

Northamptonshire Archaeology

M1 Widening, Junctions 10-13, Bedfordshire
Cultural Heritage Surveys Stage 3

Archaeological Geophysical Survey (Int.17)
October 2006



Adrian Butler

December 2006

Report 06/162

Northamptonshire Archaeology




2 Bolton House
Wootton Hall Park
Northampton NN4 8BE
t. 01604 700493 f. 01604 702822
e. sparry@northamptonshire.gov.uk
w. www.northantsarchaeology.co.uk



STAFF

Project Manager Andy Mudd BA Cert Arch Oxon
Fieldwork Mark Holmes MA
 Carol Simmonds MA
 James Aaronson BA
 Dan Cherry MA
 John Walford MSc
 Paul Clements BA
 Rhiannon Mann MSc
 Ian Fisher BSc
Text and illustrations Adrian Butler BSc MA AIFA
 Mark Holmes

QUALITY CONTROL

	Print name	Signature	Date
Checked by	P Chapman		7/12/06
Verified by	A Mudd		7/12/06
Approved by	A Chapman		7/12/06

OASIS REPORT FORM

PROJECT DETAILS		
Project name	M1 Widening, Junctions 10 – 13, Bedfordshire Cultural Heritage Surveys Stage 3 Archaeological Geophysical Survey (Int.17)	
Northamptonshire Archaeology, commissioned by Scott Wilson Ltd, conducted geophysical prospection as part of the archaeological evaluation of M1 Widening J10 to J13. A combined area of c 30 ha in 34 fields was surveyed by gradiometer. Putative archaeology including ditches, possible enclosures and a bank were identified in nine of the fields. More common were ferrous pipelines and geological variations.		
Project type (eg DBA, evaluation etc)	Geophysical Survey	
Previous work (SMR numbers etc)		
Current Land use	Arable / Pasture	
Future work (yes, no, unknown)	Yes	
PROJECT LOCATION		
County	Bedfordshire	
Site address (including postcode)	Junctions 10-13, M1	
Study area (sq.m or ha)	Approx 22ha	
OS Easting & Northing (use grid sq. numbers)	4960,2370 – 5080,2190	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator	Scott Wilson Ltd	
Project Design originator	Scott Wilson Ltd	
Director/Supervisor	Adrian Butler, Northamptonshire Archaeology	
Project Manager	Andy Mudd, Northamptonshire Archaeology	
Sponsor or funding body	Scott Wilson Ltd	
PROJECT DATE		
Start date	April 2006	
End date	October 2006	
ARCHIVES	Location (Accession no.)	
Physical		Content (eg pottery, animal bone etc)
Paper		
Digital	Northamptonshire Archaeology	Geoplot data files, MapInfo mapping tables
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	M1 Widening Junctions 10-13 Bedfordshire, Cultural Heritage Surveys stage 3 Archaeological Geophysical Survey (Int.17)
Title	M1 Widening, Junctions 10-13, Bedfordshire Cultural Heritage Surveys Stage 3 Archaeological Geophysical Survey	
Serial title & volume	NA Reports 06/162	
Author(s)	Adrian Butler	
Page numbers	1-7	
Date	07/12/06	

CONTENTS

1	INTRODUCTION.....	1
2	ARCHAEOLOGICAL BACKGROUND.....	1
3	TOPOGRAPHY AND GEOLOGY.....	1
4	METHODOLOGY	2
5	SURVEY RESULTS.....	2
6	CONCLUSIONS.....	6
7	REPORTING AND ARCHIVE.....	7
	BIBLIOGRAPHY.....	7

Cover: Early use of the M1 © David Jones www.cbrd.co.uk accessed 31/10/06

Figures

Fig 1: Survey Area Locations 1:75,000

Fig 2: Gradiometer Results Fields 87, 83, 82, 81 & 78 1:5000

Fig 3: Gradiometer Results Fields 175, 73, 72, 97, 98, 99, 75 & 70north 1:5000

Fig 4: Gradiometer Results Fields 70 south, 101, 68, 67 & 161 1:5000

Fig 5: Gradiometer Results Fields 20, 21, 19, 17, 164 & 129 1:5000

Fig 6: Gradiometer Results Fields 7-9, 123, 129, 117 & 119 1:5000

Fig 7: Gradiometer Results Fields 33, 37 & 40 1:5000

Fig 8: Gradiometer Results Fields 41, 136 & 53 1:5000

Fig 9: Gradiometer Results and Interpretation Field 17 1:1500

Fig 10: Gradiometer Results and Interpretation Field 40 1:2500

Fig 11: Gradiometer Results Fields 73 & 72 1:1250

Fig 12: Gradiometer Interpretation Fields 73 & 72 1:1250

Fig 13: Gradiometer Results and Interpretation Field 83 1:1250

Fig 14: Gradiometer Results and Interpretation Field 161 1:1250

Fig 15: Gradiometer Results and Interpretation Field 164 1:2500

Appendices

- 1 Stacked Trace Plots, Fields 87, 83, 82, 81 & 78
- 2 Stacked Trace Plots, Fields 175, 73, 72, 97, 98, 99, 75 & 70north
- 3 Stacked Trace Plots, Fields 70 south, 101, 68, 67 & 161
- 4 Stacked Trace Plots, Fields 20, 21, 19, 17, 164 & 129
- 5 Stacked Trace Plots, Fields 123, 119, 117, 8 & 7
- 6 Stacked Trace Plots, Fields 40, 33, 37, 136 & 41

M1 WIDENING, JUNCTIONS 10 – 13, BEDFORDSHIRE
CULTURAL HERITAGE SURVEYS STAGE 3
ARCHAEOLOGICAL GEOPHYSICAL SURVEY (INT.17)
DECEMBER 2006

ABSTRACT

Northamptonshire Archaeology, commissioned by Scott Wilson Ltd, conducted geophysical prospection as part of the archaeological evaluation of M1 Widening J10 to J13. A combined area of c 30 ha in 34 fields was surveyed by gradiometer. Putative archaeology including ditches, possible enclosures, and a bank were identified in nine of the fields. More common were ferrous pipelines and geological variations.

1 INTRODUCTION

Northamptonshire Archaeology was commissioned by Scott Wilson Ltd on behalf Costain - Carillion Joint Venture, to conduct geophysical surveys as part of the Stage 3 Cultural Heritage Surveys for the M1 Widening, Junctions 10-13, Bedfordshire (NGR SP 96,37 – TL 08,19; Fig 1).

Because of land availability the surveys were carried out on eight fields in April and May 2006 and 26 fields (Fig 1) in August and September 2006. The objectives were to locate and characterise potential sub-surface features within the projected road widening, as part of a programme of archaeological evaluation (Scott Wilson 2006). The works were undertaken in accordance with a Written Scheme of Investigation (WSI) prepared by Scott Wilson, and an approved detailed Method Statement prepared by Northamptonshire Archaeology (Scott Wilson 2006; NA 2006). The scope of works was contained in four instructions from Costain-Carillion – Change to Works Information No 1 (12 April 2006), Change to Works Information No 2 (21st April 2006) and Compensation Event 1 (27th July 2006) and Change to Works Information No 3 (15 September 2006) - which represented variations on the original WSI.

2 ARCHAEOLOGICAL BACKGROUND

The present surveys follow investigations carried out 1992-1994 for a previous scheme (M1 J10 to J15), including fieldwalking, extensive geophysical survey and trial trench evaluation (Scott Wilson 2006). Following review of the existing information, the Stage 3 surveys had the objective of completing the archaeological surveys so as to inform preparation of the Environmental Statement for the current scheme.

The Stage 3 surveys comprised fieldwalking and geophysical surveys. The fieldwalking survey forms the subject of a separate report (NA 2006 forthcoming).

3 TOPOGRAPHY AND GEOLOGY

Geophysical surveys were carried out in fields next to the M1 along the survey corridor which ran from Slip End, J10, south of Luton (near Caddington) north to Ridgmont, J13, Bedfordshire (Fig 1).

The solid geology underlying the M1 between Junctions 10 to 13 comprises strata of Upper Jurassic to Upper Cretaceous age, with progressively older deposits being crossed northwards from Junction 10 to Junction 13.

Between Junction 10 to just south of Luton the Upper Chalk (Cretaceous) is overlain by drift deposits comprising Clay with Flints, though it out-crops in dry river valleys.

From just south of Luton to Junction 11 the Middle Chalk outcrops extensively with little drift cover. Dry valley deposits, which consist of poorly sorted gravels, overlie the chalk around Stockwood and Farley Hill.

North of Junction 11 to south of Junction 12 the Lower Chalk (Cretaceous), comprising Grey Chalk and Chalk Marl, is frequently exposed. In some areas it is overlain by glacial Sands and Gravels, head deposits and Boulder Clay.

Between Toddington Services and Tingrith the Gault Clay (Lower Cretaceous) is overlain by extensive drift cover of glacial Sands and Gravels and Boulder Clays.

From Tingrith to south of Junction 13 at Ridgmont the Lower Greensand (Lower Cretaceous) is frequently exposed. Where present drift deposits comprise Boulder Clay, with occasional alluvium and head deposits.

North of Ridgmont to Junction 13 Oxford Clay (Upper Jurassic) is occasionally obscured by drift cover of alluvium, head deposits and First Terrace River Gravels.

4 METHODOLOGY

All fieldwork was carried out in accordance with both English Heritage and the Institute of Field Archaeologists Guidelines (EH 1995 & Gaffney, Gater and Ovendon 2002), and to a specification provided by Scott Wilson Ltd (2006).

Gradiometer Survey

All detailed magnetometer survey was undertaken using a combination of Bartington Grad601-2 dual-sensor and Geoscan FM256 and FM36 single sensor fluxgate gradiometers. Intensive survey was carried out along the proposed route in 34 fields using predefined 30m x 30m and 20m x 20m grid-squares, totalling c 8 ha (Phase 1) and c 22 ha (Phase 2). Each grid square was traversed with gradiometer at rapid walking pace in zigzag traverses spaced at 1m intervals with data recorded every 0.25m along these. Survey areas were plotted using a Leica 1200 GPS with an accuracy of +/- 0.05 m in relation to OS National Grid.

The data was analysed using Geoplot 3.00s software. Low (negative) magnetism is shown as white and high (positive) magnetism as black in the resultant greyscale plots. As part of our ethos, minimal processing was carried out on the data. The 'Zero Mean Traverse' function was applied as a standard in order to balance the data to zero. Other functions were carried out as necessary, such as the removal of extreme values that could bias the dataset.

The processed data is presented here in the form of grey tone graphics highlighting the magnetic anomalies (scale +5nT / -5nT or +/-3nT, black ~ white, Figs 2-15). Stacked Trace Plots illustrating the full scale of anomalies in graph form have been included for each survey block, in Appendices 1 to 6. Interpretative plots (Figs 6, 9, 10, 12, 14-15) have been generated from greyscales of anomalous results to aid in the discussion.

5 SURVEY RESULTS

The results of the gradiometer survey are presented on a field-by-field basis, from north to south (Fig 1). There is a reasonably constant background level of small intense 'dipolar' anomalies indicative of ferrous waste in the topsoil, across all the fields.

The fields yielding remains of potential archaeological interest (Fields 17, 40, 72, 73, 83, 117, 161

and 164) are plotted at a detailed scale (Figs 6, 9-15). Of all the fields, only Field 33 contained obvious earthwork remains. Most anomalies therefore relate to buried or ploughed out features.

Field 87 (Fig 2)

Survey in this area detected clusters of amorphous positive anomalies, probably indicating geological change along the south and west of the area. The survey was located close to bands of alluvium and Oxford Clay (mapping provided by Client).

Field 83 (Figs 2 & 13)

Prospection revealed a ferrous pipe orientated north-west to south-east in the west of the area. At the western end, a group of highly magnetic points has been detected, almost certainly ferrous and possibly the remains of a feature such as a pylon base. Two linear and three discrete positive anomalies may reflect archaeological features such as ditches and a pit, central to the survey area. A marginally magnetic band was located along the survey area between the ferrous features, presumably a continuation of the geological variation in Field 87.

Field 82 (Fig 2)

An east – west orientated ferrous pipeline was revealed in the west of this area. Otherwise, little, other than ridge-and-furrow on a north-east bearing, was detected.

Field 81 (Fig 2)

Positive anomalies of indeterminate source were located in the south-eastern corner of an otherwise blank field.

Field 78 (Fig 2)

East-west ploughed out ridge and furrow was identified in the western survey area. The eastern area contained no significant anomalies, although data irregularities in the western end of the block were a result of survey on a heavily ploughed part of the field.

Field 175 (Fig 3)

The major anomaly was a wide-diameter east - west ferrous pipeline, marked 'Rugby Cement' in the adjacent hedge. The south of the survey was found to contain an area of noisy data, reflecting the distribution of modern brick fragments on the surface.

Field 73 & 72 (Figs 3, 11 & 12)

Extensive ridge and furrow was located curving towards the north east in Field 73, and three possible pits were aligned centrally to the area. A former field boundary was indicated by an intense anomaly. At the east end of Field 73 five linear positive anomalies were located, reflecting ditches. Of these, four were orientated to the north-east and one to the north-west. A likely pit was detected in the same area.

Across the field boundary in Field 72, a further three possible ditches were found on north-east and north-west alignments. More anomalies were identified central to the survey area. These included three sides of a possible rectangular ditched enclosure and four curvilinear ditches of varied length.

Field 97 (Fig 3)

This survey was sub-divided into three blocks for convenience. The western block was found to contain unknown ferrous objects adjacent to the road. East aligned ridge and furrow was apparent in the west of the block although this was not detected where a geological anomaly was identified centrally. No significant anomalies were found in the central or eastern blocks. Slight data irregularities in the east of the eastern block result from repeat instrument set-ups on different days.

Field 98 (Fig 3)

No significant anomalies were found in this survey area. Slight data irregularities in the east of the block result from similar sources to those encountered in Field 97.

Field 99 (Fig 3)

An area of possible geological variation within the Boulder Clay as defined by a signal change, was detected in the south-east area.

Field 75 (Fig 3)

This survey of Field 75 contained no significant anomalies.

Field 70 (Figs 3 & 4)

Two separate grids were surveyed in Field 70. The southern most of these (Fig 4) contained a series of roughly parallel north-south anomalies spaced *c.* 5m apart. It is likely that these are agricultural in origin, possibly field drains. An amorphous anomaly in the centre of the north survey area measured *c.* 20m x 12m. The anomaly is not thought to be archaeological in origin and may simply be the result of ground disturbance. A strong bi-polar anomaly towards the north of the survey area probably represents a buried ferrous object.

Field 101 (Fig 4)

A probable ferrous pipeline was revealed orientated to the south-east along the western margin of the survey area.

Field 68 (Fig 4)

A sinuous positive anomaly, running north to south, occurs at the north-east end of the survey area. Its form would suggest that it is geological rather than archaeological in origin, notably it lies on or close to the mapped boundary between Chalk Head and Woburn Sand. It may equate with cropmarks previously observed but there were no other substantive anomalies in the remainder of the field.

Field 67 (Fig 4)

No significant anomalies were evident. Faint, sinuous anomalies running north-east to south-west through the survey area are likely to be geological in origin.

Field 161 (Figs 4 & 14)

The field was generally magnetically noisy. This 'noisiness' increased towards the south of the 'V' surveyed where a number of short, more intense, positive linear anomalies were detected. Considering the morphology of these anomalies as a group, it is not possible to determine whether these anomalies are archaeological or of a different source eg. natural.

Field 21 (Fig 5)

This survey block was magnetically subdued except for a line of four vertically magnetised anomalies, probably the remains of iron posts. The anomalies were on a similar north-west alignment to a field boundary to the north and path through Field 20 to the south, suggesting a former or temporary fence at this point.

Field 20 (Fig 5)

The field splits into two halves in order to follow the M1 closely. The northern section was found to contain nothing of interest. The hedge line dividing both blocks was patchy on the ground, but visible as a concentration of positive anomalies close to the approximate line on the mapping. Very weak anomalies further south probably reflect geological changes in the Boulder Clay.

Field 19 (Fig 5)

An intense, ferrous, anomaly was detected in the north. The area was dominated by a ferrous pipeline imaged for 420m south, parallel with the M1. A second discrete ferrous anomaly was found at the southern end of the survey.

Field 17 (Figs 5 & 9)

Part of a ferrous pipeline, probably an extension of that in Field 19, was located at the northern end of the survey area. Further south, a positive linear anomaly was detected, reflecting a ditch orientated to the north-west. South of that feature, an area of extreme readings would appear to indicate a large deposit of ferrous debris. Similarly, a more discrete intense anomaly nearby. The southern half of Field 17 contains another ferrous pipeline and any other anomalies in that area have been swamped by the readings from the pipe.

Field 164 (Figs 5 & 15)

The north-west corner has been magnetically effected by a steel mobile phone mast. Nevertheless, a series of positive anomalies indicating up to six ditches have been detected in the northern half of the area. A ferrous pipe was identified aligned to the north-east in the southern half.

Field 129 (Fig 5)

Gradiometry detected ridge and furrow orientated to the north-west along the survey block.

Field 123 (Fig 6)

A stream flowing along the western boundary of Field 123 intruded into the survey area in the north and south. No significant anomalies were detected.

Fields 9 & 8 (Fig 6)

Little appears to have been detected in these fields other than the line of the former boundary between them.

Field 7 (Fig 6)

A 6m diameter negative anomaly was detected on the eastern edge of the survey area. Such an anomaly could indicate a void but is more likely to be part of greater anomaly outside the area. An area at the south end of the block was overgrown so as to make it unsurveyable. Nothing else of significance was found.

Field 119 (Fig 6)

A single, faint linear anomaly was located at the northern end of the surveyed area. It extends down the centre of the surveyed area for *c.* 50m. Since it runs parallel with the extant hedge line it probably represents a modern agricultural feature.

Field 117 (Fig 6)

Field 117 was surveyed in two separate parts. Anomalies representing archaeological features were located towards the junction of the surveyed areas. These anomalies comprised two long curvilinear ditches which may form the eastern halves of possibly oval or lenticular shaped enclosures. Their exact form and character could not be determined since any continuation lies outside the survey area. Further anomalies, possibly representing pits and further ditches were associated. At the extreme north of the survey area at least two strongly magnetic anomalies were present. Each anomaly was approximately 4m in diameter, suggesting a modern near-surface source such as buried steel tanks or drums, although an archaeological origin cannot be discounted.

Field 33 (Fig 7)

The survey revealed the effects of modern magnetic influences comprising an electricity pylon at the south-east, modern fence-line at the east and a telegraph pole towards the north. Further magnetic disturbance, at the extreme north of the survey area may be due to buried services or other modern disturbance. At the south west corner of the survey area there is a linear anomaly which starts to curve westward out of the survey grid. This anomaly coincides with the eastern edge of an apparently rectilinear earthwork occupying the southern half of the field, possibly a relic field boundary.

Field 40 (Figs 7 & 10)

A vehicle recovery compound, set up for the M1 widening J6a to J10 divided the survey area into two. Several patches of noisy data were detected along the length of the field, probably representing brick waste and random rubbish in the topsoil. An unsurveyable small copse of trees interrupted the middle-western side of the survey block. Most archaeologically significant, though, were two positive linear anomalies reflecting adjacent ditches, one orientated north-south, the other east-west. These possibly denote two sides of a rectangular ditched enclosure of dimensions greater than 80m x 40m, or former field boundaries.

Field 37 (Fig 7)

This small area was dominated by extreme magnetic values, likely to reflect the dumping of brick, 'hardcore' and ferrous material. The surveyors noted that the field showed signs of having been built-up slightly as a recreation ground.

Field 53 (Fig 8)

The survey grid was enclosed by modern housing at the west and a metal fence at the east. The effects of the metal fence are apparent along the eastern edge of the surveyed area. The extreme readings throughout, indicate considerable magnetic disturbance possibly due to buried services or other ground disturbance.

Field 136 (Fig 8)

A long strip of survey was successful in detecting 210m of ferrous pipeline, orientated parallel to the M1. This would suggest the utility is either contemporary to or more recent than the creation of that section of carriageway. No other significant features were located.

Field 41 (Fig 8)

Positive area anomalies at the northern end are likely to be connected with a 19th / early 20th-century bottle dump. Anomalies suggestive of geological deposits associated with the mapped Clay-with-Flints, were detected to the south, adjacent to an electricity pylon. Toward the middle a north-aligned ferrous pipe was recognized, with a possible vertical ferrous pipe 30m north-west along the survey block. Further geological anomalies were identified in the southern part of the survey area.

6 CONCLUSIONS

Gradiometer prospection along the M1 identified possible archaeological remains in nine fields. In Fields 72 and 73 were found ditches and a possible rectangular ditched enclosure. In Field 161 were found short linear features along north-south and east-west alignments, but unclear as to their attribution. In Field 17 was a single ditch, and in Field 40 were two ditches forming boundaries to a field or large enclosure. Field 83 may contain two ditches and a pit. A series of six ditches, perhaps part of off-line enclosures were identified in Field 164. Survey in Field 117 identified the probable eastern halves of two oval ditched enclosures. A rectilinear anomaly in Field 33 represent echoes a low extant earthwork bank, possibly the remains of a former field boundary. It is not possible to assign a date to any of these features on present evidence.

Certainly, very few potential archaeological features have been located and none of sufficient complexity to suggest a site of great significance. Since geophysical survey is most effective at detecting patterns of linear features in a project of this kind, it is possible that discrete small features (pits and postholes) have not been detected or recognised.

Overall however, the results are considered to be reliable and not greatly affected by natural subsoil variations. Ploughed out medieval ridge and furrow was detected in six fields, notably to the north of M1 Junction 12, where the survey areas are more densely distributed. The detection of these anomalies, which are often subtle, tends to suggest that the gradiometer technique worked well.

Ferrous pipelines were a very common discovery along the survey, to be expected in such proximity to the motorway. Subtle effects of geology on the magnetic field were also commonly identified which, given the complex nature of the substrata not surprisingly given the complex local subsurface (Section 3, above).

7 REPORTING AND ARCHIVE

A brief summary of the results, as they are, will be offered for inclusion in the journal *Bedfordshire Archaeology* and will be entered into the on-line OASIS database for reference.

The archive, which comprises the digital geophysical and GIS data, will be produced following Archaeology Data Service good practice (Schmidt 2002) and stored in accordance with English Heritage management guidelines.

The archive is held by Northamptonshire Archaeology. The survey area lies within the collecting zone of Luton Museum, who have been contacted with regard to accepting a copy of the archive for long-term storage.

BIBLIOGRAPHY

EH 1995 *Geophysical Survey in Archaeological Field Evaluation*, English Heritage, Research and Professional Services Guideline, **1**

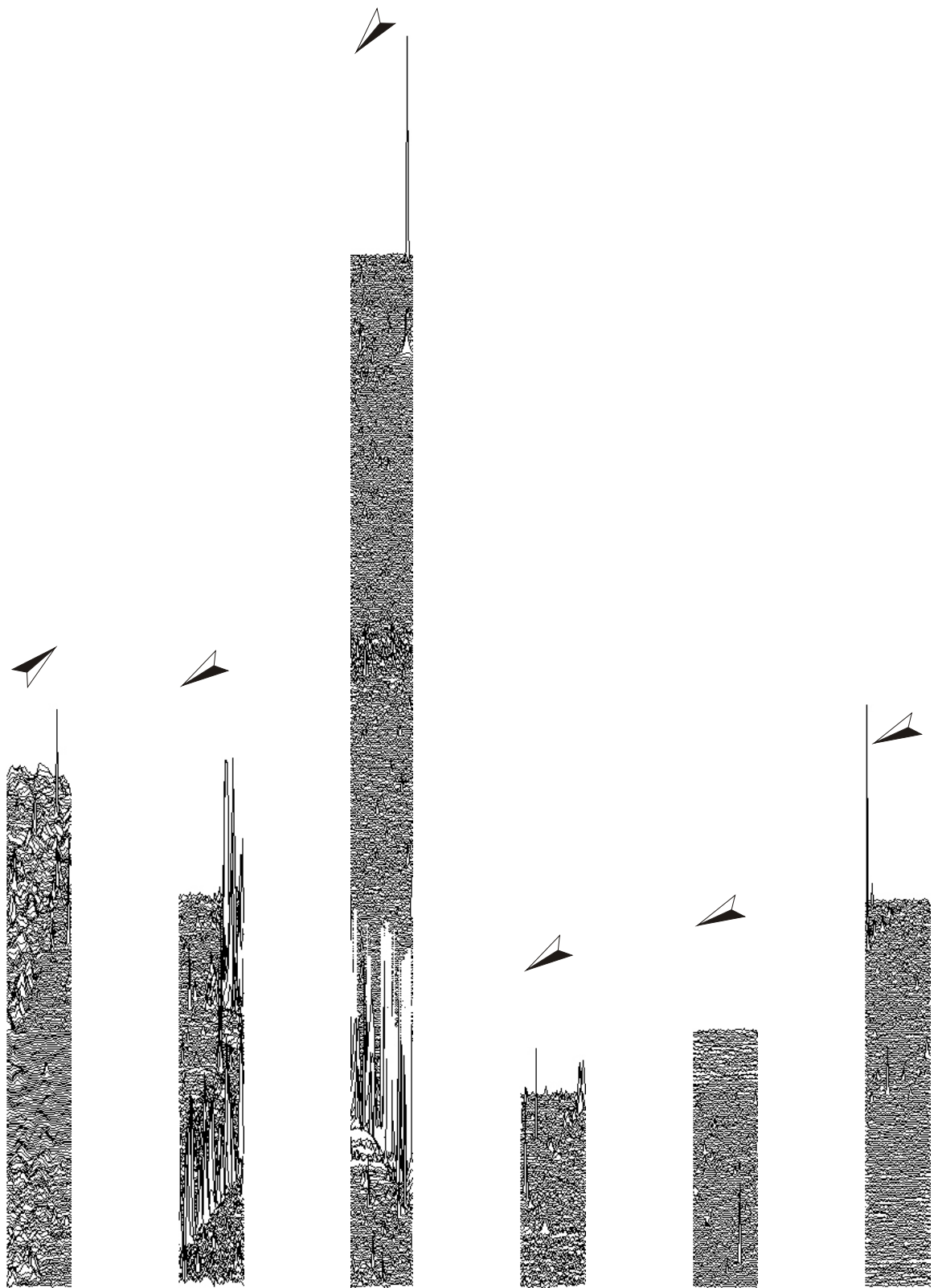
Gaffney, C, Gater, J, and Ovendon, S, 2002 *The Use of Geophysical Techniques in Archaeological Evaluations*, Institute of Field Archaeologists Technical Paper, **6**

NA 2006 *Method Statement for Archaeological Evaluation of M1 Widening Junction 10-13, Bedfordshire*, Northamptonshire Archaeology, v2 19th April 2006

NA 2006 forthcoming *M1 Widening, Junctions 10 -13, Bedfordshire. Cultural Heritage Surveys Stage 3: Archaeological Fieldwalking Survey, October 2006*, Northamptonshire Archaeology Report 06/153

Schmidt, A, 2002 *Geophysical Data in Archaeology: A Guide to Good Practice*, Oxbow Books, Oxford

Scott Wilson 2006 *M1 Widening Junctions 10 to 13, Written Scheme of Investigation, Stage 3 Cultural Heritage Surveys*, Highways Agency Report D110842/05/04b, March 2006



F87

F83

F82

F81

F78w

F78e

0 60m

40nT

Appendix 1: Stacked Trace Plots, Fields 87, 83, 82, 81, 78west & 78east

Appendix 2: Stacked Trace Plots, Fields 175, 97, 98, 99, 73, 72, 75 & 70north



F175



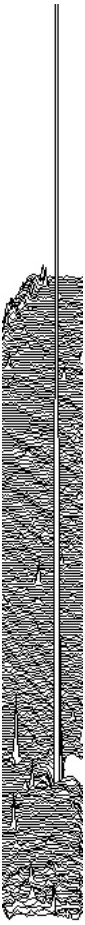
F97



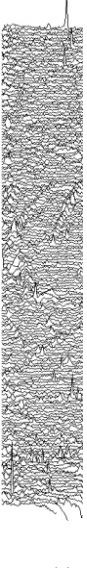
F98



F99



F73



F72



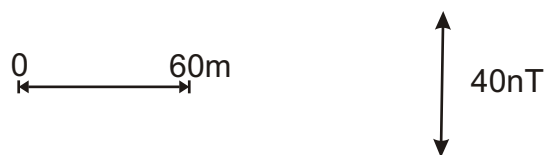
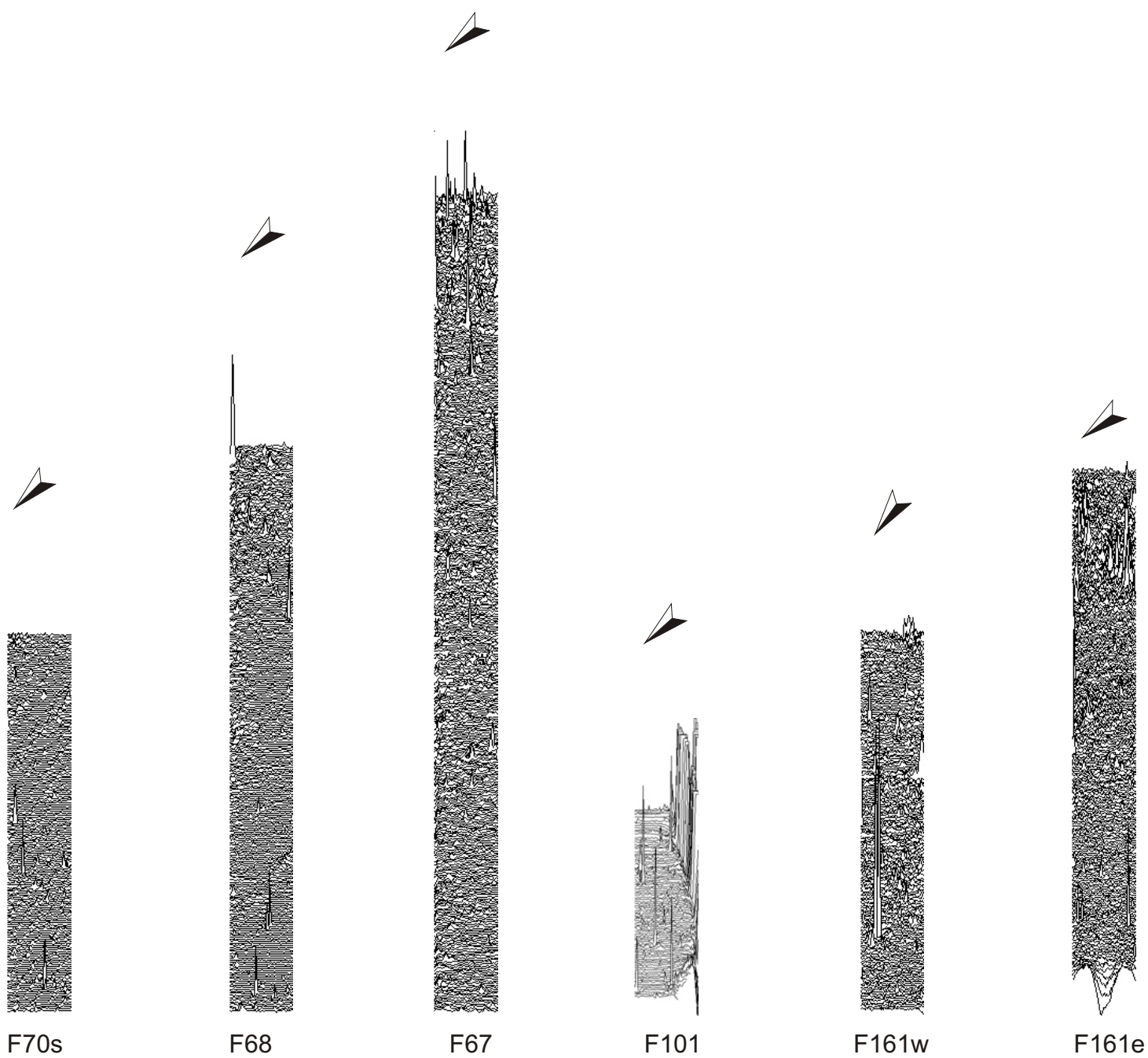
F75



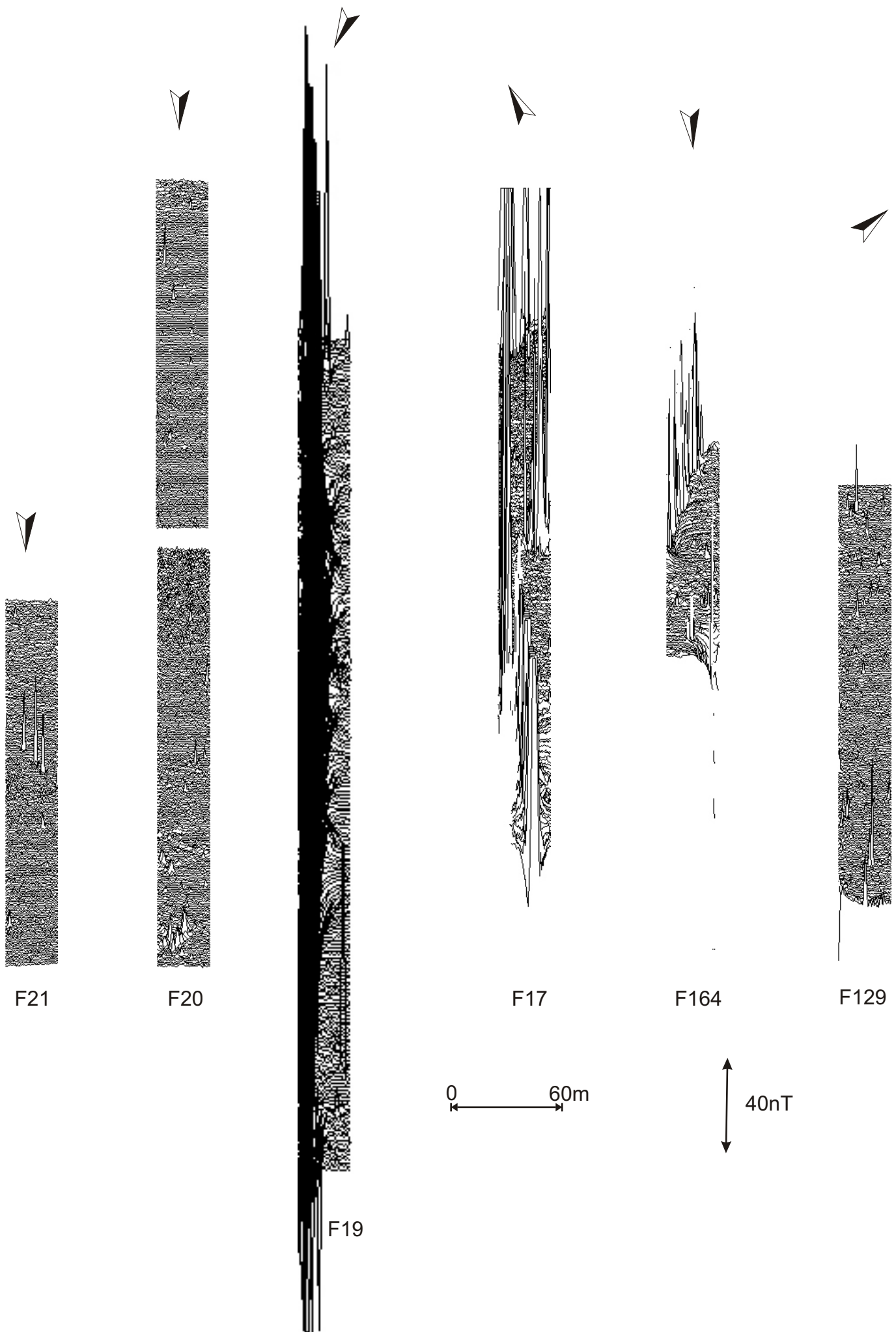
F70n

0 60m

40nT



Appendix 3: Stacked Trace Plots, Fields 70south, 68, 67, 101, 161west & east



Appendix 4: Stacked Trace Plots, Fields 21, 20, 19, 17, 164 & 129



F123



F119



F117



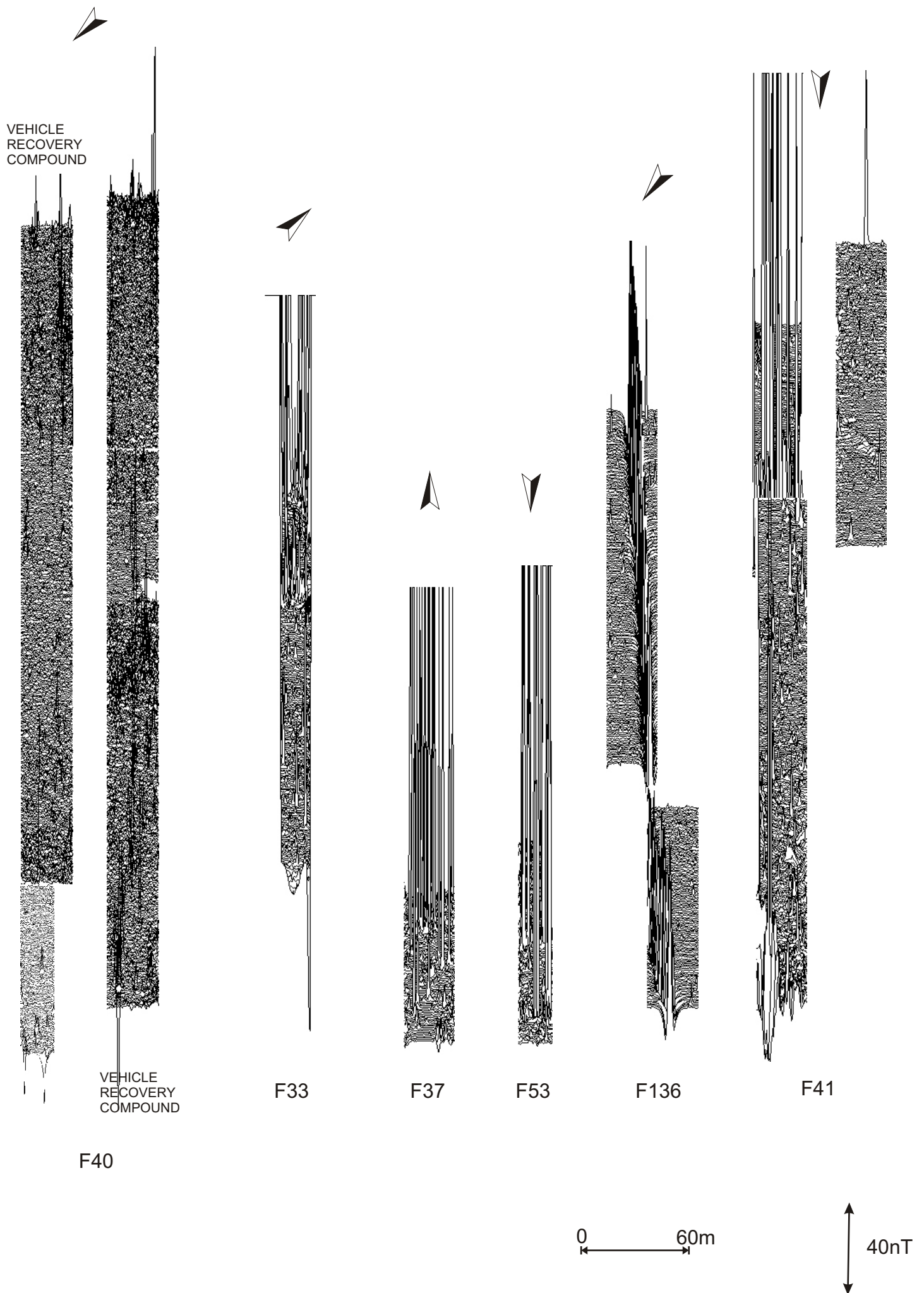
F8



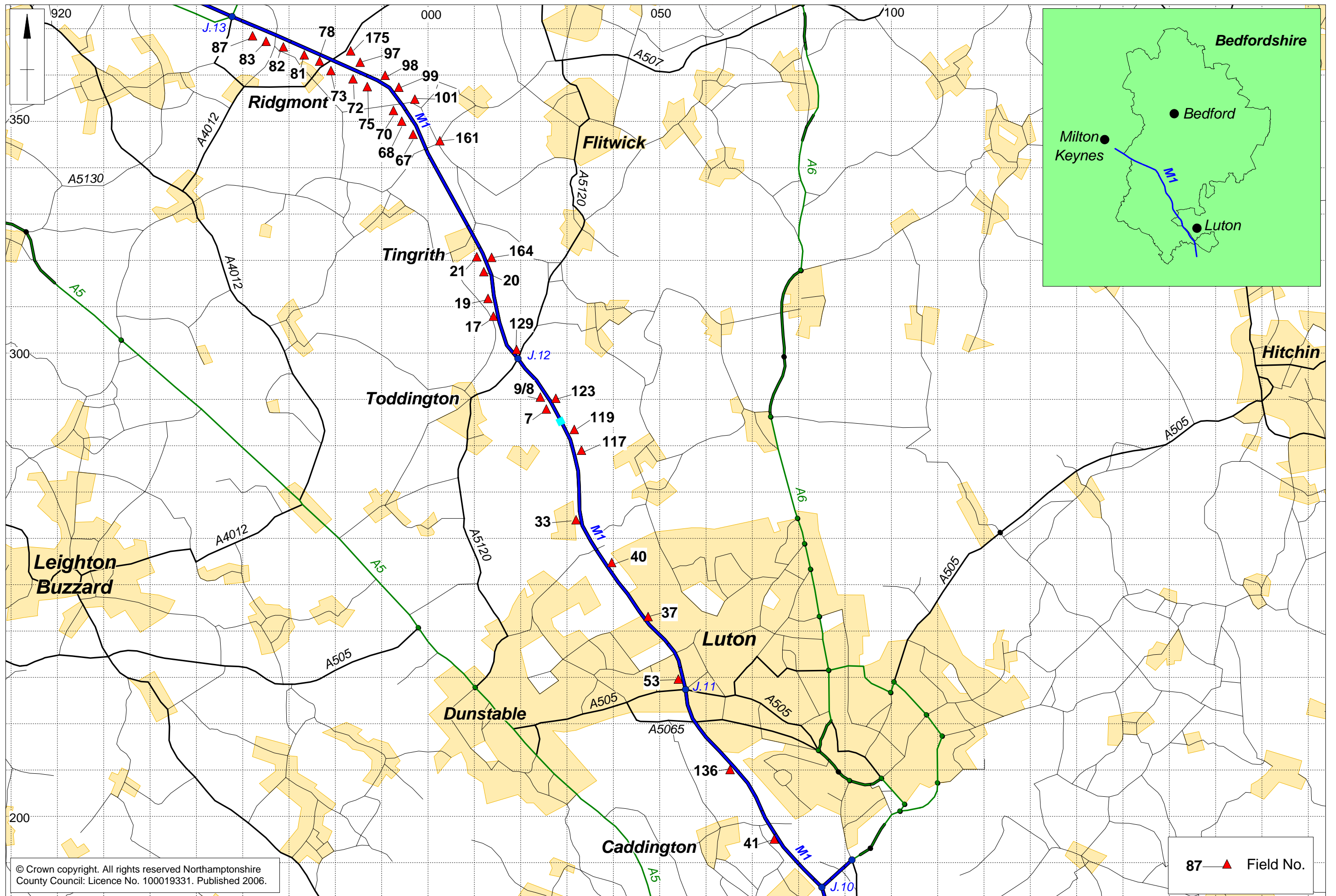
F7

0 60m

40nT

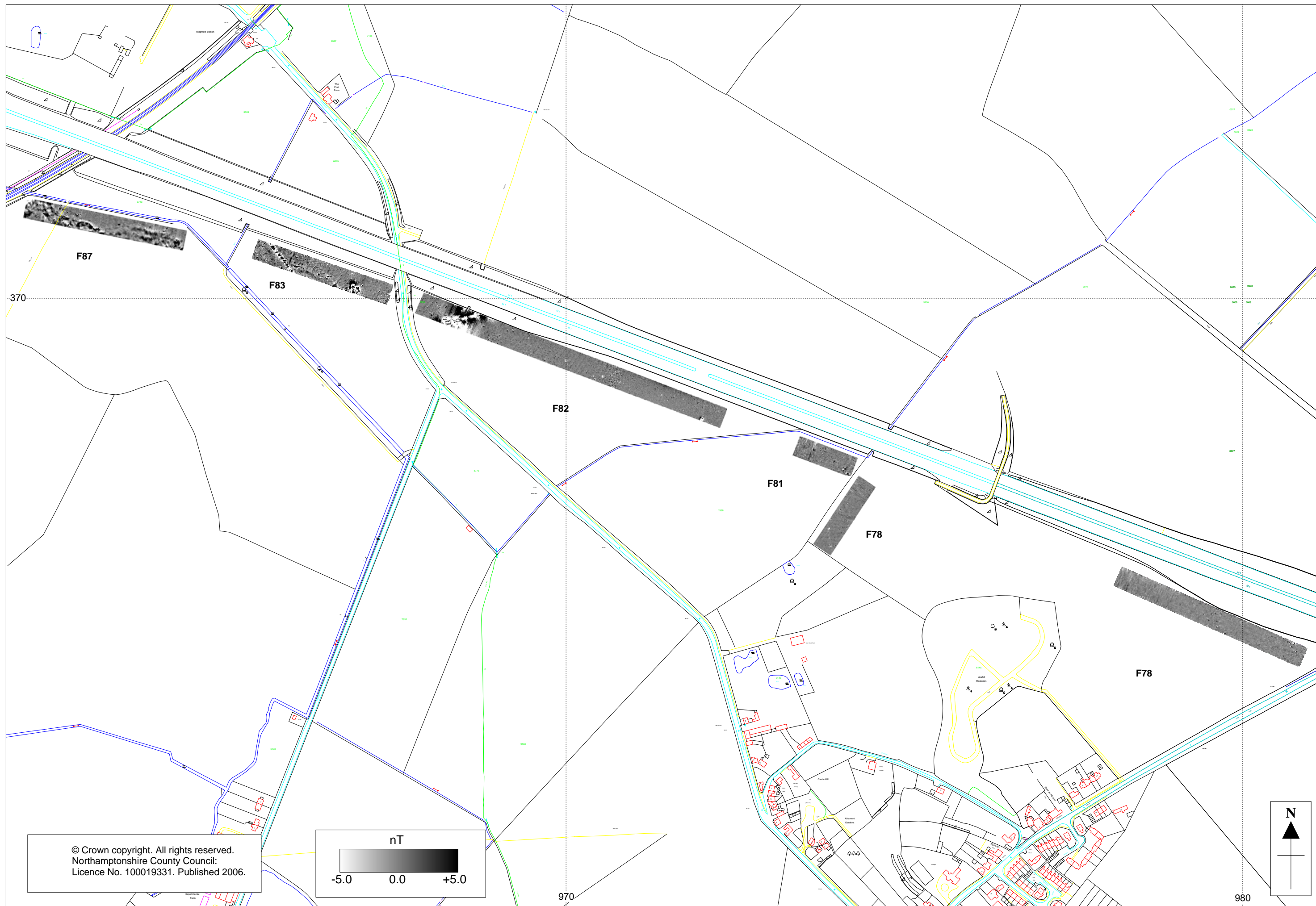


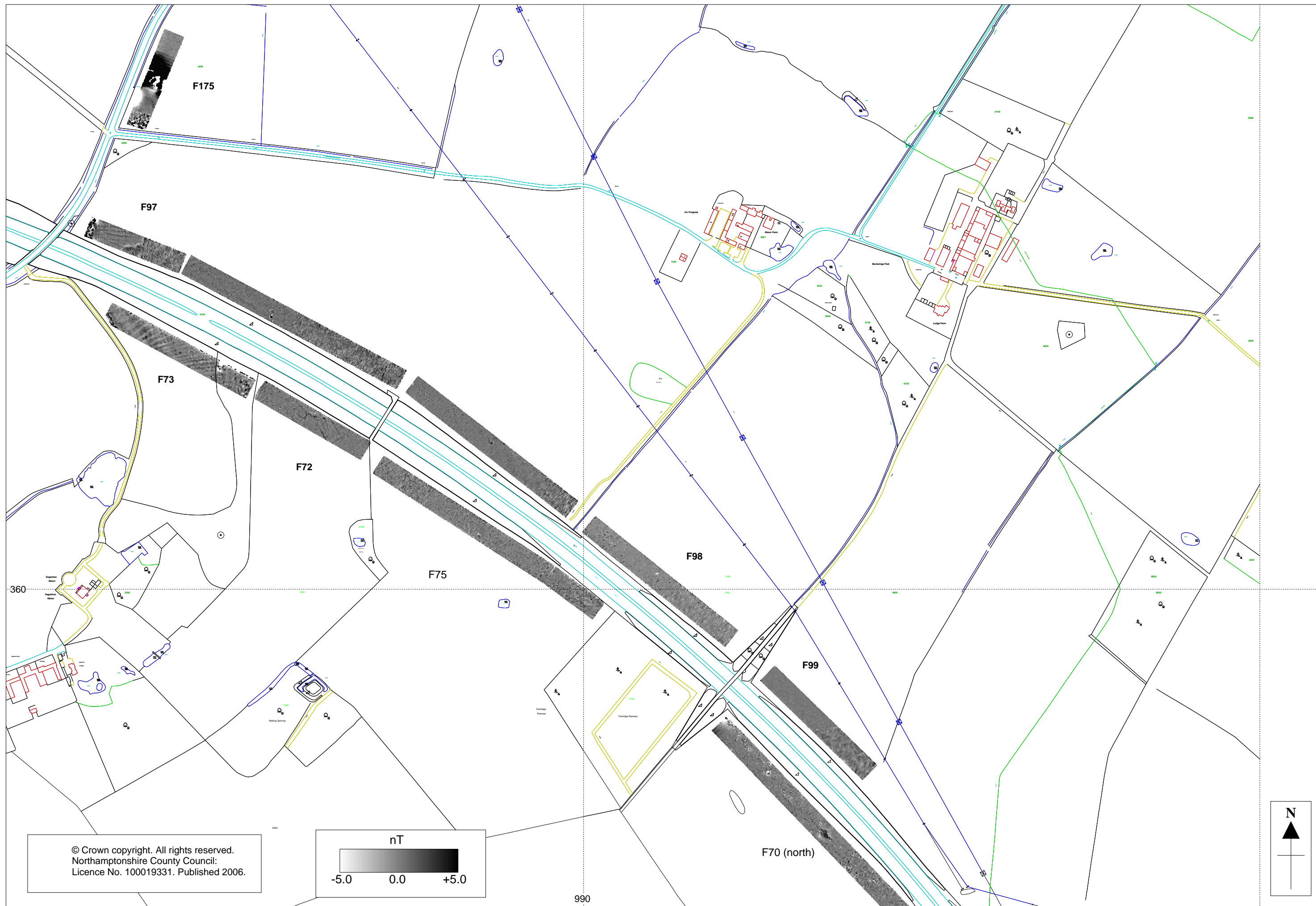
Appendix 6: Stacked Trace Plots, Fields 40, 33, 37, 136 & 41

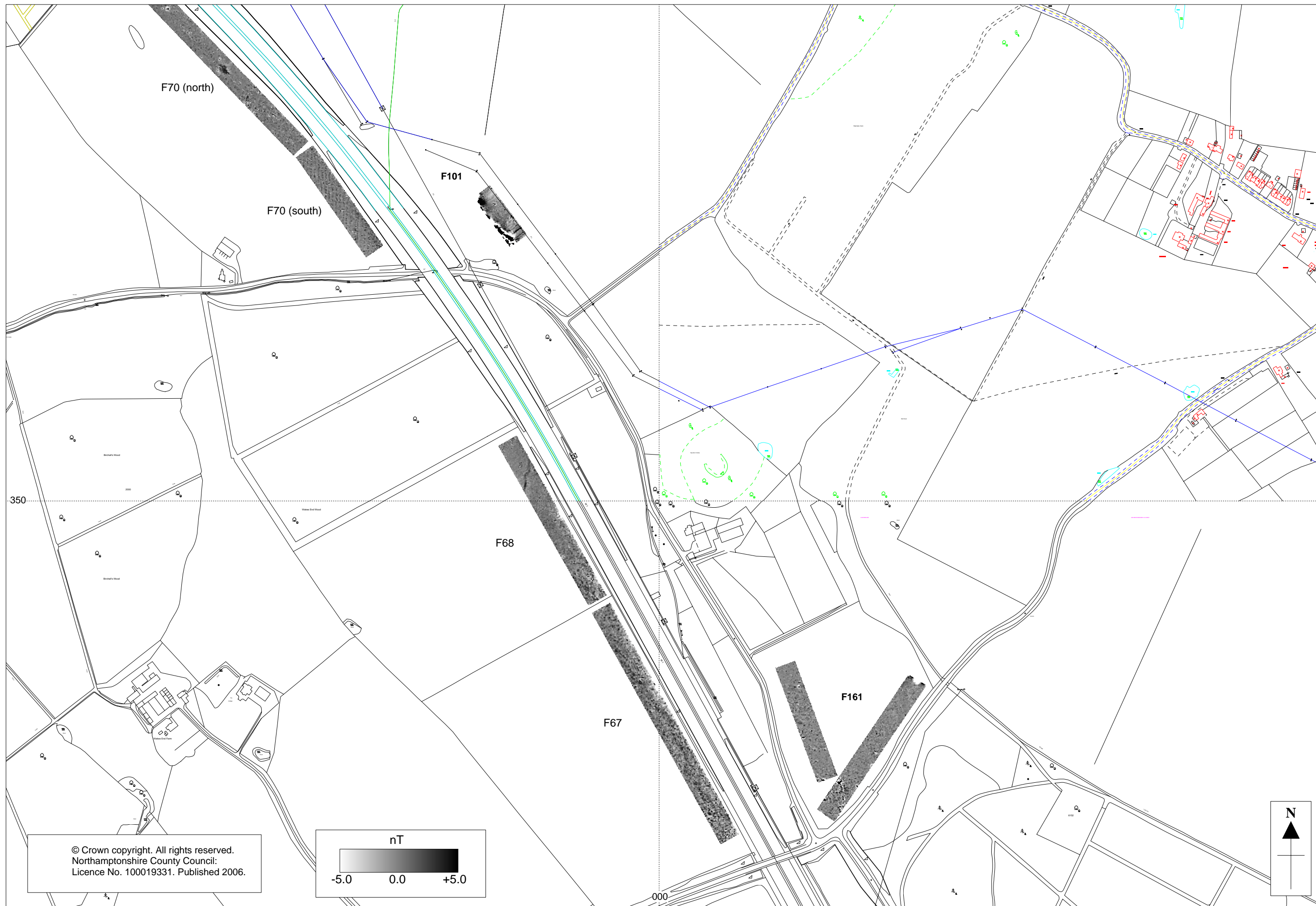


Scale 1:75,000 @ A3L

Areas of geophysical survey Fig 1





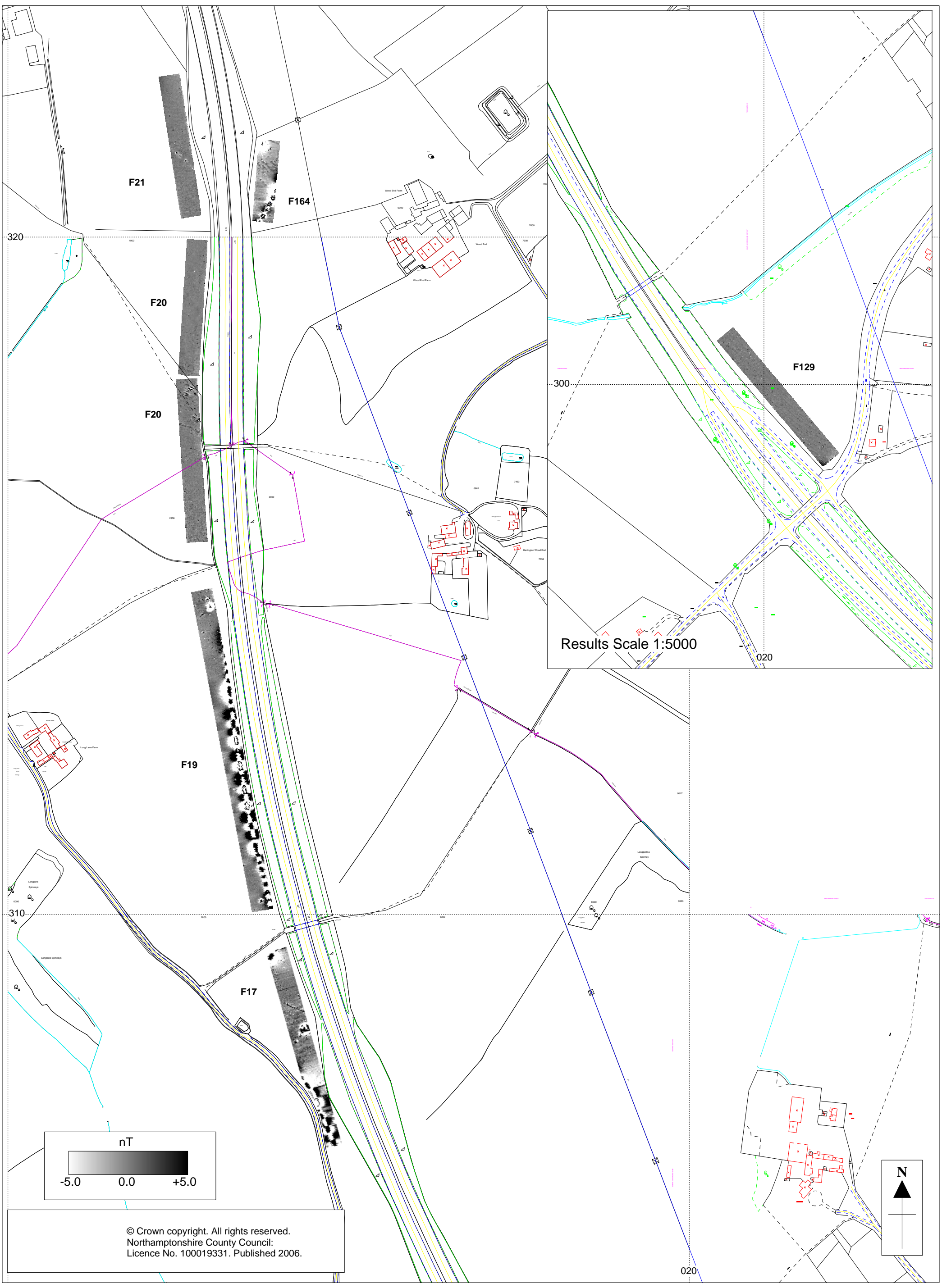


Scale 1:5000 @A3L

Gradiometer Results: Fields 70, 101, 68, 67 & 161. (+/- 5nT black/white) Fig 4

Scale 1:5000 @A3L

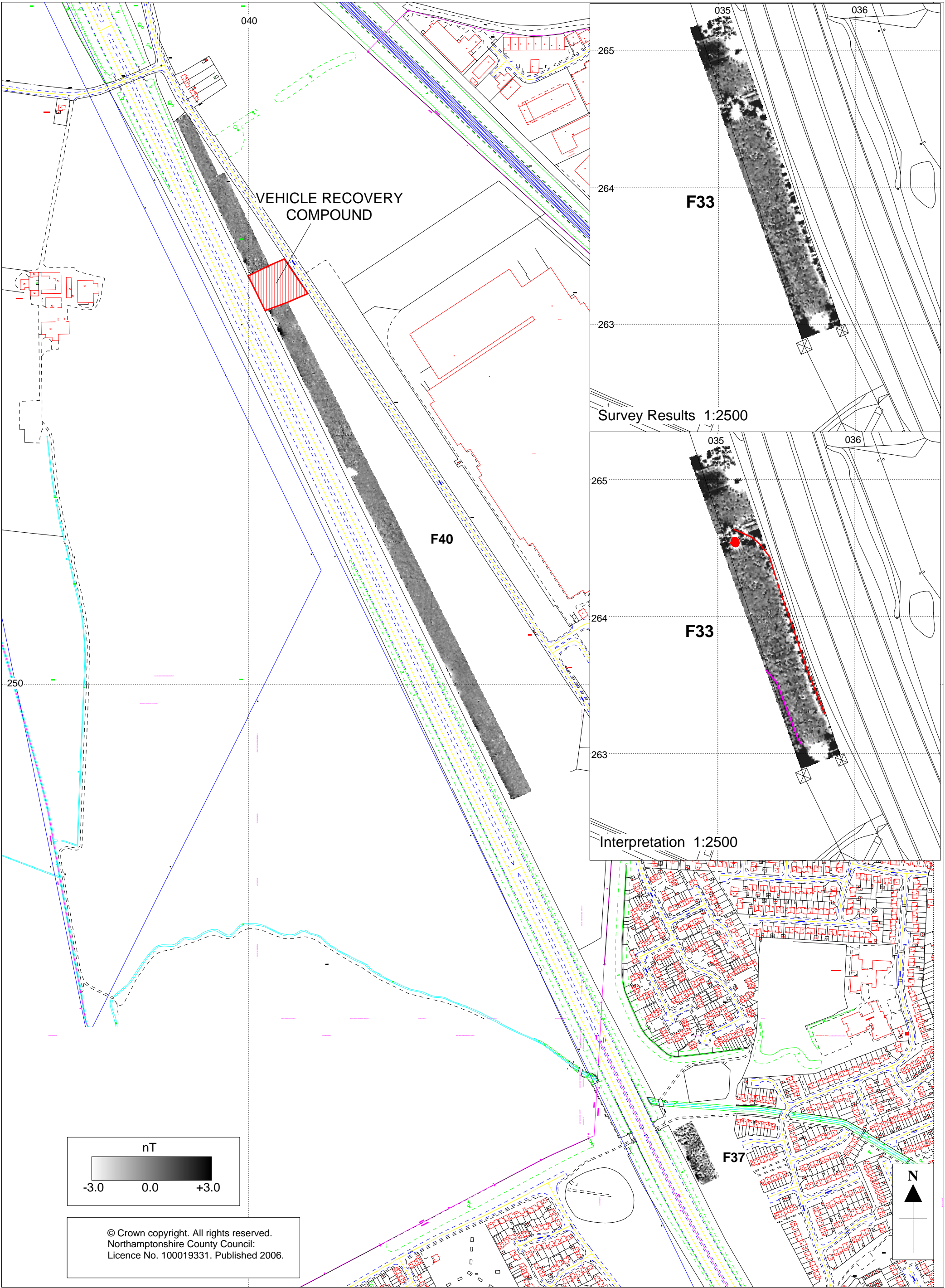
Gradiometer Results: Fields 21, 20, 19, 17, 164 & 129. (+/- 5nT black/white) Fig 5



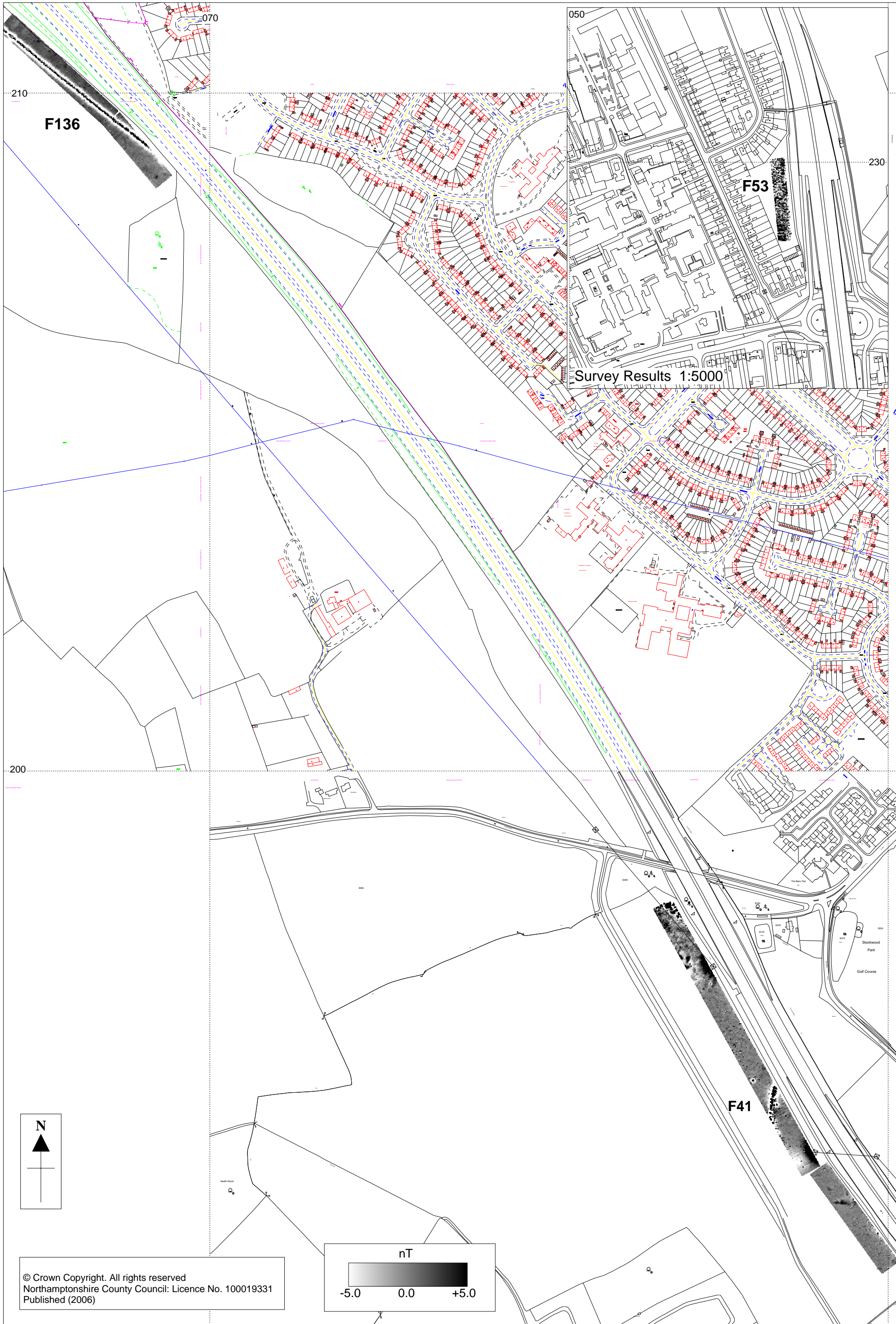
Scale 1:5000 @A3L

Gradiometer Survey Fields 7-9, 123, 129, 117 & 119 (+/- 5nT black/white) Fig 6





© Crown copyright. All rights reserved.
Northamptonshire County Council:
Licence No. 100019331. Published 2006.

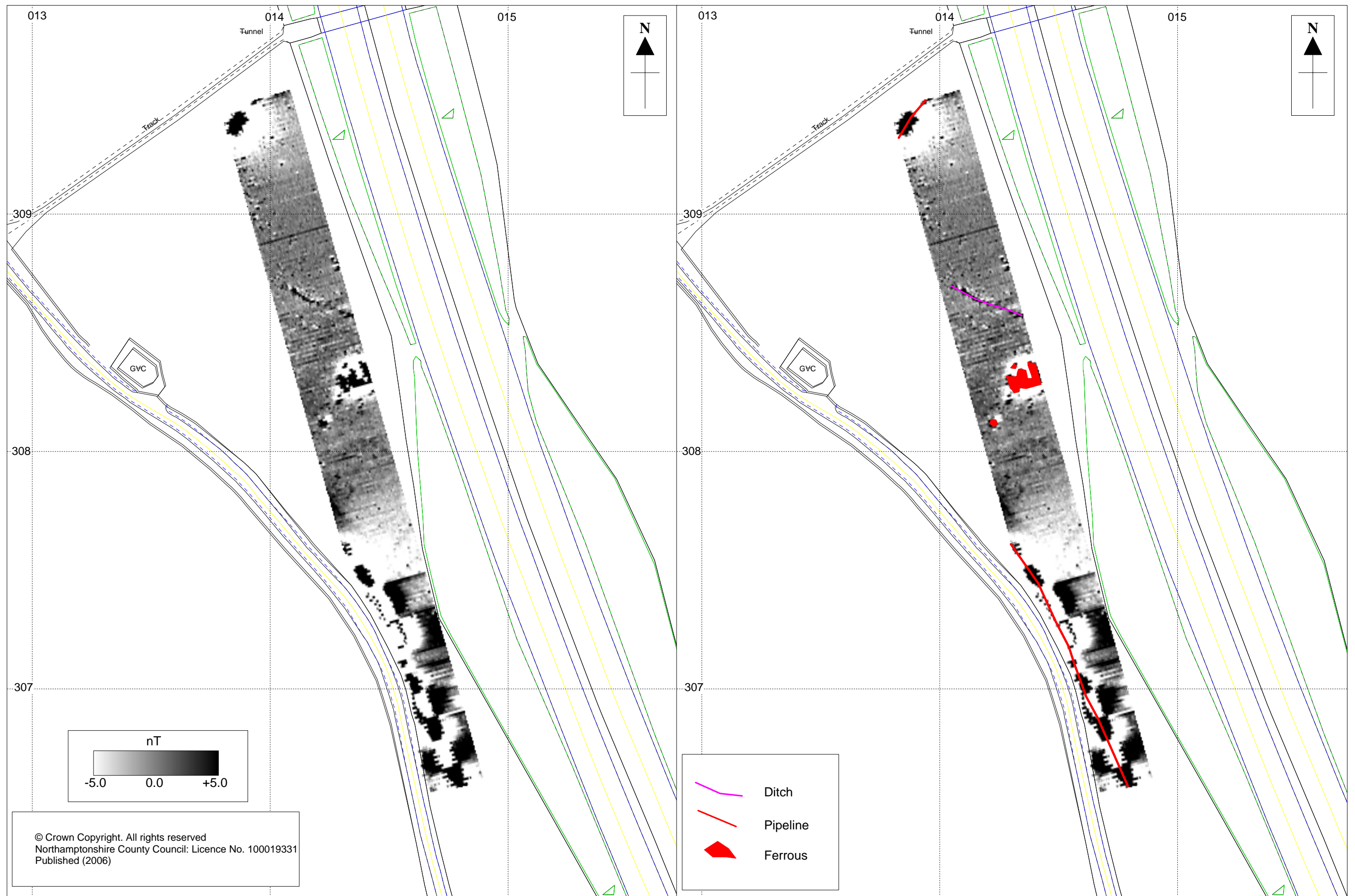


Scale 1:5000 @A3P

Gradiometer Survey Fields 41, 136 & 53 (+/- 5nT black/white) Fig 8

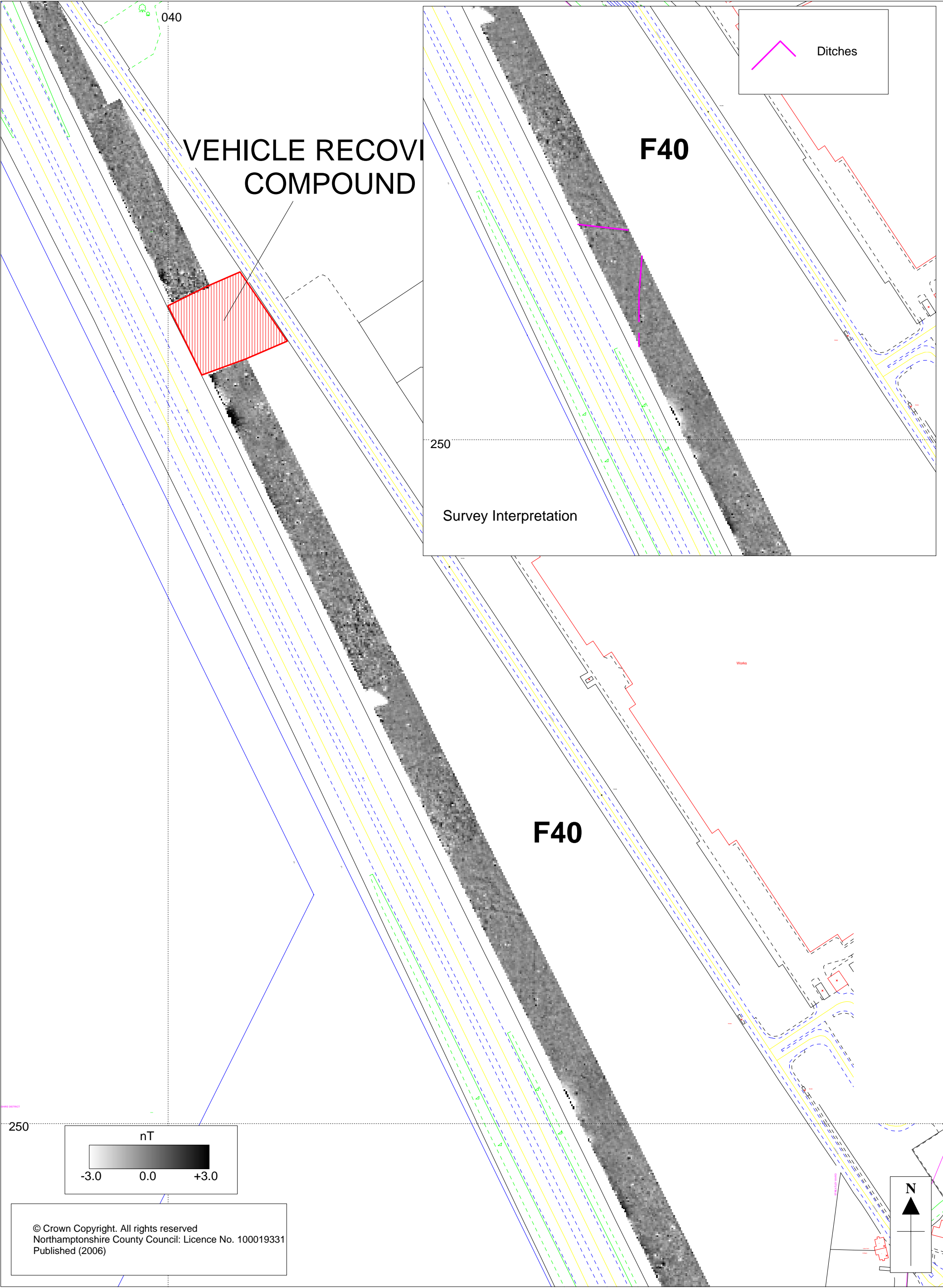
© Crown Copyright. All rights reserved
Northamptonshire County Council: Licence No. 100019331
Published (2006)

nT
-5.0 0.0 +5.0



Scale 1:1500 @A3L

Gradiometer Results: Field 17. (+/- 5nT black/white) Fig 9



Scale 1:2500 @A3P

Gradiometer Survey Results & Interpretation: Field 40 (+/-3nT black/white) Fig 10

© Crown Copyright. All rights reserved
Northamptonshire County Council: Licence No. 100019331
Published (2006)

