

Volume 10: Appendices (Onshore)

Appendix 25.2

Geophysical Survey Report

Geophysical Survey Report

Bremore, Co. Dublin

License No. 22R0244

RMP: N/A

ITM 719200, 765200



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September 2022

Summary

This report details the results of a geophysical survey (Licence No.: 22R0244) at lands at Bremore, Co. Dublin. The investigation was conducted as part of a preliminary (pre-planning) archaeological investigation.

The investigation, comprising high resolution magnetic gradiometry, was implemented over several adjoining fields of tillage (designated as 'Areas 1—3') and covered an area of approximately 31.5 ha. in total size. The survey has resulted in the discovery of a wide range of features of archaeological and potential archaeological interest, including a number of enclosures and potential ring-ditches/structures, as well as a possible burnt spread and features suggestive of 'industrial-type' activity.

Survey details

Site Name: Bremore
Townland: Bremore
County: Dublin

Parish: Balrothery
Barony: Balrothery East

RMP No.: N/A
ITM (centroid): 719200, 765200

Land use: Tillage
Geology: Andesite, pillow breccia, mudstone and tuff (Belcamp Formation)
Soils: Clayey drift with siliceous stones (Drumkeeran series)

Detection License No.: 22R0244
Planning Reference No.: N/A

Survey Type & Instrument: Fluxgate Gradiometer – Five-channel magnetometer
Sample/Transverse Interval: 0.05m/0.5m

Area Surveyed: c.31.5 ha.
Survey Date: 25—28 August 2022

License Holder: Ger Dowling
Report Author: Ger Dowling
Report Date: 01 September 2022

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Abbreviations

AOD	Above Ordnance Datum
GIS	Geographical Information Systems
GPS	Global Positioning System
IAC	Irish Archaeological Consultancy
KD	Kildare
ITM	Irish Transverse Mercator
nT	nanoTesla (unit of magnetic measurement)
OS	Ordnance Survey
RMP	Record of Monument and Places

Coordinate System

All GPS coordinates given in this report are in Irish Transverse Mercator (ITM)

1 Introduction

This report details the results of a geophysical survey (Licence No.: 22R0244) at lands at Bremore townland, Balbriggan, Co. Dublin. The survey, comprising high resolution magnetic gradiometry, was focused on several adjoining fields of tillage and encompassed approximately 31.5 hectares in total size. The investigation was conducted on behalf of Irish Archaeological Consultancy (IAC) as part of a preliminary (pre-planning) archaeological investigation.

The site has not previously been subjected to geophysical survey and it was hoped that the investigation would identify and map any subsurface archaeology that may be present.

2 Site Location

The survey is located in the townland of Bremeare, Co. Dublin (Figure 1). The site, which lies about 300m north of the outskirts of Balbriggan town, is in the Civil Parish of Balrothery and the Barony of Balrothery East.¹

¹ <https://www.logainm.ie/en/626?s=kilnaglory>: accessed on 05 July 2022.

3 Survey Background

The investigation is being conducted on behalf of IAC in respect of a pre-planning study (archaeological reconnaissance). It is designed to help inform the archaeological component of an Environmental Impact Assessment Report being prepared for the site.

4 Archaeological Background

4.1 Recorded/Known Archaeology

There are no recorded archaeological monuments within the lands of the survey area, though several sites and features of varying date are recorded in the surrounding landscape (Figure 2). Most recorded sites lie to the north of the target lands and include the well-known Neolithic passage tomb cemetery on the coastal promontory at Bremore.² The cemetery consists of five passage tombs (RMP DU02-001001—005), with later, presumably Bronze Age, activity at the site attested by an earthen barrow (RMP DU02-013) and a fulacht fia/burnt mound (RMP DU02-001006). A short distance to the south of the cemetery are the recorded remains of a sixteenth-century settlement (RMP DU02-013) and an associated coastal quay (RMP DU02-015).³

Other sites known from the immediate environs of the survey area comprise a rectangular enclosure (RMP DU02-018) and a field system (RMP DU02-019) located about 150m and 450m to the north, respectively. The latter sites were identified as cropmarks on aerial imagery. By contrast, to the south of the subject lands, excavations near Bremore Castle (RMP DU002-002001) revealed the partial remains of a field system (RMP DU002-002001) defined by two parallel ditches, set some 50m apart and extending for about 150m in east—west length. This plot of land appears to have been used for cultivation from at least the thirteenth/fourteenth century AD.⁴

Several archaeological investigations have been conducted in the townland of Bremore, all in the urban environment of Balbriggan. These include investigations in the vicinity of Bremore Castle,⁵ as well as test trenching at Bremore Regional Park in 2018 that identified portions of a possible enclosure.⁶

The survey area is shown as farmland on early historic maps (Figures 3—4).

² See, for example, Rynne, E. 1960. Survey of a Probable Passage Grave Cemetery at Bremore, Co. Dublin. *The Journal of the Royal Society of Antiquaries of Ireland*, 90:1, pp. 79—81. See also [Historic Environment Viewer \(archaeology.ie\)https://maps.archaeology.ie/HistoricEnvironment/](https://maps.archaeology.ie/HistoricEnvironment/): accessed on 05 July 2022.

³ [Historic Environment Viewer \(archaeology.ie\)](https://maps.archaeology.ie/HistoricEnvironment/): accessed on 05 July 2022.

⁴ <https://excavations.ie/report/2001/Dublin/0006262/>; O'Carroll, F. 2009, Bremore Co. Dublin, the field by the castle. In C. Baker (ed.) *Axes, Warriors & Windmills: recent archaeological investigations in north Fingal*. Fingal County Council [Available online at: <https://www.fingal.ie/sites/default/files/2019-04/Axes%2C%20Warriors%20%20Windmills%20%281%29.pdf>]

⁵ <https://excavations.ie/report/2001/Dublin/0006262/>; <https://excavations.ie/report/2017/Dublin/0026057/>; & <https://excavations.ie/report/2017/Dublin/0026061/>: accessed on 05 July 2022.

⁶ <https://excavations.ie/report/2021/Dublin/0031074/>: accessed on 05 July 2022.

4.2 Previous Investigations

No recorded archaeological investigations have previously been conducted at the survey area.⁷ Nearby excavations have been described above.

⁷ <https://excavations.ie>: accessed on 05 July 2022.

5 Survey Location and Aims

The investigation, comprising high resolution magnetic gradiometry, encompassed a combined area of approximately 32.5 ha. The target lands lie a short distance to the north of the Balbriggan town and are split into three parcels of land (designated as 'Areas 1–3') by the north–south routes of the R132 secondary road and the Belfast–Dublin rail line (Table 1; Figure 5). The land is under tillage, with Area 1 comprising two adjoining fields; Area 2 a single large field; and Area 3 encompassing a long rectangular field as well as the western portion of the adjacent field to the north.

Table 1: Survey Areas

Area	Size (ha.)
1	8
2	17
3	7.5

Despite low elevation between c.5–10m AOD, the subject lands offer extensive panoramic views of the coastline to the east, and the Irish Sea beyond. The local topography is generally flat, though a slightly more pronounced, east-facing slope is present in Area 2. The northeast corner of the latter area is the location of farm complex, while its southwestern quadrant is traversed northeast to southwest by an overhead electricity cable. A second overhead cable runs roughly east–west along the hedge line that divides Area 1 into two fields. The wider landscape comprises a mixed (sub)urban and rural environment, with Balbriggan town to the south and farmland (mainly tillage) to the north and west.

The underlying bedrock of the locality comprises a mixture of andesite, pillow breccia, mudstone and tuff (Belcamp Formation).⁸ The soils are dominated by clayey drift with siliceous stones (Drumkeeran series).⁹

The geophysical investigation aimed to:

- identify any geophysical anomalies of possible archaeological origin within the specified survey area
- accurately locate these anomalies and present the findings in map form

⁸ Geological Survey of Ireland Spatial Resources, Public Data Viewer Series: <https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228> [accessed on 05 July 2022].

⁹ Irish National Soils Map, 1:250,000k, V1b (2014): <http://gis.teagasc.ie/soils/map.php> [accessed on 05 July 2022].

- describe the anomalies and discuss their likely provenance in a written report
- incorporate all of the above in a report to the Client

6 Survey Methodology and Instrumentation

The survey involved high-resolution magnetic gradiometry survey (Table 2). This technique measures changes in the magnetic properties of the soil and is widely used in modern investigations due to its ability to detect a broad range of sub-surface archaeological remains, including ditches and pits, and industrial features associated with metalworking and pottery production.

The magnetic survey was conducted using a five-channel fluxgate gradiometer system combined with cm-precision GPS (georeferenced to Irish Transverse Mercator and Ordnance Datum). Mounted on a cart, the system records magnetometer and GPS data simultaneously into a single data file. The data capture strategy involved logging readings every 0.05m intervals along transects spaced 0.5m apart, with a maximum traverse width of 2.5m. The sampling strategy produces a high-resolution dataset, giving clarity to any archaeological features detected.

The highly accurate positioning of the survey data provides strong confidence when integrating the geophysical results with other datasets such as aerial imagery in GIS, and also ensures repeatability should further investigation of anomalies (e.g., test excavation) be required.

Table 2. Geophysical survey details

Technique	Instrumentation	Sensor spacing	Sample rate	Survey Area	Number of recorded data
Magnetic Gradiometry	Five-channel fluxgate gradiometer array	0.5m	40 Hz	c.31.5 ha.	1,793,385 ¹⁰

¹⁰ Area 1: 431,477 readings; Area 2: 971,452 readings; and Area 3: 390,456 readings.

7 Data Management, Processing and Interpretation

Gradiometry data was logged to a laptop computer and archived daily to an external hard drive. The collated data was processed using the following methodology:

- Real-time positioning of magnetometer data based on GPS measurements;
- Processing (Zero Mean Transect) of collated magnetometer data;
- Gridding (nearest neighbour interpolation); and
- Export of georeferenced greyscale images at optimum visual range

The processed data was imported into QGIS for final image production (Figures 6—15). Final geophysical datasets have been formatted as raster data models/GeoTiffs (projected to ITM, EPSG:2157) to enable subsequent geospatial analysis. Fieldwork, data processing and reporting adhered to the most up-to-date guidelines for conducting archaeo-geophysical surveys.¹¹ All geophysical raster datasets will be digitally archived to best practice.¹²

¹¹ Schmidt A., Linford P., Linford N., David, A., Gaffney C., Sarris A., and Fassbinder J. 2016. *EAC Guidelines for the Use of Geophysics in Archaeology: Questions to Ask and Points to Consider*. EAC Guidelines 2. [Online] Available from:

https://f64366e3-8f7d-4b63-9edf5000e2bef85b.filesusr.com/ugd/881a59_fdb1636e95f64813a65178895aea87cf.pdf

¹² Niven, K. 2012. *Raster Images: A Guide to Good Practice*. Archaeology Data Service/Digital Antiquity, Guides to Good Practice. [Online] Available from: http://guides.archaeologydataservice.ac.uk/g2gp/RasterImg_Toc; & Schmidt, A. and Ernenwein, E. 2012. *Guide to Good Practice: Geophysical Data in Archaeology*. Oxford: Oxbow.

8 General Considerations and Complicating Factors

8.1 Access and Ground Conditions

The survey area comprises three parcels of land ('Areas 1–3') that have been used for tillage in modern times (Plates 1–3). The northern field of Area 3 (c.1 ha. in size) was in crop at the time of the present investigation and could not be surveyed (Plate 4), while a small, overgrown area near the northern boundary of Area 2 also had to be avoided by the survey. There were no other obstacles to the investigation.

8.2 Modern Interference

Numerous small-scale and zones of 'ferrous-type' (dipolar) responses are evident in the results from the gradiometry survey. These are a common occurrence in magnetic data and in most cases represent modern metal debris contained within the topsoil; some of the ferrous responses may reflect objects of archaeological interest. It ought to be noted, however, that given the presence of igneous bedrock in all of the areas surveyed (see Section 8.5 below), many of the 'ferrous-type' (and possibly 'pit-type') responses recorded may represent naturally occurring volcanic stones/pebbles in the topsoils.

Small areas of ferrous disturbance deriving from survey in proximity to field fences and field gates were recorded in places along the edges of Areas 1–3, with the farm buildings in Area 2 providing another source of magnetic interference.

8.3 Former Land Use

Several former field boundaries recorded on early historical maps were mapped by the survey in Areas 1–3 (for historical mapping, see Figures 3 and 4). A series of narrow, widely spaced positive linears detected in Area 3 may reflect to former cultivation, perhaps associated with the sixteenth settlement (RMP DU02-013) located about 200m to the north. Modern ploughing is also apparent in the dataset as a series of slender, closely set, positive–negative linear anomalies; these are especially clear where they overlie (and disturb) areas of magnetised soils recorded in Areas 2 and 3 (see Section 8.4 below).

8.4 Areas of Increased Response

Several broad amorphous areas of increased response were registered by the survey in Areas 2 and 3 (labelled '7' in Area 2 and '3' and '6' in Area 3 on Figures 12 and 15). These zones of enhanced magnetism are characterised by a highly variable background response that likely results from natural

soil variations and/or agricultural (cultivation) disturbance to the uppermost levels of subsurface features of potential archaeological significance.

8.5 Geology

The effects of volcanic (andesite) geology registered very clearly in the survey results from Areas 1–3. This has given rise to large-scale, high intensity (bipolar) responses that are particularly pronounced where the igneous bedrock lies close to the surface, as across the northwest corner of Area 2, for example. A roughly north–south band of strongly positive/negative magnetism recorded near the eastern limit of Area 3 likely reflects an igneous intrusion in the underlying sedimentary geology. While these igneous responses are localised, they will have the effect of ‘masking’ or ‘hiding’ any potential archaeological features that may be present.

9 Survey Results

Table 3. Area 1: survey results

Area	1		
ITM (centroid)	718800, 764900		
Area surveyed	c.8 ha.		
Figure Numbers	6 & 10–11		
Anomaly Number	Form/nature of anomaly	Possible sources(s) of anomaly	Interpretative discussion
1	Integrated array of linear and curvilinear positive anomalies	Possible archaeology	Network of possible ditches and pits/spreads, may define an enclosure and/or field system that continues beyond Area 1 to E. Recorded anomalies extend over an area measuring c.40 N–S by 30 E–W and are partially ‘masked’ or ‘hidden’ by background geological response. Interpretation is tentative and further work (e.g., test excavations) is required to establish precise nature and significance. May be linked with [2] and [3].
2	Faint, integrated array of slender linear and curvilinear anomalies	Possible archaeology	Potential array of interconnected ‘ditch-type’ features, possibly indicative of former field system. Recorded anomalies extend over an area measuring c.90m N–S by 50m E–W. Not depicted on historical maps and may be associated with [1] and represent a continuation of [3].
3	Faint, integrated array of slender linear and curvilinear anomalies	Possible archaeology	Potential network of ‘ditch-type’ features, possibly indicative of former field system. Recorded anomalies extend over an area measuring c.40m N–S by 70m E–W. Not depicted on historical maps and may be associated with [1] and represent a continuation of [2].
4	Several, short positive linears	Possible archaeology	Small cluster of possible ditches and pits/spreads, some with potential burnt material. Interpretation is tentative.
5	Short positive linear	Possible archaeology	Possible ‘ditch-type feature’, about 12m in length (N–S). May contain burnt material, though this is speculative.
6	Weak positive linears	Possible archaeology/agricultural	Possible narrow ditches/drains. Appear to overlie/truncate [2], though exact relationship

			is uncertain.
7	Several 'pit-type' anomalies	Possible archaeology/modern/natural	Possible pits/deposits. Could equally reflect deeply buried modern ferrous and/or localised natural soil variation.
8	Poorly defined positive lineation	Agricultural	Relict field boundaries, marked on historical maps.
	Positive trends	Possible archaeology/agricultural	Possible ditches/drains.
	Multiple ferrous responses	Modern	Ferrous debris. Some responses may represent naturally occurring volcanic stones/pebbles.
	Multiple, closely spaced, parallel, positive—negative linears	Agricultural	Modern cultivation. <i>Not marked on Figure 10.</i>
	Areas of magnetic disturbance	Modern	Disturbance from adjacent post-and-wire fences and field gates.
	Amorphous areas of high intensity (bipolar) responses	Natural	Igneous bedrock.

Table 4. Area 2: survey results

Area	2		
ITM (centroid)	718200, 765200		
Area surveyed	c.17 ha.		
Figure Numbers	6 & 10–14		
Anomaly Number	Form/nature of anomaly	Possible sources(s) of anomaly	Interpretative discussion
1	Sub-circular positive anomaly	Archaeology	Sub-circular enclosure, apparently defined by a ditch measuring approx. 35m (N–S) by 38m (E–W) in overall diameter. Boundary appears to be breached by a narrow entrance gap on SE. Surrounds [2] and is conceivably associated with [3] and [4]. A series of ‘pit-type’ anomalies mapped both inside and outside [1] may be associated pits/spreads. See Figure 13 for detailed view.
2	Faint, slender, arcuate positive anomaly	Possible archaeology	Possible western arc of circular slot-trench, with a projected overall diameter (N–S) of c.15m. Signature is faint and appears to fade out on E and S. Tentative feature but may be associated with several ‘pit-type’ anomalies mapped inside [1].
3	Faint, rectangular positive anomaly	Possible archaeology	Possible rectangular field, c.67m NE–SW by 65m NW–SE. May be defined by ditches. Not depicted on historical maps and conceivably associated with [1] and [4].
4	Faint array of slender linear and curvilinear anomalies	Possible archaeology	Potential network of ‘ditch-type’ features, possibly indicative of former field system/s. Recorded anomalies extend over an area measuring c.150m N–S by 50m E–W. Not depicted on historical maps and may be associated with [1] and [3].
5	‘D-shaped’ positive anomaly	Archaeology	Small ‘D-shaped’ enclosure, measuring approx. 21m (N–S) by 19m (E–W) in overall size. Circuit of boundary on S is obscured by background geological response. Appears to be associated with [6]. See Figure 14 for detailed view.
6	Faint, slender positive curvilinears	Possible archaeology	Possible ditches adjoining [5] on NE and NW. Appear to extend away from [5] but full extent is uncertain owing to strength of local

			background geological response. Tentative features.
7	Large, amorphous area of increased response	Possible archaeology/ modern/ natural	Spread of magnetised soils that extends over an area measuring c.68m (NE—SW) by 58m (NW—SE). May represent archaeological features, some containing burnt material, disturbed by agricultural activity. Speculative interpretation. Could equally reflect buried ferrous of modern origin and/or natural soil variation. Further work (e.g., test excavations) is required to establish precise nature and significance.
	Poorly defined positive and negative lineations	Agricultural	Relict field boundaries, marked on historical maps.
	Positive tends	Possible archaeology/ agricultural	Possible ditches/drains.
	Multiple ferrous responses	Modern	Ferrous debris. Some responses may represent naturally occurring volcanic stones/pebbles.
	Multiple, closely spaced, parallel, positive—negative linears	Agricultural	Modern cultivation. <i>Not marked on Figure 12.</i>
	Areas of magnetic disturbance	Modern	Disturbance from adjacent post-and-wire fences and farm buildings.
	Amorphous areas of high intensity (bipolar) responses	Natural	Igneous bedrock.

Table 4. Area 3: survey results

Area	3		
ITM (centroid)	719600, 745400		
Area surveyed	c.6 ha.		
Figure Numbers	6, 10 & 15–16		
Anomaly Number	Form/nature of anomaly	Possible sources(s) of anomaly	Interpretative discussion
1	Circular positive anomaly	Archaeology	<p>Possible circular ditch, c.6m in overall diameter (N–S). May be a ring-ditch or foundation trench for a structure. Interpretation is tentative.</p> <p>See Figure 16 for detailed view.</p>
2	Cluster of strongly positive curvilinear and ‘pit-type’ anomalies	Possible archaeology	<p>Series of possible short ‘ditch-type’ features and pits/spreads extending over an elongated area measuring some 30m (N–S) by 120m (E–W). May contain burnt/fired material and be associated with industrial-type activity. Interpretation is cautious. Potentially associated with [3] and located about 35m SW of [1] at nearest point.</p> <p>See Figure 16 for detailed view.</p>
3	Large, amorphous area of increased response	Possible archaeology	<p>Zone of enhanced magnetic susceptibility that extends over an area some 30m (N–S) by 120m (E–W). Magnetic signature suggests material disturbed from [2] by cultivation.</p> <p>See Figure 16 for detailed view.</p>
4	Discontinuous sub-circular anomaly	Possible archaeology	<p>May reflect partially (ploughed-out?) remains of a ring-ditch/structure, some 10m in diameter. Surrounds a possible pit, with an arcuate ‘ditch-type feature’ a short distance to W.</p> <p>See Figure 16 for detailed view.</p>

5	Amorphous area of enhanced magnetic values	Possible archaeology	Possible burnt spread (c.34m NE—SW by 16m NW—SE). Tentative interpretation. Possibly associated with [6]. <i>See Figure 16 for detailed view.</i>
6	Area of increased response	Possible archaeology	Zone of enhanced magnetic values, c.58m NE—SW by 28m NW—SE). May represent material disturbed from [5] by cultivation. <i>See Figure 16 for detailed view.</i>
7	Faint, 'L-shaped' slender positive anomaly	Possible archaeology	Possible ditch, measuring approx. 115m NE—SW by 23m NW—SE. May mark the partial outline of a large rectangular field that extends further to N. <i>See Figure 16 for detailed view.</i>
8	Strongly positive curvilinear and 'pit-type' anomalies	Possible archaeology	Possible short ditch segment and associated pits. May contain burnt/fired material and be associated with industrial-type activity.
9	Short, strongly positive linear	Possible archaeology	Possible short ditch segment, may contain burnt/fired material and be associated with industrial-type activity.
	Multiple 'pit-type' anomalies	Possible archaeology	Possible pits/spreads, some contain burnt/fired material.
	Multiple, widely spaced, parallel, positive linears	Possible archaeology/agricultural	Possible plough lines. Aligned NE—SW and spaced approx. 10m apart. May reflect medieval cultivation. Interpretation is cautious.
	Faint positive lineations	Agricultural	Relict field boundaries, marked on historical maps.
	Positive trends	Possible archaeology/agricultural	Possible ditches/drains.
	Multiple ferrous responses	Modern	Ferrous debris. Some responses may represent naturally occurring volcanic stones/pebbles.

	Multiple, closely spaced, parallel, positive—negative linears	Agricultural	Modern cultivation. <i>Not marked on Figure 15.</i>
	Areas of magnetic disturbance	Modern	Disturbance from adjacent post-and-wire fences.
	Band of high intensity (bipolar) responses	Natural	Igneous bedrock.

10 Conclusion

Although near-surface igneous geology had a major impact on some of the survey results from Bremore, the geophysical investigation of Areas 1—3 has identified a significant number of features of archaeological and potential archaeological significance.

The partial outline of a possible enclosure/field system [1:1] was identified near the northern limit of Area 1, though interpretation is cautious as the recorded anomalies are partially ‘masked’ or ‘hidden’ by background geological response. Nevertheless, the potential remains of what may be an associated field system/s [1:2&3] were also mapped in the immediate vicinity of [1], while a range of other possible ‘ditch-’ and ‘pit-type’ features [1:4—7] were recorded elsewhere throughout the survey area. More striking, perhaps, are the two enclosures [2:1&5] mapped by the survey in Area 2. Both enclosures seem to be defined by ditches that vary from 21m to 35m in diameter. Enclosure [2:1] appears to have a SE-facing entrance and displays evidence for internal features [e.g. 2:2]. There are also hints in the dataset of potentially associated field systems [2:3, 4&6] in the broader hinterland of both enclosures. A large zone of magnetic variability [2:7] in Area 2 may also be of archaeological interest. Further features of archaeological significance were revealed in Area 3 and include two possible ring-ditches/structures [3:1&4], as well as a large and varied array of small ‘ditch-’ and ‘pit-type’ features [3:2—3; 7—9], many of which might contain burnt/fired material and be associated with ‘industrial-type’ activity. The remains of a potential disturbed burnt spread [3:5&6] was also discovered in Area 3. This area also produced evidence for past agricultural activity in the form of widely spaced plough tends suggestive of medieval farming, though this is speculative. Several relict field boundaries were also mapped by the survey in the three survey areas.

10.1 Statement of Indemnity

The geophysical properties of sub-surface features must contrast sufficiently with the surrounding soils/background variation to enable them to be detected and mapped using geophysical methods. As such, the clarity and definition of buried features can vary considerably, with some having well-defined signatures while others are only barely visible, or not discernible, in geophysical imagery. A lack of geophysical anomalies cannot be taken to imply the absence of archaeological features.

The interpretations presented here are invariably provisional and further work (e.g. test trenching) is required to fully assess the nature and archaeological potential of the anomalies identified by the present investigation.

11 Figures

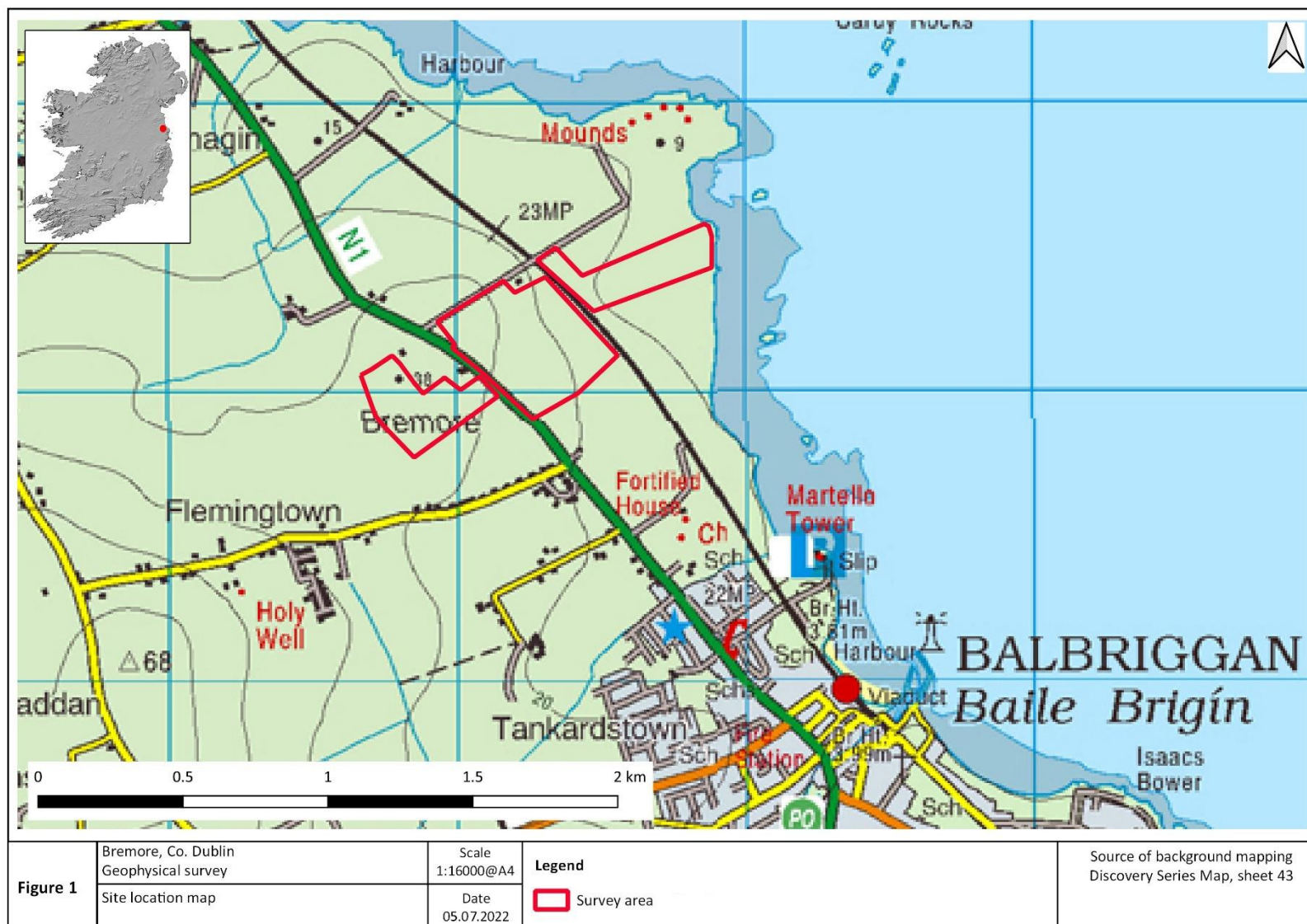


Figure 1. Site location map, showing survey area outlined in red.

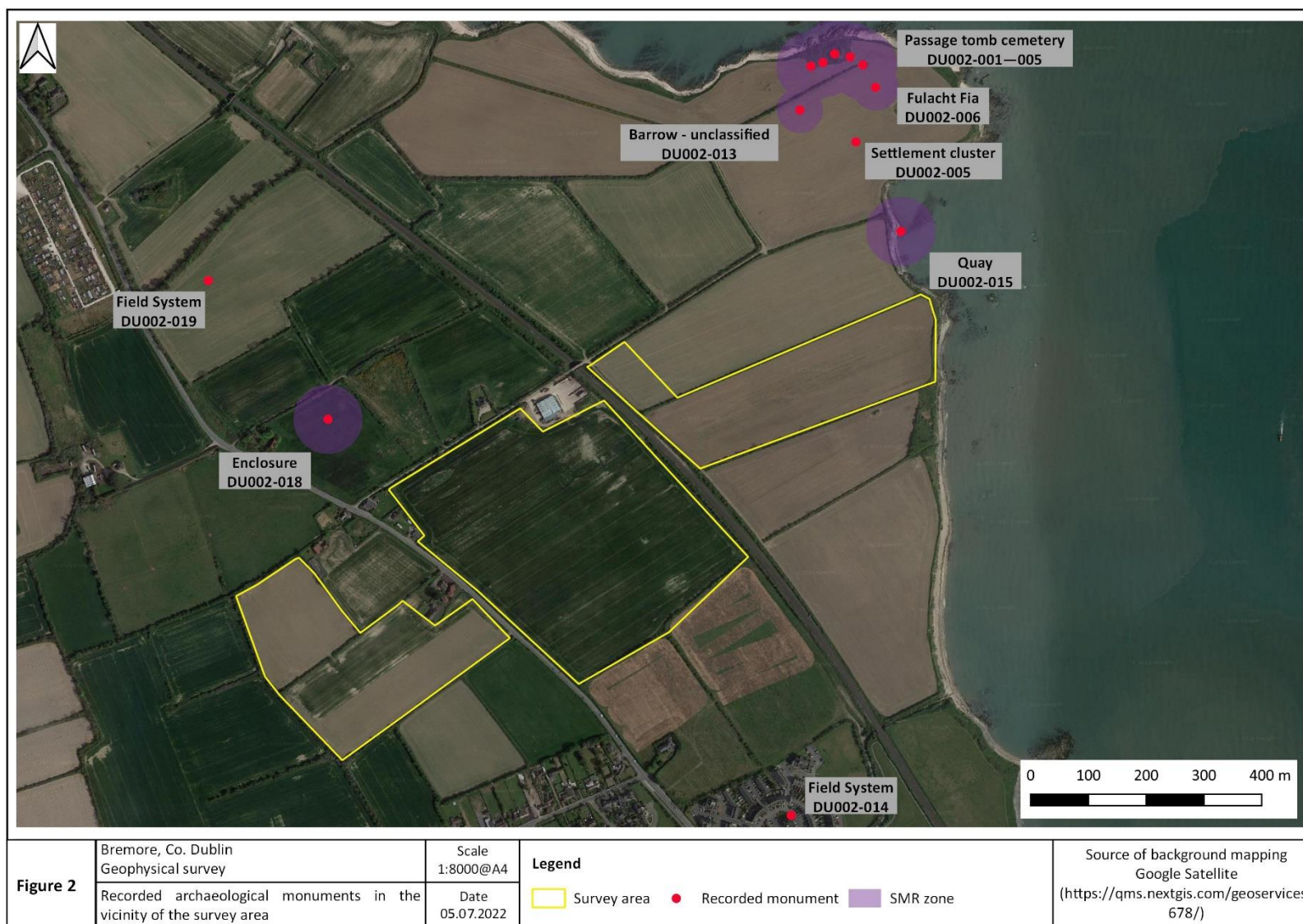


Figure 2. Location of recorded archaeological sites in the vicinity of the survey area.

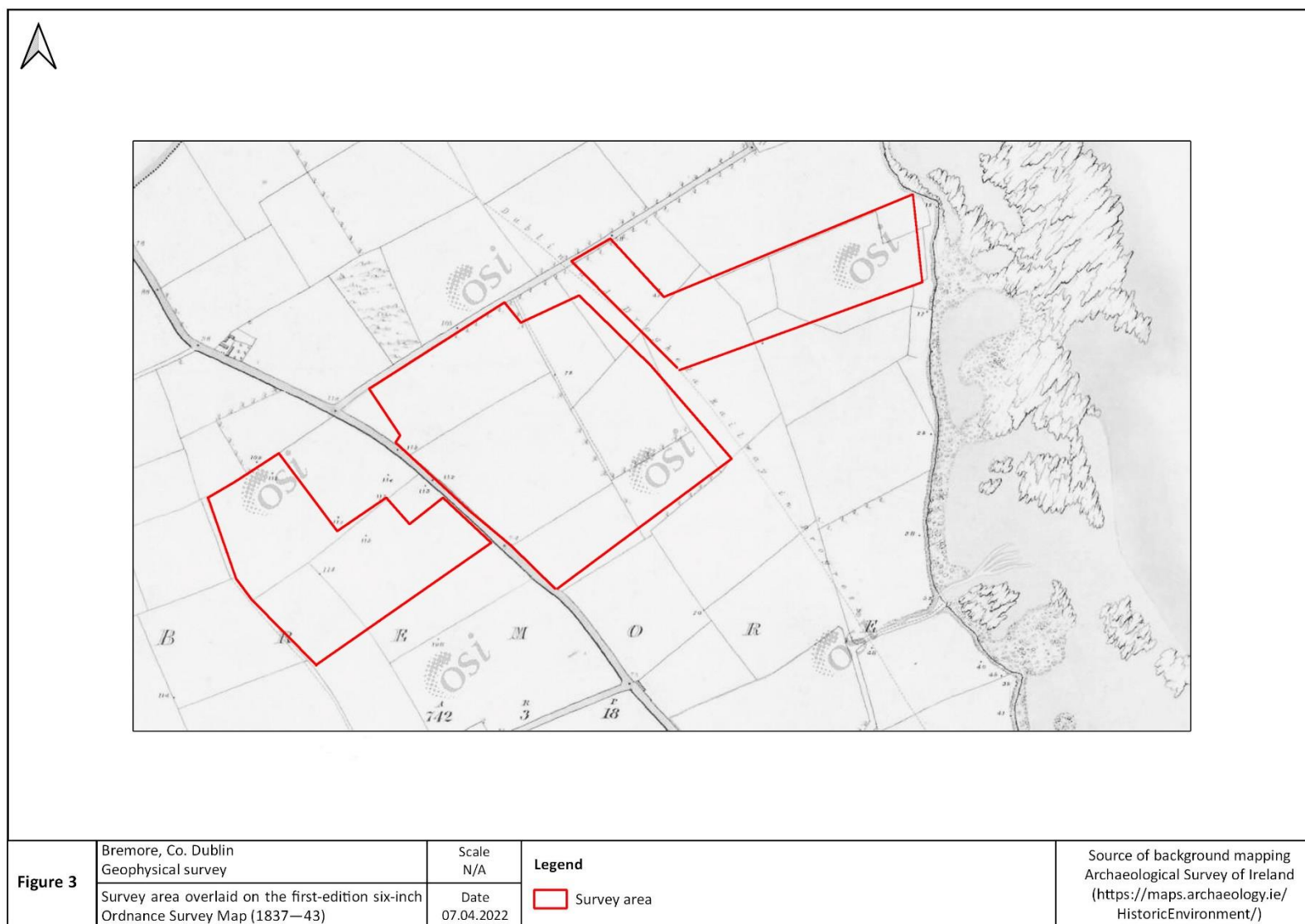


Figure 3. The survey area overlaid on the first-edition six-inch Ordnance Survey Map (1837–43).

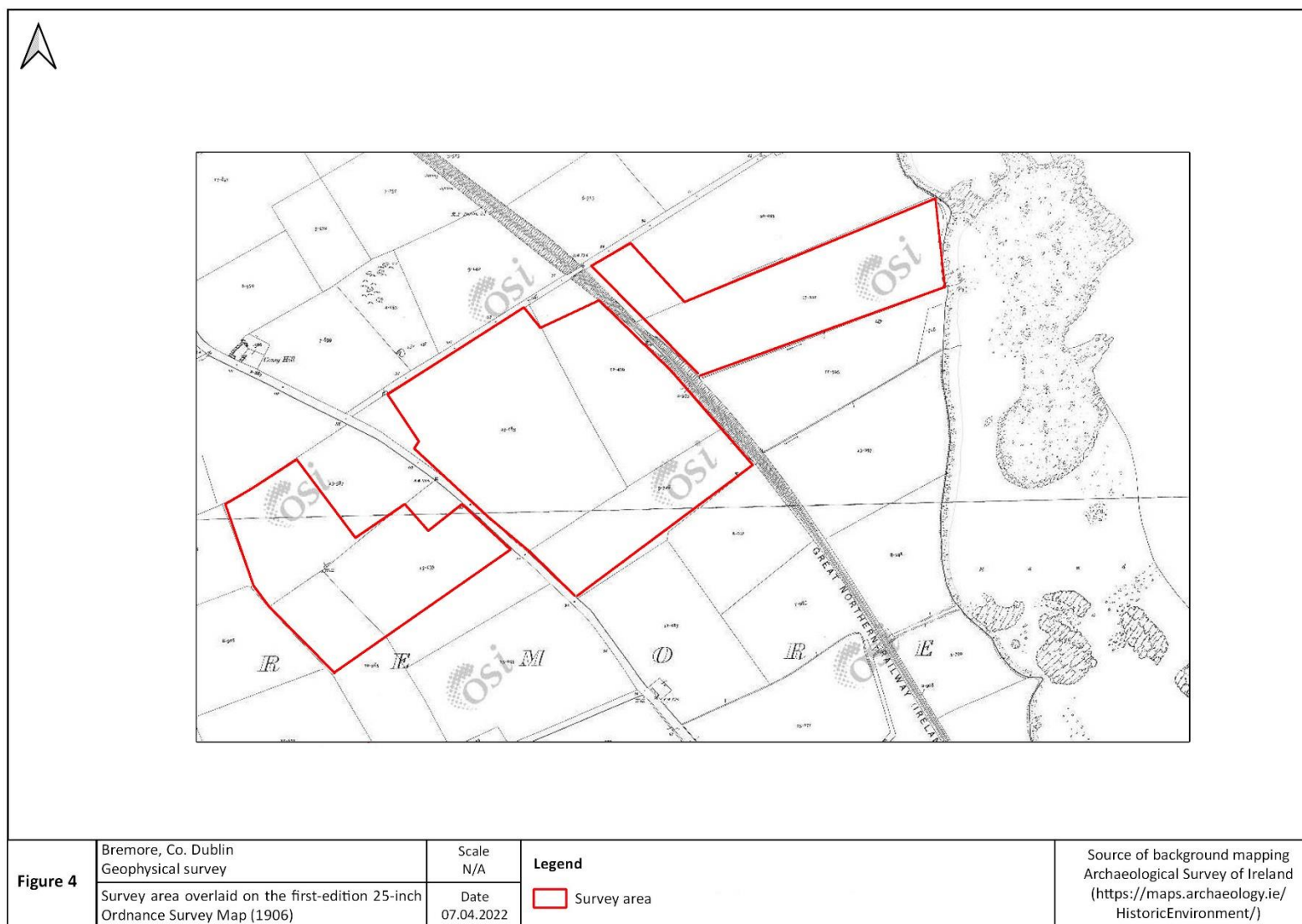


Figure 4. The survey area overlaid on the first-edition 25-inch Ordnance Survey Map (1906).



Figure 5. The survey area outlined in yellow, with areas numbered.



Figure 6. Greyscale image of gradiometry results.



Figure 7. Detail view of results from Area 1.

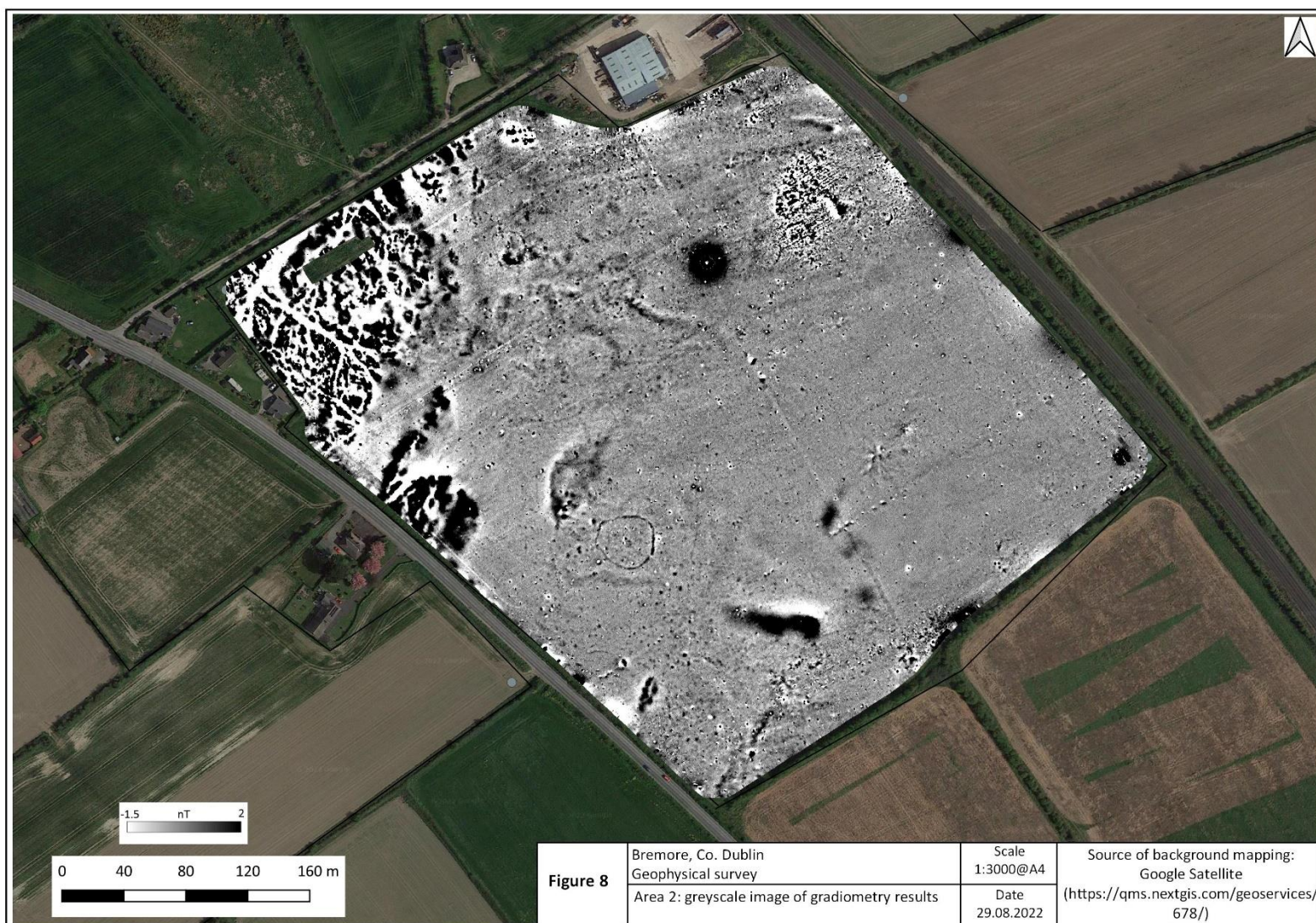


Figure 8. Detail view of results from Area 2.



Figure 9. Detail view of results from Area 3.

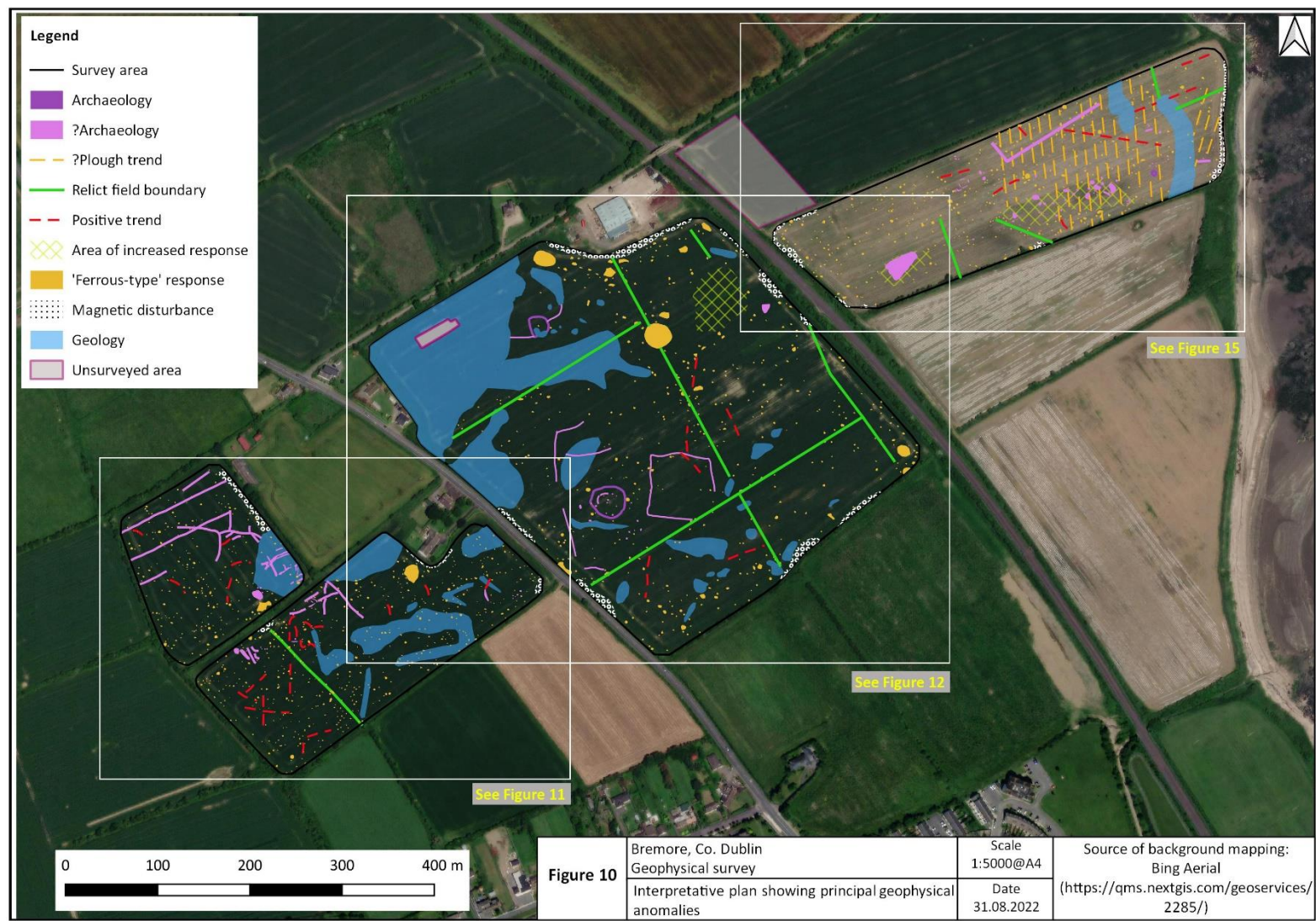


Figure 10. Interpretative plan showing principal geophysical anomalies.

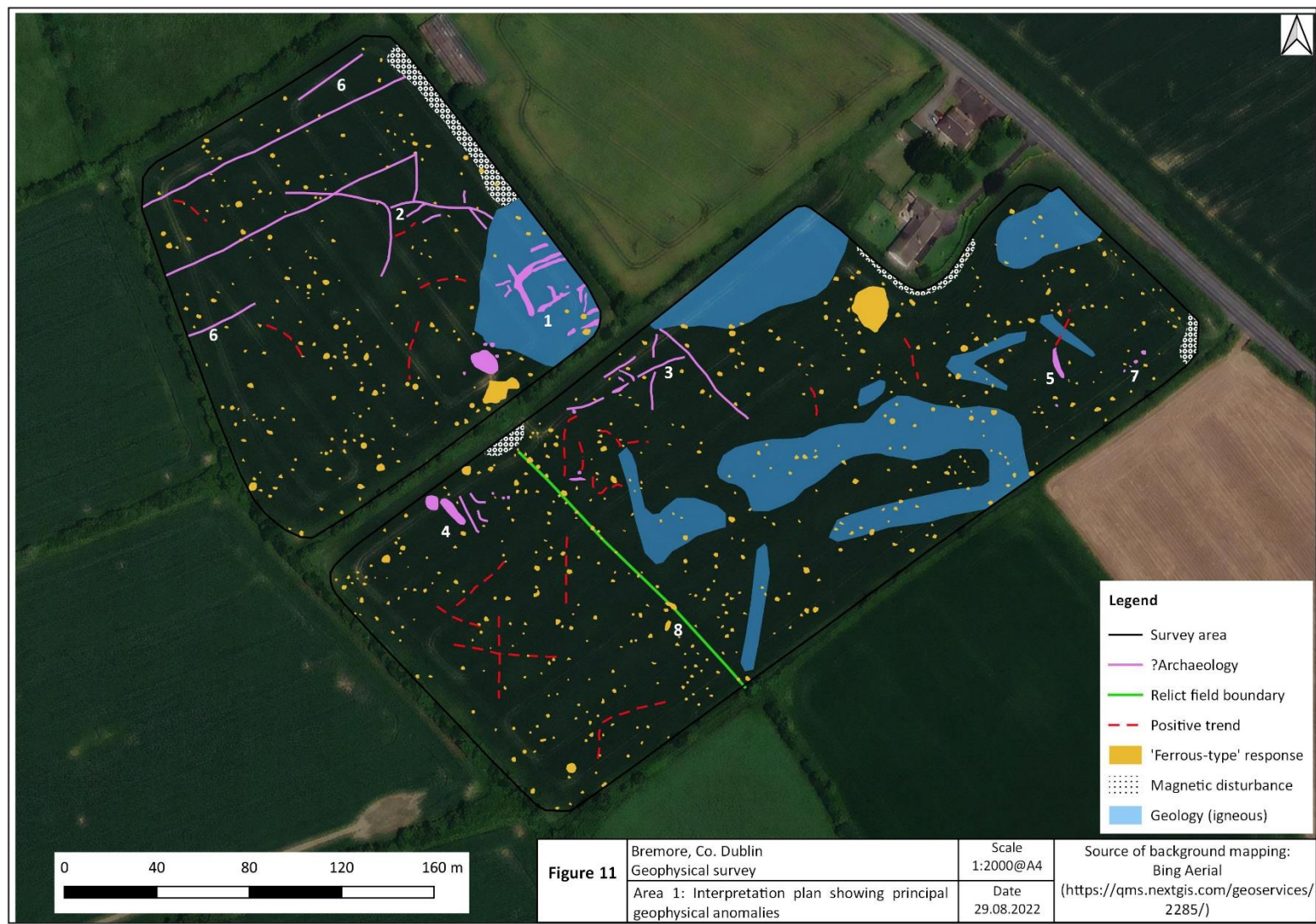


Figure 11. Area 1: interpretative plan showing principal geophysical anomalies.

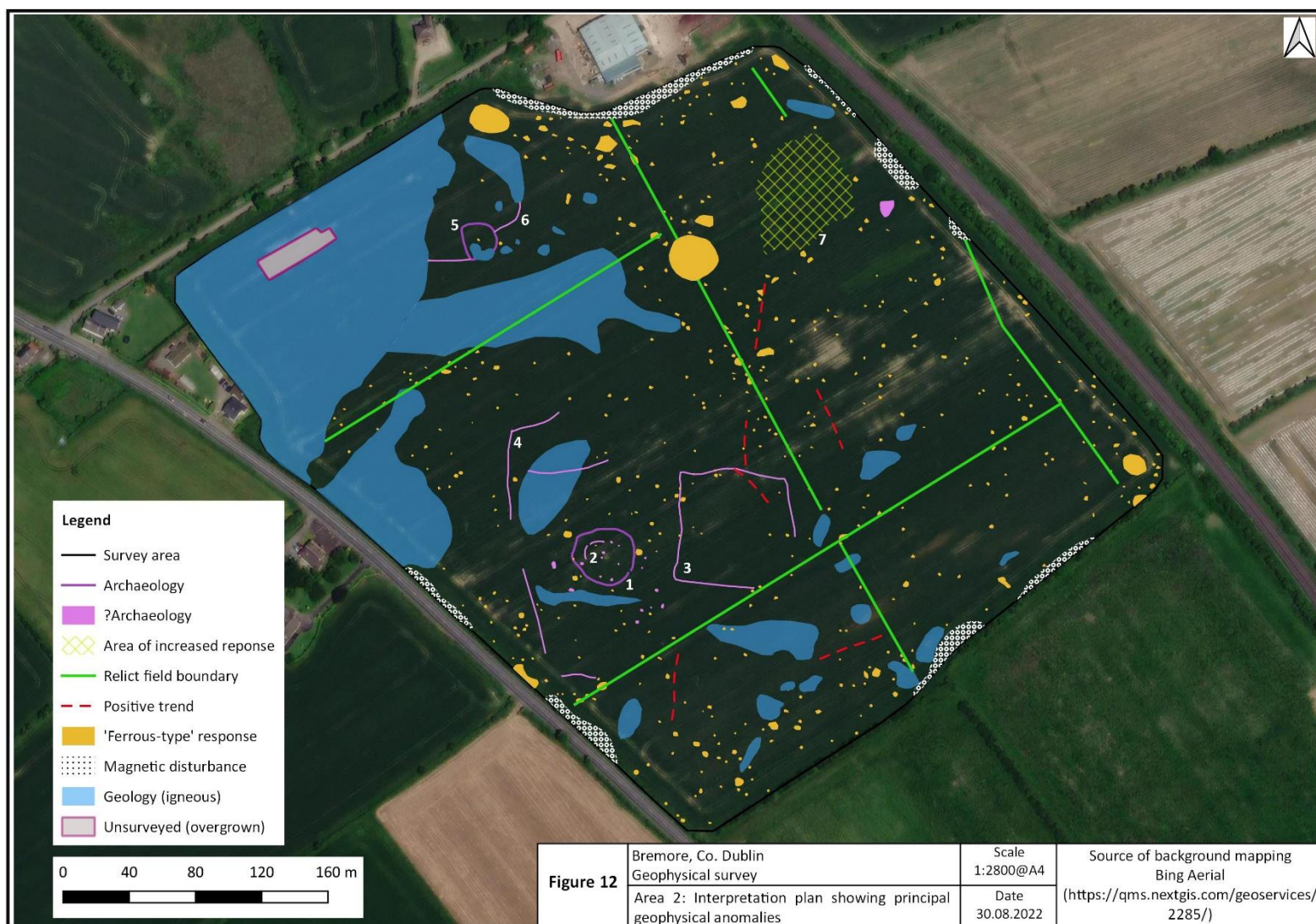


Figure 12 Area 2: interpretative plan showing principal geophysical anomalies.

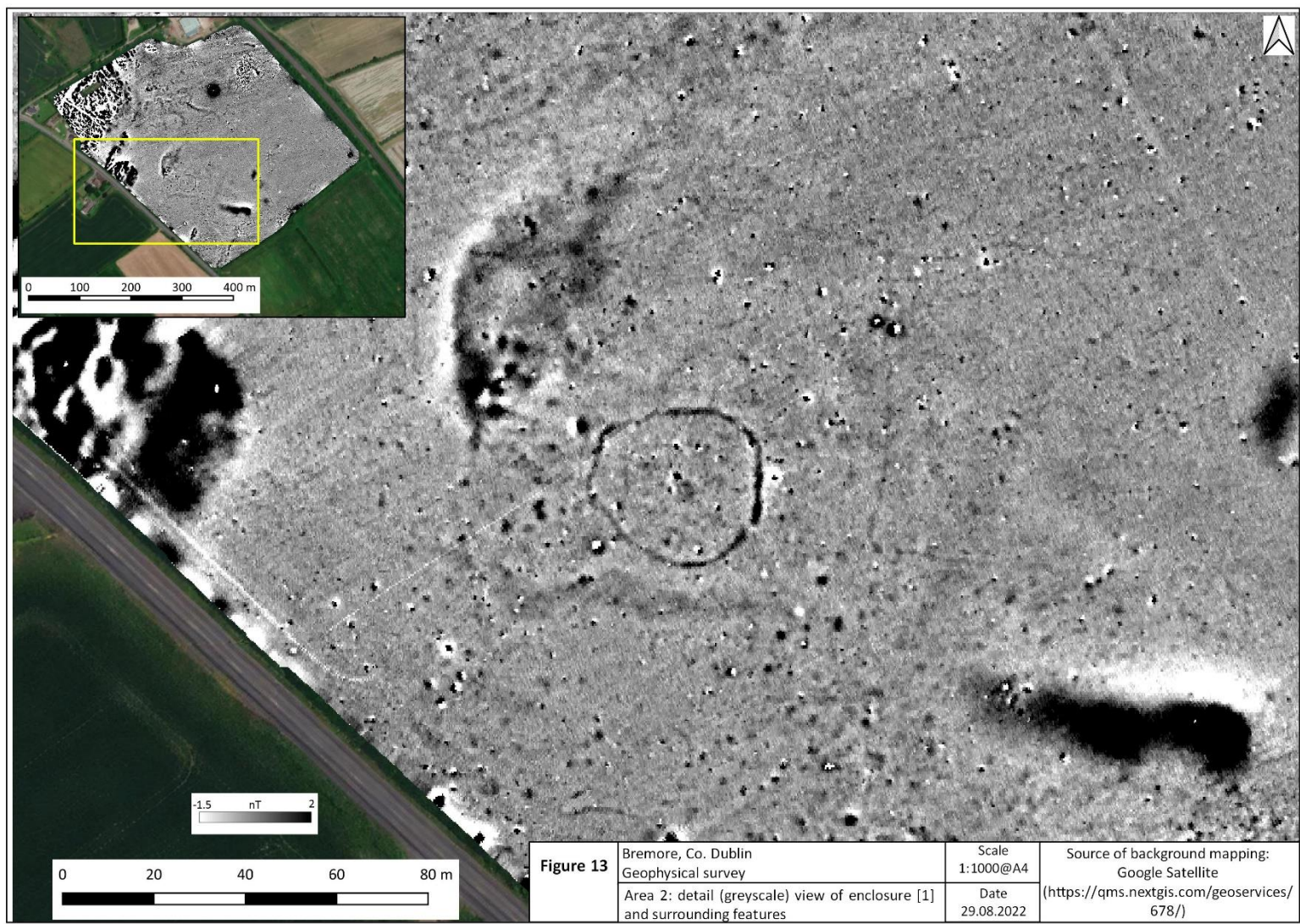


Figure 13. Area 2: detail (greyscale) view of enclosure [1] and surrounding features.

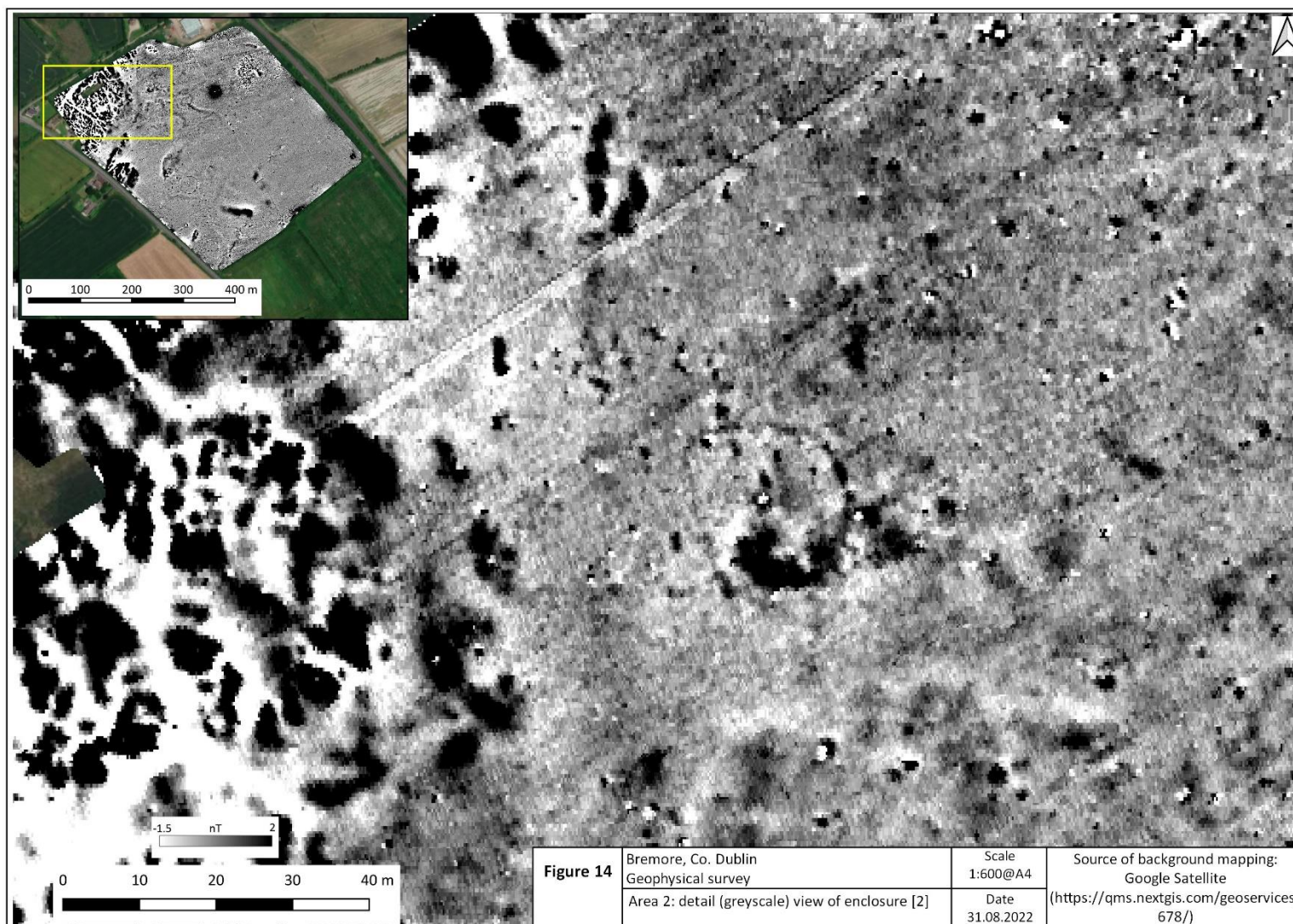


Figure 14. Area 2: detail (greyscale) view of enclosure [2].



Figure 15 Area 3: interpretative plan showing principal geophysical anomalies.



Figure 16 Area 3: detail (greyscale) view of features identified.

12 Plates



Plate 1. Looking east across the southern field of Area 1.



Plate 2. Area 2, from the west.



Plate 3. Southern field of Area 3, viewed from the west.



Plate 4. Northern field of Area 3 under crop, looking north.