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An Archaeological Evaluation Excavation of Land off Meadow Lane, North Hykeham

NGR SK 947 654

prepared by

John Samuels Archaeological Consultants

on behalf of

Longhurst Housing Association
Friars House
Quaker Lane
Boston
PE21 6DZ

*JSAC 539/99/03
December 1999*

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**An Archaeological Evaluation Excavation
of Land off Meadow Lane, North Hykeham**

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Summary

Longhurst Housing Association are proposing the development of a small piece of land off Meadow Lane, North Hykeham, centred on NGR SK 947 654. In advance of their application for planning permission, they commissioned a programme of archaeological investigation to establish the archaeological potential of the site.

The site lies on the southern edge of the modern town of North Hykeham, in an area traditionally used for arable farming. No sites or finds of archaeological interest have been recorded within the proposed development site. However, a desk-based assessment undertaken as the first phase of assessment (JSAC 539/99/01), identified that elements of a Romano-British settlement have been recorded 100m to the north of the site. The full extent of this settlement had not been determined and it was considered possible that it extended into the site itself.

A geophysical survey was commissioned in order to establish the presence or otherwise, of remains relating to this Roman settlement and to establish whether any other remains of archaeological interest existed. The results suggested that substantial linear and pit like features existed on the site. An archaeological evaluation excavation was undertaken to establish the date and nature of these anomalies.

The evaluation excavation revealed archaeological features dating from the Roman period and later. Such features comprise enclosure ditches and pits. Two fragments of Iron Age pottery were also recovered which may indicate the presence of Iron Age settlement in the vicinity. However, such finds are commonly made on 1st century AD Romano-British settlements and often merely reflect the continued use of earlier pottery types and traditions. Industrial activity is also represented by the presence of iron slag and slag-like material. Very little animal bone was recovered but it is considered likely that soil conditions on the site do not provide good preservation.

A layer of topsoil and subsoil was recorded across the site and was generally found to a depth of 0.5m below the present ground surface. These layers sealed archaeological deposits. Trial trench excavation has evaluated anomalies identified by geophysical survey and areas likely to be disturbed by development as well as those that are not. It is concluded that further archaeological monitoring and recording should be undertaken during development, if groundworks are likely to disturb buried archaeological remains. It is recommended that an archaeological watching brief should be carried out during groundworks associated with the development.

1.0 Introduction

1.1 Site Location and Topography

- 1.1.1 The study area is situated on the south-western edge of North Hykeham in North Kesteven district, centred on NGR SK 947 654. The area proposed for development covers approximately 1.15 ha of land currently under rough pasture.
- 1.1.2 The site is situated 800m from the western bank of the Old River Witham at between 5-10m above Ordnance Datum, sloping gently eastwards towards the Old River Witham. Soils at the site are Wickham 2 Association, typified by generally clayey deposits derived from the drift geology below.
- 1.1.3 Numerous streams and drains lie in the vicinity of the site and it is likely to have been seriously affected by flooding in the past. The southern boundary of the field concerned is formed by the South Field Drain; a further field lies to the east and housing lies to the northwest. The western boundary of the site is Meadow Lane.

1.2 Planning Background

- 1.2.1 It is proposed that 24 residential buildings will be constructed on the western part of the site (Planning Application: N/43/680/96). The eastern extent of the site is within the South Witham Flood Protection Area and is not to be developed.
- 1.2.2 Longhurst Housing Association commissioned *John Samuels Archaeological Consultants* to undertake a desk-based assessment to identify any archaeological remains in advance of the development of the site (*JSAC 539/99/01*). This study identified the possibility that archaeological remains dating from the Romano-British period could extend into the development site. A geophysical survey was then commissioned and the results suggested that linear and pit-like features existed within the study area (GSB Prospection Report 99/77 - see Appendix A).
- 1.2.3 After consultation with the Heritage Officer (North Kesteven District Council), a specification was submitted for the evaluation excavation of a 2% sample of the site (*JSAC 539/99/02* - see Appendix B). The aim was to investigate the date, nature, extent and state of preservation of those features identified by the geophysical survey as well as to investigate apparently blank areas.
- 1.2.4 This assessment was written by Jenny Young BA in consultation with Nansi Rosenberg BA, PIFA.

2.0 Archaeological Background

- 2.1 The site lies on the southern edge of the modern town of North Hykeham, in an area traditionally used for arable farming. A desk-based assessment undertaken by *John Samuels Archaeological Consultants* and commissioned by Longhurst Housing Association was produced and it was concluded that no sites or finds have been recorded within the proposed development site (JSAC 539/99/01).
- 2.2 However, archaeological artefacts and remains have been recorded outside the site and date from the prehistoric period. A Neolithic polished stone axe (SMR ref. E) has been recorded on slightly higher ground, 450m to the north of the site.
- 2.3 Watching briefs undertaken during residential development between 1947 and 1997 have produced evidence for a Romano-British settlement dating from the 3rd century A.D. and earlier (SMR 60783). The full extent of this settlement has not been determined and up to the time of the assessment, elements of it had been identified within 100m of the proposed development site. It was considered possible that remains dated to this period extended into the site itself.
- 2.3.4 Medieval settlement of North Hykeham is likely to have concentrated around the centre of the modern town located north of the site. Evidence for settlement during the medieval period is mainly indicated in historical written sources.
- 2.3.5 The Domesday survey (1086) records the manor of Hykeham with the name *Hicham*, which is suggested to be derived from Old English *hice* and *ham*, meaning 'the homestead where the blue tit-mouse is found'. This interpretation is reported to be very uncertain (Cameron 1998).
- 2.3.6 Hykeham is recorded in the Domesday Survey as a manor belonging to Count Alan with additional land belonging to Doddington and St Peters Abbey in Westminster. The population of North Hykeham comprised two villagers and 13 freemen. Extensive areas of meadow (78 acres) reflect its position on the bank of the River Witham. A mill is also recorded (Morgan & Thorn 1986).
- 2.3.7 A number of historic maps, including the second edition of the Ordnance Survey 6" to 1 mile publication marks the site of a medieval chapel located approximately 300m to the north of the proposed development site (SMR ref : U). Documentary references to St Katherine's Grange at North Hykeham are known (Owen 1971) and it is likely that it lay in the vicinity of Chapel Lane. A number of medieval pottery fragments are recorded 50m to the west of the supposed chapel site (SMR ref : V).
- 2.3.8 Areas of ridge and furrow have been recorded to the east, west and south of the site (Rosenberg 1999a).

3.0 Methodology and Objectives

- 3.1 Trenches were located in relation to the anomalies identified by the geophysical survey and to test apparently blank areas. In total, they measured 224m² comprising 2% of the proposed development site by area. Four trenches measuring 20m x 1.6m and six 10m x 1.6m wide trenches were excavated. Their precise locations and dimensions are detailed in Figure 2.
- 3.2 Topsoil and overburden was removed by mechanical excavator. The spoil generated during the evaluation was mounded around the edges of the trench with topsoil being kept separate from other excavated material. The excavation ceased when either undisturbed natural deposits or when archaeological features were identified. The nature of these deposits was assessed by hand excavation. Excavation of archaeological features exposed was undertaken as far as was required, to determine their date, sequence, density and nature.
- 3.3 The objective of the evaluation was to determine the presence or otherwise of buried remains of archaeological interest; and to assess the site's archaeological potential in order to allow the Local Planning Authority to make an informed decision regarding its suitability for development.
- 3.4 Further aims included:
 - i. to assess the nature, date, density, extent, function and state of preservation of archaeological remains identified;
 - ii. to assess their potential for answering questions about the development of land use in the region; and
 - iii. where remains are of sufficient importance, to determine the best method by which these remains can be preserved by record.

4.0 Results

4.1 Evaluation excavation at Meadow Lane, North Hykeham recorded several archaeological features dating from the Roman period and later. These were located towards the northern sector of the site within the area to be developed (referred to as Area A). Area B, is located within the South Witham Flood Protection Area. The results which follow are discussed within these area locations as well as by trench. Trenches 1 - 6 were located in Area A and Trenches 7 - 10 were located within Area B.

4.2 Area A

4.2.1 A 0.25m thick layer of topsoil comprising a firm, dark brownish grey silt with turf was recorded across the area sealing a deposit of subsoil. Subsoil was revealed in all trenches to a maximum thickness of 0.4m and comprised a firm, greyish brown silty clay.

Trench 1

4.2.2 Excavation of Trench 1 revealed no archaeological features or finds. The only evidence of man-made disturbance dates from the post-medieval period and comprises a ceramic field drain (see Plate 1). The field drain was sealed by subsoil (102) and cut through the natural geology (103) on a northwest-southeast alignment.

Trench 2

4.2.3 Excavation of Trench 2 was inhibited by rising water levels possibly caused by an underground spring line (see Plate 2). The original location of the trench as detailed in the specification (JSAC 539/99/02) proved to be unworkable and for this reason the trench was relocated 5m to the north of the original location. The water influx in this trench was also high and the level of water was controlled using a water pump.

4.2.4 The earliest deposit recorded within Trench 2 comprises a mid yellow clay representing the natural geology (212). Several archaeological features dating to the Roman period were recorded cutting through this layer which had not been identified by geophysical survey (see Figure 3 and Plate 3).

4.2.5 A shallow, oval cut with concave sides and base [204] was recorded at the western end of Trench 2. The fill of this feature consisted of a mid greyish brown clay (203) containing greyware pottery of 1st to 4th century Roman date.

4.2.6 To the east of pit [204], a shallow east-west aligned ditch [206] with concave sides and a flat base was recorded. A deposit of brownish red humic silty clay comprised the secondary fill (205) of this feature with a primary fill of mid reddish orange sandy gravel (211). A large sherd of decorated 2nd century Samian pottery was recovered from (205).

4.2.7 To the east of ditch [206], the northern edge of a large ditch or pit [210] was recorded,

nearly reaching the northern baulk. This feature could have been a ditch curving around to the south, or the edge of a large pit (see Plate 4). A deposit of mottled greyish brown silty clay (209) was the only fill recorded. Greyware pottery dated to the 1st - 4th century A.D. was retrieved from this deposit during excavation.

- 4.2.8 A small oval cut [208] with concave sides and base was recorded to the north of ditch [206]. A quantity of weather worn sandstone and pottery of 2nd to 4th century date was recovered from excavation of the dark grey silty clay fill (207).
- 4.2.9 All archaeological features within Trench 2 were sealed by a 0.4m thick layer of subsoil (202) overlain by topsoil (201).

Trench 3

- 4.2.10 The earliest deposit recorded within Trench 3 comprises a light yellowish brown clay with occasional sand pockets representing the natural geology (307). Two post-medieval field drains as well as ditches and gullies dated to the 1st - 4th century and earlier were recorded cutting through this layer (see Figure 4). These features were not identified through geophysical survey.
- 4.2.11 A series of intercutting ditches were recorded in this trench, aligned approximately northwest-southeast (see Plate 5). Ditch cut [310] with concave sides and base was the earliest of these, cutting through the natural geology (see Figure 5). The primary fill of this ditch comprised redeposited mid yellowish brown silty clay (315) which is likely to have derived from the natural geology. A mid greenish brown-grey silty clay (314) formed the secondary fill. No dateable artefacts were retrieved from either deposit.
- 4.2.12 Cutting through the secondary fill of ditch cut [310], an east-west aligned ditch [309] with steep irregular sides and a concave base was recorded. The fill of this ditch comprised a mid brownish grey silty clay (312) with occasional rounded stone. No archaeological artefacts were retrieved from this deposit.
- 4.2.13 A further ditch [308], aligned northwest-southeast with concave sides and base, was recorded cutting through fill (312). It contained (311), a mid greenish grey silty clay with moderate stone. Large nodules of conglomerate containing slightly ferrous slag-like material, ferrous slag, burnt sandstone, animal bone and pottery of 3rd to 4th century date were recovered from this deposit.
- 4.2.14 Ditch cut [316], with concave sides and an irregular base, was recorded cutting through deposit (311) and (305). The fill of this ditch comprised a mid brownish grey silty clay (313) with a high charcoal content, suggesting a fire had occurred within the vicinity but yielded no dateable material. A layer of light grey-greenish brown silty clay (303) was recorded sealing fill (313).
- 4.2.15 Two curvilinear gullies were recorded which remained undated. Within the centre of the

trench, curvilinear gully [321] was recorded cutting through the natural geology. The primary fill of this gully comprised a dark grey clay with frequent charcoal (322) but no dateable artefacts were recovered. A deposit of mid grey silty clay formed (305), the secondary fill of the gully and yielded a fragment of pottery of medieval date. However, this sherd is likely to be intrusive as the feature was truncated by ditch cut [316] (see Figure 4) which was securely dated to the Roman period.

- 4.2.16 A possible continuation of gully [321] was revealed to the south of ditches [308], [309] and [310]. This feature comprised the terminus end of a curvilinear gully [320], with concave sides and base, and was recorded cutting through the natural geology. A mid brownish grey silty clay (306) containing occasional stone formed the single fill of this gully but yielded no dateable artefacts.
- 4.2.17 A further two linear gullies were also recorded cutting through the natural geology within Trench 3. A northeast-southwest aligned gully terminus [318], with a dark brown silty clay fill was recorded at the southern extremities of the trench. Adjacent to this gully, a northwest-southeast aligned gully [319] with concave sides and base and a mid brownish grey silty clay fill, was recorded. No artefacts were recovered from either feature.
- 4.2.18 Two northwest-southeast aligned ceramic field drains were recorded at the northern end of the trench, with the most northerly drain cutting through the natural geology (307). The most southerly drain cut through deposit (303) which sealed the surface of a series of ditches and inhibited full excavation.
- 4.2.19 All archaeological features within Trench 3 were sealed by a 0.34m thick layer of subsoil (302) overlain by topsoil (301).

Trench 4

- 4.2.20 The earliest deposit recorded within Trench 4 comprised a light yellowish brown clay with occasional sand pockets representing the natural geology (414). A post-medieval field drain as well as ditches and a gully dated to the Roman period were recorded cutting through this layer (see Figure 6). The ditches were identified through geophysical survey.
- 4.2.21 A northwest-southeast aligned ditch [405] with a mid greenish grey silty clay fill (406) was recorded cutting through the natural geology (see Figure 7). This feature represents the earliest sequence of ditches recorded within Trench 4. Pottery of 2nd to 3rd century A.D. date was recovered from deposit (406).
- 4.2.22 A second northwest-southeast aligned ditch [408] with concave sides and base was recorded within Trench 4 (see Plate 6) cutting through the single fill of ditch [405]. A mid yellowish brown silty clay (413) forms the primary fill and is interpreted as redeposited natural generated through excavation of the ditch. A secondary deposit of light bluish grey clay (407) with orange mottling seals primary fill (413). Roman pottery sherds of 1st to 4th century date were recovered during excavation. One fragment of possible medieval

pottery was also recovered but is considered to be intrusive to the feature. The upper fill of this ditch comprised a dark blackish brown silty clay (403) with occasional rounded stone and frequent charcoal flecks. This deposit was similar in composition to deposit (313) recorded in Trench 3. Pottery of 2nd to 3rd century A.D. date was recovered during excavation.

- 4.2.23 Cutting through the primary fill of ditch [408], a further northwest-southeast aligned ditch [415] with concave sides and base was recorded. The fill of this ditch comprised a mid brownish grey silty clay (404) with orange mottling similar to deposit (314) recorded in Trench 3. Ferrous slag, animal bone and pottery of Iron Age and 1st - 4th century Roman date was retrieved.
- 4.2.24 To the south of this series of ditches, a northeast-southwest ditch [409] with convex sides and a flat base was recorded cutting through the natural geology (see Plate 7). The fill of ditch [409] comprised a grey clay with orange mottling and occasional rounded stone. No dateable artefacts were recovered.
- 4.2.25 At the northern end of the trench, the terminus end of small gully [411] was recorded. The fill of this vertical sided cut comprised a mid brown silty clay which yielded no dateable material. It is possible that this feature was created by cracking of the natural clays.
- 4.2.26 All archaeological features within Trench 4 were sealed by a 0.35m thick layer of subsoil (402) overlain by topsoil (401).

Trench 5

- 4.2.27 The earliest deposit recorded within Trench 5 comprised a light yellowish grey clay with occasional sandy gravel pockets representing the natural geology (505). A post-medieval field drain as well as a ditch dated to the Roman period were recorded. The ditch had been identified by geophysical survey.
- 4.2.28 A north-south aligned ditch [504] with sloping sides and concave base was recorded cutting through the natural geology. The fill of the ditch comprised a firm, grey clay (503) with orange mottling and occasional charcoal flecks and was similar in composition to deposit (410) recorded in Trench 4. The profile of ditch [505] was similar in form to [409] recorded in Trench 4 (compare Plate 7 and Figure 9). Pottery of Roman date was retrieved from the fill of this feature.
- 4.2.29 A post-medieval ceramic field drain was recorded cutting through the natural geology.
- 4.2.30 All man-made features within Trench 5 were sealed by a 0.3m thick layer of subsoil (502) overlain by topsoil (501). Three Pancheon body sherds of 19th century date were recovered from the subsoil (502).

Trench 6

- 4.2.31 The earliest deposit recorded within Trench 6 comprised a light yellowish brown clay with pockets of yellowish red sand representing the natural geology (610). Ditches, a post-medieval field drain, plough marks and furrows were recorded (see Figure 10). The ditches had previously been identified through geophysical survey.
- 4.2.32 A series of ditches were recorded crossing Trench 6. These were only partially excavated in order to confirm the initial on-site interpretation as the continuation of those features already excavated in Trench 4. An east-west aligned ditch [611] was recorded cutting through the natural geology. The fill (604) of this cut resembled deposit (407) recorded within Trench 4. Pottery of 2nd to 3rd century AD date was retrieved from this deposit.
- 4.2.33 Cutting through deposit (604), a ditch [605] with concave sides and flat base was recorded. Pottery of Roman date was recovered from the fill of this ditch. The fill comprised a blackish brown silty clay (603) and had the same composition as deposit (403) within Trench 4. A field drain truncated this deposit.
- 4.2.34 Two northwest-southeast aligned furrows were recorded to the north of ditch [605] (see Figure 11). The fill of furrow [609] which is located immediately adjacent to ditch [611], comprised a mid orange brown silty clay with charcoal flecks. Tile of unknown date was retrieved.
- 4.2.35 Another furrow [607], also northwest-southeast aligned, was recorded to the north of furrow [609]. Furrow [607] measuring 0.96m in width and 0.14m in depth was smaller and shallower than the adjacent furrow.
- 4.2.36 Ploughmarks probably deriving from the post-medieval period were recorded towards the southern extremities of the trench. All man-made features within Trench 6 were sealed by a 0.30m thick layer of subsoil (602) overlain by topsoil (601). A 15th to 16th century green glazed jug handle was retrieved from the subsoil (602).

4.3 Area B

- 4.3.1 No archaeological features were recorded within Area B (South Witham Flood Protection Area). However, the depth of the subsoil and composition of the underlying natural geology varied across the area.
- 4.3.2 A 0.2m thick layer of topsoil comprising a dark brownish grey silt with turf was recorded overlying a deposit of firm, greyish brown silty clay representing subsoil, within all trenches located within Area B (Trenches 7 - 10). The depth of the subsoil varied between these trenches from 0.3m to 0.4m thick at the western and eastern boundaries of the site (Trenches 7 and 10); to a maximum of 0.7m in Trenches 8 and 9 (see Plate 8). The depth of subsoil within these trenches is likely to be attributed to the close proximity of the River Witham as well as the topography of the site. It is considered that the accumulation of

such deposits is likely to have occurred during localised flooding of the river. The presence of field drains of post-medieval date within these trenches also indicates the area was particularly wet in the past.

- 4.3.3 Removal of the subsoil revealed the underlying natural geology, at which point all excavation within each trench ceased. The underlying natural geology was found to differ in composition between trenches. Deposits varied between a firm, dark yellow brown silty clay with sand (703) in Trench 7 to a deposit of light yellow sandy silt within Trench 9 (903). Such variations in composition are again considered to be attributable to the close proximity of the River Witham.

5.0 Discussion

- 5.1 Trial trenching at Meadow Lane, North Hykeham revealed archaeological features and artefacts dating from the Roman period and earlier. Evidence suggests that the earliest phase of occupation pre-dates the 2nd to 3rd centuries A.D, although it is not clear whether this earlier activity dated to the 1st century BC or AD. The small quantity of pottery and animal bone retrieved during excavation suggests that the proposed development site is located on the periphery of a settlement focus.
- 5.2 *residual* → Sherds of Iron Age pottery retrieved during excavation may indicate the presence of Iron Age settlement in the vicinity. However, such finds are commonly made on 1st century AD Romano-British settlements and often merely reflect the continued use of earlier pottery types and traditions. Stratigraphical analysis of undated gullies (e.g. [321] and [320] in Trench 3) suggests they date to the early Roman period at the latest. The function of these gullies is not clear as the limit of trench excavation inhibited further study and the full extent of the gullies was not determined.
- 5.3 A series of inter-cutting northwest-southeast aligned ditches were recorded during excavation and are considered likely to have formed enclosure ditches, perhaps related to animal husbandry or arable farming. Excavation of Trenches 4 and 6 recorded archaeological ditches [408] and [611] identified by geophysical survey. Pottery of general Roman date and, more specifically, of 2nd to 3rd century date was retrieved, suggesting use of this enclosure during this period.
- 5.4 A northwest-southeast aligned ditch [310] recorded within Trench 3, continued as far as Trench 4 [415], after which the full extent was not determined. Pottery evidence also suggests that this ditch dates from the Roman period although residual Iron Age pottery was also retrieved.
- 5.5 An east-west aligned ditch [309] was recorded cutting through ditch [310] within Trench 3 but remains undated. This feature was not identified through geophysical survey. The purpose of this ditch is unknown, it could form a boundary or part of an enclosure.
- 5.6 As with paragraphs 5.2, 5.4 and 5.5 above, geophysical survey failed to identify features within the most northwesterly extent of the site and within Trench 3. A further northwest-southeast aligned ditch [308] was recorded cutting through the east-west aligned ditch, [309] but it is considered likely that this ditch does not relate to [408] and [611] within Trenches 4 and 6. Pottery of 3rd to 4th century date was retrieved.
- 5.7 Within Trench 3, a further northwest-southeast aligned ditch [316] was recorded cutting through the fill of ditch [308] and represents the last phase of ditch excavation within this area. However, this linear feature was not encountered within Trenches 4 and Trench 6 although deposits recorded within cuts [408] and [605] are very similar and could relate to the same time period. A high level of charcoal within the fills of this ditch [316] suggest the burning of organic matter in the vicinity. Pottery of 2nd to 3rd century A.D. date was

recovered from the ditch.

- 5.8 An enclosure ditch partially identified by geophysical survey was recorded within Trenches 2 [210], 4 [409] and 5 [504]. The north-south extent had been identified by geophysical survey but the east-west return was only identified by trial trenching. This is likely to be due to the increased wetness of the south-eastern part of the site, which would have affected the results of the geophysical survey. Material of Roman date was retrieved.
- 5.9 A possible break in the east-west return of this enclosure ditch was recorded in Trench 2 and it is likely that the two ditches recorded within that trench form an entranceway. It is also possible that ditch [206] is related to the east-west aligned ditch recorded in Trench 3 (see Paragraph 5.6). However, both these relationships are not fully established and this idea remains an assumption. Also within Trench 2, two pits were recorded containing pottery of 2nd-4th century date.
- 5.10 Within Trench 6, furrows aligned to the present field boundary were recorded and are considered likely to be of late medieval to post-medieval date.

6.0 Conclusions and Recommendations

- 6.1 Excavation evaluation at Meadow Lane, North Hykeham recorded the presence of an enclosure dating to the Roman period. A series of ditches, pits and gullies were recorded across the area to be developed, in the western part of the site. No archaeological features were encountered during trench excavation in the eastern sector of the site and within the South Witham Flood Protection Area.
- 6.2 Evidence suggests that the site lies on the periphery of a settlement dating from the 1st - 3rd centuries AD. The majority of the features excavated date to the Roman period and are in particular of 3rd century date. Development and archaeological work to the north of the site has also recorded remains of such a date.
- 6.3 The site appears to represent an enclosure, the purpose of which has not been determined. Such enclosures are commonly found on the periphery of Roman settlements, used for holding stock. However, the presence of slag within the ditch sections excavated suggests this area may also have been used for industrial processes. Such activities commonly occurred on the edge of the main settlement, close to a source of water. This site would therefore appear to have been ideal. The small assemblage of pottery and bone would also suggest that this is the case.
- 6.4 All archaeological features encountered were sealed, on average, by a 0.5m thick layer of topsoil and subsoil. It is considered likely however, that groundworks associated with construction are likely to disturb archaeological deposits and features to some extent. The majority of the house plots have already been investigated by trenches and the interior of the enclosure is mainly unaffected by additional structures. It is therefore recommended that, depending on the depth of excavation, a watching brief be maintained during the soil stripping associated with the construction of the road and driveways in this area.

7.0 Figures

Figure 1 : Site location

Figure 2 : Trench location

Figure 3 : Plan of Trench 2

Figure 4 : Plan of Trench 3

Figure 5 : Section drawing of ditch cuts [308], [309] and [310]

Figure 6 : Plan of Trench 4

Figure 7 : Section drawing of ditch cut [408]

Figure 8 : Plan of Trench 5

Figure 9 : Section drawing of cut [504]

Figure 10 : Plan of Trench 6

Figure 11 : Section drawing of Trench 6

*An Archaeological Evaluation Excavation of
Land off Meadow Lane, North Hykeham*

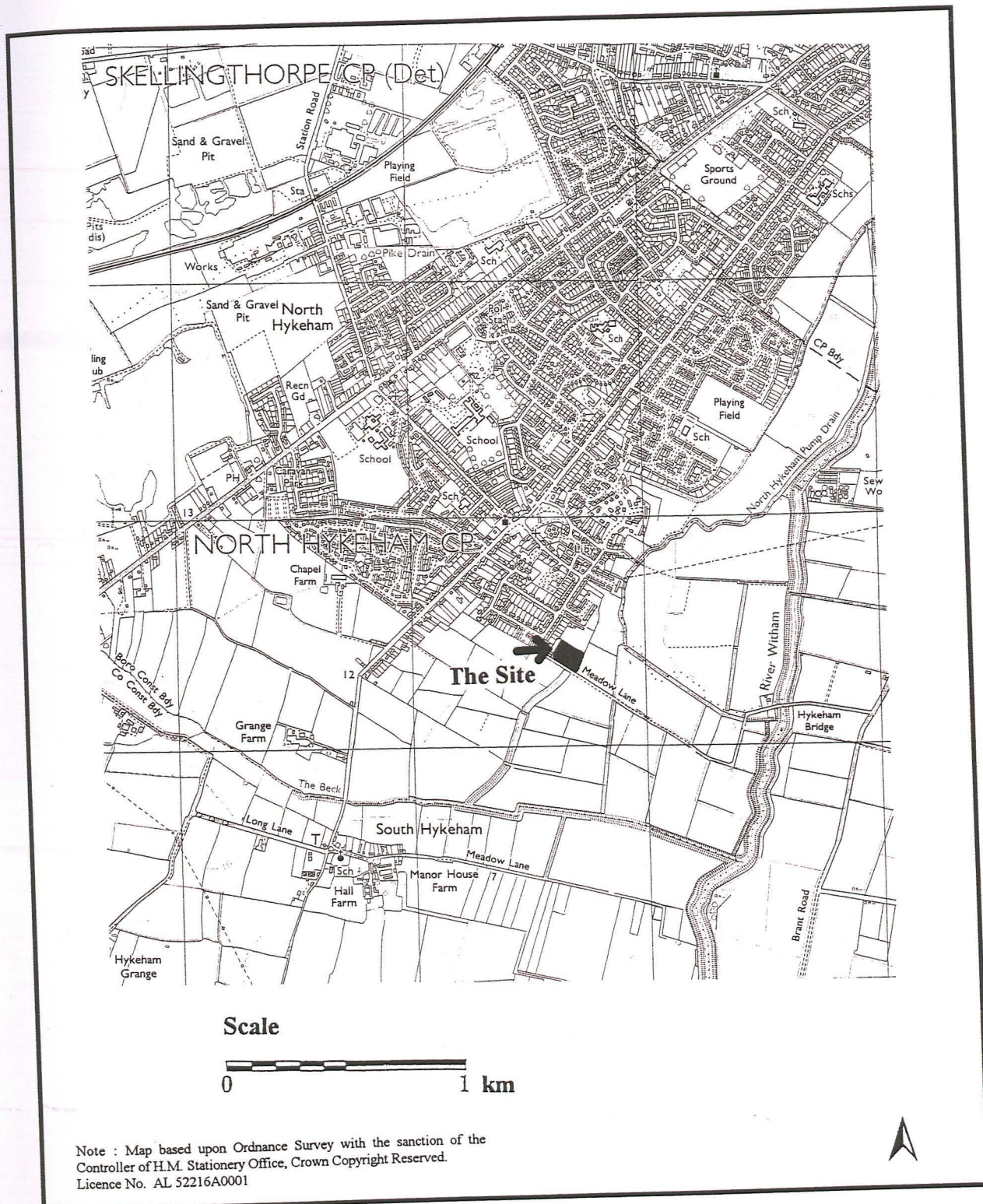


Figure 1 : Site location

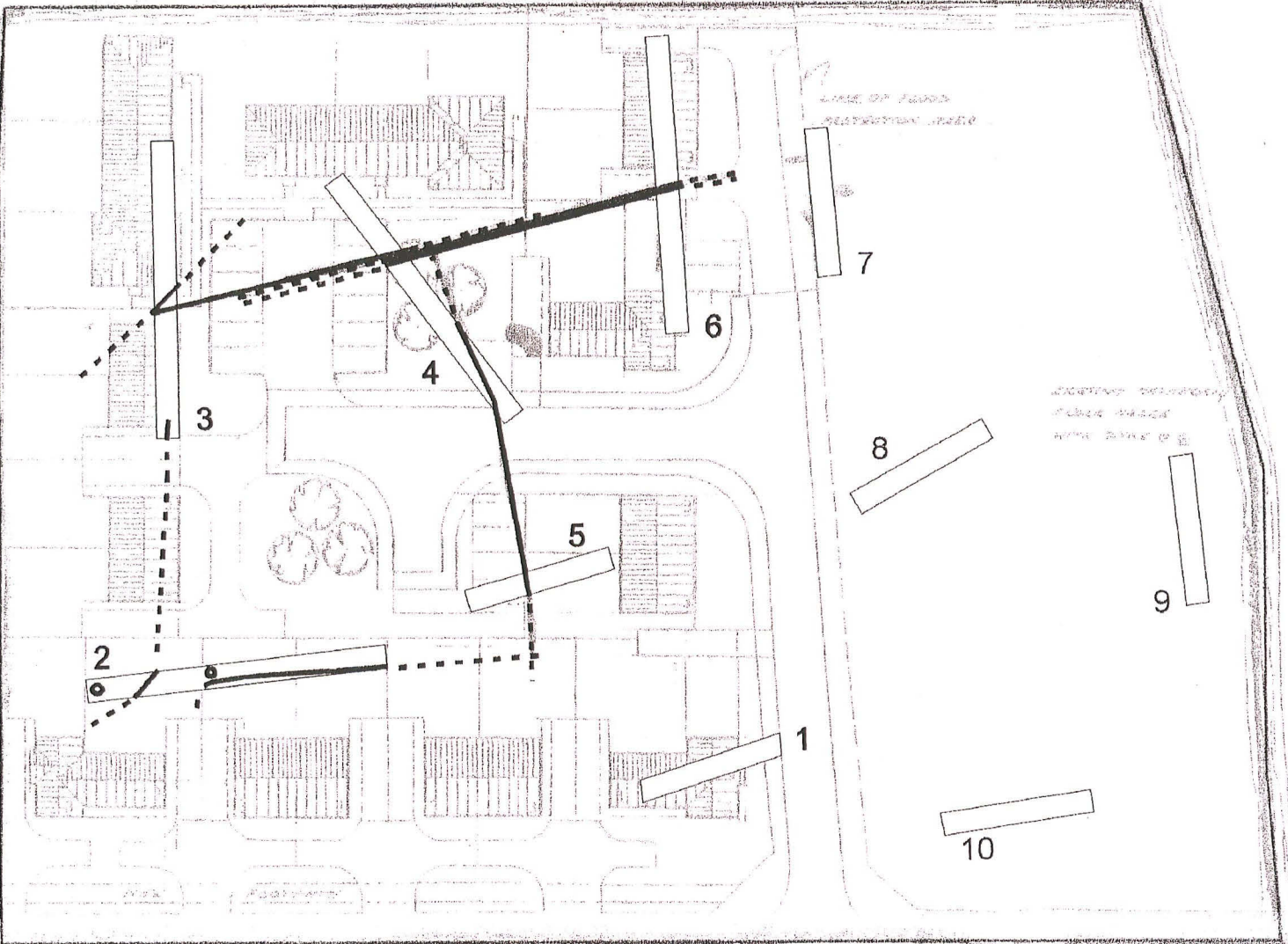


Figure 2 : Trench locations showing major features and projected alignments

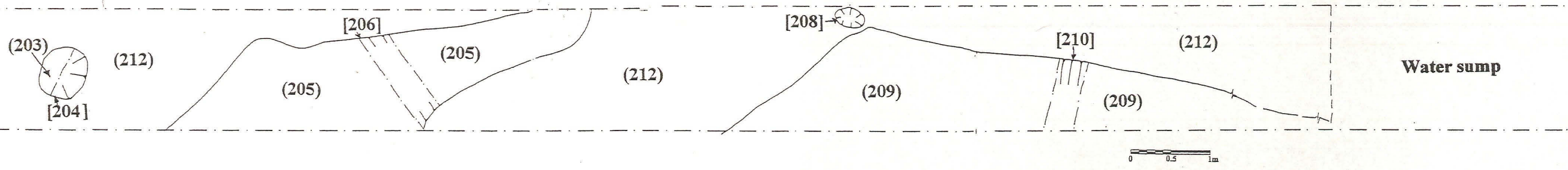
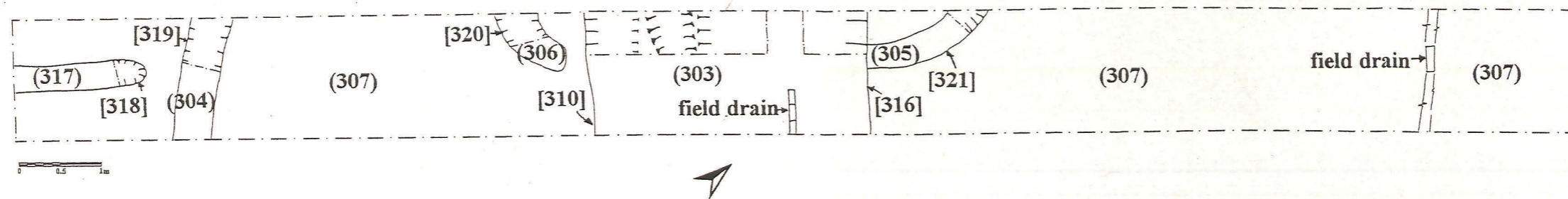


Figure 3 : Plan of Trench 2

Figure 4 : Plan of Trench 3



North West Section

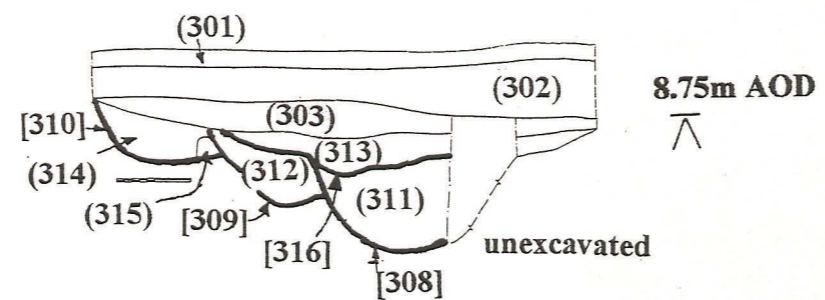


Figure 5 : Section drawing of ditch cuts [308], [309] and [310]

Figure 6 : Plan of Trench 4

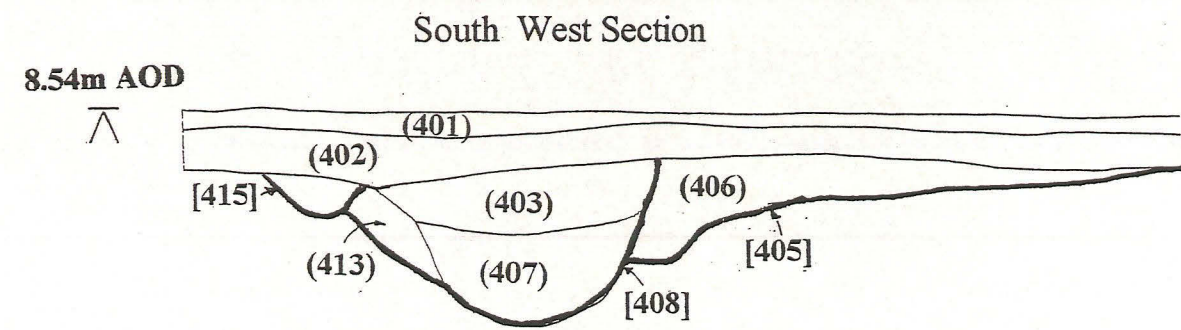
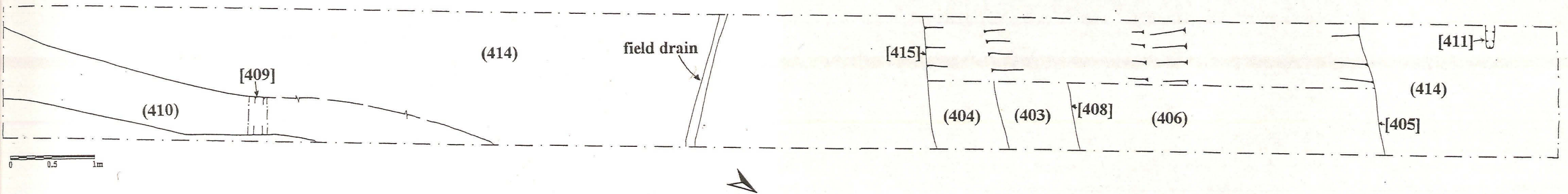


Figure 7 : Section drawing of ditch cut [408]

Figure 8 : Plan of Trench 5

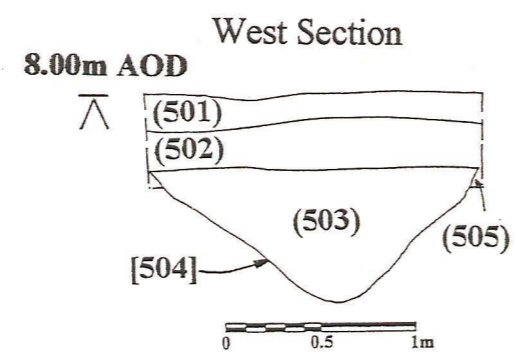
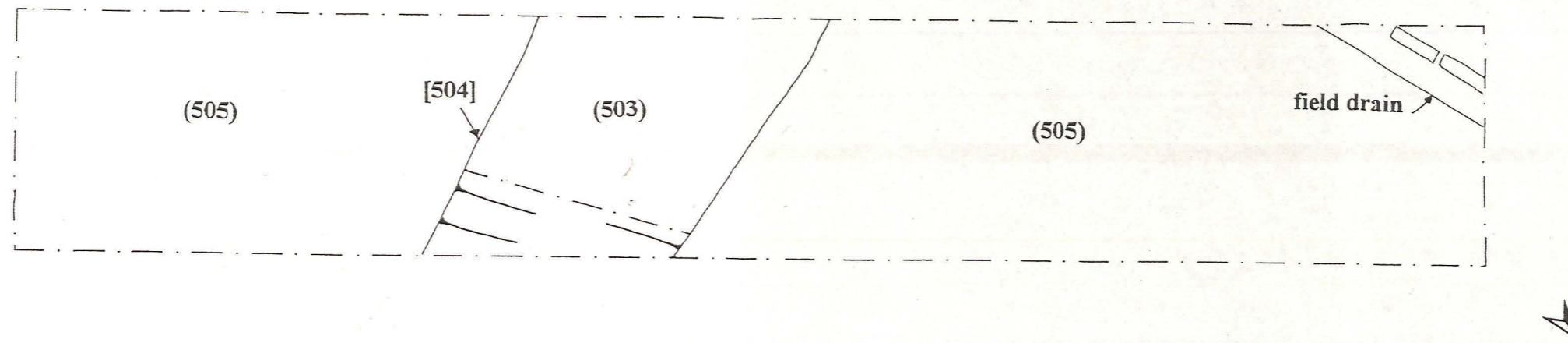


Figure 9 : Section drawing of cut [504]

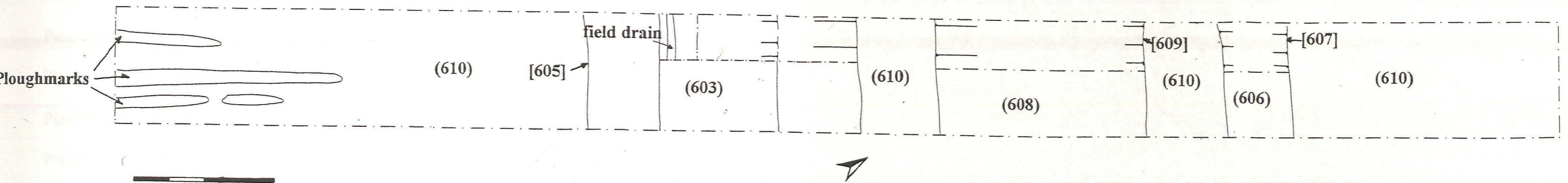


Figure 10 : Plan of Trench 6

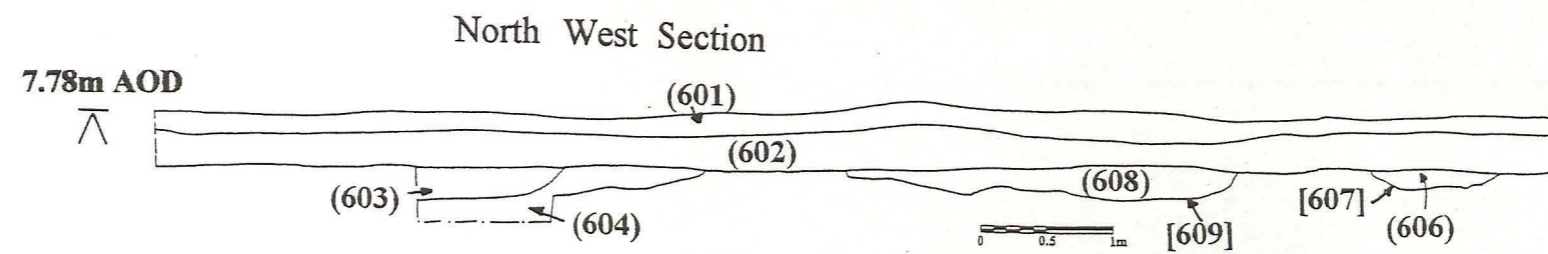


Figure 11 : Section drawing of Trench 6

8.0 Plates

Plate 1 : Trench 1, looking northeast

Plate 2 : Trench 2, prior to cleaning and excavation

Plate 3 : Western half of Trench 2, showing ditch [206] and pit [204] in the background

Plate 4 : Ditch cut [210]

Plate 5 : Ditch cuts [308], [309] and [310]

Plate 6 : Ditch cut [408]

Plate 7 : Ditch cut [409]

Plate 8 : Trench 8, illustrating the depth of subsoil, field drain and the natural geology

*An Archaeological Evaluation Excavation of
Land off Meadow Lane, North Hykeham*

**Plate 1 : Trench 1,
looking northeast**



MLH 99
Tr 1



**Plate 2 : Trench 2,
prior to cleaning and excavation**

**Plate 3 : Western half of Trench 2,
showing ditch [206] and
pit [204] in the background**



**Plate 4 :
Ditch cut [210]**

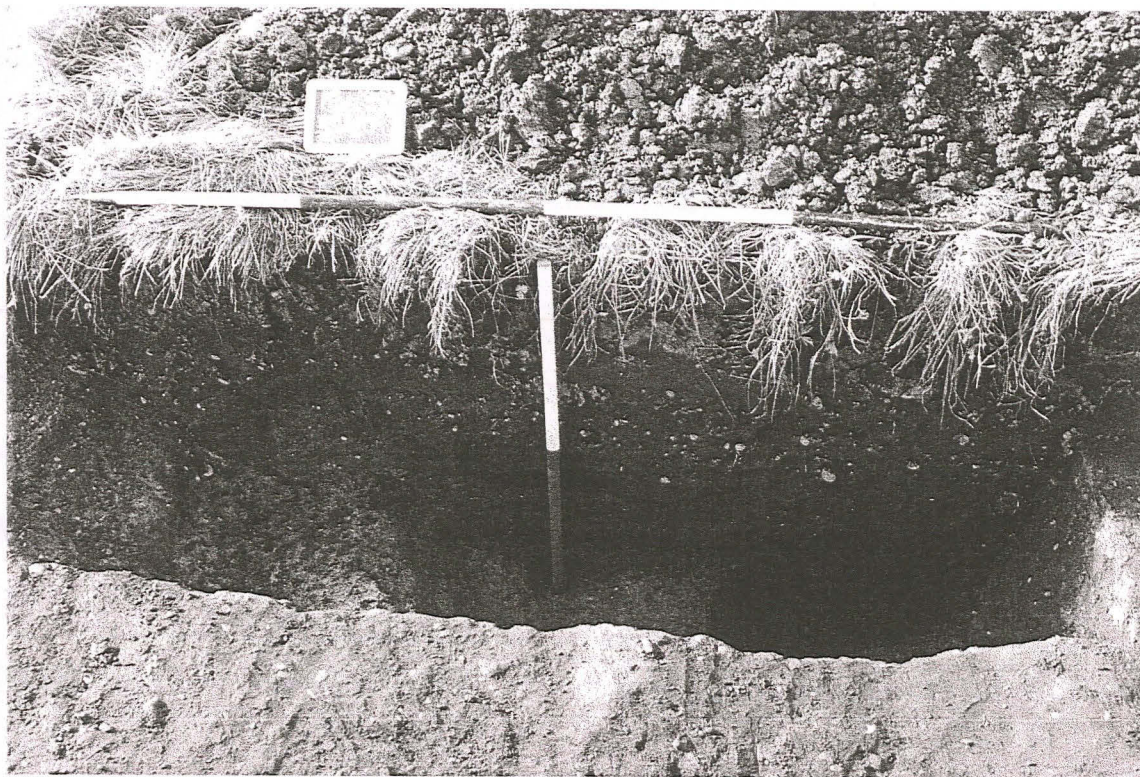


Plate 5 : Ditch cuts [308], [309] and [310]

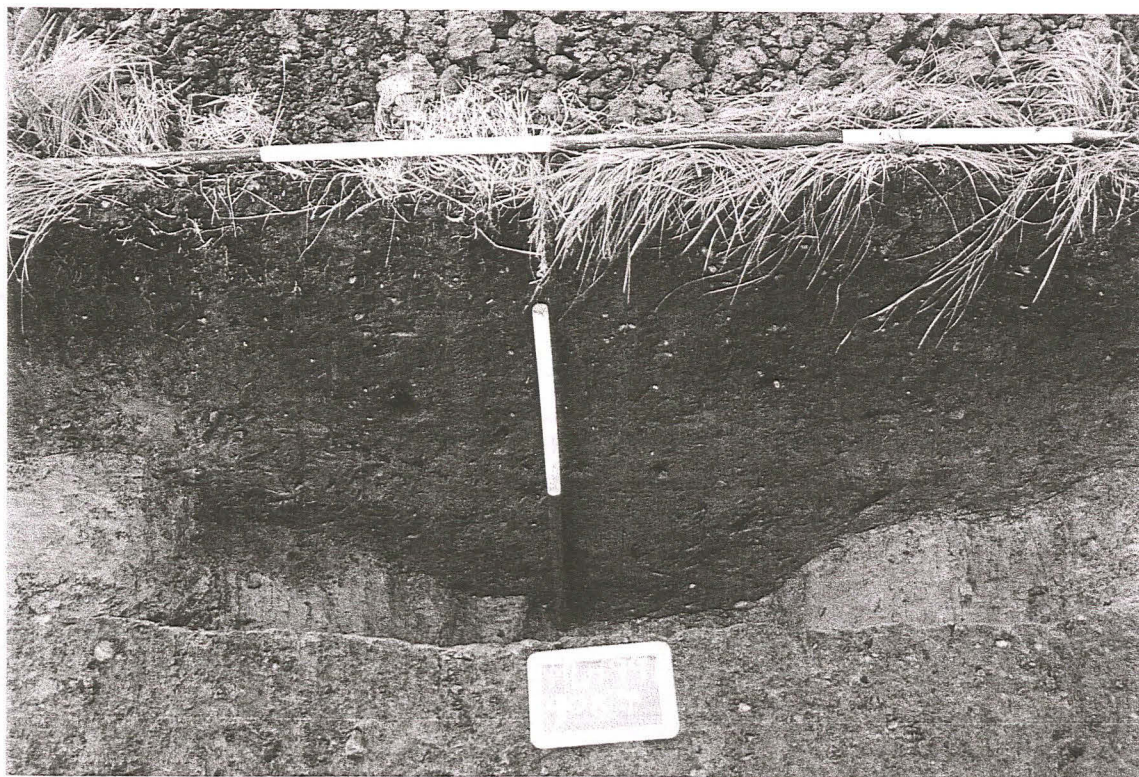


Plate 6 : Ditch cut [408]



Plate 7 : Ditch cut [409]



**Plate 8 : Trench 8, illustrating
the depth of subsoil,
field drain and the
natural geology**

9.0 References

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**Appendix A :
Geophysical Survey Results**

GSB
PROSPECTION

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GSB_Prospection@Compuserve.com

**GEOPHYSICAL SURVEY
REPORT 99/77**

**NORTH HYKEHAM
Lincolnshire**

Client:

**John Samuels
Archaeological Consultants**

SITE SUMMARY SHEET

99 / 77 North Hykeham, Lincoln

NGR: SK 9460 6545

Location, topography and geology

The application area occupies a field approximately 0.6 km south of the centre of North Hykeham and lies immediately to the north of Meadow Lane. The terrain is flat and at the time of survey the ground cover was recently mown grass. The soils comprise coarse loams over clays and are intermediate between brown sands and stagnogleys.

Archaeology

Whilst there is no archaeological information for the survey area, the field lies within a landscape containing several Roman roads which focus upon Lincoln. There is, therefore, the possibility of the existence of Roman sites within the survey area. Finds of other ages have been found within the general locality.

Aims of Survey

The aim of the survey was to locate any anomalies of archaeological potential within the application area. This survey forms part of a wider archaeological assessment of the site by *John Samuels Archaeological Consultants* (JSAC).

Summary of Results *

Survey located two diffuse linear anomalies, which appear to abut one another. Their nature is unclear, although they may reflect former land divisions. Several pit-type anomalies were also detected and whilst these may be archaeological in nature, they may be due to deeply buried ferrimagnetic materials. The data also contain faint linear trends, these probably reflect the direction of past ploughing. The data at the edge of the survey have been affected by magnetic disturbance from adjoining field boundaries.

* It is essential that this summary is read in conjunction with the detailed results of the survey.

SURVEY RESULTS

99 / 77 North Hykeham, Lincoln

1. Survey Area

- 1.1 The application area consists of a field adjacent to Meadow Lane and is approximately 0.6 km south of the centre of North Hykeham. The entire field was investigated by detailed gradiometer survey, which totalled approximately 0.9 of a hectare (see Figure 1).
- 1.2 The survey grid was set out by *GSB Prospection* and tied in to existing field boundaries. Details of the tie-in information have been lodged with the client.

2. Display

- 2.1 The results are displayed as XY traces, dot density plots and greyscale images. These display formats are discussed in the *Technical Information* section, at the end of the text.
- 2.2 Figure 2 is a summary greyscale of the gradiometer data at a scale of 1:500. A digitized interpretation diagram (Figure 3) is also given at the same scale. The data are also presented as an XY trace (Figure 4) and a dot density plot (Figure 5), both at a scale of 1:500.

3. General Considerations - Complicating factors

- 3.1 At the time of survey, ground conditions were free from obstruction and favourable for survey.
- 3.2 Magnetic disturbance is evident at the margins of the survey area and is attributable to near by metal fences and field boundaries as well as concentrations of individual ferrous anomalies. This disturbance will mask the response from any weaker anomalies if present. Numerous small scale ferrous type responses are apparent throughout the data. Unless otherwise referred to in the text, these are presumed to be modern in origin.

4. Results of Detailed Survey

- 4.1 Aside from magnetic disturbance around the edges of the survey area, which arises from the field boundaries, the results contain numerous scattered ferrous responses. The latter responses show a concentration at the western margin of the survey area are most likely to be due to debris from adjacent properties.
- 4.2 The data contain two linear anomalies that appear to abut one another, these may be of archaeological interest. Whilst they may represent former land divisions, they are indistinct in nature and an alternative interpretation, such as their being field drains, cannot be excluded. The data also contain several pit-type anomalies, again any interpretation remains equivocal.
- 4.3 Responses, which are no more than linear trends in the data, can also be seen. Whilst their nature is uncertain, it is probable that they reflect the direction of past ploughing.

5. Conclusions

- 5.1 Detailed gradiometry detected two linear anomalies which appear to abut one another at right angles. They are diffuse in nature and whilst they may represent former land divisions, any archaeological interpretation remains tentative. The data also contain several pit-like anomalies; whilst these may be archaeological, a natural or modern origin should not be ignored.
- 5.2 Faint linear trends are also evident within the data and it is more likely that they reflect the direction of past ploughing. The periphery of the survey area is marked by magnetic disturbance from adjacent field boundaries. The data also contain numerous ferrous type anomalies which are indicative of ferrous debris within the soil.

Project Co-ordinator: D Weston
Project Assistants: C Martinez, J Nicholls and A Shields

Date of Survey: 14th and 15th June, 1999
Date of Report: 18th June, 1999

References:

SSEW 1983. *Soils of England and Wales. Sheet 4, Eastern England.* Soil Survey of England and Wales.

TECHNICAL INFORMATION

The following is a description of the equipment and display formats used in **GSB Prospection (GSB)** reports. It should be emphasised that whilst all of the display options are regularly used, the diagrams produced in the final reports are the most suitable to illustrate the data from each site. The choice of diagrams results from the experience and knowledge of the staff of **GSB**.

All survey reports are prepared and submitted on the basis that whilst they are based on a thorough survey of the site, no responsibility is accepted for any errors or omissions.

Instrumentation

(a) Fluxgate Gradiometer - Geoscan FM36

This instrument comprises of two fluxgates mounted vertically apart, at a distance of 500mm. The gradiometer is carried by hand, with the bottom sensor approximately 100-300mm from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is conventionally measured in nanoTesla (nT), or gamma. The fluxgate gradiometer suppresses any diurnal or regional effects. Generally features up to one metre deep may be detected by this method. Readings are normally logged at 0.5m intervals along traverses 1.0m apart.

(b) Resistance Meter - Geoscan RM4 or RM15

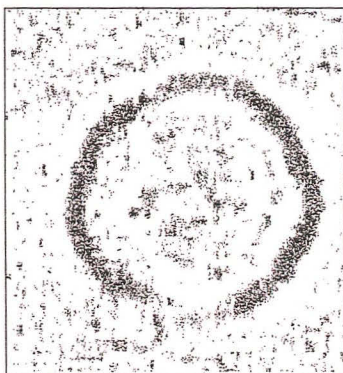
This measures the electrical resistance of the earth, using a system of four electrodes (two current and two potential.) Depending on the arrangement of these electrodes an exact measurement of a specific volume of earth may be acquired. This resistance value may then be used to calculate the earth resistivity. The "Twin Probe" arrangement involves the pairing of electrodes (one current and one potential) with one pair remaining in a fixed position, whilst the other measures the resistance variations across a fixed grid. The resistance is measured in Ohms and the calculated resistivity is in Ohm-metres. The resistance method as used for area survey has a depth resolution of approximately 0.75m, although the nature of the overburden and underlying geology will cause variations in this generality. The technique can be adapted to sample greater depths of earth and can therefore be used to produce vertical "pseudo sections". In area survey readings are typically logged at 1.0m x 1.0m intervals.

(c) Magnetic Susceptibility

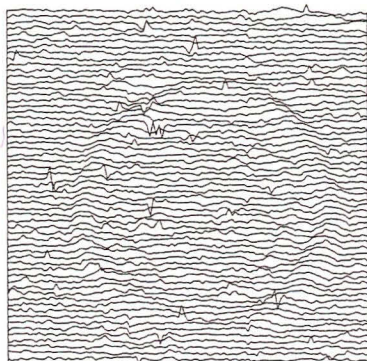
Variations in the magnetic susceptibility of subsoils and topsoils occur naturally, but greater enhanced susceptibility can also be a product of increased human/anthropogenic activity. This phenomenon of susceptibility enhancement can therefore be used to provide information about the "level of archaeological activity" associated with a site. It can also be used in a predictive manner to ascertain the suitability of a site for a magnetic survey. The instrument employed for measuring this phenomenon is either a field coil or a laboratory based susceptibility bridge. For the latter 50g soil samples are collected in the field. Sampling intervals vary widely but are often at the 10m or 20m level.

Display Options

The following is a description of the display options used. Unless specifically mentioned in the text, it may be assumed that no filtering or smoothing has been used to enhance the data. For any particular report a limited number of display modes may be used.

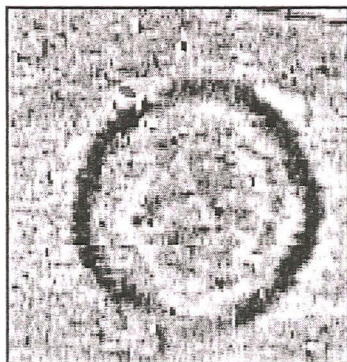


(a) Dot-Density In this display, minimum and maximum cut-off levels are chosen. Any value that is below the minimum will appear white, whilst any value above the maximum will be black. Any value that lies between these two cut-off levels will have a specified number of dots depending on the relative position between the two levels. The focus of the display may be changed using different levels and a contrast factor (C.F.). Usually the C.F. = 1, producing a linear scale between the cut-off levels. Assessing a lower than normal reading involves the use of an inverse plot. This plot simply reverses the minimum and maximum values, resulting in the lower values being presented by more dots. In either representation, each reading is allocated a unique area dependent on its position on the survey grid, within which numbers of dots are randomly placed. The main limitation of this display method is that multiple plots have to be produced in order to view the whole range of the data. It is also difficult to gauge the true strength of any anomaly without looking at the raw data values. This display is much favoured for producing plans of sites, where positioning of the anomalies and features is important.



(b) X-Y Plot This involves a line representation of the data. Each successive row of data is equally incremented in the Y axis, to produce a stacked profile effect. This display may incorporate a hidden-line removal algorithm, which blocks out lines behind the major peaks and can aid interpretation. Advantages of this type of display are that it allows the full range of the data to be viewed and shows the shape of the individual anomalies. Results are produced on a flatbed plotter.

This display joins the data values in both the X and Y axis. The display may be changed by altering the horizontal viewing angle and the angle above the plane. The output may be either colour or black and white.



(c) Grey-Scale

This format divides a given range of readings into a set number of classes. These classes have a predefined arrangement of dots or shade of grey, the intensity increasing with value. This gives an appearance of a toned or grey scale.

Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. While colour plots can look impressive and can be used to highlight certain anomalies, grey-scales tend to be more informative.

Terms commonly used in the graphical interpretation of gradiometer data

Ditch / Pit

This category is used only when other evidence is available that supports a clear archaeological interpretation e.g. cropmarks or excavation.

Archaeology

This term is used when the form, nature and pattern of the response is clearly archaeological but where no supporting evidence exists. These anomalies, whilst considered anthropogenic, could be of any age. If a more precise archaeological interpretation is possible then it will be indicated in the accompanying text.

? Archaeology

The interpretation of such anomalies is often tentative, with the anomalies exhibiting either weak signal strength or forming incomplete archaeological patterns. They may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.

Natural

These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions e.g. palaeochannels or magnetic gravels.

? Natural

These are anomalies that are likely to be natural in origin i.e geological or pedological.

Areas of Magnetic Disturbance

These responses are commonly found in places where modern ferrous or fired materials are present e.g. fence lines, pylons or brick rubble. They are presumed to be modern.

Areas of Increased Magnetic Response

These responses show no visual indications on the ground surface and are considered to have some archaeological potential.

Ferrous Response

This type of response is associated with ferrous material and may result from small items in the topsoil or larger buried objects such as pipes. Ferrous responses are usually regarded as modern. Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.

Ridge and Furrow

These are regular and broad linear anomalies that are presumed to be the result of ancient cultivation. In some cases the response may be the result of modern activity.

Ploughing Trend

These are isolated or grouped linear responses. They are normally narrow and are presumed modern when aligned to current field boundaries or following present ploughing.

Linear Trend

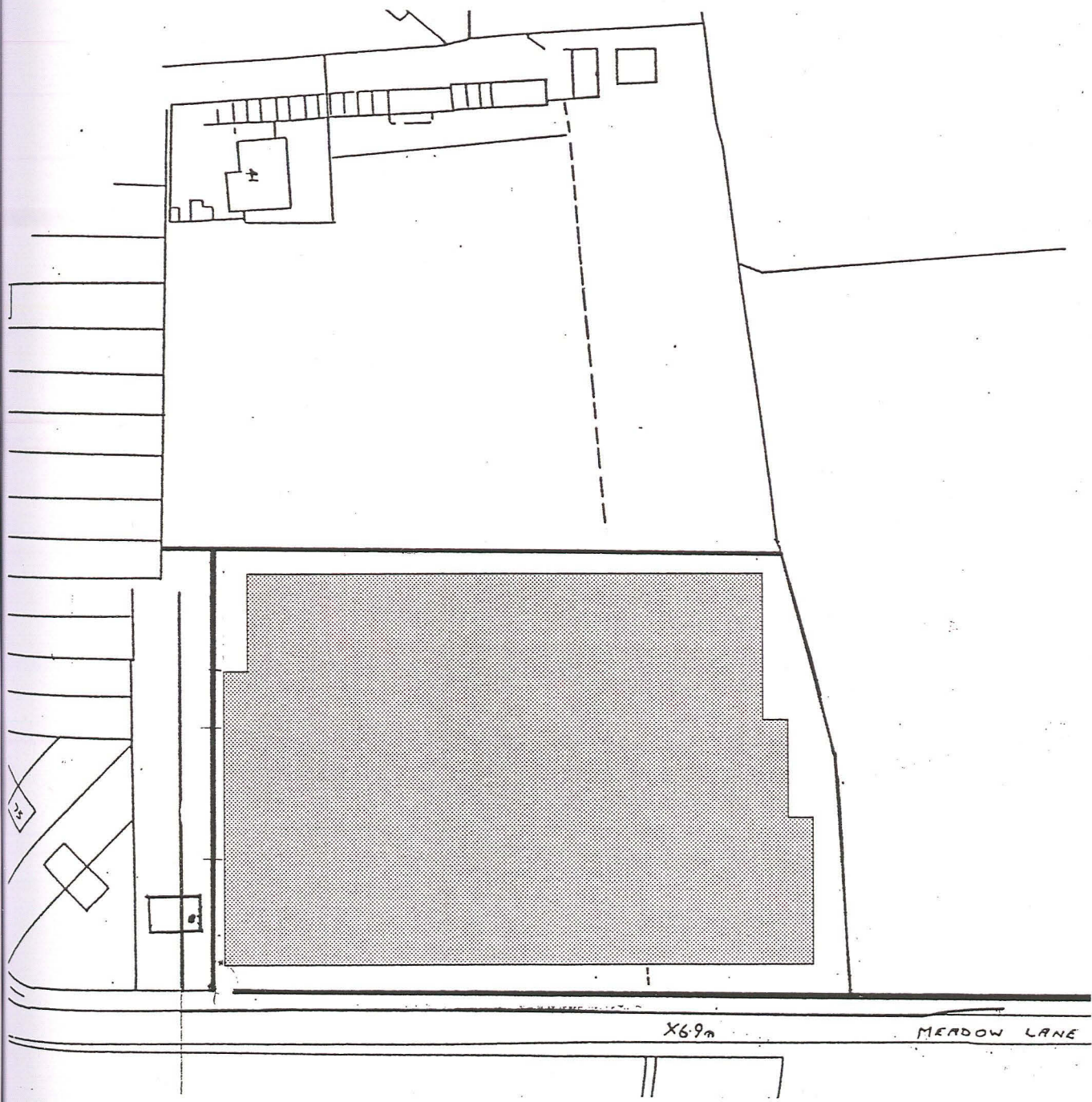
This is usually a weak isolated linear anomaly of unknown cause or date.

List of Figures

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NORTHHYKEHAM

Location of Survey Area



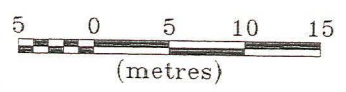
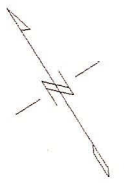
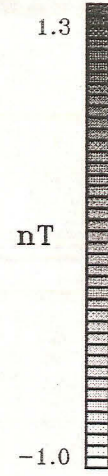
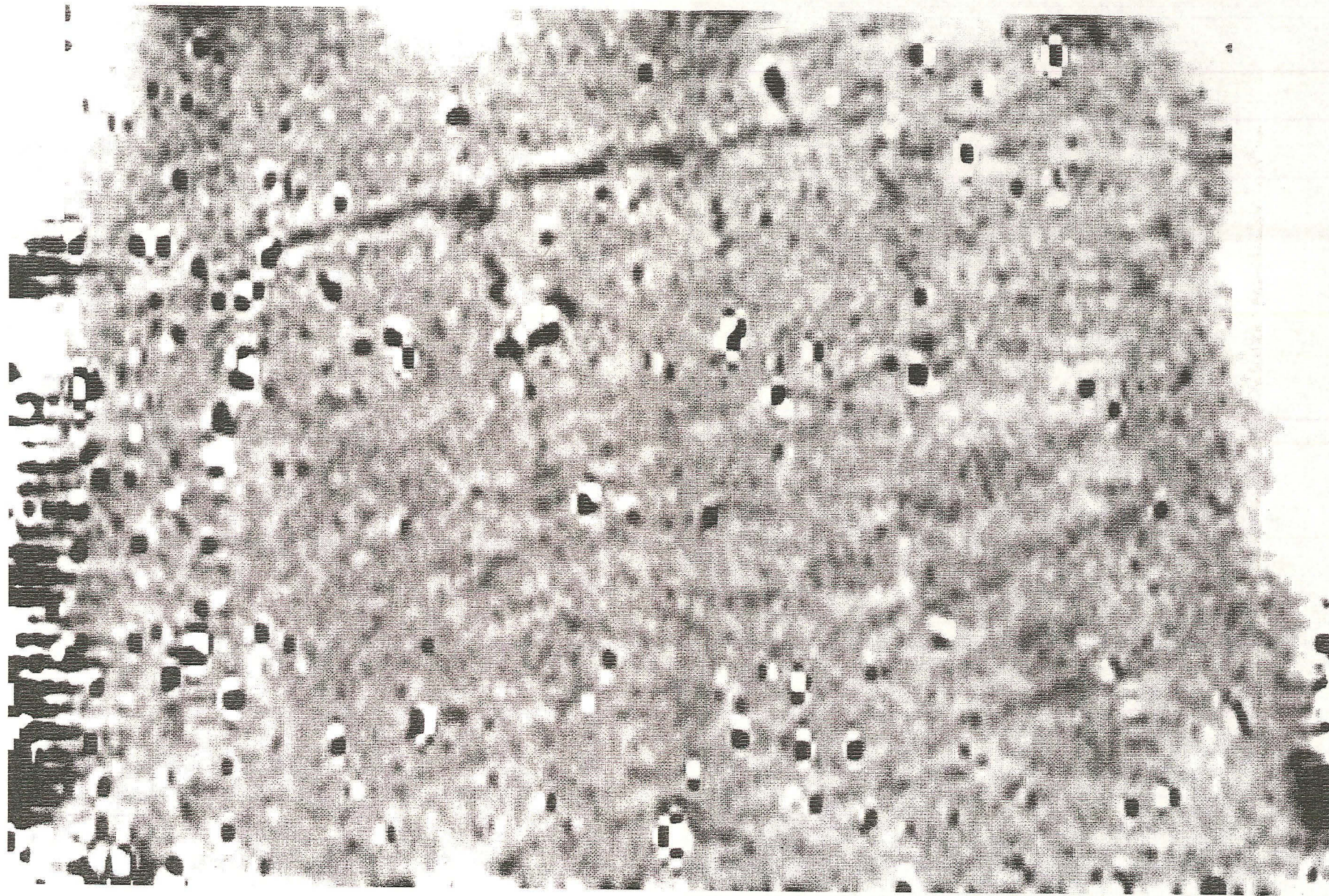
Based on a plan supplied by
the Client



1:1250

GSB Prospection 99/77

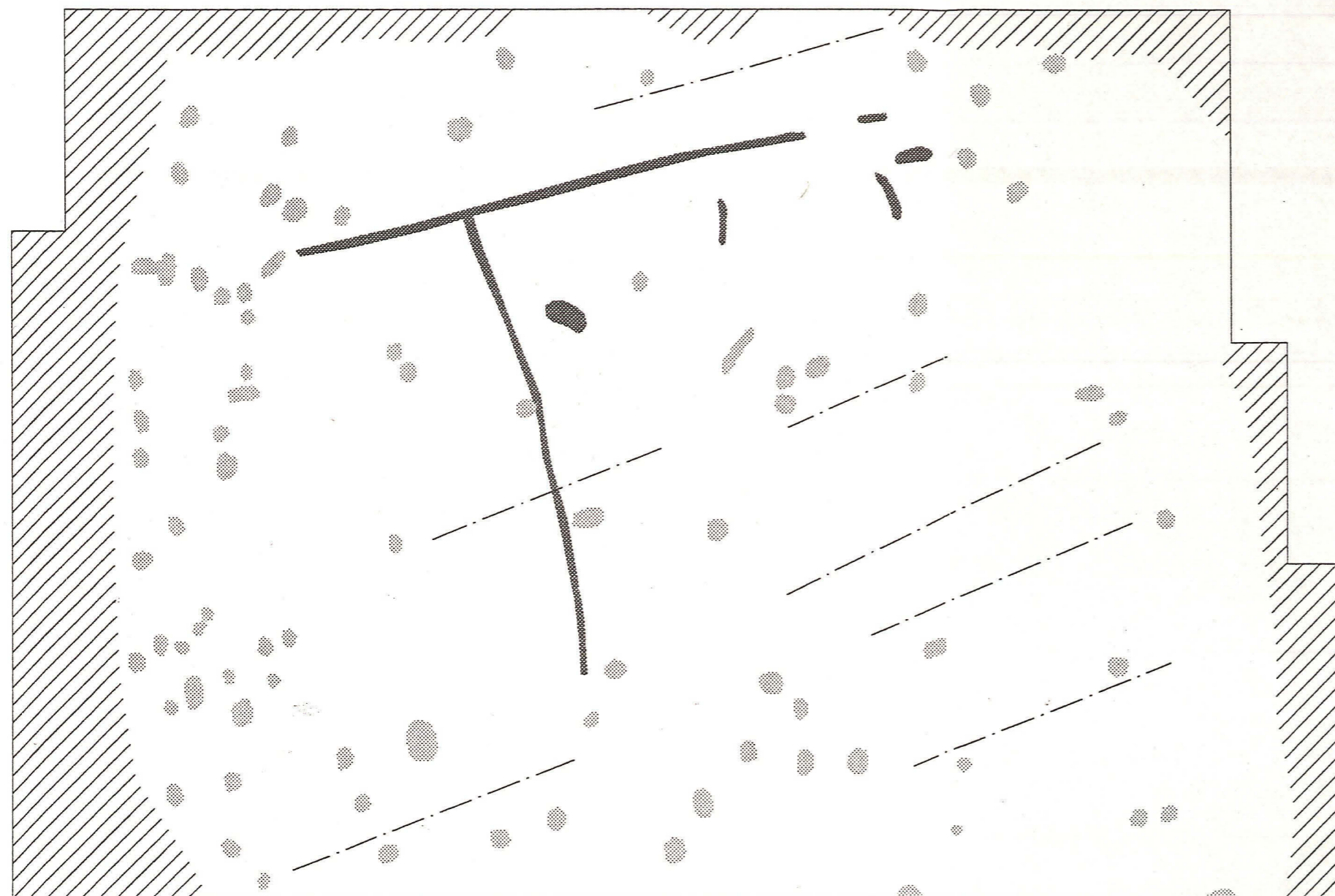
Figure 1







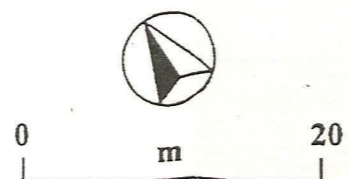
North Hykeham

Gradiometer Data

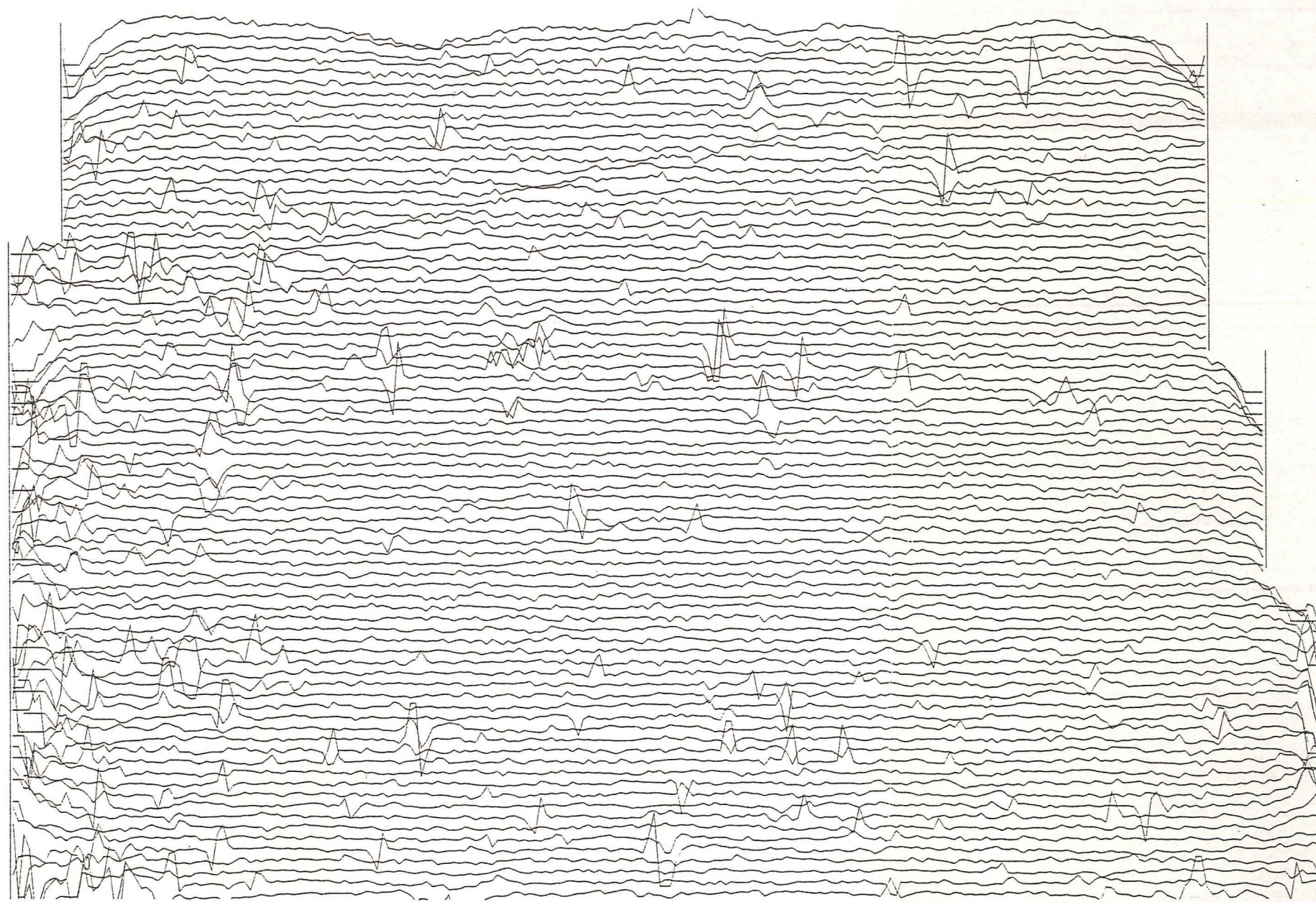
NORTH HYKEHAM



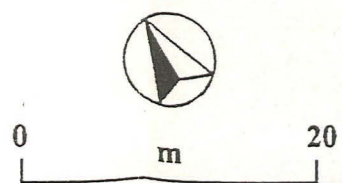
-  ?Archaeology
-  Linear Trend
-  Magnetic Disturbance
-  Ferrous



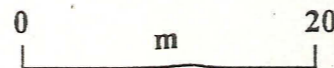
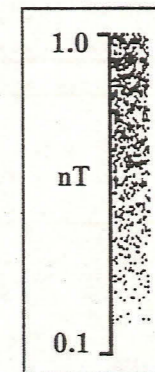
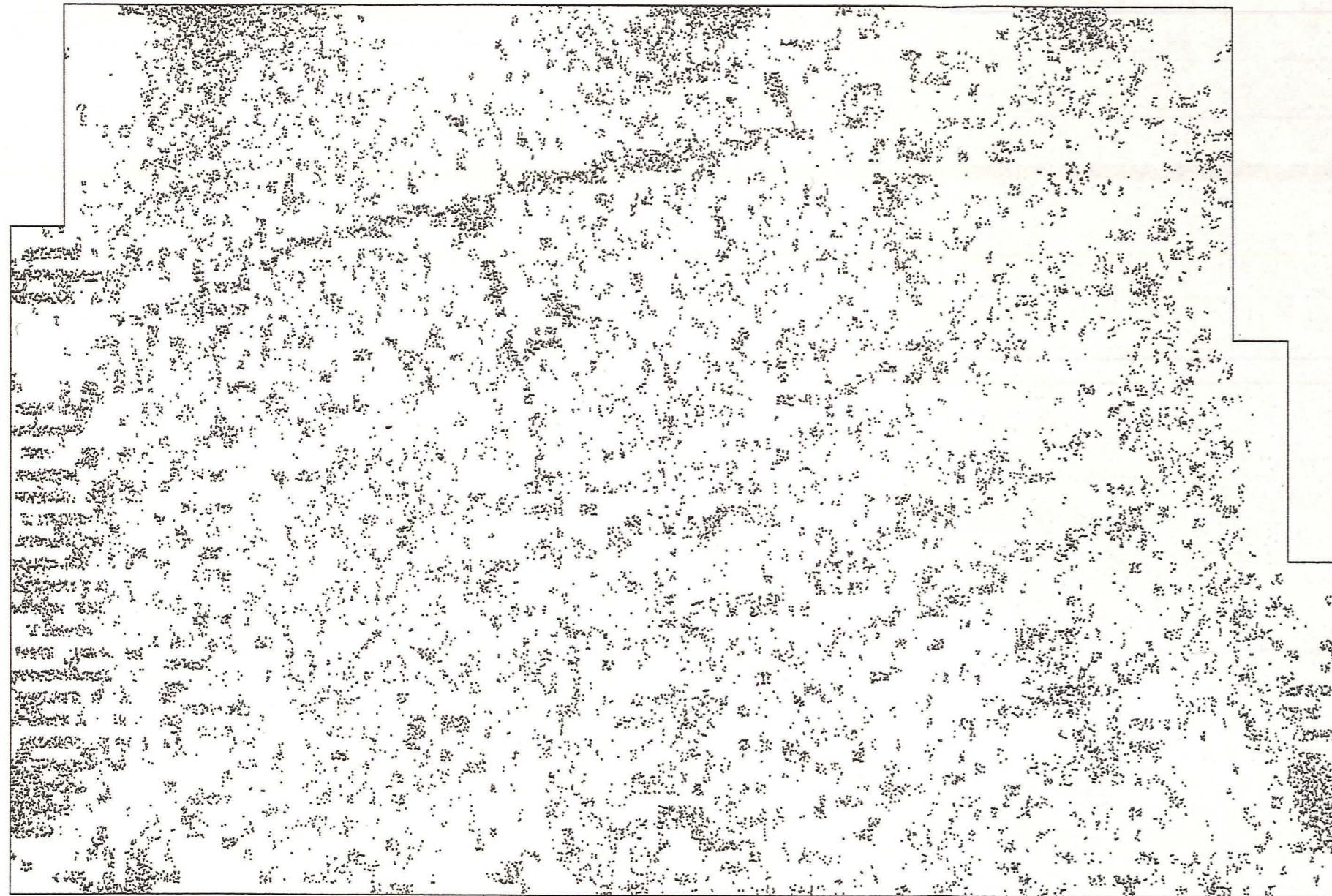
NORTH HYKEHAM



10 nT



NORTH HYKEHAM



**Appendix B:
Specification for Archaeological Evaluation Excavation**

John Samuels Archaeological Consultants

*The Manor, South Street, Normanton-on-Trent, Newark, Nottinghamshire NG23 6RQ
Telephone 01636 821727 Fax 01636 822080*

A Specification for the Archaeological Evaluation Excavation of Land off Meadow Lane, North Hykeham

NGR SK 947 654

by

John Samuels Archaeological Consultants

on behalf of

Longhurst Housing Association

Friars House
Quaker Lane
Boston
PE21 6DZ

JSAC 539/99/02
September 1999

Site Code : MLH99
Accession No. : 100.99

Also at : Witham Park House, Waterside South, Lincoln, LN5 7JP Telephone 01522 880050

**A Specification for the Archaeological Evaluation Excavation of
Land off Meadow Lane, North Hykeham**

Contents

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1.0 Introduction

1.1 Site Location and Description

1.1.1 The proposed development site is situated on the south-western edge of North Hykeham in North Kesteven district, centred on NGR SK 947 654. The area proposed for development covers approximately 1.15 ha of land currently rough pasture.

1.2 Planning Background

1.2.1 Longhurst Housing Association commissioned *John Samuels Archaeological Consultants* to undertake a desk-based assessment to identify any archaeological remains in advance of the development of the site (JSAC 539/99/01) and a geophysical survey has also been carried out (GSB Prospection Report 99/77). The proposed development of the site will comprise the construction of 24 buildings for residential accommodation.

1.2.2 The North Kesteven Heritage Officer acts as advisor to the Local Planning Authority. The following methodology has been devised in consultation with the Heritage Officer and is subject to her approval.

1.3 Archaeological Background

1.3.1 The site lies on the southern edge of the modern town of North Hykeham, in an area traditionally used for arable farming. No sites or finds have been recorded within the proposed development site. The medieval settlement of North Hykeham appears to have been concentrated to the north around the centre of the modern town. Watching briefs undertaken during developments from 1947 to 1997 have also produced evidence for a Romano-British settlement. The full extent of this settlement has not been determined. At present, elements of it have been identified within 100m of the proposed development site and it is possible that it extended into the site itself.

1.3.2 The geophysical survey identified a number of anomalies worthy of further investigation. These comprised two perpendicular linear features that may represent former property boundaries, and a number of pit-like features.

1.4 Aims

1.4.1 The aims of this evaluation are:

- i. to determine the presence or otherwise of buried remains of archaeological interest; and
- ii. to assess the site's archaeological potential in order to allow the Local Planning Authority to make an informed decision regarding its suitability for development.

*Specification for the Archaeological Evaluation Excavation of
Land off Meadow Lane, North Hykeham*

- 1.4.2 Should any significant remains be identified, an additional set of aims are in place to allow the planning decision to be made. These are:
- i. to assess the nature, date, density, extent, function and state of preservation of archaeological remains identified;
 - ii. to assess their potential for answering questions about the development of land use in the region; and
 - iii. where remains are of sufficient importance, to determine the best method by which these remains can be preserved by record.
- 1.5 This specification conforms to the requirements of *Planning Policy Guidance: Archaeology and Planning* (DoE 1990) (PPG16). It has been designed in accordance with current best archaeological practice and the appropriate national standards and guidelines including :

Management of Archaeological Projects (English Heritage, 1991);

Model Briefs and Specifications for Archaeological Assessments and Field Evaluations (Association of County Archaeological Officers, 1994);

Code of Conduct (Institute of Field Archaeologists, 1994);

Standard and Guidance for Archaeological Excavations (Institute of Field Archaeologists, 1994); and

Archaeology Handbook (Lincolnshire County Council 1998).

2.0 Methodology

2.1 Excavation

- 2.1.1 Trenches have been located in relation to the anomalies identified by the geophysical survey. In total they measure 224m², that is 2% of the proposed development site by area. Their precise locations and specific dimensions are detailed in Figure 1.
- 2.1.2 Topsoil and overburden will be removed by mechanical excavator. The spoil generated during the evaluation will be mounded around the edges of the area with topsoil being kept separate from the other excavated material. The excavation will cease at either undisturbed natural deposits or when archaeological features are identified. The nature of these deposits will be assessed by hand excavation. Excavation of archaeological features exposed will be undertaken as far as is required to determine their date, sequence, density and nature. However, where features of particular interest are encountered that cannot be adequately assessed within the trenches identified, additional areas will be opened up by machine in consultation with the Heritage Officer.
- 2.1.3 The exposed areas will be cleaned by hand and discrete archaeological features (e.g. pits) that are identified for excavation will be assessed by half- or quarter-sectioning. Where linear features are encountered, sufficient will be excavated to determine their nature, profile and, where possible, their date and function.
- 2.1.4 The exposed areas and spoil heaps will be scanned by metal detector, operated by an archaeologist with experience in metal-detecting. Where metal artefacts are identified within trenches they will be marked for stratigraphic excavation which will take place prior to leaving site on that particular day. Where metal artefacts are identified within spoil heaps, they will be bagged and labelled according to the trench from which the spoil has been removed.
- 2.1.5 The exposed area will be recorded at an appropriate scale by measured drawing and photography and the deposits encountered described fully on pro-forma individual context recording sheets. The sections of excavated archaeological features will also be recorded by measured drawing at an appropriate scale (normally 1:20). The recording system is based on the Museum of London's '*Archaeological Site Manual*' (1994). Spot heights and those of individual features will be recorded relative to Ordnance Datum.
- 2.1.6 The photographic record will be maintained during the course of the excavation and will include:
- i. the site prior to commencement of fieldwork;
 - ii. the site during work, showing specific stages of fieldwork;
 - iii. the layout of archaeological features within each trench;
 - iv. individual features and, where appropriate, their sections;

- v. groups of features where their relationship is important;
- 2.1.7 All artefacts will be treated in accordance with UKIC guidelines, 'First Aid for Finds' (1981). All finds will be bagged and labelled according to the individual deposit from which they were recovered, ready for later cleaning and analysis.
- 2.1.8 Mr James Rackham will make a site visit to advise on deposits suitable for environmental sampling.
- i. Any securely dated deposits containing the following will be sampled at a minimum of 20 litres where possible.
- charred plant remains;
 - large quantities of molluscs;
 - large quantities of bone;
 - hearths and other burnt features;
 - other domestic features, e.g. house gullies, potentially containing the above .
- ii. Charred plant samples will be wet sieved with flotation using a 0.5mm mesh. All residues will be checked.
- iii. Should waterlogged deposits be encountered, further consultation with one of the above named specialists will determine methods for recovery.
- 2.1.9 Any human remains encountered will be cleaned with minimal disturbance, recorded and left *in situ* and only removed if necessary. The contractor will comply with all statutory consents and licences under the Disused Burial Grounds (Amendment) Act, 1981 or other Burial Acts regarding the exhumation and interment of human remains. The archaeological contractor will comply with all reasonable requests of interested parties as to the method of removal, reinterment or disposal of the remains or associated items. Every effort will be made, at all times, not to cause offence to any interested parties.
- 2.1.10 The Heritage Officer will be given notice of when work is due to commence and will be free to visit the site by prior arrangement with the project director. Should any significant remains be found it may be necessary, in liaison with the Heritage Officer, to formulate a strategy designed to fully establish their character, distribution, extent, condition, dating and further treatment.
- 2.1.11 Archaeological staff and visitors will respect Health and Safety provisions and site specific safety regulations.
- 2.1.12 The material excavated from the trenches will be used to backfill them following the completion of work.

2.2 *Post-excavation*

2.2.1 Post excavation work will comprise the following:

- i. checking of drawn and written records during and on completion of fieldwork;
- ii. production of a stratigraphic matrix of the archaeological deposits and features present on the site, if appropriate;
- iii. cataloguing of photographic material and labelling of slides which will be mounted on appropriate hangers;
- iv. cleaning, marking, bagging and labelling of finds according to the individual deposits from which they were recovered. Any finds requiring specialist treatment and conservation will be sent to the Conservation Laboratory at the City and County Museum, Lincoln. Finds will be identified and dated by appropriate specialists.

2.2.2 A report detailing the finds of the evaluation will be prepared within three months of the completion of site works and will consist of:

- i. a title page detailing site address, site code and accession number, NGR, author/originating body, client's name and address;
- ii. full contents listing;
- iii. a non-technical summary of the findings of the evaluation;
- iv. a description of the archaeological background with reference to the desk-top assessment and previous fieldwork;
- v. a description of the topography and geology of the evaluation area;
- vi. a description of the methodologies used during the evaluation;
- vii. a description of the findings of the evaluation;
- viii. plans of each of the trenches/areas showing the archaeological features exposed;
- ix. sections of the excavated archaeological features;
- x. interpretation of the archaeological features exposed and their context within the surrounding landscape;
- xi. specialist reports on the artefactual/environmental remains from the site;
- xii. appropriate photographs of specific archaeological features;
- xiii. a consideration of the importance of the archaeological remains present on the site in local, regional and national terms
- xiv. a list of contexts.

2.2.3 Copies of the evaluation report will be sent to Longhurst Housing Association, the North Kesteven Heritage Officer and Lincolnshire SMR.

2.2.4 The project archive will be prepared according to the recommendations in *Guidelines for the Preparation of Excavation Archives for long term storage* (UKIC 1990), *Standards in the Museum Care of Archaeological Collections* (Museums and Galleries Commission 1992). This excludes items of gold and silver which by law must be reported to Her Majesty's Coroner. An archive list will be sent to the Heritage Office for subsequent

inclusion in the SMR. The archive will be deposited with under accession number applied for, within 6 months of the completion of field and appropriate post-excavation work.

- 2.4.5 Notes or articles describing the results of the evaluation will be submitted for publication to *Lincolnshire History and Archaeology* and/or national journals, dependant on the nature of the results. A copy of any such works will be sent to the Heritage Officer and to the County SMR.

3.0 Timetable and Personnel

- 3.1 The evaluation is expected to take up to 10 working days with two staff.
- 3.2 Nansi Rosenberg BA, PIFA will direct the project with assistance from Jenny Young BA. Additional members of JSAC staff will be brought in as required. CVs will be provided on request.
- 3.3 Specialist assistance, where required, will be provided by the following persons :

Robert Alvey - Small finds
Jane Cowgill - Slag
James Rackham - Environmental analysis
John Samuels - Prehistoric / Roman pottery
Robert White - Conservation
Jane Young - Medieval / Post-medieval pottery

Additional or alternative specialists will be brought in if necessary, in consultation with the Heritage Officer.

4.0 Insurance

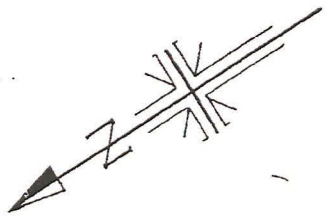
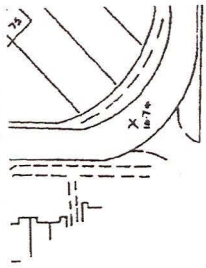
- 4.1 The archaeological contractor will produce evidence of Public Liability Insurance to the minimum value of £5 m and Professional Indemnity Insurance to the minimum of £2m.

5.0 Health and Safety

- 5.1 It is the policy of John Samuels Archaeological Consultants ('the Employer') to conform fully with the requirements of the Health & Safety at Work etc. Act (1974).
- 5.2 It is accepted that it is the duty of the Employer to ensure, so far as is reasonably practical, the health and safety of all his employees at work.
- 5.3 The employer also has a duty to ensure that his employees are aware of their responsibility for their own health and safety, and for the health and safety of others, including the general public, who might be affected by their work.
- 5.4 Where employees are temporarily engaged at other workplaces, they are to respect relevant local regulations, both statutory and as imposed by other employers within the Health and Safety at Work etc. Act (1974).
- 5.5 In furtherance of the duty of care imposed by the Health & Safety at Work etc. Act (1974), the Employer shall make available to his employees whatever reasonable facilities are required by particular circumstances, e.g appropriate protective clothing, safety equipment, rest breaks for specialised tasks, etc.
- 5.6 Attention is paid to the requirements of more recent legislation including the provision and use of *Work Equipment Regulations 1992*, the *Management of Health and Safety at Work Regulations 1992* and the *Construction (Design and Management) Regulations 1994*. A risk assessment will be undertaken, a safety officer appointed and all aspects of health and safety nominated during work.
- 5.7 In addition to the forgoing all *John Samuels Archaeological Consultants* staff will be bound by the Health and Safety requirements of the main contractor.

6.0 Figures

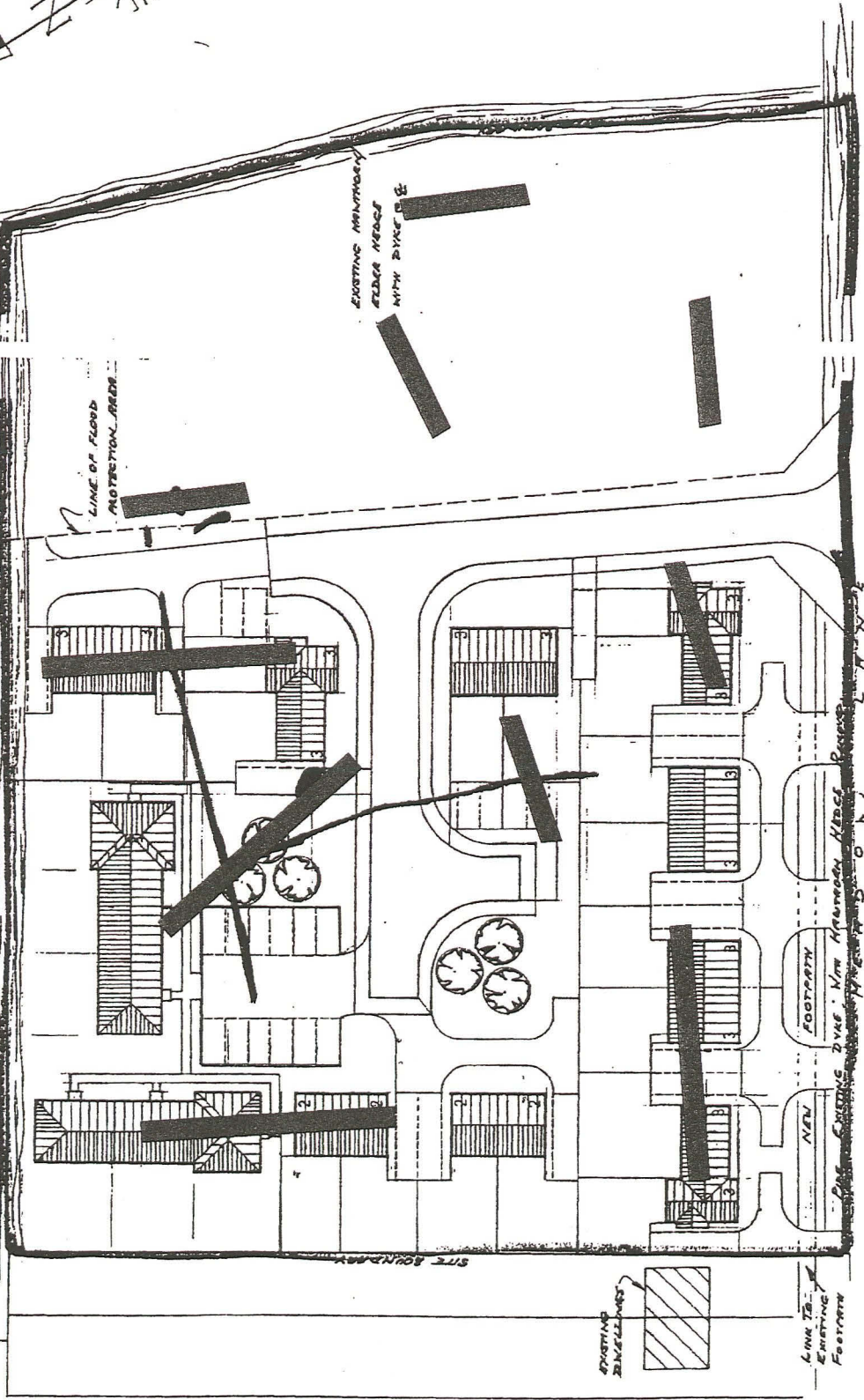
Figure 1 : Trench locations



50 metres



SITE BOUNDARY
EXISTING LA



LINE TO EXISTING FOOTPATH

EXISTING BUILDINGS

LINE TO EXISTING DYKE - WITH MINOR ROAD
FOOTPATH

LINE OF FLOOD PROTECTION AREA

EXISTING MINOR ROAD STREET WALLS WITH DYKE

SITE BOUNDARY

**Appendix C:
Context Summary**

Context Summary

Context Number	Trench Location	Description	Interpretation
101	1	Firm, dark brownish grey silt with turf	Topsoil
102	1	Firm, greyish brown silty clay with occasional sand.	Subsoil
103	1	Firm, light yellowish brown clay	Natural geology
201	2	Dark brownish grey silt with turf	Topsoil
202	2	Firm, greyish brown silty clay with occasional sand.	Subsoil
203	2	Firm, mid greyish brown clay	Single fill of pit [204]
204	2	Shallow oval cut with concave sides and base	Pit
205	2	Mid brownish red humic silty clay with occasional pebble and subangular stone	Secondary fill of shallow linear cut [206]
206	2	Shallow linear cut with concave sides and flat base	Ditch
207	2	Soft, dark grey silty clay with occasional rounded stone	Single fill of pit [208]
208	2	Oval cut with concave sides and base	Pit
209	2	Firm, mottled greyish brown silty clay	Single fill of ditch cut [210]
210	2	Linear cut with concave sides and base	Enclosure ditch
211	2	Soft, mid reddish orange sandy gravel	Primary fill of [206]
212	2	Firm, mid yellow clay containing occasional pebble	Natural geology
301	3	Dark brownish grey silt with turf	Topsoil
302	3	Firm, greyish brown silty clay with occasional sand.	Subsoil

303	3	Firm, light grey-greenish brown silty clay	Sealing deposit
304	3	Soft, mid brownish grey silty clay with occasional rounded stone	Single fill of gully [319]
305	3	Firm, mid grey silty clay	Secondary fill of gully [321]
306	3	Firm, mid brownish grey silty clay with occasional rounded stone	Single fill of [320]
307	3	Plastic, light yellowish brown clay with occasional sand pockets	Natural geology
308	3	Linear cut with concave sides and base	Enclosure ditch
309	3	Linear cut with steep irregular sides and a concave base`	Enclosure ditch
310	3	Linear cut with concave sides and base - same as [415]	Enclosure ditch
311	3	Firm, mid greenish grey silty clay with moderate rounded stone	Single fill of [308]
312	3	Firm, mid brownish grey silty clay with occasional rounded stone	Single fill of [309]
313	3	Firm, mid brownish grey silty clay with frequent charcoal	Single fill of [316]
314	3	Firm, mid greenish brown-grey silty clay with moderate rounded stone	Secondary fill of [310]
315	3	Firm/compact, mid yellowish brown silty clay - redeposited natural	Fill of [310]
316	3	Linear cut with concave sides and irregular base	Recut of [309]
317	3	Soft, dark brown silty clay with occasional rounded stone	Single fill of [318]
318	3	Linear cut with irregular sides and base	Gully
319	3	Linear cut with concave sides and base	Gully
320	3	Curvilinear cut with concave sides and base	Gully terminus
321	3	Curvilinear cut with slightly irregular sides and base	Gully

322	3	Firm, dark grey clay with frequent charcoal	Primary fill of [321]
401	4	Dark brownish grey silt with turf	Topsoil
402	4	Firm, greyish brown silty clay with occasional sand.	Subsoil
403	4	Firm, dark blackish brown silty clay with occasional rounded stone and frequent charcoal flecks	Tertiary fill of [408]
404	4	Firm, mid brownish grey silty clay with occasional rounded stone and orange mottling	Single fill of [415]
405	4	Linear cut with gently sloping sides	Enclosure ditch
406	4	Firm, mid greenish grey silty clay	Single fill of [405]
407	4	Firm, light bluish grey clay with orange mottling	Secondary fill of [408]
408	4	Linear cut with concave sides and base	Enclosure ditch
409	4	Linear cut with convex sides and a flat base	Enclosure ditch
410	4	Firm, grey clay with orange mottling and occasional rounded stone	Single fill of [409]
411	4	Terminus end of a linear cut with vertical sides and a concave base	?Gully
412	4	Firm, mid brown silty clay	Single fill of [411]
413	4	Firm/compact, mid yellowish brown silty clay - redeposited natural	Primary fill of [408]
414	4	Plastic, light yellowish brown clay with occasional sand pockets	Natural geology
415	4	Linear cut with concave sides and base - same as [310]	Ditch
501	5	Dark brownish grey silt with turf	Topsoil
502	5	Firm, greyish brown silty clay with occasional sand.	Subsoil

*An Archaeological Evaluation Excavation of
Land off Meadow Lane, North Hykeham*

503	5	Firm, grey clay with orange mottling, occasional rounded stone and very occasional charcoal flecks	Single fill of [504]
504	5	Linear cut with sloping sides and concave base	Enclosure ditch
505	5	Firm, light yellowish grey clay with sandy gravel pockets	Natural geology
601	6	Dark brownish grey silt with turf	Topsoil
602	6	Firm, greyish brown silty clay with occasional sand.	Subsoil
603	6	Firm, dark blackish brown silty clay with occasional rounded stone and frequent charcoal flecks	Fill of [605]
604	6	Firm, light bluish grey clay with orange mottling	Fill of [611]
605	6	Linear cut with concave sides - same as [405]	Enclosure ditch
606	6	Firm, mid orange brown silty clay with occasional rounded stone	Single fill of [607]
607	6	Linear cut with concave sides and base	Furrow
608	6	Firm, mid orange brown silty clay with occasional rounded stone and charcoal flecks	Single fill of [609]
609	6	Linear cut with concave sides and an irregular base	Furrow
610	6	Firm/compact, light yellow brown clay with pockets of yellowish red sand	Natural geology
611	6	Linear cut - same as [408]	Enclosure ditch
701	7	Dark brownish grey silt with turf	Topsoil
702	7	Firm, greyish brown silty clay with occasional sand.	Subsoil
703	7	Firm, dark yellow brown silty clay with sand	Natural geology
801	8	Dark brownish grey silt with turf	Topsoil
802	8	Firm, greyish brown silty clay with occasional sand.	Subsoil

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803	8	Compact, light grey silty sand containing gravel	Natural geology
901	9	Dark brownish grey silt with turf	Topsoil
902	9	Firm, greyish brown silty clay with occasional sand.	Subsoil
903	9	Firm, light yellow sandy silt	Natural geology
1001	10	Dark brownish grey silt with turf	Topsoil
1002	10	Firm, greyish brown silty clay with occasional sand.	Subsoil
1003	10	Firm, mid yellow brown silty sand containing gravel	Natural geology

*An Archaeological Evaluation Excavation of
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**Appendix D:
The Pottery
by Dr. John Samuels BA, PhD, FSA, MIFA**

The Pottery

A total number of 49 sherds representing perhaps 40 vessels and weighing 1.78kgs were recovered from the excavations. The pottery was examined using a x10 hand lens where necessary to identify inclusions. Most of the material is from the Roman period with a date range in the 2nd - 3rd century where forms can be dated.

Two sherds of probable Iron Age date were found in context (404) but with greyware sherds of undoubted Roman origin and must therefore be considered residual. Similarly, in context (407) where all the pottery was Roman except for a medieval sherd, the latter is intrusive. Only 3 other medieval pottery sherds were found, in contexts (305), (602) and (902).

All of the pottery is from relatively small vessels with none of the large, open-mouthed bowls more typical of rural sites. However, the relatively small quantity of material and lack of joining sherds or sherds from the same vessel, suggests that the area of excavation is peripheral to a settlement focus. There is a complete lack of colour-coated ware from either of the Nene Valley or Swanpool kilns and only two sherds (403 and 604) could be tentatively attributed to the latter kilns. One of these is the narrow-necked jar with a frilled rim from context (311) which has extended its date range to the 4th century but these do occur earlier. Similarly, an everted rim jar from context (207) has extended its date range but the presence in the same context of a Dalesware jar and lid seated greyware jar in (403) and (604) are more typical of the 3rd century. It is probable that the bulk of the Roman material is more likely to be 3rd century with the decorated Samian from (205) reflecting the peripheral nature of more highly-priced pottery.

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Context Number	Form	Description	Date
203	Pottery	2 greyware body sherds	Roman
205	Pottery	Decorated Samian	2nd century A.D.
207	Stone	6 pieces of weather worn sandstone	Unknown
	Pottery	3 grey ware body sherds	2nd to 4th century A.D.
		1 greyware everted rim jar ?Swanpool	
		1 Dalesware jar	
209	Pottery	1 greyware body sherd	Roman
		1 greyware lid	
	Bone	Animal - cattle and horse	Unknown
305	Pottery	1 orange body sherd	Medieval
311	Pottery	1 greyware body sherd	3rd to 4th century A.D.
		1 frilled narrow-necked jar	
	Tile	Fragment	Unknown
	Slag	3 lumps of conglomerate containing slightly ferrous slag-like material and stones	Unknown
		1 lump of ferrous slag	Unknown
	Stone	Fragment of burnt sandstone	Unknown
	Bone	Animal - cattle and horse	Unknown
403	Pottery	5 greyware body sherds	2nd to 3rd century A.D
		1 greyware lid-seated jar	
	Bone	Animal - cattle	Unknown
404	Pottery	1 orange fabric body sherd with combed decoration	?Iron Age
		1 brown fabric body sherd	
	Pottery	2 greyware body sherds	Roman
		1 greyware recurved rim jar	

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	Slag	1 lump of ferrous slag	Unknown
	Bone	Animal - cattle and horse	Unknown
406	Pottery	6 greyware body sherds	2nd to 3rd century A.D.
		1 greyware recurved rim jar	
		2 shelly gritted bodysherds	
		1 shell gritted recurved rim jar	
407	Pottery	1 greyware body sherd	Roman
		1 medium wide-mouthed greyware bowl	
		1 greyware jug rim ?intrusive	?Medieval
	Stone	2 fragments of fossiliferous limestone	Unknown
	Bone	Animal - cattle	Unknown
502	Pottery	3 Pancheon body sherds	19th century
503	Pottery	2 greyware body sherds	Roman
602	Pottery	1 green glazed jug handle	15th to 16th century
603	Pottery	1 greyware body sherd	Roman
	Bone	Animal - cattle and horse	Unknown
604	Pottery	1 greyware lid seated jar	2nd to 3rd century A.D.
	Bone	Animal - cattle	Unknown
608	Tile	1 fragment	Unknown
902	Pottery	1 orange fabric body sherd	Medieval

*An Archaeological Evaluation Excavation of
Land off Meadow Lane, North Hykeham*

Appendix E:

**The Animal Bone
by D. J. Rackham
Environmental Archaeology Consultancy**

Meadow Lane, North Hykeham**Animal Bone assessment**

A small assemblage of animal bone from evaluation excavations carried out by John Samuels Archaeological Consultants at Meadow, Lane North Hykeham was submitted for assessment.

The assemblage comprised 24 fragments of bone, some broken into several more pieces, from three evaluation trenches. An archive catalogue of the bone was produced (Appendix).

The bone was not in good condition. A number of fragments were eroded, surface etching and in the case of teeth loss of dentine, was present and this loss of strength had resulted in the fragmentation of a number of the bones and teeth. The quality of this assemblage is poor and it is possible that some fragments may have been lost completely as a result of the soil conditions. The presence of loose teeth from the same jaw but no bone may illustrate this point.

Identified material in the collection includes fragments of horse, cattle, and cat.

D.J.Rackham
8 December 1999

THE ENVIRONMENTAL ARCHAEOLOGY CONSULTANCY

Key to codes used in the cataloguing of animal bones

SPECIES	BONE	SIDE	FUSION
BOS cattle	SKL skull	W - whole	Records the fused/unfused condition of the epiphyses
CSZ cattle size	TEMP temporal	L - left side	P - proximal; D - distal; E - acetabulum;
SUS pig	FRNT frontal	R - right side	N - unfused; F - fused; C - cranial; A - posterior
OVCA sheep or goat	PET petrous	F - fragment	
OVI sheep	PAR parietal	TOOTH WEAR - Codes are those used in Grant, A. 1982 <i>The use of tooth wear as a guide to the age of domestic animals</i> , in B.Wilson, C.Grigson and S.Payne (eds) <i>Ageing and sexing animal bones from Archaeological sites, 91-108</i> .	
SSZ sheep size	OCIP occipital	Teeth are labelled as follows in the tooth wear column:	
EQU horse	ZYG zygomatic	h ldpm4/dupm4	f ldpm2/dupm2
CER red deer	MAN mandible	H lpm4/upm4	g ldpm3/dupm3
CAN dog	MAX maxilla	I lm1/um1	
MAN human	ATL atlas	J lm2/um2	
UNI unknown	AXI axis	K lm3/um3	
CHIK chicken	CEV cervical vertebra		
GOOS goose, dom	TRV thoracic vertebra		
LEP hare	LMV lumbar vertebra		
UNB indet bird	SAC sacrum		
MALL duck, dom.	CDV caudal vertebra	ZONES - zones record the part of the bone present.	
GULL gull sp.	SCP scapula	The key to each zone on each bone is on page 2	
FISH fish	HUM humerus		
UNIB bird indet	RAD radius		
UNIF fish indet	MTC metacarpus	MEASUREMENTS - Any measurements are those listed in A.Von den Driesch (1976) <i>A Guide to the Measurement of Animal Bones from Archaeological Sites</i> , Peabody Museum Bulletin 1, Peabody Museum, Harvard, USA	
GSZE goose size	MCl-4 metacarpus 1-4		
BEAV beaver	INN innominate		
CORV crow or rook	ILM ilium		
POLE polecat/ferret	PUB pubis		
PART partridge	ISH ischium	PRESERVATION	1 - enamel only surviving
ORC rabbit	FEM femur		2 - bone very severely pitted and thinned, tending to break up teeth with surface erosion and loss of cementum and dentine
ROD rodent	TIB tibia		3 - surface pitting and erosion of bone, some loss of cementum and dentine on teeth
JACK jackdaw	AST astragalus		4 - surface of bone intact, loss of organic component, material chalky, calcined or burnt
OWL owl indet.	CAL calcaneum		5 - bone in good condition, probably with some organic component
AUR aurochs	MTT metatarsus		
DUCK duck sp.	MT1-4 metatarsus 1-4		
	PH1 1st phalanx		
	PH2 2nd phalanx		
	PH3 3rd phalanx		
	LM1-LM3 Lower molar 1 - molar 3		
	UM1-UM3 upper molar 1 - molar 3		
	LPM1-LPM4 lower premolar 1-4		
	UPM1-UPM4 upper premolar 1-4		
	DLPM1-4 deciduous lower premolar 1-4		
	DUPM1-4 deciduous upper premolar 1-4		
	MNT mandibular tooth		
	MXT maxillary tooth		
	LBF long bone		
	UNI unidentified		
	STN sternum		
	INC incisor		
	TTH indet. tooth		
	CMP carpo-metacarpus		
	SKEL skeleton		

ZONES - codes used to define zones on each bone

SKULL -	<ol style="list-style-type: none"> 1. paraoccipital process 2. occipital condyle 3. intercornual protuberance 4. external acoustic meatus 5. frontal sinus 6. ectorbitale 7. entorbitale 8. temporal articular facet 9. facial tuber 0. infraorbital foramen 	METACARPUS -	<ol style="list-style-type: none"> 1. medial facet of proximal articulation, MC3 2. lateral facet of proximal articulation, MC4 3. medial distal condyle, MC3 4. lateral distal condyle, MC4 5. anterior distal groove and foramen 6. medial or lateral distal condyle
		FIRST PHALANX	<ol style="list-style-type: none"> 1. proximal epiphysis 2. distal articular facet
MANDIBLE	<ol style="list-style-type: none"> 1. Symphyseal surface 2. diastema 3. lateral diastemal foramen 4. coronoid process 5. condylar process 6. angle 7. anterior dorsal ascending ramus posterior M3 8. mandibular foramen 	INNOMINATE	<ol style="list-style-type: none"> 1. tuber coxae 2. tuber sacrale + scar 3. body of ilium with dorso-medial foramen 4. iliopectoral eminence 5. acetabular fossa 6. symphyseal branch of pubis 7. body of ischium 8. ischial tuberosity 9. depression for medial tendon of rectus femoris
VERTEBRA	<ol style="list-style-type: none"> 1. spine 2. anterior epiphysis 3. posterior epiphysis 4. centrum 5. neural arch 	FEMUR	<ol style="list-style-type: none"> 1. head 2. trochanter major 3. trochanter minor 4. supracondyloid fossa 5. distal medial condyle 6. lateral distal condyle 7. distal trochlea 8. trochanter tertius
SCAPULA	<ol style="list-style-type: none"> 1. supraglenoid tubercle 2. glenoid cavity 3. origin of the distal spine 4. tuber of spine 5. posterior of neck with foramen 6. cranial angle of blade 7. caudal angle of blade 	TIBIA	<ol style="list-style-type: none"> 1. proximal medial condyle 2. proximal lateral condyle 3. intercondylar eminence 4. proximal posterior nutrient foramen 5. medial malleolus 6. lateral aspect of distal articulation 7. distal pre-epiphyseal portion of the diaphysis
HUMERUS	<ol style="list-style-type: none"> 1. head 2. greater tubercle 3. lesser tubercle 4. intertuberal groove 5. deltoid tuberosity 6. dorsal angle of olecranon fossa 7. capitulum 8. trochlea 	CALCANEUM	<ol style="list-style-type: none"> 1. calcaneal tuber 2. sustentaculum tali 3. processus anterior
RADIUS	<ol style="list-style-type: none"> 1. medial half of proximal epiphysis 2. lateral half of proximal epiphysis 3. posterior proximal ulna scar and foramen 4. medial half of distal epiphysis 5. lateral half of distal epiphysis 6. distal shaft immediately above distal epiphysis 	METATARSUS	<ol style="list-style-type: none"> 1. medial facet of proximal articulation, MT3. 2. lateral facet of proximal articulation, MT4 3. medial distal condyle, MT3 4. lateral distal condyle, MT4 5. anterior distal groove and foramen 6. medial or lateral distal condyle
ULNA	<ol style="list-style-type: none"> 1. olecranon tuberosity 2. trochlear notch- semilunaris 3. lateral coronoid process 4. distal epiphysis 		

Archive Catalogue of Animal Bone from Meadow Lane, North Hykeham

site	cont.	species	bone	no.	side	fusion	zone	butchery	gnawing	toothwear	measurement	path.	comment	preservation
MLH99	209	BOS	MAX	1	L								POST FRAG WITH FRAGMENTED MOLAR- 5 PIECES	3
MLH99	209	EQU	MAN	1	F								3 LOOSE INCISOR TEETH-SAME JAW	3
MLH99	209	FEL	HUM	1	L								MID AND DISTAL SHAFT	4
MLH99	311	BOS	AST	1	L		1						DAMAGED AND ERODED	3
MLH99	311	BOS	HC	1	L								PART OF CORE- 2 PIECES	4
MLH99	311	BOS	MAN	1	R					I12J6			LOOSE TEETH	4
MLH99	311	EQU	FEM	1	R	PF	1		DG?				PART PROX END-ERODED-POSSIBLY CHEWED	3
MLH99	403	BOS	CAL	1	L	PN		CH					PROX SHAFT-TUBERCLE CHOPPED OFF	3
MLH99	404	BOS	ULN	1	R								PROX SHAFT FRAGMENT	3
MLH99	404	EQU	LM	1	R								MED WEAR	3
MLH99	407	BOS	UM	1	L					I7				4
MLH99	407	CSZ	LBF	2	F								SHAFT FRAG	3
MLH99	407	CSZ	SCP	1	F								NECK FRAG-HORSE?	4
MLH99	407	CSZ	UNI	1	F								POSS SCP SPINE	4
MLH99	407	EQU	SCP	1	L	DF	12				GLC-93		GLENOID AND TUBERCLE- 2 PIECES	4
MLH99	407	EQU	TRV	1	F	CNAN	4						POST THORACIC VERT-CENTRUM- 2 PIECES	4
MLH99	603	CSZ	UNI	2	F								POSS SCP FRAGS	3
MLH99	603	EQU	TIB	1	R	DF	567						BROKEN DISTAL END- 3 PIECES- LARGE	3
MLH99	604	CSZ	UNI	4	F								INDET FRAGS	3