EILEAN DONAN CASTLE

ROSS-SHIRE

ARCHAEOLOGICAL EVALUATION

FEBRUARY 2009

ARCHAEOLOGICAL EVALUATION

EILEAN DONAN CASTLE

ROSS-SHIRE

SITE CODE: LDC08

REPORT CODE: FAS2009 416 LDC342

NGR: NG 8812 2583

MONUMENT No. 7575

REPORT

February 2009

FIELD ARCHAEOLOGY SPECIALISTS LTD

Unit 8 Fulford Business Centre
35 Hospital Fields Road
York YO10 4DZ

TELEPHONE (01904) 652000
FACSIMILE (01904) 749014
fas@fieldarchaeologyspecialists.co.uk

ON BEHALF OF	MACKENZIE KERR Redwood 19 Culduthel Road Inverness IV2 4AA
CLIENT	THE CONCHRA CHARITABLE TRUST
PROJECT TEAM	Nicola Toop BA MA PhD MIfA FSA Scot Justin Garner-Lahire BA Jonathan Clark BA MA DPhil Richard Jackson BA
REPORT PREPARED BY	Nicola Toop BA MA PhD MIfA FSA Scot
REPORT REVIEWED BY	Cecily Spall BSc MA MIfA FSA Scot
	.....
REPORT AUTHORISED BY	Justin Garner-Lahire BA
	.....

LIST OF CONTENTS

	Contents	Page
	Summary	v
	Acknowledgements	v
1.0	**INTRODUCTION**	**1**
1.1	LOCATION AND LAND USE	1
1.2	ARCHAEOLOGICAL AND HISTORICAL BACKGROUND	1
1.2.1	Prehistory	1
1.2.2	Early medieval	1
1.2.3	Medieval	3
1.2.4	Post-medieval	3
1.2.5	Modern reconstruction	4
1.3	BACKGROUND TO THE PROJECT	4
1.4	STATUTORY DESIGNATIONS	5
1.5	AIMS AND OBJECTIVES	5
2.0	**FIELDWORK PROCEDURE**	**7**
2.1	EVALUATION METHODOLOGY	7
2.2	EXCAVATION STRATEGY	7
2.3	RECORDING METHODOLOGY	9
2.4	ENVIRONMENTAL STRATEGY	9
2.5	PUBLIC ARCHAEOLOGY	10
3.0	**FIELDWORK RESULTS**	**10**
3.1	INTERVENTION 3	10
3.1.1	Vegetation clearance	10
3.1.2	Evaluation trench	11
3.2	INTERVENTION 4	11
3.2.1	Structural remains	15
3.2.2	Occupation deposits and craft-working activity	19
3.2.3	Buried soil	21
3.2.4	Wall-chasing trench	21
3.3	INTERVENTION 5	22
3.3.1	Rubble deposit and curtain wall	22
3.3.2	Occupation deposits	24
3.3.3	Buried soil	27
3.3.4	20th-century midden	27

3.3.5	Wall-chasing trench	29
3.4	INTERVENTION 6	29
3.4.1	Possible tower	29
3.4.2	Dumping	30
3.4.3	Disuse of the wall	30
3.4.4	Later alterations	33
3.5	INTERVENTION 7	33
3.5.1	Rubble deposits and structural remains	35
3.5.2	Wall-chasing trench	35
4.0	**DISCUSSION**	**35**
4.1	PERIOD 1 - VITRIFIED FORT	39
4.2	PERIOD 2 - MEDIEVAL CASTLE	39
4.2.1	Construction and layout of the outer defences	39
4.2.2	Structures within the outer ward	42
4.2.3	Occupation and metal-working deposits	42
4.2.4	Phases of activity	43
4.3	PERIOD 3 - POST-MEDIEVAL CASTLE	44
4.4	PERIOD 4 - MODERN CASTLE	44
4.4.1	19th-century activity	44
4.4.2	20th-century reconstruction	44
5.0	**ASSESSMENT AND POTENTIAL**	**45**
5.1	SPECIFIC OBJECTIVES	45
5.2	GENERAL ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL	47
5.3	GENERAL ASSESSMENT OF CONDITION	47
6.0	**ARCHIVE AND RECOMMENDATIONS**	**47**
	References	49

Figures

1	Location map	2
2	Detailed contour map of the island at 0.2m intervals	6
3	Location of interventions	8
4	Intervention 3 - Structure 1, internal west-, north- and east-facing elevations	12
5	Intervention 3 - post-excavation plan	13
6	Intervention 3 - south-facing section	14
7	Intervention 4 - Structure 1, external south-facing elevation	16

8	Intervention 4 - F2 pre-excavation plan and F28 post-excavation hachure	17
9	Intervention 4 - north-facing section	18
10	Intervention 4 - west-facing section	20
11	Intervention 5 - north-facing section	23
12	Intervention 5 - F25 C1009 and F26 post-excavation hachure plan	25
13	Intervention 5 - east-facing section	26
14	Intervention 5 - south-facing section	28
15	Intervention 6 - F7 C1014 pre-excavation plan	31
16	Intervention 6 - north-facing section	32
17	Intervention 6 - F24 post-excavation hachure	34
18	Intervention 7 - west-facing section	36
19	Intervention 7 - F8 pre-excavation plan	37
20	Intervention 7 - F8, south-facing elevation	38
21	Revised reconstruction of the outer defences, with evaluation results	41

Plates

1	Eilean Donan from the southeast	1
2	Structure 1, pre-excavation, looking north	10
3	Structure 1 from above, after vegetation clearance, looking north	10
4	Intervention 3 - post-excavation, looking south (scale 1.0m)	11
5	Structure 1, internal west-facing elevation (scale 1.0m)	11
6	Intervention 3 - south-facing section (scale 1.0m)	11
7	Intervention 4 - pre-excavation, following clearance	15
8	Structure 1, external south-facing elevation	15
9	Intervention 4 - F2 C1026, west-facing elevation (scale 1.0m)	15
10	Intervention 4 - showing C1033, looking south (scale 1.0m)	19
11	Intervention 4 - F29 C1035, looking west (scale 0.5m)	21
12	Intervention 4 - F28 during excavation (scale 1.0m)	21
13	Intervention 4 - west-facing section (scale 1.0m)	22
14	Find no. 8, annular brooch (diameter 27mm)	22
15	1960s ‘Sqezy’ advert	22
16	Intervention 5 - pre-excavation	24
17	Intervention 5 - F25 C1009, looking south (scale 1.0m)	24
18	Intervention 5 - F25 C1009, south-facing elevation	24
19	Find no. 16, strap end (length 34mm)	27
20	Intervention 5 - north-facing section (scale 1.0m)	27
21	Intervention 5 - east-facing section (scale 1.0m)	27
22	Intervention 5 - F26, post-excavation (scale 1.0m)	29

23	Find no. 14, silver penny of Edward I, 1301 (diameter 18.0mm)	29
24	Intervention 6 - pre-excavation	29
25	Intervention 6 - F7 C1014, east-facing elevation (scale 1.0m)	30
26	Intervention 6 - F7 C1014, looking south (scale 1.0m)	30
27	Intervention 6 - north-facing section (scale 1.0m)	33
28	Intervention 6 - F24 post-excavation (scale 1.0m)	33
29	Intervention 7 - pre-excavation	33
30	Intervention 7 - F8 C1019, looking south	35
31	Intervention 7 - F8 C1019, south-facing elevation (scale 1.0m)	35
32	Pre-1908 view of the castle (GWW E1606)	44
33	Eilean Donan during reconstruction, 1929	45

Tables

1	Index of interventions	7
2	Phases of activity	39

Appendices

A	Project Design
B	Scheduled Monument Consent
C	Index to field file
D	Summary of context records
E	Summary of feature records
F	Stratigraphic diagram
G	Photographic index
H	Finds index
I	Assessment of ceramic assemblage
J	Assessment of metal-working waste
K	Assessment of animal remains
L	Assessment of small finds

Summary

This document presents the results of an archaeological evaluation undertaken at Eilean Donan Castle, Ross-shire, by Field Archaeology Specialists (FAS) Ltd on behalf of Mackenzie Kerr for the Conchra Charitable Trust. The evaluation was carried out between 22nd September 2008 and 17th October 2008.

The design of the evaluation programme was informed by the results of a topographic and geophysical survey, undertaken in March 2008, and consisted of five trenches, which were positioned to investigate the character and layout of the medieval castle outer defences and any associated deposits.

The northwest tower was cleared of vegetation, and rubble deposits excavated from within it (Intervention 3), which allowed the layout of the tower to be located accurately, and records made of internal elevations. The rubble deposits were not deep suggesting the area had been cleared previously. Intervention 4 was situated to the immediate south of the northwest tower. Excavation revealed structural evidence relating to the western curtain wall, and demonstrated a level of truncation in this area. Deposits relating to medieval occupation and a metal-working (iron-smithing) horizon, including an *in situ* hearth, was encountered. These deposits had been disturbed at an unknown date by an episode of 'wall-chasing', which had removed stratigraphic relationships between the medieval deposits and structural features.

Intervention 5 was positioned to investigate the northern stretch of curtain wall and 20th-century midden. The curtain wall was identified as a substantial rubble-built construction. Medieval occupation was also encountered, again disturbed by a wall-chasing trench. The midden was found to represent a substantial deposit of mortar and stone, thought to derive from the recycling of building stone during the reconstruction of the castle in the 1920s and 1930s. The remains of a possible northeast tower were investigated (Intervention 6). The remains of a truncated wall were encountered, to the rear of which a substantial rubble deposit appeared to represent the infilling of a possible tower. A single trench was excavated to the south of the island, revealing a massive curtain wall which measured over 5m wide and survived to over 1.30m in depth.

The results of the evaluation, with the preceding survey, will inform the preparation of a Conservation and Research Management Plan for the site. The evaluation demonstrated that, despite modern interventions during the reconstruction of the castle, stratified medieval deposits and structures survive at the site, and contain significant material assemblages.

Acknowledgements

Field Archaeology Specialists would like to thank the Conchra Charitable Trust, David Win and staff at Eilean Donan for continued support and assistance during the evaluation. FAS are also grateful to John Malcolm, Historic Scotland, for advice, and Mr Bill Ramsay, who kindly provided valuable information and insight into the surrounding area.

1.0 INTRODUCTION

This document reports on an archaeological evaluation undertaken at Eilean Donan Castle by Field Archaeology Specialists (FAS) Ltd on behalf of Mackenzie Kerr for the Conchra Charitable Trust. The evaluation was undertaken between the 22nd September 2008 and 17th October 2008.

1.1 LOCATION AND LAND USE

The castle of Eilean Donan (NGR: NG 8812 2583) lies at the confluence of three lochs on the western seaboard of Scotland, situated on a small island, now connected to the mainland by a bridge. Although the site of a medieval fortification, the current appearance of Eilean Donan is primarily the result of an early 20th-century campaign of reparation and restoration, engineered by Lieutenant-Colonel John Macrae Gilstrap. The picturesque nature of the monument and its surroundings has made the site a major tourist destination, attracting thousands of visitors per year (Figure 1; Plate 1).

Plate 1 Eilean Donan from the southeast

1.2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

1.2.1 Prehistory

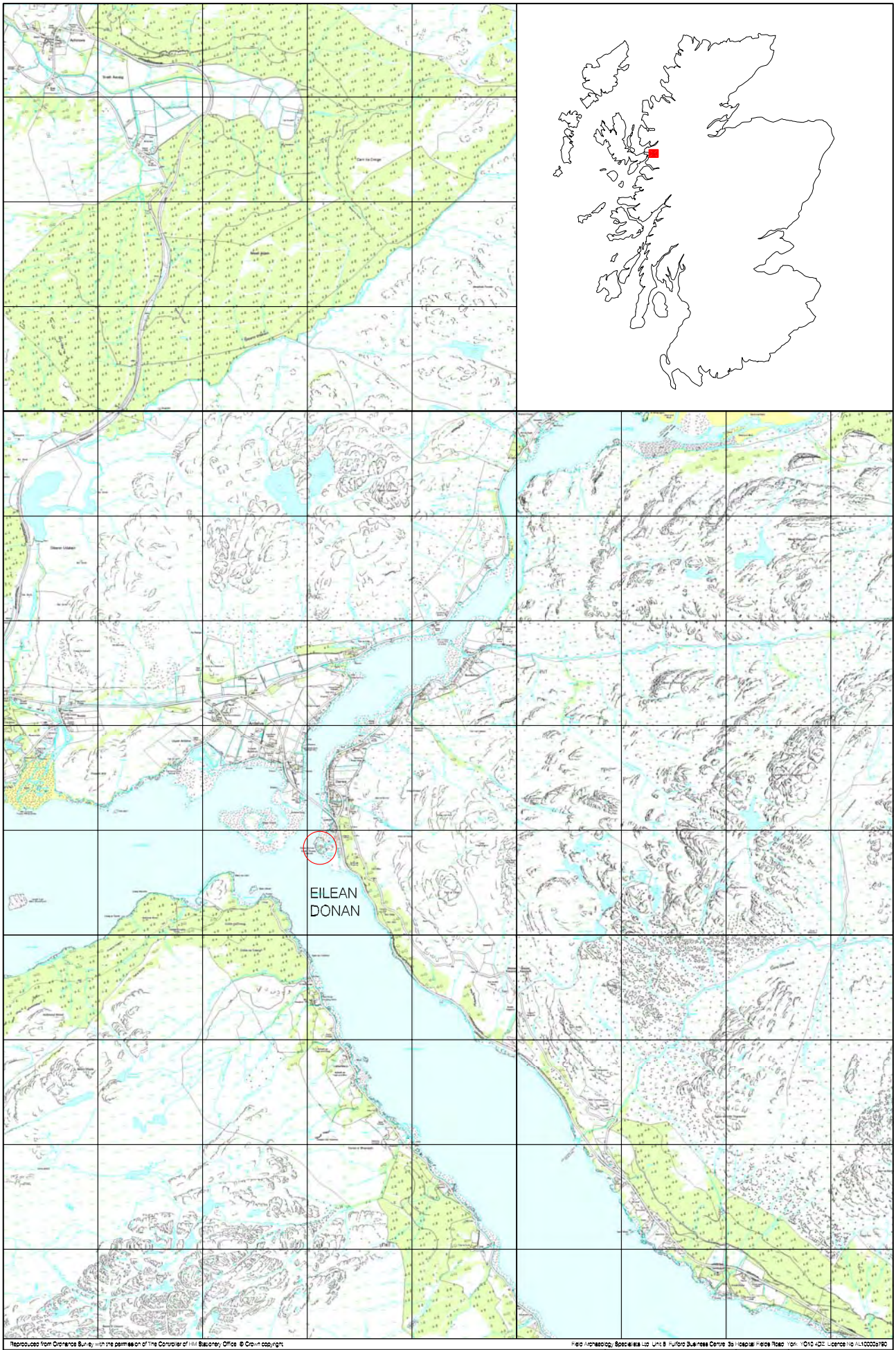
It is frequently stated that Eilean Donan Castle was constructed on the site of a vitrified fort. Prior to the reconstruction works of the early 20th century, Wallace observed that:

> 'on the landward side of the Island are traces of a vitrified wall of considerable dimensions, indicating probably that the island had been the site of a prehistoric fort' (Wallace 1912-1918, 109)

The walling referred to is, however, of doubtful antiquity, and a recent magnetometer survey at the site revealed no evidence for a substantial vitrified rampart.

1.2.2 Early medieval

Eilean Donan translates as 'Island of Donnan', and has been readily associated with the early medieval saint, Donnan, or Donan, of Eigg (Miket and Roberts 1990, 74, 80). Donan is believed to have lived in the late 6th to early 7th century, and has close associations with western Scotland; later documents record his martyrdom, with 52 of his congregation, at Eigg in AD 617 (Scott 1906). Nonetheless, to date, there is no evidence for early medieval activity on the island.



Location map | Scale 1:50000 | Figure 1

1.2.3 Medieval

The chronology and development of the castle are currently not clear. Historical documents recording the origins of the castle are not extant, and several hypotheses exist relating to the date of the construction, and the individuals responsible for the building and its governance.

The castle is generally believed to have been constructed in the 12th or 13th century (Anon 1959). By the later 13th century, the castle is said to have been in the hands of Kenneth Mackenzie, who may have been a nephew of William third Earl of Ross, whose family were superiors of Kintail during the 13th to 14th centuries (Miket and Roberts 1990, 76).

Likewise, few sources are available for the earliest form of the castle. No pictorial sources survive for the site prior to the early 18th century; the earliest plan and elevation, by Lewis Petit, date to 1714, immediately prior to the destruction of the castle. Petit's plan came to light during the earlier part of the 20th century, and has proved invaluable in the phasing and interpretation of the surviving medieval and post-medieval remains

Available cartographic sources and early descriptions tend to indicate only that a castle was present on the site. Slightly more informative is the late 16th century map and description by Timothy Pont;

> 'The castell of Ylen Donen is composed of a strong and fair dungeon upon a rock, with another tower compasd with a fair barmkin wall, with orchards and trees, al within ane yland of the lenth of twa pair of butts almost round. It is sayd of old that castel consisted of seven tours.' (MacFarlane's Geog. Collect.; OPS 1855, 395; Gifford 1992, 532-3)

From these later sources, and from the surviving medieval remains, scholars have attempted to ascertain the original plan, and subsequent development, of the castle. MacGibbon and Ross, in one of the earliest scholarly studies of castles of Scotland, provide a plan of Eilean Donan, and a description of major features (MacGibbon and Ross 1889, 82-3). This differs slightly from more recent plans, which have been helped by the emergence of the Petit's survey (Petit 1714), but provides a valuable pre-reconstruction account.

More recently, the castle has been phased by Miket and Roberts (1990, 82-92), who divide the development of the fortifications into four main phases (including the reconstruction). To the First Phase, dated to the 13th to 14th century, have been assigned the keep, north tower, northeast and southwest mural towers and the curtain wall. The Second Phase then saw a contraction of the castle, with the disuse of the outer curtain walls and towers, continuation of the main keep, and the construction of the inner ward to the plan that the reconstructed castle now occupies. The Third Phase, dated to the 16th century, consisted of two stages: (a) the construction of the hornwork, and (b) addition of a staircase and gateway in the southern side of the hornwork.

1.2.4 Post-medieval

The castle was occupied by Government troops during the rising of 1715, but, on the eve of Sherrifmuir, was seized by Kintail men. Stewart supporters occupied the castle, and a local account records them dancing on the roofs of the castle, before heading out into battle, where a large number of soldiers were killed (Miket and

Roberts 1990, 80). In 1719, an attempt was made to recoup these losses, in a Jacobite uprising that involved the landing of 300 Spanish soldiers on the west coast, to unite with Highland forces and march to Inverness (Miket and Roberts 1990, 80). The Spanish occupied part of Eilean Donan. The Government had, however, received intelligence of this plan. Three government ships were situated on the west coast; two of which, the Worcester and the Enterprise, sailed up Loch Alsh to the castle, which was soon 'reduced to ruins' (Miket and Roberts 1990, 80; Close-Brooks 1995, 98). Captain Herdman of the 'Enterprise' was sent ashore to set fire to the powder magazine, which exploded, taking much of the castle with it, and forcing the Spaniards to move inland (Miket and Roberts 1990, 80); forced to make a stand, they were beaten at the pass of Glenshiel.

1.2.5 Modern reconstruction

Following the destruction of the castle in 1719, the ruins lay largely undisturbed, until John Macrae-Gilstrap (1861-1937), one of the claimants for the Chiefship of the Clan Macrae, purchased the island along with land at nearby Conchra (MacDonald and Polson 1931, 72). The site was purchased in 1912 from Sir Keith Fraser of Inverinate, although the transaction was not completed until 1913 (Woodward 1994, 50); a clan gathering was held on the site in the same year. The reconstruction of the castle (Miket and Roberts' Fourth Phase) then began.

The architect for the reconstruction of Eilean Donan was George Mackie Watson (1860-1948), and a local clansman, Farquhar Macrae, was appointed carpenter-in-chief (Gifford 1992, 532). The bridge to the mainland was built in 1932, and the castle officially opened on July 22nd. After the opening, work continued, with the addition of the complete southwest range, finishing of the well wall, stairway railings, roofing details and walls supporting the curved roadway to the main entrance. Shortly after completion, the southwest elevation of the keep was harled in an effort to reduce damp (Woodward 1994, 52).

John Macrae-Gilstrap died in 1937, and the castle then passed on to his son, Captain Duncan Macrae (1890-1966), whose enthusiasm for the project did not match that of his father, and whose family chose to occupy their other estates, rather than Eilean Donan (Woodward 1994, 53). Duncan's son, Mr John Macrae (25th Constable 1925-1988), opened the castle to the public in 1955, and in 1983 established the charitable trust to oversee the maintenance of the castle (Woodward 1994, 53).

1.3 BACKGROUND TO THE PROJECT

This evaluation represents part of an ongoing programme of research at Eilean Donan. Although an iconic site, prior to 2008 there had been no formal archaeological investigation at Eilean Donan Castle. The focus of interpretation and visitor attention on the island is the reconstructed castle, and there is little understanding or appreciation of the surviving archaeological remains of the surrounding island.

An Archaeological Assessment and Research Agenda was prepared for the site in 2006 (FAS 2006). The assessment highlighted the lack of clear understanding of the site, and identified the need for further investigation to inform future decisions regarding the management, research and presentation of the site.

A programme of archaeological survey, including topographic and geophysical survey, was undertaken in March 2008 (FAS 2008). The topographic survey (Intervention 1) resulted in a detailed and accurate base map of the castle, island and adjacent shoreline, with an accurate plan of the reconstructed castle itself (Figure 2). The topographic survey also identified and mapped earthwork features and exposed walls relating to the medieval curtain wall and associated towers. Geophysical survey (Intervention 2) was carried out in three areas, and provided further information on the layout of structural remains, in addition to indicating the presence of below-ground features at the northern part of the site.

The results of the survey informed the preparation of a Project Design for the evaluation (Appendix A), which was approved by Historic Scotland.

1.4 STATUTORY DESIGNATIONS

Eilean Donan Castle is situated within a **Scheduled Ancient Monument** (SAM No. 7575). The scheduled area includes the entire island, but excludes the upstanding castle itself, the terrace between the southwestern wall of the castle and sea, and the above-ground structures of the MacRae War Memorial, the slipway and various floodlights. Scheduled Monument Consent (SMC) was obtained prior to the onset of the evaluation (Appendix B).

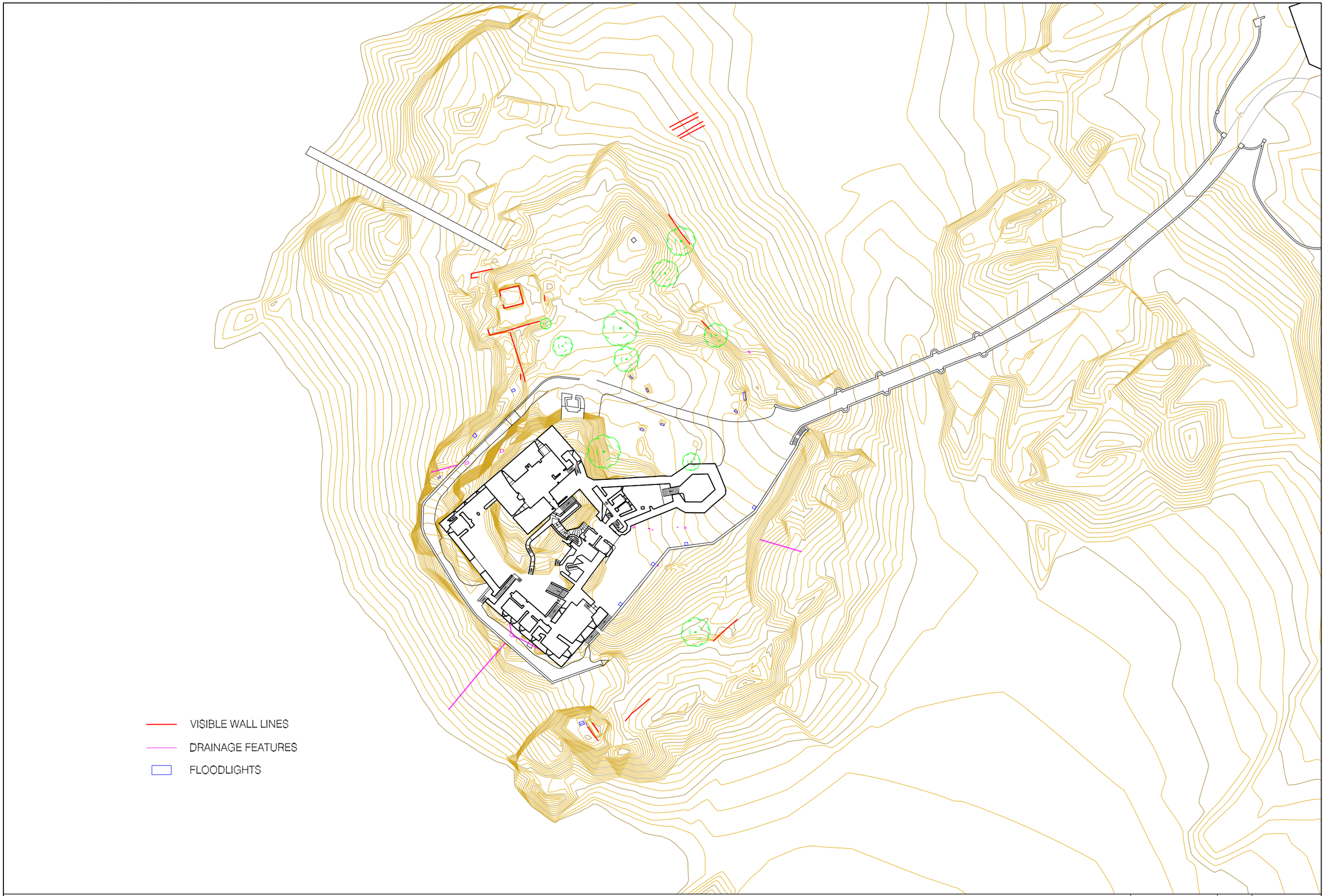
Eilean Donan Castle is a **Listed Building** (Category A; LB No. 7209), described as 'a free interpretation of the former castle'. The fact that this building was excluded from the SAM means that alterations to the castle fall under Listed Building legislation (Planning (Listed Buildings and Conservation Areas (Scotland) Act 1997), rather than Scheduled Ancient Monument legislation.

1.5 AIMS AND OBJECTIVES

The overarching aim of the evaluation was to define the character, date and condition of buried archaeological remains on the island. The evaluation aimed to characterise any primary archaeological deposits and structural remains, providing access to selected parts of the fabric for structural assessment. The results of the evaluation were intended to contribute to a more accurate plan of the castle, to assess the condition of the buried archaeological deposits and structures, define the research potential of the archaeological remains , and identify threats to the long-term survival of those remains. These, in turn, will inform the preparation of the Conservation and Research Management Plan.

In addition, the programme of evaluation was designed to achieve the following specific objectives:

- to define the original plan and present condition, of the northwest tower;
- to define the survival and character of the western curtain wall, and its relationship to the north tower;
- to establish the former ground level, and condition and character of archaeological deposits in the outer ward;
- to define the survival and character of the north curtain wall;
- to assess the character and date of the northeast tower, in order to determine whether this is a medieval



Detailed contour map of the island at 0.20m intervals | Scale 1:750 | Figure 2

feature or the remains of a 20th-century hut;
- to ascertain whether or not there was a southwestern tower;
- to assess whether the current vegetation and tides at the site are having a detrimental effect on the extant archaeological remains.

2.0 FIELDWORK PROCEDURE

2.1 EVALUATION METHODOLOGY

The archaeological evaluation consisted of a programme of vegetation clearance (Intervention 3), and the excavation of five evaluation trenches (Intervention 3 to 7)(Figure 3; Table 1).

Table 1 Index of interventions

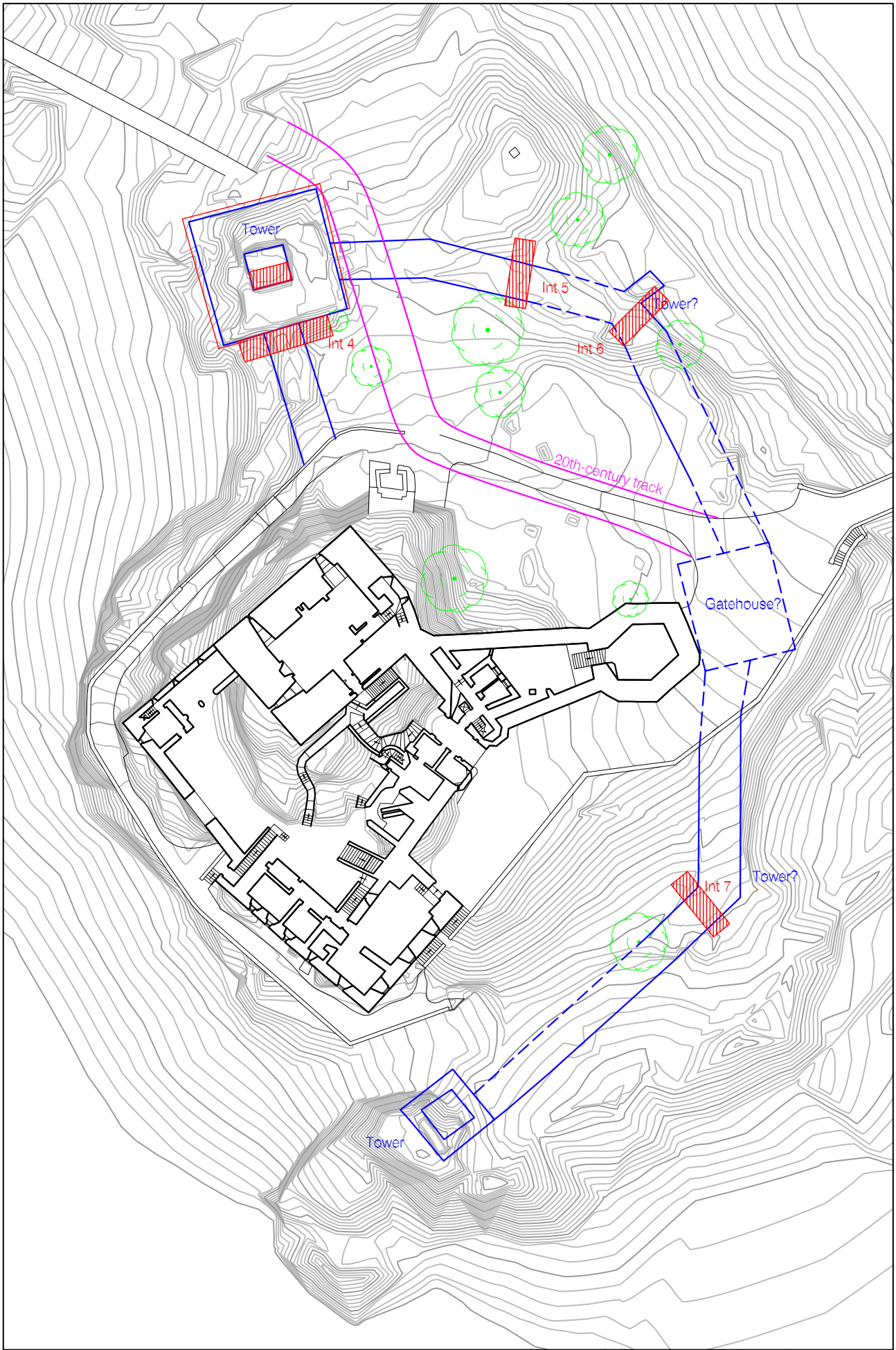
Intervention	Location	Description
1	Island and environs	Topographic survey (March 2008)
2	Island	Geophysical survey (March 2008)
3	Northwest tower	Vegetation clearance and 3.8m x 2.0m evaluation trench
4	South of northwest tower	11.0m x 2.0m evaluation trench
5	North curtain wall	6.0m x 2.0m evaluation trench
6	Northeast curtain wall, possible tower	6.0m x 2.0m evaluation trench
7	South curtain wall	6.0m x 2.0m evaluation trench

2.2 EXCAVATION STRATEGY

All excavation was undertaken by hand. Interventions were de-turfed as far as the nature of the vegetation cover would allow prior to excavation, and the turf and vegetation retained for reinstatement. On completion of the excavation, backfilling and re-turfing was also undertaken by hand.

Archaeological deposits were removed in a sequential and scientific manner. The excavation removed secondary rubble, and deposits which were clearly of 19th- or 20th-century origin, in order to expose any extant structural remains. Excavation ceased at the latest archaeological horizon, and once this level has been attained, a sub-sample area was excavated, to characterise the extent, date and character of archaeological deposits within each of the areas of evaluation. All structures were recorded *in situ* and no structural features were removed.

Appropriate treatment and storage methods were employed on site to ensure that the finds, samples and records were maintained in the optimum conditions. Where deposits had clear environmental potential, an appropriate sampling strategy was employed.



Location of interventions | Scale 1:500 | Figure 3

2.3 RECORDING METHODOLOGY

The site grid which was previously established for the survey was employed during the site investigation, and subsequently aligned to the Ordnance Survey grid. All heights were recorded in metres above Ordnance Datum (AOD).

A full written, drawn and photographic record was made of all deposits encountered during the course of the investigations. Archaeological deposits, features and structures were recorded using a standard system of context and other record forms (Carver 1999). A series of indexes, capable of interrogation, was maintained for all site records along with a working stratigraphic matrix. An index detailing the records created is provided in Appendix C; context and feature summaries in Appendix D and E, and the stratigraphic diagram in Appendix F. The planning of features was undertaken at a scale of 1:10; sections were also recorded at a scale of 1:10.

The photographic record consisted of 35mm colour and monochrome photography, supplemented by digital colour photography. Monochrome photography was undertaken using silver-based film to ensure archival stability. All record photographs included an appropriate scale, and a photographic index was maintained (Appendix G). An index of finds recovered can be found in Appendix H.

Elevations and other structural elements exposed by excavation were recorded using a combination of instrument survey (Reflectorless Total Station Theodolite) and computer rectified or rectified photography. Stone-by-stone drawings were created at a scale of 1:20, in order to achieve a dimensional accuracy of within 20mm.

2.4 ENVIRONMENTAL STRATEGY

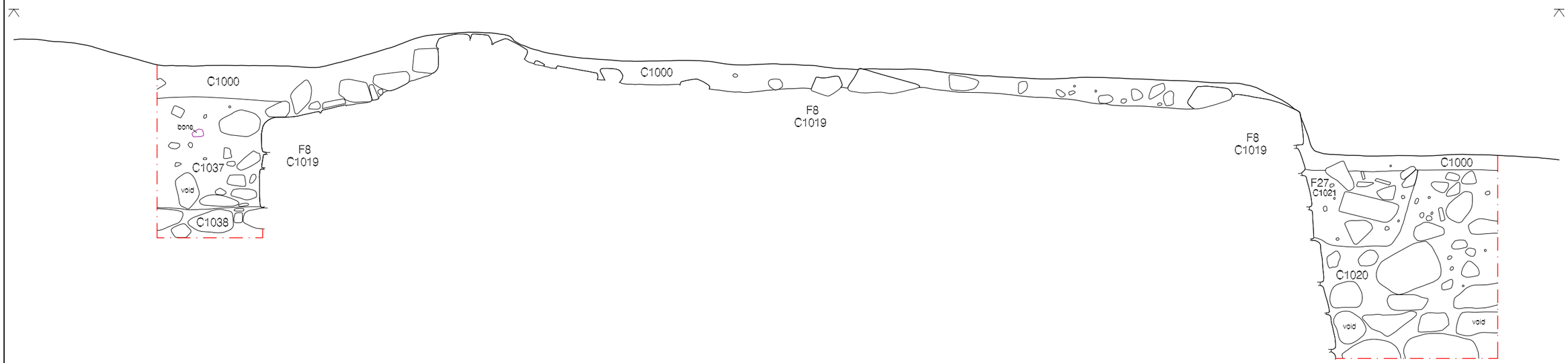
The principal aim of the Environmental Strategy was to define the value, range, quality and potential of any archaeological environmental evidence present at the site in accordance with Project Design.

Accordingly a systematic environmental sampling method was employed during the evaluation. Deposits which were clearly of a mixed/secondary origin such as rubble or make-up layers, or deposits which display a high degree of residual/intrusive artefactual material were not subject to environmental sampling since no specific question relating to function or social status could be addressed. Where deposits were thought to be of primary origin and appeared to have the potential to contain biological or metallurgical remains, the following sampling regime was undertaken:

Excavated deposits were 100% dry sieved in order to maximise recovery. *Fine-mesh sieving samples* were collected from deposits which appeared to contain metal-working residues and small fraction animal bone. Samples of 40 litres were collected and processed using a 1mm mesh, residues were then dried and sorted using stacked sieves followed by hand- and magnet collection of material.

N
NG 88148.36/25825.32
4.65m

S
NG 88153.08/25819.47
4.65m



Intervention 7 - west-facing section | Scale 1:20 | Figure 18

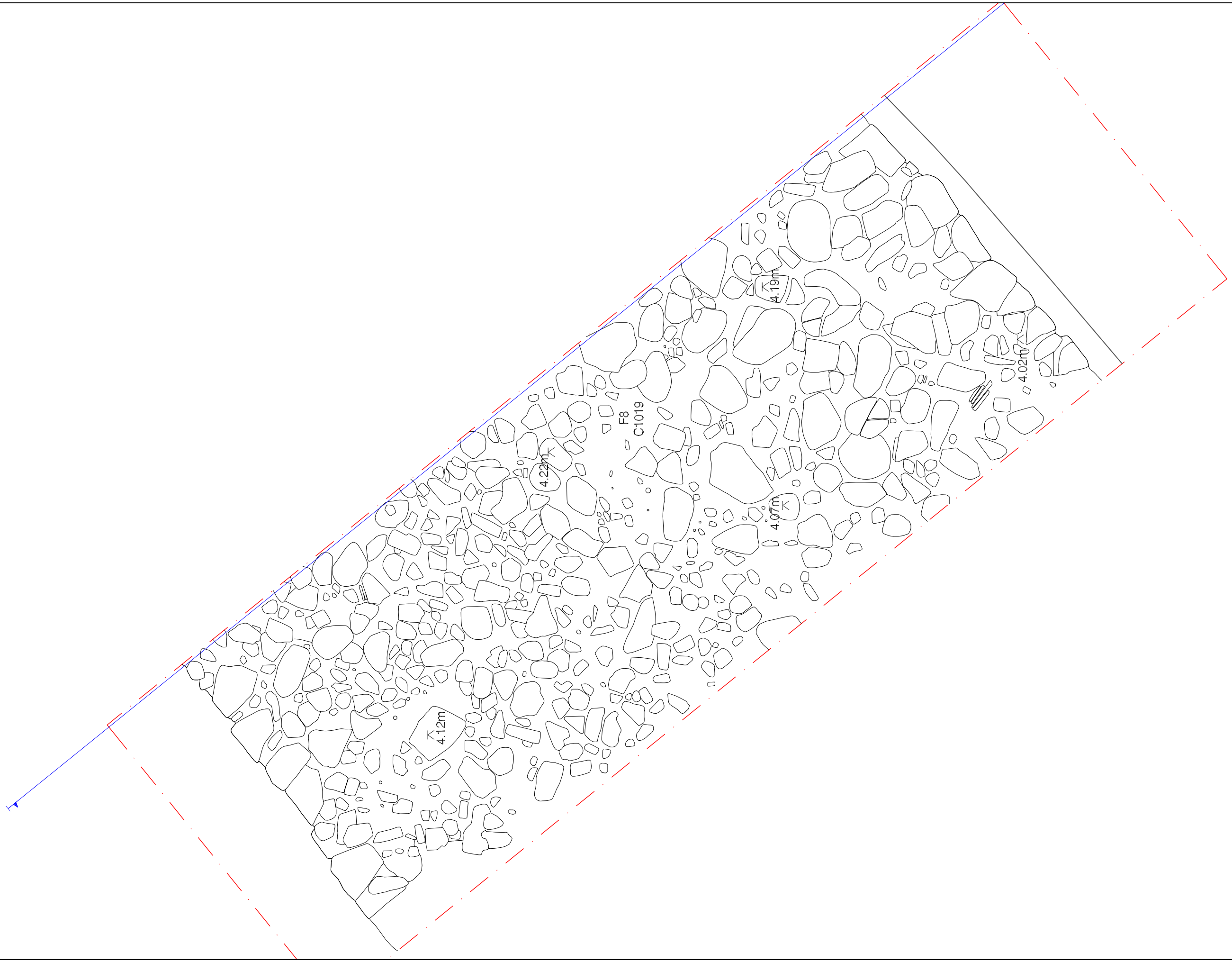
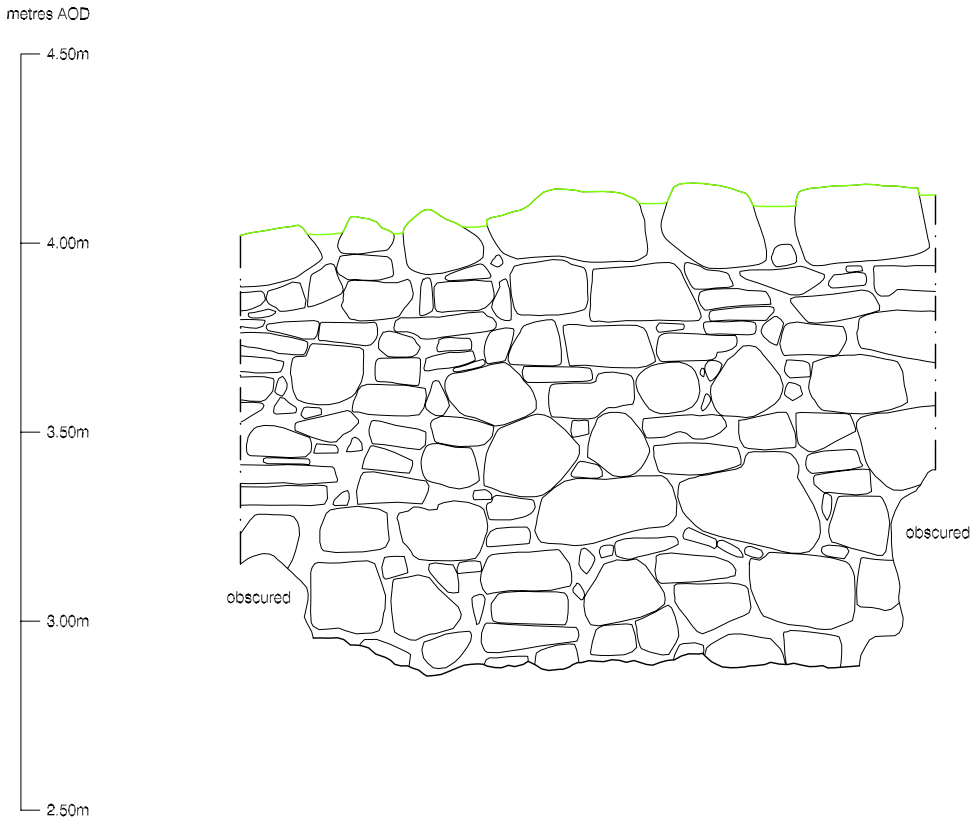


Figure 20

Scale 1:25

Intervention 7 - F8 pre-excavation plan



Intervention 7 - F8 south-facing elevation	Scale 1:20	Figure 20

2.5 PUBLIC ARCHAEOLOGY

The evaluation was undertaken between 22nd September 2008 and 17th October 2008, in order to coincide with Highland Archaeology Fortnight 2008. Tours of the evaluation trenches were offered to interested visitors as part of this programme, and a press release on the evaluation provided further information for the public (*West Highland Free Press* 10/10/2008).

3.0 FIELDWORK RESULTS

3.1 INTERVENTION 3

Intervention 3 focussed on the upstanding remains of the northwest tower. This structure has long been recognised at the site, but the remains are generally concealed from view by dense vegetation and are visible only during the winter months when the vegetation has died down (Plate 2). The tower was allocated Structure 1 during the topographic survey, and the walls allocated F1.

Plate 2 Structure 1, pre-excavation, looking north

Intervention 3 consisted of a two-stage process. Initially, the vegetation was cleared from the remains of the tower, in order to expose the elevations and to assess the condition of the structure. Secondly, half of the interior of the tower was excavated, in order to characterise deposits within the structure.

3.1.1 Vegetation clearance

At the onset of the evaluation, the tower (Structure 1) was covered with dense vegetation; specifically grasses, ferns, and roses. Once clearance of this vegetation was underway, it became clear that much of the surviving earthwork of the tower consisted of rubble wall core, with the external and internal elevations having been robbed or eroded. As such, total removal of the vegetation was likely to result in significant damage to the structure, and so rather than threaten the structure further, the vegetation was cut back in order to reveal the layout of the tower, and surviving elevations were photographed where possible.

Plate 3 Structure 1 from above, after vegetation clearance, looking north

The exercise allowed the position of the walls (F1 C1023) to be clearly defined, and their layout surveyed and updated (Plate 3). Visible elements of stonework at the northeastern corner of the tower hinted at the

possibility that this was the location of an adjoining wall, or the springing of an arch.

3.1.2 Evaluation trench

Intervention 3 involved the archaeological excavation of deposits within the tower itself. At the outset of the investigation, the tower was found to contain irregular rubble which was overgrown with moss and vegetation. The southern half of this backfill was removed, to characterise the sequence of deposits present, being an area of 3.8m x 1.8m. The earliest deposit to be encountered within the trench was the natural bedrock of the island, which formed an irregular surface within the tower (Plate 4); bedrock across the whole of the island was allocated C1025.

Plate 4 Intervention 3 - post-excavation, looking south (scale 1.0m)

The walls of Structure 1 (F1 C1023) had been constructed directly over bedrock, with stones keyed into the undulating topography (Plate 5). Excavation within the tower allowed the full extent of the surviving internal elevations of the southern half of the structure to be recorded using rectified photography (Figure 4). Abutting the base of the internal elevations, a firmly compacted mortar deposit was recorded (C1024), but not excavated further (Figure 5; see Plate 5). This deposit represented bonding material that had eroded from the walls of the tower, during its structural collapse.

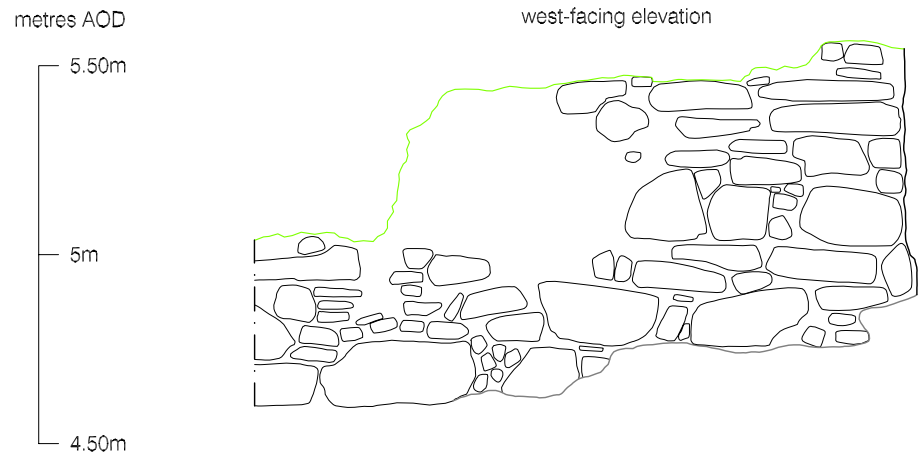
Plate 5 Structure 1, internal west-facing elevation (scale 1.0m)

Sealing the mortar deposits, and infilling the tower, was a deposit of large rounded and angular boulders, of varying geology, with rare slag inclusions (C1022). This deposit measured a maximum 0.70m in depth, infilling undulations in the natural bedrock (Figure 6; Plate 6). C1022 does not necessarily represent *in situ* collapse, the stones do not show ordering to this effect, but may have been dumped within the building at a later date. The deposit was covered with moss and vegetation that had occupied much of the tower.

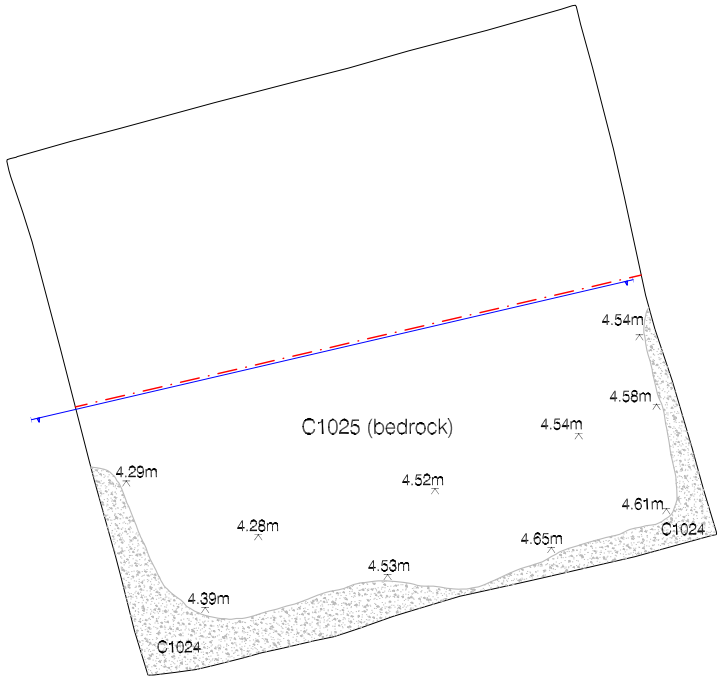
Plate 6 Intervention 3 - south-facing section (scale 1.0m)

3.2 INTERVENTION 4

Intervention 4 was situated to the immediate south of Structure 1, and measured 9.0m east-west, by 2.0m north-south (see Plate 3). The intended 11.0m length could not be achieved due to the presence of a mature



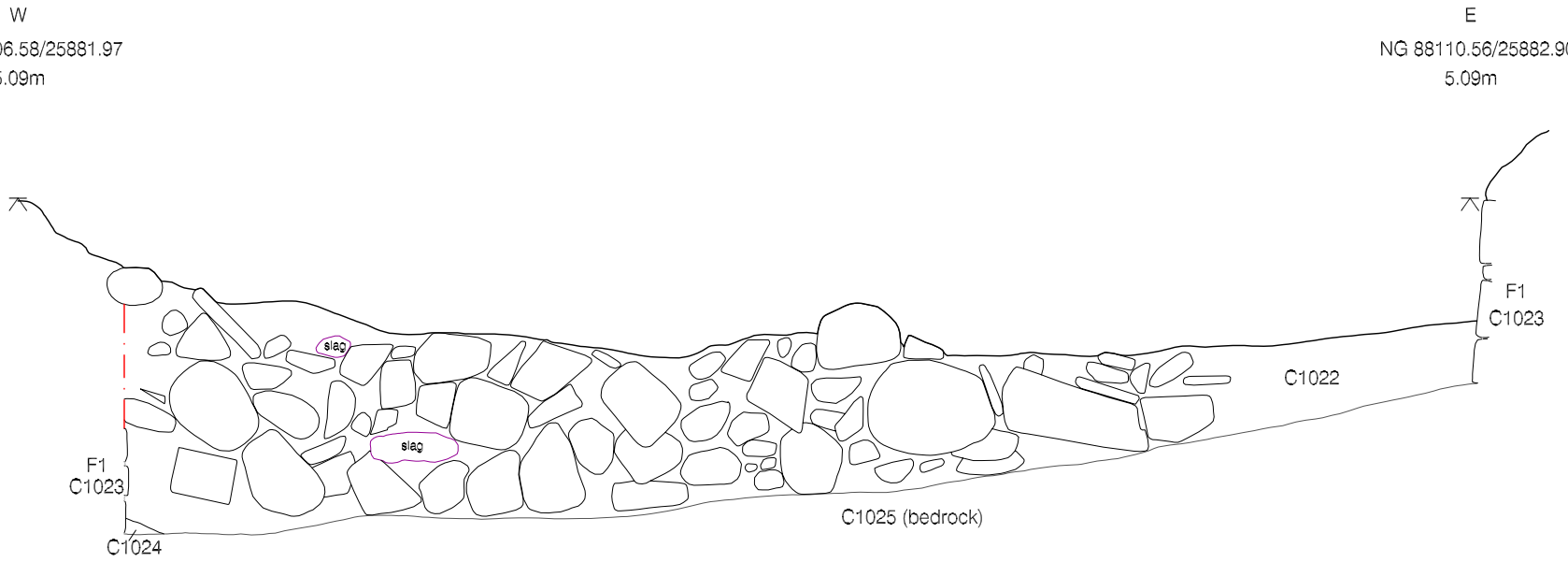
Intervention 3 - Structure 1, internal west-, north- and east-facing elevations | Scale 1:20 | Figure 4



Intervention 3 - post-excavation plan

Scale 1:50

Figure 5



Intervention 3 - south-facing section | Scale 1:20 | Figure 6

rowan tree. Prior to the evaluation, this area was heavily overgrown with nettles, brambles and roses. Following clearance of vegetation, a steep, north-south slope was exposed, indicating that deposits had already been removed from the area adjacent to the tower itself (Plate 7).

Plate 7 Intervention 4 - pre-excavation, following clearance

Excavation within Intervention 4 was undertaken until structural remains were exposed and *in situ* occupation deposits were encountered. At this stage a 1.0m wide sondage was excavated at the eastern end of the intervention; this was excavated until a mortar floor was encountered. Earlier deposits were defined by formalising a section within cut feature F28, within the sondage.

The natural bedrock (C1025) was observed at the base of the sondage at the eastern end of the trench (4.84m AOD), and protruding through later deposits at the western edge of the intervention. Variations in the bedrock were evident within the trench, ranging from red to green from west to east.

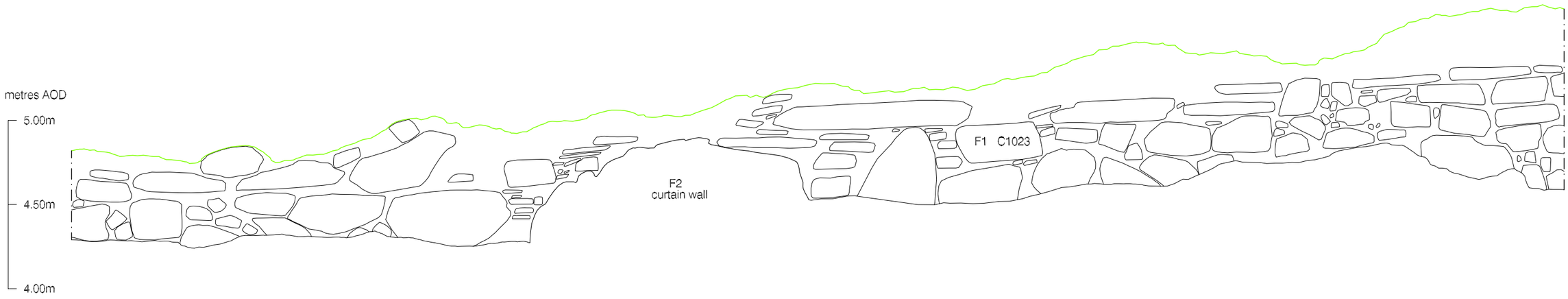
3.2.1 Structural remains

Constructed over bedrock, the external face of Structure 1 (F1 C1023) was exposed for the full length of the intervention, but survived only to a maximum 0.70m high (Figure 7; Plate 8). The irregular stonework suggested that the lower courses at least were initially below-ground foundations.

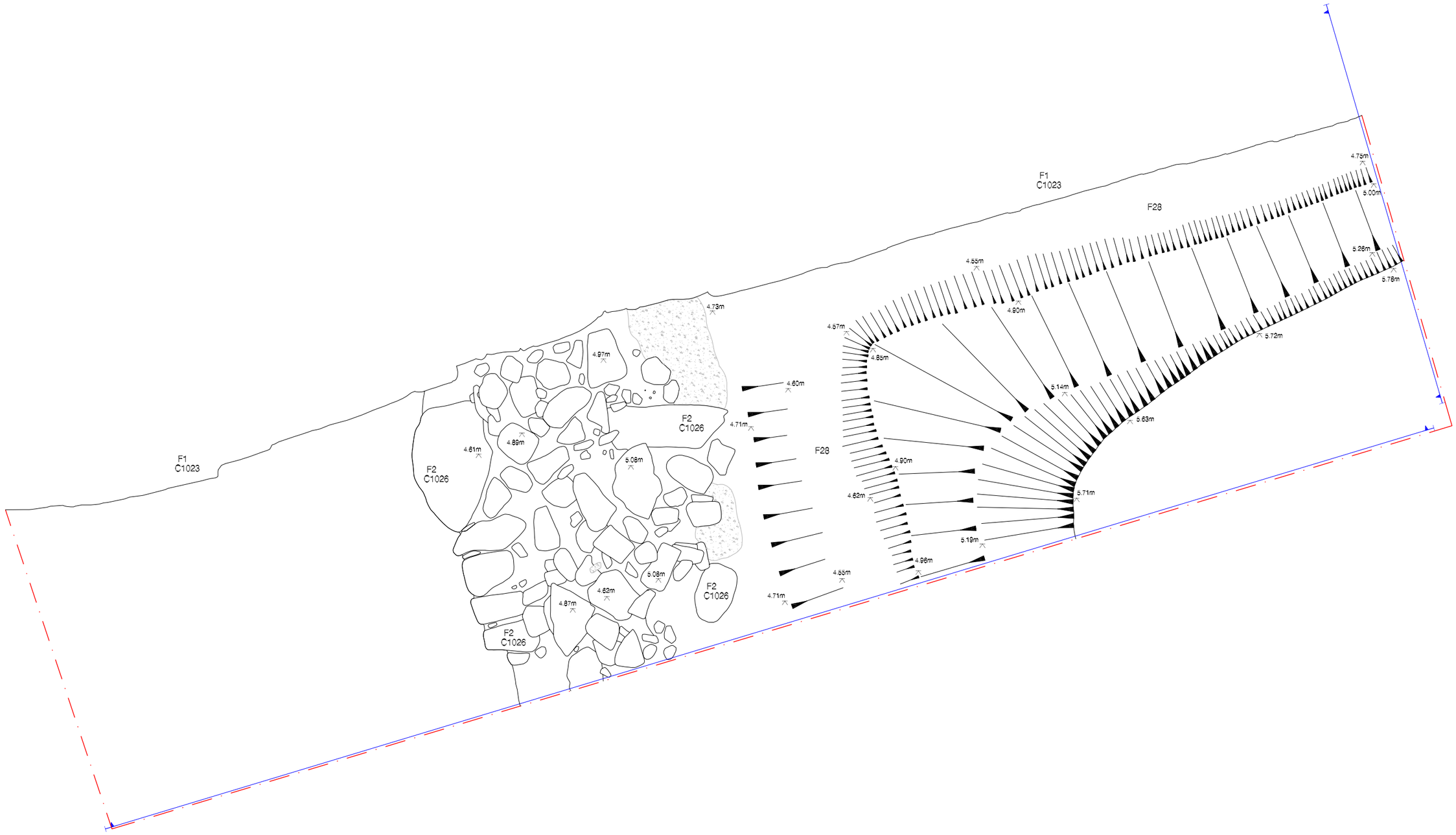
Plate 8 Structure 1, external south-facing elevation

Abutting the tower, a section of north-south wall was revealed; this feature had been defined during the topographic survey and allocated F2 (Figure 8; see Plate 8). The wall was badly truncated to the east and west, and only one course of the outer elevation survived, at the western side of the wall (Plate 9). The remainder of the wall survived only as rubble core, with layers of compacted yellowish-brown mortar. Severe root disturbance had removed much of the bonding material from between these stones. As a result, the full extent of the wall could not be determined, although the results of the topographic survey suggest a wall width of 2.75m. A possible steep-sided cut to the immediate east of F2, preceding F28, may represent an episode of partial robbing of the eastern edge allocated C1046 (Figure 9).

Plate 9 Intervention 4 - F2 C1026, west-facing elevation (scale 1.0m)



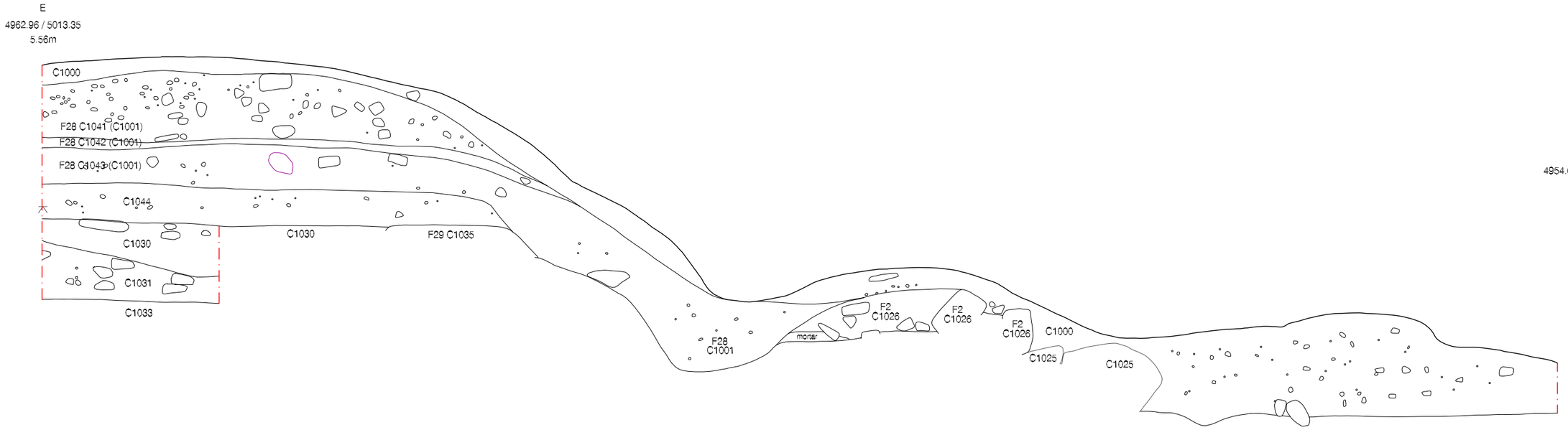
Intervention 4 - Structure 1, external south-facing elevation | Scale 1:25 | Figure 7



Intervention 4 - F2 pre-excavation plan, F28 post-excavation hachure

Scale 1:25

Figure 8



Intervention 4 - north-facing section | Scale 1:25 | Figure 9

3.2.2 Occupation deposits and craft-working activity

In the eastern half of Intervention 4, a sequence of deposits was encountered which represented occupation and iron-working activity. The earliest deposit encountered was C1034, a dark greyish-brown clayey silt recorded in the west-facing section of Intervention 4 (Figure 10). This deposit directly overlay bedrock, and infilled gaps in the natural topography.

Also overlying bedrock (C1025), a deposit of grey clay was defined (C1046); the relationship between this deposit and C1034 was not ascertained within the excavated area. This clayey layer formed preparation for a well-defined mortar floor (C1033). Although only exposed in plan in the eastern sondage of Intervention 4, C1033 and underlying C1046 were observed within the cut of later feature F28, extending towards the remains of wall F2 (Plate 10). A compact layer of mortar extending beneath F2 may represent part of the same sequence, although the matrix of the deposit was quite different. The presence of a mortar floor has been used to infer that this area would have been a roofed internal space.

Plate 10 Intervention 4 - showing C1033, looking south (scale 1.0m)

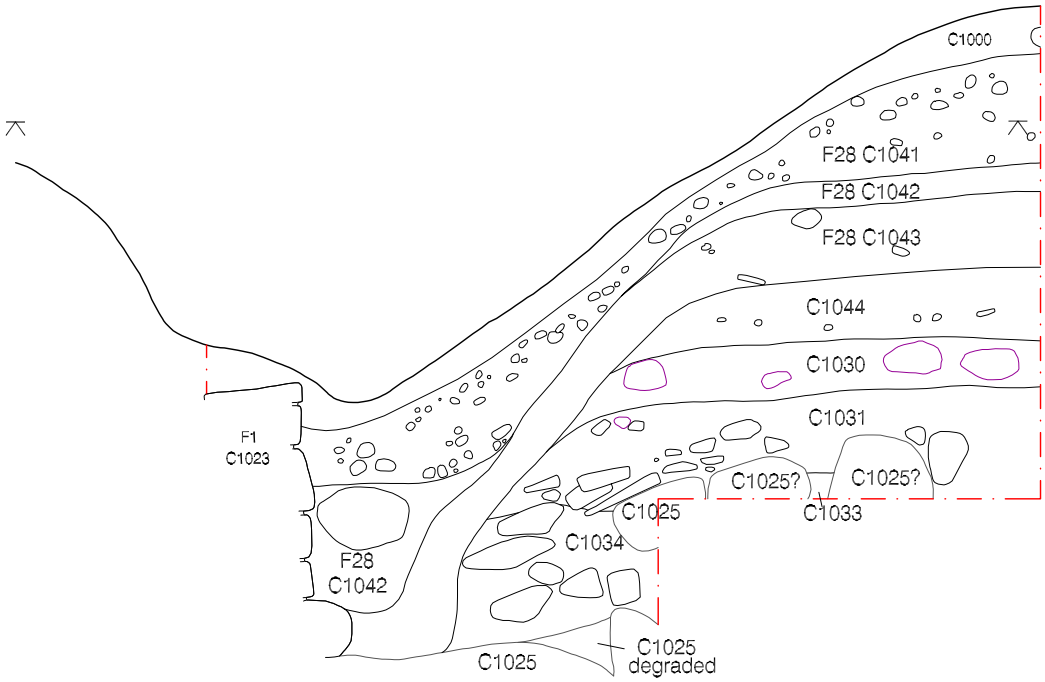
A layer of domestic waste was encountered overlying the mortar surface, represented by a 0.15m deep deposit of very dark grey silty clay containing a high proportion of animal bone (C1031). Due to the quantity of animal bone, a 40 litre sample was taken for fine-mesh sieving, which produced further zooarchaeological remains, in addition to six sherds of organic-tempered pottery (Appendix I), a fragment of crucible, hammerscale and slag fragments (Appendix J). The pottery has a long period of use in Scotland, but has recently been encountered within deposits radiocarbon-dated to the 12th-century in Caithness (see Appendix I). The animal bone consisted primarily of cattle, with some sheep/goat, and a phalange from a large raptor, possibly an eagle; fine-mesh sieving also produced fish, shell, bird and small mammal bones (Appendix K). Three nails of likely medieval date were hand-collected from C1031 during the evaluation, and a small iron link identified as possible chainmail was recovered from sieving (Appendix L). The deposit appeared to represent the accumulation or dumping of domestic waste over a deliberately laid surface.

The bone-rich deposit (C1031) was sealed by a 0.15m layer of very dark greyish-brown clayey silt (C1030), which contained a large quantity of iron-working debris. This deposit was encountered across much of Intervention 4, but was only excavated within the eastern sondage. C1030 was sampled (= 10 litres) for the retrieval of metal-working waste, which produced spherical and flake hammerscale. The assessment of the metal-working debris suggests that this would have been secondary smithing of a substantial nature, representing more than small-scale repair work.

C1030 appeared to be associated with the *in situ* remains of a metal-working hearth, revealed against the

N
NG 88114.20/25878.58
6.04m

S
NG 88114.93/25876.07
6.04m



Intervention 4 - west-facing section	Scale 1:20	Figure 10

southern edge of Intervention 4 (see Plate 10). The feature, allocated F29 C1035 was characterised by alternating deposits of orange clayey silt and charcoal, visible against the cut of F28 (Plate 11). A number of stones, also visible in the cut of F28 may represent hearth make-up. F29 was recorded *in situ*, but not further excavated following initial definition and recording leaving the remains intact for future investigation.

Plate 11 Intervention 4 - F29 C1035, looking west (scale 0.5m)

The interface between C1030 and the overlying deposits was not clear, and a recovery context (C1029) was allocated to finds recovered during excavation. The nature of the finds allocated to C1029, which included a quantity of slag, animal bone (cattle, sheep/goat), suggest that they originally derived from the medieval deposits.

3.2.3 Buried soil

Overlying C1030, and identified only during the recording of the north- and west-facing sections, was a deposit of clean, very dark greyish-brown clayey silt, measuring *c*. 0.20m in depth. This layer was allocated C1044, and has been interpreted as a buried soil, which accumulated over the industrial area following its disuse. This layer produced no datable material.

To the west of wall F2, the bedrock was overlain by a dark brown clayey silt, with a high proportion of rubble. This deposit, allocated C1040, was not further allocated, but appeared to represent material resulting from the decline and collapse of the curtain wall and tower structures (F2 and F1 respectively).

3.2.4 Wall-chasing trench

Along the southern edge of F1 and the eastern edge of F2, a steep-sided linear trench had been excavated to the base of surviving walls (see Figure 8 to 10; Plate 12). This cut, allocated F28, appears to represent an attempt to define the route of the walls (an activity also observed in Intervention 5 and Intervention 7). F28 effectively severed the stratigraphic relationship between the sequence of deposits (C1034, C1046, C1033, C1031, C1030, F29 C1035, C1044) and the make-up of the surrounding structures. The upcast from the excavations had been deposited over the buried soil sealing the metal-working horizon, and this material had subsequently slumped into the cut and partially backfilled it.

Plate 12 Intervention 4 - F28 during excavation (scale 1.0m)

During excavation, the upcast and backfill were allocated a single context number for the recovery of finds (C1001). The north- and

west-facing sections, however, suggested a more complex sequence of backfilling, and C1001 was subsequently recorded as a sequence of three deposits (C1041 to C1043)(Plate 13). C1043 was allocated to the earliest deposit within the base of the cut and extending over C1044, and consisted of a well-defined dark greyish-brown to black sandy clay, flecked with charcoal. Over C1043, a distinct deposit of yellowish sand was recorded (C1042), which had also slumped into the cut adjacent to the wall F1. Over C1042, was a layer of very dark grey clayey silt, with gravel and slag inclusions (C1041). This directly underlay the modern topsoil (C1001).

Plate 13 Intervention 4 - west-facing section (scale 1.0m)

The sequence of deposits would suggest that the feature was gradually backfilled, through the slumping of upcast, and subsequent deposition of sand and soil. The finds from the backfill (allocated C1001), cover a broad date range. The slag inclusions from the backfill of F1 are likely to derive from the medieval deposits through which the trench had been excavated. Further finds of early date included iron nails, and a 13th- to 14th-century copper-alloy brooch (Plate 14). A small assemblage of ceramic has been dated to the 19th century, including a single fragment of clay pipe of 18th- to 19th-century date. More recent inclusions indicate a later date for the final backfilling of the feature, including a 20th-century glass bottle base, fragments of 19th- or 20th-century fire grate, and a 'Sqezy' bottle of early 1960s design (Plate 15).

Plate 14 Find no.8, annular brooch (diameter 27mm)

3.3 INTERVENTION 5

Intervention 5 was situated approximately 15m to the east of the northwest tower, and was positioned to investigate the northern stretch of curtain wall in this area, and the character of the midden on which the flagpole is positioned. This area was formerly overgrown with fern and nettles (Plate 16). Intervention 5 was excavated to a maximum safe depth of 1.30m (4.36m AOD); natural bedrock was not encountered.

3.3.1 Rubble deposit and curtain wall

The earliest deposit encountered within Intervention 5 was a substantial rubble deposit (C1032), visible at the southern end of the trench, and excavated within a sondage for 0.60m, but continuing beyond this depth (Figure 11). C1032 consisted of very large cobbles, within a clean, very dark greyish-brown clayey silt matrix.

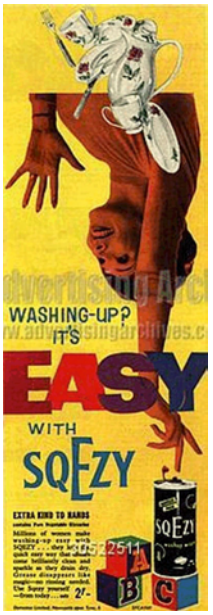
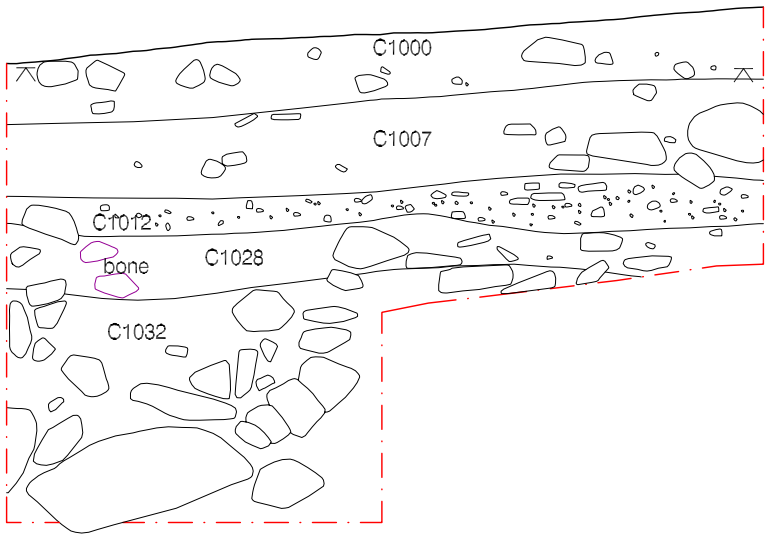


Plate 15 1960s 'Sqezy' advert

E
NG 88133.30/25878.54
5.56m

W
NG 88131.44/25878.87
5.56m



Intervention 5 - north-facing section	Scale 1:20	Figure 11

C1032 was seen to extend beneath the foundations of wall F25, which dominated the intervention (Figure 12; Plate 17). The wall was constructed with regularly laid stone (Plate 18) and a clay-bonded rubble core; the remains measured *c*.4m wide in total. A coarser, sandier matrix at the northern edge of the wall suggested that it had previously been harled or mortared.

Plate 16 Intervention 5 - pre-excavation

The edges of the exposed masonry were not parallel, and it appears that the wall may represent more than one phase of activity. At the northern end, parallel tip lines, and possible aligned stones indicate that there may have been some internal feature into which the make-up had collapsed, or an earlier feature which undermined the structure; this runs parallel to the southern edge of the wall (see Plate 17). Further investigation to the east and west would hopefully clarify this situation, which could not be resolved within the 2.0m wide trench. F25 C1009 contained fragments of vitrified rock within its makeup; within the loose rubble overlying the wall, a small copper-alloy object was recovered, identified as a strap-end or chape of likely medieval date (Plate 19).

Plate 17 Intervention 5 - F25 C1009, looking south (scale 1.0m)

3.3.2 Occupation deposits

To the south of Intervention 5, overlying C1032, a sequence of layers was identified which appear to represent occupation activity (C1028, C1027) and a deliberately laid floor surface (C1012)(Plate 20). These deposits were physically separated from the wall by the excavation of wall-chasing trench F26 (see Figure 12 and 13), but it seems likely that they would have been associated with this structure.

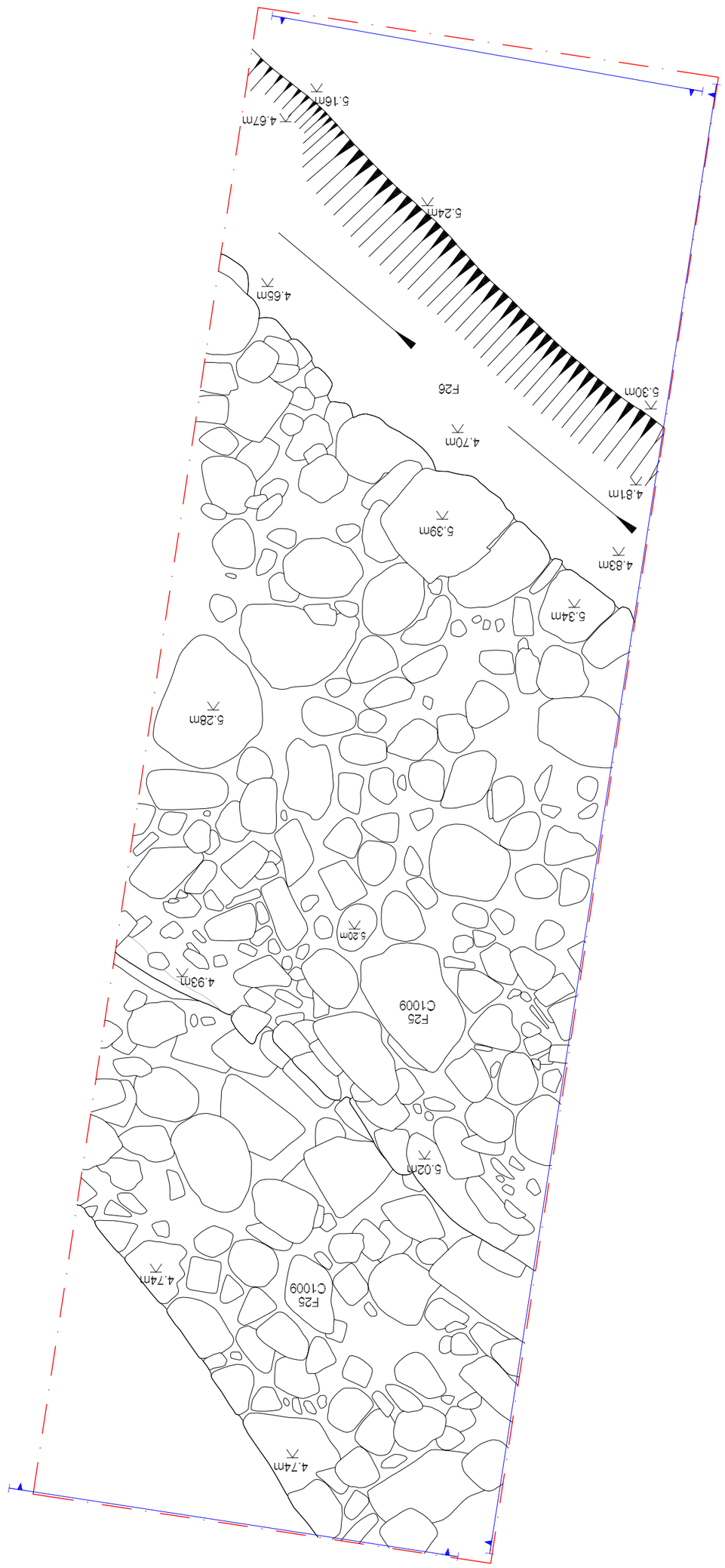
Plate 18 Intervention 5 - F25 C1009, south-facing elevation (scale 1.0m)

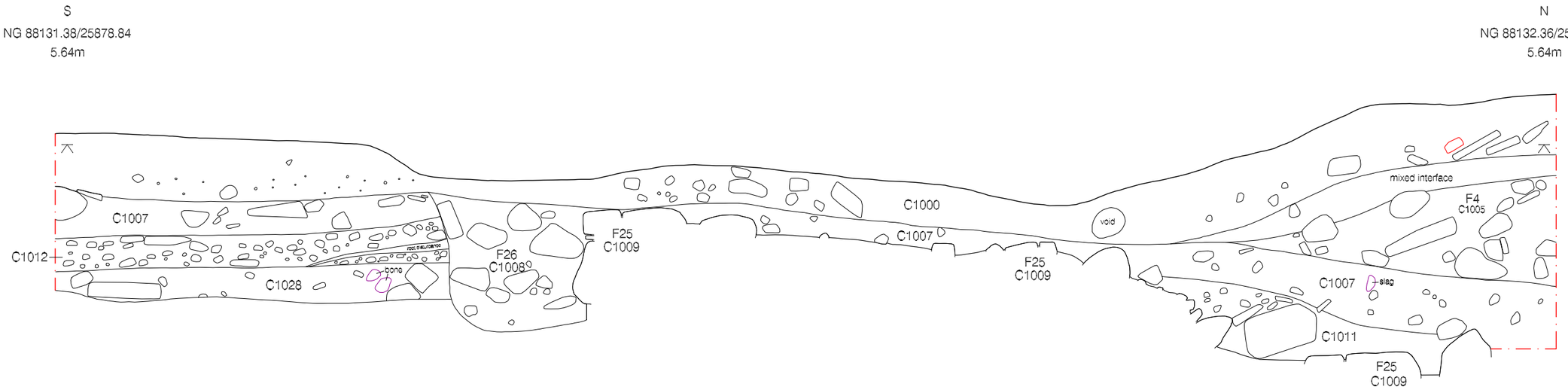
The earlier deposit, C1028, overlay C1032 directly, and consisted of a 0.15m deep deposit of very dark brown clayey silt, which contained a high proportion of animal bone and a number of iron objects (including at least 20 complete or incomplete nails, and 4 roves). The nails and roves represent structural ironwork; and some examples had possible mineral-preserved wood adhering; it is therefore likely that these have been used in the construction of timber buildings. A 40-litre sample was subject to fine-mesh sieving, which produced a single sherd of pottery, which has been identified as part of a jug of Scottish Redware, and dated to the 13th to 14th century. Evidence for non-ferrous metal-working was represented by two fragments of crucible, which

Intervention 5 - F25 plan, F26 post-excavation plan

Scale 1:20

Figure 12





Intervention 5 - east-facing section | Scale 1:20 | Figure 13

have been identified as potentially pre-medieval in date. Assessment of the zooarchaeological remains identified cattle, sheep/goat, pig and a number of red deer bones; in addition, the sieved sample produced an assemblage of fish bone.

C1027 was allocated to a thin, charcoal rich lens overlying C1028, which contained flecks of burnt animal bone, and fragments of a copper alloy ring. C1027 was fine-mesh sieved in its entirety (= 10 litres) and produced hammerscale, calcined animal bone fragments and a small lead token bearing a faint scratched cross. These deposits had been sealed by a layer of pale brown gravel (C1012), representing the construction of a surface or path (see Plate 20).

Plate 19 Find no.16, strap end (length 34mm)

3.3.3 Buried soil

F25 had been levelled before the accumulation of the overlying buried topsoil (C1007), which also sealed the surface (C1012). C1007 pre-dated the early 20th-century, and formed a more gradually sloping surface onto which the mortar-rich make-up of the midden had subsequently been deposited (Plate 21).

Plate 20 Intervention 5 - north-facing section (scale 1.0m)

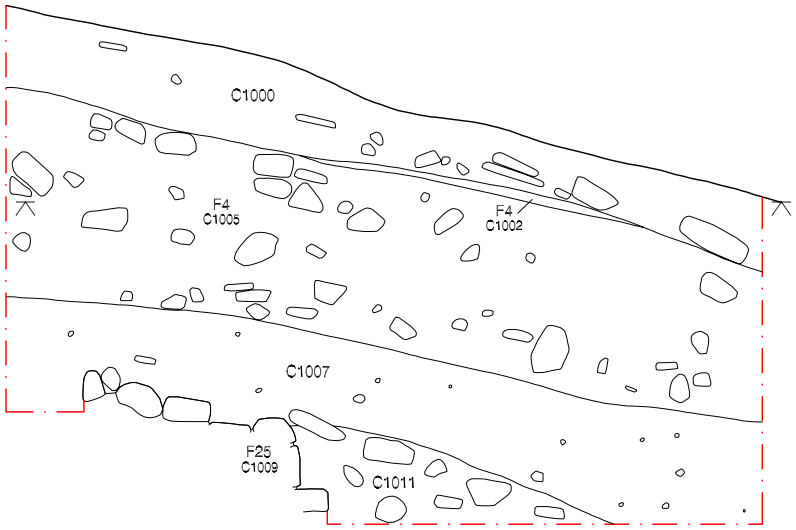
3.3.4 20th-century midden

The midden, which was defined during the topographic survey as F4, is a large mound on which the flagpole currently stands. The make-up of the midden was investigated in the northern part of Intervention 5, and recorded in the east-facing and south-facing sections (see Figure 13 and 14; see Plate 21). Two deposits were observed; the earliest (C1005) was a loosely-compacted mortar dump, which contained occasional large fragments of mortar and stone (including a piece of vitrified rock). A few fragments of well-preserved animal bone were collected, identified mainly as cattle bones, with a single goat/sheep bone. A thin, slag-rich deposit was encountered (C1002), which had been deposited over the mortar deposit; this did not extend across the whole of the area. This produced modern glass and ironwork. It is assumed that the midden represents mortar which was cleaned from medieval building material, before its reuse in the 20th-century reconstruction. Following deposition of the midden material, a layer of topsoil had accumulated across the mound, representing the current ground surface (C1000).

Plate 21 Intervention 5 - east-facing section (scale 1.0m)

W
NG 88132.50/25885.20
5.35m

E
NG 88134.44/25884.91
5.35m



Intervention 5 - south-facing section	Scale 1:20	Figure 14

3.3.5 Wall-chasing trench

At some point after the initial accumulation of the earlier topsoil (C1007), a linear trench was excavated along the side of the wall F25, apparently representing the same type of activity as the wall-chasing episode in Intervention 4 (F28)(Plate 22). The trench, allocated F26, measured 0.40m wide, and up to 0.70m deep, with steeply sloping sides and a flat base. The feature had been backfilled once with C1008, a mixed deposit which contained a high proportion of rubble, including a number of mortar-bonded stone fragments. C1008 produced four iron nails, and two coins. One coin was a penny of 1861, while the second was medieval, a silver penny of Edward I, dated to 1301 (Plate 23); this is assumed to have derived from C1028 or associated deposits.

Plate 22 Intervention 5 - F26, post-excavation (scale 1.0m)

Plate 23 Find no.14, silver penny of Edward I, 1301 (diameter 18mm)

The backfill of C1008 was found to have been sealed by accumulating topsoil and vegetation, although the trench could be defined topographically, and had been assigned F7 during the survey.

3.4 INTERVENTION 6

Intervention 6 was situated *c*.8.0m to the east of Intervention 5, and measured 6.0m x 2.0m, orientated NE-SW. The trench lay in an area previously overgrown with vegetation, sloping steeply down towards the shore of the island (Plate 24). The intervention aimed to investigate the presence of a possible tower in this location, in addition to characterising the survival and layout of the curtain wall and any associated deposits. The trench was excavated to a maximum depth of 0.70m at its southwestern end, at which point the rubble matrix of the walls made further investigation unsafe. A 1.0m wide sondage was further investigated at the northeastern end of the trench, reaching bedrock at 2.85m AOD.

Plate 24 Intervention 6 - pre-excavation

3.4.1 Possible tower

Intervention 6 was situated in order to investigate a wall, part of the east-facing elevation of which was visible through the vegetation prior to the evaluation. This was surveyed as part of the topographic recording of the

site, and allocated F7. The full extent of wall F7 was not observed within Intervention 6, and the feature appears to be have been truncated by later activity.

The northeastern elevation of F7 survived to a height of at least 0.95m (Plate 25); to the southwest, the wall appears to have collapsed, and no clear evidence for the elevation survived (Plate 26). The surviving wall measured *c*.1.80m in width, and was constructed using boulders of varying geology, with a clay-bonded rubble core (C1014)(Figure 15). The surviving eastern elevation was highly irregular, appearing to represent collapse or consolidation.

Plate 25 Intervention 6 - F7 C1014, east-facing elevation (scale 1.0m)

3.4.2 Dumping

Overlying bedrock, to the east of F7, a series of deposits was encountered which appeared to represent dumping on the foreshore of the island (C1016, C1017 and C1018)(Figure 16). The earliest of these deposits was C1018, a thin (0.05m) layer of black sand, containing gravel and pebbles, and a high proportion of animal bone (all identifiable fragments were cattle). A 10 litre sample was taken for fine-mesh sieving, which produced a further assemblage of bone which included cattle and sheep/goat.

C1018 was sealed by a layer of reddish-brown silt, which produced few finds and contained a high proportion of micaceous stone, similar to the bedrock observed within this trench. C1016 was allocated to a layer of black, charcoal-rich clayey silt which produced a small quantity of animal bone (cattle) and gravel. This deposit measured 0.30m in depth. A 10 litre sample was subject to fine-mesh sieving, which produced a number of fragments of unidentifiable burnt bone.

Plate 26 Intervention 6 - F7 C1014, looking south (scale 1.0m)

The relationship between these deposits and wall F7 was not ascertained within Intervention 6, and so it is not clear whether they predate the wall. However, it is suggested that these deposits represent occupation waste which was dumped against the wall, on the foreshore.

3.4.3 Disuse of the wall

To the west of wall F7, and abutting it, a deep, homogenous deposit of large boulders was recorded, and allocated C1013 (Plate 27). The voided nature of the deposit, and the lack of artefactual evidence or soil matrix, would suggest that this context was deposited in a single episode, representing the final disuse of wall F7, which had presumably been levelled to its current height. The upper interface of C1013 consisted of a mortar-rich

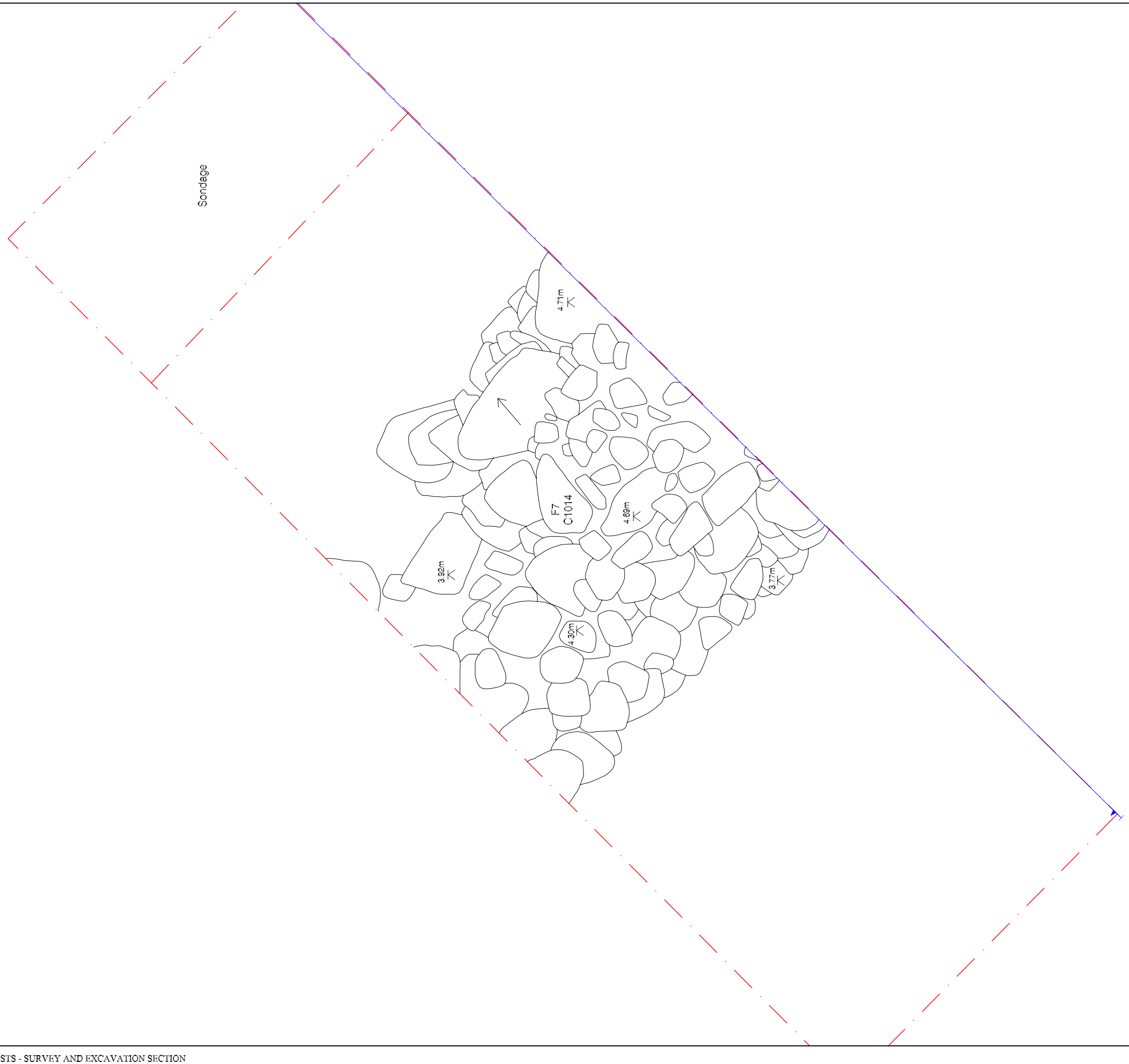


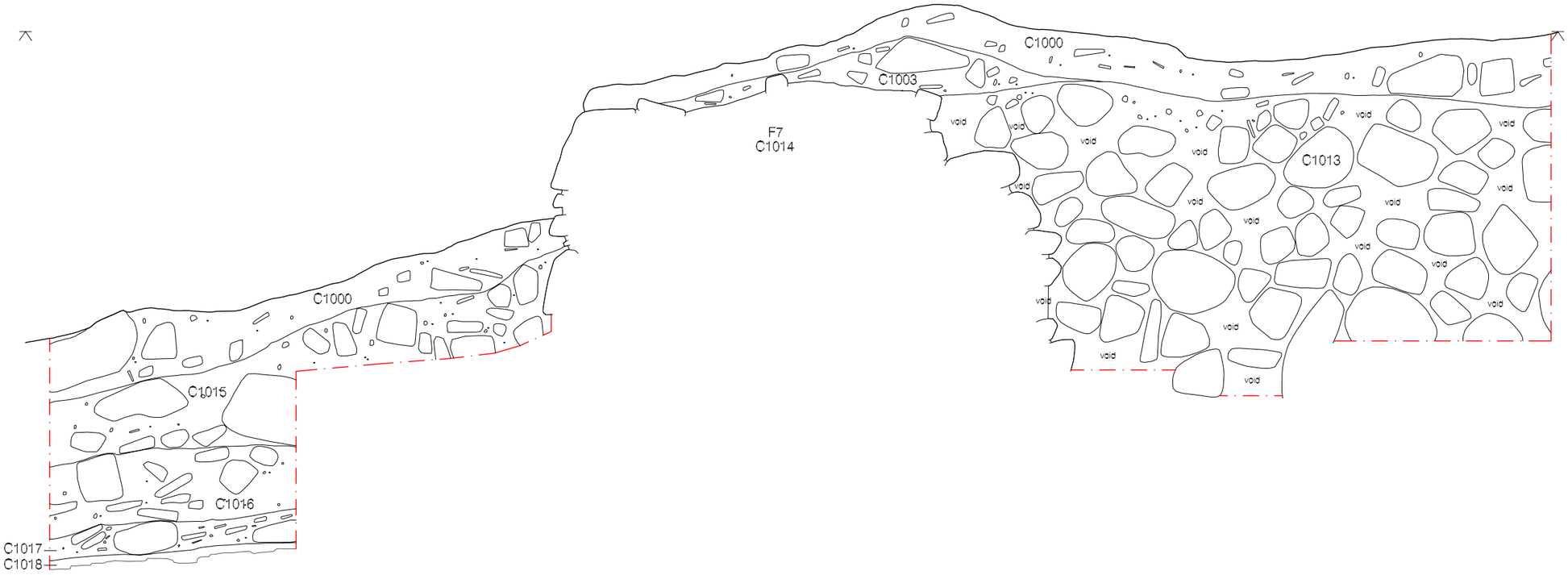
Figure 15

Scale 1:20

Intervention 6 - F7 C1014 pre-excavation

E
NG 88134.44/25884.91
5.02m

W
NG 88132.50/25885.2
5.02m



Intervention 6 - north-facing section | Scale 1:20 | Figure 16

spread, which also contained a high proportion of rubble (C1010).

Plate 27 Intervention 6 - north-facing section (scale 1.0m)

To the east of F7, and sealing C1016, a dark brown silty clay layer was identified, containing angular cobbles and gravel (C1015). This deposit measured up to 0.45m in depth, and abutted the make-up of wall F7. The layer may have been contemporary with the clayey silt and rubble deposit C1003, which overlay the wall directly. These layers appear to represent more gradual disuse of the features, and the accumulation of topsoil. C1003 produced a single copper-alloy coin, identified as a bawbee of an uncertain king (Charles II - William II 1677-1697).

3.4.4 Later alterations

Cutting C1003 and C1015, and truncating the northern edge of F7, a linear feature was defined, measuring at least 1.0m wide. The steep-sided cut, allocated F24 descended to an irregular base, which appeared to form rough stairs from the rubble make-up of wall F7 (Figure 17; Plate 28). This may have been excavated to form an access route to the shore down the steep bank.

F24 had been backfilled with a two deposits of rubble and clayey silt deposit (C1004 and C1006). The later backfill (C1006), produced a single sherd of 19th-century sanitary ware. Following the backfilling of F24, the whole area was overgrown with vegetation and topsoil (C1000).

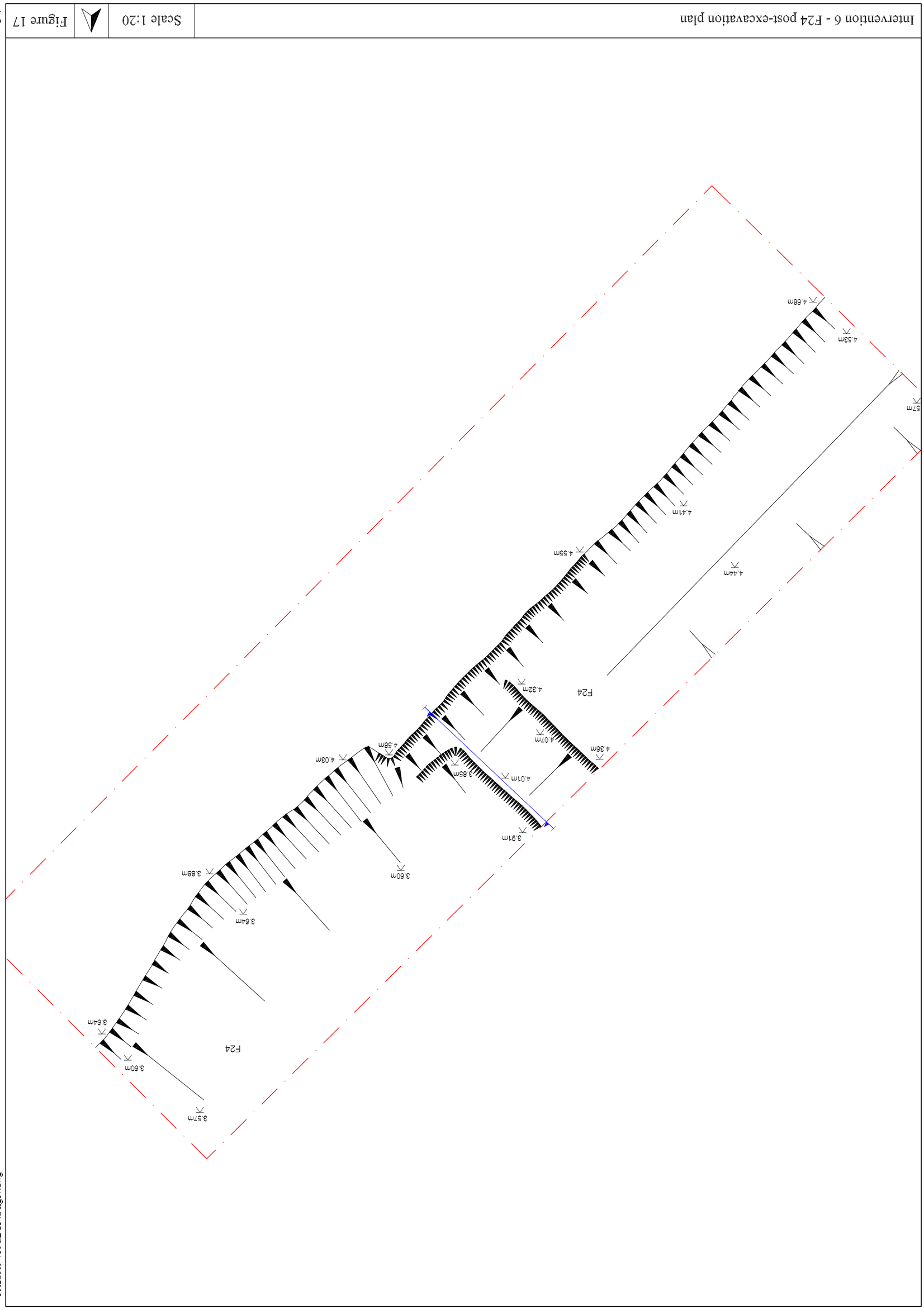
Plate 28 Intervention 6 - F24 post-excavation (scale 1.0m)

3.5 INTERVENTION 7

Intervention 7 was located on the southern side of the island, and was positioned to investigate the curtain wall, and a possible tower in this location; the trench measured 6.0m x 2.0m. Previously, this area had been overgrown, although parts of the southern elevation of the wall were visible amongst the vegetation (allocated F8 during the topographic survey)(Plate 29). Intervention 7 was excavated to a maximum depth of 1.20m (2.96m AOD); natural bedrock was not achieved.

Plate 29 Intervention 7 - pre-excavation

Figure 17	Scale 1:20	Intervention 6 - F24 post-excavation plan



3.5.1 Rubble deposits and structural remains

The earliest deposit observed within Intervention 7 was encountered at the northern end of the trench, and consisted of a rubble deposit within a clayey matrix (C1039)(Figure 18).

Overlying C1039, and spanning most of the trench, was the stone-built curtain wall, allocated F8 C1019 (Figure 19 and 20; Plate 30). The wall in this area was much wider than the visible earthwork had suggested, measuring 5.0m in total width. The wall was well-constructed, with regular elevations formed from boulders, and a clay-bonded rubble core (Plate 31). Fragments of vitrified rock were observed within the make-up. The well-preserved southern elevation was gently battered, and survived to a height of 1.20m; its lower extent was not achieved, and it seems likely that the structure was constructed directly over bedrock. The elevation to the north was more fragmented, with a possible return to the east, and appeared to have been constructed over a rubble foundation layer.

Plate 30 Intervention 7 - F8 C1019, looking south

Plate 31 Intervention 7 - F8 C1019, south-facing elevation (scale 1.0m)

Abutting F8 to the north and west were rubble deposits (C1037, 1038 and C1020).

3.5.2 Wall-chasing trench

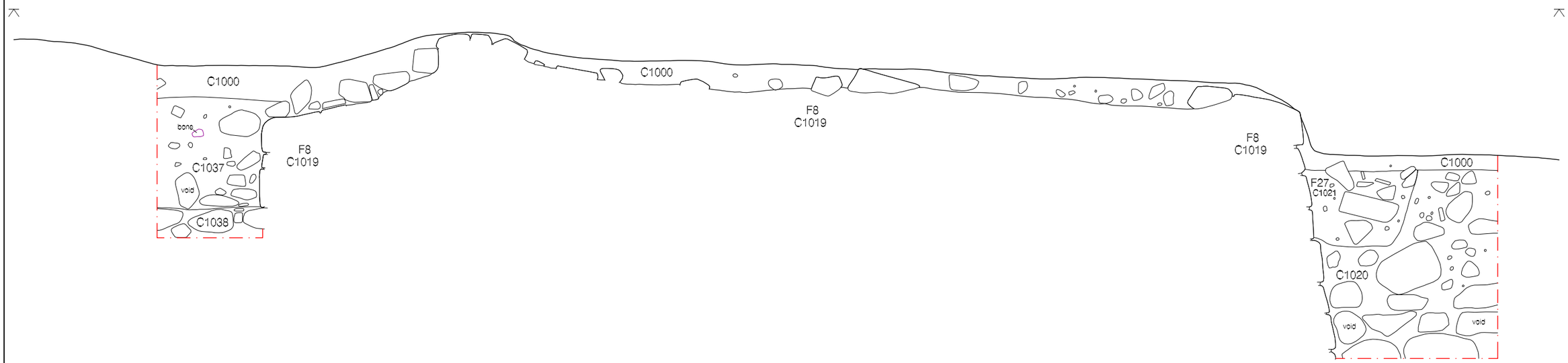
Following the disuse of wall F8, the southern elevation had been defined through the excavation of a 0.40m wide trench, similar to that encountered in Intervention 5, and allocated F27. Unlike F26, F27 did not extend the full height of the wall, but measured only 0.35m deep (see Figure 18). No finds were recovered from the single, rubble backfill (C1021). Following the backfilling of F27, topsoil and vegetation accumulated across the area.

4.0 DISCUSSION

The evaluation revealed *in situ* deposits of medieval to modern date. The remains can be divided into four broad phases of activity (Table 2).

N
NG 88148.36/25825.32
4.65m

S
NG 88153.08/25819.47
4.65m



Intervention 7 - west-facing section | Scale 1:20 | Figure 18

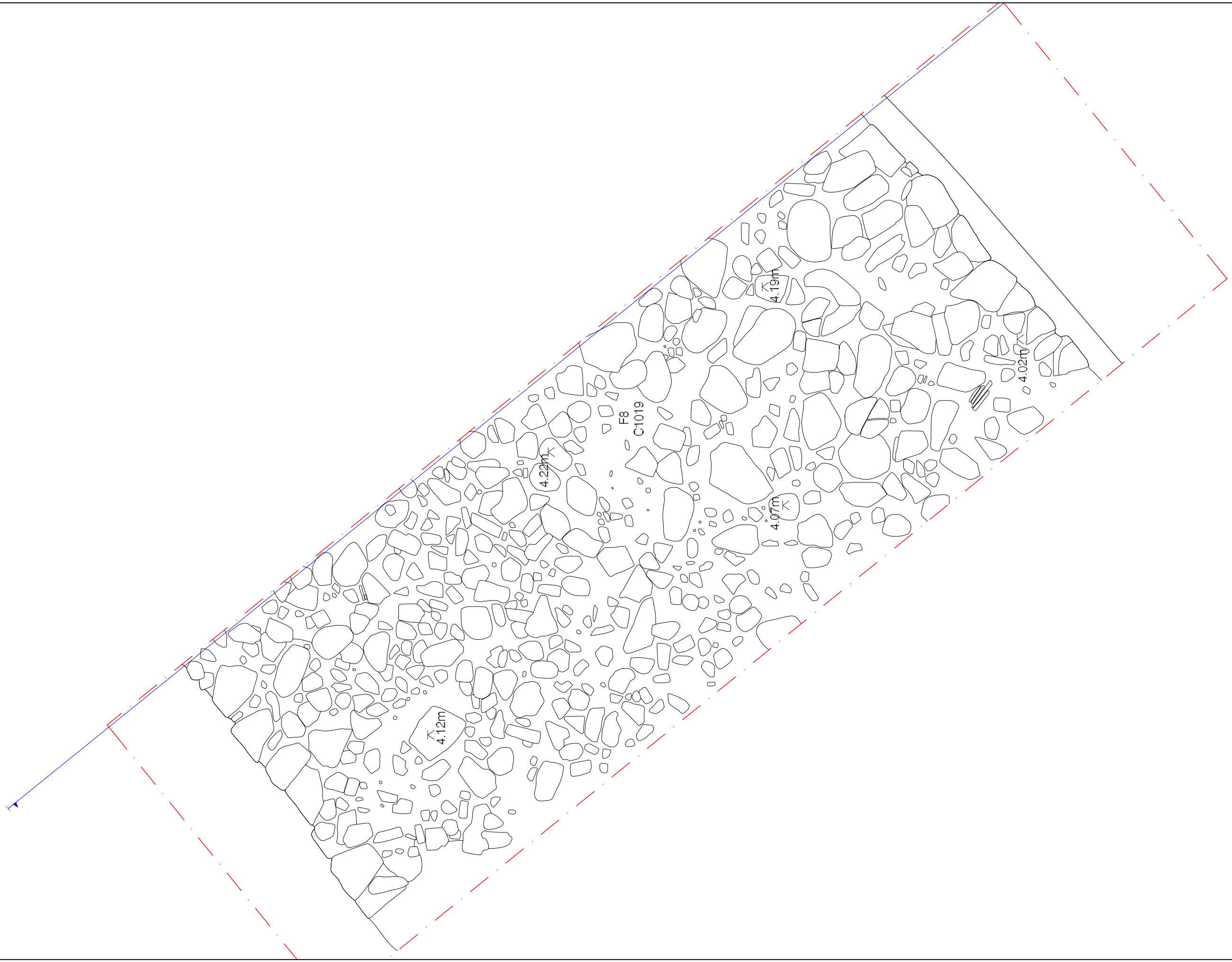
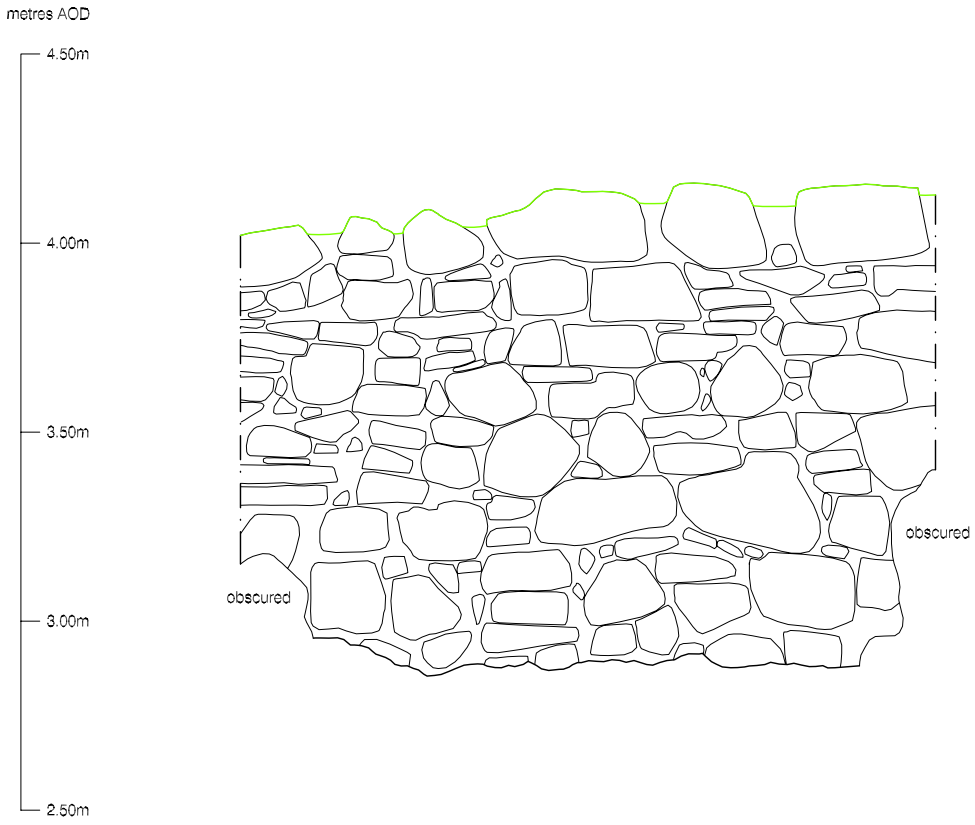


Figure 20

Scale 1:25

Intervention 7 - F8 pre-excavation plan



Intervention 7 - F8 south-facing elevation	Scale 1:20	Figure 20

Table 2 Phases of activity

Period	Date	Activity	Physical remains
1	Iron Age?	Vitrified fort	Residual vitrified rock
2	Medieval	Construction of the castle	Structural remains
		Occupation of the castle	Layers, artefactual assemblages, personal items
3	Post-medieval	Disuse of the outer ward	Rubble deposits, buried soils
4	Modern	Reoccupation of the island, reconstruction	Wall-chasing trenches, midden of building
		Investigation of the castle layout	material

4.1 PERIOD 1 - VITRIFIED FORT

No *in situ* remains of the supposed vitrified fort were encountered during the investigation, but given the scale of the medieval fortifications encountered, this is unsurprising. The presence of vitrified rock within the fabric of the medieval castle could, however, be used to further support the assertion that there was a pre-existing fortification at the site. Previously, it had been suggested that fragments of vitrified rock found in the castle grounds could have been brought to the island as antiquities, or in building material for the modern reconstruction; their presence in medieval contexts would suggest otherwise. Vitrified rock was found in all trenches, suggesting widespread availability across the island.

A hint at earlier activity is provided by the crucible fragment from C1028, which has been identified as a form atypical of the medieval or post-medieval period, and therefore potentially earlier. However, C1028 has been defined as a medieval layer, and so if early, the find must be residual. Its significance must await further discoveries at the site.

4.2 PERIOD 2 - MEDIEVAL CASTLE

All five interventions were positioned to reveal the structural remains of the medieval castle, and as such have allowed the known layout of the site to be refined. The trenches also provided information on the construction techniques used in the building of the fortification, clarified their form, and in some cases presented new lines of investigation.

4.2.1 Construction and layout of the outer defences

The walls of the castle were uniformly found to have been constructed with a clay-bonded rubble core, and regularly coursed elevations using unshaped boulders. Evidence from Interventions 5 suggested that the outer elevations may have been mortared or harled.

Within both Intervention 5 and Intervention 7, the curtain wall was found to have been constructed over substantial rubble deposits, which might indicate either an earlier phase of building activity, or the levelling of ground prior to building. The north tower and the adjacent curtain wall were constructed directly over bedrock, which would have provided a stable foundation.

The thickness of the walls varied across the site. The most substantial wall was that encountered on the south side of the island, measuring *c*.5m wide. To the north of the island, the western curtain wall and northeastern curtain wall both measured less than 3m wide (although the latter may formerly have been wider).

Western curtain wall

Intervention 3 revealed the remains of the north-south curtain wall that had been defined by Miket and Roberts (1990), and mapped during the topographic survey (Figure 21). Part of the wall appears to have been robbed, but the full width as suggested by the vertical edge of the robber trench would concur with the feature mapped during the topographic survey, suggesting that the wall was *c*.2.75m wide. This wall is known to extend to the immediate south and is likely to have continued to join the northern wall of the main keep. Miket and Roberts suggest a gateway in this length of wall, which cannot currently be defined, but would be worthy of exploration in the future.

North tower

The layout of the north tower was already known, having been visible as a substantial earthwork. The full extent of the wall was exposed between Interventions 3 and 4, revealing a total width of 4.2m. The walls of the north tower were therefore comparable in scale to those of the main keep (*c*.3.5m).

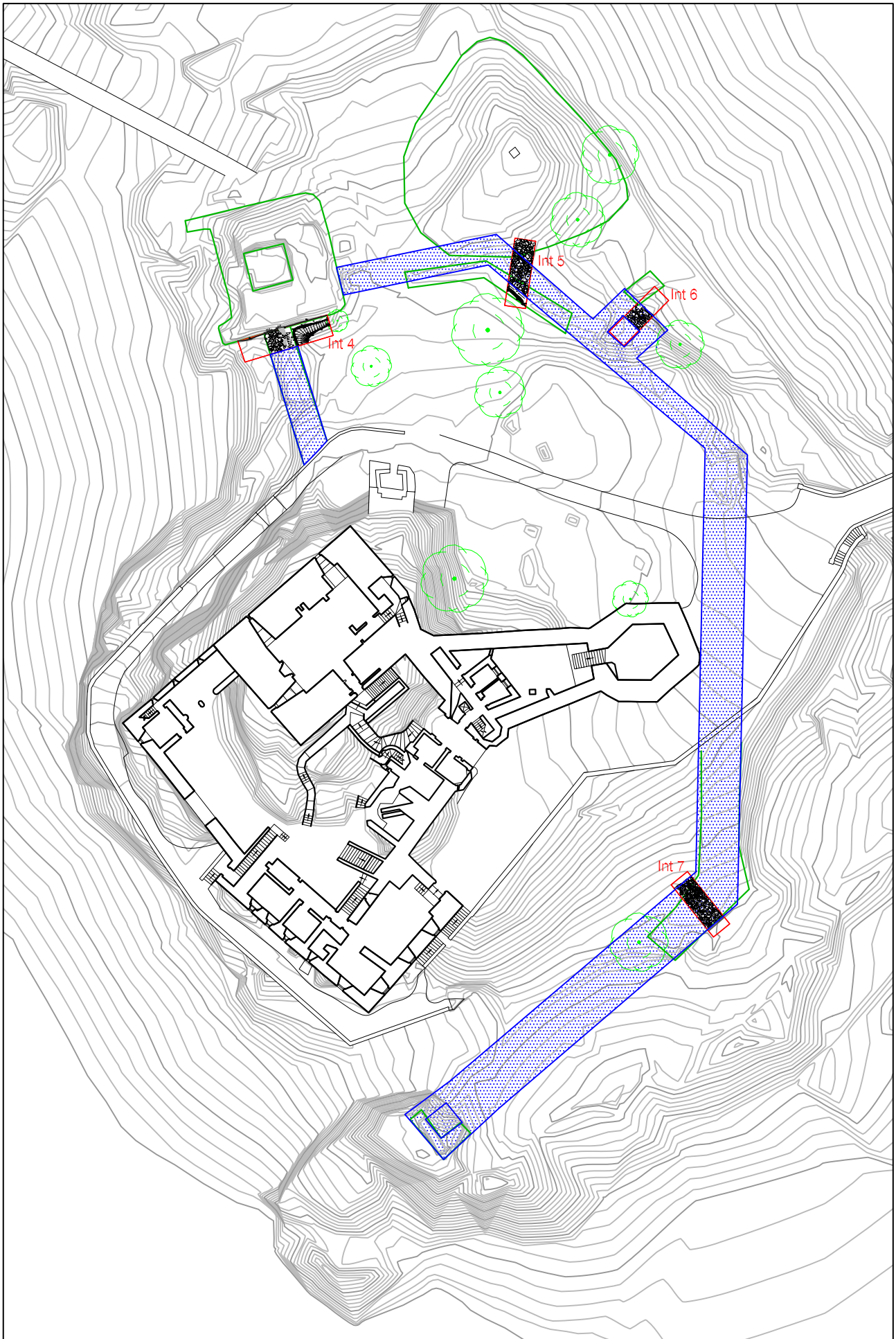
The coursed stonework of the elevations was recorded; no doorways or window openings were encountered within this area, although the decayed state of the walls does not exclude their existence. The internal surface of the tower, represented by bedrock, was irregular, and did not appear to have been shaped. No evidence for a suspended floor was observed, and so the floor is likely to have been levelled with an earth-based material.

North and northeast curtain wall

Within Intervention 5, the orientation of the curtain wall differed slightly from that predicted (see Figure 21). The two potential orientations suggested by the wall lines require further clarification, and suggest a wall of either 2.60m or 3.75m in width. The former width, which appear to represent a more parallel wall, would compare in dimensions with the western curtain wall. The relatively thin dimensions of these walls when compared to the southern curtain wall, may be attributable to the fact that a range of buildings may have been constructed against the interior face wall within the outer ward.

The alignment of the north wall appears to run in a more northerly direction than might be expected, and if projected would not meet with the north tower which presumably formed part of the continuous circuit of the curtain wall. The wall-chasing trench (F26) had previously been identified as an angled negative feature during the topographic survey as F3; the angle of this trench, if it truly follows the route of the curtain wall, suggests that the wall would turn to meet the eastern wall of the tower, coincident with an earthwork suggestion of a projecting wall (see Figure 21).

The angled wall may have been protected by a tower, the remains of which have remained undetected beneath the 20th-century midden. It could be suggested that the north-facing length of wall would have housed a gateway, which would have overlooked Loch Alsh to the north, and provided access *via* the natural slipway that has been formalised in the 19th-century jetty.



Revised reconstruction of the outer defences, with evaluation results | Scale 1:500 | Figure 21

Northeast tower

Previous reconstructions of the curtain wall have placed a tower at the eastern edge of the island. Intervention 6 encountered structural remains likely to relate to this structure, but their layout remains to be confirmed. The construction of the wall, with a clay-bonded rubble core, would suggest a medieval date rather than remnants of a modern structure. The projection of the wall runs parallel to that of the curtain wall, suggestive of a possible external tower (see Figure 21).

Eastern curtain wall

The eastern curtain wall, beyond the northeast tower, was not encountered during the evaluation, and its layout and character, with that of any potential gatehouse, remain uncertain.

South curtain wall

The width of the southern curtain wall, when projected across the southern shore of the island, appears to align with the southwest tower (see Figure 21). This might indicate that the southern curtain wall was constructed with a mural tower; the suggested tower at the southeastern angle of the wall might therefore have a turret positioned over the wall itself.

The evaluation demonstrated that the apparent curve in the curtain wall, visible topographically, did not reflect the layout of the buried remains (see Plate 31). The curving feature may be a remnant of field boundary, as seen on the eastern side of the island, or possibly a topographic feature caused by later clearance of stone from this area. The northern elevation of the wall ran in a more direct NE-SW direction.

4.2.2 Structures within the outer ward

Although no *in situ* evidence for timber or stone structures was recovered from within the curtain walls, artefactual and stratigraphic evidence suggests that there would have been a series of buildings against the perimeter of the outer ward.

The mortar floor within Intervention 4, and the associated hearth, demonstrate these remains were within a building in this area, situated in the angle between the north tower and the curtain wall, since iron-workers required semi-darkness to judge the temperature of the hearth. The presence of structural ironwork in Intervention 5 would suggest that there were also timber buildings within this location; supporting the hypothesis that a range of timber buildings would have extended around the internal perimeter of the outer ward. The mortar-floored building cannot be dated, but seems to represent the earliest activity within the outer ward, with deposits accumulating from the 14th century onwards.

4.2.3 Occupation and metal-working deposits

Evidence for medieval activity was encountered within Interventions 4 and 5. Unfortunately, the wall-chasing activity in these trenches completely removed any direct stratigraphic relationships between the stone walls and associated deposits. It is assumed, however, that the two can be related.

Deposits within the two interventions were similar, suggesting contemporary activity. Layers of domestic debris was encountered in Intervention 4 and 5. These measured between 0.20 and 0.25m in depth and occurred at a similar height AOD (5.18m and 5.27m respectively), suggesting deposition across a relatively level area within the outer ward. Both contained cattle, sheep/goat and fish bones (with pig and red deer in C1028). The presence of organic-tempered ware within C1031 does not provide secure dating evidence, but the Scottish Redware from C1028 indicates a 13th- to 15th-century date. Finds from the adjacent wall-chasing trenches included the coin dating to 1301, and the 13th- to 14th-century annular brooch support a date of the 14th century for these deposits.

Following, or possibly contemporary with, the dumping of domestic waste, this area was used for metal-working. In the angle of the north tower and the curtain wall, secondary smithing occurred on a significant scale, producing large iron items. The presence of slag and a crucible, with copper-alloy fragments, in Intervention 5 suggests that the metal-working activity extended across this part of the outer ward and included non-ferrous working.

4.2.4 Phases of activity

The apparently truncated nature of the deposits encountered during the evaluation, the scarcity of datable material, and the removal of stratigraphic relationships by the later wall-chasing activity, mean that the phasing of medieval activity at the site is not yet possible, though some observations can be made.

The construction of parts of the curtain wall over rubble spreads, the two possible alignments of the northern curtain wall, and the discrepancy of width between the northern and southern curtain walls, might suggest that there was more than one phase of activity represented by the outer defences. Equally, however, the rubble might have been deliberately used to level areas prior to building, and the variation in wall thickness may have been affected by other elements of the castle layout, such as the presence of interior buildings.

There was a demonstrable lack of post-medieval (16th- to 17th-century) finds from the evaluation trenches. This would appear to add support to Miket and Roberts' hypothesis that the outer ward was disused in the 16th-century, and that the castle contracted at that date. Re-examining Pont's late 16th-century description is also helpful. Pont states that:

> 'The castell of Ylen Donen is composed of a strong and fair dungeon upon a rock, with another tower compasd with a fair barmkin wall, with orchards and trees'

This suggests two towers and a 'fair barmkin wall'. This could be interpreted as referring to the keep and inner ward, and the north tower, which might suggest that the remaining towers and curtain wall were no longer visible. The reference to the 'seven tours' is made in the context that 'it is sayd of old' (MacFarlane's Geog. Collect.; OPS 1855, 395; Gifford 1992, 532-3). On this basis, it could be assumed that the outer ward, and associated structures, was no longer in use in the 16th century, and that the area was part of an orchard or garden.

There was a notable lack of rubble in and around the curtain walls and towers (with the exception of the interior

of the northeast tower), which suggests deliberate robbing or clearance of the stonework. While this cannot yet be dated, it is possible that the stone was robbed to create a new, inner ward, or for the construction of the hornwork in the 16th century.

4.3 PERIOD 3 - POST-MEDIEVAL

Historical records have provided a clear date for the demolition of the castle, with the bombardment of the site from the sea in 1715. The decline of the castle was not, however, easy to detect or date archaeologically, and, as noted, there was relatively little rubble encountered.

The lack of post-medieval finds could be used to argue that those areas which have been evaluated were not occupied after the 15th century, other than possibly the north tower, which was evidently standing when Timothy Pont described the site in the late 16th century.

4.4 PERIOD 4 - MODERN

4.4.1 19th-century activity

The castle is believed to have been abandoned after 1715, and is little discussed until the site was purchased by John Macrae-Gilstrap in the early 20th century. The presence of 19th-century ceramic and 18th to 19th-century clay pipe was therefore unexpected. Although encountered in small quantities, it would suggest that the island was frequented during this time. Daniell's 1818 depiction of the island paints a picture of leisurely activity on the loch, and it may be that the island was visited as a picturesque ruin at this time. Historic photographs hint at the possibility that the island was under crop during the late 19th to early 20th century.

4.4.2 20th-century reconstruction

The evidence for the 20th-century activity encountered during the evaluation was confined to the large midden of mortar (Intervention 5), the possible ramp cut through Intervention 6, and the wall-chasing trenches encountered in Interventions 4, 5 and 7.

Midden

The midden, representing mortar presumably removed from rubble before reuse, contained very little of antiquity, and was well-defined stratigraphically. This feature is not visible on historic photographs prior to reconstruction, but can be seen to have developed after the onset of reconstruction (Plate 32 and 33).

Plate 32 Pre-1908 view of the castle (GWW E1606)

The linear cut which truncated the possible northeast tower was difficult to interpret, although its profile was highly suggestive of a stairway or ramp excavated to

provide access to the shore. Historic photographs and illustrations depict Farquhar's hut on the foreshore close to this location, and this may have formed part of remodelling during his occupancy (see Plate 33).

Plate 33 Eilean Donan during reconstruction, 1929

Wall-chasing

The wall-chasing trenches demonstrate a concerted effort on someone's behalf to trace the route of the curtain wall and towers around the island. The dating of this activity is difficult to pinpoint. While modern material was produced from the steep-sided cut in Intervention 4, there was virtually no intrusive (post-medieval or later) material within the wall-chasing trenches identified in Intervention 5 and 7. In the former, particularly, metal-work and a medieval coin were indicative that the trench had been backfilled quickly with the material through which it had been excavated. The trench in Intervention 4, however, had been left open to refill gradually (and never completely), which seems likely to have resulted in finds of mixed date.

5.0 ASSESSMENT AND POTENTIAL

5.1 SPECIFIC OBJECTIVES

The programme of evaluation was designed to achieve specific objectives, and the following results were achieved:

- *to define the original extent and plan, and present condition, of the north tower;*

The original extent of the southern wall of the tower was exposed, and showed that the topographic survey had accurately mapped the maximum extent of the structure. The removal of vegetation demonstrated the unstable nature of the tower; all but the lower courses of the elevations had been removed, leaving an unstable core, and it is unlikely that the wall would survive, without consolidation, should the vegetation be totally removed.

- *to define the extent, survival and character of western curtain wall, and its relationship to the north tower;*

The dimensions and extent of the western curtain wall were defined within Intervention 4, and the wall was found to abut the north tower. Within the evaluation trench, much of the eastern part of the wall had been removed at an unknown date.

- *to establish the former ground level, and condition and character of archaeological deposits in the outer ward;*

Within Interventions 4 and 5, buried surfaces were identified in the form of the mortar floor, which was encountered at 5.11m AOD (up to 1.3m below current ground level), and the gravel surface (over occupation deposits in Intervention 5), which was encountered at 5.24m AOD (*c*.0.40m below current ground level).

Although currently disturbed by tree roots, and truncated by the wall-chasing activity, the condition and integrity of the medieval occupation and metal-working deposits was good. The artefactual assemblages have demonstrated the potential of the site to produce zooarchaeological assemblages, small finds, ceramic, and *in situ* evidence for metal-working, specifically secondary iron-smithing.

- *to define the extent, survival and character of the north curtain wall;*

The northern curtain wall was exposed and its dimensions ascertained; the wall was found to survive to only *c*.0.45m in height, and parts of the southern elevation had been removed by a possible tree throw.

The precise layout of the wall requires further elucidation and it is unclear whether there are two phases of construction, an intramural feature, or simply collapse. Further investigation to the immediate north (beneath the midden) would clarify the situation, ascertain the angle of the wall, and identify whether or not there was a tower in this location.

- *to assess the character and date of the northeast tower, in order to determine whether this is a medieval feature or the remains of a 20th-century hut;*

The evaluation indicated that the remains of the northeast tower were likely to be medieval in origin, but that they had been disturbed during the 20th-century reconstruction.

- *to ascertain whether or not there was a southwestern tower;*

No southwestern tower was identified during the archaeological evaluation, although the investigation of the southern curtain wall has shed some light on the layout of this area. The dimensions of the wall (5m thick) suggest that the towers may have been integral to the curtain wall and may not, therefore, be identifiable in plan. Such hypotheses must remain tentative.

- *to assess whether the current vegetation and tides at the site are having a detrimental effect on the extant archaeological remains*.

The evaluation found that the effects of vegetation were variable across the site. In the context of the north tower, the current vegetation appears to be holding the structure in place, and removal of all plant matter would severely impact the integrity of the structure. However, the larger trees and shrubs that may develop, including wild rose and elder, would cause considerable damage if allowed to take hold.

Elsewhere, the mature trees were found to have a detrimental effect on the archaeological deposits and structures. Within Intervention 5, an area of the curtain wall had been destroyed by a feature interpreted as a

tree throw, and the dense root systems of the bracken are affecting the stratified deposits in all interventions. The Archaeological Assessment of the site identified damage to the southern curtain wall by mature trees, which will continue to destroy any upstanding masonry if allowed to remain. The remains of the northeast tower have also been severely impacted by the presence of a mature tree.

None of the evaluation trenches encountered damage by tide directly.

5.2 GENERAL ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL

Although affected by later wall-chasing and vegetation, the evaluation demonstrated a much higher potential for evidence of medieval activity than had hitherto been anticipated. Where they had not been removed, the medieval (13th to 15th-century) deposits were well-stratified, and represented dumping of occupation waste and *in situ* metal-working activity, producing significant zooarchaeological and metal-working assemblages, in addition to a range of small finds (coin, token, brooch, strap end and structural ironwork) that will add to knowledge of medieval occupation at the site.

The presence of buildings within the outer ward is strongly suggested by the presence of floor layers and structural ironwork. The extent of the buildings was not defined within the evaluation trenches, but larger scale investigations would allow their position and layout to be explored, and a much more detailed picture of the castle ward to be reconstructed. The presence of identifiable metal-working horizons, with at least one *in situ* hearth, indicates the potential for much greater understanding use of space within this area. The potential for dating evidence within the associated deposits should allow the sequence of use and disuse within the outer ward to be better understood.

5.3 GENERAL ASSESSMENT OF CONDITION

The condition of remains across the island was variable. While medieval structures and deposits lie close to the surface on peripheral areas of the island, it is likely that further remains survive at greater depth beneath landscaping associated with the reconstruction of the castle. It was clear, however, that the dense vegetation covering some of the remains, including mature trees, is having a detrimental effect on some of the structural remains and associated deposits. Fortunately, episodes of ‘wall-chasing’ are no longer an issue at the site.

Survival of the structural remains was varied within the areas of evaluation. To the north, the curtain walls appeared to have been cleared to their lowest courses; in the case of the western curtain wall the masonry had been badly truncated. To the south, however, the curtain wall survived to over 1.30m in height, and was seen to be a stable condition.

6.0 ARCHIVE AND RECOMMENDATIONS

The finds from the archaeological evaluation are currently in the care of FAS; permission for their removal from Scotland for temporary study has been granted by the Queen’s and Lord Treasurer’s Remembrancer. On

completion of the excavations at the castle, the finds will be formally declared to the Treasure Trove Advisory Panel, to be allocated to a museum by the Queen's and Lord Treasurer's Remembrancer.

An assemblage of 23 sherds of ceramic was submitted for assessment to Derek Hall (SUAT). No further work has been recommended; the ceramic is to be retained. One box of animal bone was submitted for assessment to Catherine Smith (SUAT). Further recommendations for analysis are included in the report, and the animal bone is currently retained by FAS.

The metal-work from the site was submitted for x-ray and assessment, and two coins and three copper alloy objects (brooch, strap-end and ring fragments) were cleaned and stabilised by Karen Barker (Antiquities Conservation). The copper-alloy brooch and strap-end have been recommended for illustration. The coins were sent to Nick Holmes, NMS, for identification and inclusion in the Scottish coins finds record. The disposal of modern ironwork should be considered, but all remaining material is to be kept.

An assessment was made of the assemblage of metal-working debris (amounting to three large boxes). The crucible from C1028 has been recommended for illustration, and the assemblage is to be retained. Should further work be undertaken, a ferrous specialist should be consulted.

References

Primary sources

Petit, L. 1714. 'Plan of the Castle of Island Dounan'

Cartographic sources

Pont, T. 1580s-1590s. Maps of Scotland

Secondary sources

Anon. 1959. *Eilean Donan castle, nr. Dornie, Wester Ross*, J. Arthur Dixon Ltd (Inverness)

Ayton, R. and Daniell, W. 1978. *A voyage round Great Britain undertaken between the years 1813 and 1823 and commencing from Land's End, Cornwall, with a series of views illustrative of the character and features of the coast, drawn and engraved by William Daniell RA*, Tate Gallery (London)

Carver, M.O.H. 1999. 'Field Archaeology', in G. Barker (ed.) *Companion Encyclopaedia of Archaeology* (London): 128-181

Close-Brooks, J. 1995. *Exploring Scotland's Heritage: The Highlands*, HMSO (London)

FAS. 2006. 'Eilean Donan Castle: Archaeological Assessment and Research Agenda' (unpublished report)

FAS. 2008. 'Eilean Donan Castle: Archaeological survey' (unpublished report)

Gifford, J. 1992. *Highland and islands: The buildings of Scotland*, Penguin books, in association with the Buildings of Scotland Trust (London)

MacDonald, D. And Polson, A. 1931. *The book of Ross, Sutherland and Caithness*, George Souter (Dingwall)

MacGibbon, D. and Ross, T. 1889. *The castellated and domestic architecture of Scotland from the twelfth century to the 18th century*, Volume 3, David Douglas (Edinburgh)

Miket, R. and Roberts, D.L. 1990 (repr 2007). *The mediaeval castles of Skye and Lochalsh*, Maclean Press (Portree)

OPS: *Origines Parochiales Scotiae: The antiquities ecclesiastical and territorial of the parishes of Scotland*, Volume 2, Part 2 (Edinburgh)

Scott, A.B. 1905-6. 'S. Donnan the great and his muinntir', *Trans. Scot. Ecc. Soc*, Volume 3: 256-267

Wallace, T. 1912-1918. 'Archaeological notes', *Trans. Inv. Sci. Soc. Fld. Club*, Volume 8

Woodward, A. 1994. 'Eilean Donan castle, Ross-shire' *Country Life*, January 13th, Volume 188(2): 50-53

APPENDIX A PROJECT DESIGN
Field Archaeology Specialists

1.0 SUMMARY

This Project Design concerns a proposed archaeological evaluation at Eilean Donan Castle, Ross-shire (NGR NG 8812 2583). This investigation aims to provide a more detailed understanding of the layout, character and condition of archaeological and structural remains at Eilean Donan, to inform the preparation of a forthcoming Conservation and Research Management Plan.

2.0 INTRODUCTION

2.1 LOCATION AND LAND USE

The castle of Eilean Donan (NGR: NG 8812 2583) lies at the confluence of three lochs on the western seaboard of Scotland, situated on a small island, now connected to the mainland by a bridge. Although the site of a medieval fortification, the current appearance of Eilean Donan is primarily the result of an early 20th-century campaign of reparation and restoration, undertaken by Lieutenant-Colonel John Macrae Gilstrap. The picturesque nature of the monument and its surroundings have made the site a major tourist destination, attracting thousands of visitors per year.

Eilean Donan Castle is situated within a **Scheduled Ancient Monument** (SAM No. 7575). The scheduled area includes the entire island, but excludes the castle itself, the terrace between the southwestern wall of the castle and sea, and the above-ground structures of the MacRae War Memorial, the slipway and various floodlights.

Eilean Donan Castle is a **Listed Building** (Category A; LB No. 7209), described as 'a free interpretation of the former castle'. The fact that this building was excluded from the SAM means that alterations to the castle fall under Listed Building legislation (Planning (Listed Buildings and Conservation Areas)(Scotland) Act 1997), rather than Scheduled Ancient Monument legislation.

2.2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Prehistory
It is frequently stated that Eilean Donan Castle was constructed on the site of a vitrified fort (Gifford 1992, 533*n*). Prior to the reconstruction works, Wallace observed that:

> 'on the landward side of the Island are traces of a vitrified wall of considerable dimensions, indicating probably that the island had been the site of a prehistoric fort' (Wallace 1912-1918, 109)

The walling referred to, however, is of doubtful antiquity, and a recent magnetometer survey at the site revealed no evidence for a substantial vitrified rampart.

Early medieval
Eilean Donan translates as 'Island of Donnan', and has been readily associated with the early medieval saint, Donnan, or Donan, of Eigg (Miket and Roberts 1990, 74, 80). Donan is believed to have dwelt in the late 6th to early 7th century, and has close associations with western Scotland; later documents record his martyrdom, with 52 of his congregation, at Eigg in AD 617 (Scott 1906). There is, however, no evidence to date for early medieval activity on the island.

Medieval

The origins and development of the castle are not currently clear. Historical documents recording the origins of the castle are not extant, and several hypotheses exist relating to the date of the construction, and the individuals responsible for the building and its governance. Likewise, the physical development of the castle is not well understood.

The castle is generally believed to have been constructed in the 12th or 13th century (Anon 1959). By the later 13th century, the castle is said to have been in the hands of Kenneth Mackenzie, who may have been a nephew of William third Earl of Ross, whose family were superiors of Kintail during the 13th to 14th centuries (Miket and Roberts 1990, 76). Few sources are available for the earliest form of the castle. No pictorial sources survive for the site prior to the early 18th century; the earliest plan and elevation, by Lewis Petit, date to 1714, immediately prior to the destruction of the castle. Petit's plan came to light during the earlier part of the 20th century, and has proved invaluable in the phasing and interpretation of the surviving medieval and post-medieval remains

Available cartographic sources and early descriptions tend to indicate only that a castle was present on the site. Slightly more informative is the late 16th century map and description by Timothy Pont;

> 'The castell of Ylen Donen is composed of a strong and fair dungeon upon a rock, with another tower compasd with a fair barmkin wall, with orchards and trees, al within ane yland of the lenth of twa pair of butts almost round. It is sayd of old that castel consisted of seven tours.' (MacFarlane's Geog. Collect.; OPS 1855, 395; Gifford 1992, 532-3)

From these later sources, and from the surviving medieval remains, scholars have attempted to ascertain the original plan, and subsequent development, of the castle. MacGibbon and Ross, in one of the earliest scholarly studies of castles of Scotland, provide a plan of Eilean Donan, and a description of major features (MacGibbon and Ross 1889, 82-3). This differs slightly from more recent plans, which have been helped by the emergence of the Petit's survey (Petit 1714), but provides a valuable pre-reconstruction account.

More recently, the castle has been phased by Miket and Roberts (1990, 82-92), who divide the development of the fortifications into four main phases (including the reconstruction).

Post-medieval

The castle was occupied by Government troops during the rising of 1715, but, on the eve of Sherrifmuir, was seized by Kintail men. Stewart supporters occupied the castle, and a local account records them dancing on the roofs of the castle, before heading out into battle, where large number of soldiers were killed (Miket and Roberts 1990, 80). In 1719, an attempt was made to recoup these losses, in a Jacobite uprising that involved the landing of 300 Spanish soldiers on the west coast, to unite with Highland forces and march to Inverness (Miket and Roberts 1990, 80). The Spanish occupied part of Eilean Donan. The Government had, however, received intelligence of this plan. Three government ships were situated on the west coast; two of which, the Worcester and the Enterprise, sailed up Loch Alsh to the castle, which was soon 'reduced to ruins' (Miket and Roberts 1990, 80; Close-Brooks 1995, 98). Captain Herdman of the 'Enterprise' was sent ashore to set fire to the powder magazine, which exploded, taking much of the castle with it, and forcing the Spaniards to move inland (Miket and Roberts 1990, 80); forced to make a stand, they were beaten at the pass of Glenshiel.

Modern reconstruction

Following the destruction of the castle in 1719, the ruins lay largely undisturbed, until John Macrae-Gilstrap (1861-1937), one of the claimants for the Chiefship of the Clan Macrae, purchased the island along with land at nearby Conchra (MacDonald and Polson 1931, 72). The site was purchased in 1912 from Sir Keith Fraser of Inverinate although the transaction was not completed until 1913 (Woodward 1994, 50); a clan gathering was held on the site in the same year.

The architect for the reconstruction of Eilean Donan was George Mackie Watson (1860-1948), and a local clansman, Farquhar Macrae, was appointed carpenter-in-chief (Gifford 1992, 532). The bridge to the mainland was built in 1932, and the castle officially opened on July 22nd. After the opening, work continued, with the addition of the complete southwest range, finishing of the well wall, stairway railings, roofing details and walls supporting the curved roadway to the main entrance. Shortly after completion, the southwest elevation of the keep was harled in an effort to reduce damp (Woodward 1994, 52).

John Macrae-Gilstrap died in 1937, and the castle then passed on to his son, Captain Duncan Macrae (1890-1966), whose enthusiasm for the project did not match that of his father, and whose family chose to occupy their other estates, rather than Eilean Donan (Woodward 1994, 53). Duncan's son, Mr John Macrae (25th Constable 1925-1988), opened the castle to the public in 1955, and in 1983 established the charitable trust to oversee the maintenance of the castle (Woodward 1994, 53).

2.1 BACKGROUND TO THE PROJECT

Although an iconic site, prior to 2008 there had been no formal archaeological assessment or investigation of Eilean Donan Castle. The focus of interpretation and visitor attention on the island is the reconstructed castle, and there is little understanding or appreciation of the surviving archaeological remains in the surrounding island.

An Archaeological Assessment and Research Agenda was prepared for the site in 2006 (FAS 2006). The assessment highlighted the lack of clear understanding of the site, and identified the need for a Conservation and Research Management Plan to inform the future decisions regarding the management, research and presentation of the site.

A programme of archaeological survey, including topographic and geophysical survey, was undertaken in March 2008 (FAS 2008). The topographic survey (Intervention 1) resulted in a detailed and accurate base map of the castle, island and adjacent shoreline, with an accurate plan of the reconstructed castle itself (Figure 2). The topographic survey also identified and mapped earthwork features and exposed walls relating to the medieval curtain wall and associated towers. Geophysical survey (Intervention 2) was carried out in three areas, and provided further information on the layout of structural remains, in addition to indicating the presence of below-ground features at the northern part of the site.

3.0 AIMS AND OBJECTIVES

The overarching aim of the evaluation is to define the extent, character and condition of buried archaeological remains on the island. The evaluation would aim to characterise any primary archaeological deposits and structural remains, providing access to selected parts of the fabric for structural assessment. The results of the evaluation would contribute to a more accurate plan of the castle, assess the condition of the buried archaeological remains, and identify threats to the long-term survival of these remains. This would in turn inform the preparation of the Conservation and Research Management Plan.

The key objectives of the evaluation, informed by the results of the recent survey, are as follows:

- to define the original extent and plan, and present condition, of the north tower;
- to define the extent, survival and character on western curtain wall, and its relationship to the north tower;
- to established the former ground level, and condition and character of archaeological deposits in the outer ward;
- to define the extent, survival and character of the north curtain wall;
- to assess the character and date of the northeast tower, in order to determine whether this is a medieval feature or remains of a 20th-century hut;
- to ascertain whether or not there was a southwestern tower;
- to assess whether the current vegetation and tides at the site are having a detrimental effect on the extant archaeological remains;

4.0 SCHEME OF WORKS

4.1 VEGETATION CLEARANCE AND RUBBLE REMOVAL

It is proposed that investigation of the north tower commence with the clearance of vegetation from within and around the upstanding walls. This operation has been allocated Intervention 3 (Figure 3).

4.1 EVALUATION

The vegetation clearance around the north tower (Intervention 3) would be accompanied by rubble removal within the walls. Four proposed evaluation trenches have been defined following the geophysical survey of the island (Intervention 4 to 7) marked on the accompanying plan (see Figure 3).

4.1.1 Intervention 3

Intervention 3 would also involve the removal of rubble from half of the interior of the tower. Rubble deposits would be removed until the latest archaeological horizon be encountered, and the extant walls recorded.

4.1.1 Intervention 4

Intervention 4 would measure 2.0m x 11.0m, and be situated immediately to the south of the north tower. This trench would provide access to the exterior elevation of the tower, and reveal further information pertaining to its relationship with the north-south curtain wall. Intervention 4 would also assess the presence and condition of archaeological deposits within the outer ward.

4.1.2 Intervention 5

Intervention 5 would measure 2.0m x 6.0m and be positioned in order to investigation the northernmost stretch of curtain wall. The objectives for this intervention would be to define the extent, character and exact layout of the defences in this area, and the relationship between the defences and the 20th-century midden. Sampling of the 'midden' would hopefully reveal more about the nature of material that was removed and redeposited during the reconstruction works.

4.1.3 Intervention 6

Intervention 6 would measure 2.0m x 6.0m and be situated in the location of the potential northeastern tower, with the purpose of clarifying whether the extant remains relate to a medieval tower or a 20th-century hut, and what their relationship with the surviving curtain wall. The intervention would also establish the former ground level in this area, and characterise any occupation deposits.

4.1.4 Intervention 7

Intervention 7 would measure 2.0m x 6.0m, and be situated at the southeastern angle of the castle defences. This evaluation trench would aim to determine whether there was a tower in this location, and if so, to define its form, extent and survival. The intervention would establish the former ground level in this area, and characterise any occupation deposits.

4.2 PUBLIC ARCHAEOLOGY

It is hoped that the evaluation will take place between 22nd September 2008 and 17th October 2008. This will coincide with Highland Archaeology Fortnight 2008, and regular tours of the evaluation trenches will be offered to visitors as part of this programme.

5.0 EVALUATION PROCEDURE

5.1 EXCAVATION STRATEGY

All excavation will be undertaken by hand. Interventions will be carefully de-turfed prior to excavation, and the turf retained for reinstatement.

Archaeological deposits will be removed in a sequential and scientific manner. The excavation will remove secondary rubble, and deposits which are clearly of 19th- or 20th-century origin, in order to expose any extant structural remains. Excavation will cease at the latest archaeological horizon; once this level has been attained, a sub-sample area will be excavated, to characterise the extent, date and character of archaeological deposits within each of the areas of evaluation. All structural features will be recorded *in situ* and no structures will be removed.

Appropriate treatment and storage methods will be employed on site to ensure that the finds, samples and records are maintained in the optimum conditions. Where deposits have clear environmental potential, an appropriate sampling strategy will be employed. Buried soils and sediment sequences will be recorded and where necessary sampled. Primary deposits containing animal bone will be bulk sampled in order to maximise recovery. Where appropriate, samples will be taken for scientific dating.

Every reasonable effort will be made to preserve the archaeological integrity of the remains against unrecorded damage or loss during excavation. This will apply to working techniques and site security.

On completion of the excavation of the trenches, backfilling and re-turfing will be undertaken by hand.

5.2 RECORDING METHODOLOGY

The site grid which was previously established for the survey will be employed during the site investigation. All heights will be recorded in metres above Ordnance Datum (AOD).

A full written, drawn and photographic record will be made of all deposits encountered during the course of the investigations. Archaeological deposits, features and structures will be recorded using a standard system of context and other record forms (Carver 1999). A series of indexes, capable of interrogation, will be maintained for all site records along with a working stratigraphic matrix. The planning of features will be at scales of 1:10, 1:20 or 1:50; sections will be recorded at a scale of 1:10 or 1:50.

The photographic record will consist of 35mm colour and monochrome photography and digital colour photography. Monochrome photography will be undertaken using silver-based film to ensure archival stability. All record photographs will include an appropriate scale. A photographic index will be maintained.

Elevations and other structural elements exposed by excavation will be recorded using a combination of instrument survey (Reflectorless Total Station Theodolite) and computer rectified or rectified photography. Stone-by-stone drawings will be

created at a scale of 1:20, in order to achieve a dimensional accuracy of within 20mm. All diagnostic architectural fragments revealed by excavation will be photographed and planned *in situ*.

5.3 ENVIRONMENTAL STRATEGY

The principal aim of the Environmental Strategy will be to define the value, range, quality and potential of any archaeological environmental evidence present at the site. It is anticipated that the investigations will encounter dry archaeological deposits largely of secondary origin containing poor assemblages of biological material.

A systematic environmental sampling method will be employed. Deposits which are clearly of a mixed/secondary origin such as rubble or make-up layers, or deposits which display a high degree of residual/intrusive artefactual material will not be the subject of environmental sampling unless a specific question relating to function or social status can be addressed. Where deposits are thought to be of primary origin and have potential to contain biological remains, the following sampling regime will be undertaken:

Flotation samples will be collected from deposits which appear to contain small vertebrate and mollusc assemblages, charred plant remains, organic plant remains, cess and insect remains. Samples of 40 litres will be collected and processed using a water-recycling tank with rapid water-flow washover. A 1mm mesh will be used to recover the dense residue and a 300 micron mesh will be used to recover light fractions. 10 litres (*GBA*) will be retained for sub-sampling for paraffination for the recovery of insects remains, and other specialist analyses (*eg* parasites, pollen etc), where deemed appropriate.

5.4 POST-EXCAVATION

After completion of the site investigation all records will be ordered, quantified and checked for consistency. The drawn record will be digitised in an appropriate format that will permit the output of standard AutoCAD type DWG and DXF files.

The archival record will include all material relating to the site investigation including correspondence, written, drawn and computerized records.

All artefacts and ecofacts recovered will be packed and stored in the appropriate materials and conditions. Artefacts, ecofacts and samples will be processed, quantified and described in an appropriate manner. In addition the stratigraphic matrices and a site summary will be prepared.

5.5 REPORTING

The material archive and stratigraphic sequence will be assessed. A report will be prepared within 3 months of completion of the site investigation. The report will contain the following:

- A plan of the site showing the position of the trenches
- A portfolio of plans and sections and where appropriate, drawings of artefacts and a site matrix.
- A listing of all contexts, finds and samples.
- A description of the stratigraphic sequence encountered.
- An interpretation of any stratigraphic or structural sequence encountered.
- An assessment of the results of the investigation.
- Recommendations for further analysis

5.6 PUBLICATION AND DISSEMINATION

Paper and electronic copies of this report will be submitted to Historic Scotland, Highland HER and the RCAHMS.

An entry will be submitted to *Discovery and Excavation Scotland*, and submitted online via the OASIS website.

6.0 ARCHIVE

The material archive will be declared to the Treasure Trove Advisory Panel, and the paper archive will be deposited with the RCAHMS.

7.0 TIMETABLE

It is hoped that Scheduled Monument Consent can be granted so that this evaluation can proceed from 22nd September to 17th October, to coincide with Highland Archaeology Fortnight.

8.0 HEALTH & SAFETY

In order to comply with Management of Health and Safety at Work Regulations 1992 a full risk assessment of risks will be undertaken prior to the commencement of site work. Appropriate safety standards will be maintained during the archaeological site works.

9.0 MONITORING

Historic Scotland will be notified at least two weeks in advance of the start of site works. Facilities will be afforded to representatives of Historic Scotland to be directly involved in discussions on such matters as they arise during the course of the archaeological works.

10.0 CONCLUSION

The provisions outlined above will provide for a controlled and professional archaeological record to be made of all archaeological finds, deposits and structures that will be revealed in the course of the evaluation and excavation works. Historic Scotland may require that further conditions are adhered to as part of the SMC for the archaeological investigation.

20/07/08

APPENDIX B SCHEDULED MONUMENT CONSENT

HISTORIC SCOTLAND

Dr Nicola Toop
Project Manager
Field Archaeology Specialists Ltd
Unit A3, Parkside Centre
Terry Avenue
York
YO23 1JP

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Direct Line: 0131 668 8942
Direct Fax: 0131 668 8722
Switchboard: 0131 668 8600
Fiona.mackenzie2@scotland.gsi.gov.uk

Our ref: AMH/7575/1/1

27 August 2008

Dear Dr Toop

ANCIENT MONUMENTS AND ARCHAEOLOGICAL AREAS ACT 1979
APPLICATION FOR SCHEDULED MONUMENT CONSENT: EILEAN DONNAN CASTLE
FINAL CONSENT

I refer to your application for scheduled monument consent to conduct initial evaluations of the archaeological deposits associated with the outer ward of the castle at Eilean Donnan.

You indicated that a hearing is not requested before the Scottish Ministers determine whether or not to grant scheduled monument consent.

The Scottish Ministers are satisfied that the works summarised above can be carried out without detriment to the historic, archaeological or architectural integrity of the monument. **Accordingly, they hereby grant scheduled monument consent** for the works outlined in the application dated 28 July.

Consent is granted subject to the following conditions:

1. There shall be no deviation from the works as described in the application for scheduled monument consent (SMC) dated 28 July without prior written approval from Historic Scotland.

Reason: to ensure that the works are carried out to an agreed standard.

2. Not less than 2 weeks before any of the works to which this consent relates are begun on site, Historic Scotland's Inspector of Ancient Monuments, Mr John Malcolm, shall be informed in writing of the timetable for the proposed works.

www.historic-scotland.gov.uk

INVESTOR IN PEOPLE

HISTORIC SCOTLAND

Reason: to enable a representative of Historic Scotland to have the opportunity to inspect the work for which consent is granted.

3. If unexpectedly rich archaeological or palaeoenvironmental deposits not anticipated in the application are located, the analysis of which is likely to over-extend the resources of the project, they must not be disturbed without further consultation and the prior written agreement of Historic Scotland.

Reason: to ensure that any unexpected discoveries that are made during excavation are recorded adequately and can be dealt with appropriately in any post-excavation

4. The applicant shall submit a data structure report to Historic Scotland, whether or not anything of archaeological interest was found, within 3 months of the completion of works on site.

Reason: to enable Historic Scotland to monitor the work to ensure that it is adequate.

5. A single copy of the report should be sent to each of the following organisations: the National Monuments Record of Scotland and the Sites and Monuments Record of Highland Council Archaeology Unit, The Highland Council, Planning and Development Service, Glenurquhart Road, Inverness, IV3 5NX.

Reason: to make widely available the immediate results of the work.

6. A summary account shall be sent to the Council for Scottish Archaeology for publication in Discovery and Excavation in Scotland for every year in which the work takes place.

Reason: to make widely available the immediate results of the work.

7. The site archive, including copies of the Data Structure Report, amendments, draft reports, specialist reports, illustrations, photographs, transparencies, notebooks and copies of data stored in electronic media, organised according to the current guidelines of the National Monuments Record of Scotland (NMRS), shall be deposited in NMRS within 1 year of the submission of the report if no further works take place, or failing this, 5 years after all excavation has taken place.

Reason: to secure the long-term survival of a full archive so that future researchers may have access to all records of the project.

Note: Should any human remains be found during these archaeological works, Historic Scotland recommends that they should be treated in accordance with the procedures outlined in *Historic Scotland 1997, The Treatment of Human*

www.historic-scotland.gov.uk

HISTORIC SCOTLAND

Remains in Archaeology, Historic Scotland Operational Policy Paper 5. This document explains the legal situation with regard to the removal of human remains and recommends procedures which will ensure that any removal is conducted in a legal manner.

Reason: to ensure that the legal requirements regarding human remains are observed.

Note: The applicant shall ensure that the listing of finds is made available to the appropriate authority (Treasure Trove Secretariat, c/o National Museums of Scotland, Chambers Street, Edinburgh) to consider Treasure Trove action.

Reason: to ensure that the legal requirements regarding finds are observed.

Yours sincerely

FIONA MACKENZIE

Cc: Dorothy Maxwell, Local Authority Archaeologist
Anne Coombs, Monument Warden
John Malcolm, Area Inspector, Historic Scotland
Conchra Charitable Trust, owner

INVESTOR IN PEOPLE

www.historic-scotland.gov.uk

APPENDIX C INDEX TO FIELD FILE

CODE		DESCRIPTION	RECORD	FORMAT
		Indices		
YO1		Index of notebooks	-	-
YO2		Index of contexts	2	A4
YO3		Index of features	1	A4
YO4		Index of structures	1	A4
YO5		Index of drawings	1	A4
YO6	.0	Index of photographs	8	A4
	.1	Index of film processing	1	A4
YO7	.0	Index of finds	-	A4
	.1	Index of finds by context	-	-
	.2	Index of finds by grid square	-	-
	.3	Sample Register	1	A4
	.4	Artefact Register	-	-
	.5	Finds Storage Register	-	-
YO8		Index of geophysical data files	-	-
YO9	.0	Index of survey stations	-	-
	.1	Index of co-ordinate files	-	-
	.2	Index of topographic files	-	-
YO10		Index of interventions	1	A4
Y1		**Notebooks**		
		Contexts		
Y2	.0	Context Record	47	A4
	.1	Skeleton Record	-	-
	.2	Coffin Record	-	-
	.3	Masonry Record	-	-
	.4	Timber Record	-	-
		Features		
Y3	.0	Feature Record	10	A4
	.1	Auger Record	-	-
		Structures		
Y4		Structure Record	1	A4
		Site drawing		
Y5	.0	Legend	-	-
	.1	Plans	5	A1/A4
	.2	Maps	-	-
	.3	Sections	10	A1/A4
		Photographs		
Y6	.0	Black and white negatives	86	35mm
	.1	Colour negatives	175	35mm
	.2	Colour slides	-	-
	.3	Colour enprints	175	6 x 4
	.4	Black and white prints	4	contacts
		Finds		
Y7	.0	Finds Location Record	-	-
	.1	Artefact Record	-	-
		Survey		
Y8	.0	Record of geophysical data files	-	-
	.1	Record of .RAW data file	-	-
	.2	Record of .FLD data file	-	-
	.3	Surface Reconnaissance Record	-	-

APPENDIX D SUMMARY OF CONTEXT RECORDS

Context	Int	Feature	Identity	Description	Munsell
1000	ALL	-	topsoil and vegetation	allocated to the topsoil and vegetation cleared from all interventions prior to evaluation	10YR3/1
1001	4	28	backfill	allocated to all finds recovered from F28, but later recorded from west- and north-facing sections as distinct deposits C1041 to C1045	various
1002	5	4	make-up	slag-rich deposit of coarse, very dark greyish brown sandy silt, identified immediately beneath the modern topsoil	10YR3/2
1003	6	-	spread	a spread of angular cobbles, within a matrix of very dark greyish-brown silty clay, apparently representing a mix of clay bonding and topsoil	10YR3/2
1004	6	24	backfill	allocated to a deposit of cobbles within a matrix of dark brown sandy silt, which formed the earliest backfill of linear cut F24	7.5YR3/3
1005	5	4	make-up	allocated to a substantial deposit of mortar within a loose sandy silt matrix containing rare fragments of animal bone, large fragments of mortar and a piece of vitrified rock	2.5Y5/4
1006	6	24	backfill	allocated to a very dark grey silty clay matrix containing gravel and pebble inclusions, and measuring 0.30m in depth	10YR3/1
1007	5	-	buried soil	old topsoil exposed following removal of midden F4, consisting of a very dark grey sandy silt with occasional gravel inclusions	10YR3/1
1008	5	26	backfill	allocated to the rubbly backfill of F26, consisting of a large proportion of cobbles and pebbles (some mortar-bonded) within a dark brown sandy silt matrix. Several iron and copper alloy finds recovered, including a coin dating to 1861	10YR3/3
1009	5	25	make-up	clay-bonded core and mortar-bonded elevations of wall F25, identified across much of Int 5	2.5Y5/2
1010	6	-	layer	coarse brown silty sand matrix, containing frequent gravel and pebble inclusions, and rare flecks of shell (snail) and charcoal	7.5YR4/3
1011	5	-	spread	allocated to rubble spread excavated from over and adjacent to wall F25, consisting of rounded and angular cobbles within a heavily rooted matrix of very dark greyish brown clayey silt with occasional displaced clods of clay bonding. A small copper alloy object (strap end?) was recovered	10YR3/2
1012	5	-	make-up	a clean, level deposit of light olive brown sandy silt, with cream coloured gravel and pebbles, interpreted as make-up of a surface	10YR5/4
1013	6	-	dump	extensive deposit of large cobbles, abutting wall F7 in the southeastern half of Int 6. Small amount of dark reddish-brown sand noted closest to the wall, but generally characterised by voids between the stones	5YR3/2
1014	6	7	make-up	stone and clay make-up of wall F7, comprising a light greyish brown clay which bonded large rounded boulders; the east elevation consisted of large, irregularly laid angular blocks	10YR5/2
1015	6	-	layer	very dark brown silty layer revealed to the east of wall F7, containing a large quantity of angular cobbles within a gravelly matrix	10YR2/2
1016	6	-	layer	black clayey silt layer, containing a high proportion of charcoal, and frequent pebble inclusions, identified following removal of overlying C1015	10YR2/1

Context	Int	Feature	Identity	Description	Munsell
1017	6	-	layer	reddish-brown sandy silt deposit, containing angular gravel and pebbles, much of which consisted of the gold-coloured micaceous bedrock	10YR4/3
1018	6	-	layer	black sandy deposit, with dark grey sandy lenses, and frequent gravel and pebble inclusions.	7.5YR2.5/1
1019	7	8	make-up	allocated to the stone and clay make-up of wall F8, consisting of well-fitted elevations and an irregular rubble core	10YR5/2
1020	7	-	layer	deposit of rubble within a stiff, reddish-brown clay matrix, situated to the south of wall F8 and representing its collapse	5YR3/3
1021	7	27	backfill	clean, dark greyish-brown clayey silt backfill of trench F27, along the southern edge of F26. C1021 contained a number of large pebbles, no finds were recovered	10YR3/2
1022	3	-	layer	rubble deposit excavated within tower S1, consisting of large angular and rounded cobbles within a loose silty sand matrix	10YR3/2
1023	3 4	1	make-up	allocated to the stone, clay and mortar make-up of wall F1, exposed in Int 3 and 4. Roughly shaped and rounded boulders constructed the elevation, much of which had been robbed/collapsed, with a rubble core representing the main surviving element of the fabric	-
1024	3	-	mortar	allocated to deposits of very pale mortar situated against the internal elevations of Intervention 3 and representing mortar which had washed from the walls	10YR7/3
1025	ALL	-	bedrock	allocated to the geologically variable bedrock of the island	-
1026	4	2	make-up	allocated to the rubble make-up of wall F2, with some more regular blocks surviving as the western elevation. Heavily disturbed by roots, the likely clay bonding was no longer evident, but the stones were set within a dark brown silty clay	10YR3/3
1027	5	-	spread	charcoal-rich deposit of silty clay, with yellowish-red silty clay fragments, burnt bone and a small, corroded copper alloy fragment	5YR4/6
1028	5	-	dump	extensive deposit of very dark brown clayey silt, up to 0.20m deep, and containing a large quantity of animal bone, and frequent iron objects (mainly nails). Lenses of shells were noted	10YR3/1
1029	4	-	recovery context	allocated to the interface between the upcast deposits of F28, and the *in situ* metalworking layers below	-
1030	4	-	layer	very dark greyish-brown clayey silt with frequent charcoal and slag inclusions, associated with hearth F29 and representing a metalworking horizon. Lenses of charcoal recorded in sondage section	10YR3/2
1031	4	-	layer	very dark grey clayey silt containing charcoal flecks, a high proportion of animal bone, and interpreted as dumping of domestic waste	10YR3/1
1032	5	-	layer	revealed following excavation of overlying C1028 as a deposit of large cobbles, within a clean, very dark greyish-brown clayey silt matrix, up to 0.60m in depth. Heavily disturbed by roots to the east	10YR3/2
1033	4	-	make-up	white mortar floor identified beneath midden deposit C1031, consisting of a fine-grained mortar with occasional gravel inclusions	5Y8/1
1034	4	-	layer	very dark greyish-brown deposit of clayey silt recorded in the west-facing section of Int 4, overlying dark brown deposit over bedrock	10YR3/2

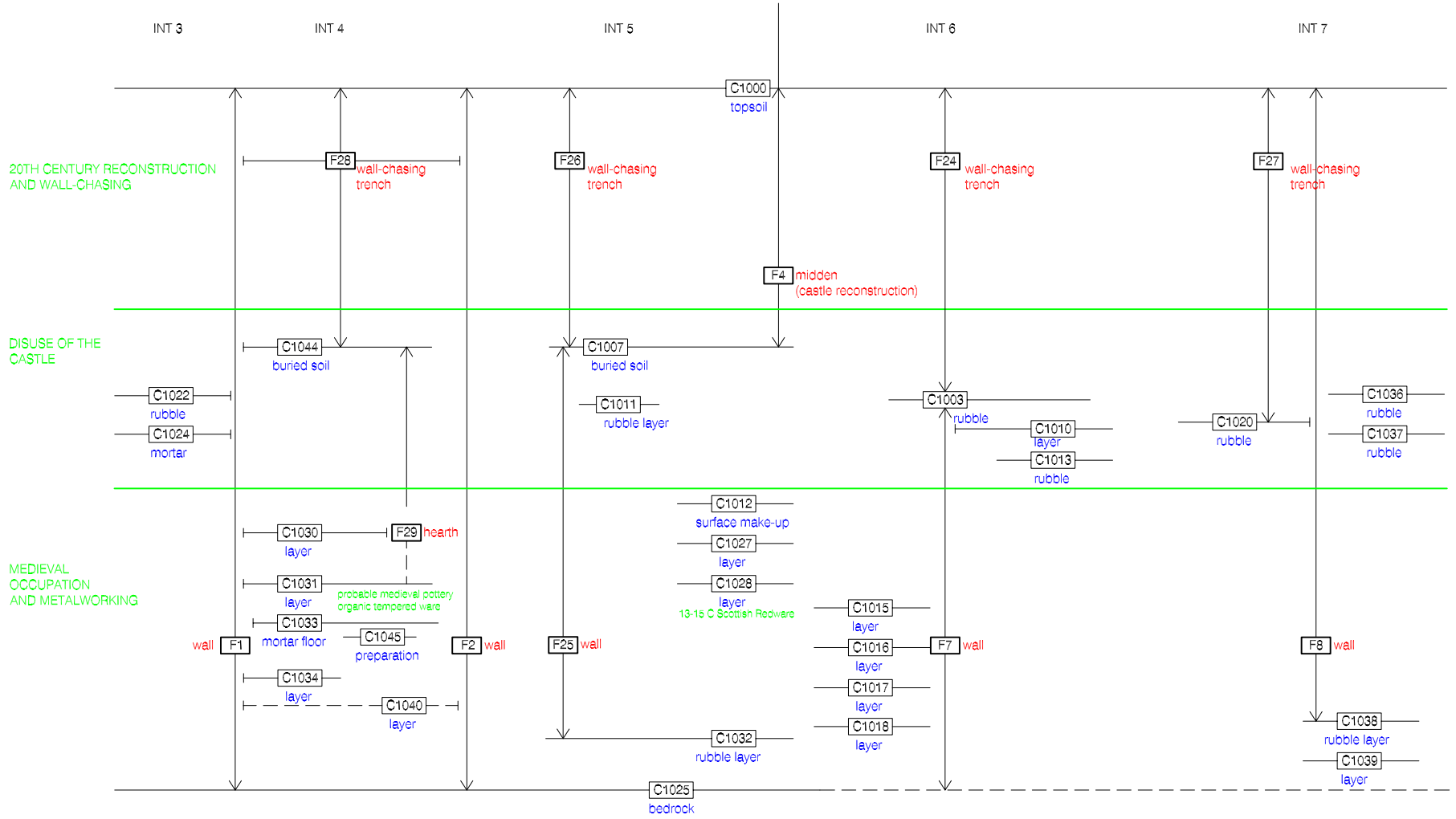
Context	Int	Feature	Identity	Description	Munsell
1035	4	29	fill	allocated to the latest visible fill of hearth F29, consisting of a strong brown clayey silt, flecked with charcoal and containing fragment of slag	10YR5/6
1036	7	-	layer	identified in the south-facing section of Int 7 as a mortar-flecked deposit of sandy silt, up to 0.20m deep	10YR3/2
1037	7	-	layer	very dark greyish-brown clayey silt matrix, with large pebbles and cobbles, measuring up to 0.35m in depth	10YR3/2
1038	7	-	layer	very dark greyish-brown clayey silt matrix, with large pebbles and cobbles	10YR3/2
1039	7	-	layer	gravelly deposit of dark brown clay identified in the northwestern part of Int 7	10YR3/3
1040	4	-	layer	very dark brown clayey silt, containing a large proportion of rubble, situated to the west of wall F2, and not further excavated	10YR3/2
1041	4	28	backfill	latest backfill of F28, consisting of a very dark grey clayey silt containing modern (plastic) rubbish, and a high proportion of gravel	10YR3/1
1042	4	28	backfill	allocated to a clearly defined lens of yellowish-brown sand identified beneath C1042, and forming deeper backfill within wall-chasing trench. Excavated as part of C1001	5YR5/3
1043	4	28	backfill	excavated as part of C1001, but recorded in section as part of a separate backfill, distinguished from overlying C1041 by lens C1042. C1043 consisted of a very dark grey clayey silt with gravel and slag inclusions, forming upcast/backfill of F28	10YR3/1
1044	4	-	buried soil	very dark greyish-brown deposit, 0.20m in depth, defined as the buried soil from which F28 had been cut	10YR3/2
1045	4	-	layer	grey clayey layer, lying directly beneath mortar surface C1033. Not excavated	2.5Y5/1
1046	4	-	deposit	rubbly deposit partially excavated in the base of F28	2.5Y5/1

APPENDIX E SUMMARY OF FEATURE RECORDS

*feature numbers allocated during the topographic survey

Feature	Int	Contexts	Identity	Description	Profile
1*	1 3 4	1023	wall	allocated to the stone and mortar walls of tower S1, remains of which are visible as an earthwork. Removal of vegetation, and excavation of Int 3 to the north and Int 4 to the south revealed coursed masonry elevations, with a rubble core	irregular
2*	1 4	1026	wall	allocated to the north-south wall running from tower S1 towards the main keep. The make-up, which may have been clay-bonded, had been badly truncated to the east, with only some elements of the western elevation surviving, F2 largely consisted of irregular rubble core	irregular
4*	5	1002 1005	midden	allocated to a midden defined during the topographic survey, and investigated during the evaluation (Int 5). F4 was found to comprise an extensive deposit of mortar, overlying the buried ground surface. A slag-rich deposit formed the upper interface with modern topsoil	dump
7*	1 6	1014	wall	F7 was identified during the topographic survey as a visible section of masonry elevation, and was further investigation in Int 6. The roughly constructed eastern elevation appeared to represent repair or rebuilt, while the western elevation had not survived at all. The rubble core was clay-bonded and abutted by later deposits of rubble	irregular
8*	1 7	1019	wall	F8 was initially identified during the topographic survey, and subsequently investigated in Intervention 7. The removal of adjacent rubble deposits revealed a well-constructed stone wall, with well-fitted elevations and a clay-bonded rubble core. The southern elevation survived to 1.3m while the gradient of the island meant the northern elevation was only 0.40m high	square
24	6	1004 1006	cut	F24 was identified as a linear cut, which had truncated wall F7. Excavation revealed a steep-sided cut to a sloping base, which descended from west to east, possibly deliberately stepped. Possibly excavated to make way for Farquhar Macrae's hut	U-shaped
25	5	1009	wall	allocated to the stone, clay and mortar-built wall which covered most of Intervention 5. The wall consisted of a clay-bonded core, and regular elevations, which appeared to have been mortar bonded.	square
26	5	1008	trench	allocated to a steep-sided, U-shaped trench defined and excavated against the southwestern elevation of wall F25. F26 measured 0.90m wide and up to 0.60m deep	U-shaped
27	7	1021	trench	allocated to a steep-sided U-shaped trench defined and excavated against the southern elevation of wall F26, but not extending its full depth. Backfilled once with C1021	U-shaped
28	4	1001 1041 1042 1043 1044 1045	trench	allocated to an irregular trench which appears to have been excavated in order to define the course of the tower and adjacent curtain wall (F1 and F2). Variable backfill suggests that the trench was left open and gradually backfilled with collapsing upcast	irregular
29	4	1029	hearth	F29 was identified in plan following excavation of C1029, as a spread of orange clayey silt. Against the cut of F28, an alternating sequence of clayey silt and charcoal layers was visible, with possible stone structure leading to interpretation as a hearth	not seen

APPENDIX F STRATIGRAPHIC DIAGRAM



Stratigraphic diagram

Appendix F

Fii

APPENDIX G PHOTOGRAPHIC INDICES

Camera: NIKON FM2 **Film**: FUJI SUPERIA **Film No**: N8

Slide ☐ **Print** ✓ **Colour** ✓ **Mono** ☐ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
1	z	-	N	3	3	General shot before excavation		09/08	NJT
2	z	-	N	3	3	General shot before excavation		09/08	NJT
3	z	-	NNE	5 6	3	General shot before excavation		09/08	NJT
4	z	-	E	-	6	General shot - bridge and centre		09/08	NJT
5	z	-	E	-	6	General shot - centre and cottage		09/08	NJT
6	z	-	N	3	3	Tower before clearance		09/08	NJT
7	z	-	E	5	3	Intervention 5 area before clearance		09/08	NJT
8	z	-	E	6	3	Intervention 6 area before clearance		09/08	JGL
9	z	-	S	7	4	Intervention 7 area before clearance	underexposed	09/08	JGL
10	z	-	SE	7	4	Intervention 7 area before clearance		09/08	NJT
11	z	-	SW	-	-	General view of Loch Duich		09/08	NJT
12	z	-	SW	-	-	General view of Loch Duich		09/08	NJT
13	z	-	SW	-	4	General view of S of island		09/08	NJT
14	z	-	N	6	3	Intervention 6 area before clearance		09/08	NJT
15	z	-	W	-	1	View of main tower		09/08	NJT
17	z	-	E	3	3	Tower from the shore, pre-excavation		09/08	NJT
19	z	-	SE	3	3	Tower from the NW, pre-excavation		09/08	NJT
21	z	2m	W	4	3	Intervention 4, pre-excavation		09/08	NJT
22	z	2m	W	4	3	Intervention 4, pre-excavation		09/08	NJT
23	z	2m	N	4	3	Intervention 4, pre-excavation		09/08	NJT
24	z	2m	S	5	3	Intervention 5, pre-excavation		09/08	NJT
25	z	2m	S	5	3	Intervention 5, pre-excavation		09/08	NJT
26	z	-	NE	6	3	Richard, area of Int 6, pre-excavation		09/08	NJT
27	z	2m	N	5	3	Intervention 5, pre-excavation		09/08	NJT
28	z	2m	NE	6	3	Intervention 6, pre-excavation		09/08	NJT
29	z	2m	NE	6	3	Intervention 6, pre-excavation		09/08	NJT
30	z	2m	SW	6	3	Intervention 6, pre-excavation		09/08	NJT
31	z	2m	SW	6	3	Intervention 6, pre-excavation		09/08	NJT
32	z	1m	SE	6	3	F7 C1003 pre-excavation		09/08	NJT
33	z	1m	W	6	3	F7 C1003 pre-excavation		09/08	NJT
34	z	1m	W	6	3	C1004 pre-excavation		09/08	NJT
35	z	0.5m	SE	6	3	F24 C1004 C1006 NE facing section		09/08	NJT
36	z	1m	SE	6	3	F24 C1004 C1006 NE facing section		09/08	NJT
37	z	0.5m	SE	6	3	F24 C1004 C1006 NE facing section		09/08	NJT

Camera: NIKON FM2 **Film**: FUJI SUPERIA **Film No**: N9

Slide ☐ **Print** ✓ **Colour** ✓ **Mono** ☐ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
1	z	0.5m	W	6	3	F7 F24 East-facing section		09/08	NJT
2	z	2m	W	3	3	Intervention 3 pre-excavation		09/08	NJT
3	z	2m	N	3	3	Intervention 3 pre-excavation		09/08	NJT
4	z	1m	W	6	3	F24 post-excavation		09/08	NJT
5	z	1m	E	6	3	F24 post-excavation		09/08	NJT
6	z	1m	NW	5	3	F26 C1008 pre-excavation	photomarkers	09/08	NJT
7	z	1m	NW	5	3	F26 C1008 pre-excavation	photomarkers	09/08	NJT
8	z	-	S	7	4	Intervention 7 area pre-excavation		09/08	NJT
9	z	-	E	7	4	Intervention 7 area pre-excavation		09/08	NJT
10	z	-	W	7	4	Intervention 7 area pre-excavation		09/08	NJT
11	z	-	NW	7	4	Intervention 7 area pre-excavation		09/08	NJT
12	z	-	SE	7	4	Intervention 7 area pre-excavation		09/08	NJT
13	z	-	S	7	4	Intervention 7 area pre-excavation		09/08	NJT
14	z	1m	N	5	3	F25 C1009, F26 post-ex		09/08	NJT
15	z	1m	N	5	3	F25 C1009, F26 post-ex		09/08	NJT
16	z	1m	N	5	3	F25 C1009 elevation		09/08	NJT
17	z	1m	S	5	3	F25 C1009, F26 post-ex		09/08	NJT
18	z	1m	S	5	3	F25 C1009, F26 post-ex		09/08	NJT
19	z	1m	NE	5	3	F26 post-ex		09/08	NJT
21	z	0.5m	W	5	3	F26 C1008 east-facing section	out of focus	09/08	NJT
22	z	0.5m	W	5	3	F26 C1008 east-facing section		09/08	NJT
23	z	1m	N	5	3	Int 5 south-facing section		09/08	NJT
24	z	1m	W	5	3	Int 5 east-facing section		09/08	NJT
25	z	1m	W	5	3	F25 C1009		09/08	NJT
26	z	1m	N	3	3	Int 3 south-facing section		09/08	NJT
27	z	1m	N	3	3	Int 3 south-facing section		09/08	NJT
28	z	1m	S	3	3	Int 3 post-excavation		09/08	NJT
29	z	1m	S	3	3	Int 3 post-excavation		09/08	NJT
30	z	1m	S	3	3	Int 3 post-excavation		09/08	NJT
31	z	1m	S	3	3	F1 C1023 north-facing elevation		09/08	NJT
32	z	1m	S	3	3	F1 C1023 north-facing elevation		09/08	NJT
33	z	1m	W	3	3	F1 C1023 east-facing elevation		09/08	NJT
34	z	1m	E	3	3	F1 C1023 west-facing elevation		09/08	NJT
35	z	1m	E	3	3	F1 C1023 west-facing elevation		09/08	NJT
36	z	1m	E	3	3	F1 C1023 west-facing elevation		09/08	NJT
37	z	1m	W	4	3	F28 post-excavation		09/08	NJT

Camera: NIKON FM2 **Film**: FUJI SUPERIA **Film No**: N10

Slide ☐ **Print** ✓ **Colour** ✓ **Mono** ☐ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
2	z	1m	W	4	3	F28 post-excavation		10/08	NJT
3	z	1m	W	4	3	F28 post-excavation		10/08	NJT
4	z	1m	N	4	3	F28 post-excavation, F1 C1023		10/08	NJT
5	z	1m	N	4	3	F28 post-excavation, F1 C1023		10/08	NJT
6	z	1m	E	4	3	F28 post-excavation, F1 C1023		10/08	NJT
7	z	1m	E	4	3	F28 post-excavation, F1 C1023		10/08	NJT
8	z	1m	E	4	3	F28 post-excavation, F1 C1023		10/08	NJT
9	z	1m	E	4	3	F28 post-excavation, F1 C1023		10/08	NJT
10	z	1m	E	4	3	F2 C1026		10/08	NJT
11	z	1m	E	4	3	F2 C1026		10/08	NJT
12	z	1m	SE	4	3	F2 C1026		10/08	NJT
13	z	1m	SE	4	3	F2 C1026		10/08	NJT
14	z	1m	N	4	3	F1 C1023		10/08	NJT
15	z	1m	W	4	3	F28 post-excavation		10/08	NJT
16	z	1m	W	4	3	F28 post-excavation		10/08	NJT
17	z	1m	N	3 4	3	Int 3 and Int 4 from above		10/08	NJT
18	z	1m	N	3 4	3	Int 3 from above		10/08	NJT
19	z	1m	N	3 4	3	Int 3 and Int 4 from above		10/08	NJT
20	z	1m	N	4	3	Int 4 from above		10/08	NJT
21	z	1m	S	7	4	Int 7 from above		10/08	NJT
22	z	1m	S	7	4	Int 7 from above		10/08	NJT
23	z	1m	S	7	4	Int 7 from above	out of focus	10/08	NJT
24	z	1m	S	7	4	Int 7 from above		10/08	NJT
25	z	1m	S	7	4	F8 C1009		10/08	NJT
26	z	1m	S	7	4	F8 C1009		10/08	NJT
27	z	1m	S	7	4	F8 C1009		10/08	NJT
28	z	1m	N	7	4	F8 C1009		10/08	NJT
29	z	1m	N	7	4	F8 C1009		10/08	NJT
30	z	1m	N	7	4	F8 C1009		10/08	NJT
31	z	1m	N	7	4	F8 C1009		10/08	NJT
32	z	1m	N	7	4	F8 C1009		10/08	NJT
33	z	1m	N	7	4	Int 7 west facing section		10/08	NJT
34	z	1m	N	7	4	Int 7 west facing section		10/08	NJT
35	z	1m	N	7	4	Int 7 west facing section	no board	10/08	NJT
36	z	1m	N	7	4	Int 7 west facing section		10/08	NJT
37	z	-	SW	6	3	Int 6 sondage		10/08	NJT

Camera: NIKON FM2 **Film**: FUJI SUPERIA **Film No**: N11

Slide ☐ **Print** ✓ **Colour** ✓ **Mono** ☐ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
1	z	1m	W	6	3	Int 6 general shot post ex		10/08	NJT
2	z	1m	W	6	3	Int 6 general shot post ex		10/08	NJT
3	z	1m	NE	6	3	F7 C1014		10/08	NJT
4	z	1m	NE	6	3	F7 C1014		10/08	NJT
5	z	1m	SE	6	3	F7 C1014		10/08	NJT
6	z	1m	SE	6	3	F7 C1014		10/08	NJT
7	z	1m	S	6	3	Int 6 north-facing section (W)		10/08	NJT
8	z	1m	S	6	3	Int 6 north-facing section (W)		10/08	NJT
9	z	1m	S	6	3	Int 6 north-facing section (E)		10/08	NJT
10	z	1m	S	6	3	Int 6 north-facing section (E)		10/08	NJT
11	z	1m	E	6	3	Int 6 west-facing section (W)	overexposed	10/08	NJT
12	z	1m	E	6	3	Int 6 west-facing section (W)	overexposed	10/08	NJT
13	z	-	E	6	3	Working shot - Richard and wall		10/08	NJT
14	z	-	E	6	3	Working shot - Richard and wall		10/08	NJT
15	z	1m	SW	6	3	F7 C1014 elevation		10/08	NJT
16	z	1m	S	5	3	Int 5 north-facing section		10/08	NJT
17	z	1m	S	5	3	Int 5 north-facing section		10/08	NJT
18	z	1m	W	5	3	Int 5 east-facing section		10/08	NJT
19	z	1m	W	5	3	Int 5 east-facing section		10/08	NJT
20	z	1m	W	5	3	Int 5 east-facing section		10/08	NJT
21	z	1m	W	5	3	Int 5 east-facing section		10/08	NJT
22	z	1m	W	5	3	Int 5 east-facing section (S)		10/08	NJT
23	z	1m	W	5	3	Int 5 east-facing section (S)		10/08	NJT
24	z	1m	S	4	3	Int 4 north-facing section (E)		10/08	NJT
25	z	1m	S	4	3	Int 4 north-facing section (E)		10/08	NJT
26	z	1m	S	4	3	Int 4 north-facing section (W)		10/08	NJT
27	z	1m	S	4	3	Int 4 north-facing section (W)		10/08	NJT
30	z	1m	E	4	3	Int 4 west-facing section		10/08	NJT
32	z	1m	E	4	3	Int 4 west-facing section		10/08	NJT
33	z	1m	E	4	3	Int 4 west-facing section		10/08	NJT
34	z	1m	E	4	3	Int 4 west-facing section		10/08	NJT
35	z	1m	S	4	3	Int 4 north-facing section (E)		10/08	NJT
36	z	1m	S	4	3	Int 4 north-facing section (E)		10/08	NJT
37	z	1m	S	4	3	Int 4 north-facing section (E)		10/08	NJT

Camera: NIKON FM2 **Film**: ILFORD HP5+ **Film No**: N12

Slide ☐ **Print** ✓ **Colour** ☐ **Mono** ✓ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
1	z	1m	NE	4	3	Intervention 4 general shot		10/08	NJT
2	z	1m	W	4	3	Intervention 4 general shot		10/08	NJT
3	z	1m	NE	4	3	Intervention 4 general shot		10/08	NJT
4	z	1m	E	4	3	Int 4 F2 C1026		10/08	NJT
5	z	1m	E	4	3	Int 4 F2 C1026		10/08	NJT

Camera: NIKON FM2 **Film**: ILFORD HP5+ **Film No**: N12

Slide ☐ **Print** ✓ **Colour** ☐ **Mono** ✓ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
6	z	1m	S	4	3	Int 4 F2 C1026		10/08	NJT
7	z	1m	S	4	3	Int 4 F2 C1026		10/08	NJT
8	z	1m	N	4	3	Int 4 F1 C1023		10/08	NJT
9	z	1m	W	4	3	Intervention 4 general shot		10/08	NJT
10	z	1m	W	4	3	Intervention 4 general shot		10/08	NJT
11	z	-	N	4	3	Int 3 and Int 4 from above		10/08	NJT
12	z	-	S	7	4	Int 7 from above		10/08	NJT
13	z	-	S	7	4	Int 7 from above		10/08	NJT
14	z	1m	S	7	4	Int 7 general shot		10/08	NJT
15	z	1m	S	7	4	Int 7 general shot		10/08	NJT
16	z	1m	N	7	4	Int 7 F8 C1019		10/08	NJT
17	z	1m	N	7	4	Int 7 F8 C1019		10/08	NJT
18	z	1m	E	7	4	Int 7 west-facing section		10/08	NJT
19	z	1m	E	7	4	Int 7 west-facing section		10/08	NJT
20	z	1m	E	7	4	Int 7 west-facing section		10/08	NJT
21	z	1m	W	6	3	Intervention 6 general shot		10/08	NJT
22	z	1m	W	6	3	Intervention 6 general shot		10/08	NJT
23	z	1m	W	6	3	Intervention 6 general shot		10/08	NJT
24	z	1m	E	6	3	Intervention 6 general shot		10/08	NJT
25	z	1m	E	6	3	Intervention 6 general shot		10/08	NJT
26	z	1m	S	6	3	Int 6 F7 C1014		10/08	NJT
27	z	1m	S	6	3	Int 6 north-facing section		10/08	NJT
28	z	1m	S	6	3	Int 6 north-facing section		10/08	NJT
29	z	1m	W	6	3	Int 6 east-facing section		10/08	NJT
30	z	1m	E	6	3	F7 west-facing elevation		10/08	NJT
31	z	1m	W	5	3	Int 5 west-facing section		10/08	NJT
32	z	1m	W	5	3	Int 5 west-facing section		10/08	NJT
33	z	1m	W	5	3	Int 5 east-facing section		10/08	NJT
34	z	1m	W	5	3	Int 5 east-facing section		10/08	NJT
35	z	1m	W	5	3	Int 5 east-facing section		10/08	NJT
36	z	1m	S	4	3	Int 4 north-facing section		10/08	NJT
37	z	1m	S	4	3	Int 4 north-facing section		10/08	NJT
38	z	1m	S	4	3	Int 4 north-facing section		10/08	NJT

Camera: NIKON FM2 **Film**: ILFORD HP5+ **Film No**: N13

Slide ☐ **Print** ✓ **Colour** ☐ **Mono** ✓ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
8	z	1m	N	6	3	Int 6 F7 pre-excavation		10/08	NJT
9	z	1m	W	6	3	Int 6 F7 F24 pre-excavation		10/08	NJT
10	z	1m	W	6	3	Int 6 F24 east-facing section		10/08	NJT
11	z	1m	W	6	3	Int 6 F24 east-facing section		10/08	NJT
12	z	1m	W	6	3	Int 6 F24 post-excavation		10/08	NJT
13	z	1m	N	5	3	Int 5 F26 post-excavation		10/08	NJT

Camera: NIKON FM2 **Film**: ILFORD HP5+ **Film No**: N13

Slide ☐ **Print** ✓ **Colour** ☐ **Mono** ✓ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
14	z	1m	N	5	3	Int 5 F26 post-excavation		10/08	NJT
15	z	1m	N	5	3	Int 5 F26 post-excavation		10/08	NJT
16	z	1m	S	5	3	Int 5 F5 C1009		10/08	NJT
17	z	1m	S	5	3	Int 5 F5 C1009		10/08	NJT
18	z	1m	NE	5	3	Int 5 F26 post-excavation		10/08	NJT
19	z	1m	E	5	3	Int 5 F26 west-facing section		10/08	NJT
20	z	1m	N	5	3	Int 5 south-facing section		10/08	NJT
21	z	1m	N	5	3	Int 5 south-facing section		10/08	NJT
22	z	1m	W	5	3	Int 5 east-facing section		10/08	NJT
23	z	1m	W	5	3	Int 5 east-facing section		10/08	NJT
24	z	1m	N	3	3	Int 3 south-facing section		10/08	NJT
25	z	1m	N	3	3	Int 3 south-facing section		10/08	NJT
26	z	1m	S	3	3	Int 3 general shot		10/08	NJT
27	z	1m	S	3	3	Int 3 general shot		10/08	NJT
28	z	1m	S	3	3	Int 3 F1 north-facing elevation		10/08	NJT
29	z	1m	S	3	3	Int 3 F1 north-facing elevation		10/08	NJT
30	z	1m	W	3	3	Int 3 F1 east-facing elevation		10/08	NJT
31	z	1m	E	3	3	Int 3 F1 west-facing section		10/08	NJT
32	z	1m	E	3	3	Int 3 F1 west-facing section		10/08	NJT
33	z	1m	W	4	3	Int 4 F28 post-excavation		10/08	NJT
34	z	1m	W	4	3	Int 4 F28 post-excavation		10/08	NJT
35	z	1m	N	4	3	Int 4 F28 post-excavation		10/08	NJT
36	z	1m	N	4	3	Int 4 F28 post-excavation		10/08	NJT
37	z	1m	E	4	3	Int 4 F28 post-excavation		10/08	NJT

Camera: NIKON FM2 **Film**: ILFORD HP5+ **Film No**: N14

Slide ☐ **Print** ✓ **Colour** ☐ **Mono** ✓ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
1	z	1m	E	4	3	Int 4 west-facing section	underexposed		
2	z	1m	E	4	3	Int 4 west-facing section			
3	z	1m	E	4	3	Int 4 west-facing section			
4	z	1m	E	4	3	Int 4 west-facing section			
5	z	1m	S	4	3	Int 4 north-facing section			
6	z	1m	N	3	3	Int 3 F1 south-facing elevation			
7	z	1m	N	3	3	Int 3 F1 south-facing elevation			
8	z	1m	E	3	3	Int 3 F1 west-facing elevation			
9	z	1m	E	3	3	Int 3 F1 west-facing elevation			
10	z	1m	W	3	3	Int 3 F1 east-facing elevation			
11	z	1m	W	3	3	Int 3 F1 east-facing elevation			
12	z	1m	S	4	3	Int 4 north-facing section			
13	z	0.5m	E	4	3	Int 4 F29 C1035 pre-excavation			
14	z	0.5m	E	4	3	Int 4 F29 C1035 pre-excavation			
15	z	1m	N	4	3	Int 4 F1 south-facing elevation			

Camera: NIKON FM2 **Film**: ILFORD HP5+ **Film No**: N14

Slide ☐ **Print** ✓ **Colour** ☐ **Mono** ✓ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
16	z	1m	N	4	3	Int 4 F1 south-facing elevation			
17	z	1m	SW	5	3	Int 5 F5 pre-excavation			
18	z	1m	SW	5	3	Int 5 F5 pre-excavation			

Camera: NIKON FM2 **Film**: FUJI SUPERIA **Film No**: N15

Slide ☐ **Print** ✓ **Colour** ✓ **Mono** ☐ **ISO**: 400

Frame	Lens	Scale	Direction	Int. No.	Zone	Details (F/C Nos)	Notes	Date	Initials
3	z	2m	N	3	3	Int 3 F1 south-facing elevation		10/08	NJT
4	z	2m	E	3	3	Int 3 F1 west-facing elevation	with photomarkers	10/08	NJT
5	z	2m	E	3	3	Int 3 F1 west-facing elevation	with photomarkers	10/08	NJT
6	z	2m	W	3	3	Int 3 F1 east-facing elevation	with photomarkers	10/08	NJT
7	z	2m	W	3	3	Int 3 F1 east-facing elevation	with photomarkers	10/08	NJT
8	z	1m	S	4	3	Int 4 north-facing section		10/08	NJT
9	z	1m	S	4	3	Int 4 north-facing section		10/08	NJT
10	z	0.5m	E	4	3	Int 4 F29 C1035		10/08	NJT
11	z	0.5m	E	4	3	Int 4 F29 C1035		10/08	NJT
12	z	0.5m	E	4	3	Int 4 F29 C1035		10/08	NJT
13	z	0.5m	E	4	3	Int 4 F29 C1035		10/08	NJT
14	z	0.5m	E	4	3	Int 4 F29 C1035		10/08	NJT
15	z	0.5m	E	4	3	Int 4 F29 C1035		10/08	NJT
16	z	1m	S	4	3	Int 4 general shot post-ex		10/08	NJT
17	z	1m	S	4	3	Int 4 general shot post-ex		10/08	NJT
18	z	1m	N	4	3	Int 4 F1 C1023		10/08	NJT
19	z	1m	N	4	3	Int 4 F1 C1023		10/08	NJT
20	z	1m	N	4	3	Int 4 F1 C1023		10/08	NJT
21	z	1m	N	4	3	Int 4 F1 C1023		10/08	NJT
22	z	1m	N	4	3	Int 4 F1 C1023		10/08	NJT
23	z	1m	N	4	3	Int 4 F1 C1023		10/08	NJT
24	z	1m	SW	5	3	Int 5 F25 C1008		10/08	NJT
25	z	1m	SW	5	3	Int 5 F25 C1008		10/08	NJT
26	z	-	N	3	3	Post-reinstatement		10/08	NJT
27	z	-	N	3	3	Post-reinstatement		10/08	NJT
28	z	-	E	4	3	Post-reinstatement		10/08	NJT
29	z	-	E	4	3	Post-reinstatement		10/08	NJT
30	z	-	S	7	4	Post-reinstatement		10/08	NJT

APPENDIX H INDEX OF FINDS

Find no	Context No	Feature No	Int	Rec level	Material	Identity	Type	Count	Weight(g)	Box
1	1001	28	4	c	ceramic	assemblage	mixed	15	81.8	q1
2	1006	24	6	c	ceramic	pot (body)	modern	1	57.5	q1
3	1015		6	c	slag			2	6.5	q1
4	1029		4	c	slag			1	12.6	q1
5	1002	4	5	c	cbm	assemblage		10	279.9	q1
6	1001	28	4	c	glass	assemblage	mixed	2	223.1	q1
7	1002	4	5	c	glass	vessel	body	1	10	q1
8	1001	28	4	c	metal cu	brooch		1	7.2	m1
9	1001	28	4	c	metal fe	assemblage	nails	2	148.4	m1
10	1003		6	c	metal cu	coin		1	6.5	m1
11	1002	4	5	c	metal fe	unidentified		1	6.7	m1
12	1005	4	5	c	metal fe	assemblage	mixed	1	92.2	m1
13	1008	26	5	c	metal cu	coin		1	7.8	m1
14	1008	26	5	c	metal ag	coin		1	1.4	m1
15	1008	26	5	c	metal fe	assemblage	nails	4	74	m1
16	1011		5	c	metal cu	unstrap end		1	1.1	m1
17	1027		5	c	metal cu	finger ring		1	0.7	m1
18	1028		5	c	metal fe	fitting		2	37.3	m1
19	1028		5	c	metal fe	assemblage	nails	24	462.8	m1
20	1028		5	c	metal fe	assemblage		4	151.7	m1
21	1028		5	c	metal cu	waste		2	32.9	m1
22	1031		4	c	metal fe	assemblage	nails	2	16.6	m1
23	1002	4	5	c	bone a	assemblage	mixed		76.6	q1
24	1005	4	5	c	bone a	assemblage	mixed		112.7	q1
25	1016		6	c	bone a	assemblage	teeth		56	q1
26	1018		6	c	bone a	assemblage	mixed		201.6	q1
27	1020		5	c	bone a	assemblage	mixed		938.5	q1
28	1029		4	c	bone a	assemblage	mixed		142.7	q1
29	1031		4	c	bone a	assemblage	mixed		669	q1
30	1031		4	c	ceramic	assemblage	mixed		30	q1
31	1030		4	c	bone a	assemblage	mixed		18	q1
32	1018		6	c	bone a	assemblage	mixed		72	q1
33	1031		4	c	bone a	assemblage	mixed		146	q1
34	1028		5	c	bone a	assemblage	mixed		736	q1
35	1016		6	c	bone a	unidentified			2	q1
36	1027		5	c	bone a	assemblage	mixed		12	q1
37	1028		5	c	bone a	assemblage	fish		14	q1
38	1030		4	c	slag				464	s1
39	1031		4	c	ceramic o	crucible			4	q1
40	1031		4	c	slag				52	q1
41	1031		4	c	slag	hammerscale			22	q1

Find no	Context No	Feature No	Int	Rec level	Material	Identity	Type	Count	Weight(g)	Box
42	1030		4	c	slag	hammerscale			126	q1
43	1028		5	c	slag	hammerscale			8	q1
44	1016		6	c	slag				4	q1
45	1027		5	c	slag	hammerscale			2	q1
46	1027		5	c	daub				26	q1
47	1027		5	c	metal fe	nail			2	q1
48	1027		5	c	metal pb	token			1	q1
49	1031		4	c	metal fe	?blade			1	q1
50	1031		4	c	metal fe	?chainmail			1	q1
51	1035	29	4	c	slag				58	q1
52	1022		3	c	slag				742	sl2
53	1001	28	4	c	stone	vitrified			2308	sl2
54	1029		4	c	slag				656	sl2
55	1030		4	c	slag				5360	sl2
56	1011		5	c	slag				1518	sl2
57	1005	4	5	c	slag				1184	sl2
58	1008	26	5	c	slag				990	sl2
59	1004	24	6	c	slag				1498	sl2
60	1002		5	c	slag				4064	sl2
61	1001	28	4	c	slag				51380	sl13

APPENDIX I ASSESSMENT OF THE CERAMIC ASSEMBLAGE
Derek Hall (SUAT)

1.0 QUANTITY

The assemblage comprises 23 sherds which come from four separate contexts from three trial trenches

2.0 PROVENANCE AND DATING

The 14 sherds from C1001 (Intervention 4) are probably all of 19th-century date, they will be shown to George Haggerty, an acknowledged specialist on ceramics of this date, at no extra cost to the project. The six sherds of organic tempered ware from C1031 (Intervention 4) are frustratingly difficult to date as this tradition is present in the Scottish Highlands and Western Isles for at least 2,000 years (Cheape 1993). In recent years an assemblage of this fabric from Robert's Haven in Caithness was dated to the 12th century based on associated C14 dates and its association with sherds from straight-sided Scottish White Gritty Ware cooking vessels (Hall forthcoming). The single bodysherd from C1028 (Intervention 5) is definitely of medieval date and comes from a wheel thrown jug in Scottish Redware and is potentially of 13th or 14th-century date.

3.0 THE MATERIAL

The early part of the assemblage comprises small bodysherds from a single just and cooking vessels. The later part of the assemblage comprises body and rimsherds from cups, a saucer and other tin-glazed earthenware vessels. There is a single undecorated clay pipe stem which probably also dates to the 19th century.

4.0 CONDITION

The current packing is sufficient.

5.0 DOCUMENTATION

A basic bulk sherd count by context and initial fabric identification has been produced during this assessment and is appended as an Excel table.

6.0 STATEMENT OF POTENTIAL

The basic bulk sherd catalogue produced as part of this assessment should suffice for this group of pottery. The background information given in the provenance and dating section of this report ought to serve as an interim statement on this assemblage, there seems little need to produce a fuller report. There is nothing in this assemblage that the author considers worthy of illustration.

References

Cheape, H. 1993. 'Crogans and Barvas Ware: Handmade Pottery in the Hebrides' *Scottish Studies* 31, 109-128
Hall, D. forthcoming. 'The pottery' in Barrett, J. *Excavations at Robert's Haven, Caithness*

BULK CATALOGUE OF CERAMICS

Fabric glossary

TGE Tin glazed earthenware
Org Temp Organic tempered ware
Scot Red Scottish Redware

Int	C No	F No	SF No	Fabric	Vessel type	Spot date		Sherd count
4	1001	28	1	Clay pipe		18th/19th		1
4	1001	28	1	TGE	Cups, saucer, plates	19th	3 blue and white, 4 white. 2 spongeware, 1 yellow-glazed, 3 from earlier looking vessel with blue lines, 1 rim with stamped design	14
4	1031	-	30	Org temp	Cooking vessels		This material covers a vast period!	6
5	1028	-	27	Scot Red	Jug	13th-15th		1
6	1006	24	2	Sanitary ware		19th		1
Total								**23**

APPENDIX J ASSESSMENT OF METAL-WORKING WASTE

Cath Mortimer

The 2008 evaluation work comprised seven interventions focussed around the curtain wall of the medieval castle. Large amounts of ironworking slag were found, particularly in deposits relating to a 20th-century reworking of medieval layers in Intervention 4. Other significant evidence types at the site are iron nails, bone-rich and charcoal-rich deposits and a hearth (F29). Twenty-four samples were briefly examined for this assessment.

Table 1 Material types

Material type	Weight (g)
Crucible	35
Fired clay, vitrified clay, vfl	1933
Slag, mainly iron-rich	51694
Stone, with metalworking evidence	4954
Mixed sample	2025
Total	60641

1.0 IRONWORKING DEBRIS

The metalworking debris is dominated by a large amount of ironworking slags from Int 4, in the north of the site. The largest group is sf 61 (39.8kg) and consists of very large pieces of iron-rich slag, including at least 20 well-preserved hearth bottoms, the biggest example of which is a substantial 155mm across and weighs 1.8kg. A hearth bottom has a characteristic plano-convex shape which is unlikely to be found anywhere apart from a smithing hearth. When the iron from the objects combines with the silica from the furnace lining to form liquid iron silicate (fayalite), this slag runs down to the base of the hearth and when cooled can be cleared out regularly or left to form a smithing hearth bottom, which can then be taken out whole or broken.

Although sf61, the largest collection of slag, was redeposited in 20th-century backfill C 1001, it is thought to be medieval and it is comparable to material from the better-preserved contexts such as sf55 from C1030, close to the hearth F29. Slag is not normally recycled, except as hardcore, and it is heavy and bulky, so it would often be disposed off in any nearby ditch or pit. The location of the hearth near to a substantial wall is also normal, since a simple lean-to building could be constructed, enough to keep the light levels low in the working area, without needing substantial effort.

Two small samples (sf 44 and 51) were less clearly diagnostic of ironworking, and were just classified as ‘slag’, although with the bulk of evidence of the site relating to ironworking, it is quite likely that these were also from ironworking.

Hammerscale is a form of micro-slag and is formed during both primary smithing, when the rough iron bloom is being worked to remove slag inclusions and secondary smithing, when a smith is working the iron into its final form. There are two classic forms of hammerscale, spherical hammerscale which is formed in both primary and secondary smithing and flake hammerscale which is mainly related to secondary smithing. In this case, four samples of hammerscale (sf 41, 42, 43 and 45) were retrieved individually in sieving, and hammerscale was also found in the bags with the ironworking slag samples sf 54, 58 and 60. Flake hammerscale was seen more frequently amongst the Eilean Donan samples, although there is also some spherical hammerscale.

In addition to the slag types discussed above, there were three samples of stone with slag attached which most probably originates from ironworking (sf53, 57 and 59). These may have been part of the structure of the ironworking hearth.

Three samples (sf38, 40 and 56) were only very briefly examined for this report, as they were very mixed and fragmentary, but these all include ironworking slag, along with varying quantities of vitrified clay, stone, iron objects and iron concretion. Iron concretion can be thought of as a man-made version of iron panning, found in soil with high levels of iron *eg* near smithies.

The substantial quantities of ironworking slag and the attendant hearth and charcoal-rich deposits suggest that this is much more than small-scale repairing and mending. Larger objects were being made at the site, probably relating to construction phases at the castle.

2.0 NON-FERROUS METALWORKING

There is only a very small amount of debris relating to non-ferrous metalworking, represented by one crucible sample and one possible crucible sample. The most intriguing is sf 21, two fragments from a small relatively-shallow vessel with thick walls (*c*.13mm) and copious amounts of copper alloy debris, mainly at the rim. The form is not a classic medieval or post-medieval form, and could be of an earlier date, although it was found in a bone-rich medieval context (C1028), which also has iron nails and flake hammerscale. The other fragment (sf39, from medieval C1031) is much smaller and has pale green vitrification on the outside and some greyish slagging on the inside. Although there are no copper alloy droplets visible, it seems likely that this item was also involved in non-ferrous metalworking. Copper alloy ring fragments are also reported from a context just above where sf21 was found (C1027).

3.0 FIRED CLAY AND VITRIFIED CLAY

Despite the large furnace area, most of the fired clay that was small-finded at the site is not of particular interest as there is only a small amount and there is no evidence for the nature of its use. The fired clay in sf 46 was only very lightly fired, and is now in poor condition. The small fired clay in samples sf3 and sf4 was much more intensely-fired, with some vitrification showing higher temperatures.

The largest small find classed for the moment with 'fired clay' comes from C1008. This item has the shape of a large flat plate or platter. It is somewhat distorted and now broken into six pieces, but it is not possible to find any joins. The thickness ranges from 14mm to 26mm and the largest extant dimension is about 15cm. A recent fracture shows the interior is very dark and uniform, with small ?quartz inclusions. A slightly-paler crust only extends a very small way (c. 1mm) into the interior. Most of the surface is rough and matte, but a small area on one side is lightly-vitrified.

It is not clear what this object is. A suggestion was made that it could be of geological origin, but it seems too deliberately formed for this. Initial enquiries with colleagues have not yielded any clues as to the identity. Further research is required, and it is suggested that a ceramic specialist might be found for this work.

4.0 RECOMMENDATIONS

The existing collection of slag does not require much further work at this point, however, ironworking was a significant activity at the site, and should be given priority in any future excavations. If further work was to be carried out in the areas with large amounts of slag, charcoal and other industrial debris, plans should be made for area sampling for hammerscale which may reveal more about the arrangements of the smithy. Contact should be made with a ferrous specialist.

The non-ferrous evidence at the site is interesting but at such a low level that it is not significant. The crucible, sf21, should be illustrated (probably drawn) for publication. The mystery object from C1008 requires more identification work, preferably from a ceramic specialist. This will also need illustration, possibly drawing since its dark colour means photos are not very useful.

The iron objects should be extracted, X-rayed and repacked accordingly. The material does not require further conservation.

Acknowledgements

Thanks to Dave Starley for comments during this assessment, and to Fraser Hunter (National Museums of Scotland) for his initial comments on the mystery object.

Table 2 Sample identification

C No	SF	Int	F No	ID	Wt (g)	Comments
1001	53	4		stone	2283	two pieces stuck together with slag
1001	61	4	28	Fe slag	39794	mainly large chunks, includes large hearth bottoms, some with evidence for multiple episodes, best shb = 155x130 width, 60mm depth, wt 1843g
1002	60	5	4	Fe slag	3970	2 bags, clinkery. With some fl hs
1004	59	6	24	stone	1491	stone and Fe slag (fayalitic run)
1005	57	5	4	stone/vfl	1180	
1008	58	5	26	Fe slag	990	furnace bottom?with hs
1008		5		fc	1895	Large flat slabs. Dark, smooth edges, even texture, vitrification on top surface
1011	56	5		mix	1510	clinkery slag = 773g, Fe slag (possible shb) = 319, slag/stone/fc in a block = 1510
1015	3	6		fc/vfl	6	
1016	44	6		slag	<2	
1022	52	3		Fe slag	737	dense
1027	45	5		hs	<2	
1027	46	5		fc	20	only lightly fired
1028	21	5		crucible	32	2 frags, shallow, thick-walled (13mm), CA inside, vitrification
1028	43	5		hs	5	fl
1029	4	4		vfl	12	
1029	54	4		Fe slag	651	undiag, with fl hs
1030	38	4		mix	466	Fe obj, vfl, Fe conc
1030	42	4		hs	122	About 20%fl hs, 5%sph hs
1030	55	4		Fe slag	5359	SSL, including large shb
1031	39	4		crucible	3	pale green vitrification on outside, slagging on inside
1031	40	4		mix	49	vfl, Fe obj, stone, slag
1031	41	4		hs	10	About 30% fl hs, 5% sph hs
1035	51	4	29	slag	56	

Codes

fc	fired clay	Fe slag	iron-rich slag
Fe conc	iron concretion	fl hs	flake hammerscale
hs	hammerscale	shb	smithing hearth bottom
sph hs	spherical hammerscale	vfl	vitrified furnace lining

APPENDIX K ASSESSMENT OF ANIMAL REMAINS

Catherine Smith, SUAT Ltd

1.0 METHOD

Animal bones recovered from excavations at Eilean Donan Castle, Ross-shire were submitted for assessment. Bones were recovered from hand-excavated and fine-mesh sieved samples.

The bones were scanned and briefly recorded. No attempt was made to assign a side (left or right) to all of the identified fragments and only the hand-excavated material has been identified as far as particular bone element. For the sieved samples, a rough count of bones and teeth is noted.

2.0 RESULTS

In general, the condition of the bones ranged from moderately well preserved to poorly preserved and approximately one quarter of the fragments was friable and crumbling. Surface abrasion was noticeable and was judged to be moderate or heavy. Despite this it was possible to identify a range of mammalian species and a small quantity of bird and fish bones within the assemblage. The mammals consisted of domesticated species: cattle, sheep/goat and pig, whose bones were of a size consistent with medieval or post-medieval date. Wild mammals were represented by a few bones and teeth thought at this stage to be red deer (*Cervus elaphus*). Bird bones were not numerous, and only one, a large foot phalange, probably from a raptor such as Golden or White-Tailed Sea Eagle, may be further identifiable (Context 1031, Int 4, SF 29). Fish bones were also present and were particularly numerous in a sieved sample from Context 1028, Int 5, SF 37.

A summary of the material recovered by hand excavation is presented in Table 1 and material recovered by fine-mesh sieving in Table 2.

3.0 RECOMMENDATIONS

3.1 BIRDS

Further work could lead to a more definite identification of the bird foot phalange from Context 1031.

3.2 MAMMALS

Further work on the mammals should consist of assigning a side to the bone elements in order to calculate minimum numbers of animals present. Where anatomical measurements are possible, these should be made according to the scheme of von den Driesch (1976). Ageing of those mandibles where teeth are present should be carried out and it is suggested that the methods of Payne (1973) and Grant (1982) are followed. Epiphyseal fusion evidence should also be compiled in order that some evidence may be gleaned as to the ages at which animals were killed. More detailed examination of potential butchery marks may provide evidence of tools or butchery practices. The results should if possible be compared with other northern castle assemblages, where these exist, for example Urquhart Castle.

3.3 FISH

It is recommended that the fish bones be sent to a specialist as they are likely to shed light on food supply.

References

von den Driesch, A 1976 *A Guide to the Measurement of Animal Bones from Archaeological Sites* (= Peabody Museum Bulletin No. 1). Harvard University.

Grant, A 1982 'The use of tooth wear as a guide to the age of domestic ungulates' in Wilson, B, Grigson, C and Payne, S (eds) *Ageing and Sexing Animal Bones from Archaeological Sites* (= BAR British Series 109), 55-71. Oxford.

Payne, S 1973 'Kill-off patterns in sheep and goats - the mandibles from Aşvan Kale' *Journal of Anatolian Studies*, 23, 281-303.

Catalogue

Abbreviations used in Tables 1 and 2

SF	Small find no (designated by triangle on finds bag)
LU	large ungulate
SU	small ungulate
IM	indeterminate mammal
prox	proximal
dist	distal
L	left
R	right
M	molar tooth
PM	premolar tooth
dpm	deciduous premolar tooth

Table 1 Catalogue of hand-retrieved material

Context	Int	Feature	SF	Species	Bone	Condit (whole context)/Comments
1002	5	F4	23	Cattle	scapula blade	poor abrasion moderate
1002	5	F4	23	Cattle	L premaxilla	
1002	5	F4	23	Cattle	radius, prox	
1002	5	F4	23	Cattle	metacarpal, dist	
1002	5	F4	23	Cattle	L tibia, dist	
1005	5	F4	24	Cattle	L femur, dist	
1005	5	F4	24	Cattle	L tibia, dist	
1005	5	F4	24	Cattle	1st phalange	
1005	5	F4	24	Cattle	1st phalange	
1005	5	F4	24	Sheep/goat	metatarsal, prox	
1005	5	F4	24	LU	vertebra; centrum	
1005	5	F4	24	LU	rib; shaft	
1016	6		25	Cattle	teeth: 2 lower M3 1 upper M	fair abrasion slight teeth flaking
1018	6		26,32	Cattle	mandibular fragment	poor-very poor abrasion moderate;
1018	6		26,32	Cattle	teeth: 4 upper M 1 upper PM 2 lower M3 1 lower M1/2	teeth flaking
1018	6		26,32	Cattle	R innominate	calf
1018	6		26,32	Cattle	vertebra; centrum	
1018	6		26,32	LU	vertebra; epiphysis	
1018	6		26,32	LU	rib; shaft	
1028	5		27	Cattle	mandible fragments x 6	fair-poor

Context	Int	Feature	SF	Species	Bone	Condit (whole context)/Comments
						abrasion: moderate
1028	5		27	Cattle	teeth, upper x 2	
1028	5		27	Cattle	teeth, lower x 2	
1028	5		27	Cattle	scapula x 2	
1028	5		27	Cattle	humerus, dist	
1028	5		27	Cattle	metacarpal x 2	
1028	5		27	Cattle	femur, dist, unfused	
1028	5		27	Cattle	femur, shaft x 2	
1028	5		27	Cattle	tibia, prox	
1028	5		27	Cattle	R astragalus	
1028	5		27	Cattle	Calcaneum, shaft	
1028	5		27	Cattle	metatarsal shaft	
1028	5		27	Cattle	1st phalange	
1028	5		27	Sheep/goat	skull fragment	
1028	5		27	Sheep/goat	teeth x 10	
1028	5		27	Sheep/goat	L tibia, dist (butchery mark)	
1028	5		27	Sheep/goat	L tibia, shaft	
1028	5		27	Sheep/goat	metatarsal, prox	
1028	5		27	Sheep/goat	metatarsal, shaft x 2	
1028	5		27	Sheep/goat	metapodial, dist x 2	
1028	5		27	Pig	1st phalange, unfused	
1028	5		27	Pig	ulna	
1028	5		27	Red deer	teeth x 2	
1028	5		27	Red deer	radius, dist, unfused & epiphysis	check
1028	5		27	Red deer	radius, prox	check
1028	5		27	Red deer	calcaneum, epiphysis	check
1028	5		27	LU	vertebra	
1028	5		27	LU	rib x 8	
1028	5		27	SU	vertebra	
1028	5		27	SU	rib x 7	
1028	5		27	IM	unburnt fragments x 78	
1028	5		27		calcined fragments x 19	
1029	4		28	Cattle	horn core fragment	fair-poor abrasion: moderate
1029	4		28	Cattle	teeth: 1 upper M 2 upper PM	
1029	4		28	Cattle	premaxilla	
1029	4		28	Cattle	mandible; aboral (butchery mark)	
1029	4		28	Cattle	metatarsal, prox	gnawed by carnivore
1029	4		28	Cattle	1st phalange	
1029	4		28	Sheep/goat	teeth: 2 upper M	
1029	4		28	Sheep/goat	R mandible, oral; no teeth	
1029	4		28	Sheep/goat	femur, shaft	

Context	Int	Feature	SF	Species	Bone	Condit (whole context)/Comments
1029	4		28	Sheep/goat	humerus, dist	
1029	4		28	LU	rib, shaft	
1029	4		28	SU	rib, shaft x 3 (conjoin?)	
1029	4		28	IM	fragments x 11	
1031	4		29	Cattle	skull fragment	
1031	4		29	Cattle	mandible fragments, deciduous teeth present	
1031	4		29	Cattle	mandible fragment, no teeth	
1031	4		29	Cattle	teeth: 1upper M 3 lower dpm 1 lower M; unerupted	
1031	4		29	Cattle	axis vertebra	
1031	4		29	Cattle	scapula, glenoid	
1031	4		29	Cattle	humerus, dist x 3	
1031	4		29	Cattle	humerus, shaft	
1031	4		29	Cattle	radius, prox	
1031	4		29	Cattle	radius, shaft	
1031	4		29	Cattle	metacarpal, prox	
1031	4		29	Cattle	tibia, prox	
1031	4		29	Cattle	metatarsal, prox	
1031	4		29	Cattle	astragalus	
1031	4		29	Cattle	naviculo-cuboid	
1031	4		29	Cattle	3rd phalange	
1031	4		29	Sheep/goat	maxilla fragments x 2	
1031	4		29	Sheep/goat	mandible with full tooth row	to be aged
1031	4		29	Sheep/goat	mandible fragments x 3	
1031	4		29	Sheep/goat	teeth x 7	
1031	4		29	Sheep/goat	scapula, blade x 3	
1031	4		29	Sheep/goat	humerus, shaft	
1031	4		29	Sheep/goat	radius, shaft	
1031	4		29	Sheep/goat	metapodial, dist x 2	
1031	4		29	Sheep/goat	astragalus	
1031	4		29	LU	vertebra x 5	
1031	4		29	SU	vertebra	
1031	4		29	LU	Rib, shaft x 5	
1031	4		29	SU	rib, shaft	
1031	4		29	IM	skull fragments x 3	?identifiable
1031	4		29	IM	fragments x 60	
1031	4		29	Bird	foot phalange	large; probable raptor needs further work
1031	4		29	Bird	shaft; probably indeterminate species	

Table 2 Catalogue of sieved samples

Condition of bone is fair to very poor; surface abrasion is moderate to heavy. There is evidence of burning/calcination in most of the samples.

Context	Int	SF	Species	Details	Further work recommended on this context
1016	6	35	Indeterminate mammal	c10 burnt fragments	no
1018	6	32	Cattle	tooth: M root	no
1018	6	32	Sheep/goat	petrous	
1018	6	32	LU	vertebral fragments x 2	
1018	6	32	IM	calcined fragments x 6	
1027	5	36	?Cattle	?metapodial, dist; calcined	no
1027	5	36	IM	c25 calcined fragments	
1028	5	37	cf Cattle	tooth: enamel shell from incisor tooth: M fragment	
1028	5	37	Pig	tooth: fragment	
1028	5	37	SU	vertebra: epiphysis fragments x 2	
1028	5	37	Fish	vertebrae x c100 other bone x 50	yes: send fish to specialist
1028	5	34	Cattle	teeth x 9 (+ 2 fragments) bone x 18	yes
1028	5	34	Sheep/goat	teeth x 10 tooth roots x 2 bone x 10	
1028	5	34	Pig	teeth x 11 maxilla fragments x 2 mandible fragments x 2 other bone x 15	
1028	5	34	cf Red deer	radius, prox (poor condition) innominate fragment	confirm species
1028	5	34	Small mammal	femur shaft ribs x 3 vertebra x 1	may not be possible to identify further
1028	5	34	LU	rib shaft x 13	
1028	5	34	SU	rib shaft x 10 rib articulation x 1 vertebra x 2 vertebral epiphysis x 1	
1028	5	34	IM	unburnt fragments x 190 burnt/calcined fragments x 67	
1028	5	34	Fish	vertebra x 2 other x 7	send fish to specialist
1028	5	34	Wood	root/twig fragment	
1030	4		Cattle	tooth: M fragments	no further work needed on this context
1030	4		IM	burnt/calcined fragments x 4	

Context	Int	SF	Species	Details	Further work recommended on this context
				unburnt x 2	
1030	4		Wood	roundwood fragment	
1031	4	33	Cattle	bone x 4	further work recommended
1031	4	33	Sheep/goat	teeth x 4 bone x 2	
1031	4	33	LU	vertebra x 1 rib shaft x 3	
1031	4	33	SU	vertebra x 1 rib x 1	
1031	4	33	Small mammal	vertebra x 1 rib x 1	
1031	4	33	IM	fragments x c90	
1031	4	33	Bird	quadrate x 1 vertebra x 1 phalange x 1	
1031	4	33	Fish	vertebrae x 2 other x 3	send fish to specialist
1031	4	33	Mollusc	periwinkle fragment x 1	
1031	4	33	Fe/FeO2	fragments x 3	
1031	4	33	Stone	limestone fragment other stone fragments x 2	may be accidental inclusions

APPENDIX L ASSESSMENT OF SMALL FINDS

Cecily Spall, Field Archaeology Specialists

1.0 INTRODUCTION

A small assemblage of metal objects was submitted for conservation assessment and identification. The assemblage was recovered during an archaeological evaluation undertaken by Field Archaeology Specialists (FAS) at Eilean Donan Castle.

The assemblage consisted of ferrous and non-ferrous items and was submitted for x-ray and assessment, which was undertaken on behalf of FAS by Karen Barker, Antiquities Conservation. The objects were x-rayed at 110kv for one minute and examined by microscope.

Full identification of the objects was undertaken by examining x-ray plates on a light box colour corrected to 5000k. All the finds are packaged in a polythene 'Stewart' box with silica gel to provide a dry micro-environment of less than 15% relative humidity which should prevent further corrosion of the finds. The non-ferrous metalwork is packaged in an appropriate dry micro-environment according to guidelines set out in First Aid for Finds (Neal and Watkinson 1998). As a result of the conservation assessment two coins were cleaned and stabilised before referral to a numismatist. In addition, three copper-alloy artefacts were cleaned and stabilised.

2.0 ASSESSMENT

2.1 FERROUS OBJECTS

A total of 45 ferrous objects were identified in the assemblage represented primarily by structural ironwork. The structural ironwork was dominated by nails and fragments of nails. The nails were handmade, invariably square in profile with round hammered heads and among the complete nails two lengths appeared to be represented 90mm and 45-60mm including the length of clench bolts. In addition, two clench bolts were recovered along with four separate square roves being represented within the assemblage.

Most of the structural ironwork was recovered from or originated in deposits of medieval date (C1027 and C1028 and redeposited within F26). The material is likely to derive from timber buildings within the castle and had certainly been used, since some had clenched ends and two shafts displayed mineral-preserved wood remains and may have been deposited still fixed into wood which has since perished. Clench bolts can be used to fasten ship timbers, although they are also found in domestic contexts where they were probably used to join timbers and elements of timber doors. The structural ironwork should be studied with a view to understanding the nature of timber building at the castle should further assemblages be recovered during future work.

A small fragment of iron link was recovered from C1031 and may represent a fragment of chainmail, but no information about the method of manufacture was preserved.

An assemblage of modern ironwork was among the material. The items were recovered from the backfill of a wall-chasing trench including a large threaded bolt and nut (Find no 9), modern ironwork from midden F4 and included in material recovered from wall chasing trench F28. Disposal of this material could be considered.

2.2 NON-FERROUS OBJECTS

A small annular brooch made of a dense, possibly lead-rich (?gunmetal) copper-alloy was recovered from a wall-chasing trench

(F28), but is certainly medieval in date. The brooch measures 27mm in diameter and is decorated with emanating chip-carved lines interrupted by the pin rest and decorative niches to either side. The brooch pin is intact and made from a single sheet of folded copper-alloy. Of 13th- to 14th-century date. In stable condition, recommended for illustration.

A complete copper-alloy strap-end or chape was recovered from C1011, a rubble deposit overlying the remains of the northeastern curtain wall. The object measures 34mm in length and is made from two tapering sheets of copper-alloy, possibly soldered at one end and separate at the opposite where a small rivet remains *in situ* on one side (Find no 16). Of likely medieval date.

Four small fragments of possible finger ring were recovered but are too small for secure identification and may represent scrap for recycling (Find no 17). The fragments have been cleaned and consolidated but handling should be avoided; no further work recommended.

3.0 RECOMMENDATIONS FOR FURTHER WORK

The remaining ferrous and non-ferrous metalwork is well-packaged to archival standards and is stable. The brooch and strap end should be illustrated should publication of the assemblage be undertaken. The ironwork should be considered for further study should more material be recovered in future work. Disposal of the modern ironwork should be considered.

Catalogue

Non-ferrous items

Find no 8	F28, C1001	small annular brooch
Find no 16	C1011	strap end or chape
Find no 17	C1027	fragmentary object, ?finger ring

Structural ironwork

Find no 9	F28, C1001	large threaded bolt with nut, incomplete nail; modern
Find no 11	F4, C1002	1 incomplete nail; modern
Find no 12	F4, C1005	?blade fragment, 1 hook, 2 nails; modern
Find no 15	F26, C1008	2 complete nails, possible mineral-preserved wood adhering, 2 incomplete nails
Find no 18	C1028	2 roves
Find no 19	C1028	6 complete nails, 2 nails with roves, 14 incomplete nails
Find no 20	C1028	2 incomplete nails, 2 incomplete roves
Find no 22	C1031	2 complete nails, 1 incomplete nail
Find no 47	C1027	1 incomplete nail
Find no 49	C1031	1 unid iron object

Miscellaneous ironwork

Find no 50	C1031	small fragment of iron link - chainmail

References

Neal, V. and Watkinson, D. 1998. *First Aid for Finds (3rd edition)* (London)

FIELD ARCHAEOLOGY SPECIALISTS LTD

Unit 8 Fulford Business Centre
35 Hospital Fields Road
York YO10 4DZ

TELEPHONE (01904) 652000
FASCIMILE (01904) 749014
fas@fieldarchaeologyspecialists.co.uk