LAND EAST OF TY AN GWYN
SANCREED
PENZANCE
CORNWALL

Results of a Geophysical Survey



South West Archaeology Ltd. report no. 210408



LAND EAST OF TY AN GWYN, SANCREED, PENZANCE, CORNWALL RESULTS OF A GEOPHYSICAL SURVEY

By J. Bampton Report Version: FINAL Draft issued: 8th April 2021 Finalised:8th October 2021

Work undertaken by SWARCH for CAU

SUMMARY

This report presents the results of a geophysical survey carried out by South West Archaeology Ltd. (SWARCH) on land east of Ty An Gwyn, Sancreed, Penzance, Cornwall. The site is located to the north-west of the village of Sancreed across a roughly rectangular field classified as within Anciently Enclosed Farmland, although adjacent to modern enclosed land and upland rough ground. Sancreed contains medieval HER's associated with the village and church (e.g. MCO21805). Immediately south of the site is The Beacon, a hill that contains prehistoric barrows and settlement activity, and post-medieval mining activity (e.g. MCO3441, MCO21598, MCO12500).

No probable significant or probable/possible archaeological anomalies were identified in the geophysical survey. Evident in the survey data were geological anomalies and variation associated with the underlying granite geology. Any potential buried archaeological resource on the site will have been truncated to some degree by agricultural activity.

Given the results of the geophysical survey it does not appear that any further archaeological works are warranted in this instance.



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1.0 INTRODUCTION

LOCATION:	LAND EAST OF TY AN GWYN
PARISH:	SANCREED
COUNTY:	CORNWALL
NGR:	SW 41574 29904
SWARCH REF.	STAG21
OASIS REF.	southwes1-432351

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by Cornwall Archaeology Unit (CAU) to undertake a geophysical survey on land east of Ty An Gwyn, Sancreed, Penzance, Cornwall. This work was undertaken in accordance with best practice and ClfA guidance.

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

The village of Sancreed is located *c*.5.5km west of the centre of Penzance: on the route between Newlyn and St Just in a landscape of steep hills and valleys. The site was north-west of the village, *c*.675m north-west of the village church, on the northern edge of *The Beacon* hill and slightly south and up-slope from a stream that feeds the *Drift Reservoir*. The site was across an approximately rectangular field on a very gentle north facing slope at a height of *c*.135m AOD at its south end.

The soils on the site are the gritty loamy very acid soils with a wet peaty surface horizon of the Hexworthy Association - while the wider area is predominantly characterised by the well drained gritty loamy soils with a humose surface horizon in places of the Moretonhampstead Association (SSEW 1983). On and near the site these soils overlie granite of the Land's End Intrusion (BGS 2021).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

The parish and village of Sancreed is in the deanery and west division of the hundred of Penwith (Lysons 1814). Sancreed is named for the dedication of its church saint: in the mid-12th century it was recorded as *Eggloslant* from the Cornish for church and a saint's name (MCO16712) and in the early 13th century it was recorded as *Sancti Sancreti* (Watts 2004). The church is probably an early medieval Lann site (MCO21805) and includes a 10th century cross (MCO5759) and possible 6th century inscribed stone and other local early medieval elements (e.g. MCO5758).

Cornwall's Historic Landscape Characterisation (HLC) describes the site as within Anciently Enclosed Farmland (HCO5) – 'The agricultural heartland, with farming settlements documented before the 17th century AD and whose field patterns are morphologically distinct from the generally straight-sided fields of later enclosure. Either medieval or prehistoric origins'; although it is adjacent to both Upland Rough Ground (HCO7) and Modern Enclosed Land (HCO11), mostly 20th century farmland.

Historical mapping from *c*.1809 does not depict any enclosure or field system incorporating the site. It does depict a large number of prehistoric monuments in the wider landscape; particularly barrows to the south and north-west of the site. The 1839 tithe map shows the field that includes the site (Plot 1011). The site occupies most of the south-east portion of the south-west field of plot 1011. This plot was listed in the apportionment as part of the *Tenement in Trerice*, which belonged to Samuel Borlase Esq. and Richard Hoskin; it was occupied by a John James, named *Further Croft* and under *Furze*; indicating rough/scrub ground or grazing. The immediately surrounding fields (1010-1015) were under the same tenement and ownership: had prosaic names and were generally

under *moor* or *furze*. To the south of the site, Plot 423 was part of the *Tenement in Churchtown*, which was owned and occupied by Rev. Henry Comyn. It was named *Beacon* and an area of burrows were labelled and depicted immediately south of the site. In comparison to the 1809 mapping it is possible that the Surveyor's Draft map had inaccuracies; however, it ostensibly shows that the lane running from *Trerice* to the south-east, to the fording point of the stream north-west of the site may have shifted from originally running past the north-east boundary of the site, to its extant route along the south-west boundary of the site. The 1st edition Ordnance Survey (OS) map, 1887, shows the site as split into three enclosures by straight boundaries. These boundaries are not depicted on the 1908 2nd edition or subsequent OS mapping. The north-west of the site was subject to a relatively large amount of development. This area continued to be developed into the 21st century. Immediately south of the site, the area of burrows from 1839, a 'shaft' is shown on the 1964 OS mapping. Supporting cartographic sources and LiDAR imagery for this section can be seen in Appendix 2.

Near to the site Cornwall's Historic Environment Record (HER) includes the post-medieval Wheal Argus mine on the moorland slopes on *The Beacon* (MCO12500); a post-medieval extraction pit on *Grumbla Common* (MCO24511), south of the site; possible prehistoric or early medieval enclosures on Grumbla Common (MCO51830, MCO51831) identified on aerial photography; two possible prehistoric enclosures immediately east of the site (MCO51828) identified on aerial photography; and prehistoric field-systems, hut circles and enclosures (MCO20993, MCO21598)) to the southwest; and Bronze Age barrows and later a Beacon (MCO3441, MCO3442) to the south of the site.

1.4 METHODOLOGY

This work was undertaken in accordance with current best practice and CIfA guidance. Any deskbased assessment aspect of this report follows the guidance as outlined in: *Standard and Guidance for Archaeological Desk-Based Assessment* (CIfA 2014a) and *Understanding Place: historic area assessments in a planning and development context* (English Heritage 2012). The geophysical (gradiometer) survey follows the general guidance as outlined in: *EAC Guidelines for the use of geophysics in Archaeology: Questions to Ask and Points to Consider* (Europae Archaeologiae Consilium/European Archaeological Council 2016) and *Standard and Guidance for Archaeological Geophysical Survey* (CIFA 2014b).

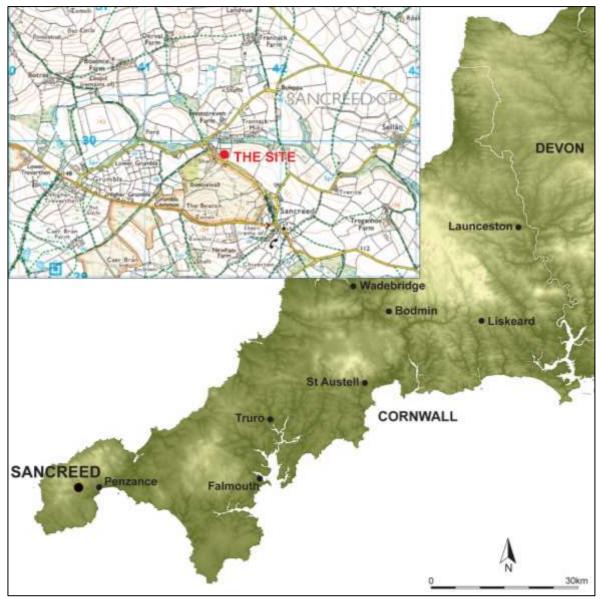


FIGURE 1: SITE LOCATION (THE SITE IS INDICATED).

2.0 GEOPHYSICAL SURVEY

2.1 INTRODUCTION

An area of *c*.0.5ha was the subject of a magnetometry (gradiometer) survey. The purpose of this survey was to identify and record magnetic anomalies within the proposed site. While identified anomalies may relate to archaeological deposits and structures the dimensions of recorded anomalies may not correspond directly with any associated features. The following discussion attempts to clarify and characterise the identified anomalies. The survey was undertaken on the 3rd of March 2021 by J. Bampton; the survey data was processed by J. Bampton.

2.2 SITE INSPECTION

The site was located across a single field that was under short tufty grass/pasture with some scrub in its north-east corner and along its east boundary. The north, east and south boundaries of the site were Cornish hedgebanks; the west boundary was a wooden with wire fence. These boundaries were lined with an electric fence. A large number of granite boulders were visible on the ground in the field immediately east of the site and granite boulders cleared from an adjacent area in the field to the north-west of the site. There were no apparent earthworks visible on the site during the geophysical survey. The ground could be seen to have been worked (agriculturally) parallel to the site boundaries. Supporting photographs for the site inspection can be seen in Appendix 3.

2.3 METHODOLOGY

The gradiometer survey follows the general guidance as outlined in: *EAC Guidelines for the use of geophysics in Archaeology: Questions to Ask and Points to Consider* (Europae Archaeologiae Consilium/European Archaeological Council 2016) and *Standard and Guidance for Archaeological Geophysical Survey* (ClfA 2014b).

The survey was carried out using a twin-sensor fluxgate gradiometer (Bartington Grad601). These machines are sensitive to depths of up to 1.50m. The survey parameters were: sample intervals of 0.25m, traverse intervals of 1m, a zigzag traverse pattern, traverse orientation was circumstantial, grid squares of 30×30m. The gradiometer was adjusted ('zeroed') every 0.5-1ha. The survey grid was tied into the Ordnance Survey National Grid- and set out using a Leica CS15 GNSS Rover GPS. The data was downloaded onto *Grad601 Version 3.16* and processed using *TerraSurveyor Version*

3.0.36.0. The primary data plots and analytical tools used in this analysis were *Shade* and *Metadata*. The details of the data processing are as follows:

Processes:

- *DeStripe* all traverses, median; used to equalise underlying differences between grids (potentially caused by instrument drift or orientation, directional effects inherent in magnetic instrument, or differences in instrument set up during survey e.g. using two gradiometers).
- *DeStagger* all traverses out- and inbound by 0.50m; reduces staggering effects within data derived from zig-zag collection method.

Clip +/- 1SD; removes extreme data point values.

Details:

0.4617ha surveyed

Stats unadjusted/prior to data clipping; Max. 71.15nT, Min. -98.23nT; Standard Deviation 5.72nT, mean -0.50nT, median 0.00nT.

Stats threshold adjusted/post processing (clipped to 1SD); Max. 5.21nT, Min. -6.22nT; Standard Deviation 1.88nT, mean -0.17nT, median 0.00nT.

2.4 RESULTS

Table 1 with the accompanying Figures 2 and 3 show the analyses and interpretation of the geophysical survey data. Additional graphic images of the survey data and numbered grid locations can be found in Appendix 1.

Anomaly	Class and	Form	Archaeological	Comments	
Group	Certainty		Characterisation		
No probab	No probable or possible archaeological anomalies or anomalies associated with known historical features were present in the data.				
	Below is a description of other types of anomaly present in the data.				
-	Moderate-strong	Point/	Geology/	The site has a relatively frequent spread of dipolar	
	dipolar, probable	ovoid	Ferrous	responses. The strongest examples are indicative of	
			objects/debris	ferrous objects that are typically presumed to be modern,	
				such as farm machinery fragments. Similar and weaker	
				responses can be indicative of geological	
				features/anomalies. In the case of this site, most of these	
				are presumably associated with the granite geology and	
				possible present and removed boulders within an	
				otherwise differentially weathered granite. These are	
				highly probable to be non-archaeological in nature.	
				Responses of between approximately +/-22nT and +/-	
				65nT.	
-	Magnetic	Spreads	Magnetic	Near the edges of the site magnetic disturbance from	
	disturbance,	associated	disturbance	fence lines, debris and farm equipment is visible. Adjacent	
	probable	with site		to the north and south boundaries of the site these	
		boundaries		responses are associated with gates/access to the field;	
				and along the west boundary they are associated with a	
				modern fence line and adjacent property. Responses of	
				between approximately +/-50nT and +/-100nT.	

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.

2.5 DISCUSSION

The geophysical survey identified no groups of anomalies that could be associated with probable or possible archaeological deposits. Evident in the survey data was geological variation associated with the sites known underlying geology and modern disturbance and debris associated with site boundaries and fence lines.

The general 'noise' (inherent geological variation) of the site was relatively quiet, <c.+/-1nT with occasional spikes/points of <c.+/-22nT. The granite bedrock inherent to the underlying Land's End

Intrusion probably accounts for most of this variation with some dipolar points associated with both *in-situ* granite boulders beneath the turf and perhaps sockets of cleared/removed boulders from the site. The presence of moderate-strong dipolar, possible ferrous and geological, anomalies and areas of magnetic disturbance are explained in Table 1.

The site had evidently been ploughed and given the probable shallow nature of any topsoil on the site and presumably solid underlying 'natural' any buried archaeological resource may have been shallow and truncated to a varying degree. Historical boundaries depicted on the site in 1887 may have been short lived or not substantial boundaries, as they were neither depicted on earlier or subsequent mapping, nor was there clear evidence of them in the geophysical record.

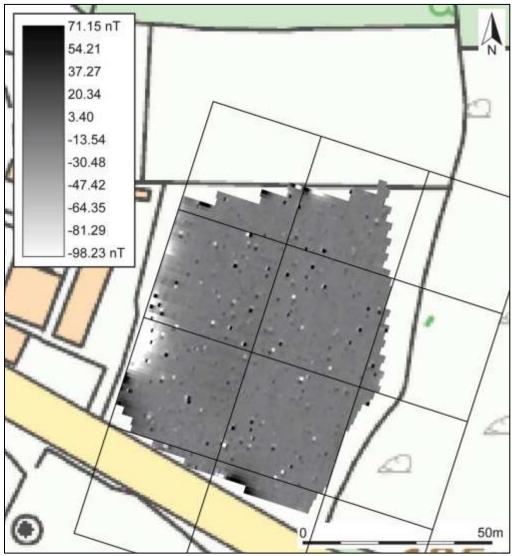


FIGURE 2: SHADE PLOT OF GRADIOMETER SURVEY DATA; MINIMAL PROCESSING.

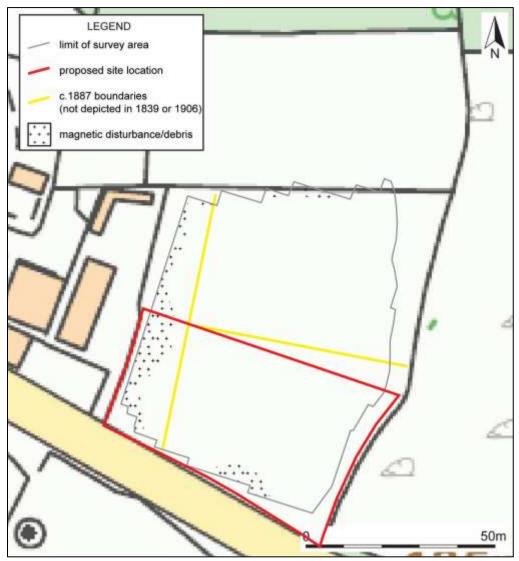


FIGURE 3: INTERPRETATION OF GRADIOMETER SURVEY DATA.

3.0 CONCLUSION

The site is located to the north-west of the village of Sancreed, *c*.675m north-west of the parish church, across a roughly rectangular field described on the Historic Landscape Characterisation as within Anciently Enclosed Land, although adjacent to modern enclosed land and upland rough ground. Sancreed is an early medieval settlement and probable Lann site (MCO21805). Sancreed is within a landscape of prehistoric monuments and associated with the adjacent Beacon hill, south of the site and west of the main village, on which can be found prehistoric barrows and settlement and post-medieval mining activity (e.g. MCO3441, MCO21598, MCO12500). Some possible, and short-lived field divisions may have been present on the site in the later 19th and very early 20th century.

No probable significant or probable/possible archaeological anomalies were identified in the geophysical survey. Evident in the survey data were geological anomalies and variation associated with the underlying granite geology; these may be indicative of present and/or removed boulders and areas of differential weathering in the underlying geology. Magnetic disturbance from fence lines and possible modern debris near to the edges and entrances of the site was also evident in the survey data. Any potential buried archaeological resource on the site will have been truncated to some degree by agricultural activity.

4.0 BIBLIOGRAPHY & REFERENCES

Published Sources:

- **Chartered Institute of Field Archaeologists** 2014a (revised 2017): Standard and Guidance for Historic Environment Desk-based Assessment.
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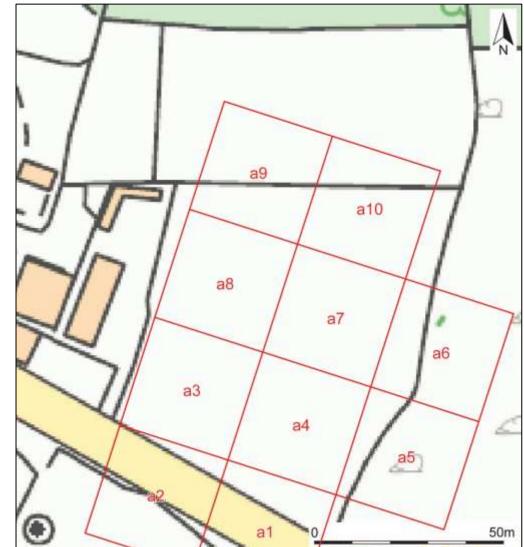
Cornwall Record Office (CRO)

Surveyors draft map for the Land's End area, c.1809

Sancreed Tithe Apportionment, c.1839

Sancreed Tithe Map, c.1839

Ordnance Survey 1st edition, 6 inch map, Sheet: Cornwall LXXIII.NE, surveyed 1876-7, published 1887 Ordnance Survey 2nd edition, 6 inch map, Sheet: Cornwall LXXIII.NE, surveyed 1906, published 1908



APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY



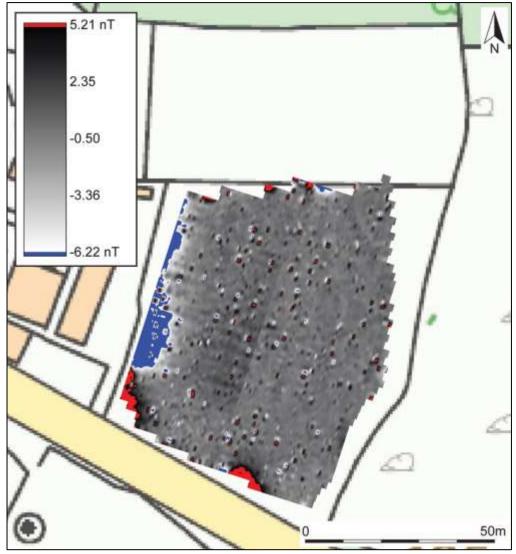


FIGURE 5: RED-GREY-BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; GRADIATED SHADING; CLIPPED BY 1SD (STANDARD DEVIATION).

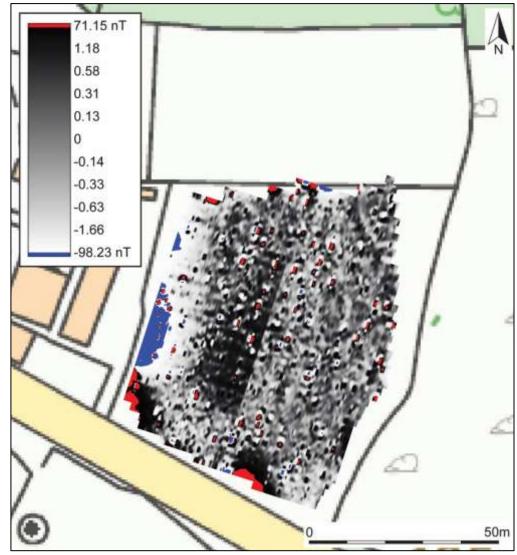


FIGURE 6: RED-GREY-BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.

APPENDIX 2: SUPPORTING SOURCES

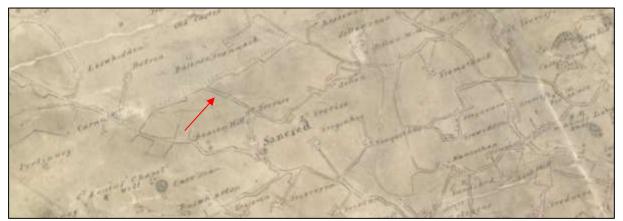


FIGURE 7: EXTRACT FROM THE SURVEYOR'S DRAFT MAP, *c*. 1809; THE APPROXIMATE LOCATION OF THE SITE IS INDICATED (CRO).

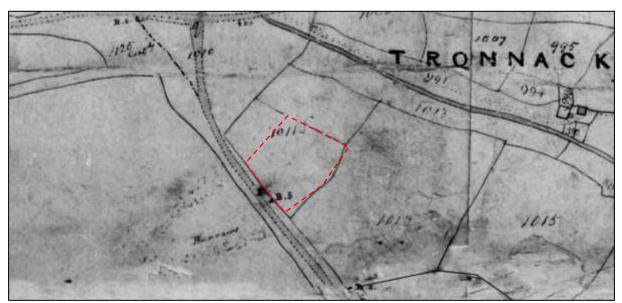


FIGURE 8: EXTRACT FROM THE SANCREED TITHE MAP, 1839; THE SITE IS OUTLINED IN RED (CRO).

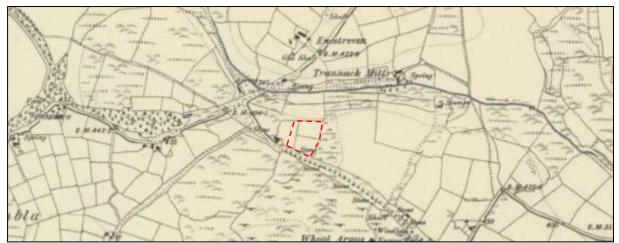


FIGURE 9: EXTRACT FROM THE ORDNANCE SURVEY 1ST EDITION, 6 INCH SERIES, PUBLISHED 1887; THE SITE IS OUTLINED IN RED (CRO).

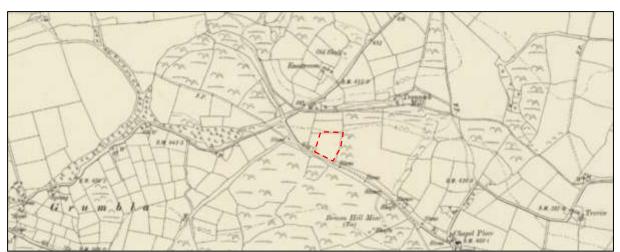


FIGURE 10: EXTRACT FROM THE ORDNANCE SURVEY 2ND EDITION, 6 INCH SERIES, PUBLISHED 1908; THE SITE IS OUTLINED IN RED (CRO).

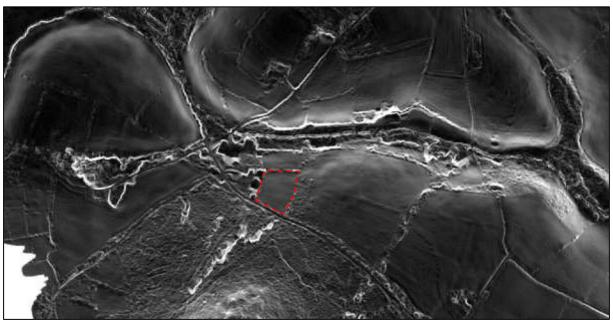


FIGURE 11: IMAGE DERIVED FROM LIDAR DATA; THE SITE IS OUTLINED IN RED (PROCESSED USING QGIS VER2.18.4, TERRAIN ANALYSIS/SLOPE, VERTICAL EXAGGERATION 3.0). DATA: CONTAINS FREELY AVAILABLE DATA SUPPLIED BY NATURAL ENVIRONMENT RESEARCH COUNCIL (CENTRE FOR ECOLOGY & HYDROLOGY; BRITISH ANTARCTIC SURVEY; BRITISH GEOLOGICAL SURVEY); ©NERC.

APPENDIX 3: SUPPORTING PHOTOGRAPHS



1. VIEW ALONG THE WEST BOUNDARY OF THE SITE; VIEWED FROM THE SOUTH (NO SCALE).



2. VIEW ALONG THE NORTH BOUNDARY OF THE SITE; VIEWED FROM THE WEST (NO SCALE).



3. SITE SHOT FROM THE NORTH-WEST CORNER; VIEWED FROM THE NORTH-WEST (NO SCALE).



4. VIEW OF THE EAST END OF THE NORTH BOUNDARY; VIEWED FROM THE WEST (NO SCALE).



5. SITE SHOT FROM THE CENTRAL ACCESS IN THE NORTH BOUNDARY; VIEWED FROM THE NORTH (NO SCALE).



6. VIEW ALONG THE NORTH BOUNDARY; VIEWED FROM THE EAST (NO SCALE).



7. SITE SHOT FROM THE NORTH-EAST CORNER; VIEWED FROM THE NORTH-EAST (NO SCALE).



8. VIEW ALONG THE EAST BOUNDARY; VIEWED FROM THE NORTH (NO SCALE).



9. VIEW INTO THE ADJACENT EASTERN FIELD, SHOWING GRANITE STONES/BOULDERS; VIEWED FROM THE WEST (NO SCALE).



10. VIEW ALONG THE EAST BOUNDARY; VIEWED FROM THE SOUTH (NO SCALE).



11. SITE SHOT VIEWED FROM THE SOUTH-EAST CORNER; VIEWED FROM THE SOUTH-EAST CORNER (NO SCALE).



12. VIEW ACROSS THE SOUTH END OF THE FIELD/SITE; VIEWED FROM THE EAST (NO SCALE).



13. VIEW FROM THE MIDDLE OF THE FIELD LOOKING NORTH-WEST; VIEWED FROM THE SOUTH-EAST (NO SCALE).



14. VIEW FROM THE MIDDLE OF THE FIELD LOOKING NORTH; VIEWED FROM THE SOUTH (NO SCALE).



15. VIEW FROM THE MIDDLE OF THE FIELD LOOKING NORTH-EAST; VIEWED FROM THE SOUTH-WEST (NO SCALE).



16. VIEW FROM THE MIDDLE OF THE FIELD LOOKING EAST; VIEWED FROM THE WEST (NO SCALE).



17. VIEW FROM THE MIDDLE OF THE FIELD LOOKING SOUTH-EAST; VIEWED FROM THE NORTH-EAST (NO SCALE).



18. VIEW FROM THE MIDDLE OF THE FIELD LOOKING SOUTH; VIEWED FROM THE NORTH (NO SCALE).



19. VIEW FROM THE MIDDLE OF THE FIELD LOOKING SOUTH-WEST; VIEWED FROM THE NORTH-EAST (NO SCALE).



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