DRAINAGE

DRUM CASTLE

ABERDEENSHIRE

Archaeological Watching Brief

Carried out between October and November 2016

by

Murray Archaeological Services Ltd

Report No: MAS 2016-27

by

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1. Background

1.1 In winter 2015/2016 flooding from groundwater running through the buildings at Drum Castle highlighted the need for increased drainage capacity around the outer perimeter of the buildings.

1.2 The National Trust for Scotland planned a new larger drain to replace the existing drain (c 1970s) to run from the SW corner of the castle, along the S facade and N to the E of the castle, linking with an existing outflow to the pond. A French drain was to run S along the W side of the castle from a point S of the path to the car park to join the new drain at the SW corner. Another French drain was designed to run N from the N side of the path to the car park and drain into the existing drains on the S side of the drive.

1.3 Dr Shannon Fraser, archaeologist for the National Trust for Scotland, determined that it was advisable to commission a watching brief on all excavation works. This applied both in areas that were not already known to have been disturbed, and in areas where the new drains followed existing drains, the line of which had not been watched when they were dug- in the hope that features might be visible in the sections.

1.4 Murray Archaeological Services Ltd was commissioned by the National Trust for Scotland to undertake a watching brief on ground disturbance in the agreed areas and to record any finds or features that were revealed. The watching brief was carried out between October and November 2016. We are grateful to Alison Cameron (Cameron Archaeology) for watching the site on 20th October.

2. The Site

The works relate to the immediate environs of Drum Castle, Aberdeenshire.

(a) Drum Castle, Drumoak, Aberdeenshire.

Parish: Drumoak

NGR NJ 7962 0050

NMRS No: NJ70SE 4.00 Canmore ID 18550

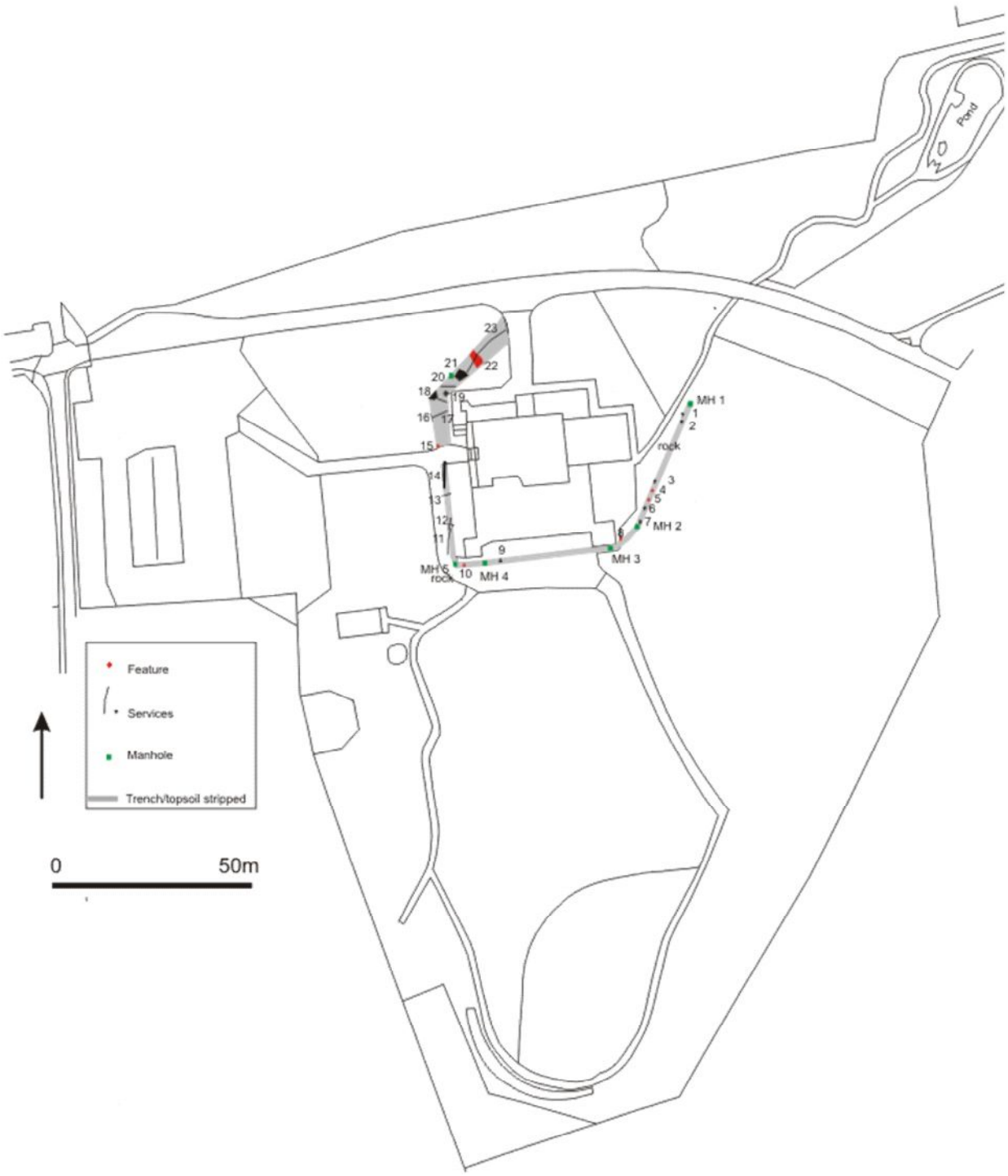
3 Methodology

3.1 All ground works in the areas agreed with Dr Fraser were observed with any potential features cleaned by hand, planned, photographed (Appendix 1) and recorded as appropriate.

3.2 All mapping was done with a Magellan Mobile Mapper 120 GPS and Glonass.

4 Results

The line of each section of drain was observed. The location of observed drain trenches and all observed features is shown on Illus 2 with details in Table 1.



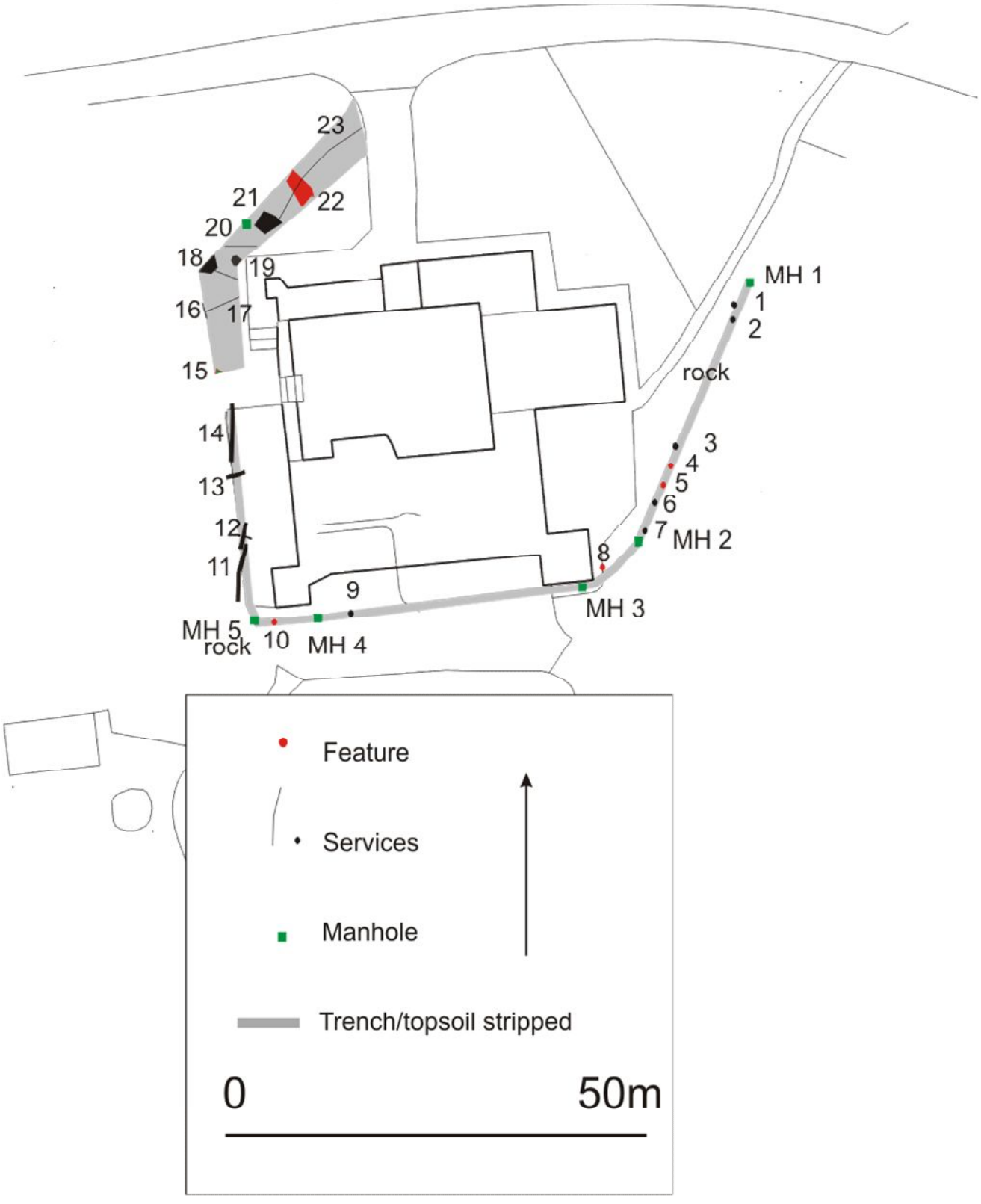
Illus 1 Overall location of trench (details see illus 2). Crown copyright: All rights reserved Licence No 10004140

Table 1 Details of features observed.

Location	Context No	Context	GPS	Interpretation

Manhole 1- 2	MH 1		379658, 800519	
	1	Live sewer	379656, 800517	
	2	Stones in fill	379656, 800515	
	3	Ceramic drain pipe	379649,800499	
	4	Possible remnant of stone drain below plastic drain.	379648, 800497	
	5	Stone drain. SW/NE. Obliquely across line of earlier trench for c 800mm.Only clear in W section. Capstone on W side of earlier trench sealed by 150mm topsoil. C 300mm wide, c 300mm deep set in cut in natural c 900mm wide. Base of drain 400mm below surface.	379648, 800495	Possibly equates with drain 31 in 2014 excavation (illus 3)
	6	E/W stones - drain? Loose stone fill of shallow cut in natural rock. C 900mm wide. 19th/E 20th C clay pipe stem in fill.	379646, 800493	
	7	BT cable	379645, 800487	
	M H 2		379644, 800489	
Manhole 2-3				
	8	Stone drain (section drawn). Details below.	379640, 800485	Possibly equates with drain 13 in 2014 excavation (illus 3)
	MH 3		379638, 800483	
Manhole 3-4		In this section, in front of mansion and steps there is between 500 and 800mm of rubble/ stone, in places over buried topsoil above natural sand and rock.		
	9	Alarm cable, ? phone cable cross trench. Out of use water pipe removed	379610, 800481	
	MH 4		379608, 800480	
Manhole 4-5				
	10	Steps (plan and section drawn). Details below.	379602, 800478 to 379602, 800479	Steps at angle of SW tower to take path down from outcrop in natural rock. Possibly 17th century
	MH 5	Natural rock c 200mm below surface here	379599, 800478	
French drain from manhole 5 to S side of path to car park		Trench cut c 1.5m wide, splayed at top because of depth of 2.5m. Lined with geotex, plastic drain and bottom and filled with stones. Plastic membrane on E side. c. 300mm topsoil (below grass) and gravel (path) over natural. Natural rock at S end- this slopes steeply down near N end of SW tower (379597, 800484 and for most of trench rock is at 2.5m below surface, with hard		

		compact sandier over rock to N end		
	11	Lead water pipe (removed). In excavated trench running in natural along S part of new drain trench.	From 379597, 800481 to 379598, 800487	
	12	Lead water pipe. T junction halfway across drain trench, with spur of lead pipe running towards castle (379598,800487)	From W side trench at 379597,800485, runs SW/NE and out of E side trench at 379598,800490	Takes water from well to rose garden
	13	Lead pipe WNW/ESE across drain trench	379597,800484	
	14	Trench 1.2m wide, 1m deep. Below c250mm topsoil & filled with small loose stones. Runs NNE/SSW along new drain line for 7m, then extends below grass to SW.	From 379596, 800497 to 379597, 800504	Did not show in path line (March 2016). Line visible in resistivity survey- but does not show it extending SW. Soakaway?
French drain from N side of path to car park, N to main drive		French drain along W side of soil strip from N edge of tarmac path to manhole at 379599, 800528. From manhole to main drain in driveway, plastic drain pipe. The soil strip in this section was c4m in width to allow access for a dumper truck alongside the drain trench.		
	15	At S end of trench c 500mm corner of cobbled path surface removed.	379594, 800509	Corner of paving recorded in march 2016 (Murray 2016a, 2, illus 1)
	16	Roughly N/S Water main. Blue alcathene. Appears to be along W side of new drain trench	379593, 800515	
	17	ENE/WSW electric cable	From 379593, 800515 to 379596, 800517	
	18	Stone filled soakaway, extending W beyond trench. Stone lined drain, with plastic drain pipe lying on it fed into/out of soakaway	Centred at 379594, 800522. drain extends from this to 379597, 800519	This is probably identifiable as the SE corner of feature 2 noted on the geophysical survey (Ovenstone, 2014, fig 4)
	19	Stone filled soakaway	379596, 800522	
	20	Water main SW/NE	379595, 800524 to 379599, 800524	
	21	Stone filled soakaway	Centred 379601,800526	
	22	Patch of late 19th / early 20th century rubbish dumping Details below.	Centred 379604, 800530	
	23	Drain from soakaway 21	From 21 to 379611, 800536	

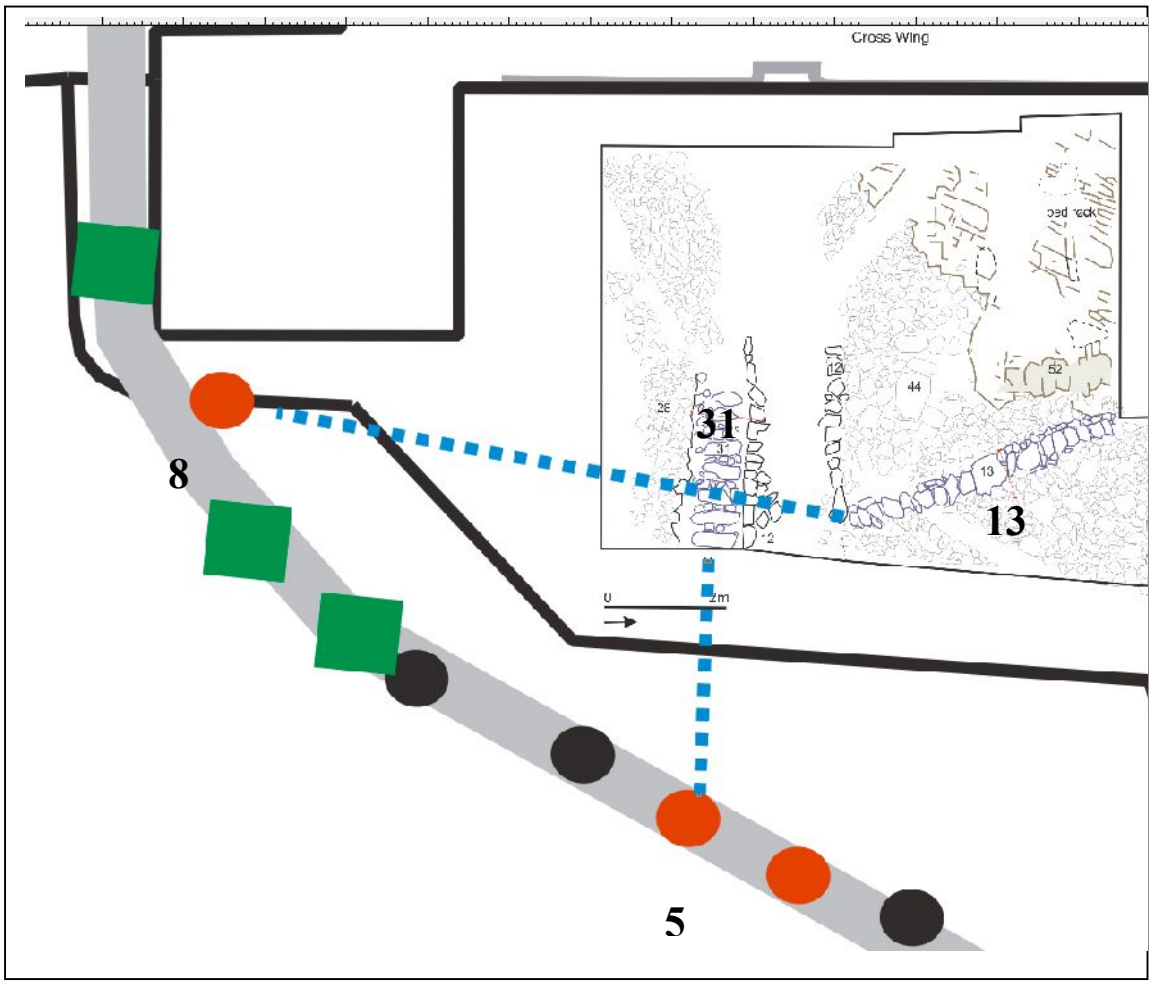


Illus 2 Detail of areas observed Crown copyright: All rights reserved Licence No 10004140

Details of Features

Stone drain 5

A stone drain ran SW/NE obliquely across line of earlier trench for c 800mm. It had been destroyed on the trench line (although the line of its cut was visible across the base of the trench) and was only clear in the W section. The capstone on the W side of the earlier trench was sealed by 150mm of topsoil. The drain was c. 300mm wide and c 300mm deep set in a cut in natural c 900mm wide. The base of the drain was 400mm below the present surface. It was not possible to get a full section of the drain. It may be a continuation of the V-shaped drain (31) excavated to the W in 2014 (illus 3) although this is uncertain as drain 5 appears to be smaller in internal dimensions than 2014 drain 31 (Murray & Murray 2014, 27, 57).



Illus 3 Features recorded in 2016 set against plan of features excavated in 2014

Illus 4 Stone drain 5 in relation to E facade of castle

Illus 5 Detail of stone drain 5

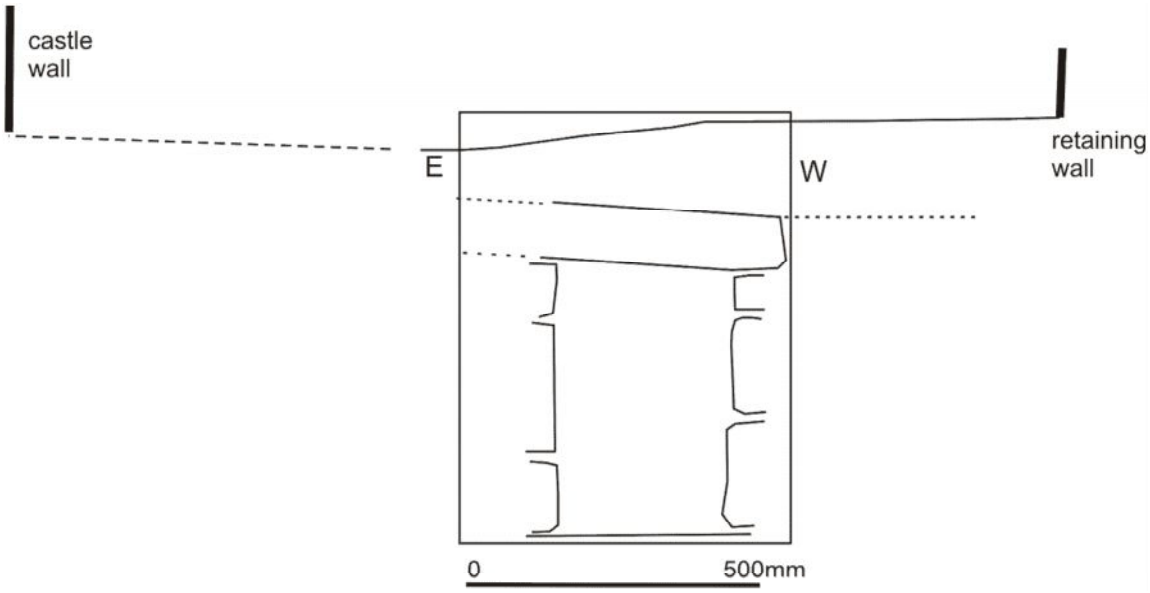
Stone drain 8

A stone drain was exposed for some 700mm which extended from level with SE corner of castle to N, it ran N/S roughly parallel to castle E wall and c 1m to W of it. The S end had been cut away by the earlier drains and manholes being replaced in 2016. It had flat slate lids across 3 courses of drystone walls. It was 470mm high from the base of the lid to the base of drain on natural rock. The internal width was 200-220mm. The lids were only sealed by c100mm gravel. Fill: gritty soil, occasional slate. 1 sherd 20th-century china, 1 sherd 20th-century glass (not retained).

This may equate to drain (13) excavated to the N in 2014 (Murray & Murray 2014, 25, 54) which was of similar size and construction (illus 2).

Illus 6 Location of stone drain 8in relation to E wall of SE tower

Illus 7 Detail of stone drain 8



Illus 8 Section of stone drain 8

Foundation SE corner S facade

The corner stone foundation at the SE corner of the S facade was exposed during removal of the previous manhole; it projected c150mm out beyond wall face and c500mm below present surface.

Illus 9 SE corner of SE tower showing removal of earlier brick manhole

Illus 10 Detail of boulder foundation of SE corner of SE tower

Rock stratigraphy

The depth of the new drainage trench gave a useful insight into the levels of bedrock around the castle. It is clear that there is bedrock just below the surface from near the N end of the E part of the drainage trench (illus 10) and past the tower (illus 11), confirming the results of the excavations in 2014 (Murray & Murray 2014) showing the Tower was set on a rock outcrop which extended into the courtyard area.

Illus 11 Rock directly below surface at N end of E line of new drain

Illus 12 Rock directly below surface in E line of new drain opposite Tower

The natural rock is far lower across the S facade of the 17th century mansion, with the exception of an outcrop near the SW tower (illus 12, 13) where it is just below the surface, but shelved down to c 2.5m just around the corner of the tower, in the W side of the drainage trench- at this point there was a hard compact sandy natural above the rock.

Illus 13 Rock below surface between manholes 4 and 5, with path to chapel in background

Illus 14 Rock at surface at SW corner of castle beside manhole 5

Stratigraphy S of castle

Across the S facade of the mansion there was evidence of a deliberate deposition of material in places over buried topsoil (illus 14, 16) and elsewhere directly above natural (illus 15). Across much of the frontage this comprised c 500mm of grey, often stoney

soil which appeared clean of artefacts apart from occasional slate fragments: this can probably be interpreted as associated with the construction of this part of the structure and the levelling of the ground in front of it to create the formal gardens.

Illus 15 Retaining wall at SE corner showing build-up below wall over buried topsoil (dark line indicated by arrow)

Illus 16 Straitigraphy beside central steps of S facade

Illus 17 Stratigraphy beside S facade SW tower

Steps 10

Two steps were excavated lying WSW/ENE at a slightly off-perpendicular angle to the SW tower of the S facade. They were built on the natural rock, with the top of the lower step level with the grey layer (illus 20:5) interpreted as the construction layer- a thin drift from this extended on the top of the lower step but is probably the result of normal soil movement created by footfall across the steps. The upper step was almost level with the rock outcrop, with a patch of a stony levelling layer (illus 20:7) surviving. The surviving width of the steps was c1.4m, with a total rise of c 350mm (although if the lower step was level with the construction level the rise would have been only c200mm).

Both steps were sealed by redeposited natural sand with lenses of topsoil and occasional slate (illus 20:4). The S side of the steps had been removed by the ceramic drain (the new drain ran along the N side of the old drain at this point).

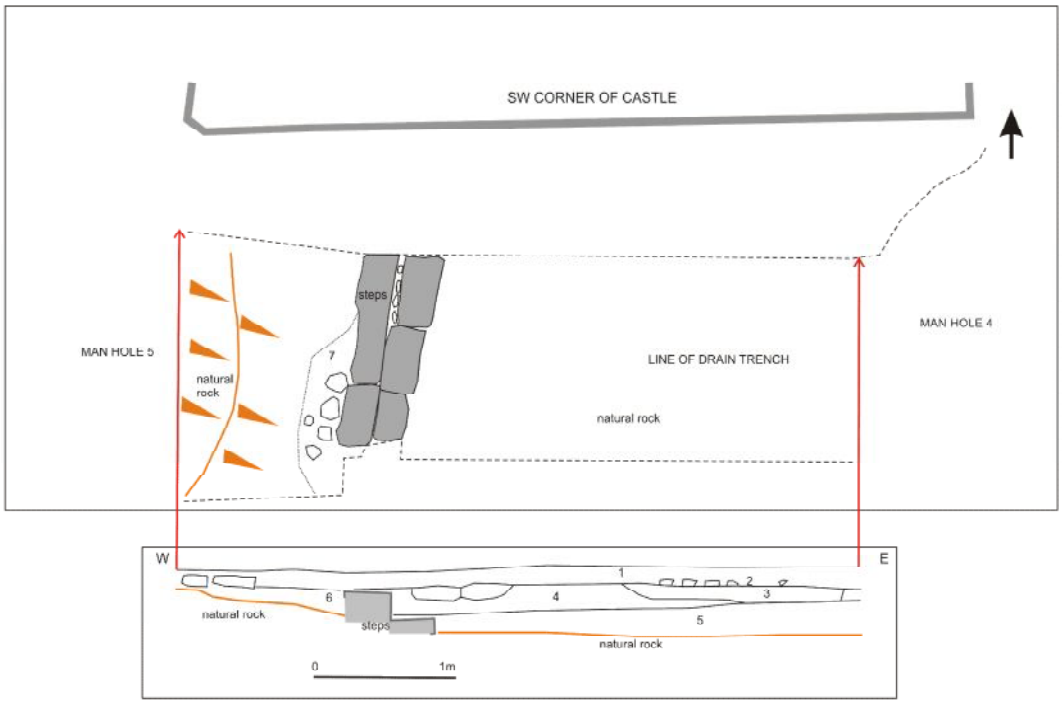
The steps appear to have been of probable 17th-century date and related to the formal gardens buried below the S lawn. They formed a transition down from the steep rock outcrop at this corner.

They were removed as they were in the line of the new drain and manhole 5.

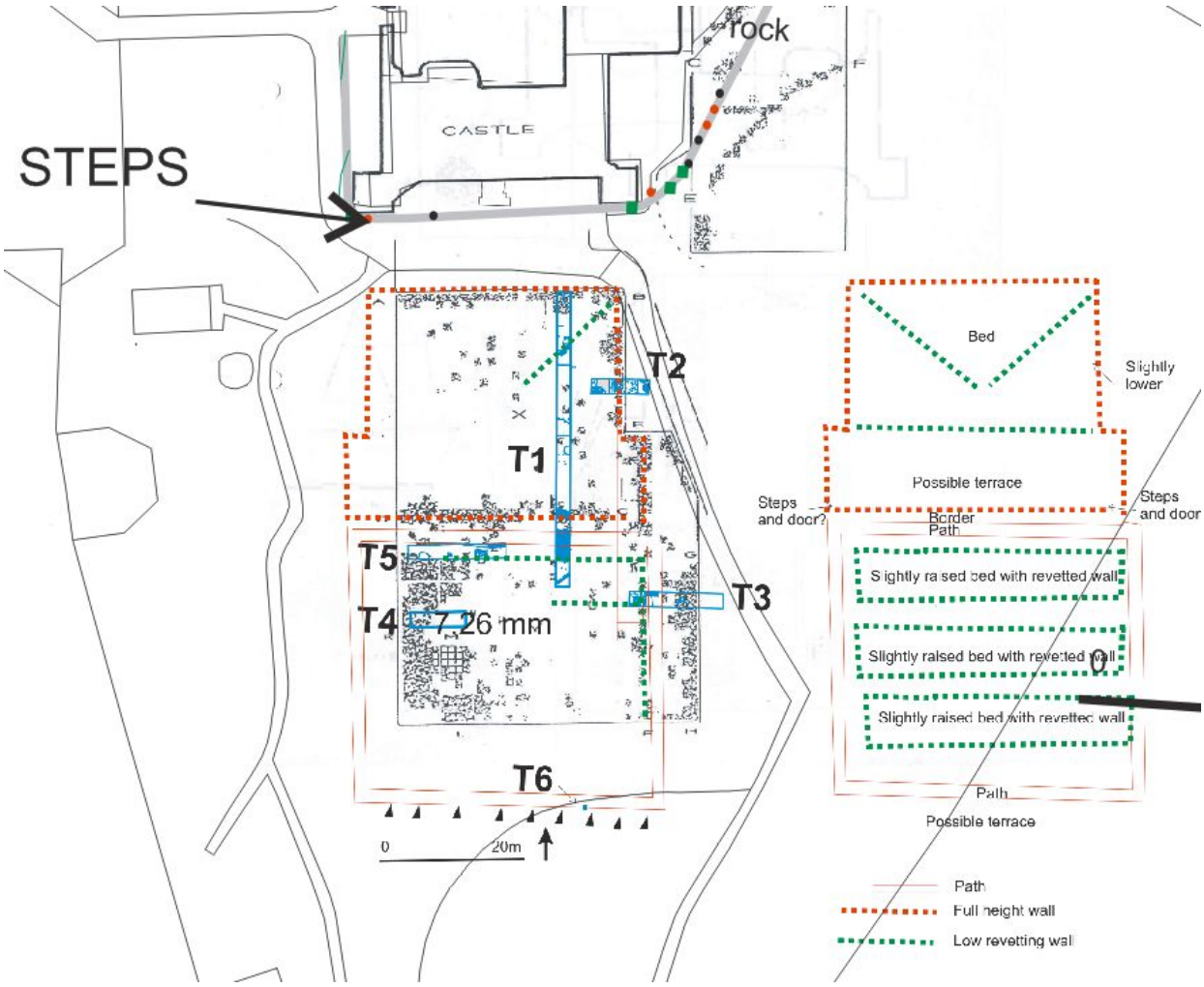
Illus 18 Steps: detail

Illus 19 Steps looking W

Illus 20 Steps looking E



Illus 21 Plan and section of steps (1= gravel of modern surface. 2= small stones over soft patch. 3= black silt in localised hollow. 4= redeposited natural with lenses of topsoil and occasional slate (deliberate levelling). 5= grey compact soil, occasional slate (probably construction level). 6=gritty disturbed natural. 7=remnant of stone layer levelling between top step and rock outcrop.



Illus 22 Steps in relation to garden excavation in S lawn (Murray & Murray 2008,illus 21)

Soakaway 14

A c 1.2m wide trench extended c 7m NNE/SSW across the line of the new drain trench from just S of the tarmac path to the car park and into the grass W of the gravel path (illus 23, 24, 25).

The geophysical survey (Ovenstone, 2014, fig 4) only showed a portion of this as an area of high resistance (not named) which appears to be the excavated N end, by the tarmac path but does not show where it extended below the grass (the survey did not include the existing gravel path).

A section was cut through this feature by machine (illus 24) and showed it to be c 1m deep sealed by c 250mm topsoil or path gravel. The fill was of medium sized rounded field stones. The S end may have been cut when fire main put in as there was a scrap of blue water hazard tape in the edge of the fill.

This can only be interpreted as some sort of soakaway but it is hard to understand where it was intended to drain to.

Illus 23 Soakaway (14) looking S

Illus 24 Soakaway (14) looking N

Illus 25 Section of soakaway c 2m S of tarmac path

Dumping 22

A thin spread of rubbish dumping lay across the trench and was cut by drain 23. The dumping included a small quantity of large pieces of one, or possibly two, 19th-century Willow Pattern dishes, several fragments of 19th-century wine bottle glass and a small

quantity of animal bone from food remains. The dumping extended for c1.6 x 3m and appeared to continue to the W of the soil strip. It lay on the top of natural and was only sealed by between 350mm (W) to 450mm (E) of topsoil; the fill around the pottery etc was indistinguishable from the overlying topsoil.

Illus 26 Dumping 22 (A- marked by blue line) bisected by drain 23 (B- marked by red arrow)

Soakaway and drain 18

A stone soakaway and a related stone-filled drain (with a plastic drian lying on top of it) can probably be identified as the SE corner of feature 2 noted on the geophysical survey (Ovenstone, 2014, fig 4).

5 Discussion

E of castle

Two of the stone-lined drains revealed in the drain trench may equate with drains excavated in 2014, however the path excavated in 2014 did not appear to have continued as a formal paved path as it was not observed in the sections of the drain trench.
The natural rock which the tower was built on was shown to extend in this area.

There was no surviving evidence of walls of an outer court or courts; however it must be stated that the only observation possible was in the already disturbed section faces of the earlier drain trench.

Potential in this area still remains relatively high and interventions in this area should be monitored.

S of castle

There appears to be some survival of what is at present interpreted as a construction level with subsequent levelling of the ground S of the castle. The steps excavated at the SW corner appear most likely to be of 17th-century date (although they may have survived for a considerable time before it was deemed safer to have a level pathway). They may relate to the formal 17th-century gardens, although it may appear an odd direction from which to approach the garden at that period.

There is still considerable potential in all of this area and interventions in this area should be monitored.

Illus 27 General view , N of path, looking N to drive

W of castle

With the exception of a small area of rubbish dumping, the area W of the castle was criss-crossed by water pipes and other services. Features that were visible on the

geophysical survey (Ovenstone, 2014, fig 4, feature 2 = evaluation feature 18 and un-numbered high resistance which can be identified as evaluation feature 14) appear to be identifiable as a series of stone filled soakaways and drainage.

References

Murray, H K & Murray, J C 2008 *Drum Castle , South Lawn, Drumoak, Aberdeenshire.* MAS 2008-05. Unpublished client report, available in NTS archive.

Murray, H K & Murray, J C 2013 *Drum Castle Aberdeenshire. Drainage: Archaeological watching brief.* MAS 2013-18. Unpublished client report, available in NTS archive.

Murray, H K & Murray, J C 2014 *Drum Castle . Tower of Drum major repairs project, Drumoak, Aberdeenshire.* MAS 2014-07. Unpublished client report, available in NTS archive.

Murray, J C 2016a *Pathway, Drum Castle, Aberdeenshire*. MAS 2016-11. Unpublished client report, available in NTS archive.

Ovenden, S 2014 *Geophysical Survey Report: Drum Castle*. Unpublished client report, available in NTS archive.

Appendix 1: Catalogue of digital photographic record (to archive)

Digital frame number	**Content**
1-2	Natural bedrock at N end of E arm of drain
3	Sewer pipe crossing line of new drain
4-7	Natural bedrock E of tower
8-11	Drain 5
12-16	Drain cut below revetting wall at SE corner of mansion
17-20	Drain 8
21-27	Foundation of SE corner mansion
28-29	Stratigraphy by steps in S facade and former brick man trap
30-31	Stratigraphy at W end S facade. Alarm cable
32-33	Natural rock near manhole 5
34-36	Stratigraphy in front of SW tower
37	Looking E to manhole 4

38-52	Steps (10)
53	Natural rock on position of manhole 5 by SW tower
54-56	Soakaway (14)
57	W arm of drain looking N showing lead water pipes
58-59	W arm of drain looking S
60	Natural rock at W side of SW tower
61	Looking N up W arm of drain
62-65	Soakaway (14) sectioned.
66-67	Topsoil strip between drive and path to car park W of castle, looking S
68	Drain 23 cutting dumping 22 looking S
69	Detail of dumping 22
70-71	Drain 23 cutting dumping 22 looking N
72	Features 17-19 looking S
73-74	Soakaway and drain 18 looking E
75	General view of soil strip looking N
76	Tree root/stump in soil strip
77	General view of soil strip looking N