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## Babraham Estate



## Archaeological Impact Assessment

October 2021

**E:mail**

**• Telephone**

**Offices in Thirsk•Stowmarket•Leamington Spa•Bath**

Correspondence and Accounts: Waltham House, 11 Unity Road, Stowmarket, IP14 1AS

Andrew Josephs Associates Ltd. Registered Office, Fulford House, Newbold Terrace, Leamington Spa, England, CV32 4EA

Registration no. 13428825

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### Appendix A

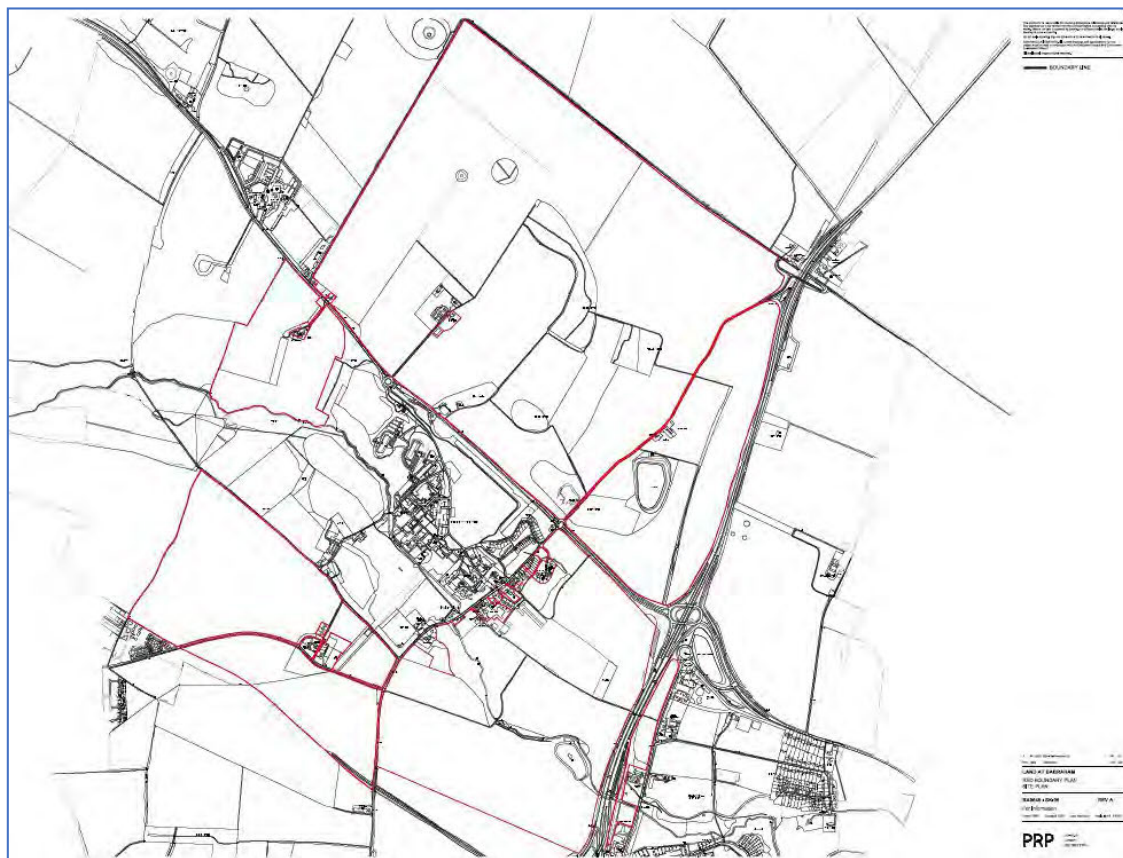
Cambridgeshire Historic Environment Maps

# 1. Introduction

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## 1.1 SCOPE OF THIS REPORT

This report, commissioned by Cheveley Park Farms Limited, presents an assessment of the potential impacts and benefits of development on land (**Figure 1**) being promoted as a new settlement at Babraham, Cambridge. The proposed scheme is presented in detail in the supporting documents and the masterplan framework is included below, **Figure 2**.



**Figure 1 Proposed Allocation Area**

The assessment has been based upon known and anticipated archaeology, weighed against national and local planning policy. Opportunities for enhancement have been identified. Recommendations for further evaluation and mitigation have been made, and the timing of that work suggested.

Archaeology is represented by a wide range of features that result from past human use of the landscape. These include historic structures, many still in use, above ground and buried archaeological monuments and remains of all periods, artefacts of anthropological origin and evidence that can help reconstruct past human environments.

Potential effects upon the setting of built heritage assets, such as listed buildings and Conservation Areas, has been undertaken by Bidwells and is reported separately.



Figure 2 Concept Masterplan

## 1.2 AUTHORSHIP

This report been written by Andrew Josephs (BA Hons Archaeology and Environmental Studies), Managing Director of Andrew Josephs Associates, a consultancy specialising in archaeology and cultural heritage founded in 2002. Andrew has extensive experience of all periods and facets of cultural heritage. He is involved primarily in planning applications, EIA and the design of mitigation strategies on developments with heritage constraints. Currently Andrew is heritage consultant to over 150 companies across Europe.

He has undertaken in excess of 1200 cultural heritage assessments since becoming one of the UK's first archaeological consultants in 1992. He was previously Principal Consultant (Director of Archaeology) at Entec (now Wood) and Wardell Armstrong. Prior to 1992, he worked as a field-based archaeologist and researcher for universities and units in the UK, Europe and the USA including The Universities of Wales, York, Arizona and Leuven. He has lectured widely and was visiting lecturer in Environmental Impact Assessment at the University of Nottingham.

## 1.3 RELEVANT POLICY AND GUIDANCE

### 1.3.1 *National*

The following published policy and guidance is relevant to this appraisal.

- National Planning Policy Framework, updated 2021. Department for Communities and Local Government.
- Planning Practice Guidance: *Conserving and Enhancing the Historic Environment* <http://planningguidance.planningportal.gov.uk>
- Historic England<sup>1</sup> 2008. *Conservation Principles: Policies and Guidance for the Sustainable Management of the Historic Environment*.
- Historic England 2017. *The Setting of Heritage Assets (GPA3)*
- Historic England 2019 *Statements of Heritage Significance (HE Advice Note 12)*

### 1.3.2 *Local*

The Potential Development Area (PDA) is situated within the administrative area of South Cambridgeshire District Council. The current development plan is The South Cambridgeshire Local Plan 2018 that was adopted on 27 September 2018. The policy relevant to archaeology is set out in Chapter 6 of the Plan and reproduced below.

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<sup>1</sup> Historic England includes its former name English Heritage



### **Policy NH/14: Heritage Assets**

1. Development proposals will be supported when:
  - a. They sustain and enhance the special character and distinctiveness of the district's historic environment including its villages and countryside and its building traditions and details;
  - b. They create new high quality environments with a strong sense of place by responding to local heritage character including in innovatory ways.
  
2. Development proposals will be supported when they sustain and enhance the significance of heritage assets, including their settings, as appropriate to their significance and in accordance with the National Planning Policy Framework, particularly:
  - c. Designated heritage assets, i.e. listed buildings, conservation areas, scheduled monuments, registered parks and gardens;
  - d. Non-designated heritage assets including those identified in conservation area appraisals, through the development process and through further supplementary planning documents;
  - e. The wider historic landscape of South Cambridgeshire including landscape and settlement patterns;
  - f. Designed and other landscapes including historic parks and gardens, churchyards, village greens and public parks;
  - g. Historic places;
  - h. Archaeological remains of all periods from the earliest human habitation to modern times.

## 2. Baseline Conditions

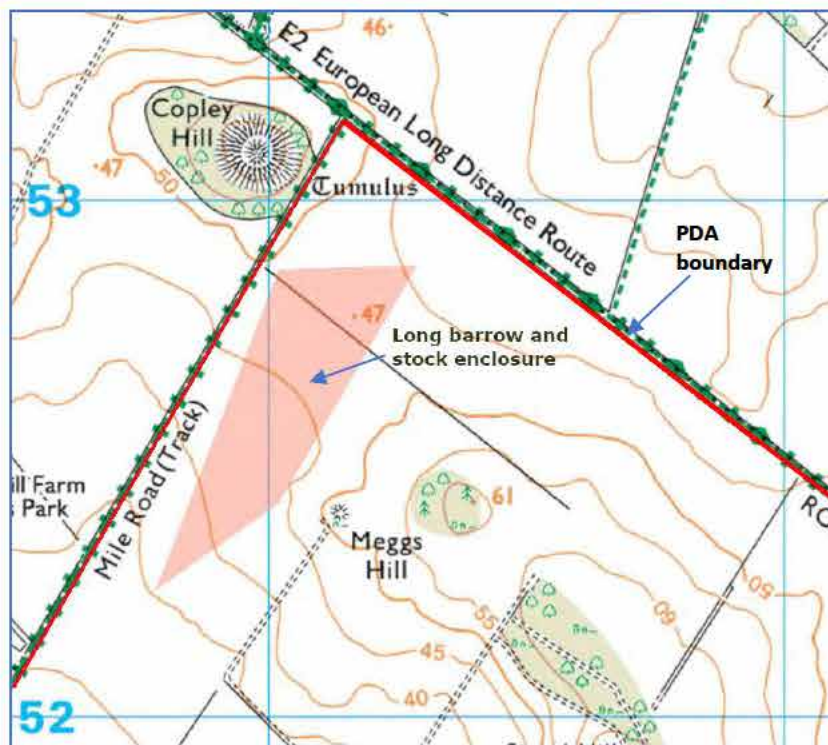
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### 2.1 DESIGNATED ARCHAEOLOGICAL ASSETS

#### 2.1.1 Scheduled Monuments within the PDA

One scheduled monument is situated within the PDA and was identified early in the design process as a significant influence upon the design and layout of the proposed development.

The monument was added to the schedule in 2003 and is named as *Long barrow and enclosure 870m ENE of Copley Hill Farm* (list entry number 1020845). Its location and extent are shown on **Figures 3** and **4** (reference 1).



**Figure 3** Extent of scheduled monument 1020845

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The scheduling<sup>2</sup> describes the monument as:

The buried remains of a long barrow and livestock handling enclosure 870m ENE of Copley Hill Farm. The long barrow lies on the summit of a south facing slope and is oriented NNW-SSE, in between and aligned with the chalk outcrops of Copley Hill and Meggs Hill. It measures approximately 90m long by 40m wide with the wider terminal on the south. The barrow's mound has been reduced by ploughing to

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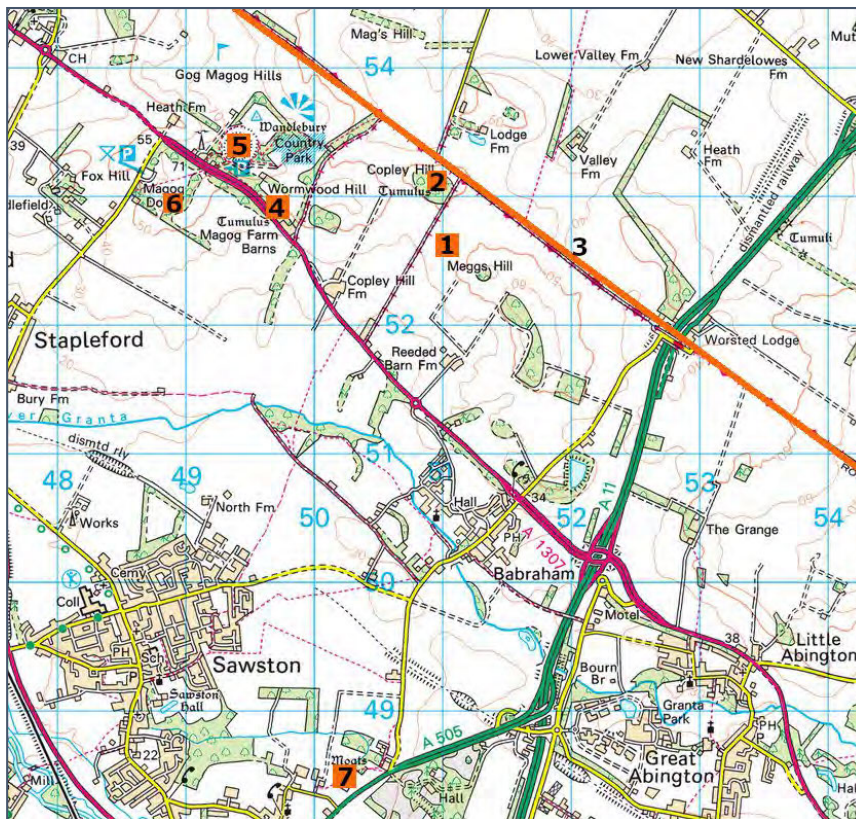
<sup>2</sup> <https://historicengland.org.uk/listing/the-list/list-entry/1020845>



the extent that it is no longer visible above ground, but its deeper deposits are preserved. The central burial area and the encircling ditch, from which earth was dug in the construction of the mound, are clearly visible as dark soilmarks against the otherwise white chalky ground, as well as cropmarks (areas of enhanced growth resulting from higher levels of moisture retained by the underlying archaeological features). The ditch is up to 7m wide. At a later stage the long barrow was incorporated into an enclosure, whose boundary ditch runs along, and respects, the northern tip of the barrow. Although the enclosure's boundary ditch has become infilled over the years, it survives and is clearly visible as a soilmark against the white chalk and as a cropmark on aerial photographs. The enclosure is triangular in shape, with the tip at the south. Current archaeological research identifies this feature as a Bronze Age stock enclosure, similar to the one excavated at Fengate. The 150m wide entrance lies in the north east corner, where animals from the surrounding fields were gathered. They would then be driven down hill into the tip of the enclosure, which acted as a funnel, in which the flock could be inspected and sorted. The northern edge of the enclosure runs along the summit of the hill and measures 250m long, while the eastern and western boundaries are 600m and 450m long respectively up to their meeting point, beyond which the western boundary ditch continues south for another 180m. The aerial photographic evidence also suggests that two rectangular enclosures of approximately 100m by 15m were aligned within the tip of the enclosure, which were probably used as sorting yards. Outside the main enclosure, and connected to its eastern edge by two antennae shaped ditches, is a square enclosure measuring 60m on all sides, in which selected animals could be held separately from the main flock. The stock handling system is part of a larger field system, of which other segments have been identified about 300m to the north west and 800m to the south east. The precise layout and survival of these elements of the field system remain uncertain and they are not included in the scheduling.

### 2.1.2 Scheduled Monuments within the surrounding landscape

Within the surrounding landscape are a number of scheduled monuments, as shown on **Figure 4**.



**Figure 4** Scheduled monuments

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Bowl barrow on Copley Hill (reference 2<sup>3</sup>)

The monument (List Entry Number 1017327) includes a bowl barrow on Copley Hill. This natural hill, one of several chalk knolls along the Babraham Road (A1307), stands 17m high and is crowned by a small mound representing the remains of a Bronze Age barrow. The mound measures approximately 21m in diameter and is 2m high. Its north western slope merges with the natural hill, obscuring the precise dimensions of the mound. The surrounding ditch, from which earth was dug in the construction of the mound, has become infilled over the years, but will survive as a buried feature. It is believed to be approximately 3m wide.

Worstead Street (*Via Devana*) (reference 3)

A stretch of the Roman road known as *Via Devana* (List Entry Number 1003263) borders the northern boundary of the PDA. This is now a European long distance route. It was given its name by Charles Mason of Trinity College, Cambridge in the mid-18<sup>th</sup> century from the Latin name for Chester (*Deva*); *Via Devana* is thus 'The Chester Road'.

Via Devana linked the important Roman military centres of Colchester and Chester. It has been suggested that the road was constructed for military rather than civilian purposes<sup>4</sup>.

There are no details available on its scheduling.

Wormwood Hill tumulus (reference 4)

A tumulus (list entry 1006904) set in woodland, just north of the A1307 Cambridge Road. There are no details available on its scheduling.

Wandlebury Camp<sup>5</sup> (reference 5)

A multivallate hillfort, earlier univallate hillfort, Iron Age cemetery and 17th century formal garden remains (list entry 1009395). Wandlebury Camp is one of only three large multivallate hillforts known to survive in Cambridgeshire. Despite some alteration, the monument still retains many of its original features, including an extramural cemetery to the south east of the defences. Small scale excavation has demonstrated the survival of below ground features in the interior, including evidence of Iron Age buildings and buried rampart structures. Excavation, and the study of artefacts retrieved since the late 17th century, have also shed significant light on the development of the site from univallate to multivallate fort between the Early and later Iron Age. The hillfort lies in relatively close proximity to other monuments of similar period and function, such as the hillfort at Arbury Camp to the north. Wandlebury Camp may also have formed part of a series of defended sites including Borough Hill, Arbury Banks and Ravensburgh Castle which extend across the chalk uplands to the south east. The comparative study of chronological and morphological variations between these monuments provides important evidence for the development of prehistoric societies in the region.

Post-medieval formal gardens are usually found in direct association with the dwellings of high status individuals in society and were created as an expression of wealth and refinement, forming a setting for such residences. Seventeenth and 18th century gardens tend to comprise a regular or symmetrical pattern of flowerbeds, water features, paths, terraces or lawns forming a vista related to the main building.

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<sup>3</sup> Reference number on Figure 4

<sup>4</sup> P Liddle & R F Hartley, 'A Roman road through north-west Leicestershire', *Transactions of the Leicestershire Archaeological and Historical Society* 68, 1994, 186

<sup>5</sup> Source: <https://historicengland.org.uk/listing/the-list/list-entry/1009395>

The garden at Wandlebury is a well-preserved example, with terraces leading down to a rectangular pond to the north of the former mansion. Later developments wherein the garden formed the centre of a more 'natural' landscape of parkland and orchards are also evident. The presence of these remains enhances the importance of the monument by illustrating an unusual sequence of adaptations of the hillfort interior in later periods.

Causewayed enclosure and bowl barrow at Little Trees Hill<sup>6</sup> (reference 6)

The monument (List Entry Number 1011717) includes a causewayed enclosure and a bowl barrow, both situated on a prominent chalk knoll to the south of the junction between the Babraham Road (A1307) and Haverhill Road, some 500m to the south west of the Iron Age hillfort known as Wandlebury Camp. Although no earthworks can be observed on the ground, the causewayed enclosure is clearly visible from the air, and is recorded on aerial photographs. The following description is therefore based on the photographic record. The enclosure is roughly circular in plan with a maximum diameter of 265m. The perimeter is defined by a segmented ditch which encircles the hill by following closely the contour marking 60m above sea level. This alignment is most clearly visible around the northern and north western parts of the circuit, where it is composed of a series of ditches, 10m-15m in length and some 4m in width, separated by 2m-4m wide gaps. This section of the perimeter is flanked both internally and externally by interrupted alignments of dark material, thought to represent the remains of banks formed from upcast material from the ditches. The south eastern arc, which lies towards the base of a more abrupt slope, is less clearly defined due to the effects of ploughing and soil displacement. On the western arc of the perimeter there is an 80m wide gap, or major causeway, which corresponds broadly with the location of a slight spur leading towards the summit of the knoll. Two minor causeways, each less than 10m in width, are visible in the most northerly section of the perimeter separated by a single ditch segment measuring c.30m in length. These smaller entranceways are flanked by slight inward extensions of the ditch terminals. A trackway, orientated north west to south east, passes the foot of the knoll on the north east side and partially converges with the boundary of the causewayed enclosure. A 120m length of this trackway, which is defined by a parallel arrangement of ditches separated by about 8m, is included in the scheduling in order to protect its archaeological relationship with the causewayed enclosure. A bowl barrow is situated within the interior of the causewayed camp, to the south west of the highest point of the knoll. This feature, which is thought to indicate later, Bronze Age reuse of the Neolithic enclosure, comprises a circular mound, approximately 25m in diameter which survives to a height of 1.8m. The surrounding ditch from which material for the mound was quarried has become infilled over the years, although it can be traced as a slight depression around the eastern and southern sides. The barrow, which apparently remains unexcavated, now stands within a small area of woodland covering the summit of the knoll. In the absence of this copse, the barrow would have served as a conspicuous local landmark. Further evidence of Neolithic and Early Bronze Age activity was revealed by fieldwalking surveys conducted in 1979/80 and 1990/1 which identified a distribution of flint tools and manufacturing debris concentrated on the lower ground immediately to the north and north east of the causewayed enclosure (with some examples located within its perimeter). A Neolithic flint arrowhead was discovered on the summit of the knoll in 1970, and various other artefacts including a polished stone axe and a scatter of worked flint were recovered from an adjacent field (to the west of Haverhill Road) during the mid 1960s. The southern side of Little Trees Hill (formerly known as Clunch Pit Hill) has been considerably disturbed by a series of chalk pits excavated during the 19th century.

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<sup>6</sup> Source: <https://historicengland.org.uk/listing/the-list/list-entry/1011717>

Two moated sites 150m east of College Farm<sup>7</sup> (reference 7)

The monument (List Entry Number 1017884) includes two adjacent medieval moated sites, situated 150m east of College Farm. The ground between the moats contains evidence for a series of partly infilled ditches and hollows which are thought to represent a system of paddock enclosures and beast ponds which are also included in the scheduling. The northern island is roughly rectangular in plan, measuring about 61m east to west and 46m north to south. It is defined by a moat some 4m wide and up to 1.5m deep. The island is raised approximately 0.3m above the level of the surrounding land, probably by upcast from the construction of the moat. The surface is generally level except on its western side. Here there is a shallow oblong depression about 2.5m wide and 15m long. This is set at right angles to the centre of the moat's western arm and is thought to be modern. The southern moated island lies some 100m to the SSE. It is square in plan, set on a north-south diagonal and measuring overall 54m north east to south west and 52m north west to south east. A large raised area, thought to represent a building platform, occupies the western half of the island, and extends into the eastern half. The moat averages 4m in width and is about 0.9m deep except at the eastern angle. Here, the depth reduces to approximately 0.3m, corresponding with the lower part of the island, and suggesting the possible location of an entrance. At the northern corner there is a short extension from the north eastern arm of the moat. Both moats are seasonally wet and are thought to be fed by springs and surface water. The area between the two moats contains a number of hollows and partly buried ditches which combine to form a series of enclosures. The largest enclosure lies to the immediate east of the northern moat. It is triangular in plan, bounded to the west by the moat's eastern arm, with the remaining sides defined by two shallow ditches running from the moat's north eastern and south eastern corners and converging at a point 35m to the east. A series of six lesser ditches run southwards from the southern arm of the enclosure and the southern arm of the northern moat compartmentalising the area between the two moats in a row of narrow closes or paddocks, some of which contain evidence of shallow ponds attached to the ditches. Irregularities in the adjacent ground may indicate the buried remains of further ponds. This system of ditches and ponds, as well as providing paddocks and water supplies for animals, may have served to provide drainage in a low-lying area which would have been prone to flooding. The close proximity of two similar moated sites is intriguing. It is possible that one succeeded the other, it being easier to construct a second moat and buildings before abandoning the first, than to rebuild on the same site.

**Table 1 Scheduled Monuments**

Designated Asset	Description	Distance from PDA boundary	Distance from nearest proposed built development
1020845	Long barrow and enclosure	Within	545m
1017327	Bowl barrow on Copley Hill	100m	1300m
1003263	<i>Via Devana</i> Roman road	0m	1500m
1006904	Wormwood Hill tumulus	1050m	1050m
1009395	Wandlebury Camp, multivallate hillfort and garden	1455m	1455m
1011717	Causewayed enclosure and a bowl barrow	1575m	1575m
1017884	Two medieval moated sites	940m	1075m

<sup>7</sup> Source: <https://historicengland.org.uk/listing/the-list/list-entry/1017884>



## **2.2 ARCHAEOLOGICAL BACKGROUND**

A 2km wide search area centred upon TL 5120 5090 was explored. Data was requested from the Cambridgeshire Historic Environment Record (CHER) and was kindly provided by Ruth Beckley of the Historic Environment Team. A total of 148 records of monuments and finds lay within the search area. These are discussed by period below, and those of post medieval or recent date are only briefly touched upon for the purposes of this assessment. The location maps of assets recorded in the CHER are included at **Appendix A**.

There are three distinct zones of data: land north of the A1307, land west of Babraham High Street and land east of Babraham High Street.

### **2.2.1 Prehistoric**

The evidence for Prehistoric activity north of the A1307 comprises three records. The first is a group of four probable Bronze Age round barrows (06281) towards the eastern side of the study area (to the east Icknield Way) which were upstanding mounds until the twentieth century. A further possible ring ditch (09275) lies a short distance to the north but examination of the surface did not produce any finds. The other prehistoric records in the area to the north of the A1307 are the scheduled monuments discussed above (Section 2.1).

In the area of the Babraham Institute Campus, west of the High Street there are several records of recording a few features and prehistoric finds, mostly flint tools ranging from the Mesolithic to Bronze Age in date. Many of these records relate to fieldwork undertaken as part of development. The flints include some Mesolithic to Bronze Age flints to the northeast (MCB17428), a Neolithic axe (MCB24621) to the west, a Neolithic arrowhead (06342), a Neolithic to Bronze Age flint working site (MCB20448) to the northwest and a couple of sites which produced Neolithic and Bronze Age flints (MCB17433 & 17448). Some Neolithic pits with flints (MCB17637) were identified within the Campus, along with a hollow which also produced flints (MCB17545) and residual flints in later features (MCB17546). Also north of the High Street, but on the western limits of the study area, some largely undated ditches (MCB27477) were excavated, although two contained Bronze Age pottery and one a blade of Mesolithic/Neolithic date. A flint flake (06323) was also recovered as a surface find in Babraham Park which although initially identified as Levallois is now thought to be more likely derived as a hand axe thinning flake.

In the area to the east of the High Street and south of the A1307 are a number of records indicating prehistoric activity. In the area of Fourwentways they include a prehistoric ditch (09356b) which produced two flint flakes, three ring ditches (09356) two of which proved to be the remains of Bronze Age barrows when evaluated, and a further ring ditch, possibly a henge (09356a). Slightly to the south of this group of features a single late Mesolithic to early Neolithic flint blade and waste flake was also recorded (CB14748). Near to Bourn Bridge excavation in a borrow pit and fieldwalking of the area produced a Palaeolithic handaxe (11317B), evidence of Mesolithic to Bronze Age activity in the form of flints (11317) and a Bronze Age ditched monument (11317A), within which there were numerous stake and post holes and a couple of cremations.

### **2.2.2 Iron Age and Roman**

The evidence for Roman activity north of the A1307 is dominated by the course of the Via Devana (7970) or Worstead Street, which is Scheduled and discussed above (Section 2.1). The route runs across the northeastern part of the study area with a further Roman road from Braughing joining it near Worsted Lodge (MCB26667), the course of this road is reflected by the A11, and.

In the area of the Babraham Campus west of the High Street several features of Late Iron Age and Roman date are recorded that were largely identified a result of archaeological works associated with its development. The records include pits and ditches (MCB16827, 17429, 17434, 17545, 17546, 17663, 20250, 20313) and part of a field system (MCB19539). At some locations there were sufficient features

and material culture that the record is of 'settlement' (MCB17449, 17547, 20314) or 'occupation' (MCB17547) and walls were identified at one location (MCB16827) along with a section of a possible road (MCB20252). Roman burials are recorded in the eastern part of the campus (11937 and MCB17624). Additionally stray finds of pottery (06342A) and metal finds (06228) including a barrel padlock (06208) are recorded. Further Roman material is recorded to the west of the study area comprising largely finds such as a quern (04325), a brooch (04326), a slave shackle (CB15667) and other objects (04764) but also a surface (MCB19436), building materials (MCB28985) and foundations (04328). These records are focussed in a small area and may reflect some contemporary occupation beside the Granta.

To the east of the High Street there are a few records of Roman activity. They comprise some ditches (MCB19813) adjacent to the High Street and in the area of the borrow pit towards the southern margins evidence of fields (11317C) and settlement (11317D) are recorded.

### ***2.2.3 Anglo-Saxon***

There is limited evidence for Anglo-Saxon activity across the study area with no records north of the A1307. West of the High Street archaeological work in the Babraham Campus found a possible Grubenhaus with associated pits (MCB20253) and a burial (11937). The other Anglo-Saxon records within the study area are three in the southwestern part and they comprise several small long brooches recovered with some bones next to the river (MCB17799); additional metalwork was also reported (CB14745) slightly further west. A focus of occupation comprising six grubenhaus and associated pits dating to the fifth to seventh century were excavated near Bourn Bridge and are suggested as representing a short-lived settlement (13044).

### ***2.2.4 Medieval***

Evidence for medieval activity includes a medieval settlement in the southwest of the study area, cleared in the sixteenth century (08151) to enable emparkment. There are also elements of the medieval fields (MCB30890, 30891, 30892) recorded in the study area. Close to the western limit of the study area medieval horseshoes and horse bells (04330) and the upper stone of a medieval Puddingstone quern (04761) are recorded. Further medieval finds, including a lead ampulla (06211) and features have been recorded within the Campus. The features include numerous pits and ditches (MCB17435, 17627, 17638, 20250) and other features (MCB20253, 21832). Part of a trackway that continued in use into the post medieval period was also identified within the Campus (MCB20315) and a further section of road (MCB17450) was present slightly to the southeast. To the west of the canalised course of the Granta is the site of a 'pear shaped' moated site (01199) which was explored in the 1960s but has now largely been infilled.

### ***2.2.5 Post-medieval and modern***

A total of twelve quarry pits of varying size (MCB22363, 223354, 22367, 26850, 30896, 30897, 30899, 30900, 30901, 30902, 30903, 30904) are recorded in the western and southern part of the study area reflecting the long and extensive history of extraction in the areas. The pits were variously for chalk, clay or gravel extraction and are dated as post-medieval, but most probably mainly nineteenth century.

Eight records relate to buildings, sites of buildings or structures (06229, MCB22365, 22366, 23287, 26689, 26690, 26691, 26692). Five records relate to the railways that once crossed the area (06326, 06327, MCB16575, 29002, 29003). Four records are of World War II date: a plane crash site (MCB17451), the site of a searchlight battery (09263), a bomb decoy or starfish site (MCB15117) and a Stanton air raid shelter (MCB28323).

Other post medieval features included a Napoleonic semaphore station (MCB17962) and an eighteenth/nineteenth century icehouse (06375). A large number relate to the occupation of Babraham Hall (06314) and park (12273) which lie near the centre of the study area. The original house comprised a brick mansion erected c 1580 but demolished in 1767 with a new Hall erected in 1770 which forms the core of

the Babraham Institute Campus. These elements associated with the house include records of ditches and pits (MCB11703, 17430, 17664), metalled surfaces (11418) and planting remains (MCB19540).

In addition, there are a few stray finds of post medieval date including a spur (06210) and a harness ring (06226) and a post medieval elements have been recorded in archaeological observations during the development of the Campus, for example a track (MCB20315) and ditches (MCB17435).

### **2.2.6 Undated**

There are numerous undated enclosures, tracks and ditches identified largely from aerial photographs scattered across the study area. The presence of undated ring ditches (09354) towards the southwest margins of the study area might denote further Bronze Age burial monuments whilst the less diagnostic enclosures and ditches may relate to elements of field systems of any date.

## **2.3 GEOPHYSICAL SURVEY**

Geophysical survey<sup>8</sup> was carried out over approximately 70ha of land within the PDA as part of Phase 2 of the Cambridge Southeast Transport Project. The geophysical survey primarily detected anomalies related to archaeological, agricultural and modern activity. Archaeological activity was identified in the form of trackways, enclosures, and anomalies interpreted as pits. Anomalies related to historical agricultural use were detected in the form of ridge and furrow cultivation, former field boundaries, and field drains, as well as modern agricultural trends. Further historic activity related to mapped World War II antitank trenches in the centre of the survey area, and a former railway in the south. Natural variations were also identified, corresponding with dissolution patterns of the calcareous bedrock and runoff features in the near surface relating to site topography.

## **2.4 AERIAL PHOTOGRAPHY**

Examination of Google Earth identified a rectangular enclosure, with rounded corners (sometimes called a playing-card enclosure), south of the River Granta (**Figure 5**), the form of which may suggest a Roman military marching camp or an installation to guard a crossing of the Granta. This is not recorded on the CHER. The location of the possible Roman enclosure has been incorporated into the masterplan. This will take it out of cultivation and preserve it *in situ* within an area of open space.

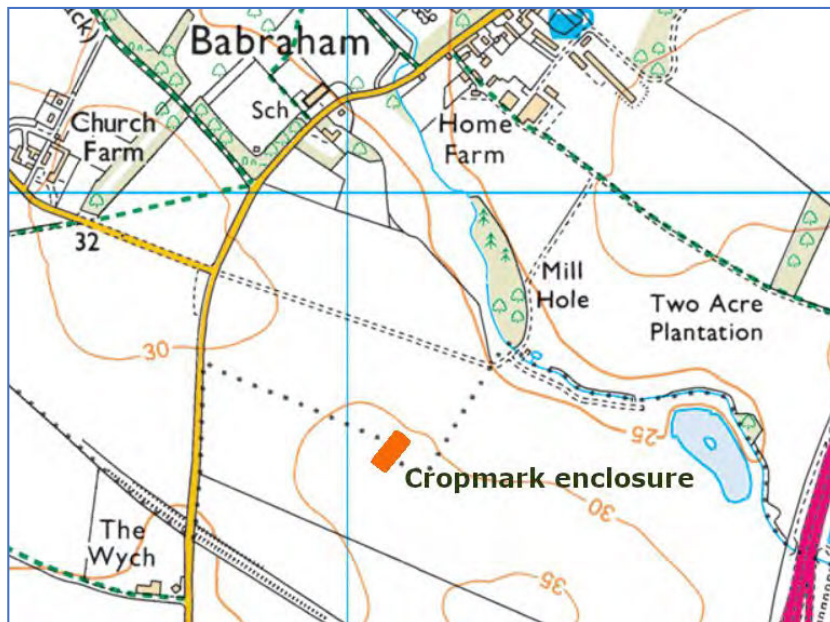
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<sup>8</sup> Swinbank, L. Clements, M & Falcus, B. 2020. Geophysical survey report of Cambridge South East Transport Phase 2. Magnitude Surveys. CHER ref; ECB6216.





**Figure 5** Cropmark enclosure  
© Google Earth 2020



**Figure 6** Location of cropmark enclosure  
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## 3. Impacts and Mitigation

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### 3.1 IMPACTS

Development can result in the loss of the archaeological resource wherever ground disturbance for construction takes place, and the potential loss or damage in other areas associated with infrastructure, services and landscaping.

The vast majority of the PDA is under arable cultivation and will have experienced truncation of archaeology where soils are not deep. That which survives will be represented by cut features such as ditches and pits, and this is reflected in the HER by cropmarks.

Even at this outline stage, the broad-brush masterplan has taken known constraints into account and has been designed to:

- Preserve in situ a possible Roman marching camp or fort identified as part of this assessment
- Protect the long barrow and stock enclosure scheduled monument by taking the land within its boundary permanently out of arable cultivation.
- Allow flexibility in the layout so that should significant archaeology be identified during field-based evaluation (that would be required prior to a planning application), it can be preserved *in situ* through detailed design and the location of, for example, areas of open space or community meadows

### 3.2 FUTURE ARCHAEOLOGICAL WORK AND MITIGATION

The aim of this Archaeological Assessment is to provide sufficient information to inform the Local Plan Review and also determine whether further investigation is likely to be required in the event of a planning application.

Further archaeological desk-based research and field evaluation, comprising both non-intrusive survey such as geophysical survey and fieldwalking, and intrusive evaluation through trial trenching, is likely to be required to inform any specific development proposals. However, based on current evidence and the clear signal provided by the promoter to preserve significant archaeology *in situ*, coupled with the size of development that allows great flexibility in the detailed layout, the potential direct impacts upon archaeology should not be a constraint on the allocation of the PDA.

In the event of the allocation of the PDA, the loss of archaeological remains associated with assets of interest identified by field-based evaluation would need to be judged in any planning application in terms of the test set out at paragraph 203 of the NPPF; i.e. weighed in the planning balance against the public benefits of any proposed development.

*203. The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.*

Based on current evidence, and the desire to protect significant archaeology, it is considered that the loss of archaeological remains of lesser significance can appropriately be mitigated by a programme of archaeological excavation, recording and publication. This would also allow the archaeological resource that is currently being truncated through arable agriculture to be preserved by record.

Such works would be secured by a planning condition on any planning permission.

### 3.3 INDIRECT IMPACTS

#### 3.3.1 Introduction

Indirect impacts are those that do not physically affect a cultural heritage asset or landscape, but that alter the context or setting.

Setting is defined in the National Planning Policy Framework (NPPF) as:

*"The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of the asset, may affect the ability to appreciate that significance or may be neutral."*

Historic England's *The Setting of Heritage Assets* (Good Practice Advice Note 3) published in 2017 observes that amongst the Government's planning objectives for the historic environment is that conservation decisions are based on the nature, extent and level of a heritage asset's significance and are investigated to a proportionate degree. It recommends the following broad approach to assessment, undertaken as a series of steps that apply proportionately to complex or more straightforward cases:

- Step 1: identify which heritage assets and their settings are affected;
- Step 2: assess whether, how and to what degree these settings make a contribution to the significance of the heritage asset(s);
- Step 3: assess the effects of the proposed development, whether beneficial or harmful, on that significance;
- Step 4: explore the way to maximise enhancement and avoid or minimise harm;
- Step 5: make and document the decision and monitor outcomes.

These steps have been followed in this initial assessment below.

GPA3 states that:

*"The setting itself is not designated. Every heritage asset, whether designated or not has a setting. Its importance, and therefore the degree of protection it is offered in planning decisions, depends entirely on the contribution it makes to the significance of the heritage asset or its appreciation."*

#### 3.3.2 Assessment

##### ***Step 1: Identify which heritage assets and their settings are affected***

Three designated archaeological assets have been identified as potentially being affected in the north-west corner of the PDA (**Figure 7**). One lies within the PDA boundary, and two outside.

These are:

- Long barrow and enclosure (1020845)
- Copley Hill bowl barrow (1017327)
- Via Devana Roman road (1003263)





**Figure 7 Scheduled Monuments in north west corner of PDA**  
 © Google Earth 2012 (base photo)

The other designated assets identified in Section 2 have been scoped out for the following reasons:

**Table 2 Scheduled Monuments Scoped out of Assessment**

List entry	Asset	Reason for scoping out
1006904	Wormwood Hill tumulus	No intervisibility with proposed development. Distance +1km.
1009395	Wandlebury Camp, multivallate hillfort and garden	No intervisibility with proposed development. Distance +1km.
1011717	Causewayed enclosure and a bowl barrow	No intervisibility with proposed development. Distance +1.5km.
1017884	Two medieval moated sites	No intervisibility with proposed development. Distance +1km.

***Step 2: assess whether, how and to what degree these settings make a contribution to the significance of the heritage assets***

**Long barrow and enclosure**

The long barrow and enclosure sit within an arable field but are not visible (**Figure 8**). They have been recognised from cropmark and soilmark evidence (see Figure 7). The buried remains of the barrow are situated on the summit of a south facing slope. At a later stage the long barrow was incorporated into an enclosure, whose boundary ditch runs along, and respects, the northern tip of the barrow. The enclosure is triangular in shape, with the tip at the south. The southern tip of the scheduled area is 545m north east of the nearest area of proposed built development; the site of the long barrow is 1.1km north east.



**Figure 8 The scheduled long barrow and stock enclosure from the north (marked by yellow vegetation – the location of the barrow is arrowed)**

The key significance of the monument is its below ground archaeology. Although not visible except from the air, it does have a setting, albeit less obvious, and arguably therefore less significant, than an upstanding monument.

The barrow's main setting is derived both from views south from the site of the monument and views south to it (for example from the later Via Devana) where the barrow would have stood out on the skyline. However, the significance of this is significantly reduced as the monument is no longer visible. The scheduled area will be taken permanently out of arable cultivation. The southern facing land outside the monument will be maintained as farmland, as it currently is.



**Figure 9 Looking south from the scheduled long barrow and stock enclosure. The proposed R&D zone is behind the trees (arrowed). No proposed built development within any of the PDA would be visible from the monument (50mm lens)**

There are predicted to be no views of the proposed built development areas due to a combination of topography and woodland. The proposed R&D zone is set behind woodland. The current view from the monument to the existing Babraham Research Campus (a distance of approximately 750m due south of the scheduled boundary) is barely visible within a woodland setting. The height of the buildings is absorbed into woodland and a backdrop of higher topography (**Figure 10**).





**Figure 10 Looking south (135mm lens approx) from the scheduled long barrow and stock enclosure towards Babraham Research Campus (arrowed) to show how the buildings are absorbed into a backdrop of woodland and below the skyline**

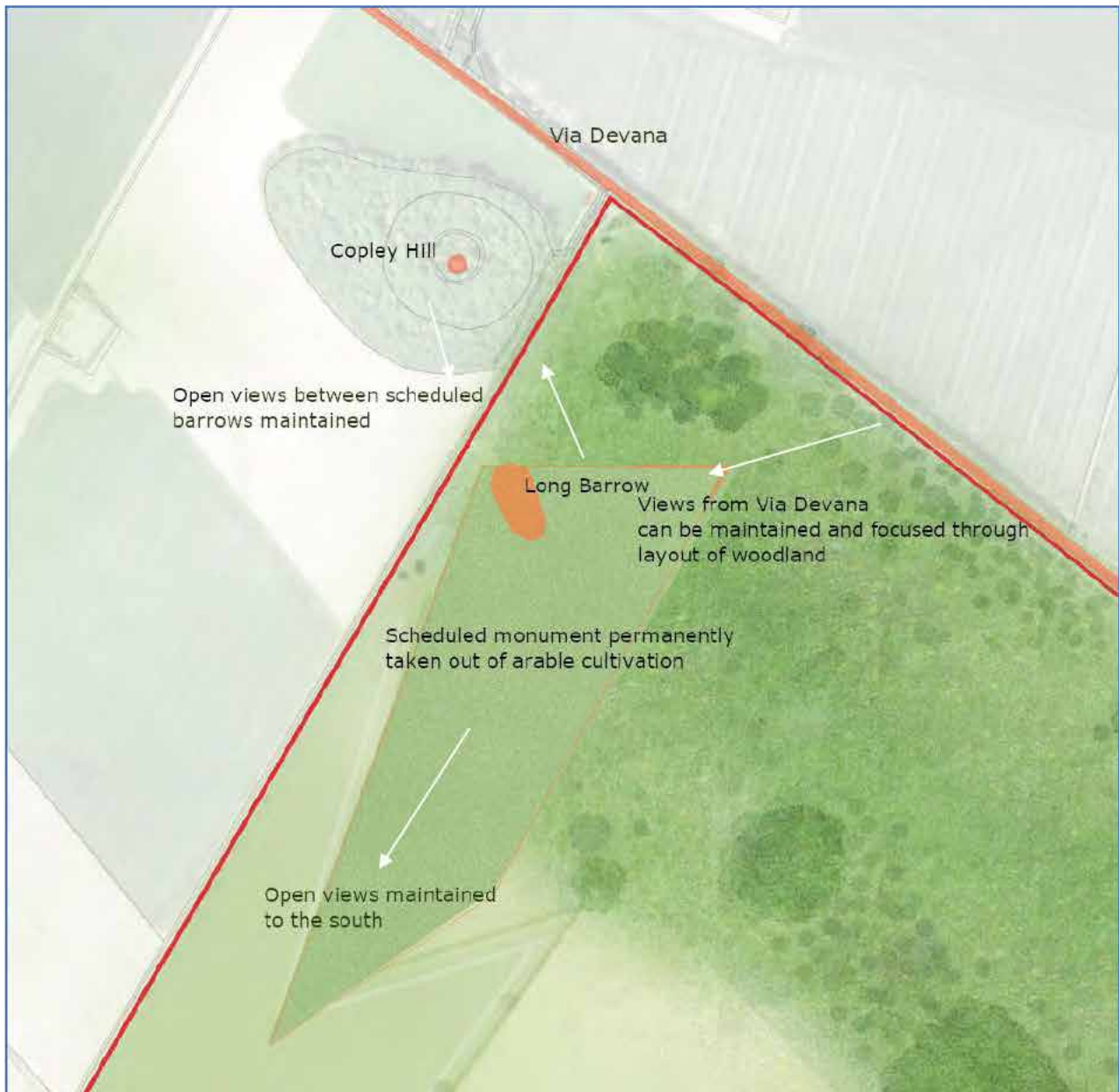
A second strand of the monument's setting is the relationship with Copley Hill scheduled monument to the north west. Copley Hill (see below) is a later barrow of Bronze Age date atop a prominent chalk knoll. The long barrow would have been visible from Copley Hill, at a distance of approximately 350m, and is therefore part of a setting of prehistoric funereal monuments in the broader landscape.



**Figure 11 Looking south east from the base of Copley Hill towards scheduled long barrow (arrowed) and stock enclosure with Megs Hill Wood behind**

This open view (although currently obscured by woodland on Copley Hill) will be maintained in the proposed development.

The proposals will not only maintain the current setting of the monument, but through permanent protection of the below-ground remains, the long-term benefits to archaeology are assured (**Figure 12**).



**Figure 12 Proposals for management of the scheduled monument and preservation of buried remains and setting**



### Copley Hill

The monument includes a bowl barrow situated on top of a natural chalk knoll. The monument lies on private land. There are currently no views to or from the monument due to mature woodland. In the absence of the woodland, long-distance views may be possible of the proposed research and development zone, to the west of the existing Babraham Research Campus, depending upon the height of buildings. But at a distance of 1.3km, and with the development set down within the landscape, this would have no effect upon the significance of this heritage asset.

The key view to the south east towards the site of the scheduled long barrow and stock enclosure will be maintained and the land that currently forms the setting of the monument will be unaltered.

### Worstead Street (*Via Devana*)

A stretch of the Roman road known as *Via Devana* borders the northern boundary of the PDA with longer distance views predominantly to the north at this location. It runs below the ridge that the long barrow sits on. This scheduled section runs for about 7km.

From some parts of the *Via Devana* there would have been views south across the long barrow when it was an earthwork, at a distance of about 300m, with the barrow slightly proud above the skyline. Due to topography, there are no views of the proposed built development areas (Figures 13 and 14).



**Figure 13** Looking south from the *Via Devana* towards scheduled long barrow (arrowed)



**Figure 14** Looking south east from the *Via Devana* near Copley Hill towards scheduled long barrow (arrowed) with Megs Hill Wood behind



***Step 3: assess the effects of the proposed development, whether beneficial or harmful, on that significance***

There will be no adverse effects upon the setting of scheduled monuments, or their significance, as a result of the proposed development due to a combination of distance, topography and woodland.

***Step 4: explore the way to maximise enhancement and avoid or minimise harm;***

These have been incorporated into the broad-brush masterplan and can be refined at the detailed application stage, for example to enhance and focus specific views, incorporate a heritage trail and provide interpretation facilities.

***Step 5: make and document the decision and monitor outcomes.***

A further assessment of setting would be included at the detailed design stage, but based upon the proposed masterplan there would be no adverse effects upon the setting of scheduled monuments.

## 4. Response to LPA Site Assessment

The LPA Site Assessment identified significant constraints to the development of the site. As has been demonstrated above, these constraints would not only be incorporated into the scheme, but can be managed in a way that will enhance and protect nationally important archaeology. A summary of this is presented below, **Table 3**.

**Table 3 Response to LPA Site Assessment**

Subject Area	LPA Score	LPA Comment	Response
<b>Historic Environment</b> <ul style="list-style-type: none"> <li>• Scheduled Monument on site</li> <li>• Bowl barrow (Copley Hill) and Roman road setting</li> </ul>	Amber	Development on some parts of this site would cause higher level harm which would be difficult or impossible to mitigate: the long barrow, setting of the bowl barrow and the Roman Road	<p>The LPA assessment assumes that the impact upon the scheduled sites must be negative, either in physical terms or in relation to its setting, and that it would be <i>'difficult or impossible to mitigate'</i></p> <p>The monuments would be significant distances from the proposed edge of built development. Topography and woodland also prevent views, and all development will be to the south of the A1307, that creates a physical separation in the landscape.</p>
<b>Archaeology</b>	Red	Impact on nationally important archaeology. Numerous sites of prehistoric date recorded within and in close proximity. Area includes a Scheduled Long Barrow and associated enclosure.	<p>Distances from nearest built development (R&amp;D area) would be to:</p> <ul style="list-style-type: none"> <li>•Long barrow 1.1km and enclosure 545m</li> <li>•Copley Hill bowl barrow: 1.30km</li> <li>•Roman road: 1.5km</li> </ul> <p>The proposal to retain agricultural land as a buffer to the built edge on land to the north of the A1307 maintains the current setting. Further, the intention to remove the scheduled long barrow permanently out of cultivation is a significant benefit.</p> <p>The proposed woodland on the northern edge of the PDA has been designed so as to avoid the scheduled long barrow and enclosure, retain a sense of openness around the monument, and to maintain views southwards and between the scheduled barrows and Roman road.</p> <p>An archaeology and heritage trail is proposed that would link sites and would include interpretation panels at key points.</p>

## 5. Conclusion

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The PDA lies within an area of high archaeological interest and potential. This was recognised at the outset of the project and was a key driver in the layout of the masterplan.

The vast majority of the PDA is under arable cultivation and will have experienced truncation of archaeology where soils are not deep. That which survives will be represented by cut features such as ditches and pits, and this is reflected in the HER by cropmarks.

Even at this outline stage, the broad-brush masterplan has taken known constraints into account and has been designed to:

- Protect the setting of scheduled monuments
- Protect the scheduled long barrow and stock enclosure by taking the land within its boundary permanently out of arable cultivation
- Preserve in situ a possible Roman marching camp or fort identified as part of this assessment
- Allow flexibility in the layout so that should significant archaeology be identified during field-based evaluation (that would be required prior to a planning application), it can be preserved *in situ* through detailed design.

The proposed development is in accordance with Policy NH/14 of The South Cambridgeshire Local Plan 2018 in relation to archaeology, and contrary to findings of the LPA site assessment. The proposed scheme has identified significant archaeological assets and incorporated them into the development in a sustainable way, as well as recognising the potential for currently undiscovered archaeology and proposing a way to assess that their presence and significance in the planning process.

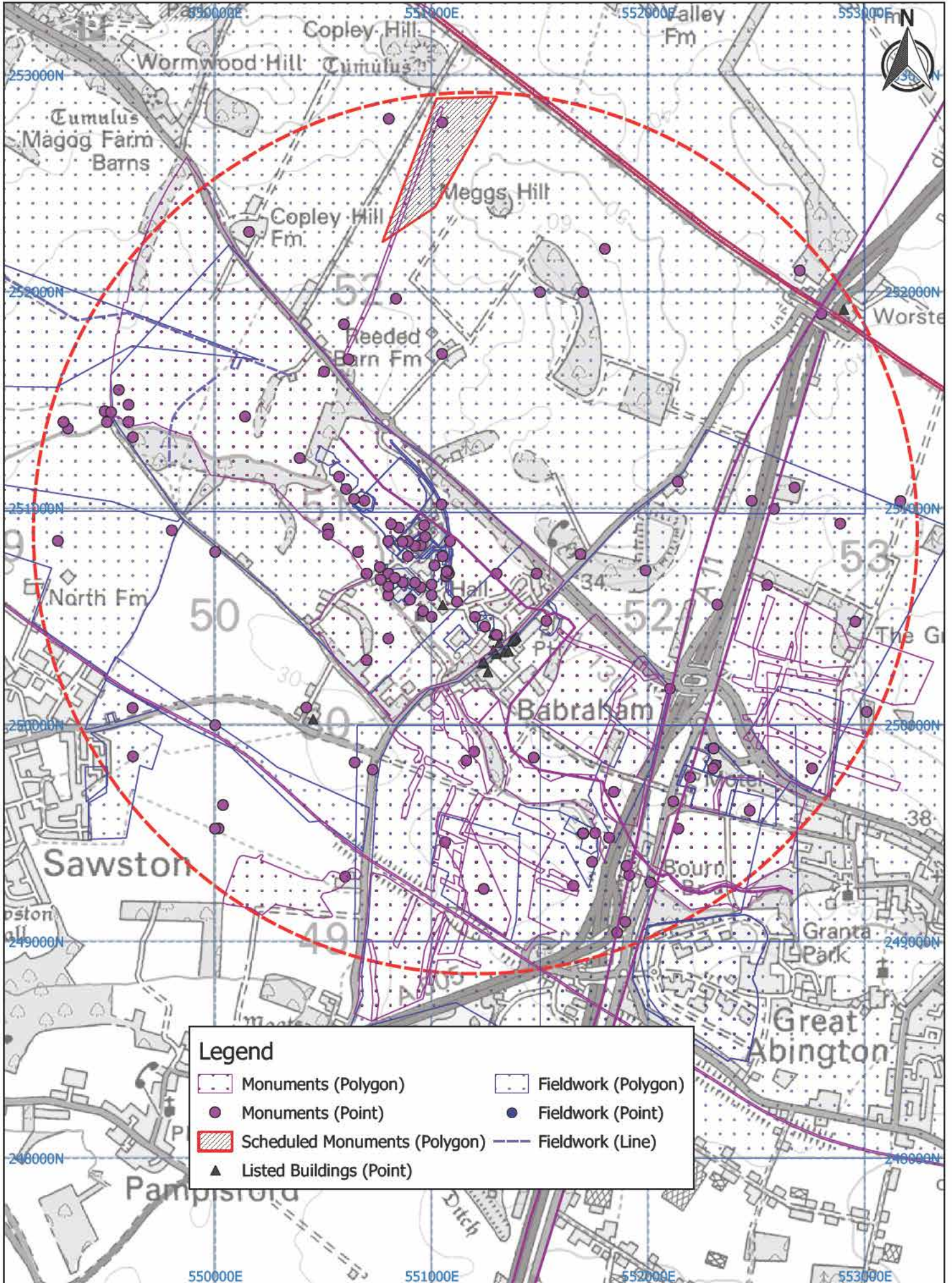
On the basis of currently available information there are no over-riding constraints to the allocation of this land for development.

## Appendix A








# Cambridgeshire Historic Environment Maps

(Reproduced with kind permission of CCC and © as shown)

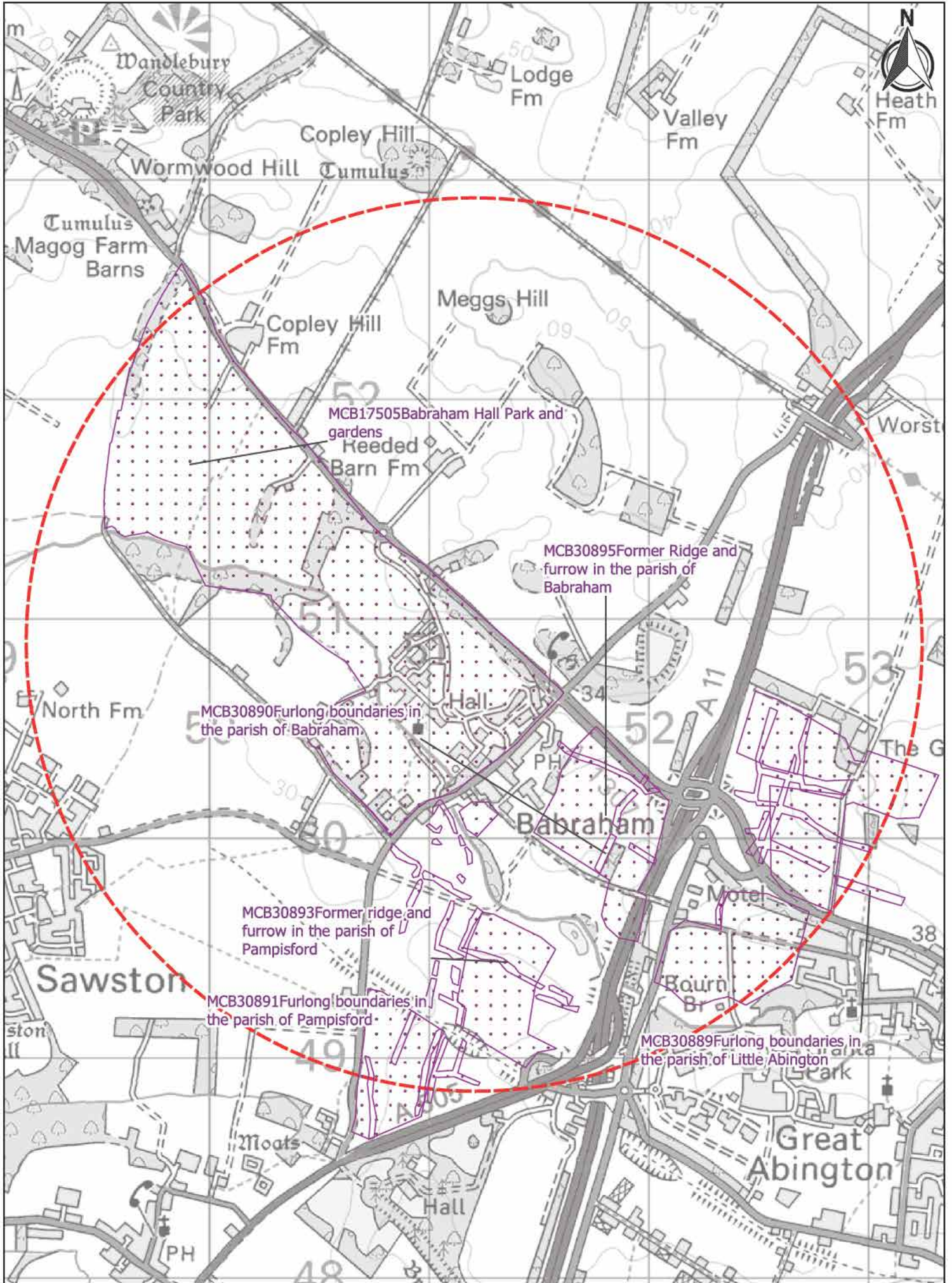




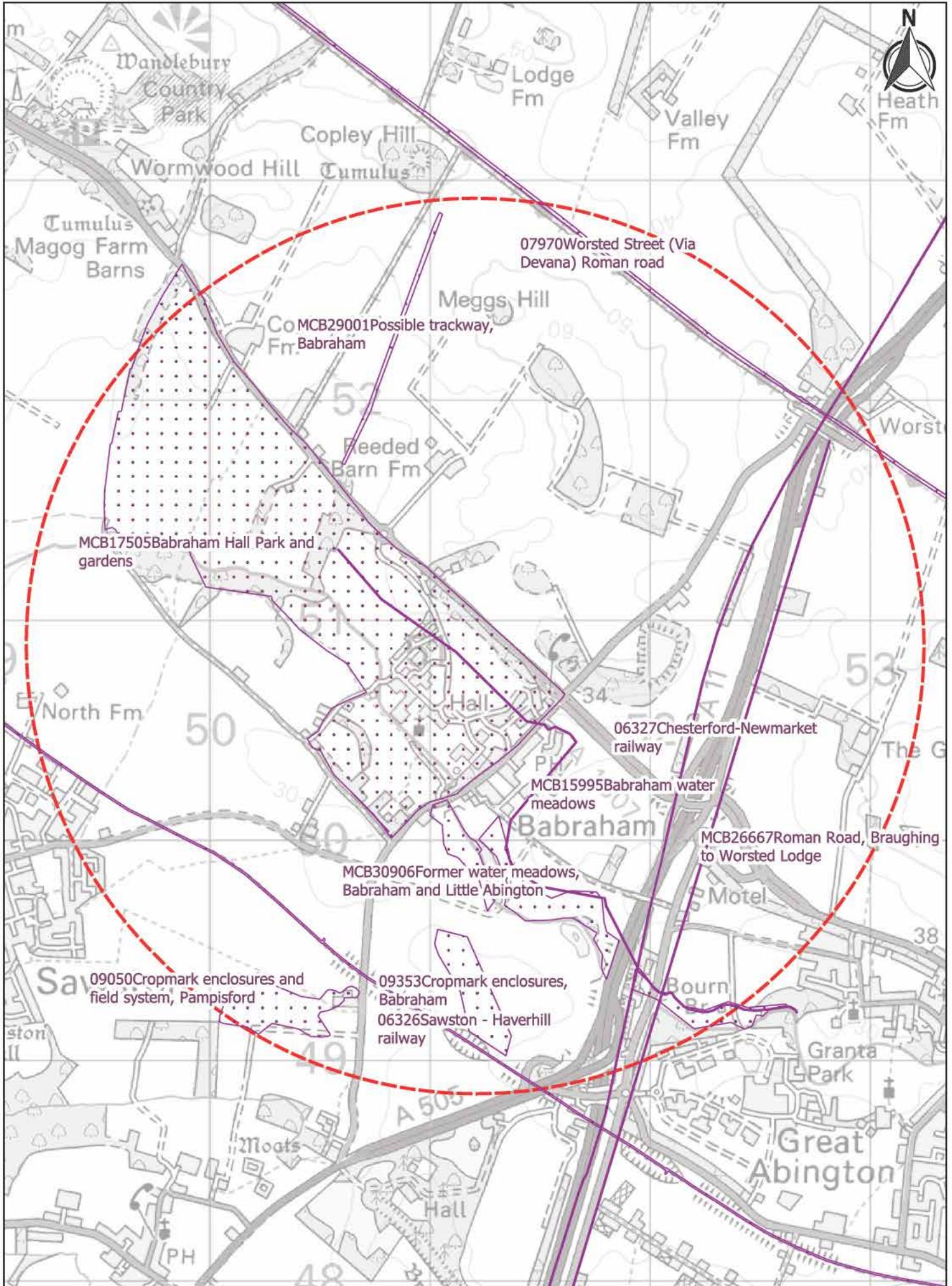
**Legend**

 Monuments (Polygon)	 Fieldwork (Polygon)
 Monuments (Point)	 Fieldwork (Point)
 Scheduled Monuments (Polygon)	 Fieldwork (Line)
 Listed Buildings (Point)	

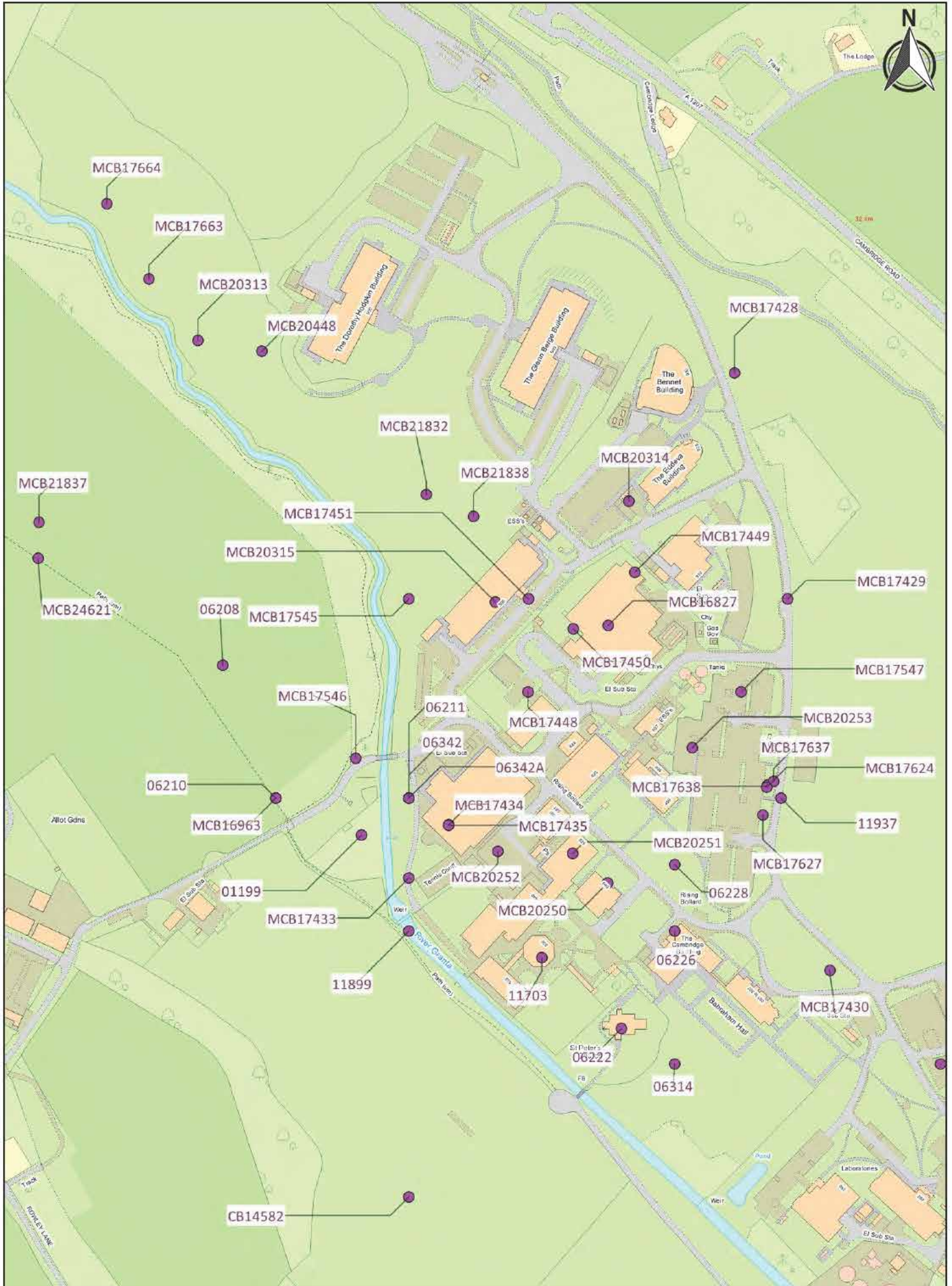


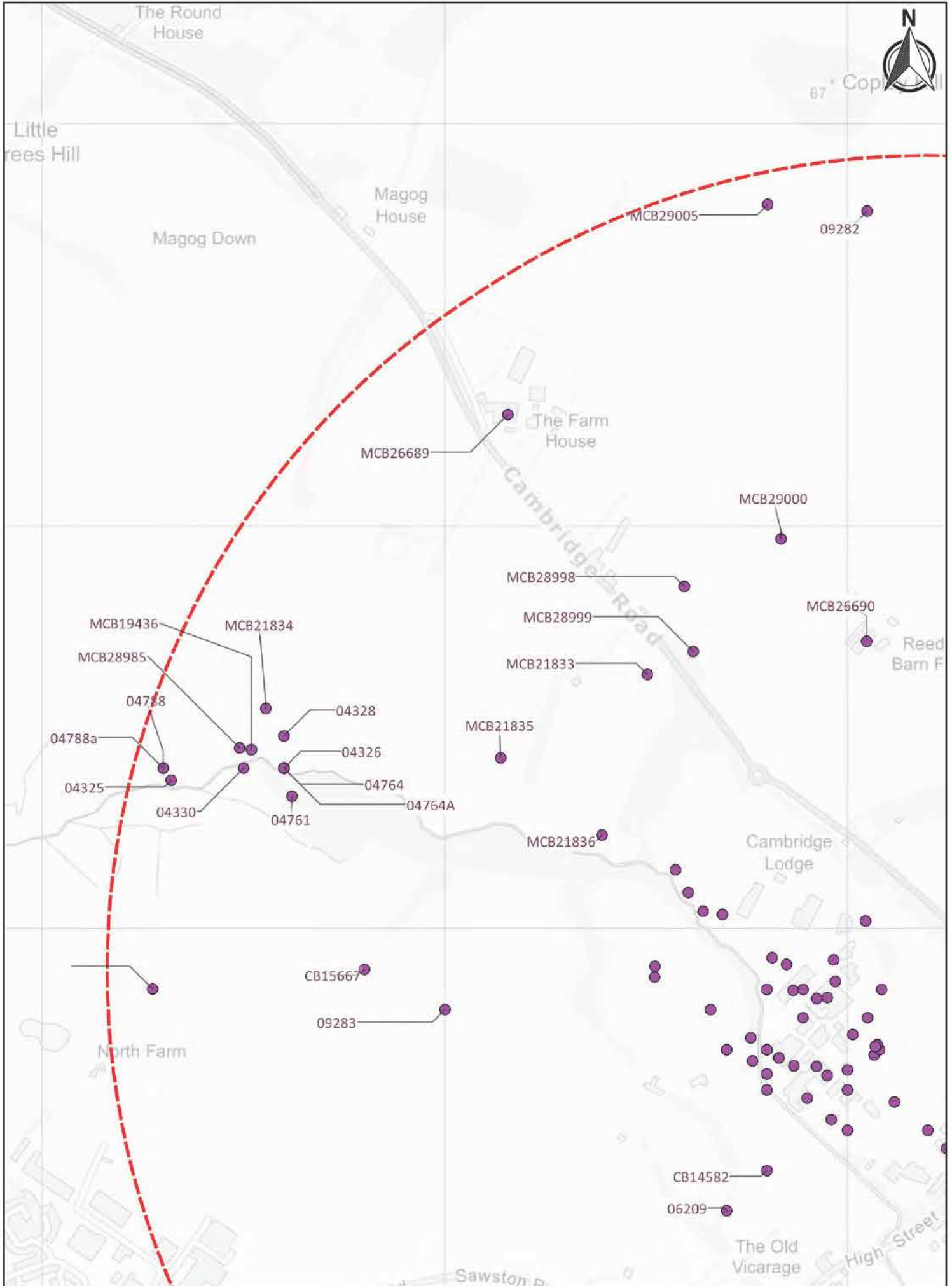




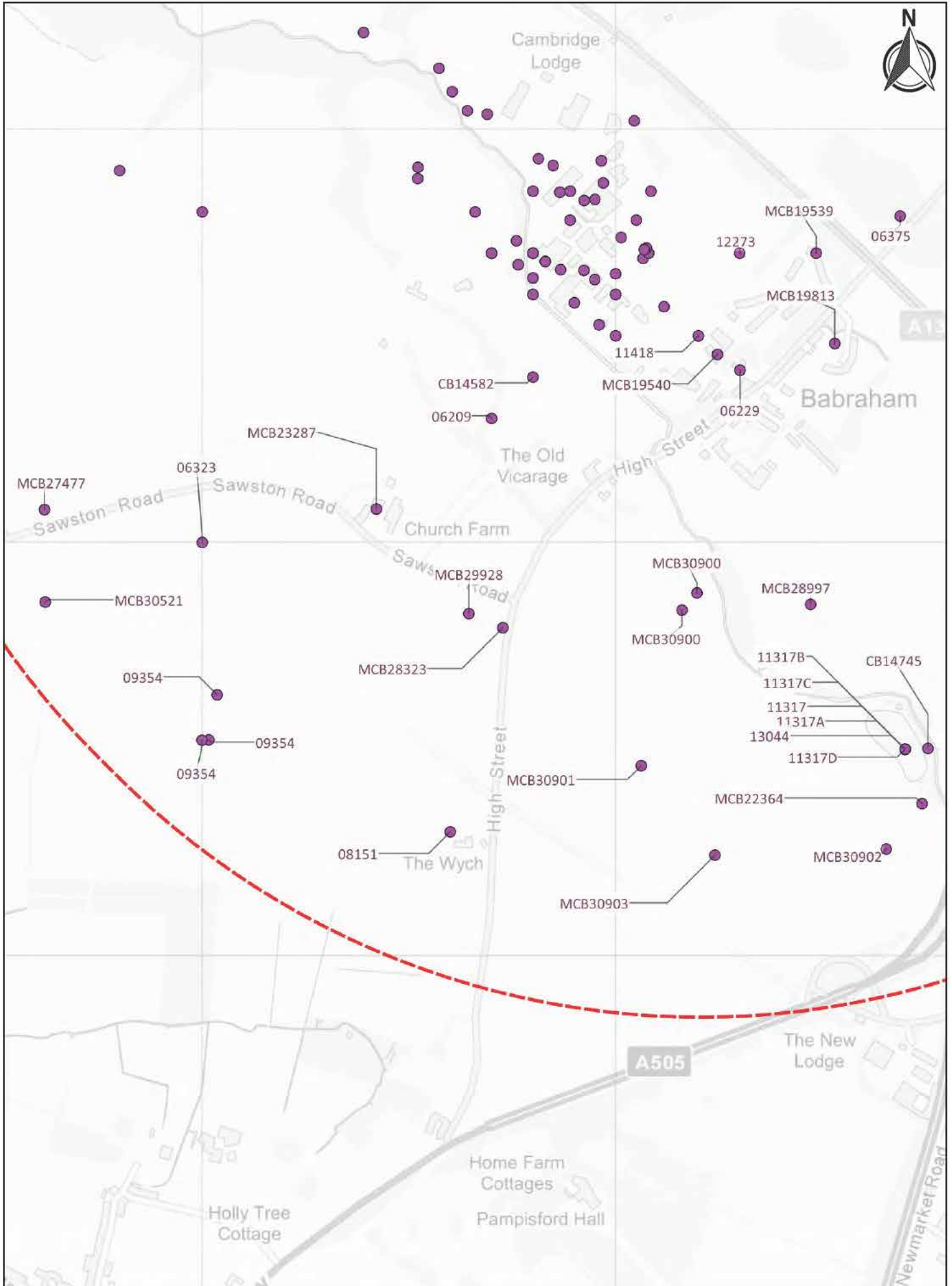




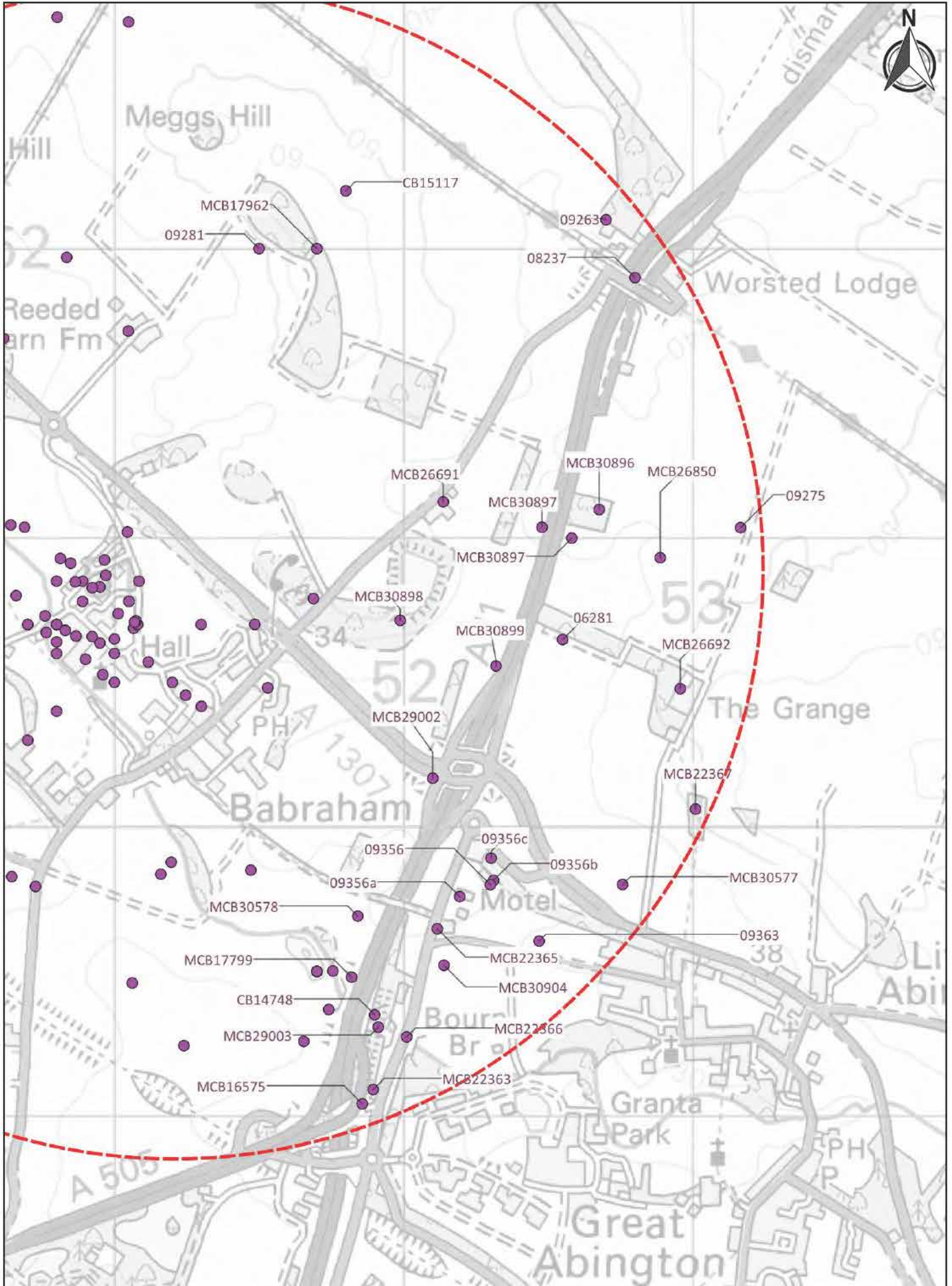




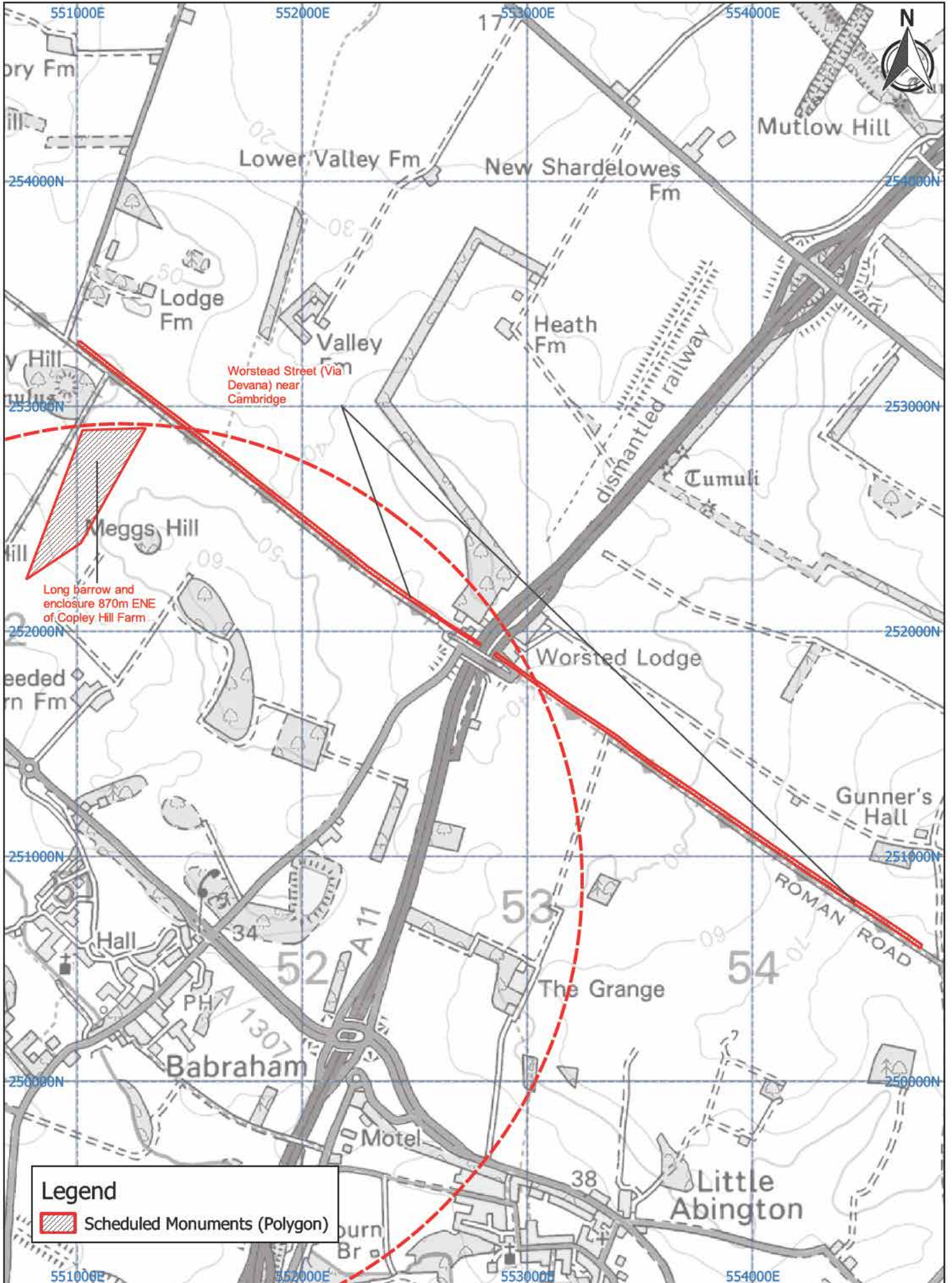


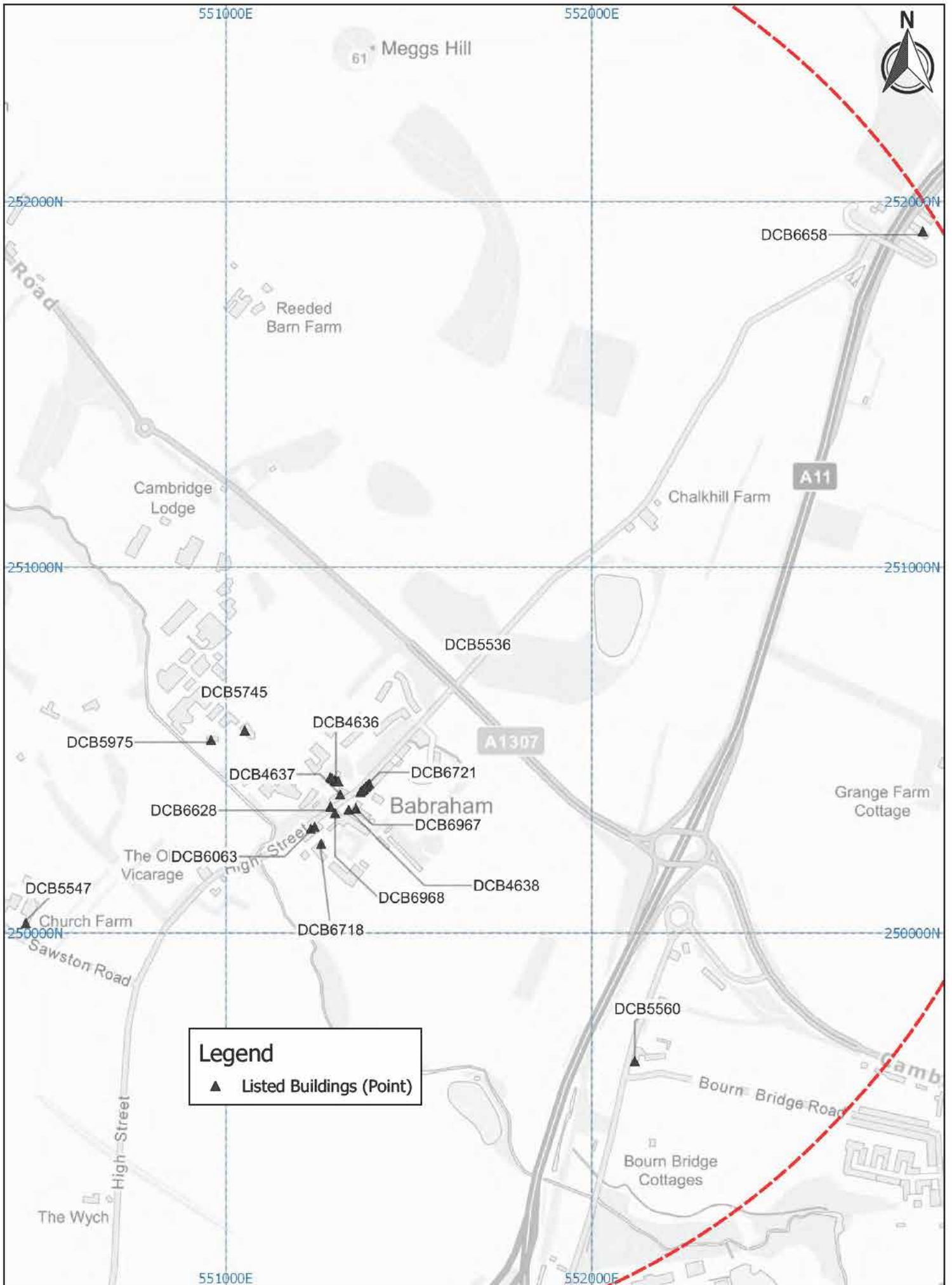




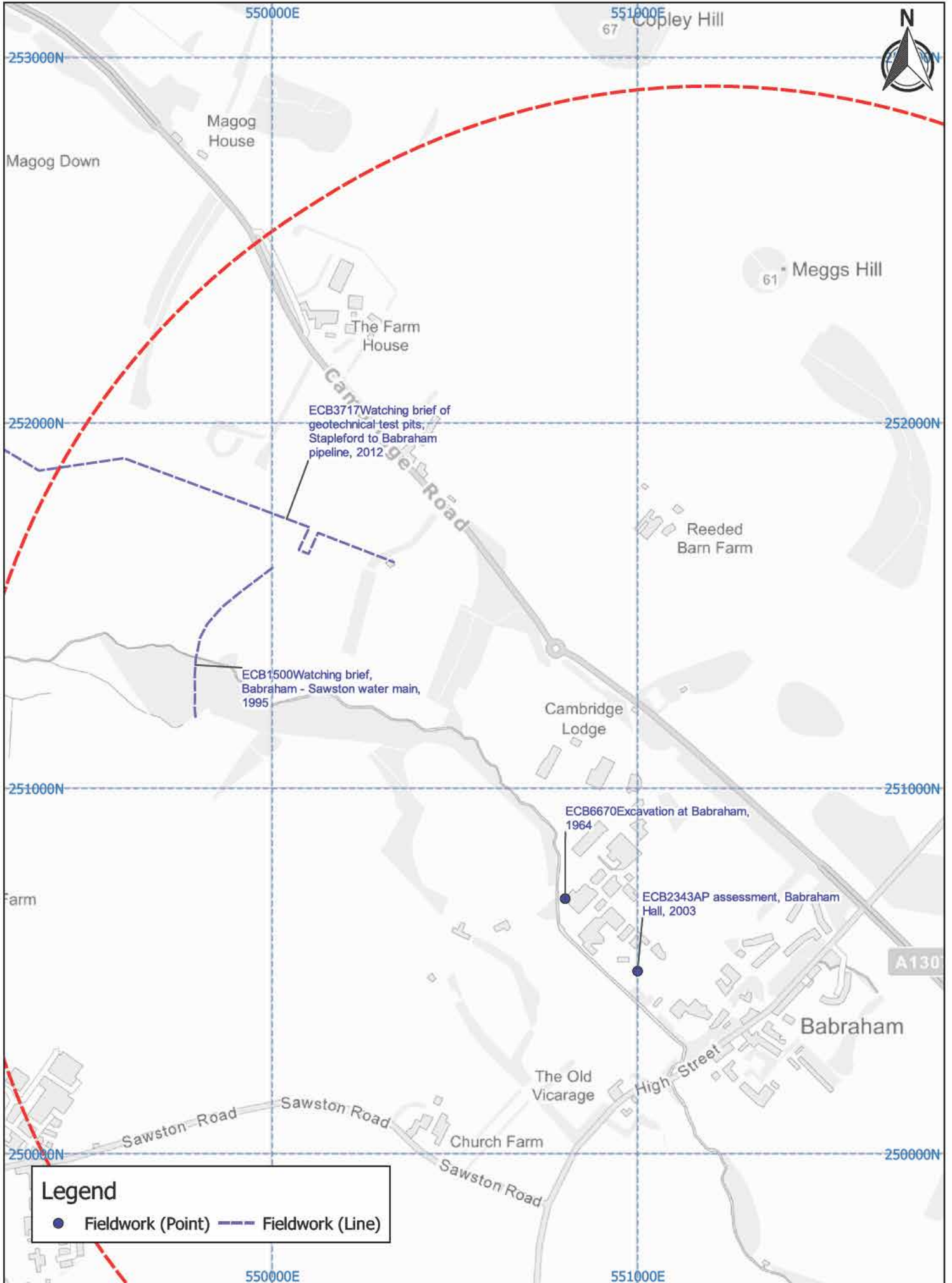








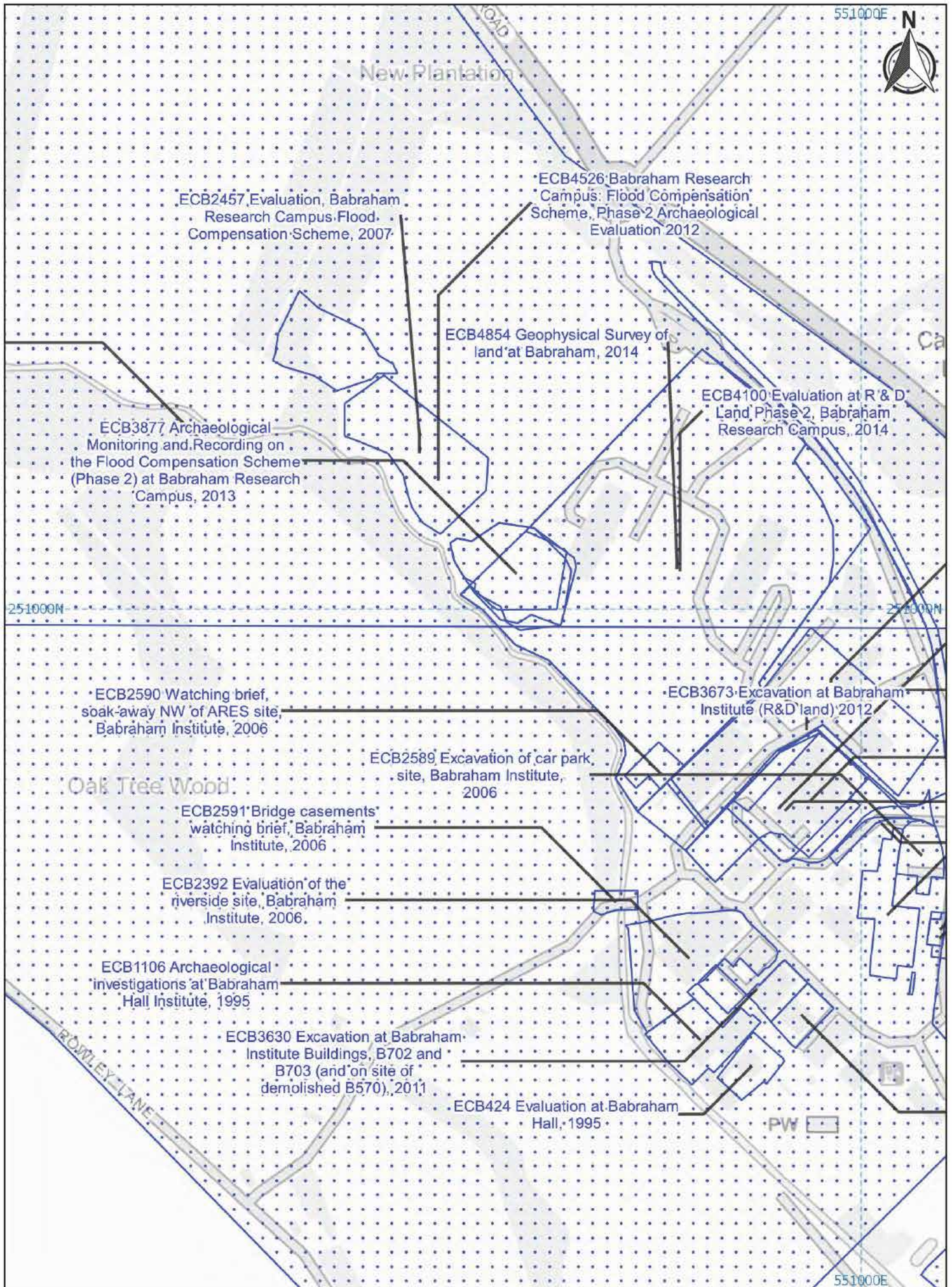




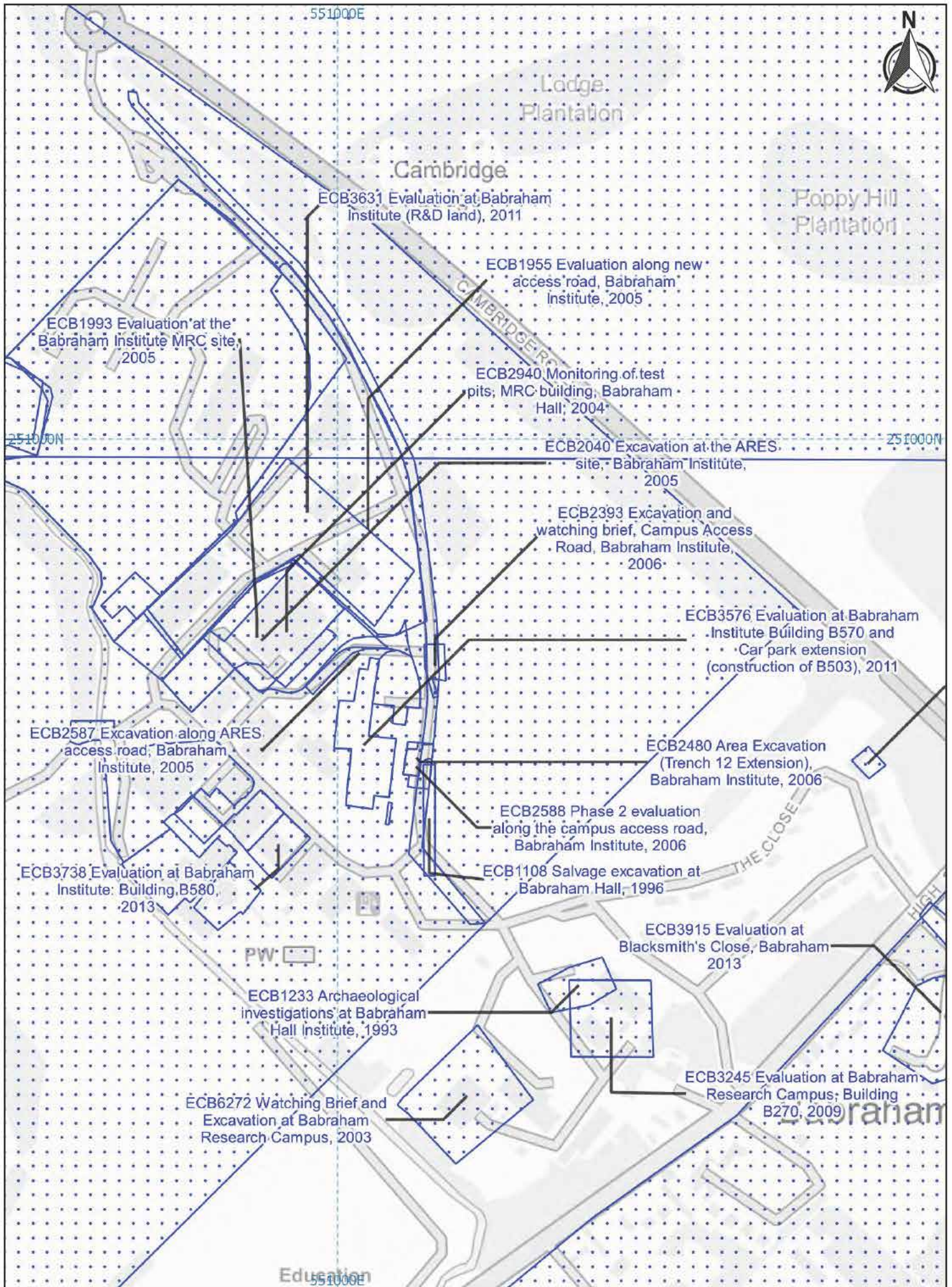
### Legend

- Fieldwork (Point)
- Fieldwork (Line)

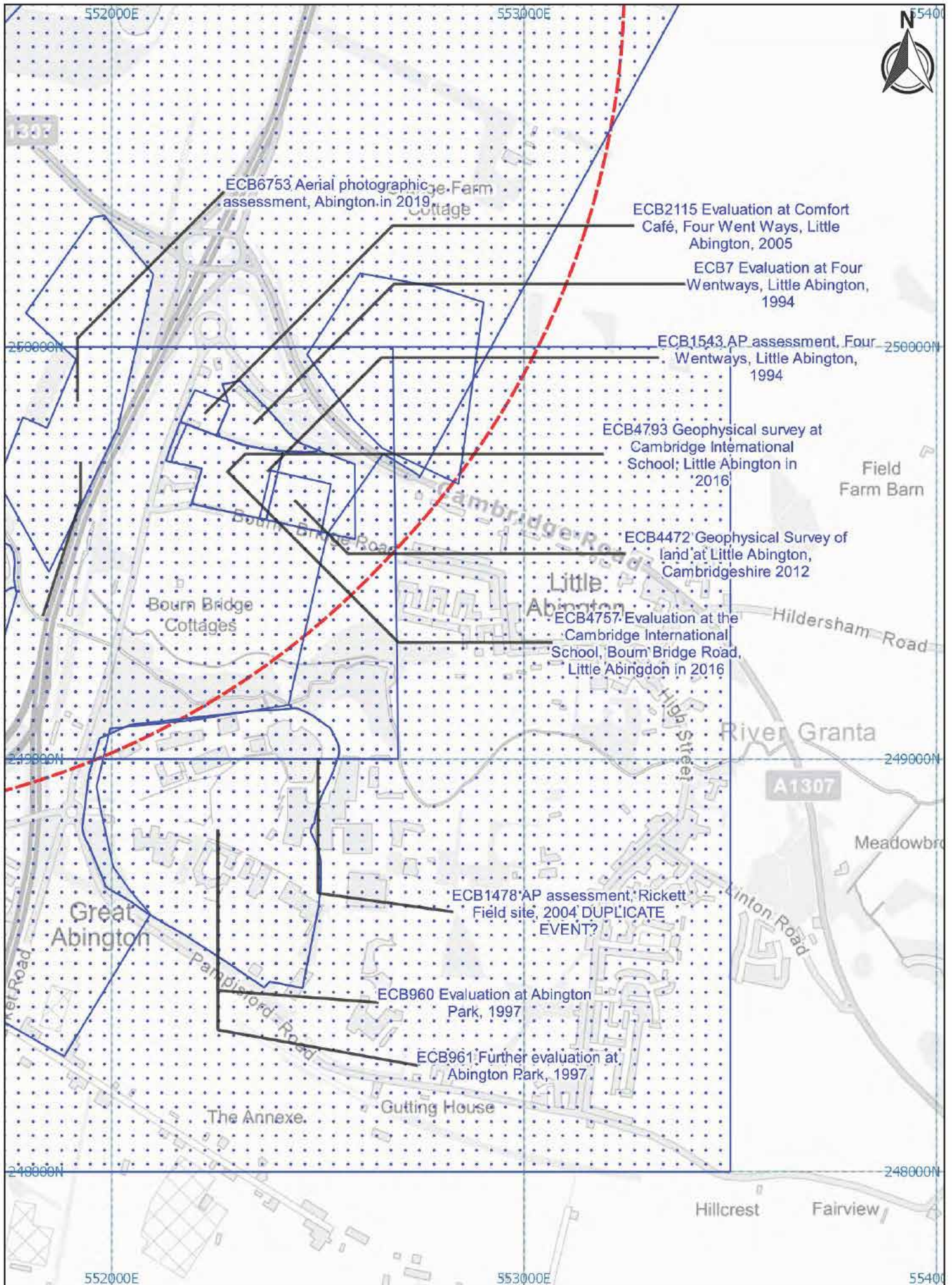




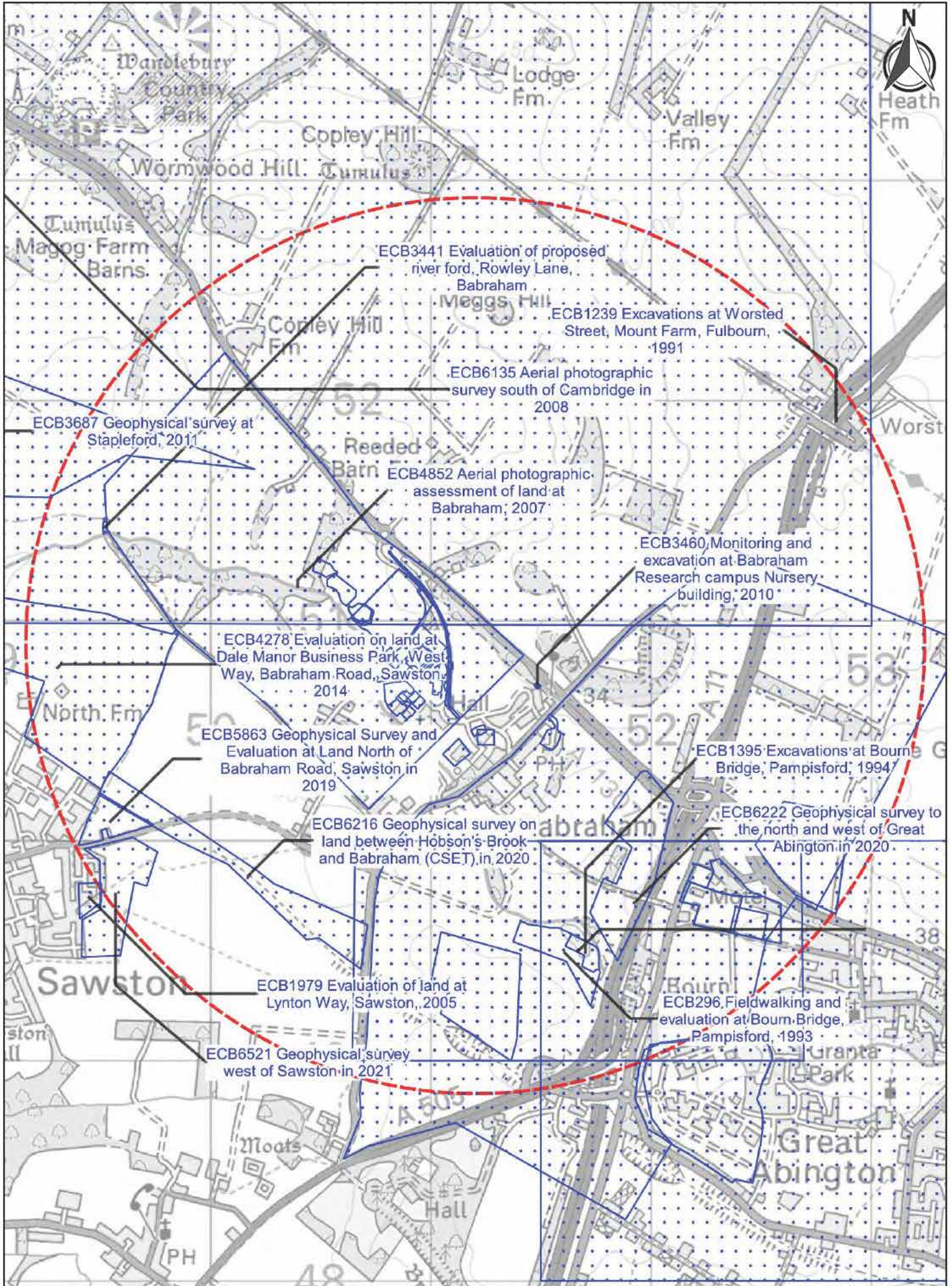
















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