

Fornleifarannsókn á Gásum /Archaeological Research at

Gásir, 2001

An Interim Report/Framvinduskýrsla



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Archaeological Research at Gásir, 2001.

An Interim Report

SUMMARY

A preliminary programme of archaeological survey and test excavation was conducted at Gásir, Glæsibæjarhreppur, Eyjafjörður, NE Iceland in June and July of 2001. The work was undertaken by Fornleifastofnun Íslands on behalf of Minjasafnið á Akureyri. Survey work has produced a new map of the site, and a number of previous excavation trenches were re-opened and re-assessed. This evidence suggests a lengthy and complex sequence of occupation, and is interpreted as seasonal occupation for the purposes of trading. Re-excavation found the remains of informal temporary structures, along with deposits located below the present water table that indicate potential for the preservation of organic remains.

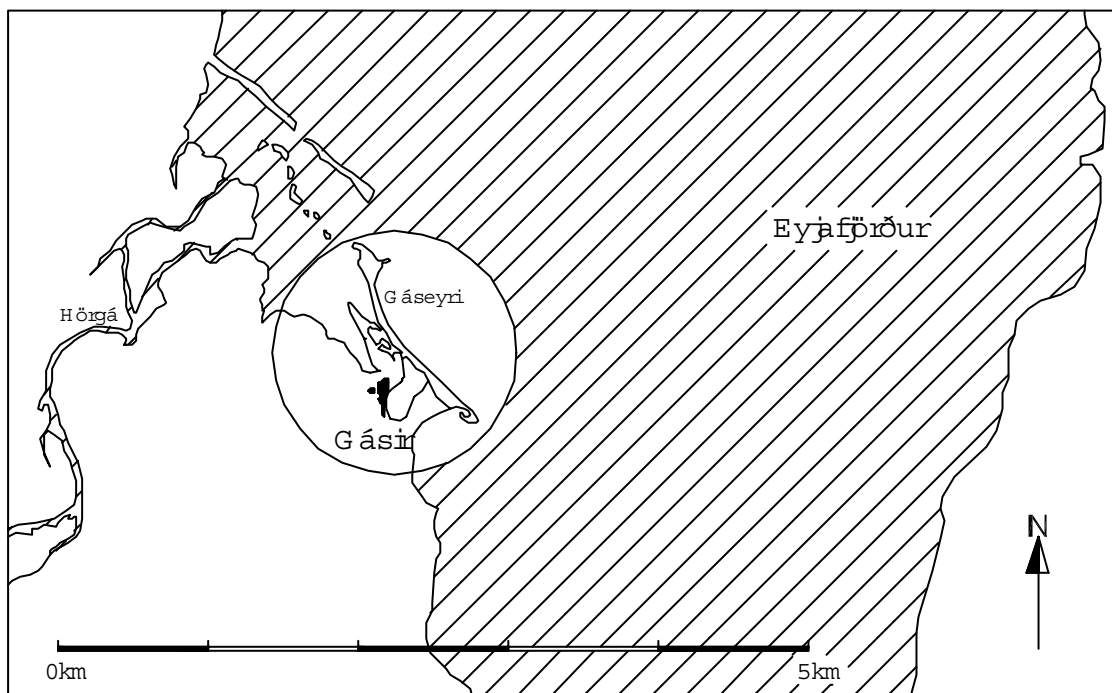


Figure 1 - Site Location

INTRODUCTION

Gásirkaupstaður is located at the southern edge of the Hörgá river delta, on the western shore of Eyjafjörður, 11km north of Akureyri. The low lying area of surviving archaeology is protected from the open water of Eyjafjörður by a system of sandbars and mudflats. A great number of broadly sub-rectangular earthworks up to 2m tall are clearly visible to the west of an area of salt marsh, itself protected from the

sea by a large sandbar. The visible archaeological remains lie in a zone of grass and low shrub, between 1m and 7m above sea level. The land rises quite sharply to the south of the site, to a height of circa 16m above sea level, where the land is now utilised for pasture/hay production by the modern farm of Gásir. Higher areas of the site that have no visible archaeology are heavily thufurised.

The archaeology of Gásir has been investigated on a number of previous occasions. A survey of the site was conducted by Premierløjtnant F. Froda in 1902 on behalf of Daniel Bruun, and excavation was first undertaken in 1907 by Daniel Bruun and Finnur Jónsson. These investigations focused on the church at Gásir, and upon a group of structures at the eastern edge of the site. More recently, four trial trenches were excavated by Margrét Hermanns-Auðardóttir and Bjarni F. Einarsson during the summer of 1986, each located within a different part of the site. This previous work documented the uniqueness of the site, and indicated the tremendous complexity of surviving archaeological deposits at Gásir.

At the initiative of Minjasafnið á Akureyri, further work was undertaken at Gásir during July 2001. This initiative aims to further archaeological research at Gásir, and to enhance the public presentation of the remains. In collaboration with Minjasafnið Akureyri and Þjóðminjasafn Íslands, Fornleifastofnun Íslands has undertaken a topographical survey of the site and a re-assessment of previous work at Gásir, including the re-excavation of earlier trenches. In addition, an assessment of geophysical survey techniques at the site has been carried out by Tim Horsley (University of Bradford, UK) and a search of Daniel Bruun's documentary archives stored at the Nationalmuseet in Copenhagen has been undertaken. An initial analysis of the tephra horizons encountered has been carried out by Magnús Á. Sigurgeirsson. A study of the previously found artefacts has been undertaken – of particular interest are three pot sherds and a bronze object. These are discussed below (See Mehler). These steps are seen as a prerequisite to further investigation, and will hopefully provide the foundation for a wide ranging programme of further research.

M E T H O D O L O G Y

M easured survey

In order to generate a three dimensional model of the surviving archaeology and its environs, the entire area was surveyed using a Total Station Theodolite. A 20m grid system was marked out based on control points supplied by the staff of Vegagerðin á Akureyri. These points were used as the basis for locating all further work. Within this grid system 3D measurements were taken at 1m intervals over the area of visible archaeological remains, and at 5m intervals for a larger area surrounding the site. Additionally, landscape features were noted and measurements were also taken along the shore line. This data was subsequently processed and interpolated to produce a 3D model of the site and a map of the visible archaeology.

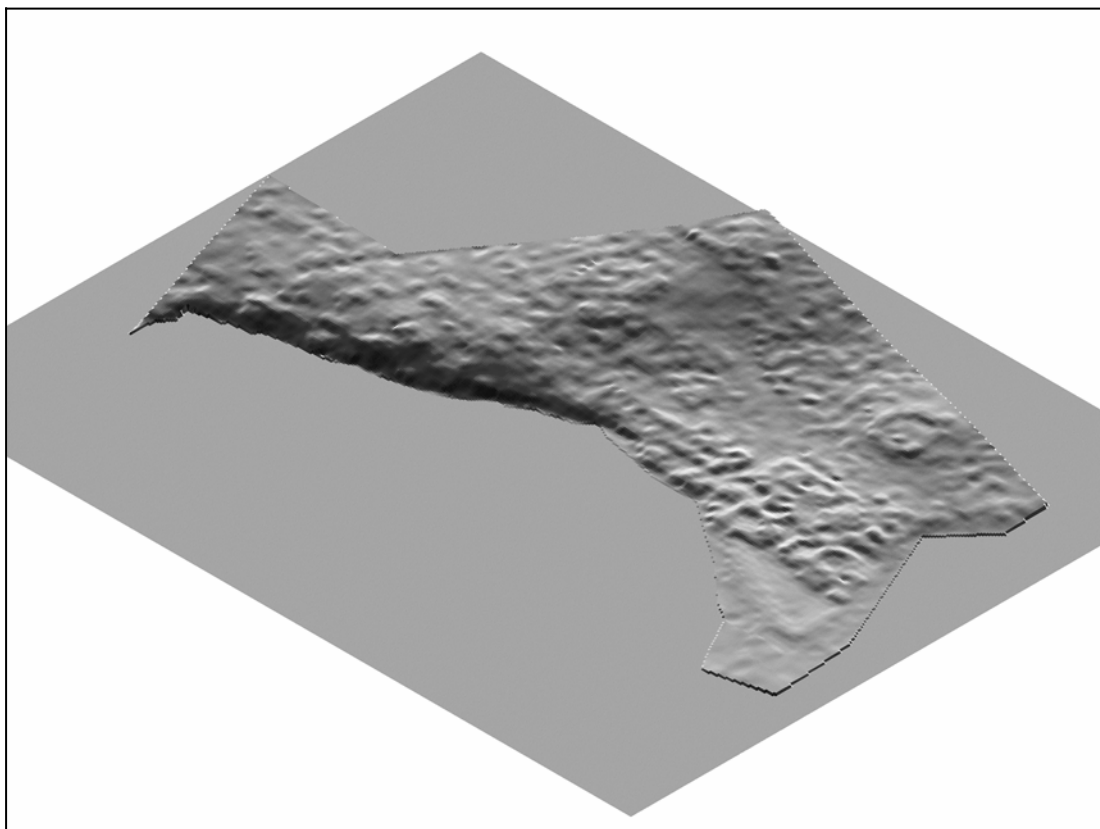


Figure 2 – Surface model of site environs, interpolated from 5m survey.

Isometric view from the northeast.

This survey will serve as a record of the archaeological remains prior to further investigation, and will be of use in identifying areas for further study, the

protection of the monument, and the presentation of the site to the public. The result of this survey is a new map of the site, intended to complement other surveys and imaging methods (e.g. Aerial photography, stereo photogrammetry, geophysical survey etc.). The survey also helped establish the locations of previous excavation trenches by a comparison with previously published drawings.

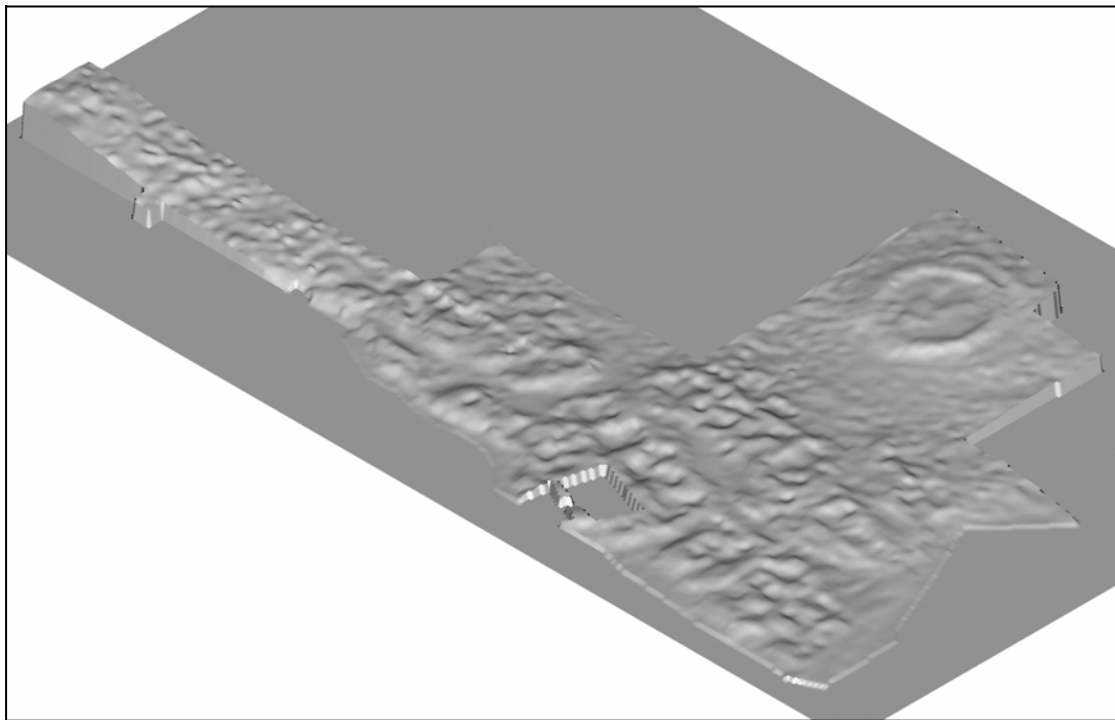


Figure 3 – Surface model of archaeological remains, interpolated from 1m survey.

Isometric view from the northeast.

Geophysical Survey

An assessment of routine geophysical techniques was undertaken by Tim Horsley (University of Bradford, UK). The results of this work are discussed below (See Appendix 1).

Excavation

In order to more fully assess the nature, extent and condition of the surviving archaeological remains, a number of previously excavated archaeological trenches were targeted for re-excavation. The larger part of this effort was directed towards a cluster of structures partially excavated under the direction of Daniel Bruun and

Finnur Jónsson in 1907, and designated as “Rummene” A, B, C and D in Bruun’s report¹.

A single open area encompassing these structures was defined (Area A), measuring in total 180m². Turf was removed by hand and reserved for replacement. The soil backfilling the excavation of 1907 was hand excavated to a depth in excess of 1m. Effort was then focused on the complete re-excavation of the structure designated “Rum B” by Bruun (hereafter Structure A1), being that in which he recorded the greatest concentration of features.

Once the backfill had been removed, the remaining archaeological deposits were recorded. Plans were made at a scale of 1:20 and sections/elevations were drawn at appropriate scales. This record was supplemented by photography as appropriate. Archaeological deposits were described in accordance with a standardised terminology set out in the “Archaeological Field Manual” of Fornleifastofnun Íslands.² Additionally, 3 of 4 trial trenches excavated by Margrét Hermanns-Auðardóttir and Bjarni F. Einarsson in 1986 were re-examined and recorded. These trenches were designated “Prh 1/A”, “Prh 3/D” and “Prh 4/E” in the published report³, and these identifiers are used here for ease of reference.

The 1986 trial trenches each measured 3m², and had been backfilled with coarse grey black sand. Trenches 1/A and 4/E were re-excavated in their entirety, along with the southernmost part of trench 3/D. The archaeological deposits encountered were re-recorded according to the methodology described above.

All artefacts and bones encountered in the backfill of the trenches were retained for further study. All previously undisturbed archaeological deposits were left as found, excepting where sampling was required or clarification was necessary.

¹ Bruun 1928, pgs 114-125

² Lucas (ed) 2000

³ Hermannsdóttir 1987, pgs 3-39

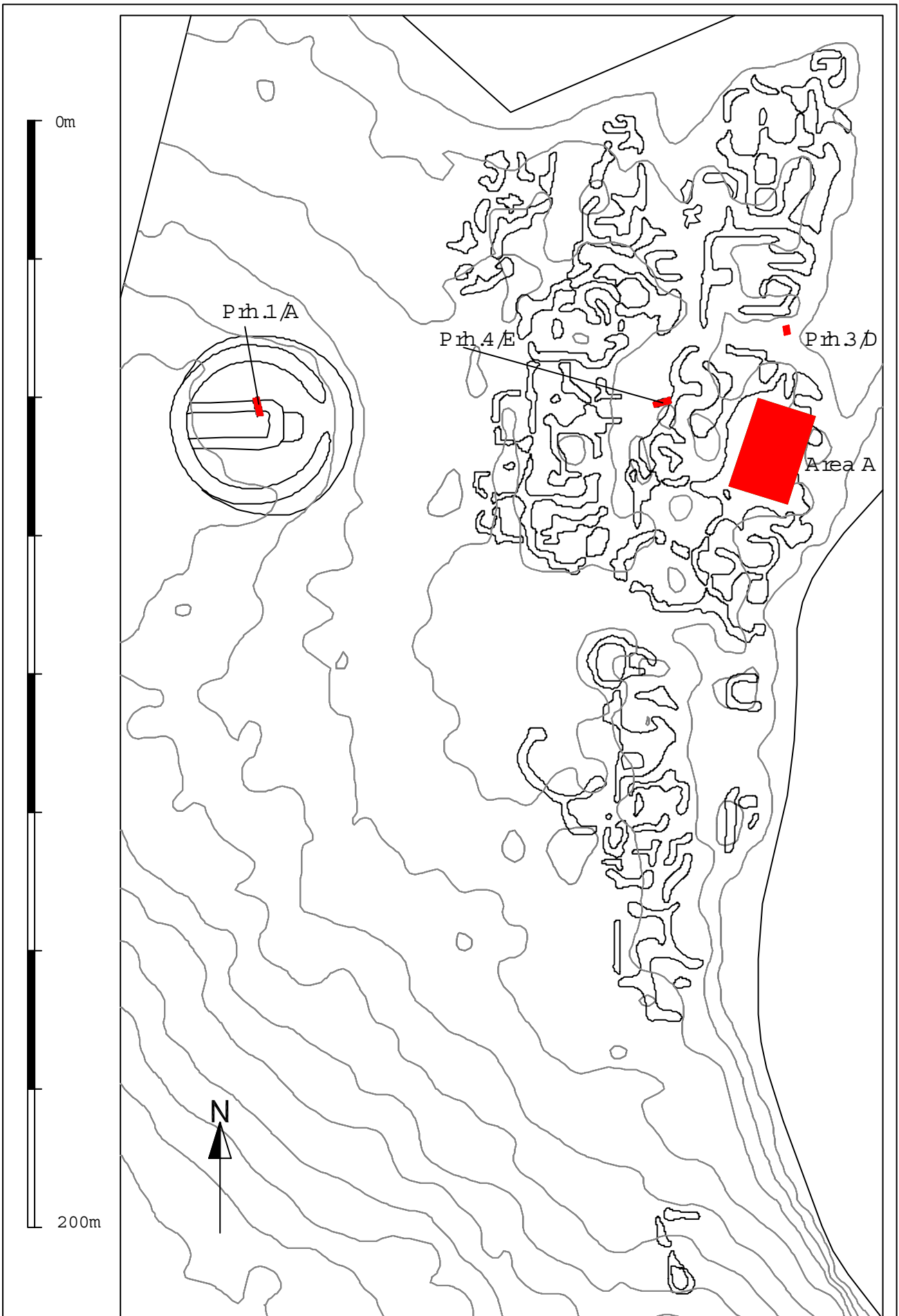


Figure 4 - Overview of surveyed earthworks and 2001 excavation areas

RESULTS

Excavation

Area A - (Figures 5, 6, 7 and 8)

The re-excavation and recording of these apparent structures revealed a sequence of deposits and features that appear somewhat different from the previously published evidence.⁴ Only the north-easternmost of the 4 apparent structures was completely re-excavated (Structure A1). Excavation of the southeastern “structure” was discontinued after the removal of turf and topsoil, and excavation of the 2 western structures continued to a level where the elevations of the trench could be studied. Structure A1 contained a complex sequence of debris layers and a number of archaeological features that must represent multiple phases of use. Prior to further excavation only a limited understanding can be gained from these previously excavated features and deposits, but a number of new discoveries have come to light.

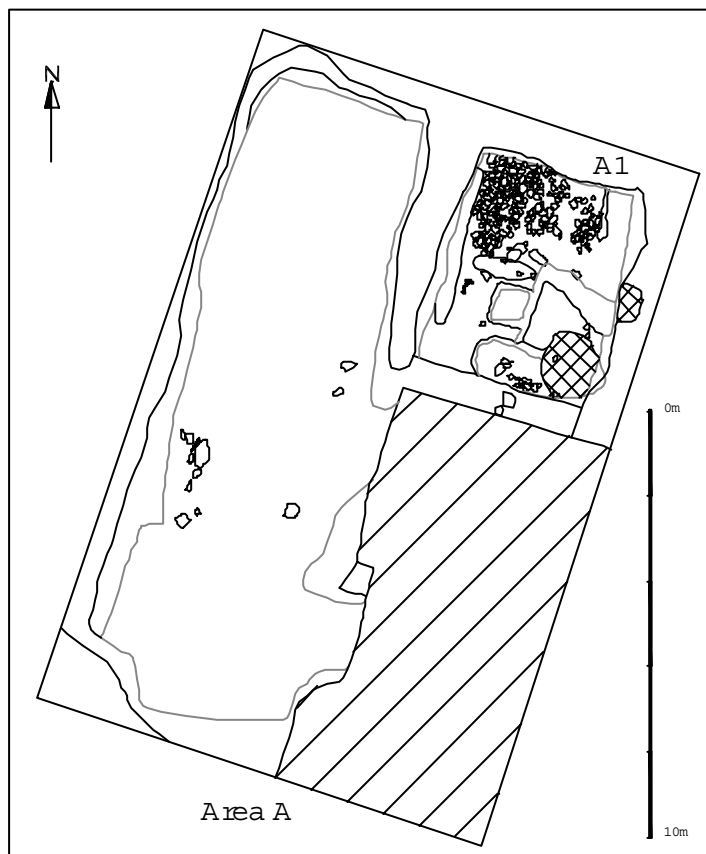


Figure - Area A and Structure A1

Whereas all of the features noted by Bruun are still identifiable, the size, location and nature of these features are not always as previously recorded. Additionally, an apparent test pit discovered in the centre of Structure A1 is not discussed by Bruun. This sub-square test pit was backfilled with the same material as encountered elsewhere in Area A, and is believed to have been dug as part of the 1907 excavation.

⁴ Bruun 1928, pgs 114-125

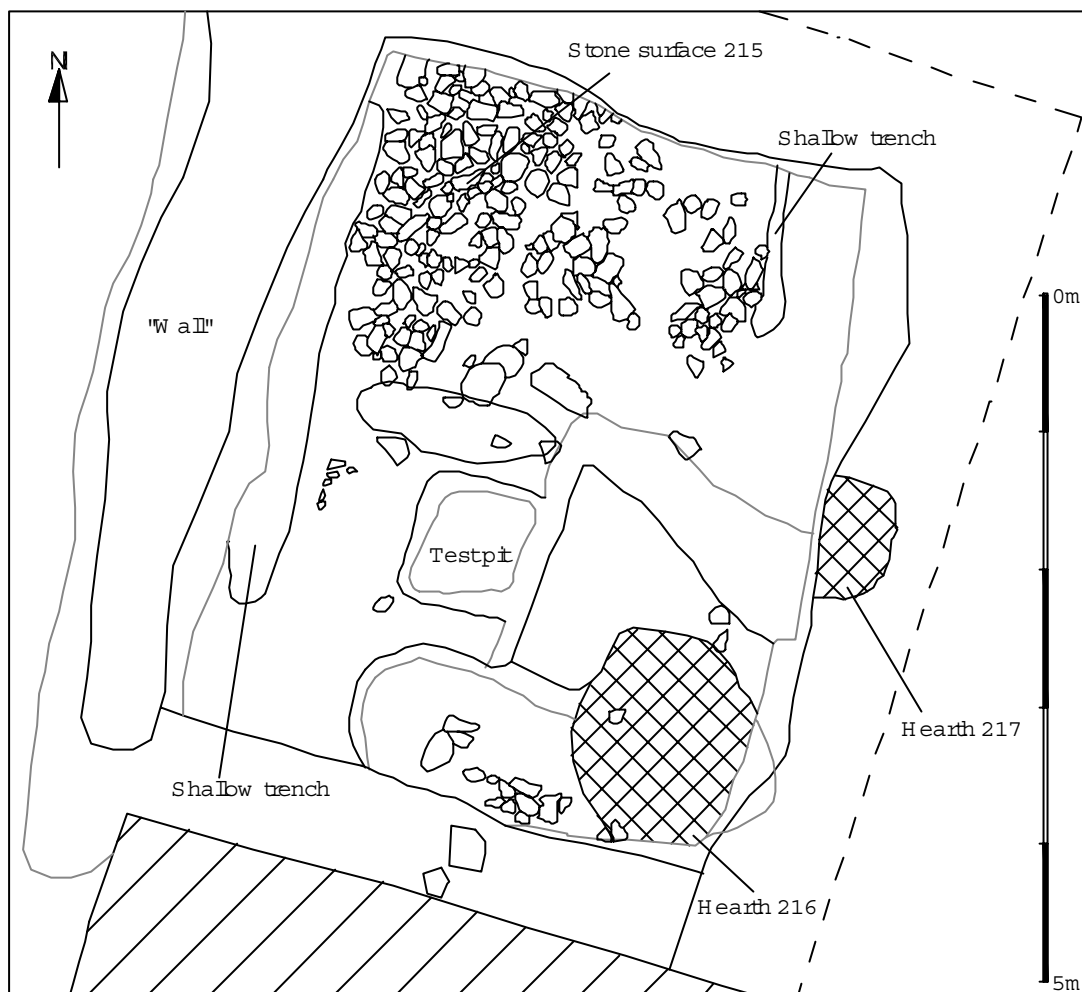


Figure 6 - Structure A1 ("Rum B")

The earliest deposits recorded were those encountered at the base of the test pit. The test pit measured approximately 1m square at the surface, becoming narrower towards its base and was a maximum of 0.9m in depth. The base of the test pit (at 0.13m below sea level) was subject to rapid inundation.

At the base of this test pit was a pale clay rich deposit (Context 214) found to contain organic material and charcoal. These inclusions are thought to be anthropogenic, and the possibly waterlogged nature of this deposit indicates the potential for excellent preservation of organic materials and artefacts. At the upper horizon of context 214, a deposit of dark, organic rich soil (context 213) was encountered. This latter deposit may represent a buried surface. Context 213 was overlain by a sequence of mixed deposits including turf debris and peat ash (contexts 212, 211, 210). These in turn were sealed by a dark blue grey tephra horizon (context 209), thought to be Grimsvötn ~1320AD (See Appendix 4)

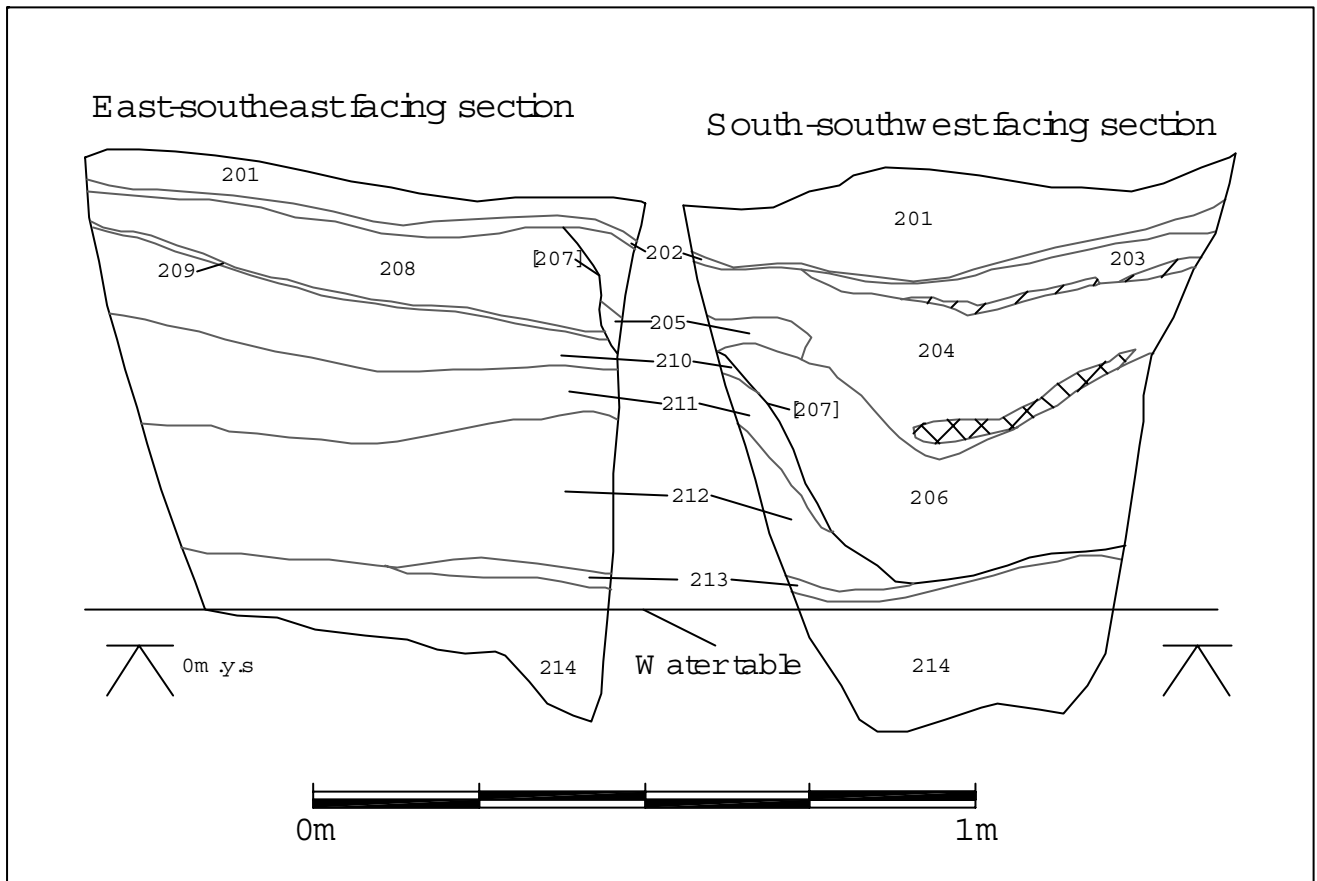


Figure 7 - Sections of testpit in Structure A1

Context No.	Description
201	Mid grey brown sandy silt with occasional dark red turf fragments
202	Very small rounded stones/gravel, up to 6mm
203	Mid grey brown silty sand with lenses of orange/black turf inc blue grey tephra at lower horizon.
204	Very mixed yellow brown sandy silt with small orange red turf fragments and dark brown organic lens at lower horizon.
205	Yellow/grey turf block.
206	Very mixed yellow brown silt with some organic content, frequent peat ash inclusions and occasional charcoal.
207	Possible cut feature (pit?)
208	Dark yellow brown sandy silt with very occasional turf fragments and peat ash
209	Blue grey tephra horizon (G~1320?)
210	As 208
211	Yellow brown clay silt with yellow/brown/black turf fragments
212	Grey brown clay silt with occasional orange red turf fragments
213	Dark brown organic horizon
214	Pale yellow grey clay silt with frequent organic lenses and occasional charcoal

Table 1 – Context descriptions for Figure 7

Above the latter tephra horizon was a further mixed deposit (context 208). Context 208 appeared to be truncated by an irregular pit [207], which had subsequently been filled with a succession of mixed debris layers (contexts 206, 205, 204 and 203). Both the fills of feature [207] and deposit 208 were sealed by a thin band of very small rounded gravel (context 202). This gravel horizon had in turn been overlain by a further deposit of grey brown sandy silt (context 201) including fragments of turf.

Further excavation will be needed to confirm the stratigraphic relationship between these deposits and those seen elsewhere in Structure A1, but it seems clear that the stone surface (context 215) and possible hearths (216 and 217) recorded in plan (see Figure 6, and below) must post-date both the G~1320 tephra horizon, and the construction, use and disuse of the possible pit feature [207].

This interpretation was supported by the re-recording of the west facing elevation of Structure A1 (Bruun's "Östre væg"), and the excavation of a small trial hole extending that sequence down to the water table (See Figure 8).

At the base of this sequence was a soft, wet, grey silty clay (context 200) with organic inclusions and occasional charcoal. Context 200 was sealed by a mixed deposit including turf debris (context 199). The latter deposit was in turn sealed by an horizon of dark blue grey tephra (context 198), also thought to be Grimsvötn~1320AD. Above the tephra horizon were a layer of silt and turf debris (context 197), a layer of peat ash (context 196), a layer of sand (context 195), a further layer of turf debris (context 194) and a grey black ash horizon (context 193). These deposits were in turn overlain by a widespread layer of dark brown silt and turf debris (context 192). Context 192 was exposed in plan throughout the larger part of Bruun's excavation trench. It appears that the stone surface 215 lies at the surface of this deposit, although the relationship has been obscured by Bruun's excavation of a shallow trench between the drawn elevation and the stone surface.

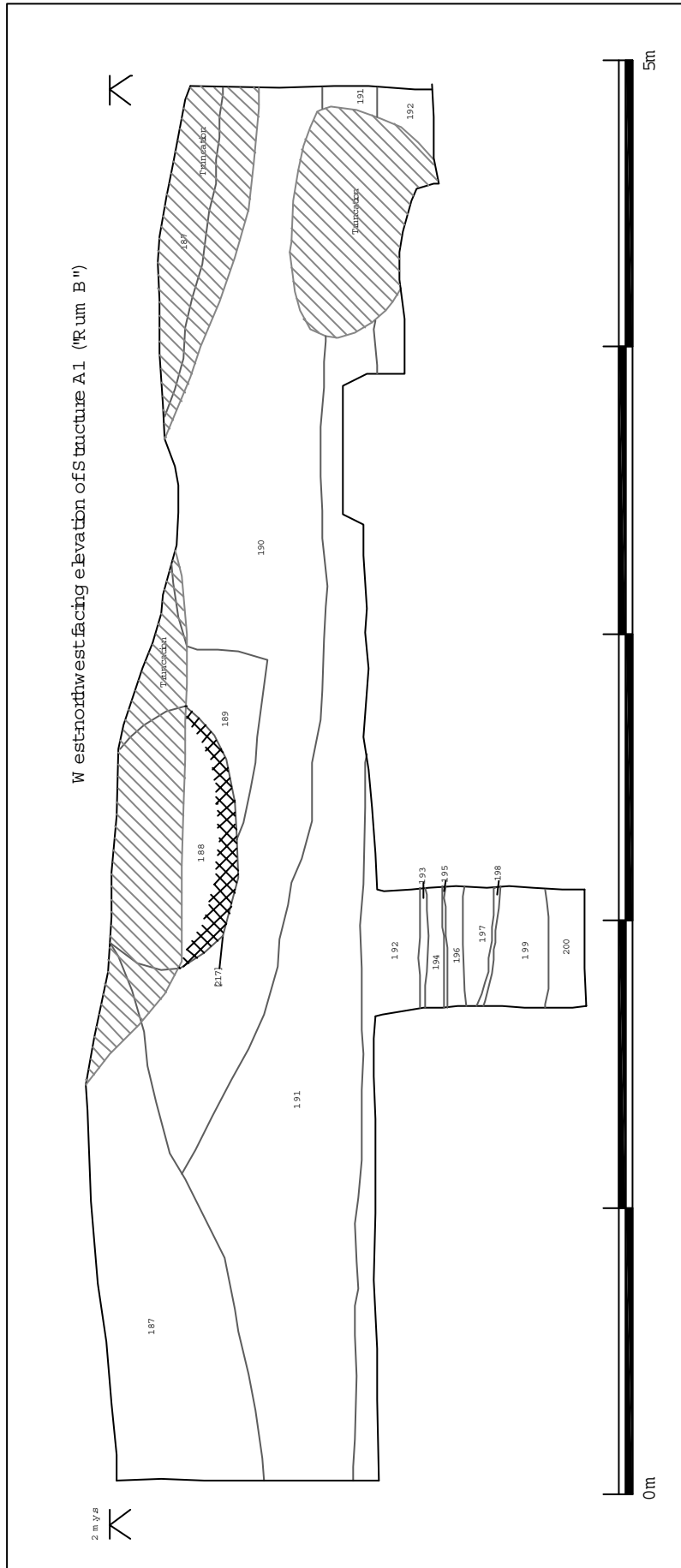


Figure 8 - Elevation of Structure A1, (Bruun's "Ostrevæg")

Context No.	Description
187	Mixed yellow brown sandy silt with frequent turf fragments, occasional peat ash, charcoal and small rounded gravel
188	Reddish pink peat ash at surface, becoming blackened soot and charcoal towards base. Fill of hearth [217]
189	Yellow and grey turf blocks, with frequent bands of fine dark grey sand
190	Mid brown sandy silt with frequent large turf fragments (inc. dark grey tephra)
191	Dark yellow brown sandy silt, with frequent small, variable turf debris, occasional dark grey and pale yellow tephra, and small rounded gravel
192	Dark brown sandy silt, with occasional larger fragments of turf and angular stones (up to 100mm)
193	Grey black wood ash horizon
194	(As 190)
195	Fine grey black sand
196	Pink peat ash with occasional charcoal
197	(As 192)
198	Dark blue grey tephra horizon (G~1320)
199	Mid yellow brown sandy clay silt, slightly plastic, with occasional turf debris
200	Soft, dark blue grey silty clay with occasional charcoal and organic inclusions, and ferric precipitation.
217	Shallow cut of hearth

Table 2 – Context descriptions for Figure 8

Context 192 lies beneath a thick, mixed deposit of turf debris (context 191), extending along the entire length of the eastern elevation of Structure A1. At the southern limit of Structure A1, the elevation has been undercut by previous excavation. This is likely to have been undertaken to investigate the extent of a sub-circular feature filled with peat ash (feature 216, or fireplace “a” as recorded by Bruun). This feature is believed to be a hearth or temporary fireplace, and appears to truncate the surface of context 191. Feature 216 is sealed by a deposit of silt and turf debris (context 190) measuring up to 0.55m in thickness and up to 3.5m in length. Set in to the surface of deposit 190 was a block of regular turf (context 189) yellow/grey in colour and including horizontal bands of fine grey sand. This block of turf was truncated by a shallow sub-circular feature [217], filled with charcoal and ash at its base and peat ash at its surface (context 188). Feature 217 had been half excavated by Bruun and corresponds to his fireplace “b”. Context 190 was additionally overlain by a further mixed deposit of sandy silt and turf debris (context 187) up to 0.52m in depth.

This sequence of deposition once again indicates numerous episodes of archaeological activity postdating the deposition of the G~1320AD tephra horizon, and details the accumulation of very large quantities of anthropogenic material after that date. This evidence suggests considerable activity continuing within this area of the site into the latter part of the 14th century and possibly longer. Tephrochronological study has identified fragments of the “A” layer (V-1477 AD) tephra within turf debris above the stone surface 215, suggesting that human activity at Gásir extends into the last quarter of the 15th century.

The features seen in plan within Structure A1 are those recorded by Bruun, although their detail is amended somewhat. Located at the northern end of the area is a deposit of stone (context 215, or Bruun’s “c Stenbrolægning”). Deposit 215 measures up to 3m east-west and 2.3m north-south, extending beyond the northern limit of excavation. It is formed from an uneven spread of unworked angular stones measuring 0.10-0.25m in length. It is interpreted as a surface, and is believed to have been partially removed by previous excavation. Feature 216 (see above) was located at the southeastern corner of A1, and had also been partially excavated. It appears that this feature would have originally measured circa 1.5m in diameter, and up to 0.30m in depth. Feature 216 is interpreted as a hearth or temporary fireplace. The remaining portion of feature 217 (see above) suggests a diameter of circa 0.90m, and is also interpreted as a temporary hearth.

These three features recorded by Bruun appear to belong to different phases of activity, in addition to further phases recorded within the test pit, which they overlie.

An examination of the exposed archaeological deposits seen elsewhere in Area A did not locate any structural features, and most particularly did not identify any deposits thought likely to represent walls for the rooms or structures enumerated by Daniel Bruun. Rather, the remaining elevations of the excavation area, and the baulks of soil left between the four “Rummene” are formed from a sequence of sandy silts and turf debris deposits not unlike those detailed above. It is unclear at this time why Bruun and Jonsson felt these limits represented defined structures.

Test trench /Prufuhola "Prh. 4/E" (Figures 9, 10 and 11)

Prh. 4/E was located circa 18m to the west of Area A. This test trench was first excavated by Margrét Hermanns-Auðardóttir and Bjarni F. Einarsson in 1986. The trench measured 3m x 1m and is aligned broadly east-west. Unlike the 1907 investigations, excavation within this trench had proceeded to and beneath the lowest archaeological deposits, (at up to 1.85m below the current surface) and thus it offers a complete sequence of the deposits to be found at this location.

Once again, this trench evidences the multi-phase nature of activity at the site, and the accumulation of large quantities of anthropogenic material. The earliest deposits seen within Prh.4/E were a number of prehistoric naturally deposited layers (contexts 123, 124, 125, 126, 129, 130 and 141) exposed by the excavation of a small trial hole in the southwestern corner of the trench. These include several episodes of aeolian deposition, along with two pale yellow / white tephra horizons (possibly Hekla 3 and 4). Upper most in this sequence was a pale grey to dark grey tephra horizon (context 123) thought to be the Landnám layer (871AD±2). These prehistoric deposits were seen to have been subject to some modification, probably as a result of cryoturbation. Overlying deposit 123 was a band of sterile orange brown silt (context 122) up to 3cm thick. This layer, and the underlying natural horizons, had been truncated by a large negative feature (Feature 173) at the south eastern limit of the trench. Context 122 was also overlain by a multi-lenticular deposit of gray sand (context 117)

The excavated portion of feature 173 is semi-circular in shape and measures circa 1.45m in diameter and up to 0.40m in depth, continuing beyond the southern limit of excavation. Feature 173 has moderately steep concave sides and a flattish base, and was filled by deposits 137 and 136. Deposit 137 seems to be derived from natural deposits and may represent either slumping or upcast, but deposit 136 was seen to contain peat ash, fire-cracked stone and fragments of decayed bone. Without knowing its full extent, the function of feature 173 is unclear. A number of possible postholes/stakeholes were identified in the base of Prh. 4/E, and these could be associated features. However, it is not clear from what level these features were cut, and they may belong to a later phase of activity.

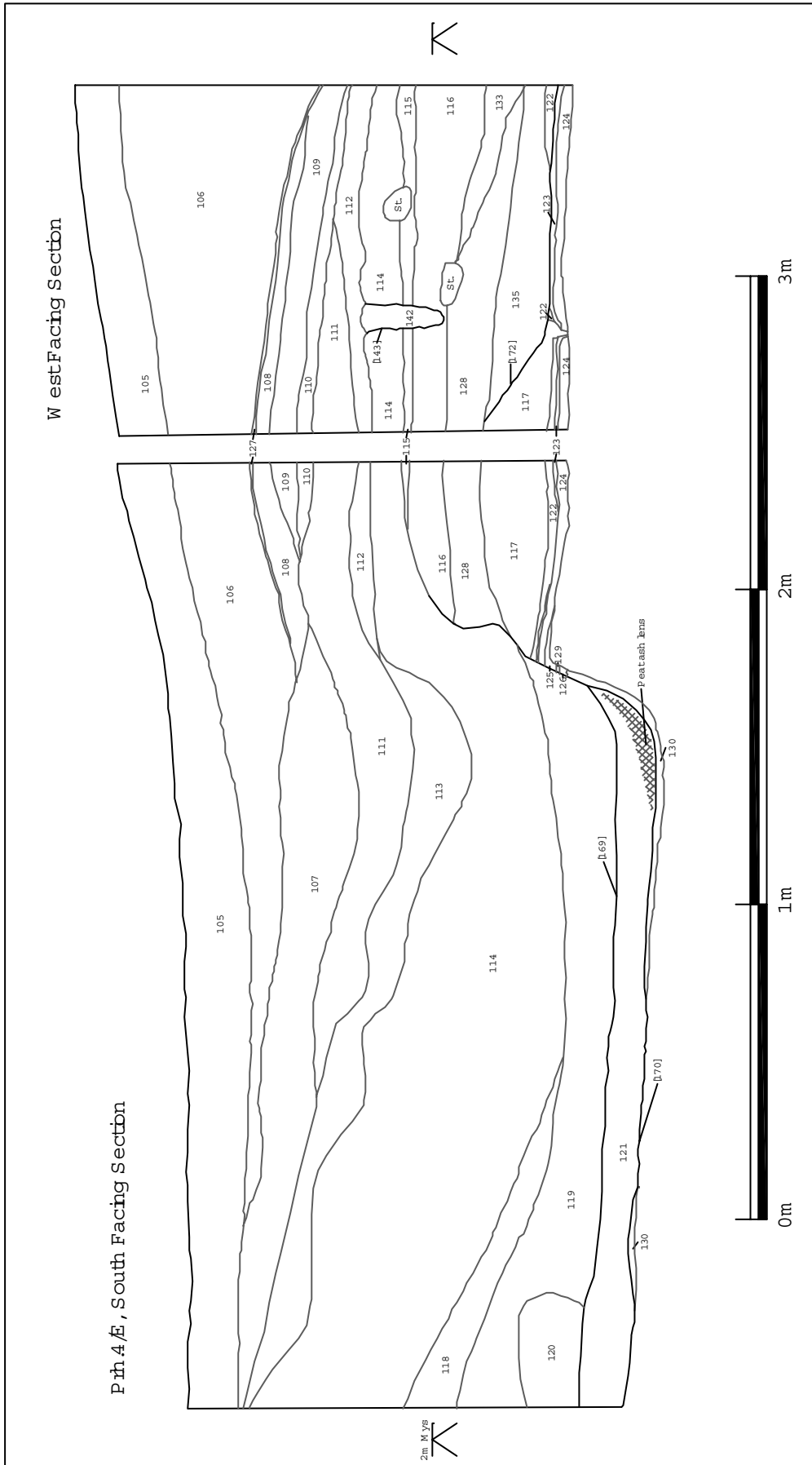


Figure 9 - Pih.4/E, South facing and West facing sections

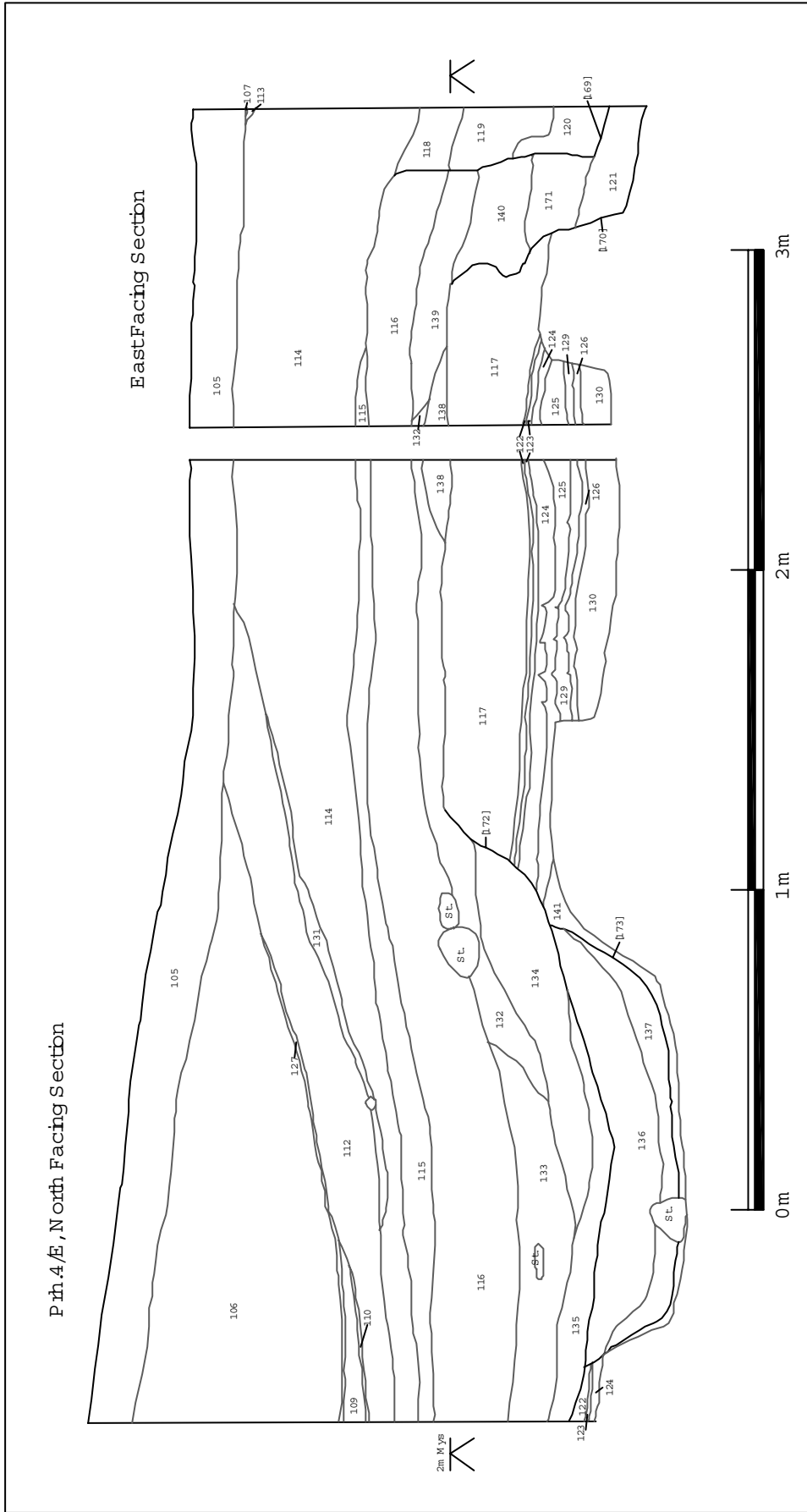


Figure 10 - P.h.4/E, North facing and East facing sections

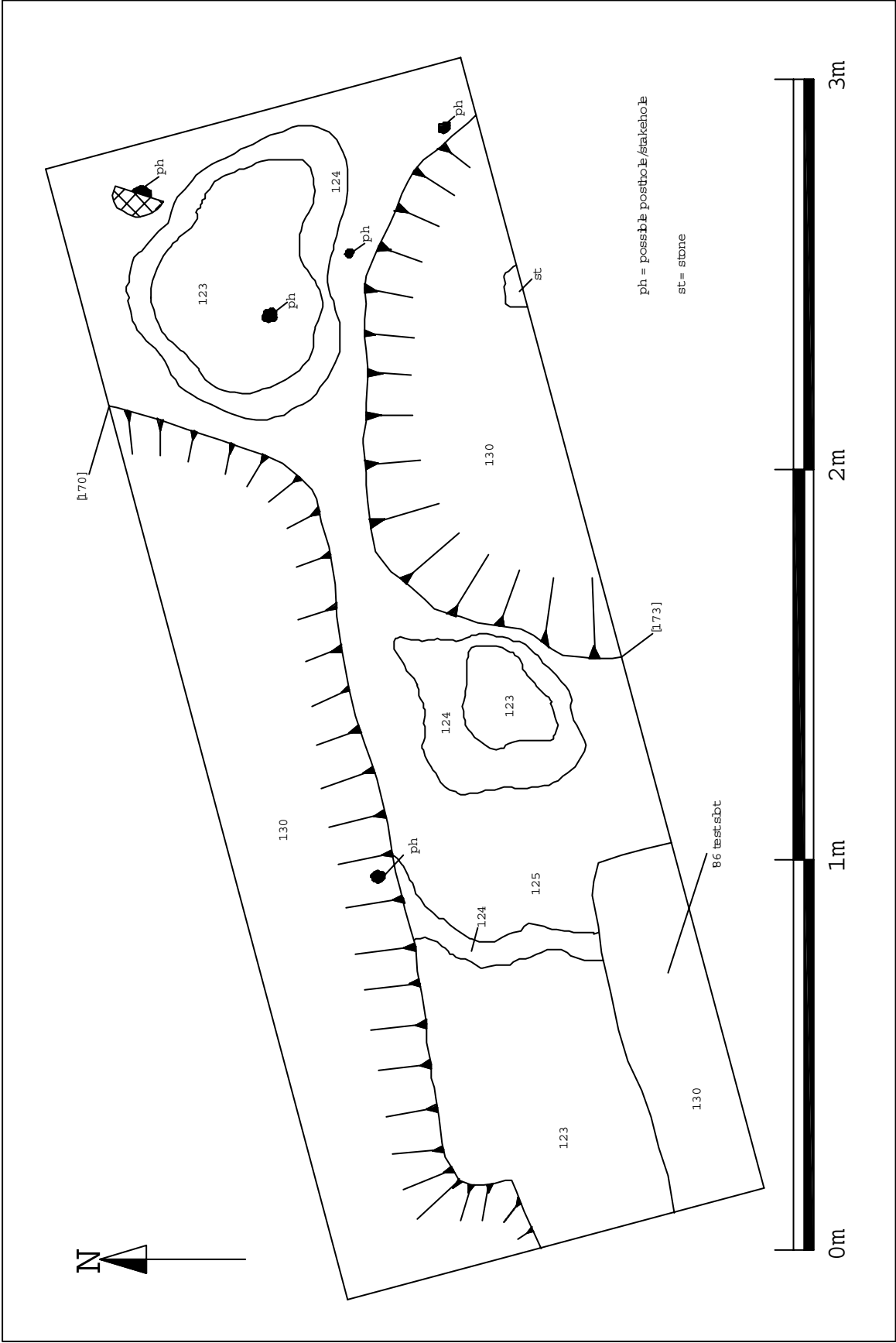


Figure 11 - Prh.4/E, Plan

Context No.	Description
105	Pale brown sandy silt, with moderate bands of coarse grey sand
106	Mid brown sandy silt, with occasional turf debris, peat ash, dark grey and pale yellow tephra
107	Pale grey-brown silty sand with very occasional charcoal and peat ash
108	Mid brown sandy silt with occasional pale yellow tephra and small rounded pebbles
109	Reddish brown silt with frequent flecks of pale yellow tephra and occasional charcoal
110	Mid grey sand with occasional pale yellow tephra
111	Mid brown silty sand with occasional pale yellow tephra, lenses of coarse sand, and turf debris
112	Dark brown silt with occasional peat ash, lenses of coarse sand, pale yellow tephra, very small rounded pebbles and charcoal flecks
113	Mid grey sand with occasional silt lenses, flecks of pale yellow tephra and small rounded pebbles.
114	Mid brown sandy silt with moderate pale yellow tephra, occasional rounded pebbles, peat ash, coarse sand lenses, flecks of charcoal and turf debris
115	Pale brown silt with frequent patches of peat ash, occasional charcoal, turf debris and dark grey tephra
116	Mid-dark brown sandy silt with occasional charcoal, pale yellow tephra, bands of coarse sand, turf debris, dark grey tephra and fragments of decomposed bone
117	Mid grey laminar coarse sand interleaved with silt.
118	Pale pink peat ash with occasional charcoal and bone fragments
119	Mid-dark brown silty sand with occasional pale yellow and dark grey tephra
120	Turf collapse ?- dark brown silt with bands of dark grey tephra and flecks of pale yellow tephra
121	Grey brown silty sand with occasional flecks of dark grey and pale yellow tephra. Includes peat ash lens at eastern limit
122	Mid brown silt
123	Dark grey to pale grey tephra horizon. "Landnám" layer ? Affected by cryo-turbation
124	Red brown silt.
125	Fine pale yellow tephra horizon. "H3" layer ?
126	Fine mid yellow tephra horizon. "H4" layer ?
127	Coarser dark blue grey tephra horizon. "G~1320" layer ?
128	Coarse grey sand with occasional pale yellow tephra and charcoal flecks
129	Soft grey brown clay silt. Affected by cryo-turbation
130	Fine red brown silt. Aeolian deposit ?
131	Medium grey sand with occasional pale yellow tephra
132	Mid brown silt with occasional pale yellow and dark grey tephra, and lenses of sand
133	Grey brown silty sand with occasional turf debris, lenses of coarse sand, peat ash and pale yellow/dark grey tephra

Context No.	Description
134	(As 132)
135	Mid red-pink peat ash with occasional burnt bone fragments and charcoal
136	Mid grey sand with occasional pale yellow tephra, peat ash, fire-cracked stone and bone fragments
137	Mid brown silt with lenses of sand and occasional pale yellow tephra
138	Grey brown sand with silty lenses
139	Red brown silt with occasional pale yellow and dark gray tephra
140	Turf collapse ? - Mid grey sandy silt with lenses of mid brown silt
141	(As 130)
142	Mixed fill of posthole / stakehole
143	Cut of posthole / stakehole
169	Recut of large negative feature
170	Cut of larger negative feature
171	Middle fill of cut 170. (Slumping, derived from 117?)
172	Recut of smaller negative feature
173	Cut of smaller negative feature

Table 3 – Context descriptions for Prh. 4/E

The fills of feature 173 and the sand deposit 117 were truncated by a further negative feature (cut 172). Feature 172 was only evident in the southern and eastern sections, and measured a minimum of 1.9m in length, 1.05m in width and up to 0.40m in depth. It was filled by a deposit of peat ash (context 135) containing fragments of burnt bone and charcoal, and by a mixed silt deposit (context 134). These fills were in turn overlain by sand and debris layers (context 128, 132, and 133).

Additionally, the sand deposit 117 and the underlying natural horizons were also truncated by a further large negative feature (170) located in the northwestern portion of the trench. Feature 170 measured at least 2.28m in length, 0.53m in width and 0.60m in depth, extending beyond the northern and western limits of excavation. The lowest part of this feature was filled by a deposit of grey brown silty sand (context 121) with occasional peat ash lenses, and up to 0.17m in depth. Two upper fills of sand and possible turf collapse (contexts 171 and 140) were noted in the western section of the trench. Fill 140 was in turn sealed by a mixed silty horizon (context 139), itself sealed by an extensive layer of dark brown silt (context 116) including anthropogenic debris. Context 116 was truncated by a additional large negative

feature (169) located over feature 170. This feature was only apparent in section but appears to have dimensions broadly similar to those of feature 170, and may replace it. Feature 169 was filled by, in turn, turf debris (context 120), mixed silt and tephra fragments (context 119) and a thin layer of peat ash (context 118). The latter deposits were themselves sealed by a complex accumulation of sands, silt and turf debris (contexts 114, 113, 112, 111, 110, 109, 108, 107, 106 and 105), together up to 1.48m in depth. A dark blue grey tephra horizon (context 127) was noted in the southern and eastern ends of the trench, believed to be Grimsvotn ~1320AD. It is noted that the plane of deposition appears to alter after the deposition of this horizon. A small possible posthole (feature 143) was also noted in the eastern section of the trench, truncating deposit 114.

Taken together these features and deposits must represent at least four separate phases of activity plus a further lengthy period of deposition. In contrast to Area A, this activity must have largely taken place significantly prior to the deposition of the G~1320 tephra horizon. The earliest activity in Prh. 4/E may have commenced only a short time after the deposition of an earlier tephra horizon at the base of the trench, believed to be the Landnám layer. Unfortunately, truncation by later activity has obscured this relationship.

The function of the four large negative features encountered in Prh. 4/E is unclear, and each has only been partially investigated. Prior to discovering of the full extent of any of these features, the assignment of function must be speculative at best. Whereas they are associated with deposits of peat ash and bone etc, they do not appear to be waste pits, or industrial features. Nor do they possess any horizons clearly resembling trampled floors, and no heat sources have been located. This may yet be consistent with their use as temporary shelters, storage areas or trading facilities, but this hypothesis requires significant further proof – and will require further detailed excavation.

Test trench /Prufuhola "Prh.1/A" (Figures 12 and 13)

Prh.1/A was located circa 90m to the west of Area A, within a circular enclosure believed to be a churchyard, and intersecting the northern wall of a rectangular earthwork believed to be the remains of a church. The trial trench, first excavated in 1986, measured 3m x 1m and was aligned north-south. Excavation had proceeded into the underlying natural horizons, and the full archaeological sequence was exposed.

The earliest deposits encountered were a sequence of naturally deposited prehistoric layers (contexts 166, 168, 165, 164, 163/154, 162/153, 161/152, 160/151, 159/150), including two pale yellow/white tephra horizons, thought to be Hekla 3 and 4. At the southern end of the trench this sequence had been overlain by a deposit of dark grey tephra (context 149), thought to be part of the Landnám sequence. At the northern end of the trench, the prehistoric layers were overlain by a deposit of dark brown sandy silt (context 158) with occasional bands of redder silt and dark grey tephra. Context 158 may represent turf debris, but does not appear to be in situ turf blocks. The latter context was overlain by a sequence of clean brown sandy silts (contexts 157, 156 and 155). Truncating the latter layers was an interface (feature 175) associated with a line of large stones bisecting the trench

Feature 175 is highly irregular but is believed to represent a construction event associated with the building of the church. Feature 175 was filled by a mixed deposit of silt with tephra fragments (context 148) deposited around an east-west linear alignment of unworked angular stones measuring up to 0.40m in length. These stones are interpreted as the footing of a wall located 0.60-1.0m from the southern limit of the trench.

Context 148 had been truncated from above by a further irregular cut (feature 176) filled by turf debris (context 167) and including further angular stone in the eastern section of Prh.1/A. This feature is thought to represent an episode of repair or modification to the wall. Feature 175 was sealed by a layer of clean brown silt (context 147), and that layer was in turn overlain by a more mixed layer of silt and upcast white tephra (context 147). These latter layers were truncated from above by a small irregular trench (feature 174) seen only in the western section. Feature 174 is associated with Bruun's 1907 excavation.

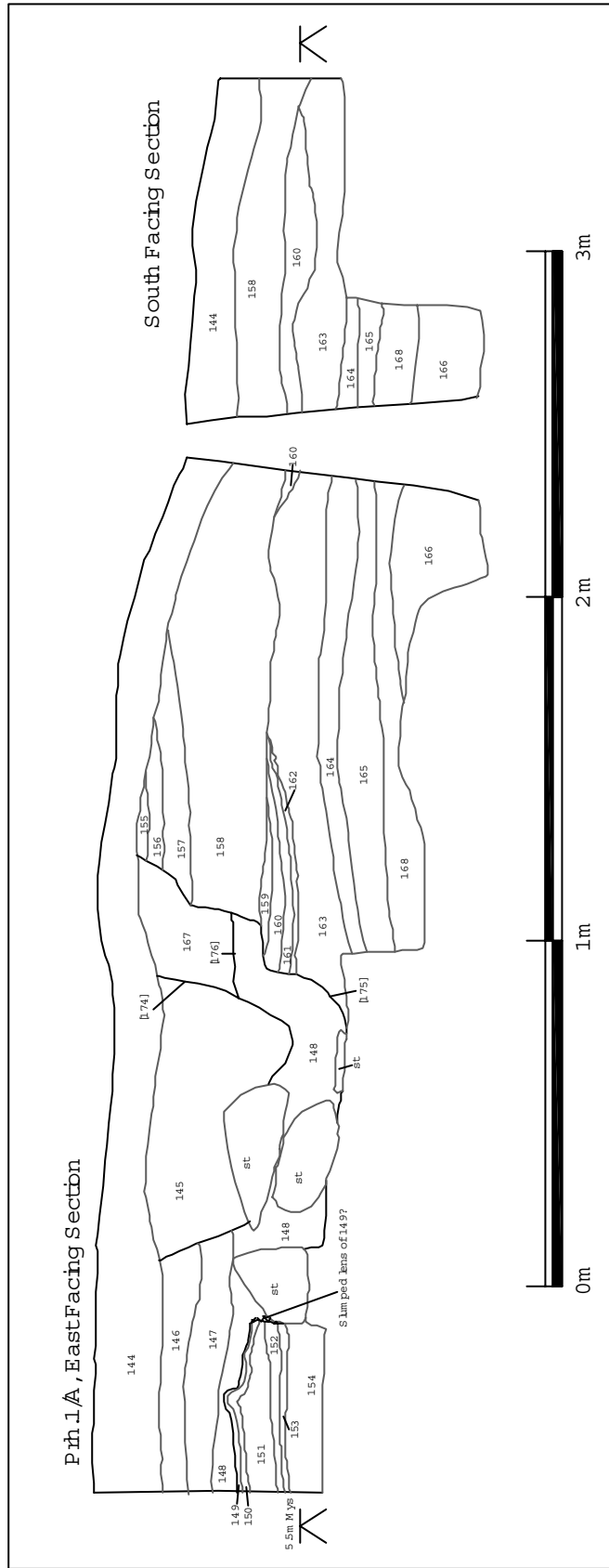


Figure 12 - Prh. 1/A, East facing and South facing sections

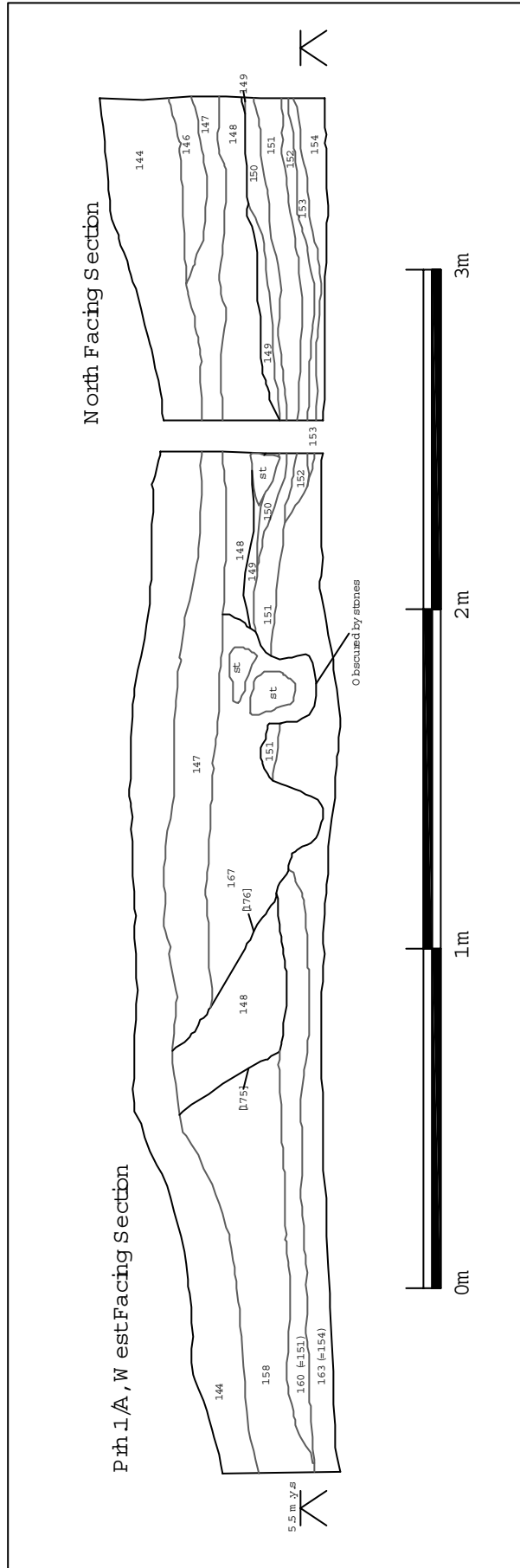


Figure 13 - Prh.1/A, West facing and North facing sections

Context No.	Description
144	Mid grey brown silty sand, turf and topsoil
145	Mixed red brown silt with occasional pale yellow tephra – Bruun’s backfill
146	Mid brown sandy silt with occasional pale yellow tephra
147	Clean dark brown sandy silt
148	Mid brown silt with occasional flecks of dark grey tephra and pale yellow tephra
149	Dark grey tephra – disturbed in places, but broadly continuous (“Landnám” layer?)
150	Clean red brown silt. Aeolian deposit?
151	Pale yellow tephra horizon (“H3”?)
152	Clean pale grey brown silt
153	Mid yellow tephra horizon (“H4”?)
154	Clean red brown silt
155	Clean mid brown sandy silt
156	(As 147)
157	(As 155)
158	Dark brown sandy silt
159	(As 150)
160	(Equals 151)
161	(As 152)
162	(As 153)
163	(Equals 154)
164	Mid brown silt
165	Red brown silt
166	Compact grey brown clay silt
167	Mixed dark brown silt with occasional dark grey tephra – Turf debris?
168	Mid grey brown silt.
174	Cut of Bruun’s excavation
175	Construction cut / interface for church
176	Recut – for repair ?

Table 4 - Context descriptions for Prh 1/A

Unlike Prh4/E and Area A, the deposits seen in Prh1/A only appear to represent a limited amount of activity – one event of construction and one of repair. The currently available evidence does not permit a close dating of these remains. It is noted that no occupation layers are apparent in the trench. This evidence is not inconsistent with interpretation of this structure as a church, but it is further noted that no evidence of inhumation has yet come to light.

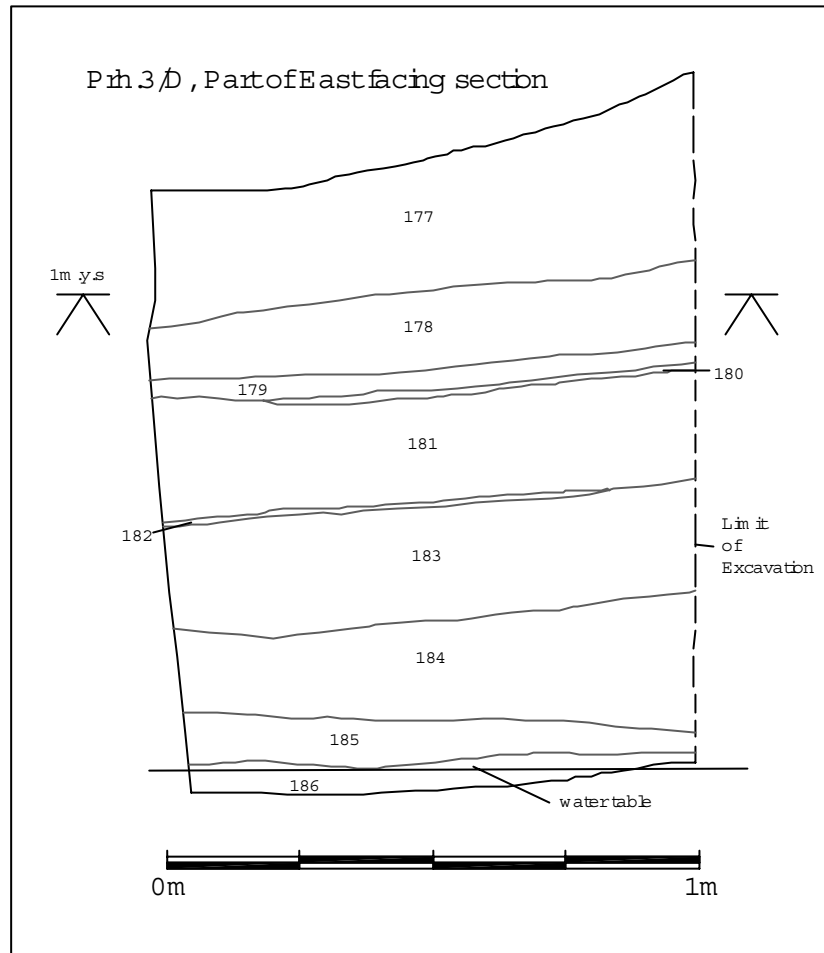


Figure 14 - Prh.3/D, East facing section

Context No	Description
177	Turf and topsoil – pale brown silty sand
178	Mid brown sandy silt with occasional charcoal, roots and flecks of tephra
179	Mid grey brown silty sand, banded, with occasional charcoal and peat ash flecks
180	Mixed / redeposited pale yellow tephra (H3?) - upcast
181	Dark brown sandy silt with occasional turf fragments and charcoal
182	Dark blue grey tephra horizon - (G~1320?)
183	Mid brown sandy clay silt with occasional charcoal
184	Fine mid grey brown sand, banded, with very occasional charcoal and turf fragments
185	Pale brown clay silt, with redeposited pale yellow tephra (H3?)
186	Coarse dark grey sand with occasional highly decomposed organic inclusions

Table 5 - Contexts descriptions for Prh3/D

Test trench /Prufuholi "Prh. 3/D" (Figure 14)

Prh. 3/D was located circa 15m to the north of Area A. Only the southern most portion of this trench was re-excavated. The illustrated section (Figure 14) revealed only a sequence of silts, sands and debris layers – all seen to contain anthropogenic inputs, but none that could be said to be structural or occupational in origin. These layers together form an accumulation of up to 1.35m, and were separated in the centre of this sequence by a thin layer of blue grey tephra (context 182) believed to be Grimsvötn ~1320. The lowest part of the trench was subject to rapid inundation. Prh.3/D therefore adds little to the evidence from Area A.

DISCUSSION

Evidence from preliminary excavations at Gásir in July 2001 suggests that the site enjoyed a lengthy period of occupation and use. Preliminary data from the re-excavation of earlier investigations shows a lengthy sequence of anthropogenic activity, interpreted as seasonal occupation for the purpose of trading. The re-excavation of four structures dug by Daniel Bruun and Finnur Jónsson requires a re-interpretation of these remains. The positive structures visible on the surface do not yet appear to represent buildings with turf or turf and stone walls. Turf debris was evident, but nowhere layered or ordered. Rather than semi-permanent “booths” it seems that occupation at Gásir has generated more complex accumulations, more correctly associated with tents or other temporary structures. The discovery of a test pit within Daniel Bruun’s excavation revealed anthropogenic layers below the current water table. This discovery implies that waterlogged remains may survive within some areas of the site. Examination of the deposits seen in Prh. 1/A suggests an interpretation in line with that of Daniel Bruun. The form and layout of these remains are seen as consistent with this structure being a church. In the absence of preserved turf walls it is thought most likely that this structure was largely built of timber on a stone footing.

Initial results from the study of in-situ tephra horizons found in association with the archaeological deposits indicate that activity at Gásir continued for some considerable period after the deposition of a tephra horizon tentatively dated to the

1320's and thought to originate from the Grimsvötn system. This tephra horizon was sealed by up to 1.05m of later deposits, including the stone surface and firepits identified by Bruun and Jónsson. Although the "A" layer /V-1477 tephra horizon may be expected at Gásir, this layer was not seen in situ during this season's work.

The study of pottery from Gásir holds tremendous potential for both the dating of trading activity and determining the origin of trade goods (see Mehler, below). To date, six small sherds have been recovered from very limited excavation areas, and unfortunately are not securely stratified. Nonetheless, given the great rarity of medieval pottery finds from excavations in Iceland, these few sherds indicate that Gásir is likely to generate an unparalleled assemblage.

Environmental Change

It is evident that considerable environmental change has occurred at Gásir within the historic period. The area of archaeological structures at Gásir is no longer readily accessible by sea from Eyjafjörður, and a number of structures at the southern limit of activity have evidently suffered from coastal erosion at some point since their abandonment. It seems clear that sedimentation from the Hörgá river system has blocked sea-access to the site by the creation or modification of sandbars and mud flats.

A preliminary study of this question by Halldór Pétursson,⁵ suggests that a catastrophic sequence of mudslides in Hörgádalur in 1390 could have deposited a vast quantity of sediment into the Hörgá, and may be responsible for the creation of the outer beach ridge of Gáseyri. This environmental event would certainly have had a major impact on the viability of Gásir as a trading site, but much more work needs to be done before this can be seen as a causal factor for site abandonment. Many other environmental questions must also be addressed, not least the extent of changes to site morphology during the period of occupation.

Initial study of the topography of Gásir suggests that there may have been considerable aggradation of the shoreline during the period of occupation. It is thought that the structures investigated (within Area A), at the easternmost limit of the

⁵ Halldór Pétursson 1999

positive surviving archaeology, may have been constructed upon sediments deposited after the initial occupation of the site. The majority of archaeological features to the west of this area appear to respect a linear alignment located up to 30m from the present shoreline. This may represent an earlier shore, and might suggest that human activity at the site contributed to the advance of the shoreline.

As the G~1320 tephra is found to be undisturbed within parts of the site, it seems likely that these foci at least suffer an hiatus of structural activity in the period after this event.

In order to understand how landscape morphology has affected site formation processes and possibly site abandonment, a study of environmental change in and around Gásir will prove invaluable.

History

Gásir is mentioned in numerous historical documents from the 13th and 14th centuries. These documents are a valuable resource for shedding further light on archaeological research at Gásir, but may be of limited use in determining the chronology of the site. Gásir disappears from the historical record at the end of the 14th century, but this may only reflect the paucity of the historical record from the following period. The development of Akureyri must to a significant extent eclipse Gásir as the major regional trading centre. However, Akureyri is not mentioned as a trading site until the 16th century.

Broader historical factors may also play a role in the abandonment of Gásir. These might include the decline in trade between Iceland and Scandinavia in the late 14th /early 15th century, and the impact of political struggles in Scandinavia associated with Nordic union and conflict with the Hansa. This may suggest changes in trade routes to Iceland and the growth of alternative trading centres. Another factor may be changes in trade items, resulting from these political developments, which may have reduced the importance of Gásir as a regional trade centre.

PROPOSALS

In light of the complex evidence gathered by this preliminary investigation, it is clear that significant further study is needed to more fully establish the nature, extent and dating of human activity at Gásir.

To this end a five year program of archaeological excavation is proposed, continuing the work begun in Area A and extending the study area progressively towards the west. Additionally, it is hoped to target further investigations in the area of the churchyard. Further, a pilot study of possible offshore remains is suggested. These proposals are more fully detailed below (Appendix 7)

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The site was excavated by Bruno Bersson, Elín Ósk Hreiðarsdóttir, Guðmundur H. Jónsson and Kristin Fjarestad. The topographical survey was carried out by Rebecca Hardy and James Taylor. Tim Horsley of Bradford University carried out an assessment of geophysical techniques.

Post-processing of the survey data was conducted by Rebecca Hardy, James Taylor, Ruth Maher, Oscar Aldred and H. M. Roberts. The finds were studied by Natascha Mehler. The illustrations were prepared by the author.

We would like to thank Heiko Steuer for his advice and valuable comments.

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Appendix 1

Preliminary Assessment of Geophysical Surveys at Gásir, Eyjafjörður.

T.J. Horsley

Doctoral Research Student, Department of Archaeological Science, University of Bradford, UK.

Introduction

Geophysical surveys were undertaken at Gásir during the summer of 2001 as part of a broader assessment of archaeological prospection techniques in Iceland. This work is being conducted by the author as a Natural Environment Research Council (NERC)-funded doctoral research project, in collaboration with Fornleifastofnun Íslands and the North Atlantic Biocultural Organisation (NABO).

Previous research at Gásir and at other sites in 1999 demonstrated the effectiveness of magnetometer and earth resistance techniques for such prospection in Iceland (Horsley & Dockrill, forthcoming; Horsley, 1999), and the aim of this current work is to better understand the reasons for the results obtained. Integration with the results from other archaeological evaluation methods and excavation allows a fuller understanding of the geophysical anomalies, and consequently a better assessment of these prospection techniques.

The underlying geology at Gásir consists of Tertiary basic and intermediate extrusive rocks (Jóhannesson & Sæmundsson 1998). The bedrock can be seen to outcrop at various parts of the site indicating that in places the soil may be very shallow, although excavations indicate that the depth of deposits is quite variable.

Methodology

The geophysical surveys conducted at Gásir employed the grid of 20m x 20m squares established for the topographical survey of the earthworks.

The gradiometer survey was undertaken using a Geoscan FM36 fluxgate gradiometer, with readings being recorded at a sampling interval of 0.25m along traverses spaced

0.5m apart. The data are presented here in the form of a greyscale plot (Figure 1), following the application of a High Pass (Gaussian) filter and interpolation to enhance the data.

The earth resistance survey employed a Geoscan RM15 earth resistance meter using the twin probe electrode configuration with a mobile probe separation of 0.5m. The resistance data are also presented as a greyscale plot (Figure 2), following interpolation and smoothing with a Low Pass (Gaussian) filter to reduce the background noise caused by thufur.

Results

Fluxgate gradiometer survey

The results of the gradiometer survey (Figure 1) contain a variety of anomalies, of archaeological, geological and periglacial origin – a combination very characteristic of such surveys in Iceland.

Most obvious is the circular ring of positive anomalies on the western side of the survey area. This 30m rough circle coincides with the turf ring earthwork of the probable churchyard boundary, visible on the surface. Previous surveys in Iceland have indicated that individual rocks can often produce discrete positive spikes on account of their being strongly magnetic. This circular anomaly is therefore interpreted as being due to rocks within the boundary wall, possibly as a stone core or foundation.

Within the churchyard the outline of the church can also be made out as linear positive anomalies, again probably due to the buried rocks of the foundations. However, there is a difference in the strength of these anomalies between the nave of the church and the eastern “apse”. Previous excavations into this probable church suggest that the building had a stone foundation, possibly with an outer turf wall (Bruun and Jónsson 1908; Jónsson 1908; Bruun 1928; Hermannsdóttir 1987). Since the apse contains more intense readings than the rest of the structure, this might indicate better survival of this end of the building or, more likely, that a greater quantity of stone was used in constructing the apse. Different construction techniques

for the two sections of the church might indicate different phases, although since little work has been undertaken to identify Icelandic church typologies such a difference could also be functional or symbolic in nature.

Although rather confused, many of the booths have been detected by the gradiometer. The limited excavation of the booths to date has revealed that they are almost entirely constructed of turf and soil, and that there may be many phases of these booth structures at this site. Excavation has also revealed a very high quantity of windblown basaltic sand deposits in the soil at Gásir. This will increase the magnetism of the soil, causing earthwork features to produce magnetic anomalies. Re-cutting and rebuilding of booths over time will have left a host of disturbances in the soil, and the resulting anomalies would be expected to be very confusing.

Despite this, a few booths do show up quite clearly in the data, especially the large booth first excavated by Bruun and reopened in 2001. It may be that the interior of this booth appears clearer as a result of this earlier excavation. Immediately west of this booth a row of at least four booths is visible, running NNE-SSW. These rectangular booths are remarkably similar in shape, having an internal space of approximately 9m x 4.5m with two smaller round annexes projecting off each on the western side. This row may contain as many as eight such booths although the anomalies become more jumbled towards the northern end. This is particularly interesting as this pattern of booths had not previously been recognised from aerial photographs of the site, nor is it immediately obvious from the 2001 topographical survey results.

It is an interesting question exactly why some of the booths are being detected as they are. It may be that the high content of magnetic sand in the soil plays a large part, however further excavations at Gásir and geophysical surveys at this, and other sites in Iceland should help to understand the cause of the anomalies.

Three areas demonstrate the intense broad positive and negative magnetic responses due to near-surface igneous bedrock; two of these, immediately outside the churchyard anomaly, coincide with positions where outcropping rock was noted. The third geological anomaly has been detected at the north-west end of the booth remains, in an area where no such outcrops were visible. This indicates that the

bedrock is particularly shallow at this position, maybe less than 0.5m below the present ground surface.

The small-scale “speckled” noise over much of the site is due to periglacial features such as thufur which cover the surface of much of the site, although the area of the booths are generally free of them. Each frost hummock has altered the soil conditions such that it produces its own discrete magnetic anomaly. Unfortunately the noise created by a great number of thufur across the surface may reduce the ability of this technique to detect more subtle anomalies of archaeological origin, and might prevent the identification of features buried below them.

Other surface deformations have also been detected, for example the parallel ruts cut into the surface by the passage of horses over time, and the soil erosion front along the eastern edge of the survey area.

Earth resistance survey

A smaller area was surveyed using the earth resistance meter, including the probable church and a few of the booth remains. The results are presented in Figure 2, along with the results of the gradiometer survey over the same area for comparison.

The remains of the churchyard show up very clearly in the resistance data, with the turf wall having been detected as a low resistance anomaly on account of the higher water content and better electrical conductivity. Narrow bands of high resistance within this correspond to the positive magnetic anomalies and back up the interpretation of the use of stone in the construction of the bank.

As the gradiometer survey, the two cells of the church structure have been detected differently. The walls of the main body of the church are generally unclear, with a slight low resistance anomaly indicating the south (turf) wall of the building. The eastern end of the church appears as clear high resistance anomalies, consistent with the interpretation that it is constructed of stone rather than turf. With no standing remains surviving these results may indicate that only the foundations are constructed of stone, rather than the entire wall, yet there is a clear distinction in construction between the two parts of the building.

The resistance data is slightly confused in the area of the church due to anomalies caused by thufur, again producing a speckled effect in the data. The surface outside the churchyard is covered with thufur and the same small-scale noise can be seen in this area of the resistance survey.

The broader areas of high resistance are caused by the near-surface bedrock.

Over the area of the booths the earthwork banks have been detected as low resistance anomalies, again apparently caused by the higher water content of the turf and soil used in their construction. Comparison with the gradiometer survey shows good correlation but reveals that the booth walls are not as well defined, and that the whole area is still confused by the deep deposits of many phases of booths. The southernmost booth in the resistance survey contains a high resistance anomaly in the internal space that could either be due to the fact that this lower floor is closer to the bedrock, or may indicate the presence of a packed stone floor.

Conclusion

The results of both surveys demonstrate the effectiveness of these techniques for the detection and characterisation of the turf structures at Gásir, despite the effects produced by near-surface geology and thufur. The complimentary nature of the two methods indicates that used in combination they have the potential to provide information not otherwise discernable from the surface remains.

Comparison of the gradiometer survey with the topographical survey interpretation reveals an excellent correlation with the archaeological remains. Indeed, a number of these features are more clearly defined through geophysical survey, in particular the row of booths running north-south down the eastern side of the site.

In addition, it is possible to extract information regarding the different construction techniques of the remains. Both methods have clearly detected the features of the church and churchyard, where the results indicate the use of turf and stone in the structures. This contrasts with the booth remains which appear to be constructed almost entirely of turf.

Acknowledgements

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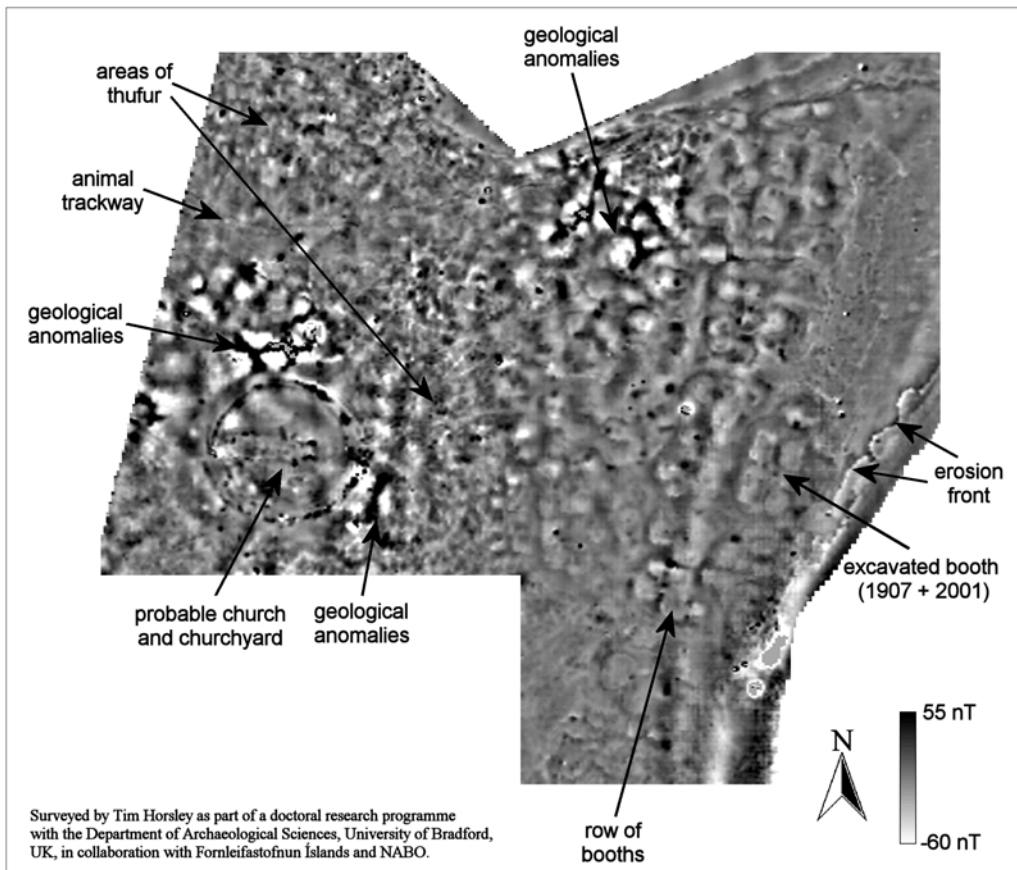


Figure 1: Fluxgate gradiometer survey results, July 2001.

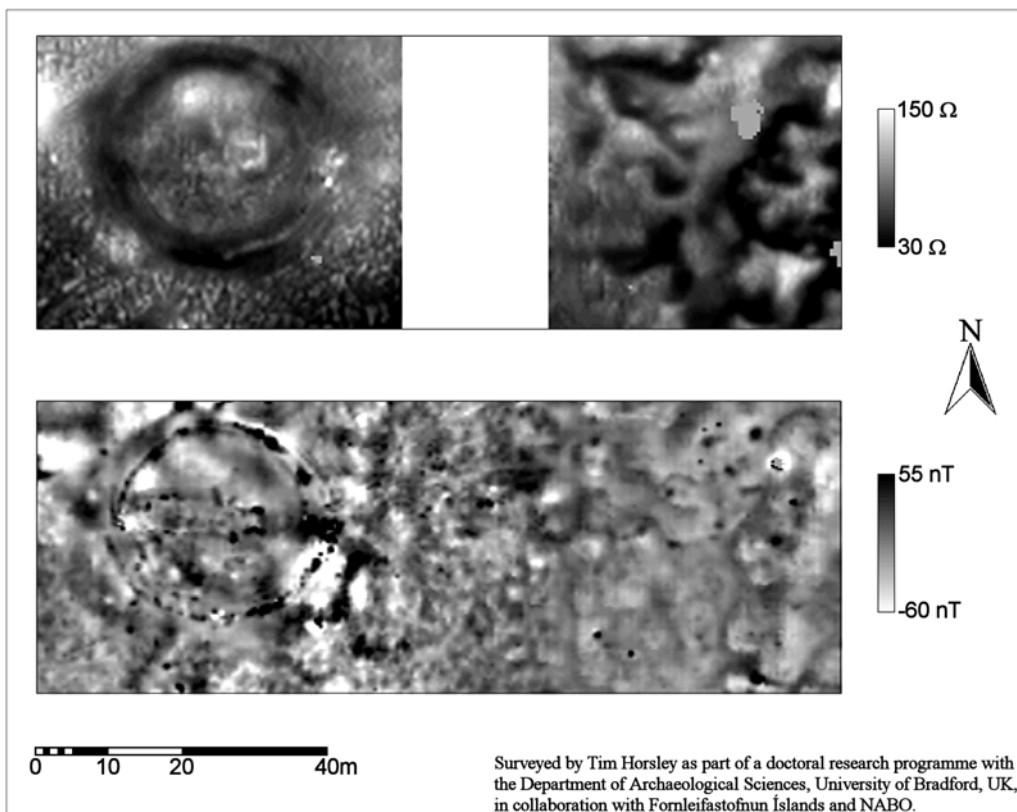
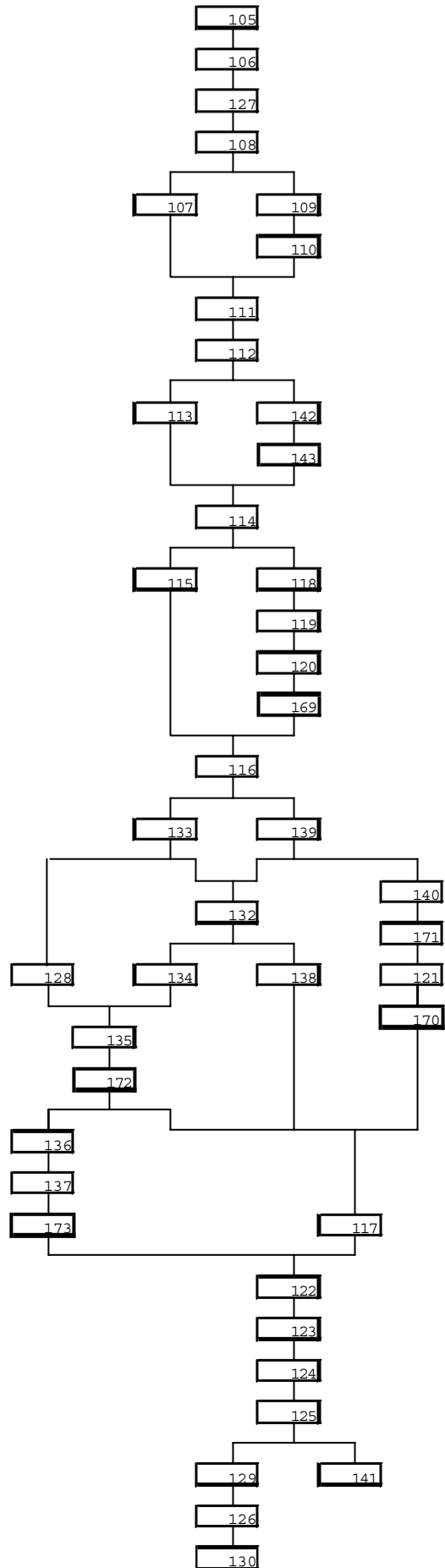


Figure 2: Comparison between earth resistance results (top) and fluxgate gradiometer results (bottom), July 2001.

Appendix 2

Proposed Stratigraphic Matrix

Prh.4/E



Appendix 4

Fornleifarannsókn á Gásum í Eyjafirði Gjóskulagagreining

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Heildarrannsókn hefur ekki farið fram á gjóskulögum í Eyjafirði enn sem komið er. Einstök gjóskulög hafa þó verið rakin um Eyjafjörð og nágrenni, s.s. gjóskulög frá Heklu (Sigurður Þórarinnsson 1968) og Landnámslagið (Guðrún Larsen 1984). Við vinnslu þessarar greinargerðar var auk þessara heimilda stuðst við athuganir á gjóskulögum í innanverðum Eyjafjarðardal (Magnús Á. Sigurgeirsson 1993, Bjarni F. Einarsson 1995) og við Mývatn (Árni Einarsson o.fl. 1988, Magnús Á. Sigurgeirsson 1998).

Gjóskulög við Gásir

1. Gjóskulag sem nefnt er “a”-lagið, sennilega frá árinu 1477, og fundist hefur um allan norðausturhluta landsins (Sigurður Þórarinnsson 1958). Samkvæmt útbreiðslukorti er þykkt þessa lags 0,5-1 cm við Gása (Sigurður Þórarinnsson 1977, Jón Benjamínsson 1982). Í innanverðum Eyjafjarðardal er lagið um 1 cm þykkt (Magnús Á. Sigurgeirsson 1993). Uptök lagsins eru í Veðivatnakerfinu.
2. Grátt (stálgrátt) gjóskulag sem mjög áberandi er í jarðvegi í innanverðum Eyjafjarðardal (Magnús Á. Sigurgeirsson 1993). Greinilegur litamunur er sjáanlegur á þessu lagi og “a”-laginu. Þar sem þau eru saman í sniði, er “a”-lagið mun dekkra. Útbreiðsla lagsins hefur ekki verið könnuð og gosár er ekki þekkt með vissu. Afstaða lagsins til gjóskulaganna K-1262 og “a”-lagsins bendir til að það sé frá fyrri hluta 14. aldar. Útreikningur á aldri lagsins með tilliti til jarðvegsþykkunar bendir til að það sé frá því um 1320. Efnagreiningar benda til upptaka í Vatnajökli, sennilega Grímsvötnum. Mögulegt er að þetta lag hafi myndast í fyrsta Grímsvatnagosi sem nefnt er í rituðum heimildum árið 1332 (Sigurður Þórarinnsson 1974). Lagið hefur ekki fundist við Mývatn (Magnús Á. Sigurgeirsson 1998) og heldur ekki vestan Eyjafjarðar sem bendir til að útbreiðsla þess á Norðurlandi sé fremur lítil og vel afmörkuð. Að svo stöddu, meðan aldur lagsins er ekki betur þekktur, verður það nefnt G~1320.
3. H-1300. Nákvæmt útbreiðslukorti er ekki til fyrir H-1300 en samkvæmt rituðum heimildum varð umtalsvert gjóskufall í þessu gosi um Eyjafjörð (Sigurður Þórarinnsson 1968). Vottur af laginu fannst í innanverðum Eyjafjarðardal, við bæinn Tjarnir (Magnús Á. Sigurgeirsson 1993).
4. H-1104 (H1). Fannst ekki með vissu á uppgraftarsvæðinu á Gásum. Mögulega er þó um slitur af því að ræða á nokkrum stöðum. Samkvæmt útbreiðslukorti er það < 0,5 cm þykkt við utanverðan Eyjafjörð (Sigurður Þórarinnsson 1968). Við Mývatn er það um 1 mm þykkt og slitrótt (Árni Einarsson o.fl. 1988, Magnús Á. Sigurgeirsson 1998).
5. Landnámslagið eða önnur þg af líkum aldri voru lítið áberandi á uppgraftarsvæðinu. Þykkt þess við Gása er < 0,5 cm samkvæmt mælingum (Guðrún Larsen 1984).

Aldur m annvirkja í ljósi gjóskulaga

Í sniði 1 koma skýrt fram torflög, sem eru bæði eldri og yngri en gjóskulagið G~1320. Ekki er hægt að segja til um hversu gömul elstu mannvistarlög þar eru en ekki hafði verið grafið niður úr þeim þegar þessi athugun var gerð. Torfuhnaus með svörtu gjóskulagi, sem sennilega er H-

1300, sást neðan við G~1320 (sjá sniðteikningu). Sé gengið út frá því að um sé að ræða H-1300 má ljóst vera að torf hefur verið stungið eftir árið 1300 og áður en gjóskulagið G~1320 fellur. Í austurenda uppgraftarsvæðisins kom í ljós að G~1320 liggur um 15-20 cm undir grjótlögninni (stéttinni ?) sem þar er (snið 2). Hún er því frá 14. öld eða síðar. Í torflagi yfir stéttinni eru torfhnausar með bæði G~1320 og a-laginu frá 1477, sem bendir til framkvæmda um eða eftir 1500. Það að einungis gjóskulagið G~1320 skuli vera varðveitt á milli mannvistarlaga bendir sterkt til að um það leiti, nokkru fyrir og eftir gjóskufallið, hafi lítið verið um framkvæmdir á staðnum, að minnsta kosti við búðirnar sem nú voru kannaðar. Athugun á prufuholu nr. 3 sem grafin var af Margréti Hermannsdóttur (1987) staðfestir það sem fram kemur í sniði 1, þ.e. að í búðaveggjunum sé torf bæði neðan og ofan gjóskulagsins G~1320 (snið 3). Ekki komu fram skýrar vísbendingar um aldur elstu mannvistaleifa á Gásum. Telja verður líklegt að ýtarlegri upplýsingar um aldur mannvirkja á Gáseyri komi fram samhliða frekari uppgrefti.

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Gásir í Eyjafirði

Snið mæld 19/7 2001

1

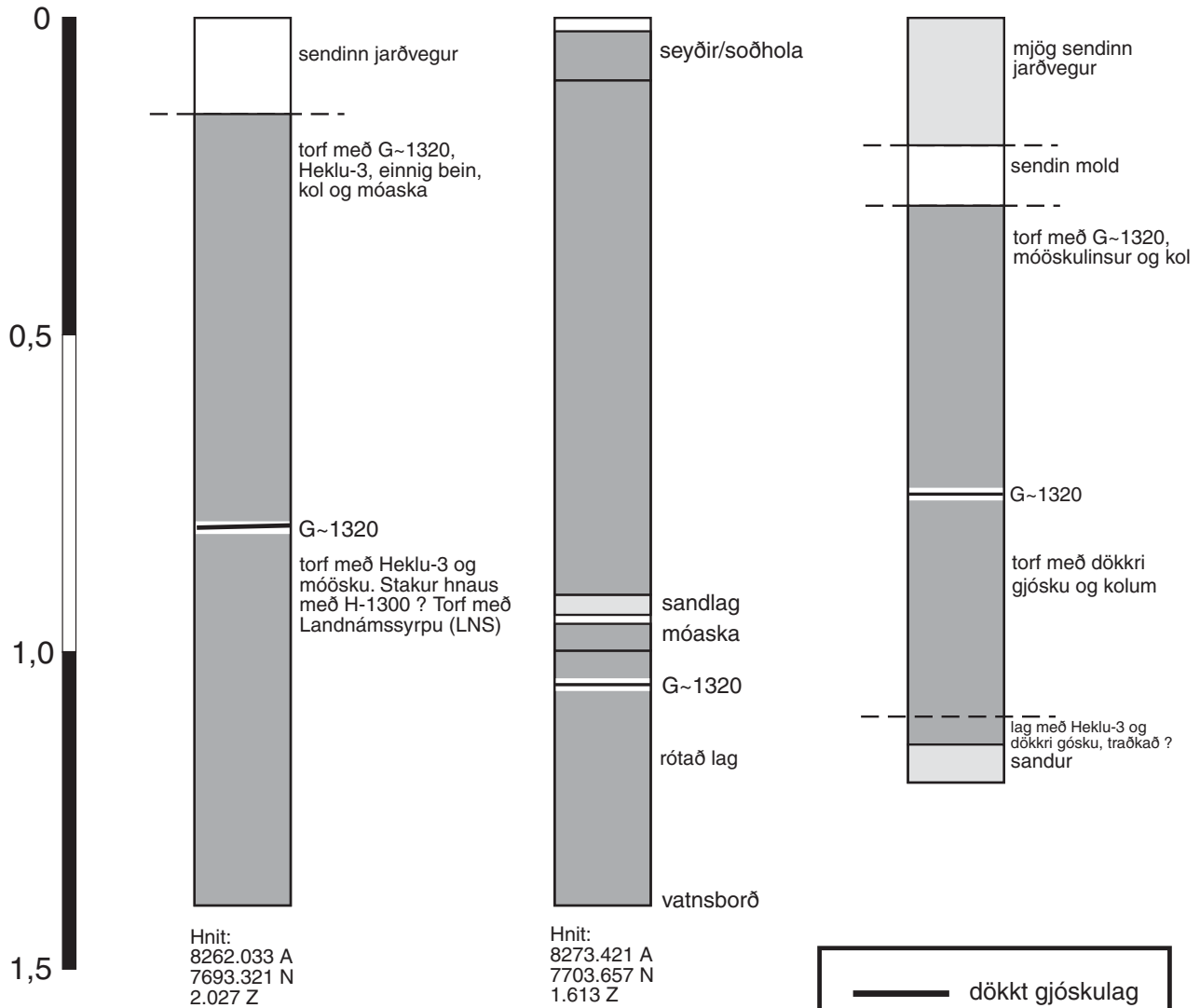
Snið í vesturenda svæðis "A", í norðurenda rústar

2

Snið í SA-horni svæðis "A", sunnan við grjótlögn

3

Prufuhola-3/D frá 1986 endurgrafin



Mynd 1

Appendix 6

The Finds

Natascha Mehler (Fornleifastofnun Íslands)

The excavations at the medieval trading site Gásir undertaken in July of 2001 recovered 22 finds in total. All but one were found in the covering top soil, in the backfill of Daniel Bruun's excavations at the beginning of the 20th century or are loose finds. The artefacts can be divided into three material groups: most of them are made of metal, mostly iron, few others of copper alloy. The second group consists of stone artefacts like whetstones of schist. Ceramic forms the last material group. The excavated fragments are the only datable finds from this year's investigation. All finds were cleaned, dried and registered in the excavation database. Metal objects are packed with silica gel in order to prevent humid storage. Further conservation is not requested.

Metal objects

Eleven metal objects were found: nine are made of iron, two of copper alloy. None of them is typologically datable. Three corroded iron nails of different size were found in Area A and are recorded as GÁS 01-004. The largest nail, most likely modern, is 9.5 cm long, has a hook-like bent end and a head with a diameter of 4.4cm. Another nail is 4.5 cm long, the last one is 3.3 cm long and double headed. None of those nails is datable, although the double headed nail appears to be medieval. Four corroded iron objects are listed as GÁS 01-005: one rather small complete nail, 1.7 cm long; three other objects of unknown purpose. Two modern loose finds of corroded iron are given the number GÁS 01-013. The larger object is rather flat and rectangular in shape and could be part of a metal fitting or attachment. The smaller fragment is of unknown purpose. Two copper alloy fragments (GÁS 01-006) were found in the backfill, flat sheets of unknown purpose.

Stone objects

Five objects of stone were found in total. GÁS 01-002 is an unworked piece of unknown stone type. The other pieces are of non Icelandic origin. Three fragments belong to whetstones: GÁS 01-001, GÁS 01-003 and GÁS 01-012. GÁS 01-003 (context 100, Area A) is the small fragment of a whetstone edge made of light gray and rather porous schist. The tool seems to have been rather small and lenticular in cross-section. GÁS 01-001 (context 100) and GÁS 01-012 (loose find) are of similar but more coarse stone types - gray schist - the latter of finer quality. GÁS 01-001 is damaged on all but one side. GÁS 01-012 is better preserved: the form tapers towards one end, and is square shaped in cross-section. On both ends are two grooves. GÁS 01-011 is the fragment of a soapstone object and could be part of a vessel. Only one surface is preserved which bears clear signs of working. This object was found while cleaning the section of trench 4/E and is unstratified. None of the stone objects is typologically datable, although the soapstone fragment most likely has a medieval date.

Ceramic

Three pieces of ceramic were found, all in context 101 (Area A), (see Fig.1). The sherds belong to three different vessels of stoneware, all made in the German Rhine-area around the city of Cologne in the late 14th or 15th century. Their fabric is similar but not the same. GÁS 01-008 is the body sherd of a rather small jug, most likely the fragment of the vessel's shoulder or neck. The fabric is gray and fine, the outer surface bears patches of a greenish-brownish salt glaze containing ash (so-called "Ascheanflugglasur"). The inside is brownish to

purple due to either self-slip (so-called “Eigenengobe”) or metal-slip. The jug was without doubt produced in the Rhine area. The place of origin can not be more closely identified, although the fabric resembles early Siegburg stoneware. GÁS 01-009 is a rather small body sherd most likely of a jug or jar. The fabric is dark gray, the outer surface evenly covered with purple to brownish iron-containing glaze. The inner surface is covered with a very similar slip to GÁS 01-008. The vessel has most likely been made in a kiln of Langerwehe. GÁS 01-010 is the rim sherd of another Rhenish stoneware vessel, possibly a beaker or a small jug. The rim diameter is 4.5 cm, the fabric beige to gray in colour. The outer and inner surfaces are evenly covered with a light brown slip under small patches of brownish speckled salt glaze. The exact location of origin is unknown.



Fig. 1: Rhenish stoneware found at Gásir: GÁS 01-008 (bottom left), GÁS 01-009 (bottom right) and GÁS 01-010 (top).

Unknown objects

Three objects found at Gásir remain unidentified (GÁS 01-007 and GÁS 01-014). They are most likely of mineralogical material, but it is unclear whether these fragments are samples of a basalt-like porous stone type or small pieces of slag.

Finds from previous excavations at Gásir

In 1986 Dr. Margrét Hermanns-Auðardóttir opened two trenches (3/D and 4/E) where she found three pieces of medieval pottery and an object of copper alloy. The pottery was published shortly afterwards, without their origin or type being identified⁶. In a later analysis of these sherds carried out by Dr. Guðrun Sveinbjarnardóttir two of the pieces were identified as Rhenish stoneware of Langerwehe type, the third fragment as English earthenware of Grimston type⁷. The latter has recently been suggested to be earthenware of east English type rather than Grimston ware⁸ but nevertheless, all six pottery fragments found at Gásir so far can be dated to the 14th or 15th century. The copper alloy object found in 1986 (see Appendix 6) was originally identified as a late Viking age weight most likely originating in eastern Sweden and made in the 10th or 11th century.⁹ A re-evaluation of this artefact has given new results: the small weight of 4.29 g dates to the 12th or 13th century with closest comparative material in Telemark, eastern Norway. The weight is of droplike shape and has a rounded knob at the upper side with a surrounding metal wire. The bottom bears deep cross cut marks. The weight's metal composition is unclear at present state. It seems to be made of lead or iron with a surrounding copper alloy covering. A metal analysis of this artefact is therefore suggested.

Discussion and conclusion

The artefacts recovered at Gásir are of high importance for our understanding of Iceland's medieval material culture. Six sherds of medieval pottery found in a rather small excavation area is an unusually high number, since medieval pottery is very rarely found in Iceland. This is no doubt explained by the fact that Gásir was a trading site where stoneware and earthenware vessels from the Rhine area and eastern England were traded, as well as steatite vessels and whetstones. It has previously been suggested that most of the medieval ceramics found in Iceland came via Norwegian trading centres like Bergen, where Langerwehe stoneware and earthenware of east English origin were found in large quantities. In 1262 Iceland became part of the Norwegian crown and by the early 14th century direct trade from Northern Europe to Iceland was prohibited. Items could only be traded via Hanseatic merchants in Bergen.¹⁰ By the early 15th century English merchants had established direct trade-links with Iceland, followed by Germans trading directly with Iceland from the late 15th century onwards. The small metal weight, the steatite and schist artefacts could also represent links with Norway and a petrological analysis of both stone types is therefore suggested. All datable artefacts found at Gásir are high or late medieval. No object datable to the Viking period has been found thus far.

⁶ Margrét Hermannsdóttir 1987, 20 and 26 ff.

⁷ Guðrun Sveinbjarnardóttir 1996, 93, 96, 99 and 161.

⁸ Mehler 2000, 75.

⁹ Margrét Hermannsdóttir 1999, 23.

¹⁰ Mehler 2000, 127.

List of Finds

Nr	C	General	Material	Description	Date
001	100	Whetstone	Stone	Whetstone, 1 fragment, 23 g	Medieval?
002	100	Object	Stone	Stone of unknown type, 1 piece, 13 g	
003	100	Whetstone	Stone	Whetstone, schist, 1 fragment, 3 g	Medieval?
004	100	Nails	Metal	Iron, 3 complete nails of various size, 108 g	
005	101	Objects	Metal	Iron, 4 objects (one complete nail), 26 g	
006	101	Objects	Metal	Copper alloy sheets, 2 fragments, 5 g	
007	101	Objects	Unknown	Slag or stone, 2 fragments, 12 g	
008	101	Pottery	Ceramic	Body sherd, rhenish stoneware, 6 g	14/15 th cent.
009	101	Pottery	Ceramic	Body sherd, rhenish stoneware, 3 g, Langerwehe type?	14/15 th cent.
010	101	Pottery	Ceramic	Rim sherd, rhenish stoneware, 4 g	14/15 th cent.
011	LF	Vessel?	Stone	Steatite, worked, 1 fragment, 11 g	Medieval?
012	LF	Whetstone	Stone	Whetstone, 1 fragment, 25 g	Medieval?
013	LF	Objects	Metal	Iron, 2 fragments, 36 g	
014	LF	Object	Unknown	Slag or basalt, 1 fragment, 5 g	

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Appendix 6

Das Gewicht aus Gásir

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Das kleine Gewicht von Gásir (4,29 g) ist in der Seitenansicht tropfen-,birnen- oder auch glockenförmig mit profiliertem Kopf (Bakka 1980, 156) und zeigt an der Unterseite eine kräftige kreuzförmige Einkerbung. Damit verkörpert das Stück zwei Traditionen im skandinavischen Gewichtswesen.

a) Einerseits gab es anscheinend in Städten Sätze aus birnenförmigen Gewichten, die zumeist jedoch vollständig aus Bronze sind und eigentlich keine Drahtumwicklung (zum Trieren?) aufweisen.

b) Andererseits wurden in der späten Wikingerzeit Kugelzonen-Gewichte (aus Eisen mit einem Bronzemantel oder vollständig aus Bronze) mit Kreuzkerben versehen, oft nachträglich, aber manchmal direkt bei der Herstellung. Der Zweck der Kerben ist nicht eindeutig geklärt; es könnte auf eine nicht hoheitlich autorisierte Gewichteproduktion hinweisen.

Zu (a): Birnenförmige Gewichte sind veröffentlicht bei A. W. Brøgger, *Ertog og øre* (1921), S. 86 Fig. 45 (Akerhaugen i Sauda mit Parallelen). Dieser Gewichtssatz von Akerhaugen ist neu veröffentlicht: E. Bakka, Ein mittelalterlicher Gewichtssatz von Akerhaugen in Sauderad, Telemark, Ostnorwegen. *Offa* 37, 1980, 154-168. Abb. 1 bringt die Waage des Fundes (von meinem Typ 7 "spät") und den Gewichtssatz, darunter zwei birnenförmige Gewichte. Der Fund gehört ins 12./13. Jahrhundert. Die glockenförmigen Gewichte wiegen 12,85 g und 6,70 g. Bakka diskutiert das aus dem Gesamtsatz zu errechnende Öregewicht. Die weiteren Fundorte solcher Gewichte sind Holte, Eidfjord, Hardanger (B 6999) (Gewicht 12,695 / 12,7 g), Bergen (B 6601) (Gewicht 99,585 g) und Oslo (C 16811) (Gewicht 107,03 g). Sie gehören alle - so Bakka - in den Zusammenhang der hochmittelalterlichen Städte.

Zu (b): Die mir seinerzeit bekannten Gewichte mit Kreuzkerben habe ich veröffentlicht: *Gekerbte Gewichte der späten Wikingerzeit. Fornvånen* 82, 1987, 66-74. Außerdem in: H. Steuer, *Waagen und Gewichte aus dem mittelalterlichen Schleswig. Funde des 11. bis 13. Jahrhunderts aus Europa als Quellen zur Handels- und Währungsgeschichte. Beiheft 10 zur "Zeitschrift für Archäologie des Mittelalters"* (Köln Bonn 1997) 312-315. Ich zitiere S. 313: "Kerben wurden an Gewichten der Typen des 10., häufiger des 11. und vor allem an den Typen des 11./12. Jahrhunderts angebracht." Kerben kommen also an verschieden alten Gewichten vor, sind aber nach der statistischen Verteilung und den datierten Fundkomplexen auch im 12./13. Jahrhundert häufiger möglich.

Das Gewicht von Gásir gehört mit seiner Glockenform in einen späten Zusammenhang des 12., wenn nicht 13. Jahrhunderts, was der Zweitstellung der Waage von Akerhaugen entspricht. In jener Zeit wurden Gewichte mit Kreuzkerben versehen. Die Gewichtsgröße aus Gásir mit 4,29 g ist für die Einheiten der Wikingerzeit eigentlich zu hoch; man müßte das

Stück ohne Draht wiegen. Die von mir aufgelisteten Kugelzonen-Gewichte sind alle schwerer; aber da es auch Kugelzone-Gewichte von 4,25 g oder 4,0 g gibt, ist das nur eine Frage der Zeit, bis auch ein leichteres gefunden wird. Die anderen mir bekannten glockenförmigen Gewichte - ausschließlich aus Norwegen - haben keine Kreuzkerben. Kreuzkerben kommen auch an den Kugelzonen-Gewichten in Norwegen bisher nicht vor. Der Draht ist, wie oben gesagt, sicherlich zum Austarieren angebracht worden.



Abb. 1: Das Gewicht aus Gásir.

Appendix 7

Fornleifarannsóknir á Gásum 2002-2006

– Tillaga að rannsóknaráætlun

Orri Vésteinsson

Gásir við Eyjafjörð eru einstakur staður. Ekki eru varðveittar jafnmiklar mannvistarleifar á neinum öðrum verslunarstað frá miðöldum á Íslandi. Af þessum sökum er mikill ábyrgðarhluti að gera fornleifarannsókn á Gásum og ekki verjandi að hefja þar framkvæmdir nema fyrir liggja skýr rannsóknarmarkmið, nýjustu og bestu tækni verði beitt og fjármagn sé tryggt til að ljúka verkinu á viðunandi hátt.

Í þessari greinargerð er fjallað er um forsendur rannsókna, markmið þeirra og aðferðafræði, og sett fram tillaga að rannsóknaráætlun fyrir árin 2002 til 2006.

Forsendur

Gásir við Hörgárósa voru helsti verslunarstaður á Norðurlandi á miðöldum og er víða getið í fornritum frá 13. og 14. öld. Gása er síðast getið 1391 og virðist verslun þar hafa lagst af skömmu síðar eða a.m.k. á 15. öld. Elstu lýsingar á rústum á Gásum eru frá seinni hluta 18. aldar og þegar á 19. öld var mönnum orðið ljóst að Gásir væru einn umfangsmesti og merkilegasti minjastaður á Íslandi. Árið 1907 grófu Daniel Bruun og Finnur Jónsson 16 prufuholur á Gásum auk þess sem þeir grófu út fjórar samtengdar búðatóftir. Niðurstaðan af þeirri rannsókn var að skýr merki væru um að búðirnar höfðu verið í notkun um langa hríð. Veggir voru eingöngu úr torfi og engar stoðarholur fundust og töldu þeir að það benti til að aðeins hefði verið tjaldað yfir búðirnar. Ekkert kom í ljós sem þeim fannst benda til fastrar búsetu og engir gripir fundust sem varpað gæti ljósi á tímamörk Gásakaupstaðar. Rannsókn við kirkjutóft töldu þeir sýna að kirkjan hefði eingöngu verið byggð úr tré. Árið 1986 gerðu Bjarni F. Einarsson og Margrét Hermanns-Auðardóttir könnun á Gásum og grófu þar 4 prufuholur, þar af eina í kirkjutóftina. Niðurstöður þeirra voru sambærilegar við fyrri rannsókn. Þau töldu þó að elsta gerð búða á Gásum væru niðurgrafnar tóftir en að seinna hefðu verið byggðir upp veggir í búðunum. Einnig fundu þau talsvert af gripum, þar á meðal hluti gerða úr lífrænum efnum, en það er vísbending um góð varðveisluskilyrði í jarðvegi á Gáseyri. Við kirkjuna töldu þau sig finna torfvegg, í andstöðu við niðurstöðu þeirra Finns og Bruuns um gerð kirkjunnar.¹

¹ Adolf Friðriksson, Birna Gunnarsdóttir og Orri Vésteinsson (1995): Fornleifar og ferðamál í Eyjafirði:

Forkönnun sem gerð var árið 2001 fólst í yfirborðsmælingu, fjarkönnun og uppgrefti úr eldri könnunarholum. Helstu niðurstöður voru þessar:

- Mannvirkjaleifar er ekki að finna utan þess svæðis þar sem þær eru sýnilegar á yfirborði.
- Mannvirkjaleifar þær sem sjást á yfirborði eru að öllum líkindum ekki uppbyggðar búðir úr torfi og grjóti heldur uppmokstur að tjaldbotnum og gefa yfirborðsleifar því hugsanlega aðeins mynd af síðasta stigi athafna á staðnum.
- Mannvistarlögin eru flest afar þunn og gríðarlega mörg en það þýðir að skipulegur uppgröftur verður mjög seinlegur og flókinn.
- Upphleðsla mannvistarleifa á 14. öld og síðar hefur sennilega verið mest austast á svæðinu, næst sjónum.
- Ástæða er til að ætla að sjávarstaða við Gáseyri hafi breyst á meðan verslunarstaðurinn var í notkun og færst út m.a. vegna upphleðslu úrgangs- og mannvistarlaga.
- Veruleg upphleðsla mannvistarlaga hefur átt sér stað eftir um 1320, allmörg leirker hafa fundist sem tímasett eru til loka 14. aldar og 15. öld, og torfhnausar hafa verið stungnir á staðnum eftir 1477. Allt þetta bendir til að Gásir hafi verið í notkun sem verslunarstaður lengur enn hingað til hefur verið talið, þ.e. fram á 15. og jafnvel 16. öld. Mögulegt er að athafnasvæðið á 15. og 16. öld hafi verið mun minna en áður var og afmarkað við 5 búðir austast á verslunarstaðnum, þ.e. þær búðir sem grafnar voru upp 1907 og að hluta 2001.
- Sjór stendur uppi í dýpstu könnunarholum næst fjörunni og eru því líkur á að elstu lögin þar séu vatnsósa. Það gæti þýtt að þar séu skilyrði til varðveislu lífrænna leifa, s.s. timburs. Það gerir uppgröft á Gásum meira spennandi en jafnframt flóknari og dýrari í framkvæmd.
- Ekki er torfveggur um kirkjuna eins og fyrri rannsakendur töldu og er hún því ein örfárra þekktra trékirna á Íslandi. Enn hafa ekki komið í ljós grafir í kirkjugarðinum.
- Talsvert fannst af gripum við uppgröftinn, þar á meðal miðaldaleirker, sem gefa góða von um hægt verði að byggja á gripum um tímasetningar og eðli umsvifa á staðnum.

Við þetta má bæta þremur almennum athugunum :

- Sjór hefur brotið af búðatóftum syðst á svæðinu fyrir 20. öld. Ekki er þar neitt landbrot nú.
- Tóftir sem ekki er vitað hvort eða hvernig tengjast verslunarstaðnum er að finna bæði norðan

og sunnan við aðalrústasvæðið.

- Hugsanlegt er að fornleifar leynist undir yfirborði sjávar í lóninu austan við Gáseyri.

Rannsókn á Gásakaupstað mun eflaust varpa nýju ljósi á verslun við Norður-Atlantshaf á há-miðöldum og eru Gásir því mikilvægur minjastaður í alþjóðlegu samhengi. Hann ber því að skoða með hliðsjón af öðrum verslunarstöðum og bæjum frá sama tímabili sem þegar hafa verið rannsakaðir. Þar má nefna t.d. Björgvin, Þrándheim, Túnberg, Osló og Kaupang í Noregi – þar sem uppgröftur stendur yfr nú –, Heiðabæ og Slésvík á Jótlandi, Birka í Svíþjóð, Visby á Gotlandi, Novgorod í Rússlandi, Quentowic í Hollandi, Jórvík á Englandi og Dyflinni og Watford á Írlandi. Þá eru nú í bígerð rannsóknir á Herjólfssnesi á Grænlandi sem gæti reynist mjög áhugaverður staður til samanburðar. Á undanförunum áratugum hafa fornleifarannsóknir aukið skilning okkar á viðskiptum í norðanverðri Evrópu sem og hlutverki þessara staða og er brýnt að sú þekking verði nýtt og sett í samhengi við rannsóknir á Gásum.

Engar sagnfræðilegar rannsóknir hafa verið gerðar um Gása sjálfa, fyrir utan það sem menn hafa tínt saman úr ritheimildum í tilefni af áðurnefndum fornleifarannsóknum. Heimildum um utanferðir og skipakomur á Gásum hefur þó verið safnað á einn stað og eru því aðgengilegar til frekari greiningar.² Hitt er ljóst að Gásir gegna mikilvægu hlutverki í rannsóknum á verslunarsögu miðalda, bæði að því er varðar hagfræðileg og samfélagsleg atriði. Eitt af helstu álitamálum um íslenskt miðaldasamfélag er að hve miklu leyti utanríkisverslun skipti máli fyrir samfélagið í heild eða hvort fyrst og fremst var verslað með munaðarvöru. Einnig er óljóst hvort verslunarstaðir eins og Gásir voru fyrst og fremst til vegna utanríkisverslunar, eða hvort þar var einnig innanlandsmarkaður þar sem vöruskipti fóru fram og hvort þeir höfðu líka almennara hlutverk, sem móts- og jafnvel þingstaðir, tímabundnar miðstöðvar í sínum landshluta.

Ein tilgátan um það af hverju Gásakaupstaður hafi lagst af í lok 14. aldar byggir á því að Hörgárósar hafi breyst vegna stórfelldra skriðufalla í Hörgárdal árið 1390, svo að framburður safnaðist upp við ósa Hörgár og gerði höfnina við Gása ónothæfa.³ Þó að uppgröfturinn 2001 bendi til að verslað hafi verið á Gásum fram eftir 15. öld og jafnvel fram á þá 16. er þessi tilgáta enn markverð og ljóst er að rannsóknir á umhverfi Gása, bæði á jarðfræði og gróðurfari skipta miklu máli til að taka á álitaeftum sem þessum.

2 Bogi Th. Melsted (1907-15): 'Ferðir, siglingar og samgöngur milli Íslands og annara landa á dögum þjóðveldisins.' *Safn til sögu Íslands*4, 585-911.

3 Halldór Pétursson ATH

Ósar Hörgár eru friðland á náttúruverndarskrá en þar er stórt samfellt votlendi með fjölbreytilegu fuglalífi. Friðlandið hefur rannsóknargildi en það hefur líka aðdráttarafli fyrir náttúruunnendur. Það kallar á að lausnir verði fundnar á því hvernig náttúruskoðun – t.d. í samhengi við minjaskoðun á Gásum – fer saman við verndun friðlandsins.

Á undanförunum árum hefur ferðapjónusta eflst mjög á Íslandi og er langt síðan menn bentu á að Gásir gætu haft mikilvægu hlutverki að gegna sem ferðamannastaður. Staðurinn er nálægt alfaraleið og þjónustu á Akureyri, rústasvæðið er stórt og tilkomumikið og auðvelt að tengja það við meginatriði í miðaldasögu Íslands. Einnig er næsta nágrenni áhugavert til náttúruskoðunar og eykur það mjög á gildi staðarins.

Ljóst er að til þess að Gásir geti orðið fjölsóttur og spennandi viðkomustaður ferðamanna þarf ýmsar framkvæmdir og undirbúning. Þar má nefna:

- fornleifa-, umhverfis- og sagnfræðirannsóknir þarf til að afla þekkingar og auka skilning á staðnum og hlutverki hans í samfélagi miðalda.
- koma þarf upp aðstöðu til að taka á móti ferðamönnum, m.a. aðkeyrslu og bílastæði, salerni, göngustígum og upplýsingum um það sem fyrir augu ber á skiltum eða með öðrum hætti. Einnig þarf að kynna staðinn útá við til að laða að ferðamenn.
- leysa þarf hvernig koma má við náttúruskoðun í nágrenni Gása án þess að slík umferð raski viðkvæmu dýralífi og gróðurfari.

Þessi þrjú grundvallaratriði tengjast innbyrðis og nauðsynlegt er að rannsóknir, kynning og verndun falli saman í eðlilega heild.

M arkmið fornleifarannsóknna

Heildarmarkmið fornleifarannsóknna á Gásum er að afla þekkingar um Gása og auka skilning á staðnum sem verslunarstað og miðstöð í Eyjafirði á miðöldum. Það er einnig höfuðmarkmið og meginástæða þess að ráðist er í uppgröft nú, að uppgröfturinn verði fléttaður inn í kynningu á Gásum. Þar er átt við að gestir geti skoðað uppgröftinn á meðan hann stendur yfir, þannig að hann verði sjálfur aðdráttarafli fyrir

ferðamenn, en líka að þekking sú sem aflað verður verði jafnóðum gerð aðgengileg almenningi og gestum.

Helstu rannsóknarmarkmið

- að afmarka verslunarstaðinn og kanna samhengi hans við byggð í nágrenninu. Þó að stærsti hluti búðanna sé vel greinilegur eru nokkrar á jaðri svæðisins, flestar mjög ógreinilegar og líklegt að fleiri séu sem sjást alls ekki. Nauðsynlegt er því að finna ystu mörk mannvistarleifa á verslunarstaðnum. Einnig er mikilvægt að fá hugmynd um eðli byggðarinnar í kring á þeim tíma sem verslað var á Gásum.
- að tímasetja upphaf og endalok verslunar á Gásum. Af ritheimildum að dæma var verslað á Gásum frá 10. öld til loka 14. aldar og fornleifarannsóknir benda til að verslað hafi verið lengur, e.t.v. fram á 16. öld, en mikilvægt er að fá betri hugmynd um hvar nákvæmlega tímamörkin eru. Af hverju varð þessi staður fyrir valinu í byrjun og hversvegna lagðist hann af?
- að kortleggja þróun verslunarstaðarins frá upphafi til enda. Ljóst er að búðirnar á Gásum hafa verið endurbyggðar margoft og líklegt er að verslunarstaðurinn hafi tekið breytingum í tímans rás. Kortleggja þarf hvar elstu búðirnar eru, hversu hratt verslunarstaðurinn byggðist upp og stækkaði, hvort tímabundnar sveiflur hafi verið í búðabyggingum á ákveðnum svæðum eða tímabilum o.s.fr.v.
- að sýna fram á hvernig búðirnar voru byggðar, hvort þar voru jarðhús eða ekki og hvort aðeins var tjaldað yfir þær eða reft yfir með torfþaki, og hvort – og þá hvaða – breytingum búðagerðin tók í tímans rás.
- að varpa ljósi á eðli þeirrar starfsemi sem fram fór á Gásum. Var það aðeins verslun, eða komu þangað iðnaðarmenn til að framleiða og selja vöru sína? Sjást merki um þinghald, dóma eða skemmtanir? Hve lengi var verslað eða haldið til á Gásum? Var þar föst búseta eða ekki?
- Hvert var viðurværi þeirra sem dvöldust á Gásum? Lifðu þeir við skrínukost sem þeir fluttu með sér eða treystu þeir á veiðar og vöruskipti við nágrennabæi?
- Hverskonar varning var verslað með? Hvaða vörur voru fluttar inn og hvaðan komu þær? Hvaða vörur voru til útflutnings? Urðu breytingar á þessu í gegnum tíðina? Ljóst er að svör við þessum spurningum verða grundvallarheimildir í hagsögu Íslands á miðöldum.
- Hvenær var kirkjan byggð og hvernig var hún gerð? Var hún endurbyggð og þá hvernig? Eru grafir í kirkjugarðinum eða kuml í nágrenni búðanna? Geta mögulegar grafir sagt eitthvað um þjóðfélagsstöðu og uppruna þess fólks sem kom til Gása?
- Hvaða áhrif hafði verslunarstaðurinn á næstu bæi, þ.e. Gása og Skipalón? Voru það bústaðir

höfðingja vegna rágreinnis við verslunarstaðinn eða liðu jarðimar fyrir átroðning hesta og manna sem komu til Gása?

- Hvaða áhrif hafði verslunarstaðurinn á nærsveitir, þ.e. Hörgárdal og Kræklingahlíð? Jókst pólitískt mikilvægi þeirra vegna nálægðar við verslunina eða skipti hún engu máli? Er t.a.m. sambandi milli Gása og klausturstofnunar á Möðruvöllum í Hörgárdal á 13. öld?

- Hve langan veg fóru menn til að versla á Gásum? Voru Gásir fyrst og fremst miðstöð verslunar í Eyjafirði eða komu menn þangað af öllu Norðurlandi til að versla, eða jafnvel lengra að?

Þjálfun íslenskra fornleifafræðinga.

Eitt af markmiðum rannsóknarinnar ætti að vera að stuðla að bættri þjálfun íslenskra fornleifafræðinga og fornleifafræðinema. Stór uppgröftur eins og sá sem ráðgerður er á Gásum, þar sem áætlað er að grafa lengi hvert sumar og til margra ára með þátttöku inn- og útlendra sérfræðinga, gefur svigrúm til að þjálfa unga fornleifafræðinga og fornleifafræðinema á skipulegri og árangursríkari hátt en allajafna er mögulegt.

Aðferðafræði

Lagt er til að sú meginforsenda verði lögð til grundvallar rannsóknum á Gásum að fara hægt í sakirnar, grafa lítið í einu og beita bestu aðferðum sem völ er á til að fá upplýsingar út úr því sem grafið er fram.

Grafið verði í langan tíma á hverju sumri (2-3 mánuði) en áhöfn að sama skapi lítil (um 5 manns).

Með því að grafa með fámennri áhöfn en lengi í einu vinnst margt:

- upplýsingar sem safnað er á hverju sumri verða ekki meiri en svo að hægt verður að vinna úr þeim á komandi vetri og þannig tryggt að ekki safnist upp frumgögn sem erfitt eða ógerlegt verður að vinna úr síðar.

- hægt verður að breyta stefnu milli ára í ljósi nýrra uppgötvanna.

- raunhæft verður að vænta megi niðurstaðna sérfræðigreininga áður en uppgrefti lýkur og þannig hægt að taka tillit til þeirra við uppgröftinn.

- nægt svigrúm verður til að taka á móti gestum og sinna almannatengslum.

Innan við þriðjungur aðalrústasvæðisins verði grafinn en hinn geymdur ósnertur fyrir komandi kynslóðir.

Kirkjan verði öll grafin fram og stærsti hluti búða á jaðri svæðisins.

Grafið verður í plani en það felst í því að stór svæði verða opnuð í einu, t.d. 20x20 m skikar eða stærri og þeir grafnir lag fyrir lag.

Ekki er reiknað með að öll uppgraftarsvæðin verði endilega grafin til botns heldur verði á sumum stöðum skildar eftir búðaleifar sem hentað gætu til kynningar.

Lögð er áhersla á að koma á alþjóðlegri og fjölfaglegri samvinnu í rannsókninni og að henni komi stór hópur sérfræðinga sem ekki vinni endilega við uppgröftinn nema lítinn tíma á hverju ári.

Úrvinnsla fari fram jafnóðum og haldnir reglulegir fundir/ráðstefnur þar sem sérfræðingar og aðrir sem vinna að rannsókninni hittast og fara yfir stöðu mála. Uppgraftarskýrsla verði gefin út á hverju hausti og sérfræðigreinar samhliða uppgreftinum en lokaútgáfa verður bók eða ritröð sem út mun koma að uppgrefti loknum.

Rannsóknaráætlan

Við mótun tillögu að rannsóknaráætlun hafa ofangreindar niðurstöður og athuganir verið hafðar til hliðsjónar. Einnig er byggt á þeirri meginforsendu að Gásir er einstakur minjastaður sem á sér enga hliðstæðu á Íslandi. Af því leiðir að fara verður með meiri gát en annarstaðar við uppgröft og gæta þess að gildi staðarins rými ekki við rannsóknirnar.

Meginforsendur eru því þessar :

- aðeins hluti verslunarstaðarins verður grafin upp
- beitt verður bestu aðferðum sem völ er á við uppgröftinn og hvergi slakað á kröfum um skráningu upplýsinga og greiningu sýna
- rannsóknin verður sett í samhengi við uppbyggingu Gása sem ferðamannastaðar, bæði á meðan á uppgrefti stendur og þannig að rannsóknarniðurstöður nýtist jafnharðan við þá uppbyggingu
- rannsóknarsvæði verður skilið eftir þannig að hægt verði að varðveita mannvirkjaleifar á staðnum til sýningar fyrir gesti
- Áhersla er lögð á alþjóðlegt samstarf og þjálfun ungra vísindamanna í sambandi við rannsóknina.

Tíllaga að rannsóknaráætlun 2002-2006

Lagt er til að opnað verði stórt rannsóknarsvæði (um 1900 m² = A) í kringum og vestur af uppgraftarsvæði Daniels Bruun og Finns Jónssonar frá 1907. Svæðið nær einnig yfir eina af

könnunarholunum frá 1986. Þetta rannsóknarsvæði (sjá meðfylgjandi uppdrátt) nær frá fjöruborði og upp fyrir rústasvæðið og er líklegt til að geyma mannvistarleifar frá öllu því tímasteiði sem verslað var á Gásam – aðrir hlutar rústasvæðisins gætu spannað styttri tímabil. Innan þess eru einnig allar helstu tegundir búða sem greina má á yfirborði.

Ekki er reiknað með að allt svæðið verði grafið í botn, heldur verði vel varðveittar mannvirkjaleifar frá mismunandi tímum skildar eftir til varðveislu og sýningar. Engu að síður er um stórt rannsóknarsvæði að ræða sem ólíklegt er að grafið verði til fulls á fimm árum.

Lagt er til að grafið verði ofan af kirkju og kirkjugarði (B). Uppgröftur á kirkju miðast við að gera undirstöður hennar sýnilegar og komast nær um aldur hennar og gerð, sem og hvort eldri kirkjugrunnar leynast undir. Uppgröftur í kirkjugarði miðast við að ganga úr skugga um hvort greftrað hafi verið í garðinum, en hafi svo verið er um mjög spennandi rannsóknarefni að ræða því líkur eru á að í garðinum hafi fyrst og fremst verið grafnir útlendingar og aðrir aðkomumenn.

Lagt er til að grafnir verði könnunarskurðir í þær tóftir sem eru utan við aðal rústasvæðið, bæði norðan og sunnan við það til að ganga úr skugga um hvort þær tengjast verslunarstaðnum eða ekki (C).

Lagt er til að búðir þær sem brotið hefur af syðst á svæðinu verði grafnar upp og gengið þannig frá að þeim stafi ekki frekari hætta af landbroti (D).

Lagt er til að kannað verði hvort fornleifar (bátsflök, bryggjur eða annað) leynist neðansjávar í lóninu suðvestan við Gáseyri (E). Þegar hafa verið lögð drög að samstarfi við Víkingaskipasafnið í Hróarskeldu um þetta verkefni.

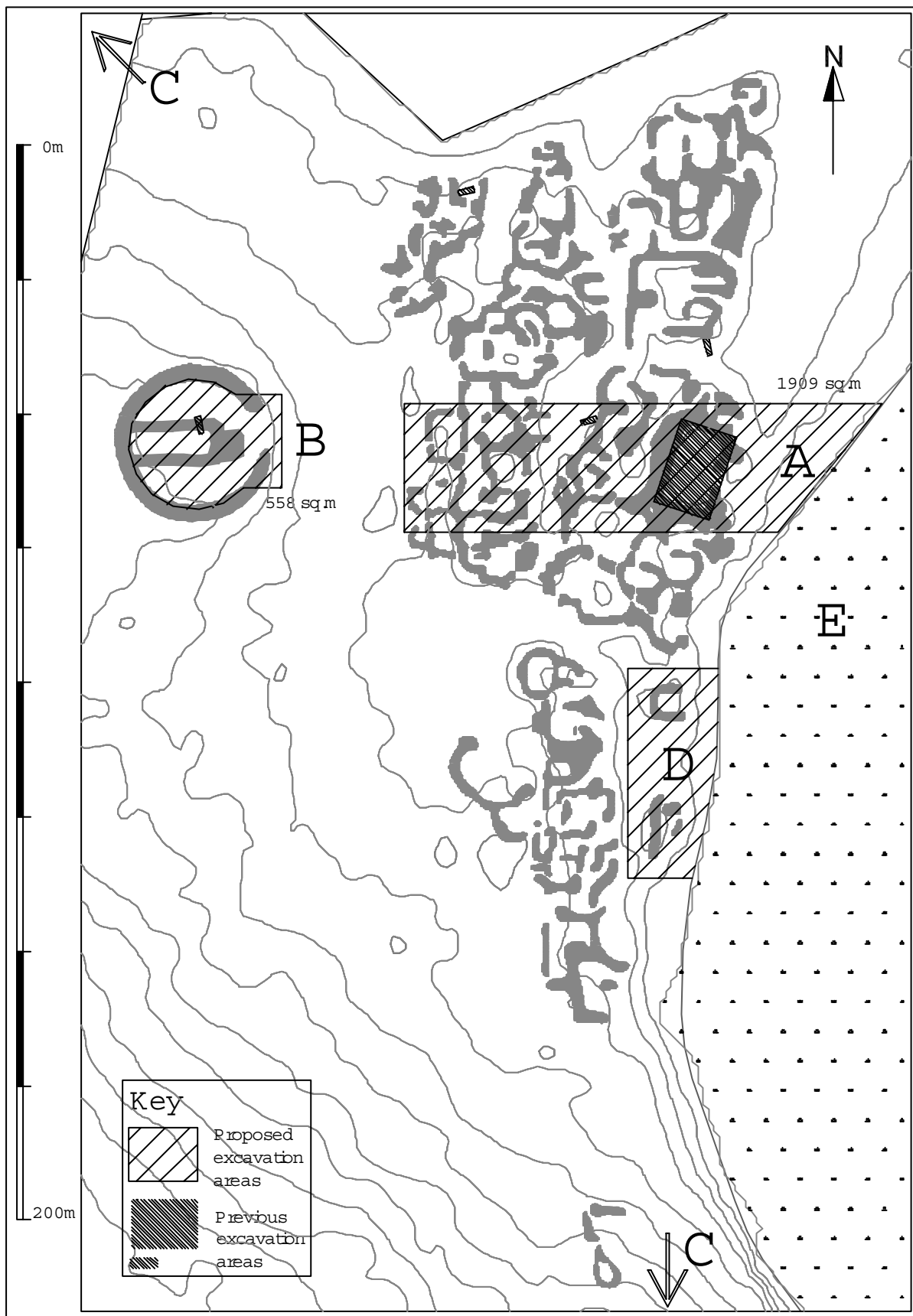
Lagt er til að fengnir verði til liðs við verkefnið náttúruvísindamenn til að kanna breytingar á míkro-landslagi á verslunarstaðnum sjálfum, einkum m.t.t. sjávarstöðu.

Verkþáttum má skipta svo milli ára:

2002	* Uppgröftur í kirkju og kirkjugarði (B)
* Uppgröftur á búðasvæði (A)	
* Könnun í lóni (E)	2005
	* Uppgröftur á búðasvæði (A)
2003	* Uppgröftur í kirkju og kirkjugarði (B)
* Uppgröftur á búðasvæði (A)	
* Könnunarskurðir í búðir á jaðri (C)	2006
	* Uppgröftur á búðasvæði (A)
2004	* Uppgröftur á búðum sem brotið hefur af (D)
* Uppgröftur á búðasvæði (A)	

Ljóst er að sérhver nýr verkþáttur getur leitt af sér margra ára framhaldsverk og er hér því eingöngu um að ræða tillögu um í hvaða röð verði byrjað á mismunandi verkþáttum. Hún byggir á mati á hversu umfangsmikið framhald hvers verkþáttar er líklegt til að verða og hversu líklegt er að niðurstöður eins verkþáttar hafi áhrif á framvindu verksins í heild.

Jafnframt er sýnt að komi í ljós fornleifar í lóninu sem talið verður vert að rannsaka þá er þar um að ræða verkefni sem krefðist annarskonar fjáröflunar en hin hefðbundni uppgröftur sem hér er gerð tillaga um.



Tillaga um uppgriftarsvæði