

**Archaeological Monitoring
at
RSPB Botany Marshes, Farnham, Suffolk**

NGR: 637711 258297

Site Code: FNM 020

**ASE Project No: 8022
ASE Report No: 2014122
OASIS id: 155120**



April 2014

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Abstract

Archaeology South-East undertook a programme of archaeological monitoring at the RSPB site at Botany Marshes during groundworks associated with the creation of a new wetland reserve in the valley. Previous archaeological works (trial trenching and Geoarchaeological assessment) had established that the site was one with archaeological potential.

The groundworks comprised the excavation of a series of ponds across the site, the re-excavation of a number of historic ditches that once crossed the site but had been in-filled in the recent past, and the establishment of a new sluice and associated ditches. Prior to the start of works the results of the earlier studies had been utilised to re-design the scheme to avoid, where possible, archaeologically sensitive areas.

Archaeological monitoring of the groundworks recorded the presence of:

- a geological sequence consistent with that noted in the earlier studies*
- a timber revetment of post-medieval date associated with a causeway entrance to a field*
- a group of undated, but potentially early, ditches and shallow pits*

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1.0 INTRODUCTION

1.1 Site Background

1.1.1 Archaeology South-East (ASE), the contracting division of the Centre for Applied Archaeology (CAA), Institute of Archaeology (IoA), University College London (UCL) was commissioned by the Royal Society for the Protection of Birds (RSPB) to undertake a programme of archaeological monitoring and recording during groundworks associated with habitat creation at RSPB Botany Marshes, Farnham, Suffolk (NGR 637711 258297; Fig 1).

1.1.2 The RSPB design for the creation of new reedbed and wetland habitat and included the following elements:

- Excavation of new ponds
- Ditch re-profiling
- Water management structures (sluices and associated ditches)
- Reinstatement of historic ditches

1.2 Location, Geology and Topography

Location

1.2.1 The habitat creation site is located to the south of Botany Farm, in an area of semi-improved pasture (NGR: 637711 258297 – see Fig. 1). The site is situated in the valley of the River Alde, just beyond the tidal head. The current river channel runs along the southern boundary of the site. Within the site the landscape is relatively level at between c.1.7m and c.0m AOD (Rolfe 2009, 3).

Topography

1.2.2 The land slopes upwards to the west, towards Langham Road and Burnt House Farm, and to the north towards Botany Farm. The existing field system in the valley prior to the start of works was defined by a limited number of deep field ditches. Historic cartographic sources and aerial photographs show that this system used to be more extensive, comprising relatively straight ditches defining a broadly rectilinear field system along the side of the river.

Geology

1.2.3 The site lies in an area of transitional geology, largely comprised of alluvial river deposits including peat deposits (SCCAS 2009, 2). These were being formed by a tributary of the River Alde in the Holocene (OA 2010, 12) and overlay sands of the Red Crag Formation and Crag Formation (British Geological Survey map viewer – <http://www.bgs.ac.uk/>). Detailed geophysical and borehole assessment of micro-topography and wetland deposits in connection with the scheme (discussed below) has established the presence of a formerly dry sand terrace thought to be an Early Holocene land surface within the floodplain, a major river palaeochannel of the River Alde and areas of deeper alluvial deposits consistent with an embayment containing estuarine and freshwater wetland deposits.

1.3 Planning Background

1.3.1 A planning application (C/13/0137) for a programme of habitat creation was submitted to Suffolk Coastal District Council in January 2013. Botany Marshes is intended to provide compensation for reedbed being lost to the sea from flood risk management works on the east coast of Suffolk. The works entailed the raising of water levels on site to enable the creation and management of reedbed. Existing ditches were cleared and re-shaped and a number of new ditches and pools excavated to create areas of open water. As previous archaeological works undertaken in connection with the scheme have shown that it contains important archaeological deposits SCCAS, in their capacity as archaeological advisors to the District Council, recommended that a full archaeological condition be attached to any grant of planning consent.

1.3.2 This recommendation is in accordance with guidance contained in the National Planning Policy Framework (DCLG 2012) and the condition that has been attached to the grant of consent states that:

4. No development shall take place within the application site until the implementation of a programme of archaeological work has been secured, in accordance with a Written Scheme of Investigation which has been submitted to approved in writing by the Local Planning Authority.

The scheme of investigation shall include an assessment of significance and research questions; and:

- a. The programme and methodology of site investigation and recording.*
- b. The programme for post investigation assessment.*
- c. Provision to be made for analysis of the site investigation and recording.*
- d. Provision to be made for reporting, publication and dissemination of the analysis and records of the site investigation.*
- e. Provision to be made for archive deposition of the analysis and records of the site investigation.*
- f. Nomination of a competent person or persons/organisation to undertake the works set out within the Written Scheme of Investigation.*
- g. The scheme of investigation shall be completed prior to development or in such phased arrangement as agreed and approved in writing by the Local Planning Authority.'*

Reason: *To ensure proper recording of archaeological deposits which may be affected by the development.*

5. The archaeological site investigation and post investigation assessment shall be fully undertaken and shall be completed and results analysed, published, disseminated and archived within 18 months of the commencement of the development (unless otherwise agreed in writing by the Local Planning Authority). A copy of the report and confirmation of the above, shall be submitted to the local planning authority for approval in writing by the local planning authority also within 18 months of the commencement of the development (unless otherwise agreed in writing by the Local Planning Authority).

Reason: *To ensure proper recording, analysis and publication of archaeological work required under condition 4 above.*

- 1.3.3 The programme of archaeological works were undertaken in accordance with a Written Scheme of Investigation prepared by ASE in consultation with the RSPB and SCCAS (ASE 2013) and approved by SCCAS.

1.4 Aims and Objectives

- 1.4.1 The aim of the archaeological works at RSPB Botany Marshes was, as far as possible, to preserve archaeological remains *in situ* through design solutions implemented prior to and during the start of works (see 3.1.2 below). Where archaeological remains were identified that could not be preserved in-situ the aim of the archaeological monitoring was to record, excavate, analyse and report on any features/finds impacted by the habitat creation works thereby achieving their preservation by record.
- 1.4.2 All significant discoveries were to be investigated and assessed in relation to relevant regional research questions presented in *Research and Archaeology Revisited: a revised framework for the East of England* (Medlycott 2011).

1.5 Scope of Report

- 1.5.1 This report details the results of the archaeological monitoring undertaken by E. Heppell (ASE) and R. Standring (RSPB) in July to November 2013.

2.0 ARCHAEOLOGICAL BACKGROUND

- 2.1 The monitoring survey was part of a programme of archaeological investigations been undertaken in order to better understand the development of the site. Previous studies had enabled an appropriate mitigation strategy to be devised through design changes and the implementation of this programme of archaeological monitoring. The previous studies comprised:

- Archaeological Desk –Based Assessment by SCCAS (Rolfe 2009) incorporating SHER data, cartographic and historical research
- Geoarchaeological survey through geophysical (electro-magnetic) survey and auger survey (Oxford Archaeology 2010)
- Archaeological trial-trenching evaluation (Krawiec 2011)

The following archaeological background utilises the results of these earlier studies.

- 2.2 The site is situated within the wide flat valley of the River Alde, the river now runs along the southern boundary of the site and is embanked. The tidal head is situated at the south-east corner of the site. This modern landscape has developed over the millennia. The general sediment sequence (top to bottom) in the area is as follows:
- Alluvial Deposits (Holocene)
 - Basal sand (Late Pleistocene or Holocene)
 - Sand and Gravel (probably Pleistocene)

These deposits were of variable thicknesses and occurred at varying depths across the site.

- 2.3 Five zones of distinctive sedimentation, reflecting that of the palaeo-topography, were identified (Fig. 2):

Zone I: This area occupies much of the central part of the site. It is characterised by the presence of peat deposits but these are thinner than those recorded in Zones II and IV. This zone contains a late Pleistocene/early Holocene land surface (at a relatively shallow depth in relation to the current surface) which would have been above the river floodplain before being inundated.

Zone II - Palaeochannel: This area follows a sinuous path along the northern part of the site. Thick peat-dominated units with abundant, well preserved wood remains were recorded in this zone, along with some organic rich silt dominated sediments. The sediment sequence suggests a fluctuating depositional environment, with spells of flowing water and standstill periods when peat accumulated. This zone is interpreted as being a former course of the River Alde.

Zone III - Embayment: An area that occupies an 'embayment' like feature in the south eastern part of the site. Peat deposits are present but are thinner than those in II and IV. The zone represents a large embayment or backwater area at the edge of the confluence of a palaeochannel and the main river.

Zone IV - Palaeochannel: An area that joins up with zone I and occupies a strip along the eastern boundary of the site. It is characterised by thick peat-dominated units with abundant, well preserved wood remains. Some organic-rich silt-dominated sediments. It may be a palaeochannel of the River Fromus, the current channel of which is now situated to the east of the site.

Zone V – Drainage Ditch: An area that occurs as a linear strip through the central part of the site. An historic drainage ditch, possibly one shown on historic OS mapping.

- 2.4 The results of the studies show the site was once within the confluence zone of the Rivers Alde and Fromus but that this confluence has now shifted to be further downstream towards Snape (OA 2010). The paleochannels were cut off from the main watercourse at an unknown date allowing extensive organic deposits to develop through the Holocene. The area did however remain a wetland, with wetland species such as sedge dominate the pollen recovered (Krawiec 2011, 10).

- 2.5 The Geoarchaeological model suggested that some of the areas of old land surfaces which would have been above the river floodplain were present. These areas were considered to be areas of archaeological potential and were relatively shallowly buried. Accordingly archaeological evaluation (Krawiec 2010) was targeted on the proposed locations of three ponds which lay within these areas of archaeological potential. Trenching over Pond B identified pits and a hollow/pit, prehistoric artefacts were recovered from

- some of these features. Flintwork was of Mesolithic/Early Neolithic date. A very small pottery sherd of probable Iron Age date was also recovered from one of the pits, but is thought to be intrusive. The location of these pits, alongside the river channel, is thought typical of models of prehistoric use of river valleys (Krawiec 2010, 10).
- 2.6 The SHER records a number of heritage assets in the general vicinity of the development site including scattered Bronze Age finds (e.g. BLX008), indicative of continuing use of this landscape through the later prehistoric periods. Roman remains include those of a bathhouse to the west of the site in the vicinity of Langham Bridge (FNM001).
- 2.7 The historic field pattern within Botany Marshes has been identified as one comparable to other valley floor landscapes in Suffolk, and are generally associated with areas of meadow/pasture enclosed prior to c.1600 (Rolfe 2009, 11). An 1803 map by Isaac Johnson is the earliest detailed map of the site and shows that, by this date, the main channel of the Alde was in, roughly, its modern position, running along its southern edge. A sinuous ditch runs along part of the eastern boundary of the site. Enclosed strips of meadow, running north from the river, can be seen on the higher ground in the vicinity of Langham Bridge. Within the site itself only a single boundary is depicted, zig-zagging across the site, with the land to the west and east being in differing ownership. The possibility that other boundaries may perhaps have been present but not depicted.
- 2.8 By the early 1840s the Tithe map shows a greater number of boundaries across the site in a pattern which remained largely unchanged through to the mid to late 20th century (Fig. 2). The field names on the apportionment distinguish between 'Marsh' and 'Meadow', the distinction perhaps reflecting differences in drainage. The 'marsh' names for the most part occur in the areas of lower elevations. The field pattern can, to some degree be shown to reflect the variations in elevation and that that of the underlying sediment zones, for example Four Acre Field is set within a corner of a larger field in Zone I whereas much of the latter is in the Zone III embayment.
- 2.9 The most significant change to the landscape in the late 19th century was the construction of a railway line, Snape Branch Line, part of which crossed the site (Fig 2). This was a freight only line which opened in 1859 and linked the (extant) East Suffolk Line at Snape Junction (in the vicinity of Burnt House Farm) to the extensive Snape Maltings. The line ran across the site, partially on an embankment, then cut through the higher ridge of land to the east and over the River Fromus valley and marshland to Snape. This route crossed a number of wooden bridges and could only be used by special small engines due to weight restrictions (<http://old.blaxhall.com/history/articles/1700to1900.php>). During its operational history the line had to be closed as a result of drifting snow and flooding.
- 2.10 A 1945 aerial photograph shows the site layout as much the same as on previous maps, the main difference being that some of the field entrances would appear to have been widened, presumably reflecting the increased mechanisation of farming and the need for larger machinery.

- 2.11 A decline in revenues from freight, coupled with the age of the locomotives operating on the line, led to its closure in 1960. The track was lifted in 1961 and the land sold off (http://en.wikipedia.org/wiki/Snape_Branch_Line#CITEREFPaye2005). The remains of the railway embankment are reported to have been levelled at some point after 1965 with the material from it being used, at least in part, to infill some of the drainage ditches on the site.
- 2.12 Subsequent decades have seen the majority of the drainage ditches on the site in-filled with the exception of two west to east draining ditches and two north-south ditches at the west of the site (Fig. 1). The modern landscape is still agricultural in character and much of it is meadow.

3.0 ARCHAEOLOGICAL METHODOLOGY

3.1 Fieldwork Methodology

- 3.1.1 The development plan of the RSPB reserve at Botany Marshes was revised following the results of the earlier works to minimise the impacts of the works on the archaeological resource through design solutions and a programme of archaeological monitoring. Design solutions included the re-siting of ponds away from known archaeological remains identified during evaluation in the vicinity of Pond B, the avoidance of disturbance in the soil storage area on the sand terrace to the east of the site, the re-location of ponds away from the palaeochannel edge and amendment of their depths so they would not impact on the lower part of the organic sequence or the old land surfaces (sand).
- 3.1.2 Mitigation during groundworks was achieved through the implementation of a programme of monitoring and 'tool box talk' provided to the earthmoving contractors on the archaeology of the site and typical types of remains found in wetland environments so that project archaeologists could be informed if finds were made when not on site. The talk also stressed the need to stop excavation if sand deposits, likely to be the old land surface, were identified. Such a call was made when timbers, initially interpreted as being structural, was identified in the northern sluice pit (below).
- 3.1.3 Groundworks were undertaken by 360° excavators equipped with toothless buckets.
- 3.1.4 Monitoring focussed on those areas groundworks that were located within areas of archaeological potential or had not been previously investigated. These comprised:
Pond C – c.0.66ha
Pond D – c.0.23ha
Pond F – c.0.18ha
Pond G – c.0.78ha
Pond H – c.0.53 ha
Northern sluice and associated ditches (c.210m length)

- 3.1.5 Watching brief record sheets were completed during each site visit. A record of the deposit sequences encountered was made and a photographic record maintained. Where archaeological features were encountered they were recorded using ASEs context recording system, hand-drawn (plans and sections) and photographed. Locations were tied in to the national grid using GPS.
- 3.1.6 Each pond was subject to a monitoring visit upon the start of excavation to record the deposit sequence and relate it to the earlier Geoarchaeological studies. A further two to three visits were made during the excavation of each pond. The northern sluice pits was subject to two visits when partially excavation and the excavation of the new ditches in this area subject to continual monitoring (with the exception of temporary babuls left in place to vehicular access to and from the site).
- 3.1.7 The reinstatement of the historic ditch lines (c.1.5km length in total) was undertaken under archaeological supervision (R. Standing, RSPB), with the lines of the ditches being established on the ground and then being re-excavated/re-profiled.
- 3.1.8 A group of post stubs (see 4.3 below) was identified following the re-excavation of Ditch 8 (R. Standing, pers comm). An area around these posts was subject to further excavation in order to define their extents and to better characterise them.
- 3.1.9 Archaeological features were identified in the northern sluice pit and associated ditches. These features were visible where they cut into the sand deposits which underlay the peat deposits. Hand dug segments were excavated through these features.
- 3.1.10 Finds were retained for specialist analysis. No environmental samples were collected.

3.2 The Site Archive

- 3.2.1 The site archive is currently held at the offices of ASE and will be deposited with the Suffolk County Council Archaeological Service in due course. The contents of the archive are tabulated below (Table 1).

Number of WB Record Sheets	15
Number of Contexts	41
No. of files/paper record	1 file
Plan and sections sheets	6
Bulk Samples	0
Photographs	147(Digital)
Bulk finds	536g
Registered finds	0
Environmental flots/residue	0

Table 1: Quantification of site archive

4.0 RESULTS

4.1 Overview

4.1.1 The following section of the report described the results of the archaeological survey and monitoring at RSPB Botany Marshes. For the purposes of the report this has been divided into the following sections:

- Deposit Sequences
- Historic Ditch Re-Instatement
- Northern Sluice and Associated Ditches

Plans, sections and photographs can be found at the back of the report.

4.2 Deposit Sequence

4.2.1 The natural geological development of the site through the late Pleistocene and Holocene is well understood through the previous studies that have been undertaken (2.2-2.5 above), along with their associated sediment sequence. The archaeological monitoring has enabled further detail to be added to this.

4.2.2 Ponds D, F, and G were situated within Zone II, a palaeochannel interpreted as being the former course of the River Alde. Previous works had established that the deposit sequence within the channel comprised:

- Topsoil/ subsoil
- Reddish mottled silt/clay
- Desiccated Peat
- Silty Peat
- Peat – becoming increasingly woody and humic with depth

4.2.3 The archaeological monitoring of Ponds D, F and G identified broadly the same sequence of deposits, and is described below:

Description	Deposit Thickness m
Topsoil/Turf	0.15m
Reddish brown desiccated peat	0.15m-0.18m
Dark/mid grey clayey silt with frequent rootlets and roots particularly towards the base. This deposit was patchier in Pond G	0.3m-0.6m
Woody peat in a silty clay matrix	>0.2m
Grey sands	-

Table 2: Natural deposit sequence in Ponds D, F and G

4.2.4 The peat in the lower part of the sequence was particularly woody and a number of relatively large unworked timbers were present towards the interface with the upper clayey silt part of the sequence. Timbers included fallen tree trunks and tree boles, some of which were relatively large. In general this peat deposit became less woody towards its base.

4.2.5 The overlying clayey silts in the ponds were variable in depth and were particularly patchy in Pond G. Patches of grey clay were also present within

this deposit. The deposits within the ponds represent the later stages of the stagnation/in-filling of the former river channel. The variation in the deposit types would suggest periods of wetting/de-watering, and perhaps flooding events.

- 4.2.6 The basal sands which represent the underlying topography of the site were uncovered at the western end of Pond F and on the eastern edge of Pond G. The design of the latter was amended in order to ensure that the archaeologically sensitive sands were not significantly impacted.
- 4.2.7 Pond C (Plate 2) was a curving U-shaped and situated in Zone IV (a palaeochannel) and Zone III (embayment). Pond H was situated within the embayment itself. The deposit sequences within these ponds (Table 3) was broadly the same as that described above but with the addition of a thin pale grey clay deposit immediately below the topsoil in places. As with the other ponds unworked timbers were noted within the peat deposits and tree-stools were also present.
- 4.2.8 In Pond H a group of timbers were recorded (Contexts 1-4) in the lower peat deposit. This included part of a tree-trunk [01] (Plate 2), branches [02] and [03] and groups of twigs [05]. Although it is possible that the larger tree-trunk had been worked (see below) these timbers did not form a structure and are likely to have drifted or fallen into the river embayment. Timber [01] was identified as ash.

Description	Deposit Thickness m
Topsoil/Turf	0.15m
Pale yellowish grey clayey silt (Context 05)	up to 0.2m
Reddish brown desiccated peat (Context 06)	0.4m-0.5m
Dark/mid grey silty clay humic with frequent rootlets. Becoming increasingly humic towards the base (Context 07)	0.2m- 0.3m
Woody peat in a silty clay matrix (Context 08)	>0.2m
Context 09 – not used	-

Table 3: Deposit Sequence in Pond H

4.3 Historic Ditch Re-Instatement

- 4.4.1 As noted above many of the historic ditches which crossed the site were backfilled in the last half of the 20th century. These ditches were re-opened and re-profiled as part of the habitat creation works at Botany Marshes in order to assist in the control of the water levels in the new ponds and to provide additional wetland areas. A total of eleven lengths of ditch (D1-11) were reopened across the site (Fig 1 and 2). The backfill of these ditches was, in many cases, seen to contain mixed sand deposits and to incorporate pieces of railway furniture. These deposits are derived from the levelling of the embankment of the disused railway. Other than this significant remains were recorded at only one ditch location.
- 4.4.2 A wooden structure was located in Ditch 8 (Fig 3, A and B; Plates 3 and 4).

In plan the ditch alignment was 'L' shaped and situated in the northeast corner of, what was, Nine Acre Marsh and delineating the edges of Four Acre Marsh (Rolfe 2009, 7).

- 4.4.3 The structure comprised a series of upright stakes/posts aligned west to east, along with a horizontal timber which may have been associated with them. Timbers were identified on both sides of the north-south orientated re-instated ditch (Fig. 3 A). None were located along the centre of the ditch, although as this was partially flooded at the time of survey the possibility that timbers may have been present in this area cannot be entirely discounted. No post-holes were identified and thus it is likely that the posts were driven into the ground. The lower part of all the observed timbers was in good condition, with the upper parts being weathered.
- 4.4.4 To the west of the ditch line the timber alignment [14] comprised twelve upright timbers including a straight cut timber [11] and a halved stake [12] which had been sawn to a point, as well as various roundwood stems. They appear arranged on a broadly west to east alignment, running from the edge of the water filled ditch to just to the west of the historic ditch cut (Context [19]) for 3m but not beyond this. The majority of the timbers formed a single, irregularly spaced, line but there were also some outliers which may have acted as additional supports, perhaps for cross planks. Timber [12] was sampled and was identified as being a piece of oak of probable late post-medieval or early modern date (below).
- 4.4.5 Horizontal timber [10], 1.4m long and c.0.1m diameter, was recorded c.0.1m to 0.15m to the north of the timber alignment [14] and on the same orientation. There was however no direct physical relationship between the two and it showed no evidence of working and thus a direct association with this and the posts is not definitive.
- 4.4.6 To the east of the main ditch line the upright timbers formed a less clear plan. Timber [13] was on the same line as alignment [14] and could conceivably part of the same structure.
- 4.4.7 The timbers were driven through a compact blue grey silty clay [18], with some very silty lenses. This deposit is interpreted as being the fill of the historic ditch and contained 18th and 19th century artefacts. The timbers were within a relatively localised dump of yellow sand, [22] containing no artefacts. Some pieces of natural timber were identified within this deposit (Fig 3B) It would appear that this sand deposit had accumulated around and covered the posts rather than them having been driven through it.
- 4.4.8 Reference to historic mapping shows that this structure is located in the vicinity of the entrance to Four Acre Marsh. This is presumed, like some of the other ditch crossings on the site to comprise a causeway over the ditch, with water running through a pipe or pipes. An aerial photograph of 1945 (not reproduced) shows that by this date the causeway had been widened to c.11m, presumably to allow better access to this field as mechanisation became more common. It is probable that the timber structure was a revetment along the northern edge of this causeway which was subsequently buried when the causeway was widened by the 1940s. The

ditch is thought to have been excavated between 1803 and 1840, based on the results of map regression, and then had time for some the ditch to become at least partially filled by [18] prior to revetment of the causeway. This would suggest a 19th century date for the construction of the structure. The sand dump [22] presumably relates to the mid 20th century widening of the causeway.

4.4.9 A further group of four upright posts, [16], lay to the south of [13], and appeared to define the edges of a patch of reddish brown silty peat, [17]. These timbers included [15] a section of roundwood with a sawn base. The remaining timbers comprised two uprights which appeared to have been cleft or quartered and piece of roundwood. There is no clear structure to these posts. It is possible that they may be related to the main revetment structure to the west or perhaps represent the remains of a separate revetment.

4.4.10 Modern land rains were also recorded in this area cutting through the various structures and deposits (Fig. 3).

Context	Type	Description	Height M AOD (Max)
10	Timber	Horizontal timber	0.45m
11	Timber	Upright timber post. Part of 14	0.42m
12	Timber	Halved roundwood post with a sawn point. Oak	0.53m
13	Timber	Roundwood Stake. ?Part of 14	0.12m
14	Structure	Timber alignment orientated west to east. Revetment of causeway	0.53m
15	Timber	Upright timber post. Roundwood with sawn base. Part of 16	0.42m
16	Group	Group of four upright timbers including 15.	0.45m
17	Deposit	Soft silty reddish brown peat	0.45m
18	Deposit	Compact blue grey silty clay with silty patches. Fill of 19.	0.27m
19	Cut	Historic 19th century ditch	0.6m
21	Group	Overall number for timbers in historic ditch	
22	Deposit	Yellow sand. Dumped deposit relating to widening of the causeway.	0.8m

Table 4: Context Information; Features in Historic Ditch No 8

4.4 Northern Sluice and Associated Ditches

- 4.4.1 As part of the water management system a new sluice was constructed in the northeast corner of the site where the main west to east boundary across the site is linked into the main north south ditch (Fig. 4). This sluice structure was linked into the existing drainage system with new sections of ditch, with parts of the existing ditches being backfilled. These new ditches and sluice were located to the north of the historic palaeochannel (Sediment Zone II) where the ground begins to rise up from the valley floor. A number of archaeological features were noted in this area which are illustrated on Figure 4.
- 4.4.2 Ditch [24] (Plate 5) was located within the excavated sluice pit. It ran on a NNW to SSE alignment and the northerly part of it had been truncated during construction. Where the full profile of the ditch was visible in section it was c.1.10m wide and 0.6m deep and had a rounded profile. It had been cut through the underlying natural grey sands. The ditch cut was irregular rather than sharp as frequent rootlets and root holes extended down from black peaty ditch fill [39] into the underlying sands. No artefacts were recovered from the ditch fill. The ditch was sealed by a reddish brown organic silty clay [40], with silt/clay lenses, which is broadly comparable with the organic deposits elsewhere on the site. Thin patches of topsoil were present but this had been truncated by the construction of a temporary earthwork bund [41], constructed as part of the current works.
- 4.4.3 An alignment of what initially appeared to be timber uprights, group [23] were noted to the east of the ditch [24] within the natural sands. On further investigation these proved to be natural in origin comprising twisted roots. These probably represent the remains of a hedgeline that perhaps ran alongside the ditch.
- 4.4.4 Ditch terminal [26] (Plate 6) was identified in the new ditch to the west of the sluice pit. Only a short 1.2m long section of this feature was exposed within the ditch line and it is possible that it may have been a pit. Hand excavation showed that this feature was 0.3m deep and its dark-brown to black humic silty clay fill, [25], contained no finds.
- 4.4.5 Two small shallow pits, [28] (Plate 7) and [29] were located to the east of [26] and on the north side of ditch [31]. Both were oval in shape and were filled by black organic sandy silts ([27] and [30] respectively). These features were half-sectioned and no finds were recovered from there fills.
- 4.4.6 Ditch [31] (Plate 8) was orientated on a WSW to ENE axis, roughly perpendicular to that recorded in the sluice pit. This ditch was 1.1m wide and 0.35m deep and contained three fills; a pale reddish brown organic deposit [34] at its base, patches of dark grey sands [33] with a significant organic component and a black brown organic silty clay [32]. No artefacts were recovered from the fills of this ditch.
- 4.4.7 To the east of the sluice pit a single ditch [35] (Plate 9) was identified during the excavation of a new length of ditch. This ditch was orientated on a SSW to NNE axis, was 2m wide and c.1.1m deep. The lower fill, [36] comprised

a dirty mixed sand, overlain by black organic silty clays [37] and a backfill of mixed sands [38]. As with the other features in this area no finds were recovered.

- 4.4.8 This group of features in the vicinity of the new sluice are not shown on any of the historic mapping and are on a differing alignment to the other features on the site. These factors, coupled with their location overlooking the valley floor, would suggest that it is possible that they are of relatively early date and almost certainly pre-date 1803.

Context	Type	Description	Depth/ Thickness	Height mAOD (Max)
24	Cut	Ditch	0.60m	0.41m
39	Deposit	Fill of ditch 24. Black silty peat.	0.60m	0.41m
40	Deposit	Reddish brown organic silty clay. Layer.	0.25m	0.71m
41	Bund	Newly constructed temporary bund	0.30m	1.01m
23	Timbers	Natural timbers (roots) – old hedgeline	N/A	-0.1m
25	Deposit	Fill of 26. Dark brown black humic silt clay	0.30m	0.05m
26	Cut	Ditch	0.30m	0.05m
27	Deposit	Fill of 28. Black organic sandy silts	0.16m	0.2m
28	Cut	Small oval pit	0.16m	0.2m
29	Cut	Small oval pit	0.25m	0.2m
30	Deposit	Fill of 29. Black organic sandy silts	0.25m	0.15m
31	Cut	Ditch	0.36m	0.15m
34	Deposit	Fill of 31. Pale reddish brown organic deposit.	0.16m	-0.05m
33	Deposit	Fill of 31. Dark grey/black sands	0.20m	0.15m
32	Deposit	Fill of 31. Organic silty clay.	0.15m	0.15m
35	Cut	Ditch	1.1m	0.75m
36	Deposit	Fill of 36. Grey/brown m mottled sands	0.20m	-0.15m
37	Deposit	Fill of 36. Black organic silty cays	0.40m	0.15m
38	Deposit	Fill of 36. Mixed grey brown sands.	0.40m	0.15m

Table 5: Context Information; Features in the vicinity of the northern sluice and associated new ditches.

5.0 THE FINDS

5.1 Summary

5.1.1 The archaeological monitoring work at Botany Farm produced a small assemblage of finds from a single context (Table 6). These were all washed and dried or air dried as appropriate and finds were quantified by count and weight. They were subsequently bagged by material and context and stored following IFA guidelines (2008). No further conservation is required on any of the finds.

Context	CBM	Wt (g)	Bone	Wt (g)	Fe	Wt (g)
18	2	112	1	13	2	536
Total	2	112	1	13	2	536

Table 6: Quantification of the finds

5.2 Ironwork by Elke Raemen

5.2.1 Ditch [19] (fill [18]) contained two pieces of ironwork. Included is a chain with seven remaining oval links (L260mm+) of varying dimensions, dating to the 19th- to mid 20th-century. A post-medieval worn and broken iron horse shoe was found in the same context.

5.3 Ceramic Building Material by Elke Raemen

5.3.1 Two fragments of ceramic building material were recovered from [18]. Included is an undiagnostic crumb in a sandy fabric as well as a black-glazed pantile fragment in an overfired, sandy fabric, dated to the 18th century.

5.4 Animal Bone by Gemma Ayton

5.4.1 A single fragment of bone was recovered from context [18]. The specimen has been identified as a fragment of roe deer mandible and includes the second and third permanent molars which are in wear. The bone shows signs of moderate surface erosion; there is no evidence of burning, gnawing, butchery or pathology.

5.5 Waterlogged Wood by Dawn Elise Mooney

Introduction

5.5.1 Three waterlogged timbers were recovered during monitoring of ground works at the site. Timber T1 was recovered from the southern end of Pond H, and timbers T12 and T15 originated from a wooden structure 21 in a north-south aligned ditch immediately to the north of Pond H. The dimensions and condition of the timbers were recorded, along with any tool marks and notes on preservation.

Methodology

5.5.2 Samples taken from each timber were sectioned along three planes (transverse, radial and tangential) according to standardised procedures

(Gale & Cutler 2000), and examined under a transmitted light microscope at 50x to 300x magnification in order to determine the woody taxa used at timber at the site. Taxonomic identifications were assigned by comparing suites of anatomical characteristics visible with those documented in reference atlases (Hather 2000, Schoch *et al.* 2004), and by comparison with modern reference material held at the Institute of Archaeology, University College London. Identifications have been given to species where possible, however genera, family or group names have been given where anatomical differences between taxa are not significant enough to permit satisfactory identification. Nomenclature used follows Stace (1997). Descriptions and taxonomic identifications of the timbers from the site are recorded in Table 5.

Timber T1

- 5.5.3 Timber T1 was taken from a deposit (Context [08]) which included several other natural timbers towards the southern end of Pond H. The timber measured 722 mm long by 244 mm wide and 69 mm deep. The timber appeared at first to be tangentially faced, possibly representing an offcut from the creation of boxed heart timber, however this may also be the result of more recent damage during excavation. No other tool marks were recorded, and both bark and sapwood were present on the underside of the timber. The wood was identified as ash (*Fraxinus excelsior*).

Timber T12

- 5.5.4 Timber T12 was part of Structure 14 in Ditch 8, comprised a piece of split oak (*Quercus* sp.) roundwood measuring 624 mm long by 72 mm wide and 36 mm in depth. A large knot was present towards the upper end of the timber, indicating that the wood is likely to derive from a branch or small trunk. The upper end of the timber was weathered and poorly preserved, however the preservation of the lower end was very good. This end was shaped to a point with two sawn facets, the first measuring 185 mm and the second 245 mm.

Timber T15

- 5.5.5 Timber T15, from Group 16 in Ditch 8, was identified as a short length of oak with bark and sapwood present, probably comprising a section of a large branch or small trunk, measuring 559 mm long by 134 mm in diameter. Although the base of the timber was in good condition, the upper end of the timber was very weathered and poorly preserved. The only tool marks observed were on the base, where the timber had been sawn flat, with a notch across one side which could possibly have occurred during felling.

Timber number	Length (mm)	Width (mm)	Depth (mm)	Diameter (mm)	Bark present	Sapwood present	Preservation notes	Conversion	Tool marks	Taxonomic identification
1	722	244	69	-	Y	Y	Preservation good across entire sample	None - natural	None	<i>Fraxinus excelsior</i>
12	624	72	36	-	N	Y	Upper end decayed but lower end very well preserved	Split branch	Sawn to point at lower end with two facets - one 185mm, one 245mm	<i>Quercus</i> sp.
15	559	-	-	134	Y	Y	Base well preserved but upper end weathered and very poorly preserved	Whole	Base sawn flat, with notch	<i>Quercus</i> sp.

Table 7: Descriptions and taxonomic identifications of timber

Discussion

5.5.6 Timber T1 is likely to represent part of a natural accumulation of wood remains formed in an embayment of the nearby River Alde, and as such is of no archaeological significance. This timber has been discarded. Timbers T12 and T15, however, originally formed part of a structure likely to be a timber revetment of a ditch causeway from which they were recovered. This would have consisted of a series of upright posts, of which T12 and T15 are examples, supporting cross planks which would have reinforced the sides of the causeway. The excellent preservation of those parts of these timbers which were not weathered suggests a fairly late date for the revetment, in the Post-Medieval or Early Modern period. However, no joints, fixings or tool marks which could inform further regarding the date of the timbers were recorded. The choice of oak for these revetment timbers is likely to have been intentional, as this wood is known to be strong and durable and is frequently used for many categories of joinery and construction (Taylor 1981). Given the probable late date of the timbers, it is likely that the wood derived from managed woodland (Rackham 1990), although the timbers themselves do not provide evidence of this.

5.6 Finds Overview

5.6.1 The assemblage is small and only a broad date range is provided by the finds, placing the assemblage in the 18th to mid 20th century. The recovered timbers are of probable similar age although they lack diagnostic features enabling refinement of date. The group therefore does contribute to the dating evidence, however, it is small and lacks diagnostic material to shed any further light on the site. It is not considered to be of any significance and material is recommended for discard.

6.0 DISCUSSION AND CONCLUSIONS

- 6.1 The archaeological monitoring and survey at RSPB Botany Marshes established that the deposit sequence and sediment zones was consistent with that modelled in previous studies and thus that disturbance in those areas which were most archaeologically sensitive had been minimised at the design stage.
- 6.2 The only wooden structure identified during the works is considered to be of probable 19th century date. Only some timbers from this structure were sampled for further study and the remainder of it remains on site. Given its late date it is considered to be of low archaeological significance and thus the impact of the works on them has not been major.
- 6.3 The ditches and features identified in the vicinity of the new sluice contained no artefacts but were not marked on any historic maps. This, coupled with their topographical location overlooking the valley floor, would suggest a possible relatively early date for them. The presence of ditches would suggest that the valley was being exploited, presumably as pasture or perhaps meadow, prior to the 19th century and that this included some land drainage. The discrete features are, given the absence of any dating material, more difficult to interpret but may be earlier in date and perhaps hint at occupation in the vicinity of the site and activity on sand/gravel islands (e.g Krawiec 2011, 11) and the valley edges. Where present in the area of the works these features have been preserved by record and, in the case of the ditches, they are likely to survive beyond the extents of the works. Accordingly the impact of the works has not been major.

ACKNOWLEDGEMENTS

ASE would like to thank RSPB for commissioning the work and for their assistance throughout the project, and J. Plouviez of the Suffolk County Council Archaeological Service for her guidance and monitoring. The excavation was directed by E. Heppell (ASE) with the assistance of R. Standing (RSPB). Excavation of the timber structure was supervised by S.Chew with the assistance of S. King. The author would like to thank A. Scruby who project managed the excavations and M. Atkinson who project managed the post-excavation process. The groundwork contractors were Miles Water Engineering.

BIBLIOGRAPHY

ASE 2013 *Written Scheme of Investigation for Archaeological Monitoring at RSPB Botany Marshes, Suffolk*

DCLG 2012 *The National Planning Policy Framework*

Gale, R. & Cutler, D. 2000. *Plants in Archaeology*. Otley/London: Westbury/Royal Botanic Gardens, Kew.

Hather, J. G. 2000. *The Identification of the Northern European Woods: A Guide for archaeologists and conservators*. London: Archetype Publications Ltd.

Institute of Archaeologists, 2008 IFA Standard and Guidance for the collection, documentation, conservation and research of archaeological materials, accessed on 09/08/13

Krawiec, K. 2011 *An Archaeological Evaluation at Botany Farm, Farnham, Suffolk*. Birmingham Archaeo-Environmental Rep. Ref. 2137-RSPB-BAE

Medlycott, M. 2011 *Research and Archaeology Revisited: a revised framework for the East of England*, E. Anglian Archaeol. Occ. Paper 24

Oxford Archaeology 2010 *Botany Farm, Farnham, Suffolk. Geoarchaeological Survey Report. OA Ref 4817*

Rolfe, J. 2009 *Archaeological Desk-Based Assessment. Botany Farm, Farnham, Suffolk* SCCAS Ref 2010/006

Schoch, W., Heller, I., Schweingruber, F. H., & Kienast, F. 2004. *Wood anatomy of central European Species*. Online version: www.woodanatomy.ch

Stace, C. 1997. *New Flora of the British Isles*. Cambridge: University Press.

Taylor, M. 1981. *Wood in Archaeology*. Aylesbury: Shire Publications.

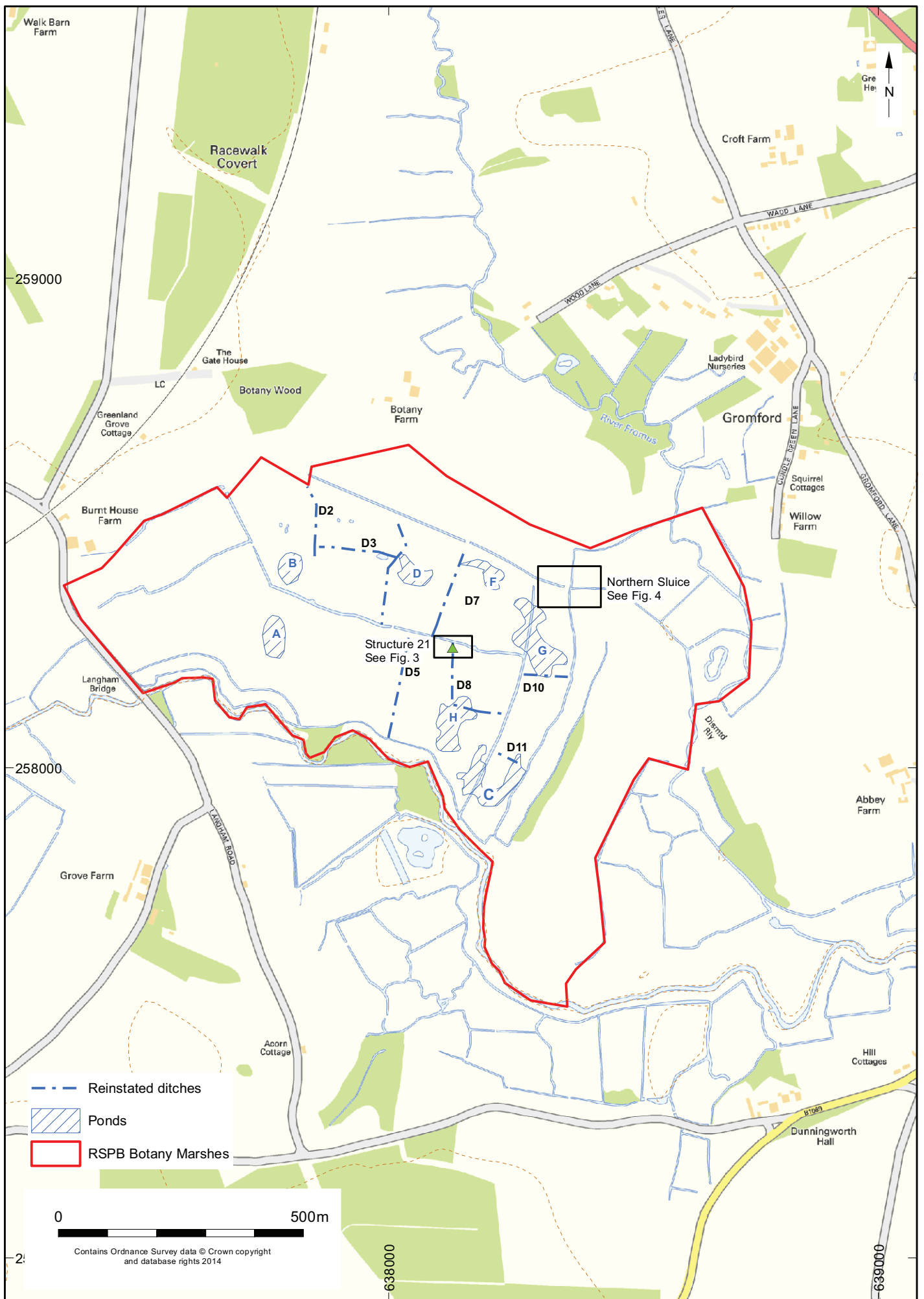
APPENDIX 1: HER Summary Form

Site Code	FNM 020					
Identification Name and Address	RSPB Botany Marshes, Farnham, Suffolk					
County, District &/or Borough	Suffolk Coastal District					
OS Grid Ref.	637711 258297					
Geology	Alluvial deposits					
Arch. South-East Project Number	8022					
Type of Fieldwork	Eval.	Excav.	Watching Brief	Standing Structure	Survey	Other
Type of Site	Green Field		Deep Urban	Other		
Dates of Fieldwork	August – November 2014					
Sponsor/Client	RSPB					
Project Manager	Adrian Scruby					
Project Supervisor	E. Heppell					
Period Summary	Post medieval and Undated					
<p><i>Archaeology South-East undertook a programme of archaeological monitoring at the RSPB site at Botany Marshes during the groundworks associated with the development of a new wetland reserve in the valley. Previous archaeological works (trial trenching and Geoarchaeological assessment) had established that the site was one with archaeological potential.</i></p> <p><i>The groundworks comprised the excavation of a series of ponds across the site, the re-excavation of a number of historic ditches that once crossed the site but had been infilled in the recent past and the establishment of a new sluice and associated ditches. Prior to the start of works the results of the earlier studies had been utilised to re-design the scheme to avoid, where possible, archaeologically sensitive areas.</i></p> <p><i>Archaeological monitoring of the groundworks recorded</i></p> <ul style="list-style-type: none"> • <i>a geological sequence consistent with that noted in the earlier studies,</i> • <i>a timber revetment of post-medieval date associated with a causeway entrance to a field</i> • <i>a group of undated, but potentially early, ditches and shallow pits</i> 						

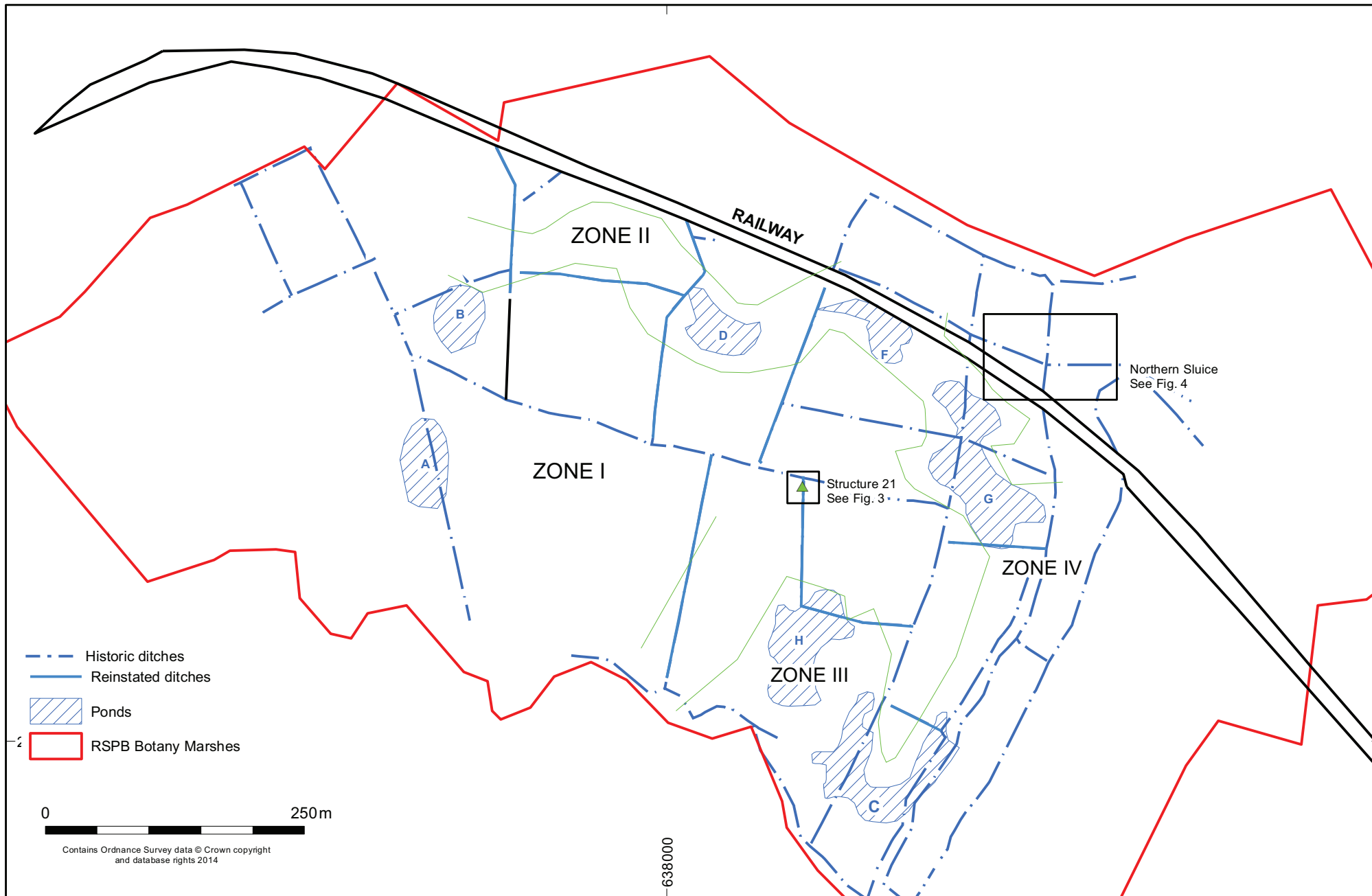
APPENDIX 2: OASIS Form

OASIS ID: archaeol6-155120	
Project details	
Project name	Botany Farm Reserve
Short description of the project	RSPB Botany Farm Reserve - habitat creation; Archaeological monitoring of the groundworks recorded a geological sequence consistent with that noted in the earlier studies, a timber revetment of post-medieval date associated with a causeway entrance to a field a group of undated, but potentially early, ditches and shallow pits related to landuse of this valley floor location.
Project dates	August – November 2013
Previous/future work	Yes / Not known
associated project reference codes	FNM 020 - HER event no. ASE Project No 8022
Type of project	Recording project
Monument type	REVETMENT Post Medieval
Monument type	DITCHES Uncertain
Significant Finds	N/A
Investigation type	"Salvage Excavation", "Salvage Record"
Prompt	Direction from Local Planning Authority - PPS
Project location	
Country	England
Site location	SUFFOLK SUFFOLK COASTAL FARNHAM Botany Farm Reserve
Postcode	IP17 1QZ
Study area	4.00 Hectares
Site coordinates	TM 37711 58297 52.1710556054 1.47676671843 52 10 15 N 001 28 36 E Point
Height OD / Depth	Min: 0m Max: 1.00m
Project creators	
Name of Organisation	Archaeology South-East
Project brief originator	Suffolk County Council Archaeological Service
Project design originator	ASE
Project director/manager	Adrian Scruby
Project supervisor	E Heppell
Name of	RSPB

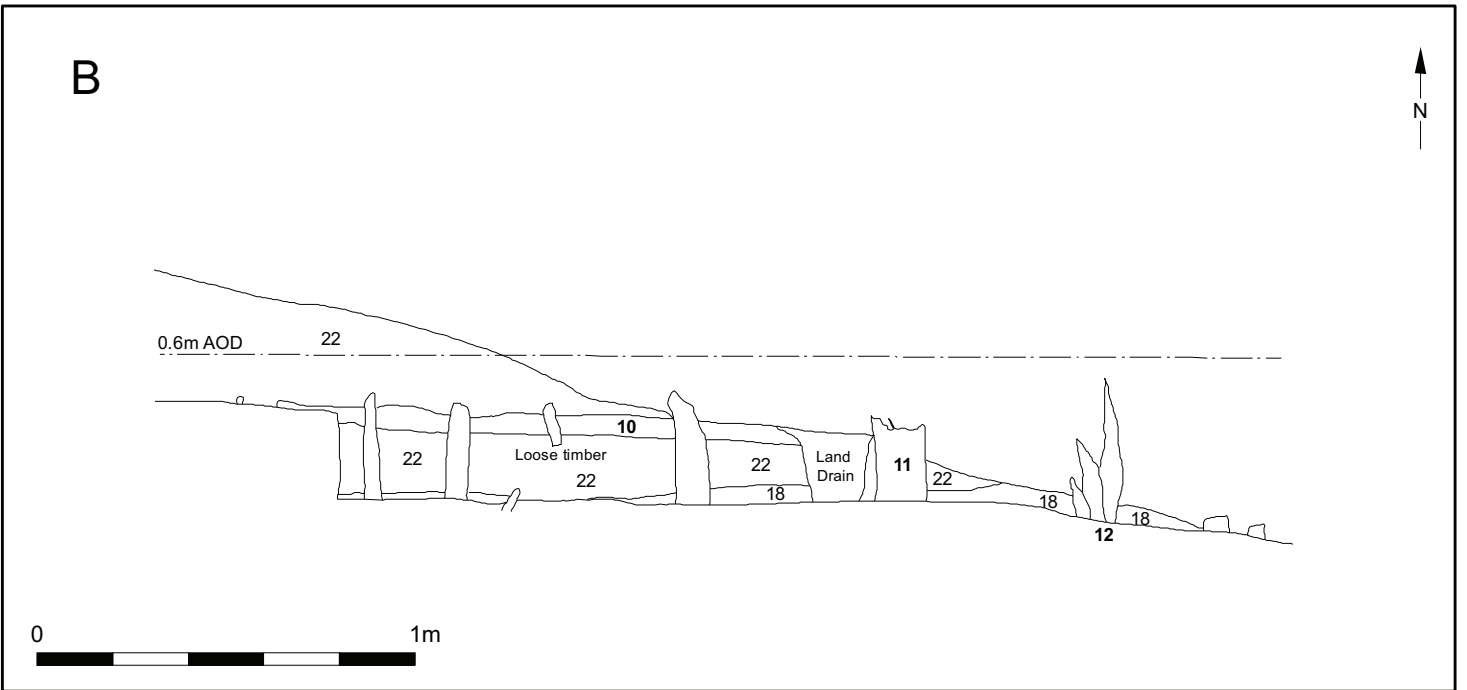
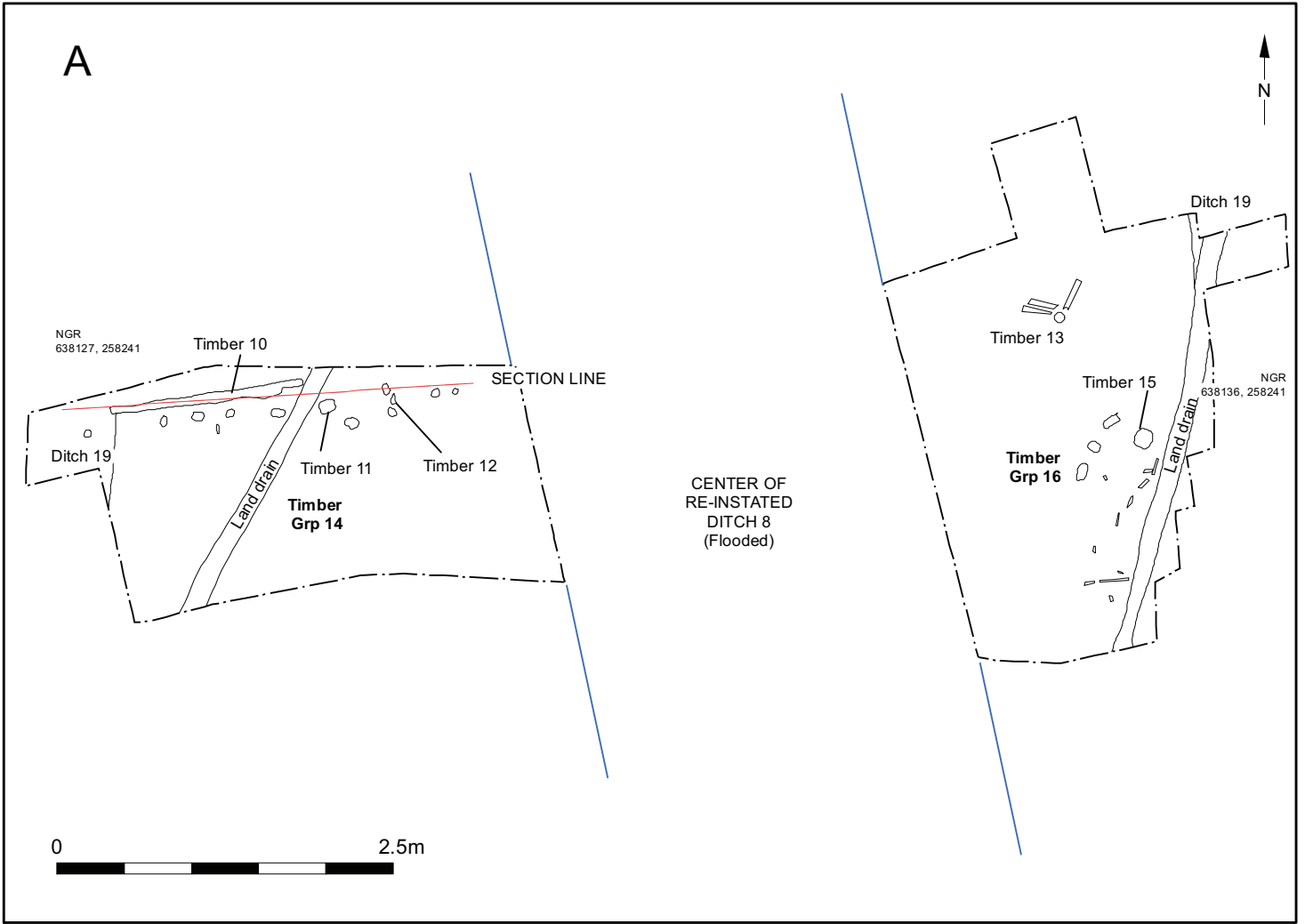
sponsor/funding body	
Project archives	
Physical Archive Exists?	No
Digital Archive recipient	Suffolk County Council Archive Store
Digital Media available	"Images raster / digital photography", "Spreadsheets", "Text"
Paper Archive recipient	Suffolk County Council Archive Store
Paper Media available	"Context sheet", "Drawing", "Map", "Notebook - Excavation", "Research", "General Notes", "Report"
Project bibliog.	
Publication type	Grey literature (unpublished document/manuscript)
Title	RSPB Botany Marshes, Archaeological Monitoring Report
Author(s)/Editor(s)	Heppell, E.
Other bibliographic details	2014122
Date	2014
Issuer or publisher	ASE
Entered by	E. Heppell (e.heppell@ucl.ac.uk)
Entered on	11 April 2014



© Archaeology South-East		RSPB Botany Marshes	Fig. 1
Project Ref: 8022	April 2014	Site location and areas of works	
Report Ref:	Drawn by: EMH		



© Archaeology South-East		RSPB Botany Marshes	Fig. 2
Project Ref: 8022	April 2014	Areas of works showing historic features and sediment zones	
Report Ref: 2014122	Drawn by: EMH		



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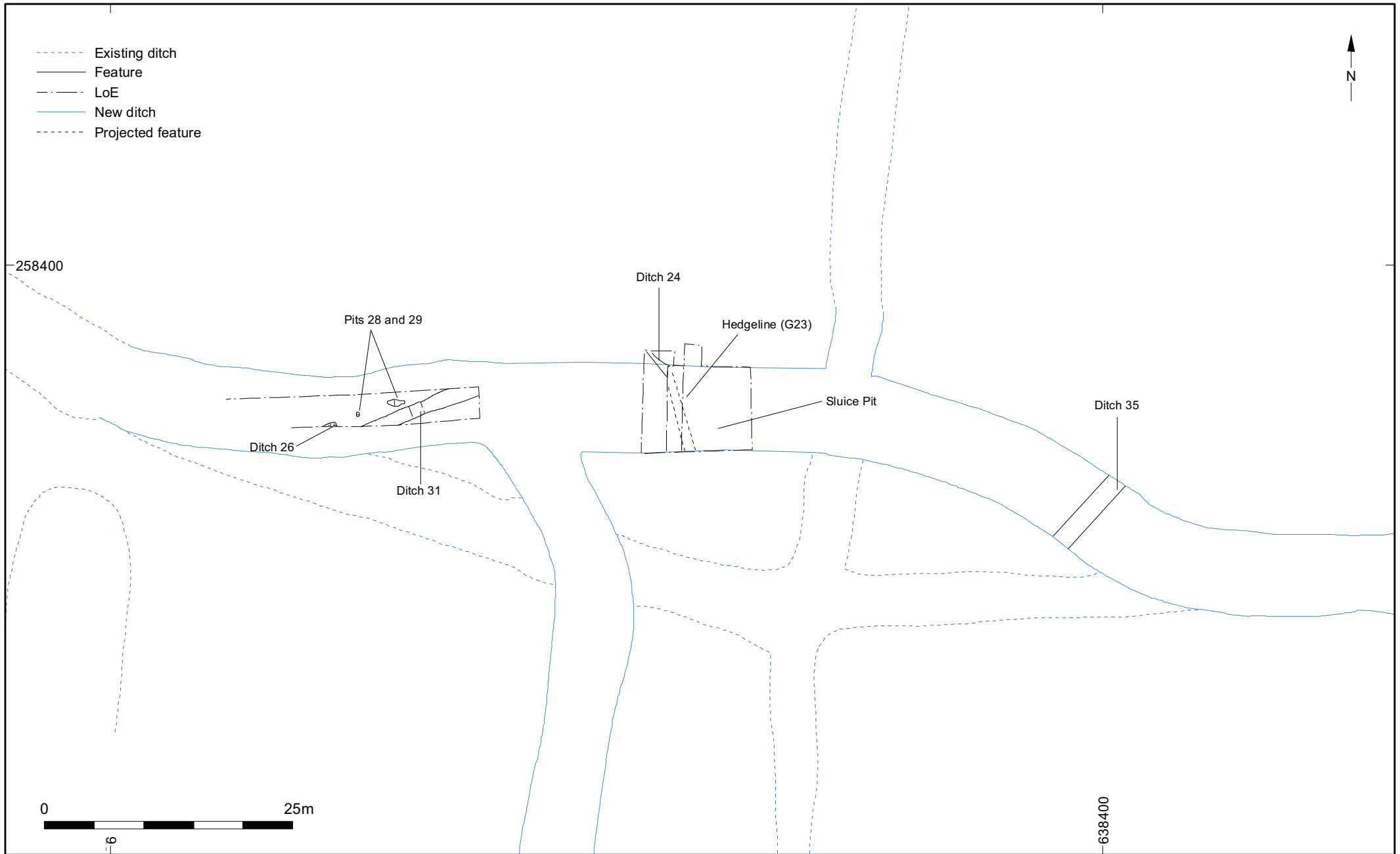
April 2014

drawn by: EMH

RSPB Botany Marshes

Plan and Section of Structure 21

Fig. 3



© Archaeology South-East		RSPB Botany Marshes	Fig. 4
Project Ref: 8022	April 2014	Plan of features in the vicinity of the northern sluice	
Report Ref: 2014122	Drawn by: EMH		



Plate 1. Timber 01 (0.5m scale)



Plate 2. Example of deposit sequence, Pond C (1m scale)



Plate 3. Timber revetment, looking east (2 x 1m scale)



Plate 4. Timber revetment, looking north (1m scale)



Plate 5. Ditch 24 (2m scale)



Plate 6. Ditch 26 (1m scale). Water rising as the photo is being taken.



Plate 7. Pit 28 (0.5m scale)



Plate 8. Ditch 31 (1m scale)



Plate 9. Ditch 35, looking southwest (2m scale)

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