Geophysical Survey Report

Site to North East of Lochcraigs Farm, Stevenston, North Ayrshire

21/10/2015

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1 EXECUTIVE SUMMARY

1.1 A geophysical survey was undertaken in October 2015 to investigate potential buried archaeological remains within the footprint of the proposed development site at Site to North East of Lochcraigs Farm, Stevenston, North Ayrshire. A detailed magnetometer survey, at 1.0m by 0.1m and 0.15m intervals, was carried out over all suitable areas within the allocated survey boundary.

1.2 The geophysical survey has identified a number of potential anomalies indicative of buried archaeology. The northern field survey area identified anomalies associated with ploughing on the western side. A linear magnetic response, identified as a boundary ditch was located running NNE-SSW through the middle of the northern survey area into the middle field survey area. This feature seems to run towards the western boundary before turning to the east. The feature fragments, becoming more ambiguous towards the east. There is an area of archaeological potential within the boundary, but the features are tentative due to strong magnetic responses from the underlying geology. The eastern boundary of the middle survey area has indicated the presence of the 19th century disused limestone quarry. The magnetic response is quite clear and indicates the quarry's extent. The southern field is dominated by the underlying geology and there is little geophysical evidence for potential archaeology. The location of the deserted rural settlement of Little Hillhead was believed to be somewhere within the southern field of the development site. However, cartographic evidence (1st Edition OS map 1855 - 1882) appears to locate the settlement c. 270m to the south-southeast of the southern extent of the development site (NGR E227881 N643456).

1.3 The aim of the survey was to ascertain its viability in igneous conditions and it has provided positive results in locating strong magnetic archaeological responses with limitations in mind. There is a clear east/west split in the data with the eastern part of the survey affected to varying degrees by presumed igneous material mixed in with the geological sub strata potentially masking weaker features. The western part of the survey data appears unaffected by the underlying geology.

2 INTRODUCTION

2.1 The development area, North East of Lochcraigs Farm, Stevenston, North Ayrshire covers three agricultural fields which are polygonal in plan (Figure 1). There are no archaeological sites that are protected by designation within the survey area, but there are at least three features of interest. A 19th century disused limestone quarry, a possible deserted rural settlement and prehistoric remains related to the Ashgrove Loch. These are discussed in detail below.

2.2 A geophysical survey was commissioned by Neo-Environmental Ltd, to investigate potential buried archaeological remains at the consented development Site to North East of Lochcraigs Farm, 5MW solar development (15/00252/PP). A detailed magnetometer survey, at 1.0m by 0.1m and 0.15m intervals, was carried out within the allocated survey area (*c*. 12.27ha), as indicated in Figure 1. Figures 2-6 display a series of graphical plots and interpretation of the geophysical data.

2.3 The report is supported by the following figures (Appendix A):

Figure 1: Site Location

Figure 2: Raw Grayscale Plot

Figure 3: Processed Grayscale Plot

Figure 4: Trace Plot

Figure 5: Grayscale Image Overlaid with Interpretation Data

Figure 6: Interpretation Data

SITE LOCATION

2.4 The land at North East of Lochcraigs Farm, Stevenston, North Ayrshire is centered on National Grid Reference (NGR) NS 277 440 to the east of Loch Craig farm within the county of Ayrshire. The land is 2.06 km W of Kilwinning and 2.51 Km N of Stevenston. The area lies at an average elevation of 45m AOD at its southern limit and at approximately 55m AOD upwards to its northern boundary. The development area concerned covers three agricultural fields which are polygonal in plan and measure roughly 500m from NNW to SSE by 350m (maximum) transversely, covering an area of ground measuring approximately 12.27ha in extent. The fields are currently used as managed pasture bound by a watercourse running NNE-SSW, hedges, tree lines and to the W by Ashgrove Loch.

3 GEOLOGY AND LAND USE

3.1 The primary lithology is comprised of Upper Limestone Formation. These materials typically comprise strong, bedded limestone. Superficial deposits are recorded as Devensian Till (Glacial Diamicton). Soil depths are between 0.10m and 0.25m underlain by soft to firm silty gravelly clay.

3.2 The survey area is comprised of 12.27 hectares of arable farmland. The fields are currently used as managed pasture bound by a watercourse running NNE-SSW, hedges, tree lines and to the W by Ashgrove Loch.

4 ARCHAEOLOGICAL BACKGROUND

4.1 A study zone of 2 km around the application site was considered to provide an archaeological and historical background for the programme of works.

4.2 There are no archaeological sites that are protected by designation within the survey area. However there are a number of features within the survey area that are of interest. A site of an old limestone quarry (NS 279 440) is shown on the Ordnance Survey 1st edition map. It can be located around the NE of the middle parcel of land. Its extent is unknown and may affect the survey area. The remains of a deserted rural settlement (Little Hillhead) have been identified on Roy's Military map of 1752-55. The settlement can be seen as a number of rectilinear structures and their exact location is unclear. However, an examination of the 1st Edition OS map, 1855 – 1882, depicts Hillhead (a small farmstead) c. 270m to the south-southeast of the southern extent of the development site (NGR E227881 N643456) making this a likely candidate for the location of the settlement. There is also the potential for archaeological remains related to Ashgrove Loch Crannog (NS 2759 4432). The crannog is readily seen on the ground to the northern side of the fence line. The extent of the loch in prehistoric times would have probably encroached upon the land within the survey area before it was drained.

5 SURVEY OBJECTIVES

5.1 The aim of the geophysical survey is to locate and identify the presence or absence of possible sub-surface anomalies within the area of interest.

5.2 The information gathered will provide an assessment of the potential significance of any buried archaeological deposits and the impact the development will have upon them. This can lead to an informed decision regarding the need for further field evaluation and mitigation strategies put in place in advance of or during development.

6 METHODOLOGY

6.1 The majority of UK geophysical surveys comprise the use of magnetic surveys using fluxgate gradiometers due to their rapid speed of data collection. Earth resistance is usually followed up over targeted areas where anomalies are more prominent. Some techniques are more suitable than others depending the ground or environmental conditions such as the nature of the feature, depth of the feature, obstruction proximity and local geology.

6.2 The geophysical survey North East of Lochcraigs Farm will consist of a detailed magnetometer survey over the entire proposed development area of 12.27 hectares.

6.3 The fieldwork was undertaken by a team of experienced geophysicists over three working days. The survey was undertaken across all parts of the site unless obstructed and by unsafe areas.

6.4 The magnetometry survey will be carried out using a mutli-sensor cart-based system. The sensors used are 4 Foerster 4.032 Ferex CON 650 gradiometers with a control unit and data logger. The Foerster gradiometers do not require balancing as each sensor is automatically 'zeroed' using the control unit software.

6.5 A gradiometer is a dual sensor instrument that employs the use of the magnetic field strength detectors called fluxgates. These sensors are simple iron cores (mumetal) wound with copper wire. These are arranged one above the other at 50cm or 1m apart. The positioning of the sensors, where one is closer to the ground will be more affected by an anomaly than the other. The difference in readings between the sensors should effectively cancel the effect of the earth's magnetic field in the higher sensor and record the anomaly from the lower. A gradiometer basically measures the difference or gradient of the magnetic field rather than the total field strength. This is an active system with the sensors measuring the magnetic fields continuously. The MACS utilises an RTK GNSS system which means that survey grids do not have to be established. Instead an area is surveyed over a series of continuous profiles and the position of each data point is recorded using an RTK GNSS system. The sensors have a separation of 1.0 m which means that data was collected on profiles spaced at 1.0 m apart. Readings were taken at between 0.1 m and 0.15 m intervals.

6.6 Data is collected on zig-zag profiles along the full length or width of a field, although fields can be sub-divided if they are particularly large. Marker canes are set-out along field boundaries at set intervals and these are used to align the profiles. The survey profiles are usually offset from field boundaries, buildings and other metallic features by several metres to reduce the detrimental effect that these surface magnetic features have on the data. The location of the MACS data is converted direct to Ordnance Survey co-ordinates using the UK OSTN 02 projection. As the survey is referenced direct to Ordnance Survey National Grid co-ordinates temporary survey stations are not established.

6.7 The MACS data was stored direct to a laptop using in-house software which automatically corrects for instrument drift and calculates a mean value for each profile. A positional value is assigned to each data point based on the sensor number and recorded GNSS co-ordinates. The data is gridded using in-house software and parameters are set based on the sensor spacing and mean values. No additional processing is required. The gridded data is then visualised in Terrasurveyor and image files of the data are created.

6.8 The basic pipeline process of what happens to the data after it is downloaded into the software is described below.

Restoration of Data

6.9 The data is formed into a composite to join all of the data together.

Data Processing

6.10 Usually during this stage, further algorithms can be applied to help adjust individual readings with respect to other collected data. This will help bring out weaker anomalies in respect to the overall data. These are usually standard algorithms such as de-spike and other related filters. It was deemed not necessary to put the information through this processing stage and the data is presented in its un-altered state.

Image Enhancement

6.11 This is the final stage, where the data can be enhanced using interpolation and similar related filters to make the anomalies stand out, enhancing weak and strong features alike. In this case no further algorithms were employed to enhance the data.

6.12 Upon completion of fieldwork, a full site report is to be provided for the client and local authority. This will consist of a digital version in PDF format. Final archiving will also include the submission of an OASIS form.

6.13 The fieldwork and reporting will be carried out in accordance with the appropriate policies and guidelines as laid out by:

- 'The Use of Geophysical Techniques in Archaeological Evaluations' (Gaffney, C et al 2002)[1];
- 'Geophysical Data in Archaeology: A Guide to Good Practice' (Schmidt, 2001)[2]; and
- The 'Standard for Guidance for Archaeological Geophysical Survey' (CIFA 2014)[3].

7 RESULTS

7.1 Results of the magnetometer survey can be seen in Figures 2 through to 6. The raw results are presented as a grey scale or shaded plots. Some of the data has been clipped to lower values as shown in the illustrations. The final illustrations are presented as a shaded and trace plots.

7.2 Anomaly numbers referred to in the below text are shown on the accompanying interpretation diagrams (Figures 5 and 6)

NORTHERN FIELD

7.3 The results of the magnetometer survey indicate a relative uniform magnetic background across the eastern portion of the northern most survey area. A number of EW positive magnetic linears have been identified as cultivation trends. There also appears to be a clear positive magnetic linear forming a boundary feature (2) running NNE-SSW across the middle of the area. The eastern area of the northern survey area is defined by relatively strong magnetic noise caused by the underlying geology. The strong magnetic response could be masking any weaker responses across this area.

FEATURE 1

7.4 The area to the W of the survey area contains a number of roughly E-W aligned positive magnetic linear (1) features. Their nature would indicate they are plough lines. These can be seen running from the western boundary edge with no evidence for the western headland, suggesting the

[1] Gaffney, C., Gater, J., and Ovenden, S., 2002. *The Use of Geophysical Techniques in Archaeological Evaluations. CIFA Paper No. 6.* Chartered Institute for Field Archaeologists.

[2] Schmidt, 2001. *Geophysical Data in Archaeology: A Guide to Good Practice*. Archaeology Data Service, York.

[3] CIFA, 2014. *Standard and Guidance for Archaeological Geophysical Survey*. Chartered Institute for Field Archaeologists.

cultivation trends exists outside of the western boundary. The plough lines are on average 7m in width and terminate towards features (3 and 4).

FEATURE 2

7.5 This is a clear positive magnetic linear (2) running NNE-SSW across the middle of the northern field survey area, in effect bisecting it. The linear is 5m wide and 128m in length. It is a weak/medium strength anomaly, producing a signal range from around 7 to 25nT. This particular feature produces a clear negative magnetic signature around it within a -7 to -24nT range, reflecting a similar response to the positive. The northern extent of the anomaly is clear, running for 34m from the northern edge of the field, before it abuts feature (4) to the south. There appears to be an area missing for 54m within part of feature (4) and is possibly ploughed out. Feature (2) appears again at the southern extent of (4). The linear extends for 41m beyond feature 4 before entering the southern edge of the northern field. Feature (2) could be seen as a field boundary or drainage ditch that extends beyond the northern field into the middle field survey area. There are a number of dipolar responses within the negative element of feature (2) that are suggestive of potential pits or are probable stone holes.

FEATURE 3

7.6 Just to the west of feature (2) is feature (3). This is an area 60m by 60m that is made up of spatially small clustered responses. Most of these are positive in polarity with the some negative influence around some of the anomalies. This would suggest a possible natural origin such as a raised geological feature. It would seem the plough lines (1) abut this feature (3) to the west and do not extend beyond it to the east. This may suggest that the feature was very stony when ploughed and created a natural boundary to the east.

FEATURE 4

7.7 To the east of feature (3) is feature (4). This is a sub-rectilinear shaped anomaly running SW-NE. It is 62m in length and 20m wide at its SW end and 27m at its NW end. It produces a weak to medium magnetic response, producing a similar negative response around its boundary. This feature can be seen as having no specific structure in form and is likely to be the result of a natural feature. It appears to be a change in the underlying geology and most likely forms part of feature (10) to the east. Feature (2) appears to stop at its northern most edge. The middle area of feature (2) would appear to have been ploughed out and picks up again at the southern edge of feature (4). This would suggest that either feature (2) was cut into feature (4) and has been ploughed out due to (4) being raised or has solid geology that was not cut into.

FEATURE 5

7.8 This is a weak anomaly running N-S from the northern most edge of the northern field survey area, cutting through feature (3) and into the southern boundary of the survey area. It also appears to cut the plough lines (1) to the lower SW. This feature is ephemeral and could simply be the remains of a headland created during agricultural practice when creating the W-E plough lines to the west of the northern field or could be archaeological in origin.

FEATURE 6

7.9 Running in parallel to feature (2) in the same alignment are a series of linear positive magnetic features (6). These can be seen as weak to medium magnetic responses. The more prominent responses appear from the northern edge of the survey area and appear to be bounded by feature (4) to the south. There are similar more ephemeral linears immediately to the SW running into the southern edge of the field boundary. This could suggest a different direction of plough activity forming a different phase of agricultural practice than in the western area.

FEATURE 7

7.10 Towards the eastern most extent of the survey area is what appears to be a negative (-7nT) magnetic response. This anomaly is 4m wide and extends from the eastern edge of the field for 40m, before becoming ambiguous. This may be a natural feature with natural soil build up through agricultural practise but may be archaeological in nature.

FEATURE 8

7.11 Towards the southern extent of the survey area are a number of similar features to feature (4). They exhibit the same type of form that suggests underlying geological features. There is a sinuous clear positive magnetic anomaly that runs from feature (2) SE and into the edge of the southern boundary. Its form appears natural and would suggest some magnetic material has become spread within a channel in the lower strata or is in the near surface.

FEATURE 9

7.12 This relates to the western extent of the survey area and is abutted by features (2) and (4). This area has a weak magnetic background response and is intermixed with typical positive magnetic

point and magnetic dipolar responses reflecting igneous stones and boulders/holes. This area is less magnetically noisy than the eastern area where there is a clear change in the underlying, more magnetic geology.

Feature 10

7.13 As discussed above, the eastern geology of the northern field survey area is visibly more magnetically noisy than the western half. This can also be seen as an area of weak magnetic background but with a much higher magnetic response from positive point and dipolar anomalies reflecting the igneous material mixed with clay and gravel. This effect may mask any weaker archaeological anomalies in this area. Some of the underlying geology can be seen as positive magnetic responses to the SE of the survey area.

Middle Field

7.14 The magnetometer survey, again indicates a relative uniform magnetic background across the western portion of the middle field survey area. Again as with the northern field, there appears to be a clear boundary change in geology across the middle of the area. The eastern area of the middle field is defined by relatively strong magnetic noise caused by the underlying geology. Again, the strong magnetic response could be masking any weaker features across this area.

Feature 11

7.15 This feature seems to be a continuation of the linear feature (2) from the northern field survey area. The feature (11) is the same width (5m), the same alignment and of the same magnetic response as feature (2) and runs from the NW edge of the middle field into the middle-western edge of the survey boundary. It could be surmised that the linear (11 and 2) continues beyond this. To the SE there appears to be a return, forming features (12 and 13) and these begin to fragment towards the eastern extent of the survey area as discussed below.

Feature 12

7.16 As described above, this feature appears to be a continuation of the linear (11 and 2) turning at a right angle to the east. Feature (11) appears to terminate at the western boundary and then there is a 24.5m gap and then feature (12) forms the eastern alignment. Feature (12) continues for 29m before there is a further break. This is only a matter of a metre before another 7m linear is formed and then a further break of 5m before joining onto another 20m section. This linear is within the eastern area of more magnetically enhanced material and becomes more ambiguous.

There is a further linear section (13) within this area that is discussed below. Features (12) could be seen as the eastern return of boundary or ditch (11 and 2) to the west and north.

FEATURE 13

7.17 As discussed above, this is a possible continuation of the eastern linear (12). This feature is 19m from the edge of the last western most linear feature (12). This portion is within the eastern area of relatively strong magnetic noise caused by the underlying geology. The signature of this anomaly may be being masked by the stronger enhanced geological features. The EW linear appears to terminate here and there are further hints in the southern field survey area in feature (20).

FEATURE 14

7.18 To the NE boundary of the middle field survey area is an area of positive magnetic response associated with a negative response. This feature (14) is around 48m by 22m and appears to be disturbed by a number of large magnetic type dipole anomalies towards the western extent. This could be caused by igneous geology and would suggest the precise location and extent of the old quarry located on the Ordnance Survey 1st edition map.

FEATURE 15

7.19 This relates to the eastern extent of the field survey area and reflects a clear change in the underlying geology. This area has a general weak magnetic background response and is intermixed with typical positive magnetic point and magnetic dipolar responses, reflecting igneous stones and boulders within clay bound striations of the geological sub-strata. These striations can be seen through the area and mask any potential weaker magnetic anomalies.

FEATURE 16

7.20 Feature (16) can be located W of centre within the area of feature (15). It has a sub-circular form, 30m in length and 25m wide, with arms of positive and negative magnetic responses emanating from it. Around the centre of feature (16) are a number of high magnetic dipolar responses with an intensity as high as 243nT. These point dipolar responses would suggest either a ferrous or igneous response. It is plausible that the feature is entirely geological, but equally could be

archaeological (i.e. hearth) in the form that is being masked by surrounding geological high magnetic responses.

Feature 17

7.21 Against the western boundary is an area of magnetic disturbance (17) formed of irregular positive magnetic anomalies, bounded by an irregular negative magnetic linear. The magnetic response fall within acceptable background values, suggesting that this is not derived from stray ferrous material or a response from a boundary fence, but is entirely natural in form. This would suggest a geological formation created by the encroachment of the lochs edge from the west.

Feature 18

7.22 This feature (18) is located in the SE most corner of the middle field survey area. This indicates a natural geological form, similar to the western formation (19), providing a clear change in the underlying geology with intermixing of igneous magnetic responses from boulders and stones.

Feature 19

7.23 This relates to the western extent of the survey area and is cut by features (11) and (12). This area has a weak magnetic background response (typically -1 to 1nT) and is intermixed with typical positive magnetic point and magnetic dipolar responses reflecting igneous stones and boulders/holes. This area is less magnetically noisy than the eastern extent (15) where there is a clear change in the more magnetic underlying geology.

Southern Field

7.24 The magnetometer survey indicates a noisy magnetic background caused by the underlying geology across the entirety of the southern field survey area. Again, the strong magnetic response could be masking any weaker features across this area.

Feature 20

7.25 In the upper right hand corner of the southern field survey area is a weak linear magnetic response (20) that could be seen as a continuation of features (2, 11, 12 and 13). This assumption

is tentative, as the feature (20) is not really on the same alignment and appears to veer away to the SSE. This would suggest that it could be entirely natural in form, created by the underlying geology following a build-up of natural against the parent strata. However, the possibility remains that it could be associated with the potential ditch (2, 11, 12 and 13).

FEATURE 21

7.26 This is an irregular linear (21) running from the lower eastern edge of the field boundary into the southern boundary and feature (24). Feature (21) has a weak positive magnetic signal and its form would suggest that it is natural in origin, again created by the underlying geology following a build-up of underlying natural.

FEATURE 22

7.27 In the middle of the survey area is a number of large sub-circular positive magnetic anomalies (22) that would suggest the presence of the underlying geology.

FEATURE 23

7.28 To the lower SW of the survey area is also a similar set of sinuous positive magnetic responses (23) reflecting the underlying geology in the area. Feature (23) appears to form an upper ridge with an area sloping below it to the south.

FEATURE 24

7.29 Against the immediate southern boundary is an area of high magnetic disturbance forming an EW linear (24). The response it nearly entirely negative in form, suggesting that the positive is not within the immediate survey area. The signal would suggest that this is ferrous in nature and is from a metaled boundary.

FEATURE 25

7.30 This is a magnetic negative linear (25) response emanating from the NW boundary and becoming more ambiguous towards the W boundary edge. The feature (25) is 29m in length by 4m in width.

This may be a typical geological feature with natural soil build up through agricultural practise and there are similar positive/negative features in the middle field survey area.

8 CONCLUSION

8.1 The magnetometer survey has identified a number of clear archaeological features. The northern field survey has identified a series of linear positive magnetic responses suggesting these are cultivation trends (feature 1) or drainage channels. These can be seen running in a W-E direction in the western part of the survey area. There does not appear to be a clear headland for turning the plough around at the western boundary, which would suggest that either there is no headland, the plough did not turn around in a conventional manner or the plough lines extend beyond the western boundary. The cartographic evidence indicates that the loch's water levels to the immediate west were still prominent before the 1850's, but the loch's water levels had become significantly reduced due to attempts at drainage and subsequent silting events by the 1911 OS maps. This would suggest land improvements had started somewhere around these periods. It is plausible that the land had been used for cultivation prior to the act of enclosure and that the land had been ploughed from the loch edge into the northern field. The plough lines appear to terminate towards a clear boundary running NNE-SSW. This feature (2) is quite clear and could be seen as either a ditch or field boundary. This is not evident in the cartographic information and could be seen as an earlier attempt at drainage from the lochs overflow or an enclosure of some kind. The boundary is not aligned to any of the field boundaries shown on any of the maps or the loch itself. The boundary feature extends through the southern extent of the northern field into the middle field and becomes more ambiguous and seems to terminate towards the field's western edge. The extended boundary (features 12 and 13) turn at a right angle and continues to the east and becomes fragmented within the geological stronger magnetic responses on the western side of the survey area. There does appear to be a number of clear gaps within this EW alignment that could suggest entrances. The boundary (feature 19) may continue into the southern field, but again this is ambiguous. The feature's origin and age are unknown.

8.2 There are no clear archaeological features within the boundary (feature 2, 12 and 13) area to the east. The area is dominated by a strong mixed magnetic response that may be masking any of the weaker magnetic anomalies. This appears to be the product of magnetic gravels and stones within the glacial till, which is probably derived from igneous rock. The act of cultivation has moved these materials around and only the stronger magnetic response features appear to be evident. In the northern field there are a number of positive linear features emanating from the upper boundary edge and these appear to be caused by the underlying geology, creating channels filled with clayey gravel and igneous stone. There is one potential feature (16) that is of archaeological interest, but it has no clear form.

8.3 Towards the eastern edge of the middle field is an area of clear magnetic disturbance (feature 14) that would identify the position and extent of the disused limestone quarry.

8.4 The western edge of the middle field survey area has identified an area of localised geology (feature 17), which appears to be associated with Ashgrove Loch. There are no clearly defined archaeological features associated with the loch itself in this area.

8.5 The southern field is equally dominated by the mixed magnetic responses encountered in the upper fields. The general noise is evident from the magnetic gravels and stones within the glacial till. There are no clear archaeological features evident in this area. There is no clear geophysical evidence to identify the presence of the earlier settlement or the farmstead of Little Hillhead as shown on Roy's map of 1752 - 55. If the buildings were constructed from stone there is no clear geophysical evidence for demolition rubble or building foundations. The likely location of the farmstead is depicted on the 1st Edition OS map, 1855 – 1882 (NGR E227881 N643456) c. 270m to the south-southeast of the southern development boundary. The location corresponds well to that of Roy's map of 1752 – 55. If correct, this would place the settlement outwith the survey area.

8.6 Around all three field areas are numerous magnetic positive point features. Some have associated negative responses, but their form would suggest they are stones/boulders or holes. There are a number of magnetic dipolar features that can be seen in yellow on figure 5 and 6. These could be ferrous or archaeological in nature.

8.7 The survey was also carried out as a test, to ascertain if a magnetic geophysical survey would be beneficial at locating buried archaeology within clayey silt, admixed igneous material. The survey has clearly achieved its purpose of locating and identifying stronger magnetic features as archaeology within these noisy strata. This would suggest that a magnetic survey will identify archaeological features on this type of mixed geology. The results will clearly aid any further mitigation strategies within the area.

8.8 In conclusion, the findings of the geophysical survey suggest that archaeological deposits are of limited significance and it is not likely that further intrusive investigations will reveal previously unidentified archaeological remains. The watching brief during the construction phase will provide an opportunity to confirm the findings of the geophysical survey and provide a greater clarity on the nature of the identified features.

9 APPENDICES

APPENDIX A – FIGURES