

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire



ARS Ltd Report 2016/62

May 2016

OASIS ID: archaeo15 – 250638

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EXECUTIVE SUMMARY

Project Name: Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Site Code: MMW016

Planning Authority: South Derbyshire

Location: Mercia Marina, Findern Lane, Willington, Derby DE65 6DW

Geology: Gunthorpe Mudstones overlain by Findern clays, silts and sands

NGR: SK 2981 2964

Planning reference: 9/2016/0066

Date of Fieldwork: 18-22, 25th April 2016

Date of Report: 6th May 2016

Archaeological Research Services Ltd was commissioned by Mercia Marina to undertake an archaeological evaluation on land at Mercia Marina, Findern Lane, Willington, Derby DE65 6DW. The work forms part of pre-determination works in support of a planning application for the construction of 32 wood clad lodges and a wild life pond. The site lies within an area of previously attested archaeology and a later prehistoric boundary, identified as discontinuous ditches and pits, has been shown to run through the site. Evidence for relict medieval cultivation terraces, ridge and furrow, has also been previously demonstrated to be preserved on the site.

The evaluation was undertaken between the 18th and 22nd April 2016 in accordance with a written scheme of works agreed with the Derby and Derbyshire Development Control Archaeologist (DDCA). A sign off meeting was held on site with the DDCA on the 25th April 2016.

The evaluation comprised 12 trenches which were targeted to assess the presence/absence of archaeology in the footprints of proposed cabins and on the site of the wildlife pond. Two trenches (Trenches 7 and 10) produced clear evidence of archaeological deposits. This included evidence of the linear ditch/pit alignment known from aerial photography to be running through the site (Trench 7) on the proposed site of the wildlife pond. Potential archaeological deposits were identified in the northern field around Trench 10. Made ground was identified running along the eastern side of the development area. In this area the modern ground surface averages a depth of some 0.6m above the undisturbed subsoil where archaeological remains may be located, services are therefore unlikely to have an impact in this area.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Archaeological Research Services Ltd (ARS Ltd) was commissioned by Mercia Marina to undertake an archaeological evaluation (the evaluation) on land to the west of Mercia Marina, Willington, Derbyshire, Figure 1, centred at NGR SK 2981/2964.

1.1.2 The site is situated in the middle of the Trent valley and lies within a landscape identified as being rich in archaeological remains (Burpoe 2015, 12). The 'red line boundary' of the site and proposed development area (PDA) is shown in Figure 1.

1.1.3 The aim of the evaluation was to further determine the survival of any archaeologically significant deposits and features within the PDA. It comprised the excavation and recording of 12no, 25m x 2m trenches (Figure 2), and forms part of pre-determination works in support of a planning application (9/2016/0066) to build 32 wood-clad lodges and create a wildlife pond.

1.2 Site Topography and Geology

1.2.1 The site covers 5.85ha and comprises two fields, Field 1 and Field 2, which are bounded to the north by open fields and the A50, to the east by the existing Mercia Marina complex and to the south and west by open fields.

1.2.2 Field 2, which lies to the north of the PDA and is triangular in shape, slopes from a high point at c. 57 m above Ordnance Datum (aOD) in the north-west corner toward the east and south-east. The fall of slope to the east is relatively gentle, dropping to c.52m aOD over 142m, but is more pronounced to the south-east where there is a fall of 7m over a distance of 153m to 49m aOD. The land at the eastern edge and south-eastern corner of Field 2 levels off and even rises slightly to c. 49.8m aOD before dropping off again to the 49m aOD at the hedge line.

1.2.3 Field 1, to the south, is trapezoidal in shape and slopes down from west to east from c.53m aOD to 48m aOD in the middle of the field before levelling off and even rising slightly to c.49m aOD at the eastern edge of the field. The underlying fall of the land is also from the south-west toward the north-east, where a fall of slope from 53m to 49m aOD over a linear distance of 264m was observed.

1.2.2 The underlying solid geology of the PDA consists of mudstone of the Gunthorpe Member, formed during the Triassic Period when the local environment was dominated by hot deserts. This is overlain by superficial deposits of Findern clays, silts and sands and Beeston sand and gravels, with the sand and gravels being uppermost across the PDA and being the material into which the archaeological remains are cut (BGS 2015). The soils of the PDA are classified as belonging to the ARROW Soil Association (543), which are gleyic brown earths (SSEW 1983). These soils form as glaciofluvial drift and are characterised as deep, permeable, coarse loamy soils affected by groundwater (CU 2015).

1.3 Archaeological and Historical background

1.3.1 Archaeological remains spanning the earlier and later prehistoric periods are well attested in the immediate vicinity (Burpoe 2015, 5) and the surrounding area has been subjected to sustained investigation over the last 30 years (Taylor 1990; Beavit 1990; TPAT 1992; Philpott 1993; Hughes 1995; Hughes & Jones 2001; Brightman 2008; Brightman and Waddington 2012).

1.3.2 A Heritage Impact Assessment (HIA) undertaken by ARS Ltd in 2015 (Burpoe 2015) highlighted the presence of non-designated archaeological remains within the PDA (Burpoe 2015, 9) in Field 2. These remains, namely Neolithic and Bronze Age features and a Late Prehistoric Pit Alignment, are identified in the Historic Environment Record for Derbyshire (HER nos. MDR4333, MDR14504) and the National Record of the Historic Environment (NRHE nos. 1516179 & 313191, 1516192).

1.3.3 The presence of relict medieval field terraces to the northern end of Field 2 was also highlighted in the HIA. These are clearly visible in Google Earth (Figure 3) but were initially identified in the *Derbyshire and the Peak District Aggregates Assessment Resource Assessment* (Brightman and Waddington 2011, 154).

1.3.4 Previous archaeological evaluations (Hughes 1995) within the PDA, though limited in scope, revealed relatively little in terms of preserved archaeology (Burpoe 2015, 7). This absence of evidence does not necessarily constitute evidence of absence and Hughes (1995) notes that natural site formation processes within the PDA may have obscured the archaeology visible to aerial photography. Excavations further to the east (Brightman and Waddington 2012) revealed archaeological remains dating from most periods of prehistory previously unknown from cropmarks and aerial photography (Brightman 2008, 3 and 106).

1.3.5 While the excavations adjacent to the PDA undertaken in the 1990s (Hughes 1995; Hughes and Jones 1995; 2001) have remained unpublished, the interim reports when taken in concert with later published works (Brightman and Waddington 2012) suggests the archaeological resource may have a greater density than hitherto attested by aerial photography.

2 AIMS AND OBJECTIVES

2.1 A written scheme of investigation (WSI) was prepared by ARS Ltd which had been devised in consultation with and approved by the Derby and Derbyshire Development Control Archaeologist (DDCA) prior to the commencement of works.

2.2 The evaluation aimed to:

- Identify, sample and fully record archaeological deposits and features within the evaluation trenches.
- Obtain, where possible, relative dating and dating frameworks for deposits and features encountered.
- Establish the nature, date, character, extents and level of preservation of deposits and structures.

- Produce information on the economy and local environment.

2.3 These aims were pursued in accordance with and in the context of relevant objectives extant in the regional research framework outlined in *An Updated Research Agenda and Strategy for the Historic Environment of the East Midlands* (Knight *et al.* 2012, 58-69). Specifically to:

- Improve dating frameworks (Objective 3A)
- Gain insights into settlement morphology, function and variability (Objectives 3I, 4C)
- More clearly understand issues relating to the visibility of prehistoric archaeological sites, their prospection and exploration.
- Gain insights into the development of field systems and the political and socio-economic role of pit alignments and ditch systems and changes in agrarian landscape.

3 METHODOLOGY

3.1 The WSI outlines the methodology employed in the evaluation which followed the Chartered Institute for Archaeologists' *Code of Conduct* (CIfA 2014a) and the *Standard and Guidance for an Archaeological Field Evaluation* (CIfA 2014b).

3.2 A risk assessment was undertaken before commencement of the work. Health and Safety regulations were adhered to at all times.

3.3 The evaluation was undertaken between the 18th and 22nd April 2016 followed by a site meeting on the 25th April to confirm suitability and sign off the works.

4 RESULTS

4.1 Introduction

4.1.1 Some 11 trenches measuring c.25m by 2m and one trench (7) measuring 27m by 2m were excavated over the two fields (Figure 2).

4.1.2 The trenches in Field 1 were placed specifically to allow the potential impact of the footprint of the proposed wildlife pond and 11 lodges to be assessed and examined 404m². A total of four trenches were sited in Field 2 to evaluate the potential impact of four lodges and examined 200m².

4.1.3 Trench summary tables (Table 1 and Table 2) are presented below. These provide a synthesis of the presence/absence of archaeology or potential archaeology in each of the trenches as well as the depths of the topsoil and subsoil below ground level (BGL).

Field No	Trench No	Archaeology? Y/N	Period	Top soil thickness	Sub soil thickness
1	1	N	N/A	0.25m	0.41m
	2	?Y	?Prehistoric	0.30m	0.10m
	3	Y	?Med & ?Prehistoric	0.26m	90mm
	4	?	?	0.39m	0.30m
	5	N	Modern/Recent	0.30m	0.12m
	6	N	Modern/Recent	0.20m	0.20-0.70m
	7	Y	?Med& Prehistoric	0.40m	0.18m
	8	N	N/A	0.30m	50mm
2	9	N	Modern/Recent	0.40m	0.50-1.1m
	10	?Y	?? Prehistoric	0.40m	Not Obs
	11	N	N/A	0.4-0.75m	Not Obs
	12	N	Modern/Recent	0.34m	0.29-0.33m

Table 1. Trench summary table demonstrating presence absence of archaeology/excavated deposits/structures and topsoil/subsoil depths.

Field No	Trench No	Excavated Feature	Dating Y/N	Depth to top BGL	Depth to top aOD
1	2	? Posthole	N	0.40m	48.66m
	3	Furrow Posthole	N	0.26m	48.62m
			N	0.34m	48.54m
	4	?Pits (natural feature) ?Scoop/gully (natural feature)	N	0.69m	48.18m
			Y (disuse)	0.69m	48.01m
	5	Pit/scoop (Recent) ?Made Ground	N	0.42m	47.68m
			N	0.42m	47.68m
6	Made Ground	Y	0.40m	47.81m	
7	Ditch Pit Furrow	N	0.40m-0.58m	48.06-47.92m	
		N	0.40m-0.58m	48.06-47.92m	
		N	0.40m	48.06m	
2	9	Made Ground	Y	0.40m	50.03
	10	Linear Trench (Recent/Modern) ?Postholes ?Slot ?Wear Hollow	N	0.40m	51m
			N	0.38m-0.44m	49.82m
			N	0.54m	49.82m
			N	0.38m	51m
12	Pits (Recent) Gully/channel (Natural)	N	0.53m	49.87m	
		N	0.53m	49.87m	

Table 2. Summary table of the excavated deposit/feature types encountered in the evaluation trenches

4.1.4 Topsoil on the site characteristically comprised a dark or very dark greyish/brown clay silt with occasional small spherical water rolled pebbles in its matrix. It typically overlay a subsoil or colluvial layer of dark yellowish/brown or brownish yellow clay silt with sparse or occasional small water rolled pebbles in its matrix.

4.1.5 Trenches 1 and 4 in Field 1 were excavated in an area which had been formerly used for soil storage and a bund is still extant at this edge of the field. This recent build up of soil accounts for the increased thickness of topsoil and subsoil observed at this edge of the site.

4.1.6 Extant land drains that were encountered during the evaluation were left intact.

4.1.7 Deposits/features excavated in Trenches 5, 6, 9, 12 are modern. Those in Trenches 5, 6 and 9 all relate to the levelling up of the fall in slope on the eastern side of the PDA (see 1.2 above), most likely when the land to the east was actively used for sand and gravel extraction. Polyethylene pipe, tyre inner tube, cloth sacking and broken asphalt were in evidence in Trenches 6 and 9. A shallow linear pit, filled with modern topsoil, was also recorded from Trench 5 cut into recent levelling up.

4.1.8 Shallow pits excavated in Trench 12 were sterile of finds but are almost certainly recent.

4.1.9 Evidence of previous episodes of archaeological evaluation, undertaken by Birmingham University Field Archaeology Unit (BUFAU) (Hughes and Jones 1995), was revealed in Trench 4.

4.2.9 Features excavated in Trench 4 are likely to be of geological origin. Two clay filled pits visible in the natural clay may represent glacial clay plugs, while the base of a linear scoop or hollow, possibly the remains of a narrow fluvial channel, contained a small, abraded, re-deposited struck flint laid down when the underlying gravels were deposited during the Ice Age. Such secondarily deposited struck flints are termed 'palaeoliths'. They are not representative of past activity on the site itself.

4.2.10 A gully excavated in Trench 12 represents a natural drainage feature.

4.2.11 Deposits and structures which can be unambiguously ascribed an archaeological in origin were encountered in two trenches (3, 7). Features of probable archaeological origin were also encountered in Trench 10 and Trench 2.

4.2.12 Trenches 2 and 3 each revealed the truncated remains of what may have been postholes. Only the bases of these features had survived and their fills produced no dating evidence.

4.2.13 Trenches 3 and 7 revealed the shallow remains of wide linear furrows, probably related to medieval cultivation terraces previously recorded as present on site.

4.2.14 Trench 10 revealed evidence of a linear vertical sided trench of probably modern date. This had truncated a shallow scoop adjacent and to the south of which lay a possible post trench which retained evidence of post sockets at its base. No dating evidence was recovered in the excavation of Trench 10.

4.2.15 Trench 7 revealed evidence of a linear ditch and an associated hollow which had cut an earlier pit. These features were undated but are thought to be part of a late prehistoric boundary feature. Previous work by ARS Ltd (Burpoe 2015) and others (TPAT 1993) had identified this alignment and Trench 7 was sited deliberately to assess its presence in the context of previous work (Hughes and Jones 1995).

4.3 Field 1

Also see trench summaries in APPENDIX II: Context Summary Table

4.3.1 Trench 1

(Figure 4)

Topsoil (101) and subsoil (102) deposits were removed from Trench 1, in the south-west of Field 1, by machine under archaeological supervision to a depth of 0.66m below ground level BGL, c.49m-48.71m aOD at which depth the underlying geological natural was revealed. No archaeological deposits or structures were observed.

4.3.2 Trench 2

(Figure 5, 6, 7)

Topsoil (200) and subsoil/colluvium (201) was machine excavated in Trench 2 to a depth of 0.4m BGL, c.48.67m aOD. A shallow irregularly sided pit, possibly representing the truncated remains of a posthole (203) was excavated and represented the only potential archaeological feature within Trench 2.

4.3.3 Trench 3

(Figure 8, 9, 10)

Topsoil (300) and subsoil/colluvium (301) was machine excavated in Trench 3 to a depth of 0.35m BGL, c.48.53m aOD. This revealed the remains of a shallow linear feature (302; 303), some 1.8m wide, probably representing a furrow which may have delineated the edge of a medieval or post medieval cultivation terrace.

4.3.4 Trench 4

(Figures 11, 12, 13, 14, 15)

Excavation of topsoil (401) and subsoil (402) revealed the top of the clay natural at c. 48.18m aOD. Three features were sampled from Trench 4, a sub-rectangular pit [404], 0.6m wide, extended from the north facing section for 0.5m. Its single fill (403) produced no finds and though its sides were regular and fairly well defined [404] is interpreted as being geological in origin.

Some 3.5m to the west a similar square pit [406] was also sampled. Its edges and upper fill (405) were also interpreted as being geological in origin and excavation was discontinued.

Further west and to the north of [406] a shallow, linear, east-west aligned, scoop was sampled. This scoop [406] was 4.5m long and had rounded terminals or butt ends to the east and the west. The single shallow fill (407) retained traces of iron panning and this feature is also interpreted as being of natural rather than human origin.

4.3.5 Trench 5

(Figure 16)

Topsoil (500) and putative subsoil (501) was excavated for a depth of 0.42m to c.47.69m aOD and revealed a shallow sub-rectangular pit [503] filled with topsoil remnant (502). This pit, [503], is interpreted as being modern in date based on the nature of its fill which contained no finds. The underlying deposit (504) which was very compact and included modern brick fragments and fragments of asphalt in its matrix is interpreted as redeposited natural which, as in trenches 6 and 9 to the north, had been deposited when the site to the east was active as a sand and gravel quarry.

4.3.6 Trench 6

(Figures 17, 18)

Trench 6 was excavated to a depth of 0.9m BGL, c.47.19m aOD. It revealed a uniform depth of topsoil (600) and (601) which was very similar to (500) and (501) to the south. A deposit of redeposited natural (602) of mixed and dirty reddish/orange grey/brown clay lay at c.47.8m aOD and contained polyethylene pipe, rubber, broken asphalt and a cloth bag. Geological natural was reached at the western end of the trench at c.47.8m aOD with the underlying topography being observed to drop off to the east 9m in from the western edge of the trench to c. 47.19m aOD.

4.3.7 Trench 7

(Figures 19, 20, 21, 22, 23, 24)

Topsoil (701) and subsoil/colluvial deposits (702) were removed to the top of the natural sand and gravel at c.48.06m aOD. These sealed a north-east - south-west aligned ditch [706] which was filled by a single iron stained deposit (705). Ditch [706] was seen to cut an earlier pit [704], some 1.6m in diameter and 0.7m deep, the fills of which appeared to have been naturally derived. A primary fill (714) appeared to have weathered in from the south-west and was overlain by a secondary fill (713) which rose up to the west and south-west. A coherent spread of small pebbles (712) overlay (713) and, reflecting the underlying topography, lensed down to the north-east. A final ?fill (703) lensed to the west and southwest over (712) and feathered out over a wear hollow [711]. This wear hollow [711], manifest as a linear, east-west aligned dip in the natural, appeared to be respected by the alignment of [706].

Ditch [706] and pit [704] correspond with the prehistoric pit and discontinuous ditch alignment previously recognised from aerial photograph by Trent and Peak Archaeological Trust in 1990 (Taylor 1990) and interpreted as forming elements related to prehistoric land (Philpott 1993, 3).

It is possible that hollow [711] represents the horizon of construction/use of this land division it being stratigraphically coeval with the construction of pit [704] and extant at point of deposition of ?surfacing/consolidation [712]. This surfacing/consolidation probably represents the final use, or definitive disuse, of [704]. Lensing down of [712] into

pit [704] represents slumping as lower fills contracted and the accumulation of [703] represents dishing of a basal fill of [711] into [704].

Based on the sequence revealed in ditch section [706] was cut from the upper horizon of (703) and its common interface with [711] probably reflects what remains of the horizon of construction/use contemporary with [706]. The disuse and infilling of ditch [706] with (705) probably occurred gradually with changes in ground water conditions creating the iron staining visible at and signifying the cut, or interface of construction, of [706].

At the northern end of Trench 7 a shallow linear furrow [708] was excavated which, like that in Trench 3 to the north-east, was probably associated with medieval cultivation terracing.

4.3.8 Trench 8

(Figure 25)

Removal of topsoil (800) to c. 48m aOD revealed an upper interface of colluvium (801) through which plough scratches on a north-west to south-east alignment and a north-east to south-west alignment were observed (not illustrated). The underlying sands and gravels were encountered at c. 47.95m aOD.

4.4 Field 2

4.4.1 Trench 9

(Figure 26, 27, 28)

Removal of topsoil (900) to c. 50.03m aOD revealed redeposited natural (901) which lensed down steeply 6m from the eastern end of Trench 9 to a depth of 1.5m. Because Field 2 was open to the public redeposited natural (901), which contained modern detritus including a cloth bag and broken asphalt, was removed by machine to maximum safe depth, a representative section photographically recorded, and the eastern part of the trench backfilled to a depth of 1m.

Redeposited natural (901), like that in Trench 5 and Trench 6 to the south, represents the modern/recent levelling up of the underlying slope at the eastern edge of the site. In Trench 9 however it was seen to seal a topsoil horizon (902) and subsoil horizon (903) which had a combined thickness of 0.5m with the geological natural present in the west of the trench at c.49.53m aOD it dipping down to below c.48.7m aOD at the eastern end of the trench.

4.4.2 Trench 10

(Figures 29, 30, 31, 32, 33)

Removal of topsoil (1001) revealed a linear steep sided trench [1003] at 51m aOD which had a mixed fill with mottled clay patches. Initial excavation of [1003] revealed that it had cut through the infill (1004) of a shallow linear scoop or hollow [1005] the base of which sloped gently to the south and south-east. The southern edge of this hollow had a much less gentle slope which was itself marked by a distinct slot [1008] some 0.15m wide.

Within this slot distinct deposits of clay (1009) defined the impressions of possible vertical posts [1010; 1011] which were themselves filled with a pale grey/brown silt (1021).

Following consultation with the DDCA additional clearing of [1003] to below the level of intrusion and further excavation and additional cleaning of hollow [1005] was undertaken. This additional work confirmed the continuation in plan of slot [1008] to the west and revealed at the level of the base of [1005] the continued presence of ?clay packing [1009; 1018; 1020] which defined the interface of possible postholes [1016; 1014; 1019]. Further it also appeared that, at the level of the base of [1005] at c.50.75m aOD fills, [1015; 1017] of [1008] may have possibly overlain the clay packing [1009; 1018; 1020].

Given the observed sequence in Trench 10 it seems likely that trench [1003], which was excavated to a depth of 0.3m may represent either the laying of services associated with Hill Farm or the mechanical grubbing out of a former field boundary. The fact that infill (1002) was very mixed but contained neither topsoil or subsoil remnant suggests that, rather than having been cut from the level of the contemporary ground surface, it may represent the historic provision of services to Hill Farm to the west.

The features represented by hollow [1005] and slot [1008] are more enigmatic and the presence of the impressions of what might have been posts and packing clay [1009] is strongly redolent of a structural feature. The weathered nature of the infill (1004) of [1005] and the disposition of its interface with (1021) may even suggest the deposition or accumulation of (1004) against a post rather than it having been truncated by the insertion of a slot. However these observations all come with a caveat. The nature of the underlying geology, a tendency to differentially weather and for potential features to become more visible with lengthened exposure and the narrow window afforded by evaluation trenching militate against a more solid interpretation of [1005;1008].

4.4.3 Trench 11

(Figure 36)

Removal of topsoil (1100) and subsoil (1101) revealed the underlying natural geology which sloped from south-west to north-east from c.52.21m aOD to c.51.61m aOD. No archaeological deposits or structures were recorded or observed in this trench.

4.4.4 Trench 12

(Figures 37, 38)

Removal of the topsoil (1200) a lens of makeup (1201) and subsoil (1202) revealed the underlying natural geology which sloped down from north-west at c.51.04m aOD to c.49.7m aOD in the south-east.

Two shallow pits [1204; 1206] were excavated at the south-eastern edge of the trench, both of which were filled by very dark grey/brown clay (1203; 1205) which, while containing no finds, appeared very modern in character and topsoil derived. To the north-east an irregular linear feature [1207] was sampled. This was filled by (1208) a single blue/grey clay fill laminated with iron pan probably representing natural solution or drainage.

5 CONCLUSION

5.1 The presence of archaeological deposits related to the creation and maintenance of a linear field boundary which probably dates to later prehistory has been attested within Trench 7 surviving to c.48.06m aOD. Under the current planning proposal this area will be covered by a wildlife lake that will be excavated down to c.47.8m aOD.

5.2 Additional archaeological features probably of medieval or earlier post-medieval origin are attested in Trench 7 and Trench 3 and are likely to relate to ridge and furrow cultivation.

5.3 The eastern edge of the site covered by trenches 5, 6 and 9 has been subject to recent levelling up to c.47.68m in the south-east, c.47.81m to the north-east to c.50.03m aOD in the north

5.4 In Field 2, Trench 10 demonstrated the survival of potential archaeological features at c.51m aOD.

5.5 In Field 1 the impacts on the archaeological resource occasioned by the excavation of the wildlife pond may be best offset by strip map and sample excavation of the pond footprint.

7 PUBLICITY, CONFIDENTIALITY AND COPYRIGHT

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7.2 ARS Ltd will retain the copyright of all documentary and photographic material under the Copyright, Designs and Patent Act (1988).

8 STATEMENT OF INDEMNITY

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9 ARCHIVE

9.1 A digital and paper archive will be prepared by ARS Ltd, consisting of all primary written documents, plans, sections, photographs and electronic data, which will be deposited with Derby Museums and Galleries.

10 ACKNOWLEDGEMENTS

10.1 ARS Ltd would like to thank Mercia Marina Ltd and particularly Mr. Robert Neff for commissioning the project and Mr. Luke Gittens of Bidesign Architecture for

survey information. We would also like to thank Mr Steve Baker Derby and Derbyshire Development Control Archaeologist for his assistance with the project.

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APPENDIX I: FIGURES

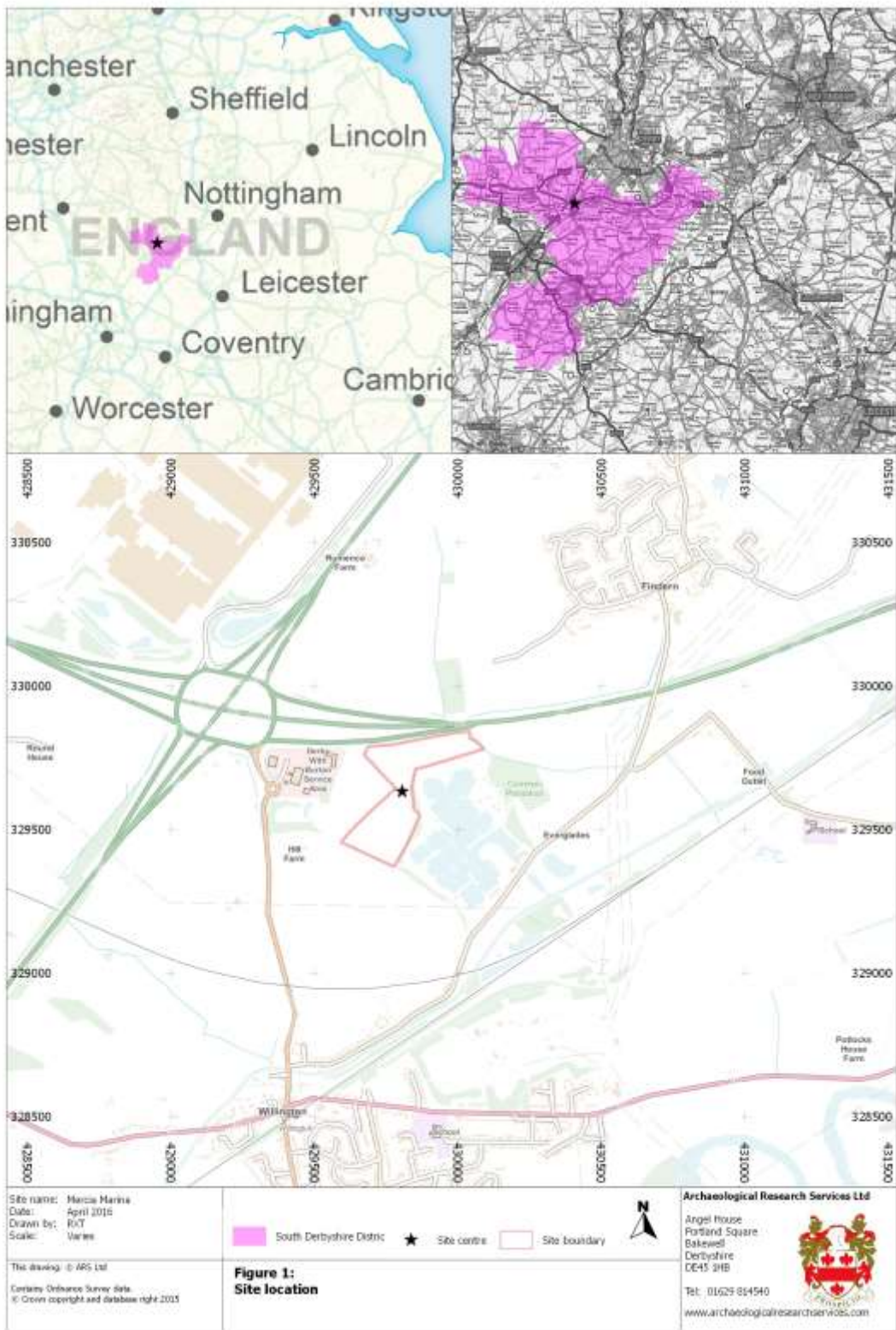


Figure 1: Site location.



Figure 3: Redline area of site and Google earth photo showing ridge and furrow, dark green area of levelling up, late prehistoric boundary taken from aerial photographic analysis can be seen bisecting field 1.



Figure 4: General view of Trench 1, looking north-west (scale 2m).



Figure 5: Trench 2, looking north (scale 2m).



Figure 6: Detail of possible posthole [203] in Trench 2 (scale 0.2m).

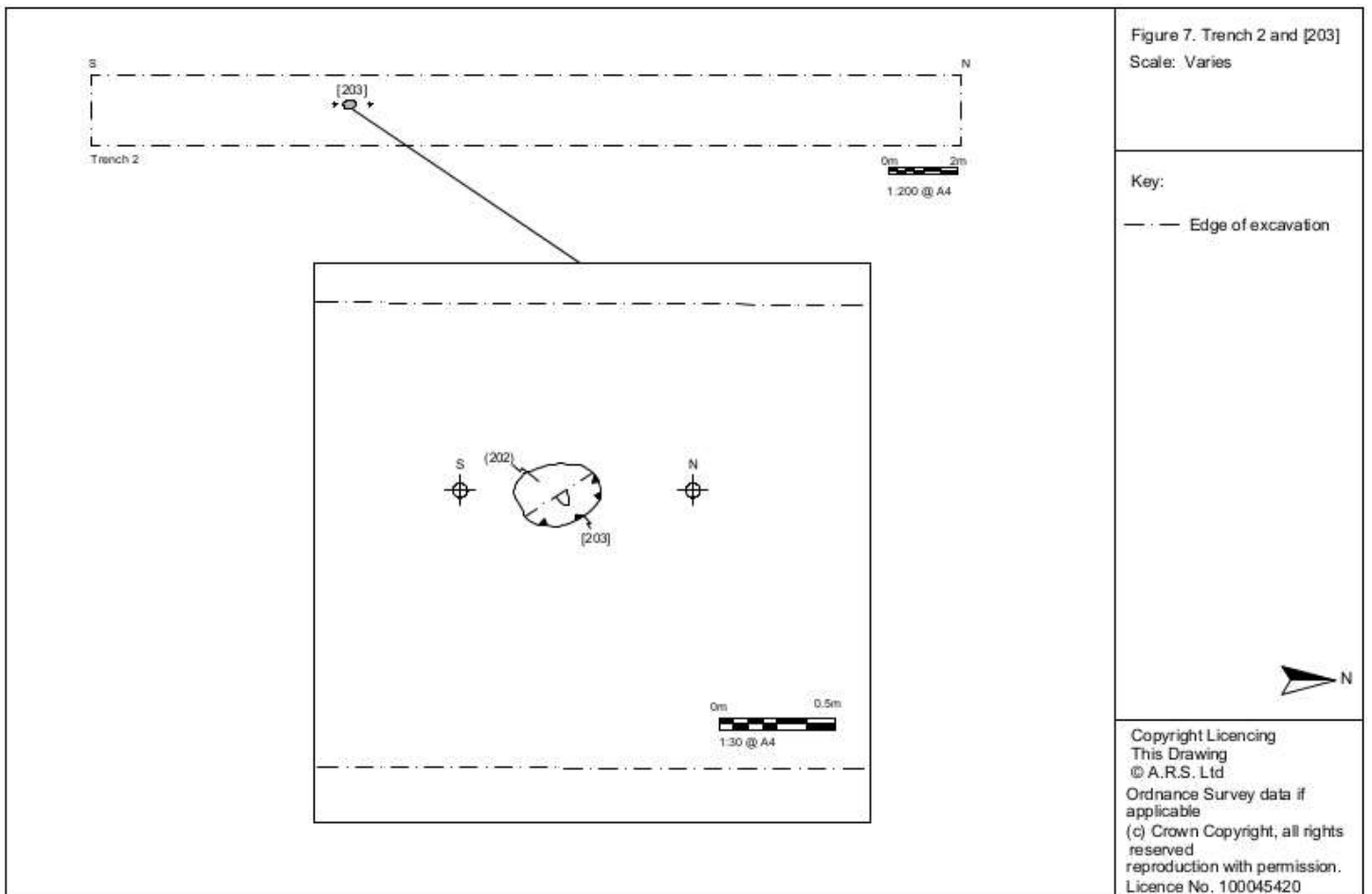


Figure 7. Trench 2 and [203] with detail inset.



Figure 8: Trench 3 facing south-west with furrow [303] in the foreground (scale 2m).

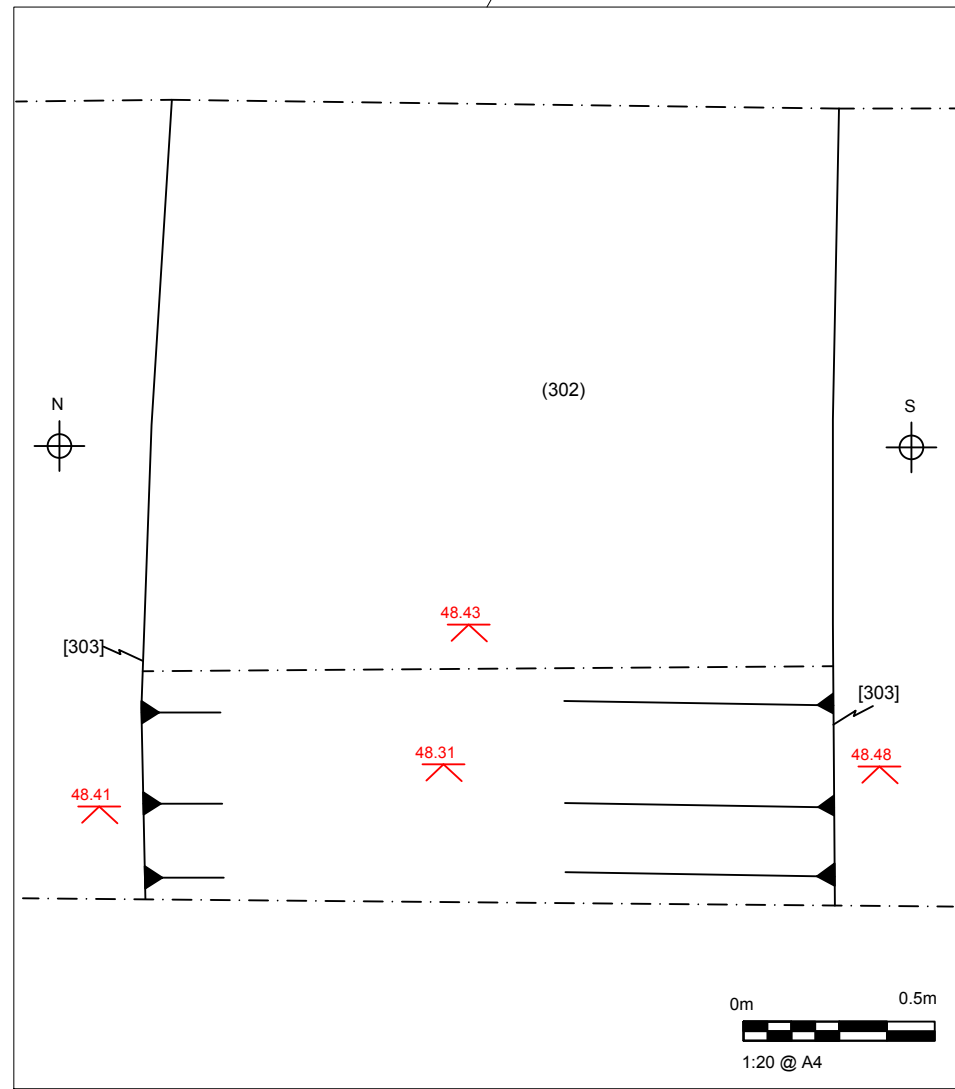
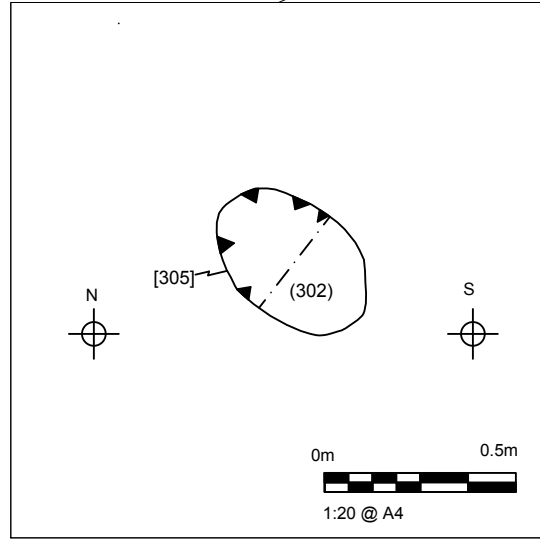
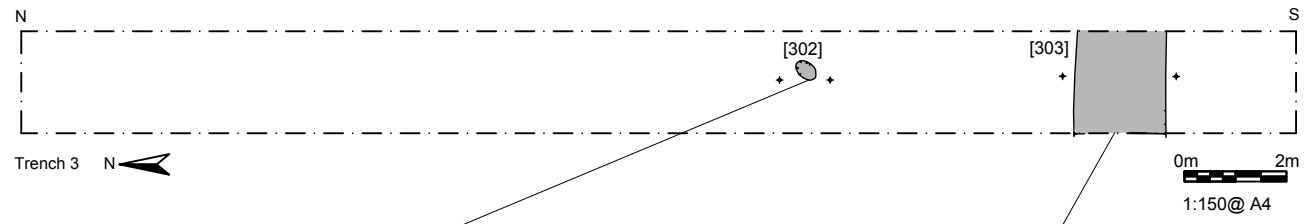


Figure 9. Trench 3 with [303] and [305]

Scale: Varies

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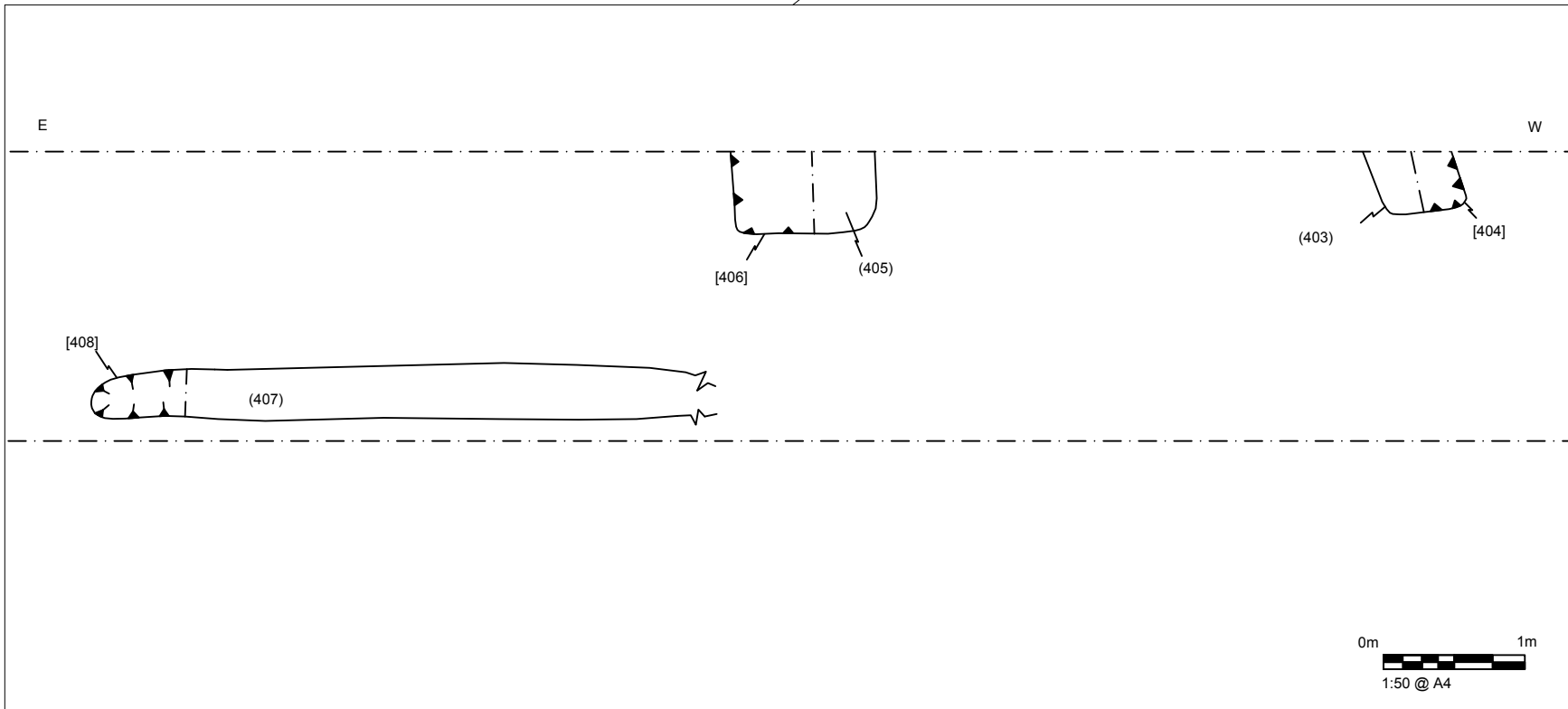
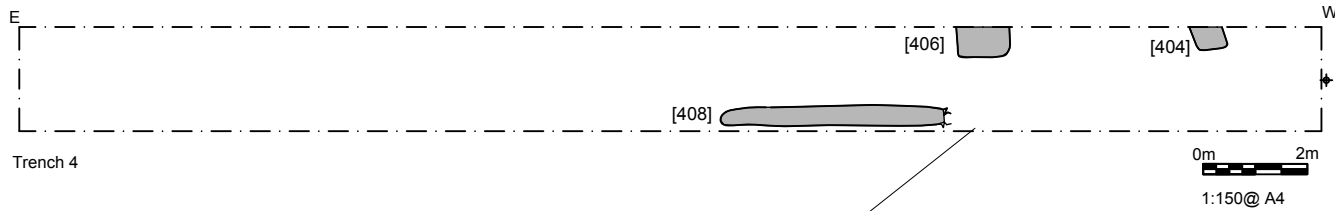


Figure 10. Trench 4 with [404], [406] and [408]

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Figure 11: General view of Trench 4 looking east (scale 2m).



Figure 12: Trench 4 from the east showing natural gully [408] (scale 2m foreground, 1m background).



Figure 13: Trench 4 and Pit [404] looking south (scale 1m).



Figure 14: Trench 4, pit [406] partially excavated from the north (scale 1m).



Figure 15: The southern end of a BUFAU evaluation trench in the north section of Trench 4. (scale 2m and 1m).



Figure 16: Trench 5 from the south-west. Mixed and redeposited natural (504) is clearly visible over the footprint of the trench, pit [502] is visible in the middle distance in the south-east facing section (scale 2m).



Figure 17: Trench 6 looking north-west showing levelling up (602) (scale 2m).



Figure 18: South-eastern end of Trench 6 looking north-east showing levelling up (602) with asphalt and polyethylene pipe (scale 2m).



Figure 19: Trench 7, pre-excavation from the south-west. The area of [704; 706] can be seen in the middle distance at the interface of the subsoil. Re-machining (see Figure 20 following) confirmed feature location (scale 2m).



Figure 20: Trench 7, post-excavation from the south-west. Pit [704] and ditch [706] can be seen in the middle distance (scale 2m).



Figure 21: Trench 7.looking north-east with wear hollow [711] in the foreground, ditch [706] mid left of frame and pit [704] centre of frame (scale 2m and 1m).

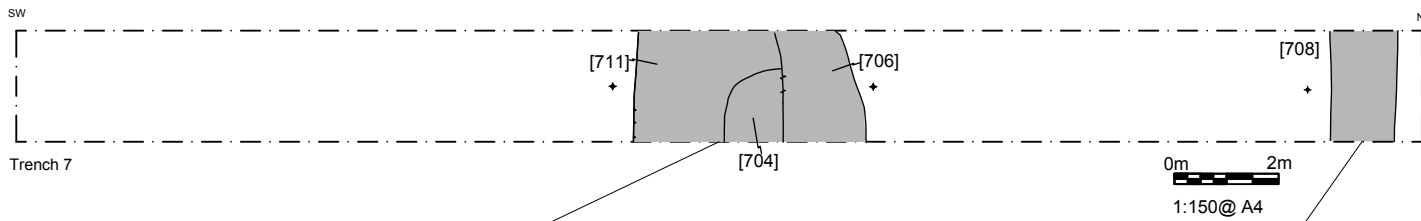


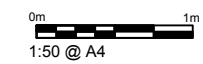
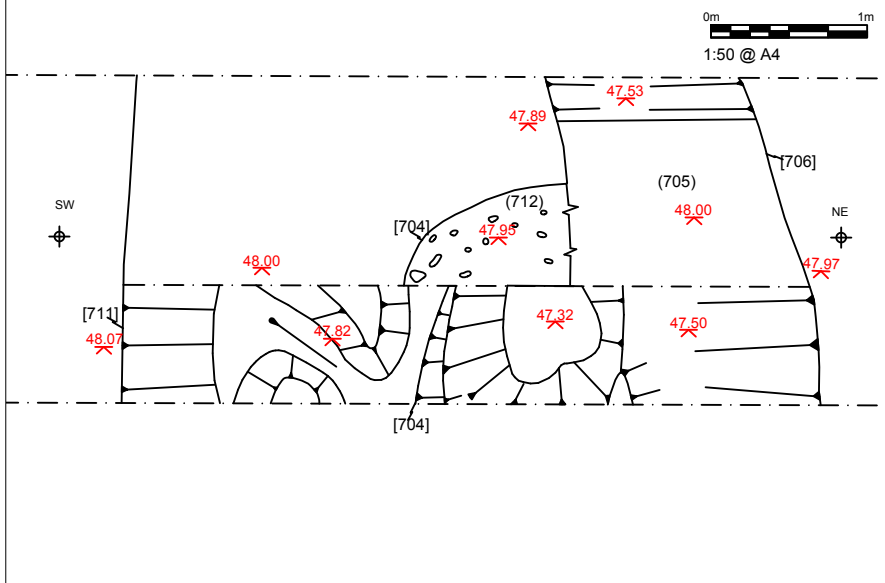
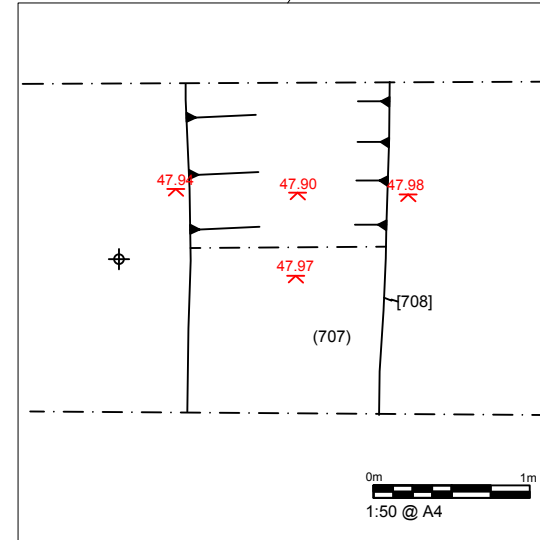
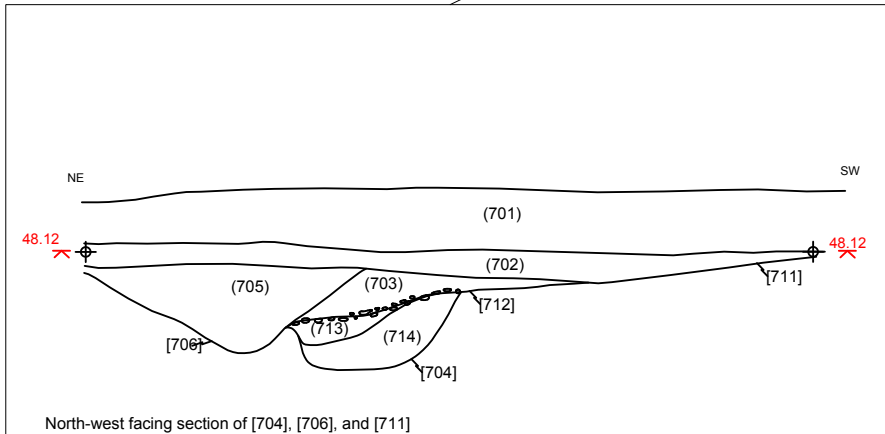
Figure 22. Trench 7 with [204, [706], [711], and [708]

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Figure 23. The north-west facing section of ditch [706] (left) and pit [704] notice pebble concentration [712] in foreground and its slumping down in section (scale 2m).



Figure 24: Trench 7. Furrow [708] from the south-east (scale 2m and 1m).



Figure 25: Trench 8 looking north-east. Diagonal plough scratches vaguely visible in foreground left of frame extending to middle right under scale (scale 2m).



Figure 26: The eastern end of Trench 9 demonstrating depth of made ground prior to backfilling. Note cloth bag in north facing section (scale 2m).



Figure 27. The eastern end of Trench 9 from the north showing depth of made ground prior to backfilling. Note cloth bag in north facing section (scale 2m).



Figure 28. Trench 9 from the west. Notice made ground material [901] in middle distance of frame (scale 2m).

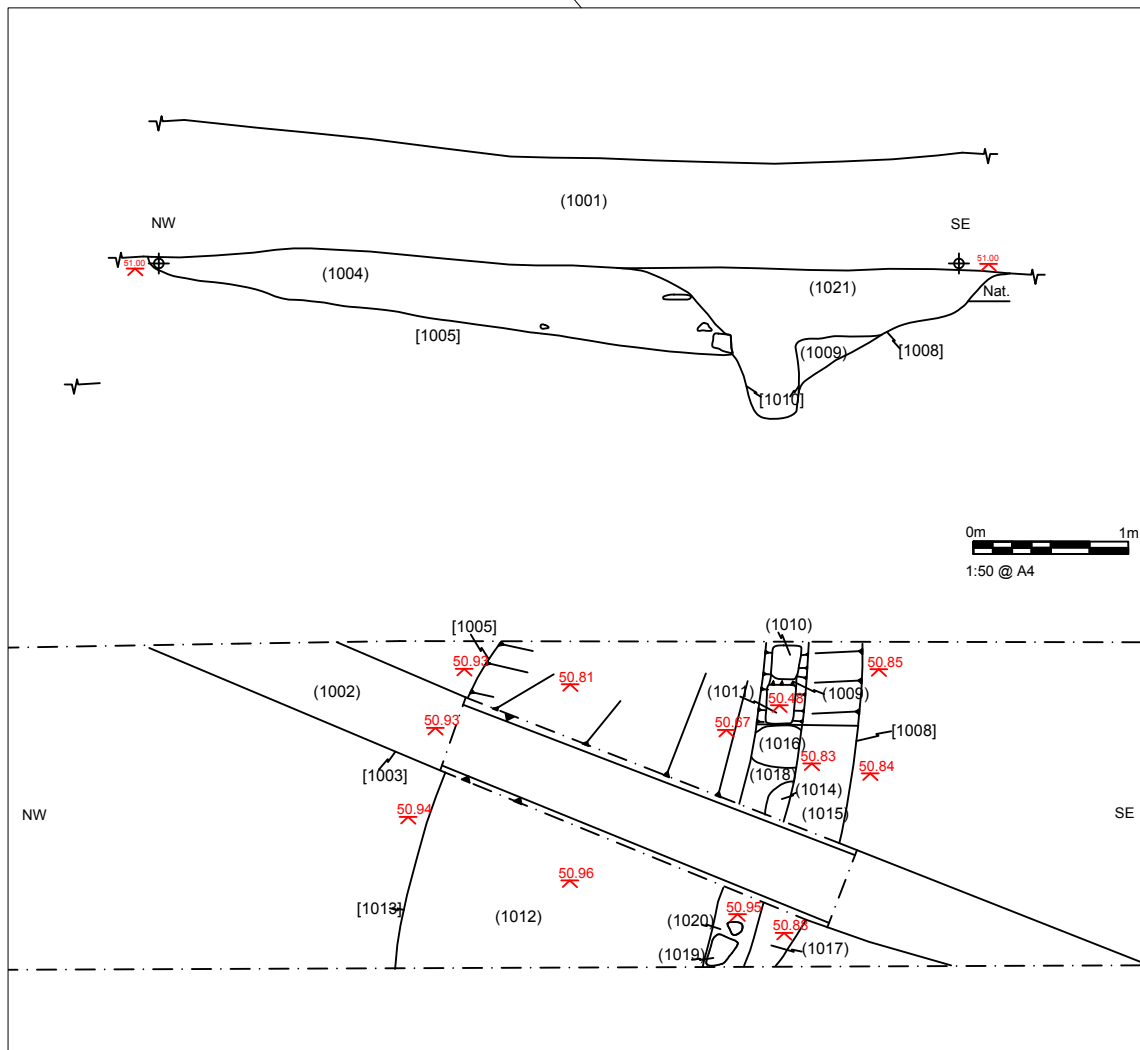
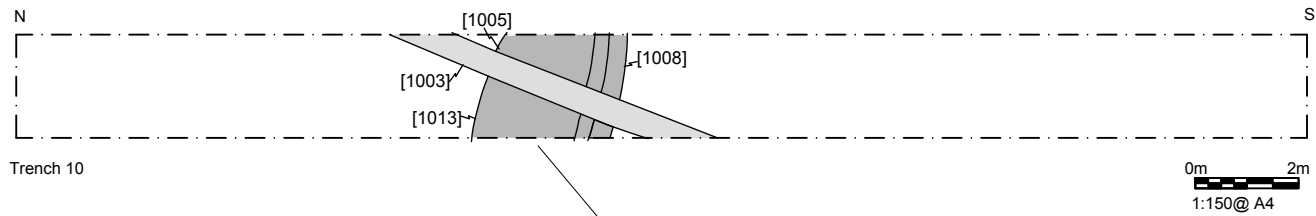


Figure 29. Trench 10 with

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Later feature



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Figure 30. Trench 10 from the north-west (scale 2m).



Figure 31. Trench 10 from the south-east after original excavation of [1003] to left of frame, post slot [1008] in foreground and hollow [1005] centre of frame (scale 1m).



Figure 32. Trench 10 and detail of slot [1008] and fill of hollow [1004] (scale 0.2m).



Figure 33. Trench 10, slot [1008] and hollow [1005] after further removal of (1004), slot [1008] can be seen continuing to the south-west. Linear trench [1003] has been further excavated to below the level of [1004] and outside the extents of [1005]. Fill (1015) can be seen to right of frame (scale 1m).



Figure 34: Trench 11 from the south-east (scale 2m).



Figure 35: Trench 12 from the east (Scale 2m).

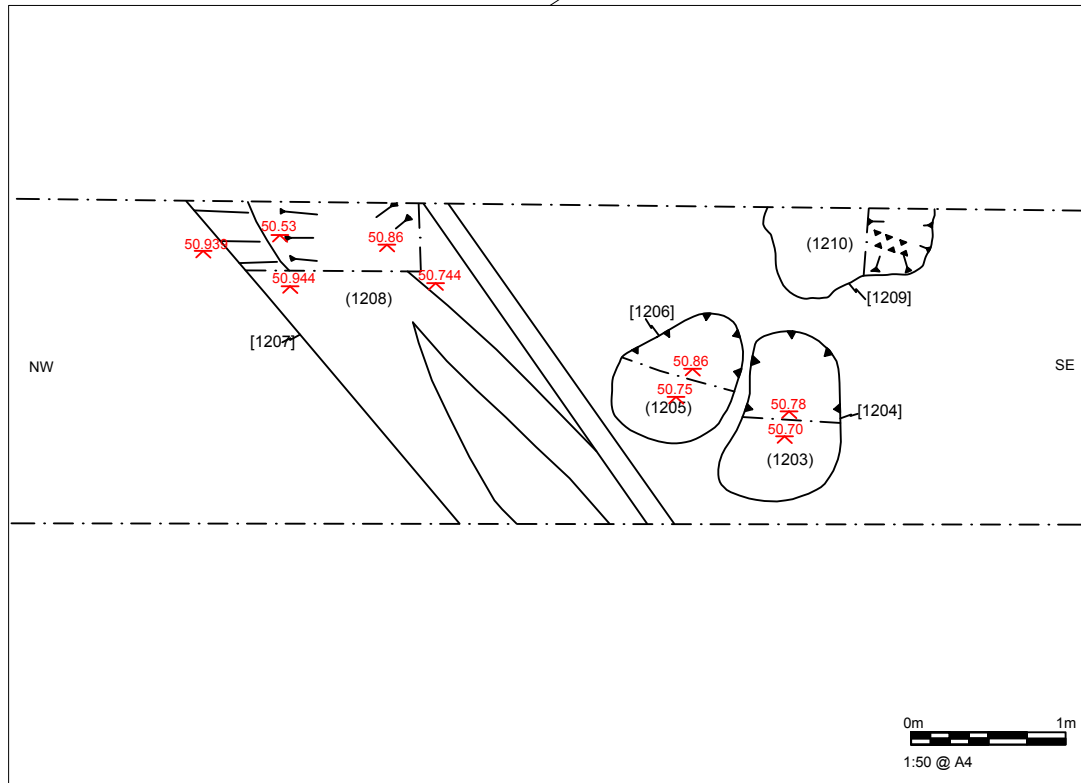
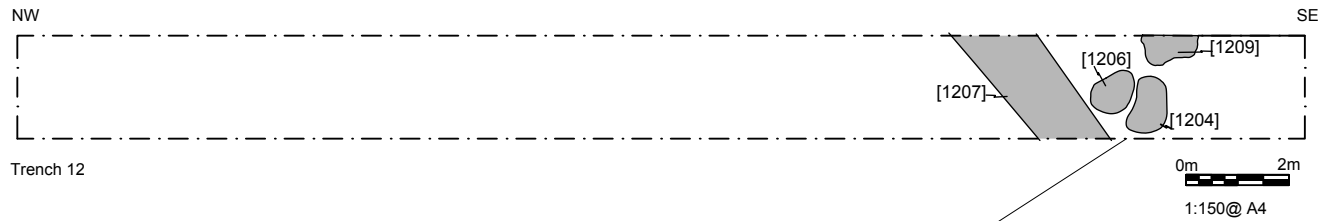


Figure 36: Trench 12 with [1204], [1206], [1207] and [1209]
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APPENDIX II: Context Summary Table

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Trench	Context	Type/	Description / Processual Interpretation	Thickness /extent (feature = length x width x depth)	Depth to top (BGL)
1	101	Deposit/Topsoil	Very dark grey/brown clay silt with occasional small pebbles	0.25m/ 25m x 2m	0
	102	Deposit/Subsoil	Orangey/reddish brown sandy clay with frequent medium water rolled pebbles	0.41m/ 25m x 2m	0.25m
	103	Deposit/Geological natural	Variegated/marbled red/yellow/orange sandy clay with frequent patches of gravel and finer silt	∞/ 25m x 2m	0.66m
2	200	Deposit/Topsoil	Very dark grey/brown clay silt with occasional small pebbles	0.30m/ 25m x 2m	0
	201	Deposit/Subsoil	Dark grey/brown sandy clay silt occasional small rounded pebbles	0.10m/ 25m x 2m	0.30m
	202	Fill of posthole [203]	Mixed mid grey/brown silt with occasional small pebbles.	(l) 0.38m x (w) 0.3m x (d) 80mm	0.40m
	203	Cut of posthole	Shallow sub rectangular cut with rounded corners, gently sloping sides and flat base oriented NW-SE.	(l) 0.38m x (w) 0.3m x (d) 80mm	0.40m
3	300	Deposit/Topsoil	Very dark grey/brown clay silt with occasional small pebbles	0.26m/ 25m x 2m	0
	301	Deposit/Subsoil	Yellowish/brown, sandy clay silt with occasional small rounded pebbles	90mm/ 25m x 2m	0.26m
	302	Fill of gully	Yellowish/brown mottled sandy silt with moderate small and medium waterworn pebbles dispersed to the east and west.	(l) 2m x (w) 1.8m x (d) 0.2m	0.26m
	303	Cut of gully	Shallow linear cut oriented east to west with sharp upper break of slope and steep sides to the north and rounded upper break of slope and gradual shallow sides to the south leading to a rounded base.	(l) 2m x (w) 1.8m x (d) 0.2m	0.26m
	304	Fill of ?posthole [305]	Pale yellowish/brown silt, leached(?) with moderate small pebbles	(l) 0.48 x	0.26m

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Trench	Context	Type/	Description / Processual Interpretation	Thickness /extent (feature = length x width x depth)	Depth to top (BGL)
				(w) 0.3 (d) 0.12m	
	305	Cut of ?posthole	Shallow Oval/rounded sub-rectangular cut oriented NE-SW with sharp upper break of slope to steep sides leading to a rounded bottom.	(l) 0.48 x (w) 0.3 (d) 0.12m	0.26m
4	401	Deposit/Topsoil	Very dark grey/brown sandy clay silt with occasional small pebbles.	0.39m/ 25m x 2m	0
	402	Deposit/Subsoil	Mid Yellowish/brown silty clay with frequent small and medium spherical pebbles.	0.3m/ 25m x 2m	0.39m
	403	Fill of pit [404]	Dark reddish grey/brown compact sandy clay with moderate small rounded pebbles. Single fill of pit, less stoney than subsoil peeling off against a clear edge.	(l) 0.7m x (w) 0.5m x (d) 0.25m	0.69m
	404	Cut of pit	Sub-rectangular vertical interface with rounded corners, a sharp upper break of slope, steeply sloping sides leading to a flat base. oriented NW-SE.	(l) 0.7m x (w) 0.5m x (d) 0.25m	0.69m
	405	Fill of pit [406]	Mixed yellowish brown sandy gritty clay with frequent small water rounded grit <5mm in size. Platey soil structure but which breaks off against cut. Not bottomed as thought to be geological feature.	(l) 1m x (w) 0.58m x (d) 0.1m	0.69m
	406	Cut of pit	Sub-square vertical interface with rounded corners, sharp upper break of slope to the west and vertical side, rounded upper break of slope to the east with more gently sloping side. Not bottomed as thought to be geological feature.	(l) 1m x (w) 0.58m x (d) 0.1m	0.69m
	407	Fill of gully [408]	Stiff, platey, compacted and laminated with iron panning and mottled mid grey/brown clay with frequent rounded pebbles <18mm, well sorted included in matrix. Single fill of gully which lifted as a block from [408] below.	(l) 4.5m x (w) 0.40m x (d) 0.1m	0.69
	408	Cut of Gully	Linear with rounded terminal edges. Truncated upper edge but with gentle sloping sides to a rounded base. Oriented W-E and slopes down from W-E.	(l) 4.5m x (w) 0.40m x (d) 0.1m	0.69
	409	Deposit/Geological	Dark reddish yellow/brown sandy clay with frequent gravel, grit 5mm and less and	∞/	0.69m

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Trench	Context	Type/	Description / Processual Interpretation	Thickness /extent (feature = length x width x depth)	Depth to top (BGL)
		Natural	rounded pebbles 10mm and above included in its matrix.	25m x 2m	
	410	Cut/Fill BUFAU Trench 9	Cut and Fill of steep sided flat bottomed cut its very southern edge seen only in section protruding into this trench by less than 0.1m. Filled by redeposited topsoil and subsoil (401; 402). BUFAU 1995 Evaluation Trench 9	(l) not obs (w) 1.8m x (d) 0.6m	0m
5	500	Deposit/Topsoil	Very dark grey/brown sandy clay silt with occasional small pebbles <2mm. Well sorted. Redeposited and graded topsoil	0.3m/ 25m x 2m	0m
	501	Deposit/Subsoil	Yellowish brown clay silt with occasional small spherical pebbles at base of deposit. Patchy within base of the trench. Subsoil created by movement on horizon of deposition.	0.12m/ 25m x 2m	0.3m
	502	Fill of pit [503]	Very dark grey/brown sandy clay silt with occasional small and medium water rolled pebbles <10mm - >20mm in size. Single topsoil like fill of pit.	(l) 1.9m x (w) 0.62m x (d)80mm	0.3m
	503	Cut of pit	Sub-rectangular, north-south aligned, shallow cut with rounded edges, gently sloping sides and a rounded base.	(l) 1.9m x (w) 0.62m x (d)80mm	0.3m
	504	Deposit/Redeposited natural	Coarse orangey/yellow silty clay with frequent rounded pebbles. Indurated and compact. Makeup to level ground at east of Field 1	Not obs/ 25m x 2m	0.42m
6	600	Deposit/Topsoil	Very dark grey/brown sandy clay silt with occasional small pebbles <2mm. Well sorted. Redeposited and graded topsoil	0.2m/ 25m x 2m	0m
	601	Deposit/Subsoil	Fine, loose dark yellowish grey clay silt with sparse small pebble inclusions. Well sorted but relatively inclusion free "topsoil" forming second horizon in Trench 6. Subsoil created by movement on horizon of deposition.	0.2m/ 25m x 2m	0.2m
	602	Deposit/Redeposited natural	Coarse, mixed, reddish yellow/orange/brownish grey, sandy silty clay with frequent small rounded pebbles +20mm and occasional broken angular asphalt. Mixed and dirty deposit tipping down from the NW end of trench. Contains polythene, polyethylene pipe, cloth bag, non-perished rubber. Makeup to level ground at north-east of Field 1	0.5m+-not obs/ 16m x 2m	0.4m
	603	Deposit/Subsoil	Medium and compact mottled and variegated pale/yellowish grey silty clay with	exc 0.13m-	0.4m min

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Trench	Context	Type/	Description / Processual Interpretation	Thickness /extent (feature = length x width x depth)	Depth to top (BGL)
			frequent small rounded pebbles. Geological Natural	not obs/ 9m obs x 2m	
7	701	Deposit/Topsoil	Very dark grey/brown clay silt with occasional small pebbles	0.4m/ 25m x 2m	0m
	702	Deposit/Subsoil	Pale brownish/grey with yellow/brown mottling sandy silt with occasional small water rolled pebbles. Mixed and mottled deposit from which [704] could be seen. Deposit varies in thickness over trench.	0.1-0.18m/ 25m x 2m	0.4m
	703	Fill/Final fill of [704]	Fine and sticky mid grey/brown clay silt. Inclusion free. Upper fill of [704] with platy/laminated silt structure which lenses up to the south over (712) and (711). Truncated to the north by [706]. Final weathered fill of pit [704], accumulated over earlier slumped fills.	(l)1.6m x (w)1.4m x (d)0.3m	0.4-0.5m
	704	Cut of Pit	Subcircular in plan with rounded upper edges and break of slope to steeply sloping sides (0.7m in 0.4m) to a rounded base. Pit construction	(l)1.3m x (w)1.2m x (d)0.7-0.8m (fro section)	0.45m
	705	Fill/Fill of Ditch [706]	Friable mid greyish brown clay silt mottled and veined with iron pan. Occasional small pebble inclusions. Single fill of ditch [706]. Ditch use/disuse	(l)2m x (w)1.6m x (d)0.6m	0.4-0.5m
	706	Cut of Ditch	Linear, north-west to southeast aligned cut of ditch with sharp upper break of slope with steep sides leaving to a rounded bottom Forms a flattened "V" in profile with rounded base. Ditch construction	(l)2m x (w)1.6m x (d)0.6m	0.4-0.5m
	707	Fill/Fill of Furrow [708]	Fine yellowish grey/brown sandy silt with occasional small water worn pebbles. Single clean and fairly homogenous fill of [708].	(l)2m x (w)1.25m x (d)80mm	0.4m
	708	Cut of Furrow	Linear, NW=SE oriented cut with sharp upper break of slope leading to a steep side to the north gentler to the south leading to a rounded basal break of slop and a flat	(l)2m x (w)1.2 x	0.4m

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Trench	Context	Type/	Description / Processual Interpretation	Thickness /extent (feature = length x width x depth)	Depth to top (BGL)
			base.	(d) 80mm	
	711	Horizon of use/Wear Hollow	Linear, broadly east-west aligned, negative interface with gentle SW break of slope and gently sloping sides to a rounded base. NW break of slope has been worn away forming an underlying hollow above (705; 703). Interface of use/disuse [706]; [704].	(l)2.7m x (w)2m x (d)0.2m	0.44m
	712	Fill/Penultimate fill of [704]	Concentrated spread of small rounded pebbles over (at the top of) [704] lensing up to the south-west and slumping down to the north-east from around 47.92m aOD to 47.32m aOD.	(l)1.6m x (w)1m x (d)10mm	0.8m
	713	Fill/Secondary fill of [704]	Homogenous grey clayed clay disposed to northern part of pit and lensing up over (714) to south.	(l)1.4m x (w)0.6m x (d) 0.16m	0.81m
	714	Fill/Primary fill of [704]	Basal primary fill of 704. Variegated and mottled. Probably also partially weathered in from sides.	(l)1.4m x (w)1m x (d)0.3m	0.97m
8	800	Deposit/Topsoil	Very dark grey/brown clay silt with occasional small pebbles	(l)25m x (w)2m x (d)0.3m	0m
	801	Deposit/Subsoil	Colluvium/subsoil deposit. Well sorted and homogenous.	(l)25m x (w)2m x (d)50mm	0.3m
	802	Deposit/Subsoil	Geological deposit of mixed sands and clay. Pockets of gravel and sand. Mottled.	(l)25m x (w)2m x ?	0.35
9	901	Deposit/Topsoil	Homogenous deposit of uniform thickness covering entire footprint of Trench 9.	(l)25m x (w)2m x (d)0.4m	0m
	902	Deposit/Buried Topsoil	Coarse, mixed deposit of gritty clay which lenses down from west to east, min thickness of 0.1m, thickness c. 19m from west edge of trench to where it follows natural topography and lenses down onto [904] buried, anaerobic possible pond fill.	(l)25m x (w)2m x (d)0.1m	0.4m
	903	Deposit/Buried Subsoil	Homogenous levigated fine and humic deposit uniformly 0.3m thick which lenses	(l)21m x	0.5m

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Trench	Context	Type/	Description / Processual Interpretation	Thickness /extent (feature = length x width x depth)	Depth to top (BGL)
			down to east and feathers out c. 2.5m from eastern edge of trench below [901]	(w)2m x (d)0.3m	
	904	Deposit/Buried low lying fill	Mottled but homogenous deposit lensing down below [901] to the east, following natural topography.	(l)22m x (w)2m x (d)0.2m	0.8m
	905	Deposit/Geological Natural	Sticky black anaerobic clay at eastern edge of Trench 9	(l)8m x (w)2m x ?	1.5m
10	1001	Deposit/Topsoil	Variegated/marbled red/yellow/orange sandy clay with frequent patches of gravel and finer silt	(l)25m x (w)2m x ?	1.5m
	1002	Fill/Fill of Trench [1003]	Very dark grey/brown clay silt with occasional small pebbles	(l)25m x (w)2m x (d)0.4m	0m
	1003	Cut/Linear trench	Mixed and interleaved fill of red clay, redeposited topsoil, sand, gravel. Yellow clay lumps. Evenly and squarely fills 1003. Interleaved and mixed nature of fill might have this as bedding trench for grubbed out hedge or screen.	(l)5m x (w)0.5m x (d)0.5m	0.4m
	1004	Fill/Fill of scoop [1005]	Vertical sided straight cut	(l)5m x (w)0.5m x (d)0.5m	0.4m
	1005	Cut/Interface/?Wear hollow	Fairly homogenous single fill/deposit which lenses up to the northwest and down to the southeast. 0.1m thick to northwest but 0.3m thick to southeast.	(l)0.5m – (w)1m x (d)1m x 0.3m	0.4m
	1006	Fill /Tree throw [1007]	Sub-rectangular scoop excavated in eastern edge of Trench 10, bisected by 1003 and to east of it. Gentle sides slope to an even base which sloped to the southeast. Has an uncertain relationship with 1008, and is probably part of same event. Possible wear hollow.	(l)0.5m x (w)1.5m x (d)0.3m	0.4m
	1007	Cut tree throw	Tree throw		0.4m
	1008	Cut/Post Slot	Tree throw		0.4m

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Trench	Context	Type/	Description / Processual Interpretation	Thickness /extent (feature = length x width x depth)	Depth to top (BGL)
	1009	Fill/?Post packing	Gently sloping sided cut to east which then becomes vertical to create a linear slot 0.3m wide at the top and 0.3m deep. Post slot of wear hollow.	(l)1.1m x (w)0.7m x (d)0.48m	0.4m
	1010	Interface/?Post Ghost	Patches and deposit of yellow brown clay which sits within 1008 and defines post ghosts 1010. Post packing within post trench.	(l)0.4m x (w)0.2m x (d)0.2m	0.4m
	1011	Interface/?Post Ghost	Gap filled with 2021 which is defined by where clay (1009) isn't. Clay 1009 deposited against upright. Interface of which represented by 1010, base lies c.50.48.	(l)0.22m x (w)0.2m x (d)0.25m	0.4m
	1012	Deposit / same as (1004)	Rectangular gap filled with 1021, defined by where clay 1009 isn't.	(l)0.22m x (w)0.2m x (d)0.25m	0.4m
	1013	Cut/same as [1005]	Homogenous deposit, friable loose when troweled. Probably same as 1004 to east. Truncated by 1003 to the east.	(l)1.2m x (w)0.38m x ?	0.4m
	1014	Interface/?Post Ghost	Unexcavated interface of 1012 to NW physically cut by (1003) to east. Unexcavated continuation of 1005.		0.4m
	1015	Fill/?Fill of slot [1008]	Putative post ghost ½ round in plan within trench.	(l)0.25m x (w)0.10m	0.4m
	1016	Fill/?Post Ghost	Deposit of gritty sandy clay to southeast of line of 1016, 1014, 1018. Possibly post packing clay. Quite mixed and similar to what is around it.	(l)0.65m x (w)0.4m x ?	0.4m
	1017	Fill/? same as [1015;1008]	Possible/putative post ghost, sub-circular in plan	(l)0.25m x (w)0.25m x ?	0.4m
	1018	Fill/? Post packing, ?same as [1009,	Deposit of gritty sand clay. Possible backfill around packing.	(l)0.4m x (w)0.2m x ?	0.4m

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Trench	Context	Type/	Description / Processual Interpretation	Thickness /extent (feature = length x width x depth)	Depth to top (BGL)
	1019	Fill/Interface/Post Ghost	Compact clay defining slot in middle of 1008 and with (1016) and (1014). Possibly same as 1009.		0.4m
	1020	Fill/Post trench packing	Possible/putative post ghost.	(l)0.2 x (w)0.1 x ?	0.4m
	1021	Deposit/?Post removal	Compact clay possibly defining slot, may actually be upstanding. Possibly same as 1009 and 1018.	(l)0.4m x (w)0.26m x ?	0.4m
11	1100	Deposit/Topsoil	Fill of 1008. Darker than 1004.	(l)1.10m x (w)0.4m x (d)0.5m	0.4m
	1101	Deposit/Subsoil	Very dark grey/brown clay silt with occasional small pebbles	(l)25m x (w)2m x (d)0.4m – 0.75m	0m
12	1200	Deposit/Topsoil	Natural deposit of fine firm yellow, red, and orange clay with frequent rounded pebbles.	(l)25m x (w)2m x (d)0.5m	0.4m – 0.75m
	1201	Deposit/makeup	Very dark grey/brown clay silt with occasional small pebbles	(l)25m x (w)2m x (d)0.34m	0m
	1202	Deposit/Subsoil	Red sandy clay with frequent gravel inclusions, levelling up like in Trench 9.	(l)2m x (w)1.2m x (d)0.2m	0.34m
	1203	Fill of pit [1204]	Sandy clay subsoil	(l)25m x (w)2m x (d)0.2m – 0.33,	0.54
	1204	Cut of pit	Single fill of kidney shaped pit 1204	(l)1.10m x	0.87m

Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire

Trench	Context	Type/	Description / Processual Interpretation	Thickness /extent (feature = length x width x depth)	Depth to top (BGL)
				(w)0.7m x (d)0.4m	
	1205	Fill of pit [1206]	Cut of modern pit	(l)1.10m x (w)0.7m x (d)0.4m	0.87m
	1206	Cut of Pit	Single fill of pit 1206	(l)1.07m x (w)0.8m x (d)0.11m	0.87m
	1207	Cut/interface/Edge of palaeochannel	Shallow cut of sub-rectangular pit	(l)1.07m x (w)0.8m x (d)0.11m	0.87m
	1208	Deposit/Fill of [1207]	Linear gully, possibly two gullies following north – south contour. Truncated to east by land drain. Undulating base, irregular but gradually sloping sides.	(l)2.2m x (w)1.34m (d)x 0.14m	0.87m
	1209	Fill of Tree throw	Single fill of linear feature, homogenous. Tenacious and solid but variegated with seams of iron pan. Naturally derived.	(l)2.2m x (w)1.34m (d)x 0.14m	0.87m
	1210	Cut of Tree throw	Tree throw		0.87m

APPENDIX III: SPECIFICATION AND OASIS FORM

Archaeological Evaluation at Mercia Marina, Willington, Derbyshire Written Scheme of Investigation



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Prepared on behalf of: Mercia Marina

Date of compilation: April 2016

Compiled by: Reuben Thorpe MCIfA

Local Authority: South Derbyshire District
Council

Site central NGR: SK 2981 2964

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1 INTRODUCTION

1.1 Project and Planning Background

1.1.1 This Written Scheme of Investigation (WSI) is for the excavation of 12 evaluation trenches by Archaeological Research Services Ltd on land to the west of Mercia Marina, Willington, Derbyshire (the site: Figure 1).

1.1.2 The field evaluation outlined in this document forms part of pre-determination works in support of an application for planning permission to build 32 wood-clad lodges and a wildlife pond.

1.1.3 The site is situated in the middle of the Trent valley and lies within a landscape rich in archaeological remains.

1.1.4 A Heritage Impact Assessment (HIA) was produced by Archaeological Research Services (ARS) Ltd for the proposed development area (PDA) in 2015. This identified both known remains and the potential for archaeological remains that may be adversely impacted by any development on the site (Burpoe 2015, 12).

1.1.5 Archaeology is a material consideration in the planning process. The purpose of the evaluation outlined in this document is to provide evidence that will contribute towards understanding the significance and potential of the archaeological resource on the site as prescribed in the *National Planning Policy Framework* (NPPF) para 128 (DCLG 2012, 30).

“local planning authorities should require an applicant to describe the significance of any heritage assets affected.... Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.”

1.1.6 The following WSI describes the objectives and the methods to be employed in the excavation of twelve targeted evaluation trenches (Figure 2). The trenches will examine a total of 600m², 1.02% of the PDA. The trenching plan (Figure 2) is in accordance with guidance provided by the Derby and Derbyshire Development Control Archaeologist (DDCA).

1.2 Site description

1.2.1 The ‘red line boundary’ of the PDA is outlined in Figure 1 and encompasses an area of approximately 5.85ha. The site comprises of two fields bounded to the north by open fields and the A50, to the east by the existing Mercia Marina complex and to the south and west by open fields. The site is centred at NGR SK 2981, 2964 (Figure 1).



1.3 Geology

1.3.1 The solid geology of the PDA comprises mudstone of the Gunthorpe Member, formed during the Triassic Period when the local environment was dominated by hot deserts. This is overlain by superficial deposits of Findern clays, silts and sands and Beeston sand and gravels. The sands and gravels are uppermost across the PDA forming the material into which the archaeological remains are cut (BGS 2015). The soils of the PDA are classified as belonging to the ARROW Soil Association (543), which are gleyic brown earths which formed as glaciofluvial drift and are characterised as *deep, permeable, coarse loamy soils affected by groundwater*. (SSEW 1983).

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Archaeological remains spanning the earlier and later prehistoric periods are well attested in the immediate vicinity (Burpoe 2015, 5) and the surrounding area has been subjected to sustained investigation over the last 30 years (Taylor 1990; Beavit 1990; TPAT 1992; Philpott 1993; Hughes 1995; Hughes & Jones 2001; Brightman 2008; Brightman and Waddington 2012).

2.2 A Heritage Impact Assessment (HIA) was undertaken by ARS Ltd in 2015 (Burpoe 2015) which highlighted the presence of non-designated archaeological remains within the PDA (Burpoe 2015, 9). These remains, namely Neolithic and Bronze Age features and a Late Prehistoric Pit Alignment are identified in the Historic Environment Record for Derbyshire (HER nos. MDR4333, MDR14504) and the National Record of the Historic Environment (NRHE nos. 1516179 & 313191, 1516192). In addition the HIA also highlighted the presence of relict medieval field terraces in the central part of the PDA initially identified in the *Derbyshire and the Peak District Aggregates Assessment Resource Assessment* (Brightman and Waddington 2011, 154).

3 AIMS AND OBJECTIVES

3.1 Regional Research Aims and Objectives

3.1.1. Previous archaeological evaluation (Hughes 1995) within the PDA, though limited in scope, has revealed relatively little in terms of preserved archaeology (Burpoe 2015, 7). This absence of evidence does not necessarily constitute evidence of absence.

3.1.2 Hughes (1995) notes that natural site formation processes within the PDA may have obscured the archaeology visible to aerial photography and excavations further to the east (Brightman and Waddington 2012) revealed archaeological remains dating from most periods of prehistory previously unknown from cropmarks (Brightman 2008, 3, 106).

3.1.3 While excavations adjacent to the PDA undertaken in the 1990s (Hughes 1995; Hughes and Jones 1995; 2001) have remained unpublished, the interim reports when taken in concert with later published works (Brightman and Waddington 2012) suggests the archaeological resource may have a greater density than hitherto realised and attested by aerial photography.



3.1.4 With this in mind the evaluation outlined in this document might have the potential to contribute to research themes outlined in *East Midlands Heritage. An Updated Research Agenda and Strategy for the Historic Environment of the East Midlands*. (Knight *et al.* 2012, 58-69), specifically:

Objective 3A: Dating.

- 3.1.2. Improve seriation and dating of Neolithic and Bronze Age pottery.

Objective 3I: Settlement Patterns

- 3.5.3. variation in settlement morphology and function

Objective 4C: Characterise the Late Bronze Age – Early Iron Age (LBA-EIA) settlement resource and investigate intra-regional variability.

- 4.2.1 and 4.2.2. Site visibility, prospection and exploration
- 4.3.2. Morphology, development and function
- 4.6.1; 4.6.2; 4.6.3. Development of field systems, political and socio-economic role of pit alignments and ditch systems and changes in agrarian landscape.
- 4.8.1 – 4.8.4. The examination of agricultural change over time.

Objective 4E: Assess the evidence for the evolution of settlement hierarchies.

- 4.5.2. The relationship of nucleated settlements, evidence of settlement hierarchies.

Objective 4F: Investigate Intra-regional variations in the development of field boundaries.

- 4.6.1; 4.6.2; 4.6.3. Development of field systems, political and socio-economic role of pit alignments and ditch systems and changes in agrarian landscape.
- 4.8.1 – 4.8.4. The examination of agricultural change over time.

3.2 Aims and Objectives of Archaeological Evaluation

- ♦ Identify, sample and fully record archaeological deposits and features within the evaluation trenches.
- ♦ Obtain where possible relative dating and dating frameworks for deposits and features encountered.
- ♦ Establish the nature, date, character, extents and level of preservation of deposits and structures.
- ♦ Produce information on the economy and local environment.



4 ARCHAEOLOGICAL EVALUATION

4.1 Coverage

4.1.1 Evaluation trenching will consist of twelve 25mx2m trenches. Trenches 1-8 will be in the southern part of the PDA placed specifically to examine the potential impact of the footprint of the proposed wildlife pond and 11 villas.

- ◆ Trench 1: aligned north-west to south-east.
- ◆ Trench 2: aligned north-north-east to west-south-west.
- ◆ Trench 3: aligned north-east to south-west.
- ◆ Trench 4: aligned west to east.
- ◆ Trench 5: aligned north-north-east to west-south-west.
- ◆ Trench 6: aligned north-west to south-east.
- ◆ Trench 7: aligned east-east-north to west-west-south within the footprint of the proposed wildlife pond.
- ◆ Trench 8: aligned north-north-east to south-south-west.

4.1.2 The northern part of the proposed development area will be sampled with four trenches which will evaluate the potential impact of four villas.

- ◆ Trench 9: aligned west to east.
- ◆ Trench 10: aligned north-north-east to south-south-west.
- ◆ Trench 11: aligned north-east to south-west.
- ◆ Trench 12: aligned north-west to south-east.

4.1.3 The location of the trial trenches has already been agreed with the DDCA as sufficient to cover the proposed works.

4.2 Evaluation Methodology

4.2.1 All elements of the archaeological evaluation will be carried out in accordance with the Chartered Institute for Archaeologist (CIfA) *Code of Conduct* (2014a) and will follow the CIfA's *Standards and Guidance for Archaeological Evaluation* (2014b). All staff employed on the project will be suitably qualified and experienced for their respective project roles and have practical experience of archaeological excavation and recording. All staff will be made aware of the archaeological importance of the area surrounding the site and will be fully briefed on the work required by this specification. Each member of staff will be fully conversant with the aims and methodologies of the evaluation and will be given a copy of this WSI to read. All members of staff employed by ARS Ltd are fully qualified and experienced archaeologists, which will ensure that appropriate decisions will be made in the field.

4.2.2 Topsoil will be removed by a tracked or wheeled machine using a ditching bucket under continuous archaeological supervision. The topsoil and subsoil will removed down to the first significant archaeological horizon in successive level spits. Machine movements will



be strictly controlled and no machinery will track over areas that have previously been stripped in the evaluation.

4.2.3 Each trench will be appropriately cleaned by hand to expose the full nature and extent of archaeological features and deposits.

4.2.4 All spoil removed during groundworks will be scanned visually to recover small finds. Any finds so recovered will be recorded and their location noted on a site plan at a relevant scale. The finds will be retained and recorded.

4.2.5 All archaeological features will be planned and sectioned.

4.2.6 Isolated or discreet features, such as pits and postholes not associated with structures will be 50% sampled, although if they produce artefacts then provision is made for full excavation.

4.2.7 Sampling of linear features such as ditches and gullies not associated with structures will be sufficient to determine their character, internal stratigraphy and relationship to other features, sampling through excavation will also look specifically to obtain dating evidence.

4.2.8 Deposits relating to funerary/ritual activities, such as burials and cremation deposits will be 100% excavated. Domestic/industrial activity (such as walls, postholes, floors, hearths) will be sufficiently excavated to understand their form and function and to recover potential dating evidence and artefact and ecofact assemblages.

4.2.9 A 10% minimum sample of spreads of material such as "occupation" deposits, buried soils, or middens will be excavated by hand where after subsequent controlled excavation by machine may be considered. Large intrusions, such as reservoirs, will be sufficiently excavated by machine, within safe limits, to provide information on their character.

4.2.10 The discovery of any human remains will be reported to the coroner and excavated following receipt of the appropriate Ministry of Justice Guidelines.

4.2.12 Any material recovered which would be regarded as Treasure under the terms of the Treasure Act will be reported to the coroner

4.2.13 For deposits that have potential for providing environmental or dating evidence, a minimum of 10 litres of sample will be taken, or 100% of the sample if smaller. This material will be floated and passed through graduated sieves, the smallest being a 500 μ mesh. Should other types of environmental deposits be encountered, appropriate specialist advice will be sought and an appropriate sampling strategy devised. Samples will be assessed by a suitable specialist with provision for further analysis as required. Advice from the Historic England Scientific Advisor will be taken as appropriate.

4.2.14 All site operations will be carried out in a safe manner in accordance with ARS Ltd's health and safety policy. Deep sections, such as those across ditches or pits will be shored as necessary. A risk assessment will be prepared before commencement on site.



4.3 Recording

4.3.1 The site will be accurately tied to the National Grid and located on a 1:2500 or 1:1250 map of the area. The site will be recorded using the single context recording system in accordance with the ARS Ltd field recording manual.

4.3.2 A full, appropriate and proper record (drawn, written, and photographic) will be compiled for all work, using pre-printed record sheets appropriate to the deposits or structures under consideration. Accurate scale plans and section drawings will be drawn where required at 1:50, 1:20 and 1:10 scales, as appropriate. Provision for rectified photographic recording shall also be made if deemed necessary.

4.3.3 A stratigraphy of the site will be recorded even where no archaeological deposits have been identified.

4.3.4 The heights of all archaeological deposits and features will be recorded in metres above Ordnance Datum (aOD).

4.3.5 A photographic record of all deposits and structures will be taken using a digital camera. Record images of deposits and structures will include a clearly visible, graduated metric scale. A register of all photographs will be kept. A selection of working images will be taken to demonstrate how the site was investigated and the prevailing conditions during excavation.

4.3.6 A stratigraphic matrix will be prepared for all evaluation trenches where stratified deposits and/or features are encountered.

4.4 Finds Processing and Storage

4.4.1 All finds processing, conservation work and storage of finds will be carried out in compliance with the ClfA (2014d) *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* and the UKIC (1990) *Guidelines for the Preparation of Archives for Long-Term Storage*.

4.4.2 Artefact collection and discard policies will be appropriate for the defined purpose.

4.4.3 Bulk finds which are not discarded will be washed and, with the exception of animal bone, marked. Marking and labelling will be indelible and irremovable by abrasion. Bulk finds will be appropriately bagged, boxed and recorded. This process will be carried out no later than two months after the end of the excavation.

4.4.4 All small finds will be recorded as individual items and appropriately packaged (e.g. lithics in self-sealing plastic bags and ceramic in acid-free tissue paper). Vulnerable objects will be specially packaged and textile, painted glass and coins stored in appropriate specialist systems. This process will be carried out within two days of the small finds being excavated.

4.4.5 During and after the excavation, all objects will be stored in appropriate materials and storage conditions to ensure minimal deterioration and loss of information (including controlled storage, correct packaging, and regular monitoring, immediate selection for conservation of vulnerable material). All storage will have appropriate security provision.



4.4.6 The deposition and disposal of artefacts will be agreed with the legal owner and the repository for the archive prior to the work taking place. All finds except treasure trove are the property of the landowner.

4.4.7 All retained artefacts and ecofacts will be cleaned and packaged in accordance with the requirements of the recipient museum.

4.5 Evaluation Report

4.5.1 Following the completion of fieldworks, ARS Ltd will produce a comprehensive report which will include the following as a minimum:

- ◆ A non-technical summary
- ◆ Introduction and objectives of the archaeological works
- ◆ Methodology
- ◆ An objective summary statement of results
- ◆ A phased discussion of the archaeological features
- ◆ An interpretive discussion of the results, placing them in a local and regional framework and an assessment of the significance of any remains
- ◆ Appropriate supporting illustrations, including a site plan, trench and section plans, feature sections and plans and a phased site plan as appropriate
- ◆ A site location plan at 1:2500 or 1:10000 as appropriate and a phased interpretation of the site as appropriate
- ◆ The identification and quantification of artefacts, ecofacts and industrial residues carried out by suitable specialists.
- ◆ A detailed context index and supporting data in tabulated form or in appendices
- ◆ An index to and the proposed location of the archive
- ◆ The proposed date of deposition of the archive
- ◆ References
- ◆ Photographs of work in progress on the site

4.5.2 One bound copy of the evaluation report with a digital copy of the report in PDF/A format on disk will be deposited with the Derbyshire Historic Environment. A copy of the report will be uploaded as part of the OASIS record (see 6.2 below) for online access via the Archaeological Data Service (ADS).

5 MONITORING AND STAFFING

5.1 Monitoring Arrangements

5.1.1 At least one week's notice prior to commencement of the archaeological works will be given to DDAC:



Steve Baker
Derbyshire County Council
Shand House
Dale Road South
Matlock
Derbyshire
DE4 3RY
Tel: 01629 539773.

5.1.2 The client will afford reasonable access to DDAC, or their representative, for the purposes of monitoring the archaeological works. ARS Ltd will liaise with DDAC at regular intervals throughout the course of the work.

5.2 Staffing

5.2.1 The Project Manager for the archaeological works will be Tony Brennan, Operations Manager at ARS Ltd. The Project Manager will be Reuben Thorne, Project Manager at ARS Ltd.

5.2.2 Specialist analyses will be carried out by appropriately qualified specialist as detailed subject to availability:

- | | |
|-----------------------------------------------|--------------------------------------------------------|
| ◆ Flint and prehistoric pottery: | Dr Clive Waddington MCIfA or
Dr Robin Holgate MCIfA |
| ◆ Romano-British pottery: | Ruth Leary |
| ◆ Samian Ware: | Dr Gwladys Monteil |
| ◆ Medieval & post-medieval pottery: | Dr Chris Cumberpatch or
Dr Robin Holgate MCIfA |
| ◆ Post-medieval clay pipe, glass & metalwork: | Mike Wood MCIfA |
| ◆ Plant macrofossils and charcoals: | Elise McLellan |
| ◆ Pollen and molluscs: | Dr Andy McWilliams |
| ◆ Human and Animal bone: | Milena Grzybowska |
| ◆ Radiocarbon dating: | Prof Gordon Cook (SUERC) |
| ◆ Finds conservation: | Vicky Garlick (Durham University) |

6 ARCHIVE DEPOSITION

6.1 Deposition Guidelines

6.1.1 A digital, paper and artefactual archive will be prepared by ARS Ltd, consisting of all primary written documents, plans, sections, photographs and electronic data. The archive will be stored by ARS Ltd until such a time when a suitable repository museum becomes available. The archive will be deposited in line with the ClfA (2014e) Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives and Society of Museum Archaeologist (1993) Selection, Retention and Dispersal of Archaeological



collection: Guidelines for use in England, Wales and Northern Ireland. The archive will be deposited within two months of the completion of the report. Derbyshire HER will be notified and Museum Curator will be notified in writing on completion of the fieldwork with projected dates for the completion of the report and deposition of the archive. The date of the deposition of the archive will be confirmed in the report and the DDAC informed in writing on final deposition of the archive.

6.1.2 All artefacts and associated material will be cleaned, recorded, properly stored and deposited in the archive (see above).

6.1.3 A full set of annotated, illustrative pictures of the site, excavation, features, layers and selected artefacts will be supplied to the Greater Manchester HER and deposited with the archive as digital images on a CD ROM.

6.2 OASIS

6.2.1 At the start of work (immediately before fieldwork commences) an OASIS online record <http://ads.ahds.ac.uk/project/oasis/> will be initiated and key fields completed on Details, Location and Creators forms. All parts of the OASIS online form will be completed for submission to the Greater Manchester HER. This will include an uploaded .pdf version of the entire report (a paper copy will also be included in the archive).

7 GENERAL ITEMS

7.1 Health and Safety

7.1.1 All work will be carried out in accordance with the Health and Safety at Work Act 1974. Specific health and safety policies exist for all our workplaces and all staff employed will be made aware of the policy and any relevant issues. The particular risks involved with this project will be assessed, recorded and relevant mitigation measure put in place as part of a full risk assessment, which will be compiled in advance of fieldwork and will be read and signed by all on-site operatives. ARS Ltd retains Peninsula as its expert health and safety consultants.

7.2 Insurance Cover

7.2.1 ARS Ltd has full insurance cover for employee liability, public liability, professional indemnity and all-risks cover.



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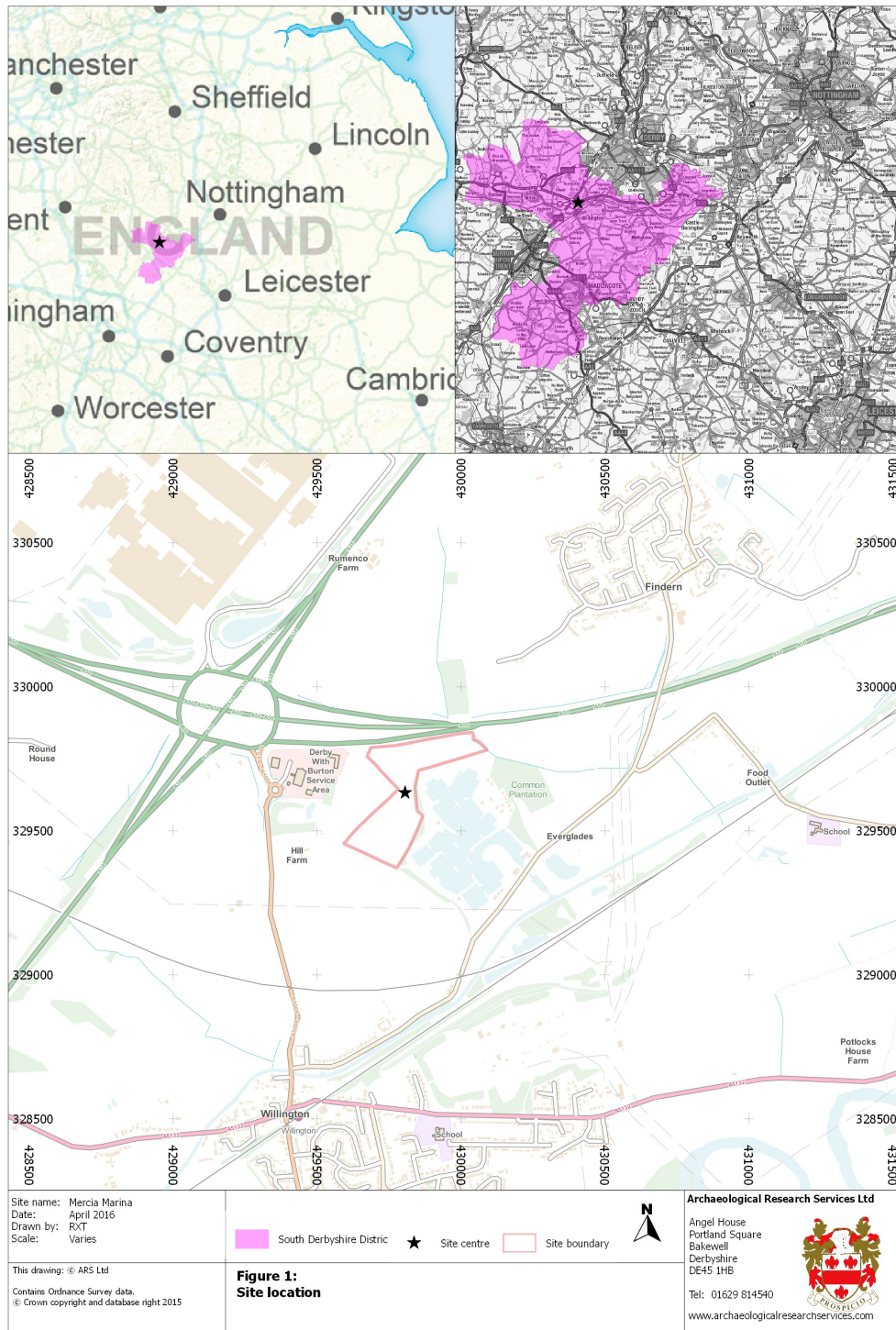


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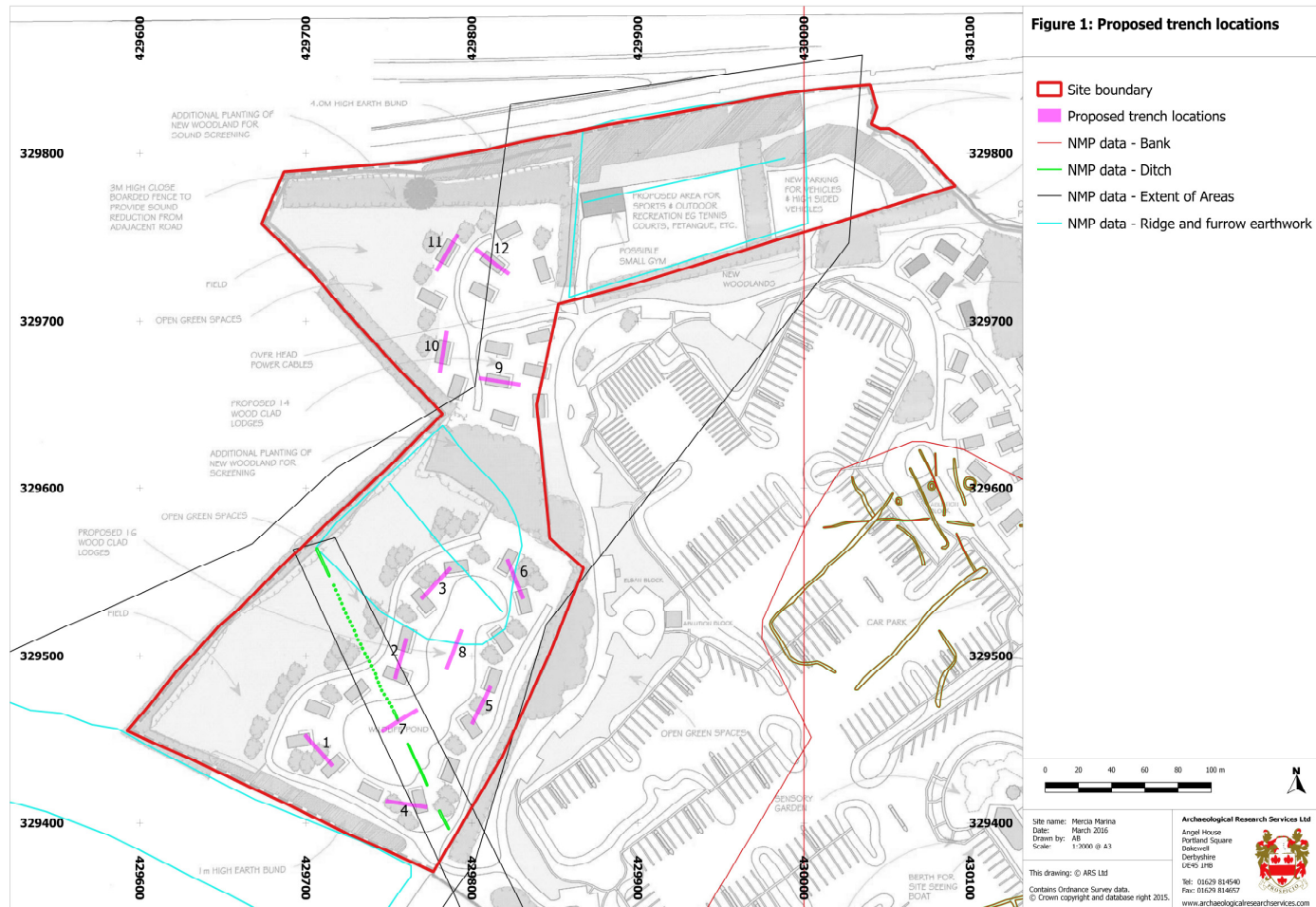


FIGURES





Archaeological Evaluation at Mercia Marina, Willington, Derbyshire. Written Scheme of Investigation.



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OASIS ID: archaeol5-250638

Project details

Project name	Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire
Short description of the project	Archaeological evaluation pre-determination of planning application for the construction of wood clad lodges at Mercia Marina, Willington, Derbyshire
Project dates	Start: 18-04-2016 End: 25-04-2016
Previous/future work	Yes / Not known
Any associated project reference codes	EDR1700 - HER event no.
Any associated project reference codes	EDR1701 - HER event no.
Any associated project reference codes	EDR1702 - HER event no.
Any associated project reference codes	EDR1704 - HER event no.
Any associated project reference codes	EDR1705 - HER event no.
Any associated project reference codes	EDR1723 - HER event no.
Any associated project reference codes	EDR2130 - HER event no.
Any associated project reference codes	EDR2247 - HER event no.
Any associated project reference codes	EDR2672 - HER event no.
Any associated project reference codes	EDR2674 - HER event no.

Any associated project reference codes	EDR2675 - HER event no.
Any associated project reference codes	EDR2676 - HER event no.
Any associated project reference codes	EDR2254 - HER event no.
Type of project	Field evaluation
Site status	Area of Archaeological Importance (AAI)
Current Land use	Vacant Land 2 - Vacant land not previously developed
Monument type	BOUNDARY DITCH Uncertain
Development type	Rural residential
Prompt	National Planning Policy Framework - NPPF
Position in the planning process	Between deposition of an application and determination

Project location

Country	England
Site location	DERBYSHIRE SOUTH DERBYSHIRE WILLINGTON Mercia Marina, Willington, Derbyshire
Postcode	DE65 6DW
Study area	5.85 Hectares
Site coordinates	SK 2981 2694 52.83882026731 -1.557408859762 52 50 19 N 001 33 26 W Point
Height OD / Depth	Min: 48m Max: 56m

Project creators

Name of Organisation	Archaeological Research Services Ltd
Project brief originator	Derbyshire County Council
Project design originator	Archaeological Research Services Ltd
Project director/manager	Reuben Thorpe
Project supervisor	Caitlin Halton
Type of sponsor/funding body	Landowner
Name of sponsor/funding body	Mercia Marina

Project bibliography 1

Grey literature (unpublished document/manuscript)

Publication type
Title Archaeological Evaluation on Land at Mercia Marina, Willington, Derbyshire
Author(s)/Editor(s) Thorpe, R.

Entered by Reuben Thorpe (reuben@archaeologicalresearchservices.com)
Entered on 10 May 2016

OASIS:

Please e-mail [Historic England](#) for OASIS help and advice

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