

National Roads Authority

Archaeological Geophysical Survey Database 2001-2010: Archive Report

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Survey Event No. **18**
Survey Name **RMP WM027:001, N4 Downs Grade Separation, Co. Westmeath**

This Geophysical Report should be Referenced or Acknowledged as:

Nicholls, J., 2008. N4 Downs Grade Separation, Co. Westmeath: Archaeological Geophysical Survey. Target Archaeological Geophysics. Unpublished Report No. 08/020. May 2008.

Detection Licence No. 08R104
Ministerial Directions No. Not Applicable
NRA Route No. N4
NRA Scheme Name The Downs Grade-Separation
NRA Scheme ID WH/07/894

Survey carried out for Westmeath County Council

Survey funded by the National Roads Authority

Known problems with this report

There are no known archive issues with this report

Depositor James Bonsall, NRA Fellowship Programme
Primary Archive held by Westmeath NRDO
Secondary Archive held by Target Archaeological Geophysics

This archive was last updated on 06/04/2012

TARGET

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Geophysical Prospection For Archaeological Assessment

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Gradiometry

Resistivity

Ground Penetrating Radar

Electromagnetics

Motorway Route Selection

Pipeline Corridors

Area Surveys

Research

Geophysical Survey Report:

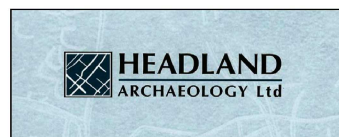
Area 1, RMP WM027-001

**N4 Downs Grade Separation
County Westmeath**

License Ref: 08R0104

TAG Project No. 08/015

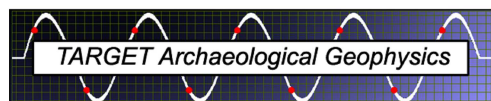
Client:



Unit 1, IDA Industrial Estate
Wallingstown, Little Island, Cork

On Behalf Of:

Westmeath County Council



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Digital Archive

A complete digital archive for this geophysical survey is provided on the attached CD. This archive includes all the report text, PDF documentation, AutoCAD drawings, and raw XY trace / greyscale displays relating to this work. Further data relating to this project may be made available upon request.

Executive Summary

Introduction

Geophysical survey was conducted within one of three predefined areas (Area 1) situated along the route of the proposed N4 Downs Grade Separation, to the East of Mullingar, in Newdown townland, County Westmeath. The survey focused on one area immediately to the north of the N4 national road, directly over the area of archaeological potential associated with earthwork site RMP WM027:001.

This work forms one of three geophysical investigations (Areas 1 – 3) undertaken as part of the archaeological works connected with the proposed scheme, and follows a desk-based survey by Jacobs Engineering. This work was commissioned by Headland Archaeology Ltd. on behalf of Westmeath County Council.

Survey Objectives

The aims of the survey were to define the location form and extent of buried remains within the investigation area, which may be associated with earthwork site RMP WM027:001. The results from this survey will be used as a basis for archaeological testing to be undertaken by the client.

Site Location

The investigation area extends over the south-eastern corner of one field and is situated at NGR 250885 250401 (central coordinate), c.5.3 kilometres to the east of Mullingar town. The survey grid is bound to the east and south by agricultural land and the N4 national Road respectively, and the Royal Canal is located roughly 0.36 kilometres to the south.

A total 0.64 hectares of detailed gradiometer survey was undertaken during this work.

Soils, Geology & Topography

The study area lies within a flat to gently undulating landscape. Soils of the region are mainly dry and mineral in form, typically grey brown podzolics, with gleys and brown earths occurring locally. The underlying geology derives from Carboniferous limestone overlain by mixed fluvioglacial and till deposits (Association 37: National Soil Survey Of Ireland, 1980).

Archaeological Background

The survey area directly overlies the zone of archaeological potential associated with earthwork site RMP WM027:001. This monument has been levelled by intensive ploughing, and no surface visible remains are present. The approximate location of this monument has been ascertained from the 1st edition OS and recent aerial survey. Further sites of historic and potential historic interest within a 1 kilometre radius of this investigation include earthwork site WM027:004 (Area 2) to the south, and a potential fulacht fiadh / burnt mound site (Area 3) to the north. The relevant data for Areas 1 – 3 are provided in Table 1 below:

Table 1. Known Archaeological Monuments Within c.1 km Radius

Site	Sh / Pl / Tr	NGR	Townland	Classification
WM027:001	027-/ 01/1	250885 / 250401	Newdown	Earthwork
WM027:004	027-/01/4	250800 / 250261	Newdown	Earthwork
Potential Site	N/A	250979 / 250702	Newdown	Fulacht Fiadh / Burnt Mound

Summary Of Results

The results from detailed survey in Area 1, over the zone of archaeological potential associated with earthwork site WM027:001, show the outline of a probable ringfort defined by two enclosing ditches. The anomalies associated with the monument are at the limits of instrument detection, and interpretation of the more isolated patterns in the data has been precluded.

Variations from the underlying soils and geology are also visible in the data, and remnants of former cultivation extend through a significant proportion of the survey grid.

*** This summary should be read in conjunction with the results from detailed survey.**

1 Areas of Investigation (Figures 1 - 3)

- 1.1 A total 0.64 hectares of detailed gradiometer survey was undertaken throughout Area 1, over the zone of archaeological potential associated with earthwork site WM027:001.
- 1.2 The survey grids were set out and tied-in to the ordnance survey using differential GPS, tapes, ranging rods and an optical square. Tie-in points remain in situ to facilitate grid relocation where necessary.
- 1.3 Fieldwork was undertaken from the 17th April 2008, under licence from the Department Of Environment, Heritage & Local Government (Licence No. 08R0104).
- 1.4 Figure 1 presents the location of Area 1 to the north of the N4 national road and the Royal Canal, and indicates the zone of archaeological potential associated with earthwork site WM027:001 (scales 1:12500 & 1:5000).

2 Data Display, Interpretation & Digital Archive

- 2.1 The results from detailed survey in Area 1 are presented as a greyscale image in Figure 2 at a scale of 1:1000. Interpretations of the results are provided at the same scale in Figure 3 and derive from in depth analysis of raw greyscale, interpolated greyscale, and XY trace displays.
- 2.2 The archive attached to this report contains both the .TIF XY trace and .BMP greyscale displays for the recorded data, the AutoCAD .DWG files for Figures 1 – 3, and the.DWG interpretation made from analysis of the recorded data.

3 Ground Conditions & General Considerations

- 3.1 The area of survey extends through accessible arable land, which was suitable to geophysical survey, and no major obstructions which might impact on the progress of fieldwork were noted.
- 3.2 Large-scale ferrous disturbance was observed at the south-eastern and south-western edges of survey, and these represent interference from neighbouring boundaries.
- 3.3 Isolated ferrous responses also occur throughout the data. These are usually caused by the presence of modern debris within the topsoil, and are not referred to in the text unless considered relevant.

- 3.4 Instrument specifications and survey methodology are discussed in the *Summary Technical Information* document attached to this report.

4 Results From Detailed Survey (Figures 2 & 3)

- 4.1 The plough damaged remains associated with earthwork site RMP WM027:001 have been recorded within the south-eastern portion of Area 1. The data show the presence of two circular ditches indicated by low level positive linear anomalies and trends (<1.5nT), and these extend over an area roughly 40 – 45m in diameter. The pattern of these responses suggests that RMP site WM027:001 represents the remains of a plough damaged ringfort.
- 4.2 Numerous isolated positive responses and several weak trends have been recorded beyond the enclosure remains associated with WM027:001. Whilst these may of potential interest, possibly representing pit locations, gully remains and associated features, a natural, modern ferrous or agricultural origin should not be dismissed.
- 4.3 Responses from both natural sources and former cultivation have been recorded from survey in this location. The latter are visible as a series of closely spaced parallel linear anomalies aligned north-east to south-west, and these extend throughout much of the survey grid.




5 Conclusions

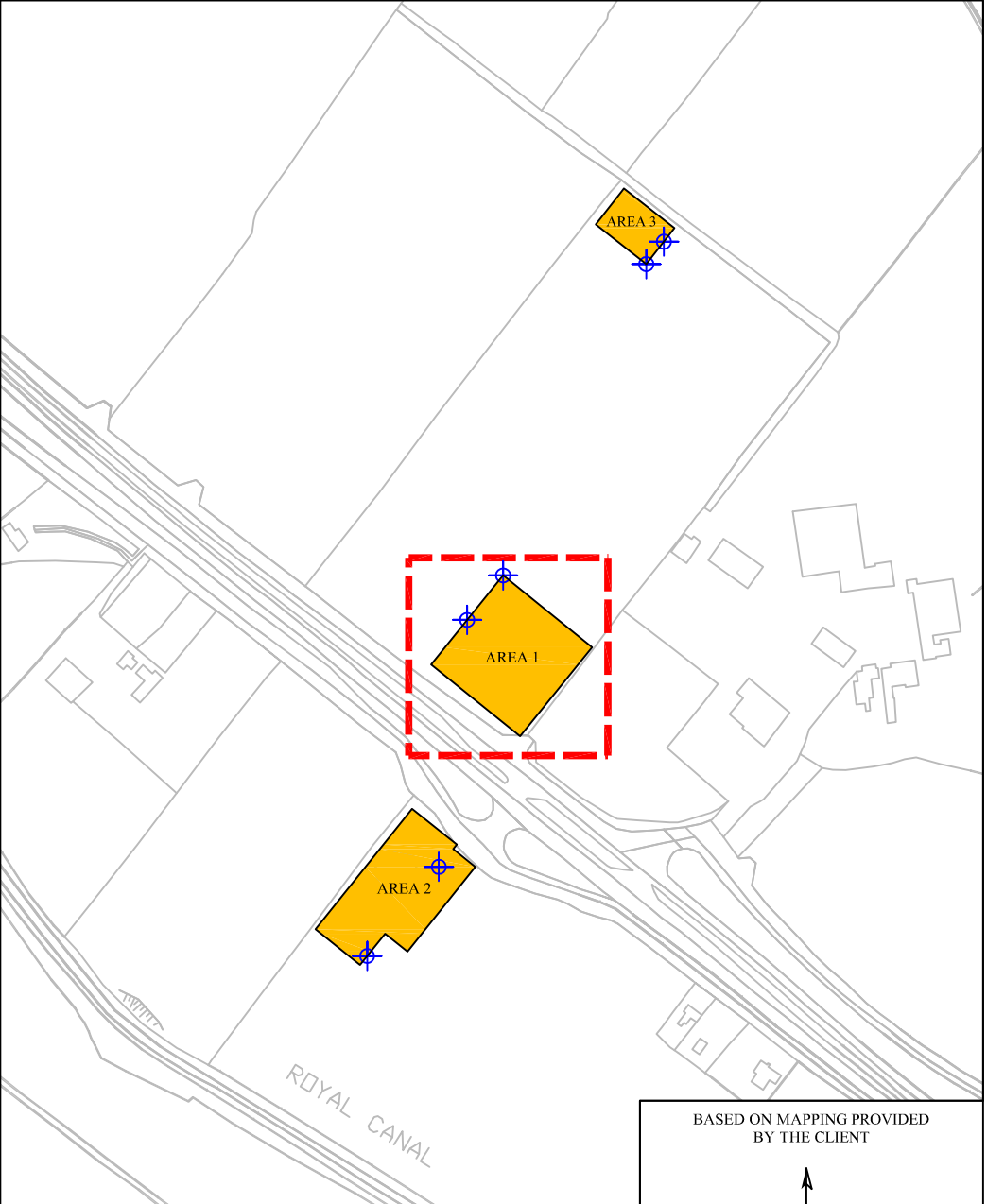
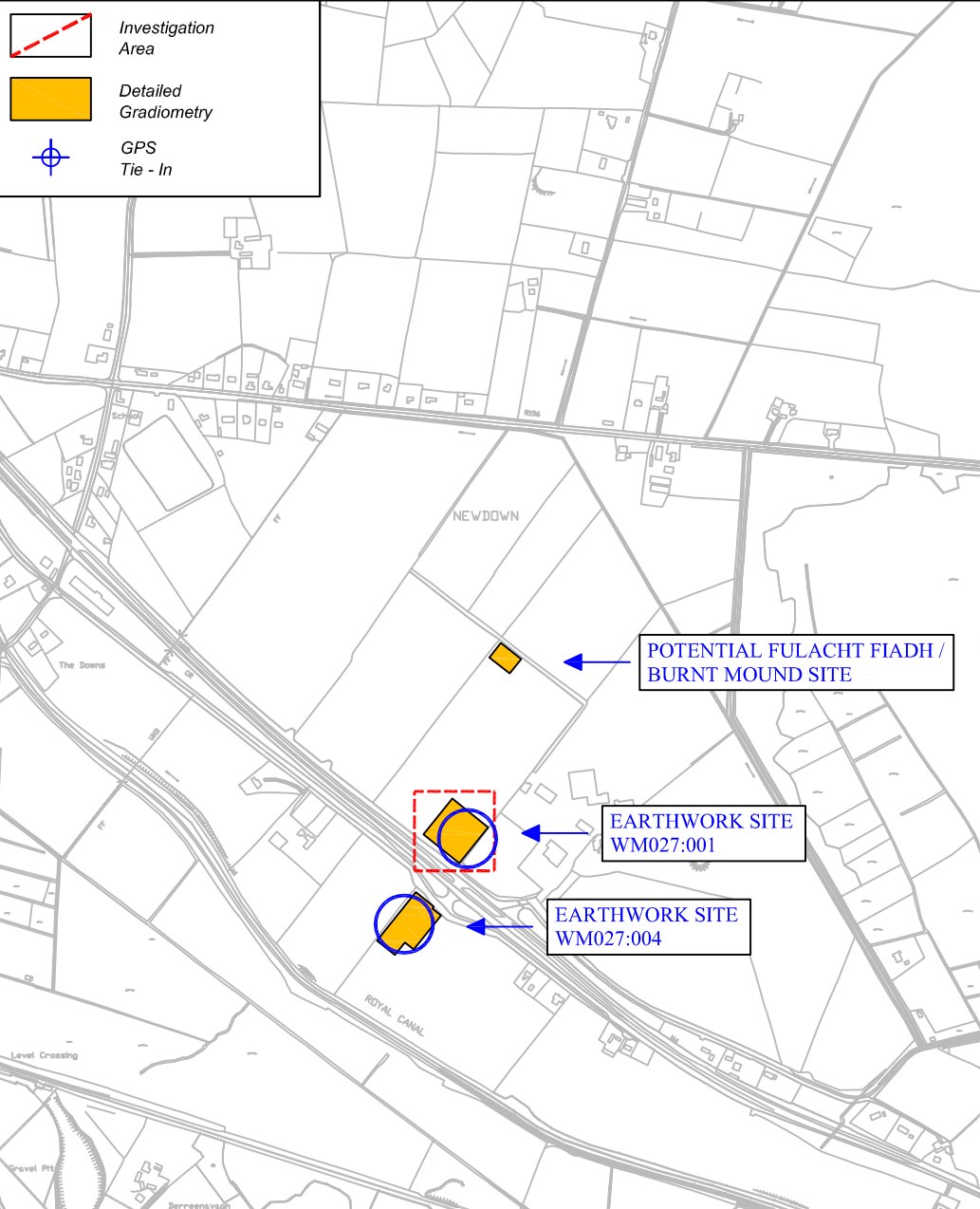
- 5.1 The plough damaged remains of RMP site WM027:001 have been recorded within the south-eastern portion of Area 1. The curvilinear ditch type anomalies and weak trends recorded from survey in this location are consistent with those of a ringfort. The responses are generally very weak, below 1.5nT in magnitude, and interpretation of the more discrete responses at the perimeter of the monument has been complicated.
- 5.2 Responses from both natural sources and agricultural activity are also present in the results from survey.


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Personnel: John Nicholls MSc.
Date of Survey: 17th April 2008
Date of Report: 19th May 2008

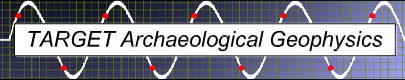
References:

National Soil Survey Of Ireland (1980). General Soil Map 2nd Edition (1:575,000. An Foras Taluntais).

 Investigation Area
 Detailed Gradiometry
 GPS Tie - In



BASED ON MAPPING PROVIDED BY THE CLIENT

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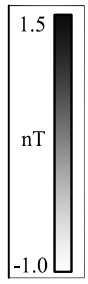

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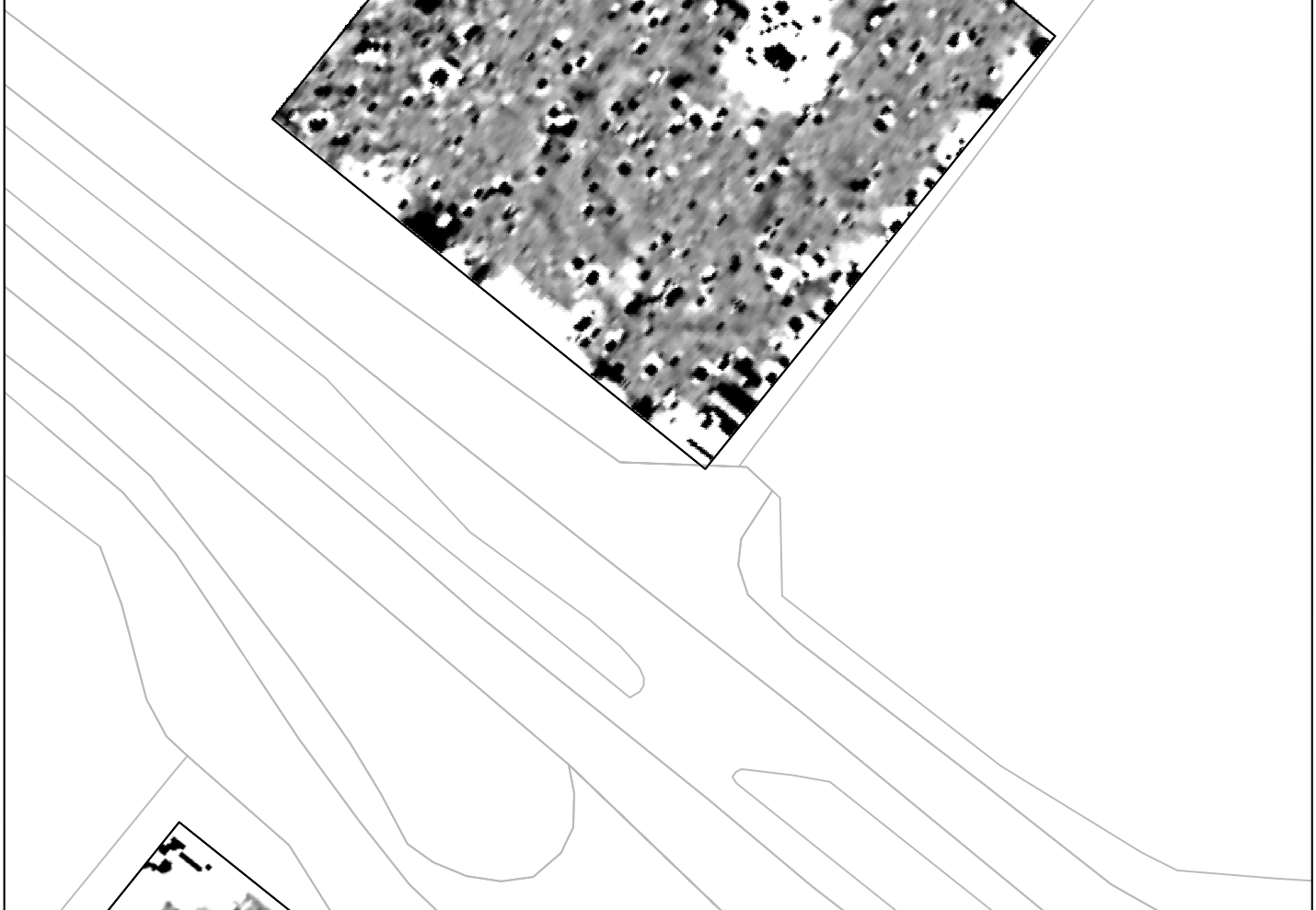
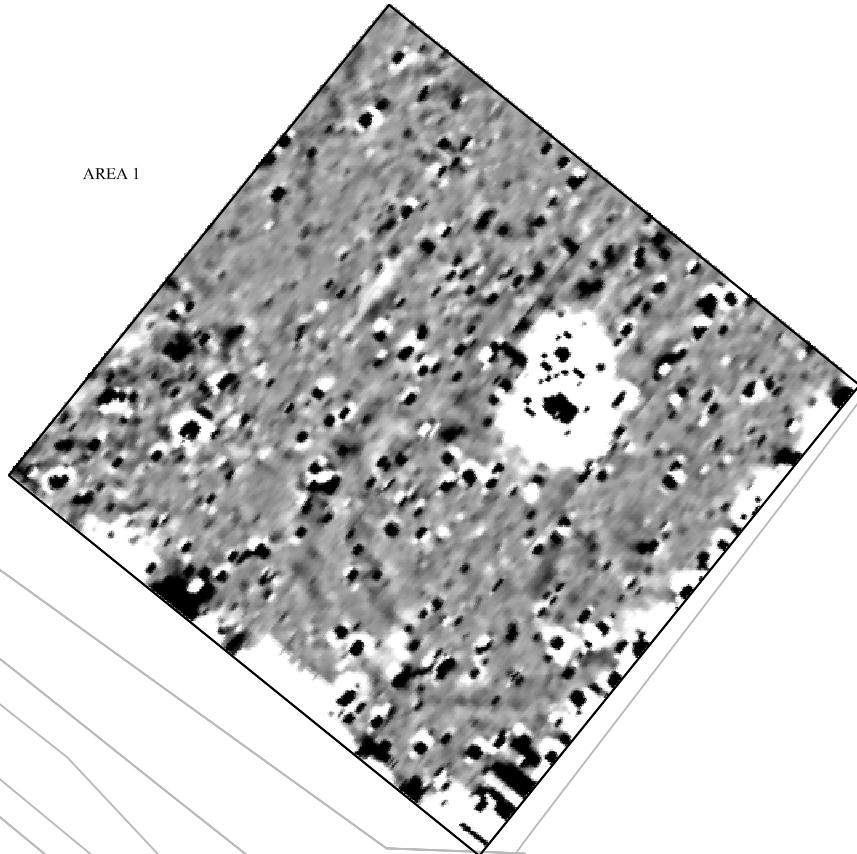
PROJECT:
 N4 DOWNS GRADE SEPARATION
 CO. WESTMEATH
 CLIENT:
 HEADLAND ARCHAEOLOGY LTD ON BEHALF
 OF WESTMEATH COUNTY COUNCIL

TITLE:
 SURVEY LOCATION: AREA 1
 EARTHWORK SITE RMP WM027:001
 FIGURE: FIG. 1
 DATE: 19/05/08
 SCALE: 1/5000
 1/12,500

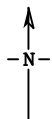
JOB NUMBER:
 08/015
 LICENCE:
 08R0104



AREA 1



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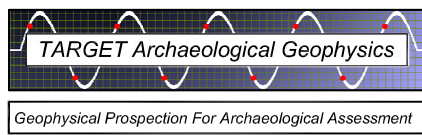


PROJECT:	N4 DOWNS GRADE SEPARATION CO. WESTMEATH	TITLE:	GREYSCALE: AREA 1 EARTHWORK SITE RMP WM027:001		
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CLIENT:	HEADLAND ARCHAEOLOGY LTD ON BEHALF OF WESTMEATH COUNTY COUNCIL	FIGURE:	FIG. 2	DATE:	19/05/08	SCALE:	1/1000
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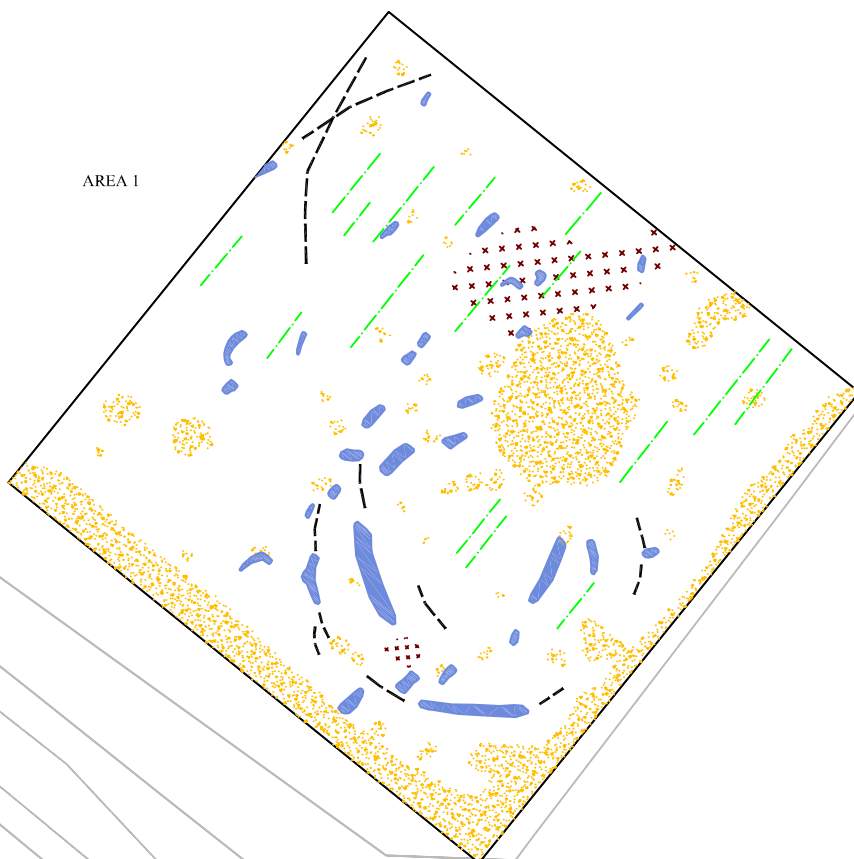
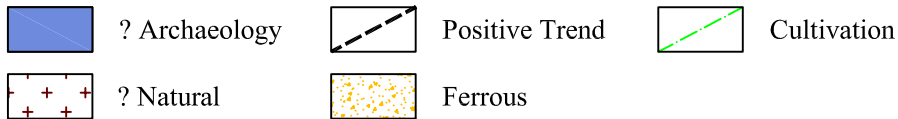
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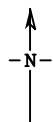


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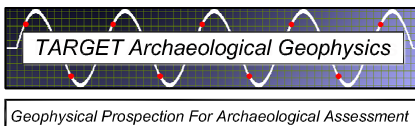
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PROJECT: N4 DOWNS GRADE SEPARATION
CO. WESTMEATH

CLIENT: HEADLAND ARCHAEOLOGY LTD ON BEHALF
OF WESTMEATH COUNTY COUNCIL

LICENCE:
08R0104

JOB NUMBER:
08/015



TITLE: INTERPRETATION: AREA 1
EARTHWORK SITE RMP WM027:001

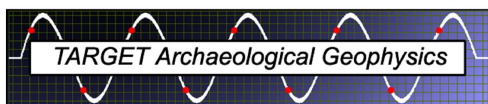
FIGURE:
FIG. 3

DATE:
19/05/08

SCALE:
1/1000

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