

**THE CHILTERNS GATEWAY CENTRE  
DUNSTABLE DOWNS  
BEDFORDSHIRE**

**PROGRAMME OF ARCHAEOLOGICAL  
OBSERVATION, INVESTIGATION, RECORDING,  
ANALYSIS AND PUBLICATION**

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## **Preface**

*Every effort has been made in the preparation of this document to provide as complete a summary as possible within the terms of the method statement. All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.*

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## **Structure of the Report**

After the introductory Section 1, there is a summary of the results of the programme of archaeological observation and recording in Section 2. A synthesis of the results and their significance is presented in Section 3. Section 4 is a bibliography and Section 5 contains an archaeological context summary.



## **Key Terms**

Throughout this report the following terms or abbreviations are used:

Albion	Albion Archaeology
BCC	Bedfordshire County Council
BLARS	Bedfordshire and Luton Archives and Records Service
CAO	County Archaeological Officer
Client	Bedfordshire County Council
Development Area	The area of land subject to the development
EIA	Environmental Impact Assessment
Evaluation Study Area	The area of land subject to the archaeological field evaluation in 2004
Hannah–Reed	Hannah Reed and Associates Ltd
HER	Bedfordshire’s Historic Environment Record
IFA	Institute of Field Archaeologists
NMR	English Heritage’s National Monuments Record
Project Design	Project Design (document 2005/53) for a Programme of Archaeological Observation, Investigation, Recording, Analysis and Publication for this development
<i>Procedures Manual</i>	Procedures Manual Volume 1 Fieldwork, 2nd edition, 2001 Albion Archaeology



## **Non-Technical Summary**

*In 2005 Albion Archaeology was commissioned to undertake a programme of archaeological observation, investigation, recording, analysis and publication, occasioned by the construction of new visitor facilities on Dunstable Downs centred on Grid Reference TL 0085 1944. The work was carried out for Bedfordshire County Council on behalf of The Dunstable and Whipsnade Downs Gateway Partnership. This followed a previous Environmental Impact Assessment and trial trenching, which included results of a geophysical survey.*

*The Downs are rich in archaeology dating from the Palaeolithic period to the 20<sup>th</sup> century, but the most significant record relating to the Development Area itself is that of an early 19<sup>th</sup>-century Admiralty telegraph signalling station. Geophysical survey had identified areas of magnetic disturbance at the south end of the Development Area, which were tested by subsequent trial trenching and found to contain post-medieval and modern refuse deposits that were possibly associated with the signalling station.*

*The programme of archaeological observation was carried out between 7<sup>th</sup> November 2005 and 8<sup>th</sup> August 2006, and involved the monitoring of the excavation of building and service trenches, as well as ground reduction associated with facilities such as access roads, footpaths and car-parks. It is estimated that the groundworks covered a total area of c.0.5ha, but only about 0.3ha was stripped to the chalk (i.e. the depth at which archaeological features could be recognised).*

*Only two datable archaeological features were revealed during the programme of archaeological observation and investigation. These were post-medieval or modern and consisted of a large, backfilled, chalk quarry or marl pit and two smaller refuse pits. One of the refuse pits contained a dump of 20<sup>th</sup>-century slag and fuel waste material and was nearby and similar to a feature previously investigated during the trial trench excavation. These refuse pits appeared to have been associated with a group of discrete anomalies identified by geophysical survey, therefore demonstrating that the geophysical anomalies are unlikely to be associated with the Admiralty telegraph signalling station. It is more likely that the features revealed provide evidence of relatively recent (c. 1850–1950) industrial or agricultural activity in the vicinity that is not readily apparent today.*

*Five small pits were also recorded. These contained no artefacts and were probably natural features in the surface of the chalk. However, it is possible that four of them may have been postholes of a fence. These features complement a small scatter of undated pits and plough furrows that were identified during the field evaluation.*



## 1. INTRODUCTION

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### 1.1 Background

In July 2004 Albion Archaeology was commissioned by Hannah Reed and Associates Ltd, on behalf of The Dunstable and Whipsnade Downs Gateway Partnership, to contribute to a site selection study (Albion Archaeology 2004a) which considered the impacts of the options available for the renovation of visitor facilities on Dunstable Downs. Subsequently, Albion Archaeology was commissioned to prepare the cultural heritage chapter of an Environmental Impact Assessment Report for the development (Albion Archaeology 2004b). The Assessment was augmented by field evaluation comprising geophysical survey (Archaeological Services WYAS 2004) and trial trench excavation (Albion Archaeology 2004c).

The site selection study and Environmental Impact Assessment Report concluded overall that the preferred option was to build a new visitor centre on the site of the present Development Area. However, the chosen location was identified as being historically important as the approximate site of an early 19<sup>th</sup>-century Admiralty telegraph signalling station.

Planning permission for the new visitor centre and associated facilities was subsequently obtained (planning ref: BC/CC/2004/43). Because the work had the potential to disturb archaeological deposits, the CAO issued a brief for a programme of archaeological observation, investigation, recording, analysis and publication (BCC 2005). Albion Archaeology was commissioned by Bedfordshire County Council (acting through Hannah-Reed) to undertake the work in accordance with a project design (Albion Archaeology 2005) approved by the CAO.

Construction work included the excavation of trenches for the building foundations and associated services as well as ground reduction for facilities such as access roads, footpaths and car-parks.

### 1.2 Site Location and Description

The Development Area was an unenclosed site at the top of Dunstable Downs (Figure 1), located *c.* 2km south of the centre of modern Dunstable, on land beside the access road to Chute Farm, at grid reference TL 0085 1944. The land is at an average height of 241.67m OD. The southern half of the Development Area lay within fallow agricultural fields owned and farmed by the National Trust, while the northern half lay within the open grassland owned by Bedfordshire County Council. The Downs are managed by the Trust on behalf of the County Council.

The Development Area is irregular in shape (following the footprint of the proposed new visitor centre, car park areas and access routes). At its maximum extent it is approximately 0.7ha in area, but only about 0.5ha of this was affected by groundworks.

The underlying geology consisted of solid chalk, overlain to the south of the Development Area by clay-with-flints (British Geological Survey 2001).



## **1.3 Archaeological Background**

### **1.3.1 Results of the Desk Based Assessment**

Existing archaeological and historical knowledge of the Development Area was examined for an Environmental Impact Assessment (Albion Archaeology 2004b), which was produced in support of the planning application. This found that, although the Downs are rich in archaeology dating from the Palaeolithic period to the 20<sup>th</sup> century, the only significant record relating to the Development Area itself is that of an early 19<sup>th</sup>-century Admiralty telegraph signalling station (HER 11211; NMR 359480; Lutt 1997, p19). This station was built in the Napoleonic War period and was part of the Yarmouth line; it was abandoned in 1814. Its exact site is unknown.

The ancient route of the track-way known as the Icknield way (HER 353) has been identified as running close to the current Development Area (c. 100m to the west), just off the chalk scarp.

### **1.3.2 Results of the Geophysical Survey**

A detailed fluxgate gradiometer survey was undertaken by Archaeological Services WYAS, in July 2004, and the results were incorporated in the EIA. The detailed survey covered 100% of the Evaluation Study Area, but it should be noted that this was not exactly the same as the Development Area. The results of the survey indicated two large areas of magnetic disturbance and 'iron spike' readings that were thought to be the result of modern beacon fires and general littering. A cluster of discrete magnetic anomalies and a weak linear trend anomaly were identified just to the north-west of the access track to Chute Farm. These anomalies were subsequently tested by trial trenching.

### **1.3.3 Results of Trial Trenching**

A programme of trial trench excavation within the Evaluation Study Area was completed by Albion Archaeology, in September 2004, and the report was issued separately subsequent to submission of the EIA. The trenches revealed a small number of archaeological features, mostly small pits and linear features. Most of the features did not produce any finds and are therefore undated, although some may have been quite ancient.

One trench revealed a large pit that was interpreted as a quarry, possibly to obtain chalk for use in marling the fields on the clay-with-flints to the south. As such, this feature is representative of minor industrial activity in the Chilterns in the last 200 years or so.

No structural remains of the telegraph station were found, but its foundations are unlikely to have been very substantial. The presence of post-medieval/modern artefacts and refuse deposits in the south of the Development Area, however, provided evidence for some form of occupation in the area and were assumed to have been associated with the telegraph station.

## **1.4 Research Objectives**

### **1.4.1 Primary Objectives**

The CAO's Brief has indicated that the objectives of the investigation should derive from the regional research context. In particular they will seek to:





- establish the date, nature and extent of activity or occupation in the development site;
- establish the relationship of any remains found to the surrounding contemporary landscapes;
- recover artefacts to assist in the development of type series within the region;
- recover palaeo-environmental remains to determine local environmental conditions.

A more detailed consideration of these objectives is set out below.

#### **1.4.2 National and Regional Policies and Research Frameworks**

##### *National Research Frameworks*

National research priorities have been formalised by English Heritage in *Exploring our Past* and more recently updated in the Archaeology Division's *Research Agenda* (draft 1997). The potential archaeological remains within the *Development Area* have some relevance to a number of these, but the remains encountered are of local significance and are best considered in the local context.

##### *Regional Frameworks*

At a regional level, research frameworks have been outlined in Glazebrook (1997), with research agendas recently published in Brown and Glazebrook (2000). Research agendas for Bedfordshire are also in preparation and Oake (forthcoming).

The key significance of the Development Area is that is the documented site of an early 19<sup>th</sup>-century military installation – the Admiralty telegraph station. The thrust of Gilman, Gould and Green's research agenda paper (Gilman, Gould and Green 2000) concentrates on post-medieval fortifications, notably those of the East Coast, but it is clear that the inland signalling stations were a key component of Britain's defensive network. It also has significance as the site of an early form of long-distance communication.



## 2. RESULTS OF OBSERVATION AND RECORDING

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### 2.1 Introduction

The programme of archaeological observation was undertaken between 7<sup>th</sup> November 2005 and 8<sup>th</sup> August 2006. During this period all groundworks that required monitoring were completed (Figures 1 and 2). This included the monitoring of the following:

- the excavation of service trenches associated with the new visitor centre, such as for the rising main and breather pipe
- the excavation of a pit for a rainwater recovery system
- the excavation of foundation trenches
- ground reduction for access roads and car parks (photograph, Figure 4)

### 2.2 Methodology

The programme of archaeological observation adhered to the field methods as set out in the Brief (BCC 2005) and section 3 of the Project Design (Albion Archaeology 2005). All soil stripping and excavation of service and construction trenches was monitored at appropriate intervals. It is estimated that the soil was stripped from a total area of c.0.5ha during the construction works. However, not all areas were stripped to the top of the natural chalk (see Figure 2). Where some soil was left *in situ*, it is highly unlikely that archaeological features would have been recognised. The corollary of this is that any such features will not have been destroyed by the development, although they may have been adversely affected to some degree (e.g. by compaction of the soil by heavy machinery).

Throughout the project the standards set out in the following documents were also adhered to:

- IFA's *Codes of Conduct and Standards and Guidance for Archaeological Watching Brief* and draft *Standard and Guidance for Archaeological Finds Work* (2000);
- English Heritage's *Management of Archaeological Projects* (1991);
- Albion Archaeology's *Procedures Manual: Volume 1 Fieldwork*, (2<sup>nd</sup> edn, 2001);
- Guidelines issued by The National Trust Estates Department Archaeology Section, such as those for historic landscape survey (2000);
- the English Heritage Centre for Archaeology guidelines for *Environmental Archaeology* (2002), and others, as appropriate;
- *Preparing Archaeological Archives for Deposition with Registered Museums in Bedfordshire* (2007), and the Society of Museum Archaeologists' *Preparation of Archaeological Archives: Selection Retention and Dispersal of Archaeological Collections* (1993).

### 2.3 Results

Section 5 presents a detailed summary of all the archaeological features recorded during the programme of archaeological observation. The construction works revealed seven new features, two of which proved to be fairly modern, while the other five contained no dating evidence and were possibly of a natural origin. Apart from the large modern quarry pit first identified in Trench 6, none of the features investigated during the earlier trial trench excavation was re-exposed by the construction works. The discussion below focuses on the features found



during the mitigation phase. Features from the trial trenches were discussed in the evaluation report (Albion Archaeology 2004c), but they are referred to below, where relevant, and the contexts are listed in Section 5.

### 2.3.1 Deposit Model

The overburden was fairly homogenous across the site. A moderately thick topsoil (2000) (varying between 0.2m and 0.35m thick), consisting of a loose mid-brown clay silt that directly overlay the natural geology (2001). Throughout the majority of the development area the geology consisted of solid chalk with smaller patches of red-brown clay. Towards the southern extent of the development area the chalk gave way to a compact and plastic, dark-red clay which contained numerous, large, chalk and flint inclusions ('clay-with-flints').

### 2.3.2 Refuse Pits

Two probable refuse pits (Figure 2, [2002] and [2013]) were identified within the Development Area. Both were only partially revealed within the area of the development impact and as such, their identification as pits rather than linear features is largely based on their shape in profile. The pits had similar dimensions and profiles and were both sealed by the topsoil. They measured between 2.8m and 3m across and between 0.22m and 0.25m deep. They had shallow profiles with moderately sloping concave sides and relatively flat bases. They complement pits [302] and [803], which were found during trial trenching.

One pit, [2002], was located towards the south of the development, in the area of the new bus turning circle adjacent to the track to Chute Farm. It extended beyond the bounds of the excavated area, but the visible portion was sub-circular in plan and contained two fills. The upper fill (2003) was 0.15m thick and consisted of a mid brown clay silt with lenses of yellow sand and moderate amounts of small chalk fragments and stones. The lower fill (2004) was 0.10m thick and darker in colour. Fill (2004) also contained a substantial amount of slag and fuel waste inclusions – fragments of coke/coal. The pit had been dug through a land drain (see Figure 2). The natural chalk surrounding the feature did not show any evidence of having been heated, which suggests that the material had not been burnt *in situ*. The subsequent fill (2003) was interpreted as deliberate backfilling with sand and re-deposited topsoil.

Pit [2002] was located near to an elongated pit-like feature [803], which had been examined in the earlier trial trench excavation and which also contained slag and fuel waste material. Feature [803] correlated with a discrete area of magnetic enhancement identified by the geophysical survey (see Figure 3). Whilst pit [2002] did not correlate precisely with any of the discrete areas of magnetic enhancement, its proximity to and location between two of the anomalies suggests it is likely to have been related. Other similarly sized discrete areas of magnetic enhancement were identified in this vicinity by the geophysical survey, but were outside the area of development impact. It is likely that these other magnetic anomalies were also caused by features of a similar nature. Together, these appear to define a sub-rectangular area that is *c.* 35m long by *c.* 30m wide.

The interpretation of features [2002] and [803] is unclear, but they were probably refuse pits. Pit [2002] cannot be associated with the Admiralty telegraph station, because it post-dated an early 20<sup>th</sup>-century land drain. It is likely that pit [803] and the other, unexcavated, geophysical anomalies are also more recent than



previously thought. They may simply have been pits dug to dispose of residue from a fire, though the presence of the fuel waste and slag material suggests they are from more than a bonfire. These features may be the result of coal fires associated with the early 20<sup>th</sup>-century military activity in the area. However, there is no evidence to confirm this and they may equally well contain ash from the firebox of an agricultural steam engine, or similar.

The second pit, [2013], was located c.90m to the north-east of the new visitor centre, within the confines of the service trench for the rising main alongside the B4541. Only a small portion of the pit was visible within the excavated trench, but it had a similar profile and was similar in size to pit [2002]. It contained two fills, the lower of which was 0.15m thick and consisted of dark brown silty clay with lenses of re-deposited chalk and moderate amounts of small stones (2014). This fill contained pieces of 'tin' sheet from a modern vessel, possibly remains of a pail or lining of a small trough-shaped object. The upper fill (2015) was 0.10m thick and contained a higher proportion of re-deposited chalk. The nature of these fills suggests they represent a combination of deliberately re-deposited topsoil and chalk to backfill the pit. The interpretation of this feature is unclear, but the tin sheet indicates it is relatively modern. Though the fill differs to that of pit [2002], it is possible that it, too, was dug to dispose of waste material.

The refuse pit [302] found in evaluation Trench 3 was not observed during the construction phase, because soil was only partially stripped in this area.

### 2.3.3 Quarry pit

A large, sub-circular pit [2016], up to 20m across, was revealed in the southern half of the development (Figures 2 and 5). This had been partially excavated during the trial trenching (Trench 6, [605]) and revealed to be 1.3m deep. Now that its full extent is known, it can be more certainly interpreted as a chalk quarry or marling pit, features which are common in the Chilterns.

A classic tree-throw hole was observed on the edge of the quarry pit, but this was not recorded as an archaeological feature. Its presence implies that the pit may have been left open for some time and that scrub had become established around it – in much the same way as has happened around the numerous pits at the north end of the Downs.

During the evaluation, a sondage 3m long by 1m wide was excavated through the fills of the quarry pit, revealing modern scrap metal and roof tile. An 'L'-shaped pit [603] was found to have been dug into the upper fill of the quarry pit. It contained a modern shoe iron.

After stripping to expose its full extent, a number of distinct fills were visible in plan within the pit, ranging from re-deposited chalk to brown silty clays. Two small fragments of post-medieval roof tile and a modern fragment of roof tile were contained within fill (2020), consistent with the artefacts recovered during the trial trench excavation that indicate a post-medieval / modern date for the pit.

### 2.3.4 Undated pits of archaeological or geological origin

Five pits (Figure 2, [2005], [2007], [2009], [2011] and [2021]) were identified within the car-park areas of the development. These features were irregular in plan. Pit [2009] was the largest and was over 1.7m long, but the others varied



between 0.20m and 0.90m across and were up to 0.3m deep. They were all sealed by the topsoil and had irregular but generally steeply sloping sides and irregular bases. They were filled with dark red-brown silty clay with frequent small to medium sized flints, the larger of which lay towards the bottom. This is characteristic of a natural sorting process. None of the features contained artefacts and are therefore undated.

The irregular nature of the features and characteristics of their fills suggested that they were likely to have been of natural origin – possibly clay pockets that had formed within the natural chalk as a result of geological processes. Because they were interpreted as natural features, pits [2011] and [2021] were recorded but not excavated. Several similar pits and were encountered during the evaluation (Trench 1 [103], [105], [107], [109]; Trench 2 [204], [208]) and a probable posthole [402] had been identified in Trench 4.

During post-fieldwork analysis of the results it was noted that the four smaller pits, [2005], [2007], [2011] and [2021], lay on an approximate north–south alignment and may, therefore, have been a line of postholes, possibly fence posts. Although the intervals between the pits were quite large (more than 3.5m), it is possible that intermediate postholes were not as deep and therefore did not survive below the subsoil. The features were irregularly spaced, but this may also be explained if intermediate posts have been lost. Comparison of the distances in the table below suggests that posts at approximately 6-foot intervals would fit quite well between the four features. A six foot interval is likely to have been a standard spacing for fence posts.

Features	Distance between features (a)	'Standard' 6ft interval (b)	No. of 6ft intervals (a)/(b)	Conjectured no. of 'missing' posts
2007 and 2005	3.5m (140in)	1.8m (72in)	1.9 ( $\approx 2$ )	1
2005 and 2011	10.1m (404in)	1.8m (72in)	5.6 ( $\approx 6$ )	4
2011 and 2021	5.2m (208in)	1.8m (72in)	2.9 ( $\approx 3$ )	2

Exactly six 'standard' intervals would fit between features 2005 and 2011 if the total distance between them was 10.8m. This would have been possible if the fence line curved slightly.

The pit-like feature [2009] is still considered to have been natural in origin, but its fill was identical in composition to the fills of the five possible postholes.

### 2.3.5 Furrows

Plough furrows similar to those identified in the evaluation (Trench 1 [111]; Trench 4 [404] [406]; Trench 5 [503]) were not encountered during soil stripping for the construction phase. This suggests that the furrows only survive to the west of the Development Area.





### 3. CONCLUSIONS

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#### 3.1 Synthesis

The features revealed during the construction of the new visitor centre comprised two pits containing modern waste material, a post-medieval/modern chalk quarry or marling pit, and five undated pits. These complement the features found during the field evaluation carried out in 2004. In addition to the above, the evaluation had identified two pits containing modern refuse, seven undated pits (including a possible posthole) and four plough furrows.

##### 3.1.1 Modern refuse pits

The two pits located near the southern end of the site, [803] and [2002], contained what appeared to have been dumps of 19<sup>th</sup>/20<sup>th</sup>-century slag and fuel waste material. These features were located within a cluster of six similar anomalies identified during geophysical survey (Archaeological Services WYAS, 2004). The interpretation of the excavated evidence is unclear, though the slag and fuel waste suggest they are the result of more than a simple bonfire. Pit [2002] post-dated an early 20<sup>th</sup>-century field drain and so can not have been contemporary with the early 19<sup>th</sup>-century Admiralty telegraph station. By implication, it is likely that the unexcavated magnetic anomalies in the area also post-date the telegraph station.

Though located some distance to the north of the above cluster, pits [302] and [2013] were similar in size and profile to pit [2002]. They contained pieces of sheet iron, and also appeared to have been used to dispose of modern waste material.

For an area of open countryside well away from any settlement or industrial areas, the presence of a relatively large quantity of modern rubbish is surprising. This indicates that there has been at least one phase of temporary occupation of the land. There is no evidence for the purpose of the occupation. It is most probable that it was agricultural but the Downs have also seen 20<sup>th</sup>-century military activity (gun emplacements have been identified at the foot of the scarp and some earthworks have been interpreted as the remains of First World War practice trenches). The use of the site as an encampment by Travellers is also possible, but more domestic material might have been expected in that case.

##### 3.1.2 Quarrying

The post-medieval / modern quarry pit [2016] is one of many such features scattered over Dunstable Downs. Given the proximity of the site to arable land on the clay-with-flints, it is most likely that the pit was dug to obtain chalk for use in marling the fields to the south.

##### 3.1.3 Possible postholes

The undated small pits [2005] [2007] [2011] and [2021] are likely to have been natural in origin. However, they may have been the deeper postholes of a fence running in north-westerly direction across the Downs. None of the historical maps consulted for the desk-based assessment (Albion Archaeology 2004a) records a boundary in this location, so any fence was probably very temporary.



George Shepherd's 1819 painting (BLARS slide no. 1566) of the Admiralty telegraph station depicts a waist-high paling or hedge in front of the building, but there is as yet insufficient evidence to determine the precise location of the structure.

No relationship could be established between this possible fence line and the isolated posthole found in Trench 4, because the intervening land was not stripped.

#### **3.1.4 Undated pits**

Apart from the above, all other pits are most likely to have been natural features in the chalk. They contained no artefacts and it is not possible to resolve them into recognisable structures.

#### **3.1.5 Undated plough furrows**

Although plough furrows were encountered during the field evaluation, none was identified during soil stripping for the car park area. This is surprising as it would be expected that plough marks would have been more likely to occur at the top of the hill, where soils are more subject to erosion. Current fieldwork associated with the construction of the Dunstable Downs Multi-User Route has recorded numerous wheel ruts and hollow-ways near the north end of the Downs. It is possible that the 'furrows' on the Gateway Centre site could also be reinterpreted as wheel ruts. However, the profile of the best preserved furrow [406] was the 'V' shape characteristic of ploughing, rather than the more 'U'-shaped profile of wheel ruts.

### **3.2 Limitations of the Results of the Investigation**

All the archaeological features found during the investigation lay within the areas from which topsoil and subsoil were completely removed to expose the underlying chalk (see Figure 2). No features were visible in areas of partial soil stripping, even where features had been identified during the earlier trial trenching (pit [302] for example). Also, there were large areas along the western side of the Development Area where no groundworks took place. Full recovery of archaeological information was limited to the areas of the car-park and part of the access road. (see Figure 2).

### **3.3 Significance of Results**

None of the features encountered can be interpreted as remains of the Admiralty telegraph station and do not assist the more accurate determination of its site. The refuse pits, which were considered on the basis of the field evaluation to have been contemporary with this installation, have now been shown to post date the Napoleonic period.

For most of the features, there is insufficient evidence to determine their archaeological significance with complete confidence. In order to assess the significance of the results, the archaeological features identified during the programme of observation and investigation, along with those recorded in the field evaluation, have been grouped according to form and interpretation of function. The significance each group of features is assessed as follows:



Group	Features	Archaeological Significance
Chalk quarry or marling pit	[603] [605] [2016]	The quarrying of chalk as a raw material in the whiting, lime and cement industries is characteristic of the Dunstable area. These industries have been identified by English Heritage as potentially of national importance (Chitty 2001). However, the quarry pit identified on the Gateway Centre site was probably dug to extract chalk for use in marling the adjacent arable fields. This was a fairly commonplace practice and is representative of widespread agricultural improvements introduced in the post-medieval and modern periods. This quarry pit is therefore of local importance, although this is enhanced by its proximity to the more developed industries centred around Dunstable.
Modern waste pits	[302] [803] [2002] [2013]	For an area of open countryside well away from any settlement or industrial areas, the presence of a relatively large quantity of modern rubbish is surprising. The significance of this is not clear, but it indicates that there has been at least one phase of temporary occupation of the land. The dating of pit [2002] to the early 20 <sup>th</sup> century indicates that this occupation probably post-dates the Admiralty telegraph station. There is no evidence for the purpose of the occupation. It is most probable that it was agricultural, but a possible military association may be of greater importance. Because of the limitations of the evidence, the significance of these features is unknown.
Possible post holes	[402] [2005] [2007] [2011] [2021]	These are pits tentatively interpreted as postholes based solely on their form and alignment. There is no dating evidence. Because of the limitations of the evidence, the significance of these features is unknown.
Undated pits	[103] [105] [107] [109] [204] [208] [2009]	These pits are probably natural geological features. Because of the limitations of the evidence, the significance of these features is unknown.
Furrows	[111] [404] [406] [503]	Furrows are normally indicative of arable agriculture. Dated examples can be significant when they shed light on changes in land use, particularly if they represent the introduction of ploughing in the remote past. Isolated single furrows are generally less significant than multiple furrows that form recognisable patterns indicating the method of ploughing. No furrows were observed during the construction phase and the few examples found during the evaluation were undated and widely spaced. They are therefore of negligible significance.





## 4. REFERENCES

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## 5. CONTEXT SUMMARY

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**Area:** 1  
**Extent (ha):** 0.7  
**OS Co-ordinates:** TL0085019440  
**Description:** Area 1 comprises all areas of excavation monitored as part of the programme of Archaeological Observation, Investigation, Recording, Analysis and Publication. (Contexts 103 to 806 were recorded during trial trenching)

Context:	Type:	Description:	Excavated:	Finds Present:
103	Pit	Circular profile: concave base: concave dimensions: max breadth 0.5m, max depth 0.23m, max length 0.5m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
104	Fill	Plastic dark red brown silty clay moderate small chalk, frequent medium-large stones. Depth 0.23m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
105	Pit	Sub-oval profile: 45 degrees base: v-shaped dimensions: max breadth 0.52m, max depth 0.2m, max length 0.78m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
106	Fill	Plastic dark red brown silty clay moderate small chalk, frequent small-large stones. Depth 0.2m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
107	Pit	Sub-circular profile: 45 degrees base: uneven dimensions: max breadth 0.37m, max depth 0.19m, max length 0.5m. North side is steep, straight and near vertical, south side is irregular and 45 degrees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
108	Fill	Plastic dark red brown silty clay moderate small chalk, frequent small-large stones. Depth 0.19m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
109	Pit	Circular profile: concave base: flat dimensions: max breadth 0.5m, max depth 0.12m, max length 0.47m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
110	Fill	Plastic dark red brown silty clay. Depth 0.12m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
111	Furrow	Straight linear profile: near vertical base: flat dimensions: max breadth 0.25m, max depth 0.15m, max length 2.55m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
112	Fill	Friable dark brown silt frequent small chalk, frequent small stones. Depth 0.15m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
202	Pit	Sub-oval profile: concave base: flat dimensions: max breadth 0.75m, max depth 0.12m, max length 1.15m. Partially obscured by bulk	<input checked="" type="checkbox"/>	<input type="checkbox"/>
203	Fill	Friable dark red brown clay silt occasional flecks chalk, frequent small stones. Depth 0.12m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
204	Pit	Oval profile: concave base: concave dimensions: max breadth 0.45m, max depth 0.15m, max length 0.57m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
205	Fill	Friable dark brown clay silt frequent small chalk, frequent small stones. Depth 0.15m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
302	Pit	Sub-circular profile: concave dimensions: max breadth 1.4m, max length 2.6m. Feature not fully excavated, believed to be modern. Partially obscured by baulk	<input checked="" type="checkbox"/>	<input type="checkbox"/>
303	Fill	Friable dark brown clay silt frequent small-medium chalk, frequent small-large stones. Visible portion of the feature is 2.60m x 1.40m, depth unknown	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
402	Posthole	Circular profile: near vertical base: uneven dimensions: max breadth 0.3m, max depth 0.22m, max length 0.34m. Base is flat with a V shaped indentation in the centre, possibly a spade mark. Possibly posthole for earlier fence line.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
403	Fill	Compact dark brown clay silt moderate small-medium chalk, moderate small-medium stones. Depth 0.22m. No evidence for a rotted post and fill not very humic.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
404	Furrow	Linear profile: 45 degrees base: v-shaped dimensions: max breadth 0.1m, max depth 0.03m, max length 1.9m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
405	Fill	Friable mid brown clay silt moderate small-medium chalk, moderate small-medium stones. Very similar to topsoil and feature may run into or through topsoil, difficult to tell as fills so similar. Max depth 0.03	<input checked="" type="checkbox"/>	<input type="checkbox"/>
406	Furrow	Linear profile: near vertical base: flat dimensions: max breadth 0.2m, max depth 0.11m, max length 2.7m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
407	Fill	Friable mid brown clay silt moderate small-medium chalk, moderate small-medium stones. Very similar to topsoil and feature may run into or through topsoil, difficult to tell as fills so similar. Max Depth 0.11m	<input checked="" type="checkbox"/>	<input type="checkbox"/>



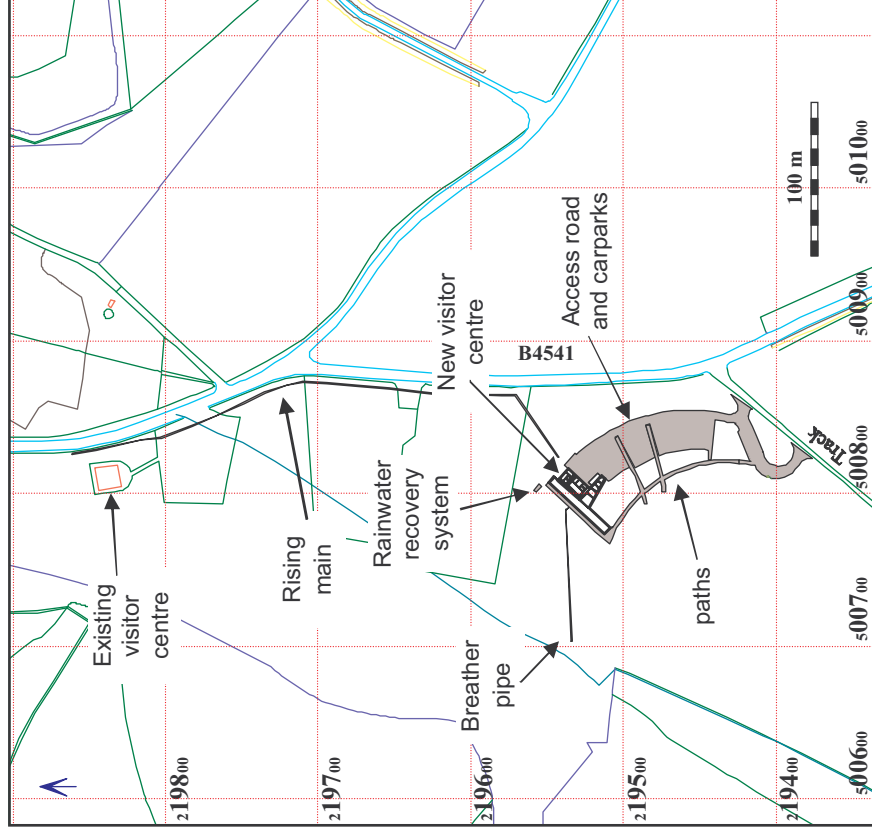
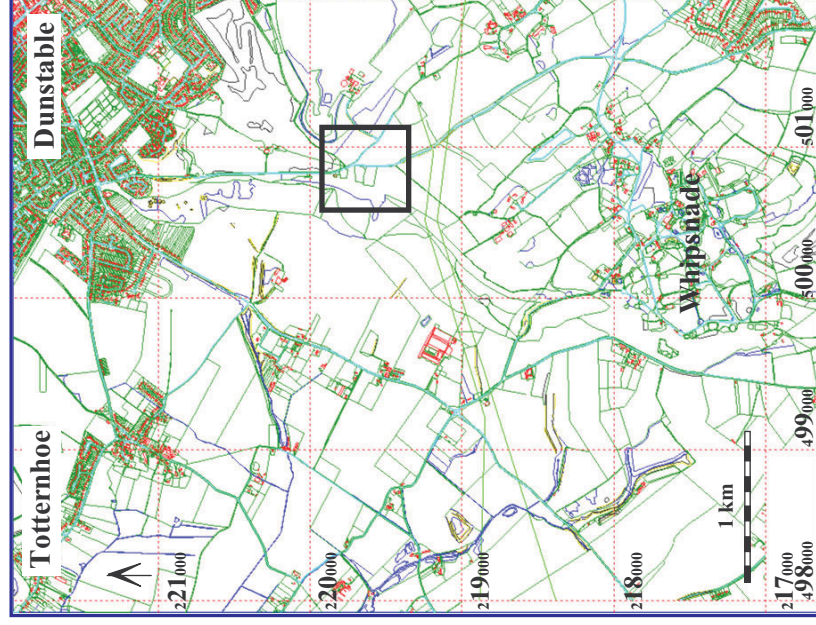
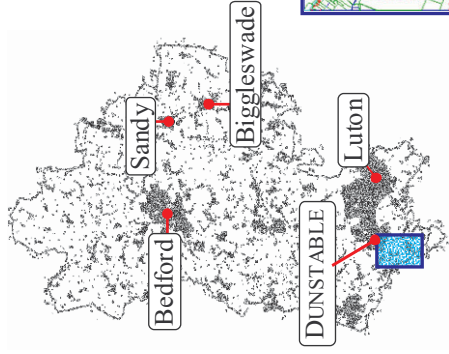
**Area:** 1  
**Extent (ha):** 0.7  
**OS Co-ordinates:** TL0085019440  
**Description:** Area 1 comprises all areas of excavation monitored as part of the programme of Archaeological Observation, Investigation, Recording, Analysis and Publication. (Contexts 103 to 806 were recorded during trial trenching)

503	Furrow	Linear profile: near vertical base: v-shaped dimensions: max breadth 0.12m, max depth 0.04m, max length 3.6m. Natural chalk and silt	<input checked="" type="checkbox"/>	<input type="checkbox"/>
504	Fill	Friable dark brown silt frequent small chalk, frequent small stones. Very like topsoil. Max depth 0.04m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
603	Pit	Irregular profile: concave base: flat dimensions: max breadth 0.57m, max depth 0.06m, max length 1.14m. L - shaped pit, probably modern. Probably sitting inside extent of pit [605]	<input checked="" type="checkbox"/>	<input type="checkbox"/>
604	Fill	Firm mid brown silty clay occasional small chalk, frequent small-medium stones. Modern fill. Max depth 0.06m	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
605	Pit	Profile: 45 degrees dimensions: max breadth 3.4m, max depth 1.32m. Shape and sides unclear as no edges visible, base not excavated. Possible chalk pit of possible post-medieval period. Extent probably lies outside trench 6	<input checked="" type="checkbox"/>	<input type="checkbox"/>
606	Fill	Firm light orange brown silty clay frequent small-large chalk, occasional small-medium stones. Width 2.10m, depth 0.18m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
607	Fill	Firm light brown grey silty clay frequent small-large chalk, occasional small-medium stones. Width 0.85m, depth 0.16m. Chalk tip.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
608	Fill	Firm dark orange brown sandy clay frequent small-medium chalk, occasional flecks charcoal, moderate small-medium stones. Width 3.4m, depth 0.4m	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
609	Fill	Firm light brown grey silty clay moderate small-large chalk, occasional small-medium stones. Width 2.00m, depth 0.17m. Chalk tip.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
610	Fill	Firm dark orange brown silty clay moderate small-large chalk, occasional flecks charcoal, frequent small-large stones. Width 1.86m, depth 0.62m	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
611	Fill	Firm light brown grey silty clay frequent small-large chalk, occasional small-large stones. Width 0.36m, depth 0.16m. Chalk tip.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
612	Fill	Firm light brown grey silty clay frequent small-large chalk, occasional small-large stones. Width 0.89m, depth 0.05m. Chalk tip.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
613	Fill	Firm dark orange brown silty clay moderate small-large chalk, frequent small-large stones. Width 0.57m, depth 0.15m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
614	Fill	Loose light yellow brown silty clay frequent small-large chalk, occasional small-large stones. Weathered chalk. Width 3.4m, depth 0.3m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
615	Fill	Loose light yellow brown silty clay frequent small-large chalk, frequent small-large stones. Weathered Chalk looser than (614). Width 1.05m, depth 0.19m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
803	Ditch	Straight linear profile: concave base: flat dimensions: max breadth 1.8m, max diameter 0.14m, max length 2m. Extent partially obscured by baulk	<input checked="" type="checkbox"/>	<input type="checkbox"/>
804	Fill	Compact dark brown clay silt frequent small-medium chalk. Frequent small-medium coke/coal and slag inclusions. A burnt fill containing modern material. Depth 0.14m, width 1.8m.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
805	Fill	Loose yellow sand occasional small chalk. Length 0.3m, width 1.6m, depth 0.1m	<input checked="" type="checkbox"/>	<input type="checkbox"/>
806	Subsoil	Compact dark red brown silty clay frequent small-medium chalk, frequent small-medium stones. A re-deposited subsoil type material which appears to seal the feature	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2000	Topsoil	Loose mid brown clay silt moderate small-medium chalk, frequent small-large stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2001	Natural	Firm white chalk moderate small-large stones. Contained pockets of red-brown clay with flints. Towards the southern extent of the study area the chalk gave way to a compact and plastic, dark red clay with flints.	<input type="checkbox"/>	<input type="checkbox"/>



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2002	Pit	Sub-circular profile: concave base: flat dimensions: max breadth 2.8m, max depth 0.22m. Feature only partially visible within confines of excavation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2003	Fill	Firm mid brown clay silt moderate small-medium chalk, occasional small-medium stones. Contained lenses of yellow sand	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2004	Fill	Firm dark brown clay silt moderate small-medium chalk, moderate small-medium stones. Contained frequent fragments of slag and coke/coal pieces	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2005	Pit	Irregular profile: irregular base: uneven dimensions: max breadth 0.5m, max depth 0.3m, max length 0.65m. Though the shape of this feature is somewhat irregular, the alignment of features [2005], [2007], [2011] and [2021] suggests they may be remnants of a fence line.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2006	Fill	Firm dark red brown silty clay frequent small-medium stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2007	Pit	Irregular profile: irregular base: uneven dimensions: max breadth 0.2m, max depth 0.25m, max length 0.4m. Though the shape of this feature is somewhat irregular, the alignment of features [2005], [2007], [2011] and [2021] suggests they may be remnants of a fence line.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2008	Fill	Firm dark red brown silty clay frequent small-medium stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2009	Pit	Irregular profile: irregular base: uneven dimensions: max breadth 2m, max depth 0.3m, max length 0.9m. Probable geological feature	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2010	Fill	Firm dark red brown silty clay frequent flecks chalk, frequent small-medium stones	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2011	Pit	Irregular dimensions: max breadth 0.3m, max length 0.42m. Though the shape of this feature is somewhat irregular, the alignment of features [2005], [2007], [2011] and [2021] suggests they may be remnants of a fence line.	<input type="checkbox"/>	<input type="checkbox"/>
2012	Fill	Firm mid red brown silty clay frequent small-medium stones	<input type="checkbox"/>	<input type="checkbox"/>
2013	Pit	Profile: concave base: uneven dimensions: max breadth 3m, max depth 0.25m. Shape of the feature is not visible due to confines of the service trench.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2014	Fill	Loose dark brown silty clay frequent small chalk, moderate small stones. Contained lenses of re-deposited chalk and also contained pieces of rusted tin sheet	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2015	Fill	Moderately loose mixture of re-deposited chalk and silty clay with moderate small-medium sized stones.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2016	Quarry	Sub-circular dimensions: max diameter 20m. Previously excavated during trial trench excavation.	<input type="checkbox"/>	<input type="checkbox"/>
2017	Fill	Loose mid brown silty clay frequent flecks chalk, frequent small-medium stones	<input type="checkbox"/>	<input type="checkbox"/>
2018	Fill	Firm mid orange brown silty clay frequent flecks chalk, moderate small-medium stones	<input type="checkbox"/>	<input type="checkbox"/>
2019	Fill	Re-deposited chalk	<input type="checkbox"/>	<input type="checkbox"/>
2020	Fill	Firm mid brown silty clay moderate flecks chalk, moderate small-medium stones	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2021	Pit	Irregular dimensions: max breadth 0.28m, max length 0.45m. Though the shape of this feature is somewhat irregular, the alignment of features [2005], [2007], [2011] and [2021] suggests they may be remnants of a fence line.	<input type="checkbox"/>	<input type="checkbox"/>
2022	Fill	Firm mid red brown silty clay frequent small-medium stones	<input type="checkbox"/>	<input type="checkbox"/>



**Figure 1: Site location**

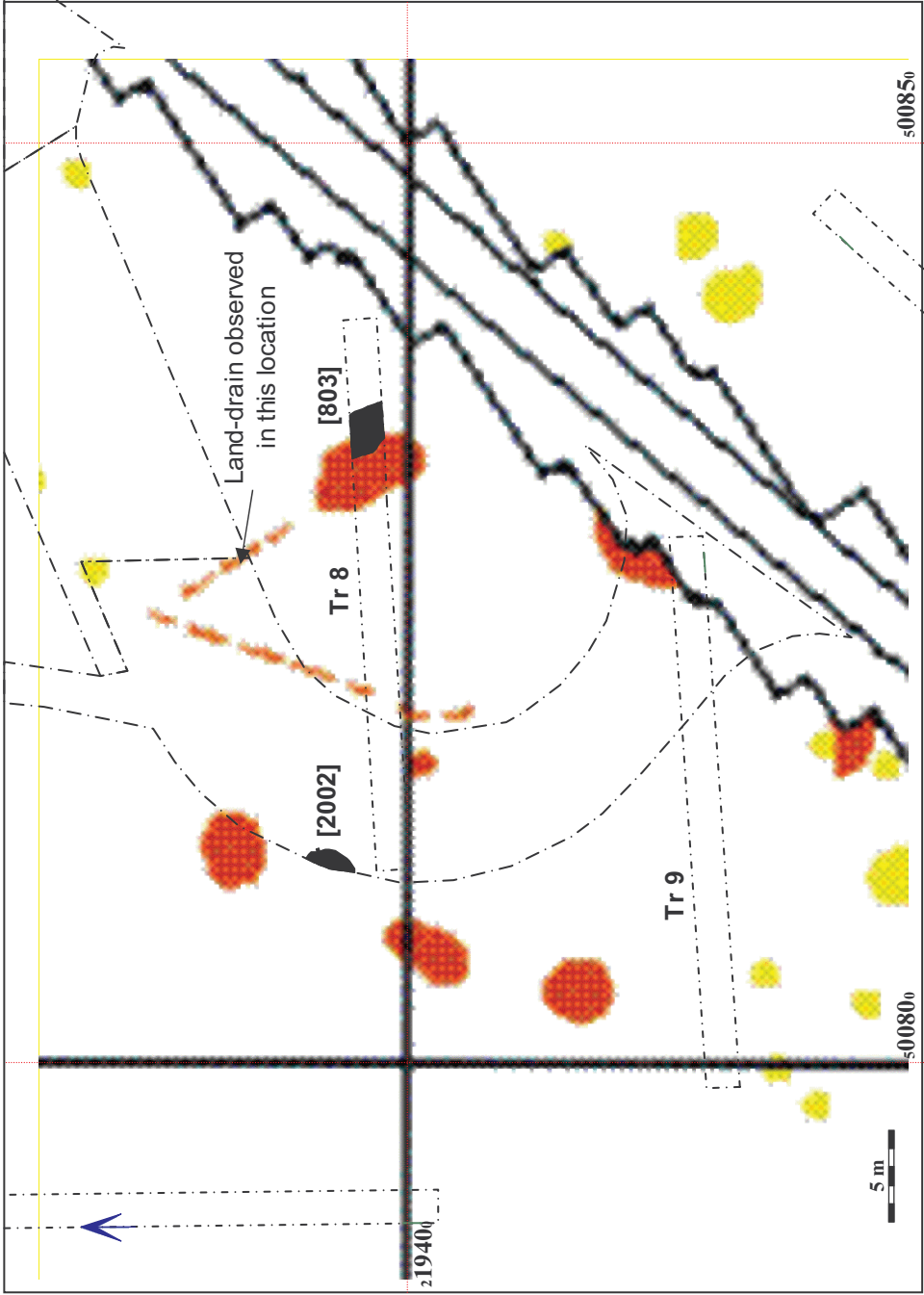
Base map reproduced from the Ordnance Survey Map with the permission of the Controller of Her Majesty's Stationary Office, by Bedfordshire County Council, County Hall, Bedford. OS Licence











TYPE OF ANOMALY		INTERPRETATION
	DIPOLAR, ISOLATED	FERROUS MATERIAL
	AREA OF MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	MODERN/AGRICULTURAL
	AREA OF MAGNETIC ENHANCEMENT	ARCHAEOLOGY?
	LINEAR TREND	ARCHAEOLOGY?

Figure 3: Geophysics results and features in south end of the site







Ground reduction for new visitor centre and car park



Ground reduction for new access road

**Figure 4:** Photographs of ground reduction







**Figure 5:** Photograph of quarry pit [2016]