GEOPHYSICAL SURVEYS IN THE VICINITY OF CORRODY KEEILL, THOLT Y WILL, SULBY, ISLE OF MAN

Summary Report

A programme of research carried out by the

Keeills Research Project

In conjunction with

BATH & CAMERTON ARCHAEOLOGICAL SOCIETY

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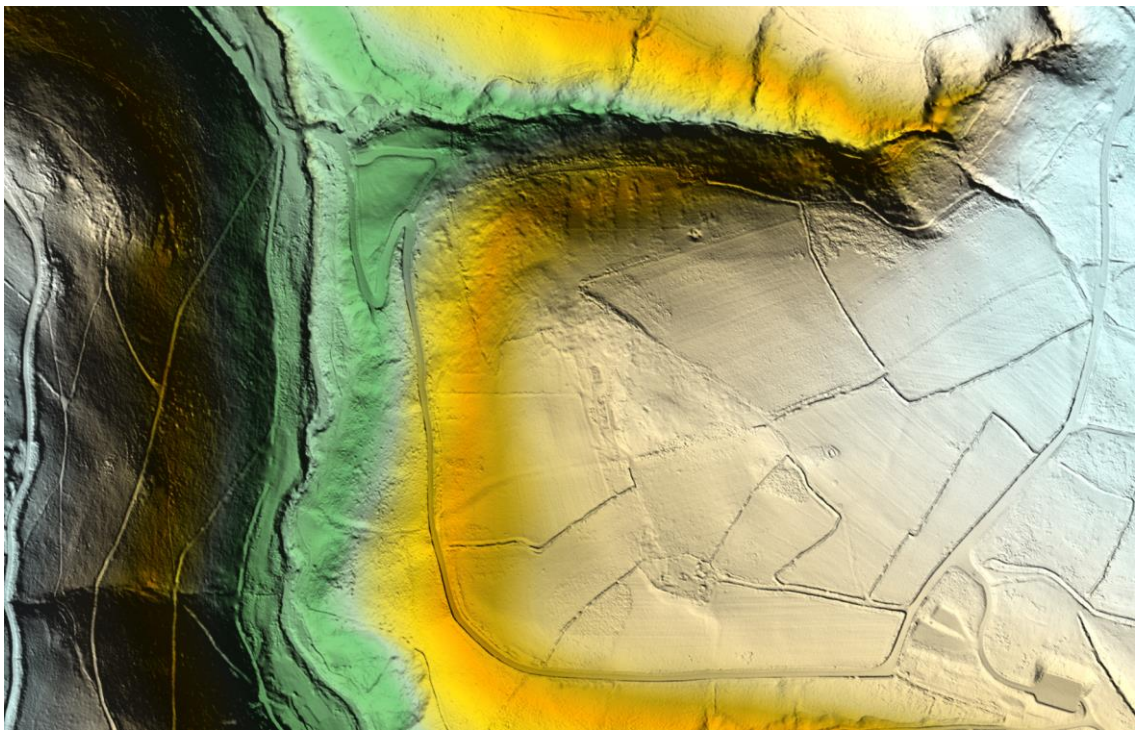
Corrody Keeill viewed from the SW.



High-resolution LiDAR elevation data processed and shaded to show subtle landscape features. Old field boundaries and cultivation ridges are also visible in this image. The keeill can be seen as the small rectangular monument right of centre in this picture.

1 INTRODUCTION

1.1 This report describes the results of geophysical surveys within Fields 133511 (the 'Road Field'), 134747 (the 'Keeill Field'), 133491 (the 'Chapel Field') and 134747 (the 'Well Field') aimed at detecting and characterising subsoil features associated with Corrody Keeill, an Early Christian Chapel (Ordnance Survey grid reference 237551 489223 / SC 376 892).

1.2 The site is a gently-sloping Northwest-facing hillside above the upper Sulby valley. Known to have been farmed since at least 1515, but uninhabited since mid-twentieth century, Corrody [1] and Creggan [2] farmsteads lie 170-200m downslope from the Keeill. To the East of the site, a trackway, sunken in parts, leads from the farmsteads to the higher hills. Surrounded by cultivated fields, the Keeill currently appears as a low walled rectangular building some 6x3m, set within a ring some 14m in diameter of upright stones, all atop a slightly raised 20x35m platform. Mid-way between the Keeill and Creggan farmstead stands a hooded walk-in well, reputedly holy [3] with healing powers. In the Southern corner of the 'Well Field', low banks still define a possible building footprint which was at one time thought to have been the Keeill.

1.3 In 1910 the Manx Archaeological Survey (MAS) investigated the immediate area of Corrody Keeill [4] [5]. The First Series Ordnance Survey had recorded a "Chapel & Burial Ground" (3492) in the Southern corner of the Well Field, and a rough area (3515) known as 'Cronk ny Keeillee' in what is now known as the Keeill Field. When the MAS investigated the building the First Series OS had marked as the "Chapel & Burial Ground", it was discounted (but not otherwise explained). However, they did find the Keeill, with walls about 1m thick and standing 1m above ground, oriented NE-SW, within the stone circle in (3515). The surrounding stones, some of which had been disturbed by close agriculture, were believed to define a burial mound; this was confirmed when the MAS discovered a Bronze-Age burial urn beneath the floor of the Keeill [6] - the Keeill had been inset into a Bronze-Age burial mound. Figure 1 shows the site viewed from the air and Figure 2 as mapped by the First Edition of the Ordnance Survey 1:2500 County Series 1868.

1.4 The geophysical survey of Corrody Keeill forms part of an Island-wide project that is using a range of scientific methods and documentary research to gain a deeper understanding of Keeill monuments; in particular their origins and placement in the historic landscape, their structure, purpose and evolution. Results are being shared with Manx National Heritage and will be more widely disseminated via publication and electronic media.

2 THE GEOPHYSICAL SURVEYS (Keeills Research Project Team)

2.1 Geophysical survey was carried out during July 2017 while each of the fields were in pasture. An area of deep bracken in the southern corner of Field 133491 was cut to facilitate the surveys. Baselines and grid patterns were established as a foundation for the surveys using fibron tapes and optical squares. This network was subsequently connected relative to the Ordnance Survey using kinematic GPS, which thus provided a precision basemap for the drawings presented in this report. A fluxgate gradiometer and

[1] The name Corrody (previously possibly Corrony) may relate to the Keeill being dedicated to St. Ciaran JJ Kneen, Manx Place Names, part 6, p516

[2] Creggan – Manx for 'a stony bank'

[3] The well is known as Chibbyr Karrin or St. Ciarin's Well

[4] Proc. IoMNHAS Vol I pp 627-8

[5] Manx Archaeological Survey – Fourth Report, 1915 – pp 7-9

[6] Manx Museum Annual Report no. 7 (1912) – p21

soil resistance meter were then used to survey each of the areas, with a particular effort being made to map all of Field 133511 and most of Field 134747 in which features of archaeological interest were being revealed.

2.2 Measurements of the vertical gradient in the Earth's magnetic field were recorded using Geoscan FM36 and FM256 fluxgate gradiometers with 0.05nT/m resolution. 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. Data were downloaded on-site into a portable graphics computer and later transferred to a laboratory PC for final processing, interpretation and archiving.

2.3 Measurements of soil electrical resistivity were made using Geoscan RM15 instruments with 0.5m spacing of the search electrodes. A zig-zag traverse scheme was again used, with data recorded with a similar regime to that utilised for the magnetic field survey.

2.4 GeoQuest InSite® software was used to process the magnetometer data into continuous-tone grey-scale images representing subtle variations in the Earth's magnetic field (Figure 4). In this drawing positive magnetic anomalies appear dark grey and negative magnetic anomalies light grey. Generally, most *positive* magnetic anomalies will correspond to soil-filled ditches or ploughed-out earthen banks, while *negative* anomalies usually reflect features such as wall footings and paths composed of sedimentary rock. The magnetometer often reveals ferrous litter or burnt ground as strong 'dipolar magnetic anomalies', seen as close black-white pairings in the greyscale image. Results from the soil resistance surveys were processed by the BACAS team and are shown in a Figure below, superimposed as colour-graded plots over the magnetic field data.

2.5 Figure 5 compares features recorded in the First Edition Ordnance Survey with the magnetometer data. A preliminary archaeological interpretation of this survey is presented over the data image in Figure 6, and without this image in Figure 7. A key defines the colours and fill styles used in these drawings, while feature codes are added for ease of reference in Figure 7.

3 DISCUSSION

The following features of archaeological interest have been identified by the survey:

3.1 **f1**: A strong texture of parallel lineations in the western corner of the 'Keeill Field' represents the ploughed-out remains of former lazy beds, with typical spacing of about 3.5m. These cultivation furrows are markedly better preserved on the SE side of a linear ditch (or bank), where the magnetic anomalies appear much stronger, giving rise to a cellular pattern 12m wide.

3.2 **f2**: Both the 'Keeill Field' and 'Road Field' are traversed by weak positive magnetic lineations, trending NE-SW, which are continuous across the field boundary. These anomalies are consistent with sets of ridges or 'butts' created by horse-drawn ploughs and are denoted by the green lines in Figure 7.

3.3 **f3**: A parallel set of curvilinear anomalies has been mapped trending ENE from the field gate at the western edge of the 'Keeill Field', marking disturbance to the ground along a twentieth-century track to the Creggans farmstead.

3.4 **f4**, **f5** & **f9**: A distinctive features of the geomagnetic image is the presence of several strong curvilinear anomalies that bisect the 'Keeill' Field in a NW-SE direction. A part of this network corresponds with former field boundaries marked on the 1868 Ordnance

Survey (**f4** & **f9**), which must have been constructed as sod banks (or ditches) whose remains contain material of enhanced magnetic susceptibility. However, within these meandering anomalies is a new feature, **f5**, which must reflect traces of an earlier silted ditch or sod bank, clearly on a differing alignment.

3.5 **f6**: A weak and rather diffuse pair of parallel lineations meanders over the central part of the 'Keeill Field', almost certainly marking the course of a former trackway not recorded by the early Ordnance Survey.

3.6 **f7**: About 14m south of the surviving Keeill the survey has detected a feature comprising three faint lineations that define a rectangular, open-ended enclosure about 6m in diameter. This may represent the infilled footings of a small structure, possibly associated with the Keeill.

3.7 **f8**: Another strong positive magnetic lineation is present immediately east of the Keeill, probably marking another sod bank, or ditch.

3.8 **f10**: Careful examination of the greyscale image of Figure 4 shows the presence of a rectangular ditched or sod-banked enclosure in the extreme southern part of the 'Keeill Field', within which there is a strong dipolar magnetic anomaly. The latter is not oriented N-S and is therefore inconsistent with an *in situ* fired structure. It therefore seems more likely that the dipole anomaly reflects a buried iron object, such as an agricultural implement, fairly close to the surface.

3.9 **f11**, **f12** & **f13**: A particularly fascinating result from the geomagnetic survey is the discovery of three areas where the anomaly patterns may indicate former structures where stone footings survive in the subsoil. In the 'Road Field' a striking pattern of rectilinear anomalies is present adjacent to a kink in the sod hedge which adds further weight to this conjecture, since the wall may have been modified to accommodate such a structure (**f11**). The magnetic anomaly suggests subdivision of the structure, presumably into rooms, although further exploration by trial trenching would be needed to verify this suggestion. Anomaly patterns associated with features **f12** and **f13** are less distinct, although both contain traces of cellular division that may be indicative of former building structures.

4 THE GEOPHYSICAL SURVEYS (BACAS Team)

20 m

Items Showing in Geophysical Survey at Corrody, Principally in Resistance Measurements

John Oswin *August 2017*

4.1 Well Field

4.1a I have hachured in blue an area of regular magnetic disturbance. I suspect this is related to the deserted farmstead next to it.

4.1b I have marked with a red rectangle a feature next to a strong linear magnetic feature (short ditch?) which needs to be investigated with resistance measurement.

4.1c I have marked a few lines near what the First Series OS marked as the Chapel which may be structural stone. The stony areas surrounding I suspect are natural.

4.1d The area around the Holy Well needs to be surveyed by both magnetometry and resistance.

4.2 Chapel Field

4.2a The magnetometry appears to show only a criss-cross pattern of drains, probably nineteenth century, probably connected with the ruined farmstead (*more likely to be horse butts, see §3.2*).

4.2b There is a definite rectangular feature marked with a red rectangle, but it was difficult to distinguish at first as its relative levels appear different in different grids.

4.2c To the north of this, is a second less-well-defined feature which may also be structural. These items (b and c) seem to be aligned north-south, so are unlikely to represent a chapel.

4.3 Keeill Field

4.3a The Keeill itself can be seen as a white rectangular mark made of dummy readings.

4.3b Just to the south of it, there appears to be a small D-shaped enclosure. Either side of this, the natural stone seems to dominate the plot. The far north corner of the plot also appears to be dominated by natural stone, and this appears to extend into the top of Well Field.

4.3c Two separate small areas were surveyed by resistance over the cellular features detected by magnetometry. Lines in the magnetometry and resistance do seem to coincide, so I take these to be structural in some manner, and I have marked them up in black.

4.3d There is a rectangular feature between those two areas which needs to be included in the resistance survey. Indeed, the whole vicinity could benefit from resistance survey, joined up to the survey over the Keeill mound and extended north and south.

4.3e The magnetometry shows a rectangular mark in the Keeill Field near the Southern corner of the Chapel Field. I have marked it with a red rectangle. Some grids around here need to be subject to resistance survey to see if there is any structure.

4.3f There is a white, area, apparently of negative magnetic influence in the far north corner of the field, but this may just be due to disturbance over the years around the entrance.

5 CONCLUSIONS

Detailed geophysical surveys has been undertaken of four fields in the vicinity of Corrody Keeill in an effort to provide further information regarding the survival of subsoil features associated with this monument and other traces of archaeological interest. Former field boundaries mapped by the First Edition Ordnance Survey are found to survive as linear soil deposits traversing the 'Keeill Field' while other features, possibly associated with the farm steading have been detected in both the 'Well Field' and 'Chapel Field'.

Of particular interest has been the discovery of three compact areas within which rectilinear patterns of strong magnetic anomalies suggest the presence of wall footings from building structures: two of these are along the western edge of the 'Keeill Field', while the third is adjacent to the eastern edge of the 'Road Field'.

Further investigation, for example by trial trenching and more detailed geophysical surveys, may be required in order to verify these conjectures.

5 ACKNOWLEDGEMENTS

We are very grateful to the landowner Mr Jaques van den Berg for kindly granting permission and to Mr Danny Creer for his assistance in undertaking the geophysical surveys on private land.

The Isle of Man Government Department of Infrastructure provided the OS digital mapping and LiDAR data used, under licence ACA-1040, as the basis of drawings presented in this report.

Culture Vannin kindly supported the visit to the Isle of Man by BACAS to assist with this survey.

6 CREDITS

Geophysical survey
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Report
M.J. Noel, D. Martin & J. Oswin
1st September 2017

Keeills Research Project

BATH & CAMERTON ARCHAEOLOGICAL SOCIETY

FIGURE 1

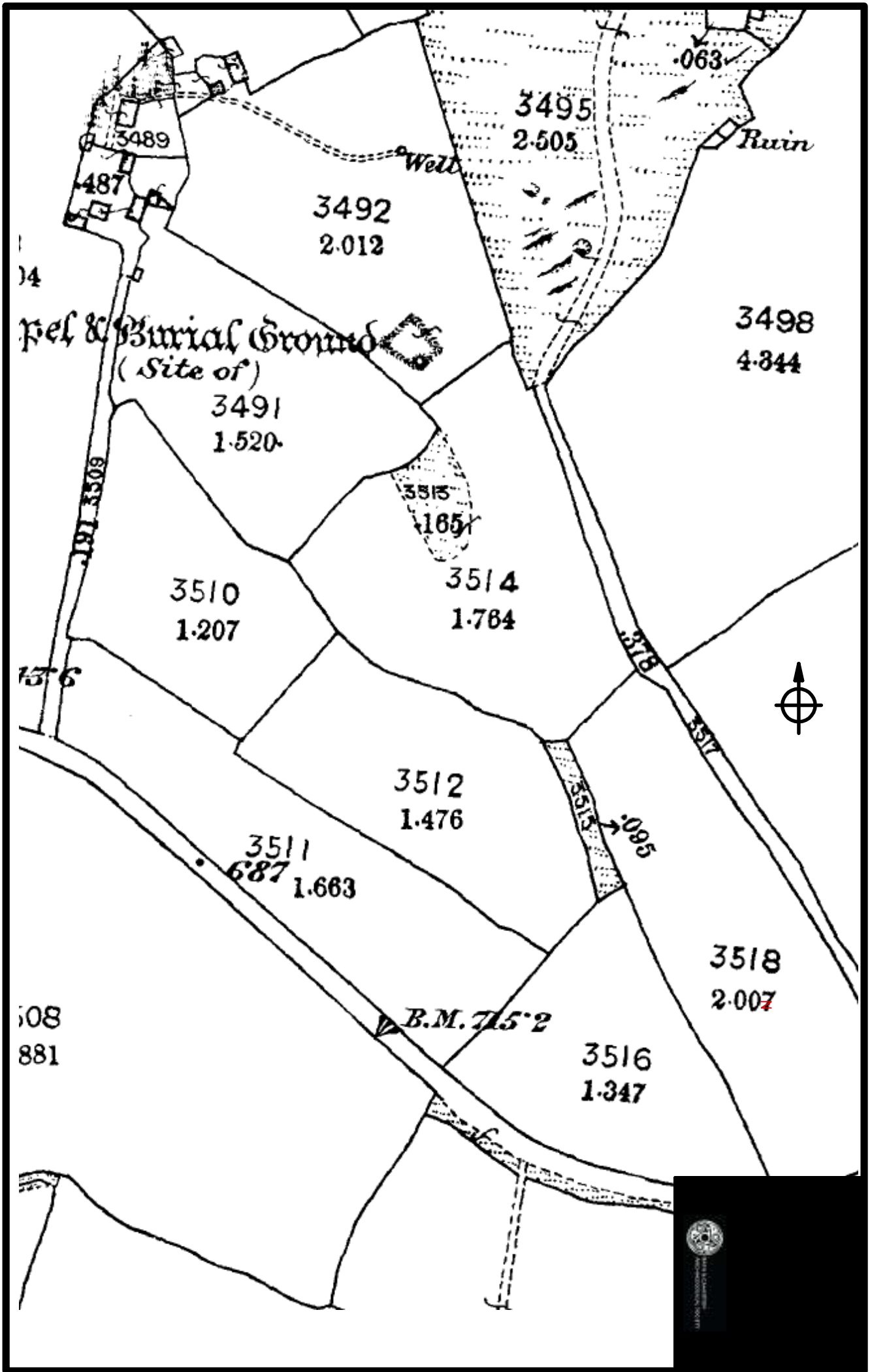
3495
2·505
·063
Ruin
3489
487
Well
3492
2·012
3498
4·344
Burial Ground
(Site of)
3491
1·520
3515
·165
3514
1·764
3510
1·207
3512
1·476
3511
6·87
1·663
·095
3518
2·007
B.M. 715·2
3516
1·347

FIGURE 2

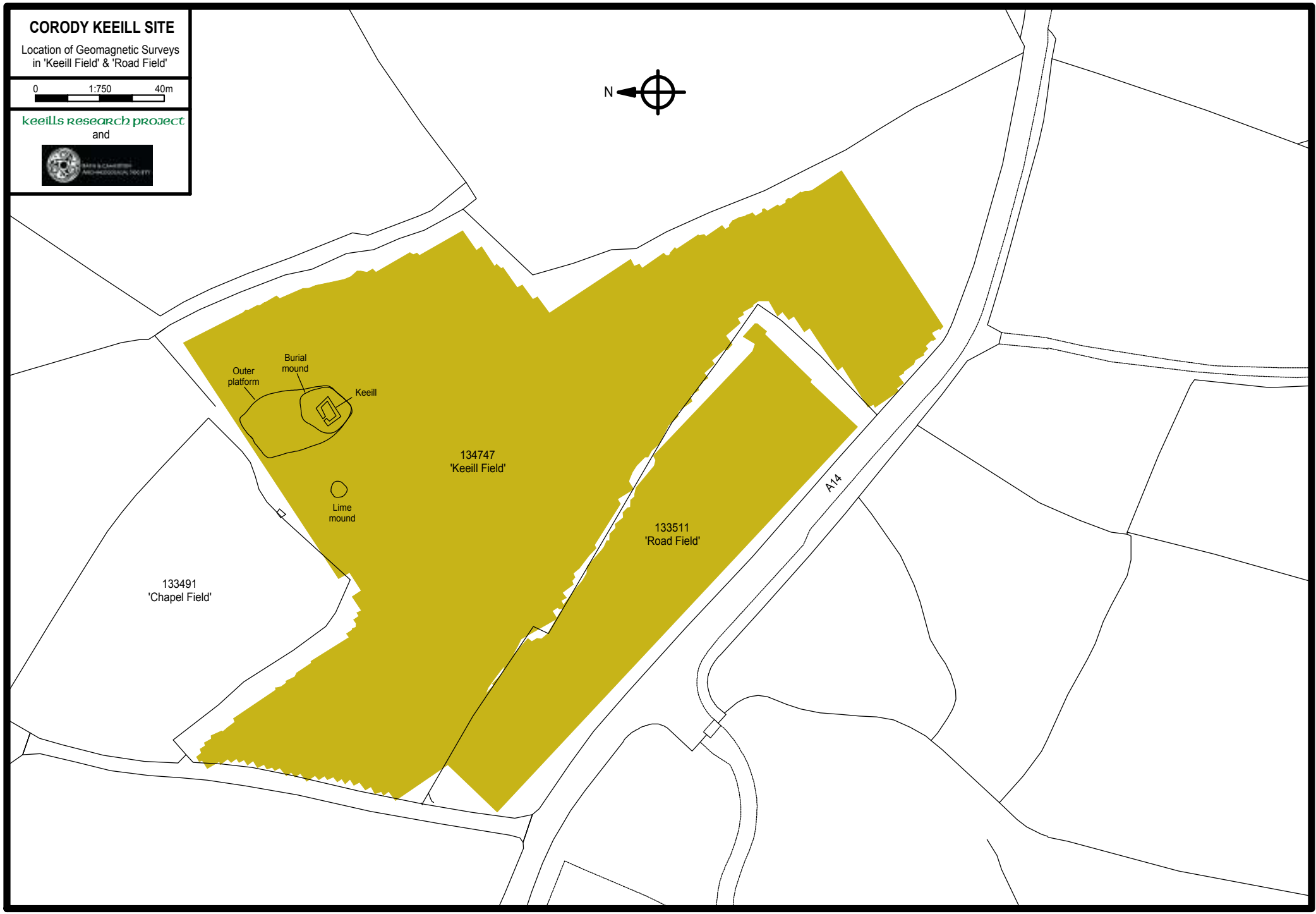
CORODY KEEILL SITE
Location of Geomagnetic Surveys in 'Keeill Field' & 'Road Field'
0
1:750
40m
keeills research project
and
N
Outer platform
Burial mound
Keeill
Lime mound
134747
'Keeill Field'
133511
'Road Field'
133491
'Chapel Field'
A14

FIGURE 3

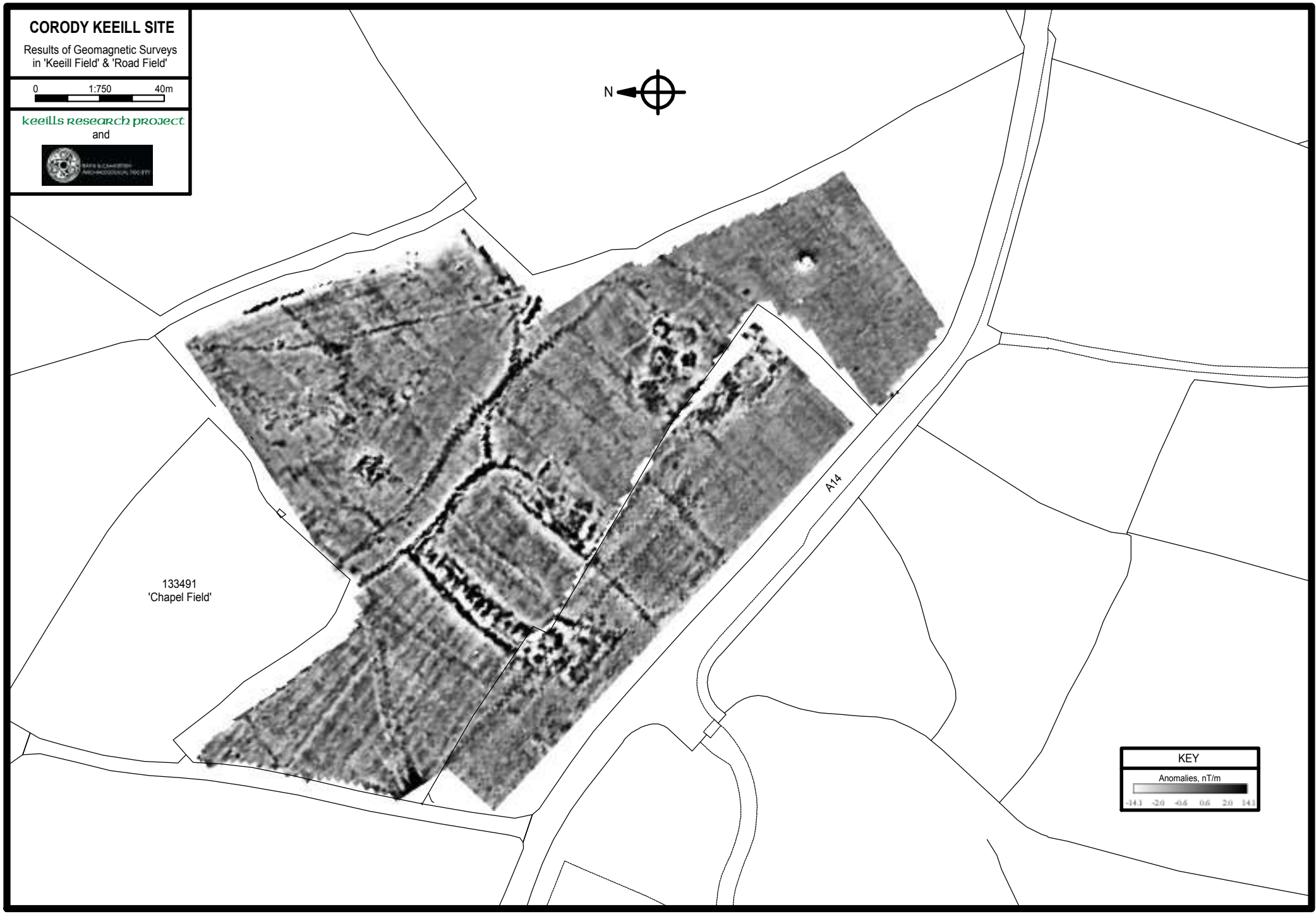
CORODY KEEILL SITE
Results of Geomagnetic Surveys
in 'Keeill Field' & 'Road Field'
0
1:750
40m
keeills research project
and
N
A14
133491
'Chapel Field'
KEY
Anomalies, nT/m
-14.1
-2.0
-0.6
0.6
2.0
14.1

FIGURE 4

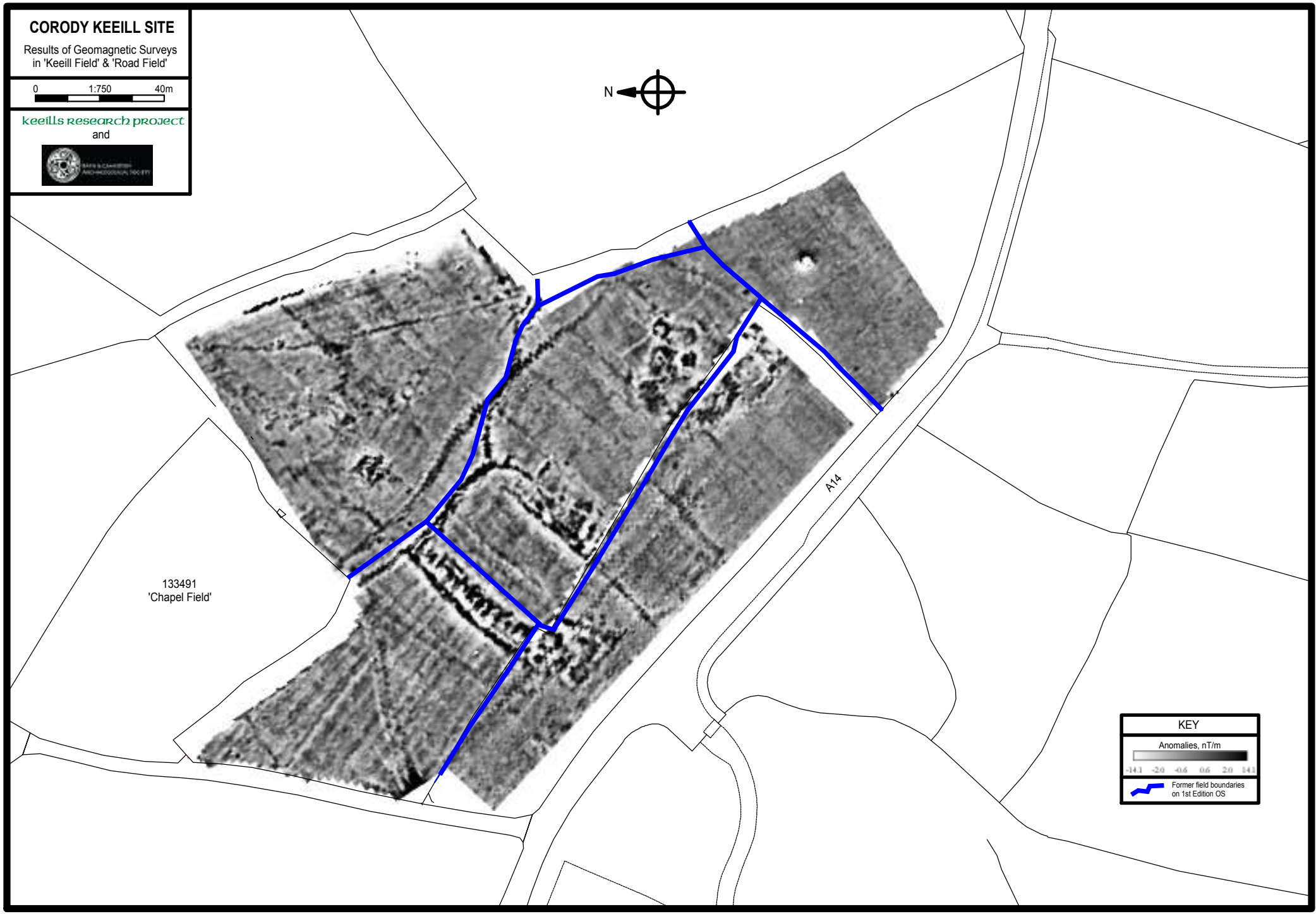
CORODY KEEILL SITE
Results of Geomagnetic Surveys
in 'Keeill Field' & 'Road Field'
0
1:750
40m
keeills research project
and
N
A14
133491
'Chapel Field'
KEY
Anomalies, nT/m
-14.1
-2.0
-0.6
0.6
2.0
14.1
Former field boundaries
on 1st Edition OS

FIGURE 5

CORODY KEEILL SITE
Archaeological Interpretation.
'Keeill Field' & 'Road Field'
0
1:750
40m
keeills research project
and
N
A14
133491
'Chapel Field'
KEY
Anomalies, nT/m
-14.1
-2.0
-0.6
0.6
2.0
14.1
Remains of former sod banks or silted ditches
Furrows of lazy beds
Wall footings or plastic drains
Structural remains
Modern track
Ferrous litter or bonfire
Land drain

FIGURE 6

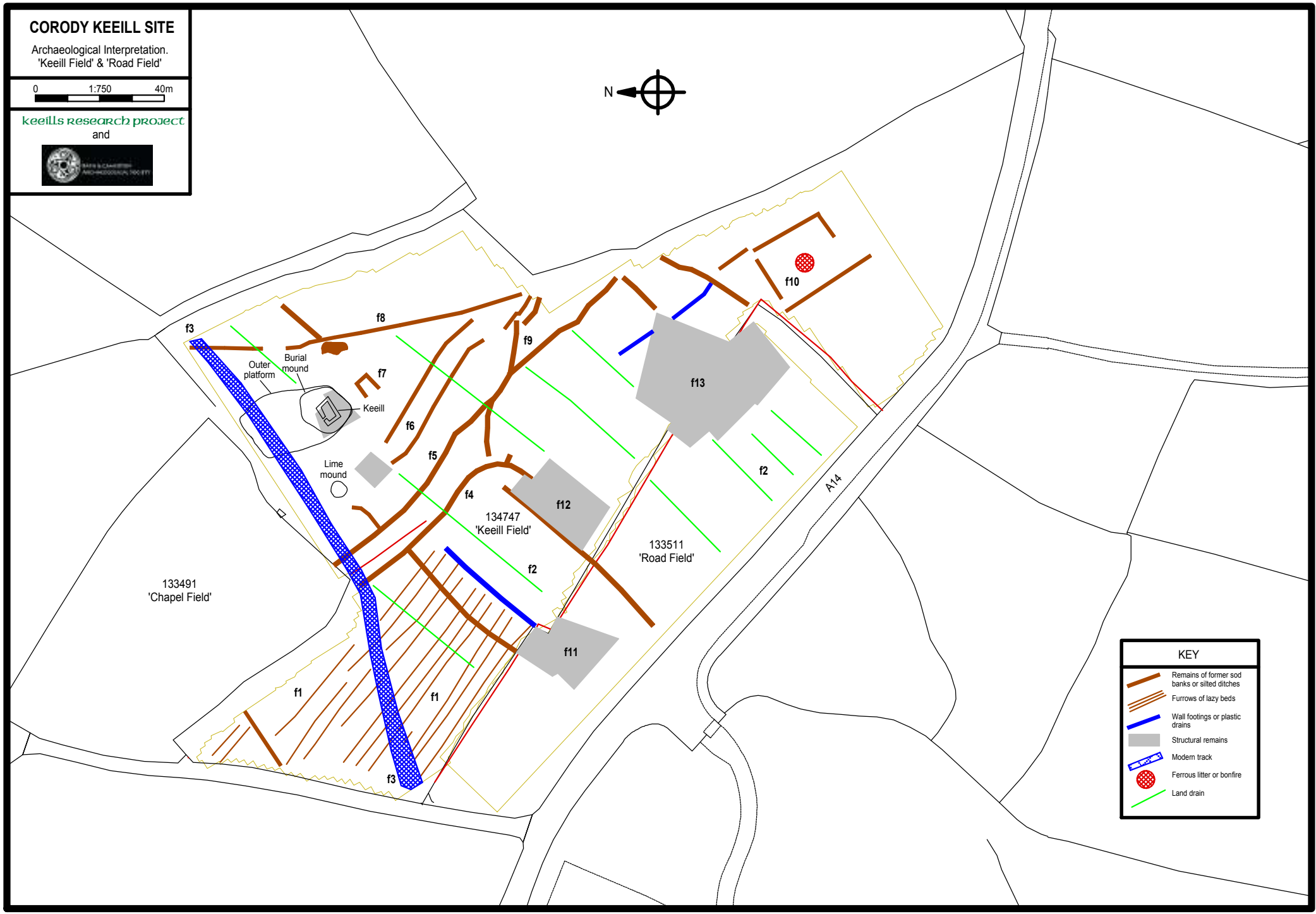
CORODY KEEILL SITE
Archaeological Interpretation.
'Keeill Field' & 'Road Field'
0
1:750
40m
keeills research project
and
N
f1
f2
f3
f4
f5
f6
f7
f8
f9
f10
f11
f12
f13
Outer platform
Burial mound
Keeill
Lime mound
134747
'Keeill Field'
133491
'Chapel Field'
133511
'Road Field'
A14
KEY
Remains of former sod banks or silted ditches
Furrows of lazy beds
Wall footings or plastic drains
Structural remains
Modern track
Ferrous litter or bonfire
Land drain

FIGURE 7