



Excavation of an Early Iron Age Burial Cairn with a Cremation Burial at Lerstad in Ålesund

Askeladden id. 25738

Gnr. 38, bnr. 143, Lerstad, Ålesund k., Møre og Romsdal

Howell Magnus Roberts and Trond Eilev Linge

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UNIVERSITETSMUSEET I BERGEN
AVDELING FOR KULTURHISTORIE
FORNMINNESEKSJONEN



UNIVERSITETSMUSEET I BERGEN
Avdeling For Kulturhistorie

Fylke	Møre og Romsdal
Kommune	Ålesund
Gårdsnavn	Lerstad
G.nr./b.nr.	38/143
Prosjektnavn	E136 Breivika - Lerstad
Prosjektnummer	717
Kulturminnetype	Gravrøys
Lokalitetsnavn	Fetts fk.nr.2
ID nr. (Askeladden)	25738
Tiltakshaver	Statens Vegvesen
Ephortenummer	2014/586
Saksbehandler	Trond Eilev Linge
Intrasisnummer	UM_2022_013
Aksesjonsnummer	2022/75
JS-nummer (osteologi)	JS1888
Museumsnummer (B/BRM)	B18828
Fotobasenummer (Bf)	Bf10469
Tidsrom for utgraving	27/6/22 - 15/7/22
Prosjektleder	Trond Eilev Linge
Rapport ved:	Howell Magnus Roberts og Trond Eilev Linge
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For three weeks during the summer of 2023 the University Museum of Bergen excavated a cairn at the farm Lerstad in Ålesund municipality, Møre og Romsdal county. Underneath the cairn a grave consisting of a layer of charcoal mixed with fragments of burnt human bones (Norw.: 'brannflakgrav') was investigated. A 14C sample from the charcoal, believed to be from wood used in the cremation fire, was dated 46 BCE-58 CE - late in the Pre-Roman Iron Age or early in the Early Roman Iron Age. No burial goods or artefacts was found in the grave. Close to the cairn several cooking pits were found. The majority of these are 14C dated to later parts of the Early Iron Age.

1. Research Framework

1.1 Background

The excavation was initiated by Statens Vegvesen, in regard of their plan to build a new road between the suburban areas of Breivika and Lerstad thereby improving connections to the city centre of Ålesund. The road is part of the E136 main road. This plan was in conflict with a cairn (Askeladden id. 25738) protected by the Heritage Act (Lov om kulturminner §4).

The Museum received a letter from the Cultural heritage management office of Møre og Romsdal county municipality dated 21/11/13, where they recommended that the road plan could go ahead on the premise that an archaeological investigation to secure archaeological data (Preservation by record) was conducted before construction work commenced.

The Museum supported this recommendation, and in a letter to the national cultural heritage authorities (*Riksantikvaren*) dated 22/1/14, the Museum put forward a preliminary project design and a budget for the investigation.

Riksantikvaren gave permission for the plan to be formalized on the premise that it clearly stated that no construction work could start before the University Museum of Bergen had excavated the cairn (letter dated 29.01.14, cf. lov om kulturminner § 8,4). The municipality council of Ålesund approved the plan on 04/9/14.

In an e-mail to the Møre og Romsdal county municipality dated 16/12/21 Statens Vegvesen stated that they wanted the excavation to take place during the first half of 2022 and asked the county municipality to instigate the process leading to the necessary approvals being made. In a letter dated 03.02.22 Riksantikvaren was asked to give final approval according to Lov om Kulturminner §10 - to approve the budget and state who should be financially responsible for the excavation. In accordance with this the Museum produced a final project design and budget, forwarded to Riksantikvaren on 7/2/22. In a letter dated 11/2/22 Riksantikvaren approved the project design and budget and stated that Statens Vegvesen should fund the excavation. The Museum and Statens Vegvesen then made an agreement stating that the excavation should take place between 27/6 and 16/7/22.

1.2 Chronological Framework

Period	14C years BP	Cal. Year	Main period
Early Mesolithic	10000 - 9000 BP	9500 - 8200 BCE.	Middle Stone Age
Middle Mesolithic	9000 - 7500 BP	8200 - 6300 BCE.	
Late Mesolithic	7500 - 5200 BP	6300 - 4000 BCE.	
Early Neolithic	5200 - 4700 BP	4000 - 3500 BCE.	Neolithic
Middle Neolithic A	4700 - 4100 BP	3500 - 2700 BCE.	
Middle Neolithic B	4100 - 3900 BP	2700 - 2350 BCE.	
Late Neolithic	3900 - 3400 BP	2350 - 1700 BCE.	
Early Bronze Age	3400 - 2900 BP	1700 - 1100 BCE.	Bronze Age
Late Bronze Age	2900 - 2430 BP	1100 - 500 BCE.	
Pre-Roman Iron Age	2430 - 2010 BP	500 – 0.	Early Iron Age
Early Roman period	2010 - 1650 BP	0. - 150/160 CE.	
Late Roman period		150/160 - 400 CE.	
Migration period	1650 - 1500/1510 BP	400 - 560/570 CE.	
Merovingian era	1500/1510 - 1200 BP	560/570 - 800 CE.	Late Iron Age
Viking Age	1200 - 970 BP	800 - 1030 CE.	
Early Middle Ages		1030 - 1150 CE.	Medieval
High Middle Ages		1150 - 1350 CE.	
Late Middle Ages		1350 - 1537 CE.	
Recent times		1537 CE. -	Modern

Table 1 – An overview of the archaeological periods as they are commonly used in Western Norway.

A selection of the archaeological remains at Lerstad have been dated by radiocarbon analysis, and these dates span a range from the 4th century BCE through to the 5th century CE. The excavated remains are thus all dated to various points in the Early Iron Age (*Eldre Jernalder*).

1.3 Timeframe and participants

A team from Fornminneseksjon, Universitetsmuseet, Universitetet i Bergen carried out an archaeological excavation at Lerstad, Breivika, Ålesund Kommune between 27/6/22 and 15/7/22. The team comprised Trond Eilev Linge (Project Leader), Howell Magnus Roberts (Field Leader GIS) and Florence Reidarsdatter (Field Archaeologist).

Post excavation analysis, data management and report writing were carried out by Howell Magnus Roberts and Trond Eilev Linge, in January and February of 2023.

Charcoal and bone samples were processed by Howell Magnus Roberts and Trond Eilev Linge during August and September 2022.

Identification of wood species was undertaken by Lene Synnøve Halvorsen, Avdeling for naturhistorie, Universitetet i Bergen during August 2022 (see Appendix 5)

Radiocarbon dating was conducted by Martin Seiler of the National Laboratory for Age Determination (NTNU University Museum, Trondheim) during October/November 2022 (see Appendix 4).

Osteological analysis of the cremated bone remains was conducted by Anne Karin Hufthammer, De osteologiske samlinger, Avdeling for naturhistorie, Universitetet i Bergen, during November of 2022 (see Appendix 1)

1.4 Public Outreach

Two items about the project were posted to the Instagram page “arkeologi i vest”.

July 11 2022 - «På Lerstad i Ålesund er vi i gang med utgraving av ei røys. Som ein ser er det nok blitt grave i den tidlegare. Likevel anar vi ei fint lagt kantkjede og andre detaljar i konstruksjonen. Røysa har ein diameter på 11-12 meter»

July 14 2022 - «Til slutt måtte siste del av røysa på Lerstad fjernast med maskin. Da kom det fram ei ringgrøft som har gått rundt røysa, og ikkje minst eit område rikt på kol blanda med små brente beinfragment. Vi trur dette er eit såkalla brannflak der kremerte bein, saman med restane frå kremasjonsbålet, har blitt spreidd ut. Denne gravskikken kan tyde på at gravrøysa er frå dei første par hundreåra av vår tidsrekning. Siste dag i felt gjekk med til å samle inn brannflaket med innhald.»

As the project was undertaken within an active construction site (including rock blasting and constant heavy machining), further opportunities for public outreach were limited and constrained by safety considerations.

2. Cultural heritage, registration and landscape.

2.1 Previous finds and registered cultural heritage from the area

According to the Askeladden database, the cairn ID. 25738 is one of three known protected archaeological heritage sites at the farm Lerstad. The other two are also burial monuments and are located down by the Ellingsøyfjord a couple of hundred metres NE and NW from ID. 25738.

Askeladden ID. 66679 / Fetts fk. nr. 1 and 2 are located 200 meters to NE from ID. 25738 and consists of two cairns. One is 8 x 5m wide and ca 1m high, the other is 7 m in diameter and 0.5 m high. No artefacts are known from these. The monuments have been known since Per Fetts survey in the 1940s. Askeladden ID. 148452 was surveyed in 2002 and is located ca 300m to the NW from ID. 25738 and ca 300m to the WNW of ID. 66679. It is 8.5 x 9.5m wide and 1m high.

According to Per Fetts *Førhistoriske minne på Sunnmøre* the cairn ID. 25738 was 13m wide and 1m in height, although damaged at the top. Fett also states he was informed that the previous owner had broken into the cairn, but no finds/objects are known to have been discovered. Per Fett did most of his surveys in Sunnmøre in the 1940s. During the recent excavation we learned from the current owner that a change in ownership of the farm took place in the 1930s.

The cairn is also said to be located close to the farm road and directly to the south of a bridge leading to the 1st floor of a nearby barn (Norw.: 'låvebru'). On a photo probably from the 1960s (see Figure 1) the location of the cairn can be seen close to the barn and a smaller building. At the time of our excavation the smaller building was still present whilst the barn had been taken down in the 1970s.



Figure 2 - Photo taken towards SE. The location of the cairn can be seen in the centre of the frame, between the barn, the smaller dark building, and the Y-shaped crossroad.

2.2 Registration

An archaeological survey was conducted in 2010 (Hovland 2011). This focused mainly on finding prehistorical settlement sites by mechanical trenching. The survey targeted areas other than Lerstad, and no archeological sites were found. Since the cairn ID. 25738 was already known from Per Fetts survey it is only briefly mentioned in the latter survey report.

2.3 Topography and Landscape



Figure 3 - Ålesund, Western Norway

The Area of Study is centered on E 360200, N 6929440 (ETRS89 UTM 32N) at an elevation of circa 50m above sea level.

The Area of Study (encompassing Askeladden ID 25738) is located circa 7km east of central Ålesund, and some 60m to the north of the present E136 highway (see Figures 3 & 4). Excavation was occasioned by the redevelopment of the highway and preparatory works for a new road tunnel (see Background, above).



Figure 4 - Site Location in relation to Ålesund

Prior to the commencement of work, the Area of Study had been overgrown, with a mixture of low shrub and several large trees (especially to the west). This foliage was mechanically removed prior to excavation. An area to the north and east of the visible monument had also been subjected to the dumping of modern rubbish. The central eastern portion of the monument had also been truncated – presumably in modern times, and partially back filled with modern debris. That debris is likely connected to the remains of a demolished barn known to have stood a short distance to the north (See Figure 1, above).



Figure 5 - Site Location

A gravel track ran east-west at the south of the visible monument. To the north of the Area of Study the land was heavily wooded, before dropping steeply towards the sea. Elevation also drops more gently towards the east. The Area of Study thus occupied a somewhat elevated position in the landscape and would have good intervisibility across its local area in a deforested landscape, overlooking the coast. Modern development (road construction) has radically altered the local topography to the south of the Area of Study, but it is generally a low plateau occupied by housing and shopping facilities, before rising to a steep crest at about 105m above sea level circa 600m to the south.



Figure 6 - Site Overview, looking NE



Figure 7 - Site Overview, Looking NW



Figure 8 - Site extent (red) with 1m contour lines (grey)

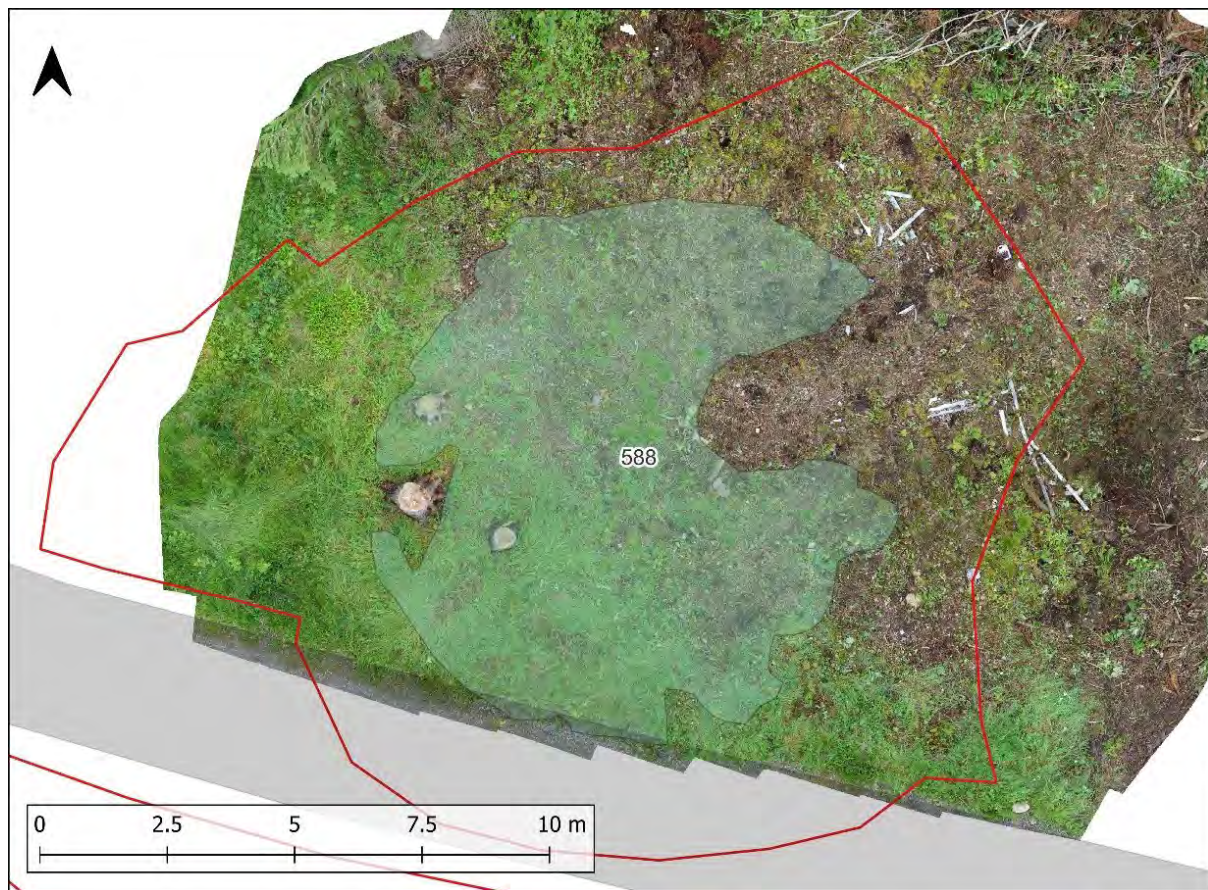


Figure 9 - Area prior to excavation

3. Implementation of the excavation project

3.1 Research questions and goals

An investigation of the cairn was considered important as only a few comparable grave monuments have been investigated by modern archaeological methods. It was considered likely that an excavation would produce data on the construction of the cairn as well as the burial itself and possibly grave goods. These would all give valuable information about prehistoric burial practice. Dating the grave and monument would also be important to contextualize it within a broader discussion on chronological change and variation in burial practice.

Indirectly, the investigation could possibly provide data on the settlement history of the Lerstad farm. The potential for finding actual settlement remains on the farm is considered low due to a large part of the farms land being developed in modern times.

The aim was therefore to document the construction details of the cairn, any possible grave(s) and all other relevant data associated with the cairn.

3.2 Method

The Investigation was carried out using an Open Area excavation method and single context recording.

The excavated area comprised 2 adjacent areas (see Figure 7). These areas were opened with the assistance of a large mechanical excavator, using a flat toothless bucket under archaeological supervision. This process removed the overburden of topsoil, and areas of modern dumping. The dumped modern material was found to contain asbestos roof tiles. Work was suspended for 1 day, whilst specialist contractors removed the asbestos under secure conditions.



Figure 10 - Asbestos removal

The overburden was removed down to the upper surface of a sub-circular stone-built low mound, and around the mound overburden was removed down to the interface with the natural subsoils, where a number of additional features (cooking pits) became apparent.

Excavation of the mound proceeded by single context. Excavation of the stone base of the mound was also assisted by a mechanical excavator using a toothless bucket.

3.3 Documentation

The central grave mound (A588) and associated layers and features were recorded using pro-forma recording sheets, supplemented by measured survey, and *Structure From Motion* photogrammetry. Oblique digital photography was also utilised.

Small individual structures (the cooking pits) were half-sectioned and recorded in section using scale drawings on waterproof polyester drafting film (Permatrace), supplemented by oblique digital photography.

The measured survey was undertaken using a Trimble S6 Total station, with data exported to the Intrasis data management package. Fixed base points were established using a Trimble R10 GNSS system, using a 4G connection for RTK corrections.

Sample lists, photo lists and survey notes were maintained in waterproof notebooks. Structures and contexts were numbered sequentially according to auto-generated unique IDs derived from the survey data and Intrasis data structure. Samples were numbered both sequentially (VP1 etc) and as a separate parallel sequence in Intrasis (VP1 = 1PK10001 etc). Photo numbers were auto-generated from the camera frame numbers. See Appendix 2 below.

No artefacts were recovered, but a sample of charcoaled wood from the *brannflak* are kept at the archaeological collection at the Universitetsmuseet i Bergen – with ID number B18828.

The bones collected from the grave are kept at Universitetsmuseet i Bergen, Avdeling for Naturhistorie, osteologisk samling – with ID number JS1888.

3.4 Course of excavation

Two adjacent areas were opened for investigation. The larger (northern) open area (O214) measured 207m², enclosing the great majority of investigated remains. A smaller (southern) area (O364), measuring circa 65m² was excavated to permit re-routing of a private track and hence the subsequent expansion of Area O214 in order to expose the complete extent of the burial mound (see Figure 10).



Figure 11 - Site extent and all features

The central grave mound was cleaned by hand and excavation proceeded by single context, as discreet depositional events were defined and recorded. Deposits were removed in stratigraphic sequence.

Whole sediment samples were taken as required to recover dating materials (charcoal). The latter were processed offsite (at UiB). A cremation deposit was recovered in its entirety for later processing and analysis.

4. Results

A selection of the archaeological remains at Lerstad have been dated by radiocarbon analysis, and these dates span a range from the 4th century BCE through to the 5th century CE.

The natural basement deposits comprise a pale yellow to mid orange sandy silt clay. The upper surface of the natural deposit exhibits some indications of truncation from above, possibly including ard marks and/or root action.

4.1 Phase 1

Phase 1 includes all features and deposits dated prior to the deposition of Cremation A725 and the construction of Grave monument A588 (see below).

4.1.1 - Phase 1a

Overlying the natural basement and sealed by later features were the remnants of a soil horizon (A200027). The full extent of this horizon is unclear, but it was observed in situ sealed beneath the later cremation deposit A725 and sampled for dating (VP12). The sample produced birch charcoal and is dated to;

361BCE-197BCE (2 sigma 95.4% probability)

Both stratigraphically and from radiocarbon dating this deposit is thought to represent the oldest activity on site. Deposit A200027 was a firm mid yellow brown sandy clay silt up to 5cm in thickness, containing occasional charcoal and small angular gravel. It is interpreted as an agricultural horizon.

4.1.2 - Phase 1b

Truncating the natural ground surface were a group of small narrow curvilinear ditches (*ringgrøft*)– A657, A673 and A694. Taken together, these encompass a slightly oval subcircular space measuring 12.2m from the southwest to northeast, and 10.4m from the southeast to northwest (see Figure 11). The latter features are all shallow, with concave sides and a flattish base, measuring up to 60cms in width and 10-20cms in depth. It is thought that these features would originally have formed a complete circuit, and have been truncated by later activity and bioturbation. It is noted that these features have an almost identical location and extent to the overlying grave mound A588, and are likely closely associated with it. A charcoal sample (VP8) taken from feature A673 has been identified as birch and dated to;

356 - 173BCE(2 sigma 95.4% probability)

Dating evidence from feature A673 is thus broadly contemporary with the agricultural horizon A200027. However, spatial relationships suggest a close association between the ring ditches and the overlying grave monument A588. This may imply that the sediment infilling the ring ditches is derived from the pre-existing soil horizon, that the dating material is residual in nature and that the sample might not reliably date the construction of the ring ditches A657, A673 and A694.

However – it remains possible that the subcircular area later occupied by the grave monument A588 had already been delineated by the ring ditches at this earlier date.

4.1.3 - Phase 1c

Close by the western limit of ditch A694 was a small cooking pit – A319. The latter feature measured circa 70 x 50cms, oval in form, and with a depth of circa 6 cms. A sample was

taken from the basal charcoal rich fill (VP2). This sample produced hazel charcoal and is dated to;

195BCE - 53BCE (2 sigma 95.4% probability).

Cooking Pit A319 is one of a group of 11 cooking pits identified and recorded. Of the latter group, 5 features have been dated and phased (A312, A347, A356, A338 and A319) and 6 are not dated/phased (A275, A284, A291, A298, A305 and A328). Cooking Pit A319 is the oldest dated feature in this class. It remains possible that some of the other cooking pits might be contemporary (or older) although the majority of the dated features are notably younger (see below).

4.2 Phase 2

Phase 2 includes all features and deposits contemporary to or closely associated with Cremation A725 and Grave monument A588.

4.2.1 - Phase 2a

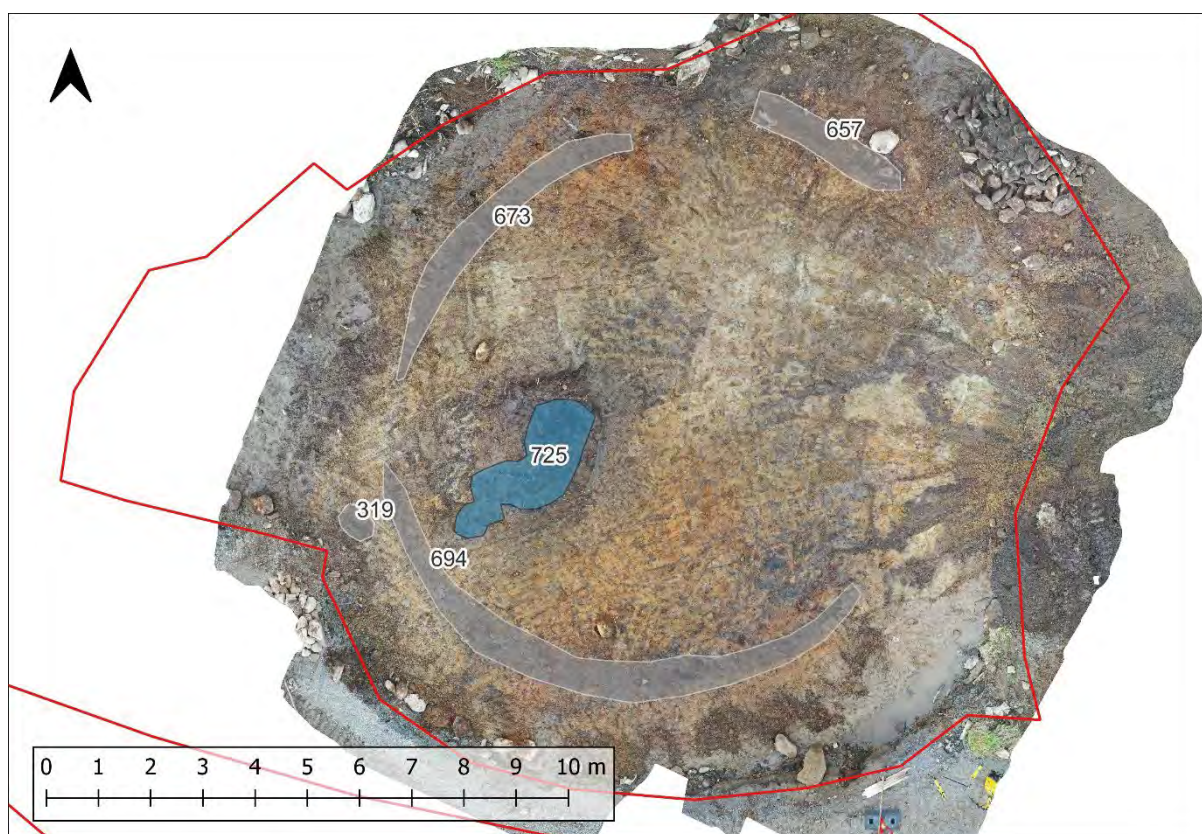


Figure 12 - Cremation A725

Removal of the grave monument A588 revealed a black charcoal rich sandy silt deposit (A725) containing white burnt fragmented bone. The latter deposit was discovered beneath the southwestern quadrant of the grave mound. Cremation deposit A725 measured 3.45m in length and 1.15m in maximum width. It was irregular in form and up to 10cm in depth where thickest – to the northeast. The majority of the bone fragments were found within this thicker, north-eastern portion of the deposit. Charcoal fragments were recovered for dating (VP10) and the entirety of the bone rich portion (circa 17 litres) recovered for processing and osteological analysis (VP11). VP10 produced birch charcoal dated to;

46BCE - 58CE (2 sigma 95.4% probability)



Figure 13 - A725 - Brannflak/Cremation layer. Facing W

VP11 was wet sieved through a 1mm mesh, slowly air dried at room temperature and sorted with the aid of magnification to maximise recovery. This produced 1767 fragments of burnt bone weighing a total of 70.4g. Of the total, 12 fragments weighing 1.3g could be identified as *Homo sapiens*. The remaining bone fragments may be regarded as likely human, and there are no other species identified (Hufthammer 2022, see Appendix 1 below).

This deposit is interpreted as a human cremation burial. No evidence of in situ burning (rubefaction etc) was noted, and the deposit was not contained within any pit or cut feature.

It is believed that the site of cremation must be elsewhere, and that the cremation product was collected and redeposited as Layer A725. It is interpreted as a *brannflakgrav*. It is noted that the A725 is *not* located beneath the centre of the overlying monument. It is further noted that this deposition is dated younger than at least one of the cooking pits, A319.



Figure 14 - Sampling Cremation layer A725

4.2.2 - Phase 2b

Grave monument/ Burial mound A588 directly overlies cremation A725. The outer limits of the mound also overlie some portions of the ring ditches A657, A673 and A694 (described above), although only fractionally. It is believed that these features taken as a group represent a single burial, although some part of the area may have been delineated at an earlier date, and the construction of the Burial mound A588 will have occurred at some point after the deposition of cremation deposit A725. This delay is of an unknown length but presumed to be of a very short duration.



Figure 15 - A588 (highlighted)

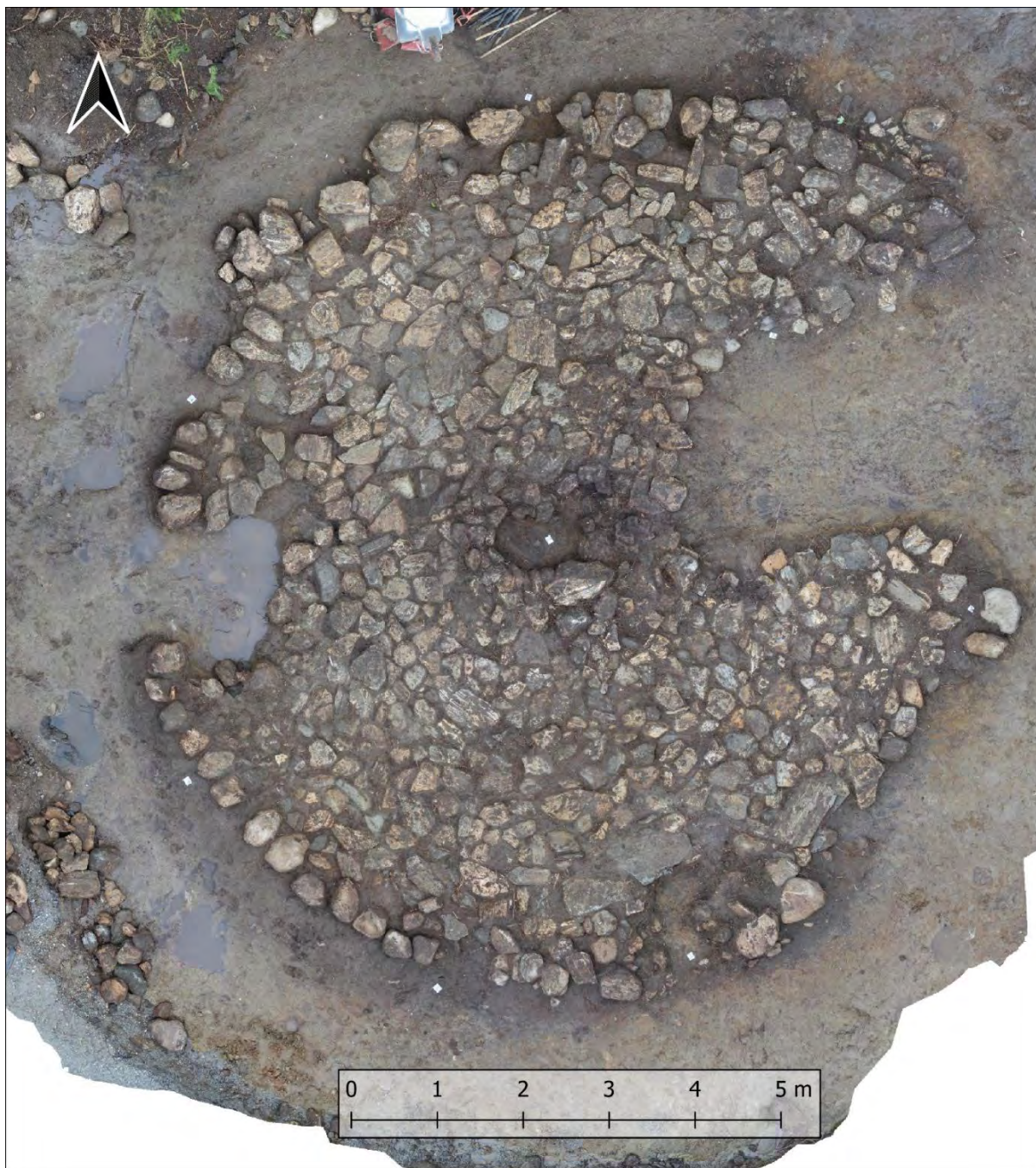


Figure 16 - A588

Grave mound A588 was sub-circular in form and measured 11.25m (SW-NE) x 10.55m (SE-NW), surviving to a height of circa 50cms. Modern truncation had destroyed the southern part of the north-western quadrant, and bioturbation (tree roots) had damaged other parts of the mound. It sits upon broadly level ground, sloping slightly down towards the east.

The outer perimeter or kerb of A588, where it survives, is formed by a curving single row of large sub-rounded stones, each measuring 50-60cms in largest dimension. These stones are amongst the largest in the mound and required significant effort to manoeuvre.

At the centre of the mound another smaller sub-circular ring of stone was apparent, measuring 1.3m in diameter. This inner ring was filled by a disordered stone deposit A553. Between the outer ring and inner ring, the main body of the mound (A588) was formed from roughly sorted and deliberately lain stones. There is considerable variation in the stone used, from large sub-rounded boulders like the kerb stones to much smaller angular fragments down to 10cms. Some of stone used was flat thinner laminar slabs of a blue grey and/or orange-brown colour, measuring up to 80cms in length, but only 5-10cms in thickness. The stones of A588 appear to have been laid out in a broadly concentric manner, but this property is variable and inconsistently observed. The construction was (broadly speaking) a single layer of stone in a matrix of dark grey-brown sandy silt.

Following detailed cleaning, several discrete patches of anomalous well-ordered stone or large slabs were investigated of the basis that they might indicate additional/secondary burial features, or perhaps special deposits (A471, A507, A570, A578, A492). This did not prove to be the case, with excavation proceeding rapidly to the natural basement. The latter “features” may thus be disregarded.



Figure 17 - "Possible features" – (discontinued).

Alternatively, taken together with the empty central space, and the non-visible location of the cremation remains A725 beneath the main body of A588, we might consider the possibility that these discrete patches of stone were consciously made to mislead – to misdirect anyone seeking to rob or disrupt or otherwise re-open the original burial.

Whilst the construction of the burial monument A588 appears to be a single event, occasioned by the deposition of cremation A725, we may consider some indications of greater complexity and a somewhat longer depth of time. Overlying A588 were three areas where additional stones had been added to the mound. Stone layer A429 was located towards the north-western edge of the mound, layer A412 was located towards the south-western limit, and layer A456 was centrally located.

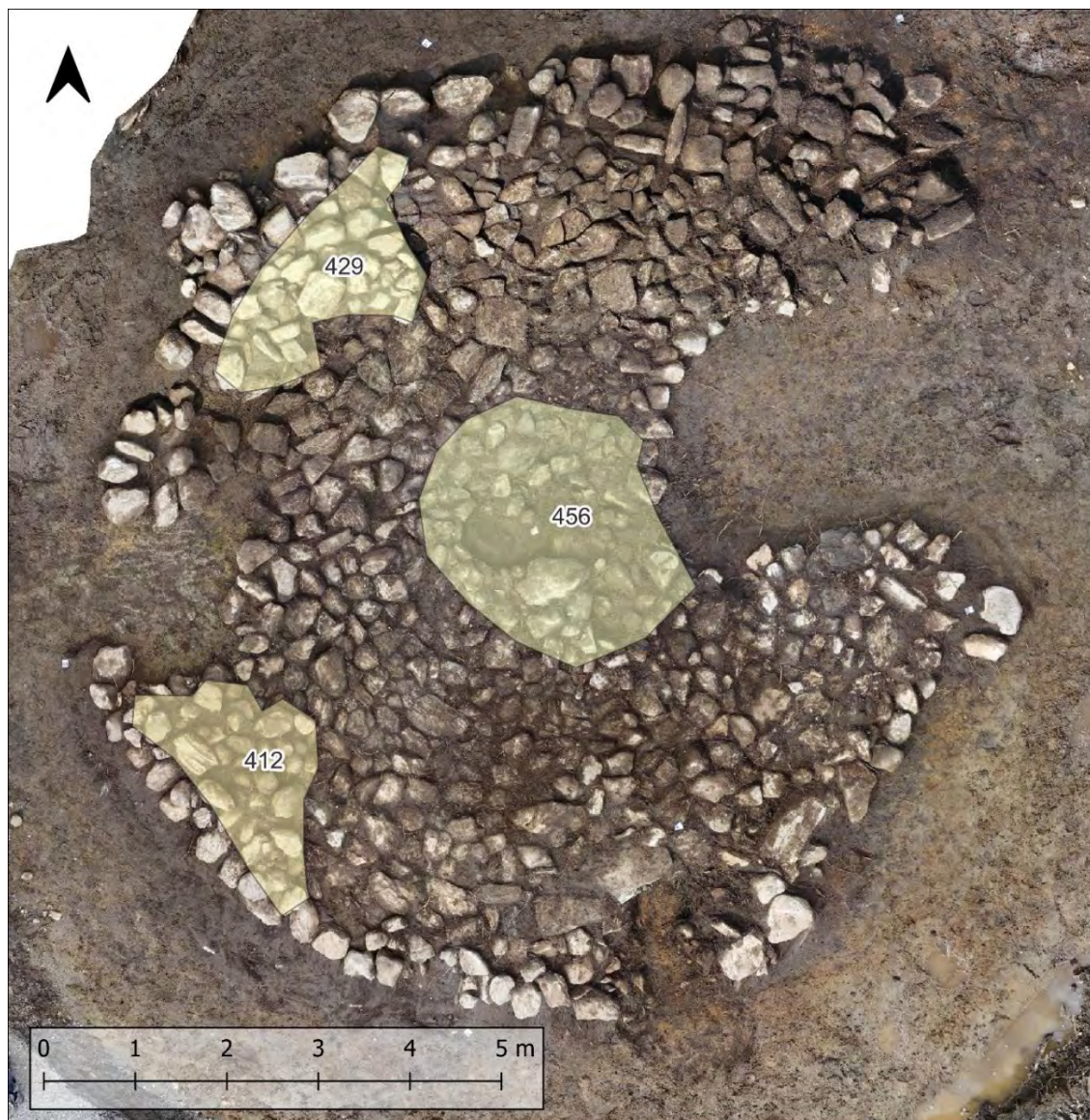


Figure 18 - Layers A412, A429 and A456.

Layers A412, A429 and A456 were all seemingly ad hoc deposits of disordered stone, with a depth of 20-30cms. They may form remnants of a previously more extensive layer, latterly eroded or removed. Layer A456 raises the height of the central part of the mound, and measures 2.6-3.0m in diameter, being an irregular sub-oval in form. Layers A412 and A429 raised the height of the western part of the grave mound – this may serve to emphasise the mound at the west, where the ground surface rises, as opposed to the east where the ground surface drops. The latter layers may have been joined but were truncated by bioturbation (tree roots).

4.2.3 - Phase 2c

This phase includes a single cooking pit (A338) dated somewhat later than the cremation A725, and a deposit of stone rubble (A398) abutting the northeastern limit of the Grave mound A588.

(Undated cooking pits A275, A284, A291, A298, A305, A328 could be placed within this phase, but this is unprovable).

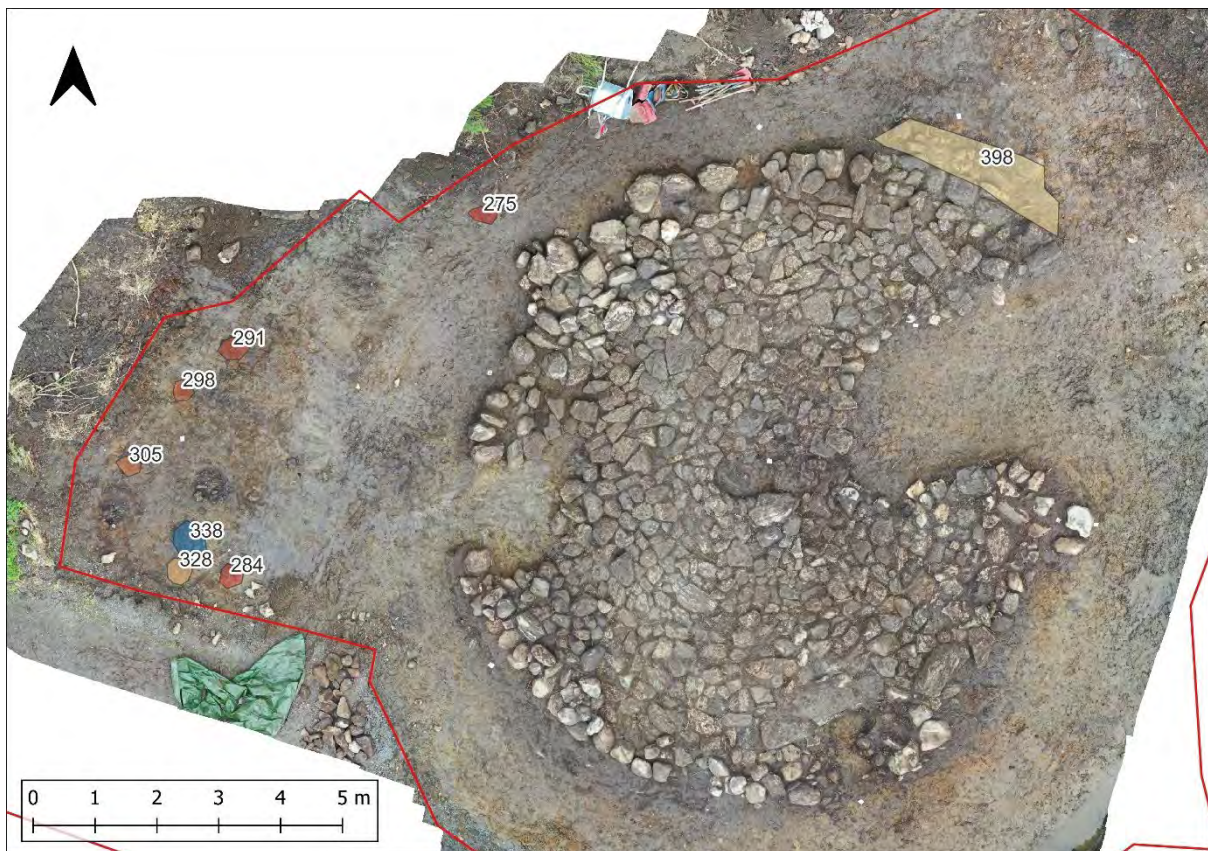


Figure 19 - Phase 2c

Located to the west of the Grave Mound A588 were a group of small cooking pits. Cooking pit A338 measured 65cms x 50cms and was oval in form. It survived to a depth of 7cms and was sampled for dating purposes (VP5). Sample VP5 contained pine charcoal and was dated to;

77CE -205CE (95.4% probability, 2 sigma)

As such, it is later than the cremation remains A725 and suggests ongoing activity at the site. At the northeast limit of Grave mound A588, the outer kerb stones were abutted by a deposit of irregular stone – layer A398. The latter layer measured up to 3.4m in length, 0.7m in width and upto 0.5m in depth. It comprised unsorted sub-rounded stone up to 40cms in length. It is interpreted as collapsed material derived from A588.

4.3 Phase 3

This phase includes cooking pits A312, A347 and A356. Each of these latter features was sampled and dated – to the later 4th or early 5th centuries CE – perhaps 400 years later than the cremation deposit A725, and 2-300 years later than cooking pit A338.

(Undated cooking pits A275, A284, A291, A298, A305, A328 could also be placed within this phase, but this is unprovable). This phase of activity demonstrates significant ongoing activity at the site, likely associated with the continued remembrance of the grave monument and burial.



Figure 20 - Phase 3 cooking pits (in Blue) and unphased cooking pits (orange/red)

Cooking pit A312 was oval in form and measured 0.46m x 0.36m, with a depth of 0.12m. It included a black charcoal rich deposit and was sampled for dating (VP3). The sample produced birch charcoal, dated to;

260 – 406 CE (2 sigma 95.4% probability).

Cooking pit A347 was oval in form and measured 0.65 x 0.52m, with a depth of 0.10m. It included burnt stone and a black charcoal rich deposit, sampled for dating (VP4). The sample produced birch charcoal, dated to;

265CE – 417 CE (2 sigma 95.4% probability).

Cooking pit A356 was located in the additional area to the south of the Grave mound. It was oval in form and measured 0.45m x 0.32m with a depth of 0.05m. It included a black charcoal rich deposit and was sampled for dating (VP1). The sample produced birch charcoal, dated to;

264CE - 417 CE (2 sigma 95.4% probability)

4.4 Unphased remains

Unphased/undated features

Cooking pits A275, A284, A291, A298, A305, A328 (see Figure 17). It is possible that further similar features are located beyond the Limit of Excavation.

Feature A275 was located circa 1m to the northwest of Grave mound A588. It measured 0.36-0.38m in diameter and was sub-circular in form, surviving to a depth of 2cms. A275 contained a black charcoal rich deposit of silty sand.

Features A284, A291, A298, A305 and A328 were located in a cluster between 3.5 – 5.8m west of Grave mound A588. They are all sub-circular/oval in form and filled with black charcoal rich sandy silts.

A284 measured 0.43 x 0.32m with a depth of 4cm.

A291 measured 0.6 x 0.35m with a depth of 4cm.

A298 measured 0.33 x 0.32m with a depth of 1cm.

A305 measured 0.41 x 0.37m with a depth of 3cm.

A328 measured 0.45 x 0.42m with a depth of 3cm.

Spatially and morphologically, the latter features may be associated with dated/phased cooking pits A338, A312 and A347. They are thought to form part of the same continuity of practice and serve the same function.

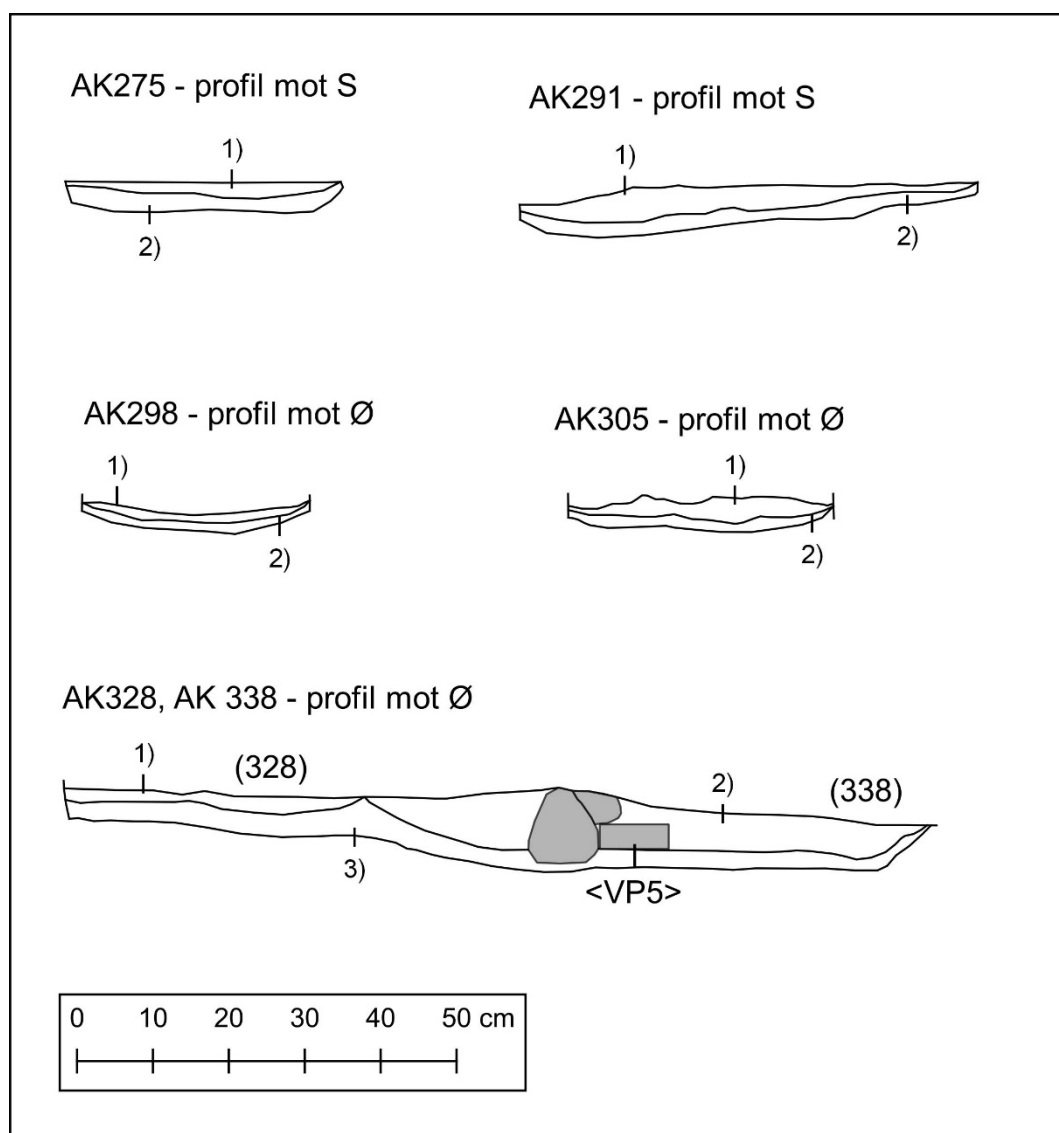


Figure 21 - Profiles AK275, AK291, AK298, AK305, AK328 and AK338

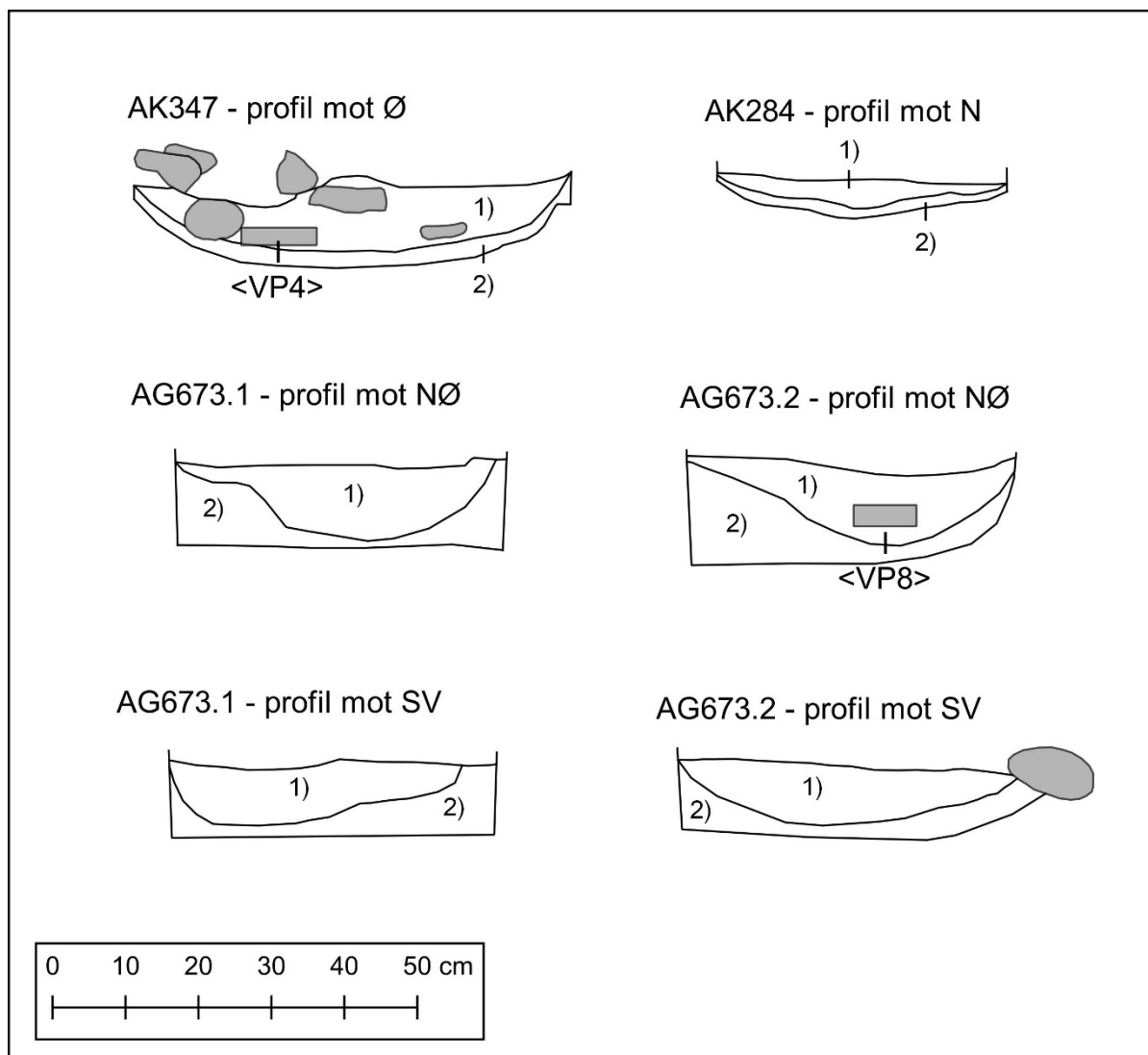


Figure 22 - Profiles AK347, AK284, AG673.1, AG673.2

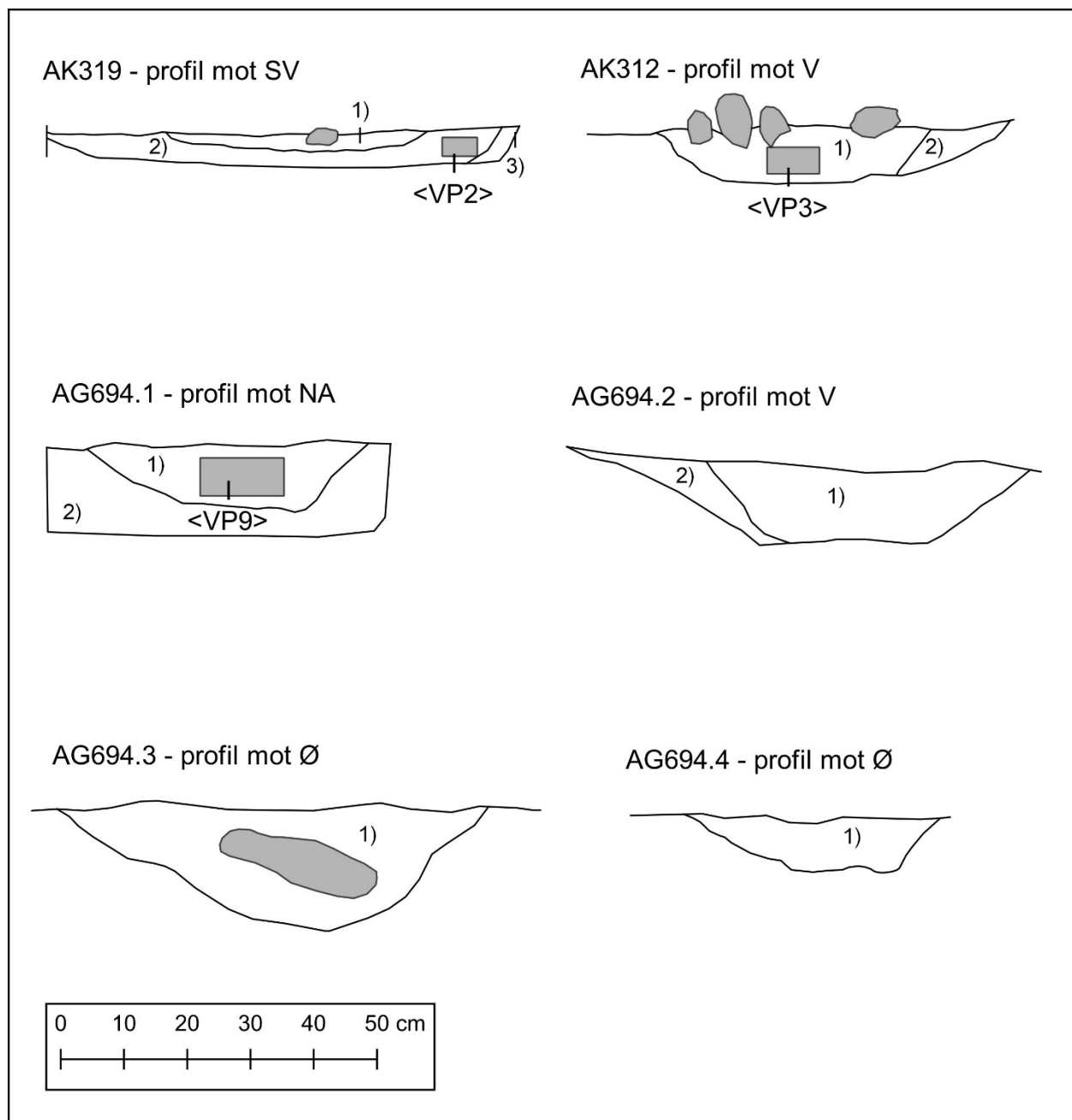


Figure 23 - AK319, AK312, AG694.1, AG694.2, AG694.3, AG694.4

Feature	Description
AK275	Kokegrop/Cooking pit
	1) - Thin black layer of charcoal in a silty sand matrix
	2) - Underground/Natural, yellow/orange silty sand
AK284	Kokegrop/Cooking pit
	1) - Black layer of charcoal in a silty sand matrix
	2) - Underground/Natural, yellow/orange silty sand
AK291	Kokegrop/Cooking pit
	1) - Black layer of charcoal in a silty sand matrix
	2) - Underground/Natural, yellow/orange silty sand
AK298	Kokegrop/Cooking pit
	1) - Thin black layer of charcoal in a silty sand matrix
	2) - Underground/Natural, yellow/orange silty sand
AK305	Kokegrop/Cooking pit
	1) - Black layer of charcoal in a silty sand matrix
	2) - Underground/Natural, yellow/orange silty sand
AK312	Kokegrop/Cooking pit
	1) - Black charcoal layer with frequent sub-angular stones, some firecracked.
	2) - Brown humic sand with occasional charcoal
AK319	Kokegrop/Cooking pit
	1) - Brown humic sand with occasional charcoal
	2) - Black charcoal layer
	3) - Yellow brown silty sand
AK328 -	1) - Black layer of charcoal in a silty sand matrix
AK338	2) - Black layer of charcoal in a silty sand matrix
	3) - Red/orange to yellow/orange silty sand with gravel
AK347	1) - Black charcoal layer with frequent sub-angular stones, some firecracked.
	2) - Underground/Natural, yellow/orange silty sand
AG673.1	Curvilinear gulley
	1) - Grey brown charcoal rich sandy silt
	2) - Underground/Natural, red/orange silty coarse sand
AG673.2	Curvilinear gulley
	1) - Grey brown charcoal rich sandy silt, some organic content
	2) - Underground/Natural, red/orange silty sand and gravel
AG694.1	Curvilinear gulley
	1) - Grey/brown humic sandy silt with occasional charcoal
	2) - Orange brown sandy clay silt, occasional gravel
AG694.2	Curvilinear gulley
	1) - Dark grey/brown sandy clay silt, occasional charcoal, occasional small stones
	2) - Orange brown sandy clay silt, occasional gravel
AG694.3	Curvilinear gulley
	1) - Dark grey/brown sandy clay silt, occasional charcoal, occasional small stones
AG694.4	Curvilinear gulley
	1) - Dark grey/brown sandy clay silt, occasional charcoal, occasional small stones

Table 2 – Profile descriptions

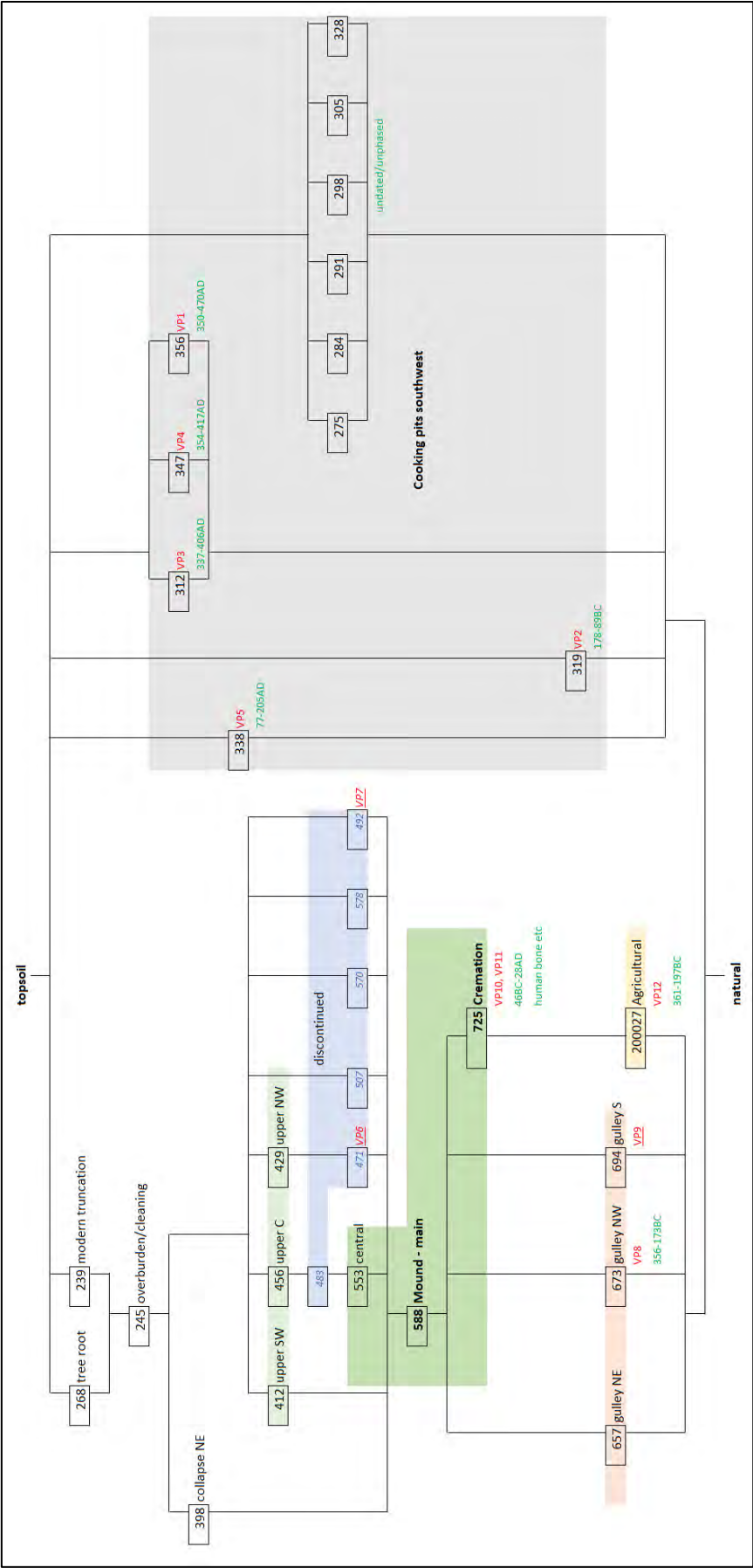


Figure 24 - Harris Matrix

5. Summary and interpretation

Sample Name	Fraction	Calibrated Age Range (68.3% probability)	Calibrated Age Range (95.4% probability)
VP1	Betula., alkali residue	366CE (4.5%) 370CE 375CE (63.8%) 413CE	264CE (6.2%) 273CE 350CE (89.2%) 417CE
VP2	Corylus., alkali residue	168BC (68.3%) 104BC	195BC (1.9%) 186BC 178BC (79.5%) 89BC 81BC (14.0%) 53BC
VP3	Betula., alkali residue	264CE (13.3%) 274CE 347CE (51.1%) 384CE 397CE (3.9%) 401CE	260CE (18.9%) 279CE 337CE (76.6%) 406CE
VP4	Betula., alkali residue	378CE (68.3%) 414CE	265CE (4.5%) 273CE 354CE (91.0%) 417CE
VP5	Pinus., alkali residue	81CE (20.4%) 98CE 111CE (25.7%) 132CE 140CE (14.9%) 160CE 190CE (7.3%) 201CE	77CE (95.4%) 205CE
VP8	Betula., alkali residue	351BC (15.8%) 336BC 330BC (37.3%) 290BC 226BC (3.4%) 221BC 210BC (11.8%) 198BC	356BC (60.6%) 279BC 256BC (1.7%) 248BC 233BC (33.2%) 173BC
VP10	Betula., alkali residue	40BC (46.4%) 11BC 2CE (21.9%) 17CE	46BC (91.7%) 28CE 46CE (3.7%) 58CE
VP12	Betula., alkali residue	355BC (9.7%) 343BC 320BC (34.4%) 281BC 231BC (24.2%) 202BC	361BC (95.4%) 197BC

Table 3 - Summary of dating evidence (see also Appendix 4)

The features investigated at Lerstad are interpreted as a) the truncated remains of a stone burial mound overlying a cremation deposit and b) a series of external cooking pits associated with this mortuary practice.

The cremation deposit A725 is held to be the focal event, latterly covered by the grave mound A588. The cremation deposit is dated at the transition from the Pre-Roman Iron Age to the Early Roman period.

Dating evidence recovered from the cooking pits however spans a wider range, suggesting a continuity of practice. It is possible that the grave mound and cooking pits form part of a larger ritual landscape – potentially extending west and north of the Area of Study.

The burial mound (A588) was sub-circular in form and measured 11.25m (SW-NE) x 10.55m (SE-NW), surviving to a height of circa 50cms. The outer edges were formed by an irregular kerb of larger stones. Monuments of this sort are uncommon, but not unknown.

Two similar mounds were discovered and excavated at Ytre Hauge, Haugsbygda, Sande kommune, Møre og Romsdal during the summer of 2003.



Figure 25 - Mounds at Ytre Hauge, 2003. Oblique image taken from a helicopter. N is top.

These two mounds were situated on the shoreline and are incomplete. The larger mound (Røys 1, Figure 24 right) measured circa 15.5m in diameter, and the smaller mound (Røys 2, Figure 24 left) measured circa 8.5m in diameter.

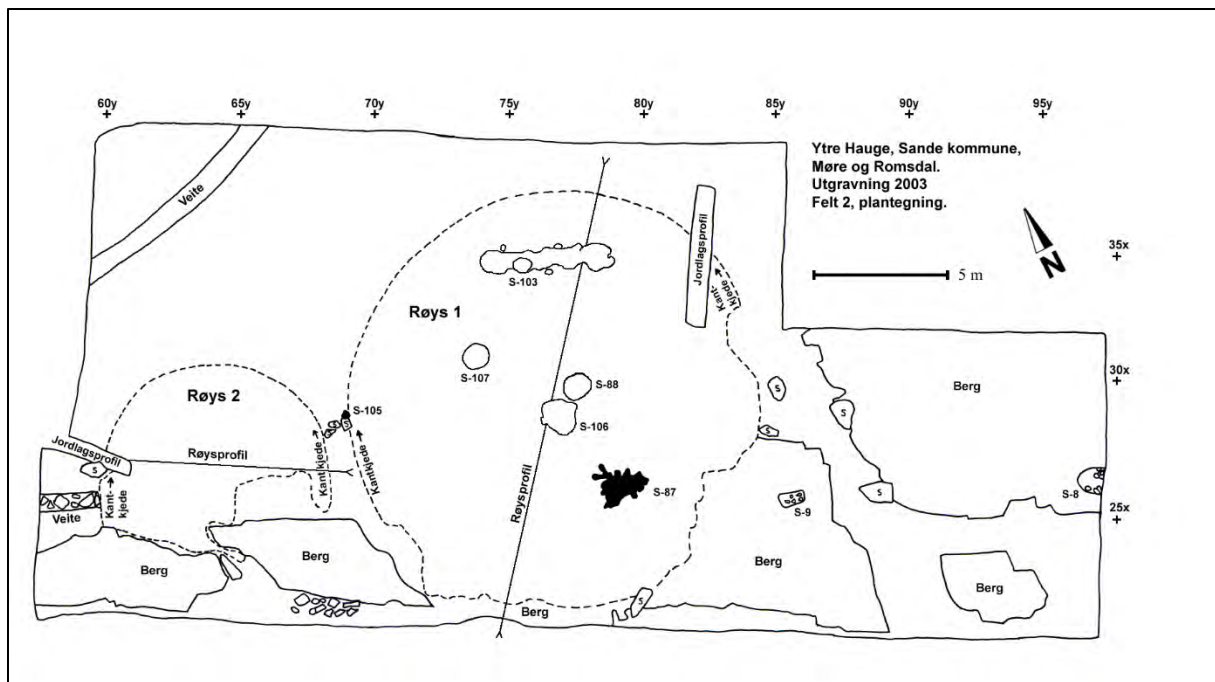


Figure 26 - Ytre Hauge, Plan drawing

The larger mound, Røys 1, was found to cover a patch of charcoal and burnt bone (Structure 87), offset from the centre, within the southeastern quadrant. This was interpreted as a *brannflakgrav*. It contained some shards of pottery, a tooth from a predator (probably bear) and fragments of a bone implement interpreted as a bone knife. The two mounds are believed to be broadly contemporary. They are dated by pottery typology to the period 200-400CE – the Later Roman Iron Age (Asle Bruen Olsen, 2003).

The mound at Lerstad has clear parallels to those at Ytre Hauge, although is somewhat earlier in date, and lacks artefactual evidence.

Another similar monument was excavated in 2020 at Giskegjerdet, Giske kommune, Møre og Romsdal (Askeladden 229556, see Palsdottir and Linge 2020). This latter monument survived as a half circle of stone (eroded by the sea), measuring circa 10.5m in diameter with a kerb of larger sorted stones. It dates to the Pre-Roman Iron Age or younger. The Giskegjerdet mound also produced no artefacts, and also had no discrete grave feature.

Within a broader discussion of burial customs in the Early Iron Age of Western Norway this type of grave ('*brannflakgrav*') is considered a phenomenon typical for the Roman Iron Age (1-400 CE) (Solberg 2005:137ff). In light of this the grave at Lerstad could be considered as an early example of this burial practice in this region. However, Lars Pilø has shown that there are a few examples of this burial practice in Western Norway dating back to the latest part of the Bronze Age. He also points at the possibility that this type of grave could be underrepresented since they would be hard to notice if not marked by a mound/cairn which is often the case when it comes to burials from the Pre-Roman Iron Age, as well as having no or only a few artefacts. The lack of artefacts in the Lerstad grave could thus be an expression

of this Pre-Roman Iron Age tradition. On the other hand, the stone monument built over the grave could be seen as an expression of a trend towards to the more monumental grave mounds of the Late Roman Iron Age and Migration Period.

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Norsk resymé

I perioden frå 27. juni til 15. juli 2022 gjennomførte Universitetsmuseet i Bergen ei arkeologisk utgraving av gravrøysa Askeladden id. 25738 på gnr. 38 Lerstad i Ålesund kommune. Gravrøysa har vore kjent lenge, og vart første gang registrert av Per Fett i samband med hans registreringsarbeid på Vestlandet (Fett 1950). Bakgrunnen for utgravinga var at tiltak som var planlagt som ein del av reguleringsplanen for ny E136 mellom Breivika og Lerstad var i konflikt med gravrøysa. Riksantikvaren gav i 2014 dispensasjon frå lov om kulturminne for tiltaket med vilkår om at det før anleggsstart i området vart gjennomført ei arkeologisk utgraving av røysa.

Gravrøysa var før utgravinga sterk overgrodd og det vaks ein del større grantre på den. I forkant av utgravinga vart tre sagde ned og kratt fjerna. Ved utgravinga vart det nytta gravemaskin for å fjerne torv- og jordlaget ned til den steinbygde røysa. Finreinsing av jord mellom røysstein vart gjort for hand. Det vart også nytta maskin for å avdekke eit arbeidsområde rundt røysa. Det vart her fjerna masse ned til undergrunnen, og i samband med dette kom det fram fleire kokegroper ved den nordvestlege delen av røysa. Som følgje av at ein veg gjekk over den sørvestlege kanten av røysa, måtte delar av denne fjernast og ei midlertidig omlegging av vegen mot sør lagast. Her blei det funne nok ei kokegrop.

Etter at den var reinska fram var røysa så godt som sirkulær; den vart målt til eit tverrmål på 11,25 meter (SV-NA) og 10,55 meter (SA-NV). Største bevarte høgd var 0,5 meter. I ytterkanten var kantsteinar som hadde ei noko større dimensjon enn steinen som elles var nytta i røysa. Det var også klare spor etter seinare forstyrringar i røysa. Eit stort parti frå austenden inn mot midten var fjerna, og kantsteinane var borte frå den søraustlege delen. Det var også eit sår i røysa inn frå vest. Her stod det før utgravinga eit større grantre, og ved avdekkinga vart stein som openbert var flytta på som følgje av røter, fjerna. De øvre nivå av røysstein vart fjerna for hand, men av tidsomsyn vart det nedre nivået samt kantsteinane fjerna ved hjelp av gravemaskin. Etter dette kom det både fram ei ringgrøft og ei brannflakgrav.

Utgravinga vart gjort som ei *single context* graving, og følgjande fasar skildrar oppbygginga av røysa:

Fase 1 omfattar alle strukturar og lag som er eldre enn kremasjonsgrava og bygginga av røysa.

Fase 1a viser til eit lag som kunne følgjast under heile røysa og utanfor, og antakast å vere eit åker- eller beitelag frå før grava og røysa vart anlagt. Ei 14C-prøve av laget daterer det til 361-197 BC.

Fase 1b viser til fleire kurva nedgravingar som til saman dannar ein noko oval sirkulær form (12,2 – 10,4 meter). Forma følgjer omtrentleg ytterkanten til røysa og strukturane er samla tolka som delar av ei ringgrøft knytt til røysa. Ved snitting var strukturane opp til 60 cm breie

med konkave sider og flat botn, 10-20 cm djupe. Ei 14C-datering gav resultatet 356-173 BC. Det er mest truleg datert på kol frå det nemnte dyrkingslaget som har fylt att grøfta.

Fase 1c viser til ei kokegrop (A319) rett vest for røysa. Denne vart 14C-datert til 195-53 BC, noko som skil den frå dei andre daterte kokegropene med fleire hundre år og plasserer den før gravlegginga (sjå under).

Fase 2 viser til alle strukturar og lag som er samtidig med eller nært assosiert med kremasjonsgrava (A725) og røysa (A588).

Fase 2a viser til struktur A725 som var eit svart kolrikt sand- og siltlag med fragment av brente bein som låg innanfor røysa sin nordvestlege fjerdedel. Laget var 3,45 meter langt og opp til 1,15 meter breitt og hadde ei irregulær form. Det var opp til 10 cm tjukt i den nordaustlege delen og det var også her størstedelen av dei brente beina vart funne. Heile laget vart samla inn (om lag 17 liter), tørka sakte på museet før bein vart plukka ut av massane. Det vart ikkje funne gjenstandar. 1767 (70,4 g) beinfragment vart funne og gjennomgått av osteolog. 12 av fragmenta vart bestemt til menneske (*Homo Sapiens*). Laget tolkast som eit brannflakgrav der kremerte bein, saman med kol frå kremasjonsbålet har blitt deponert utan å vere plassert i ein behaldar eller ei nedgraving. Ei 14C-prøve frå kol som antakast å stamme frå kremasjonsbålet vart datert til 46 BC-58 AD, antydgar at kremasjonen har funne stad ein gong like før eller like etter starten på vår tidsrekning.

Fase 2b viser til sjølve røysa, som antakast å vere bygd relativt kort tid etter deponeringa av A725. Den er elles skildra tidlegare.

Ingen andre gravleggingar vart påvist i røysa, men det kan sjølvsagt tenkast at slike har blitt fjerna ved tidlegare inngrep, til dømes i austenden. I midten av røysa skilde ein ring av stein med tverrmål på 1,3 meter seg ut (A533), men grav kunne ikkje sikkert påvisast her. Under den manuelle avdekkinga vart fleire delar av røysa undersøkt nøye ut frå teikn på at det kunne vere graver (t.d. flate steinar, steinar som tilsynelatande var satt i bestemte mønster og liknande). Ingen av desse førte til påvising av graver.

Fase 2c består av ei kokegrop (A338) som vart 14C-datert til 77-205 AD og som dermed er den kokegropa som følgjer nærast i tid etter gravlegginga.

Fase 3 omfattar tre kokegroper; A312, A347 og A356, med særskilte like dateringar. Desse er datert til høvesvis 260-406 AD, 265-417 AD og 264-417 AD, men med ei sterk statistisk overvekt mot siste del av 300-talet eller tidleg 400 talet AD. Dei antydgar at røysa kan ha vore senter for merksemd om lag 400 år etter gravlegginga, i siste del av yngre romartid eller tidleg i folkevandringstid.

Utover dei fem daterte kokegropene, vart det funne seks som ikkje er datert.

Sjølve gravrøysa, karakterisert som ei relativt låg røys med tydelege definerte kantsteinar, har likskapstrekk med i alle fall tre gravminne som Universitetsmuseet har grave ut på

Sunnmøre. To røyser som vart grave ut Ytre Hauge i Sande kommune i 2003 (Olsen 2003) hadde både dette trekket. I den største av desse vart det funne ei brannflakgrav som vart datert til yngre romartid (200-400 AD). Likedan kan ein sjå på ei gravrøys som vart greve ut på Giskegjerde, Giske k. i 2019. Her vart det ikkje funne grav, men dette kan skuldast at halve røysa var erodert vekk. Datering er såleis ei utfordring, og 14C-dateringane frå undersøkinga seier ikkje meir enn at røysa neppe er eldre enn siste del av førromersk jernalder (Pálsdóttir & Linge 2020). Interessant nok var brannflaket på Ytre Hauge, som Lerstadgrava, plassert ut i sida av røysa, og ikkje i sentrum.

Brannflakgraver vert på Vestlandet først og fremst knytt til romartid (Solberg 2005), og såleis skulle grava på Lerstad vere eit tidleg døme på denne typen gravlegging. Lars Pilø peiker likevel på at det fins døme på brannflakgraver med ureinsa bein alt i siste periode av yngre bronsealder og at det teoretisk sett kan tenkjast at brannflak under flatmark var den vanlegaste gravforma, men at de er underrepresentert fordi de er vanskeleg å erkjenne (Pilø 1989:36). Generelt må det seiast å vere vanskeleg å samanlikne med gravmaterialet frå førromersk jernalder. Det er kjent få graver frå perioden, delvis på grunn av at gravskikken var sparsam og de fleste utgravingar av gravfunn er da også gjort lenge før 14C-dateringar vart teke i bruk ved denne typen undersøkingar. Det biletet vi har av gravskikken si utvikling frå forromersk til romersk jernalder kan vere mangelfullt. Det som likevel kan poengterast er at mangelen på funn knytt til Lerstadgrava er eit trekk som peikar attende til de funnfattige gravene frå førromersk jernalder. Det at det er anlagt røys over grava kan på si side hevdast å vere eit trekk som peikar framover mot meir monumentale gravmarkeringar seinare i eldre jernalder.

Appendix 1

Osteology

List of cremated bones and letter



JS 1888 Rapport Lerstad, Ålesund k., Møre og Romsdal. 27.10.2022

Fam/Art	Rute	Annet	Klasse	Norsk navn	Beinslag	Ant	Br/Ubr	Vekt,g	Kommentar
Homo sapiens									
	VP11/A725	Bone - from residue 1mm	Mammalia	Menneske	Dens	9	Brent	0,3	
	VP11/A725	Små bein	Mammalia	Menneske	Dens	1	Brent	0,1	
	VP11/A725	Cremated bone	Mammalia	Menneske	Dens	1	Brent	0,1	
	VP11/A725	Cremated bone	Mammalia	Menneske	Mandibula	1	Brent	0,8	
Sum Homo sapiens						12		1,3	
Mammalia ubestembar									
	VP11/A725	Bone - from residue 1mm	Mammalia	Pattedyr	Ubestembar	887	Brent	16,6	Trolig utelukkende menneske
	VP11/A725	Bone - from residue 1mm	Mammalia	Pattedyr	Ubestembar	7	Brent	1	Høyst sannsynlig menneske
	VP11/A725	Små bein	Mammalia	Pattedyr	Ubestembar	237	Brent	7,4	Trolig utelukkende menneske
	VP11/A725	Små bein	Mammalia	Pattedyr	Ubestembar	54	Brent	6,6	Sannsynligvis menneske
	VP11/A725	Små bein	Mammalia	Pattedyr	Ubestembar	8	Brent	2,6	Høyst sannsynlig menneske
	VP11/A725	Cremated bone	Mammalia	Pattedyr	Ubestembar	462	Brent	13,2	Trolig utelukkende menneske
	VP11/A725	Cremated bone	Mammalia	Pattedyr	Ubestembar	55	Brent	7,6	Sannsynligvis menneske
	VP11/A725	Cremated bone	Mammalia	Pattedyr	Lemmeknokl	33	Brent	9,5	Høyst sannsynlig menneske
	VP11/A725	Cremated bone	Mammalia	Pattedyr	Ubestembar	12	Brent	4,6	Høyst sannsynlig menneske
Sum Mammalia ubestembar						1755		69,1	
SUM TOTAL						1767		70,4	



UNIVERSITETET I BERGEN
Universitetsmuseet – Avdeling for naturhistorie

Trond Linge,
Fornminneseksjonen
Universitetsmuseet i Bergen

Bergen 17.11.2022

Vedlagt er analyserapport for beinmaterialet fra Lerstad, Ålesund kommune. Beinmaterialet er magasinert ved de osteologiske samlinger, Universitetsmuseet under registreringsnummer JS 1888.

Hele funnet består av 1767 brente beinfragmenter med totalvekt 70,4 gram. Av disse er 12 bein artsbestemt til menneske. Alle er fra kjeve: ett fragment er fra underkjeve, de øvrige er fragmenter av tannrøtter. Også de ubestembare beina er kategorisert som sannsynligvis, trolig eller høyst sannsynlig av menneske. Vi finner ingen indikasjoner på at det er bein av andre arter enn menneske i dette materialet.

Med vennlig hilsen

Anne Karin Hufthammer
De osteologiske samlinger

Appendix 2

List of photos

Filnavn	Motiv	Strukturnr/Objektnr	Sett mot	Rute	LokalitetsID	Foto	Fotograf	Opptaksdat
Bf10469_0002.JPG	Site overview, pre-excavation		V		25738	TRUE	Trond Linge	29.06.2022
Bf10469_0006.JPG	Site overview, pre-excavation		NV		25738	TRUE	Howell Roberts	29.06.2022
Bf10469_0009.JPG	Site overview, pre-excavation		N		25738	TRUE	Howell Roberts	29.06.2022
Bf10469_0011.JPG	Site overview, pre-excavation		Ø		25738	TRUE	Howell Roberts	29.06.2022
Bf10469_0015.JPG	Site overview, pre-excavation		V		25738	TRUE	Howell Roberts	29.06.2022
Bf10469_0017.JPG	Charcoal pits, south west of mound		NØ		25738	TRUE	Trond Linge	01.07.2022
Bf10469_0018.JPG	Charcoal pit AK 319, in plan	AK319	SV		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0019.JPG	Charcoal pit AK 284, in plan	AK284	SV		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0020.JPG	Charcoal pit AK 275, in plan	AK275	N		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0021.JPG	Charcoal pit AK 319, in plan	AK319	SV		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0022.JPG	Charcoal pit AK 284, in plan	AK284	SV		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0023.JPG	Charcoal pit AK 338, in plan	AK338	VSV		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0024.JPG	Charcoal pit AK 328, in plan	AK328	V		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0025.JPG	Charcoal pit AK 328 + 338, in plan	AK328, AK338	V		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0026.JPG	Charcoal pit AK 347, in plan	AK347	SSV		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0027.JPG	Charcoal pit AK 305, in plan	AK305	SV		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0028.JPG	Charcoal pit AK 312, in plan	AK312	NNV		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0029.JPG	Charcoal pit AK 298, in plan	AK298	SSØ		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0030.JPG	Charcoal pit AK 291, in plan	AK291	S		25738	TRUE	Florence Reidarsdatter	04.07.2022
Bf10469_0031.JPG	Charcoal pit AK 356, in plan	AK356	N		25738	TRUE	Howell Roberts	04.07.2022
Bf10469_0032.JPG	Charcoal pit AK 356, situation, extended area	AK356	NV		25738	TRUE	Howell Roberts	04.07.2022
Bf10469_0033.JPG	Charcoal pit AK 275 Profil	AK275	NNV		25738	TRUE	Florence Reidarsdatter	08.07.2022
Bf10469_0034.JPG	Charcoal pit AK 319 Profil	AK319	SV		25738	TRUE	Trond Linge	08.07.2022
Bf10469_0035.JPG	Charcoal pit AK 298 Profil	AK298	NØ		25738	TRUE	Florence Reidarsdatter	08.07.2022
Bf10469_0036.JPG	Charcoal pit AK 291 Profil	AK291	N		25738	TRUE	Florence Reidarsdatter	08.07.2022
Bf10469_0037.JPG	Charcoal pit AK 312 Profil	AK312	V		25738	TRUE	Trond Linge	08.07.2022
Bf10469_0038.JPG	Charcoal pit AK 347 Profil	AK347	V		25738	TRUE	Florence Reidarsdatter	08.07.2022
Bf10469_0039.JPG	Charcoal pit AK 284 Profil	AK284	S		25738	TRUE	Florence Reidarsdatter	08.07.2022
Bf10469_0040.JPG	Grave mound layer AA 429	AA429	SV		25738	TRUE	Trond Linge	08.07.2022
Bf10469_0041.JPG	Charcoal pit AK 328 + 338, Profil	AK328, AK338	V		25738	TRUE	Florence Reidarsdatter	08.07.2022
Bf10469_0042.JPG	Grave mound layer AA 412	AA412	NA		25738	TRUE	Trond Linge	08.07.2022
Bf10469_0048.JPG	Grave mound AA 471	AA471	SV		25738	TRUE	Florence Reidarsdatter	11.07.2022
Bf10469_0058.JPG	AL 553 - pre excavation	AL553	V		25738	TRUE	Howell Roberts	12.07.2022
Bf10469_0064.JPG	AL 553 - post excavation	AL553	V		25738	TRUE	Trond Linge	12.07.2022
Bf10469_0066.JPG	Grave mound overview	AA588	V		25738	TRUE	Trond Linge	12.07.2022
Bf10469_0069.JPG	HMR watching machine remove mound	AA588	NØ		25738	TRUE	Trond Linge	13.07.2022
Bf10469_0073.JPG	Gulley A673, post-excavation profil	AG673	NØ		25738	TRUE	Florence Reidarsdatter	14.07.2022
Bf10469_0074.JPG	Gulley A673, post-excavation profil	AG673	SV		25738	TRUE	Florence Reidarsdatter	14.07.2022
Bf10469_0075.JPG	Gulley A673, post-excavation profil	AG673	N		25738	TRUE	Florence Reidarsdatter	14.07.2022
Bf10469_0076.JPG	Gulley A673, post-excavation profil	AG673	S		25738	TRUE	Florence Reidarsdatter	14.07.2022
Bf10469_0077.JPG	Gulley A694, post-excavation profil	AG694	SØ		25738	TRUE	Florence Reidarsdatter	14.07.2022
Bf10469_0078.JPG	Gulley A694, post-excavation profil	AG694	NV		25738	TRUE	Florence Reidarsdatter	14.07.2022
Bf10469_0079.JPG	Cremation layer A725 pre excavation	AL725	V		25738	TRUE	Trond Linge	14.07.2022
Bf10469_0080.JPG	Cremation layer A725 (northern part) pre excavation	AL725	V		25738	TRUE	Trond Linge	14.07.2022
Bf10469_0081.JPG	Cremation layer A725 (southern part) pre excavation	AL725	V		25738	TRUE	Trond Linge	14.07.2022
Bf10469_0082.JPG	Gulley A694.2, plan, post excavation	AG694	N		25738	TRUE	Howell Roberts	14.07.2022
Bf10469_0083.JPG	Gulley A694.2, situation, post excavation	AG694	NØ		25738	TRUE	Howell Roberts	14.07.2022
Bf10469_0084.JPG	Gulley A694.2, section, post excavation	AG694	Ø		25738	TRUE	Howell Roberts	14.07.2022
Bf10469_0085.JPG	Gulley A694.3, plan, post excavation	AG694	N		25738	TRUE	Howell Roberts	14.07.2022
Bf10469_0086.JPG	Gulley A694.3, situation, post excavation	AG694	Ø		25738	TRUE	Howell Roberts	14.07.2022
Bf10469_0087.JPG	Gulley A694.3, section, post excavation	AG694	V		25738	TRUE	Howell Roberts	14.07.2022
Bf10469_0088.JPG	Gulley A694.4, plan, post excavation	AG694	N		25738	TRUE	Howell Roberts	14.07.2022
Bf10469_0089.JPG	Gulley A694.4, situation, post excavation	AG694	NØ		25738	TRUE	Howell Roberts	14.07.2022
Bf10469_0090.JPG	Gulley A694.4, section, post excavation	AG694	V		25738	TRUE	Howell Roberts	14.07.2022
Bf10469_4095.JPG	Working shot - HMR and FR	AA588	Ø		25738	TRUE	Trond Linge	05.07.2022
Bf10469_4096.JPG	Working shot - HMR and FR	AA588	Ø		25738	TRUE	Trond Linge	05.07.2022
Bf10469_4365.JPG	Working shot - HMR machining	AA588	Ø		25738	TRUE	Trond Linge	13.07.2022
Bf10469_4367.JPG	Working shot - HMR cleaning brannflak	AL725	S		25738	TRUE	Trond Linge	13.07.2022
Bf10469_4380.JPG	Brannflak - charcoal and bone fragments	AL725	V		25738	TRUE	Trond Linge	14.07.2022

Appendix 3

List of drawings

Number	Type	Scale	Contexts/Features	Date	ID
1	Sections	1:10	AK275, AK291, AK298, AK347, AK284, AK328, AK338, AK305, AK673.1, AK673.2	08.07.2022	FR/TEL
2	Sections	1:10	AK319, AK312, AK694.1, AK694.2, AK694.3, AK694.4	08.07.2022	HMR/TEL

Appendix 4

14C-dating report

	Sample Name	Fraction	14C content (pMC)	14C Age (rounded)	d13C (from AMS system)	Calibrated Age Ranges	mgC	Fraction Yield(%)	C content % by weight	14C Age (not rounded)
						68.3% probability 366AD (4.5%) 370AD 375AD (63.8%) 413AD 95.4% probability 264AD (6.2%) 273AD				
	TRa-18719 LER_VP1	Betula., alkali residue	81.11 ± 0.14	1680 ± 15	-29.6 ± 0.3 ‰	350AD (89.2%) 417AD	1.21	52	43	1682 +15/-15 BP
						68.3% probability 168BC (68.3%) 104BC 95.4% probability 195BC (1.9%) 186BC 178BC (79.5%) 89BC				
	TRa-18720 LER_VP2	Corylus., alkali residue	76.83 ± 0.12	2115 ± 15	-26.3 ± 1.1 ‰	81BC (14.0%) 53BC	1.53	36	61	2117 +14/-14 BP
						68.3% probability 264AD (13.3%) 274AD 347AD (51.1%) 384AD 397AD (3.9%) 401AD 95.4% probability 260AD (18.9%) 279AD				
	TRa-18721 LER_VP3	Betula., alkali residue	80.85 ± 0.12	1710 ± 10	-23.8 ± 0.2 ‰	337AD (76.6%) 406AD	1.76	42	63	1708 +12/-12 BP
						68.3% probability 378AD (68.3%) 414AD 95.4% probability 265AD (4.5%) 273AD				
	TRa-18722 LER_VP4	Betula., alkali residue	81.12 ± 0.11	1680 ± 10	-23.7 ± 1.0 ‰	354AD (91.0%) 417AD	1.67	29	64	1680 +12/-12 BP
						68.3% probability 81AD (20.4%) 98AD 111AD (25.7%) 132AD 140AD (14.9%) 160AD 190AD (7.3%) 201AD 95.4% probability 77AD (95.4%) 205AD				
	TRa-18723 LER_VP5	Pinus., alkali residue	78.83 ± 0.11	1910 ± 15	-24.2 ± 0.7 ‰	77AD (95.4%) 205AD	1.69	46	60	1911 +13/-13 BP
						68.3% probability 351BC (15.8%) 336BC 330BC (37.3%) 290BC 226BC (3.4%) 221BC 210BC (11.8%) 198BC 95.4% probability 356BC (60.6%) 279BC 256BC (1.7%) 248BC				
	TRa-18724 LER_VP8	Betula., alkali residue	76.16 ± 0.13	2190 ± 15	-24.4 ± 0.5 ‰	233BC (33.2%) 173BC	1.72	56	69	2188 +15/-15 BP
						68.3% probability 40BC (46.4%) 11BC 2AD (21.9%) 17AD 95.4% probability 46BC (91.7%) 28AD				
	TRa-18725 LER_VP10	Betula., alkali residue	77.83 ± 0.11	2015 ± 10	-24.2 ± 0.2 ‰	46AD (3.7%) 58AD	1.90	74	68	2013 +12/-12 BP
						68.3% probability 355BC (9.7%) 343BC 320BC (34.4%) 281BC 231BC (24.2%) 202BC 95.4% probability				
	TRa-18726 LER_VP12	Betula., alkali residue	76.01 ± 0.12	2205 ± 15	-25.2 ± 0.5 ‰	361BC (95.4%) 197BC	1.68	47	64	2204 +14/-14 BP

Appendix 5

Wood analysis

Lerstad, Ålesund kommune, Møre og Romsdal.

Vedartsanalyse av prøver til datering.

Av Lene Synnøve Halvorsen

Rapport 19 - 2022



UNIVERSITETET I BERGEN
UNIVERSITETSMUSEET - AVDELING FOR NATURHISTORIE

Ni kullprøver ble overlevert botaniker for vedartsanalyse til datering. Kullprøvene er fra kokegroper og en grav, materialet var silt og tørket av arkeologene før det ble oversendt botaniker.

Trekullbitene ble snittet radially og tangentialt under lupe før mikroskopering. Til analysene ble Zeiss Stemi 2000 KL 1500 LCD stereolupe og Zeiss Axio Scope.A1 pålysmikroskop benyttet. Til hjelp ved analysene ble referanselitteratur for identifikasjon av hardved/løvtrær (Wheeler *et al.* 1989) og bartrær (Richter *et al.* 2004) benyttet i tillegg til nettsiden Inside Wood (<http://insidewood.lib.ncsu.edu/search>). Generelt vil man velge trekull/ved fra kortlivete treslag som bjørk, or, hassel, rogn, osp og selje for dateringsprøver for å minke egenalderen på materialet man daterer.

Fra hver prøve ble det plukket ut og analysert minimum en trekullbit for å gi nok materiale for datering. For LER_VP10, som er fra grav (A 725) ble det i tillegg gjort en kursorisk analyse for å få en indikasjon på treslagstyper i prøven. I tabell 1 er informasjon om treslag og vekt på prøven gitt, samt info om årringenes kurvatur og antall som kan gi en indikasjon på alder og hvilken del av treet som er benyttet.

I prøvene fra Lerstad er det stort sett trekull fra kortlivete treslag som er valgt ut til datering. Unntaket er prøve VP5 fra struktur AK 338. Denne prøven inneholdt kun trekull fra bartrær. Kun en bit ble valgt ut for analyse og denne ble identifisert til furu (*Pinus*), men det er sannsynlig at alle de resterende bitene i prøven også er av furu.

I den kursoriske analysen av trekull fra VP 10 (struktur A 725, grav) ble tverrsnittet på 27 biter sjekket. Alle disse var løvtrær, og av disse ble 10 biter bestemt til bjørk (*Betula*). Det er generelt store trekullbiter i prøven.

Tabell 1. Prøveliste og analyseresultat. Det er plukket ut en trekullbit til datering fra hver av prøvene.

Prøve	Intrasis-nummer (PK-)	Struktur	Treslag	Info	Vekt (mg)
LER_VP1	10001	AK 356	Bjørk (<i>Betula</i>)	Total diameter ca. 4 cm, sterk kurvatur. Dvs. kvist/gren. Biten har del av margen til stede. Minimum 9 år.	569
LER_VP2	10002	AK 319	Hassel (<i>Corylus</i>)	Biten har ikke del av margen. Lite kurvete årringer, trolig bit av større grein/stammeved. Minimum 6 år.	55,9
LER_VP3	10003	AK 312	Bjørk (<i>Betula</i>)	Lite kurvete årringer, trolig bit av større grein/stammeved. Minimum 3 år.	57,8
LER_VP4	10004	AK 347	Bjørk (<i>Betula</i>)	Svakt kurvete årringer, trolig bit av medium stor grein. Minimum 3 år.	77
LER_VP5	10005	AK 338	Furu (<i>Pinus</i>)	Lite kurvete årringer, trolig bit av større grein/stammeved. Antall årringer ikke notert.	39,7
LER_VP8	10008	A 673, snitt 2	Bjørk (<i>Betula</i>)	Diameter 6 mm. Kommer trolig fra liten kvist. Sterkt kurvete årringer, bit med marg. Minimum 6 år.	42,8
LER_VP9		A 694, snitt	Osp/Selje (<i>Populus/Salix</i>)	Sterkt kurvete årringer. Mulig diameter på ca. 2 cm. Rester av marg innerst. Biten kan stamme fra en kvist. Minimum 6 år	72
LER_VP10	10010	A 725 (grav)	Bjørk (<i>Betula</i>)	Total diameter ca. 5 mm, biten har marg og rester av bark. Biten er del av en kvist. 5,5–6 år.	100,8
LER_VP12	10012	Masse under A 725	Bjørk (<i>Betula</i>)	Kurvete årringer, biten har hele omkretsen og marg til stede. Total diameter 4–5 mm, dvs. en kvist. Antall årringer er ikke notert.	13,3

Litteratur:

- Richter, H. G., Grosser, D., Heinz, I. & Gasson, P. 2004: IAWA list of microscopic features for softwood identification. *Iawa Journal* 25, 1-70.
- Wheeler, E. A., Baas, P. & Gasson, P. E. 1989: IAWA list of microscopic features for hardwood identification.

Appendix 6

Tilvekst

B18828

B18828/1

Gravfunn fra FETTS FK.NR. 2, av LERSTAD (38/143), ÅLESUND K., MØRE OG ROMSDAL.

1) **vitenskapelige prøver**. Kolprøve teke ut frå brannflakgrava A725. Det er teke vare på ein pose med større kolbitar og ein med kolbitar i ordinær storleik.

Strukturnr: A725 Brannflakgrav

Funnomstendighet: Funne under arkeologisk utgraving av gravrøys i 2022. Sjå rapport ved Howell Magnus Roberts og Trond Eilev Linge, nr. 6 - 2023

LokalitetsID: 25738.

Funnet av: Trond Eilev Linge.

Funnår: 2022.

Katalogisert av: Trond Eilev Linge.