

# Whitberry Point, Tynninghame, East Lothian

## Evaluation, Topographic and Geophysical Survey



November 2016

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# **Whitberry Point, Whitekirk & Tynninghame, East Lothian**

## **Topographic Survey, Geophysical Survey and Evaluation**

### **Data Structure Report**

National Grid Reference (NGR):	NT63718125
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Illustration by:	David Connolly
Date of Fieldwork:	29 <sup>th</sup> August 2015; 23 <sup>rd</sup> April 2016
Date of Report:	November 2016
OASIS ID:	Connolly1-268846

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**Plate 3:** Trench 1— west facing section

**Plate 4:** Trench 2— south and west facing sections showing lower stone cairn beneath disturbed cairn material and pillbox construction material

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## 1. SUMMARY/ABSTRACT

- 1.1. A topographic survey, geophysical survey and trial trenching were carried out on a prominent mound, known as Whitberry Point, Whitekirk And Tynninghame (East Lothian), in order to characterise the site and to determine its potential for surviving undisturbed archaeology.
- 1.2. Whitberry Point (NT68SW 4), also known as St Baldred's Cradle, was previously interpreted as a cairn and has been at one point presumed completely destroyed by the construction of a concrete WWII pillbox on the same site (Nisbet 1975). However, others have since suggested, the cairn may have survived these WWII alterations. In order to clarify whether the mound represents remains of a cairn, possibly prehistoric, and the state of its preservation, the mound was investigated using geophysical and topographic surveys as well as limited excavations.
- 1.3. Topographic survey of the area was carried out prior to the excavations, in order to create an accurate plan to aid in interpretation of the site. This significantly increased the understanding of the layout of the site, its relationship to the natural promontory on which it is located, as well as the later WWII works alterations. The topographic survey was accompanied by geophysical survey focusing on the mound itself, identifying the later concrete structure but also the possible outline of the cairn kerb.
- 1.4. Based on the results of the surveys, trenches were located in the most promising/suitable areas of the site. Two trenches were opened to investigate the potential of the surviving archaeology and to characterise its depth, condition and, if possible, its date. It became clear that despite the WWII and subsequent alterations on the mound, which significantly disturbed the original cairn, it does appear to survive to a significant degree underneath these later works.
- 1.5. Although no dating material was recovered during the excavations, these nevertheless demonstrated the possibility of a significant archaeological survival beneath the modern works.
- 1.6. Any further research should focus on recovering dating material, which would significantly enhance the understanding of the monument.

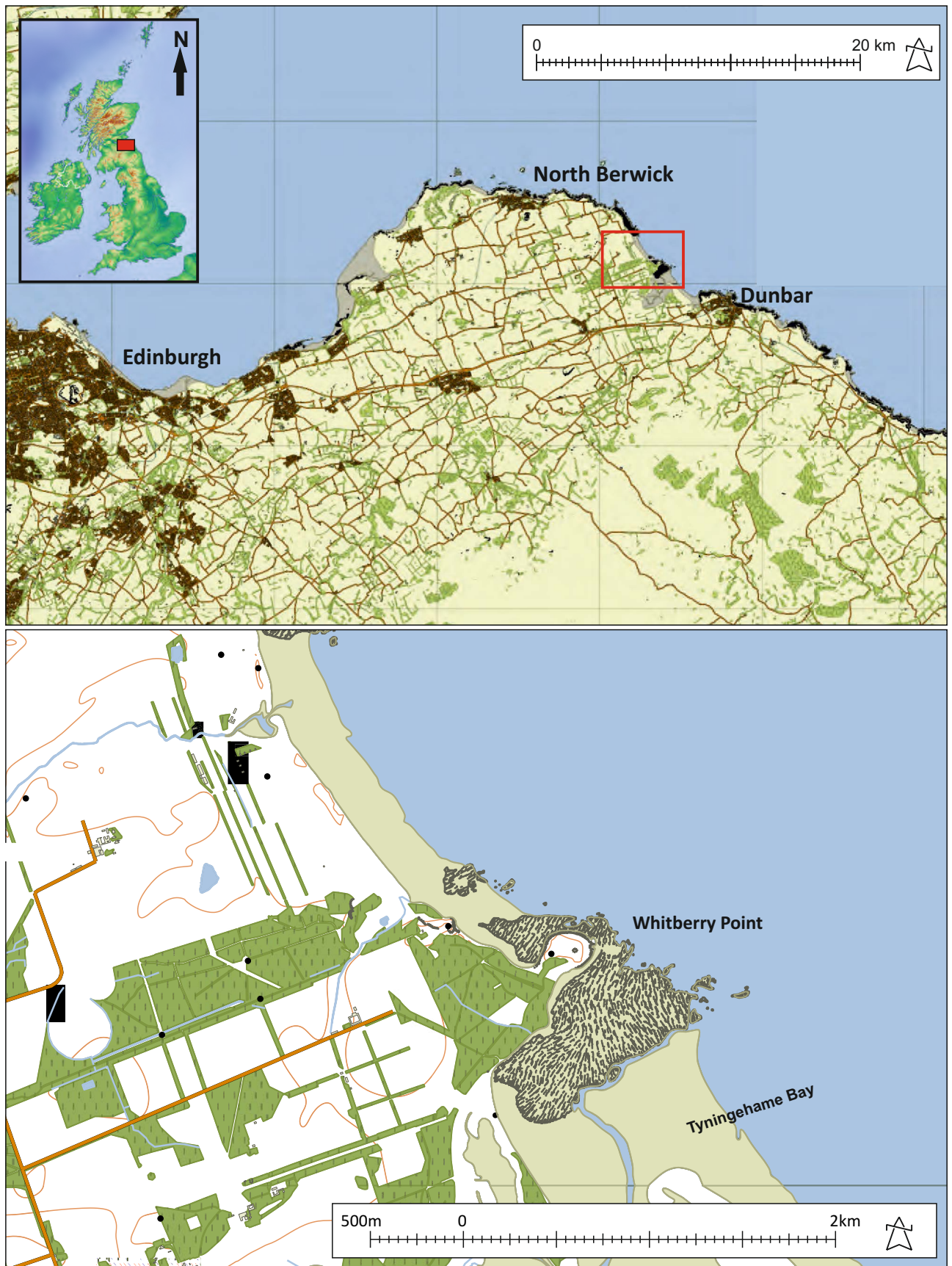
## 2. INTRODUCTION

### 2.1 Site location

- 2.1.1 The site (Plate 1) is located on a prominent sea promontory in the Parish of Whitekirk And Tynninghame, East Lothian, approximately 4.5 km northeast from Dunbar. The site is centred on NGR NT63718125 and bounded to the east by Belhaven Bay and to the west by Ravensheugh sands.



**Plate 1:** Aerial view of the cairn mound from the east.



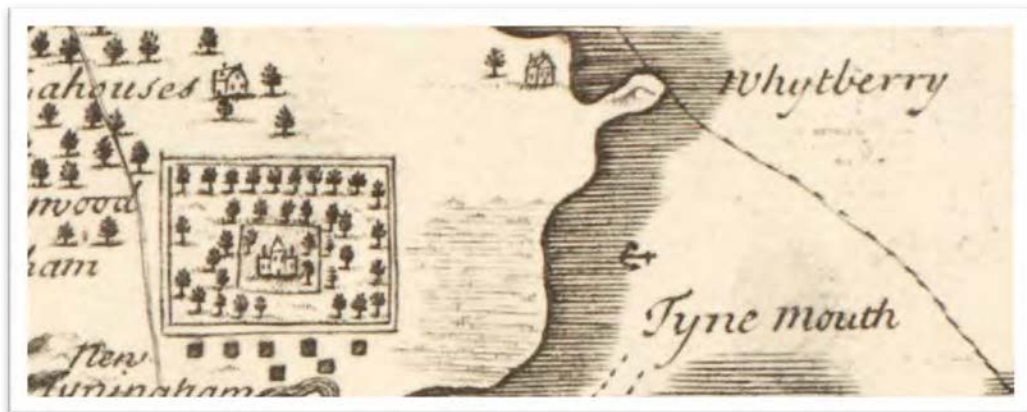
Contains OS data © Crown Copyright [and database right] 2015

Figure 1: Site Location Map



## 2.2 Site History

- 2.2.1 Cartographic sources indicate that Whitberry Point (NT68SW 4), also known as St Baldred's Cradle, was a prominent landscape feature, bearing cairn characteristics, since at least 17<sup>th</sup> century (Plate 2). The site first appears on Johanne Adair's map of East Lothian, published in 1682, where the site is depicted as a prominent mound and named 'Whytbery'. Adair's later engraved and published version of the same map (Adair 1736) again depicts the site but the spelling of the name is slightly different– i.e. 'Whytberry'. The site also makes it to Roy's map of Lowland Scotland (1752-55), again depicted as a prominent mound and named as 'Whiteberry', while the 1<sup>st</sup> edition OS map identifies the site for the first time as a cairn (1853/1854).



**Plate 2:** From top– Adair, J. 1682 *A Map of East Lothian*; Roy, W. 1752-55 (1747-55) *Military Survey of Scotland*; First edition Ordnance Survey Map 1854.

The site was previously interpreted as a cairn (RCAHMS 1924, visited 1913; OS visit 1962), but was later judged to have been completely destroyed by the construction and subsequent removal of a concrete WWII pillbox (Nisbet 1975). The site was also examined as part of two programmes of coastal surveys, which both suggested it may have partially survived the construction of the pillbox (James 1996; Moore & Wilson 2006), while further RCAHMS visit also argued for the cairn's likely survival (field visit by D. Easton 2001).

It has been proposed that the site may have been associated with other possible (prehistoric?) sites in the near vicinity, including putative trapezoidal banked enclosure/platform (NT68SW 22) and possible rigs identified in 1985 (Aliaga-Kelly 1985). However, this was not confirmed by later fieldwork, which instead argued for interpreting these as a result of WWII interventions and/or natural feature (James 1996).

No further information regarding the cairn existed prior to the fieldwork described in this report and no accurate up to date survey plan of the site was available.

### 3. OBJECTIVES

- 3.1.1 The overriding aims of the fieldwork, subject to this report, were to determine the character, extent, condition, quality, date and significance of the feature believed to be a possible prehistoric cairn. With this in mind the specific objectives were:
- 3.1.2 Conduct a topographic survey of the site and its immediate surroundings to create an accurate and up to date plan of the feature.
- 3.1.3 Conduct a geophysical survey to establish any survival of the cairn structure and to determine the character of any other associated archaeological features.
- 3.1.4 Investigate through small-scale hand trenching the significance and the character of any surviving underlying archaeology and to determine to what extent this has been damage by the WWII pillbox construction and its subsequent removal.
- 3.1.5 The placement of the trenches was guided by the available data from the preliminary geophysical and topographic surveys and designed to target the most promising areas of likely archaeological survival. It was the explicit aim of the proposed project to retain *in situ* as much as practicable any pre-WWII anthropomorphic material that might be encountered during the excavations.

### 4. METHODOLOGY

- 4.1.1 Topographic survey of the site was carried out by David Connolly on the 29<sup>th</sup> of August 2015, using a total station and post processed in Penmap software. An arbitrary datum was established, which was later referenced to Ordnance Survey coordinates and Height Datums. The resulting 0.10m interval topographic contour survey was geolocated using GPS coordinates related to known features and cross related to the geophysical survey grid.

- 4.1.2 The resistivity survey was undertaken by the *Edinburgh Archaeological Field Society* on the 29<sup>th</sup> of August 2015 using TR/CIA area ground resistance measuring equipment. The equipment operates in the 'twin' configuration with four probes: two of the probes are mounted on a portable frame 0.5m apart and comprise one current input and one potential measurement probe. The other two probes, again one for current input and one for potential measurement, complete the two circuits. The probes are inserted about 1m apart and positioned so that no reading can be taken with the portable frame located closer than 15m to the probes. All readings were taken at 1m intervals in lanes 1m wide and in 20m by 20m survey grids, giving a total of 400 measurements in each grid.
- 4.1.3 The unit on the frame generates a 137Hz signal current that flows through the ground and the potential drop is detected by the measurement probes; the computer in the unit converts this voltage reading into a ground resistance value in ohms. Within the unit is the display, which indicates this resistance, together with the data store into which the readings are dumped for later processing and printing. The data are loaded, to a computer and printer, with the resulting printout in grey scale with the black and white limits chosen, based upon the highest and lowest ohms readings recorded. It is normal practice to print high resistance (well drained areas and bedrock) as black and low resistance (infilled ditches and damp areas) as white.
- 4.1.4 The Whitberry Point geophysical survey was undertaken in 40m x 40m grid laid out over the cairn mound and surrounding apron of land, with results displayed on Figure 2.
- 4.1.4 Hand excavation of two small trenches took place on the 23<sup>rd</sup> of April 2016 and the fieldwork was directed by David Connolly and Hana Kdolska.
- 4.1.5 Two trench locations were selected based on the results of the topographical and geophysical surveys— targeting the most promising places for surviving archaeology. Locations of the trenches were recorded using total station. The excavations were carried out stratigraphically, using shovels, mattocks, hand shovels and trowels.



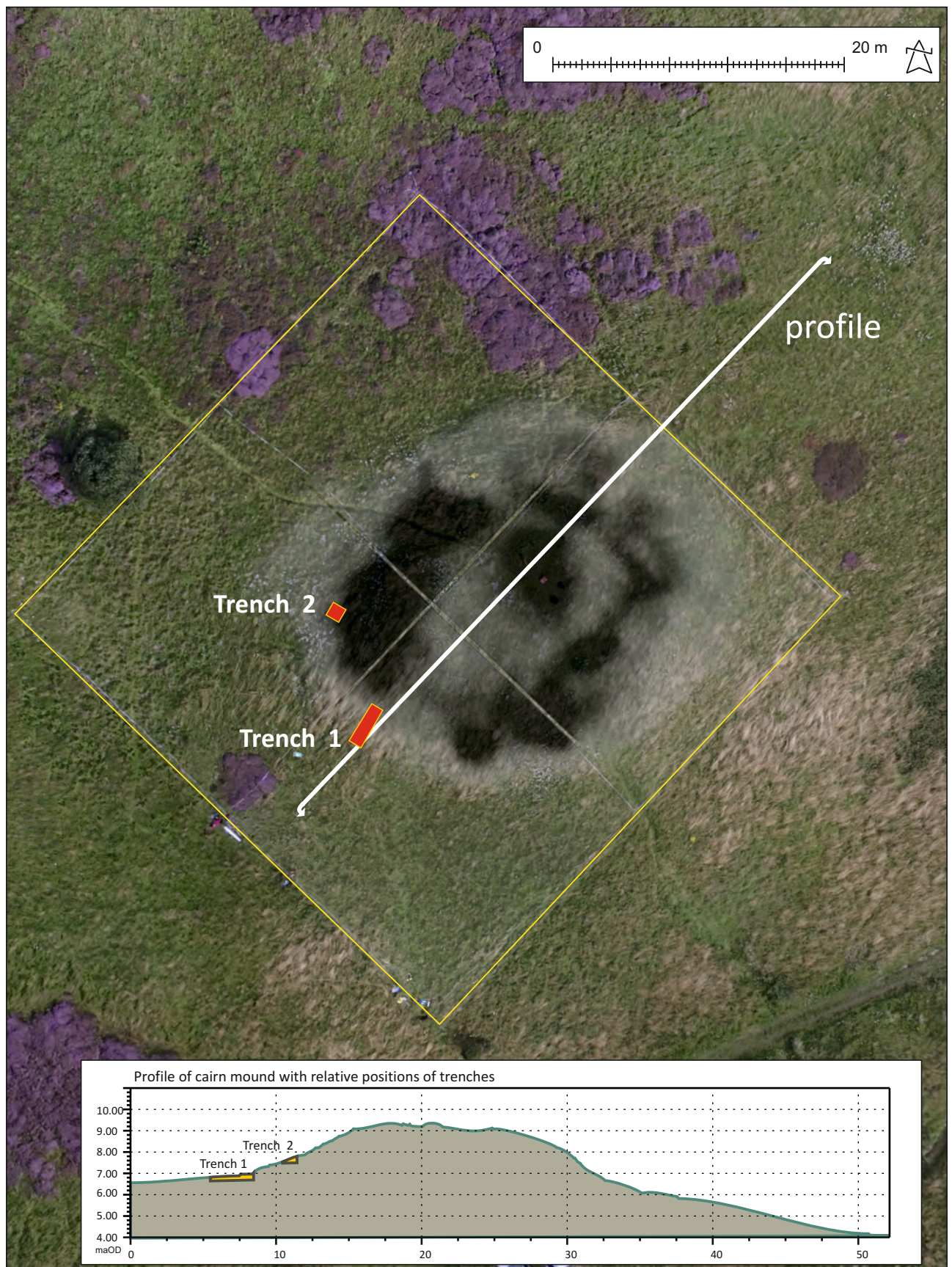


Figure 2: trench locations and profile - with overlaid geophysical plot



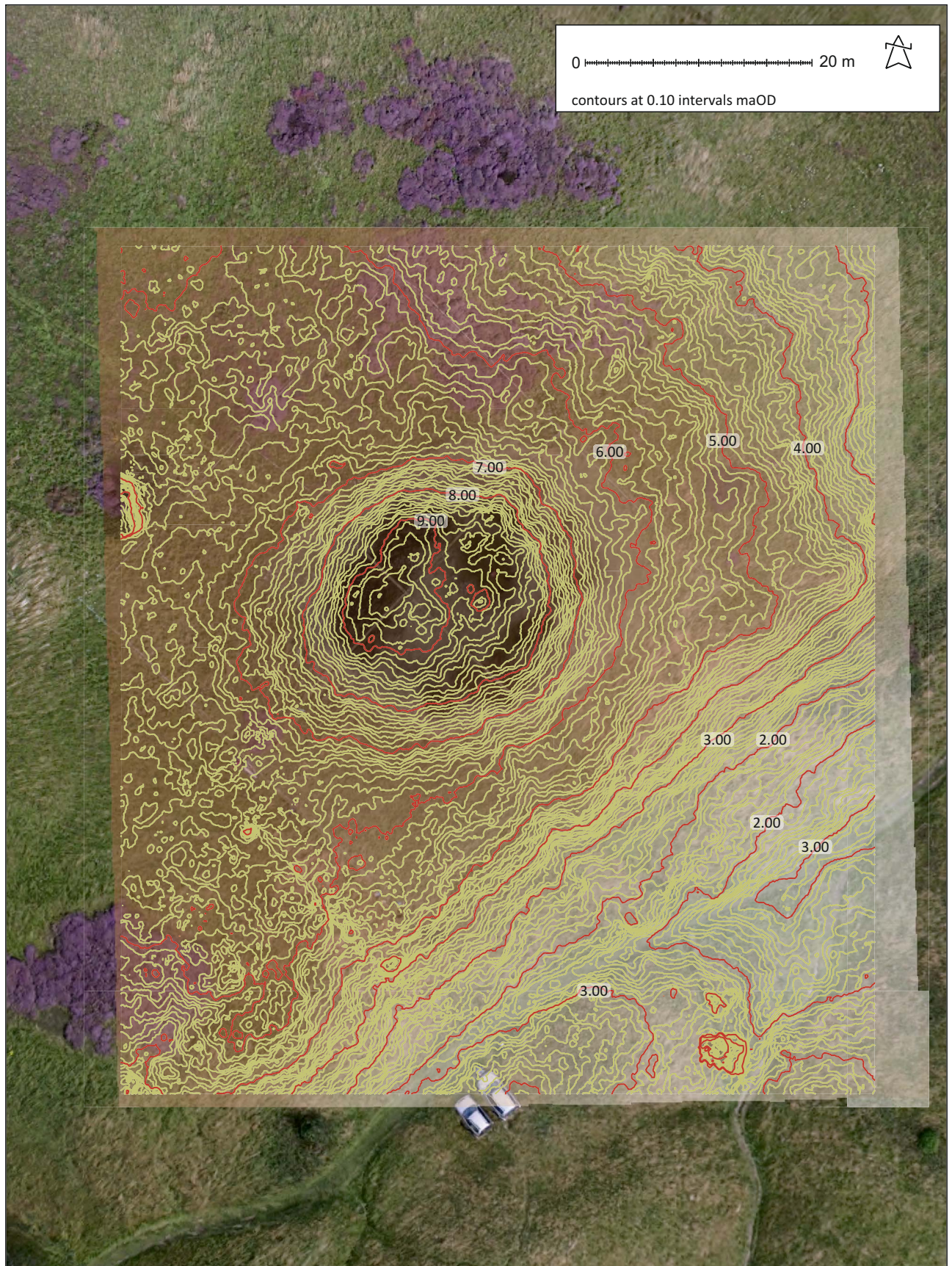


Figure 3: Topographic survey plot over cairn area



## 5. RESULTS

### 5.1 Introduction

- 5.1.1 The following section describes results of each fieldwork component. The excavation results should be read in conjunction with the data presented in Appendices 1 to 2– Appendix 1 (Context Register); Appendix 2 (Photographic Register).

### 5.2 Topographical Survey

- 5.2.1 Topographic survey of the site (Figure 3) was carried on 29<sup>th</sup> of August. The weather conditions were good. The results clearly show the upper flat area is circular and 17.5m in diameter, while the lower bounds of the mound are elongated to the southwest measuring 26.5m southeast-northwest and 32m southwest-northeast. The mound height from the basal break of slope is c. 3.10m. The potential exists that the work carried out in the 1940s to create the pillbox, has altered the overall shape of the mound, with demolition debris further changing what may have been a circular cairn into a slightly tear shaped structure.

### 5.3 Geophysical Survey

- 5.3.1 Geophysical survey was undertaken on the 29<sup>th</sup> of August 2015. The weather conditions were good. This established the presence of subsurface features that were regular and of anthropogenic origin (Figure 2). The grey (lower resistance) central area in the plot corresponds to the now flattened top of the mound, the black (high resistance) surrounding area to the upper part of the sides and the grey halo to the lower part of the sides correspond to brick walls and stone rubble (uncovered in both excavated trenches) and the extant brick wall located on the flat top of the mound. No definitive kerb was identified from the present survey results.

### 5.4 Excavations

- 5.4.1 Two small trenches (Trench 1 and 2) were opened on the 23<sup>rd</sup> of April 2016, with the weather conditions being generally good.

#### 5.4.1. Trench 1

- 5.4.1.1. Trench 1 (Plate 3) was located on the base of the southwest side of the cairn (Figure 2 & 4) to determine any surviving kerb structure and to assess the depth/amount of material accumulated as a result of the construction and subsequent decommissioning of the WWII pillbox. Trench 1 measured 3.0m (N-S) by 1.0m (E-W) and was 0.54m (S end)/ 0.91m (N end) deep.
- 5.4.1.2. The removal of the medium grey sandy topsoil and turf [1001] revealed compacted mottled ginger sandy deposit [1002], heavily bioturbated by bracken roots, which

may have been deliberately deposited on site after the dismantling of the pillbox or maybe of windblown (aeolian) origin.

- 5.4.1.3. Below [1002] was a mixed deposit [1003] of dark organic material, probably buried turf, together with darker grey silty sand, some light mottled grey/beige sand and stone and concrete rubble. The deposit petered out approximately 1.70m to the south of the trench and was also bioturbated by bracken roots. This deposit probably related to the dismantling of the pillbox, with fragments of concrete etc. imbedding themselves in the then exposed turf covering the mound at the time. Underneath [1003] was deposit of loose light grey sand [1004], with occasional concrete fragments, surviving towards the northeast end of the trench and approximately 1.11m in extent. This deposit must have been present during the construction of the pillbox, rather than being result of its dismantling, as it appears to form an interface between the demolition material above it and undisturbed layers below.
- 5.4.1.4. Deposits [1004] and [1002] overlay mottled greyish and reddish beige, medium compact sand [1005], which in turn lay above compact mid orange sterile sand [1006]. Both these layers, [1005] and [1006] appear to represent an undisturbed archaeological deposits, probably relating to the construction of the mound/cairn but certainly previous to the WWII pillbox. Deposit [1006] overlay light grey clayey sand [1007], which included decaying vegetation/roots and likely represents a natural subsoil.



**Plate 3:** Trench 1– west facing section.

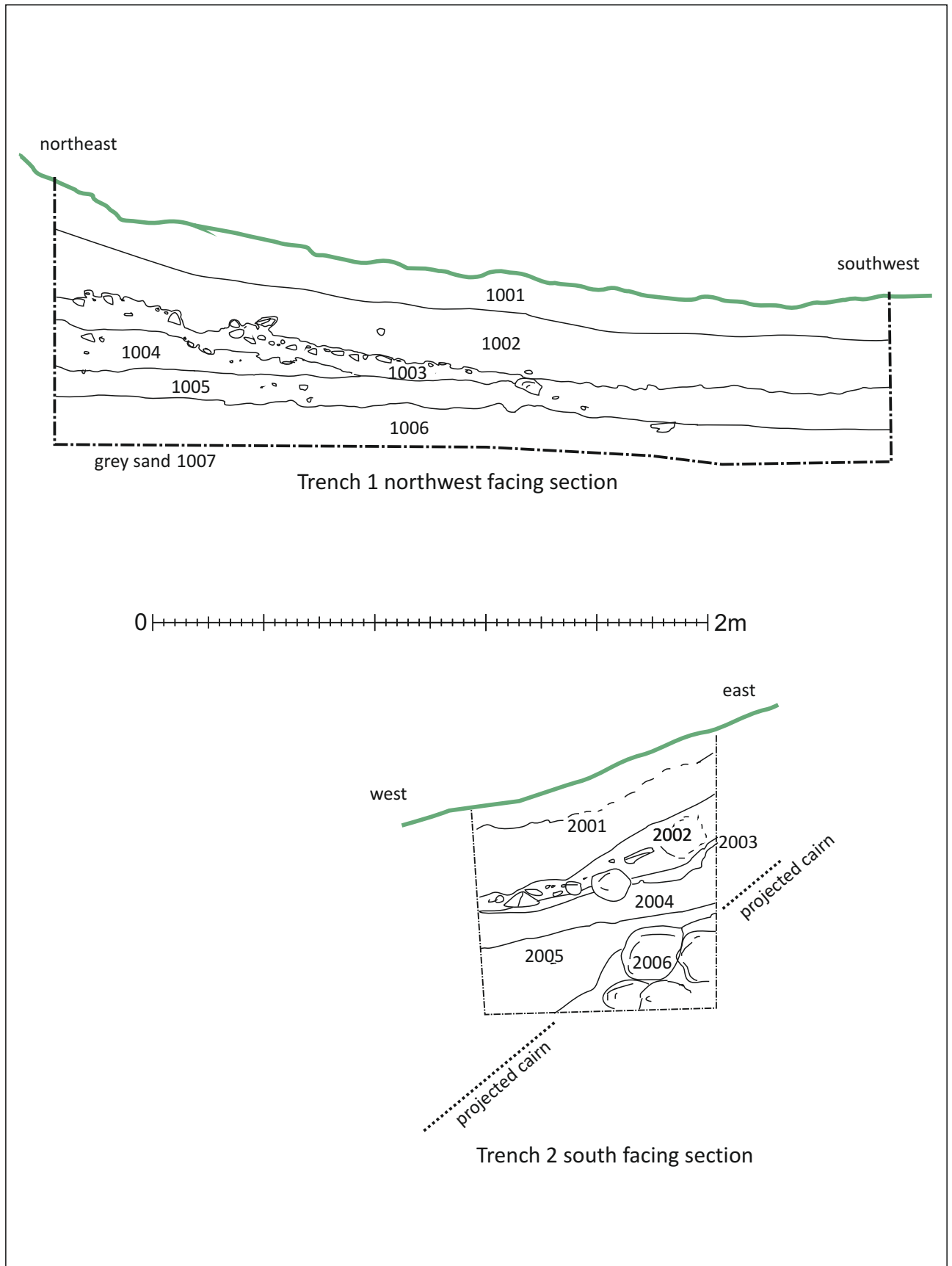


Figure 4: Trench 1 and 2 sections

## 5.4.2 Trench 2

- 5.4.2.1. Trench 2 (Plate 4) measured 1.0m by 1.0m and was 0.74m deep. It was located approximately half way down the slope on the west side of the cairn (Figure 2 & 4). The trench was opened to determine the character of the several larger stones protruding from the surface– i.e. whether these may represent an in situ cairn material or were a result of the later disturbance by the construction and/or decommissioning of the pillbox.
- 5.4.2.2. After the removal of the medium dark sandy topsoil and turf [2001], the next encountered deposit [2002] consisted of rubble layer composed of bricks, round and sub-angular stones and fragments of concrete, mixed with loose orange sand. This deposit clearly denotes a demolition layer resulting from the removal of the pillbox but, nevertheless, also includes stones likely originating from the disturbance of the cairn during the construction of the pillbox. Deposit [2002] overlay dark organic silty sand [2003], representing buried topsoil and turf, identical to [1003] in TR1. Deposit [2003] in turn overlay firm grey sandy deposit [2004], similar in nature to [1004] in TR1. This deposit must have been present during the construction of the pillbox, rather than being as a result of its dismantling, this seems to form an interface between demolition material above and undisturbed pre-WWII layers below.
- 5.4.2.3. Underneath [2004] was sediment of firm orange sand [2005], which overlay in situ deposit of moderately sized rounded to sub-angular boulders of the local whinstone [2006]. This material presumably relates to the cairn construction and was not investigated further. Nevertheless, it is obvious that the amount of material accumulated on top of the cairn material [2006], relating to the construction and decommissioning of the pillbox, significantly altered the shape of the original cairn (Figure 2).



**Plate 4:** Trench 2– south and west facing sections showing lower stone cairn beneath disturbed cairn material and pillbox construction/demolition material.

## **6. CONCLUSIONS AND RECOMMENDATIONS**

- 6.1** The programme of topographic and geophysical survey, followed by trial trenching/ evaluation has shown that in the areas of investigation, the cairn material appears to survive in situ. This was demonstrated in both trenches by the presence of deposits likely associated with the material used in the cairn construction (but certainly predating the WWII works)– deposits [1005] and [1006] in Trench 1 and [2006] in Trench 2.
- 6.2** Although the extent of the cairn's survival could not be determined during the small-scale excavations described here, the potential exists that it survives to a significant degree underneath the later disturbances/alterations associated with WWII works, which have altered the shape of the original structure.
- 6.3** The excavations have demonstrated presence of presumably undisturbed deposits pre-dating the construction of the pillbox. Coupled with the available cartographic evidence, the monument itself pre-dates at least later seventeenth century. However, given the absence of any datable finds or material, the site cannot be dated more closely at this time.
- 6.4** Only future investigative works maybe able to determine beyond doubt, whether the monument in question is of prehistoric or later origin.



## 7. Acknowledgments

Special thanks are extended to the team members– Mr Gary Craig and Mr Kai Wallace and the landowner Mr Alec Dale, in addition to the members of the Edinburgh Archaeological Field Society who produced the geophysical results.

## 8. References

### Maps:

Adair, J. 1682. A Map of East Lothian.

Adair, J. 1736. A Map of East Lothian.

Roy, W. 1752-55 (1747-55). Military Survey of Scotland.

First edition Ordnance Survey Map 1854.

### Published documents:

Aliaga-Kelly, C J. 1985. 'Whitberry Point (Whitekirk and Tynningham p), enclosed settlement (possible)', *Discovery Excav Scot*, p. 29.

Nisbet, H. C. 1975. 'Whitekirk and Tynninghame, St Baldred's Cradle, Whitberry Point, site of round cairn', *Discovery Excav Scot*, p.23.

RCAHMS. 1924. *The Royal Commission on the Ancient and Historical Monuments and Constructions of Scotland*. Eighth report with inventory of monuments and constructions in the county of East Lothian, p.131, No. 205.

### Unpublished documents:

James, H. F. 1996. *Coastal Assessment Survey: The Firth of Forth from Dunbar to the Border of Fife*, p. 228.

Moore, H. and G. Wilson 2006. *Report on Coastal Zone Assessment Survey: East Lothian and Scottish Borders*, site 11.

Ordnance Survey. Ordnance Survey Site Visit (1962).

## 9. Appendices

### 9.1 Appendix 1: Context Register

Context List – Whitberry Point (WP_16)	
Context	Description
1001	Topsoil– medium grey sandy silt and turf. The depth of the deposit was 0.16m.
1002	Compacted mottled ginger sandy deposit, below [1001], heavily bioturbated by bracken roots. This layer may have been deliberately deposited on site after the dismantling of the pillbox or maybe of windblown origin. The depth of the deposit varied between 0.23 and 0.17m.
1003	A mixed deposit of dark, organic material, probably representing buried turf, together with dark grey silty sand and some lighter ginger sand. Also included sub-angular to round stones and concrete rubble. Located below [1002]. The deposit did not run across the whole trench but petered out approximately 1.70m to the south. This deposit was also bioturbated by bracken roots. The depth of the deposit varied between 0.08 and 0.02m. This deposit clearly related to the dismantling of the pillbox after the WWII, with fragments of concrete etc. imbedding themselves in the turf, which would have grown on the mound at the time.
1004	A deposit of light grey loose sand, with occasional concrete fragments, surviving towards the northeast end of the trench and located below [1003]. Its spread covered an area of c. 1.11m. The depth of the deposit was 0.17m to 0.01m. This deposit must have been present during the construction of the pillbox, rather than being result of its dismantling, as it seems to form an interface between the demolition material above it [1003] and clean in situ layers below.
1005	A deposit of mottled greyish and reddish beige medium firm sand situated below [1004] and [1002]. The deposit was 0.10 to 0.18m deep. This deposit contained no later intrusive material and appears to represent an undisturbed archaeological deposit, probably relating to the construction of the mound/cairn but certainly prior to WWII.
1006	Compact mid orange sand, situated below [1005], which appeared sterile. The deposit was 0.12 to 0.18m deep. This deposit contained no later intrusive material and appears to represent an undisturbed archaeological deposit, probably relating to the construction of the mound/cairn but certainly prior to WWII.
1007	Natural subsoil– consisted of light grey clayey sand, which included decaying vegetation/roots. Below [1006].
2001	Topsoil– medium dark grey sandy silt and turf. The depth of the deposit was 0.22m to 0.31m.
2002	Deposit consisted of brick rubble layer, round to sub-angular stones and fragments of concrete, mixed with loose orange sand. Below [2001]. Depth of the deposit was 0.05m to 0.16m. This deposit most probably represents a demolition layer resulting from the removal of the pillbox, but also includes stones likely originating from the disturbance of the cairn during the construction of the pillbox.
2003	Layer of dark organic silty sand, representing buried topsoil and turf, identical to [1003] in TR1. The depth of the deposit was 0.04m. Situated below [2002].
2004	Firm grey sandy deposit, located below [2003], similar in nature to [1004] in TR1. The depth of the deposit was 0.12m.
2005	A deposit of sterile firm orange sand. The depth of the deposit was 0.05 to 0.26m. The deposit sits on top of stony deposit [2006], which appears undisturbed and presumably relates to the cairn construction.
2006	A deposit of moderately sized (c. 0.25m x 0.25m) rounded to sub-angular stones of the local whinstone. This material appears undisturbed and probably relates to the cairn construction. The deposit was not investigated further.

## 9.2 Appendix 2: Digital Photo Register

Photo Record List – Whitberry Point

Photo ID	Site Code	Description	Direction from	Date
1	WP_16	Trench 1– pre-excavation shot	NE	23/04/2016
2	WP_16	Trench 1–post-turf removal	NE	23/04/2016
3	WP_16	Trench 2–post-turf removal	SE	23/04/2016
4-17	WP_16	Trench 2–rubble brick and stone deposit [2002]	SE	23/04/2016
18	WP_16	Trench 1– post-removal of deposit [1002]/ exposure of [1003]	NE	23/04/2016
19-21	WP_16	Trench 1–photo-modelling shots of deposit [1003]	NE/N	23/04/2016
22-24	WP_16	Trench 1–photo-modelling shots of deposit [1003]	SW/S	23/04/2016
25-26	WP_16	Trench 1–detail of deposit [1003]	NE	23/04/2016
27-28	WP_16	Trench 1–detail of deposit [1003]	SW	23/04/2016
29	WP_16	Trench 2–detail of deposits [2004] (left) and [2002]	W	23/04/2016
30	WP_16	Trench 1–detail of deposits [1004] and [1005]	NE	23/04/2016
31-33	WP_16	Trench 1–detail of deposits [1004] and [1005]	W	23/04/2016
34	WP_16	Trench 1–detail of deposits [1004] and [1005]	NE	23/04/2016
35-42	WP_16	Trench 2– N and E facing sections with stratigraphy	N/A	23/04/2016
43-48	WP_16	Trench 1– SW/W facing section for 3D modelling	N/A	23/04/2016
49-51	WP_16	Trench 1– SW facing section	SW	23/04/2016



## 9.3 Appendix 3: DES entry

<b>LOCAL AUTHORITY:</b>	East Lothian
<b>PROJECT TITLE/SITE NAME:</b>	Whitberry Point
<b>PROJECT CODE:</b>	WP_16
<b>PARISH:</b>	Whitekirk and Tynninghame
<b>NAME OF CONTRIBUTOR:</b>	David Connolly
<b>NAME OF ORGANISATION:</b>	(Connolly Heritage Consultancy)
<b>TYPE(S) OF PROJECT:</b>	Evaluation and Survey
<b>NMRS NO(S):</b>	NT68SW4
<b>SITE/MONUMENT TYPE(S):</b>	Cairn
<b>SIGNIFICANT FINDS:</b>	none
<b>NGR (2 letters, 8 or 10 figures)</b>	NT63718125
<b>START DATE (this season)</b>	29 <sup>th</sup> August 2015
<b>END DATE (this season)</b>	23 <sup>rd</sup> April 2016
<b>PREVIOUS WORK</b> (incl. DES ref.)	Recorded field visits by RCAHMS (1913/1924; 2001); OS (1962) and others: Nisbet 1975 ( <i>Discovery Excav Scot</i> , p.23.)  Two programmes of coastal surveys examined the site ( <i>Coastal Assessment Survey: The Firth of Forth from Dunbar to the Border of Fife</i> , James 1996; <i>Report on Coastal Zone Assessment Survey: East Lothian and Scottish Borders</i> , Moore & Wilson 2006)
<b>MAIN (NARRATIVE) DESCRIPTION:</b> (May include information from other fields)	The fieldwork consisted of topographic survey, geophysical survey and trial excavation. The topographic survey generated an accurate plan of the monument, which significantly increased the understanding of the layout and the sitting of the site. The geophysical survey provided evidence of surviving sub-surface features. Two trenches were opened to investigate the potential for surviving archaeology and characterise its depth, condition and date. Although no artefacts or datable material were recovered, the excavations demonstrated in-situ survival of the cairn material (or material predating WWII pillbox) below the WWII and later alterations. It has also demonstrated that the WWII pillbox construction and decommissioning works have substantially altered the original shape of the mound/cairn.
<b>PROPOSED FUTURE WORK:</b>	Future works should focus on recovering datable evidence.
<b>CAPTION(S) FOR ILLUSTRS:</b>	-
<b>SPONSOR OR FUNDING BODY:</b>	-
<b>ADDRESS OF MAIN CONTRIBUTOR:</b>	Connolly Heritage Consultancy Thornton Mill Cottage Near Innerwick Dunbar EH42 1QT
<b>EMAIL ADDRESS:</b>	info@bajr.org
<b>ARCHIVE LOCATION</b>	RCAHMS