nps archaeology

2018/1115

Land south of Meadowland Drive and Caraway Drive, Bradwell, Norfolk

Archaeological Evaluation by Trial Trenching

Prepared for: D M King Ltd

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Grid Ref: TG 5091 0322

Planning Ref: 06/13/0703/O
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Client:	D.M.King Ltd
Location:	Land South of Meadowland Drive and Caraway Drive, Bradwell
District:	Great Yarmouth Borough Council
Planning Reference:	06/13/0703/O, 06/17/0790/D
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Summary

NPS Archaeology carried out informative archaeological trial trenching in advance of proposed residential development at Land South of Meadowland Drive and Caraway Drive, Bradwell, Norfolk. The work was carried out in response to a brief issued by Norfolk County Council Environment Service, with fieldwork and reporting funded by D.M. King Ltd.

The trial trenching consisted of 18nos. trenches, each measuring 30.00m x 1.80m, with some of these trenches located to examine cropmarks recorded by the Norfolk Mapping Programme.

Archaeological features were present in eleven of the eighteen trenches. A further five trenches contained only natural features, with two trenches devoid of features of any sort.

The earliest archaeological features recorded at the site were a small number of shallow ditches, these all sealed by subsoil. These heavily truncated ditches may represent elements of an early field system, possibly a ditch running north to south through Trenches 1, 5 and 11 before turning east to cross Trenches 14 and 12. No dating evidence was recovered from any of these features, but as the subsoil is thought to be medieval in origin, these ditches are tentatively suggested as likely to be at the latest of Saxon date.

A second group of ditches all clearly cut the subsoil. None of these ditches appears to align with nearby later post-medieval and modern field boundaries, or are visible on the 1st Edition OS mapping. This infers a post-medieval date perhaps predating enclosure in the later 18th and early 19th century.

The paucity of finds of any date recovered by the trial trenching suggests the site was not close to any settlement.

One finding of the trial trenching was that variations in the underlying geology may have been mapped as cropmarks.

INTRODUCTION

Project Background

1 NPS Archaeology was commissioned and funded D. M. King Ltd. to undertake an archaeological informative trial trenching on Land South of Meadowland Drive and Caraway Drive, Bradwell (TG 5091 0322).

2 There has been little previous archaeological investigation in the vicinity of the site, but a number of cropmarks of unknown date have been identified across the development plot. A total of 18 trial trenches were arrayed across the site, with a number of these located to examine these cropmarks.

3 The evaluated site covered an area of 1.948 ha.

Planning Background

4 The current work was undertaken to fulfil planning requirements set by Norfolk County Council Environment Service on behalf of the planning authority, Great Yarmouth Borough Council.

5 The work was conducted in accordance with a Written Scheme of Investigation prepared by NPS Archaeology (NPSA 2018) in response to the Brief for a Programme of Archaeological Mitigatory Work produced by Norfolk County Council Environment Service (NCCES 2018).

6 The programme of work was designed to assist in defining the character and extent of any archaeological remains within the, following guidelines set out in National Planning Policy Framework (Department for Communities and Local Government 2012).

7 The recipients of this report will be the client, Norfolk County Council Environment Service and Great Yarmouth Borough Council.

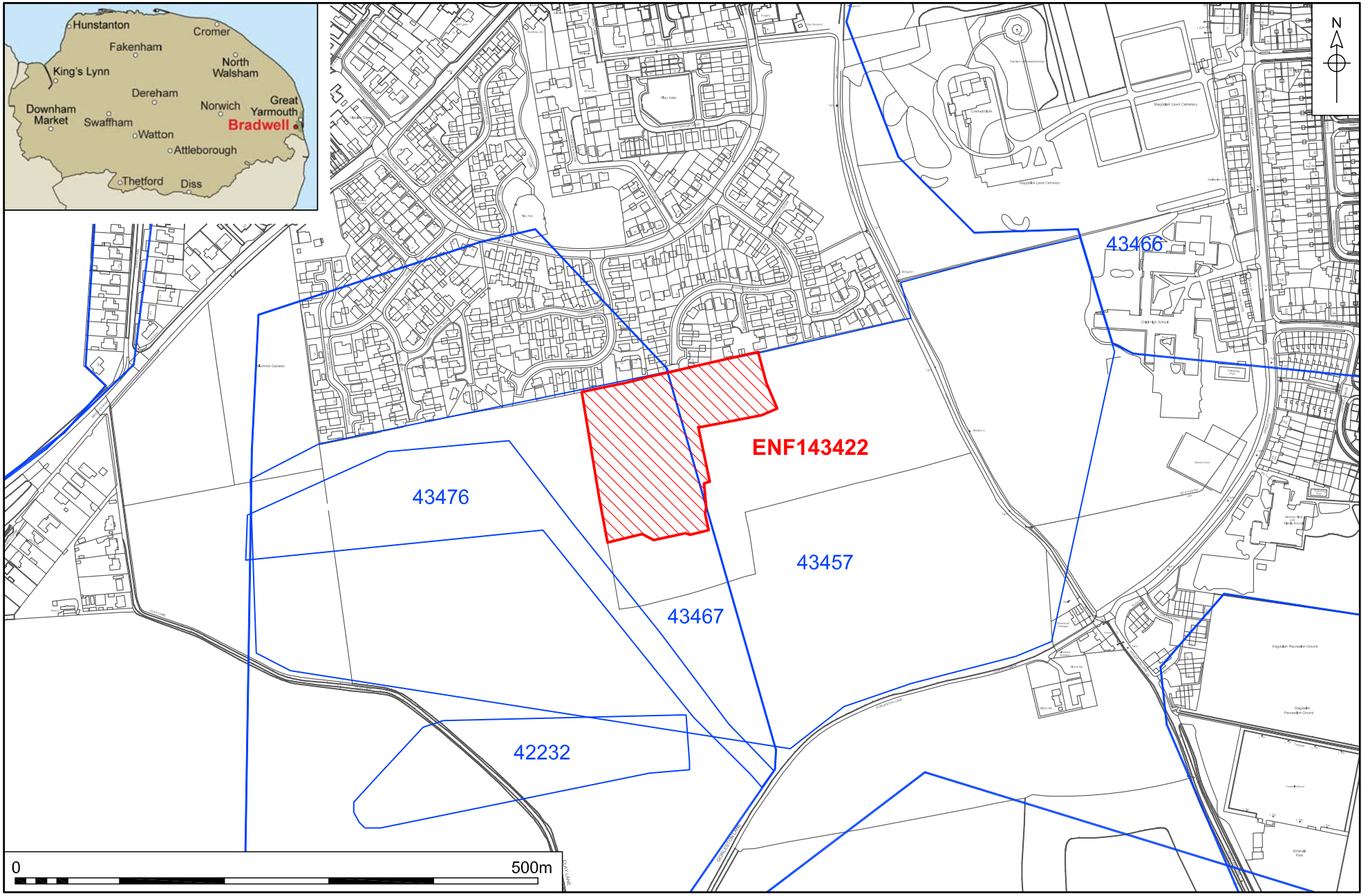

Figure 1. Site location with HER data. Scale 1:5000

GEOLOGY AND TOPOGRAPHY

Geology

8 The underlying geology consisted of sands of Happisburgh Glacigenic Formation overlying sand and gravel of the Crag Group Sedimentary Bedrock (British Geological Survey 2018).

9 The topsoil across the site was a 0.35-0.40m deep dark yellowish brown silty sand with occasional flint pebbles and gravel inclusions. This overlay a 0.15m to 0.25m deep layer of mid orangey or yellowish brown silty sand with occasional flint pebble inclusions. The subsoil was deepest in the trenches towards the northern end of the site.

Topography

10 The development area was located within an agricultural field land recently left fallow. The field was relatively level with a slight downwards slope from south-west (10.49m OD) to north-east (7.81m OD).

11 To the south and west of the development area were similar arable fields, beyond which were extensive new housing developments and associated access roads still under construction. To the east, the field containing the site is bounded by a public footpath, beyond which are the buildings and playing fields of Ormiston Venture Academy. To the north of the site was a modern housing estate.

12 The development area was L-shaped and measured approximately 1.9ha in size within a larger field of 5.6ha area.

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Sources

13 The primary source for archaeological evidence in the county of Norfolk is the Norfolk County Council Historic Environment Record (HER), which details archaeological discoveries and sites of historical interest. In order to characterise the likely archaeological potential of the proposed development site, a 1km radius search of Historic Environment Records (HER) centred on TG 6509 3032 and Norfolk Mapping Project (NMP) data for a 2km radius was purchased. This search recovered a total of 90 separate records within this area, of which those considered most relevant to the current site are highlighted below.

14 The earliest evidence of human activity in the parish of Bradwell is provided by finds of flint tools typologically dated as Mesolithic, including axes (NHER 11787 and 12780).

15 Neolithic finds are also present as flint tools with chipped or polished axes (NHER 11787). Possible settlement sites have been suggested based on a range of Neolithic flint artefacts having been recovered (NHER 12780).

16 The Roman fort at Burgh Castle is c. 3.5km from the site, though to date relatively little evidence of Roman activity has been recorded in the parish. Roman finds in Bradwell are relatively sparse at present, though metal detecting has recovered some coins of this date (NHER 11788).

17 A large number of cropmarks are recorded by the NMP in the parish, though currently only a small number of these have been tested by archaeological excavation. The cropmarks of a possible fragmentary field system and ditched boundaries of unknown, possibly Iron Age to Roman in date (NHER 43467) were present to the north of the current site, though these appear to now mostly lie below modern housing.

18 Close (c. 130m) to the west of the trial trenching are further cropmarks (NHER 43476) of ditched field boundaries and trackways of unknown, possibly Iron Age to Roman date, visible on aerial photographs of Bradwell. Another group of undated ditches and field boundaries are recorded within this area (NHER 43467) and these were also tentatively dated to the Iron Age and Roman periods. These cropmarks appear to be overlain by a series of field boundaries and trackways (NHER 43457), thought to be of late medieval to post medieval date.

19 Cropmark and soilmarks (NHER 43457) of predominantly post medieval field boundaries, banks and trackways are visible on aerial photographs c. 200m to the south-east of the trial trenching site. The boundaries appear to align with those of the modern landscape, suggesting a broadly post-medieval date, although some elements may have medieval origins. One of the trackways links up with a field boundary marked on the 1842 Bradwell Tithe map, now removed

20 Some 300m to the south-west of the trial trenching is the site of a World War Two High Frequency Direction Finding Station, (NHER 42232) which probably formed part of the ‘Coastal System’ of direction finding stations that helped lost aircraft return to base and to plot the location of mayday signals.

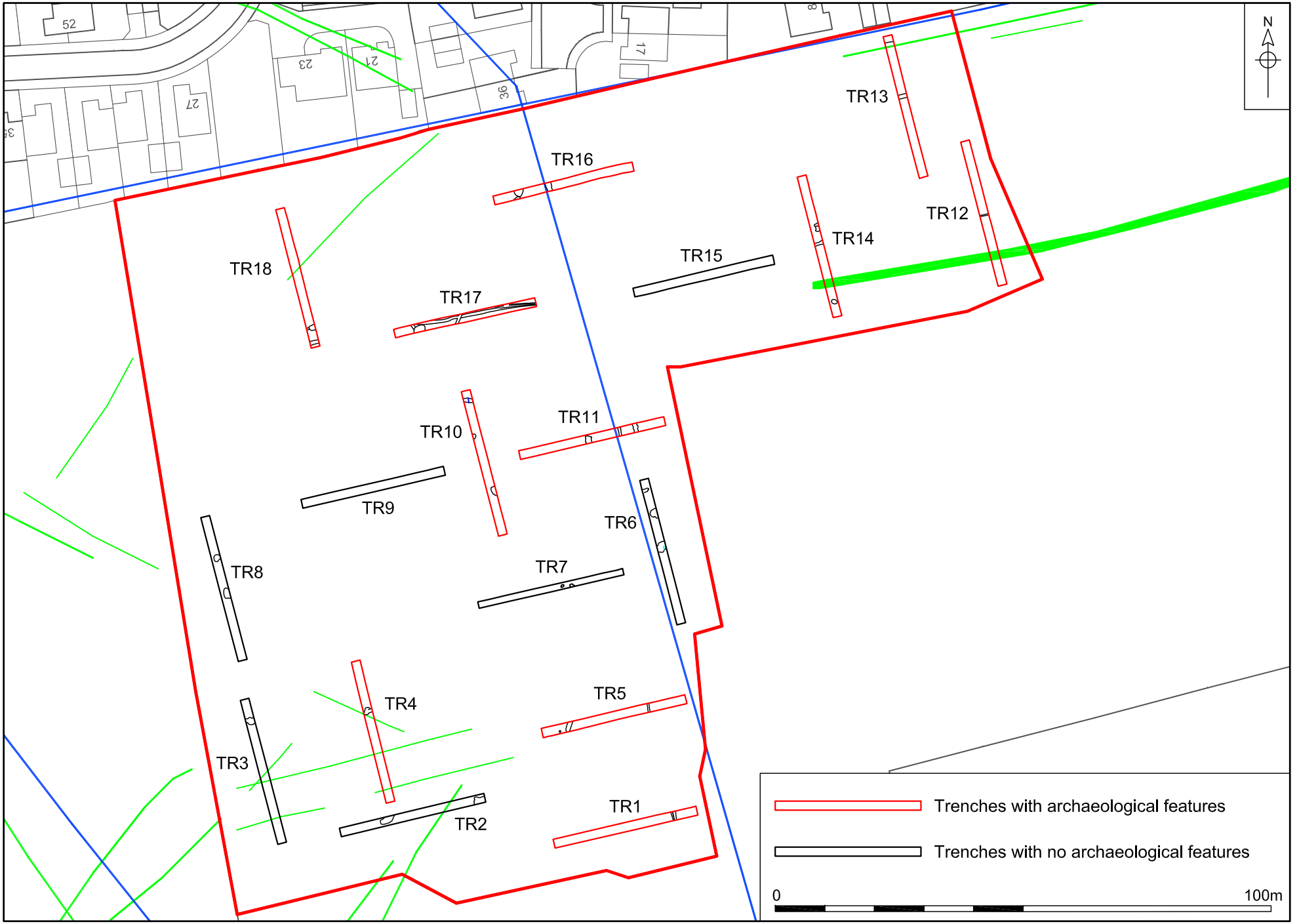

Figure 2. Location of trenches. Scale 1:1000

21 There have been no recorded archaeological interventions with close proximity of the site. Some 1km to the south, a possible Roman enclosure (NHER 45052) has been tested, with this work recording material of Roman date

METHODOLOGY

General

22 The methodology for the archaeological trial trenching followed the agreed Written Scheme of Investigation (NPSA 2018), where the mitigation strategy for the works is presented in full (Appendix 6).

23 Archaeological procedures conformed to guidelines issued by the Chartered Institute for Archaeologists (CIfA 2014a) and the archaeological trial trenching was conducted within the context of the relevant regional archaeological framework (Medlycott 2011).

Objectives

24 The objective of the trial trenching was to determine as far as reasonably possible the presence or absence, location, nature, extent, date, quality, condition and significance of any surviving archaeological deposits within the development area.

25 The archaeological project aimed to provide appropriate and adequate data to permit informed decisions regarding any requirement for future archaeological mitigation work on Land South of Meadowland Drive and Caraway Drive, Bradwell, and to make the results of the work accessible.

Methods

26 The Brief required that an approximate 5% sample of the proposed development area should be evaluated by trial trenching. In accordance with the requirements of the Brief issued by Norfolk County Council Environment Service trenches measured 30m x 1.80m and were positioned to examine the cropmarks recorded by the National Mapping Programme.

27 Site survey was carried out by NPS Land Survey using a GS16 GPS. Trenches were situated according to the agreed WSI plan and located in relation to the Ordnance Survey National Grid

28 Prior to mechanical excavation, each trench location was scanned with a CAT to check for buried services. The areas to be stripped of topsoil were examined for surface features and for archaeological artefacts prior to any excavation.

29 Machine excavation was carried out by a 7 tonne hydraulic 360˚ excavator equipped with a toothless ditching bucket. All mechanical excavation was constantly and directly monitored by a suitably experienced archaeologist. Machining was halted at the first identifiable archaeological deposits or natural geology.

30 All trench surfaces revealed by machine were hand-cleaned and any archaeological deposits were excavated by hand. On completion of the work all trenches were backfilled by machine.

31 Spoil, exposed surfaces and features were scanned with a metal-detector. All metal-detected and hand-collected finds, other than those that were evidently modern, were retained for examination. All retained finds were identified by context number to a specific deposit and were processed and recorded in line with relevant guidelines for archaeological finds (CIfA 2014b).

32 All archaeological features and deposits were recorded using NPS Archaeology pro forma. Trench locations, plans and sections were recorded at appropriate scales. 35mm monochrome negatives and digital photographs were taken of all relevant archaeological features and deposits where appropriate.

33 Temporary benchmarks used during the course of this work were located at the ends of each of the trenches with spot heights recorded by the GS16 GPS.

34 Site conditions were good and the work took place in mainly dry but windy weather.

35 With the exception of Trench 2 as an example, trenches containing only natural features are solely illustrated in Figure 2.

Archive

36 The site archive is currently held at the offices of NPS Archaeology. Upon completion of the project, the documentary archive will be prepared and indexed following guidelines obtained from the relevant museum and relevant national guidelines (CIfA 2014c). The archive, consisting of all paper elements created during recording of the archaeological site, including digital material, will be deposited with Norfolk Museums Service.

37 Subject to written consent and donation by the landowner, all archaeological finds recovered by the current work will be deposited with Norfolk Museums Service.

38 A summary form of the results of this project has been completed for Online AccesS to the Index of archaeological investigationS (OASIS) under the reference Norfolka-1 311793 (Appendix 4), and this report will be uploaded to the OASIS database.

39 The contents of the site archive is summarised in Table 1.

Item	No.
Contexts	99
Files/paper record sheets	1/127
Plan and section sheets	18
Photographs	71 b/w and 101 digital/
Finds	1 box

Table 1. Site archive quantification

RESULTS

Trench 1

Figures 2, 3; Plate 1	
Location	
Orientation	East-west
East: 650848.47, 303165.36	
West: 650819.27, 303158.46	
Dimensions	
Length	29.65m
Width	1.80m
Depth	0.50m
Levels	
East top	9.46m OD
West top	9.80m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.35m
02	Deposit	Subsoil	0.15m
09	Cut	North-south gully. 0.40m+ wide.	0.14m
10	Deposit	Mottled mid yellowish brown silty sand fill of gully **09**.	0.14m
11	Cut	North-south ditch. 0.70m wide.	0.25m
12	Deposit	Mid orangey brown silty sand with occasional lenses of yellow sand. Fill of ditch **11**.	0.14m
13	Deposit	Mid greyish brown sandy silt primary fill of ditch **11**.	0.11m

Discussion

A shallow north-south aligned gully **09**, was recorded towards the eastern end of Trench 1. This gully was sealed by the subsoil and shallowed and eventually petered out close to the south edge of the trench. The gully had been truncated on its east side by ditch **11**. This gully is thought to be the same feature as gully **05** in Trench 5. No finds were recovered from this feature

Ditch **11** followed an identical north-south alignment as gully **9** and similarly shallowed towards the south side of the trench. Although the ditch appeared to be sealed by the subsoil the two deposits were quite similar in colour and composition which may suggest that the ditch and subsoil formation were broadly contemporary. The silty primary fill, **13**, was quite firm, almost forming a crust along the base and lower sides of the ditch. This might represent a prolonged period of standing water, maybe after an episode of significant flooding as the free-draining character of the underlying sand and gravel natural would probably preclude the retention of standing water for any significant period of time. No finds were recovered from this feature.

Trench 1

Plate 1. Trench 1, Gully 09 and ditch 11, looking north, 1m scale

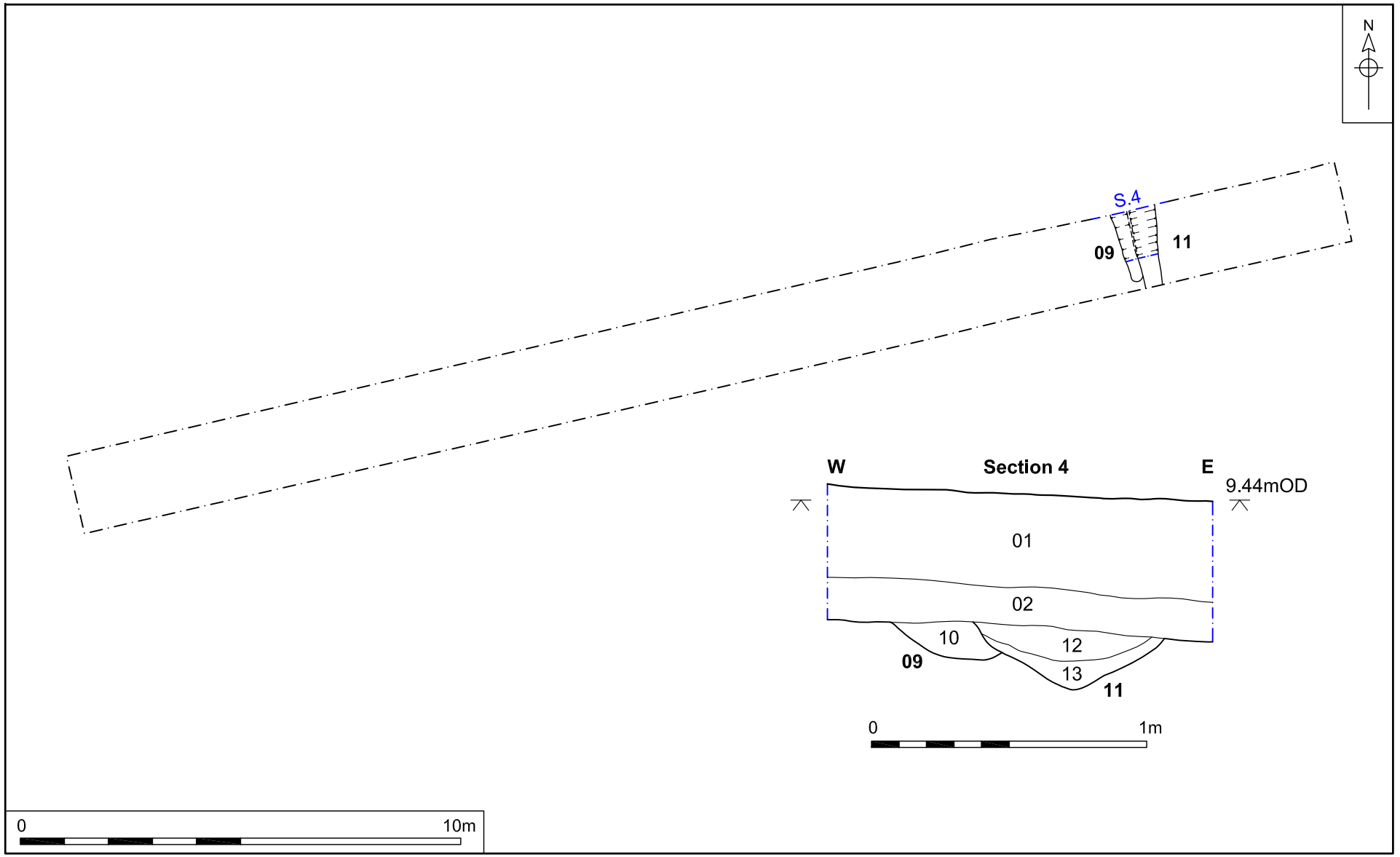

Figure 3. Trench 1, plan and section. Scale 1:125 and 1:20

Trench 2

Figures 2, 4 Plates 2 and 3	
Location	
Orientation	East–West
East: 650805.53, 303167.82	
West: 650776.36, 303160.82	
Dimensions	
Length	30.00m
Width	1.80m
Depth	0.55m
Levels	
East top	9.90m OD
West top	10.30m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.35m
02	Deposit	Subsoil	0.45m
14	Cut	Natural feature.	0.89m
15	Deposit	Pale brown silty sand with lenses of pale yellow sand. Fill of natural feature **14**.	0.89m
16	Cut	Tree throw	0.26
17	Deposit	Mid brown silty sand with patches of redeposited yellow sand. Fill of tree throw **16**.	0.26m
98	Deposit	Metal-detected finds from topsoil	-

Discussion

A slightly amorphous feature **14** was thought to be of glacial origin due to its sterile fills and the presence of darker, siltier fills undercutting confirmed natural sands.

At the western end of the trench was pit-like feature **16**. On excavation, this feature was interpreted as a tree throw due to the undulating nature of the base and the rooted appearance of both base and sides of the feature. The tree throw appears to have been open and infilled overtime with material identical to the subsoil. Two sherds of 16-18th century earthenware pottery were recovered from the fill of the tree-throw.

A post-medieval copper alloy button, a lead pot mend, a musket ball and a worked flint flake were recovered from the topsoil from this trench.

No subsurface feature related to a cropmark recorded by the NMP as crossing the trench on a north-east to south-west alignment was present in the trench.

Trench 2

Plate 2. Trench 2, Natural feature 14 looking north-east, 1m scale

Plate 3. Trench 2, Pit 16 looking north-east 1m scale

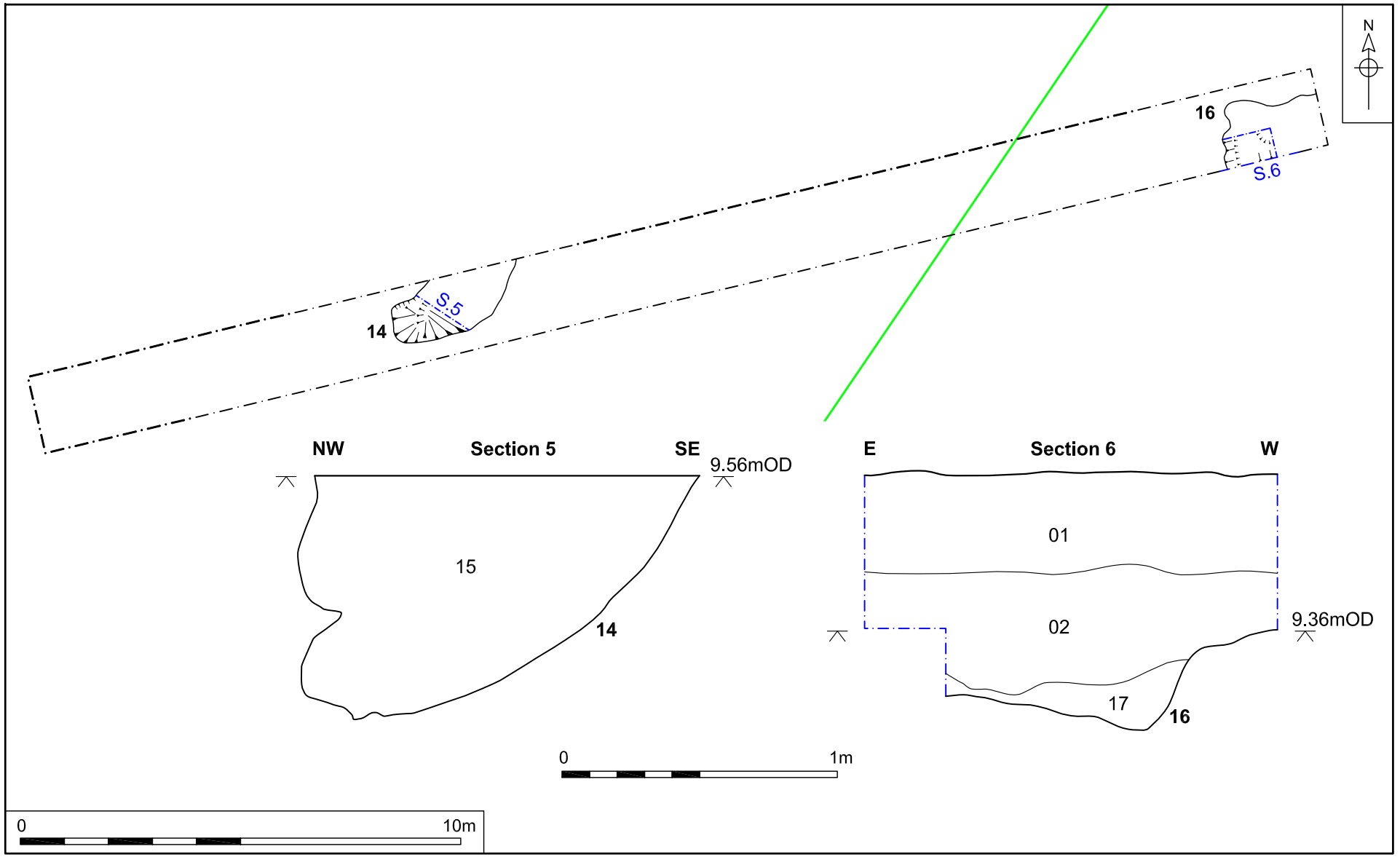

Figure 4. Trench 2, plan and sections. Scale 1:125 and 1:20

Trench 3

Figure 2

Location	
Orientation	North–South
North: 650757.09, 303187.63	
South: 650764.74, 303158.62	
Dimensions	
Length	30.00m
Width	1.80m
Depth	0.60m
Levels	
North top	10.28m OD
South top	10.49m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.35m
02	Deposit	Subsoil	0.25m
27	Cut	Hedge line.	0.21m
28	Deposit	Mid brown silty sand fill of probable grubbed out hedge or tree **27**.	0.21m
99	Deposit	Metal-detected finds from topsoil	-

Discussion

This trench contained an irregularly shaped linear feature running east-west across the trench. This feature has been interpreted as a hedge line and was filled with material identical to the subsoil. It is possible that this feature continues to the east in Trench 4 as features **18**/**20**. No finds were recovered from this feature.

A post-medieval copper alloy button and a copper alloy farthing coin, dating to the reign of King Edward VII (1902-1910) were recovered from the topsoil from this trench.

Three linear cropmarks are recorded by the NMP as crossing this trench. The southern-most of these linear cropmarks appears to correspond with a band of very gravelly natural, with other posited cropmarks not visible as sub-surface features within the trench.

Trench 4

Figures 2, 5; Plate 4		
Location		
Orientation	North-south	
North: 650779.50, 303195.86		
South: 650786.78, 303166.76		
Dimensions		
Length	29.35m	
Width	1.80m	
Depth	0.56m	
Levels		
North top		10.00m OD
South top		10.89m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.36m
02	Deposit	Subsoil	0.20m
18	Cut	East-west ditch. 079m wide.	0.28m
19	Deposit	Mid yellowish brown silty sand with occasional flint pebbles. Fill of ditch **18**.	0.23m
20	Cut	Tree throw.	0.40m
21	Deposit	Mixed mid to dark yellowish brown / mid greyish brown / pale brown / yellow silty sand with moderate flint pebbles and gravel. Fill of tree throw **20**.	0.40m
22	Deposit	Firm mid greyish brown sandy silt. Primary fill of ditch **18**.	0.07m

Discussion

Towards the north end of this trench was a probable tree throw **20**, which had been cut by ditch **18**. This ditch was aligned east – west and appeared to become narrower and shallower close to the west baulk of the trench, suggestive a ditch terminus. The primary fill of the ditch was a firm sandy silt, which had formed almost a crust on the base of the ditch, similar to the basal fill of ditch **11** in Trench 1. This deposit may have formed as the result of flooding and prolonged standing water. The ditch was sealed by subsoil. No finds were recovered from this feature.

Three cropmarks are recorded by the NMP as crossing this trench. Two running east to west may equate to the edges of a wide band of gravellier natural observed running across the bottom half of the trench.

Trench 4

Plate 4. Trench 4, Ditch 18 and tree throw 20 looking east, 1m scale

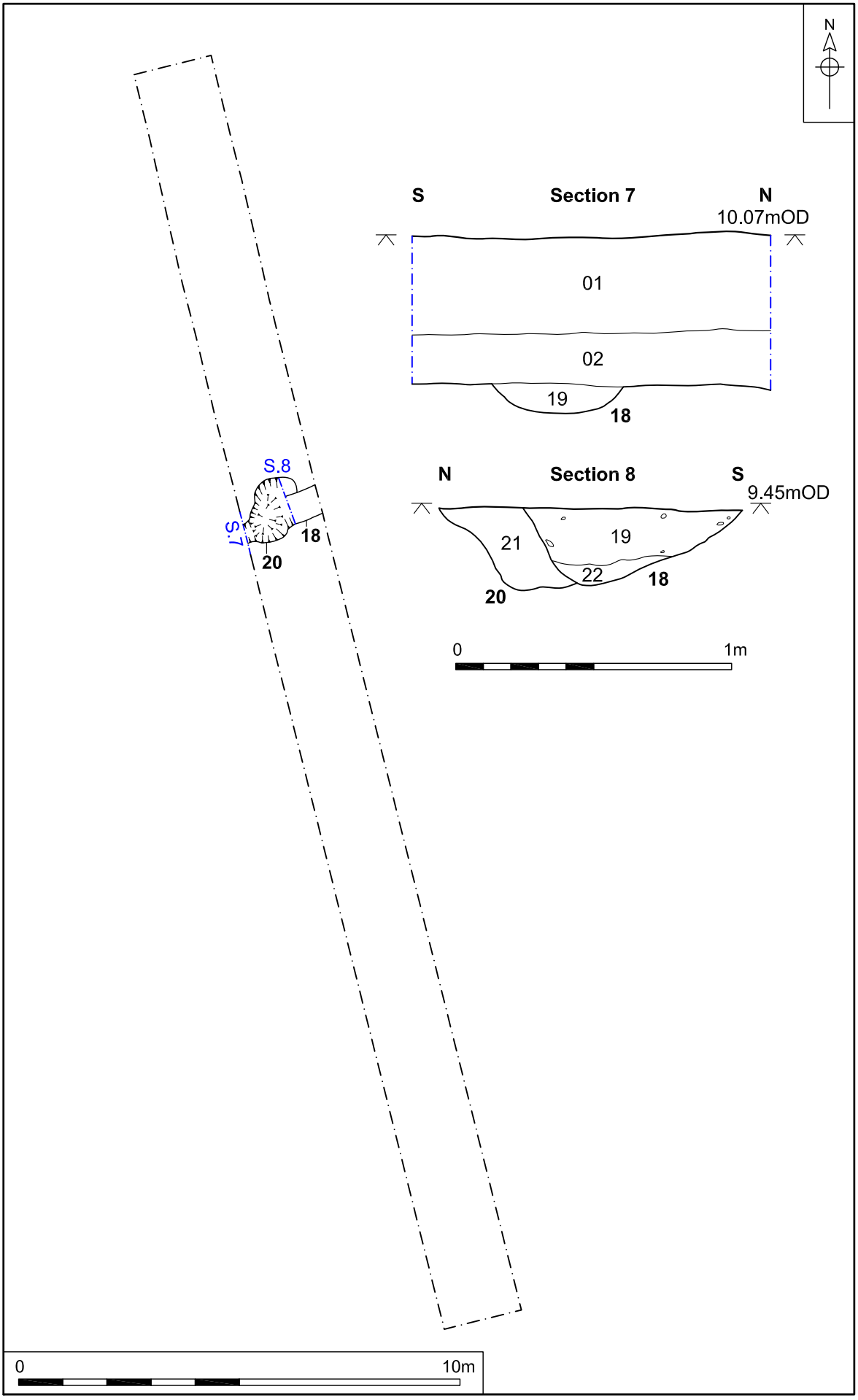

Figure 5. Trench 4, plan and sections. Scale 1:125 and 1:20

Trench 5

Figures 2, 6; Plates 5, 6 and 7	
Location	
Orientation	East-west
East: 650846.21, 303187.66	
West: 650817.32, 303180.67	
Dimensions	
Length	29.80m
Width	1.80m
Depth	0.60m
Levels	
East top	9.32m OD
West top	9.66m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.40m
02	Deposit	Subsoil	0.20m
03	Cut	South-west – north-east aligned ditch terminus. 1.05m wide.	0.28m
04	Deposit	Mid orangey brown silty sand with occasional flint pebbles concentrated around base. Fill of ditch terminus **03**.	0.28m
05	Cut	North-south gully. 0.42m wide.	0.16m
06	Deposit	Mottled pale yellowish brown silty sand fill of gully **05**.	0.16m
07	Cut	Post-hole.	0.18m
08	Deposit	Dark yellowish brown silty sand fill of post-hole **07**.	0.18m

Discussion

Towards the eastern end of the trench was shallow north-south aligned gully **05**. This gully was sealed by subsoil and is thought to be the same feature as gully **09** seen in Trench 1 to the south. No finds were recovered from this feature but its mottled and leached appearance suggested it was of some antiquity. Environmental sample <3> from fill **06** of gully **05** contained small counts of charcoal.

Located c. 5m from the western end of the trench was ditch terminus **03**. This ditch seemed to cut the subsoil although the relationship was uncertain as ditch fill 0**4** was very similar in appearance to the subsoil. No dating evidence was recovered from this feature.

Post-hole **07** was located adjacent to ditch terminus **03**. The composition and colour of the fill was very similar to the topsoil, which may suggest that the feature is relatively modern. No dating evidence was recovered from this post-hole.

Trench 5

Plate 5. Trench 5, Ditch 3 1m scale looking north-east

Plate 6. Trench 5, Ditch 05 1m scale looking north

Trench 5

Plate 7. Trench 5, Post-hole 07, 1m scale looking south

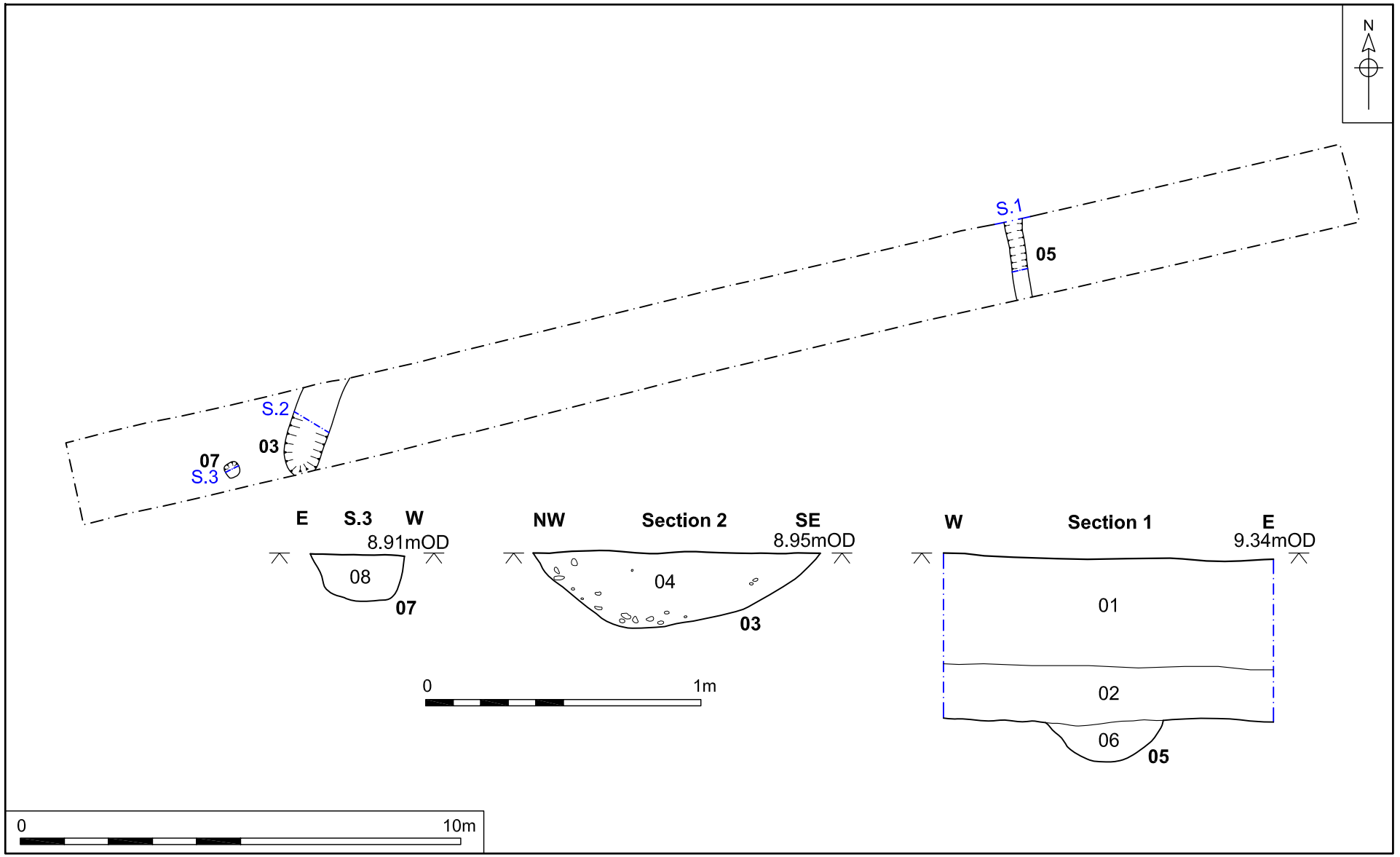

Figure 6. Trench 6, plan and sections. Scale 1:125 and 1:20

Trench 6

Figure 2

Location	
Orientation	North–South
North: 650837.57, 303231.90	
South: 650845.17, 303202.86	
Dimensions	
Length	30.05m
Width	1.80m
Depth	0.54m
Levels	
North top	9.06m OD
South top	9.27m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.34m
02	Deposit	Subsoil	0.20m
47	Deposit	Mottled pale to mid brown silty sand fill of natural feature **48**.	0.40m
48	Cut	Natural feature.	0.40m
49	Deposit	Dark brown sandy silt with occasional pebbles fill of natural feature **50**.	0.36m
50	Cut	Natural feature	0.36m
51	Deposit	Dark brown sandy silt with occasional pebbles fill of natural feature **52**.	0.28m
52	Cut	Natural feature	0.28m

Discussion

Three features were excavated in this trench. All three features are considered to be of natural origin due to their sterile fills and irregular form.

Trench 7

Figure 2

Location	
Orientation	East–West
East: 650833.45, 3032013.46	
West: 650804.22, 303206.72	
Dimensions	
Length	30.00m
Width	1.80m
Depth	0.57m
Levels	
East top	9.32m OD
West top	9.66m OD

Context	Type	Description and Interpretation	Thickness
1	Deposit	Topsoil	0.34m
2	Deposit	Subsoil	0.23m
23	Deposit	Pale brown silty sand fill of natural feature **24**.	0.08m
24	Cut	Shallow natural feature.	0.08m
25	Deposit	Mid brown silty sand fill of shallow natural feature **26**.	0.10m
26	Cut	Shallow natural feature.	0.10m

Discussion

Two shallow and irregular natural features were excavated in this trench.

Trench 8

Figure 2, Plates 8 and 9	
Location	
Orientation	North–South
North: 650749.14, 303224.47	
South: 650756.76, 303195.46	
Dimensions	
Length	30.00m
Width	1.80m
Depth	0.62m
Levels	
North top	9.89m OD
South top	10.20m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.44m
2	Deposit	Subsoil	0.18m
43	Cut	Natural feature.	0.86m
44	Deposit	Mid orangey brown subsoil or fill of natural feature **43**.	0.18m
45	Cut	Tree-throw.	0.44m
46	Deposit	Mid brown silty sand fill of tree-throw **45**.	0.25m
59	Deposit	Pale brown sand fill of natural feature **43**.	0.20m
60	Deposit	Mid brown silty sand fill of natural feature **43**.	0.75m
61	Deposit	Pale brown silty sand fill of tree-throw **45**.	0.10m
62	Deposit	Orange sand and gravel fill of tree-throw **45**.	0.18m
97	Deposit	Metal-detected finds from topsoil.	-

Discussion

Two features were excavated in this trench. One was natural feature **43**, which was probably of glacial origin, with fills that appeared to diffuse with natural sands. The second feature, **45**, has been interpreted as a tree-throw.

A post-medieval lead bag seal was recovered from the topsoil in this trench.

Trench 8

Plate 8. Trench 8, Natural feature 43, 1m scale looking east

Plate 9. Trench 8, Tree-throw 45, 1m scale looking east

Trench 9

Figure 2,

Location	
Orientation	East-West
East: 650797.74, 303233.56	
West: 650768.51, 303226.80	
Dimensions	
Length	29.60m
Width	1.80m
Depth	0.53m
Levels	
East top	9.66m OD
West top	9.83m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.34m
02	Deposit	Subsoil	0.19m

Discussion

No archaeological features were observed within this trench.

Trench 10

Figures 2, 7 Plate 10	
Location	
Orientation	North–South
North: 650801.76, 303249.88	
South: 650809.27, 303220.83	
Dimensions	
Length	30.00m
Width	1.80m
Depth	0.48m
Levels	
North top	9.26m OD
South top	9.48m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.34m
02	Deposit	Subsoil	0.14m
84	Deposit	Mid brown silty sand fill of ditch **85**.	0.28m
85	Cut	East-west aligned ditch. 0.85m wide.	0.28m
86	Deposit	Mid brown silty sand fill of natural feature **87**.	0.22m
87	Cut	Natural feature.	0.22m
88	Deposit	Pale greyish brown fill of tree-throw **89**.	0.35m
89	Cut	Tree-throw.	0.35m

Discussion

This trench contained an east to west aligned ditch **85**, which appeared to cut the subsoil. This ditch contained no dating evidence. Environmental sample <1> taken from fill **86** of this feature contained small quantities of charcoal and a single, unidentified cereal grain.

Other features investigated in this trench were a natural feature and a probable tree-throw.

Trench 10

Plate 10. Trench 10, Ditch 85, 1m scale looking west

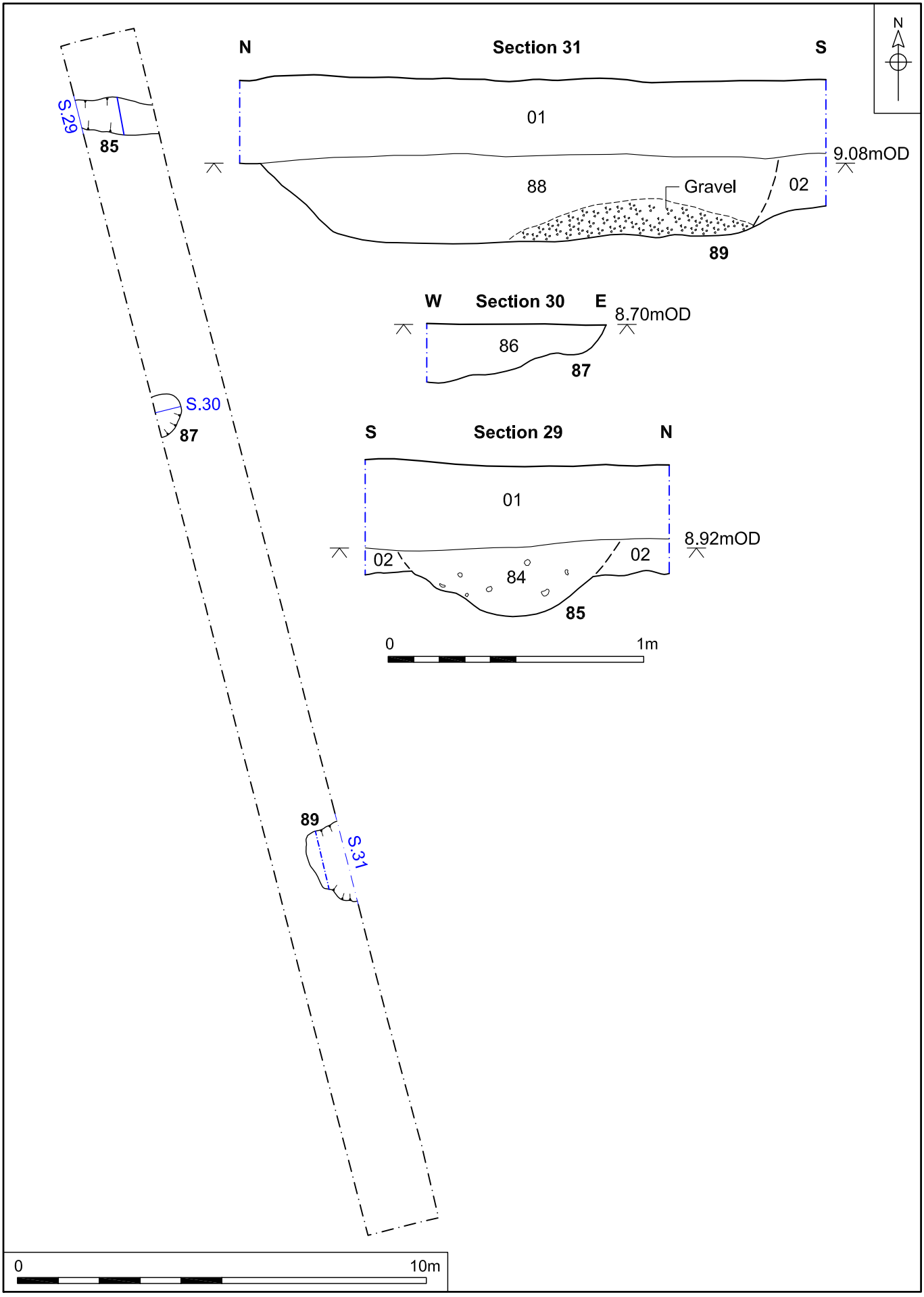

Figure 7. Trench 10, plan and sections. Scale 1:125 and 1:20

Trench 11

Figures 2, 8 Plates 11 and 12	
Location	
Orientation	East–West
East: 650841.76, 303243.72	
West: 650812.54, 303236.97	
Dimensions	
Length	30.00m
Width	1.80m
Depth	0.50m
Levels	
East top	8.96m OD
West top	9.30m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.36m
02	Deposit	Subsoil	0.14m
53	Deposit	Pale greyish brown silty sand fill of ditch **54**.	0.16m
54	Cut	North-south ditch. 0.90m wide.	0.16m
55	Deposit	Pale greyish brown silty sand fill of ditch **56**	0.16m
56	Cut	North-south ditch.0.54m wide.	0.16m
57	Deposit	Mid brown silty sand with occasional flint pebbles concentrated towards base of deposit. Fill of tree-throw **58**.	0.34m
58	Cut	Tree-throw.	0.34m

Discussion

This trench contained two north-south aligned linear features, both interpreted as ditches.

Ditch **56** was aligned north to south and was sealed by the subsoil. The relative alignment and position of this ditch, as well as its recorded relationship with the subsoil, might indicate that it is a continuation of ditch **05** in Trench 5 and ditches **09** or **11** in Trench 1.

Ditch **54** was less regular in form than ditch **56** to the west and therefore its interpretation as a ditch is more conjectural. Like ditch **56**, ditch **54** was also sealed by the subsoil. Projecting its alignment southwards it did not appear in Trench 6, only 10m to the south of Trench 11 so the ditch either turned or terminated before intersecting with Trench 6.

Feature **58** was excavated close to the centre of the trench. The irregularity of the form of the feature were indicative that it was a tree-throw.

Trench 11

Plate 11. Trench 11, Ditch 54, 1m scale looking north

Plate 12. Trench 11, Ditch 56, 1m scale looking north

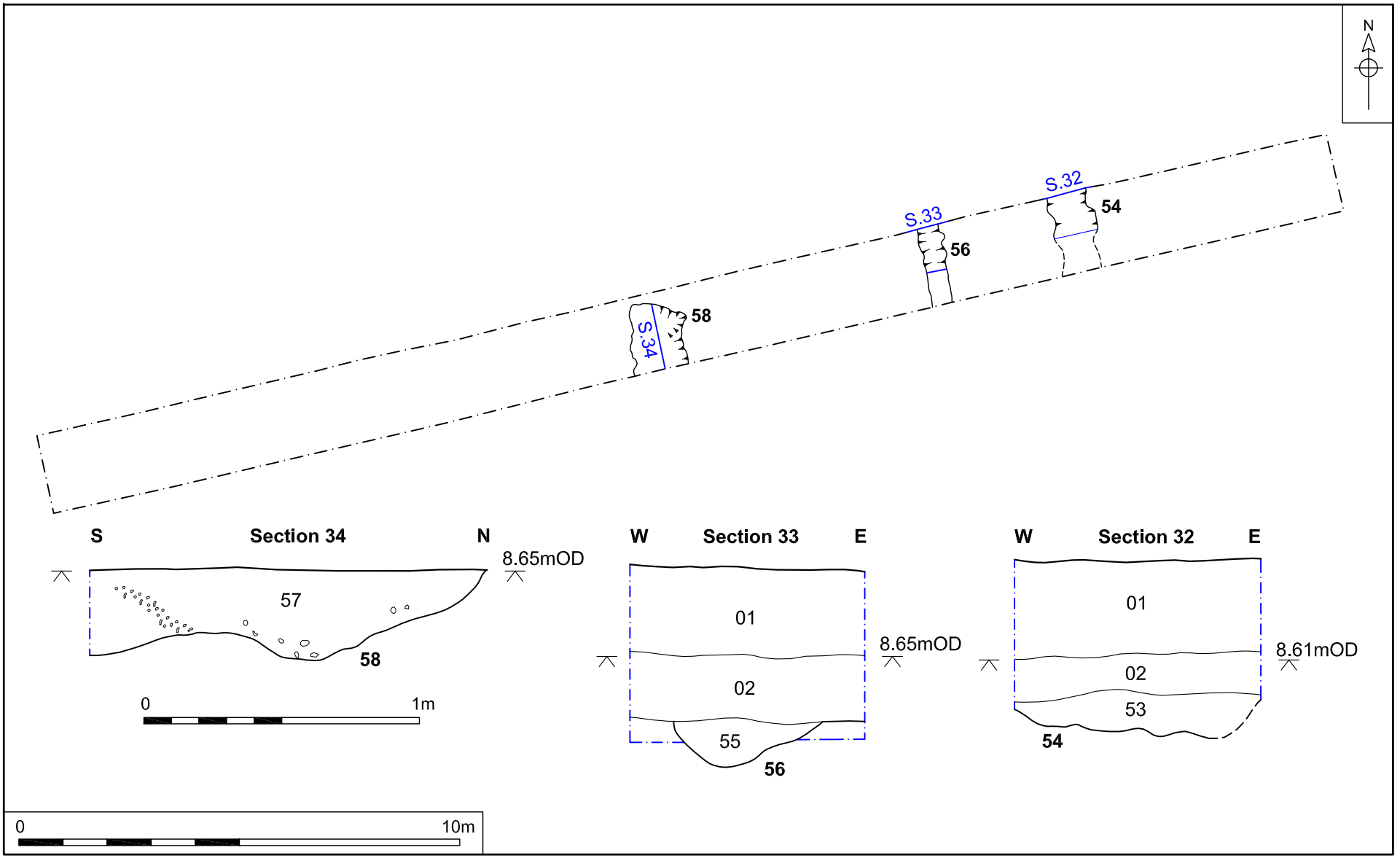

Figure 8. Trench 11, plan and sections. Scale 1:125 and 1:20

Trench 12

Figures 2, 9; Plate 13	
Location	
Orientation	North–South
North: 650902.34, 303300.18	
South: 650909.95, 303271.16	
Dimensions	
Length	30.00m
Width	1.80m
Depth	0.64m
Levels	
North top	7.81m OD
South top	7.80m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.40m
02	Deposit	Subsoil	0.24m
69	Cut	East-west aligned ditch. 0.32m wide.	0.18m
70	Deposit	Mid brown silty sand fill of ditch **69**.	0.18m

Discussion

Crossing close to the centre of the trench was a solitary east to west aligned ditch. This ditch appeared to be sealed by the subsoil but cut through an earlier paler, mottled and more bioturbated subsoil layer. No artefact evidence was recovered from this ditch. The alignment of this ditch may suggest that it is the same feature as ditch **65** in Trench 14 to the west.

There was no evidence of any feature, natural or cultural, that correlated with the east to west cropmark recorded by the NMP as crossing the southern half of the trench.

Trench 12

Plate 13. Trench 12, Ditch 69, 1m scale looking east

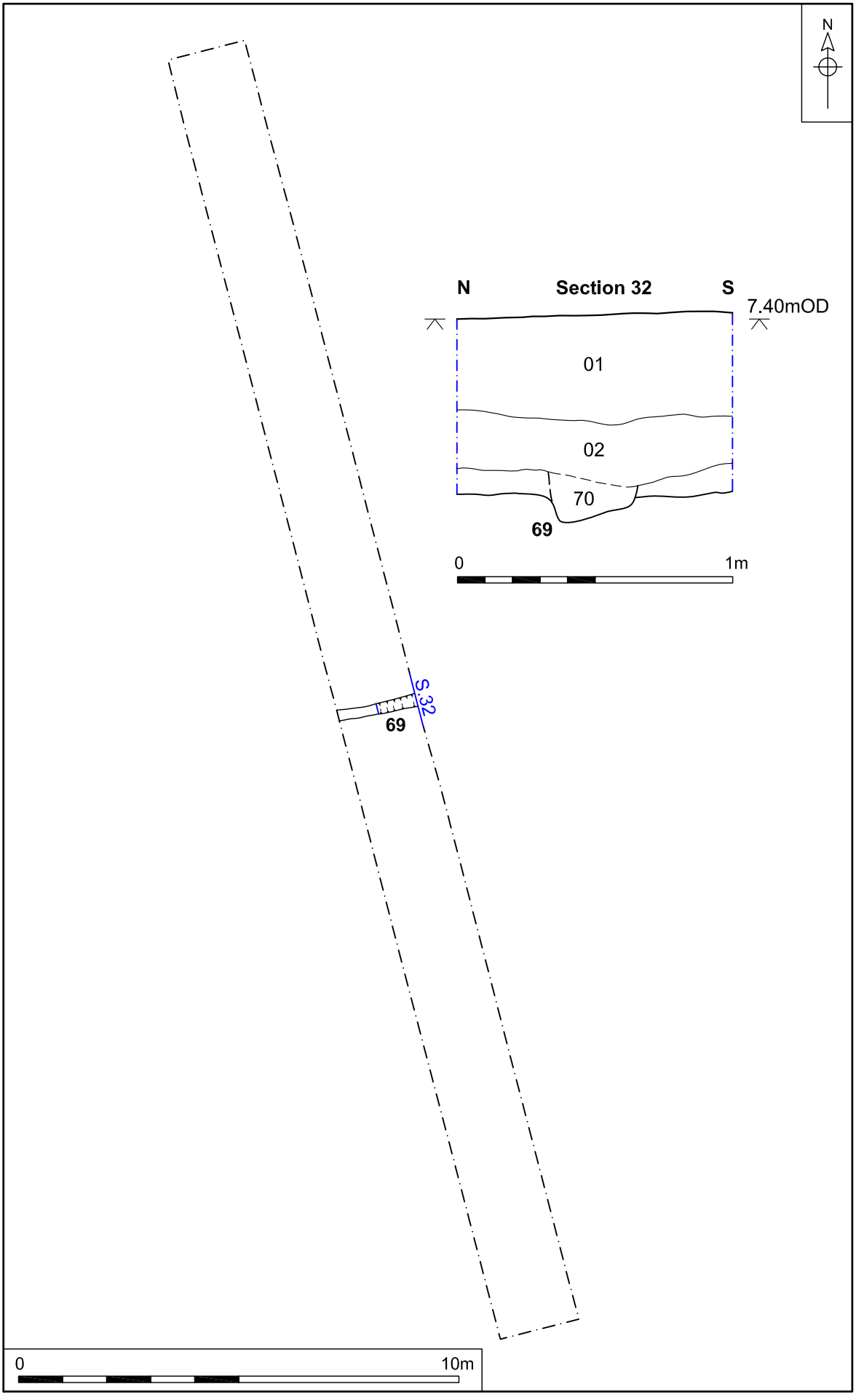

Figure 9. Trench 12, plan and section. Scale 1:125 and 1:20

Trench 13

Figures 2, 10 Plates 14 and 15	
Location	
Orientation	North–South
North: 650886.47, 303321.75	
South: 650893.97, 303292.70	
Dimensions	
Length	29.55m
Width	1.80m
Depth	0.55m
Levels	
North top	7.87m OD
South top	7.94m OD

Context	Type	Description and Interpretation	Thickness
1	Deposit	Topsoil	0.39m
2	Deposit	Subsoil	0.18m
92	Cut	East-west aligned ditch. 1.03m wide.	0.45m
93	Deposit	Mottled dark yellowish brown silty sand with occasional flint pebbles and charcoal flecks. Fill of ditch **92**.	0.45m
94	Cut	East-west aligned ditch. 1.20m+ wide.	0.52m
95	Deposit	Dark yellowish brown silty sand with occasional flint pebbles, charcoal flecks and very dark greyish brown silty sand lenses. Fill of ditch **94**.	0.52m

Discussion

Two ditches were recorded in this trench.

Ditch **92** was located 12.5m south of the northern end of the trench, running parallel to the modern field boundary and to ditch **94**. The ditch was cut through subsoil and contained no finds. Environmental sample <2> from fill **93** of this ditch contained small counts of charcoal.

Ditch **94** was located right at the north end of the trench. This ditch was also observed to cut the subsoil and contained three sherds of 19th-century pottery. It is thought that this ditch represents an earlier iteration of the modern northern field boundary seen on the 1st Edition OS mapping. Its alignment and position corresponds to the line of a cropmark mapped by the NMP, the only such feature within the trial trenching area that does appear tie up with the cropmark evidence.

Trench 13

Plate 14. Trench 13, Ditch 92, 1m scale looking east

Plate 15. Trench 13, Ditch 94, 1m scale looking east

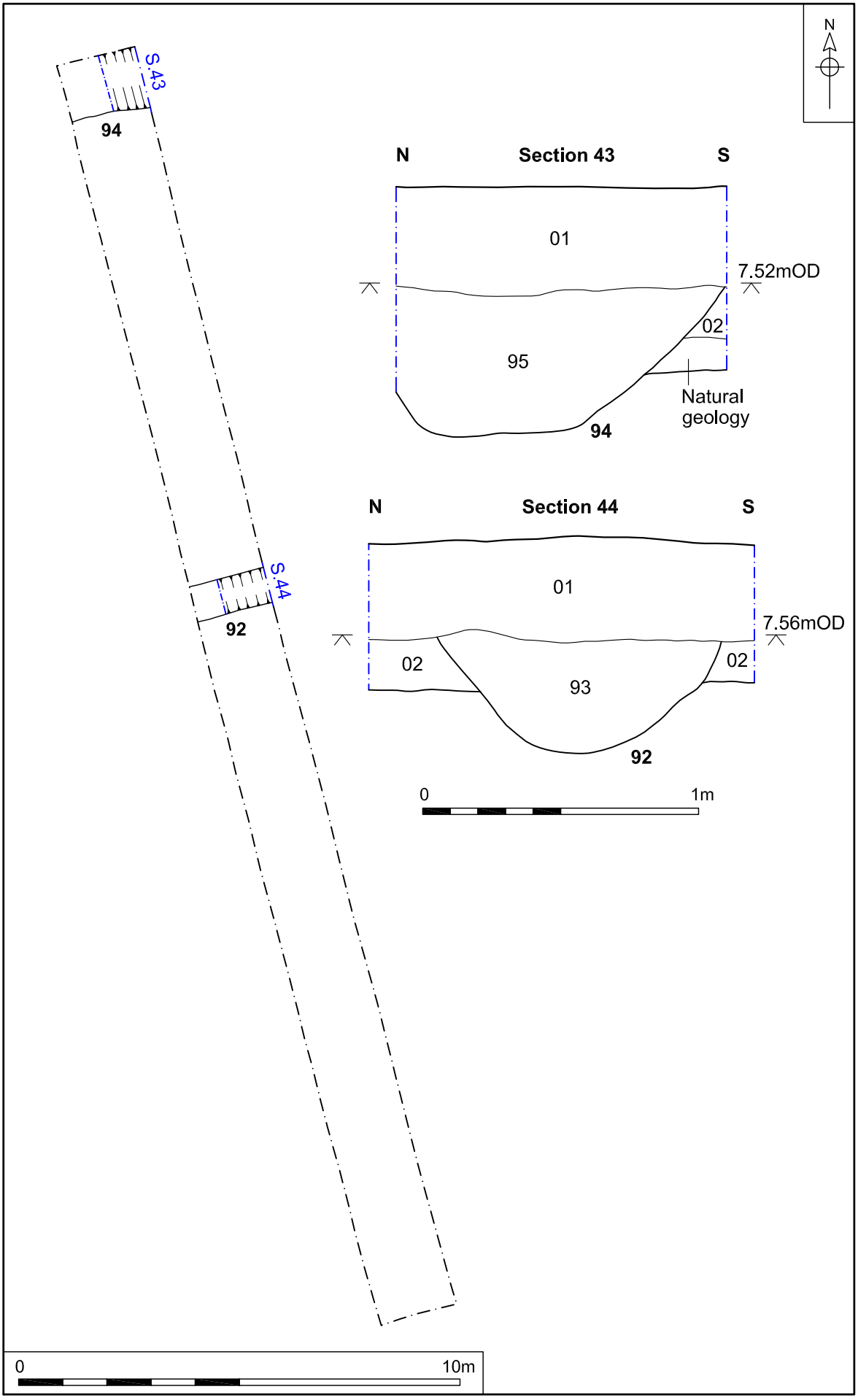

Figure 10. Trench 13, plan and sections. Scale 1:125 and 1:20

Trench 14

Figures 2, 11 Plate 16	
Location	
Orientation	North–South
North: 650869.31, 303293.66	
South: 850876.82, 303264.61	
Dimensions	
Length	29.30.00m
Width	1.80m
Depth	0.64m
Levels	
North top	8.35m OD
South top	8.36m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.34m
02	Deposit	Subsoil	0.30m
63	Cut	Natural feature	0.100m
64	Deposit	Pale brown silty sand with pale grey sand lenses. Fill of natural feature **63**.	0.10m
65	Cut	East-west aligned ditch. 0.56m wide.	0.22m
66	Deposit	Mottled pale to mid brown silty sand fill of ditch **65**.	0.22m
67	Cut	Tree-throw.	0.16m
68	Deposit	Heat affected natural. Pale orange and red silty sand fill of possible tree-throw **67**.	0.16m
96	Deposit	Mottled pale to mid brown silty sand fill of tree-throw **67**.	0.14m

Discussion

This trench contained an east to west aligned ditch. The relationship of this ditch with the subsoil was uncertain. The ditch may be a continuation of ditch 69 in Trench 12 to east (which is sealed by the subsoil) or may be a continuation of one of the east-west ditches seen in Trench 17 to the west (which cut through the subsoil). No artefacts were recovered from this ditch.

A feature containing heat reddened natural **67** has been interpreted as a tree-throw where the stump may have been burnt *in situ*.

There was no evidence of any feature, natural or cultural, that correlated with the east to west cropmark recorded by the NMP as crossing the southern half of the trench.

Trench 14

Plate 16. Trench 14, Ditch 65, 1m scale looking east

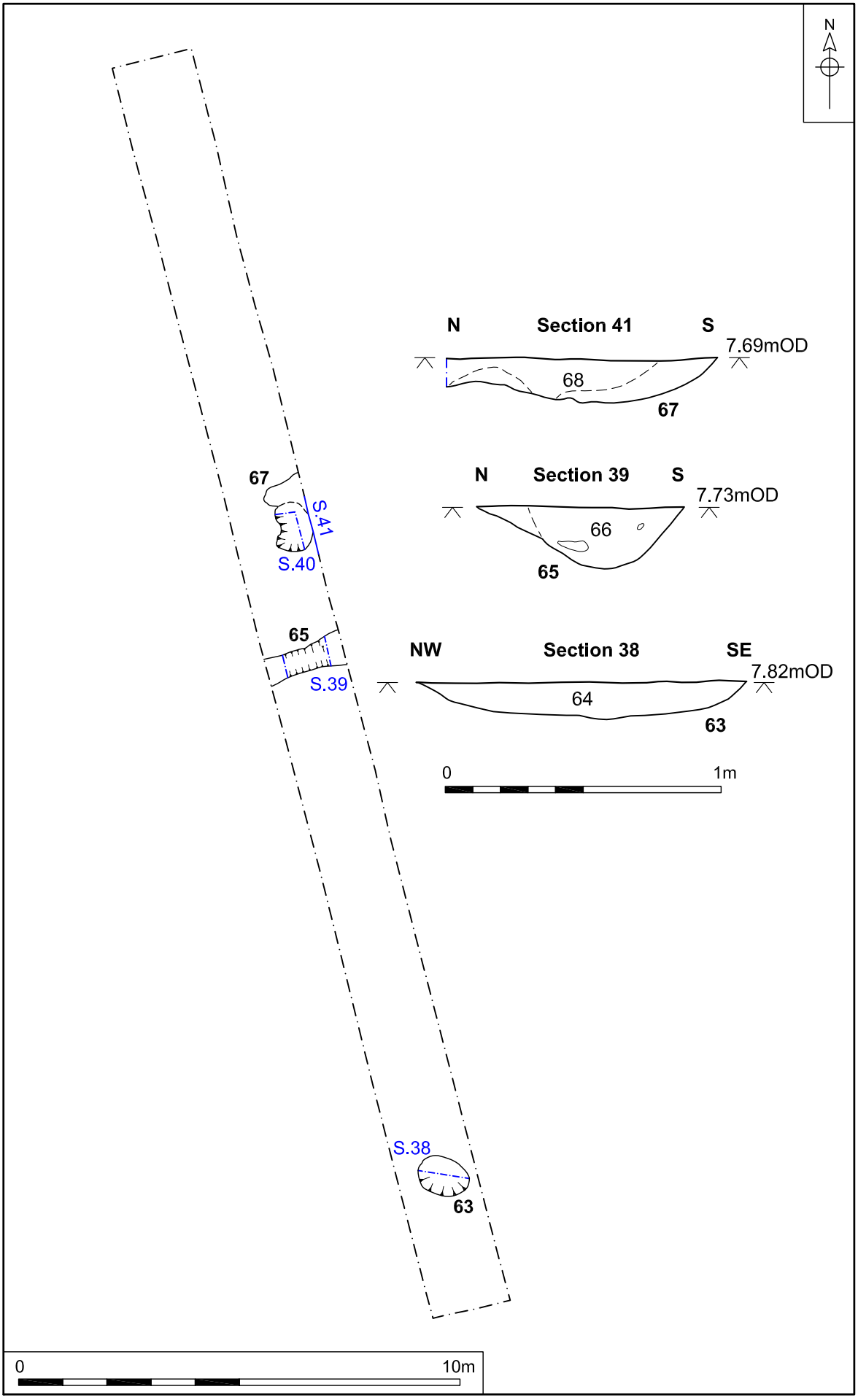

Figure 11. Trench 14, plan and sections. Scale 1:125 and 1:20

Trench 15

Figure 2

Location	
Orientation	East–West
East: 650864.49, 303276.39	
West: 650835.28, 303269.52	
Dimensions	
Length	29.05m
Width	1.80m
Depth	0.60m
Levels	
East top	8.52m OD
West top	8.85m OD

Context	Type	Description and Interpretation	Thickness
1	Deposit	Topsoil	0.42m
2	Deposit	Subsoil	0.18m

Discussion

No archaeological features or deposits were present within this trench.

Trench 16

Figures 2, 12 Plate 17		
Location		
Orientation	East–West	
East: 650836.31, 303295.22		
West: 650807.17, 303288.07		
Dimensions		
Length	29.27m	
Width	1.80m	
Depth	0.55m	
Levels		
East top		8.74m OD
West top		8.93m OD

Context	Type	Description and Interpretation	Thickness
1	Deposit	Topsoil	0.39m
2	Deposit	Subsoil	0.16m
29	Cut	Tree-throw.	0.22m
30	Deposit	Mid brown sandy silt fill of tree-throw **29**.	0.22m
31	Cut	Natural feature	0.60m+
32	Deposit	Mid greyish brown sandy silt fill of natural feature **31**.	0.60m+
33	Cut	North-south aligned ditch. 0.98m wide.	0.26m
34	Deposit	Mid brown silty sand fill of ditch **33**.	0.26m

Discussion

This trench contained a single north to south aligned ditch **33**. The relationship between this ditch and the subsoil is unclear but was thought by the excavator to be sealed by the subsoil. If the ditch is sealed by the subsoil it is might be a continuation of ditches **9**/**11**, **5** and **56** seen in Trenches 1, 5 and 11 respectively. No dating evidence was recovered from this feature.

Also excavated within this trench was a tree-throw **29** and a pit like feature **31** with sterile fill, thought to be of natural origin.

Trench 16

Plate 17. Trench 16, Ditch 33, 1m scale looking north

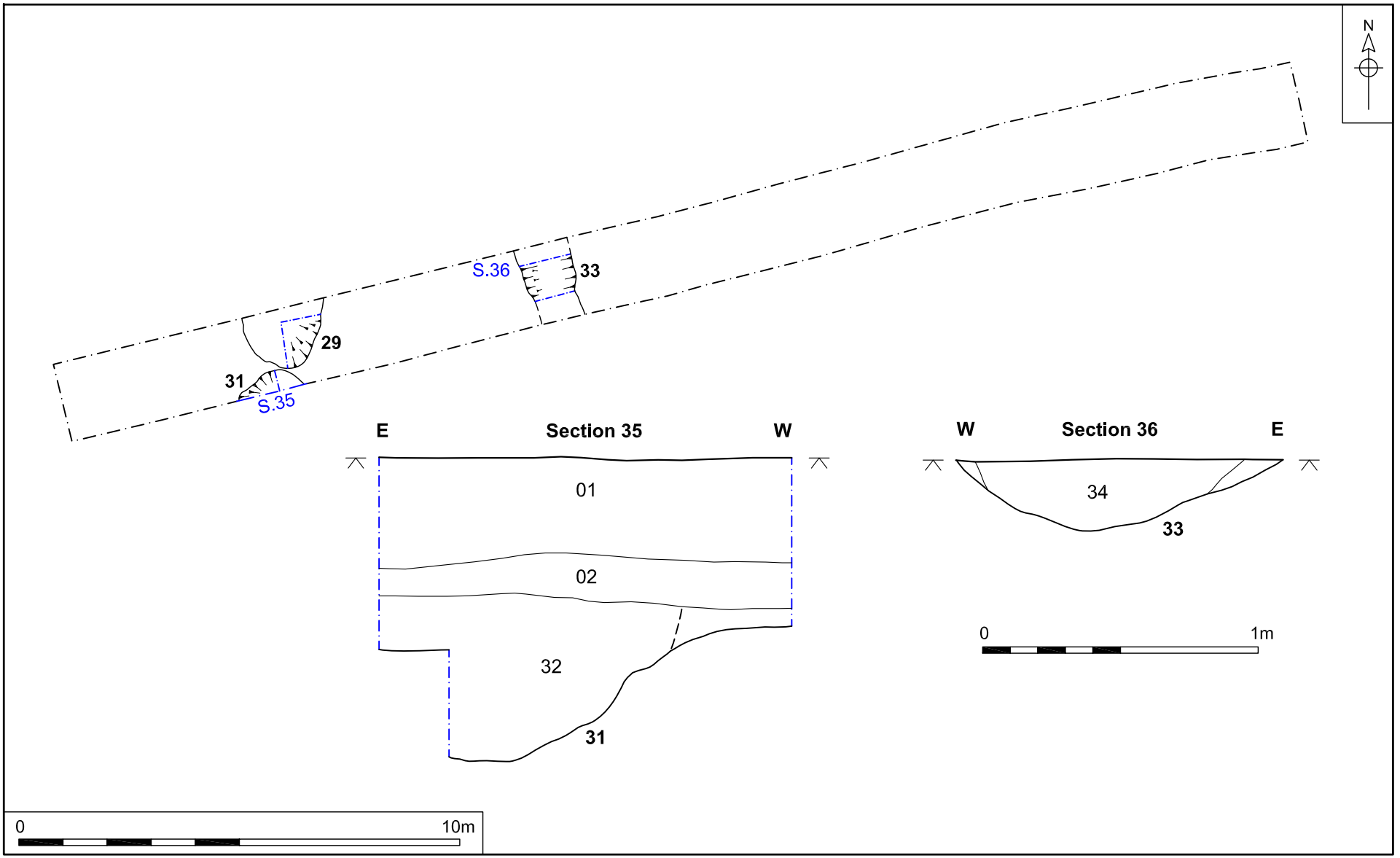

Figure 12. Trench 16, plan and sections. Scale 1:125 and 1:20

Trench 17

Figures 2, 13 Plates 18, 19, 20 and 21	
Location	
Orientation	East–West
East: 650815.84, 303267.98	
West: 650786.61, 303261.23	
Dimensions	
Length	29.20m
Width	1.80m
Depth	0.49m
Levels	
East top	9.23m OD
West top	8.99m OD

Context	Type	Description and Interpretation	Thickness
1	Deposit	Topsoil	0.33m
2	Deposit	Subsoil	0.16m
71	Cut	Pit or tree-throw. 2.20m wide.	0.60m+
72	Deposit	Mid greyish brown silty sand fill of probable tree root **73**.	0.20m
73	Cut	Ditch or tree root.	0.20m
74	Deposit	Dark yellowish brown silty sand becoming paler and greyer towards edges of feature. Occasional flint pebbles. Fill of pit or tree-throw **71**.	0.60m+
75	Cut	East-west aligned ditch segment. 0.44m wide.	0.33m
76	Deposit	Mid yellowish brown silty sand with occasional gravel and charcoal flecks. Fill of ditch **75**.	0.25
77	Deposit	Mottled pale yellow or yellowish brown slightly silty sand with occasional gravel. Primary fill of ditch **75**.	0.08m
78	Cut	North-east to south-west aligned ditch. 0.52m wide	0.35m
79	Deposit	Dark yellowish brown silty sand with occasional gravel and charcoal flecks. Fill of ditch **78**.	0.35m
80	Cut	East-west aligned ditch segment. 0.43m wide.	0.19m
81	Deposit	Mid yellowish brown silty sand with occasional gravel and charcoal flecks. Fill of ditch **80**	0.19m
82	Cut	East-west aligned ditch segment. 0.44m wide.	0.11m
83	Deposit	Mid yellowish brown silty sand with occasional gravel. Fill of ditch **82**.	0.11m

Discussion

Close to the centre of Trench 17 was a ditch running on a north-east to south-west alignment. Ditch 78 was seen to cut the subsoil and was in turn cut by east-west ditch segment **80**.

Trench 17

A slightly sinuous east to west aligned ditch was present along most of the length of Trench 17, disappearing beyond the north side of the trench approximately 4.5m from the west end of the trench. Three segments, **75**, **80** and **82** were excavated across this ditch, which deepened towards the west. A distinct V-shaped profile was noted, especially in western-most ditch segment **75**. This profile may suggest that it is a shallower continuation of ditch **35** recorded in Trench 18. This ditch was cut through north-east to south-west ditch **78** and therefore by association was also cut through the subsoil. A fragment of post-medieval roof tile was recovered from **76**.

Running some 0.30m to the north of this east-west ditch was evidence for a second ditch, also slightly sinuous in appearance. Only the very base of this ditch survived and where it did survive it had a depth of no more than a few centimetres.

Towards the western end of the trench was irregular oval pit **71**. The base and sides of this feature were irregular with obvious rooting in the sides suggesting that this was a tree-throw. A tiny fragment of post-medieval ceramic building material and a piece of probable roofing slate suggest that this tree was removed sometime in the 18th century, maybe related to the institution of the field boundaries visible on the 1st Edition OS mapping.

Linear feature **73** was initially thought to be a ditch but the irregularity of the edges and base of this feature suggest that this was a large root related to tree throw **71**.

Plate 18. Trench 17, Ditch 75, 1m scale looking east

Trench 17

Plate 19. Trench 17, Ditch 78, 1m scale looking north-east

Plate 20. Trench 17, Ditch 80, 1m scale looking west

Trench 17

Plate 21. Trench 17, Pit/tree-throw 71, 2m scale looking north-east

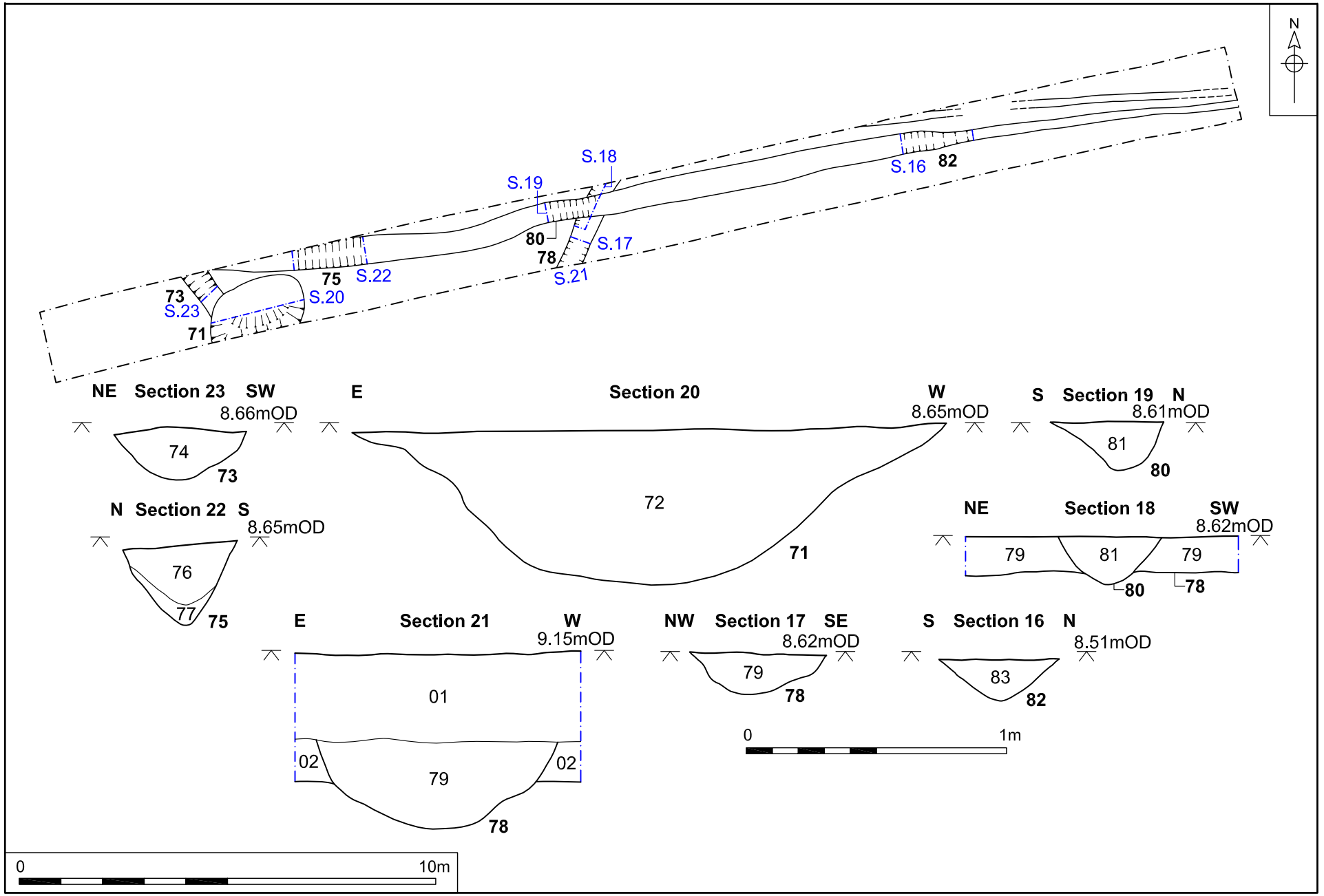

Figure 13. Trench 17, plan and sections. Scale 1:125 and 1:20

Trench 18

Figures 2, 14; Plates 22, 23 and 24

Location	
Orientation	North–South
North: 650764.14, 303287.55	
South: 650771.75, 303258.54	
Dimensions	
Length	28.90m
Width	1.80m
Depth	0.48m
Levels	
North top	9.10m OD
South top	9.30m OD

Context	Type	Description and Interpretation	Thickness
01	Deposit	Topsoil	0.36m
02	Deposit	Subsoil	0.17m
35	Cut	East-west aligned ditch with V-shaped profile. 0.96m wide.	0.69m
36	Deposit	Mid yellowish brown silty sand with occasional gravel and charcoal flecks. Fill of ditch **35**.	0.37m
37	Deposit	Pale yellow slightly silty sand with orange sand lenses and occasional gravel. Slumped natural sand in ditch **35**.	0.17m
38	Deposit	Pale brown silty sand with occasional gravel and yellow sand lenses. Primary slumping/silting in ditch **35**.	0.14m
39	Cut	East-west aligned ditch terminus. 1.40m wide.	0.73m
40	Deposit	Mid yellowish brown silty sand becoming darker towards base. Fill of ditch **39**.	0.67m
41	Cut	East-west aligned ditch with steep U-shaped profile. 0.47m wide.	0.43m
42	Deposit	Mid yellowish brown silty sand with occasional gravel and lenses of yellow sand. Fill of ditch **41**.	0.30m
90	Deposit	Pale brown slightly silty sand with frequent yellow sand lenses. Primary slumped natural sand and silting in ditch **39**.	0.06m
91	Deposit	Pale yellowish brown slightly silty sand with moderate mid yellowish brown silty sand lenses. Primary slumped natural sand and silting in ditch **41**.	0.13m

Discussion

Three east to west aligned ditches were present at the southern end of Trench 18.

Trench 18

Ditch **35** was located right at the southern end of the trench. The ditch had a distinctive V-shaped profile and was observed as being cut through the subsoil. The natural was a soft yellow sand and it is likely that the primary fill, **38**, had slumped in to infill the base of the ditch quite quickly after the ditch was cut. The V-shaped of the ditch profile and the broad east to west alignment is similar to that of ditch **75**/**80**/**82** in Trench 17 and therefore ditch **35** may represent the continuation of this ditch westwards.

Ditch **41** was located 2.50m north of ditch **35** and appeared to follow an identical east to west alignment. This ditch was also observed to cut the subsoil. At its east end ditch **41** had been cut by probable ditch terminus **39**, thought to represent a remodelling of an existing boundary. This recut was also seen to cut the subsoil. One or both of the features may represent a continuation of the unexcavated intermittent shallow linear feature seen in Trench 17.

No dating evidence was recovered from any of the features in this trench.

A linear north-east to south-west aligned cropmark recorded by the NMP as crossing the centre of the trench seemingly corresponds to a band of gravel in the natural, visible in the photograph of the trench above.

Plate 22. Trench 18, Ditch 35, 1m scale looking west

Trench 18

Plate 23. Trench 18, Ditch 39, 1m scale looking east

Plate 24. Trench 18, Ditch 41, 1m scale looking west

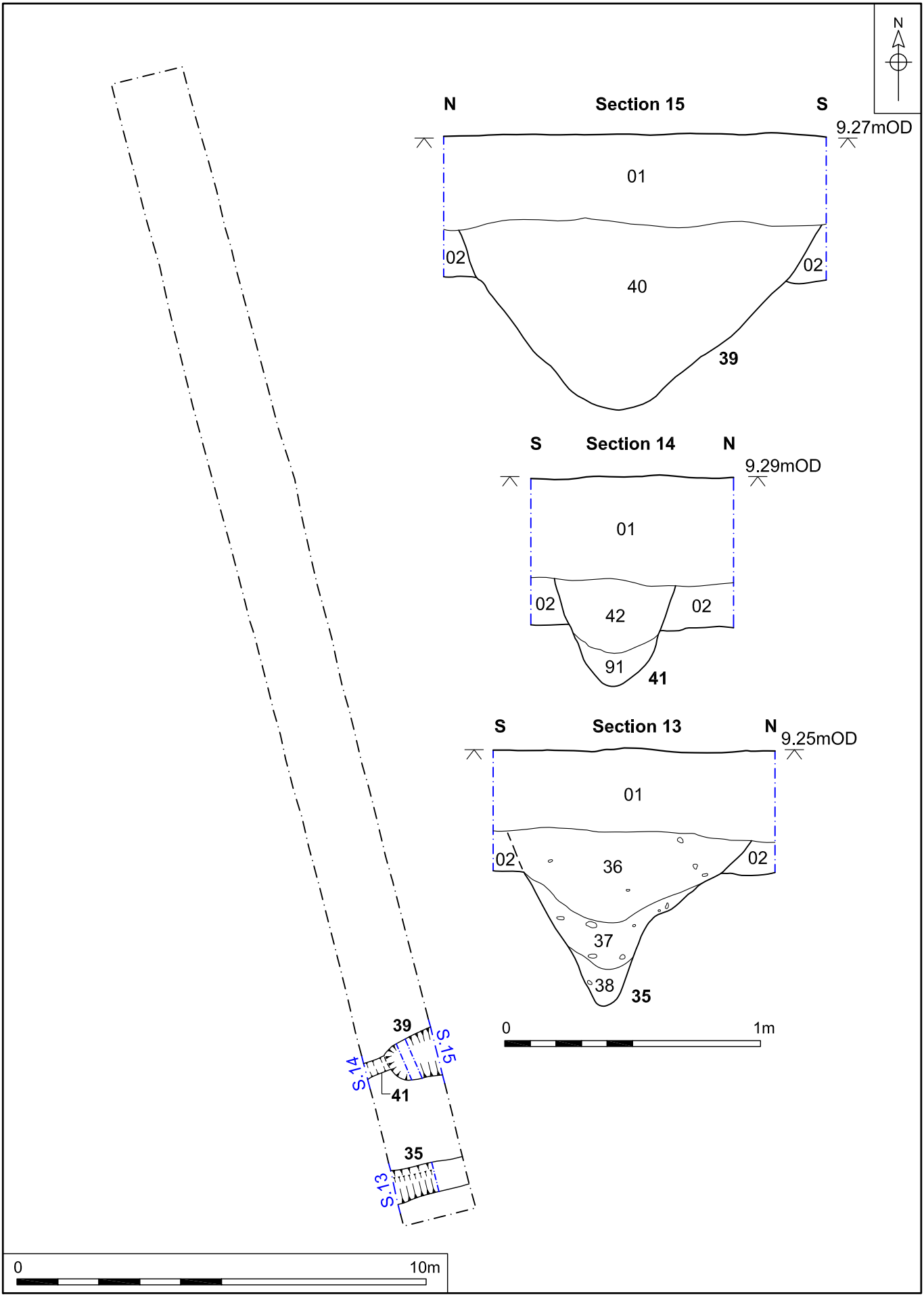

Figure 14. Trench 18, plan and sections. Scale 1:125 and 1:20

ARCHAEOLOGICAL FINDS

By Rebecca Sillwood

Pottery

40 Five fragments of post-medieval pottery were recovered from two contexts on the site. Two came from tree throw fill **17**, and three from ditch fill **95**.

41 The pieces from the tree throw are both earthenware types of pottery, and date to between the 16th and 18th centuries. The three pieces from the ditch are transfer printed wares, one piece with the letters 'MONY' remaining. It is unknown what the complete word or phrase would have been on this piece, but it is likely to be Victorian in date (19th century).

Ceramic Building Material

42 Three pieces of CBM weighing 40g in total, were recovered from three contexts on the site. The pieces are all post-medieval in date.

43 A fragment of sandy red brick was recovered from tree throw fill **30**; a piece of flat roof tile from ditch fill **76** and a tiny formless fragment from pit/tree-throw fill **74**.

Stone

44 Two pieces of worked stone were recovered from the site.

45 A probable fragment of roof slate was found in pit/tree-throw fill **74**. This material used in roofing tends to be post-medieval in date, possibly as late as the 19th century.

46 A probable prehistoric flint flake was also recovered. This piece, however, was unstratified from the spoil of Trench 2 (**98**).

Metal

47 Unstratified metalwork from this site took the form of three pieces of copper alloy and three of lead. These objects were recovered from the spoil of Trenches 2, 3 and 8.

48 The copper alloy consisted of two buttons; one is a flat four-hole example, probably of a later post-medieval date (**99**); the second is a flat circular disc, with corrosion to one side where the shank is likely missing (**98**). The disc is apparently plain.

49 A copper alloy farthing coin, dating to the reign of King Edward VII (1902-1910) was also found (**99**).

50 The lead consists of a musket ball of post-medieval date, a post-medieval bag seal, with illegible markings, and a possible pot mend, which could feasibly be of multiple periods.

ENVIRONMENTAL EVIDENCE

By Val Fryer, Environmental Archaeologist

Introduction and method statement

51 Evaluation excavations at Bradwell, undertaken by NPS Archaeology, recorded a limited number of features including three undated ditches. Samples for the evaluation of the content and preservation of the plant macrofossil assemblages were taken from the ditch fills, with samples being submitted from contexts **86** (Sample 1), **93** (Sample 2) and **6** (Sample 3) Table 2.

52 The samples were processed by manual water flotation/washover and the flots were collected in a 300 micron mesh sieve. The dried flots were scanned under a binocular microscope at magnifications up to x 16 and the plant macrofossils and other remains noted are listed below in Table 1. All plant remains were charred. Modern fibrous roots were also recorded.

53 The non-floating residues were collected in a 1mm mesh sieve and sorted when dry. All artefacts/ecofacts were retained for further specialist analysis.

Results

54 All three flots are extremely small (i.e. <0.1 litres in volume) and limited in composition. Charcoal/charred wood fragments are present at a low density, along with small pieces of charred root/stem, but the only other plant macrofossil is a single, poorly preserved, indeterminate cereal grain from sample 1. Other remains include black porous and tarry residues and small pieces of coal. As the features are undated, it is impossible to state whether these latter may be contemporary with the sampled contexts, or later contaminants. The assemblage from sample 3 also includes a small piece of very abraded bone and a possible fragment of pottery, but the latter is of very small size.

Conclusions and recommendations for further work

55 In summary, the assemblages from Meadowland Drive are largely inconclusive. As so few remains are recorded, it is tentatively suggested that the ditches may have been peripheral to any main focus of either agricultural or domestic activity, with the material which is noted probably being derived from a very low density of scattered refuse.

56 On the basis of these assemblages, it is difficult to make recommendations for further work, should additional archaeological intervention be anticipated. It is, therefore, suggested that if further excavation is planned, the excavator should take samples at their discretion, noting features with darker or charcoal rich fills, features associated with structures or particular areas of activity, or features which are intrinsically dated.

Sample No.	**1**	**2**	**3**
Context No.	**86**	**93**	**6**
Plant macrofossils			
Cereal indet. (grain)	x		
Charcoal <2mm	xx	xx	xx
Charcoal >2mm	x		x
Charcoal >5mm	x		x
Charred root/stem	x	x	
Other remains			
Black porous/tarry residues	x	x	x
Bone			x
?Pottery			x
Small coal frags.	xx	xxx	x
Sample volume (litres)	**12**	**12**	**10**
Volume of flot (litres)	**<0.1**	**<0.1**	**<0.1**
% flot sorted	**100%**	**100%**	**100%**

Key to Table:
x = 1 – 10 specimens
xx = 11 – 50 specimens
xxx = 51 – 100 specimens

Table 2 Plant Macrofossils

DISCUSSION

57 The archaeological evaluation by trial trenching undertaken by NPS Archaeology on Land South of Meadowland Drive and Caraway Drive, Bradwell recorded features of archaeological interest in eleven of the eighteen trenches. A further five trenches contained only what are considered natural features, with two trenches devoid of features of any sort.

58 The geology across the area was predominantly pale yellow sand with gravel bands of different densities running through it. In some instances these gravel bands, where visible on the surface of the excavated evaluation trenches, appear to correlate with cropmark locations recorded by the National Mapping Programme, which were one of the factors determining the location of some trial trenching. Of the recorded cropmarks, only one, a ditch at the northern end of Trench 13, was positively identified as being of archaeological origin. The geological origin of many of the cropmarks here may indicate that some of the dense palimpsest of cropmarks recorded in the wider area west of Bradwell may also be of geological rather than cultural origin, especially the shorter linear examples.

59 The earliest archaeological features recorded were a number of shallow ditches, all of which were sealed by the subsoil. These may represent parts of an early field system, possibly a ditch running north to south through Trenches 1, 5 and 11 before turning eastwards and crossing Trenches 14 and 12. No dating evidence was recovered from any of these features but, as the subsoil is thought to be medieval in origin, then these ditches are likely to be at the latest of Saxon date and possibly much earlier.

60 The subsoil was present in all of the trenches and although it produced no artefactual evidence it has been interpreted as being the product of medieval and early post-medieval agricultural practices.

61 A second group of ditches was recorded, all of which were clearly cut through the subsoil. None of these ditches relate to the later post-medieval and modern field boundaries and are not visible on the 1st Edition OS mapping. This suggests a post-medieval date predating the enclosures of the later 18th and early 19th century, backed up by the only piece of positive dating evidence recovered from any of the ditches, a fragment of post-medieval roof tile found in an east to west ditch segment in Trench 17. The absence of any finds from the features or the subsoil indicates that the site was not close to any settlement.

62 The only other ditch that produced any dating evidence was one right at the north end of Trench 13, which produced sherds of 19th century pottery. This ditch matched the position and line of the northern field boundary visible on the 1st Edition OS map and may have been an extant boundary until quite recently (maybe even until the housing estate to the immediate north was built).

63 The presence of an earlier agricultural soil may indicate that all but the most substantial features of pre-medieval date that may have been present on the site have been truncated away. Modern ploughing may have damaged or destroyed some of the post-medieval and later features that may have been present but those that are present suggest that the density and significance of features was not originally high in any case. Therefore it is reasonable to assume that the evidence recovered by the trial trenching is representative of the degree of

truncation and the survival of archaeological deposits across the development are as a whole.

64 Recommendations for further archaeological mitigation work (if required, based on the evidence presented in this report) will be made by Norfolk County Council Environment Service.

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Finds were processed and reported on by Rebecca Sillwood, with environmental analysis by Val Fryer.

The report was illustrated by David Dobson and edited by David Adams.

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NCCES 2018 *Brief for a programme of archaeological mitigatory work (to commence with informative trial trenching) at Land South of Meadowland Drive/Caraway Drive, Bradwell,, Norfolk (phases 1 and 2)*

Norfolk County Council 2015. *Map Explorer*. [online] Available at: http://historic-maps.norfolk.gov.uk/mapexplorer/. [Accessed 24 April 2018]

Ordnance Survey map editions, 1850–modern (NRO)

Appendix 1a: Context Summary

Context	Category	Cut Type	Fill Of	Description	Trench
1	Deposit			Topsoil	1-18
2	Deposit			Subsoil	1-18
3	Cut	Ditch		Ditch terminus	5
4	Deposit		3	Ditch fill	5
5	Cut	Gully		N-S gully	5
6	Deposit		5	Gully fill	5
7	Cut	Post-hole		Post-hole	5
8	Deposit		7	Post-hole fill	5
9	Cut	Gully		N-S gully	1
10	Deposit		9	Gully fill	1
11	Cut	Ditch		N-S ditch	1
12	Deposit		11	Ditch fill	1
13	Deposit		11	Ditch fill	1
14	Cut	Natural feature		Natural feature	2
15	Deposit		14	Natural feature fill	2
16	Cut	Tree throw		Tree throw	2
17	Deposit		16	Tree throw fill	2
18	Cut	Ditch		Ditch	4
19	Deposit		18	Ditch fill	4
20	Cut	Tree throw		Tree throw	4
21	Deposit		20	Tree throw fill	4
22	Deposit		18	Ditch fill	4
23	Deposit		24	Natural feature fill	7
24	Cut	Natural feature		Natural feature	7
25	Deposit		26	Natural feature fill	7
26	Cut	Natural feature		Natural feature	7
27	Cut	Ditch		Ditch or hedge line	3
28	Deposit		27	Ditch fill	3
29	Cut	Tree throw		Tree throw	16
30	Deposit		29	Tree throw fill	16
31	Cut	Natural feature		Natural feature	16
32	Deposit		31	Natural feature fill	16
33	Cut	Ditch		Ditch	16
34	Deposit		33	Ditch fill	16
35	Cut	Ditch		Ditch	18
36	Deposit		35	Ditch fill	18
37	Deposit		35	Ditch fill	18
38	Deposit		35	Ditch fill	18
39	Cut	Ditch		Ditch	18
40	Deposit		39	Ditch fill	18
41	Cut	Ditch		Ditch	18

Context	Category	Cut Type	Fill Of	Description	Trench
42	Deposit		41	Ditch fill	18
43	Cut	Natural feature		Natural feature	8
44	Deposit		43	Natural feature fill	8
45	Cut	Tree throw		Tree throw	8
46	Deposit		45	Tree throw fill	8
47	Deposit		48	Natural feature fill	6
48	Cut	Natural feature		Natural feature	6
49	Deposit		50	Natural feature fill	6
50	Cut	Natural feature		Natural feature	6
51	Deposit		52	Natural feature fill	6
52	Cut	Natural feature		Natural feature	6
53	Deposit		54	Natural feature fill	11
54	Cut	Natural feature		Natural feature	11
55	Deposit		56	Ditch fill	11
56	Cut	Ditch		Ditch	11
57	Deposit		58	Ditch fill	11
58	Cut	Ditch		Ditch	11
59	Deposit		43	Natural feature fill	11
60	Deposit		43	Natural feature fill	11
61	Deposit		45	Tree throw fill	11
62	Deposit		45	Tree throw fill	11
63	Cut	Natural feature		Natural feature	14
64	Deposit		63	Natural feature fill	14
65	Cut	Ditch		Ditch	14
66	Deposit		65	Ditch fill	14
67	Cut	Natural feature		Natural feature	14
68	Deposit		67	Natural feature fill	14
69	Cut	Gully		Gully	12
70	Deposit		69	Gully fill	12
71	Cut	Pit		Pit/Tree throw	17
72	Deposit		73	Ditch fill	17
73	Cut	Ditch		Ditch	17
74	Deposit		71	Pit fill	17
75	Cut	Ditch		Ditch	17
76	Deposit		75	Ditch fill	17
77	Deposit		75	Ditch fill	17
78	Cut	Ditch		Ditch	17
79	Deposit		78	Ditch fill	17
80	Cut	Ditch		Ditch	17
81	Deposit		80	Ditch fill	17
82	Cut	Ditch		Ditch	17
83	Deposit		82	Ditch fill	17

Context	Category	Cut Type	Fill Of	Description	Trench
84	Deposit		85	Ditch	10
85	Cut	Ditch		Ditch fill	10
86	Deposit		87	Natural feature fill	10
87	Cut	Natural feature		Natural feature	10
88	Deposit		89	Tree throw fill	10
89	Cut	Tree throw		Tree throw	10
90	Deposit		39	Ditch fill	18
91	Deposit		41	Ditch fill	18
92	Cut	Ditch		Ditch	13
93	Deposit		92	Ditch fill	13
94	Cut	Ditch		Ditch	13
95	Deposit	Ditch	94	Ditch fill	13
96	Deposit		67	Tree throw fill	14
97	Deposit	Gully		Metal detected finds from topsoil T8	8
98	Deposit			Metal detected finds from topsoil T2	2
99	Deposit	Post-hole		Metal detected finds from topsoil T3	3

Appendix 1b: Feature Summary

Period	Category	Total
Post-Medieval	Ditch	8
Post-medieval	Pit	1
Undated	Ditch	12
Undated	Posthole	1

Appendix 2a: Finds by Context

Context	Material	Qty	Wt	Period	Notes
17	Pottery	2	27g	Post-medieval	
30	Ceramic building material	1	16g	Post-medieval	
74	Ceramic building material	1	1g	Post-medieval	
74	Stone	1	4g	Post-medieval	Roof slate
76	Ceramic building material	1	23g	Post-medieval	
95	Pottery	3	3g	Post-medieval	
97	Lead	1	5g	Post-medieval	Bag seal
98	Copper alloy	1	3g	Post-medieval	Button
98	Lead	1	27g	Post-medieval	Musket ball
98	Lead	1	18g	Unknown	?Pot mend
98	Worked flint	1	5g	Prehistoric	
99	Copper alloy	1	1g	Post-medieval	Button
99	Copper alloy	1	4g	Modern	Coin; Edward VII farthing; 1902-1910

Appendix 2b: Finds Summary

Period	Material	Total
Prehistoric	Worked flint	1
Post-medieval	Ceramic building material	3
	Copper alloy	2
	Lead	2
	Pottery	5
	Stone	1
Modern	Copper alloy	1
Unknown	Lead	1

Appendix 3: Historical Periods

Period	Date From	Date To
Prehistoric	-500,000	42
Early Prehistoric	-500,000	-4,001
Palaeolithic	-500,000	-10,001
Lower Palaeolithic	-500,000	-150,001
Middle Palaeolithic	-150,001	-40,001
Upper Palaeolithic	-40,000	-10,001
Mesolithic	-10,000	-4,001
Early Mesolithic	-10,000	-7,001
Late Mesolithic	-7,000	-4,001
Late Prehistoric	-4,000	42
Neolithic	-4,000	-2,351
Early Neolithic	-4,000	-3,001
Middle Neolithic	-3,500	-2,701
Late Neolithic	-3,000	-2,351
Bronze Age	-2,350	-701
Early Bronze Age	-2,350	-1,501
Beaker	-2,300	-1,700
Middle Bronze Age	-1,600	-1,001
Late Bronze Age	-1,000	-701
Iron Age	-800	42
Early Iron Age	-800	-401
Middle Iron Age	-400	-101
Late Iron Age	-100	42
Roman	42	409
Post Roman	410	1900
Saxon	410	1065
Early Saxon	410	650
Middle Saxon	651	850
Late Saxon	851	1065
Medieval	1066	1539
Post-medieval	1540	1900
Modern	1900	2050
World War One	1914	1918
World War Two	1939	1945
Cold War	1945	1992
Unknown	--	--

after English Heritage Periods List, recommended by Forum on Information Standards in Heritage available at: http://www.fish-forum.info/inscript.htm

Appendix 4: OASIS Report Summary

OASIS DATA COLLECTION FORM: England

OASIS ID: norfolka1-311793

Project details

Project name	Land Off Meadowland Drive Bradwell Norfolk
Short description of the project	NPS Archaeology carried out informative archaeological trial trenching in advance of proposed residential development at Land South of Meadowland Drive and Caraway Drive, Bradwell, Norfolk. Trial trenching comprised 18nos. trenches, each 30.00m x 1.80m, with some trenches targeting cropmarks recorded by the Norfolk Mapping Programme. Archaeological features were present in eleven of the eighteen trenches. A further five trenches contained only natural features, with two trenches devoid of features of any sort. The earliest archaeological features were a small number of shallow ditches, all sealed by subsoil. Heavily truncated, these may represent elements of an early field system, possibly a ditch running north to south through Trenches 1, 5 and 11 before turning east to cross Trenches 14 and 12. No dating evidence was recovered from these features, but as the subsoil is thought medieval in origin, these ditches may tentatively be suggested of Saxon date at the latest. A second group of ditches all cut subsoil. None appears to align with nearby later post-medieval and modern field boundaries, or are visible on the 1st Edition OS mapping; inferring a post-medieval date perhaps predating enclosure in the later 18th and early 19th century. The paucity of finds of any date from the site suggests the site was some distance from any settlement. One finding of the trial trenching was that variations in the underlying geology may have been mapped as cropmarks
Project dates	Start: 19-03-2018 End: 29-03-2018
Previous/future work	Not known / Not known
Any associated project reference codes	ENF143422 - HER event no.
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 2 - Operations to a depth less than 0.25m
Monument type	DITCH Uncertain
Monument type	DITCH Post Medieval

Monument type	POST-HOLE Uncertain
Monument type	NATURAL FEATURE Uncertain
Monument type	PIT Uncertain
Significant Finds	POTTERY Post Medieval
Significant Finds	CERAMIC BUILDING MATERIAL Post Medieval
Significant Finds	STONE Post Medieval
Significant Finds	WORKED STONE Late Prehistoric
Significant Finds	BUTTON Post Medieval
Significant Finds	COIN Modern
Significant Finds	MUSKET BALL Post Medieval
Significant Finds	POT MEND Post Medieval
Significant Finds	BAG Post Medieval
Methods & techniques	"'Targeted Trenches"'
Development type	Rural residential
Prompt	Planning condition
Position in the planning process	After full determination (eg. As a condition)

Project location

Country	England
Site location	NORFOLK GREAT YARMOUTH BRADWELL Land Off Meadowland Drive Bradwell
Study area	1.95 Hectares
Site coordinates	TG 5091 0322 52.568235802995 1.702994833347 52 34 05 N 001 42 10 E Point
Height OD / Depth	Min: 7.81m Max: 10.49m

Project creators

Name of Organisation	NPS Archaeology
Project brief originator	Norfolk Historic Environment Service
Project design originator	NPS Archaeology
Project director/manager	David Adams

Project supervisor	David Adams
Type of sponsor/funding body	Developer
Name of sponsor/funding body	D.M.King Ltd

Project archives

Physical Archive recipient	Norfolk Museums Service
Physical Contents	"Ceramics","Metal","Worked stone/lithics","other"
Digital Archive recipient	Norfolk Museums Service
Digital Contents	"Ceramics","Metal","Worked stone/lithics","other"
Digital Media available	"Images raster / digital photography","Spreadsheets"
Paper Archive recipient	Norfolk Museums Service
Paper Contents	"none"
Paper Media available	"Context sheet","Drawing","Photograph","Unpublished Text"

Entered by	David Adams (david.adams@nps.co.uk)
Entered on	1 May 2018

OASIS:

Please e-mail Historic England for OASIS help and advice

Appendix 5: Archaeological Specification

nps archaeology

Land south of Meadowland Drive and Caraway Drive, Bradwell, Norfolk

Evaluation by Informative Trial Trenching

Written Scheme of Investigation Phases 1 and 2
Programme of Archaeological Mitigatory Work

Prepared for: D M King Ltd

Planning Ref: 06/13/0703/O
06/17/0790/D
NCCES Ref: CNF45500

March 2018

nps archaeology

QUALITY ASSURANCE		
Location	Land south of Meadowland Drive and Caraway Drive, Bradwell, Norfolk	
Planning Reference	06/13/0703/O and 06/17/0790/D	
NCCES Reference	CNF45500	
Grid Reference	TG 5091 0322	
Oasis Ref.	Norfolka-1 311793	
HER	ENF143422	
Client	D M King Ltd	
Draft	David Adams	19-03-2018
Issue 1		
Issue 2		
Issue 3		

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Contents

Land south of Meadowland Drive and Caraway Drive Bradwell, Norfolk
Archaeological Evaluation

Written Scheme of Investigation

Introduction

1 NPS Archaeology has been commissioned by D M King Ltd ('the client') to provide a Written Scheme of Investigation (WSI) for the archaeological investigation of proposed development at Land South of Meadowland Drive Bradwell, Norfolk ('the site'). The site is centred at National Grid Reference TG 509 032.

2 The proposed development is for residential housing of c. 130 units along with road access, parking and open spaces.

3 Construction works such as foundation trenching, service trenches and ground reduction associated with the proposed development may have a detrimental impact on any archaeological remains present. In light of this, Norfolk County Council Heritage and Environment Service (NCCES) has issued a *Brief for Archaeological Evaluation* (ref. CNF45500) which sets out minimum standard requirements for archaeological work at the site in advance of construction. This WSI should be read in conjunction with the NCCES Brief, included as an appendix at the end of this document.

4 Planning permission has been granted subject to a programme of Archaeological Mitigatory Work in line with paragraph 128 of National Planning Policy Framework (condition 18 of planning permission 06/13/0703/O

5 This WSI details a programme of archaeological mitigatory works to assess the potential archaeological resource of the site and the likely impacts of development on that resource. Any such mitigation works would be the subject of a future project design. All works will be carried out in accordance with the relevant CIFA standards and guidance (CIFA 2014).

Historic Background

6 The brief states that the proposed development site 'lies in an area where aerial photographic analysis has revealed a complex pattern of archaeological features evidenced as cropmarks' (NCCES brief 15-03-2018). These cropmarks appear to identify a possible double-ditch trackway along with other linear features of unknown date. In addition, struck flint of prehistoric date has been recovered from the site during fieldwalking, with a concentration of such flint present immediately east of the proposed development area.

7 Coins of medieval date have also been recorded from the proposed development area, so that it is possible archaeological remains of prehistoric date and field boundaries of medieval or earlier date might be present at the site.

8 On the basis of the available evidence, NCCES has recommended an evaluation by trial trenching targeted on the development area.

9 Evaluation of the development area will seek to identify any concentrations of historical artefacts, the character and depth of any archaeological deposits

present, and the impacts of any later land uses. It will provide an indication whether remains are likely to be impacted on by groundworks associated with new construction.

10 The recommendation that a programme of archaeological evaluation be carried out in advance of any new development is made in accordance with the principles set out in *National Planning Policy Framework* (Department for Communities and Local Government 2012), to record and advance understanding of any heritage assets that might be present before they are damaged or destroyed.

11 The NCCES brief proposes that a linear trenched evaluation is required of 5% of the development area to enable the archaeological resource, both in quality and extent, to be accurately quantified. Some trenching will be targeted on possible archaeological features recorded by the Norfolk Mapping Program (NMP).

12 In order to fulfil the requirements of the NCCES brief, the client has requested NPS Archaeology prepare this WSI to detail an appropriate programme of archaeological works to fulfil the brief. Proposed locations of evaluation trenches are provided as Figure 1. The location of evaluation trenches is based upon available space (avoiding known obstructions), position of known below ground services, and available information on the historic environment.

Informative Trial Trenching

Aims

13 The overall aims of the archaeological work, based on the requirements of the NCCES brief are summarised as:

- Gain information about the heritage assets within the proposed development areas;
- Provide detailed information regarding the date, character, extent, integrity and degree of preservation of the identified heritage assets;
- Inform a strategy for the recording, preservation and/or management of the identified assets;
- Mitigate potential threats;
- Inform proposals for further archaeological investigations (namely, targeted area excavations) within the ongoing programme of research;
- Define the sequence and character of activity at the site, as reflected by the excavated remains;
- Interpret the archaeology of the site within its local, regional, and national, archaeological context.

14 The evaluation should consider the general investigative themes outlined by: Medlycott, M. 2011 (ed.) *Research and Archaeology Revisited: a Revised Framework for the East of England*, East Anglian Archaeology Occasional Paper 24; *Research and Archaeology: A Framework for the Eastern Counties* (Glazebrook 1997; Brown & Glazebrook 2000); *Revised Research Strategies 2010-2015* (Historic England 2015).

15 Supplementary and alternative research themes may be proposed within the submitted specification, or defined by agreement in consideration of on-going evaluation results.

Method Statement

16 The programme of archaeological works presented in this document has been designed to meet the requirements of the archaeological *Brief* to evaluate the potential archaeological resource of the site and to assess the impacts of construction that will be necessary for any new development.

17 In advance of the evaluation, the archaeological contractor will commission an HER search including NMP data and obtain a unique event number from the Norfolk County Council Historic Environment Record (NCCHER). The event number will be clearly marked on all documentation relating to the work. An online OASIS data record norfolka-311793 has been initiated prior to the start of fieldwork.

18 A three-stage evaluation strategy will be undertaken to assess the archaeological potential of the proposed development site. The stages of this strategy may be summarised as follows.

- *Trial Trenching*. Manual excavation will be employed to investigate the presence, condition, character and date of any subsurface archaeological deposits and features occurring within the site. Any archaeological features identified will be cleaned and sample excavated to determine function, form and relative date. Prior to any fieldwork commencing a Risk Assessment and Method Statement document will be produced.
- *Post-fieldwork Processes*. The drawn and written stratigraphic/structural record will be cross-referenced and analysed to provide a synthesis of the results of the work. The cleaning and cataloguing of any artefactual and ecofactual materials recovered will be carried out throughout the duration of the fieldwork. The finds will be cleaned, marked and packaged in accordance with the archive requirements of NCCES.
- *Report and Archive.* The report will describe the results of the trial trenching with data presented in tabular, graphic and appendix form. The report will also incorporate and present the findings of the metal detecting survey. Copies of the reports will be submitted to the client and to NCCES.

19 The procedures and methodology for each of the stages outlined above are described in further detail below.

Trial Trenching

20 Evaluation trenching will be concerned with establishing the condition, character and date of any subsurface archaeological features and deposits present. The NCCES *Brief* was consulted to provide a basis for the methods described in this WSI. Guidelines set out in the documents *Standard and guidance for archaeological field evaluation* (Chartered Institute for Archaeologists 2014) and *Standards for Field Archaeology in the East of England* (Gurney 2003) will be followed.

21 The NCCES brief proposes that a linear trenched evaluation is required of 5% of the development area to enable the archaeological resource, both in quality and extent, to be accurately quantified.

22 To comply with this, the length of linear trenching to examine the development area is proposed as follows:

- Phase 1 and 2, combined areas 1.948Hect. Archaeological evaluation trenches corresponding to 18 Nos. 30.00m x 1.80m will be arrayed to examine the areas. As required by the brief, trenches will be targeted to test possible archaeological feature revealed by NMP data, modified to avoid site obstructions (Fig 1)

23 The extent of trenches across the site is intended to represent an approximate 5% sample by area.

24 The trenches will be set out by the archaeology contractor and CAT-scanned prior to excavation. The final trench locations may be amended on the basis of surface or below ground obstructions and any Health and Safety considerations identified at the time of the work, following consultation with NCCES. Other considerations such as public access may also be a factor.

25 Initial excavation will be by mechanical excavator fitted with a 1.80m-wide toothless bucket in 100mm spits under the control of an experienced archaeologist. Topsoil and subsoil will be deposited separately on the trench sides, with a minimum 1m clear space between the spoil and trench edge.

26 Mechanical excavation will be undertaken to the top of any undisturbed archaeological deposits, or the surface of the underlying geological deposits, whichever is the highest. If neither is identified it may be necessary to excavate to a maximum depth of 1.20m below the present ground surface in line with Health and Safety guidance for trenches with unsupported sides. If further depth of excavation is required, the trench sides may need to be locally stepped. The requirement for and the scope of works below 1.20m will be determined in consultation with the client and NCCES.

27 The trial trenches will characterise the full archaeological sequence down to undisturbed geological deposits. Where full depths of deep features cannot be safely or practically excavated, their full depths will be established if possible by hand-auger

28 Areas of deep excavation will be fenced using Netlon high-visibility fencing and appropriate warning signs will be displayed where these measures are appropriate. It is understood that the site perimeter will be secured by the client as appropriate.

29 Spoil from the trenches will not be removed from site. The trenches will not be backfilled until agreement to do so is given by NCCES. Consolidation or compaction over and above that possible with a mechanical excavator will not be attempted. Full surface reinstatement will not be carried out, but all trenches will be left in safe condition.

30 Thorough metal detector sweeps of exposed features and excavation spoil will be carried out in advance of, and during, hand excavation. Deeply buried signals will be investigated only if agreed as part of the hand excavation programme.

31 If additional trial trenching is requested by NCCES to better establish the extent, form or date of particular archaeological remains, this request will be provided in writing by NCCES, with any additional costs incurred and changes to programme resulting from this agreed in advance with the client.

Recording

32 A numbered single context-based recording system, written on suitable forms and indexed appropriately, will be used for all elements of the archaeological recording programme

33 Measured plans will be produced that show all exposed features (including natural features, modern features, etc.) and excavated areas. Individual measured plans and sections will be produced for all excavated features and deposits. These will be accurately tied in to trench plans/trench location plans, and accurately related to the Ordnance Survey grid.

34 All sections and plans will be related accurately to Ordnance Datum.

35 Archaeological deposits, features and layers will be assigned individual context numbers and recorded on standardised forms. The records will include full written, graphic and photographic elements with site and context numbering compatible with NCCES. Plans will be made at a scale of 1:50, with provision for 1:20 and 1:10 drawings. Sections will be recorded at scales of 1:10 and 1:20 depending on the detail considered necessary. A photographic record in 35mm monochrome film and digital formats will be maintained of all archaeological deposits, layers and features to record their characteristics and relationships.

36 Photographs will be taken to record the progress of the evaluation. Digital photographs may be used in the final report (maximum of two photographs per A4 sheet), in accordance with Historic England's Digital Image Capture and File Storage: Guidelines for Best Practice (2015).

Hand Excavation

37 The evaluation will provide a representative sample of the site's archaeology at no significant cost to the value or integrity of archaeological remains therein. Judgement regarding the removal of human remains, structural remains (in situ wood or masonry), or other special remains or deposits, will be led by this consideration, and will be made in consultation with NCCES and relevant specialist.

38 If exceptional remains are encountered unexpectedly, NCCES will be notified. A new brief may be issued to be read in conjunction with the present one.

39 In general, the feature/deposit sampling strategy will be employed throughout the evaluation in accordance with *Standards for Field Archaeology in the East of England* (Gurney 2003).

40 All anthropogenic features will be investigated. Apparently natural features (such as tree throws) will be sampled sufficiently to establish their origin and to characterise any related human activity. Hand excavation and feature sampling will be sufficient to establish date and character, and to allow appropriate levels of recording.

41 Deposits and layers (including buried soils) will be sampled sufficiently to enable a confident interpretation of their character, date and relationships with other features. Thereafter, mechanical removal and visual scanning for artefacts may be discussed with NCCES.

42 At least 10% (or a percentage sufficient to achieve information on the character, function and dating) of linear and/or very large and deep features not associated with structural remains will be hand excavated. Investigation slots

through all linear features will be at least 1m in width. Particular attention will be given to terminals and intersections to ascertain stratigraphic and physical relationships.

43 Discrete anthropogenic features, such as pits and post-holes (excavated in half sections or in quadrants where large) will normally be subject to a minimum of 50% excavation.

44 Structural remains or layers associated to domestic or industrial activity (stake holes, post holes and gullies, as well as floors, etc.) will be excavated fully (100%). Masonry foundations or low masonry walls will be sufficiently excavated to characterise and date, but not 100% excavated in order to preserve their integrity.

45 Discrete features relating to industrial activity (e.g. kilns, ovens, hearths, etc.) will be excavated fully (100%).

46 A minimum of 10% of the area of midden deposits and artefact scatters (e.g. flint, metal-working debris will be excavated to establish extent, integrity and date if possible.

47 All artefacts and ecofacts will be collected and, where possible, related to the context from which they derived. All artefacts will be retrieved unless volume and quantity of particular classes of items justify an on-site sampling policy. In all such eventualities relevant specialists (see *Project Staff*) and NCCES will be consulted to agree a strategy. All retained materials will be stored in stable conditions until arrangements for their processing and analysis are made.

48 Any finds of gold or silver will be removed to safe storage and reported to the local Portable Antiquities Scheme Finds Liaison Officer, as soon as is reasonably practical, who will in turn inform the District Coroner's office according to the procedures set out in the 1996 *Treasure Act* (and amendments). Where removal cannot be effected on the same working day as discovery, suitable security measures will be taken to protect the finds from theft. The archaeological contractor will inform NCCES of such discoveries immediately.

49 If human remains (inhumations and cremations) are identified by the archaeological works these will be lifted. If multiple burials are present, a sample whole burial or burials will be lifted to asses preservation and potential for scientific dating. Backfilling of open trenches or features containing human remains that are not to be removed will be carried out manually to ensure that the remains are appropriately protected from any damage or disturbance. If human remains or burials are identified, which because of their location, vulnerability or other reasons must be removed, an application for a Licence for the Removal of Human Remains will be made in compliance with Section 25 of the Burial Act 1857, if appropriate. Treatment of human remains will be in line with *Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England* (English Heritage/The Church of England 2015). Human remains will be screened from public view during the course of the excavation. No human remains will be removed from the site until permission has been granted in writing from all relevant parties.

50 Should preservation in situ strategy be applicable, following appropriate excavation and recording, all exposed surfaces will be cleaned and prepared for re-burial beneath construction materials. If necessary, the laying out of

geotextile and buffering materials will be carried out under archaeological supervision.

Palaeo-Environmental Sampling

51 Viable baulk samples to characterise soil profiles, as well as plant remains/charred plant remains, molluscs, small faunal remains, and pollen sequences, will be taken from a representative selection of suitable deposits in accordance with the evaluation aims. As applicable, attention should be paid to the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features, and to soil pollen analysis, and to the retrieval of plant macrofossils, insect, molluscs and pollen from waterlogged deposits.

52 The samples will be extracted and recorded in consultation with an appointed specialist and with the Historic England Regional Science Advisor, and in accordance with Historic England, 2011, Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition).

Post-Fieldwork Processes

53 The drawn and written stratigraphic/structural record will be cross-referenced and analysed to provide a synthesis of the results of the work.

54 The cleaning and cataloguing of any artefacts recovered will be undertaken on completion of the evaluation trenching. All retained materials will be cleaned, marked and packaged in accordance with the requirements of NCCES.

55 Post-fieldwork analyses will start upon completion of the finds processing and will involve the identification and description of the artefacts materials recovered by the relevant specialists. In general, the following strategies will be employed in the analysis of the artefactual materials recovered:

- *Pottery*. Analysed to determine date and tabulated by context unit.
- *Worked flint*. Sorted and tabulated by context unit.
- *Metal artefacts*. Assessed for dating and significance, catalogued by context unit and where necessary conserved within four weeks of completion of fieldwork, in accordance with *UK Institute of Conservators Guidelines*.
- *Faunal Remains*. Sorted and tabulated by context unit. Assessed for the potential for further analysis and for sieving for the recovery of smaller bird and fish bones.
- *Environmental Samples*. Processed and assessed for content and significance.
- Other categories of artefactual materials will be analysed in a similar fashion.

56 The drawn and written stratigraphic/structural record will be cross-referenced and analysed to provide a synthesis of the results of the work.

57 The cleaning and cataloguing of any artefacts recovered will be undertaken on completion of the evaluation trenching. All retained materials will be cleaned, marked and packaged in accordance with the requirements of NCCES.

58 Post-fieldwork analyses will start upon completion of the finds processing and will involve the identification and description of the artefacts materials recovered by the relevant specialists. In general, the following strategies will be employed in the analysis of the artefactual materials recovered:

Report and Archive

59 An evaluation report will be prepared that presents the stratigraphic, structural, artefact and environmental evidence and analyses, and a synthesis of the

results of the trial trenching. The synthesis will be undertaken in reference to relevant research agendas identified by Medlycott (2011) and what is already know about the archaeology of the immediate area.

60 The report will present data in tabular, graphic and appendix form. A list of archive components generated by the work will also be included in the report. Unless otherwise agreed in writing, NPS Archaeology will retain copyright in and ownership of all documentation and other materials prepared by the archaeological contractor. NPS Archaeology may publish or jointly publish any description or illustration of the works with the prior consent of the client.

61 A draft copy of the report (marked DRAFT) will be presented in digital format to the client and to NCCES for approval within 8 weeks of the completion of the evaluation. An advance (interim) report for the purpose of expediting planning applications may be supplied upon request by the client and by agreement with NCCES. Multiple copies of the approved report will be produced as appropriate and presented to the client, with 1 hard copy and 1 digital copy submitted to NCCES. Distribution and dissemination are NOT undertaken by NCCES. One copy of the report may be sent to the Historic England Science Advisor for the East of England, if considered appropriate.

62 The online OASIS record initiated prior to the start of the evaluation will be completed when the final report on the works is approved by NCCES. This will include submission of a pdf version of the final report to the Archaeology Data Service via the OASIS form.

63 A single integrated archive for all elements of the work will be prepared according to the recommendations set out in *Environmental standards for the permanent storage of excavated material from archaeological sites* (UKIC *Conservation Guidelines* 3, 1984) and *Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (Brown 2007), and in accordance with NCCES requirements for archive preparation, storage and conservation.

64 The archive will be fully indexed and cross-referenced for retention at Norfolk Museum Service facilities. Deposition of the archive and finds (by prior agreement with the landowner) will take place after completion of the final report and confirmed in writing to NCCES. In this case, the archive will be prepared for long term storage to the requirements of Norfolk Museum Service. A full list of archive contents and finds boxes will accompany the deposition of the archive and finds.

Timetable and Resources

65 The timetable for fieldwork assumes that there are no major delays to the work programme caused by factors outside of NPS Archaeology's reasonable control. Such circumstances include without limitation: long periods of adverse weather conditions, flooding, repeated vandalism, ground contamination, delays in the development programme, unsafe buildings, conflicts between the archaeological recording methods and the protection of flora and fauna on the site, disease restrictions, and unexploded ordnance.

66 The proposed earliest start date for the archaeological work is two working weeks upon notification from the client. The timetable for the evaluation is dependent upon the needs and progress of the construction scheme. Currently, it is anticipated that archaeological works will commence in March 2018 and NCCES will be advised as far in advance of commencement as possible.

67 It is estimated that the fieldwork will take c. 2.5 working weeks and that the job will be staffed by two archaeologists, dependent on and appropriate to the archaeological remains present.

68 The financial resources for this work are subject to separate agreement with the client and are not reproduced here.

Project Staff

69 A Project Manager will assume overall responsibility for the delivery of the project. The project will be co-ordinated on a day-to-day basis by a Project Officer who will be dedicated to the project throughout its duration. The Project Officer will act under the direction of the Project Manager in respect of logistics, standards, health and safety, and liaison with the client and curators. The Project Officer will have substantial experience in archaeological excavation and post-excavation analysis.

70 NPS Archaeology staff associated with the project will be:

Project Management	
Project Manager	David Adams, *MCIfA*
Senior Project Officer	David Whitmore *BA MCIFA*

Specialists used by NPS Archaeology

Specialist	***Research Field***
Andy Barnett	Metal-detectorist, Numismatic Items
Sarah Bates/ Barry Bishop	Struck Flint
Frances Green	Palaeo-environmental Analysis
Julie Curl	Faunal Remains
Sue Anderson	Post-Roman Pottery, Ceramic Building Material
Debbie Forkes	Conservation
Val Fryer	Macrofossil analysis
Andrew Peachey	Prehistoric and Roman Pottery

71 NPS Archaeology reserves the right to change its nominated personnel at any time should project programmes change.

Requirements and Implementation of Further Phases Mitigatory Work

72 Informative trial trenching (ENF143422). was required to establish the scope and extent of any further mitigatory work e.g an archaeological excavation, or monitoring of groundworks during construction. Based on the results of the trial trenching, the following mitigatory works may be required.

73 Following discussion with NCCES, separate project designs will be provided by the archaeological contractor for each part of the following mitigatory works: monitoring, excavation, post-excavation assessment publication and archive as necessary with these project designs provided as appendices to this WSI.

PART 1: Informative Trial Trenching

74 Phase 1 and 2 have a combined area of 1.948Hect. Archaeological evaluation trenches corresponding to 18 Nos. 30.00m x 1.80m will be arrayed to examine the areas. As required by the brief, trenches will be targeted to test possible archaeological feature revealed by NMP data, modified to avoid site obstructions (Fig 1

PART 2: Works under Archaeological Supervision and Control (Monitoring)

75 Archaeological monitoring requires a professional archaeologist to be present throughout or during certain phases of a development to record any archeologically significant features or deposits so exposed and recover archaeological artefacts or ecofacts. In the event unanticipated, highly significant archaeological remains or complexity is discovered, NCCES will be contacted immediately. If areas of significant archaeological remains are encountered that cannot be recorded safely or to the appropriate standard by the monitoring, consultation will take place with the client, NCCHES, the archaeological contractor and possibly Historic England to determine how such remains might be preserved in situ or recorded.

76 All works that affect below ground deposits will be monitored by an experienced archaeologist. The monitoring will be carried out in accordance with the *Standard and guidance for archaeological watching briefs* (Chartered Institute for Archaeologists 2014) and the guidelines set out in the document *Standards for Field Archaeology in the East of England* (Gurney 2003).

77 Prior to the start of archaeological monitoring work, NPS Archaeology will contact the Historic Environment Record Officer of NCCHER to obtain an Event Number for the site. NPS Archaeology contributes to the OASIS project. An online OASIS record will be initiated immediately prior to the start of fieldwork and completed when the final report is submitted to the client and NCCHES.

78 If excavation depths exceed 1.20m, or the excavation sides are considered too unstable to provide safe working conditions, NPS staff will not enter the excavations.

79 Exposed surfaces and all archaeological features and deposits will be excavated by hand and may be screened by metal detector. The metal detector will be utilised to scan excavated spoil and *in situ* horizons with the operator ensuring that it is used in a correct fashion. All artefacts and ecofacts materials will be collected and bagged by unique context number.

80 Detailed strategies for levels of sample excavating buried soils, structures, pits, post-holes and ditches will be determined on site. Linear features will be examined by 1.00m-wide sections, discrete features will be half-sectioned and a minimum of 50% excavated. 100% of structural elements including beam slots will be excavated, although a decision may be taken to leave structural remains *in situ* in respect to considerations of any further work and if the evaluation questions can still be answered. Allowance will be made for total recovery where appropriate; percentage sampling will apply in areas where complex stratified deposits are encountered. In general, the feature/deposit sampling strategy will be employed throughout the evaluation in accordance with *Standards for Field Archaeology in the East of England* (Gurney 2003).

81 All archaeological deposits, features and layers will be assigned individual context numbers and recorded on standardised forms employing a pro forma recording system approved by NCCES. The records will include full written, graphic and photographic elements with site and context numbering compatible with the Norfolk Historic Environment Record numbering system. Plans will be made at a scale of 1:50, with provision for 1:20 and 1:10 drawings. Sections will be recorded at scales of 1:10 and 1:20 depending on the detail considered necessary.

82 A digital photographic record will be maintained of archaeological deposits, layers and features to record their characteristics and relationships, and general shots will be taken to document the progress of the work. Monochrome 35mm photographs will be taken of remains considered to be significant.

83 All artefacts and ecofacts will be collected and, where possible, related to the context from which they derived. All artefacts will be retrieved unless volume and quantity of particular classes or items justify an on-site sampling policy. In all such eventualities relevant specialists (see *Project Staff*) and NCCHES will be consulted to agree a strategy. All retained materials will be stored in stable conditions until arrangements for their processing and analysis are made.

84 If any items of gold or silver are discovered they will be removed to safe storage and reported to the local coroner according to procedures set out in the Treasure Act 1996 (and amendments). Where removal cannot be effected on the same working day as discovery, suitable security measures will be taken to protect the items from theft. NPS Archaeology will inform NCCHES and the Portable Antiquities Scheme Finds Liaison Officer of such discoveries as soon as is reasonably practical.

85 If human remains are identified by the monitoring works they will be left in situ. Backfilling of open trenches or features containing human remains that are not to be removed will be carried out manually to ensure that the remains are appropriately protected from any damage or disturbance.

86 If human remains or burials are identified, which because of their location, vulnerability or other reasons must be removed, an application for a Licence for the Removal of Human Remains will be made in compliance with Section 25 of the Burial Act 1857, if appropriate. Treatment of human remains will be in line with *Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England* (English Heritage/The Church of England 2015). Human remains will be screened from public view during the course of the excavation. No human remains will be removed from the site until permission has been granted in writing from all relevant parties.

87 Soil samples for palaeoenvironmental materials will be collected only if suitable sealed and well-dated deposits are identified. Standard 40 litre bulk soil samples, column or monolith samples and Kubiena tins will be collected from such deposits as appropriate, in consultation with the Historic England Science Advisor for the East of England and/or other consultant environmentalists if appropriate.

Post-Fieldwork Processes

88 The drawn and written stratigraphic/structural record will be cross-referenced and analysed to provide a synthesis of the results of the work.

89 The cleaning and cataloguing of any artefactual materials recovered will be undertaken on completion of the trial trenching. All retained materials will be cleaned, marked and packaged in accordance with the requirements of NCCHES.

90 Post-fieldwork analyses will start upon completion of the finds processing and will involve the identification and description of the artefactual materials recovered by the relevant specialists. In general, the following strategies will be employed in the analysis of the artefactual materials recovered:

- *Pottery*. Analysed to determine date and tabulated by context unit
- *Worked flint*. Sorted and tabulated by context unit
- *Metal artefacts*. Assessed for dating and significance, catalogued by context unit and where necessary conserved within four weeks of completion of fieldwork, in accordance with UKIC *Conservation Guidelines* 3 (1984)
- *Faunal remains*. Sorted and tabulated by context unit. Assessed for the potential for further analysis and for sieving for the recovery of smaller bird and fish bones
- *Environmental samples*. Processed and assessed for content and significance
- Other categories of artefactual materials will be analysed in similar fashion.

91 All finds work will follow the procedures set out in *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (Chartered Institute for Archaeologists 2014). Finds data will be entered on a spreadsheet to aid analysis and report preparation.

Report and Archive

92 A client report will be prepared that presents the stratigraphic, structural, artefactual and environmental evidence and analyses, and a synthesis of the results of the monitoring.

93 The report will present data in written, tabular, graphic and appendix form. A list of archive components generated by the work and a reference to the intended place of archive deposition will be included in the report. Unless otherwise agreed in writing, NPS Archaeology will retain copyright in and ownership of all documentation and other materials prepared by NPS Archaeology. NPS Archaeology may publish or jointly publish any description or illustration of the works with the prior consent of the client.

94 A draft copy of the report will be presented to the client and to NCCHES for approval within four weeks of the completion of the monitoring. An advance (interim) report for the purpose of expediting planning applications may be supplied upon request by the client and by agreement with NCCHES.

95 On approval of the report, NCCHES will advise the Local Planning Authority accordingly. Multiple copies of the approved report will be produced as appropriate and presented to the client and one digital and one paper copy to NCCHES. One copy of the report may be sent to the Historic England Science Advisor for the East of England, if considered appropriate.

96 The online OASIS record initiated prior to the start of the programme of archaeological work will be completed when the report is approved by

NCCHES. This will include submission of a pdf version of the final report to the Archaeology Data Service via the OASIS form.

97 A single integrated archive for all elements of the work will be prepared according to the recommendations set out in *Environmental standards for the permanent storage of excavated material from archaeological sites* (UKIC *Conservation Guidelines* 3, 1984) and *Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (Brown 2007), and in accordance with NCCHES requirements for archive preparation, storage and conservation.

98 The archive will be fully indexed and cross-referenced. It will be integrated with NCCHES project accession numbering and Norfolk Historic Environment Record's numbering system. A full list of archive contents and finds boxes will accompany the deposition of the archive and finds.

99 All archaeological materials, excepting those covered by the Treasure Act 1996, will remain the property of the landowners. NPS Archaeology will seek to reach a formal agreement with the landowners for the donation of finds to Norfolk County Council Museums Service.

100 Deposition of the archive and finds (by prior agreement with the landowners) with NCCHES will take place within six months of the completion of the published report.

101 If Norfolk Museum Service are not making new archive accessions and no confirmation is provided of when new archives will be accepted, NPS Archaeology reserve the right to make alternative arrangements. From 1 January 2016 NPS Archaeology may charge for storage of prepared archaeological archives

PART 3: Excavation

102 The scope and area of any archaeological excavation will be defined by NCCES based on the results of informative Trial Trench (ENF 143422) and any other available archaeological data. This provision would be implemented dependant on discussion with the client and NCCES.

103 A separate project design detailing the scope and methodology of excavation works will be submitted by the archaeological contractor to NCCES for approval in advance of fieldwork commencing.

104 Prior to the start of the programme of archaeological work, NPS Archaeology will contact the Historic Environment Record Officer of NCCHER to obtain an Event Number for the site. NPS Archaeology contributes to the OASIS project. An online OASIS record will be initiated immediately prior to the start of fieldwork and completed when the final report is submitted to the client and NCCHES.

105 The excavation phase will examine, excavate and replace by record all archaeological features deposits and structures within the area indicated by the NCCES and to an agreed depth. The programme of archaeological work will assess the potential for analysis all features, deposits and structures by an agreed programme of analysis, produce an archive and report and disseminate the results by means of an appropriate form of publication.

106 All human remains within the archaeological excavation area will be fully excavated unless otherwise agreed with NCCES.

107 NPS Archaeology will obtain an appropriate licence from the Ministry of Justice concerning the disturbance of human remains prior to the commencement of work on the site.

108 A contingency will be incorporated to extend the archaeological excavation area, in agreement with NCCES and the client, in the case of significant archaeological deposits or features (including inhumations) extending beyond the initial defined excavation area.

109 NPS Archaeology will produce an assessment report and updated project design within six months of the completion of fieldwork. The draft publication of this report will be supplied to NCCES within 24 months of the completion of fieldwork.

Aims

110 The excavation is required to recover, by archaeological excavation, information relating to the extent, date, phasing, character, function, status and significance of the site. A determination of the state of preservation of any features, deposits and structures is also required.

111 The generic aims of the archaeological work may therefore be summarised as:

i. To establish the presence or absence of archaeological remains within the proposed development site.

ii. To determine the extent, condition, nature, quality and date of any archaeological remains occurring within the site and the possible impacts of the proposed development on them.

iii. Ensure that any archaeological features discovered during excavation are identified, sampled and recorded.

iv. To establish, as far as possible, the extent, character, stratigraphic sequence and date of archaeological features and deposits, and the nature of the activities which occurred at the site during the various periods or phases of its occupation.

v. To establish the palaeoenvironmental potential of subsurface deposits by ensuring that any deposits with the potential to yield palaeoenvironmental data are sampled and submitted for assessment to the appropriate specialists.

vi. To explore evidence for social, economic and industrial activity.

vii. To disseminate the archaeological data recovered by the archaeological excavation in the form of a report which will provide a basis for any decisions regarding further archaeological intervention proposals should they be necessary.

112 Site-specific aims for archaeological excavation will be based on regional research aims presented in Medlycott 2011. Current knowledge about the site and its location suggests remains of prehistoric date and medieval to post-medieval field systems and boundaries might form key areas of investigation.

113 If excavation is required a four-stage excavation strategy will be undertaken. The stages of this strategy may be summarised as follows.

i. ***Excavation***. Where significant archaeological remains exist these remains will be recorded through archaeological excavation. All archaeological features or deposits will be cleaned and excavated to determine function, form and relative date. Full written, drawn and photographic records of all excavated archaeological deposits and features will be produced.

ii. ***Post-Fieldwork Processing***. The drawn and written, photographic, stratigraphic and structural record will be cross-referenced and entered onto a database to provide a consistent and compatible record of the results of the various elements of fieldwork. Artefacts and ecofacts recovered during the fieldwork will be cleaned, marked and packaged in accordance with the archive requirements of the Norfolk County Council Museums Service. A database of these materials will be compiled.

iii. ***Post-Excavation Assessment***. On completion of all fieldwork and the post-fieldwork Processing, an assessment will be made of the stratigraphic and structural records and the artefact and environmental materials. This assessment will identify the tasks required to carry the project through to publication and completion. A separate Assessment Report and Updated Project Design document will be produced if the results warrant this approach otherwise justification will be made to proceed straight to a final report.

iv. ***Report and Archive***. A final report or publication report will be prepared based on the results of the assessment. The report will describe the results with data presented in tabular, graphic and appendix form. Copies of the reports will be submitted to the client and to NHES.

114 The procedures and methodology for each of the stages outlined above are described in detail below.

Excavation

115 Excavation will be concerned with establishing the condition, character and date of any sub-surface archaeological features and deposits present. Guidelines set out in the documents *Standard and guidance for archaeological field evaluation* (Chartered Institute for Archaeologists 2014) and *Standards for Field Archaeology in the East of England* (Gurney 2003) will be followed.

116 Only area/s defined by NCCHES will be excavated.

117 The excavation will characterise the full archaeological sequence down to undisturbed deposits. A single-context planning strategy will be implemented for the reproduction of results and a matrix of the sequence will be created on site.

118 Provision will be made for sampling deposits for the analysis of palaeoenvironmental remains and for dating deposits, artefacts and ecofacts where appropriate. The sampling strategy will be agreed in the course of the excavation with NCCES and the Heritage England Regional Advisor for Archaeological Science.

119 The trench will be recorded in relation to the Ordnance Survey National Grid by NPS Archaeology and CAT scanned prior to excavation.

120 Initial excavation will be undertaken to the top of any undisturbed archaeological deposits or the surface of the underlying natural geological deposits, whichever is the highest. If neither is encountered it may be necessary to excavate to a maximum depth of 1.20m below the present ground surface in line with Health and Safety guidance for trenches with unsupported sides. If further depth of excavation is required, the trench sides may need to be locally stepped or shored. The requirement for and the scope of works below 1.20m will be discussed with the NCCES in this event.

121 If the deposits in the trenches extend below the level of any development impact, a hand-auger may be used to retrieve information about the characteristics of the lower deposits with the prior agreement of NCCES.

122 If appropriate the excavation site will be fenced around using Netlon high-visibility fencing and applicable warning signs will be displayed.

123 Spoil from the trench will not be removed from site. Excavations will not be backfilled until agreement to do so is given by NCCES. Backfilling will not attempt consolidation or compaction over and above that possible with a mechanical excavator. Full surface reinstatement will not be attempted, but all excavated areas will be left in safe condition.

124 Exposed surfaces and archaeological features and deposits will be excavated by hand and screened by metal detector. The metal detector will be utilised to scan excavated spoil and *in situ* horizons with the experienced operator

ensuring that it is used in a correct fashion. All artefacts and ecofacts will be collected and bagged by unique context number.

125 All archaeological deposits, features and layers will be assigned individual context numbers and recorded on standardised forms employing the NPS Archaeology pro forma recording system. A single-context planning method will be utilised and a matrix created on site.

126 If human remains (inhumations and cremations) are identified by the archaeological works these will be lifted. In advance of this a Licence for the Removal of Human Remains in compliance with Section 25 of the Burial Act 1857 will be obtained. Treatment of human remains will be in line with Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England (English Heritage/The Church of England 2015). Human remains will be screened from public view during the course of the excavation.

127 The records will include full written, graphic and photographic elements with site and context numbering compatible with the Norfolk Historic Environment Record numbering system. Plans will be made at a scale of 1:50, with provision for 1:20 and 1:10 drawings. Sections will be recorded at scales of 1:10 and 1:20 depending on the detail considered necessary.

128 A photographic record in 35mm monochrome film and digital formats will be maintained of all archaeological deposits, layers and features to record their characteristics and relationships. Photographs will be taken to record the progress of the trial trenching.

129 Detailed strategies for levels of sampling of buried soils, structures, pits, post-holes and ditches will be determined on site. Allowance will be made for total recovery where appropriate; percentage sampling will apply in areas where complex stratified deposits are encountered. In general, the feature/deposit sampling strategy will be employed throughout the trial trenching in accordance with *Standards for Field Archaeology in the East of England* (Gurney 2003).

130 Soil samples for palaeoenvironmental materials will be collected if suitable sealed and well-dated deposits are identified. Standard 20 litre bulk soil samples, column or monolith samples and Kubiena tins will be collected from such deposits as appropriate, in consultation with the Historic England Science Advisor for the East of England and/or other consultant environmentalists if appropriate. Buried soils will be sampled by sieving to determine artefact densities. In all instances, sampling procedures will follow guidance issued by English Heritage (Historic England) in *Environmental Archaeology* 2nd edition (2011). Full written, graphic and photographic sample records will be made using NPS Archaeology's pro forma recording system.

Post-Fieldwork Processes

131 The drawn and written stratigraphic/structural record will be cross-referenced and analysed to provide a synthesis of the results of the work.

132 The cleaning and cataloguing of any artefactual materials recovered will be undertaken on completion of the excavation. All retained materials will be cleaned, marked and packaged in accordance with the requirements of Norfolk Museums Service (NMS).

133 Post-fieldwork analyses will start upon completion of the finds processing and will involve the identification and description of the artefactual materials recovered by the relevant specialists. In general, the following strategies will be employed in the analysis of the artefactual materials recovered:

- *Pottery*. Analysed to determine date and tabulated by context unit
- *Worked flint*. Sorted and tabulated by context unit
- *Metal artefacts*. Assessed for dating and significance, catalogued by context unit and where necessary conserved within four weeks of completion of fieldwork, in accordance with UKIC *Conservation Guidelines* 3 (1984)
- *Faunal remains*. Sorted and tabulated by context unit. Assessed for the potential for further analysis and for sieving for the recovery of smaller bird and fish bones
- *Environmental samples*. Processed and assessed for content and significance
- *Human skeletal material*. Analysed by context unit and grave group identified where feasible. The use of C14 dating for the HSM will be implemented in consultation with NHES if artefactual dating is either absent, insufficiently reliable or does not provide satisfactory precision.
- Other categories of artefactual materials will be analysed in a like fashion as described above.

134 All finds work will follow the procedures set out in *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (Chartered Institute for Archaeologists 2014). Finds data will be entered on a spreadsheet to aid analysis and report preparation.

135 All archaeological materials, excepting those covered by the *Treasure Act 1996*, will remain the property of the landowners. NPS Archaeology will seek to reach formal agreement with the landowners for donation of materials to NMS.

Report and Archive

136 Unless otherwise agreed in writing, NPS Archaeology will retain copyright in and ownership of all documentation and other materials prepared by NPS Archaeology. NPS Archaeology may publish or jointly publish any description or illustration of the works with the prior consent of the client.

137 An online OASIS record for the excavation will be initiated immediately prior to the start of fieldwork and completed when the final report is submitted to NCCES. This will include uploading a pdf version of the final report.

138 A single integrated archive for all elements of the work will be prepared according to the recommendations set out in *Environmental standards for the permanent storage of excavated material from archaeological sites* (UKIC *Conservation Guidelines* 3, 1984) and *Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (Brown 2007), and in accordance with NMS requirements for archive preparation, storage and conservation.

139 The archive will be fully indexed and cross-referenced. It will also be integrated with the NMS Project accession number and the Norfolk Historic Environment

Record numbering system. Deposition of the archive and archaeological materials (by prior agreement with the landowners) will take place after completion of the final report and confirmed in writing to NMS. A full listing of archive contents and finds boxes will accompany the deposition of the archive and finds.

Timetable and Resources

140 The different stages of archaeological work have different time and staff requirements. The timetable for fieldwork assumes that there are no major delays to the work programme caused by factors outside of NPS Archaeology's reasonable control. Such circumstances would include without limitation: long periods of adverse weather conditions, flooding, repeated vandalism, ground contamination, delays in the development programme, unsafe buildings, conflicts between the archaeological recording methods and the protection of flora and fauna on the site, disease restrictions, and unexploded ordnance.

Quality Standards

141 All staff employed or sub-contracted by NPS Archaeology will be employed in line with the Chartered Institute for Archaeologists' *Code of Practice*.

142 NPS Archaeology operates under a recognised Quality Management System and is accredited with BS EN ISO 9001:2008.

143 The guidelines set out in the document *Standards for Field Archaeology in the East of England* (Gurney 2003) will be adhered to. Provision will be made for monitoring the work by NCCES in accordance with the procedures outlined in the document *Management of Research Projects in the Historic Environment* (MoRPHE) (English Heritage 2006, republished April 2015 by Historic England). Monitoring opportunities for each phase of the project are suggested as follows:

i. during evaluation trenching
ii. during post-fieldwork processing
iii. upon receipt of the evaluation report

144 A further monitoring opportunity will be provided at the end of the work upon deposition of the integrated archive and finds.

145 Most aspects of this project will be co-ordinated by the Senior Project Officer who has the day-to-day responsibility for the successful completion of the project. The Project Officer's performance is monitored by a Project Manager. Overall responsibility for the successful delivery of the project lies with the NPS Archaeology Manager, who has responsibility for all of NPS Archaeology's work and ensures the maintenance of quality standards within the organisation.

General Conditions

146 NPS Archaeology will not commence work until a written order, or signed agreement is received from the client. Where the commission is received through an agent, the agent is deemed to be authorised to act on behalf of the client. NPS Archaeology reserves the right to recover unpaid fees for the service provided from the agent where it is found that this authority is contested by said client.

147 A 7.4-hour working day is normally operated by NPS Archaeology, although their agents may work outside these hours.

148 NPS Archaeology shall not be held responsible for any delay or failure in meeting agreed deadlines resulting from circumstances beyond its reasonable control. Such circumstances would include all those listed in para. 93.

149 NPS Archaeology expects any information concerning the presence of TPOs and/or, protected flora and fauna on the site to be provided by the client prior to the commencement of works and accepts no liability if this information is not disclosed. No excavation will take place within 8.00m or canopy width (whichever is the greater) of any trees within or bordering the site.

150 NPS Archaeology will not accept responsibility for any tree surgery, removal of undergrowth, shrubbery or hedges or reinstatement of gardens. NPS Archaeology will endeavour to restrict the levels of disturbance of to a minimum, but wishes to bring to the attention of the client that the works will necessarily alter the appearance of a site.

Access, Health and Safety

151 NPS Archaeology expects the client to arrange suitable access to the site for its staff, plant and welfare facilities on the agreed start date.

152 Reasonable access to the site will be granted by NPS Archaeology to NCCES and representatives of the client who wish to be satisfied, through site inspections, that the archaeological works are being conducted to appropriate professional standards and in accordance with the agreements made.

153 In advance of works commencing, NPS Archaeology will prepare and submit a Health and Safety Risk Assessment and Method Statement to the client. All NPS staff will be briefed on the contents of the Risk Assessment and required to read it. Personal protective clothing and equipment will be issued and used as required.

154 NPS Archaeology will ensure that all work is carried out in accordance with NPS Property Consultants Limited's Health and Safety Policy, to standards defined in *the Health and Safety at Work, etc. Act,* 1974 and *The Management of Health and Safety Regulations,* 1992, and in accordance with the health and safety manual *Health and Safety in Field Archaeology* (SCAUM 2007).

155 The client will provide NPS Archaeology with all information reasonably obtainable on the location of live services including overhead utilities before site works commence.

156 Whether or not CDM regulations apply to this work, NPS Archaeology expect the client to provide information on the nature, extent and level of any soil contamination present. Should unanticipated contaminated ground be encountered during the works, excavation will cease until an assessment of risks to health has been undertaken and on-site control measures implemented. NPS Archaeology will not be liable for any costs related to the collection and analysis of soils or other assessment methods, on-site control measures, and the removal of contaminated soil or other materials from site. In case of contaminated soil, it may be necessary for NPS Archaeology to produce a revised Risk Assessment and/or adapt the agreed Written Scheme of Investigation in consultation with the client and NCCES.

157 Should any disease restrictions be implemented for the area during the excavation, fieldwork will cease and staff will be redeployed until they are lifted. NPS Archaeology will not be liable for any costs related to on-site disease control measures and for any additional costs incurred to complete the fieldwork after the restrictions have been removed.

158 NPS Archaeology will provide copies of NPS Property Consultants Limited's Health and Safety policy on request.

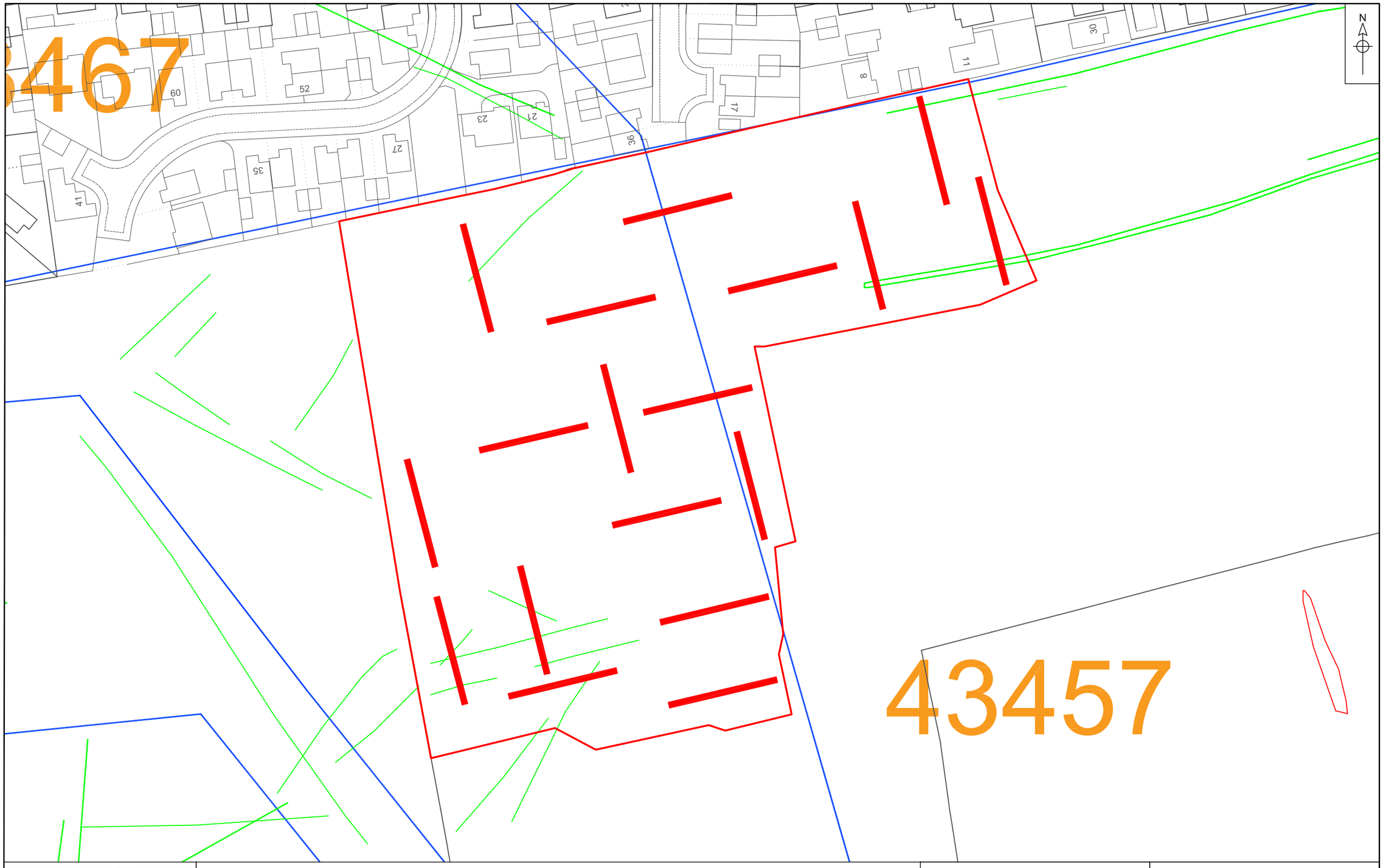
159 In an effort to improve its service, NPS Archaeology would welcome any comments on the content or presentation of this Written Scheme of Investigation.

Insurance

160 NPS Archaeology’s insurance cover is:

Employers Liability	£5,000,000
Public Liability	£50,000,000
Professional Indemnity	£5,000,000

161 Full details of NPS Archaeology's insurance cover will be supplied on request.



Land off Meadowland Drive, Bradwell. Proposed evaluation trench location. Version 2

18 no. 30m x 1.8m trenches

0 100m

nps group
nps archaeology

Drawn by: DD	Date: 16/03/2018
Checked by:	Scale: 1:1000 @ A3

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