

GUARD ARCHAEOLOGY



Braehead Road, Falkirk: Archaeological Evaluation Data Structure Report Project 3887

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Braehead Road, Falkirk: Archaeological Evaluation Data Structure Report

On behalf of: Bracewell Stirling Consulting

NGR: NS 8662 8072


Project Number: 3887

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Approved by:



Date:

29/07/2014

*This document has been prepared in accordance
with GUARD Archaeology Limited standard operating procedures.*

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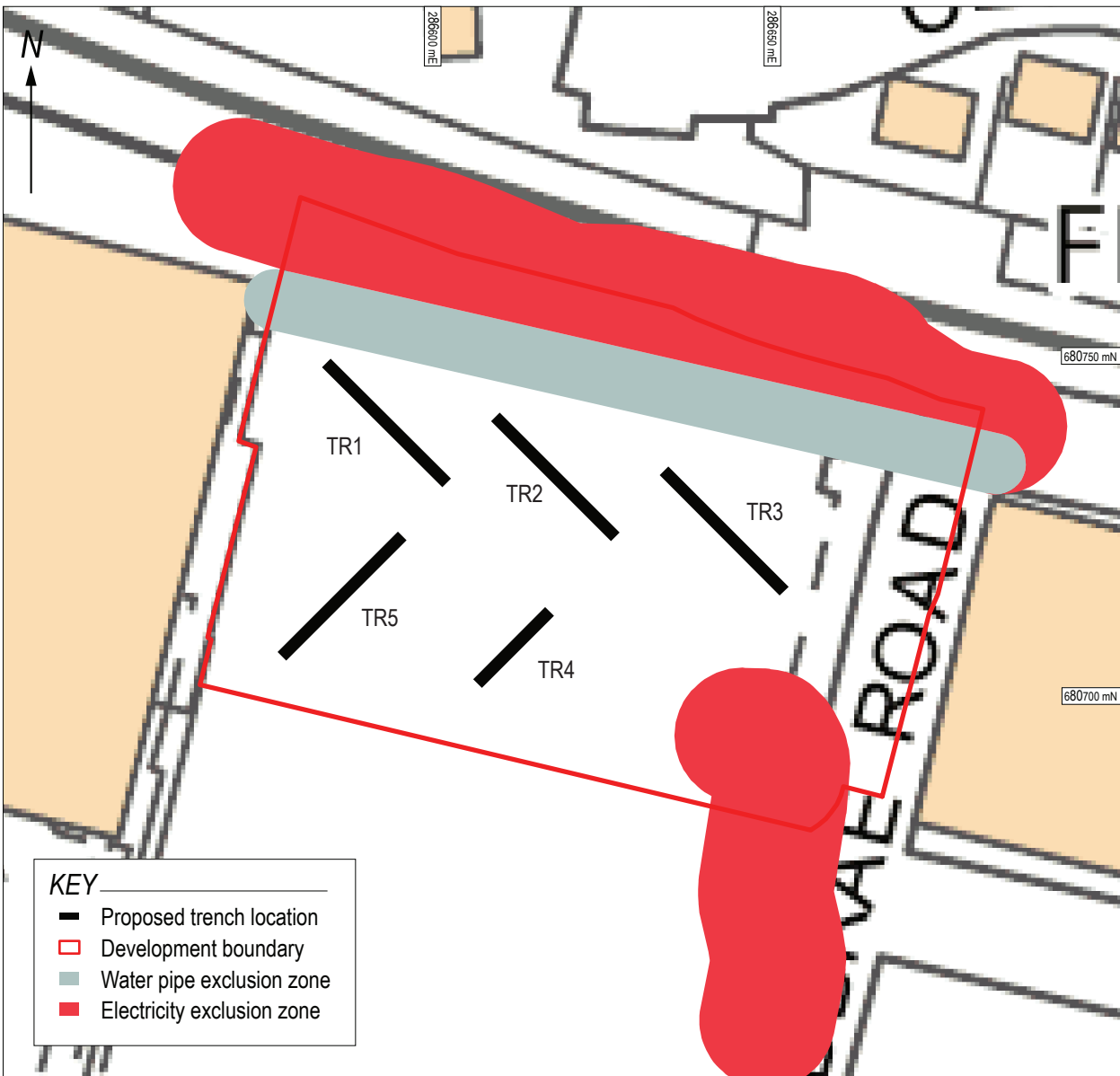
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KEY	
—	Proposed trench location
□	Development boundary
■	Water pipe exclusion zone
■	Electricity exclusion zone

Figure 1:
Site location.



Executive Summary

- 1.1 An archaeological evaluation was carried out by GUARD Archaeology Limited, on behalf of Bracewell Stirling Consulting, on an area proposed for development at Braehead Road, Camelon, Falkirk. The trial trench evaluation comprised 5% of the total available area proposed for development, excluding areas where services are known to lie. Several linear features possibly ditches were uncovered during the evaluation, including a possible Roman period ditch although no artefacts were recovered. The work was undertaken on 7th and 8th July 2014.
- 1.2 The archive for the fieldwork will be deposited with the National Monuments Record for Scotland (NMRS), held by the Royal Commission for the Ancient and Historic Monuments of Scotland.
- 1.3 All elements of the fieldwork have been undertaken in line with the policies and guidelines of the Institute for Archaeologists (IfA) of which GUARD Archaeology Ltd is a Registered Organisation.

Introduction

- 2.1 This report sets out the results of an archaeological evaluation undertaken by GUARD Archaeology Limited, on behalf of Bracewell Stirling Consulting on a site proposed for the construction of a retail outlet at Braehead Road, Camelon. During the course of the evaluation, a total of 230 square metres of trenching was undertaken, spread over five individual trenches arranged in a herring-bone pattern across the site.

Site Location, Topography and Geology

- 3.1 The proposed development area is located on the west side of Braehead Road in Camelon (NGR centred at NS 8662 8072). The site is bounded to the north by a railway, to the east by Braehead Road and to the south and west by retail outlets. The proposed development is currently a gap site, the previous buildings on the site having been demolished.
- 3.2 The southern side of the site is more elevated than the former access road and parking area on the north; the difference in height is about 1 m. The ground surface over all of the site is concrete, with that on the south side of the site having been re-enforced with steel rods. The development area covers approximately 0.72 ha, only 0.449 of which was available for evaluation, and sits between 26 and 28 m AOD.
- 3.3 The bedrock is Scottish Lower Coal Measures Formation, a sedimentary rock type that formed about 312 million years ago. The superficial deposits on the site are Raised Marine Deposits that formed about 2 million years ago when the local environment was dominated by shallow seas (British Geological Survey 1987).

Archaeological Background

- 4.1 A brief archaeological assessment undertaken during the preparation of this document has identified the following known archaeological sites in the surrounding area close to the proposed development site:
 - Excavation on the site of Dorrator Ironworks (NMRS: NS88SE 23.02; NGR: NS 866 807);
 - Camelon Roman Forts (NMRS: NS88SE 23.00; NGR: NS 8630 8097);
 - Camelon Roman Burial Cist (NMRS: NS88SE 19; NGR: NS 8717 8055);
 - Camelon Prehistoric Burial Cist (NMRS: NS88SE 14; NGR: NS 8701 8067)
 - Camelon Polished Stone Axe Find (NMRS: NS88SE 23.01; NGR: 862 810);
 - Camelon Barbed and Tanged Flint Arrowhead Find (NMRS: NS88SE 30; NGR: NS 8637 8078);

- 4.2 Excavation in June 1998 by Geoff Bailey, at the site of the Dorrator Ironworks ahead of redevelopment, located two V-shaped ditches of the 1st century AD. They followed the line of an east/west escarpment overlooking the floodplain of the River Carron, and were of a military character. They can be attributed to the Flavian annexe to the fort at Camelon, to the north-west of the proposed development area. A slot parallel with the upper ditch may represent part of the associated rampart. The ditches had completely silted up by the time a large drainage ditch was cut across them at right-angles. This drain was filled with a large quantity of rubbish in the 2nd century. The material included pottery, shoes, wattle and daub, bone, beads and harness fittings. Having completely impeded the flow of water, the rubbish was dug through by a V-shaped ditch of much smaller dimensions. On the flatter ground to the south, a number of smaller ditches probably represented a field system of the immediate post-Roman period (Bailey 1999).
- 4.3 The Roman forts at Camelon have suffered from the construction of a railway, foundries and cultivation so that virtually no remains may be seen on the surface. They were extensively excavated in 1899-1900, the excavators, Christison and Buchanan, calling the two adjacent enclosures "North Camp" and "South Camp". The "North Camp" was an auxiliary fort, measuring internally 530' E-W by 490', of Antonine date. The "South Camp", which was only partially excavated in 1899-1900, has now been largely destroyed. The published plan of this enclosure is not reliable, as may be seen when it is compared with the original survey, now in Falkirk Museum. The RCAHMS deduce that the remains uncovered represent (i) an early work, probably an Agricolaan fort, denoted by the ditches, (ii) a Flavian fort, having the general annexe to the Antonine fort, within which was a bath-house and a possible *mansio*. There was also an annexe north of the Antonine fort. This was excavated in 1961-2 under the auspices of the DoE, ahead of quarrying. Pre-Roman occupation was found in the form of two hut circles, thought to be associated with the settlement to the north-east. The annexe had contained timber buildings of non-military type, some of which were Antonine, but some were possibly pre-Antonine; the logical explanation appears to be a defended civil settlement associated with the fort, though very little datable evidence was found. Among the many relics from the site are a great deal of Flavian and Antonine pottery, several enamelled *fibulae* and a fragment of a votive lantern. The latest of the 56 identified coins found on the site is a first brass of Faustina II. A building stone of the Twentieth Legion reading XX V(aleria) V(ictrix) F(ecit) was found in the bath-house. In 1967 an altar inscribed (P)RO SE ET SUI: V S L L M was found at NS 852 812 in a wall on Bogton farm. It is now in Falkirk Museum. Price notes remains of Roman buildings and streets revealed during building operations and his excavations in the "South Camp", also numerous finds made by him during a re-excavation of the north annex (RCAHMS).
- 4.4 Excavations in advance of development in 1975, 1976 and 1977 were confined to the northeast, southeast and assumed west gate area of the 'south' fort. A well-constructed 2nd century east-west road approximately bisecting the fort was located just south of its projected 19th century position. South of this road was an industrial area with four substantial furnaces and numerous rubbish pits, and further south, a stone-built building, c 6.5 x 3.2 m surrounded by an area of cobbling. Traces of Flavian occupation were found beneath these levels but no coherent structural plans emerged. On the west side, three periods of ditches were found, with an innermost v-shaped ditch ending 4 m north of the postulated west entrance, and being separated by a c 3 m wide berm found deposited clay remnants of a rampart. Three large post-holes of the gate structure were revealed, and also a cobbled east/west road that ran out through the gateway to where another road ran south from it. These features were Antonine and represent a reduction in the size of the annexe in its final phase, for they overlaid 2nd century timber buildings. The area just inside the west defences had simple timber buildings with no trace of industrial activity. The many finds included a spear and arrowheads, a bronze belt buckle, two silver rings, and several brooches, a bronze dish and part of a lava quernstone. A bronze zoomorphic ornament is in the National Museum of Scotland as are several sherds of two face-mask Roman jars from earlier trenching operations in the south fort in 1972 (RCAHMS).
- 4.5 Continued excavation in April 1979 in advance of development within the south fort produced further evidence of both the Flavian and Antonine defences. The inner and central ditches of the triple ditched Flavian enclosure identified in 1900-1 were located. The central ditch was overlaid by the south rampart of the 2nd century annexe, the rampart surviving to a maximum

height of 1.1 m and width of over 3 m. A 5 m wide road ran parallel to end north of the rampart, and further north a post built timber building at least 5.4 m long (or wide) was located.

- 4.6 A Roman burial was found in April 1922 in a sand-pit a short distance to the east of the proposed development area. It consisted of a cist, 4' x 1'6" x 2', the walls of which were formed of two courses of large stones, mostly boulders, while the cover was composed of three contiguous slabs. Inside there were the fragmentary remains of an extended skeleton and part of a Roman sword. In December 1922, a Flavian coarse pot was found together with three bronze discs, two small fragments of bronze, some corroded fragments of iron and particles of wood, in the same sand-pit. The sand above the deposit had been disturbed, and although no human remains were observed, there can be no doubt that the objects accompanied a burial, probably by cremation. It is worth noting that a line joining the two burials, if prolonged westwards, would intersect the east side of the "South Camp" at Camelon (Site 2), and in view of the Roman practice of burying the dead alongside main roads, it seems possible that these burials, one of which is firmly dated on the ceramic evidence to the Flavian period, give an indication of the route originally taken by the Roman trunk road from York to the Tay in the vicinity of Camelon. Such a 1st century route may well be perpetuated in part by the present Nailer Road which borders the sand-pit in which the burials were found.
- 4.7 A prehistoric cist was found on 15 April 1922 near the same location east of the proposed development area at a depth of 2'6" below ground level. It was oriented NNE/SSW and measured internally 3' x 19" x 18" deep, covered with an overlapping slab. Inside there was a food vessel, now in the National Museum of Scotland, and fragments of the cremated remains of an adult and of the unburnt remains of a young woman.
- 4.8 Other prehistoric finds within the area surrounding the proposed development include the cutting end of a broken polished stone axe found in disturbed soil outside the north wall of Camelon Roman fort while a barbed and tanged flint arrowhead (Site 6) was found within the area of the fort in 1973.
- 4.9 The presence of known Roman and Prehistoric sites within the immediately surrounding area of the proposed development area, indicates the potential for buried archaeological artefacts and remains to survive within the proposed development area.

Aims and Objectives

- 5.1 The aim of the archaeological evaluation was to:
- identify as yet unknown archaeological features and deposits within the proposed development area, and
 - to ensure that any surviving archaeological remains encountered during the evaluation were recorded to an appropriate level.
- 5.2 The objectives were therefore to:
- conduct an archaeological evaluation within the development area, in accordance with the Falkirk Council Keeper of Archaeology and Local History's required scope of work, to establish the presence or absence of any archaeological remains, and their character, date and extent if surviving, and to
 - submit a report to data structure level for approval to the Falkirk Council Keeper of Archaeology and Local History, acting on behalf of Falkirk Council, on completion of the archaeological fieldwork. The report will include an outline of the scope of any further excavation works should any significant archaeology be encountered.
- 5.3 The scope of the archaeological works were designed to establish that if the archaeological evaluation encountered no significant archaeological remains within the development area, no further archaeological fieldwork would be required within that specific area.

Methodology

- 6.1 In accordance with the Falkirk Council Keeper of Archaeology and Local History's required scope of work, the development area was photographed immediately prior to machine excavation.
- 6.2 Prior to excavation, the concrete surfaces above the five evaluation trenches was broken-up using a hydraulic concrete breaker. All trenches were excavated by mechanical excavator, fitted with a 2 m wide flat-bladed (toothless) ditching bucket under the direct supervision of the project director. Deposits were removed down to the level of the first archaeological horizon or to natural subsoil, whichever was encountered first. The depth of stratigraphy was recorded in all trenches.
- 6.3 All archaeological features encountered were cleaned by hand to determine their character and extent. Negative-cut features were sample in order to determine their significance, date and function. All on-site recording, written, drawn and photographic, was to the standards normally pertaining in archaeological fieldwork and in accordance with the Institute for Archaeologists guidance for fieldwork. A full record of excavated features was made using a single context recording system using pro forma sheets, drawings and photographs. All archaeological features were photographed and recorded at an appropriate scale. Sections were drawn at 1:10, and plans at 1:20. All evaluation trenches were accurately surveyed using a handheld GPS and located within the National Grid.
- 6.4 All excavated feature fills and horizons were sampled as appropriate, using bulk soil samples, for palaeo-environmental evidence.
- 6.5 A representative section was recorded denoting depth of topsoil, any stratigraphy present and the nature of the soil. This information was logged in the day book together with a sketch drawn to scale and a photographic record of deposits.
- 6.6 On completion of the recording of the evaluation trenches, all trenches were back-filled by mechanical digger.

Results

- 7.1 In all trenches, a levelling layer of aggregate was found immediately below the concrete, and the subsoil throughout the site was orange/yellow fine-grained sand. The archaeological features described here were all located immediately under the aggregate, at a depth of about 0.3 m below current ground level.

Trench 1

- 7.2 No archaeological features, artefacts or deposits were uncovered.

Trench 2

- 7.3 A linear cut, a deposit of industrial waste and two bonded brick walls were uncovered in Trench 2 (Figure 2). The linear cut (Context 2005) was aligned approximately east/west, and was visible for 2.5 m. Excavation of a slot through the feature revealed that it was up to 0.68 m wide and up to 0.18 m deep. The cut was filled with heavily compacted mid-brown fine-grained sand (2006) with inclusions of industrial waste.
- 7.4 A deposit of moderately compacted black silt and industrial waste lay immediately east of the linear cut. The deposit extended for 4.3 m and was up to 0.37 m thick.
- 7.5 Two bonded brick walls (2007) lay at the eastern end of Trench 2. The walls were three bricks wide, and formed an L-shape. The long axis was 4.1 m long and the shorter axis was 1.5 m long. At least two courses of bricks, some of which were stamped with the maker's mark 'Stein', were visible.

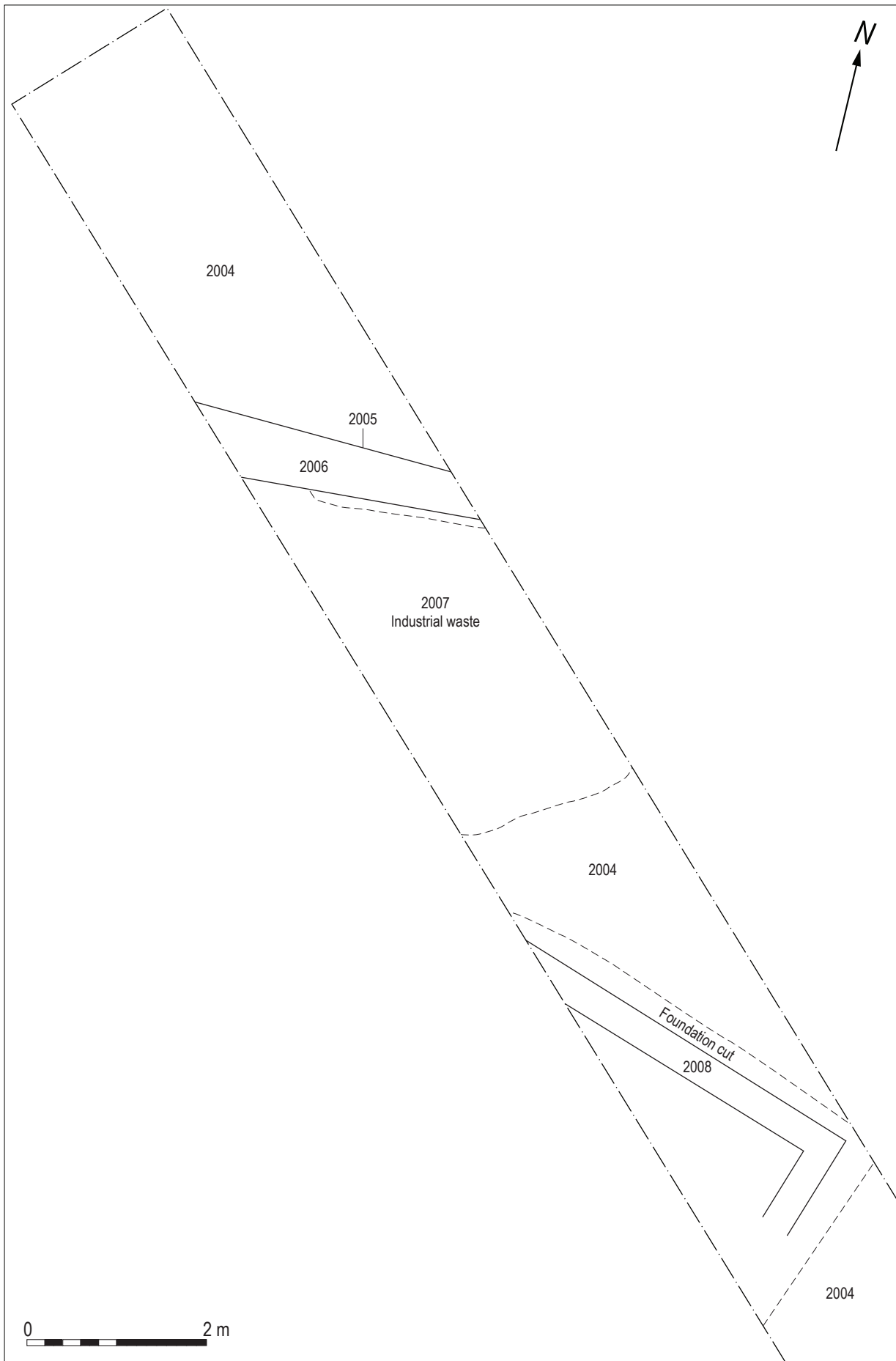


Figure 2:
Plan of Northern end of trench 2.

Trench 3

- 7.6 A linear cut (3004) was uncovered in this trench (Figure 3). The cut was aligned approximately east/west, and was visible for 5.5 m. Excavation of a slot through the feature indicates that it was 0.9 m wide and up to 0.59 m deep. The sides of the cut sloped very steeply (almost vertically on the north side) to a flat base. A section excavated through the feature showed distinct banding of the fill, with bands of yellow sand separating the layers of black sand (Figure 4). No artefacts were recovered from the fill of the ditch but the ditch profile may indicate that this dates to the Roman period.



Plate 1: Trench 3 Ditch.



Plate 2: Trench 3 Ditch section.

Trench 4

- 7.7 This trench proved to be quite problematic to excavate as the ground had been substantially built up with aggregate and red blaes (4002 and 4003) over the remains of a re-enforced concrete layer (4004) found over one metre below current ground level. Following the breaking-up and removal of 4004, the subsoil was inspected and no indications of archaeological remains were noted.

Trench 5

- 7.8 A linear cut (5004) was uncovered in this trench. The cut was aligned approximately north-west/south-east, and was visible for 2.8 m. Excavation of a slot through the feature indicates that it was 0.35 m wide and up to 0.13 m deep. The sides of the cut sloped quite to a U-shaped base. The fill comprised very heavily compacted dark brown fine-grained sand (5005).

Discussion

- 8.1 A map regression exercise indicates that the proposed development site was open moorland in the mid-eighteenth century and an enclosed field partly lined with trees in the mid and late nineteenth century. By 1917, an un-named building occupied the site; an indication of its industrial function is suggested by the two railway tracks that branch from the main line, and from the crane noted by Ordnance Survey. An unidentified feature, possibly a pond or slag pile, lies at the north east of the site. By 1947, parts of the Grange Iron Works and the Gothic Iron Works occupy the site, and several more railway branches are noted at the north of the site.
- 8.2 The evaluation identified three linear cuts, the remains of a brick-built structure and a deposit of industrial waste within the proposed development site. Of these, the brick structure and industrial waste are almost certainly associated with the site's past use as an iron works. Some of the bricks have the maker's stamp of JG Stein who had brick-works at Bonnybridge and Denny from the late 19th century.

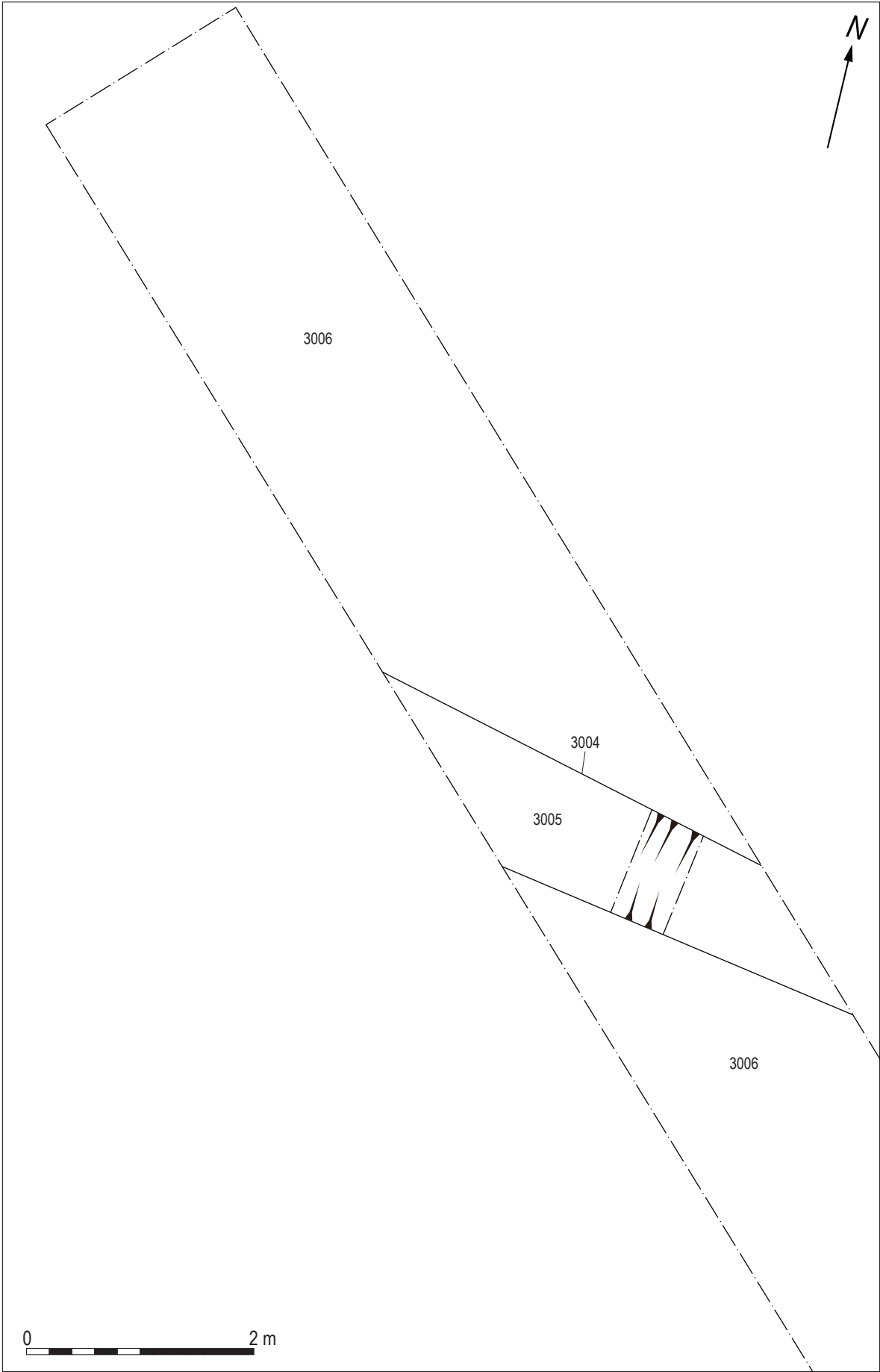


Figure 3:
Plan of Northern end of trench 3.

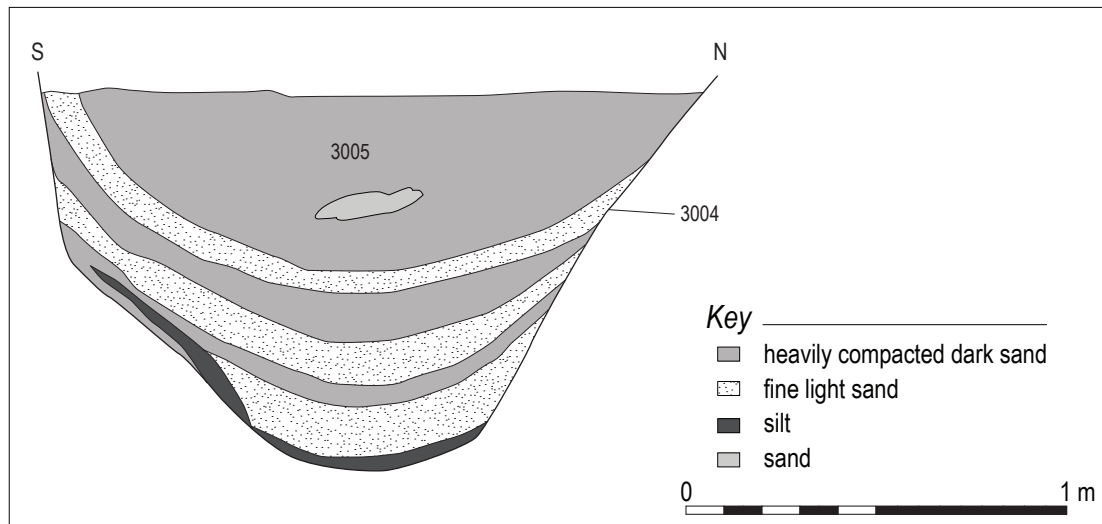


Figure 4:
 East facing section of ditch 3004.

- 8.3 The orange/brown sandy fill of linear cut 2005 was found to include pieces of industrial waste. This suggests that the cut was open during at least some of the time that the iron works were in use, although the industrial waste could be an intrusion introduced by animal activity. This feature has been interpreted as a ditch or drain, currently of unknown date, that may be related to other similar features uncovered during the evaluation.
- 8.4 Cut 3004 in Trench 3 was markedly deeper than either of the other linear cuts, and the banding noted within the fill indicates that this cut was in-filled incrementally. The lighter yellow sand may be the result of natural in-filling, possibly via episodes of flooding, while the black colour of the thicker bands of sand may relate to the leeching of minerals or other material from the industrial works. This feature has been interpreted as a ditch, the morphology of which is very similar to the V-shaped ditch excavated in 1998 (Paragraph 4.2). It is, therefore, possible that this also dates from the Roman period, and represents part of the annexe of a fort.
- 8.5 Possible drain 5004 is the shallowest of the three linear cuts and is located on the raised southern part of the site. Its depth probably also reflects truncation from above associated with the industrial development of the site, and the black colour of its heavily compacted sand fill may have been caused by staining from industrial processes or waste material. No artefacts that could indicate the date or function of this feature were recovered from the fill.
- 8.6 The three linear cuts are at present undated, although palaeo-environmental samples of their fills may yield datable evidence in the form of botanical remains. While it is possible that features 2005 and 5004 are associated with the industrial use of the site, cut 3004 may be the remains of a 1st century AD Roman ditch, related to the annexe of Camelon fort. Given that the ditch was not identified in trenches 1 or 2 to the west then it might only survive in the north-east corner of the development site.

Recommendations

- 9.1 The evaluation work has proved that some archaeologically potential sensitive deposits and features exist within the proposed development area. The deposit of industrial waste and the brick-built structure are almost certainly related to the iron works that occupied the site from the early twentieth century. Of potentially greater significance is the linear cut uncovered in trench 3, which is morphologically similar to a 1st century AD Roman ditch excavated in 1998.
- 9.2 Given that potential Roman remains lie within the proposed development, it is likely that the archaeological adviser to Falkirk Council may request further archaeological investigations within the north-eastern portion of the site to clarify the significance of the feature encountered in trench 3.

- 9.3 GUARD would stress that these recommendations are intended for guidance only. The nature and extent of any future archaeological work rest with the planning authority.

Acknowledgements

- 10.1 GUARD Archaeology Limited would like to thank Bracewell Stirling Consulting for their assistance. Plant and drivers were supplied by John Pollock Plant Hire. Technical support was from Aileen Maule and John Kiely. The illustrations were produced by Fiona Jackson. The report was desk top published by Gillian McSwan. The project was managed for GUARD by Bob Will.
- 10.2 OASIS reference number guardarc1-185354.

**Braehead Road, Falkirk:
Archaeological Evaluation
Data Structure Report**

Section 2: Appendices



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Appendices

Appendix A: References

Cartographic Sources

Ordnance Survey 1864 *Stirling, Sheet XXX.2 (Falkirk)*. 1st Edition 25" to the mile map series.

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Anderson, J (1901) 'Account of the excavations of the Roman station of Camelon, near Falkirk, undertaken by the Society in 1900. Notice of the pottery, bronze and other objects found at Camelon', *Proc Soc Antiq Scot*, vol.35, 380-417.

Bailey, G (1999) 'Dorrator Foundry, Camelon (Falkirk parish), Roman fort', *Discovery Excav Scot*, 45.

Institute for Archaeologists 2008 *Standard and Guidance for archaeological field evaluation*.

Appendix B: List of Contexts

Context No.	Area	Description	Interpretation
2005	Tr 2	Linear cut	Probable drain
2006	Tr 2	Medium compaction brown sand	Fill of cut 2005
2007	Tr 2	Black silt and industrial waste	Deposit of IW from iron works
2008	Tr 2	Bonded brick walls	Foundations of earlier building
3004	Tr 3	Linear cut	Probable ditch
3005	Tr 3	Very compacted dark brown and yellow sand	Fill of cut 3004
5004	Tr 5	Linear cut	Probable drain
5005	Tr 5	Medium compaction brown sand	Fill of cut 5004

Appendix C: List of Environmental Samples

Sample No.	Area	Context No.	Size	Reason for Sampling				Application/Comments
				Pot	Bone	Lithics	Botanics	
1	Tr2	2006	1xL	*	*	*	*	Flotation
2	Tr3	3005	1xL	*	*	*	*	Flotation
3	Tr5	5005	1xL	*	*	*	*	Flotation

Appendix D: List of Drawings

Drawing No.	Area	Sheet No.	Subject	Scale
1	Tr2	1	Post-excavation plan of features in trench	1:20
2	Tr2	1	South-east facing section of deposits in trench	1:10
3	Tr3	2	Post-excavation plan of features in trench	1:20
4	Tr3	2	East facing section of ditch	1:10

Appendix E: List of Trenches

Tr No	Length (m)	Width (m)	Depth (m)	Topsoil/Overburden	Subsoil	Details
1	25	2	0.57	Concrete to 100 mm onto aggregate for 0.2 m	Loose, orange fine-grained sand	No archaeology found
2	25	2	0.54	Concrete to 100 mm onto aggregate and hardcore for 0.4 m	Loose, orange fine-grained sand	Probable drain, deposit of industrial waste and bonded brick walls found
3	25	2	0.56	Concrete to 100 mm onto aggregate for 0.2 m	Loose, yellow/orange fine-grained sand	Linear ditch found
4	15	2	1.83	Re-enforced concrete to 0.2m. Onto red blaes for 0.73 m. Second layer of re-enforced concrete below red blaes is up to 0.33 m thick.	Loose, yellow/orange fine-grained sand	No archaeology found
5	25	2	0.73	Re-enforced concrete to 0.2m. Onto red blaes for 0.25 m.	Loose, yellow/orange fine-grained sand	Probable drain found

Appendix F: List of Digital Photographs

File 1

Frame	Area	Context No.	Subject	Taken from
1	-	-	ID shot	-
2	-	-	Pre-excavation view of site	-
3	-	-	Pre-excavation view of site	-
4	-	-	Pre-excavation view of site	-
5	-	-	Pre-excavation view of site	-
6	-	-	Pre-excavation view of site	-
7	-	-	Pre-excavation view of site	-
8	-	-	Pre-excavation view of site	-
9	-	-	Pre-excavation view of site	-
10	-	-	Pre-excavation view of site	-
11	-	-	Pre-excavation view of site	-
12	Tr1	1001	Pre-excavation view of trench	NW
13	Tr1	1001-1005	South-west facing section of trench	SW
14	Tr1	1005	Post-excavation view of trench	NW
15	Tr2	2005-2007	Linear cut and industrial waste deposit	SE
16	Tr2	2005-2007	Linear cut and industrial waste deposit	SE
17	Tr2	2008	Brick walls post cleaning	E
18	Tr2	2008	Brick walls post cleaning	ESE
19	Tr2	2001-2007	South-west facing section of trench	SW
20	Tr2	2001-2007	South-west facing section of trench	SW
21	Tr3	3004-3005	Pre-excavation view of linear feature	SW
22	Tr3	3004-3005	Pre-excavation view of linear feature	NE
23	Tr3	3004-3005	Post-excavation view of slot through ditch	W
24	Tr3	3004-3005	West facing section of ditch	W
25	Tr3	3004-3005	East facing section of ditch	E
26	Tr5	5001-5003	South-east facing section of trench	S
27	Tr5	5003	Post-excavation view of trench	NE
28	Tr5	5004-5005	Pre-excavation view of linear feature	SE
29	Tr5	5004-5005	Post-excavation view of slot through ditch	NE
30	Tr5	5004-5005	South-east facing section of drain/ditch	SE
31	Tr4	-	Hammering out concrete deposit	SW
32	Tr4	-	Hammering out concrete deposit	SW
33	Tr4	4001-4005	South-east facing section of trench	E
34	Tr4	4005	Post-excavation view of trench	SW

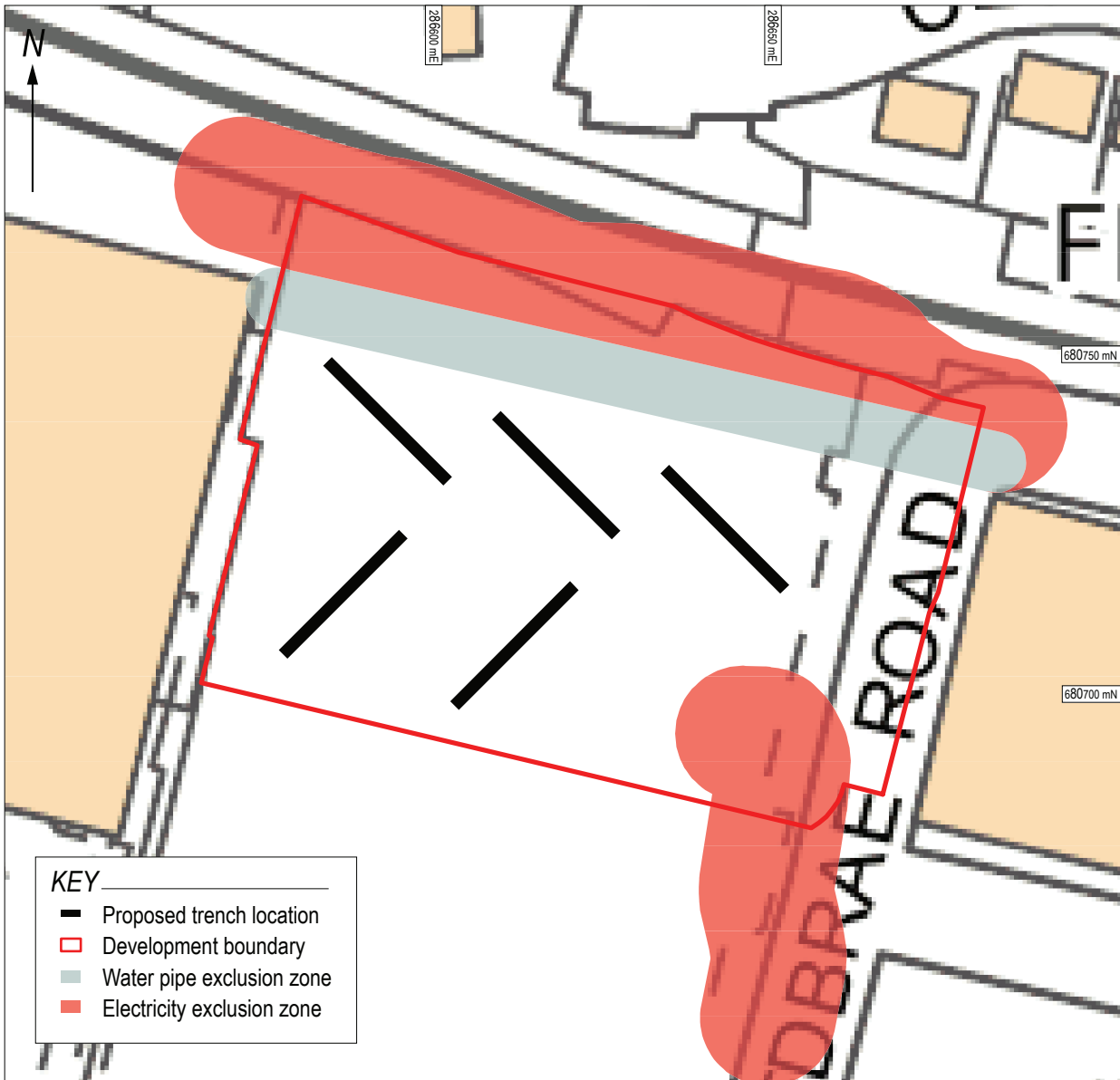
Appendix G: DES entry

LOCAL AUTHORITY:	Falkirk Council
PROJECT TITLE/SITE NAME:	Redbrae Road, Falkirk: Archaeological Evaluation
PROJECT CODE:	3887
PARISH:	Falkirk
NAME OF CONTRIBUTOR:	Christine Rennie
NAME OF ORGANISATION:	GUARD Archaeology Ltd
TYPE(S) OF PROJECT:	Archaeological evaluation
NMRS NO(S):	NS88SE 23.02
SITE/MONUMENT TYPE(S):	Roman ditch
SIGNIFICANT FINDS:	None
NGR (2 letters, 8 or 10 figures)	NS 8662 8072
START DATE (this season)	7th July 2014
END DATE (this season)	8th July 2014
PREVIOUS WORK (incl. DES ref.)	DES 1999, p 45
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	An archaeological evaluation was carried out by GUARD Archaeology Limited, on behalf of Bracewell Stirling Consulting, on an area proposed for development at Braehead Road, Camelon, Falkirk. The trial trench evaluation comprised 5% of the total available area proposed for development, excluding areas where services are known to lie. Several significant archaeological features, including a possible Flavian period Roman ditch, were encountered during the evaluation.
PROPOSED FUTURE WORK:	To be confirmed
CAPTION(S) FOR ILLUSTRS:	--
SPONSOR OR FUNDING BODY:	Bracewell Stirling Consulting
ADDRESS OF MAIN CONTRIBUTOR:	52 Elderpark Workspace, 100 Elderpark Street, Glasgow G51 3TR
EMAIL ADDRESS:	christine.rennie@guard-archaeology.co.uk
ARCHIVE LOCATION (intended/ deposited)	Archive to be deposited in NMRS

Appendix H: Written Scheme of Investigation**REDBRAE ROAD, FALKIRK**

ARCHAEOLOGICAL WRITTEN SCHEME OF INVESTIGATION

PROJECT 3887



- KEY**
- Proposed trench location
 - Development boundary
 - Water pipe exclusion zone
 - Electricity exclusion zone

Figure 1:
Site location.



Executive Summary

- 1.1 This Written Scheme of Investigation forms the archaeological method statement for the evaluation of the proposed development site at Redbrae Road, Falkirk and will require to be approved by the Falkirk Council Keeper of Archaeology and Local History, acting on behalf of Falkirk Council, prior to the commencement of archaeological fieldwork.

Introduction

- 2.1 This Written Scheme of Investigation (WSI) sets out the methodology for the archaeological evaluation of the development site at Redbrae Road, Falkirk. An archaeological evaluation of the development area will be undertaken to establish the presence, extent and nature of any significant archaeological remains. Should significant remains be identified and it is not possible to preserve them *in situ* a further requirement for archaeological works to ensure their preservation through record is likely to be required.
- 2.2 This WSI outlines the programme of archaeological works that may be needed to mitigate the effects of the proposed development. It details the methodology to be employed in implementing the Stage 1 archaeological works. The mitigation methodology to be employed during Stage 2 excavation and Stage 3 post excavation analysis and publication, will be specified in *addenda* to this document. These *addenda*, if required, will be submitted for the approval of the Falkirk Council Keeper of Archaeology and Local History, acting on behalf of Falkirk Council prior to the commencement of any archaeological work. All phases of work will be funded by the developer as required by the Planning Authority.

Site Location

- 3.1 The proposed development area is located on the west side of Redbrae Road in Falkirk (centred NGR: NS 866 806) with the railway to the north. The Proposed Development Area consists of a gap site, the previous buildings having been demolished. The available land within the development area measures 0.72 ha in total.

Archaeological Background

- 4.1 A brief archaeological assessment undertaken during the preparation of this document has identified the following known archaeological sites in the surrounding area close to the proposed development site:
- Excavation on the site of Dorrator Ironworks (Site 1; NMRS: NS88SE 23.02; NGR: NS 866 807);
 - Camelon Roman Forts (Site 2; NMRS: NS88SE 23.00; NGR: NS 8630 8097);
 - Camelon Roman Burial Cist (Site 3; NMRS: NS88SE 19; NGR: NS 8717 8055);
 - Camelon Prehistoric Burial Cist (Site 4; NMRS: NS88SE 14; NGR: NS 8701 8067)
 - Camelon Polished Stone Axe Find (Site 5; NMRS: NS88SE 23.01; NGR: 862 810);
 - Camelon Barbed and Tanged Flint Arrowhead Find (Site 6; NMRS: NS88SE 30; NGR: NS 8637 8078);
- 4.2 Excavation in June 1998 by Geoff Bailey, at the site of the Dorrator Ironworks (Site 1) ahead of redevelopment, located two V-shaped ditches of the 1st century AD. They followed the line of an east/west escarpment overlooking the floodplain of the River Carron, and were of a military character. They can be attributed to the Flavian annexe to the fort at Camelon, to the north-west of the proposed development area. A slot parallel with the upper ditch may represent part of the associated rampart. The ditches had completely silted up by the time a large drainage ditch was cut across them at right-angles. This drain was filled with a large quantity of rubbish in the 2nd century. The material included pottery, shoes, wattle and daub, bone, beads and harness fittings. Having completely impeded the flow of water, the rubbish was dug through by a V-shaped ditch of much

smaller dimensions. On the flatter ground to the south, a number of smaller ditches probably represented a field system of the immediate post-Roman period.

- 4.4 The Roman forts at Camelon (Site 2) have suffered from the construction of a railway, foundries and cultivation so that virtually no remains may be seen on the surface. They were extensively excavated in 1899-1900, the excavators, Christison and Buchanan, calling the two adjacent enclosures "North Camp" and "South Camp". The "North Camp" was an auxiliary fort, measuring internally 530' E-W by 490', of Antonine date. The "South Camp", which was only partially excavated in 1899-1900, has now been largely destroyed. The published plan of this enclosure is not reliable, as may be seen when it is compared with the original survey, now in Falkirk Museum. The RCAHMS deduce that the remains uncovered represent (i) an early work, probably an Agricola fort, denoted by the ditches, (ii) a Flavian fort, having the general annexe to the Antonine fort, within which was a bath-house and a possible mansio. There was also an annexe north of the Antonine fort. This was excavated in 1961-2 under the auspices of the DoE, ahead of quarrying. Pre-Roman occupation was found in the form of two hut circles, thought to be associated with the settlement to the north-east. The annexe had contained timber buildings of non-military type, some of which were Antonine, but some were possibly pre- Antonine; the logical explanation appears to be a defended civil settlement associated with the fort, though very little datable evidence was found. Among the many relics from the site are a great deal of Flavian and Antonine pottery, several enamelled fibulae and a fragment of a votive lantern. The latest of the 56 identified coins found on the site is a first brass of Faustina II. A building stone of the Twentieth Legion reading XX V(aleria) V(icitrix) F(ecit) was found in the bath-house. In 1967 an altar inscribed (P)RO SE ET SUI: V S L L M was found at NS 852 812 in a wall on Bogton farm. It is now in Falkirk Museum. Price notes remains of Roman buildings and streets revealed during building operations and his excavations in the "South Camp", also numerous finds made by him during a re-excavation of the north annex.
- 4.5 Excavations in advance of development in 1975, 1976 and 1977 were confined to the northeast, southeast and assumed west gate area of the 'south' fort. A well-constructed 2nd century east-west road approximately bisecting the fort was located just south of its projected 19th century position. South of this road was an industrial area with four substantial furnaces and numerous rubbish pits, and further south, a stone-built building, c 6.5 x 3.2 m surrounded by an area of cobbling. Traces of Flavian occupation were found beneath these levels but no coherent structural plans emerged. On the west side, three periods of ditches were found, with an innermost v-shaped ditch ending 4 m north of the postulated west entrance, and being separated by a c 3 m wide berm found deposited clay remnants of a rampart. Three large post-holes of the gate structure were revealed, and also a cobbled east/west road that ran out through the gateway to where another road ran south from it. These features were Antonine and represent a reduction in the size of the annexe in its final phase, for they overlaid 2nd century timber buildings. The area just inside the west defences had simple timber buildings with no trace of industrial activity. The many finds included a spear and arrowheads, a bronze belt buckle, two silver rings, and several brooches, a bronze dish and part of a lava quernstone. A bronze zoomorphic ornament is in the National Museum of Scotland as are several sherds of two face-mask Roman jars from earlier trenching operations in the south fort in 1972.
- 4.6 Continued excavation in April 1979 in advance of development within the south fort produced further evidence of both the Flavian and Antonine defences. The inner and central ditches of the triple ditched Flavian enclosure identified in 1900-1 were located. The central ditch was overlaid by the south rampart of the 2nd century annexe, the rampart surviving to a maximum height of 1.1 m and width of over 3 m. A 5 m wide road ran parallel to end north of the rampart, and further north a post built timber building at least 5.4 m long (or wide) was located.
- 4.7 A Roman burial (Site 3) was found in April 1922 in a sand-pit a short distance to the east of the proposed development area. It consisted of a cist, 4' x 1'6" x 2', the walls of which were formed of two courses of large stones, mostly boulders, while the cover was composed of three contiguous slabs. Inside there were the fragmentary remains of an extended skeleton and part of a Roman sword. In December 1922, a Flavian coarse pot was found together with three bronze discs, two small fragments of bronze, some corroded fragments of iron and particles of wood, in the same sand-pit. The sand above the deposit had been disturbed, and although no human remains were observed, there can be no doubt that the objects accompanied a burial, probably by cremation. It is worth noting that a line joining the two burials, if prolonged westwards, would intersect the east side

of the "South Camp" at Camelon (Site 2), and in view of the Roman practice of burying the dead alongside main roads, it seems possible that these burials, one of which is firmly dated on the ceramic evidence to the Flavian period, give an indication of the route originally taken by the Roman trunk road from York to the Tay in the vicinity of Camelon. Such a 1st century route may well be perpetuated in part by the present Nailer Road which borders the sand-pit in which the burials were found.

- 4.8 A prehistoric cist (Site 4) was found on 15 April 1922 near the same location east of the proposed development area at a depth of 2'6" below ground level. It was oriented NNE/SSW and measured internally 3' x 19" x 18" deep, covered with an overlapping slab. Inside there was a food vessel, now in the National Museum of Scotland, and fragments of the cremated remains of an adult and of the unburnt remains of a young woman.
- 4.9 Other prehistoric finds within the area surrounding the proposed development include the cutting end of a broken polished stone axe (Site 5) found in disturbed soil outside the north wall of Camelon Roman fort (Site 2) while a barbed and tanged flint arrowhead (Site 6) was found within the area of the fort in 1973.
- 4.10 The presence of known Roman and Prehistoric sites within the immediately surrounding area of the proposed development area, indicates the potential for buried archaeological artefacts and remains to survive within the proposed development area.

Aims, Objectives and Scope

- 5.1 The aim of the archaeological evaluation is to identify:
 - as yet unknown archaeological features and deposits within the proposed development area;
 - to ensure that any surviving archaeological remains, encountered during the evaluation within the development area, are recorded to an appropriate level.
- 5.2 The objectives are therefore to:
 - Conduct an archaeological evaluation within the development area, in accordance with the Falkirk Council Keeper of Archaeology and Local History's required scope of work, to establish the presence or absence of any archaeological remains, and their character, date and extent if surviving;
 - Submit a report to data structure level for approval to the Falkirk Council Keeper of Archaeology and Local History, acting on behalf of Falkirk Council, on completion of the archaeological fieldwork, which includes an outline of the scope of any further excavation works should any significant archaeology be encountered.
- 5.3 The scope of the archaeological works will establish:
 - that if the archaeological evaluation encounters no significant archaeological remains within the development area, no further archaeological fieldwork will be required within that specific area.

Fieldwork Methodology

- 6.1 In accordance with the Falkirk Council Keeper of Archaeology and Local History's required scope of work, the programme of archaeological works will commence with photographs of the development area immediately prior to machine excavation.
- 6.2 The machine excavation of five trenches, each measuring 25 m by 2 m and arranged 10 m apart, will follow, across the northern part of the development area, in order to evaluate the presence, nature, significance and extent of any archaeological features below the concrete apron (Figure 1). Although the total area of the site is 0.72ha there are services within the site and appropriate buffer zones have been placed round them to ensure that these are avoided. Therefore, the total area for the evaluation has been reduced to 4491 m² and will consist of three trenches each 25 m long and 2 m wide and two trenches 20 m long and 2 m wide. If archaeological deposits are uncovered in any of the trenches it may be necessary to extend the trenches or excavate further trenches to reveal the

extend of the deposits. Any additional trenching will be limited to a maximum of 3% of the available area (135 m²) and will only be undertaken following agreement with the Council archaeologist and the client.

- 6.3 All trenches will be excavated by mechanical excavator, utilizing a concrete breaker and c 2 m wide flat-bladed (toothless) ditching bucket under the direct supervision of a GUARD archaeologist, down to the first archaeological horizon or to natural subsoil, whichever is encountered first. The depth of stratigraphy apparent in all trenches will be recorded.
- 6.4 Any archaeological features encountered will be cleaned by hand by the on-site Archaeologist to determine their character and extent. Should negative-cut features be encountered, a representative sample will be 25-50% excavated in order to determine their significance, date and function. All on-site recording, written, drawn and photographic, will be to the standards normally pertaining in archaeological fieldwork and to IfA standards. A full record of excavated features will be made using a single context recording system using pro forma sheets, drawings and photographs. All archaeological features will be photographed and recorded at an appropriate scale. Sections will be drawn at 1:10, and plans at 1:20. All evaluation trenches will be accurately surveyed using a sub-metre GPS and located within the National Grid.
- 6.5 All archaeological finds will be dealt with by the on-site Archaeologist. Finds and animal bone will be collected as bulk samples by context. Significant small finds will be three dimensionally located prior to collection. All finds will be processed to MAP2 type standards and subject to appropriate specialist assessment. If necessary, conservation of finds will be appraised to allow for specialist study.
- 6.6 All excavated feature fills and horizons will be sampled as appropriate, using bulk soil samples, for palaeo-environmental evidence.
- 6.7 A representative section will be recorded denoting depth of topsoil, any stratigraphy present and the nature of the soil. This information will be logged in the day book together with a sketch drawn to scale and a photographic record of deposits.
- 6.8 Should human remains be revealed by the excavation, the local police, the client and Falkirk Council Keeper of Archaeology and Local History will be informed immediately. Any human remains will be accurately recorded, but left *in situ*, pending the agreement of the police, the client and Falkirk Council on an appropriate mitigation strategy.
- 6.9 Should significant archaeological remains be encountered by the evaluation, requiring more than the limited evaluation outlined above, the remains will be largely left *in situ* pending the agreement of the client and the Falkirk Council Keeper of Archaeology and Local History on a WSI addenda for an appropriate scope of excavation (Stage 2) and Post-excavation design including scope of finds analysis and publication (Stage 3).
- 6.10 On completion of the recording of the evaluation trenches, the backfilling of trenches will be undertaken by machine. No specialist backfilling is proposed, nor will the backfilling of trenches be supervised by the on-site archaeologist.

Report Preparation and Contents

- 7.1 A report detailing the results of the archaeological fieldwork will be submitted to the client within two weeks of completion of fieldwork and, subject to client approval, then submitted to Falkirk Council Keeper of Archaeology and Local History, acting on behalf of Falkirk Council. The report will take the form of a Data Structure Report and will contain an analysis of the results of the evaluation. The report will include a full descriptive text that will characterise the date and extent of any archaeological deposits. It will also include plans at an appropriate scale showing the area subjected to ground-breaking works, evaluation trenches, archaeological features and archiving lists of all finds, samples, field drawings and photographs.
- 7.2 If appropriate, the report will also include an addendum to this WSI for further archaeological fieldwork, should significant archaeology have been encountered.
 - The report will include the following:

- executive summary;
 - a site location plan to at least 1:10,000 scale with at least an 8 figure central grid reference;
 - OASIS reference number; unique site code;
 - Planning application number;
 - contractor's details including date work carried out;
 - nature and extent of the proposed development, including developer/client details;
 - description of the site history, location and geology;
 - a site plan to a suitable scale and tied into the national grid so that features can be correctly orientated;
 - discussion of the results of field work;
 - context & feature descriptions;
 - features, number and class of artefacts, spot dating & scientific dating of significant finds presented in tabular format;
 - plans and section drawings of the features drawn at a suitable scale;
 - initial assessment of relevant finds/samples if appropriate;
 - recommendations regarding the need for, and scope of, any further archaeological work such as excavation (Stage 2) and Post-excavation finds analysis, conservation & publication (Stage 3);
 - bibliography.
- 7.3 An appropriate number of hard copies and digital pdf copies of the report will be prepared for the client and sent to the Falkirk Council Keeper of Archaeology and Local History for agreement.
- 7.4 The report will be presented in an ordered state and bound within a protective cover/sleeve. The report will be page numbered and supplemented with section numbering for ease of reference.

Copyright

- 8.1 Unless otherwise agreed copyright for any report resulting from the archaeological work undertaken as part of the project will be deemed the intellectual property of GUARD Archaeology Ltd.

Publication

- 9.1 A summary of the project results will be submitted to *Discovery and Excavation in Scotland*. In the event of minor archaeological remains being encountered during the archaeological fieldwork, it is proposed that a comprehensive report submitted to *Discovery and Excavation in Scotland*, will form the final publication of the site. A copy of this will be included in the Data Structure Report.

Archive

- 10.1 The archive for the project, including a copy of the report, will be submitted to the National Monuments Records for Scotland within three months of completion of all relevant work.
- 10.2 The online OASIS form at <http://ads.ahds.ac.uk/project/oasis/> will be completed within 3 months of completion of the work. Once the Data Structure Report has become a public document by submission to or incorporation into the SMR, The Falkirk Council Keeper of Archaeology and Local History will validate the OASIS form thus placing the information into the public domain on the OASIS website.

Finds Disposal

- 11.1 The arrangement for the final disposal of any finds made in connection with the archaeological work, will be deposited in keeping with Scottish legal requirements as set out in the Treasure Trove Code of Practice published by the Scottish Government in December 2008. The laws relating to Treasure Trove and *Bona Vacantia* in Scotland apply to all finds where the original owner cannot be identified. This includes all material recovered during archaeological fieldwork. Accordingly, all assemblages recovered from archaeological fieldwork are claimed automatically by the Crown and must be reported to the Scottish Archaeological Finds Allocation Panel through its secretariat, the Treasure Trove Unit. In the event of the discovery of small finds, a filled-out copy of the form "Declaration of an Archaeological Assemblage from Fieldwork" and two copies of the pertinent Data Structure Report will be submitted to the Panel at the conclusion of the fieldwork. The Panel will then be responsible for recommending to the Queen's and Lord Treasurer's Remembrancer which museum should be allocated the finds. All artefacts will be temporarily stored by GUARD until a decision has been made by the panel.

Personnel and Liaison

- 12.1 The GUARD team will include the following qualified and experienced GUARD archaeologists:
- Project Manager: Bob Will
 - Project Director (on-site Archaeologist): TBC
 - Finds and Environmental Support and Conservation: Aileen Maule
 - Illustrator: Gillian McSwan
- 12.2 The GUARD Project Manager, Bob Will, will be the point of contact for the archaeological works. A full CV for individuals concerned can be made available on request.

Monitoring

- 13.1 The proposed start date for the archaeological fieldwork will be arranged in due course. The Falkirk Council Keeper of Archaeology and Local History will be given at least one week's notice prior to the commencement of fieldwork. The Falkirk Council Keeper of Archaeology and Local History and the client will be informed of the site mobile phone number prior to the start date so that monitoring visits can be arranged. It is estimated that the evaluation of proposed development area will take 1 day to complete, with a contingency for a further day should significant archaeology be encountered.

Health & Safety and Insurance

- 14.1 GUARD Archaeology Ltd adheres to the guidelines and standards prescribed for archaeological fieldwork set down in the Institute for Archaeologists approved Health and Safety in Field Archaeology document. It is standard GUARD policy, prior to any fieldwork project commencing, to conduct a risk assessment and to prepare a project safety plan, the prescriptions of which will be strictly followed for the duration of all archaeological fieldwork. Copies of the resultant project safety plan and of GUARD's Fieldwork Safety Policy Statement may be viewed upon request.
- 14.2 GUARD Archaeology Ltd also possesses all necessary insurance cover, proofs of which may be supplied upon request.

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