

# West Burton Solar Project

## Environmental Statement Appendix 13.7: Written Scheme of Investigation for Archaeological Mitigation Revision A

Prepared by: Lanpro Services  
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## Schedule of Changes

Figure Reference	Page	Description of Changes	Reason for Revision
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Figure 2	53	Change to Order Limits red line	Update to reflect Change Application
Figure 4	55	Change to Order Limits red line	Update to reflect Change Application
Figure 6	57	Change to Order Limits red line	Update to reflect Change Application

All other changes made to text and to tables are shown as tracked changes.

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## Issue Sheet

Report Prepared for: West Burton Solar Project Ltd.

### West Burton Solar Project Appendix 13.7: Written Scheme of Investigation for Archaeological Mitigation

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West Burton 2: WBIN22

West Burton 3: WBMA22

Cable Route Corridor: WBSC22



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## 1 Introduction

1.1.1 This Written Scheme of Investigation (WSI) for archaeological mitigation has been prepared by Lanpro Services Ltd on behalf of West Burton Solar Project Limited ('the Applicant'). The WSI details the methodology for undertaking a programme of archaeological mitigation within the proposed West Burton Solar Project area ('the Scheme') as part of an application for a Development Consent Order (DCO).

1.1.2 The Scheme is a proposed solar farm with energy storage which will generate and store renewable electricity for export to the National Grid. The Scheme is to be located at three distinct areas, as described in Chapter 3 of the Environmental Statement (ES) [EN010132/APP/WB6.2.3]. The solar array Sites and associated substations and energy storage are to be connected to the National Grid at a substation at West Burton Power Station. The Scheme will connect to the National Grid substation via a new 400kV substation constructed as part of the Scheme to provide the connections to the various solar Sites. The substations, cable connections and energy storage will be required for the duration of the Scheme. The substations and energy storage will be decommissioned and removed at the end of the lifetime of the Scheme but the underground cables are anticipated to be decommissioned in situ to minimise environmental impacts.

1.1.3 The Scheme sites ('the Sites') are described in detail in **Chapter 3** of the ES [EN010132/APP/WB6.2.3] and descriptions of the Scheme proposals are provided in **Chapter 4** of the ES ('Scheme Description') [EN010132/APP/WB6.2.3].

1.1.4 This WSI has been informed by the results of several previous stages of archaeological desk-based assessment (ES Appendix 13.1 [EN010132/APP/WB6.2.13.1]; Lanpro 2022b; 2022c; 2022d; 2023), geophysical survey (ES Appendix 13.2 [EN010132/APP/WB6.2.13.2]; ASWYAS 2022; ASWYAS 2023; NAA 2022a; NAA 2022b; Wessex 2022a), a geoarchaeological desk-based assessment (ES Appendix 13.3 [EN010132/APP/WB6.2.13.3]; OAN 2022), aerial photographic and LiDAR interpretation (ES Appendix 13.4 [EN010132/APP/WB6.2.13.4]; Deegan 2022a; 2022b; 2022c), and an extensive programme of evaluation trenching (ES Appendix 13.6 [EN010132/APP/WB6.2.13.6]; CFA 2022a; 2022b; 2022c; Wessex 2023.) These have been produced to support the ES and are appended to that document in the following Appendices to Chapter 13 ('Cultural Heritage') [EN010132/APP/WB6.2.13]:

- **ES Appendix 13.1** Archaeological Desk-Based Assessments (DBAs)
- **ES Appendix 13.2** Archaeological Geophysical Survey Reports
- **ES Appendix 13.3** Geoarchaeological Desk-Based Assessment
- **ES Appendix 13.4** Aerial Photographic and LiDAR mapping and interpretation
- **ES Appendix 13.6** Archaeological Evaluation (Interim) Reports

- 1.1.5 This WSI also takes into account the results of consultation and engagement undertaken with the Lincolnshire County Council Historic Environment Team (who also provide archaeological planning advice to Bassetlaw District Council, Nottinghamshire) and Historic England, throughout these stages of work, including regular meetings undertaken to monitor the progress of the evaluation trenching.
- 1.1.6 The proposed mitigation strategy detailed in this WSI provides for a programme of informed trenching, 'strip, map and sample' excavation, and archaeological watching brief monitoring, based on the location of identified archaeological remains where there is considered to be potential for such remains to be impacted by the Scheme. It also provides for preservation *in situ* of archaeological remains where possible through the use of non-intrusive surface-mounted pre-cast concrete ground anchors, which is a standard accepted approach to removing the impact of solar mounts upon potential archaeological sub-surface remains (BRE 2013, 13), and the removal of specific areas of the Scheme from any proposed development work.

## 2 Site Location and Description

- 2.1.1 The Scheme is divided across three main 'Sites', West Burton 1, 2, and 3, together with the Cable Route Corridor (see Figure 1).
- 2.1.2 The fields within each Site have been given a 'Field' number (e.g. M1; Figure 1).
- 2.1.3 The Sites are described in brief below, with detailed descriptions provided in Chapter 3 of the ES (Lanpro 2022a) [EN010132/APP/WB6.2.3].

### West Burton 1, 2 and 3 – see Figures 1 - 4

- 2.1.4 **Size:** West Burton 1 – c.90ha; West Burton 2 – c.305ha; West Burton 3 – c.370ha
- 2.1.5 **Use:** In the main, the Sites within the Scheme are currently being used for agricultural purposes in arable production. There is a redundant farmhouse within the West Burton 3 Site which will remain and is not proposed to be redeveloped.
- 2.1.6 **Features:** The land is relatively flat and is predominantly well screened from its immediate surroundings by tall hedges around the boundaries of the Sites. The fields are generally large and typically have dividing hedgerows. There are only isolated trees outside of field margins. The surrounding area is interspersed with a number of farmsteads.
- 2.1.7 The Sites benefit from existing farm access tracks and field accesses.
- 2.1.8 The River Till meanders in a predominantly north/south direction between West Burton 1 and West Burton 2. Part of the West Burton 2 Site adjoin the riverbanks of the Till. The banks of the river are lined with trees. There are woodland blocks adjoining and within close proximity to the area. Overhead lines cross parts of the landholdings.

- 2.1.9 **Location:** All of the landholdings fall within West Lindsey District Council and Lincolnshire County Council administrative areas.
- 2.1.10 **Settlements:** The Site of West Burton 3 is located between the villages of Brampton and Marton. West Burton 2 is located north of Saxilby and West Burton 1 is located to the east of Broxholme with the village of Bransby to the northwest.
- 2.1.11 **Roads:** The A1500 Stow Park Road/Till Bridge Lane runs along the northern boundary of West Burton 3. Cowdale Lane runs along the southern boundary. The A156 is located to the west and sits between the land and the River Trent. The A1500 also runs to the north of West Burton 1 but is separated by several fields.
- 2.1.12 The B1241 Saxilby Road/Sturton Road runs north/south through West Burton 2. In the south-eastern corner of the holding, Broxholme Lane cuts across the land in an east/west direction. This lane also runs north/south between the A1500 and the A57 to the south and cuts through the north-western corner of West Burton 1.
- 2.1.13 **Railway Lines:** The trainline between Lincoln and Sheffield runs to the south of West Burton 2 and northwards within the West Burton 3 Site.
- 2.1.14 **Public Rights of Way:** There is a PRoW which runs from the northwest corner of West Burton 1 southwards and another which runs from the western boundary in a southwest direction.
- 2.1.15 There are no PRoW's which are located within West Burton 2 but there is an 'Other route with Public Access' (ORPA) which runs alongside part of the western boundary.
- 2.1.16 There is a public footpath in the north-west of West Burton 3.
- 2.1.17 **Power Stations:** Cottam Power Station is a decommissioned coal fired power station and is located on the western side of the River Trent, to the west of West Burton 3.
- 2.1.18 West Burton Power Station is located over 5km northwest of West Burton 3. EDF have announced that the coal-fired part of the power station is due to shut in March 2023, with the remaining gas power station remaining operational.
- 2.1.19 **Airfields:** RAF Scampton Airfield is located northeast of West Burton 1 adjacent to the A15. It housed the Red Arrows until their relocation to RAF Waddington at the end of 2022.
- 2.1.20 **Rivers:** The River Trent is located to the west of West Burton 3. The River Till (as mentioned above) sits adjacent to the eastern boundary of West Burton 2 and runs in a north south direction up to the northern boundary of West Burton 1.
- 2.1.21 **Geology:** The recorded bedrock geology across the West Burton 1 Site consists of mudstone of the Charmouth Mudstone Formation. On the eastern side of the Site, this is overlain by superficial deposits of diamicton, while no superficial deposits are recorded over the Site's western half (BGS 2024).
- 2.1.22 The recorded bedrock geology across much of the West Burton 2 Site consists of interbedded mudstone and sandstone of the Scunthorpe Mudstone Formation,

although the bedrock geology on the Site's eastern side adjacent to the River Till comprises mudstone of the Charmouth Mudstone Formation. Superficial deposits of alluvial clay, silt, sand and gravel are recorded overlying the bedrock geology along the River Till on the Site's eastern edge, and a band of Holme Pierrepont Sand and Gravel Member occurs in the south-west of the Site (BGS 2023).

- 2.1.23 The recorded bedrock geology across the majority of the West Burton 3 Site consists of mudstone and limestone of the Scunthorpe Mudstone Formation; mudstone of the Penarth group occurs along the western edge of the Site. No overlying superficial deposits are recorded across the centre-west and east of the Site. A band of Holme Pierrepont sand and gravel crosses the west and centre-east of the Site from north to south, and a small area of sand and gravel glacialfluvial deposits is recorded in the north-west (BGS 2024).

#### **Cable Route Corridor – see Figures 1 to 6**

- 2.1.24 The Cable Route Corridor will accommodate the underground cables (or 'cable circuits') linking West Burton 1, 2 and 3 Sites to the grid connection point at the National Grid substation at West Burton Power Station. The majority of the land within the corridor is agricultural land. Other land use types that the corridor crosses include the River Trent between Marton and Coates.
- 2.1.25 Works within the Cable Route Corridor, as well as the cable circuits, include the provision of access tracks, construction laydown areas (construction compounds) and joint bays. Part of the Cable Route Corridor accommodate cable circuits associated with the Gate Burton Energy Park and Cottam Solar Project (referred to in the ES as the 'Shared Cable Corridor').
- 2.1.26 A section of the Cable Route Corridor to the east of the West Buton 3 Site was widened as part of a change to the Order Limits, which was the subject of a Change Application ([AS-021] to [AS-057]) during the Examination of the DCO application for the Scheme (see Figure 4). This area was covered by geophysical survey undertaken for Cable Route Corridor, and anomalies were identified that were interpreted as belonging to enclosures or field systems (ASWYAS 2023).

## **3 Archaeological Baseline**

### **3.1 Introduction**

- 3.1.1 The baseline information provided below is drawn from the results of the archaeological desk-based assessments, geophysical surveys, aerial photo and LiDAR interpretation, geoarchaeological assessment and evaluation trenching undertaken of the West Burton 1, 2 and 3 Sites and the Cable Route Corridor (**Appendix 13.1**; Lanpro 2022b; 2022c; 2022d; 2023; **Appendix 13.2**; ASWYAS 2022; ASWYAS 2023; NAA 2022a; NAA 2022b; Wessex 2022a; **Appendix 13.3**; OAN 2022; **Appendix 13.4**;

Deegan 2022a; 2022b; 2022c; **Appendix 13.6**; CFA 2022a; CFA 2022b; CFA 2022c; Wessex Archaeology 2022b; 2022c).

- 3.1.2 These documents should be referred to separately as they provide a detailed archaeological and historical narrative for the Sites (see ES Appendices 13.1-13.6 [EN010132/APP/WB6.3.13.1 – WB6.3.13.6] to Chapter 13 of the ES ‘Cultural Heritage’ [EN010132/APP/WB6.2.13]).

## West Burton 1

### 3.2 Designated Heritage Assets

- 3.2.1 The West Burton 1 Site does not contain any designated heritage assets.
- 3.2.2 There is one Scheduled Monument within 1km of the Site, relating to the site of the Broxholme medieval settlement and cultivation remains (NHLE1016797), which lie adjacent to the south-western corner of the West Burton 1 Site.
- 3.2.3 There are seven Listed Buildings within 1km of the Site, all of which are Grade II Listed, and all relate to late-post medieval or 19<sup>th</sup> century buildings.
- 3.2.4 There are no other designated heritage assets (i.e. Conservation Areas, Registered Parks and Gardens, Registered Battlefields or World Heritage Sites) within 1km of the Site.

### 3.3 Non-Designated Heritage Assets

- 3.3.1 The West Burton 1 Site contains three records held on the HER. A Neolithic stone axe is recorded as having been found within the north-western side of the Site in 1934 (MLI51515) and the HER defines the possible eastern extent of medieval and post-medieval settlement and cultivation remains at Broxholme as extending into the west of the Site (MLI50523; 51796).

### 3.4 Geophysical Survey

- 3.4.1 The majority of the anomalies recorded by the geophysical survey of the West Burton 1 site represent agricultural features including field drains, ridge and furrow cultivation, modern ploughing and former field boundaries (**ES Appendix 13.2** [EN010132/APP/WB6.3.13.2]; ASWYAS 2022a; see Figure 2). Some anomalies of an uncertain origin were recorded and suggested to be of potential archaeological interest.
- 3.4.2 A group of linear and short ditch-like anomalies were recorded on the western side of Field M2. Due to the location of the medieval village of Broxholme, to the immediate west, it was suggested that an archaeological origin was possible, and that they may represent the remains of house plots. However, the interpretation was tentative as it was considered equally plausible that they are agricultural in origin, or possibly represent animal corrals. Therefore an ‘uncertain’ interpretation was given.



3.4.3 Several linear anomalies were identified in the east of Field M3 and interpreted as possibly forming a field system. The relationship between anomalies in Fields M2 and M3 is uncertain but it is possible that they are contemporaneous.

3.4.4 A linear trend in Field M4 is perpendicular to a former boundary which lies to its immediate east. It is possible that this represents a former boundary predating available historical mapping. Further linear anomalies in Field M5 were interpreted as possibly representing further field systems.

### 3.5 Aerial Photographic and LiDAR Interpretation

3.5.1 The programme of aerial photographic and LiDAR mapping and interpretation (**ES Appendix 13.4 [EN010132/APP/WB6.3.13.4]**; Deegan 2022c; see Figure 2) identified a limited range of potential archaeological features within the West Burton 1 Site, all of which were interpreted as relating to medieval or post-medieval agricultural activity.

3.5.2 Linear and rectilinear cropmarks identified by air photo and LiDAR mapping were considered to largely relate to medieval and postmedieval agricultural activity including ridge and furrow, field boundaries, headlands and drainage ditches.

3.5.3 Several features of unknown origin were identified within Field M1 and comprised a long mound and an amorphous parchmark which appears to comprise two short ditches and two pits.

3.5.4 A slight scarp was identified as a shallow earthwork in Field M3. The date of the feature was considered unclear but suggested to underly medieval or post-medieval ridge and furrow. Directly to the west of the scarp is a short bank interpreted as a medieval or post-medieval plough headland.

### 3.6 Geoarchaeological Assessment

3.6.1 The geoarchaeological assessment investigated and characterised the geoarchaeological potential of the Scheme (**ES Appendix 13.3 [EN010132/APP/WB6.3.13.3]**; OAN 2022).

3.6.2 West Burton 1 is considered to have a medium geoarchaeological and paleoenvironmental potential in areas where alluvial deposits are located.

3.6.3 Flood alleviation of the Trent valley since the late-15<sup>th</sup> century has resulted in a mosaic of drainage channels and the loss of natural wetland environment. Alluvial deposits commonly occur along water courses such as the River Till, to the west of West Burton 1. Where present, alluvial soils have the potential to preserve environmental, historical and prehistoric archaeology and contain accumulations of dateable organics.

### 3.7 Evaluation Trenching

3.7.1 Areas assessed to have archaeological potential, based on consideration of all available archaeological data, were targeted with evaluation trenches in the West

Burton 1 Site both to 'ground truth' the results of previous surveys and to provide samples of 'blank' areas, in which archaeological remains had not been identified by non-intrusive methods. Overall, there was a strong correlation between the results of the geophysical survey, aerial photographic and LiDAR interpretation, and the results of the evaluation trenching.

- 3.7.2 Within West Burton 1, 41 trenches were excavated, and archaeological remains were recorded within four trenches (**ES Appendix 13.6 [EN010132/APP/WB6.3.13.6]**; CFA 2022a).

### *Field M2*

- 3.7.3 The geophysical anomalies interpreted as being of an uncertain origin in the west of West Burton 1 were proven to be caused by a series of ditches. Only one ditch was found to contain pottery (three sherds), animal bone (sheep/goat) and ceramic building material. Pottery was provisionally dated to the 14/15<sup>th</sup> centuries.

## **West Burton 2**

### **3.8 Designated Heritage Assets**

- 3.8.1 The West Burton 2 Site does not contain any designated heritage assets.
- 3.8.2 There are two Scheduled Monuments situated within 1km of the West Burton 2 Site: North Ingleby Deserted Medieval Village (DMV) (NHLE 1003570), located adjacent to the centre of the Site and Broxholme medieval settlement and cultivation remains (NHLE 1016797), which are located c. 330m to the east of the Site.
- 3.8.3 There are 11 Listed Buildings within the 1km of the Site. The majority of these are located to the north, east and south of the Site within the villages of Bransby, Broxholme and Saxilby. These include the Grade I listed medieval Church of St Botolph (NHLE 1359490), located within the northernmost part of Saxilby, c. 400m west of the Site, as well as The Old Hall (NHLE 1064072), a late-15<sup>th</sup> century house that is Grade II\* listed, located c. 980m south-west of the Site. The remaining nine buildings are Grade II Listed.
- 3.8.4 There are no other designated heritage assets (i.e. Conservation Areas, Registered Parks and Gardens, Registered Battlefields or World Heritage Sites) within 1km of West Burton 2.

### **3.9 Non-Designated Heritage Assets**

- 3.9.1 The West Burton 2 Site contains ten records held on the HER.
- 3.9.2 The earliest recorded evidence for activity within the Site dates to the Neolithic Period, with two Neolithic axe findspots (HER MLI52786; MLI52796), recorded in Fields N2 and N31, as well as an undated worked flint flake (HER MLI52788) recovered from Field N10.
- 3.9.3 Earthwork remains of North Ingleby DMV (HER MLI54225) extend beyond the Scheduled core of the former medieval village (NHLE 1003570) and occur in pasture



fields adjacent to the centre of the Site (Fields N14, N15, N16, N17 and N18 – all outside of the scheme). Four medieval silver coins (HER MLI52787) were found in Field N10 immediately west of the North Ingleby DMV earthworks. No extant related earthworks continue within the Site.

3.9.4 HER ‘monument’ records relating to post-medieval and 19<sup>th</sup> century activity within the Site consist of the demolished sites of Ingleby Wood Farm (HER MLI119092) and an unnamed farmstead (MLI HER119086). A former landscaped park (HER MLI92375), associated with Ingleby House, falls within the northern boundary of West Burton 2. The possible site of a former windmill (HER MLI52773) is located within Field N21, immediately east of Sturton Road.

3.9.5 The Lincolnshire HER contains a further 93 ‘monument’ records within 1km of the Site. The vast majority of these records date to the medieval and post-medieval periods. The HER contains 15 ‘event’ records relating to previous archaeological investigations carried out within 1km of the Site.

### 3.10 Geophysical Survey

3.10.1 The geophysical survey of the West Burton 2 Site detected numerous magnetic anomalies associated with an agrarian landscape, including former field boundaries, medieval/post-medieval ridge and furrow cultivation, modern ploughing and land drains (**ES Appendix 13.2 [EN010132/APP/WB6.3.13.2]**; NAA 2022a; see Figure 3). Archaeological and possible archaeological responses were recorded within the Site, comprising possible linear ditches and trends, and possible rectilinear enclosures and sub-circular trends, perhaps indicative of settlement activity. Areas of magnetic disturbance were also mapped that were considered likely to be of a geological origin, such as in fields to the west of the River Trent.

3.10.2 Rectilinear, curvilinear and amorphous anomalies were identified in Fields N1 and N2 that were interpreted as being of an archaeological origin. In Field N1, three sides of a possible enclosure, measuring c.60m by 130m, were identified that correspond with a cropmark on aerial imagery. The fourth side was truncated by a bipolar anomaly caused by a modern utility. Several curvilinear and amorphous anomalies were identified adjacent to the enclosure that were interpreted as possibly having an archaeological origin. Two perpendicular anomalies were identified in the west of Field N2, which were interpreted as possibly forming an enclosure that extended beyond the limits of the Site.

3.10.3 A linear trend of unknown origin was identified running north-west to south-east in Fields N26 and N27.

3.10.4 Several rectilinear and amorphous anomalies were identified outside the limits of the Site in Fields N15 to N18 that are likely to be associated with the North Ingleby DMV. These anomalies largely correspond with earthworks visible in pasture fields that border the Scheduled core of the medieval village (NHLE 1003570).

3.10.5 Numerous trends were identified across the Site that generally lacked the increases in magnetic value or patterning for conclusive interpretation. It is probable that they are largely agricultural in nature.

### 3.11 **Aerial Photographic and LiDAR Interpretation**

3.11.1 The programme of aerial photographic and LiDAR mapping and interpretation (**ES Appendix 13.4 [EN010132/APP/WB6.3.13.4]**; Deegan 2022c; see Figure 3) identified a limited range of potential archaeological features within West Burton 2.

3.11.2 A rectilinear enclosure considered to be of possible Iron Age or Roman origin was identified as a cropmark on air photos in Field N1. Adjacent to the enclosure is a broad low earthwork bank that was interpreted as possibly either being of a natural origin or caused by a denuded plough headland.

3.11.3 A short ditch of uncertain date was identified as a shallow earthwork in Field N26. The ditch corresponds with the location of geophysical anomalies that continue into Field N27. A second section of ditch running on the same alignment appears to the south-east of the River Till and potentially belongs to the same feature.

3.11.4 A post-medieval windmill mound and narrow bank were identified from soil marks on aerial photographs that correspond with a mound labelled 'Mill Hill' on the 1885 first edition Ordnance Survey (OS) map.

3.11.5 Outside of the Site, numerous earthworks were mapped in pasture fields surrounding the Scheduled Monument of North Ingleby DMV.

3.11.6 Across much of the West Burton 2 site the air photos and LiDAR interpretation of the imagery has identified plough headlands, earthworks, soilmarks and cropmarks on the historical air photos, but many can also be detected as very low and spread earthworks on the LiDAR imagery. There are several locations where plough headlands appear to be cut by later ridge and furrow, usually indicated by slight deviations in the overlying plough ridges. All of the ridge and furrow that survived as earthworks in the 1940s within the Site has now been levelled.

### 3.12 **Geoarchaeological Assessment**

3.12.1 The geoarchaeological assessment identified that West Burton 2 is considered to have a medium/high geoarchaeological and a medium paleoenvironmental potential in areas where alluvial deposits are located. There is a medium geoarchaeological and a low/medium paleoenvironmental potential in areas where river terrace deposits are located (**ES Appendix 13.3 [EN010132/APP/WB6.3.13.3]**; OAN 2022).

3.12.2 Alluvial deposits have been recorded within West Burton 2, adjacent to the course of the River Till, as well as superficial undifferentiated river terrace deposits and Holme Pierrepont Sand and Gravel Member.

3.12.3 Where present, alluvial soils have the potential to preserve environmental archaeology and contain accumulations of dateable organics. The date of undifferential sand and gravel deposits associated with river terraces is uncertain but assigned to a broad Quaternary (includes the Pleistocene and Holocene) age by the BGS. Pleistocene sands and gravels (such as Holme Pierrepont Sand and Gravel Member) have the potential to contain palaeolithic material.

### 3.13 Evaluation Trenching

3.13.1 Areas assessed to have archaeological potential, based on consideration of all available archaeological data, were targeted with evaluation trenches in the West Burton 2 Site both to 'ground truth' the results of previous surveys and to provide samples of 'blank' areas, in which archaeological remains had not been identified by non-intrusive methods.

3.13.2 Within the West Burton 2 Site, 106 trenches were excavated, and archaeological remains and features were recorded within 25 trenches (**ES Appendix 13.6 [EN010132/APP/WB6.3.13.6]**; CFA 2022b).

3.13.3 The geophysical survey identified a rectilinear enclosure in the north of Field N1, which was confirmed in five trenches. These features were interpreted as probably representing small-scale settlement or agricultural activity. Pottery retrieved from these was dated from the late Iron Age through to the early Roman period.

3.13.4 Three trenches identified a long curvilinear ditch that corresponded with geophysical anomalies in the west of Field N2. Although no datable material was recovered from the ditch, a second perpendicular ditch, postulated as possibly being contemporaneous, contained pottery spot-dated to the 2<sup>nd</sup> century AD.

3.13.5 Isolated features were also identified in the centre of Field N1 and east of Field N2. Isolated features in Field N1 comprised four pits and four gullies which contained charcoal, animal bone, fired clay and pottery of unknown date. Two ditches and a gully were identified in the east of Field N2. The gully contained a loom weight and pottery dated from the Bronze Age to the medieval period.

## West Burton 3

### 3.14 Designated Heritage Assets

3.14.1 The West Burton 3 Site does not contain any designated heritage assets.

3.14.2 There is one Scheduled Monument within the 1km of the Site. The remains of the medieval bishop's palace and deer park at Stow Park (NHLE 1019229) are located immediately adjacent to the Site. This designated asset is divided across three separate areas: the site of the Bishop's Palace, which is now largely occupied by the modern farm buildings of Moat Farm within the north-eastern corner of the Site, and the 'West Lawn' and 'East Lawn' of the deer park, both of which comprise the remains of former park pales, immediately adjacent and c. 250m east of the Site's south-eastern corner respectively. The West Burton 3 Site excludes the footprints of

all three elements of this Scheduled Monument from its proposed development plans and no development works will be undertaken within their boundaries.

3.14.3 There are 16 Listed Buildings within 1km of the Site. One building is Grade I listed and comprises the parish church of St Margaret of Antioch (NHLE 1359484). The remainder are Grade II listed, the majority of which are located to the north-west and south-west of the Site within the villages of Marston and Brampton. Three buildings are located off Till Bridge Lane: the former Stow Park Station (NHLE 1064058) and its associated signal box (NHLE 1146606) located at the junction of Till Bridge Lane and the Gainsborough and Lincoln rail line, c. 70m east of Field Q11. Gallows Dale Farmhouse (NHLE 1146780) is located c. 285m to the east of the Site.

3.14.4 There are no other designated heritage assets (i.e. Conservation Areas, Registered Parks and Gardens, Registered Battlefields or World Heritage Sites) within 1km of West Burton 3.

### 3.15 **Non-Designated Heritage Assets**

3.15.1 The West Burton 3 Site contains ten records held on the HER.

3.15.2 The earliest recorded evidence for activity within the Site dates to the Neolithic, with a polished stone axe (HER MLI52435) discovered within Field P1, immediately south of Till Bridge Lane.

3.15.3 West Burton 3 is located immediately south of a former Roman road (now followed by Till Bridge Lane; HER MLI50575), which linked Ermine Street north of Lincoln to the River Trent crossing at Littleborough Roman town (Segelocum). Chance finds of Roman period date have been identified to the north-east of Stow Park Farm, including a copper ring (HER MLI52442), a bronze strap-end, a disc brooch and 17 coins (HER MLI52441). In the north-west of the Site, in Field Q5, cropmarks interpreted as representing a probable Roman trackway have been recorded (HER MLI52489).

3.15.4 Stow Park Medieval Deer Park (HER MLI50418) extends across the east of the Site, with the Scheduled earthworks of the park boundary located adjacent to the Site (NHLE 1019229). The deer park also includes the site of the Scheduled Bishop's Palace (NHLE 1019229) now occupied by the ruinous modern buildings of the former Moat Farm (HER MLI116500), which are outside the Site boundary. The Stow Park Deserted Medieval Settlement (HER MLI52444) falls within the north of the deer park. Ridge and furrow (HER MLI52501) is recorded in the west of the Site, but is no longer extant.

3.15.5 Rectory Farm (now Poplar Farm) (HER MLI50066) is located to the north-east of the West Burton 3 Site. Although the majority of the farmstead is not located within the Site, the former site of a 19<sup>th</sup> century farmhouse (HER MLI116491) partially extends into the Site.

3.15.6 The Lincolnshire HER contains three 'event' records wholly or partially within the West Burton 3 Site. Two of these comprise a series of investigations (HER ELI2571;

ELI2755) carried out in Field P3, immediately to the north-east of Stow Park Farm (HER MLI116499). These investigations targeted previously recorded Roman findspots (HER MLI52441) but did not identify any buried archaeological deposits. A negative watching brief was completed as part of the Blyborough to Cottam pipeline (HER ELI2197) and traversed fields Q5, 10, 12 and 13, to the south-west of Till Bridge Lane.

3.15.7 The Lincolnshire HER contains a further 131 'monument' records within 1km of the Site. The vast majority of these records date to the medieval and post-medieval periods. The HER contains a further 31 'event' records relating to previous archaeological investigations carried out within 1km of the Site, some of which recovered evidence of Roman, early medieval and medieval remains; the vast majority of works did not produce datable remains.

### 3.16 Geophysical Survey

3.16.1 The geophysical survey of the West Burton 3 Site detected magnetic anomalies associated with an agricultural landscape, including former field boundaries, medieval/post-medieval ridge and furrow cultivation, modern ploughing and land drains (**ES Appendix 13.2 [EN010132/APP/WB6.3.13.2]**; NAA 2022b; see Figure 4). Anomalies have been recorded in Fields P4, Q1, Q6, Q7, Q8, Q9, Q11, Q15 and Q16, which were interpreted as being of a potential archaeological origin and possibly indicative of linear ditches associated with possible settlement activity.

3.16.2 A series of fragmented rectilinear anomalies were identified in Field P4, to the west of the Site, that were interpreted as possibly being of an archaeological origin. Interpretation was tentative as anomalies caused by agricultural activity and buried utilities partially masked those considered to have an archaeological potential. Subsequent evaluation trial trenching confirmed that anomalies interpreted as being archaeological were caused by ditches, which contained material dated to the medieval period.

3.16.3 Three well-defined concentrations of magnetic anomalies were identified that were considered likely to be caused by Iron Age/ Roman settlement activity.

3.16.4 Several rectilinear and amorphous anomalies and trends were identified in the north of Field Q9 that were interpreted as forming a roadside settlement to the south of Stow Park Road. Linear anomalies were also identified to the west of Field Q9, in Field Q1. It was not possible to identify if these were agricultural or associated with anomalies considered to be of an archaeological nature to the east. The evaluation trial trenching confirmed that evidence for Roman settlement was present in Field Q9, and this extended into the far east of Field Q1. The majority of identified anomalies in Field Q1 were proven to be of an agricultural nature.

3.16.5 A concentration of rectilinear and amorphous anomalies were identified in Field Q6 that were considered to denote settlement activity predating the medieval period.

- 3.16.6 Numerous rectilinear and amorphous anomalies were identified in Fields Q7, Q8, Q15 and Q16 that were considered to form a series of enclosures that were possibly associated with an Iron Age or Roman period ladder settlement.
- 3.16.7 An area of magnetic disturbance was identified in the south-west of Field Q26 that corresponds with the location of a former brick works, which is recorded on 19<sup>th</sup> century historical maps.
- 3.16.8 Otherwise anomalies were largely considered to be associated with agricultural activity (including former field boundaries, possible former trackways, ponds, ridge and furrow, modern ploughing and land drains) or modern activity, including numerous buried utilities.

### 3.17 **Aerial Photographic and LiDAR Interpretation**

- 3.17.1 The programme of aerial photographic and LiDAR mapping and interpretation (**ES Appendix 13.4 [EN010132/APP/WB6.3.13.4]**; Deegan 2022c; see Figure 4) identified a limited range of potential archaeological features within the West Burton 3 Site, primarily relating to now levelled ridge and furrow, field boundaries, headlands and ponds.
- 3.17.2 Several parchmarks and soilmarks have been recorded in fields adjacent to the Scheduled Stow Park medieval Bishop's Palace (NHLE 1019229) that were interpreted as being caused by buildings, walls, enclosures, fishponds and a road (Field P1, P2 and P4). A linear ditch recorded as an earthwork, cropmark and soilmark (but now levelled) runs through Fields P4 and P5 and could represent a former boundary of, or within, the deer park. The other suggested location of the deer park's eastern boundary lies further to the east and corresponds with the Stow parish boundary. Scheduled sections of the medieval Stow Deer Park occur to the south-west of the site adjacent to Fields Q25 and Q26, and to the east of the Site, to the north of Cowdale Lane. Many of the features mapped through air photo and LiDAR interpretation were not identified by the evaluation trial trenching. Consequently the survival of these features is questionable as it is possible that they have been destroyed by modern ploughing.
- 3.17.3 A series of perpendicular ditches are visible as cropmarks on recent air photos in Field Q6, which correspond with geophysical anomalies confirmed by evaluation trial trenching as relating to a Roman settlement.
- 3.17.4 A broad linear feature runs north-west to south-east in Field Q5 which is recorded as a possible Roman trackway by the HER (MLI52489). Weak geophysical trends were identified in this area that possibly relate to the same feature. Four evaluation trenches were located to target the feature but did not encounter any buried archaeological deposits. It can therefore be surmised that any former remains have since been destroyed by agricultural activity in Field Q5.
- 3.17.5 A swathe of complex and indistinct cropmarks was identified running through Fields Q5 to Q8, Q14 to Q18 and Q21 that were interpreted as being caused by geological changes in the substrata.



3.17.6 Several cropmarks and soilmarks were identified from air photos that are interpreted as forming a ditch and polygonal enclosure of unknown date.

### 3.18 **Geoarchaeological Assessment**

3.18.1 The geoarchaeological assessment identified that West Burton 3 is considered to have a medium/high geoarchaeological and paleoenvironmental potential in areas where Holme Pierrepont terrace deposits are located. There is a medium geoarchaeological and a medium/high paleoenvironmental potential in areas where alluvium / peat deposits are located (**ES Appendix 13.3 [EN010132/APP/WB6.3.13.3]**; OAN 2022).

3.18.2 The geological record becomes progressively older heading westwards across the Site. Extensive superficial deposits occur of Holme Pierrepont Sand and Gravel member (river terrace of the River Trent), glaciofluvial deposits are recorded in the north-west of the Site and a small area of peat deposits are mapped in the west.

### 3.19 **Evaluation Trenching**

3.19.1 Areas assessed to have archaeological potential, based on consideration of all available archaeological data, were targeted with evaluation trenches in the West Burton 3 Site both to 'ground truth' the results of previous surveys and to provide samples of 'blank' areas, in which archaeological remains had not been identified by non-intrusive methods.

3.19.2 Within the West Burton 3 Site, 211 trenches were excavated, and archaeological remains and features were recorded within 71 trenches (**ES Appendix 13.6 [EN010132/APP/WB6.3.13.6]**; CFA 2022c).

3.19.3 The results of the evaluation trial trenching confirmed the nature of anomalies identified by geophysical survey. A series of ditches were identified in Field P4 that contained pottery spot-dated to the medieval period and could relate to the Bishop's Palace. A sub-rectangular feature was also identified that was tentatively interpreted as a sunken floor building.

3.19.4 A Roman roadside settlement was identified in Field Q9 and the far east of Field Q1. Features in Field Q9, were suggested to be indicative of at least two phases of occupation. The presence of CBM, non-local angular rubble, a possible wall or surface, and stone packed postholes all provided evidence for the existence of built structures. Evidence of metal and glass working was also encountered, suggesting small scale manufacturing-based activity was undertaken.

3.19.5 A second concentration of ditches containing material of a Roman date occurred in Field Q6. Generally these features were relatively shallow, many of which were considered to belong to a field system. CBM was identified, including possible roof tiles, suggestive of nearby structures.

3.19.6 A concentration of archaeological features were identified within Fields Q7 and Q8, which contained ceramic and animal bone artefacts and had fills suggestive of gradual silting processes. In the south of Field Q7 features were interpreted as

probably forming fields and enclosures. A multi-ditched sub-rectangular enclosure was recorded that contained abundant evidence of occupation, including coins and a brooch fragment, as well as two walls representing part of a built structure. To the south, in Field Q8, two distinct rectilinear geophysical anomalies were confirmed to relate to enclosures containing Roman material including CBM, which is possibly suggestive of further structures.

3.19.7 Several sub-square enclosures were identified in Field Q16, which had been obscured by shallow quarrying activity. Further quarrying deposits were identified in the west of Field Q15.

### **Cable Route Corridor**

#### **3.20 Designated Heritage Assets**

3.21 The West Burton Cable Route Corridor does not contain any designated heritage assets.

3.22 There are two Scheduled Monuments within the 250m of the boundary of the Cable Route Corridor. Broxholme medieval settlement and cultivation remains (NHLE 1016797) are situated directly to the south-west of West Burton 1. Stow Park medieval bishop's palace and deer park (NHLE 1019229) lies adjacent to West Burton 3 and the eastern boundary ditch of the deer park is located to the north of the cable corridor running between West Burton 2 and 3. It is possible that Cowdale Lane in part follows the line of the former southern boundary of the deer park.

3.23 There are seven Listed Buildings within the search area, one of which is Grade I listed and comprises the Church of St Margaret of Antioch in Marton (NHLE 1359484). The remaining are all Grade II listed. Two of which are located within Broxholme and comprise the mid-19<sup>th</sup> century church of All Saints (NHLE 1064095) and late-18<sup>th</sup> century former rectory (NHLE 1147028). Three are situated in Marton; Berfoston Cottage (NHLE 1064060), Cross (NHLE 1146582), Wapping Lane Farmhouse and attached Outbuilding (NHLE 1146611). Crow Tree Farm 17<sup>th</sup> century farmstead (NHLE 1216936) is located in the north of Sturton le Steeple.

3.24 There are no other designated heritage assets (i.e. Registered Parks and Gardens, Registered Battlefields or World Heritage Sites) within the 1km search area.

#### **3.25 Non-Designated Heritage Assets**

3.26 The overall West Burton Cable Route Corridor contains wholly or partially ten records held on the HER, comprising nine 'monument' records and one 'event' record. These are recorded in Table 3.1 below by section.



Table 3.1: HER records within the Cable Route Corridor

Section	HER Ref.	HER Description
1	MLI50523	Broxholme medieval settlement and cultivation remains
	MLI52455	Cropmark boundary and enclosure
	MLI50418	Stow Park Medieval Deer Park, Stow
2	MLI50066	Rectory Farm, Marton
	MLI52489	Roman cropmarks at Marton
	MLI52488	Post-medieval flood defences
	MNT27760	Clapper Gate 31
	MNT4981	Cropmarks of ring ditches and enclosures of an unknown date
	MNT4980	Cropmarks of field systems and enclosures of an unknown date
	ELI13007	An Auger Survey by the Viking Torksey Project in 2011

3.27 The HER contains a further 56 ‘monument’ and 57 ‘event’ records within 250m of the Cable Route Corridor boundary.

### 3.28 Non-Intrusive Survey

3.28.1 The geophysical survey of the Cable Route Corridor was divided between the parts of the route dedicated to just the Scheme (ES Appendix 13.2 [EN010132/APP/WB6.3.13.2]; ASWYAS 2023; hereafter known as the Cable Route Corridor), and the section that is proposed to accommodate cable circuits associated with the Gate Burton Energy Park and Cottam Solar Project, which will form separate consent applications (referred to in the ES as the ‘Shared Cable Corridor’; Wessex Archaeology 2022a).

3.28.2 The results of the surveys recorded several concentrations of rectilinear and curvilinear anomalies that are possibly indicative of late prehistoric and/or Roman period activity. Anomalies associated with agricultural activity, including former ponds, ridge and furrow, former field boundaries, land drains and modern ploughing, were also identified, as well as areas of magnetic disturbance caused by ferrous material and broad anomalies caused by geological or paleological changes in the substrata.

3.28.3 A rectilinear anomaly measuring 64m by 67m spans Geophysics Survey Areas S42 and S43 and was interpreted as forming an enclosure with a possible entrance in the north-eastern corner.

3.28.4 An isolated curvilinear anomaly with a diameter of c.10m was interpreted as a possible ring ditch in Geophysics Survey Area S39.

- 3.28.5 A series of weak linear anomalies were identified to the south-east of Stow Park Farm in Geophysics Survey Area S36, which were tentatively interpreted as belonging to enclosures or a field system. The proximity of anomalies in Geophysics Survey Area S36 to Roman find spots (MLI52441 and MLI52453) recorded on the HER may be suggestive that the features date to the Roman period.
- 3.28.6 Within the Site, to the south-east of Marton, the HER records cropmarks in Field 106 that were interpreted as representing a Roman trackway and field boundaries (MLI52489). The air photo and LiDAR mapping interpreted the cropmarks as comprising a broad compacted surface flanked by two ditches (Deegan 2022a and c). Geophysical survey within the Site did not identify any anomalies conclusively associated with this feature, which suggests that it has been destroyed by agricultural activity.
- 3.28.7 To the east of the River Trent, a series of linear and amorphous anomalies were identified in the south-east of Field 113a that are likely to be caused by ditches of a possible Iron Age and/or Roman origin (Wessex 2022a). These anomalies possibly correspond with a series of undated cropmarks (MLI54108) recorded on the HER. A watching brief undertaken during the installation of the Blyborough to Cottam pipeline in 1997 did not observe any archaeological features associated with the cropmarks, however a spread of alluvium was identified that contained Roman to post-medieval pottery (Wessex 1997).
- 3.28.8 Several circular anomalies were identified in Fields 115 and 116, adjacent to the eastern bank of the River Trent, and tentatively interpreted as possible ditches and embankments, associated with roundhouses or small round barrows. While these features are topographically expressed in LiDAR data, their interpretation is less than certain, as they could equally relate to natural variation in superficial geological deposits close to the river. Indications of former agricultural activity and 19<sup>th</sup>-century enclosure of land were recorded throughout the Cable Route Corridor in the form of former field boundaries and areas of ridge and furrow. Other 19<sup>th</sup>-century activity such as possible coal extraction pits, demolished buildings at Rectory Farm, and features associated with Marton Pumping Station were also noted.
- 3.28.9 The HER records two areas of cropmarks that possibly relate to field systems and trackways of an unknown date (MNT4980 and MNT4981) within the Site at North Leverton. Air photo and LiDAR interpretation (Deegan 2022c) and geophysical survey (ASWYAS 2023) have mapped an extensive series of cropmarks and magnetic anomalies that are likely to be indicative of prehistoric and/or Roman enclosures and field systems to the south-west of the Site, which possibly extend into the Site in Geophysics Survey Areas S18 to S25.
- 3.28.10 Linear and curvilinear anomalies were identified in Geophysics Survey Area S9 that were interpreted as denoting settlement activity of an Iron Age / Romano British to medieval date. Given the similarity in the morphology with other identified anomalies it is considered likely that they relate to enclosures dated to the Iron Age and/or Roman periods.

3.28.11 A former route of Craikbank Lane (MNT6180) was recorded as comprising a double ditched trackway from air photos taken in the 1940s and extends into the north of Geophysics Survey Area S25.

3.28.12 A sub-square enclosure of possible medieval or post-medieval date, located directly to the north-west of Geophysics Survey Area S1, was recorded from earthworks and soilmarks present on air photos and LiDAR (Deegan 2022c). An annex or hollow way is suggested at the north-west corner. The air photo and LiDAR mapping record two ponds to the south-west of the enclosure, within the Site. One of which is recorded on the 1885 Ordnance Survey map and mapped as a bipolar magnetic anomaly.

### 3.29 Geoarchaeological Assessment

3.29.1 The geoarchaeological assessment identified the following geoarchaeological and paleoenvironmental potential along the West Burton Cable Route Corridor. These are recorded in Table 3.2 below;

**Table 3.2: Geoarchaeological and Paleoenvironmental potential of the West Burton Cable Route Corridor**

Section of Cable Route	Deposit	Geoarchaeological potential	Paleoenvironmental Potential
Between West Burton 1 and West Burton 2	Alluvial	High/Medium	Medium
Between West Burton 2 and West Burton 3	Unknown	-	-
Between West Burton 2 and West Burton 3	Alluvium/Peat deposits	High/Medium	High/Medium
	Holme Pierrepont terrace	High/Medium	High/Medium
	Unknown deposits	-	-

3.29.2 Where present, alluvial soils have the potential to preserve environmental archaeology and contain accumulations of dateable organics. The date of undifferential sand and gravel deposits associated with river terraces is uncertain but assigned to a broad Quaternary (includes the Pleistocene and Holocene) age by the BGS. Peat (or organic alluvium) form during periods of stabilisation or channel migration when vegetation accumulates in wetland environments and has a potential to contain prehistoric archaeology. Pleistocene sands and gravels (such as Holme Pierrepont Sand and Gravel Member) have the potential to contain palaeolithic material.

### 3.30 Evaluation Trenching

- 3.30.1 Due to the concentration of potential archaeological features identified within the Shared Cable Route Corridor section of the Cable Route Corridor, and the greater level of potential impact upon these remains from the three separately proposed schemes that will utilise this corridor, a programme of evaluation trenching was undertaken across this area (Wessex Archaeology 2023).
- 3.30.2 Within the Shared Cable Route Corridor, 154 trenches were excavated and recorded. Archaeological features were identified in 27 trenches, the majority of which lay outside the West Burton Shared Cable Route Corridor. The features largely accord with the results of the geophysical surveys, as well as aerial photograph and LiDAR mapping, and together suggest Iron Age or Romano-British activity concentrated on slightly higher ground to the west of the River Trent.
- 3.30.3 Within the West Burton Cable Shared Cable Route Corridor ditches were recorded that related to former post-medieval field boundaries, ridge and furrow cultivation, a pond and possible palaeochannels. Features of uncertain archaeological origin were identified in Fields 102 that accorded well with aerial photograph and LiDAR mapping, although it is unclear if these features are archaeological or geological.

## 4 Research Aims and Objectives

### 4.1 Aims

- 4.1.1 The overall aim will be to mitigate against the loss of any archaeological remains that may be impacted upon by the Scheme. Where possible, there will be a preference to conserve buried archaeological deposits through mitigation by design which will preserve them in situ (either through use of concrete ground anchors or removal of areas from the Scheme). Where this is not achievable, mitigation by record will be undertaken in the form of archaeological excavation and/or watching brief monitoring.

### 4.2 Objectives

- 4.2.1 The aims will be realised through the achievement of the following objectives:
- To establish the spatial extent, date, character, condition and significance of the archaeological activity in the proposed archaeological mitigation areas.
  - To recover information relating to the nature and function of past human activity represented by the surviving archaeological remains.
  - To identify areas where the conservation of archaeological features can be achieved by preservation in situ.
  - Where preservation of archaeological features in situ cannot be achieved, to excavate and record identified archaeological features and deposits to a level appropriate to their extent and significance.

- To assess the potential for survival of environmental evidence.
- To interpret the nature of human activity within the Scheme and to place identified archaeological remains in their local, regional and national context as appropriate.
- Assess the site formation processes and the effects that these may have had on the survival and integrity of the archaeological features and deposits.
- Undertake sufficient post-excavation assessment to confidently interpret identified archaeological features.
- Undertake sufficient post-excavation analysis of artefacts and environmental samples to interpret their significance.
- Report and publish the results of the excavation and post-excavation analysis and place them within their local, regional and national context.
- Compile and deposit a site archive at a suitable repository, and provide information for the Lincolnshire and Nottinghamshire HERs and The Collection (Lincolnshire’s archaeological repository) to ensure the long-term survival of the excavated data.

### 4.3 Regional Research Agenda

- 4.3.1 The programme of archaeological mitigation will be carried out with the aim of addressing the general research parameters and objectives defined in the regional archaeological research framework, *An Updated Research Agenda and Strategy for the Historic Environment of the East Midlands* (Knight *et al.* 2012) and the *East Midlands Historic Environment Research Framework* online resource (Research Frameworks 2022).
- 4.3.2 Given the size of the Scheme it is possible that evidence may be identified that can inform the objectives of the research agenda across a wide range of strategic objectives and periods.
- 4.3.3 Based on the extensive evidence identified by the assessments, surveys and evaluation trenching undertaken to inform the ES, it is considered that, at present, the archaeological mitigation has the potential to inform the strategic objectives outlined in the table below. These objectives will be reviewed and updated as the archaeological mitigation works proceed.

**Table 4.1: Relevant Regional Research Agenda strategic objectives**

Strategic Objective	Research Agenda	Project Potential
<b>6.3 Neolithic and Early to Middle Bronze Age</b>		
<b>3D:</b> Assess the regional air photographic and lidar resource:	3.3, 3.4, 3.6, 3.7, 3.8	Extensive air photo and LiDAR assessment has been undertaken of the Scheme ( <b>ES Appendix 13.4 [EN010132/APP/WB6.3.13.4]</b> ; Deegan 2022a, Deegan 2022b and Deegan 2022c). Ground truthing of the features identified, through excavation, could help understand the origin, character and date of such features.
<b>3H:</b> Recover and analyse human remains	3.1, 3.2, 3.3, 3.7, 3.8	There may be potential for Neolithic and Bronze Age burials within identified ring ditches or in areas where concentrations of archaeological remains have been identified through earlier stages of work.
<b>3I:</b> Investigate the development and intensification of agriculture	3.2, 3.3, 3.4, 3.5	Evidence from excavation and paleoenvironmental assessment may have potential to provide evidence of animal domestication and cultivation.
<b>6.4 Late Bronze Age and Iron Age</b>		
<b>4C:</b> Characterise the LBA-EIA settlement resource and investigate intra-regional variability	4.2, 4.3, 4.6, 4.8, 4.9, 4.10	Evidence from excavation and monitoring may contribute to the characterisation of LBA-EIA settlement. Its regional variability could be investigated at the post-excavation analysis stage.
<b>4E:</b> Assess the evidence for the evolution of settlement hierarchies	4.4, 4.5, 4.9, 4.10	Evidence from excavation and monitoring could contribute to the understanding of settlement hierarchies.
<b>4F:</b> Investigate intra-regional variations in development of fields and linear boundaries	4.2, 4.6, 4.7, 4.8, 4.10	The results of the geophysical survey and aerial interpretation have provided evidence for possible prehistoric field systems. Ground truthing of features, through excavation, could help in understanding the origin, character and date of such features. Regional variability could be investigated at the post-excavation analysis stage.
<b>4G:</b> Study the production, distribution, and use of artefacts	4.9, 4.10	Post-excavation analysis of excavated finds.
<b>6.5 Romano-British</b>		
<b>5C:</b> Promote systematic application of scientific dating techniques	5.1, 5.2, 5.4, 5.5, 5.8	Scientific dating will be undertaken at post-excavation analysis stage, following recommendations in the assessment reports of excavations/monitoring
<b>5D:</b> Support scientific analysis of human remains	5.5, 5.8	Analysis of human remains, including radiocarbon and isotopic analysis will be undertaken as required during the post-excavation analysis stage.

Strategic Objective	Research Agenda	Project Potential
<b>5H:</b> Investigate landscape context of rural settlements	5.4, 5.5	The combination of the results of non-intrusive survey with those from excavation/monitoring could help develop further the understanding of the Roman agrarian landscape.
<b>5I:</b> Support research and publication of landscape synthesis	5.1, 5.2, 5.4, 5.6, 5.7, 5.8	The combination of the results of non-intrusive survey with those from excavation/monitoring could inform understanding of the Roman period Trent valley landscape.
<b>6.6 Early Medieval</b>		
<b>6A:</b> Elucidate the chronology and demography of Roman to Anglo-Saxon transition period	6.1, 6.2, 6.4	Evidence from excavation and monitoring could contribute to the understanding of the transition between the Roman and Anglo-Saxon periods.
<b>6.7 High Medieval</b>		
<b>7E:</b> Investigate the morphology of rural settlements	7.2	Evidence from excavation and monitoring could help characterise medieval rural settlement.
<b>7F:</b> Investigate the development, structure and landholdings of manorial estate centres	7.2 and 7.3	Evidence from informative trenching could enhance our knowledge of the medieval bishop's palace and deer park at Stow Park (NHLE 1019229).
<b>7I:</b> Investigate the development of the open-field system and medieval woodland management	7.2, 7.3, 7.7	The combination of the results of non-intrusive survey with those from excavation/monitoring could inform understanding of the development of the open-field system.
<b>6.8 Post-Medieval</b>		
<b>8E:</b> Identify agricultural improvements of the sixteenth to eighteenth centuries	8.3, 8.4	The combination of the results of non-intrusive survey with those from excavation/monitoring could inform understanding of post-medieval agricultural improvements.

## 4.4 SHAPE Research Programmes

4.4.1 The programme of archaeological mitigation will also take account of the national research programmes outlined in English Heritage's Strategic Framework for Historic Environment Activities and Programmes in English Heritage (SHAPE) first published in 2008 (English Heritage 2008b).

## 5 Standards and Guidance

5.1.1 All archaeological works will be undertaken to fully meet the requirements of all nationally recognised guidance for such work, including standards laid down by the



former English Heritage (now Historic England) and the Chartered Institute for Archaeologists (CIfA).

5.1.2 The programme of archaeological mitigation and post-excavation work will be managed in line with the standards laid down in the Historic England guideline publication *Management of Research Projects in the Historic Environment (MoRPHE): Project Managers Guide* (2015a) and the *MoRPHE Project Planning Note 3: Archaeological Excavation (PPN3)* (English Heritage 2008a), as well as to meet the requirements of the National Planning Policy Framework (NPPF; Chapter 16: 'Conserving and enhancing the historic environment'; revised 2021).

5.1.3 All excavation will be undertaken using recording standards detailed in the *Archaeological Field Manual* (MOLAS 1994).

5.1.4 Guidance of particular relevance to the programme of works are:

- *Standard and guidance for archaeological geophysical survey* (CIfA 2020a)
- *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives* (CIfA 2020b)
- *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (CIfA 2020c)
- *Chartered Institute for Archaeologists Code of Conduct* (CIfA 2022)
- *Standard for field evaluation* (CIfA 2023a)
- *Universal guidance for field evaluation* (CIfA 2023b)
- *Standard for archaeological monitoring and recording* (CIfA 2023c)
- *Universal guidance for archaeological monitoring and recording* (CIfA 2023d)
- *Standard for archaeological excavation* (CIfA 2023e)
- *Universal guidance for archaeological excavation* (CIfA 2023f)
- *Archaeological Handbook* (Lincolnshire County Council 2019)
- *Management of Research Projects in the Historic Environment: PPN3: Archaeological Excavation* (English Heritage 2008a)

## 6 Scope of Mitigation Fieldwork

### 6.1 Overview

6.1.1 The programme of archaeological mitigation will comprise four main elements;

- Preservation in situ
- Informative Trial Trenching



- Strip, Map and Sample Excavation
- Archaeological Watching Brief

- 6.1.2 The form of mitigation has been determined based on an assessment of the potential for archaeological remains to survive within specific areas of the Scheme based on all archaeological information obtained during previous stages of archaeological investigation, together with the assessed potential character and significance of any such remains, and the potential impact that the Scheme could have on these.
- 6.1.3 The detailed methodology for undertaking the various elements of the archaeological mitigation fieldwork is provide in Section 7 of this WSI.
- 6.1.4 The mitigation works will be followed by a programme of post-excavation assessment, analysis, reporting, publication and dissemination (see Sections 8 and 9).
- 6.1.5 Archaeological mitigation strategies for specific areas are outlined in Table 6.1 below and the areas are marked on plan in Figures 1 to 6.

**Table 6.1: Archaeological Mitigation Strategies**

Site/Parcel	Field Nos	ES Gazetteer Ref.	Mitigation Area Ref.	Archaeological Potential	Mitigation Type	Area (HA)
<b>Main Solar Sites:</b>						
West Burton 1	M1	AR01	WB1/01	Cropmarks and magnetic anomalies of unknown origin	<b>Informative trial trenching</b> followed by excavation or concrete anchors as required	2.07
West Burton 1	M2	AR03	WB1/02	Possible medieval settlement	<b>In situ</b> preservation (concrete anchors)	0.45
West Burton 1	M2	AR03	WB1/03	Possible medieval settlement	<b>Strip, Map and Record</b> with area of ecological mitigation.	1.11
West Burton 2	N1	AR24	WB2/01	IA/RB settlement	<b>In situ</b> preservation (concrete anchors)	4.11
West Burton 2	N2	AR22	WB2/02	Possible IA/RB feature	<b>In situ</b> preservation (concrete anchors)	3.98
West Burton 2	N2	AR22	WB2/02/CR1	Possible IA/RB feature	<b>Strip, Map and Record</b> along line of cable route impact area within Mitigation Area WB2/02.	0.43
West Burton 2	N2	AR20	WB2/03	Possible IA/RB and unknown features	<b>In situ</b> preservation (concrete anchors)	1.37

Site/Parcel	Field Nos	ES Gazetteer Ref.	Mitigation Area Ref.	Archaeological Potential	Mitigation Type	Area (HA)
West Burton 2	N6	AR18	WB2/04	Geophysical anomaly of unknown origin	<b>Informative trial trenching</b> followed by excavation or concrete anchors as required	0.3
West Burton 2	N7	AR19	WB2/05	Geophysical anomaly of unknown origin	<b>Informative trial trenching</b> followed by excavation or concrete anchors as required	0.08
West Burton 2	N21	AR11	WB2/06	Post-medieval windmill mound	<b>Informative trial trenching</b> followed by excavation or concrete anchors as required	0.13
West Burton 2	N13	AR13	WB2/07	Trackway of possible medieval date	<b>Informative trial trenching</b> followed by watching brief if required	0.69
West Burton 3	P1	AR44	WB3/01	Possible medieval remains associated with the Stow Park medieval bishop's palace (SM: 1019229)	<b>Informative trial trenching</b> followed by excavation or concrete anchors as required	9.47
West Burton 3	P1	AR42 / AR44	WB3/02	Medieval remains associated with the Stow Park medieval bishop's palace and deer park (SM: 1019229) and DMV (MLI52444)	<b>Strip, Map and Sample</b>	0.51
West Burton 3	P4	AR42 / AR44	WB3/03	Medieval remains associated with the Stow Park medieval bishop's palace and deer park (SM: 1019229) and DMV (MLI52444)	<b>Strip, Map and Sample</b>	0.11
West Burton 3	Q1 and Q9	AR55	WB3/04	IA/RB settlement	<b>In situ</b> preservation (concrete anchors)	4.87
West Burton 3	Q1 and Q9	AR55	WB3/04/CR1	IA/RB settlement	<b>Strip, Map and Record</b> along line of cable route impact area within Mitigation Area WB3/04	0.27
West Burton 3	Q1	AR54	WB3/04/CR2	Possibility for IA/RB settlement	<b>Strip, Map and Record</b> along line of cable route impact area in Field Q1	1.13
West Burton 3	Q11	AR48	WB3/05	Geophysical anomaly of unknown origin	<b>Informative trial trenching</b> followed by excavation or concrete anchors as required	0.63

Site/Parcel	Field Nos	ES Gazetteer Ref.	Mitigation Area Ref.	Archaeological Potential	Mitigation Type	Area (HA)
West Burton 3	Q5	AR52	WB3/06	Possible feature(s) of prehistoric date	In situ preservation (concrete anchors)	1.72
West Burton 3	Q6	AR51	WB3/07	IA/RB settlement	In situ preservation (concrete anchors)	2.89
West Burton 3	Q7, Q8, Q15 and Q16	AR49	WB3/08	IA/RB settlement	In situ preservation (concrete anchors)	12.36
West Burton 3	Q21	AR47	WB3/09	Cropmarks of unknown origin	Informative trial trenching followed by excavation or concrete anchors as required	1.16
West Burton 3	Q21	AR46	WB3/10	Cropmarks of unknown origin	Informative trial trenching followed by excavation or concrete anchors as required	2.61
West Burton 3	Q26	AR30	WB3/11	Brick Works depicted from the 1839 Stowe Tithe map - labelled 'old' 1906 OS map	In situ preservation (concrete anchors)	1.03
<b>Battery Storage Sites (West Burton 3 Site):</b>						
West Burton 3	Q13	-	WB3/12		Watching Brief	3.71
<b>Cable Route Corridor:</b>						
West Burton Cable Route	S50	-	WBCR/01		Strip, Map and Sample along area of impact	1.61
West Burton Cable Route	S26 and S27	AR08	WBCR/02	Earthwork of ditch and geophysical trends of unknown origin	Strip, Map and Sample along area of impact	1.61
West Burton Cable Route	S51 and S52	-	WBCR/03	Possibility for medieval remains associated North Ingleby DMV (NHLE 1003570)	Strip, Map and Sample along area of impact	1.69
West Burton Cable Route	S42 and S43	AR25	WBCR/04	Geophysical anomalies of enclosures and field systems of unknown date	Strip, Map and Sample along area of impact	1.79
West Burton Cable Route	S39	AR26	WBCR/05	Geophysical anomaly of unknown origin	Strip, Map and Sample along area of impact	1.54

Site/Parcel	Field Nos	ES Gazetteer Ref.	Mitigation Area Ref.	Archaeological Potential	Mitigation Type	Area (HA)
West Burton Cable Route	S37	AR34	WBCR/06	Possible remains associated with the southern boundary of Stow Deer Park (SM: 1019229)	Strip, Map and Sample along area of impact	0.76
West Burton Cable Route	S36	AR32	WBCR/07	Geophysical anomalies interpreted as large enclosures or field system of unknown date	Strip, Map and Sample along area of impact	1.57
West Burton Cable Route	106 and 107	AR53	WBCR/08	IA/RB road or trackway	Strip, Map and Sample along area of impact	3.06
West Burton Cable Route	110 and 111	AR57	WBCR/09	Cropmarks of post medieval flood defences	Strip, Map and Sample along area of impact	0.57
West Burton Cable Route	112 and 114 - 116	-	WBCR/10	Possibility for remains associated with Torksey Viking Winter Camp	Strip, Map and Sample along area of impact	8.71
West Burton Cable Route	113	AR58	WBCR/11	Torksey Viking Winter Camp	Strip, Map and Sample along area of impact	2.48
West Burton Cable Route	S21 - S25	AR61 / AR62 / AR64 / AR65	WBCR/12	Possible IA/RB features	Strip, Map and Sample along area of impact	6.28
West Burton Cable Route	S18 - S20	AR67	WBCR/13	Possible IA/RB features	Strip, Map and Sample along area of impact	3.26
West Burton Cable Route	S9	AR68	WBCR/14	Possible IA/RB features	Strip, Map and Sample along area of impact	1.18
West Burton Cable Route	S1	AR69	WBCR/15	Cropmark and geophysical anomalies of ditch and ponds of probable medieval / post-medieval	Strip, Map and Sample along area of impact	0.96
West Burton Cable Route	Q21 and Q24	AR34	WBCR/16	Possible remains associated with the western boundary of Stow Park Medieval Deer Park (MLI50418).	In situ preservation (directional drilling)	0.1
<b>Other Infrastructure:</b>						
Substations	-	-	-	Low archaeological potential	Watching Brief	-
Water Tanks	-	-	-	Low archaeological potential	Watching Brief	-
Construction Compounds	-	-	-	Low archaeological potential	Watching Brief	-

Site/Parcel	Field Nos	ES Gazetteer Ref.	Mitigation Area Ref.	Archaeological Potential	Mitigation Type	Area (HA)
Construction lay-down areas	-	-	-	Low archaeological potential	Watching Brief	-
Directional drilling access pits	-	-	-	Low archaeological potential	Watching Brief	-
Low voltage cable runs	-	-	-	Low archaeological potential	Watching Brief	-

## 7 Fieldwork Methodology

### 7.1 Project Initialisation

7.1.1 The Lincolnshire County Council Historic Environment Team will be informed at least one week in advance of the commencement of any fieldwork, or stages of fieldwork, within the Scheme.

7.1.2 Prior to the commencement of archaeological fieldwork, the appointed archaeological contractor will familiarise themselves with all existing documentation and reports relating to previous stages of archaeological investigation within the site, and any other relevant documents as necessary.

7.1.3 The appointed archaeological contractor will be provided with all available information relating to health and safety on the site, including any mapped utilities and any other constraints that may affect the mitigation works.

7.1.4 All works will be archived under the accession number obtained from The Collection (LCNCC:2022.69.). Works undertaken in the Shared Cable Corridor will be archived under the accession number LCNCC:2022.103. Table 7.1 below details individual site codes for each of the sites. The appointed archaeological contractors will complete all archive deposition forms as required.

Table 7.1: Archive accession numbers and site codes

Site	Accession Number	Site Code
West Burton 1	LCNCC : 2022.69	WBBR22
West Burton 2	LCNCC : 2022.69	WBIN22
West Burton 3	LCNCC : 2022.69	WBMA22
Cable Route Corridor	LCNCC : 2022.69	WBSC2
Shared Cable Corridor	LCNCC:2022.103	GBE22

7.1.5 Before fieldwork commences, an OASIS online record will be initiated, and key fields completed on Details, Location and Creator forms.

## 7.2 Preservation in situ

7.2.1 Where possible, areas of potentially extensive or significant archaeological remains will be preserved *in situ*.

7.2.2 Ten areas have been identified within the West Burton 1, 2, 3 Sites through non-intrusive investigations, and confirmed by evaluation trenching, as containing archaeological features. Although impacts on any such remains from the solar mounts would be limited, the potential for any impact will be mitigated through the use of non-intrusive surface-mounted pre-cast concrete ground anchors, which is a standard accepted approach to removing the impact of solar mounts upon potential archaeological sub-surface remains (BRE 2013, 13).

7.2.3 Sub-surface directional drilling will be employed beneath mitigation area WBCR/16 of the Cable Route Corridor (see Figure 4), where the cable route crosses the western boundary of Stow Park Medieval Deer Park (MLI50418).

## 7.3 Mechanical Excavation

7.3.1 Topsoil or overburden across the mitigation excavation areas (see Table 6.1 above) will be stripped using 360° tracked excavators fitted with a toothless, flat bladed, grading bucket, down to the first significant archaeological horizon or natural sub-soil.

7.3.2 All mechanical excavation will be undertaken under direct archaeological supervision, by a suitably experienced and qualified archaeologist, with one archaeologist responsible for monitoring each excavator.

7.3.3 All areas of excavation will be scanned with a Cable Avoidance Tool (CAT) prior to ground works commencing. Necessary measures will be taken to avoid disturbing any services.

7.3.4 Mechanical excavators will work backwards from the starting point of the excavation to avoid tracking over stripped areas.

7.3.5 Mechanical excavators and other plant will not track or drive over an area that has been stripped until an archaeologist has confirmed that no archaeological remains are present, or that any features have been fully archaeologically recorded.

7.3.6 The stripped surface will be kept clean and free of loose spoil until fully archaeologically investigated and recorded.

7.3.7 If required, areas of archaeological remains will be fenced-off to prevent accidental damage.

- 7.3.8 Spoil from mechanical excavation will be scanned by eye and by metal detector to aid the recovery of finds.
- 7.3.9 Topsoil and subsoil will be stored separately. Excavated topsoil will be redeposited at a location to be determined in agreement with the principal contractor and the Applicants. All spoil will be stored and managed safely in line with the standards of the *Construction Code of Practice for Sustainable Use of Soils on Construction Sites* (DEFRA 2009).
- 7.3.10 Should the excavation of the trenches reach the limit of safe working depth without natural geology being encountered, a machine dug sondage will be excavated in order to establish the depth of natural geology, provided this will have no detrimental effects upon archaeological deposits. Where depth of excavation is required to be greater than 1m, suitable stepping will be employed.
- 7.3.11 At least one end of each trench or excavation area will be ramped to provide safe access and egress for staff and to enable any wildlife that may accidentally fall into the trenches to escape.

#### **7.4 Informative Trial Trenching**

- 7.4.1 Several sites identified by non-intrusive investigations of unknown archaeological potential have been identified within the Scheme that would benefit from targeted informative trial trenching to determine their character.
- 7.4.2 The number of targeted informative trial trenches would total 47, the locations of which are shown on Figures 2, 3, and 4 (displayed as a dark blue lines).
- 7.4.3 This will then inform the need for any further targeted archaeological mitigation (Strip, Map and Sample, watching brief or *in situ* preservation).
- 7.4.4 Trenches will be machine excavated and will typically be between 2m by 30m or 2m by 50m in dimension.
- 7.4.5 Following excavation and recording of any archaeological remains, and with the agreement of the Lincolnshire County Council Historic Environment Team, the evaluation trenches will be backfilled with the previously excavated spoil.
- 7.4.6 Where archaeological remains are encountered, the preference will be to preserve these *in situ* where possible using non-intrusive surface-mounted pre-cast concrete ground anchors. If remains of a high significance are identified during the informative trial trenching, targeted open-area excavation may be required to preserve such remains by record (see below).

#### **7.5 Strip, Map and Sample Excavation**

- 7.5.1 'Strip, Map and Sample' excavation will be employed where non-intrusive previous archaeological investigations have identified potential archaeological remains but, based on current evidence, these do not appear to be extensive or potentially significant enough to warrant Open-Area excavation.

- 7.5.2 Following machine topsoil excavation, a pre-excavation plan of identified potential archaeological features will be produced. This plan will be used to agree an excavation sampling strategy with the Lincolnshire County Council Historic Environment Team, in order to decide which features require hand excavation and the 'sample' of how much of these features should be excavated.
- 7.5.3 An indicative sampling strategy is provided below, but if archaeological remains are identified to be less extensive or less potentially significant, then this may be subject to reduction in scope following liaison with the Lincolnshire County Council Historic Environment Team.
- 100% excavation of all stake-holes
  - 100% excavation of all structural, funerary or ritual features
  - 100% excavation of all post-holes and pits with a diameter of less than 0.4m
  - 50% excavation of pits between 0.4m and 1.5m in diameter
  - 25% excavation of pits with a diameter of over 1.5m. This will include a complete section across the pit to recover its full profile
  - 10% excavation of all linear features, up to 5m in length
  - Reduced percentage excavation of longer linear features, to be agreed with the Lincolnshire County Council Historic Environment Team
- 7.5.4 All archaeological features and deposits revealed will be cleaned and excavated by hand in an archaeologically controlled and stratigraphic manner, in order to establish their extent, form, date, function and relationship to other features. All features will be investigated to understand the full stratigraphic sequence down to naturally occurring deposits.
- 7.5.5 Any excavation, by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features or deposits which appear to be demonstrably worthy of preservation in situ. No machine excavation of archaeological deposits or features will be undertaken without agreement from the Lincolnshire County Council Historic Environment Team.
- 7.5.6 There will be sufficient excavation to give clear evidence for the period, depth and nature of any archaeological deposit. The depth and nature of colluvial or other masking deposits will be established across the site.
- 7.5.7 During the Strip, Map and Sample excavation, where it has been established that areas of the site under investigation do not contain archaeological remains, these areas will be signed-off to allow for construction groundworks to proceed, following agreement with the Lincolnshire County Council Historic Environment Team.
- 7.6 Watching Brief**
- 7.6.1 An archaeological watching brief will be undertaken on specific areas of groundworks (e.g. the cable route, access roads where these require intrusive



groundworks) and where topsoil stripping is required as part of the construction process (e.g. battery storage areas, sub-stations, water tanks, construction compounds, directional drilling access pits etc.).

7.6.2 All topsoil or overburden stripping across these areas will be undertaken using 360° tracked excavators fitted with toothless, flat bladed, grading buckets, down to the first significant archaeological horizon or natural sub-soil. All machine stripping will be undertaken in line with the methodology in paragraphs 7.3.1 to 7.3.11 of this WSI.

7.6.3 A suitably qualified and experienced archaeologist will monitor groundworks in the specified areas and record any features in line with the recording methodology for excavation detailed above. The archaeological monitoring of construction groundworks will include the following:

- archaeological inspection of overburden / topsoil removal
- monitoring of the removal of structural remains
- inspection of subsoil for archaeological features
- excavation, recording and environmental sampling of features necessary to determine their date and character

7.6.4 The principal contractor, or any other groundworks contractors operating on site, will allow sufficient time for any archaeological features to be excavated, sampled and recorded to meet the requirements of this WSI.

7.6.5 Every effort will be made to implement the archaeological watching brief without affecting the construction timetable, however, some limited suspension of groundworks in specific areas of the Scheme under investigation may be required in order to record and sample any archaeological evidence uncovered (in line with the 'Strip, Map and Sample' methodology provided in this WSI). The length of stoppage time will be determined by the nature of archaeological features or deposits identified.

7.6.6 Where it can be demonstrated that survival conditions are such that archaeological potential is negligible, the Lincolnshire County Council Historic Environment Team will be informed and, where necessary, the watching brief suspended.

7.6.7 The results of the watching brief will be fully integrated with results of the excavation stage and the overall post-excavation assessment and analysis.

## **7.7 Hand Excavation and Recording**

7.7.1 All archaeological features and deposits revealed will be excavated by hand in an archaeologically controlled and stratigraphic manner, in order to establish their extent, form, date, function and relationship to other features.

7.7.2 All features will be investigated to understand the full stratigraphic sequence down to naturally occurring deposits. Where depth of excavation is required to be greater than safe working depth, suitable stepping will be employed.

- 7.7.3 Metal detector searches will take place at all stages of the mitigation fieldwork, over archaeological features and excavated spoil. Any metal finds will be located using survey-grade GPS and metal detectors will be set not to discriminate against iron. Metal detecting will also be conducted over the surface of all exposed features before the end of each working day as a countermeasure to ‘nighthawking’.
- 7.7.4 The stripped surface will be kept clean and free of loose spoil until fully archaeologically investigated and recorded. Wherever possible, spoil arising during hand-cleaning and hand-excavation will be piled beyond the limits of excavation.
- 7.7.5 A full written, drawn and photographic record will be made of all features revealed during the course of the archaeological mitigation works.
- 7.7.6 All archaeological features or deposits encountered will be described fully on pro-forma individual context recording sheets, using standard methods of the archaeological contractor appointed.
- 7.7.7 Plans will be completed at a scale of 1:20 with a site plan at 1:100 (as appropriate), with section drawings at a scale of 1:10. All plans will be tied in with the Ordnance Survey National Grid with levels given to above OD using cm accurate survey grade GPS equipment.
- 7.7.8 A photographic record, utilising high resolution digital photography of a minimum of 12 megapixels and in RAW format, will be maintained during the course of the fieldwork and recorded in a photographic register. This will include:
- the site prior to commencement of fieldwork
  - the site during work, showing specific stages of fieldwork
  - the layout of archaeological features within the site
  - individual features and, where appropriate, their sections
  - groups of features where their relationship is important
- 7.7.9 All photography will follow industry best practice (Historic England 2015b). Images will be converted to uncompressed baseline v.6 TIFF for archiving. All images will have accompanying metadata specifying; photo ID, capture device, converting software, colour space, bit depth, resolution, date of capture, photographer, caption, and any alterations made to the image.
- 7.8 Finds Recovery**
- 7.8.1 All identified finds will be collected, retained, bagged and labelled according to their context. Finds of significant interest will be given a ‘special finds’ number, and information on their location in three dimensions will be entered on a separate pro-forma sheet.
- 7.8.2 No finds will be discarded without assessment by an appropriate finds specialist, and/or the approval of the Lincolnshire County Council Historic Environment Team.

7.8.3 It is anticipated that unstratified 20<sup>th</sup> and 21<sup>st</sup> century material will be noted, spot dated as required, and discarded.

7.8.4 All finds and samples will be treated in a proper manner during the excavation stage. Finds will be exposed, lifted, bagged, conserved and stored in accordance with the guidelines set out in United Kingdom *Institute for Conservation's Conservation Guidelines No. 2 and the CfA guidelines Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (2020c).

7.8.5 The provisions of the Treasure Act 1996 (as amended), and the Treasure (Designation) Order 2002 will be followed with regard to any finds that might fall within its purview. All finds of gold and silver, and associated objects, will be reported to the coroner according to the procedures under the Treasure Act 1996 (and the Act's amendment of 2003 to include prehistoric objects such as Bronze Age metalworking hoards and other non-precious metal items), after discussion with the Applicant, the landowner, the Lincolnshire County Council Historic Environment Team and the Finds Liaison Officer.

## 7.9 Palaeoenvironmental Sampling

7.9.1 Soil samples will be taken from all suitable features or deposits for palaeoenvironmental sampling. This will comprise the removal of a bulk sample from every securely sealed and hand-excavated context, excepting those with excessive levels of residuality or those with minimal 'soil' content (such as building rubble).

7.9.2 Bulk samples will comprise representative 40 litre samples, or more if appropriate. Where a context does not yield 40 litres of material, smaller samples will be taken (generally the maximum amount of material that it is practicable to collect). Bulk samples will be used to recover a sub-sample of charred macroplant material, faunal remains and artefacts. Suitable deposits will also be sampled for industrial residues.

7.9.3 If buried soils or other deposits are encountered, column samples may be taken for micromorphological and pollen analysis. Environmental material will be stored in controlled environments and specialists will be consulted during the course of the work as necessary.

7.9.4 If required a qualified and experienced palaeoenvironmental specialist will undertake site visits to discuss the sampling strategy and, if necessary, assist in any required fieldwork, and the appropriate advice of the Historic England Regional Science Advisor will be sought.

7.9.5 All environmental work will be undertaken in accordance with English Heritage guidelines *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation* (2011).

## 7.10 Human Remains

- 7.10.1 The Ministry of Justice and the Lincolnshire County Council Historic Environment Team will be informed if human remains are found. The contractor will comply with all statutory consents and licences under the Disused Burial Grounds (Amendment) Act 1981 or other Burial Acts regarding the exhumation and interment of human remains.
- 7.10.2 If human remains are encountered, they will be cleaned with minimal disturbance, prior to recording and removal, following receipt of the required Ministry of Justice licence. Investigation and excavation of human remains will be undertaken by, or under supervision of, suitably experienced specialist staff and in accordance with former *Institute of Field Archaeologists (IFA) guidelines Excavation and Post-excavation Treatment of Cremated and Inhumed Human Remains* (McKinley and Roberts 1993) and *Guidelines to the standards for recording human remains* (Brickley and McKinley 2004). Assessment of excavated human remains will be undertaken in line with current English Heritage guidelines *Human Bones from archaeological sites: Guidelines for the production of assessment documents and analytical reports* (English Heritage 2004) and *Guidance for Best Practice for Treatment of Human Remains Excavated from Christian Burial Grounds in England* (Church of England/Historic England 2017).
- 7.10.3 The archaeological contractor will comply with all reasonable requests of interested parties as to the method of removal, re-interment or disposal of the remains or associated items. Every effort will be made, at all times, not to cause offence to any interested parties.
- 7.10.4 If required a qualified and experienced osteoarchaeologist will undertake site visits to discuss the recording and assist in the removal of any human skeletal remains.

## 7.11 Strategy Review

- 7.11.1 The strategy for the archaeological fieldwork will be held under continuous review.
- 7.11.2 Where areas of the Scheme or parts of individual sites have been shown to contain no archaeological remains following stages of archaeologically monitored top-soil stripping, or where specific areas of the Scheme have been fully archaeologically excavated, agreement will be sought with the Lincolnshire County Council Historic Environment Team to allow for construction groundworks to proceed in these specific areas.
- 7.11.3 Should the strategy be considered unsuitable at any time by the appointed archaeological contractor, an alternative strategy will be proposed for agreement with the Lincolnshire County Council Historic Environment Team.

## 7.12 Unexpectedly Significant or Complex Discoveries

- 7.12.1 Should unexpectedly extensive, complex or significant remains be uncovered that warrant, in the professional judgment of the archaeologists on site, more detailed recording or extensive excavation than is appropriate in the terms of this WSI, the scope of the WSI will be reviewed.

## 8 Post-Excavation Assessment

8.1.1 Upon completion of the archaeological fieldwork, the finds, soil samples and stratigraphic information will be assessed for their potential and significance for further analysis.

8.1.2 An assessment report on the fieldwork will be produced within an agreed timetable following the completion of the fieldwork, which will inform the production of an Updated Project Design (UPD) detailing the methodology for the analysis and publication stage if necessary (see Section 9).

### 8.2 Finds Processing

8.2.1 All finds will be treated in a proper manner during the post-excavation stage and to standards agreed in advance with The Collection. Finds will be cleaned, conserved, marked, bagged and stored in accordance with the guidelines set out in United Kingdom Institute for Conservation's *Conservation Guidelines No. 2* (1990), the ClfA guidelines *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (2020c) and the former English Heritage's *Investigative Conservation* (2008c).

8.2.2 In accordance with the procedures outlined in English Heritage's MoRPHE PPN3 (2008a), significant iron objects, a selection of non-ferrous artefacts (including all coins), and a sample of any industrial debris relating to metallurgy will be X-radiographed before assessment.

8.2.3 All material will be packed and stored in optimum conditions, as described in *First Aid for Finds* (Watkinson and Neal 1998). Waterlogged organic materials will be dealt with in line with the English Heritage guidance documents, *Waterlogged Organic Artefacts. Guidelines on their Recovery, Analysis and Conservation* (2012a) and *Waterlogged Wood. Guidelines on the recording, sampling, conservation and curation of waterlogged wood* (2010).

8.2.4 The finds assessment will be reported in the overall post-excavation assessment report and include proposals for full analysis to be incorporated into the UPD.

8.2.5 Finds for dating will be submitted to specialists promptly, so as to ensure that results are available to aid development of the UPD for the analysis stage.

8.2.6 For ceramic assemblages, recording will be carried out in a manner compatible with existing typological series in local pottery reference collections. Reporting on ceramic artefacts and pottery should follow the guidance given in *A Standard for Pottery Studies in Archaeology* (Barclay *et al.* 2016) and endorsed by the Prehistoric Ceramics Research Group, the Study Group for Roman Pottery, and the Medieval Pottery Research Group.

### 8.3 Environmental Sample Processing

8.3.1 The processing of all palaeoenvironmental samples will be undertaken in line with the requirements of the English Heritage publications *Archaeological Science at*

*PPG16 Interventions: Best Practice Guidance for Curators and Commissioning Archaeologists* (2006) and *Environmental Archaeology: A guide to the theory and practice of methods from sampling and recovery to post-excavation* (2011).

8.3.2 The samples will be processed, and ecofacts collected and assessed with regard to the potential for detailed analysis of pollen, charred plant macrofossils, land molluscs, faunal remains (including small mammals and fish) and soil micromorphology. Samples suitable for radiocarbon, or other dating methods, will also be identified. The environmental assessment will be reported within the overall post-excavation assessment report and include proposals for full analysis to be incorporated into the UPD. Unprocessed sub-samples will be stored in conditions specified by the appropriate specialists.

8.3.3 Samples for dating will be submitted to specialists promptly, so as to ensure that results are available to aid development of the UPD for the analysis stage.

#### 8.4 Human Remains Processing

8.4.1 Human remains will be processed following national standards and guidance, including English Heritage (2004), Brickley and McKinley (2004) and the Advisory Panel on the Archaeology of Burials in England (Church of England/Historic England 2017). Processing will be undertaken by experienced specialists trained in the identification of human remains and who are familiar with delicate areas of the skeleton that need careful preservation, important areas required for an individual identification (e.g. age and sex) as well as potentially pathologically altered bones.

8.4.2 Where specialist processing may be required, for example where samples may be required for ancient DNA analysis, specialist advice will be sought to minimise potential contamination. The human remains will be placed in breathable bags and labelled and boxed protected by polyethylene 3mm foam sheeting and in line with any specific archive requirements.

8.4.3 Cremation burials will be processed by removing the fill of the vessel in 5 to 10mm spits with recording of the distribution and density of the bone per spit following guidance by Brickley and McKinley (2004). The fill will be wet sieved over a 1mm mesh with retrieval of burnt bone, pyre debris such as charcoal and botanical remains, and the remains air-dried and hand-sorted.

#### 8.5 Conservation

8.5.1 If required at the assessment stage or earlier, conservation will be undertaken by approved conservators in line with the *First Aid for Finds* guidelines (Watkinson and Neal 1998) and the guidance document produced by the then English Heritage, *Investigative Conservation* (English Heritage 2008c). Material considered vulnerable will be selected for stabilisation after specialist recording. Where intervention is necessary, consideration must be given to possible investigative procedures (e.g. glass composition studies, residues in or on pottery, and mineral-preserved organic material).



## 8.6 Assessment Report

8.6.1 The results of the fieldwork and post-excavation assessment stage will be presented in an integrated assessment report to allow an informed decision to be made on the future analysis and publication of the project.

8.6.2 As a minimum the assessment report shall contain the following information:

- A title page, with the name of the project, the name of the author(s) of the report, the title of the report and date of the report
- A non-technical summary of the scope, methodology and results of the work
- Introduction which includes site code/project number, planning reference number and dates when the fieldwork took place, grid reference
- Description of the aims, methodology and extent of fieldwork completed
- Factual assessments of stratigraphic, artefactual and environmental evidence
- Factual assessment of stratigraphic evidence to include interpretation, covering phasing of the site sequence and integrating spot-dating of ceramics or other material
- Factual assessment of the artefactual evidence, where applicable including inspection of X-radiographs of all iron objects, a selection of non-ferrous artefacts (including coins) and a sample of any industrial debris relating to metallurgy
- Factual assessment of the environmental evidence
- An assessment of the archaeological potential of the stratigraphic, artefactual and environmental records
- Proposals for the selection of samples or sub-samples for further analysis and reporting
- Identification of interim and long-term conservation and storage requirements.
- Updated Project Design (UPD) detailing proposed programme for analysis and publication
- Proposed format for analysis reporting and publication of the results
- Conclusions
- Details of archive location and destination (with The Collection accession number(s)), together with a catalogue of what is contained in that archive
- Copy of the OASIS entry form and any entry updates



- Appendices, illustrations and figures, as appropriate
- References and bibliography of all sources used

8.6.3 Copies of the draft assessment report will be provided in both MS Word and PDF formats and submitted to the Lincolnshire County Council Historic Environment Team for comment.

8.6.4 All survey data will be provided in PDF/A format at a suitable scale, together with AutoCAD DWG files or Esri Shapefiles, as required.

8.6.5 A digital copy of the final assessment report will be provided to in PDF/A format to:

- The Applicants
- Lincolnshire HER
- Nottinghamshire HER
- Lincolnshire County Council Historic Environment Team for dissemination to the Local Planning Authority
- Historic England Regional Science Advisor

8.6.6 Digital copies of the final assessment report will also be submitted to OASIS and ADS to allow the results to be accessible on-line to the wider archaeological community and general public.

8.6.7 The assessment report will be used to inform the scope of UPD detailing the methodology for further analysis and dating of artefacts, soil samples and stratigraphic information. This will include a selection strategy in order to establish what records and finds will be retained as part of the final archaeological archive, in line with CIfA guidance (CIfA 2020b).

## **9 Post-Excavation Analysis**

9.1.1 The scope of work for the analysis stage will be detailed in the UPD and a detailed publication quality report produced following the results of the analysis as required.

9.1.2 The analysis stage will also draw on the results of all previous archaeological investigations within and adjacent to the Scheme, to produce a coherent and comprehensive record of the archaeological resource.

9.1.3 The following is provided as a guide to the potential content of the analysis report, but this will be reviewed within the UPD as necessary. As a minimum, the analysis report shall contain the following information:

- A title page, with the name of the project, the name of the author(s) of the report, the title of the report and date of the report
- A non-technical summary of the scope, methodology and results of the work

- Introduction which includes site code/project number, planning reference number, dates when the fieldwork took place, grid reference
- A description of, and a background to, the works and its aims and objectives
- A description of the site location and the archaeological and historical context for the area
- An account of the methods and results of the fieldwork, describing both structural data and associated finds and/or environmental data recovered
- The results and interpretation of specialist analysis of stratigraphic records, artefacts, environmental and scientific samples, as necessary and based upon the requirements identified at the assessment stage and detailed in the UPD
- An analysis of the archaeological significance of the deposits identified, in relation to other sites in the region.
- Details of archive selection strategy
- Conclusions
- Details of archive location and destination (with accession number for The Collection) together with a catalogue of what is contained in that archive
- Appendices and figures, as appropriate, including a copy of the updated project design; and References and bibliography of all sources used

9.1.4 Digital copies of the report will be provided in draft form in MS Word and PDF format to the Applicant and the Lincolnshire County Council Historic Environment Team. Two iterations of the draft analysis report based on consultee and Applicants comments will be allowed for.

9.1.5 The appointed archaeological contractor shall rectify any defects and make any amendments as identified by Lanpro, the Applicants and the Lincolnshire County Council Historic Environment Team and shall subsequently submit the final report within an agreed programme, following receipt of any comments.

9.1.6 Final copies of the analysis report (in PDF/A format) will be produced, and submitted to the following, together with all other digital information in industry standard formats as required:

- Lincolnshire HER
- Nottinghamshire HER
- Lincolnshire County Council Historic Environment Team to distribute to the Local Planning Authority
- Historic England Regional Science Advisor

- The Collection

- 9.1.7 Digital copies of the final analysis report and the digital archive will be submitted to OASIS and ADS to allow the results of the work to be accessible on-line to the wider archaeological community and general public.
- 9.1.8 The preparation of a publication report for an appropriate journal (or in another agreed form) will be required if the Lincolnshire County Council Historic Environment Team considers the results significant enough to warrant dissemination to a wider audience.
- 9.1.9 Provision will be made for publicising the results of the work locally, e.g. by presenting a paper at Lincolnshire and/or Nottinghamshire Archaeology Days, talking to local societies etc.

## 10 Archiving and Data Management

### 10.1 Archive Content

- 10.1.1 The Collection Accession Number is: LCNCC : 2022.69. Works undertaken in the Shared Cable Corridor will be archived under the accession number LCNCC:2022.103.
- 10.1.2 The following site codes have been issued for each Site:
- West Burton 1: WBBR22
  - West Burton 2: WBIN22
  - West Burton 3: WBMA22
  - Cable Route Corridor: WBSC2
  - Shared Cable Corridor: GBE22
- 10.1.3 The appointed archaeological contractor will contact The Collection in advance of commencing any fieldwork to determine the preparation, and deposition of the archive and finds, and agree any additional accession numbers for all archaeological works.
- 10.1.4 The archive will be prepared in accordance with the ClfA guidelines detailed in *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives* (ClfA 2020b) and *The Collection's Archaeological Archives Deposition Guidelines* (2016) which forms Chapter 17 of the *Lincolnshire Council Archaeological Handbook* (2019).
- 10.1.5 The preparation of the archive will also be informed by the *Guidelines for the preparation of Excavation Archives for long-term storage* (United Kingdom Institute for Conservation, 1990), *Standards in the museum care of archaeological collections* (Museums and Galleries Commission 1994), and in accordance with The Collection's

deposition guidelines. Provision will be made for the stable storage of paper records and their long-term storage.

10.1.6 The landowner will be encouraged to transfer ownership of the finds to The Collection. The archive will be presented to The Collection within six months of completion of all post-excavation analysis, unless alternative arrangements have been agreed.

10.1.7 Adequate resources will be provided during fieldwork to ensure that all records are checked and internally consistent. Archive consolidation will be undertaken immediately following the conclusion of fieldwork and will include the following work:

- the site record will be checked, cross-referenced and indexed as necessary;
- all retained finds will be cleaned, conserved, marked and packaged in accordance with the requirements of The Collection;
- all retained finds will be assessed and recorded using pro forma recording sheets, by suitably qualified and experienced staff. Initial artefact dating will be integrated within the site matrix; and
- all retained environmental samples will be processed by suitably experienced and qualified staff.

10.1.8 The archive will consist of paper records and digital data, as well as finds and samples as selected. Not all material collected or created during the course of the works will require preservation in perpetuity, and the final contents of the archive will be subject to selection prior to the accession of the archive to The Collection, in line with a selection strategy agreed with the Applicant.

10.1.9 The selected contents of the archive will be appropriate to establish the significance of the results of the project and support future research, outreach, engagement, display and learning activities. Selection will be focused on selecting what is to be retained to support these future needs. Methods for disposing of de-selected material will be agreed with the landowner and other relevant stakeholders.

10.1.10 A copy of the digital archive will be submitted to the Lincolnshire County Council Historic Environment Team on completion of all work, for integration into the Lincolnshire and Nottinghamshire HERs.

10.1.11 An OASIS form will be completed for the project and an electronic copy of the final report and the digital archive deposited with the ADS.

## 10.2 **Data Management**

10.2.1 A Data Management Plan will be created and managed by the appointed archaeological contractor on commencement of the Scheme, which will outline the strategy for the sharing and preservation of the project's digital data.

10.2.2 The Data Management Plan will be produced in line with ClfA standards (2020b) and guidance produced by the ADS (2014), and will include:

- Details of data that will be generated during the work
- Type of file formats to be used (e.g. .doc, .pdf., .dwg., .shp, etc.)
- Methods of data collection or capture (e.g. GPS/Total Station/digitising from hard copies)
- File naming conventions (e.g. ADS naming conventions)
- Metadata, standards and quality assurance measures
- Plans for sharing data
- Ethical and legal issues or restrictions on data sharing (e.g client confidentiality etc.)
- Copyright and intellectual property rights of data
- Data storage and back-up measures
- Data management roles and responsibilities
- Costing or resources needed (ADS archiving costs etc.)

10.2.3 The digital archive will be produced using industry standard file formats, with a clear file structure that allows these to be easily shared with all stakeholders, and allows the data to continue to be preserved and shared with the public through, for example, the HERs.

10.2.4 The data comprising the digital archive will comply with the English Heritage (now Historic England) guidance on historic environment data standards, *MIDAS Heritage; the UK Historic Environment Data Standard* (English Heritage 2012b).

10.2.5 It is anticipated that the repositories to which the digital archive are submitted (i.e. HER/local museum/archive) will have in-house Data Management Plans to allow for the long-term preservation of the digital archive data, including plans for data back-up and migration to new digital formats as these emerge.

## 11 Public Outreach and Engagement

11.1.1 It is recognised that community engagement both fosters public understanding and support for the historic environment and adds value to archaeological work.

11.1.2 A programme of public outreach and engagement will be developed during the archaeological mitigation and post-excavation stages of the project, depending on the character and form of any archaeological remains encountered, in liaison with the Lincolnshire County Council Historic Environment Team, Historic England and/or any other interested community groups.

- 11.1.3 The programme of public outreach and engagement could include, for example, provision of talks and presentations, guided walks, arranging conferences, exhibitions, open days and living history events, providing school project work and learning resources, offering work experience and volunteering opportunities, and supporting community archaeology projects.

## 12 Staffing

- 12.1.1 All archaeological fieldwork and post-excavation works will be undertaken by a suitably qualified and experienced professional archaeological contractor, that will adhere to the CIfA Code of Conduct and all appropriate standards and guidance.
- 12.1.2 Details of the CVs of key personnel and specialists will be provided to the Lincolnshire County Council Historic Environment Team in advance of the commencement of fieldwork, following appointment of the archaeological contractor. The appointed archaeological contractor's Project Manager for the project must be able to demonstrate competence and experience of managing archaeological projects of a similar size, nature and complexity.
- 12.1.3 Assessment and analysis of finds, environmental samples and human remains will be undertaken by suitably qualified and experienced specialists.

## 13 Project Timetable

- 13.1.1 A timetable for the programme of archaeological mitigation fieldwork and post-excavation assessment reporting will be agreed between the appointed archaeological contractor and the Applicant. The Lincolnshire County Council Historic Environment Team will be informed of this timetable, following the development consent order being made but prior to the commencement of fieldwork.
- 13.1.2 The Lincolnshire County Council Historic Environment Team will be informed of the proposed start date for the project as soon as practicable, and at least one week before commencement of fieldwork.
- 13.1.3 The appointed archaeological contractor will provide at least weekly progress reports on the progress of fieldwork via email to Lanpro, and regular site meetings will be held between the archaeological contractor, Lanpro, the principal contractor, the Applicant and the Lincolnshire County Council Historic Environment Team.
- 13.1.4 A draft assessment report will be provided to the Applicant and the Lincolnshire County Council Historic Environment Team within an agreed timeframe following completion of fieldwork, with a final version to be submitted to the Applicant and the Lincolnshire County Council Historic Environment Team following receipt of any comments within the agreed timeframe.

- 13.1.5 A draft analysis report will be submitted to Lincolnshire County Council Historic Environment Team within a programme agreed in the UPD, informed by the results of the post-excavation assessment. This will be followed by a final report following any comments, and the publication of the results of the report in a suitable format.

## 14 Monitoring

- 14.1.1 The Lincolnshire County Council Historic Environment Team will monitor the implementation of the archaeological mitigation works and evaluate the scope and progress of the work against the methodology detailed in the WSI.

## 15 Communication

- 15.1.1 The appointed archaeological contractor will provide at least weekly updates to Lanpro via email and/or telephone. Any issues that arise on site or during the post-excavation stages should first be addressed by the archaeological contractor directly to Lanpro, who will then liaise with the Applicant, Lincolnshire County Council Historic Environment Team and any other stakeholders in order to resolve the matter.
- 15.1.2 In the event of issues arising regarding the implementation of this WSI, or the scope or methodology of the excavation, these will be resolved in the first instance by contacting Lanpro who will liaise with the Applicant and Lincolnshire County Council Historic Environment Team to determine a solution. Should the issue not be resolved remotely a meeting will be held between key stakeholders to facilitate discussion of the issues and identification of a suitable strategy for progress to be agreed by all parties.

## 16 Copyright and Publicity

- 16.1.1 Copyright of the documentation prepared by the appointed archaeological contractor and specialist sub-contractors should be the subject of additional licences in favour of the Applicant, the Lincolnshire and Nottinghamshire HERs and the Lincolnshire County Council Historic Environment Team to use such documentation for their commercial, statutory or educational functions, and to provide copies to third parties as required.
- 16.1.2 Under the *Environmental Information Regulations* (EIR 2004), information may need to be disclosed, except where an exception under these Regulations applies.
- 16.1.3 It is recognised that the Scheme may identify remains which are of interest to the public and these may be publicised through appropriate media. Any publicity for the Scheme proposed by the archaeological contractor should be approved by the Applicant. The appointed contractor will not issue any information on the work through media, internet or social media without prior agreement of the Applicant.



16.1.4 Care will be taken to ensure that any publicity does not compromise the security of archaeological remains that may have been identified or recovered.

## 17 Insurance

17.1.1 The appointed archaeological contractor will hold Employers Liability Insurance, Public Liability Insurance and Professional Indemnity Insurance to at least the following amounts;

- Public Liability £10,000,000
- Employer's Liability £5,000,000
- Professional indemnity (for any single claim) £10,000,000

## 18 Health and Safety

18.1.1 The management of all health and safety, and welfare provision, on site during the excavation phase will be the responsibility of the principal contractor. All works will be undertaken by the principal contractor in compliance with the Health and Safety at Work Act (1974) and all applicable regulations and Codes of Practice.

18.1.2 All archaeological staff will undertake their operations in accordance with safe working practices and will be Construction Skills Certification Scheme CSCS certified. At least one First Aider will be present on site at all times.

18.1.3 A site-specific risk assessment and method statement (RAMS) will be produced by the appointed archaeological contractor, prior to the commencement of work on site.

18.1.4 Personal Protective Equipment (PPE) will be provided to all staff by the archaeological contractor, including hi-visibility coats/vests, hard hats, safety boots and gloves, as well as safety glasses if required.

18.1.5 All staff will receive a health and safety induction prior to starting work on site to be provided by the principal contractor and/or the appointed archaeological contractor.

18.1.6 Regular audits of health and safety practices will be carried out during the course of the project by the archaeological contractor in consultation with the site workforce.

18.1.7 Toolbox talks on health and safety issues will be conducted at minimum weekly intervals and/or after changes in working practices or identification of new threats/risks. The risk assessment will be updated and control measures will be implemented as required in response to specific hazards.

18.1.8 Safe working will take priority over the desire to record archaeological features or remains, and where it is considered that recording is dangerous, any such features will be recorded by photography at a safe distance.

- 18.1.9 All areas of excavation will be scanned with a Cable Avoidance Tool (CAT) prior to ground works commencing. Necessary measures will be taken to avoid disturbing any services.
- 18.1.10 Plant operators will be required to produce evidence of qualification within an industry accepted registration scheme. Sub-Contractors health and safety performance will be kept under review and action taken if necessary.
- 18.1.11 All spoil will be stored and managed safely in line with the standards of the *Construction Code of Practice for Sustainable Use of Soils on Construction Sites* (DEFRA 2009).

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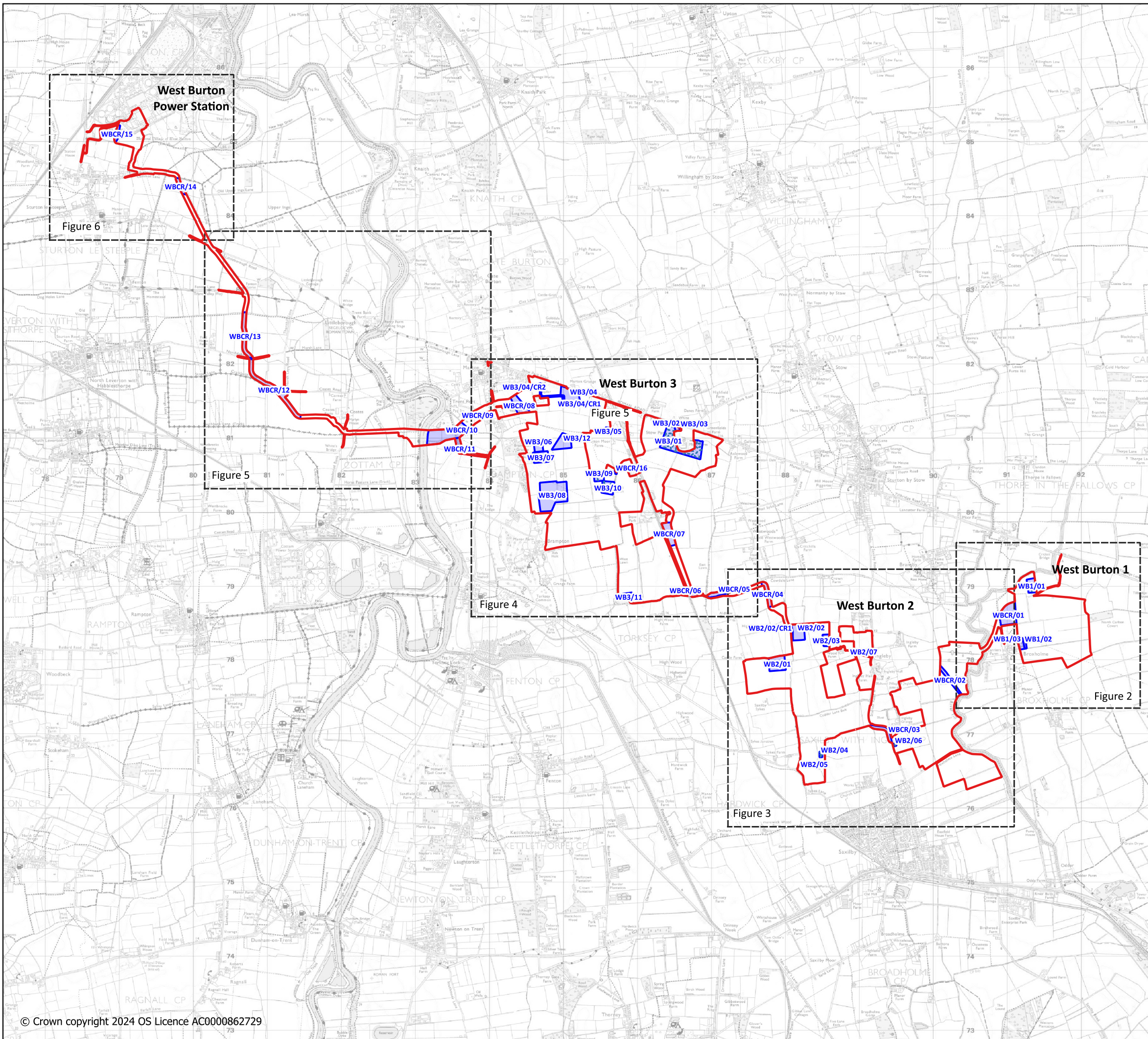
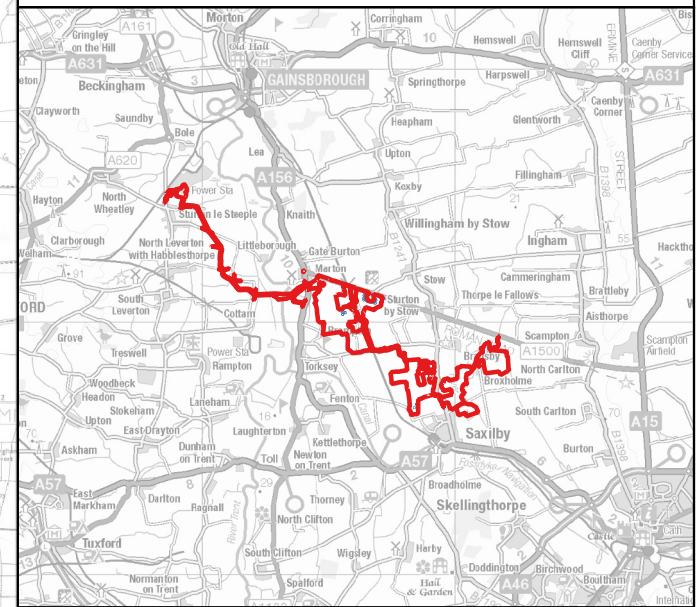
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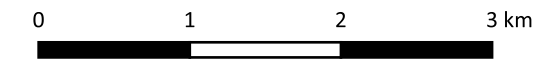
## Figures

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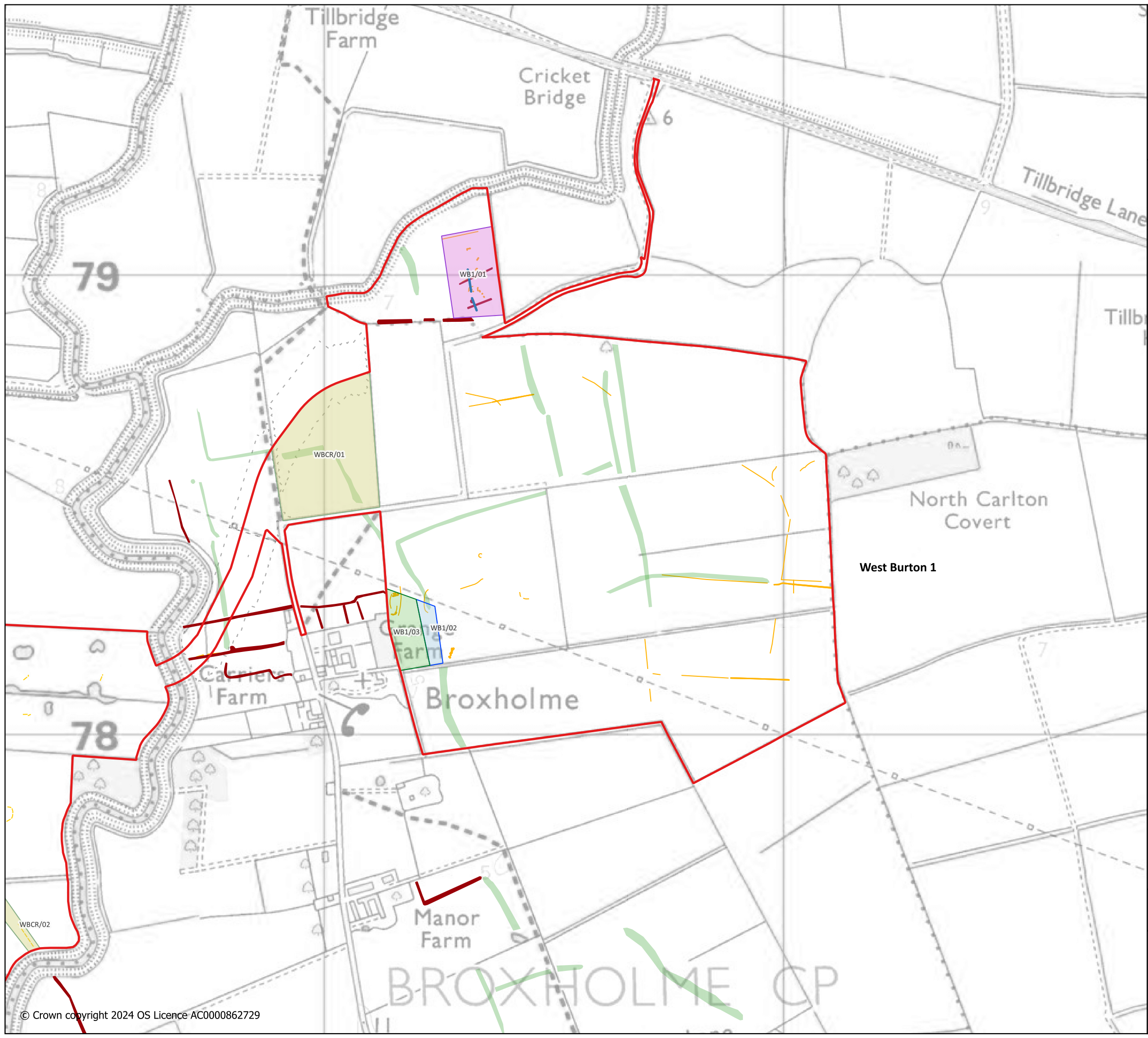
- ▭ Site boundary
- ▭ Archaeological Mitigation Area














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Figure 1. General location of archaeological mitigation areas





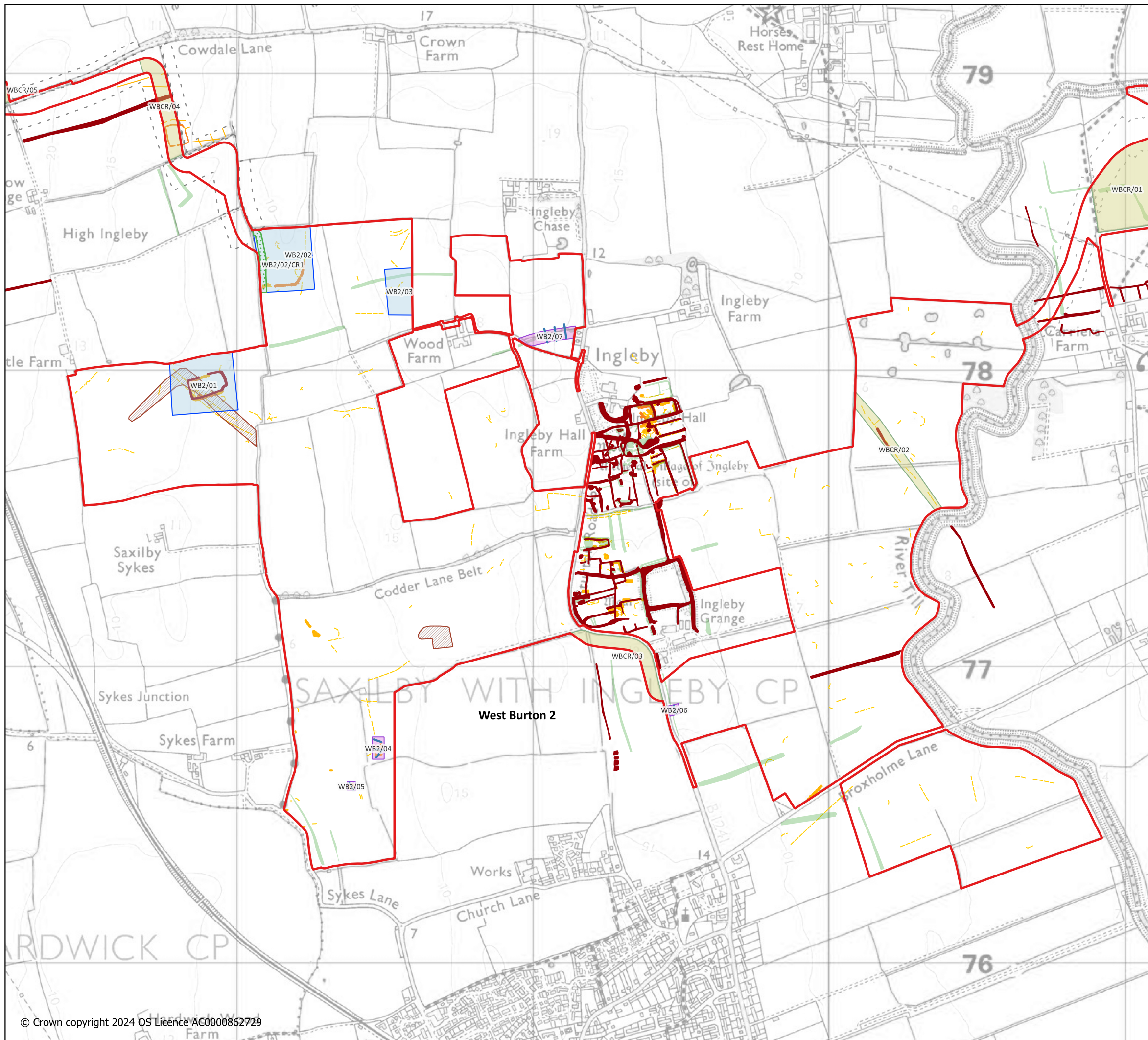
-  Ground Anchors
  -  Strip, Map and Record (along landscape mitigation impact area)
  -  Strip, Map and Record (along the cable route impact area)
  -  informative trench area
  -  Informative trench location
- Geophysical Survey Features:
-  Geophysical survey area (Cable Route Corridor)
  -  Archaeological anomaly
  -  Possible archaeological anomaly
  -  Site Boundary
- AP and LiDAR Survey Features:
-  Bank
  -  Ditch









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Figure 2. Archaeological mitigation areas within West Burton 1







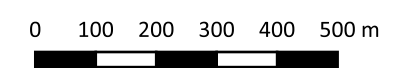
-  Site boundary
-  Ground Anchors
-  Strip, Map and Record within Solar Site (along the cable route impact area)
-  Strip, Map and Record (along the cable route impact area)
-  Informative Trench Area
-  Informative Trench Location

**Geophysical Survey Features:**

-  Geophysical survey area (Cable Route Corridor)
-  Archaeological anomaly
-  Possible archaeological anomaly

**AP and LiDAR Survey Features:**

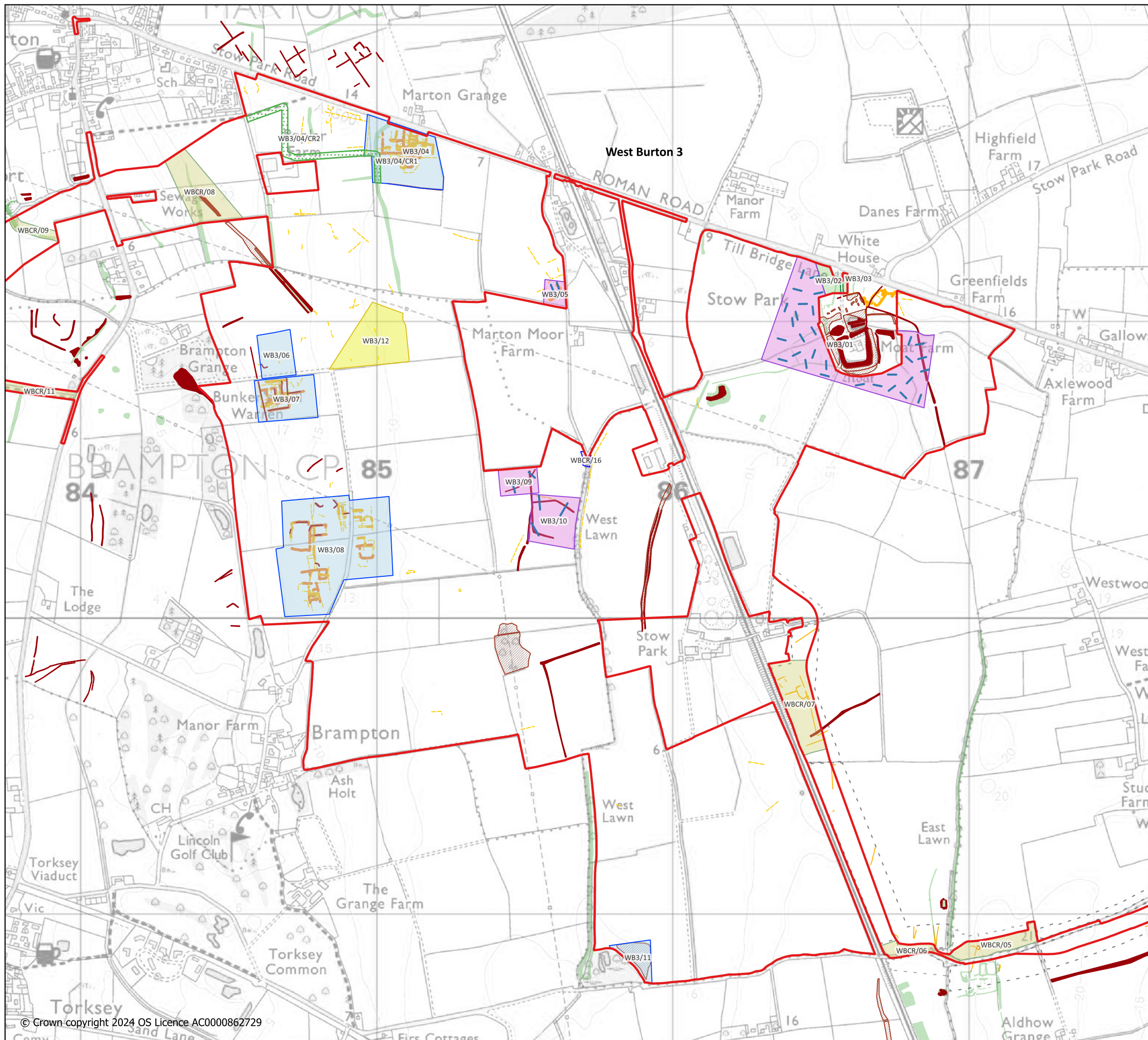
-  Bank
-  Ditch

















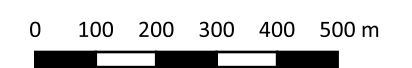
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Figure 3. Archaeological mitigation areas within West Burton 2





-  Site boundary
  -  Ground Anchors
  -  In Situ Preservation (directional drilling)
  -  Strip, Map and Record
  -  Strip, Map and Record within Solar Site (along the cable route impact area)
  -  Strip, Map and Record (along the cable route impact area)
  -  Watching Brief
  -  Informative Trench Area
  -  Informative trench location
- AP and LiDAR Survey Features:
- Geophysical Survey Features:
-  Geophysical survey area (Cable Route Corridor)
  -  Archaeological anomaly
  -  Possible archaeological anomaly
- AP and LiDAR Survey Features:
-  Bank
  -  Ditch



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Figure 4. Archaeological mitigation areas within West Burton 3

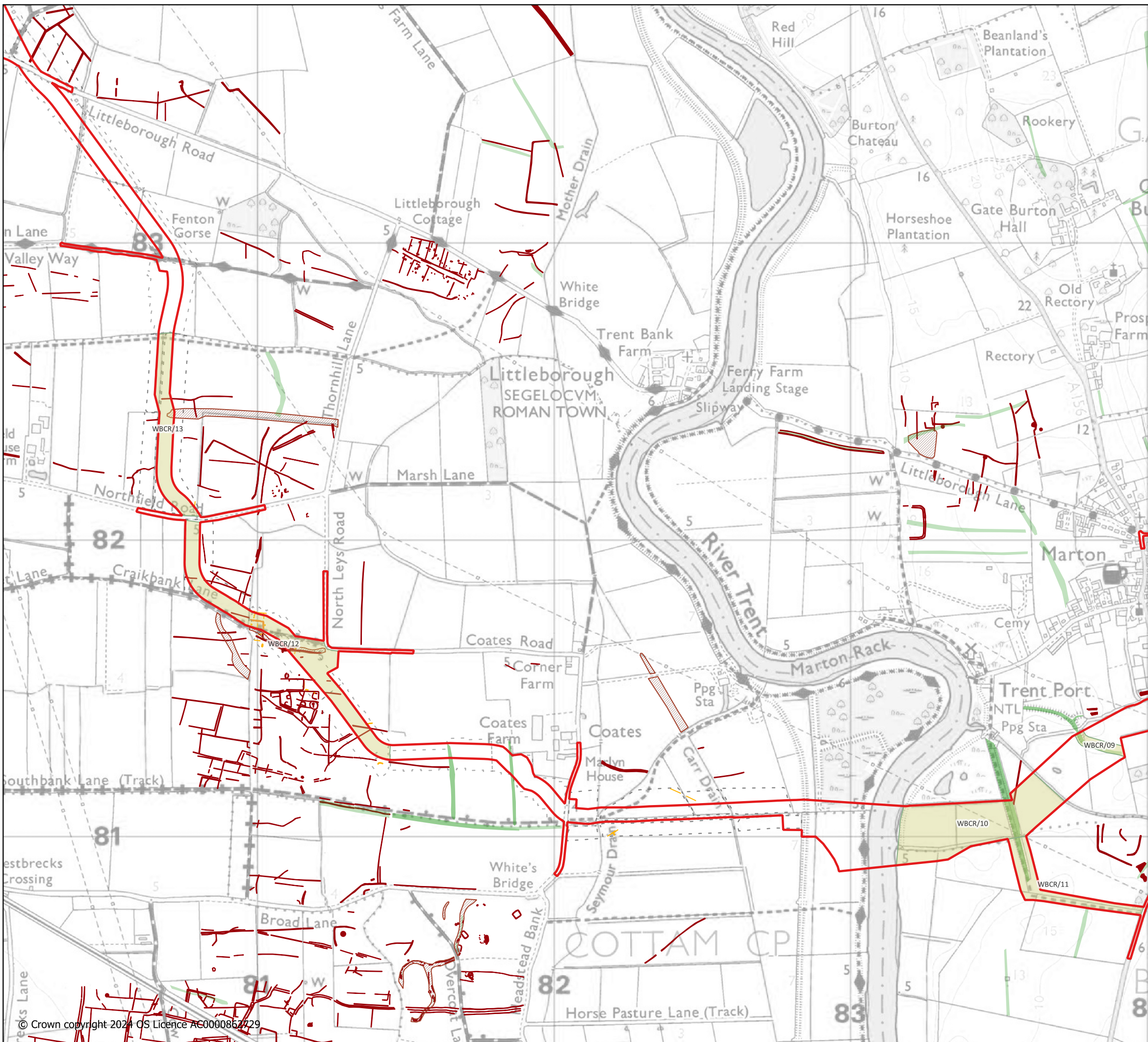


- Site Boundary
- Strip, Map and Record (along the cable route impact area)
- Geophysical Survey Features:
  - Geophysical survey area (Cable Route Corridor)
  - Archaeological anomaly
  - Possible archaeological anomaly
- AP and LiDAR Survey Features:
  - Bank
  - Ditch

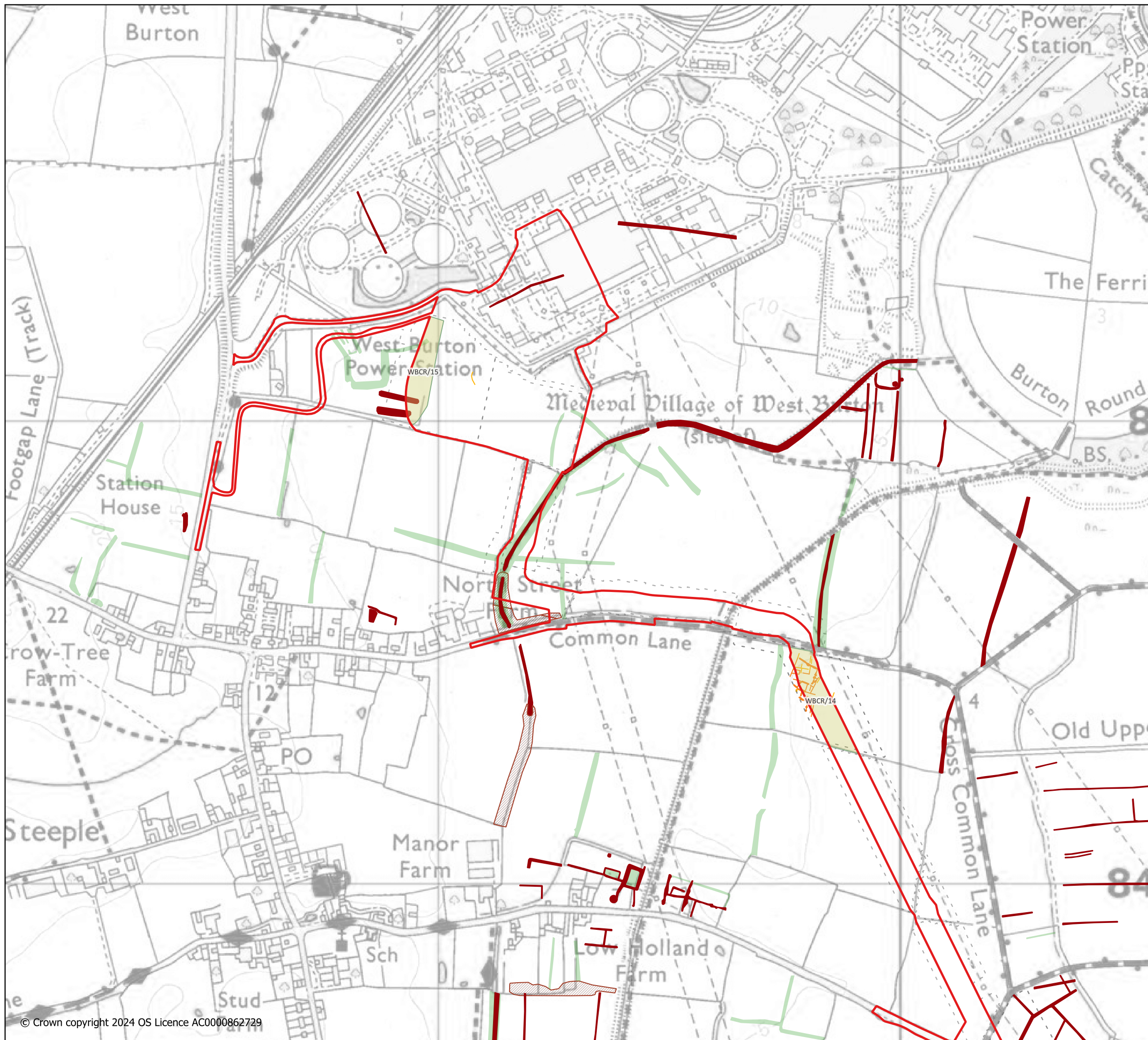









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Figure 5. Cable route mitigation areas WBCR/09 to WBCR/13







-  Site Boundary
  -  Strip, Map and Record (along the cable route impact area)
- Geophysical Survey Features:
-  Geophysical survey area (Cable Route Corridor)
  -  Archaeological anomaly
  -  Possible archaeological anomaly
- AP and LiDAR Survey Features:
-  Bank
  -  Ditch



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Figure 6. Cable route mitigation areas WBCR/14 and WBCR/15