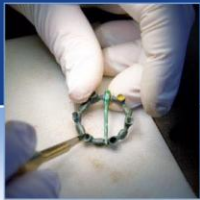


# Gleann Casaig Hydroelectric Scheme, Loch Lomond & The Trossachs National Park: Archaeological Mitigation Report

*AOC Project 23361  
23<sup>rd</sup> May 2016*



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# Glenn Casaig Hydroelectric Scheme, Loch Lomond & The Trossachs National Park

## Archaeological Mitigation Data Structure Report

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<b>On Behalf of:</b>	<b>CgMs Consulting, Ocean Point One, 4<sup>th</sup> Floor 94 Ocean Drive Edinburgh EH6 6JH</b>
<b>National Grid Reference (NGR):</b>	<b>NGR: NN 53045 09274 (approximate centre of the mitigation area)</b>
<b>Planning Reference:</b>	<b>2004/0221/DET</b>
<b>Oasis No:</b>	<b>1-251997</b>
<b>AOC Project No:</b>	<b>23361</b>
<b>Prepared by:</b>	<b>Rob Engl</b>
<b>Illustration by:</b>	<b>Diana Sproat</b>
<b>Date of Fieldwork:</b>	<b>17<sup>th</sup> March 2016 – 23<sup>rd</sup> March 2016 (Watching Brief) 23<sup>rd</sup> April 2016 (Archaeological Evaluation)</b>
<b>Date of Report:</b>	<b>18<sup>th</sup> May 2016</b>

This document has been prepared in accordance with AOC standard operating procedures.

**Author: Rob Engl** Date: 18<sup>th</sup> May 2016

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**Draft/Final Report Stage: Final Draft** Date: 23<sup>rd</sup> May 2016

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## SUMMARY

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*This report presents the results of archaeological mitigation works undertaken in association with a hydroelectric scheme at Gleann Casaig in the Loch Lomond and the Trossachs National Park (planning ref: 2014/0221/DET). The mitigation work was undertaken in accordance with an updated Written Scheme of Investigation agreed with Loch Lomond National Park and West of Scotland Archaeology Service (WoSAS).*

*The mitigation works consisted a targeted WB on ground breaking works associated with the scheme, trail-trenching evaluation of a section of the new pipeline route and establishing protective buffer zones around known sites in close proximity to development. The watching brief revealed peat deposits between one and two metres in depth. Topsoil stripping associated with the excavation of a borrow pit revealed truncated remains of rig and furrow agriculture likely to be post-medieval in date.*

*An existing track-way was utilised for the borrow pit. This track had previously crossed the line of a drystone dyke of post medieval date. Further investigation of the dyke was undertaken during the current works allowing the section to be recorded.*

*The archaeological evaluation was undertaken on the northern run of the pipeline segment that required mitigation. No archaeological features were present.*

## 1 INTRODUCTION

### 1.1 Site Background

- 1.1.1 A programme of archaeological mitigation works including an Archaeological Watching Brief and Evaluation was undertaken by AOC Archaeology at Gleann Casaig, Loch Lomond & The Trossachs National Park (NGR: NN 53045 09274). The works were commissioned by CgMs Consulting on behalf of Green Cat Renewables prior to a hydroelectric scheme. The site lies within the administrative area of Loch Lomond & Trossachs National Park, which is advised on archaeological matters by West of Scotland Archaeology Service (WoSAS).
- 1.1.2 The works were undertaken in response to a planning condition (2014/0221/DET) and in accordance with a *Written Scheme of Investigation* (WSI) produced by CgMs (2015 & updated in 2016) and agreed with WoSAS. The planning application concerning the hydroelectric scheme was accompanied by an Environmental Statement (ES), which included a section on Cultural Heritage (Chapter 10). This was accompanied by a desk-based assessment and a walkover survey (CgMs 2015) which noted the presence of rig and furrow cultivation. In response to the application and the results of the aforementioned works WoSAS advised that an archaeological Watching Brief be undertaken on an area extending from the out-flow at Finglas reservoir to a recorded head dyke or bank. WoSAS also advised that a feature recorded to the north of the head dyke be protected by temporary fencing during ground-works.
- 1.1.3 An addendum to the original Written Scheme of Investigation (CgMs 2015) was submitted in April 2016. This proposed change in scope to the archaeological mitigation at Gleann Casaig on account of existing site conditions, environmental constraints and the negative results of the initial stages of the Watching Brief undertaken as outlined in the original WSI (*ibid*). A programme of Trial Trenching was adopted, targeting areas of raised potential within the remaining development corridor. This equated to 160 m<sup>2</sup> of trenching or 8% of the available area.
- 1.1.4 The mitigation works were conducted in accordance with the principles set out in *Scottish Planning Policy* (2014) and *Planning and Archaeology 2/2011* (2011).

### 1.2 Site Location

- 1.2.1 The site is located to the north east of the Glen Finglas Reservoir, off an unnamed track in the centre east portion of the Loch Lomond & the Trossachs National Park, centred on NN 53045 09274 (Figure 1). Gleann Casaig is a broadly northeast to southwest aligned glen with a relatively narrow base containing Allt Gleann Casaig. Most of the stream's larger (i.e. mapped) tributaries flow down the eastern side of the glen and this side also has a broader shelf of slightly flatter land. The scheme's six intakes are located on several tributaries of Allt Gleann Casaig on the upper slopes of the glen (up to 400mOD) among unimproved upland. A proposed pipe route and footpath run from the intakes along the grassy west side of the glen, crossing moderate and sometimes steep slopes with numerous small watercourses that drain down toward the base of the glen. As the glen approaches Glen Finglas the footpath and pipe route begin to drop in altitude and the slope has a more southerly aspect. The ground cover here is mainly shorter (more heavily grazed) grass and there are

occasional mature trees and reeds. The ground remains undulating with frequent moraine and bedrock outcrops and is moderately sloping. The slope begins to ease near the powerhouse and outfall at Glen Finglas reservoir.

### 1.3 Archaeological background (Based on CgMs Environmental Survey Report 2015)

- 1.3.1 A previously recorded area of former rig cultivation with associated field system is present in the lower (south-westerly) parts of the development footprint. The extent of this was confirmed during the walkover survey. The field system is associated with a series of linear boundary banks; three such banks (CH1-3) crossed the line of the pipe and footpath on a broad northeast to southwest alignment and enclosed areas of rig cultivation. The rig cultivation is common above a height of around 200mOD and was contained within an upper bank (CH3) at 260mOD (Figures 2 and 3). The upper and lower banks (CH1 & 3) were broadly parallel to and alongside drystone dykes shown on the first edition OS map (surveyed in 1862), which they clearly pre-date and they are presumed to represent a field system shown on a late 18<sup>th</sup> estate map.
- 1.3.2 Several hundred metres beyond the head dyke was a small, sub-rectangular mound of stones (CH4; Figure 2), which may represent the collapsed remains of a small drystone structure (approximately 2 x 3m in plan and 0.5m high). It was presumed to be relatively late in date and may be a small shelter or pen associated with sheep farming or a small cairn erected as a marker.
- 1.3.3 The walkover survey confirmed that lower parts of the scheme will cross a field system and cultivation remains associated with the former settlement of Achnaguard (now submerged beneath the Glen Finglas reservoir). The settlement is likely to have been present by the late medieval period and the field system was in use during the 18<sup>th</sup> century; it is likely to have been abandoned when the area started to be used for sheep farming during the first half of the 19th century. Later drystone dykes are likely to have been constructed around this latter date as is the small dry-stone feature CH4.

## 2 OBJECTIVES

- 2.1 The purpose of the archaeological works was to mitigate and offset adverse effects on historic environment assets. Specifically, the objective of this phase of mitigation was to:
- archaeologically monitor initial main contract excavations (removal of turf and topsoil) from the outfall up to the head dyke CH3;
  - to undertake a targeted archaeological evaluation on areas of raised archaeological potential within the development corridor from the outfall to site CH3.
  - excavate and record any archaeological features exposed during these works;
  - undertake appropriate post excavation analyses (if required) and dissemination of results;
  - prevent any accidental or construction damage to possible former drystone structure CH4.

### 3 METHODOLOGY

- 3.1 The possible collapsed dry-stone structure CH4 (NGR; NN 2539 7104) was marked out with temporary fencing in advance of construction work, and a buffer of 10 m placed around the structure in order to avoid any accidental damage. A site visit immediately prior to commencement of ground works identified a further two archaeological sites representing possible shieling remains CH5 (NGR; 253899 710284) and CH6 (NGR; 253852 710214) in the vicinity of the proposed development. The locations of these two sites were recorded with GPS. They were subsequently photographed and appropriate buffer zones established (Plates 6 and 7).
- 3.2 All machine removal of top-soil/turf was conducted with a toothless ditching bucket under direct archaeological supervision. The excavation proceeded until natural drift geology or the first archaeological horizon was reached. The watching brief was undertaken from the out-flow to the location of the borrow pit. The evaluation was undertaken in the area between the borrow pit and CH3 and consisted of an 8% sample of the available area.
- 3.3 The movement of spoil and plant was controlled so as to avoid tracking over or covering any stripped areas until they were confirmed as archaeologically sterile.
- 3.4 All archaeological monitoring was undertaken by experienced field archaeologists and carried out according to AOC Archaeology Group's standard operating procedures, and the methodology within the agreed *Written Scheme of Investigation* (CgMs 2015 & updated in 2016).

### 4 RESULTS

#### 4.1 Archaeological Watching Brief

- 4.1.1 The Archaeological Watching Brief was undertaken on the 17<sup>th</sup> March – 23<sup>rd</sup> March 2016. The contractor excavations demonstrated that a thin peaty topsoil occurred across the site. This ranged from 0.05 m to 0.10 m in depth. The topsoil overlaid intermittent deposits of peat and clay natural. The peat ranged from 0.5 m to 2.0 m in depth.
- 4.1.2 The topsoil stripping of an access track for a borrow pit revealed the truncated remains of several cultivation furrows. These had been heavily affected by bracken roots. The furrows were aligned NW/SE and were spaced at 1.0 m interval. Excavation of the furrows revealed widths ranging from 0.4 m to 0.9 m and depths of 0.06 to 0.10 m (Plates 1 and 2).
- 4.1.3 The access track to the borrow pit included the widening of the existing track-way close to CH1. This existing track had previously crossed the line of a stone dyke. The widening of the track allowed further investigation of the dyke with the section being cleaned and recorded (Plate 3).
- 4.1.4 No other archaeological features were present.





*Plates 1&2 Rig & Furrow remnants revealed during borrow pit work*



*Plate 3 Stone Dyke crossed by track excavation, east facing section*



*Plate 4 Trench 5 post-excavation from west*



*Plate 5 Trench 2 post-excavation showing peat depth*



Plate 6 Possible shieling CH5



Plate 7 Possible shieling CH6

## 4.2 Archaeological Evaluation

- 4.2.1 The Archaeological Evaluation was undertaken on the 23<sup>rd</sup> April 2016. Ten targeted 10 m by 2 m trenches were opened along the route of the contractors pipeline to the north-east of the watching brief area (Figures 2 and 3).
- 4.2.2 The evaluation revealed 0.10 m of peaty top-soil. With the exception of Trench 2 this deposit directly overlay natural drift geology of glacial clays. The excavation of Trench 2 revealed a deposit of peat 1.1 m in depth (Plate 5).
- 4.2.3 No archaeological features were present in the evaluation trenches.

## 5 CONCLUSION AND RECOMMENDATIONS

- 5.1 The watching brief identified a number of sub-surface features during topsoil stripping, these appeared to be related to post medieval rig and furrow agriculture. No other archaeologically significant features were observed, either within the Watching Brief or during the Archaeological Evaluation.
- 5.2 Given the nature of the archaeological works and its findings no further mitigation works are deemed necessary. This recommendation will require confirmation by WoSAS on behalf of Loch Lomond & Trossachs National Park.

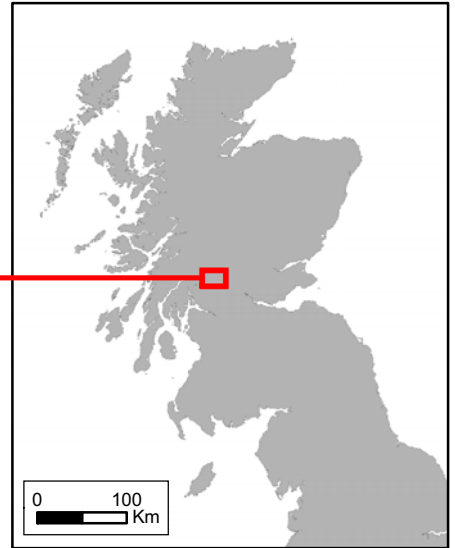
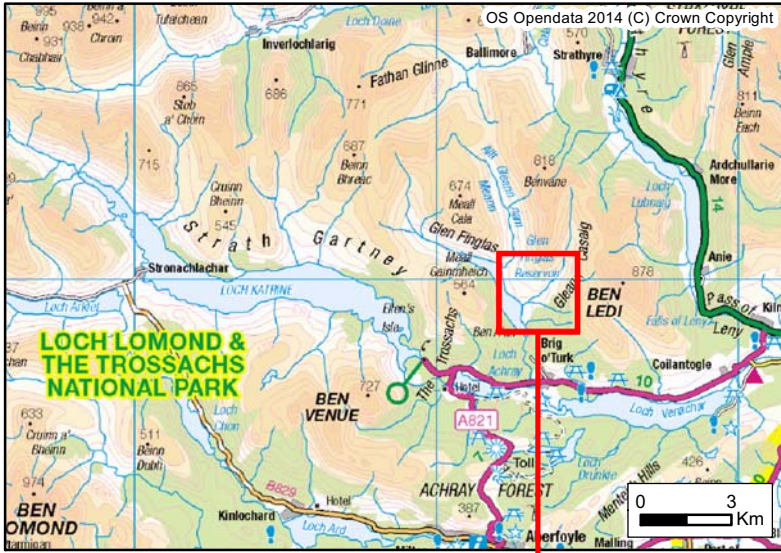
## 6 REFERENCES

CgMs Consulting 2015 *Written Scheme of Investigation for Archaeological Works, Gleann Casaig Hydroelectric Scheme, Loch Lomond & The Trossachs National Park*. Unpublished client report.

CgMs Consulting 2015 *Addendum Written Scheme of Investigation for Archaeological Works, Gleann Casaig Hydroelectric Scheme, Loch Lomond & The Trossachs National Park*. Unpublished client report.

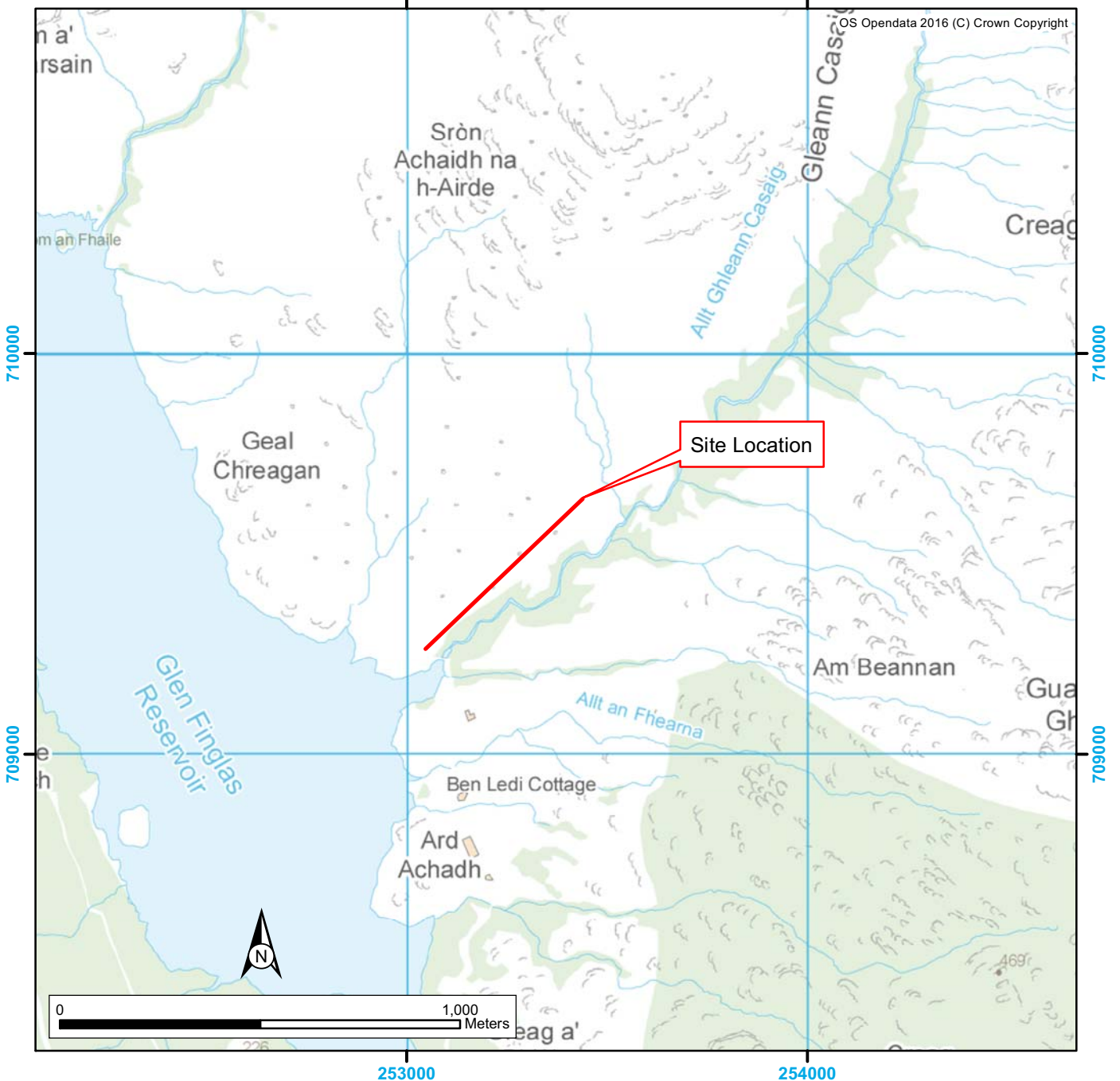
*Scottish Planning Policy SPP23. Archaeology and Planning*. Scottish Government April 2014.

Scottish Government 2011 *Planning and Archaeology 2/2011*



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Figure 1: Site location plan

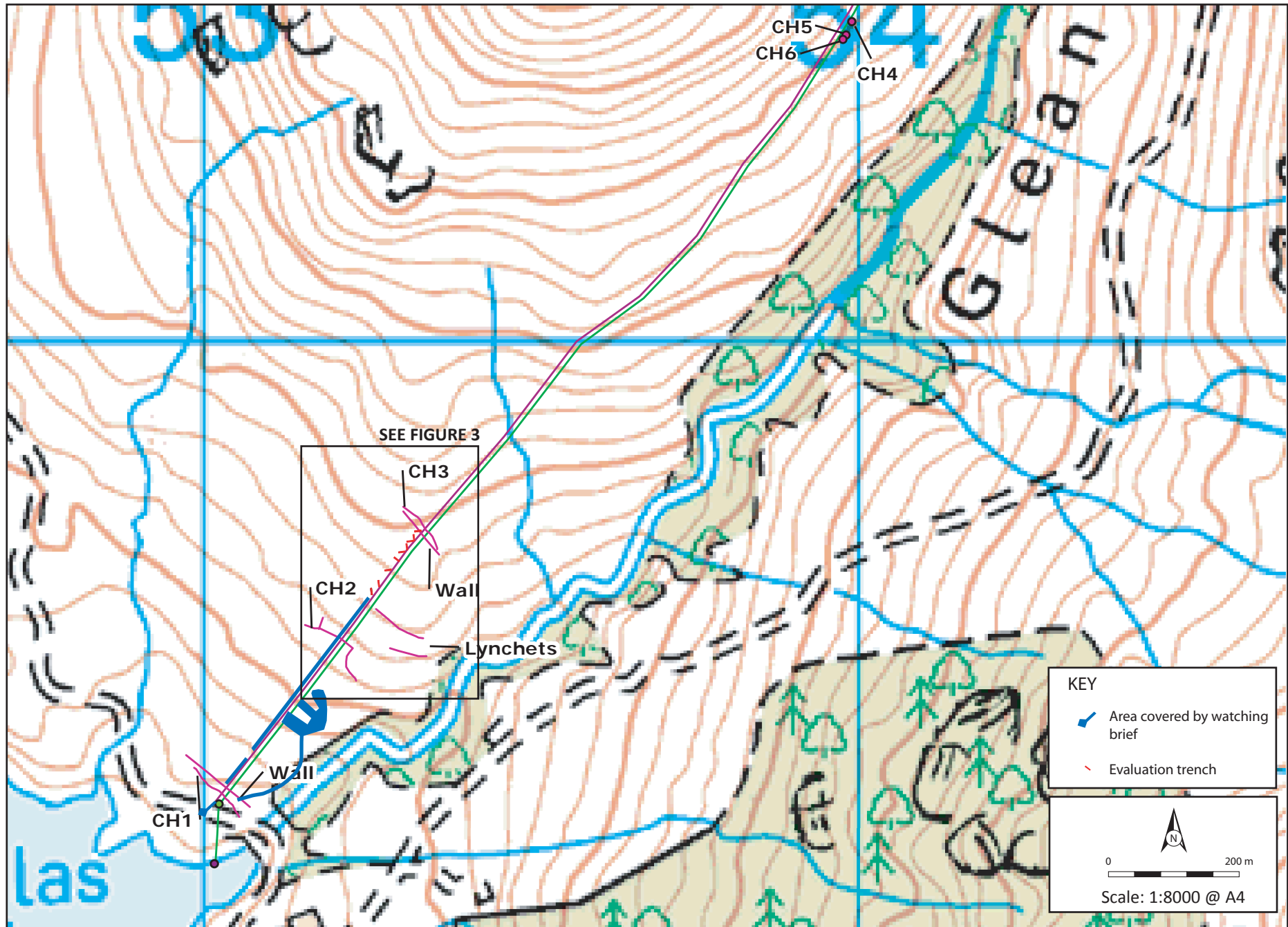


Figure 2: Site plan of showing area covered by watching brief and location of evaluation trenching

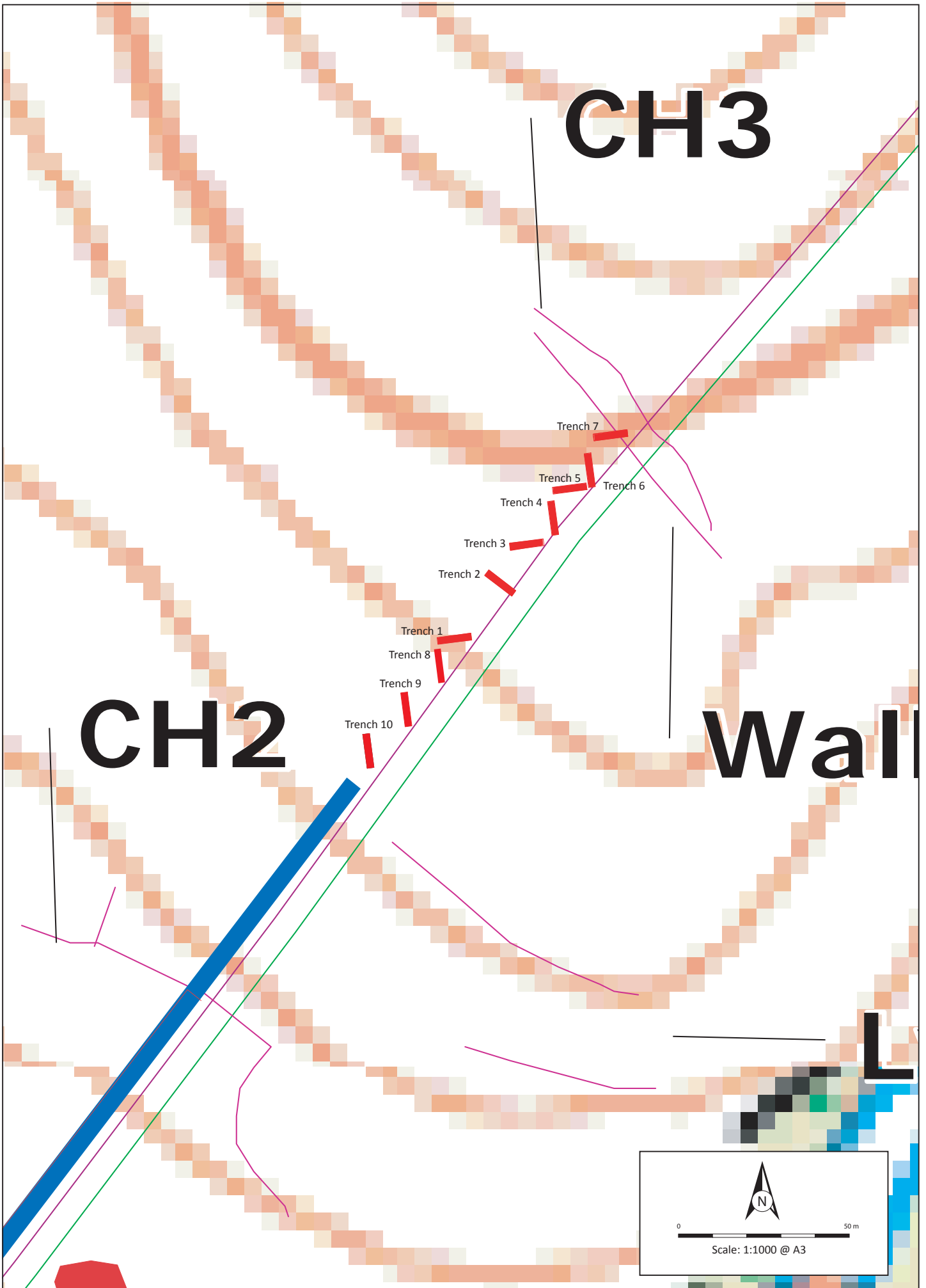


Figure 3: Site plan of showing location of evaluation trenches

# Gleann Casaig Hydroelectric Scheme, Loch Lomond & The Trossachs National Park: Archaeological Mitigation Report

## Appendices

### APPENDIX 1: PHOTOGRAPHIC RECORD

#### Watching Brief Photographs

Frame	Description	From
1	Registration shot	-
2-15	Working shots	var
16-19	Pipeline shots showing peat depth	N&E
21-30	Track-way under excavation	var
31-38	Rig & Furrow remnants	var
39-43	East facing section through CH4	E

#### Evaluation Photographs

Frame	Description	From
1	Registration shot	-
2	Working shots	E
3	Tr 2 Post excavation	NE
4	Tr 2 showing depth	E
5	Tr 3 Post excavation	E
6	Tr 4 Post excavation	S
7	Tr 5 Post excavation	E
8	Tr 6 Post excavation	S
9-10	Rig and furrow	N
11	Tr 7 Post excavation	E
12	Tr 8 Post excavation	S
13	Tr 9 Post excavation	S
14	Tr 10 Post excavation	S
15	Excavated track to SW of evaluation area	-
16-18	Fenced off area around shieling	-

## APPENDIX 2: TRENCH RECORD

### Trench 1

Dimensions	10.0 m by 2.0 m
Orientation	E-W
Excavation Depth	0.10m
Depth of Topsoil	0.10m – dark brown black sandy silt with peat and roots
B-Horizon	None
Features	None
Subsoil	Grey brown orange sandy clay with rocks – glacial till
Finds	None

### Trench 2

Dimensions	10.0 m by 2.0 m
Orientation	SE-NW
Excavation Depth	1.10m
Depth of Topsoil	0.10m – dark brown black sandy silt with peat and roots
B-Horizon	None
Features	None
Subsoil	Grey brown orange sandy clay with rocks – glacial till
Finds	None

### Trench 3

Dimensions	10.0 m by 2.0 m
Orientation	E-W
Excavation Depth	0.10m
Depth of Topsoil	0.10m – dark brown black sandy silt with peat and roots
B-Horizon	None
Features	None
Subsoil	Grey brown orange sandy clay with rocks – glacial till
Finds	None

### Trench 4

Dimensions	10.0 m by 2.0 m
Orientation	N-S
Excavation Depth	0.10m
Depth of Topsoil	0.10m – dark brown black sandy silt with peat and roots
B-Horizon	None
Features	None
Subsoil	Grey brown orange sandy clay with rocks – glacial till
Finds	None

### Trench 5

Dimensions	10.0 m by 2.0 m
Orientation	NW-SE
Excavation Depth	0.10m
Depth of Topsoil	0.10m – dark brown black sandy silt with peat and roots
B-Horizon	None
Features	None
Subsoil	Grey brown orange sandy clay with rocks – glacial till
Finds	None

### Trench 6

Dimensions	10.0 m by 2.0 m
Orientation	N-S
Excavation Depth	0.10m
Depth of Topsoil	0.10m – dark brown black sandy silt with peat and roots
B-Horizon	None
Features	None
Subsoil	Grey brown orange sandy clay with rocks – glacial till



Finds                      None

#### **Trench 7**

Dimensions              10.0 m by 2.0 m  
 Orientation              NW-SE  
 Excavation Depth      0.10m  
 Depth of Topsoil      0.10m – dark brown black sandy silt with peat and roots  
 B-Horizon                None  
 Features                 None  
 Subsoil                  Grey brown orange sandy clay with rocks – glacial till  
 Finds                      None

#### **Trench 8**

Dimensions              10.0 m by 2.0 m  
 Orientation              N-S  
 Excavation Depth      0.10m  
 Depth of Topsoil      0.10m – dark brown black sandy silt with peat and roots  
 B-Horizon                None  
 Features                 None  
 Subsoil                  Grey brown orange sandy clay with rocks – glacial till  
 Finds                      None

#### **Trench 9**

Dimensions              10.0 m by 2.0 m  
 Orientation              N-S  
 Excavation Depth      0.10m  
 Depth of Topsoil      0.10m – dark brown black sandy silt with peat and roots  
 B-Horizon                None  
 Features                 None  
 Subsoil                  Grey brown orange sandy clay with rocks – glacial till  
 Finds                      None

#### **Trench 10**

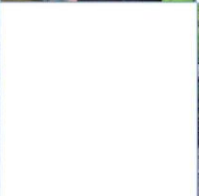
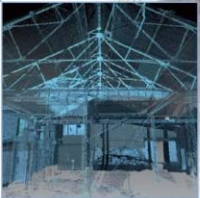
Dimensions              10.0 m by 2.0 m  
 Orientation              N-S  
 Excavation Depth      0.10m  
 Depth of Topsoil      0.10m – dark brown black sandy silt with peat and roots  
 B-Horizon                None  
 Features                 None  
 Subsoil                  Grey brown orange sandy clay with rocks – glacial till  
 Finds                      None

## APPENDIX 3: DISCOVERY AND EXCAVATION IN SCOTLAND (DES) REPORT

<b>LOCAL AUTHORITY:</b>	Loch Lomond and the Trossachs National Park
<b>PROJECT TITLE/SITE NAME:</b>	Gleann Casaig, Watching Brief and Evaluation
<b>PROJECT CODE:</b>	AOC 23361
<b>PARISH:</b>	Luss
<b>NAME OF CONTRIBUTOR:</b>	Rob Engl
<b>NAME OF ORGANISATION:</b>	AOC Archaeology Group
<b>TYPE(S) OF PROJECT:</b>	Archaeological Watching Brief and Evaluation
<b>NMRS NO(S):</b>	None
<b>SITE/MONUMENT TYPE(S):</b>	None
<b>SIGNIFICANT FINDS:</b>	Rig & Furrow agriculture
<b>NGR (2 letters, 6 figures)</b>	NN 53045 09274
<b>START DATE (this season)</b>	17 <sup>th</sup> March 2016
<b>END DATE (this season)</b>	23 <sup>rd</sup> April 2016
<b>PREVIOUS WORK (inc DES)</b>	Walkover Survey CgMS 2015 unpublished client report
<b>MAIN (NARRATIVE) DESCRIPTION:</b> (May include information from other fields)	<p>This report presents the results of archaeological mitigation works undertaken in association with a hydroelectric scheme at Gleann Casaig in the Loch Lomond and the Trossachs National Park. The mitigation work was undertaken in accordance with an updated Written Scheme of Investigation agreed with Loch Lomond National Park and West of Scotland Archaeology Service (WoSAS).</p> <p>The mitigation works consisted a targeted WB on ground breaking works associated with the scheme, trail-trenching evaluation of a section of the new pipeline route and establishing protective buffer zones around known sites in close proximity to development. The watching brief revealed peat deposits between one and two metres in depth. Topsoil stripping associated with the excavation of a borrow pit revealed truncated remains of rig and furrow agriculture likely to be post-medieval in date.</p> <p>An existing track-way was utilised for the borrow pit. This track had previously crossed the line of a stone dyke of post medieval date. Further investigation of the dyke was undertaken during the current works allowing the section to be recorded.</p> <p>The archaeological evaluation was undertaken on the northern run of the pipeline segment that required mitigation. No archaeological features were present.</p>
<b>PROPOSED FUTURE WORK:</b>	None
<b>CAPTION(S) FOR ILLUSTRATIONS:</b>	N/A
<b>SPONSOR OR FUNDING BODY:</b>	CgMs

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