Puny Drain
West Winch
Norfolk

Archaeological Evaluation Surface Survey Collection and Geoarchaeological Sampling

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Approved by: Paul Booth Signed…….
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Illustrated by Mary Saunders

Oxford Archaeology

Janus House
Osney Mead
Oxford OX2 0ES
t: (0044) 01865 263800 e: info@oxfordarch.co.uk
f: (0044) 01865 793496 w: www.oxfordarch.co.uk

Puny Drain, West Winch
45464WHW

ARCHAEOLOGICAL EVALUATION
SURFACE SURVEY COLLECTION AND GEOARCHAEOLOGICAL SAMPLING

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SUMMARY

During August and September 2006 Oxford Archaeology (OA), on behalf of Scott Wilson, carried out a field evaluation on land centred on NGR 3158 5618 at West Winch, south of Kings Lynn, Norfolk. These works were undertaken to facilitate the proposed re-routing of Puny Drain. The evaluation comprised three phases of works, a geophysical survey, a geoarchaeological (borehole) survey and a surface survey collection (fieldwalking). The geophysics did not reveal any anomalies likely to be caused by significant archaeological features or deposits. The results of the geophysical investigations are the subject of a separate report (Northamptonshire 2006). The surface survey collection did not find any significant scatters of medieval or earlier artefacts along the route of the proposed development. No major peat or organic beds were recorded in the geoarchaeological survey.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 During August and September 2006 OA carried out an archaeological field evaluation at West Winch, Norfolk (Fig. 1), on behalf of Scott Wilson Ltd in respect of a proposed drainage diversion. A Brief for the archaeological evaluation was prepared by Scott Wilson Ltd and approved by Andrew Hutcheson (Head of Archaeological Planning, Norfolk Landscape Archaeology), and Jane Sidell (Regional Scientific Advisor, English Heritage).

1.1.2 The areas impacted by the proposed groundworks extend westwards from the existing Puny Drain *c.* 0.5 km west of West Winch, along a line north of, and parallel to, Clarke's Chase as far as the East Anglian Railway. From here it continues across open fields and watercourses to terminate near to the River Ouse Flood Relief Channel. The length of the new channel is 1.68 km, which will consist of an open channel measuring between 21 and 24 m wide. A new ditch for diverting the flow of the River Nar is also proposed immediately to the north of the proposed diversion. This runs for a distance of 0.26 km and measures 2.0 m in width.

1.2 Geology

1.2.1 At the western end of the site the underlying sediments consist of deposits of orange-brown clay overlying black fibrous peat horizons. To the east the geology consisted of natural silts sands and clays with no significant peat horizons present.

1.3 Archaeological and historical background

1.3.1 In 1986 and 1987 fieldwalking was undertaken in the area, as part of the Fenland Project Survey (Silvester 1988). A number of pottery sherds were recovered but no concentrations of material were identified.

1.3.2 In August 2004 Scott Wilson undertook a review of the cultural heritage of a number of areas covered by the Nar Ouse Regeneration Area. Specifically they assessed the assets within close proximity to the proposed diversion for the Puny Drain.

1.3.3 This area was in the centre of the wetland zone known as The Lenn which was gradually reclaimed by the construction of a series of east-west orientated sea banks during the late Saxon and medieval periods. At *c* 0.5 km to the south of the proposed route, a broad east-west band of silt is believed to represent a former course of the Nar, possibly in existence during the Iron Age (Silvester 1988), however, this has not been confirmed.

1.3.4 It is generally agreed that, in the prehistoric and Romano-British periods, the area would have been marshland dissected by numerous channels and creeks prior to its gradual reclamation. Fieldwalking was undertaken in the area as part of the Fenland

Project Survey (Silvester 1988) but no prehistoric material was identified. However, two cropmarks recorded as ring ditches on the NHER are dated to the Bronze Age. These are located to the north of the mid-section of Puny Drain. In the absence of further information, it is suggested that these may be later features.

1.3.5 The Roman period is represented by one sherd of Romano-British pottery which was found to the north-east of Golden Bell Cottage, a few sherds recovered from field survey earlier this year, at the far western extent of the scheme, and one bronze stud found through metal detecting was recovered to the south of the scheme near to Narside Bungalow. There is no other evidence for occupation in the area at this time.

1.3.6 One of the Anglo-Saxon/medieval sea banks is thought to cross from West Winch to the Nar although a preliminary plot of this feature suggests that it ran approximately 300 m to the south of the line of the proposed drain diversion.

1.3.7 Also associated with Late Saxon/medieval land reclamation is The Green Dyke which is mentioned in a document of 1379 as running from Hardwick Causeway (A47) to Jerry's Dam (Clarke's Chase). It forms the current parish boundary in places and is thought to represent the eastern bank of the reclaimed area.

1.3.8 Late Saxon metalwork, including a bridle side link, was recovered by metal detectors in the fields close to West Winch which appears in the Domesday survey.

1.3.9 By the medieval period, the area had been reclaimed and a great house or hall, evidenced from the field name 'Hall Piece', stood on the western edge of the village. To the south-west of this, to the east of the railway line, a moat and field boundaries were revealed by aerial photography in 1966 and medieval pottery was recovered from the site during field walking in 1986.

1.3.10 Within the surrounding area a number of finds were found including sparse scatters of medieval pottery or metalwork recovered from the Fenland survey (Silvester 1988). There are no concentrations large enough to suggest settlement activity, thus it is likely that the finds relate to the manuring of fields and/or reclamation during this period.

1.3.11 The area remained in use as agricultural land throughout the post-medieval period. In 1863, St Helen's Church, Saddlebow was constructed in flint on the eastern side of the bridge. This was restored and converted into one wing of a large house in the late 1980s.

1.3.12 The proposed line of the Puny Drain diversion crosses the East Anglian Railway, originally the Lynn and Ely Railway, which was opened in 1847. Some elements of this are Grade II Listed. Clarke's Drove Siding, also known as the Setchey Oil Railway, ran to two oil mines and joined the main line near to the route of the proposed drain diversion. It was in use between 1920 and 1954 and the route of it can be traced on Ordnance Survey maps.

1.3.13 It has been speculated that the present course of the Puny Drain, including its confluence with the Nar *c* 500 m south of the South Gates of Kings Lynn, is a 17th century diversion associated with a drainage programme. Sykes (2000) proposes that the medieval course of the Puny ('the Old Peweneye') ran north-east along the line of the Ely and Lynn Railway, crossing the Harding Road and skirting the eastern boundary of Harding Cemetery to Join the Middleton River. His reconstruction was based on abuttals given in a 1577 town survey. Although the railway destroyed much of the evidence for the former course of the drain, its position can still be traced on various Ordnance Survey maps. The section that is located either side of the diversion is shown on the 1st and 2nd editions.

1.4 Geoarchaeological background.

1.4.1 The Fenland basin covers an area of c 4000 km^2 and forms part of a clay vale, which stretches from the Humber Estuary south along the Ancholme Valley into Cambridgeshire. During the past 10,000 years infilling of the basin has occurred as a result of rising sea-level and local processes, which has resulted in the accumulation of up to *c* 30 m of sediment (Waller 1994; Wheeler and Waller 1995). The formation of these deposits has attracted a great deal of research, when, as early as the 1800's Skertchly (1877, cited in Waller 1994) recognised the complexity of the Fenland sediment sequences (Waller 1994). The Fenland Research Committee was established in the 1930s, which, pioneered by Sir Harry Godwin, resulted in a number of seminal papers on the stratigraphy of the Fenland deposits. Godwin was largely responsible for the establishment of a four-part chronostratigraphic division of Basal/Lower Peat, Fen Clay, Upper Peat, and Upper Silt (Waller 1994). However, the major limitation of this work was the lack of absolute dating, plus the fact that Godwin's studies were concentrated in the southern Fens. Subsequently, further, more widespread, research in the 1950s (and the advent of C14 dating) highlighted major flaws with the existing chronostratigraphic divisions.

1.4.2 During the 1970s the British Geological Survey established a new tripartite division (Gallois 1979, cited in Waller 1994 and Wheeler & Waller 1995). This system, however, still retained the very broad stratigraphic units adopted by Godwin, and has also since been found to be too simplistic and imprecise (Wheeler & Waller 1995)

1.4.3 Research at Wiggenhall St. Germans, King's Lynn (Godwin & Godwin 1933, cited in Waller 1994), identified nine stratigraphic intercalated peat and clay units. Also, detailed pollen work carried out here and at nearby Nordelph (Godwin 1938, cited in Waller 1994) and the Nar Valley (Smith 1982, cited in Waller 1994) has provided information on the general landscape history of the area around the current study area. Foraminifera work at Wiggenhall St. Germans showed that the intercalated peat and clay units developed as a result of fluctuations in the water table due to the incursion and subsequent regression of relative sea level. Wheeler and Waller (1995), however, have suggested that due to the variability of local processes, a single lithostratigraphic scheme cannot be applied to the whole basin.

1.4.4 Further work carried out as part of The Fenland Project (Waller 1994) included an extensive borehole survey (comprising seventy-two holes) carried out from West Winch to Broad Fen, a route very near to the site of the current project. Here, a peat bed *c* 0.68 m thick was recorded consistently at between -2.04 m and -0.43 m OD, which Waller (1994) correlates with a similarly elevated bed at Saddle Bow (Godwin & Willis 1961, cited in Waller 1994), and one of the uppermost beds at Wiggenhall St. Germans (see above). Detailed pollen work and radiocarbon dating was carried out on this peat bed (Wiggenhall St Germans Site A, TF 58201315, Waller 1994) and it was dated to 3820 ± 60 BP (Q-2589). This was interpreted as indicating a relatively widespread phase of peat development at this time, during the middle Bronze Age.

1.4.5 The same borehole survey identified a second, very thin and disturbed, peat near to Main Drain, which was also dated and analysed for pollen (Wiggenhall St Germans Site B, TF 58101298). However, the evidence suggests that this layer was secondary and derived from the underlying main peat (Waller 1994).

1.4.6 Previous geotechnical work commissioned by the Babtie Group (June 2004) along the route of the proposed Puny Drain diversion scheme revealed black fibrous peat at –0.98 m OD, sealed by surface deposits of soft orange brown clay at its western end. Boreholes excavated to the north-east of this revealed a deposit of stiff brown clay over fibrous peat at +0.05 m OD. A further peat horizon was contacted at between –2.85 m and –2.45 m OD.

2 EVALUATION AIMS

2.1 Evaluation aims: General

2.1.1 To establish the presence/absence of archaeological remains within the proposed development area.

2.1.2 To determine within the limits of the survey the extent, condition, nature, character, quality and date of any archaeological or environmental remains present.

2.1.3 To make available the results of the investigation to inform decisions regarding any future work.

2.2 Specific aims: Surface Survey Collection

2.2.1 To identify any significant find assemblages within the area covered by the proposed development.

2.2.2 To re-survey part of the area covered by the Fenland Survey.

2.2.3 To determine the current spatial extent and character of possible medieval pottery scatters previously identified by surface survey collection in 1986 and 1987.

2.2.4 To correlate the results of this survey with that of previous works to arrive at a definitive statement of the potential for significant activity to be present.

2.3 Specific aims: Geoarchaeological Sampling

2.3.1 To characterise the sequence of sediments and patterns of accumulation along the route, including the depth and lateral extend of major stratigraphic units, inferred environments of deposition and the character of any potential land surfaces/buried soils within or pre-dating these sediments.

2.3.2 To identify significant variations in the deposit sequence indicative of localised features such as topographic highs or palaeochannels.

2.3.3 To identify the extent of waterlogged organic deposits and outline recommendations for subsampling and assessment for palaeoenvironmental remains and material for scientific dating, if necessary.

2.3.4 To clarify the relationships between sediment sequences and other deposit types, including periods of 'soil', peat growth, archaeological remains, and the effects of relatively recent human disturbance, including the location and extent of made ground.

2.3.5 To relate the site sequences to current local or regional models.

3 EVALUATION METHODOLOGY

3.1 Scope of fieldwork: Surface Survey Collection

3.1.1 The length of the proposed drainage diversion channel is 1.64 km. A 25 m wide strip was ploughed prior to fieldwalking. The route was divided into four distinct areas, divided by Low Road, the River Nar and the East Anglian Railway. The areas were numbered 1-4 with Area 1 to the west and Area 4 to the east (Fig. 2).

3.2 Scope of Fieldwork: Geoarchaeological Sampling

3.2.1 The Geoarchaeological sampling took place within the western extent of the scheme (Area 1) where the potential for palaeoenvironmental deposits to be present had been identified. It involved the excavation of 9 window sample boreholes (Fig. 3).

3.3 Fieldwork methods and recording: Surface Survey Collection

3.3.1 The route was divided into four distinct areas by Low Road, the River Nar and the East Anglian Railway.

3.3.2 The route was systematically walked by four members of OA staff, two of whom were equipped with Global Positioning Systems to accurately pinpoint find locations (within 50 mm). Each transect measured 5 m wide. Areas of soil discolouration, changes in soil type and significant stone scatters were noted. The locations of brick and tile, unworked burnt flint and mortar were recorded but these artefacts were not retained. Bone, slag, charcoal, glass and metalwork which could not be readily identified / dated and finds of clearly modern origin were discounted. Pottery, fired

clay, worked flint or significant other finds were located and retained. Each recorded find was given an individual number and typological code.

3.4 Fieldwork methods and recording: Geoarchaeological Sampling

3.4.1 The sampling strategy for geoarchaeological investigation was developed in consultation with Elizabeth Stafford (Head of Geoarchaeological Services, Oxford Archaeology). All work was carried out in accordance with Oxford Archaeology's Standards and guidance for Environmental Archaeology (2002).

3.4.2 The sampling took place within the western extent of the scheme (Area 1) in an area where there was the potential for palaeoenvironmental deposits to occur. It involved the excavation of 9 window sample boreholes in locations specified by Scott Wilson and agreed with Andy Hutcheson and Jane Sidell (English Heritage Scientific Advisor) (Fig. 3). The boreholes were drilled by May Gurney Ltd under the guidance of a specialist from Oxford Archaeology North (OAN). The method utilised a terrier rig to obtain windowless samples, which involved driving lengths of steel sample barrels into the ground by the action of a percussive hammer. Inserted into the steel barrel were plastic tubes, which provided a continuous sample core. Samples were taken after every successive 1 m drive to a depth of at least 4 m, or to a depth required to prove specific sediment units. A Global Positioning System (GPS) was used to locate all boreholes in three dimensions relative to the National Grid and Ordnance Datum.

3.4.3 The undisturbed cores were taken back to the OA North offices in Lancaster, cleaned, photographed and logged under laboratory conditions. Each core was recorded on a summary proforma sheet, which included information on sample number, core number, elevation and location together with detailed sediment descriptions. Each core was also assessed for its palaeoenvironmental potential.

3.5 Presentation of results

3.5.1 The results of both the surface survey collection and geoarchaeological investigations are presented in sections 4 and 5. Those results are discussed in section 6 and the implications of the same are considered in section 7.

4 RESULTS: GENERAL

4.1 Soils and ground conditions

4.1.1 Field walking was carried out on ground, which had been ploughed specially for the purpose and allowed to weather for approximately 2 weeks. No waterlogging problems were encountered.

4.2 Distribution of archaeological remains

4.2.1 No significant concentrations of archaeological remains were located during the surface survey collection. No major peat or organic beds were recorded in the borehole survey.

5 RESULTS

5.1 Surface Survey Collection

5.1.1 Although finds of pottery, brick and tile were noted from all areas surveyed the majority were recorded in Area 2. The majority of finds were of post-medieval date but 20 medieval sherds were also identified, 14 in Area 2, 1 in Area 3 and 5 in Area 4. Two pieces of unworked but burnt flint were recovered from Area 4. No worked flint or finds of special interest were recovered. The distribution of finds by type, period and date is illustrated in Figures 4 and 5. No archaeologically significant quantities or concentrations of finds were recorded.

5.2 Geoarchaeological Sampling

5.2.1 The nine cores are shown diagrammatically (Fig. 6) and consist primarily of over 4 m of intercalated clay and silt, overlying a deposit of sand, which often contained elements of clay or silt. The deposit of sand or silt/clay and sand was reached in seven of the boreholes where its surface varied in height from *c* +2.25 m to *c* +0.5 m OD. The whole was sealed by up to 0.50 m of silt/clay topsoil and the height of the current ground surface varied from between *c* +2.00 m and +2.50 m OD.

5.2.2 No major peat or organic beds were recorded in the boreholes. Boreholes 1, 2 and 4 contained relatively thin bands of organic silt and a majority of the silt and clay facies exhibited varying strengths of banding (laminations).

6 DISCUSSION AND INTERPRETATION

6.1 Reliability of the Surface Survey Collection

6.1.1 The soil was well weathered and artefact visibility was good.

6.2 Reliability of the Geoarchaeological Sampling

6.2.1 The sediments excavated during this phase of investigation at Puny Drain contained no significant organic deposits and appear to have developed under very localised conditions. As a result, relating them to an already complicated Fenland system would be inadvisable. In addition, a fair amount of palaeoenvironmental work has already been carried out in the area, which has provided a general sequence of Holocene vegetation change.

6.3 Interpretation of the Surface Survey Collection

6.3.1 Area 2 contained the majority of the finds. Their nature and distribution strongly argue for deposition associated with farming practices such as manuring and this area's proximity to a farmyard reinforces this view. All fields contained brick and tile, the majority of which appeared to be modern. No worked flint or finds of special interest were recovered. A few pieces of unworked but burnt flint were located but not in significant quantities or scatters. In the main the pottery dated to the post-medieval or modern periods. However, some 15 sherds of early medieval (13th - 14th century) sandy wares and 5 sherds of medieval Grimston ware, 13th - 15th century were recorded (Table 1). The majority of these were again in Area 2 as might be expected and there were no significant concentrations. There is no evidence to suggest these finds indicate the presence of archaeological features in the vicinity.

6.4 Interpretation of the Geoarchaeological Sampling

6.4.1 Work carried out by the Fenland Project revealed sands at *c* -6.00 m depth, however, as Waller (1994) suggests, it is unclear whether the sands represent the earliest phases of marine deposition or whether they represent the re-working of sediments found extensively at higher elevations near the fen edge. Given the location of the current survey site it is possible that the sand encountered in the cores represents this same fen edge deposit. One of the cores (KL03) in the previous borehole survey by the Babtie Group (June 1994) reached fine sand at 1.70 m depth (+0.94 m OD), which, again, suggests that the sand in the area can be found at relatively high elevations.

6.4.2 Previous work in the area (see above) has highlighted the complexity of the Fenland deposits, therefore it is recommended that no overall stratigraphic or chronological sequence is adhered to for this area (Wheeler & Waller 1995). In addition, the thin bands of organic silt in the Puny Drain cores are likely to represent either very limited phases of organic accumulation or represent reworked material, and it is likely that they developed under very localised conditions rather than representing widescale environmental changes. On this basis, their potential for providing environmental information on the wider landscape is limited.

6.4.3 Recent work on the Holocene banded sediments of the Severn Estuary Levels suggests that they formed under variations in tidally influenced seasonal deposition (Dark and Allen 2005). As such, the work highlighted the potential of such deposits for identifying seasonal coastal processes alongside the seasonal and annual patterns of human activity. Previous work on the Fenland deposits has tended to concentrate on the organic layers as providing a record of vegetation changes (see above), but only limited work has been carried out on the clay and silt facies.

7 RECOMMENDATIONS

7.1.1 The surface survey collection did not identify any concentrations of archaeologically significant materials, consequently no ameliorative measures are recommended.

7.1.2 No further palaeoenvironmental work is recommended, but the research potential of the banded clay and silt facies should be highlighted.

APPENDICES

APPENDIX 1 POTTERY ASSESSMENT/ SPOT DATING

By Paul Blinkhorn

The pottery assemblage comprised 103 sherds with a total weight of 685 g. The bulk of the pottery was post-medieval or modern, although a small assemblage of medieval pottery was also noted.

The following fabric types were noted:

Early Medieval Sandy wares (EMW), 12th-14th century (Jennings 1981, 39). 15 sherds, 130 g.
Medieval Grimston ware, 13th - 15th century (Leah 1994). 5 sherds, 27 g.
Glazed Red Earthenwares (GRE), 17th century +. (eg. Wade-Martins 1983). 13 sherds, 126 g.
Tin-Glazed Earthenware (TGE), 17th-18th century (Jennings 1981, 187-216). 1 sherd, 2 g.
Staffs slip-trailed ware (SSLip) (eg. Clarke and Carter 1977, 264-7), mid 17th – mid 18th century. 1 sherd, 8 g.
Manganese Mottled Ware (MANG), late 17th – 18th century. 1 sherd, 1 g.
Staffordshire White Salt-Glazed Stoneware (SWSG), *c* 1720 – 1780. 4 sherds, 29 g.
Miscellaneous modern wares, 19th – 20th century. 63 sherds, 362 g

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 1. Each date should be regarded as a *terminus post quem*.

The medieval assemblage generally comprised fairly small and slightly abraded sherds, suggesting that they had been subject to some degree of transportation and attrition before final deposition. It is the sort of assemblage that appears typical of those found in cultivated soil horizons rather than well-stratified in closed features.

The range of fabric types present suggests that there has been activity at the site more or less unbroken since the early medieval period, albeit at a low level until the 17th century or later.

Table 1: Pottery occurrence by number and weight (in g) of sherds per context by fabric type

	EMW		Grimston		GRE		TGE		SSLip		MANG		SWSG		Modern		
Cntxt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	Date
10									1	8							M17th C
11	1	2															12thC
14	1	1															12thC
20													1	11			E18thC
21	1	3															12thC
28															1	2	19thC
31															1	1	19thC
37															1	1	19thC
40			1	6													13thC
43					1	6											17thC

	EMW		Grimston		GRE		TGE		SSLip		MANG		SWSG		Modern		
Cntxt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	Date
44															1	1	19thC
45					1	5											17thC
53											1	1					L17thC
56															1	1	19thC
57															1	23	19thC
59															1	1	19thC
60															1	1	19thC
61															1	9	19thC
62															1	1	19thC
65															1	28	19thC
66															1	1	19thC
67															1	2	19thC
69															1	2	19thC
71															1	11	19thC
72															1	4	19thC
73															1	8	19thC
74															1	14	19thC
77															1	1	19thC
78															1	3	19thC
81															1	2	19thC
86															1	1	19thC
93															1	16	19thC
97															1	1	19thC
101	1	8															12thC
103	1	2															12thC
107	1	4															12thC
109	1	38															12thC
110	1	23															12thC
115															1	1	19thC
117															1	5	19thC
123															1	6	19thC
125					1	8											17thC
130													1	4			E18thC
134															1	1	19thC
138			1	6													13thC
139															1	8	19thC
142			1	8													13thC
144															1	10	19thC
145			1	4													13thC
147					1	10											17thC
156															1	1	19thC
1000	1	4															12thC
1002															1	1	19thC
1005					1	3											17thC
1006	1	1															12thC
1009	1	22															12thC
1010															1	2	19thC
1026															1	4	19thC
1031															1	1	19thC

	EMW		Grimston		GRE		TGE		SSLip		MANG		SWSG		Modern		
Cntxt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	Date
1032															1	1	19thC
1033															2	5	19thC
1046															1	24	19thC
1049															1	7	19thC
1051															1	1	19thC
1053							1	2									17thC
1054															1	4	19thC
1057															1	37	19thC
1061															1	4	19thC
1068															1	3	19thC
1080															1	5	19thC
1081															1	1	19thC
1087															1	2	19thC
1088															1	15	19thC
1090	1	2															12thC
1092	1	13															12thC
1093	1	5															12thC
1095															1	10	19thC
1096			1	3													13thC
1099															1	2	19thC
1101															1	1	19thC
1103															1	8	19thC
1104													1	10			E18thC
1107					1	7											17thC
1108															1	10	19thC
1109															1	2	19thC
1110															1	2	19thC
1115															1	3	19thC
1119															1	7	19thC
1120															1	21	19thC
1121													1	4			E18thC
1122															1	5	19thC
1123															1	2	19thC
1124					1	4											17thC
1126															1	2	19thC
1134					1	6											17thC
1141					1	2											17thC
1148	1	2															12thC
1171					1	25											17thC
1174					1	28											17thC
1178					1	20											17thC
1186															1	3	19thC
1190					1	2											17thC
Total	15	130	5	27	13	126	1	2	1	8	1	1	4	29	63	362	

APPENDIX 2 BIBLIOGRAPHY AND REFERENCES

Clarke, H, and Carter, A, 1977 *Excavations in King's Lynn, 1963-1970* Soc Med Archaeol Monog Ser **7**

Dark, P, and Allen J R L, 2005 Seasonal deposition of Holocene banded sediments in the Severn Estuary (southwest Britain): palynological and sedimentological evidence. *Quaternary Science Reviews* **24**, 11-33

Jennings, S, 1981 *Eighteen Centuries of Pottery from Norwich*. E Ang Archaeol Rep **13**

Leah, M, 1994 *The Late Saxon and Medieval Pottery Industry of Grimston, Norfolk: Excavations 1962-92*. E Ang Archaeol Rep **64**

Northamptonshire Archaeology, 2006, Geophysical surveys on land at Nar-Ouse, Boal Quay, King's Lynn, Norfolk. Client Report

Scott Wilson, 2006 Puny Drain Diversion. Project Design

Silvester, RJ, 1988 *The Fenland Project No.3: Norfolk Survey, Nar Ouse and Marshland.* East Anglian Archaeology **45**

Wade-Martins, P, 1983 *Two Post-Medieval Earthenware Pottery Groups from Fulmodeston* E Anglian Archaeol Rep **19**

Waller, MP, 1994 *Fenland Project No. 9, Flandrian Environmental Change in Fenland.* E Ang Archaeol Rep **70**

Wheeler, AJ, & Waller, MP, 1995 The Holocene lithostratigraphy of Fenland, eastern England: a review and suggestions for redefinition. *Geol. Mag.* **132 (2)**, 223-233

APPENDIX 3 SUMMARY OF SITE DETAILS

Site name: Puny Drain
Site code: 45464WHW
Grid reference: TF 3158 5618
Type of evaluation: Fieldwalking, Geoarchaeological and Geophysics (separate report)
Date and duration of project: August/September 2006
Area of site: The proposed drainage diversion channel is 1.64 km long and 25 m wide.
Summary of results: The geophysics did not reveal any anomalies likely to be caused by significant archaeological features or deposits. The results of those works are the subject of a separate report (Northamptonshire 2006). The surface survey collection did not find any significant scatters of medieval or earlier artefacts along the route of the proposed development. No major peat or organic beds were recorded in the geoarchaeological survey.
Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with Norfolk Museums Service in due course.

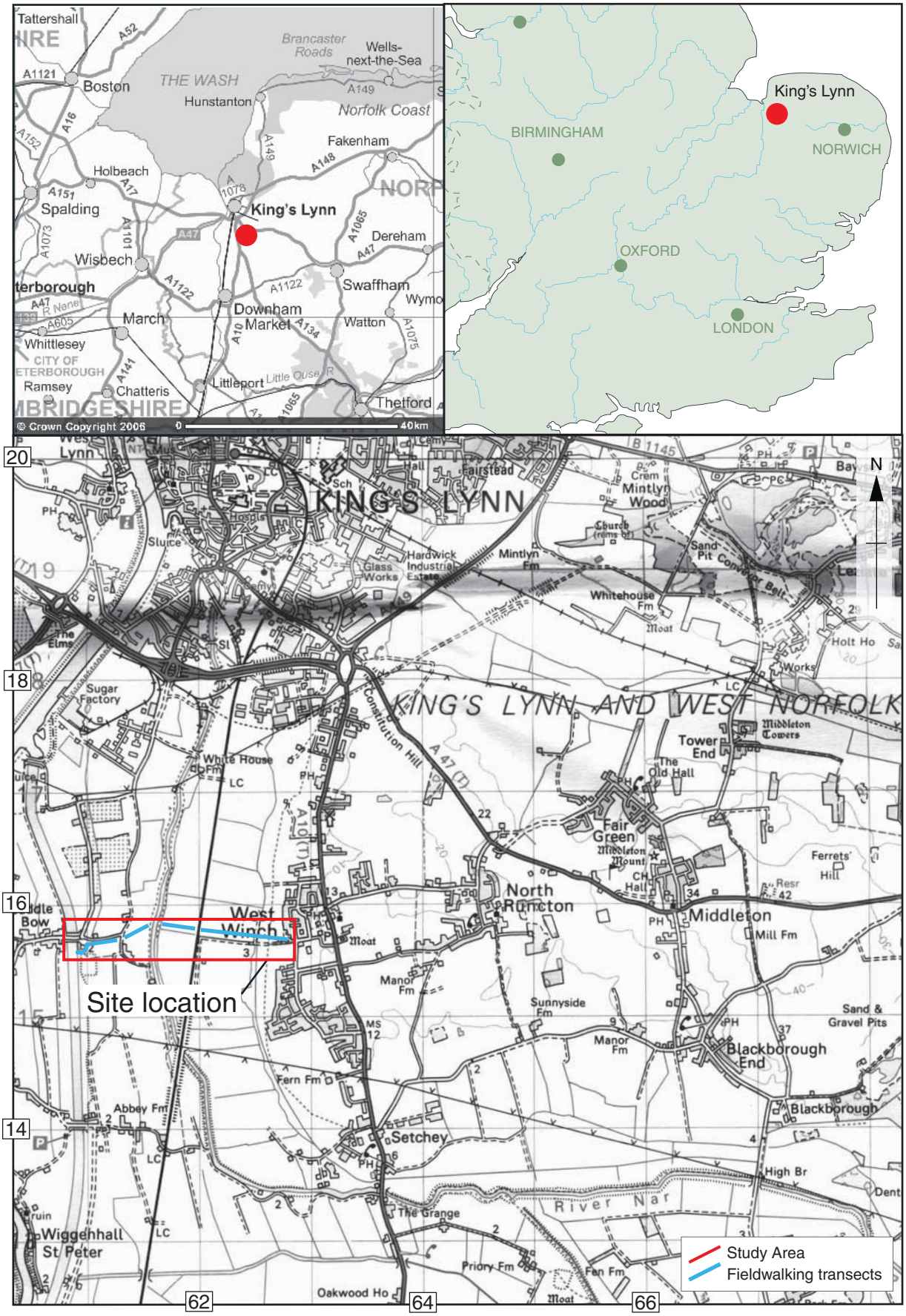

Figure 1: Site location

Transect 1
Transect 2
Transect 3
Transect 4
Basemap
N
0
100 m
Scale at A3 1:2500

Western Area

Golden Ball Farm
River Nar
Area 2
St. Helens Church
LOW ROAD
Derelict
Area 1
Rose Cottage
E 560800m
E 560900m
E 561000m
E 561100m
E 561300m
E 561400m
E 561500m
E 561600m
E 561700m

Eastern Area

River Nar
Area 3
Railway
Area 4
E 562000m
E 562100m
E 562200m
E 562300m

Overview at 1:10000

Figure 2: Fieldwalking transects

Figure 3: Borehole locations

Server1:\Puny Drain\010Geomatics\GIS\ArcGIS\current\PUNDREV_puny drain_fig 4_261006.mxd

Burnt Clay
Burnt Flint
CBM
Clay Pipe
Pottery
Basemap

N

0 100 m

Scale at A3 1:2500

Western Area

Golden Ball Farm

River Nar

Area 2

St. Helens Church

LOW ROAD

Derelict

Rose Cottage

Area 1

E 560900m E 561000m E 561100m E 561200m E 561300m E 561400m E 561500m E 561600m E 561700m E 561800m

Eastern Area

River Nar

Area 3

Railway

Area 4

E 561600m E 561700m E 561800m E 561900m E 562000m E 562100m E 562200m E 562300m

Overview at 1:10000

Figure 4: Fieldwalking finds by type

Server1:\Puny Drain\010Geomatics\GIS\ArcGIS\current\PUNDREV_puny drain_fig_5_261006.mxd

Western Area

Eastern Area

Unknown
0 - 2 g
3 - 7 g
8 - 15 g
16 - 28 g
29 - 38 g

Medieval
0 - 2 g
3 - 7 g
8 - 15 g
16 - 28 g
29 - 38 g

Post Medieval
0 - 2 g
3 - 7 g
8 - 15 g
16 - 28 g
29 - 38 g

Basemap

0 100 m

Scale at A3 1:2500

N

315900m
315800m
315700m

E 560800m
E 560900m
E 561000m
E 561100m
E 561200m
E 561300m
E 561400m
E 561500m
E 561600m
E 561700m

E 562000m
E 562100m
E 562200m
E 562300m

Cattle Shed
Cattle Sheds
Golden Ball Farm
River Nar
Area 2
St. Helens Church
LOW ROAD
Derelict
Rose Cottage
Area 1
River Nar
Area 3
Railway
Area 4

Overview at 1:10000

Figure 5: Pottery by period and weight

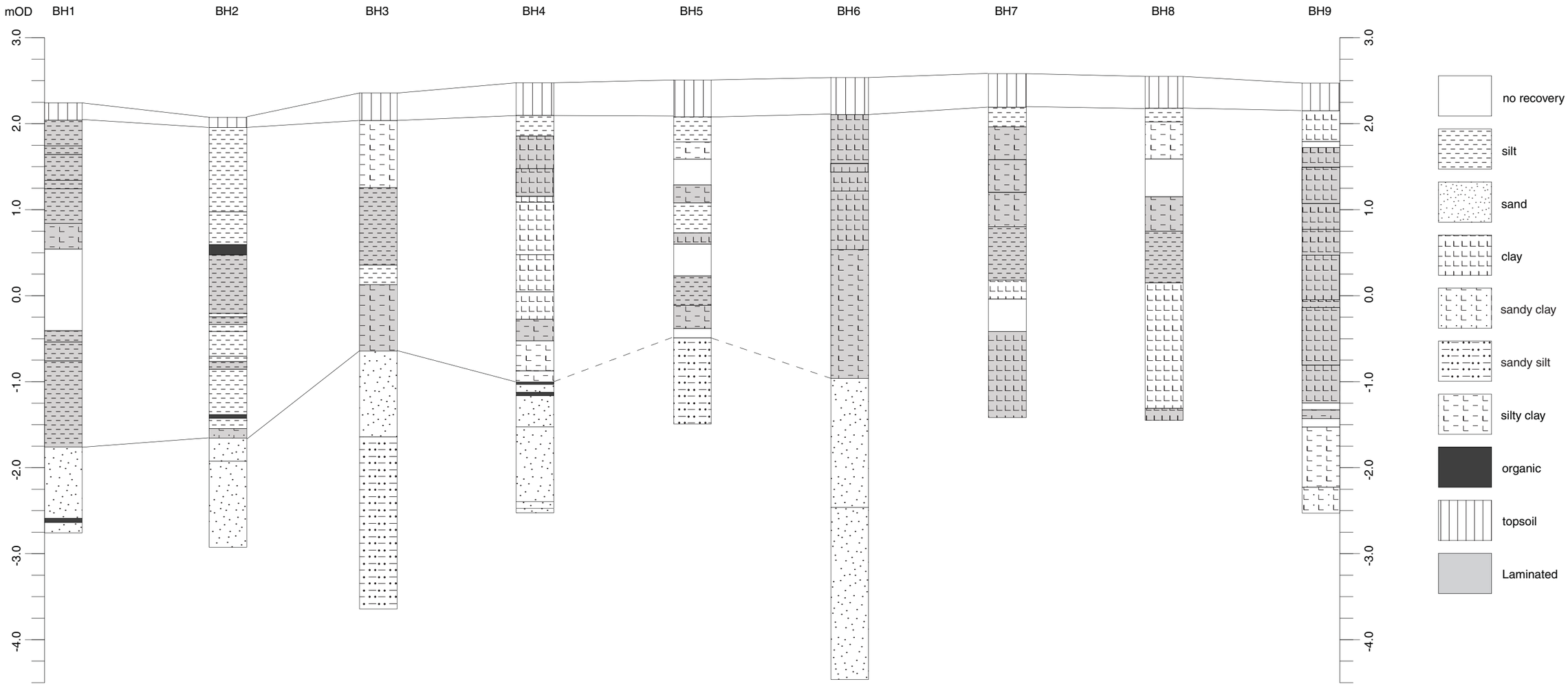

Figure 6: Purposive geoarchaeological boreholes

Oxford Archaeology

Janus House
Osney Mead
Oxford OX2 0ES

t: (0044) 01865 263800
f: (0044) 01865 793496
e: info@oxfordarch.co.uk
w:www.oxfordarch.co.uk

Oxford Archaeology North

Storey Institute
Meeting House Lane
Lancaster LA1 1TF

t: (0044) 01524 848666
f: (0044) 01524 848606
e: lancinfo@oxfordarch.co.uk
w:www.oxfordarch.co.uk

Director: David Jennings, BA MIFA FSA

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Oxford Archaeological Unit
Janus House, Osney Mead, Oxford OX2 0ES