issued.
- 6.13 Digital copies of the report will be issued to the client, the Local Authority Archaeologist, and the Historic Environment Record (HER).
- 6.14 The results of the report will be published and disseminated in an appropriate form. 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 where it will be incorporated into their datasets for public consultation. Deposition of the report with the respective HERs and uploading the project data to OASIS will be considered as placing the results of the project in the public domain.

- 6.15 Wider publication of the results will be considered, although the content and place of publication will be dependent on what is found, and will be subject to discussion with the Archaeological Monitors.

7 ARCHIVE

General Standards

- 7.1 The project archive will consist of all original records, artefacts, ecofacts/samples and all documentation that relates to the archaeological works. Copies of the written scheme of investigation, report and any relevant correspondence will be included.
- 7.2 RSK/Headland 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*).
- 7.3 The nominated recipient museum (anticipated to be *Experience Barnsley*) will be contacted in advance of the start of fieldwork in order to obtain an accession number for the fieldwork.
- 7.4 Any artefacts discovered are the property of the landowner. The landowner will be contacted on completion of the site work and agreement sought for the artefacts to be deposited as part of the site archive.
- 7.5 The archive will comply with the United Kingdom Institute for Conservation (Archaeology Section) Guidelines for the Preparation of Excavation Archives for Long-Term Storage (1990) the Society of Museum Archaeologists Towards an Accessible Archive (1995) and to the reasonable requirements of the recipient museum.
- 7.6 The archiving of digital data will conform to the standards and guidance set out by the Archaeological Data Service (Guidelines for Depositors²) and Historic England/ClfA/Archaeological Archives Forum.³
- 7.7 The strategy for selection and data management (set out below) is informed by the Chartered Institute for Archaeologists 'Toolkit for Selecting Archaeological Archives'⁴ and RSK/Headland's own archiving procedures.

Selection Strategy and Data Management Plan

Physical Archive

- 7.8 In accordance with Section 4 of Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation Archaeological Archives Forum 2007 (revised 2011) a rigorous process of selection and discard will be followed, in consultation with the recipient museum, so that only those elements that are considered of significance for potential future study will be retained.

² <https://archaeologydataservice.ac.uk/advice/guidelinesForDepositors.xhtml>

³ Historic England, ClfA and DigVentures 2019, Dig Digital: A guide to managing digital data generated from archaeological investigations.

⁴ <https://www.archaeologists.net/selection-toolkit/toolkit-overview>

- 7.9 This strategy will be reviewed as work proceeds at each stage of the Project in light of the specific findings, the aims and period specific research objectives of the archaeological work (see Section 4), and the significance of any material recovered.
- 7.10 At the outset of the project it is unknown which periods are most likely to be represented. In general all non-modern (i.e. pre-1800) artefacts will be retained. If appropriate 'small finds' will be recorded three dimensionally, otherwise bulk finds will be collected by context. Finds will be treated in accordance with the Historic England guidance document 'A strategy for the care and investigation of finds' (1995) and stored in controlled conditions where appropriate (See also Watkinson and Neal (2001)⁵). All artefacts will be retained, cleaned, labelled and stored as detailed in the guidelines of the ClfA. Conservation, if required, will be undertaken by approved conservators. Appropriate Institute of Conservation (ICON) guidelines (<https://icon.org.uk/groups/archaeology>) will apply and the conservator/s will be ICON register.
- 7.11 RSK/Headland will liaise with the archaeological monitors and the internally appointed post-excavation specialists regarding the retention or recording and disposal on site of diagnostic and undiagnostic worked stone and ceramic building material, and during subsequent stages of post-excavation assessment and analysis the strategy for retention of sample residues and flots. Where material not selected for retention is discarded on site, RSK/Headland will liaise with the Principal Contractor to confirm the appropriate location for discard which conforms to the site waste and soils management plans.
- 7.12 In light of any unexpected finds, the selection strategy will be updated and circulated to the archaeological monitors in consultation with RSK/Headland's own specialist team. The final selection strategy at archive compilation stage will accompany the project report as an appendix and will be included within the archive to the receiving museum.

Digital Data

- 7.13 All digital data arising from the archaeological mitigation works will be managed in accordance with RSK/Headland's procedures for secure storage of data and retrieval from site. All data collection equipment (cameras, GPS) will be removed from site daily and data backed up routinely in accordance with the in-house file structure. Copies of data will be stored locally for routine retrieval on site and backed up on the Headland Datto cloud-based server, enabling access for members of the project team. File structures and naming conventions will accord with Headland's internal guidance document 'Digital Archive Preparation Guidance (England) ARC-P07' (updated 2017).
- 7.14 The selection of digital data for inclusion in the site archive will be undertaken by RSK/Headland's appointed Project Manager, in liaison with their Archives Manager. Digital data selected for retention may include (subject to the final nature of the site archive):
- Databases and excel records generated during site archive completion and assessment;
 - Images: Site photography, scans of site drawings and context records, X-rays and graphics;

⁵ Watkinson, D. and Neal V. 2001 *First Aid for Finds Rescue/UKICAS*, London

- Text: Digital copies of Word documents; including this WSI, assessment reports, updated project designs and site archive completion report;
- Excavation and Finds Data: All born digital records, in their final file versions, will be selected for archive. This may include those produced externally, subject to the addition of metadata and compilation into accessible formats: database records (covering excavation, post-excavation and assessment); third party specialist finds data; conservation records; survey data;
- Images: Born digital photographs, born digital drawings, digitized drawings and sketches, video, graphs and tables;
- Text: Born digital text files in accessible formats (in-house text in Word).

7.15 Selection strategy reviews will be undertaken at periodic intervals throughout the post-excavation stage, with key hold points following completion of the site work and ordering of site data for specialist input, at assessment and analysis reporting stage.

8 PUBLIC PROMOTION

Construction Phase

- 8.1 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 Headland Project Manager in accordance with access restrictions, on-site health and safety regulations, and site- and task-specific risk-assessments (RAMS).
- 8.2 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.

Post-construction

- 8.3 The potential for adding public benefit to the project through the popular publication of the survey results will be considered as part of the programme of post excavation work.
- 8.4 National Grid will be responsible for disseminating findings through public engagement by the ACoW and/or members of the Headland project team 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.

9 STAFFING AND PROGRAMME

Staffing

- 9.1 The nominated Archaeological Clerk of Works is Laurence Hayes BA (Joint Hons) MCIfA IHBC, Principal Archaeologist with Headland Archaeology. Laurence will be responsible for preparation of technical documentation (including this WSI), programme management and interface between the Principal Contractor, National Grid, the Archaeological Monitors and the archaeological site team.
- 9.2 The Archaeological Project Manager is David Harrison BA (Hons) MSc MCIfA, Project Manager at Headland Archaeology. David will be responsible for direct management and scheduling of the field team, time recording and management of data recovered from site.
- 9.3 The field team will comprise one project officer and additional site assistants as necessary drawn from Headland Archaeology's permanent field team. All site staff are members of the CfA at the commensurate level.
- 9.4 As necessary during the works, and dependant on the nature of the findings, additional specialist input will be drawn from Headland Archaeology's post-excavation and specialist services teams, headed up by Alex Smith (Head of Post Excavation) and Michael Wallace (Environmental Manager). Specific artefact and environmental specialists are identified in the table below.

Table 1: Headland Archaeology Post Excavation and Specialist Staff

Person	Role	Specialism
Alex Smith	Head of Post-excavation	PX management, Roman specialist
Julie Franklin	Finds, Archives & Post-excavation Project manager	PX project and specialist management; medieval and post-medieval finds, medieval and post-medieval pottery (Scotland); Medieval/post-medieval specialist
Julia Bastek-Michalska	Graphics manager	Graphics management, all illustration, typesetting
Claire Christie	Senior Post-excavation Project Officer	Stratigraphic analysis, PX management, report writing, training, GIS, C14, prehistoric specialist
Owain Scholma-Mason	Post-excavation Project Officer	Stratigraphic analysis, report writing, junior specialist in prehistoric pottery, prehistoric specialist
Kate Turner	Senior Environmental Specialist	Plant remains, geoarch
Michael Wallace	Environmental Manager	Plant remains, Plant isotope
Angela Walker	Environmental specialist	Plant remains
Jason Stewart	Geoarchaeologist	Geoarchaeology
Laura Bailey	Environmental specialist	Plant remains, charcoal, faunal remains

Person	Role	Specialism
Sara Machin	Senior Finds Specialist & post-excavation coordinator	CBM, pottery (Roman), management of PX systems, PX project management
Alexandra Kriti	Post-excavation Supervisor	Processing, archiving
Anna Rebisz-Niziolek	Post-excavation Supervisor	Processing, IA/Roman pottery, archiving
Amy Koonce	Post-excavation Supervisor	General finds specialist (assessment level); Post-Roman registered finds, archiving
Steve Roe	Post-excavation Supervisor	Processing
Clare Powell	Post-excavation Assistant	Processing, archiving
Suzanne McGalliard	Osteologist/Post-excavation Project Officer	Osteology, stratigraphic analysis, report writing
Rafael Maya Torcelly	Illustrator	Graphics, IT
Beata Wieczorek-Oleksy	Senior Illustrator	Graphics
Eleanor Winter	Illustrator	Graphics

Programme

- 9.5 Preconstruction surveys (earthwork survey, condition surveys) are scheduled to commence on 8th Feb 2021 and are anticipated to be completed within a single week. Reports will be completed within 4 weeks following completion of the site works.
- 9.6 Construction phase watching brief is anticipated to commence in May 2021.
- 9.7 The final report on the results of the archaeological watching brief will be prepared within 12 weeks of completion of the site works, pending receipt of specialist reports and any specific requirements of the LPA.
- 9.8 The archive will be deposited within 12 months of the completion of the site works.

10 REFERENCES

- Brown, D.H. 2007, *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation*. Available at http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-799-1/dissemination/pdf/AArchives_v2.pdf
- Chartered Institute for Archaeologists Finds Group, 2014, *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials*
- Chartered Institute for Archaeologists, 2019, *Code of Conduct*
- Chartered Institute for Archaeologists, 2014, updated 2020, *Standard and Guidance for Archaeological Excavation*
- Chartered Institute for Archaeologists, 2014, updated 2020, *Standard and Guidance for an Archaeological Watching Brief*
- DCMS, 2010, *Criteria for Assessing the National Importance of Monuments*
- Historic England, 2011, *Environmental Archaeology; A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (second edition)
- Historic England, 2008, *MoRPHE (Management of Research Projects in the Historic Environment, Project Planning Note (PPN) 3: Archaeological Excavation*
- Historic England, Centre for Archaeology Guidelines, 2011, *Environmental Archaeology, A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation, Revision II*
- Historic England, 2015 *Digital Image Capture and File Storage: Guidelines for Best Practice*
- Historic England, 2016 *Understanding Historic Buildings, A Guide to Good Recording Practice*
- Historic England, 2018. *Using Airbourne LiDAR in Archaeological Survey. The Light Fantastic.*
- National Planning Policy Framework (NPPF), 2019, Department for Communities and Local Govt.
www.gov.uk/government/publications/national-planning-policy-framework--2
- Roskams, S. and Whyman, M., 2007, *The Yorkshire Archaeological Research Framework: Research Agenda*, Department of Archaeology, University of York
- RSK, 2019, Peak District (East) *National Park VIP Environmental Assessment Report: Chapter 8 Cultural Heritage and Outline Archaeological Written Scheme of Investigation*
- SCAUM, 2007, *Health and Safety Manual in Field Archaeology*
- The Society of Museum Archaeologists, 1995, *Towards an Accessible Archive*
- United Kingdom Institute for Conservation (Archaeology Section), 1990, *Guidelines for the Preparation of Excavation Archives for Long-Term Storage*
- Watkinson & Neal, 1998, *First Aid for Finds*

APPENDIX 1

PHOTOGRAPHS



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



Plate 2: RSK 016 rocky embankment within Woodhead Tunnel Portal (NB: Mitigation no longer required in this location)



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



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

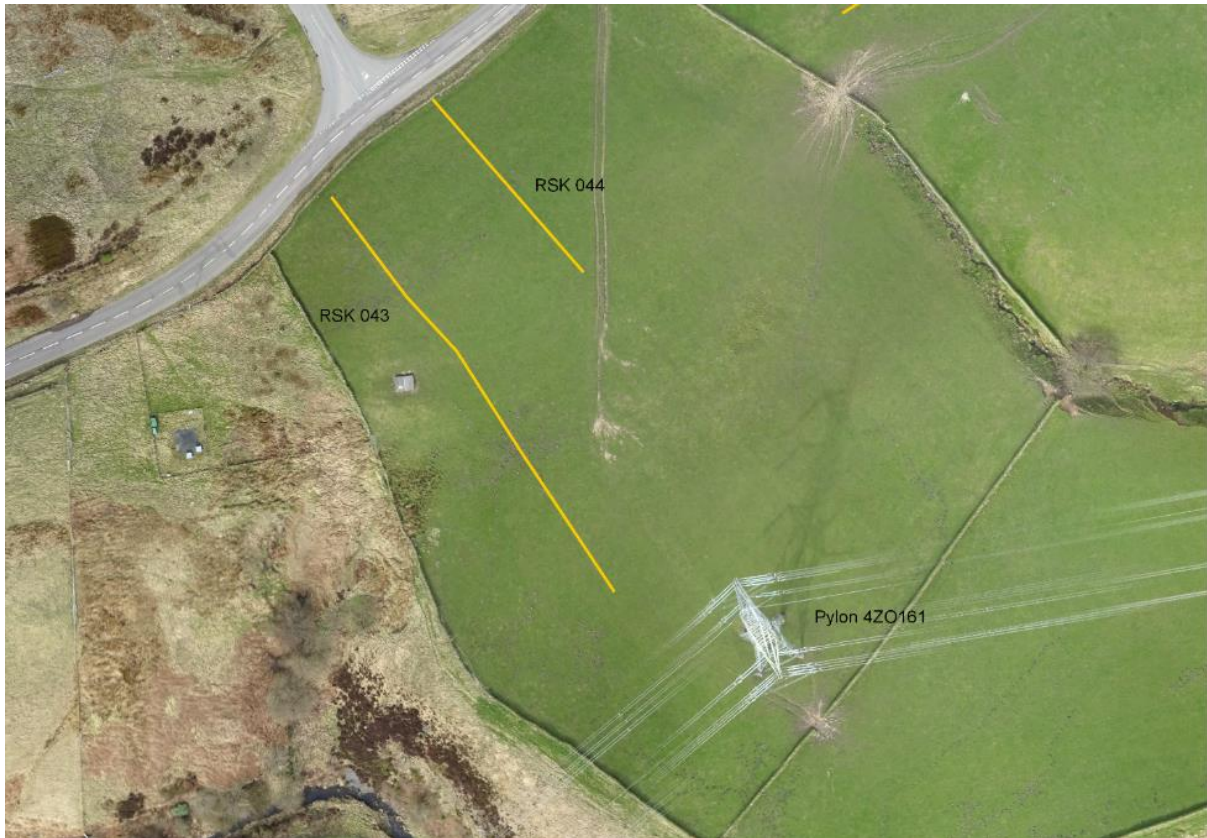


Plate 5: RSK 043 and RSK 044 relict field boundaries within field close to Pylon 4ZO161



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

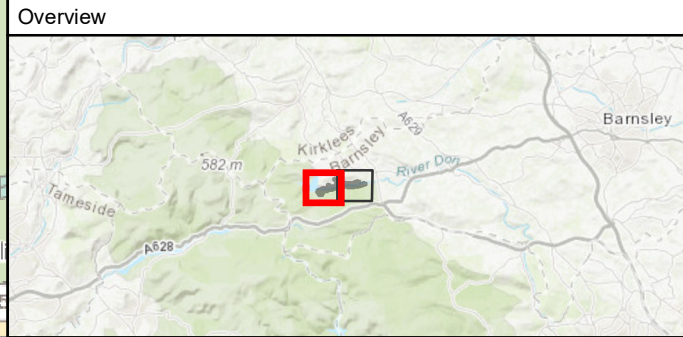
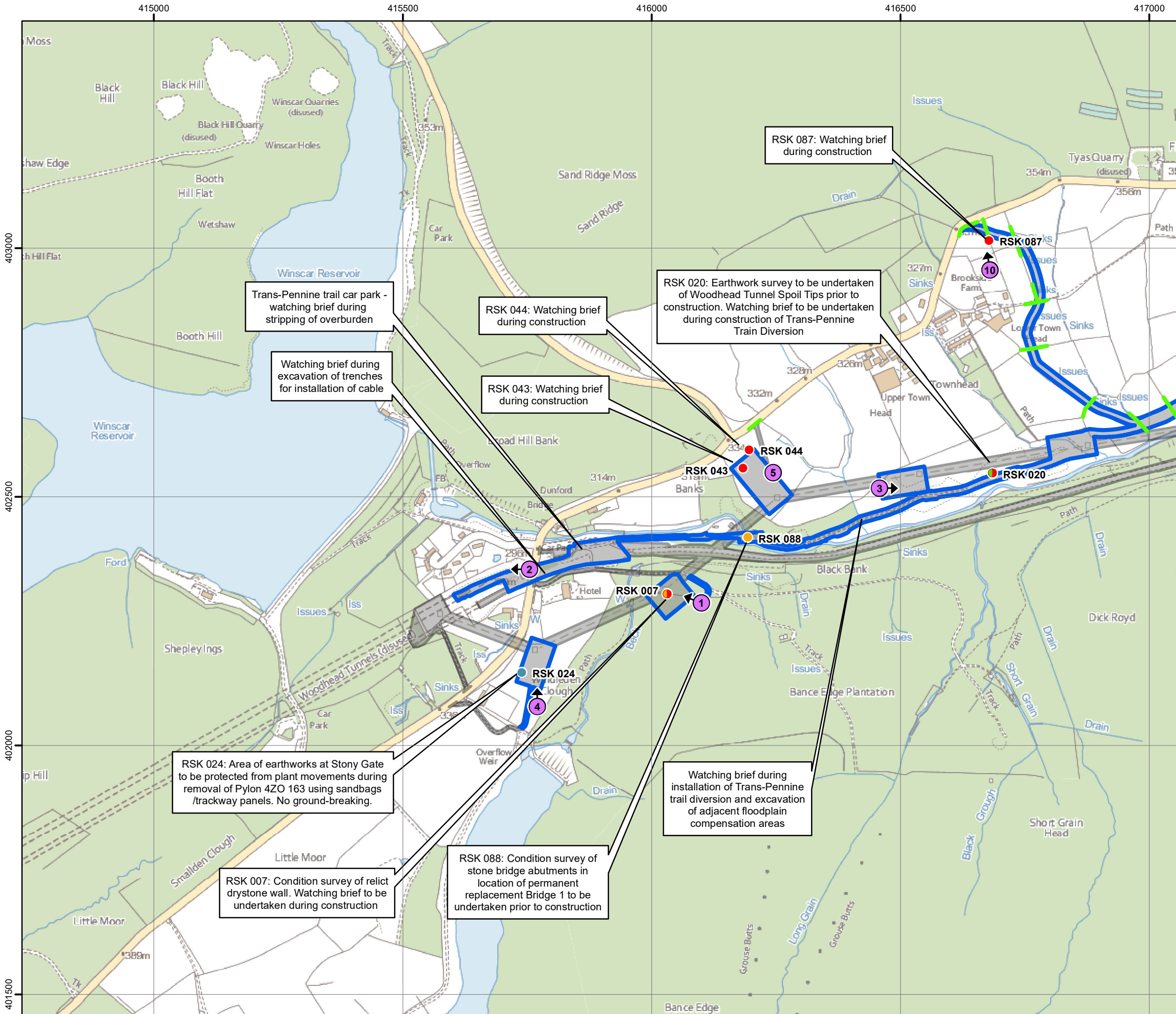


Plate 10: RSK 087 collapsed drystone wall



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

FIGURES



Legend

Site Boundary

Watching Brief During Construction

Mitigation Type

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

REPRODUCED FROM ORDNANCE SURVEY MAPS, BY PERMISSION OF THE ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HER MAJESTY'S STATIONARY OFFICE. © CROWN COPYRIGHT ORDNANCE SURVEY. NATIONAL GRID ELECTRICITY - 100024241. NATIONAL GRID GAS -100024886

03	Gaz and label edits	NH	LH	SR	01/02/2021
02	Label edits	NH	LH	SR	13/05/2019
01	Add Photo Points	AW	LH	SR	05/04/2019
00	First Draft	NH	LH	SR	20/03/2019
Rev	Description	Cre'd	Chk'd	App'd	Date



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	01/02/2021	L.Hayes	01/02/2021	S.Rotherham	01/02/2021
Development Eng:	Document Type:	Scale:	Format:	Sheet(s):	Rev:
-	-	1:7,500	A3	1 of 2	03

National Grid Document Number:
-

FEED Document Number:
-



