Appendix 14.5 Geophysical Report











Foynes to Limerick Road Improvement Scheme, Co. Limerick

Volume 1: Text

Archaeological Geophysical Survey

Detection Licence No. 18R0122

Survey undertaken on behalf of Limerick City and County Council

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Table of Contents

1	Introduction	3
1.1	Brief Description of the Proposed Development	3
1.2	Aims of the Survey	3
1.3	Description of the Survey Area	3
1.4	Archaeological Background and Statutory Protections	6
1.5	Health and Safety requirements	7
2	Methodology	8
2.1	Magnetometer Survey	8
2.2	Resistivity Survey	9
2.3	Electrical Resistivity Tomography	9
2.4	Reporting, Mapping & Archiving	9
3	Results	10
3.1	Magnetometer Survey	10
3.2	Resistivity Survey	106
3.3	Electrical Resistivity Tomography Survey	144
4	Discussion	164
5	Conclusion	176
5.1	Summary of Results	176
5.2	Dissemination	177
6	Acknowledgements	177
7	Bibliography	178
8	Tables	179
9	Images	179
10	Plates	180
11	Figures	180



Summary of Results

Between the 18th June and 29th November 2018, geophysical surveys commissioned by Limerick City and County Council were conducted over pre-selected sites along the proposed Foynes to Limerick Road Improvement Scheme, County Limerick. A total of 105.6 hectares across 44 sites were surveyed using magnetometer surveys at a sample resolution of 0.5m x 0.25m and a total of 22.7 hectares across 23 sites were targeted by resistivity surveys at a sample resolution of 0.5m x 0.25m. In addition, three sites containing topographical features and geophysical anomalies were targeted by a total of seven electrical resistivity tomography profiles, equating to 528m in length at a 1m probe separation.

The surveys have identified geophysical anomalies of possible archaeological origin within the specified survey areas. These have been accurately located and their provenance has been described in tabular and map form.

Circular or sub-circular anomalies of possible archaeological origin are prevalent across most of the survey areas as well as possible pit features. Irregular and curvilinear responses were also common and are likely to be associated with agricultural or archaeological processes. The presence of strong cultivation furrows across much of the survey areas indicates that the landscape has been subjected to intensive agriculture.

The most significant archaeological features identified are:

- M4/ER15 Possible area of habitation
- M5 / ER16—Two enclosures, one of which is bivallate and contains internal features
- M6 / ER4– Possible habitation remains
- M16 Enclosure associated with possible building remains
- M19 Outer bank and possible ditch surrounding ringfort LI019-064
- M20 Enclosure with associated internal features and later habitation remains
- M21 / ER17 Ditched enclosure and possible habitation remains
- ER18 Bank and internal features associated with enclosure LI020-005
- M26 / ER19 Possible habitation remains
- M27 Possible double banked enclosure with internal possible pits
- M33 / ER10 / ER12 Ditched enclosure and a probable archaeological banked feature
- M36 / ER22 / ERT1 Banked enclosure with internal divisions and possible habitation remains
- M38 / ER13 / ERT2

 Mound containing and surrounded by a possible ditch and pits
- M39 / ER14 / ERT3- Probable moated site with internal divisions and possible internal structures
- M43 Probable enclosure with internal pits
- M43 Remains of enclosures (LI021-011001 & LI021-011002) showing external banks and internal pits
- M44 Remains of two probable enclosures, one revealing the true location of enclosure LI021-147002. Both have internal divisions and pits.

Statement of Indemnity

A geophysical survey is a scientific procedure that produces observations of results which are influenced by specific variables. The results and subsequent interpretation of the geophysical survey presented here should not be treated as an absolute representation of the underlying archaeological features, but as a hypothesis that must be proved or disproved. Direct investigations are recommended to confirm the findings of this report. Verification can only be provided via intrusive means, such as Test Trench excavations.

1 Introduction

1.1 Brief Description of the Proposed Development

Earthsound Geophysics Ltd. were commissioned by Limerick City and County Council to carry out geophysical surveys along pre-selected areas of the proposed Foynes to Limerick Road Improvement Scheme, County Limerick.

The scheme is being progressed by Limerick City and County Council in consultation with Transport Infrastructure Ireland (TII) and will comprise the construction of approximately 34 kms of new road linking Foynes Port to the motorway network. The preferred route corridor for the scheme was published in December 2015. A provisional 80m-wide corridor and provisional junction layouts were identified in June 2017. A design update was issued in May 2018 showing the proposed mainline, side road realignments and junction layouts, and indicative landtake line.

The geophysical surveys were being undertaken at locations of archaeological monuments listed on the Sites and Monuments Record and potential archaeological monuments identified by the Route Selection Study and subsequent archaeological assessment of LiDAR data that are within or in close proximity to the route corridor.

1.2 Aims of the Survey

Limerick City and County Council required an archaeological geophysical survey of targeted portions of the route of the proposed Foynes to Limerick Road Improvement Scheme. The survey was carried out in accordance with the brief prepared by the TII Archaeology section supplied by Limerick City and County Council, using a combination of Magnetic Gradiometer, Resistivity and Electrical Resistivity Tomography surveys. The aims of the Stage (i) i Geophysical Survey Services were to:

- identify any geophysical anomalies of possible archaeological origin within the specified survey areas.
- accurately locate these anomalies and present the findings in map form.
- describe the anomalies and discuss their likely provenance in a written report.
- incorporate all of the above in a report to Limerick City and County Council.

1.3 Description of the Survey Area

A total of 44 discrete areas were surveyed along the route of the proposed Foynes to Limerick Road Improvement Scheme. The route extends from just south of Foynes village, eastwards to Ballycullen before turning SSE to Rathkeale. From Rathkeale, it runs ENE, passing to the north of Croagh and Adare before tying in with the existing N21 at Attyflin junction.

The survey areas are listed in Table 1 below, which is based on Tables 1.1 & 1.2 Stage (i)i Geophysical Survey Services from the services requirements of the contract (Limerick City and County Council 2018) and has been amended to include all areas surveyed in phase II of the project.

Survey	Survey	Townland	SMR ref.	Route	LiDAR site	Description	Area (ha)
area	Phase			Selection ref.	ref.		
M1	I	Corgrig	N/a	N/a	1.2	Possible enclosure	0.42
ER1	I	Corgrig	N/a	N/a	1.2	Possible enclosure	0.41
M2 *	-	Ardaneer	N/a	CH 4	5.4	Field system	-
ER2*	-	Ardaneer	N/a	CH 4	5.4	Field system	-
M3	I	Sroolane North	N/a	N/a	6.2	Possible ringfort	0.52
ER3	I	Sroolane North	N/a	N/a	6.2	Possible ringfort	0.45

Survey area	Phase	Townland	SMR ref.	Route Selection ref.	LiDAR site ref.	Description	Area (ha)
M4	I	Robertstown	N/a	CH 5	N/a	Field system	1.18
ER15	II	Robertstown	N/a	CH 5	N/a	Field system	0.947
M5	I & II	Robertstown	N/a	N/a	14.3, 14.4	Two possible enclosures	3.07
ER16	II	Robertstown	N/a	N/a	14.3, 14.4	Two possible enclosures	0.426
M6	I	Robertstown	N/a	CH 43	15.2–15.4	Field system, two possible enclosures	2.34
ER4	I	Robertstown	N/a	CH 43	15.2–15.4 Field system, two possible enclosure		1.13
M7	I & II	Rincullia	LI010-074	AH 8	N/a	Enclosure	0.7
ER5	I	Rincullia	LI010-074	AH 8	N/a	Enclosure	0.62
M8	I & II	Rincullia	N/a	CH 6, CH 7	16.1, 16.3	Possible enclosure and field system	0.69
M9 *	-	Craggs	LI010-081	AH 9	N/a	Ringfort	-
M10	I	Mulderricksfield	N/a	CH 9	17.4	Possible rectangular enclosure	0.47
M11	I	Mulderricksfield, Craggs	LI010-090	N/a	17.5–17.8	Modified terrace and field system associated with LI10-090	1.47
M12*	-	Ballyclogh	N/a	N/a	18.2	Possible enclosure	-
M13* M14*	-	Ballyclogh Ballyclogh	N/a N/a	N/a N/a	18.2 18.3, 18.5	Possible enclosure Possible enclosure and field system	-
M15*	1-	Ballyclogh	N/a	CH 13	19.4	Possible enclosure	_
ER6*	1-	Ballyclogh	N/a	CH 13	19.4	Possible enclosure	_
M16	Ī	Ballycullen	N/a	CH 14	11.1	Possible enclosure	0.63
ER7	I	Ballycullen	N/a	CH 14	11.1	Possible enclosure	0.64
M17	I	Ballycullen	N/a	N/a	11.2	Possible ringfort	1.26
M18	I	Cloonreask	N/a	N/a	12.2	Possible settlement cluster	1.48
M18a	II	Cloonreask	N/a	N/a	N/a	N/a	3.584
M19	I & II	Lismakeery	LI019-064	N/a	N/a	Ringfort	0.75
ER8	I	Lismakeery	LI019-064	N/a	N/a	Ringfort	0.5
M20	I	Ballynacaheragh	LI020-002	AH 84	N/a	Enclosure	1.5
M21	I & II	Ballynacaheragh	N/a	N/a	26.1, 26.2, 26.5	Possible enclosure, ringfort and field system	1.4
ER17	II	Ballynacaheragh	N/a	N/a	26.1, 26.2, 26.5	Possible enclosure, ringfort and field system	1.157
M22	I	Ballynacaheragh	LI020-005	AH 87	N/a	Enclosure	1.39
ER18	II	Ballynacaheragh / Milltown North	LI020-005	AH 87	N/a	Enclosure	0.638
M22a	II	Boolaglass	N/a	N/a	35.3	Mound	2.02
M23	I	Feeagh	N/a	AAP 43	N/a	Wetland	1.36
M23a	II	Ardgoul South	N/a	N/a	N/a	N/a	2.89
M24	I	Graigeen	N/a	DL 12	53.2	Field system	1.82
M25	I	Ballingarrane	N/a	N/a	57.2	Possible enclosure	0.69
M26	I	Kyletaun	N/a	AAP 55	N/a	Wetland	3.95
ER19	II	Kyletaun	N/a	AAP 55	N/a	Wetland	2.912
M27 M28	I & II	Kyletaun Wolfesburgess East, Blossomhill	N/a N/a	AAP 55 N/a	N/a N/a	Wetland Wetland	3.03 1.98
M29	I	Wolfesburgess East, Blossomhill	N/a	N/a	N/a	Wetland	0.49
M30	I	Blossomhill	N/a	N/a	65.2	Possible platform	0.28
ER9	I	Blossomhill	N/a	N/a	65.2	Possible platform	0.26
M31	I & II	Clogh West	N/a	N/a	66.4	Possible enclosure	0.54
ER25	II	Clogh West	N/a	N/a	66.4	Possible enclosure	0.69
M32	I & II	Ballycannon	N/a	N/a	N/a	Area of potential north of Croagh Village	2.21
ER20	II	Ballycannon	N/a	N/a	N/a	Area of potential north of Croagh Village	1.6
M33	I	Croagh	N/a	CH 127	61.2–61.4	Possible settlement cluster and two enclosures	10.25
		Croagh	N/a	N/a	61.3	Possible enclosure	•

Survey area	Phase	Townland	SMR ref.	Route Selection ref.	LiDAR site ref.	Description	Area (ha)
ER11	I	Croagh	N/a	N/a	61.2	Possible Settlement Cluster	1
ER12	I	Croagh	N/a	N/a	61.4	Possible enclosure	0.55
M34	I	Graigue (ED Croagh)	LI020-159	AH 119	N/a	Hall house - Clonshire Castle	3.79
ER21	II	Graigue (ED Croagh)	LI020-159	AH 119	N/a	Hall house - Clonshire Castle	2.08
M35	I	Graigue (ED Croagh), Clonshire More	LI020-159	AH 119	N/a	Hall house - Clonshire Castle	1.72
M36	I	Gortnagrour	N/a	N/a	55.1	Possible enclosure	2.04
ER22	II	Gortnagrour	N/a	N/a	55.1	Possible enclosure	1.331
ERT1	II	Gortnagrour	N/a	N/a	55.1	Possible enclosure	160 m
M37	I	Tuogh	LI021-005	AH 109	N/a	Ringfort	0.5
M38	I	Tuogh	N/a	N/a	49.3, 49.4	Possible ringfort, field system and mound	2.4
ER13	I	Tuogh	N/a	N/a	49.3, 49.4	Possible ringfort, field system and mound	2.19
ERT2	II	Tuogh	N/a	N/a	49.4	Possible mound	192 m
M38a	II	Kilknockan	N/a	N/a	N/a	N/a	3.7
M39	I & II	Kilknockan	N/a	N/a	38.1, 38.2	Possible enclosure and moated site	1.39
ER14	I	Kilknockan	N/a	N/a	38.1, 38.2	Possible enclosure and moated site	1.27
ERT3	II	Kilknockan	N/a	N/a	38.2	Possible moated site	176 m
M40	I	Islandea	N/a	N/a	39.1	Possible settlement plots	0.45
M41	I & II	Ardshanbally	LI021-010, LI021-149	AH 57, AH 58	N/a	Enclosures (x2)	0.43
M42	I	Ardshanbally, Mondellihy	LI021-144	AH 61	N/a	Enclosure	2.35
M43	I & II	Mondellihy	LI021- 011001/002	AH 62	N/a	Conjoined enclosures	0.75
M44	I & II	Kilgobbin	LI021-146, LI021- 147001/002	AH 64, AH 65	N/a	Enclosures (x3)	2.42
M45	II	Durnish	N/a	N/a	1.5	Possible enclosure	0.43
ER23	II	Durnish	N/a	N/a	1.5	Possible enclosure	0.43
M46	II	Durnish	N/a	N/a	2.1	Possible enclosure	0.64
ER24	II	Durnish	N/a	N/a	2.1	Possible enclosure	0.66

Table 1: Geophysical Survey Areas. (*Sites M2 and ER2 were not surveyed due to overgrown vegetation and access issues; M9 could not be surveyed due to heavily overgrown vegetation and uneven ground; M12, M13, M14, M15 and ER6 could not be surveyed as access was not granted.)

The topography of the road improvement scheme is generally flat-lying undulating lowlands with elevations from 0-70m OD. The majority of the survey areas were undertaken on pasture agricultural land, with areas of wetland found at M23, M27 and M29. A description of each survey area can be found within section 3.

The climatic conditions were mostly warm, dry and sunny with some mixed periods of heavy rain and overcast weather towards the end of the survey. The weather is unlikely to have had an impact on the Magnetometer or EMI resistivity surveys.

The survey areas are located across a wide landscape with varying bedrock geology – the majority of these were comprised of different forms of limestone and mudstone: including Ballysteen formation, Waulsortian Limestone formation, Rathkeale formation, Durnish formation and Visean Limestone (undifferentiated). These are overlain by a number of soils – predominately alluvium and tills, with areas of outcropping bedrock present. Several areas of peat and lake sediments are also found along the survey area which must be regarded as area of high archaeological potential.

The use of magnetometer surveys on a predominately limestone geology can produce signatures of weak contrast between ditches and the background soils, this is mitigated by the use of resistance surveys.

1.4 Archaeological Background and Statutory Protections

Sixteen recorded monuments exist within the proposed scheme and its environs. These are:

Monument	Townland	Description taken from www.archaeology.ie
Enclosure (LI010-074)	Rincullia	Roughly square area (23.5m N-S) enclosed by collapsed stone and earth wall (int. H 0.8m; ext. H 1m) incorporated into surrounding field-boundary system on eastern and southern sides.
Ringfort (LI010-081)	Craggs	Site, marked as circular enclosure (diam. c. 25m) on 1923 OS 6" map
Ringfort (LI010-090)	Mulderricksfield	Monument, depicted as circular enclosure (diam. c. 20m) on 1923 OS 6" map, has been partially levelled
Ringfort (LI019-064)	Lismakeery	Oval area (34.9m N-S; 26.6m E-W) defined by scarped edge (H 2.6m; Wth 3.2m) which grades to earthen bank (int. H 0.75m) SW->W and N->ENE
Enclosure (LI020-002)	Ballynacaheragh	No description supplied
Enclosure (LI020-005)	Ballynacaheragh	In pasture, on western bank of Deel River. Monument, depicted on 1923 OS 6" map as D-shaped enclosure with river bank forming straight eastern side (c. 25m N-S; c. 30m E-W), is no longer evident. This area now covered by dump of material dredged from river (H 2.75m; Wth 10m; L c. 30m) by OPW
Hall House (LI020-159)	Clonshire More	This consists of a four-storeyed rectangular keep with a five floored stair turret to the west and a three floored pointed opening to the stair turret in the west wall. There is also a spiral stair case in the south west angle of the room which originally led to the first floor but this is blocked with collapsed masonry
Ringfort (LI021-005)	Tuogh	In gently undulating pasture, atop slight rise. Monument, depicted as circular enclosure (diam. c. 30m) on 1841 OS 6" map, now survives as wedge-shaped area (34m N-S; 23m E-W) enclosed NE->SW by arc of curving earthen bank (int. H 0.5m; ext. H 0.45m), and is defined on western and northern sides by dry-stone field walls which meet at the northwest.
Enclosure (LI021-010)	Ardshanbally	No description available
Enclosure (LI021-149)	Ardshanbally	No description available
Enclosure (LI021-144)	Ardshanbally	No description available
Conjoined enclosures (LI021-011001/002)	Mondellihy	No description available
Enclosure (LI021-146)	Kilgobbin	No description available
Enclosure LI021-147001	Kilgobbin	No description available
Enclosure LI021-147002	Kilgobbin	No description available
Enclosure LI029-147	Blossomhill	No description available

Table 2: Recorded Monuments listed in the Sites and Monuments Record (SMR) that are within or in close proximity to the proposed scheme

No other archaeological remains are known within the survey areas, although a number of potential archaeological sites have been identified through the Route Selection Study, including 76 sites of possible cultural heritage significance. These generally consist of levelled vernacular buildings, lime kilns and railway infrastructure which are not subject to statutory protection. There are also 11 demesne landscapes in the immediate environs of the proposed scheme.

In addition, 140 potential archaeological monuments were identified through LiDAR data analysis. This LiDAR was commissioned for a 1 km-wide corridor centred on the proposed route centreline identified and led to the potential identification of predominantly enclosures, ringforts and relict field systems. Land containing or adjacent to thirty-six of the LiDAR sites were targeted with geophysical surveys as they are likely to be directly impacted by the proposed development (see Table 1). A total of 44 areas were surveyed using magnetometer surveys, 23 using resistivity surveys and 3 using electrical resistivity tomography surveys.

The National Monuments Acts (1930-2014) prohibit the unauthorised use of detecting devices on archaeological sites as well as unauthorised searches for archaeological objects using such devices. All elements of the survey were carried out in accordance with a written method statement and an application for a detection licence from the Department of Culture, Heritage and the Gaeltacht to carry out the work. A Detection Licence 18R0122 was issued to Heather Gimson for the work undertaken.

1.5 Health and Safety requirements

A health and safety statement was submitted to Limerick City and County Council prior to the commencement of work.

For every site surveyed, risk assessments were carried out, hazards identified and control measures implemented if and where needed.

2 Methodology

The fieldwork was carried out between the 18th June and 29th November 2018 by C. Hogan, U. Garner and M. Wait of Earthsound Geophysics Ltd.. Surveys were undertaken in two phases of fieldwork, upon completion of Phase I and examination of the results it was agreed with the client that a number of additional Phase II surveys were to be undertaken. Phase II also included a number of electrical resistivity tomography survey lines targeting three sites which were of particular interest due to both topographical and geophysical anomalies. These include a possible enclosure at Gortnagrour (ERT1), a possible mound at Tuogh (ERT2) and a possible moated site at Kilknockan (ERT3).

A Magnetometer survey was carried out using a LEA MAX Förster gradiometer system at a special resolution of 0.5m x 0.25m. Surveys were conducted at 44 locations and covered a total area of 105.6 hectares.

Apparent Electrical Resistivity data was collected using a GF Instruments CMD Mini-Explorer at a data acquisition resolution of 0.5m x 0.2s which was then gridded at 0.5m x 0.25m, exceeding the specified special resolution of 0.5m x 1m. Surveys were conducted at 23 locations and covered a total area of 22.7 hectares.

Electrical Resistivity Tomography was collected using an ABEM Terrameter LS 2 at 1m probe separation. A total of 528m of survey were undertaken at three locations (Gortnagrour, Tuogh and Kilknockan).

The Magnetometer surveys and Electromagnetic surveys were undertaken gridlessly with each data point logged using a Trimble RTK GPS VRS Now system. The Electrical Resistivity Tomography surveys were laid out in linear lines, with each probe located using a Trimble RTK GPS VRS Now system.

The surveys were slightly constrained by the presence of geological outcrops, land access issues, uneven and overgrown vegetation. These have been listed within the site description sections on part 3 (below).

No known errors occurred within any of the data collected and all surveys were undertaken using the same methodology and survey parameters.

2.1 Magnetometer Survey

Instrument	Eastern Atlas LEA MAX ¹⁵⁰⁵ System
Components	LEA D2, 10-channel digitiser
Data Acquisition	0.5m x 0.25m
Resolution	
Sensors	8 x Förster FEREX® 4.032 CON650 fluxgate gradiometers
Platform	LEA MAX ¹⁵⁰⁵ System cart
Data Acquisition Method	Gridless, using a Trimble RTK GPS VRS Now system to an accuracy
	of 5cm
Sensitivity	<0.1 nT
Data Logger	Panasonic Toughbook CF-H2 Field computer
Calibration	According to manufacturers guidelines (Pilz & Goossens 2015)
Data Processing	Ealdec: Profile decoding
	Ealmat.m: Normalisation, drift correction
	Surfer 8: Data Gridding (0.5m x 0.25m), using the Kriging Gridding
	Method
Graphical Display	Greyscale -2nT (white) to 2nT (black)

2.2 Resistivity Survey

EMI Measurement	Apparent Electrical Resistivity (ER _a)
Instrument	GF Instruments CMD-MiniExplorer (Bonsall et al. 2013)
Data Acquisition	0.5m x 0.2s
Resolution	
Coil Configuration	Vertical Coplanar Coil configuration (VPC) or 'half-depth',
	effective depth range: 0.25m, 0.5m, 0.9m
Platform	SparrowHawk-1000 cart system, sensor positioned 10cm above
	the ground
Data Acquisition Method	Continuous mode, Gridless, using a Trimble RTK GPS VRS Now
	system to an accuracy of 5cm
Measuring Range	ER _a : 1000mS/m, resolution 0.1mS/m
Data Logger	CMD Control Unit
Calibration	According to manufacturers guidelines (GF Instruments 2010)
Data Processing	CMD Data Transfer: conversion to Apparent Electrical Resistivity
	(ER _a) from Apparent Electrical Conductivity (Quadrature)
	Process-it: Drift correction using a moving filter, Despike, Low
	Pass Gaussian Filter, Interpolation
Graphical Display	Greyscale ±2 Standard Deviation mS/m (white) to (black)

2.3 Electrical Resistivity Tomography

Instrument	ABEM Terrameter LS 2 (ABEM 2016)
Data Acquisition Resolution	1m probe separation
Data Acquisition	Electrical Resistivity Tomography
Array	Dipole Dipole
Processing	ABEM Terrameter LS, RES2DINV, 2D Inverted Model
Display	RES2DINV
Units	Ohms
Vertical Exaggeration	2x

2.4 Reporting, Mapping & Archiving

The geophysical survey and report follow the recommendations outlined by relevant best practice guidance documents as a minimum standard (Bonsall *et al.* 2014; David *et al.* 2008; Gaffney *et al.* 2002, Schmidt *et al.* 2015).

Ordnance Survey of Ireland mapping, Orthographic photos and LiDAR DSM and DTM data were supplied by Limerick City and County Council.

Geophysical data, the figures presented here and the text have been archived following the recommendations of the Archaeology Data Service (Schmidt & Ernenwein 2011). See Appendix 2.



3 Results

The geophysical surveys conducted for this road scheme comprise a total of 105.6 hectares of magnetometer surveys, 22.7 hectares of resistivity surveys and 528 metres of electrical resistivity tomography surveys. Significant archaeological features have been identified at 16 of the 44 individual areas investigated by magnetometer surveys and at eleven of the 23 areas investigated by resistivity surveys. All of the three sites investigated by electrical resistivity tomography have been shown to be of archaeological significance.

The interpretation figures should not be looked at in isolation but in conjunction with the relevant discussion section and with the information contained in the Appendices. Features are highlighted in the interpretation diagrams (contained within Volume 2) and are described and interpreted within the text.

3.1 Magnetometer Survey

Surve	y Area ID:	M1							Townland: Corgrig		
Central	ITM Coordinate:	525924,651154							OD height of Survey Area 1.5 m OD		
Survey \	Weather Conditions:	Warm and dry Survey Date and Area (Ha): 17/07/18 0.42 Ha									
Heritage	e Constraint Ref:	LiDAR Site 1.2 – Possible E	nclo	sure							
Site Des	cription:								on the ground. The land slopes down slightly towards a water course uneven slope down towards the southwestern edge of the survey area, and		
Figure N	No.:	6 & 7									
Significa	ant Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	Possible Source(s) of Anomaly				of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M1-1	Isolated magnetic response	525916.989,651178.485			✓		✓		Possible pit (diam. 1.3m).	✓	
	Multiple magnetic linear trends	Throughout the survey area			✓		✓		Could be associated with geological, archaeological or agricultural activity.	✓	



Survey Area ID:	M2	Townland:	Ardaneer						
Central ITM Coordinate:	526552, 650326	5552, 650326							
Heritage Constraint Ref:	Route Selection Site CH 4 / LiDAR Site 5.4 – Field System								
Site Description:	Site was not surveyed due to its overgrown nature and access	ss issues.							

Surve	y Area ID:	M3							Townland: Sroolane North	th	
Central	ITM Coordinate:	526687, 649998							OD height of Survey Area 4.84 m OD		
Survey	Weather Conditions:	Warm and sunny							Survey Date and Area (Ha): 13/07/18 0.52 Ha		
Heritag	e Constraint Ref:	LiDAR Site 6.2 – Possible	Ringf	ort							
Site Des	scription:	Gently sloping pasture field	cont	ainin	ng sh	ort g	rass	,			
Figure 1	No.:	8 & 9									
Signific	ant Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor		` '	of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M3-1	Strong magnetic linear anomaly	526669.998,649996.172	✓		✓				Possible ditch (c.5m wide and 72m long) running through the survey area in N-S direction within band of magnetic enhancement anomaly M3-2. Corresponds roughly with a former field boundary on the historic 6" OS map (1829-41).	√	
M3-2	Wide band of magnetic enhancement	Multiple locations			✓		✓		A band of magnetic enhancement (c. 23m wide and 72m long) running in N-S direction and likely to be related to M3-1 a former field boundary.	✓	
M3-3	Four irregular areas of magnetic enhancement	526698.261,650033.869 526707.840,650013.924 526699.060,650004.084 526692.408,649972.438			✓		√		Could be associated with geological, archaeological or agricultural activity.	√	
M3-4	Weakly magnetic linear	526697.483,650023.850	✓		✓		✓		Possible ditch running in NW-SE direction (47m in length) which could be archaeological or agricultural in origin.	✓	
M3-5	Two parallel weakly magnetic curvilinears	526716.343,650001.081 526714.289,650003.880	✓		✓		✓		Two possible parallel ditches running in NE-SW direction (20m and 30m in length) which could be archaeological or agricultural in origin.	✓	



Survey Area ID: M3		M3							Townland: Sroolane Nor	th	
Central	ITM Coordinate:	526687, 649998							OD height of Survey Area 4.84 m OD		
Survey	Weather Conditions:	Warm and sunny							Survey Date and Area (Ha): 13/07/18 0.52 Ha		
Heritag	e Constraint Ref:	LiDAR Site 6.2 – Possible R	ingf	ort							
Site Des	scription:	Gently sloping pasture field	cont	ainin	ıg sh	ort g	grass				
Figure 1	No.:	8 & 9									
Signific	ant Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ourc maly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Int		Test Excavation	Geophysical Survey
M3-6	T-shaped negatively magnetic anomaly	526703.458,650011.345			✓		✓		Compacted earth or stone feature measuring c. 25m E-W and 8m N-S. This anomaly could represent a former boundary.	√	
M3-7	Multiple isolated magnetic responses	Throughout centre of survey area 526685.719,650002.947			√		√		Possible pits of archaeological or agricultural origin.	✓	
M3-8	Weakly magnetic linear		✓		✓		✓		A possible ditch running in NW-SE direction and c. 58m in length.	✓	



Surve	ey Area ID:	M4							Townland: Robertstown		
Centra	l ITM Coordinate:	526951, 649621							OD height of Survey Area 6.44 m OD		
Survey	Weather Conditions:	Warm and sunny							Survey Date and Area (Ha): 19/06/18 1.18 Ha		
Heritag	ge Constraint Ref:	Route Selection Site CH 5 -	Field	d sys	stem						
Site De	scription:								he southern edge of the field. The northern corner of the original survey area	could not be	е
			e of a	1 fend	ced a	rea a	ınd l	ouilo	ling, the survey was therefore extended to the southeast.		
Figure		10 & 11									
	cant Features present:	No	,								
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon	ource naly	(s) c	f	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M4-1	Large irregular area of very strong magnetic enhancement	526938.408,649629.477			\			✓	This may be an area of demolition rubble or another form of dumping causing very strong magnetic responses. Contained within the enhancement are a number of strong magnetic linear, L-shaped and curvilinear features and one possible pit. These may relate to archaeology or be related to historic or modern dumping.	~	
M4-2	Magnetic curvilinear	526985.657,649629.477			✓		✓		Possible ditch of archaeological or agricultural origin (55m in length).	✓	
M4-3	Magnetic curvilinear	526984.832,649614.216	✓		\checkmark		✓		Possible archaeological ditch (41m in length).	✓	
M4-4	Multiple isolated magnetic responses	527003.664,649601.143 527009.123,649617.249			✓		✓		Two possible pits and one short possible ditch (c. 8 m in length) located between them.	✓	
M4-5	Strong magnetic linear	527024.764,649592.562			✓			✓	Corresponds to a section of a former field boundary visible on historic OS maps (1829-41 6"; 1897-1913 25"; c.1900 Cassini).	✓	
M4-6	Two short linear magnetic anomalies	527041.909,649583.082 527057.049,649579.071	✓		✓		✓		Two possible archaeological or agricultural ditches, (c. 9m and 11m in length).	✓	
	Weak magnetic linear trend	526980.540,649609.536			✓		✓		Possible ditch or geology.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows.	✓	
	Areas of strong magnetic responses	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey	Area ID:	M5							Townland: Robertstown		
Central I	TM Coordinate:	527267, 649486							OD height of Survey Area 14.6 m OD		
Survey V	Veather Conditions:	Raining (18/06/18) & hot ar	nd su	nny ((02/0	7/18	3)		Survey Date and Area (Ha): 18/06/18, 02/07/18 & 04	4/10/18 3.52	2 Ha
Heritage	Constraint Ref:	LiDAR Site – 14.3, 14.4 – 7						s	· , , , , , , , , , , , , , , , , , , ,		
Site Desc	ription:	Flat pasture fields containing							vergrown vegetation. The eastern section rising towards southeast with some	bedrock out	tcrop
Eigung N	^ •	present. 10 & 11									
Figure No	o.: nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	D	ossib	la Sc	urce	(c) (of.	Comment	Recomme	ndation
NO.	Form of Anomary	TTM (E,N)	F		Anor			Л	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M5-1	Positively magnetic linear anomaly	527140.929, 649559.278	✓		✓				Possible ditch (35m long) running along the northern field boundary.	✓	
M5-2	Two interconnecting negatively magnetic linears	527130.871,649531.182		√					Two interconnecting possible walls, banks or compacted earth features which cross at a perpendicular angle. One is running in an N-S direction (c. 45m in length), the other runs roughly W-E (c. 42m in length) and may be continuing beyond the field boundary to the east where it appears to connect with an enclosure.	√	
M5-3	One linear and two L-shaped positively magnetic anomalies	527128.292,649529.378 527134.997,649534.275 527123.134,649536.595	√		√				Three possible ditches running alongside M5-2 and probably associated.	√	
M5-4	Isolated magnetic response	527141.505,649539.062			✓		✓		Possible pit of archaeological or agricultural origin.	✓	
M5-5	Two weakly magnetic curvilinears	527137.474,649504.568 527152.589,649511.869	✓		✓				Two curving possible ditched features. These anomalies may form a 17m x 12m feature.	✓	
M5-6	Three isolated magnetic responses	527142.261,649508.093 527144.024,649510.107 527149.314,649510.107			√				Possible pits which may be related to M5-5.	√	
M5-7	Curvilinear magnetic anomaly	527133.696,649496.762	√		√				Possible curvilinear ditch forming a semi-circle (c. 21m in diameter) which may be archaeological or geological in origin.	✓	



Survey	Area ID:	M5							Townland: Robertstown		
Central	ITM Coordinate:	527267, 649486							OD height of Survey Area 14.6 m OD		
Survey V	Weather Conditions:	Raining (18/06/18) & hot ar	nd sui	nnv (02/0	7/18)		Survey Date and Area (Ha): 18/06/18, 02/07/18 & 04	4/10/18 3.52	На
	Constraint Ref:	LiDAR Site – 14.3, 14.4 – 7						s	[201.0] = 11.0 11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	., - 0, - 0 0 10 -	
Site Desc	ription:								vergrown vegetation. The eastern section rising towards southeast with some	bedrock out	crop
		present.	0								•
Figure N	o.:	10 & 11									
Significa	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A	le So Anon		e(s) c	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M5-8	Curvilinear magnetic anomaly	527172.921,649556.731	✓		✓				Curvilinear ditch which may be agricultural in origin or associated with the adjacent enclosure M5-9	√	
M5-9	Circular highly magnetic anomalies	527212.039,649547.180	√	✓					Circular enclosure ditch measuring c. 40m E-W and 36m N-S, with a possible entrance gap at eastern side (c. 3.7m wide). The northern edge of this entrance seems to contain a large post pit, while the southern may also terminate in a pit. The survey has indicated that a parallel external ditch surrounds the enclosure making it bivallate. This external ditch was not detected totally surrounding the monument. In places it may have been impacted by later boundaries or exist as a series of larger pits. This enclosure corresponds to that identified in the LiDAR data (site 14.3). The enclosure ditches are visibly straight on the southern edge. This is likely to be a product of a later field boundary M5-2	✓	
M5-10	Circular negatively magnetic anomaly	527214.421,649526.399		✓					This is located between the parallel ditches of enclosure M5-9. The negative signature indicates a bank, compacted earth or stone feature separating the enclosure ditches. The bank contains the same possible entranceway as M5-9 and is clearly identifiable on the southern and eastern portions, while a suggestion of it extending to the north can be seen in the data. On the northern edge of M5-10 there is a northern spur of negative anomalies which indicate that the bank may once have extended to the north or been linked with a later boundary feature.	✓	



Survey	Area ID:	M5							Townland: Robertstown		
Central I	TM Coordinate:	527267, 649486							OD height of Survey Area 14.6 m OD		
Survey V	Veather Conditions:	Raining (18/06/18) & hot and	d sui	nny (02/0	7/18	3)		Survey Date and Area (Ha): 18/06/18, 02/07/18 & 0	4/10/18 3.52	На
Heritage	Constraint Ref:	LiDAR Site – 14.3, 14.4 – T	wo p	ossi	ble e	enclo	sure	s	<u> </u>		
Site Desc	ription:								ergrown vegetation. The eastern section rising towards southeast with some	bedrock out	crop
Figure N	o.:	10 & 11									
Significa	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib. A		ource naly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M5-11	Multiple isolated and curvilinear magnetic responses	527194.712,649542.827 Multiple locations within M5-9		✓	✓				Contained within enclosure M5-9, these pits, postholes and slot trenches represent occupational activity within the fort. The number of slot trenches detected could indicate internal divisions and structural remains.	√	
M5-12	Multiple large magnetic anomalies	527220.942,649547.72			✓				Located on the external edge of the enclosure adjacent to the entranceway these large pits may be associated with defence.	✓	
M5-13	Multiple isolated magnetic responses	527220.158,649530.869 Multiple locations immediately surrounding M5-9/10		√	√				A number of possible pits and postholes which are contained on the external edge of enclosure M5-9/10. Four large possible pits are located near the eastern entrance, measuring c. 2-4.5m in diameter.	√	
M5-14	A linear and curvilinear weak magnetic anomaly	527225.908,649555.624	✓		√		✓		Two interconnecting possible ditches of archaeological or agricultural origin, A possible ditch (oriented SW-NE, c. 18m long) appears to abut enclosure M5-9. It is crossed by a curvilinear possible ditch (c. 25m in length) which runs in N-S direction and curves towards west at the northern end.	✓	
M5-15	Curvilinear magnetic anomaly	527179.488,649502.284			✓				A possible arcing ditch (c. 20m diameter) located approximately 5m southwest of the enclosure M5-9/10. This anomaly may be related to archaeological processes or the adjacent agricultural boundaries	√	
M5-16	Highly magnetic linear	527192.779,649491.384	✓	✓					Probable agricultural ditch which once connected enclosures M5-9/10 and M5-17.	✓	



Survey	Area ID:	M5							Townland: Robertstown	Robertstown		
Central l	TM Coordinate:	527267, 649486							OD height of Survey Area 14.6 m OD			
Survey V	Veather Conditions:	Raining (18/06/18) & hot as	ıd su	nnv (02/0	7/18	3)		Survey Date and Area (Ha): 18/06/18, 02/07/18 & 04	4/10/18 3.52	На	
Heritage	Constraint Ref:	LiDAR Site – 14.3, 14.4 – 7						s				
Site Desc	ription:								rergrown vegetation. The eastern section rising towards southeast with some	bedrock outo	crop	
	•	present.						•			•	
Figure N	0.:	10 & 11										
Significa	nt Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Po	ossib 1		ource naly		of	Comment	Recommen	ndation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey	
M5-17	Semi-circular strong magnetic feature	527185.963,649460.899	√	√					Segment of an enclosure ditch (41.5m diameter E-W). Likely related to M5-18 and M5-19. This enclosure appears to run into the field boundary to the south and is partially disturbed or obscured by a large area of modern disturbance. This anomaly corresponds to one of the two enclosures identified in the LiDAR data (site 14.4).	√		
M5-18	Three strong magnetic anomalies	527184.929,649455.562		√				✓	Possible pits contained inside enclosure M5-17. It is possible that further pits may exist which have been obscured by a large area of modern disturbance to the south.	✓		
M5-19	One arcing and one irregular shaped magnetic anomaly	527205.050,649465.898	√		√		✓		An arcing possible ditch (spanning c. 32m) which follows the curve of enclosure M5-17 c. 11m to the northeast. This is crossed by a small irregular possible ditch feature (c. 12m in length) which could be archaeological or agricultural in origin.	~		
M5-20	Positively magnetic linear	527220.056,649483.939	✓		✓				Possible ditch running in N-S direction and measuring c. 84m in length, roughly parallel to M5-25.	✓		
M5-21	Multiple isolated magnetic responses	527214.052,649483.459 Multiple locations			✓		✓		Possible postholes or pits in multiple locations roughly between enclosures M5-17 and M5-9/10.	✓		
M5-22	Parallel linear negative and positive magnetic anomalies	527260.433,649470.256	√		✓				A possible ditch and bank running roughly in SW-NE direction, which may represent a former field division. The anomalies run on the same orientation as M5-23 and M5-24 and may be related.	✓		



Survey	Area ID:	M5							Townland: Robertstown		
Central	ITM Coordinate:	527267, 649486							OD height of Survey Area 14.6 m OD		
Survey V	Veather Conditions:	Raining (18/06/18) & hot ar	nd su	nny (02/0	7/18)		Survey Date and Area (Ha): 18/06/18, 02/07/18 & 04	4/10/18 3.52	2 Ha
Heritage	Constraint Ref:	LiDAR Site – 14.3, 14.4 – 7	ſwo p	ossi	ble e	nclo	sure	s			
Site Desc	cription:	Flat pasture fields containin present.	g sma	all ar	eas o	of sli	ghtl	y ov	rergrown vegetation. The eastern section rising towards southeast with some	bedrock out	crop
Figure N	0.:	10 & 11									
Significa	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A	le So Anon		e(s) (of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M5-23	Linear magnetic anomaly	527265.3262,649500.662	✓		✓				Possible ditch or cultivation furrow (SW-NE orientation, c. 88m in length) which crosses M5-25.	✓	
M5-24	Linear negatively magnetic anomaly	527242.278,649516.424			✓				Possible bank or stone field division (SW-NE orientation, c. 46m in length).	✓	
M5-25	Linear magnetic anomaly	527293.226,649481.868	✓		✓				Possible ditch, field division or cultivation furrow (NW-SE orientation, c. 69m in length).	✓	
M5-26	Strong magnetic linear anomaly	527319.159,649483.085	✓		✓				Corresponds to former field boundary marked on historic OS maps (1829-41 6"; 1897-1913 25"; c.1900 Cassini).	✓	
M5-27	Linear positively magnetic anomaly	527316.805,649511.826	✓		✓				Possible ditch (c. 97m in length) running in E-W direction and crossing M5-26.	√	
M5-28	Linear positively magnetic anomaly	527412.738,649449.890	✓		✓				Possible ditch (c. 80m in length) running in E-W direction.	✓	
M5-29	Rectangular positively magnetic anomaly	527089.673,649503.526	✓		✓				Rectangular possible archaeological ditch (11.5 NE-SW by 10.6m)	✓	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology.	✓	
	Multiple parallel trends	Multiple locations							Cultivation furrows running in various directions.		
	Areas of strong magnetic responses	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey	Area ID:	M6							Townland: Robertstown		
Central I	TM Coordinate:	527695, 649461							OD height of Survey Area 16.18 m OD		
Survey V	Veather Conditions:	Hot and sunny							Survey Date and Area (Ha): 20/06/18 2.34 Ha		
Heritage	Constraint Ref:	Route Selection Site CH 43	/ LiD	OAR	Site	15.2	2-15.	4 –	Field system, two possible enclosures		
Site Desc	ription:	Flat pasture field containing	med	ium	heig	ht ve	egeta	tion	and divided by an L-shaped electric fence.		
Figure N	0.:	10 & 11									
Significal	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M6-1	Roughly L-shaped parallel high and low magnetic anomalies	527615.609,649435.979	✓		✓				Possible division made up of bank and ditch. Measuring c. 48m (NW-SE) and 49m (SW-NE).	√	
M6-2	Highly magnetic linear	527634.130,649458.459	✓		✓				Possible ditch (c. 24m SW-NE).	✓	
M6-3	Sub-rectangular magnetic anomaly	527654.504,649474.328	√		√				Possible sub-rectangular enclosing feature (c. 10.5m NE-SW, 16m NE-SW). This ditch or slot trench appears to contain an opening/gap on the southeastern side. Two parallel ditches (c.36m) interconnect with this enclosing feature running into the field boundary to the northwest. These may be part of a former field system or settlement (LiDAR ref 15.3).	~	
M6-4	Curvilinear positively magnetic anomalies	527662.707,649462.427	✓		√				Curvilinear possible ditch (c. 47m N-S). Approximately 3m southeast of this anomaly is another possible L-shaped ditch (c.14m NE-SW, 9.5m NW-SE).	√	
M6-5	Multiple linear and curvilinear magnetic anomalies	527689.960,649472.741	√		✓		✓		A roughly oval possible ditch (c. 11m SW-NE, 15m NW-SE) with a wide opening at north is crossed by two parallel possible ditches. These parallel ditches may be part of M6-13 to the south of the electric fence. Two further possible ditch features (c. 22m and 13m in length) are located to the northeast.	√	
M6-6	L-shaped positively magnetic linear	527678.582,649497.073	~		✓				Possible ditch (c. 43m E-W).	✓	



Survey	Area ID:	M6							Townland: Robertstown		
Central I	TM Coordinate:	527695, 649461							OD height of Survey Area 16.18 m OD		
Survey V	Veather Conditions:	Hot and sunny							Survey Date and Area (Ha): 20/06/18 2.34 Ha		
Heritage	Constraint Ref:	Route Selection Site CH 43 /	′ LiE	OAR	Site	15.2	2-15.	4 – 1	Field system, two possible enclosures		
Site Desc	ription:	Flat pasture field containing	med	ium	heig	ht ve	egeta	tion	and divided by an L-shaped electric fence.		
Figure N	o .:	10 & 11									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ssib A		ource naly		of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M6-7	Sub-rectangular magnetic anomaly	527642.333,649503.420	√		✓				Possible small enclosure (c. 11m E-W, 8m N-S) which may be part of a former field system or settlement (LiDAR ref 15.3).	✓	
M6-8	Curvilinear highly magnetic response	527674.252,649520.986	✓		✓				Possible ditch which may contain burnt remains (c. 14.5m N-S) which could be part of a former field system or settlement (LiDAR ref 15.3).	✓	
M6-9	Highly magnetic linear	527710.110,649501.436	✓		✓				Possible ditch (c. 36m NW-SE) which may be part of a former field system or settlement (LiDAR ref 15.3).	√	
M6-10	L-shaped weakly magnetic anomaly	527766.415,649497.289	✓		✓				Possible archaeological ditch or cut feature (c.14m N-S, 7.5m NW-SE).	√	
M6-11	Curvilinear weakly magnetic anomaly	527754.858,649494.624	✓		✓				Possible archaeological ditch or cut feature (c. 15m SW-NE).	√	
M6-12	Sub-rectangular weakly magnetic anomaly	527774.120,649469.446			✓				Possible archaeological ditch or cut feature (c. 33m NW-SE, 17m NE-SW). This may be part of a former field system or settlement (LiDAR ref 15.3).	√	
M6-13	Irregular grid of multiple connecting magnetic linears	527710.386,649412.209 Throughout southern half of survey area.	✓		✓				Made up of parallel possible ditches spaced approximately 4-6m apart which may form some sort of paths or roadways between areas of cultivation/habitation. This may be part of a former field system or settlement (LiDAR ref 15.3).	~	
M6-14	Circular and curvilinear highly magnetic anomalies and multiple pits	527712.768,649443.793	✓		√				A cluster of possible pits and postholes, which may contain burnt remains. Some of these may be contained within a possible circular enclosure ditch (c. 10m diameter).	~	



Survey	Area ID:	M6							Townland: Robertstown		
Central 1	TM Coordinate:	527695, 649461							OD height of Survey Area 16.18 m OD		
Survey V	Veather Conditions:	Hot and sunny							Survey Date and Area (Ha): 20/06/18 2.34 Ha		
Heritage	Constraint Ref:	Route Selection Site CH 43	/ Li[OAR	Site	15.2	2-15.4	4 – 1	Field system, two possible enclosures		
Site Desc	cription:	Flat pasture field containing	med	ium	heig	ht ve	egeta	tion	and divided by an L-shaped electric fence.		
Figure N	o.:	10 & 11									
Significa	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon			of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M6-15	Curvilinear positively magnetic anomaly	527662.466,649409.488	√		✓				Possible archaeological ditch or cut feature (c. 12m N-S).	√	
M6-16	L-shaped positively magnetic anomaly and interlinking arcing features	527749.709,649408.702	√		√				This may be related to M6-13 but has a slightly weaker response. It is a possible ditch or enclosing feature measuring c. 44m SW-NE and 34m NW-SE. One linear and two curvilinear possible ditches or divisions are located on the northern edge of M6-16.	√	
M6-17	Crescent shaped positively magnetic anomaly	527793.199,649386.705			✓			✓	Possible archaeology or agricultural ditch (c. 7m diameter).	✓	
	Very magnetic L-shaped response	527732.030,649474.328						✓	Caused by electric fence dividing the field.		
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in various directions.		



Survey	Area ID:	M7							Townland: Rincullia		
Central 1	ITM Coordinate:	528184, 649465							OD height of Survey Area 18 m OD		
Survey V	Veather Conditions:	Light drizzle / overcast; Ra	in						Survey Date and Area (Ha): 23/07/18, 06/09/	18 1.87 Ha	
Heritage	Constraint Ref:	SMR No. LI010-074 / Rou		ectio	n Si	te Al	H 8 -	- En	· · · · · · · · · · · · · · · · · · ·		
Site Desc	ription:		short	gras	s and	d the	east	tern	oundary running into an enclosure. There is a gentle slope down towards ield is partially grazed and overgrown and very rutted uneven ground. wards centre.	east and west.	. The
Figure N	0.:	12 & 13									
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly	` '	of	Comment	Recommendation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M7-1	Weakly magnetic linear	528219.683,649479.217			✓		✓		Possible ditch or drain (c. 54m SW-NE).	√	
M7-2	Positively magnetic linear	528290.517,649455.980	✓		✓				Possible ditch or drain (c. 35m SW-NE).	✓	
M7-3	Weakly magnetic curvilinear	528297.419,649450.715	√		√		✓		Possible ditch of archaeological or agricultural origin (c. 16m N-S).	✓	
M7-4	Isolated strong magnetic response	528284.887,649436.918			✓				Possible pit of archaeological or agricultural origin.	✓	
M7-5	L-shaped positively magnetic anomaly	528297.237,649436.736	✓		✓				Possible archaeological ditch (c. 18m NW-SE, 17m SW-NE).	✓	
M7-6	Curving weakly magnetic anomaly	528280.528,649426.570	✓		✓				Possible archaeological ditch or small enclosing feature (c. 15m E-W).	√	
M7-7	Isolated positively magnetic responses	528205.234,649441.864 Multiple locations			✓		✓		Four possible pits of possible archaeological or agricultural origin.	✓	
M7-8	Weakly magnetic curvilinear	528177.646, 649437.463	√		✓		✓		Possible ditch of archaeological or agricultural origin (c. 12.3m N-S).	√	
M7-9	Positively magnetic L-shaped anomaly	528129.220,649455.065	√		✓				Possible ditch of archaeological or agricultural origin (c. 14m NW-SI 6.3m NE-SW). Four possible pits are located to the immediate west an north of M7-9 which may be associated.		
M7-10	Weakly magnetic linear	528136.851,649472.960	✓		✓				Possible archaeological or agricultural ditch (c. 12m N-S).	✓	



Survey	Area ID:	M7							Townland: Rincullia		
Central l	TM Coordinate:	528184, 649465							OD height of Survey Area 18 m OD		
Survey V	Veather Conditions:	Light drizzle / overcast; Rais	1						Survey Date and Area (Ha): 23/07/18, 06/09/18	1.87 Ha	
Heritage	Constraint Ref:	SMR No. LI010-074 / Route	Sel	ectio	n Si	te A	Н8-	- En	closure		
Site Desc	ription:		hort	gras	s an	d the	eas	tern	boundary running into an enclosure. There is a gentle slope down towards east field is partially grazed and overgrown and very rutted uneven ground. owards centre.	st and west.	The
Figure N	o.:	12 & 13									
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po			ource maly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M7-11	Multiple isolated highly magnetic responses	528118.067,649476.480 Multiple locations			✓		✓		Possible pits or postholes of archaeological or agricultural origin which may be related to M7-12.	✓	
M7-12	Multiple curvilinear and linear anomalies	528117.480,649466.506 Multiple locations	✓		✓				Numerous possible ditches or cut features, possibly relating to M7-11, running roughly in N-S direction. May be archaeology.	✓	
M7-13	Four isolated highly magnetic responses	528103.099,649448.904			✓		✓		Four possible pits in a N-S alignment, may be archaeology or of agricultural origin.	✓	
M7-14	Six isolated positively magnetic responses	528049.684,649450.958			✓		✓		Six small possible archaeological pits or postholes aligned in a rough circle.	✓	
M7-15	Weakly magnetic linear	528015.044,649470.301	✓		✓				Possible ditch or cut feature (c. 46m NW-SE).	✓	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, agriculture or geology.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running mostly in E-W direction. The furrows in the central field have a strong magnetic signature indicating that they might have been burnt.		



Survey	y Area ID:	M8							Townland: Rincullia		
Central	ITM Coordinate:	528482, 649450							OD height of Survey Area 16 m OD		
Survey V	Weather Conditions:	Overcast; Rain; Overcast							Survey Date and Area (Ha): 30/07/18, 06/09/18, 2	24/09/18 1.8	87 Ha
Heritage	Constraint Ref:	,	CH 7	/ LiI	DAR	Site	: 16	.1, 1	6.3 – Possible enclosure and field system		
Site Desc	cription:	towards east. Some of the s Extension north: Short gras	teepe s, une	st an even	ıd mo grot	ost o ind,	verg steep	rowi slo	ren with a lot of bedrock outcrop, trees and shrubs present. Moderate to steep in sections of the survey area could not be surveyed. pe down towards east, some bedrock outcrop. lope along southwestern edge and some bedrock outcrop.	slope down	1
Figure N	lo.:	12 & 13									
Significa	int Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anoi		` /	of	Comment	Recommendation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M8-1	Weakly magnetic curvilinear anomaly	528393.270,649405.934	✓		✓		√		Possible curving ditch or cut feature (c. 36m NW-SE).	✓	
M8-2	Positively magnetic linear	528401.151,649395.633	✓		✓		✓		Possible ditch of archaeological or agricultural origin (c. 14m NW-SE).	✓	
M8-3	Band of magnetic enhancement	528451.672,649427.951			✓		✓	✓	A wide band of magnetic enhancement (c. 53m NE-SW, 17m NW-SE) which may relate to geology, archaeology or modern disturbance.	✓	
M8-4	Weakly magnetic linear	528490.333,649435.179	√		✓				Possible ditch or cut feature (c. 75.8m N-S), which may be of archaeological or agricultural origin.	✓	
M8-5	Weakly magnetic curvilinear	528488.042,649421.951	✓		✓				Possible archaeological ditch (c. 57m E-W).	✓	
M8-6	Large area of magnetic enhancement	528507.639,649400.073					√		An area measuring c. 58m N-S by 38m E-W, the enhancement is roughly contained between linear M8-4 to the west and M8-8 to the east. This anomaly coincides with a moderate slope and may be caused by near surface geology, archaeology or agricultural activities.	√	
M8-7	Three weakly magnetic linears	528519.855,649400.328	✓		✓				Three possible ditches or cut features (c.28.7m NW-SE, 18m and 21m NE-SW), may be of archaeological or agricultural in origin.	√	
M8-8	Weakly magnetic curvilinear	528528.762,649423.222	✓		✓				Possible ditch or cut feature (c. 75.8m N-S), which runs parallel to M8-4 and may enclose M8-6.	✓	



Survey	Area ID:	M8							Townland:	Rincullia		
Central 1	TM Coordinate:	528482, 649450							OD height of Survey Area	16 m OD		
Survey V	Veather Conditions:	Overcast; Rain; Overcast							Survey Date and Area (Ha):	30/07/18, 06/09/18, 2	24/09/18 1.8	87 Ha
Heritage	Constraint Ref:	Route Selection Site CH6, O	CH 7	/ LiI	DAR	Site	: 16	.1, 1	3 – Possible enclosure and field system			
Site Desc	ription:	towards east. Some of the st Extension north: Short grass	eepes s, une	st an even	d mo	ost o ind,	verg steep	row slo	n with a lot of bedrock outcrop, trees and shrubs presections of the survey area could not be surveyed. e down towards east, some bedrock outcrop. pe along southwestern edge and some bedrock outcomes.	·	slope down	
Figure N	o.:	12 & 13										
Significa	nt Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Po		le So Anoi		. ,	of	Comment		Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
M8-9	Multiple isolated positively magnetic responses	528544.541,649409.231 Multiple locations			✓		✓		Numerous possible pits or postholes located in the he survey area. May be archaeological or agricultur		√	
M8-10	Highly magnetic sub-rectangular anomaly	528550.394,649432.635	√		✓		√	✓	Possible ditch or dug feature, measuring c. 15m S E. Possibly archaeological or agricultural. The hadicates it may contain burnt remains or metal	W-NE and 8.3m NW-	√	
M8-11	Two isolated highly magnetic responses	528571.772,649423.222			✓		✓	✓	wo possible pits or postholes. Possible archaeological	cal or agricultural.	✓	
M8-12	Highly magnetic linear anomaly	528569.991,649401.091	√		√		√	✓	A roughly linear possible ditch or drain, c. 47m in W-NE direction. It appears to run into the stream nd terminates at or is cut by the modern disturbander of the survey area. Due to the strong magneature M8-12 could be related to modern dumping lso be archaeology.	at the northeastern end ce at the southwestern netic signature of this	√	
M8-13	Irregular highly magnetic anomaly	528548.358,649373.363			√		✓	✓	Possible large dug feature (c. 10.5m N-S, 9m rchaeological in origin and may be related to 1 ighly magnetic so may also be associated with modern control of the control of	M8-12. The feature is	✓	



Survey	Area ID:	M8							Townland: Rincullia					
Central 1	TM Coordinate:	528482, 649450							OD height of Survey Area 16 m OD					
Survey V	Veather Conditions:	Overcast; Rain; Overcast							Survey Date and Area (Ha): 30/07/18, 06/09/18, 2	24/09/18 1.8	7 Ha			
Heritage	Constraint Ref:	Route Selection Site CH6, C	CH 7	/ Lil	DAR	Site	: 16	.1, 1	6.3 – Possible enclosure and field system					
Site Desc	ription:	towards east. Some of the st Extension north: Short grass	eepe	st an even	ıd mo grot	ost o und,	verg steep	rowi slo	en with a lot of bedrock outcrop, trees and shrubs present. Moderate to steep a sections of the survey area could not be surveyed. pe down towards east, some bedrock outcrop. lope along southwestern edge and some bedrock outcrop.	slope down				
Figure N	· · · ·	12 & 13												
Significa	nt Features present:	No												
No.	Form of Anomaly	ITM (E,N)	Po			ource	` /	of	Comment	Recommen	ndation			
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey			
M8-14	Positively magnetic curvilinear	528562.865,649375.144	✓		✓				Possible archaeological or agricultural ditch or cut feature (c. 13m SW-NE).	√				
M8-15	Four isolated highly magnetic anomalies	528573.299,649381.758			√				Three large possible pits and one smaller possible pit. These may be archaeology, agricultural in nature or associated with modern soil disturbance.	✓				
M8-16	Two highly magnetic curvilinears	528443.505,649456.038	✓		✓		✓		Two possible ditches or cut features (c. 10m and 19m E-W), may be archaeological or agricultural in origin.	√				
M8-17	Highly magnetic linear	528463.610,649463.670	✓		✓				Possible ditch or drain (c. 40.5m E-W), may be of archaeological or agricultural origin.	√				
M8-18	Parallel positively magnetic curvilinears	528509.929,649472.573	✓		✓				Two parallel possible ditches or cut features (c. 15.5m E-W), they may be archaeological or agricultural origin.	√				
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, agriculture or geology.	√				
	Areas of strong magnetic response	Multiple locations						✓	The strong magnetic response at the western end of the survey area may be related to the nearby gas pipeline or caused by other modern disturbance.					



Survey Area ID:	M9	Townland:	Craggs
Central ITM Coordinate:	528845, 649308		
Heritage Constraint Ref:	SMR No. LI010-081 / Route Selection Site AH9 - Ringfort		
Site Description:	This area could not be surveyed. The western portion was n vegetation (20/06/18).	nostly overgrown on top of uneven ground. The eas	tern portion contained overgrown

Survey	Area ID:	M10							Townland: Mulderricks	field	
Central I	TM Coordinate:	529681, 649239							OD height of Survey Area 48.74 m OD		
Survey V	Veather Conditions:	Overcast							Survey Date and Area (Ha): 19//06/18 0.47 H	a	
Heritage	Constraint Ref:	Route Selection Site CH 9	LiD	AR S	ite 1	7.4	– Po	ssib	rectangular enclosure		
Site Desc	ription:	Flat pasture field containing	area	s of	thist	les.					
Figure N	0.:	14 & 15									
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly	` /	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M10-1	L-shaped strong magnetic anomaly	529640.910,649227.647	√		✓		✓		ossible former boundary ditch (c. 33m N-S, 102m E-W).	√	
M10-2	Positively magnetic linear	529677.774,649255.840	✓		✓		✓		ossible ditch, drain or former field division (c. 17m N-S).	✓	
M10-3	Positively magnetic L-shaped anomaly	529717.431,649248.303	✓		✓		>		ossible ditch or division (c. 18m N-S, 30m SW-NE).	✓	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		\		ossible archaeology or geology.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions. The furrows to the east f M10-1 have a very strong magnetic signature indicating that they might ontain burnt material.		



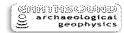
Survey	Area ID:	M10							Townland: Mulderricksfi	ield		
Central I	ΓM Coordinate:	529681, 649239							OD height of Survey Area 48.74 m OD			
Survey W	eather Conditions:	Overcast							Survey Date and Area (Ha): 19//06/18 0.47 Ha	vey Date and Area (Ha): 19//06/18 0.47 Ha		
Heritage (Constraint Ref:	Route Selection Site CH 9 /	LiD	AR S	Site 1	17.4	– Po	ssib	e rectangular enclosure			
Site Descr	iption:	Flat pasture field containing	area	s of	thist	les.						
Figure No) .:	14 & 15										
Significan	t Features present:	No										
No.	Form of Anomaly	ITM (E,N)	ITM (E,N) Possible Source(s) of Anomaly				. ,	of	Comment	Recomme	ndation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey	
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.			



Survey	Area ID:	M11							Townland: Mulderricksf	ield, Cra	ggs
Central I	TM Coordinate:	529704, 649101							OD height of Survey Area 52.47 m OD	•	
Survey V	Veather Conditions:	Overcast							Survey Date and Area (Ha): 19/06/18 1.47 Ha		
Heritage	Constraint Ref:	SMR No. LI010-090 / LiDA	AR Si	te 17	7.5-1	7.8 -	- Pos	ssibl	le enclosures and field system		
Site Desc	ription:	Flat pasture fields which ha	d bee	n ne	wly	cut, s	some	e sm	all areas of thistles and overgrown vegetation.		
Figure N	0.:	14 & 15									
	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Possible Source(s) of Anomaly						Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M11-1	Strong magnetic linear	529590.592,649128.058	Possible ditch or drain (c. 32m N-S), running parallel to the modern farm road.		✓						
M11-2	Two isolated strong magnetic responses	529607.006,649110.722 529608.248,649115.736			✓		✓		Two possible pits which may be agricultural or archaeological in origin (c. 1.4m and 4m in diameter).	√	
M11-3	Area of strong magnetic response	529655.320,649113.508			√			✓	This probably relates to the adjacent pillbox. Some demolition rubble (possibly from a field boundary) was visible on the ground to the east of the pillbox.	√	
M11-4	Strong magnetic linear	529670.186,649131.154	✓		√				Corresponds to former field boundary visible on historic 6" OS map (1829-41). May continue to the south of M11-3 as a slightly curving boundary which is also on the historic 6" OS map.	√	
M11-5	Isolated strong magnetic response	529674.213,649121.248			✓			✓	Large possible pit measuring c. 6m E-W and 4.5m N-S. Located adjacent to a relict field boundary this anomaly may be agricultural in origin.	√	
M11-6	Linear strong magnetic responses	529695.466,649088.977	✓		✓		✓		Two possible ditches or dug features (c. 6m and 5m in length) of unknown origin.	✓	
M11-7	Linear strong magnetic response	529714.084,649118.183	✓		✓		✓		Possible ditch which may contain fired remains (c. 8.5m NW-SE).	√	
M11-8	Curvilinear positively magnetic response	529752.485,649121.848							Possible ditch which may be agricultural in nature (c. 63m E-W).	✓	
M11-9	L-shaped positively magnetic anomaly	529744.187,649115.483	✓		✓				Possible ditch or field division (c. 61m NW-SE).	√	



Survey	Area ID:	M11							Townland: Mulderricksf	ield, Cra	ggs
Central I	ΓM Coordinate:	529704, 649101							OD height of Survey Area 52.47 m OD	•	
Survey W	eather Conditions:	Overcast							Survey Date and Area (Ha): 19/06/18 1.47 Ha		
Heritage	Constraint Ref:	SMR No. LI010-090 / LiDA	R Si	te 17	'.5-1'	7.8 -	- Pos	ssibl	e enclosures and field system		
Site Desci	ription:	Flat pasture fields which had	d bee	n nev	wly c	ut, s	some	sm	ll areas of thistles and overgrown vegetation.		
Figure No	.:	14 & 15									
Significan	t Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Possible Source(s) of Anomaly						Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M11-10	Sub-rectangular magnetic anomaly	529765.800,649110.468			✓				Possible sub-rectangular feature with gap at the western side. Measuring c. 12.5m E-W, 11.5m N-S this feature may be agricultural or archaeological in origin.	√	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, agriculture or geology.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in various directions indicating heavy ploughing.		
	Multiple locations response							✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey Area ID:	M12	Townland:	Ballyclogh
Central ITM Coordinate:	530399, 649210		
Heritage Constraint Ref:	LiDAR Site 18.2 – Possible enclosure		
Site Description:	Survey could not be undertaken as access was not granted		
Figure No.:	14 & 15		

Survey Area ID:	M13	Townland:	Ballyclogh
Central ITM Coordinate:	530476, 649233		
Heritage Constraint Ref:	LiDAR Site 18.2 – Possible enclosure		
Site Description:	Survey could not be undertaken as access was not granted		
Figure No.:	14 & 15		

Survey Area ID:	M14	Townland:	Ballyclogh
Central ITM Coordinate:	530892, 649282		
Heritage Constraint Ref:	LiDAR Site 18.3, 18.5 – Possible enclosure and field system	n	
Site Description:	Survey could not be undertaken as access was not granted		
Figure No.:	16 & 17		

Survey Area ID:	M15	Townland:	Ballyclogh						
Central ITM Coordinate:	531494, 649126								
Heritage Constraint Ref:	Route Selection Site CH13 / LiDAR Site 19.4 – Possible enclosure								
Site Description:	Survey could not be undertaken as access was not granted	urvey could not be undertaken as access was not granted							
Figure No.:	16 & 17								



Survey	y Area ID:	M16							Townland: Ballycullen				
Central	ITM Coordinate:	531867, 649576							OD height of Survey Area 12.7 m OD				
Survey V	Weather Conditions:	Sunny and hot							Survey Date and Area (Ha): 03/07/18 0.63 Ha				
Heritage	Constraint Ref:	Route Selection Site CH 14	/ LiI	OAR	Site	11.1	– P	ossi	ble enclosure				
Site Desc	cription:								n area of stony ground overgrown with trees precluded the survey in the SE c	orner. The s	urvey		
		was extended to the south a	nd w	est to	con	npen	sate.						
Figure N		18 & 19											
	nt Features present:	No ITM (E,N) Possible Source(s) of Comment											
No.	Form of Anomaly	ITM (E,N)	Po			ource naly	(S) (ÞΙ	Comment	Recomme	ndation		
M16-1	Small U-shaped positively	531878.633,649619.007	Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern	Possible fulacht fiadh (c. 4.5m N-S, 6m E-W).	Test Excavation	Geophysical Survey		
	magnetic anomaly	,	✓		✓		✓			√			
M16-2	Two L-shaped strong magnetic anomalies	531882.871,649606.934	✓		✓		✓		Possible dug features which may contain burnt remains.	✓			
M16-3	Roughly U-shaped highly magnetic anomaly	531896.008,649585.966			✓				Enclosing feature marked on historic OS maps (1829-41 6"; 1897-1913 25"; c.1900 Cassini). May comprise an enclosing wall or structure (measuring c. 28m N-S, 23m E-W).	√			
M16-4	L-shaped weakly magnetic anomaly	531883.295,649580.036	✓		✓		✓		Possible ditch or cut feature, measuring c. 10m N-S, 8m E-W. Located within M16-3 and possible representing a sub-division.	✓			
M16-5	Curvilinear positively magnetic anomaly	531892.406,649574.317	✓		✓		✓		Possible ditch or cut feature within M16-3, measuring c. 24m N-S.	✓			
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, agriculture or geology.	✓			
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in NW-SE direction.				
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.				



Survey	Area ID:	M17							Townland: Ballycullen			
Central ITM Coordinate:		532207, 649688							OD height of Survey Area 12.93 m OD			
Survey V	Veather Conditions:	Hot and sunny Survey Date and Area (Ha): 29/06/18 & 09/07/18										
Heritage	Constraint Ref:	Vicinity of LiDAR Site 11.2	2 – Po	ossib	le ri	ingfo	ort					
Site Desc	ription:	Short grass flat pasture field	ls									
Figure N	0.:	18 & 19										
	nt Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Possible Source(s) of Anomaly					of	Comment	Recommendation		
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey	
M17-1	Highly magnetic L-shaped anomaly	532167.976,649669.069	✓		√		√		Possible boundary feature (c.39m E-W, 17m N-S) which is likely to continue into the northern field as M17-7.	√		
M17-2	Highly magnetic irregular shaped anomaly	532156.229,649652.631			✓			✓	Possible archaeological feature or area of modern disturbance (c. 9m E-W, 4m N-S).	√		
M17-3	Irregular shaped negatively magnetic linear	532174.353,649660.682			✓				Possible division, bank or wall, measuring c. 28m E-W and 34m N-S. This feature may be archaeological or agricultural in origin.	✓		
M17-4	Highly magnetic irregular shaped anomaly	532180.729,649672.424			✓			✓	Possible archaeology or modern disturbance (c. 10m N-S, 8m E-W). This anomaly is similar in composition to M17-2.	✓		
M17-5	Weakly magnetic curvilinear anomaly	532196.168,649671.753	✓		✓				Possible semi-circular enclosing feature or ditch, measuring c. 24.5m in diameter, which may surround M17-4.	✓		
M17-6	Linear negatively magnetic feature	532225.703,649671.753			✓		✓		Possible field division comprising of a bank or wall (c. 31m N-S).	✓		
M17-7	Positively magnetic linear anomaly	532176.702,649703.622	✓		✓				Possible ditch (c. 27m N-S). May be a continuation of M17-1.	✓		
M17-8	Positively magnetic curvilinear anomaly	532257.252,649710.667	✓		✓		✓		Possible ditch (c. 37m SW-NE).	✓		
M17-9	Crescent shaped positively magnetic feature	532274.704,649686.849			✓		✓		Possible archaeological ditch (c. 6.5m N-S, 6m E-W).	√		
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or agriculture.	√		



Survey Area ID:		M17								Townland: Ballycullen	Ballycullen		
Central ITM Coordinate:		532207, 649688								OD height of Survey Area 12.93 m OD	12.93 m OD		
Survey Weather Conditions:		Hot and sunny								Survey Date and Area (Ha): 29/06/18 & 09/07/1	29/06/18 & 09/07/18 1.26 Ha		
Heritage Constraint Ref:		Vicinity of LiDAR Site 11.2 – Possible ringfort											
Site Description:		Short grass flat pasture fields											
Figure No.:		18 & 19											
Significant Features present:		No											
No.	Form of Anomaly	ITM (E,N)	Possible Source(s) of			of		Comment	Recommendation				
			Anomaly										
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey	
	Multiple parallel linear magnetic trends	Multiple locations							Cultiv	vation furrows running in multiple directions.			
	Areas of strong magnetic response	Multiple locations						✓		e may be caused by modern interference such as dumping, large objects, boreholes or fencing materials.			



Survey	Area ID:	M18							Townland: Cloonreask		
Central I	TM Coordinate:	532703, 649958							OD height of Survey Area 11.29 m OD		
Survey W	Veather Conditions:	Hot and sunny							Survey Date and Area (Ha): 21/06/18 1.48 Ha		
Heritage	Constraint Ref:	LiDAR Site 12.2 – Possible	settl	emer	ıt clı	ıster			· · · · · · · · · · · · · · · · · · ·		
Site Desc	ription:	Flat short pasture field									
Figure No	0.:	20 & 21									
Significar	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib <i>I</i>		ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M18-1	Positively magnetic linear	532634.974,649984.444	✓		√		√		Possible ditch or drain (c.22.5m N-S).	√	
M18-2	Positively magnetic linear	532634.974,649984.444	√		✓				Possible ditch or drain (c. 91m E-W).	✓	
M18-3	Irregular strongly magnetic anomaly	532678.461,649996.815			✓				Possible archaeological structure, burnt deposit or modern disturbance. Measuring c. 16m N-S and 9.5m E-W.	✓	
M18-4	Parallel curvilinear magnetic features	532681.138,649977.422			√		✓		A c. 5-6m wide curving band of low magnetism located between parallel curvilinears of raised magnetism, measuring c. 168m E-W. Possible metalled surface or dug feature which is surrounded by parallel ditches. This anomaly was apparent within the field as a depression in the topography.	✓	
M18-5	Two interconnecting magnetic linears	532719.273,649978.091	✓		✓				Possible drains or ditches (c. 31m N-S & c. 57m E-W).	✓	
M18-6	Right-angled magnetic anomaly	532729.25,649941.077	✓		✓				Possible ditch (c. 48m in length).	✓	
M18-7	Isolated positively magnetic anomalies	532703.551,649958.029			✓		✓		Possible pits or tree bowls. This field was marked as forest on historic OS maps (1897-1913 25"; c.1900 Cassini); therefore it is likely that some of these features are tree bowls.	√	
M18-8	Positively magnetic linear	532699.202,649929.607	✓		✓				Possible ditch or drain (c. 45m NW-SE).	✓	
M18-9	Highly magnetic linear	532769.451,649934.957			✓			✓	Corresponds to field boundary (c. 87m N-S) visible on historic OS maps (1829-41 6"; 1897-1913 25"; c.1900 Cassini). Appears to be filled with highly magnetic materials which may be related to modern dumping or burning.	✓	



Survey	Area ID:	M18							Townland: Cloonreask		
Central I	ΓM Coordinate:	532703, 649958							OD height of Survey Area 11.29 m OD		
Survey W	eather Conditions:	Hot and sunny							Survey Date and Area (Ha): 21/06/18 1.48 Ha		
Heritage (Constraint Ref:	LiDAR Site 12.2 – Possible	settle	emer	ıt clı	ıster					
Site Descr	ription:	Flat short pasture field									
Figure No) .:	20 & 21									
Significan	t Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po			ource		of	Comment	Recommendation	
				A	Anoı	naly					
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Int		Test Excavation	Geophysical Survey
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or agriculture.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey A	Area ID:	M18a							Townland: Cloonreask		
Central IT	M Coordinate:	532384, 648572							OD height of Survey Area 14.05 m OD		
Survey We	ather Conditions:	Overcast							Survey Date and Area (Ha): 05/10/18 3.58 Ha		
Heritage C	onstraint Ref:								. , ,		
Site Descri	ption:	Relatively flat field									
Figure No.	•	20 & 21									
Significant	Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M18a-1	Parallel magnetic anomalies	532785.23,650178.317	✓		✓				Parallel relict boundary, possibly burnt in places (c.146m in length) and likely to be associated with M18a-2 and M18a-4.	√	
M18a-2	Interconnecting magnetic linears	532834.319,650176.795 Multiple locations	✓		✓				Series of interconnecting linears forming a relict field system associated with M18a-1	√	
M18a-3	Two highly magnetic anomalies	532824.638,650162.392 Multiple locations			✓			✓	Two anomalies of strong magnetism which may be associated with archaeological remains such as a burnt structure or modern debris. This feature coincides with a topographical expression seen during the survey.	√	
M18a-4	Curvilinear magnetic feature	532859.984,650150.464	✓		✓				Relict field boundary shown on the historic 6" OS map (1829-41)	√	
M18a-5	Linear and curvilinear anomalies	532904.983,650230.359 Multiple locations	✓		✓				Possible ditches or cut features (c. 28m & 33m in length).	√	
M18a-6	Parallel magnetic curvilinears	532927.129,650220.142	✓		✓				Possible ditches or cut features (c. 10m in length). Possibly contains burnt remains.	√	
M18a-7	Isolated magnetic responses	532942.176,650235.183 Multiple locations			✓		✓		Possible pits of archaeological or agricultural origin.	√	
M18a-8	Two interconnecting curvilinear anomalies	532935.362,650248.238	✓		✓				Possible ditches or cut features (c. 11m & 13m in length).	√	
M18a-9	Isolated magnetic responses	532925.141,650255.617M ultiple locations			✓		✓		Possible pits of archaeological or agricultural origin.	√	
M18a-10	Curvilinear magnetic anomaly	532902.428,650259.59	✓		✓				Probably relict field boundary associated with M18a-11	√	



Survey	Area ID:	M18a							Townland: Cloonreask		
Central IT	M Coordinate:	532384, 648572							OD height of Survey Area 14.05 m OD		
Survey We	eather Conditions:	Overcast							Survey Date and Area (Ha): 05/10/18 3.58 Ha		
Heritage C	Constraint Ref:										
Site Descri	iption:	Relatively flat field									
Figure No.	:	20 & 21									
Significant	Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		e(s) c	of	Comment	Recommendation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M18a-11	Interconnecting linear anomalies	532902.428,650259.59,	✓		✓				Relict field boundary shown on the historic OS maps (1829-41 6"; 1897-1913 25"; c.1900 Cassini).	√	
M18a-12	Arcing magnetic linear	532956.444,650322.134	✓		✓				Possible ditch (c. 64m in length).	√	
M18a-13	Interconnecting linear magnetic anomalies	532976.602,650333.487	√		✓				Probable relict field system.	√	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or agriculture.	√	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Areas of strong magnetic response	Multiple locations						√	These may be caused by modern interference such as dumping, large metal objects or fencing materials.		



Survey	Area ID:	M19							Townland: Lismakeery		
Central I	TM Coordinate:	532384, 648572							OD height of Survey Area 16.98m OD		
Survey W	Veather Conditions:	Dry and sunny							Survey Date and Area (Ha): 21/06/18, 04/09/18	3.25 Ha	
Heritage	Constraint Ref:	SMR No. LI019-064 - Ring	fort								
Site Desc	ription:	Flat short pasture field, sligl	nt ris	e tov	ards	the	ring	fort.			
Figure No	•	22 & 23									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib		ource naly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M19-1	Weakly magnetic linear anomaly	532389.453,648537.525	✓		✓		✓		Possible ditch (c. 35m NE-SW).	✓	
M19-2	Positively magnetic curvilinear	532382.893,648522.131			✓		✓		Possible archaeological ditch (measuring c. 20m NW-SE), arcing around the northeastern side of M19-4.	√	
M19-3	Isolated magnetic response	532364.640,648516.857			✓				Possible pit (c. 2.3m diameter).	✓	
M19-4	Sub-circular positively magnetic anomaly	532378.757,648515.574 532371.485,648514.576	✓		✓		✓		Possible circular ditch (c. 13m E-W, 11.5m N-S) with an isolated possible pit near the centre. This anomaly may be archaeological in origin.	√	
M19-5	Negatively magnetic linear	532333.837,648486.354			✓				Segment of a possible linear stone or bank feature (c. 11m NW-SE) in the southwestern corner of the survey area.	√	
M19-6	Three curvilinear strongly magnetic anomalies	532371.485,648498.612 532394.444,648507.307 532391.734,648505.169	√		✓				Three segments of a possible ditch (c. 19.5m, 14m and 8.5m in length) which is located on the northern edge of M19-7. These may represent an outer ditch related to ringfort LI019-064 which is located less than 20m to the south.	~	
M19-7	Negatively magnetic curvilinear	532378.187,648496.902		✓					Segment of a possible outer bank associated with ringfort LI019-064, measuring c. 30m SW-NE.	√	
M19-8	Three isolated positively magnetic responses	532380.326,648498.612 532377.189,648488.635			✓		✓		Three possible pits, possibly related to ringfort LI019-064.	√	
M19-9	Two isolated positively magnetic responses	532423.250,648526.835 532426.387,648527.120			✓		✓		Two possible pits.	✓	
M19-10	Strongly magnetic linear response	532371.485,648514.576	✓		✓				Possible ditch or field division (c. 46m N-S).	✓	



Survey	Area ID:	M19							Townland: Lismakeery		
Central I	TM Coordinate:	532384, 648572							OD height of Survey Area 16.98m OD		
Survey W	Veather Conditions:	Dry and sunny							Survey Date and Area (Ha): 21/06/18, 04/09/18	3.25 Ha	
Heritage	Constraint Ref:	SMR No. LI019-064 - Ring	fort								
Site Desc	ription:	Flat short pasture field, slig		e tov	vards	s the	ring	fort.			
Figure No	•	22 & 23									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib		ource maly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M19-11	Strongly magnetic linear response	532433.660,648548.215	√		√				Possible ditch or field division (c. 57m E-W).	√	
M19-12	Positively magnetic L-shaped anomaly	532479.000,648527.274	✓		✓				Possible archaeological ditch (c. 69m E-W, 28m SW-NE). This anomaly appears to terminate within M19-15.	✓	
M19-13	Highly magnetic curvilinear	532464.377,648589.554	✓		✓				Curving possible archaeological ditch (c. 19m E-W), probably extending beyond the survey area to the north. Appears to be cut by M19-14.	√	
M19-14	Highly magnetic curvilinear	532457.339,648586.181	✓		✓				Slightly curving possible ditch or cut feature (c. 25.8m SW-NE). Appears to cut M19-13 and may be archaeological or agricultural in origin.	✓	
M19-15	Area of magnetic enhancement	532501.437,648561.409			✓		✓		Large area of magnetic enhancement (c. 78m N-S, 50m E-W) with a break near the southeastern corner. This anomaly may have been caused by agricultural activities, geology or archaeological processes.	✓	
M19-16	Parallel positively magnetic linears	532523.656,648557.138	✓		✓				Two possible ditches (c. 50m and 89m NW-SE), may have formed a field boundary or division or archaeological routeway.	✓	
M19-17	Multiple isolated highly magnetic responses	532543.483,648565.851 Multiple locations			✓		✓		A number of possible pits located in the eastern section of the survey area. Possible archaeological, geological or agricultural in origin.	√	
M19-18	Parallel positively magnetic linears	532541.945,648556.113	✓		✓				Two possible ditches (5.7m and 40m NE-SW), which may be related to M19-16. These anomalies are possibly archaeological or agricultural.	√	
M19-19	Weakly magnetic sub-circular anomaly	532560.746,648544.837			✓				Possible ditch or cut feature which has a very weak magnetic signature, may be geological or archaeological (10m in diameter).	√	
M19-20	Positively magnetic curvilinear	532369.746,648458.115	✓	✓					Possible part of outer ditch of ringfort LI019-064, c. 22m N-S. It is located between the extant ringfort and the possible bank M19-7.	✓	



Survey	Area ID:	M19							Townland: Lismakeery		
Central I	TM Coordinate:	532384, 648572							OD height of Survey Area 16.98m OD		
Survey W	eather Conditions:	Dry and sunny							Survey Date and Area (Ha): 21/06/18, 04/09/18	3.25 Ha	
Heritage	Constraint Ref:	SMR No. LI019-064 - Ring	fort								
Site Desci	ription:	Flat short pasture field, sligh	nt rise	e tow	ards	the	ring	fort.			
Figure No).:	22 & 23									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		(s) c	of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M19-21	Weakly magnetic linear	532355.247,648481.517	✓		✓				Possible archaeological ditch (c. 59.5m SW-NE), appears to run into or terminate at M19-7 and may be related.	✓	
M19-22	Highly magnetic linear	532320.019,648509.171	√		✓				Possible field division (c. 22.6m N-S). Terminates at or is cut by M19-23 at the northern end. M19-22 may be related to M19-5 and M19-24. The highly magnetic nature of the anomaly indicates that it has suffered burning.	~	
M19-23	Sub-rectangular highly magnetic anomaly	532308.348,648522.033	√		✓				Possible small enclosing ditch (c. 14m SW-NE by 8m NW-SE) with entrance at the northern corner. Three large possible pits are located on the western and eastern corners.	√	
M19-24	Angular highly magnetic anomaly	532329.297,648551.349	✓		✓				Possible field division (c. 30m N-S, 44m E-W), possibly related to M19-22.	√	
M19-25	Three isolated highly magnetic responses	532312.089,648552.396			✓		✓		Three possible pits, may be of archaeological or agricultural origin, which are enclosed by M19-24.	√	
M19-26	Isolated highly magnetic response	532279.768,648534.447			✓				Possible archaeological or agricultural pit.	✓	
M19-27	Two parallel magnetic curvilinears	532258.112,648536.053			√				Two curvilinear parallel ditches which are truncated by M19-28. These ditches (9.6m in length) may be archaeological or agricultural.	✓	



Survey	Area ID:	M19							Townland: Lismakeery	7	
Central I	TM Coordinate:	532384, 648572							OD height of Survey Area 16.98m OD		
Survey W	eather Conditions:	Dry and sunny							Survey Date and Area (Ha): 21/06/18, 04/09	18 3.25 Ha	ı
Heritage	Constraint Ref:	SMR No. LI019-064 - Ring	fort								
Site Descr	ription:	Flat short pasture field, sligh	nt rise	e tov	vard	s the	ring	fort.			
Figure No	o.:	22 & 23									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		ole So Anoi		()	of	Comment	Recommendation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M19-28	Multiple interconnected negatively magnetic curvilinear and linear anomalies	532247.750,648523.435			✓				A series of interconnecting possible field divisions or banks. These mathematical have once created small agricultural enclosures or internal field division. They are located within an area of heavy cultivation which may have moved or redistributed some of the magnetic particles associated withem, therefore causing the unusual 'U-shaped' signatures.	s. ee /	
M19-29	Positively magnetic curvilinear	532228.533,648495.564	✓		✓				Large U-shaped possible archaeological or agricultural ditch (c. 31m N-27m E-W).	S,	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, larg metal objects, boreholes or fencing materials.	e	



Survey	Area ID:	M20							Townland: Ballynacah	eragh	
	TM Coordinate:	533454,648238							OD height of Survey Area 19.07 m OD		
Survey V	Veather Conditions:	Cloudy							Survey Date and Area (Ha): 17/10/18 1.5 H	Ia	
Heritage	Constraint Ref:	LI020-002 / Route Selection	ı Site	AH	84 -	Enc	closu	re			
Site Desc	ription:	Pasture field containing sho	rt gra	ass aı	nd ui	neve	n gro	ounc	l, gentle slope down towards east.		
Figure N	0.:	24 & 25							•		
Significa	nt Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly		of	Comment	Recommo	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M20-1	Arcing highly magnetic anomaly	533378.138,648289.214		✓					Arcing ditch, 34m in length, which is highly magnetic and likely contain burnt or fired remains. The ditch is likely to continue into M20-2		
M20-2	Arcing highly magnetic anomaly	533411.994,648229.081		✓					Arcing ditch which marks the location of a large archaeological feature. Measuring 79m in length this feature probably links with M20-1 to for an enclosure ditch measuring 85m in diameter. It is possible to see the remains of this enclosure within the field boundaries shown on the 1824 41 6" OS map. The highly magnetic nature of the ditch in places suggest that it contains burnt deposits.	e. m e o-	
M20-3	Right-angled positive magnetic response	533362.638,648250.892	✓		√				Right-angled ditch or cut feature (42m in length) which may be agricultural or archaeological in origin.	e 🗸	
M20-4	Numerous isolated magnetic responses	533384.868,648250.077 Multiple locations			✓		✓		Numerous pits or postholes which were detected within enclosure M20-2. These are likely to be archaeological in origin; however, collection of pits within the NW corner of enclosure M20-2 may be agricultural and associated with M20-6.	a	
M20-5	Two curvilinear positive magnetic anomalies	533369.368,648225.82 Multiple locations	✓		✓				Two curvilinear ditches or cut features which are located within enclosured M20-2. These features may be archaeological in origin and could be associated with some of the pits M2-4.	e v	
M20-6	Arcing negative magnetic anomaly	533402,648247.427			✓				Arcing bank or stone feature (36m in length) which crosses the N ^o portion of M20-2. This feature matches a boundary shown on the 1829-46" OS map and may be associated with a number of the pits M20-4.		



Survey	Area ID:	M20							Townland: Ballynacaher	agh	
Central I	TM Coordinate:	533454,648238							OD height of Survey Area 19.07 m OD		
Survey W	eather Conditions:	Cloudy							Survey Date and Area (Ha): 17/10/18 1.5 Ha		
Heritage	Constraint Ref:	LI020-002 / Route Selection	n Site	AH	84 -	Enc	losu	re			
Site Descr	ription:	Pasture field containing sho	rt gra	iss ar	nd ur	nevei	n gro	ound	, gentle slope down towards east.		
Figure No).:	24 & 25									
Significar	nt Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly	` '	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M20-7	Arcing highly magnetic anomaly and two isolated magnetic responses	533395.474,648222.558	✓		✓				Arcing ditch or cut feature (20m in length) which may contain burnt or fired remains. This feature appears to surround M20-8 and respect M20-2. Two isolate possible pits also appear to be contained with M20-7.	√	
M20-8	Area of high magnetism	533399.757,648216.035			√				An area of high magnetism (8m x 5m) which is likely to be associated with burnt structural remains. The anomaly roughly matches the location of a structure shown on the 1829-41 6" OS map.	√	
M20-9	Positive magnetic linear bounding an area of magnetic enhancement, isolated and linear features	533417.908,648216.443			√				Linear ditch which appears to bound an area of magnetic enhancement. The ditch is shown on the 1829-41 6" OS map and represents a portion of a small field division, the enhancement being associated with different manuring or agricultural processes. Contained within the enhancement are a number of possible pits and a ditch cut feature. These features are also likely to be agricultural in origin, however they are situated adjacent to enclosure ditch M20-2 and therefore an archaeological explanation cannot be ruled out.	✓	
M20-10	Arcing highly magnetic anomaly	533426.066,648214.608	✓		✓				Arcing ditch or cut feature (18.6m in length), which is likely to contain burnt or fired remains. This ditch could be archaeological in origin.	✓	
M20-11	Right-angled positive magnetic response	533442.586,648213.589	~		√				Right-angled possible agricultural ditch or cut feature (29m in length).	~	



Survey	Area ID:	M20							Townland: Ballynacaher	agh	
Central I'	TM Coordinate:	533454,648238							OD height of Survey Area 19.07 m OD		
Survey W	eather Conditions:	Cloudy							Survey Date and Area (Ha): 17/10/18 1.5 Ha		
Heritage	Constraint Ref:	LI020-002 / Route Selection	n Site	AH	84 -	- Enc	closu	re	, , ,		
Site Descr	ription:	Pasture field containing sho	rt gra	ass ar	nd u	neve	n gro	ounc	l, gentle slope down towards east.		
Figure No	*	24 & 25									
Significar	nt Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M20-12	Numerous isolated magnetic responses	533452.376,648207.474 Multiple locations			√		√		Numerous possible pits or postholes detected surrounding enclosure M20-2. These pits could be archaeological in origin, however given the area is known to have contained later agricultural boundaries and habitation remains, shown on the 1829-41 6" OS map, these pits may be agricultural in origin.	✓	
M20-13	Arcing positive magnetic anomaly	533447.481,648231.731	√		✓				Arcing ditch or cut feature (14m in diameter) which may be archaeological or agricultural.	✓	
M20-14	Parallel curvilinear magnetic anomalies	533432.593,648247.63	✓		✓				Parallel ditches or cut features (22m in length) which could be archaeological or agricultural in origin.	✓	
M20-15	Arcing negative magnetic anomaly	533410.566,648275.556			✓				Bank or stone feature which appears to run from M20-1. Measuring 45m in length. This bank could be archaeological but may be more likely to represent an agricultural boundary which was later joined to the enclosure.	✓	
M20-16	Positive magnetic linear	533410.362,648290.437	✓		✓				Linear possible agricultural ditch, 13m in length, which terminates at M20-15.	✓	
M20-17	Positive magnetic linear	533429.126,648275.964	✓		✓				Linear possible agricultural ditch, 27m in length, which terminates at M20-15.	√	
M20-18	Positive magnetic linear	533466.449,648259.045	✓		✓				Linear possible agricultural ditch, 53m in length, which runs parallel to M20-17 and M20-22.	√	
M20-19	Area of magnetic enhancement	533500.1,648233.158			✓		✓		Area of magnetic enhancement which is likely to be associated with habitation or agricultural processes. The area is shown on the 1829-41 6" OS map as a small paddock or yard.	√	



Survey	Area ID:	M20							Townland: Ballynacaher	agh	
Central I	TM Coordinate:	533454,648238							OD height of Survey Area 19.07 m OD		
Survey W	Veather Conditions:	Cloudy							Survey Date and Area (Ha): 17/10/18 1.5 Ha		
Heritage	Constraint Ref:	LI020-002 / Route Selection	n Site	AH	84 -	Enc	losu	re	· · · · · ·		
Site Desc	ription:	Pasture field containing sho	ort gra	ıss aı	nd ur	never	ı gro	ound	l, gentle slope down towards east.		
Figure No	0.:	24 & 25									
Significa	nt Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A	le So Anon		e(s) c	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M20-20	Area of high magnetism	533491.127,648221.539			✓				An area of high magnetism (9.5m x 4m) which is likely to be associated with burnt structural remains. The anomaly roughly matches the location of a structure shown on the 1829-41 6" OS map.	√	
M20-21	Parallel curvilinear magnetic anomalies	533482.357,648217.666	√		✓				Two parallel arcing ditches (32m E-W and 23m NE-SW) which roughly match boundaries shown on the 1829-41 6" OS map. They appear to enclose M20-20.	√	
M20-22	Positive magnetic linear	533469.508,648231.527	√		✓				Linear ditch or cut feature which runs parallel to M20-17 & M20-18. This anomaly (36m in length) may been associated with M20-20.	√	
M20-23	Right-angled positive magnetic response	533463.185,648239.681	√		✓				Right-angled ditch or cut feature which may be agricultural in origin. The feature contains an arcing division at its NW corner and a further spur to the south, suggesting that it may be related to former field divisions.	✓	
M20-24	Positive magnetic linear	533543.338,648207.678	✓		✓				Agricultural or archaeological ditch or cut feature (29m in length).	✓	
	Multiple linear trends	Multiple locations			✓		✓		Possible archaeology or geology.	√	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows. It is noticeable that the most dominant furrows are contained within the archaeological monument; however, they are likely to be associated with later field systems which partially followed the alignment of this enclosure (see 1829-41 6" OS map).		



Survey	Area ID:	M21							Townland: Ballynacahera	agh	
Central I	TM Coordinate:	533923, 647831							OD height of Survey Area 19.07 m OD		
Survey V	Veather Conditions:	Sunny							Survey Date and Area (Ha): 22/06/18 3.2 Ha		
Heritage	Constraint Ref:	LiDAR Site 26.1, 26.2, 26.5	5 – Po	ssib	le en	clos	ure,	ring			
Site Desc	ription:								d, which gently slopes to the SW		
Figure N	0.:	24 & 25									
Significa	nt Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor			of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M21-1	Positively magnetic curvilinear	533760.732,648017.372	√		√		✓		Possible ditch or cut feature (c. 15.5m E-W).	√	
M21-2	U-shaped strongly magnetic anomaly	533762.939,647997.521			✓		✓		Possible archaeological ditch or cut feature (c. 7.5m diameter NW-SE).	√	
M21-3	Positively and negatively magnetic curvilinear	533769.244,647979.560	✓		√				Possible bank with one ditch on either side running in an S-shape roughly in N-S direction (c. 63m in length). These represent a field boundary marked on the 1829-41 6" OS map.	✓	
M21-4	Weakly magnetic linear	533785.637,647996.890	√		✓				Possible ditch, cut feature or field division (c. 162m NW-SE). May be associated with M21-9 towards SE.	√	
M21-5	U-shaped positively magnetic anomaly	533778.386,647976.094	✓				✓		Possible archaeological ditch or cut feature (c. 6.8m diameter NE-SW).	✓	
M21-6	Large area of magnetic enhancement containing multiple strongly magnetic anomalies	533839.229,647925.047 Multiple locations			✓		✓		An area measuring roughly 145m (NW-SE) by 60m SE-NW which is magnetically enhanced and may be caused by archaeology, geology or agricultural activities. There appear to be multiple curvilinear and linear features within this area which don't form a consistent pattern but may be associated with the enhancement or be archaeological in origin.	~	
M21-7	Strongly magnetic curvilinear	533882.103,647922.841	✓		✓				Possible curving ditch or cut feature (c. 53m NW-SE), which is likely to contain burnt remains. It is likely to represent a field boundary marked on the 1829-41 6" OS map.	√	
M21-8	Two parallel strongly magnetic linears	533875.349,647878.014 533871.994,647879.691	✓		✓				Two parallel ditches, cut features or a field boundary (c. 77m SW-NE), which contained burnt remains.	✓	



Survey	Area ID:	M21							Townland: Ballynacaher	Ballynacaheragh		
Central I	TM Coordinate:	533923, 647831							OD height of Survey Area 19.07 m OD			
Survey W	Veather Conditions:	Sunny							Survey Date and Area (Ha): 22/06/18 3.2 Ha			
Heritage	Constraint Ref:	LiDAR Site 26.1, 26.2, 26.5	5 – Po	ossib	le er	nclos	ure,	ring				
Site Desc	ription:	1						_	l, which gently slopes to the SW			
Figure No	0.:	24 & 25										
Significar	nt Features present:	Possibly										
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource maly		of	Comment	Recomme	ndation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey	
M21-9	Positively magnetic U- shaped anomaly	533863.818,647862.341			√			✓	Possible archaeological ditch or cut feature (c. 4.7m E-W).	✓		
M21-10	Weakly magnetic linear	533870.438,647861.395	✓		✓				Possible ditch, cut feature or field division (c. 34m NW-SE). May be a continuation of M21-4.	√		
M21-11	Weakly magnetic linear	533924.785,647855.177	✓		✓				Possible ditch or cut feature (c. 39m in length) which abuts the eastern edge of M21-10.	✓		
M21-12	Area of magnetic enhancement	533915.99,647869.96			✓		✓		This enhancement is similar to M21-6 and may be caused by archaeology, geology or agricultural activities. It is possibly bounded by M21-11	√		
M21-13	Three isolated highly magnetic responses	533901.999,647865.965 Multiple locations			✓		✓		Three possible pits or post-holes of archaeological or agricultural origin.	✓		
M21-14	Four interconnecting magnetic linears	533893.831,647834.275 Multiple locations	✓		✓				Four linear ditches which are likely to be agricultural in origin, forming a relict field system.	✓		
M21-15	Weakly magnetic linear	533929.312,647800.685	√		✓				Possible ditch or cut feature (14m in length), which may be agricultural or archaeological in nature.	✓		
M21-16	Strongly magnetic linear	533979.215,647769.557	√		✓				Possible ditch or cut feature (55m in length), which is likely to contain burnt material.	✓		
M21-17	Strongly magnetic linear	534033.369,647719.904	√		✓				Possible ditch or cut feature (14m in length), which is likely to contain burnt material.	√		
M21-18	Two weakly magnetic linears	534059.849,647674.758 Multiple locations	✓		√				Possible ditches or cut features (28m and 9m in length), which may be agricultural or archaeological in nature.	√		



Survey	Area ID:	M21							Townland: Ballynacaher	agh	
Central I	ГМ Coordinate:	533923, 647831							OD height of Survey Area 19.07 m OD		
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 22/06/18 3.2 Ha		
Heritage	Constraint Ref:	LiDAR Site 26.1, 26.2, 26.5	5 – Po	ssib	le en	clos	ure,	ring	rt and field system		
Site Desci	ription:	Pasture field containing sho	rt gra	ss ar	nd ur	neve	n gro	ound	which gently slopes to the SW		
Figure No).:	24 & 25									
Significar	t Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		` '	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M21-19	Strongly magnetic linear	534046.142,647672.267	✓		✓				elict field boundary which is marked on historic OS maps (c.1900 assini).	√	
M21-20	Highly magnetic isolated response	534046.453,647725.508			✓				he remains of a well which is marked on historic OS maps (c.1900 assini).	√	
	Multiple linear magnetic trends	Multiple locations			✓		√		ossible archaeology or geology.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							ultivation furrows running in multiple directions.		



Survey	Area ID:	M22							Townland: Ballynacaher	agh	
Central I	TM Coordinate:	534306, 647385							OD height of Survey Area 19.9 m OD		
Survey V	Veather Conditions:	Sunny							Survey Date and Area (Ha): 22/06/18 1.39 Ha		
Heritage	Constraint Ref:	SMR No. LI020-005 / Rout	te Sel	ectio	n Sit	te AI	H 87	- Eı	nclosure		
Site Desc	ription:	Pasture field which gently s	slopes	s to tl	ne so	uth a	and o	cont	ained knee high grass		
Figure N	0.:	26 & 27									
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly	e(s) (of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M22-1	Strongly magnetic linear	534275.164,647452.076	✓		✓				Possible ditch or cut feature (c. 46m E-W), possibly containing burnt remains.	✓	
M22-2	Positively magnetic curvilinear	534247.653,647405.672	✓		✓				Possible ditch or cut feature (c. 18m N-S).	✓	
M22-3	Four isolated magnetic anomalies	534263.816,647390.548 534261.752,647395.704 534287.544,647412.203 534290.983,647444.514			√		✓		Possible pits or postholes of archaeological or agricultural origin.	√	
M22-4	Weakly magnetic curvilinear anomaly	534292.702,647366.143			✓		✓		Possible archaeological ditch (c. 30m E-W)	✓	
M22-5	Highly magnetic L-shaped anomaly	534352.883,647328.333	✓		✓				Possible ditch or cut feature (c. 14m E-W, 12m N-S).	√	
	Two curvilinear magnetic trends	534310.585,647403.610 534310.585,647377.486			✓		✓		Possible archaeology or geology.	√	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Areas of strong magnetic response	SE corner of field						✓	This may be related to modern dredge dumping by the OPW which could mask any potential archaeology related to nearby enclosure LI020-005.		



Survey A	Area ID:	M22a							Townland: Boolaglass		
Central IT	M Coordinate:	534441, 647185							OD height of Survey Area 21.71 m OD		
Survey We	ather Conditions:	Overcast							Survey Date and Area (Ha): 28/09/18 2.02 Ha		
Heritage C	onstraint Ref:	Vicinity of LiDAR site 35.3	- mo	ound							
Site Descri	ption:	Relatively flat pasture field									
Figure No.		26 & 27									
Significant	Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly	` '	of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M22a-1	Three interconnecting highly magnetic linears	534421.964,647250.465	✓		✓				Three interconnecting possible ditches or cut features (c. 63m SW-NE, 57m N-S, 46.5m NW-SE). Probably agricultural in nature.	√	
M22a-2	Multiple isolated positively magnetic responses	534424.101,647201.362 Multiple locations			✓		✓		Possible archaeological or agricultural pits or postholes.	√	
M22a-3	Highly magnetic linear	534415.506,647184.178	✓		✓				Possible field division, ditch or cut feature (c. 63.5m E-W)	✓	
M22a-4	Highly magnetic linear	534466.049,647191.739	✓		✓				Possible field division, ditch or cut feature (17m in length) which may be associated with M22a-3.	√	
M22a-5	Series of isolated magnetic anomalies	534450.233,647173.524 Multiple locations			✓		✓		Possible pits or post-holes of archaeological or agricultural origin.	✓	
M22a-6	Two sub-circular weakly magnetic responses with associated isolated responses.	534467.080,647155.652	√		√				Two possible ring ditches which contain a number of possible pits along their ditches. Measuring 14m and 11m in diameter these may be archaeological in origin, however the weakly magnetic signature of the possible ditches means that they could also be geological.	√	
M22a-7	Highly magnetic linear	534478.974,647146.254	✓		✓				Possible field division, ditch or cut feature (78m in length).	√	
M22a-8	Weakly magnetic linear	534449.545,647123.003	✓		✓				Possible field division, ditch or cut feature (57m in length).	✓	
M22a-9	Arcing magnetic response	534448.857,647109.256	✓		✓				Possible ditch (33m in length) of archaeological or agricultural origin.	✓	
M22a-10	Curvilinear magnetic response	534467.080,647091.385	✓		✓				Possible field division, ditch or cut feature (81m in length).	√	



Survey A	Area ID:	M22a							Townland: Boolaglass		
	M Coordinate:	534441, 647185							OD height of Survey Area 21.71 m OD		
Survey We	eather Conditions:	Overcast							Survey Date and Area (Ha): 28/09/18 2.02 Ha		
Heritage C	Constraint Ref:	Vicinity of LiDAR site 35.3	- mo	ound	,						
Site Descri	ption:	Relatively flat pasture field									
Figure No.	:	26 & 27									
Significant	Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po			ource maly	e(s)	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M22a-11	Sub-circular weakly magnetic response	534473.368,647028.479	✓		✓				Possible ditch or cut feature (26m in length) which may be archaeological in nature.	√	
M22a-12	Weakly magnetic linear	534471.203,647015.497	✓		✓				Possible ditch or cut feature (26m in length) which is located on the southern edge of M22a-11.	✓	
	Curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Areas of strong magnetic response	NW corner of field						✓	This may be related to modern dredge dumping by the OPW which could mask any potential archaeology.	✓	



Survey	Area ID:	M23							Townland:	Feeagh		
Central I	TM Coordinate:	534741, 646131							OD height of Survey Area	19.45m OD		
Survey V	Veather Conditions:	Very hot and sunny							Survey Date and Area (Ha):	04/07/18 1.36 Ha		
Heritage	Constraint Ref:	Route Selection Site AAP 4	3 - W	/etla	nd							
Site Desc	ription:								e patches of rushes and lilies and dissected by aggesting that it has suffered extended periods		entire surve	y area
Figure N	0.:	28 & 29										
Significa	nt Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor		e(s) o	of	Comment		Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
M23-1	Weakly magnetic linear	534709.948,646171.464	✓		√				Corresponds to existing drainage ditch an historic OS maps (1829-41 6"; 1897-1913 2 to the east but was too overgrown to survey	5"; c.1900 Cassini). Continues	✓	
M23-2	Weakly magnetic linear	534768.843,646141.275	✓		✓				This drainage ditch and bank was visible wit on historic maps.		√	
M23-3	Irregular interlinking positively magnetic responses	534759.178,646096.596	✓		✓		✓		Possible dug features; may be archaeologic mineral collections within waterlogged soils		✓	
M23-4	Curvilinear positively magnetic responses	534789.079,646058.860			✓				Two possible ditches (c. 14m NW-SE and 18	8m E-W). Similar to M23-3.	√	
	Multiple parallel linear magnetic trends	Multiple locations							Possible cultivation furrows running N-S dir	ection.	✓	



Survey	Area ID:	M23a							Townland: Ardgoul Sout	h	
Central I	TM Coordinate:	535303, 645495							OD height of Survey Area 30.2 m OD		
Survey W	Veather Conditions:	Rain							Survey Date and Area (Ha): 10/09/18 2.89 Ha		
Heritage	Constraint Ref:										
Site Desc	ription:	Undulating grazed pasture t	ield								
Figure No	0.:	30 & 31									
	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		` '	f	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M23a-1	Weakly magnetic linear	535254.432,645609.968	✓		✓				Possible ditch or cut feature (c. 70m in length) which may represent a former field division.	✓	
M23a-2	Two parallel highly magnetic linears	535317.095,645507.775	✓		✓				Two parallel ditches (c. 62m in length) with two extensions to the east. These are likely to represent former field divisions.	✓	
M23a-3	Semi-circular magnetic signature	535287.187,645519.456	✓		✓		✓		Possible ditch or cut feature (c. 76m in length) which may be of agricultural or geological origin.	✓	
M23a-4	Semi-circular magnetic signature	535393.069,645415.007	✓		✓		✓		Possible ditch or cut feature (c. 27m in length) which may be of agricultural or geological origin.	✓	
M23a-5	Highly magnetic linear	535396.85,645405.387	✓		✓				Possible ditch or cut feature (c. 25m in length) which is likely to be agricultural in origin.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.	✓	
	Areas of strong magnetic response	Multiple locations						✓	The larger area corresponds to a pipeline which crossed the survey area.	✓	



Survey	Area ID:	M24							Townland: Graigeen		
Central 1	TM Coordinate:	535631, 644906							OD height of Survey Area 34.6m OD		
Survey V	Veather Conditions:	Hot and dry							Survey Date and Area (Ha): 03/07/18 & 17/07/1	18 1.82 Ha	
Heritage	Constraint Ref:	Route Selection Site DL 12	l / LiΓ	OAR	Site	53.2	2 – F	ield	system		
Site Desc	eription:	Gently sloping fields. The state southern field which is							pasture while the north contained uneven bare ploughed soil. A slightly raise near surface bedrock	d area was i	noted in
Figure N	0.:	32 & 33									
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor			of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M24-1	Linear positively magnetic anomaly	535531.517,645001.125	✓		✓		√		Possible ditch or cut feature (c. 27m SW-NE).	✓	
M24-2	Three positively magnetic curvilinears	535552.733,645004.942	✓		✓		✓		Possible curving ditches (measuring c. 25m, 6m and 24m), which may form an archaeological or agricultural feature.	√	
M24-3	Negatively magnetic linear	535608.743,644963.377			✓				Possible compacted earth or stone feature (c. 42m E-W), such as a bank or path. Running alongside M24-4.	✓	
M24-4	Linear (Z-shaped) highly magnetic anomaly	535627.838,644957.864	✓		✓				Possible field division, ditch or cut feature (c. 28m NW-SE, 24m NE-SW, 45m W-E).	√	
M24-5	Linear highly magnetic anomaly	535645.225,644934.728	✓		✓				Possible ditch, cut feature or field division (c. 79m N-S).	✓	
M24-6	Linear highly magnetic anomaly	535629.066,644853.499	✓		✓				Possible field boundary, ditch and bank (c. 53m N-S). Appears to correspond to a linear feature visible in the LiDAR data (53.2).	✓	
M24-7	Two isolated positively magnetic anomalies	535635.280,644843.964 535633.873,644813.258			✓		✓		Two possible pits or postholes.	✓	
M24-8	Large area of magnetic enhancement	535654.040,644837.401			√		✓		Magnetically enhanced area measuring c. 93m N-S and 30m E-W and containing a number or magnetic trends. May be caused by agricultural activity, geology or archaeology.	√	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, agriculture or geology.	✓	



Survey	Area ID:	M24							Townland: Graigeen		
Central I	TM Coordinate:	535631, 644906							OD height of Survey Area 34.6m OD		
Survey W	eather Conditions:	Hot and dry							Survey Date and Area (Ha): 03/07/18 & 17/07/1	1.82 Ha	
Heritage	Constraint Ref:	Route Selection Site DL 12	/ LiD	OAR	Site	53.2	2 – F	ield	system		
Site Descr	ription:	Gently sloping fields. The s the southern field which is							pasture while the north contained uneven bare ploughed soil. A slightly raise near surface bedrock	d area was i	noted in
Figure No).:	32 & 33									
Significar	nt Features present:	No									
No.	Form of Anomaly ITM (E,N)		Possible Source(s) of Anomaly						Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Areas of strong magnetic response	Multiple locations						√	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey	Area ID:	M25							Townland: Ballingarrane	•	
Central I	TM Coordinate:	535872, 644369							OD height of Survey Area 35 m OD		
Survey V	Veather Conditions:	Overcast							Survey Date and Area (Ha): 20/07/18 0.69 Ha		
Heritage	Constraint Ref:	LiDAR Site 57.2 – Possible	encle	osure	;				· · ·		
Site Desc	ription:	Undulating pasture field wit	h rise	e tow	ards	the	sout	herr	n end of the survey area.		
Figure N	o.:	32 & 33							•		
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ssib	le So	urce	e(s) c	of	Comment	Recomme	ndation
				A	Anon	naly					
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M25-1	Positively magnetic linear	535853.272,644398.245	✓		\checkmark				Possible ditch or cut feature (c. 81m E-W).	✓	
M25-2	Strongly magnetic linear	535881.327,644413.897	✓		\checkmark				Possible ditch or cut feature (c. 28m N-S).	✓	
M25-3	Positively magnetic linear	535845.443,644367.268	✓		\checkmark				Possible ditch or cut feature (c. 32m E-W).	✓	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology. The U-shaped linear trend in the centre of the survey area roughly corresponds to the location of a hatched feature on the 1829-41 6" OS map.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Area of strong magnetic response	Multiple locations						✓	May be caused by modern interference such as dumping, fencing materials or a large metal object.		



Survey	Area ID:	M26							Townland: Kyletaun		
Central	ITM Coordinate:	536305, 643453							OD height of Survey Area 32.84m OD		
Survey V	Veather Conditions:	Dry and overcast							Survey Date and Area (Ha): 18/07/18 3.95 Ha		
Heritage	Constraint Ref:	Route Selection Site AAP5	5 - W	'etlar	nd						
Site Desc	cription:					lscap	e slo	pin	g down towards to NE and S edges of the survey area. Within the field iron	remains were	e noted
	•	(possibly associated with the									
Figure N	o.:	34 & 35									
Significa	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A	le So Anon		e(s) c	of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrons	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M26-1	Highly magnetic linear	536246.868,643503.076	√		✓				Possible ditch (c. 171m N-S) which has a slight change in orientation near the centre. The southern section is a lot more magnetic than the northern part suggesting it may contain burnt remains.	√	
M26-2	Positively magnetic curvilinear	536288.790,643516.039	√		✓				Possible ditch or boundary, measuring c. 49m N-S and 43m SW-NE.	✓	
M26-3	Four isolated positively magnetic responses	536260.741,643508.201 Multiple locations			✓		✓		Four possible pits or postholes. May be archaeology or agricultural in origin.	✓	
M26-4	Two isolated positively magnetic responses	536333.124,643510.613 536344.584,643520.862			✓		✓		Two possible pits or postholes. May be archaeology or agricultural in nature.	✓	
M26-5	Curvilinear highly magnetic anomaly	536264.425,643491.260	✓		✓				Possible ditch or cut feature (c. 26.5m E-W).	√	
M26-6	Multiple isolated positively magnetic anomalies	536348.505,643479.864 Multiple locations			✓		✓		Small cluster of possible pits near the centre of the northern field. May be archaeology or agricultural in nature.	√	
M26-7	Curvilinear positively magnetic anomaly	536348.505,643479.864	✓		✓				Possible ditch in two segments (c. 38m and 27m NW-SE) which runs along M26-13 and may be archaeological in origin.	√	
M26-8	Curvilinear positively magnetic anomaly	536285.611,643463.308	√		✓				Possible ditch or cut feature (c. 55m N-S). May be part of possible archaeological features to the east including M26-7, M26-11, M26-12 and M26-13.	√	
M26-9	Curvilinear positively magnetic anomaly	536306.373,643484.484	✓		✓				Possible semi-circular ditch or cut feature (c. 16m SW-NE). May be archaeological in origin and most likely interlinks with M26-8.	✓	



Survey	Area ID:	M26							Townland: Kyletaun		
Central I	TM Coordinate:	536305, 643453							OD height of Survey Area 32.84m OD		
Survey W	Veather Conditions:	Dry and overcast							Survey Date and Area (Ha): 18/07/18 3.95 Ha		
Heritage	Constraint Ref:	Route Selection Site AAP5	5 - W	etlar	nd				, , , , , , , , , , , , , , , , , , , ,		
Site Descr	ription:					dscar	e sle	opin	g down towards to NE and S edges of the survey area. Within the field iron r	emains were	noted
	-	(possibly associated with th									
Figure No	0.:	34 & 35									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib		ource maly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M26-10	Curvilinear positively magnetic anomaly	536304.890,643463.096	✓		√				Possible semi-circular cut feature (c. 6.5m N-S) with a central possible pit. May be archaeology.	✓	
M26-11	Multiple curvilinear positively magnetic features	536321.203,643470.296 Multiple locations	√		√				Possible ditches or dug features such as slot trenches amongst a large number of possible pits (M26-12). They may be part of a possible habitation site enclosed by M26-7, M26-8 & M26-13. This habitation possibly extends to the south in M26-19.	√	
M26-12	Multiple isolated highly magnetic responses	536341.118,643460.978 Multiple locations			√		√		A large number of possible pits and postholes. May be part of a possible habitation site enclosed by M26-7, M26-8 & M26-13. Similar to M26-20 in southern field.	√	
M26-13	Very highly magnetic curvilinear anomaly	536350.439,643468.390	✓		√				Possible ditch (c. 48m NW-SE) which appears to be partially enclosing a large number of potential archaeological features (M26-11, M26-12). May be the boundary ditch of a habitation site.	√	
M26-14	Two parallel positively magnetic linears	536301.077,643435.567	✓		✓				Possible field boundary ditches (c. 58m NW-SE).	✓	
M26-15	Linear positively magnetic anomaly	536270.140,643428.945	✓		✓				Corresponds to a field boundary (c. 93.5m NW-SE) marked on the historic 1829-41 6" OS map.	√	
M26-16	Small oval magnetic anomaly	536251.980,643431.688			✓		✓		Possible archaeological ditch (c. 6m E-W by 4m N-S).	√	
M26-17	Irregular positively magnetic anomalies	536259.370,643408.260			✓		√		Three irregular shaped possible ditched features (c. 16m, 7.5m and 9.5m NW-SE) which may be archaeological in origin.	✓	



Survey	Area ID:	M26							Townland: Kyletaun		
Central I	TM Coordinate:	536305, 643453							OD height of Survey Area 32.84m OD		
Survey W	eather Conditions:	Dry and overcast							Survey Date and Area (Ha): 18/07/18 3.95 Ha		
Heritage	Constraint Ref:	Route Selection Site AAP5	5 - W	'etlar	nd				122 - 13 - 132 - 13		
Site Descr	ription:					lscap	e slo	pin	g down towards to NE and S edges of the survey area. Within the field iron i	emains were	noted
	•	(possibly associated with th									
Figure No).:	34 & 35									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor	ource naly	(s) c	f	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M26-18	Parallel highly magnetic linears	536340.593,643379.337	√		√				Possible boundary ditches (c. 74m and 45m N-S) that may be an enclosing feature related to possible habitation site stretching along the eastern edge of the survey area in both fields (M26-13 and M26-19).	✓	
M26-19	Multiple irregular/curvilinear highly magnetic anomalies	536360.169,643418.682 Multiple locations	✓		✓				Possible dug features or slot trenches to the east of M26-18. May form part of a habitation site together with multiple possible pits (M26-10). Similar to M26-11 in northern field.	✓	
M26-20	Multiple isolated highly magnetic responses	536354.493,643360.057 Multiple locations			✓				A large number of possible pits or postholes to the east of M26-18. May be part of a habitation site. Similar to M26-12 in northern field.	√	
M26-21	Curvilinear negatively magnetic anomaly	536311.225,643307.853			✓				Possible stone drain, boundary wall or bank (c. 124m SW-NE).	✓	
M26-22	Highly magnetic linear	536320.621,643274.647	✓		✓				Possible ditch or cut feature (c. 29m E-W).	√	
M26-23	Multiple isolated positively magnetic anomalies	536325.319,643213.937			✓		✓		Cluster of six possible pits or postholes near the southern corner of the survey area, which form a circular pattern.	✓	
M26-24	Curvilinear highly magnetic anomaly	536340.755,643215.614			✓		✓		Possible dug feature (c. 8m SW-NE) beside a possible pit. May be archaeology.	√	
M26-25	Parallel curvilinear highly magnetic anomalies	536342.432,643185.763	✓		√				Two possible ditches (c. 27m SW-NE) which may be running either side of a bank. Possible boundary or routeway.	✓	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, agriculture or geology.	✓	



Survey	Area ID:	M26							Townland: Kyletaun		
Central I	TM Coordinate:	536305, 643453							OD height of Survey Area 32.84m OD		
Survey W	eather Conditions:	Dry and overcast							Survey Date and Area (Ha): 18/07/18 3.95 Ha		
Heritage	Constraint Ref:	Route Selection Site AAP5	5 - W	etlar	ıd						
Site Desci	ription:	Pasture field which contain (possibly associated with the							g down towards to NE and S edges of the survey area. Within the field iron r test pit.	emains were	e noted
Figure No).:	34 & 35									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly	` /	of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Area of strong magnetic response	Multiple locations							May be caused by modern interference such as dumping, fencing materials or a large metal object.		



Survey	Area ID:	M27							Townland: Rathkeale / Kyletau	un	
Central	ITM Coordinate:	536485, 642674							OD height of Survey Area 33 m OD		
Survey V	Veather Conditions:	Periods of rain							Survey Date and Area (Ha): 26/07/18 & 27/09/18 & 17/	/10/18 8.29	9 Ha
Heritage	Constraint Ref:	Route Selection Site AAP5	5 - W	etlan	ıd				·		
Site Desc	eription:								pedrock outcrop, tall grass, trees and shrubs growing in the survey area. The ralong the south and east. The southern portion of the survey area was heavily		
Figure N	o.:	34 & 35, 36 & 37									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ssibl A	le So Anon		e(s) c	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M27-1	Positively magnetic linear	536440.810,643014.279			\checkmark		✓		Possible ditch or cut feature (c. 61m N-S).	✓	
M27-2	Two arcing negatively magnetic features and isolated positive responses	536510.206,642671.896 Multiple locations			✓				Two arcing bank, stone or compacted earth features which follow the alignment of a topographical expression visible in the field (28m diameter). A series of possible pits was detected surrounding these features. Further, an arcing bank, stone or compacted earth features can be seen within the interior of this probable banked enclosure.	✓	
M27-3	Curvilinear positive magnetic anomaly	536535.678,642663.514	✓		✓				Possible ditch of archaeological or agricultural origin (14m in length).	√	
M27-4	Two arcing positive magnetic responses	536535.678,642663.514	✓		✓				Two arcing ditches or cut features which are likely to be associated with the same possible archaeological feature (20m N-S)	√	
M27-5	Series of interconnecting and parallel positively magnetic linears	536498.402,642572.237 Multiple locations	√		✓				Series of interconnecting and parallel ditches which form a relict field system. Some boundaries appear to be double ditched and may extend into M27-9.	√	
M27-6	Two linear weakly magnetic responses terminating in a circular response	536498.402,642572.237	√		✓				Two linear possible ditches or cut features (43m in length) which appear to terminate in a circular ditch (18m in diameter). This anomaly could be archaeological in origin.	√	
M27-7	Arcing positive magnetic response	536537.873,642550.023	✓		✓				Arcing ditch or cut feature (25m in length) which may be agricultural or archaeological in origin.	√	



Survey	Area ID:	M27							Townland: Rathkeale / Kyleta	un	
Central	ITM Coordinate:	536485, 642674							OD height of Survey Area 33 m OD		
Survey V	Veather Conditions:	Periods of rain							Survey Date and Area (Ha): 26/07/18 & 27/09/18 & 17	/10/18 8.2	9 Ha
Heritage	Constraint Ref:	Route Selection Site AAP5	5 - W	etlar	nd				·		
Site Desc	cription:								pedrock outcrop, tall grass, trees and shrubs growing in the survey area. The along the south and east. The southern portion of the survey area was heavily		
Figure N	o.:	34 & 35, 36 & 37									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A	le So Anor			of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M27-8	Linear positive magnetic anomaly	536537.873,642550.023	√		✓				Linear ditch or cut feature (69m in length) which may be agricultural or archaeological in origin and it may respect M27-7.	√	
M27-9	Series of interconnecting and parallel positively magnetic linears	536549.677,642499.417	✓		✓				Series of interconnecting and parallel ditches which represent former field divisions. The orientation of these anomalies matches M27-5 suggesting that they once formed contemporary boundaries.	√	
M27-10	Five parallel magnetic anomalies dissecting an area of magnetic enhancement	536639.8,642629.662 Multiple locations	√		√				Five parallel magnetic anomalies which run through an area of magnetic enhancement. These features may be associated with cultivation containing burnt or fired remains or may cut through an earlier possibly archaeological feature.	√	
M27-11	Linear positive magnetic anomaly	536549.717,642672.816	√		✓				Linear ditch or cut feature (69m in length) which may be agricultural or archaeological in origin.	√	
M27-12	Curvilinear positive magnetic anomaly	536507.34,642732.504	✓		✓				Curvilinear ditch or cut feature (20m in length) which may be agricultural or archaeological in origin.		
M27-13	Three isolated magnetic anomalies	536465.54,642724.78 Multiple locations			✓		✓		Three isolated possible pits which may be associated with agricultural or archaeological processes.		
	Multiple linear and curvilinear magnetic trends	Multiple locations			√		✓		Possible archaeology, agriculture or geology. Within the central field a series of roughly parallel trends were detected which could be associated with alluvial processes such as the old shoreline of an old lake.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running mostly in N-S direction.		



Survey	rvey Area ID: M27								Townland: Rathkeale / Kyle	aun	
Central I	ΓM Coordinate:	536485, 642674							OD height of Survey Area 33 m OD		
Survey W	eather Conditions:	Periods of rain							Survey Date and Area (Ha): 26/07/18 & 27/09/18 &	17/10/18 8.2	29 Ha
Heritage (Constraint Ref:	Route Selection Site AAP55	- We	tlanc	1						
Site Descr	ription:		•						drock outcrop, tall grass, trees and shrubs growing in the survey area. Thong the south and east. The southern portion of the survey area was heaven		
Figure No).:	34 & 35, 36 & 37									
Significan	t Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Pos	Possible Source(s) of Anomaly					Comment	Recomm	endation
			Ditch	Archaeology	? Archaeology	ڪ ا		Interference / Modern		Test Excavation	Geophysical Survey
	Areas of strong magnetic response	Multiple locations					V		These may be caused by modern interference such as dumping, large netal objects, boreholes or fencing materials.	e	



Survey	Area ID:	M28							Townland:	Wolfesburgess East, F	Blossomh	ill
Central 1	TM Coordinate:	537524, 642618							OD height of Survey Area	35 m OD		
Survey V	Veather Conditions:	Dry							Survey Date and Area (Ha):	19/07/18 1.98 Ha		
Heritage	Constraint Ref:	Wetland										
Site Desc	ription:	northeastern field was slope	ing do	own t	owa	rds s	outh	and	veeds. The field is mostly flat in the western was partially grazed and partially overgro to a large herd of cattle present.		ds east. The	
Figure N	0.:	38 & 39										
Significa	nt Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Po	ossib		ource naly		of	Comment		Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
M28-1	Highly magnetic linear	537443.821,642732.326	√		√				Possible ditch or cut feature (c. 34m NE-S	W).	√	
M28-2	Multiple isolated magnetic responses	537454.726,642720.258 Multiple locations			✓		✓		Four possible pits or postholes in the north		✓	
M28-3	Highly magnetic parallel linear anomalies	537455.505,642703.908	✓		✓			✓	Two parallel possible ditches or cut featur be archaeological or agricultural origin.	es (c. 38m and 60m E-W). May	√	
M28-4	Very highly magnetic linear	537526.388,642611.256	✓		✓			✓	Corresponds to a field boundary (c. 46m (1829-41 6"; 1897-1913 25"; c.1900 (materials or other dumped magnetic mater	Cassini). May contain fencing	✓	
M28-5	Very highly magnetic linear	537608.177,642615.539	✓		√			√	Corresponds to a field boundary (29m N-S 6"; 1897-1913 25"; c.1900 Cassini). Ma burnt materials.	S) on historic OS maps (1829-41	√	
M28-6	Positively magnetic linear	537656.861,642638.118	√	ĺ	✓				Possible ditch or cut feature (c. 39m NW-S	SE).	✓	
M28-7	L-shaped positively magnetic anomaly	537747.607,642674.322	✓		✓				Possible ditch or cut feature (c. 14m NW-S	·	√	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology.		✓	
	Multiple parallel linear magnetic trends	Multiple locations							Highly magnetic cultivation furrows runni	ng in multiple directions.		



Survey	Area ID:	M28							Townland: Wolfesburgess East, I	Blossomh	ill
Central I	TM Coordinate:	537524, 642618							OD height of Survey Area 35 m OD		
Survey W	eather Conditions:	Dry							Survey Date and Area (Ha): 19/07/18 1.98 Ha		
Heritage	Constraint Ref:	Wetland									
Site Desci	ription:	The long southern field contained thick tall grass and weeds. The field is mostly flat in the western two thirds and sloping up towards east. The northeastern field was sloping down towards south and was partially grazed and partially overgrown with thistles. Two of the northern fields could not be surveyed due to a large herd of cattle present. 38 & 39									
Figure No).:	38 & 39									
Significan	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	Possible Source(s) Anomaly				of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
	Areas of strong magnetic response	Multiple locations							These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Surve	y Area ID:	M29							Townland:	Wolfesburgess East,	Blossom	hill
Central	ITM Coordinate:	537581, 642656							OD height of Survey Area	32.5 m OD		
Survey	Weather Conditions:	Sunny							Survey Date and Area (Ha):	19/07/18 0.49 Ha		
Heritag	e Constraint Ref:	Wetland										
Site Des	cription:	Flat pasture field with fresh may have suffered prolonge					me s	ilage	bales left within survey area. It contained v	ery low background magnetism	indicating th	hat it
Figure I	No.:	38 & 39										
Significa	ant Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Po	Possible Source Anomaly			` /	of	Comment		Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
	Two curvilinear magnetic trends	Multiple locations			√		✓		Possible archaeology, agricultural or geolog	y.	✓	
	Area of strong magnetic response	Multiple locations						✓	These may be caused by modern interfermetal objects, boreholes or fencing materials			



Survey	Area ID:	M30							Townland: Blossomhill		
Central 1	ITM Coordinate:	537902, 642751							OD height of Survey Area 44.5m OD		
Survey V	Veather Conditions:	Sunny with clouds							Survey Date and Area (Ha): 19/10/18 0.277 Ha		
Heritage	Constraint Ref:	SMR No. LI029-147 enclo	sure /	LiD	AR S	Site 6	55.2	- P	ossible platform		
Site Desc	cription:	Hillside							•		
Figure N	o.:	38 & 39									
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M30-1	Curvilinear positively magnetic anomaly	537898.093,642771.366	✓		✓				Possible curving ditch (c. 29m NW-SE) which appears to correspond in part with a feature shown on the 1829-41 6" OS map. The southern end terminates at M30-4. This could represent a former archaeological enclosure boundary.	√	
M30-2	Area of magnetic enhancement	537903.018,642764.905			✓		✓		Magnetically enhanced area (max. 10m in diameter) inside the bend of M30-1. May be caused soil disturbance, archaeology or agricultural activities.	√	
M30-3	Sub-circular weakly magnetic anomaly	537895.425,642752.905			✓				Possible sub-circular archaeological feature (c. 4.5m E-W, 3.5m N-S) with a gap at the northern side.	✓	
M30-4	Positively magnetic linear	537898.298,642745.931	✓		✓				Possible ditch or cut feature (c. 40.8m E-W). May be related to M30-5.	✓	
M30-5	Highly magnetic linear	537906.199,642740.905	✓		✓				Possible ditch or cut feature (c. 35m E-W). The western segment is highly magnetic and may contain charcoal or ferrous materials. M30-5 related to M30-4.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Highly magnetic cultivation furrows running roughly in N-S direction.		
	Areas of highly magnetic responses	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects or fencing materials.		



Survey	Area ID:	M31							Townland: Clogh West		
Central I	TM Coordinate:	539070, 643317							OD height of Survey Area 42.99 m OD		
Survey V	Veather Conditions:	Overcast							Survey Date and Area (Ha): 02/10/18 & 28/11/2018 2	.46 Ha	
Heritage	Constraint Ref:	LiDAR Site 66.4 – Possible	encl	osur	e				1		
Site Desc	ription:					ındar	ry pa	rtial	lly extant within the survey area.		
Figure N	*	40 & 41					<i>J</i> 1		,		
	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M31-1	Magnetic linear	538882.333,643279.194	✓		√				Relict field boundary ditch shown on the historic OS maps (1829-41 6"; 1897-1913 25"; c.1900 Cassini).	√	
M31-2	Isolated points and curvilinear anomalies of high magnetism	538882.333,643279.194 Multiple locations			✓		✓		Numerous highly magnetic responses which may form two sub- rectangular anomalies (c.24m in length). These may be associated with habitation and have possibly suffered burning; however, they could also be agricultural or geological.	~	
M31-3	Oval magnetic anomaly	539109.851,643315.917	✓		√				Possible oval ditch or cut feature (c. 13m N-S, 10m E-W), possibly archaeological.	√	
M31-4	Curvilinear magnetic anomaly	539128.637,643327.184	✓		✓				Possible ditch or cut feature (44m in length) which may be associated with M31-3.	√	
M31-5	Rectangular magnetic feature	539128.637,643327.184	✓		✓				Rectangular area of high magnetic which may be associated with burnt archaeological remains or agricultural processes. Measuring 17m N-S and 5m E-W.	√	
M31-6	Magnetic linear	539195.431,643331.775	✓		√				Relict field boundary ditch shown on the historic OS maps (1829-41 6"; 1897-1913 25"; c.1900 Cassini).	√	
M31-7	Magnetic right-angled features	539221.732,643313.831	✓		✓				Possible relict field boundary (122m in length) which runs parallel to M31-6. Not shown on historic mapping.	√	
M31-8	Curvilinear anomalies of high magnetism	538976.036,643257.252 Multiple locations			✓		✓		Numerous highly magnetic responses which are similar in composition to M31-2. The largest of these anomalies measures 9m N-S, 8m E-W. These anomalies are likely to be associated with habitation or burning, however they could also be agricultural or geological.		



Survey	urvey Area ID: M31 entral ITM Coordinate: 539070, 643317								Townland: Clogh West		
Central I	TM Coordinate:	539070, 643317							OD height of Survey Area 42.99 m OD		
Survey W	eather Conditions:	Overcast							Survey Date and Area (Ha): 02/10/18 & 28/11/2018 2.4	6 Ha	
Heritage	Constraint Ref:	LiDAR Site 66.4 – Possible	encle	osure	2				` ' '		
Site Desc	ription:	Rolling pasture field with a	ı old	field	bou	ındaı	ry pa	rtial	y extant within the survey area.		
Figure No	D.:	40 & 41					•				
Significar	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib	le So	ource	e(s) (of	Comment	Recomme	endation
				A	Anor	naly					
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M31-9	Two interconnecting magnetic linears	538972.612,643237.774	✓		✓				Two possible ditch or cut features (c.52m and 32m in length) which could be archaeological or relate to relict field boundaries.	√	
M31-10	Zone of magnetic enhancement	538957.603,643245.539			✓		✓		Linear zone of magnetic enhancement which lies to the west of M31-9. This anomaly is highly magnetic in places suggesting that it contains burnt deposits. It may be archaeological, agricultural or geological in origin.	√	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology.	✓	
	Multiple linear trends	Multiple locations							Highly magnetic cultivation furrows running in multiple directions.		



Survey	Area ID:	M32							Townland: Croagh / Ball	ycannon	
Central I	TM Coordinate:	540381, 643330							OD height of Survey Area 35.42m OD		
Survey V	Veather Conditions:	Sunny; Sunny with clouds							Survey Date and Area (Ha): 05/07/18, 25/09/18	4.75Ha	
Heritage	Constraint Ref:	Area of potential north of C	roagh	ı vill	age						
Site Desc	ription:	Gently sloping pasture field Extension: cut crop	cont	ainin	ıg tal	l veg	getat	ion			
Figure N	0.:	42 & 43									
Significa	nt Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon			of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrons	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M32-1	Two parallel positively magnetic linears	540237.159,643342.722	√		✓				Possible field boundary ditches (c. 38m and 52m N-S).	✓	
M32-2	Positively magnetic linear anomaly	540280.658,643335.420	✓		✓				Possible ditch or cut feature (c. 42m N-S).	√	
M32-3	Cluster of multiple positively magnetic anomalies	540352.715,643329.114 Multiple locations			\		<		This represents a large number of possible pits, postholes and curvilinear dug features across an area of c. 42m E-W by 28m N-S. This may be caused by habitation, agricultural activity or geology. Probably related to M32-4.	\	
M32-4	Cluster of multiple positively magnetic anomalies	540396.879,643324.135 Multiple locations			✓		✓		Similar to M32-3, this represents a large number of possible pits, postholes and linear or curvilinear dug features across an area of c. 39m E-W by 33m N-S. This may be caused by habitation, agricultural activity or geology.	~	
M32-5	Positively magnetic linear and curvilinear anomalies	540353.892,643297.567			✓		✓		One linear possible dug feature (c. 7.5m N-S) and one curvilinear feature (c. 9.5m N-S). May be associated with M32-3 and M32-4.	√	
M32-6	Highly magnetic curvilinear	540437.293,643318.039	√		✓				Possible ditch (c. 38m NE-SW and c. 34m N-S), which may represent a former boundary either archaeological or agricultural in origin. The highly magnetic nature of the anomaly indicates that it contains burnt remains. The feature contains an apparent break in its NW corner.	√	
M32-7	Positively magnetic linear anomaly	540450.911,643332.873	✓		✓				Possible ditch (c. 36m in length), which may be associated with M32-6, or represent another former field boundary.	✓	



Survey	Area ID:	M32 540381, 643330 Supply Supply with clouds							Townland: Croagh / Ball	ycannon	
Central I	TM Coordinate:	540381, 643330							OD height of Survey Area 35.42m OD		
Survey V	Veather Conditions:	Sunny; Sunny with clouds							Survey Date and Area (Ha): 05/07/18, 25/09/18	4.75Ha	
Heritage	Constraint Ref:	Area of potential north of C	roagl	ı vill	age						
Site Desc	ription:	Gently sloping pasture field				l ve	getat	ion			
		Extension: cut crop				Ì					
Figure N	0.:	42 & 43									
Significan	nt Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon			of	Comment	Recomme	ndation
			Ditch	0gy	y	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M32-8	Arcing magnetic feature	540457.309,643333.359	✓		✓				Possible ditch or cut feature (c. 63m in length). This anomaly could be archaeological in origin and may be truncated by M32-9.	√	
M32-9	Magnetic linear	540457.309,643333.359	✓		√				Possible ditch or cut feature (c. 41m in length).	√	
M32-10	Magnetic linear	540475.529,643355.149	✓		✓				Possible ditch or cut feature (c. 46m in length) which interlinks with M32-11.	√	
M32-11	Magnetic linear	540483.663,643379.866	✓		✓				Possible relict field boundary ditch or cut feature (c. 130m in length) which may once have enclosed enhancement M32-13.	√	
M32-12	Magnetic curvilinear	540483.663,643379.866	✓		✓				Possible ditch or cut feature (c. 85m in length), which runs through the middle of M32-13.	√	
M32-13	Area of magnetic enhancement	540499.605,643428.324			✓		✓		Area of enhancement which is likely to be associated with agricultural or geological processes.	√	
M32-14	Right-angled magnetic anomaly	540499.605,643428.324	✓		✓				Possible ditch or cut feature (c. 40m in length) which may represent a former field division.	√	
M32-15	Curvilinear magnetic feature	540340.184,643366.532	✓		✓				Possible ditch or cut feature (c. 9m in length) that may be agricultural or archaeological in origin.	√	
	Multiple curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology which is contained within M32-13.	√	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		



Survey	Area ID:	M33							Townland: Croagh		
Central 1	TM Coordinate:	541551, 644161							OD height of Survey Area 26.2 m OD		
Survey V	Veather Conditions:	Sunny							Survey Date and Area (Ha): 10/07/18 – 24/07/1	8 10.25 Ha	
Heritage	Constraint Ref:	Route Selection Site CH 12	7 / Li	DAI	R Site	e 61	.2-61	.4 –	Possible settlement cluster and two enclosures		
Site Desc	ription:	Mostly flat pasture fields w	ith sh	ort g	rass.						
Figure N	0.:	44 & 45									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly		of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M33-1	Positively magnetic linear anomalies	541472.728,644308.177	✓		✓		✓		Three possible ditches running in NE-SW direction and measuring c. 22m, 6m and 7m in length. These may be agricultural in origin.	√	
M33-2	Positively magnetic sub- angular anomaly	541435.807,644202.630	✓		✓				Possible ditch or enclosing feature measuring c. 25m E-W, 7m N-S.	✓	
M33-3	Positively magnetic arcing anomaly	541469.036,644201.400	√		✓				Possible arcing ditch measuring c. 6m NW-SE and 11m SW-NE.	√	
M33-4	Multiple linear and curvilinear magnetic anomalies	541477.839,644213.964 541517.000,644209.504 541502.624,644281.844	✓		√				Four possible ditches which correspond with field boundaries marked on historic OS maps (1829-41 6", 1897-1913 25" and c.1900 Cassini). The area to the south of the southernmost field boundaries is covered in highly magnetic cultivation furrows, whereas the area to the north is of very low magnetic contrast, suggestive of waterlogging.	√	
M33-5	Two weakly magnetic curvilinear	541590.486,644335.892 541573.891,644328.704	✓		√				Two possible ditches (c. 66m NW-SE and c. 55m NW-SE, 25m SW-NE). The northern possible ditch appears to form a boundary between a more magnetically enhanced area to the northeast and a magnetically quieter area to the southwest.	✓	
M33-6	Weakly magnetic linear	541557.572,644253.230	✓		✓				Possible ditch or cut feature (c. 18m NW-SE). May be related to possible lime kiln M33-8.	✓	
M33-7	Weakly magnetic L-shaped response	541557.296,644241.065	√		✓				Possible ditch or cut feature (c. 9m E-W, 11m N-S). May be related to possible lime kiln M33-8.	√	
M33-8	Very highly magnetic	541571.678,644249.083			✓				Corresponds to a lime kiln marked on historic OS maps (c.1900 Cassini	√	



Survey	Area ID:	M33							Townland: Croagh		
Central I	TM Coordinate:	541551, 644161							OD height of Survey Area 26.2 m OD		
Survey W	Veather Conditions:	Sunny							Survey Date and Area (Ha): 10/07/18 – 24/07/1	8 10.25 Ha	
Heritage	Constraint Ref:	<u> </u>	27 / Li	DAI	R Sit	e 61.	2-61	.4 -	- Possible settlement cluster and two enclosures		
Site Desc	ription:	Mostly flat pasture fields w									
Figure No	*	44 & 45									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly	(s) c	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrons	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
	isolated anomaly								and 1897-1913 25"). Dimensions of the geophysical signature are c. 12m N-S and 11m E-W. This anomaly is located on the edge of a possible settlement cluster identified in the LiDAR data site 61.2.		
M33-9	Curvilinear and L-shaped magnetic anomalies	541592.832,644269.134	✓		√				Possible field boundaries or ditches (c. 64m NE-SW and 32.5m E-W). This anomaly matches the feature interpreted as a possible settlement cluster in the LiDAR data site 61.2.	√	
M33-10	Weakly magnetic curvilinear	541590.896,644243.970	✓		✓				Possible ditch or field division (c. 87.5m SW-NE).	√	
M33-11	Positively magnetic curvilinear	541646.281,644262.165	✓		✓				Possible ditch or cut feature (c. 19m N-S and 15m NW-SE) which may link with M33-12	√	
M33-12	Positively magnetic curvilinear anomaly	541660.224,644249.390	✓		✓				Possible section of a field boundary or double ditch (c.28m SW-NE).	√	
M33-13	Negatively magnetic linear	541399.449,644126.015	✓		✓				Possible pronounced cultivation ridge or bank (c. 44.5m NW-SE).	✓	
M33-14	Negatively magnetic linear	541428.639,644142.225	✓		√				Possible pronounced cultivation ridge or bank (c. 72m SW-NE).	✓	<u> </u>
M33-15	L-shaped highly magnetic anomaly	541448.640,644135.471	✓		✓				Possible drain or cut feature (c. 34m NW-SE, 46m SW-NE) containing burnt remains.	✓	
M33-16	Parallel positive and negative magnetic linears	541463.506,644124.664	✓		✓				Possible ditch and bank (c. 43m SW-NE) with a kink at the centre, which may be associated with later agricultural processes and abuts M33-19.	√	
M33-17	Parallel positively magnetic linears	541427.288,644100.080	✓		✓				Possible field boundary or ditches (c. 67.6m SW-NE). Running up to western side of M33-19.	√	
M33-18	Curvilinear positively	541453.775,644098.999	✓		\checkmark				Possible ditch (c. 77m NW-SE). Running up to and possibly joining with	✓	



Survey	Area ID:	M33							Townland: Croagh		
Central I	TM Coordinate:	541551, 644161							OD height of Survey Area 26.2 m OD		
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 10/07/18 – 24/07/1	8 10.25 Ha	
Heritage	Constraint Ref:	Route Selection Site CH 127	/ L	iDAl	R Sit	e 61	.2-6	1.4 -	Possible settlement cluster and two enclosures		
Site Desc	ription:	Mostly flat pasture fields wit	h sh	ort g	grass						
Figure No	*	44 & 45									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib		ource maly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
	magnetic anomaly								enclosure M33-19 at the southern side.		
M33-19	Circular positively magnetic anomaly.	541478.912,644125.475	√	✓					Segments of a ditch forming a circular enclosure which is cut by field boundaries at its northern and eastern sides splitting the feature between two fields. The diameter is c. 34m and there are two gaps at the western side. There is a possible extension at the southern side (c. 17m E-W) which appears to continue towards east as M33-18. This anomaly matches LiDAR site 61.3.	√	
M33-20	Multiple isolated magnetic anomalies	541486.209,644111.967 Multiple locations within M33-19		√					Possible pits or postholes contained within enclosure M33-19. These anomalies match LiDAR site 61.3.	√	
M33-21	L-shaped highly magnetic anomaly	541440.261,644064.419	√		✓				Possible ditched feature (c. 11.5m N-S, 15m E-W). On the historic 1829-41 6" OS map, there is a small structure marked roughly in the area between M33-21 and M33-22 and therefore these anomalies may be related.	√	
M33-22	L-shaped highly magnetic anomaly	541472.443,644082.164	✓		√				Possible ditched feature (c. 10m E-W, 13m N-S) with possible extensions at east and south. On the historic 1829-41 6" OS map, there is a small structure marked roughly in the area between M33-21 and M33-22 and therefore these anomalies may be related.	√	
M33-23	Curvilinear magnetic anomaly	541443.285,644043.870	✓		✓				Possible ditch or cut feature (c. 36.5m E-W).	√	



Survey	Area ID:	M33							Townland: Croagh		
Central I'	TM Coordinate:	541551, 644161							OD height of Survey Area 26.2 m OD		
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 10/07/18 – 24/07/1	8 10.25 Ha	
Heritage	Constraint Ref:	Route Selection Site CH 12	7 / Li	DAF	R Site	e 61.	2-61	.4 –	Possible settlement cluster and two enclosures		
Site Descr	ription:	Mostly flat pasture fields wi	th sh	ort g	rass.						
Figure No).:	44 & 45									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon	ource naly	e(s) c	of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M33-24	Parallel positively magnetic linears	541524.655,644057.765	✓		✓				Possible ditches or cut features (c. 14m SW-NE).	√	
M33-25	Weakly magnetic curvilinear	541552.117,644072.337	✓		✓				Possible ditch or cut feature (c. 14.5m N-S).	✓	
M33-26	Curvilinear magnetic anomalies	541556.864,644004.898	✓		✓				Five segments of a possible ditch spanning across c. 86m SW-NE. the presence of cultivation furrows may have impacted the features detection in some areas.	✓	
M33-27	Curvilinear band of low magnetism	541576.867,644109.614	✓		✓				Possible compacted earth or stone feature such as a path, bank or geological ridge. Measuring c. 70m E-W and appears to intersect or join with M33-28 at its centre.	√	
M33-28	L-shaped band of low magnetism	541596.192,644130.625	√		✓				Possible compacted earth or stone feature such as a path, bank or geological ridge. Measuring c. 71m NE-SW, 104m NW-SE and appears to intersect or join with M33-27.	√	
M33-29	Semi-circular positively magnetic anomaly	541650.439,644148.247	✓		✓				Possible ditched feature (c. 12m NE-SW) with a short extension towards southeast (c. 3.5m). This feature may be archaeological in origin.	√	
M33-30	Broad linear magnetic feature	541608.737,644036.415	✓		✓				Corresponds to a field boundary (107m long and up to 7.5m wide) marked on historic OS maps (1829-41 6", 1897-1913 25" and c.1900 Cassini).	√	



Survey	Area ID:	M33							Townland: Croagh		
Central I'	TM Coordinate:	541551, 644161							OD height of Survey Area 26.2 m OD		
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 10/07/18 – 24/07/1	8 10.25 Ha	
Heritage	Constraint Ref:	Route Selection Site CH 127	/ Li	DAF	R Sit	e 61.	2-61	1.4 -	Possible settlement cluster and two enclosures		
Site Descr	ription:	Mostly flat pasture fields wit	h sh	ort g	rass.						
Figure No	D.:	44 & 45									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly	e(s) o	of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M33-31	Broad oval band of low magnetism	541653.151,644093.009			√		✓		Possible compacted earth or stone bank forming an enclosure with a gap at north. External diameter is 36m E-W and 43m N-S. Internal diameter is 24m E-W and 28.5m N-S. Short linear segment (c. 11m in length) extending towards east. Although it is possible that this anomaly is geological in origin its oval nature suggests archaeology. This anomaly matches LiDAR site 61.4.	√	
M33-32	Multiple isolated magnetic responses	541631.113,644085.214 Multiple locations within M33-31			✓				A number of possible pits or postholes and a curvilinear feature (c. 13m N-S) contained within enclosure M33-31. These anomalies match LiDAR site 61.4.	√	
M33-33	Isolated positively magnetic anomaly	541654.818,644099.124			✓		✓		Possible pit or dug feature (c. 5m E-W, 4m N-S) located on the northeastern edge of M33-31.	√	
M33-34	Multiple isolated magnetic responses	541670.006,644116.303M ultiple locations			✓		✓		Possible pits or postholes of archaeological or agricultural origin.	√	
M33-35	Curvilinear positively magnetic anomalies	541706.327,644077.404	✓		✓		✓		Three curving possible ditches or dug features forming a sub-circular feature measuring c. 13m in diameter,	✓	
	Multiple curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology.	✓	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions. The furrows are very pronounced throughout most of M33 indicating burnt remains.		
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey	Area ID:	M34							Townland: Graigue (ED	Graigue (ED Croagh)		
Central I	TM Coordinate:	542121, 644770							OD height of Survey Area 14.61 m OD			
Survey V	Veather Conditions:	Hot and sunny							Survey Date and Area (Ha): 06/07/18 3.79 Ha			
Heritage	Constraint Ref:	SMR No. LI020-159 / Route	Sel	ectio	n Si	te Al	H119	9 – I	Hall house / Clonshire Castle			
Site Desc	ription:	Flat pasture field, covered by	sho	rt gi	ass							
Figure N	0.:	46 & 47										
Significa	nt Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Po			ource naly		of	Comment	Recommen	ndation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey	
M34-1	Weakly magnetic linear	542148.221,644851.708	✓		✓		✓		Possible ditch or cut feature (c. 30m E-W).	✓		
M34-2	Positively magnetic curvilinear anomaly	542145.783,644808.201	✓		✓				Possible ditch (c. 12m NE-SW). May be related to M34-3.	✓		
M34-3	Parallel positively magnetic linears	542142.649,644796.715	√		✓				Two possible ditches or cut features (c. 151m and 86m NE-SW) containing an c. 5m separation from each other and possibly continue as a trend in the southern field. These anomalies may be a field boundary or ditches along a road or trackway.	√		
M34-4	Highly magnetic curvilinear	542185.828,644861.453	✓		✓			✓	Possible dug feature. Its highly magnetic nature indicates that it could be archaeological or associated with modern disturbance (c. 23m NE-SW).	✓		
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology.	✓		
	Multiple parallel linear magnetic trends	Multiple locations in the northern field							Cultivation furrows running in multiple directions. The furrows are very pronounced in the western section of the northern field.			
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.			



Survey	Area ID:	M35							Townland:	Graigue (ED Croagh), Clo	onshire N	More
Central I	TM Coordinate:	542326, 644993							OD height of Survey Area	11.5 m OD		
Survey W	Veather Conditions:	Dry							Survey Date and Area (Ha):	24/07/18 1.72 Ha		
Heritage	Constraint Ref:	SMR No. LI020-159 / Route	e Sel	ectic	on Si	te A	H11	9 – I	Iall house / Clonshire Castle	•		
Site Desc	ription:									ral field was divided into smaller areas NE corner. Western field could not be		
Figure No	0.:	46 & 47										
Significa	nt Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Po	ossib	le S	ourc	e(s)	of	Com	ment	Recomme	endation
					Anoi	maly	•					
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Int			Test Excavation	Geophysical Survey
M35-1	Weakly magnetic irregular response	542420.808,645050.740	✓		✓		✓		Possible ditch or cut feature (c. 42m l	E-W).	✓	
M35-2	Positively magnetic linear	542446.406,645058.347	✓		✓		✓		Possible ditch or cut feature (c. 16m l	N-S).	✓	
M35-3	Positively magnetic linear	542452.287,645071.832	✓		✓		✓		Possible ditch or cut feature (c. 17m l	E-W).	✓	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology.		✓	
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern is metal objects, boreholes or fencing m	nterference such as dumping, large aterials.		



Survey	Area ID:	M36							Townland: Gortnagrour		
Central l	TM Coordinate:	542857, 645555							OD height of Survey Area 9.5 m OD		
Survey V	Veather Conditions:	Overcast							Survey Date and Area (Ha): 31/07/18 2.04 Ha		
Heritage	Constraint Ref:	LiDAR Site 55.1 – Possible	encl	osure							
Site Desc	ription:		t gra			a mo	dera	te ri	se towards southeast corner of the survey area. A large oval slightly raised at	ea with a dip	p in its
Figure N	o.:	48 & 49									
Significa	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ssibl A		ource naly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M36-1	Multiple isolated magnetic responses	542798.011,645467.829 Multiple locations			✓		✓		Possible pits or postholes in the southwestern corner of the survey area. Of archaeological or agricultural origin.	✓	
M36-2	Positively magnetic linear	542854.075,645556.511	✓		✓				Possible ditch or boundary feature (c. 102m N-S).	✓	
M36-3	Parallel linear/curvilinear magnetic anomalies	542886.189,645580.722	√		✓				These appear to be two parallel possible ditches, spaced c. 2.5m apart and running roughly in N-S direction for c. 40m. At the southern end they appear to diverge and follow a sub-oval shape which contains M36-4 and M36-5. These ditches are likely to be archaeological and are suggestive of an enclosure, which coincide with a topographical expression.	✓	
M36-4	Multiple isolated highly magnetic responses	542896.803,645529.036 Multiple locations within and surrounding M36-5			✓				Several possible pits and postholes or dug features which are contained within M36-3 and are likely to be associated with M36-5.	✓	
M36-5	Sub-rectangular/oval negatively magnetic anomaly	542897.075,645545.358			√		√		This feature coincides with an oval topographic expression (LiDAR site 55.1). It appears to be bounded by M36-3 and its negative signature indicates that it comprises of stone or bank material. The external diameter of the total anomaly is c. 37m N-S by 21m E-W with a possible annex at the southwestern side measuring c. 13.5m N-S by 20m E-W. M36-5 is likely to represent multiple internal divisions within a ditched enclosure.	√	
M36-6	Parallel highly magnetic linear anomalies	542901.157,645590.243	✓		✓				Possible field boundary comprising a bank and two ditches (c. 87m NW-SE).	√	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, agriculture or geology.	✓	



Survey	rvey Area ID: M36 tral ITM Coordinate: 542857, 645555								Townland: Gortnagrour		
Central I	TM Coordinate:	542857, 645555							OD height of Survey Area 9.5 m OD		
Survey W	eather Conditions:	Overcast							Survey Date and Area (Ha): 31/07/18 2.04 Ha		
Heritage	Constraint Ref:	LiDAR Site 55.1 – Possible	e encl	osur	e						
Site Descr	ription:	Pasture field covered by sh centre is visible on the grou	_	ass v	vith a	a mo	dera	te ris	se towards southeast corner of the survey area. A large oval slightly raised ar	ea with a di	p in its
Figure No).:	48 & 49									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource maly	` '	of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey	Area ID:	oordinate: 543887, 646390							Townland: Tuogh		
Central I	TM Coordinate:	543887, 646390							OD height of Survey Area 11 m OD		
Survey W	Veather Conditions:	Overcast							Survey Date and Area (Ha): 31/07/18 0.5 Ha		
Heritage	Constraint Ref:	SMR No LI021-005 / Route	Sele	ection	n Sit	e Al	H109) - R	ingfort		
Site Descr	ription:	Pasture field covered by sho	rt gra	ass. '	The	west	ern f	field	could not be surveyed due to high corn crop.		
Figure No	o.:	50 & 51									
Significar	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		ole So Ano		e(s)	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M37-1	Highly magnetic L-shaped anomaly	543883.926,646371.602	✓		✓				Possible ditch (c. 47.5m N-S, 14m E-W) which may contain burnt remains.	√	
	L-shaped magnetic trends	543907.369,646387.902			✓		✓		Possible agricultural.	√	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in SW-NE direction.		
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey	Area ID:	M38							Townland: Tuogh		
Central I	TM Coordinate:	544218, 646545							OD height of Survey Area 6.5 m OD		
Survey W	Veather Conditions:	Sunny							Survey Date and Area (Ha): 25/07/18 2.4 Ha		
Heritage	Constraint Ref:	LiDAR Site 49.3, 49.4 – Po	ssible	e rin	gfort	t, fie	d sy	sten			
Site Desc	ription:				_		_		outhwestern field boundary. Small oval mound in southwestern section of the	field.	
Figure No		50 & 51	•						,		
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource		of	Comment	Recommendation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M38-1	Isolated highly magnetic response	544107.208,646508.094			✓				Possible pit.	✓	
M38-2	L-shaped highly magnetic anomaly	544161.470,646552.913	✓		✓				Possible part of a ditch or field boundary (c. 19m N-S, 58m E-W). May be related to M38-5.	√	
M38-3	Multiple isolated highly magnetic responses	544164.069,646511.667 Multiple locations			✓		✓		Possible pits or postholes which may be archaeological in origin. They are located on and around a small mound (LiDAR site 49.4)	✓	
M38-4	Irregular positively magnetic anomalies	544157.091,646495.047 Multiple locations	✓		✓		✓		Possible ditches or dug features which may be related to M38-3 & M38-5.	√	
M38-5	Irregular/linear highly magnetic anomaly	544178.819,646499.391	√		√				Possible enclosure ditch or field boundary (c. 25m N-S). May form an enclosing feature around M38-3, M38-4, M38-6 and M38-7. The location of the ditch means that it may enclose a small mound (LiDAR site 49.4). May be related to M38-2.	~	
M38-6	Linear negatively magnetic anomaly	544175.496,646483.804			✓				Possible compacted earth or stone feature which crosses M38-7. Measuring c. 28m E-W this anomaly may be related to M38-5.	√	
M38-7		544163.481,646479.205 Multiple locations			✓		✓		Possible pits or postholes to the south of M38-4 and M38-5 and are probably related.	√	
M38-8	Negatively magnetic sub-rectangular anomaly	544251.930,646603.642			✓		✓		Small possible stone or compacted earth structure (c. 7m NW-SE, 7.5m SW-NE).	✓	
M38-9	Multiple isolated positively magnetic responses	544260.878,646589.077 Multiple locations			✓		✓		Possible pits or postholes, most of which are running along a N-S trend measuring c. 32m in length and may indicate the presence of a ditched feature which contains multiple highly magnetic deposits.	√	



Survey	Area ID:	M38							Townland: Tuogh		
Central I	ΓM Coordinate:	544218, 646545							OD height of Survey Area 6.5 m OD		
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 25/07/18 2.4 Ha		
Heritage (Constraint Ref:	LiDAR Site 49.3, 49.4 – Pos	sible	ring	gfort	, fiel	d sy	stem	and mound		
Site Descr	ription:	Undulating pasture field with	ı slig	ght ri	ise to	war	ds tł	ne so	uthwestern field boundary. Small oval mound in southwestern section of the	field.	
Figure No). :	50 & 51									
Significan	t Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		le So			of	Comment	Recomme	endation
				I	Anor	naly					
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Inte		Test Excavation	Geophysical Survey
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology or geology. Some of the magnetic trends in the western corner of the survey area roughly coinciding with LiDAR site 49.3. Their very weak magnetic nature makes them difficult to classify, however some of them could form an enclosing feature surrounding M38-3, M38-4, M38-5 & M38-6.	√	
	Multiple parallel linear magnetic trends	Multiple locations							Cultivation furrows running in multiple directions.		
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey	Area ID:	M38a							Townland: Tuogh	Tuogh	
Central I	TM Coordinate:	544582, 646707							OD height of Survey Area 4.18 m OD		
Survey V	Veather Conditions:	Sunny							Survey Date and Area (Ha): 6/09/18 3.7 Ha		
Heritage	Constraint Ref:										
Site Desc	ription:	Mostly flat pasture field co	ontaini	ng hi	umm	ocks	, rus	shes.	, thistles and nettles.		
Figure N	o .:	52 & 53									
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		(s) c	of	Comment	Recommendation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M38a-1	Curvilinear trend within an area of high magnetism				✓			✓	Possible formation or structure (43m in length) within a larger area of magnetic interference. This anomaly could be associated with the dumping of modern debris or demolition.	√	
M38a-2	Magnetic linear		✓		✓				Possible ditch or cut feature measuring 18m in length.	✓	
M38a-3	Arcing magnetic anomaly		✓		✓		✓		Possible ditch or cut feature (16m in diameter), may be archaeological or geological	✓	
M38a-4	Magnetic linear		✓		✓		✓		Possible ditch or cut feature (17m in length) which leads north from M38a-3.	✓	
M38a-5	Isolated magnetic response				✓				Possible pit.	√	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, geology or agriculture.	✓	
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



	Area ID:	Coordinate: 544836, 646759							Townland: Kilknockan		
Central I	TM Coordinate:	544836, 646759							OD height of Survey Area 8.58 m OD		
Survey V	Veather Conditions:	Sunny; dry							Survey Date and Area (Ha): 17/07/18, 05/09/18	2.35 Ha	
Heritage	Constraint Ref:	LiDAR Site 38.1, 38.2 – Po	ssible	e enc	losu	re ar	nd m	oate			
Site Desc	ription:								esence of high rough vegetation and very rough land precluded the survey wi	thin the west	tern
	-	field						•			
Figure N	0.:	52 & 53									
Significa	nt Features present:	7es ITM (E,N) Possible Source(s) of									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor			of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M39-1	Multiple irregular highly magnetic responses	544861.771,646849.698 Multiple locations	✓		√		√		Three possible pits and two possible ditches or dug features (both c. 12m N-S) located along the northern edge of the survey area which may be archaeological in origin.	✓	
M39-2	Multiple isolated positively magnetic responses	544891.545,646848.319 Multiple locations			√		✓		A number of possible pits or postholes and a possible ditch (c. 12m N-S) of probable archaeological origin.	√	
M39-3	Multiple isolated positively magnetic responses	544851.715,646825.259 Multiple locations			√		✓		A number of possible pits or postholes to the west of M39-4.	√	
M39-4	Large sub-rectangular highly magnetic anomaly	544861.179,646810.477 544872.022,646766.917 544909.291,646799.440	✓	✓					This feature corresponds to LiDAR site 38.2. This possible moated site consists of three roughly L-shaped ditches which form a sub-rectangular enclosure measuring c. 67m N-S and 52m E-W. There are two possible entrance gaps, one at W and one at S. There is another gap at the NE corner which could be due to poorer preservation. The highly magnetic nature of M39-4 indicates that it contains or suffered burning events. There are multiple anomalies on the interior of the enclosure (M39-5, M39-6, M39-7 and M39-8) and several outside of it (M39-1, M39-2, M39-3, M39-9, and M39-10) which are likely to be related. The northern edge of the site is likely to have been modified later in history to form a field boundary. At the northwestern corner a linear possible ditch extends in western direction (c. 19m in length).	*	



Survey	Area ID:	M39							Townland: Kilknockan		
Central I	TM Coordinate:	544836, 646759							OD height of Survey Area 8.58 m OD		
Survey W	eather Conditions:	Sunny; dry							Survey Date and Area (Ha): 17/07/18, 05/09/18	2.35 Ha	
Heritage	Constraint Ref:	LiDAR Site 38.1, 38.2 – Po	ssible	enc	losu	re an	d m	oate			
Site Desc	ription:	Pasture field which slopes t							esence of high rough vegetation and very rough land precluded the survey wi	thin the wes	tern
E* NI		field 52 & 53									
Figure No											
	nt Features present:	Yes		• • • • • • • • • • • • • • • • • • • •	1 0		<i>(</i>)	C		ъ	1
No.	Form of Anomaly	ITM (E,N)	Po	ssib A	Anor		e(s) (10	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M39-5	Sub-rectangular weakly magnetic anomaly	544900.616,646816.390			√		✓		Possible interior division of M39-4 measuring c. 24m E-W by 8m N-S. This anomaly could comprise of stone or bank material and could represent structural remains. Two dug features or possible pits are present at the western end.	√	
M39-6	Sub-rectangular weakly magnetic anomaly	544867.884,646780.913			√		✓		Possible interior division of M39-4 measuring c. 12.5m N-S by 12m E-W and contains four possible pits or postholes. This anomaly could comprise of stone or bank material and could represent structural remains.	√	
M39-7	Sub-rectangular weakly magnetic anomaly	544885.630,646782.490			√		✓		Possible interior division of M39-4 measuring c. 9.5m N-S by 20m EW. This is located around the southern possible entrance gap and contains a number of possible pits or postholes. This anomaly could comprise of stone or bank material and could represent structural remains.	✓	
M39-8	Multiple isolated positively magnetic responses	544894.700,646801.608 Multiple locations		✓			✓		Refers to multiple possible pits or postholes and small possible dug features within the enclosure M39-4.	✓	
M39-9	Multiple isolated positively magnetic responses	544909.883,646833.931 Multiple locations			✓		✓		Multiple possible pits or postholes around the northeastern corner of M39-4. These anomalies may represent a continuation of the moated site or be associated with limited preservation or later modifications.	✓	
M39-10	Multiple isolated positively magnetic responses	544912.841,646754.500 Multiple locations			✓		✓		Multiple possible pits or postholes to the south of M39-4.	√	
M39-11	Multiple isolated positively magnetic responses	544951.291,646813.433 Multiple locations			√		✓		Multiple possible pits or postholes of archaeological or agricultural origin.	✓	



Survey	Area ID:	M39							Townland: Kilknockan		
Central I	TM Coordinate:	544836, 646759							OD height of Survey Area 8.58 m OD		
Survey W	eather Conditions:	Sunny; dry							Survey Date and Area (Ha): 17/07/18, 05/09/18	8 2.35 Ha	
	Constraint Ref:	LiDAR Site 38.1, 38.2 – Po	ossible	e enc	losu	re an	d m	oate			
Site Descr									esence of high rough vegetation and very rough land precluded the survey w	ithin the wes	tern
	•	field						1			
Figure No		52 & 53									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		e(s) 0	of	Comment	Recommendation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M39-12	Right-angled positive magnetic response	544984.512,646781.763	✓		✓				Possible ditch or cut feature, 90m in length, which may represent a relict field boundary.		
M39-13	Arcing weakly magnetic anomaly	544984.512,646781.763	✓		✓				Possible agricultural or archaeological ditch or cut feature (17m in length).		
M39-14	Right-angled positive magnetic response	545033.521,646779.381	✓		✓				Possible ditch or cut feature, 35m in length, which may be agricultural in nature.		
M39-15	Three arcing weakly magnetic anomalies	545033.521,646779.381 Multiple locations	✓		√				Three arcing ditches or cut features which form two interconnecting anomalies (c. 14m and 18m in diameter). These may be archaeological or geological in origin. A third arcing ditch (c. 13m in length) follows the alignment on the eastern edge.		
M39-16	Two interconnecting weakly magnetic anomalies	545048.496,646781.082	✓		✓				Two interconnecting possible ditches or cut features (24m and 30m in length) which may be archaeological or agricultural in nature.		
M39-17	Weakly magnetic linear	545033.521,646779.381	✓		✓				Possible ditch or cut feature, 72m in length, which may be associated with a relict agricultural boundary.		
M39-18	Magnetic curvilinear	545033.521,646779.381	✓		✓				Possible ditch or cut feature, 45m in length which may be associated with M39-15.		
M39-19	Arcing weakly magnetic anomaly	545092.4,646805.918	✓		✓				Possible ditch or cut feature, 58m in length.		
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeological, agricultural or geological.	√	



Survey	Area ID: M39								Townland: Kilknockan		
Central IT	ΓM Coordinate:	544836, 646759							OD height of Survey Area 8.58 m OD		
Survey W	eather Conditions:	Sunny; dry							Survey Date and Area (Ha): 17/07/18, 05/09/1	8 2.35 Ha	
Heritage (Constraint Ref:	LiDAR Site 38.1, 38.2 – Pos	sible	enc	losu	re an	ıd m	oate	d site		
Site Descr	iption:	Pasture field which slopes to field	ward	ls to	the	west	. The	pre	sence of high rough vegetation and very rough land precluded the survey v	vithin the wes	stern
Figure No	·:	52 & 53									
Significan	t Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	Possible Source(s) of Anomaly					Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.	:	



Survey	rvey Area ID: M40 tral ITM Coordinate: 545568, 646909 vey Weather Conditions: Light rain								Townland: Islandea		
Central I	TM Coordinate:	545568, 646909							OD height of Survey Area 5 m OD		
Survey V	Veather Conditions:	Light rain							Survey Date and Area (Ha): 27/07/18 0.45 Ha		
Heritage	Constraint Ref:	LiDAR Site 39.1 – Possible	settle	emei	nt plo	ots			· · · · · ·		
Site Desc	ription:	Undulating pasture field slo	ping	dow	n fro	m n	orthv	vest	to southeast.		
Figure N	0.:	54 & 55									
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor		e(s) o	of	Comment	Recommendation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M40-1	Curvilinear magnetic anomaly	545550.641,646901.930			✓		√		Possible ditch or cut feature (c. 8m NW-SE).	√	
M40-2	L-shaped negatively magnetic anomaly	545555.568,646892.747			✓		✓		Possible ditch or cut feature (c. 9m SW-NE, 6m NW-SE).	✓	
M40-3	Multiple isolated highly magnetic responses	545565.687,646911.646 Multiple locations			✓		√		Multiple possible pits and postholes. A number of these are aligned in a trend running in NW-SE direction and therefore may be agricultural in origin possibly associated with possible settlement plots (LiDAR site 39.1).	√	
	Multiple parallel linear magnetic trends	Multiple locations			✓		✓		Cultivation furrows running in multiple directions. The orientation of many of the furrows follows the topographical expression.	✓	
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey	Area ID:	M41							Townland: Ardshanbally	,	
Central I	TM Coordinate:	546478, 647178							OD height of Survey Area 14 m OD		
Survey W	eather Conditions:	Cloudy							Survey Date and Area (Ha): 12/09/18 3.49 Ha		
Heritage	Constraint Ref:	SMR No. LI021-010, LI021	-149	/ Ro	ute S	Selec	tion	Site	AH57, AH 58 – Enclosures (x2)		
Site Desci	ription:	Undulating pasture field par	tially	ove	rgro	wn w	ith 1	hist	les. Part of the area could not be surveyed due to very high thistles and other	vegetation.	
Figure No).:	56 & 57									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly	(s) c	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M41-1	Arcing magnetic anomaly and two isolated responses	546335.014,647117.482 Multiple locations	✓		✓				Possible ditch or cut feature (29m in length) with two possible pits within the ditch.	√	
M41-2	Oval magnetic anomaly and two isolated responses	546365.266,647144.55 Multiple locations	✓		✓				Oval ditch or cut feature (29m in diameter) enclosing two possible pits.	√	
M41-3	Multiple isolated highly magnetic responses	546363.574,647174.367 Multiple locations	✓		✓				Arcing alignment of possible pits which may be of archaeological or agricultural origin.	√	
M41-4	Parallel magnetic anomalies	546413.712,647167.812	✓		✓				Two parallel possible ditches or cut features which may represent a relict field boundary.	√	
M41-5	Parallel magnetic anomalies	546439.098,647161.891	✓		✓				Two parallel possible ditches or cut features which may represent a relict field boundary.	√	
M41-6	Parallel magnetic anomalies	546468.081,647187.69			✓				Two possible ditches which run along the alignment of a trackway shown on the 1829-41 6" OS map.	√	
M41-7	Magnetic linear	546468.081,647187.69	✓		✓				Possible ditch or cut feature (187m in length) which may represent a relict agricultural boundary.	√	
M41-8	Rectangular magnetic anomaly	546539.307,647159.658	✓		✓				Rectangular possible ditch which may be associated with structural remains measuring 11m by 7m.	√	
M41-9	Interconnecting magnetic responses	546556.442,647186.092	✓		✓				Two interconnecting ditches or cut features which are likely to be agricultural in origin.	√	
M41-10	Interconnecting magnetic responses	546540.153,647217.389	✓		✓				Two ditches or cut features which cross each other and are likely to be associated with agricultural remains.	√	



Survey	urvey Area ID: M41 entral ITM Coordinate: 546478, 647178 urvey Weather Conditions: Cloudy								Townland: Ardshanbally		
Central I	TM Coordinate:	546478, 647178							OD height of Survey Area 14 m OD		
Survey W	eather Conditions:	Cloudy							Survey Date and Area (Ha): 12/09/18 3.49 Ha		
Heritage	Constraint Ref:	SMR No. LI021-010, LI02	-149	/ Ro	ute S	Selec	tion	Site	e AH57, AH 58 – Enclosures (x2)		
Site Descr	ription:	Undulating pasture field pa	tially	ove	rgrov	wn w	ith t	hist	les. Part of the area could not be surveyed due to very high thistles and other	vegetation.	
Figure No	D.:	56 & 57									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		(s) c	of	Comment	Recommendation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M41-11	Amorphous highly magnetic anomalies	546575.059,647204.067			✓		✓		Series of amorphous highly magnetic anomalies which could be archaeological or geological in origin.	√	
M41-12	Area of magnetic enhancement	546595.791,647219.716			✓				Area of magnetic enhancement which could be associated with archaeological or agricultural processes.	√	
M41-13	Arcing magnetic anomaly and an isolated responses	546595.791,647219.716 Multiple locations	✓		✓				Possible ditch or cut feature (25m in length) with one central possible pit.	√	
M41-14	Magnetic linear	546609.331,647254.82	✓		✓				Possible ditch or cut feature (85m in length) which may represent a relict agricultural boundary and may once have bounded enhancement M41-12.	√	
M41-15	Arcing magnetic anomaly	546622.447,647282.734	✓		✓				Possible archaeological ditch or cut feature which may form an enclosing ditch measuring 19m in length and containing a possible entranceway to the north.	√	
M41-16	Amorphous highly magnetic anomaly	546655.661,647288.444			✓		✓		Amorphous highly magnetic feature (15m in length) which may be agricultural, geological or archaeological.	√	
	Multiple parallel linear magnetic trends	Multiple locations			✓		✓		Cultivation furrows running in multiple directions. The orientation of many of the furrows follows the topographical expression.	✓	
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.		



Survey	Area ID:	M42							Townland: Ardshanbally	, Mondel	llihy
Central I	TM Coordinate:	546836, 647328							OD height of Survey Area 5.9 m OD		
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 28/06/18 2.35 Ha		
Heritage	Constraint Ref:	SMR No. LI021-144 / Rout	e Sele	ectio	n Si	e Al	H61	- Er			
Site Desc	ription:	Pasture field which slopes f	rom V	W to	E co	ntai	ning	sho	ort grass. The northern field contained very uneven ground and patches of hig	h thistles.	
Figure No	0.:	56 & 57									
Significar	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor		` '	of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M42-1	Positively magnetic curvilinear response	546754.098,647342.974	√		✓		√		Possible ditch or cut feature (c. 38m SW-NE).	√	
M42-2	Area of magnetic enhancement	546776.245,647324.924			√		✓		An area of magnetic enhancement along the northwestern edge of M42-3, measuring roughly 53m NE-SW, 26m NW-SE. Contains several magnetic trends and may be caused by geology, archaeology or agricultural activities.	√	
M42-3	Parallel positively magnetic linears	546784.763,647314.367	✓		✓				Two parallel cut features (c. 85m NE-SW) corresponding to a field boundary marked on the 1829-41 6" OS map.	√	
M42-4	Area of magnetic enhancement	546789.533,647257.834					✓		An area of magnetic enhancement (c. 46m NW-SE, 10m SW-NE) in the southern corner of the survey area which may be caused by geology, archaeology or agricultural activities.	✓	
M42-5	Linear positively magnetic anomaly	546816.449,647288.143	✓		✓				Possible ditch or cut feature (c. 27.5m NE-SW).	√	
M42-6	Area of magnetic enhancement	546825.989,647317.432					✓		An area of magnetic enhancement (c. 41m NW-SE, 15m SW-NE) in the centre of the survey area which may be caused by geology, archaeology or agricultural activities.	✓	
M42-7	Linear positively magnetic anomaly	546848.817,647262.601	√		✓				Possible ditch or cut feature (c. 28m NE-SW).	√	
M42-8	Curvilinear positively magnetic anomaly	546832.122,647287.803	✓		√				Possible ditch or cut feature (c. 133m NW-SE) which may interlink with M42-7.	√	



Survey	Area ID:	M42							Townland: Ardshanbally	Ardshanbally, Mondellihy		
Central I	TM Coordinate:	546836, 647328							OD height of Survey Area 5.9 m OD			
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 28/06/18 2.35 Ha			
Heritage	Constraint Ref:	SMR No. LI021-144 / Rout	e Sele	ectio	n Sit	e Al	H61	- En	closure			
Site Descr	ription:	Pasture field which slopes fi	rom V	W to	Есс	ntai	ning	sho	rt grass. The northern field contained very uneven ground and patches of high	h thistles.		
Figure No).:	56 & 57										
	nt Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor		` '	of	Comment	Recomme	ndation	
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey	
M42-9	Linear positively magnetic anomaly	546848.477,647308.577	✓		✓				Possible ditch or cut feature (c. 101m N-S).	√		
M42-10	Two arcing magnetic anomaly and numerous isolated responses	546826.827,647306.329 Multiple locations	✓		√				Two arcing possible ditches or cut feature (30m and 15m in length) which are located on the southern edge of M42-6. These may be archaeological in origin and appear to contain a number of possible pits.			
M42-11	Multiple isolated responses	546821.115,647383.304 Multiple locations							Area of possible pits which may be archaeological or agricultural in origin.			
M42-12	Linear positively magnetic anomaly	546851.202,647376.348	✓		✓				Possible ditch or cut feature (c. 31m NE-SW).	✓		
M42-13	Linear negatively magnetic anomaly	546866.194,647374.646			✓				Possible compacted earth or stone feature (c. 41m NW-SE) and may link to M42-10.	✓		
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, agriculture or geology.	✓		
	Areas of strong magnetic response	Multiple locations						✓	These may be caused by modern interference such as dumping, large metal objects, boreholes or fencing materials.			



Survey	Area ID:	M43							Townland: Mondellihy		
Central l	TM Coordinate:	547055, 647434							OD height of Survey Area 1.73 m OD		
Survey V	Veather Conditions:	Hot and sunny; Cloudy with	ı son	ne rai	n				Survey Date and Area (Ha): 28/06/18, 13/09/18	5.80 Ha	
Heritage	Constraint Ref:	SMR No. LI021-011001/00	2 / R	oute	Sele	ctior	ı Site	e Al	H62 – Conjoined enclosures		
Site Desc	ription:		well	, this	cou	ld no			hich rises towards the centre of the western field. Area of very uneven and veyed and therefore the survey was extended to N, S and E. Some of the sou		
Figure N	o.:	56 & 57									
Significa	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib	le So Anon		. ,	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M43-1	Isolated strongly magnetic response	547214.206,647417.943			✓			✓	Possible pit, hearth, well or area of modern disturbance.	√	
M43-2	Linear positively magnetic anomaly	546976.955,647470.48	√		✓				Possible ditch or cut feature (52m in length), which may interlink with M43-4 and is associated with archaeological or agriculture.	√	
M43-3	Linear positively magnetic anomaly	546968.884,647427.116	✓		✓				Linear ditch or cut feature (145m in length) which is likely to represent a former field boundary and probably interlinks with M43-8 and M43-11.	√	
M43-4	Arcing magnetic anomaly	546995.787,647459.387	✓		✓				Arcing ditch or cut feature (c.22m in length) which may be archaeological or agricultural in origin.	√	
M43-5	Semi-circular ditch with internal isolated responses	546989.734,647412.661 Multiple locations		✓					Semi-circular ditch (c.31m in diameter) which possibly contains a break to the northwest and southwest. This enclosure ditch may contain a number of possible pits within it. Internal to the enclosure a number of possible pits can be seen, some of which may form an inner circular archaeological feature. A number of further pits can be seen on the northern external edge of the enclosure.	√	
M43-6	Circular magnetic anomaly	547031.769,647427.788	√		✓				Possible ditch or cut feature (19m N-S) which may cross M43-5 and may be archaeological or geological in origin.	√	
M43-7	Arcing magnetic anomaly	547031.769,647416.359	✓		✓				Possible ditch or cut feature (c.27m in length) which may be associated with M43-5 or M43-6 or may be agricultural in origin.	√	



Survey	Area ID:	M43							Townland: Mondellihy	7		
Central I	TM Coordinate:	547055, 647434							OD height of Survey Area 1.73 m OD			
Survey W	eather Conditions:	Hot and sunny; Cloudy with	h som	ne rai	n				Survey Date and Area (Ha): 28/06/18, 13/09	/18 5.80	Ha	
Heritage	Constraint Ref:	SMR No. LI021-011001/00)2 / R	oute	Sele	ctior	n Site	e Al	62 – Conjoined enclosures			
Site Desc	ription:		well	, this	cou	ld no			ch rises towards the centre of the western field. Area of very uneven- eyed and therefore the survey was extended to N, S and E. Some of the			
Figure No	o.:	56 & 57										
Significar	nt Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Po	ossib 1	le So Anor			of	Comment	Reco	ommen	dation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		£	rest excavation	Geophysical Survey
M43-8	Linear positively magnetic anomaly	547023.362,647386.777	✓		✓				inear ditch or cut feature (77m in length) which is likely to represent ormer field boundary and probably interlinks with M43-3.	a		
M43-9	Oval isolated strongly magnetic response	546993.433,647389.13			√			✓	Possible pit, hearth, well or area of modern disturbance.	√		
M43-10	Arcing positively magnetic anomaly	547023.362,647386.77	✓		✓				Arcing possible ditch or cut feature of archaeological or geological or	al 🗸		
M43-11	Two interconnecting curvilinear positively magnetic anomalies	547005.875,647352.153	√		√				Linear ditch or cut feature (145m in length) which is likely to represent ormer field boundary and probably interlinks with M43-3. The anomalontains a northern spur which may once have linked with M43-8.			
M43-12	Isolated strongly magnetic response	547086.92,647400.56			✓			✓	Possible pit, hearth, well or area of modern disturbance.	✓		
M43-13	Two arcing positively magnetic anomalies	547158.549,647344.758	✓		✓				Two arcing possible ditches or cut features which appear to form a suircular feature c.22m in diameter. This feature is located adjacent to transfer monuments and may be archaeological.			
M43-14	Arcing weakly magnetic anomaly and isolated response	547207.983,647352.153			✓				Arcing possible bank material which appears to surround the northedge of RMP monument LI021-011001. Measuring c.21m in length to nomaly may cross or interconnect with M43-16. To the south of solated possible pit can be seen.	is		



Survey	Survey Area ID: M43								Townland:		Mondellihy		
Central I	TM Coordinate:	547055, 647434							OD height of Survey	y Area	1.73 m OD		
Survey W	eather Conditions:	Hot and sunny; Cloudy with	som	ne rai	in				Survey Date and Ar	rea (Ha):	28/06/18, 13/09/18	5.80 Ha	
Heritage	Constraint Ref:	SMR No. LI021-011001/00	2 / R	oute	Sele	ectio	n Sit	e Al	62 – Conjoined enclosures	3			
Site Descri	ription:	Pasture field containing me existed to the east around a not be surveyed due to bank	well,	, this	cou	ıld n							
Figure No	o.:	56 & 57											
Significar	nt Features present:	Yes											
No.	Form of Anomaly	ITM (E,N)	Po			ource maly		of		Comment		Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern				Test Excavation	Geophysical Survey
M43-15	Two arcing weakly magnetic anomalies	547202.266,647385.769			√				11002. This possible be	nks which surround RMP ank has a diameter of 3 est, defined by two possible	2m and a possible	√	
M43-16	Numerous isolated responses	547202.266,647385.769 Multiple locations			✓					cated within M43-15 and a		√	
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		Possible archaeology, agric	culture or geology.		✓	
	Areas of strong magnetic response	Multiple locations						✓	netal objects, boreholes or		7 0		
	Numerous dipoles within background readings	Across site						✓	Suggestive that the area presence of so many diponomalies.	has been subjected to go bles may have obscured fu	reen manuring. The archaeological		



Survey	rvey Area ID: M44								Townland: Kilgobbin		
Central 1	TM Coordinate:	547823, 647595							OD height of Survey Area 5.22 m OD		
Survey V	Veather Conditions:	Hot and sunny; Dry							Survey Date and Area (Ha): 25/06/18 4.8 Ha		
Heritage	Constraint Ref:		l-147	001/	002	/ Roi	ıte S	elec	ction Site AH 64, AH 65 – Enclosures (x3)		
Site Desc	ription:	Pasture field which slightly									
		Extension east: small ridge							with two mature trees in middle field. Slight slope up towards east in centre of	eastern mo	st field.
Figure N		58 & 59									
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib 1		ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M44-1	Positively magnetic curvilinear	547568.442,647577.490	✓		√				Possible ditch (c. 16.5m N-S).	✓	
M44-2	Positively magnetic curvilinear	547576.445,647559.926	✓		✓				Possible ditch (c. 14.5m N-S).	✓	
M44-3	Multiple isolated highly magnetic responses	547594.887,647555.057 Multiple locations			✓				A number of possible pits or postholes spread throughout the western half of the survey area.	✓	
M44-4	Sub-rectangular area of magnetic enhancement	547600.280,647578.359			✓		✓		An area of magnetic enhancement (c. 32m N-S, 17m E-W), which may have been caused by archaeology or agricultural activity.	✓	
M44-5	Curvilinear highly magnetic anomaly	547609.153,647560.795	✓		√				A ditch (c. 58m NE-SW, 25m E-W) which may be archaeological in origin. A number of possible pits or postholes are situated on the edge of the anomaly and it is wider in the northern section (up to 4m).	√	
M44-6	Semi-circular highly magnetic anomaly	547641.338,647574.359	√	✓					Possible ditched enclosure, measuring c. 39m E-W, which is cut by the railway line at north. Contained within the enclosure ditch a number of possible pits or postholes can be seen.	√	✓
M44-7	Multiple isolated highly magnetic responses	547648.819,647585.489			✓				Possible pits or postholes which run in a linear formation. They area contained within enclosure M44-6.	✓	✓
M44-8	Curvilinear highly magnetic response	547657.692,647565.838	√	✓					Possible ditch (c. 45.5m E-W) which leads from M44-6. This anomaly probably continues into M44-21 suggesting that it represents a former boundary feature.	√	
M44-9	Curvilinear positively magnetic response	547622.375,647541.493	✓		✓				Oval shaped possible ditch (c. 10m N-S, 11m E-W), which may connect with M44-10 at east.	✓	



Survey	Area ID:	M44							Townland: Kilgobbin		
Central I	TM Coordinate:	547823, 647595							OD height of Survey Area 5.22 m OD		
Survey V	Veather Conditions:	Hot and sunny; Dry							Survey Date and Area (Ha): 25/06/18 4.8 Ha		
Heritage	Constraint Ref:	SMR No. LI021-146, LI022	-147	001/	002	/ Rot	ite S	Selec	ction Site AH 64, AH 65 – Enclosures (x3)		
Site Desc	ription:	Pasture field which slightly							of the northern boundary. with two mature trees in middle field. Slight slope up towards east in centre of	f aastarn ma	et field
Figure N	0.:	58 & 59	Lumm	пеп	115-1	W GH	ccu	OH V	with two mature frees in middle field. Sitent slope up towards east in centre of	r castern mo	st ficid.
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly	` '	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M44-10	V-shaped positively magnetic response	547637.859,647543.580	✓		✓				A possible ditch or cut feature forming a rough V-shape (c. 14.5m SW-NE, 17.5m NW-SE) with a curvilinear annex to the west. This anomaly may be archaeological in origin and may be related to M44-9.	✓	
M44-11	Curvilinear band of magnetic enhancement.	547657.344,647537.319			√		✓		An arcing area of enhancement (c. 106m E-W and c. 3m wide), which may be associated with an archaeological or agricultural cut feature. The anomaly is cut by M44-10 and may be related to M44-13.	✓	
M44-12	Area of magnetic enhancement.	547661.868,647554.709			√		✓		An area of magnetic enhancement, measuring c. 29m NW-SE, 8.5m SW-NE, which contains a large possible pit (c. 7m by 4m) and an arcing ditch. This anomaly could be archaeological or agricultural in nature.	√	
M44-13	Linear positively magnetic anomalies	547685.703,647536.971	✓		√				Two possible ditches, c. 50m and 32m in length, running in E-W direction between M44-11 and M44-12 and may be associated. They are connected by a 4.5m long possible ditch at the eastern end.	✓	
M44-14	Area of magnetic enhancement.	547680.935,647585.884			✓		✓		An area of magnetic enhancement (c. 18m E-W, 6m N-S) to the east of M44-6 which contains a number of possible pits. This anomaly could be archaeological or agricultural.	✓	
M44-15	Area of magnetic enhancement.	547703.631,647592.210			✓		✓		An area of magnetic enhancement (c. 17m SW-NE, 3m NW-SE) to the east of M44-6 which contains a number of possible pits. This anomaly could be archaeological or agricultural.	✓	
M44-16	Four curvilinear and linear positively magnetic anomalies	547719.781,647605.080	✓		✓				Four possible ditched features which interconnect or cross each other. These anomalies could be archaeological or agricultural in nature.	✓	



Survey	Area ID:	M44							Townland: Kilgobbin		
Central I	TM Coordinate:	547823, 647595							OD height of Survey Area 5.22 m OD		
Survey W	Veather Conditions:	Hot and sunny; Dry							Survey Date and Area (Ha): 25/06/18 4.8 Ha		
Heritage	Constraint Ref:	3 7 3	l-147	001/	002	/ Roı	ute S	Sele	ction Site AH 64, AH 65 – Enclosures (x3)		
Site Descr	ription:	Pasture field which slightly									
		Extension east: small ridge							with two mature trees in middle field. Slight slope up towards east in centre of	f eastern mo	st field.
Figure No		58 & 59									
	nt Features present:	Yes							,		
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly	. ,	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M44-17	Multiple isolated highly magnetic anomalies	547711.792,647542.887 Multiple locations			✓				A number of possible pits or postholes to the west of enclosure M44-18.	✓	
M44-18	Strongly magnetic circular anomaly	547727.296,647560.794	✓	✓					A circular enclosure ditch (RMP LI021-147002) measuring c. 27m E-W and 25.5m N-S. There are four possible gaps or entrances, one at west, one at south and possibly two at the eastern side. Suggestions of at least one ditch dividing the internal space of the enclosure can be seen, while a number of possible pits are bounded by the enclosure ditch. A number of possible pits or postholes also appear to be contained within the ditch. Leading from M44-18 a number of radial ditches can be seen.	~	
M44-19	Positively magnetic curvilinear	547768.261,647550.718	√	✓					Possible ditch (c. 37m SW-NE) curving around the southeastern side of M44-18. This may represent an extension or overlapping monument to RMP LI021-147002 (M44-18)	√	
M44-20	Curvilinear positively magnetic anomaly	547719.199,647560.278	✓	✓					Possible ditch immediately to the west of enclosure M44-18. Contained within M44-20 are a number of possible pits and the anomaly may be associated with M44-18.	√	
M44-21	Linear highly magnetic anomaly	547718.921,647569.202	√	√					Possible ditch (c. 30m E-W) which is likely to represent a continuation of M44-8. M44-21 is a boundary which has truncated the north edge of enclosure M44-18 and continues towards to SE corner of the survey area as a mixture of ditch and linear posthole formations.	✓	
M44-22	Linear magnetic anomaly	547739.535,647603.629	✓		✓				Possible ditch or cut feature (c. 16m long).	√	



Survey	Area ID:	M44							Townland: Kilgobbin		
Central I	TM Coordinate:	547823, 647595							OD height of Survey Area 5.22 m OD		
Survey W	Veather Conditions:	Hot and sunny; Dry							Survey Date and Area (Ha): 25/06/18 4.8 Ha		
Heritage	Constraint Ref:		1-147	001/	002	/ Roi	ute S	Selec	ction Site AH 64, AH 65 – Enclosures (x3)		
Site Desc	ription:	Pasture field which slightly									
	-								vith two mature trees in middle field. Slight slope up towards east in centre o	f eastern mo	st field.
Figure No		58 & 59									
Significat	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib		ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M44-23	Numerous linear and curvilinear magnetic anomaly	547775.725,647574.472 Multiple locations	√		√				Numerous possible ditches and cut features which are located to the northeast of M44-18. Many of the ditches and cut features appear to interlink while some truncate M44-18 & M44-21. These anomalies could be archaeological but are more likely to be agricultural in origin.	✓	
M44-24	Multiple isolated positively magnetic responses	547787.706,647608.515			✓		✓		Possible pits or postholes in the northeastern corner of the survey area which may be archaeological or agricultural in origin.	✓	
M44-25	Linear magnetic anomaly	547841.75,647605.494	✓		✓				Possible ditch or cut feature (c. 50m long).		
M44-26	Interlinking magnetic anomalies	547865.366,647614.716	✓		✓				Two interconnecting ditches or cut features (c. 73m and 18m in length).		
M44-27	Arcing magnetic anomaly and numerous isolated responses	547862.414,647580.412 Multiple locations	√		√				Arcing possible archaeological ditch forming a roughly circular anomaly c. 12m in diameter. Contained within this and surrounding it are a number of possible pts or post holes.		
M44-28	Series of curvilinear magnetic anomalies	547871.639,647569.715 Multiple locations	✓		✓				Series of roughly parallel ditches. These are likely to represent a continuation of boundary M44-21.		
M44-29	Two curvilinear magnetic anomalies and two isolated responses	547871.639,647569.715 Multiple locations	✓		✓				Two possible ditches which are separated by two central possible pits. These anomalies may represent a relict boundary 58m in length with a central entranceway flanked by pits.		
M44-30	Two linear highly magnetic anomalies	Multiple locations						✓	Two highly magnetic pipelines.		
M44-31	Two interconnecting magnetic anomalies	547955.402,647591.109	✓		✓				Two possible ditches which are highly magnetic and therefore may have suffered burning. These ditches probably represent a relict boundary.		



Survey	Area ID:	M44							Townland: Kilgobbin		
Central I	TM Coordinate:	547823, 647595							OD height of Survey Area 5.22 m OD		
Survey W	Veather Conditions:	Hot and sunny; Dry							Survey Date and Area (Ha): 25/06/18 4.8 Ha		
	Constraint Ref:		1-147	001/	002	/ Ro	ute S	Selec	ction Site AH 64, AH 65 – Enclosures (x3)		
Site Desc	ription:	Pasture field which slightly	slope	es to	ward	ls the	e cen	tre o		f eastern mo	st field.
Figure No	D.:	58 & 59	141111			11 41	1000	,	THE CHO MARGIO ROLL MINISTER MARGIO WALLE WARREST COME OF THE CONTROL OF THE CONT	Custom mo	oc mora.
	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource maly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M44-32	Parallel magnetic anomalies	547963.521,647630.945	✓		✓				Two parallel ditches or cut features (c. 28m and 20 in length) which could be archaeological or agricultural in origin.		
M44-33	Area of magnetic enhancement	547979.388,647618.404			✓		✓		Small area of magnetic enhancement (9m by 5m) which could be associated with agricultural or archaeological processes.		
M44-34	Linear magnetic anomaly	548006.159,647618.792	√		✓				Possible ditch or cut feature (c. 29m long).		
M44-35	Linear magnetic anomaly	548006.159,647618.792	✓		✓				Possible ditch or cut feature (c. 34m in length).		
M44-36	Series of isolated responses	548006.159,647618.792 Multiple locations			✓		✓		Three isolated possible pits of archaeological or agricultural origin.		
M44-37	Two interconnecting magnetic anomalies	548081.111,647636.674	✓		✓				Two interconnecting possible ditches which may represent a relict field boundary.		
M44-38	Area of magnetic enhancement	548107.635,647625.063,			✓		✓		Area of highly magnetic enhancement which may be associated with agricultural or geological processes.		
M44-39	Series of curvilinear magnetic anomalies and isolated responses	548107.635,647625.063, Multiple locations	√		✓		√		Series of highly magnetic ditches and pits which are located within M44-38. These may be associated with the enhancement or be archaeological features situated on top.		
M44-40	Curvilinear magnetic anomaly	548137.893,647635.391	✓		✓				Possible ditch or cut feature (c. 54m in length).		
M44-41	Area of magnetic enhancement	548144.904,647661.949,			✓		✓		Area of highly magnetic enhancement which is located adjacent to the railway line and therefore may be associated with its construction, alternatively the anomaly may be geological in origin.		



Survey	Area ID:	M44							Townland: Kilgobbin			
Central I	TM Coordinate:	547823, 647595							OD height of Survey Area 5.22 m OD			
Survey W	Veather Conditions:	Hot and sunny; Dry							Survey Date and Area (Ha): 25/06/18 4.8 1	Ia		
Heritage	Constraint Ref:	SMR No. LI021-146, LI021	-147	001/	002	/ Ro	ute S	Selec	n Site AH 64, AH 65 – Enclosures (x3)			
Site Desc	ription:	Pasture field which slightly Extension east: small ridge							ne northern boundary. two mature trees in middle field. Slight slope up towards east in cent	re of e	astern mos	st field.
Figure No		58 & 59										
Significat	nt Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Po	ssib A		ource naly	()	of	Comment		Recommer	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
M44-42	Sub-rectangular negative magnetic anomaly and four isolated responses	548144.904,647661.949,			✓				b-rectangular stone or bank feature measuring 12m by 8m which narchaeological in origin. Contained within this are four possible pits of the stholes which may represent internal supports for a possible structure	or		
	Multiple linear and curvilinear magnetic trends	Multiple locations			✓		✓		ssible archaeology, agricultural or geology.		✓	
	Multiple parallel linear magnetic trends	Multiple locations							ltivation furrows running in multiple directions.			
_	Areas of strong magnetic response	Multiple locations						√	ese may be caused by modern interference such as dumping, la tal objects, boreholes or fencing materials.	ge		



Surve	y Area ID:	M45							Townland: Durnish		
Central	ITM Coordinate:	526172, 651199							OD height of Survey Area 2.16 m OD		
Survey	Weather Conditions:	Overcast							Survey Date and Area (Ha): 26/11/18 0.43 Ha		
Heritag	e Constraint Ref:	LiDAR Site 1.5 – Possible l	Enclo	sure	;						
Site Des	scription:	This survey area represents which is cut by numerous d					ı for	a pı	roposed new lorry park which comprised an area of newly cut ground within	an overgro	wn field
Figure 1	No.:	6 & 7									
Signific	ant Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib		ourc maly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M45-1	Series of interconnecting magnetic anomalies	526117.241,651208.313	✓		✓		✓		Series of interconnecting possible ditches or cut features which may be archaeological, agricultural or associated with soil composition.	✓	
M45-2	Linear magnetic anomaly	526117.241,651208.313	✓		✓		✓		Possible ditch or cut feature (12m in length), similar in composition to M45-1.	√	
M45-3	Curvilinear magnetic anomaly	526134.986,651205.933	✓		✓		✓		Possible ditch or cut feature (13m in length), which may be archaeological, agricultural or associated with soil composition.	√	
M45-4	Arcing magnetic anomaly	526134.986,651205.933	✓		✓		✓		Possible ditch or cut feature (15m in length), similar in composition to M45-3.	✓	
M45-5	Linear magnetic anomaly	526168.448,651190.665	✓		✓		✓		Possible ditch or cut feature (12m in length), which may be archaeological or agricultural and appears to link into M45-6.	✓	
M45-6	Two highly magnetic anomalies	526176.978,651187.624	✓		✓				Two highly magnetic ditches which may contain enhanced soils or burnt remains. Appear to form one contiguous feature (38m in total length) with a gap at the southern end.	✓	



Surve	ey Area ID:	M46							Townland: Durnish		
Centra	ITM Coordinate:	526307, 651068							OD height of Survey Area 2.12 m OD		
Survey	Weather Conditions:	Overcast							Survey Date and Area (Ha): 26/11/18 0.64 Ha		
Heritag	ge Constraint Ref:	LiDAR Site 2.1 – Possible	Enclo	sure							
Site De	scription:	This survey area represents which is cut by numerous d					ı for	a pr	oposed new lorry park which comprised an area of newly cut ground within	an overgro	own field
Figure	No.:	6 & 7									
Signific	ant Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anoi			of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
M46-1	Right-angled magnetic anomaly	526282.257,651072.587	✓		✓				Right-angled possible ditch or cut feature (112m in length) which may be agricultural in origin or associated with land drainage.	√	
M46-2	Right-angled magnetic anomaly	526320.82,651079.125	✓		✓				Right-angled possible ditch or cut feature (99m in length), which appears to run parallel to M46-1.	√	
M46-3	Arcing magnetic anomaly	526310.669,651065.157	✓		✓		✓		Possible ditch or cut feature, c. 25m in length, which may be archaeological or geological.	✓	
M46-4	Area of magnetic enhancement	526310.669,651065.157			✓		✓		Area of enhancement (8m x 7m) associated with archaeological, agricultural or soil composition.	√	



3.2 Resistivity Survey

Survey	Area ID:	ER1							Townland: Corgrig		
Central l	TM Coordinate:	525923, 651155							OD height of Survey Area 1.5 m OD		
Survey V	Veather Conditions:	Dry							Survey Date and Area (Ha): 24/07/18 0.41 Ha		
Heritage	Constraint Ref:	LiDAR Site 1.2 – Possible e	nclos	sure							
Site Desc	ription:	northwestern edge of the sur survey area is mostly flat.							the ground. The land slopes down slightly towards a water course running alc uneven slope down towards the southwestern edge of the survey area, and the		of the
Figure N		60 & 61									
	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anoi			of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER1-1	Isolated low resistivity response	525925.879,651178.534			✓		✓		Possible pit or area of disturbed soil.	✓	
ER1-2	Low resistivity linear response	525917.343,651167.777	✓		✓		✓		Possible ditch or boundary (c. 56m in length) running roughly in E-W direction with a wider section and extension towards south (c. 11.5m).	✓	
ER1-3	Isolated high resistivity response	525907.694,651157.947			✓		✓		Possible area of compacted earth or stone (c. 10m E-W, 6.5m N-S) which may be archaeological or geological.	✓	
ER1-4	Curvilinear high resistivity anomaly	525921.982,651148.859			✓		✓		Possible compacted earth or stone feature (c. 39m E-W), may be geology or archaeology and could represent what was seen in LiDAR site 1.2	✓	
ER1-5	Curvilinear high resistivity response	525898.973,651140.883			✓		√		Possible compacted earth or stone feature (c. 19m E-W), may be geology or archaeology. Roughly corresponds to an area of raised topography beside the field drain to the southwest of the survey area visible in the field.	✓	
ER1-6	Curvilinear low resistivity anomaly	525921.982,651137.359	✓		✓		✓		Possible ditch or drain (c. 26m E-W), corresponds to a dip in the topography between two raised areas (ER1-5, ER1-7).	✓	
ER1-7	Curvilinear high resistivity anomaly	525937.940,651133.279			✓		✓		Possible compacted earth or stone feature (c. 17.5m SW-NE, 17m E-W), may be geology or archaeology and is likely to be associated with ER1-5 and ER1-6.	√	



Survey Area ID:	ER2	Townland:	Ardaneer
Central ITM Coordinate:	526398, 650474		
Heritage Constraint Ref:	Route Selection Site CH4 / LiDAR Site 5.4 – Field system		
Site Description:	Site was not surveyed due to its overgrown nature and access	ss issues.	

Surve	y Area ID:	ER3							Townland: Sroolane Nor	th	
	ntral ITM Coordinate: 526685, 650000 rvey Weather Conditions: Warm and sunny								OD height of Survey Area 4.84 m OD		
Survey V	Weather Conditions:	Warm and sunny							Survey Date and Area (Ha): 13/07/18 0.45 Ha		
Heritage	Constraint Ref:	LiDAR Site 6.2 – Possible	ringfo	ort							
Site Desc	cription:	Gently sloping pasture field	l cont	ainir	ng sh	ort g	rass				
Figure N	lo.:	62 & 63									
Significa	int Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor		. ,	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER3-1	Linear high resistivity anomaly	526680.109,649981.052			√				Possible compacted earth or stone feature (c. 60m N-S). Running in line with magnetic anomalies M3-1 and M3-2, this anomaly corresponds roughly with a former field boundary on the historic 6" OS map (1829-41).	✓	
ER3-2	Oval high resistivity response	526666.602,650004.969			✓		✓		Possible compacted earth or stone feature (c. 8m E-W, 7m N-S). May be archaeology or geology.	✓	
ER3-3	Low resistivity linear	526671.876,649993.653	✓		✓		✓		Possible ditch or cut feature (c. 66m SW-NE).	✓	
ER3-4	High resistivity curvilinear anomaly	526691.687,650012.941			✓		✓		Possible compacted earth or stone feature (c. 17m NW-SE, 5m SW-NE). May be archaeology or geology.	✓	
ER3-5	Oval high resistivity response	526686.798,649998.925			√		✓		Possible compacted earth or stone feature (c. 7.5m N-S, 5m E-W) of possible archaeological or geological origin.	√	
ER3-6	Low resistivity curvilinear	526692.330,649976.681	✓		✓		✓		Possible ditch or cut feature (c. 27m NW-SE).	✓	
ER3-7	High resistivity area	526700.692,649995.968			✓		✓		Possible compacted earth or stone feature (c. 20m N-S, 6.5m E-W) of possible archaeological or geological origin.	✓	



Survey	Area ID:	ER3							Townland: Sroolane Nor	th	
Central I'	TM Coordinate:	526685, 650000							OD height of Survey Area 4.84 m OD		
Survey W	eather Conditions:	Warm and sunny							Survey Date and Area (Ha): 13/07/18 0.45 Ha		
Heritage	Constraint Ref:	LiDAR Site 6.2 – Possible ri	ngfo	ort							
Site Descr	ription:	Gently sloping pasture field	cont	ainin	g sh	ort g	rass				
Figure No).:	62 & 63									
Significan	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib			` '	of	Comment	Recomme	ndation
				A	Anor	naly					
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER3-8	High resistivity linear	526710.340,649993.139			✓		✓		Possible compacted earth or stone feature such as a bank or wall (c. 35.5m N-S).	✓	
	Linear low resistivity trends	Multiple locations							Series of parallel possible cultivation furrows running in SW-NE and NW-SE direction.		



Survey	Area ID:	ER4							Townland: Robertstown		
Central I	TM Coordinate:	527688, 649465							OD height of Survey Area 16.18 m OD		
Survey W	Veather Conditions:	Dry							Survey Date and Area (Ha): 20/06/18 1.13 Ha		
Heritage	Constraint Ref:	Route Selection Site CH43	/ LiD	AR	Site	15.2	-15.4	4 – I	Field system, two possible enclosures		
Site Desc	ription:	Flat pasture field containing	g med	lium	heig	ht ve	egeta	ation	and divided by an electric fence.		
Figure No	0.:	66 & 67							·		
Significa	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource maly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER4-1	Linear low resistivity response	526710.340,649993.139	✓		✓		√		Possible ditch or cut feature (c. 33m NW-SE). May be of archaeological or agricultural origin.	√	
ER4-2	Isolated low resistivity response	527611.518,649481.573			✓		✓		Possible pit or area of disturbed soil.	√	
ER4-3	Linear band of low resistivity	527608.614,649465.605	✓		✓				Possible ditch (c. 56m NW-SE, 6-10m SW-NE), containing a number of possible pits. Runs parallel to magnetometer anomaly M6-2 (ditch).	√	
ER4-4	Low resistivity curvilinear	527629.753,649481.412	√		✓		✓		Possible ditch or cut feature (c. 34m N-S). May be archaeology or of agricultural origin.	✓	
ER4-5	Five isolated high resistivity responses	527642.662,649465.928 Multiple locations			✓		✓		Possible compacted earth or stone features. May be archaeology or geology.	✓	
ER4-6	Isolated low resistivity response	527653.151,649459.960			√		✓		Possible pit (c. 3.5m diameter). May be of archaeological or agricultural origin.	√	
ER4-7	Multiple curvilinear high resistivity responses	527635.885,649478.347 Multiple locations			√		√		Possible compacted earth or stone features in the western half of the survey area. May be caused by habitation, agricultural activities or geological processes.	√	
ER4-8	Linear low resistivity anomaly	527732.752,649451.317	√		√				Possible ditch or cut feature (c. 94.5m SW-NE).	✓	
ER4-9	Linear low resistivity anomaly	527732.752,649451.317	✓		√				Possible ditch or cut feature (c. 59m NW-SE).	✓	



Survey	Area ID:	ER4							Townland: Robertstown			
Central I	ΓM Coordinate:	527688, 649465							OD height of Survey Area 16.18 m OD			
Survey W	eather Conditions:	Dry							Survey Date and Area (Ha): 20/06/18 1.13 Ha	20/06/18 1.13 Ha		
Heritage (Constraint Ref:	Route Selection Site CH43 /	LiD	AR	Site	15.2	-15.	4 – F	rield system, two possible enclosures			
Site Descr	ription:	Flat pasture field containing	med	ium	heig	ght v	egeta	ation	and divided by an electric fence.			
Figure No).:	66 & 67										
Significan	t Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Po	ossib			` '	of	Comment	Recomme	endation	
				1	Anoı	maly	,					
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey	
ER4-10	Curvilinear high resistivity anomaly	527765.869,649448.262			✓		✓		Possible compacted earth or stone feature (c. 32m SW-NE, 39m NW-SE), of archaeological or agricultural origin.	✓		
ER4-11	Linear low resistivity anomaly	527732.752,649451.317	✓		✓				Possible ditch or cut feature (c. 43.5m NW-SE).	✓		
	Linear band of low resistivity	527693.367,649464.720					✓		A possible geological anomaly (c. 60m N-S, 16m wide) running in N-S direction through the centre of the field.	✓		



Survey	Area ID:	ER5							Townland:	Rincullia		
Central 1	TM Coordinate:	528248, 649470							OD height of Survey Area	18 m OD		
Survey V	Veather Conditions:	Overcast, light drizzle							Survey Date and Area (Ha):	23/07/18 0.62 Ha		
Heritage	Constraint Ref:	SMR No. LI010-074 / Rout	e Sel	ectio	on Si	te A	Н8 -	Enc		•		
Site Desc	ription:								oundary running into an enclosure. There is a ge teld is partially grazed and overgrown and very r		st and west.	The
Figure N	o.:	66 & 67										
Significa	nt Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Po		ole So Ano			of	Comment		Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
ER5-1	Low resistivity linear	528215.938,649479.933	✓		✓		✓		Possible ditch or cut feature (c. 50m NW-SE).	Possible archaeology or	✓	
ER5-2	Low resistivity linear	528208.635,649456.895	✓		✓		√		Possible ditch or cut feature (c. 70m SW-NE). agricultural origin.	Possible archaeology or	√	
ER5-3	Low resistivity curvilinear	528207.494,649438.875	✓		✓		✓		Possible sub-circular ditched feature (c. 13m NV inear possible ditch (c.18m) running into enclos This anomaly may be archaeological in origin.		√	
ER5-4	Low resistivity linear	528262.492,649477.652	✓		✓		✓		Possible ditch or cut feature (c. 39m NW-SE). agricultural origin.	Possible archaeology or	✓	
ER5-5	Low resistivity linear	528285.084,649437.278	✓		✓		✓		Possible ditch or cut feature (c. 49m SW-N geological origin.		✓	
	Linear low resistivity trends	Multiple locations							Series of parallel possible cultivation furro direction.	ws running in NW-SE		



Survey Area ID:	ER6	Townland:	Ballyclogh
Central ITM Coordinate:	528248, 649470		
Heritage Constraint Ref:	Route Selection Site CH13 – Possible enclosure		
Site Description:	Survey could not be undertaken as access was not granted		

Survey	Area ID:	ER7							Townland: Ballycullen		
Central I	TM Coordinate:	531869, 649576							OD height of Survey Area 12.7 m OD		
Survey V	Veather Conditions:	Sunny and hot							Survey Date and Area (Ha): 03/07/18 0.64 Ha		
Heritage	Constraint Ref:	Route Selection Site CH14	/ LiD	AR	Site	11.1	- Po	ossib			
Site Desc	ription:								rock outcrop. The presence of an area of stony ground overgrown with trees	precluded th	ie
		survey in the SE corner. Th	e surv	vey v	vas e	exter	nded	to th	ne south and west to compensate		
Figure N		68 & 69									
	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anoi		e(s)	of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER7-1	Low resistivity curvilinear	531839.852,649566.414	✓		✓		✓		Possible ditch (16.5m E-W), may be archaeology or agricultural.	✓	
ER7-2	Irregular high resistivity anomaly	531859.115,649589.234			√		✓		A roughly U-shaped anomaly (c. 25m NW-SE, 19m SW-NE) with a high resistivity area (c. 12m by 11m diameter) to the south. This compacted earth or stone feature, possibly an enclosing feature facing the stream to the northwest, contains a possible extension to the south.	~	
ER7-3	Curvilinear high resistivity anomaly	531868.033,649604.744			✓		✓		Possible compacted earth or stone feature (c. 14m (NE-SW, 11m NW-SE). May be archaeology or agricultural.	✓	
ER7-4	High resistivity linear	531878.913,649620.255			✓		✓		Possible compacted earth or stone feature (c. 33m SW-NE), which might be associated with the adjacent stream.	√	
ER7-5	Low resistivity area	531882.480,649574.793			✓		✓		Possible dug feature or soil change, measuring c. 8m E-W, 28m N-S. This feature broadly matches an enclosure detected in the magnetometer data (M16-3).	√	
ER7-6	Low resistivity linear	531886.404,649561.244			✓		✓		Possible ditch or cut feature (c. 56m SW-NE). May be archaeological or agricultural.	✓	



Survey	Area ID:	ER7							Townland: Ballycullen		
Central I	ΓM Coordinate:	531869, 649576							OD height of Survey Area 12.7 m OD		
Survey W	eather Conditions:	Sunny and hot							Survey Date and Area (Ha): 03/07/18 0.64 Ha	03/07/18 0.64 Ha	
Heritage (Constraint Ref:	Route Selection Site CH14 /	LiD	AR S	Site	11.1	- Po	ossib	le enclosure		
Site Descr	iption:								rock outcrop. The presence of an area of stony ground overgrown with trees are south and west to compensate	precluded tl	ne
Figure No		68 & 69									
Significan	t Features present:	No									
No.	Form of Anomaly	ITM (E,N)	ITM (E,N) Possible Source(s) of Anomaly						Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
	Area of low resistivity	531886.404,649561.244					✓		Possibly associated with a geological outcrop.	✓	
	Linear low resistivity trends	Multiple locations							Series of parallel possible cultivation furrows running in NW-SE direction.		



Survey	Area ID:	ER8							Townland: Lismakeery		
Central I	TM Coordinate:	532369, 648521							OD height of Survey Area 16.98 m OD		
Survey V	Veather Conditions:	Dry							Survey Date and Area (Ha): 21/06/18, 04/09/18	0.703 Ha	
Heritage	Constraint Ref:	SMR No. LI019-064 - Ring	fort								
Site Desc	ription:	Flat short pasture field, rising		ghtly	tow	ards	the	ring	fort at south.		
Figure N	0.:	70 & 71									
Significa	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A	le So Anon		` '	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER8-1	Low resistivity anomaly	532369.232,648518.426	✓		✓				Possible agricultural ditch (c. 77.5m NW-SE).	√	
ER8-2	Low resistivity linear	532344.940,648516.635	✓		✓				Possible ditch or cut feature which crosses ER8-1 (c. 39.5m SW-NE).	✓	
ER8-3	Semi-circular high resistivity anomaly	532376.399,648524.198			√		√		Possible compacted earth or stone enclosing feature (c. 14.5m N-S, 16m E-W) with a 9m wide gap at the northeastern side. This possible archaeological feature is located on the northern edge of M19-4 and may be associated.	✓	
ER8-4	L-shaped low resistivity anomaly	532384.762,648541.711	√		✓				L-shaped ditch which runs parallel to ER8-1 (c. 23m NW-SE, 10m SW-NE).	✓	
ER8-5	Curvilinear low resistivity anomaly	532383.767,648499.122	✓		✓				Arcing ditch (56m in length) which appears to be bounding ringfort LI019-064. This anomaly coincides with magnetometer anomaly M19-7 (a bank or stone feature). The difference in the detection between the two instruments may be caused by two adjacent features (bank and ditch) or by vegetation disturbance which has impacted the top of the bank causing it to look like a ditch in the resistivity data.	√	
ER8-6	Linear low resistivity anomaly	532359.404,648491.783	✓		✓				Possible agricultural ditch (c. 77m SW-NE).	✓	
ER8-7	Linear low resistivity anomaly	532363.074,648479.555	✓		✓				Possible ditch which runs parallel to ER8-6. Measuring 43m in length this ditch is also likely to be agricultural in origin.	✓	
ER8-8	Zone of low resistivity	532363.074,648479.555			✓				Rectangular zone of disturbed earth which may be archaeological or agricultural in nature.	✓	
	Linear trends	Multiple locations							Series of parallel cultivation furrows running in multiple directions.		



Survey A	Area ID:	ER9							Townland: Blossomhill		
Central IT	M Coordinate:	537903, 642745							OD height of Survey Area 44.5m OD		
Survey We	ather Conditions:	Sunny with clouds							Survey Date and Area (Ha): 19/10/18 0.277 Ha		
Heritage C	onstraint Ref:	SMR No. LI029-147 enclos	ure /	LiD.	AR S	Site 6	55.2	– Po	ossible platform		
Site Descrip	ption:	Hillside									
Figure No.:	!	78 & 79									
Significant	Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A	le So Anor		` '	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER9-1	Low resistivity linear	537894.079,642731.633	✓		✓				Possible ditch or cut feature (20m in length).	✓	
ER9-2	Curvilinear high resistivity anomaly	537905.013,642738.079			✓		✓		Compacted earth or stone feature (16m in length) which may be agricultural, archaeological or associated with geology.	√	
ER9-3	Right-angled high resistivity anomaly	537905.013,642738.079			✓		✓		Right-angled compacted earth or stone feature (16m in length) which may be agricultural or archaeological and may bound ER19-4.	✓	
ER9-4	Zone of low resistivity	537907.817,642758.678			✓				Zone of disturbed or waterlogged earth which may be agricultural or archaeological in origin.	✓	
ER9-5	High resistivity linear	537893.939,642757.837			✓		✓		Linear compacted earth or stone feature (17m in length) which may be associated with ER19-5.	✓	
ER9-6	High resistivity linear	537893.939,642757.837			✓		✓		Linear compacted earth or stone feature (17m in length)	✓	
ER9-7	Arcing high resistivity response	537893.939,642757.837			✓		✓		Arcing compacted earth or stone feature (27m in length) which may be agricultural, archaeological or associated with geology.	✓	



Survey	rvey Area ID: ER10 ntral ITM Coordinate: 541474, 644105 rvey Weather Conditions: Sunny								Townland: Croagh		
Central I'	TM Coordinate:	541474, 644105							OD height of Survey Area 26.2 m OD		
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 12/07/18 0.3 Ha		
Heritage	Constraint Ref:	LiDAR Site 61.3 – Possible	encl	osure	е						
Site Descr	ription:	Short pasture field									
Figure No).:	84 & 85									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor		e(s) o	of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER10-1	Low resistivity linear	541470.554,644129.008	✓		✓				Possible ditch (c. 35m SW-NE) which coincides with magnetometer anomaly M33-16.	✓	
ER10-2	L-shaped low resistivity anomaly	541477.769,644114.584	✓		√		✓		Possible ditch (c. 24.5m NW-SE, 33m SW-NE). Possibly archaeological or agricultural.	√	
ER10-3	Low resistivity linear	541455.302,644099.624	✓		✓				Possible ditch (c. 21.5m E-W). Coincides with magnetometer anomaly M33-18 which is related to enclosure M33-19.	√	
ER10-4	Low resistivity curvilinear anomaly	541471.356,644090.944	✓		✓		✓		Possible archaeological curving ditch (11m NW-SE).	√	
ER10-5	Low resistivity linear	541480.935,644097.027	✓		✓				Possible ditch (c. 21.5m E-W). Corresponds to southern extension of enclosure M33-19 (LiDAR site 61.3).	✓	
	Linear low resistivity trends	Multiple locations							Series of parallel possible cultivation furrows running in NW-SE direction.		



Survey	Area ID:	ER11							Townland: Croagh		
Central I	TM Coordinate:	541592, 644245							OD height of Survey Area 26.2 m OD		
Survey W	Veather Conditions:	Sunny							Survey Date and Area (Ha): 11/07/18 1 Ha		
Heritage	Constraint Ref:	LiDAR Site 61.2 – Possible	settle	emer	nt clu	ıster					
Site Descr	ription:	Short pasture field									
Figure No	0.:	84 & 85									
Significar	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor		()	of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER11-1	Low resistivity linear	541587.603,644277.256	✓		√				Possible agricultural ditch (c. 93m NW-SE).	✓	
ER11-2	Low resistivity curvilinear	541613.257,644303.700	✓		✓				Possible ditched feature (c. 16.5m NW-SE, 16.5m SW-NE) of archaeological or agricultural origin.	✓	
ER11-3	Isolated very high resistivity anomaly	541571.982,644251.213			✓				Limekiln marked on historic 6" OS map (1829-41). This feature was also detected as magnetometer anomaly M33-8 (LiDAR site 61.2).	√	
ER11-4	Low resistivity linear	541582.172,644211.409	✓		✓				Possible agricultural ditch (c. 93m SW-NE).	✓	
ER11-5	Low resistivity linear / curvilinear anomaly	541607.322,644255.570	✓		✓				Possible linear ditch which contains an arc at its northern end (c. 107m SW-NE).	√	
ER11-6	Low resistivity curvilinear anomaly	541592.413,644248.809	✓		✓				Arcing ditched feature (c. 25m NW-SE, 14m SW-NE), which might be archaeological in nature.	✓	
	Linear low resistivity trends	Multiple locations							Series of parallel possible cultivation furrows running in NW-SE direction.		



Survey	Area ID:	ER12							Townland: Croagh		
Central I	TM Coordinate:	541637, 644085							OD height of Survey Area 26.2 m OD		
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 12/07/18 0.55 Ha		
Heritage	Constraint Ref:	LiDAR Site 61.4 – Possible	encl	osure	e						
Site Descr	ription:	Short pasture field									
Figure No).:	84 & 85									
Significar	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		` /	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER12-1	Linear high resistivity anomaly	541631.229,644100.459			✓				Possible compacted earth or stone feature (c. 89m SW-NE). Probably agricultural in origin.	✓	
ER12-2	Zone of low resistivity	541649.307,644121.671	✓		✓				Possible wide archaeological ditch (c. 29m E-W, 7m N-S).	✓	
ER12-3	Low resistivity linear	541658.150,644100.459	✓		✓				Possible ditch (c. 40.5m NW-SE). Possibly of archaeological or agricultural origin.	✓	
ER12-4	Area of low resistivity	541648.521,644063.337			√				Possible dug feature or disturbed ground (c. 12m E-W, 10m N-S) which coincides with magnetometer anomaly M33-31 and M33-32 (possible enclosure). The presence of low resistivity could be associated with habitation within LiDAR site 61.4.	√	
ER12-5	Linear high resistivity anomaly	541648.521,644063.337			✓				Possible agricultural compacted earth or stone feature (c. 65.5m SW-NE).	✓	
	Linear low resistivity trends	Multiple locations							Series of parallel possible cultivation furrows running in NW-SE direction.		



Survey	Area ID:	ER13							Townland: Tuogh			
Central I	TM Coordinate:	544215, 646544							OD height of Survey Area 6.5 m OD			
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 25/07/18 2.1	9 Ha		
Heritage	Constraint Ref:	LiDAR Site 49.3, 49.4 – Po	ssible	ring	gfort,	fie	ld sys	ster	and mound			
Site Desc	ription:								thwestern field boundary. Small oval mound in south western section	of the	field.	
Figure No).:	90 & 91										
Significar	nt Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon			of	Comment		Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
ER13-1	Low resistivity linear	544098.364,646539.910	√		✓		✓		Possible agricultural ditch (c. 51m long).		✓	
ER13-2	Low resistivity linear	544150.792,646529.528	✓		✓		✓		Possible agricultural ditch measuring 94m in length.		✓	
ER13-3	Sub-circular low resistivity anomaly	544147.825,646502.337	✓		\				Sub-circular possible ditch or cut feature adjacent to mound 49.4. cossible that magnetometer anomalies M38-3, M38-4, M38-5 and M re associated with ER13-3.		✓	
ER13-4	High resistivity linear	544193.823,646564.135			\checkmark				Possible agricultural compacted earth or stone feature (c. 100.6m N-S).	✓	
ER13-5	Low resistivity linear	544256.144,646608.135	✓		\checkmark		\checkmark		Possible agricultural ditch (c. 80m long).		✓	
ER13-6	Low resistivity linear	544262.079,646552.270	✓		✓				Possible agricultural ditch which crosses ER13-4 and may meet ER 133.6m long)		✓	
ER13-7	High resistivity curvilinear anomaly	544267.326,646531.887			✓				Possible compacted earth or stone feature which may be archaeologic gricultural in origin (76.6m in length)		✓	
	Linear low resistivity trends	Multiple locations							series of parallel possible cultivation furrows running in N-S and lirection.	E-W		
	Band of low resistivity	544217.302,646549.521					\checkmark		Associated with geological activity			



Survey	Area ID:	ER14							Townland: Kilknockan		
Central IT	'M Coordinate:	544816, 646746							OD height of Survey Area 8 m OD		
Survey W	eather Conditions:	Sunny							Survey Date and Area (Ha): 16/07/18 – 17/07/1	18 1.27 Ha	
Heritage (Constraint Ref:	LiDAR Site 38.1, 38.2 - Po	ssible	e enc	losu	re an	d m	oate			
Site Descr	iption:	Pasture field which slopes t fields	owar	ds to	the	west	. The	e pre	esence of high rough vegetation and very rough land precluded the survey wi	ithin the wes	stern
Figure No	:	90 & 91									
Significan	Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER14-1	Low resistivity linear	544864.169,646832.628			✓		✓		Linear ditch which is likely agricultural in origin. Measuring 78.8m in length this anomaly coincides with the northern portion of magnetometer anomaly M39-4; identified as the northern portion of a possible moated site (LiDAR Site 38.2) which was later used as an agricultural boundary. It is likely that resistivity data is only detecting the later agricultural ditch due to the amount of cultivation activity undertaken on the site.	√	
ER14-2	Low resistivity linear	544897.760,646846.127	✓		✓				Possible ditch or cut feature which might be archaeological or agricultural in origin (c. 33.3m NW-SE).	✓	
ER14-3	Linear high resistivity anomaly	544881.831,646823.628			√				Possible compacted earth or stone feature (c. 17.6m N-S), which may be agricultural in origin or associated with archaeological remains within the moated site (LiDAR Site 38.2).	✓	
ER14-4	Arcing high resistivity anomaly	544902.609,646818.782			√		✓		Possible compacted earth or stone feature which may be archaeological or agricultural in origin (c. 43.4m E-W).	✓	
ER14-5	Linear high resistivity anomaly	544872.480,646789.706			✓				Possible compacted earth or stone feature which may be archaeological in origin, however it runs parallel to the cultivation furrows suggesting that it might represent an agricultural boundary (c. 51.2m NW-SE).	√	
ER14-6	Linear high resistivity anomaly	544846.162,646742.285			✓				Agricultural compacted earth or stone boundary, c. 108.8m NW-SE.	✓	
ER14-7	Low resistivity linear	544898.453,646793.860	√		✓				Agricultural ditch (c. 37.7m long), which leads from an existing field boundary.	√	



Survey A	Area ID:	ER14							Townland: Kilknocka	n		
Central IT	M Coordinate:	544816, 646746							OD height of Survey Area 8 m OD			
Survey We	ather Conditions:	Sunny							Survey Date and Area (Ha): 16/07/18 – 17.	07/18	1.27 Ha	
Heritage C	onstraint Ref:	LiDAR Site 38.1, 38.2 - Po	ssible	enc	losui	re an	d m	oate	te			
Site Descri		fields	oward	ds to	the	west	. Th	e pre	nce of high rough vegetation and very rough land precluded the surve	y with	nin the wes	tern
Figure No.:		90 & 91										
Significant	Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly	` '	of	Comment		Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
ER14-8	Low resistivity linear	544914.729,646781.053	✓		✓				gricultural ditch (c. 55.5m long), which is associated with ER14-9.		✓	
ER14-9	Low resistivity linear	544955.939,646797.321	✓		✓				gricultural ditch (c. 32.7m long), which represents a continuation R14-8.	of	✓	
ER14-10	Low resistivity linear	544946.935,646775.860	✓		✓				gricultural ditch which runs perpendicular to ER14-8 & ER14-9 an ely to represent a field subdivision (c. 47.5m long).	l is	✓	
	Linear low resistivity trends	Multiple locations							ries of parallel possible cultivation furrows running in NW rection.	SE		



Survey A	Area ID:	ER15							Townland: Robertstown		
Central IT	M Coordinate:	526959, 649611							OD height of Survey Area 8.6 m OD		
Survey We	ather Conditions:	Sunny with occasional cloud	ds						Survey Date and Area (Ha): 01/10/18 0.95 Ha		
Heritage C	onstraint Ref:	CH5 – field system									
Site Descri	ption:	Gently sloping pasture field	conta	ainin	g an	kle l	nigh	gras	S		
Figure No.		64 & 65									
Significant	Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		e(s) (of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrons	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER15-1	Low resistivity linear	526952.783,649630.86	✓		✓				Linear ditch or cut feature 32m in length.	✓	
ER15-2	Sub-rectangular high resistivity anomalies	526944.653,649640.108			✓				Series of interlinking banks or stone remains which form a series of sub- rectangular possible structures.	√	
ER15-3	Isolated responses of high resistivity	526929.795,649631.981 Multiple locations			✓		✓		Series of isolated stones, rubble deposits or stone capped pits which may be associated with ER15-2 and may be archaeological in origin.	✓	
ER15-4	High resistivity linear	526920.809,649608.312			✓				Possible bank or stone remains measuring 60m in length.	✓	
ER15-5	High resistivity linear	526937.469,649603.736			✓				Possible bank or stone remains measuring 45m in length which appears to terminate at ER15-3 and contains a semi-circular feature (c.6m in diameter) on its northern edge. This feature may be archaeological in origin.	✓	
ER15-6	Three concentric high resistivity anomalies	526937.469,649603.736			✓				Three concentric bank, stone or rubble remains which may be archaeological in origin. The outer has a diameter of 22m and the inner 13m.	✓	
ER15-7	Numerous interlinking high resistivity linears	526992.027,649619.842 Multiple locations			✓				Series of interconnecting bank or stone remains which may be agricultural or archaeological.	√	
ER15-8	Curvilinear high resistivity anomaly	526979.212,649611.972			✓				Linear bank or stone feature (c.41m in length) which terminates in an arc at the western edge and may be associated with ER15-6.	√	
ER15-9	Two interlinking high resistivity linears	526979.029,649591.84			✓				Two interlinking bank or stone features (54m and 14m in length) which probably relate to a relict field division.	✓	
ER15-10	Arcing high resistivity anomaly	526978.662,649587.448			✓				Arcing bank or stone feature, 18m in length, this could relate to agricultural or archaeological processes.	✓	



Survey A	rea ID:	ER15							Townland: Robertstown		
Central ITN	M Coordinate:	526959, 649611							OD height of Survey Area 8.6 m OD		
Survey Wea	ather Conditions:	Sunny with occasional clou-	ds						Survey Date and Area (Ha): 01/10/18 0.95 Ha		
Heritage Co	onstraint Ref:	CH5 – field system									
Site Descrip	otion:	Gently sloping pasture field	cont	ainin	ıg an	ıkle l	high	gras	S		
Figure No.:		64 & 65									
Significant 1	Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po	ossib	le So	ource	e(s) (of	Comment	Recomme	ndation
				Anomaly							
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER15-11	Two arcing high resistivity anomalies	526978.662,649587.448 Multiple locations			✓		✓		Two arcing bank or stone features (11m and 18m in length) which could be agricultural or archaeological.	✓	
ER15-12	Three isolated points of high resistivity	527007.955,649604.834			✓				Three isolated stones, rubble deposits or stone capped pits which could be associated with ER15-11.	✓	



Survey	Area ID:	ER16							Townland:	Robertstown		
Central I	TM Coordinate:	527193, 649457							OD height of Survey Area	15.5 m OD		
Survey W	Veather Conditions:	Light rain							Survey Date and Area (Ha):	07/09/18 0.426 Ha	l	
Heritage	Constraint Ref:	LiDAR Site – 14.3, 14.4 – 7	Two p	ossi	ble e	nclo	sure	S				
Site Desc	ription:	Flat pasture fields containing present.	g sma	all ar	eas c	of sli	ghtly	y ov	vergrown vegetation. The eastern section rising to	wards southeast with some	bedrock outc	crop
Figure No	0.:	64 & 65										
Significar	nt Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Po		le So Anon		e(s) o	f	Comment		Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
ER16-1	Semi-circular low resistivity response	527177.451,649459.35	√		✓				Enclosure ditch which matches the location of 38m in diameter this anomaly suggests that the represents the southern extent of the enclosure.		√	
ER16-2	Semi-circular high resistivity response	527173.302,649453.398			✓				Possible bank or stone feature 32m in diameter. 4m on the internal edge of enclosure ER16 enclosure may once have been multi-valleted		√	
ER16-3	Isolated points of high resistivity	527173.302,649453.398 Multiple locations			✓		✓		Series of five isolated stones, rubble deposits of were detected inside enclosure ER16-1. The archaeological activity.		√	
ER16-4	Series of linear and curvilinear low resistivity anomalies	527184.308,649448.709 Multiple locations	✓		✓				Two curvilinear ditches or cut features (13m a linear ditches or cut features (22m and 5m in le relate to archaeological activity within the enclo	ength). These features may	~	
ER16-5	Two large zones of high resistivity	527196.035,649438.789 Multiple locations			✓		✓		Two stone or rubble deposits (6m and 5m in warchaeological, agricultural or geological activity	width) which may relate to y.	√	
ER16-6	Two interconnecting linear low resistivity responses	527196.035,649438.789	✓		✓				Two interconnecting ditches which are likely divisions.		✓	
ER16-7	Arcing low resistivity anomaly	527209.567,649473.058	✓		✓				Arcing ditch, 54m in length, which may be arch origin.		√	
ER16-8	Linear low resistivity response	527206.681,649480.092	✓		✓				Linear ditch (c.66m in length) this is likely to be	agricultural in origin.	√	



Survey	Area ID:	ER16							Townland: Robertstown		
Central I'	TM Coordinate:	527193, 649457							OD height of Survey Area 15.5 m OD		
	eather Conditions:	Light rain							Survey Date and Area (Ha): 07/09/18 0.426 Ha	l	
Heritage	Constraint Ref:	LiDAR Site – 14.3, 14.4 – T	wo p	ossi	ible e	enclo	sure	es			
Site Desci	ription:	Flat pasture fields containing present.	sma	all aı	reas	of sl	ightl	ly ov	ergrown vegetation. The eastern section rising towards southeast with some l	bedrock out	crop
Figure No).:	64 & 65									
Significan	nt Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	Possible Source Anomaly			` '	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
	Linear low resistivity trends	Throughout the survey area							Series of parallel possible cultivation furrows running in multiple directions.		



Survey A	ey Area ID: ER17								Townland: Ballynacaher	agh	
Central IT	M Coordinate:	533826, 647941							OD height of Survey Area 19.7 m OD		
Survey Wes	ather Conditions:	Overcast							Survey Date and Area (Ha): 04/10/18 1.27 Ha		
Heritage Co	onstraint Ref:	LiDAR Site 26.1, 26.2, 26.5	5 – Po	ossib	le en	clos	ure,	ring	· · · · · · · · · · · · · · · · · · ·		
Site Descrip	ption:	Flat pasture field.							•		
Figure No.:		72 & 73									
Significant	Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib		ource naly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER17-1	Arcing high resistivity anomaly	533821.109,647937.027		✓					Arcing bank or compacted earth which relates to archaeological activity. This feature is likely to represent an enclosure which will continue into the extant field boundary which is arcing in nature. The bank measures 53m in diameter and is likely to have been impacted and spread by the extensive ploughing that has been undertaken within the field.	√	
ER17-2	Linear low resistivity features	533821.109,647937.027 Multiple locations	√		✓				Three linear ditches or cut features were detected within ER17-1, these are likely to represent archaeological remains associated with the enclosure.	✓	
ER17-3	Low resistivity anomaly	533818.545,647954.646	√		✓				This feature may represent a ditch on the external edge of ER17-1 (c.65m in diameter). It contains a north spur which may represent an associated or later boundary. ER17-3 is likely to represent the boundary feature associated with magnetic enhancement (M21-6).	~	
ER17-4	Low resistivity linear	533818.545,647954.646	√		✓				Linear ditch or cut feature (69m in length) which may be archaeological or agricultural in origin.	✓	
ER17-5	Low resistivity linear	533771.756,647961.694	√		✓				Linear ditch or cut feature (63m in length) which leads from ER17-3 and crosses ER17-4.	√	
ER17-6	Low resistivity linear	533782.973,647981.555	✓		✓				Linear ditch or cut feature (81m in length) which crosses ER17-3.	✓	
ER17-7	Low resistivity linear	533782.973,647981.555	✓		✓				Linear ditch or cut feature (59m in length) which runs parallel to ER17-4.	✓	
ER17-8	Zone of raised resistivity	533808.29,647967.781			√		✓		Large area of raised resistivity which could be associated with archaeological material or be the product of agricultural processes.	✓	



Survey A	Area ID:	ER17							Townland: Ballynacaher	agh	
Central IT	M Coordinate:	533826, 647941							OD height of Survey Area 19.7 m OD		
Survey We	ather Conditions:	Overcast							Survey Date and Area (Ha): 04/10/18 1.27 Ha		
Heritage C	onstraint Ref:	LiDAR Site 26.1, 26.2, 26.5	5 – Po	ossib	le ei	nclos	ure,	ring	ort and field system		
Site Descri	ption:	Flat pasture field.									
Figure No.	:	72 & 73									
Significant	Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib				of	Comment	Recomme	endation
				1	Ano	maly					
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER17-9	Zone of raised resistivity	533808.29,647967.781			✓		✓		Large area of raised resistivity which could be associated with archaeological material or be the product of agricultural processes. It appears to be bounded by ER17-3 and ER17-10.	√	
ER17-10	Low resistivity linear	533808.29,647967.781	✓		✓				Linear ditch which runs from ER17-3 and forms the southern boundary of ER17-9. This anomaly may be archaeological or agricultural.	✓	
ER17-11	Low resistivity linear	533846.426,647887.053	✓		✓				Linear ditch (57m in length) which crosses ER17-10 and terminates within ER17-9.	✓	
	Linear trends	Multiple locations							Series of parallel cultivation furrows running throughout the survey area.		



Survey A	Area ID:	ER18							Townland:	Milltown North / Ball	ynacahei	ragh
Central IT	M Coordinate:	534336, 647294							OD height of Survey Area	20.97 m OD	•	
Survey We	eather Conditions:	Overcast with patches of lig	ght ra	in					Survey Date and Area (Ha):	02/10/18 0.74 Ha		
Heritage C	Constraint Ref:	SMR No. LI020-005 - Enc.										
Site Descri	ption:	Flat pasture field containing	g crop	ped	gras	s.						
Figure No.	:	74 & 75										
	Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Po	ossib	le So Anor		` '	of	Comment		Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrons	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
ER18-1	Arcing high resistivity anomaly	534322.997,647274.177		✓					Arcing bank or compacted earth feature vertical Enclosure LI020-005. This feature has material, but the resistivity data shows that This anomaly measures c. 60m in length and to 29m in width and contains a number features.	been buried under dredging it it survives under this deposit. In dencloses an area which is up	√	
ER18-2	Zone of high resistivity	534329.223,647234.033			✓				Is an area of high resistivity which is likely ER18-1. Forming a semi-circular enclosure		✓	
ER18-3	Semi-circular and isolated high resistivity anomalies	534329.223,647234.033		√					Comprises of two high resistivity features. and has a diameter of 6m, the larger mecontains a possible entranceway to the north of stone or compacted earth and may be structure.	The smaller is roughly circular easures 10m in diameter and hwest. These features comprise	~	
ER18-4	Semi-circular and curvilinear low resistivity responses	534339.497,647267.331	√		✓				Is a semi-circular ditched feature 9m in diar and size to ER18-3. The low resistivity na that it comprises of dug earth and has a pos To the south a curvilinear possible ditch or detected which runs from ER18-4 to ER18-	ature of the anomaly indicates sible entranceway to the south. cut feature (31m in length) was 1.	~	
ER18-5	Circular low resistivity and linear high response	534318.327,647265.464	✓		✓				Dug feature 5m in width which may be a linear possible stone or compacted earth fea	ture measuring 20m in length.	√	
ER18-6	Low resistivity linear	534318.327,647265.464	✓		✓				Linear possible ditch or cut feature (c.9m is along the external edge of ER18-2.	n length) which appears to run	√	



Survey A	Area ID:	ER18							Townland: Milltown North / Ball	ynacahei	ragh
Central IT	M Coordinate:	534336, 647294							OD height of Survey Area 20.97 m OD	•	
Survey We	ather Conditions:	Overcast with patches of lig	ht rai	in					Survey Date and Area (Ha): 02/10/18 0.74 Ha		
Heritage C	onstraint Ref:	SMR No. LI020-005 - Encl							`		
Site Descri	ption:	Flat pasture field containing	crop	ped	gras	s.					
Figure No.		74 & 75									
Significant	Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource naly	e(s) o	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER18-7	Arcing anomaly of low resistivity	534318.327,647265.464	~		√				Arcing possible ditch or cut feature (c.12m in length) which may be archaeological or geological in origin.	✓	
ER18-8	Low resistivity linear	534299.96,647254.572	✓		✓				Linear ditch (74m in length) which crosses ER18-1, ER18-4 and ER18-9.	√	
ER18-9	Parallel high resistivity anomalies	534299.96,647254.572			√				Two parallel banks or stone features which may correspond to features shown on the historic OS maps (1897-1913 25" and c.1900 Cassini). These features seem to have impacted a portion of ER18-1 and ER18-2.	✓	
ER18-10	Low resistivity linear	534299.96,647254.572	✓		✓				Linear possible ditch or cut feature (c.22m in length) which runs from ER18-1 and may be agricultural in origin.	✓	
ER18-11	Two interconnecting low resistivity linears	534312.724,647295.649	✓		✓				Two interconnecting ditches which are likely to be agricultural.	√	
ER18-12	Arcing low resistivity anomaly	534337.629,647307.475	✓		✓				Arcing possible ditch or cut feature (29m in length) which may be archaeological or agricultural in nature.	✓	
ER18-13	High resistivity anomaly	534353.195,647306.852			✓			✓	Stone or compacted earth feature which was detected adjacent to the river in an area known to contain dredging material. This feature may be archaeological, geological or associated with the dredging.	✓	
ER18-14	Sub-rectangular low resistivity anomaly	534353.195,647306.852	✓		✓				Sub-rectangular ditch measuring 27m in length which may be agricultural or archaeological.	√	
ER18-15	Curvilinear low resistivity response	534347.902,647314.943	✓		✓				Curvilinear ditch or cut feature (24m in length) which may be archaeological or agricultural in nature.	✓	
ER18-16	Zone of raised resistivity	534330.78,647325.213			✓		✓		Zone of compacted earth or stony deposit (21m x 13m) which may be archaeological, agricultural or geological in origin.	✓	



Survey A	rea ID:	ER18							Townland:	Milltown North / Ball	ynacahei	ragh
Central ITN	M Coordinate:	534336, 647294							OD height of Survey Area	20.97 m OD		
Survey Wea	ther Conditions:	Overcast with patches of lig	ht ra	in					Survey Date and Area (Ha):	02/10/18 0.74 Ha		
Heritage Co	onstraint Ref:	SMR No. LI020-005 - Enclo	osure	;								
Site Descrip	otion:	Flat pasture field containing	crop	ped	gras	s.						
Figure No.:		74 & 75										
Significant	Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Po	ossib	le So	ource	e(s) (of	Comment		Recomme	ndation
				Anomaly								
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
ER18-17	Low resistivity linear	534330.78,647325.213	✓		✓				Linear ditch or cut feature (18m in length ER18-16.	this appears to terminate at	✓	
ER18-18	Arcing high resistivity anomaly.	534330.78,647325.213			✓				Arcing stone, compacted earth feature or bawhich may be archaeological or agricultural		√	



Survey A	Area ID:	ER19							Townland: Kyletaun		
Central IT	M Coordinate:	536302, 643466							OD height of Survey Area 37.19 m OD		
Survey We	ather Conditions:	Overcast							Survey Date and Area (Ha): 05/10/18 0.5 Ha		
Heritage C	onstraint Ref:	AAP55 - wetland									
Site Descri	ption:	Pasture field which contains	s a ro	lling	land	lscap	e slo	pin	g down towards to NE and S edges of the survey area.		
Figure No.:		76 & 77						1	g		
	Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly		of	Comment	Recommen	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER19-1	Arcing low resistivity anomaly	536291.54,643344.465	~		√				Western side of possible enclosure ditch. Anomaly is 94m in length and is likely to join with ER19-2.	√	
ER19-2	Arcing low resistivity anomaly	536329.931,643465.325	✓		✓				Eastern side of possible enclosure ditch. Anomaly is 109m in length and is likely to join with ER19-1 forming an enclosure of c. 74m E-W and 91m N-S.	✓	
ER19-3	Arcing low resistivity anomaly	536294.364,643481.991	✓		✓				Possible ditch or cut feature (83m in length) which may be agricultural or archaeological in origin.	√	
ER19-4	High resistivity linear	536301.033,643462.363			✓				Possible bank, compacted earth or stone feature 27m in length.	✓	
ER19-5	Arcing low resistivity anomaly	536299.18,643449.4	✓		✓				Possible ditch or cut feature (32m in length) which may be associated with ER19-1 and ER19-2.	✓	
ER19-6	Sub-oval high resistivity response	536299.18,643449.4			✓				Sub-oval feature comprising of a external bank, compacted earth or stone feature (8m in diameter) which surrounds a circular zone of high resistivity (4m in diameter) with an extension to the west. This feature is likely to be archaeological and may be associated with industrial activity such as a kiln.	✓	
ER19-7	High resistivity linear	536295.105,643429.031			✓				Possible bank, compacted earth or stone feature 69m in length.	✓	
ER19-8	Low resistivity linear	536247.311,643459.03	✓		✓				Possible agricultural ditch (57m in length).	✓	
ER19-9	Low resistivity linear	536293.993,643473.844	✓		✓				Possible agricultural ditch (135m in length).	✓	
ER19-10	Low resistivity linear	536293.993,643473.844	✓		✓				Possible agricultural ditch (141m in length).	✓	
ER19-11	Series of interconnecting low resistivity linear	536233.973,643533.1	✓		✓				Series of interconnecting ditches which are likely to be agricultural in origin.	✓	



Survey A	Area ID:	ER19							Townland: Kyletaun		
Central IT	M Coordinate:	536302, 643466							OD height of Survey Area 37.19 m OD		
Survey We	ather Conditions:	Overcast							Survey Date and Area (Ha): 05/10/18 0.5 Ha		
Heritage C	onstraint Ref:	AAP55 - wetland							1		
Site Descri	ption:	Pasture field which contain	s a ro	lling	land	lscar	e slo	opin	g down towards to NE and S edges of the survey area.		
Figure No.:		76 & 77						- I	g		
	Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po	ossib		ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER19-12	Rectangular high resistivity response	536255.091,643500.139			✓				Area of compacted earth or stone (15m x 9m) which may be structural in origin.	√	
ER19-13	Series of linear high resistivity anomalies	536268.429,643541.988			√				Series of mostly parallel compacted earth or stone features which may represent former field divisions or potentially land drains. One feature extends to ER19-12.	√	
ER19-14	Zone of low resistivity	536268.8,643524.582			✓		✓		Zone of disturbed ground or natural water pooling (30m x 16m)	✓	
ER19-15	Arcing high resistivity anomaly	536288.065,643530.137			✓				Arcing compacted earth or stone feature (60m in length) which may be agricultural, archaeological or associated with geology.	✓	
ER19-16	Circular area of high resistivity	536288.065,643530.137			✓				Area of compacted earth or stone (8m in diameter) which may be structural or geological in origin.	✓	
ER19-17	Zone of low resistivity	536288.065,643530.137			✓		✓		Zone of disturbed ground or natural water pooling (29m x 22m)	✓	
ER19-18	Arcing high resistivity anomaly	536333.636,643515.693			✓				Arcing compacted earth or stone feature (37m in length) which may be agricultural, archaeological or associated with geology.	✓	
ER19-19	High resistivity linear	536333.636,643515.693			✓				Possible bank, compacted earth or stone feature 48m in length.	✓	
ER19-20	High resistivity linear	536333.636,643515.693			\checkmark				Possible bank, compacted earth or stone feature 28m in length.	✓	
ER19-21	Low resistivity linear	536333.636,643515.693	✓		✓				Possible ditch (74m in length) which may be agricultural in origin.	✓	
ER19-22	Low resistivity linears	536313.282,643325.973	✓		✓				Three parallel possible ditches which may represent former field divisions.	✓	
ER19-23	High resistivity linear	536312.541,643321.528	✓		✓				Possible bank, compacted earth or stone feature 41m in length which may be associated with ER19-22. Coincides with part of M26-21.	✓	
ER19-24	Area of high resistivity	536293.275,643343.749			✓				Area of compacted earth or stone (24m x 10m) which may be structural in origin.	✓	



Survey A	rea ID:	ER19							Townland:	Kyletaun		
Central ITN	A Coordinate:	536302, 643466							OD height of Survey Area	37.19 m OD		
Survey Wea	ther Conditions:	Overcast							Survey Date and Area (Ha):	05/10/18 0.5 Ha		
Heritage Co	onstraint Ref:	AAP55 - wetland										
Site Descrip	tion:	Pasture field which contains	a rol	ling	land	lscap	e slo	oping	own towards to NE and S edges of the surve	y area.		
Figure No.:		76 & 77										
Significant 1	Features present:	Possibly										
No.	Form of Anomaly	ITM (E,N)	Po	Possible Source(s) of Anomaly				of	Comment		Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
	Linear low resistivity trends	Multiple locations							ries of parallel possible cultivation fur- ections.	rows running in multiple		



Survey A	Area ID:	ER20							Townland: Ballycannon		
Central IT	M Coordinate:	540376, 643327							OD height of Survey Area 32.78 m OD		
Survey We	ather Conditions:	Overcast							Survey Date and Area (Ha): 26/09/18 1.6 Ha		
Heritage C	onstraint Ref:	North of Croagh village wh	ich is	a m	edie	val s	ettle	men			
Site Descri	ption:	Gently sloping pasture field									
Figure No.	•	82 & 83									
Significant	Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER20-1	High resistivity linear	540346.29,643359.744			√				Linear bank, compacted earth or stone feature, 12m in length, which may be agricultural in origin.	√	
ER20-2	Area of high resistivity	540405.666,643373.486			✓		✓		Area of high resistivity (17m x 14m) which may be archaeological, agricultural or geological in nature.	✓	
ER20-3	Right-angled low resistivity anomaly	540399.489,643371.893	✓		√				Right-angled possible ditch or cut feature which crosses ER17-2. This anomaly (14m in length) may be archaeological or associated with a geological break.	√	
ER20-4	Curvilinear high resistivity anomaly	540423.598,643380.656			✓		✓		Curvilinear bank, compacted earth or stone feature, 26m in length, which may be associated with agricultural, archaeological or geology.	√	
ER20-5	Area of high resistivity	540422.602,643370.3			✓		✓		Area of high resistivity (10m x 3m) which may be archaeological, agricultural or geological in nature.	✓	
ER20-6	Two arcing high resistivity features	540402.677,643358.15			✓				Two arcing compacted earth or stone features, 13m and 4m in diameter which may be archaeological or geological in origin.	√	
ER20-7	Low resistivity linear	540328.756,643335.843	√		✓				Possible ditch or cut feature (30m in length) which may be archaeological or agricultural.	√	
ER20-8	Two interconnecting low resistivity linears	540352.467,643311.345	✓		✓				Two interconnecting ditches which probably represent a former field division.	√	
ER20-9	Parallel low resistivity linears	540352.467,643311.345 Multiple locations	√		✓				Two parallel ditches or cut features which cross ER20-8. These features (23m and 34m in length) may be archaeological or agricultural.	√	
ER20-10	Curvilinear high resistivity response	540352.467,643311.345			✓		✓		Curvilinear bank, compacted earth or stone feature, 28m in length, which may be archaeological in origin.	√	



Survey	Area ID:	ER20							Townland: Ballycannon		
Central IT	M Coordinate:	540376, 643327							OD height of Survey Area 32.78 m OD		
Survey Wo	eather Conditions:	Overcast							Survey Date and Area (Ha): 26/09/18 1.6 Ha		
Heritage (Constraint Ref:	North of Croagh village wh	nich is	a m	edie	val s	ettle	men			
Site Descr	iption:	Gently sloping pasture field							,		
Figure No.	:	82 & 83									
Significant	t Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER20-11	High resistivity linear	540376.376,643330.465			√		✓		Linear bank, compacted earth or stone feature, 20m in length, which may be agricultural or archaeological in origin.	✓	
ER20-12	Three arcing high resistivity features	540376.376,643330.465 Multiple locations			✓		✓		Three arcing banks, compacted earth or stone features, 16m, 25m and 33m in length, which may be archaeological or geological in origin.	✓	
ER20-13	Curvilinear anomaly interlinking with two arcing low resistivity anomalies	540376.376,643330.465 Multiple locations	~		√		\		Two arcing ditches or cut features which join a north south curvilinear ditch. These features may be archaeological or geological in origin.	✓	
ER20-14	Curvilinear high resistivity response	540420.809,643323.694			✓		✓		Possible bank, compacted earth or stone feature, 33m in length, which may be agricultural or archaeological in origin.	•	
ER20-15	Sub-rectangular low resistivity anomaly	540420.809,643323.694	✓		✓				Sub-rectangular ditched feature (15m x 20m) which may be archaeological or agricultural.	v	
ER20-16	Low resistivity linear	540420.809,643323.694	✓		✓				Possible agricultural ditch (74m in length) which may link ER20-8 and ER20-15	V	
ER20-17	Right-angled high resistivity response	540331.745,643291.428			✓				Possible bank, compacted earth or stone feature, 33m in length, which may be agricultural or archaeological in origin.	✓	



Survey	Area ID:	ER21							Townland: Graigue		
Central IT	M Coordinate:	542164, 644812							OD height of Survey Area 12.7 m OD		
Survey We	eather Conditions:	Cool and Dry							Survey Date and Area (Ha): 16/10/18 2.08 Ha	ı	
Heritage C	Constraint Ref:	SMR No. LI020-159 / Rout	e Sel	ectio	n Sit	te Al	H119	9 –]	Hall house / Clonshire Castle		
Site Descri	iption:	Short flat pasture field									
Figure No.	:	86 & 87									
	Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po	ossib. A	le So Anon		` '	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER21-1	Zone of low resistivity	542073.041,644757.082	✓		✓		✓		Zone of waterlogged soil or disturbed ground which might be archaeological or agricultural in origin.	√	
ER21-2	Rectangular high resistivity anomaly	542094.411,644771.477			✓				Rectangular area of compacted earth or stone remains (17m x 11m) which may be archaeological or associated with soil deposition.	√	
ER21-3	Curvilinear low resistivity response	542107.013,644766.353	✓		✓				Possible ditch or cut feature (88m in length) which may be archaeological or agricultural in nature.	√	
ER21-4	Two interconnecting linear high resistivity anomalies	542118.939,644787.824			\				Two interconnecting linear ditches or cut features which may represent relict field boundaries.	✓	
ER21-5	Curvilinear high resistivity anomaly	542126.094,644780.667			✓				Possible bank, compacted earth or stone feature (87m in length) which runs between ER21-1 and ER21-14 in SW-NE direction and roughly aligns with a possible double ditch or trackway (magnetometer anomaly M34-3). This anomaly may be archaeological, geological or agricultural in nature.	√	
ER21-6	Curvilinear zone of low resistivity	542151.649,644772.828	✓		✓		✓		Curvilinear ditch or zone of disturbed ground (49m in length) which may be archaeological, geological or agricultural.	√	
ER21-7	High resistivity linear	542155.056,644751.017			✓		✓		Linear bank, compacted earth or stone feature (83m in length).	✓	
ER21-8	Right-angled low resistivity anomaly	542171.752,644745.905	✓		✓				Right-angled ditch, waterlogged soil or disturbed ground (20m in length) which may be archaeological.	✓	
ER21-9	Low resistivity linear	542182.996,644734.317	✓		✓				Linear possible archaeological or agricultural ditch or cut feature (28m in length).	√	



Survey A	Area ID: ER21								Townland: Graigue		
Central IT	M Coordinate:	542164, 644812							OD height of Survey Area 12.7 m OD		
Survey We	ather Conditions:	Cool and Dry							Survey Date and Area (Ha): 16/10/18 2.08 Ha	ı	
Heritage C	onstraint Ref:	SMR No. LI020-159 / Rout	e Sel	ectio	n Sit	te Al	H119) – I	Hall house / Clonshire Castle		
Site Descri	ption:	Short flat pasture field									
Figure No.		86 & 87									
Significant	Features present:	Possibly									
No.	Form of Anomaly	ITM (E,N)	Po	ossib A		ource naly		of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER21-10	Zone of low resistivity	542199.010,644746.245	✓		✓		✓		Curvilinear zone associated with a ditch, waterlogged soil or disturbed ground (42m in length).	√	
ER21-11	Two isolated and three interlinking linear responses of high or low resistivity	542198.342,644762.399 Multiple locations			✓				Two isolated compacted earth or stone features which have two linear compacted earth or stone features and a possible ditch extending from the largest. These features may be archaeological or agricultural.	√	
ER21-12	Two arcing high resistivity anomalies	542212.980,644782.712 542181.633,644770.102			✓		✓		Two arcing compacted earth or stone features which form a feature 41m in diameter. The two features are dissected by ER21-14 and may represent an archaeological feature which may surround ER21-11.	√	
ER21-13	High resistivity linear and isolated anomaly	542215.365,644787.142 542201.736,644787.142			✓		✓		Linear compacted earth or stone feature (18m in length) with adjacent isolated compacted earth or stone feature. These features may be archaeological, geological or agricultural.	√	
ER21-14	Low resistivity zone	542191.514,644794.640	✓		✓				Zone of waterlogged soil or disturbed ground which might be archaeological or agricultural in origin.	√	
ER21-15	Four isolated low resistivity anomalies	542208.892,644824.631 Multiple locations			✓		✓		Four possible pits of archaeological of agricultural origin.	√	
ER21-16	Six isolated high resistivity anomalies	542217.410,644844.398 Multiple locations			✓		✓		Six anomalies which may be associated with stone deposits, near surface geology or archaeology.	√	
ER21-17	Two isolated low resistivity anomalies	542208.551,644865.528			✓		✓		Two anomalies which may be associated with stone deposits, near surface geology or archaeology.	√	
ER21-18	Two interconnecting low	542193.559,644814.407	✓		✓				Two interconnecting ditches or cut features which form a series of	✓	



Survey	urvey Area ID: ER21								Townland:	Graigue		
Central IT	M Coordinate:	542164, 644812							OD height of Survey Area	12.7 m OD		
Survey We	eather Conditions:	Cool and Dry							Survey Date and Area (Ha):	16/10/18 2.08 Ha	ı	
Heritage C	Constraint Ref:	SMR No. LI020-159 / Rou	te Sel	ectio	n Sit	e Al	H119) — I	Hall house / Clonshire Castle			
Site Descri	ption:	Short flat pasture field										
Figure No.	:	86 & 87										
Significant	Features present:	Possibly										
No.	Form of Anomaly	ITM (E,N)	Po	ossib A	le So Anon		e(s) c	of	Comment		Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
	resistivity curvilinears								probably agricultural divisions.			
ER21-19	Low resistivity linear	542174.137,644852.578	✓		✓				Possible ditch or cut feature (54m in length) which archaeological in origin.	may be agricultural or	√	
ER21-20	Curvilinear high resistivity anomaly	542170.389,644836.900			✓		✓		Curvilinear compacted earth or stone feature (25m in	n length).	√	
ER21-21	Curvilinear low resistivity anomaly	542159.826,644830.425			✓				Curvilinear ditch or cut feature (16m in length) which 14.	ch terminates at ER21-	√	
ER21-22	Two zones of high resistivity	542164.256,644790.210 542164.256,644790.210			✓		✓		Two anomalies which may be associated with stone geology or archaeological remains.	deposits, near surface	√	
ER21-23	Series of isolated and curvilinear low resistivity anomalies	542147.901,644817.815 Multiple locations	✓		✓		✓		Two possible pits which are linked by a series of cu features. These features may be archaeological or ag		√	
ER21-24	Low resistivity linear	542115.191,644821.564	✓		✓				Possible ditch or cut feature (27m in length) which edge of ER21-13. This feature may be archaeological	ıl or agricultural.	√	
	Linear low resistivity trends	Multiple locations							Series of parallel cultivation furrows running in NE-	SW direction.		



Survey	Area ID:	ER22							Townland: Gortnagrour		
Central I	TM Coordinate:	542864, 645573							OD height of Survey Area 10.2 m OD		
Survey W	eather Conditions:	Dry							Survey Date and Area (Ha): 04/09/18 1.331Ha		
Heritage (Constraint Ref:	LiDAR Site 55.1 – Possible	encl	osur	е				, ,		
Site Descr	iption:	Pasture field covered by sh- centre is visible on the grou		ass v	vith a	a mo	dera	te ri	se towards southeast corner of the survey area. A large oval slightly raised ar	ea with a di	p in its
Figure No	.:	88 & 89									
Significan	t Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po	ossib 1		ource naly		of	Comment	Recomme	endation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
ER22-1	High resistivity linear	542875.52,645581.369			✓		✓		Linear bank, compacted earth or stone feature, 72m in length, which may be agricultural in origin.	✓	
ER22-2	High resistivity linear	542875.52,645581.369			✓		✓		Linear bank, compacted earth or stone feature, 71m in length, which may be agricultural in origin.	✓	
ER22-3	High resistivity linear	542859.846,645545.808			✓		✓		Linear bank, compacted earth or stone feature, 69m in length, which may be agricultural in origin.	✓	
ER22-4	Arcing high resistivity anomaly	542859.846,645545.808			✓		✓		Arcing possible archaeological bank, compacted earth or stone feature, 42m in length.	✓	
ER22-5	Zone of high resistivity	542830.611,645563.765			✓		✓		Zone of compacted earth (51m x 13m) which may be agricultural, archaeological or geological in origin.	✓	
ER22-6	Zone of low resistivity	542830.611,645563.765	√		√				Zone of disturbed or moisture retaining soil (78m in length) which appears to be cut by ER22-2 and ER22-3 and surrounds ER22-7. This feature may be associated with archaeological material or soil disturbance associated with dumping or possibly quarrying.	✓	
ER22-7	Zone of high resistivity	542830.611,645563.765			√		✓		Zone of compacted earth or stone (20m in length) which is surrounded by ER22-6. This anomaly could be associated with archaeological material or dumping.	√	
ER22-8	Zone of high resistivity	542910.215,645536.829			✓		✓		Zone of compacted earth or stone (32m in length) which is surrounded by	✓	



Survey A	Area ID:	ER22							Townland: Gortnagrour		
Central IT	M Coordinate:	542864, 645573							OD height of Survey Area 10.2 m OD		
Survey We	eather Conditions:	Dry							Survey Date and Area (Ha): 04/09/18 1.331Ha		
Heritage C	Constraint Ref:	LiDAR Site 55.1 – Possible	e encl	osur	e						
Site Descri	ption:	Pasture field covered by she centre is visible on the grou		ass v	vith	a mo	dera	te ri	se towards southeast corner of the survey area. A large oval slightly raised ar	ea with a dip	p in its
Figure No.	:	88 & 89									
Significant	Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Po			ource maly	e(s) o	of	Comment	Recomme	ndation
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
									ER22-6 and ER22-9. This anomaly could be associated with archaeological material or dumping.		
ER22-9	Zone of low resistivity	542929.94,645535.949	~		✓				Zone of disturbed or moisture retaining soil (60m in length) which may extend into ER22-12. This feature may be associated with archaeological material or soil disturbance associated with dumping or possibly quarrying.	*	
ER22-10	Zone of high resistivity	542929.94,645535.949			~		✓		Zone of compacted earth or stone (26m in length) which is located on the edge of ER22-9. This anomaly may be archaeological, geological or agricultural in origin.	✓	
ER22-11	Zone of high resistivity	542926.241,645581.017			✓		✓		Zone of compacted earth or stone (46m in length) which may be archaeological, geological or agricultural in origin.	✓	
ER22-12	Zone of low resistivity	542905.812,645573.623	~		√				Zone of disturbed or moisture retaining soil (33m in length) which may extend into ER22-9. This feature may be associated with archaeological material or soil disturbance associated with dumping or possibly quarrying.	~	
ER22-13	Zone of high resistivity	542905.812,645573.623			✓		✓		Zone of compacted earth or stone (34m in length) which may be archaeological, geological or agricultural in origin.	✓	



Survey Area ID:		ER23							Townland: Durnish	Durnish		
Central ITM Coordinate:		526172, 651199							OD height of Survey Area 3.0 m OD	3.0 m OD		
Survey V	Weather Conditions:	Overcast							Survey Date and Area (Ha): 26/11/18 0.34 Ha	26/11/18 0.34 Ha		
Heritage Constraint Ref:		LiDAR Site 1.5 – Possible Enclosure										
Site Description:		This survey area represents an additional area for a proposed new lorry park which comprised an area of newly cut ground within an overgrown field which is cut by numerous drainage ditches										
Figure No.:		60 & 61										
Significa	int Features present:	No										
No.	Form of Anomaly	ITM (E,N)	Possible Source(s) of Anomaly			` '	of	Comment	Recommendation			
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey	
ER23-1	Parallel high resistivity anomalies	526115.23,651200.763 Multiple locations			√				Possible bank or compacted earth features which run on either side of ER23-2. Measuring 63m in length, these anomalies could be archaeological, agricultural or associated with the drainage works visible on site.	√		
ER23-2	Low resistivity anomaly	526131.285,651213.417	√		√				Possible ditch or cut feature (57m in length) which could be archaeological, agricultural or associated with drainage ditches.	√		
ER23-3	Interlinking low resistivity anomalies	526184.58,651191.938			√				Two interconnecting ditches or cut features (35m and 24m in length) which may represent former boundaries or field drains.	√		
	Multiple magnetic linear trends	Throughout the survey area			√		✓		Could be associated with geological, archaeological or agricultural activity.	✓		



Survey Area ID:		ER24							Townland: Durnish	Durnish			
Central ITM Coordinate:		526307, 651068							OD height of Survey Area 3.0 m OD	3.0 m OD			
Survey Weather Conditions:		Overcast							Survey Date and Area (Ha): 26/11/18 0.66 Ha	26/11/18 0.66 Ha			
Heritage Constraint Ref:		LiDAR Site 2.1 – Possible Enclosure											
Site Description:		This survey area represents an additional area for a proposed new lorry park which comprised an area of newly cut ground within an overgrown field which is cut by numerous drainage ditches											
Figure No.:		60 & 61											
Significa	nt Features present:	No											
No.	Form of Anomaly	ITM (E,N)	Possible Source(s) of Anomaly					of	Comment	Recommendation			
			Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey		
ER24-1	Two arcing low resistivity anomalies	526293.229,651058.509 Multiple locations	✓		✓				Two possible ditches or cut features which may represent an archaeological feature 30m in diameter.	✓			
ER24-2	Three isolated areas of high resistivity	526322.238,651089.484 Multiple locations			✓		✓		Three areas of compacted earth or stone. Measuring between 10m and 4m in width these anomalies could be associated with archaeology, geology or agricultural processes.	√			
ER24-3	Area of low resistivity	526278.072,651073.739	✓		✓		✓		Area of disturbed soil or waterlogging measures 29m in width and may be associated with naturally waterlogged soils or a dug feature possibly archaeological in origin.	√			
	Multiple magnetic linear trends	Throughout the survey area			✓		✓		Could be associated with geological, archaeological or agricultural activity.	✓			



Survey	Area ID:	ER25							Townland: Clogh West		
Central l	ITM Coordinate:	538968, 643255							OD height of Survey Area 42 m OD		
Survey V	Veather Conditions:	Overcast							Survey Date and Area (Ha): 28/11/18 0.2 Ha		
Heritage	Constraint Ref:	LiDAR Site 66.4 – Possible	Encl	osur	e						
Site Desc	cription:	Rolling pasture field									
Figure N	o.:	80 & 81									
Significa	nt Features present:	No									
No.	Form of Anomaly	ITM (E,N)	Po		le So Anor		e(s) (of	Comment	Recomme	ndation
			Ditch	Arc ? Ar F Geol						Test Excavation	Geophysical Survey
ER25-1	High resistivity curvilinear	538956.683,643253.875			✓				Curvilinear compacted earth or stone feature (13m in length) which is likely to be associated with a relict field boundary.	√	
ER25-2	Two zones of low resistivity	538977.726,643249.245 Multiple locations			✓				Two areas of disturbed soil or dug features 3m in width. These roughly correspond to two of the highly magnetic features found in the magnetometer data (M31-8).		
ER25-3	Arcing high resistivity anomaly	538976.166,643265.786	✓ A su fc					Arcing compacted earth or stone feature (36m in length) which may surround ER25-2 and be associated with the highly magnetic features found in the magnetometer data.			
ER25-4	High resistivity linear	538989.234,643248.614	✓					Linear compacted earth or stone (19m in length) which may be archaeological or agricultural in origin.			
ER25-5	Zone of high resistivity	538989.234,643248.614	8989.234,643248.614			✓		Zone of compacted earth or stone (12 in width) which may relate to an archaeological deposit or near surface geology.	√		



3.3 Electrical Resistivity Tomography Survey

Survey A	rea ID:	ERT1							Townland: Gortnagrour		
Central ITN	A Coordinate:	542898,64553	35						OD height of Survey Area 9.7 – 10.5m OD		
Survey Wea	ther Conditions:	Sunny with cl	ouds						Survey Date and Area (m): 16/10/18 1x64m	& 1x96m	
Heritage Co	onstraint Ref:	LiDAR Site 5:	5.1 – Possible e	nclos	ure						
Site Descrip	tion:								arge oval slightly raised area with a dip in its centre that is visible on the group ivity (ER-22) anomalies.	and as well a	ıs
Figure No.:		92, 93, 94, 95		3111011	(11)	200)		00100	(St. 22) anomalion		
	Features present:	Yes	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Pos		Sou:	rce(s)	of	Comment	Recomme	endation
				Ditch	Archaeology	? Archaeology	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 1-1	Low resistivity anomaly	542881.117, 645545.896	10.2m	✓		✓			Possible ditch with a U-shaped profile, c. 2.4m wide and 0.2m deep, vertical side to the southeast with a sloping side to the northwest. This anomaly may correspond to a portion of ER22-6.	✓	
Profile 1-2	Area of high resistivity	542881.117, 645545.896	9.3m			√			Roughly rectangular anomaly, measuring 4.6m wide by 0.7m deep. This anomaly may represent the foundations of a large bank – either of stone or compacted earth and may correspond to a portion of M36-2.	√	
Profile 1-3	Slender low resistivity anomaly	542887.46, 645541.551	9.8m	✓		✓			Possible ditch with a U-shaped profile, roughly 0.4m deep by 0.7m wide.	√	
Profile 1-4	High resistivity area	542890.455, 645539.614	9.0m			√			Irregularly-shaped anomaly which is possibly associated with a bank of stone or compacted earth. Maximum dimensions of 4.7m width and 1m depth and may correspond to a portion of M36-5 and/or ER22-6.	√	
Profile 1-5	Anomaly of low resistivity	542890.455, 645539.614	9.4m			√			Area of disturbed soil, roughly V-shaped in profile, located at centre of oval depression. This could indicate a large pit. It has a maximum depth of 0.7m and width of 2.4m. This anomaly may correspond to a portion of ER22-6.	√	
Profile 1-6	High resistivity area	542890.455, 645539.614	9.0m			√			Irregular area of stone or compacted earth, measuring 1.2m deep by 3m wide c. This anomaly may represent compression associated with a bank or a created surface.	✓	



Survey A	rea ID:	ERT1							Townland: Gortnagrour		
Central ITM	I Coordinate:	542898,64553	5						OD height of Survey Area 9.7 – 10.5m OD		
Survey Wear	ther Conditions:	Sunny with cl	ouds						Survey Date and Area (m): 16/10/18 1x64m	& 1x96m	
Heritage Co	nstraint Ref:	LiDAR Site 5:	5.1 – Possible e	nclos	ure				· · · · · · · · · · · · · · · · · · ·		
Site Descript	tion:								arge oval slightly raised area with a dip in its centre that is visible on the gro ivity (ER-22) anomalies.	und as well a	IS
Figure No.:		92, 93, 94, 95	, 96 & 97								
	eatures present:	Yes	•								
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Pos		Sou noma) of	Comment	Recomme	endation
				Ditch	Archaeology	? Archaeology	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 1-7	Low resistivity area	542890.455, 645539.614	10.2m	✓					Square-shaped anomaly, 0.4m deep by 0.4m wide. May indicate presence of a ditch, which could be associated with broader area of low resistance surround anomaly.	✓	
Profile 1-8	Broad high resistivity anomaly	542910.954, 645525.582	9.1m			✓			Large area of highly resistant material, indicating presence of stone or compacted earth. It measures 6.3m wide with a maximum depth of 1.3m. This could be the base area of a bank or deposit. This anomaly may correspond to a portion of ER22-8.	√	
Profile 1-9	Discrete low resistivity anomaly	542913.185, 645523.879	10.3m	√		√			V-shaped anomaly which possibly represents a ditch. It has a depth of 0.8m and a width of 0.3m. The area of low resistance to the northwest may be associated. This anomaly may correspond to a portion of M36-2.	√	
Profile 1-10	Zone of raised resistivity values	542900.616, 645532.392	9m			√			Zone of archaeological material which corresponds to the topographical depression. There are no distinct cut edges to the anomaly indicating that it is not associated with a quarry or large cut feature but comprises of multiple archaeological features.	~	
Profile 2-11	High resistivity area	542863.178, 645528.813	8.4m			√			Rectangular area of high resistivity which may be associated with stone or compacted earth. This anomaly has a width of 2.6m and a depth of 1.4m and may correspond to M36-2	√	
Profile 2-12	High resistivity anomaly	542868.032, 645529.704	8.3m			√			Rectangular zone of high resistivity which may be associated with stone or compacted earth. This anomaly has a width of 3.4m and a maximum depth of 1.7m and may correspond to ER22-6.	√	



Survey A	rea ID:	ERT1							Townland: Gortnagrour		
Central ITM	I Coordinate:	542898,64553	5						OD height of Survey Area 9.7 – 10.5m OD		
Survey Wea	ther Conditions:	Sunny with cle	ouds						Survey Date and Area (m): 16/10/18 1x64m	& 1x96m	
Heritage Co	nstraint Ref:	LiDAR Site 5:	5.1 – Possible ei	nclos	sure						
Site Descript	tion:	Survey compr	ised of two prof	iles v	which	ı cut	acros	s a l	arge oval slightly raised area with a dip in its centre that is visible on the gro	and as well a	ıs
_		targeting a nui	mber of magneto	omet	er (M	I -36)	and r	esis	ivity (ER-22) anomalies.		
Figure No.:		92, 93, 94, 95	, 96 & 97								
Significant F	eatures present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Pos		Sou noma	rce(s) ıly) of	Comment	Recomme	endation
				Ditch	Arc ? Ar Geol			_		Test Excavation	Geophysical Survey
Profile 2-13	Low resistivity anomaly	542881.108, 645532.97	10.2m	✓	·				Possible ditch, with irregular base, maximum dimensions are 0.3m deep and 1.4m wide. Area of high resistance below possibly indicates stony or compacted base.	✓	
Profile 2-14	High resistant rectangular area	542885.071, 645534.059	9.3m			√			Large regular area of stone or compacted soil. This anomaly has a width of 4.7m and a depth of 1m.	✓	
Profile 2-15	Low resistivity anomaly	542887.052, 645534.257	10.1m	✓		✓			Shallow area of disturbed soil, with a depth of 0.2m and a width of 1.2m. May mark presence of a cut feature such as a ditch or pit.	✓	
Profile 2-16	Irregular area of high resistivity	542891.411, 645535.147	8.6m	✓		✓			Sub-rectangular anomaly of hard material, either stone or compact earth, measuring 1m deep and 3.8m wide. May indicate a prepared surface or compaction which is likely to be associated with ER22-7.	✓	
Profile 2-17	Irregular area of low resistivity	542893.491, 645535.939	9.5m	*			Broad area of low resistance indicating presence of disturbed soil, with overall dimensions of 0.8m depth and 4.6m width. The anomaly lacks form, except for a discrete central area and may be associated with a portion of ER22-6. May indicate a ploughed out, or otherwise disturbed, ditch; or a large pit or a series of interconnecting pits.	✓			
Profile 2-18	Low resistivity anomaly	542896.265, 645536.434	9.5m	✓		✓			Roughly U-shaped anomaly, depth of 0.4m and width of 0.8m. This may be a pit or cut linear feature.	✓	
Profile 2-19	Irregular area of high resistivity	542905.775, 645538.414	8.8m			✓			Large area of compacted earth or stone, measuring 1m deep by 5.5m wide. This anomaly appears to correspond with a portion of ER22-8.	✓	



Survey A	rea ID:	ERT1							Townland: Gortnagrour		
Central ITM	Coordinate:	542898,64553	5						OD height of Survey Area 9.7 – 10.5m OD		
Survey Weat	ther Conditions:	Sunny with cl	ouds						Survey Date and Area (m): 16/10/18 1x64m	& 1x96m	
Heritage Co	nstraint Ref:	LiDAR Site 5	5.1 – Possible e	nclos	ure						
Site Descript	tion:	Survey compr	ised of two prof	iles v	which	cut	acros	s a la	arge oval slightly raised area with a dip in its centre that is visible on the grou	ınd as well a	ıs
				omet	er (M	I -36)	and r	esist	ivity (ER-22) anomalies.		
Figure No.:		92, 93, 94, 95	, 96 & 97								
	eatures present:	Yes								7	
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)			Sou:	rce(s) lly	of	Comment	Recomme	endation
				Ditch	Archaeology	? Archaeology	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 2-20	Low resistivity rectilinear	542907.459, 645538.71	9.9m	✓		√			Possible large pit or shallow ditch. Dimensions are 0.3m deep and 2.1m wide. This anomaly appears to correspond with a portion of M36-5.	✓	
Profile 2-21	Discrete low resistivity anomaly	542913.402, 645540.393	10.1m	✓		✓			Possible ditch, U-shaped in form with maximum dimensions of 0.3m depth and 0.7m width. This anomaly appears to correspond with a portion of M36-5.	√	
Profile 2-22	Area of raised resistivity	542919.346, 645541.68	8.3m			√			Area of compacted earth or stone, measuring 1.2m deep by 3.5m wide. This anomaly appears to correspond with a portion of ER22-9.	✓	
Profile 2-23	Raised resistivity anomaly	542923.408, 645542.768	9.2m			\			Area of compacted earth or stone, measuring 1.97m deep by 1m wide. This anomaly appears to have near vertical sides and a relatively flat bottom. This anomaly may be related to M36-6.	✓	
Profile 2-24	Zone of raised resistivity values	542900.821, 645537.523	9m			✓			Zone of archaeological material which corresponds to the topographical depression. There are no distinct cut edges to the anomaly indicating that it is not associated with a quarry or large cut feature but comprises of multiple archaeological features. This feature is the same of Profile1-10. Below Profile2-14 a large dip in the subsoil can be seen, this may be a product of the geophysical modelling or may relate to a natural feature, however it is not related and has no impact on the above archaeological remains.	√	



Survey A	rea ID:	ERT2								Townland: Tuogh		
Central ITM	I Coordinate:	544165,64652	21							OD height of Survey Area 4.9 - 6m OD		
Survey Wea	ther Conditions:	Overcast with	period of rain a	and st	trons	g wii	nd			Survey Date and Area (m): 27/11/18 3x64	·m	
Heritage Co	nstraint Ref:		9.4 – Possible n							·		
Site Descrip	tion:	Three profiles	across small ov	val m	oun	d in	south	iwes	stern	section of the field and targeting a number of magnetometer anomalies (M-	-38).	
Figure No.:			101, 102, 103, 10									
Significant I	Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Po			ource maly		of	Comment	Recomme	endation
				Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 3-1	Low resistivity anomaly	544153.056, 646532.45	4.5m	✓ ✓ ✓			✓		Possible ditch or area of waterlogged ground, c. 1.8m wide and 0.25m deep and may be associated with a resistivity anomaly.	√		
Profile 3-2	Low resistivity anomaly	544153.056, 646532.45	4.75m	✓		✓				Possible ditch or cut feature with a V-shaped profile, c. 0.25m wide and 0.1m deep, this anomaly may relate to a cultivation furrow.	✓	
Profile 3-3	Low resistivity anomaly	544156.868, 646525.988	5m	✓		✓				Possible ditch or cut feature with a V-shaped profile, c. 0.3m wide and 0.11m deep, similar in formation to profile 3-2	✓	
Profile 3-4	Low resistivity anomaly	544158.849, 646522.589	5.5m	✓		✓				Possible ditch or cut feature with a u-shaped profile, c. 0.1m wide and 0.1m deep.	✓	
Profile 3-5	High resistivity anomaly	544161.577, 646518.07	4.5m					✓		Large zone of high resistivity which is likely to relate to geology. The presence of this anomaly indicates that at least in part the topographical expression is natural	√	
Profile 3-6	Low resistivity anomaly	544161.091, 646518.854	5.8m	✓	<i>y</i>			Possible ditch or cut feature, c. 0.7m wide and 0.27m deep which is located on the top of the topographical expression.	✓			
Profile 3-7	Low resistivity anomaly	544161.838, 646517.622	5.8m	✓		✓				Possible ditch or cut feature, c. 0.34m wide and 0.26m deep which is located on the top of the topographical expression.	√	
Profile 3-8	Low resistivity anomaly	544161.838, 646517.622	5.7m	✓		✓				Possible ditch or cut feature, c. 0.4m wide and 0.27m deep, which is similar in formation to Profile 3-7.	√	
Profile 3-9	Low resistivity anomaly	544161.838, 646517.622	5.7m	✓						Possible ditch or cut feature, c. 0.6m wide and 0.2m deep.	√	



Survey A	rea ID:	ERT2								Townland: Tuogh		
Central ITM	I Coordinate:	544165,64652	21							OD height of Survey Area 4.9 - 6m OD		
Survey Weat	ther Conditions:	Overcast with	period of rain a	and s	tron	g wi	ind			Survey Date and Area (m): 27/11/18 3x64r	n	
Heritage Co	nstraint Ref:		9.4 – Possible n									
Site Descript	tion:	Three profiles	s across small ov	val n	nour	nd in	sou	thwe	estern	section of the field and targeting a number of magnetometer anomalies (M-3	38).	
Figure No.:			101, 102, 103, 1									
Significant F	Teatures present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Po		ble S Ano		ce(s)	of	Comment	Recomme	endation
				Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 3-10	Low resistivity anomaly	544165.136, 646512.136	5.6m	✓		✓				Possible ditch or cut feature with a deep U-shaped profile, approximately 0.2m wide and 0.26m deep. This anomaly may be associated with a possible pit or posthole detected in the magnetometer data.	√	
Profile 3-11	Low resistivity anomaly	544165.136, 646512.136	5.4m	✓		✓				Possible ditch or cut feature c. 0.27m wide and 0.37m deep which is similar in profile to Profile 3-10.	✓	
Profile 3-12	Low resistivity anomaly	544166.818, 646509.298	5.2m	✓		✓				Possible ditch or cut feature c. 0.3m wide and 0.33m deep which is similar in profile to Profile 3-10 & 11.	✓	
Profile 3-13	Low resistivity anomaly	544167.491, 646508.215	5m	✓		✓				Possible ditch or cut feature c. 0.29m wide and 0.31m deep which is similar in profile to Profile 3-12.	✓	
Profile 3-14	Low resistivity anomaly	544167.491, 646508.215	4.9m	✓		✓				Possible ditch or cut feature, c. 1.25m wide and 0.35m deep.	✓	
Profile 3-15	Low resistivity anomaly	544167.491, 646508.215	4.7m	✓		✓				U-shaped possible ditch or cut feature, c. 0.37m wide and 0.23m deep.	✓	
Profile 3-16	Low resistivity anomaly	544167.491, 646508.215	4.6m	✓		✓				Possible ditch or cut feature, c. 0.35m wide and 0.36m deep.	✓	
Profile 3-17	Zone of low resistivity	544172.573, 646499.81	4.5m			✓		✓		Zone of low resistivity, c. 3.6m wide and 0.35m deep, which may indicate a zone of disturbed soil or natural waterlogging.	✓	
Profile 3-18	Low resistivity anomaly	544170.891, 646502.537	4.75m	✓		√				Possible ditch or cut feature, c. 0.96m wide and 0.1m deep, which is contained within Profile 3-17 and may comprise of two closely spaced features.	✓	



Survey A	rea ID:	ERT2								Townland: Tuogh		
Central ITM	Coordinate:	544165,64652	21							OD height of Survey Area 4.9 - 6m OD		
Survey Weat	ther Conditions:	Overcast with	period of rain a	ınd s	tron	g wii	nd			Survey Date and Area (m): 27/11/18 3x6	4m	
Heritage Con	nstraint Ref:		9.4 – Possible n									
Site Descript	ion:					d in	sout	hwe	stern	section of the field and targeting a number of magnetometer anomalies (M	-38).	
Figure No.:			01, 102, 103, 10								,	
	eatures present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Mid-depth	Po	ossil	ole S	ourc	e(s)	of	Comment	Recomme	endation
			OD (approx.)			Anoi	maly	7				
				Ditch	Archaeology	? Archaeology	\approx	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 3-19	Low resistivity anomaly	544170.891, 646502.537	4.6m	✓						Possible ditch or cut feature, c. 0.45m wide and 0.04m deep.	✓	
Profile 3-20	Low resistivity anomaly	544170.891, 646502.537	4.5m	✓		✓				Flat bottomed possible ditch or cut feature, c. 0.44m wide and 0.25m deep.	✓	
Profile 3-21	Low resistivity anomaly	544175.089, 646495.63	4.5m	✓		✓				U shaped possible ditch or cut feature, c. 0.39m wide and 0.2m deep.	√	
Profile 3-22	Low resistivity anomaly	544175.836, 646494.36	4.5m	✓		✓				Flat bottomed possible ditch or cut feature, c. 0.87m wide and 0.23m deep. This anomaly possibly contains two closely spaced features.	√	
Profile 3-23	Low resistivity anomaly	544176.77, 646492.866	4.4m	✓		✓				U shaped possible ditch or cut feature, c. 0.15m wide and 0.27m deep and may be associated with a resistivity anomaly.	√	
Profile 3-24	Low resistivity anomaly	544177.219, 646491.969	4.4m	✓		✓				Possible ditch or cut feature, c. 0.31m wide and 0.26m deep.	✓	
Profile 3-25	Low resistivity anomaly	544178.041, 646490.662	4.5m	✓		✓				U shaped possible ditch or cut feature, c. 0.22m wide and 0.07m deep. This anomaly is likely to be associated with a magnetometer anomaly.	√	
Profile 3-26	Low resistivity anomaly	544180.582, 646486.516	4.5m	✓		✓				Possible ditch or cut feature, c. 1m wide and 0.34m deep, this anomaly probably consists of two closely spaced features.	✓	
Profile 3-27	Low resistivity anomaly	544181.703, 646484.611	4.45m	✓		✓				V shaped possible ditch or cut feature, c. 0.42m wide and 0.14m deep.	√	
Profile 3-28	Low resistivity anomaly	544182.936, 646482.519	4.1m	✓		✓				U shaped possible ditch or cut feature, c. 0.69m wide and 0.28m deep.	✓	



Survey A	rea ID:	ERT2								Townland: Tuogh		
Central ITM	I Coordinate:	544165,64652	21							OD height of Survey Area 4.9 - 6m OD		
Survey Weat	ther Conditions:	Overcast with	period of rain a	ınd s	tron	g wi	nd			Survey Date and Area (m): 27/11/18 3x	64m	
Heritage Co	nstraint Ref:	LiDAR Site 4	9.4 – Possible n	noun	ıd							
Site Descript	tion:	Three profiles	across small ov	al m	oun	ıd in	sou	thwe	estern	section of the field and targeting a number of magnetometer anomalies (M-38).	
Figure No.:		98, 99, 100, 1	01, 102, 103, 10	04 &	105	5						
Significant F	eatures present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Po		ole S Ano		ce(s) y	of	Comment	Recomm	endation
				Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 4-29	Zone of low resistivity	544182.936, 646482.519	4.5m	✓	✓ ✓ ✓					Zone of disturbed or waterlogged ground, which may be naturally occurring or represent archaeological or agricultural activity.	√	
Profile 4-30	Low resistivity anomaly	544182.936, 646482.519	4.6m	√		✓				Possible ditch or cut feature, c. 1.7m wide and 0.38m deep, which is contained within Profile 4-30 and may be associated with a resistivity anomaly.		
Profile 4-31	Low resistivity anomaly	544158.33, 646531.235	4.6m	✓		✓				U shaped possible ditch or cut feature, c. 0.36m wide and 0.18m deep.	√	
Profile 4-32	Low resistivity anomaly	544159.077, 646529.703	4.65m	✓		✓				U shaped possible ditch or cut feature, c. 0.2m wide and 0.09m deep.	√	
Profile 4-33	Zone of high resistivity	544163.302, 646522.768	4.5m					✓		Zone of probable near surface geology. The presence of this anomaly indicates that the topographical expression is most likely geological in origin.		
Profile 4-34	Low resistivity anomaly	544163.302, 646522.768	5.1m	✓		√				Possible ditch or cut feature, c. 0.8m wide and 0.2m deep.	√	
Profile 4-35	Zone of low resistivity	544165.17, 646519.742	5.2m	✓		✓		✓		Zone of disturbed or waterlogged ground, which may be naturally occurring, however as it is located on the top of a topographical expression it is likely to be archaeological in origin.		
Profile 4-36	Low resistivity anomaly	544166.553, 646517.389	5.4m	✓		✓				Possible ditch or cut feature, c. 0.58m wide and 0.37m deep.	✓	
Profile 4-37	Low resistivity anomaly	544171.242, 646509.62	4.8m	✓		✓				Possible ditch or cut feature, c. 0.66m wide and 0.25m deep.	✓	



Survey A	rea ID:	ERT2								Townland:	Tuogh		
Central ITM	Coordinate:	544165,64652	21							OD height of Survey Area	4.9 - 6m OD		
Survey Weat	ther Conditions:	Overcast with	period of rain a	ınd st	tron	g wi	nd			Survey Date and Area (m):	27/11/18 3x64	·m	
Heritage Con	nstraint Ref:		9.4 – Possible n								•		
Site Descript	ion:					d in	south	iwes	stern	section of the field and targeting a number of mag	gnetometer anomalies (M-	-38).	
Figure No.:			01, 102, 103, 10								`		
Significant F	'eatures present:	Yes											
No.	Form of Anomaly	ITM (E,N)	Mid-depth	Po	ssit	ole S	ource	e(s)	of	Comment		Recomme	endation
			OD (approx.)			Ano	maly						
				Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
Profile 4-38	Low resistivity anomaly	544172.101, 646508.312	4.8m	✓						Possible ditch or cut feature, c. 0.2m wide and	0.15m deep.	✓	
Profile 4-39	Zone of low resistivity	544174.829, 646503.793	4.4m	✓		✓				Zone of disturbed or waterlogged ground, we occurring or represent archaeological or agriculture.		✓	
Profile 4-40	Low resistivity anomaly	544176.997, 646500.095	4.5m	✓		✓				Possible ditch or cut feature, c. 0.60m wide and		√	
Profile 4-41	Low resistivity anomaly	544178.08, 646498.003	4.4m	✓		✓				Possible ditch or cut feature, c. 0.99m wide and	1 0.30m deep.	√	
Profile 4-42	Low resistivity anomaly	544180.024, 646494.982	4.5m	✓		✓				Possible ditch or cut feature, c. 0.28m wide and	l 0.14m deep.	✓	
Profile 4-43	Low resistivity anomaly	544180.024, 646494.982	4.4m	√		✓				Possible ditch or cut feature, c. 0.52m wide and	1 0.22m deep.	✓	
Profile 4-44	Low resistivity anomaly	544184.039, 646488.389	4.1m	~		✓				U shaped possible ditch or cut feature, c. 0.85m	n wide and 0.30m deep.	√	
Profile 4-45	Low resistivity anomaly	544185.473, 646485.618	4m	✓		✓				Possible ditch or cut feature, c. 0.95m wide anomaly may comprise of two closely spaced f		✓	
Profile 5-46	Low resistivity anomaly	544185.473, 646485.618	4.6m	✓		✓				Possible ditch or cut feature, c. 1.9m wide and		✓	
Profile 5-47	Low resistivity anomaly	544141.076, 646508.661	4.6m	~		✓				Possible ditch or cut feature, c. 0.7m wide and	0.30m deep.	✓	



Survey A	rea ID:	ERT2								Townland:	Tuogh		
Central ITM	I Coordinate:	544165,64652	21							OD height of Survey Area	4.9 - 6m OD		
Survey Weat	ther Conditions:	Overcast with	period of rain a	nd st	ron	g wir	nd			Survey Date and Area (m):	27/11/18 3x64	m	
Heritage Con	nstraint Ref:		9.4 – Possible n										
Site Descript	tion:	Three profiles	across small ov	al m	oun	d in s	south	west	ern se	ction of the field and targeting a number of magnet	tometer anomalies (M-	38).	
Figure No.:			01, 102, 103, 10								•		
Significant F	'eatures present:	Yes											
No.	Form of Anomaly	ITM (E,N)	Mid-depth	Po			ource((s) of	f	Comment		Recomme	endation
			OD (approx.)		•	Anor	naly						
				Ditch	Archaeology	? Archaeology	Ferrous Godlom, Coils	Geology / Solls	Interference / Modern			Test Excavation	Geophysical Survey
Profile 5-48	Zone of low resistivity	544142.137, 646509.219	4.5m 🗸 🗸							Area of disturbed ground which is likely to be number of closely spaced cut features.	e associated with a	√	
Profile 5-49	Low resistivity anomaly	544142.864, 646509.615	4.6m	✓		✓				U shaped possible ditch or cut feature, c. 0.52m wi	de and 0.26m deep.	√	
Profile 5-50	Low resistivity anomaly	544143.755, 646510.143	4.6m	✓		✓				U shaped possible ditch or cut feature, c. 0.69m wi	de and 0.31m deep.	√	
Profile 5-51	Low resistivity anomaly	544144.609, 646510.641	4.6m	✓		✓				U shaped possible ditch or cut feature, c. 0.54m wi	de and 0.30m deep.	√	
Profile 5-52	Low resistivity anomaly	544145.567, 646511.071	4.5m	✓		✓				U shaped possible ditch or cut feature, c. 0.48m w. This feature has need vertical sides and may repredetected in the magnetometer data.	esent a post hole, as	√	
Profile 5-53	Low resistivity anomaly	544145.567, 646511.071	4.6m	✓		✓				Possible ditch or cut feature, c. 0.73m wide and 0.5	50m deep.	✓	
Profile 5-54	Low resistivity anomaly	544153.32, 646515.215	4.6m	✓		✓				Possible cut feature, c. 2.4m wide and 0.45m deep		√	
Profile 5-55	Zone of low resistivity	544155.962, 646516.601	4.5m			✓	~			Area of disturbed ground which is likely to be number of closely spaced cut features. Below anomaly a distinctive depression in the sub soil could indicate the presence of a cut feature in topographical expression or may be natural in orig	the centre of this was detected which the centre of the	✓	



Survey A	rea ID:	ERT2								Townland:	Tuogh		
Central ITM	Coordinate:	544165,64652	21							OD height of Survey Area	4.9 - 6m OD		
Survey Weat	ther Conditions:	Overcast with	period of rain a	nd st	ron	g wir	ıd			Survey Date and Area (m):	27/11/18 3x64	m	
Heritage Con	nstraint Ref:		9.4 – Possible n										
Site Descript	ion:					d in s	southv	vester	n section	on of the field and targeting a number of mag	netometer anomalies (M-	38).	
Figure No.:			01, 102, 103, 10								,	/ -	
	eatures present:	Yes											
No.	Form of Anomaly	ITM (E,N)	Mid-depth	Po	ssib	le So	ource(s) of		Comment		Recomme	endation
			OD (approx.)			Anor	naly						
				Ditch	Archaeology	? Archaeology	Ferrous Geology / Soils	Interference / Modern				Test Excavation	Geophysical Survey
Profile 5-56	Low resistivity anomaly	544158.141, 646517.856	4.7m	✓					Po	ssible ditch or cut feature, c. 0.25m wide and	0.35m deep.	✓	
Profile 5-57	Low resistivity anomaly	544160.948, 646519.308	4.7m	✓		✓				ssible ditch or cut feature, c. 0.52m wide a smally may be the same as that detected in Pro		√	
Profile 5-58	Low resistivity anomaly	544164.482, 646521.256	4.6m	✓		✓			Po	ssible ditch or cut feature, c. 3.4m wide and 0).43m deep.	✓	
Profile 5-59	Low resistivity anomaly	544171.681, 646524.952	4.4m	✓		✓			Po	ssible ditch or cut feature, c. 0.66m wide and	0.29m deep.	√	
Profile 5-60	Low resistivity anomaly	544173.893, 646526.273	4.3m	✓		✓			Po	ssible ditch or cut feature, c. 1.98m wide and	0.33m deep.	✓	
Profile 5-61	Low resistivity anomaly	544173.893, 646526.273	3.9m	✓		✓			Po	ssible ditch or cut feature, c. 1.65m wide and	0.32m deep.	√	
Profile 5-62	Low resistivity anomaly	544181.089, 3.9m Possible ditch or cut feature, c. 0.65m wide and 0.26m deep.					√						
Profile 5-63	Low resistivity anomaly	544184.094, 646531.674	3.8m	✓		✓			Po	ssible ditch or cut feature, c. 0.43m wide and	0.22m deep.	√	
Profile 5-64	Low resistivity anomaly	544184.986, 646532.202	3.8m	✓		✓			Po	ssible ditch or cut feature, c. 0.79m wide and	0.19m deep.	✓	
Profile 5-65	Zone of low resistivity	544187.528, 646533.588	3.7m			✓	✓			ne of disturbed or waterlogged ground, wheurring or represent archaeological or agricult		✓	



Survey A	rea ID:	ERT2								Townland:	Tuogh		
Central ITM	Coordinate:	544165,64652	21							OD height of Survey Area	4.9 - 6m OD		
Survey Weat	ther Conditions:	Overcast with	period of rain a	and strong wind						Survey Date and Area (m):	27/11/18 3x64	m	
Heritage Co	nstraint Ref:	LiDAR Site 4	9.4 – Possible n	noun	ıd								
Site Descript	ion:	Three profiles	across small ov	al m	noun	nd in	sout	thwes	tern	ection of the field and targeting a number of m	agnetometer anomalies (M-	-38).	
Figure No.:			01, 102, 103, 10										
Significant F	eatures present:	Yes											
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Po		ble S Ano		ce(s) o	of	Comment		Recomme	endation
				Ditch	Archaeology ? Archaeology Ferrous Geology / Soils Interference / Modern			_	ence /			Test Excavation	Geophysical Survey
Profile 5-66	Low resistivity anomaly	544190.93, 646535.404	3.7m	✓	√ √ Po					Possible ditch or cut feature, c. 2.6m wide and	d 0.38m deep.	✓	



Survey A	rea ID:	ERT3								Townland: Kilkno	ckan		
Central ITM	I Coordinate:	544165,646521								OD height of Survey Area 2.7- 6.7m	OD		
Survey Wea	ther Conditions:	Cloudy with son	ne sunny period	ls						Survey Date and Area (m): 18/10/18	1x96m	& 1x80m	
Heritage Co	nstraint Ref:	LiDAR Site 38.2			site					` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `			
Site Descrip	tion:	Two profiles un	dertaken in pasi	ture f	ield	targ	etin	g mo	oated	site and associated internal features revealed in the magnetometer d	ata (M-39	9)	
Figure No.:		98, 106, 107, 10	08, 109 & 110										
Significant I	Features present:	Yes											
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Po			ourc maly		of	Comment		Recomme	ndation
				Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
Profile 6-1	Low resistivity anomaly	544847.761, 646769.901	2.7m	✓		√				Possible ditch with a U-shaped profile, c. 1.1m wide and 0.24m c	eep.	✓	
Profile 6-2	Band of low resistivity	544851.544, 646770.654	2.8m	✓		✓				Band of disturbed soil (0.2m deep and 5.4m wide) which cou archaeological or agricultural.	ld be	√	
Profile 6-3	Low resistivity anomaly	544851.544, 646770.654	2.5m	✓		✓				Possible ditch which may contain a stepped bottom, c. 1.6 wid 0.6m deep.	e and	√	
Profile 6-4	Slender low resistivity anomaly	544858.794, 646772.135	2m	✓		✓				Possible narrow deep ditch with a U-shaped profile, c. 1.5m dee 0.7m wide. This anomaly is located on the outside edge of the m feature (M39-4) detected in the magnetometer survey		√	
Profile 6-5	Discrete low resistance anomaly	544859.148, 646772.231	2.7m	✓		✓				Possible pit or posthole which is located in the top of profile Measuring 0.4m deep and 0.5m wide this anomaly coul associated with the postholes detected in the magnetometer data.		✓	
Profile 6-6	High resistivity anomaly	544860.115, 646772.392	2.0m		✓					Area of compacted earth or stone located within the southween enclosing element of the possible moated site (M39-4). 1.4m wid 0.8m deep this anomaly probably represents the core of the defestructure.	e and nsive	√	
Profile 6-7	Slender low resistivity anomaly	544861.573, 646772.594	1.9m	✓		✓				Possible narrow deep ditch c. 0.7m wide and 1.9m deep. This for is located on the inside edge of the moated feature (M39-4) de in the magnetometer data.		✓	



Survey A	rea ID:	ERT3								Townland:	Kilknockan		
Central ITM	I Coordinate:	544165,646521								OD height of Survey Area	2.7- 6.7m OD		
Survey Weat	ther Conditions:	Cloudy with sor	ne sunny period	ls						Survey Date and Area (m):	18/10/18 1x96r	n & 1x80m	
Heritage Con	nstraint Ref:	LiDAR Site 38.			site						<u>.</u>		
Site Descript	tion:	Two profiles un	dertaken in pas	ture 1	field	targ	getin	g mo	oated	site and associated internal features revealed i	n the magnetometer data (M-3	39)	
Figure No.:		98, 106, 107, 10	08, 109 & 110										
Significant F	eatures present:	Yes											
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Po		ole S Ano		. ,	of	Comment		Recomme	endation
				Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
Profile 6-8	Discrete low resistance anomaly	544862.599, 646772.906	2.8m	✓		✓				Possible cut feature or post hole c. 0.3m of feature coincides with M39-6 a boomagnetometer data.		√	
Profile 6-9	Zone of low resistance	544865.009, 646773.396	2.0m	✓		✓				Zone of disturbed earth (4m wide and 1.5m archaeological in origin. It is possible that the interconnecting features, the deeper to the contained with M39-6 and is likely to be released.	his anomaly represents two he east. The anomaly is	√	
Profile 6-10	Zone of low resistance	544870.363, 646774.467	2.0m	✓		✓				Zone of disturbed earth (6m wide and 1.3m archaeological in origin. This anomaly is contast a similar composition to Profile 7-9.	deep) which is likely to be	√	
Profile 6-11	Discrete low resistance anomaly	544868.266, 646773.976	3.1m	✓		✓				Possible cut feature or post hole, c. 0.7m v is located on the upper edge of Profile 7-10		✓	
Profile 6-12	Discrete low resistance anomaly	544869.426, 646774.288	3.2m	✓		√				Possible cut feature or post hole (0.5m whas a similar composition to Profile 7-11.	ide and 0.4m deep) which	√	
Profile 6-13	Discrete low resistance anomaly	544871.256, 646774.6	3.1m	✓		✓				Possible cut feature or post hole, c. 0.6m wi	de and 0.5m deep.	✓	



Survey A	rea ID:	ERT3								Townland:	Kilknockan		
Central ITM	Coordinate:	544165,646521								OD height of Survey Area	2.7- 6.7m OD		
Survey Weat	ther Conditions:	Cloudy with son	ne sunny period	ls						Survey Date and Area (m):	18/10/18 1x96r	n & 1x80m	
Heritage Con	nstraint Ref:	LiDAR Site 38.2			e								
Site Descript	ion:	Two profiles un	dertaken in pasi	ture fie	ld ta	rgeti	ng m	oated	site a	nd associated internal features revealed in the	magnetometer data (M-3	39)	
Figure No.:		98, 106, 107, 10	08, 109 & 110								_		
Significant F	'eatures present:	Yes											
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Poss		Sou	rce(s)) of		Comment		Recomme	endation
				Ditch	Archaeology		Geology / Soils	Interference / Modern				Test Excavation	Geophysical Survey
Profile 6-14	High resistivity zone	544876.075, 646775.581	1.7m		~	/			like ass	mpacted earth or stone deposit, 0.6m deep and ely to represent an archaeological deposit. To ociated with a feature detected in the magn 9-7.	his anomaly may be	√	
Profile 6-15	Zone of higher resistivity	544878.618, 646776.116	3.1m		~				Zor	ne of compacted earth, c. 0.8m deep and 4m tion of this feature suggests that it might sely spaced archaeological features.		√	
Profile 6-16	Zone of higher resistivity	544881.474, 646776.651	2.9m		~				Co. is l	mpacted earth or stone feature, c. 0.6m deep a ikely to be archaeological in origin. This fea centre of the boundary feature M39-7.		√	
Profile 6-17	Zone of higher resistivity	544886.739, 646777.677	2.8m		√					mpacted earth or stone feature, c. 0.5m deep a imilar in composition to Profile 7-16.	and 2.3m wide, which	✓	
Profile 6-18	Higher resistivity zone	544893.182, 646778.977	3.0m		~				arc mo	ne of higher resistivity which is likely to haeological activity. This anomaly spans thated site M39-4 detected in the magnetometer	e eastern half of the data.	✓	
Profile 6-19	High resistivity anomaly	544902.106, 646780.76	3.2m		✓					mpacted earth or stone feature, c. 0.7m deep a imilar in composition to Profile 7-16.	and 1.1m wide, which	✓	
Profile 6-20	High resistivity anomaly	544904.918, 646781.385	3.1m		✓				Co	mpacted earth or stone feature, c. 1.1m deep a	nd 2.5m wide.	✓	



Survey A	rea ID:	ERT3							Townland: Kilknock	an	
Central ITM	I Coordinate:	544165,646521							OD height of Survey Area 2.7- 6.7m OI)	
Survey Wea	ther Conditions:	Cloudy with sor	ne sunny period	ds					Survey Date and Area (m): 18/10/18	x96m & 1x80m	
Heritage Co	nstraint Ref:	LiDAR Site 38.			site						
Site Descrip	tion:	Two profiles un	dertaken in pas	ture fi	ield	targe	eting r	noate	site and associated internal features revealed in the magnetometer data	(M-39)	
Figure No.:		98, 106, 107, 10	08, 109 & 110								
Significant I	Features present:	Yes									
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Pos		ole So Anor	ource(naly	s) of	Comment	Recomm	endation
				Ditch	Archaeology	? Archaeology	Ferrous Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 6-21	Discrete low resistance anomaly	544882.206, 646776.792	3.4m	✓		✓			Cut feature or ditch, c. 0.3m deep and 2.2m wide, which is likely to archaeological in origin.	pe 🗸	
Profile 6-22	Discrete low resistance anomaly	544883.946, 646777.194	3.4m	✓		✓			Cut feature or post hole, c 0.5m deep and 0.6m wide.	√	
Profile 6-23	Low resistance anomaly	544886.132, 646777.595	3.5m	✓		✓			Cut feature, post hole or ditch, c. 0.3m deep and 1.6m wide.	✓	
Profile 6-24	Low resistance zone	544890.818, 646778.487	3.8m	√		✓			Cut feature or ditch, c. 0.5m deep and 3.8m wide.	✓	
Profile 6-25	Discrete low resistance anomaly	544894.343, 646779.2	3.9m	~		✓			Cut feature or post hole, c. 0.5m deep and 0.6m wide, which m contain a stepped base.	ay 🗸	
Profile 6-26	Low resistance zone	544897.332, 646779.869	4.1m	✓		√			Cut feature or ditch c. 0.5m deep and 4m wide which may represen number of closely spaced archaeological features.	a	
Profile 6-27	Low resistance zone	544903.177, 646780.939	4.4m	✓		✓			Cut feature or ditch c. 0.5m deep and 8m wide which may represen number of closely spaced archaeological features.	V	
Profile 6-28	Discrete low resistance anomaly	544907.55, 646781.875	4.5m	✓		✓			Possible pit or post hole, c. 0.2m deep and 0.5m wide which lies the edge of Profile 7-26.	on 🗸	



Survey A	rea ID:	ERT3								Townland: Kilknocka	n	
Central ITM	Coordinate:	544165,646521								OD height of Survey Area 2.7- 6.7m OD		
Survey Weat	ther Conditions:	Cloudy with sor	me sunny period	ls						Survey Date and Area (m): 18/10/18 1x	96m & 1x80m	
Heritage Con	nstraint Ref:	LiDAR Site 38.	2 – Possible mo	ated	site	;				•		
Site Descript	tion:	Two profiles un	dertaken in past	ture	field	l targ	getin	ng me	oated	site and associated internal features revealed in the magnetometer data (I	M-39)	
Figure No.:		98, 106, 107, 10	08, 109 & 110									
Significant F	eatures present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Po		ble S Ano			of	Comment	Recomm	endation
				Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 6-29	High resistivity anomaly	544908.71, 646782.053	3.8m		√					Area of compacted earth or stone which corresponds to the centre of the eastern enclosing element of the possible moated feature (M39-4) 1.2m wide and 2.6m deep this anomaly probably represents the core of the defensive structure. It is similar in composition to Profile 7-6.	'	
Profile 6-30	High resistivity anomaly	544912.637, 646782.856	4.2m			√				Area of compacted earth or stone which may be archaeological ir origin. Measuring 0.7m deep and 2.5m wide this feature is located or the external edge of moated site M39-4.		
Profile 7-31	High resistivity anomaly	544879.212, 646841.172	2.9m			✓				Small compacted earth or stone feature c. 0.3m deep and 0.6m wide.	✓	
Profile 7-32	High resistivity anomaly	544879.212, 646837.694	2.8m			√				Large zone of compacted earth or stone (0.7m deep and 5.7m wide) This feature may be associated with the nearby relict field boundary or may be archaeological in origin.	•	
Profile 7-33	Low resistivity anomaly	544879.346, 646830.248	3.8m	✓		✓				Possible ditch or cut feature c. 0.4m deep and 3.6m in width. This feature is likely to represent a relict field boundary known to have existed on site. The location of the anomaly also places it over the location of the moated site (M39-4). No anomaly associated with the moated site can be seen and therefore it is likely that the later field boundary has destroyed the archaeology.	•	
Profile 7-34	High resistivity anomaly	544879.346, 646827.038	2.5m			✓				Compacted earth or stone feature c. 1.1m deep and 5.6m in width This anomaly is located on the inside edge of the moated site and could be archaeological in origin.		



Survey A	rea ID:	ERT3								Townland: Kilknockan		
Central ITM	Coordinate:	544165,646521								OD height of Survey Area 2.7- 6.7m OD		
Survey Weat	ther Conditions:	Cloudy with sor	ne sunny period	ds							m & 1x80m	
Heritage Con	nstraint Ref:	LiDAR Site 38.2			site							
Site Descript	tion:	Two profiles un	dertaken in pas	ture f	ield	targ	eting	g mo	oated	site and associated internal features revealed in the magnetometer data (M-	39)	
Figure No.:		98, 106, 107, 10	08, 109 & 110								-	
Significant F	eatures present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Po		ole S Ano			of	Comment	Recomme	endation
				Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern		Test Excavation	Geophysical Survey
Profile 7-35	High resistivity anomaly	544879.302, 646820.18	2.7m			✓				Area of compacted earth or stone which is likely to be archaeological (0.4m deep and 3.5m wide).	✓	
Profile 7-36	Low resistivity zone	544879.302, 646820.18	3.7m	✓		✓				Zone of low resistivity which may be associated with multiple cut features (0.3m deep and 8.7m wide).	✓	
Profile 7-37	Discrete low resistivity anomaly	544879.347, 646818.798	3.9m	✓		√				Possible cut feature, pit or posthole (0.2m deep and 0.8m wide). This feature is located within profile 8-36.	✓	
Profile 7-38	Discrete low resistivity anomaly	544879.302, 646815.766	3.8m	✓		✓				Possible cut feature, pit or posthole c. 0.3m deep and 0.4m wide.	✓	
Profile 7-39	Low resistivity anomaly	544879.391, 646813.359	3.7m	✓		✓				Possible cut feature or pit (0.5m deep and 1.8m wide).	✓	
Profile 7-40	Low resistivity anomaly	544879.391, 646810.371	3.7m	✓		✓				Possible cut feature or pit (0.4m deep and 2.6m wide) which may coincide with a portion of M39-5 in the magnetometer data.	✓	
Profile 7-41	Discrete low resistivity anomaly	544879.168, 646808.365	3.8m	✓		✓				Possible pit or posthole c. 0.4m deep and 0.2m wide. This feature is contained within profile 8-42.	✓	
Profile 7-42	Low resistivity anomaly	544879.257, 646807.161	3.7m	✓		✓				Possible ditch, cut feature or pit (0.6m deep and 2.6m wide). This feature may be associated with M39-5 in the magnetometer data.	✓	
Profile 7-43	High resistivity anomaly	544879.257, 646808.989	2.6m			✓				Area of compacted earth or stone c. 1.0m deep and 5.7m in width which is likely to be associated with M39-5 in the magnetometer data.	✓	



Survey A	rea ID:	ERT3								Townland: Kilknockan		
Central ITM	I Coordinate:	544165,646521								OD height of Survey Area 2.7- 6.7m OD		
Survey Weat	ther Conditions:	Cloudy with sor	ne sunny period	ds						Survey Date and Area (m): 18/10/18 1x96	m & 1x80m	
Heritage Co	nstraint Ref:	LiDAR Site 38.	2 – Possible mo	ated	site							
Site Descript	tion:	Two profiles un	dertaken in pas	ture f	ield	targ	eting	moa	ated	site and associated internal features revealed in the magnetometer data (M-	39)	
Figure No.:		98, 106, 107, 10	08, 109 & 110									
Significant F	Features present:	Yes										
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	Po			ource maly	(s) c	of	Comment	Recomme	endation
				Ditch	Archaeology	? Archaeology	Ferrous		Interference / Modern		Test Excavation	Geophysical Survey
Profile 7-44	Zone of raised resistivity	544879.436, 646803.213	2.0m			✓				Zone of slightly raised resistivity which may be associated with archaeological deposits and occupation evidence.	✓	
Profile 7-45	High resistivity anomaly	544879.526, 646798.888	2.5m			✓				Area of compacted earth or stone (0.9m deep and 1.4m in width).	✓	
Profile 7-46	Low resistivity anomaly	544879.481, 646794.34	3.7m	✓		✓				Possible ditch or cut feature c. 0.5m deep and 1.5m in width.	✓	
Profile 7-47	Zone of high resistivity	544879.479, 646787.743	2.6m			✓				Area of compacted earth or stone c. 0.7m deep and 7.0m wide.	✓	
Profile 7-48	Zone of low resistivity	544879.518, 646782.488	3.5m	✓		✓				Area of disturbed ground (0.9m deep and 11.9m) which may comprise multiple cut anomalies.	✓	
Profile 7-49	Discrete low resistivity anomaly	544879.439, 646784.7	3.7m	✓		√				Possible ditch or cut feature c. 0.4m deep and 2.3m, which is contained within profile 8-48.	√	
Profile 7-50	Discrete low resistivity anomaly	544879.558, 646780.592	3.5m	✓		√				Possible ditch or cut feature (0.9m deep and 2.1m wide) which contains near vertical steep edges and a relatively flat bottom.	✓	
Profile 7-51	High resistivity anomaly	544879.637, 646772.058	2.5m			✓				Area of compacted earth or stone (1.2m deep and 1.2m wide) which may be associated with the interior of M39-7.	✓	
Profile 7-52	Low resistivity anomaly	544879.558, 646773.125	3.8m	✓		✓				Possible ditch, cut feature or pit c. 0.5m deep and 1.4 in width.	√	



Survey A	rea ID:	ERT3								Townland:	Kilknockan	1	
Central ITM	Coordinate:	544165,646521								OD height of Survey Area	2.7- 6.7m OD		
Survey Weat	ther Conditions:	Cloudy with sor	ne sunny period	ds						Survey Date and Area (m):	18/10/18 1x90	6m & 1x80m	
Heritage Con	nstraint Ref:	LiDAR Site 38.	2 – Possible mo	ated	l site					· ·			
Site Descript	ion:	Two profiles un	dertaken in pas	ture	field	tar	getin	g m	oated	ite and associated internal features revealed in the	magnetometer data (M	-39)	
Figure No.:		98, 106, 107, 10	07, 108, 109 & 110										
Significant F	'eatures present:	Yes	(E,N) Mid-depth Possible Source(s) of										
No.	Form of Anomaly	ITM (E,N)	Mid-depth OD (approx.)	P			Source omaly		of	Comment		Recomme	endation
				Ditch	Archaeology	? Archaeology	Ferrous	Geology / Soils	Interference / Modern			Test Excavation	Geophysical Survey
Profile 7-53	Discrete low resistivity anomaly	544879.597, 646771.584	3.7m	~		✓				Possible ditch, pit or post hole (0.6m deep and 0	.5 wide).	√	
Profile 7-54	Low resistivity anomaly	544879.597, 646769.964	3.4m	✓		✓				Possible ditch, cut feature or pit (1.0m deep contains a set to the east.	and 2m wide) which	✓	
Profile 7-55	Discrete low resistivity anomaly	544879.598, 646766.068	3.8m	✓		✓				Possible pit or posthole c. 0.3m deep and 0.4m i	n width.	√	
Profile 7-56	High resistivity anomaly	544879.519, 646764.764	2.9m			✓				Compacted earth or stone feature c.0.9m deep a located on the external edge of the moated site N		√	



4 Discussion

The surveys undertaken for this report have enabled a large portion of the land due for development as part of the proposed Foynes to Limerick Road Improvement Scheme to be assessed using multiple geophysical techniques. The surveys have enabled pre-identified Cultural Heritage, Aerial photography, LiDAR sites and RMP monuments to be assessed as well as allowing the identification of previously unknown monuments.

The combined use of magnetometer, resistivity and electrical resistivity tomography surveys have enabled all survey areas to be investigated in detail and the nature of the anomalies to be resolved. Geological/soil/weather conditions were not really a factor within this survey due to the dry conditions and multiple technique approach of the survey.

The presence of highly magnetic plough furrows across certain survey areas has impacted the effectiveness of the magnetometer surveys, however where potential archaeological deposits were detected resistivity was deployed to mitigate against the highly magnetic ploughing.

A number of survey areas were placed over former marginal sites, on the edge of former wetlands. These surveys produced areas of reduced background magnetism, caused by the former waterlogged soils. The use of another technique other than magnetometer in these areas may have produced better results.

Area	Pre-identified site	Geophysical results	Discussion
M1 /	LiDAR 1.2 possible enclosure	No correlation to LiDAR anomaly in the magnetometer	No correlation to LiDAR anomaly.
ER1		data. Some of the resistivity anomalies roughly correspond to other LiDAR features, but are unlikely to be of	
		archaeological significance	
M3 /	LiDAR 6.2 possible ringfort	LiDAR anomaly possibly associated with band of	No evidence of possible ringfort.
ER3		magnetic enhancement M3-2 and possible historic field boundary M3-1	
M4 / ER15	CH5 field system	Area of archaeological deposits and numerous earth or stone features within the resistivity data which may relate to structures or field systems. Three concentric banks forming a possible small enclosure and possible rubble/stone capped pits.	Possible remains of habitation and destruction debris as well as possible field systems and a small enclosure. These were detected in the resistivity and not the magnetometer or LiDAR surveys.
M5 /	LiDAR 14.3, 14.4 two possible	M5-9/10 & M5-17/ER16-1 two ditched enclosures	Two enclosures detected in LiDAR and Geophysics. The northern (14.3)
ER16	enclosures	detected with internal features Historic field boundary M5-26 also visible on LiDAR.	was shown to be bivallate with internal and external features. The southern (14.4) appears to be single ditched with internal features.
M6 /	LiDAR 15.2-15.4 field system and	Possible field system	No evidence of enclosures. Limited correlation to LiDAR anomaly which
ER4	two possible enclosures	(M6-13) as well as habitation remains	may be associated with field system 15.3.



Area	Pre-identified site	Geophysical results	Discussion
M7 /	In vicinity of LI010-074 enclosure	Possible archaeological features not obviously associated	No additional features directly associated with enclosure.
ER5		with enclosure	
M8	LiDAR 16.1, 16.3 possible enclosure	Possible archaeological features not obviously associated	No correlation to LiDAR anomaly.
	and field system	with enclosure	
M10	LiDAR 17.4 possible rectangular	Possible field division	No correlation to possible LiDAR enclosure.
	enclosure		
M11	LiDAR 17.5-17.8 modified terrace	Historic field boundary and possible field divisions	No correlation to LiDAR anomaly.
	and field system		
M16 /	LiDAR 11.1 possible enclosure	M16-3 enclosing feature shown on historic mapping.	Enclosing feature may relate to LiDAR anomaly and is likely to be
ER7		Possible fulacht fiadh	relatively modern in origin. Possible fulacht fiadh not shown on LiDAR.
M17	In vicinity of LiDAR 11.2 possible	Possible field divisions and possible archaeological	Possible archaeological features may possibly be related to possible
	ringfort	remains	ringfort 11.2 which is situated beyond the scheme boundary.
M18	LiDAR 12.2 possible settlement	Possible field divisions and possible archaeological	Historic field boundary M18-9 and curvilinear feature M18-4 visible in
	cluster	remains	magnetometer data and LiDAR. No other correlation to LiDAR anomaly.
M18a	-	Possible field divisions and possible archaeological	M18a-1 and parts of M18a-2 (relict field system of possible post medieval
		remains	origin) and M18a-3 (possible archaeology) are visible in both LiDAR and
			magnetometer data
M19 /	In vicinity of LI019-064 Ringfort	Segment of M19-7 outer bank of ringfort LI019-064	Ringfort was shown to be bivallate, with the enclosing elements being
ER8		revealed, possible archaeological remains, field divisions	located outside the scheme boundary. Both visible in LiDAR and
		and an outer ditch.	magnetometer data. A number of archaeological features which are
1.620	T 1111 C 1 T 1000 000	T 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	possibly associated were found within the scheme.
M20	In vicinity of enclosure LI020-002	Large enclosure ditch (M20-2) and internal features	Not detected in LiDAR survey
M21/	In vicinity of LiDAR 26.1, 26.2, 26.5	M21-20 may represent part of a field system. Possible	Historic map features M21-3 (field boundary), M21-19 (well) and M21-20
ER17	possible enclosure, ringfort and field	habitation remains detected as well as an enclosure ditch	(field boundary) are visible in LiDAR and magnetometer data.
3.6007	system	(ER17-1).	Enclosure ditch previously unknown.
M22/	LI020-005 Enclosure	Field divisions, enclosure ditches and internal features	Enclosure was obscured in magnetometer data by later dredging but
ER18		(ER18-1)	revealed in resistivity. This matches the description of the monument
M22a	In vicinity of LiDAR 35.3 - mound	Two possible ring-ditches	within the 1 st Edition OS map. Not detected in LiDAR data.
M23	AAP 43 Wetland	Possible field divisions	Low background magnetism caused by waterlogged soils.
M23a	AAP 43 Welland	Possible field divisions	Field division M23a-2 visible in LiDAR and magnetometer data.
M24	LiDAR 53.2 field system	Possible field divisions and possible archaeological	M24-6 field boundary is visible in LiDAR. It is possible that one of these
IVI 24	LIDAK 55.2 Held system	remains	boundaries forms a portion of field system 53.2.
M25	LiDAR 57.2 possible enclosure	Possible field divisions	No correlation to LiDAR anomaly.
M26/	AAP 55 Wetland	Extensive possible archaeological remains associated with	M26-1 possible ditch and M26-21 possible field drain, wall or bank are
ER19	7111 55 Welland	habitation and enclosure ditches.	visible in LiDAR and magnetometer data. Low background magnetism
LIXI		martation and encrosure ditelles.	caused by waterlogged soils.
		<u> </u>	Caused by wateriogged sons.



Area	Pre-identified site	Geophysical results	Discussion
M27	AAP 55 Wetland	Possible field divisions and possible enclosure (M27-2)	M27-1 possible ditch or cut feature visible in both LiDAR and
			magnetometer data. The possible enclosure is not visible in LiDAR data.
M28	Wetland	Possible field divisions	Historic field boundaries M28-4 and M28-5 visible in both LiDAR and magnetometer data. Low background magnetism caused by waterlogged
			soils.
M29	Wetland	Two trends	Very low background magnetism caused by waterlogged soils.
M30/ ER9	SMR No. LI029-147 enclosure /	Possible field divisions and arcing boundary ditch which could possibly represent an enclosure (M30-1)	Arcing boundary visible on LiDAR, magnetometer and historic mapping.
	LiDAR Site 65.2 – Possible platform	Possible habitation remains	M21 Carlia California da madical ministra in LiDAD 0
M31	LiDAR 66.4 - possible enclosure	Possible nabitation remains	M31-6 relic field boundary ditch visible in LiDAR & magnetometer data. Possible habitation remains do not seem to be associated with an enclosure
M32 /	Area of potential north of Croagh	Possible field divisions and possible archaeological	Possible habitation remains.
ER20	Village	remains	
M33/	LiDAR 61.2-61.4 possible settlement	Two enclosures M33-19 and M33-31 detected	Possible field boundaries and a limekiln may be associated with a possible
ER10/	cluster and two enclosures	Possible field boundaries and a limekiln detected	settlement (LiDAR 61.2), but no direct evidence seen for it.
ER11/ ER12			The two enclosures correspond to LiDAR sites 61.3 and 61.4.
M34/	Adjacent to Hall-house LI020-159	Areas of compacted earth or stone and dividing ditches	M34-3 field boundary visible in LiDAR and magnetometer data. Possible
ER21		g	archaeological habitation remains, or geology detected.
M35	Adjacent to LI020-159 Hall-house	Possible field divisions	M35-1 field division visible in LiDAR and magnetometer data. Low
			background magnetism suggesting area was once extensively waterlogged.
M36/	LiDAR 55.1 possible enclosure	Banked enclosure with internal compacted zones and	M36-5, ER22-8/9, Profile1-10 & Profile 2-14 detected the remains of
ER22/		dividing ditches	archaeological activity with multiple compacted and ditch anomalies
ERT1			
M37	Adjacent to Ringfort LI021-005	Possible field divisions	M37-1 possible ditch visible in LiDAR and magnetometer data which are
			likely to be post medieval in origin and not associated with the ringfort.
M38/	LiDAR 49.3, 49.4 possible ringfort,	Field divisions, possible pits and ditches or cut features as	No evidence of Ringfort 49.3.M38-2 and M38-5 part of possible field
ER13/	field system and mound	well as a circular enclosing ditch	system. Anomalies M38-3, ER13-3 and M38-4 roughly match the location
ERT2			of the mound 49.4, which was proved to be most likely natural or modified
			from a natural ridge. A large number of ditches, cut features and possible
			pits were detected, including a circular ditch which sits on the southern
			edge of the mound 49.4.
M38a	-	Possible archaeological ditch or cut feature	Possible archaeological remains within an area of very low background
			magnetism suggesting area was once extensively waterlogged.
M39/	LiDAR 38.1, 38.2 possible enclosure	M39-4 possible moated site containing internal divisions,	Area of possible enclosure 38.1 could not be surveyed.
ER14/	and moated site	possible buildings and pits	Moated site 38.2 was detected
ERT3			



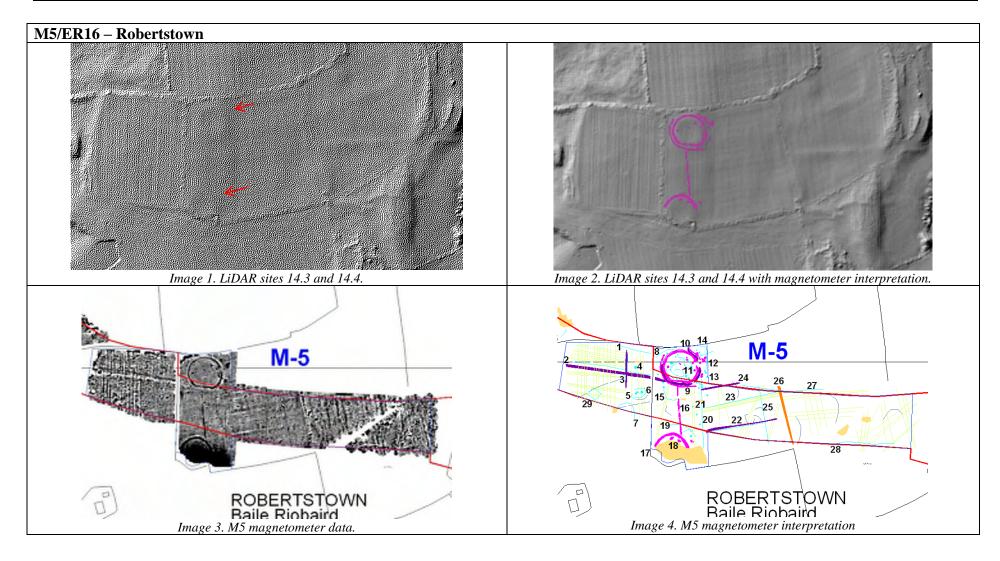
Area	Pre-identified site	Geophysical results	Discussion
M40	LiDAR 39.1 possible settlement	Multiple linear trends, possible cultivation furrows	Possibly associated with settlement although no direct evidence of
	plots		settlement activity can be seen in geophysical results.
M41	In vicinity of enclosures LI021-010	Possible enclosure ditches, pits and field divisions	Trackway on historic maps M41-6 and parallel ditches M41-5 visible in
	and LI021-149		LiDAR and magnetometer data. The presence of further geophysical
			anomalies may indicate that further archaeological monuments are present
			in addition to those identified in the LiDAR.
M42	Enclosure LI021-144	Possible enclosure ditches, pits and field divisions	Enclosure LI021-144 was not detected, but the geophysical surveys
			suggest other archaeological monuments are possibly present.
M43	Conjoining enclosures LI021-	Possible archaeological remains and field divisions as well	Ditch or cut feature M43-3 visible in LiDAR and magnetometer data.
	011001/002	as previously unrecorded enclosure and remains of	Previously unrecorded enclosure detected, this was not visible in the
		conjoined enclosures.	LiDAR data. Remains of conjoined enclosures and internal features
			identified. The southern enclosure LI021-011001 only being partially
3.5.1.1			surveyed.
M44	Enclosures LI021-146,	Remains of two archaeological monuments detected as	One archaeological monument roughly matches the location of the RMP
	LI021-147002 and in vicinity of	well as additional possible archaeological features and	record enclosure LI021-147002. No evidence of archaeological remains
	LI021-147001	field divisions	was detected at the location of enclosure LI021-146. A previously
			unrecorded enclosure was detected; this is cut by the railway line and did
			not show on the LiDAR survey. Geophysical survey results suggest the
3.4.5./	L'DAD G'A 1.5 '11 1	D '11 ' 14 11' 1 4 6 4	presence of an archaeological palimpsest between M41 and M44.
M45/	LiDAR Site 1.5 possible enclosure	Possible agricultural ditch or cut features	No correlation to LiDAR anomaly.
ER23	TID AD GIVE A COLUMN TO THE CO		Detection of probable agricultural features.
M46/	LiDAR Site 2.1 possible enclosure	Possible agricultural ditches or land drains. Arcing	No correlation to LiDAR anomaly.
ER24		possible archaeological earth or stone feature with	Detection of probable agricultural features and one possible arcing
		associated magnetic enhancement.	archaeological feature.

Table 3. Geophysical results and discussion

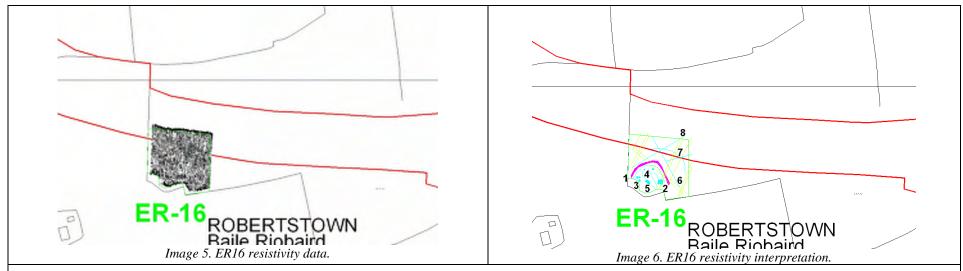
The correlation between the pre-identified sites of archaeological interest and the geophysical data was mixed. Some LiDAR anomalies proved to have no direct underlying archaeological feature or were associated with field divisions, geological anomalies or agricultural features. The location and extent of a number of RMP monuments have been traced as well as revealing previously unknown archaeological features and monuments at M21, M26, M27, M43 and M44 which have shown no trace within LiDAR or pre-identification surveys.

A number of geophysical surveys provided verification of some of the LiDAR sites, these surveys were conducted at M5/ER16, M33, M36/ER22/ERT1, M38, & M39. Below are LiDAR and geophysical images from these sites:

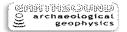


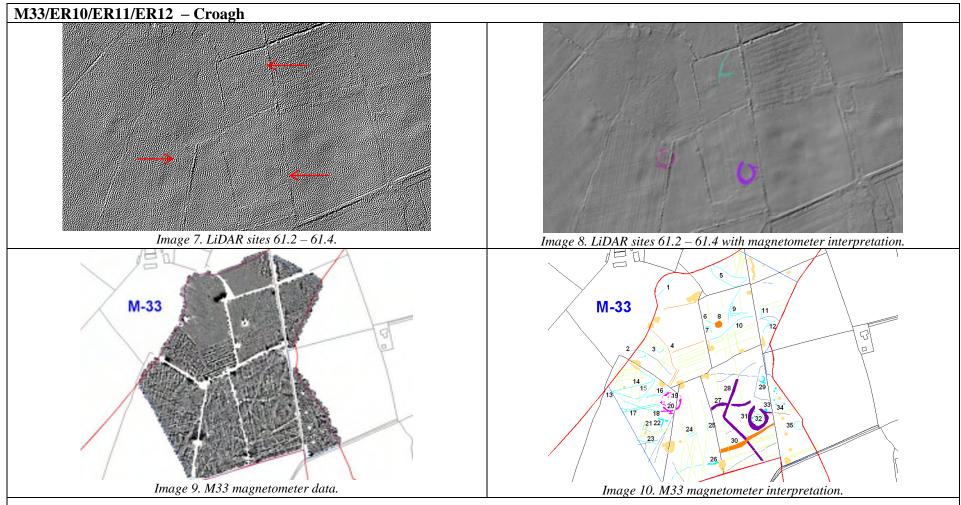




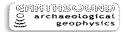


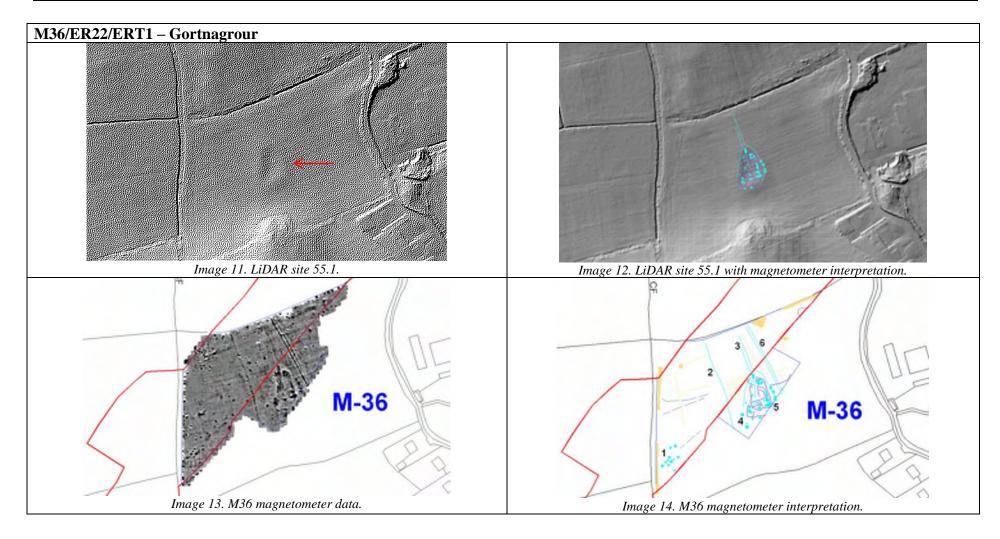
The LiDAR anomalies were confirmed through magnetometer and resistivity surveys as being associated with two enclosures. The northern enclosure appears to be bivallate and contains a very slight topographical expression located on the inside of the inner enclosure ditch, which may be a bank. The same form of topographical expression can be seen in the southern enclosure; however, this feature appears to be surrounded by a single enclosure ditch and encompasses a portion of the extant field boundary.



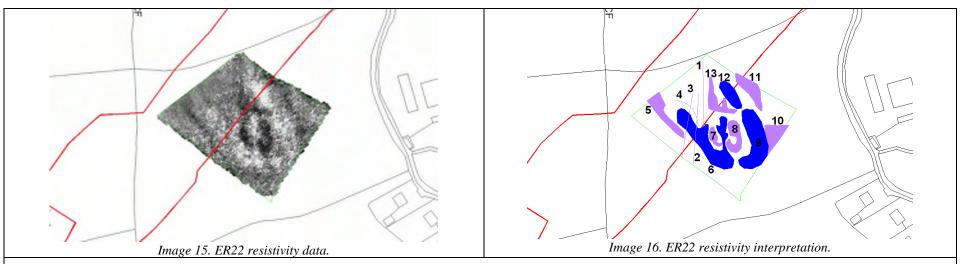


The geophysical survey revealed the presence of two archaeological monuments which correspond to the two southern LiDAR anomalies. A ditched enclosure with internal pits matches the location of LiDAR site 61.3, while a banked feature matches LiDAR site 61.4. The northern LiDAR anomaly (61.2) was found to be associated with a series of interconnecting field boundaries or ditches and is likely to be agricultural in origin as no other possible archaeological features were detected surrounding it.









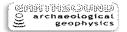
The LiDAR revealed the presence of a slightly raised, sub-oval bank with internal depression. This was surveyed with magnetometer, resistivity and electrical resistivity tomography surveys.

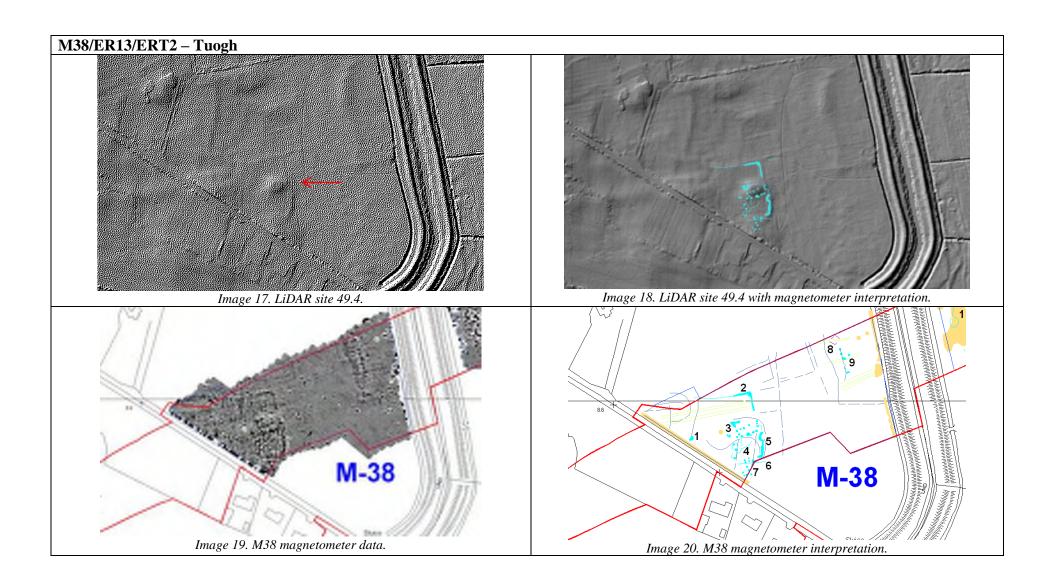
The magnetometer survey identified a sub-oval, ditched feature which contains a number of large pits divided by a number of stone or compacted earth internal divisions.

The resistivity survey revealed the presence of large external zones of disturbed ground or moisture retaining soil which may be associated with the ditch detected in the magnetometer data. Contained within these, two areas of compacted earth or stone were identified which roughly correspond to the internal divisions identified in the magnetometer data.

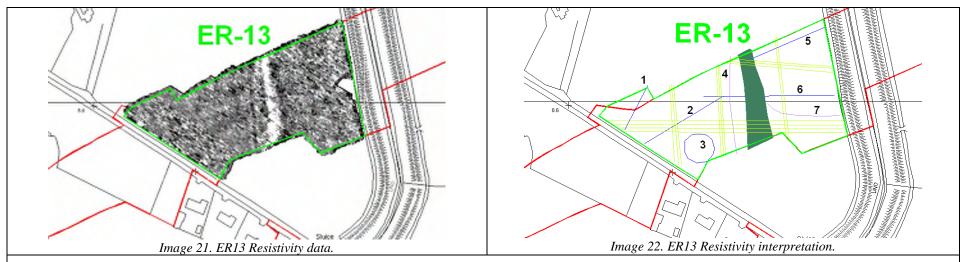
The electrical resistivity tomography surveys confirmed that the feature was archaeological in origin. The lack of clear-cut edges and the limited depth of the feature excluded the presence of a quarry; while the detection of a number of zones of compacted earth or stone deposits as well as ditches indicate that the feature contains archaeological remains, possibly associated with habitation.

The majority of the archaeology appears to be covered by approximately 0.50m of soil and survives to a depth of 1.5m below the modern surface. It is likely that the feature seen within the LiDAR and visible as a topographical feature within the field represents a banked enclosure, possibly surrounded by an outer ditch. Within this enclosure a number of possible habitation sites have been found which are divided and dissected by a number of ditches or cut features. Although the apparent depth of the archaeological remains is unusual it is possible that the site has been covered in soil deposits or is contained within a depression which has naturally in-filled.





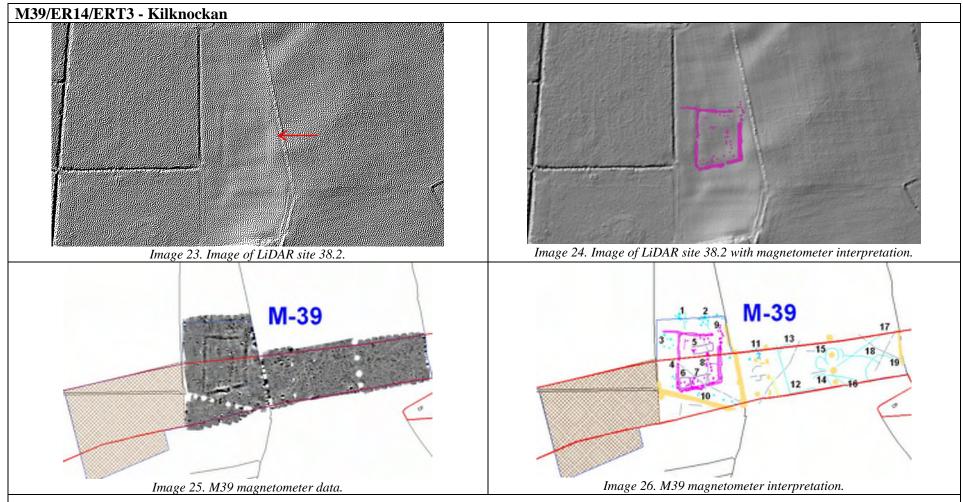




The LiDAR survey revealed the presence of a small possible mound. The resistivity survey revealed the presence of a ditch which is adjacent to the mound. In addition, the magnetometer survey identified a series of ditches and pits or postholes which are located around the base of the mound and two linear alignments of pits, one of which appears to run over the mound.

The electrical resistivity tomography survey revealed a mound which is most likely natural in origin, although some modification may have occurred. In the centre a possible cut feature or depression was detected which may be associated with archaeological remains. Covering the mound and the land surrounding it a large number of possible ditches, cut features and possible post holes were detected which suggest that the mound has been the focus of archaeological activity.





The LiDAR survey revealed the presence of a rectangular ditched feature which was interpreted as a possible Moated site. The magnetometer survey confirmed the presence of a ditched enclosure which contains internal divisions and possibly structural remains and may be related to the probable moated site. The resistivity survey did not reveal any features which are associated with the possible Moated site and instead was dominated by agricultural features. The electrical resistivity tomography survey confirmed the presence of the moated site, including the central hard core of the defences, which may be a bank or stone filled ditch and suggested that an extensive array of internal features exist within it.



5 Conclusion

5.1 Summary of Results

The survey has identified geophysical anomalies of possible archaeological origin within the specified survey areas. These have been accurately located and their provenance has been described in tabular and map form. Further work in the form of test trench excavations has been recommended where required.

Circular or sub-circular anomalies of possible archaeological origin are prevalent across most of the survey areas as well as possible pit features. Irregular and curvilinear responses were also common and are likely to be associated with agricultural or archaeological processes. The presence of strong cultivation furrows across much of the survey areas indicates that the landscape has been subjected to intensive agriculture.

The most significant archaeological features identified are:

- M4 / ER15 Possible area of habitation
- M5 / ER16– Two enclosures, one of which is bivallate and contains internal features
- M6 / ER4– Possible habitation remains
- M16 Enclosure associated with possible building remains
- M19 Outer bank and possible ditch surrounding ringfort LI019-064
- M20 Enclosure with associated internal features and later habitation remains
- M21 / ER17 Ditched enclosure and possible habitation remains
- ER18 Bank and internal features associated with enclosure LI020-005
- M26 / ER19 Possible habitation remains
- M27 Possible double banked enclosure with internal possible pits.
- M33 / ER10 / ER12 Ditched enclosure and a probable archaeological banked feature
- M36 / ER22 / ERT1 Banked enclosure with internal divisions and possible habitation remains
- M38 / ER13 / ERT2 Mound containing and surrounded by a possible ditch and pits
- M39 / ER14 / ERT3 Probable moated site with internal divisions and possible internal structures
- M43 Probable enclosure with internal pits.
- M43 Remains of enclosures (LI021-011001 & LI021-011002) showing external banks and internal pits.
- M44 Remains of two probable enclosures, one revealing the true location of enclosure LI021-147002. Both have internal divisions and pits.



5.2 Dissemination

The results of this survey were submitted to Limerick City and County Council. These results include xyz data files of all the raw and processed geophysical data, associated metadata and georeferenced mapping in CAD format.

Additional copies of the report will be distributed in accordance with the Consent to use a Detection Device (see Appendix 2).

The report will be included as an appendix in the Environmental Impact Assessment Report for the project.

The report will be uploaded to TII Digital Heritage Collections on the Digital Repository of Ireland

6 Acknowledgements

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8 Tables

- Table 1: Geophysical Survey Areas
- Table 2: Recorded Monuments listed in the Sites and Monuments Record
 - (SMR) that are within or in close proximity to the proposed scheme
- Table 3: Geophysical results and discussion

9 Images

- Image 1: LiDAR sites 14.3 and 14.4
- Image 2: LiDAR sites 14.3 and 14.4 with magnetometer interpretation
- Image 3: M5 magnetometer data
- Image 4: M5 magnetometer interpretation
- Image 5: ER15 resistivity data
- Image 6: ER15 resistivity interpretation
- Image 7: LiDAR sites 61.2 61.4
- Image 8: LiDAR sites 61.2 61.4 with magnetometer interpretation
- Image 9: M33 magnetometer data
- Image 10: M33 magnetometer interpretation
- Image 11: LiDAR sites 55.1
- Image 12: LiDAR sites 55.1 with magnetometer interpretation
- Image 13: M36 magnetometer data
- Image 14: M36 magnetometer interpretation
- Image 15: ER22 resistivity data
- Image 16: ER22 resistivity interpretation
- Image 17: LiDAR sites 49.3 and 49.4
- Image 18: LiDAR sites 49.3 and 49.4 with magnetometer interpretation
- Image 19: M38 magnetometer data
- Image 20: M38 magnetometer interpretation
- Image 21: ER13 resistivity data
- Image 22: ER13 resistivity interpretation
- Image 23: LiDAR sites 38.2
- Image 24: LiDAR sites 38.2 with magnetometer interpretation
- Image 25: M39 magnetometer data
- Image 26: M39 magnetometer interpretation



10 Plates

All plates are displayed in Appendix 3

Plate 1: Electromagnetic instrument collecting apparent resistivity data at ER7 Plate 2: Locating survey area M9 in overgrown terrain using RTK GPS Plate 3: Locating survey area M9 in overgrown terrain using RTK GPS Plate 4: Magnetometer cart in survey area M23 which contained uneven ground and large patches of overgrown vegetation Plate 5: High vegetation in part of M2 Plate 6: Difficult to access survey area M28, which also contained a large herd of free roaming cattle that could not be removed to complete the survey Plate 7: Difficult to access survey area M28, which also contained a large herd of free roaming cattle that could not be removed to complete the survey Straw bales blocking some of survey area M29 Plate 8: Plate 9: Magnetometer survey in M32 which was covered in high barley crop, making the survey very difficult Plate 10: Topographical feature in M36/ER22/ERT1 is barely visible Section of M37 which could not be surveyed due to high corn crops Plate 11: Plate 12: Resistivity survey in progress in ER13 Plate 13: Unsurveyable ground conditions in part of M39/ER14 Plate 14: Unsurveyable ground conditions in part of M39/ER14 Plate 15: Electrical resistivity tomography (ERT3) survey in progress Plate 16: Undulating survey area M43 Plate 17: Green field M44 with no above ground indication of the significant archaeological features present

11 Figures

All figures are listed and displayed in Volume 2 of this report



Technical Appendix

Appendix 1: Anomaly Classifications

Magnetometer

Magnetometer surveys are undertaken using magnetic gradiometers which measure the magnetic content of the underlying soils. Measurements are gained using sensors which calculate the difference between the geological / pedological background and anthropogenic remains associated with archaeological activity.

Positive Magnetic Anomalies

Burnt features, particularly kilns, but also hearths, furnaces and burnt (specifically 'burnt', not 'heated') mounds of stone will create a strongly magnetic anomaly due to thermoremanence. Cut features, such as pits, ditches or wooden postholes will create anomalies that will vary in shape and magnetic intensity depending on which material they were backfilled by (Fassbinder 2015). For cut features backfilled (or 'refilled') by

- magnetically enhanced topsoil the refill will generate a positive magnetic anomaly
- homogeneous topsoil the refill will generate an anomaly proportional to the size and volume of the archaeological feature.

The magnetic anomaly shape and intensity will also be determined by concentrations of pottery, ash or burned material, solid rocks or other material.

Negative Magnetic Anomalies

Negative magnetic anomalies have a number of causes (Fassbinder 2015):

- The material remains of the archaeological feature may have a lower magnetic susceptibility (MS) than the adjacent topsoil. In some cases the MS of a ditch may appear as both a positive and negative anomaly, reflecting the variable MS of the refill material. Some stone foundations can also appear as weakly magnetic or negative magnetic anomalies.
- If a cut feature is immediately refilled by the same material e.g. a grave cut excavated before a funeral is (almost) immediately refilled by the human body and the same (unaltered) sediment that was excavated before.
- Geochemical processes (see Fassbinder 2015) can alter the magnetic response, e.g. an archaeological feature identified by a positive anomaly can convert to a negative anomaly due to the combination of stagnant moisture and a changing groundwater table.

Dipolar Anomalies

A dipolar anomaly is a response to buried ferrous objects, often in the topsoil. Iron spikes generally are not removed in geophysical data; although often modern in origin (iron agricultural implements, rubbish), they can be indicative of archaeological material.

Absence of Anomalies

It is also possible that archaeological features exist that exhibit no magnetic contrast and hence cannot be identified by magnetometer survey.



Anomaly classification used to interpret Magnetometer data

After Gaffney & Gater (2003) and Gaffney et al. (2000).

A known archaeological feature type e.g. Ditch / Wall / Structure etc: An anomaly with a magnetic gradient that contrasts strongly with the surrounding sub-soil, where the presence of a type of archaeological feature is known from supporting evidence.

Archaeology: A linear, curvilinear or isolated anomaly with a magnetic gradient that contrasts strongly with the surrounding sub-soil, without any supporting evidence from another source.

- **Ditch / Wall:** A linear, curvilinear, annular or penannular anomaly with a magnetic gradient that contrasts strongly with the surrounding sub-soil. A positive polarity suggests a ditch; a negative polarity suggests a stone-filled ditch or wall.
- Burnt Mound / Spread: A horseshoe or ovoid shaped anomaly with a positive magnetic gradient that contrasts
 strongly with the surrounding sub-soil. An associated trough may be observed as a positive/negative anomaly, a hearth
 may also be expected nearby. Isolated responses in the vicinity could represent spreads of (or ploughed out) heat
 shattered stones.
- **Hearth:** A small isolated area (<2m diameter) of higher magnetic gradient than the surrounding sub-soil (typically >6nT).
- **Pit:** A small isolated area (>1-2m diameter) of moderate to high magnetic gradient, judged to be caused by a pit-type feature with a fill more magnetic than the surrounding soil.

Industrial: An isolated anomaly with a strong positive gradient (>30nT), judged not to be surface iron. This type of anomaly is typically caused by the remains of kilns or furnaces.

Magnetic Enhancement: A broad area of moderate positive magnetic gradient that contrasts with the surrounding sub-soil. May represent cultural noise associated with occupation or soil disturbance, judged to be of archaeological origin.

Ferrous: Dipolar anomalies indicating ferrous responses, judged to be in the near-surface.

Cultivation: Parallel linear responses of positive or negative polarity. Strong responses may indicate added magnetic material (e.g. burnt deposits) as fertiliser. Lower magnetic gradient anomalies 'beneath' the furrow overprint may be obscured. Higher magnetic gradient anomalies may be visualised *in situ* or ploughed out 'beneath' the furrow overprint.

?Archaeology: A linear, curvilinear or isolated anomaly with a magnetic gradient that contrasts weakly with the surrounding sub-soil, without any supporting evidence from another source. Such categories may represent possible archaeological or geological sources.

Modern Disturbance: Area where the ground has been disturbed in the recent past. Characterised by very large magnetic gradients and a high level of noise often accompanied by concentrations of dipolar, near-surface ferrous responses. This category also represents anomalies whose source may lie beyond the survey area, such as fencelines, vehicles or modern buildings.

Modern Pipe: Straight, linear anomaly with very large magnetic gradients alternating regularly between positive and negative polarity.

Previous Excavation?: Area of uniform magnetic signal contained within a well-defined boundary in regions otherwise densely covered with archaeological anomalies.

Geology: Anomalies of possible geomorphological origin.



Electromagnetic Apparent Electrical Resistivity

Electromagnetic instruments transmit an alternating current which induces a primary and subsequently a secondary electromagnetic field which interacts with the underlying soils. One of the subsequent responses is the Apparent Electrical Conductivity of the soil, which are subsequently calculated via automated software to Apparent Electrical Resistivity (ER_a) .

Anomaly classification used to interpret ERa data

After Gaffney & Gater (2003) and Gaffney et al. (2000).

A known archaeological feature type e.g. Ditch / Wall / Structure etc: An anomaly with a ERa that contrasts strongly with the surrounding sub-soil, where the presence of a type of archaeological feature is known from supporting evidence.

Archaeology: A linear, curvilinear or isolated anomaly with an ER_a that contrasts strongly with the surrounding sub-soil, without any supporting evidence from another source.

- **Ditch / Wall:** A discrete linear, curvilinear, annular or penannular anomaly with an ER_a that contrasts strongly with the surrounding sub-soil. A low ER_a suggests a ditch; a high ER_a suggests a stone-filled ditch or wall.
- Mound of Stones: A discrete horseshoe or ovoid shaped anomaly with a higher ERa than the surrounding sub-soil.
- **Pit:** A small isolated area (>1-2m diameter) of ER_a that contrasts with the surrounding sub-soil, judged to be caused by a pit-type feature.
- Cultivation: Parallel linear responses of high or low ERa.
- **Disturbed Soil:** A broad area of moderate ER_a change that contrasts with the surrounding sub-soil. May represent cultural noise associated with soil disturbance, judged to be of archaeological origin.

High ERa Anomalies

Soils comprised of materials of a higher ER_a than the surrounding soil will exhibit anomalies of 'higher resistivity'. These are likely to include stone walls, masonry, rubble, cobbled or gravel surfaces, as well as near surface geology.

Low ERa Anomalies

Soils that are comprised of materials of a lower ER_a than the surrounding soil will exhibit anomalies of 'lower resistivity'. These are likely to include ditches, drainage ditches and pits, as well as palaeochannels, drained soils, a high water table, deep topsoil, springs, boggy areas, areas adjacent to rivers and clay soils.

Modern Disturbance: Area where the ground has been disturbed in the recent past. Characterised by very large ER_a gradients and a high level of noise.

Modern Pipe: Straight, linear anomaly with an ERa contrast.

Geology: Anomalies of possible geomorphological origin.

Absence of Anomalies

It is also possible that archaeological features exist that exhibit no resistivity contrast and hence cannot be identified by Apparent Electrical Resistivity survey.



Electrical Resistivity Tomography

Electrical Resistivity Tomography (ERT) is calculated by transmitting small electrical currents into the soil. These currents are passed between a variety of different electrodes and electrode spacings enabling measurements to be taken at different depths and positions.

High Resistivity Anomalies

Soils comprised of materials of a higher resistivity than the surrounding soil will exhibit anomalies of 'higher resistivity'. These are likely to include stone walls, masonry, rubble, cobbled, compacted or gravel surfaces, as well as near surface geology.

Low Resistivity Anomalies

Soils containing ditches, drainage ditches and pits, as well as palaeochannels, drained soils, a high water table, deep topsoil, springs, boggy areas, areas adjacent to rivers and clay soils will exhibit anomalies of 'lower resistivity'.



Appendix 2: Geophysical Archive

- Copies of all project data are held by Earthsound Geophysics Ltd. in digital format, at separate locations on separate drives to ensure preservation against accidental damage or theft.
- The Client, Limerick County Council, holds further copies of the report and digital archive, including all interpretation figures, geo-rectified greyscale images, pre-processed and processed data in xyz format.
- A hard copy and a soft copy will be deposited with the Archaeological Licensing Section, National Monuments Service, Department of Culture, Heritage and the Gaeltacht, Room G50, Custom House, Dublin 1.
- A hard copy will be deposited with the National Museum of Ireland, Kildare Street, Dublin 2.



Appendix 3: Site Photos



Plate 1: Electromagnetic instrument collecting apparent resistivity data at ER7



Plate 2&3: Locating survey area M9 in overgrown terrain using RTK GPS





Plate 4: Magnetometer cart in survey area M23 which contained uneven ground and large patches of overgrown vegetation



Plate 5: High vegetation in part of M2



Plate 6&7: Difficult to access survey area M28, which also contained a large herd of free roaming cattle that could not be removed to complete the survey





Plate 8: Straw bales blocking some of survey area M29



Plate 9: Magnetometer survey in M32 which was covered in high barley crop, making the survey very difficult



Plate 10: Topographical feature in M36/ER22/ERT1 is barely visible on the ground





Plate 11: Section of M37 which could not be surveyed due to high corn crops



Plate 12: Resistivity survey in progress in ER13



Plate 13&14: Unsurveyable ground conditions in part of M39/ER14



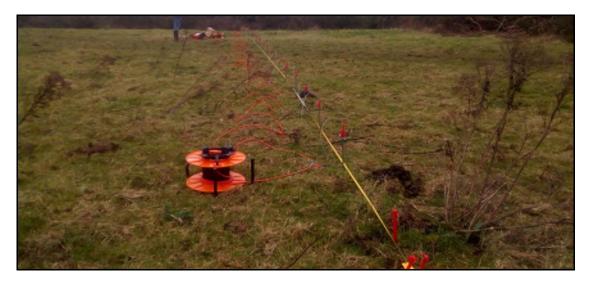


Plate 15: Electrical resistivity tomography (ERT3) survey in progress



Plate 16: Undulating survey area M43



Plate 17: Green field M44 with no above ground indication of the significant archaeological features present

Foynes to Limerick Road Improvement Scheme, Co. Limerick

Volume 2: Figures

Archaeological Geophysical Survey

Detection Licence No. 18R0122

Survey undertaken on behalf of Limerick City and County Council

H. Gimson BA (Hons) MSc MIAI
U. Garner BSc (Hons) MSc
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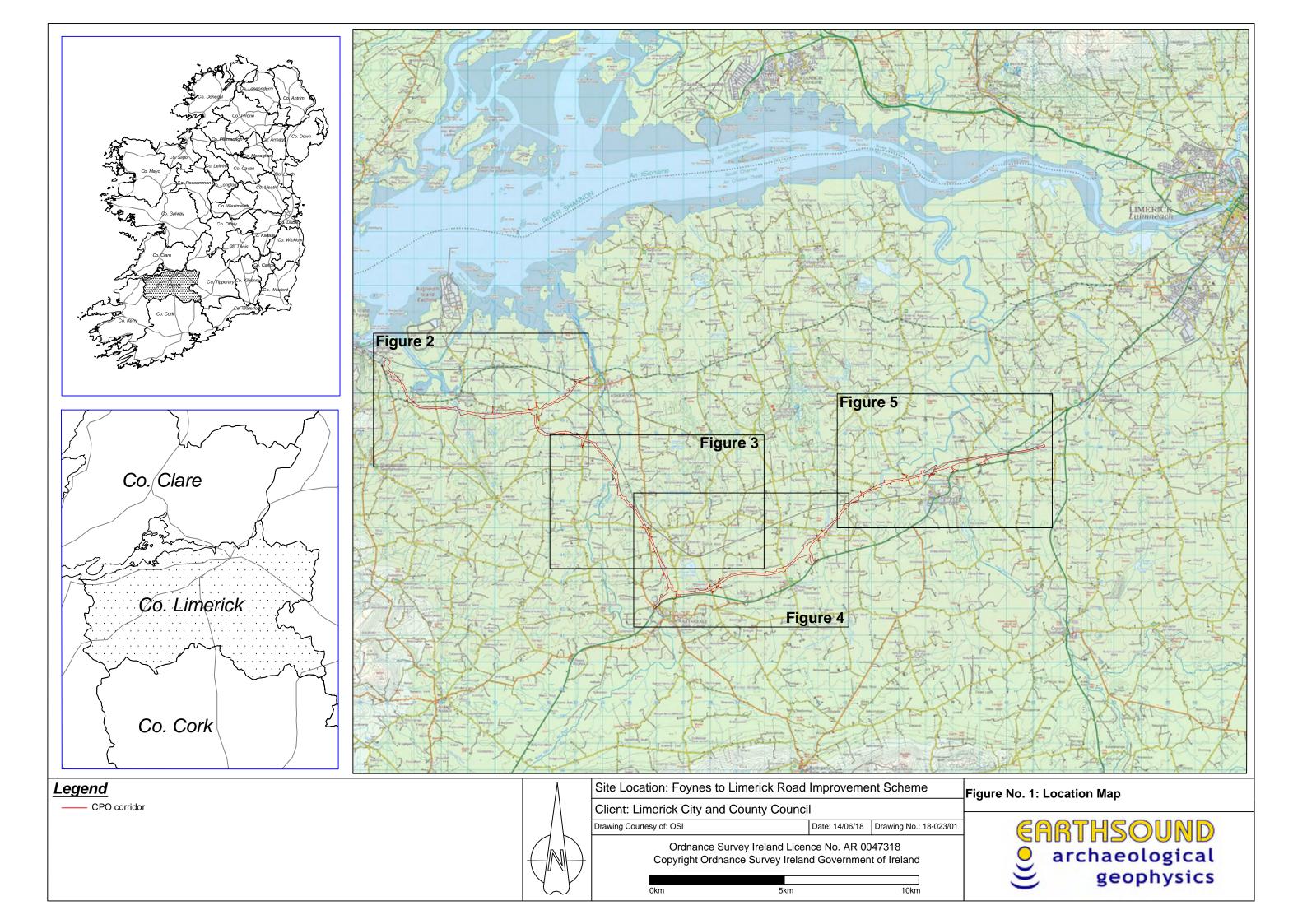


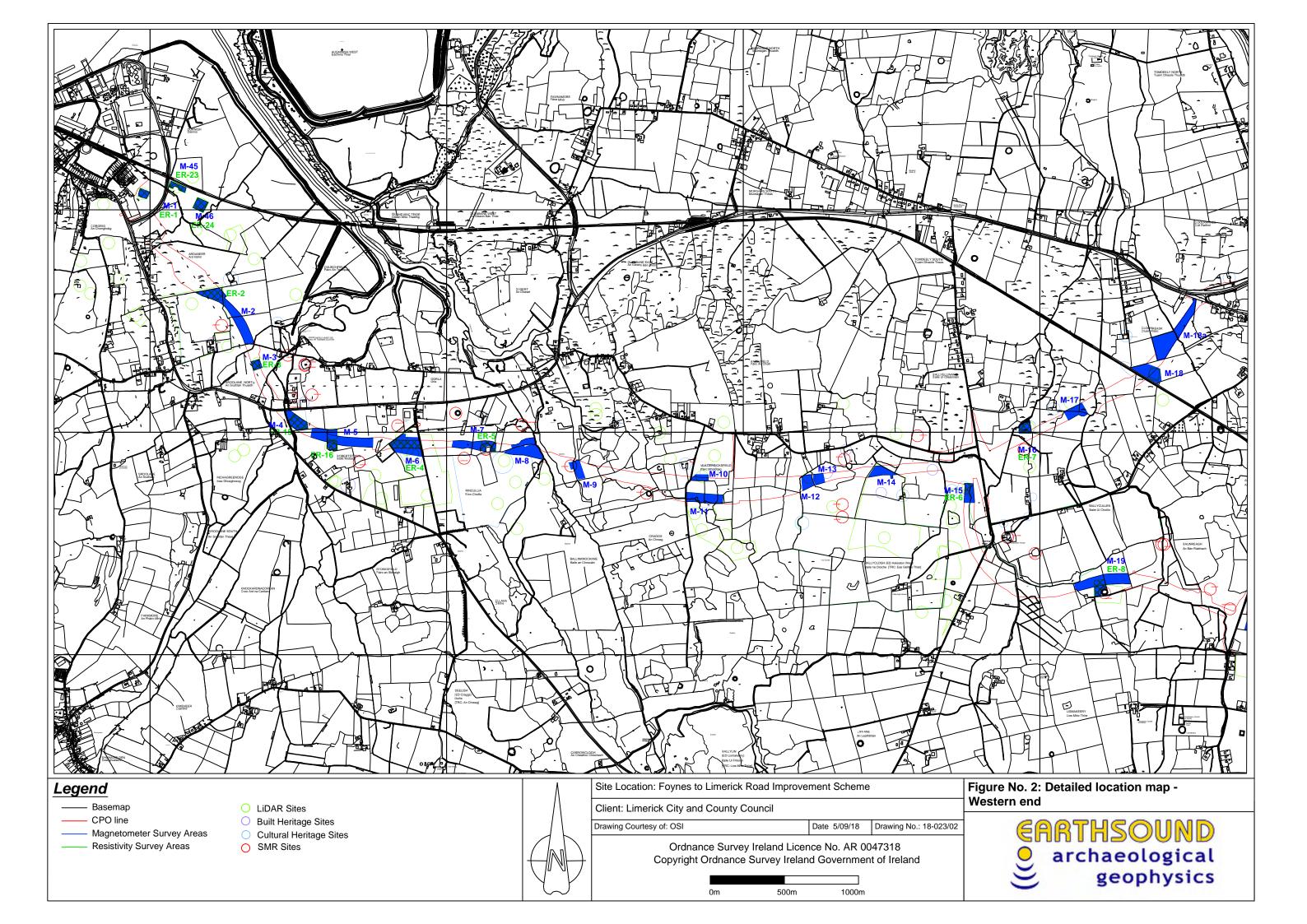
Figure List

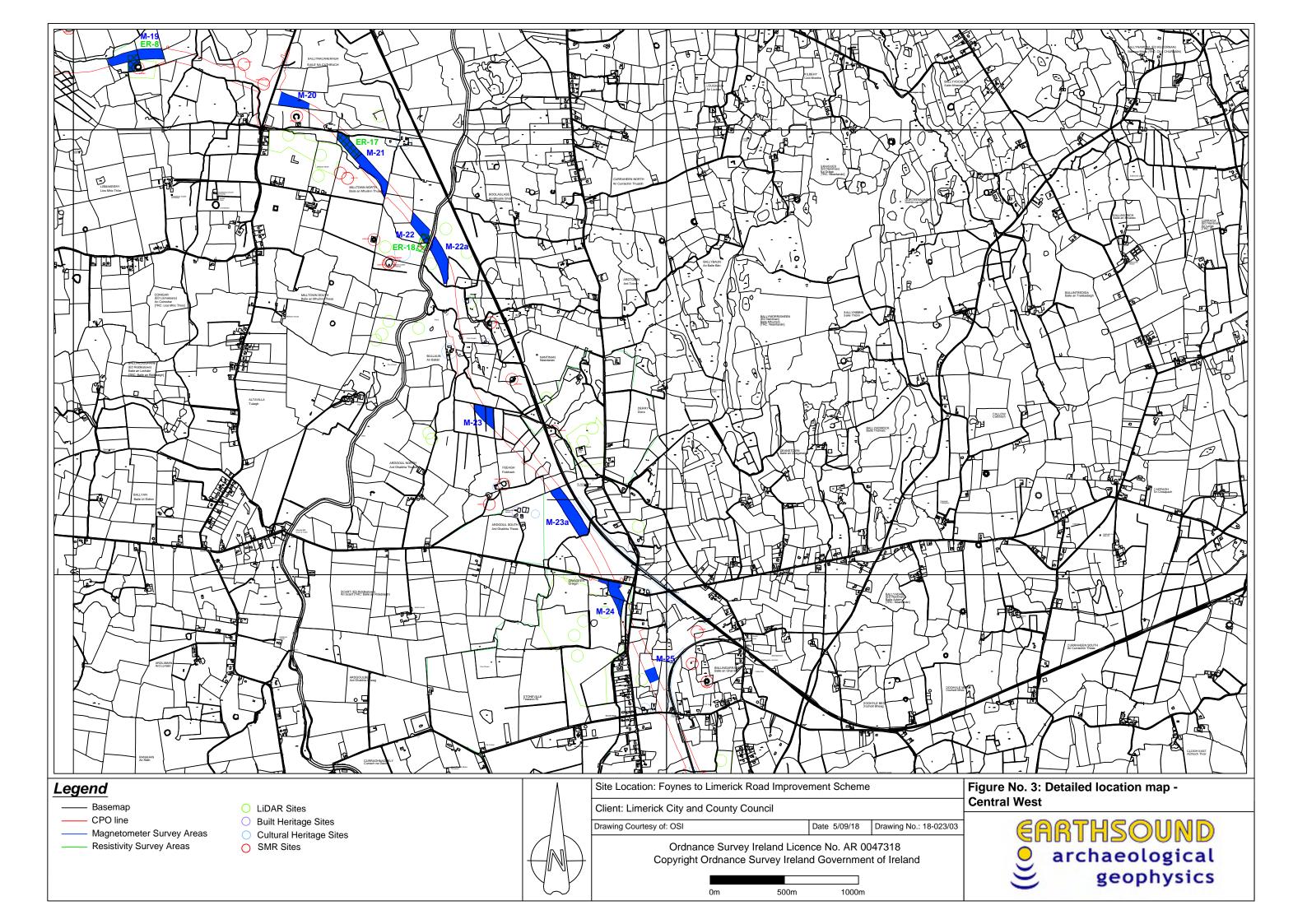
Figure 1:	Site Location	Figure 27:	Magnetometer interpretation – M-22 & M-22a
Figure 2:	Detailed location map – Western end	Figure 28:	Magnetometer data – M-23 & M-23a
Figure 3:	Detailed location map – Central West	Figure 29:	Magnetometer interpretation – M-23
Figure 4:	Detailed location map – Central East	Figure 30:	Magnetometer data – M-23a
Figure 5:	Detailed location map – Eastern end	Figure 31:	Magnetometer interpretation – M-23a
Figure 6:	Magnetometer data – M-1, M-45 & M-46	Figure 32:	Magnetometer data – M-24 & M-25
Figure 7:	Magnetometer interpretation – M-1, M-45 & M-46	Figure 33:	Magnetometer interpretation – M-24 & M-25
Figure 8:	Magnetometer data – M-2 & M-3	Figure 34:	Magnetometer data – M-26 & M-27
Figure 9:	Magnetometer interpretation – M-2 & M-3	Figure 35:	Magnetometer interpretation – M-26 & M-27
Figure 10:	Magnetometer data – M-4, M-5 & M-6	Figure 36:	Magnetometer data – M-27
Figure 11:	Magnetometer interpretation – M-4, M-5 & M-6	Figure 37:	Magnetometer interpretation – M-27
Figure 12:	Magnetometer data – M-7, M-8 & M-9	Figure 38:	Magnetometer data – M-28, M-29 & M-30
Figure 13:	Magnetometer interpretation – M-7, M-8 & M-9	Figure 39:	Magnetometer interpretation – M-28, M-29 & M-30
Figure 14:	Magnetometer data – M-10, M-11, M-12 & M-13	Figure 40:	Magnetometer data – M-31
Figure 15:	Magnetometer interpretation – M-10, M-11, M-12 & M-13	Figure 41:	Magnetometer interpretation – M-31
Figure 16:	Magnetometer data – M-14 & M-15	Figure 42:	Magnetometer data – M-32
Figure 17:	Magnetometer interpretation – M-14 & M-15	Figure 43:	Magnetometer interpretation – M-32
Figure 18:	Magnetometer data – M-16 & M-17	Figure 44:	Magnetometer data – M-33
Figure 19:	Magnetometer interpretation – M-16 & M-17	Figure 45:	Magnetometer interpretation – M-33
Figure 20:	Magnetometer data – M-18 & M-18a	Figure 46:	Magnetometer data – M-34 & M35
Figure 21:	Magnetometer interpretation – M-18 & M-18a	Figure 47:	Magnetometer interpretation – M-34 & M35
Figure 22:	Magnetometer data – M-19	Figure 48:	Magnetometer data – M-36
Figure 23:	Magnetometer interpretation – M-19	Figure 49:	Magnetometer interpretation – M-36
Figure 24:	Magnetometer data – M-20 & M-21	Figure 50:	Magnetometer data – M-37 & M-38
Figure 25:	Magnetometer interpretation – M-20 & M-21	Figure 51:	Magnetometer interpretation – M-37 & M-38
Figure 26:	Magnetometer data – M-22 & M-22a	Figure 52:	Magnetometer data – M38a & M-39

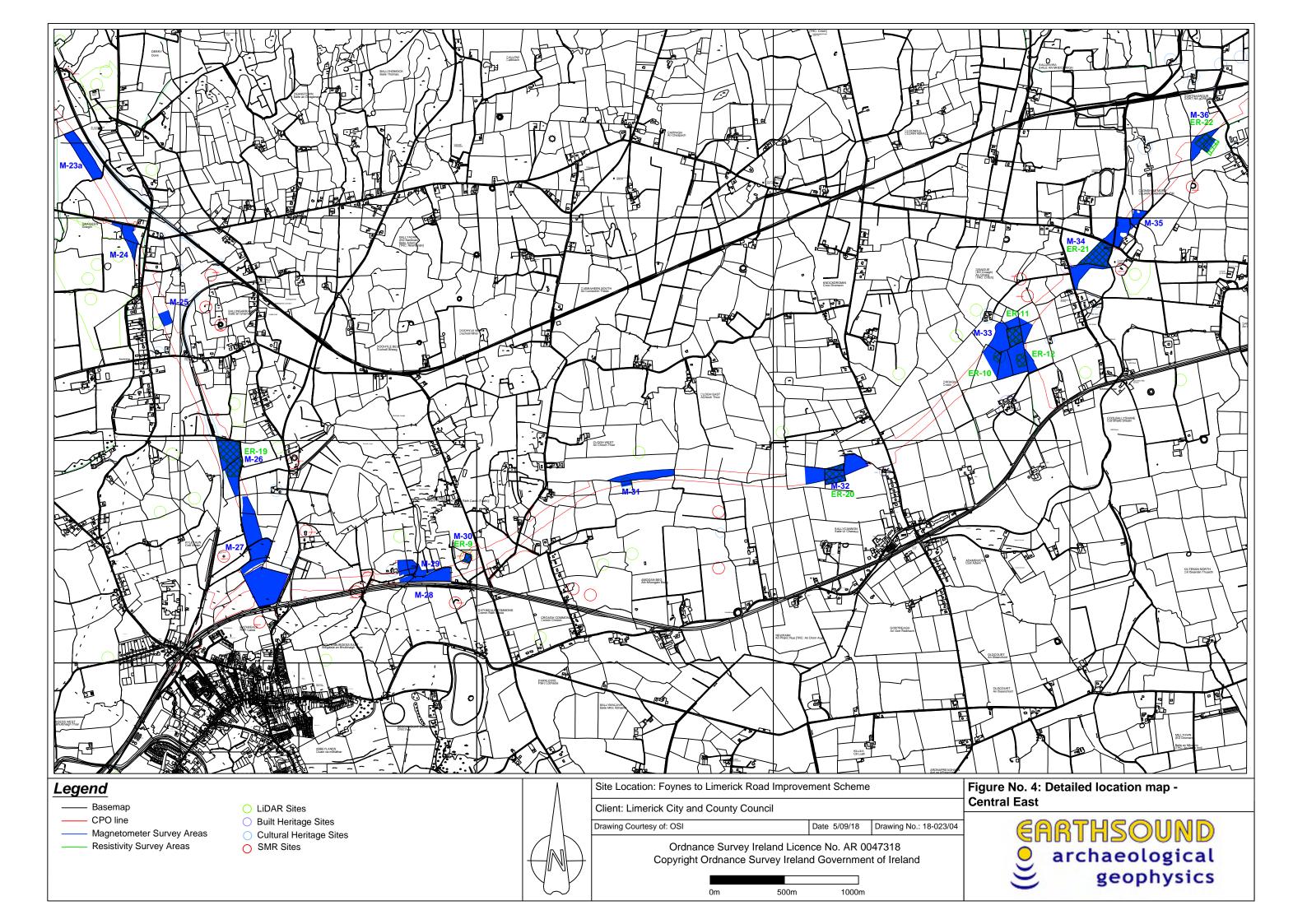


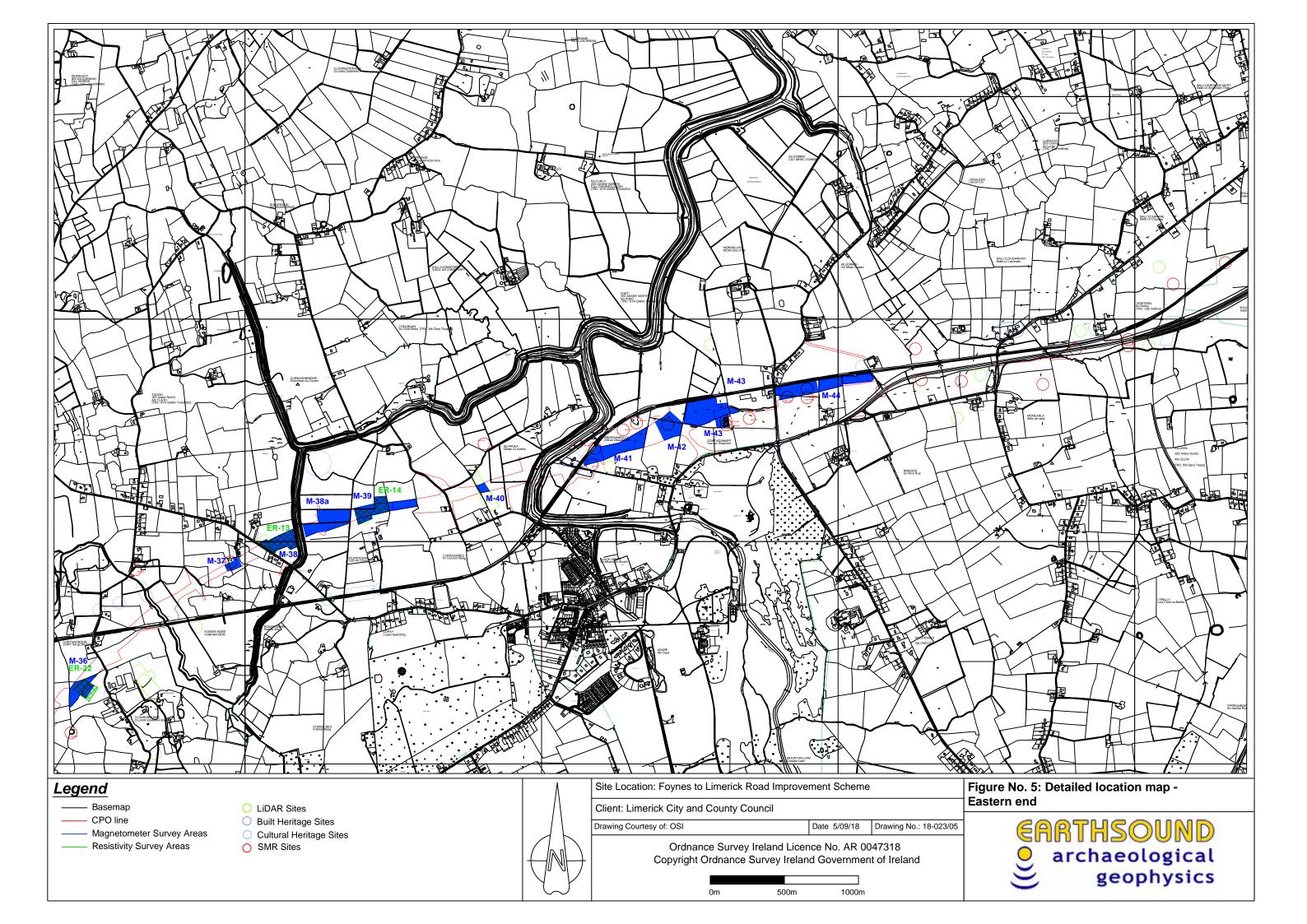
Figure 53:	Magnetometer interpretation – M-38a & M-39	Figure 82:	Resistivity data – ER-20
Figure 54:	Magnetometer data – M-40	Figure 83:	Resistivity interpretation – ER-20
Figure 55:	Magnetometer interpretation – M-40	Figure 84:	Resistivity data – ER-10, ER-11 & ER-12
Figure 56:	Magnetometer data – M-41, M-42 & M-43	Figure 85:	Resistivity interpretation – ER-10, ER-11 & ER-12
Figure 57:	Magnetometer interpretation – M-41, M-42 & M-43	Figure 86:	Resistivity data – ER-21
Figure 58:	Magnetometer data – M-44	Figure 87:	Resistivity interpretation – ER-21
Figure 59:	Magnetometer interpretation – M-44	Figure 88:	Resistivity data – ER-22
Figure 60:	Resistivity data – ER-1, ER-23 & ER-24	Figure 89:	Resistivity interpretation – ER-22
Figure 61:	Resistivity interpretation – ER-1, ER-23 & ER-24	Figure 90:	Resistivity data – ER-13 & ER-14
Figure 62:	Resistivity data – ER-2 & ER-3	Figure 91:	Resistivity interpretation – ER-13 & ER-14
Figure 63:	Resistivity interpretation – ER-2 & ER-3	Figure 92:	Location of Electrical Resistivity Tomography Survey Lines ERT1
Figure 64:	Resistivity data – ER-15 & ER-16	Figure 93:	Electrical Resistivity Tomography data – Profile 1
Figure 65:	Resistivity interpretation – ER-15 & ER-16	Figure 94:	Electrical Resistivity Tomography interpretation – Profile 1
Figure 66:	Resistivity data – ER-4 & ER-5	Figure 95:	Electrical Resistivity Tomography data – Profile 2
Figure 67:	Resistivity interpretation – ER-4 & ER-5	Figure 96:	Electrical Resistivity Tomography interpretation – Profile 2
Figure 68:	Resistivity data – ER-6 & ER-7	Figure 97:	Combined Electrical Resistivity Tomography interpretation – ERT1
Figure 69:	Resistivity interpretation – ER-6 & ER-7	Figure 98:	Location of Electrical Resistivity Tomography Survey Lines ERT2 & ERT3
Figure 70:	Resistivity data – ER-8	Figure 99:	Electrical Resistivity Tomography data – Profile 3
Figure 71:	Resistivity interpretation – ER-8	Figure 100:	Electrical Resistivity Tomography interpretation – Profile 3
Figure 72:	Resistivity data – ER-17	Figure 101:	Electrical Resistivity Tomography data – Profile 4
Figure 73:	Resistivity interpretation – ER-17	Figure 102:	Electrical Resistivity Tomography interpretation – Profile 4
Figure 74:	Resistivity data – ER-18	Figure 103:	Electrical Resistivity Tomography data – Profile 5
Figure 75:	Resistivity interpretation – ER-18	Figure 104:	Electrical Resistivity Tomography interpretation – Profile 5
Figure 76:	Resistivity data – ER-19	Figure 105:	Combined Electrical Resistivity Tomography interpretation – ERT2
Figure 77:	Resistivity interpretation – ER-19	Figure 106:	Electrical Resistivity Tomography data – Profile 6
Figure 78:	Resistivity data – ER-9	Figure 107:	Electrical Resistivity Tomography interpretation – Profile 6
Figure 79:	Resistivity interpretation – ER-9	Figure 108:	Electrical Resistivity Tomography data – Profile 7
Figure 80:	Resistivity data – ER-25	Figure 109:	Electrical Resistivity Tomography interpretation – Profile 7
Figure 81:	Resistivity interpretation – ER-25	Figure 110:	Combined Electrical Resistivity Tomography interpretation – ERT3

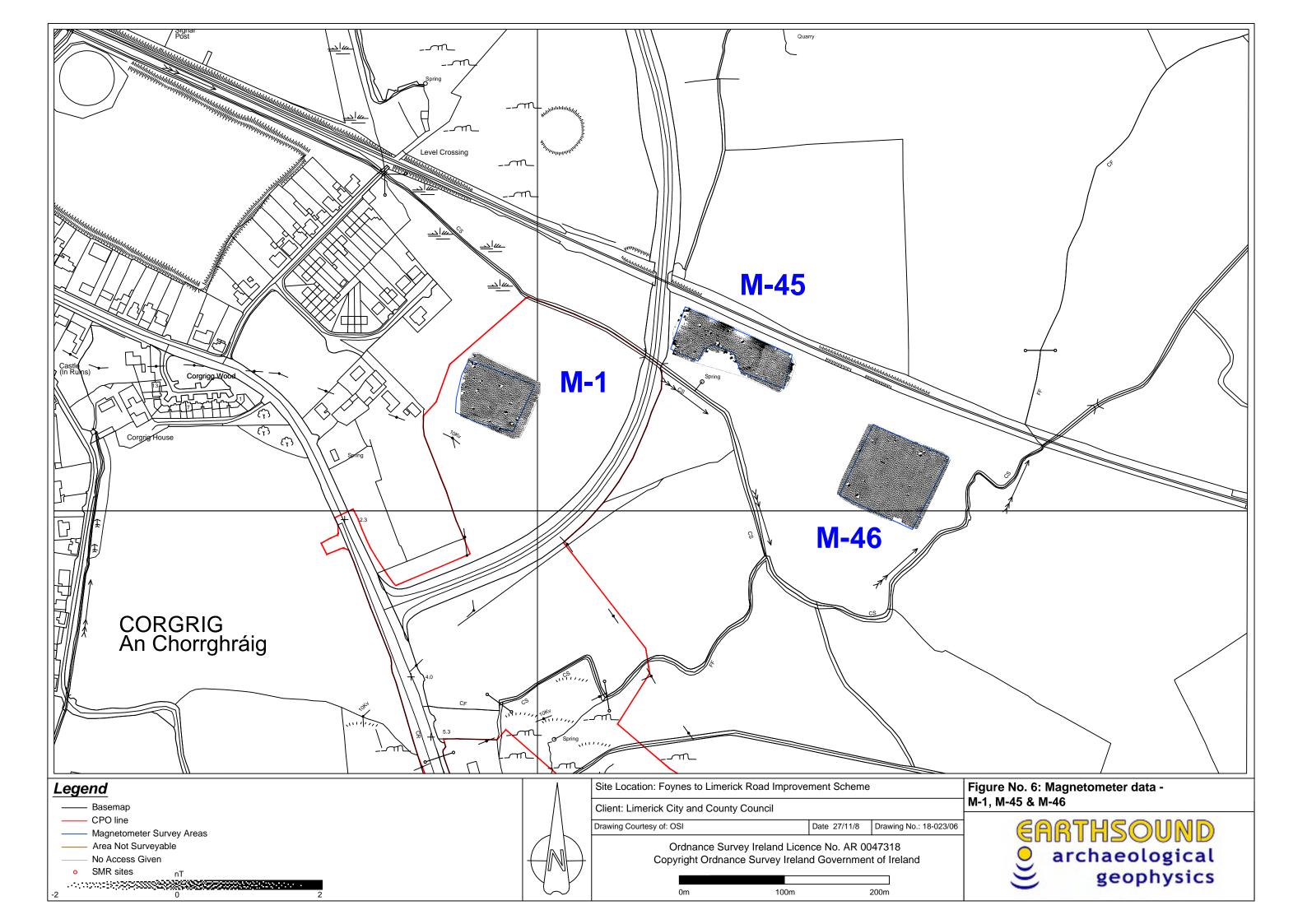


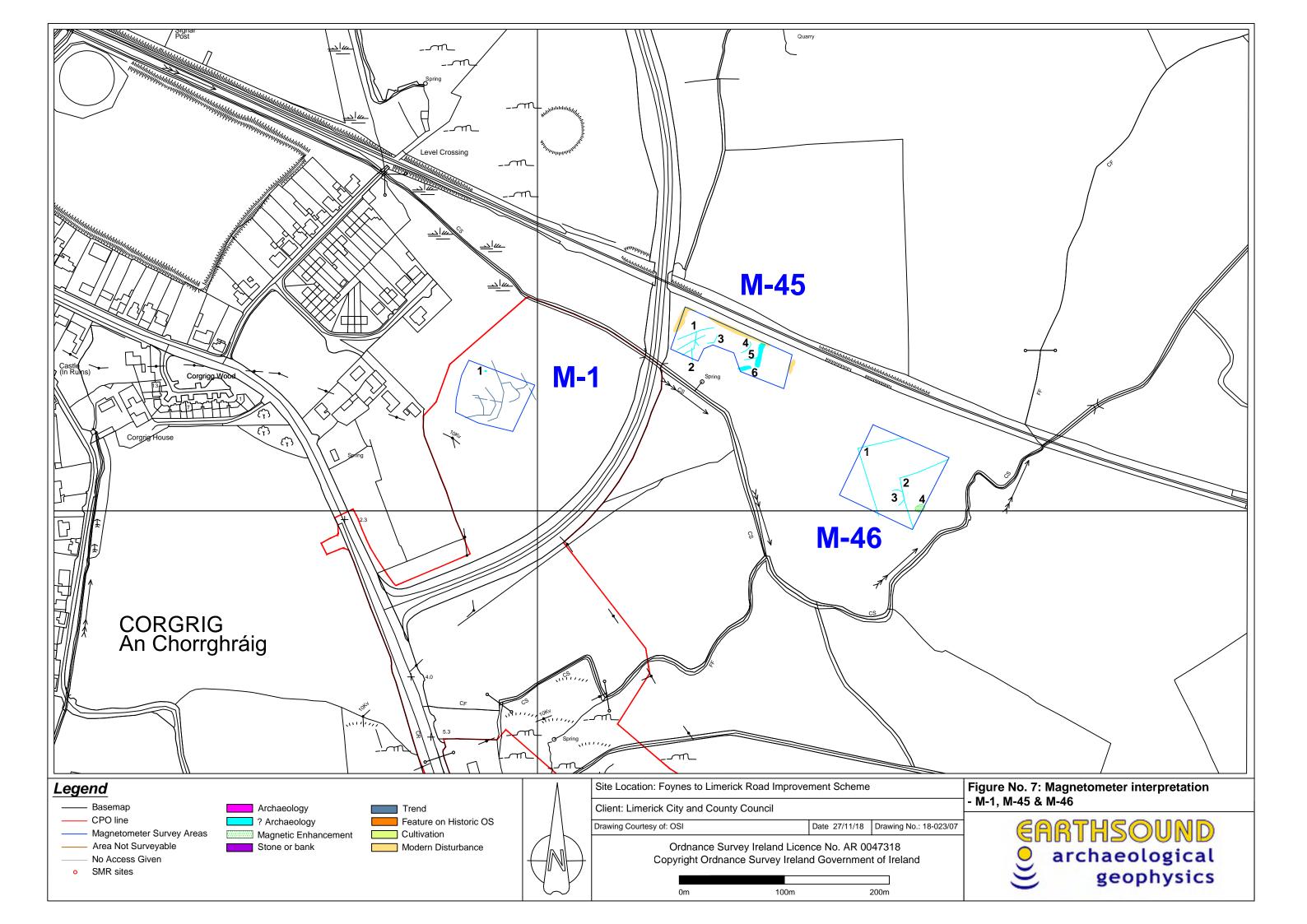


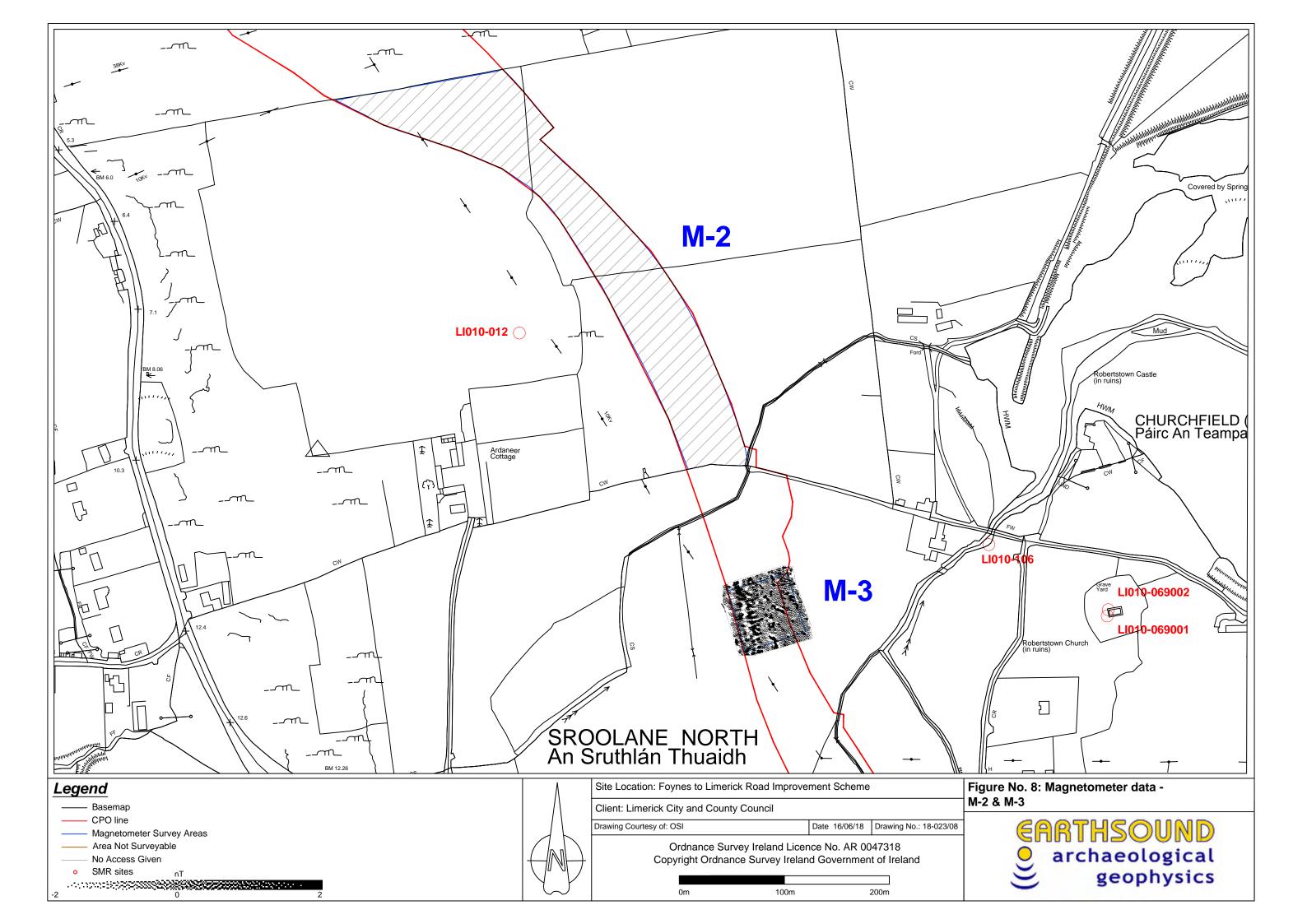


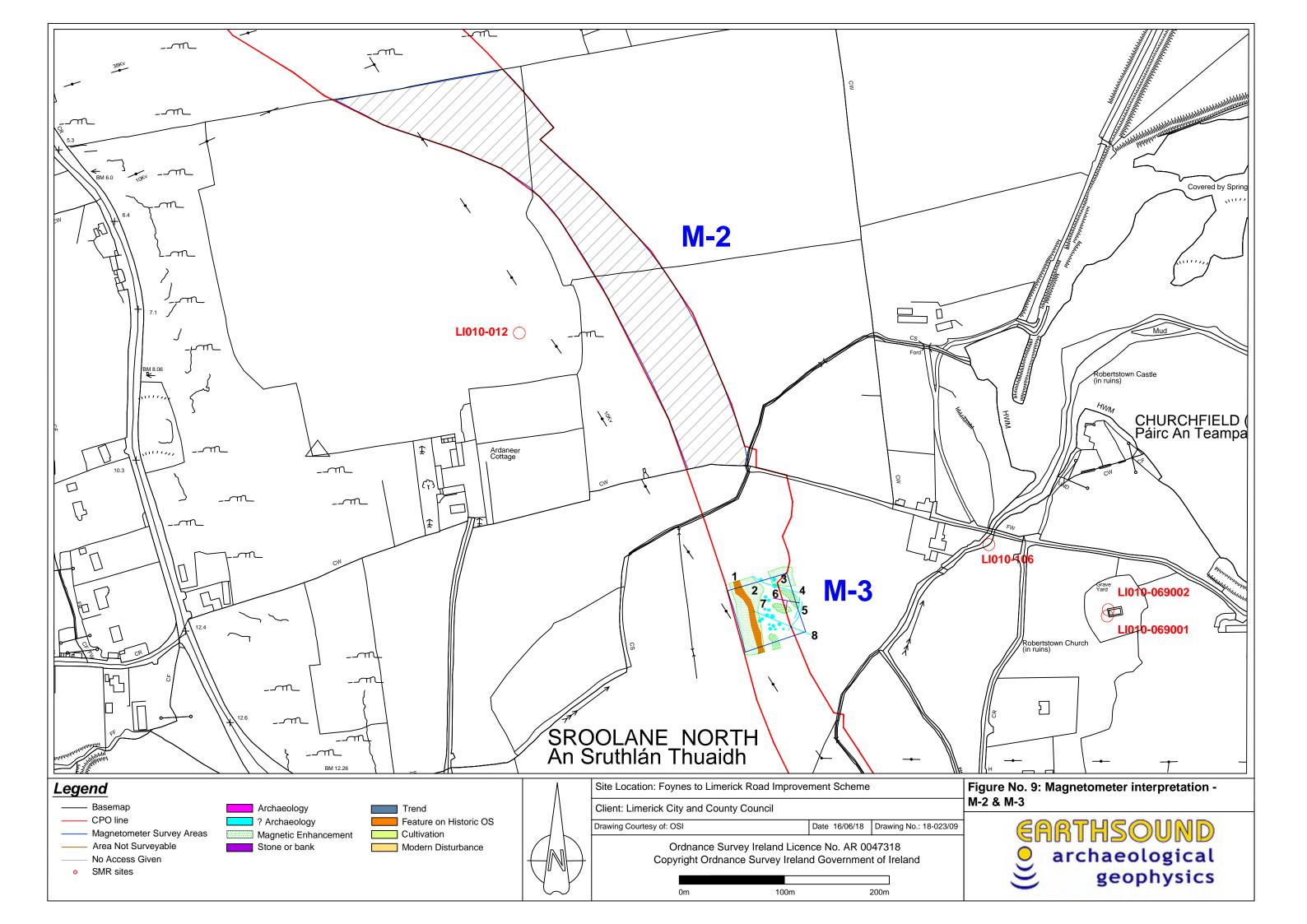


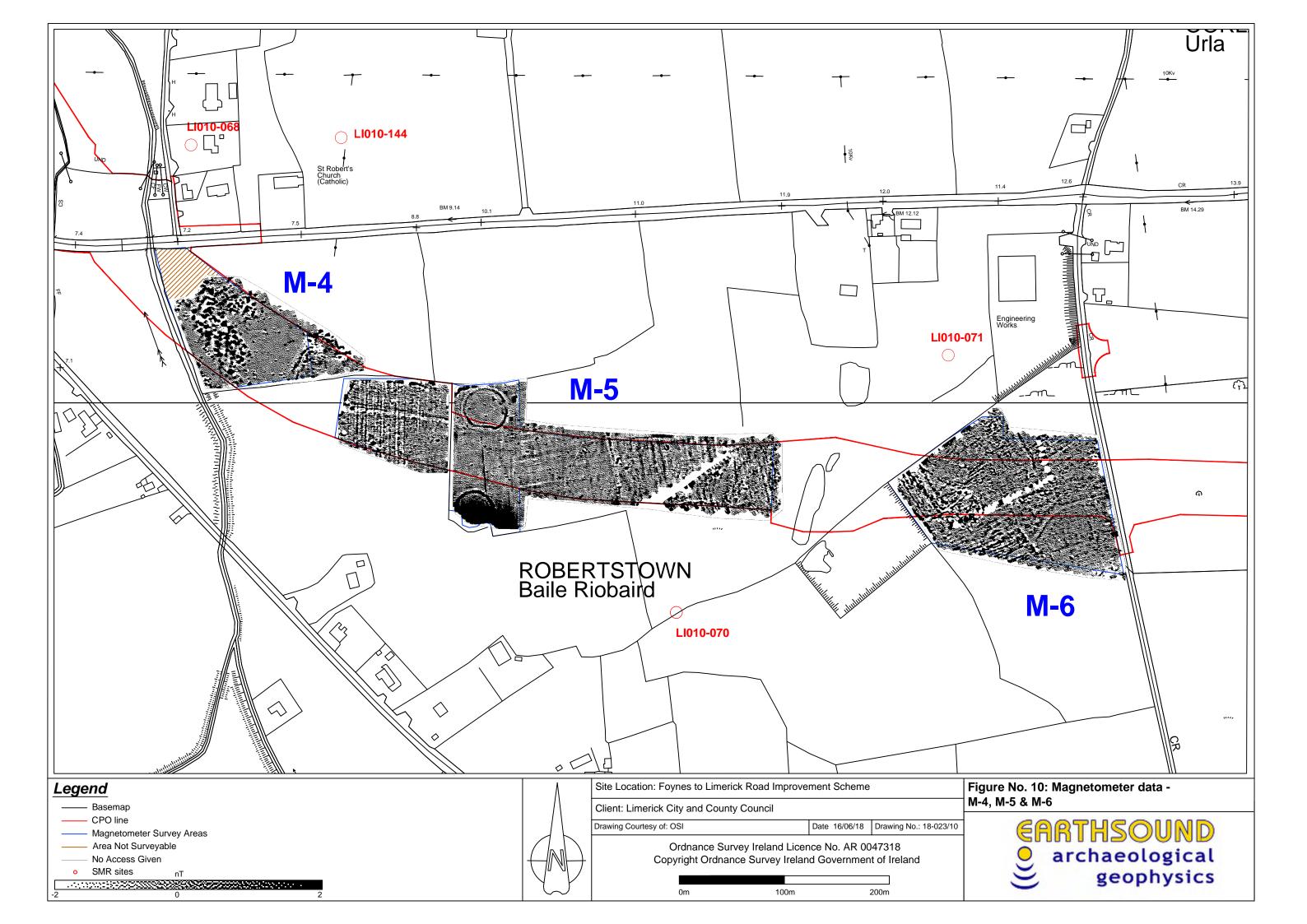


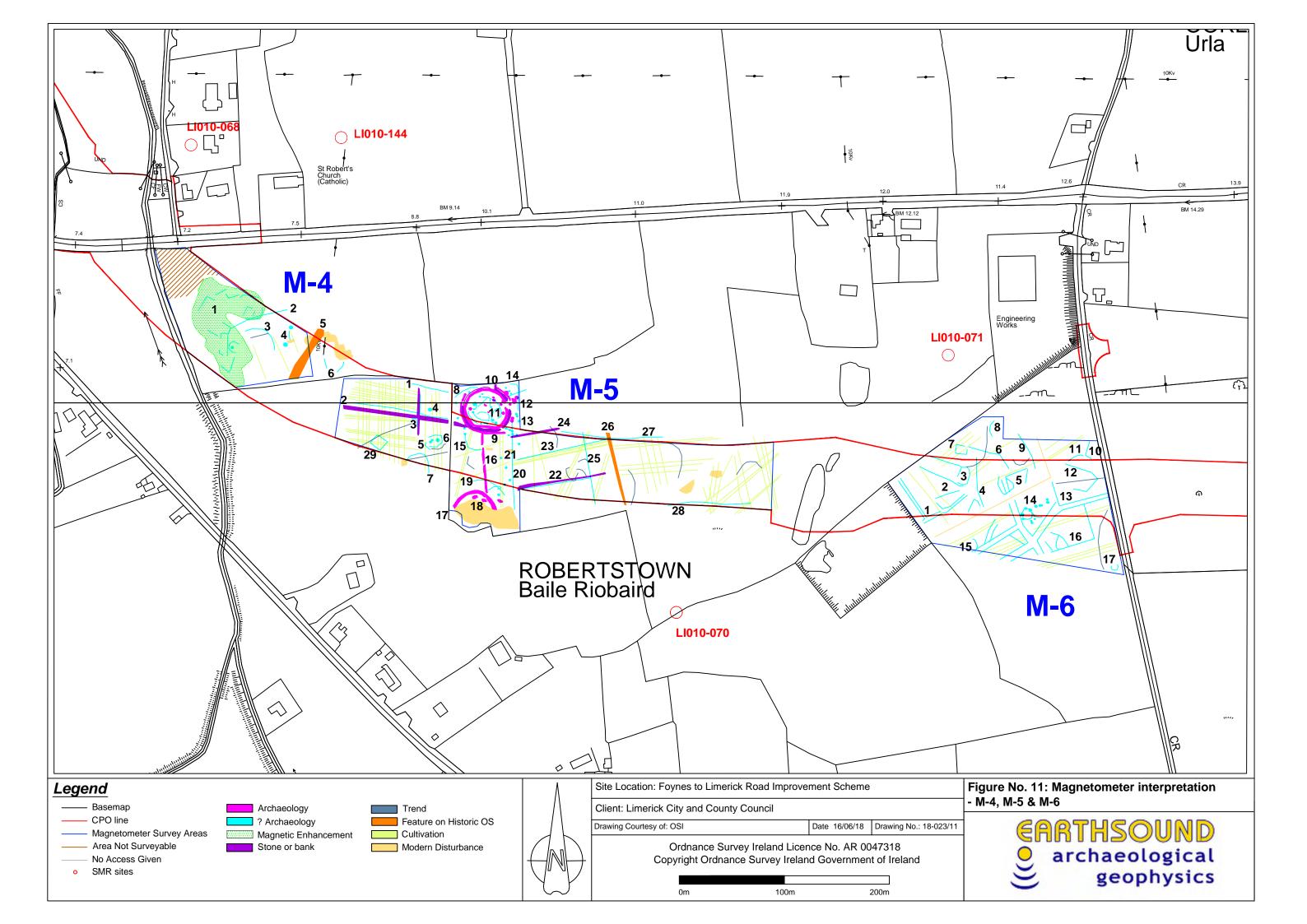


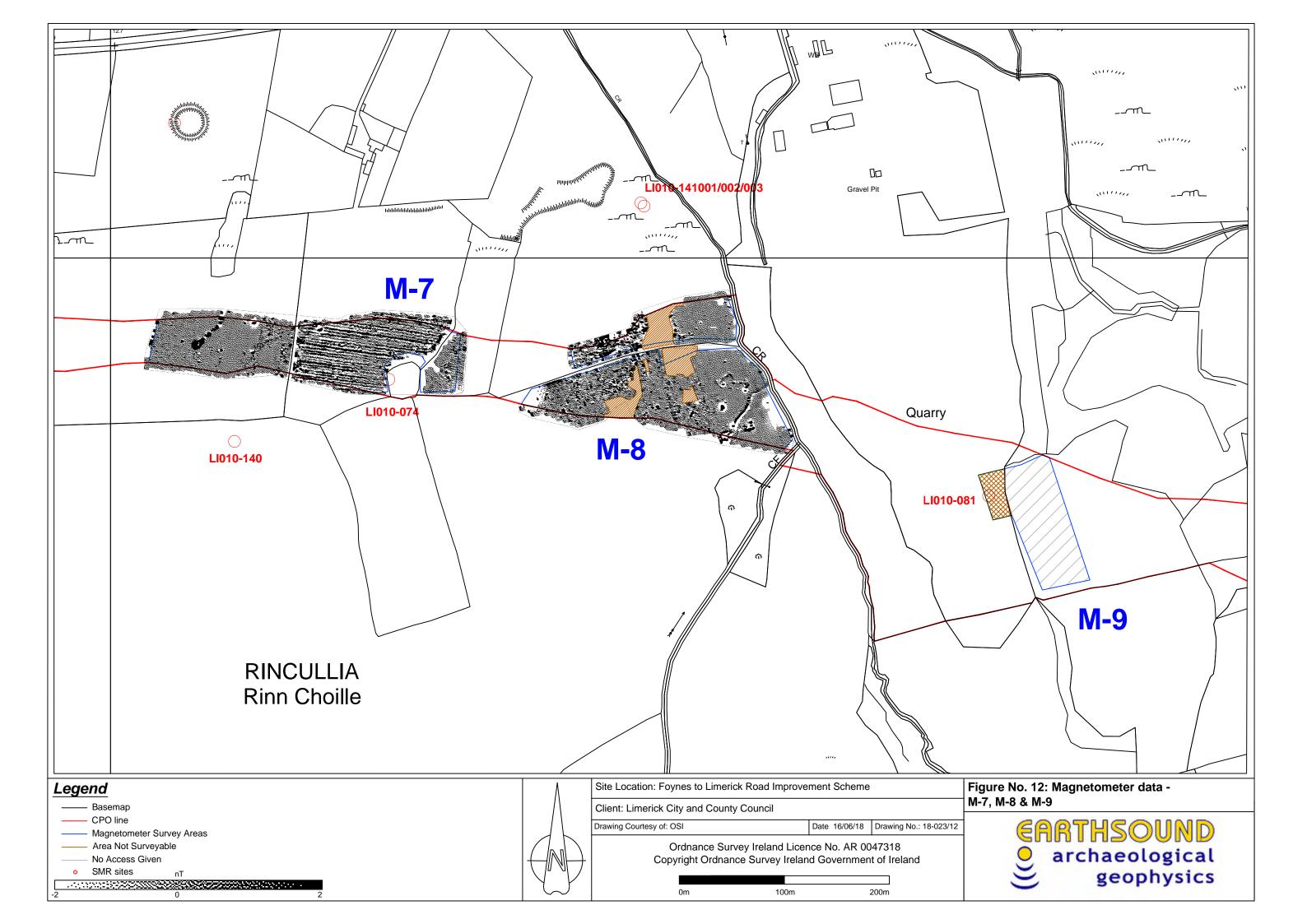


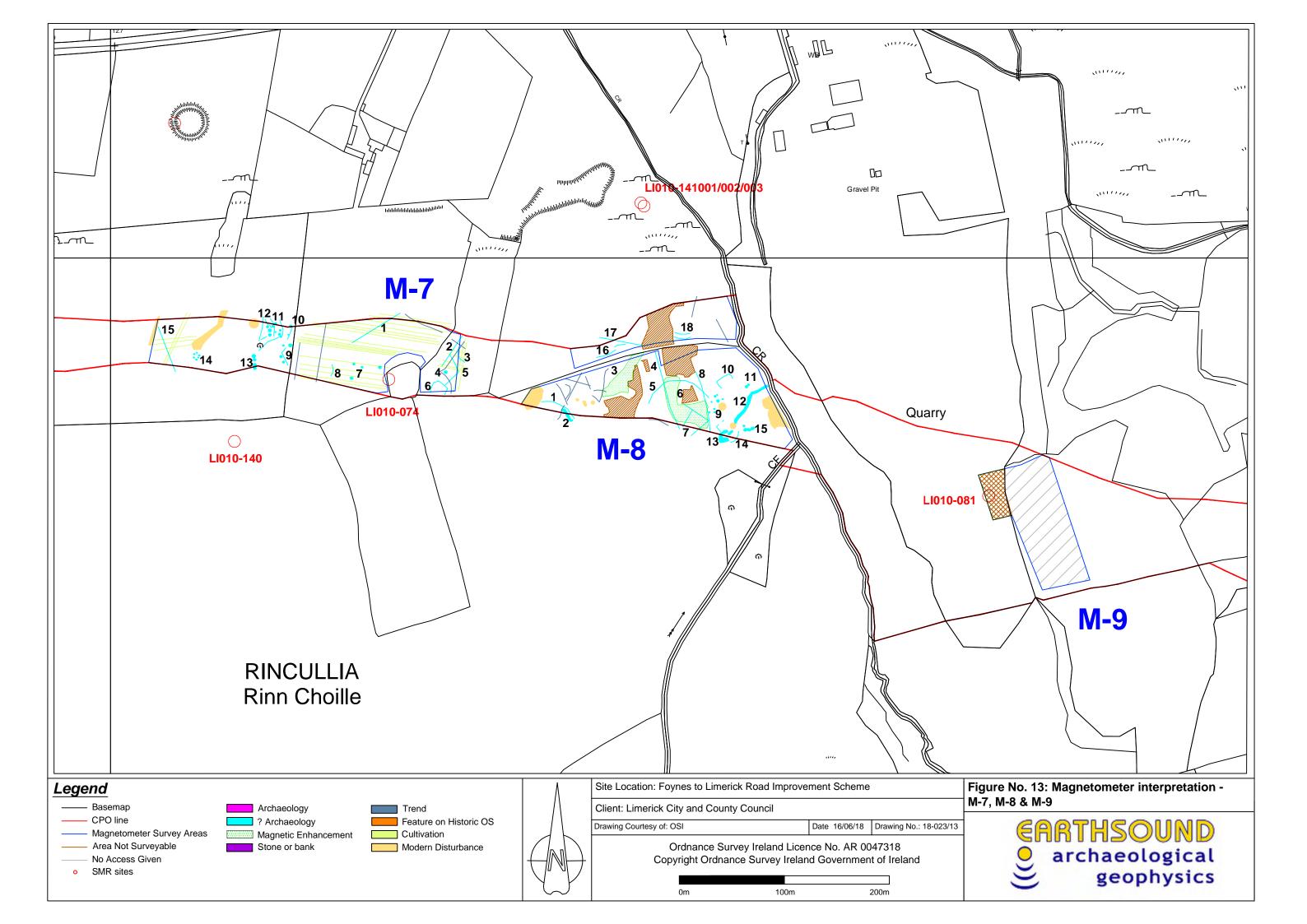


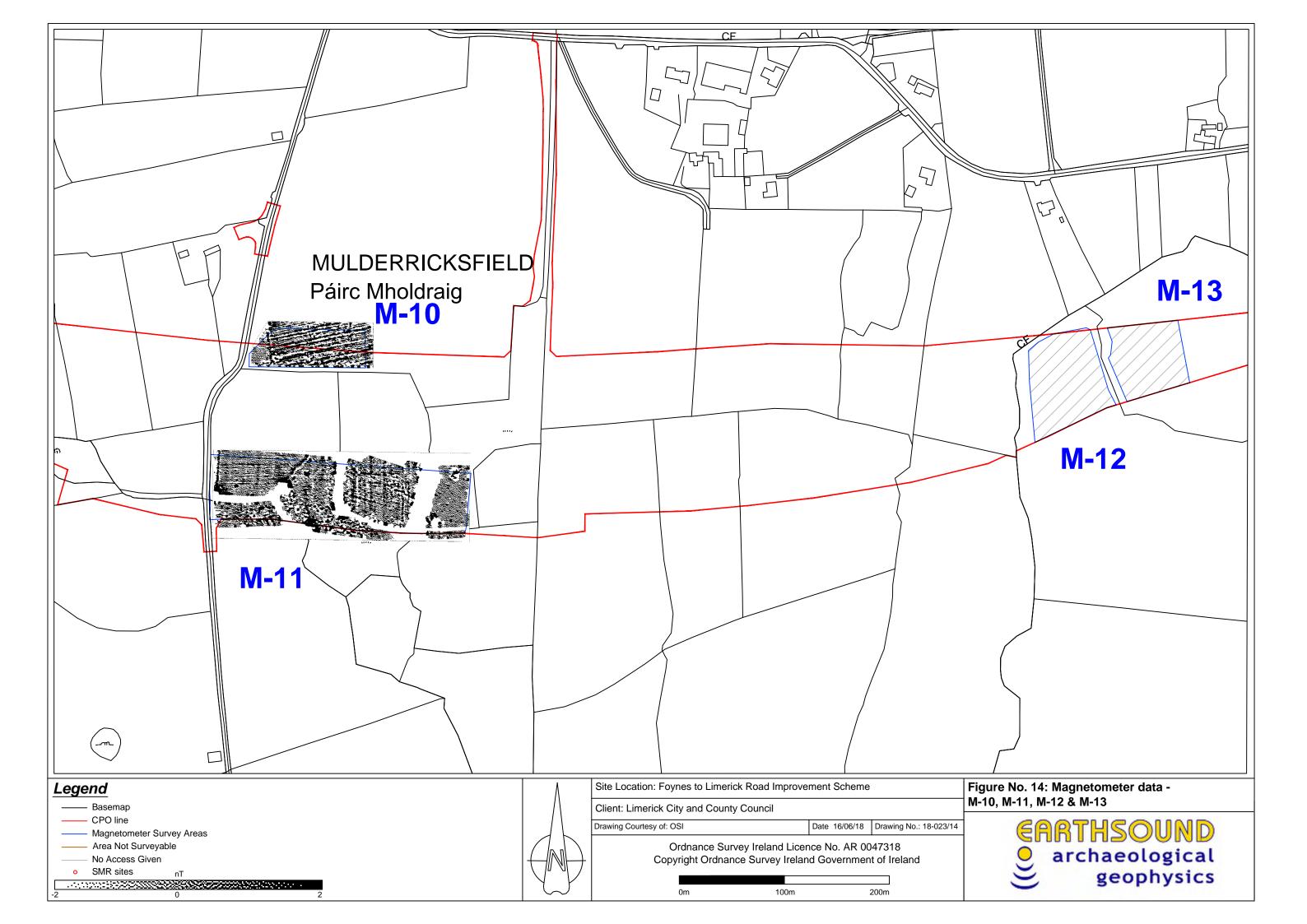


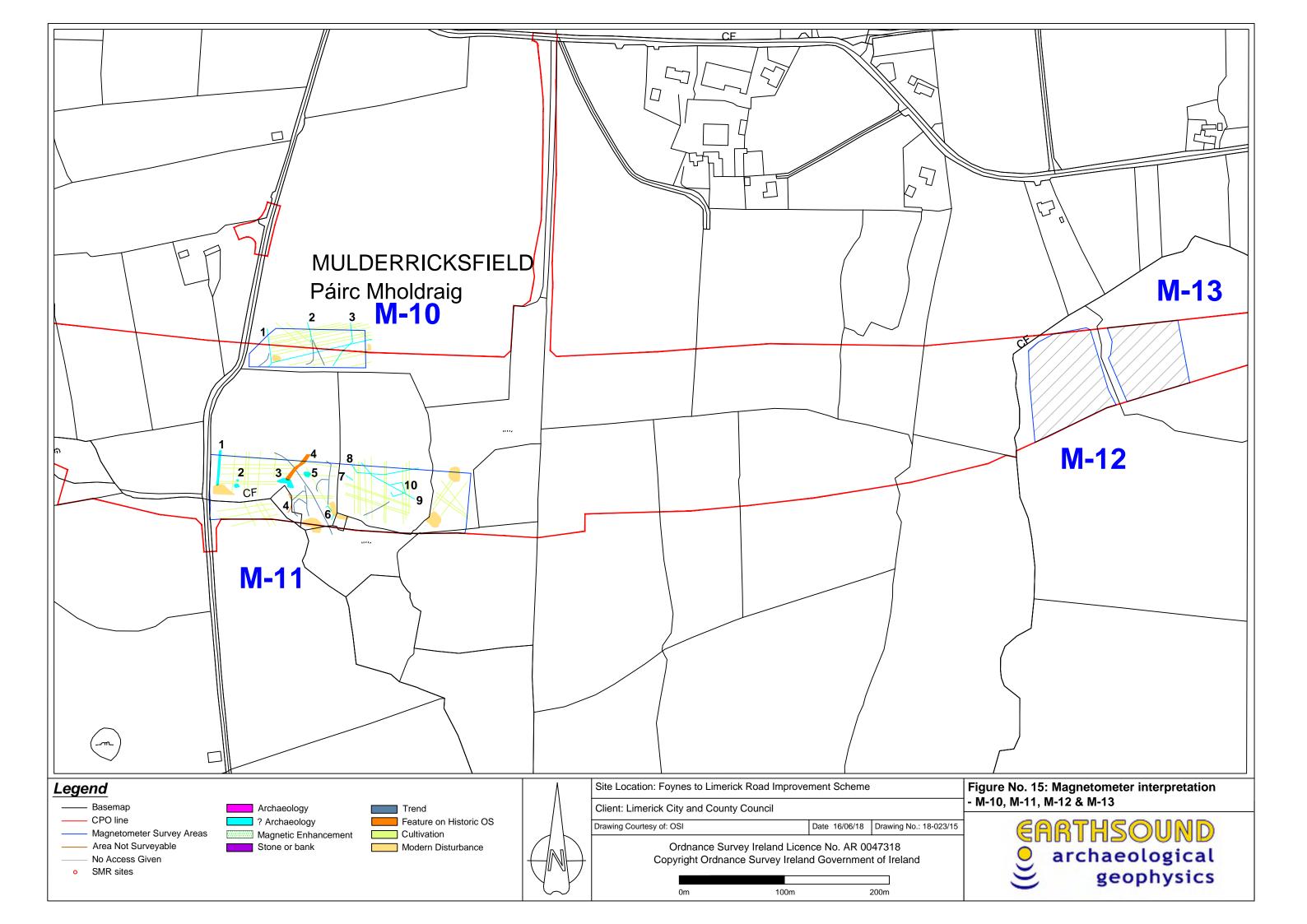


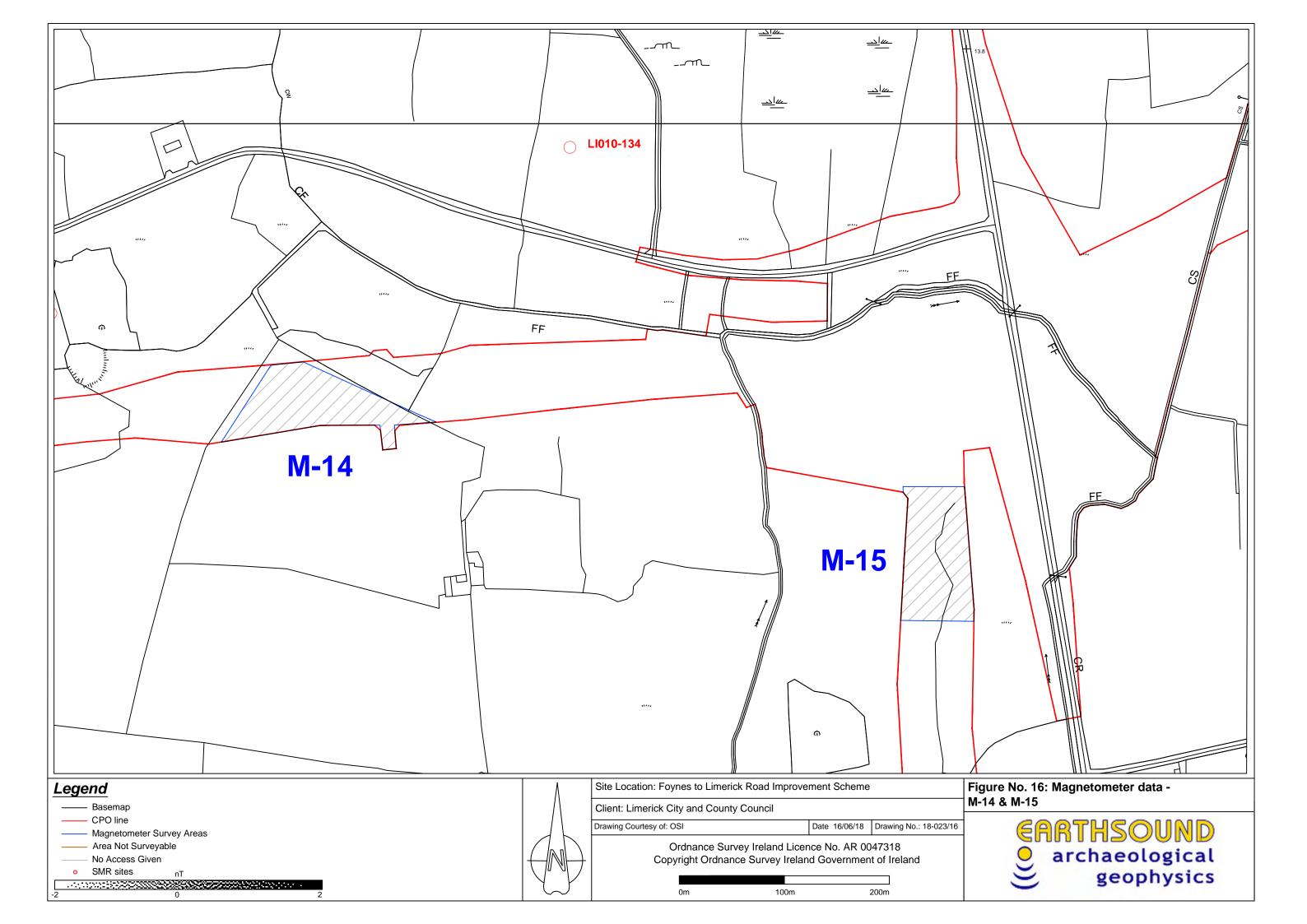


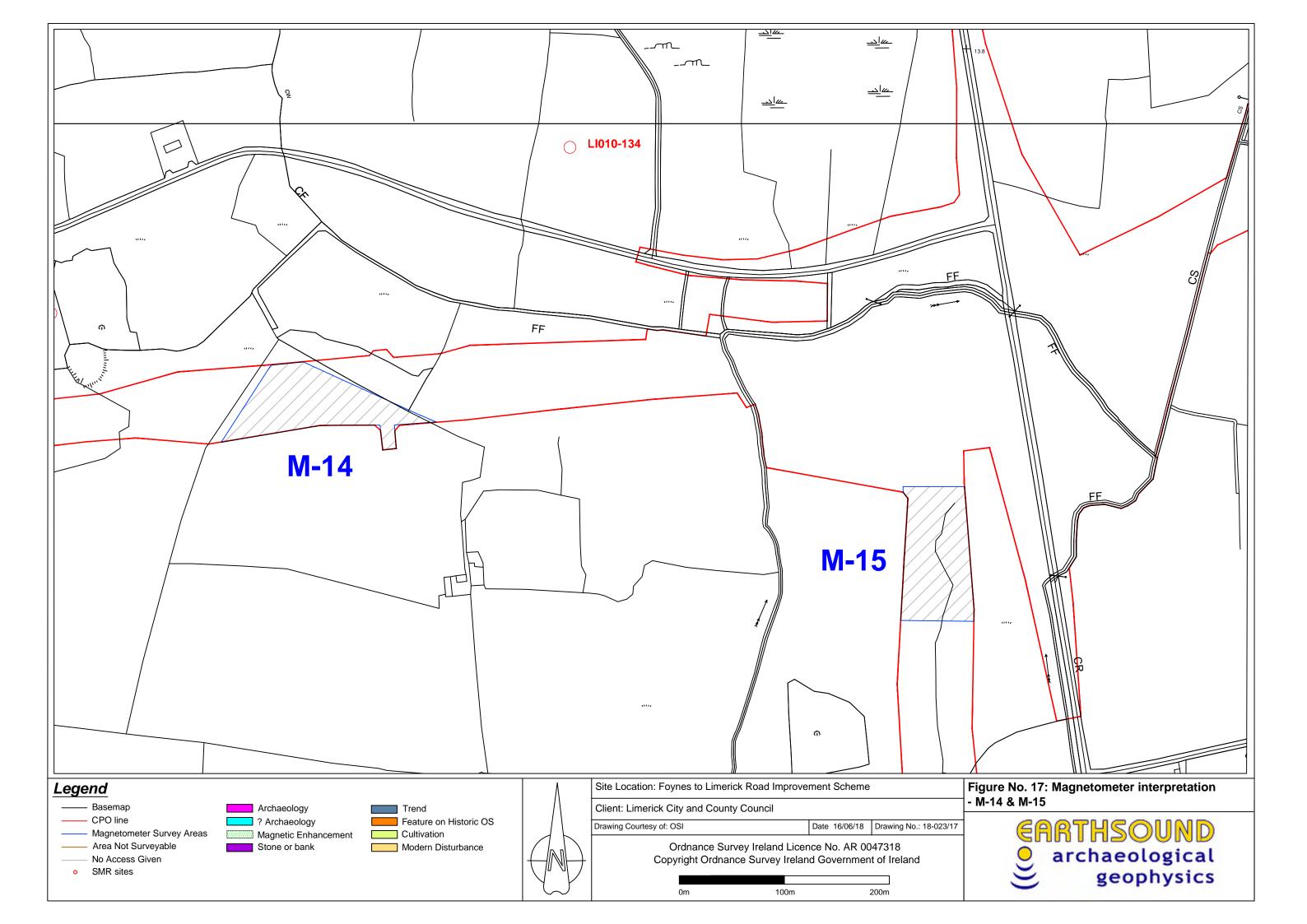


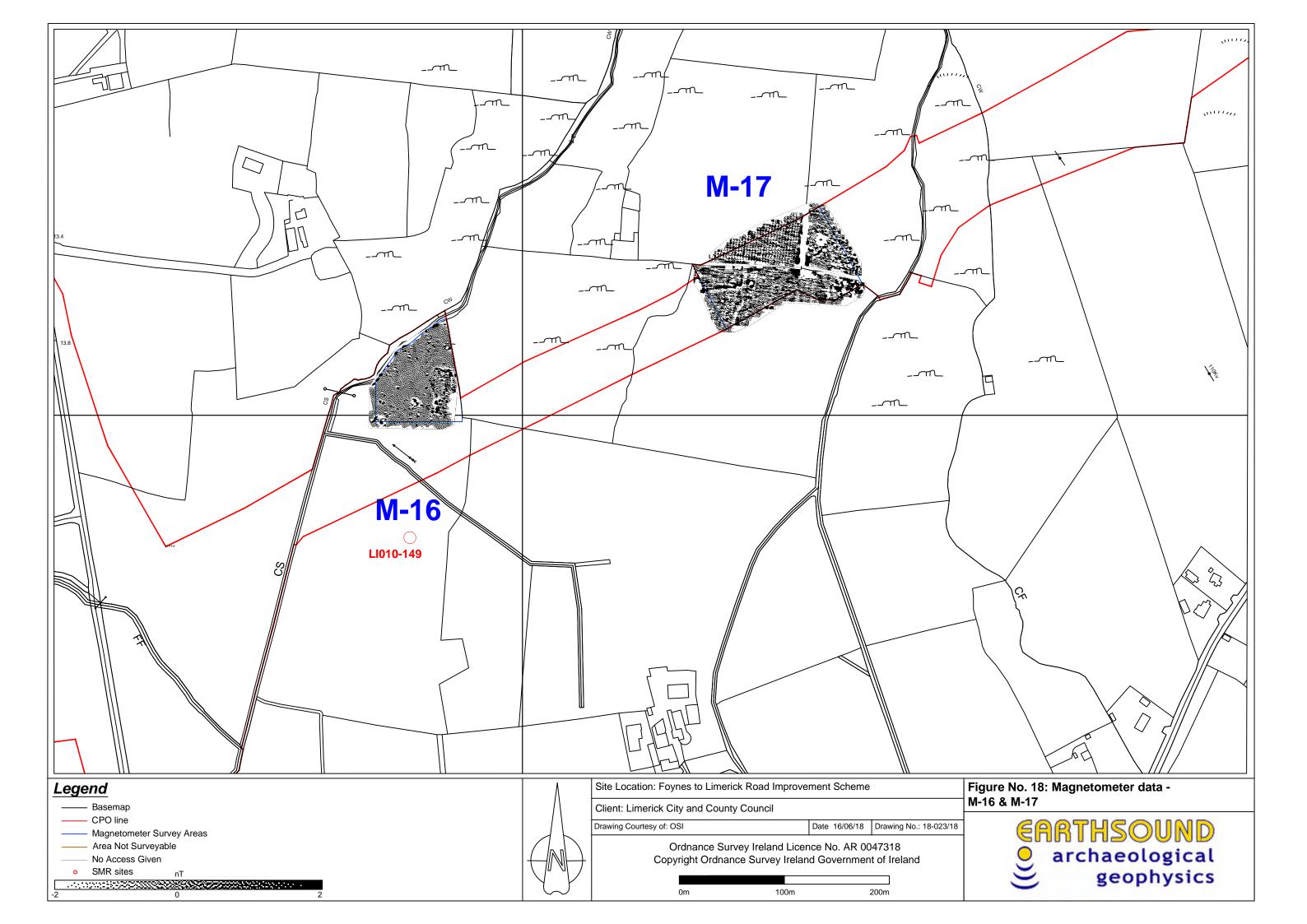


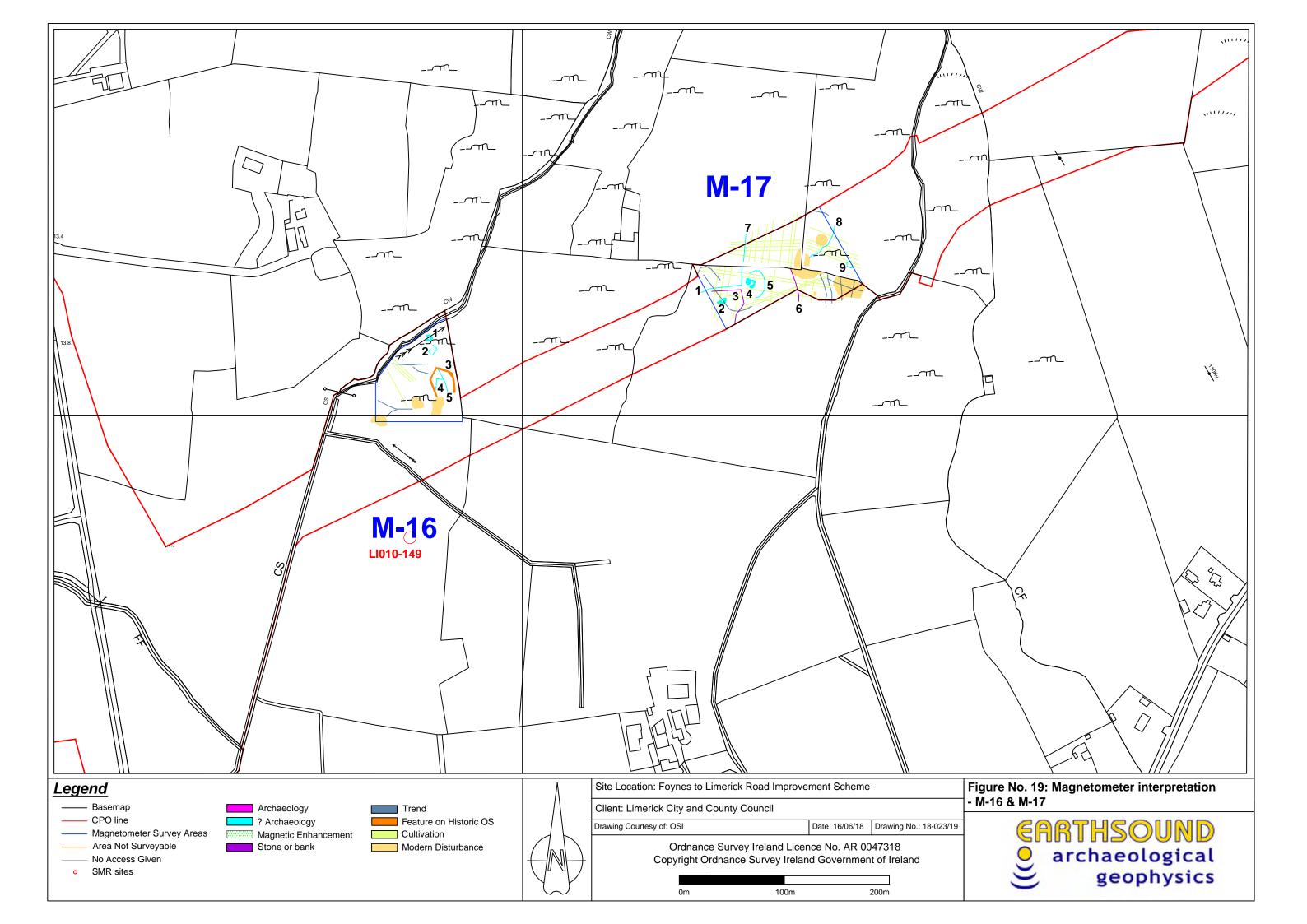


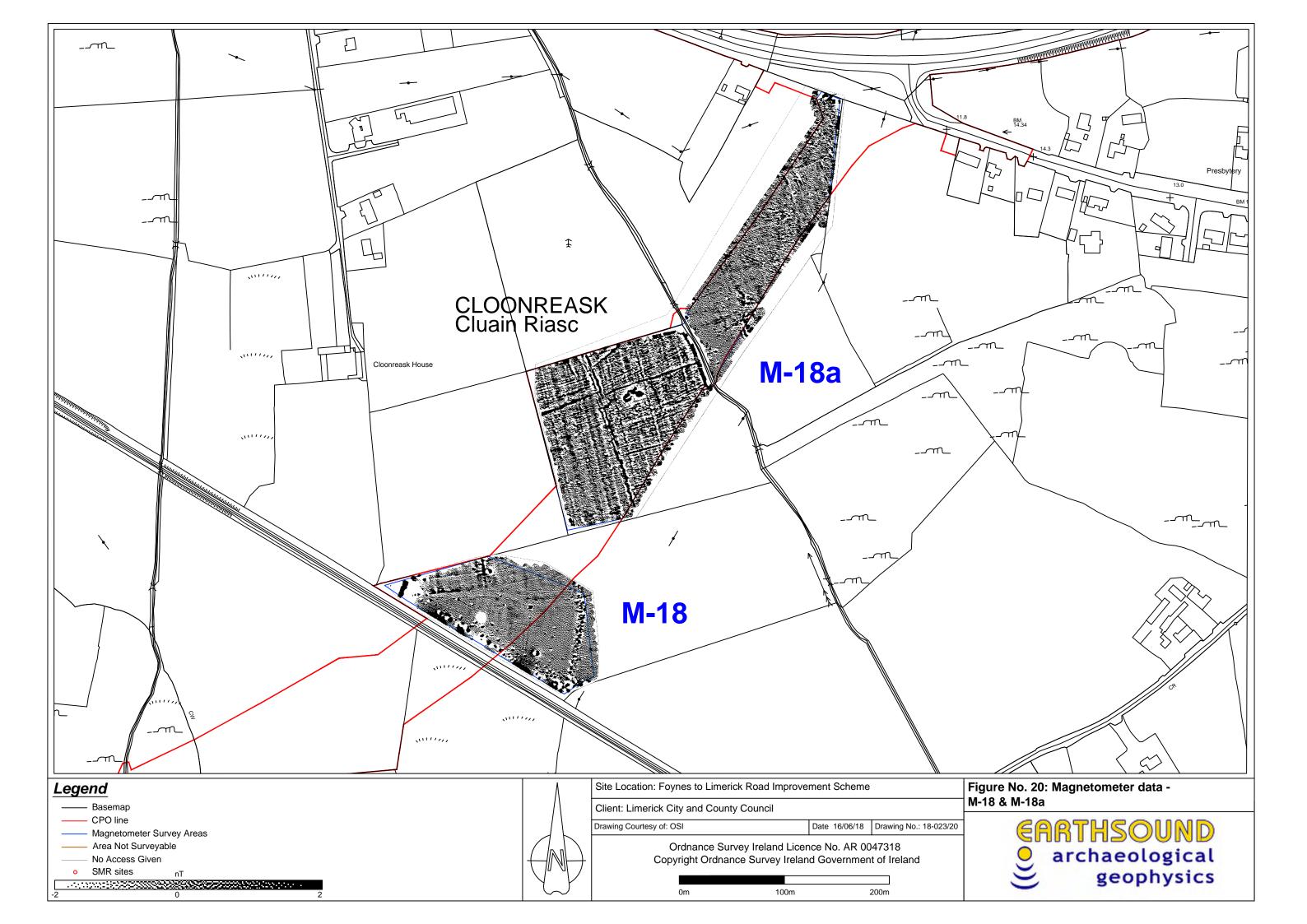


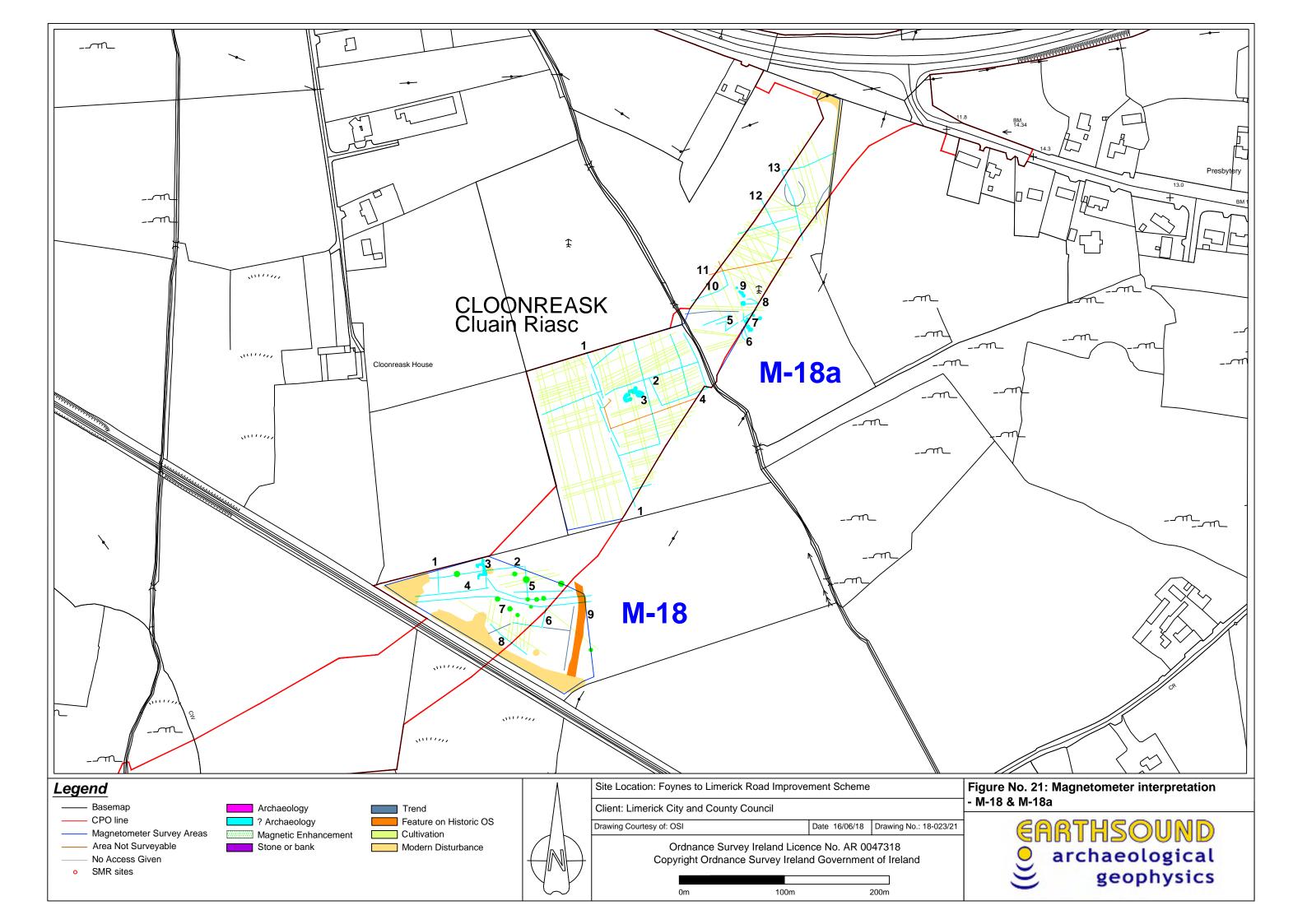


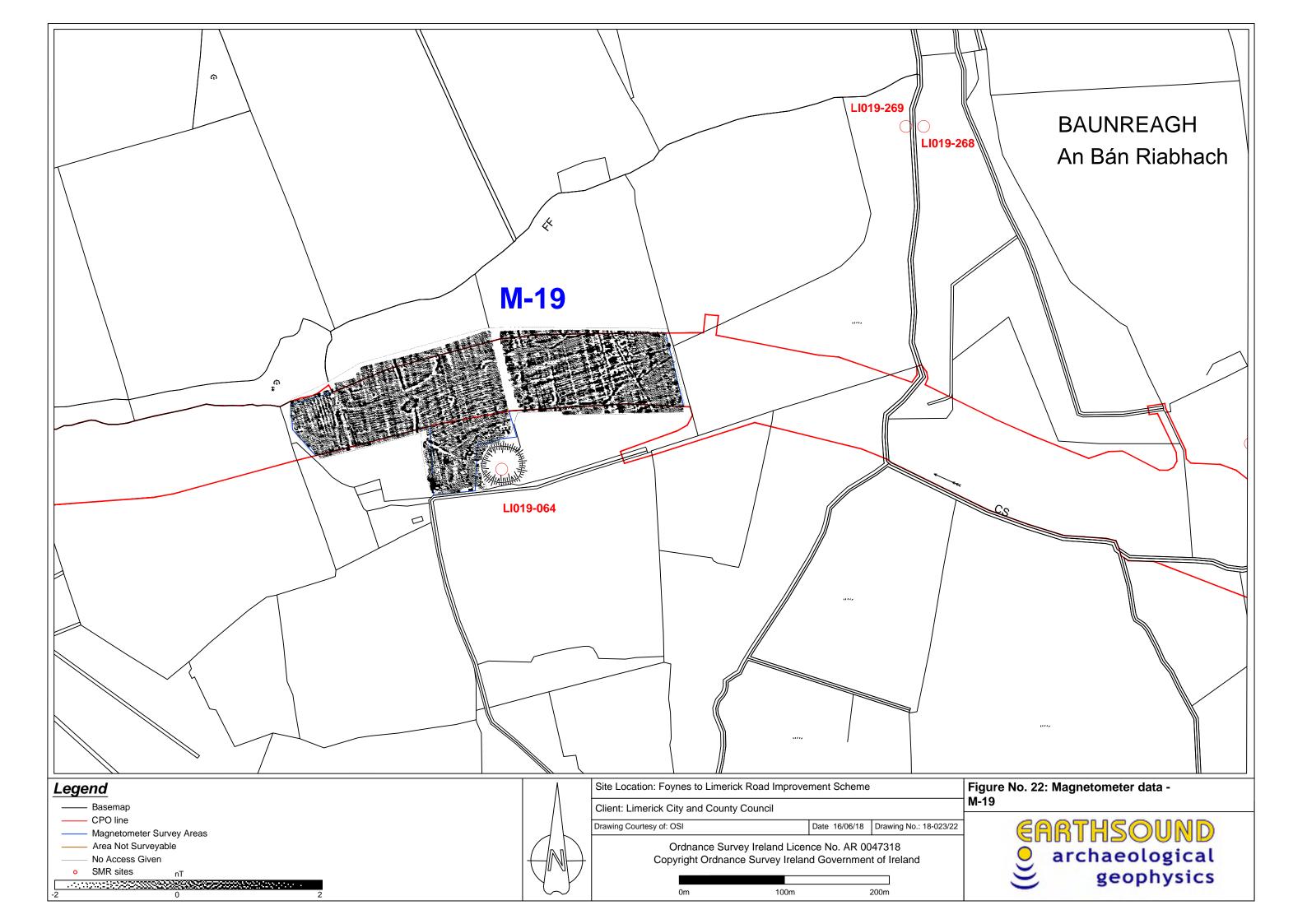


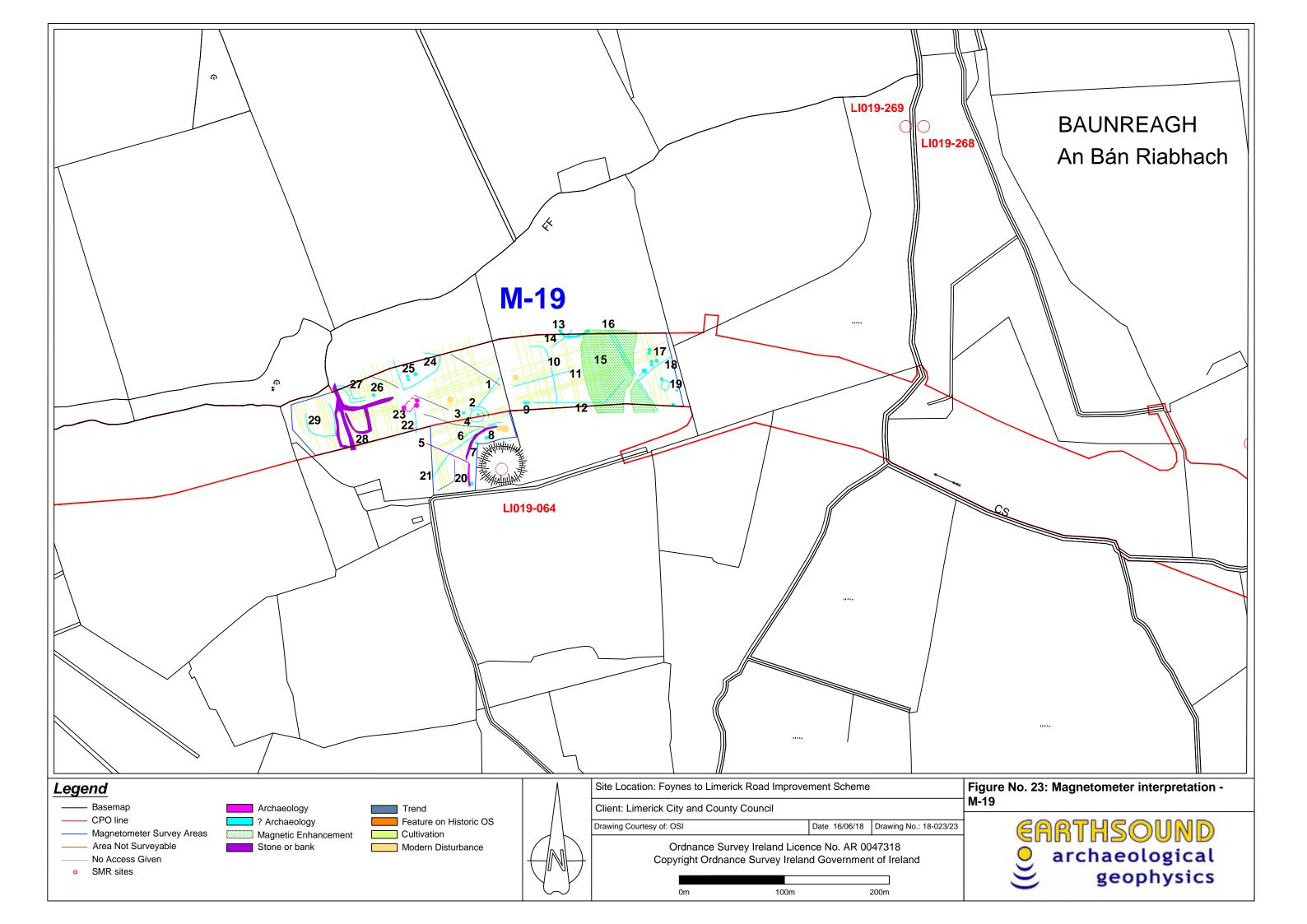


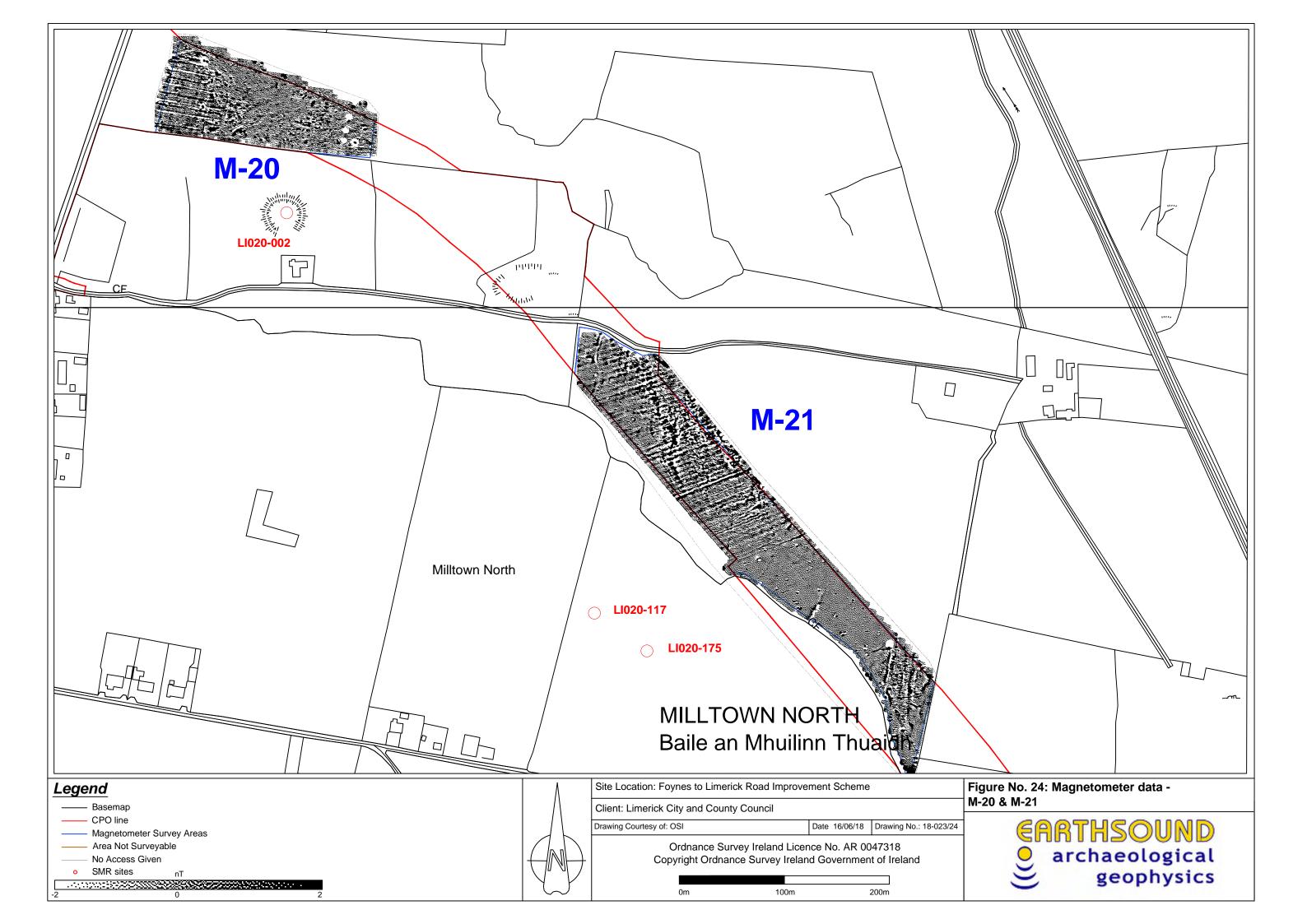


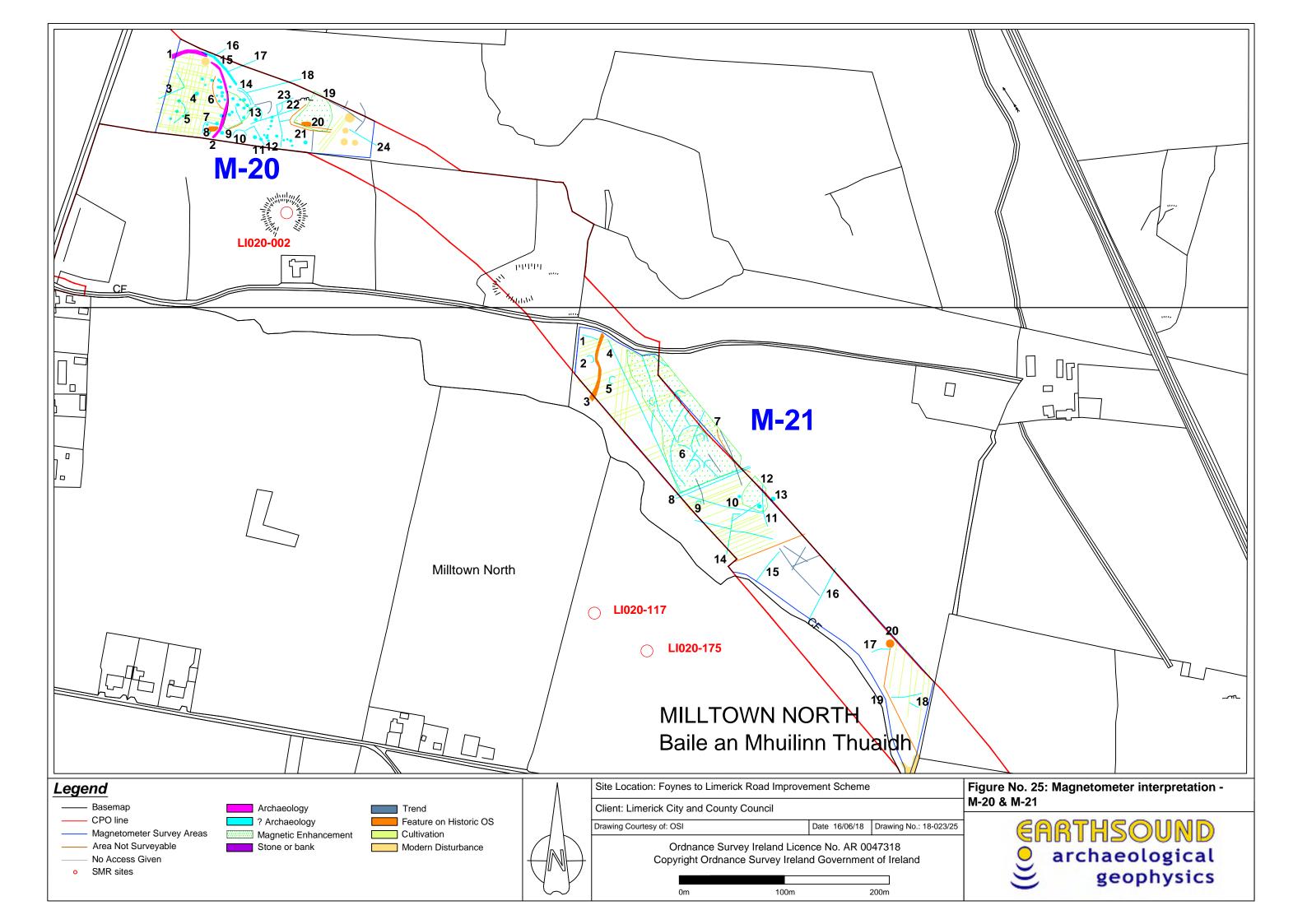


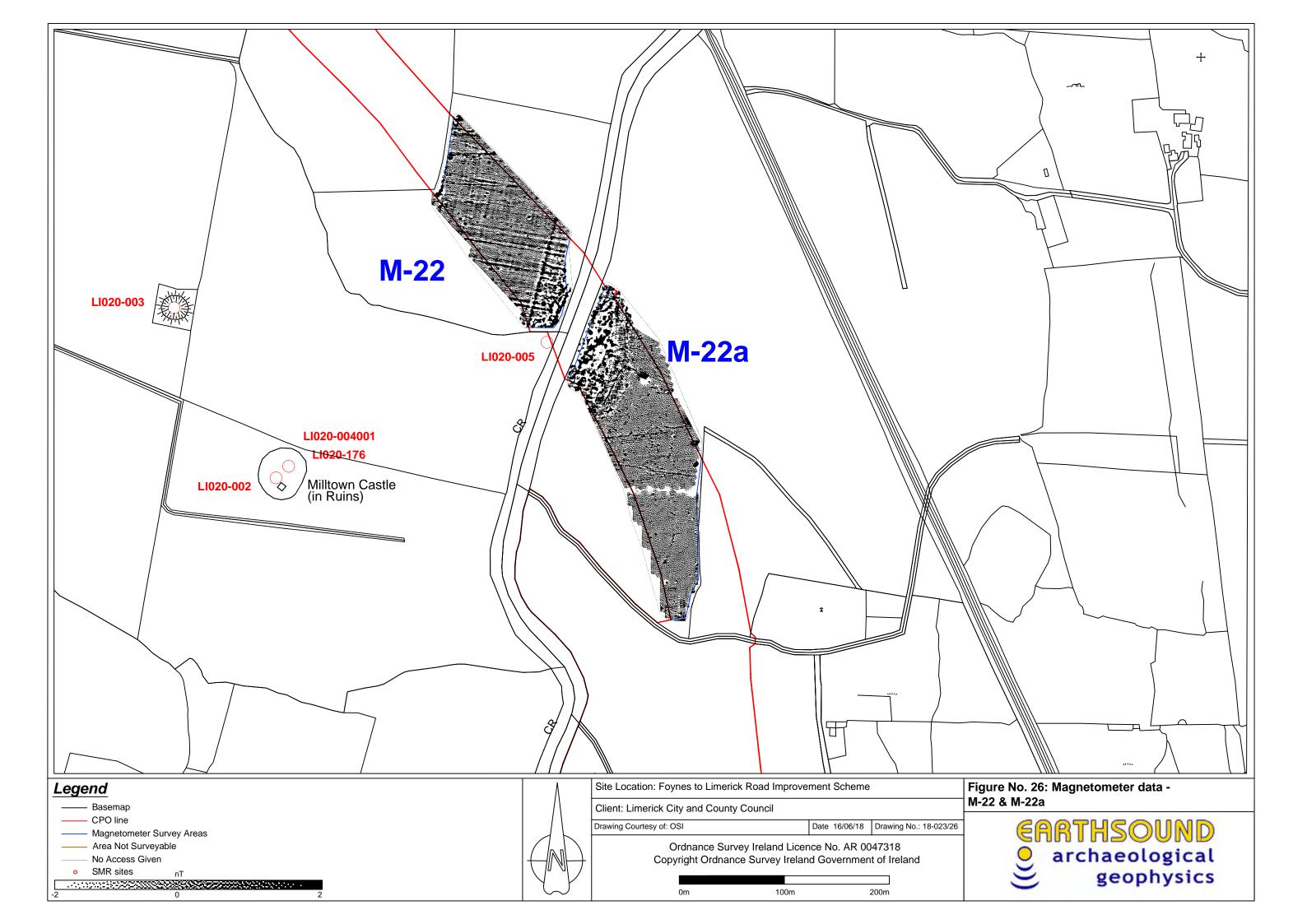


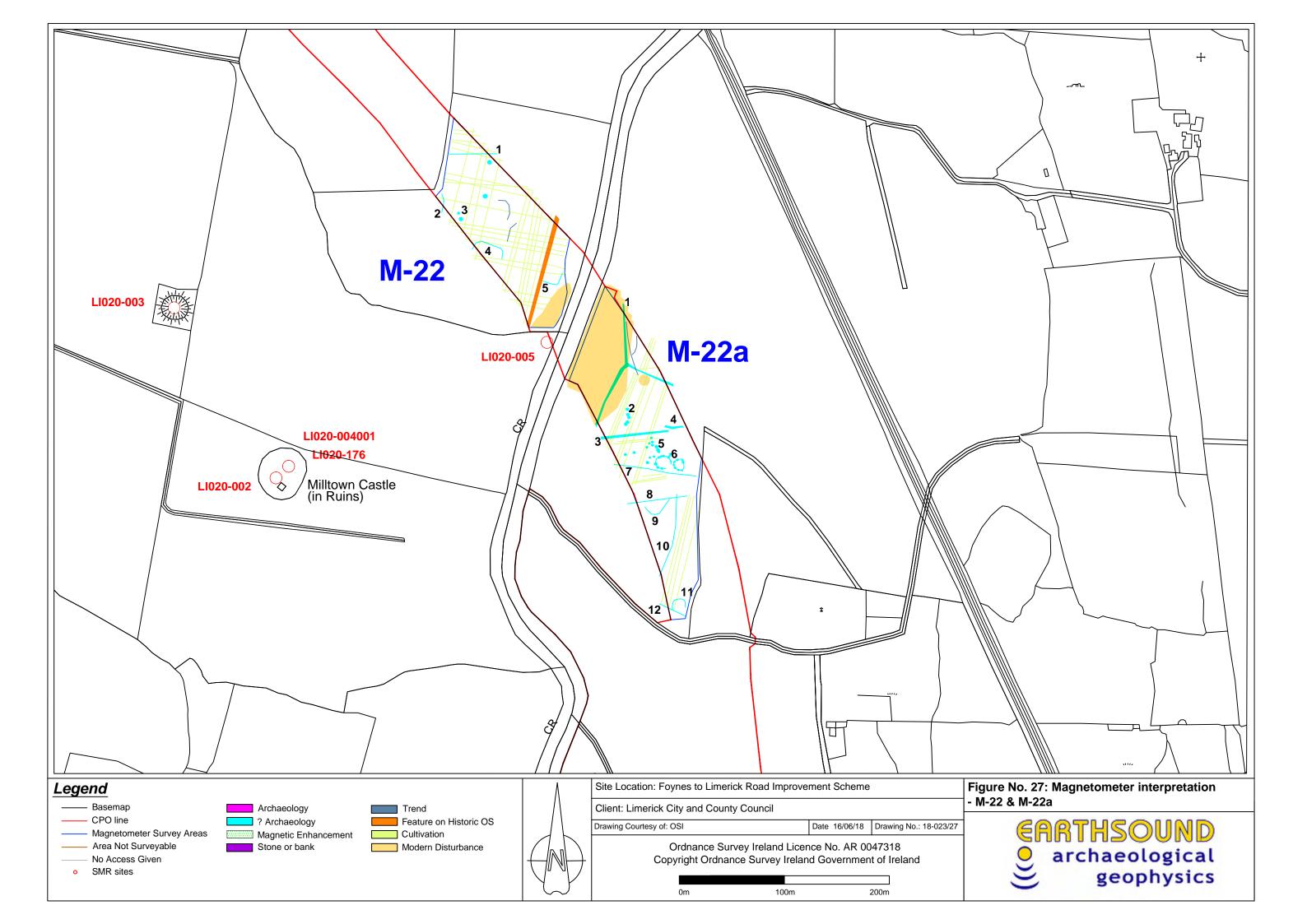


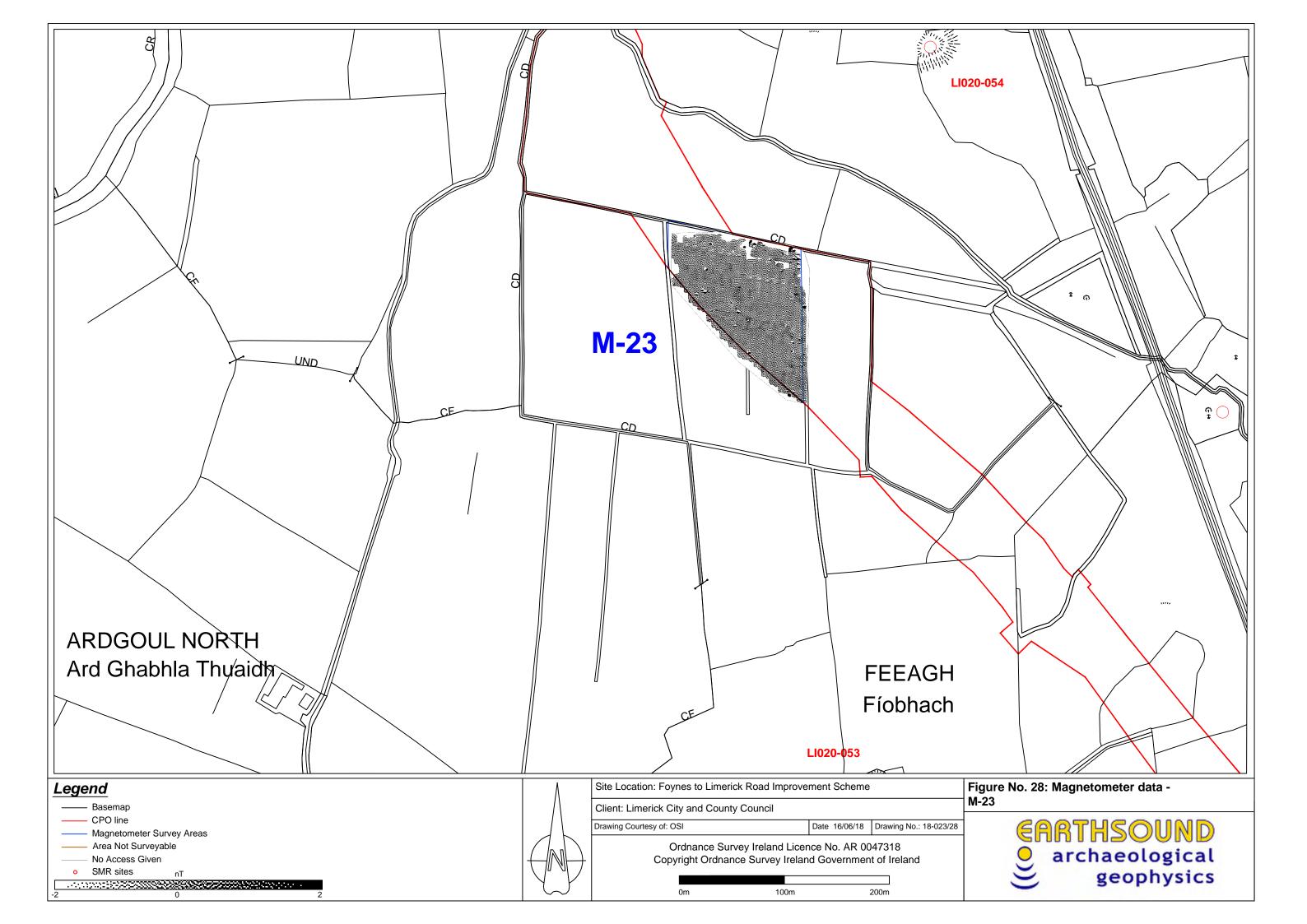


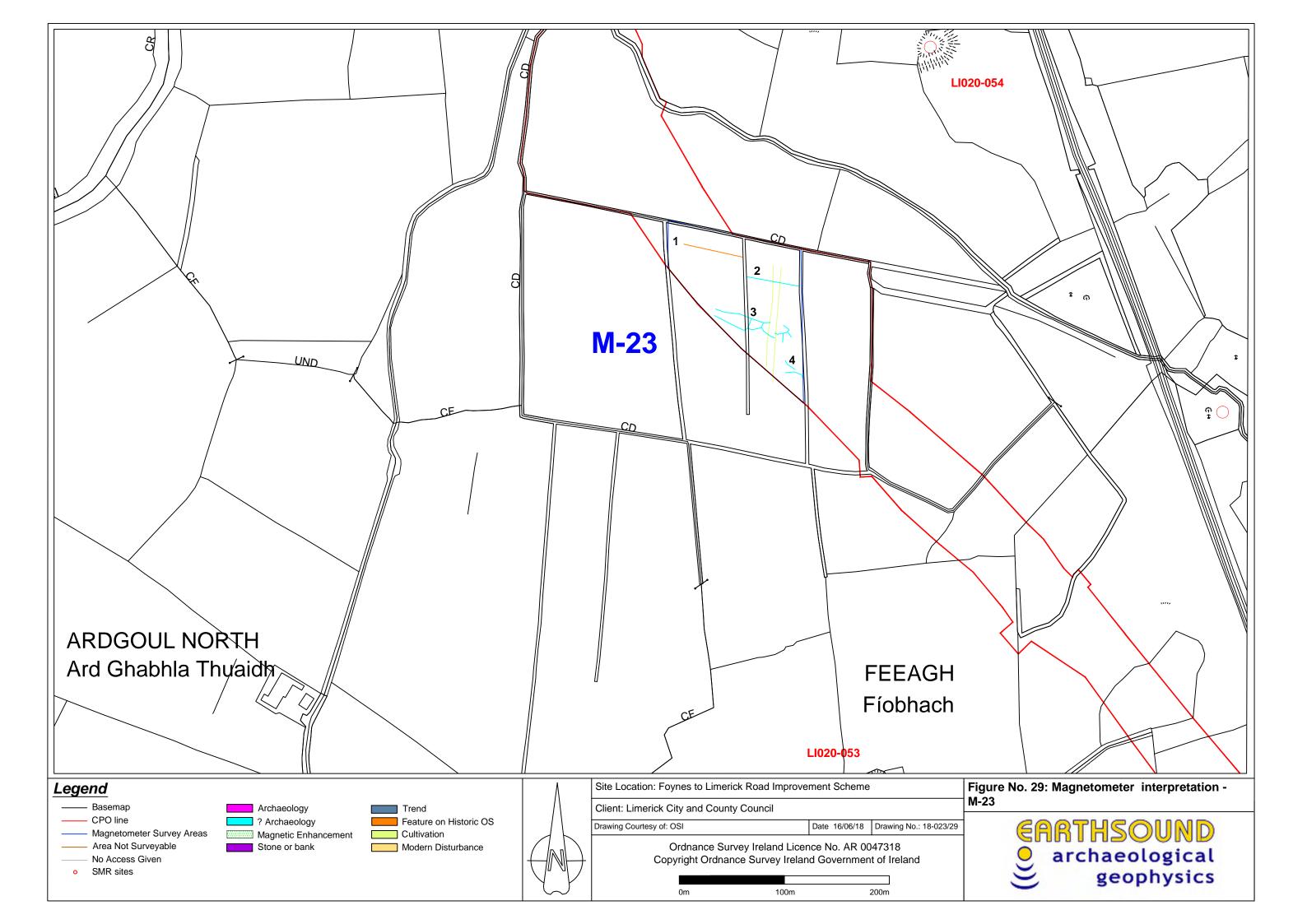


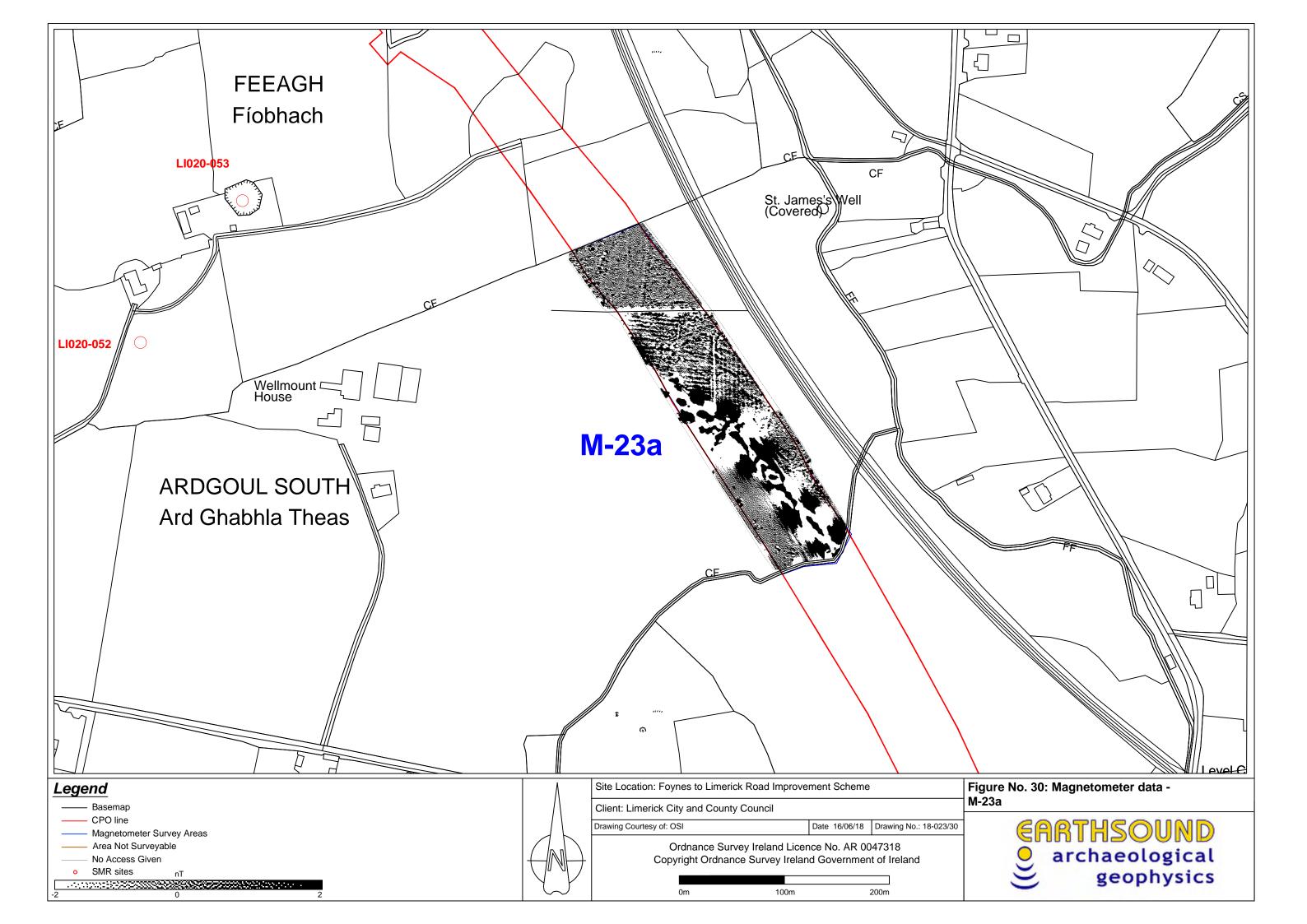


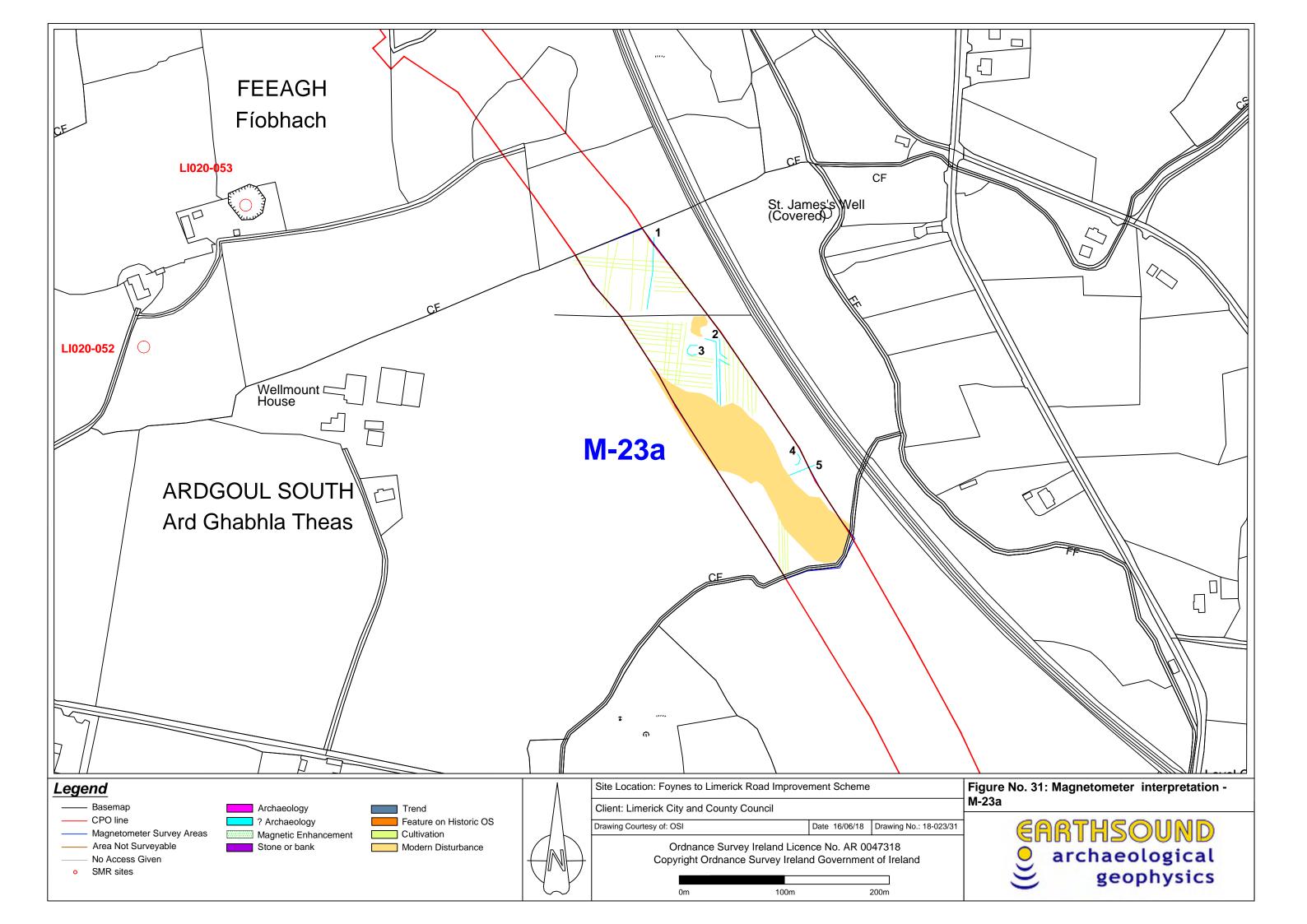


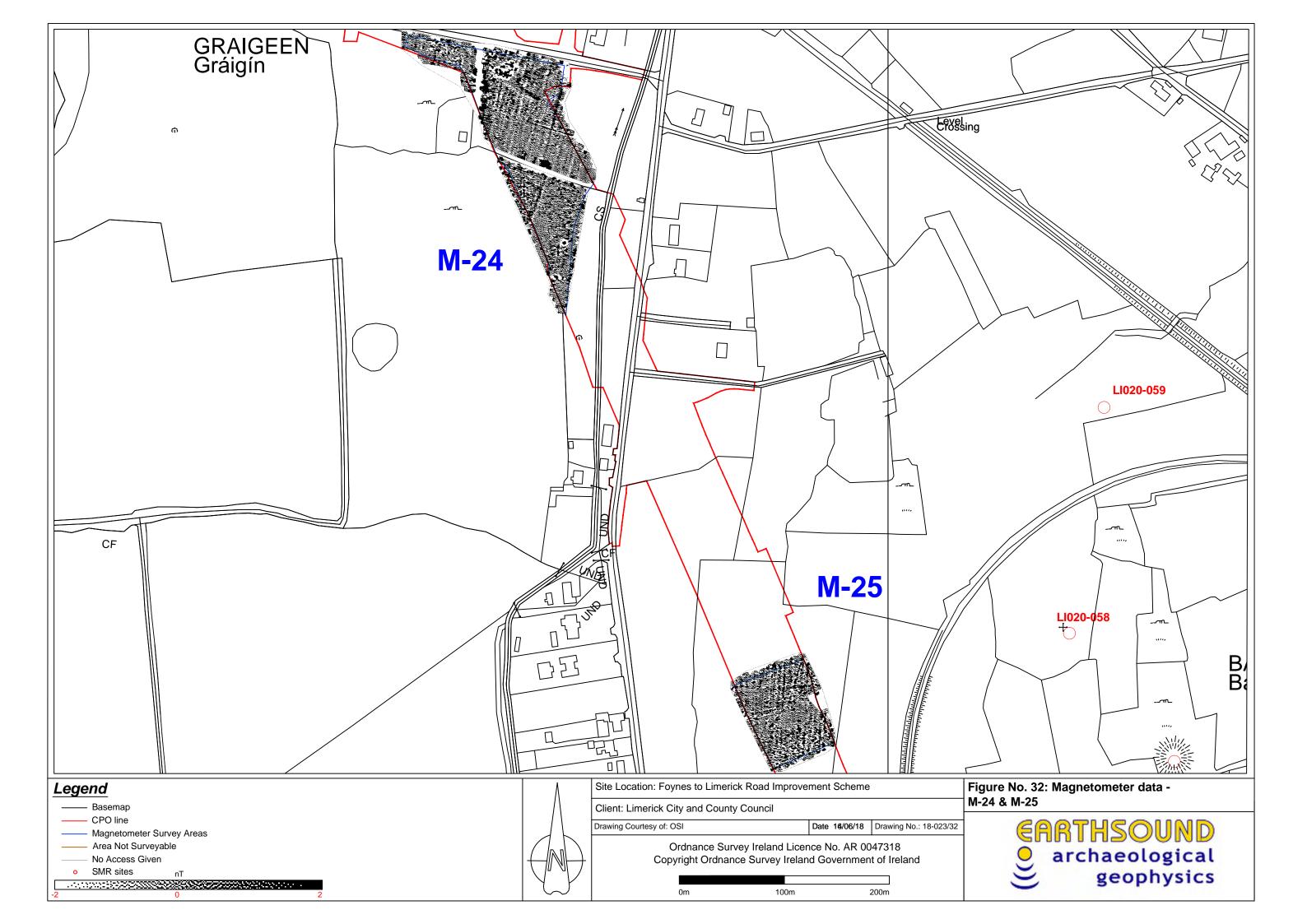


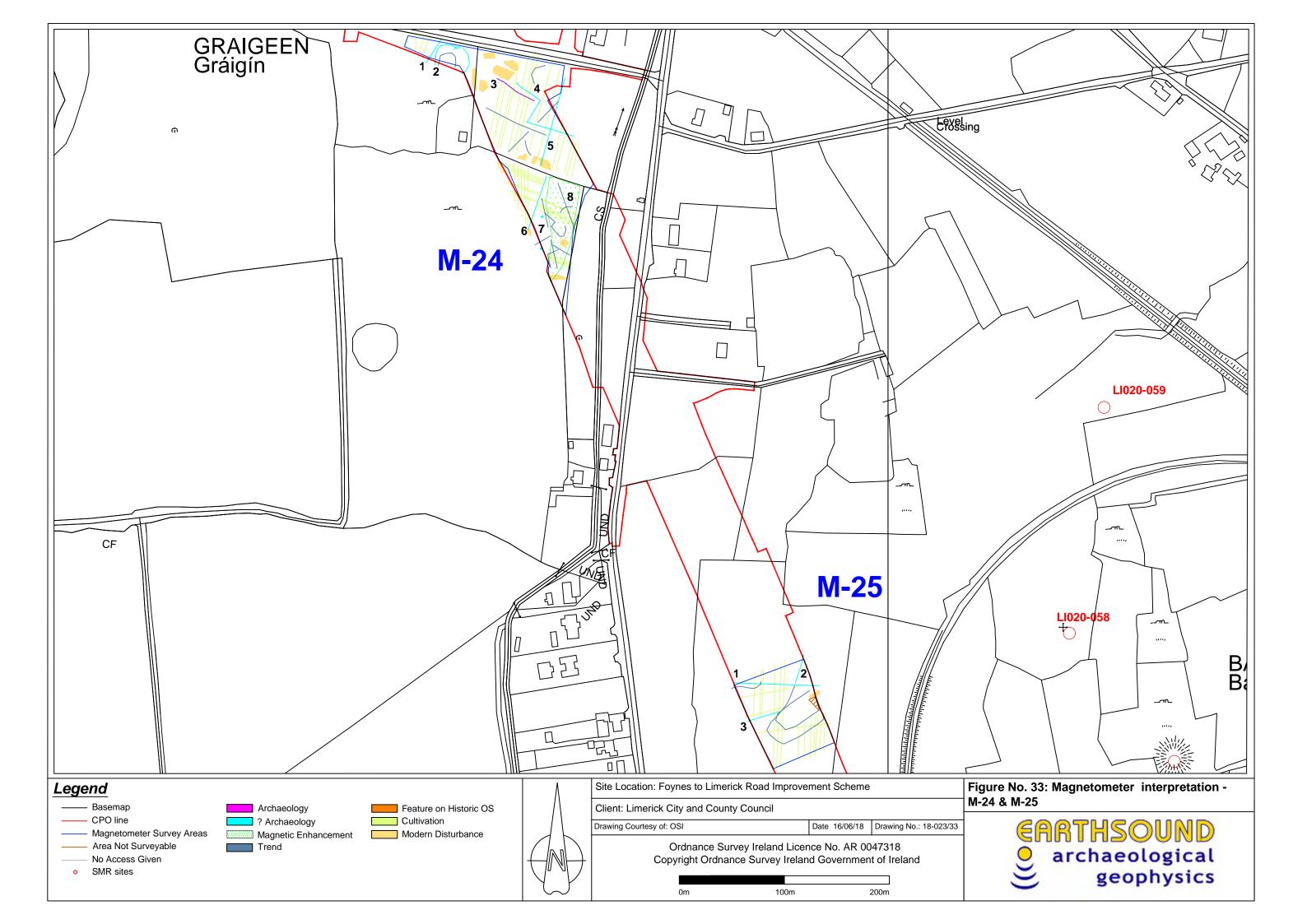


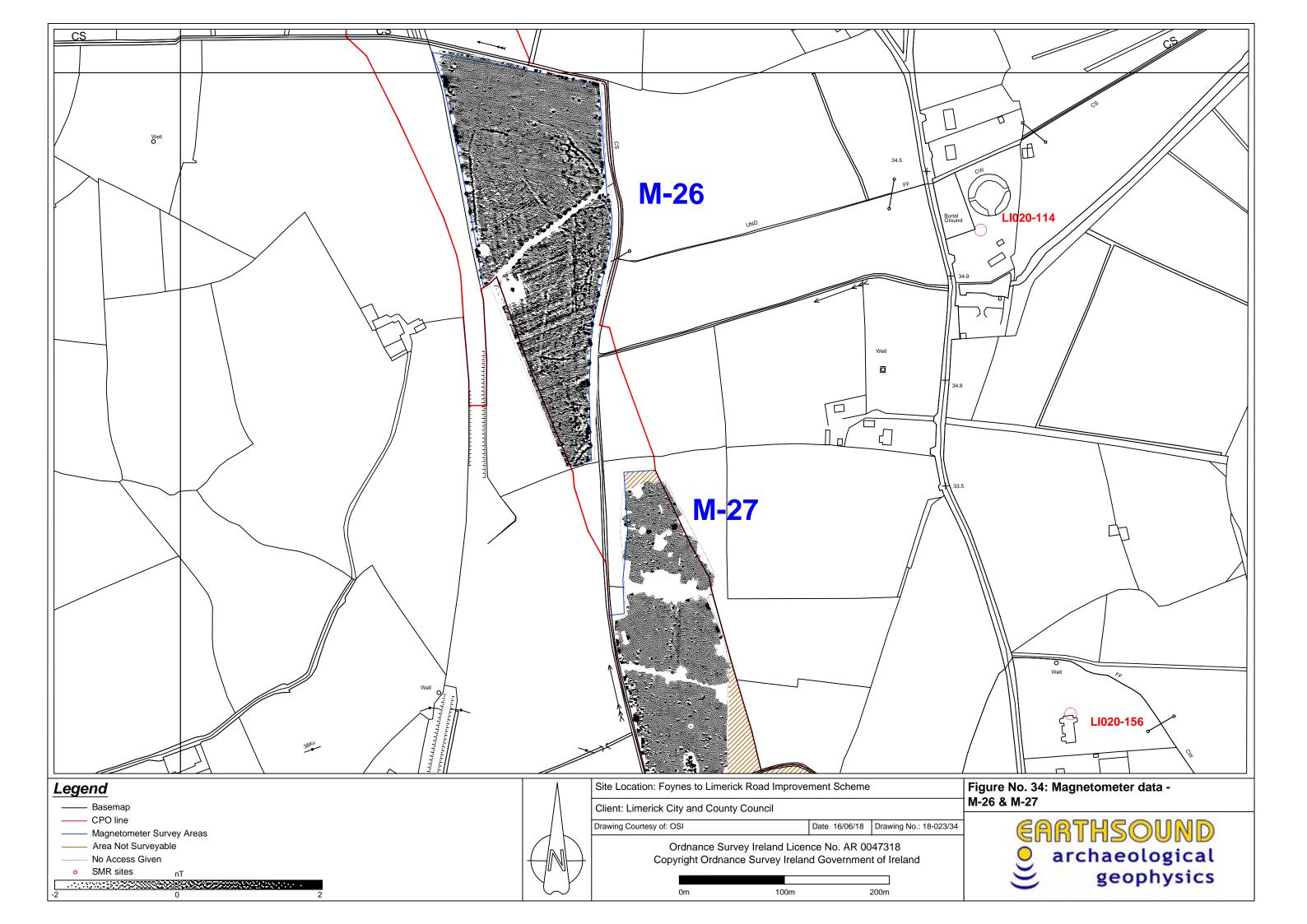


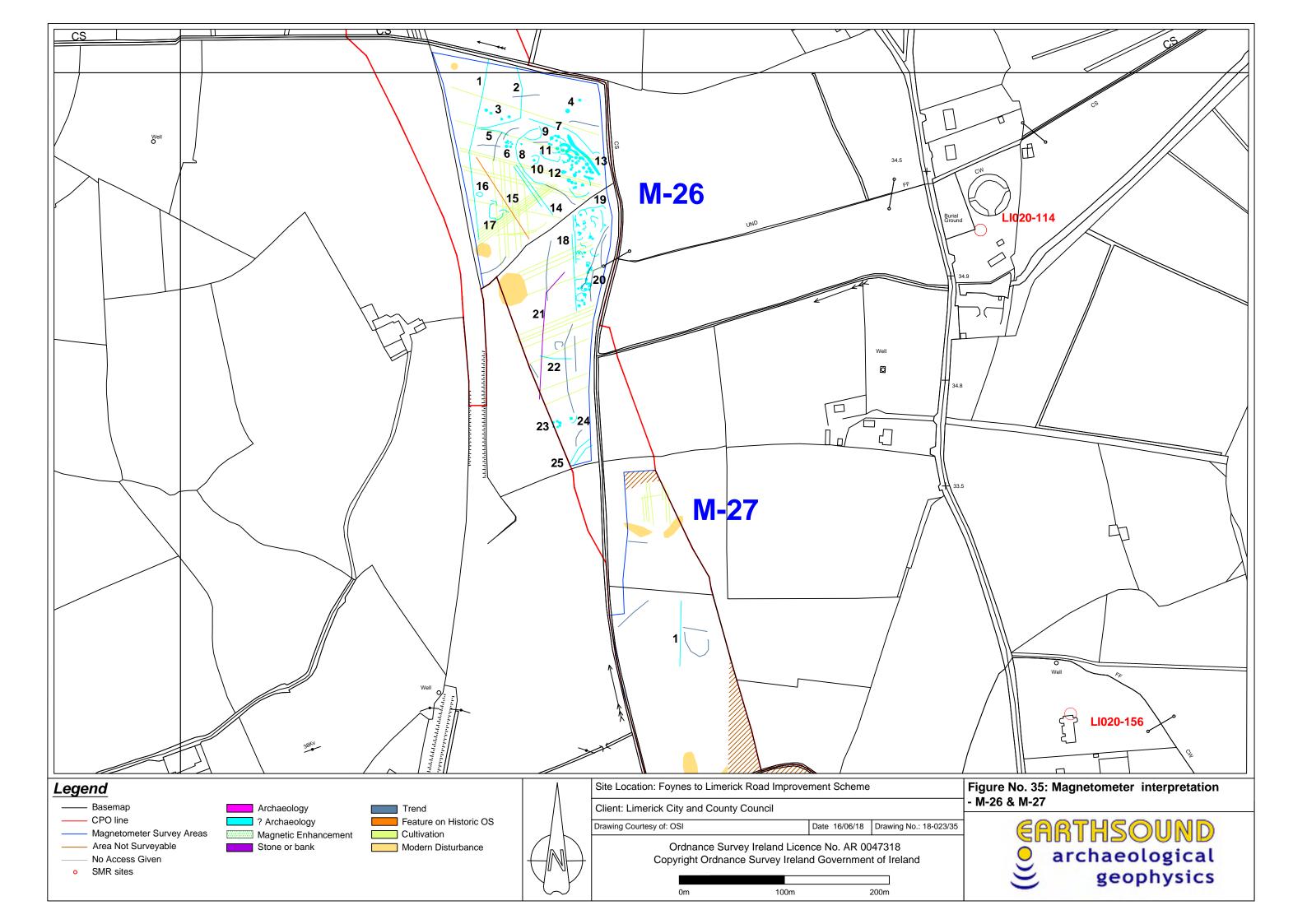


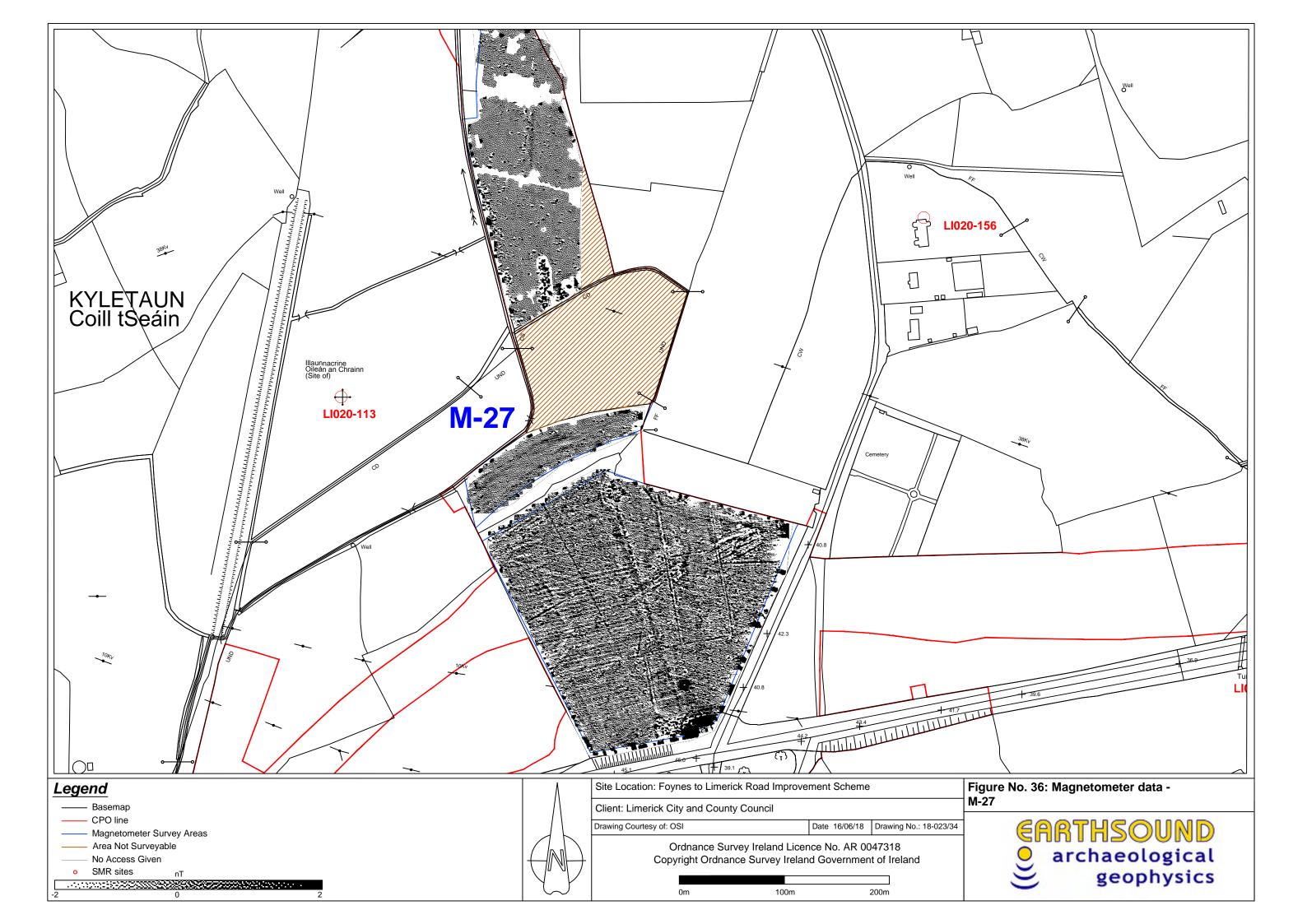


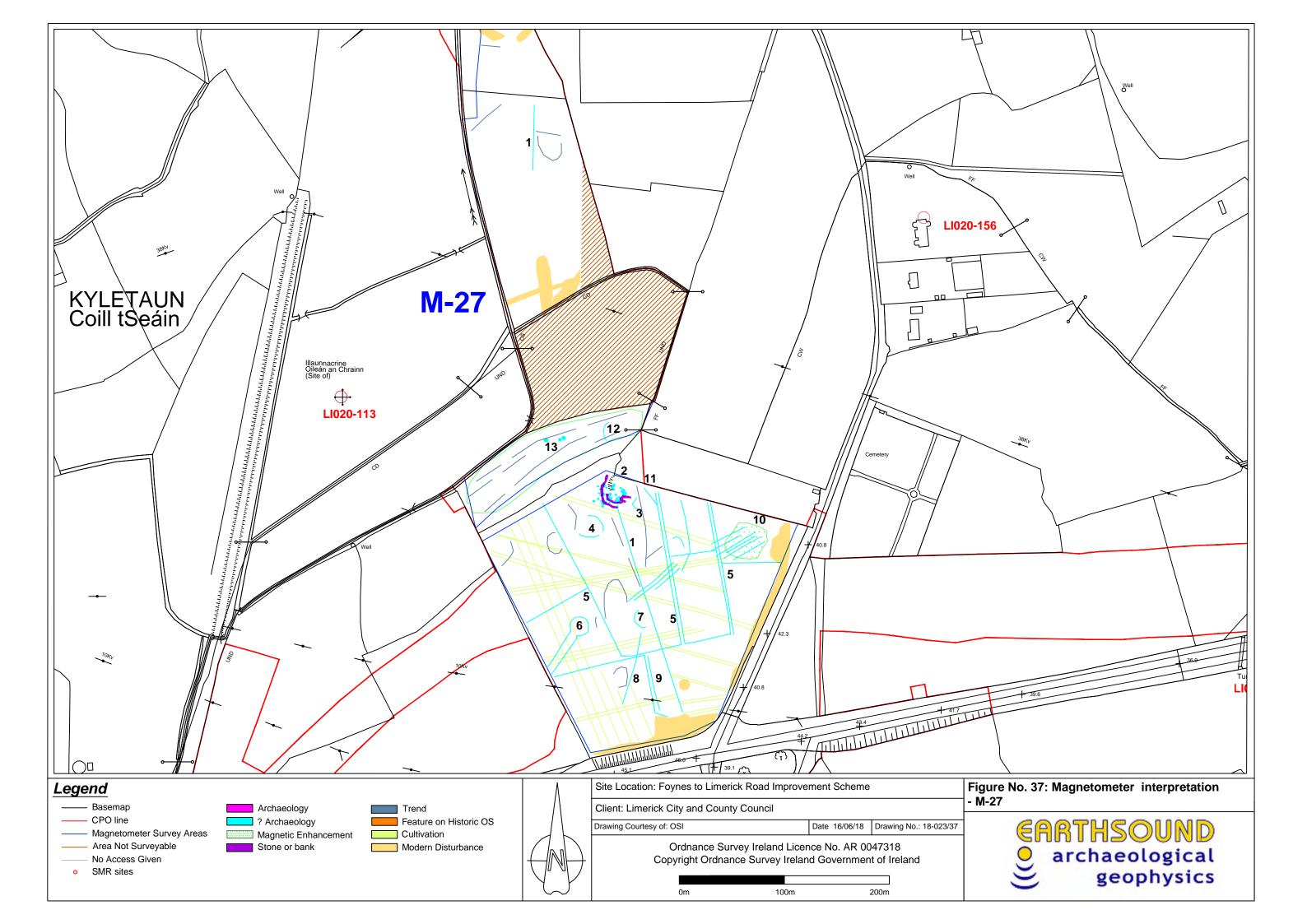


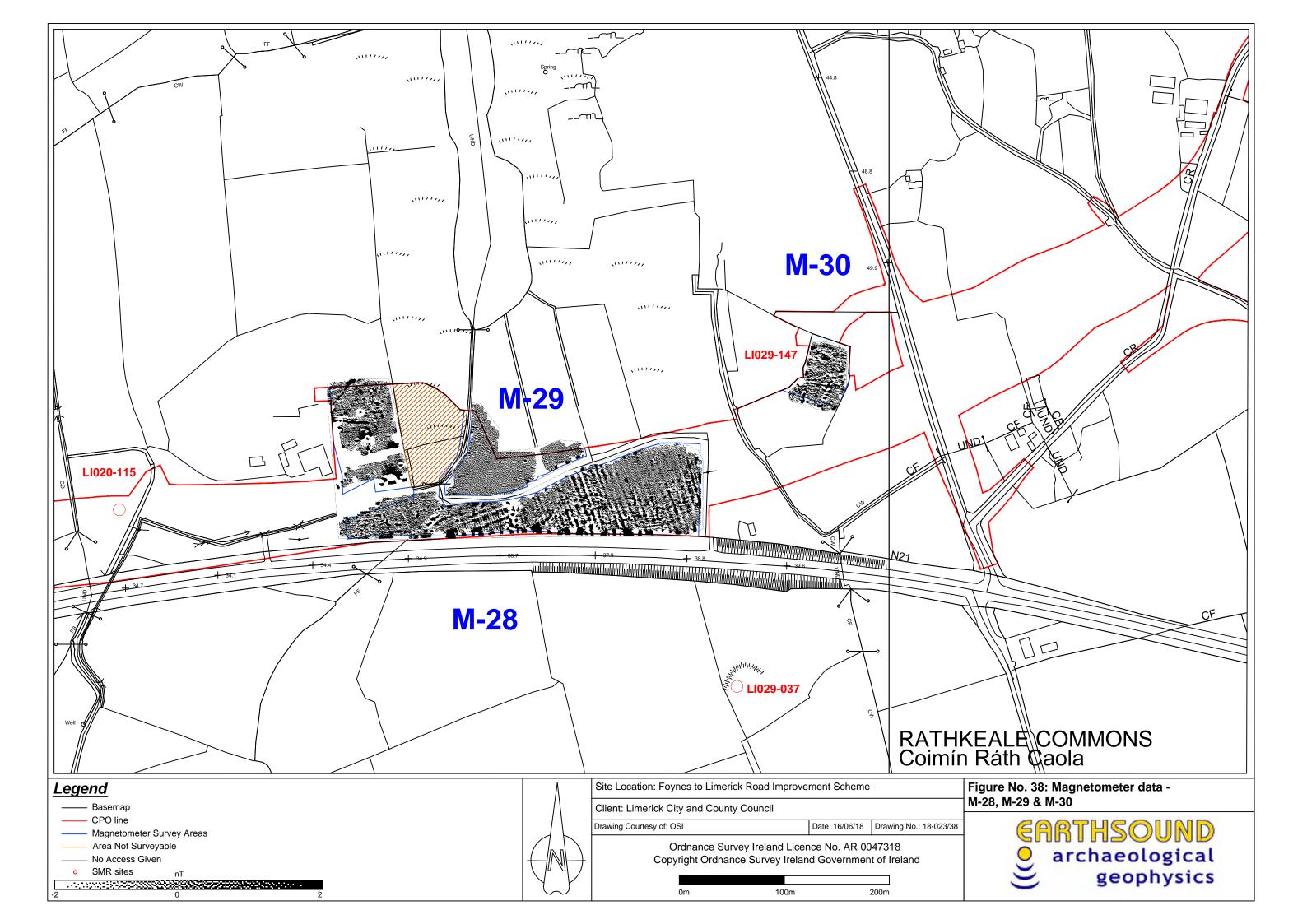


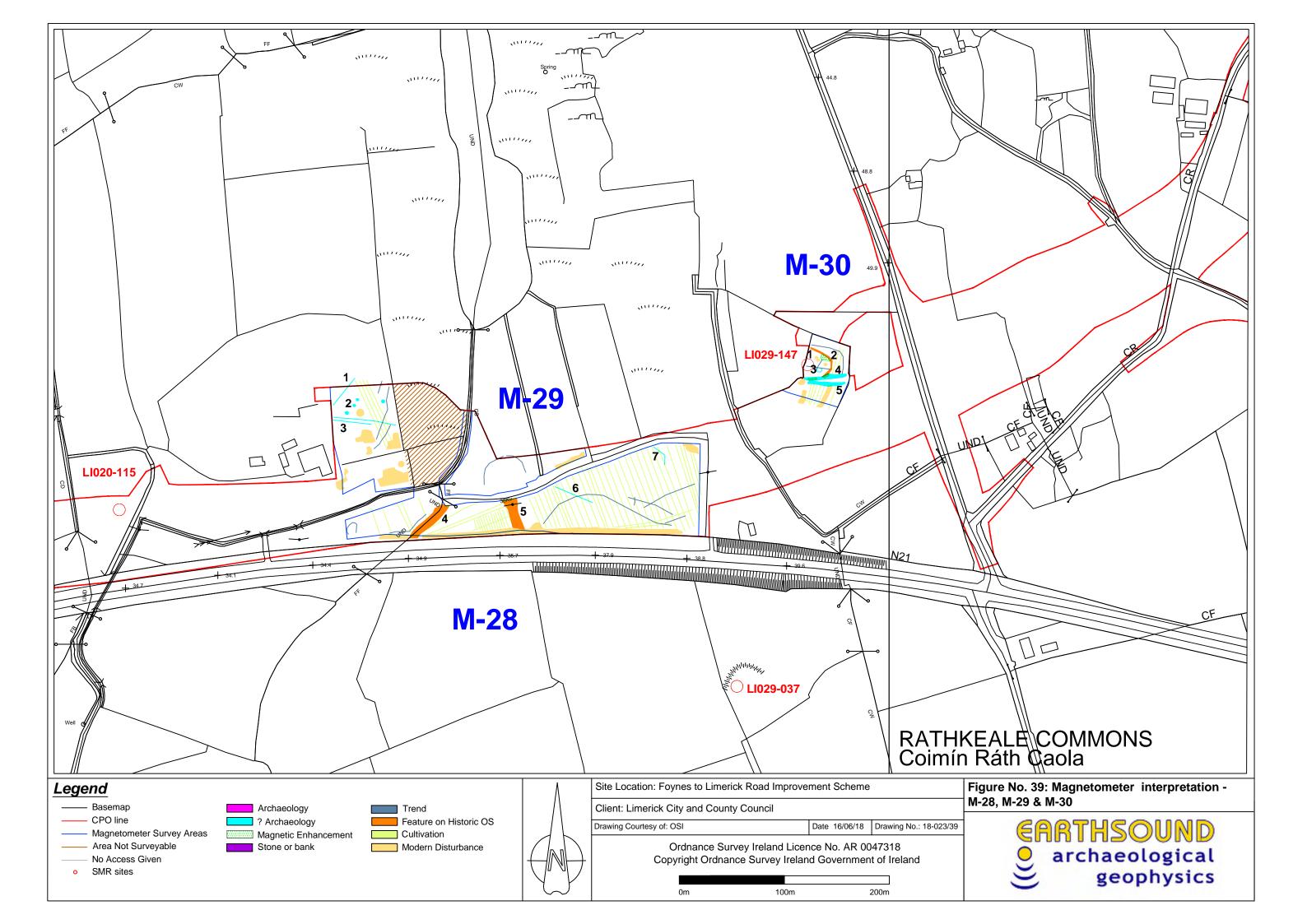


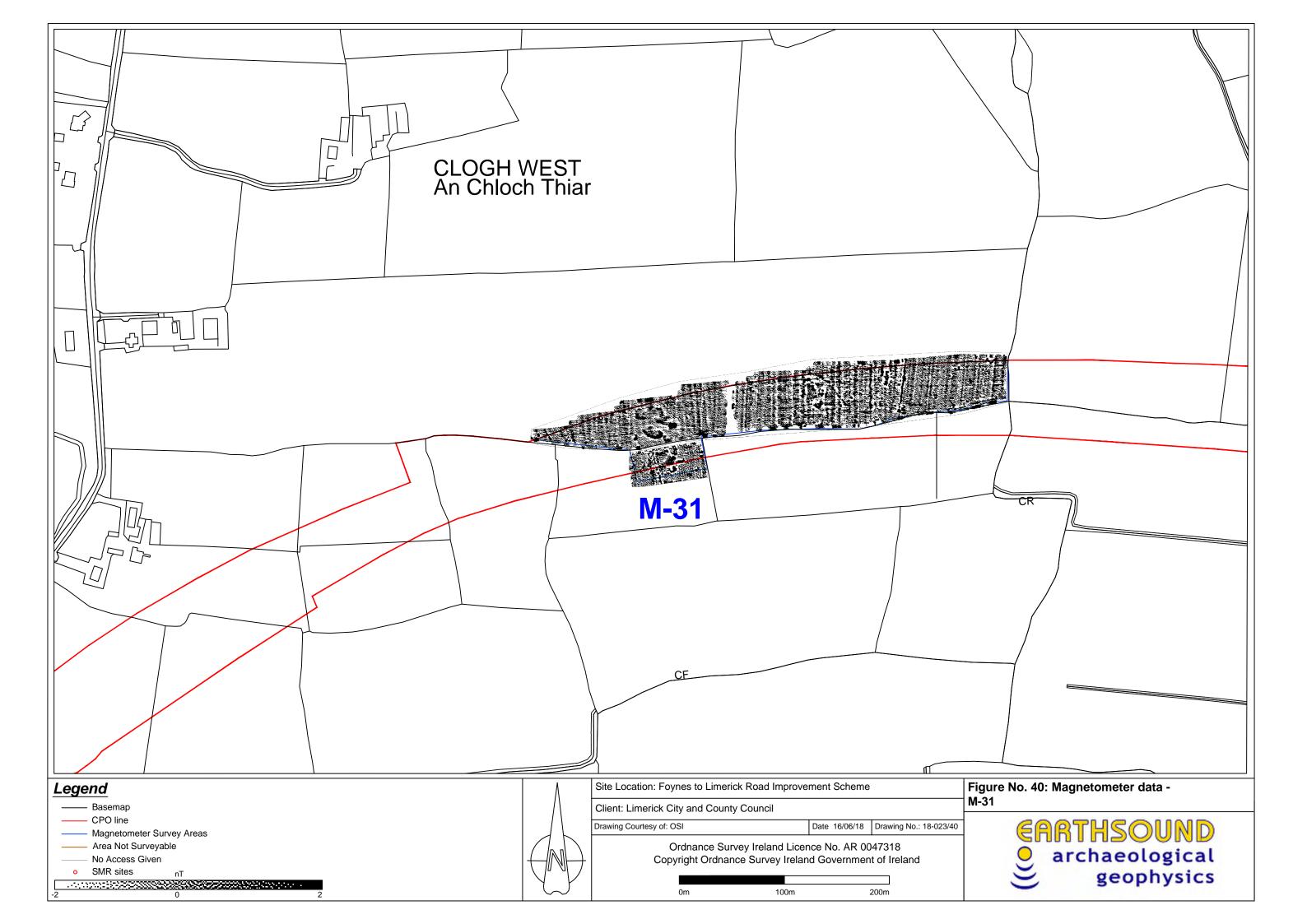


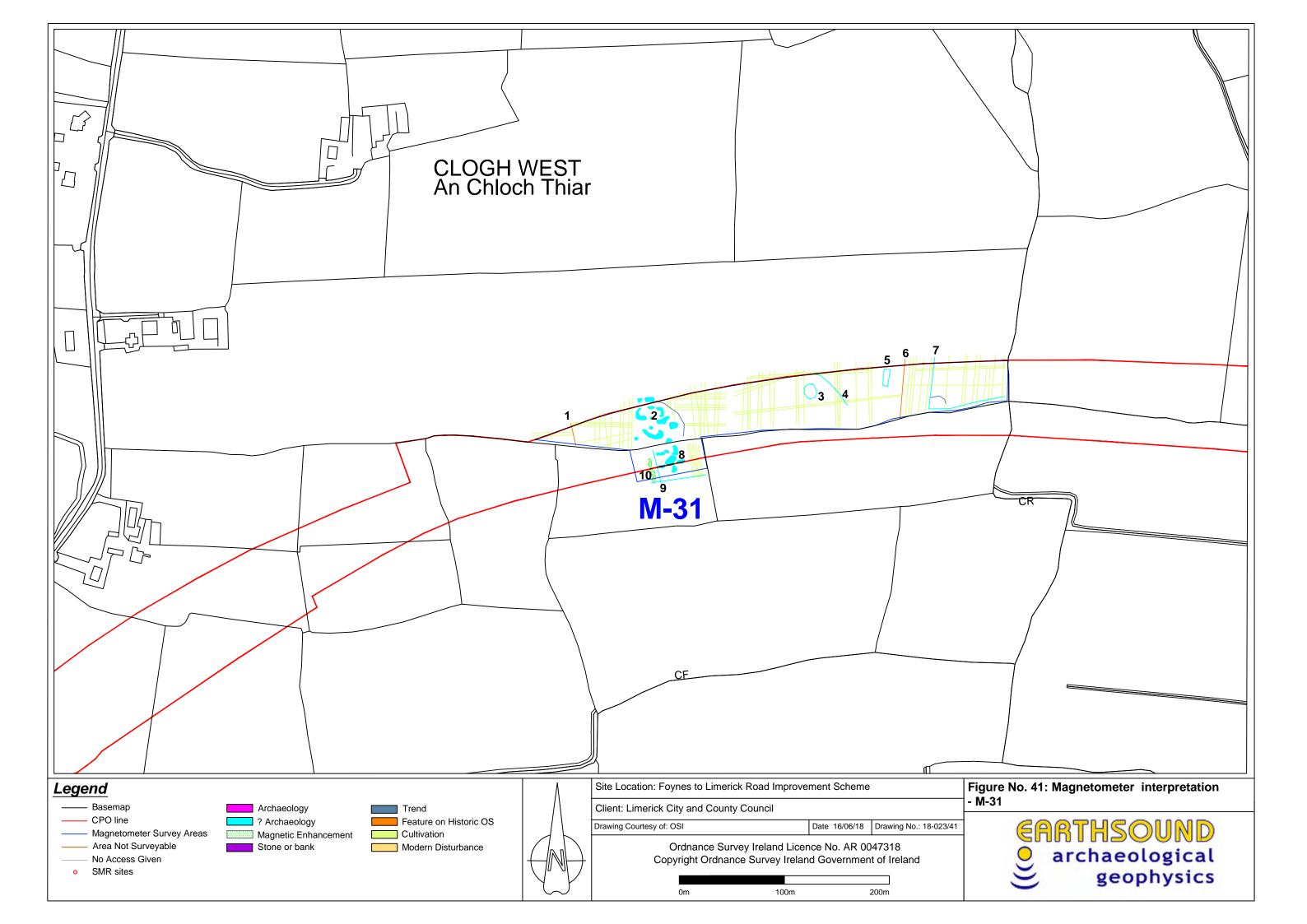


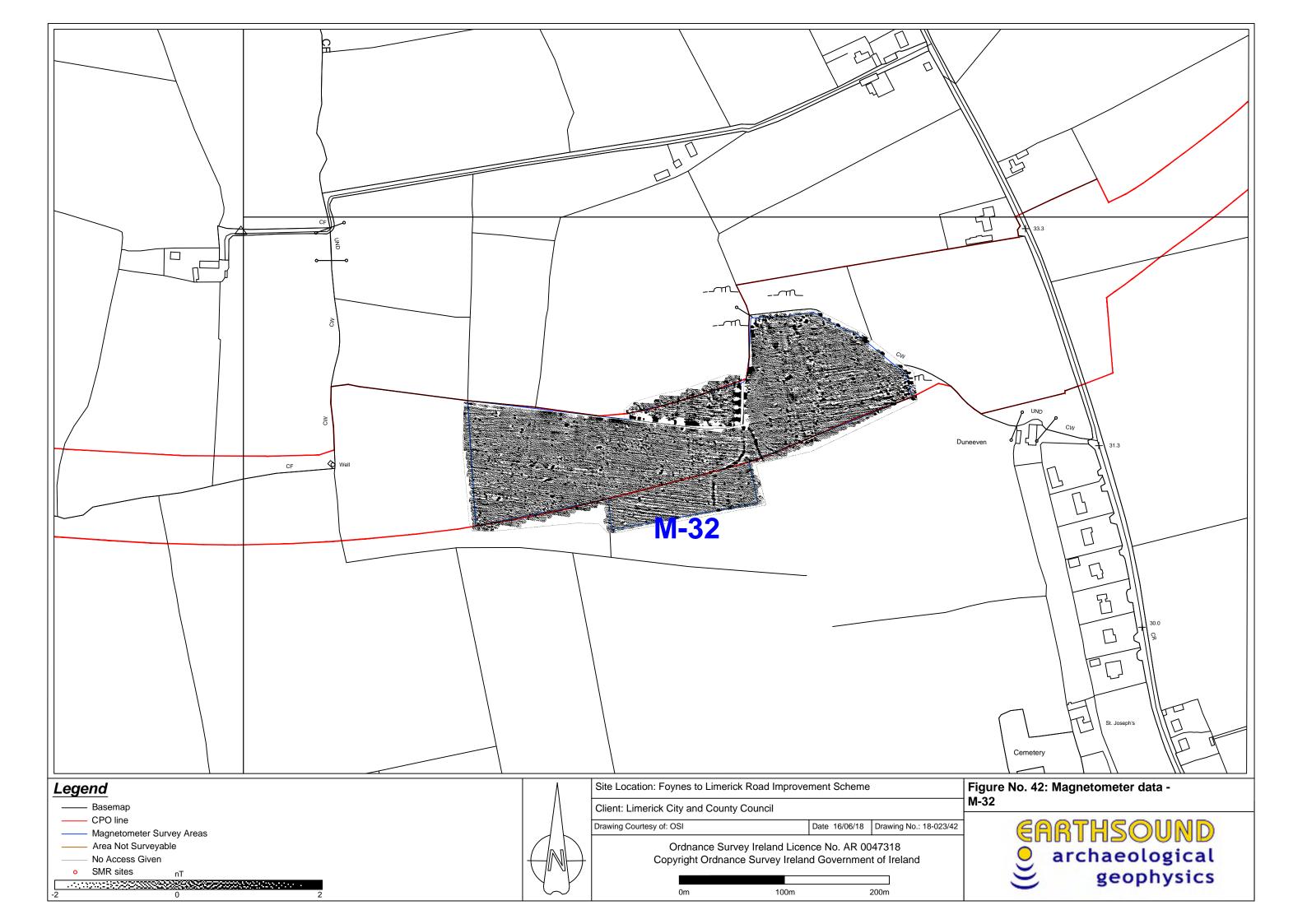


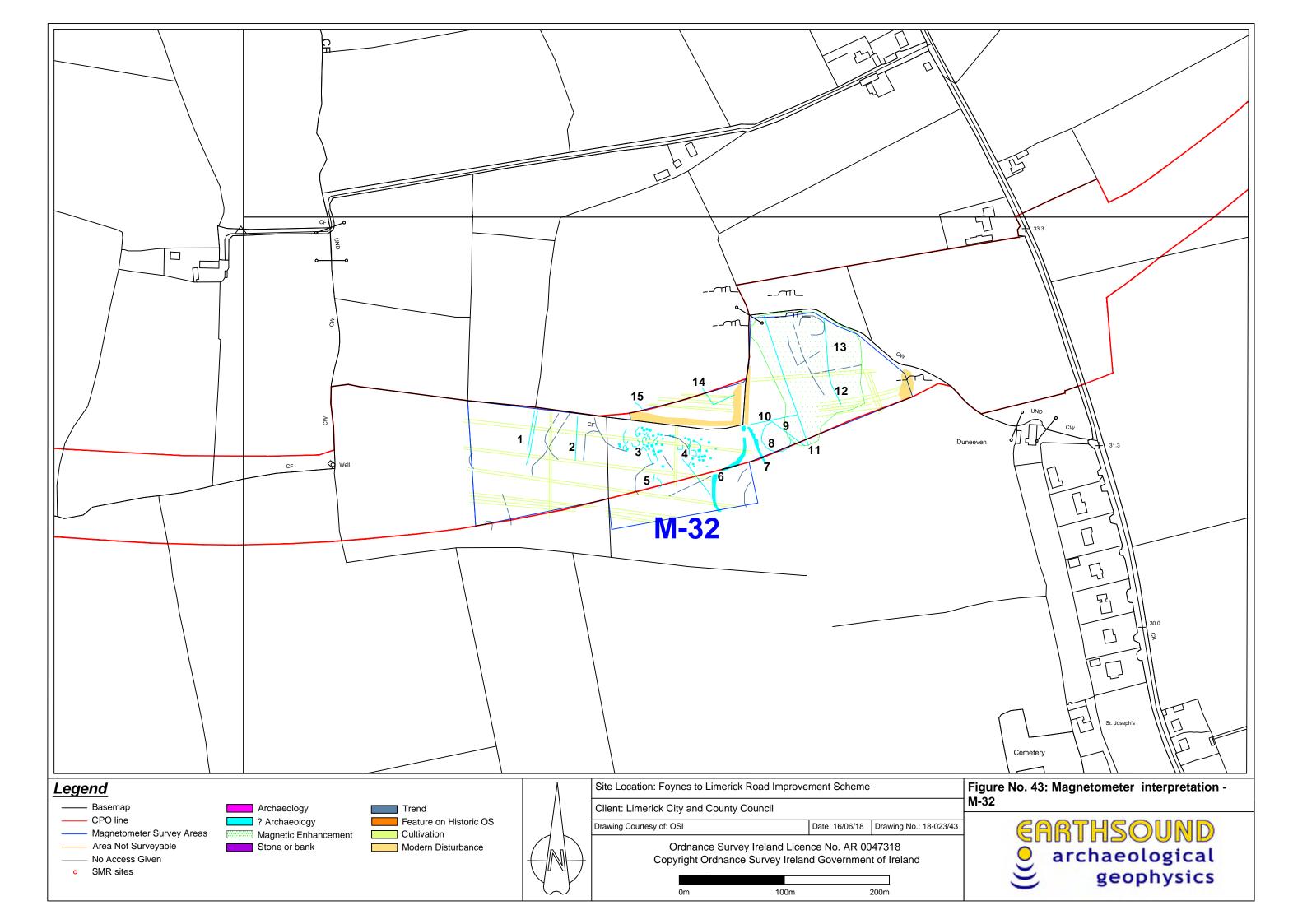


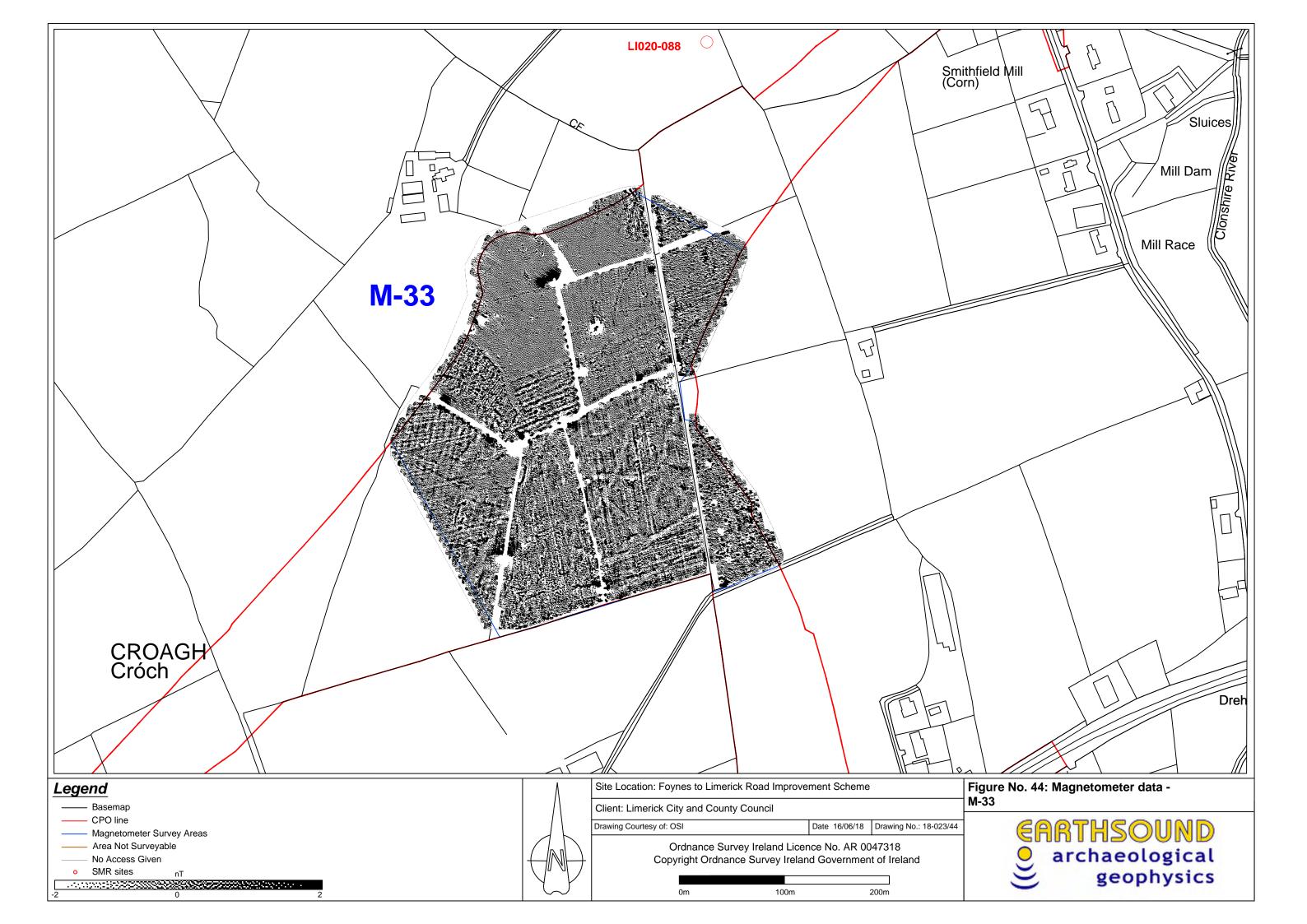


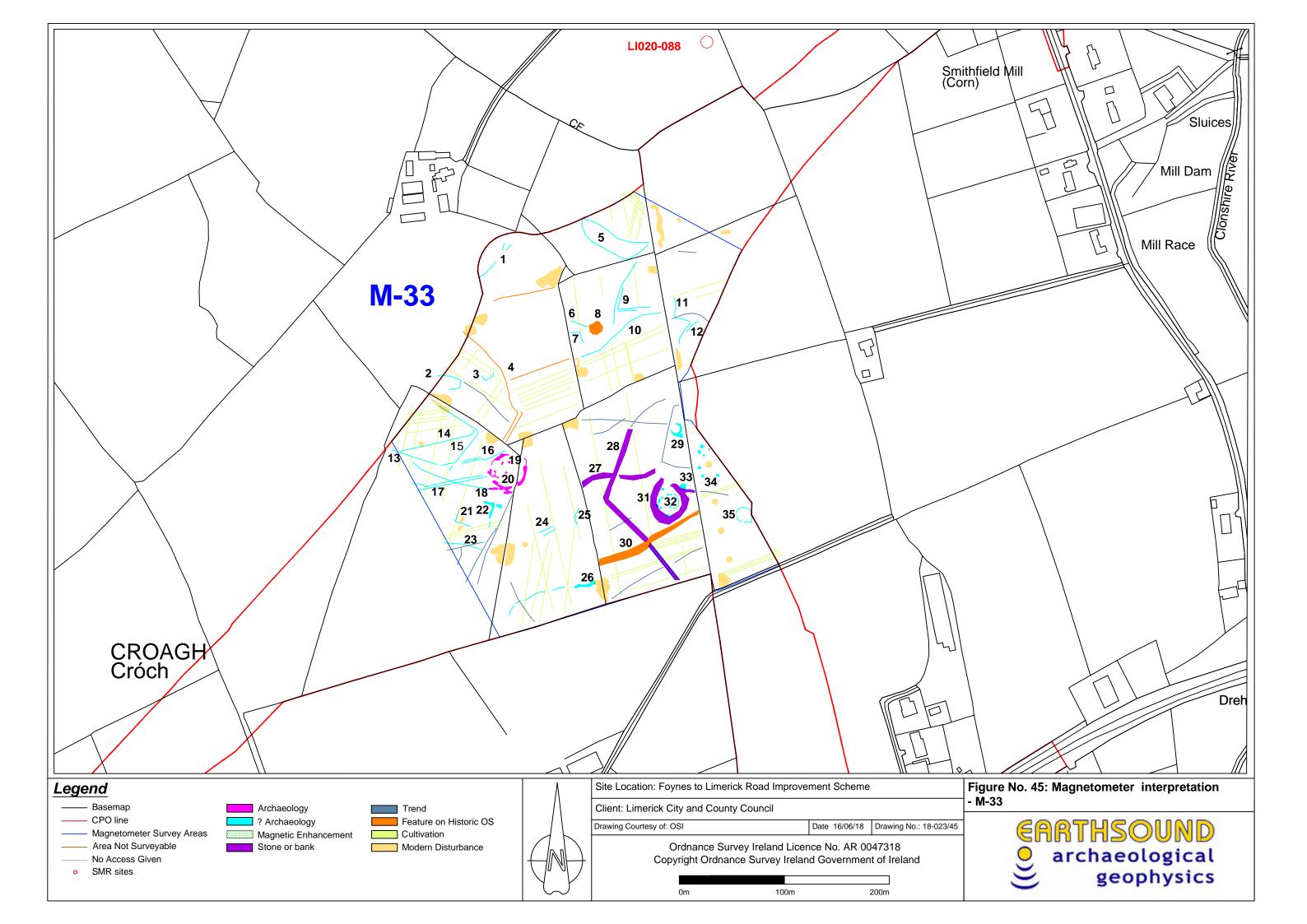


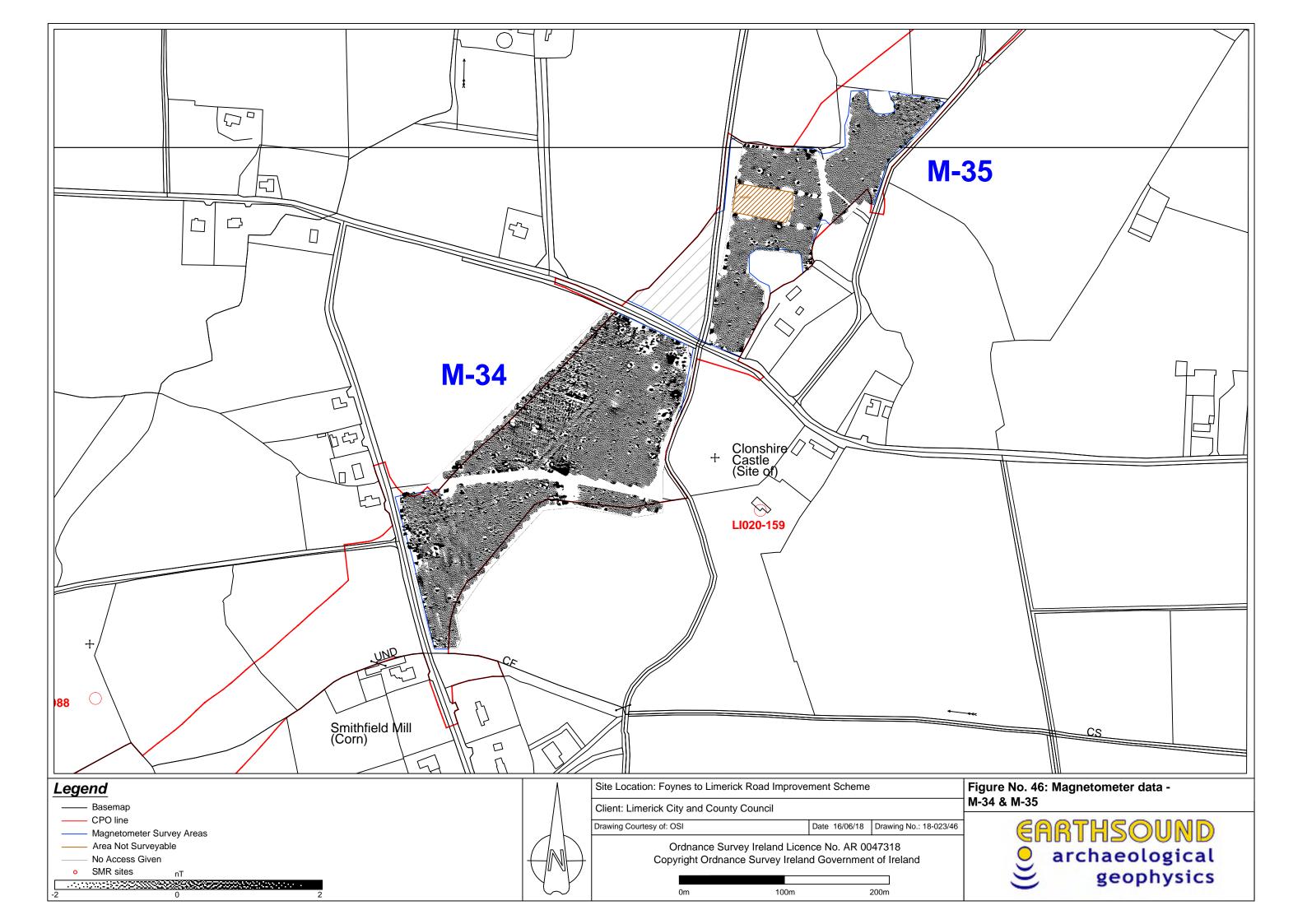


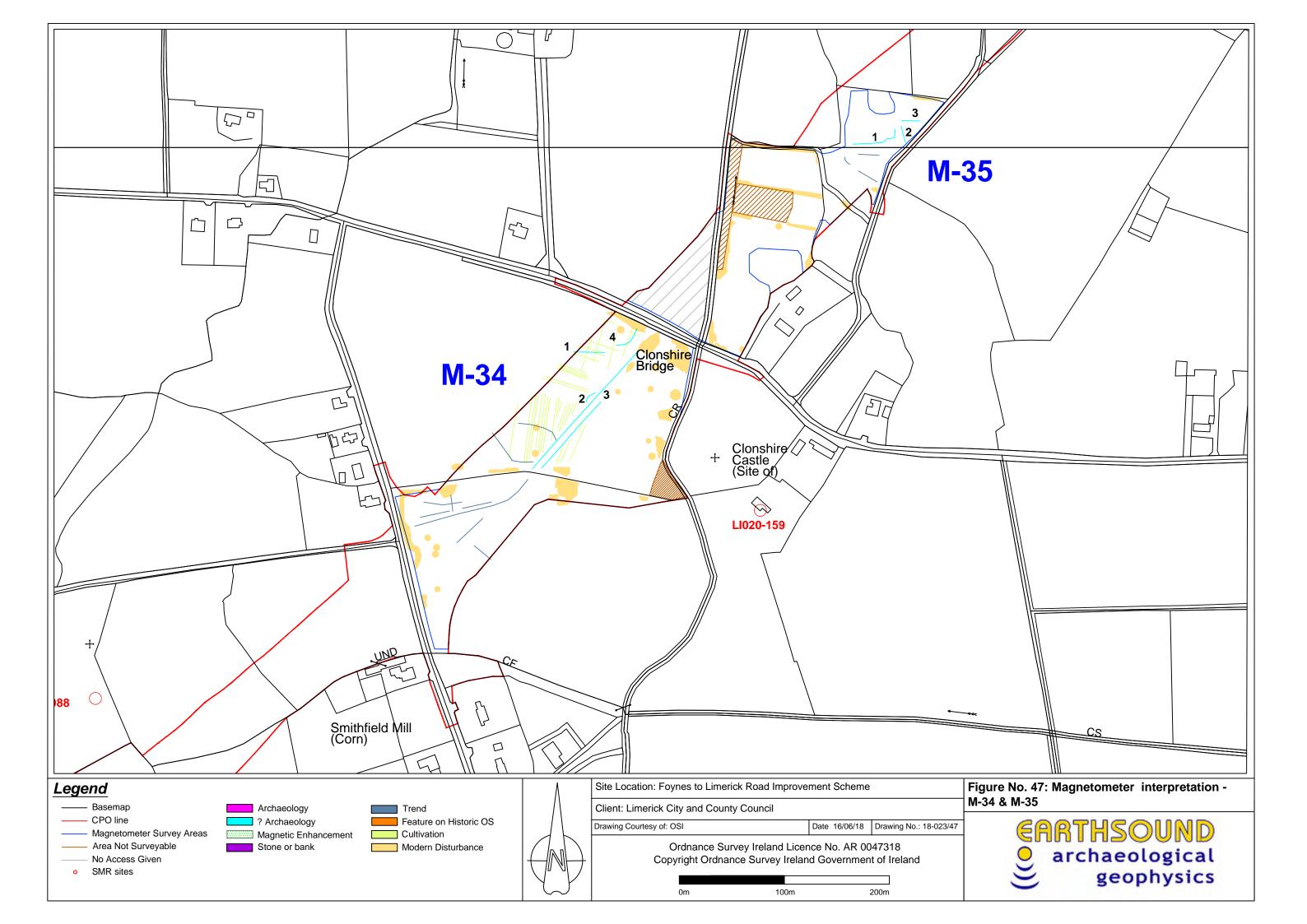


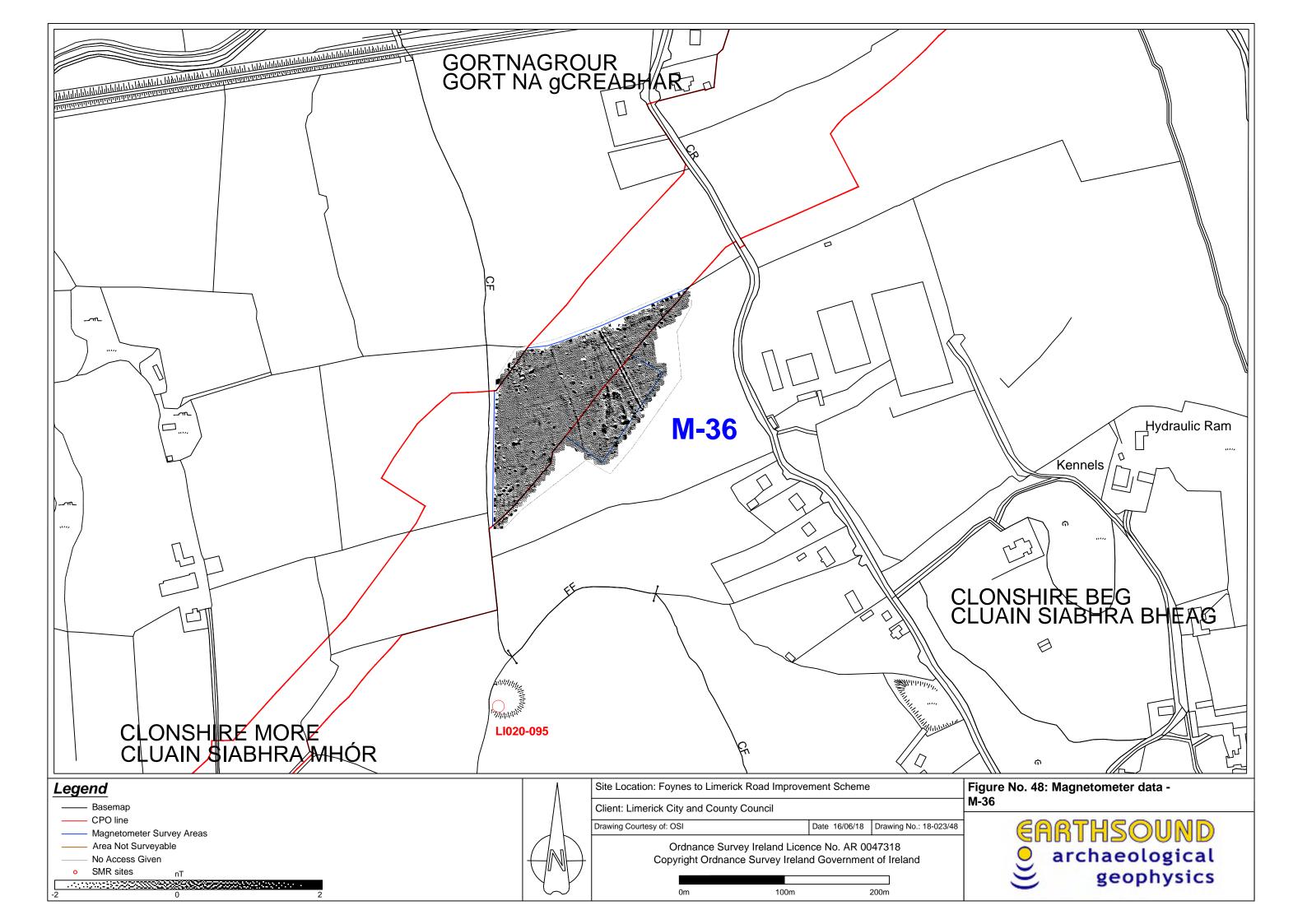


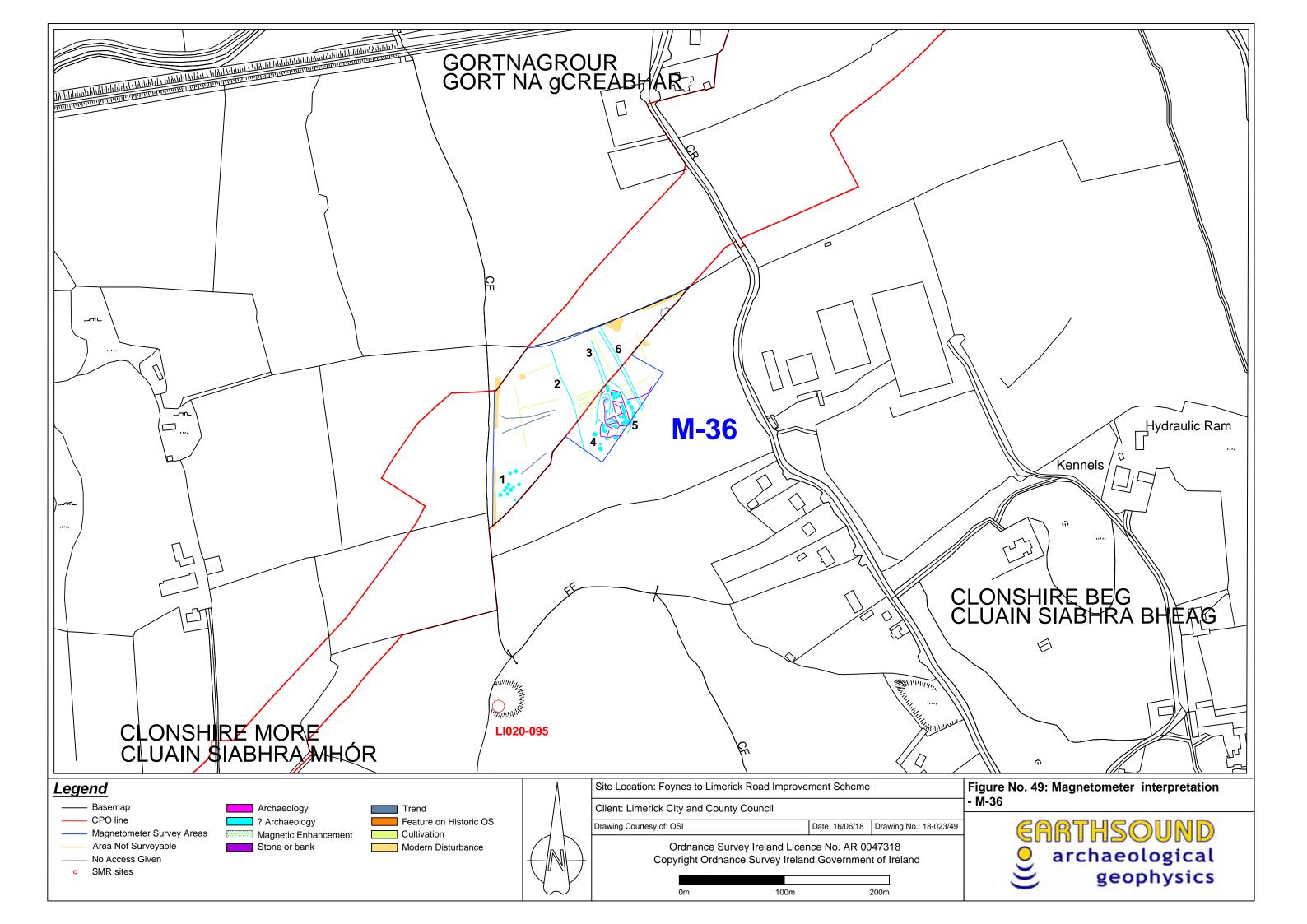


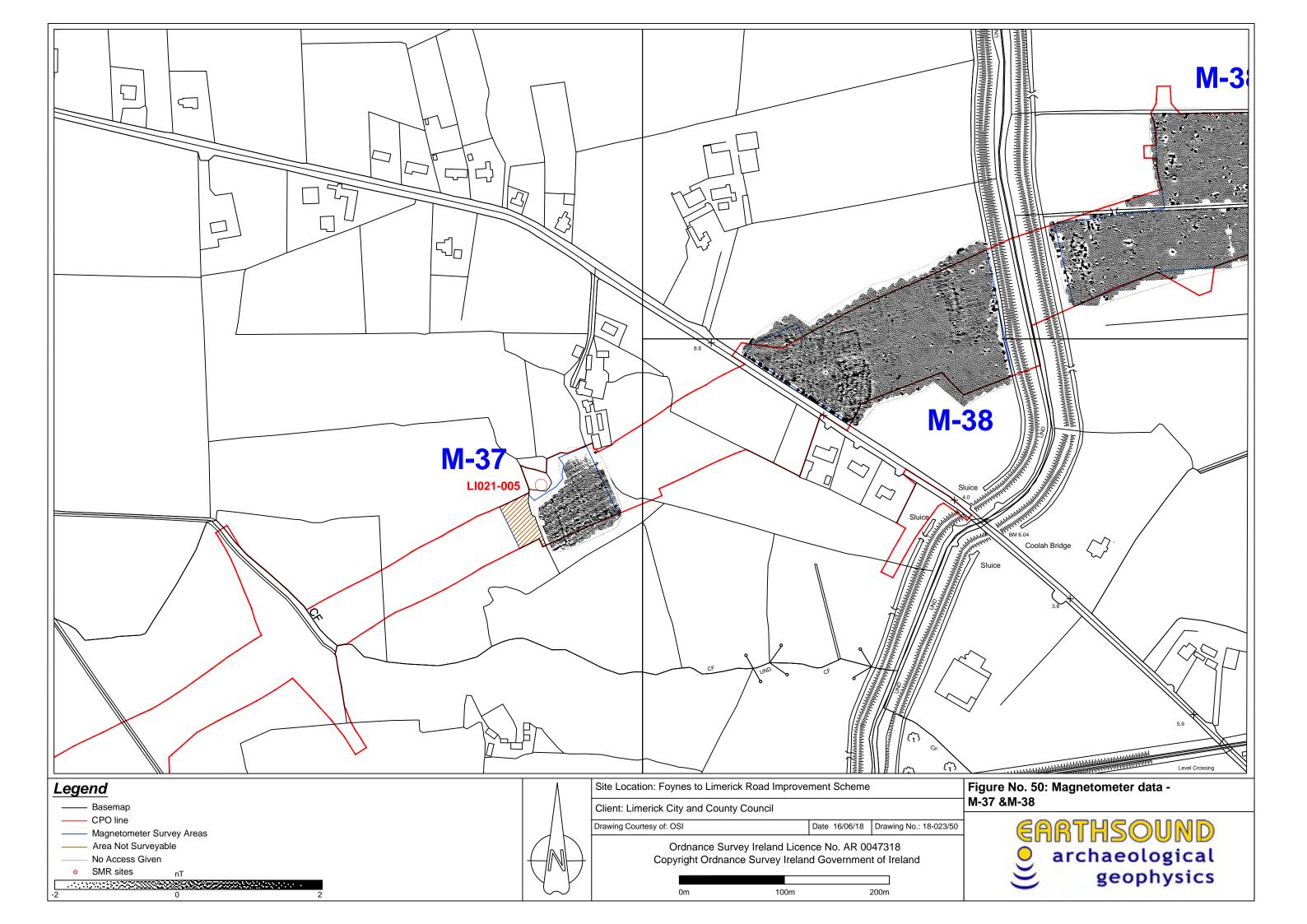


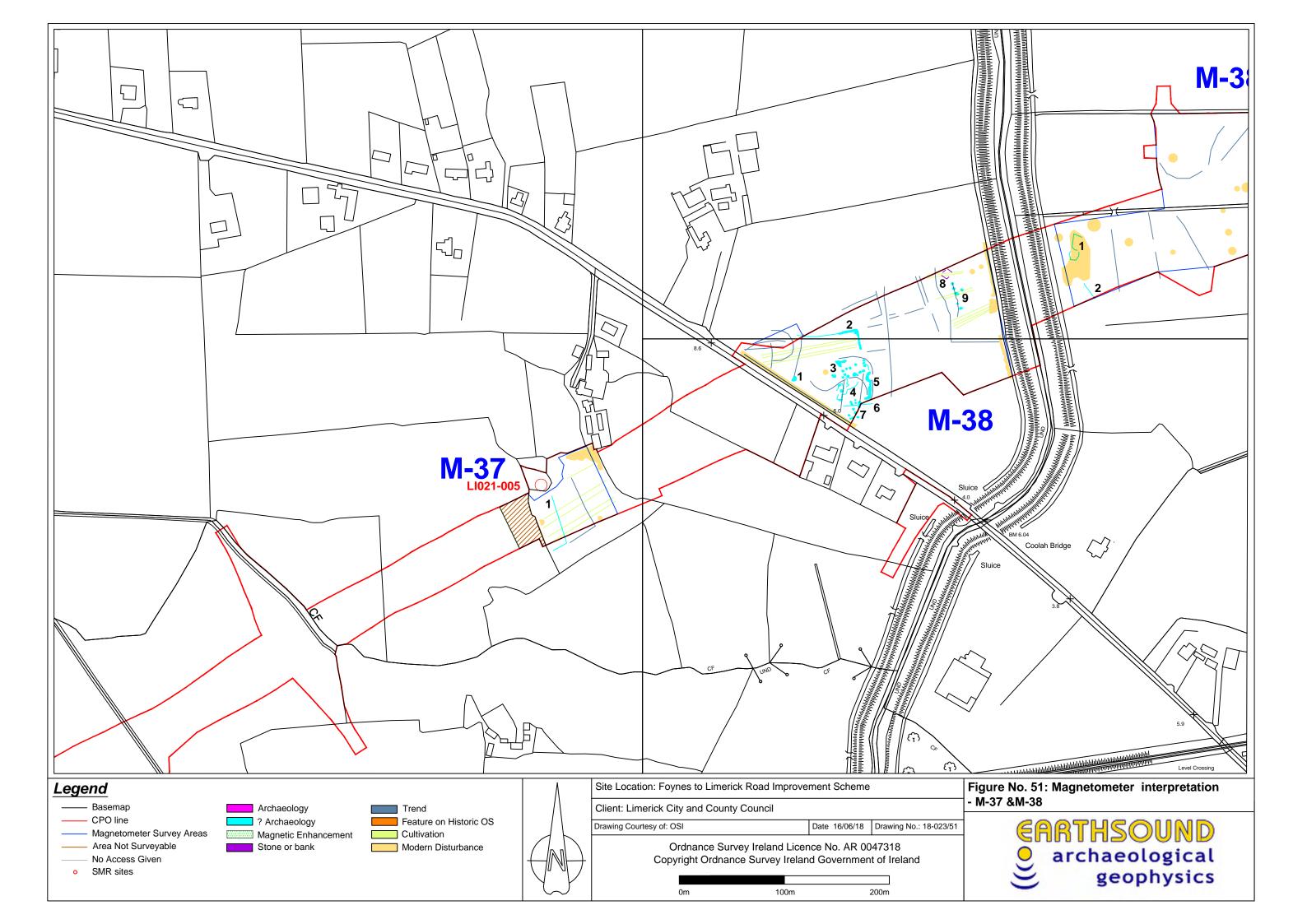


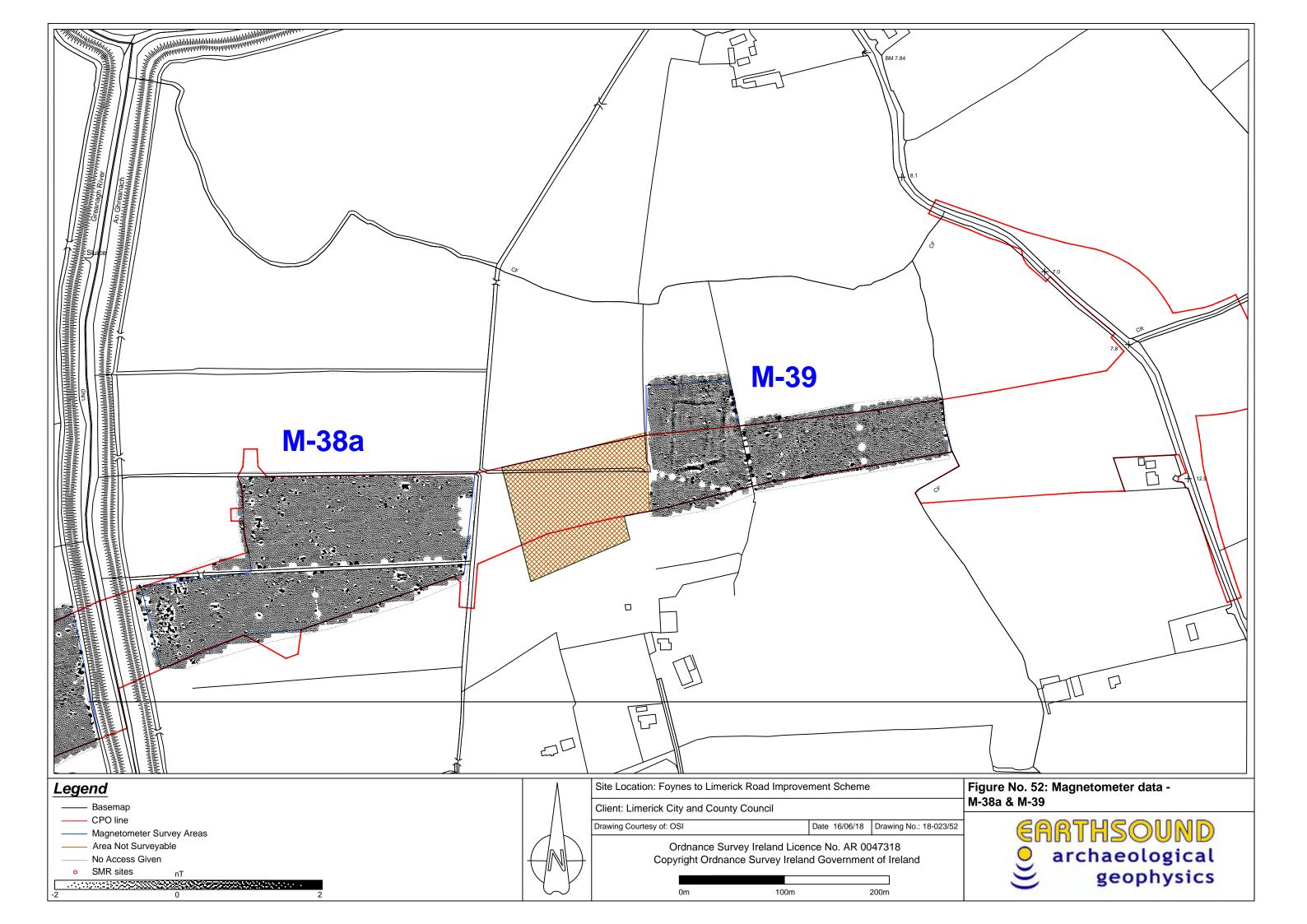


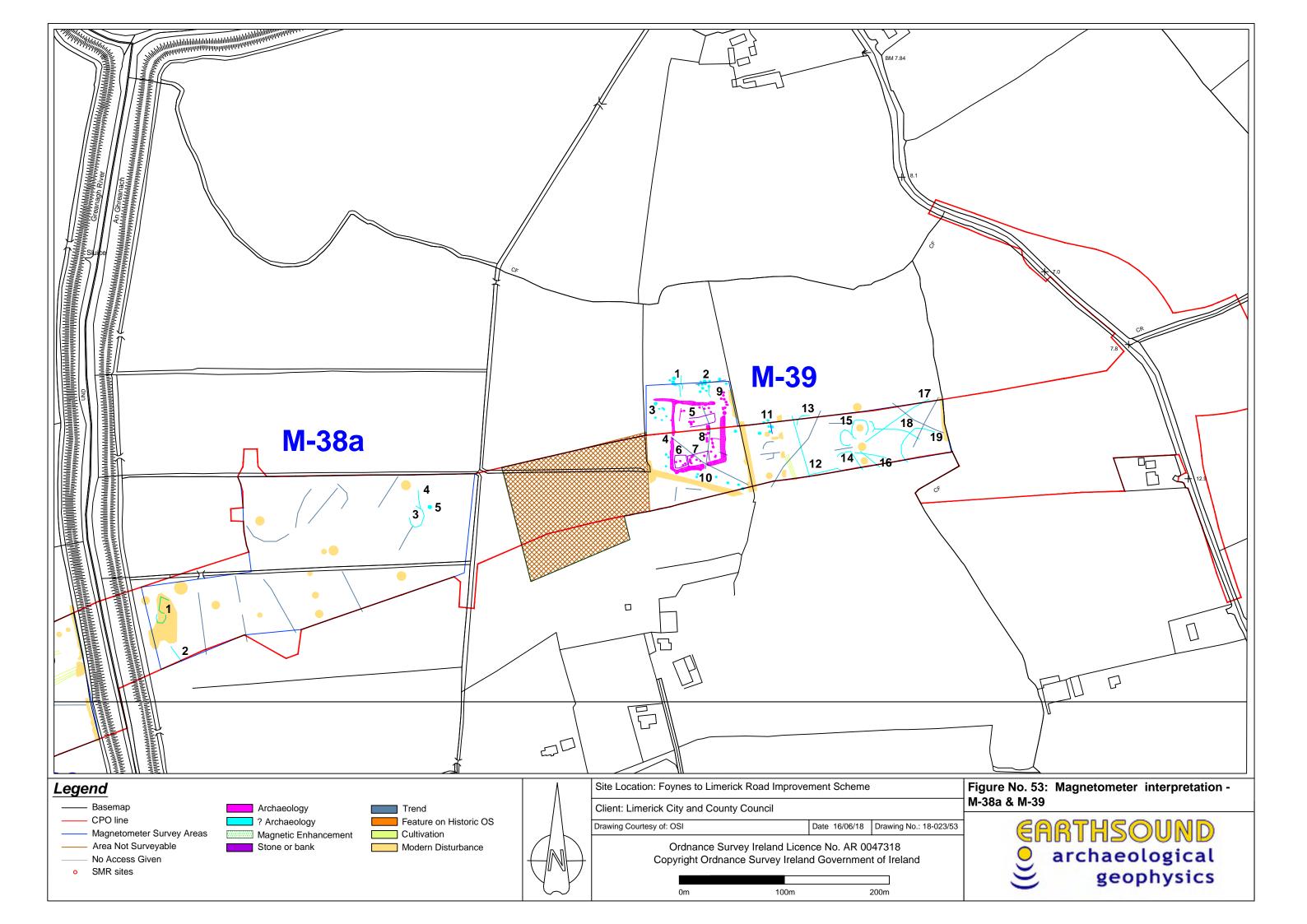


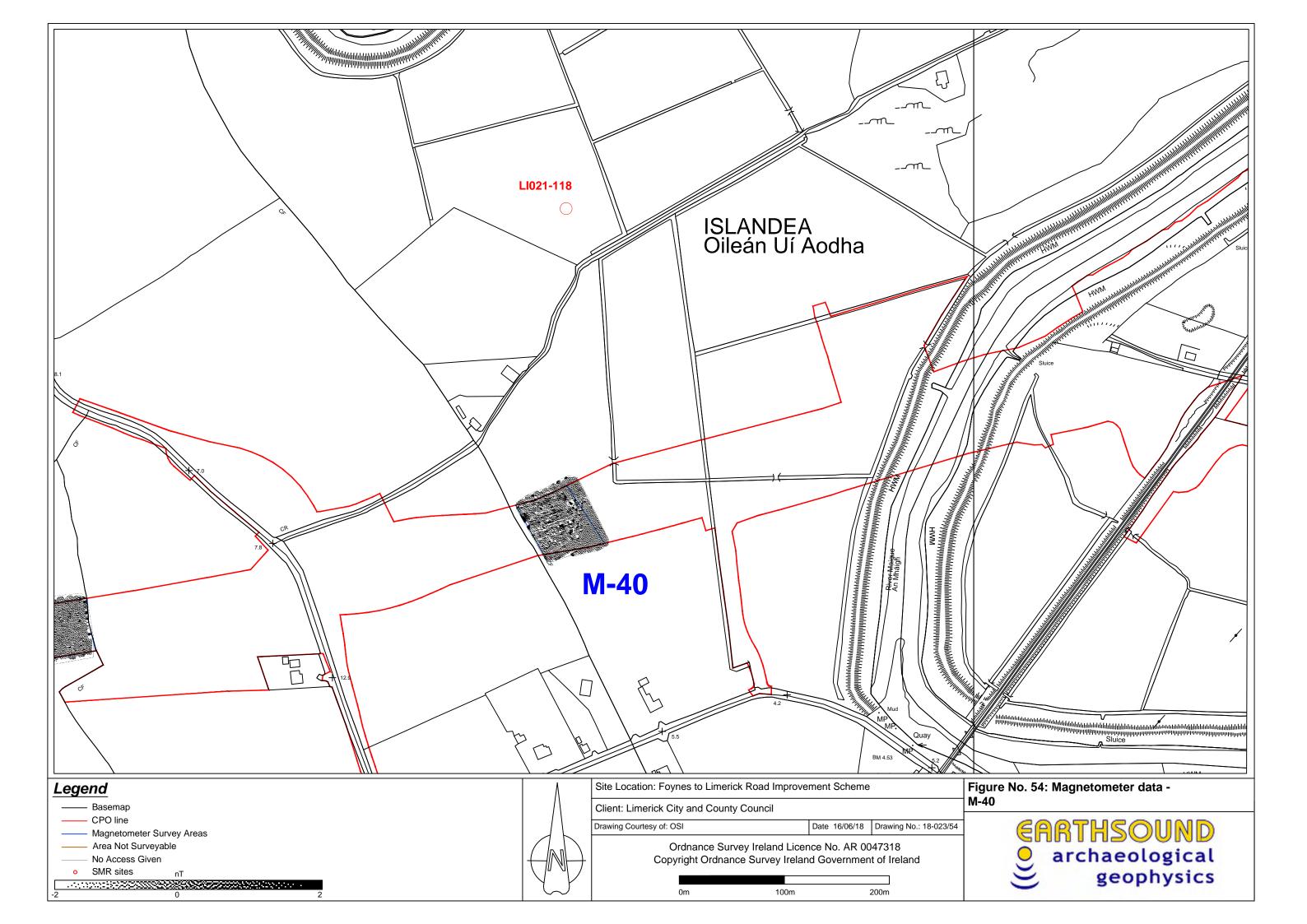


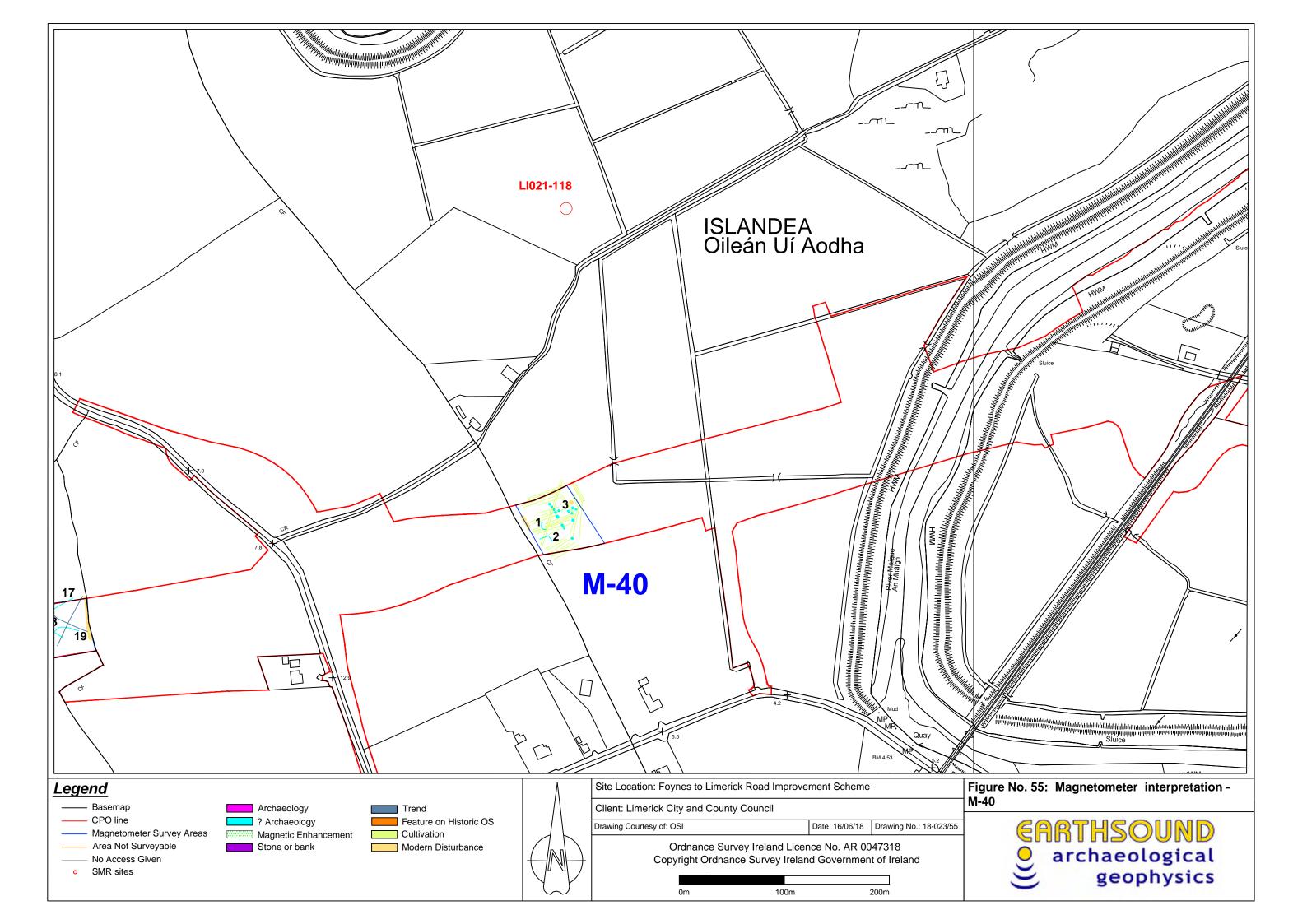


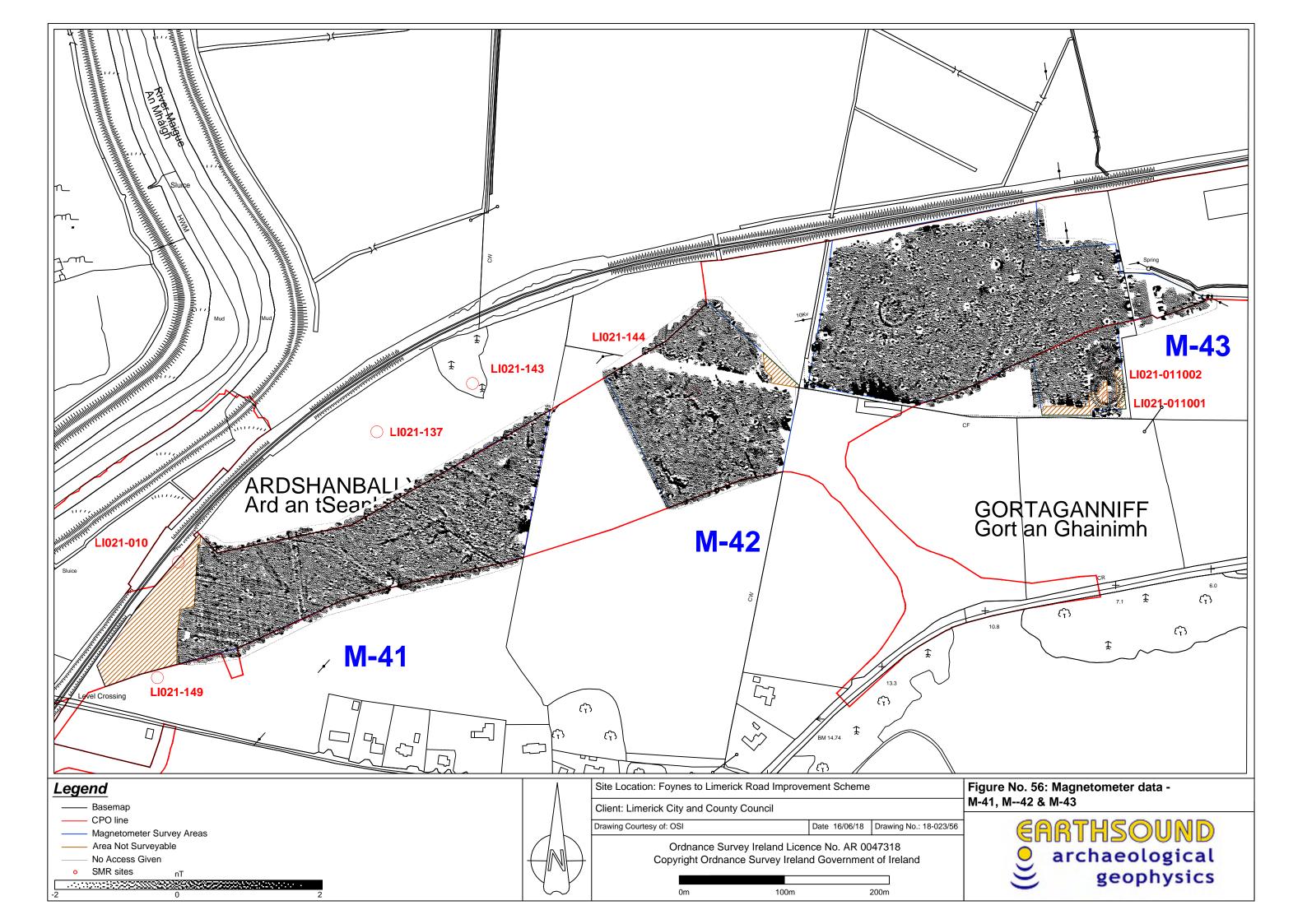


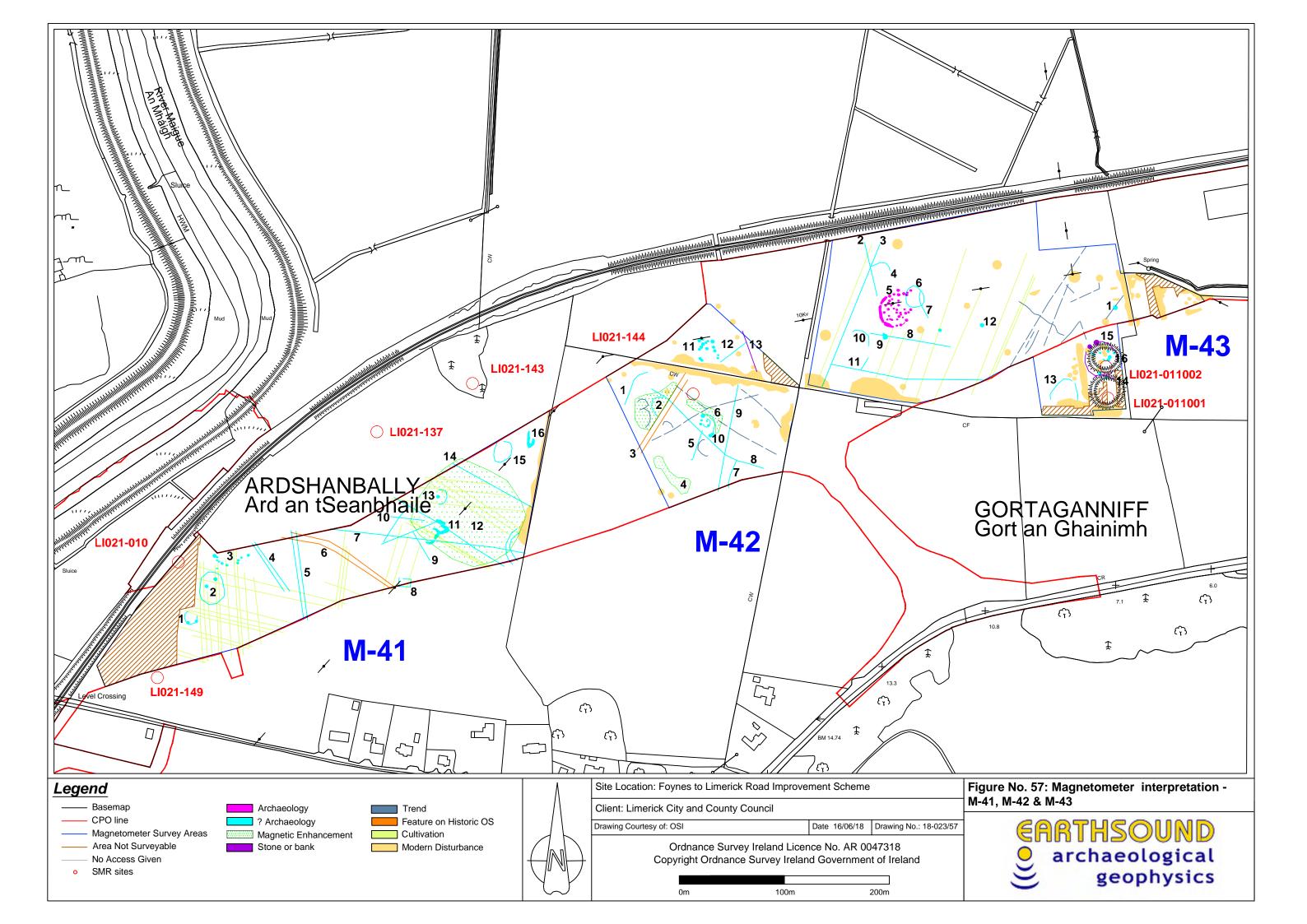


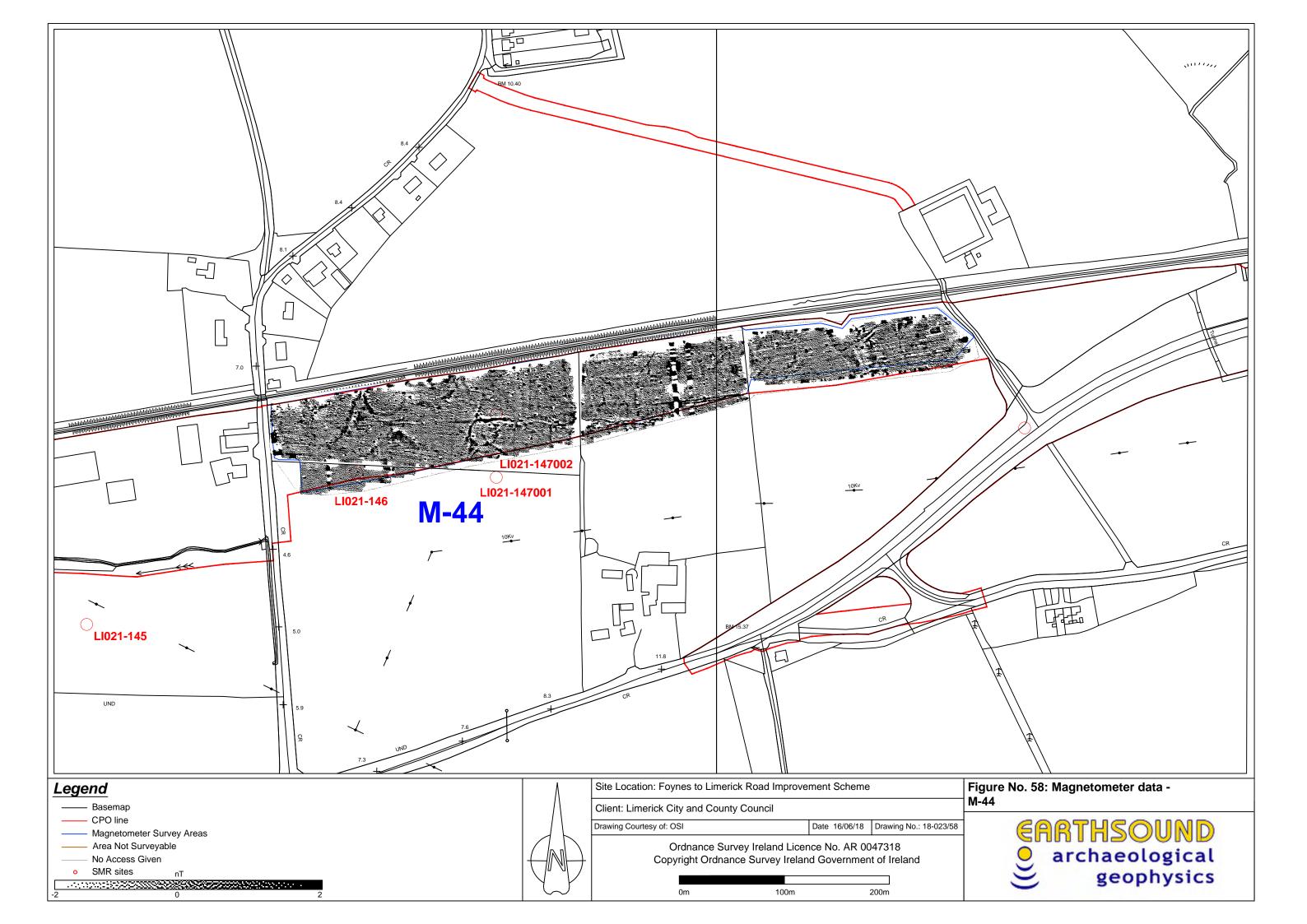


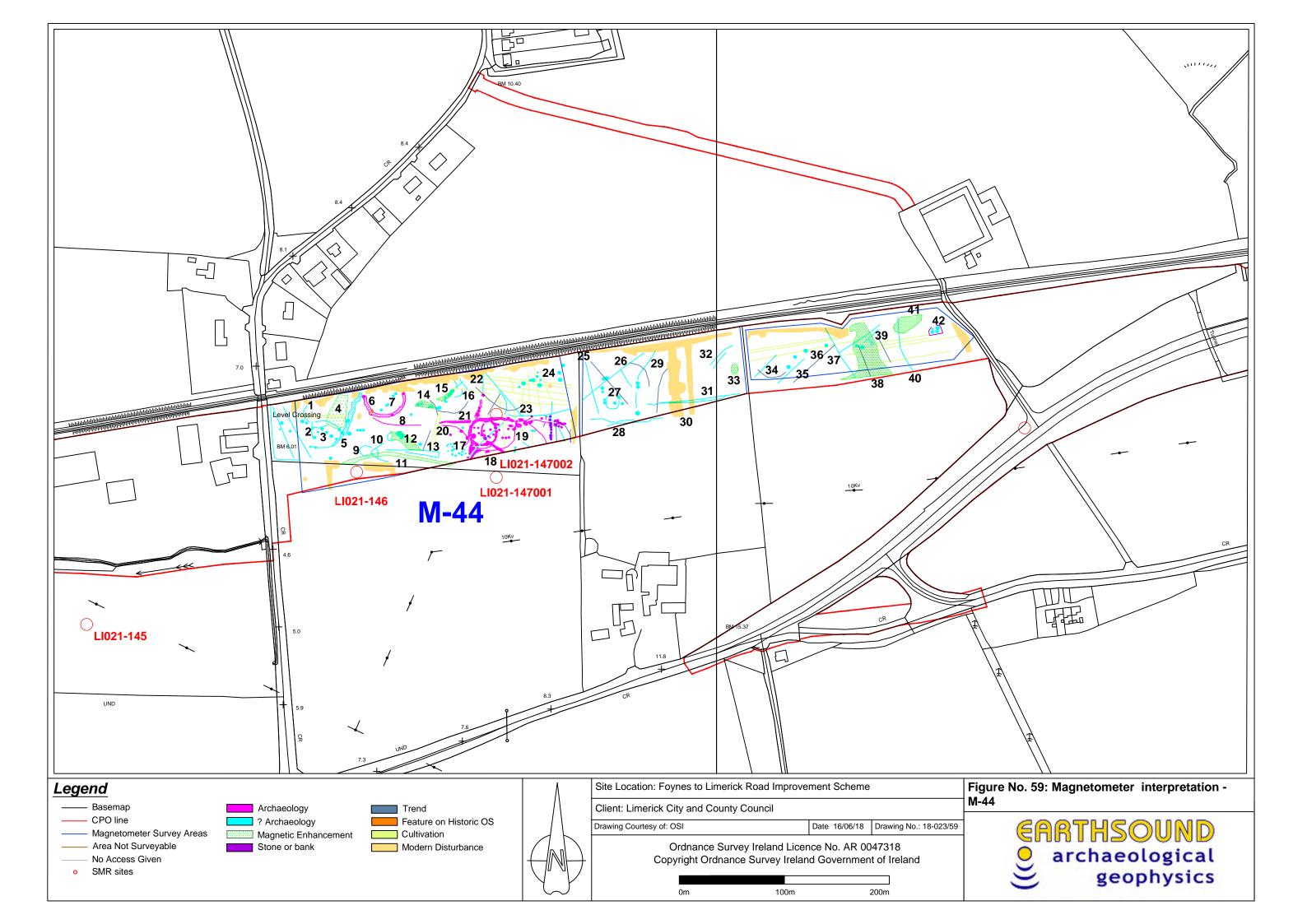


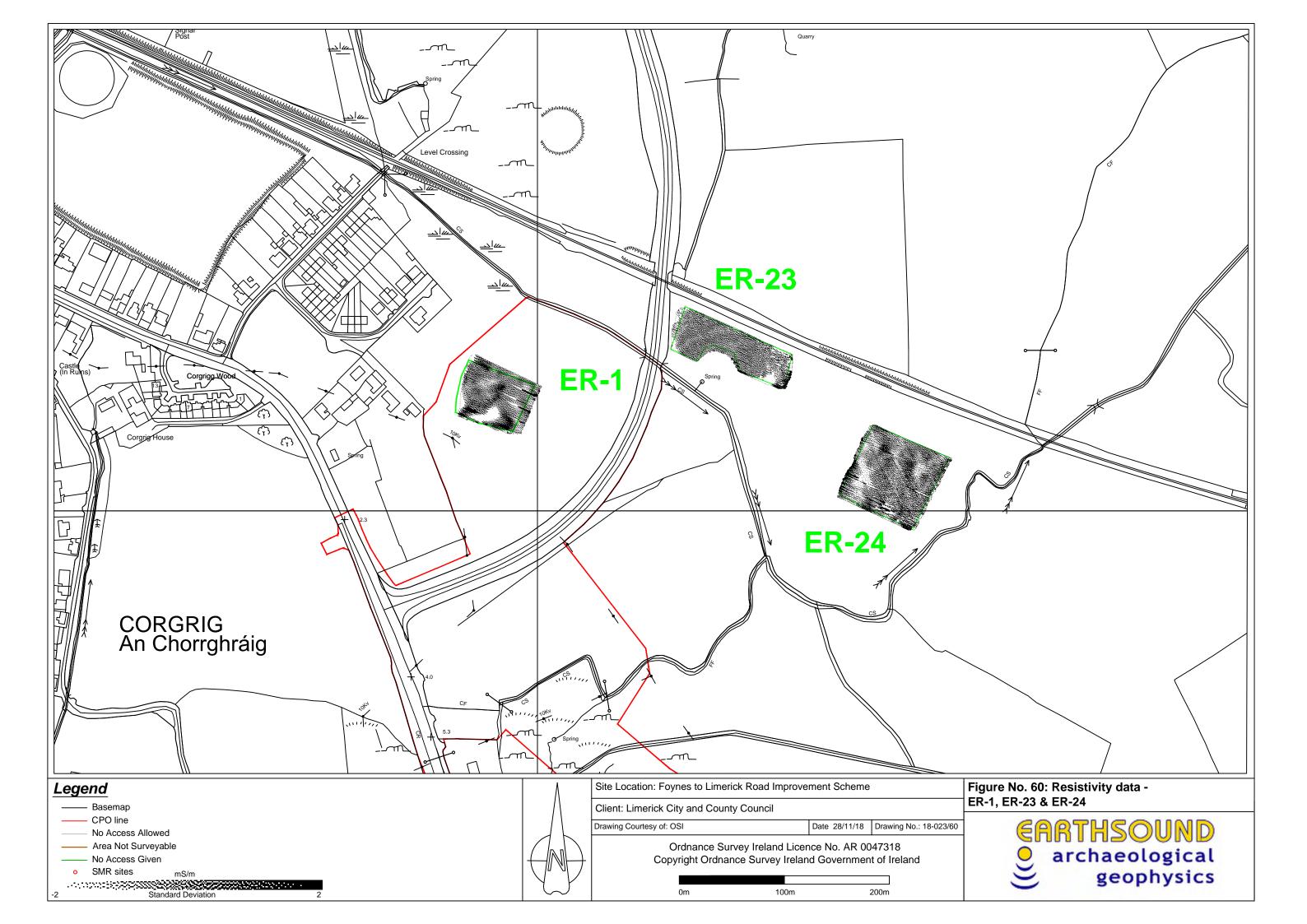


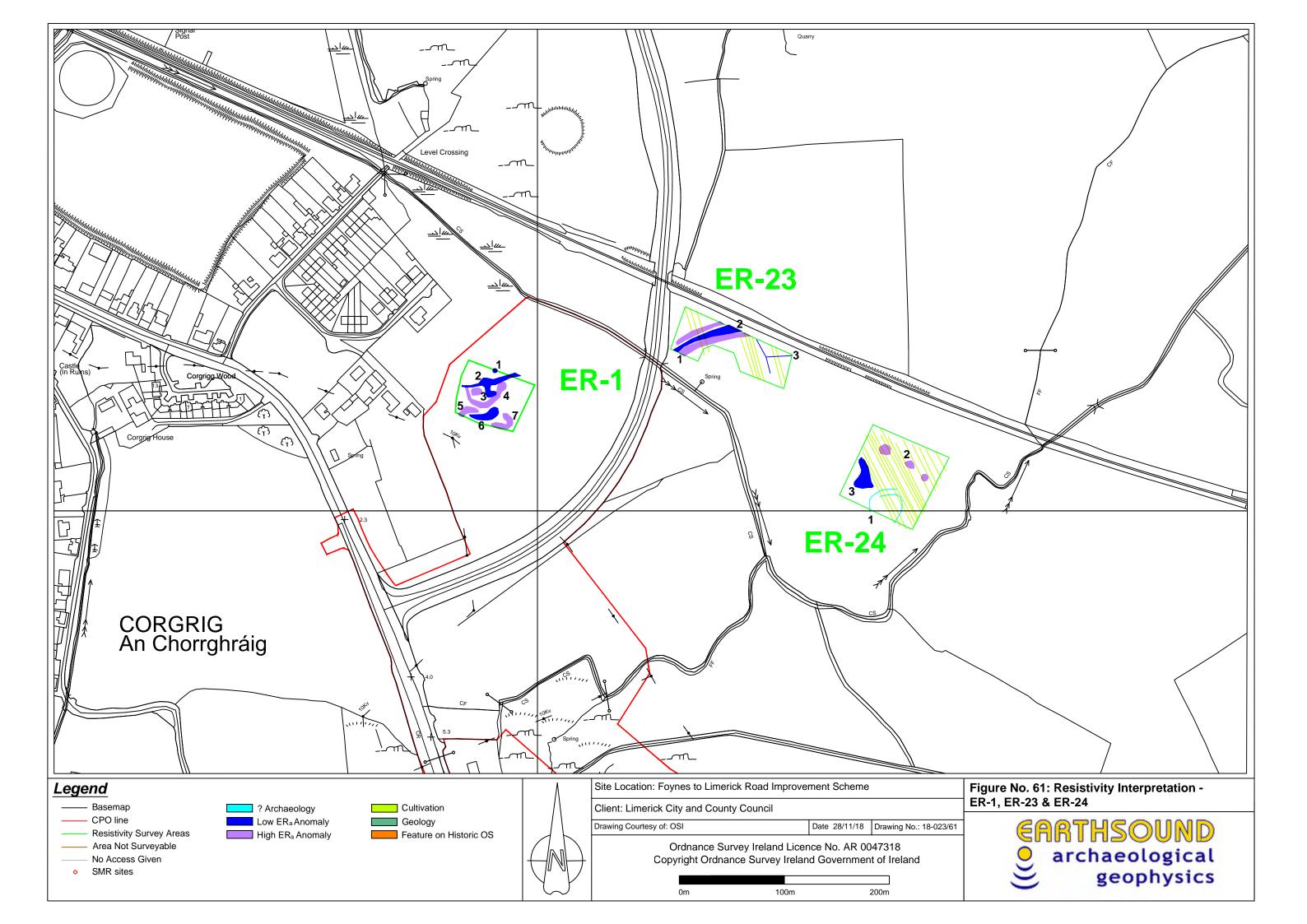


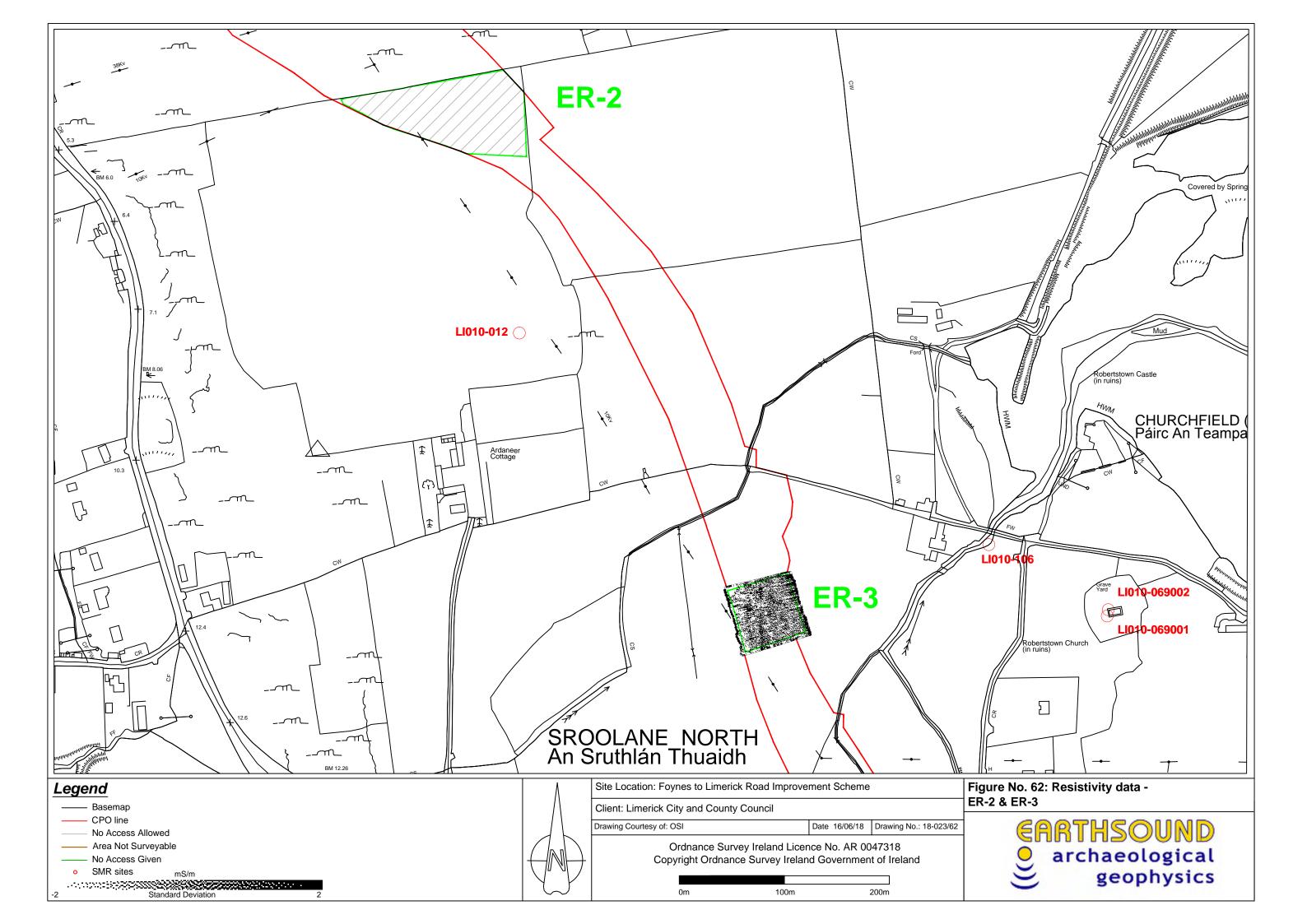


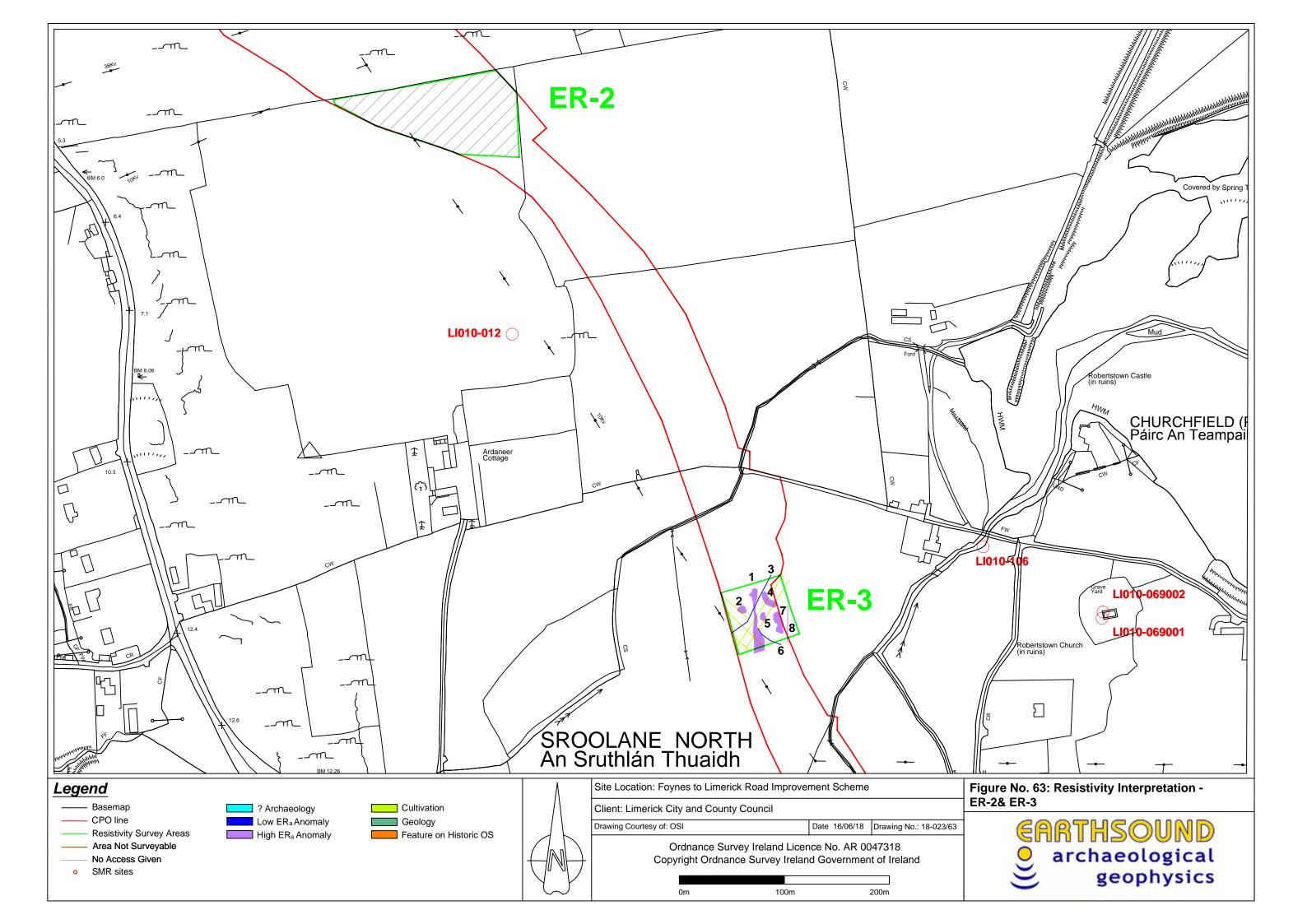


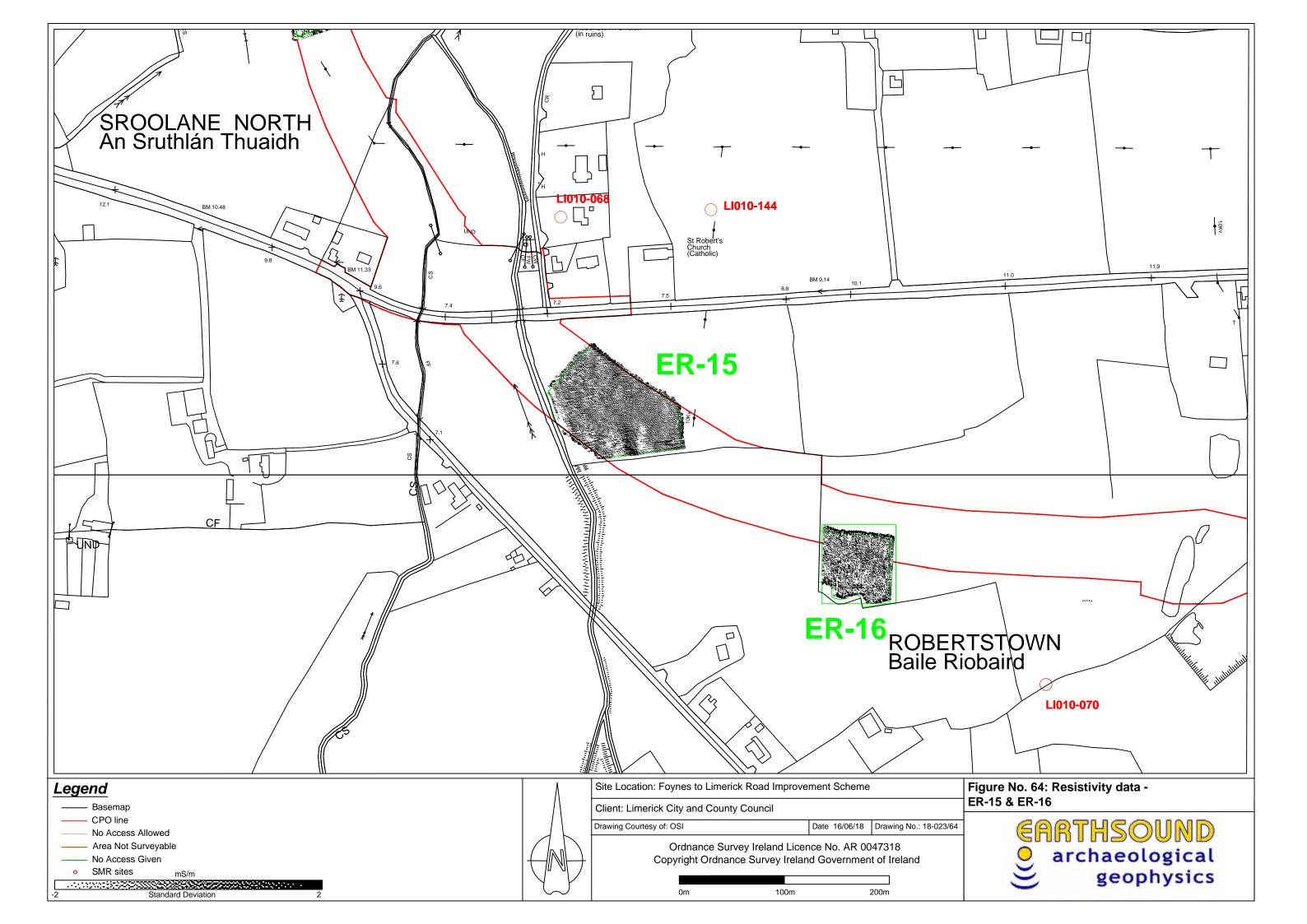


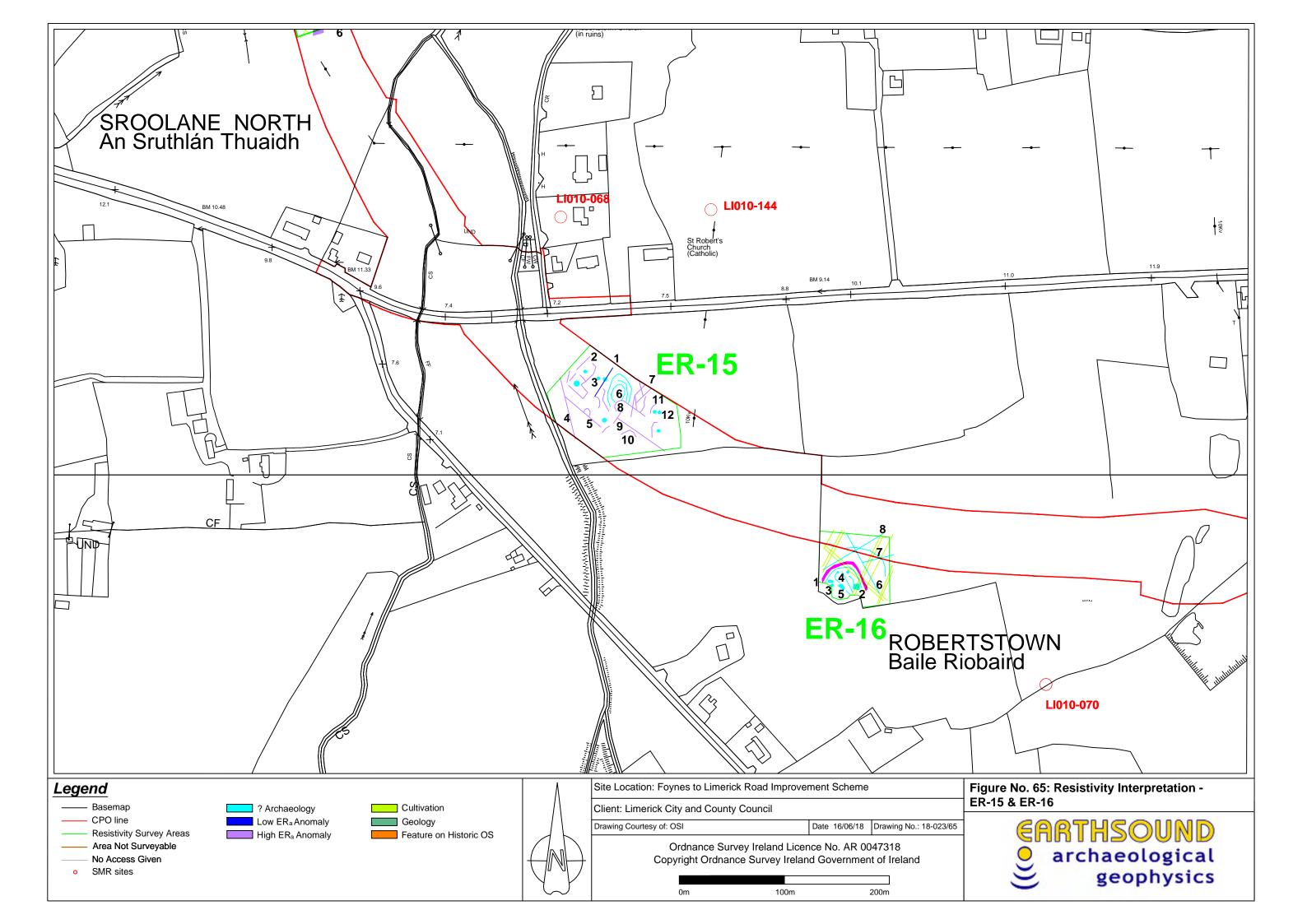


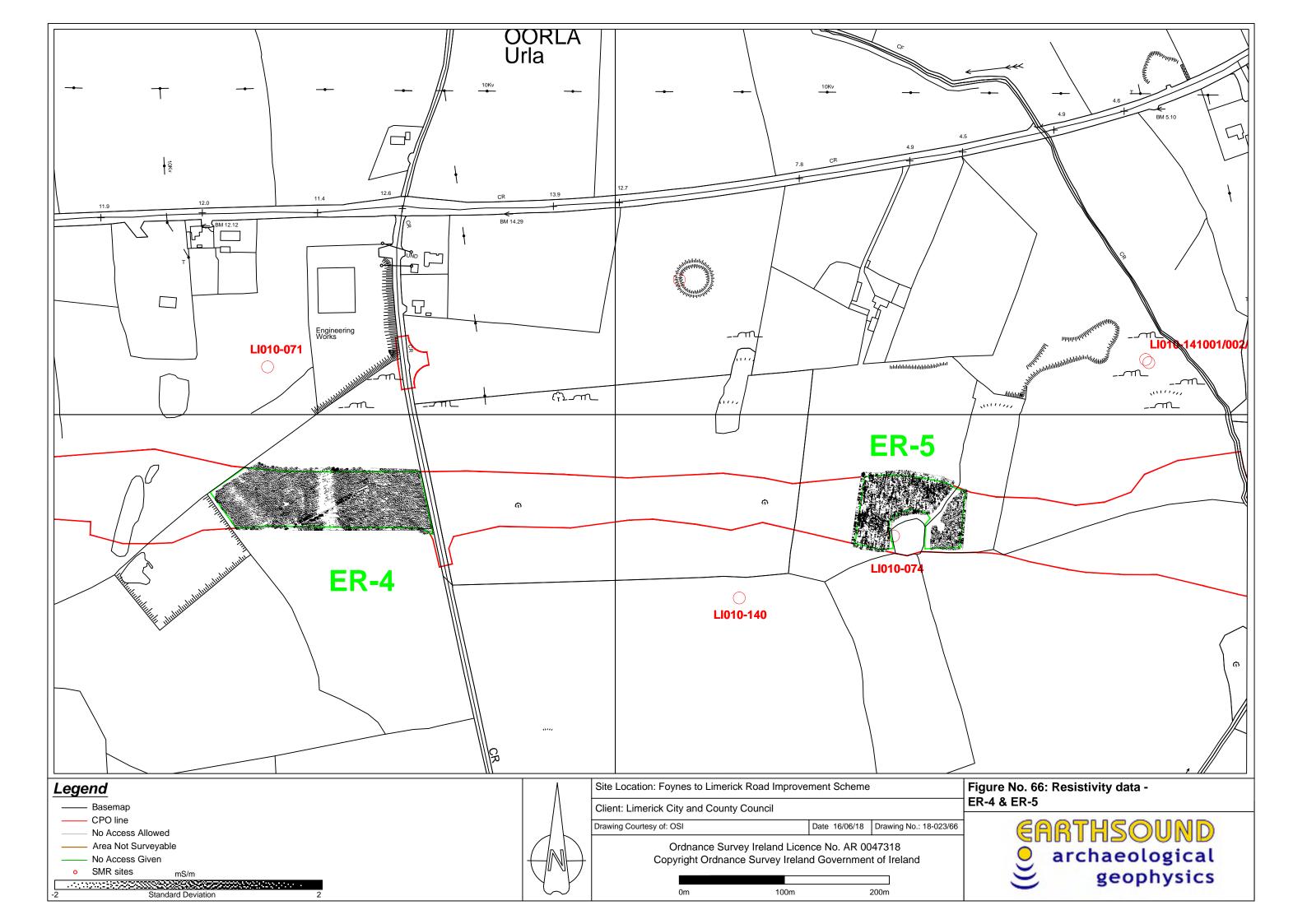


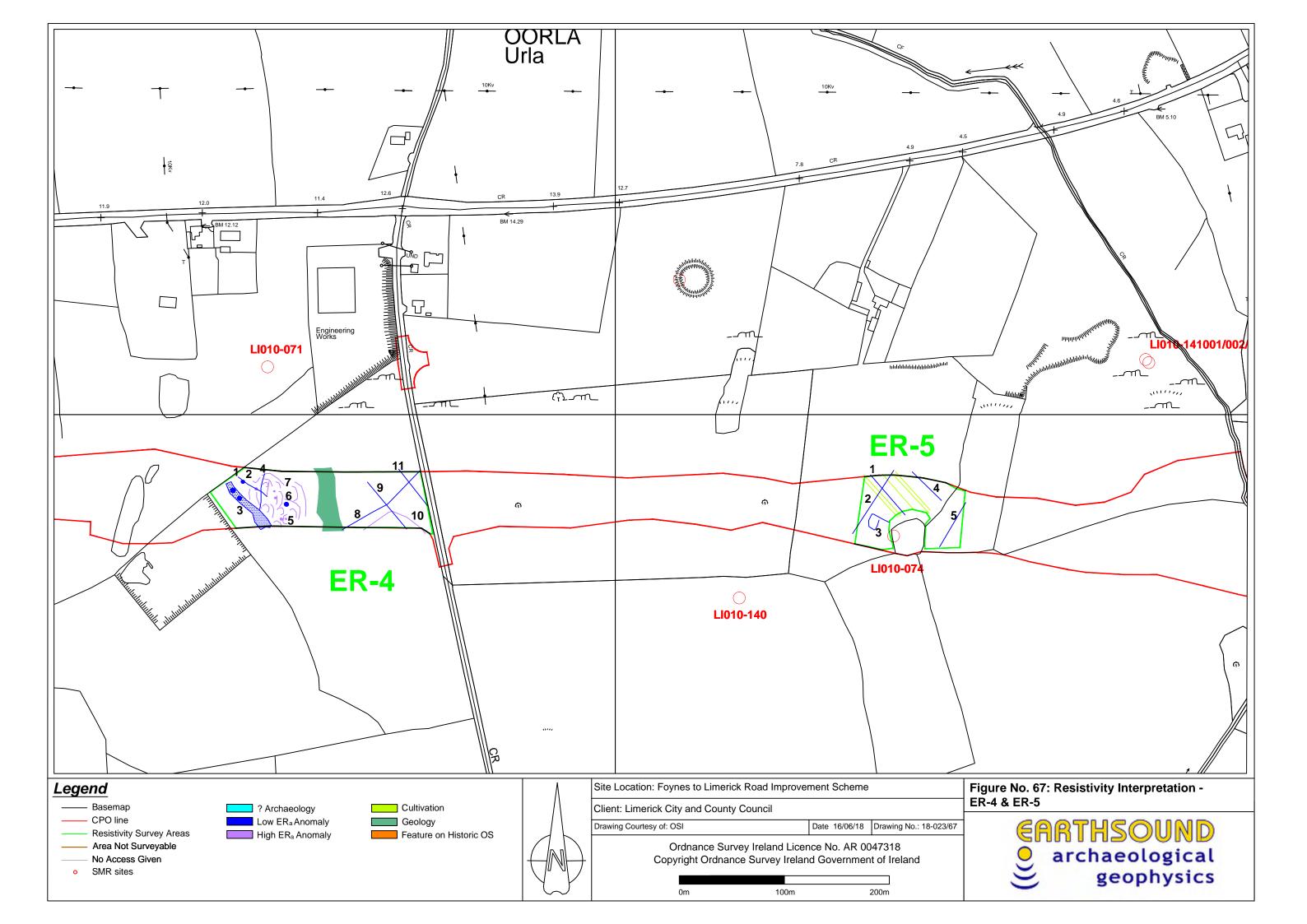


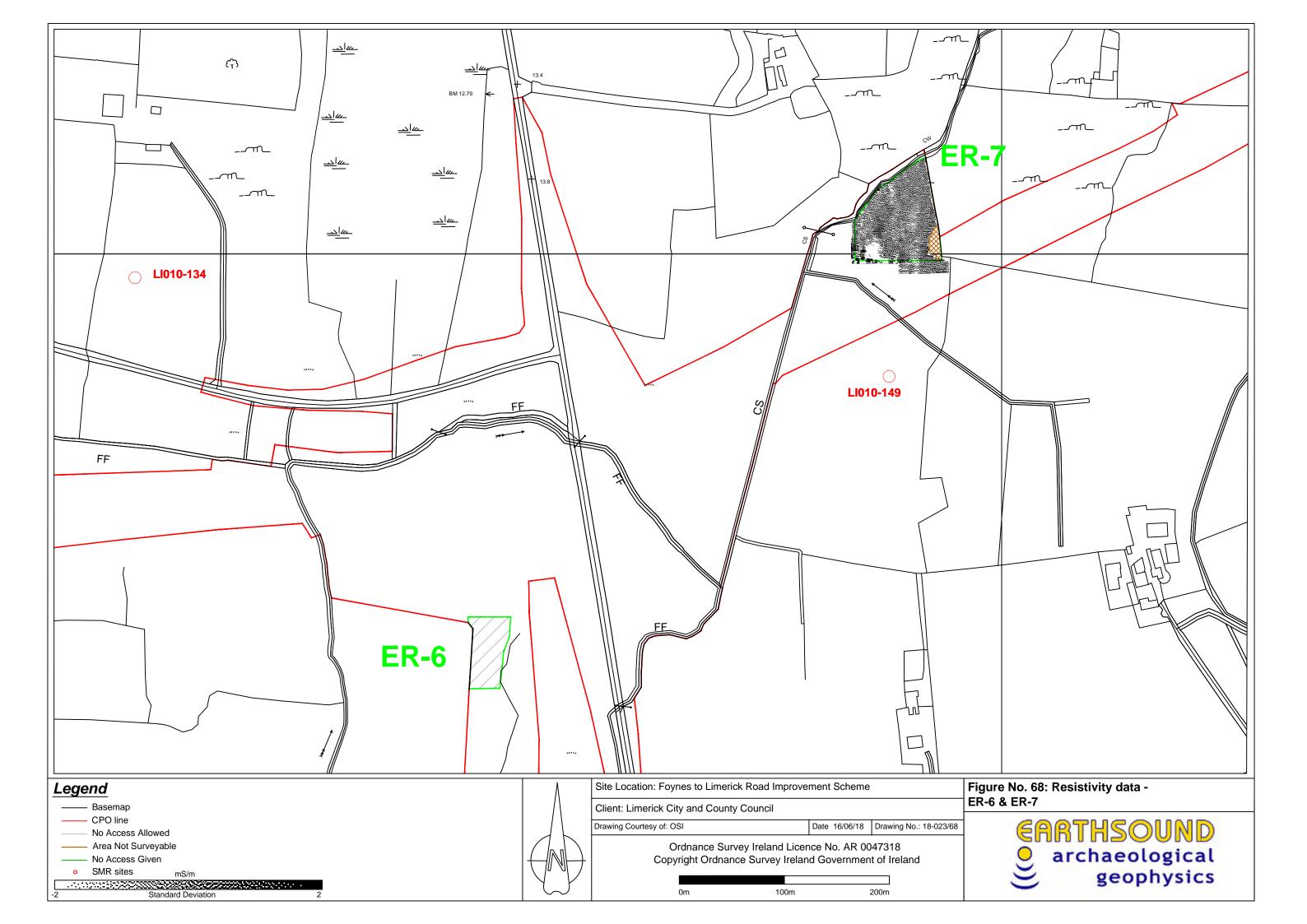


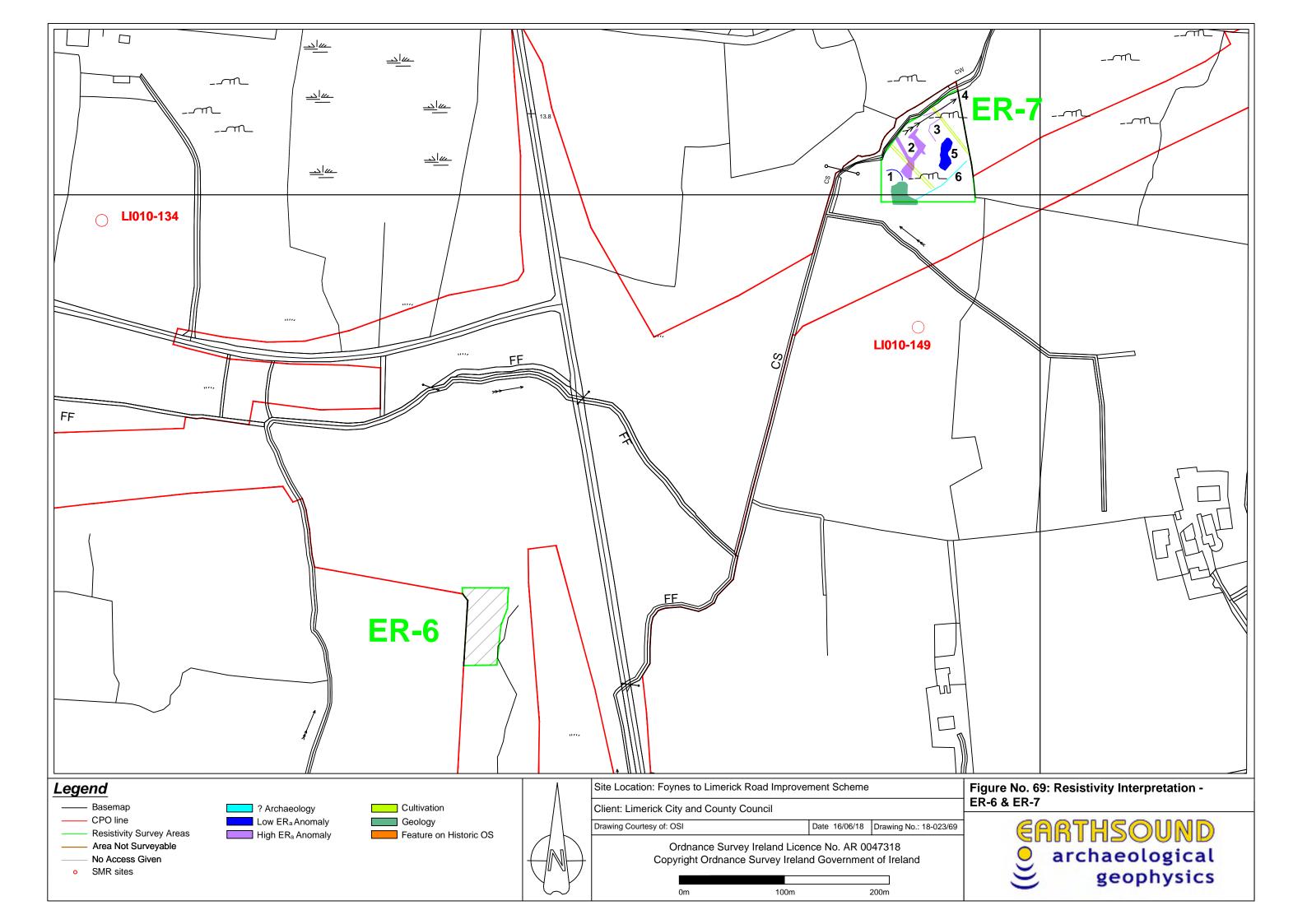


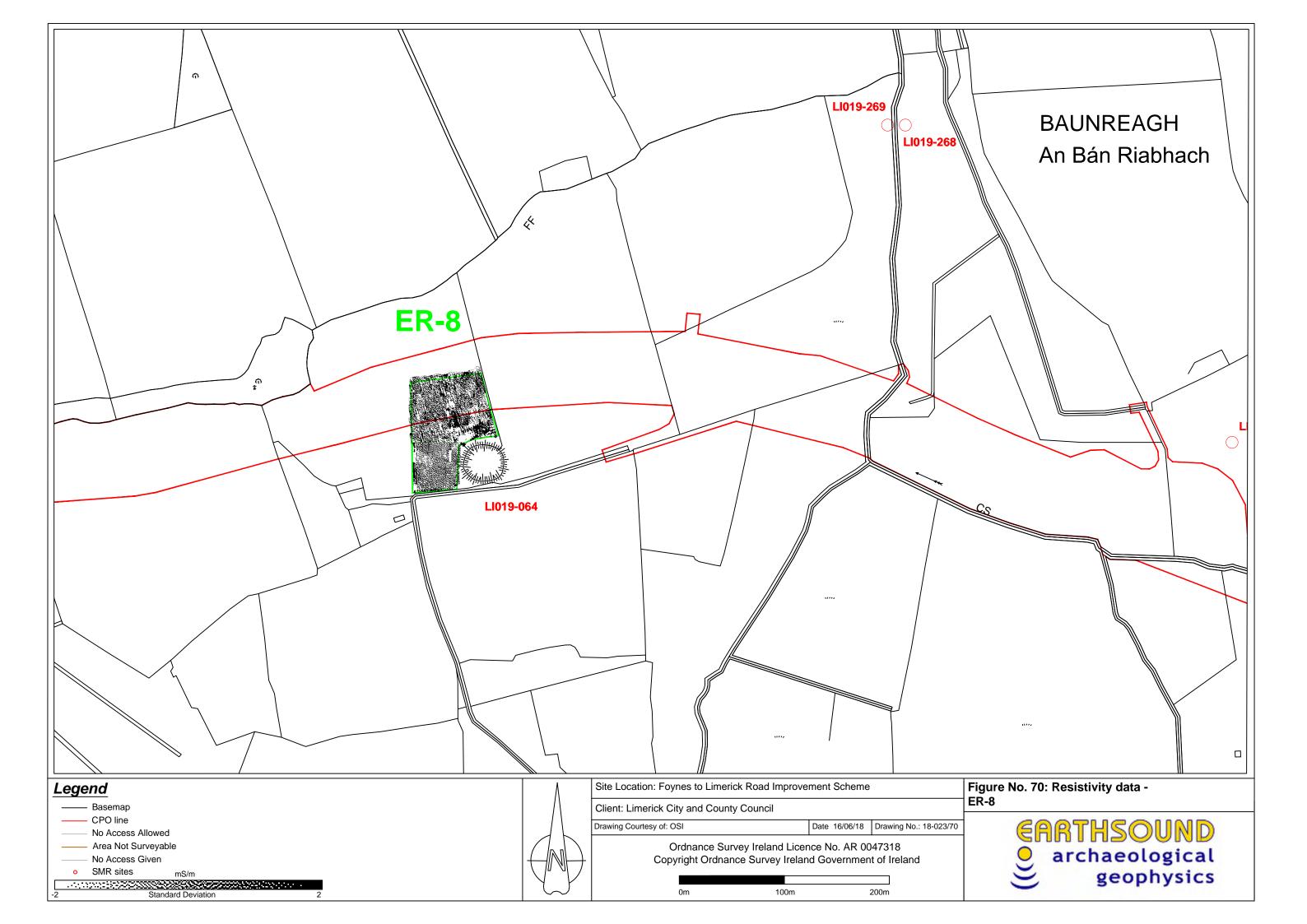


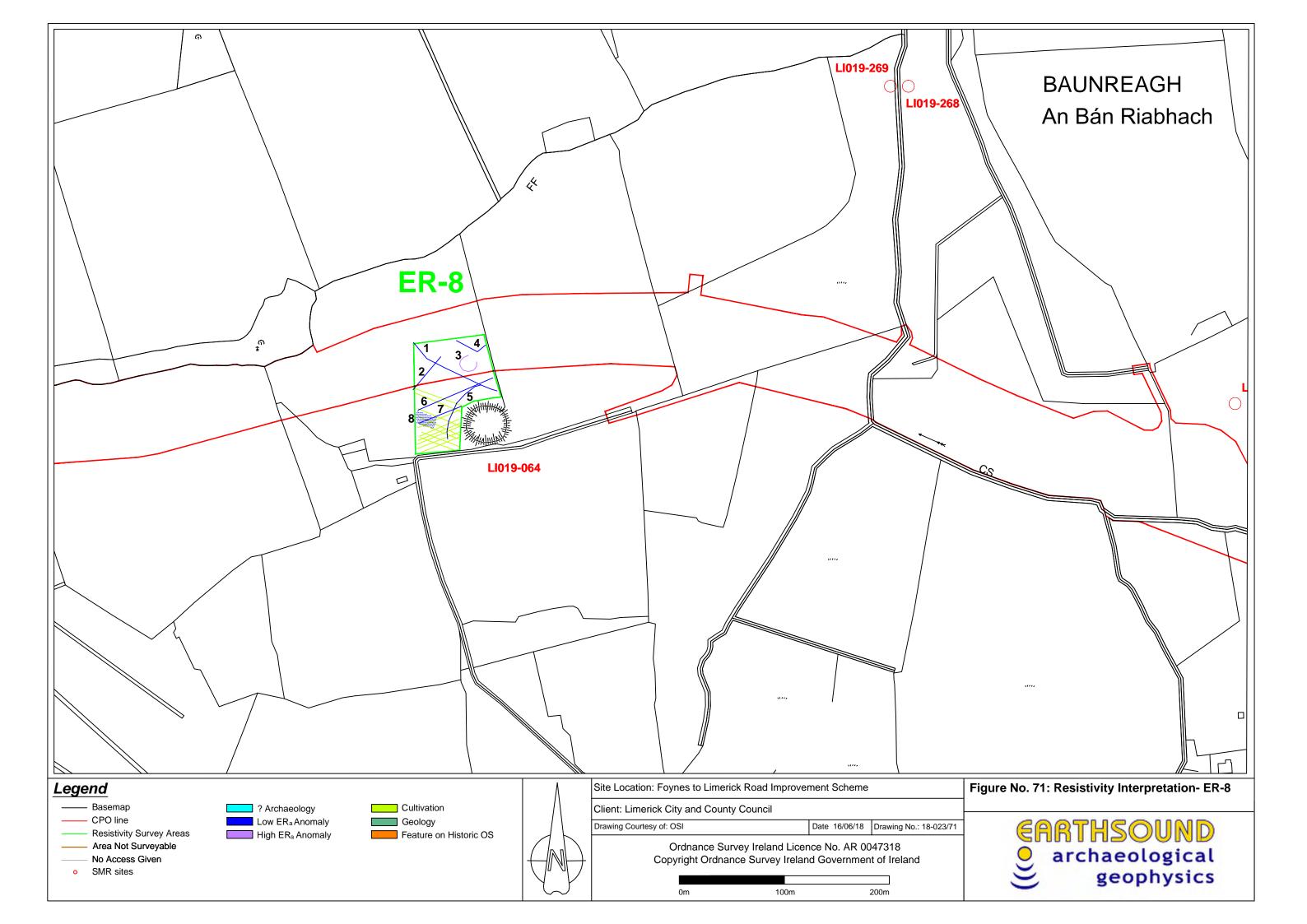


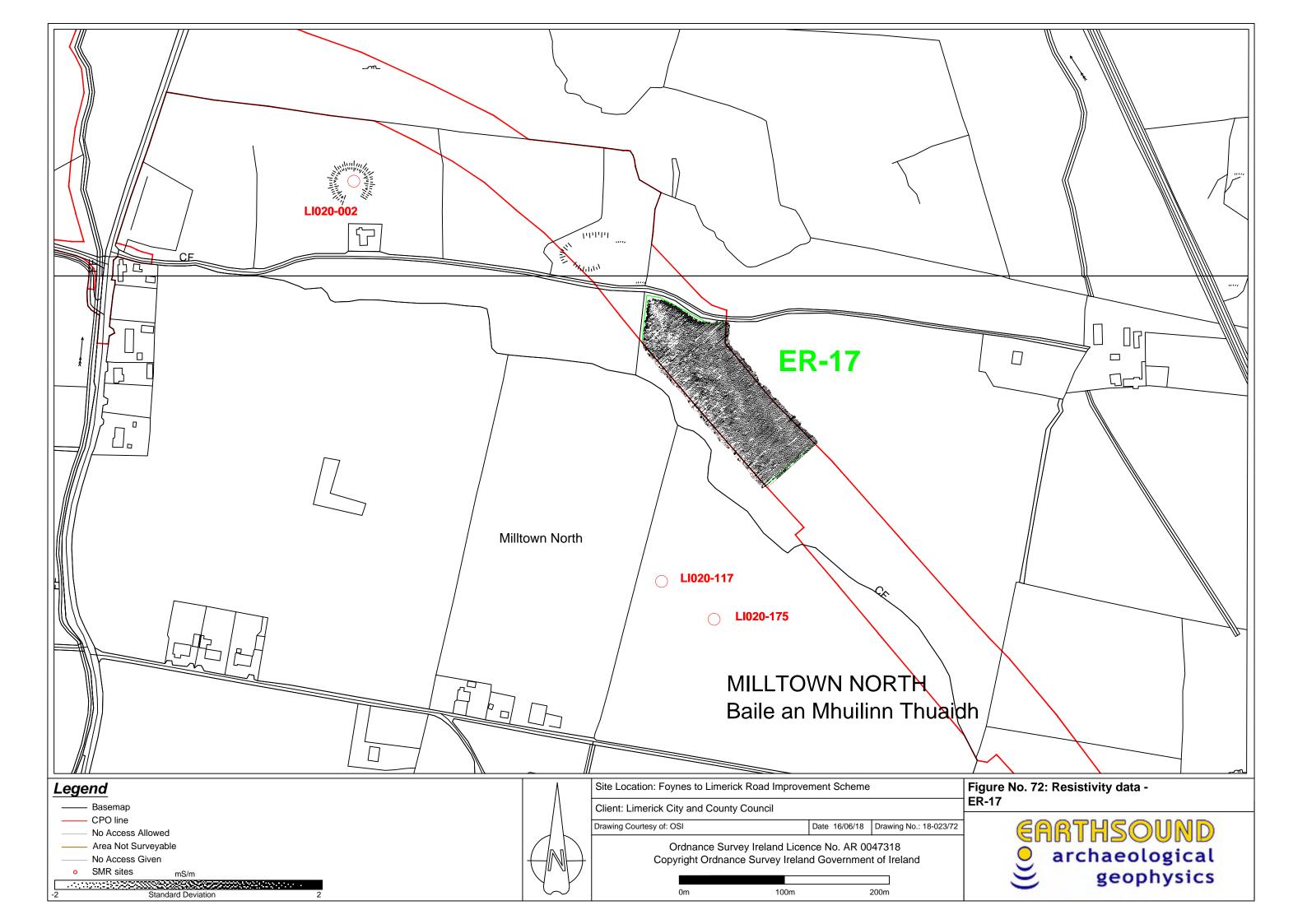


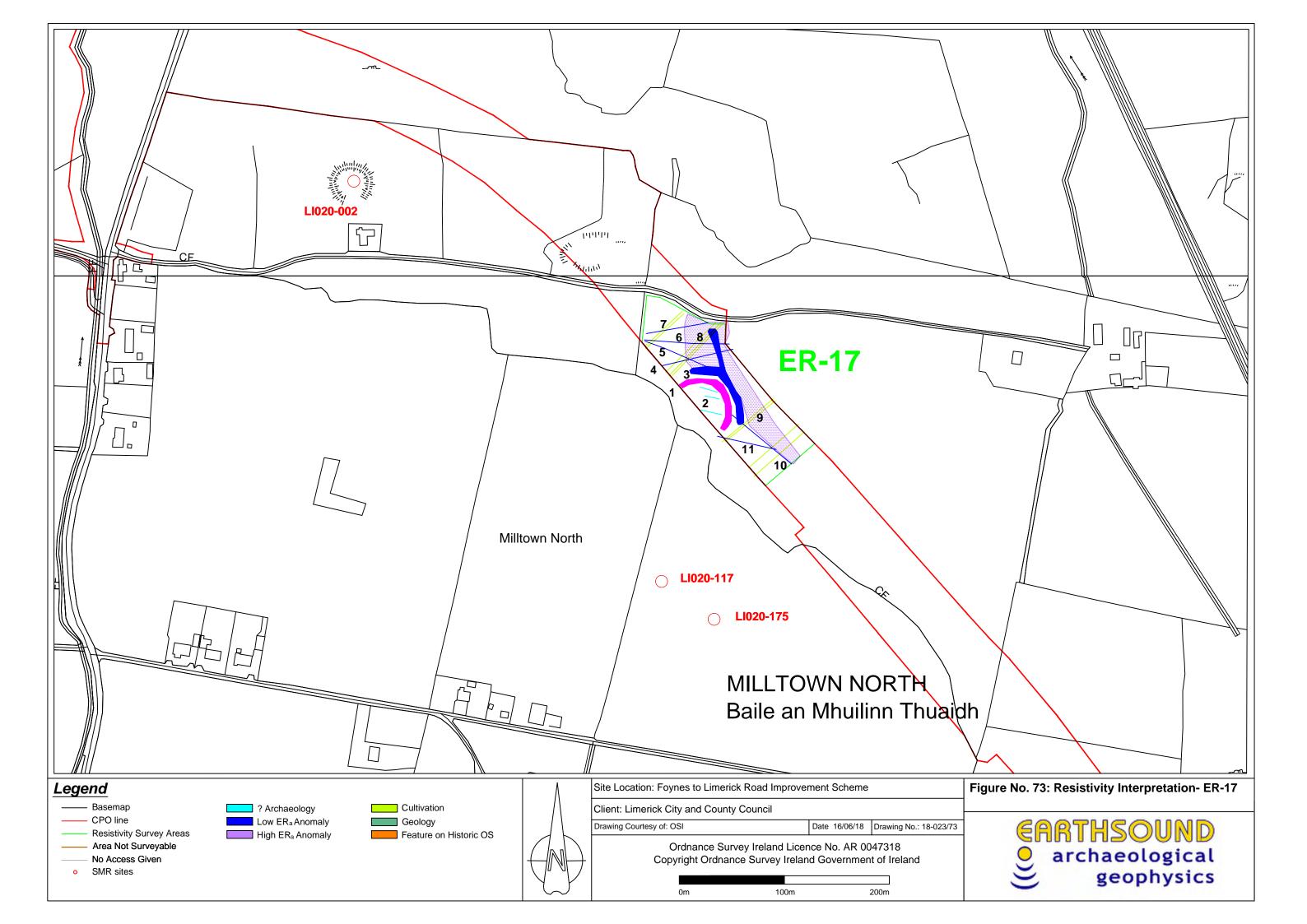


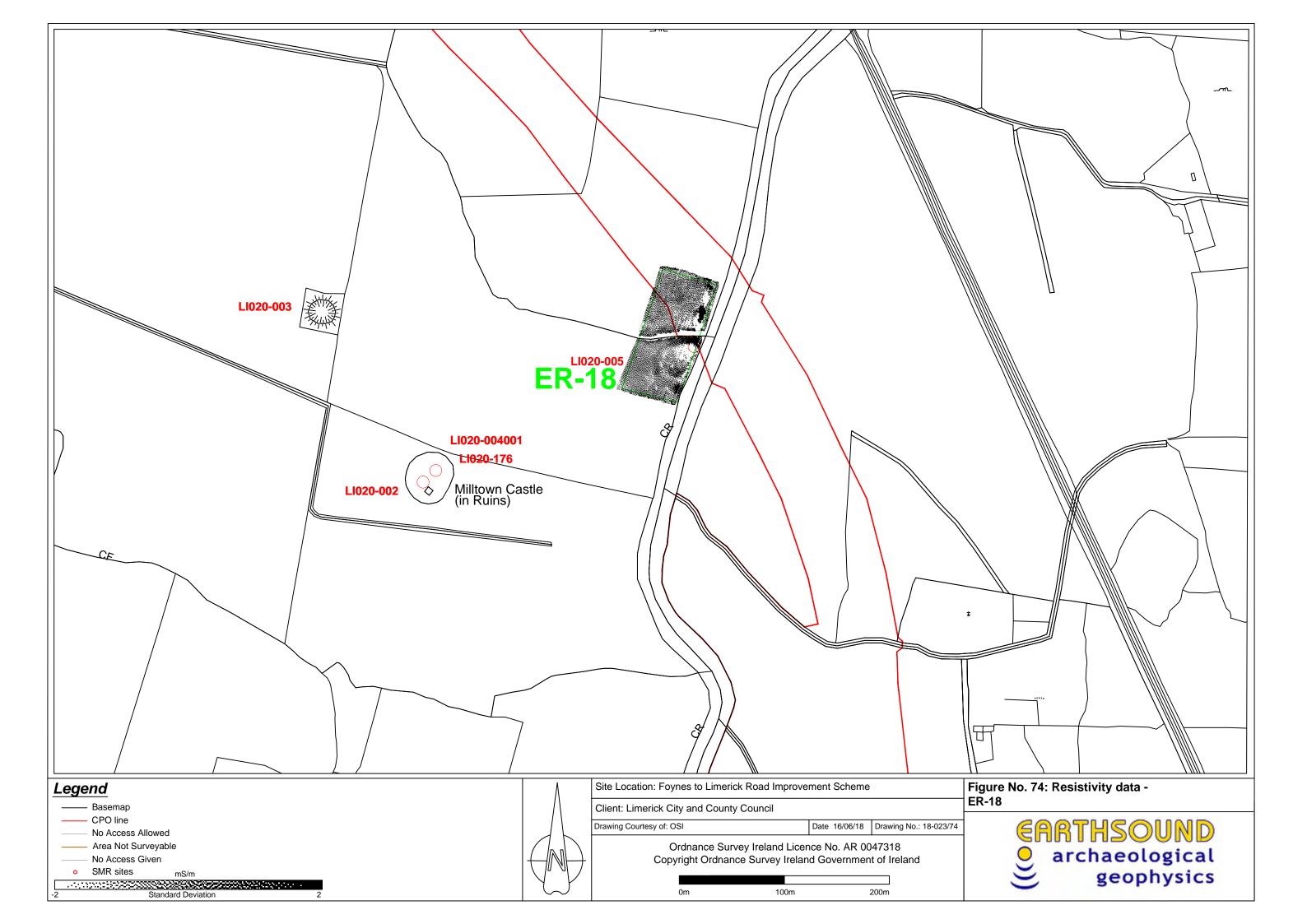


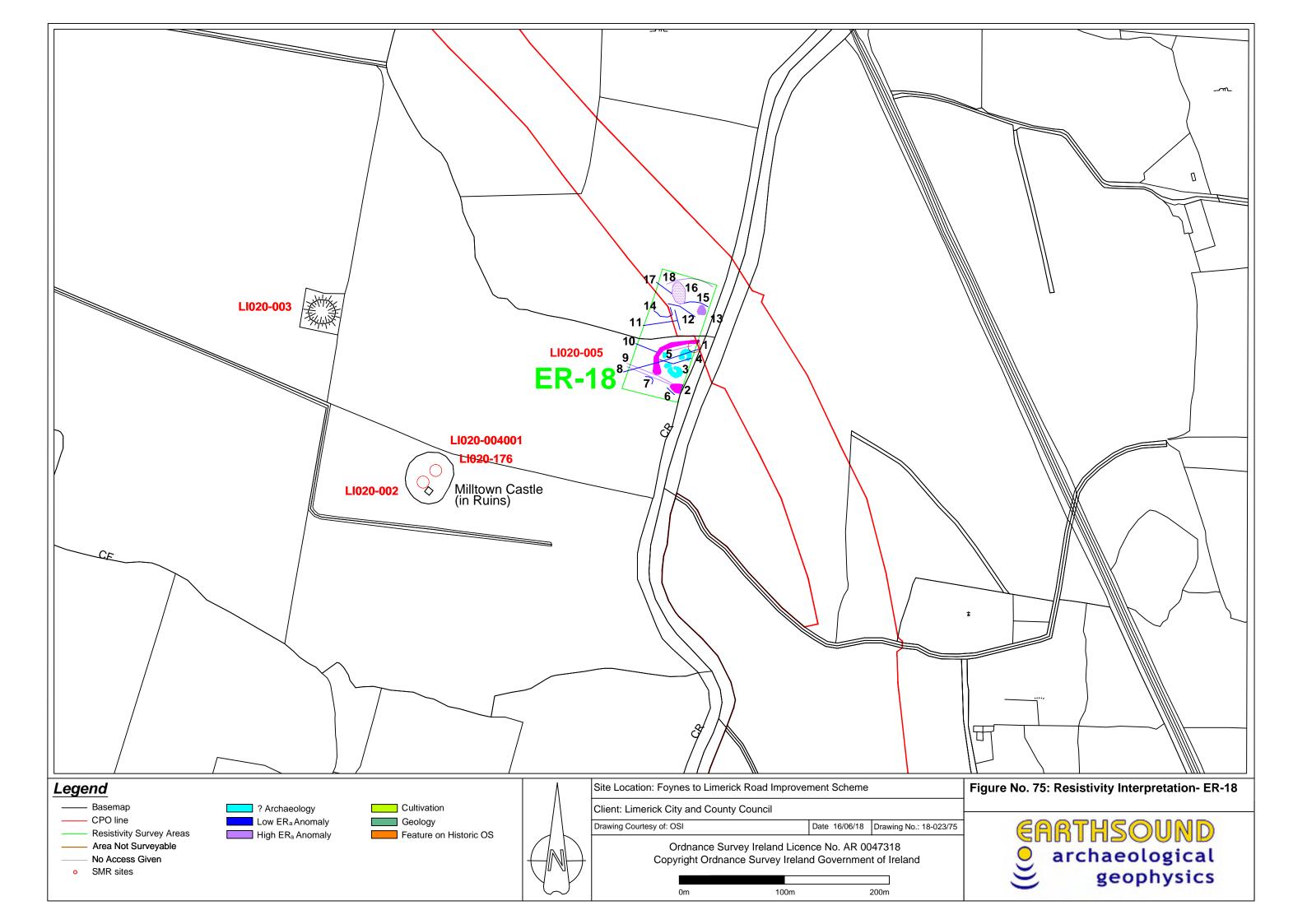


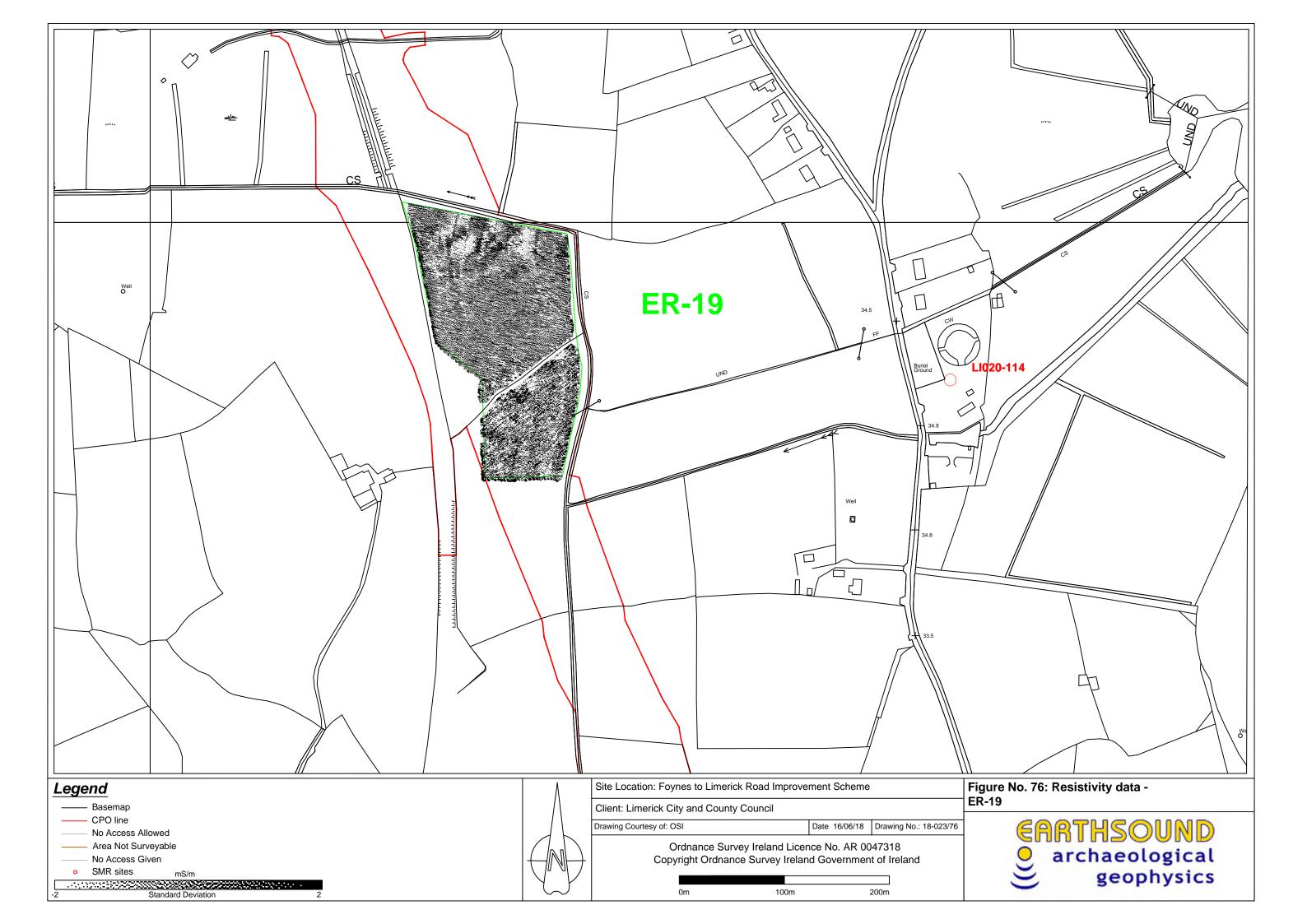


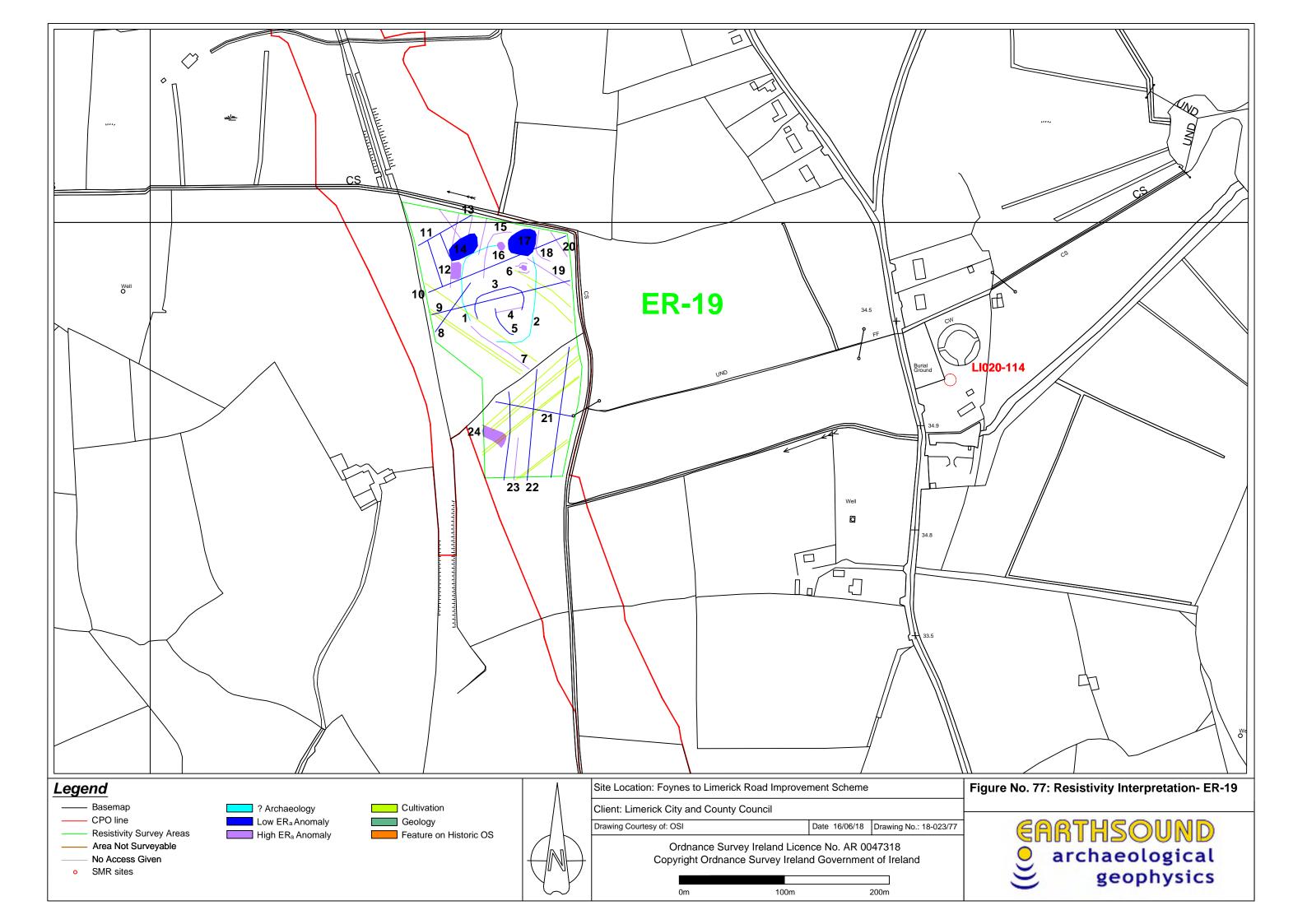


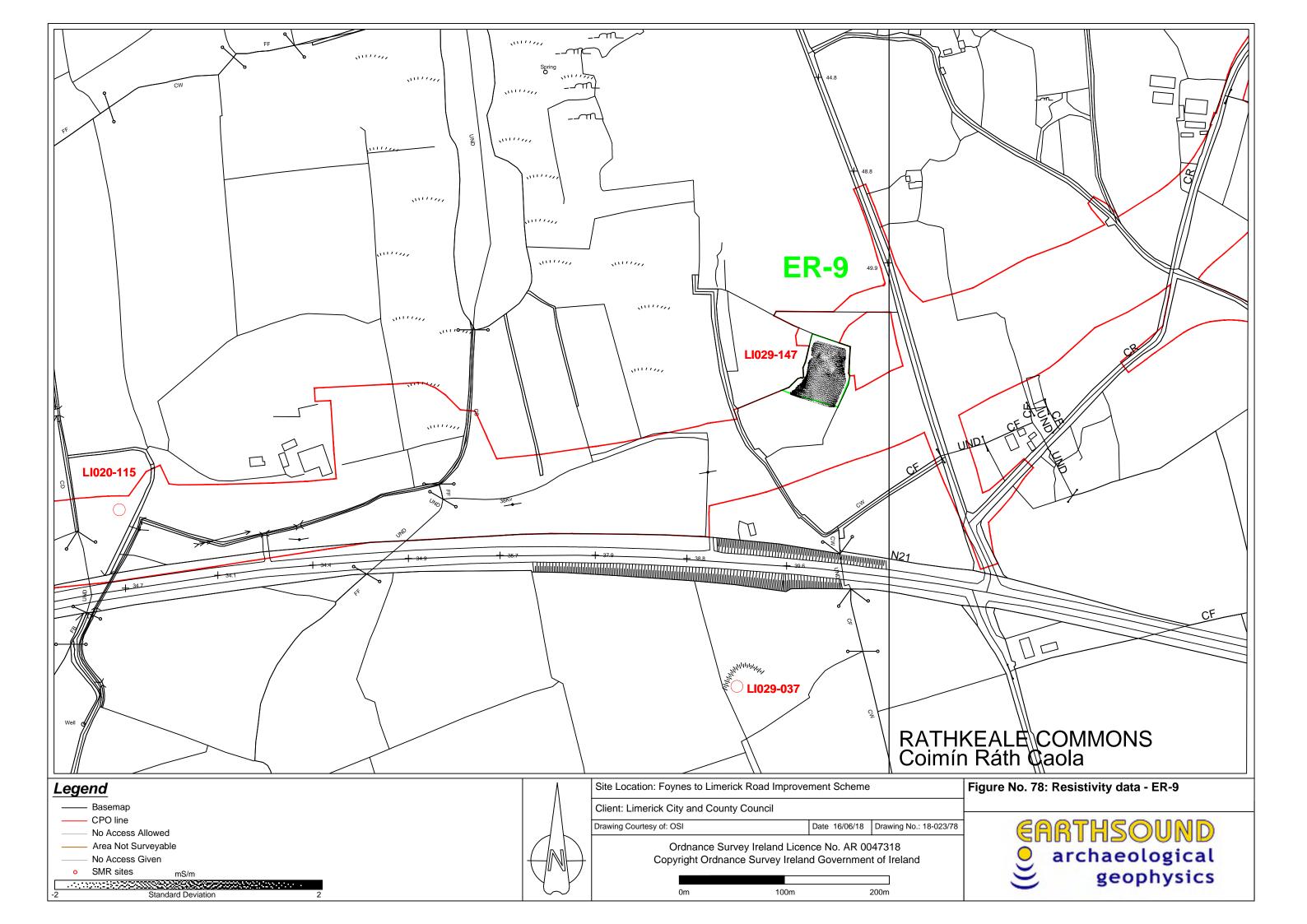


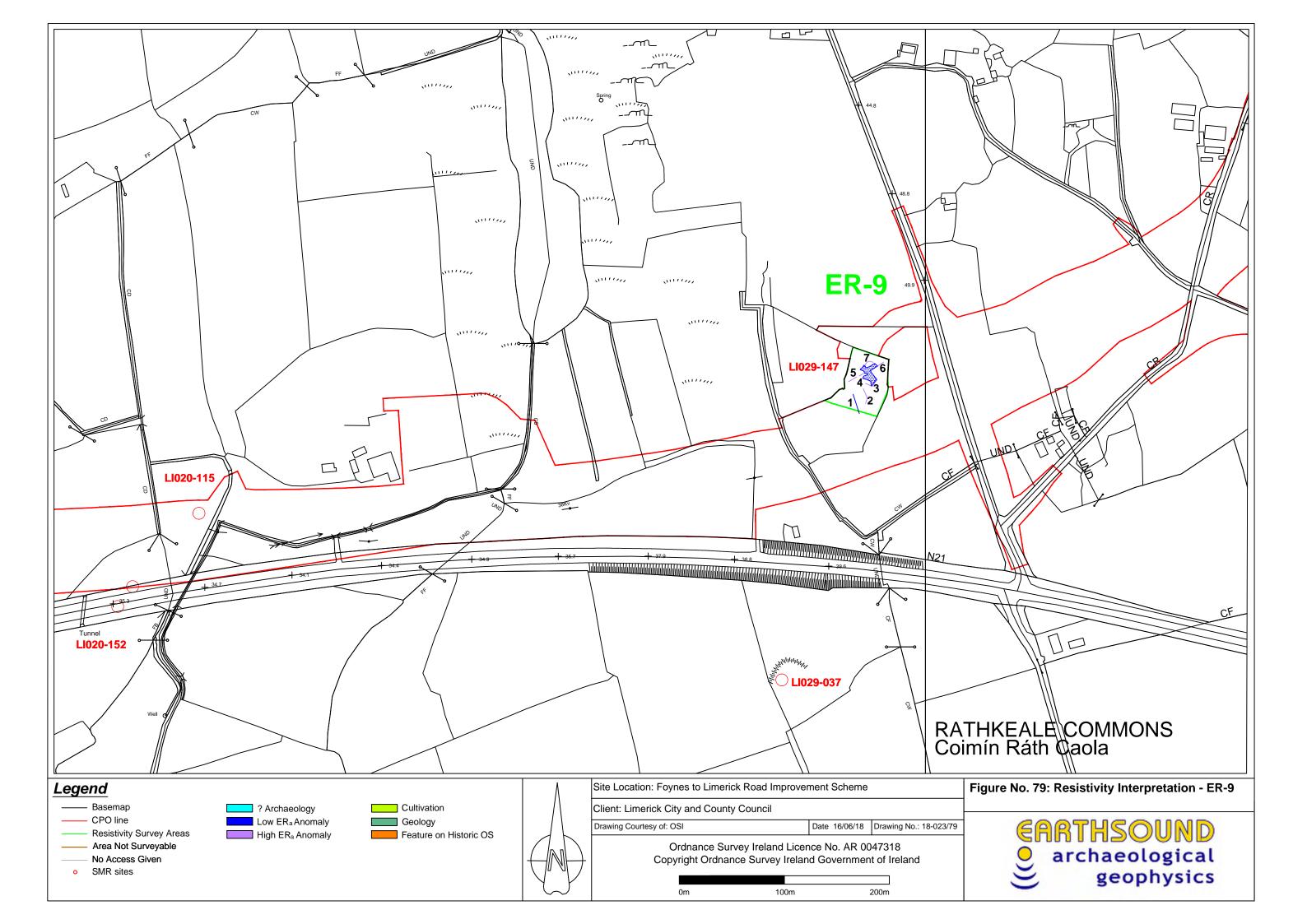


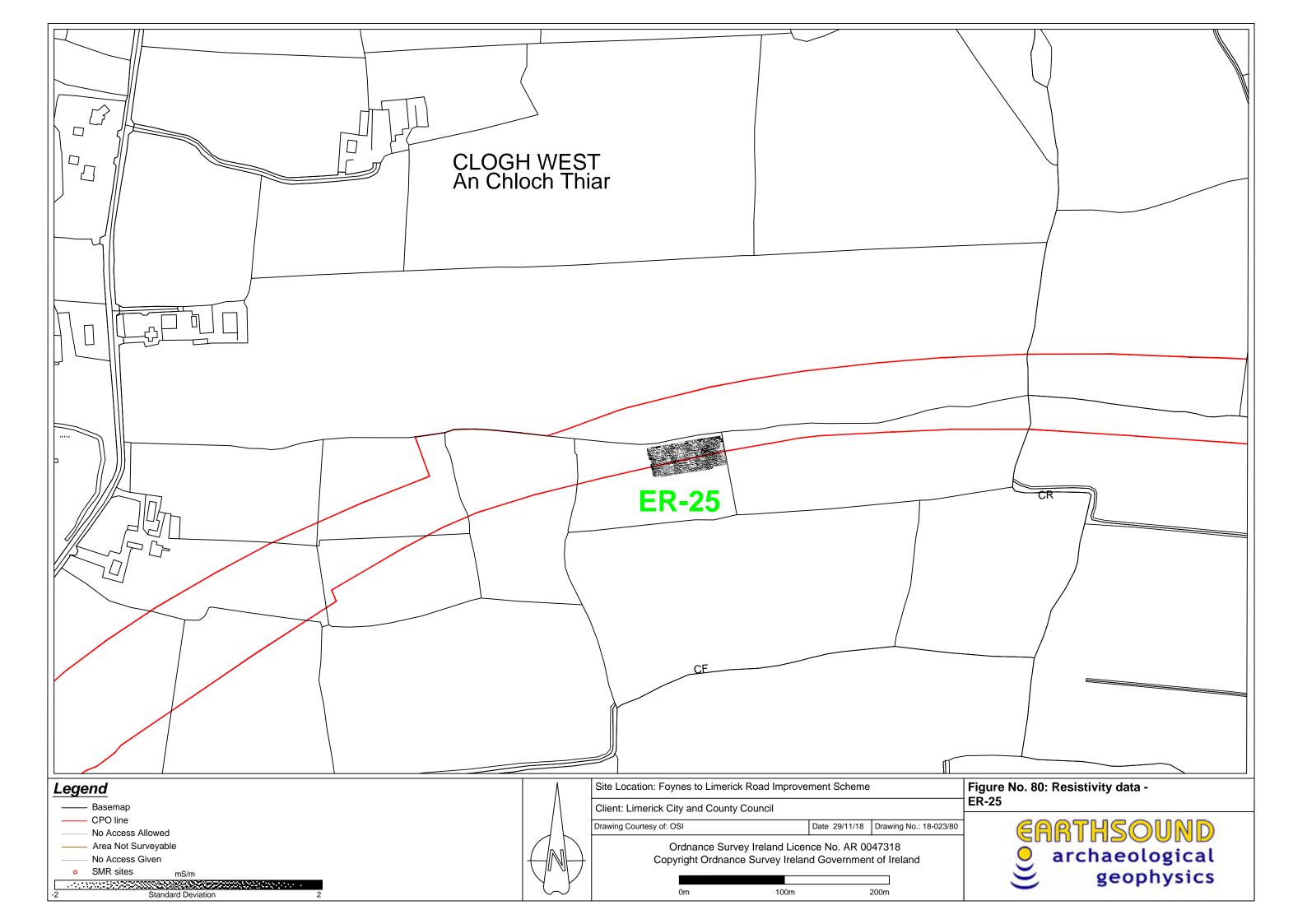


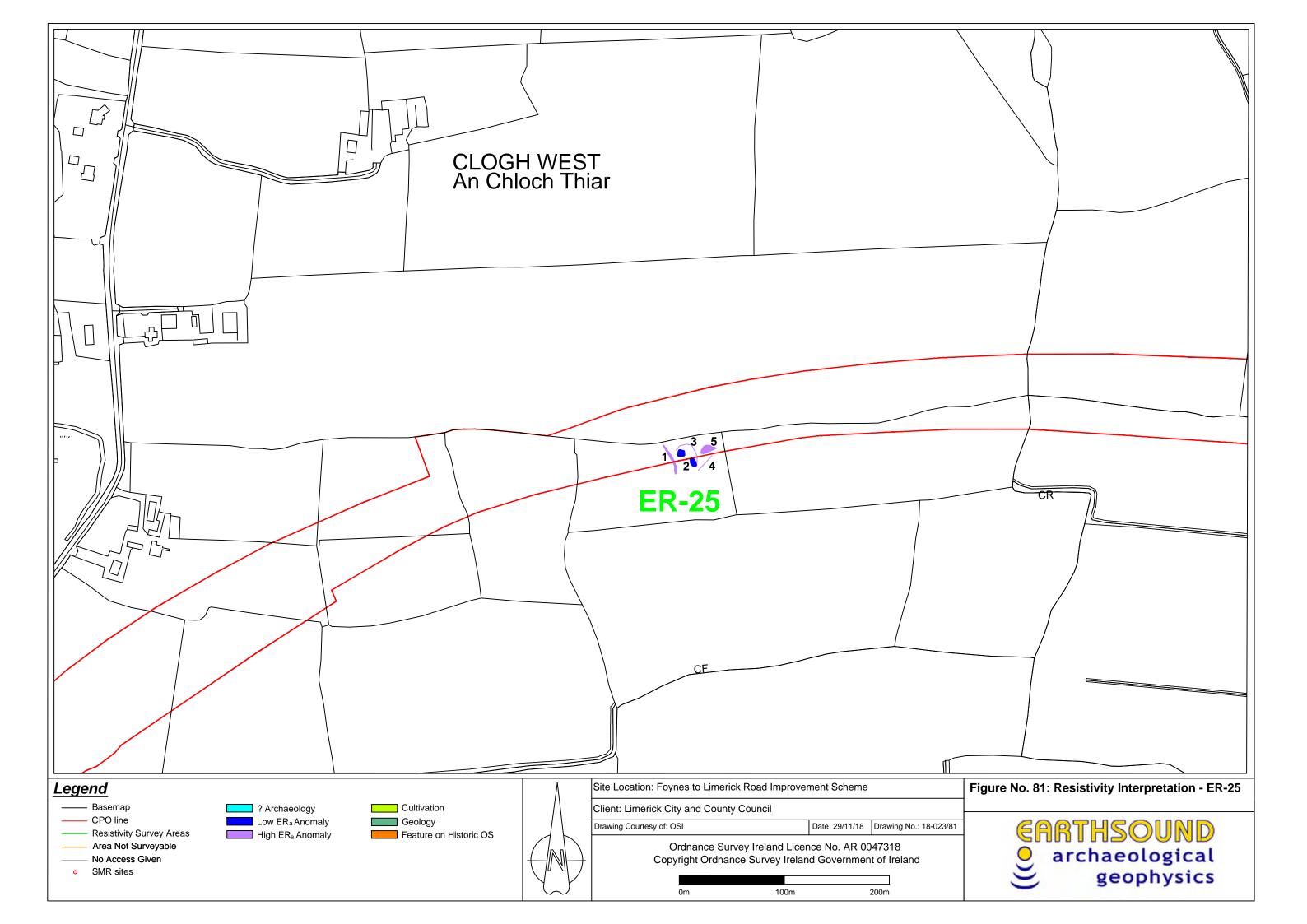


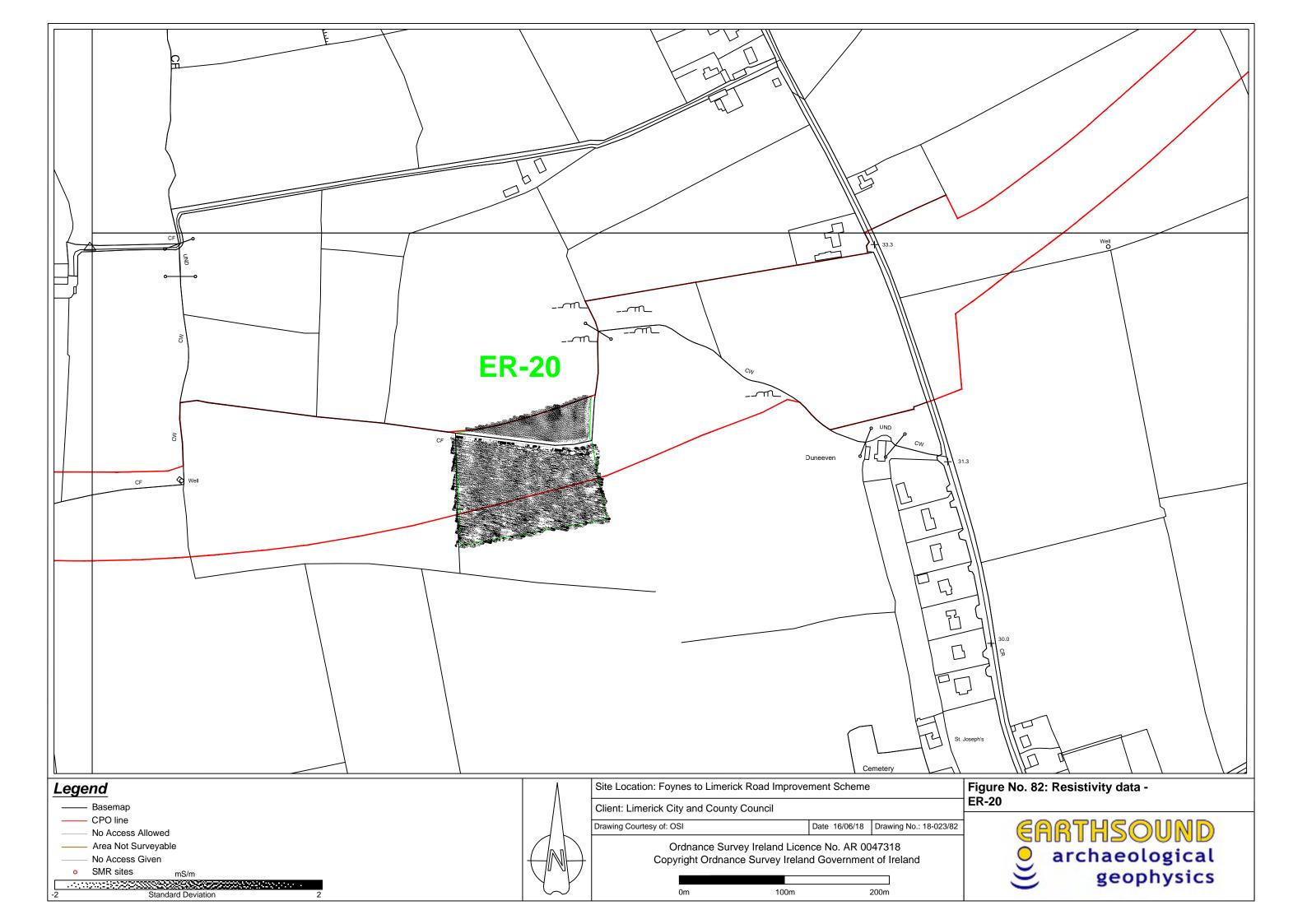


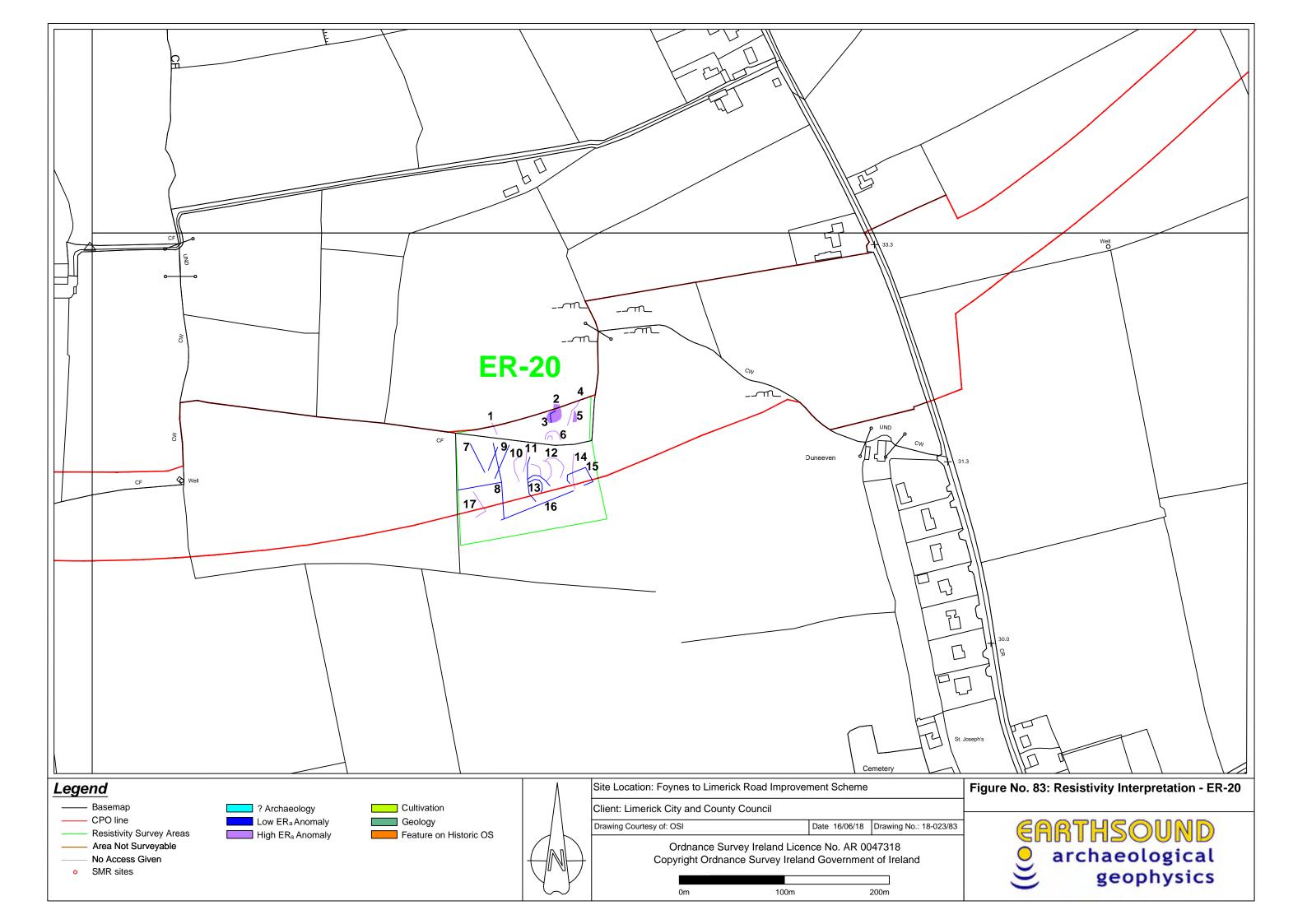


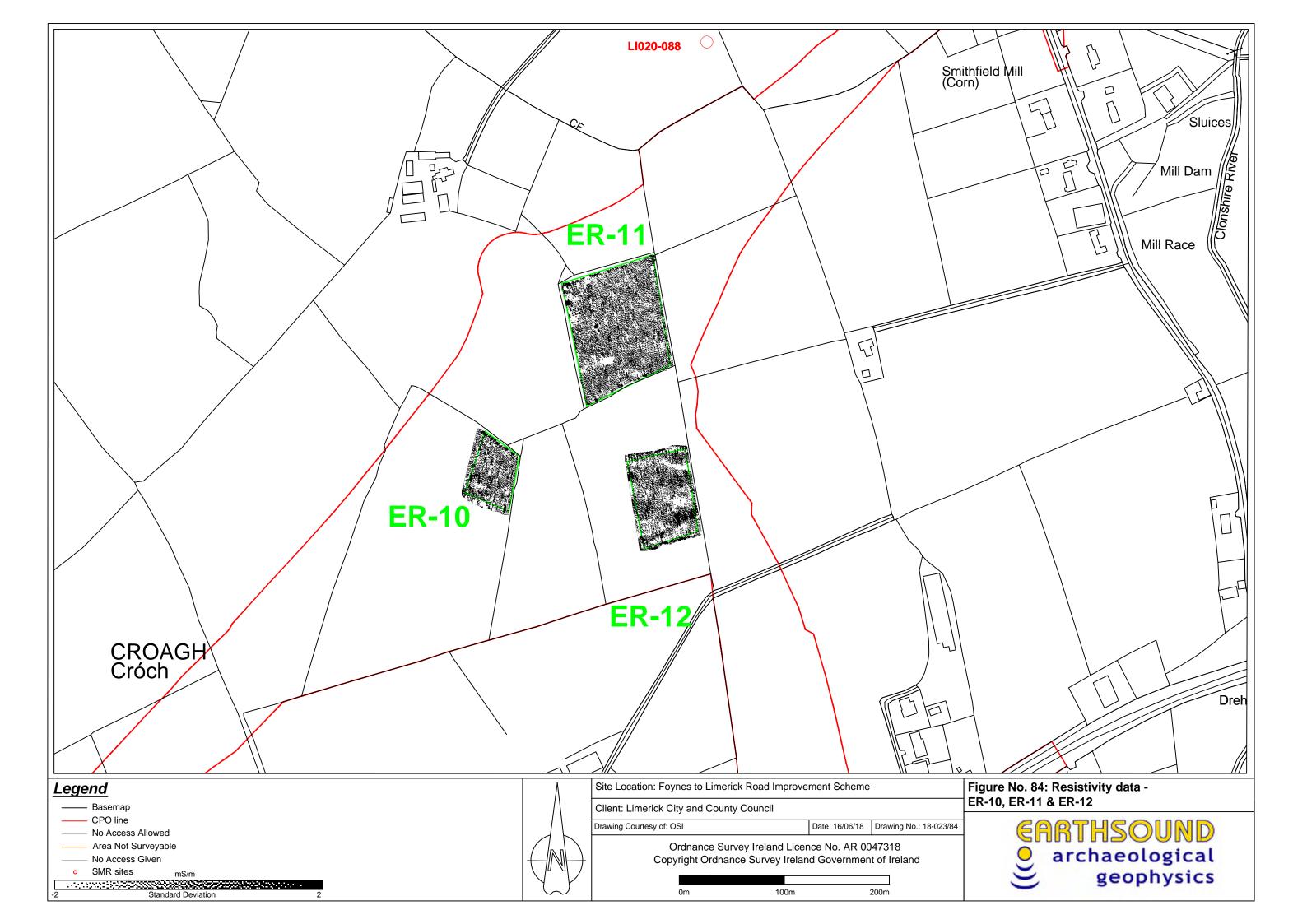


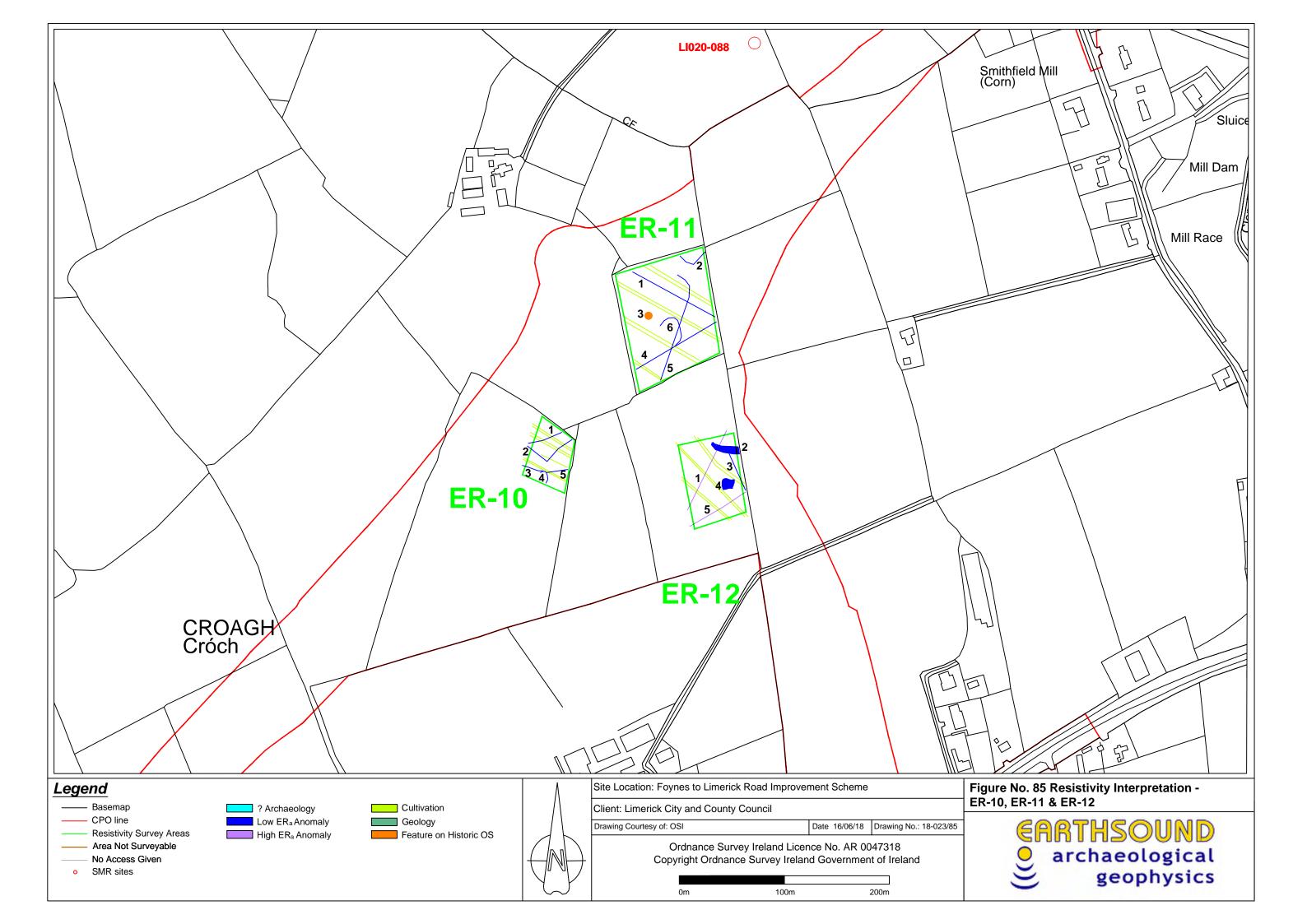


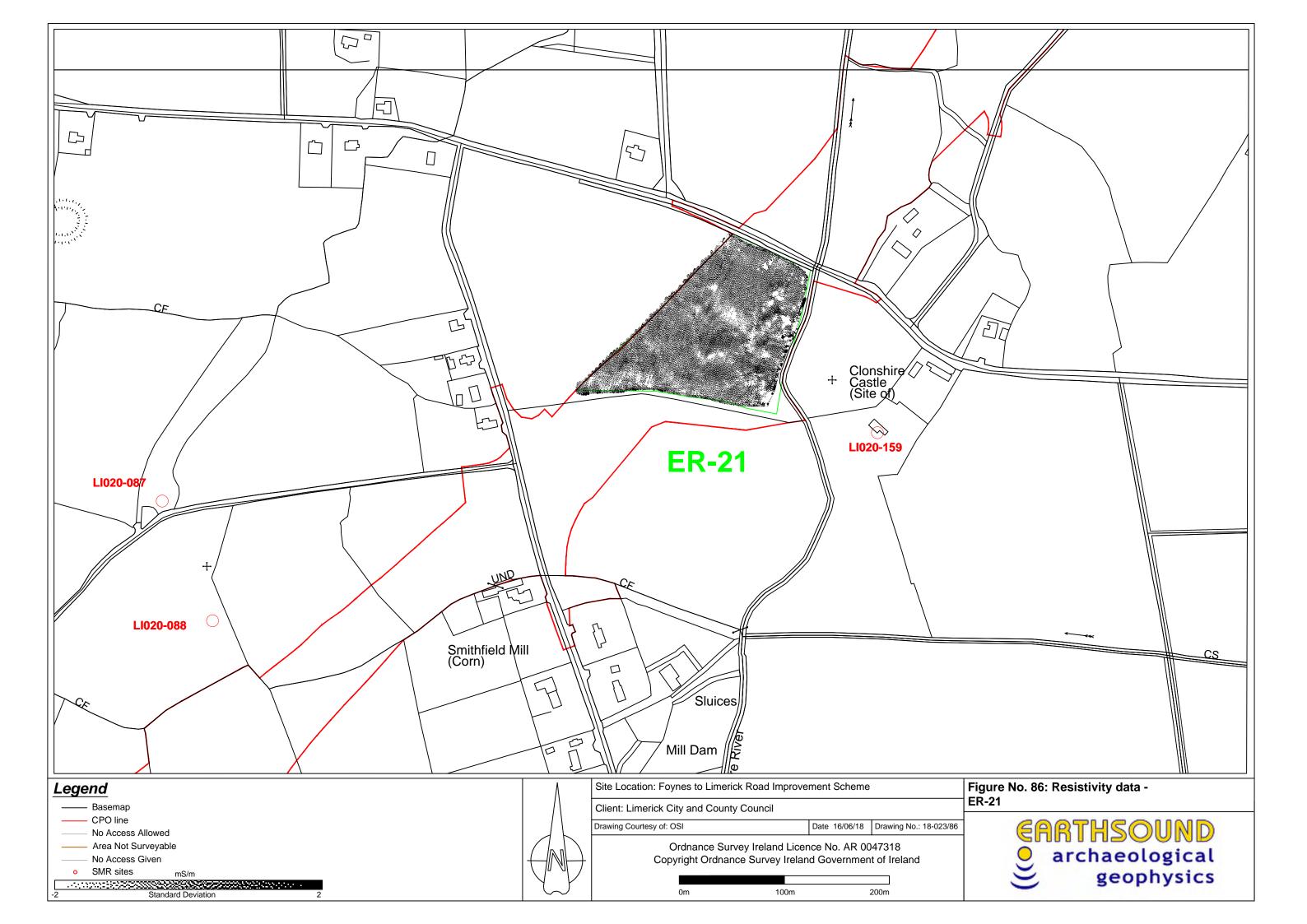


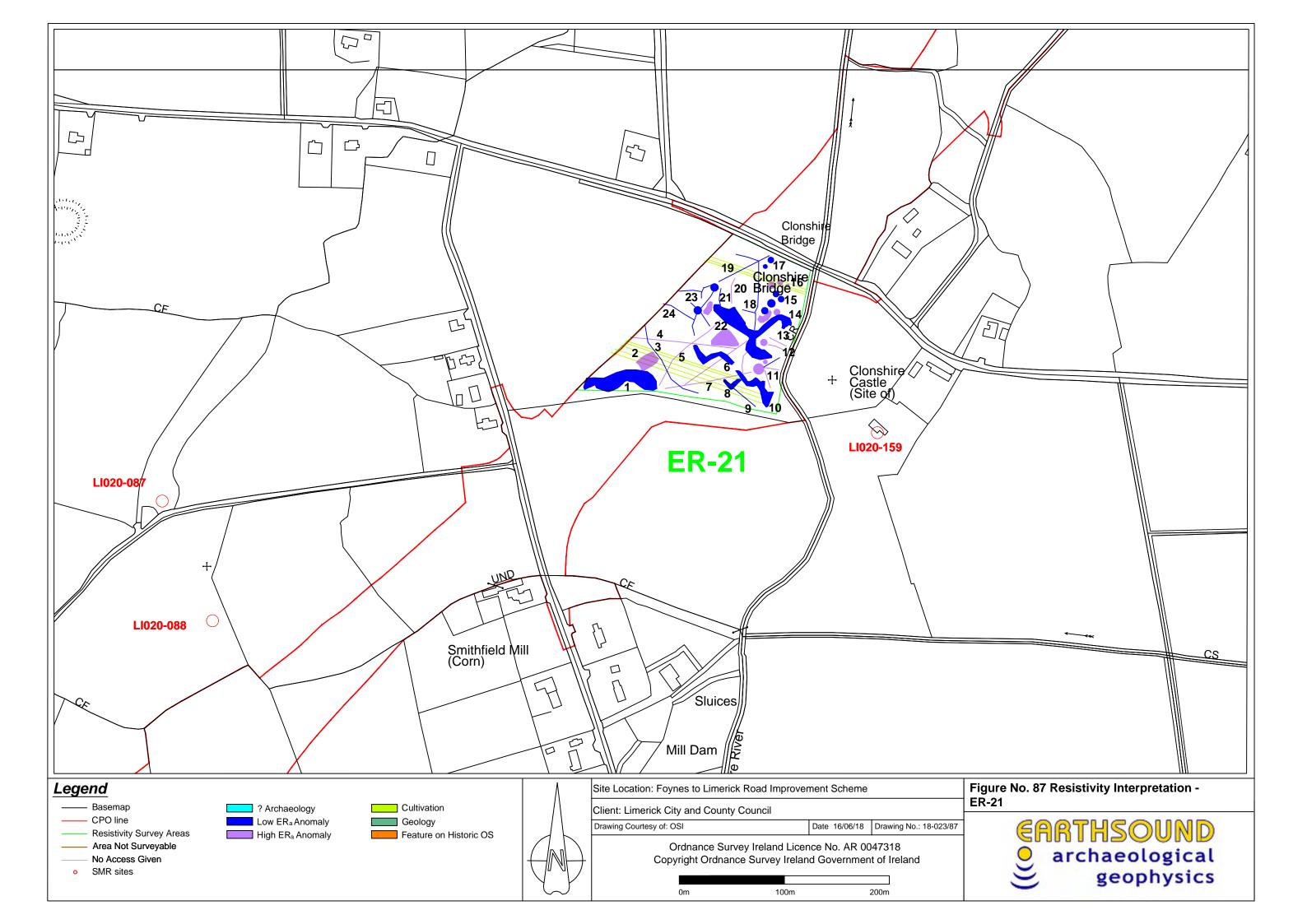


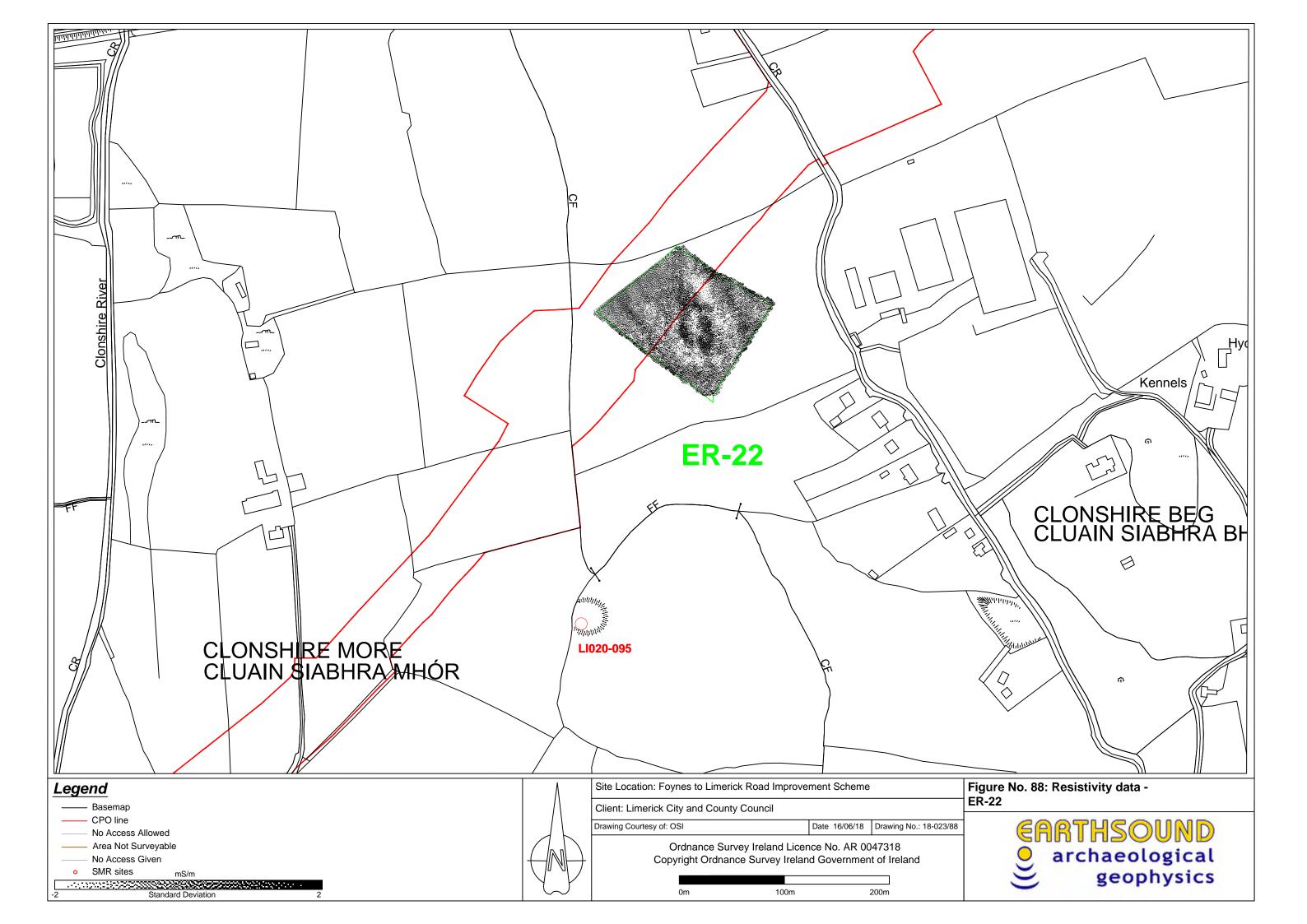


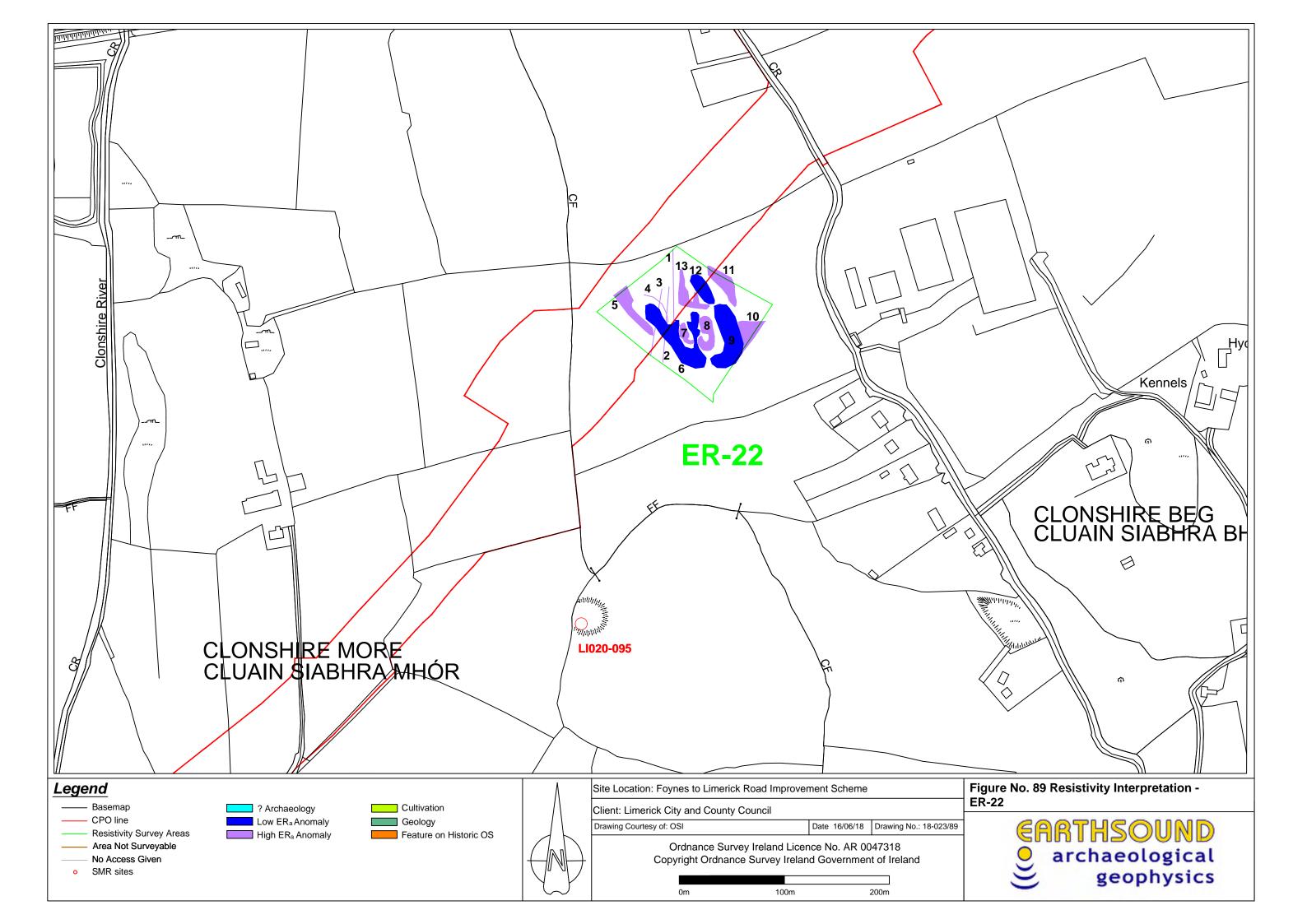


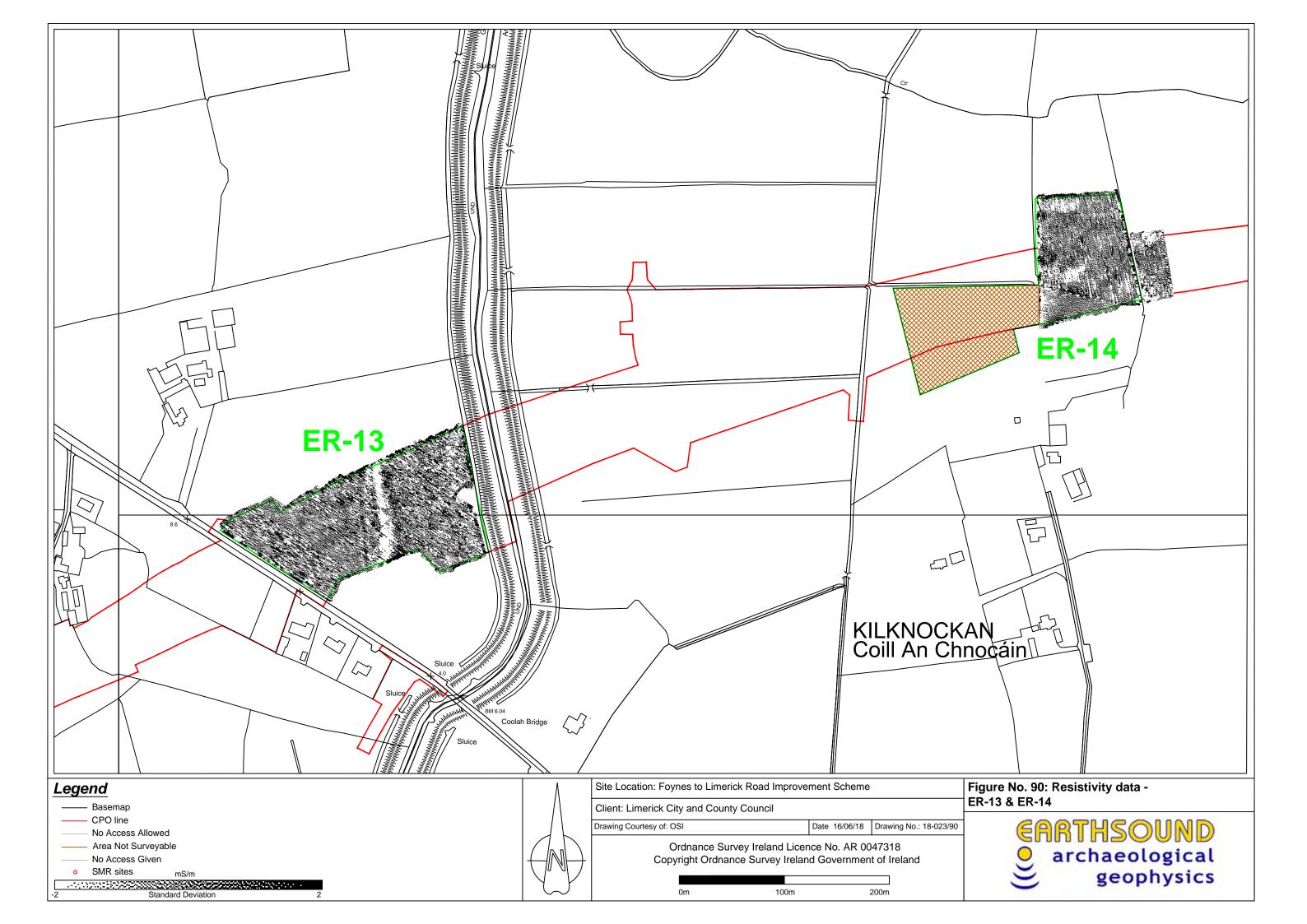


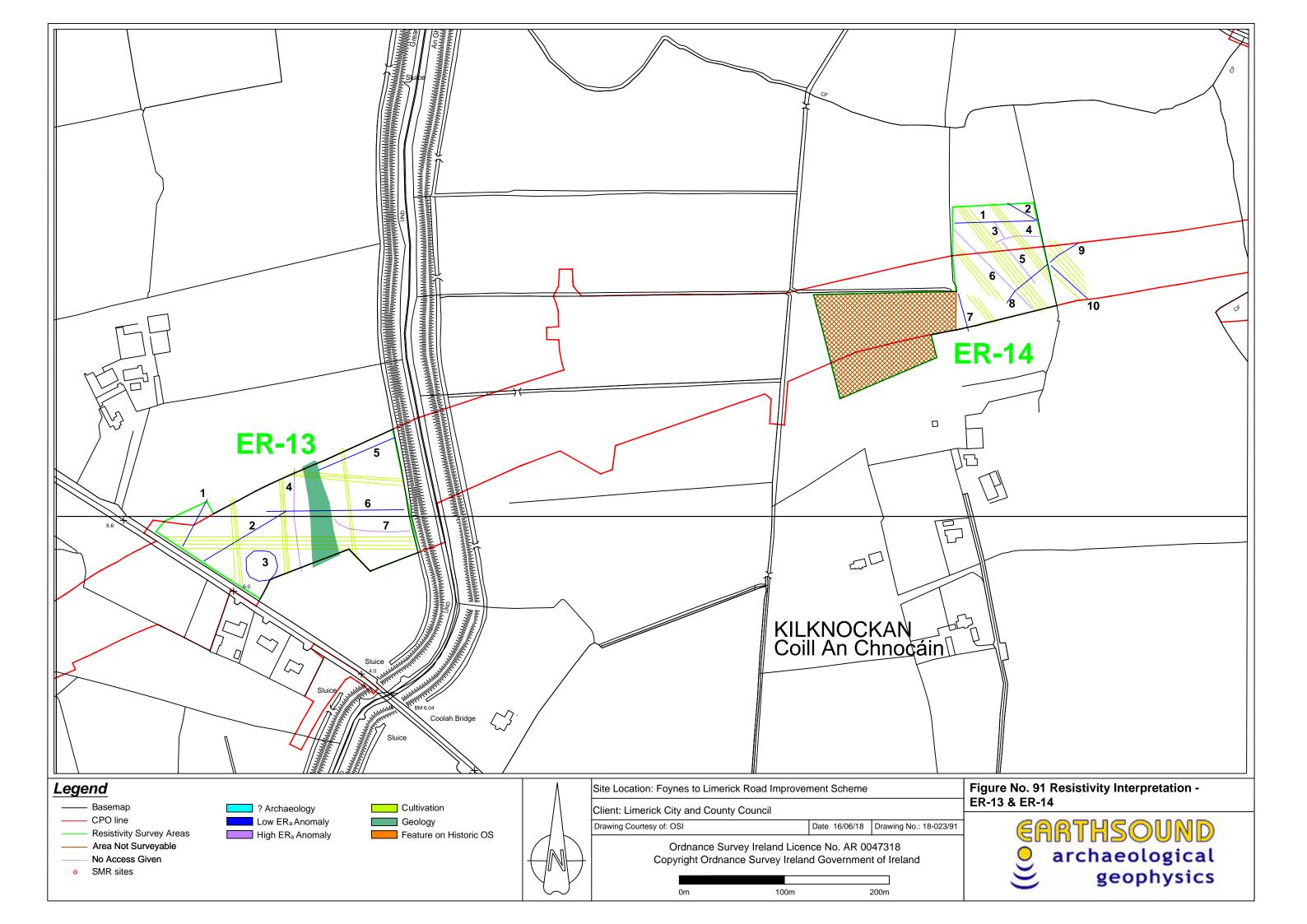


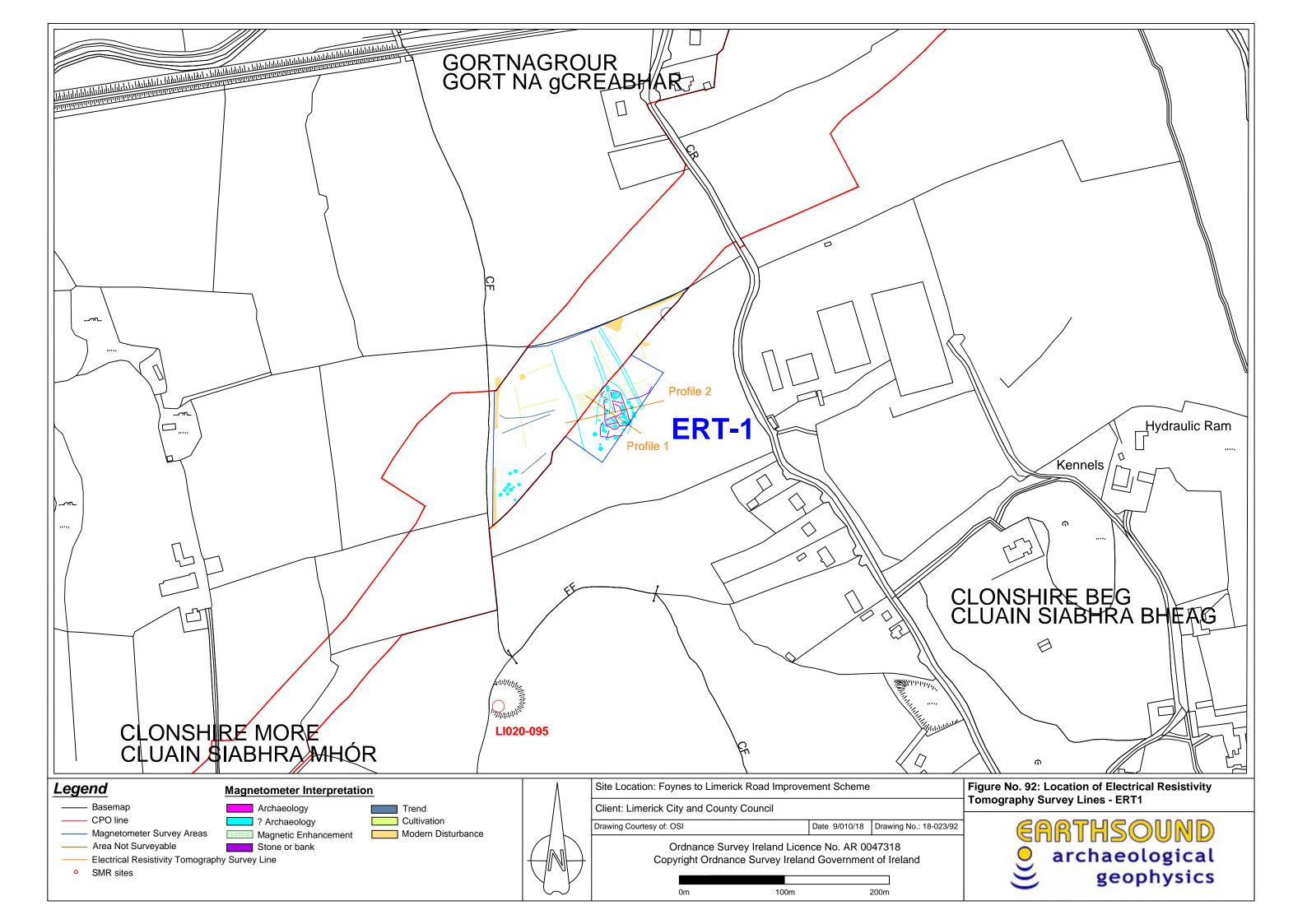


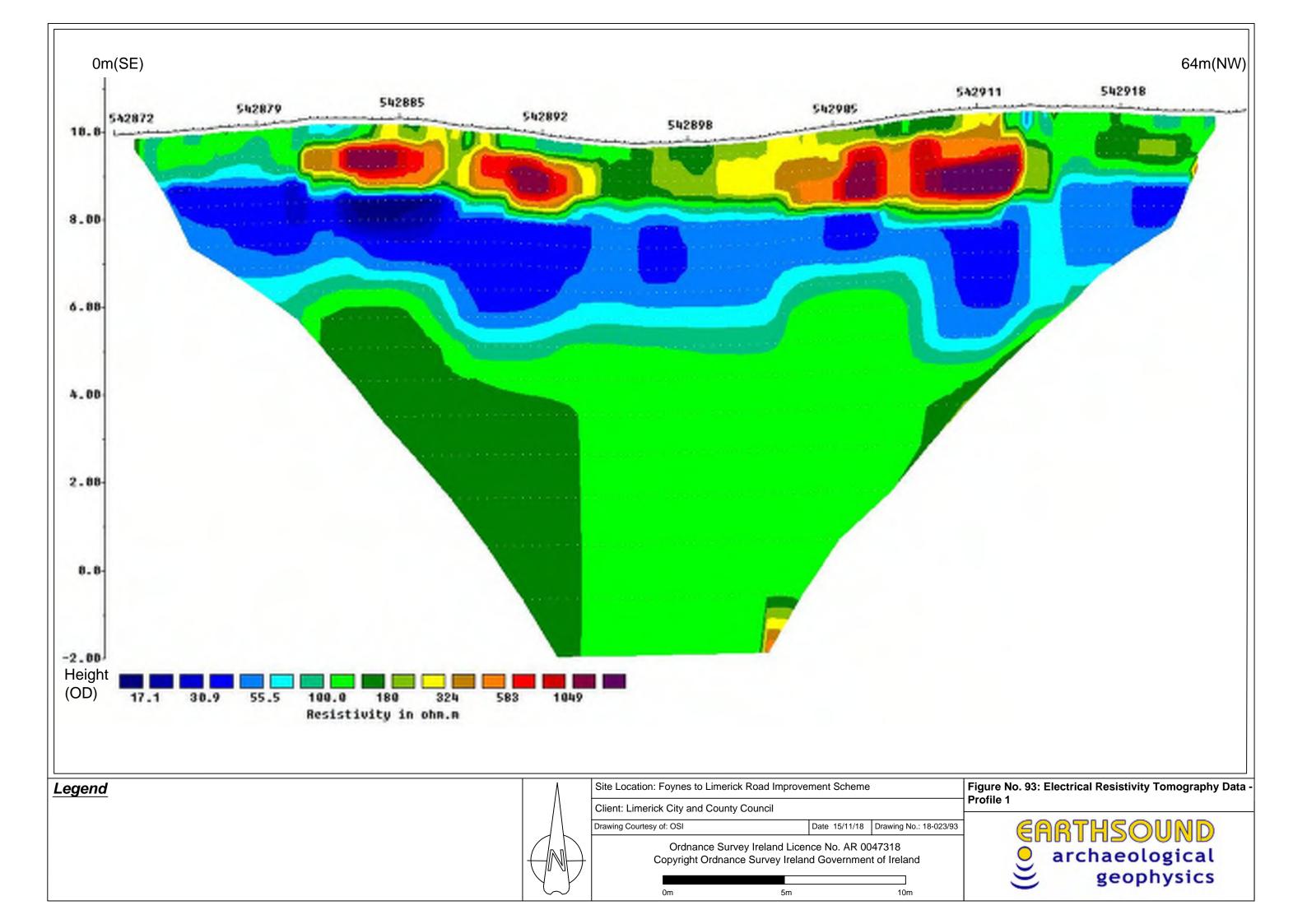


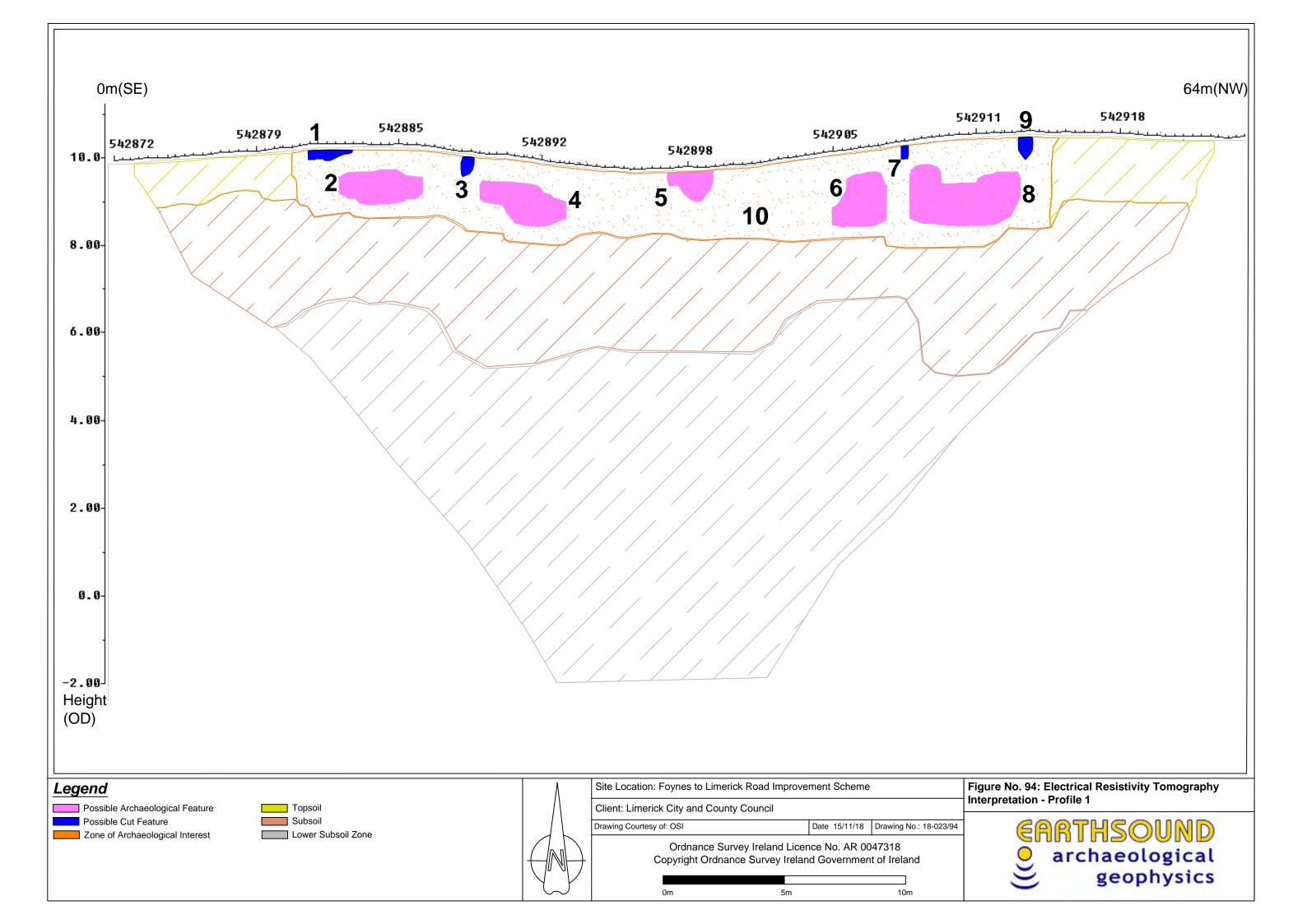


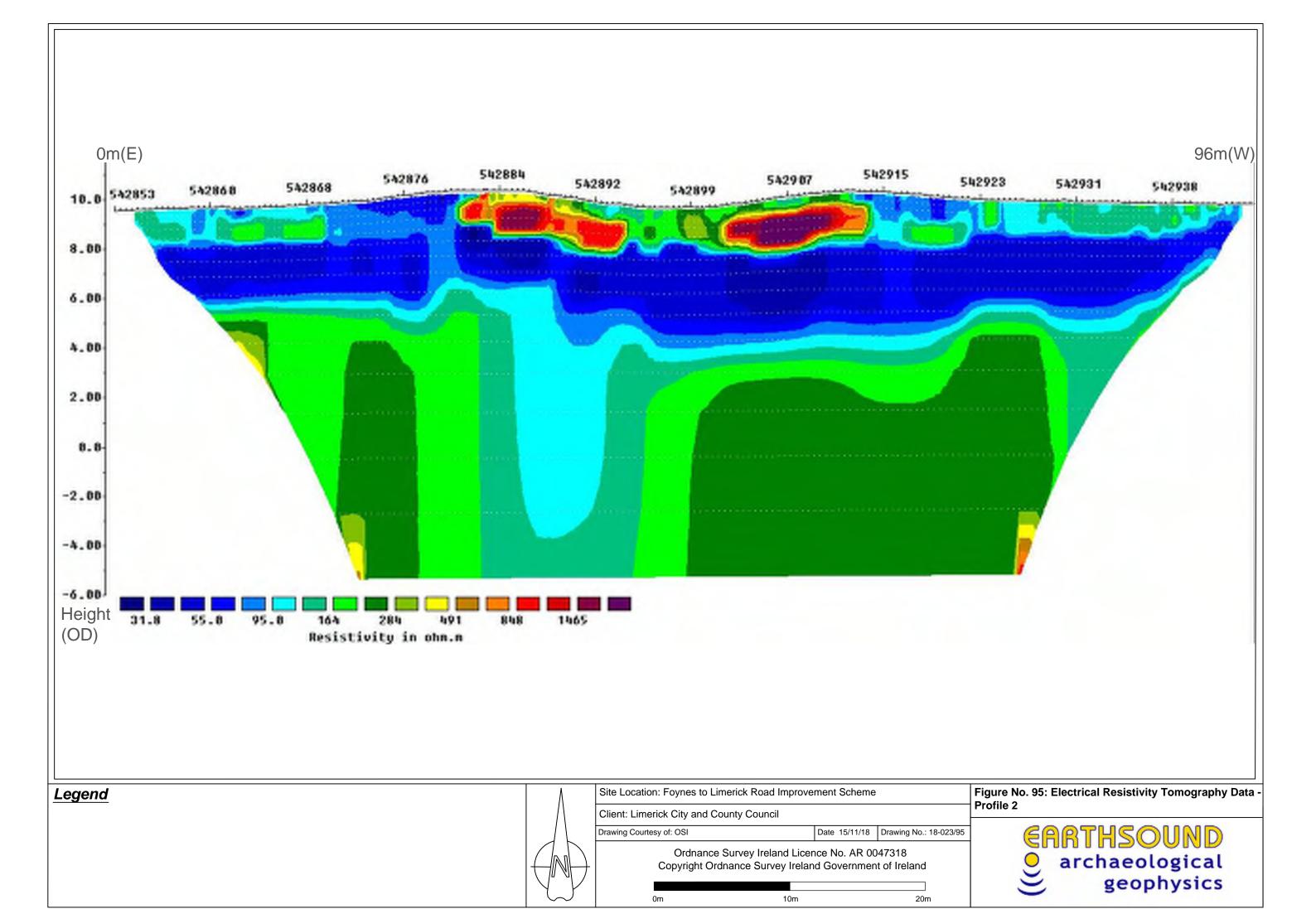


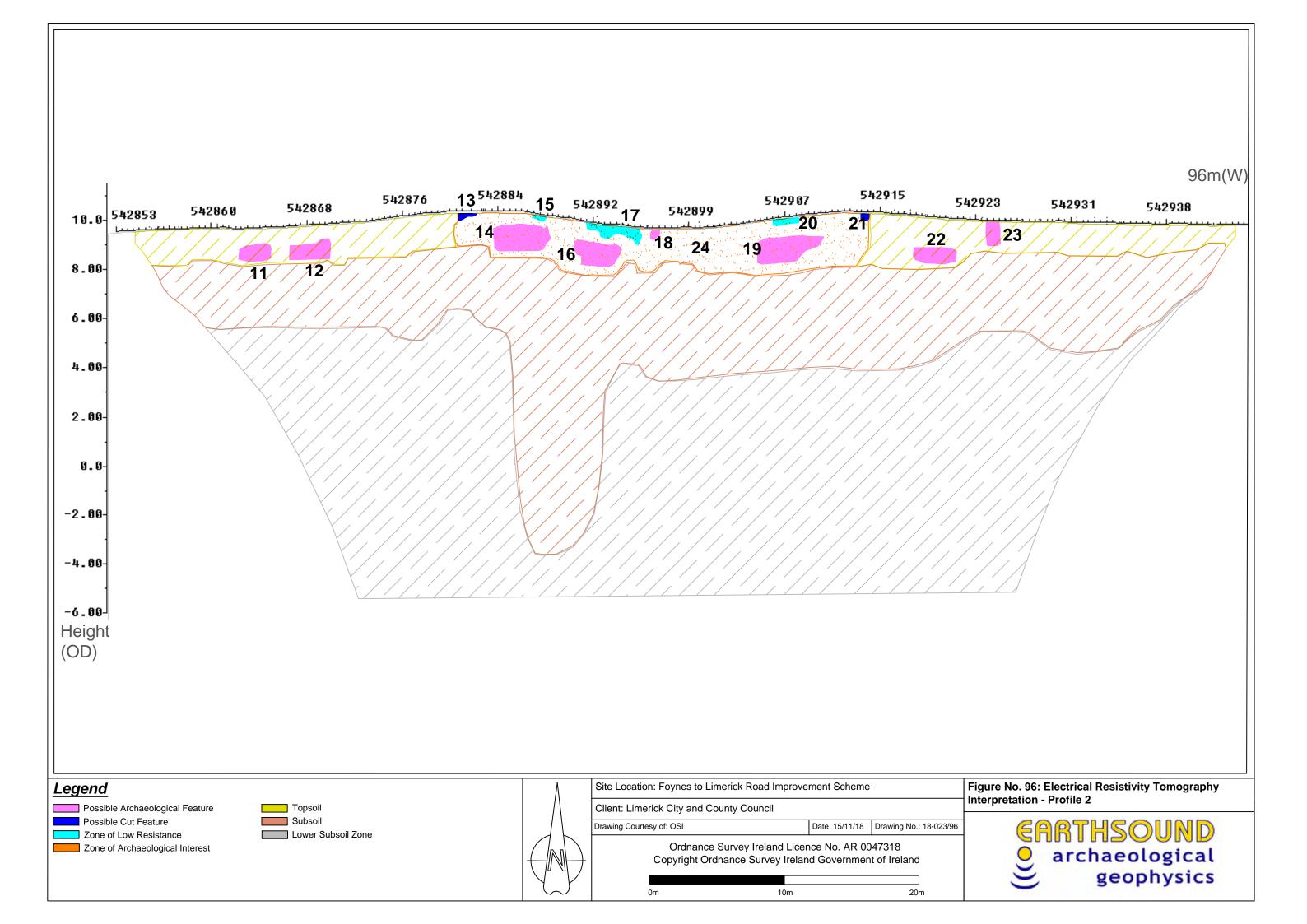


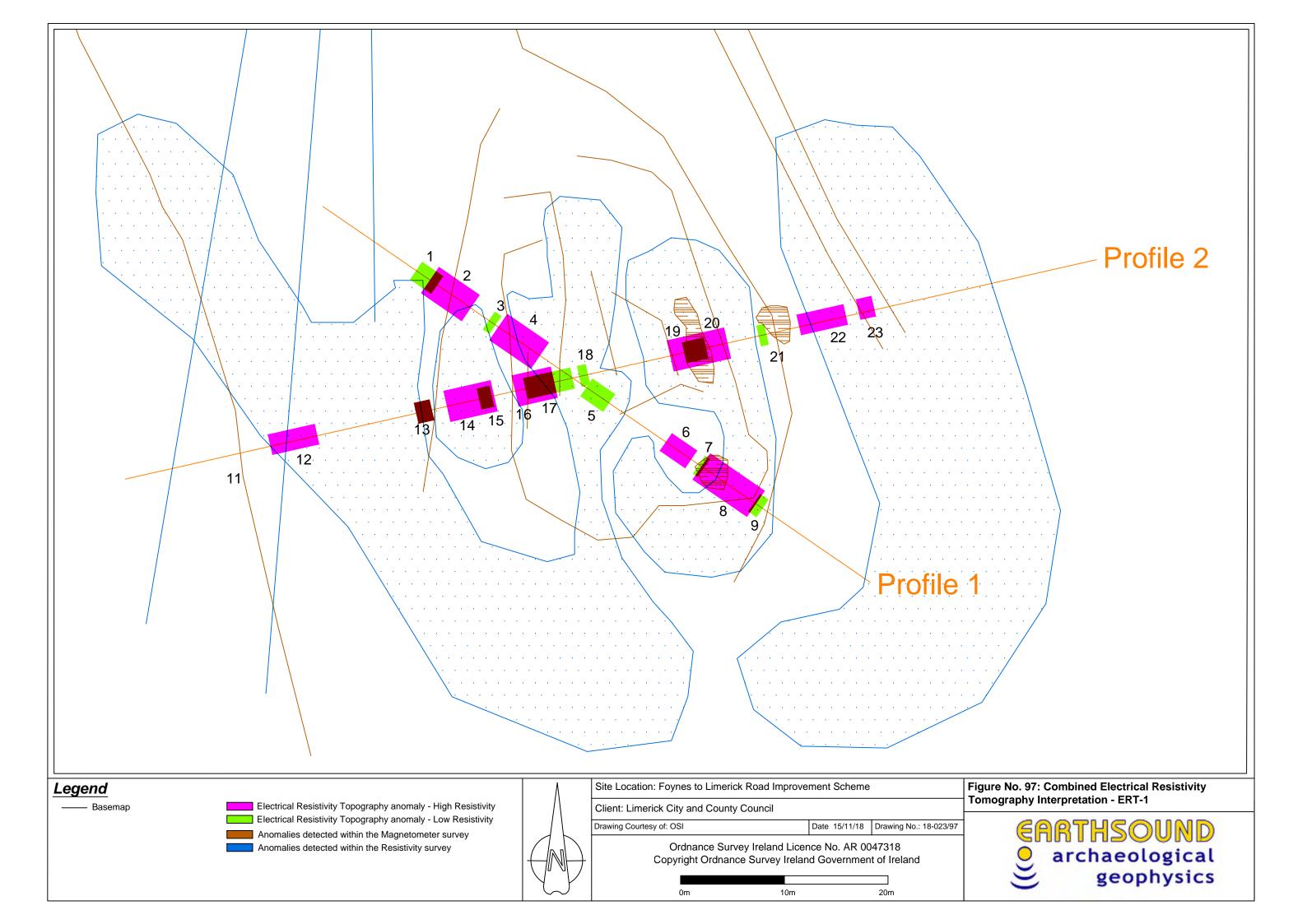


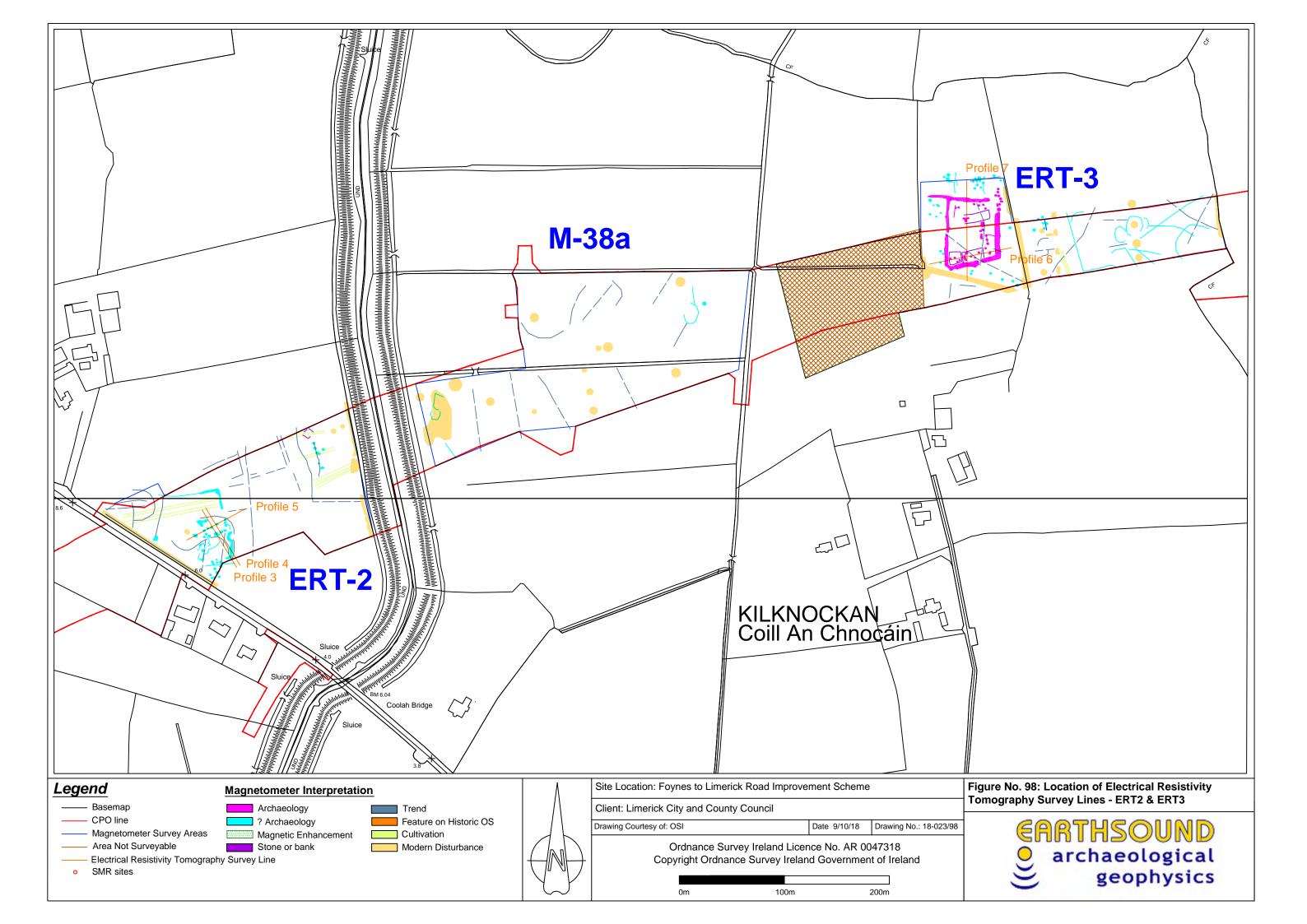


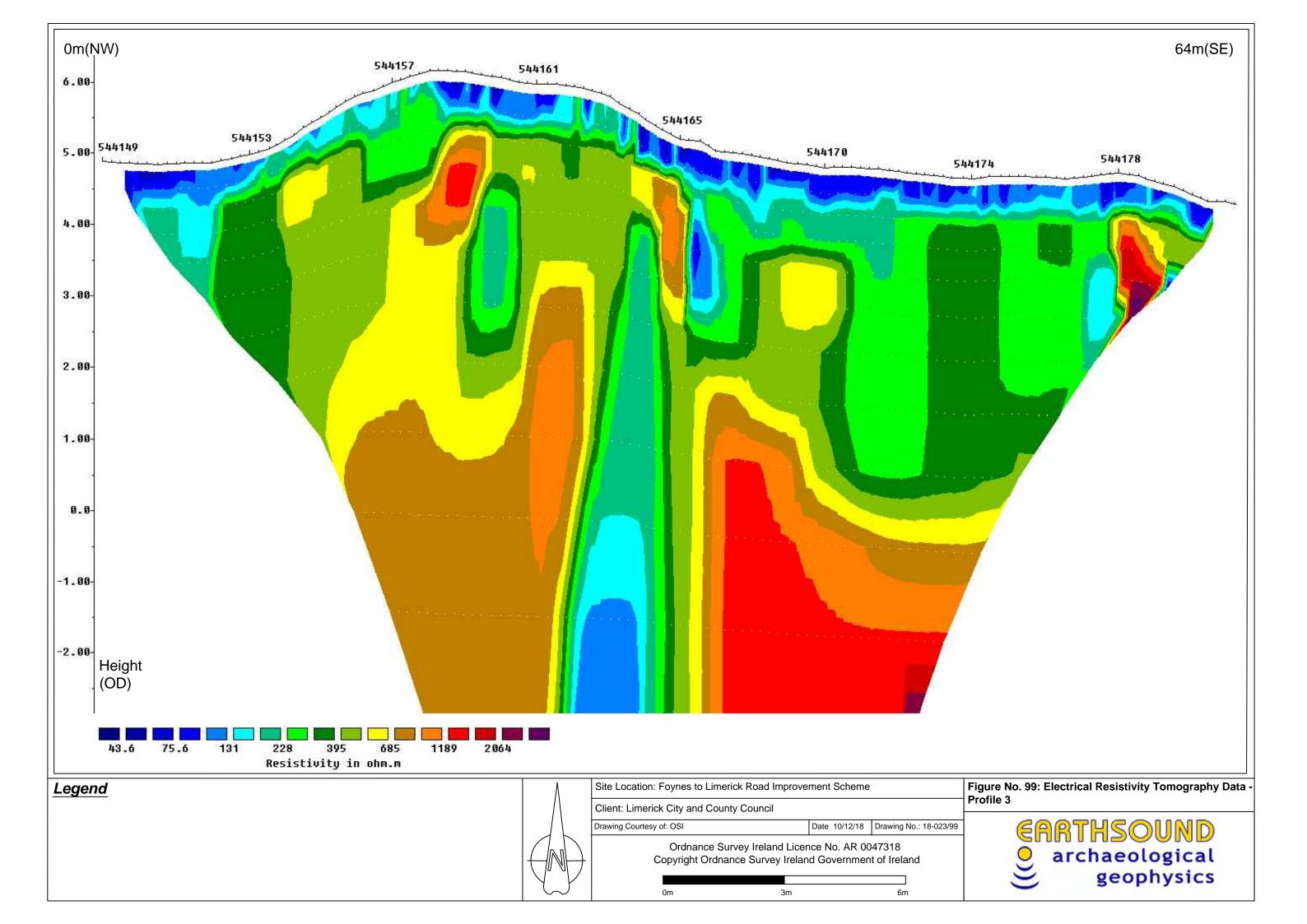


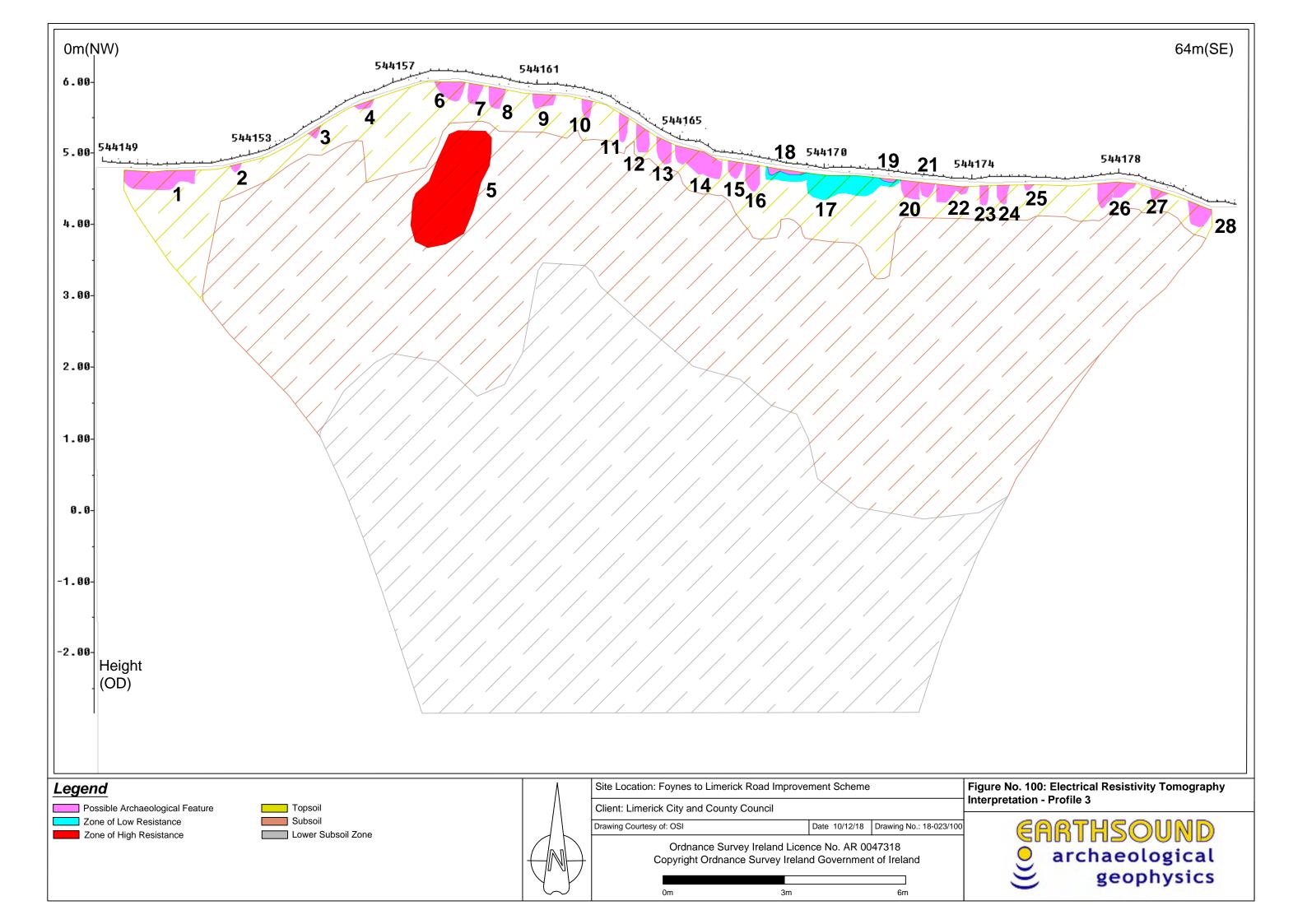


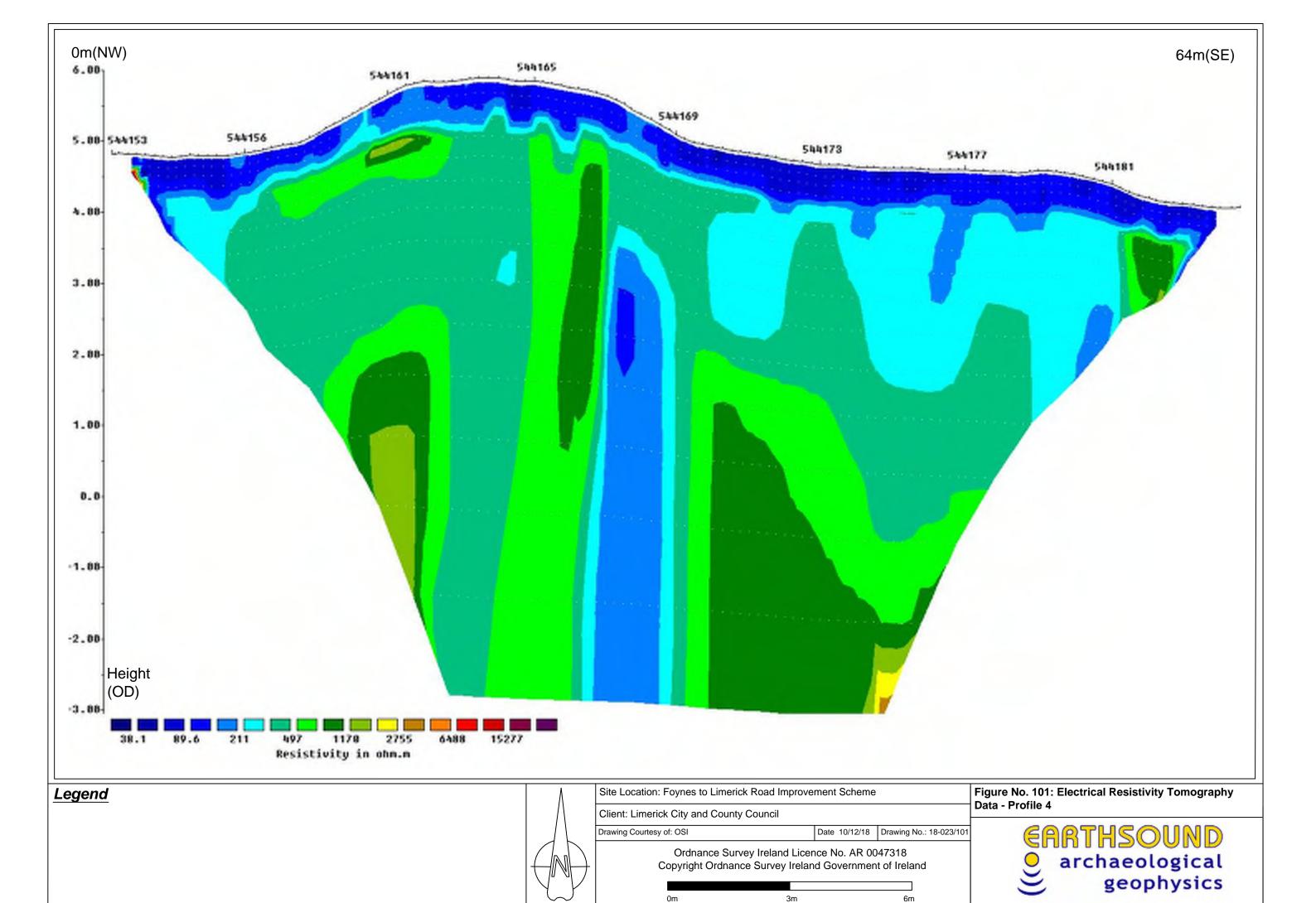


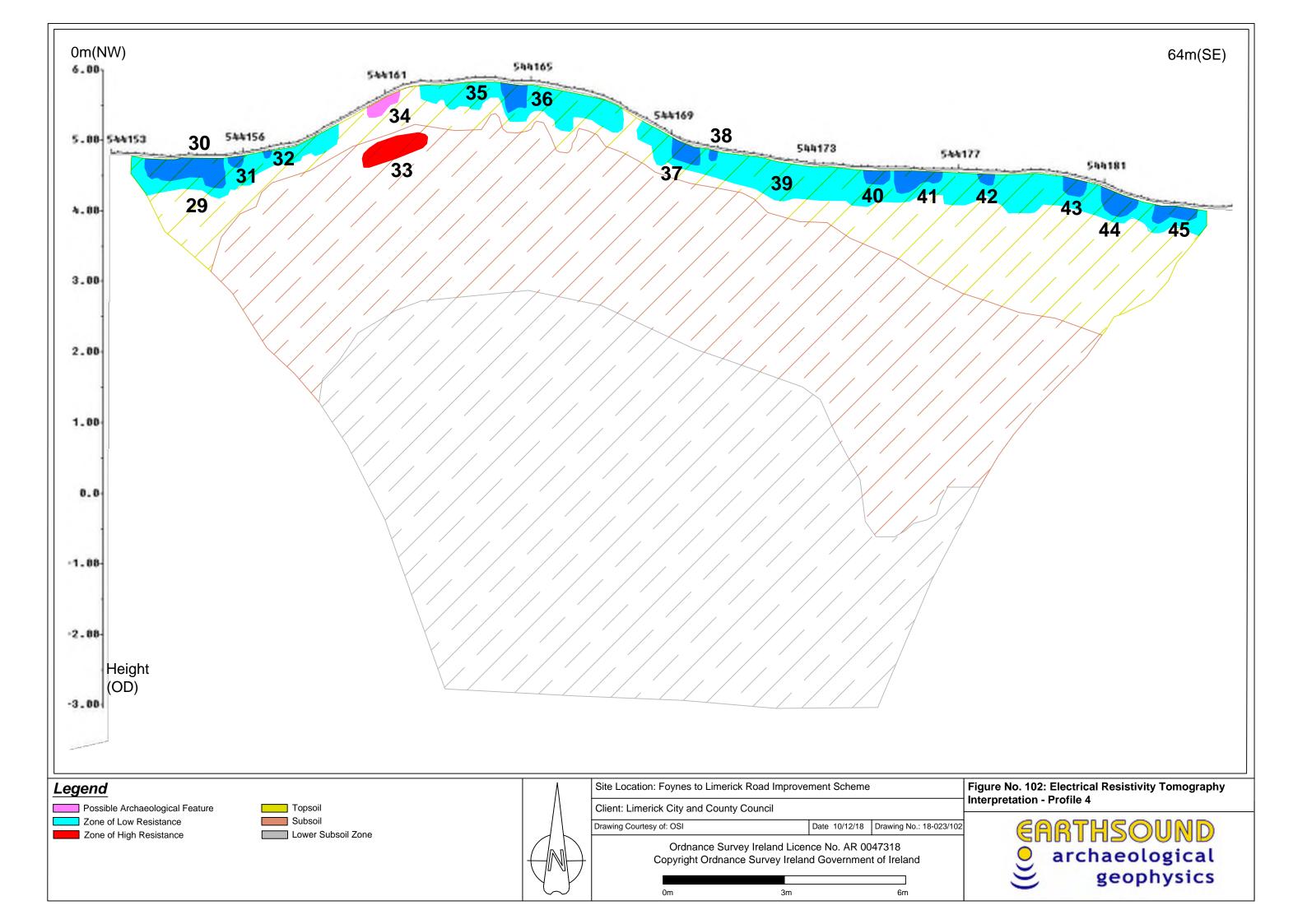


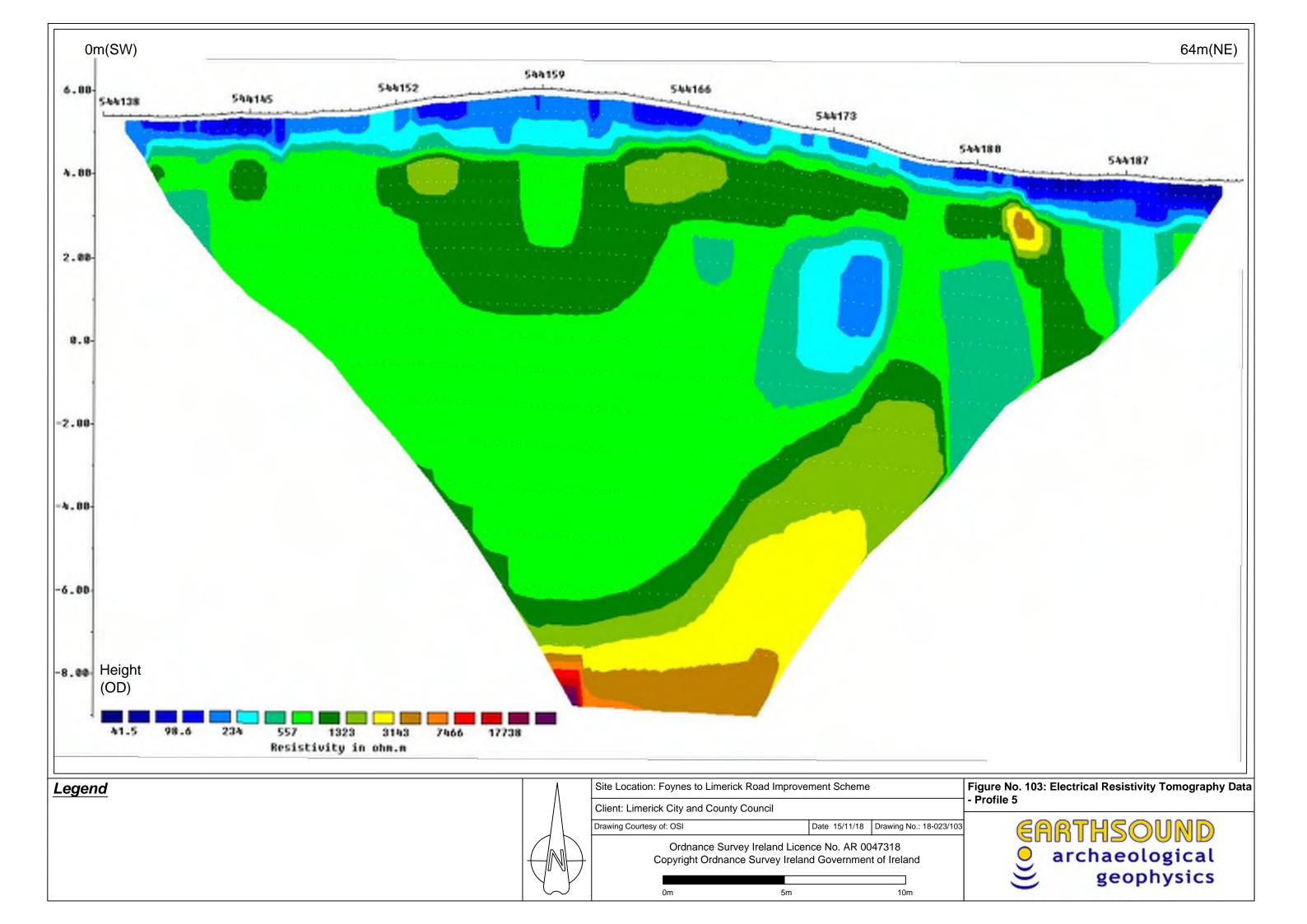


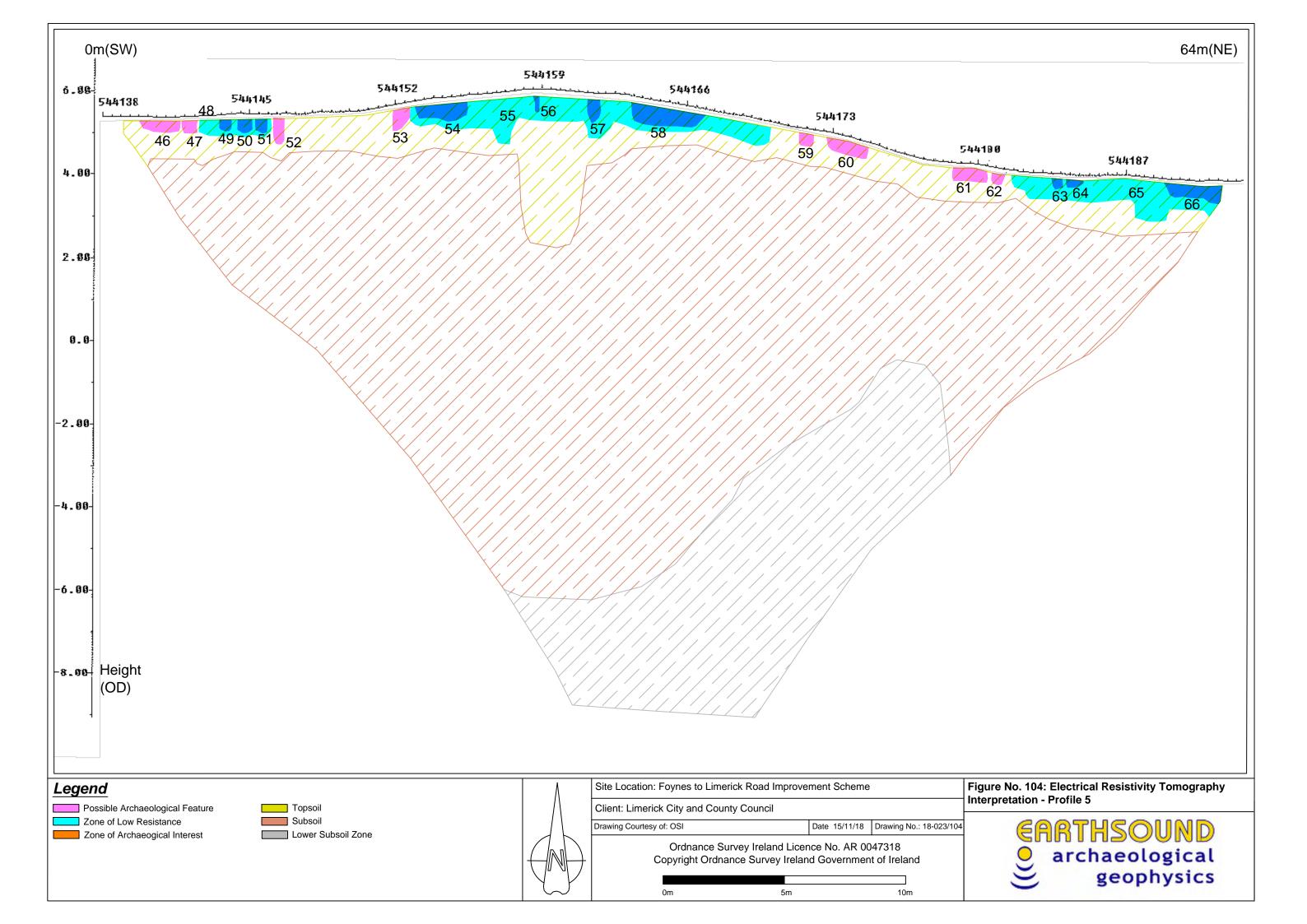


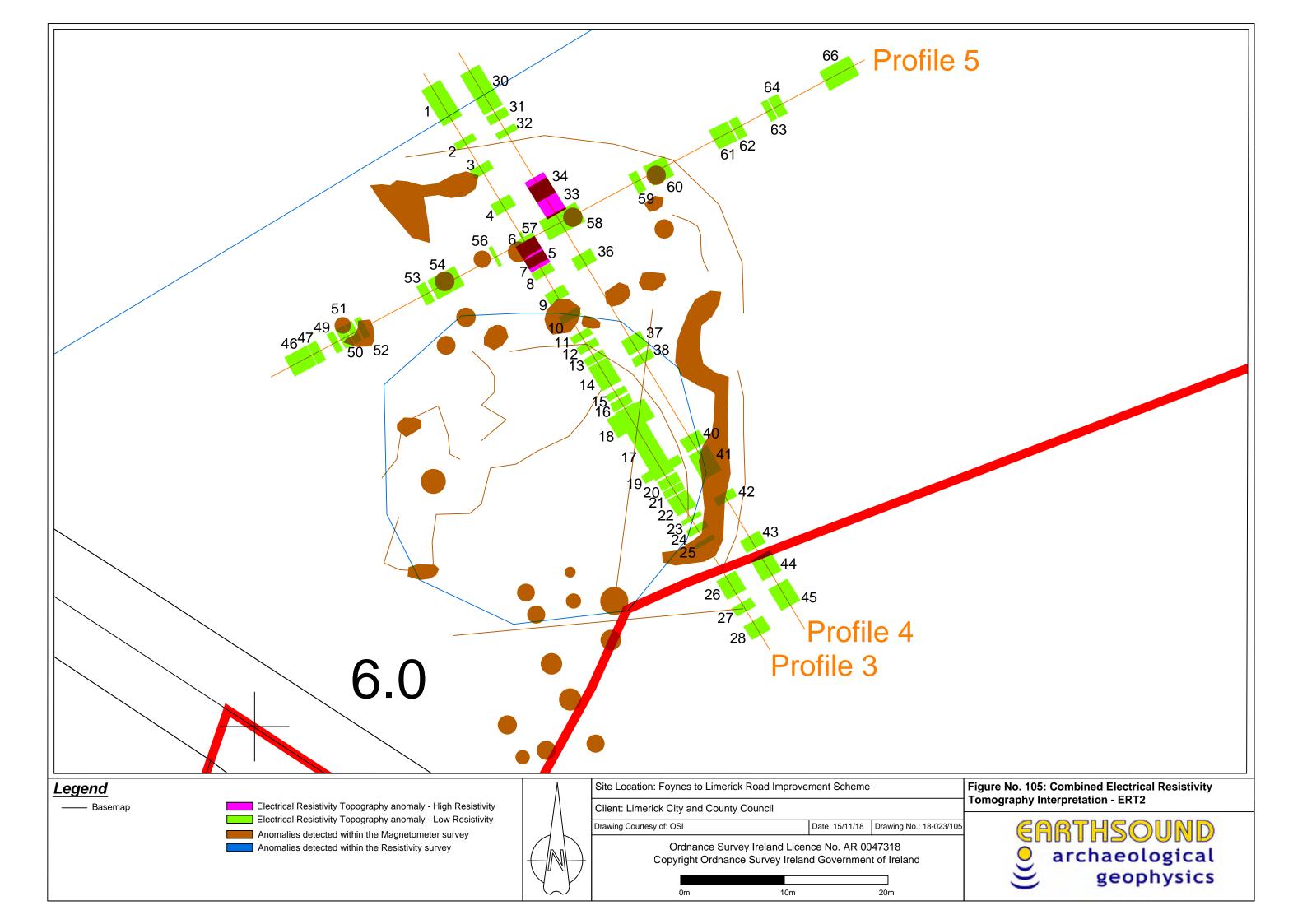


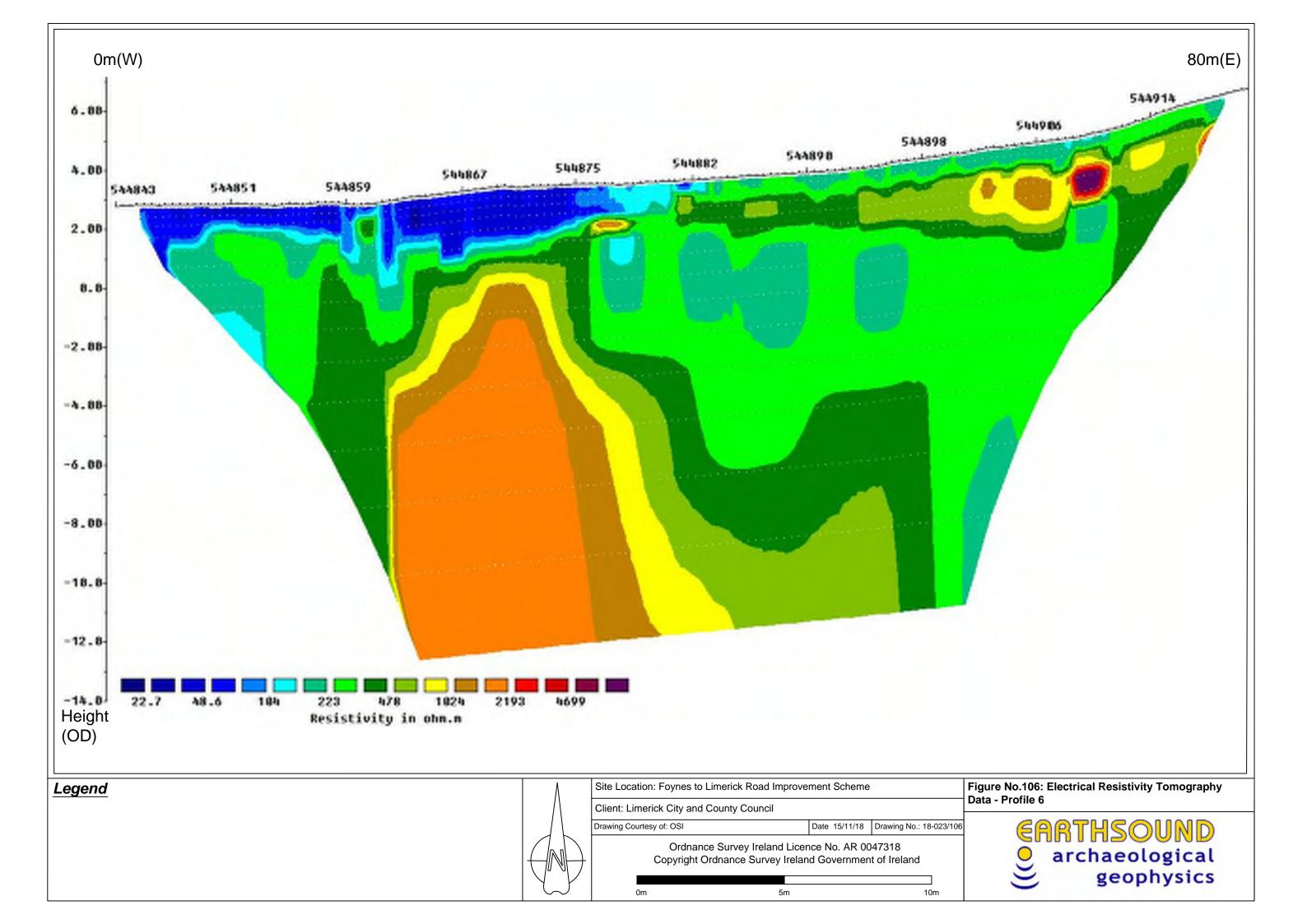


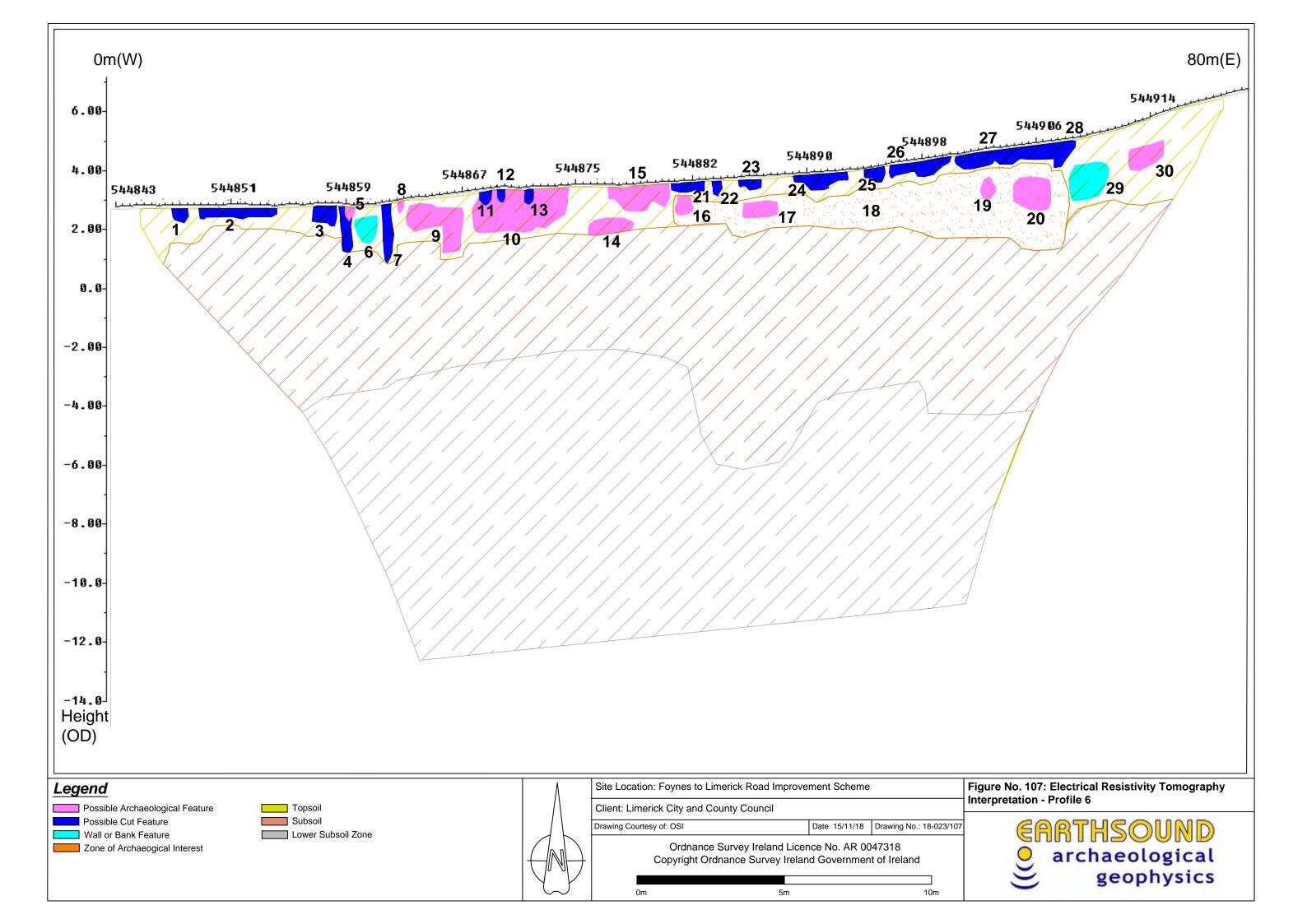


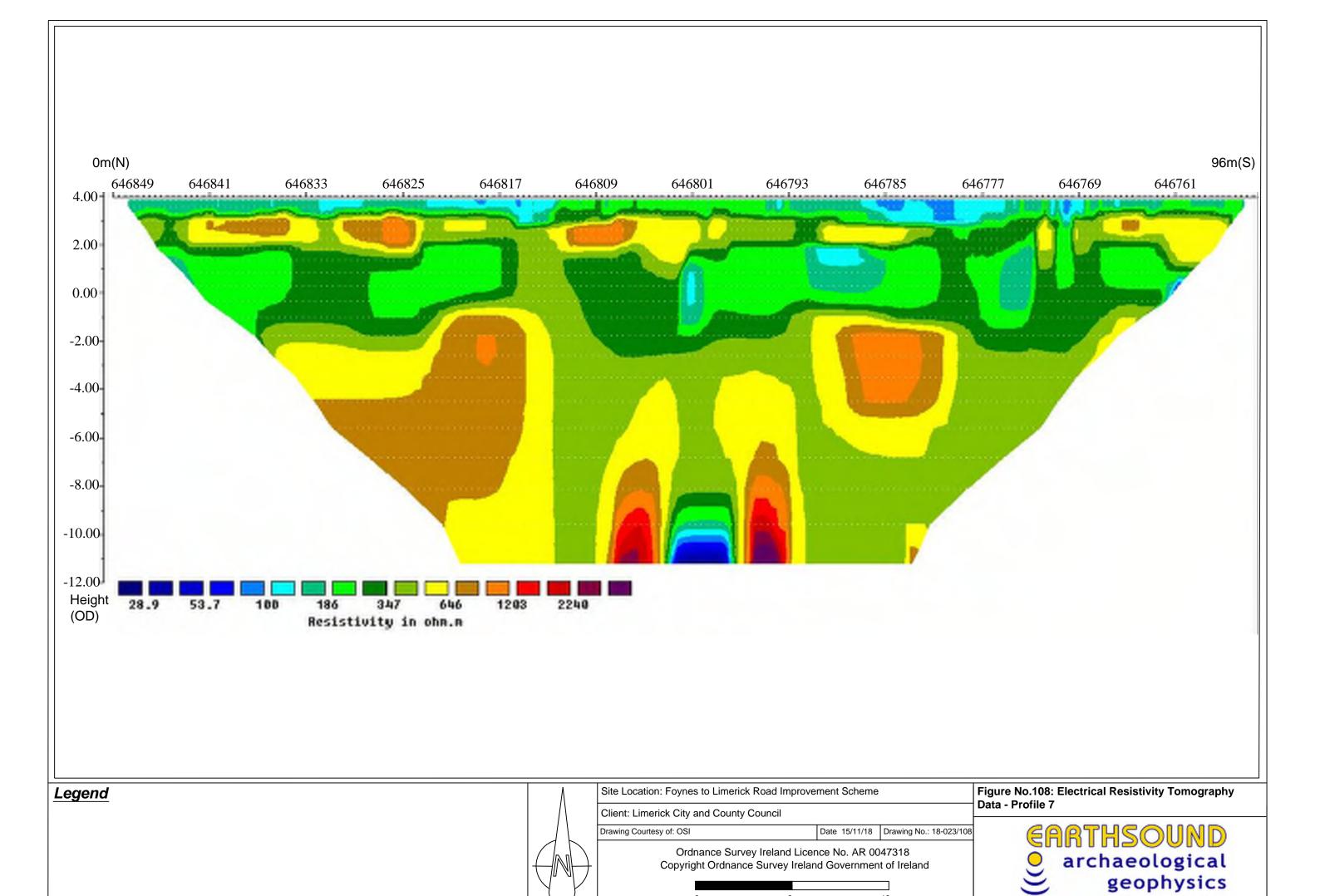












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