



Planning, Transport
and Environment

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Report No. B2221E.R01
August 2000

A34 CHIEVELEY / M4 JUNCTION 13 IMPROVEMENT
ARCHAEOLOGICAL FIELD-WALKING SURVEY




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



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ARCHAEOLOGICAL FIELD-WALKING SURVEY

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1. NON-TECHNICAL SUMMARY

- 1.1.1 A field-walking project was undertaken by Gifford and Partners Ltd on behalf of Gifford Graham & Partners for the Highways Agency. The area of the survey covered that of a proposed road improvement scheme at the A34/M4 Junction 13 close to the village of Cheiveley, West Berkshire. The fieldwork was carried out during January 2000 while significant portions of the land were clear of crops. Several fields were 'under pasture' at the time of the survey and so could not be walked. One of the fields walked contained immature cabbages, making the observation and recovery of artefacts difficult.
- 1.1.2 The fieldwalking survey was based on the 'Essex Method', walking a 20m grid based upon the Ordnance Survey National Grid for permanence of location. Statistical analysis by means of standard deviation was employed, to calculate the variance of artefact distribution away from the 'norm' in order to identify potential archaeological sites within the survey area.
- 1.1.3 A Desk Based Assessment of the area was carried out prior to the field-walking process. This identified a low-medium apparent archaeological potential within the survey area. This potential related to the Iron Age hillfort of Bussock Hill, approximately 1,000m to the west of the site. Chance or stray finds formed the basis for the majority of records consulted in the West Berkshire Sites and Monuments Record (Gifford Report No. B2221A.R01)
- 1.1.4 Statistical analysis of the fieldwalking results identified four potential sites in the survey area. Three of these sites appear to be prehistoric in date and have been identified through standard deviation from the mean within the artefact assemblages of specific areas. In one case a variation from the mean of the flint assemblage was accompanied by a concentration of Bronze Age pottery. This complementary evidence provides the best likelihood of a prehistoric site within the survey corridor. In each case these deviations appear to occur upon gentle rises, or slightly down slope of these rises. The fourth site was post-Medieval in date and was located next to the A34 to the north of the M4.
- 1.1.5 Additional finds included three sherds of Iron Age pottery, four sherds of Romano-British pottery and four sherds of Medieval pottery. However, the distribution of these artefacts did not allow any conclusions to be drawn from their recovery.

2. INTRODUCTION

2.1 Abbreviations

<i>c</i>	-	<i>circa</i>
CRO	-	County Record Office
DBA	-	Desk Based Assessment
ha	-	hectare
km	-	kilometre
NGR	-	National Grid Reference
OS	-	Ordnance Survey
SMR	-	Sites and Monuments Record

2.2 Project Background

- 2.2.1 During January 2000, Gifford and Partners Ltd. undertook a programme of fieldwalking on behalf of Gifford Graham & Partners for the Highways Agency. The objective of the survey was to ascertain the potential for archaeological remains within the area of a proposed road improvement scheme at Junction 13 of the M4/A34, by means of the collection and statistical analysis of the surface distribution of artefact scatters over the survey area.

2.3 Site Location

- 2.3.1 The site comprised a corridor of land beginning at NGR SU 480 729, just to the south of the village of Chieveley, c. 8km north of Newbury in Berkshire (Figure 1). The corridor extended c. 1.8km to the north of Chieveley village, terminating at NGR SU 480 737.

2.4 Geology, Topography, Land Use And Site Conditions

- 2.4.1 The corridor of land was aligned north south starting approximately 800m to the south of Junction 13 of the M4 motorway. From this point the corridor extended northwards to a point c.100m to the north of the motorway. The A34 and various slip roads extended along the eastern edge of the corridor. The corridor was set in a rolling landscape typical of chalk downland.

- 2.4.2 The solid geology of the site is characterised as Upper Cretaceous Chalk (soft white chalk with flint nodules). The overlying soil within the corridor consisted largely of a sandy/silty soil matrix.
- 2.4.3 The fieldwalking exercise was carried out over the course of five days during January 2000. The weather during this period was largely dry and bright. A period of rain earlier in the month did not cause any problems associated with the identification and recovery of artefacts.
- 2.4.4 Three fields had been ploughed prior to the survey, while one field contained immature cabbages. Several other fields were occupied by open pasture and saplings (notably in areas C and D and in parts of area E) and therefore could not be field walked (Figure 2).

2.5 Methodology

- 2.5.1 The project was based on the 'Essex Method', a fieldwalking method devised and developed by the Essex County Archaeological Section, which has been in use since 1985 (Essex County Council, 1985).
- 2.5.2 The field-walking grid was based on the Ordnance Survey National Grid to allow the scheme to be located to permanent points of reference (Figure 2). The survey area was subdivided into kilometre squares (with an associated letter) e.g. A. The km square was sub-divided into hectares numbered from 1 upwards e.g. A 1, subsequently each hectare was sub-divided into 20m transects and labelled A-Z (excluding O and commencing in the SW corner) e.g. A 1 A. Finds from 1m either side of the transect were collected, bagged, labelled and a record sheet completed. Artefacts were processed and bagged according to location and type of find with record sheets completed for each 20m transect.
- 2.5.3 A particular problem with fieldwalking surveys is that of differential recovery of material. This can be as a result of a number of factors such as differing ground and weather conditions affecting the visibility of material on the surface. However, these factors are out of the archaeologist's control. Haselgrove (1985, 21) identifies a further problem with the recovery of material during fieldwalking, that is, the difference in collection rate between individual walkers, and that a survey team with differing levels of experience often introduces an artificial bias to the results, simply because the more experienced team members are better able to recognise archaeological material. He argues that archaeologists with a similar experience level will produce a more accurate picture of material densities on a site than an 'unbalanced' team (ibid). With this in mind the survey was carried out by a team of five archaeologists, all of who were of similar experience.

- 2.5.4 Another problem associated with the collection of artefacts is hill-wash. Several locations, notably within area C and the southern parts of areas E and F. Hill-wash can result in artefacts collecting in areas of low ground, which may produce misleading data when the field is walked. However the only means to test whether hill-wash has affected the results is by intrusive excavation, hence areas that may have been subject to the effects of hill-wash have been designated as possible sites until the extent of archaeological remains can be determined.
- 2.5.5 A total of 915 transects were walked during the fieldwalking project. Of these transects 261 were classed as void during the fieldwalking exercise. 'Void' transects were generally the result of fence/road lines and the presence of pasture/grassland within the fieldwalking transects. This occurred most notably within Squares C, D and the first parts of Square E (Figure 2). Some 134 transects recovered no finds during the fieldwalking exercise or had all finds from them discarded after the washing and drying process.
- 2.5.6 Once processed, artefact distribution was plotted upon a site plan according to standard deviation from the mean weight for artefact type. Worked flints have been calculated by standard deviation per number of items per transect, rather than by weight. The standard deviation is used as an indicator of deviation of values from the mean. A 'site' is defined as a deviation from the norm for the survey area and the artefact type. Consequently the relative density required to define a site fluctuates from period to period and from one area to another. This definition of a site is therefore essentially a qualitative and statistical one, underpinned by professional judgement as to what type of past activity may have been responsible for this deviation (Essex County Council 1985, 8).
- 2.5.7 *'Archaeological Fieldwalking in Essex, 1985-1993: Interim Results'* (Medleycott and Germany 1994, 14) states that 'inevitably the larger the dataset, the more valid the conclusions'. In order to obtain the most realistic results, the dataset for each find type was compared with each of the others. By examining the coincidence between data sets, for example worked flint and prehistoric pottery, it was possible to establish the location of probable sites of archaeological potential.

2.6 Archaeological and Historical Background

- 2.6.1 The results of the DBA (Wait, 1999) identified no known archaeological sites within the survey corridor. Archaeological references identified within the West Berkshire SMR were largely 'chance' or stray finds.
- 2.6.2 Scattered Bronze Age and Mesolithic finds were recovered from archaeological

work associated with the Newbury Bypass (Wessex Archaeology, 1991a, 1991c, 1994b). Other stray finds dating from the Roman and Post-Medieval periods have been recovered, while documentary and place name evidence suggest apparent foci of activity at Chieveley, Snelsmore Farm, Priorscourt and Curridge during the Anglo-Saxon and Medieval periods. A single Iron Age hillfort is located upon Bussock Hill approximately 1,000m to the west.

- 2.6.3 The conclusions of the DBA identified that the apparent archaeological potential for the corridor of land to be surveyed was generally low, but rose to medium for Iron Age activity.

3. ANALYSIS BY PERIOD

3.1 Prehistoric

- 3.1.1 The analysis of prehistoric sites relied on the distribution of three indicators along the length of the fieldwalking corridor. These indicators were prehistoric pottery, worked flint (comprising flakes, cores and tools) and burnt flint. All three finds types were recovered during the course of fieldwalking. Five sherds of what appeared to be Bronze Age pottery were recovered from the entire survey area.
- 3.1.2 Neolithic and Bronze Age pottery is generally fragile in nature and does not survive well within the ploughsoil. Individually these sherds were small and generally heavily abraded with an average 0.5g of prehistoric pottery recovered per hectare walked. However, there was a marked concentration of Bronze Age pottery within hectare squares E and F at the northern end of the corridor (Figure 3), one fragment of which exhibited fresh breaks. Three sherds of Iron Age pottery were also recovered in the vicinity of square F, although these fragments appeared to be less fragile and less abraded than the Neolithic or Bronze Age fabrics. This being the case, it is possible that these sherds have been in the ploughsoil for longer and have therefore travelled further from their point of origin than the Bronze Age fragments. On this basis it is difficult to extrapolate any meaningful interpretation from these sherds, save that the proximity of Bussock Hill hillfort would make other Iron Age sites in the vicinity likely.
- 3.1.3 Worked flint is less susceptible to plough damage than prehistoric pottery and so, in bulk terms, far more was recovered from within the corridor. An average of 6.3 examples of worked flint per hectare were recovered from the fieldwalking corridor, however, significant concentrations were identified within specific areas of the survey. A small concentration of worked flint was recovered from three short transects at the end of Square C, the rest of the square was set aside to pasture. This concentration is most probably the result of hill

wash from within the ploughed field, but may have come from elsewhere in Square C. Other concentrations were recovered from within Squares E and F (Figure 4), although here examination of associated finds throws more light on the distribution of material.

3.1.4 Burnt flint is often associated with prehistoric sites, and an average of 200g per hectare was recovered. Several concentrations were identified along the fieldwalking corridor, including one concentration that corresponded with a mean distribution of worked flint within Square A. The other major concentration occurred within areas of Squares E and F and in conjunction with scatters of worked flint (Figure 5). Burnt flint was recovered in from Square F in conjunction with worked flint and prehistoric pottery. It is possible that burnt flint found 'out of situ' in the topsoil may also represent activity from later periods, such as stubble burning.

3.1.5 Analysis of the three find types from within the fieldwalking corridor suggests the presence of several prehistoric, possibly Bronze Age, sites within the survey area. The most convincing concentrations come from the northern end of the corridor. Holgate (1985,56) suggests that the type of activity carried out at a site in antiquity may produce distinctive lithic scatters that will show up during fieldwalking. The tool types represented in the Chieveley assemblages are for the most part preparatory tools such as scrapers and blades. Examined in conjunction with the pottery recovered, it seems likely that the site or sites represented by the surface finds are domestic in nature. The spreads between F1 and F6 may indicate several archaeological possibilities:

- That a single site exists on top of the slope around F4-F6 and that the finds further down slope are the result of hill wash.
- That a single large site exists within Square F and extends across the intervening area into Square E.
- That two or three sites exist, two within Square F and a single site on the high ground in Square E.

3.1.6 The presence of prehistoric pottery across this site may indicate plough activity damaging negative features on top of the slope. This process has brought several prehistoric pottery sherds to the surface in the recent past. The prehistoric sherds were recovered in various states of preservation indicating that this process has occurred on numerous occasions. It may be that hill-wash has provided protection for negative features from ploughing off the brow of the hill and so these may survive relatively intact.

3.1.7 A large mean density scatter of worked flint corresponding with a higher density

of burnt flint may indicate the presence of some form of activity site within Square A of the fieldwalking corridor. The scattered nature of this group of finds possibly indicates a heavily ploughed feature, such as a burnt mound, close to the surface, with possibly only scattered finds surviving within the top or sub soil. The exact nature and purpose of burnt mounds is, at present, not wholly understood, with some archaeologists attributing them to 'ritual' activities such as sweat lodges or cooking activities (Darvill, 1987). However, without excavation it is impossible to assess the validity of this hypothesis. The combination of find types and scatters does indicate the possible presence of a largely ploughed out site between Squares A7 and B3.

3.1.8 A small but potentially significant scatter of finds was recovered from the final transects of Square C. It was only possible to walk three transects, the rest being under pasture. A group of 12 worked flints were recovered from these three transects, this may be the result of hill wash from close by, although it is not known from which direction the hill wash originated. It must be borne in mind that the majority of Square C remains unwalked. The same must be said for all of Square D, which runs along the slip road of the M4, however, this area was most probably heavily disturbed during the construction of the road.

3.1.9 The three sherds of Iron Age pottery provide evidence for Iron Age activity in the area. However, without any accompanying material the evidence for settlement in the area of the survey is very slim.

3.2 Romano-British Period

3.2.1 In total only 18g of Romano-British pottery was recovered during the entire fieldwalking exercise, this figure averages out at 0.34g per hectare walked. Within this figure no distinct concentrations were identified during the finds processing and analysis. No other finds dating to this period were recovered during the survey. The finds density and distribution is sufficiently scattered and disparate to suggest either manuring or casual loss, as opposed to actual occupation within the survey area.

3.3 Anglo-Saxon Period

3.3.1 No finds datable to the Anglo-Saxon period were recovered during the fieldwalking exercise. The absence of finds dating to this period may indicate a lack of Anglo-Saxon archaeological sites within the survey area. It may also reflect retrieval bias due to the friable nature of the pottery, which does not survive repeated ploughing and weathering (Medleycott and Germany 1994, 17). However, prehistoric pottery may be said to be equally friable and prone to weathering and plough damage, and significant quantities were recovered from

the ploughsoil within the walked corridor.

3.4 Medieval Period

- 3.4.1 In total 70g of Medieval pottery were recovered during the fieldwalking exercise, this figure averages out to 1.32g of Medieval pottery per hectare walked. More importantly, no distinct concentrations of Medieval pottery were identified during the analysis process, suggesting the presence of no sites within the survey area. These scattered finds suggest casual loss or manuring of fields during this period.

3.5 Post-Medieval Period

- 3.5.1 The most numerous find type datable to this period was post-Medieval tile with 27.93kg recovered from the length of the fieldwalking corridor, this equates to an average of 528g recovered per hectare. A single distinct concentration was identified within the general background scatter of post-Medieval tiles within Square E at the eastern end of the site.
- 3.5.2 Post-Medieval brick was recovered throughout the fieldwalking areas, although not in as large quantities as post-Medieval tile. In total 6.19kg of post-Medieval brick were recovered from the fieldwalking corridor, on average 116g per hectare.
- 3.5.3 Post-Medieval pottery was the most numerous ceramic material recovered during the fieldwalking project. The total weight of post-Medieval pottery recovered during the project was 1.29kg, with an average of 24.3g recovered per hectare of the corridor. A single concentration of post-Medieval pottery was identified within Square E, this corresponded with a similar concentration of post-Medieval tile along the eastern edge of the field (Figure 6). Discussions with the farmer revealed that several houses had been located along this edge of the field and had been demolished ahead of the construction of the A34.

4. INTERPRETATION

- 4.1.1 Earlier work along the course of the A34 Newbury Bypass by Wessex Archaeology has identified several late Neolithic/early Bronze Age sites close to those identified through the current project. Fieldwalking (Wessex Archaeology, 1991c) recovered some 44 pieces of worked flint dated to the late Neolithic/early Bronze Age (SU 4690 7070) and 10 pieces of burnt flint. Further fieldwalking at SU 4730 7130 recovered 15 pieces of worked flint dating to the late Neolithic/early Bronze Age and 14 pieces of burnt flint.

- 4.1.2 The Chieveley survey produced finds of a broadly similar type and period. Several side scrapers, utilised flakes with retouch, and one broken leaf shaped arrowhead were found largely within hectare square F and to a lesser degree within square E to the east. Some flakes and numerous secondary flakes, primary flakes and several cores were also recovered from Squares E and F. These finds combined with the pottery do seem to suggest the presence of at least one and possibly as many as three late Neolithic or early Bronze Age sites within Squares E and F. A further site, possibly a prehistoric burnt mound, was identified, most probably surviving only within the ploughsoil of Square A. The survival of such a scatter of burnt and worked flint indicates that the group of finds are no longer *in situ* where they were originally located and have been moved by subsequent ploughing episodes.
- 4.1.3 Pierpoint (1981, 14), in his study on plough damage and the effect of post depositional disturbances on flint work, indicates that while the medium of hill-wash is able to move flint, this is only over short distances. The most serious form of disturbance comes from post-Medieval ploughing activity (ibid). Much of the worked flint, as well as one of the sherds of prehistoric pottery, appeared to have little plough damage, which may suggest their recent removal from negative features by the process of deeper ploughing.
- 4.1.4 If negative features have survived upon the raised area within the field containing Squares E and F, but have been damaged by ploughing, other negative features may survive in better condition further down-slope masked by hill-wash.
- 4.1.5 At present, the current fieldwalking project has identified several potential prehistoric sites along the proposed road corridor. The site(s) identified along the narrow band that comprised Square F cannot, as yet, be defined as separate sites or as one large entity.

5. CONCLUSION

- 5.1.1 At the beginning of the fieldwalking exercise it was expected on the basis of the DBA that minimal archaeological evidence would be encountered during the fieldwalking survey. Over the majority of the area walked this was the case, however the final squares, E and F, produced positive evidence for the survival of at least one archaeological site in the vicinity. This evidence has greatly enhanced the potential for further work in the area. The most obvious course of action is to undertake a geophysical survey of the areas identified as having archaeological potential. In addition, a programme of targeted trial trenching in response to any results produced by the geophysics would be expected to confirm the extent to which any physical remains survive. In the areas identified

as possibly being covered by hill-wash, geophysical survey methods may be ineffective, so it is recommended that test-pits or trial-trenching should take place to ascertain the extent of the hill-wash, and the nature of any archaeological remains sealed beneath.

- 5.1.2 Ideally this process would take place in the near future, as the discovery of unabraded Bronze Age pottery indicates that ploughing may be actively destroying archaeological features. Additionally, significant amounts of worked flint were recovered from the small proportion of Square C that was available for ploughing. Fieldwalking the remainder of this field, and carrying out a geophysical survey, would help quantify the apparent archaeological potential of this part of the survey area. Fieldwalking these remaining areas will also help inform on the need for archaeological mitigation of the adjacent areas undergoing enabling works.

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APPENDIX A

Figures

Figure 1. Chieveley location plan.

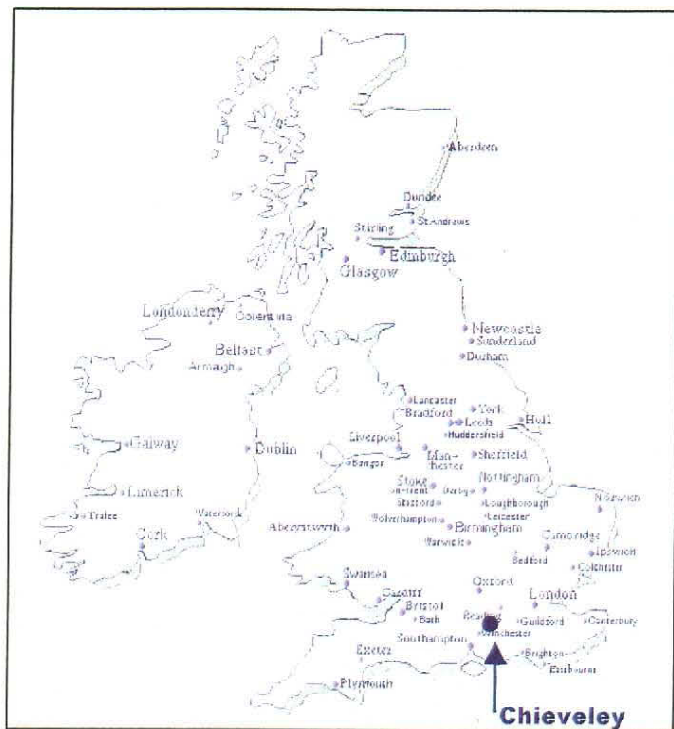
Figure 2. Survey area location plan.

Figure 3. Plan showing prehistoric pottery recovered from squares E and F.

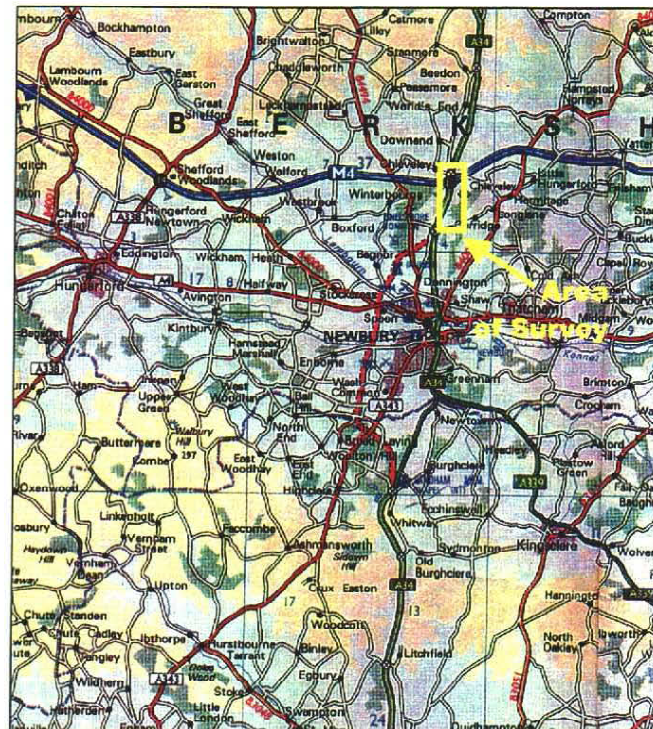
Figure 4. Plan showing worked flint recovered from squares E and F.

Figure 5. Plan showing burnt flint recovered from squares E and F.

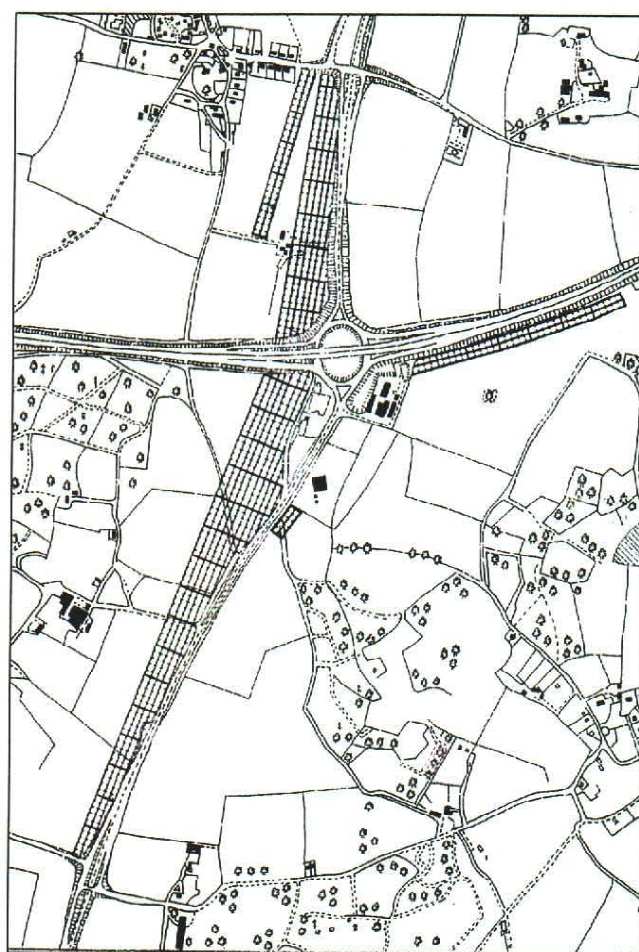
Figure 6. Plan showing location of post-Medieval site in square E.



Portsmouth City Council (Not to Scale)



RAC Road Atlas of Great Britain & Ireland 1998
(Not to Scale)



Ordnance Survey Sheet SU 47 SE (1982)
(Not to Scale)

Figure 1: Site Location Plan

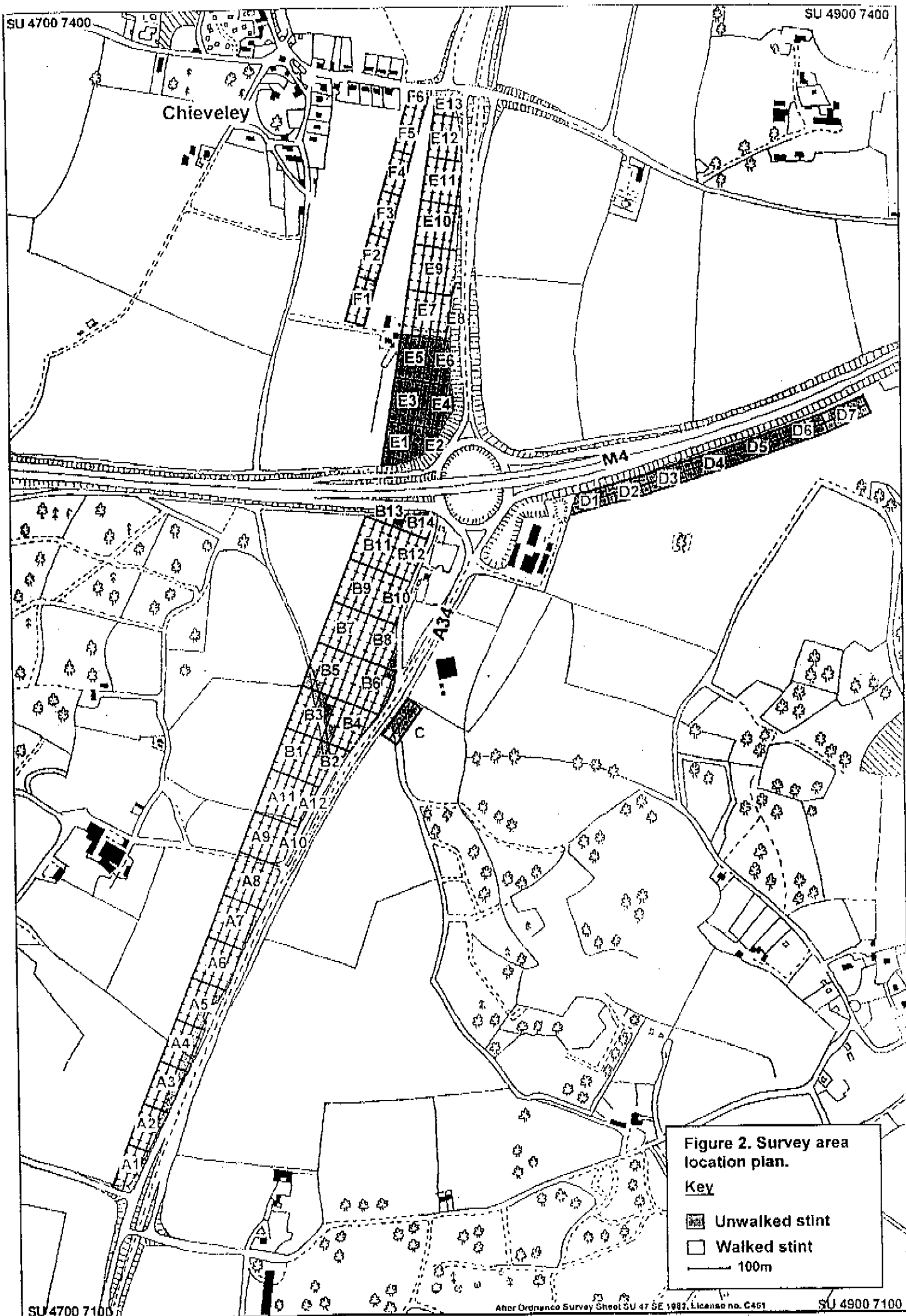


Figure 3: Plan Showing Prehistoric Pottery Recovered From Squares E and F

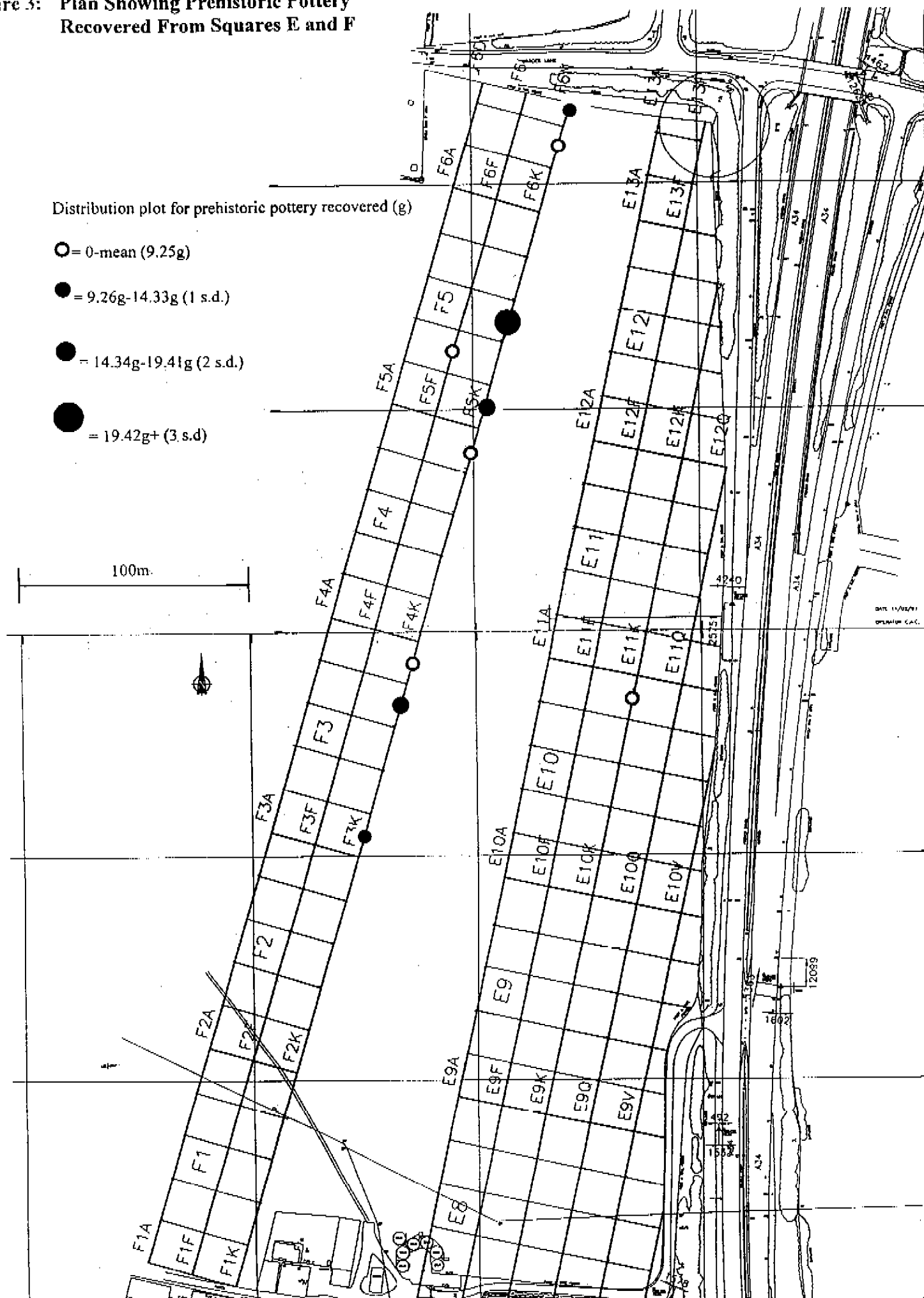


Figure 4: Plan Showing Worked Flint Recovered From Squares E and F

Distribution plot for pieces of worked flint recovered (pcs).

- = 0- mean (2.07 pcs)
- = 2.08 pcs- 5.17 pcs (1 s.d.)
- = 5.18 pcs- 6.72 pcs (2 s.d.)
- = 6.73+ pcs (3 s.d.)

100m

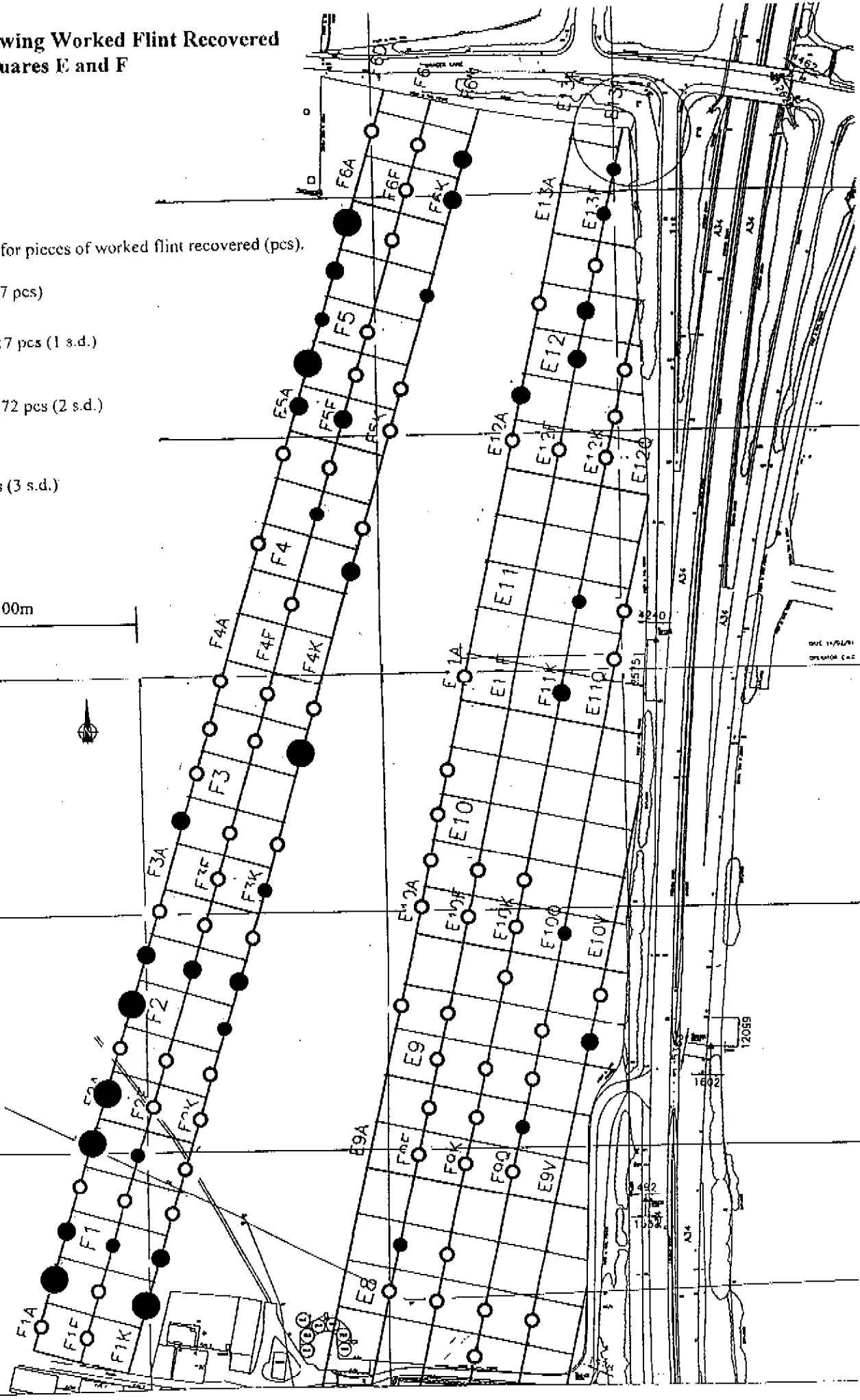


Figure 5: Plan Showing Burnt Flint Recovered From Squares E and F

Distribution plot for burnt flint recovered (g)

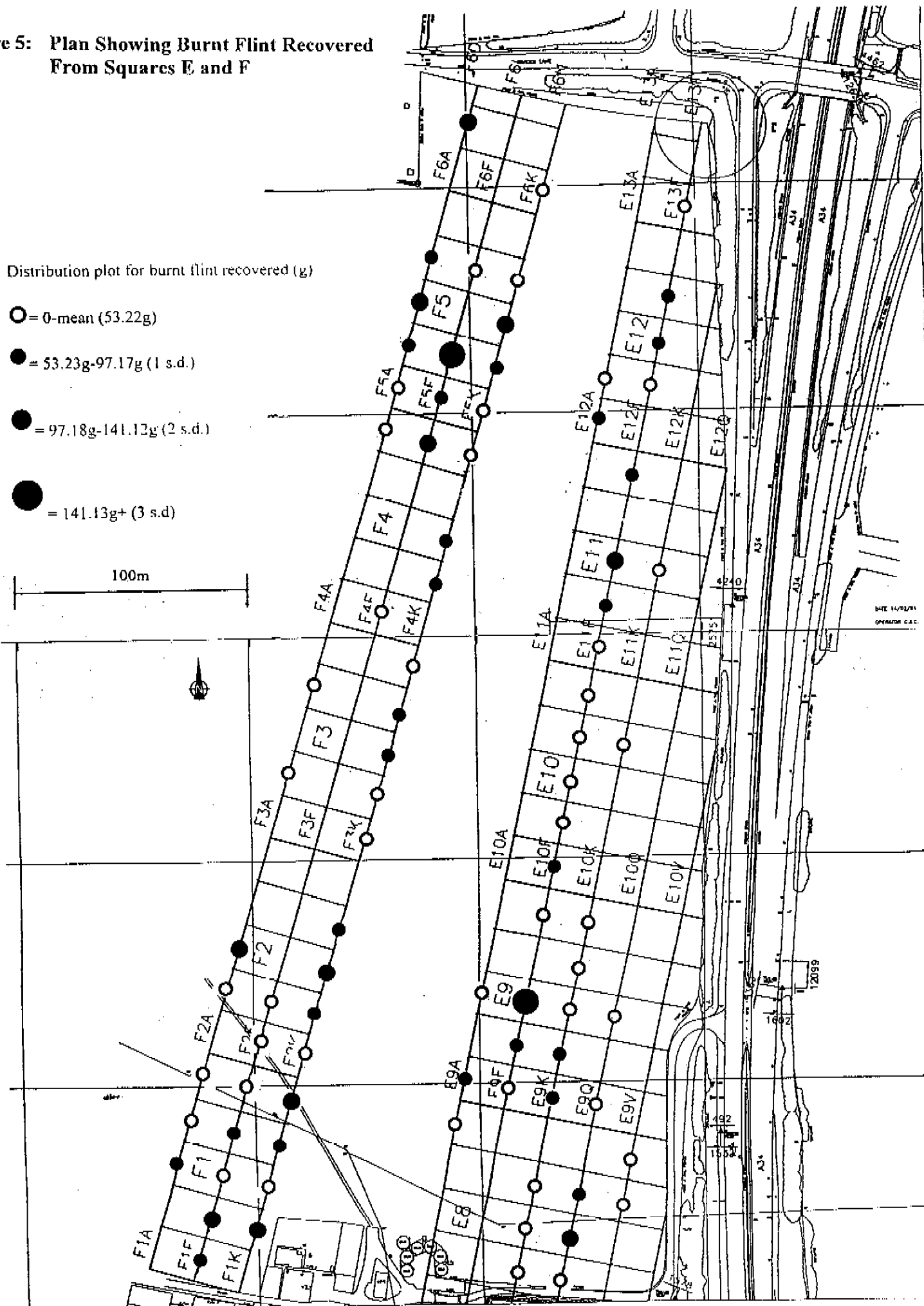
○ = 0-mean (53.22g)

● = 53.23g-97.17g (1 s.d.)

● = 97.18g-141.13g (2 s.d.)

● = 141.13g+ (3 s.d.)

100m



DATE 14/02/91
OPERATOR C.C.

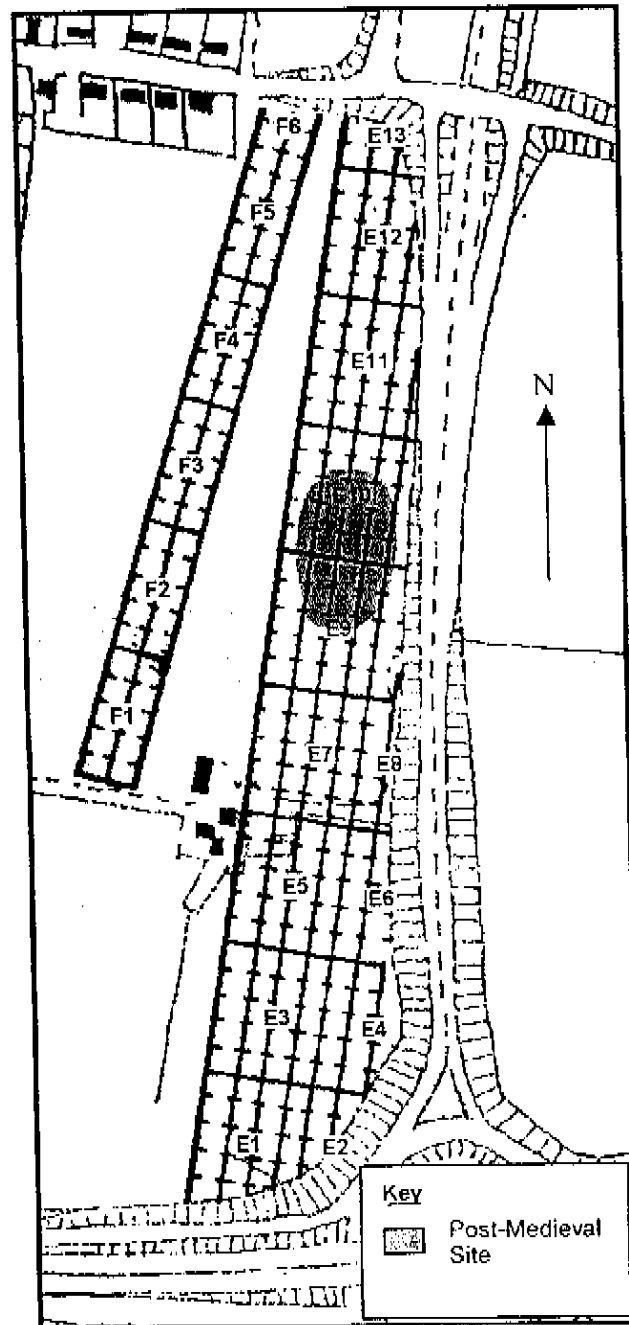


Figure 6: Plan Showing Location of Possible Post-Medieval Site
(After Ordnance Survey Sheet SU 47 SE 1982) (Not to Scale)

APPENDIX B

Archive

The retained artefacts and statistical data sheets are to be deposited in the West Berkshire Museum, Newbury.