
Appendix 1. Site Archive. Aquisition No 2002-49.

- | | | | |
|-----|--|-----|----------------------|
| 1. | 1 Drawing register. | 11. | The finds, |
| 2. | 1 Trench location plan at 1:100. | 12. | 1 Sample register. |
| 3. | 6 Sheets of plan and section drawings at 1:20. | 13. | 2 Enviro samples. |
| 4. | 2 Context registers. | 14. | 6 Skeleton sheets. |
| 5. | 42 Context sheets. | 15. | 3 skeletons. |
| 6. | 4 Photographic registers. | 16. | Correspondence file. |
| 7. | 2 Colour films x 36 exp. | 17. | Carbon 14 samples. |
| 8. | 2 B & W films x 36 exp. | 18. | This report. |
| 9. | 3 Site notebook pages. | 19. | Inked drawings. |
| 10. | 4 Finds registers. | | |

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Report on Radiocarbon Age Determination for Wk-

11774

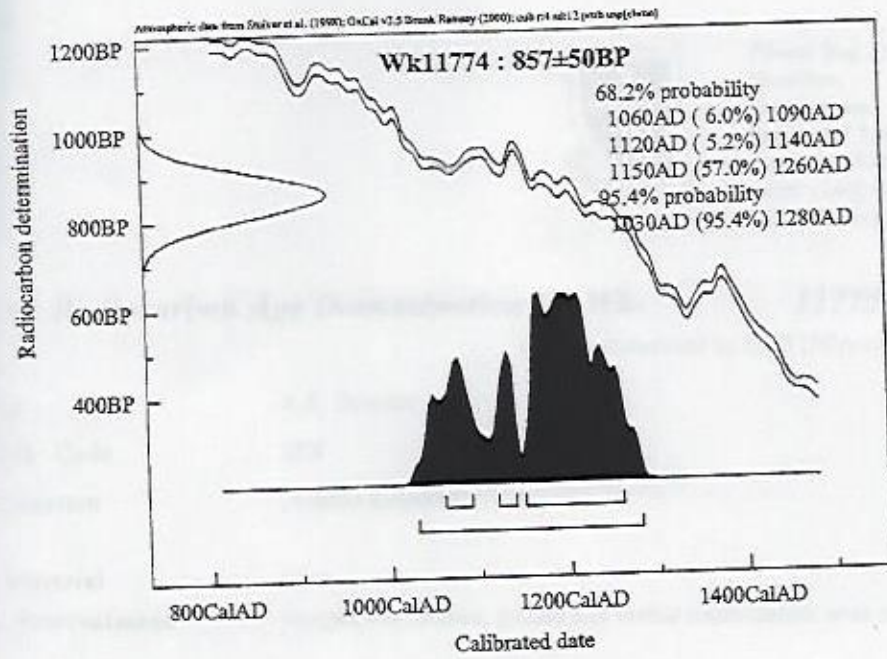
Submitter A.R. Boucher
Submitter's Code SK1
Site & Location , United Kingdom
Sample Material Right femur
Physical Pretreatment Sample was cleaned, ground and visible contaminants were removed.
Chemical Pretreatment Sample was decalcified in 2% HCl, rinsed and dried. Then gelatinised at pH=3 with HCl at 90 degrees for 4 hours. Rinsed and dried.

$\delta^{14}\text{C}$	-100.7 ± 4.6	‰
$\delta^{13}\text{C}$	-24.7 ± 0.2	‰
D^{14}C	-101.2 ± 5.6	‰
% Modern	89.9 ± 0.6	%
Result	857 ± 50 BP	

Comments

27/11/02

- Result is Conventional Age or % Modern as per Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory Error Multiplier of 1.217 .
- The isotopic fractionation, $\delta^{13}\text{C}$, is expressed as ‰ wrt PDB.
- Results are reported as % Modern when the conventional age is younger than 200 yr BP.



100%	1060 - 1090	6.0%
68.2%	1030 - 1280	95.4%
57.0%	1150 - 1260	57.0%
5.2%	1120 - 1140	5.2%
6.0%	1060 - 1090	6.0%
95.4%	1030 - 1280	95.4%

Handwritten signature
 1997

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Report on Radiocarbon Age Determination for Wk- 11775
(AMS measurement by IGNS [NZA-16440])

Submitter A.R. Boucher
Submitter's Code SK6
Site & Location , United Kingdom
Sample Material talus
Physical Pretreatment Sample was cleaned, ground and visible contaminants were removed.
Chemical Pretreatment Sample was decalcified in 2% HCl, rinsed and dried. Then gelatinised at pH=3 with HCl at 90 degrees for 4 hours. Rinsed and dried.

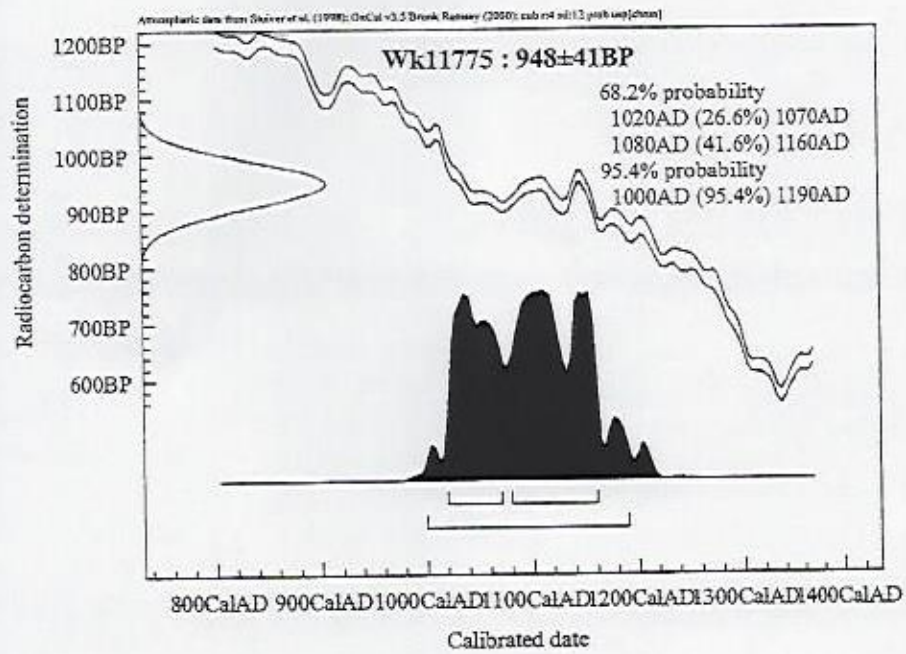
$\delta^{14}\text{C}$	-100.0 ± 4.4	‰
$\delta^{13}\text{C}$	-20.8 ± 0.2	‰
D^{14}C	-111.4 ± 4.5	‰
% Modern	88.9 ± 0.4	%
Result	948 ± 41 BP	

Comments

Alan Hogg

31/01/03

- Result is *Conventional Age* or % Modern as per Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory Error Multiplier of 1.
- The isotopic fractionation, $\delta^{13}\text{C}$, is expressed as ‰ wrt PDB.
- Results are reported as % Modern when the conventional age is younger than 200 yr BP.



Appendix 3, The Skeletal Remains by Dr Megan Brickley.

Summary

Introduction

During the excavation, the skeletal remains were discovered from two of the trenches dug. The first trench was at the end of the trench (Trench 1) with exposed and exposed during the excavation. The first skeleton was found from this trench and was complete, and the second part of the last trench was discovered. The second trench was at the end of the trench (Trench 4) with exposed and exposed during the excavation. In the case of Trench 4, only part of the skeleton of each of the individuals buried here was exposed and recovered and therefore information about the individuals buried here from this trench is more limited.

The skeletal remains were complete and no skeletal remains were. The position of the arms was not recorded in Trench 4, but in Trench 1 all the individuals had their arms extended outwards. No grave goods or other skeletal remains of burial were found during the excavation. It is possible if skeletal remains were found in the same trench, but no skeletal remains were found with the skeleton. The skeletal remains were found in the same trench and the skeletal remains were found in the same trench and the skeletal remains were found in the same trench.

Age and sex of individuals

The quality of material available from each of the individuals is to record a profile of the skeletal remains of the individuals in the trenches dug, as it is of skeletal remains of the individuals. All the individuals buried in the trenches were found in the same trench and the skeletal remains were found in the same trench. It is likely that some of the individuals buried in the trenches were found in the same trench and the skeletal remains were found in the same trench.

Age	Sex			TOTAL
	Male	Female	Unknown	
1	1	1	0	2
2	1	1	0	2
3	1	1	0	2
4	1	1	0	2
5	1	1	0	2
6	1	1	0	2
7	1	1	0	2
8	1	1	0	2
9	1	1	0	2
10	1	1	0	2
11	1	1	0	2
12	1	1	0	2
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18	1	1	0	2
19	1	1	0	2
20	1	1	0	2
21	1	1	0	2
22	1	1	0	2
23	1	1	0	2
24	1	1	0	2
25	1	1	0	2
26	1	1	0	2
27	1	1	0	2
28	1	1	0	2
29	1	1	0	2
30	1	1	0	2
31	1	1	0	2
32	1	1	0	2
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36	1	1	0	2
37	1	1	0	2
38	1	1	0	2
39	1	1	0	2
40	1	1	0	2
41	1	1	0	2
42	1	1	0	2
43	1	1	0	2
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93	1	1	0	2
94	1	1	0	2
95	1	1	0	2
96	1	1	0	2
97	1	1	0	2
98	1	1	0	2
99	1	1	0	2
100	1	1	0	2

Table 1: Skeletal remains.

The quality of bone preservation varied during analysis of the skeletal remains was very variable with all the bones discovered from Trench 1 being well preserved from that of Trench 4. One of the last skeletal remains from Trench 1 (NH 1) was a skull fragment of a young individual who was found to be complete and very well preserved. The skeletal remains were found in the same trench and the skeletal remains were found in the same trench. It is likely that some of the individuals buried in the trenches were found in the same trench and the skeletal remains were found in the same trench.

It was difficult to separate the skeletal remains from Trench 4 to an individual of the individuals buried in that trench was determined. The skeletal remains were found in the same trench and the skeletal remains were found in the same trench.

Report on the human bone from Moccas church, Herefordshire.

Megan Brickley

Introduction

During the excavation, six individuals were discovered from two of the trenches dug. The entire skeleton of two of the individuals located in Trench 1 were exposed and recovered during the excavation. The third skeleton excavated from this trench was largely complete, and only the lower part of the legs and feet were unexcavated. The completeness of these individuals allows an assessment to be made of information such as burial position and practice. In the case of Trench 4, only part of the skeleton of each of the three individuals buried here was exposed and excavated and therefore information on orientation and body position from this trench is more limited.

All of the individuals were supine and orientated east-west. The position of the arms could not be recorded in Trench 4, but in Trench 1 all three individuals had their arms folded across their chest. No grave goods or other accompaniments of burial were discovered during the excavation. It is not clear if burials would have been made in shrouds or coffins, but no metal nails or fittings associated with coffins were recovered during the excavation. Burial had not been very intensive in the areas excavated and apart from some slight disturbance of HB2, no evidence of intercutting or disturbance were found.

Quantity and nature of material

The quantity of material available from each of the individuals is as much a product of the location of the individual in relation to the trenches dug, as it is of conditions of preservation. All three individuals recorded as being < 25% complete came from Trench 4 and their lack of completeness is due to partial excavation. It is likely that most of the individuals buried at the site are largely complete and have suffered little disturbance.

	Approx. completeness				TOTAL
	> 75%	50-75%	25-50%	<25%	
N	1	2	0	3	6

Table 1. Skeletal completeness.

The quality of bone preservation recorded during analysis of the human bone was very variable with all the bone excavated from Trench 1 being much better preserved than that from Trench 4. One of the individuals from Trench 1 (HB 2) was well preserved across the skeleton with most bones being complete and very little surface weathering present (recorded as not weathered or Stage 1 Behrensmayer 1978). The majority of the other two skeletons from this trench were well preserved (not weathered or Stage 1), but there were areas of greater deterioration present (Stage 3) and in these cases far more fragmentation of the bones had occurred.

It is more difficult to assess preservation levels from Trench 4 as so little of the individuals buried in this location were excavated. Overall, bone recovered from this

trench was much damper and softer, leading to much poorer levels of preservation (Stage 3/4). However, some individual bone elements such a bone of the ankle in HB6 and the skull in HB4 were well preserved with very little or no weathering (0 or Stage 1). It is not clear what preservation in the unexcavated areas of skeleton would have been like.

Demography

The small number and partial nature of the individuals excavated makes it difficult to say much about the demography of the individuals buried at Moccas church, but it is clear that juveniles as well as adults were buried at the site and there may have been quite high levels of childhood mortality within this community.

	Age Category						
	Birth-3	3-12	12-20	20-35	35-50	50+	Adult
N	0	2	0	0	0	2	2

Table 2. Age distribution.

The determination of age at death for the juvenile individuals was based on a combination of dental eruption (Gustafson and Koch 1974, Hillson 1996) and epiphyseal union (Scheuer and Black 2000). A wide margin of error is given for each of the ages estimated reflecting the difficulties involved in making such an assessment. One reason for the wide ranges is that, prior to puberty, there is no simple way to determine sex from the skeleton and therefore the sex of the individuals excavated from Moccas is not known. The exact information on which assessments were based is available in the recording sheets that form part of the site archive.

Age determination in the adult individuals was based on epiphyseal union (Scheuer and Black 2000), the auricular surface (Lovejoy *et al.* 1985, Meindl and Lovejoy 1989) and other features of the skeleton associated with bone degeneration and aging. Only two of the adults excavated were complete enough for a more specific age than just 'adult' to be assigned and in both cases, HB3 and HB1, the individuals were judged to be older adults (50 years +).

Of the adults only one individual had sufficient areas of the pelvis and skull present for an assessment of the sex of the individual to be made following the morphological features outlined in Buikstra and Ubelaker (1994) and this individual (HB3) was recorded as a male.

Metric and non-metric data

The amount of metric data gathered was limited by the partial nature of some of the skeletons and fragmentation of many of the bones excavated and it was not possible to calculate a stature or cranial index for any of the adults excavated. Full information on all the metric data which was gathered according to Buikstra and Ubelaker (1994) is available in the site archive.

A range of non-metric traits given in Brothwell (1994) were recorded for the cranial and post cranial skeleton and full information is available in the site archive. However, with so few individuals nothing significant can be said about the results of this analysis.

Pathology

Due to the very partial and fragmented nature of the individuals excavated from Trench 4, it is possible that pathology was present in these individuals, but there was no evidence for pathological changes on any of the bones available for study from these individuals. The greater levels of completeness and better preservation of individuals from Trench 1 meant that it was possible to observe pathological changes on the bones and teeth of these individuals.

Osteoarthritis (OA) was identified and recorded according to the criteria set out in Rogers and Waldron (1995) and was found to be present in two of the adults (HB1 and HB3). In HB 1 changes associated with OA were present in the thoracic spine and in HB3 the cervical spine (much of the rest of the spine was missing or badly preserved) and the left acromio-clavicular joint were affected.

In HB2 (a child aged 4 years +/- 12 months) changes associated with an infection of the upper and lower respiratory tract, with possible linked intracranial infection were recorded. Periosteal new bone formation was recorded on the left clavicle and the pleural surfaces of four ribs from the left side. Deposits of periosteal new bone formation were also present on the endocranial surface of the occipital bone (this was the only area of skull present). A recent paper by Hershovitz *et al.* (2002) has linked changes of the type recorded in the skull of HB2 with infectious disease and tuberculosis (TB) in particular. It is possible that changes around the ribs and clavicle are linked to TB and the endocranial changes are a result of tubercular meningitis. However, as Hershovitz and co-workers point out this combination of skeletal changes could be the result of a range of inflammatory chest diseases other than TB. What is certain is that as Hershovitz *et al.* conclude in an age before antibiotics were available death in young children from acute respiratory tract infection and associated complications was probably relatively common (2002: 215)

One feature of the dentition that was very striking was the extreme degree of wear present on the teeth recorded. Dental wear was recorded using the system devised by Smith 1984 as set out in Buikstra and Ubelaker (1994:52) for the incisors, canines and premolars. Wear on the molars was recorded using the system devised by Scott (1979) as set out in Buikstra and Ubelaker 1994:53. Many of the anterior teeth were scored as 6+ using the Smith system and this gives an indication of the very high levels of wear present.

In addition to the wear, caries calculus, slight periodontal disease (score1) and hypoplastic defects were recorded in the dentition of HB1. The teeth of HB3, the other individual with a largely complete dentition, were so worn that it was impossible to record many features such as hypoplasia.

In the two adults with teeth present five teeth were recorded as having been lost ante mortem and 16 were lost post mortem. Three of the teeth present (1 molar and two premolars) were affected by caries. All of the carious teeth belonged to HB1.

References

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- Rogers, J. and Waldron, T. (1995). *A Field Guide to Joint Disease in Archaeology*. London: Wiley.
- Scheuer, L. & S. Black. (2000). *Developmental Juvenile Osteology*. London: Academic Press.

Appendix I The Skeletal Catalogue.

HB1

Age: 50+

Sex: unknown

Preservation: quite a few areas of the person are not well preserved. The bone surface is quite friable and weathered, Behrensmayer (1-3). Most of the bones are also very fragmentary.

Bones present: The right femur and patella are missing, as are some of the smaller bones from areas such as the hands and feet.

Additional notes: Dental caries, OA in thoracic spine. Limited metric and non-metric data.

Dentition:

/			/	/	/	/	/	/	/	/	/	/			
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
		/											/	/	/

Key: / = tooth lost postmortem.

HB2

Age: 4 years +/- 12 months.

Sex: n/a

Preservation: Good. The bone surface on most of the bones is well preserved and unweathered (Behrensmayer 0-1). However, many of the bones are broken, particularly the long bones

Bones present: All the bones of the skull are missing apart from the occipital. Part of the mandible is present. The left humerus is missing as are some of the smaller bones of the hands and feet.

Additional notes: Periosteal new bone formation on the endocranial surface of the occipital bone. New bone formation was also present on the posterior surface of the left medial clavicle and the pleural surface of four of the left ribs.

Dentition:

/	/	/	/	/	/		/	/	/	/	/
6	5	4	3	2	1	1	2	3	4	5	6
6	5	4	3	2	1	1	2	3	4	5	6
/	/	/	/	/	/						

Key: / = tooth lost postmortem.

HB3

Age: 50+

Sex: Male

Preservation: Bone surface preservation is very variable. Some areas, such as the skull are well preserved but others such as ends of the femora are soft and the bone surface may be missing.

Bones present: The bones of the thoracic and lumbar spine are missing, as is much of the sacrum and pelvis. The lower legs and feet from both sides are absent.

Additional notes: OA in the cervical spine and the left acromioclavicular joint. Very little metric and non-metric data was recorded.

Dentition:

	x													x	
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
	x											/	x	x	

Key: / = tooth lost postmortem, x = tooth lost antemortem.

HB4

Age: 5 years +/- 16 months

Sex: n/a

Preservation: very poor, only petrous portion of the skull and some of the teeth survive from the head, the rest of the skeleton was not excavated.

Bones present: petrous portion of skull and some teeth

Additional notes: only partially excavated.

Dentition:-

HB5

Age: Adult

Sex: unknown

Preservation: Poor. Much of the bone was very soft and almost existed only as a soil stain. Some of the bones of the skull were better preserved (Behrensmaier 0-1), but they were fragmentary and little remained.

Bones present: Some areas of skull, cervical spine, parts of clavicles and upper part of humeri.

Additional notes: only partially excavated.

Dentition: -

HB6

Age: Adult

Sex: unknown

Preservation: Overall, very poor, many of the bones very soft and friable.

Bones present: Bones from both feet and both lower legs.

Additional notes: only partially excavated.

Dentition: -

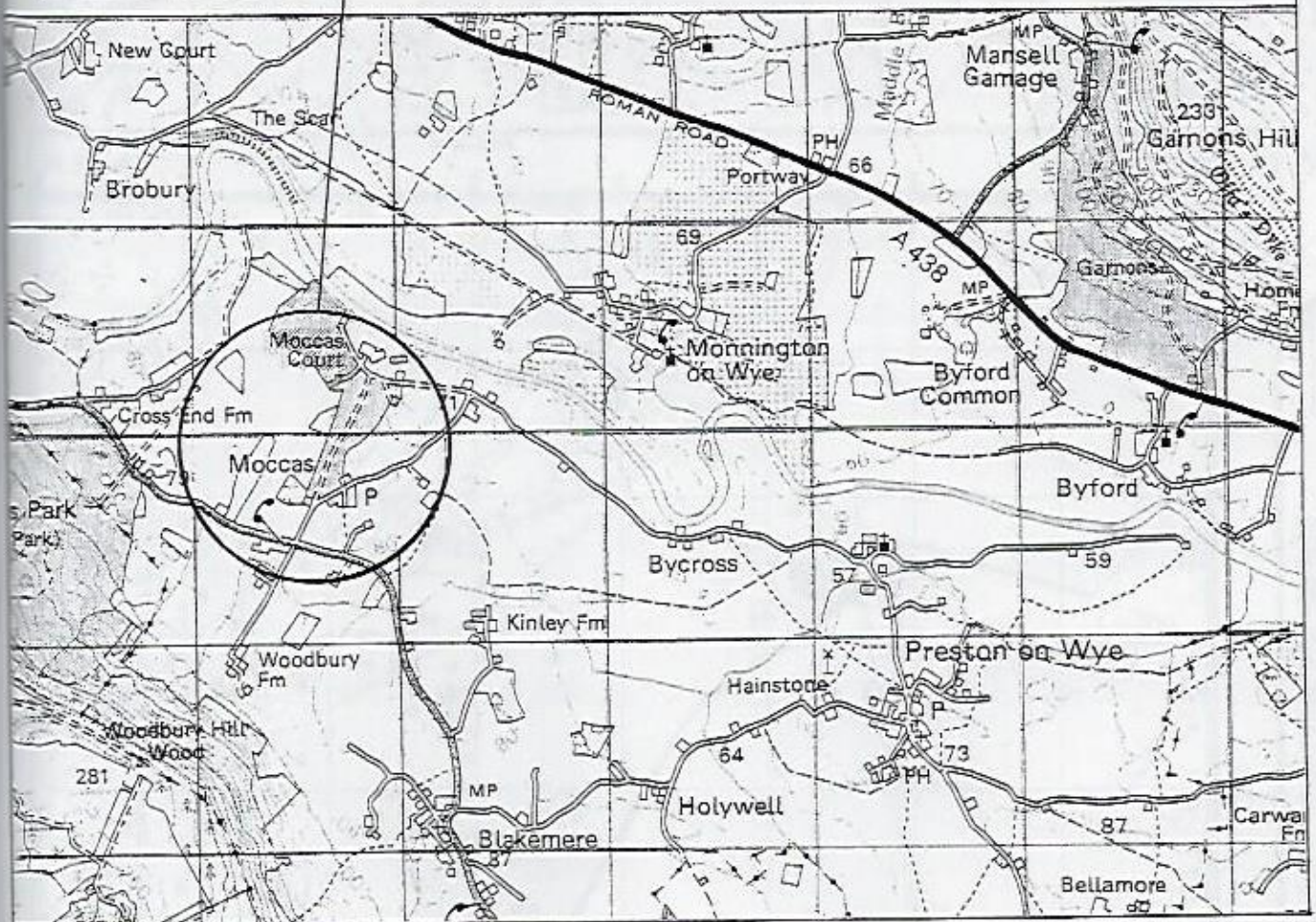
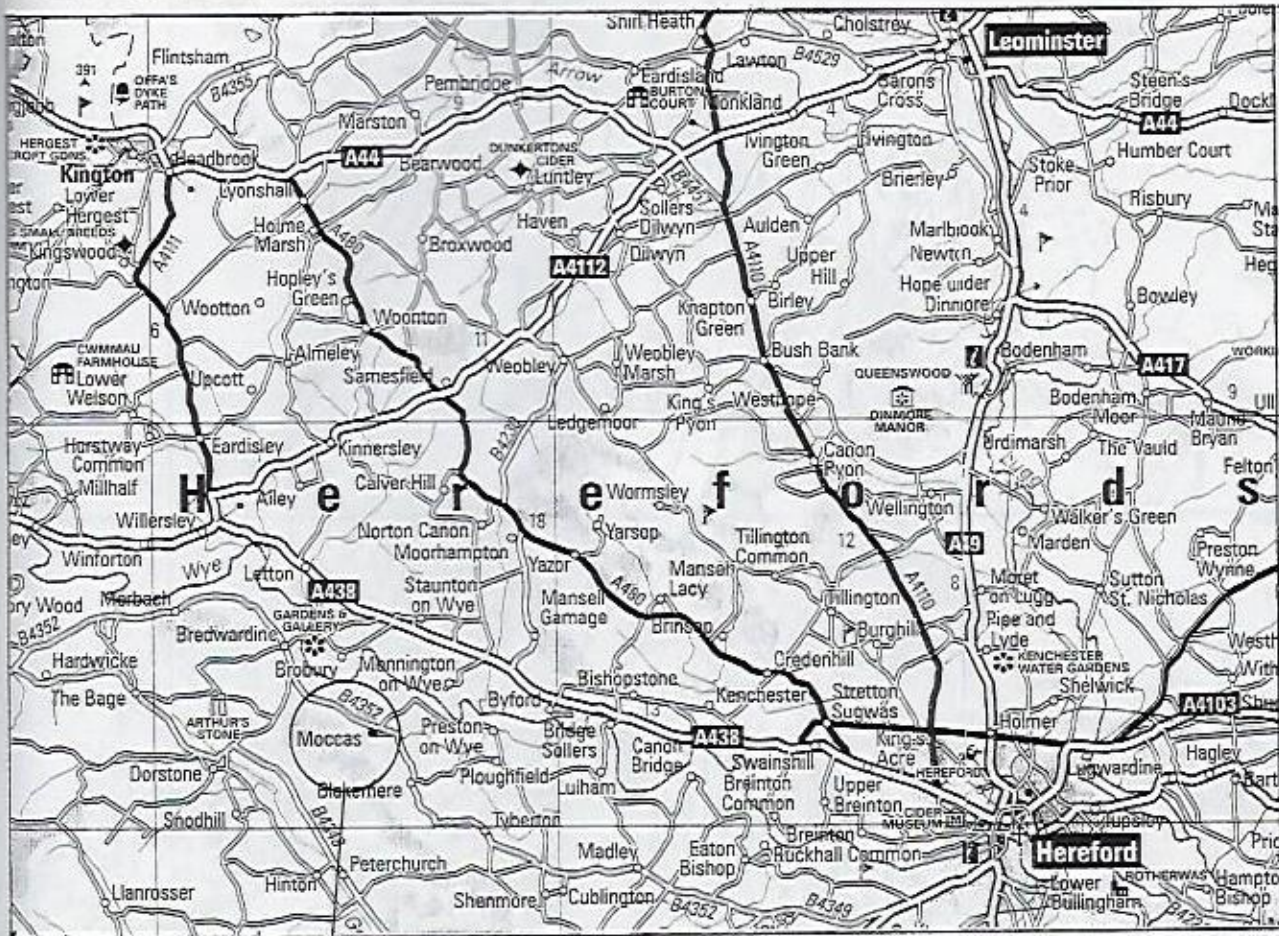


Fig.1 Site location map

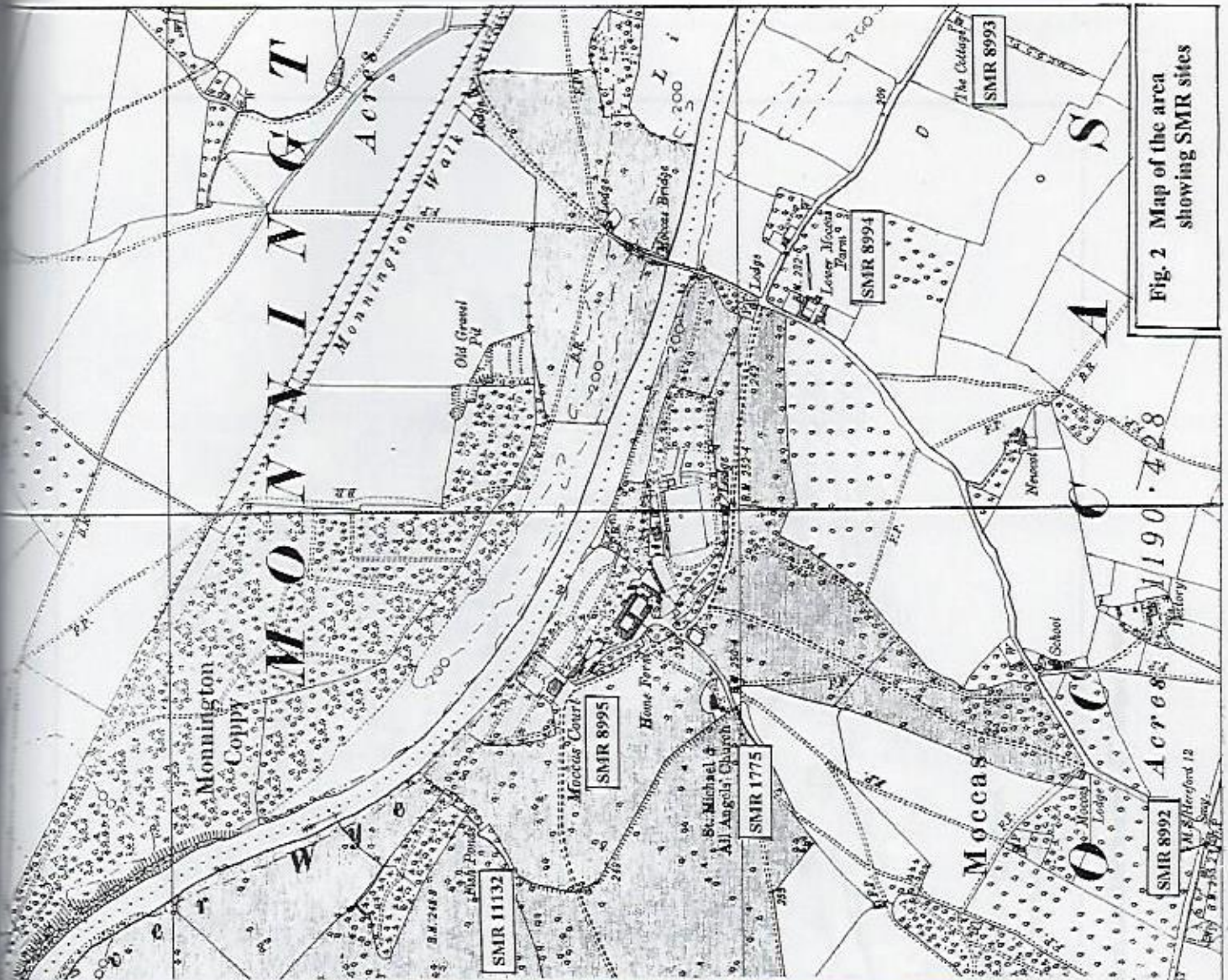
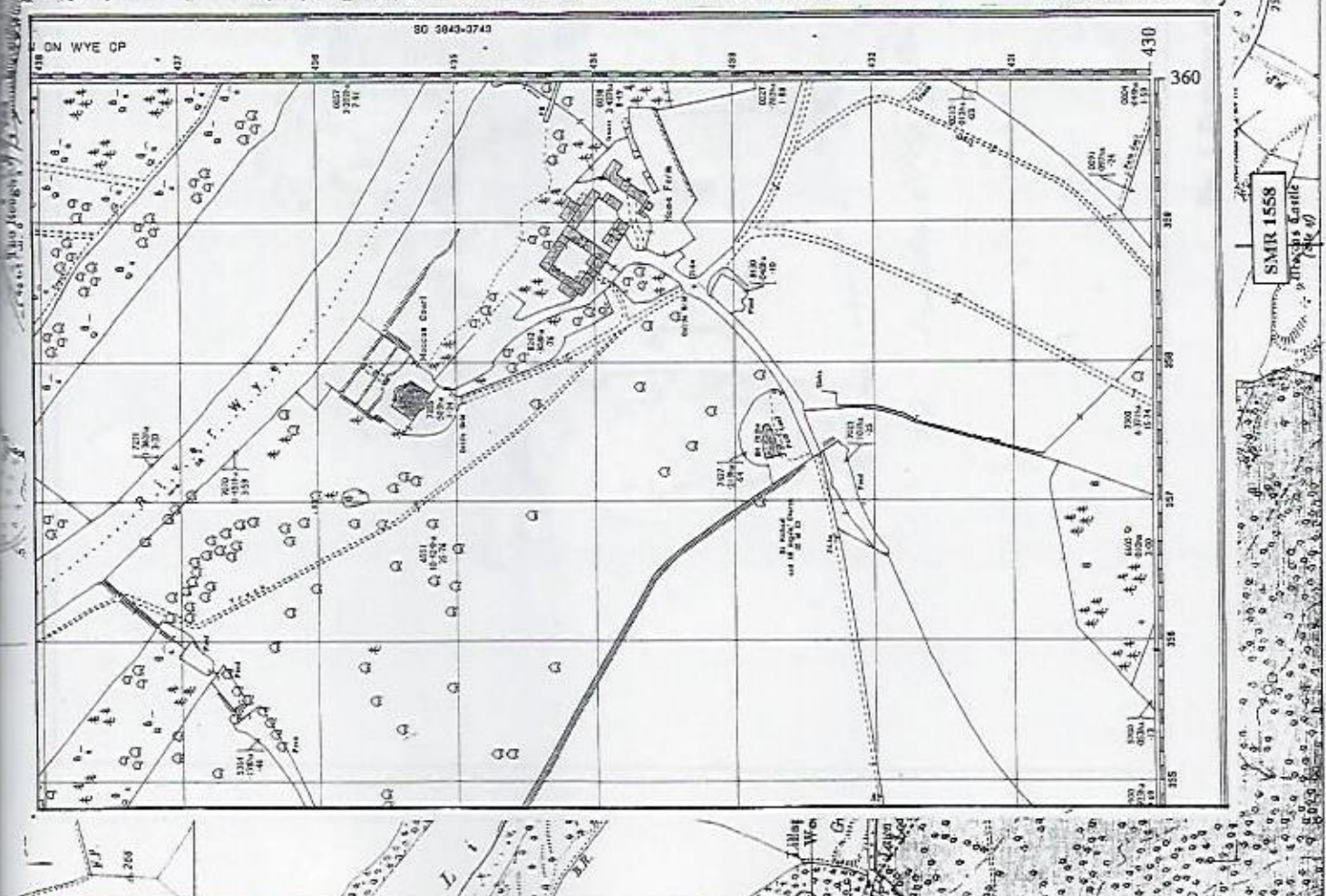
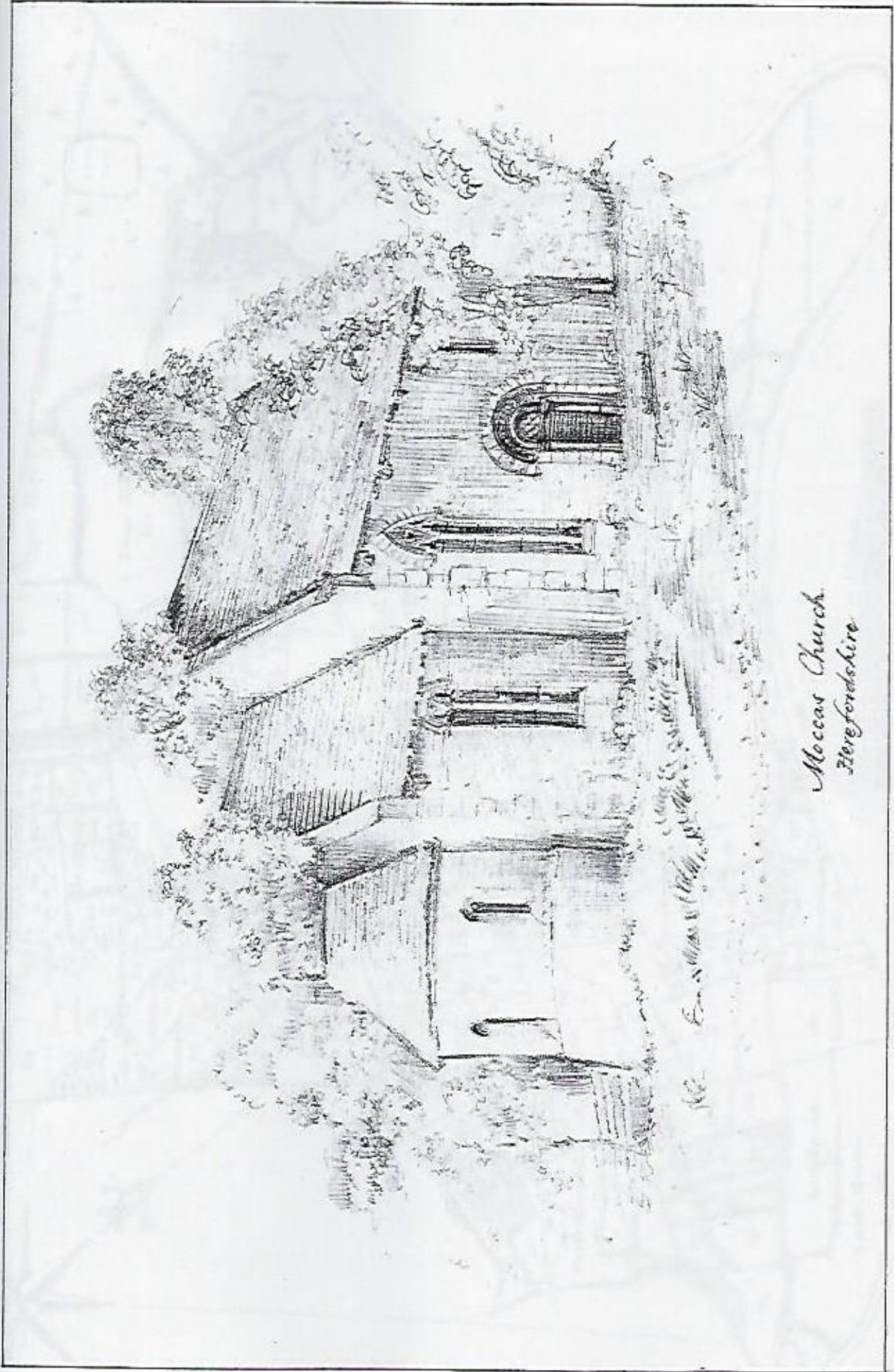


Fig. 2 Map of the area showing SMR sites





*Moccas Church
Herefordshire*

Fig. 3 Drawing of Moccas Church dated 2nd August 1867

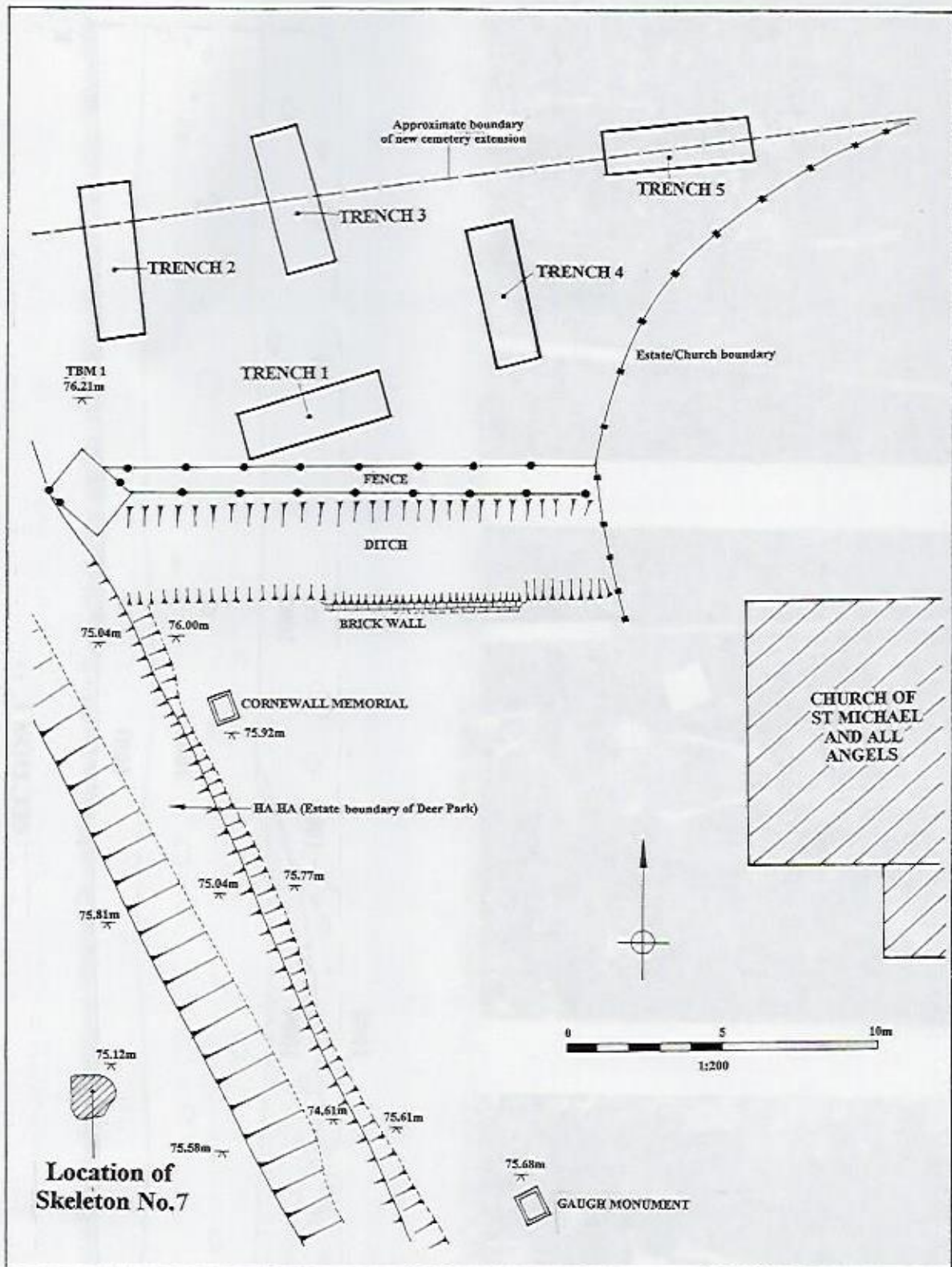
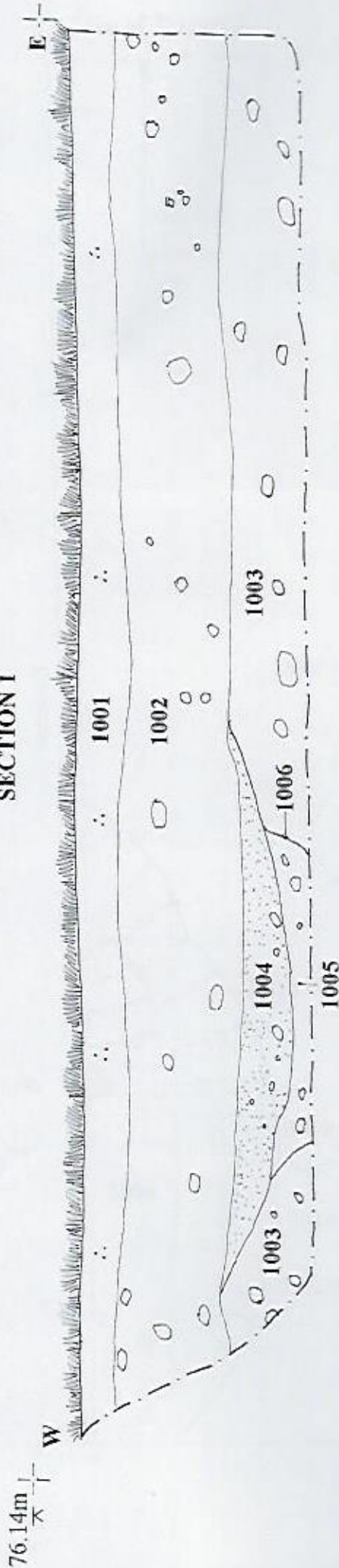


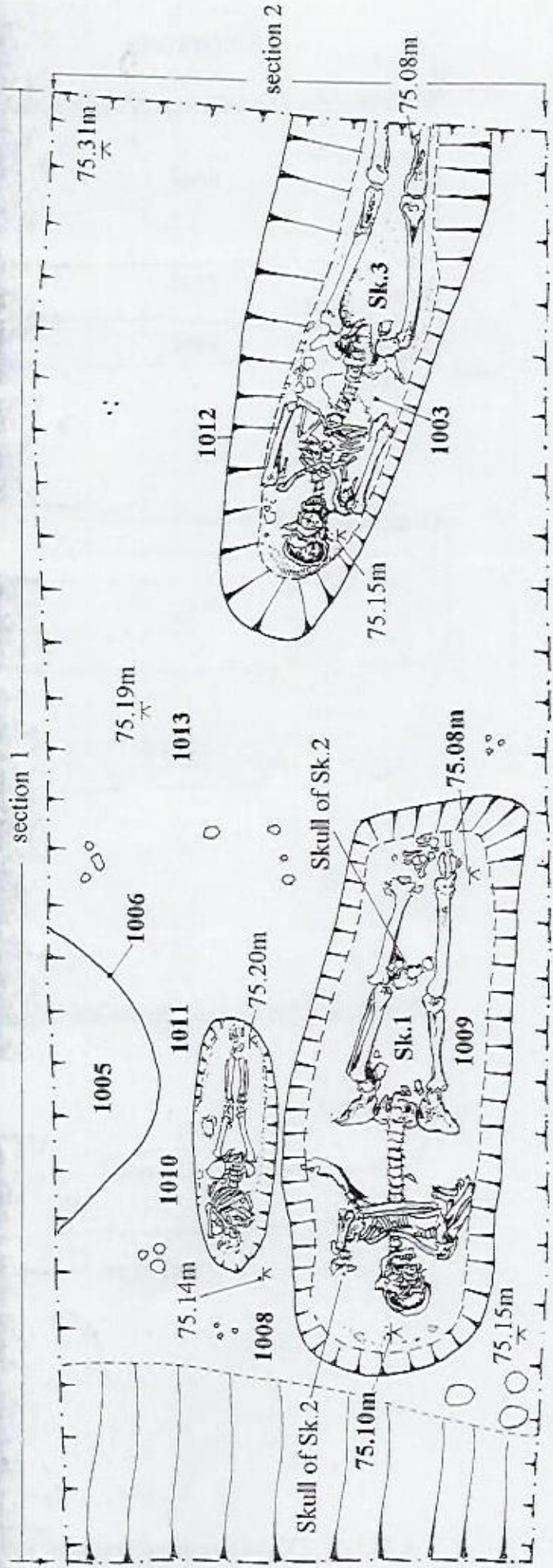
Fig. 5 Trench location plan and position of Skeleton No.7

TRENCH 1

SECTION I



PLAN I



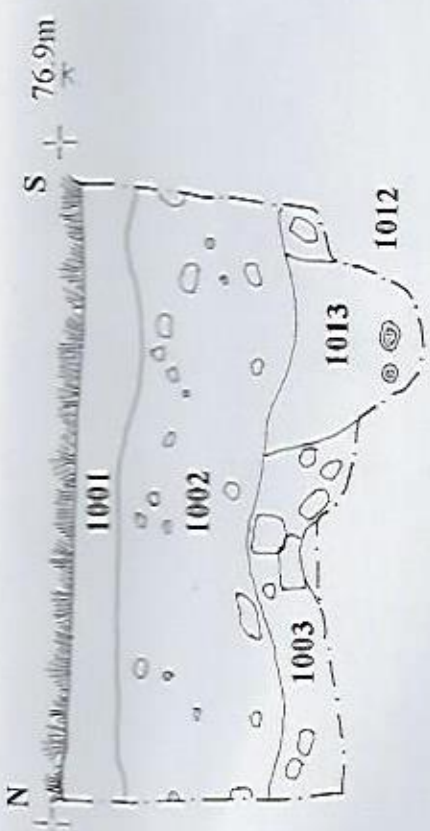


Fig. 6 Plan and section drawings TRENCH III

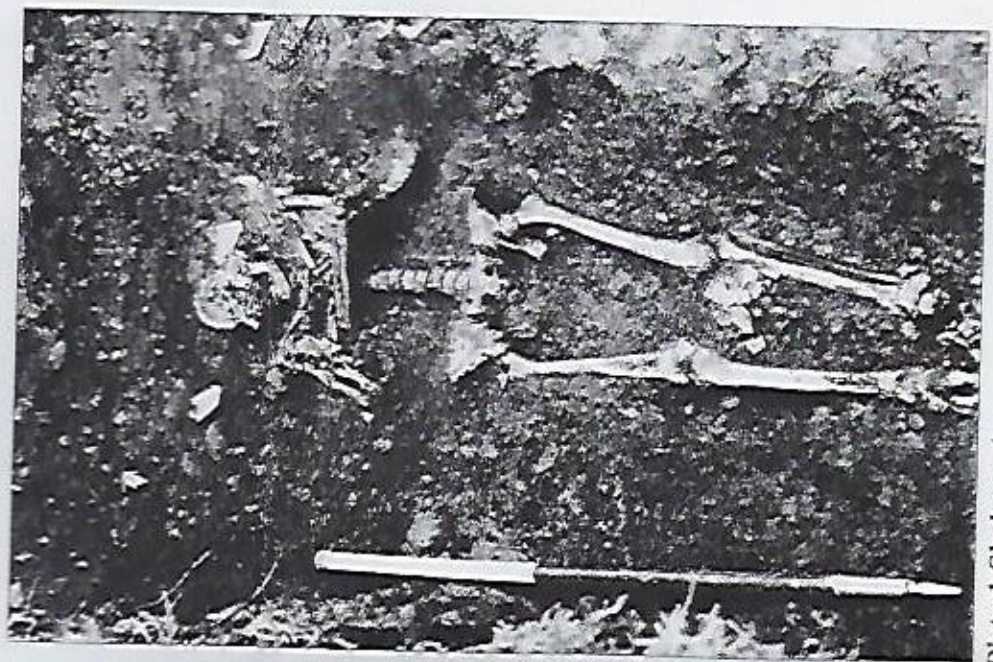


Plate 1 Skeleton 1



Plate 2 Skeleton 2

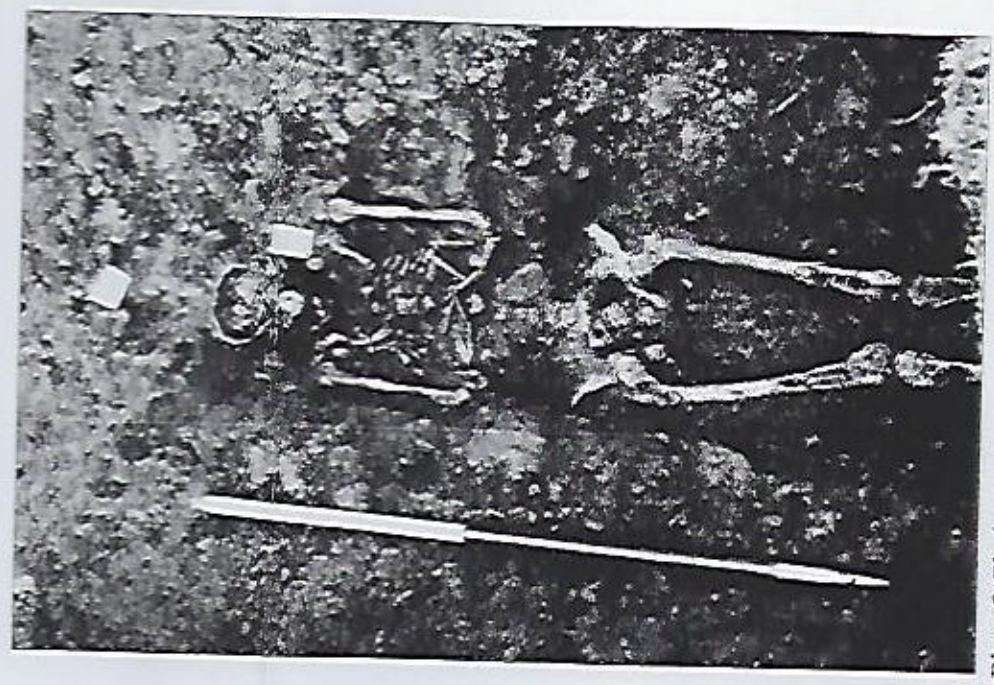
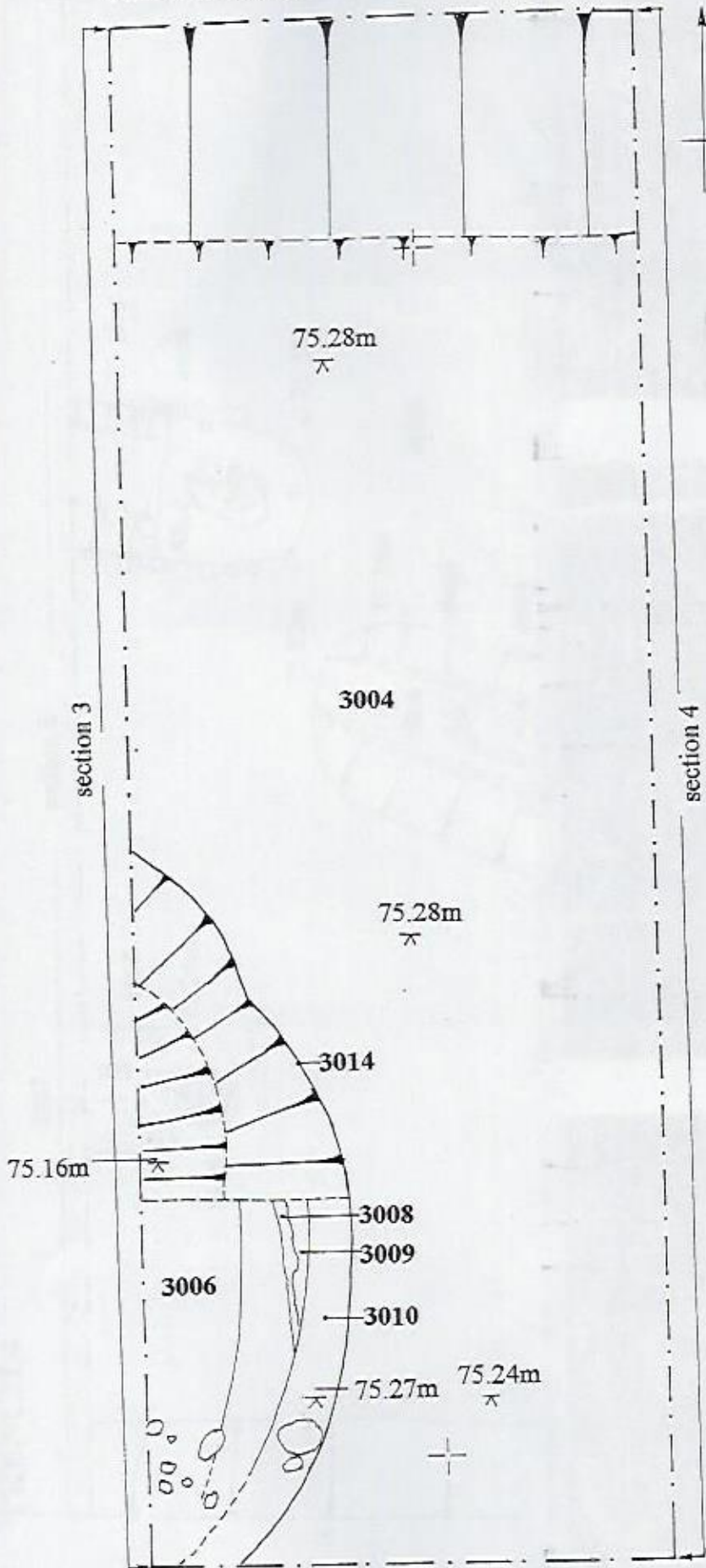


Plate 3 Skeleton 3

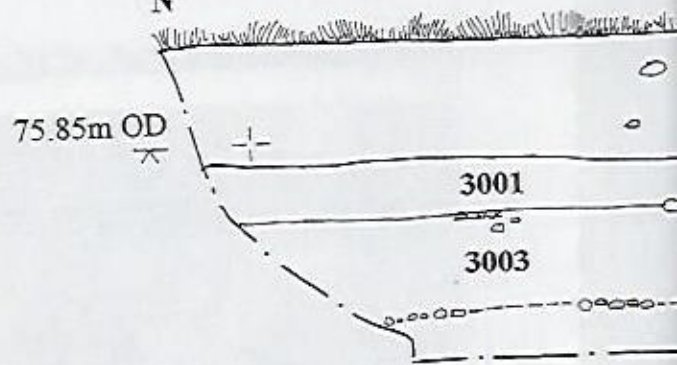
Plan of Trench 3



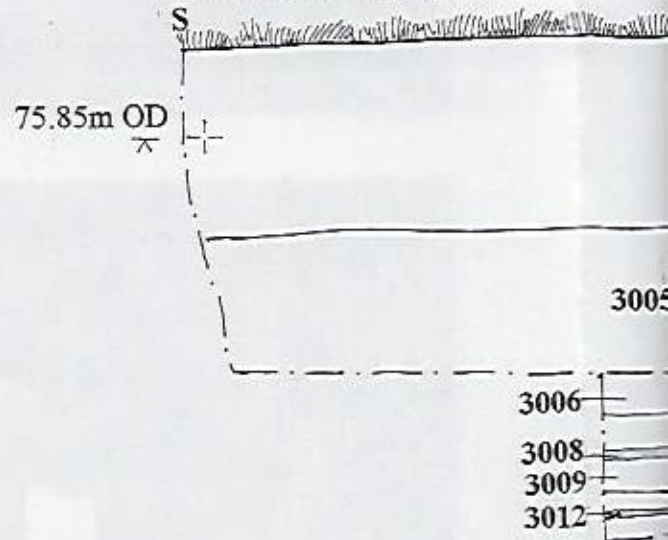
TRENCH 3



Trench 3 West facing
N



Trench 3 East facing
S



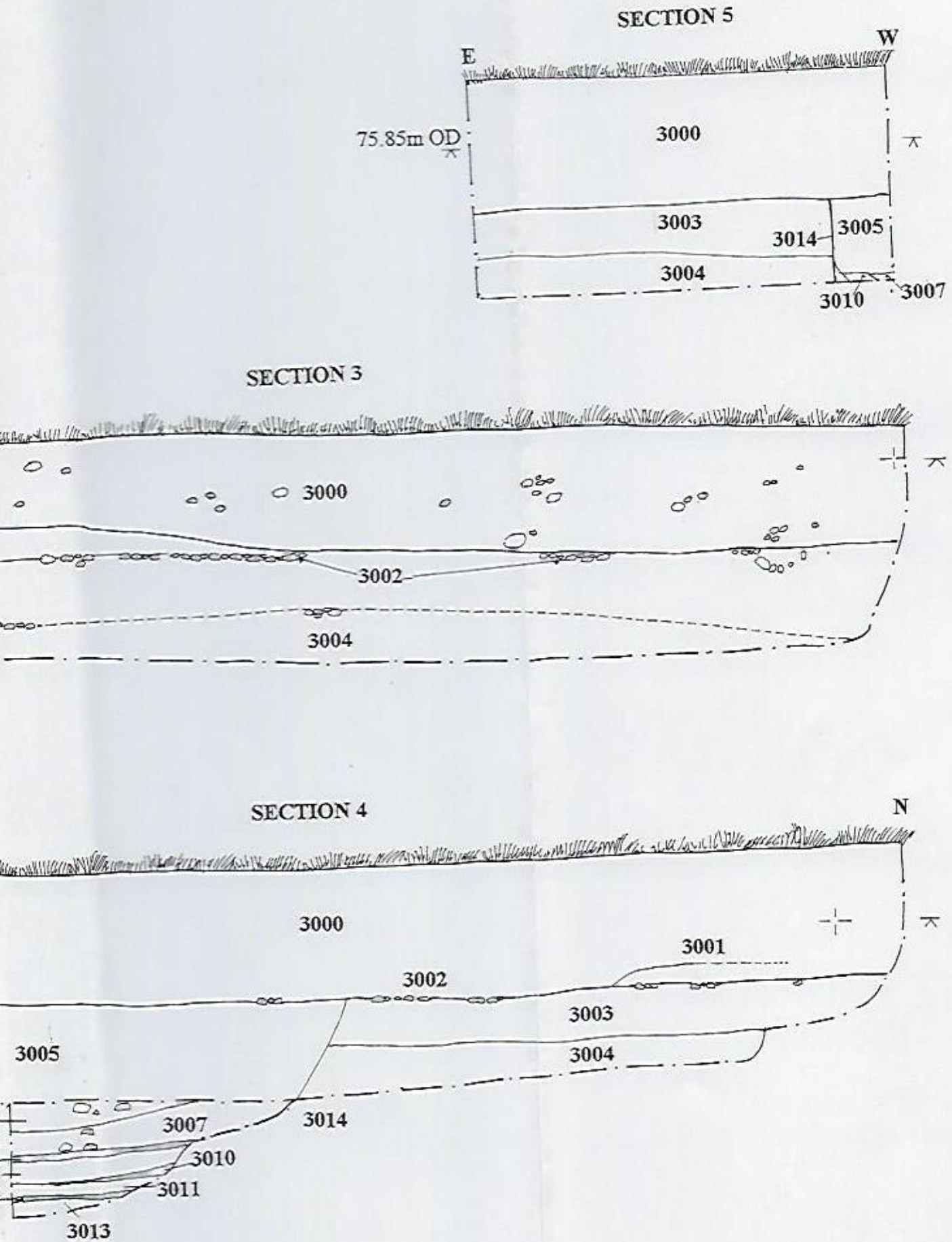
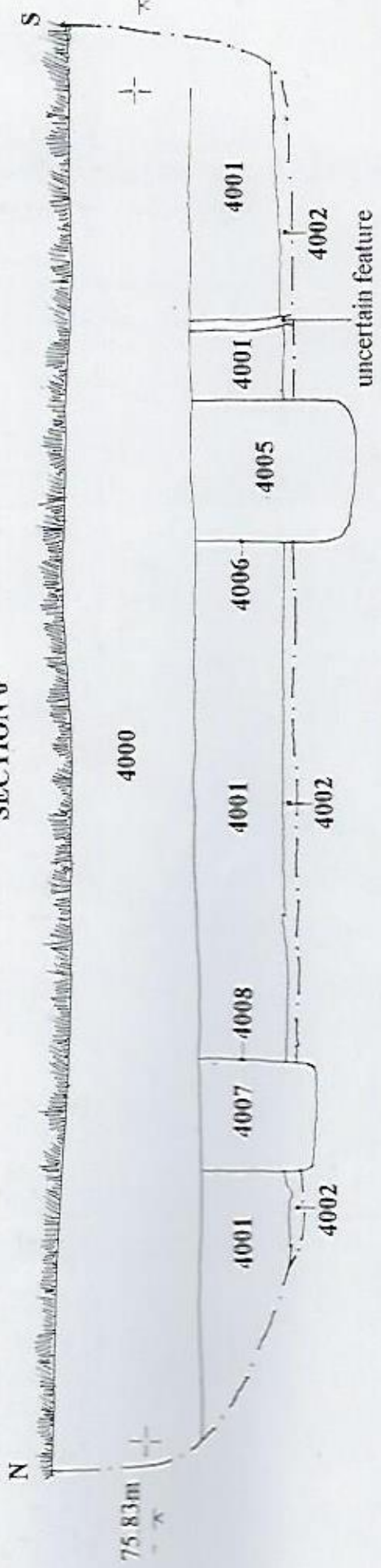
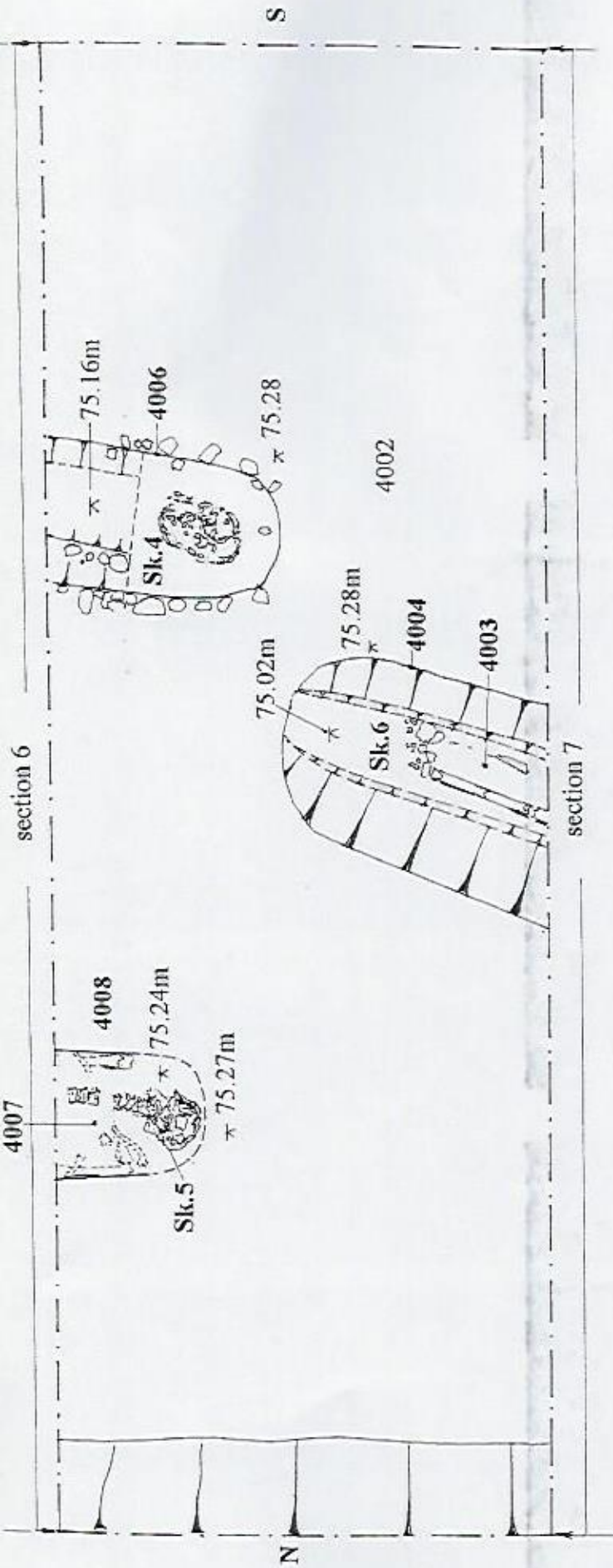


Fig. 7 Plan and section drawings TRENCH 3



4000 + 75.85 + 4000



75.85

4000



Fig. 8 Plan and section drawings TRENCH 4



Plate 4 Skeleton 4



Plate 5 Skeleton 5



Plate 6 Skeleton 6