Report on the Archaeological Excavation of Barrows 12, 13, 14, 18 & 21, Petersfield Heath, Petersfield, Hampshire

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NON-TECHNICAL SUMMARY

This document sets out the results from archaeological excavations carried out into Barrows 12, 13, 14, 18 & 21, Petersfield Heath, Petersfield, Hampshire, carried out as part of the People of the Heath Project under the auspices of Petersfield Museum. The project aims to investigate the history and prehistory of Petersfield Heath, and is funded by the Heritage Lottery Fund and the South Downs National Park Authority. The archaeological work was carried out from 2nd – 20th June 2015 (Barrows 18 & 21) and 8th – 26th September 2015 (Barrows 12, 13 & 14).

Barrow 12 - A sewer-main trench previously dug through the site was re-opened and its sections fully recorded. The barrow ditch was found to survive to either side, buried under a thin overburden. Small areas of excavation explored the ditch and two other features. No internal mound was evident and the former external bank had largely been levelled.

Barrow 13 - A single trench was excavated, running from the centre of the barrow to beyond its outer edge, which revealed that the barrow was of turf construction with an encircling ditch, dug after the turf stack had been formed. A burial pit was excavated from close to the centre of the barrow containing a cremation, probably contained within a fabric bag with a wooden handle, and an associated artefact assemblage.

Barrow 14 - A single trench was excavated, running across the centre of the monument and beyond its outer edges, which revealed that it consisted of a single ditch and external bank, with no internal mound. An oval pit and post-hole were excavated close to the centre of the monument, the former containing a significant quantity of charcoal.

Barrow 18 - A single "L"-shaped trench was excavated, running from the centre of the barrow to beyond its outer edges, which revealed that the barrow was of turf construction with no surrounding ditch. No features or artefacts associated with the barrow were recovered from within the trench save for a single ferruginous sandstone block from within its turf stack.

Barrow 21 - A single trench was excavated, running across the monument and beyond its outer edges, which revealed it to be a natural sand mound.

PROJECT BACKGROUND

Figure 1 Site location. © Crown copyright. All rights reserved. License number: AL100036068

1. Petersfield Museum has received funding from the Heritage Lottery Fund (HLF) and the South Downs National Park Authority (SDNPA) for a four-year project to understand and conserve the prehistoric barrow cemetery on Petersfield Heath. The museum has appointed Dr. Stuart Needham (independent researcher) and George Anelay (West Sussex Archaeology Ltd) to direct the project, which will involve local volunteers in most aspects of the project's fieldwork. The Heath is owned by the Petersfield Heath Trust and managed by Petersfield Town Council.

2. The 21 previously accepted barrows on Petersfield Heath are all Scheduled Monuments and as such Scheduled Monument Consent is needed for any intrusive fieldwork impacting upon them. Written Schemes of Investigation were drawn up by West Sussex Archaeology Ltd (WSA 2015b & 2015c) to accompany and inform the successful applications for Scheduled Monument Consent relating to the excavation of Barrows 12, 13, 14, 18 & 21 (Scheduled Monument Nos. SM32535, SM32536, SM32536, SM32539 & SM32540).

3. This report details the results of the second and third of six archaeological excavations. The second excavation was carried out from the 2nd – 20th June 2015 (Barrows 18 & 21) and the third from the 8th – 26th September 2015 (Barrows 12, 13 & 14) by volunteers under the supervision of George Anelay (Barrows 14 & 21), Ken Mordle (Barrows 13 & 18) and Stuart Needham (Barrow 12), and under the overall direction of George Anelay of West Sussex Archaeology Ltd. The project archive will be deposited with Hampshire Museums Service.

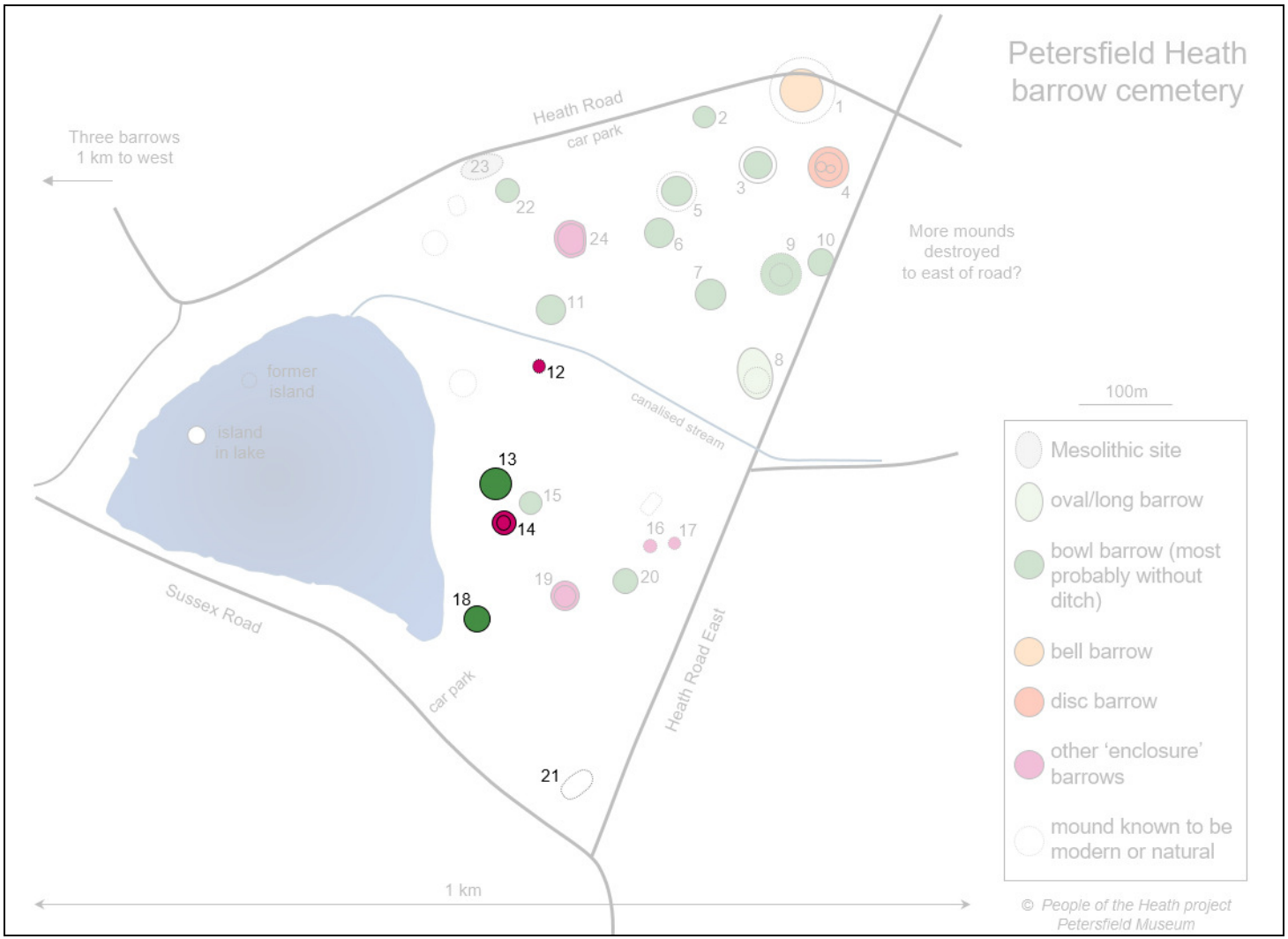

Figure 2 Schematic plan of the barrow cemetery on Petersfield Heath. Barrows 12, 13, 14, 18 & 21 are highlighted.

4. Petersfield Heath is situated on the eastern side of the town of Petersfield in Hampshire (see Fig.1). The underlying geology of the site is of Folkestone sandstone, Upper Marehill mudstone and Upper Pulborough sandstone, all of the Lower Greensand series. In addition roughly half the Heath is covered by superficial deposits, including a band of Sussex Rother Terrace deposits around its southern and western sides and a block of Head deposits in the area of the lake and its outflow. The excavated barrows are positioned as follows (see Fig.2):

    - Barrow 12 lies c.115m to the east-north-east of the lake on Petersfield Heath, at 55m aOD and is centred at OS grid reference SU 7554 2295.

    - Barrow 13 lies c.55m to the east of the lake on Petersfield Heath, at 62m aOD and is centred at OS grid reference SU 7549 2283.

    - Barrow 14 lies c.65m to the east of the lake on Petersfield Heath, at 59.5m aOD and is centred at OS grid reference SU 7550 2279.

    - Barrow 18 lies c.30m to the east of the lake on Petersfield Heath, at 57m aOD and is centred at OS grid reference SU 7547 2269.

    - Barrow 21 lies c.220m to the south-east of the lake on Petersfield Heath, at 60.5m aOD and is centred at OS grid reference SU 7558 2251.

OBJECTIVES

1. The overarching archaeological objectives of this project fall into four main categories: firstly, to clarify better the spatial extent of individual monuments; secondly to understand better their condition and the risks they are subjected to; thirdly to establish the constructional character and date of a variety of the monuments, including all of the five or six different types present; fourthly to piece together as full and as long as possible a palaeo-environmental history for the immediate environs and the local catchment. The recovery of burial deposits is not a primary objective of this project. However, we will be ready at all times to deal appropriately and responsibly with such remains should they be encountered in our excavations.

2. With specific reference to the barrows which are the subject of this report, regarding the first objective, these excavations aimed to clarify how much of the current profile of the monuments is a result of more recent modification or damage and to establish their earlier form, including whether they are encircled or flanked by a ditch or ditches. Particular questions were to confirm or revise the earlier identification of Barrows 12 & 14 as saucer barrows and Barrow 21 as an oval barrow, to determine whether Barrows 13 & 18 were originally ditch-

enclosed and to assess the origin of the semi-circular bank at the top of Barrow 13.

3. With regard to the second objective, the fact that root action and animal activity can have a significant impact upon the monuments on the Heath has already been demonstrated in the case of Barrow 11 (WSA 2015a, pps.9-10), and it was decided that greater attention should be focused on this aspect, particularly with reference to the low-relief monuments, such as Barrows 12 & 14. In the case of Barrow 13, its uneven profile suggested the likelihood of considerable historic earth-moving and its cause was a key question to be investigated. In addition a number of the low-profile monuments on the Heath have been subject to neglect in terms of their conservation and management, with Barrow 12 being an obvious example, leading to its complete disappearance. It was intended that the establishing of its exact location and condition as a result of these excavations would lead to improved management of surviving sub-surface features in the future, and would also enable an assessment of the damage inflicted by the laying of the sewer main which crosses it.

4. Thirdly the constructional character and date of Barrows 12, 13, 14, 18 & 21 was to be established by the cutting of continuous sections through the whole or a half of each monument. This would ensure that all the main structural components were exposed for recording, and would also give potential for the recovery of material for radiocarbon dating from key deposits. In addition, such sections would also meet the fourth objective by enabling the collection of a comprehensive series of palaeo-environmental samples from each of the barrow deposits.

HISTORICAL BACKGROUND

1. Petersfield Heath is home to one of the most impressive and diverse barrow cemeteries in the South-East of England. The complex is considered to be of national importance and 21 barrows, mainly probably dating to the Bronze Age, have the highest level of state protection as Scheduled Monuments. An additional site (Site 24) has since been dated to the Early Bronze Age by the People of the Heath project, while an early 19th century map suggests that the cemetery once extended to the east of Heath Road East in an area now covered by housing. The barrows comprise a mix of 'styles', some of them specialized forms that are rare outside Wessex. The cemetery has not been studied comprehensively since the 1920s, when archaeologist Stuart Piggott, initially as a student at Churchers College, added several low-profile monuments to the more obvious barrows mapped by the Ordnance Survey and produced an overall plan of the cemetery. His plan was subsequently published by Leslie Grinsell in his overview of Hampshire barrows in the *Proceedings of the Hampshire Field Club*.

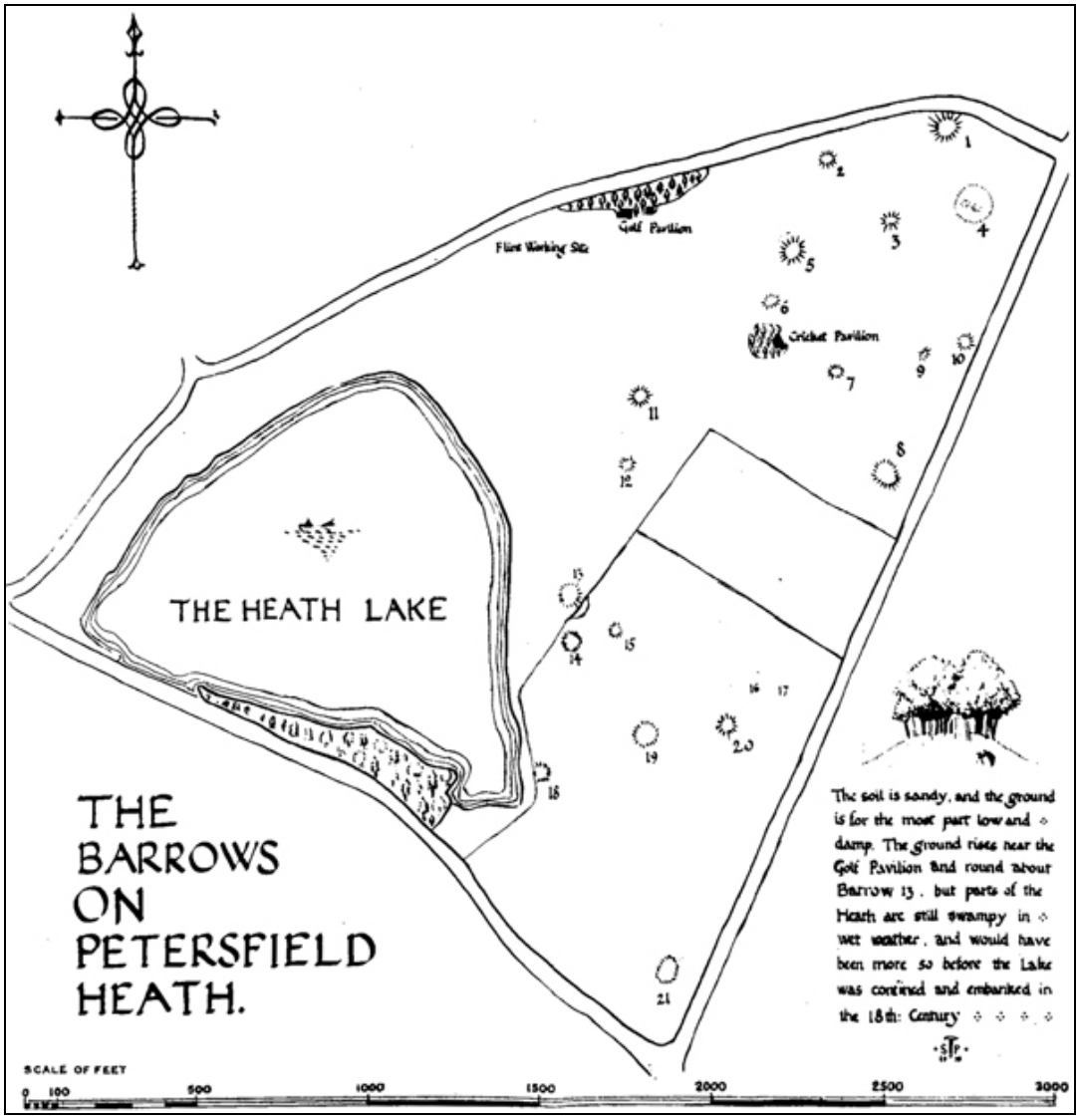

Figure 3 Piggott's plan of the barrows on Petersfield Heath

2. Barrow 12 was identified by Piggott as a saucer barrow, a classification followed by Grinsell (1939, p.228), c.15m in diameter, with an encircling ditch and outer bank. The monument was recorded as being slight, but clearly discernible by Piggott and it appears in aerial photographs until January 1969, but it has subsequently disappeared from view despite lying mainly in dry grassland. Bunkers from the golfing era on the Heath can still be seen nearby, but the People of the Heath geophysical survey (April 2015) revealed that a massive trench had been cut through the barrow, remains of which could be discerned to either side as faint curving features. Aerial photographs show that the trench was dug between 1969 and 1989 and that the remaining parts of the earthwork were masked by overburden at a later date.

3. Barrow 13 is a bowl barrow, estimated to be c.30m in diameter and c.2.5m high. The upper part of the mound has clear signs of disturbance, believed to be a result either of antiquarian excavations or of the dumping of material in modern times. There is no sign of an

accompanying ditch or ditches, but the ground immediately to the north and east were landscaped during the golf-course era. A geophysical survey undertaken as part of the project in April 2015 also found no clear evidence for any ditch.

4. Barrow 14 was identified by Piggott as a saucer barrow, again followed by Grinsell. Its diameter was recorded as c.25m, including the encircling ditch and external bank. No clear central mound was discernible on a topographic survey carried out in 2015, therefore its classification is open to question, although tree-root disturbance may have altered the topography at a fine scale. A geophysical survey undertaken as part of the project in April 2015 clearly identified the encircling ditch in the southern half, but the results were more obscure to the north.

5. Barrow 18 is thought to be a low bowl barrow, c.1m high and c.25m in diameter. No mature trees are currently growing upon the barrow, although it had to be cleared of thick scrub. However, a 1920's aerial photograph appears to show a clump of trees situated upon it. There is some evidence for mutilation to the form of the original monument, particularly to its northern and eastern flanks. Piggott records no sign of an encircling ditch and a geophysical survey undertaken as part of the project in November 2014 likewise found no clear evidence for one. However a detailed topographic survey undertaken as part of this project indicates slight depressions to the north and south of the monument which could have represented traces of an infilled ditch.

6. Barrow 21 was identified by Piggott as a possible oval barrow. It was recorded as being c.0.7m high, c.45m long and c.20m wide. A group of pine trees have been planted upon the barrow, probably in the 19th century. There is little evidence for mutilation to the form of the original monument, although a golf green situated adjacent to its northern end may have encroached slightly into its lower slopes. There is no surface sign of an accompanying ditch or ditches, nor did any clear indications show in the geophysical survey undertaken as part of the project in November 2014.

7. The first excavation carried out as part of this current project was undertaken in September 2014 and included the cutting of a single trench into Barrow 11 (two other sites sampled by excavation are not scheduled). This trench ran from the centre of the barrow to beyond its outer edge, and it revealed that the barrow was entirely of turf construction with no surrounding ditch. An artefact assemblage recovered from close to the centre of the barrow was almost certainly related to a burial, although no human remains were encountered in the trench. A radiocarbon date of 1885 - 1690 cal BC (95% probability) was obtained from charcoal associated with the assemblage.

RESULTS

Barrow 12

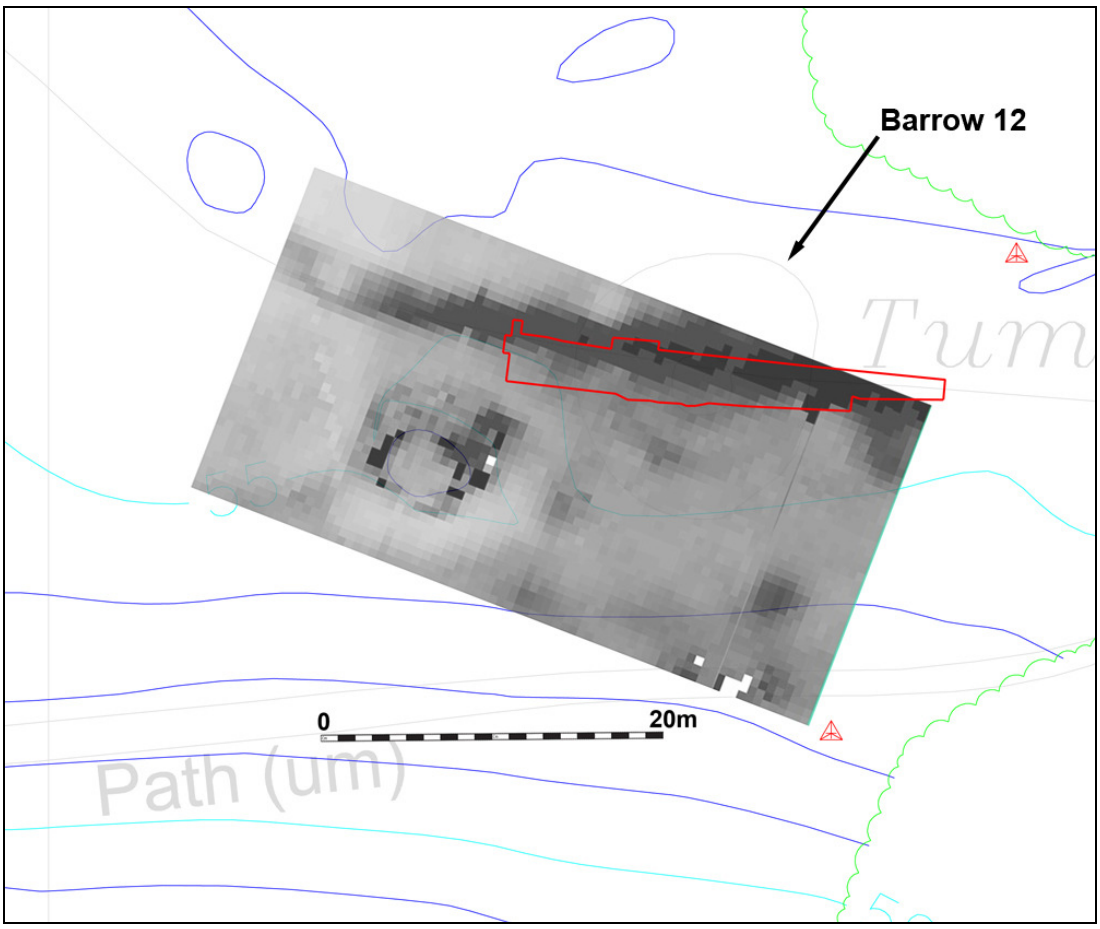

Figure 4 Plan of the excavated trench over the geophysical survey of Barrow 12.

1. The excavation trench was 26.8m long and from 2.5 - 3m wide, varying according to the width of the sewer-main cutting, running approximately east-west. In addition to re-excavating the earlier backfill to a depth of between 0.6 and 0.8m, two small extensions were excavated back from the north section to investigate intact deposits: 5 x 0.5m to excavate a short stretch of ditch and any bank remnant on the western side of the enclosure and a feature [Feature 1] lying immediately outside; 0.95 x 0.5m to excavate a cut feature [Feature 3] showing in the north section halfway between the two ditch exposures.

2. Leslie Grinsell described this barrow before it was damaged and lost: 'A beautiful example with the central mound 22ft. (6.7m) in diameter and 6in. (0.15m) high with a slight dip in the centre, the ditch and bank each being about 6ft. (1.85m) wide. The ditch is 6in. deep and the outer bank 6in. high. The ditch is marked by greener grass, and the outer bank by brown grass' (1939, 228).

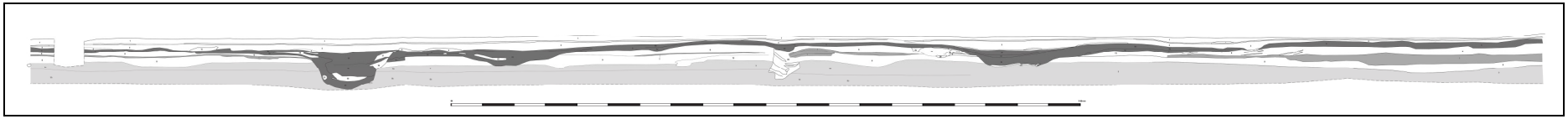

Figure 5 North face of the trench across Barrow 12. The upper (5) and lower (7) turf lines are shaded, as is the underlying sand (9 & 10).

Figure 6 North face of the trench across Barrow 12, looking north-east. The arrows mark the position of the two ditches

3. Four broad and rather shallow features in the long sections in opposite trench walls were identified as the barrow ditch, two to the west and two to the east. The space between ditch inner lips is 5.5m in the north-wall and 6.3m in the south wall; corresponding distances for the ditch outer edges are about 10.2m and 10.9m. These dimensions, in conjunction with the geophysical survey and Grinsell's measurement, suggest that the centre of ring-ditch was close to the line of the south wall.

4. The full sequence of the ditch fills from bottom upwards is as follows (not all layers were present in all sections): dark brown humic soil (35); grey-brown sand (22 & 32), variable in character and locally with a lens of beige sand (23); thin band of rich brown peaty soil (31 & 34) – presumed to be a turf-line; grey sand topped by a very thin brown soil (30). The cutting back of the north wall to investigate the western ditch exposure yielded no finds and no significant change in stratigraphy. The ditch walls were slightly uneven.

5. The outer bank recorded by Grinsell and also seen in early aerial photographs was not certainly evident in the cleaned trench sections, although it might be represented by a rise in the top of layer (5a) outside the eastern ditch in the southern section. Elsewhere it must be presumed to have been levelled by the activity during and after sewer-pipe trench cutting, at least alongside the trench itself. The interface between the overburden (base of (4)) and the top of the early sequence (top of (5a)) is uneven and includes some sudden dips presumably due to a machine cutting down deeper.

6. Similarly, if Grinsell's low mound existed, rather than being an illusion caused by the profile of the enclosure, it too had been entirely removed alongside the trench, the ground surface being no higher than that to west and east. The issue of the possible central mound will be discussed more fully in the final report. A double turf-line showed in the sections both inside and outside the enclosure, the lower one (7) being thinner (mainly ≤ 0.03m, but locally up to 0.07m) and, locally, intermittent. This lay over, in turn, a light grey sand (8), a white sand grading downwards to slightly beige due to increasing dampness (9) and localised patches of iron-rich dark brown hardened sand (10). Above the lower turf was a light grey sand (6) similar to (8) which became strongly laminated with thin darker bands to the east. This supported the upper turf-line (5), a rich brown peaty soil which frequently split into three sub-units, the middle one (5b) being greyer and sandier. The ring-ditch was cut from a horizon within this complex soil profile.

7. What survives of layer (5) was sealed by a shallow overburden of rapidly changing characteristics, from base upwards: thin intermittent spreads of gravel (4), mixed but mainly light grey sand (3) presumed to be unreturned upcast from the sewer-main trench, a very thin deposit

of yellowy-orange clay-silt (2) and a poorly developed turf incorporating light grey-brown sandy soil (1).

8. Two more features were exposed in the sewer-main trench north section. Feature 1 lay immediately outside the ditch to the west and would probably have impinged on the bank there. It was 1.4m wide and 0.58m deep at the section line. Its fills were varied, but included much peaty soil. Despite appearing to be fairly ancient, its partial excavation yielded modern ceramics from a low level. Feature 3 lay in the interior of the ring-ditch and the surviving part was fully excavated. It was 0.45m across and 0.5m deep below the upper soil horizon (5), from which it was probably cut. It had steep sides and the fill comprised patchy grey-brown sand (24) over a lower deposit of dipping lenses of dark grey and beige sand; the darker lenses could have been decayed turves. Feature 3 cannot be definitively associated with the enclosure barrow; however, it did yield a small heel-shaped piece of ferruginous cemented sandstone, a material that was well utilised in the Early Bronze Age locally to judge from the grave groups in Barrows 11 and 13.

9. Additional finds were very few, two worked flints, two charcoal fragments and two fairly large blocks of stone. One of the flints, a core from the top of layer (9) in the extreme northwest corner of the trench, is significant. Provisional identification by Anthony Haskins suggests it could be Upper Palaeolithic rather than Mesolithic and this in turn could indicate that the sands of layers (8) and (6), the latter of which is partially laminated, represent phases of wind-blown material before the stabilisation that came with Holocene vegetation. The pieces of stone are also of interest as they appear to be of upper greensand and may explain Stuart Piggott's observation of 'chalk blocks near the centre', for the off-white upper greensand can be mistaken for chalk. However, since our finds came from more modern contexts and Piggott's from unknown contexts, we cannot know how they relate to the monument and its use. Only the central location noted by Piggott suggests a connection.

Barrow 13

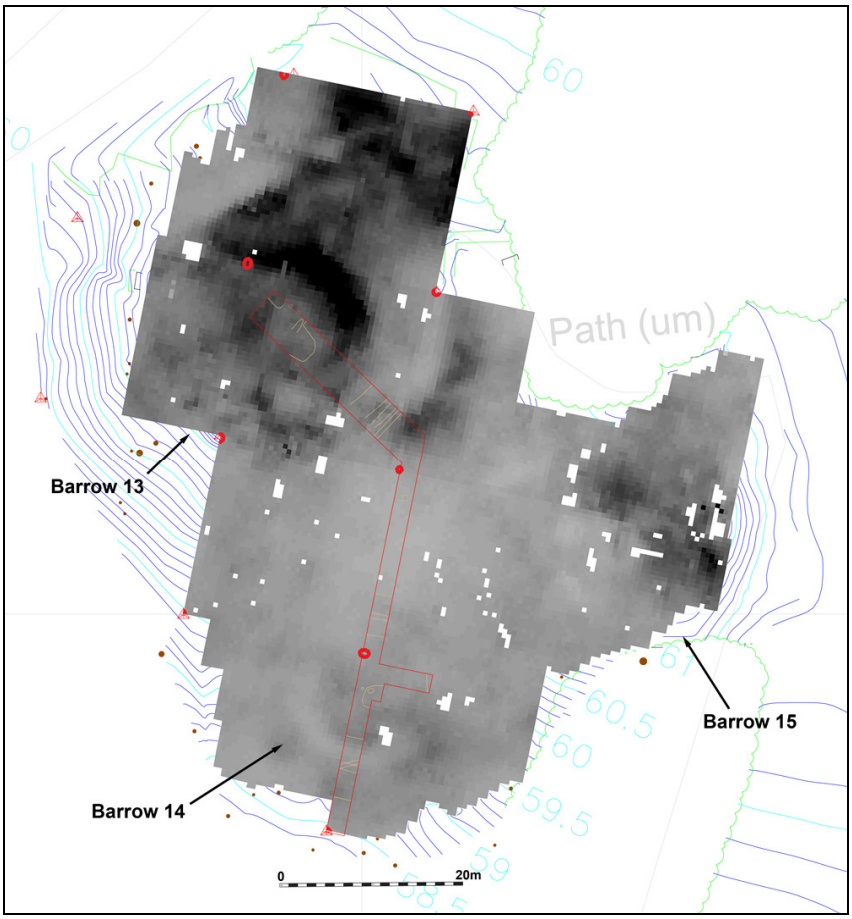

Figure 7 Plan of the excavated trench over the geophysical survey of Barrows 13-15

1. The excavation trench cut into Barrow 13 ran approximately north-west to south-east for a distance of 22.8m at 4m wide, before turning to run approximately north-south, across Barrow 14, for a further 41m at the narrower width of 2m. The trench's north corner was placed as close to the centre of the barrow as was possible, based upon the topographic survey, in order to create a continuous section from the centre of the barrow to beyond its outer edge.

2. The geological layer, which formed the base of the trench, was by no means uniform in its stratigraphy. At the greatest depth reached in the excavated trench, it was composed of an iron-rich yellow sandy clay, varying in its exact composition depending upon its location, trending more towards clay at the north-western end of the trench, and becoming increasingly sandy towards its surface where its colour changed to a pale brown, presumably due to leaching. Throughout the bulk of the trench this sandy-clay was capped with alternating lenses of black and pale grey sands, except to the south-east of ditch [104], where the black lenses were absent, presumably again because of rain-water induced leaching. These are interpreted as episodes of historic topsoil formation interspersed with windblown sands. The mound of Barrow 13 was constructed over these lenses.

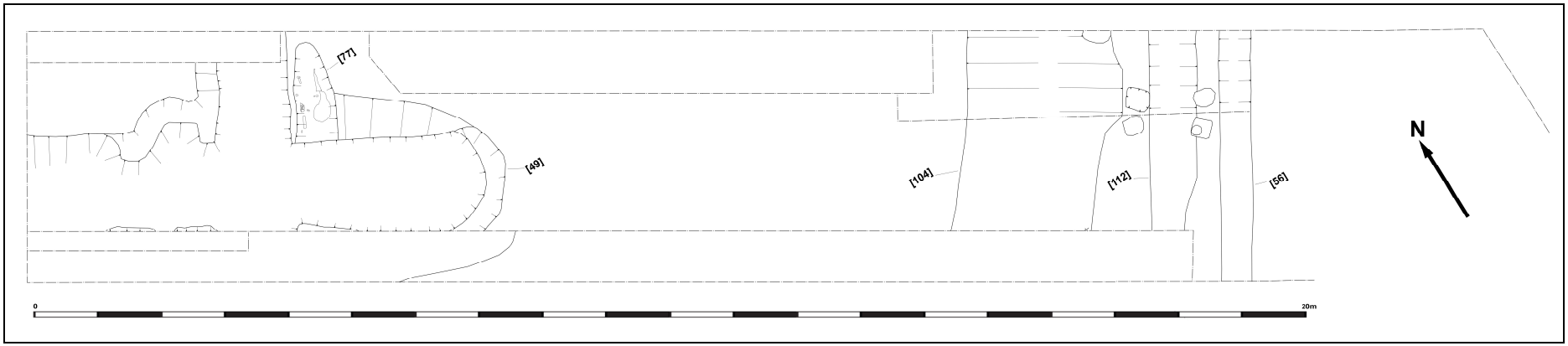

Figure 8 Plan of the trench into Barrow 13

Figure 9 North-east face of the trench into Barrow 13

Figure 10 Barrow 13, looking north-east

3. Lying upon and within the upper part of these pre-barrow layers was a scatter of *in-situ* Mesolithic flints. These were only excavated at the south-eastern end of the trench, close to its turn and to the south-east of ditch [56], but similar flintwork was also noted lying beneath the barrow to the north-west of ditch [104], where it was left unrecovered. The scatter appeared to concentrate in an area c.2m² to the immediate south-east of ditch [56]; any north-westwards extension of this being cut by this ditch and two to the west [112] & [104]. No further Mesolithic flints were found in the continuation of the excavated trench southwards towards Barrow 14. It is possible therefore that Mesolithic occupation was concentrated on the spine of the spur which runs north-west to south-east under Barrows 13 and 14.

4. Barrow 13, as with Barrow 11, was constructed of turves, seen as alternating bands of black and pale grey sands (25, 54, 66, 95, 96 & 105), except towards the south-east, where a more yellow sand was noted accompanying further black bands. The black bands are interpreted as the upper humic part of the turf, while the pale grey or yellow sand is derived from the geology beneath. This would indicate that the turves were derived from two locations, one with underlying pale grey geological sands and one with yellow geological sands. Given the complex geology of the Heath, these sources need not have been far from each other or the site of the barrow.

5. The turf stack extended for 13.5m along the trench, from its north-west end, and was 1.25m tall at its greatest height. Due to the widespread nature of subsequent disturbance to the barrow, and the limited extent of the excavated trench, it is not possible to know with any accuracy its original diameter or height. However, should the later robber trench (see below) have been placed, as is suspected, close to its centre, then it can be estimated to have been c.20m in diameter.

6. To the south-east of the turf stack a substantial ditch [104] was revealed despite the lack of any evidence for it from the topographical and geophysical surveys. The distance between the inner edge of this ditch and the outer edge of the turf stack varied within the excavated trench, being 1.15m in the north-east baulk, but only 0.35m in the south-west. Nevertheless, the short segment of ditch exposed seems to be broadly concentric with the mound. The ditch itself was c.2.85m wide and c.1m deep, with a flat base c.0.6m wide. The inner edge sloped at a 45º angle, while the outer slightly less, at 40º. The ditch fill comprised four layers: against the inner and outer sides was a black sand (108), up to 0.1m thick, and indistinguishable from the buried topsoil found beneath the barrow stack; as such it is interpreted as a humic layer formed against the ditch edge. At the base of the ditch, and probably forming before, during and after the humic layer (108), was a layer of very dark brown sand, c.0.15m thick with orange lenses (103). This is likely to have been formed by material eroding off the sides of the ditch during the earliest phase of its existence. Above this was a pale buff sand (102), 0.2m thick, overlain by a mottled grey sand (101),

0.3m thick. Both of these were probably formed by either wind-blown or water-washed sands building up within the ditch.

7. Capping the turf stack of the barrow, was a layer of grey/orange sand (8), up to c.0.35m thick. This extended for c.5m from the outer edge of the barrow towards its centre, before being cut by the robber trench. It is probable that this layer originated from the encircling ditch [104] and, if so, indicates that the turf stack of the barrow was constructed before the ditch was dug, although the lack of any discernible humic layer between the two, might suggest the interval was a short one. A similar constructional sequence was noted in three of the four ditched barrows excavated at West Heath (Drewett 1976, Barrows I, III and IV, p.127-36).

8. Sealed beneath the turf stack, and cut into the underlying geology, a shallow pit was revealed, which proved to contain a single cremation deposit, with associated grave goods. This pit was c.035m deep and c.0.65m wide, with a rounded base, and was orientated north-east to south-west, across the spine of the ridge upon which the barrow was sited. Although the pit had been truncated at its south-western end by a later robber trench [49], its surviving length was about 1.6m and may not have been more than around 2m long as originally dug. The fill of the pit consisted of lenses of buff, pale grey and black sands, reflecting the layers through which it had been dug.

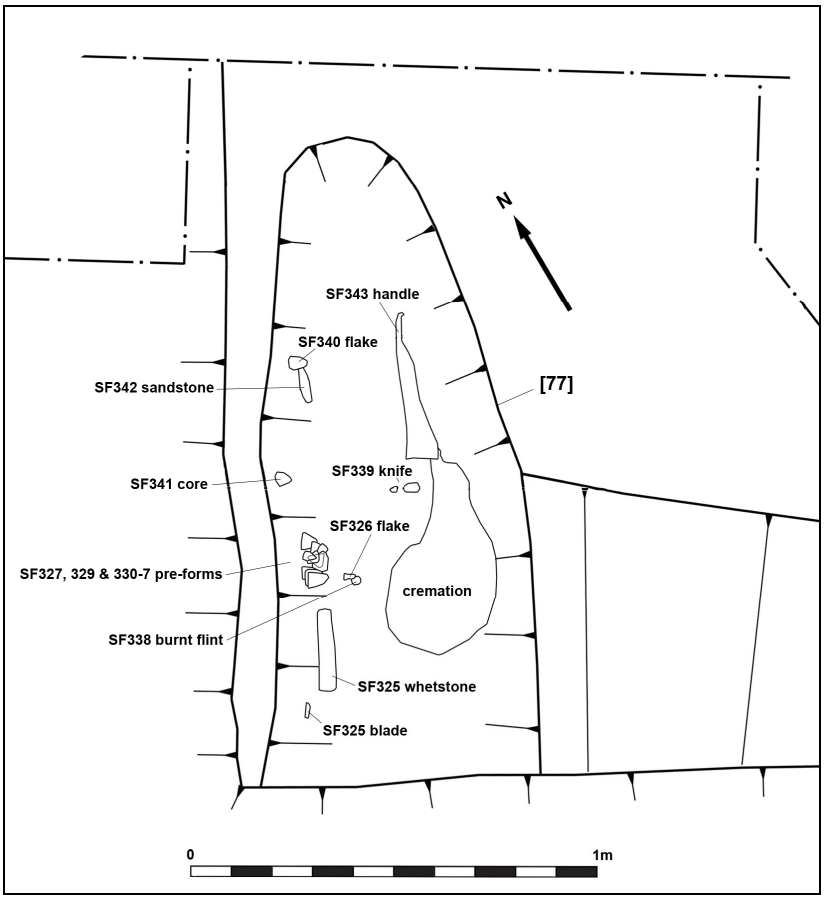

Figure 11 Plan of the burial in Barrow 13

9. The cremation was placed along the south-east side of the pit, while all but one of the grave goods were positioned in a line along its north-west side. The pile of cremated bone extended c.0.45 north-east to south-west and c.0.25m north-west to south-east. Towards the north-eastern end of the cremated bone, and lying c.0.05m to the north-west, was a burnt flint knife (SF339), possibly of the *plano-convex* type, split into two by heat. Immediately to the north-east lay a block of hardened sand (SF343), thought to be mineral-replaced wood, c.0.38m long and tapering from c.0.09m wide to a curled knob at the narrow end. This group as a whole is interpreted as the remains of an organic bag, now completely decayed, containing the cremation, with a wooden handle attached to its upper end. The flint knife, whilst quite possibly burnt with the cremation, was probably placed within the pit separately, perhaps on top of the bag.

Figure 12 The artefact assemblage from the burial in Barrow 13

10. At the north-eastern end of the linear arrangement of artefacts, opposite the supposed wooden handle, were a thin pear-shaped object (SF342) of coarse grained sandstone beneath a retouched flint flake (SF340). Next in line, and opposite the flint knife, was a flint core (SF341), showing signs of two well separated phases of working. To the south-west of the core, at a distance of c.0.2m from both it and the cremation, was the main cluster of artefacts, composed of a tight cluster of ten sub-triangular flint pre-forms (SFs327, 329 & 330-7), all

probably for barbed-and-tanged arrowheads. Slightly detached from this stack and closer to the cremation, lay a flint flake (SF326) and a burnt flint with two flake beds (SF338). To the south-west of these, and opposite the south-western end of the cremation, was placed a large sub-rectangular whetstone with flat faces and lightly furrowed sides (SF325). It is 225mm long, 57mm wide and 35mm thick and appears to be of sandstone of a still to be determined geological origin. The final artefact, a flint blade (SF328), lay c.0.05m off the south-western end of the whetstone.

11. Cutting into the very heart of the barrow was a later trench [49] running approximately north-west to south-east, c.7.5m long and c.1.5m wide at its base. Almost exactly half way along its length a slightly narrower trench, c.1.2m wide, projected at right angles to the north-east and extended beyond the width of the excavations. Opposite this, the beginnings of another trench, c.1.3m wide, again at right angles to the first, could be seen running to the south-west. The sides of this trench sloped at about 60º, except at the south-east terminus of the main trench, where it reduced to c.30º. Overall, therefore, it would appear that a trench of cruciform plan had been dug into the mound. The date of this excavation into the barrow is not known, although pottery found within its lowest fills indicates that it can be no earlier than the medieval period. It seems probable that it was part of the well attested practise of barrow-digging by antiquarians in the 18th and especially 19th centuries. We cannot know whether they succeeded in locating any burials, but that found during these excavations only narrowly escaped their attentions.

12. It would appear from the nature of the soils (10, 48 & 69) filling the antiquarian trench [49] that in the immediate aftermath of its excavation no concerted effort was made to back-fill the hole. Instead there is evidence for a sustained period of gradual rain-washed in-filling, marked by varve-like lenses. There was still, however, a sizable crater which came to be levelled with different material, possibly derived from dredging the lake alongside. All this has resulted in the current uneven profile of the barrow's summit.

13. To the south-east of the barrow's encircling ditch, a series of other, much later, boundary features were revealed, including two small ditches [56 & 112] and a series of post-holes on the same alignment [114]. These are likely to relate to a boundary first visible on the 1st edition Ordnance Survey map of 1875, running north-east to south-west and skirting around the south-east side of the Barrow 13. The boundary is still evident in early 20th century photographs.

Figure 13 The trench into Barrow 13, showing the encircling ditch (right foreground) and turf stack behind

Figure 14 The robber trench in Barrow 13, looking south

Barrow 14

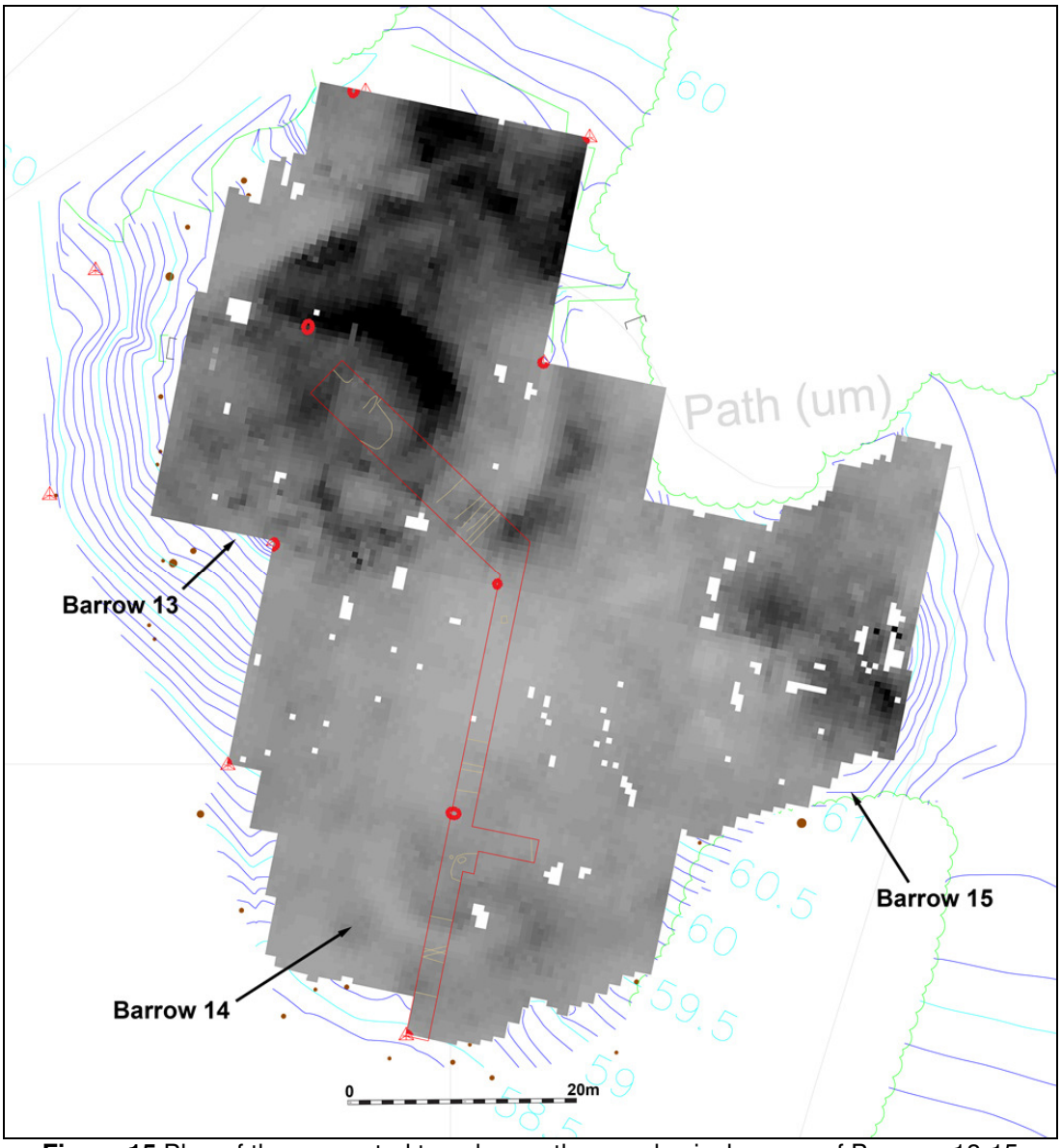

Figure 15 Plan of the excavated trench over the geophysical survey of Barrows 13-15

1. The 2m-wide main excavation trench taken across Barrow 14 ran for 41m approximately north-south. As already described, it joined the trench into Barrow 13 at an angle. The trench was placed to cross the middle of Barrow 14, and an extension was taken, from near to the centre, east for 6m. This lateral extension was also 2m wide, except for the first metre, which was widened to 4m to open more of the central area.

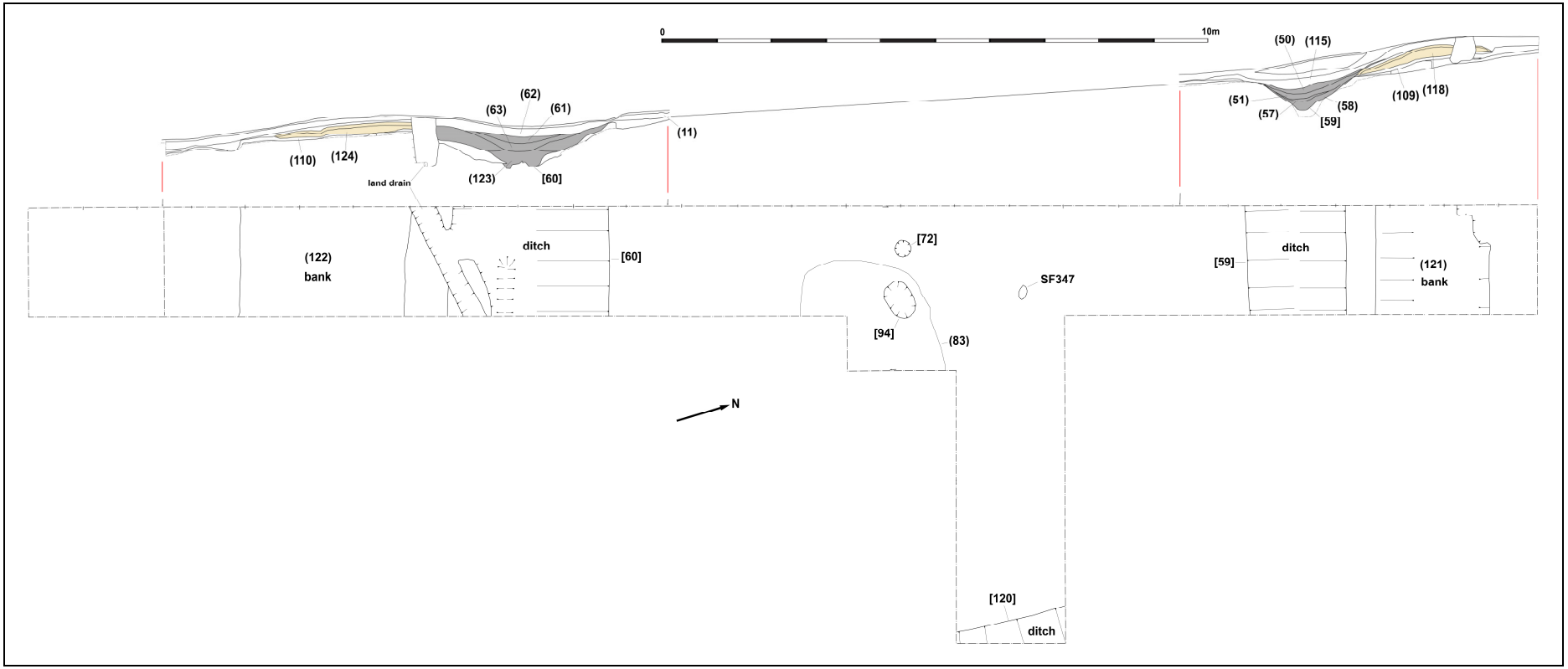

Figure 16 Plan and sections of the trench across Barrow 14

Figure 17 The trench across Barrow 14, looking south. The central pit can be seen in the middle distance.

2. While the deeper geological layers under Barrow 14 proved to be of a similar nature to those under Barrow 13, with the same iron-rich yellow sandy clay beneath mid-pale brown sand, there were few of the interleaving lenses of black and pale grey sands above. This may well be due more to the preservation of these lenses under the barrow stack, or the greater accumulation of wind-blown sands on the top of the ridge, than any change in the geology. Possibly of greater significance is the fact that the underlying iron-rich geology rises to a slight tump (83), barely 0.1m higher than the surrounding surface, which coincides with the approximate centre of the later barrow. It is not impossible that this slight rise in the ground surface was utilised as a central feature to the barrow by those constructing it.

3. The barrow itself consists of a circular ditch inside a circular bank. The total diameter of the monument, as measured along the main trench, is approximately 11.65m to the inside lips of the ditch [59 & 60] or c.22.3m to the outer edges of the bank (121 & 122). The inner lip of the ditch [120] on the barrow's eastern side was also revealed in plan, although not excavated.

4. The profile of the bank and ditch, as it was exposed at either end of the trench, differed. The northern ditch [59] was c.1.9m wide and c.0.6m deep, with sides sloping at c.35º, whereas the southern ditch [60] was c.3m wide and c.0.8m deep with sides sloping at c.30º. The northern bank (121) was 2.25m wide, with a maximum height of c.0.18m, whereas the southern bank (122) was c.2.6m wide and c.0.13m high. The variation between the banks is probably partly explained by the nature of the slope upon which the monument sits, with the southern bank spreading down-slope, but the difference between the ditch profiles is probably a result of the softer sands penetrated by the southern ditch, for these would have been more prone to erosion.

5. The layers filling the north ditch [59] suggest a number of changes through time. The lowest fill (58) was composed of a dirty buff sand, c.0.16m thick, probably formed as the sides eroded into the ditch soon after it was initially dug. Above this were two layers of dark humic material (57 & 50) separated by another layer of dirty buff sand (51). The humic layers, the lower c.0.06m thick and the upper c.0.1m thick, suggest two periods of stabilisation during which vegetation was established in the ditch, while the buff sand, c.0.1m thick, indicates an intermediate phase of erosion from the sides. Above these was a thicker (c.0.18m) layer of grey/white sand (115), with lenses of dark humic soil. This layer was probably formed of wind-blown sands accumulating in the ditch, with the humic lenses representing short periods of stable vegetation. As this layer continued beyond the ditch and across the rest of the trench the various lenses blended into one uniform grey sand (11), probably as a result of leaching. Above these layers was the modern, loose humic-rich topsoil, which extended throughout the trench.

6. The layers filling the southern ditch [60] reflected its less stable sides, with the lowest layer, again a dirty buff sand (123), being thicker (c.0.3m) than its equivalent in the northern ditch. The layer (63) above, c.0.15m thick, also showed signs of greater erosion from the ditch sides, with frequent alternating lenses of dark humic material and dirty buff sand. Above these were the lenses of grey-white sand (61) and humic material found in the north ditch (layer 115), here c.0.13m thick, topped by the grey sand (11 & 62) and humic rich topsoil.

7. The material (118 & 124) forming both bank segments was similar, comprising the iron-rich sands originally excavated from the ditch. Above and below each bank segment were layers of dark humic sand, c.0.05m thick, which represent topsoils preceding and then post-dating their formation.

8. The excavated area inside the encircling ditch only revealed two archaeological features. Close to what must have been the very centre of the monument was a small steep-sided oval pit [94], with dimensions of c.0.7m east-west, c.0.5m north-south and c.0.32m deep. The lower c.0.2m had been filled with a dark, charcoal-rich, sand, which was collected in its entirety for analysis. The remainder of the fill was composed of back-filled sand, similar to that through which it had been excavated. To the west of this pit a single probable post-hole [72] was excavated, c.0.35m deep, with tapering sides, c.0.3m wide at the top and c.0.18m wide at the base. It was backfilled with a uniform mix of humic rich topsoil and the underlying sand. Neither of these features can be phased stratigraphically, both being covered by the grey sand (11) which lay over the undisturbed sands throughout the trench, nor were any artefacts or bone fragments from them. However the charcoal recovered from the pit gives the prospects of both species identification and radiocarbon dating.

9. Approximately two metres to the north of the central pit [94] and post-hole [72] a single block of sandstone (SF347) was found, sitting upon the surface of the geological sands. While is not clear whether this is directly related to the monument, it would seem that it had been deliberately deposited in this location.

10. Despite its classification by Piggott and Grinsell as a saucer barrow (Grinsell 1939), no trace was found of an internal mound which the strict definition requires. In fact the interior surface of the monument follows the natural contours of the slope upon which it sits, with the exception of the small tump towards its centre already noted. Nor was there any trace of terracing, the monument was formed simply by the excavation of an annular ditch and the creation of an external bank from its upcast. Indeed its very classification as a “barrow”, if that term were to be reserved for monuments associated with burials, is questionable. It must therefore fall into the category of “ring-bank” monuments unless and until further evidence is found to support a more precise identification.

Barrow 18

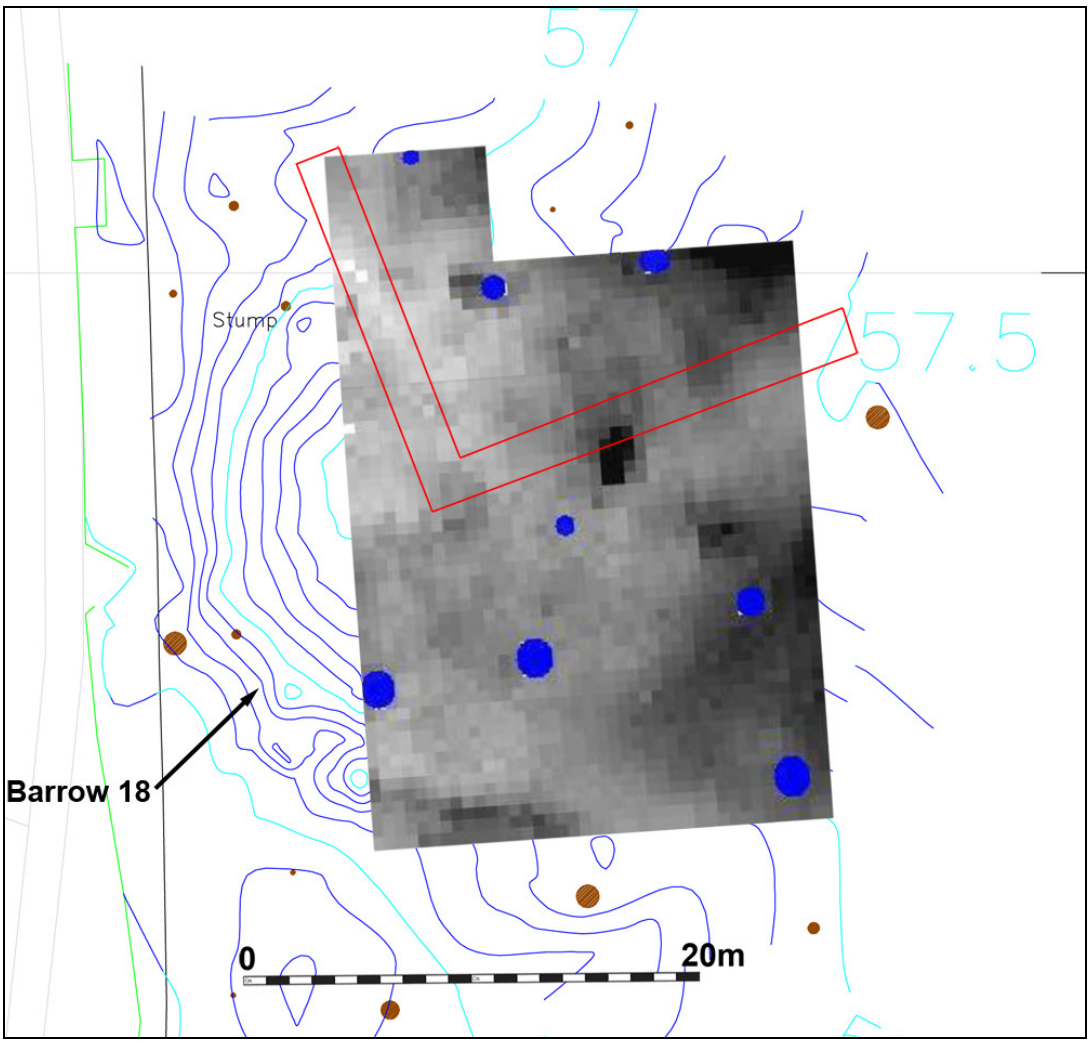

Figure 18 Plan of the excavated trench over the geophysical survey of Barrow 18

1. The excavation trench comprised two arms at right angles to one another, each 2m wide, one running approximately north-north-west for 16.3m and the other running approximately east-north-east for 20.1m. The meeting point of the two arms was positioned as close to the centre of the barrow as was possible based upon the topographic survey, in order to create two continuous sections from the centre of the barrow to beyond its outer edge.

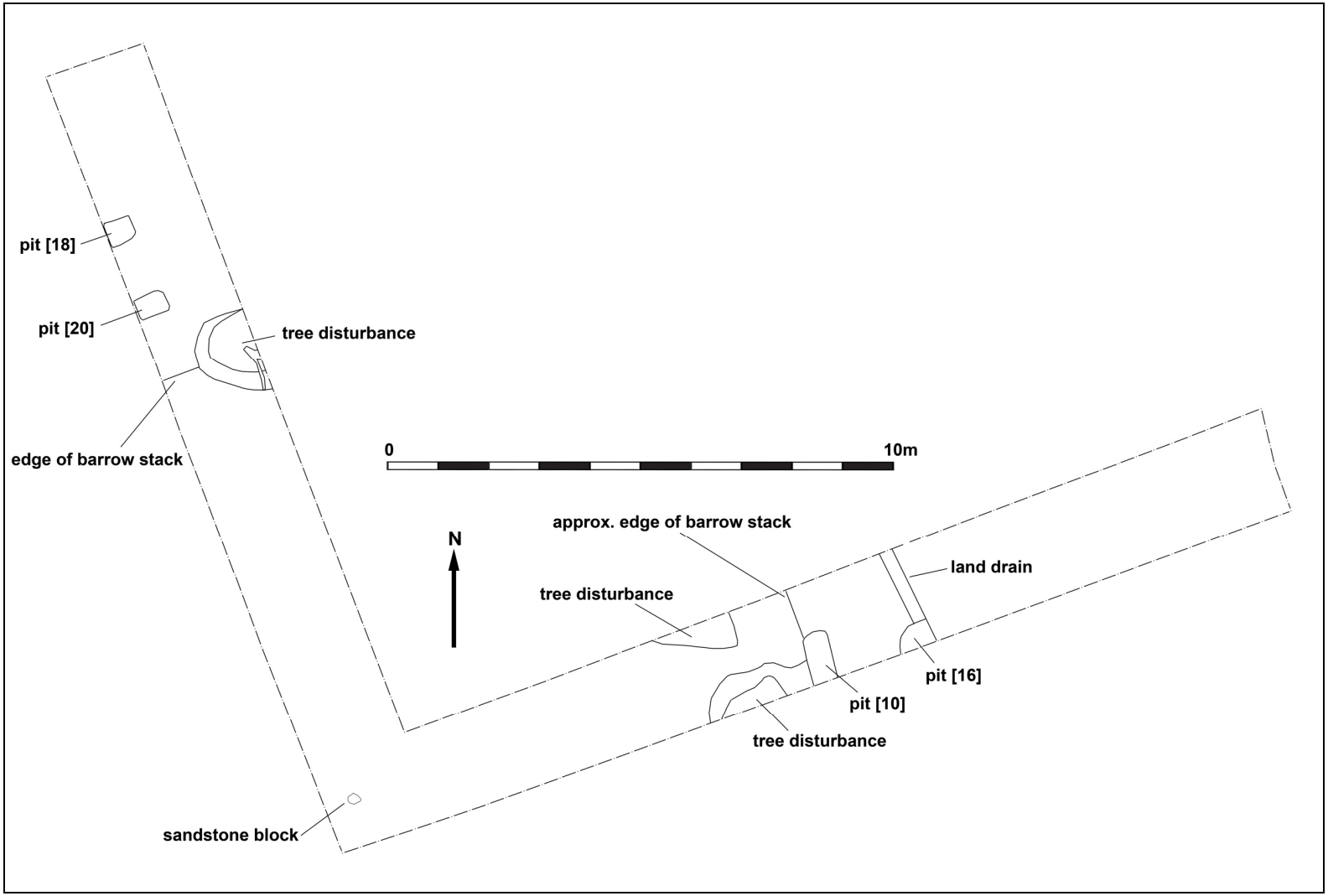

Figure 19 Plan of the trench into Barrow 18

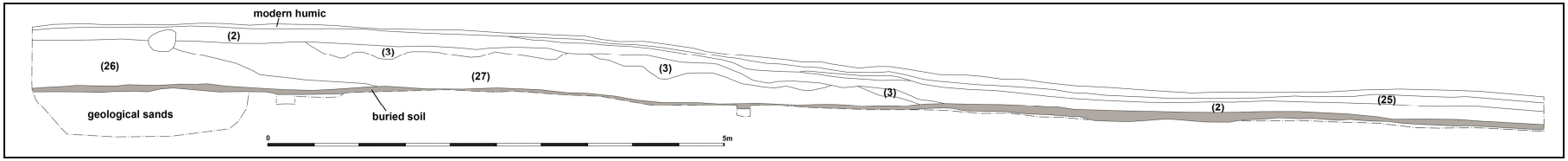

Figure 20 West face of the north arm of the trench into Barrow 18

Figure 21 East face of the north arm of the trench into Barrow 18, looking south-east

2. Once again the base geology excavated in the trench was iron-rich clay sand, capped with a buff sand which varied in tone from pale to dark, almost black, as it rose to form a buried soil beneath the barrow. Above this were patches of overlying pale grey sand, probably wind-blown. As with Barrow 13, sitting upon and within the upper layers of the underlying profile, and sealed beneath the later monument, was a concentration of *in-situ* Mesolithic struck flint. It is probable that this position was favoured since it takes advantage of a slight spur running off the higher ground to the east upon which the later barrow was sited. The surface of the underlying ground surface falls to the north by c.0.45m from one end of the trench to the other, and similar falls to the south and west, are indicated by the topographic survey.

3. As with Barrows 11 & 13, Barrow 18 was of turf stack construction, with its greatest height being c.0.65m at the junction of the two arms of the trench. This makes it the lowest of three bowl barrows so far excavated, Barrow 11 being c.1.75m and Barrow 13 c.1.25m. This comparatively shallow depth means that any later disturbance is much more likely to impact on not only the full depth of the turf stack, but also any features beneath. This was demonstrated most clearly in the eastern arm of the trench, where a comparatively recent tree fall had not only destroyed the turf stack, but also gouged a deep hole into the underlying deposits.

4. It was not possible to determine the barrow's exact overall diameter from the L-shaped excavation trench. Within the northern arm of the trench, the turf stack extended for a distance of c.10m from its southern end, but in the eastern arm its outer limit had been lost due to tree disturbance. However, by combining the measurement of the stack in the northern arm, with the results of the topographical survey, it is possible to estimate that its original diameter was close to 20m. Despite the trench extending for c.6.6m beyond the outer edge of the turf stack, no trace of an encircling ditch was found.

5. The composition of the turf stack differed from Barrows 11 & 13, which were composed of clearly discernible turves, where the dark humic lenses were interleaved with much pale/grey or yellow sand. That of Barrow 18 consisted of a mottled dark humic mass, with considerably less interleaved patches of lighter sand, and consequently with few individual turves easily identifiable. This may reflect a different source for the turves, one where there was little underlying sand and more humic matter, thus blurring the division between each turf. It is tempting to suggest that they might be from a more waterlogged area of the Heath, and it is hoped that the pollen samples taken will shed further light upon this. There was some evidence that, as with Barrow 13, the turves may not all have come from exactly the same location, since in the northern arm of the trench at least three layers of turves (3, 26 & 27) were noted, with a differing ratio of pale sand to humic matter. The layer above these (2), while almost certainly part of the stack, had been

leached to a uniform grey colour indistinguishable from that which lay beyond the barrow's limits.

6. Within the turf stack, and towards the centre of the barrow, a single block of ferruginous sandstone was found. It lay c.0.2m above the base of the stack, and would appear to have been placed upon a single turf, judging by the irregular square of dark humic material beneath it, as the turf stack was formed, although for what purpose is unclear and the possibility of further sandstone blocks beyond the excavated trench cannot be excluded. Unlike Barrows 11 and 13 no trace of any burial was found, although that may well be because any burials lay outside the narrow trench.

7. In addition to tree disturbance, in three examples of which the root ball had destroyed deposits to well below the base of the mound, four pits were encountered, all of which, judging by their relatively high position in the stratigraphy, were modern in date. The two [18 & 20] in the north arm of the barrow, of similar dimensions and c.1m apart, are likely to be linked and may possibly be associated with a bench overlooking the lake. A second pair [10 & 16] in the eastern arm, c.2.3m apart, may also be contemporary, although at that distance they are unlikely to have had the same function those in the north arm. Crossing the trench beneath the eastern of these [16] was a ceramic land drain, running north-west to south-east, similar to that found in Barrow 14.

Barrow 21

1. Barrow 21 was described by Piggott in 1929 as "?oval barrow. Low mound. C.2' high 44p x 25p. Cone core from E. side." Subsequently it was re-classified as two conjoined bowl barrows, which had gradually slumped and weathered until it took on the appearance of a single oval monument. Its identification as a barrow, or barrows, was considered certain enough that it was scheduled as such in 1932. No evidence to support the twin barrow theory was found by our topographical or geophysical surveys.

2. The excavation trench ran approximately north-west to south-east and was 29.3m long and 3m wide. At its north-west end there was an extension 3.6m long and 1m wide, while a second extension, 6.4m long and 3m wide, was taken at right angles off its north-eastern side, thus running along the long axis. The main trench was positioned to transect the barrow at its highest point, in order to create a continuous section across it. The north-east extension was intended to cross the supposed meeting point of the two barrows should the monument indeed prove to be formed of two conjoined mounds.

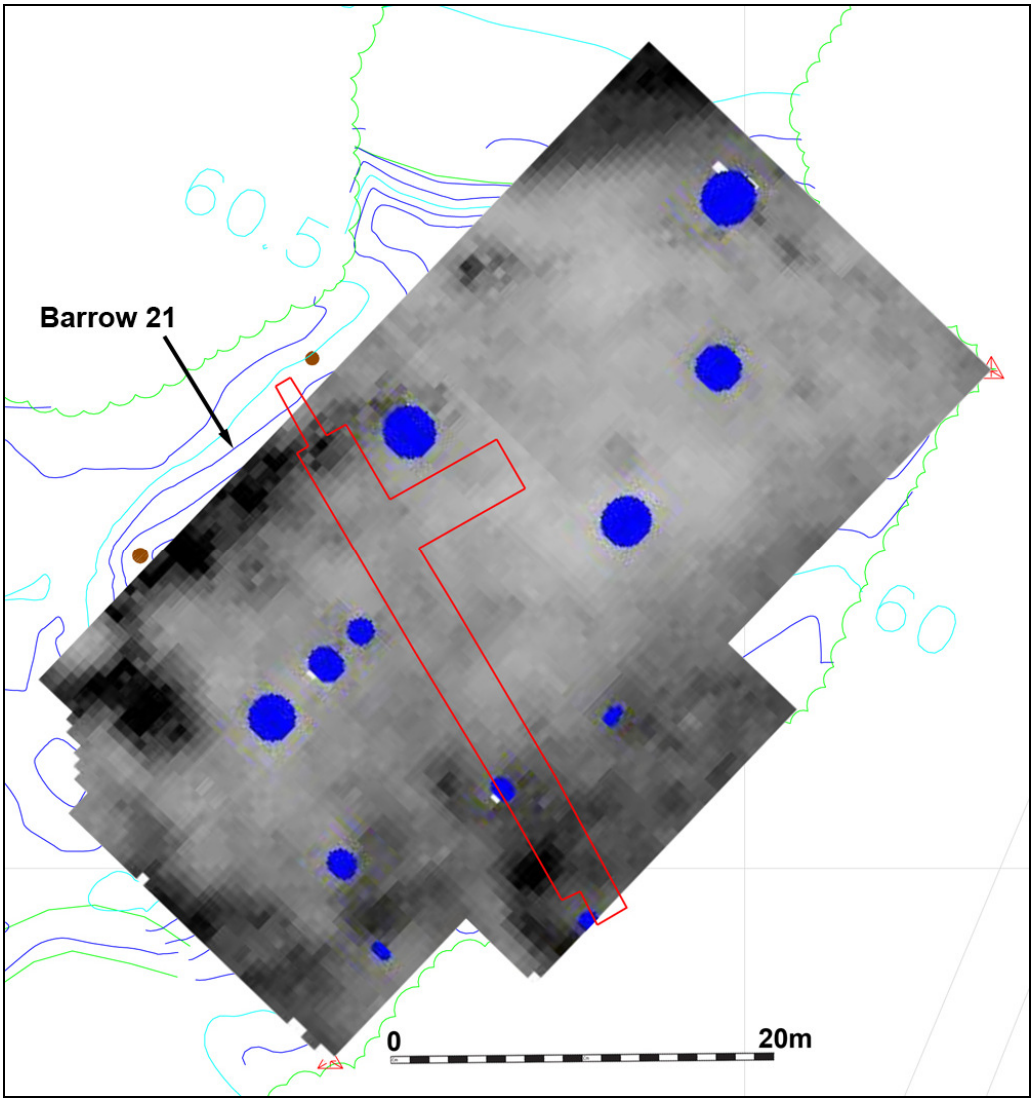

Figure 22 Plan of the excavated trench over the geophysical survey of Barrow 21

3. As elsewhere on the Heath, the base geology within the trench was iron-rich sands and clays, topped in this location by a very uneven black humic layer, similar to that seen at the base of the trench into Barrow 11, with its many depressions again filled with pale-grey sand. Overlying these geological layers was a comparatively uniform layer of grey sand (60 & 61) with pockets of black humic material at irregular intervals. This grey sand (60 & 61) is likely to be the product of the mixing up and disturbance of more defined lenses, through tree-rooting or animal burrowing, with the humic pockets representing rotted organic matter. In the few places where the grey sand (60 & 61) was not present, continuous and well-defined interleaved lenses of humic material and pale-grey sands were found, almost certainly survivals of more extensive lenses reduced to a uniform grey by the processes described above. Such lenses are consistent with the former presence of intermittently stable land surfaces on which vegetation had developed for a period before further sand deposition, presumably of wind-blown origin. The whole was overlain by the modern humic topsoil (1).

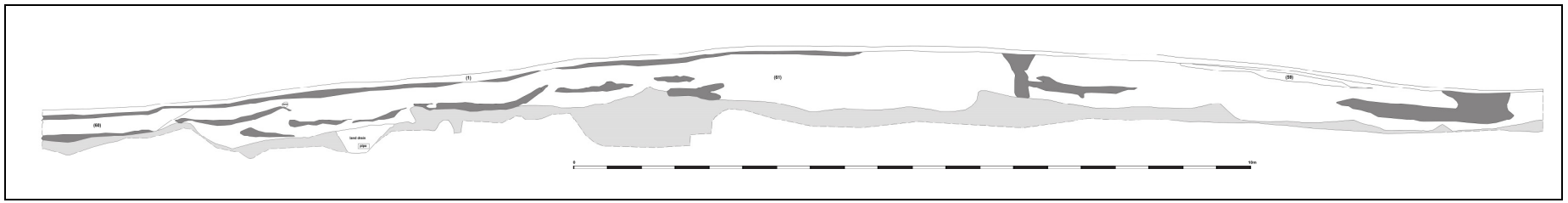

Figure 23 South-west face of the trench across Barrow 21

Figure 24 South-west face of the trench across Barrow 21, looking north-west

Figure 25 The south-east face of the north-east extension to the trench across Barrow 21, showing the continuous alternating layers of sand and humic material. At the left of the image they are dipping down into an historic tree throw.

4. It became apparent, as the excavation proceeded, that in fact the mound was neither an oval barrow, nor two conjoined bowl barrows, but instead a natural formation of alternating sand and humic layers, heavily disturbed by the roots of trees. The evidence to support this identification was: 1) the lack of a clearly defined stack of individually identifiable; 2) the lack of any consistent buried soil which might underlie such a turf stack; 3) no change in the stratigraphy within the trench to indicate the edges or slopes of a mound or mounds; 4) the presence of historic land surfaces, represented by the continuous humic and sand lenses, which survived in the few places where tree rooting or animal burrowing had not disturbed the stratigraphy.

5. A significant quantity of Mesolithic worked flints was recovered from varying depths within the trench. While these were found in small numbers throughout, they concentrated in much greater numbers at its south-eastern end, where some at least were demonstrably *in situ*. It is probable that the core found by Piggott on the east side of the mound is from this, or an associated scatter. Their location here may well be linked to the topography of the site, since the mound as a whole sits upon a ridge which continues to the north and to the south-west, and the position of this flint scatter would have enjoyed a far-reaching view over land which falls away to the south and east in this direction. It is probable that this also explains the formation of the mound itself, since it lies exposed to winds coming in from the south and east, which may well have brought the sand of which it is formed, piling it up against the south-east face of the underlying ridge.

CONCLUSION

1. Returning to the initial objectives of these excavations, the first had been to clarify how much of the current profile of the monuments is a result of more recent slumping or damage and thus to obtain a better sense of their original form, including whether they are encircled or flanked by a ditch or ditches. In particular the aim was to confirm or revise the earlier identification of Barrows 12 & 14 as saucer barrows and Barrow 21 as an oval barrow, to determine whether Barrows 13 & 18 were originally ditch-enclosed and to assess how and when the semi-circular bank at the top of the former was formed. In the case of Barrow 12, in addition to the swathe of destruction caused by the sewer-main trench, it appears that upstanding earthwork elements may have been largely levelled prior to masking with overburden. This will leave its precise morphology uncertain, although it is clear this was a low-profile enclosure barrow. The specific objectives concerning Barrow 13 have been met; not only has it been found to have a hitherto unsuspected encircling ditch, but it has also been shown that a large antiquarian trench accounts for the semi-circular bank of spoil around the rim and the central crater. With regard to Barrow 14, it has been demonstrated that it is not a saucer barrow in the strict definition and provisionally it is preferable to class it generically as an "enclosure barrow" – a term proposed by Jones & Quinnell (2014). Unfortunately, little evidence came to light to ascertain its function. It is hoped that the analysis of the contents of the central pit might shed further light upon this, and also the ongoing investigations into similar monuments within the Petersfield Heath complex. The objective of confirming Barrow 18's form has been met, in that it would appear to have been a simple bowl barrow without encircling ditch, and Barrow 21, as set out above, has been shown not to be a barrow but instead a natural dune-like formation against a pre-existing ridge.

2. The second objective of these excavations was to investigate further the effects of root action and animal activity on the monuments and, in the case of Barrow 12, the impact of neglect. In the case of the latter the most significant damage was done by the cutting of the sewer main, without scheduled monument consent, at some time in the later 20th century. Since that event, the monument has, in effect, been protected from further damage through being covered by a layer of imported material, possibly during landscaping works associated with the golf course. The case for the detrimental impact of tree growth and animal damage to the monuments has now been shown repeatedly, and the lower the profile of the monument concerned, the higher the likely impact. It is to be strongly recommended that the growth of any larger vegetation is to be discouraged on all of the barrows.

3. The third and fourth objectives concerned the constructional character and date of the barrows and the collection of a comprehensive series of palaeo-environmental samples from each of the barrow deposits. Of the six monuments investigated to date, three have been shown to be

bowl barrows (11, 13 & 18) constructed of stacked turves and varying in height from 0.65m to 1.75m. Only one of these (13) was found to be encircled by a ditch. One mound (21) has been demonstrated to be of natural formation, rather than a Bronze Age barrow. Both the remaining two (12 & 14) had been classified as saucer barrows. For Barrow 14 we can now say with confidence that it had no raised interior and the prime purpose seems instead to define a circular space by means of a continuous earthwork of very modest scale. Given the current condition of Barrow 12 and our limited investigation, we cannot now ascertain whether it really had the low internal mound perceived by Grinsell. Even though the function of these enclosure barrows may not be clear, the feature containing charcoal at the centre of Barrow 14 may prove significant in relation to parallel sites.

4. Of the sites reported on here, Barrows 13 and 14 have yielded the best prospective samples for radiocarbon dating. The independent dating of Barrows 12 and 18 will probably depend on the viability of dating palaeo-botanical remains. Site 21 is not of less concern in relation to the evolution of the barrow cemetery and while it would be interesting to know the chronology of dune formation for understanding environmental change here, the badly disturbed nature of much of the site may militate against attempts to date it.

5. Palaeo-environmental samples have been collected from all the monuments, with provisional results obtained from Barrows 11 and 13 and awaited for the remainder. The results from 11 and 13 indicate that at the time the barrows were constructed, the surrounding environment was a mix of woodland and heathland vegetation, with significant patches of wetland.

6. The discovery of a second burial assemblage from Barrow 13 has opened up some very significant questions about the identity of the Bronze Age communities which the Petersfield Heath barrow cemetery served. Of particular note is the marked similarity between the nature of the artefact assemblages, with the predominance of flint arrowhead pre-forms and various utility stones, including whetstones, and yet their collective individuality when compared with burial assemblages from elsewhere in the country. Should further grave groups be recovered from the later excavations, it will be of utmost interest to see whether they continue the same trends.

7. The object interpreted as having been the wooden handle of a cremation container may be the first of its kind recognised in Bronze Age Britain. It is therefore of considerable importance in reflecting on both the organic accoutrements of cremation deposits and the conduct of the funeral ceremony.

8. In terms of the forms of the monuments, the structure of the bowl barrows excavated to date seems to confirm the pattern found at West Heath of turf stack construction with only a minority being associated

with encircling ditches. It will be interesting to see if this balance is maintained as more of the Heath's bowl barrows are investigated. By contrast the nature of the un-mounded or minimally mounded barrow forms, such as those formerly identified as saucer barrows, is proving rather more enigmatic, and one of the principle lines of future enquiry is to attempt to discover more about their form and purpose, and their relationship to the neighbouring more numerous bowl barrows.

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