THAMES VALLEY

ARCHAEOLOGICAL

SERVICES

Main Replacement Pipeline, Kington St. Michael, Wiltshire

Geophysical Survey (Magnetic)

by Kyle Beaverstock

Site Code: KSM22/124

(ST 8989 7716)

Main Replacement Pipeline, Kington St. Michael, Wiltshire

Geophysical Survey (Magnetic) Report

For ADAS

by Kyle Beaverstock

Thames Valley Archaeological Services Ltd

Site Code KSM 22/124

July 2022

Summary

Site name: Main Replacement Pipeline, Kington St. Michael, Wiltshire

Grid reference: ST 8989 7716

Site activity: Magnetometer survey

Date and duration of project: 27th June- 1st July 2022

Project coordinator: David Sanchez

Site supervisor: Kyle Beaverstock

Site code: KSM22/124

Area of site: c. 3.2ha

Summary of results: A number of geophysical anomalies were detected by the survey, these mostly consist of linear anomalies with some possible discrete features.

Location of archive: The archive is presently held at Thames Valley Archaeological Services, Reading in accordance with TVAS digital archiving policies.

Report edited/checked by: Steve Ford✓ 15.07.22

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Mains Replacement Pipeline, Kington St. Michael, Wiltshire
A Geophysical Survey (Magnetic)

by Kyle Beaverstock

Report 22/124

Introduction

This report documents the results of a geophysical survey (magnetic) carried out at Grove Lane, Kington St. Michael, Wiltshire (ST 8989 7716) (Fig. 1). The work was commissioned by Diarmuid O'Seaneachain of RSK ADAS Ltd, 11D Park House, Milton Park, Abingdon, OX14 4RS on behalf of Wessex Water in compliance with the Water Act 1991 (as amended). The fieldwork was undertaken by Kyle Beaverstock and Mike Murray between the 27th June and 1st July 2022 and the site code is KSM22/124. The archive is presently held at Thames Valley Archaeological Services, Reading in accordance with TVAS digital archiving policies.

Location, topography and geology

The site is located along the western edge of Kington St. Michael, approximately 4km north of Chippenham (fig. 1). The survey area runs across several fields of open pastoral farmland and is bounded in the north by Grove lane and by Draycott Lane in the south. The site undulates from 100m above Ordnance Datum (aOD) in the north to 95m aOD in the central area and rising to 101m aOD in the south. The underlying geology is stated as Kellaways Clay Member above Mudstone with fine-grained sand beds (BGS 2011).

Methodology

Sample interval

Data collection required a temporary grid to be established across the survey area using wooden pegs at 20m intervals with further subdivision where necessary. Readings were taken at 0.25m intervals along traverses 1m apart. This provides 1600 sampling points across a full 30m × 30m grid (EAC 2015), providing an appropriate methodology balancing cost and time with resolution. Although the majority of the survey area was clear of obstructions the areas surrounding and near the field boundaries were mostly obstructed by fencing and vegetation with some smaller areas of vegetation in the north and central areas. Conditions were fry and bright.

The Grad 601-2 has a typical depth of penetration of 0.5m to 1.0m. This would be increased if strongly magnetic objects have been buried in the site. Under normal operating conditions it can be expected to identify buried features >0.5m in diameter. Features which can be detected include disturbed soil, such as the fill of a

ditch, structures that have been heated to high temperatures (magnetic thermoremnance) and objects made from ferro-magnetic materials. The strength of the magnetic field is measured in nano Tesla (nT), equivalent to 10^{-9} Tesla, the SI unit of magnetic flux density.

Equipment

The purpose of the survey was to identify geophysical anomalies that may be archaeological in origin in order to inform a targeted archaeological investigation of the site prior to development. The survey and report generally follow the recommendations and standards set out by both European Archaeological Council (EAC 2015) and the Chartered Institute *for* Archaeologists (2002, 2014).

Magnetometry was chosen as a survey method as it offers the most rapid ground coverage and responds to a wide range of anomalies caused by past human activity. These properties make it ideal for the fast yet detailed surveying of an area.

The detailed magnetometry survey was carried out using a dual sensor Bartington Instruments Grad 601-2 fluxgate gradiometer. The instrument consists of two fluxgates mounted 1m vertically apart with a second set positioned at 1m horizontal distance. This enables readings to be taken of both the general background magnetic field and any localised anomalies with the difference being plotted as either positive or negative buried features. All sensors are calibrated to cancel out the local magnetic field and react only to anomalies above or below this base line. On this basis, strong magnetic anomalies such as burnt features (kilns and hearths) will give a high response as will buried ferrous objects. More subtle anomalies such as pits and ditches, can be seen from their infilling soils containing higher proportions of humic material, rich in ferrous oxides, compared to the undisturbed subsoil. This will stand out in relation to the background magnetic readings and appear in plan following the course of a linear feature or within a discrete area.

A Trimble Geo7x handheld GPS system with sub-decimetre real-time accuracy was used to tie the site grid into the Ordnance Survey national grid. This unit offers both real-time correction and post-survey processing; enabling a high level of accuracy to be obtained both in the field and in the final post-processed data.

Data gathered in the field was processed using the TerraSurveyor software package. This allows the survey data to be collated and manipulated to enhance the visibility of anomalies, particularly those likely to be of archaeological origin. The table below lists the processes applied to this survey, full survey and data information is recorded in Appendix 1.

Process	**Effect**
Clip from -4.20 to 5.00 nT	Enhance the contrast of the image to improve the

	appearance of possible archaeological anomalies.
Interpolate: *y* doubled	Increases the resolution of the readings in the *y* axis, enhancing the shape of anomalies.
De-stripe: median, all sensors	Removes the striping effect caused by differences in sensor calibration, enhancing the visibility of potential archaeological anomalies.
De-spike: threshold 1, window size 3×3	Compresses outlying magnetic points caused by interference of metal objects within the survey area.
Search & Replace: from: ±30 nT to: ±1000 nT with: dummy	Removes extreme values resulting from magnetic interference caused by near-by ferromagnetic objects.
Range match (area: top 90, left 0, bottom 149, right 359) to top edge	Equalises the range of values between areas surveyed by different operatives, correcting for differences in setup.
De-stagger: all grids, both by -1 intervals	Cancels out effects of site's topography on irregularities in the traverse speed.

The raw data plot is presented as a greyscale plot shown in relation to the site (Fig. 3) with the processed data then presented as a second figure (Fig. 4), followed by a third plan to present the abstraction and interpretation of the magnetic anomalies (Fig. 5). Anomalies are shown as colour-coded lines, points and polygons. The grid layout and georeferencing information (Fig. 2) is prepared in EasyCAD v.7.58.00, producing a .FC7 file format, and printed as a .PDF for inclusion in the final report.

The greyscale plot of the processed data is exported from TerraSurveyor in a georeferenced portable network graphics (.PNG) format, a raster image format chosen for its lossless data compression and support for transparent pixels, enabling it to easily be overlaid onto an existing site plan. The data plot is combined with grid and site plans in QGIS 2.16.2 and exported again in .PNG format in order to present them in figure templates in Adobe InDesign CS5.5, creating .INDD file formats. Once the figures are finalised they are exported in .PDF format for inclusion within the finished report.

Results

A number of anomalies were detected by the geophysical survey across the whole of the survey area. In the north, along the northern boundary is an area of magnetic disturbance **[1]**, this is represented by a single polarity response. These are associated with magnetic interference from ferrous materials in structures such as fencing or buildings, this interference can also be seen in other areas of the survey along or near field boundaries. To the west of this are two small irregular positive linears **[2]**, these generally run along a north-east to south-west and south-east to north-west alignment for 7.5m and 11.5m respectively. These linears may represent cut features such as ditches however their irregular pattern suggests that they may represent a more discrete cut feature, surface evidence on site suggests that this area of the site may have been subject to more recent, most likely

agricultural related, activity causing disturbance in this area. They may also be related to the irregular positive pit-like discrete features **[5]** to the south. These features do have a relatively defined form and may represent pit-like features however their relatively low responses suggest they may also be caused by weak background variations, which are the result of geological variations or changing distributions of magnetic materials.

Amongst the discrete features are two intersecting positive linears **[3 and 4]**, one running north-west to south-east for 35m and the other running south-west to north-east for 31m. These linears are likely related to agricultural land division and while their intersection suggests multiple phases their orientation indicates they may be part of the same field system. Further south is a negative linear anomaly **[6]**, these are generally associated with banks or built up material with a lower magnitude than the background readings. Whilst these are often associated with agricultural land division they can also be the result other forms of activity such as drainage. Along the edge of this series of anomalies is a positive linear with an associated negative anomaly **[7]** this dipolar response is caused by a single anomaly orientated south-west to north-east. The relatively weak magnetic response and its alignment with the existing field system suggests that this anomaly is a former field boundary and is likely related to the current field system. Lastly in this northern field is a bipolar linear anomaly **[8]**, this is comprised of a strong positive and negative responses and represents a buried service. Similarly, in the north of the field to the south is a line of magnetic spikes **[9]**, these take the form of bipolar points in a linear pattern, these are usually caused by services with a lower magnetic response such as low voltage cables.

To the south of these are a series of irregular weak background variations **[10]**, these can take a sinuous form and are likely the result of natural features or changes in the underlying geology. In the far south of this field are a series of positive and negative linear anomalies **[11]** similar to those seen in the north **[7]**, these also run along a similar alignment to the current field boundary and may be part of an earlier field system, however the responses for these were much stronger which may suggest the presence of ferromagnetic material.

Moving further to the south, in the north of the next field are a series of discrete pit-like weak positive anomalies **[12]**, like those seen in the northern field **[5]**, these have an irregular form and a very weak response and while they may represent discrete features they may equally be geological or natural features. Along the survey area to the south, orientated on a roughly north-west to south-east trajectory is a positive linear **[13]** this slightly curved linear runs across the width of the field and likely represents a feature such as a field boundary. Intersecting this feature is a weak positive linear **[15]**, this linear runs along a similar alignment and may represent a second phase of land division. Although this feature has a comparatively weak response this may only be an indication of the level of disturbance and not its relative phase. To the north east of this is another

weak positive linear **[14]**, this linear runs along the same alignment as **[15]** and has a similar magnetic profile, this may indicate a the presence of a second corresponding boundary however it may also indicate other forms of agricultural activity such as ploughing or furrows, this cannot be determined without a wider view.

Towards the southern end of this field is an area of magnetic debris **[16]**, this is represented by numerous dipolar responses across an area. A high amplitude may represent the presence of ferromagnetic material, however a relatively low amplitude as in this case likely suggest general ground disturbance this may be due to this areas proximity to an entrance way. Adjacent to this disturbance and running along a similar alignment to positive linear **[13]** is a weak positive linear **[17].** This linear may be an associated cut feature or it may be due to variations caused by soil creep or other similar processes.

Between two fence lines to the south is a small possible discrete feature, this positive anomaly **[18]** sits on the edge of an existing water course and may be associated with this feature however there is the possibility that it may be a discrete pit-like cut feature. Along the southern side of the water course is a small area of magnetic debris **[19]**, this dipolar response has a similar magnetic profile as **[16]** and its position along the boundary suggests that it is likely to be disturbance in the underlying geology. Further south are a series of four positive linears **[20]**, **[21]**, **[22]** and **[24]**, these run along a similar alignment, south-west to north-east. These are unevenly spaced and are likely to represent land divisions with a number of potential phases or perhaps a series of subdivisions of a single system. Positive linear **[21]** also has an associated negative anomaly similar to linears **[11]** and **[7]**, this may suggest some association with these features. Between and to the south of linears **[22]** and **[24]** are two short positive linears, these are orientated north-west to south-east and the other along a more east-west alignment and measure 17m and 7m respectively. These may represent small cut features such as ditches and their position and alignment appear to respect the position of the pond to the north-east and may be part of the landscaping associated with this feature.

To the south is a bipolar linear of magnetic disturbance **[25]**, this anomaly returned very strong magnetic responses and is very likely to represent a buried service. Along the southern boundary of this field is a short length of positive linear **[26]**, part of this linear may be being masked by the magnetic disturbance caused by the ferromagnetic fencing however this may represent a boundary ditch and an earlier phase of the current land division. Across the centre of the southern most field are a series of discrete positive anomalies and weak positive anomalies **[27]**, similarly to the clusters seen in the central **[12]** and northern **[5]** parts of the survey areas these may represent pit-like features however they may also weak background variations caused by perturbations in the natural geology or variations in the distribution of magnetic minerals.

Conclusion

The geophysical survey identified a large number of magnetic anomalies across the whole of the survey area, while many of these represent cut features with some archaeological potential the majority are likely related to agricultural activity, mostly land division. While there are a number of discrete anomalies that may represent occupational deposits these mostly comprised of weak positive responses and no associated structural deposits were seen along the path of the survey.

References

BGS, 2011, *British Geological Survey*, 1:50,000, Sheet 265, Bedrock and Superficial Edition, Keyworth

CI*f*A, 2014, 'Standard and Guidance for archaeological geophysical survey', Reading

EAC, 2015, *EAC Guidelines for the use of Geophysics in Archaeology: Questions to Ask and Points to Consider*, EAC Guidelines 2, Namur

IFA, 2002, 'The Use of Geophysical Techniques in Archaeological Evaluation', IFA Paper No. 6, Reading

NPPF, 2021, *National Planning Policy Framework*, Ministry of Housing, Communities and Local Govt, London

Appendix 1. **Survey and data information**

Programme:
Name: TerraSurveyor
Version: 3.0.25.0

Raw data
Filename: Comp 1 RAW.xcp
Instrument Type: Grad 601 (Magnetometer)
Units: nT
Survey corner coordinates (X/Y):
Northwest corner: 389872.399, 177763.367 m
Southeast corner: 389932.399, 177673.367 m
Direction of 1st Traverse: 98 deg
Collection Method: ZigZag
Sensors: 2 @ 1 m spacing.
Dummy Value: 2047.5

Dimensions
Survey Size (meters): 60 m x 90 m
X&Y Interval: 0.25 m

Stats
Max: 96.73
Min: -100.00
Std Dev: 8.21
Mean: -0.55
Median: -0.45
Composite Area: 0.54 ha
Surveyed Area: 0.2945 ha

Source Grids: 4
1 Col:0 Row:0 grids\26-a.xgd
2 Col:0 Row:1 grids\25-a.xgd
3 Col:0 Row:2 grids\24-a.xgd
4 Col:1 Row:0 grids\27-a.xgd

Filename: Comp 2 RAW.xcp
Description:
Instrument Type: Grad 601 (Magnetometer)
Units: nT
Survey corner coordinates (X/Y):
Northwest corner: 389855.29, 177685.339 m
Southeast corner: 389885.29, 177625.339 m
Direction of 1st Traverse: 103 deg
Collection Method: ZigZag
Sensors: 2 @ 1 m spacing.
Dummy Value: 2047.5

Dimensions
Survey Size (meters): 30 m x 60 m
X&Y Interval: 0.25 m

Stats
Max: 60.32
Min: -60.00
Std Dev: 5.94
Mean: -0.36
Median: -0.96
Composite Area: 0.18 ha
Surveyed Area: 0.12225 ha

Source Grids: 2
1 Col:0 Row:0 grids\23-a.xgd
2 Col:0 Row:1 grids\22-a.xgd

Filename: Comp 3 RAW.xcp
Description:
Instrument Type: Grad 601 (Magnetometer)
Units: nT
Survey corner coordinates (X/Y):
Northwest corner: 389848.003, 177654.648 m
Southeast corner: 389878.003, 177444.648 m
Direction of 1st Traverse: 103 deg
Collection Method: ZigZag
Sensors: 2 @ 1 m spacing.
Dummy Value: 2047.5

Dimensions
Survey Size (meters): 30 m x 210 m
X&Y Interval: 0.25 m

Stats
Max: 83.12
Min: -83.00
Std Dev: 5.36
Mean: 0.37
Median: 0.29
Composite Area: 0.63 ha
Surveyed Area: 0.5523 ha

Source Grids: 7
1 Col:0 Row:0 grids\21-a.xgd
2 Col:0 Row:1 grids\20-a.xgd
3 Col:0 Row:2 grids\19-a.xgd
4 Col:0 Row:3 grids\18-a.xgd
5 Col:0 Row:4 grids\17-a.xgd
6 Col:0 Row:5 grids\16-a.xgd
7 Col:0 Row:6 grids\15-a.xgd

Filename: Comp 4 RAW.xcp
Description:
Instrument Type: Grad 601 (Magnetometer)
Units: nT
Survey corner coordinates (X/Y):
Northwest corner: 389769.632, 177434.552 m
Southeast corner: 389799.632, 177254.552 m
Direction of 1st Traverse: 62 deg
Collection Method: ZigZag
Sensors: 2 @ 1 m spacing.
Dummy Value: 2047.5

Dimensions
Survey Size (meters): 30 m x 180 m
X&Y Interval: 0.25 m

Stats
Max: 96.53
Min: -100.00
Std Dev: 7.18
Mean: 0.59
Median: 1.26
Composite Area: 0.54 ha
Surveyed Area: 0.38495 ha

Source Grids: 6
1 Col:0 Row:0 grids\14-a.xgd
2 Col:0 Row:1 grids\13-a.xgd
3 Col:0 Row:2 grids\12-a.xgd
4 Col:0 Row:3 grids\11-a.xgd
5 Col:0 Row:4 grids\10-a.xgd
6 Col:0 Row:5 grids\09-a.xgd

Filename: Comp 5 RAW.xcp
Description:
Instrument Type: Grad 601 (Magnetometer)
Units: nT
Survey corner coordinates (X/Y):
Northwest corner: 389844.924, 177292.026 m
Southeast corner: 389874.924, 177052.026 m
Direction of 1st Traverse: 64 deg
Collection Method: ZigZag
Sensors: 2 @ 1 m spacing.
Dummy Value: 2047.5

Dimensions
Survey Size (meters): 30 m x 240 m
X&Y Interval: 0.25 m

Stats
Max: 56.50
Min: -57.00
Std Dev: 7.73
Mean: 0.23
Median: 0.70
Composite Area: 0.72 ha
Surveyed Area: 0.71535 ha

Source Grids: 8
1 Col:0 Row:0 grids\08-a.xgd
2 Col:0 Row:1 grids\07-a.xgd
3 Col:0 Row:2 grids\06-a.xgd
4 Col:0 Row:3 grids\05-a.xgd
5 Col:0 Row:4 grids\04-a.xgd
6 Col:0 Row:5 grids\03-a.xgd
7 Col:0 Row:6 grids\02-a.xgd
8 Col:0 Row:7 grids\01-a.xgd

Filename: Comp 6 RW.xcp
Description:
Instrument Type: Grad 601 (Magnetometer)
Units: nT
Survey corner coordinates (X/Y):
Northwest corner: 389952.873, 177067.856 m
Southeast corner: 389982.873, 176857.856 m
Direction of 1st Traverse: 64 deg
Collection Method: ZigZag
Sensors: 2 @ 1 m spacing.
Dummy Value: 2047.5

Dimensions
Survey Size (meters): 30 m x 210 m
X&Y Interval: 0.25 m

Stats
Max: 96.75
Min: -100.00
Std Dev: 8.92
Mean: 0.68
Median: 0.62
Composite Area: 0.63 ha
Surveyed Area: 0.53165 ha

Source Grids: 7
1 Col:0 Row:0 grids\28.xgd
2 Col:0 Row:1 grids\29.xgd
3 Col:0 Row:2 grids\30.xgd
4 Col:0 Row:3 grids\31.xgd
5 Col:0 Row:4 grids\32.xgd
6 Col:0 Row:5 grids\33.xgd
7 Col:0 Row:6 grids\34.xgd

Filename: Comp 7 RAW.xcp
Instrument Type: Grad 601 (Magnetometer)
Units: nT
Survey corner coordinates (X/Y):
Northwest corner: 390041.136, 176870.934 m
Southeast corner: 390071.136, 176750.934 m
Direction of 1st Traverse: 13 deg
Collection Method: ZigZag
Sensors: 2 @ 1 m spacing.
Dummy Value: 2047.5

Dimensions
Survey Size (meters): 30 m x 120 m
X&Y Interval: 0.25 m

Stats
Max: 58.36
Min: -59.00
Std Dev: 5.53
Mean: -0.69
Median: 0.00
Composite Area: 0.36 ha
Surveyed Area: 0.3585 ha

Source Grids: 4
1 Col:0 Row:0 grids\35.xgd
2 Col:0 Row:1 grids\36.xgd
3 Col:0 Row:2 grids\37.xgd
4 Col:0 Row:3 grids\38.xgd

Processed data

Filename: Comp 1.xcp
Stats
Max: 6.00
Min: -5.20
Std Dev: 2.93
Mean: 0.06
Median: -0.01
Composite Area: 0.54 ha
Surveyed Area: 0.2945 ha

Processes: 8
1 *Base Layer*
2 *DeStripe Median Sensors: Grids: All*
3 *Clip at 1.00 SD*
4 *De Stagger: Grids: All By: 0 intervals, -50.00cm*
5 *De Stagger: Grids: All By: 0 intervals, -50.00cm*
6 *Clip from -7.00 to 6.00 nT*
7 *Clip from -6.30 to 6.00 nT*
8 *Clip from -5.20 to 6.00 nT*

Filename: Comp 2.xcp
Stats
Max: 2.40
Min: -3.20
Std Dev: 1.11
Mean: -0.12
Median: 0.00
Composite Area: 0.18 ha
Surveyed Area: 0.12225 ha

Processes: 7
1 *Base Layer*
2 *Clip from -60.00 to 60.32 nT*
3 *DeStripe Median Sensors: Grids: All*
4 *Clip at 1.00 SD*
5 *De Stagger: Grids: All By: 0 intervals, -50.00cm*
6 *De Stagger: Grids: All By: 0 intervals, -50.00cm*
7 *Clip from -3.20 to 2.40 nT*

Filename: Comp 3.xcp
Stats
Max: 1.70
Min: -1.60
Std Dev: 0.68
Mean: 0.00
Median: 0.00
Composite Area: 0.63 ha
Surveyed Area: 0.5523 ha

Processes: 6
1 *Base Layer*
2 *Clip from -83.00 to 83.12 nT*
3 *DeStripe Median Sensors: Grids: All*
4 *De Stagger: Grids: All By: 0 intervals, -50.00cm*
5 *Clip at 1.00 SD*
6 *Clip from -1.60 to 1.70 nT*

Filename: Comp 4.xcp
Stats
Max: 5.00
Min: -4.20
Std Dev: 2.26
Mean: 0.10
Median: 0.00
Composite Area: 0.54 ha
Surveyed Area: 0.38495 ha

Processes: 8
1 *Base Layer*
2 *DeStripe Median Sensors: Grids: All*
3 *Clip at 1.00 SD*
4 *De Stagger: Grids: All By: 0 intervals, -50.00cm*
5 *De Stagger: Grids: All By: 0 intervals, -50.00cm*
6 *De Stagger: Grids: All By: 0 intervals, -50.00cm*
7 *Clip from -5.57 to 5.00 nT*
8 *Clip from -4.20 to 5.00 nT*

Filename: Comp 5.xcp
Stats
Max: 6.66
Min: -6.87
Std Dev: 3.38
Mean: 0.12
Median: -0.01
Composite Area: 0.72 ha
Surveyed Area: 0.71535 ha

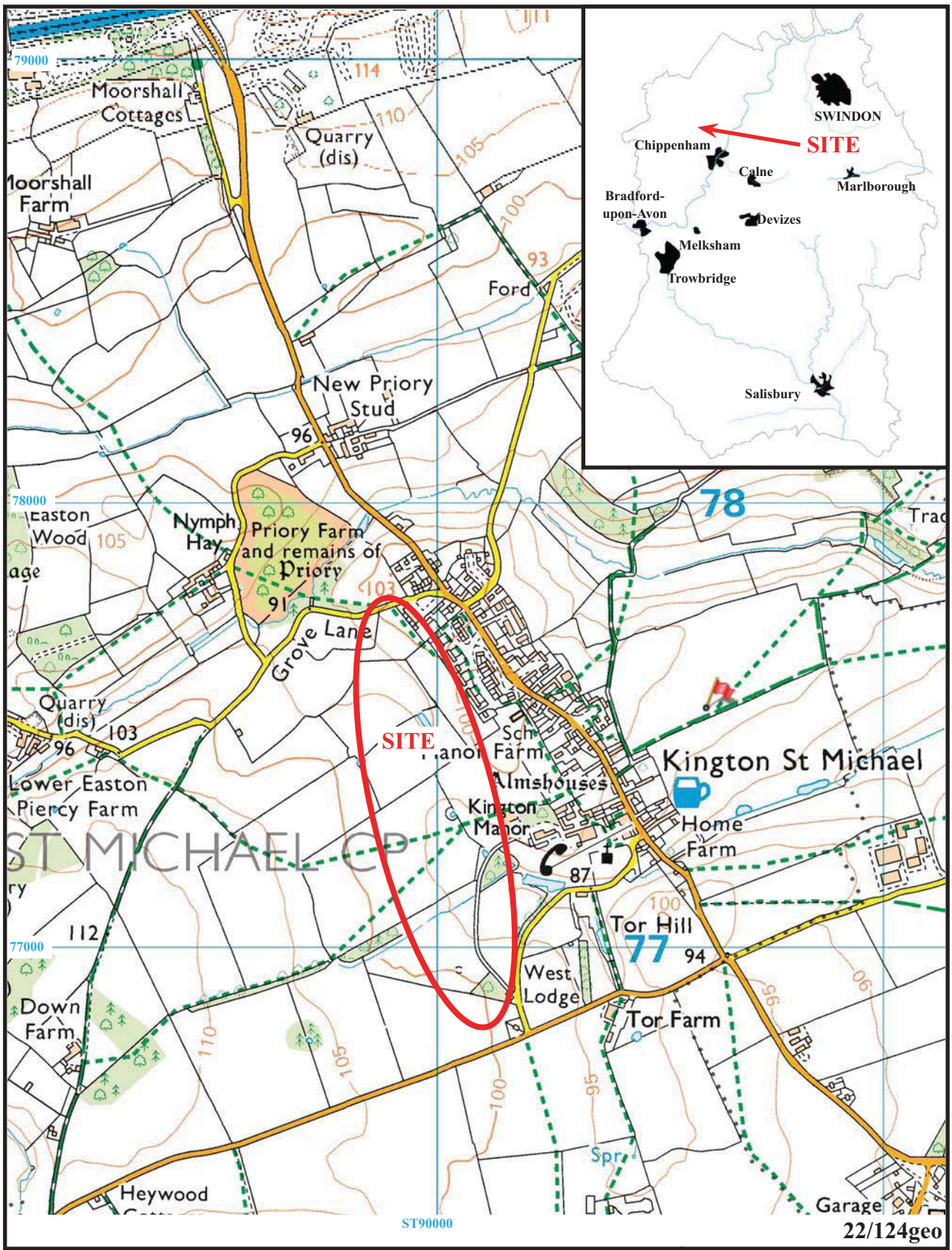
Processes: 6
1 *Base Layer*
2 *Clip from -57.00 to 56.50 nT*
3 *DeStripe Median Sensors: Grids: All*
4 *De Stagger: Grids: All By: 0 intervals, -50.00cm*
5 *Clip at 1.00 SD*
6 *De Stagger: Grids: All By: 0 intervals, -20.00cm*

Filename: Comp 6.xcp
Stats
Max: 2.20
Min: -2.70
Std Dev: 1.50
Mean: -0.03
Median: 0.00
Composite Area: 0.63 ha
Surveyed Area: 0.53165 ha

Processes: 6
1 *Base Layer*
2 *DeStripe Median Sensors: Grids: All*
3 *Clip at 1.00 SD*
4 *Clip from -5.00 to 4.00 nT*
5 *De Stagger: Grids: All By: 0 intervals, 50.00cm*
6 *Clip from -2.70 to 2.20 nT*

Filename: Comp 7.xcp
Stats
Max: 4.00
Min: -3.70
Std Dev: 2.04
Mean: -0.05
Median: 0.00
Composite Area: 0.36 ha
Surveyed Area: 0.3585 ha

Processes: 9
1 *Base Layer*
2 *Clip from -59.00 to 58.36 nT*
3 *DeStripe Median Sensors: Grids: All*
4 *Clip at 1.00 SD*
5 *De Stagger: Grids: All By: 0 intervals, 50.00cm*
6 *De Stagger: Grids: All By: 0 intervals, 50.00cm*
7 *Clip from -5.30 to 4.20 nT*
8 *Clip from -4.20 to 4.00 nT*
9 *Clip from -3.70 to 4.00 nT*



Main Replacement Pipeline, Kington St. Michael, Wiltshire
Geophysical (magnetic) Survey

Figure 1. Location of site within Kington and Wiltshire.

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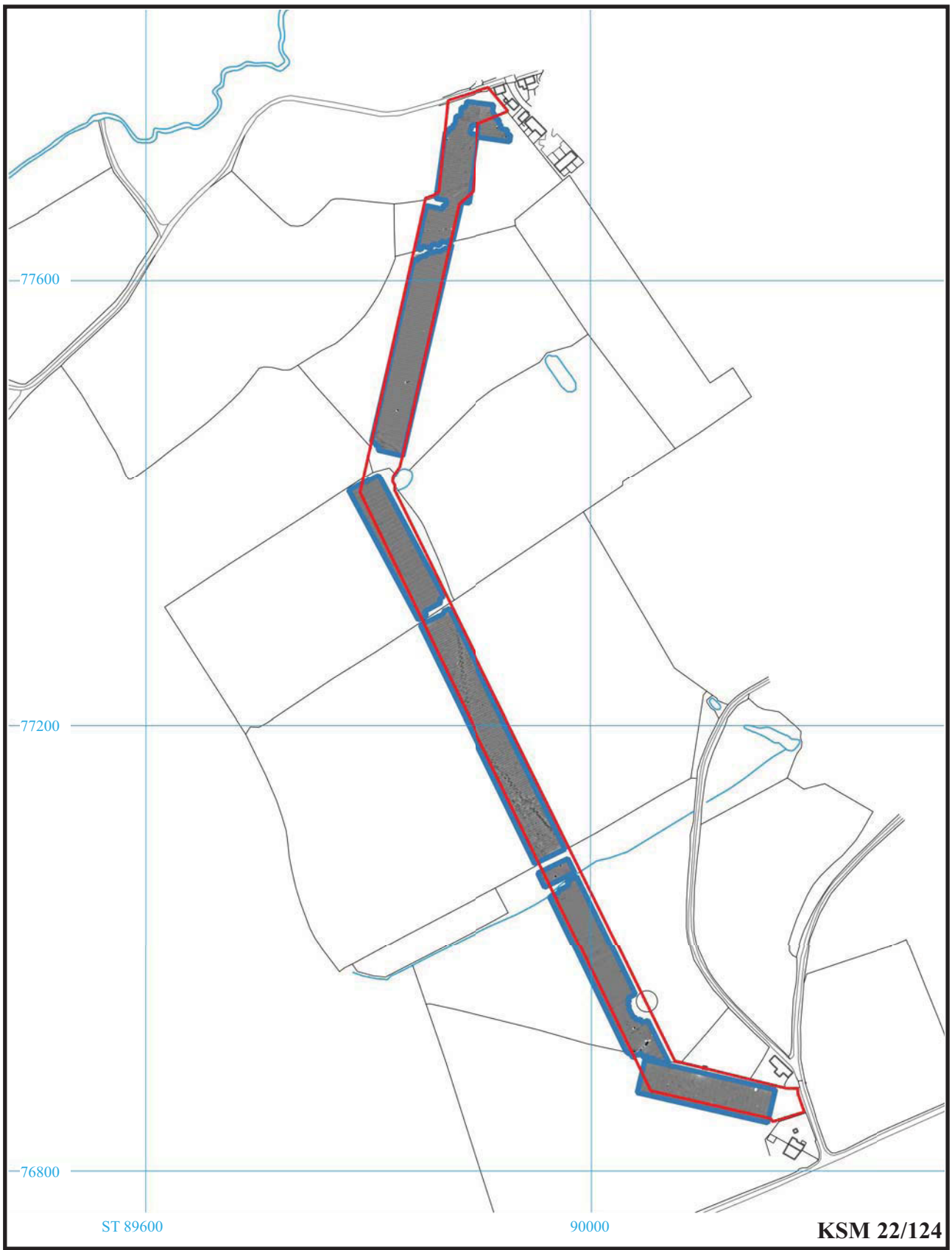

N

Mains replacement pipeline, Kington St. Michael, Wiltshire, 2022
Geophysical Survey (Magnetic)
Figure 2. Plot of raw gradiometer data.

0m 250m

+100
nT
-100

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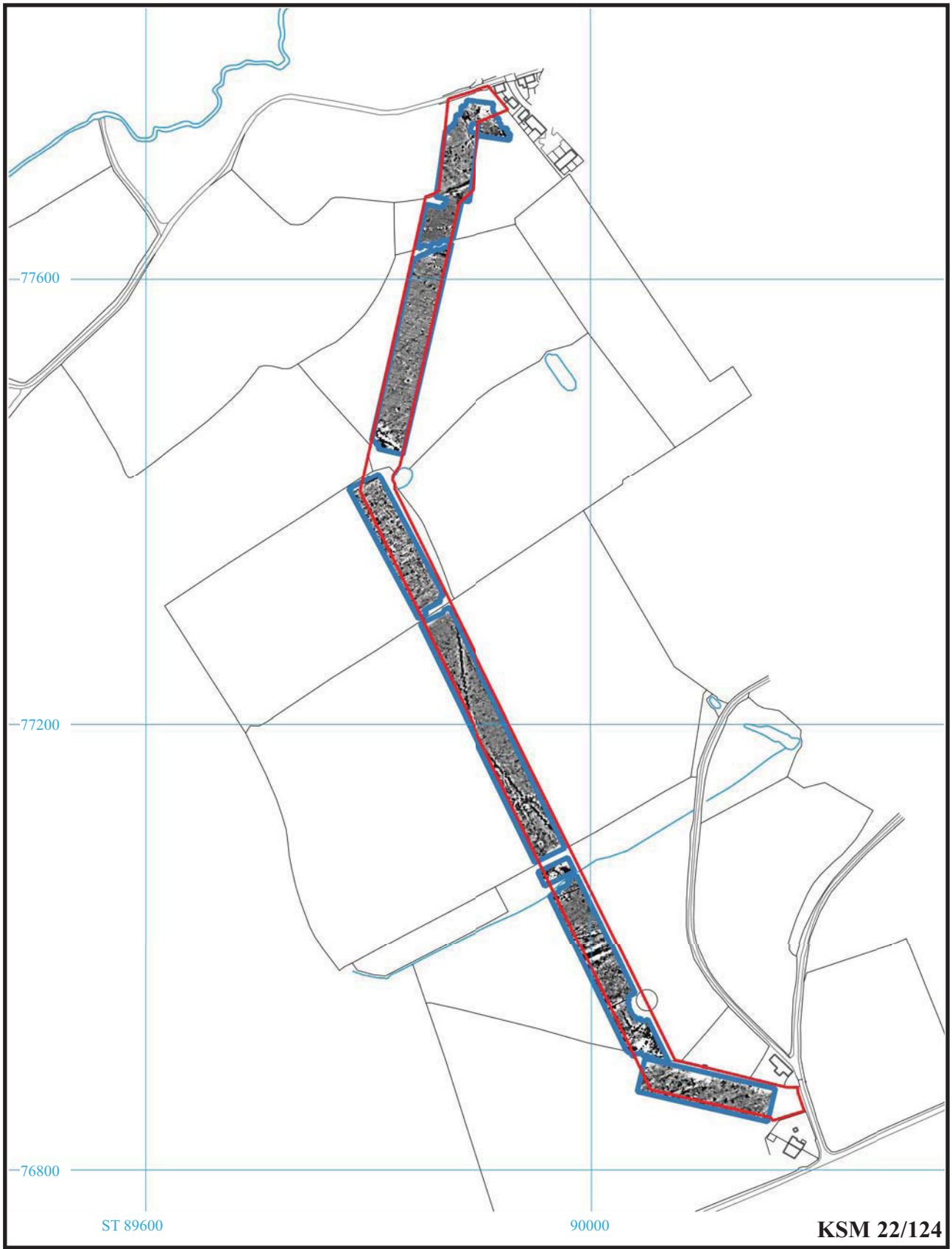

N

Mains replacement pipeline, Kington St. Michael, Wiltshire, 2022

Geophysical Survey (Magnetic)

Figure 3. Plot of processed gradiometer data.

0m 250m

+5.00

nT

-4.20

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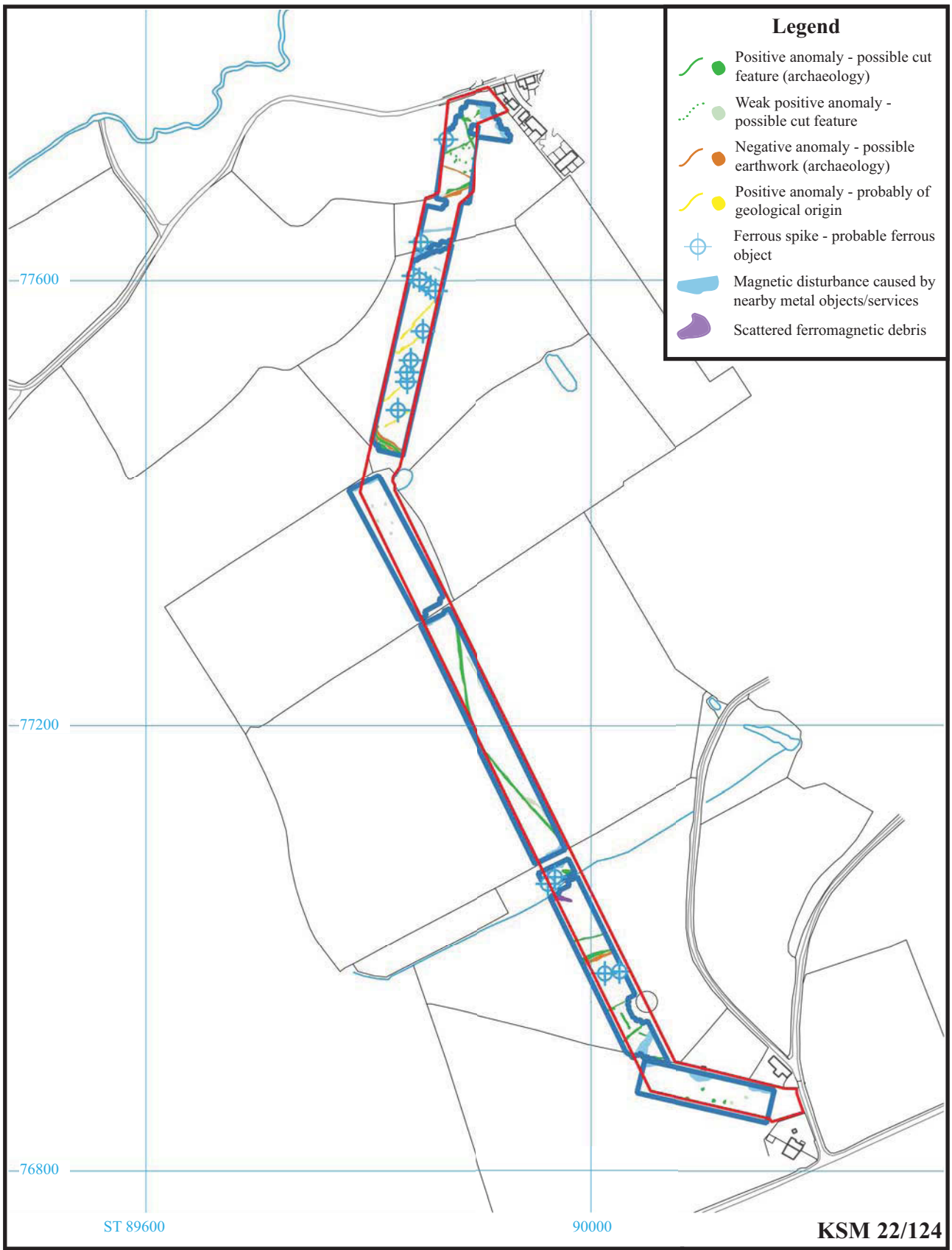

N

Mains replacement pipeline, Kington St. Michael, Wiltshire, 2022
Geophysical Survey (Magnetic)
Figure 4. Interpretation plot.

0m 250m

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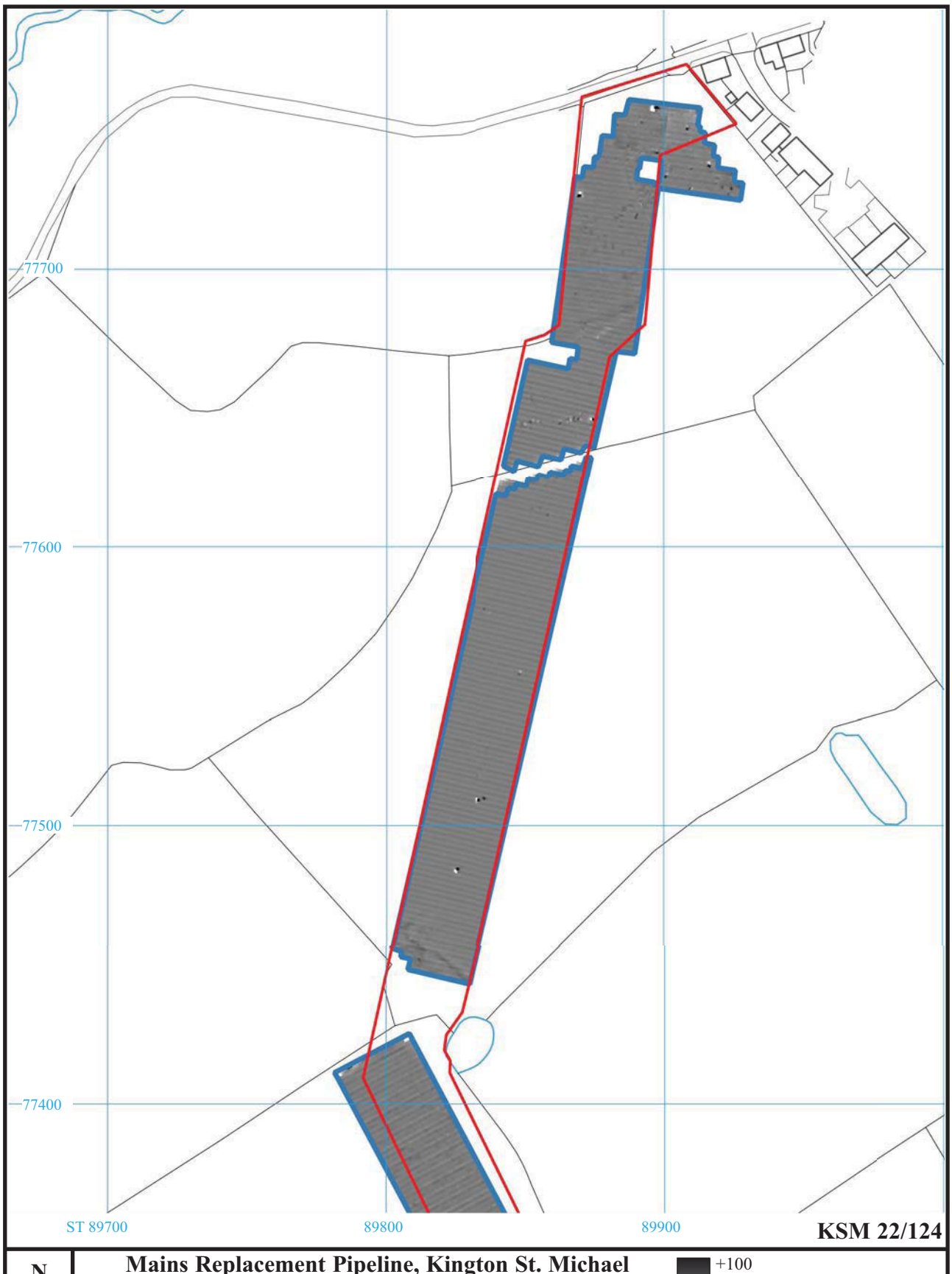
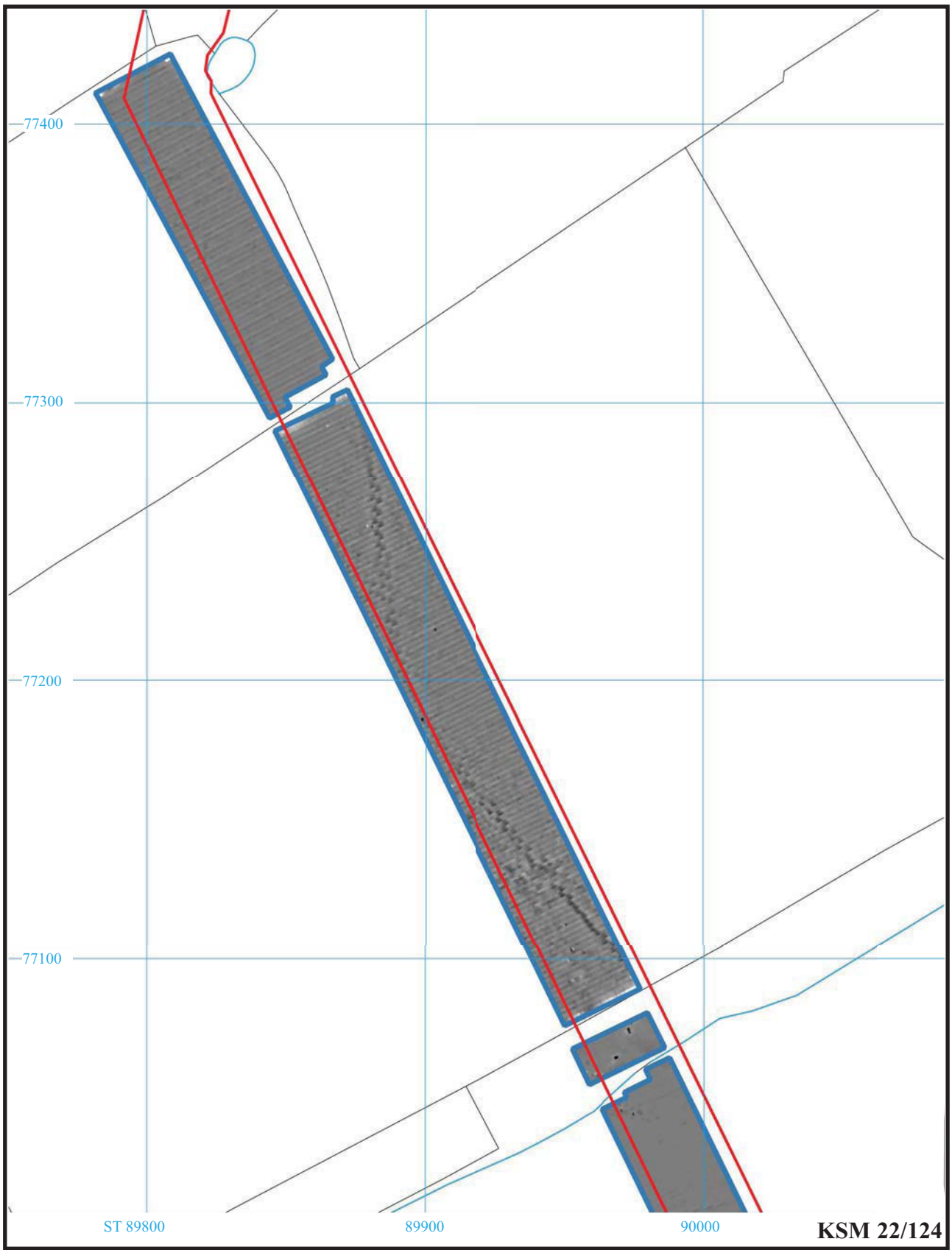


Mains Replacement Pipeline, Kington St. Michael
Wiltshire, 2022
Geophysical Survey (Magnetic)

Figure 5. Focused plot of raw gradiometer data (north).



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Mains Replacement Pipeline, Kington St. Michael
Wiltshire, 2022
Geophysical Survey (Magnetic)

Figure 6. Focused plot of raw gradiometer data (central).

0m 100m

+100
nT
-100

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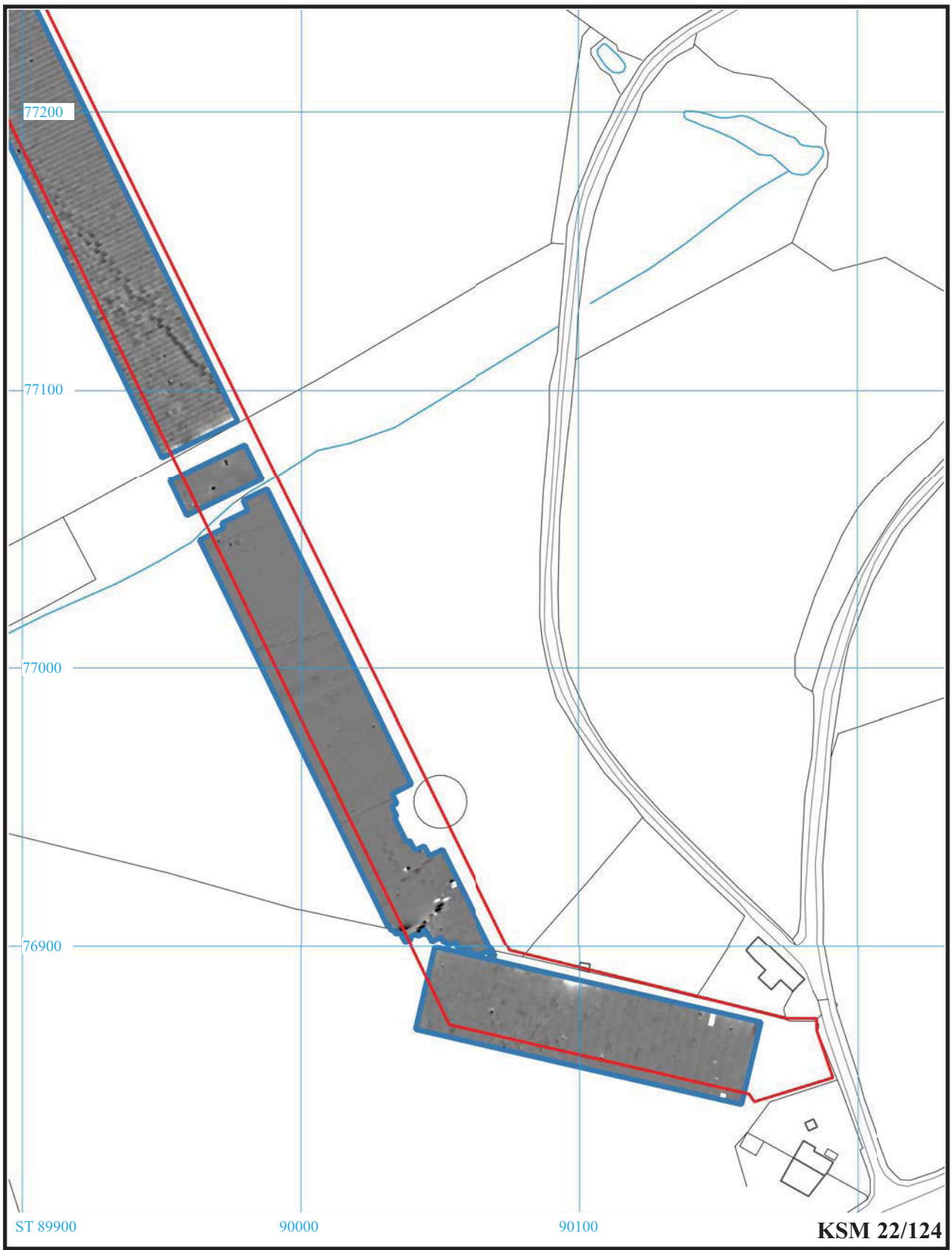

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Mains Replacement Pipeline, Kington St. Michael
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Geophysical Survey (Magnetic)
Figure 7. Focused plot of raw gradiometer data (south).

0m 100m

+100
nT
-100

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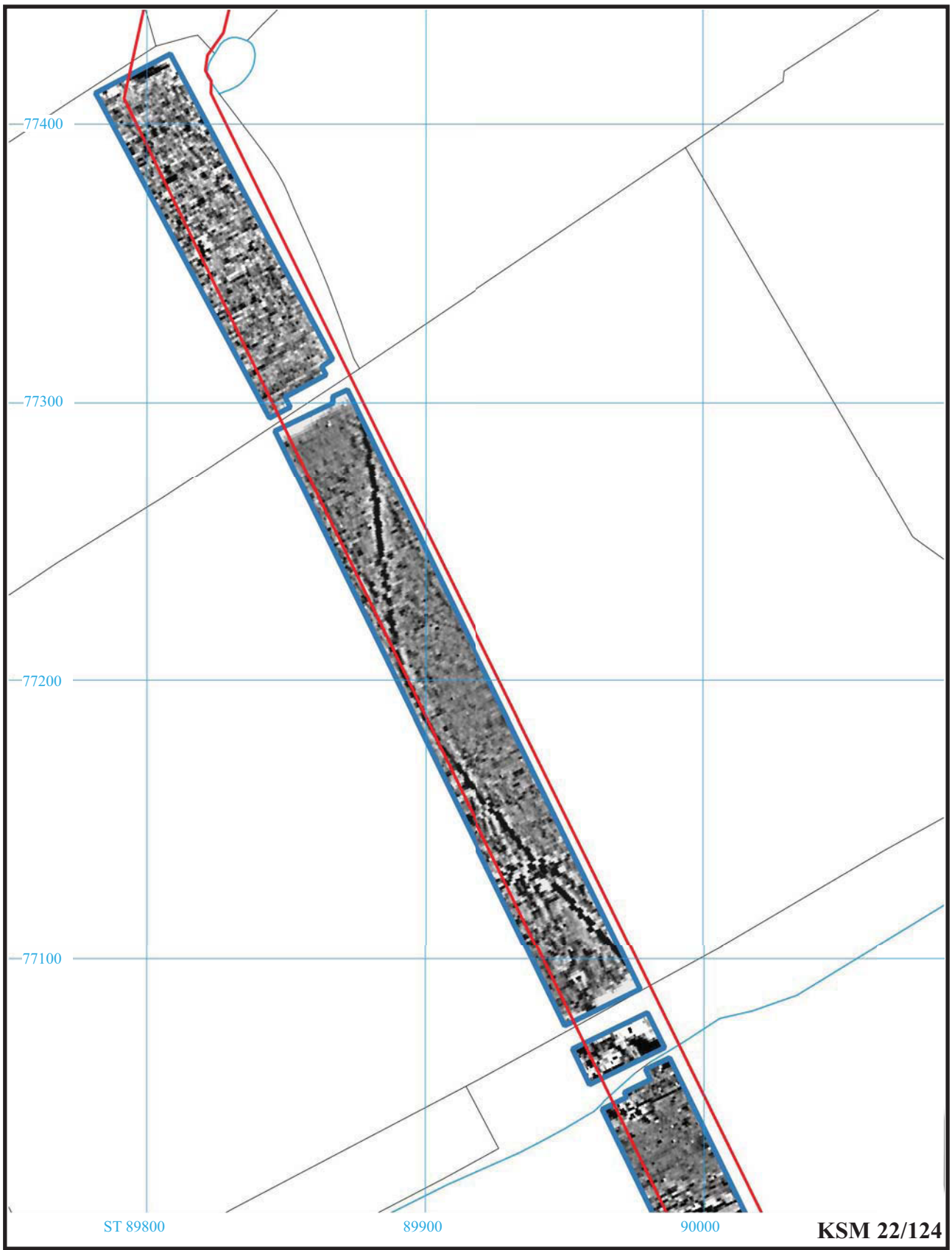
Geophysical Survey (Magnetic)

Figure 8. Focused plot of processed gradiometer data (north).



Mains Replacement Pipeline, Kington St. Michael
Wiltshire, 2022
Geophysical Survey (Magnetic)

Figure 9. Focused plot of processed gradiometer data (central).

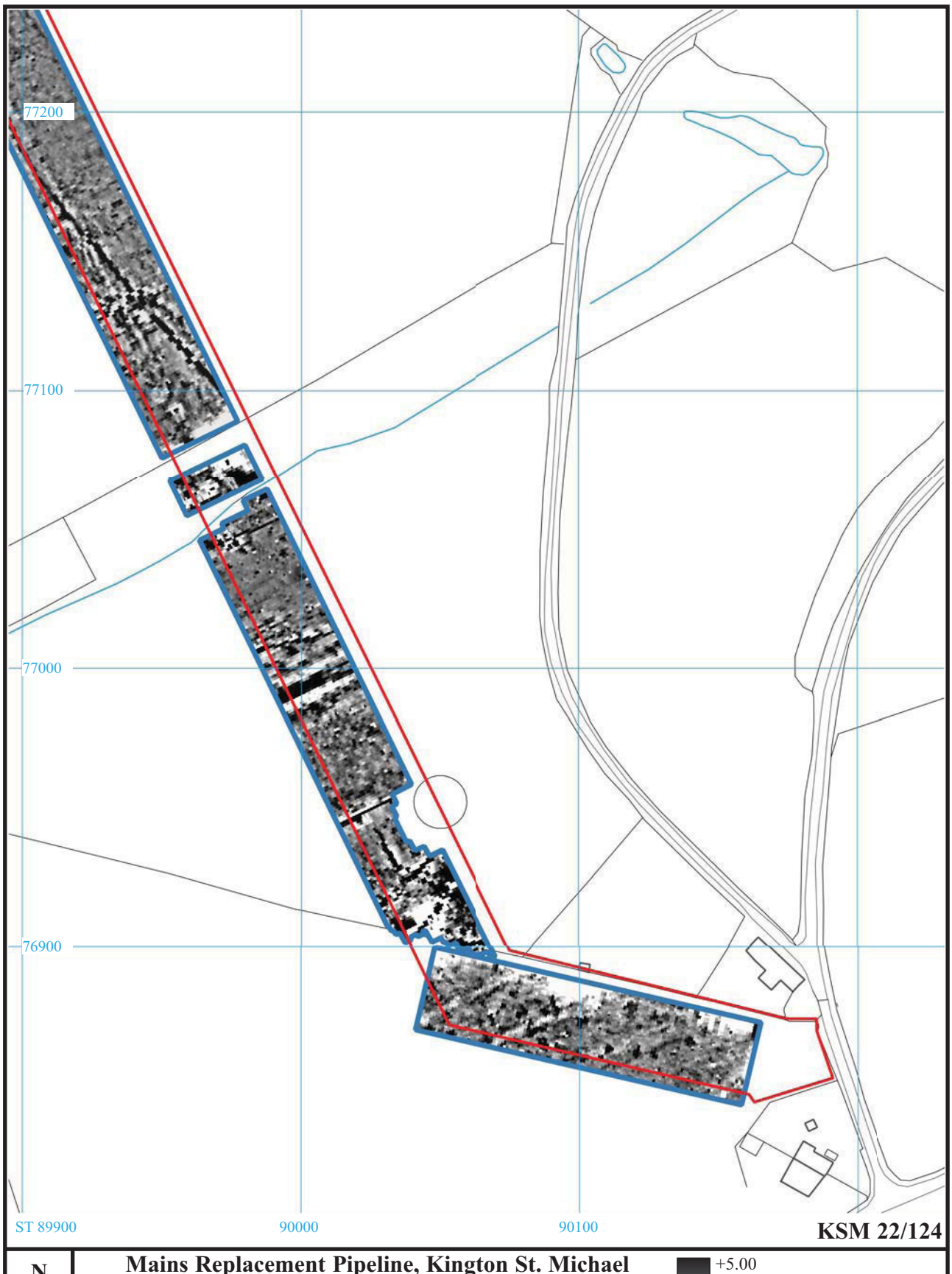


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Figure 10. Focused plot of processed gradiometer data (south).

0m 100m

+5.00
nT
-4.20

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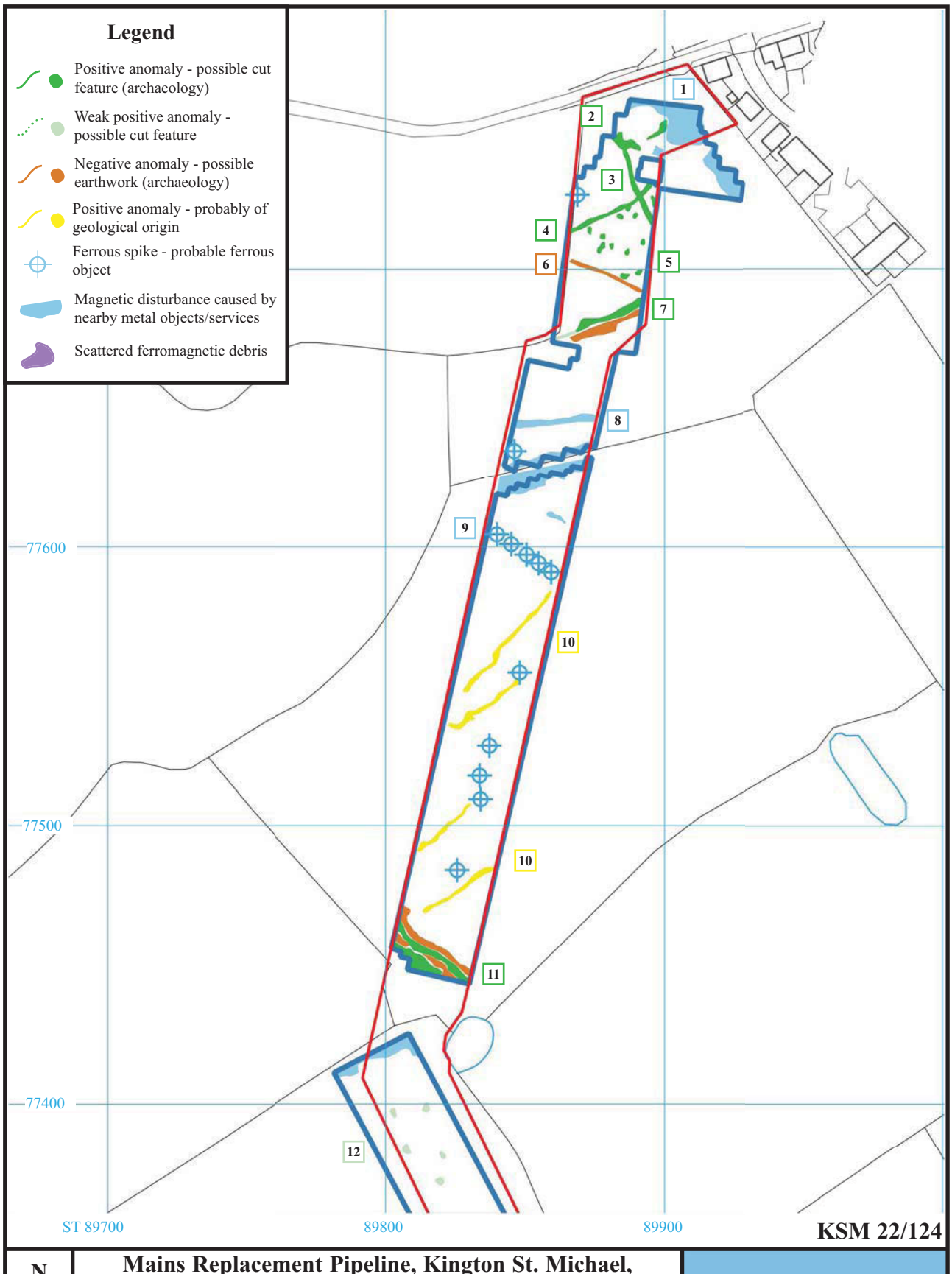

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Geophysical Survey (Magnetic)

Figure 11. Focused interpretation plot (north).

0m 100m

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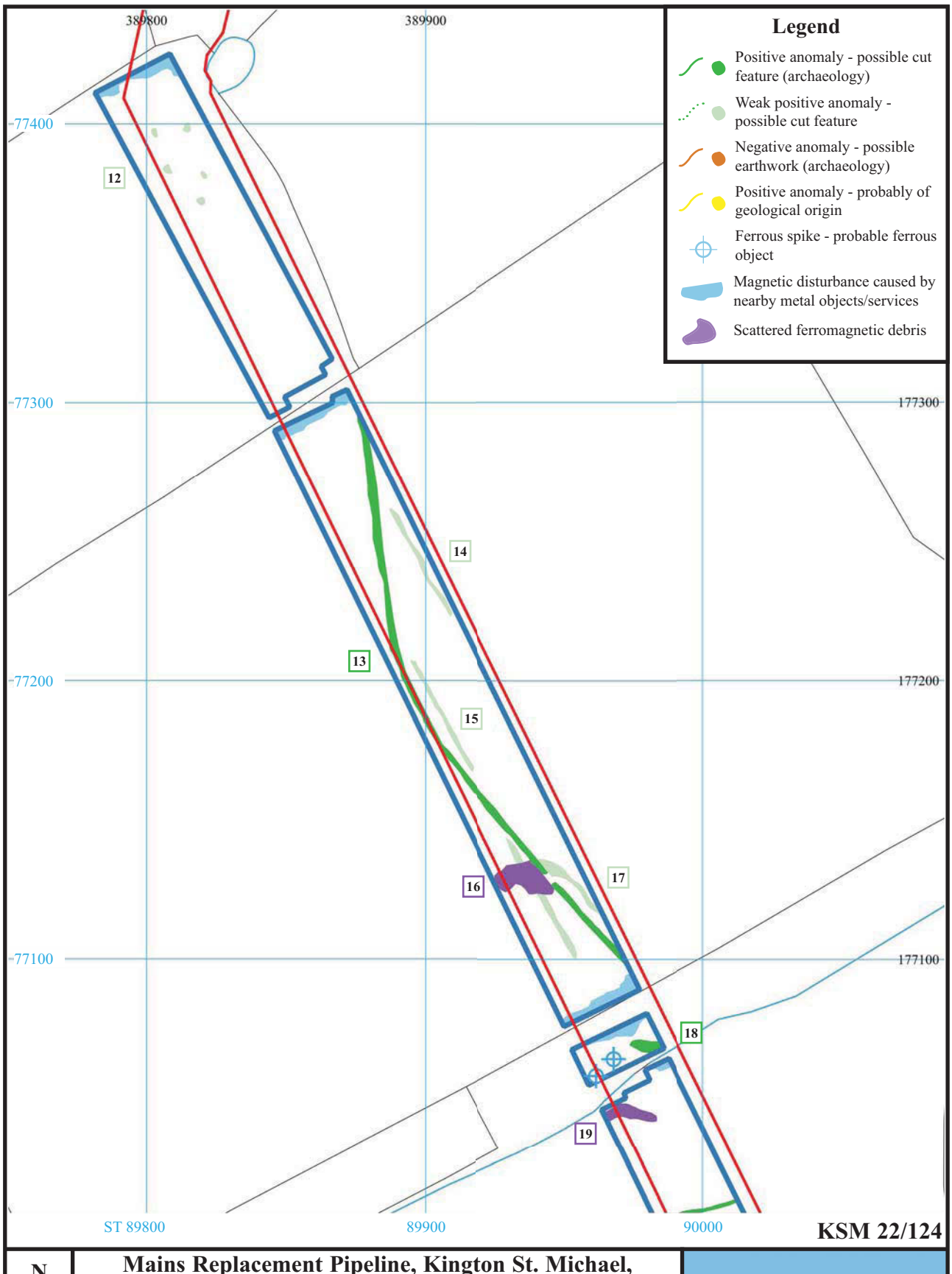

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Geophysical Survey (Magnetic)
Figure 12. Focused interpretation plot (central).

0m 100m

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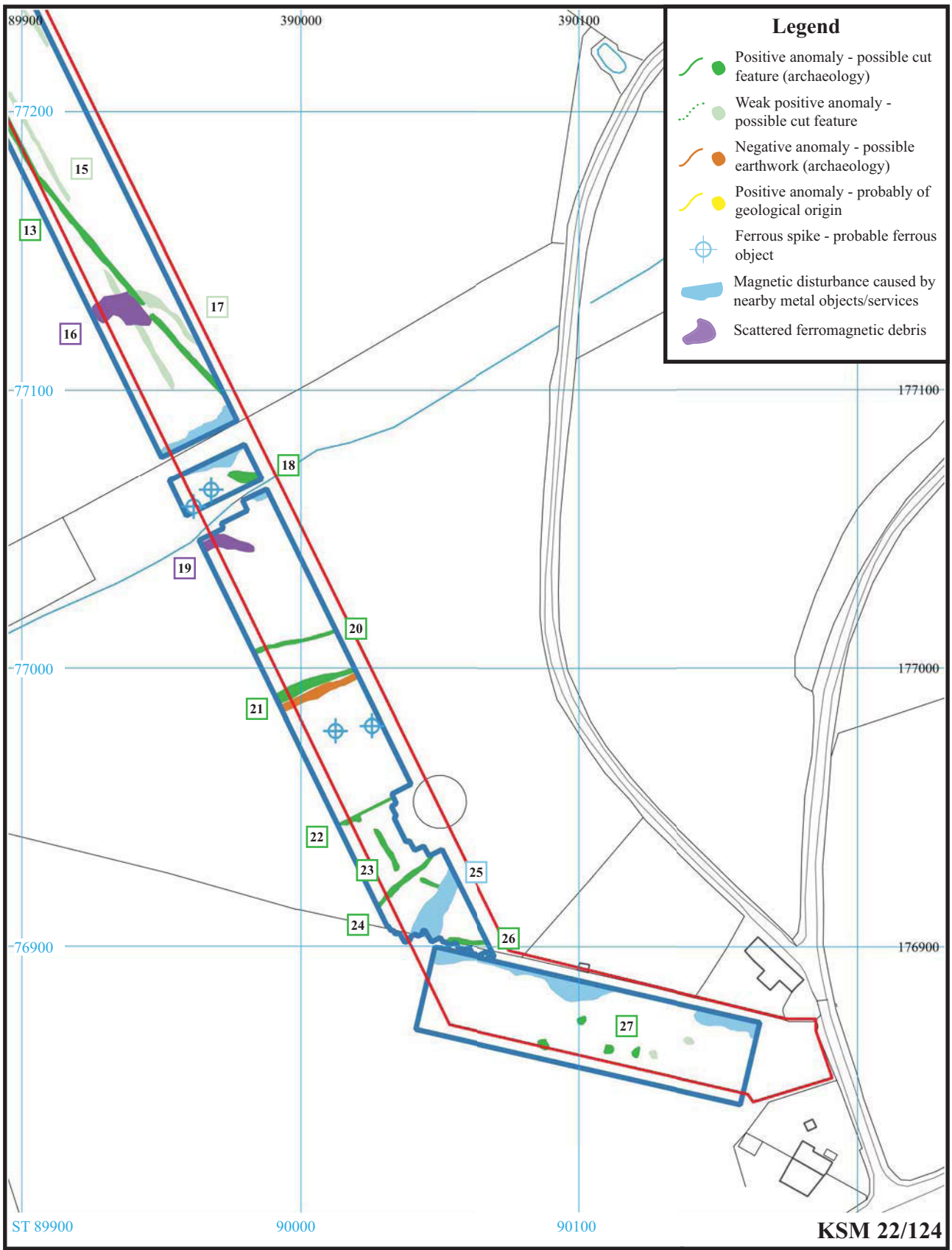

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Figure 13. Focused interpretation plot (south).

0m 100m

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Plate 1. Northern fields looking north-west.

Plate 2. Central field looking south

Plate 3. Southern field looking north-west

Plate 4. Central field looking north-west

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Plates 1 to 4.

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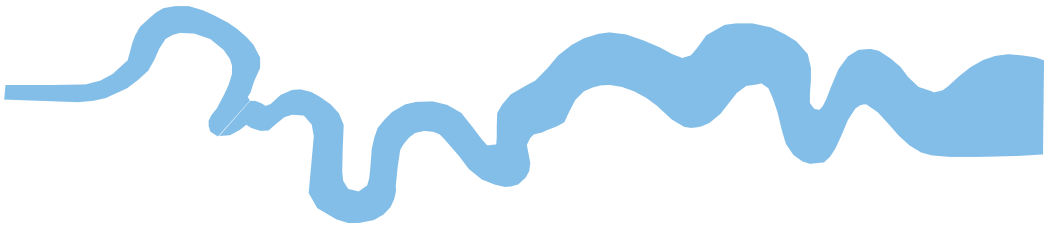
TIME CHART

	Calendar Years
Modern	AD 1901
Victorian	AD 1837
Post Medieval	AD 1500
Medieval	AD 1066
Saxon	AD 410
Roman	AD 43
	AD 0 BC
Iron Age	750 BC
Bronze Age: Late	1300 BC
Bronze Age: Middle	1700 BC
Bronze Age: Early	2100 BC
Neolithic: Late	3300 BC
Neolithic: Early	4300 BC
Mesolithic: Late	6000 BC
Mesolithic: Early	10000 BC
Palaeolithic: Upper	30000 BC
Palaeolithic: Middle	70000 BC
Palaeolithic: Lower	2,000,000 BC



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