SUAT Ltd

Archaeological Evaluation
at
Holm Mains Farm, Inverness
(JN05)

MR/SR

23rd June 2000

Archaeological Evaluation

Holm Mains Farm, Inverness (JN05)

Abstract

In May 2000 SUAT Ltd carried out an archaeological evaluation at Holm Mains Farm, Inverness, in advance of a proposed residential development. The work was funded by the developer, Tulloch Homes Ltd, Glasgow. The evaluation involved a geophysical survey covering roughly 50% of the area, carried out by GeoQuest Associates, followed by trial trenching of a 2% sample of the site.

While the geophysical survey suggested the existence of various features of interest, including possible stone trackways or field banks to the north, and widespread rectilinear cut features, excavation pointed to a lack of sites of archaeological interest. Various drainage cuts and pits were located, concentrated to the north. There was also evidence of stone clearance, and of recent road construction. The marks of recent ploughing activity were also encountered.

Of most interest, however, was the discovery of various field boundaries, running roughly east to west across the area, marked by fenceposts, a hedgeline, and a drystone wall.

It is recommended that two areas be opened up by machine for further excavation. One area (25 m x 35 m) would allow the fuller investigation of the various cut features uncovered in trench Z of the trial works. The other area of interest, measuring c 20 m x 20 m, would centre on the postholes uncovered in trench S.

1. Introduction

Tulloch Homes Ltd, Glasgow commissioned SUAT Ltd to undertake an archaeological evaluation in advance of a proposed residential development at Holm Mains Farm, Inverness (Site Code JN05). An archaeological condition had been placed on the planning application by Highland Council due to its potential archaeological interest. A copy of the specification for archaeological work provided by Highland Council is included. There are several archaeological sites in the immediate vicinity, including a motte at Holm House, to the north-west of the development, and a Pictish stone known as the "Boar Stone" to the south, both protected by legislation as Scheduled Ancient Monuments.

A desk-top assessment carried out by SUAT in March 2000 revealed that there were no known sites or find spots within the development, and a thorough search of cartographic sources similarly revealed no known features. However, to ensure that archaeological remains, deeply buried, partially ploughed out or not conducive to aerial photography, were not present, further

site investigation was recommended in the form of geophysical survey followed by a programme of trial-trenching targeting 2% of the total development area.

2. Site Location and Description (Illus 1)

The site proposed for development, *c* 14 hectares in area, lies on the outskirts of modern Inverness, some 3.5 km to the south-east of the city centre, at National Grid Reference NH 655 414. Essich Road, to the east and Holm Burn, to the west form the site boundaries. Along the western edge of the site, there is a steep slope down to the Holm Burn. In general, the area slopes gently from the centre of the site down to the north and to the south. The 45 m OD contour line runs through the south-eastern corner of the site.

The area comprises four fields, formerly Holm Mains Farm, all under rough unimproved pasture, very wet in places. The Macaulay Institute for Soil Research, Aberdeen, classifies the area as undulating lowlands, mounds and terraces with gentle slopes. The component soil is humus – iron podzols, some gleys. The underlying geology is fluvioglacial raised beach sands and gravels. A recent survey by Grampian Soil Survey estimates the topsoil as *c* 0.45m deep on average.

3. Historical and Archaeological Background

Inverness and the surrounding countryside are rich in sites and finds from all periods which testify to the importance of the area for settlement and the movement of peoples through the Great Glen over thousands of years. Prehistoric remains are extant, as in the case of the ring cairn at Culduthel to the east of the development, or visible as cropmarks in aerial photographs as in the complex of sites at Knocknagael to the south of the development. The early medieval period is represented by the Boar Stone, which formerly stood to the south of the development. On the edge of a steep gully sloping down to the Holm Burn, adjacent to the proposed development area, lies the medieval motte known as Holm House. This motte may have had an outer enclosure (bailey) but topographically this is most likely to have been to the north of the castle mound and, therefore, outwith the development.

To the north lies the medieval burgh of Inverness, with its royal castle, probably built on the site of an earlier Pictish fort where St Columba visited the Pictish king, Bridei. In more recent times, in the aftermath of the Jacobite Rising of 1715 a military road linking Inverness with Fort Augustus and Fort William, which lies to the north-west of the development, was constructed to aid policing of the Highlands.

The burgh of Inverness was founded by David I after the death of Angus, Earl of Moray in 1130, when Moray was annexed to the Crown. The motte at Holm House was the site of an early castle, probably built by a follower of David as part of the king's policy to maintain royal control in the turbulent province of Moray. It was strategically situated to protect the south-western approach to the new royal burgh along the Great Glen. The builder of the castle is unknown,

although one tradition assigned the castle to the Comyns (*OSA*, 112). It is not known when the motte at Holm was abandoned, but in 1507 there is mention of a 'castle hill, fortalice and walls thereof' at Bordland in the barony of Cardale. This castle presumably was a successor to the motte. In the late 16th century Pont's map of the Great Glen and Glen Garry, shows the 'Cast[le] of Borlan[d]' to the south of Inverness, but not Holm (Stone 1989, 50). In the mid 17th century, Bleau's maps of northern Scotland and Moray, based on Robert Gordon of Straloch, show 'Holme' and 'Borlum' (Stone 1991, 73 & 75).

The land proposed for development is rough, hummocky unimproved pasture, very wet in places. To ensure that archaeological remains, which would be threatened by the proposed development, have not survived undetected, either being deeply buried, partially ploughed out or not conducive to aerial photography, SUAT recommended further site investigation involving a geophysical survey of the fields followed by a programme of machine-cut trial-trenching targeting 2% of the total development area.

4. Method

A geophysical survey of the development area was carried out by GeoQuest Associates between the 15th and 20th May 2000. This involved a geomagnetic survey of 50% of the majority of the area, with 100% sampling of the northern zone, near the motte, as described in the attached report (GeoQuest Associates, 2000). This provided evidence for the existence of possible trackways or stone enclosure banks to the north of the area, along with widespread rectilinear ditches, possibly related to field-systems or small-scale enclosures. This evidence was used in determining the location of trial trenches, particularly to the north of the study area.

A 2% sample of the development area was examined by trial trenching by a team of three SUAT personnel, under the supervision of Mike Roy. This survey took place between 22nd and 27th May. The weather during this period was in general, sunny with occasional, often heavy, showers. The 27th was overcast with continuous, heavy rain. In total 35 trenches were opened, as listed in the attached appendix. These trenches (A-I2) were generally linear, and were excavated by a JCB with a straight-edged bucket with a width of 1.7 m. The trenches varied in length from 15 to 60 m. In several instances, ie, trenches I, Y and Z, larger areas were excavated in order to locate the extent of features.

Features uncovered such as deposits and cuts (pits, postholes, etc) were investigated by hand excavation, and where necessary drawn in plan at a scale of 1:20 or 1:50 and in section at a scale of 1:10. The trenches were described by studying the sections of the trenches at various locations.

5. Results

The 35 trenches excavated showed that in general the development area consisted of 0.3 to 0.45 m of grey sandy silt topsoil (001) overlying a subsoil of yellow or red sand and silt, often with frequent gravel and cobbles (002).

There were commonly concentrations of silt material at the bottom of dips in the topography, such as in the middle of trench A2, where the ground level fell rapidly before levelling off. In some areas (ie trenches I, K and S) there was a basal topsoil layer (014/017/026/030), generally a thin (0.15 m deep) layer of silty or sandy loam under 001.

In many instances excavation did not confirm the geophysical results, for example failing to encounter evidence of ditches or substantial cut features in trenches K, L or M, and finding no evidence of trackways or stone enclosure banks to the north. Several, probably modern, features were however encountered, and there was evidence that the above-noted "trackways" might in actuality represent field drains or areas where the subsoil was unusually rich in stone (eg the north end of trench Y).

The following trenches produced evidence of human activity: A, B, D, E, H, I, J, K, O, R, S, V, Y, Z, A2 and D2. Certain of these produced evidence that was certainly modern in nature. In trench D2, to the north, gravel hardcore with plastic and metal debris (062) evidenced the recent construction of a road and confirmed geophysical anomaly **f1**. Trench A2 cut through a modern asphalt road 059, with two layers of make-up material 061 and 058. This road ran roughly NE-SW across a rise to the south of the northernmost field, and was still visible to the west. There were iron artefacts within the topsoil (001) covering this road, again indicative of the modern debris **(f1)** located by geophysical survey.

Running across the development area from east to west, just to the south of the present fenceline between the middle fields of the development, was a partially upstanding drystone wall (028), apparently the former field boundary. This rubble-built structure had a maximum surviving height of around 0.95 m and a width of *c* 1.0 m. It acted as a terracing wall, holding back a higher level of earth to the north. This wall was largely hidden under topsoil and undergrowth.

Another probable field boundary was uncovered in trench I, to the south of the area. There a narrow (0.35 m-wide) cut (025) into subsoil was uncovered, which ran roughly NE-SW. The cut was only 0.2 m deep, and its surface showed extensive root disturbance, perhaps pointing to its having been a hedgeline. No dating evidence was located within the fill (011).

There were three apparent drainage ditches in the northernmost field. In trench Z shallow linear cut 053 ran roughly E-W and contained cobble-rich fill 053. To the west, within trench Z, was located V-shaped ditch 048. This was a more substantial feature, having a maximum depth of 0.63 m, and a width of 1.3 m. At a depth of 0.45 m this cut had a break of slope leading to a near vertical sided slot. This linear ditch ran for at least 5.0 m roughly N-S, and had a rounded end to the south. To the north it continued under the section, but was not picked up in trench C2 less than 10 m further north. No dating evidence was recovered from the fills of this feature. The lower fill (047) contained frequent cobbles, suggesting a drainage function.

To the south, in trench A2, a third apparent field drain was located under road 059. This cut (055) ran roughly NE-SW along a marked rise in the northern field and was cut into subsoil 002. It was 2.0 m wide, but only 0.35 m deep. Its gently sloping concave sides led to a steep-edged slot through its centre, similar to the slot in cut 048. Again the lower fill (056) of this feature was rich in cobbles.

In several locations probable postholes were encountered. These included individual postholes 008 in trench E, 063 in trench J and 052 in trench A2. The fill of the latter (045) contained 19th century ceramic material. Fill 006 of posthole 008, however, produced a whetstone of apparently medieval or earlier date. This was the unique artefactual find of any archaeological significance.

There was a concentration of postholes in trenches R and S. Five circular or subcircular postholes (033, 035, 064, 065 and 066) were found following a roughly NE-SW line over a distance of around nine metres in trench S. Each had a diameter of around 0.5-0.6 m, and they varied in depth from 0.2 to 0.6 m. To the south, in trench R, two further circular cuts (073 and 075) were located. These were notably smaller features, however, having diameters of only 0.2 m and 0.3 m respectively, suggesting that they were merely the bases of postholes. There was a lack of dating evidence from any of these postholes, and it seems very likely that they represented the remains of relatively recent fencelines.

Two more substantial cut features were of note. One of these, cut 020, was encountered in trench K. It was a 0.25 m deep cut into subsoil 002, and had a subsquare plan with a width E-W of around 1.0 m. Of its fills the most notable was 018, a thin deposit of charcoal. This suggested that the pit might have functioned as a hearth. There were no other contemporary features encountered in trench K or the nearby trenches L and M, suggesting that this pit was not part of a larger structure. Although the geophysical survey had pointed to the existence of a group of ditches in this location none were visible. The fills of pit 020 were covered by basal topsoil 014/017, into which a single, later, square posthole (016) had been cut.

In the northern field, again in trench Z, another pit cut (051) was discovered. This had a rounded shape with a maximum diameter of around 4.0 m and a depth of at least 0.98 m. Its function was not clear, though it contained a 0.1 m deep deposit of black/brown organic silt (049), which may have represented buried turf. If so, this might suggest that the pit was opened and closed in quick succession. Again no dating evidence was encountered.

In two areas large concentrations of stones pointed to stone clearance, or perhaps the demarcation of boundaries with stone banks. In trench Y a pile of cobbles was visible over an area of roughly 3.0 m to the north-east of the trench. These lay directly under the topsoil, and had apparently been deposited intentionally, perhaps in recent times. Further south, within trench Z, a more noteworthy concentration of stones (043) was located within

shallow oval pit 067. Although this pit had a depth of only *c* 0.3 m it had a length along its longest (NW-SE) axis of around 5.5 m.

This area of cobbles may be related to geophysical anomaly **f4**, a supposed stony area running NW-SE, perhaps representing a trackway or field bank. Although the area of stones uncovered was limited (with no evidence being encountered of stone spreads in either trenches C2, to the northwest, or H2, to the east) it is conceivable that a series of such stone deposits might represent a field boundary. A trackway seems an unlikely interpretation, as there was no sign of a continuous linear stone-built feature.

Evidence of ploughing was encountered in a number of trenches. These included trench B, where three shallow, linear cuts (005a-c) into the subsoil ran approximately NE-SW, and trench H, at the southern end of the development area, where a number of narrow, linear E-W striations (009) were visible in the subsoil. In trench O, to the south of wall 028, two linear plough furrows (069 and 071) were visible cut into the subsoil. These ran roughly N-S and were around 0.25-0.3 m wide and 0.6 m deep. Again, no finds were located within the fills (068 and 070) of these features.

Burnt mammal bone deposits were encountered in three locations. Unfortunately the material recovered was not identifiable to species. These deposits were: 004 in trench D, a deposit that was not *in situ* as it had been disturbed by earlier test-pitting; 036 in trench V, a deposit that lay within 0.4 m–wide subcircular cut 037, and 046 in trench Y, which lay within shallow circular cut 060.

Several other deposits were found under the topsoil, including charcoal spread 003, to the south of trench A and organic material 010 in trench I (possibly buried turf).

6. Discussion

Very few of the features suggested by geophysical survey were actually encountered during the trial excavation. None of the ditches plotted, including features **f5** and **f7**, were revealed by trial trenching. The only, slight, exception to this rule was **f8**, which may have appeared as a shallow ploughmark in trench A (feature 005a). Of the possible stone field banks or trackways there was only limited evidence, suggestive rather of field drains (053) and stone clearance (043/067). It is possible that stone-filled pit 067 might have been part of a linear stone field boundary (**f4**), though it seems unlikely that the continuation of such a feature would not have been seen in trench C2.

The various other features (postholes, pits, ditches, etc) were remarkable for their lack of dating evidence, and it is likely that they were of relatively recent date (as suggested by the 19th century pottery in posthole 052). The only notable artefact encountered was a whetstone of perhaps pre-medieval date in the fill of posthole cut 008 in trench E.

The most noteworthy finding of this evaluation has been the existence of various field boundaries traversing the area, roughly from west to east. These included hedgeline 025 to the south; drystone wall 028, near the centre of the area, and the fenceline revealed by postholes 033, 035, 064, 065 and 066 in trench S. Of these drystone wall 028 is almost certainly fairly recent, being the predecessor of an existing fenceline. The hedgeline in trench I had a similar orientation to the plough striations (009) encountered in trench H, suggesting recent ploughing following that boundary. The unusual NE-SW orientation of the fenceline in trench S might suggest an earlier date for this boundary.

7. Recommendations

The trial work has identified two areas worthy of further investigation. To the north, trench Z was the site of two large pits (051 and 067), and of a linear ditch (048). No dateable material has been uncovered from these, and opening up this area would allow investigation of the form and extent of these features, and perhaps provide dating evidence. The five posthole cuts in trench S are also of interest, postholes being unusual evidence for boundary markers in the area (D. Low, pers. comm.), suggesting they may have been part of some other structure. It is therefore recommended that two areas be opened up by machine for fuller excavation. These would measure approximately 25 m x 35 m (around trench Z) and 20 m x 20 m (around trench S).

It is estimated that this work would take a team of three archaeologists three days to complete, assuming that the backfilling of the opened areas did not require their presence. A provisional costing is appended.

8. Acknowledgements

The archaeological evaluation was commissioned by Tulloch Homes Ltd., Glasgow. Geophysical survey was carried out by GeoQuest Associates.

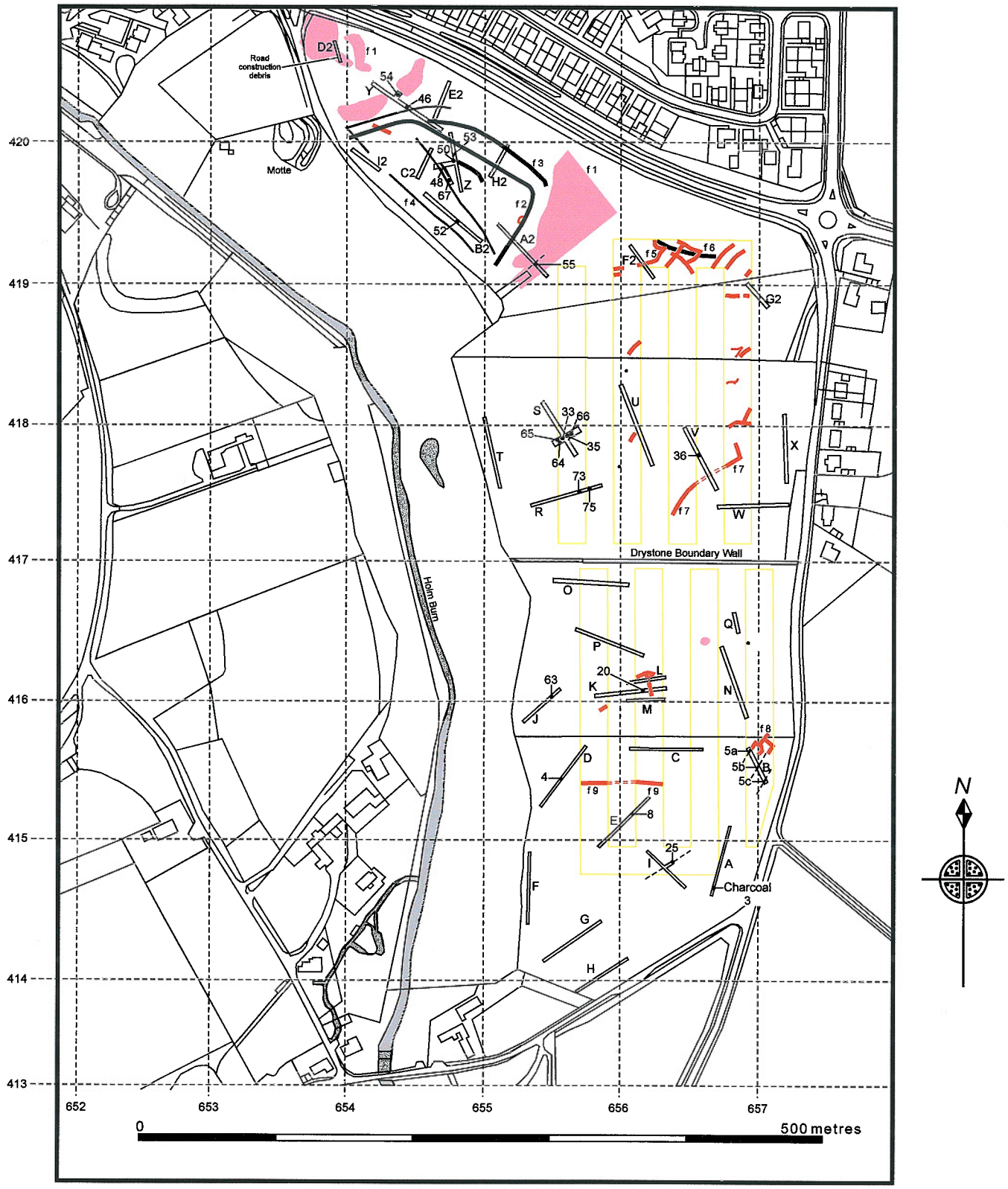
9. Bibliography

OSA 1976 *The Statistical Account of Scotland, vol XVII, Inverness-shire, Ross and Cromarty*, (Gen Eds) Withrington, D J & Grant, I R. Wakefield.

Stone, J 1989 *The Pont Manuscript Maps of Scotland.* Tring.

Stone, J 1991 *Illustrated Maps of Scotland From Blaeu's Atlas Novus of the 17th Century.* London.

Illus1


Road construction debris
Motte
D2
f1
54
Y
46
E2
53
50
J2
C2
48
67
Z
H2
f3
f1
f4
f2
52
B2
A2
55
F2
f5
f6
G2
S
33
66
65
35
64
U
V
36
f7
X
T
73
R
75
W
Drystone Boundary Wall
Holm Burn
O
Q
P
20
L
63
K
N
J
M
f8
5a
5b
5c
B
D
C
4
f9
f9
E
8
25
I
A
Charcoal
3
F
G
H
420
419
418
417
416
415
414
413
652
653
654
655
656
657
0
500 metres
N

JN05

APPENDIX

Provisional Costing for further work at Holm Mains, Inverness

1. Fieldwork

Mobilisation 0.5 day	£60
Travel time	£300
Crew bus/fuel costs	£105
1 Supervisor @ £120 per day x 3 days	£360
2 assistants @ £100 per day each x 3 days	£600
Tools/photography/consumables	£60
Accommodation/expenses	£315
Portable toilet (unless supplied by client)	£60

JCB to be supplied by client

2. Products & Reporting

Report-Writing x 3 days	£360
Illustration x 3 days	£375
Environmental Analyses & Report x 4 samples	£260
Finds Processing	£90
Finds Reports (Pottery/Flint etc)	£150
Archiving (NMRS/TT) x 1 day	£150

3. Project Management

Project Manager x 1 day	£150

4. Contingency for Radio-Carbon dating

The features to be excavated may yield material suitable for radio-carbon dating which would be important for the interpretation of the features. A budget of **£500** should be allowed for but should suitable samples not survive, this budget would not be drawn from.

Total (exclusive of Contingency above) **£3,395**

All prices exclusive of VAT

The prices quoted are exclusive of VAT at the standard rate (currently 17.5%). As SUAT Ltd is a charity, archaeological research undertaken by us for other 'eligible bodies' (public bodies including central and local government departments and agencies, educational and charitable organisations) will normally be **exempt**, if the client can confirm it is an 'eligible body' in terms of *The Value Added Tax Act 1994*, Schedule 9, Groups 6 & 7. Work undertaken for individuals or commercial businesses will normally be **taxable**.

MDR/CAM/21st June 2000

Colour Slide Record of Trial Trenching at Holm Mains, Inverness (JN 05)

C/S No.	Description	Contexts	Camera facing	Scale	Date
1:34	Working shot: south field		N		22.5
2:3	Charcoal spread 003 in trench A	003	E	1.0m	22.5
2:7	Ploughmark 005 in trench B: section	005	SW	1.0m	22.5
2:14	Burnt bone 004 in trench D	004	SE	1.0m	22.5
2:18	Posthole 008 in trench E, with packing stones 007 and whetstone	006-008	NW	1.0m	22.5
2:24	Ploughmarks 009 in Trench H	009	NE	1.0m	22.5
2:31	Boundary 011/025 in trench I	011; 025	N	1.0m	22.5
2:35	Trench J: charcoal spread 012 in posthole 063	012; 063	NE	1.0m	23.5
3:5	Possible hearth 020 with fill 013 in trench K	013; 020	S	1.0m	23.5
3:7	Trench K: general view		W	1.0m	23.5
3:14	Field boundary wall 028 to west	028	N	2.0m	23.5
3:15	Field boundary wall 028 to east	028	N	2.0m	23.5
3:19	Trench S: general view		SE	2.0m	24.5
3:21	Posthole 033 in trench S	033	W	2.0m	24.5
3:26	Burnt bone deposit 036 in trench V	036	W	1.0m	25.5
3:34	East-west alignment of postholes in trench S	033; 035; 064-066	W	1.0m	25.5
3:37	E-facing section of posthole 033in trench S	031-033	W	1.0m	25.5
4:2	Trench Z: general view		N	1.0m	25.5
4:3	Trench Y: general view		SE	1.0m	25.5
4:14	SE end of trench A2 with road 059	059	SW	1.0m	26.5
4:15	E-facing section of cut 051 with fill 041 in trench Z	041; 051	W	1.0m	26.5
4:18	Extent and location of pit 041/051 in trench Z	041; 051	NW	1.0m	26.5
4:22	Pit 043/067 and ditch 042/048 in extension of	042; 043; 048; 067	SE	1.0m	26.5

	trench Z				
4:23	Field drain 044/053 in trench Z	044; 053	N	1.0m	26.5
4:26	Posthole 045/052 in trench A2	045; 052	W	1.0m	26.5
4:28	Road construction debris/gravel 062 in trench D2	062	N	1.0m	26.5
4:32	N-facing section of ditch cut 048	042; 048	S	1.0m	26.5
5:2	Burnt bone deposit 046 in cut 060 in trench Y	046; 060	W	2.0m	26.5
5:6	E-facing section of posthole 045/052 in trench A2	045; 052	W	1.0m	27.5
5:10	Stone spread 054 in trench Y	054	S	2.0m	27.5
5:12	Possible drainage cut 055 in trench A2	055-057	W	2.0m	27.5

Holm Mains Farm, Inverness, JN 05, Photographic Register

B & W No.	C/S No.	Description	Contexts	Camera facing	Scale	Date
1:18	1:32	Working shot		N		22.5
1:19	1:33	Working shot		N		22.5
1:20	1:34	Working shot		N		22.5
1:21	1:35	Working shot		N		22.5
1:22	2:3	Charcoal spread 003 in trench A	003	E	1.0m	22.5
1:23		Charcoal spread 003 in trench A	003	E	1.0m	22.5
1:24	2:4	Trench A: general view		N	1.0m	22.5
	2:5	Trench A: general view		S	1.0m	22.5
1:25	2:6	Ploughmark 005 in trench B: section	005	SW	1.0m	22.5
1:26	2:7	Ploughmark 005 in trench B: section	005	SW	1.0m	22.5
1:27	2:8	Ploughmark 005 in trench B: plan	005	SW	1.0m	22.5
1:28	2:9	Ploughmark 005 in trench B: plan	005	SW	1.0m	22.5
1:29	2:10	Trench C		W	1.0m	22.5
1:30	2:11	Trench D		S	1.0m	22.5
1:31	2:12	Trench D		S		22.5
1:32	2:13	Burnt bone 004 in trench D	004	SE	1.0m	22.5
1:33	2:14	Burnt bone 004 in trench D	004	SE	1.0m	22.5
1:34	2:15	General view of trench E		SW		22.5
1:35	2:16	General view of trench E		SW		22.5
1:36	2:17	Posthole 008 in trench E, with packing stones 007 and whetstone	006-008	NW	1.0m	22.5
2:1		Accident				22.5
2:2	2:18	Posthole 008 in trench E, with packing stones 007 and whetstone	006-008	NW	1.0m	22.5
2:3	2:19	Trench F: general view		N		22.5
2:4	2:20	Trench F: general view		N		22.5
2:5	2:21	Trench G: general view		NE	1.0m	22.5
2:6	2:22	Trench G: general view		NE	1.0m	22.5
2:7	2:23	Ploughmarks 009 in Trench H	009	NE	1.0m	22.5
2:8	2:24	Ploughmarks 009 in Trench H	009	NE	1.0m	22.5
2:9	2:25	Charcoal spread 003 in	003	E	1.0m	22.5

		trench A				
2:10	2:26	Charcoal spread 003 in trench A	003	E	1.0m	22.5
2:11	2:27	? Hedgeline 011/025 in trench I	011; 025	S	1.0m	22.5
2:12	2:28	? Hedgeline 011/025 in trench I	011; 025	S	1.0m	22.5
2:13	2:29	Trench I: general view		NW	1.0m	22.5
2:14	2:30	Trench I: general view		NW	1.0m	22.5
2:15	2:31	Boundary 011/025 in trench I	011; 025	N	1.0m	22.5
2:16	2:32	Boundary 011/025 in trench I	011; 025	N	1.0m	22.5
2:17	2:33	Boundary 011/025 in trench I	011; 025	W	1.0m	22.5
2:18	2:34	Boundary 011/025 in trench I	011; 025	W	1.0m	22.5
2:19	2:35	Trench J: charcoal spread 012 in posthole 063	012; 063	NE	1.0m	23.5
2:20	2:36	Trench J: charcoal spread 012 in posthole 063	012; 063	NE	1.0m	23.5
2:21	2:37	Trench J: charcoal spread 012 in posthole 063 after excavation	012; 063	NE	1.0m	23.5
2:22	3:1	Trench J: charcoal spread 012 in posthole 063 after excavation	012; 063	NE	1.0m	23.5
	3:2	Trench J: charcoal spread 012 in posthole 063 after excavation	012; 063	NE	1.0m	23.5
2:23	3:3	Trench J: general view		NE	1.0m	23.5
2:24	3:4	Trench J: general view		NE	1.0m	23.5
2:25	3:5	Possible hearth 020 with fill 013 in trench K	013; 020	S	1.0m	23.5
2:26	3:6	Possible hearth 020 with fill 013 in trench K	013; 020	S	1.0m	23.5
2:27	3:7	Trench K: general view		W	1.0m	23.5
2:28	3:8	Trench L: general view		W	1.0m	23.5
2:29	3:9	Trench M: general view		W	1.0m	23.5
2:30	3:10	Trench O: general view		E	1.0m	23.5
2:31	3:11	Trench P: general view		E	1.0m	23.5
2:32	3:12	Trench Q: general view		NW	1.0m	23.5
2:33	3:13	Field boundary wall 028 to west	028	N	2.0m	23.5
2:34	3:14	Field boundary wall 028 to west	028	N	2.0m	23.5
2:35	3:15	Field boundary wall	028	N	2.0m	23.5

		028 to east				
2:36	3:16	Field boundary wall 028 to east	028	N	2.0m	23.5
3:1		General view				24.5
3:2	3:17	Trench R: general view		NE	2.0m	24.5
3:3	3:19	Trench S: general view		SE	2.0m	24.5
3:4	3:18	Trench S: general view		NW	2.0m	24.5
3:5	3:20	Postholes 033 and 035 in trench S	033; 035	NW	2.0m	24.5
3:6	3:21	Posthole 033 in trench S	033	W	2.0m	24.5
3:7	3:22	Posthole 035 in trench S	035	E		24.5
3:8	3:23	Trench T: general view		S	1.0m	25.5
3:9	3:24	Trench U: general view		N	2.0m	25.5
3:10	3:25	Burnt bone deposit 036 in trench V	036	W	1.0m	25.5
3:11	3:26	Burnt bone deposit 036 in trench V	036	W	1.0m	25.5
3:12	3:27	036 in cut 037 in trench V	036; 037	W	1.0m	25.5
3:13	3:28	036 in cut 037 in trench V	036; 037	W	1.0m	25.5
3:14	3:29	Cut 037 in trench V	037	W	1.0m	25.5
3:15	3:30	Cut 037 in trench V	037	W	1.0m	25.5
3:16	3:31	Trench V: general view		N	1.0m	25.5
3:17	3:32	Trench W: general view		E	1.0m	25.5
3:18	3:33	Trench X: general view		N	1.0m	25.5
3:19	3:34	East-west alignment of postholes in trench S	033; 035; 064; 065; 066	W	1.0m	25.5
3:20	3:35	East-west alignment of postholes in trench S	033; 035; 064; 065; 066	W	1.0m	25.5
3:21	3:36	E-facing section of posthole 033in trench S	031-033	W	1.0m	25.5
3:22	3:37	E-facing section of posthole 033in trench S	031-033	W	1.0m	25.5
3:23	4:1	Pit 041/051 in trench Z	041; 051	N	1.0m	25.5
3:24		Pit 041/051 in trench Z	041; 051	N	1.0m	25.5
3:25	4:2	Trench Z: general view		N	1.0m	25.5
3:26	4:3	Trench Y: general view		SE	1.0m	25.5
3:27	4:4	Holm motte with surrounding ditch/embankment			2.0m	25.5
3:28	4:5	Holm motte with surrounding ditch/embankment				25.5
3:29	4:6	Holm motte with				25.5

		surrounding ditch/embankment				
3:30	4:7	Holm motte with surrounding ditch/embankment				25.5
3:31	4:8	Holm motte with surrounding ditch/embankment			2.0m	25.5
3:32	4:9	Holm motte with surrounding ditch/embankment			2.0m	25.5
3:33	4:10	Holm motte with surrounding ditch/embankment				25.5
3:34	4:11	Holm motte with surrounding ditch/embankment				25.5
3:35	4:12	Holm motte with surrounding ditch/embankment				25.5
3:36	4:13	Trench B2: general view		NW	1.0m	26.5
4:1		Trench A2: general view		SE	1.0m	26.5
4:2	4:14	SE end of trench A2 with road 059	059	SW	1.0m	26.5
4:3	4:15	E-facing section of cut 051 with fill 041 in trench Z	041; 051	W	1.0m	26.5
4:4	4:16	E-facing section of cut 051 with fill 041 in trench Z	041; 051	W	1.0m	26.5
4:5	4:17	Extent and location of pit 041/051 in trench Z	041; 051	NW	1.0m	26.5
4:6	4:18	Extent and location of pit 041/051 in trench Z	041; 051	NW	1.0m	26.5
4:7	4:19	View of ditch 042/048 and pit 041/051 in trench Z	041; 042; 048; 051	W	1.0m	26.5
4:8	4:20	View of ditch 042/048 and pit 041/051 in trench Z	041; 042; 048; 051	W	1.0m	26.5
4:9	4:21	Pit 043/067 and ditch 042/048 in extension of trench Z	042; 043; 048; 067	SE	1.0m	26.5
4:10	4:22	Pit 043/067 and ditch 042/048 in extension of trench Z	042; 043; 048; 067	SE	1.0m	26.5
4:11	4:23	Field drain 044/053 in	044; 053	N	1.0m	26.5

		trench Z				
4:12	4:24	Field drain 044/053 in trench Z	044; 053	N	1.0m	26.5
4:13	4:25	Posthole 045/052 in trench A2	045; 052	W	1.0m	26.5
4:14	4:26	Posthole 045/052 in trench A2	045; 052	W	1.0m	26.5
4:15	4:27	Trench C2: general view		N	1.0m	26.5
4:16	4:28	Road construction debris/gravel 062 in trench D2	062	N	1.0m	26.5
4:17	4:29	Trench E2: general view		S	1.0m	26.5
4:18	4:30	Trench F2: general view		N	1.0m	26.5
4:19	4:31	Trench G2: general view		NW	1.0m	26.5
4:20	4:32	N-facing section of ditch cut 048	042; 048	S	1.0m	26.5
4:21	4:33	N-facing section of ditch cut 048	042; 048	S	1.0m	26.5
4:22	4:34	S-facing section of ditch cut 048	042; 048	N	1.0m	26.5
4:23	4:35	Trench H2: general view		N	1.0m	26.5
4:24	4:36	Trench I2: general view		NW	1.0m	26.5
	5:1	Working shot				26.5
4:25	5:2	Burnt bone deposit 046 in cut 060 in trench Y	046; 060	W	2.0m	26.5
4:26	5:3	Burnt bone deposit 046 in cut 060 in trench Y	046; 060	W	2.0m	26.5
4:27	5:4	Posthole 045/052 in trench A2	045; 052	W	1.0m	27.5
4:28	5:5	Posthole 045/052 in trench A2	045; 052	W	1.0m	27.5
4:29	5:6	E-facing section of posthole 045/052 in trench A2	045; 052	W	1.0m	27.5
4:30	5:7	E-facing section of posthole 045/052 in trench A2	045; 052	W	1.0m	27.5
4:31	5:8	Cut 060 in trench Y (mislabelled)	060	W		27.5
4:32	5:9	Cut 060 in trench Y (mislabelled)	060	W		27.5
4:33	5:10	Stone spread 054 in trench Y	054	S	2.0m	27.5
4:34	5:11	Stone spread 054 in	054	S	2.0m	27.5

		trench Y				
4:35		Accident				27.5
4:36	5:12	Possible drainage cut 055 in trench A2	055-057	W	2.0m	27.5
4:37	5:13	Possible drainage cut 055 in trench A2	055-057	W	2.0m	27.5

Holm Mains Farm, Inverness, JN 05 Trench List

Trench	Length	Contexts	Plans/Sections
A	50m	003	1
B	25m	005	1
C	50m		1
D	50m	004; 024	2
E	50m	006-008; 023	2
F	50m		2
G	50m		
H	40m	009	2
I	35m +5m extension	010; 011; 025-027	3
J	35m	012; 063	
K	50m	013-022	4
L	25m		
M	25m		
N	50m		
O	50m	068-071	4; 6
P	50m		6
Q	25m		
R	50m	072-075	6; 7
S	40m + 40m	029-035; 038-040; 064-066	7; 11
T	50m		8
U	60m		8
V	50m	036; 037	8; 11
W	50m		
X	50m		
Y	60m + 5m	046; 054; 060	13
Z	95m (equivalent)	041-044; 047-051; 053; 067	9; 10; 12
A2	50m	045; 052; 055-059; 061	
B2	50m		
C2	20m		
D2	15m	062	
E2	25m		
F2	28m		
G2	20m		
H2	25m		
I2	30m		

JN 05 Context List

Context	Trench	Description	Interpretation	Plan/ Section
001	A-I2	Sandy silt, commonly with a depth of 0.3-0.45m. Generally covers site.	Topsoil	
002	A-I2	Yellow or red sand or silt	Subsoil	

		deposit, in some areas with frequent gravel. Underlies topsoil 001. Has been cut or overlain by various features.		
003	A	Black charcoal deposit over subsoil 002. Deposit is 0.1m deep and 1.4m wide.	Charcoal spread	1
004	D	Disturbed burnt bone. May lie within a cut (024) into subsoil 002.	Disturbed burnt bone	2
005a-c	B	Three shallow linear cuts running roughly NE-SW. Gently sloping sides lead to irregular bases. Cut into subsoil 002. Filled with topsoil 001.	Ploughmarks	1
006	E	0.2m deep deposit of loose brown sandy loam with occasional rounded pebbles. Fill of cut 008. Overlies fill 007 and underlies topsoil 001.	Upper fill of posthole 008	2
007	E	Stones (*c* 0.2m wide) forming packing for posthole 008. Overlain by fill 006. Overlies fill 023.	Fill (packing) of posthole 008	2
008	E	0.3m deep round cut into subsoil 002. Steep straight sides lead to a concave base. Has a diameter of 0.65m. Contains fills 006, 007 and 023.	Posthole cut	2
009	H	Narrow linear E-W striations into subsoil 002. Filled with ploughsoil 001.	Modern ploughmarks	
010	I	Small area of black organic silt loam (*c* 0.1m deep). Overlies subsoil 002. Under topsoil 001.	? Buried turf	
011	I	Dark brown sandy silt loam with moderate rounded pebbles. Fill of linear cut 025. Covered by 026.	Fill of field boundary	3
012	J	Shallow (0.06m deep)	Fill of truncated	

		deposit of rounded stones in a grey silt clay matrix with charcoal flecks. Covers an area of roughly 0.4m N-S x 0.3m E-W. Apparently lies within a very shallow cut (063).	posthole 063	
013	K	Loose brown silty loam with moderate rounded pebbles (0.12m deep). A fill of cut 020. Underlies deposit 017. Covers charcoal spread 018	Fill of possible hearth 020	4
014	K	0.12m deep deposit of dark brown silty loam over subsoil 002. Truncated to west by posthole cut 016. Apparently the same as 017 further west.	Basal topsoil: same as 017	4
015	K	Loose brown sandy silt with occasional pebbles. Fill of cut 016. Under topsoil 001	Fill of posthole 016	4
016	K	Square posthole cut into basal topsoil 014/017. Has a depth of 0.2m and a width of *c* 0.3m. Contains fill 015.	Posthole cut	4
017	K	0.15m deep deposit of loose brown silty loam over pit fill 013. Truncated to east by posthole cut 016.	Basal topsoil: same as 014 to east	4
018	K	Thin deposit of charcoal within cut 020. Overlies fill 076 to west and fill 019 to east. Under fill 013.	Charcoal deposit within possible hearth 020	4
019	K	Rounded stones (*c* 0.1m) in a loose brown sandy silt loam matrix. A deposit (0.15m deep) overlying cut 020. Overlain by fill 018	Fill of possible hearth 020	4
020	K	Shallow (0.25m) concave cut with apparently a sub-square shape. Width E-W is *c* 1.0m. Cut into earlier fill 021. Lowest	Possible hearth	4

		fills of 020 are 019 and 076.		
021	K	0.1m deep deposit of loose brown sandy silt. Fill of triangular feature 022. Truncated by cut 020.	Fill of stone hole or pit 022	4
022	K	Small cut into subsoil 002. Fairly sharp, straight edges lead to a point. Has a depth of 0.1m and contains fill 021.	Probable stone hole	4
023	E	Brown sandy silt loam. Lies over cut 008. Underlies packing 007.	Lowest fill of posthole 008	2
024	D	Apparent 1.0m wide oval cut into natural 002. Has a depth of 0.3m and contains burnt bone fill 004. Concave sides lead to an irregular base.	Probable over-excavation (004 was apparently not *in situ*)	
025	I	A linear concave-edged cut, running roughly NE-SW, into subsoil 002. Has a width of *c* 0.35m and a depth of 0.2m. Contained fill 011. Surface was covered in root marks.	? Cut for hedge-line: possible boundary feature	3
026	I	Brown sandy loam with frequent gravel. Roughly 0.15m deep deposit, which covers fill 011. Under topsoil 001.	Basal topsoil	3
027	I		N/A = 025	
028	Field Boundary	A rubble-built drystone wall, running E-W across the site, separating the second and third fields. Has a height of *c* 0.95m and a width of 1.0m. Holds back higher level of earth to the north, acting as a terracing wall.	Stone boundary wall	5
029	S	Loose brown sandy silt over deposit 030 (0.4m deep).	Topsoil: same as 001	7
030	S	Grey silt loam deposit (0.15m deep) under	Basal topsoil	7

		topsoil 029 (001). Overlies posthole fills 031 and 034.		
031	S	Fairly compact brown silt loam deposit (0.6m deep). A fill of cut 033. Under 030 and over lower fill 032.	Postpipe fill of posthole 033	7; 11
032	S	0.6m deep light brown silty sand loam deposit with frequent stones (*c* 0.1m). Inner fill of cut 033. Under fill 031.	Packing of posthole cut 033	7; 11
033	S	Fairly sharp, straight-sided cut into subsoil 002. Has a depth of 0.6m. Contains fills 032 and 031.	Posthole cut	7; 11
034	S	Brown sandy loam deposit with occasional stones and charcoal flecks. Fill of cut 035. Under basal topsoil 030.	Fill of posthole 035	7; 11
035	S	Subcircular cut into subsoil 002. Has a diameter of roughly 0.5m, and a depth of 0.45m. Near vertical straight sides lead to a flat base. Contains fill 034.	Posthole cut	7; 11
036	V	0.4m deep deposit of grey loam with frequent rounded pebbles. Contains burnt bone with charcoal flecks. Fill of cut 037.	A burnt bone deposit (? cremation)	8; 11
037	V	Subcircular cut into subsoil 002, containing burnt bone deposit 036. Gently sloping sides lead to a rounded bottom. Has a depth of 0.46m and a width of *c* 0.4m.	Scoop for burnt bone (? cremation)	8; 11
038	S	Brown silty sand deposit. Fill of cut 064. Overlain by basal topsoil 030.	Fill of posthole 064	11
039	S	0.2m deep deposit of dark brown sandy silt loam with occasional pebbles. Lies within cut 065.	Fill of posthole 065	11

		Under basal topsoil 030.		
040	S	0.2m deep deposit of brown silty sand loam with occasional pebbles. Lies within cut 066. Under basal topsoil 030.	Fill of posthole 066	11
041	Z	Around 0.4m deep deposit of loose brown sandy loam with occasional gravel and pebbles. Upper fill of pit 051. Under topsoil 001, and over fill 049.	Upper fill of pit 051	9; 10; 12
042	Z	0.3m deep deposit of loose brown silty sand with few pebbles and cobbles. Upper fill of cut 048. Under topsoil 001, and over fill 047.	Fill of ditch cut 048	10; 12
043	Z	Rounded cobbles (0.1m) in a loose brown silty sand matrix. Fill of cut 067. Under topsoil 001.	Fill of pit 067 (? stone clearance or floor of structure)	12
044	Z	Loose brown sandy loam deposit with moderate rounded cobbles (0.15m). Fill of cut 053. Under topsoil 001	Fill of E-W field drain cut 053	12
045	A2	Light grey loam deposit with occasional rounded pebbles and sparse charcoal flecks. Fill of cut 052. Under topsoil 001. Contains 19th century ceramics.	Fill of posthole 052	
046	Y	0.18m deep deposit of black charcoal-rich organic silt. Contains burnt bone. Fill of cut 060. Under topsoil 001.	Fill of pit 060 (? cremation)	13
047	Z	0.33m deep deposit of moderate brown sandy loam with frequent rounded cobbles and boulders (0.1m; 0.35m). Lower fill of cut 048. Under fill 042.	Lower fill of ditch cut 048	10
048	Z	0.63m deep linear cut into subsoil 002. Runs roughly N-S and has a	Cut for a V-shaped ditch	10; 12

		maximum visible width of 1.3m. Fairly sharp straight sides form a V-shaped ditch, with a break of slope at *c* 0.45m. Slope then becomes very steep, and leads to a fairly flat base. A slot is thus formed. Contains fills 047 and 042.		
049	Z	0.1m deep deposit of black/brown organic silt. A fill of cut 051. Lies under fill 041 and over 050.	Organic fill of pit 051 (possible buried turf layer)	10
050	Z	0.4m deep deposit of dark brown silty sand loam with frequent rounded gravel and pebbles. Lowest fill of cut 051. Lies under fill 049.	Upper fill of cut 051 (? silting)	10; 12
051	Z	Approximately 4.0m wide rounded pit into subsoil 002. Depth at least 0.98m. Concave sides are very steep at top, becoming gentler at base. Base is rounded. Lowest fill is 050.	Pit cut (? storage pit)	10
052	A2	Roughly circular cut into subsoil 002. Diameter is 0.85m and depth is 0.23m. Fairly sharp sloping sides lead to an uneven base. Contains fill 045.	Cut for posthole	
053	Z	Roughly E-W linear cut into subsoil 002. Has a depth of 0.2m and a width of *c* 0.6m. Fairly gentle sloped edges lead to an irregular flat base. Contains fill 044.	Ditch cut (? field drain)	12
054	Y	Spread of irregular cobbles mixed with sandy loam (*c* 0.2m deep) over area *c* 3.0m wide. Under topsoil 001. Over subsoil 002.	Probable stone clearance deposit	
055	A2	Linear cut into subsoil	Possible drainage cut	

		002, running roughly NE-SW along a rise. Contains fills 056 and 057. Cut is 2.0m wide and 0.35m deep. Gentle concave sides lead to a steeper cut near the centre, forming a slot with a rounded base.		
056	A2	0.3m deep deposit of rounded cobbles and pebbles in a loose dark brown organic sandy silt matrix. Lower fill of cut 055. Under fill 057.	Fill of possible drainage ditch 055	
057	A2	0.1m deep deposit of loose dark brown organic silt with frequent rounded pebbles. Upper fill of cut 055. Over fill 056 and under make-up deposit 058.	Upper fill of possible drainage feature 055	
058	A2	Roughly 0.2m deep deposit of compact light grey-brown clay with frequent mortar and subangular gravel. Under make-up layer 061, and over fill 057.	Make-up for road 059	
059	A2	0.1m deep gravel and asphalt layer running NE-SW along top of rise. Under topsoil 001. Overlies make-up/base 061.	Road	
060	Y	0.18m deep cut into subsoil 002. A round cut with gently sloping sides leading to a rounded base. Has a diameter of 0.5m. Contains fill 046.	Cut for pit containing burnt bone (? cremation)	13
061	A2	0.1m deep deposit of loose dark brown silty loam with frequent fragments of asphalt. Under road surface 059 and over make-up 058.	Make-up/base for road 059	
062	D2	Deposit of gravel hardcore with metal and plastic debris (*c* 0.15m	Road construction debris	

		deep). Over subsoil 002 and under topsoil 001.		
063	J	0.06m deep cut into subsoil 002. Has an irregular shape and measures *c* 0.4m N-S x 0.3m E-W. Steep sides lead to an irregular base. Contains fill 012.	Base of posthole cut	
064	S	Circular cut into subsoil 002. Has a diameter of *c* 0.6m. Contains fill 038.	Cut for posthole	11
065	S	Circular cut into subsoil 002. Has a diameter of *c* 0.6m and a depth of 0.2m. Gentle concave sides lead to a rounded base. Contains fill 039.	Cut for posthole	11
066	S	Circular cut into subsoil 002. Has a diameter of *c* 0.6m and a depth of 0.2m. Fairly gentle concave sides lead to a rounded base. Contains fill 040.	Cut for posthole	11
067	Z	Roughly oval cut into subsoil 002. Long axis lies roughly NW-SE and has a length of *c* 5.5m. Depth is *c* 0.3m. Fairly sharp sides lead to a flat base. Contains cobbly fill 043.	Pit cut (? stone clearance or structural)	12
068	O	Brown sandy loam with charcoal flecks. Fill of cut 069. Covered by topsoil 001	Fill of plough furrow 069	4
069	O	Linear cut into subsoil 002, running roughly N-S. 0.25m deep and 0.6m wide.. Fairly steep concave sides lead to an irregular base. Contains fill 068.	Plough furrow	4
070	O	Brown sandy loam. Fill of cut 071. Covered by topsoil 001.	Fill of plough furrow 071	4
071	O	Linear cut into subsoil 002, running roughly N-S. 0.30m deep and 0.55m wide. Fairly sharp	Plough furrow	4

		concave sides lead to a flat base. Contains fill 070.		
072	R	Brown sandy loam fill of cut 073. Covered by topsoil 001.	Fill of posthole 073	7
073	R	Circular cut into subsoil 002. Around 0.2m in diameter. Contains fill 072.	Posthole cut	7
074	R	Brown sandy loam fill of cut 075. Overlain by topsoil 001.	Fill of posthole 075	7
075	R	Round cut into subsoil 002. Around 0.3m in diameter and 0.1m deep Contains fill 074.	Posthole cut	7
076	K	Brown silt loam fill of cut 020. 0.1m deep lower fill (to west). Under fill 018.	Lower fill of possible hearth 020	4

JN05 Holm Mains Farm Drawing Register

Plan/ Section	Trench	Description	Contexts	Drawn by	Date
1	A; B; C	Sketch plans of trenches A, B and C with sections at 1:10. Also a plan at 1:20 of Context 003.	003; 005	LMA	22.5.00
2	D; E; F; H	1:20 plans of features in trenches D and E. Also 1:10 section of posthole 008 and trench sections for trenches F and H. A sketch plan shows the location of cut 008 in trench E.	004; 006; 007; 008; 023	LMA	22.5.00
3	I	1:20 plan of hedgeline 025 with north facing sections at scale of 1:10.	011; 025; 026	FS	23.5.00
4	K; O	1:10 plan of pit 020; 1:10 S-facing section of cuts 016 and 020; 1:10 S-facing section of plough furrows 069 and 071.	013-022; 068-071; 076	FS	24.5.00
5	Field Boundary	Three S-facing elevations of wall 028 at scale 1:10; one 1:20 plan of 028.	028	FS	24.5.00
6	O; P; R	Sketch plans of trenches O, P and R; sketch section of trench O showing bioturbation.		FS	24.5.00
7	R; S	Sketch plan of trench R; 1:20 plan of postholes 073 and 075; sketch section of trench R; 1:10 section of cuts 033 and 035 in trench S; 1:20 plan of cuts 033 and 035.	029-035; 072-075	FS	25.5.00
8	T; U; V	Sketch section of trenches T and U; 1:20 plan of burnt bone 036 in cut 037.	036; 037	FS	25.5.00
9	Z	Sketch plan of pit cut 051 in trench Z.	041; 051	FS	25.5.00
10	Z	1:20 E-facing section of pit cut 051; 1:10 NW-facing section of ditch cut 048.	041; 042; 047-051	FS	26.5.00
11	S; V	1:50 plan of features in trench S; 1:10 sections of posthole cuts 065 and 066.	031-040; 064-066	FS	25.5.00

		Also a sketch section of cut 037 in trench V.			
12	Z	1:50 plan of trench Z with a 1:10 E-facing section of cut 053.	041-044; 048; 050; 053; 067	FS	26.5.00
13	Y	1:10 plan and section of cut 060 in trench Y.	046; 060	FS	26.5.00
14	A-Q	1:1000 EDM survey of trenches A-Q.		MR	23.5.00
15	R-X	1:1000 EDM survey of trenches R-X.		MR	24.5.00
16A-D	Y-I2	1:1000 EDM survey of trenches Y-I2.		MR	26.5.00

GEOPHYSICAL SURVEY OF AN AREA OF PROPOSED HOUSING AT HOLM MAINS, INVERNESS

A programme of research carried out on behalf of

SUAT

by

GeoQuest Associates

1 INTRODUCTION

1.1 This report presents the results of an archaeological geophysical survey carried out on a parcel of land about 3km south of Inverness town centre (Figure 1). An area of approximately 7 hectares was examined with the aim of providing information concerning the likely character and extent of subsoil archaeological features which may be affected by the proposed construction of a new housing and access roads.

1.2 The research was carried out by GeoQuest Associates on behalf of SUAT, in accordance with a Technical Specification agreed between SUAT and GeoQuest Associates. Results of the geophysical survey were intended to inform a programme of archaeological evaluation by trial trenching (to be carried out by SUAT) aimed at further characterising any subsoil archaeological features.

1.3 Figure 1 shows the location of the survey areas on a map digitised from a 1:3500 Ordnance Survey plan supplied by SUAT. A sampling scheme was used to provide effective and economical coverage of the development area, with concentration of coverage in the northern part of the site adjacent to a motte and bailey monument (SMR code 29). The geophysical survey took place between 15th and 20th May 2000.

2 LAND USE AND GEOLOGY

2.1 The entire area is established as rough grazing pasture, with the grass about 20cm tall at the time of survey. Post and wire fences divided the site into 3 fields. A 20m length of metalled road in the NW part of the area is all that remains of a roadway which once traversed the site in a NE direction.

2.2 A geotechnical investigation by Grampian Soil Surveys Ltd has highlighted the hummocky nature of the terrain and the possibility of soil movement along the western side of the site where gradients are steep east of the Holm Burn. Their report also indicated potential for made ground deposits of sand and gravel, with contaminated topsoil, associated with the previous construction of Holm Road and the adjacent houses.

2.3 County records identify only two sites of archaeological interest in the immediate vicinity: a motte immediately adjacent to the NW corner of the site (Code 29), and the sculptured *Boar Stone* (Code 25) which was found about 500m S of the southern limit of the proposed development area.

2.4 The solid geology underlying the study areas comprises Devonian Old Red Sandstone which is probably overlain by substantial deposits of sand, gravel and alluvium. Such lithologies are likely to have moderate magnetic susceptibilities, providing a favourable environment for the development of measurable geomagnetic field anomalies over cut features infilled with topsoil.

THE GEOPHYSICAL SURVEYS

Field Methods

3.1 Measurements of vertical geomagnetic field gradient were recorded using a Geoscan FM36 fluxgate gradiometer within each of the three fields. A zig-zag traverse scheme was employed and data were logged in grid units of 20x20m at 1.0x0.5m intervals, thus providing 800 measurements per grid. Appendix A provides further information about the technique.

3.2 Data were downloaded on-site into an IBM Thinkpad computer for processing, printing and storage. These data were subsequently transferred to a laboratory computer for further processing, interpretation and archiving.

Data Processing

3.3 The GeoQuest InSite® software was used to process the geophysical data and to produce continuous tone grey-scale images of the data at a scale of 1:1750 (Figure 2) and as colour in Figure 3. An enlargement of the results obtained in the northern part of the area is shown in Figure 4. In each drawing a convention is used that shows positive magnetic anomalies as dark grey (violet), and negative magnetic anomalies as light grey (red). Figures 2-4 include keys which relate the colour scales to anomaly values in nano Tesla per metre.

3.4 The following basic processing steps were applied to the data:

Removal of striping artifacts in the geomagnetic images caused by alternating changes in level between zig-zag traverses.

Removal of Random 'Spikes' present in the geomagnetic data due to small ferrous objects or fired stone on or near the ground surface. This process replaces spikes with the mean of near-neighbours.

DeShear corrects for apparent shear in strong geomagnetic anomalies surveyed by zig-zag traversing.

Correction for drift in magnetometer calibration with time.

Adjustment of grid mean values to achieve an optimum match along the lines of contact between data grids.

Interpolation of the data, using a bilinear function, to generate a regular mesh of values at 0.25 x 0.25m intervals.

3.5 The geophysical images were printed on a Hewlett Packard HP650C Designjet plotter with 256 colours and 600 dpi resolution. A sigmoid function was used to map the data to printed

tones since this provides a measure of contrast equalisation. Appendix B provides more information about data processing and itemises the algorithms that were applied to produce the images in Figures 2-4.

Key to Figure 5

3.6 A number of significant anomalies have been detected in the data and these are presented on a 1:1750 geophysical interpretation plan using coded colours and patterns (Figure 5). The following types of anomaly have been distinguished:

Green Significant regions of anomalously high or positive magnetic field gradient which might be associated with high susceptibility, soil-filled structures such as pits and ditches, or paths where the topsoil effective susceptibility has been enhanced by compaction.

Blue Areas of anomalously low or negative magnetic field gradient, corresponding to features of low magnetic susceptibility, such as concentrations of Old Red Sandstone, possibly laid as wall footings, field banks or tracks.

Red Strong dipolar magnetic anomalies (paired negative-positive) which may reflect recent bonfires or dumps of material with very high susceptibility. Smaller examples are almost certainly due to near-surface iron objects such as horseshoes and have been ignored in the subsequent archaeological interpretation.

3.7 An archaeological interpretation plan at 1:1750 is presented in Figure 6 which includes feature codes f1, f2, etc, to assist in the discussion below.

4 INTERPRETATION

4.1 A low density of small magnetic dipoles is present over much of the area and can be ascribed to a scatter of ferrous litter on or near the surface. However, more extensive concentrations of ferrous or brick debris are present within the northern 'finger' of the study area and probably relate to demolition of the road and other spreads of rubble material (f1). Several larger magnetic dipoles correlate with the positions of telegraph poles and steel guys.

4.2 The geophysical survey has detected several prominent negative magnetic lineations in the northern 'finger' of the survey area: these are particularly evident in the enlarged 1:1000 plan of Figure 4. It seems likely that these anomalies reflect stoney material laid as trackways or field banks possibly associated with the medieval motte NW of the survey area (f2, f3 & f4). Features f2 and f3 appear to join at a point where f2 makes an turn towards an E-W orientation.

4.3 No further features of archaeological interest have been detected in the northern 'finger' of the survey area. However, it should be pointed out that the high density of magnetic dipoles (ie. ferrous litter/rubble) has prevented the location of more subtle anomalies of possible archaeological significance. Hence, it may be prudent to carry out a programme of trial trenching evaluation in this area in order to verify and extend the findings of the geophysical survey.

4.4 Of archaeological interest is the presence of a network of weak and diffuse, positive magnetic lineations in the central part of the study area (particularly N & E of the telegraph pole and guy). Owing to the 50% sampling scheme used, it has not been possible to reliably infer connections between all of these anomalies. However, the geophysical data suggest the presence of small-scale ditches that may join to form enclosures or small field systems (f5 - f7). A similar pattern of networked lineations has been detected near the southern limit of the study area, suggesting that the field systems or enclosures may extend in this direction (f8 & f9)

4.5 No further features of archaeological interest have been detected by geophysical survey in the remainder of the study area.

5 SUMMARY AND CONCLUSIONS

5.1 A geophysical survey has been carried out on an area at Holm Mains, Inverness, where it is proposed to develop new housing. The aim of the survey was to identify features of archaeological interest and thus inform a scheme of mitigation prior to construction works. A 50% sampling scheme, in the form of 20m wide strips was employed over most of the study area, while 100% survey was used in the northern part of the site in order to fully identify features that may be associated with a known motte.

5.2 The geophysical survey has mapped a number of anomalies of archaeological interest. These include trackways or enclosure banks of stone, together with rectilinear networks of ditches that may comprise field systems or small-scale enclosures. Each of these features may warrant further investigation via a scheme of trial trenching.

6 CREDITS

Survey: A. Newton BA, MA and S. Leuthwaite BA
Report: M. J. Noel PhD, FRAS
Date: 31st May 2000

Note: Whilst every effort has been taken in the preparation and submission of this report in order to provide as complete an assessment as possible within the terms of the brief, GeoQuest Associates cannot accept any responsibility for consequences arising as a result of unknown and undiscovered sites or artifacts.

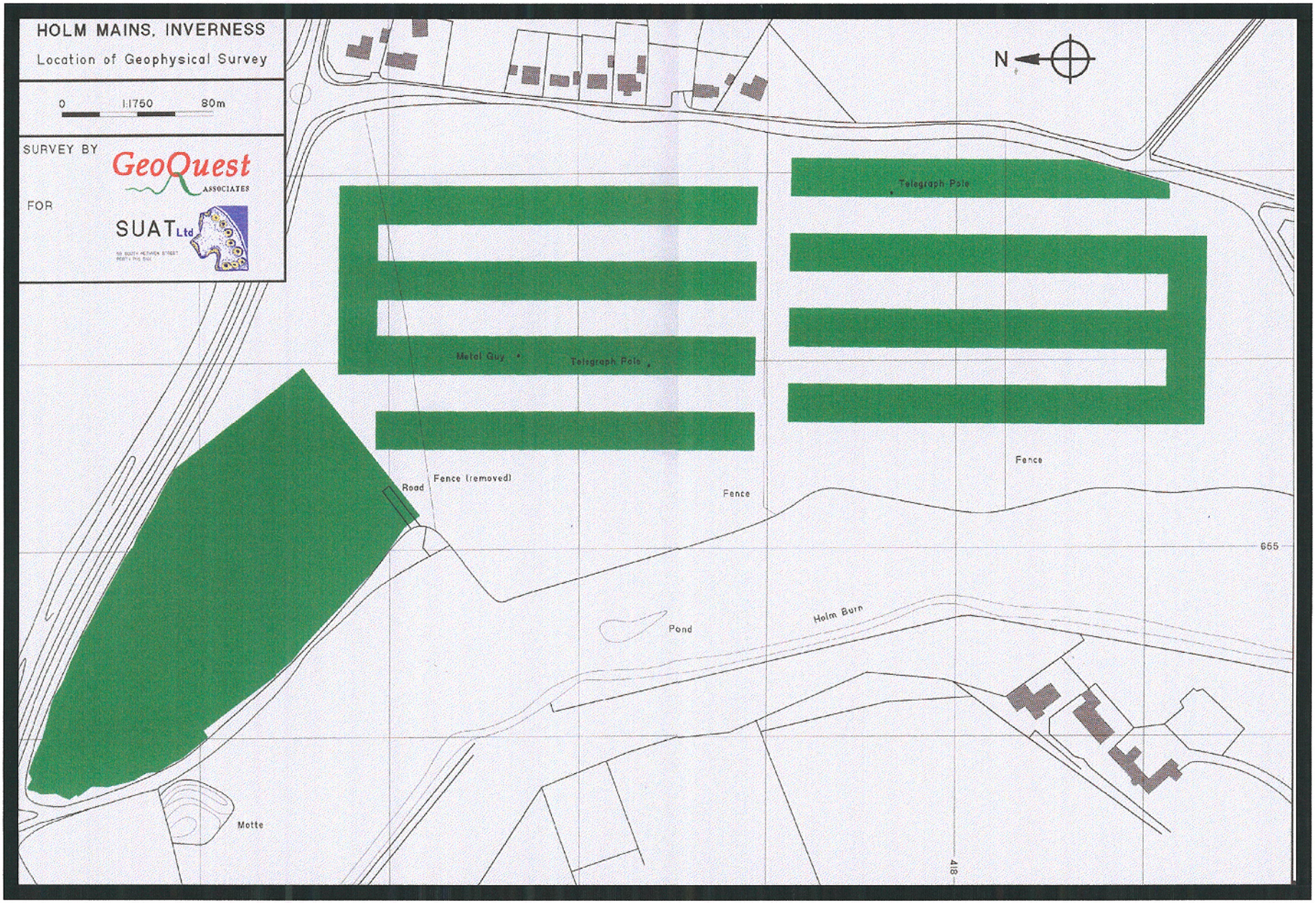

HOLM MAINS, INVERNESS
Location of Geophysical Survey
0 1:1750 80m
SURVEY BY
GeoQuest ASSOCIATES
FOR
SUAT Ltd
N
Telegraph Pole
Metal Guy
Telegraph Pole
Fence
Road
Fence (removed)
Fence
655
Pond
Holm Burn
Motte
418

Figure 1

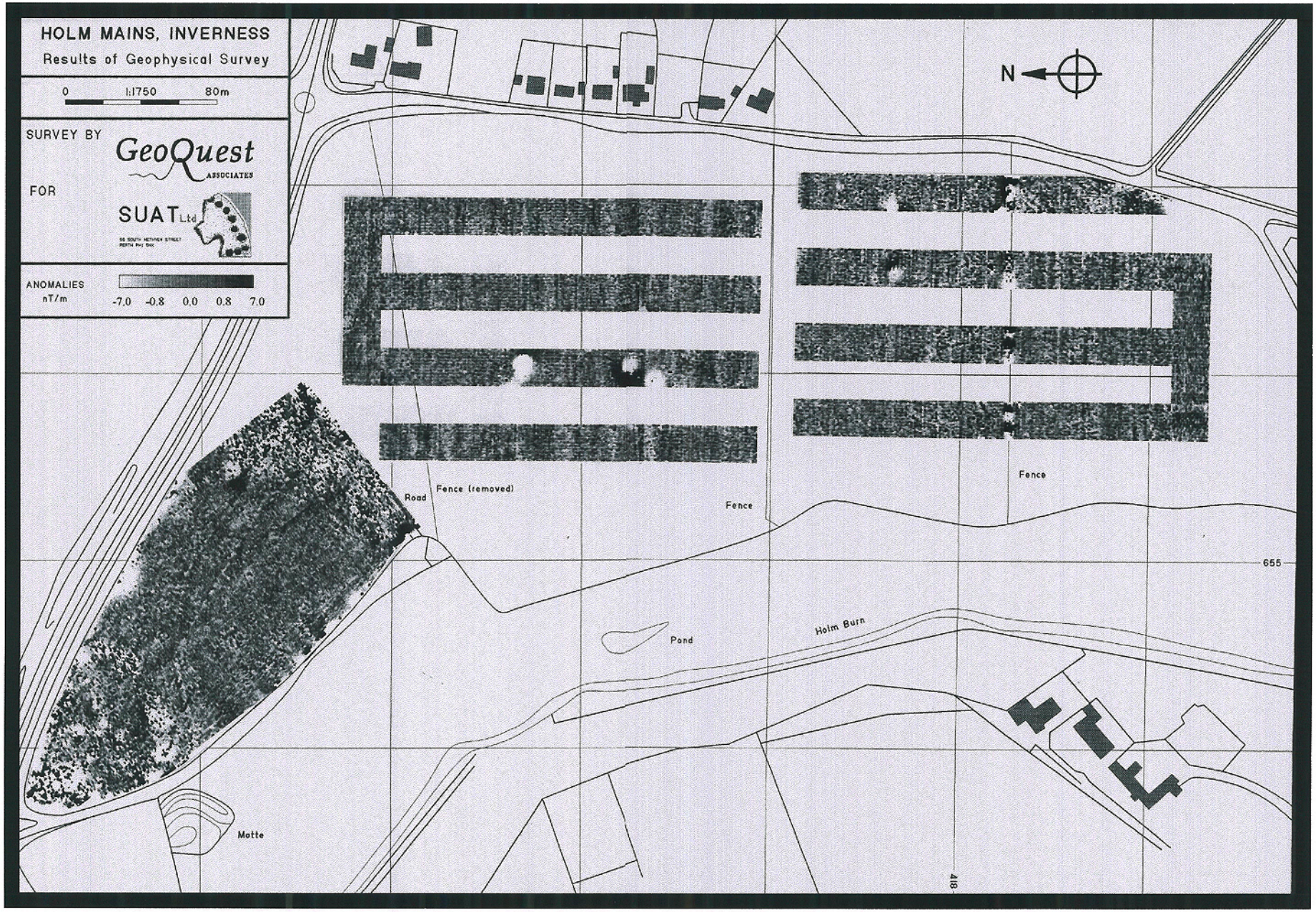

HOLM MAINS, INVERNESS
Results of Geophysical Survey
0 1:1750 80m
SURVEY BY
GeoQuest ASSOCIATES
FOR
SUAT Ltd
ANOMALIES nT/m
-7.0 -0.8 0.0 0.8 7.0
N
Road
Fence (removed)
Fence
Fence
655
Pond
Holm Burn
Motte
418

Figure 2


HOLM MAINS, INVERNESS
Results of Geophysical Survey
0
1:1750
80m
SURVEY BY
GeoQuest
ASSOCIATES
FOR
SUAT Ltd
ANOMALIES
nT/m
-7.0
-0.8
0.0
0.8
7.0
N
Road
Fence (removed)
Fence
Fence
655
Pond
Holm Burn
Motte
418

Figure 3


HOLM MAINS, INVERNESS
Results of Geophysical Survey
0
1:1000
40m
SURVEY BY
GeoQuest
ASSOCIATES
FOR
SUAT Ltd
-7.1
-0.8
0.0
0.8
7.1
N

Figure 4


HOLM MAINS, INVERNESS
Geophysical Interpretation
0
80m
SURVEY BY
GeoQuest
ASSOCIATES
FOR
SUAT Ltd
Positive
Negative
Dipole
N
Telegraph Pole
Fence
Metal Guy
Telegraph Pole
Road
Fence (removed)
Fence
655
Pond
Holm Burn
Motte
418

Figure 5

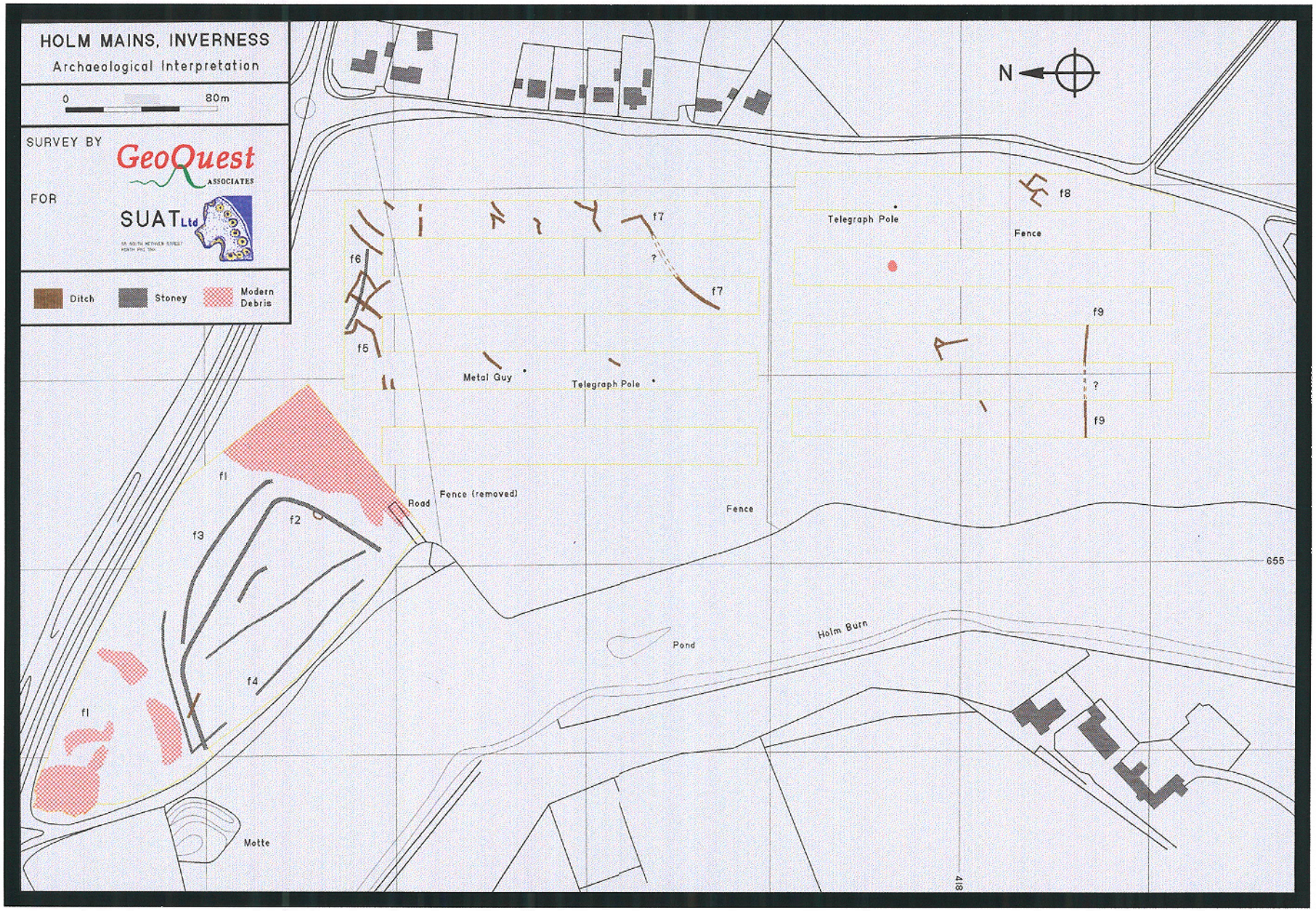

HOLM MAINS, INVERNESS
Archaeological Interpretation
0
80m
SURVEY BY
GeoQuest
ASSOCIATES
FOR
SUAT Ltd
Ditch
Stoney
Modern Debris
N
f1
f2
f3
f4
f5
f6
f7
f8
f9
Telegraph Pole
Fence
Metal Guy
Telegraph Pole
Road
Fence (removed)
Fence
Pond
Holm Burn
Motte
655
418

Figure 6

The Highland Council
Comhairle na Gaidhealtachd
SERVING The Highland Community

HIGHLAND COUNCIL
PLANNING AND DEVELOPMENT SERVICE

Archaeology Unit

Specification for archaeological work at:

HOLM MAINS

ARCHAEOLOGICAL EVALUATION

1. Background

This specification has been produced in response to the need for an archaeological evaluation to be carried out prior to work beginning on site. It is for a ***minimum*** standard of work; a higher standard may be offered and accepted.

2. Terms of Reference

This specification is for archaeological recording work occasioned by a planning application. It is based on these documents. If these details are changed a new specification will be needed. It is valid until 31st July 2000 after which if no work has been carried out a revised specification will be needed.

The specification has been produced for Tullochs who will be responsible for the work, including all tendering and contractual arrangements. Estimates should be obtained from archaeological contractors on the basis of this specification

Any reference to 'archaeologist' in this specification is to be taken to mean a qualified and experienced practitioner acceptable to the Senior Archaeologist. This is to ensure that work is carried out to professional standards. The project should be carried out by, or under the immediate direction of, a member of the Institute of Field Archaeologists or an archaeologist of equivalent standing.

Before site works commence, the proposed arrangements, including a timetable for the work must be agreed with the Area Planning Manager and the Senior Archaeologist in writing.

If this is for a road or water or sewerage proposal the area to be covered is the entire wayleave except where otherwise indicated.

3. Tendering

Tenders must be accompanied by a project design, statement and evidence of competence, including the CV of the Project Director, and other staff where possible.

4. Objectives

1. To establish the presence/absence, nature depth extent and importance of previously unrecorded and recorded archaeological remains
2. To propose arrangements for the safeguarding where possible and recording where necessary of any archaeological features or finds identified. These will be approved by the Senior Archaeologist.
3. To ensure that the needs for archaeological conservation and recording are met without causing any unnecessary delay or disturbance to the development project.

5. Method

1. A survey will be made of the areas identified on the attached plan, using a walk over survey of the area to enable identification of any upstanding remains, from any period, including modern. All individual features to be recorded on a 1:2500 plan.

2. Contractors are asked to advise as to the suitability of geophysical survey on this site. Should ground conditions be suitable, then the whole site should be surveyed in this way. Trial trenches will be excavated at locations to be proposed to provide a sample of the total site area. The sample size will very depending upon the suitability of gepohysics. A sample of at least 5% of the area must be evaluated if geophysics is not utilised. The location of these trenches must be accurately located on the aforementioned 1:2500 plan.

3. Those carrying out site works will need to work closely with the archaeologist and provide all necessary access and other arrangements. Where machinery is to be used for topsoil stripping, a straight-edged bucket must be used on a back acting machine. Care will need to be taken to avoid over excavation, and the advice of the archaeologist on-site should be adhered to regarding this.

4. The archaeologist must be given every aid by contractors to enable the archaeological work to be carried out. Contractors may need to use differing work practices on site than usual to enable the archaeologist to complete the work. This must be catered for and adhered to.

5. The report must propose appropriate arrangements for the safeguarding where possible or recording where necessary of any objects or features identified by this evaluation.

6. Monitoring

I. The Senior Archaeologist will normally monitor projects to ensure that specifications are met.

II. Monitoring will normally be by unannounced site visit. Alternative or additional monitoring arrangements may be made in individual cases.

III. Prior notice of fieldwork starting dates, with contact names and local addresses, telephone numbers and directions and other arrangements for access must be given to the Area Planning Manager and the Senior Archaeologist.

IV. Any unexpectedly significant or complex discoveries, or any other unexpected occurrences or conditions which might affect the agreed project work or its timetable or cost must be notified immediately to the client and the Senior Archaeologist so that revised arrangements can be made.

V. Where archaeological work fails to meet this specification the applicant will be in breach of the planning condition until matters are rectified.

7. Reporting

7.1. Project report

At least five copies of the project report must be produced.

I. One paper copy for the applicant: Tulloch Homes Ltd, Corrie Lodge, Millburn Road, Inverness

II. One paper copy for the Area Planning and Building Control Manager

III. One paper copy for the Archaeology Unit, Planning and Development Service, Council Offices, Glenurquhart Road, Inverness IV3 5NX where it will be available for immediate consultation by the public.

IV. One copy for the Highland SMR as above, on a computer disk in a format compatible with Microsoft Office 95 for Windows.

V. One paper copy to be deposited with Norman Newton, Libraries Support Unit, 31a Harbour Road, Inverness.

The report must be submitted to the all of the above within 3 weeks of the completion of the field work.

The report must include, as a minimum,

1. Location plan showing the project area and archaeological sites and features affected. The Grid Reference of the site must be included.

2. Circumstances and objectives of this work, including a copy of this specification

3. Weather and other conditions affecting fieldwork

4. Scale plans, and photographs of geophysical grids, trial trenches and archaeological features noted. The scale plans must accurately locate the grids and trial trenches within the development area.

5. A full index to any records or other material generated by the project including its location

6. Details of any measures proposed to mitigate the impact of the application on the archaeological resource

7. A brief analysis of the project results drawing in comparative data as appropriate, and a statement of the significance of the results for future research. Note that a negative result may itself be significant.

8. General comments and proposals for future archaeological projects arising from the carrying out of this project

9. A set of colour slides illustrating the project progress from start to completion.

The completed report will be available for immediate public consultation for research purposes at the Highland Sites and Monuments Record. In addition, the Archaeology Unit reserves the right to make the report available for reference and research purposes, either on paper, or electronically. Subject to this, copyright will remain with the author unless specifically transferred in writing, and the Archaeology Unit will assume author's copyright unless advised otherwise. Copyright will be acknowledged in all cases by the Archaeology Unit.

This specification includes arranging a presentation of the project results to the local community within a year of the completion of the fieldwork. Arrangements must be agreed with the Senior Archaeologist.

7.2. Treasure Trove

The Archaeological Contractor must liase with the Assistant Curator (Archaeology) at Inverness Museum and Art Gallery prior to the start of fieldwork, regarding possible emergency conservation needs and future storage arrangements. The Assistant Curator will in turn notify the local museum of the fact that there is archaeological work ongoing in the area. Should museum staff wish to visit the site whilst the archaeological work is in progress, they must first gain permission from the site owner/agent. **The site owner/agent must be aware that no one, other than the Council's Planning Officer, in consultation with the Archaeology Unit, has the authority to vary the terms of this specification.**

Provision must also be made for a cataloguing system for artefactual material, which will be compatible with the needs of the institution receiving these finds. Any report to the Queen's and Lord Treasurer's Remembrancer must be copied to the Senior Archaeologist, and the Assistant Curator (Archaeology) at Inverness Museum and Art Gallery. Any finds, where appropriate, should also be reported to the Receiver of Wreck.

7.3. Discovery and Excavation in Scotland

A brief summary of the results must be sent to the Council For Scottish Archaeology for inclusion in Discovery and Excavation in Scotland. The cost of this must be included in any tender document.

8. General

1. The archaeologist appointed must be of a professional standing acceptable to the Senior Archaeologist and must carry out the work according to the Code of Conduct, standards and guidelines of the Institute of Field Archaeologists.

2. The main contractor has responsibility for the Health and Safety of any archaeological staff on site.

3. The archaeologist is responsible for taking all necessary measures to conform with the Health and Safety at Work Acts and be covered by all necessary insurances.

4. Any Health and Safety incidents on site involving the archaeologist must be immediately notified to the Health and Safety Executive.

5. The archaeologist must agree a timetable for the work with the client and the Senior Archaeologist

6. The archaeologist appointed will not comment to the press or other media without prior approval from the Senior Archaeologist

7. Proper provision must be made for prevailing weather conditions in northern Scotland

8. The archaeologist agrees by undertaking this work to the terms of this specification.

Dorothy M Low.
Archaeologist
Friday, 10 March 2000