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**Barnsdale Bar Limestone Quarry,
Kirk Smeaton,
North Yorkshire**

Archaeological Watching Brief

April 1997

CLIENT

BFI Waste Systems/Quarry Products

WYAS R 444

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West Yorkshire Archaeology Service
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**Barnsdale Bar Limestone Quarry,
Kirk Smeaton, North Yorkshire (SE509145)**

Archaeological Watching Brief

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1. Summary

Client

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Objectives

To identify and phase features causing anomalies located by gradiometer survey and to add to the existing knowledge of the site established by trial trenching in 1993 prior to the extension of the quarry into this area.

Method

Initially a 10m square trench (Trench 1) was opened, over a point of a ditch intersection, a few days before the entire area was stripped over an area with dimensions of 180m long, tapering in width from 61m in the north to 52m in the south. The topsoil and subsoil were stripped by bulldozer and selective areas were cleaned using a 360 degree excavator fitted with a smooth ditching blade. A gradiometer survey was carried out over the stripped area to establish the position of the ditches and other potential anomalies. A number of segments were then excavated through these anomalies to establish if they were archaeological in nature.

Results

The watching brief supplied further evidence of four parallel running ditches aligned north-west to south-east, two parallel running gullies forming a right angle with the ditches, three pits and a number of geological features.

The most easterly of the ditches ran from the eastern balk, north-westwards before turning sharply onto an east-west alignment and then butt-ended towards the quarry edge.

The three remaining ditches, all butt-ended towards the southern end of the site, the central ditch also continued further south-eastwards after initially butt-ending where it was seen to be cut by one of two parallel running gullies. The gullies ran from the western balk before terminating in a butt-end immediately before intersecting with the most easterly of the four ditches.

Two pits were excavated at the northern end of the site, one of which yielded a number of pottery sherds. The third pit recognised was situated towards the southern end of the site where it was seen to cut one of the gullies. Further anomalies investigated were discounted as naturally formed features.

As most of the ditches butt-ended rather than intersecting the phasing of the site was limited (see section 8 discussion) but seemed to consist of four phases of archaeological activity.

2. Introduction

The West Yorkshire Archaeology Service was commissioned to undertake a watching brief prior to a quarry extension into an area where the Archaeology service had previously excavated 9 trial trenches in 1993 (Webb, 1993)

The watching brief was carried out between 31st August and 21st September with up to three archaeologists on site.

The underlying geology is magnesian Limestone with the topography gradually sloping up from the south to the north of the site (53m to 55m OD). The evaluation (Webb, 1993) showed that a number of naturally filled geological features were present.

3. Archaeological Background

The site and the surrounding area have been shown to be of archaeological importance. Excavations to the north and east of Windhill Plantation were carried out by West Yorkshire Archaeology Service (Abramson, 1989) and the East Riding Archaeological Research Committee (Simpson, 1990-91). These excavations produced evidence of a multi-phase ditched enclosure system and two individual burials which were not directly associated with the ditches. The presence of a number of pot sherds in the ditch segments and the position and orientation of the skeletons indicated a possible date in the prehistoric or at least pre-Christian period.

The evaluation of the site in 1993 produced evidence of three phases of agricultural field systems and a single Christian inhumation adjacent to a ditch. Finds from the excavations were scarce and the pottery fragments range from Iron Age or of Iron Age tradition to the late Roman period.

Field walking and a gradiometer survey were carried out in the adjacent field to the west immediately after the watching brief was completed. The field walking produced a concentration of worked flint to the south coinciding with a concentration noted in 1993, whilst the gradiometer survey revealed evidence of a possible field system. This information when seen in conjunction with the 1993 evaluation results shows that the features continue to the west.

4. Method of Watching Brief

Initially a 10m square, Trench 1, was excavated by machine to resolve features which were not fully excavated during the 1993 evaluation. Following this the remaining area of the site was cleared of top and subsoil by bulldozer to a depth of approximately 0.40m beneath the surface, to a level where archaeological and geological features began to appear as well as the distinctive pale coloured natural bedrock. A gradiometer survey was then undertaken across the site and using the survey results anomalies were pinpointed as location by eye was difficult due to the bulldozer tracks. Some of the ditches were intermittently visible, cutting the natural bedrock. A 360 excavator fitted with a toothless ditching blade was used in selective areas to clean the surface making features more clearly visible. Apart from three machine excavated ditch segments the remaining features were excavated by hand and recorded in accordance with the West Yorkshire Archaeology Service Site Recording Manual (1995).

5. Results

The results demonstrate a sequence of features beginning with the probable geological features and progressing to later phases of ditch activity as evidenced to geophysical work carried out on the excavation site and surrounding area as well as the trial trench evaluation carried out in 1993.

The natural features which were excavated, consisted of four irregular shaped hollows, two towards the northern end of the site (F526 and F534) and two to the north of Trench 1 further to the south. These were considered to be natural by the sterile nature of the contained deposits and the irregular shape which suggested they were not cut features.

There were four parallel ditches running north-west to south-east (M211, M548, M321 and M549) one of which (M211) turned to the east. Two smaller parallel running gullies oriented north-east to south-west (M322 and M323) formed right angles with these ditches. Of the larger ditches two had gaps in them (M321 and M549) in similar positions forming breaks or entrance ways. The later of the two gullies (M322) was seen to cut ditches M321 and M549 at the southern butt-ends where the entrances were. Apart from ditch M549, which was fully investigated during the 1993 evaluation, the remainder were investigated by the excavation of a number of segments. The earliest ditch, M211, enclosed an area containing two pits (F509 and F543) which were both investigated.

The latest feature on the site was a small pit F003, (Fig.2) seen to cut the latest ditch M322.

The following sections provide a description of all features excavated supported by plan and section drawings at appropriate scales as well as an overall site plan showing the location of features and the excavated segments and sections.

5.2 Natural features (Fig 2)

A number of anomalies indicated on the gradiometer survey were investigated during the watching brief. The majority of these turned out to be fluvially formed solution holes with irregular bases and sides filled primarily by a reddish brown clay and then a clean yellowish brown to mid brown silty sand. Due to the constraints of time, these obviously natural features were not recorded. Five features were excavated and recorded because of a build up of fills within a possible cut. These included F526, F528, (contained within F526) and F534 which were located to the north-west of ditch M211, and F537 and F540 situated between the butt ends of ditches M548 and M321. However, the cleanness of the clay, sandy silt and sandy clay fills and the irregular nature of the possible cuts would seem to imply that they were naturally formed. The only find within any of the fills was the surface find of a piece of burnt nut (Fill 521, F526). Due to the rough cleaning of the site this cannot be definitely associated with the feature. A written record of these features forms part of the archive and their locations are shown on figure 2.

Towards completion of the watching brief the removal of the first 1m of limestone by the quarry machinery revealed a face of pale limestone with intermittent patches of brown soil occupying fissures and holes which were obviously not archaeological in nature. This demonstrated that such geological features were commonplace some of which were easily confused with archaeological features.

5.3 Ditch M211 and associated features (pits 509 and 543) (Fig.2)

The earliest of the four parallel running ditches, aligned north-west to south-east, was M211, which ran from the southern end of the site northwards before turning to the east, butt-ending towards the north-eastern area of the site. Within the enclosed area formed by the turn of the ditch, two pits (F509 and

543) were seen, though it was not conclusive if they were contemporary with the ditch or associated by the fact they were enclosed by it.

The ditch was visible in places, cutting the natural bedrock, and a number of segments were excavated, three by hand and three by machine. Using the gradiometer plot as a guide the entire length of the ditch and its precise position was established by intermittent cleaning of the edges.

Two ditch segments (Fig.3, S.18) were excavated by hand, in the area to the east where the gradiometer reading was weakest and the position of the butt-end was assumed to be. These were given the same context number due to their close proximity and the similar nature of the fills, 501 and the excavated segments established both the width, depth and successfully located the butt end of the ditch.

Context	Description
500	East-west running butt ended linear ditch. Length 1.71m, width 0.46m, depth 0.36m. Single fill 501
501	Mottled dark reddish brown, loose, sandy silt.

A further ditch segment, F514 (Fig.4, S.14), was excavated by hand, positioned on the bend where the gradiometer reading showed the ditch to be wider. This proved to be the case revealing a greater depth (0.57m) and width (4.5m) than at the butt-end to the east and a larger number of fills. The profile was of gradually sloping sides, slightly steeper along the north-western edge, with a flat base sloping slightly from the south-eastern edge. A single sherd of Roman pottery was recovered from the primary fill (513). At the base of the cut two circular features were noted. Three machine segments were excavated immediately to the east of F514 in an attempt to establish if these features continued and were archaeological or natural. In two of the segments similar features were present but filled with a hard sterile reddish brown clay usually associated with geological features previously observed on the site.

The position of the machine excavated segments is shown on figure 2 and as the fills were very similar to those in segment F514 no further recording was undertaken.

Context	Description
514	Bend of north west-south east/east-west running linear ditch. Length 1.40m, width 4.50m, depth 0.57m. Filled by 510, 511, 512, 513 and 515.
510	Mid brown, compact, sandy silt clay with moderate limestone and charcoal flecks, 1 fragment of oyster shell and c. 17 fragments of animal bone, some showing butchery marks. Length 1.40m, width 3.03m, depth 0.36m. Below topsoil, above 511.
511	Intermittent burnt layer of greyish black loose ashy silt with red and purple lenses. Length 1.40m, width 0.95m, depth 0.03m. Below 510, above 513.
512	Yellow, firm, sandy silt clay. Length 1.40m, width 1.85m, depth 0.20m. Below 510, above 513
513	Orange brown, compact, sandy clay with moderate limestone flecks and occasional larger fragments <0.20m and 1 pottery sherd. Length 1.40m, width 3.58m, depth 0.28m. Below 511 and 512, above 515.
515	Mid brown, firm, silty clay with moderate limestone <0.05m slumping into feature. Length 1.40m, width 0.75m, depth 0.11m. Below 513, primary fill of F514.

5.3.1 Pits F509 and F543 (Fig.2)

Three pits were excavated which were recognised as being archaeological, two enclosed by ditch M211. The first of these was (F509) an oval shaped pit, (Fig.8, S.13) which was situated a few metres to the east of ditch M211 towards the northern end of the site. Excavation revealed this to have a length of 1.66m, a width of 0.98m and a depth of 0.34m. Two fills were recognised (507 and 508) the first of which contained over twenty sherds of pottery of a possible Iron Age date.

Context	Description
509	Oval bowl shaped pit. Length 1.66m, width 0.98m, depth 0.34m. Filled by 507 and 508.
507	Mid brown, firm, sandy silty clay with occasional small to medium sized limestone fragments and c.24 sherds of highly tempered black pottery including a rim sherd. Length 1.66m, width 0.98m, depth 0.30m. Below topsoil, above 508.
508	Pale yellowish brown, compact, ashy silt with frequent small to medium limestone fragments. Length unknown, width 0.28m, depth 0.25m. Below 507, primary fill of F509.

A sub-circular pit F543 (Fig.9) was located to the east of M211 towards the northern end of the site, and the rapid excavation of an L-shaped segment revealed it had a diameter of 2m and a depth of 0.76m. The profile was bowl-shaped with clear cut edges cutting the pale yellow bedrock. This fairly substantial pit contained two fills (541 and 542) but yielded no finds making interpretation difficult.

Context	Description
543	Sub-oval bowl shaped pit. Length 2.00m, width 2.00m, depth 0.76m. Filled by 541 and 542.
541	Mid brown, firm, sandy silt with occasional limestone fragments and very occasional charcoal flecks. Length 2.18m, width 1.76m, depth 0.42m. Below topsoil, above 542.
542	Yellowish brown, loose, silty sand with occasional small limestone fragments and charcoal flecks. length 0.90m, width 0.70m, depth 0.35m. Below 541, primary fill of F543.

5.4 Ditch M323

This small ditch ran from the eastern side of the site, where it butt ended 0.2m from ditch M211, south-westwards on a parallel alignment with a similar ditch M322, and butt-ended a few centimetres to the south of Ditch M549 (1993 Webb). It should also be noted that a grave (F404) lay directly in the path of M323 1.5m to the west of the butt-end suggesting the grave was still recognised during the excavation of the ditch or that ditch M549 and M323 were contemporary and butt-ending to form a right angle. After the excavation of two small segments,(F546 and F518, Fig.5, S.13) at the intersection of M211 and M323, it appeared that at this point M323 had butt-ended a few centimetres from the larger ditch M211. It seems likely that the two ditches were contemporaneous, with M323 forming a right angle against M211. Segment F518 of ditch M322 showed it to be fairly shallow at the butt-end containing a single fill 517. Once this was established further excavation was discontinued, the partially excavated segment of M211 revealed the cut F546 where the upper fill was recognised (516).

Context	Description
546	North-west to south-east running linear ditch. Partially excavated slot. Length 2.40m, width 1.25m, depth 0.25m. Single fill 516.
516	Dark orange brown, compact, silty sand with occasional charcoal flecks.
518	North east-south west butt ended linear ditch. Length 0.60m, width 1.14m, depth 0.26m. Single fill, 517.
517	Mid reddish brown, firm, sandy silt with occasional limestone fragments and black sub rounded stones <0.15m.

5.5 Ditch M549 (Fig.2)

This ditch ran from the western edge of the site, south eastwards before butt-ending a few centimetres from ditch M323, to which it appeared to be contemporary. A soil sample was taken from the upper fill (547) of the ditch, a mid brown, weak sandy silt with an intermittent layer of charcoal and burnt material.

5.6 Ditch M548 (Fig.2)

Ditch M548 ran south-eastwards from the western edge of the site and lay immediately to the west of M211. At one point the gap between the two ditches was only 1.5m. The ditch dog-legged slightly to the east before butt-ending further to the north than the butt-ends of ditches M321 and M549 perhaps suggesting it was not contemporary with these two ditches.

An L-shaped segment, F545 (Fig.6, S.1), was excavated to establish the exact position of the butt-end which was successfully achieved revealing it to be fairly wide, 3.10m, but very shallow, 0.30m. In profile it had gradually sloping sides with a flat base cutting the natural bedrock. On the western side of the cut two depressions were seen but were thought to represent naturally formed features.

Context	Description
545	North west-south east running butt ended linear ditch. Length 3.80m, width 3.10m, depth 0.30m. Single fill 544.
544	Mid orange brown, firm, sandy silt with moderate limestone fragments <0.10m and intermittent patches of burning in the top 0.02m.

5.7 Ditch M321 (Fig.2)

This ditch was situated to the west of (M548) and ran from the western edge of the site, 60m south-eastwards where it butt-ended, within Trench 1 and then continued on the same alignment, having been cut by M322. It formed a right angle with ditch M323 and may have been contemporary with M549 which ran parallel and also had a gap at the same point. Three segments were excavated (F005 and F009 within Trench 1 and F503 further to the north).

Segment (F503) (Fig.6, S.11) was excavated roughly half way along the length of the ditch, which revealed dimensions of 3.11m wide and 0.31m deep. The profile was of fairly steep sides with a flat base and two depressions were seen along the western side which appeared to be naturally formed.

Context	Description
503	North west-south east linear ditch. Length 1.14m, width 3.11m, depth 0.33m. Filled by 505 and 506 and cut 502.
505	Mid reddish brown, firm sandy clay with occasional limestone fragments <0.04m and large black sub-rounded stones, frequent intermittent patches of charcoal and burnt material and 7 fragments of animal bone and tooth. Length 1.14m, width 3.11m, depth 0.33m. Below topsoil, above 506.
506	Yellowish brown, loose sandy silt with very frequent limestone fragments <0.05m and occasional charcoal flecks. Length 1.14m, width 0.65m, depth 0.15m. Below 515, primary fill of F503.
502	Dark grey, firm sandy clay with occasional limestone fragments <0.05m. Length 0.40m, width 0.43m, depth 0.27m. Cut by F503.

Segment, F009 (Fig.7, S.10), was excavated across the width of the ditch in Trench 1 which revealed a profile of fairly steep sides with a fragmented slightly undulating base. The width was narrower than that of segment F503 to the north but the depth was greater and three fills were recognised.

Context	Description
009	North west-south east running linear ditch. Length 2.10m, width 2.05m, depth 0.46m. Filled by 006, 007 and 008.
006	Pale grey brown, loose, sandy silt with occasional limestone fragments <0.04m. Length 1.70m, width 1.50m, depth 0.24m. Below topsoil, above 007.
007	Pale brown, firm, sandy silt with moderate limestone fragments <0.02m. Length 1.62m, width 1.78m, depth 0.07-0.18m. Below 006, above 008.

008 Very pale brown, compact, sandy silt with very frequent limestone flecks and occasional larger fragments, redeposited natural. Length 2.10m, width 1.85m, depth 0.20m. Below 007, primary fill of F009.

A further segment (F005) was excavated at the butt-end of M321 within Trench 1, which was clearly visible, cutting the natural bedrock (Fig.7, S.2). The segment showed a bowl-shaped profile which became slightly irregular along the south-western edge. It was also apparent that its width, 1.05m, and depth, 0.16m, had gradually decreased towards the butt end. A single fill (004) was recognised compared to the multiple fills of the other segments through M321.

Context	Description
005	North west-south east running butt ended linear ditch. Length 1.00m, width 1.05m, depth 0.16m. Single fill, 004.
004	Mixed reddish brown/pale brownish yellow, loose, sandy silt with occasional small stones <0.20m near base of fill and flecks of charcoal.

5.8 Ditch M322

This small ditch ran from the eastern side of the site, south-westwards to where it was seen to cut ditches M321 and M549 (Webb 1993 Trenches 3 and 4) and appeared to be the latest phase of the ditches. The segment excavated during 1993 was still visible and as its relationships had already been established no further work was carried out.

5.9 Pit F003

Pit (F003) represents the latest feature on the site and was situated within Trench 1. It was initially thought to represent a possible grave or occupation surface during the 1993 evaluation at which time a very small amount was excavated. The limited extent of the trench halted further investigation at the time. Excavation during the watching brief proved it to be an oval shaped pit seen to cut the earlier ditch M322. The dimensions were 1.3m long, 0.80m wide, 0.30m deep with a bowl-shaped profile. The two fills recognised (001 and 002) produced no finds and the nature of the fills gave no indication as to the use of the pit.

Context	Description
003	Sub-oval bowl shaped pit. Length 1.30m, width 0.80m, depth 0.30m. Filled by 001 and 002, cut fills of F303, a segment cut through M322 in the 1993 evaluation.
001	Limestone packing, fragments 0.05-0.20m. Length 1.30m, width 0.80m, depth unknown. Below topsoil, above 002.
002	Reddish brown, firm, sandy silt with small pebbles <0.05m. Measurements not known. Below 002, primary fill of F003.

6. Environmental, Radio-Carbon and Magnetic Susceptibility Samples

6.1 Environmental Samples

The majority of ditches and pits had a sample taken from the primary fills for general biological analysis. A sub-sample of 0.5kg was taken from each sample and was wet sieved through a nest of sieves (4mm, 1mm, 0.3mm). The residue from each sieve size was then examined under a microscope and any environmental evidence was extracted. The contents of the processed soil samples are listed in the table below.

A total of two charcoal samples from the uniform burnt layers from two of the ditches, (F009, sample 8 and F545, sample 9a) were sent for radio carbon dating which provided dates of 1650 AD and 1700 AD

implying a Post-medieval landscape superimposed on an earlier landscape of late prehistoric origin. The results from the radio carbon dating laboratory are included in the appendix.

Sample no	Context no	Description	Contents
1	544	fill of ditch F544	none
2	505	burnt layer in ditch F503	charcoal partially burnt wood and carbonised thorns
3	517	Fill of ditch F518	seeds and snails
4	507	fill of pit F509	snails and shell
5	006	fill of ditch F009	none
6	547	fill of ditch	charcoal and carbonised seeds
7	542	fill of pit F543	charcoal
8	006	burnt layer of ditch F009	charcoal (radio carbon sample)
9a & b	544	burnt layer of ditch F545	charcoal (radio carbon sample)
52	505	fill of ditch F503	charcoal

6.2 Magnetic Susceptibility Sample Results

Sample no	context no	feature no	low frequency	high frequency
12	Natural		1.53	0.98
13	531	534	29.29	25.38
14	523	526	27.90	24.76
15	nat 1m from F534		2.72	1.72
16	nat below F537		30.35	30.00
17	533	534	20.65	16.82
18	nat 1m from F537		27.76	23.15
19	530	534	34.40	30.43
20	519	526	24.49	20.83
21	520	526	44.90	37.75
22	526	525	45.94	37.90
23	535	537	115.56	104.00
24	nat below F534		3.35	3.00
25	524	526	44.38	40.48
26	532	534	71.40	58.55
27	522	526	28.29	24.76
28	nat below F540		8.04	7.20
29	Nat 1m from F540		25.95	22.56
30	538	540	52.91	46.00
31	536	537	28.09	24.54
32	539	540	38.75	33.33
33	529	534	23.57	20.48
34	541	543	35.75	31.05
35	542	543	23.26	21.10
36	516	546	182.57	166.05
37	507	509	70.90	61.11
38	547		106.48	96.00
39	006	009	114.40	105.50
40	544	545	101.99	86.66
41	517	518	66.94	62.55
42	508	509	33.09	29.05
43	nat below 514		68.06	56.45
44	511	514	51.18	624.83
45	501	500	46.89	42.63

46	008	009	25.90	21.90
48	nat 2m from F526/528		0.79	0.44
49	505	503	113.46	561.95
50	521	526	14.71	25.71

7. Finds

Finds from the site were scarce and consisted of what is listed below. The most significant of the finds were the pottery sherds from pit F509 and the single sherd from the primary fill (513) of ditch segment F514. A description of these is included in the pottery report in section 7.1 by Jeremy Evans (section 7.1). The animal bone was examined in the WYAS laboratory.

context	quantity	description
US	1	pot fragment
507	c.24	Pot fragments from pit F509
513	1	pottery fragments from ditch F514
510	18	animal bone-(cow) including fragments of, scapula, radius and ephysis, from upper fill of ditch F514
505	8	animal bone-(cow) jaw fragments from upper fill of ditch F503
510	1	oyster shell fragment from upper fill of ditch F514
507	1	flint one small fragment from pit F509

7.1 Kirk Smeaton Quarry pottery Jeremy Evans

Context	Description
U/S	A lightly abraded sandy greyware bodysherd, possibly South Yorkshire ware
513	An abraded greyware footing base, perhaps a bowl base. The grey fabric has common black ironstone inclusions 0.5-2mm, possibly South Yorkshire ware.
507	15 chips, nine small bodysherds and two rimsherds from an everted, rising rimmed wide mouthed jar in calcite gritted ware. The two rimsherds join. The fabric is handmade and reduced and Iron Age or of Iron Age tradition.

8. Discussion

The watching brief confirmed the results from the gradiometer survey and the results from the 1993 evaluation and was also able to resolve a number of questions which were not answered by the trial trenching.

Although discussed in the results section, the following describes in more detail the likely phasing of features on the site, as far as possible though the stratigraphic relationships between some of the ditches was uncertain as most butt-ended rather than intersect.

Phase 1 comprises of the geological features (F534, F526, F537 and F540) all of which were thought to have been formed by glacial and periglacial fluvial activity.

Phase 2 is assigned to ditch (M211) and possibly the two pits (F509 and F543) within its enclosed area. to the east though these may have originally existed in isolation, pre-dating the ditches. A single sherd

of Roman pottery was recovered from fill 513 (M211) and a total of 24 sherds of pottery were recovered from fill 507 of pit (F509) thought to be iron age or of iron age tradition. This may suggest pit F509 was earlier than the ditch or that the ditch was open for a long period of time silting in the Romano British period.

Phase 3 consists of two sub-phases represented by ditches M323 (sub-phase 1) and M321 and M549 (sub-phase 2). Ditch M323 formed a right angle with M211 butt-ending rather than intersecting and also butt-ended to the south west where it lay immediately adjacent and at right angles to the butt-end of ditch M549. Ditches M549 and M321 aligned entrance ways both butt-end close to M323, with all of the above mentioned ditches probably in use at the same time. The remaining ditch (M548) aligned south-east to north-west, lying to the east of (M321), does not fit into a clear phasing category. Its butt-end was situated further to the north than ditches M321 and M549 and at one point the gap between the two (M549 and M321) was only 1.5m suggesting if they were contemporary there was limited access at this point and the edges of the ditches would have quickly deteriorated which was not evident in section 11 of the excavated ditch segment at this narrow point.

Phase 4 is represented by ditch M322 which ran parallel with M323, a gap of 1m between the two. This ditch was seen to cut the fills at the southern ends of ditches M321 and M549 at the position of their butt-ends and entrance way, showing that the southern parts of the ditches had filled up before (M322) was cut. This shows that the land division represented by the southern ends of M321 and M549 had become redundant prior to the excavation of ditch M322 demonstrating the field size increased to the south of (M322). There was no evidence that this ditch extended beyond ditch M211 so it seems likely that it took the place of ditch M323, moving slightly to the south allowing a gap to form entrance ways between it and the butt-ends of M321 and M549. Unlike ditch M323, which butt-ended adjacent to ditch M549, this ditch was seen to continue south-westwards which was also recognised from the gradiometer results.

Phase 5 was represented by a small sub-circular pit F003 which was seen to cut ditch M322. It contained no finds and there was no suggestion as to its function.

The grave (F404) recognised within Trench 4 during the 1993 excavation, does not fall into a definite phase and was situated just to the south-west of the butt-ends of ditches M549 and M323 and immediately to the north of ditch M322. The skeletal remains were in poor condition and only part of the skull, upper torso and leg were present. The shape and roughly east-west orientation of the grave and skeleton suggests a Christian burial, unlike the one excavated to the north east of the site (Abramson 1989) which was a crouched burial, prehistoric in date.

Intermittent layers of charcoal and burning, suggesting the burning of hedgerows, were found in the upper fills of a number of ditch segments (F514 of M211, F545 of M548, F503 of M321) and samples were taken from the upper fills of M549 and M321 for C14 dating.

The magnetic susceptibility readings using a high frequency were very high for these intermittent layers as would be expected for areas of burning. Similar intermittent burning was found in segments excavated through M322 and M549 in the 1993 evaluation. The nature of the intermittent layers and the charcoal itself would seem to indicate the possibility of the burning of a hedge line. The charcoal taken in samples would seem to be made up of possible roots, branches and twigs. The evidence of this and the partially burnt wood and carbonised thorns found in environmental sample number 2 would seem to back up this evidence. The presumed hedge could have been situated on either side of the ditch upon the embankment from up cast material, or perhaps within the ditch after a certain level of silting up had taken place with the hedge boundary replacing the ditched one perhaps in existence for a long period of time. The results of the radio carbon samples, taken from the burnt layers within the upper fills of M549 and M321 provided dates of 1650 AD and 1700 AD which indicates the date the hedge was burnt out.

It should also be noted that the present field boundaries respect the alignments of the ditches seen upon the site which also run parallel with or at 90 degrees with the Roman Ridge Road suggesting their origins. Other field boundaries respect the alignment of the A1, which runs on a more north-south alignment, which suggest they are much more recent.

The site has been termed a field system for farming use, the reason for which is there was no evidence of buildings or occupation. The machining of the site using a bull dozer meant that any smaller features such as post-holes and small pits were impossible to see. This may account for lack of occupational evidence. The presence of bone from 510 of F514 and 505 of F503 may indicate occupation or it merely the presence of animals, seemingly cattle, on the site.

Of the pits, F003, F509 and F544, only F509 had any evidence of occupation with the 24 small sherds of pottery, all smaller than 40mm in dimension. One sherd was also found in 513, the primary fill of F514. In the 1993 evaluation the presence of black pebbles (317) in Trench 3 and in no other trenches led to the conclusion that this was a purposefully laid layer of stones. The stripping of the whole site during the watching brief showed that these pebbles were naturally occurring intermittently across the site.

9. Conclusion

From evidence during the 1993 excavations, geophysical surveys and this 1995 watching brief the results suggest the site forms part an area of ditched enclosures of a multi-phased, multi-period agricultural landscape, ranging in age from the late prehistoric, due to the presence of worked flint, through to post-medieval judging from the radio carbon dates of charcoal recovered from the ditches. A single sherd of Roman greyware was recovered from one of the ditch fills whereas the pottery recovered from the pit appeared to be iron age or iron age tradition. This suggests a post-medieval landscape is superimposed on an earlier landscape of prehistoric origin.

The function of the site would appear to have been primarily agricultural with little evidence of occupation though the presence of the grave, F404, and the skeletal remains suggest some form of occupation close to the site.

The presence of flint found within the topsoil, particularly during 1993, shows prehistoric activity had occurred on or close to the site though none of the features excavated appeared to be from this period.

The watching brief cleared up the majority of questions posed due to the results of the previous gradiometer survey and archaeological evaluation of the site.

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Radio Carbon Dating Scottish Universities Research and Reactor Centre

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West Yorkshire Archaeology Service Site Recording Manual (1995)

RADIOCARBON DATING LABORATORY

West Yorkshire.

Charcoal samples collected and submitted by Andy Boucher, West Yorkshire Archaeology Service, 14 St John's North, Wakefield, WF1 3QA.

GU-4534 West Yorkshire, KSQ 95 Sample 8 250 ± 60
 $\delta^{13}\text{C} = -25.0\text{‰}$

Calibrated Age Ranges

1σ cal AD 1528-1953, cal BP 422-0

2σ cal AD 1480-1955, cal BP 470-0

GU-4535 West Yorkshire, KSQ 95 Sample 9A 310 ± 60
 $\delta^{13}\text{C} = -25.5\text{‰}$

Calibrated Age Ranges

1σ cal AD 1480-1651, cal BP 470-299

2σ cal AD 1450-1953, cal BP 500-0

N.B. 1. The above ^{14}C ages are quoted in conventional years BP (before 1950 AD). The errors are expressed at the one sigma level of confidence.

2. The calibrated age ranges are determined from the University of Washington, Quaternary Isotope Laboratory, Radiocarbon Dating Program, 1987. The 20 year atmospheric calibration curve is used throughout and the calendar age ranges, obtained from the intercepts (Method A), are expressed at both the one and two sigma levels of confidence. In the case of marine shell samples derived from around the U.K. coastline, an apparent age (reservoir effect) of 405 ± 40 years (Harkness, 1983) is subtracted from the conventional ^{14}C age prior to calibration using the 20 year atmospheric curve.

3. Samples with an AA coding are measured at the University of Arizona AMS Facility.

Harkness, D.D. (1983) The extent of natural ^{14}C deficiency in the coastal environment of the United Kingdom. In *^{14}C and Archaeology*, Groningen August 1981, 351-364.

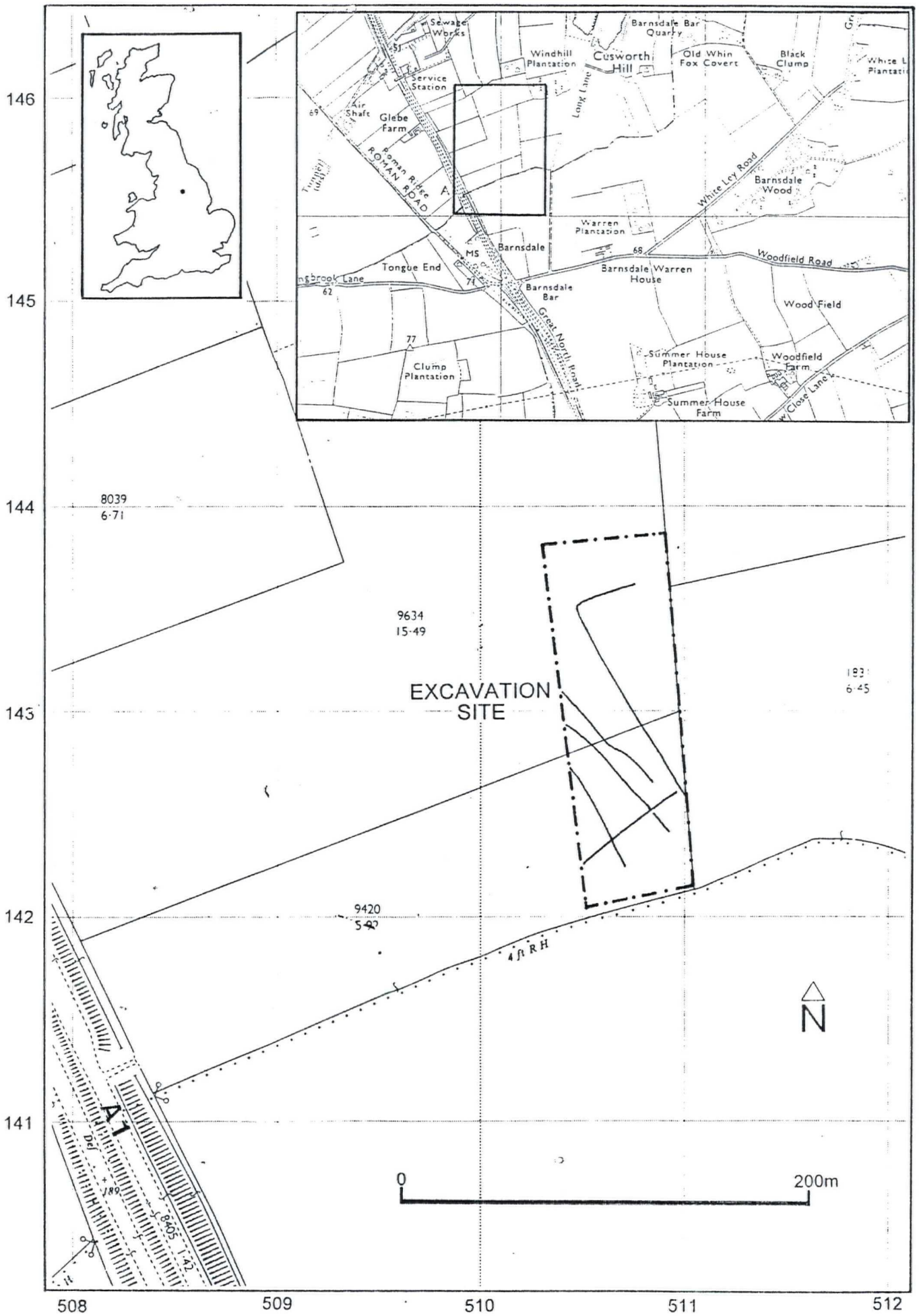
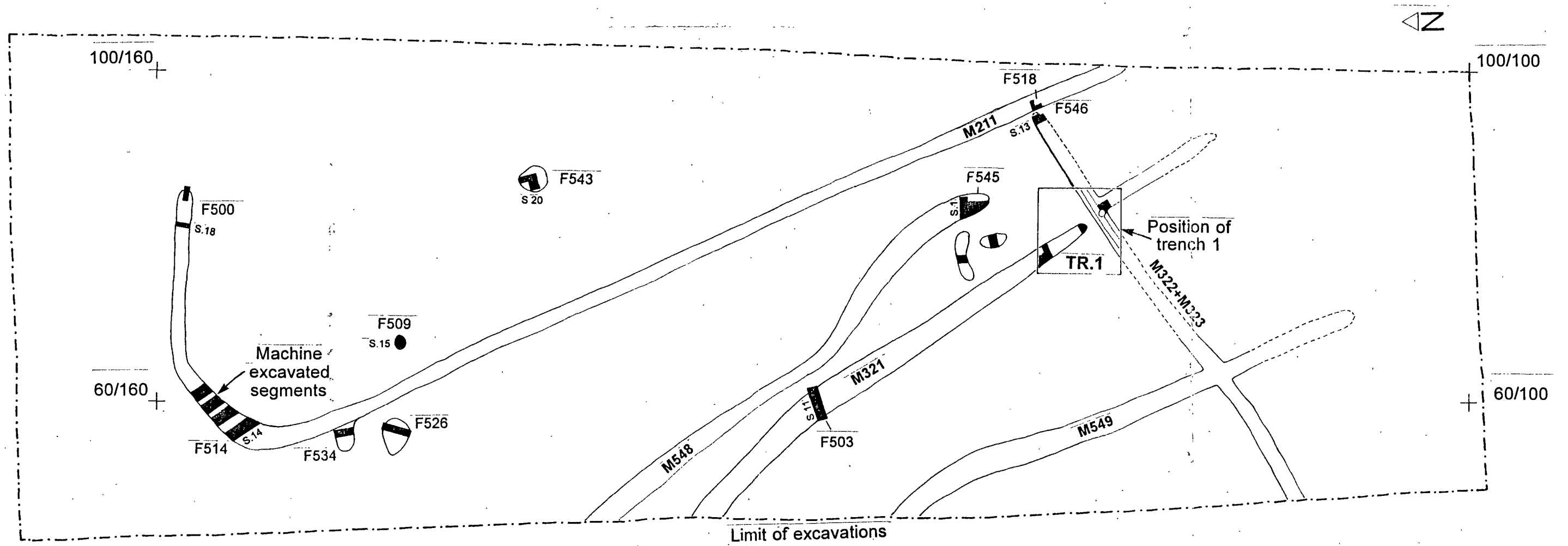


Fig.1 Site location plan



■ Excavated features

Fig.2 Site plan showing position of features and Trench 1

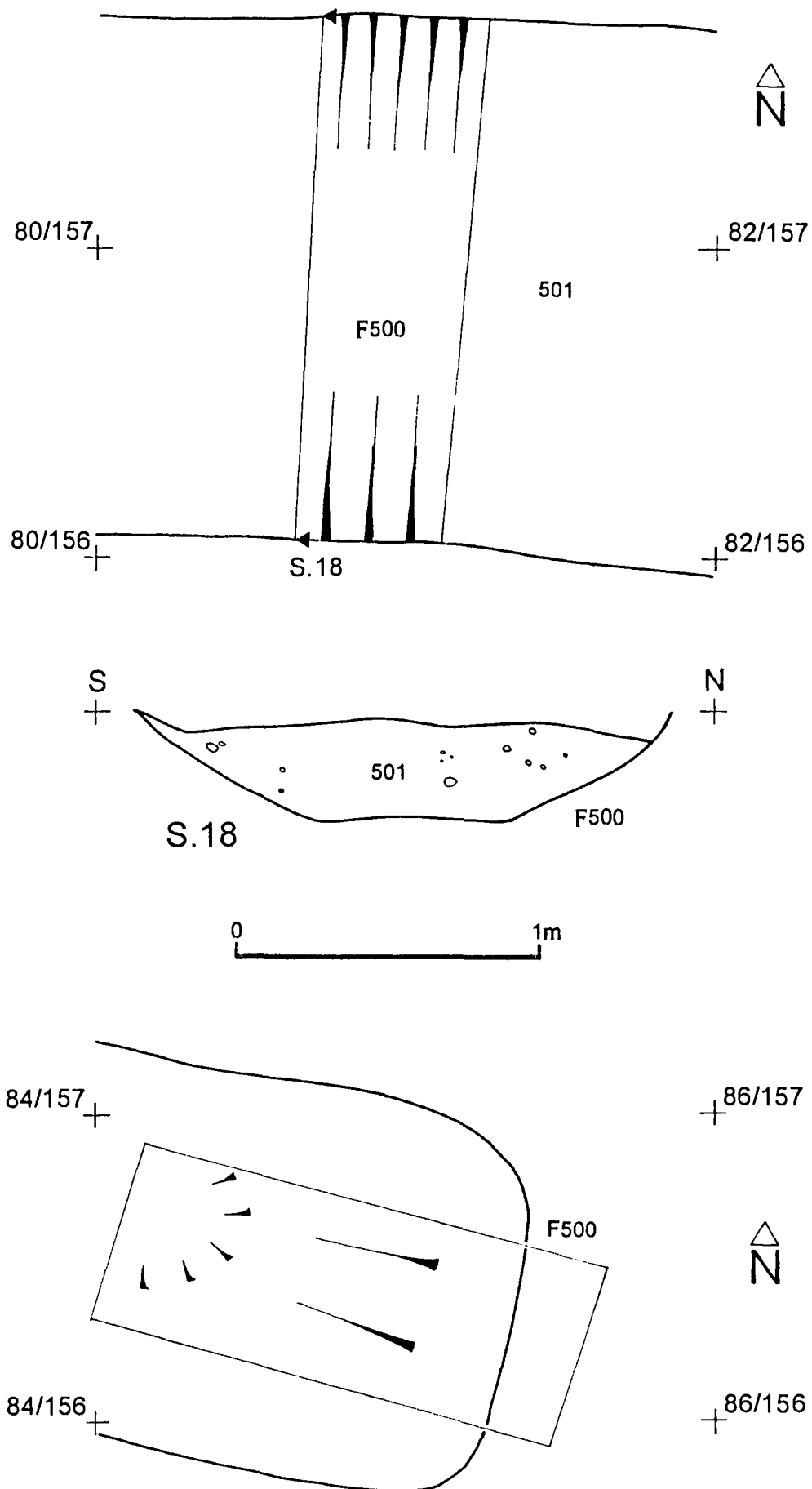


Fig.3 Post-excavation plans and ditch segments F500 and butt-end section

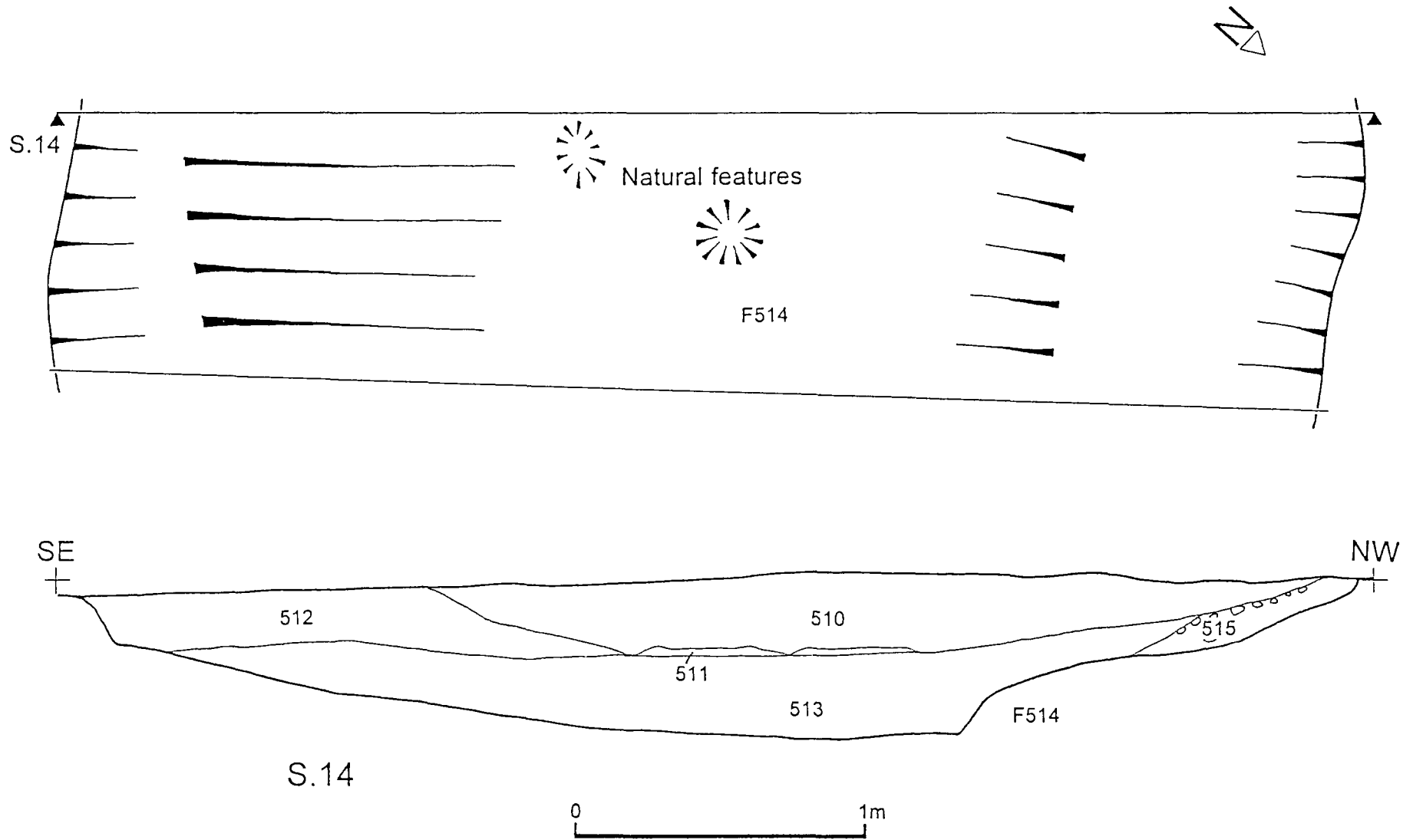
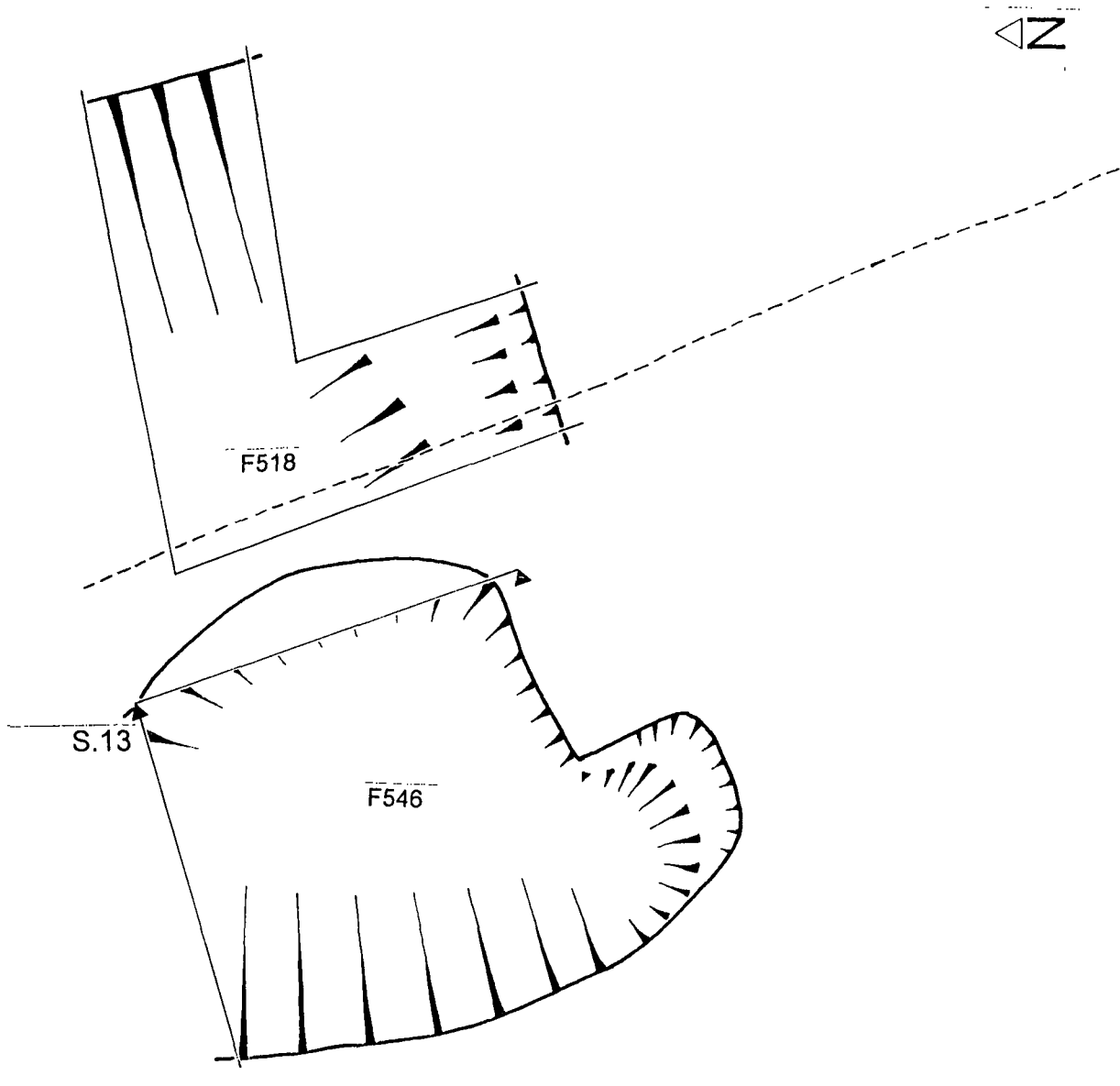


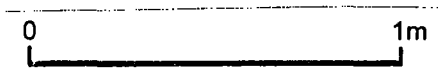
Fig.4 Post-excavation plan and section of ditch F514

97/53+

97/50+



92.8/53+



92.8/50+

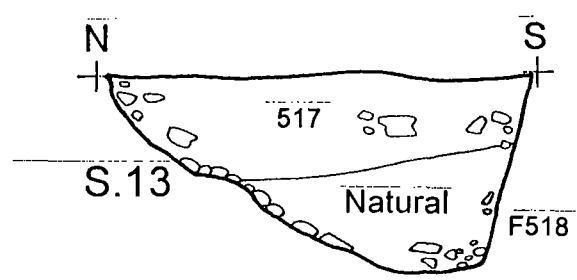


Fig.5 Post-excavation plan and section of ditch F546 and ditch F518

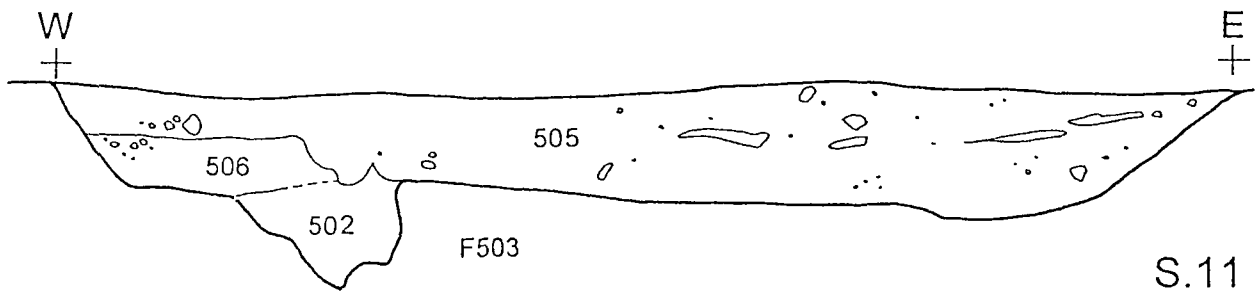
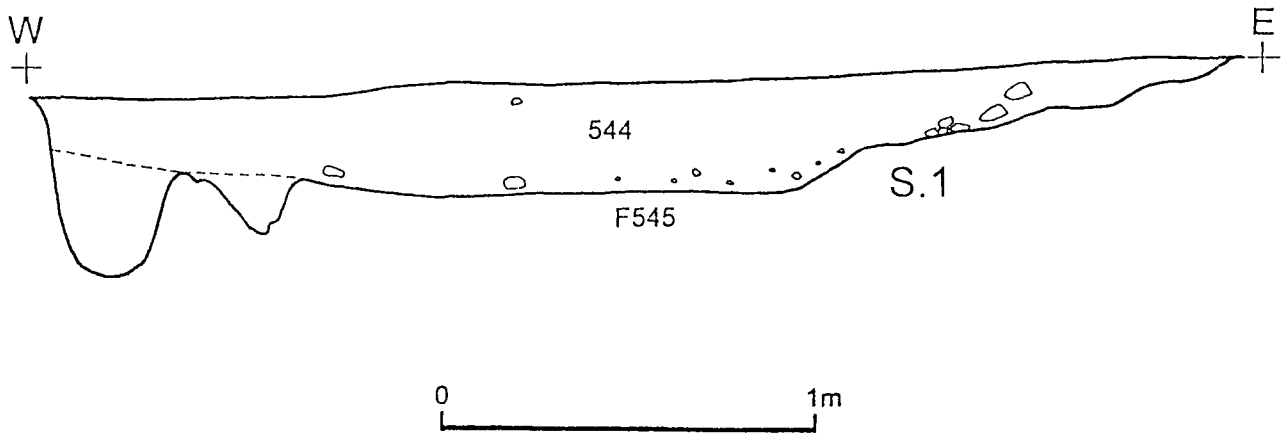
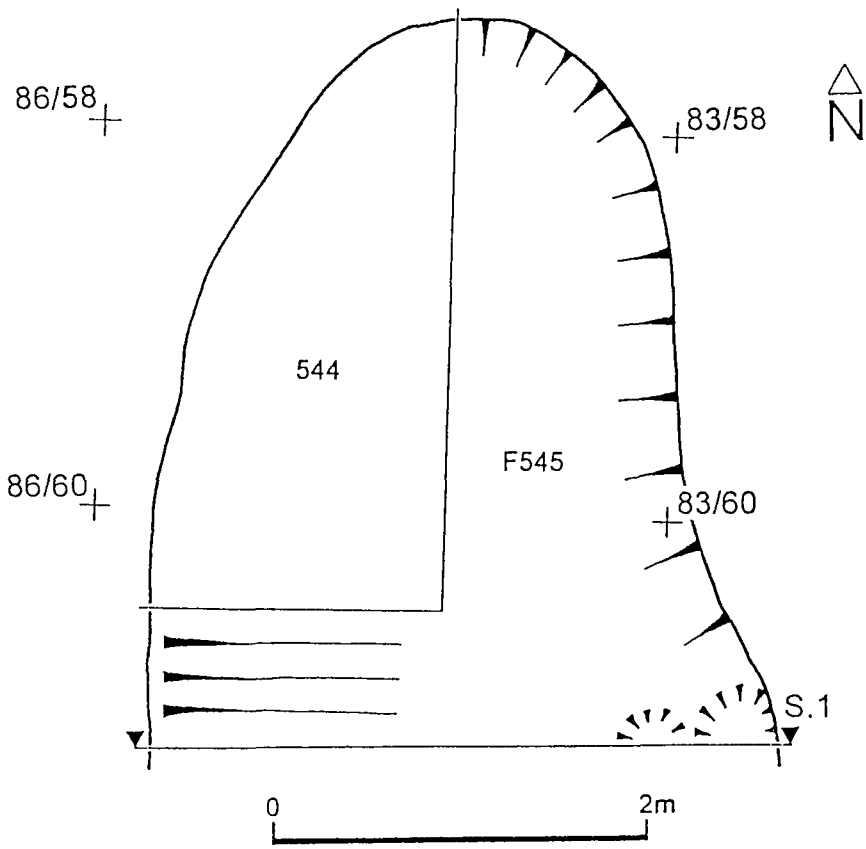
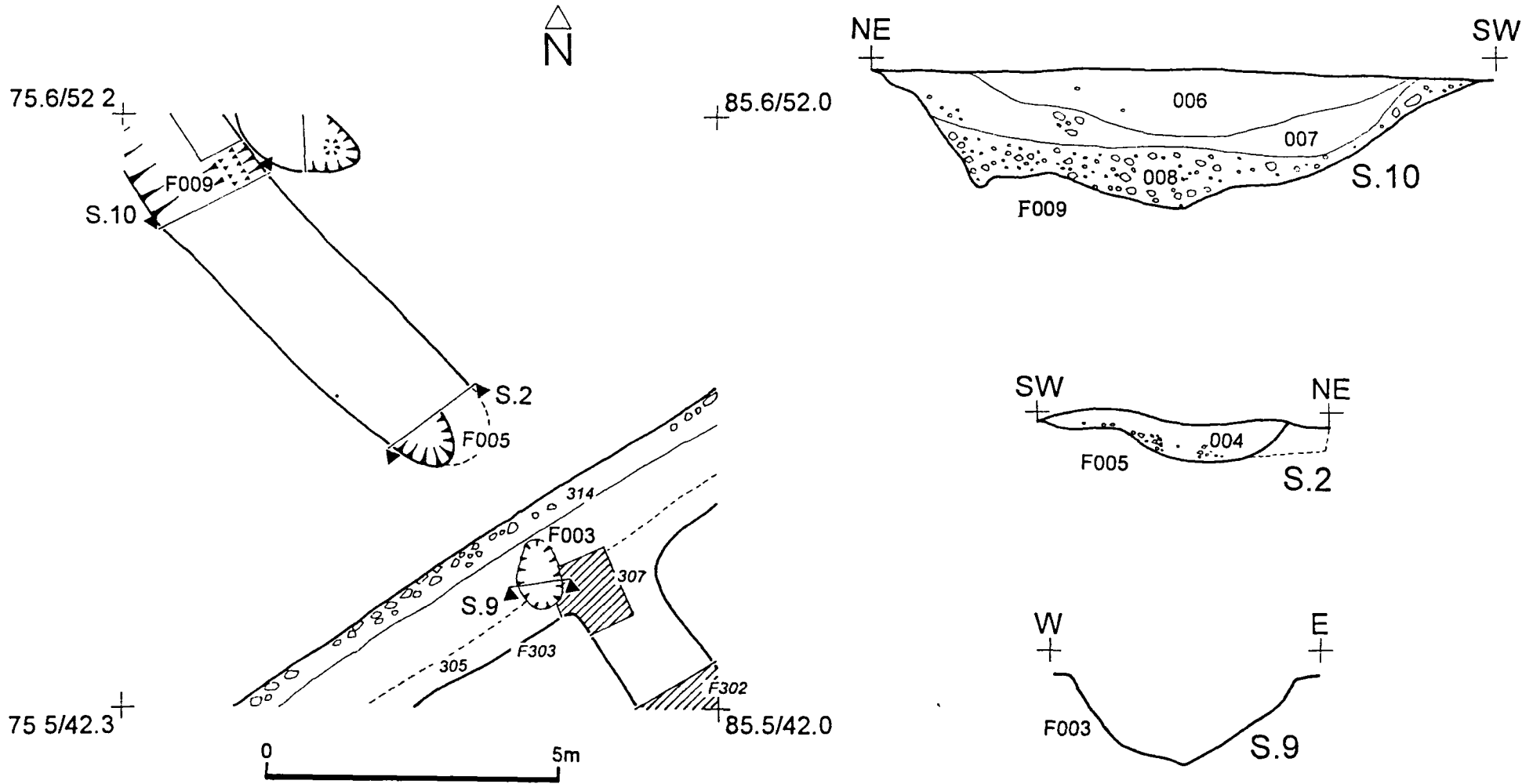


Fig.6 Post-excavation plan and section of ditch F546 and sections of ditch F503




 Excavated ditch segments during 1993 evaluation
 303 1993 evaluation context numbers

Fig 7 Post-excavation plan and sections, Trench 1

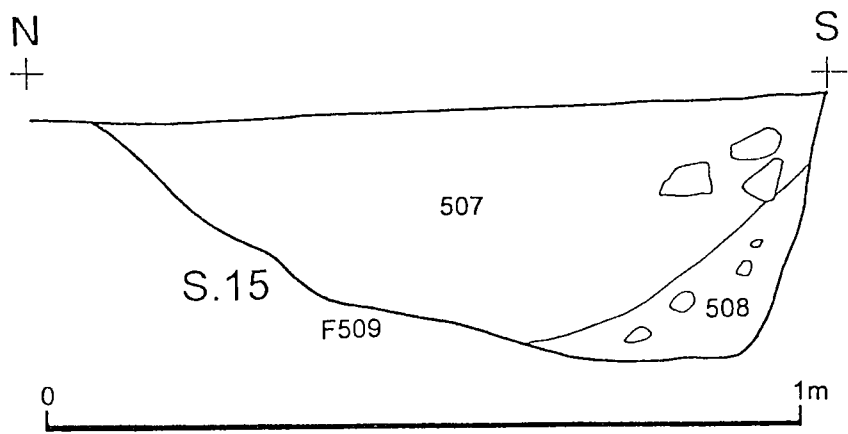
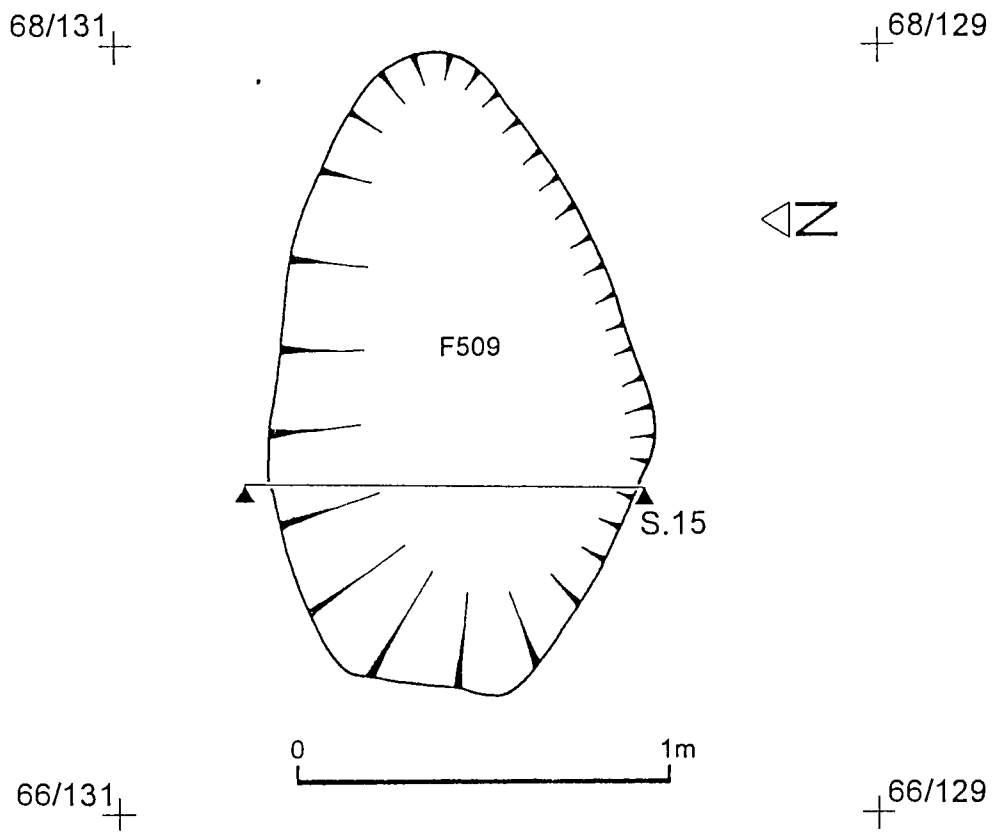


Fig 8 Post-excavation plan and section of pit F509

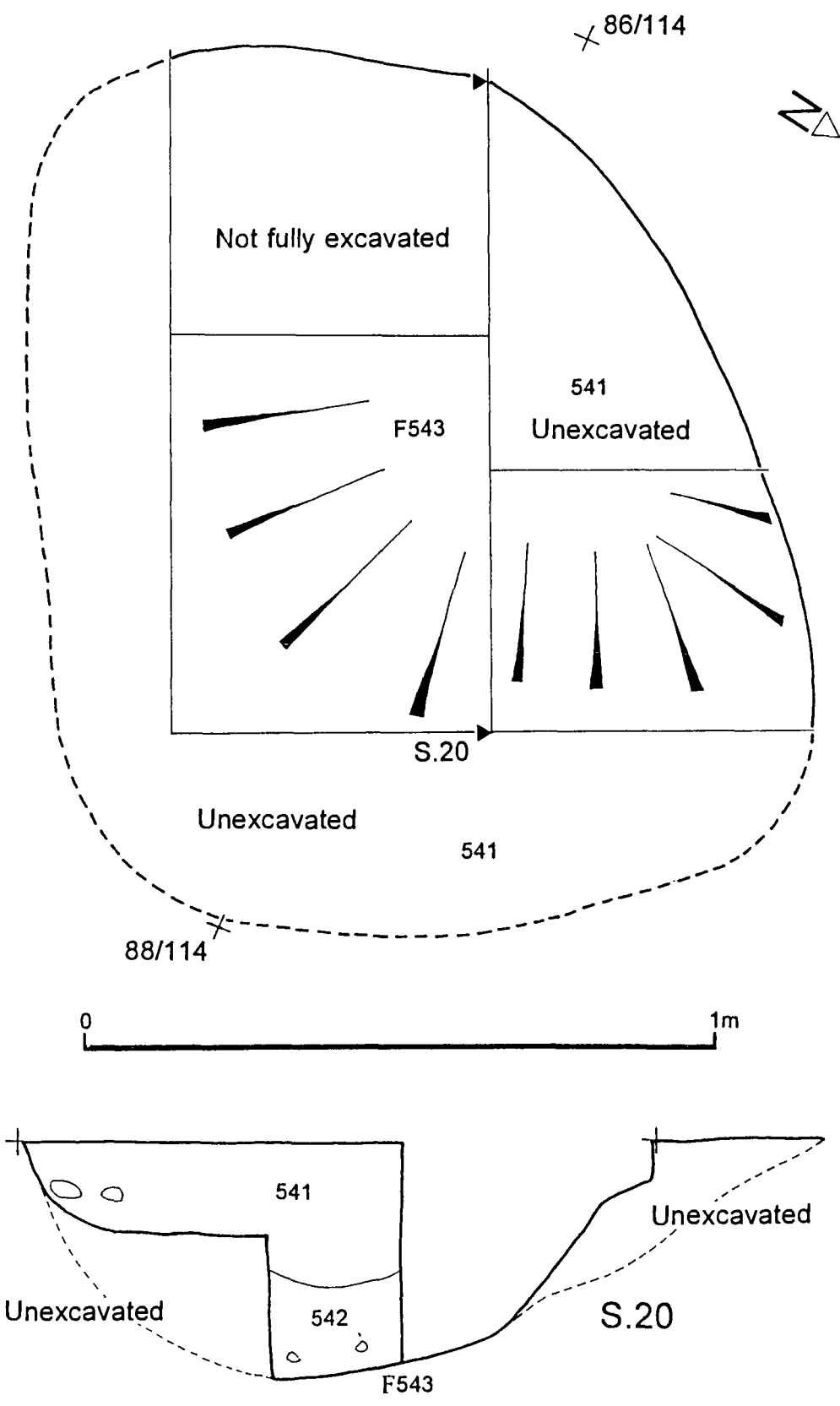


Fig.9 Pit F543, plan and section