PROJECT CASTLE
CLAVERING, ESSEX
GEOPHYSICAL AND EARTHWORK SURVEYS

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Note: selected notes from report, diagrams omitted.

INTRODUCTION

This report describes the results of geophysical and earthwork surveys carried out at Clavering Castle and its immediate environs. Clavering is located in north-west Essex, near the head of the River Stort. The castle comprises a central moated platform with associated earthworks and substantial earthworks in the surrounding fields. The majority of the site is a Scheduled Monument (SAM No 20676).

RESULTS

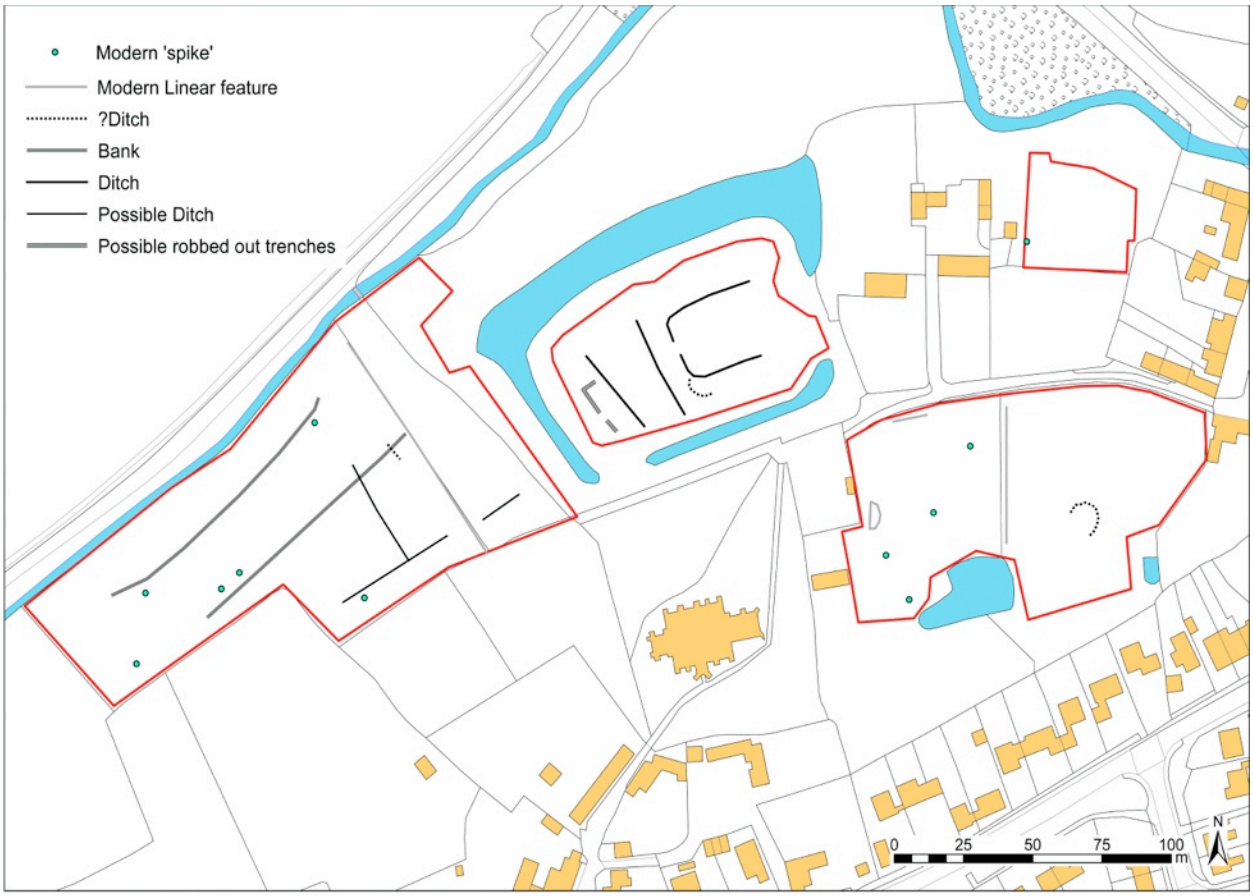

Figure 4 - Interpretation of the features detected by the geophysics in the four survey areas

Results: Castle Platform

The main castle platform is situated within a bend of the course of the River Stort, on the valley side, which slopes from the south down to the river. The roughly rectangular platform is c.85m by 50m (from the top edge of the moat), an enclosed area of 0.42 hectares. It is, in general, relatively flat, at around 90- 90.5mOD, the highest points situated in the eastern half of the platform. Around the interior edges of the platform there are traces of slight banking, particularly noticeable in the southeast corner, adjacent to the modern entrance. The platform is probably at least partially artificial, with up-cast from the excavation of the moat used to raise the ground level. This area is part of the Scheduled Monument and is completely enclosed by sizable earthworks, some of which are water filled. The area is currently under grass and is used for rough grazing of horses and it is known that it was used as an orchard in the past.

The northern arm of the moat was water-filled at the time of survey. It is slightly curving and 25-27m wide (top of slope to top of slope), the southern edge defined by the slope up to the top of the platform and the northern edge by a c.15m wide retaining/counterscarp bank. A short length of channel is visible, presumably the site of a sluice, and it cuts through the bank, linking to the moat. In the north east corner of the moat there is a further channel leading to the river. The eastern moat arm is now partially infilled, providing access to the platform. The platform edge in this area appears stepped, possibly the result of excavation of material for the infilling. This may perhaps have been the location of the original entrance to the platform (Historic England SAM description).

The southern arm of the moat, which was relatively dry at the time of survey, is around 4m deep and 17m wide and relatively steep sided. Beyond the moat lies the churchyard, where the ground rises from around 90m on the edge of the moat to 91.68m by the church. The western arm of the moat is also excavated to a depth of around 4m from the edge of the platform and is overlooked on the west by a platform in Dam Meadow, situated at *c*. 91.3m OD.

There are three main groups of earthworks on the castle platform; a group of linear banks and dips at the western end, a linear dip with associated banking crossing the centre of the platform and a rectangular feature in the north-east corner.

An area of 25m by 15m comprises linear dips, forming three sides of a rectangle. Inside this is an area of banking, two linear banks along the shorter arms and a less pronounced area between these. These linear banks rise to a height of between c 90.2m and 90.45m OD, with the base of the dips at around 80.8m to 90mOD. Further banking, with less distinct edges, is also present around the outer edges of the dips to the north and west. Against the southern arm is a further bank with more distinct edges, and a flat top.

The castle platform was the first area to be subject to geophysical survey as part of the project and consisting of only two complete grids but nine partial grids. It was expected that the gradiometer survey would, in part, detect some of the features described above. The results from the geophysical survey certainly do not indicate any building material or rubble present within

the area, nor is there any indication of a hearth. Several anomalies have been detected; of particular interest is a linear anomaly that appears to form an enclosure on the east side of the castle platform, 25m across. This possible feature essentially surrounds the area of the castle platform that is much flatter, with no earthworks visible on the ground or as part of the topographic survey. While it is unclear what this feature is, it does seem likely that this anomaly is of an archaeological origin. No further features or anomalies were detected within this area, giving no clue as to its use or origins. The geophysical survey has also detected the earthwork features at A, although not clearly enough to aid their interpretation, but there is no evidence for rubble or building material in the vicinity.

It would seem most likely that these earthworks represent the remains of a structure. Given that it is the hollows which have the clearest edges and the absence of any indications of structural remains in the geophysical survey it would seem reasonable to suggest that these features are robber trenches, where foundation/structural materials have been removed, possibly for re-use elsewhere. The banking could be the remains of up-cast from such excavations. Alternatively, the banking itself could perhaps be the location of buried structural remains, although this seems less likely given the geophysical results, although this features was not surveyed using the magnetometer due to the vegetation cover.

Other earthworks on the western half of the platform comprise a scrub filled hollow, *c*.15m by 10m, *c.*0.35mm deep, with a slight bank around its northern edge. There are also areas of slight banking around the top edge of the moat cut, particularly in the north-west corner.

Immediately to the east of complex **A** is a slight linear dip, *c.* 0.15m deep. The western side of the feature is defined by the banks of complex **A** and the western edge by a slight rise in the ground level. The location of this dip would appear to coincide with the position of a linear anomaly, detected by the geophysical survey which is *c.* 2m wide and is represented by negative responses.

Linear feature **B** runs across the platform, orientated north-northwest to south-south-west. For the majority of its length this feature is very shallow, the height difference between this and its surroundings only being between 0.15-0.2m. At the northern end of this feature are a further complex of irregular banks and dips. At the southern end it widens out, becoming indistinguishable from the surrounding ground-surface.

This second possible linear feature has also been identified on the geophysics, although is less clear than some other anomalies, as it has poorer contrast to the surrounding area. As the feature is very shallow on the topographic survey and become increasingly indistinguishable on the surface, it is not surprising that the contrast between the feature and surrounding area is difficult to identify on the geophysics. It is possible that rather than a ditch, the geophysical survey is detecting a change in the level (and therefore a change in the magnetic contrast), as this anomaly appears to correspond with the edge of the feature.

In the north east corner of the site earthwork **C** comprises a rectangular feature, 22m by 10m, comprising a narrow, shallow gully. This could perhaps be a drip gully. There is very slight banking both internally and around the outer edges. These earthworks are thought to be the site of a barn, or similar building. This building is likely to predate the late 19th century as no structure is shown on either 6" or 25" historic Ordnance Survey mapping. It should also be noted that it is also not shown on a 1783 map (Estate Map T/M 220/1, ERO). The geophysics survey did not completely cover the area of this rectangular earthwork, but the edge of this earthwork abuts the apparent enclosure ditches discussed above, although the ditch of the enclosure does appear to continue passed the end of the earthwork feature.

Results: Dam Meadow and earthworks to the north of the platform

Dam Meadow is located to the west of the castle platform and there is a further field to the east which, for the purposes of this report is referred to as Dam Meadow East. These fields are the site of a number of earthworks; a platform adjacent to the western arm of the moat, a large pond / channel, a channel into the moat, an embanked channel running along the northern arm of the moat, banks. Plans and height data in Dam Meadow East have been derived from a number of sources, such as the Ordnance Survey and Environment Agency.

Dam Meadow is currently accessed by public footpath via a kissing gate in the southeast corner of the field. This leads onto a flat-topped platform, the top of which is at *c.* 91.2m to 91.6m OD (around 1.5m higher than the castle platform, which it overlooks), situated on the edge of the western arm of the moat. The edges of the platform are irregular in layout, and drop steeply down to the main field (at *c.* 89-90m OD). It is likely to be built up-cast from the excavation of the moat. The purpose of this earthwork remains elusive. There is a second bank to the south of this, projecting out into the pond/channel.

The geophysical survey of the Dam Meadow completed seventeen full grids and eleven partial grids, covering an area of approximately 1.2 hectares. The main constraints on this survey area were the extensive earthworks (see topographic results in section 8.2.6), which, on occasion presented some problems for the surveyors due to the steepness of slope.

Several anomalies were detected within this area, both of an archaeological and modern nature. Of note is the course of the modern fence line that runs north-east – south-west across the survey area. The fence is a combination of wooden posts and metal and has been detected right along its course, but because there was only a limited amount of metal it has not caused much interference and allowed the survey to be conducted in proximity to its course. One grid completed as part of this area, located next to the fence line has a problem with the collected data. There could be a number of reasons for this including a poorly balanced instrument or the surveyor not removing metallic items before carrying out the survey of the grid. Unfortunately it is not possible to correct the errors in this grid, particularly as it is not known what the cause was.

Other non-archaeological anomalies are the linear grid edges than run along the course of the greyscale plot south-west.

The main feature in Dam Meadow is the large pond / channel. This feature runs for almost the entire length of the field, some 155m. It is defined to the north by an embankment (the crest of which is at *c.* 90m OD) beyond which is the current course of the river. The southern edge is defined by a sharp escarpment, beyond which the ground gradually rises from *c.* 89m OD to the boundary with the churchyard extension at *c.* 90-91m OD.

The Dam Meadow is defined by the earthworks that can be seen across the entire area and the topographic survey has accurately mapped these for the first time. The gradiometer survey has detected some of these earthworks, particularly those that form the main channel that runs towards the castle platform. Between these banks there are very few anomalies visible. It is suggested that this area probably was part of the pond/water management system and was water filled, therefore it is unlikely that there would have been many cut features to be detected on this survey, or if there were earlier features then it is likely that they are covered by sediment and would have been too deep for a gradiometer survey of this type to detect. The limited number of anomalies that are visible within this channel area are probably modern in origin e.g. fencing or agricultural debris and are shown as modern 'spikes'.

There are only a few anomalies that are considered to be possible archaeological features. Of particular interest are several linear anomalies in the south of the field. These anomalies are only faint and difficult to discern clearly, but it is thought that they are possibly ditches. The ditches may only be very shallow which reduces the magnetic contrast with the surrounding natural and makes the features difficult to identify with confidence. An excavation, approximately 20m to the south of the survey area, carried out prior to the extension to the church graveyard in 2000 located several ditch features (Clark and Murray 2000) that contained pottery from the 9th – 13th century, animal bone and a small amount of daub. These ditches were thought to represent property boundaries and may support an early date for the castle. The geophysics survey within the Dam meadow may well have located a continuation of these ditches and it does seem likely that the linear anomaly is a continuation of the ditch found in trench 2 of the excavation, as it is on roughly the same alignment with approximately a 10m gap between the two features. Also of importance is the depth of the excavated ditched features; the ditch in trench 2 was a maximum of 40cm deep (fairly shallow) which means that unless the fill is highly magnetic then its contrast will be minimal, and it seems likely that this is the case for the linear ditch features in the Dam Meadow. These linear features were not detected on the topographic survey.

The pond/channel in Dam Meadow is 30-35m wide, and the base relatively flat, gently sloping eastwards from 87.68m to 86m. At the eastern end of the feature the channel splits: with a narrow channel feeding into the moat and a wider channel feeding into a channel in Dam Meadow East. The latter runs between the retaining bank of the moat and a bank to the north which separates it from the modern course of the river. Approximately halfway along the main channel the retaining bank is cut by a channel feeding into the moat, beyond this there are two

banks running along the side of the moat, the northernmost of which curves around to partially dam the mouth of the channel, narrowing it to *c.* 10m.

These complex earthworks in Dam Meadow and Dam Meadow East would appear to be the remains of a complex water management system. The two main channels/ ponds may have been utilised as reservoirs and fish-ponds. The channels which feed into and out of the moat would presumably have been the site of sluices which could be opened or closed in order to manage the water level.

It has been suggested that the dam and the end of Dam Meadow East was the site of a watermill, however, this has not been confirmed through the current archaeological investigation. Some of the complex water management features could perhaps be associated with this use; the large channel/ponds providing a head of water which fed through the narrowed gap. Other channels could be used to control any overflow.

Results: Bury Meadow

Bury Meadow is situated to the south of the trackway which leads from Middle Street to the churchyard. The ground surface of the field generally slopes downwards from the rear of the properties on Pelham Road to the trackway. Thereare a number of features in the field, including a large pond. An area to the north of the pond was subject to topographical survey.

The earthworks in Bury Meadow are not as defined as those in the other survey areas. Along the southern edge of the survey area, a scarp was identified, it is possible that this scarp may be a natural feature.

Running roughly alongside the trackway is a well defined linear dip, a partially infilled ditch, with a slight bank on its southern side. This feature is likely to be the edge of an earlier route of a trackway. Running roughly perpendicular to this a very slight linear dip was identified during post-processing of the survey data. This feature could be the remains of an infilled field boundary.

Sixteen grids within Bury Meadow were subject to geophysical survey (ten complete and six partial), covering an area of approximately 0.78 hectares. The area is constrained by wooden and metal fences on all sides and there is a steep north-facing slope to the south of the field. Due to this slope it was felt that it would be problematic to survey in a grid and therefore the area behind the small pond would not be surveyed in the first instance, but would be considered for further work dependent on the initial results in the lower part of the field.

Bury Meadow. The magnetic survey of this field did not reveal any obvious archaeological features and did not detect the earthwork features that are visible. However, a small curvilinear anomaly is possibly just visible within the eastern side of the survey. While it is not clear if this low level anomaly is of archaeological origin, it is similar to a possible feature visible in the Dam

Meadow (see above), but was not detected on the topographic survey. Other features within this area include several ‘spikes’ in the data, which represent high positive readings probably caused by modern ferrous material.

Results: Bury Hills

Bury Hills comprises two fields (separated by a fence) between the trackway and the river, to the east of The Bury. The southernmost of the two fields is a former orchard and the northernmost field an area of rough grazing. The northern limit of the area is the River Stort. Both fields slope south-eastwards, with the degree of slope being greatest to the north of the fence line.

The surveyed earthworks in Bury Hills comprise two substantial linear banks, enclosing a marshy and partially water filled dip, with a further small bank. The two substantial banks are 25m and 15m long respectively, with the less substantial bank 13m long, and have no clear purpose.

A small part of the northernmost field was subject to geophysical survey, comprising one complete grid and three partial grids, covering an area of 0.134 hectares. The survey did not cover the substantial banks as the presence of a number of trees and water-filled hollows precluded effective survey. The results in the remainder of the field were very uniform with only one identifiable anomaly, located on the western edge of the grid. This anomaly is over 13m wide and extends beyond the fence line which delineated the edge of survey. The centre is strongly positive with readings over 1500 nT. While it is not known what this feature is there are a number of possibilities. Kilns do produce a similar response to this anomaly and can be comparable in size, however, there is no other evidence for kilns or other industrial activity in the area and it would perhaps not be expected on this type of site, so this seems unlikely. However, a modern bonfire/burning area could also produce a similar anomaly, although the proximity to the boundary and buildings might suggest this is not a suitable place for a bonfire.

DISCUSSION

The topographical and geophysical work at Clavering Castle aimed to use non-intrusive methods to better the understanding of the complex earthworks at the site.

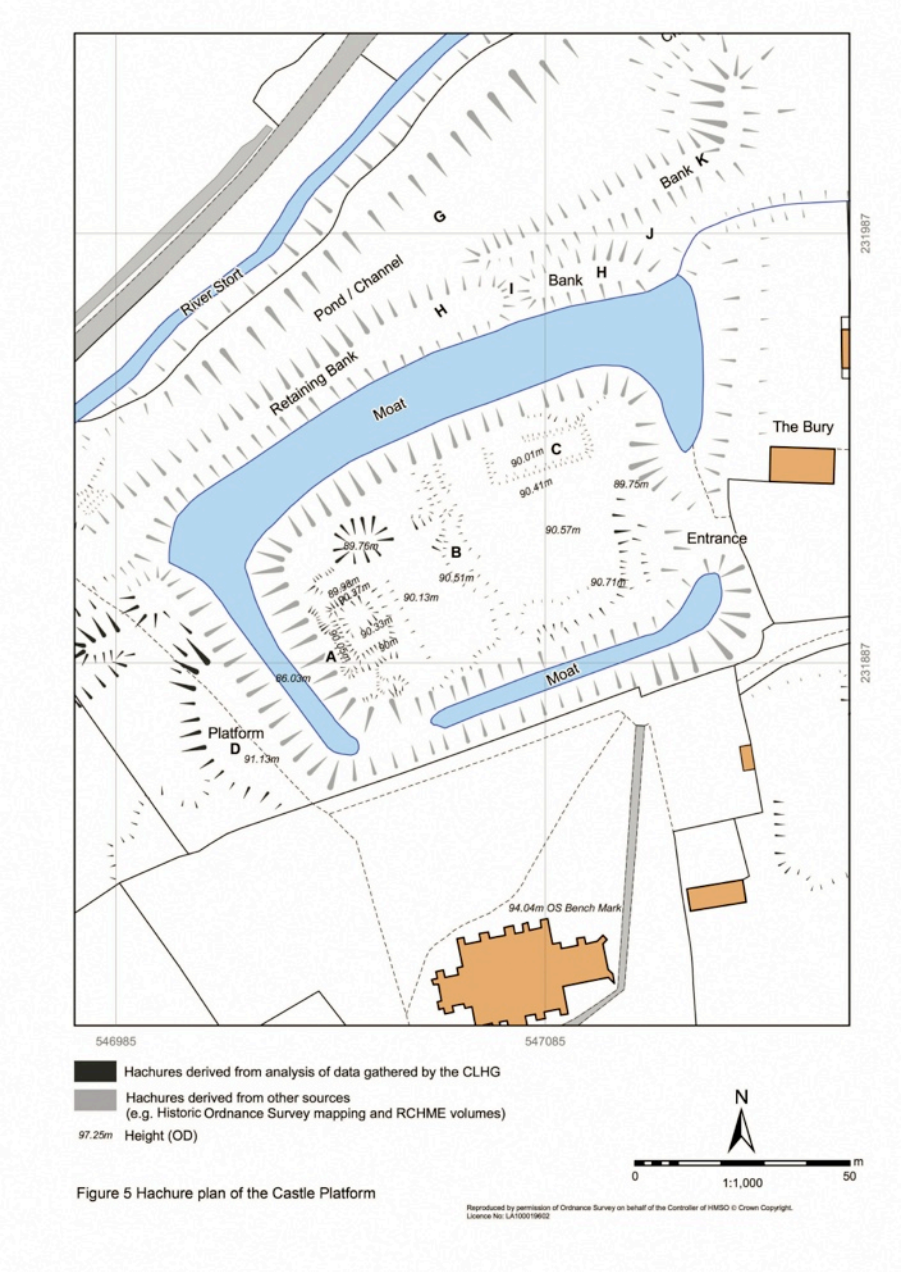

Figure 5 Hachure plan of the Castle Platform

The main Castle Platform, situated within a bend in the river, has numerous earthworks. These have been better defined by the surveys, but they cannot be dated through these techniques. The complexity suggests that they may represent different phases of activity.

The most interesting were the linear dips and banks situated at the western end of the platform. This has long been thought to be the site of structures, with the 1916 RCHME considering that "… the irregularity of the surface suggests the presence of foundations" (70). The surveys which have been

carried out would seem to support the interpretation that these are structural in origin. Interpretation of the topographical data would suggest that the banks are relatively ill defined, particularly in comparison with the dips. This, coupled with the absence of evidence of structural remains in the geophysical survey, would suggest that the dips represent robber trenches. It is difficult from the available data to provide an interpretation as to the type of structure that this may represent or its date. The clearest elements of the possible structure provide rough dimensions on 9m by 15m. The linear feature immediately to the east of the structure is likely to be an infilled ditch; it is however not possible to say whether this was in existence at the same time of the structure.

The partially infilled ditch can be identified on both the topographic and geophysical surveys. This may perhaps have divided the platform into two areas with different uses, or perhaps have been defensive.

The second building on the platform is 22m by 10m and, although visible on the ground, was not picked up by the geophysics. This would perhaps suggest that it was insubstantial and that it was of timber construction. The structure may pre-date 1783.

The surveys have not established the location of the original entrance onto the platform; this may have been in the same position as that of the present entrance, which would align it with the easternmost section of the track to The Bury. It could alternatively have been from the platform in Dam Meadow. This platform appears to have been raised above the height of the rest of the field to approximately the same height as the main platform. This interpretation remains unconfirmed, and no structures were identified in this area during the geophysical survey.

On the southern side of Dam Meadow linear anomalies are likely to be medieval boundary ditches. Similar features may have been present in Bury Meadow although only a single ditch line was picked up through the topographic survey

In Dam Meadow the most dramatic features, the banks defining channel were picked up by both surveys. Topographic survey did pick up some irregularities in height within the channel, but these could not be defined as features and no anomalies were detected in the area during the geophysical survey. This would suggest that either there were never features in this water-filled channel or that they have been masked by later deposition of water borne material. The channel would appear to be part of a complex water management system, feeding in a channel to the north of the castle that is narrowed at its western end by the means of an embankment. The large channels could provide a head of water to power a mill (the presence of which remains unconfirmed) and/or a means of controlling water levels in the moat. There are a number of channels which link

these features to the moat, where presumably sluices could be positioned to control levels. They could also be utilised as fishponds.

The purpose of the earthworks in Bury Hill, remains elusive although the effective clearance work by CLHG has allowed accurate plans to be made. The banks, 13m, 15m and 25m long, but unfortunately the presence of large trees on the banks precluded geophysical survey and it is not possible to say whether there are any structural remains within them. A possible interpretation of these features as pillow mounds (earthworks which are part of rabbit warrens) cannot be confirmed at this time. These monument occur around the UK but " … At all times, sloping ground or well drained land seems to have been preferred" (English Heritage Monument Class Description) which would not seem to fit the low lying location of the Clavering examples.

The results of the surveys at Clavering have provided a useful range of results. They have:

- Better defined the earthworks in those areas surveyed
- Identified features on the main platform which have not previously been recorded
- Identified features which pre-date available historic map sources
- Identified field boundaries in Dam Meadow which can be linked to features which have previously been excavated in the cemetery
- Identified areas where there may be no features
- Highlighted the complementary nature of the two survey techniques.

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Note: space does not permit the reproduction of all the diagrams in this report, for further information please email chair@recordinguttlesfordhistory.org.uk