GEOPHYSICAL SURVEY REPORT
FOR

Arthur's Stone

(NGR: SO 319 431)

REPORT NO: ROWE 06/02

Work commissioned by:-

Dr G Nash
Dept of Archaeology & Anthropology,
University of Bristol

Philip R Rowe BA MA PIFA

September 2006

Arthur's Stone
Geophysical Survey Report

NGR: SO 319 431

On behalf of:

Dr G Nash
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ACKNOWLEDGEMENTS

In the preparation of this geophysical survey report, acknowledgment is made, with many thanks, to the assistance given by the landowner for their kind permission in allowing the survey to be conducted.

NOTES

Whereas great care has been taken to produce a comprehensive summary of the known and recorded archaeological evidence, no responsibility can be accepted for any omissions of fact or opinion, however caused.

ABREIVIATIONS

NGR - National Grid Reference
a.O.D - Above Ordnance Datum (Sea Level)
UoB - University of Bristol

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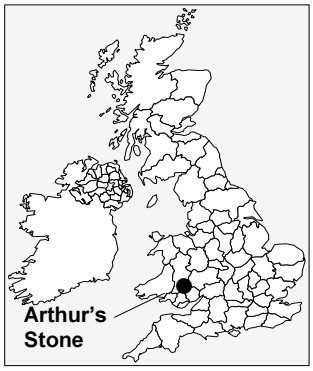
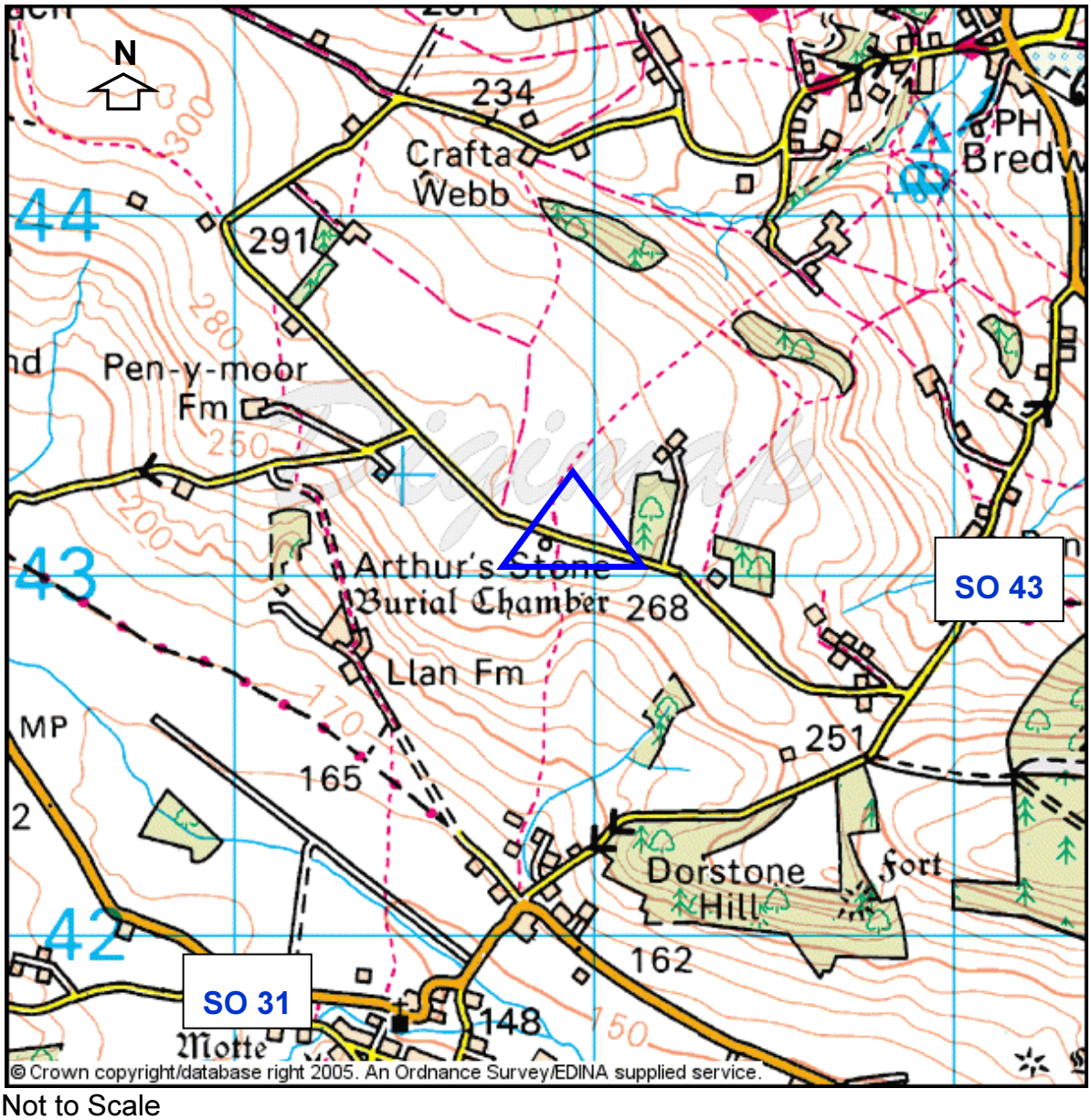
Figure 1

Location of the Study Area



Site Location △

Plans and maps based on the Ordnance Survey Sheets are represented by the permission of Her Majesty's Stationery Office.



Not to Scale

Figure 2

Approximate Boundary of Survey Area's (shaded in red)

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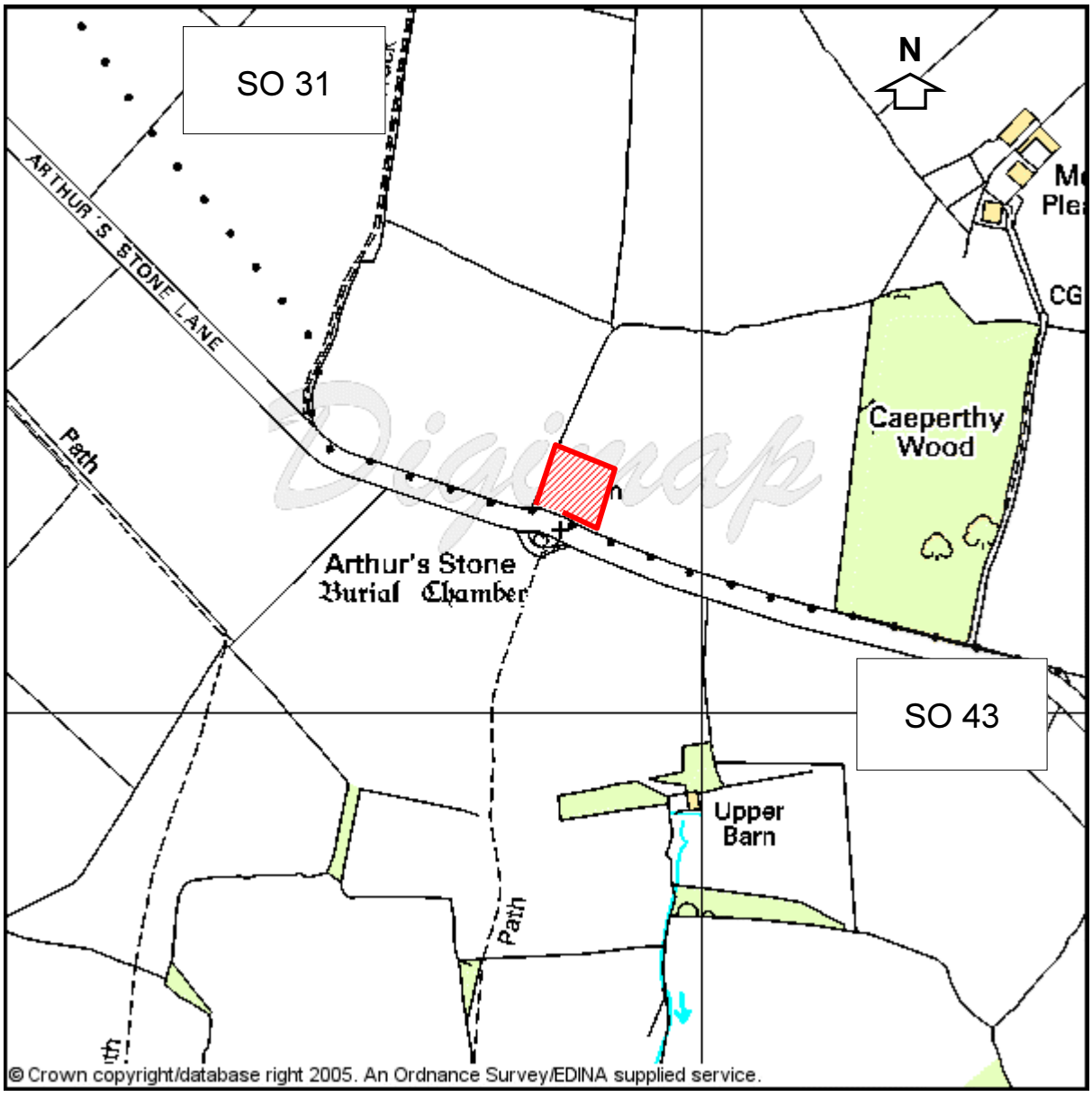

Not to scale

Figure 3

Overview of Study Area's Geology (case area outlined in red)

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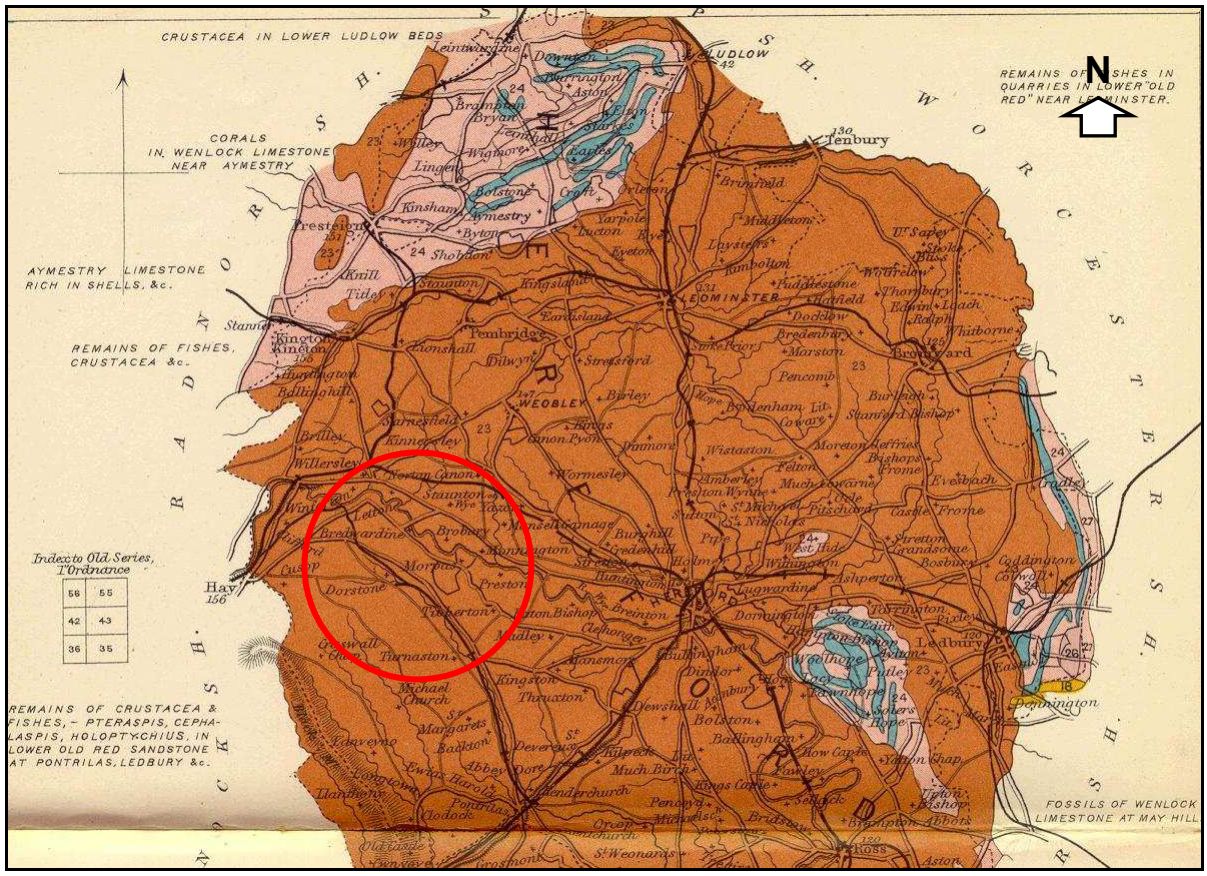
Geological Survey Map - © www.soton.ac.uk – School of Ocean & Earth Science.



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1 - INTRODUCTION (see Figures 1 & 2)

1.1 Commissioned to survey part of a field immediately north-north east of Arthur's Stone, Herefordshire (NGR: SO 319 431) as identified by Dr.G.Nash (pers.comm), a total area of 20m x 20m was subsequently surveyed late April 2006.

1.2 Producing a resistance survey report summary (Summary of Results – Paragraph 4.0 onwards); the subsequent findings will be used to enhance the archaeological knowledge of Arthur's Stone, and the surrounding landscape.

2 - METHODOLOGY

2.1 Using a Geoscan RM15 resistance meter, a geophysical survey (Rowe: 06/02) was subsequently made of the area identified in the pers.comm from Dr.G.Nash. Photocopies, manuscript copies and notes, including still photographs, are preserved in the project archive, stored at University of Bristol, Department of Archaeology & Anthropology.

3 - TOPOGRAPHY, GEOLOGY AND CURRENT LAND USE (see Figures 3 & 4)

3.1 Located on a natural ridge that runs in a north west to south east direction, the geophysical study area can be found situated *c.*1.5km north east of the village of Dorstone, Herefordshire, *c.*271m aOD.

3.2 Geological soil association for Arthur's Stone and the immediate surrounding area is that of underlying Devonian (with Limestones); and Old Red Sandstone.

3.3 The survey area in question was found to be grassed pasture land used by the tenants for the grazing of live stock.

Fig.4

4 - RESULTS

4.1 ARTHUR'S STONE

4.1.1 SUMMARY OF RESULTS

SITE RESULTS SUMMARY

GEOPHYSICAL SURVEY REPORT NO: Rowe 06/02 **NGR**: SO 319 431

SITE NAME: Arthur's Stone, Herefordshire

SITE TYPE: Grassed area

DESCRIPTION: Located on a natural ridge that runs in a north west to south east direction, the study area can be found situated *c.*1.5km north east of the village of Dorstone, Herefordshire, *c.*271m aOD.

PERIOD: Neolithic?

GEOLOGY: Devonian (with Limestones); and Old Red Sandstone

LAND USE: Grassed area used for the grazing of livestock.

SURVEY TYPE:	Resistance	**METHOD:**	Zig – Zag
INSTRUMENT:	Geoscan RM15	**SURVEY AREA:**	20m x 20m
SAMPLE INT:	1m	**TRAVERSE INT:**	1m

RESULTS SUMMARY:

A RM15 resistance survey, total area 20m x 20m (1 x 20m² grid), was completed in April 2006, providing, as a result, mixed geophysical raw data that has only partially assisted the archaeological knowledge of the site.

Areas of high resistance were identified to the north and north - north east of the study area, suggesting the possible presence of buried building material pertaining to the northern end of Arthur's Stone Neolithic long barrow; though with limited archaeological data recovered, positive interpretation is difficult

Overall, varying factors may have contributed to this lack of conclusive geophysical raw data, with extreme weather conditions making the collection of data difficult. Further archaeological investigation is required.

SURVEY DATE(S): April 2006 **REPORT DATE:** September 2006

COMPLETED BY: Philip R Rowe **REPORT AUTHOR:** Philip R Rowe

4.2 GEOPHYSICAL SURVEY

4.2.1 Point of Note: Whilst all survey reports are produced as correctly as possible, the resulting information is based on the accuracy of the equipment therefore no responsibility is taken for any errors or omissions.

4.3 INSTRUMENTATION

4.3.1 Resistance Meter – Geoscan RM15: Measuring the electrical resistance of the earth to a current being passed through it via a system of four electrodes (two current and two potential), a twin probe arrangement (0.5m interval) that involves the paring of electrodes (one current / one potential) was passed over a measured grid, with the results being compared to a back ground reading obtained from a pair of electrodes placed in a 'fixed' position.

4.3.2 Measured in Ohms and calculated resistivity in Ohm – Metres, the effective dept of penetration is approximately 0.75m, although the nature of the overburden as well as underlying geology will cause variations in this generality.

4.4. SURVEY AREA

4.4.1 Detailed to complete a Geoscan RM15 resistance survey (Rowe 06/02) (1 x 20m²) over a 20 x 20m grid area, as detailed in **Fig's 5 / 6,** archaeological research undertaken by Nash (pers.comm) has suggested that this parcel of land, used for grazing livestock, is the likely site for the continuation of Arthur's Stone long barrow.

4.4.2 Set out unaided by P R Rowe, the survey grid was measured in using taped offsets from a 20m baseline running in north-north east direction, and was surveyed into the current Ordnance Survey mapping system (Rowe 06/02 Appendix B).

4.5 DISPLAY

4.5.1 Displayed as greyscale images, this visual format divides a given range of predefined arrangement of dots / shades of grey readings into a set number of classes.

4.5.2 Increasing in intensity as the value increases, the resulting image is displayed as a toned / grey scale enabling fast and accurate interpretation of any sub-surface archaeological features discovered.

4.6 COMPLICATING FACTORS

4.6.1 The topographical environment of the site were excellent, with the ground being flat and under short grass, though metrological conditions were far from ideal, with there being high winds interspersed by frequent heavy rain showers making it wet underfoot.

4.7 RESULTS

4.7.1 Rowe 06/02 - RM15 Resistance Meter

4.7.1.1 Indicating the presence of possible material pertaining to features that could be associated with Arthur's Stone Neolithic long barrow, areas of high resistance can be clearly identified north and north – north east of the study area (**Fig.7** – Full data processing information – Appendix A).

4.7.1.2 There is, conversely, the possibility that these responses could be attributed to the natural geology of the area, though this is improbable

4.8 CONCLUSION

4.8.1 The result of the RM15 resistance survey within the case study area does suggest that whilst the areas of high resistance could relate to the natural geology of the area, it is more than likely associated with Arthur's Stone Neolithic long barrow, found located adjacent to the site.

4.8.2 Only an archaeological evaluation of the site would fully establish the presence of any of these features.

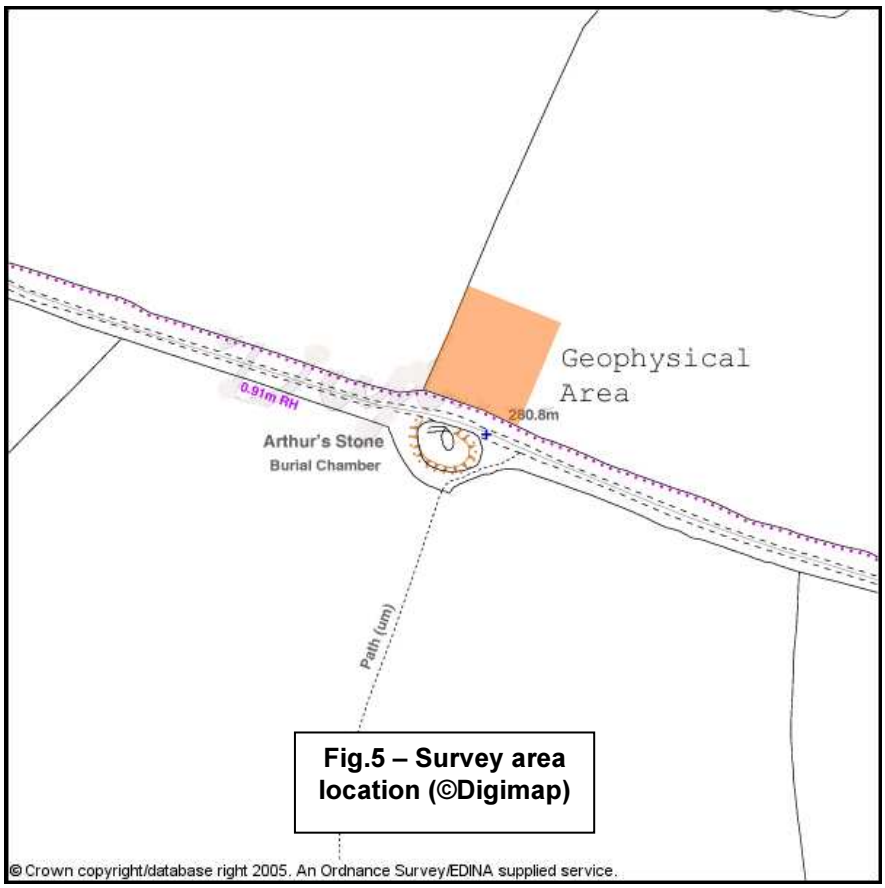


Fig.5 – Survey area location (©Digimap)

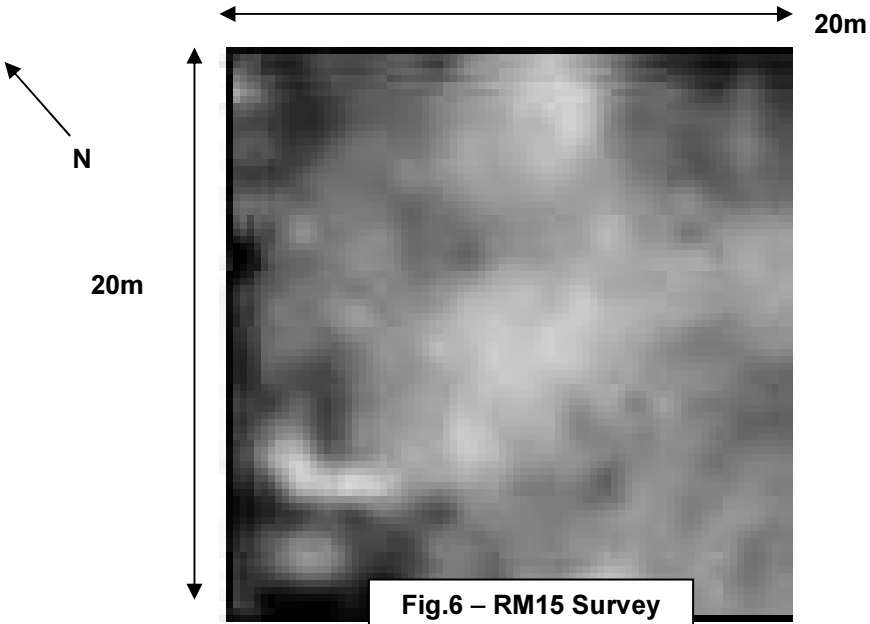
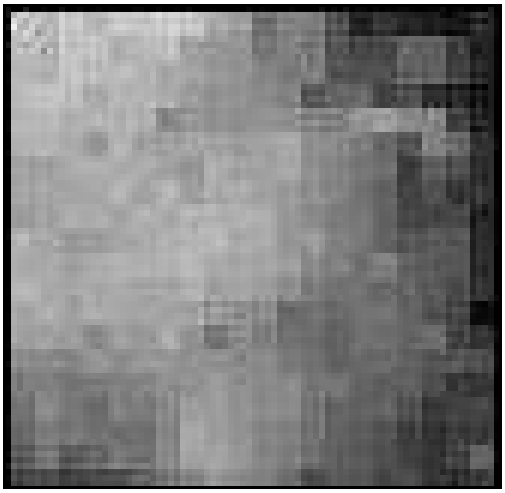
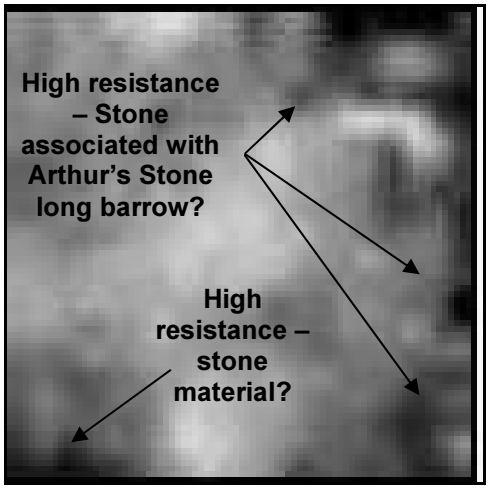


Fig.6 – RM15 Survey Area – Rowe 06/02





Raw Data

Processed Data

N

Fig.7 – RM15 Resistance survey results – Rowe 06/02

5 - BIBLIOGRAPHY

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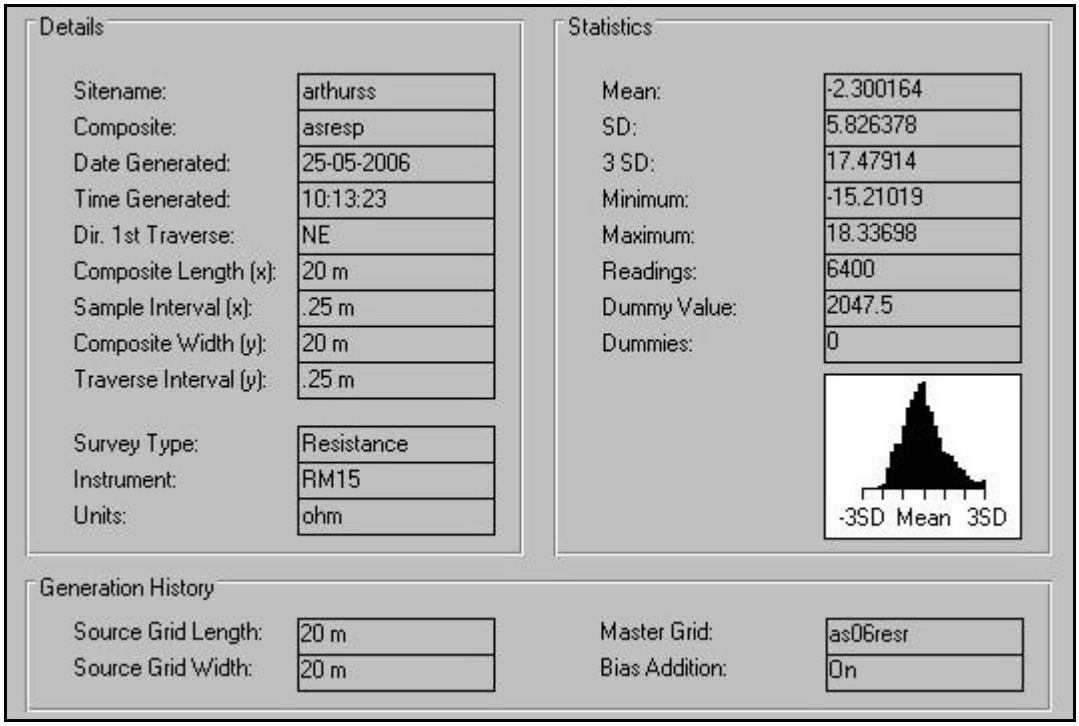
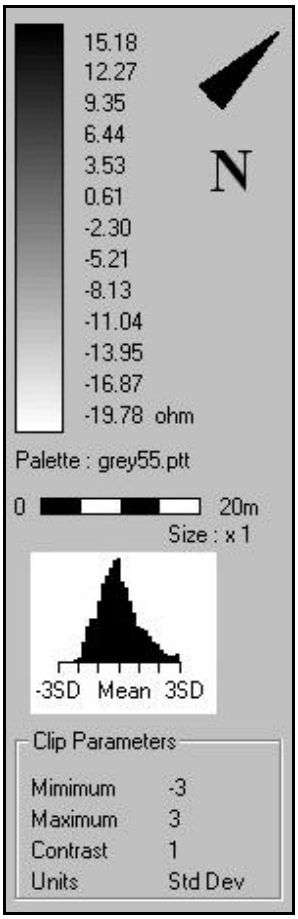
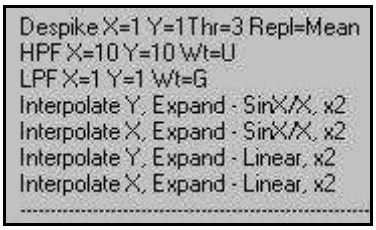
6 – APPENDICES

6.1 Appendix A







6.2 **Appendix B**