'Late Iron Age regionality and early Roman trajectories (100BC-AD200): a landscape perspective from eastern Yorkshire'

Volume 2 of 2

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APPENDICES

Appendix 1: Wharram archives

The five Sheffield archives took the following form: original pencil plans and section on permatrace – some also having inked-up versions, handwritten site notebooks, context, drawing, photographic and finds records, copies of research designs and the WGC97-98 interim report with Harris matrices, publication standard plans, sections and artefact drawings. In addition to such records the York archives also included digital finds records in Access, although this work was incomplete and approximately half the 1100 records for trench WGC04-7 had to be entered into the database from the paper records. The WP05/92 archive was comprehensive and followed the WGC template but lacked an Access database.

In terms of archaeological materials resulting from the seven fieldwork campaigns, the finds archive comprised some 15 boxes of ceramics – most of which were washed and marked and a few diagnostic sherds had been identified, separated and drawn for use in interim reports. Although there was a core of easily recognisable types amongst the ceramics it was clear that, if the archive was to be effectively processed, a very steep learning curve and considerable effort lay ahead. In addition, there were boxes of stone artefacts, small finds, and, finally, perhaps 15 boxes of washed but otherwise unprocessed bone, which were not included in this study.

Appendix 2: Access database design

The initial pair of databases for trenches WGC04-7 and 04-8 were 'inherited' in a part-completed state – approximately 500 records still requiring entering from the paper archive. The came with an array of fields designed to accommodate a range of finds types and a generic set of qualitative and quantitative criteria. Whilst the original databases are included within the digital archive for reference

purposes, the design was changed to better suit the analysis, description and quantification of ceramics. This redesigned version was then used in the creation of the other eight databases used in the main WGC case study. Some differences will be noted in the level of detail applied to the 'comments' and 'provenance' fields, which, originally, were used to enter detailed descriptive information including comments regarding the degree of abrasion and the colouration of the inside, outside and section of each sherd (i.e. evidence for the control and nature of the firing process). As my skill and understanding of the material developed it became obvious that the creation of a formalised fabric and type series would vastly simplify and, most importantly, speed up the data entry process, which in its early stages was hugely time-consuming. Thus in the early databases there is a great deal of detail in the 'comments' field, which later was simplified into the series of coded fields explained below. By the time the database for WP05-92 was being created, revising and expanding on a simplified version used, under my supervision, by a Masters student (Yip 2006), the provenance field was deemed largely superfluous as the fabric/type codes by then used indicated the type involved (e.g. MPR/WR01 = Crambeck greyware; MPR-H/WG01 = Knapton ware; MPR-HW = proto-/Huntcliff ware). Moreover, all the main types/forms were linked to comparanda in the 'provenance' field of other databases in the digital archive.

Appendix 3: Feature concordance data

Trench	New	Old Cut
WGC97/98C	Ditch F1	97:18/98:101
WGC97/98C	Ditch F2	97:11/17
WGC97/98C	Ditch F3	97:12, 98:106
WGC98A	Trackway F4	45
WGC98A	Dump F5	27=42
WGC98A	Colluvium F6	26
WGC98A	Ridge and Furrow F7	78/79
WGC04-7	Linear Boundary Ditch F8	F1N
WGC04-7	Enclosure Ditch F9	F1S
WGC04-7	Enclosure Sub-Division/Redefinition Ditch F10	

WGC04-7	Gully F11	F3
WGC04-7	Buried Soil F12	1002
WGC04-7	Pit F13	F7
WGC04-7	Pit F14	F4
WGC04-7	Pit F15	F5
WGC04-7	Gully F16	F8
WGC04-8	Enclosure Ditch F17	2025/28
WGC04-8	Linear Gully F18 (2026)	2026
WGC04-8	Linear Ditch F19 (2021)	2021
WGC04-8	Posthole/Gully butt-end F20 (2006)	2006
WGC04-8	Posthole F21 (2009)	2009
WGC95A	Linear Gully F22	025
WGC95A	Special Pit F23	006
WGC95A	Linear Gully F24	010
WGC95A	Pit F25	014
WGC95A	Pit F26	043
WGC95A	Pit F27	012
WGC95A	Pit F28	008
WGC95A	Surface Spreads F29	040
WGC95A	Enclosure Ditch F30	003
WGC95B	Pit F31	320
WGC95B	Pit F32	296
WGC95B	Pit F33	293
WGC95B	Pit F34	295
WGC95B	Pit F35	231
WGC95B	Pit F36	257
WGC95B	Pit F37	254
WGC95B	Pit F38	255
WGC95B	Pit F39	221
WGC95B	Spread F40	215
WGC95B	Pit F41	258
WGC95B	Pit F42	268
WGC95B	Pit F43	326
WGC95B	Pit F44	306
WGC95B	Pit F45	341
WGC95B	Pit F46	261
WGC95B	Pit F47	263
WGC95B	Pit F48	253
WGC95B	Pit F49	212
WGC95B	Pit F50	301
WGC95B	Pit F51	251
WGC95B	Pit F52	250
WGC95B	Enclosure Ditch F53	206=274=284
WGC95B	Spread F54	201
WGC95B	Spread F55	216
WGC98B	Pit F56	59
WGC98B	Quarry F57	75
WGC98B	Spread F58	9=22
WGC98B	Linear Ditch F59	56
WGC98B	Gully F60	48

WGC98B	Posthole F61	66
WGC98B	Grave and Stakehole F62	15/76
WGC98B	Pit F63	99
WGC98B	Quarry F64	97
WGC98B	Gully/Posthole F65	95/96
WGC98B	Spread F66	87
WGC98B	Linear Ditch F67	70=98
WGC98B	Quarry F68	92
WGC98B	L-Shaped Gully F69	50
WGC98B	Stakehole F70	68
WGC98B	Spread F71	14=51
WGC98B	Posthole Group F72	53/44/54
WGC98B	Posthole F73	36
WGC98B	Scoop F74	55
WGC98B	Posthole F75	72
WGC98B	Scoop F77	31
WGC98B	Grave F78	18
WGC99A	Linear Ditch F79	190=194
WGC99A	Linear Ditch F80	153
WGC99A	Enclosure Ditch F81	155=191 Phase 1
WGC99A	Enclosure Ditch F82	193=200 Phase 2
WGC99A	Enclosure Ditch F83	115=159 Phase 3
WGC99A	Linear Gully F84	148
WGC99A	Graves F85	180, 182, 183, 184, 186
WGC99A	Slumped Occupation Layer F86	114, 119, etc.
WGC99A	Grave F87	185
WGC99A	Stone Packed Post Setting F88	197
WGC99A	Wall F89	203
WGC99A	Stone Packed Post Setting F90	195
WGC99A	Cobbles F91	113
WGC99A	Padstones F93	199
WGC99A	Spreads F94	118 etc.
WGC99A	Kiln F95	176
WGC99A	Pit F96	189
WGC99A	Ploughsoil F97	109
WP05-92	Curvilinear Gully F98	cut 1015/1018
WP05-92	Foundation F99	1014 Stones
WP05-92	Enclosure Ditch F100	cut 1017
WP05-92	Linear Ditch F101	cut 1051
WP05-92	Linear Ditch F102	cut 1016
WP05-92	Path F103	1036
WP05-92	Foundation F104	1024
WP05-92	Posthole Group F105	1034, 1037, 1038 + 1039
WP05-92	Amorphous Intrusions F106	cut 1049, 1069
WP05-92	Linear Ditch F107	cut 1003
WP05-92	Linear Ditch F108	cut 1050
WP05-92	Foundation F109	1065 Stones
WP05-92	Pond/Wellhead F110	cut 1063
WP05-92	Surface Spreads F111	1022, 1040, 1011, 1002
WP05-92	Curvilinear Gully F112	cut 1052

Appendix 4: Some ceramic issues

Chronological myopia?

There are deeper concerns surrounding the persistence of LIA coarseware forms into the Roman period. The most surprising, perhaps, is that no one, since Brewster's (1958, 213) discussion of the ceramics from Staxton and Costa Beck in the 1950s, has challenged the received wisdom that LIA-ER handmade coarsewares would never occur on Roman-period settlements to the exclusion of diagnostically 'Roman' ceramics. This thought, it seems, has become universally and uncritically accepted, reflecting the enormous assumption that all communities and settlements during the Roman period would naturally have access to, desire and use 'the best quality ceramics available' – quality, of course, being a relative concept. This is particularly problematic in the ER period (AD71-200) when, beyond military sites and associated proto-urban developments, there is rather patchy evidence for the adoption of Roman material culture in the rural hinterlands. How, in the absence of ^{14}C dates, might one determine where within the LIA-ER period (100BC-AD200) an entirely 'non-Roman' handmade coarseware assemblage might fall? There are two obvious lines of enquiry: firstly, one might test whether the forms/assemblages occurring with ER ceramics were different to those that did not, and, secondly, by combining the analysis of stratigraphy and contextual associations with other artefact types, some further chronological differentiation might be possible. These are important questions with resonances far beyond this study but, sadly, space prevented their being properly addressed within what is, after a multi-scale landscape study.

Questions of quantification

There are, however, some important more general issues attached to quantification: the degree of fragmentation or brokenness will vary between contexts, assemblages and types and thus sherd count is fundamentally biased as a measure of proportion of types; weight is similarly biased in that heavier types will be over-represented, however,

the relative weight of different types does not vary between contexts and is therefore used below to compare proportions of types in different assemblages (Orton *et al.* 1993, 169). When only a small proportion of any vessel type survives (i.e. completeness levels are low), as is common throughout the Wharram archives, pots that fragment most readily (those with a high level of brokenness) will be over-represented in assemblages. Bias in the proportions of types is thus affected by both an assemblage's completeness and the brokenness of the types present (Orton *et al.* 1993, 169). In order to compare the proportions of types in two or more assemblages in terms of number of vessels, we have to know that the completeness and brokenness in each is the same – often an impossible task. This problem can be overcome by using the percentage of rims present to calculate estimated vessel equivalents (Rim EVEs) by type. Rim EVEs offer a statistically robust means of establishing the proportions of different ceramic types present within and between assemblages (Orton *et al.* 1993, 171-3).

Calcareously tempered wares (CTW) and the Knapton enigma

Just as the development of form provides a good measure of change, so fabric has much to tell us about insularity and inertia in coarseware traditions. Calcareously tempered wares (CTW) dominate eastern Yorkshire assemblages throughout the late prehistoric and early historic periods and vessels occur in a wide range of sizes, fabrics and forms, although calcite tempered jars are by far the commonest types throughout. Also present, particularly in prehistoric assemblages, are Erratic Tempered wares (ETW), but these were rare during earlier work at Wharram (Didsbury 2004, 147) – a finding also borne out by the ceramic archives used in this study. On this issue Didsbury commented thus:

> "the overwhelming preponderance of calcareously-tempered wares at Wharram Percy suggests that most of its pottery was locally produced or acquired, and that its socio-economic links, at least as far as may be reflected in the ceramic assemblage, must have been

> with other groups situated on the local or regional Cretaceous and Jurassic strata".

The insular persistence of CTW thus forms something of a barrier to our understanding of the material conditions surrounding the progress to Roman control and consolidation of the region.

When faced with fragmentary material dominated by undecorated body sherds, it can be difficult to distinguish between LIA-ER handmade types, earlier prehistoric sherds, and later Roman mass-produced, handmade and handmade-and-wheel-finished types. With respect to the earlier material, it is interesting to note Hayfield's comment that "Iron Age and early Roman jars are generally reduced", which contradicts Challis and Harding (1975ii, 28-29) who, like me, found that such vessels often have the typical patchy oxidised/reduced finish of bonfire-fired vessels. Didsbury's (2004, 148) discussion of the Wharram CG4 LIA-ER CTW fabric – my fabric WG04 – seems to support Hayfield by recording that "26 of the 118 illustrated vessels (22%), is more or less oxidised, most often to red tones, on one or both surfaces". I suspect that Challis and Harding may, like me, have used different criteria to Hayfield and Didsbury to define their 'oxidised' and 'reduced' categories: I only identified sherds as reduced if they were grey or black in colour – any areas coloured in the range mid-brown, buff, pink, orange or red were recorded as oxidised.

However, some later fabrics are distinctive enough to allow tentative differentiation based on more uniformly processed, and therefore better-sorted, tempering media. This is, nonetheless, much more a question of recognising gross tempering changes over fairly coarse timescales rather than being the stuff of firm rules – indeed, given the inherent variability within such a handmade tradition, one might expect to see some finely-made early examples as well as poorly fashioned later ones. The quality of finish together with the character and uniformity of oxidisation or reduction (i.e. the control and manipulation, or repeatability, of the

firing process to achieve a particular 'decorative' outcome) may allow further differentiation between domestically-produced, open-fired types and mass-produced, kiln-fired wares – but there are exceptions. Thus most stylistically 'late' gritted fabrics in my Wharram Fabric Series have surface finishes and sections that indicate that they have been 'high-fired' in a controlled, often reducing, atmosphere, but others in this category have the patchy reduced/oxidised appearance of open-fired vessels. The latter may, nonetheless, be differentiated from earlier material on the basis of fabric and firing temperature as seen in section. On balance, then, there is good evidence to suggest that some mass-produced late Roman 'wares', such as Huntcliff-type vessels, were produced in several different fabrics, using different technologies, presumably at different locations across the region. Having said all that, it is only when diagnostic rim forms and/or distinctively decorated body sherds exist that secure separation out of Huntcliff types from the mass of earlier CTW sherds can occur. Most assemblages are, of course, more-or-less mixed and it is therefore crucially important, from an interpretive standpoint, to examine ceramic assemblages not only in terms of internal composition but also with an eye to wider contextual associations and stratigraphic considerations.

It is as yet less clear whether it is possible to differentiate potentially earlier Knapton-type jars from later Roman Knapton ware examples. However, most LR Huntcliff fabrics listed in my fabric series evidence relatively well-sorted tempering media and, most importantly, have reddish-brown or grey sections that suggest controlled, higher temperature firings than was possible in open firings, which produce black-sectioned vessels.

In terms of later material, it is perhaps significant that Corder and Kirk (1930, 97) reported all Knapton ware vessels in secure 3rd-century contexts at Malton and Langton as being completely reduced to a grey or black finish. In his discussion of "calcite-gritted wares", Hayfield (1987, 24) suggested that Knapton products "tend to have oxidised surfaces",

thereby contradicting Corder and Kirk's earlier observation. Thus the process of engaging with the LIA-LR eastern Yorkshire CTW wares has provided an insight into why some people never return to ceramics research after their doctorate, whilst others devote their lives to the subject.

After much deliberation, a decision was taken to identify everted, thickened rim types as 3rd-century Knapton ware only when occurring in identifiably late Roman fabric types – all others of similar form but made in LIA-ER fabric WG04 were labelled as Knapton-type and dated in the range 100BC-AD200. I use 'Knapton-*type*' to highlight the uncertainty that exists in dating this class of MPR-H (Mass Produced Roman-Handmade) material – given that it seems to have developed from a locally expressed DPH tradition. Some of the Wharram material meets all four of my criteria – well-sorted temper, high fired under controlled conditions, well finished and fully reduced – and is thus labelled Knapton ware, otherwise it carries the 'type' qualifier. One thing that can be said with some certainty is that at WGC both Knapton ware and Knapton-type wares only very rarely occur with diagnostically 4th-century types such as Crambeck and Huntcliff, and then presumably as residual sherds.

In contrast to their reasonably distinctive forms, Knapton-type and Knapton ware vessels also exhibit a wide range of tempering media which, although dominated by calcareous rocks, also include sand, glacial erratics, shell and grog to name but four. It would seem that while the forms had a long currency, the tempering media used varied both geographically and chronologically; it is therefore at present far from clear whether fabric analyses can be used with any confidence as a means of provenancing manufacturing locations or patterns of localised trade before *c.* 200AD (but see, for example, Evans 1995). Indeed, Peter Didsbury (*pers. comm.*), following Val Rigby's example, has wisely suggested that an emphasis on form, in both the 'native tradition' handmade and ER wheelmade coarsewares, is much more useful and

informative than fabric in the clarification of chronological development and date.

Appendix 5: Wharram type series

WHARRAM CASE STUDY TYPE SERIES			
CLASS	TYPE	FABRICS CODES	DATE RANGE
HND	ALL UNDIAGNOSTIC COARSEWARE SHERDS	WG00	100BC-AD410
DPH	CALCAREOUSLY TEMPERED WARES - LIA/ERP	WG04	100BC-AD200
MPR-H	DALES WARE	WG03	AD200-380
	DORSET BLACK-BURNISHED WARE - BB1	WR04	AD43-410
	KNAPTON WARE	WG01, WG02, WG06, WG08	AD200-300
MPR-HW	PROTO HUNTCLIFF	WG01/02/05/06/08/11, WR03	AD300-370
	HUNTCLIFF	WG01/02/05/06/08/11, WR03	AD350-410
MPR-W	AMPHORAE - UNGROUPED	WA00	AD43-410
	COLCHESTER-TYPE BLACK-BURNISHED WARE - BB2	WR10	AD120-250
	COLOUR COATED WARES - UNGROUPED	WC00	AD150-410
	COLOUR-COATED WARES - NENE VALLEY WHITE FABRICS	WC01	AD200-410
	COLOUR-COATED WARES - NENE VALLEY ORANGE FABRICS	WC02	AD200-410
	COLOUR-COATED WARES - CRAMBECK PARCHMENT C C	WC03	AD300-410
	COLOUR-COATED WARES - OXFORDSHIRE RED-SLIPPED WARE	WC04	AD240-410
	CRAMBECK PARCHMENT WARE	WW01	AD350-410?
	DALES-TYPE WARE	WG01, WR06	AD200-380
	EBOR OXIDISED WARE	WO01	AD70-230

	EBOR RED PAINTED WARE	WO02	AD100-200
	GREYWARES - UNGROUPED	WR00	AD70-360
	GREYWARES - CRAMBECK GREYWARE	WR01	AD285-410
	GREYWARES - BB1/BB2 COPIES - E.G. ROSSINGTON BRIDGE	WR12	AD120-250
	GREYWARES - CRAMBECK-TYPE THIN-WALLED	WR05	AD285-410
	GREYWARES - EARLY COARSE TYPES	WR11	AD70-225
	GREYWARES - EAST YORKS BURNISHED TYPES	WR02	AD225-360
	GREYWARES - EBOR	WR06	AD70-230
	GREYWARES - NORTH LINCS DRAGONBY/ROXBY	WR08	AD70-190
	GREYWARES - NORTON	WR07	AD220-280
	LATE ROMAN CTW - UNGROUPED	WG01,WG06, WR03?	AD225+
	MORTARIA - MALTON OXIDISED WARE	WM02	AD200-300
	MORTARIA - CRAMBECK PARCHMENT WARE	WM01	AD300-410
	OXIDISED WARES - UNGROUPED	WO00	AD70-410
	RUSTICATED WARES	WR06, 08, 09, 14 & 15	AD71-155
	SAMIAN WARE - CENTRAL GAULISH	WS02	AD100-180
	SAMIAN WARE - EAST GAULISH	WS03	AD130-250
	SAMIAN WARE - SOUTH GAULISH	WS01	AD43-110
	SAMIAN WARE - UNGROUPED	WS00	AD43-250
	WHITEWARES - UNGROUPED	WW00	AD100-200

KEY: HND=HANDMADE NOT DIAGNOSTIC; DPH=DOMESTICALLY PRODUCED HANDMADE; MPR-H=MASS PRODUCED ROMAN-HANDMADE; MPR-HW=MASS PRODUCED ROMAN-HANDMADE & WHEEL-FINISHED; MPR-W=MASS PRODUCED ROMAN-WHEELMADE. NB: FOR FABRIC CODES SEE WHARRAM FABRIC SERIES.

Appendix 6: Wharram fabric series

WA00: Ungrouped amphorae

WC00: Ungrouped colour-coated wares.

WC01: A hard, smooth-textured, white to cream coloured fabric with fine, irregular fracture and few macroscopically visible inclusions, colour-coats in brown, orange-red and blue-grey. Nene Valley white parchment-type fabric. (WNM: RC1; NRFRC: LNV CC)

WC02: A hard, smooth-textured, orange coloured fabric with fine, irregular fracture and few macroscopically visible inclusions, colour-coats in brown, orange-red and blue-grey. Nene Valley orange oxidised-type fabric. (WNM: RC2; NRFRC: LNV CC)

WC03: See WW01 – slipped version has rich dark brown colour coat externally, and dark red internally (Didsbury 204, 144). Crambeck Slipped Parchment Ware. (WNM: RC3; NRFRC: CRA PA)

WC04: A hard, fine-textured fabric, sometimes with slightly laminar texture. Fabric orange-buff to red or red-brown, often with grey core, moderate or abundant fine sub-angular red iron inclusions and sparse large chalk lumps (up to 5mm), set in a micaceous matrix; smooth slip varies from orange-red to red to dark brown. (Tyers 1996, 175). Oxford Red/Brown-Slipped Wares. (WNM: RC4; NRFRC: OXF RS)

WG00: Ungrouped calcareously tempered wares, often with patchy oxidised and reduced surfaces and always with an open-fired black section. Probably all early Roman or earlier in date. (WNM: CG0)

WG01: A handmade reduced EY calcite-gritted ware, with dark grey to black surfaces and grey to dark grey section, often quite well finished and usually having much better sorted and finer calcareous inclusions than WG04 types (typically with abundant 1-2mm and occasional 3 to 4mm inclusions), rare red/black ironstone 1-2mm, and

sometimes with buff-brown patches on exterior. Mainly later Roman in date i.e. Knapton, Proto-Huntcliff, Huntcliff. (WNM: CG1; NRFRC: HUN CG)

WG02: A handmade reduced EY calcite-gritted ware, with dark grey or black surfaces and section with thin orange margins, well finished with a sandy texture, common <1mm-2mm angular calcite and occasional black or red ironstone. Colouring suggests that outer surface has been oxidised during firing and was then reduced before removal from 'kiln'. Later Roman in date i.e. Knapton, Proto-Huntcliff, Huntcliff. (WNM: CG1)

WG03: A handmade, coarse, shell-tempered fabric, black surfaces and dark grey or red-brown section, temper comprising mainly of poorly sorted shell and quartz. Rim wheel formed. Dales Ware. (WNM: CG3, WNW: G31; NRFRC: DAL SH)

WG04: A handmade, reduced, calcareously tempered fabric with patchy oxidised areas and often a distinct firing contrast between interior and exterior, section always black. Heavily tempered with usually poorly sorted calcite or, less often, chalk, typically ranging between <0.3mm to >4mm in size, plus a wide range of other materials appearing as occasional inclusions (e.g. ironstone, flint, limestone). Mostly used in domestically-produced, open-fired ceramics of pre-C3rd date. (WNM: CG4, WNW: G02)

WG05: A handmade fabric with black surfaces and section, tempered with common rounded ooliths c.1mm and occasional angular fragments of oolitic limestone <3mm. (WNM: CG6, WNW: G09)

WG06: A handmade, well-finished, smoothed fabric with orange-brown to red-brown section and dark grey-brown to black surfaces, tempered with well-sorted calcite and occasional red ironstone (1-2.5mm). Later Roman in date. (WNM: CG6, WNW: G06)

WG07: A handmade, coarse, sandy fabric with abrasive, pimply surfaces and section, grey-black throughout or with some brownish patches and tempered with coarse sand <0.5mm and occasional calcite <2mm.

WG08: A handmade sandy fabric with well-sorted calcite <1mm to 2mm and occasional angular red ironstone up to 3mm in size. Surfaces mostly reduced but occasionally with some oxidised patches, section dark grey or black sometimes with reddish-brown margins. Not fully isolated from WG01. Late Roman.

WG09: A handmade, coarse, sandy fabric with common black sand or black ironstone exposed in buff coloured surfaces, dark grey section with buff margins. Anglian?

WG10: A handmade, coarse, sandy fabric with frequent quartz grit typically <1mm to 2mm in size, dark brown to dark grey/black surfaces and reddish-brown section with darker margins. Anglian?

WG11: A handmade, coarse, sandy fabric, with predominantly reduced surfaces but occasionally having oxidised areas, high fired with grey section and common black ironstone (0.5-2.5mm) and angular calcite and/or rounded chalk (0.5-2mm). Used for Huntcliff manufacture.

WG12: A handmade, coarse, reduced, sandy fabric, with dark grey surfaces and unusual section comprising a grey outer portion and brown inner portion, with common angular calcite (0.5-2.5mm), occasionally up to 3.5mm. Used for Huntcliff manufacture. Not fully isolated from WG01.

WG13: A handmade, coarse, reduced, sandy fabric, with dark grey to black surfaces, high fired with grey-buff section with thin orange to red-brown margins, common black ironstone (0.5-2mm), common angular calcite (0.5-2.5mm) and very occasional red ironstone (1-1.5mm). Used for Huntcliff manufacture.

WM00: Ungrouped mortaria

WM01: A hard, brittle, white or yellow- to orange-buff fabric with a laminated fracture and abundant fine sand tempering. Often with orange or brown painted decoration. Mortaria have black slag trituration grits. Crambeck Parchment Ware. (WNM: RW1; NRFRC: CRA PA)

WM02: A hard, oxidised, brownish-orange sandy fabric with occasional rounded brown ironstone 0.5-1mm and angular white quartz <0.5mm, sandwich with diffuse grey core and brownish-orange margins, pale orange slip to outside surface. Trituration grits occasional angular white quartz 2-3mm and rounded red-brown sandstone 2-5mm.

WO00: Ungrouped oxidised wares.

WO01: A wheelmade, hard, fine, sandy, oxidised fabric with occasional red ironstone and calcareous inclusions, harsh, irregular fracture, pinkish-orange surfaces and section with light grey core. Ebor Ware? (NRFRC: EBO OX)

WO02: A wheelmade, hard, fine, sandy, oxidised fabric with harsh, irregular fracture, pinkish-orange surfaces and section, red painted striped decoration. Ebor Red Painted Ware.

WR00: Ungrouped reduced wares.

WR01: A wheelmade, hard, rough-feeling, powdery, sandy fabric, with a smooth fracture, grey to dark grey surfaces and very light grey section. Crambeck greyware. (WNM: RG1, WNW: R01; NRFRC: CRA RE)

WR02: A wheelmade, hard, fine, sandy fabric, light to dark blue-grey throughout, with irregular fracture sometimes lightly burnished on exterior surface. Late Roman East Yorkshire Types. (WNM: RG2, WNW: R02; NRFRC: HSM RE)

WR03: A wholly or partially wheelmade, reduced, coarse and thick-walled (8-10mm) sand-tempered fabric, grey to dark grey surfaces, sometimes with sandwich with light grey core and grey to dark grey margins, often containing some chalk and black ironstone. Mainly used in the production of Huntcliff-type jar forms. (WNM: RG3)

WR04: A handmade, sand-tempered fabric, dark brown-black throughout with burnished outer surfaces, open forms also often being burnished over rim and interior. BB1. (WNM: RG4; NRFRC: DOR BB1)

WR05: A wheelmade, thin-walled (<4mm), hard, powdery, quite open, sandy fabric, dark grey exterior, grey interior surfaces, unburnished & light grey-buff section with angular orange-pink inclusions <1.5mm. Crambeck-type greyware.

WR06: A wheelmade, smooth fabric with dark grey (often burnished) exterior, grey interior & grey-brown section sometimes with dark grey outer margin, tempered with fine sand. Ebor greyware (Monaghan 1997 fabric G1).

WR07: A wheelmade, hard, sandy fabric with irregular fracture, mid-dark grey throughout, with some black ironstone. Probably mostly Norton. (WNM: RG2, WNW: R07)

WR08: A wheelmade, hard, reduced fabric, grey-brown exterior, dark grey interior and very dark grey section with red-brown margins. Burnished bands to exterior. North Lincolnshire: Dragonby or Roxby products.

WR09: A wheelmade, soft, powdery fabric, grey surfaces with orange section used for Rusticated jar production in late 1st and 2nd centuries.

WR10: A wheelmade, hard, sandy fabric with occasional finely crushed shell, dark grey surfaces and sandwich with black core and dark grey-brown margins, burnished on exterior. BB2. Southeast England Colchester-type. (NRFRC:

WR11: A wheelmade, coarse sandy fabric, light grey, grey or grey-brown surfaces, grey to grey-brown section sometimes with sandwich, exposed sand in surfaces. Early coarse greywares.

WR12: A ?wheelmade, very hard, sandy fabric, with a harsh, irregular fracture with fine <0.5mm quartz and uniformly blue-grey surfaces and section. BB2-type greywares with incised or burnished decoration (often lattice). Rossington Bridge BB1. (NRFRC : ROS BB1)

WR13: A handmade, reduced fabric with grey-brown exterior, black interior and black section with orange-brown outer margin, tempered with coarse sand and silver mica.

WR14: A wheelmade, slightly 'chalky' fabric, light grey throughout, with irregular fracture, tempered with fine sand and occasional dark grains <0.5mm.

WR15: A wheelmade, hard, fabric with irregular fracture, smooth dark grey surfaces with dark reddish-orange section used for Rusticated jar production in late 1st and 2nd centuries.

WR16: A handmade, hard, thin-walled fabric, dark grey-black throughout with laminated section and irregular, stepped fracture, no obvious temper under macro examination but fine <0.2mm mica flakes in surface. Anglian fine ware?

WR17: A wheelmade, hard, thick walled (*c.*10mm), sandy fabric, dark grey to grey-brown surfaces and section with frequent angular red ironstone (1-3mm) in a coarse sandy matrix (0.2-0.5mm). Later Roman?

WR18: A handmade, very hard, high fired, almost vitrified fabric, grey surfaces and light grey porous section and harsh, irregular fracture, tempered with chalk/calcite, black iron stone and coarse black sand. Almost Derbyshire Ware hardness.

WR19: A wheelmade, hard, fabric with irregular fracture, smooth dark grey surfaces typically with mica dusting and sandwich section having grey core and dark reddish-orange margins. Perhaps a firing variant on WR15 or something separate (P Didsbury suggests that non-rusticated vessels in similar fabrics date from late C2nd and early C3rd - *c.* 175-225?) Wider date range 70-225 perhaps sensible for this fabric given that plain sherds may still be part of rusticated vessels.

WR20: A wholly or partially wheelmade, reduced, coarse sand-tempered fabric, with smooth, well-finished dark grey surfaces, with dark reddish-brown section with thin, paler pinkish-brown margins and sparse angular yellowish grains (0.3-0.5mm). Late Roman – Huntcliff.

WR21: A wheelmade, hard, smooth fabric with irregular fracture, smooth grey to dark grey surfaces with light-orange to pinkish-orange section and common red ironstone (0.3-1.5mm) and sparse black grains (0.3-2mm) in a sandy matrix. Grey-surfaced

orange fabrics in non-rusticated wares dated by P Didsbury to late 2nd and early 3rd century (175-225?). Plain sherds could be part of Rusticated vessels so probably should use date range 70-225.

WS01: South Gaulish Samian

WS02: Central Gaulish Samian

WS03: East Gaulish Samian

WW00: Ungrouped Whitewares

WW01: A hard, brittle, white or yellow- to orange-buff fabric with a laminated fracture and abundant fine sand tempering. Often with orange or brown painted decoration. Mortaria have black slag trituration grits. Crambeck Parchment Ware. (WNM RW1; NRFRC: CRA PA)

KEY:

WNM = Wharram North Manor report code

WNW = Wharram Northwest Enclosure report code

NRFRC = National Roman Fabric Reference Collection

Appendix 7: Excel colours for ceramic periods

Colour codes for ceramics-based periodisation (Excel palette)				
Code	Period	Date range	Colour	Sample
0	HND	Unknown	White	
1	MIA	300-100BC	Bright Green	
2	LIA-ER	100BC-AD200	Turquoise	
3	ER	43-200	Blue	
4	LR	200-410	Plum	
5	TR	43-410	Red	
6	AN	410+	Light Yellow	
7	LB-EIA	900-300BC	Light Green	

Appendix 8: Wharram archive digitisation procedures

All post-excavation plans were scanned as JPEGs, in some cases in several A4-sized sections, and then digitally stitched together and annotated in PaintshopPro to produce phase plans. All sections showing key relationships, especially those not clear in plan, were similarly processed and, together with the plans, are closely integrated with the textual discussions.

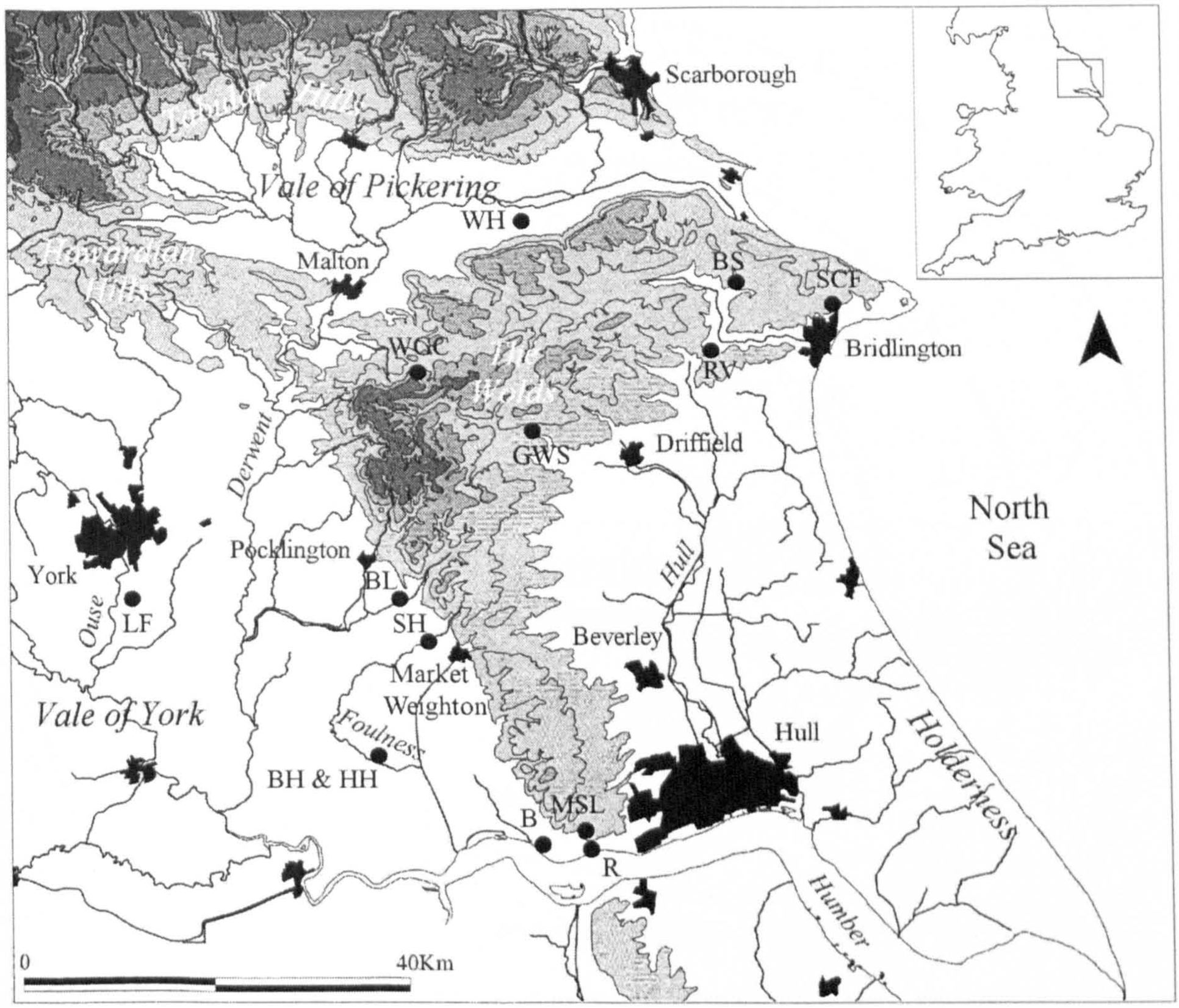


Figure 1 Eastern Yorkshire study region: bounded by the Humber, Ouse and Foss rivers, the Howardian and Tabular Hills and the East Coast. Case studies and key sites with codes as follows: B = Brough; BH = Bursea House; BL = Burnby Lane; BS = Bell Slack; GWS = Garton-Wetwang Slack; HH = Hasholme Hall; LF = Lingcroft Farm; MSL = Melton South Lawn; R = Redcliff; RV = Rudston Villa; SCF = Sewerby Cottage Farm; SH = Shiptonthorpe; WGC = Wharram Grange Crossroads; WH = West Heslerton. (Map data Harper Collins Cartographic 2000)

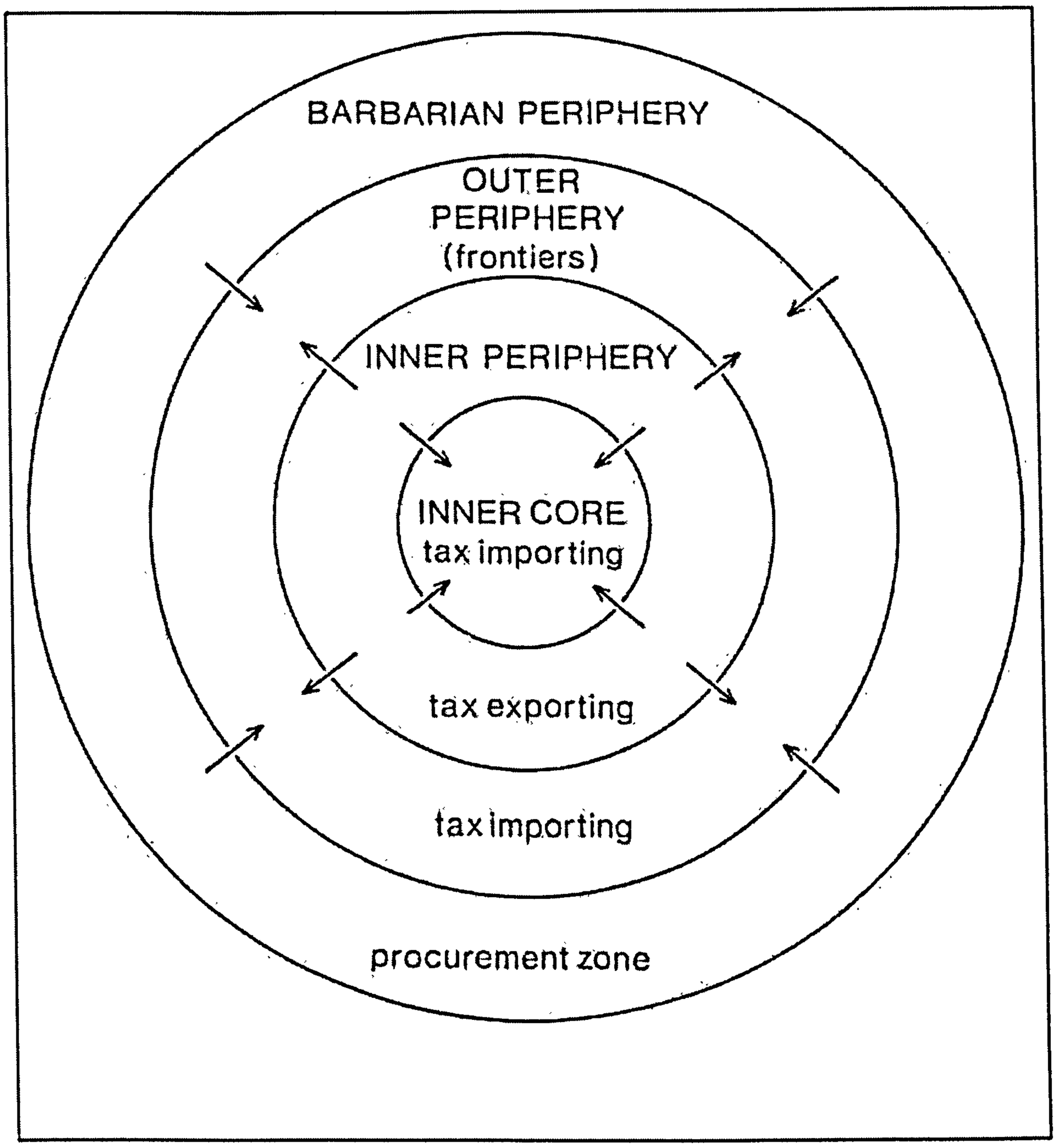


Figure 2 Core-periphery model of the Roman economy (From Cunliffe 1988, 3)

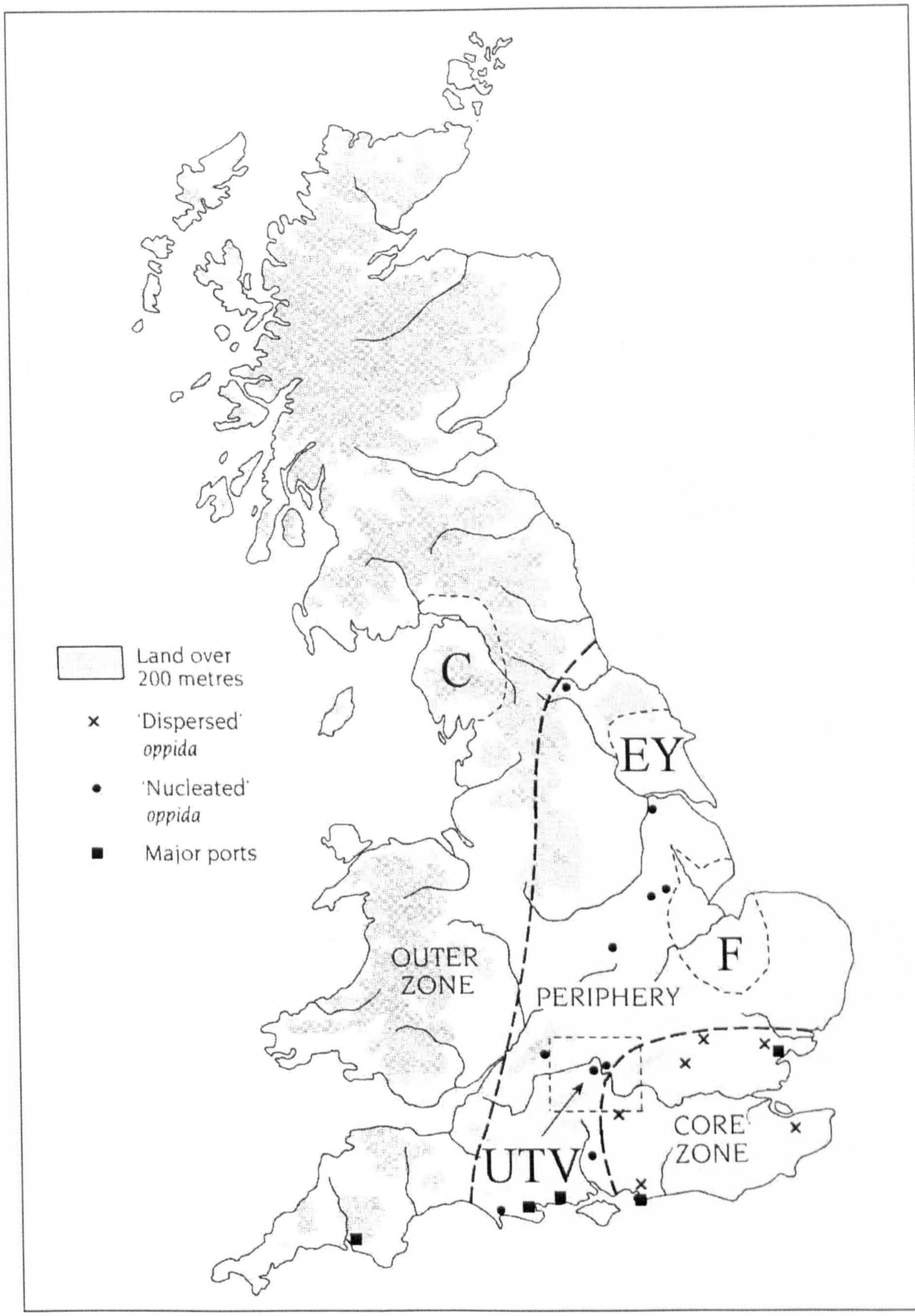


Figure 3 Core, periphery and outer zones of LIA Britain showing locations of regional case studies (After Salway 1993, 29)

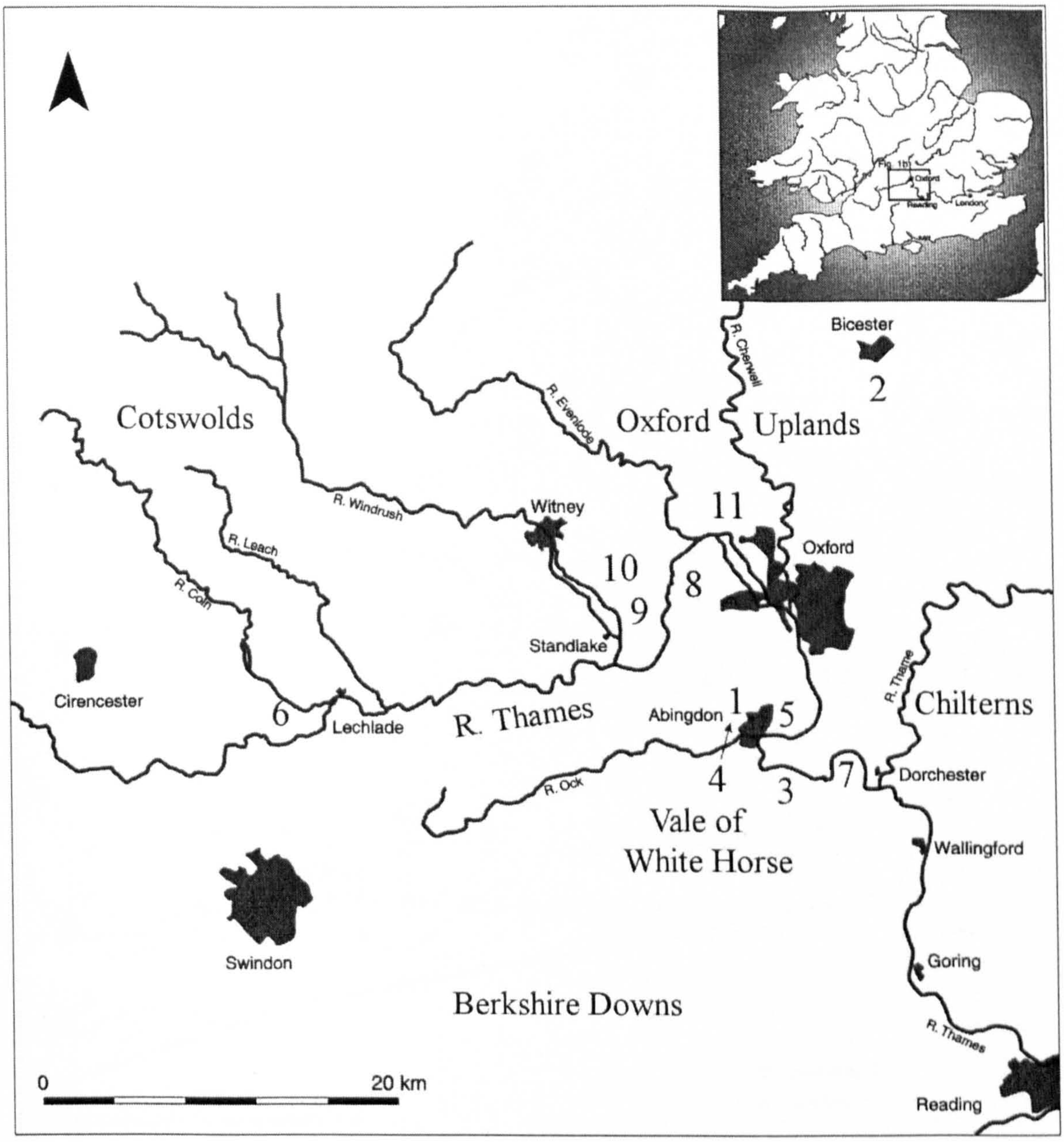


Figure 4 Upper Thames Valley. Sites mentioned in text as follows: 1 = Abingdon Vineyard, 2 = Alchester, 3 = Appleford, 4 = Ashville, 5 = Barton Court Farm, 6 = Claydon Pike, 7 = Dyke Hills, 8 = Farmoor, 9 = Gravelly Guy, 10 = Mingies Ditch, 11 = Yarnton. (After Hey 2007 Fig.2)

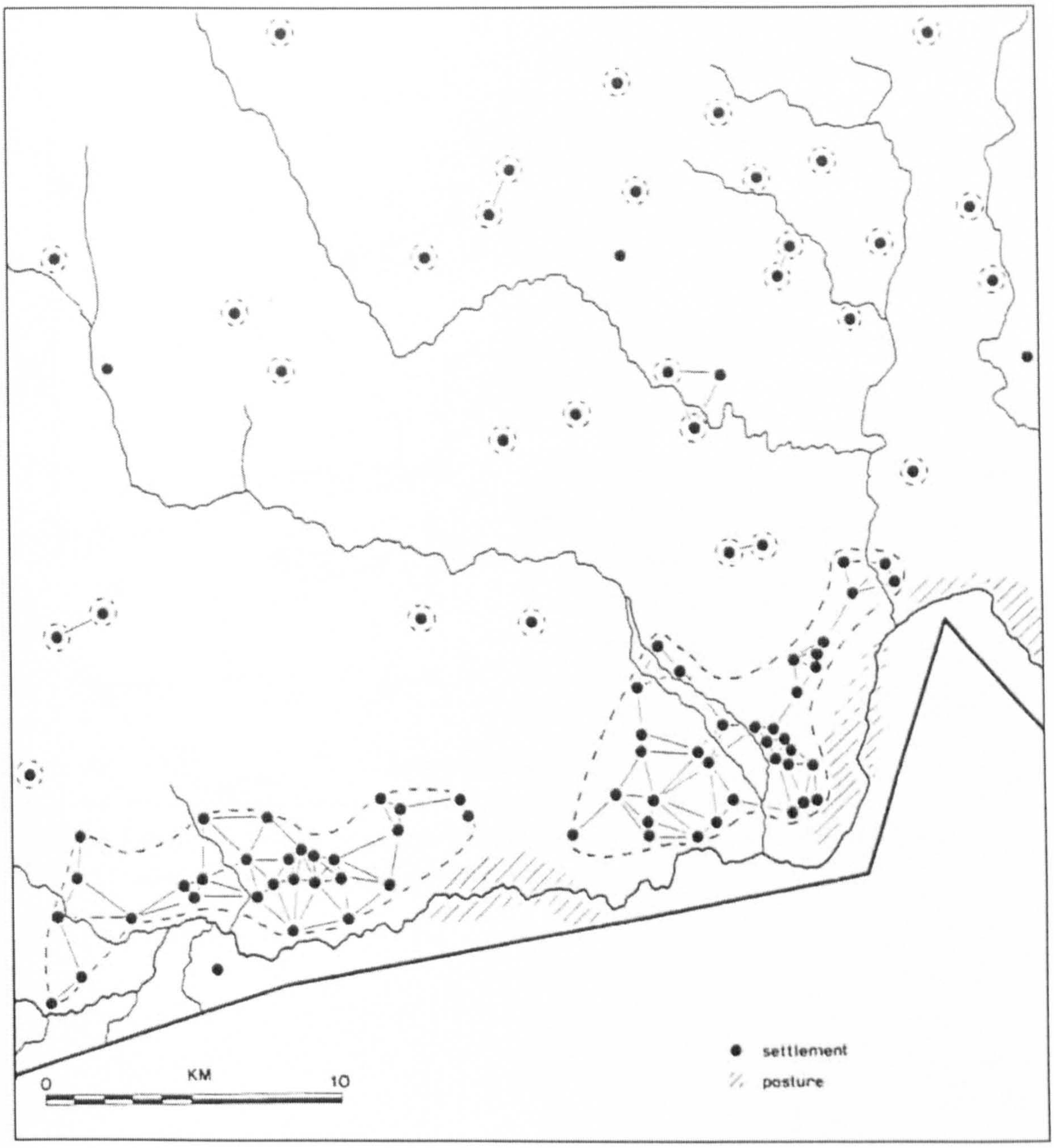


Figure 5 Hingley's model of large lowland corporate groups and isolated upland communities in the Upper Thames Valley (From Hingley 1984 Fig.5.8)

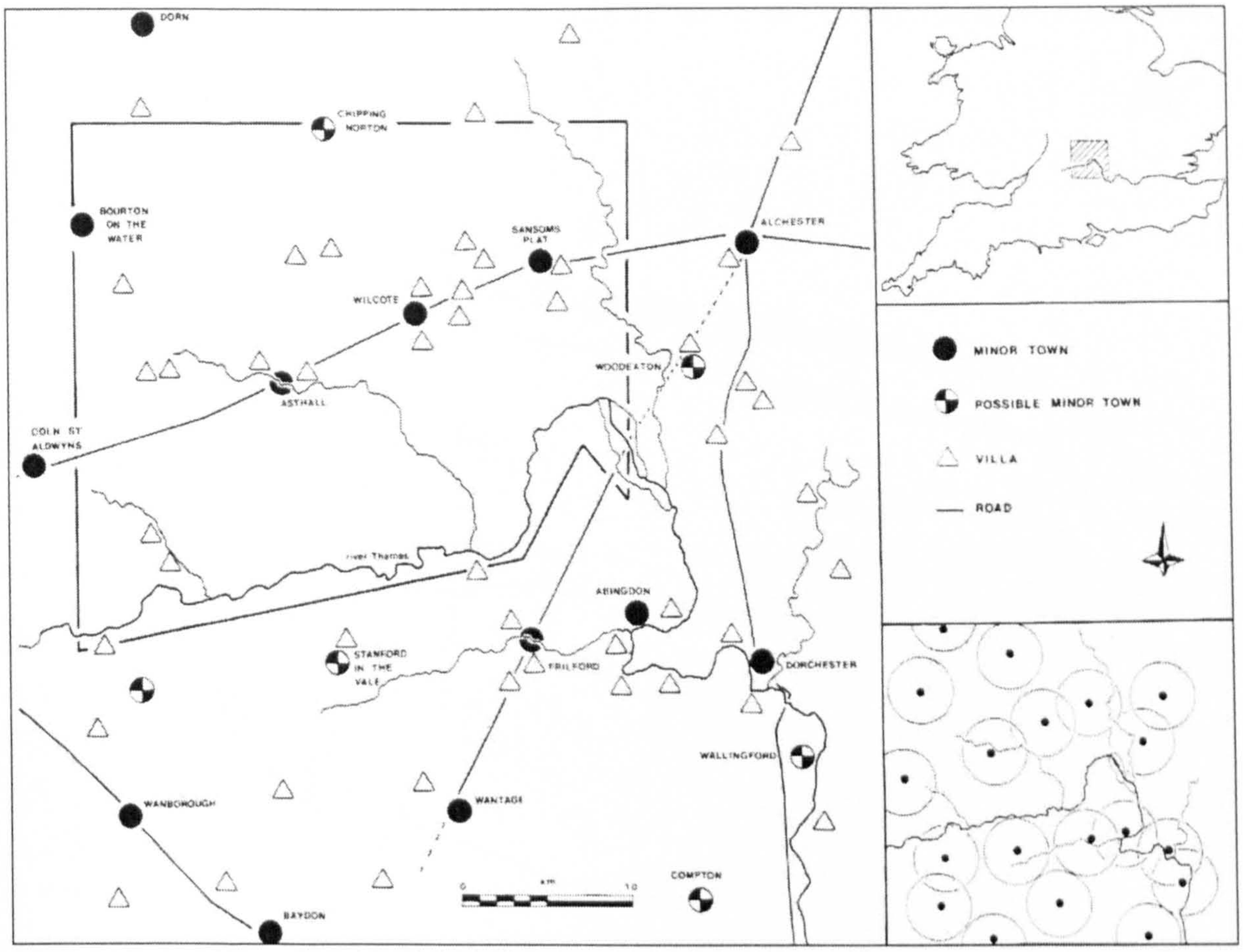


Figure 6 The patterning of Romano-British small towns and villas in the Upper Thames Valley (From Hingley 1984 Fig.5.12)

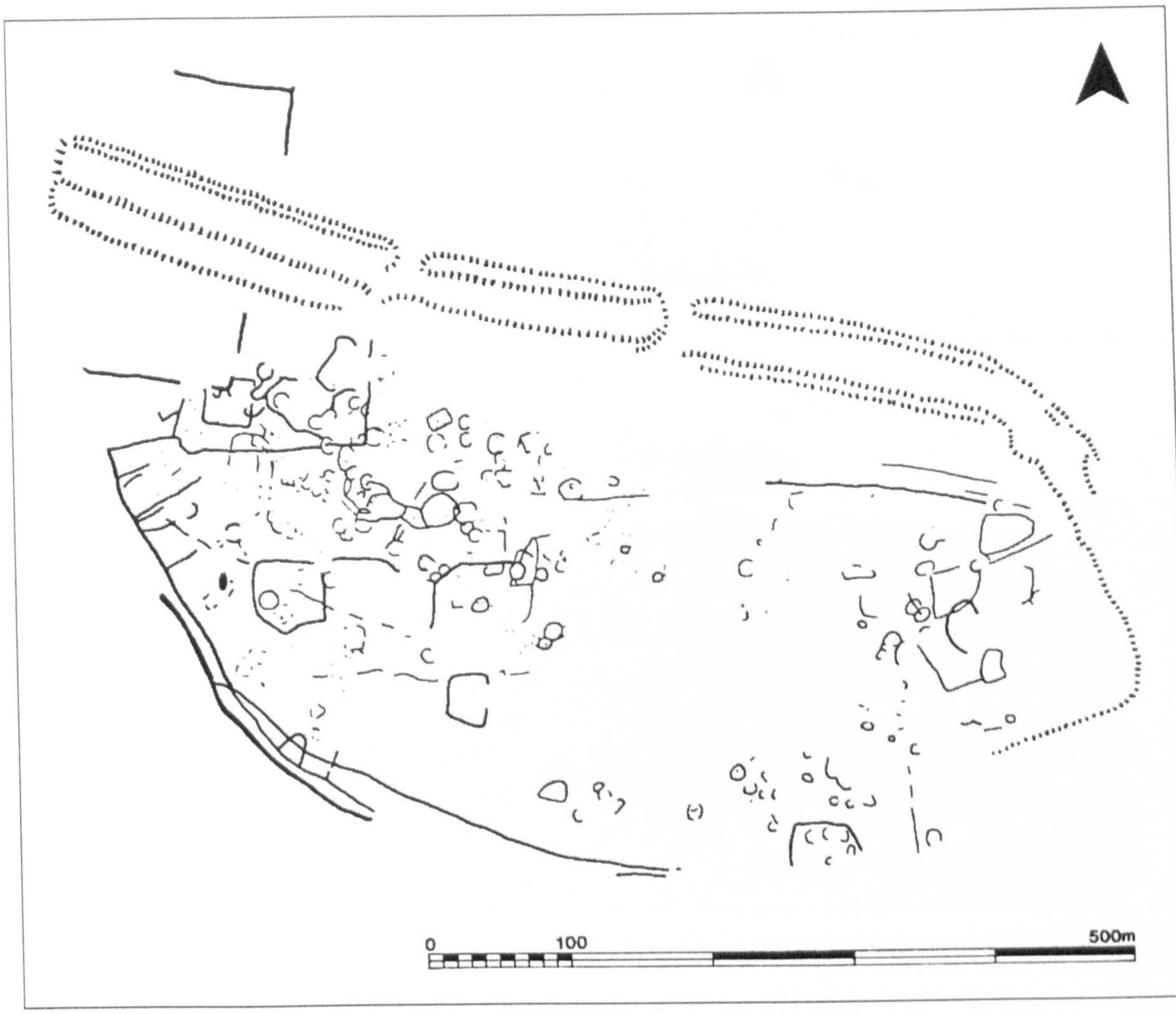


Figure 7 Dyke Hills, Dorchester (From Hingley and Miles 1984 Fig. 4.9)

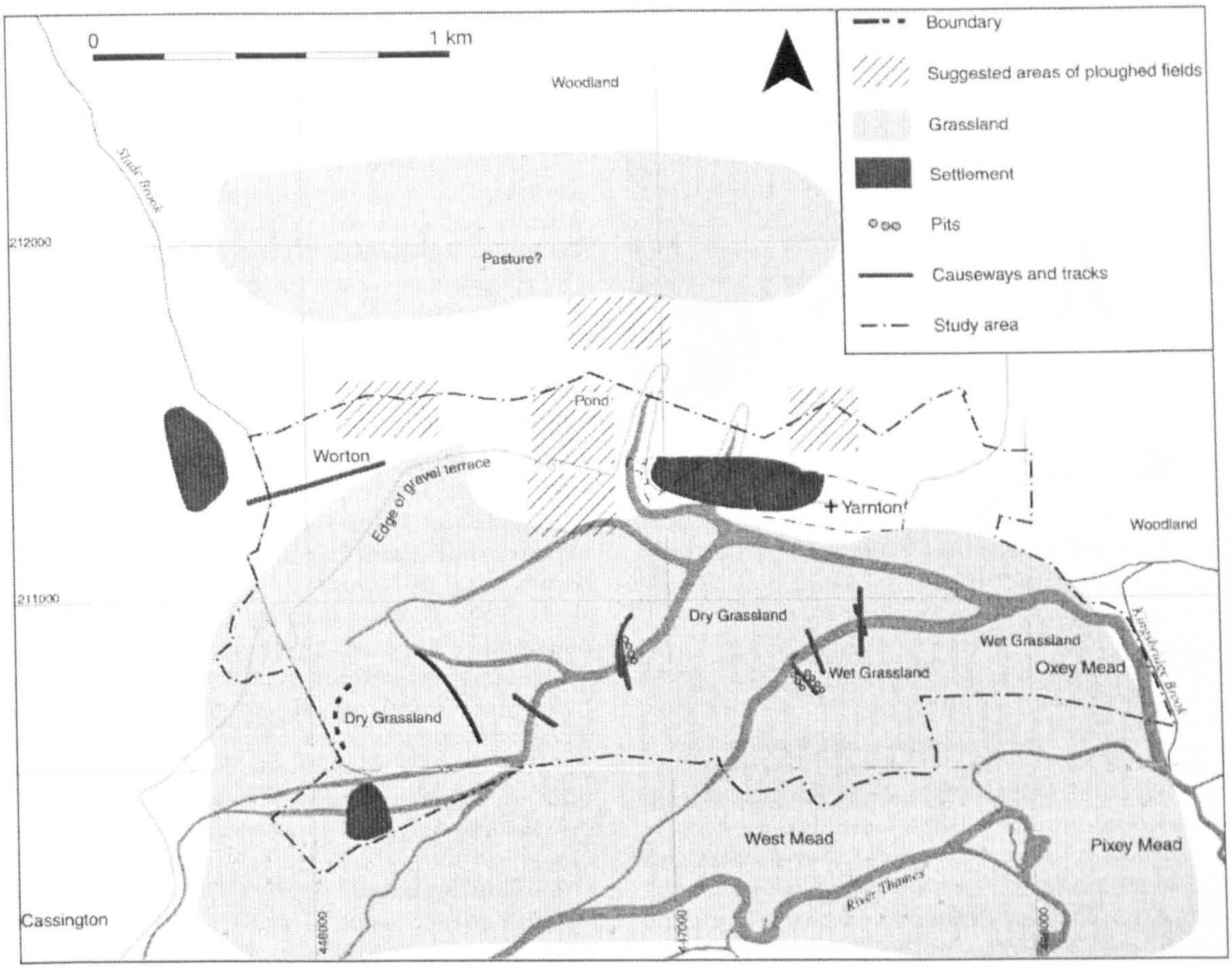


Figure 8 Iron Age landscape at Yarnton: economic and environmental reconstruction (From Hey 2007, 165)

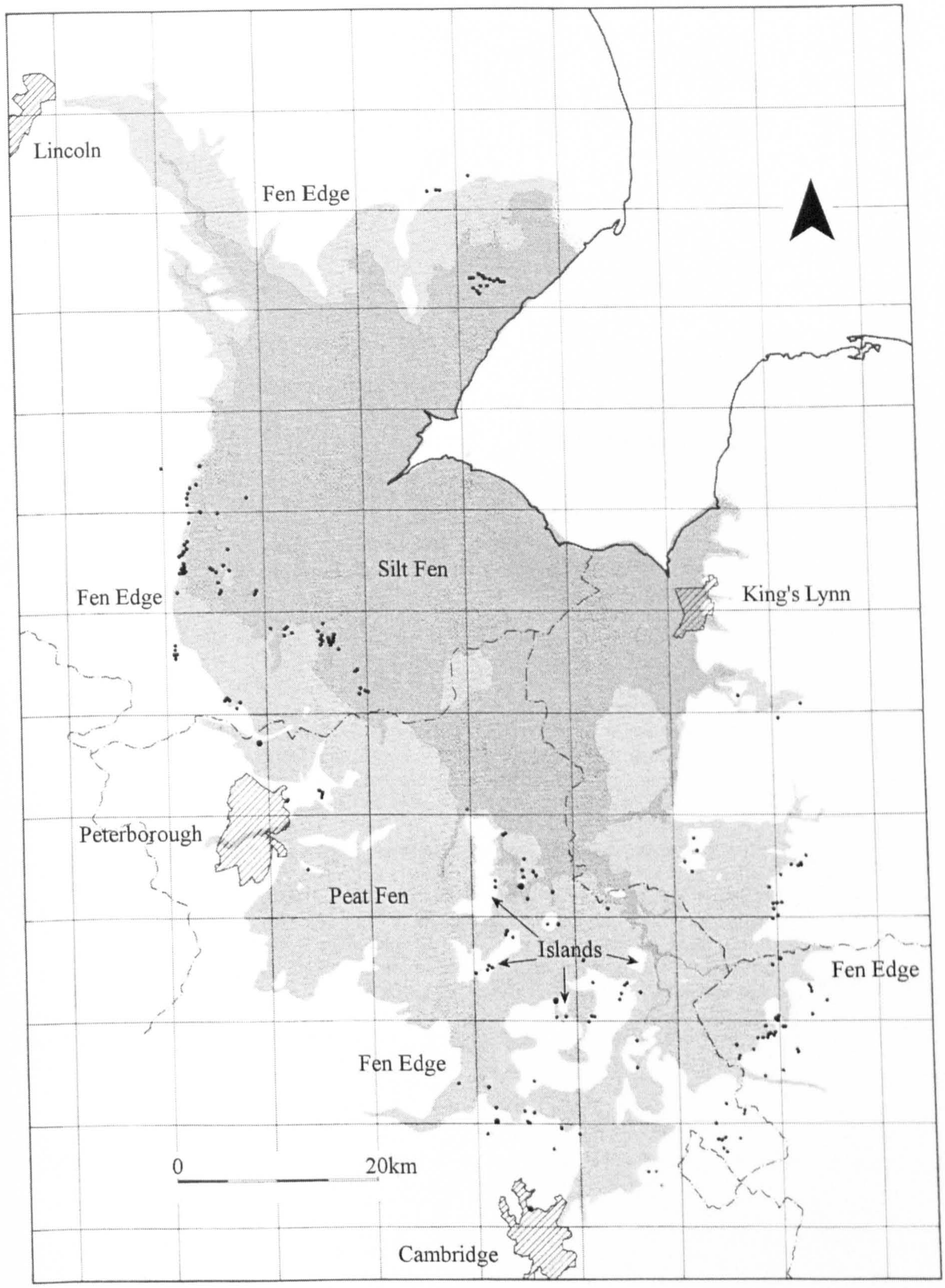


Figure 9 The Fenland during the Iron Age. Distribution of sites indicated by black dots. (After Hall and Coles 1994, 93)

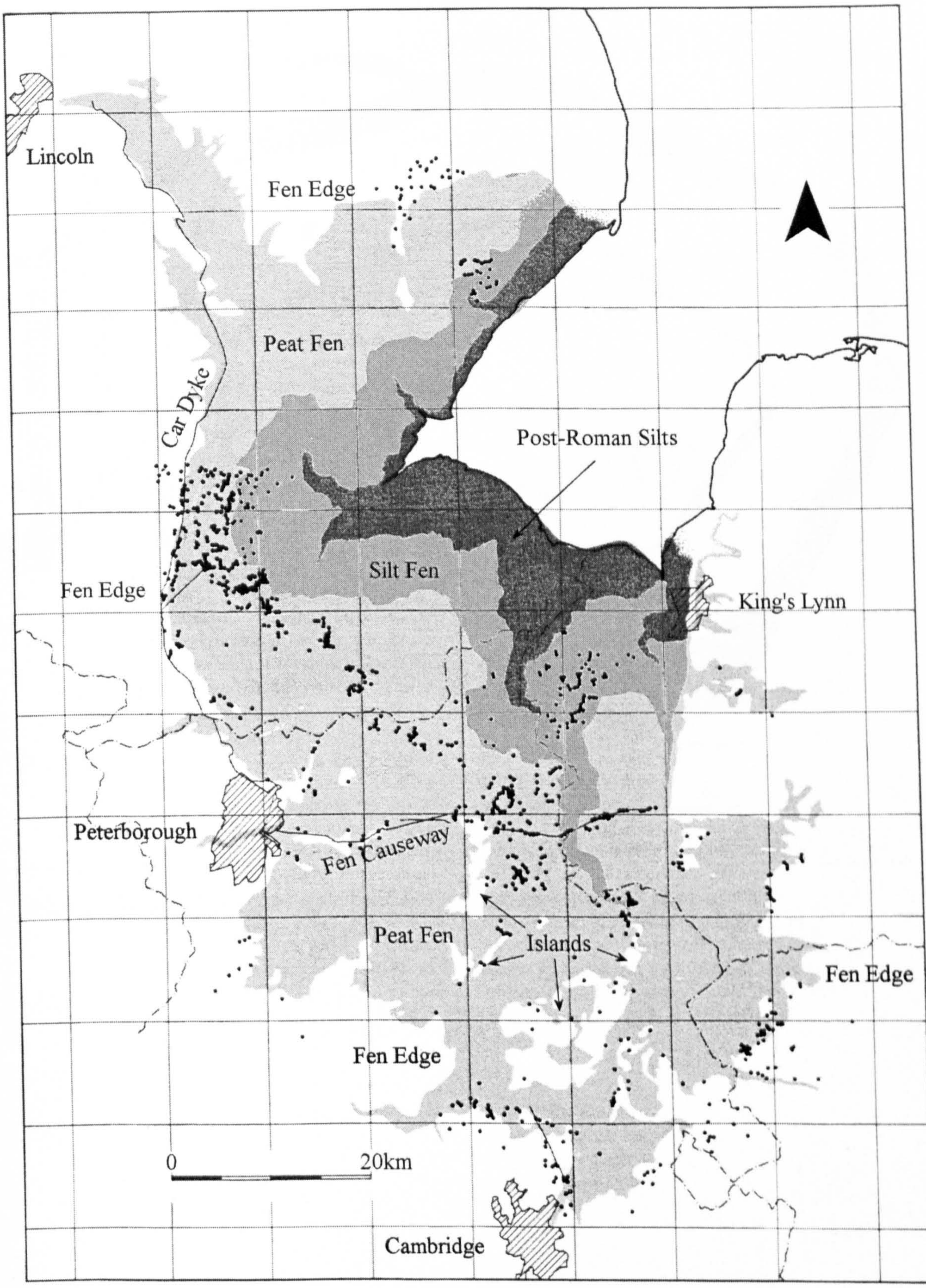


Figure 10 The Fenland during the Roman period. Distribution of sites indicated by black dots. (After Hall and Coles 1994, 106)

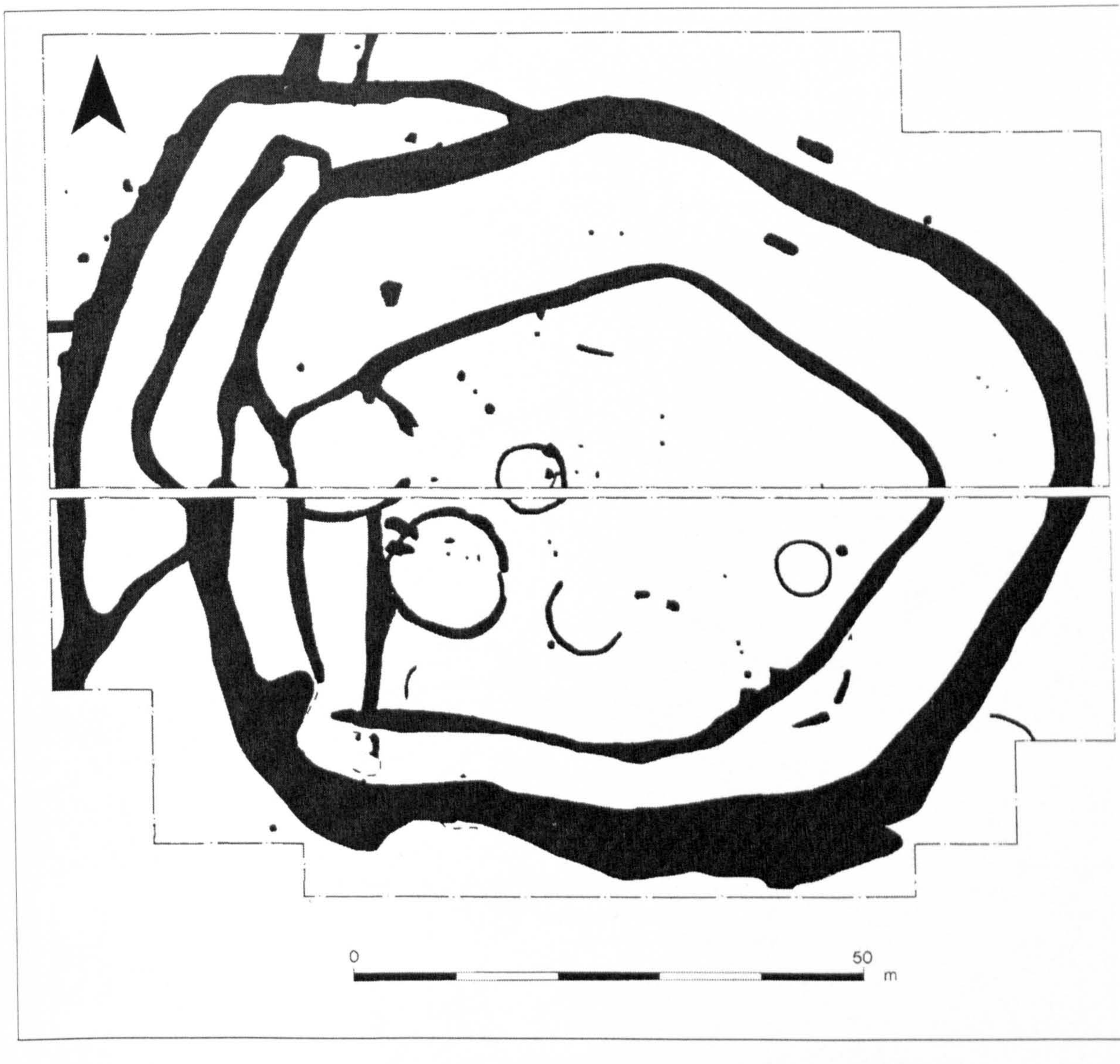


Figure 11 Wardy Hill, Coveney (After Hall and Coles 1994, 98)

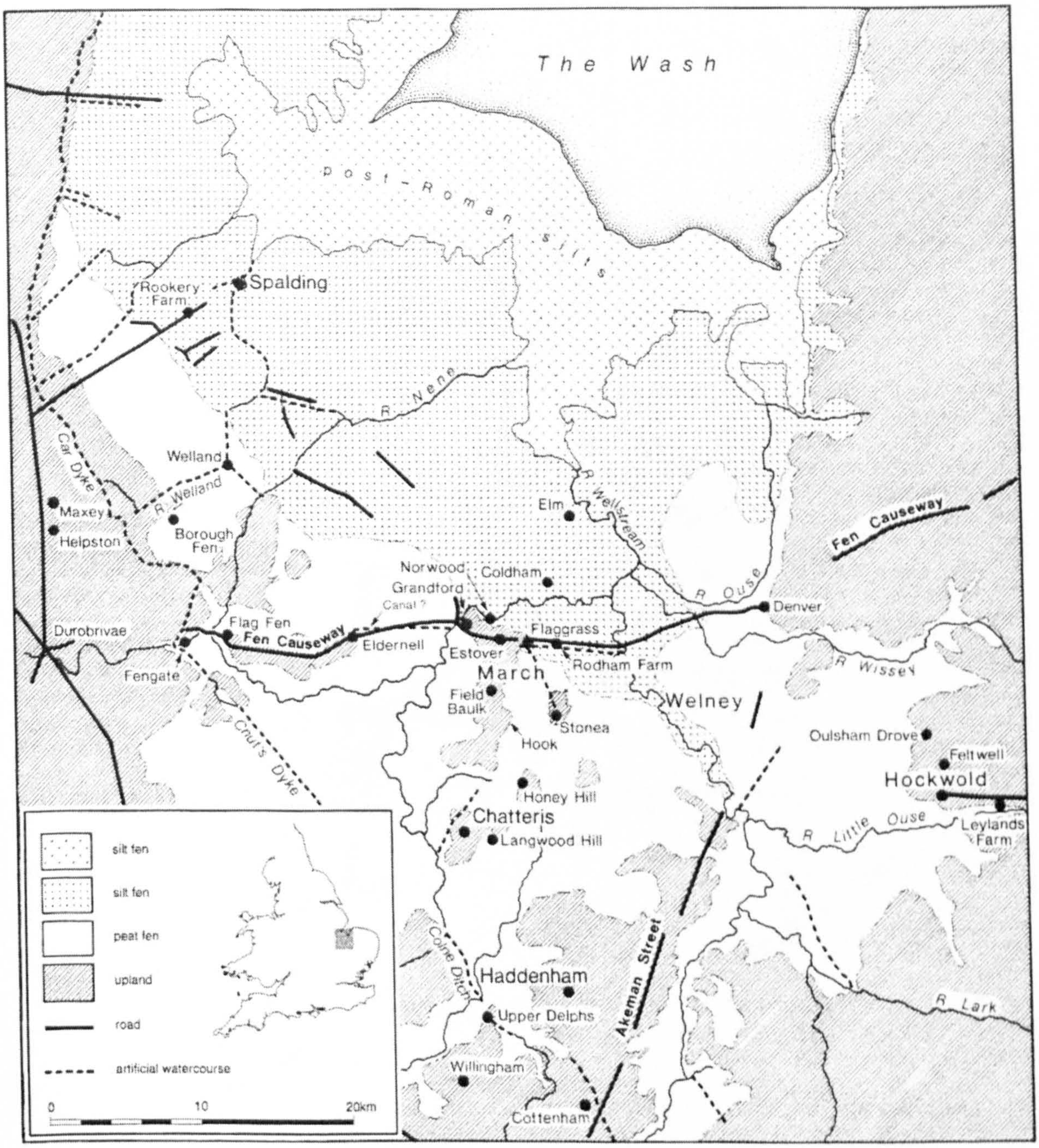


Figure 12 The central Fenland during the Roman period. (From Jackson & Potter 1996 Fig.1)

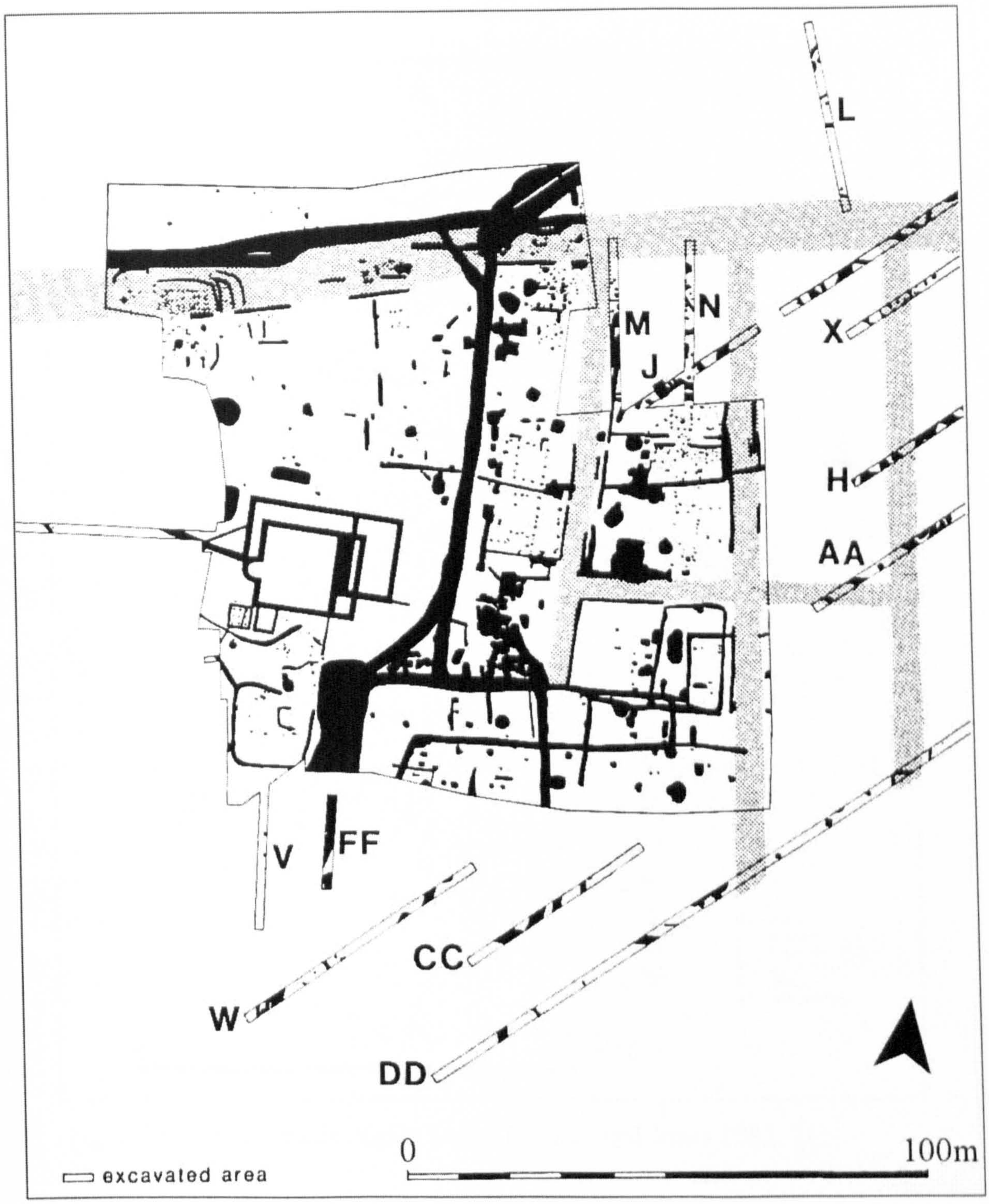


Figure 13 Stonea Grange. (After Jackson & Potter 1996 Fig.20)

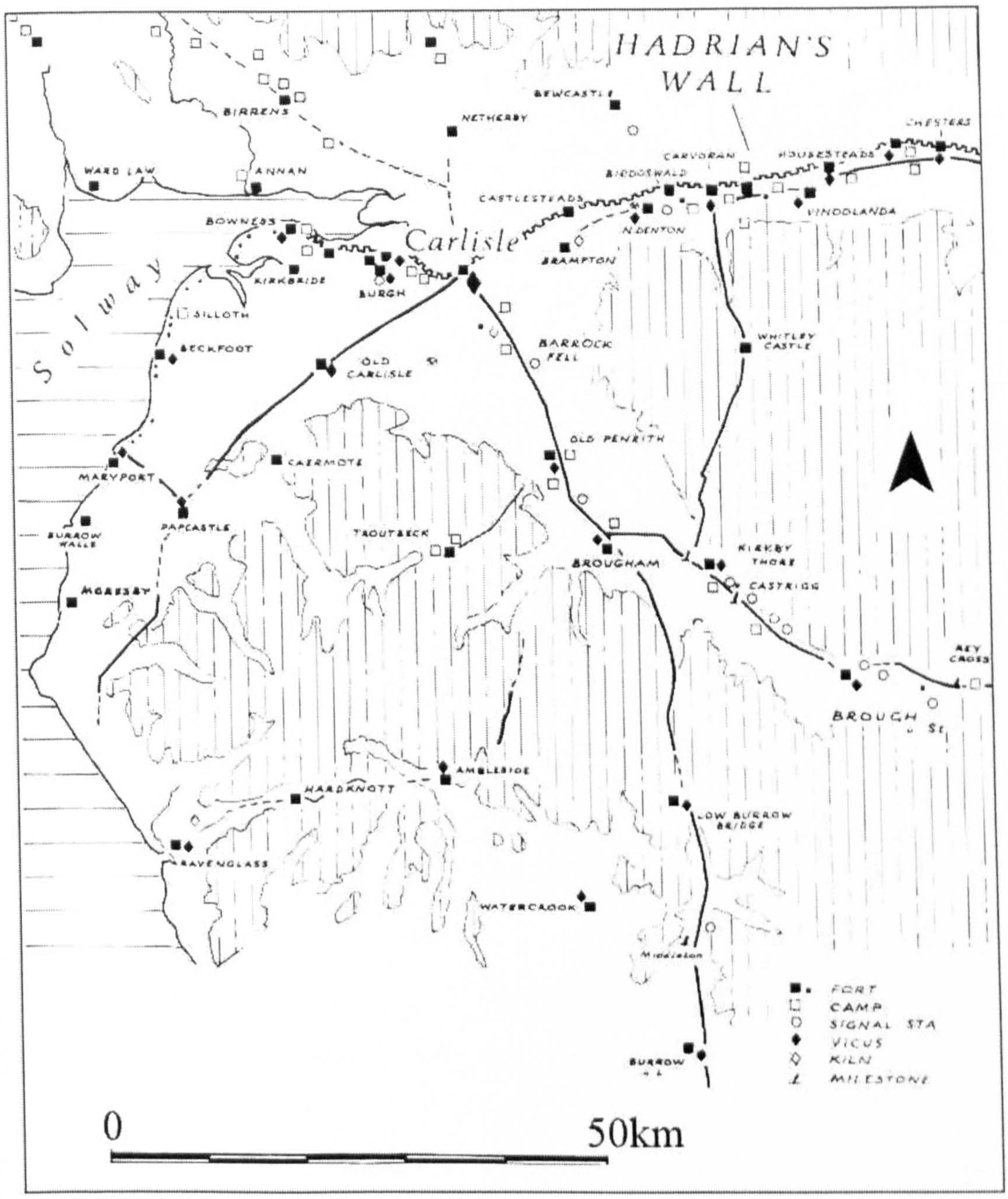


Figure 14 Cumbria study region (After Higham and Jones 1985, 21)

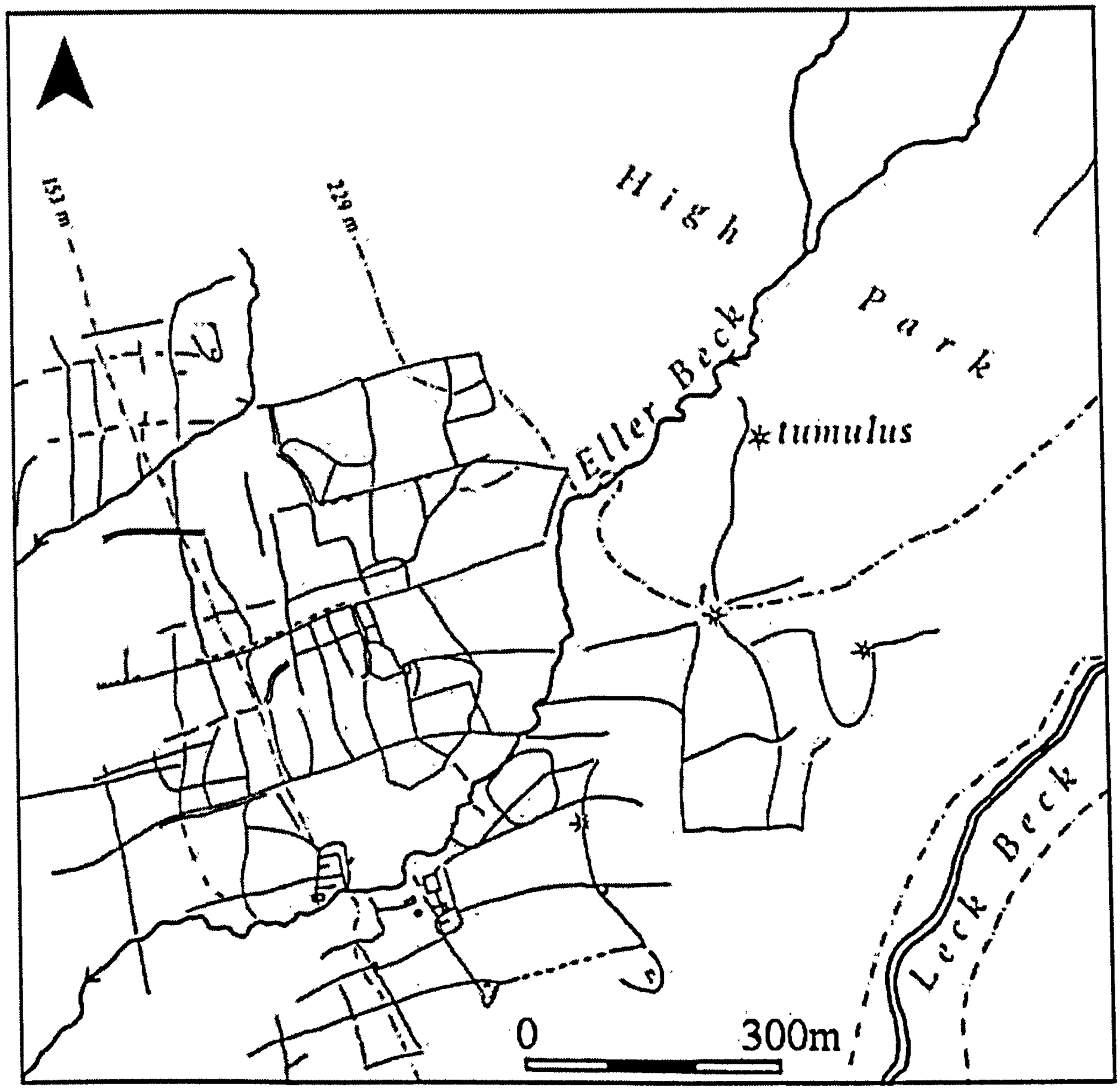


Figure 15 Eller Beck (After Higham and Jones 1985, 92)

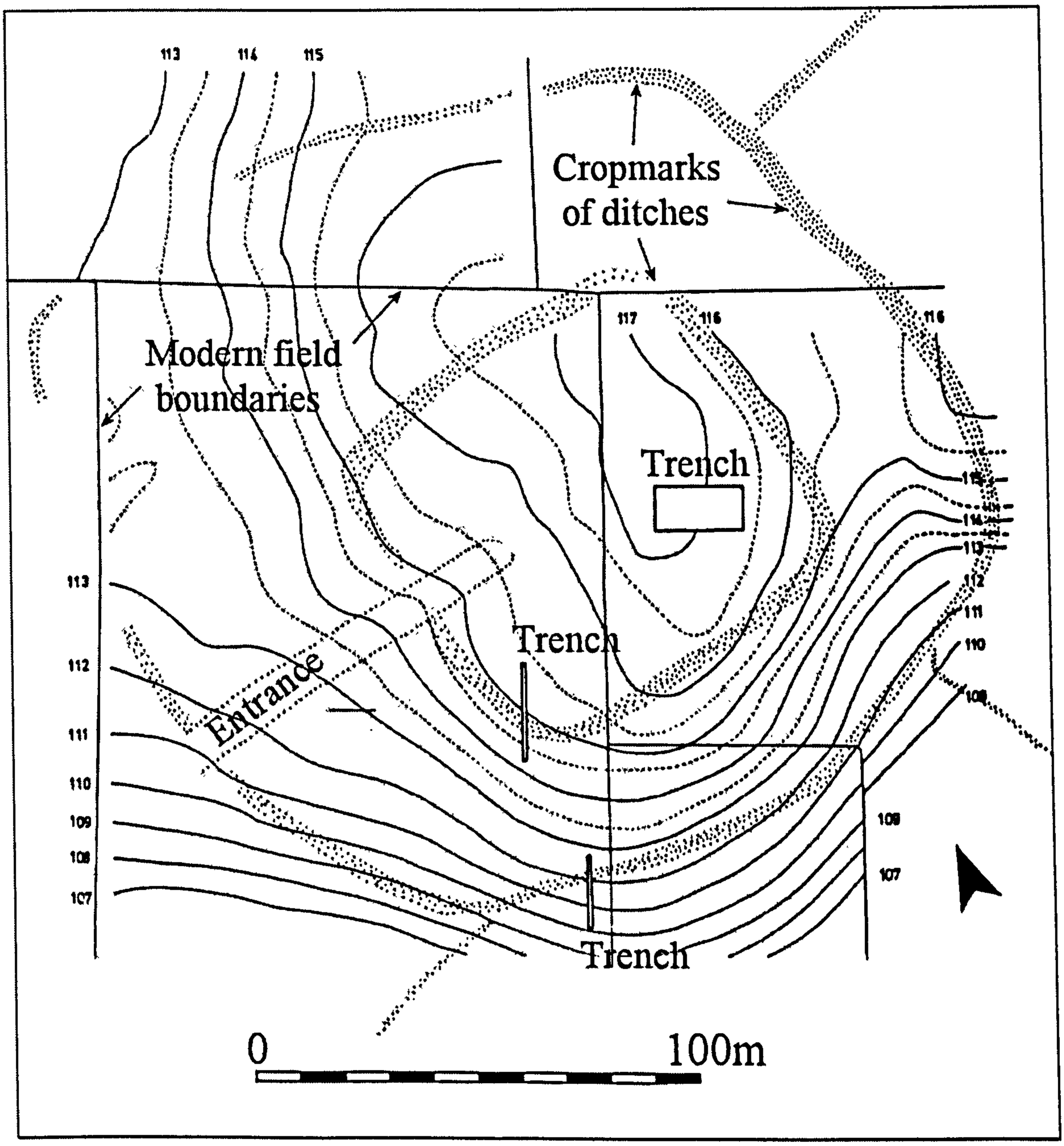


Fig 16 Dobcross Hall, Dalston (After Higham and Jones1985 ,6)

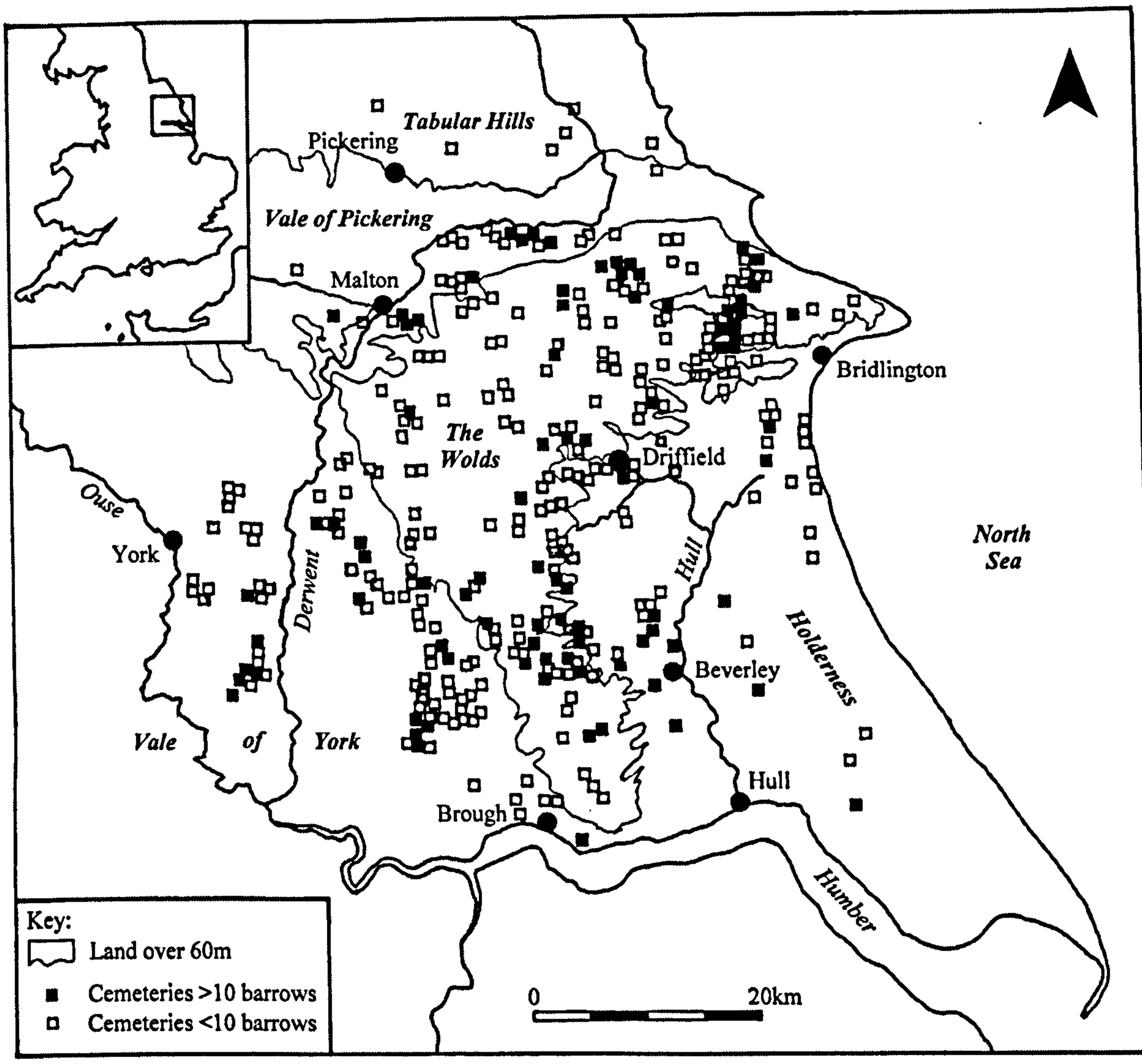


Fig17 Eastern Yorkshire square barrows (After Ramm 1978, 2)

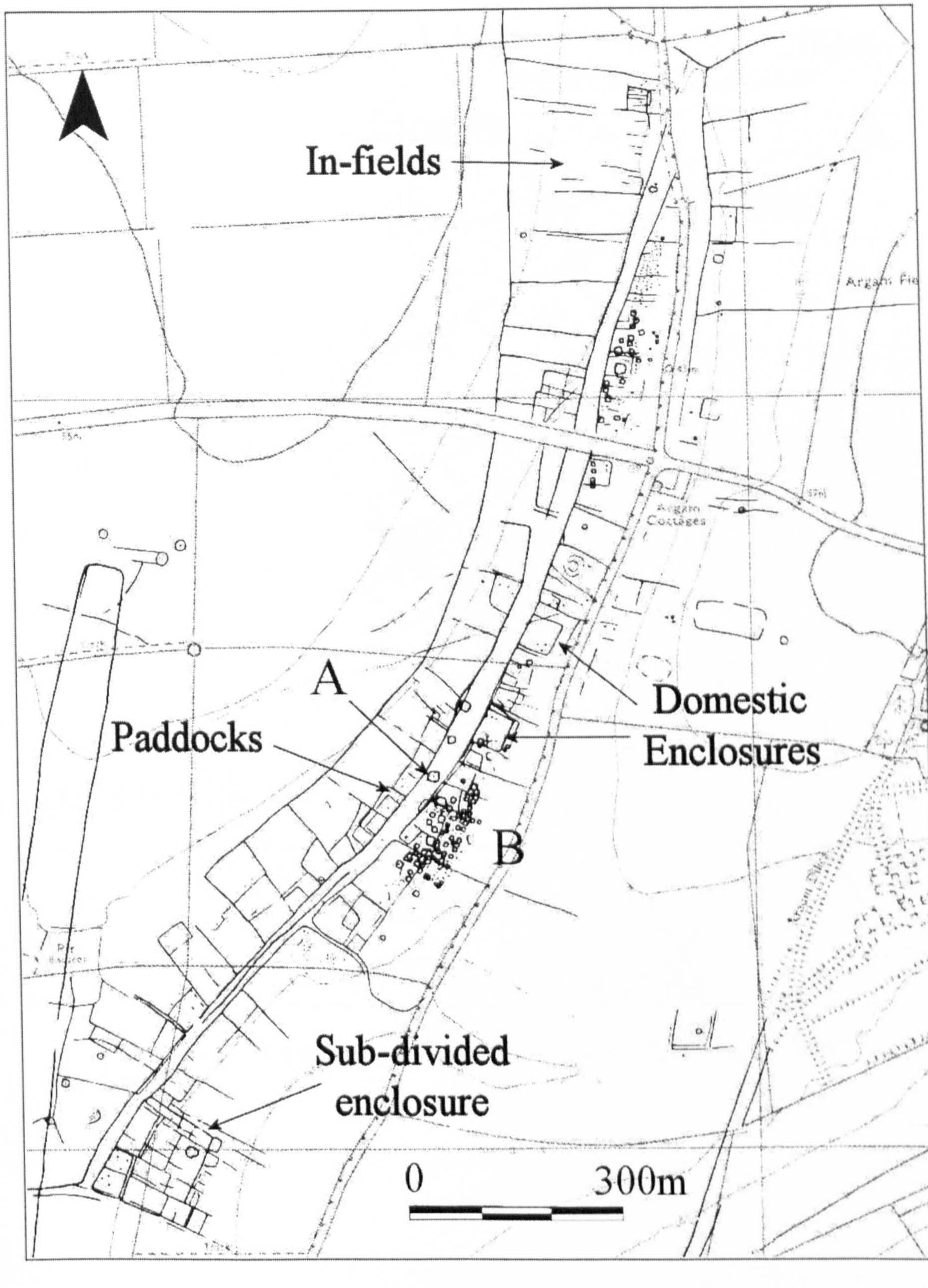


Fig 18 Bell Slack square barrows, trackway and ladder (After Stoertz 1997, Fig.31)

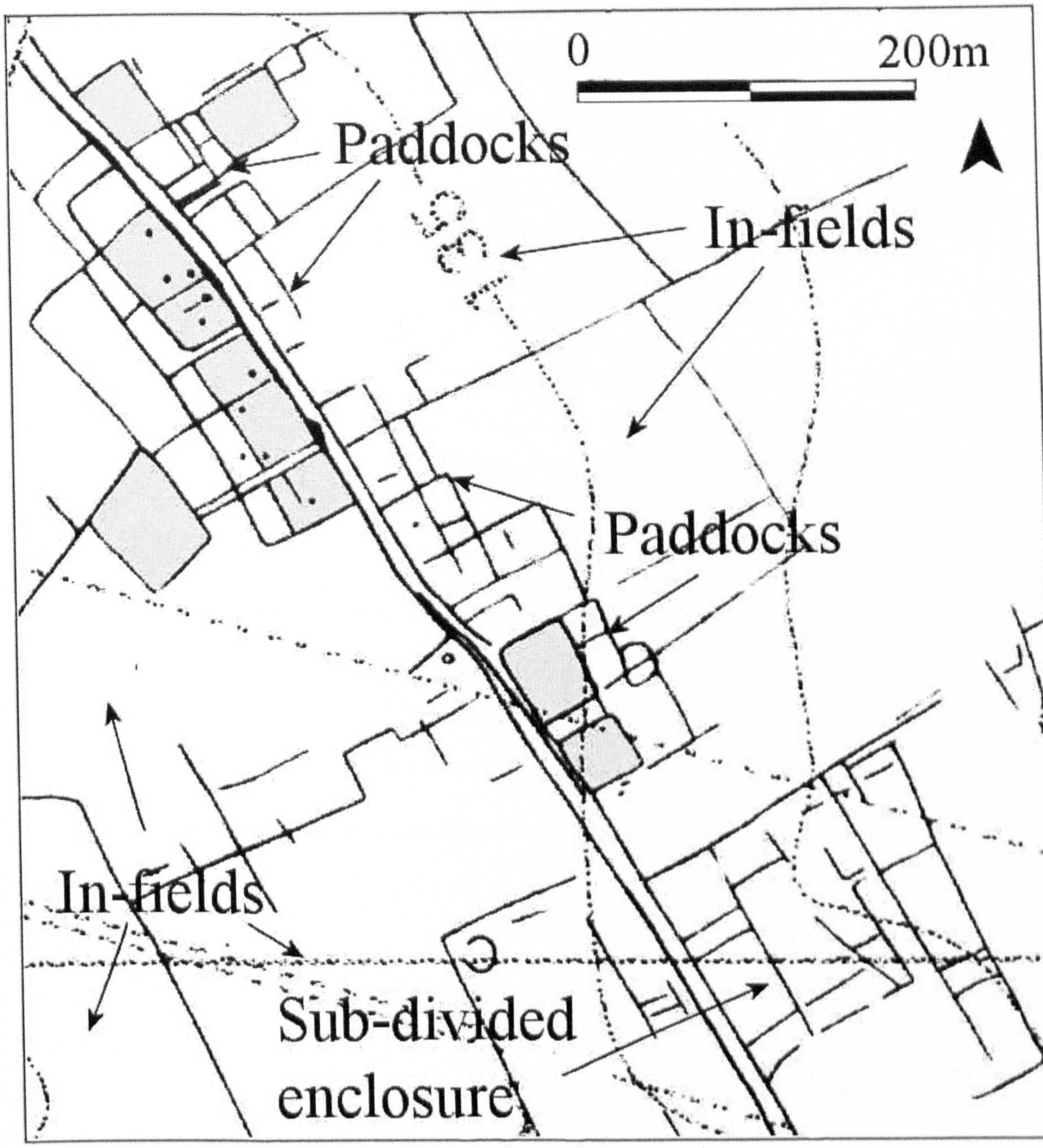


Figure 19 Wolds ladder showing different components (After Stoertz 1997, © Crown copyright OS)

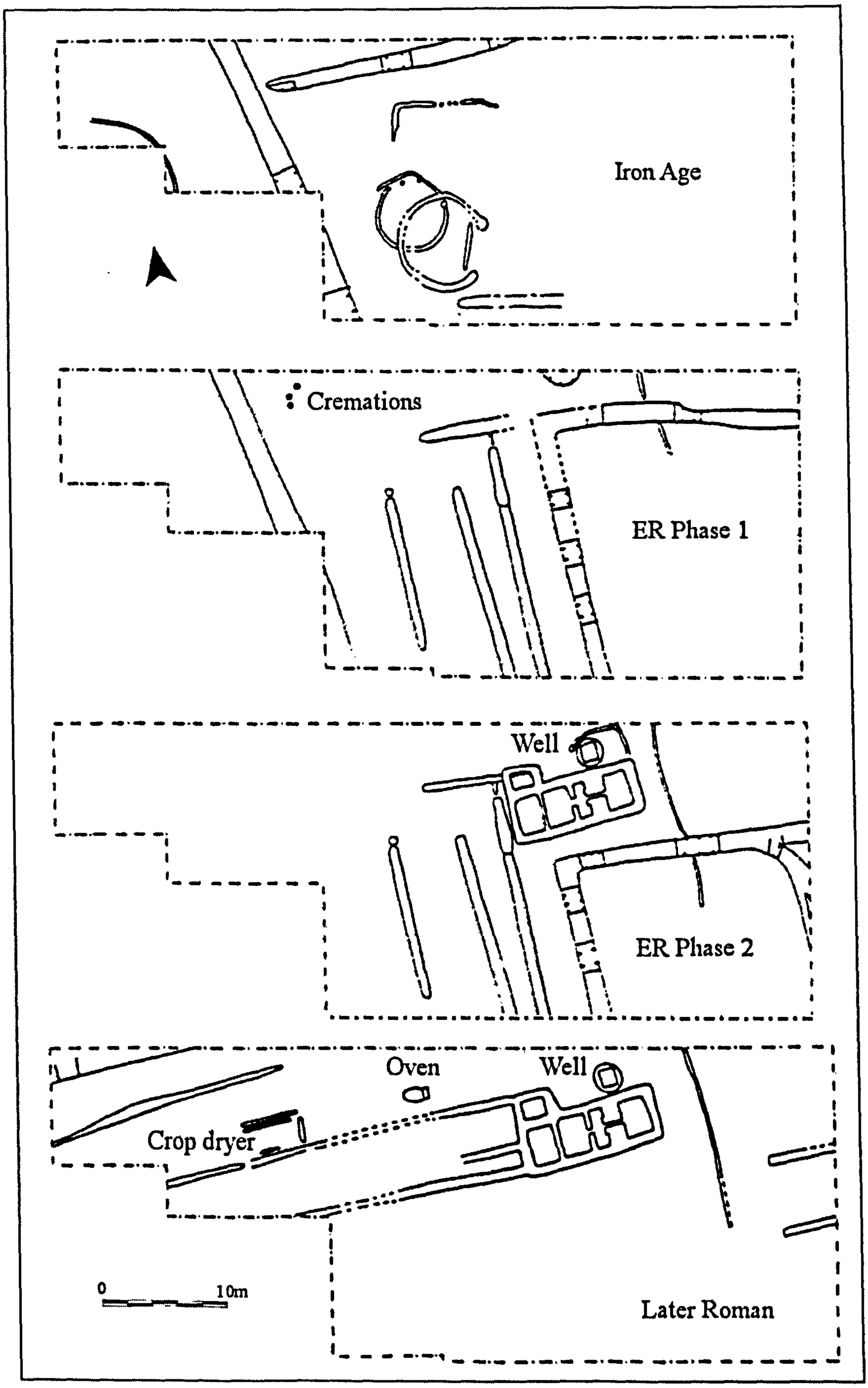


Figure 20 Burnby Lane ladder settlement (After Halkon *et al.* 1999)

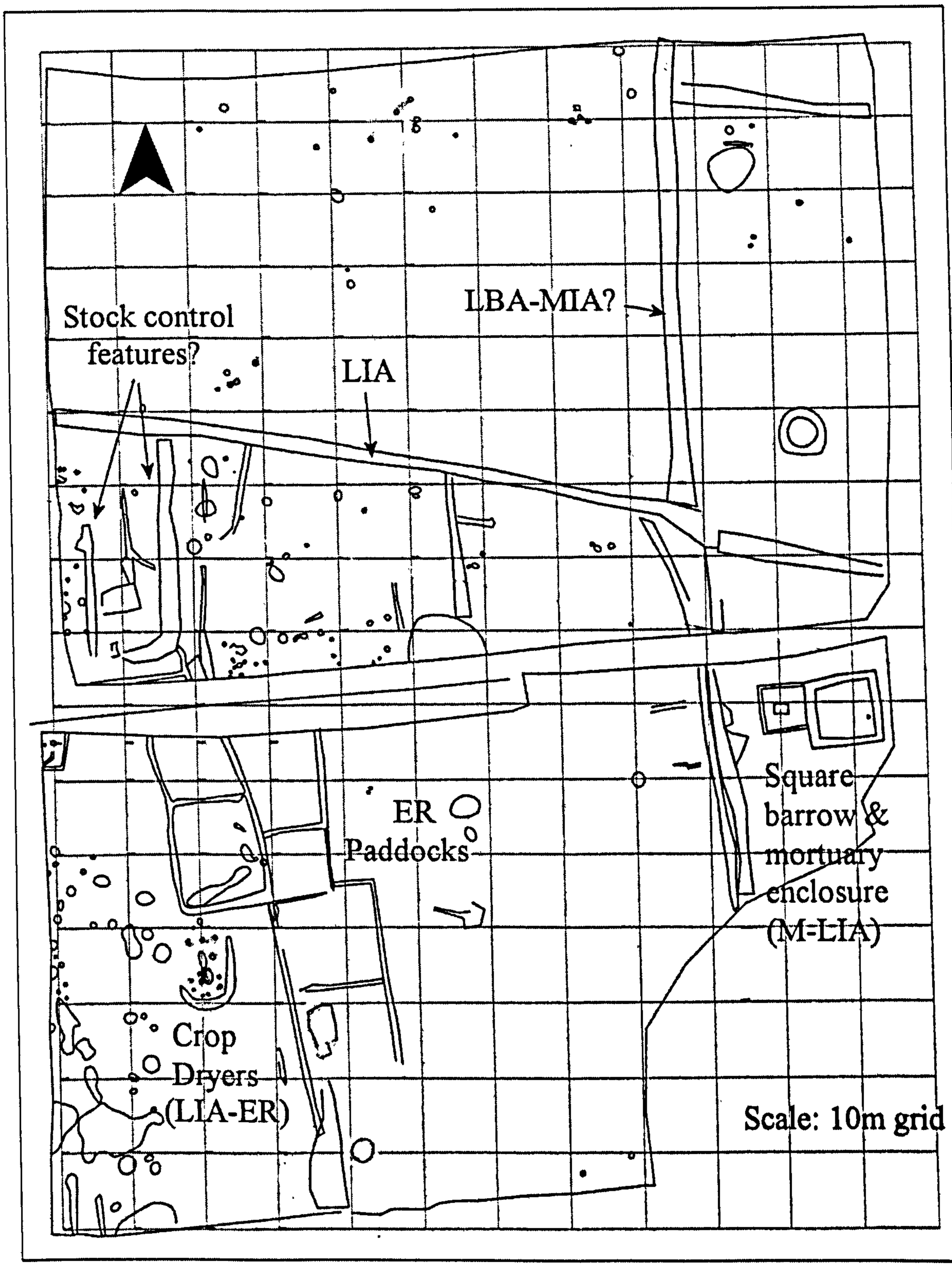


Figure 21 Sewerby Cottage Farm ladder settlement (After Fenton-Thomas 2003)

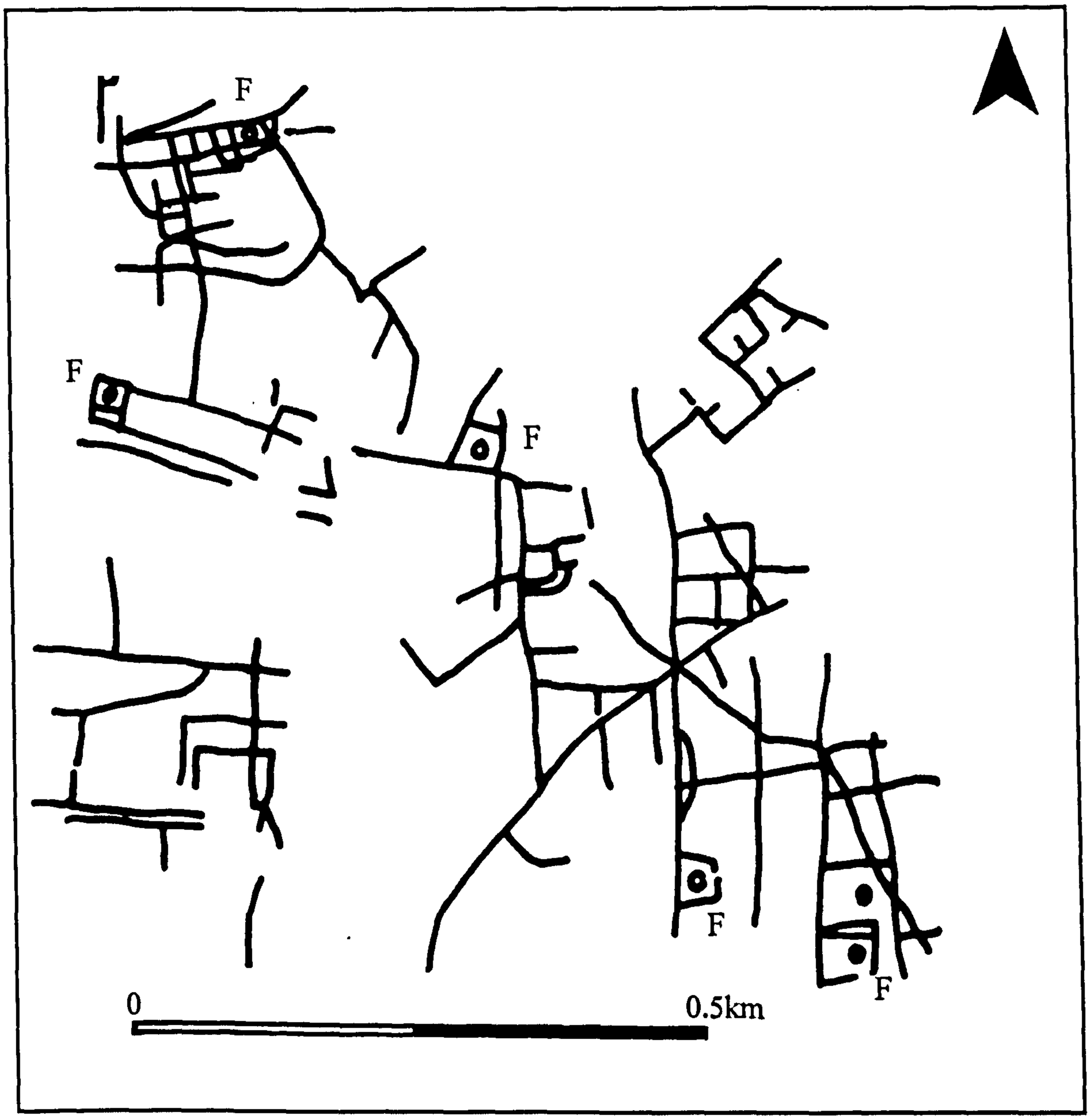


Figure 22 Lingcroft Farm co-axial field system with farmstead enclosures marked 'F' (After Jones 1988)

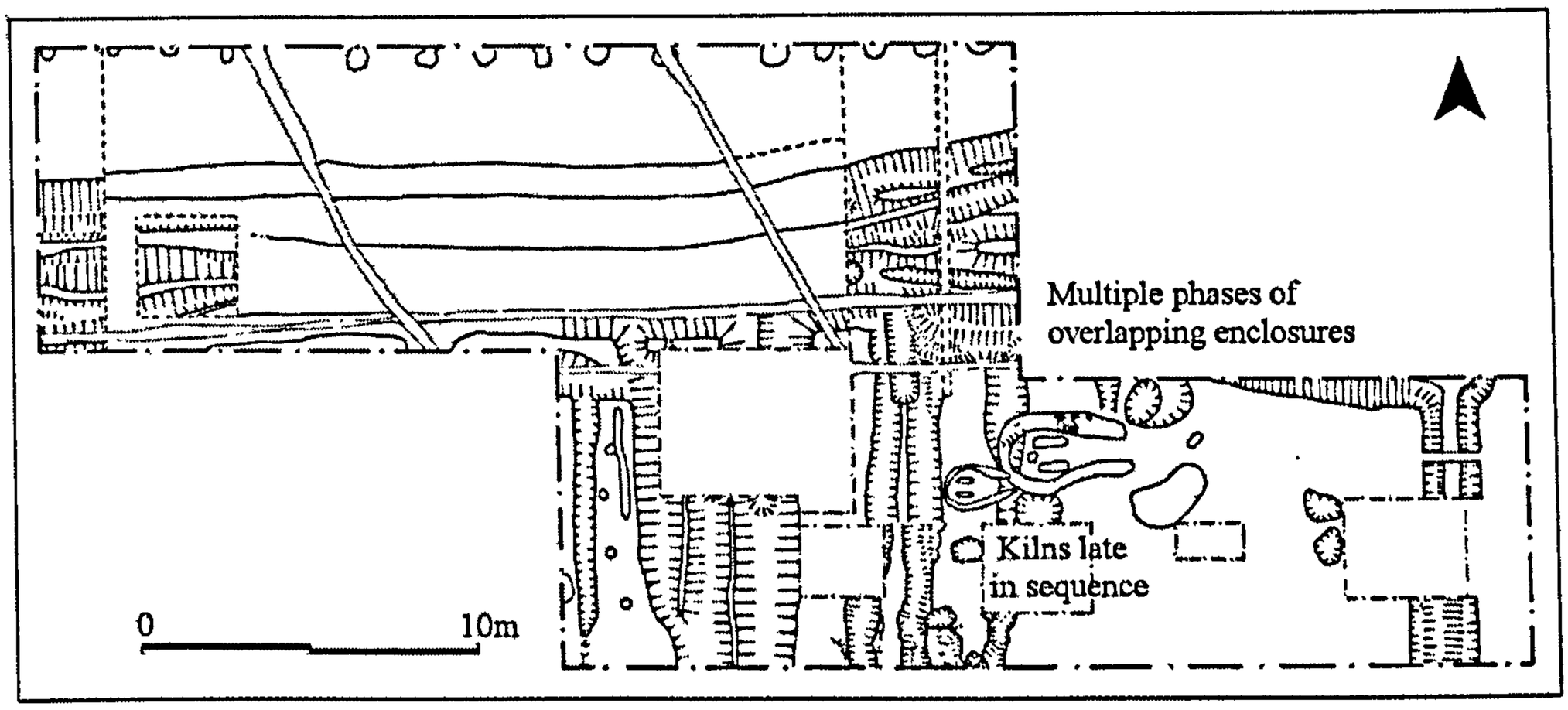


Figure 23 Bursea House nucleated industrial farmstead (After Halkon and Millett 1999, 111)

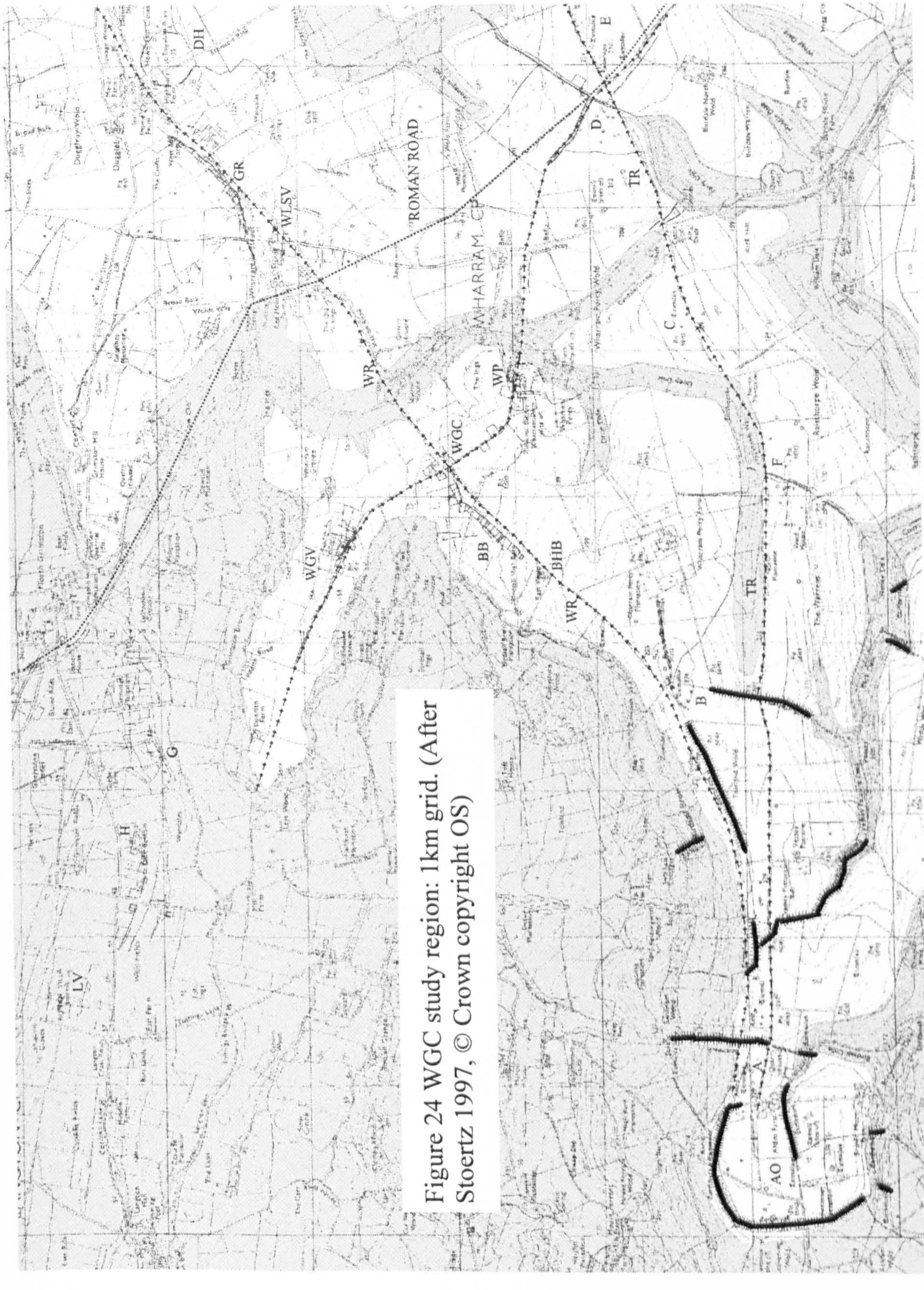


Figure 24 WGC study region: 1km grid. (After Stoertz 1997, © Crown copyright OS)

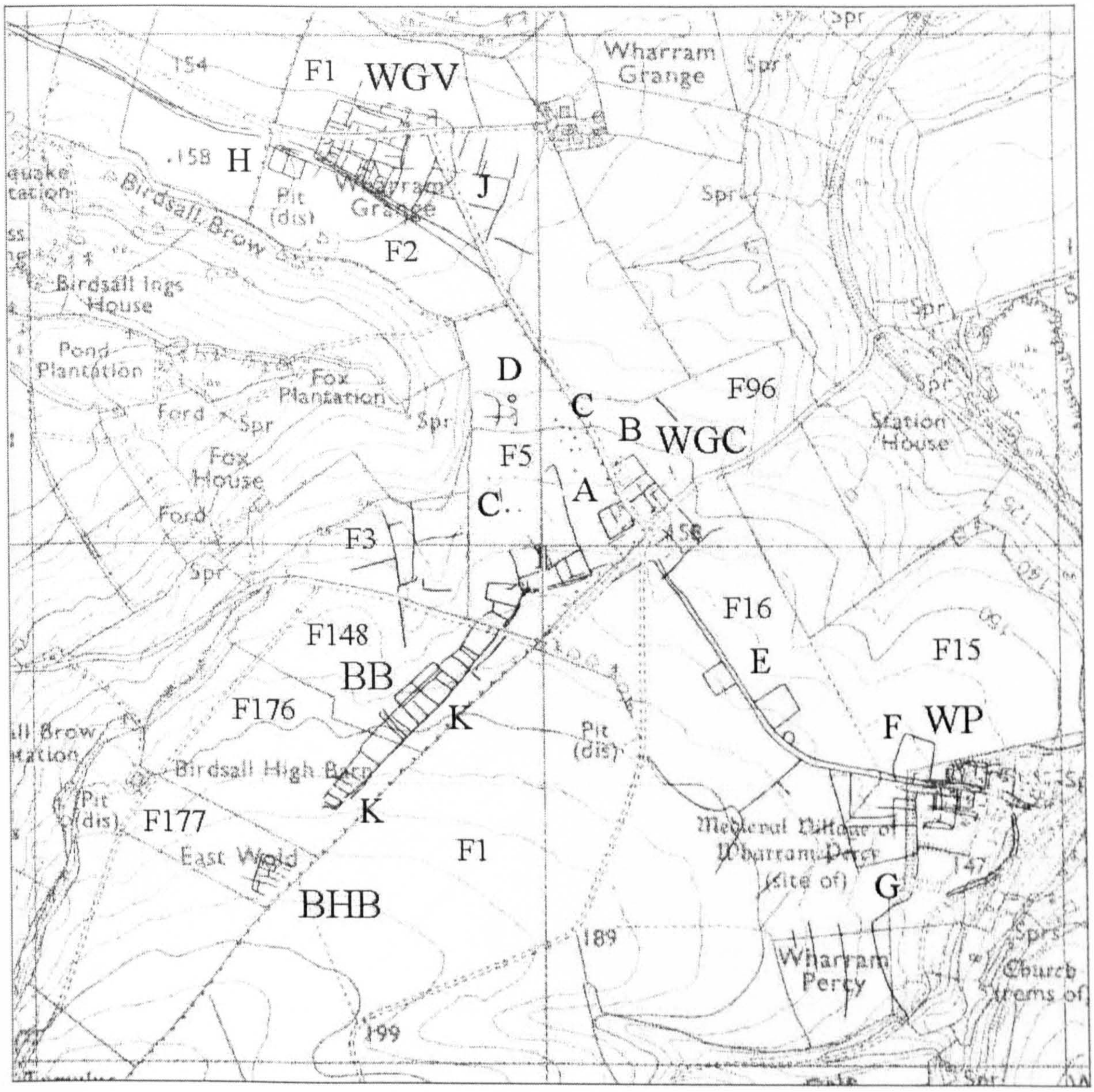


Figure 25 WGC study region: close-up view (After Stoertz 1997, © Crown copyright OS)

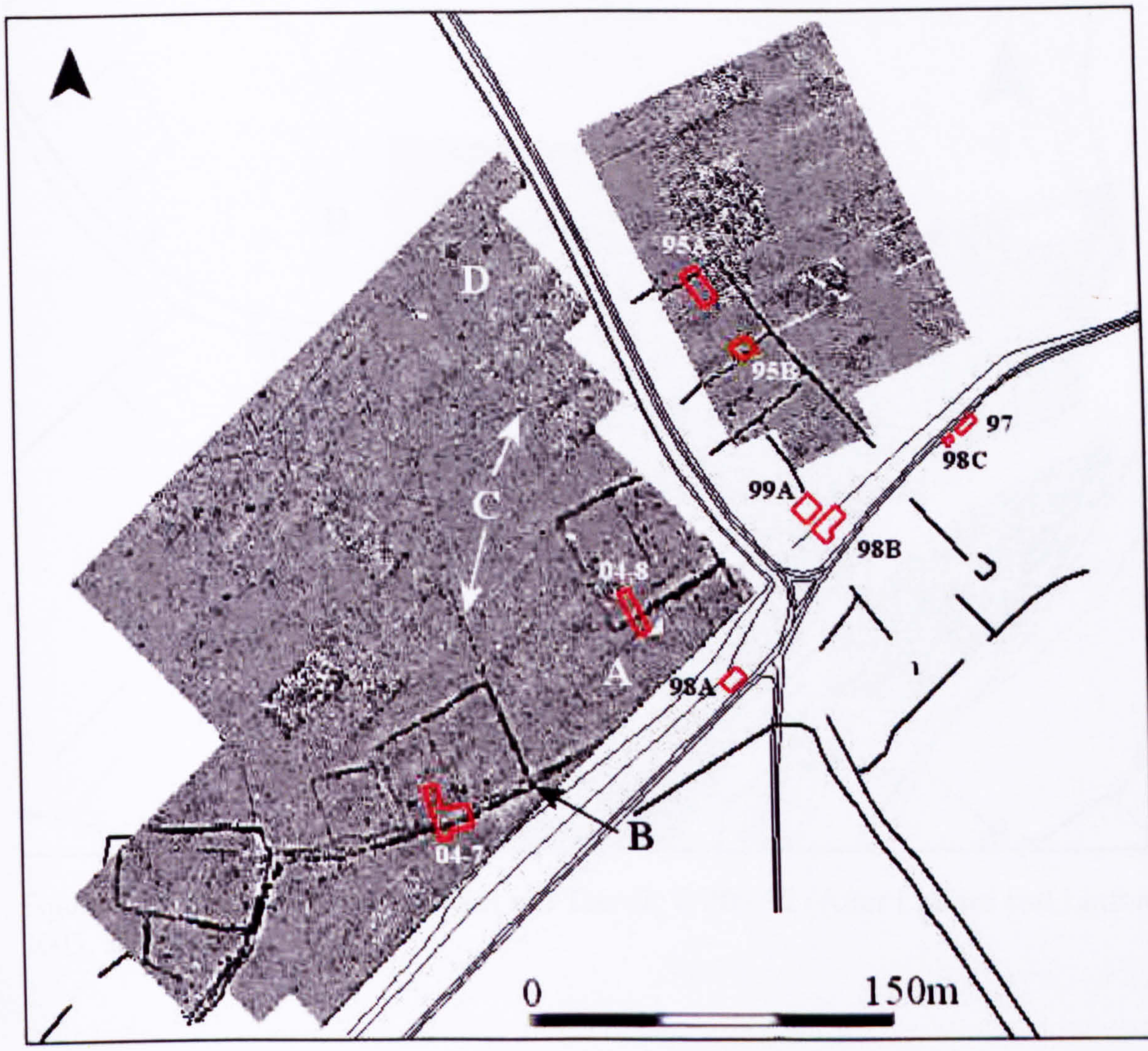


Figure 26 WGC magnetometry results, trench locations and anomalies (Department of Archaeology, University of York)

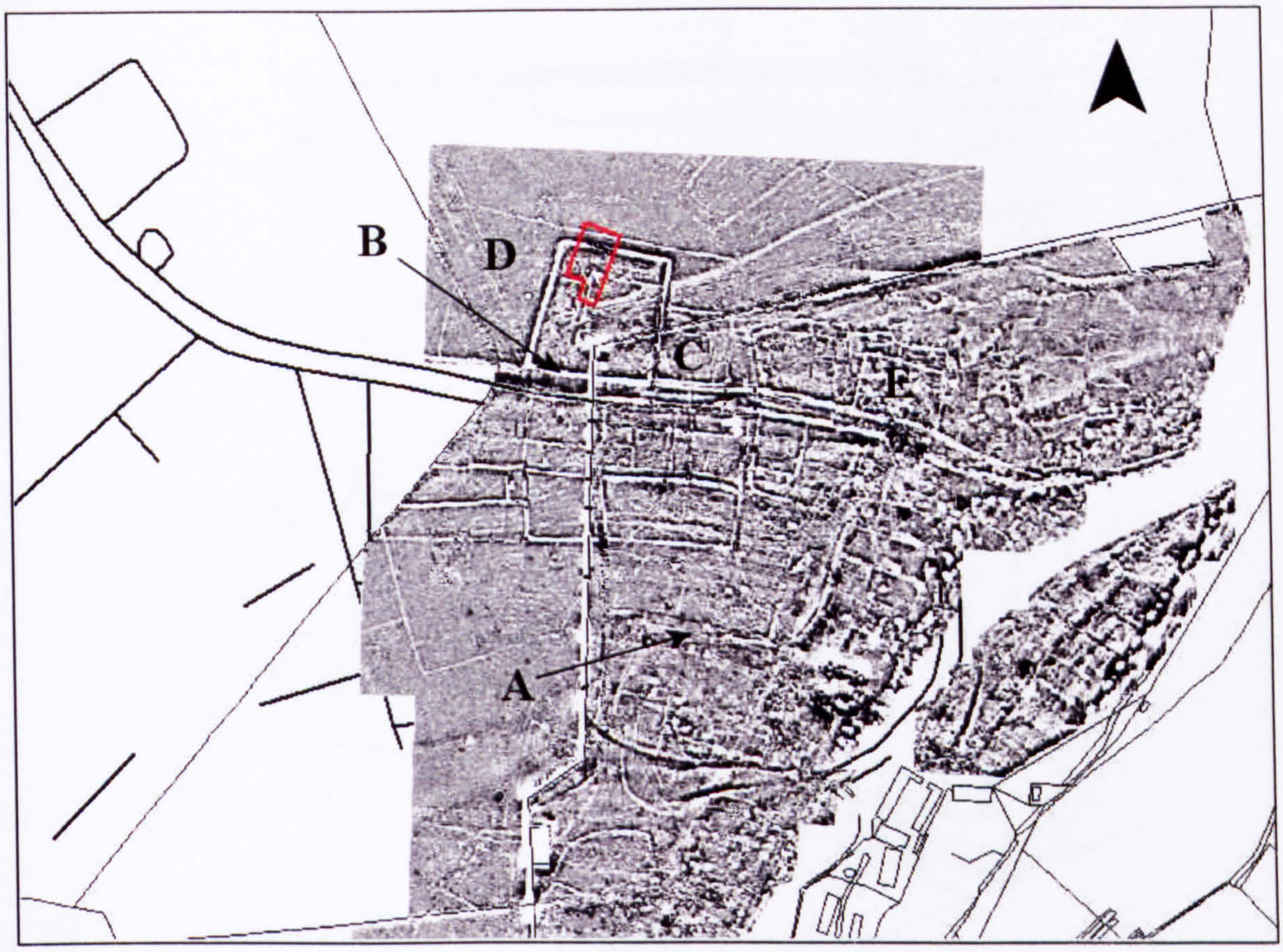


Figure 27 WP magnetometry results and Trench WP05-92 (After Linford and Linford 2003, Fig.3)

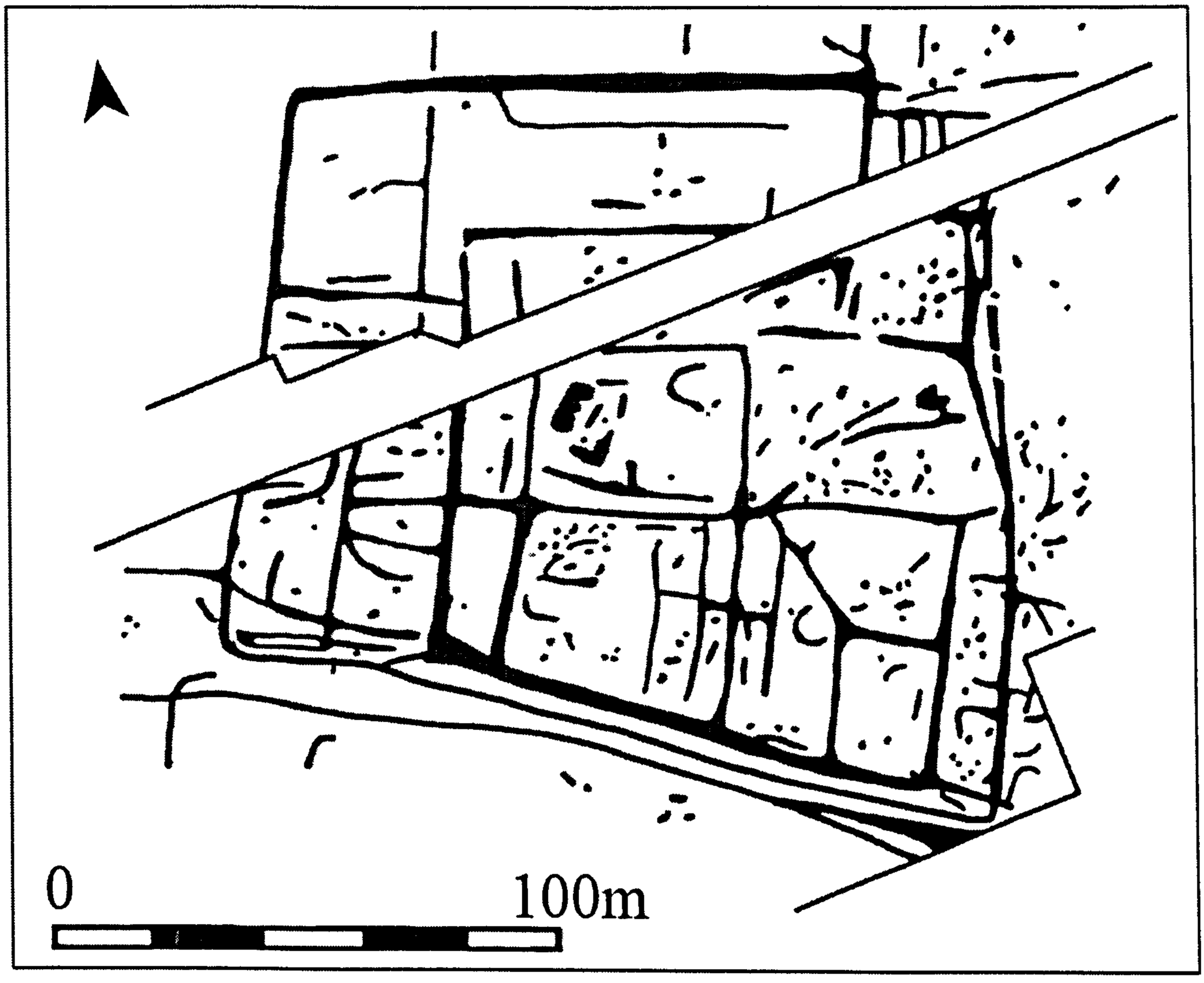


Figure 28 WGV magnetometry results (After Hayfield 1987, 182)

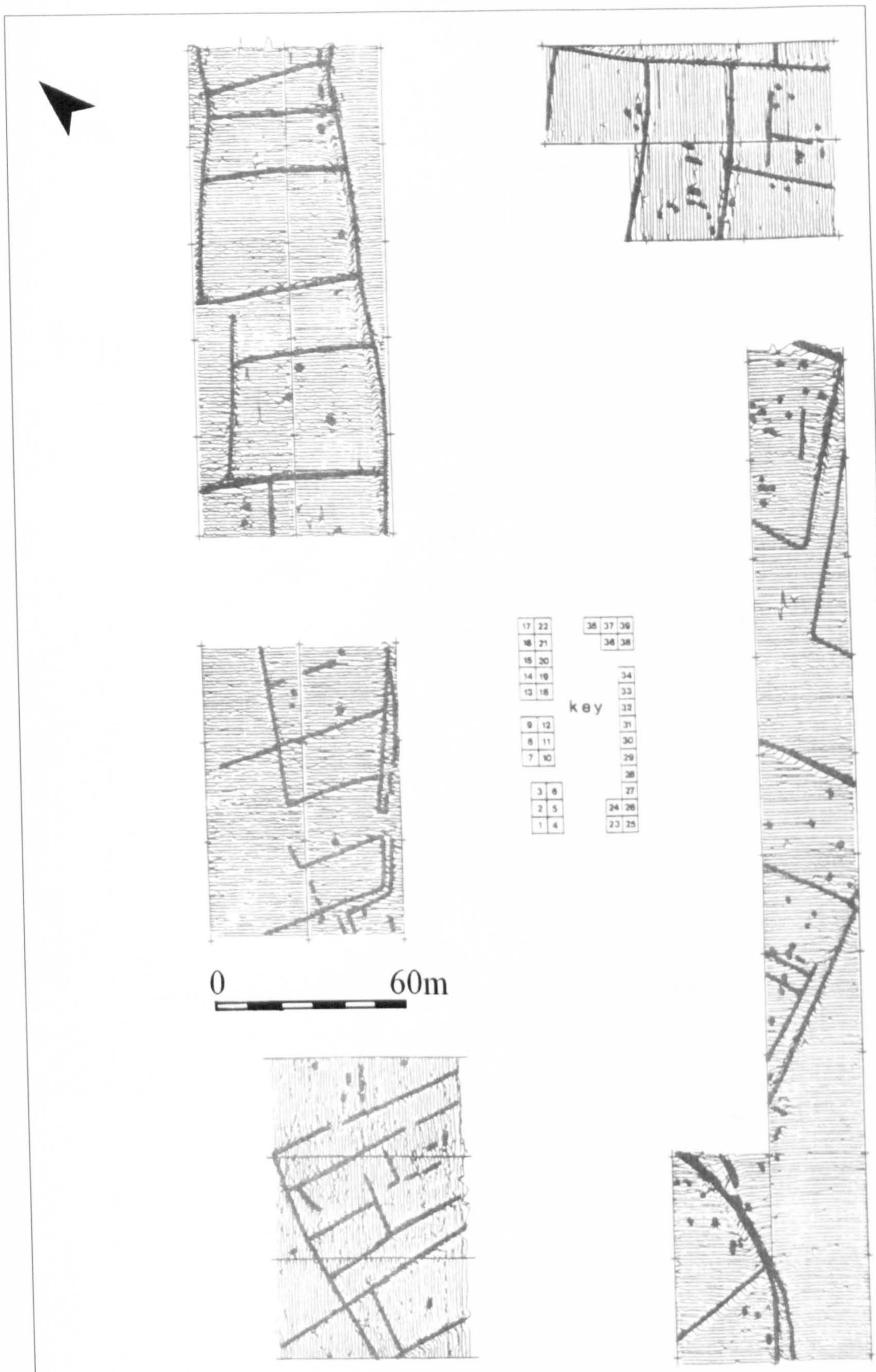


Figure 29 WGC, BB and BHB magnetometry results (After Hayfield 1987, Fig.7)

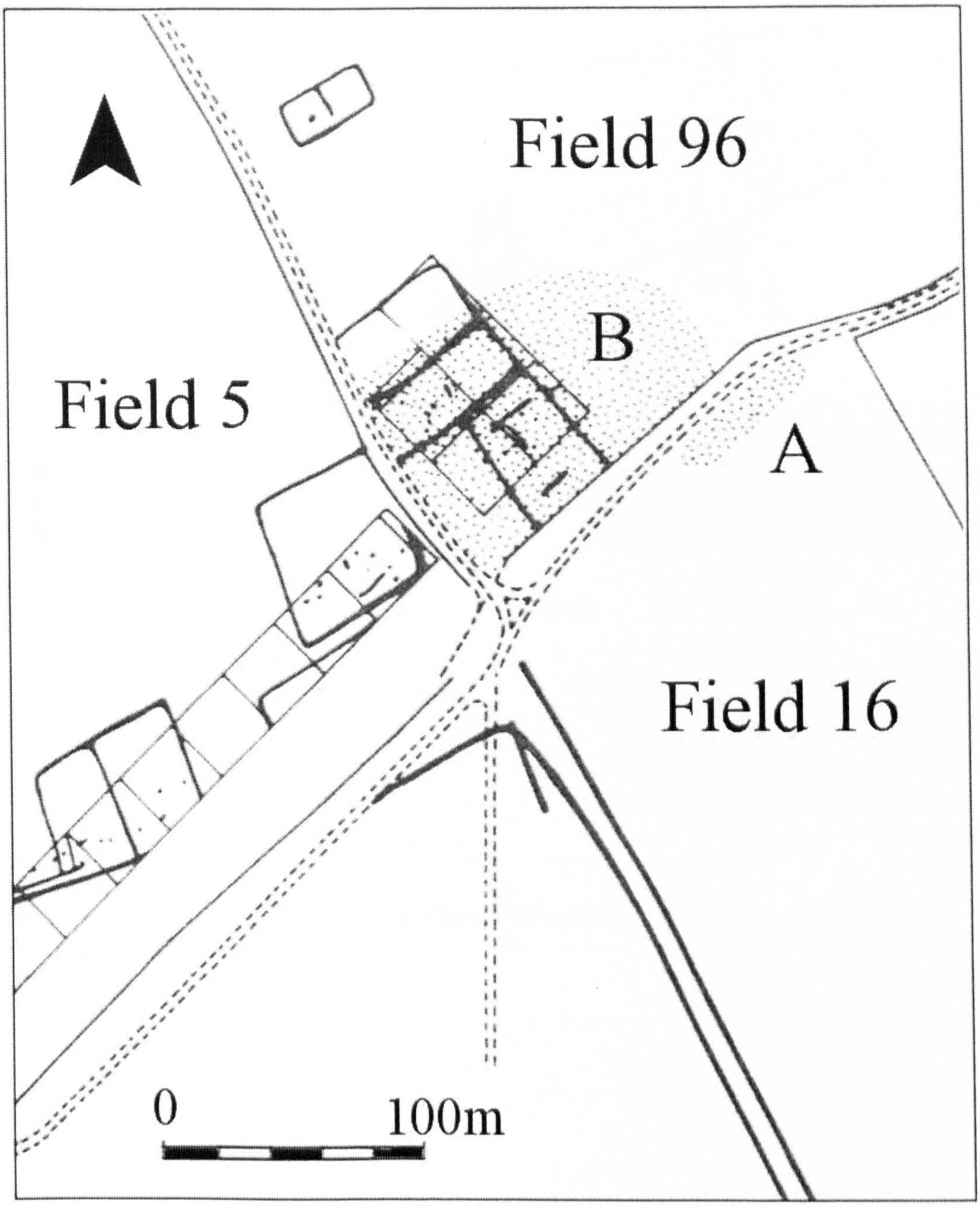


Figure 30 WGC Fields 16 and 96 surface artefact scatters (After Hayfield 1987, Fig. 26)

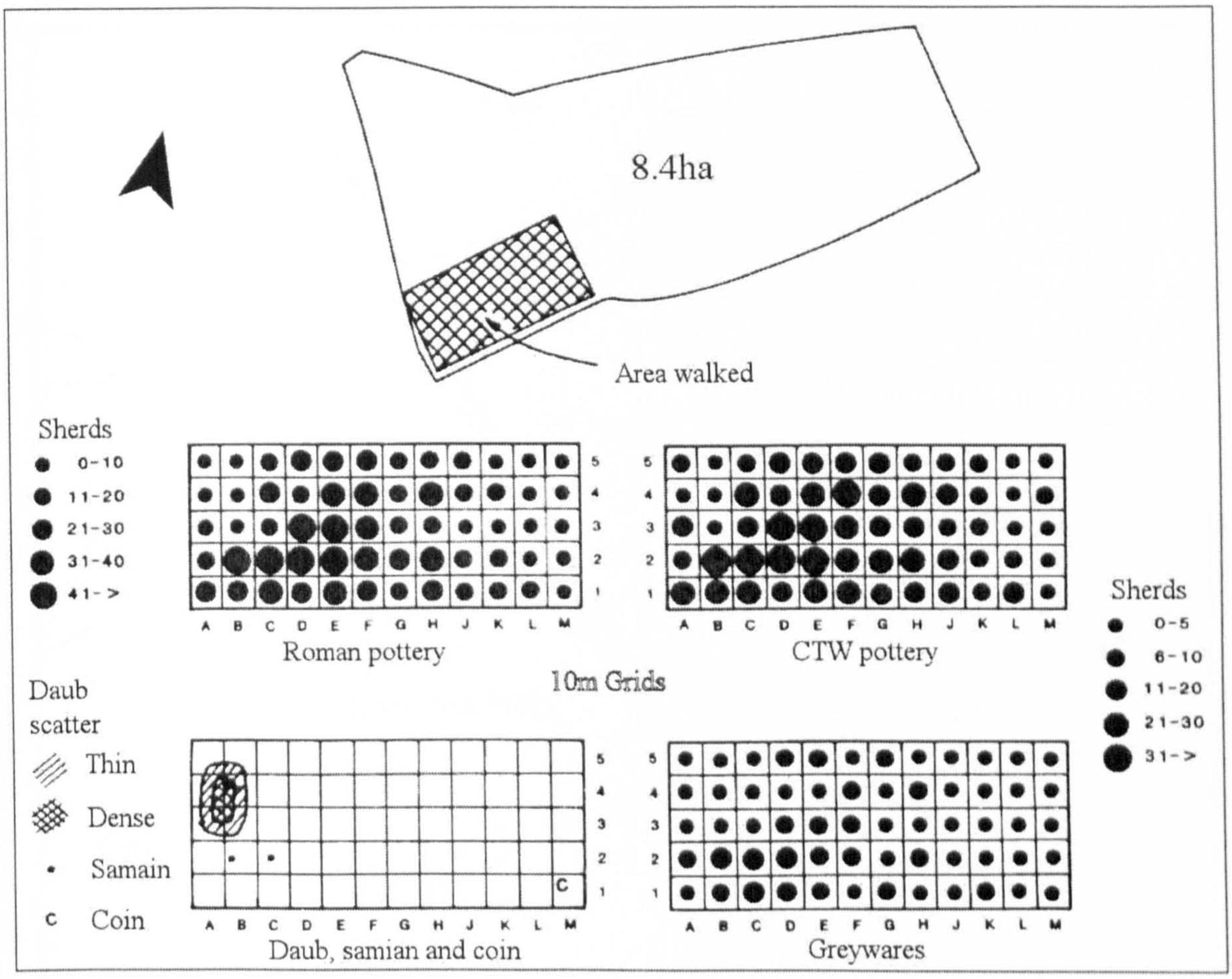


Figure 31 WGC Field 96 10m surface collection grid and results (After Hayfield 1987, Figure 4)

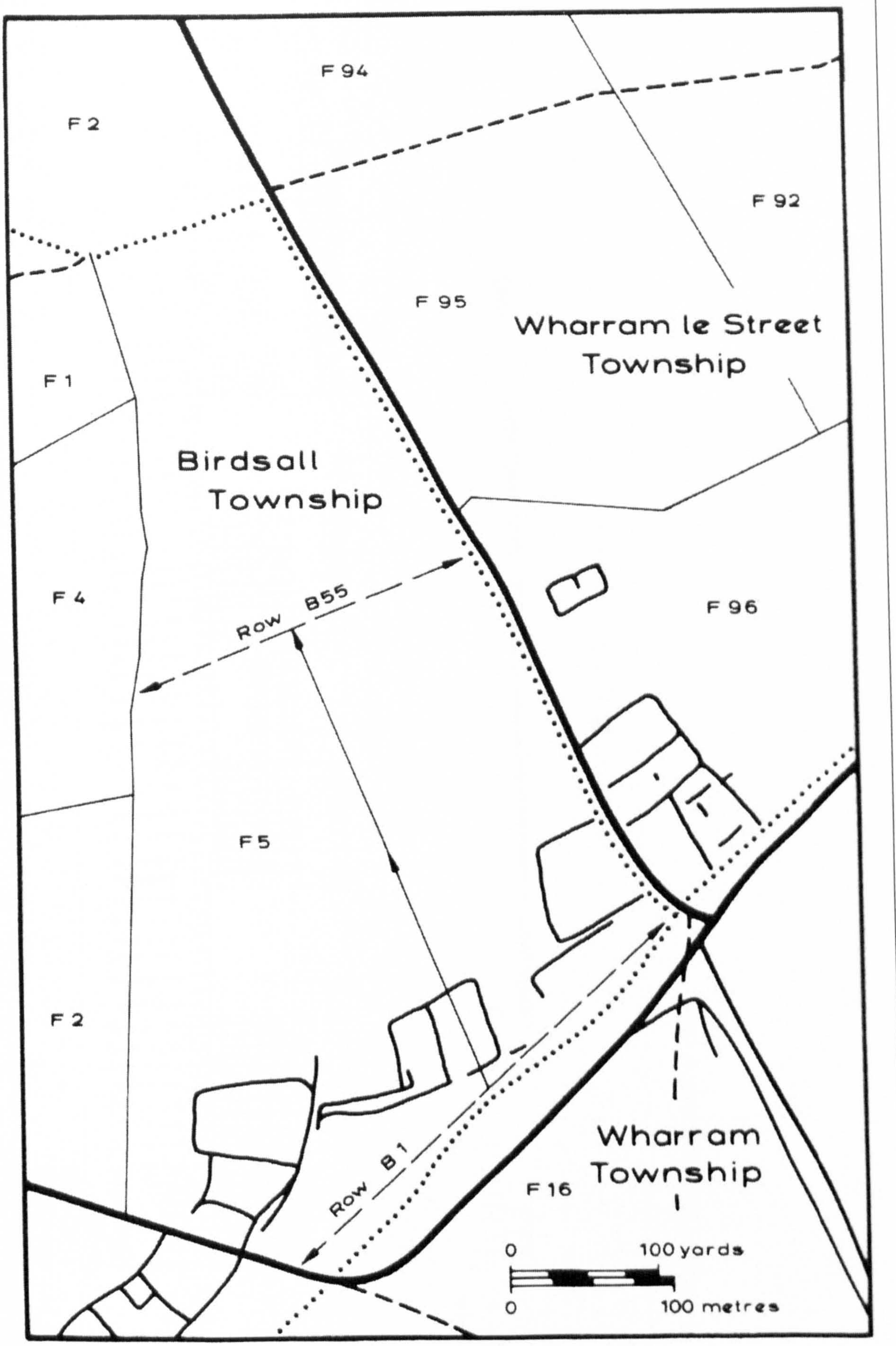


Figure 32 WGC Field 5 surface collection surveying (After Hayfield 1987, Fig. 31)

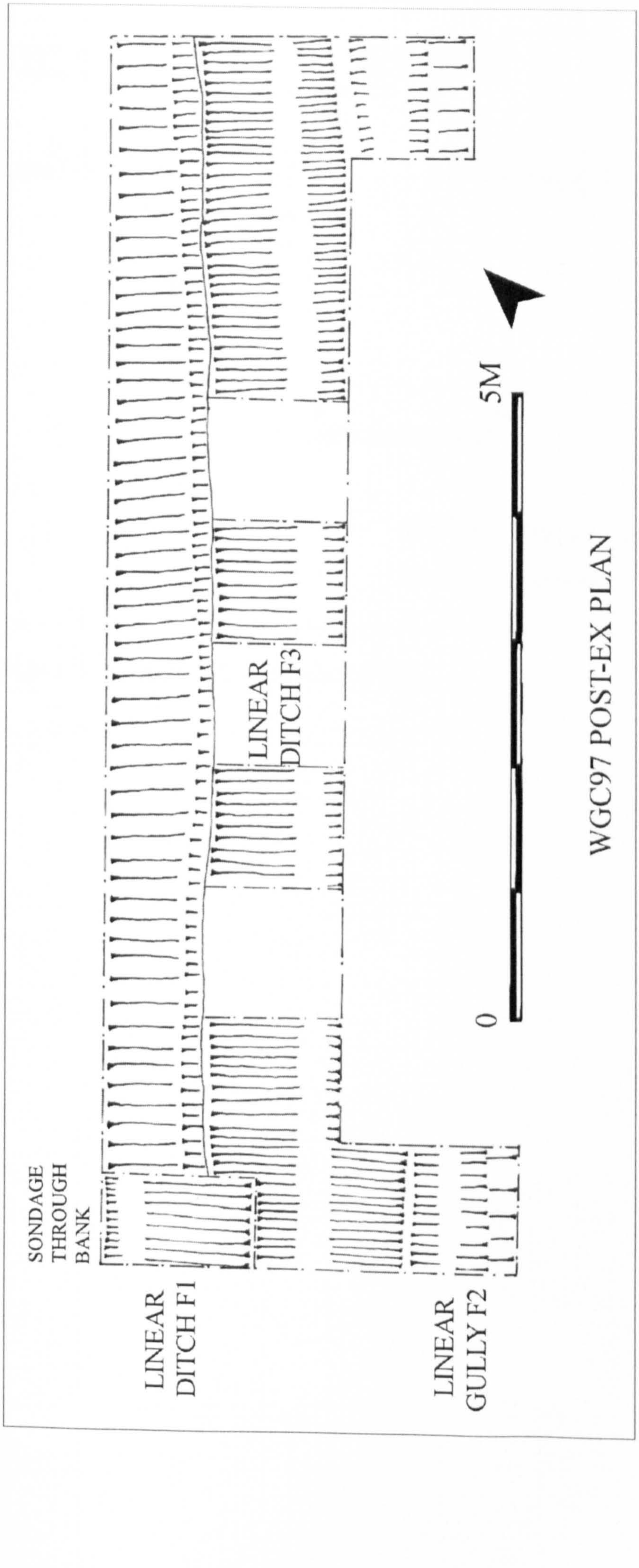


Figure 33 WGC97 Post-excavation plan

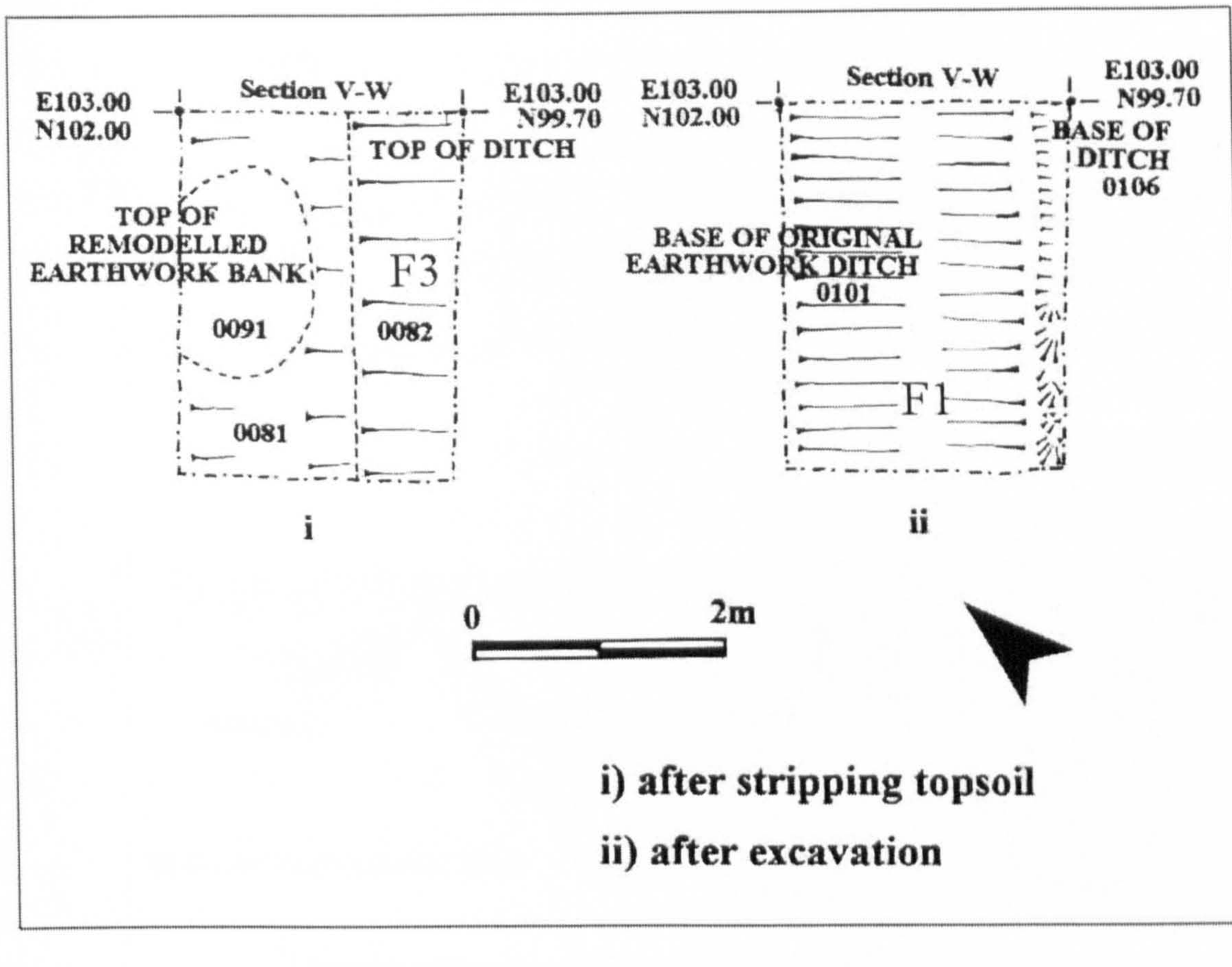


Figure 34 WGC98C Post-excavation plan

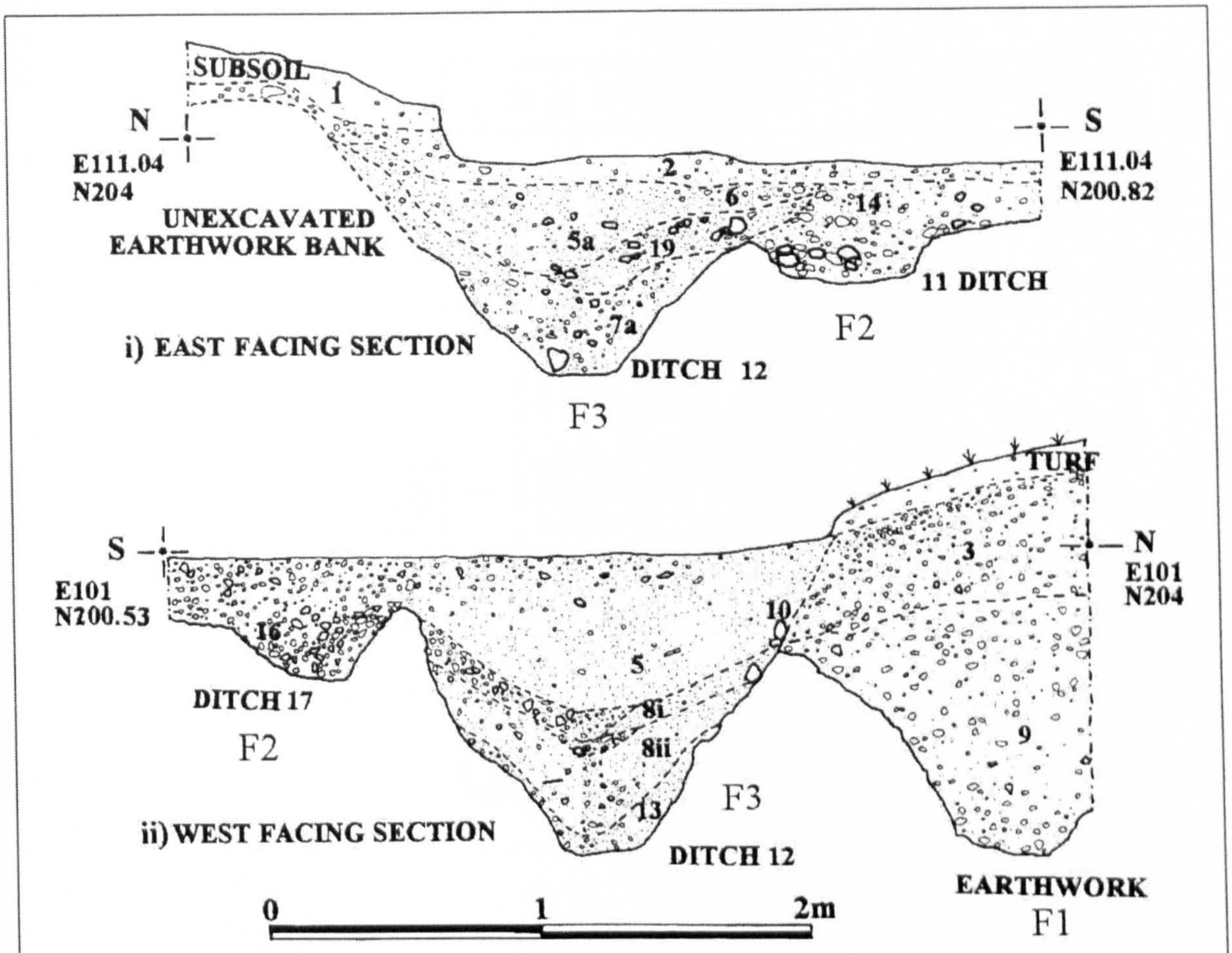


Figure 35 (i) East and (ii) west facing sections WGC97 and (iii) east facing section WGC98C

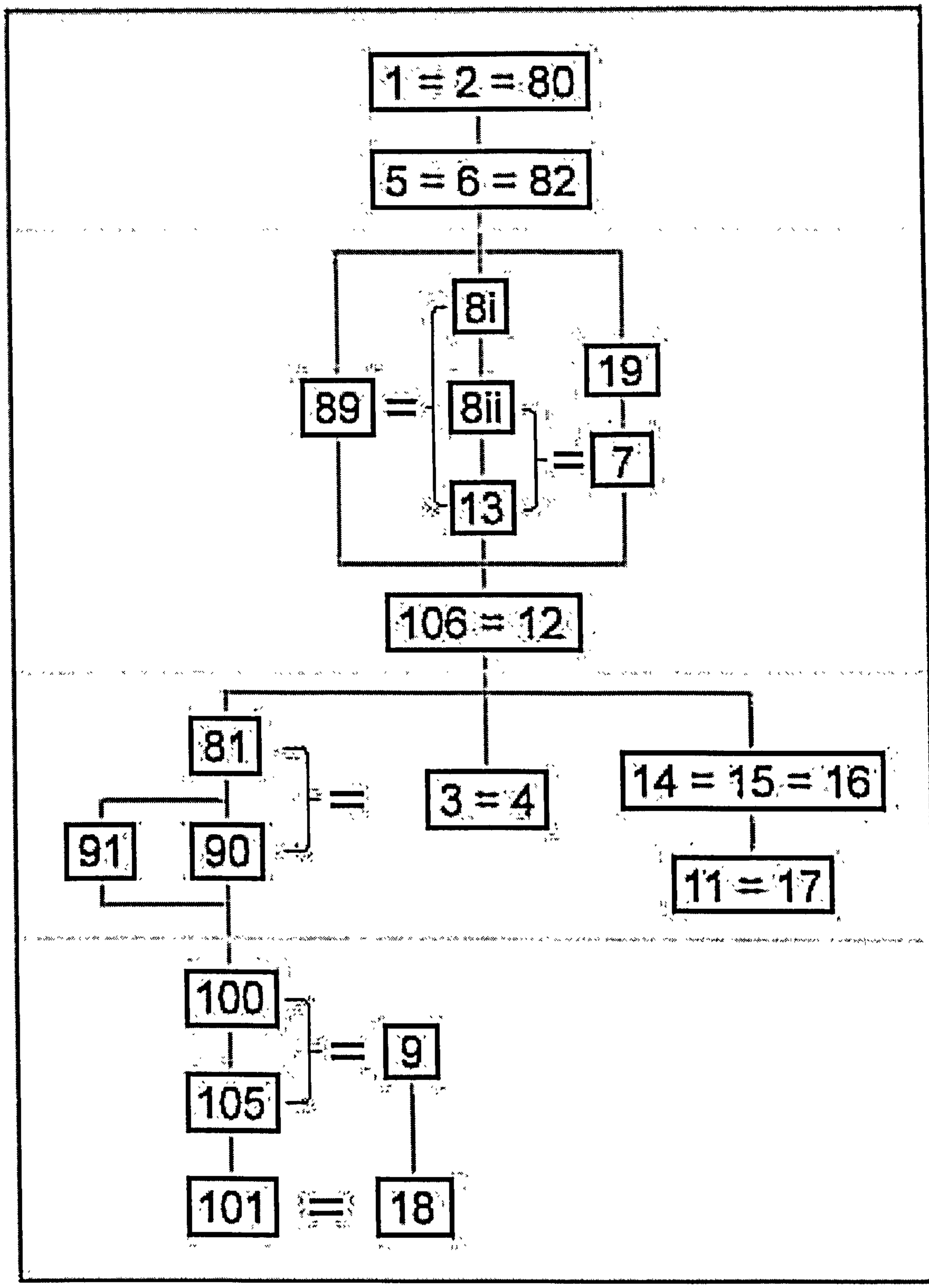


Figure 36 WGC97 and WGC98C combined matrix

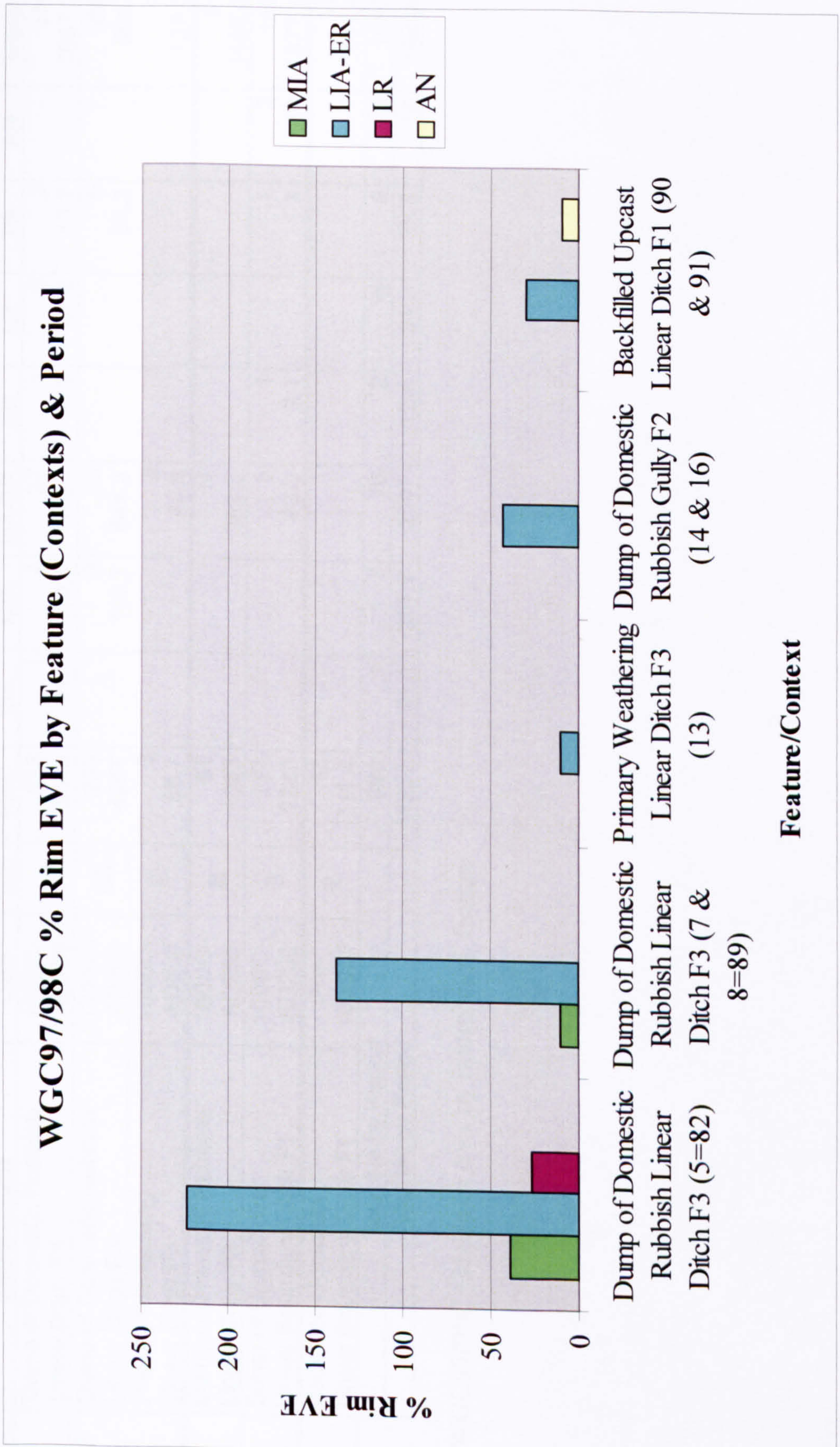


Figure 37 WGC97/98C % Rim EVE by Feature (Contexts) and Period. Original in colour.

Context	Interpretation	Date	E/L	HND	EIA	MIA	LIA-ER	ER	LR	TR	AN	Totals
5=82	Dump of Domestic Rubbish	100BC-AD200	E/L	523	1	4	37	1	6	2		574
	Linear Ditch F3			5845	91.1	140.5	1495	10.3	91.8	13.7		7687.3
7, 8 & 8ii=89	Dump of Domestic Rubbish	100BC-AD200	E/L	233		3	15			5		256
	Linear Ditch F3			4267		116.7	644.3			64.3		5092
13	Primary Weathering	100BC-AD200	E	3			2					5
	Linear Ditch F3			88.7			40.6					129.3
14,15,16	Dump of Domestic Rubbish	100BC-AD200	E	81			11					94
	Linear Gully F2			1093			395.3					1488.6
3=81,90,91	Dump of Upcast over	100BC-AD200	E	137			5	1		1	2	146
	Linear Boundary Ditch F1			1320			43.3	2.1		1.3	10	1377.1
100	Backfilled Upcast in	Pre-100BC?	E	13								13
	Linear Boundary Ditch F1			111.4								111.4
	Total No by Period			990	1	7	70	2	6	8	2	1086
	Total Wt by Period			11237	91.1	257.2	2507	12.4	91.8	79.3	10	14285

Figure 38 WGC97/98C Ceramics data by interpreted feature

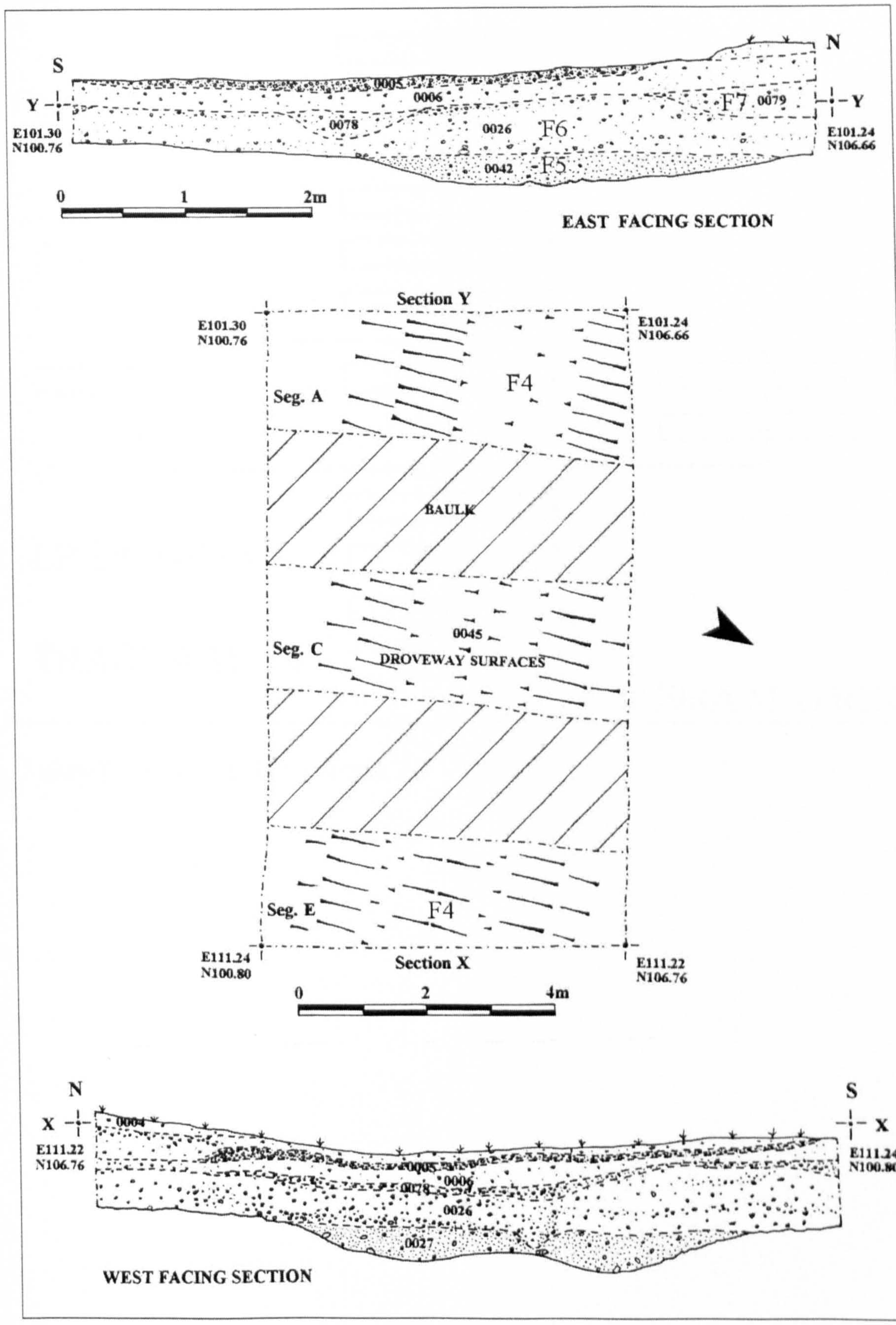


Figure 39 WGC98A Post-ex plan and sections

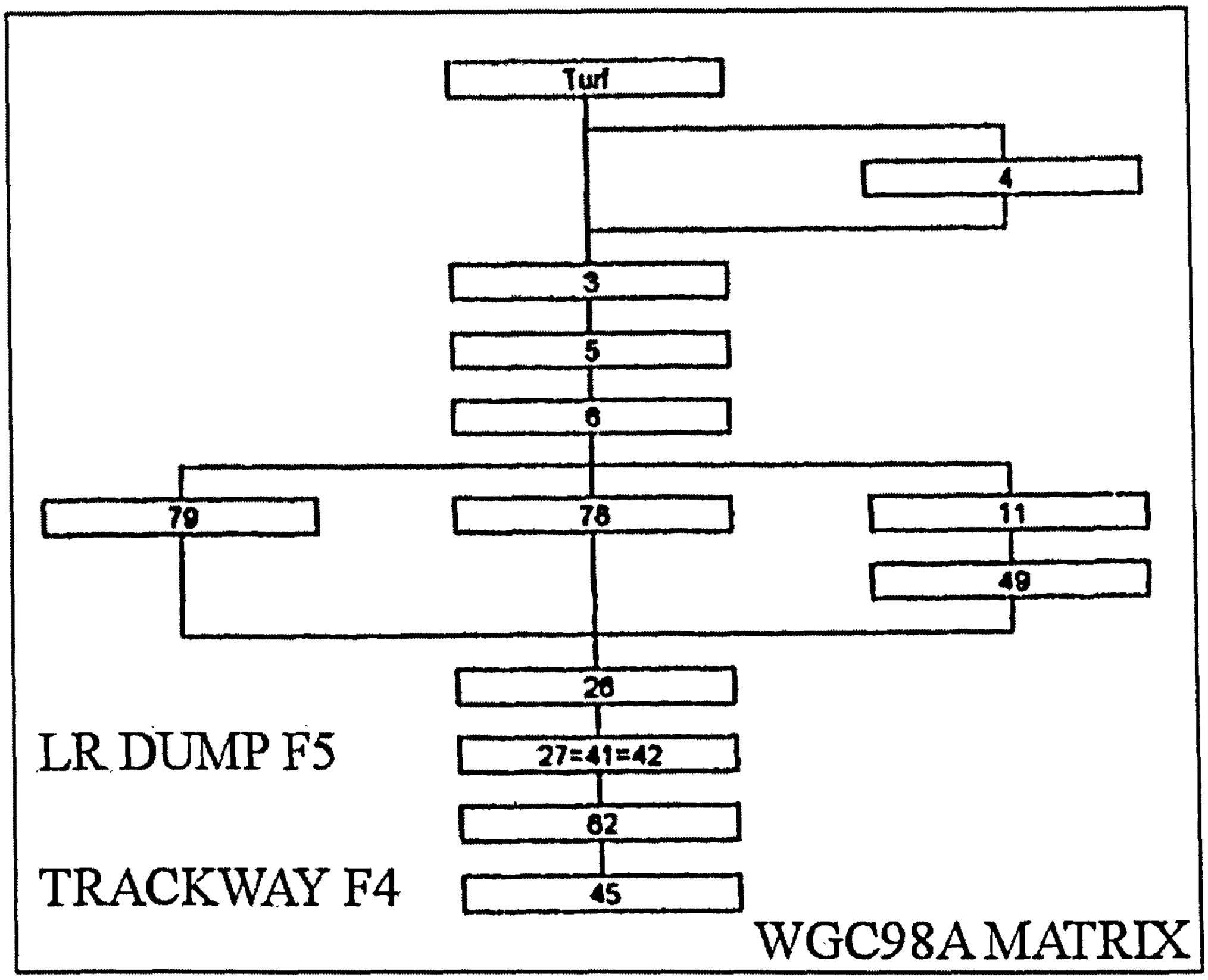


Figure 40 WGC98A Harris matrix

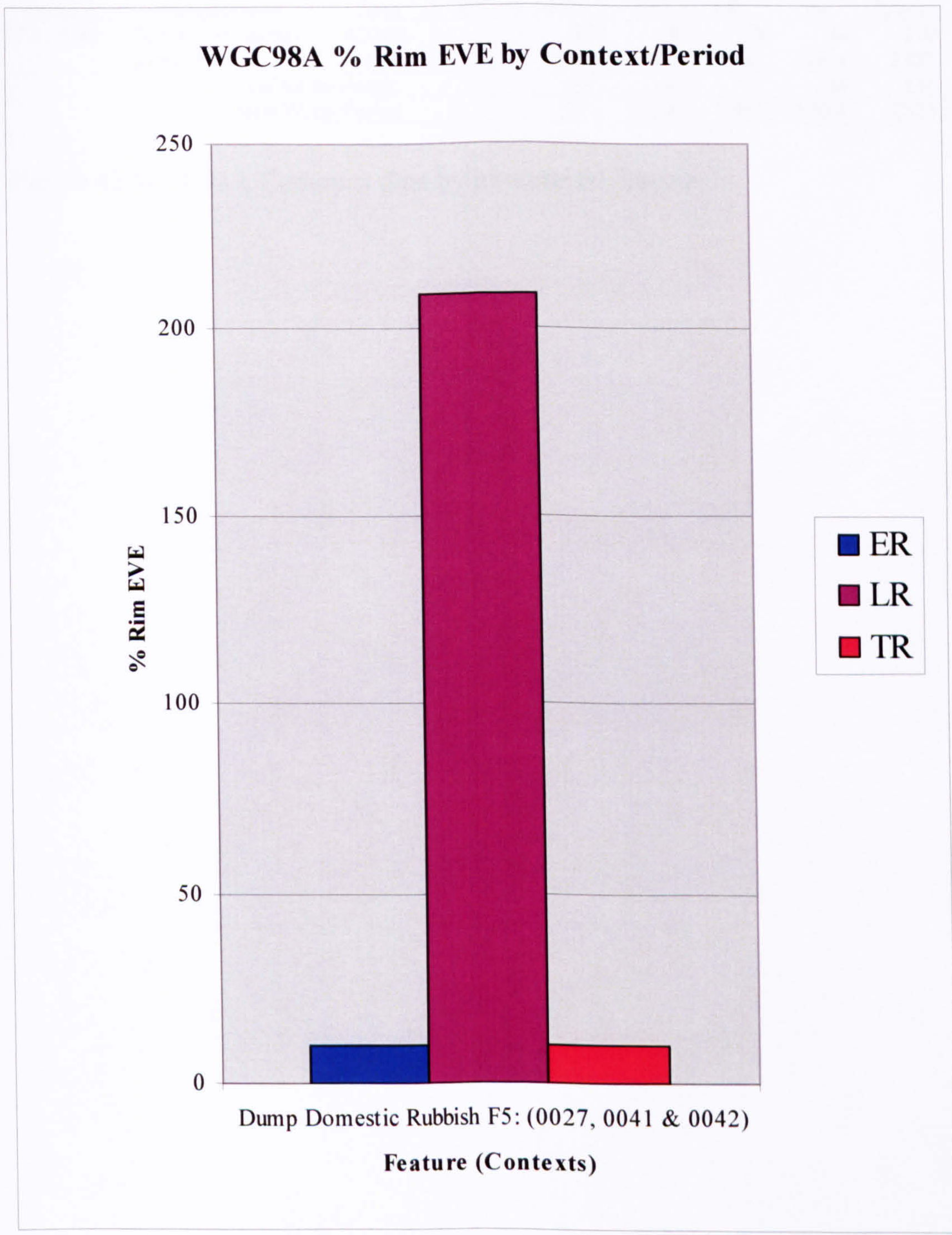


Figure 41 WGC98A % Rim EVE by Context and Period. Original in colour.

Context	Interpretation	Date	E/L	HND	ER	LR	TR	Totals
27,41 & 42	Domestic Rubbish Dump F5	AD360-410	L	87 501	16 120.4	73 1502	34 199.4	210 2323
	Total No by Period			87	16	73	34	210
	Total Wt by Period			501	120.4	1502	199.4	2323

Figure 42 WGC98A Ceramics data by interpreted feature

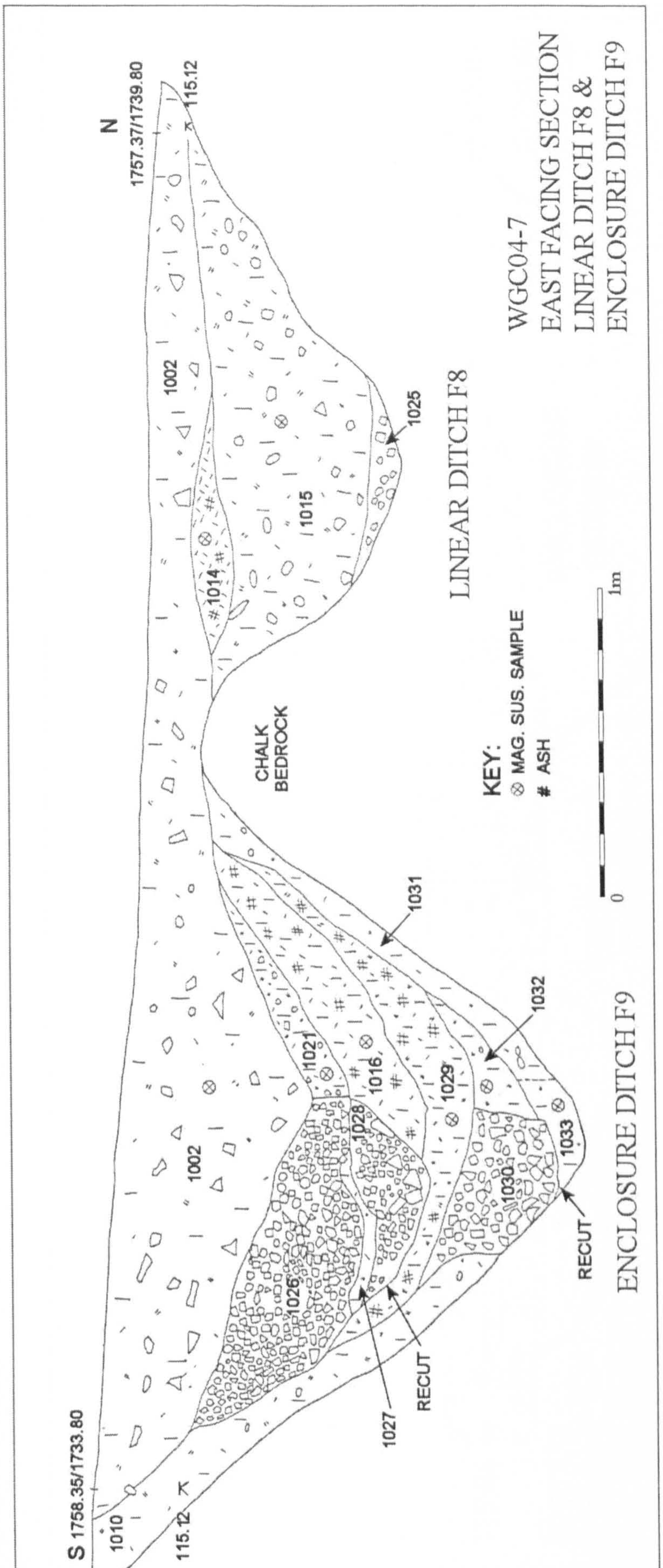


Figure 43 WGC04-7 East facing section of ditches F8 and F9

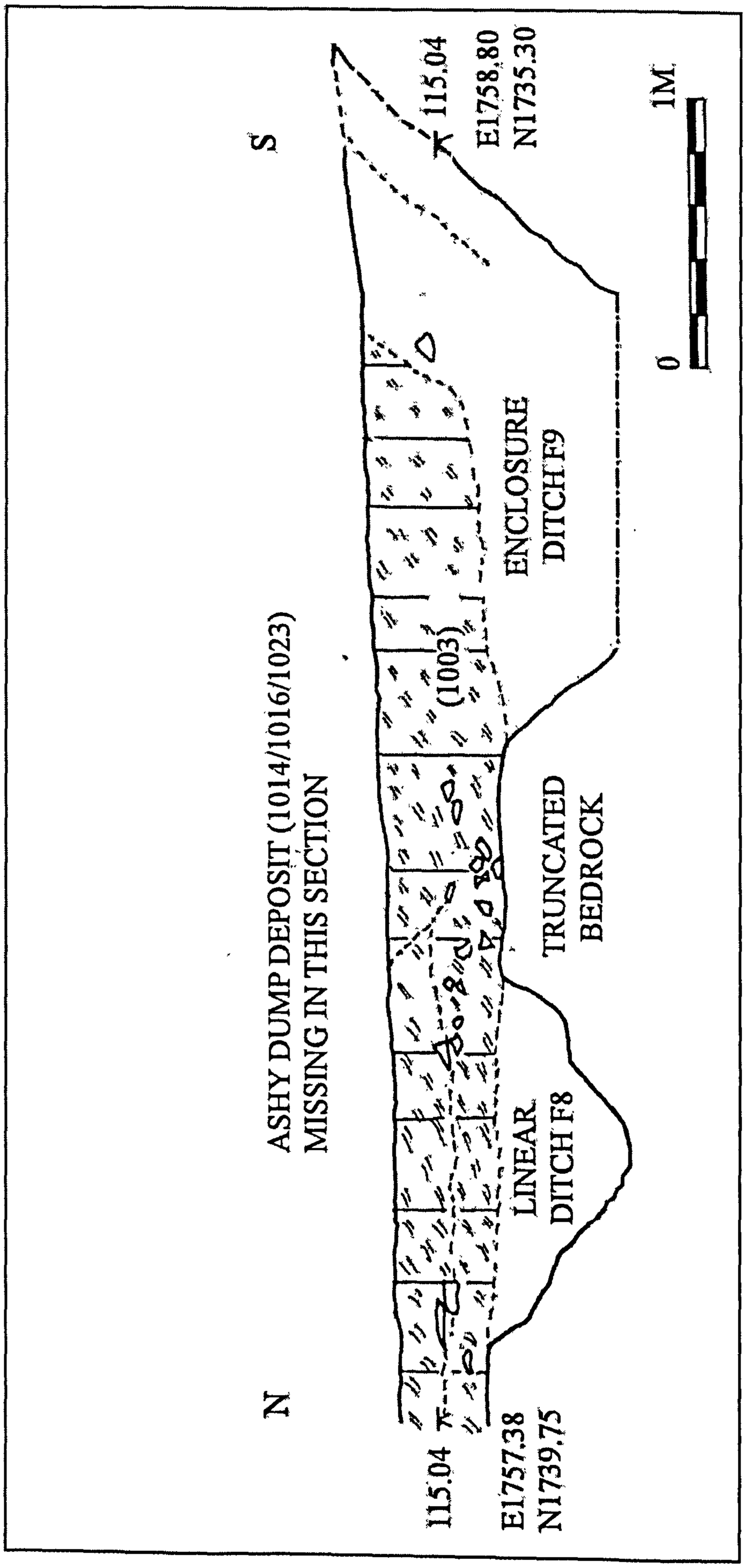


Figure 44 WGC04-7 East facing section of ditches F8 and F9 (western sondage)

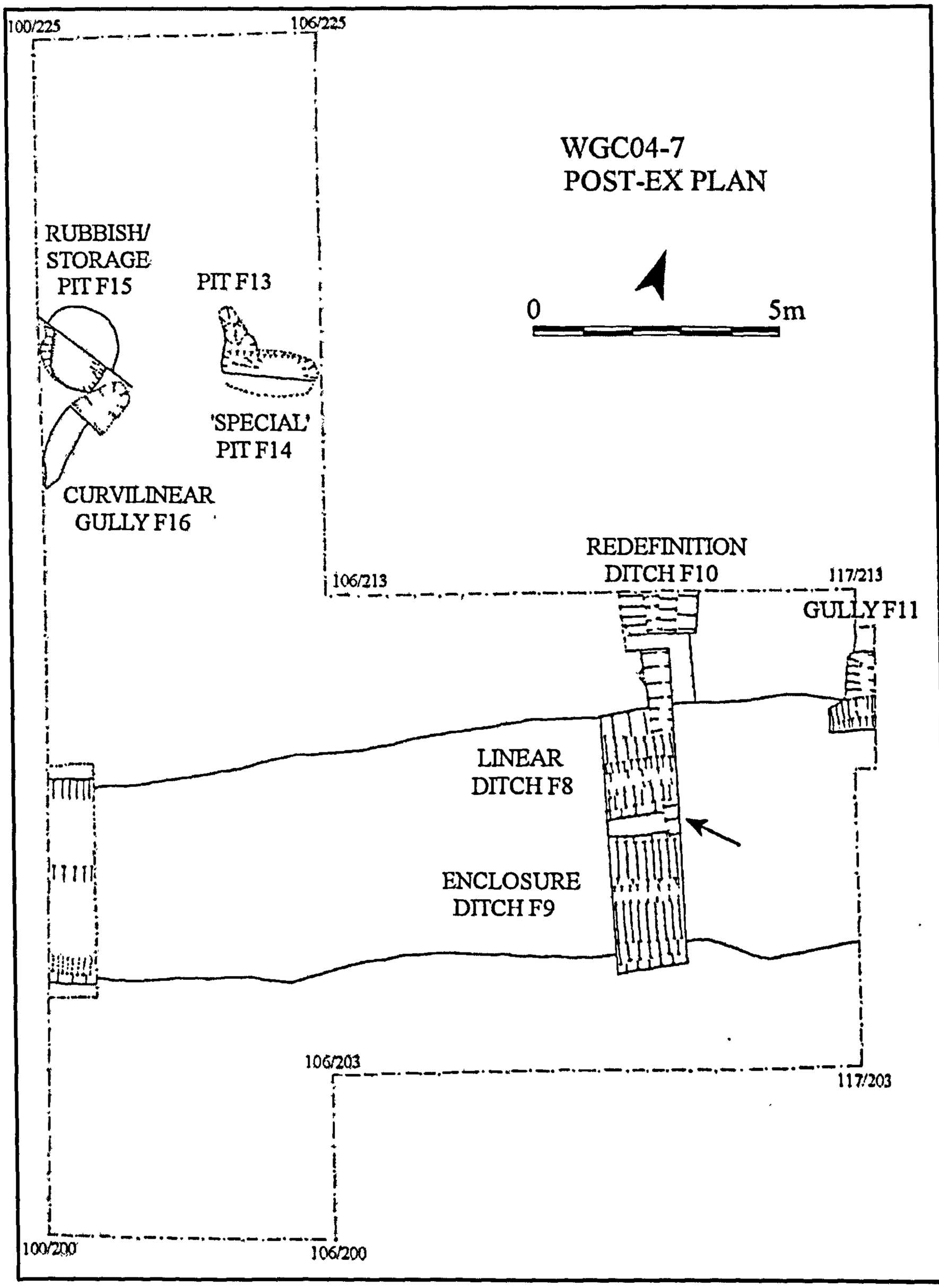


Figure 45 WGC04-7 Post-excavation plan

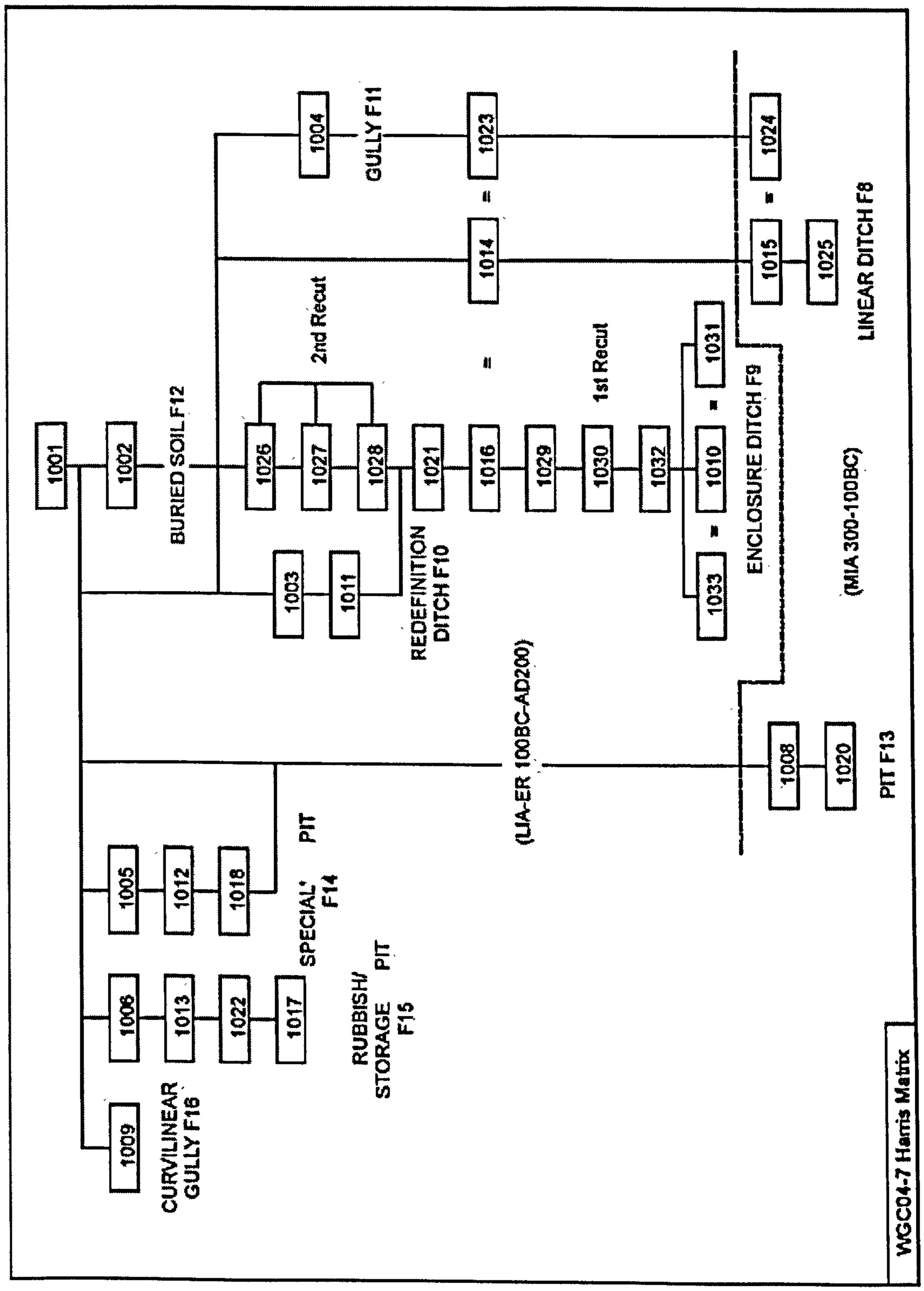


Figure 46 WGC04-7 Harris matrix

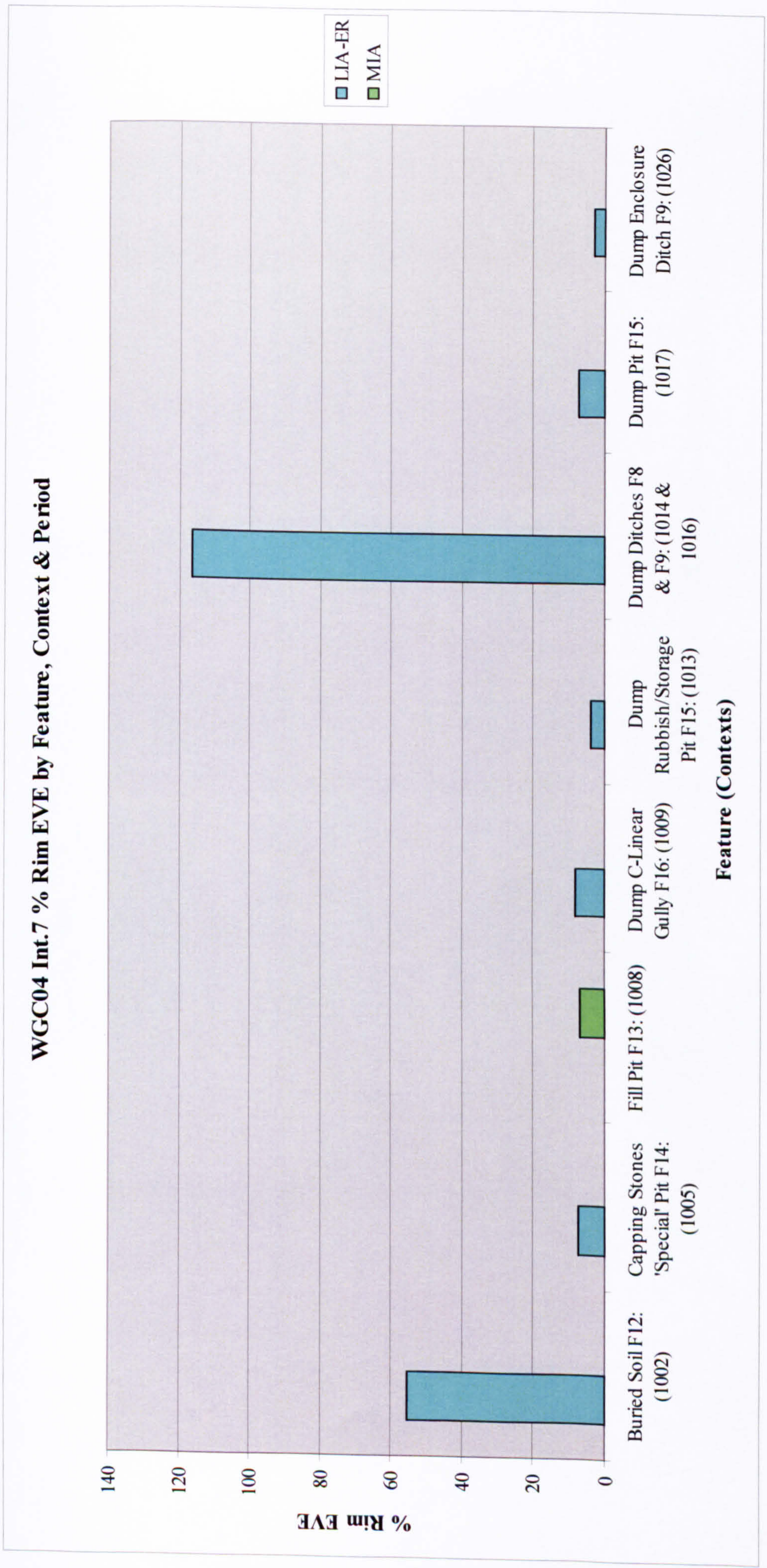


Figure 47 WGC04-7 % Rim EVE by Feature (Contexts) and Period. Original in colour.

Context	Interpretation	Date	E/L	HND	MIA	LIA-ER	ER	LR	TR	Totals
1009	Dump of Domestic Rubbish Curvilinear Gully F16	100BC-AD200	E	63 204.6		2 4				65 208.6
1006 & 1013	Dump of Domestic Rubbish Rubbish/Storage Pit F15	100BC-AD200	E	36 126.8		1 31			1 1.1	38 158.9
1022	Chalk Rubble Dump Rubbish/Storage Pit F15	100BC-AD200	E	1 1.6						1 1.6
1017	Dump of Domestic Rubbish Pit F15	100BC-AD200	E	19 70.2		3 32.6				22 102.8
1005	Capping Stones Special Pit F14	100BC-AD200	E	61 194.4		1 30.8	1 0.6			63 225.8
1012	Dump of Domestic Rubbish Pit F14	100BC-AD200	E	18 67.5						18 67.5
1018	Special' Deposit in base of Pit F14	100BC-AD200	E	3 31.7						3 31.7
1002	Buried Soil F12	100BC-AD200	E	136 969.8		8 100.2	1 6.8	1 4.6		146 1081.4
1026 1027 1028	Chalk Rubble Dump in Recut Enclosure Ditch F9	100BC-AD200	E	19 255.4		1 8.8				20 264.2
1003 & 1011	Fill Redefinition Ditch F10	100BC-AD200	E	53 164.5		1 7				54 171.5
1021	Fill Enclosure Ditch F9	100BC-AD200	E	10 53.1						10 53.1
1014=1016=1023	Dump of Domestic Rubbish Ditches F8 and F9	100BC-AD200	E	47 339.8		46 999.2				93 1339
1029	Dump of Domestic Rubbish Ditch F9	100BC-AD200	E	11 148.2		1 45.2				12 193.4
1030	Chalk Rubble Dump in Recut Ditch F9	100BC-AD200	E	6 40						6 40
1010=1031=1033	Primary Weathering Enclosure Ditch F9	100BC-AD200	E	10 64.1		1 3.1				11 67.2
1008	Fill Pit F13	300-100BC	E	13 24.5	1 7					14 31.5
1015=1024	Backfilled upcast Linear Ditch F8	300-100BC	E	15 218						15 218
	Total Number by Period			521	1	65	2	1	1	591
	Total Weight by Period			2974	7	1262	7.4	4.6	1.1	4256.2

Figure 48 WGC04-7 Ceramics data by interpreted feature

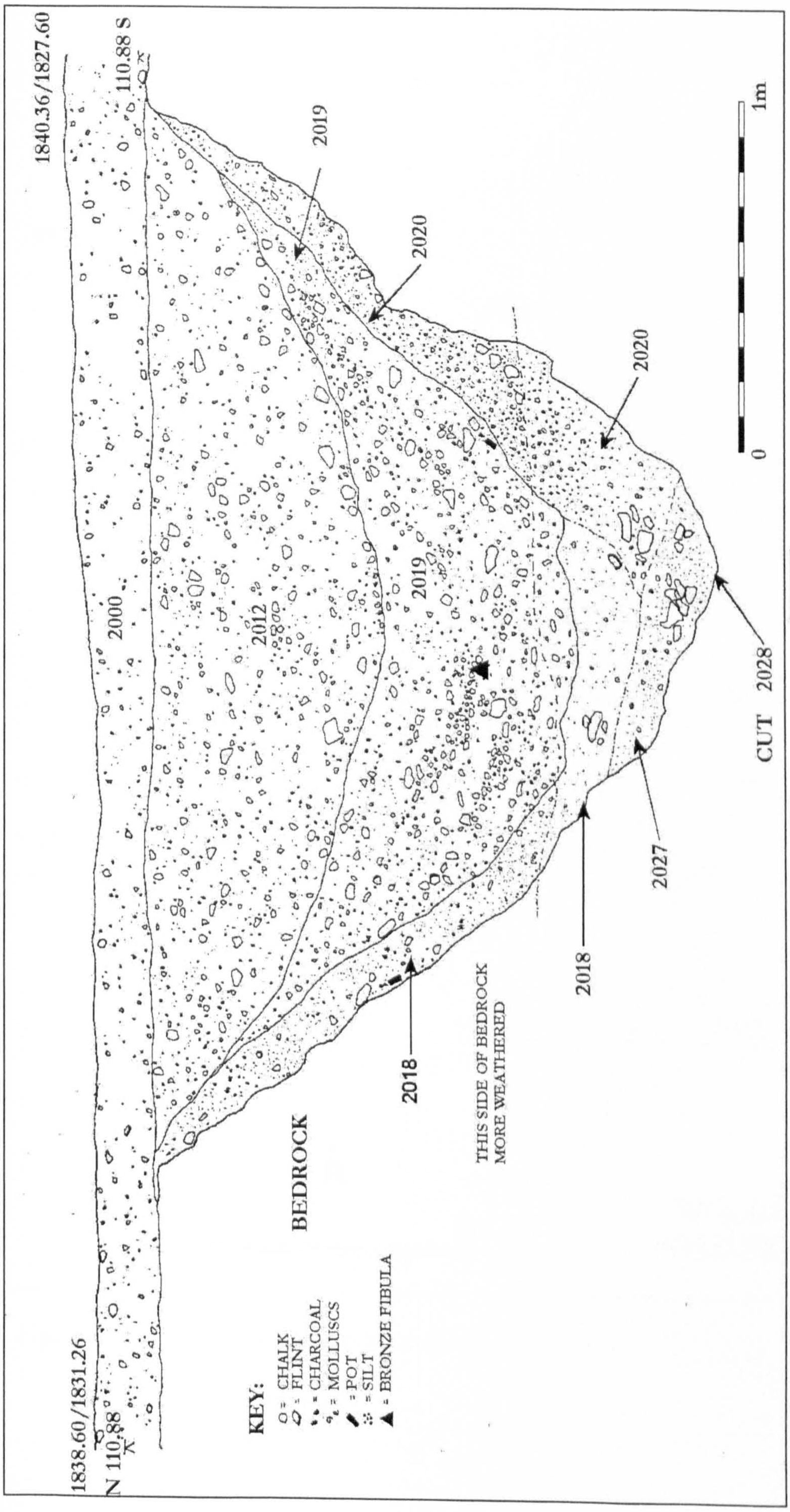


Figure 49 WGC04-8 West facing section of ditch F17

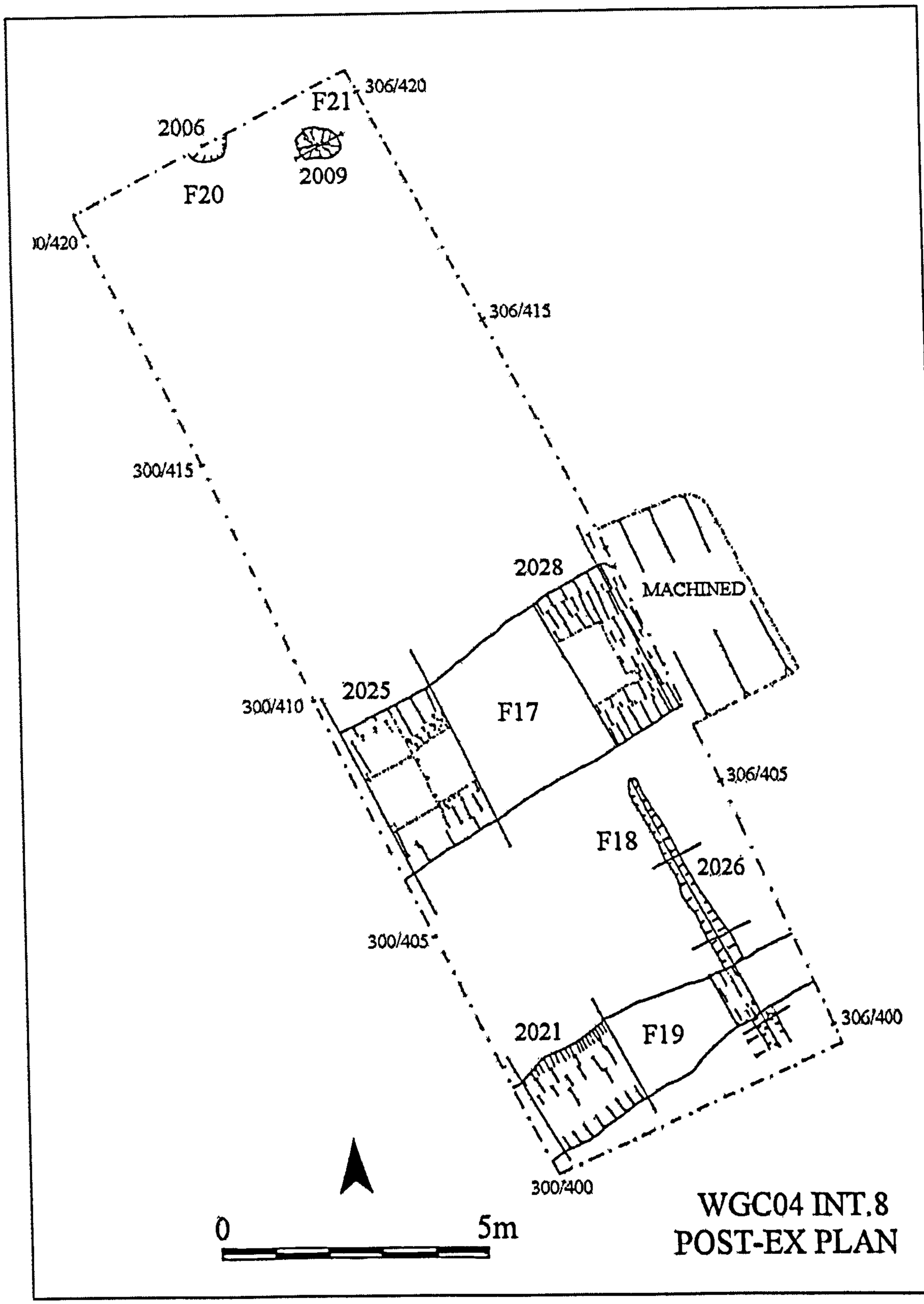


Figure 50 WGC04-8 Post-excavation plan

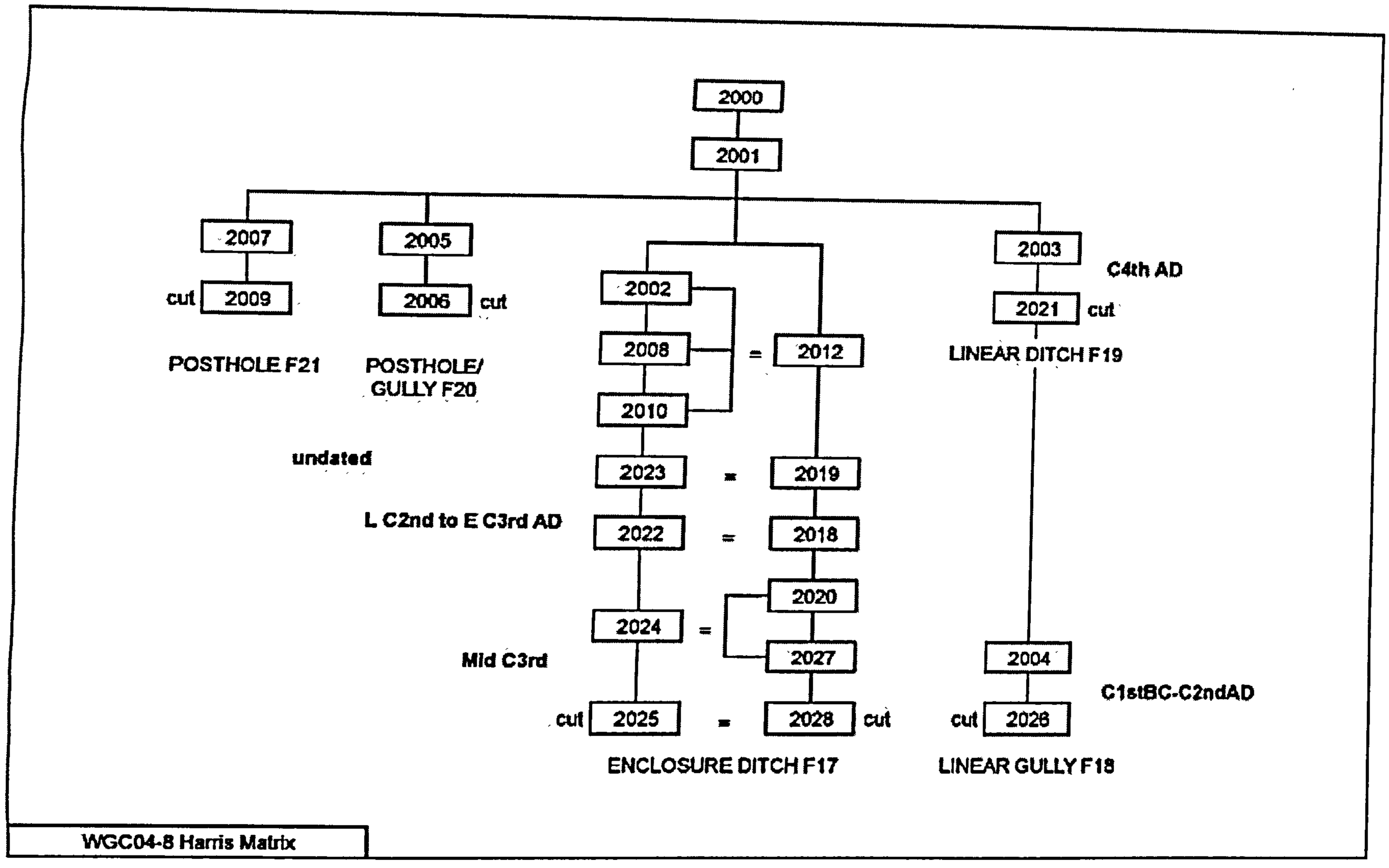


Figure 51 WGC04-8 Harris matrix

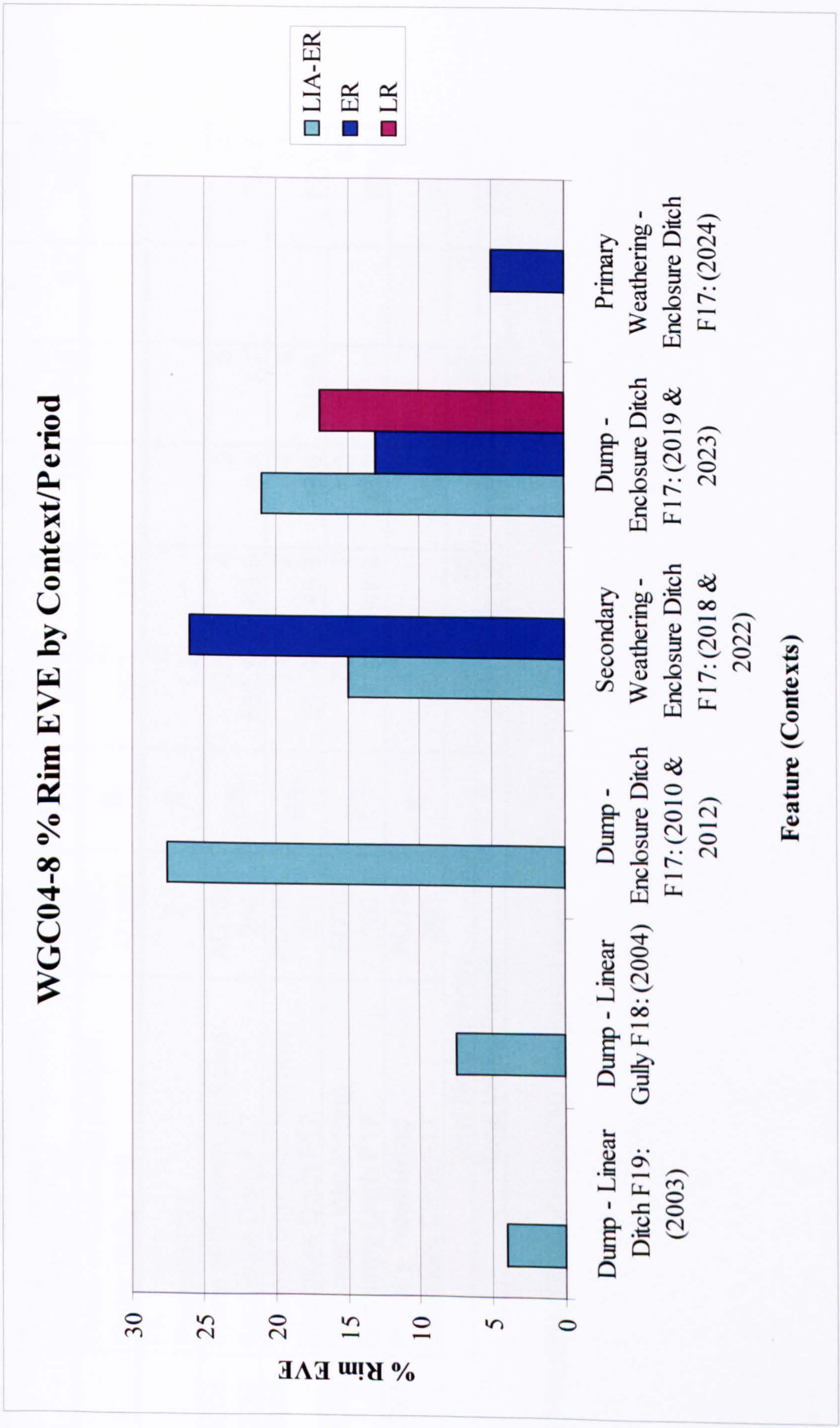


Figure 52 WGC04-8 % Rim EVE by Feature (Contexts) and Period. Original in colour.

Context	Interpretation	Date	E/L	HND	LIA-ER	ER	LR	TR	Totals
2003	Dump of Domestic Rubbish	AD285-350	E/L	16	1	1	15	1	34
	Linear Ditch F19			85.7	8	1.2	54.5	0.7	150.1
2004	Dump of Domestic Rubbish	100BC-AD200	E	3	1				4
	Linear Gully F18			98.3	14.8				113.1
2007	Fill	?	E	2					2
	Posthole F21			1.5					1.5
2002, 2008, 2010, 2012	Dump of Domestic Rubbish	AD180-250	E/L	102	4	2	3		111
	Enclosure Ditch F17			659.1	85.6	4.4	7.7		756.8
2019, 2023	Dump of Domestic Rubbish	AD180-250	E/L	71	2	4	4		81
	Enclosure Ditch F17			611.9	45.3	49.6	116.9		823.7
2018, 2022	Secondary Weathering	AD70-200	E/L	78	2	3			83
	Enclosure Ditch F17			476	17.9	45.7			539.6
2020, 2024, 2027	Primary Weathering	AD70-200	E	27		1			28
	Enclosure Ditch F17			104		9.9			113.9
	Total No by Period			299	10	11	22	1	343
	Total Wt by Period			2037	171.6	110.8	179.1	0.7	2498.7

Figure 53 WGC04-8 Ceramics data by interpreted feature

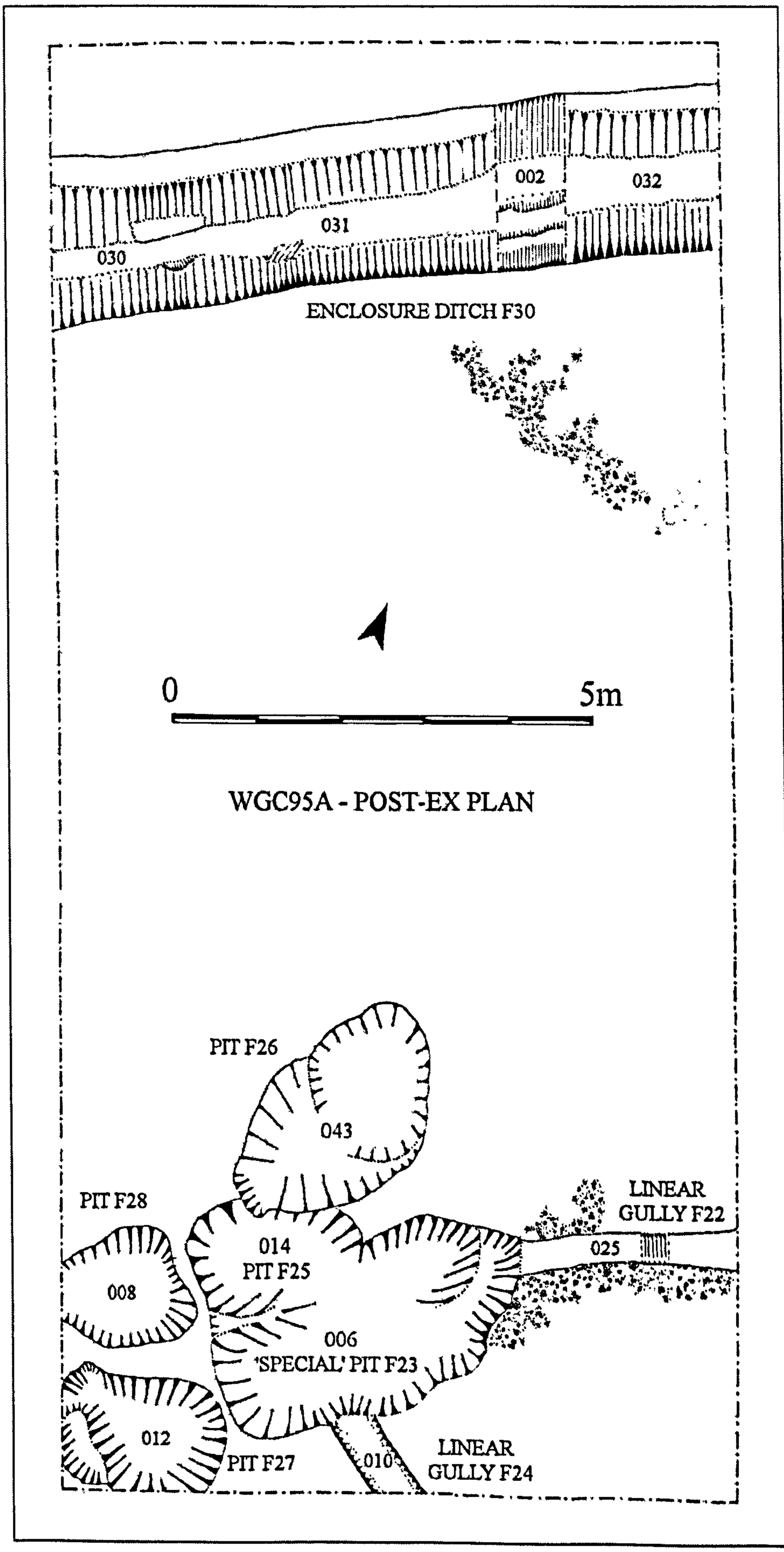


Figure 54 WGC95A Post-excavation plan

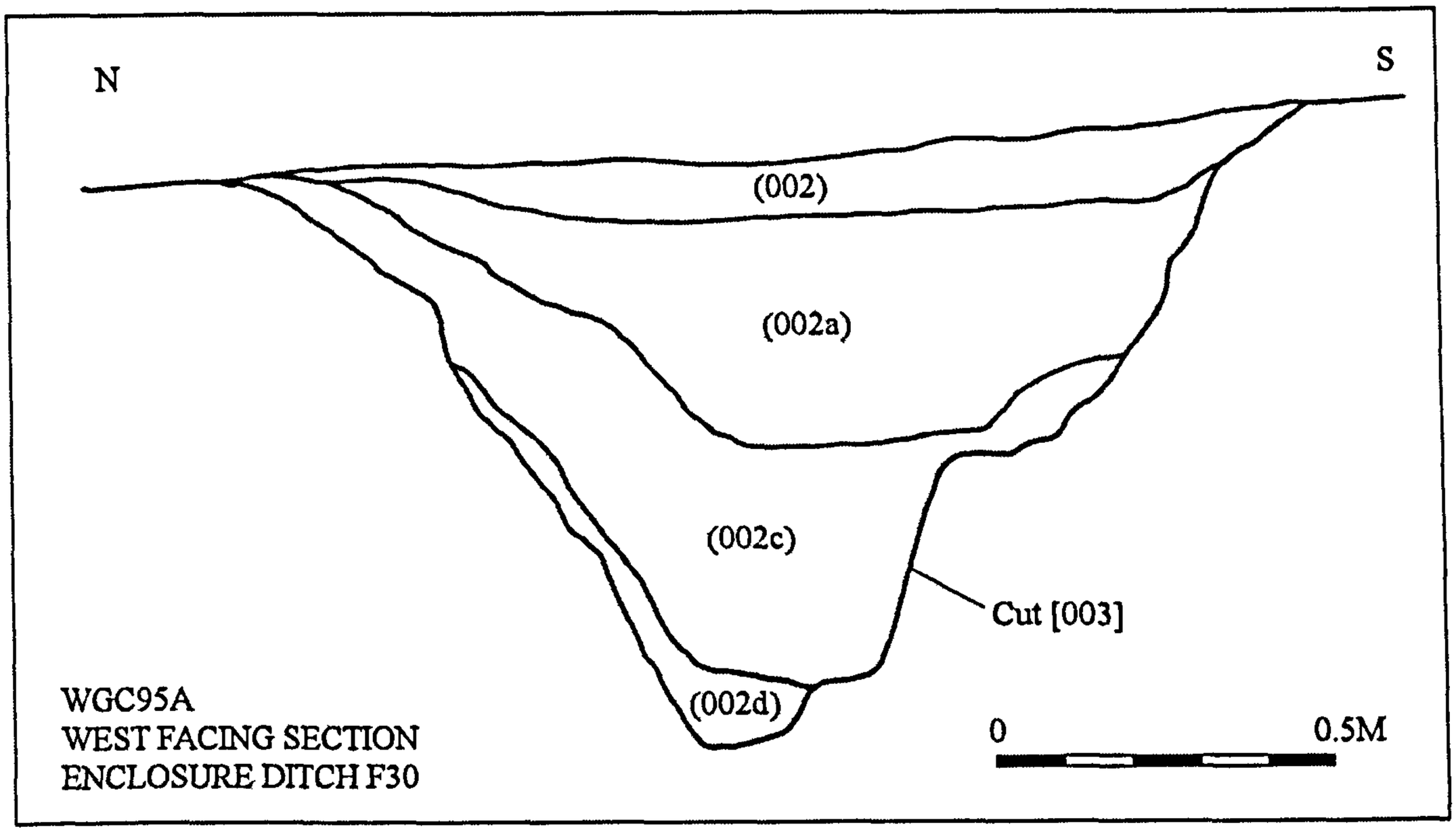


Figure 55 WGC95A West facing section of Enclosure Ditch 30

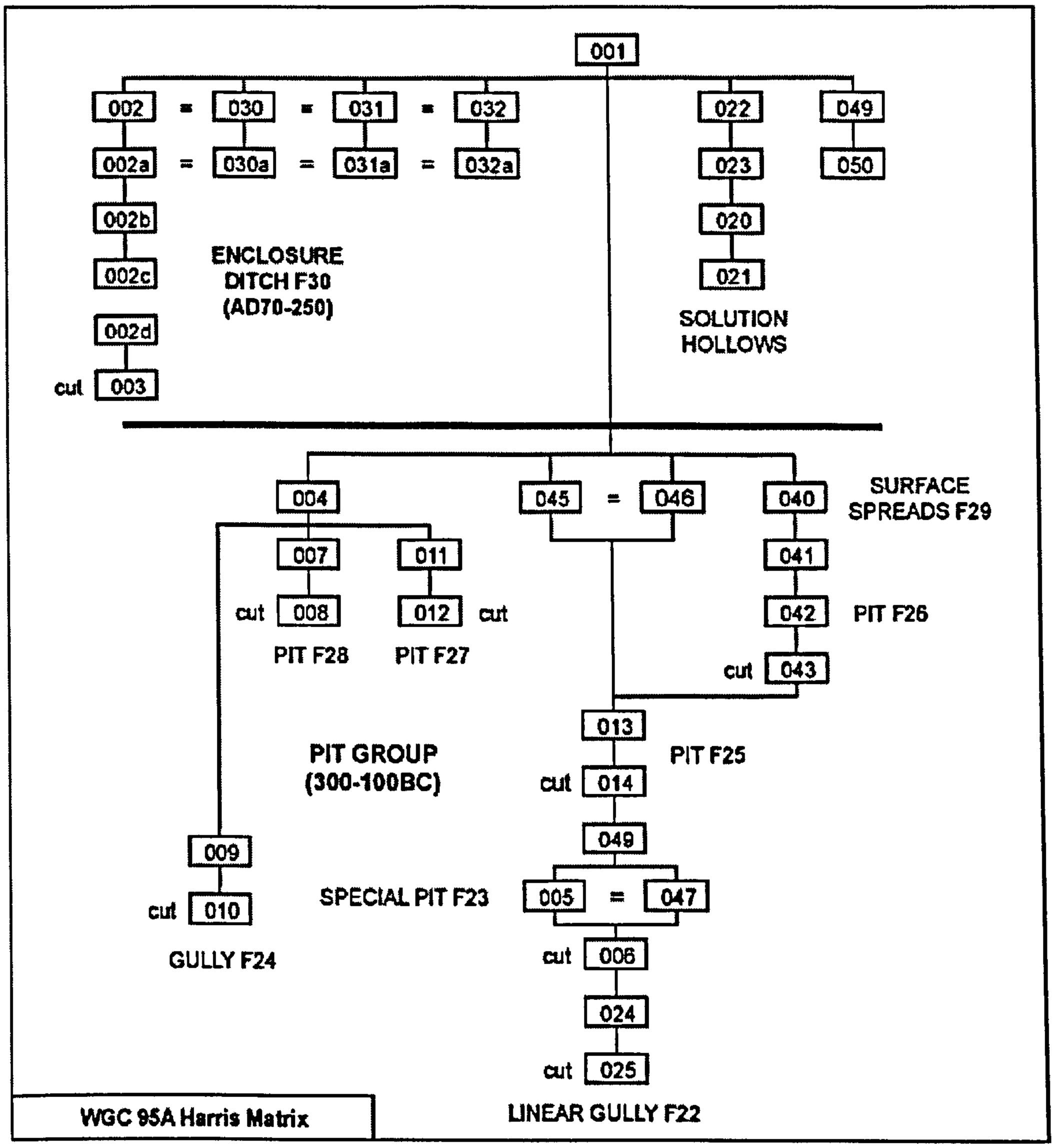


Fig.56 WGC95A Harris matrix

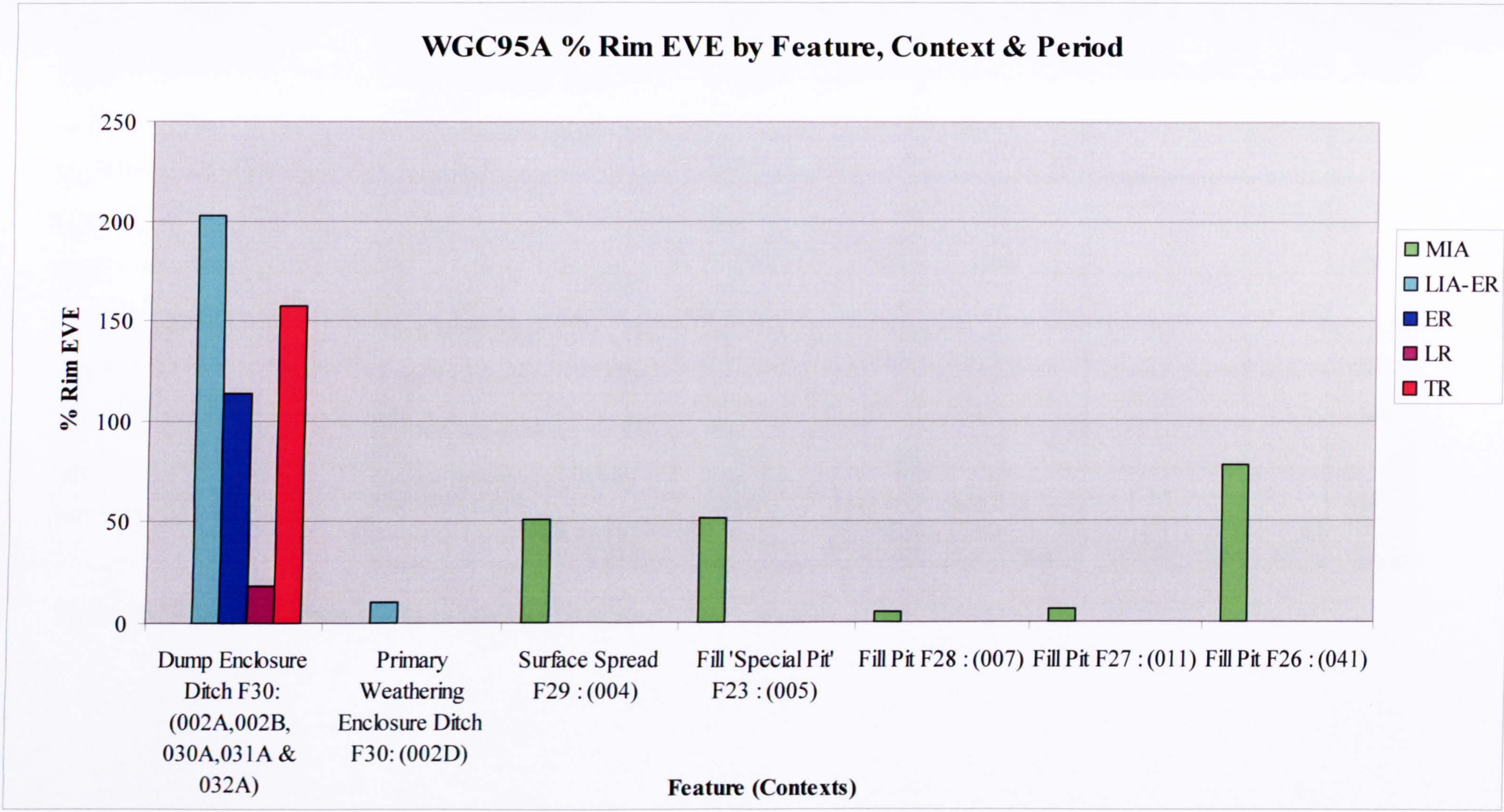


Figure 57 WGC95A % Rim EVE by Feature (Contexts) and Period. Original in colour.

Contexts	Interpretation	Date	E/L	HND	MIA	LIA-ER	ER	LR	TR	Totals
002, 002A, 002B, 030A, 031, 031A, 032, 032A, 032B	Dump of Domestic Rubbish Enclosure Ditch F30	100BC-AD250	E/L	886 7634.7		29 916.6	41 332.8	8 123.6	57 690.4	1021 9698.4
002C	Backfilled Upcast Enclosure Ditch F30	100BC-AD200	E	2 11						2 11
002D	Primary Weathering Enclosure Ditch F30	100BC-AD200	E	6 61		1 72.9				7 133.9
007	Backfilled Upcast Pit F28	300-100BC	E	17 85	2 11.7					19 96.7
011	Backfilled Upcast Pit F27	300-100BC	E	25 352.9	2 7.4					27 360.3
009	Fill Linear Gully F24	300-100BC?	E	7 64						7 64
004, 040, 045	Surface Spreads F29	300-100BC	E	178 2090.9	8 170.9					186 2261.8
041	Backfilled Upcast Pit F26	300-100BC	E	49 484.3	9 105.6					58 589.9
042	Primary Weathering Pit F26	300-100BC	E	3 38						3 38
005	Dump of Domestic Rubbish 'Special' Pit F23	300-100BC	E	71 1103.8	9 158.5					80 1262.3
	Total No by Period			1244	30	30	41	8	57	1410
	Total Wt by Period			11926	454.1	989.49	332.8	123.6	690.4	14516

Figure 58 WGC95A Ceramics data by interpreted feature

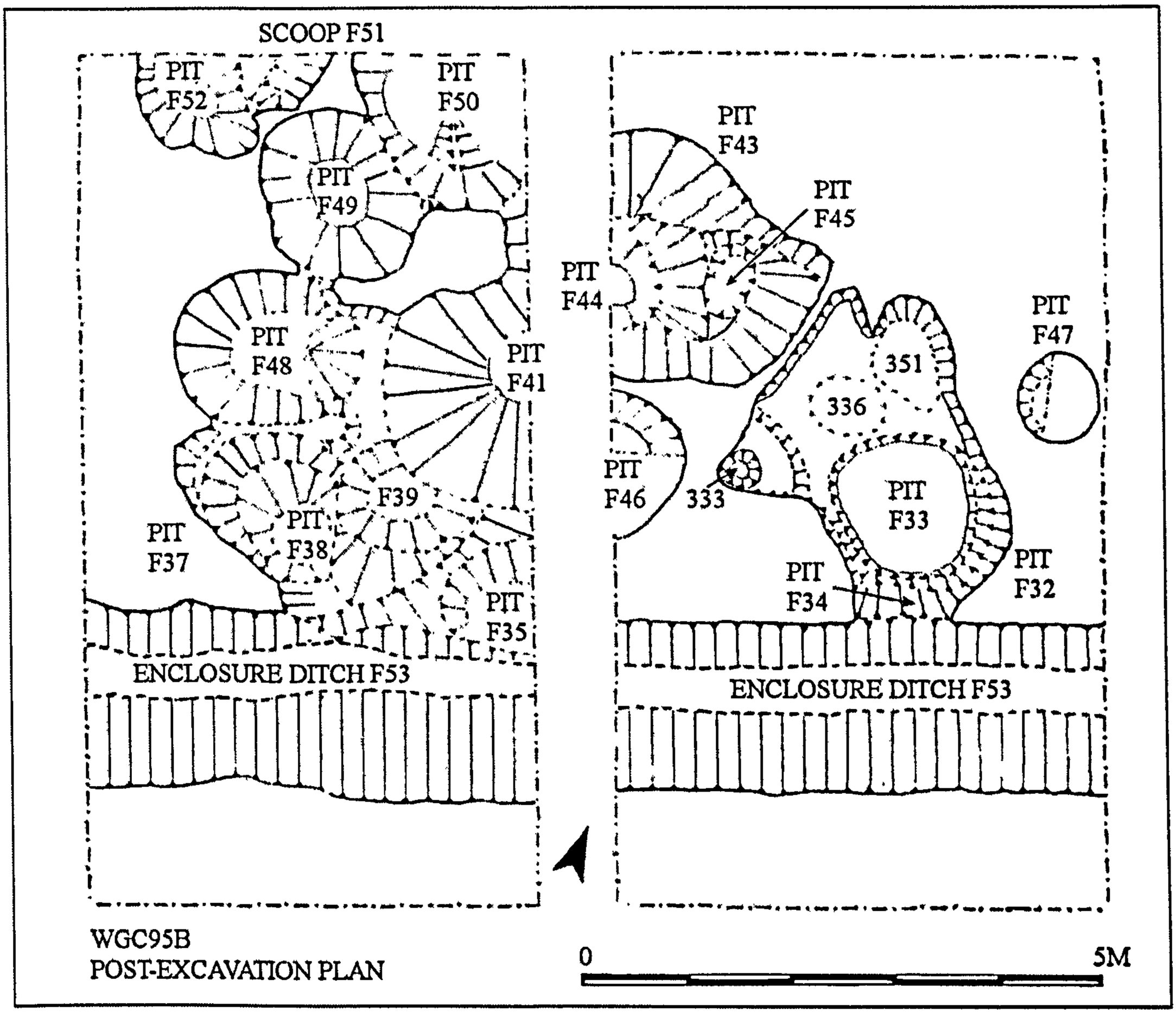


Figure 59 WGC95B Post-excavation plan

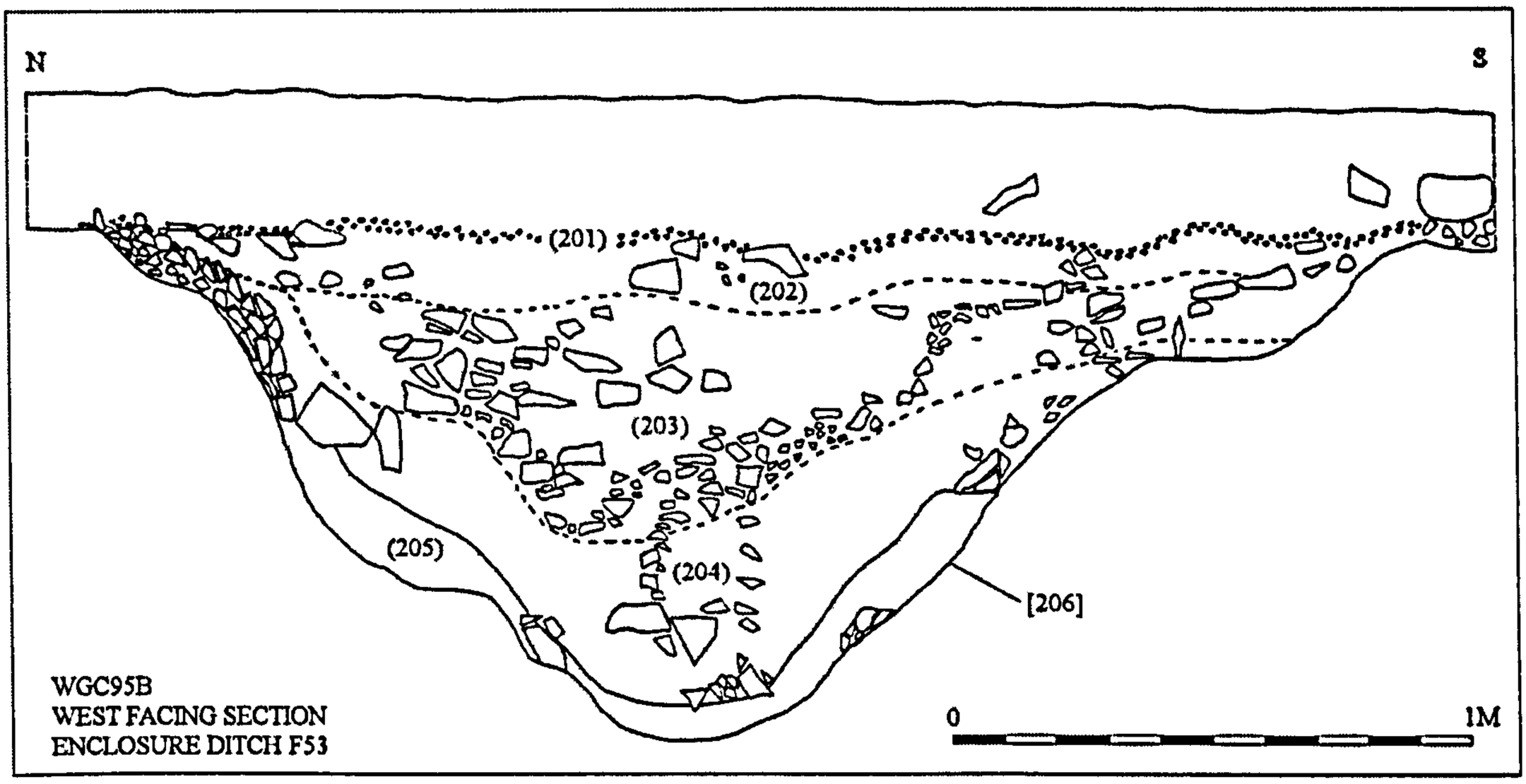


Figure 60 WGC95B West facing section of Enclosure Ditch F53

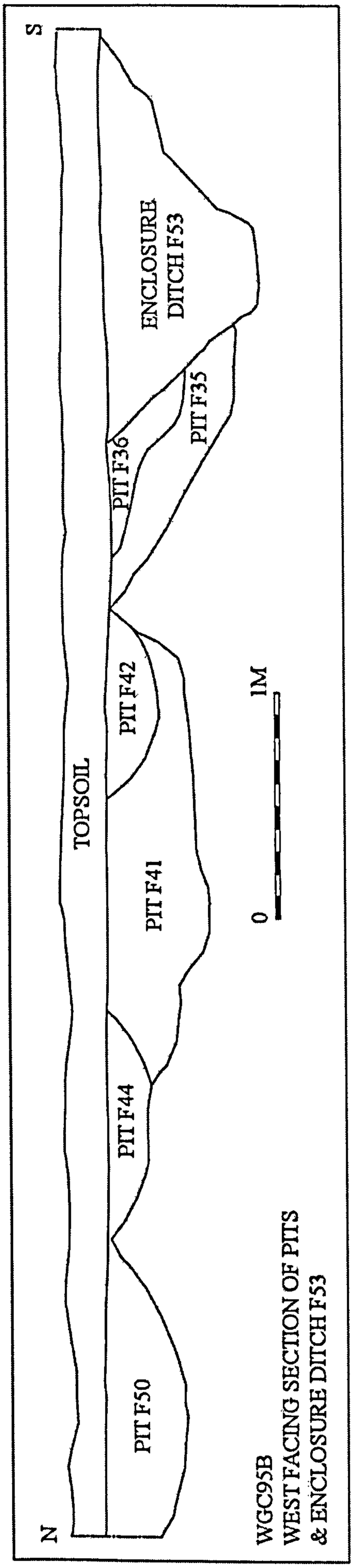


Figure 61 WGC95B West facing section of MIA pits and LIA-ER Enclosure Ditch F53

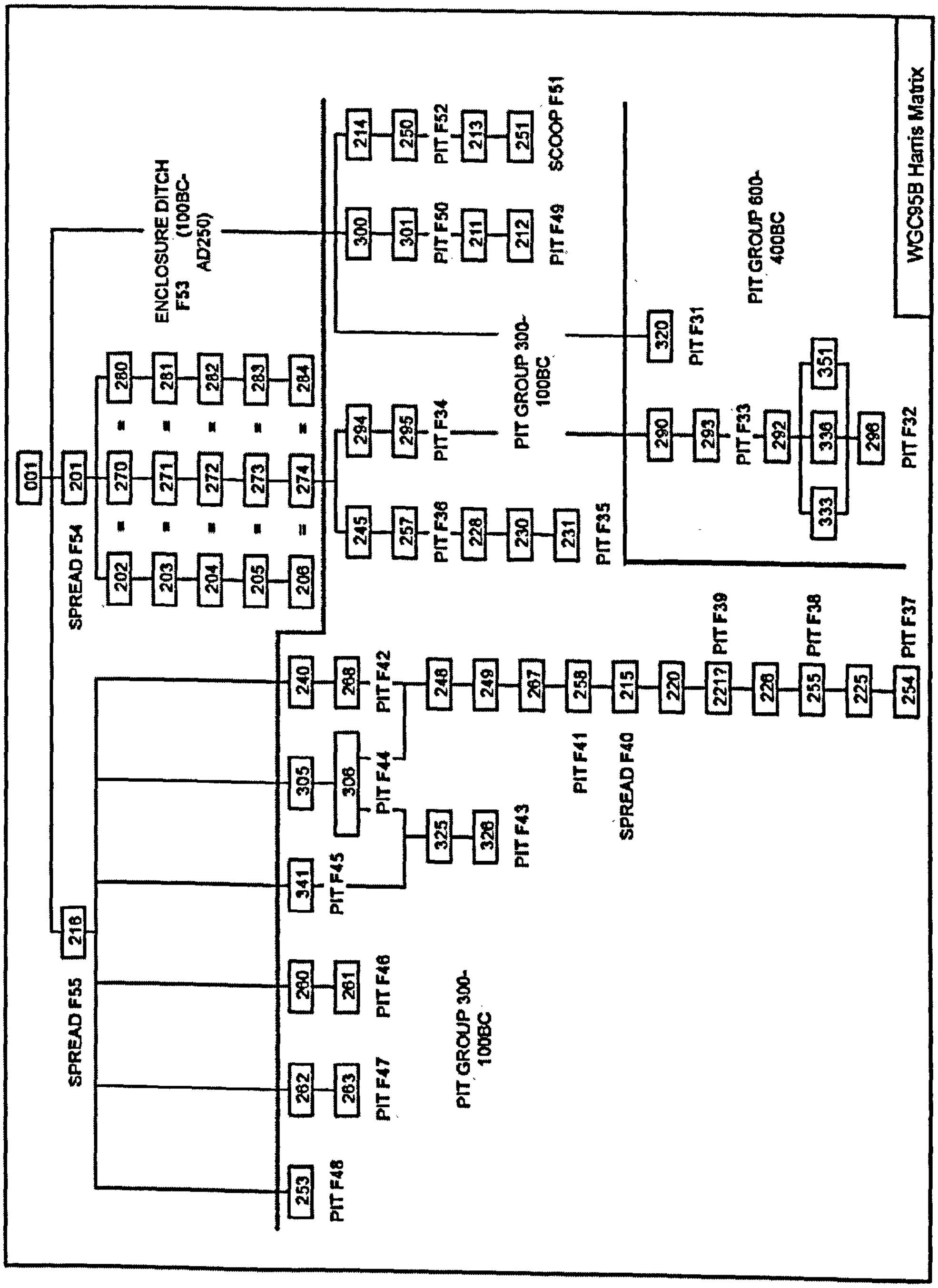


Figure 62 WGC95B Harris matrix

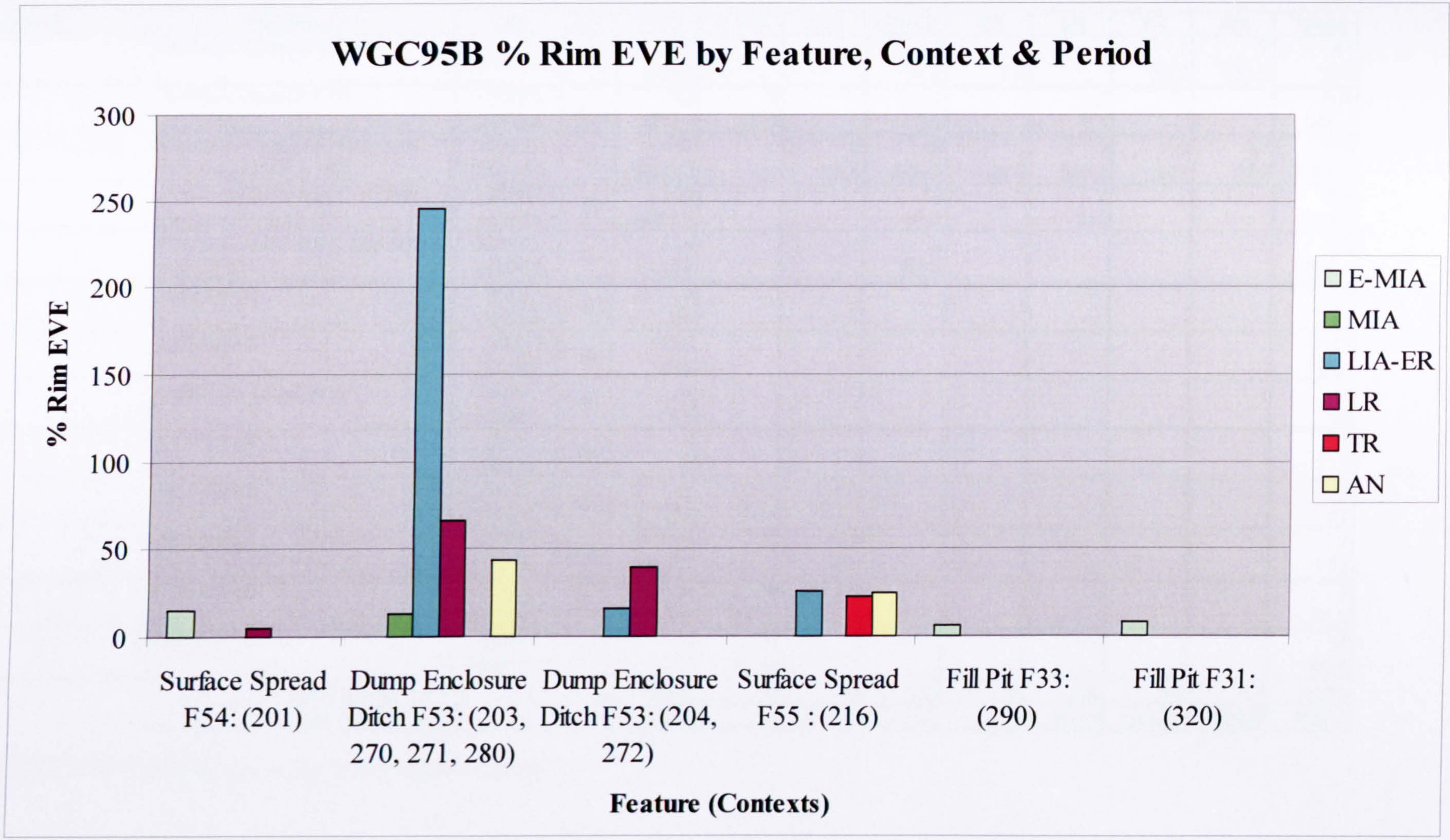


Figure 63 WGC95B % Rim EVE by Feature (Contexts) and Period. Original in colour.

Contexts	Interpretation	Date	E/L	HND	E-MIA	MIA	LIA-ER	ER	LR	TR	AN	Totals
216	Surface Spread F55	AD410+	E	30 384.6			2 17.2	1 1.4		1 33.2	7 102.6	41 539
201	Surface Spread F54	100BC-AD250	E/L	93 812.6	3 36.7		2 8.8		2 7.1			100 865.2
202, 203, 270, 271, 280	Dump of Domestic Rubbish Enclosure Ditch F53	100BC-AD250	E/L	462 6033.7		2 45.6	43 635.2	7 24.9	9 305.7	10 261	37 290	570 7596.1
204, 272	Dump of Domestic Rubbish Enclosure Ditch F53	100BC-AD250	E	152 1487.5			10 60.2		7 189			169 1736.7
205, 273	Primary Weathering Enclosure Ditch F53	100BC-AD200	E	19 148			3 80.4					22 228.4
211	Fill Pit F49	300-100BC	E	2 19								2 19
248, 267	Fill Pit F41	300-100BC	E	117 642								117 642
215	Surface Spread F40	300-100BC	E	4 14								4 14
220	Fill Pit F39	300-100BC	E	1 7								1 7
226	Fill Pit F38	300-100BC	E	3 17								3 17
225	Fill Pit F37	300-100BC	E/L	2 17								2 17
290	Fill Pit F33	600-400BC	E	3 21	1 12.3							4 33.3
320	Fill Pit F31	600-400BC	E	3 74	1 12.3							4 86.3
	Total No by Period			991		7	60	8	18	11	44	1139
	Total Wt by Period			9677.4		106.9	801.8	26.3	501.8	294.2	392.6	11801

Figure 64 WGC95B Ceramics data by interpreted feature

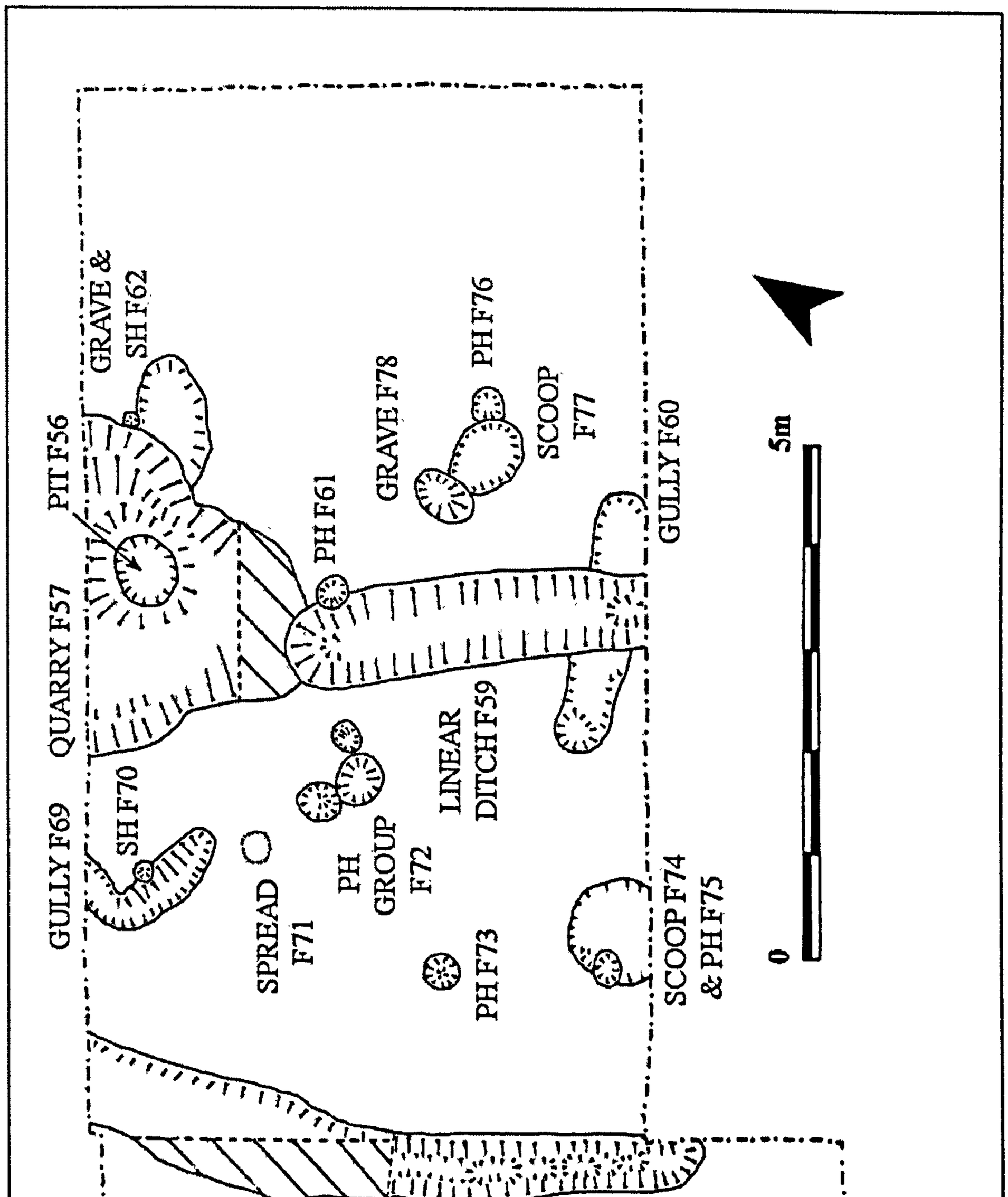


Figure 65 WGC98B Post-excavation plan

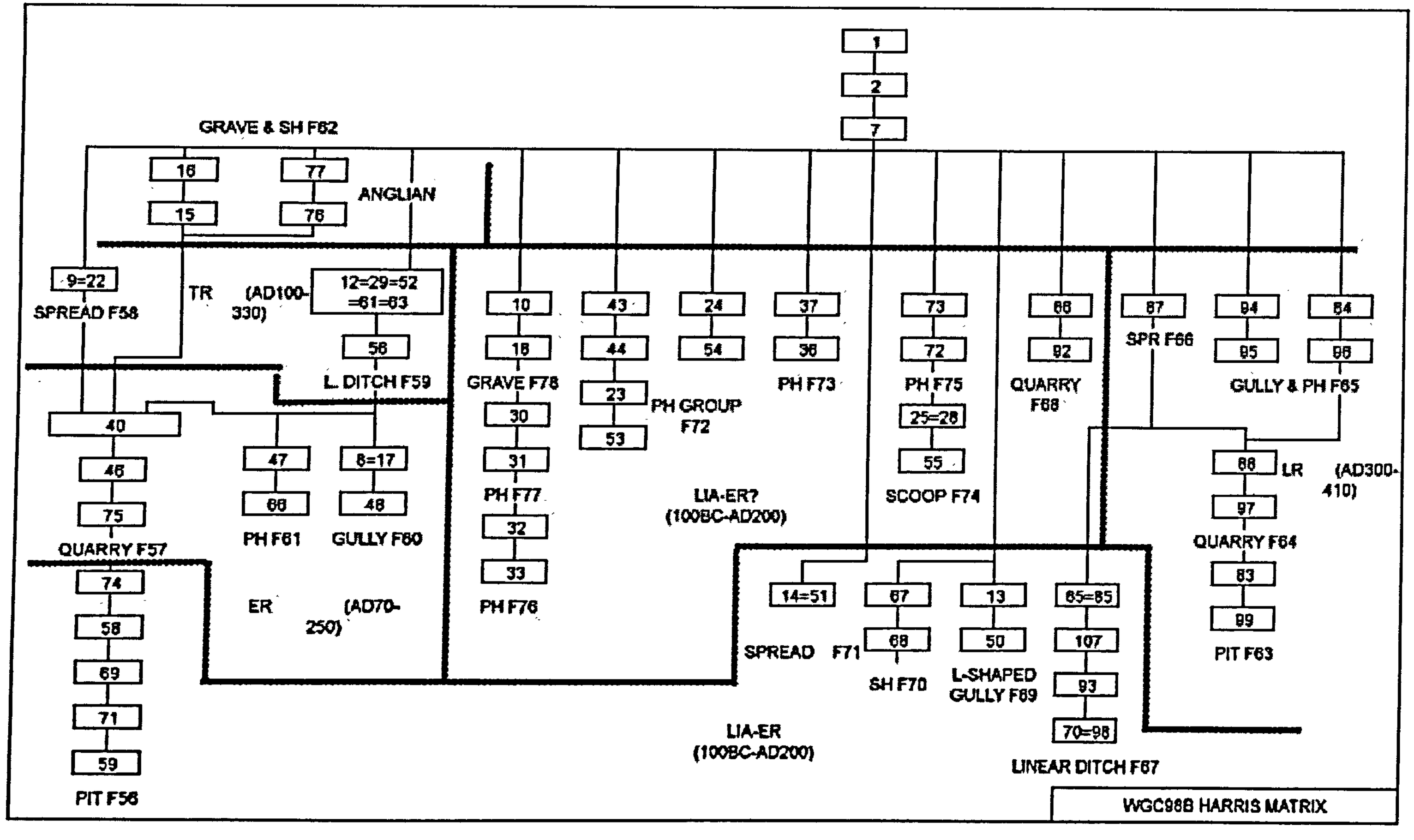


Figure 66 WGC98B Harris matrix

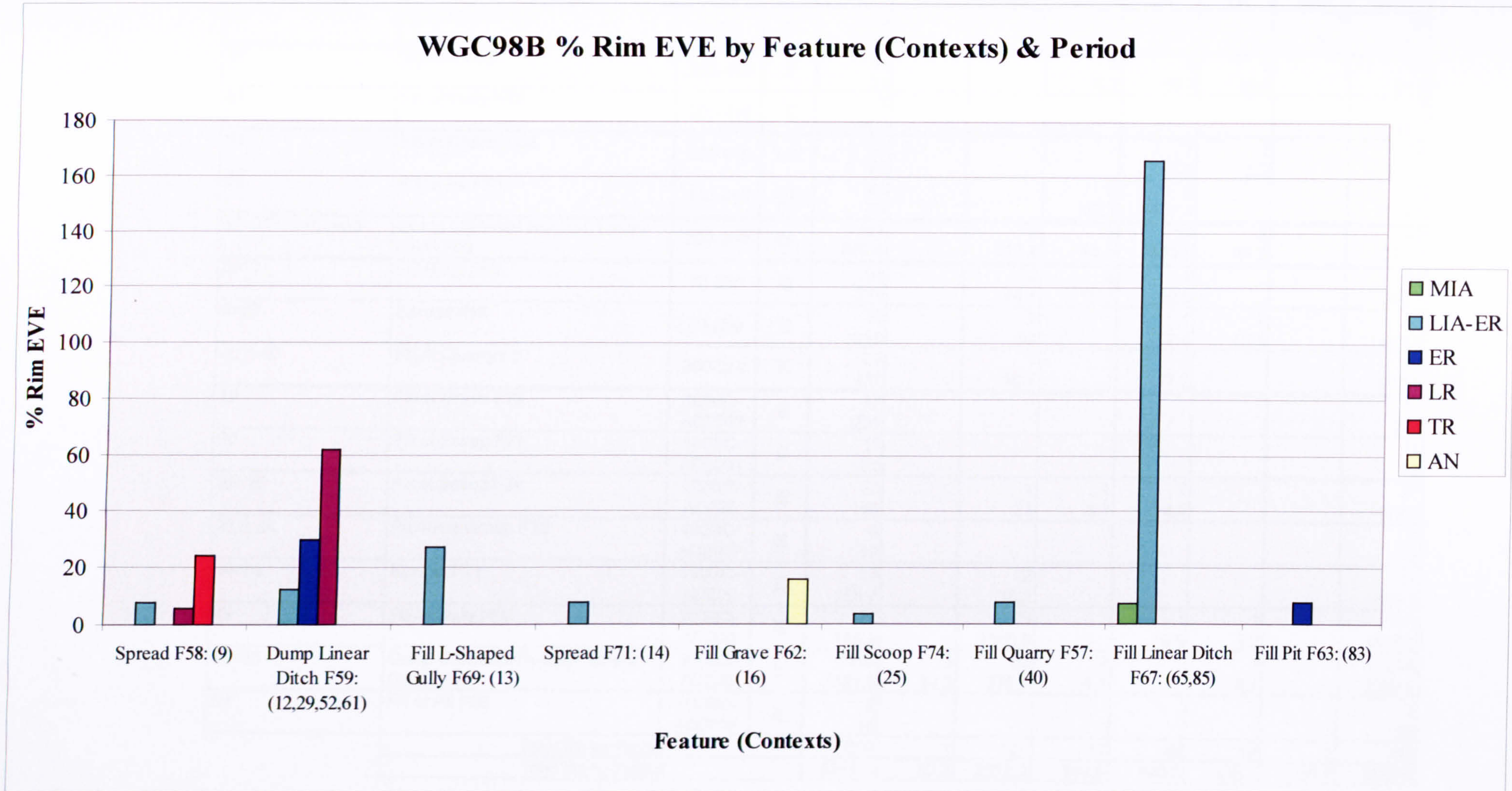


Figure 67 WGC98B % Rim EVE by Feature (Contexts) and Period

Contexts	Interpretation	Date	E/L	HND	MIA	LIA-ER	ER	LR	TR	AN	Totals
16	Fill of Grave F62	410+	E	13 132						3 39.1	16 171.1
87	Spread F66	300-410	E	11 61			1 1.2	3 10.7	3 18.4		18 91.3
84	Fill of Gully F65	300-410	E	7 44.7							7 44.7
88	Fill of Quarry F64	300-410	L/E	18 75				7 48.3	1 2.2		26 125.5
83	Fill of Pit F63	300-410	L/E	23 60			3 32.1	6 107.3			32 199.4
12=29=52=61=63	Dump Domestic Rubbish Linear Ditch F59	200-300	E/L	101 667.4		3 127.8	8 84.6	27 373.3	3 38.2		142 1291.3
8=17	Fill Gully F60	70-250	E	54 274		2 14.4	2 16.8	1 60.5			59 365.7
9=22	Spread F58	70-250	E	39 319		3 89		1 7.4	3 43.4		46 458.8
40 & 46	Fill of Quarry F57	200-250	E	25 211		1 10.7		1 17.2			27 238.9
10	Fill of Grave F78	100BC-AD200?	E	17 206							17 206
30	Fill of Scoop F77	100BC-AD200?	E	11 72							11 72
25=28	Fill of Scoop F74	100BC-AD200	E	23 146		1 23	1 5.7	2 4.9			27 179.6
23 & 24	Posthole Group F72	100BC-AD200?	E	4 12							4 12
14=51	Spread F71	100BC-AD200	E	15 158.7		2 38.2					17 196.9
13	Fill of Gully F69	100BC-AD200	E	20 185.9		79 1340.5		1 16.9	1 2.2		101 1545.5
65=85	Dump Domestic Rubbish Linear Ditch F67	100BC-AD200	E	192 2321.8	1 52.3	33 978.7	2 4.1		1 5.7		229 3362.6
69	Fill of Pit F56	100BC-AD200?	E	2 18							2 18
	Total No by Period			600	1	124	17	49	12	3	783
	Total Wt by Period			5218.5	52.3	2622.3	144.5	646.5	110.1	39.1	8582.9

Figure 68 WGC98B Ceramics data by interpreted feature

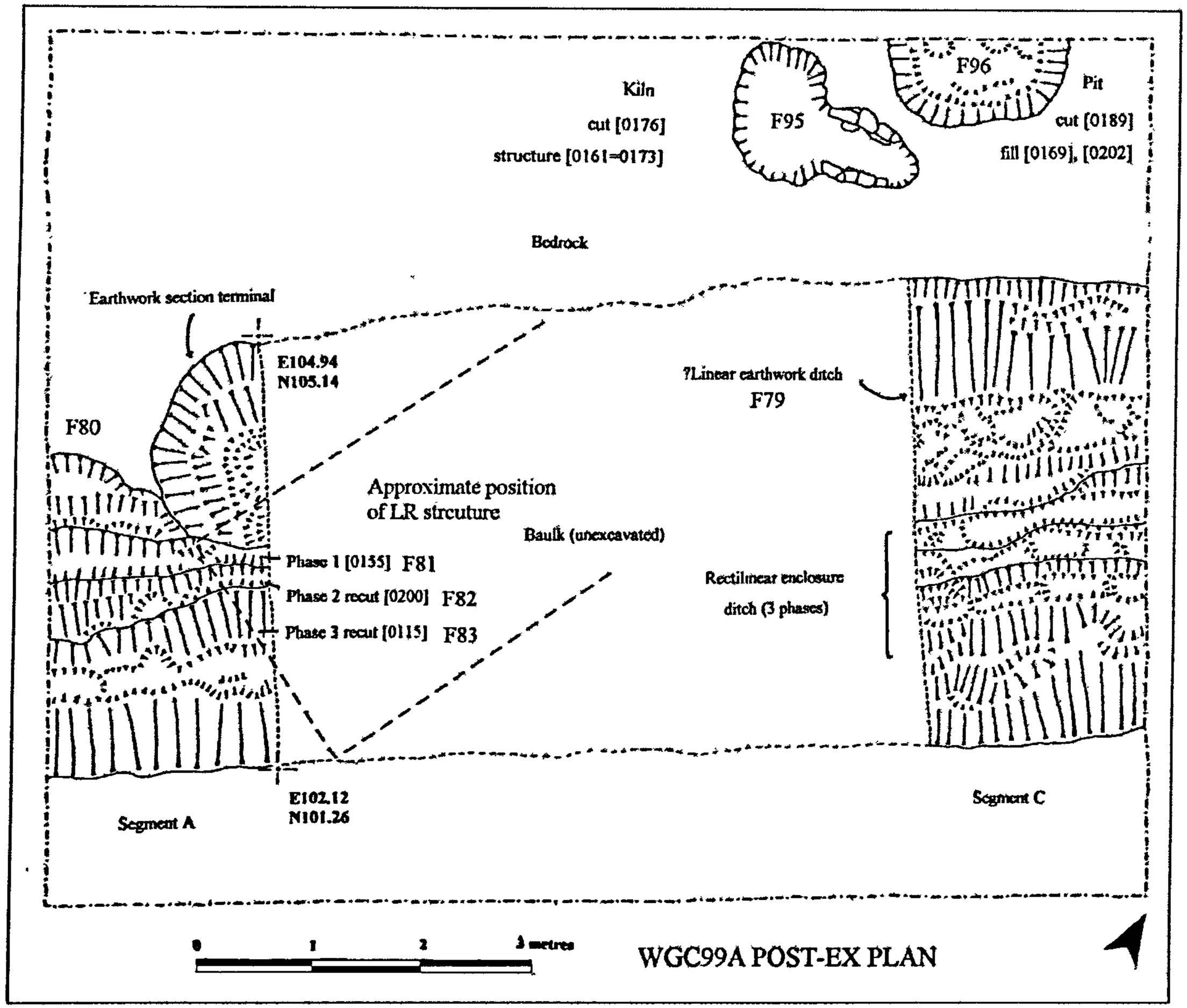


Figure 69 WGC99A Post-excavation plan

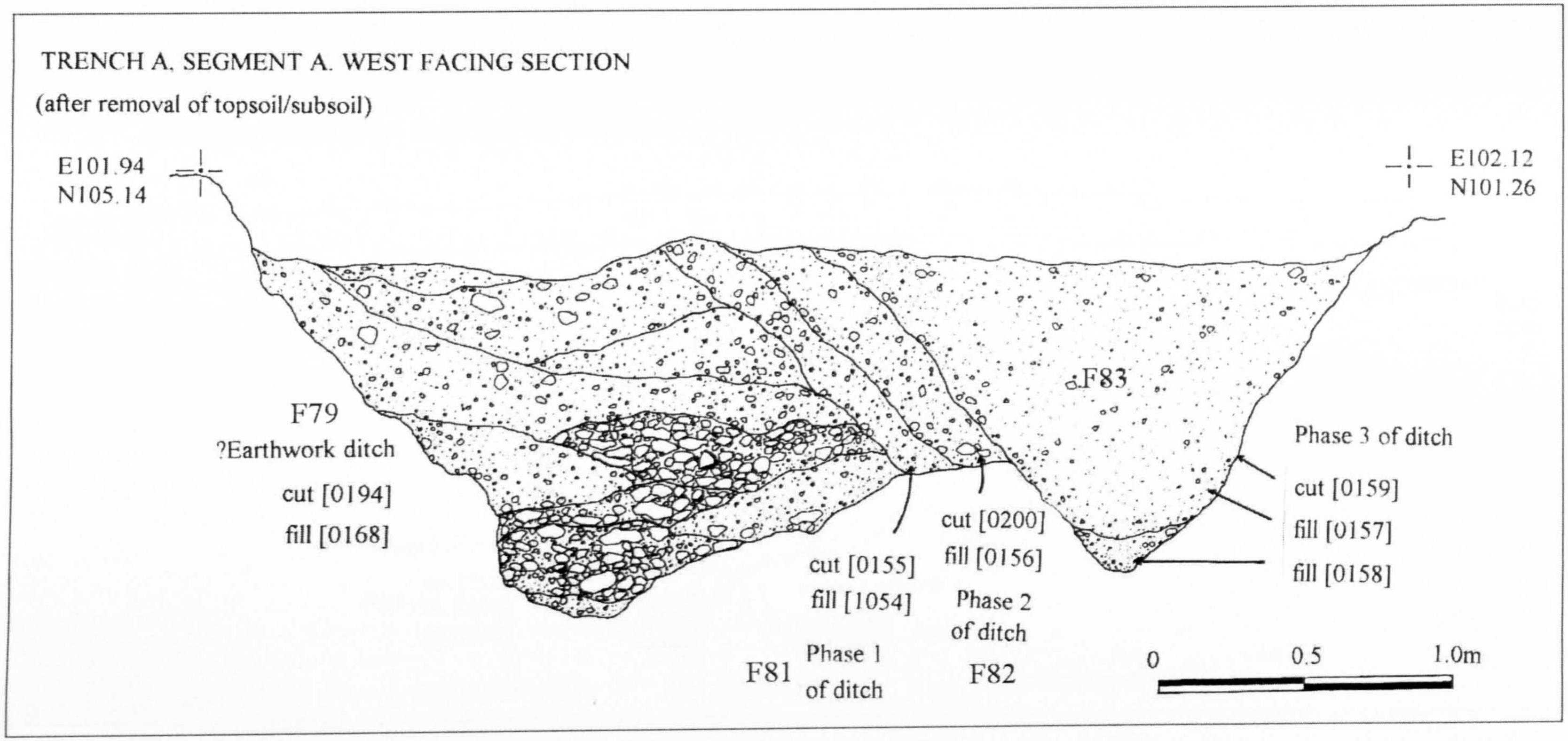


Figure 70 WGC99A West facing ditch sections

WHARRAM GRANGE CROSSROADS 1999.

TRENCH A, SEGMENT A. EAST FACING SECTION.

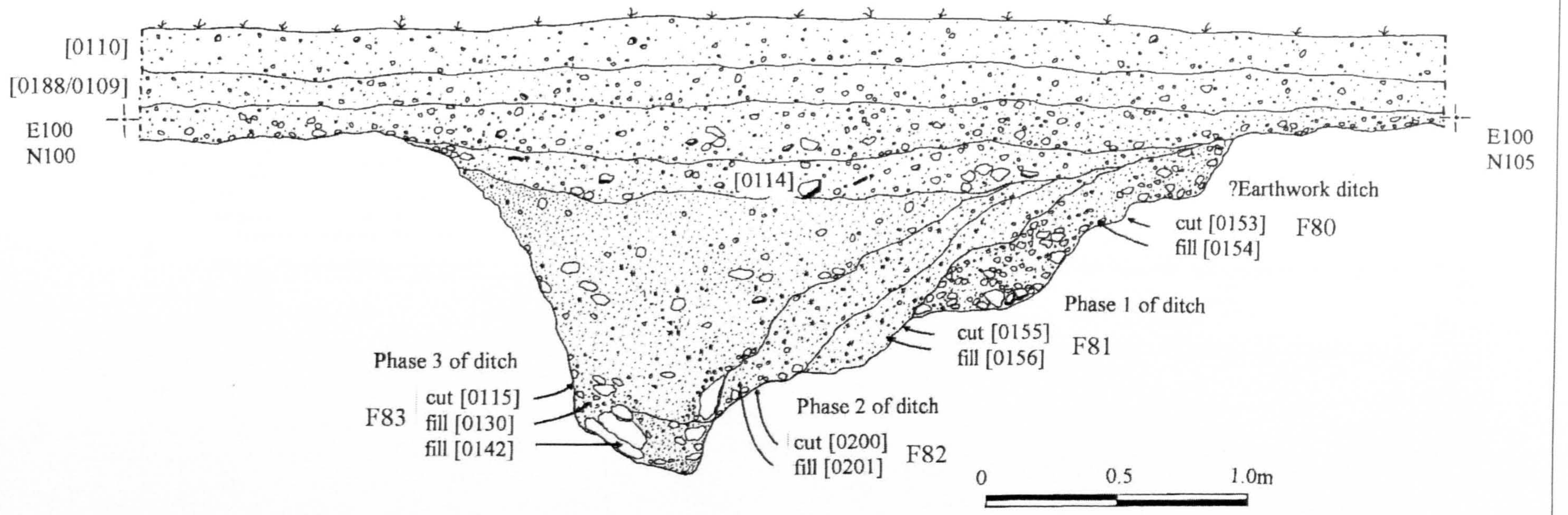


Figure 71 WGC99A East facing ditch sections

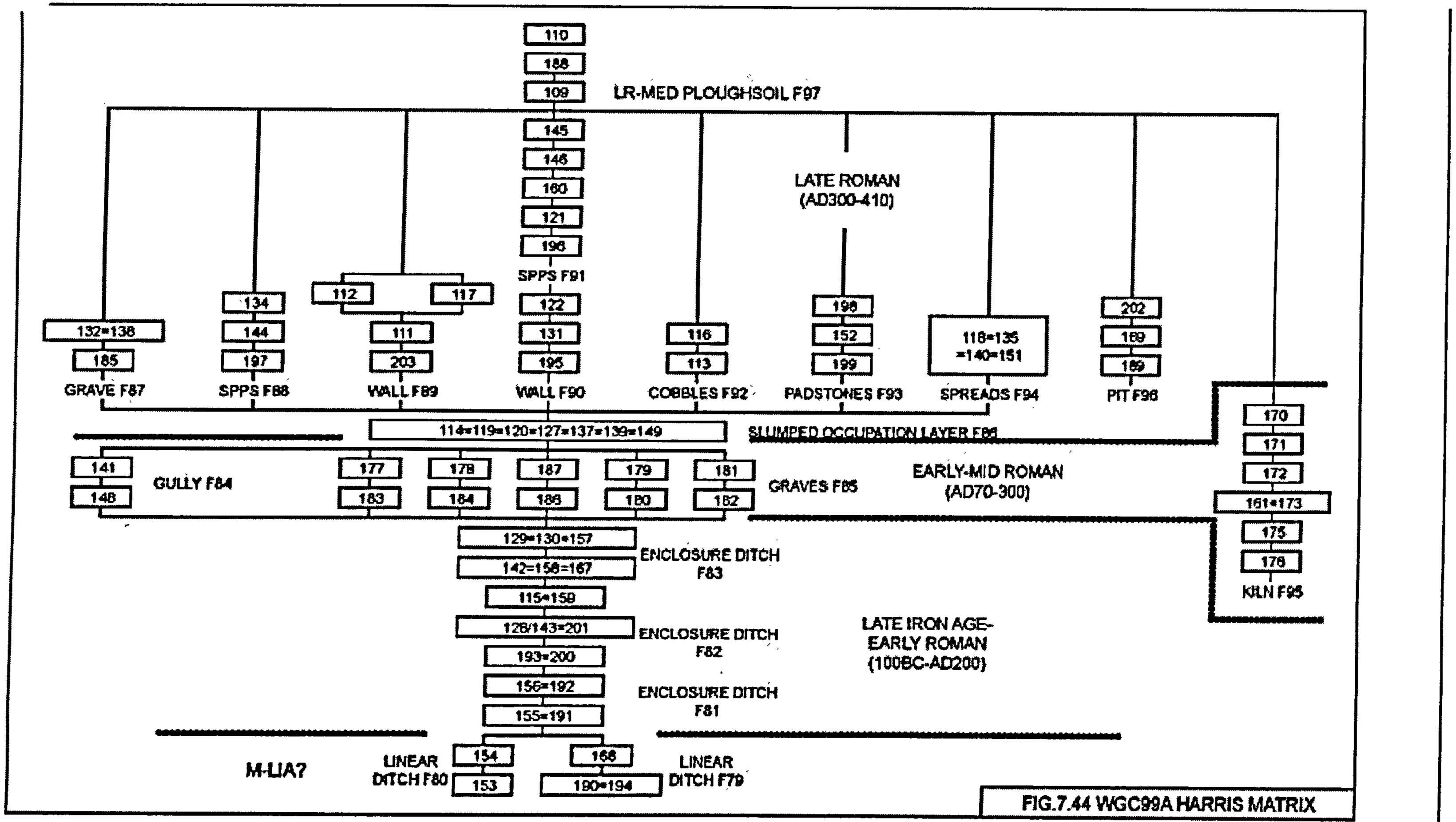


Figure 72 WGC99A Harris matrix

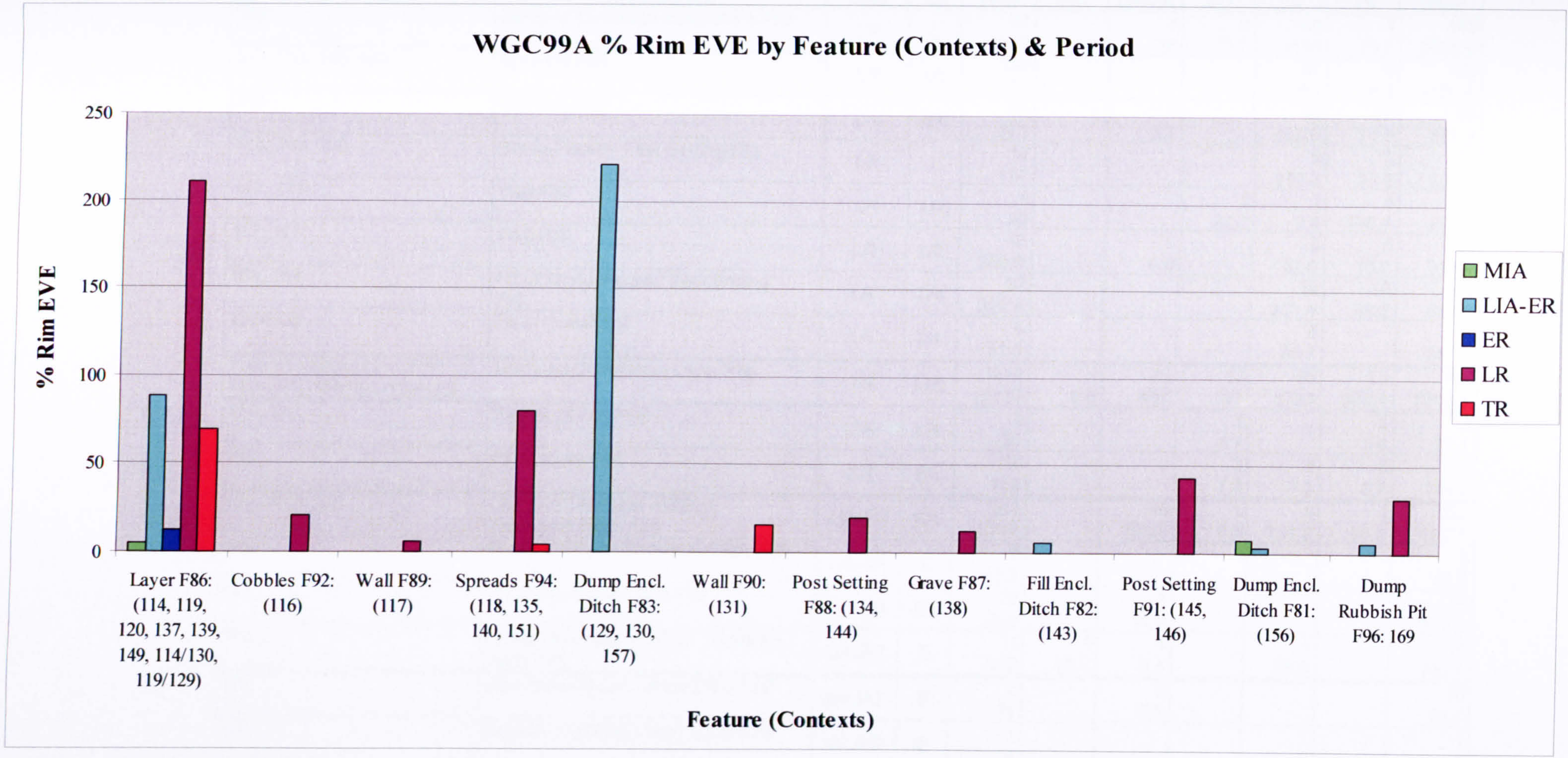


Figure 73 WGC99A % Rim EVE by Feature (Contexts) and Period. Original in colour.

Contexts	Interpretation	Date	E/L	HND	MIA	LIA-ER	ER	LR	TR	Totals
169	Dump of Domestic Rubbish Pit F96	LR	L	97 1287		1 26	3 23.7	40 1135	4 33.8	145 2505.9
118, 135, 140, 151	Spreads F94	LR	L/E	134 1286				27 1010	2 6.9	163 1406.4
116	Cobbles F92	LR	L/E	56 371		1 5.7		12 133.9	20 71.3	89 581.9
145, 146, 160	Stone-Packed Post Setting F91	LR	L	10 187				9 170.3	2 30.2	21 387.5
122, 131	Wall F90	LR	L/E	4 40			2 22.7	1 2.5	5 136.4	12 201.6
112, 117	Wall F89	LR	L/E	48 209.9		1 4.6		8 82.6	6 18.2	63 315.3
134, 144	Fill of Stone-Packed Post Setting F88	LR	L/E	37 349.9				14 253.4	10 28.8	61 632.1
132=138	Fill of Grave F87	LR	L/E	9 51.9				5 95.7		14 147.6
114=119=120=127=137=139=149, 114/130=119/129	Slumped Occupation Layer F86	TR	L/E	645 5720	1 6.6	22 457	12 103	86 1765	33 303.4	799 8355.1
170, 173	Backfill of Kiln F95	ER	L/E	3 21			1 4.7		1 3.4	5 29.1
141	Fill of Gully F84	ER	E/L	25 159			2 7.3	1 7.2	2 6.2	30 179.7
129=130=157	Dump of Domestic Rubbish Enclosure Ditch F83	LIA-ER	E/L	262 5742		48 5887	1 0.3	8 131.2	4 58.2	323 11818
142	Primary Silts of Enclosure Ditch F83	LIA-ER	E	5 43.9						5 43.9
143	Fill of Enclosure Ditch F82	LIA-ER	E/L	28 261		1 11.9				29 272.9
156	Dump Domestic Rubbish Enclosure Ditch F81	LIA-ER	E	11 110	1 15.4	1 9.4		1 28.6		14 163.4
154	Backfilled Upcast Linear Ditch F80	M-LIA?	E	8 71		2 7.7				10 78.7
168	Backfilled Upcast Linear Ditch F79	M-LIA?	E	1 6						1 6
	Total No by Period			1393	2	67	21	212	89	1784
	Total Wt by Period			18729	22	3596	161.7	4816	696.8	28022

Figure 74 WGC99A Ceramics data by interpreted feature

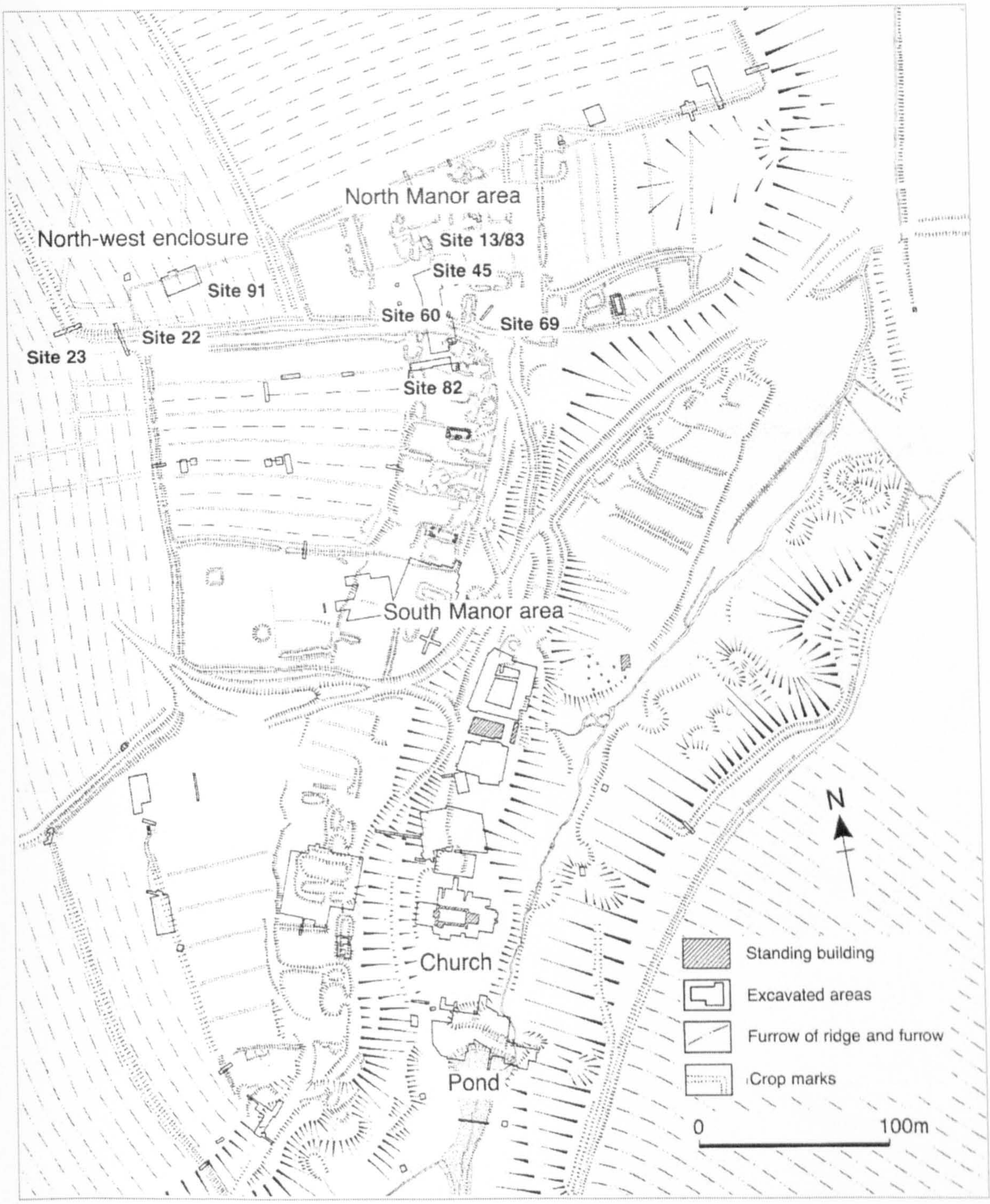


Figure 75 Wharram Percy excavation areas (From Rahtz and Watts 2004)

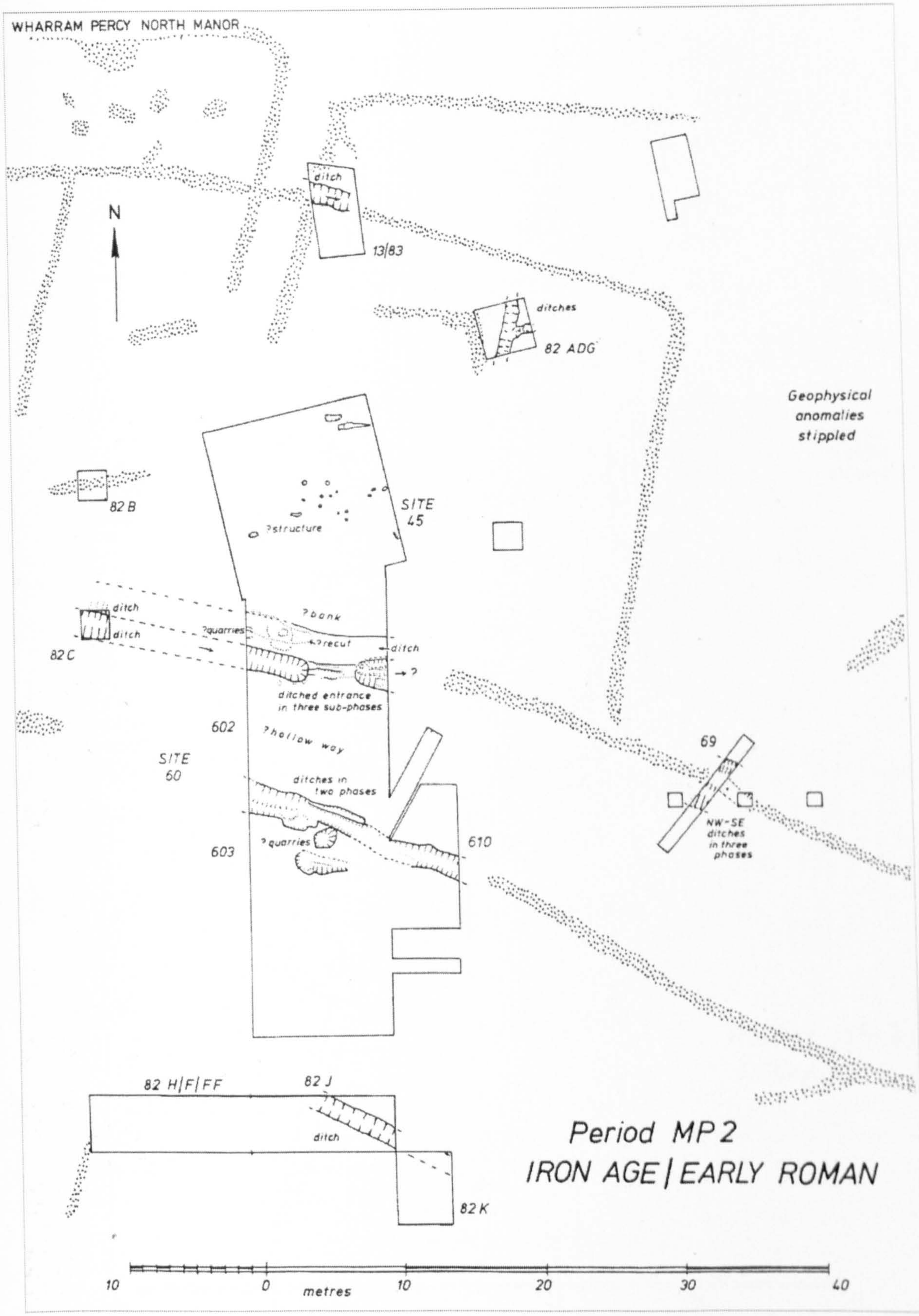


Figure 76 Wharram Percy Sites 45 and 60: LIA-ER (From Rahtz and Watts 2004)

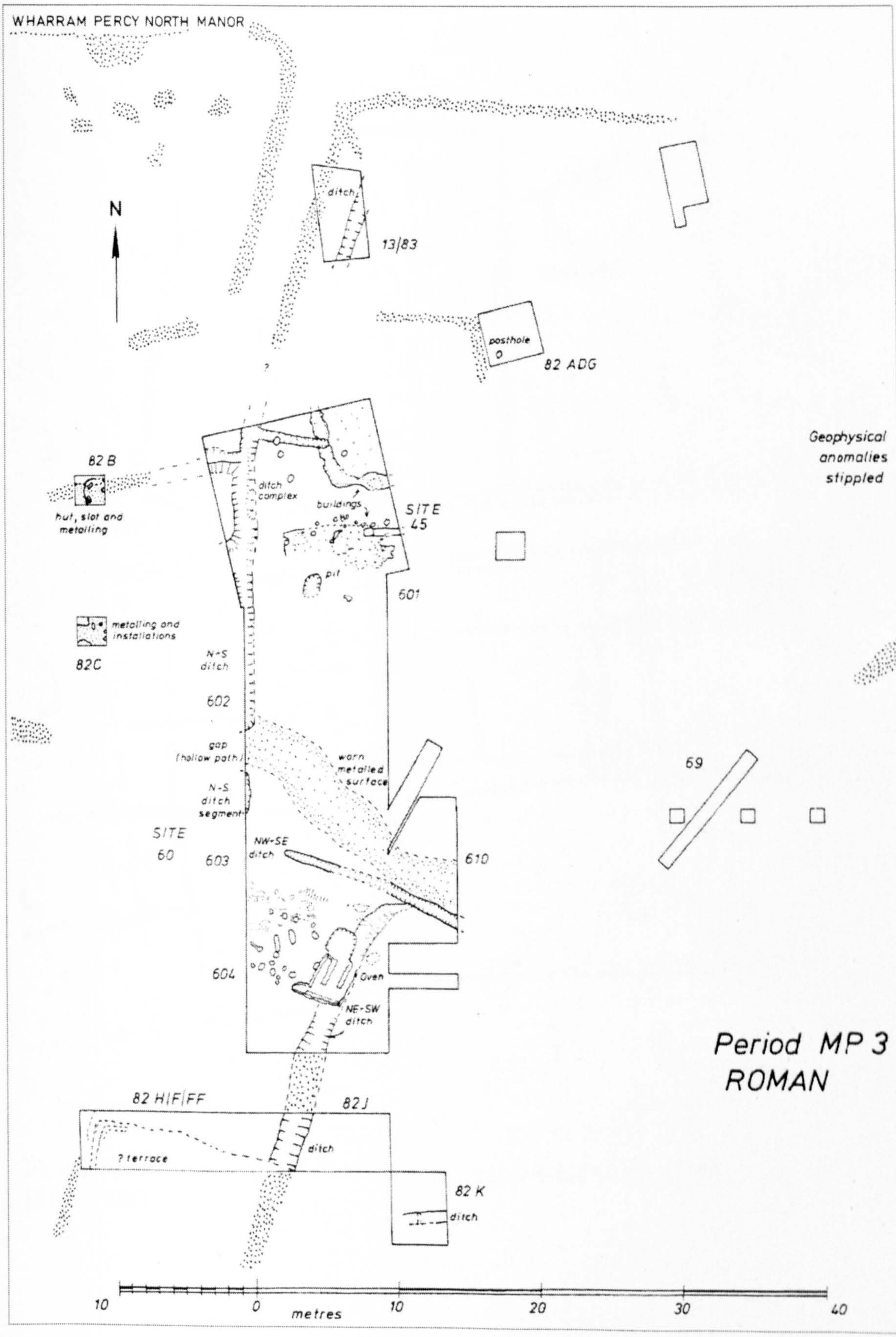


Figure 77 Wharram Percy Sites 45 and 60: LR period (From Rahtz and Watts 2004)

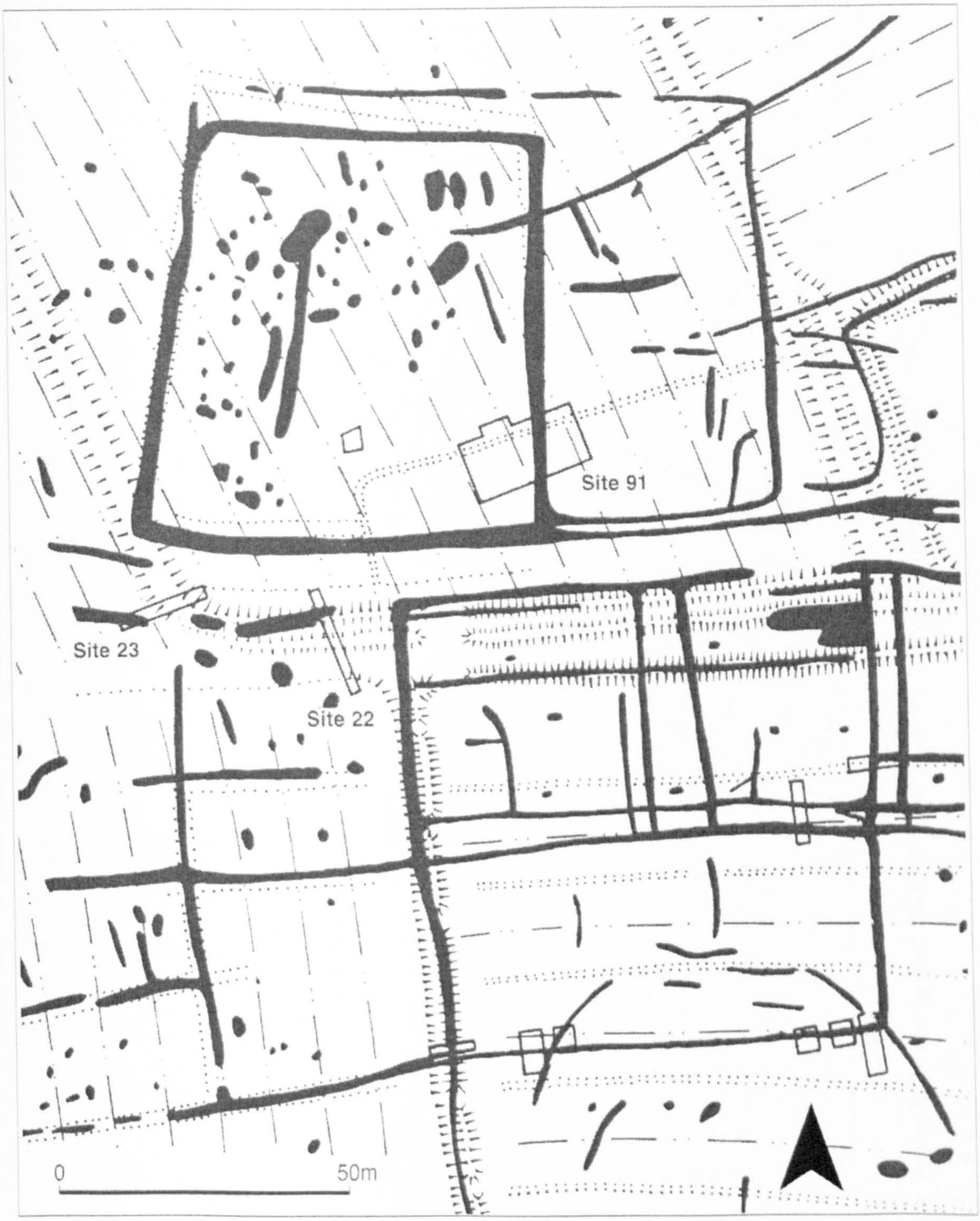


Figure 78 Wharram Percy NW Enclosure magnetometry (From Beresford and Hurst 1990)

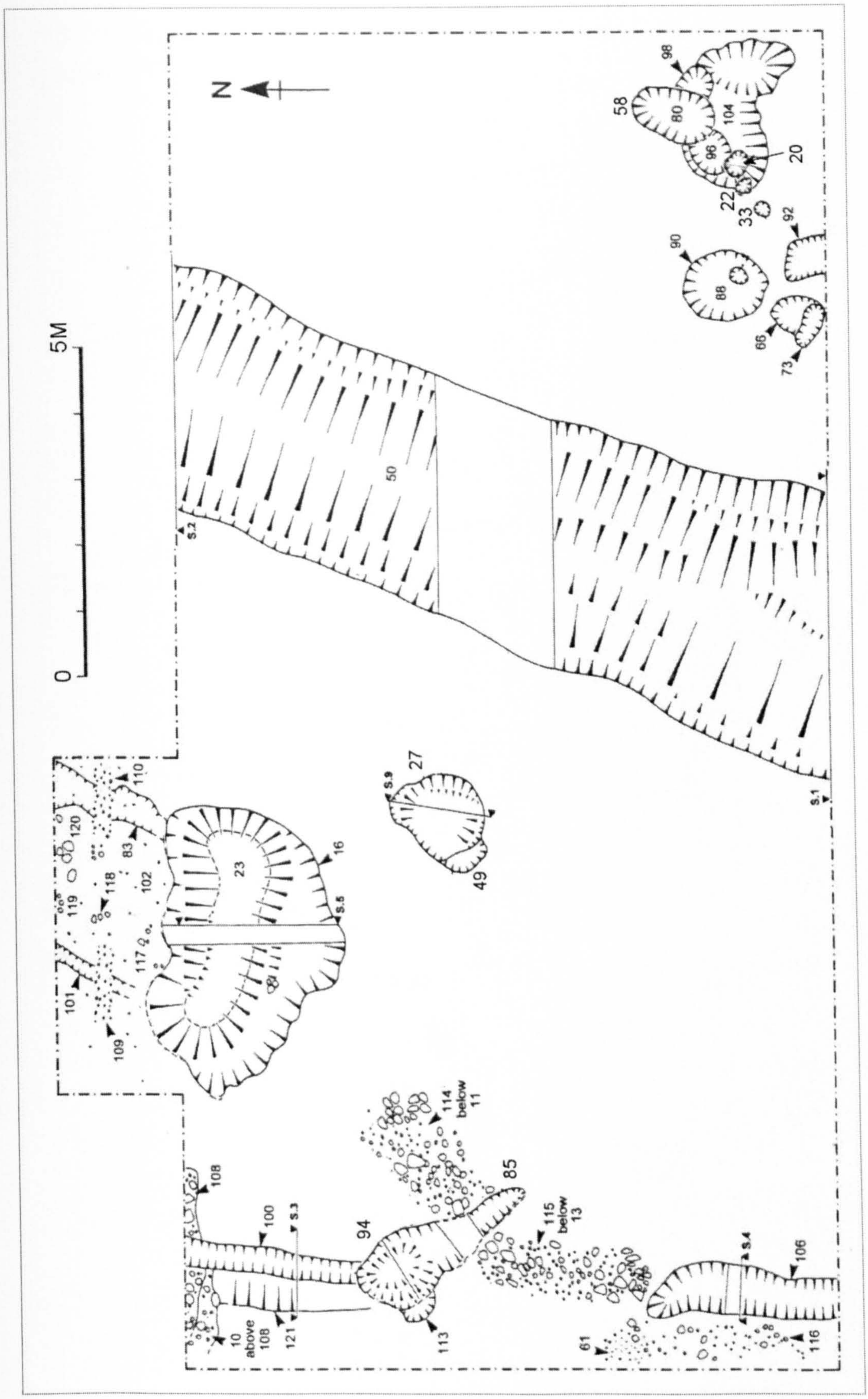


Figure 79 Wharram Percy NW Enclosure Site 91 Post-excavation plan (From Rahtz and Watts 2004)

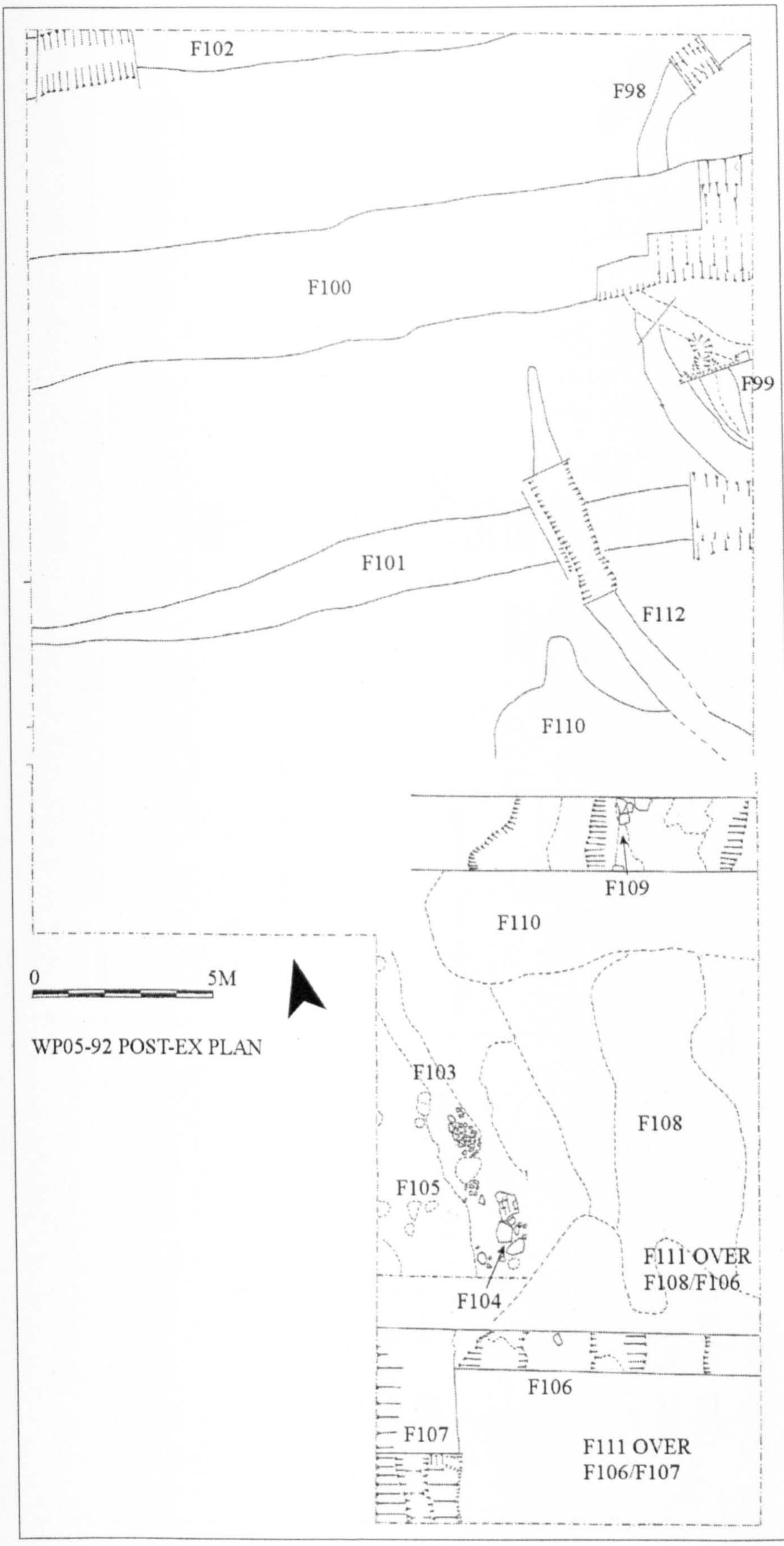


Figure 80 Wharram Percy NW Enclosure Site WP05-92 Post-excavation plan

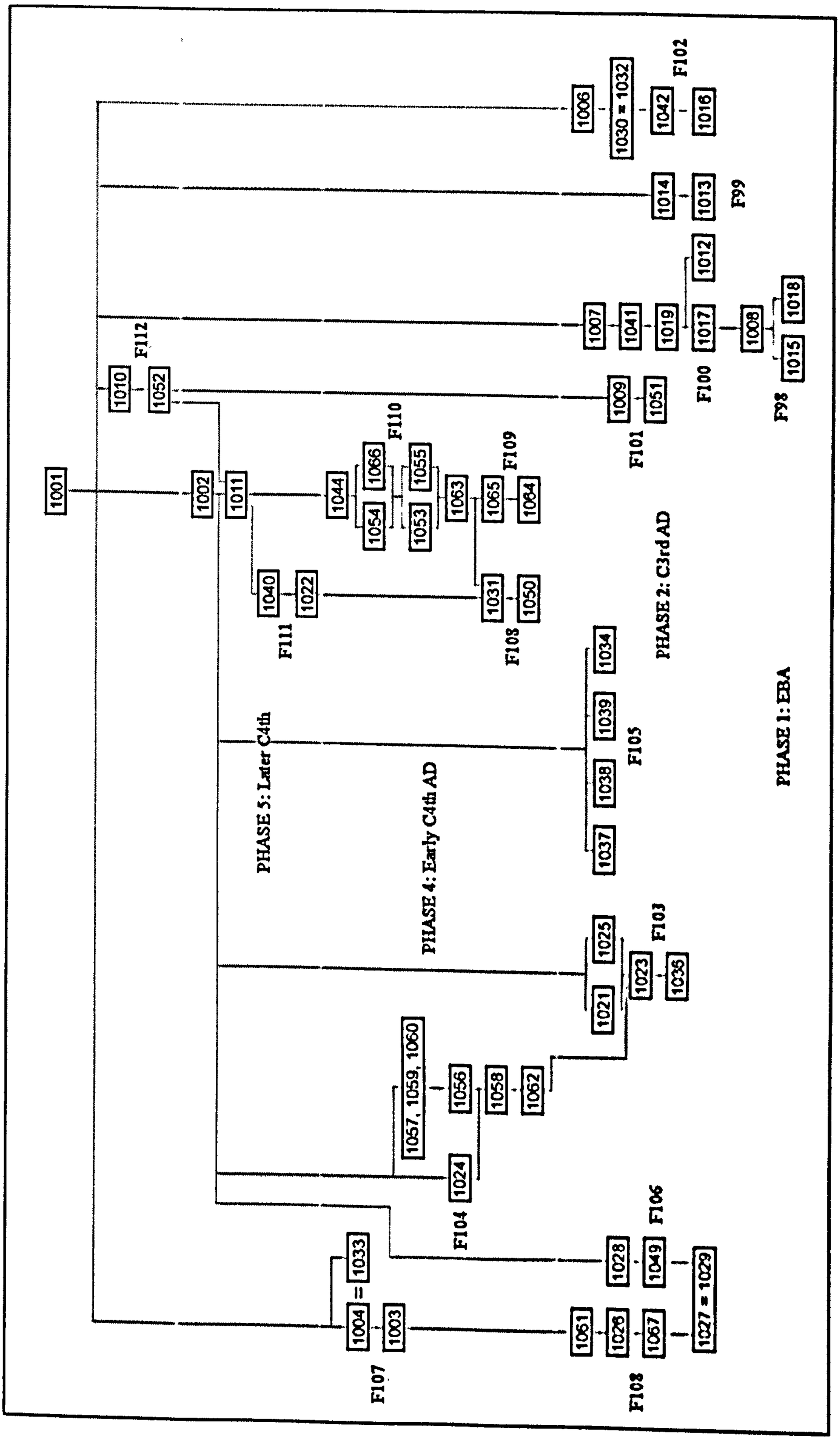


Figure 81 WP05-92 Harris matrix

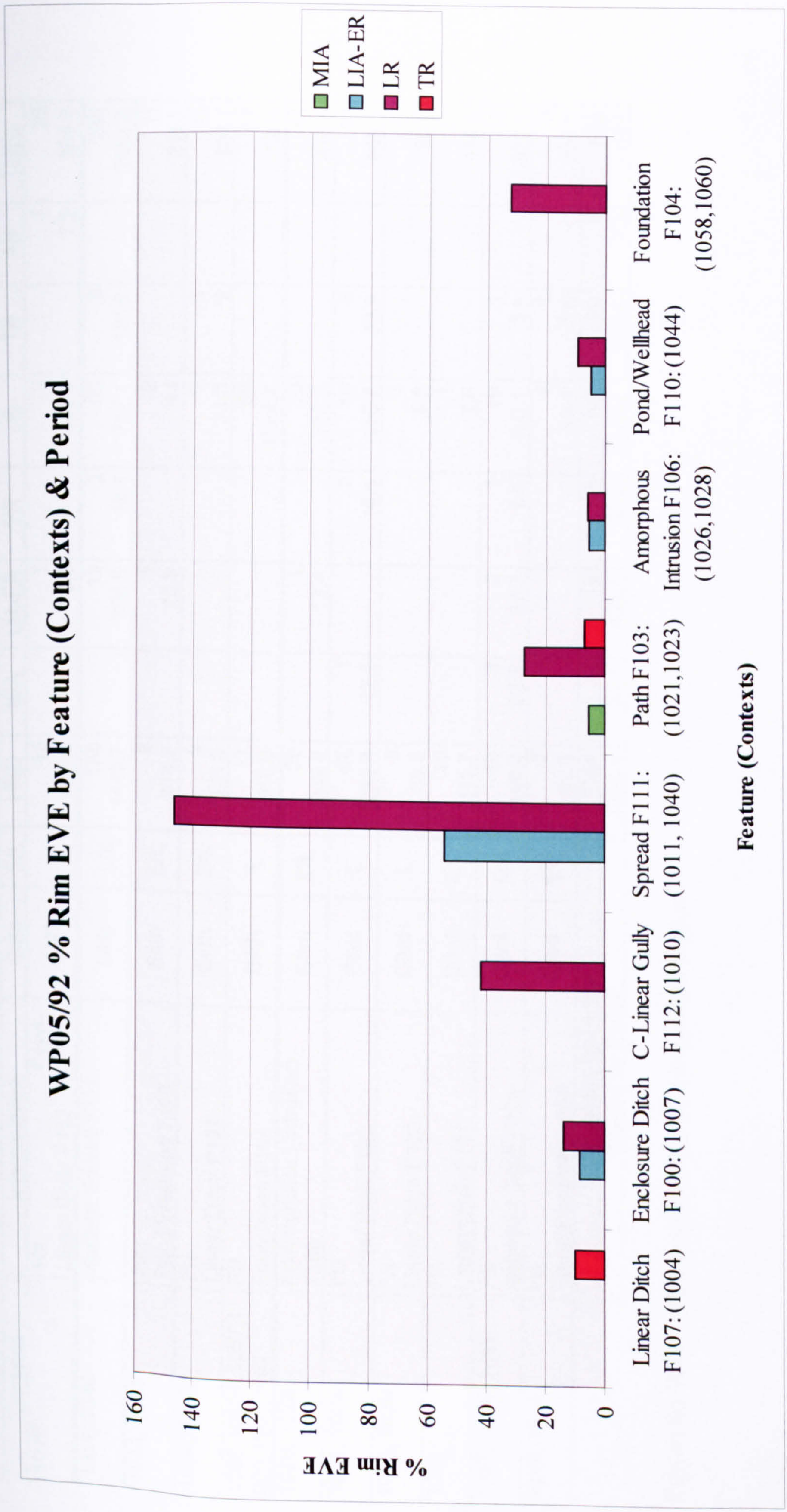


Figure 82 WP05-92 % Rim EVE by Feature (Contexts) and Period. Original in colour.

Contexts	Interpretation	Date	E/L	HND	MIA	LIA-ER	ER	LR	TR	AN	Totals
1010	Fill Curvi-Linear Gully F112	AN?	L	15 168.6		1 9.3		9 184.1		1 7.2	26 369.2
1011, 1040	Surface Spread F111	L4th	L/E	185 1449.7		12 308.3	2 16.1	60 757.1	9 124.6		268 2653.8
1044, 1053	Fill Pond/Wellhead F110	E4th	E/L	8 171.2		1 25.9		2 14			11 211.1
1004, 1033	Fill Linear Ditch F107	E4th	E/L	9 121.2				2 74.5	1 9		12 204.7
1056,1056A,1057,1058,1060,1062	Fill Foundation F104	E4th	L	17 919.8				69 5284.2			86 6204
1026, 1028	Fill Amorphous Intrusion F106	C3rd	E/L	30 280.8		1 13.4		10 122.2			41 416.4
1021, 1023	Fill Linear Path F103	C3rd	L	52 286.8	1 12.2		2 10.6	18 156.7	8 73.8		81 540.1
1006, 1030	Fill Linear Ditch F102	C3rd	L	8 88.3				3 8.6			11 96.9
1009	Fill Linear Ditch F101	C3rd	E/L	16 111.7				1 2.8			17 114.5
1007, 1019, 1041	Fill Enclosure Ditch F100	C3rd	L/E	18 148.2	2 22.2	2 37.7	1 5.5	19 403.1	1 5.4		43 622.1
1012, 1014	Fill Stone Foundation F99	C3rd	E?	7 92.3				1 13.4	1 2.6		9 108.3
	Total Count by Period			364	3	18	5	195	20	1	606
	Total Wt by Period			3286.4	34.4	404.7	32.2	7120.7	215.4	7.2	11101

Figure 83 WP05-92 Ceramics data by interpreted feature

Figure 84 WGV Surface collection plots: pottery, roof tile and tesserae (From Rahtz *et al*. 1986)

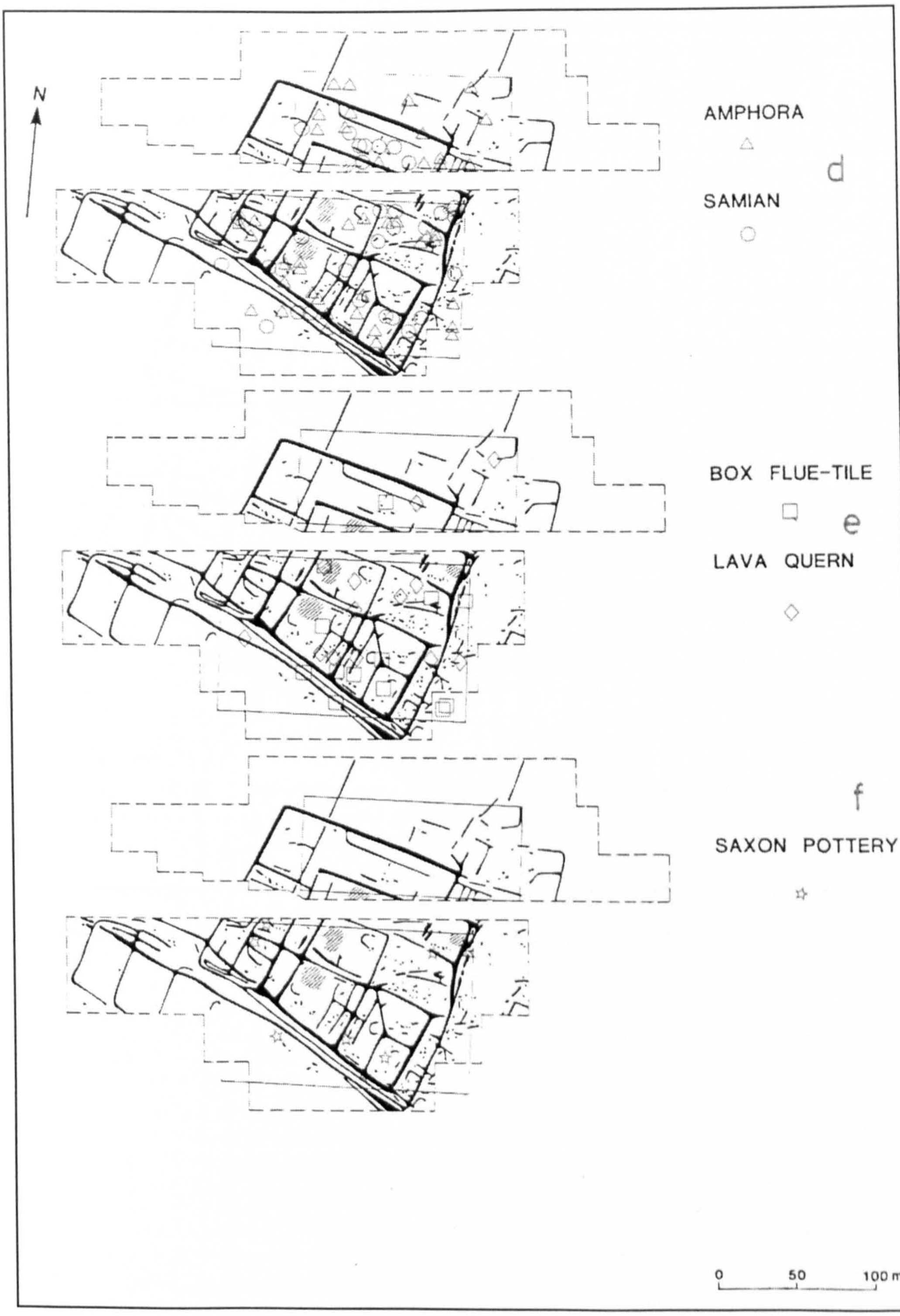


Figure 85 WGV Surface collection plots: samian, amphorae, box-flue tile, lava quern and Saxon (Anglian) pottery (From Rahtz *et al*. 1986)

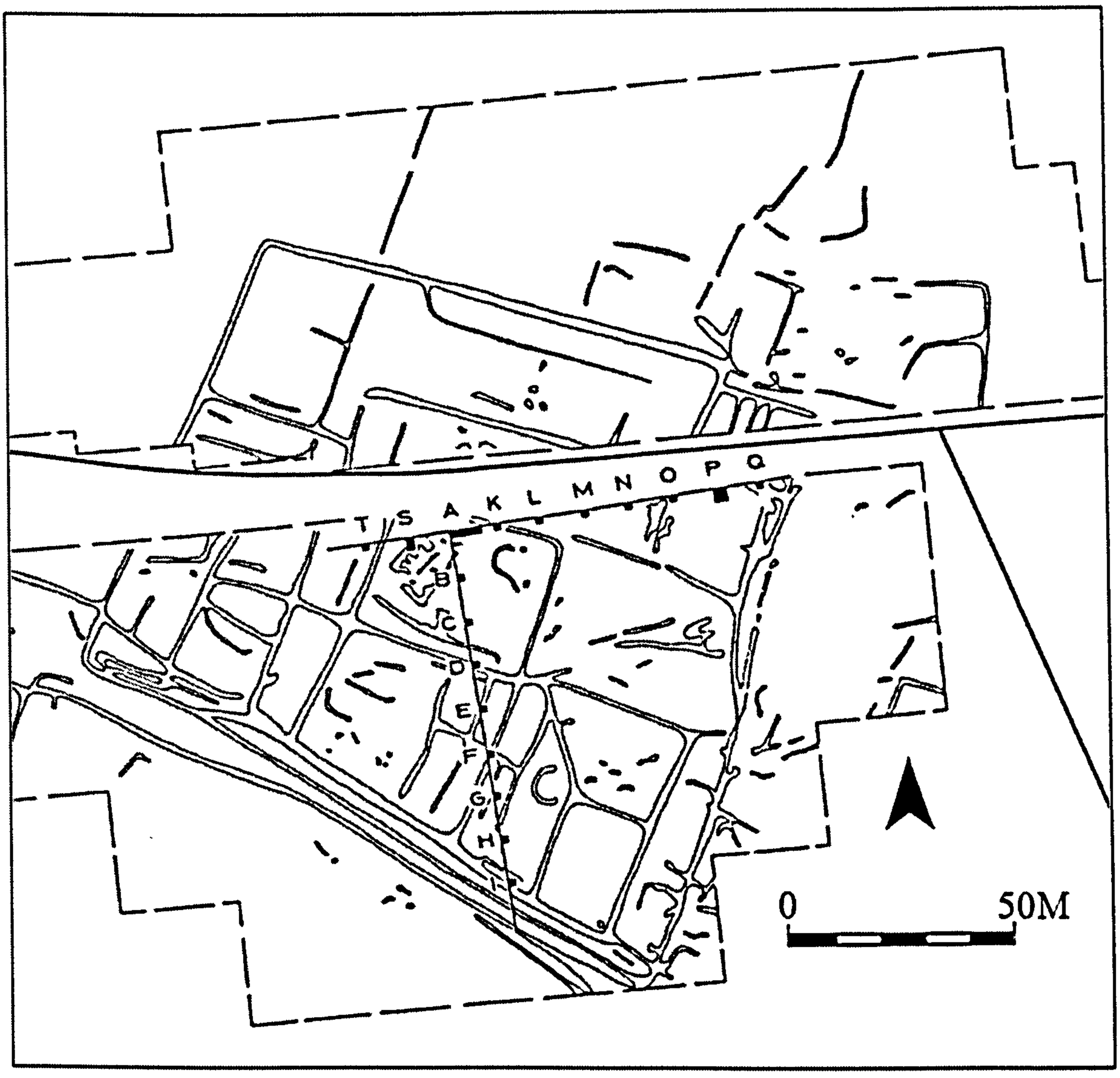


Figure 86 WGV Patterning of test pits (From Rahtz *et al.* 1986)

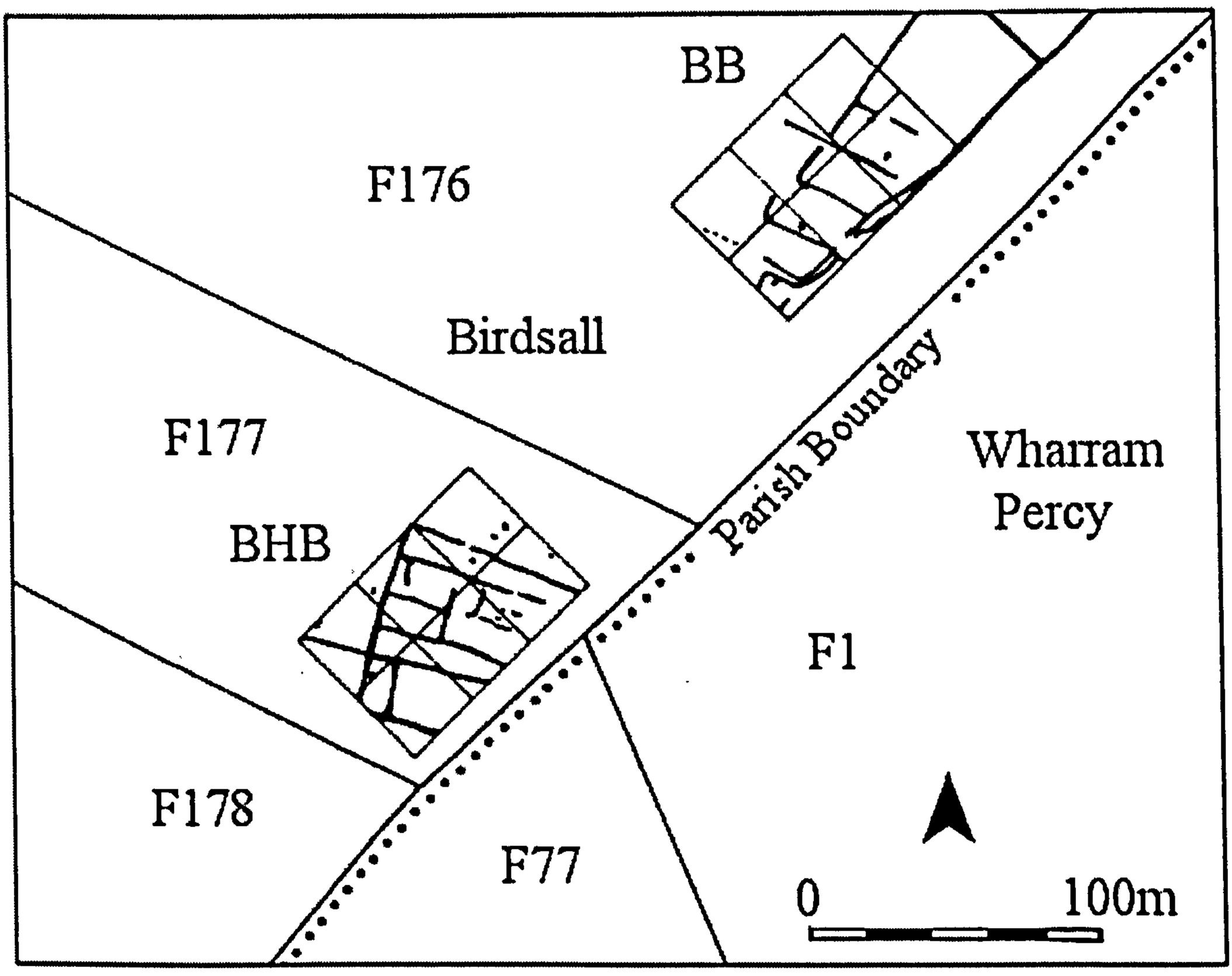


Figure 87 BHB Magnetometry results and survey grid (From Hayfield 1987)

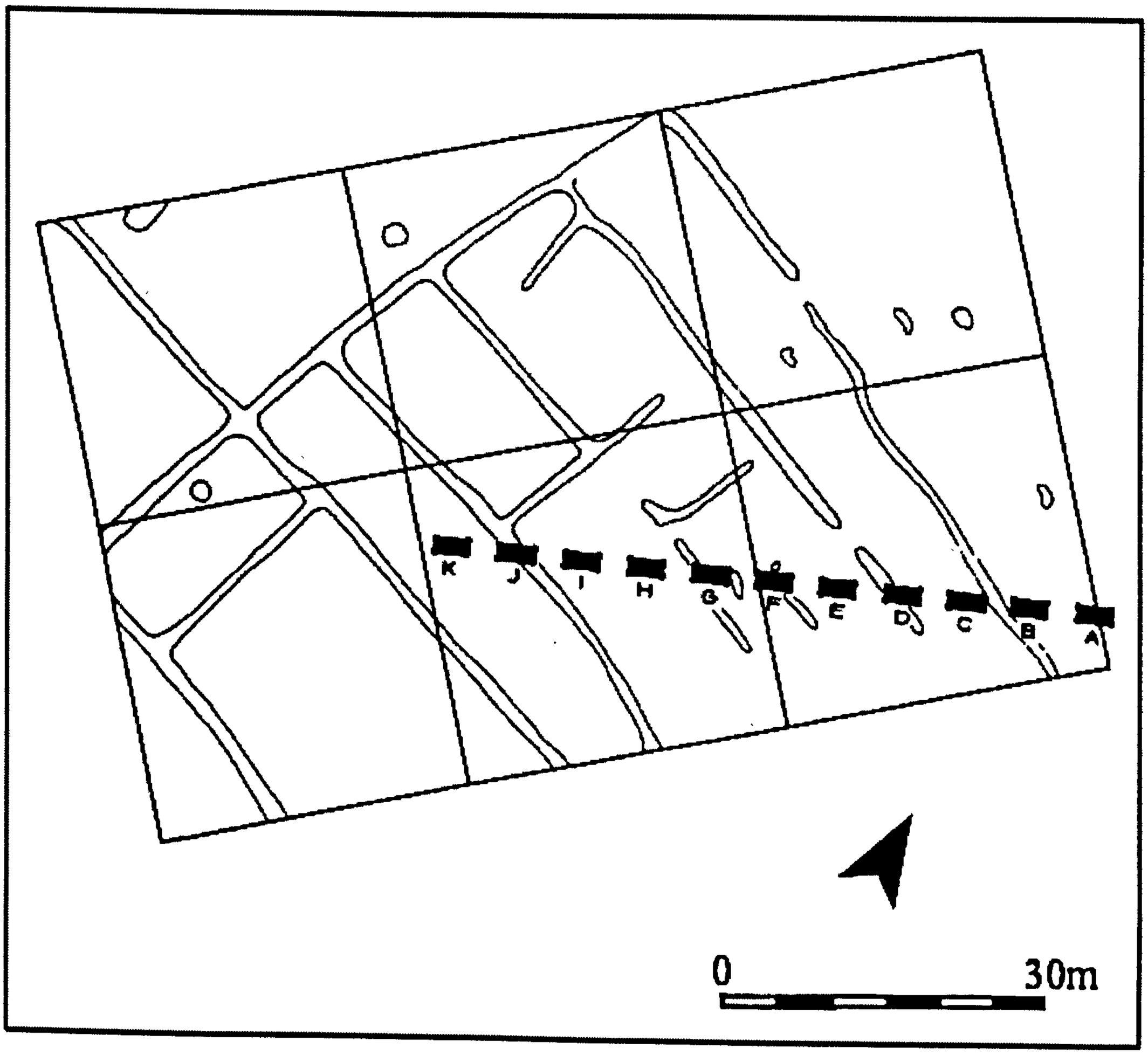


Figure 88 BHB Patterning of test pits (From Hayfield 1987)

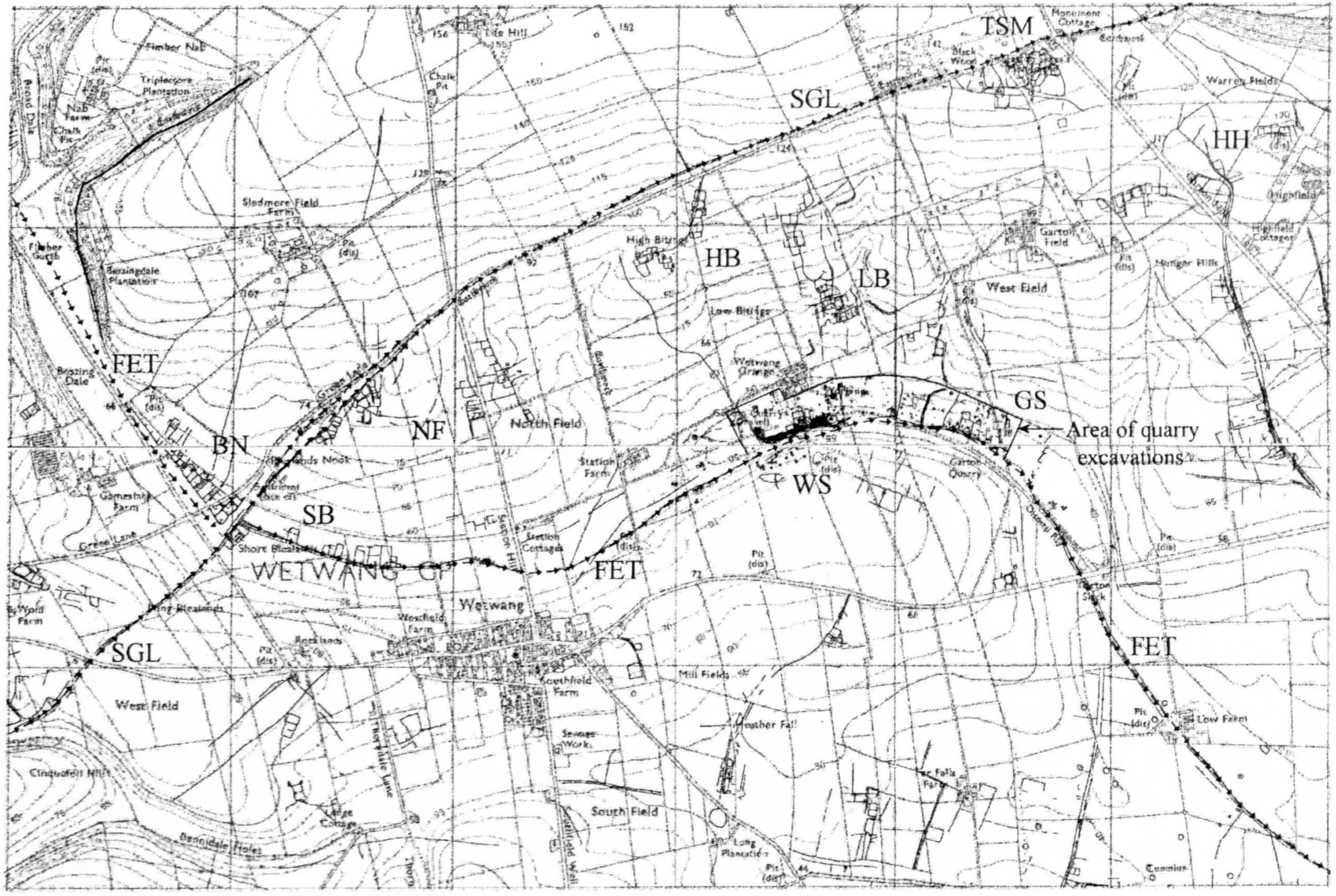


Figure 89 GWS case study region (After Stoertz 1997 © Crown copyright OS)

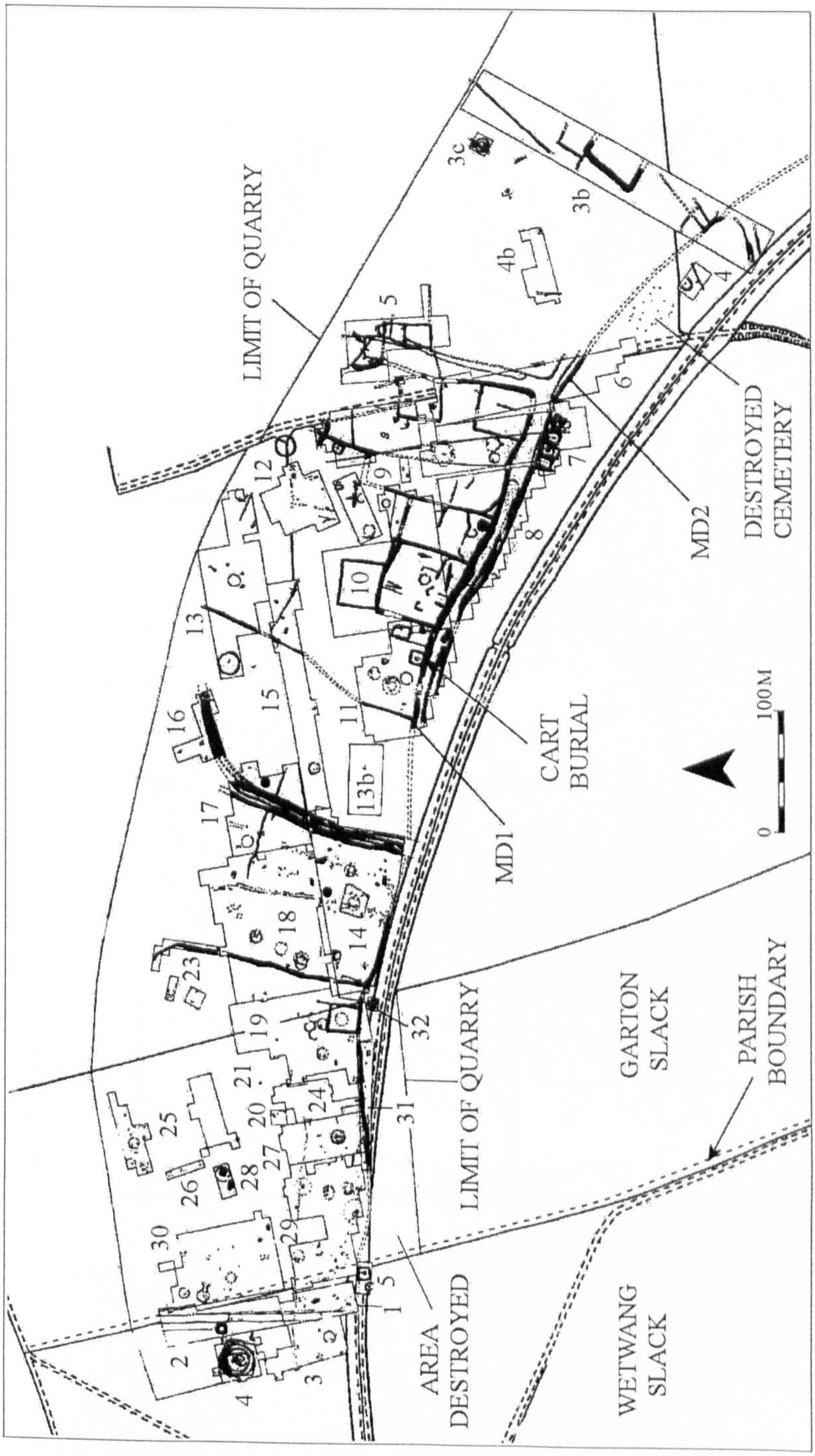


Figure 90 GWS Excavation areas and overall plan of excavated features (Brewster 1980)

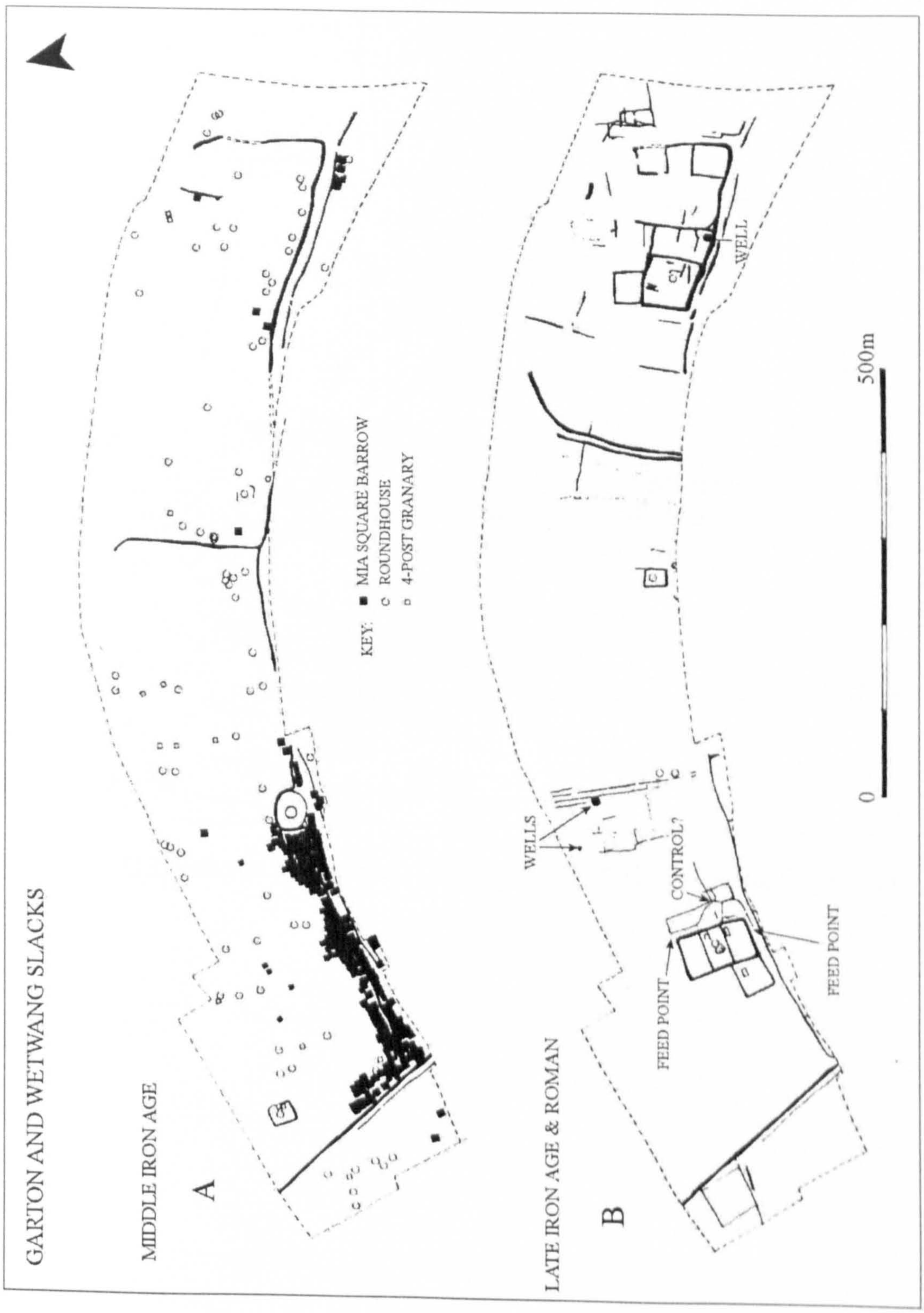


Figure 91 GWS Overview of excavated features: A: MIA, B: LIA-ER (After Dent 1983b)

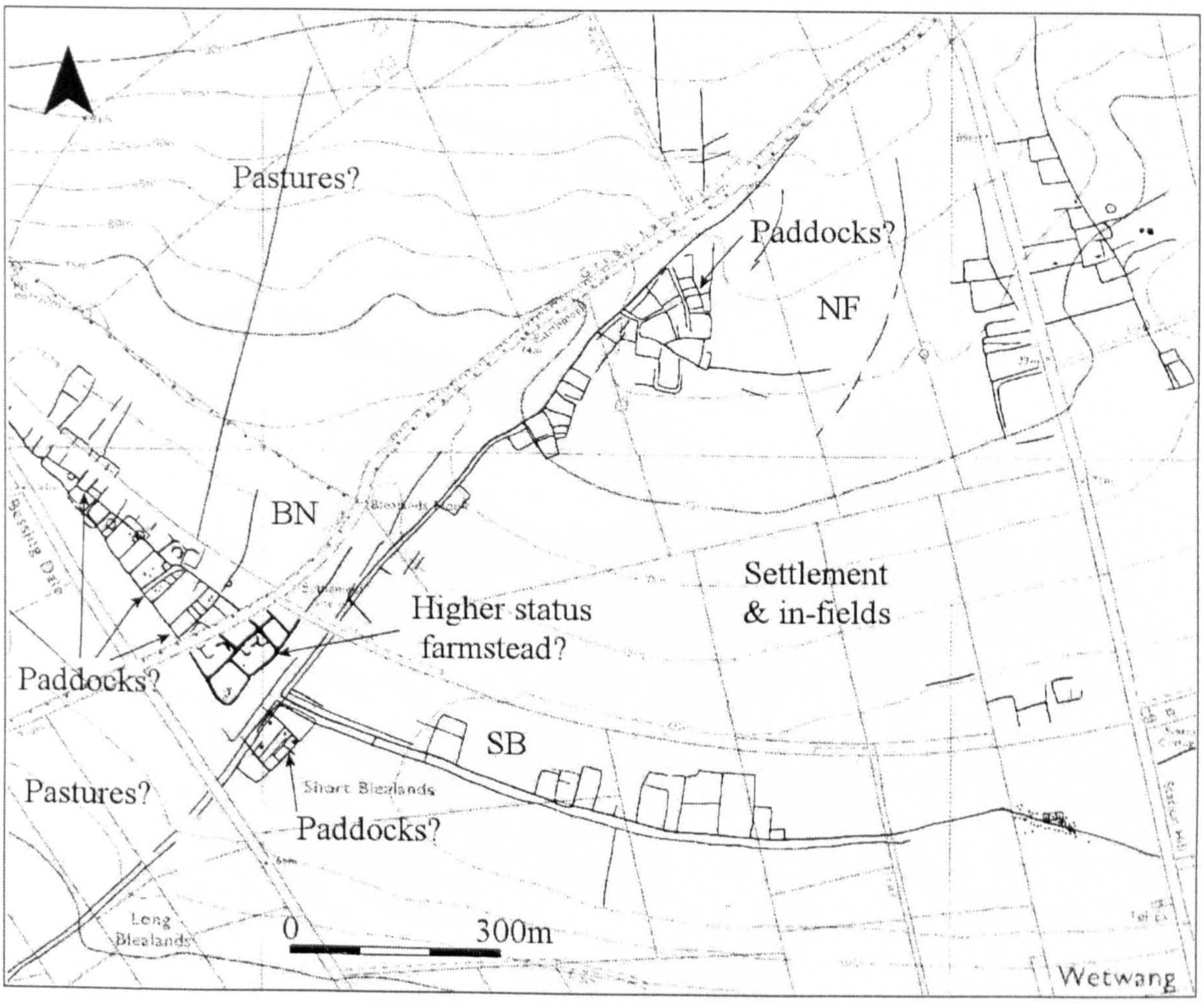


Figure 92 Blealands Nook detail (After Stoertz 1997 (c) Crown Copyright OS)

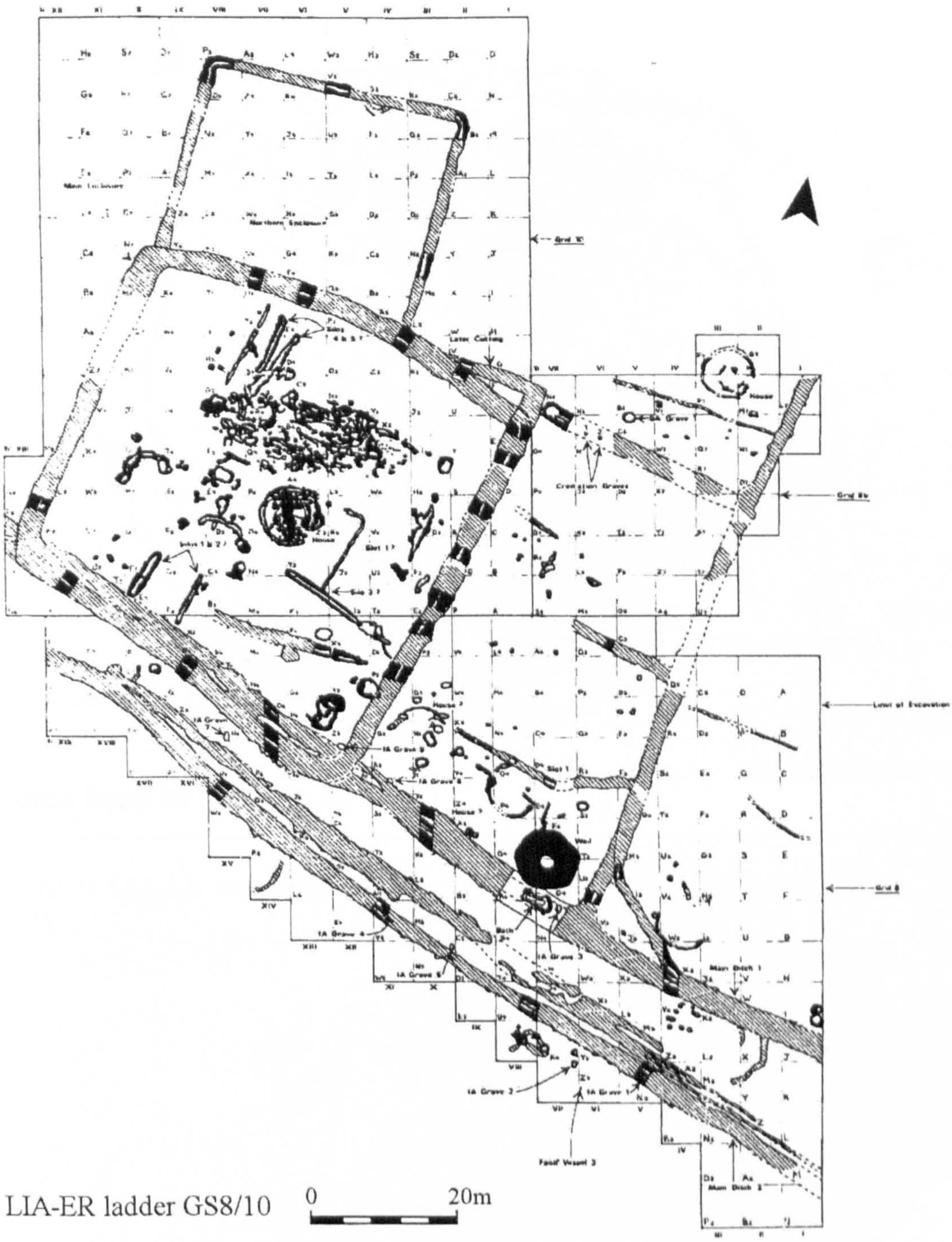
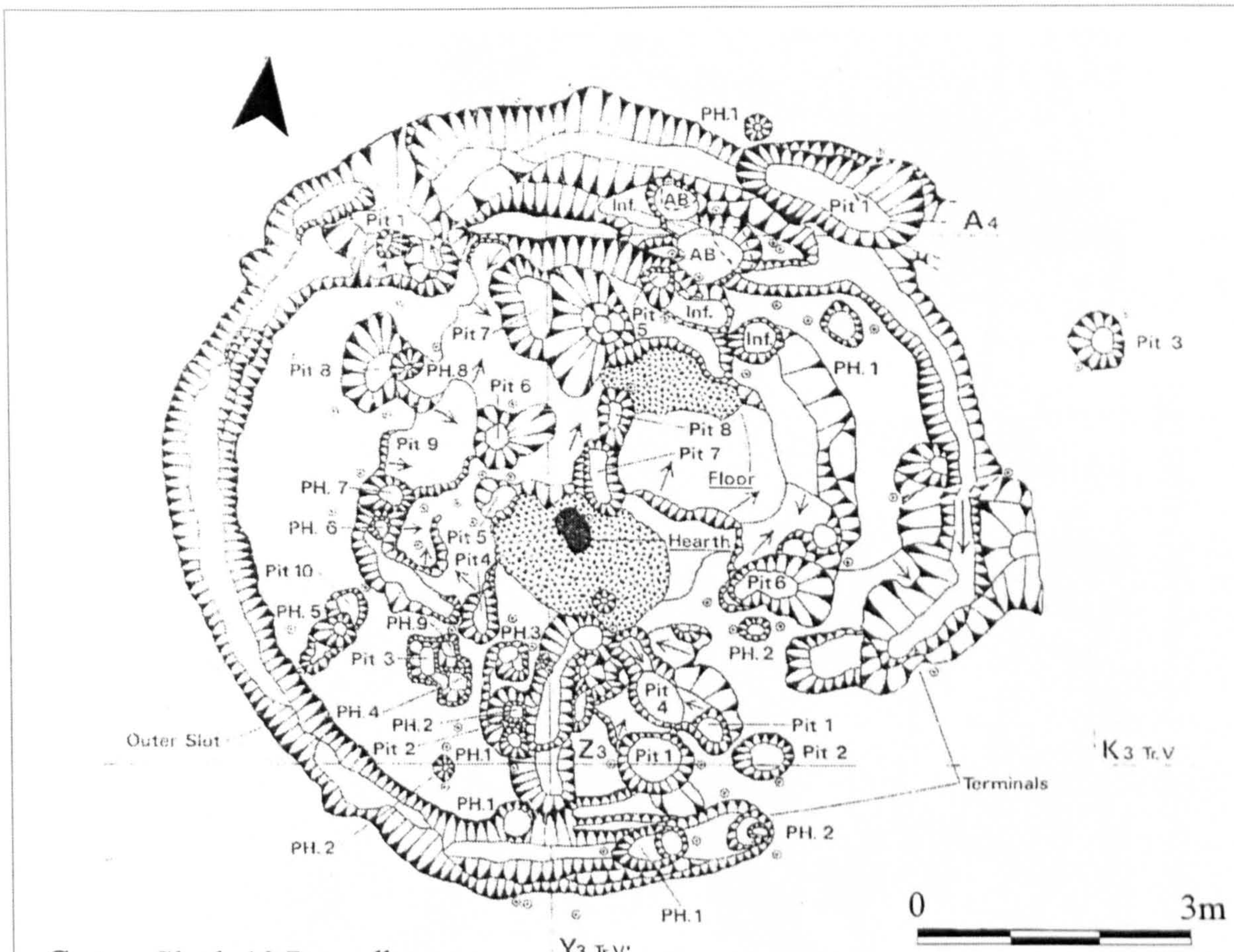


Figure 93 LIA-ER ladder in GS8/10 (From Brewster 1980)



Garton Slack 10 Roundhouse

Figure 94 LIA-ER roundhouse in ladder enclosure GS10 (From Brewster 1980)

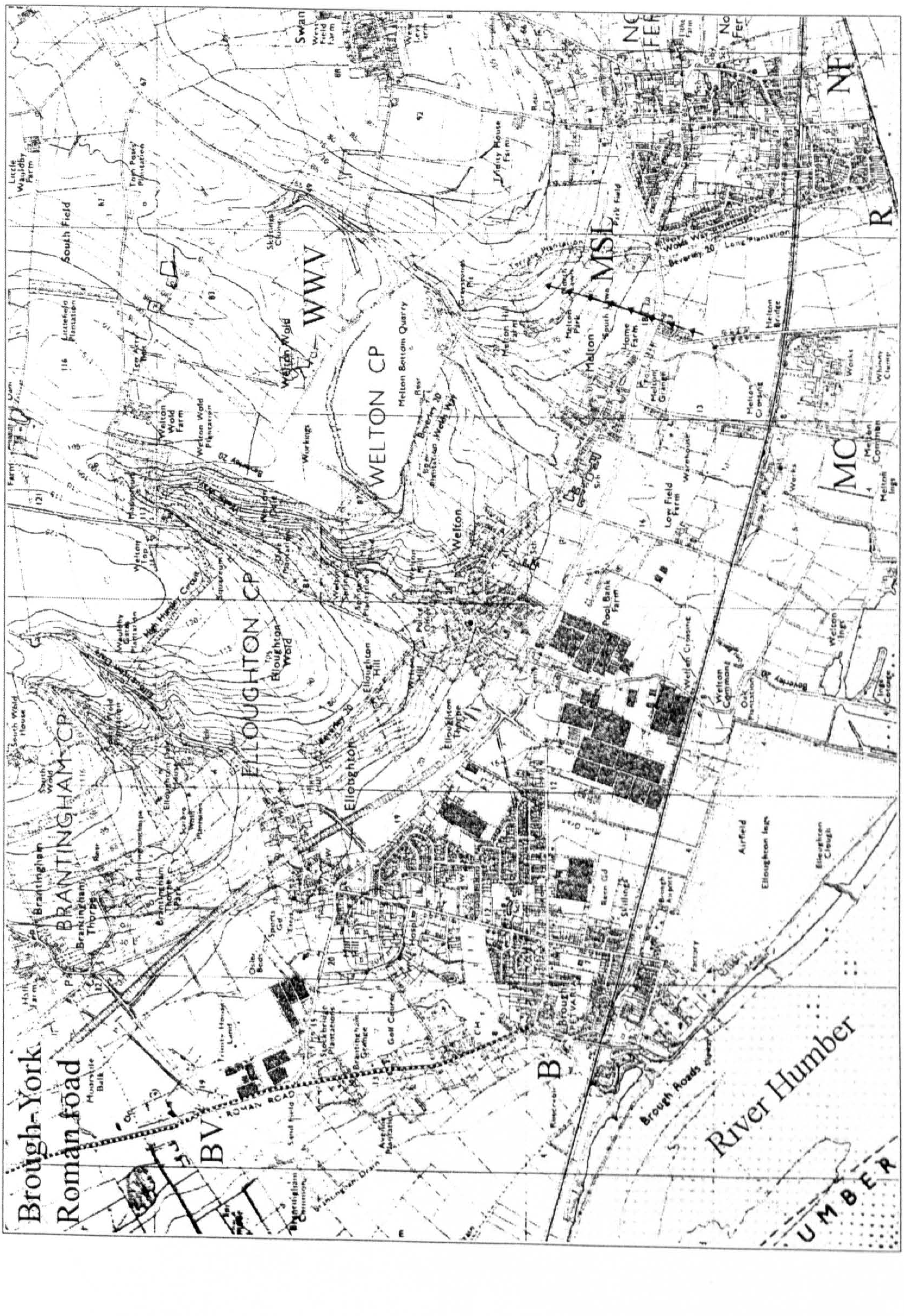


Figure 95 MSL case study region (After Stoertz 1997 © Crown copyright OS)

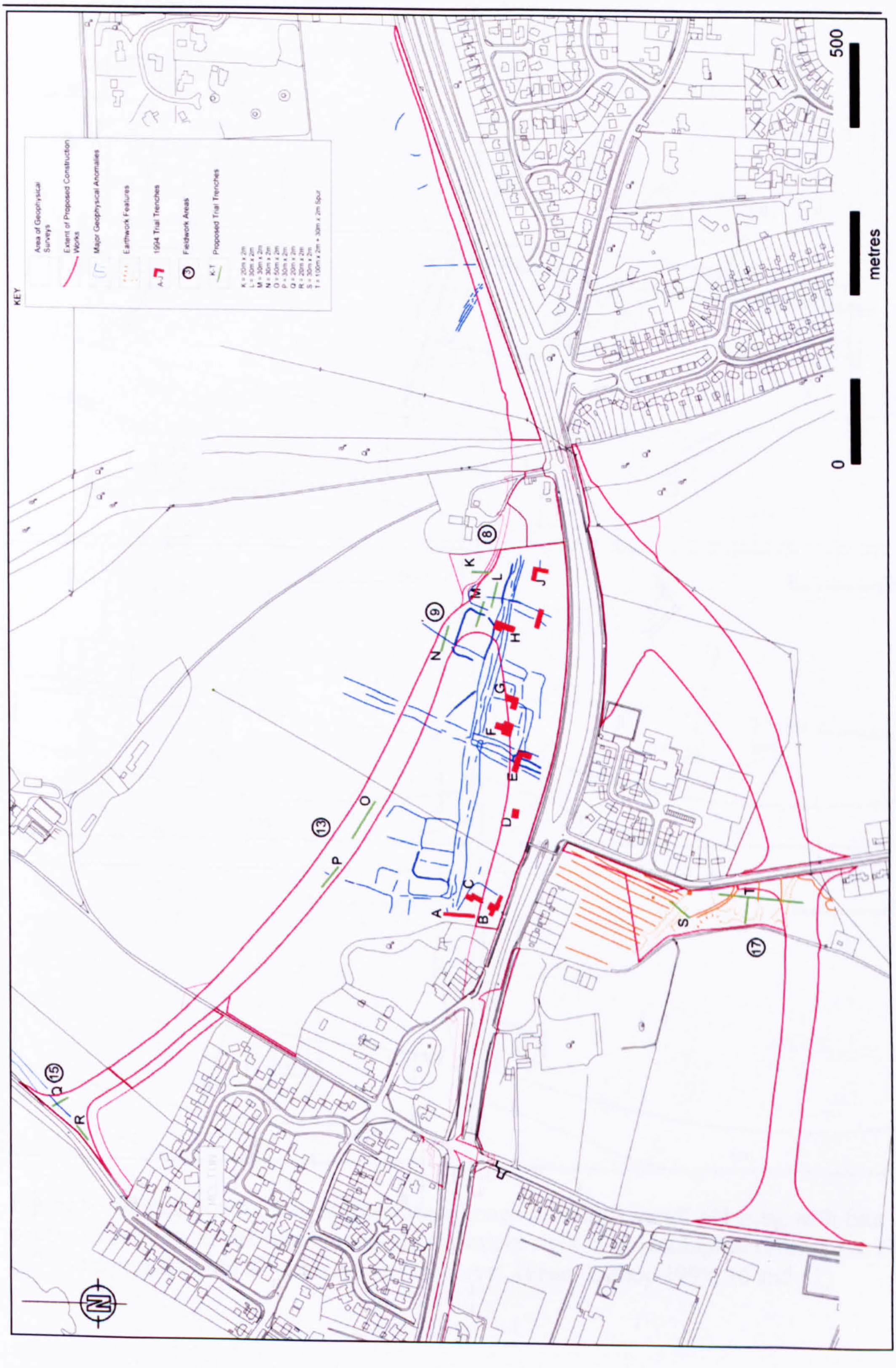
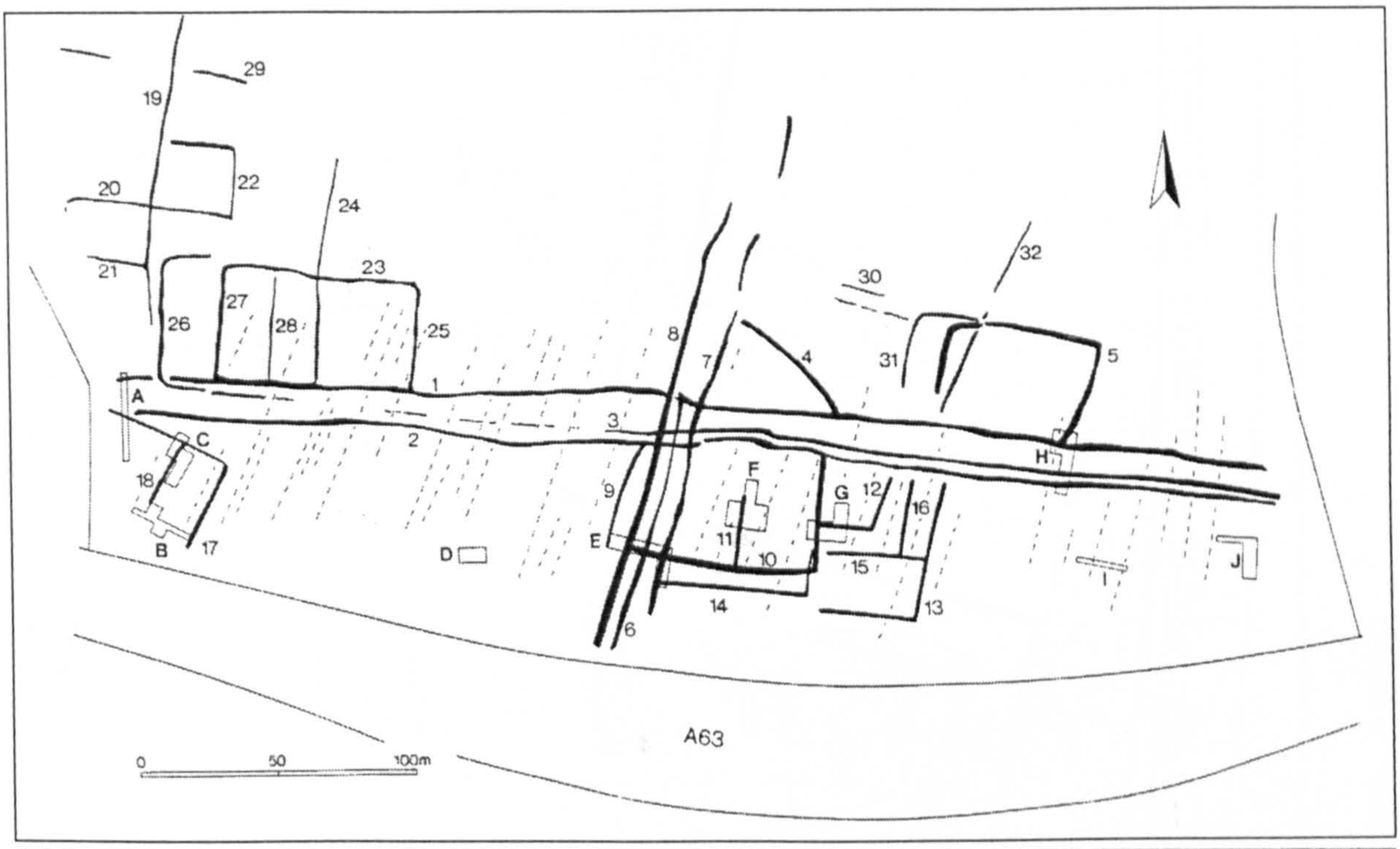
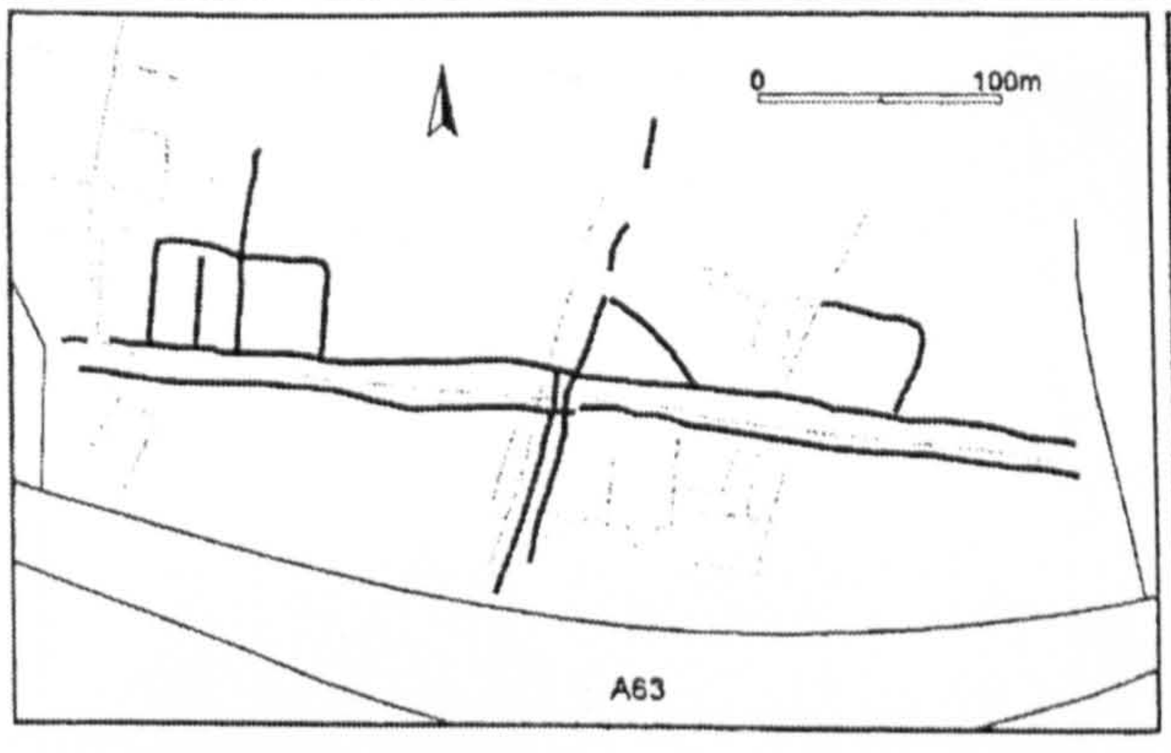
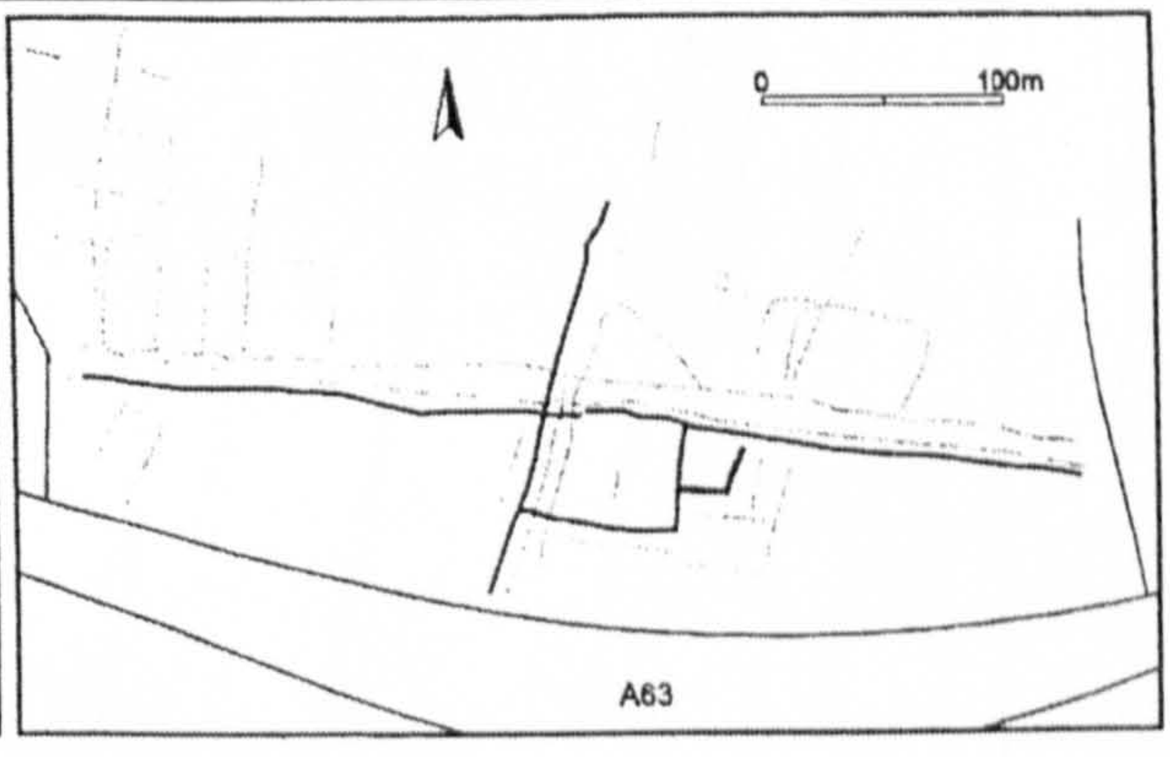
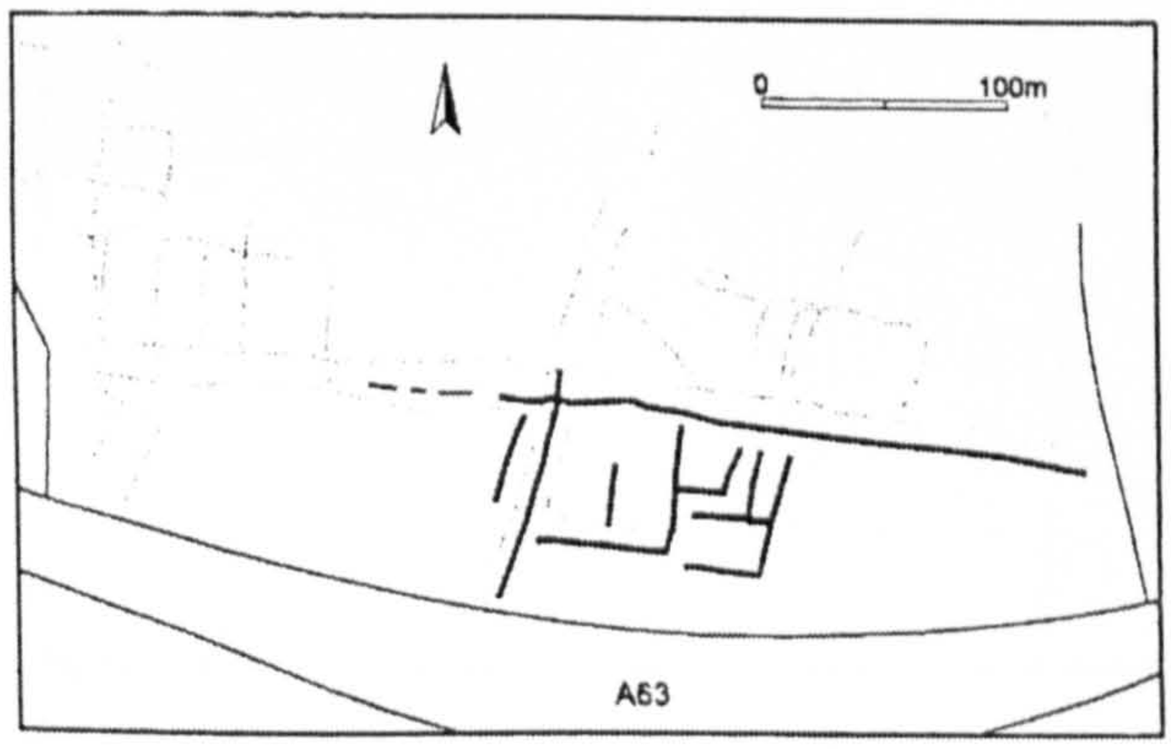


Figure 96 MSL geophysics results and evaluation trenches (From Fenton-Thomas 2006). Original in colour.









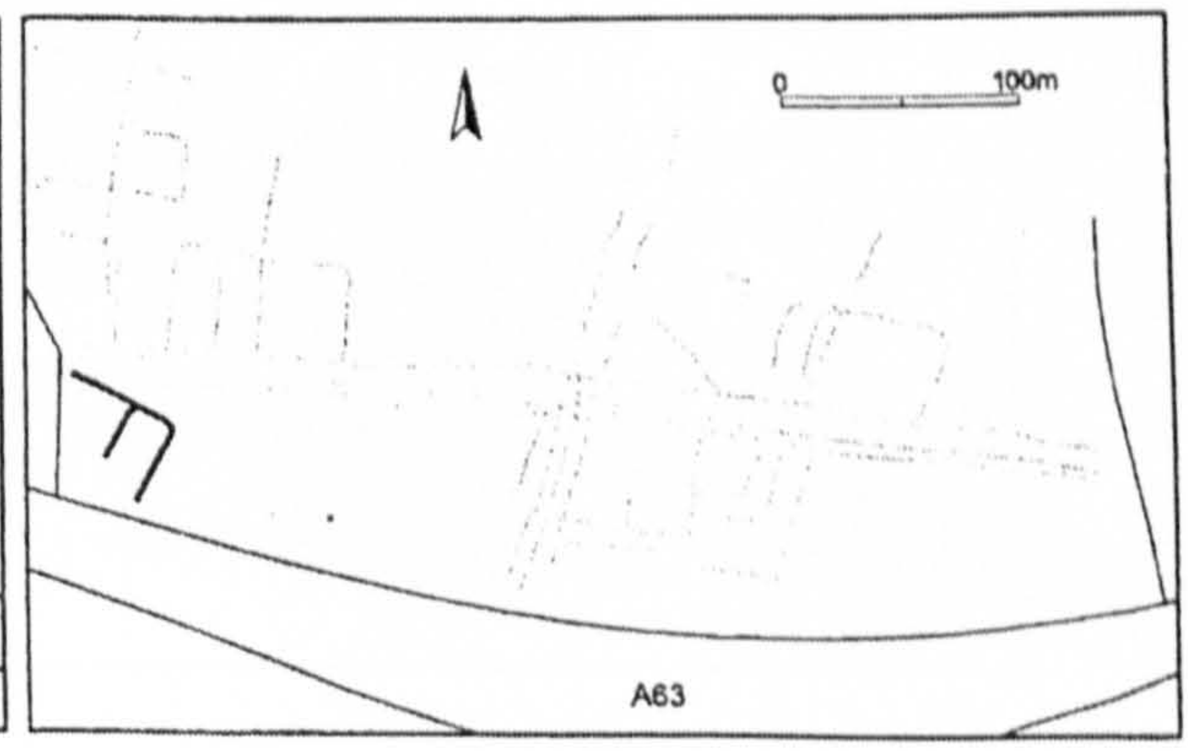


Figure 97 Melton South Lawn ladder. Main image showing overall site plan, with four phases of activity on site running top-left to bottom right in chronological order: LIA, ER (1st century), ER (1st to 2nd century) and medieval. (From Bishop 1999, 26 and 41)

Figure 98 MSL Excavation Areas 3-9 (From Fenton-Thomas 2006)

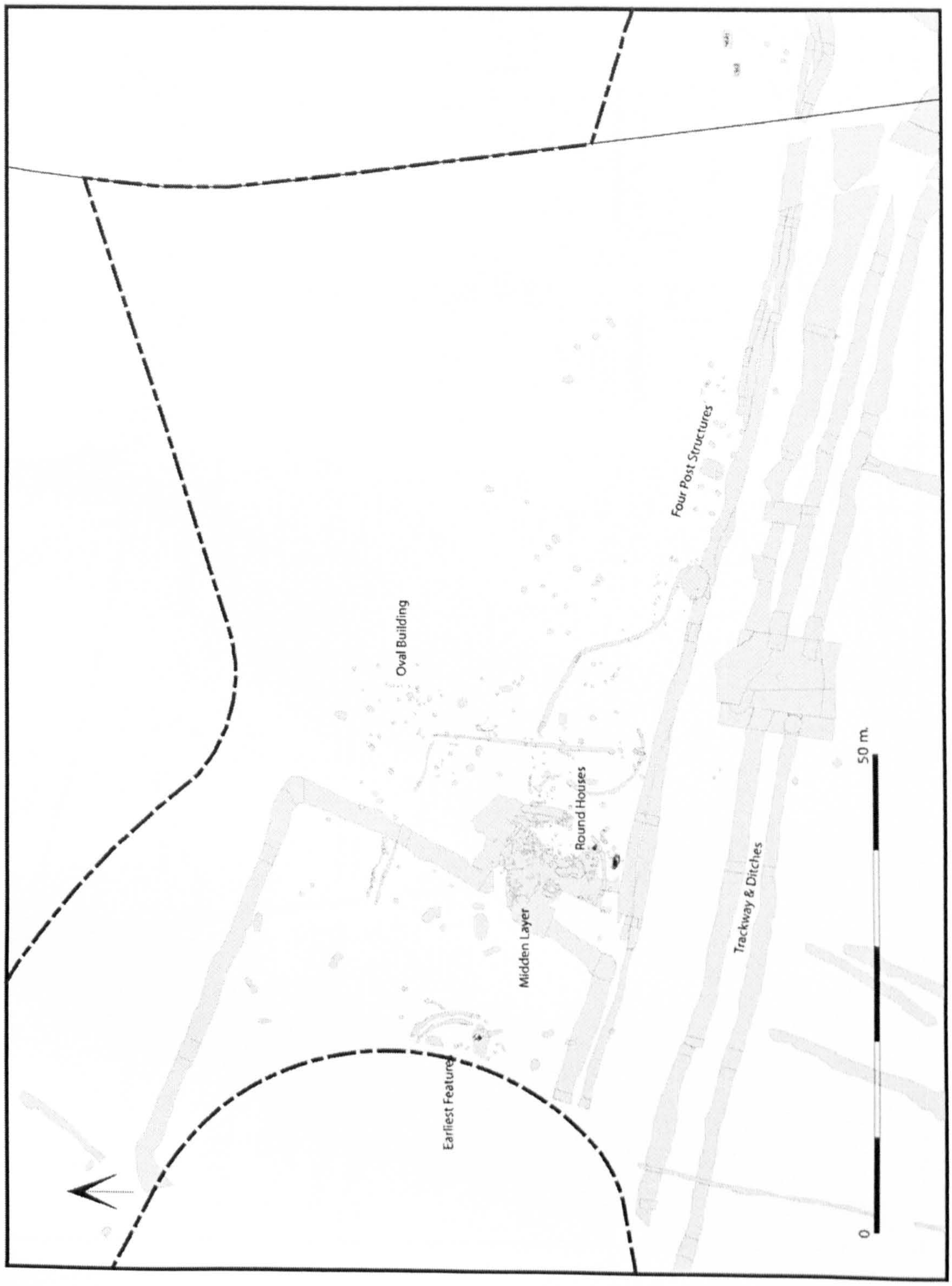


Figure 99 MSL Excavation Areas 6-9 (From Fenton-Thomas 2006)

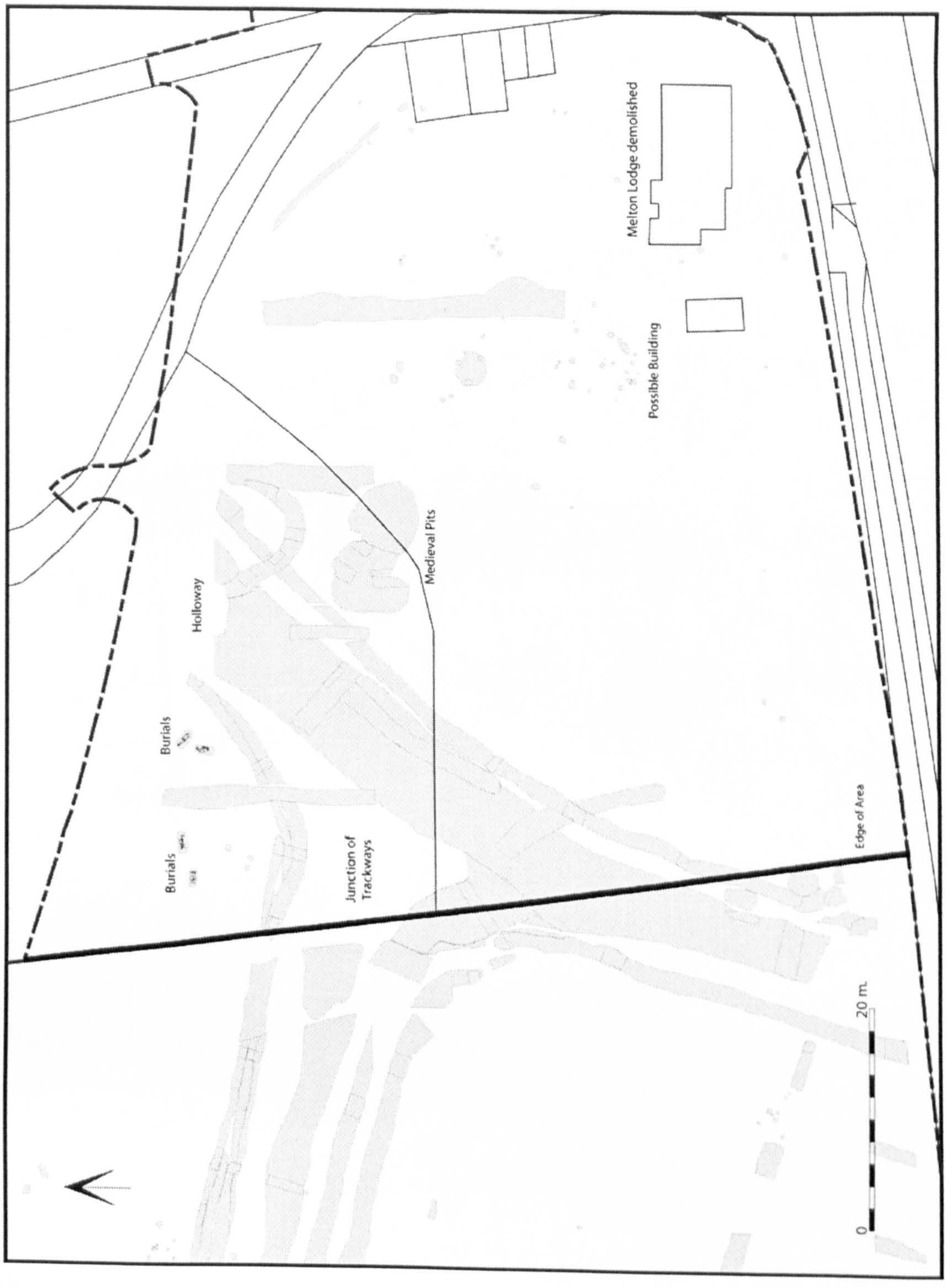


Figure100 MSL Excavation Area 5A (From Fenton-Thomas 2006)

Figure101 WH case study region (After Stoertz 1997 © Crown copyright OS)

Figure 102 WH magnetometry data (provided by Dominic Powlesland). Original in colour.

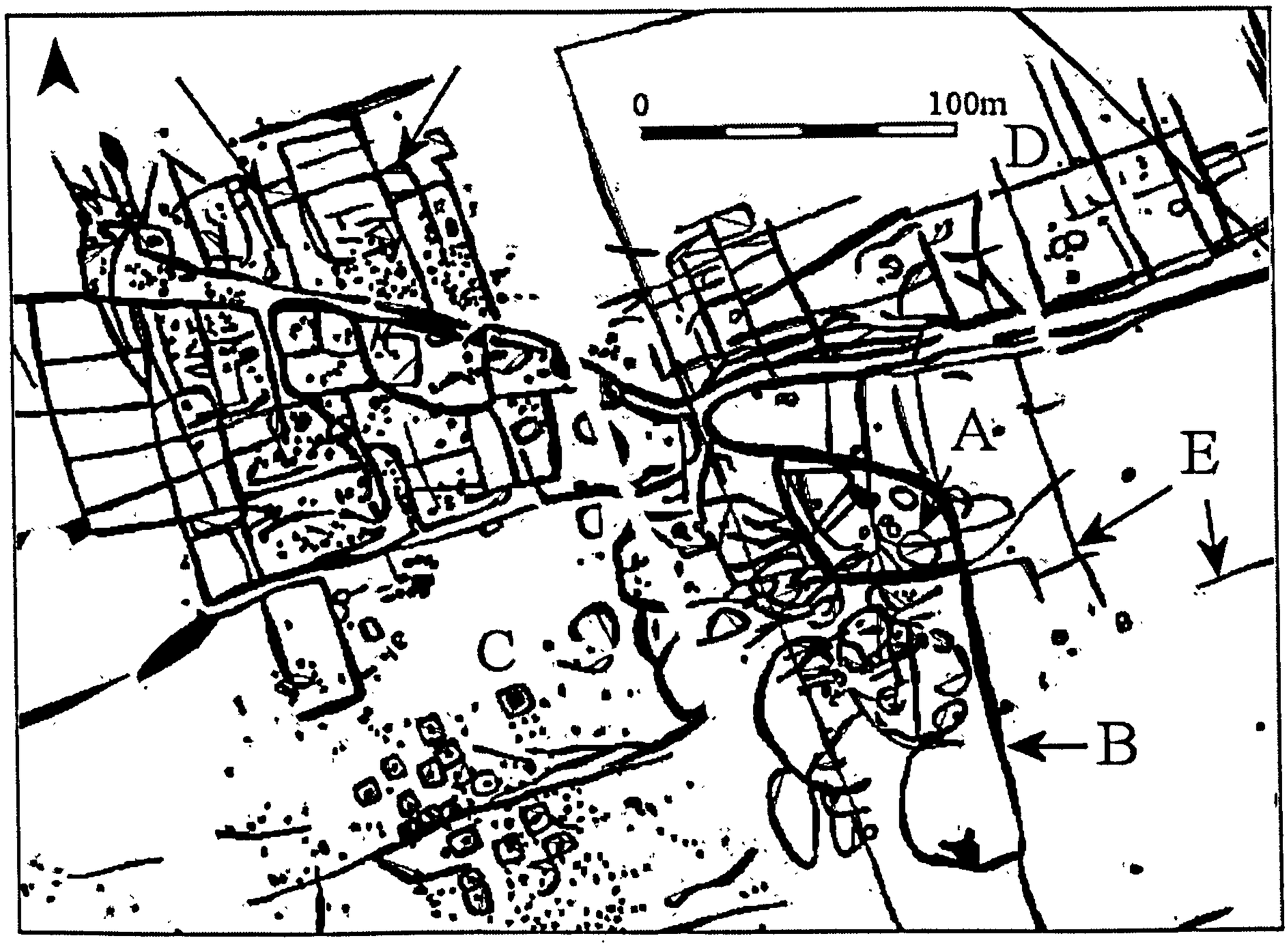


Figure 103 WH Magnetometry results: detail (data provided by Dominic Powlesland)

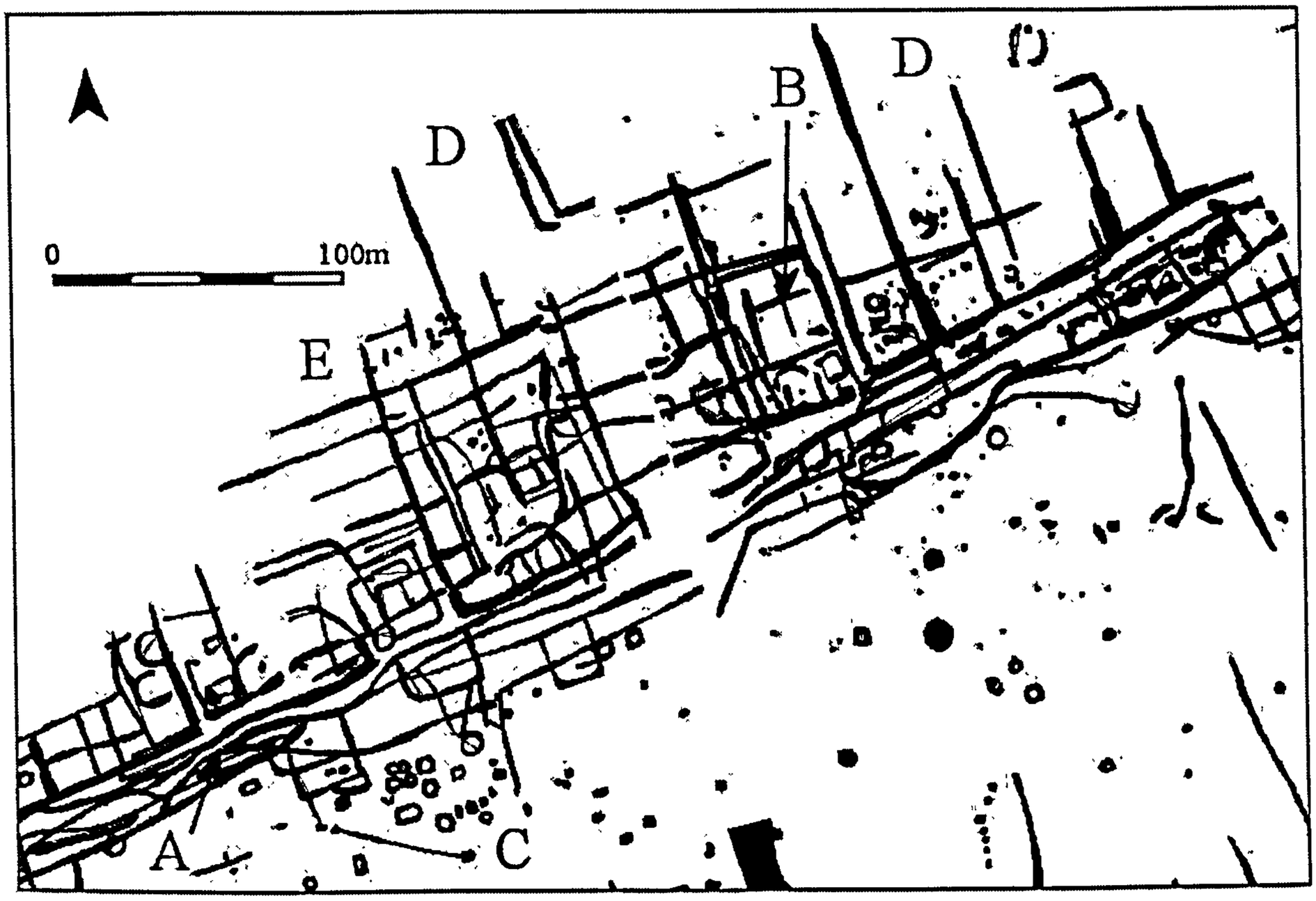


Figure 104 WH Magnetometry results: detail (data provided by Dominic Powlesland)

Figure 105 WH Magnetometry results: detail (data provided by Dominic Powlesland)