

Geophysical Survey



Aberdeen Western Peripheral Route/Balmedie-Tipperty Lot 4 – Fastlink Invasive Archaeological Investigations

Mitigation Excavation

AWPR/B-T/FL/004

Report No. 3189



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NON-TECHNICAL SUMMARY

As part of a programme of mitigation investigations along the Fastlink section of the Aberdeen Western Peripheral Route, a strip, map and excavate investigation was completed at site AWPR/B-T/FL/004, located west of the public road which runs north-east from Fishermyre and to the north-west of Burnside. Seven shallow features were excavated interpreted as stone-holes. An irregular meandering linear feature previously recorded during the evaluation was interpreted as a palaeochannel running roughly west to east through the trench. A further palaeochannel was cut by rubble field drains.

1. INTRODUCTION

1.1 General

- 1.1.1 This report presents the results of a strip, map and excavate mitigation undertaken by CFA Archaeology Ltd (CFA) between May and July 2014 at trench AWPR/B-T/FL004 (abbreviated to FL/004 in this report) for the Fastlink section (Lot 4) of the Aberdeen Western Peripheral Route/Balmedie-Tipperty (AWPR/B-T).
- 1.1.2 Trench FL/004 was located approximately 140m north-west of a farm named Burnside, and 1.3km east of the B979 (NGR: NO 8730 9188, Fig. 1).
- 1.1.3 The employer for this project was Aberdeen City Council and overall responsibility for its delivery lies with the AWPR/B-T Managing Agent. Jacobs UK Ltd was appointed as the consultants, CFA Archaeology Ltd was the Contractor for this part of the programme of works, and the curator was Historic Scotland.

1.2 Background

- 1.2.1 The Aberdeen Western Peripheral Route/Balmedie-Tipperty is being developed by Transport Scotland in partnership with Aberdeen City and Aberdeenshire Councils. These two projects were individually identified as proposed transport interventions within the Modern Transport System (www.aberdeencity_gov.uk/transport_streets/roads_pavements/transport_proje cts/roa_wrp_mts.asp) and developed separately through the statutory process. In November 2010 the Scottish Government confirmed its intention to procure both projects under a single Non Profit Distributing contract.
- 1.2.2 The two major improvements to the trunk-road network are close to each other and together will provide significant benefits to the north-east of Scotland by reducing journey times and cutting congestion within Aberdeen City. They comprise four sections: a Northern Leg from North Kingswells to Blackdog; a Southern Leg from Charleston to North Kingswells; a Fastlink from Stonehaven to Cleanhill Junction; and the Balmedie to Tipperty improvements. The work undertaken during the construction of these four sections will consist of 34.6km of wholly new dual carriageway around the outskirts of Aberdeen along with an 11.5km Fastlink running from the A90 at Stonehaven and joining the AWPR/B-T near to Maryculter. An additional 9km of new dual carriageway will also be constructed during the Balmedie to Tipperty part of the project along with 3km of on-line improvements.

1.3 Archaeological Background

1.3.1 Previous archaeological work was undertaken in 2012 and consisted of a programme of non-invasive archaeological investigations comprising a desk-based assessment, topographic surveys, photographic surveys, palaeoenvironmental assessment, geophysical surveys, field walking, metal detecting and building recording. These were carried out in areas with suitable

ground conditions within the Land Made Available (LMA) for the AWPR/B-T project. The general aim of these archaeological investigations was to identify the extent and character of known and unknown archaeological remains in order to enable a programme of further archaeological evaluation and mitigation to be designed.

- 1.3.2 Chapter 43 (Part D: Fastlink) of the Environmental Statement (ES) (Jacobs 2007) undertaken for the project identified 43 cultural heritage sites within a study area extending c.250m either side of the centreline of the road alignment. Sites of potential early prehistoric date included Cantlayhills Cairn (Site 28) and Kempstone Hill Complex (Site 491).
- 1.3.3 Archaeological sites in the near vicinity of site FL/004 consist mainly of farmsteads and field systems related to post-improvement agriculture. Around 500 metres to the south of the site, a small assemblage was found comprising a musket-ball, lead shot and coins dating potentially to the 17th century
- 1.3.4 Topographic surveys were carried out in November 2012 (Headland Archaeology 2012c) at Howieshill Farmstead (Site 32), Burnhead Cairns (Site 121) and Crossley Cairn (Site 506). A further survey should have been carried out in relation to the Scottish North Eastern Railway (Site 257), but this was postponed due to health and safety reasons.
- 1.3.5 The geophysical survey carried out in December 2012 (Headland Archaeology 2012a) identified several anomalies, notably those in close proximity to the former village of Cowie (Site 490). Thirty-five trenches excavated as part of the invasive archaeological investigations were positioned to target these anomalies.
- 1.3.6 A palaeoenvironmental survey carried out in October 2012 (Headland Archaeology 2012b) identified areas of peat within Red Moss Wetland (Site 67) and Backburn Moss Wetland (Site 119). The earlier find of a Late Bronze Age sword reportedly from the base of the peats at Red Moss indicates peat formation in this area may be relatively late, beginning in the Late Bronze Age. However, the initial estimate for peat formation in Aberdeenshire is 10,600–9800 cal BP (Tipping 2007) possibly suggesting that the depth at which the sword was recovered was not accurately recorded. This early date for peat formation was supported by palaeoenvironmental sampling and analysis carried out by CFA at Backburn Moss Wetland as part of this programme of works. The report on this has been produced under separate cover (Cressey and McCulloch 2013).
- 1.3.7 A programme of intrusive trial trenching was undertaken by CFA in 2013 within Lot 4 (Fastlink) of the Aberdeen Western Peripheral Route (Kirby 2014). Crossley Cairn lay within the road corridor and was excavated as part of this programme of works.
- 1.3.8 Four sites were revealed by the trial trenching, including: two areas of pits and linear features (trenches FL0034 and FL0242); a possible alignment of shallow pits (trench FL0381); and a stone spread or surface (trench FL0328) which

was situated on the site of a farmstead annotated 'Broomhill' on the First Edition Ordnance Survey map (1868). A sherd of prehistoric pottery was recovered from one of the areas of pits and linear features, but lithics from the other area of pits and linear features proved undiagnostic, and there was no secure dating evidence from the pit alignment.

- 1.3.9 Following the trial trenching, nine sites were identified for further mitigation works. These consisted of four sites identified during trial trenching (FL/001, FL/003B, FL/004, FL/005), two cairns identified as upstanding features (FL/002, FL/006), and an additional three areas identified by Jacobs following the trial trenching programme (FL/003A, FL/007, FL/008).
- 1.3.10 It was agreed with the Consultant, and with the approval of Historic Scotland, that the mitigation measures relating to the two cairns, one located at Fishermyre and the other located near Stranog Hill, would take the form of a topographic survey, followed by hand excavation. The results of the topographic surveys of FL/002 and FL/006 are covered in separate reports (See Mitchell 2014a and 2014b).
- 1.3.11 It was agreed with the Consultant, and with the approval of Historic Scotland, that the mitigation measures relating to the other sites identified during and following trial trenching should take the form of a strip and record, with hand excavation of any features revealed subject to further agreement. These are reported under separate cover.

Mitigation site ref	Trench Number	Description
AWPR/B-T/FL/001	FL0034/FL0034a	Pit and curvilinear feature
AWPR/B-T/FL/002	N/A	Cairn (near Fishermyre NO 870 903)
AWPR/B-T/FL/003A	N/A	Historical map evidence for earlier settlement
AWPR/B-T/FL/003B	FL0328	Stone surface (Broomhill Farm)
AWPR/B-T/FL/004	FL0242/FL0242a	Pit/linear feature. Prehistoric pottery
AWPR/B-T/FL/005	FL0381	Pit alignment
AWPR/B-T/FL/006	N/A	Cairn (near Stranog Hill NO 870 969)
AWPR/B-T/FL/007	N/A	Historical map evidence for earlier settlement
AWPR/B-T/FL/008	N/A	Historical map evidence for earlier settlement

1.3.14 The areas which required further mitigation work are summarised below.

Sites requiring further mitigation

1.3.15 This report covers the mitigation for trench FL/004, as agreed with the Consultant. This consisted of strip and map followed by hand excavation of the features.

2. METHODOLOGY

2.1 General

- 2.1.1 All work was carried out in accordance with the Specification (Schedule 1) contained within ITT Vol.2 (Aberdeen City Council 2013) which set out the framework for the methodologies/requirements of this programme of mitigation excavation.
- 2.1.2 CFA Archaeology Ltd follows the Institute for Archaeologists' Code of Conduct, Standards and Guidance for Archaeological Fieldwork.
- 2.1.3 A terrestrial photographic condition survey was undertaken prior to and immediately after the investigation. All equipment and footwear was cleaned and disinfected prior to entry on to any areas of land. An Ecological Clerk of Works conducted walkover surveys prior to any work commencing and consulted regularly to ensure that any ecological matters were dealt with promptly and correctly.

2.2 Surveying

- 2.2.1 The trench location was provided by the Consultant, as shown on Fig. 1. The location was accurately surveyed as excavated and tied in with the Ordnance Survey National Grid and Ordnance Datum using a GPS with a survey grade accuracy of ± 10 mm.
- 2.2.2 Precision topographic mapping was achieved through the use of GNSS/GPS systems. The survey achieved real-time GNSS/GPS positioning accurate to 0.01m horizontal and 0.03m vertical, through the use of a Trimble R6 GNSS system with a TSC3 controller running Trimble Access surveying software. This equipment provides centimetre-accurate RTK corrections using the Trimble VRS Now RTK GNSS service to plot / stake-out features etc within Access.
- 2.2.3 Data collection and survey control was integrated with the overall plans for the invasive investigations.
- 2.2.4 Survey data was exported from Trimble Access on the TSC3 controller to dxf format, retaining individual point feature codes and associated attributes, and processed in AutoCAD 2013. Model space in CAD was in metres at 1:1 and standard CFA layers and feature codes were used.

2.3 Mechanical Excavation

2.3.1 All topsoil/subsoil was stripped from the agreed area by a tracked mechanical excavator equipped with a toothless ditching bucket. All groundbreaking operations were undertaken under the direct and continuous supervision and control of the Contractor. Mechanical excavation ceased either at the first archaeological horizon or at the level of the natural geological deposits where it could be demonstrated that no archaeological horizon existed.

- 2.3.2 Immediately after the removal of the topsoil and any other overburden, the whole area was hand cleaned and inspected for archaeological features. The suspected features then received further cleaning and were assigned feature numbers. A list of the features was then presented to the Consultant along with a plan showing their respective positions within the trench. After further consultation with the Consultant, all of the features were partially excavated in order to determine the character, condition, quality and date of any archaeological features.
- 2.3.3 An overall plan of all visible features was prepared by instrument survey and, where appropriate, hand planning. The plan also showed any areas of visible damage or destruction of the archaeology caused by recent activity e.g. service trenches, quarry pits etc. The survey data and any hand-drawn plans were accurately tied in to the Ordnance Survey National Grid and Ordnance Datum.
- 2.3.4 Following the completion of the topsoil stripping, a composite drawing showing information from the instrument survey and the hand planning was prepared and submitted to the Consultant. Features shown on the drawing were annotated with a preliminary archaeological interpretation. The drawing was submitted to the Consultant with detailed costings and programme for undertaking excavation of features present, and for undertaking a post-excavation assessment and preparation of a post-excavation assessment report. Following agreement with the Consultant, the mitigation excavations were then undertaken as described in Section 2.4.
- 2.3.5 Topsoil and subsoil were segregated into separate spoil heaps on either side of the trench. Spoil from the excavation of any archaeological features was stored on the subsoil side. All backfilling was undertaken following inspection by, and with the prior agreement of, the Consultant. The material was backfilled in reverse order of removal in a series of layers no more than 250mm thick, each layer compacted as appropriate by the mechanical excavator prior to placement of the next layer.

2.4 Hand Excavation and Recording

- 2.4.1 Hand excavation was undertaken of all the archaeological features required by the Consultant, as follows:.
 - 50% of each pit or post-hole (half-sections or two quarter-sections as appropriate). Where necessary to obtain dating evidence or sufficient material for soil samples, such features were then fully excavated.
 - at least 20% of each simple linear feature within the whole stripped area with no individual section being less than 1.0m wide.
 - In addition to the above, all intersections between features and all terminals of linear features.
- 2.4.2 All excavated contexts were fully recorded by detailed written context records giving details of location, composition, shape, dimensions, relationships, finds,

samples, cross-references to other elements of the record and other relevant contexts. At least one plan and at least one section were drawn at an appropriate scale. Photographic records in digital form were taken of all trenches and archaeological features using a camera with a minimum resolution of ten megapixels. Feature locations were surveyed using a GPS with a survey survey-grade accuracy of ± 10 m (horizontal)/ ± 30 mm (vertical). All artefacts were recovered from site for specialist examination and analysis. All soil from the excavation of archaeological features was metal detected.

2.5 On-site Palaeoenvironmental Sampling Strategy

2.5.1 Samples comprising at least 40 litres per context or 100% of smaller contexts were taken for the recovery of small plant remains, small bones and finds. The soil samples were processed during fieldwork to allow a continuous reassessment and refinement of sampling strategies.

2.6 Archiving

- 2.6.1 The project archive, comprising all CFA record sheets, plans and reports, will be deposited at the RCAHMS and will conform to current guidelines in MoRPHE (English Heritage 2006). The deposition of paper and digital archives with RCAHMS will comply with their current requirements (RCAHMS 1996a, 1996b) and with the Archaeological Archives Forum (Brown 2007), ADS guidelines for digital archives (Richards and Robinson 2001), and the CIfA's 'Standard and Guidance for the collection, documentation, conservation and research of archaeological materials' (CIfA 2013).
- 2.6.2 A summary statement of the results of this survey will be submitted for publication in *Discovery and Excavation in Scotland* once all archaeological works are completed (Appendix 7). An *OASIS Scotland* entry will be completed.

3. ARCHAEOLOGICAL FEATURES

3.1 General

- 3.1.1 Numbers in bold refer to contexts, a full list of which is contained in Appendix 2.
- 3.1.2 A summary of the excavated features is contained in Appendix 5 and the locations of the features are shown on Figs. 2-7. Fig. 8 shows the sections of all the excavated features.
- 3.1.3 The deposits throughout the site predominantly consisted of between 0.3m and 0.5m of dark brown/black sandy silt topsoil (4000). The natural substrate consisted of mixed sands and gravels (4001). All features were isolated, cut in to natural and lay under topsoil.
- 3.1.4 It was agreed with Jacobs that only a proportion of the linear features identified during the strip and map would be excavated. The unexcavated portions of features are shown on the plans (Figs. 2-7).

3.2 Features

Pits (Figs. 6 & 8)

- 3.2.1 An irregular shaped pit (4002) measured 0.55m NE-SW by 0.45m NW-SE, and survived to a maximum depth of 0.18m. The pit contained a single dark brown sandy silt fill (4003), similar to topsoil. Small quantities of wood charcoal were recovered during sample processing.
- 3.2.2 An irregular shaped pit (4004) measured 0.60m NE-SW by 0.40m NW-SE, and survived to a maximum depth of 0.22m. The pit contained a single dark brown sandy silt fill (4005), similar to topsoil, and shattered fragments of stone. Small quantities of wood charcoal were recovered during sample processing.
- 3.2.3 An irregular shaped pit (4006) measured 0.60m E-W by 0.55m N-S, and survived to a maximum depth of 0.16m. The pit contained a single fill (4007) of dark brown sandy silt similar to topsoil. Small quantities of wood charcoal were recovered during sample processing.
- 3.2.4 A sub-rectangular pit (4008) measured 1.30m NE-SW by 0.76m NW-SE, and survived to a maximum depth of 0.30m. The pit contained a dark brown sandy silt fill (4009) similar to topsoil. Small quantities of wood charcoal were recovered during sample processing.
- 3.2.5 An irregular-shaped pit (4010) measured 0.40m in diameter and a maximum depth of 0.10m. It comprised a single dark brown/black sandy silt fill (4011) which was interpreted to be the same as topsoil (4000). Small quantities of wood charcoal were recovered during sample processing.

- 3.2.6 An oval pit (4012) measured 0.60m NW-SE by 0.52m NE-SW, and survived to a maximum depth of 0.18m. It comprised a single dark brown/black sandy silt fill (4013) similar to topsoil. Small quantities of wood charcoal were recovered during sample processing.
- 3.2.7 A sub-oval pit (4014) measured 0.94m NW-SE by 0.72m NE-SW, and survived to a maximum depth of 0.25m (Fig. 9). The pit contained a single dark brown sandy silt fill (4015), similar to topsoil, and some fragments of shattered stone. Small quantities of wood charcoal were recovered during sample processing.

Palaeochannels (Figs. 2-3, 5-6, 8)

- 3.2.10 A section was excavated across an irregular linear feature (4021), which was orientated roughly east-west across the plot and measured 49.00m east to west by 9.00m (maximum) north to south. It had been identified in the previous evaluation as a palaeochannel (Kirby 2014). Its fill was mid-brown/reddish silty sand (4022). No soil samples were retained and no finds were recovered.
- 3.2.8 Two sections were excavated across a second linear feature (4025), a meandering ditch which contained mid-dark grey silt (4016) (Fig. 11). This feature ran north-east to south-west across the trench and measured 42m NE-SW before turning to the west at the southern trench edge for a recorded distance of 10.50m. It had a maximum width of approximately 5.00m. No soil samples were retained and no finds were recovered.
- 3.2.9 Two rubble-filled field drains (4017) and (4019) had been dug into and adjacent to palaeochannel (4025) at a later date. Within (4106), the field drain was apparent on the surface as a linear deposit of stones running through the approximate centre of the feature (Fig. 10).

4. THE FINDS by Christina Hills

Find type	No.	Weight (g)
Burnt Animal Bone	1	1
Iron	1	1
Pottery	2	2
Iron pan	146	48
		a a 1

Table 1- Summary of finds

- 4.1 All the finds from FL/004 were recovered from samples and were either undiagnostic or modern and are summarised in Table 1.
- 4.2 Two sherds of modern glazed ceramic were found in contexts **4005** and **4015**.
- 4.3 A possible iron nail shaft was found in **4015**.
- 4.4 A small fragment of burnt animal bone was identified in **4009**.
- 4.5 A slag-like material, identified as natural iron pan, was found in most of the samples.
- 4.6 No further works is recommended on the finds assemblage.

5. ARCHAEOBOTANICAL ANALYSIS by Mhairi Hastie

5.1 Methodology

- 5.1.1 Each sample was processed through a Siraf style flotation tank, washed over a 250μ m mesh and re-floated. The floating organic material (flot) was collected in a 250μ m sieve and the material remaining in the tank (retent) was washed through a nest of sieves of 10mm, 5mm, 2mm, 1mm and 250μ m size. Both flot (organic) and retent (inorganic) fractions were then air-dried under controlled conditions. A 10 litre sub-sample of each bulk soil sample was processed and assessed unless the sample was less than 10 litres in total, in which case the whole sample was processed (see Table 2 for details).
- 5.1.2 The retents were sorted by eye for small finds and any non-buoyant archaeobotanical remains, and scanned with a magnet to pick up ferrous debris, and any archaeologically significant material was removed and bagged.
- 5.1.3 The flots were scanned using a binocular microscope (x10-x200 magnification) and the presence of any charred plant remains recorded.
- 5.1.4 Identifications of archaeobotanical material were carried out with reference to seed atlases and in-house reference collection.

Sample	Context	Context description	Sample volume	Vol. of sample
number	number		(litres)	processed (litres)
14	4003	Fill of stone-hole (4002)	10	10
15	4005	Fill of sub-rounded feature (4004)	10	10
16	4007	Fill of sub-rounded feature (4006)	30	10
17	4009	Fill of stone-hole (4008)	10	10
18	4009	Fill of stone-hole (4008)	10	10
20	4013	Fill of stone-hole (4012)	10	10
21	4015	Fill of stone-hole (4014)	10	10
22	4015	Fill of stone-hole (4014)	10	10

Table 2 - Sample details

_ _		Context description	Iron	Burnt	Pottery	Slag	Wood
number	number		(obj?)	bone			charcoal
14	4002	Fill of stone-hole (4002)				++	+
15	4005	Fill of sub-rounded feature (4004)			+(x1)	+	+
16	4007	Fill of sub rounded feature (4006)				+	+
17	4009	Fill of stone-hole (4008)				+	+
18	4009	Fill of stone-hole (4008)		+(x1)		+	+
19	4011	Fill of stone-hole (4011)					+
20	4013	Fill of stone-hole (4012)				+	+
21	4015	Fill of stone-hole (4014)				+	+
22	4015	Fill of stone-hole (4014)	+(x1)		+(x1)	+	+

Table 3 - Composition of retents

Sample	Context	Context description	Flot vol	Wood		Comments
number	number	_	(ml)	Charco	oal	
				Qty	AMS	
14	4002	Fill of stone-hole (4002)	20	+ (sf)	No	
15	4005	Fill of sub-rounded feature	50	+ (sf)	No	Primarily modern root debris
16	4007	(4004) Fill of sub-rounded feature (4006)	50	+	No	Primarily modern root debris
17	4009	Fill of stone-hole (4008)	40	+(sf)	No	Primarily modern root debris
18	4009	Fill of stone-hole (4008)	50	+ (sf)	No	Primarily modern root debris
19	4011	Fill of stone-hole (4011)	20	Archae v sterile	U	Only modern root debris
20	4013	Fill of stone-hole (4012)	50	+ (vsf)	-	Primarily modern root debris
21	4015	Fill of stone-hole (4014)	50	+(vsf)	No	Primarily modern root debris
22	4015	Fill of stone-hole (4014)	100	+ (sf)	No	Primarily modern root debris

Key: + = rare, ++ = occasional, +++ = common and ++++ = abundant sf = small fragments (<5mm in dia.) vsf = very small fragments (<2mm in dia.)

Table 4 - Composition of flots

5.2 Results

- 5.2.1 The amount of archaeological significant material recovered from the samples was low. The results are summarised in Tables 3 and 4. Small finds and other artefacts recovered from the retents are discussed above in Section 4.
- 5.2.2 Only low concentrations of very fragmentary and abraded wood charcoal were recovered from the samples. The charcoal fragments were no greater than

5mm in diameter and no identifications of wood species present could be made.

5.3 Statement of potential

5.3.1 The carbonised plant remains are in poor condition, the fragmentary and abraded nature suggesting that they have undergone much movement prior to burial. The low amount of material recovered does not allow for detailed discussion. The charcoal assemblage is too small to infer species exploitation and the composition of the local woodland. None of the charcoal is suitable for AMS dating.

5.4 Storage and Curation Policy

- 5.4.1 All processing, recording, storage and samples has been carried out in accordance with the Institute for Archaeologist's Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials (2001, revised 2008), with Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation (English Heritage 2011) and with reference to the Association for Environmental Archaeology's Working Paper No. 2, Environmental Archaeology and Archaeological Evaluation (1995).
- 5.4.2 The carbonised plant remains (charcoal) recovered from the samples have been packaged as appropriate for long-term storage in accordance with the requirements of the recipient museum and as per the contract in sealed finds bags at room temperature. The assemblages will be stored at CFA's secure storage facility until such time as the archive is ready to be deposited.

6. ASSESSMENT OF ARCHAEOLOGICAL FINDINGS

- 6.1 The trial trenching evaluation exposed a meandering linear feature and a pit in Trench FL0242/FL0242a. Soil samples produced small quantities of wood charcoal and hazelnut shell. A single sherd of Beaker pottery was recovered from the linear feature. The continuation of the linear feature from Trench FL0242 into Trench FL0242A suggested that it was of variable width and rather meandering in nature, indicating that it was best interpreted as a palaeochannel. Trenches FL0242/FL0242a were encompassed by the trench for the follow-on mitigation excavations (Trench FL/004).
- 6.2 The strip and map and mitigation excavation at Trench FL/004 near Hill of Muchalls identified seven pits (4002, 4004, 4006, 4008, 4010, 4012, 4014), and two linear features (4021, 4025). The ecofacts recovered from the features consisted only of small quantities of wood charcoal, and no artefacts were recovered.
- 6.3 All of the pits contained a single fill which resembled the overlying topsoil (4001) and these features were interpreted as stone-holes, due to the uneven shape of the base and side of the features, the lack of packing stones, and the nature of the fill, which in some instances contained shattered stone. The removal of larger stones from the natural substrate could either reflect stones being dragged out through ploughing activities or the deliberate removal of stones from agricultural land to improve it; some of these stones may have been gathered to provide building materials for the consumption dykes and field boundaries recorded in the area.
- 6.4 Linear feature **4021** is the same feature as recorded during the trial trenching evaluation and is interpreted as a palaeochannel. No further finds were recovered from its fill. The other linear feature is also interpreted as a palaeochannel. These interpretations are due to the meandering nature of the features and the character of their fills. The two palaeochannels (**4021** and **4025**) may indicate the former courses of the Burn of Muchalls to the north and the Back Burn to the west.
- 6.5 In addition, there were rubble-filled or ceramic field drains across the trench. This evidence indicates that the landscape has been extensively modified during the post-medieval period and reflects a process of agricultural improvement which began in the 17th century and continues to the present day.
- 6.6 Therefore, there is no archaeological value in undertaking any further work or reporting in relation to site FL/004.
- 6.7 The overall results of this programme of works indicate that the landscape through which the Fastlink route will pass has been intensively utilised during the post-medieval period with a large number of features relating to post improvement agriculture. These largely consisted of field drains (ceramic and rubble), other linear drainage features, rig-and-furrow cultivation, stone extraction, and areas of clearance stones. While areas of possible prehistoric activity have been identified, the scarcity of prehistoric remains is perhaps a

reflection on the level of post-improvement activity which has taken place along the route.

7. CONCLUSIONS

- 7.2 The mitigation excavation of trench FL/004 near Hill of Muchalls identified seven features which, based on their size, shape and fill type, were all interpreted as stone-holes. An irregular meandering linear feature previously recorded during the evaluation was interpreted as a palaeochannel running roughly west to east through the trench. A further palaeochannel was cut by rubble field drains. Field drains were recorded during both phases of the work, indicating that the landscape has been intensively utilised during the post-medieval period.
- 7.3 The project archive, comprising all CFA record sheets, maps and reports, will be deposited with the National Monuments Record of Scotland (NMRS) and copies of reports will be lodged with the Aberdeenshire Council Sites and Monuments Record.
- 7.4 A summary statement will be submitted for publication in *Discovery and Excavation in Scotland* (See Appendix 7) and the investigation will be reported through *OASIS Scotland*.
- 7.5 No further work or reporting is required in relation to site FL/004.

8. **REFERENCES**

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Context	Fill of	Description
4000		Topsoil
4001		Natural – Light/Mid-brown sandy gravel with small/medium rounded stone
		inclusions
4002		Cut of stonehole
4003	4002	Fill of stonehole 4002
4004		Cut of sub rounded feature
4005	4004	Fill of cut 4004
4006		Cut of sub rounded feature
4007	4006	Fill of cut 4006
4008		Cut of stonehole
4009	4008	Fill of 4008
4010		Cut of stonehole
4011	4010	Fill of 4010
4012		Cut of stonehole
4013	4012	Fill of 4012
4014		Cut of stonehole
4015	4014	Fill of 4014
4016	4025	Fill of Palaeochannel
4017		Cut of field drain
4018	4017	Fill of field drain
4019		Cut of field drain
4020	4019	Fill of field drain
4021		Cut of palaeochannel
4022	4021	Fill of palaeochannel
4023	4025	Pocket within palaeochannel fill
4024	4025	Pocket within palaeochannel fill
4025		Cut of palaeochannel

APPENDIX 1: Context Register

APPENDIX 2: Digital Photograph Register

Strip & Map

Photo No.	Contexts/description	Taken from
1	F401	N
2	F402	N
3	F403	N
4	F404	N
5	F405	N
6	F406	N
7	F407	Ν
8	F408+F409	S

Mitigation Excavations

Photo	Contexts/Description	Taken from
No.		
01	Pre-ex shot of (4008)	Е
02	Pre-ex shot of (4010)	Е
03	Pre-ex shot of (4012)	Е
04	Pre-ex shot of (4014)	Е
05	Pre-ex shot of (4002)	SW
06	Pre-ex shot of (4004)	Е
07	Pre-ex shot of (4006)	Е
08	Half section of (4008)	Е
09	Half section of (4010)	Е
10	Half section of (4012)	Е
11	Half section of (4014)	Е
12	NE-facing section (4002)	NE
13	SW-facing section of (4004)	SW
14	SW-facing section of (4006)	SW
15	N-facing section of palaeochannel (4016) and field drain (4017)	N
16-17	South-facing section through palaeochannel (4016) and field drains (4017) and (4019)	S
18-19	Oblique shot of S-facing sections (4017), (4019), (4018) and (4020)	SE
20	South-facing section through (4019)	S
21	South-facing section through (4017)	S
22	South-facing section of (4017)	S
23	West-facing section through palaeochannel (4022)	W

APPENDIX 3: Field Drawing Register

Drawing	awing Sheet Description/Contexts		Section/	Scale
No.	No.	-	Plan	
1	1	NE-facing section of 4002	Section	1:10
2	1	Plan of 4002	Plan	1:20
3	1	SW-facing section of 4004	Section	1:10
4	1	Plan of 4004	Plan	1:20
5	1	W-facing section of 4006	Section	1:10
6	1	Plan of 4006	Plan	1:10
7	2	NW-facing section of 4008	Section	1:10
8	2	Plan of 4008	Plan	1:20
9	2	NW-facing section of 4010	Section	1:10
10	2	Plan of 4010	Plan	1:20
11	2	NW-facing section of 4012	Section	1:20
12	2	Plan of 4012	Plan	1:20
13	2	NW-facing section of 4014	Section	1:10
14	2	Plan of 4014	Plan	1:20
15	1	N-facing section of 4017	Section	1:10
16	1	Plan of 4017	Plan	1:20
17	3	S-facing section 4017	Section	1:10
18	3	Plan of 4017	Plan	1:20
19	4	S-facing section through palaeochannel (4016)	Section	1:10
20	4	W-facing section through palaeochannel (4022)	Section	1:10

APPENDIX 4: Sample Register

Sample	Context	Fill of	Sample type	Reason for Collection	Sample Volume
No.					
14	4003	4002	Bulk	Routine	101
15	4005	4004	Bulk	Routine	101
16	4007	4006	Bulk	Routine	301
17	4009	4008	Bulk	Routine	101
18	4009	4008	Bulk	Routine	101
19	4011	4010	Bulk	Routine	101
20	4013	4012	Bulk	Routine	101
21	4015	4014	Bulk	Routine	101
22	4015	4014	Bulk	Routine	101

APPENDIX 5: Summary of Excavation Results

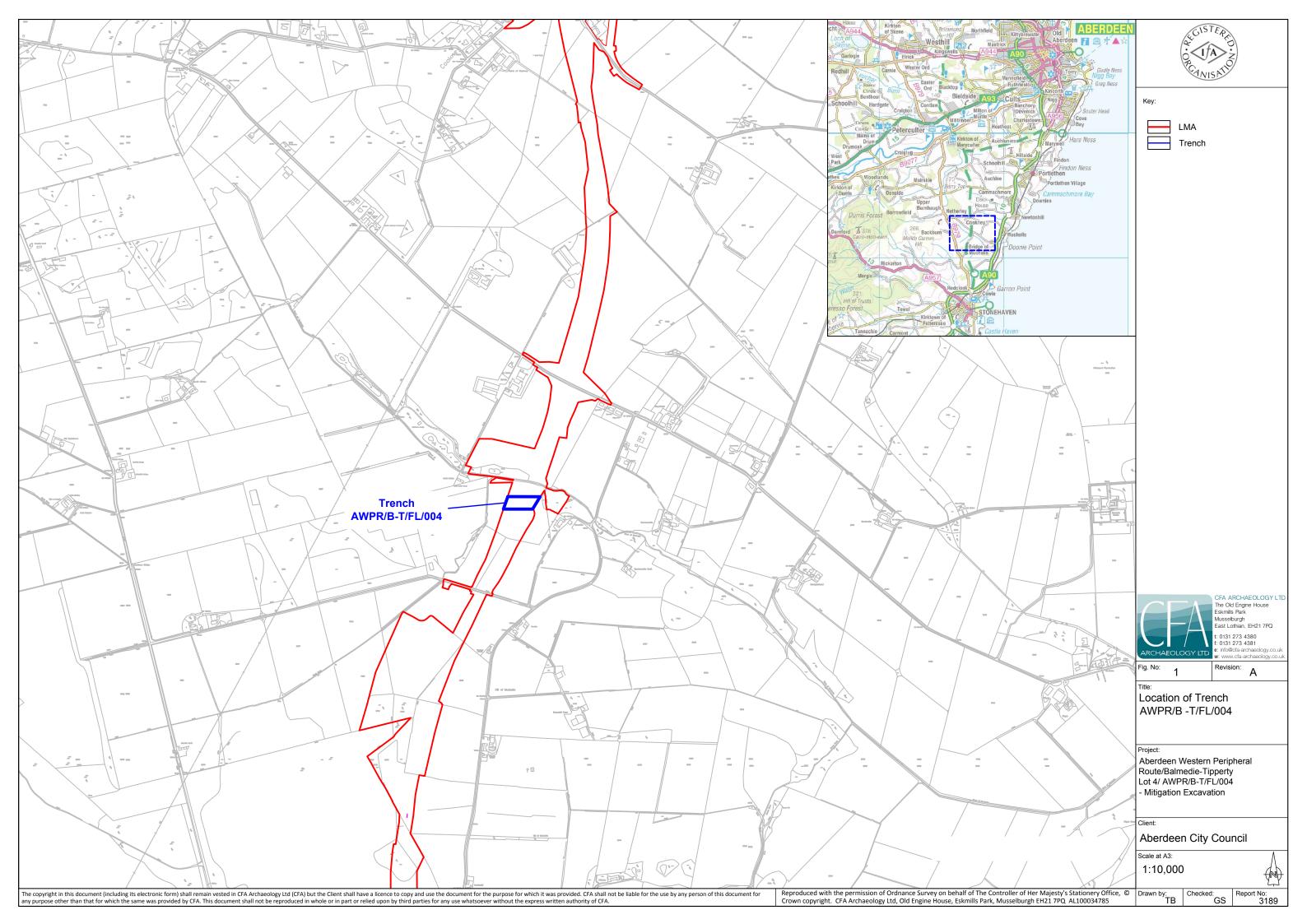
Context	Description	Dimensions	Fills/Deposits					
4004	Cut of probable stonehole	0.40m diameter, 0.10m deep	(4005) dark brown/black sandy silt					
4006	Cut of probable stonehole	0.6m diameter, 0.25m deep	(4007) dark brown/black sandy silt					
4008	Cut of sub-circular pit	0.80m diameter; 0.25m deep	(4009) dark brown/black sandy silt					
4010	Cut of probable stonehole	0.40m diameter, 0.10m deep	(4011) dark brown/black sandy silt					
4012	Cut of probable stonehole	0.7m diameter, 0.20m deep	(4013) dark brown/black sandy silt					
4014	Cut of probable stonehole	1.00m diameter, 0.25m deep	(4015) dark brown/black sandy silt					
4016	Curved silty deposit along length of site. Most probably a footprint of natural watercourse now dried and silted up.	80m length visible in stripped area, 1.00 to 12.00m wide along length.	Single deposit (4016) – mid-dark grey silt with some small rocks included.					
4017	Curved linear field drain running roughly north to south	50m length visible in stripped area, maximum 1.20m wide.	(4018) Mixed rubble and dark grey silt fill					
4019	Curved linear field drain running roughly north to south	20m length visible in stripped area, maximum 1.00m wide	(4020) Mixed rubble and dark grey/brown silt fill					
4022	East to west orientated palaeochannel	Approx. 49m long by 7m wide (max); o.27m deep	(4022) Mid brown-reddish silty sand fill					

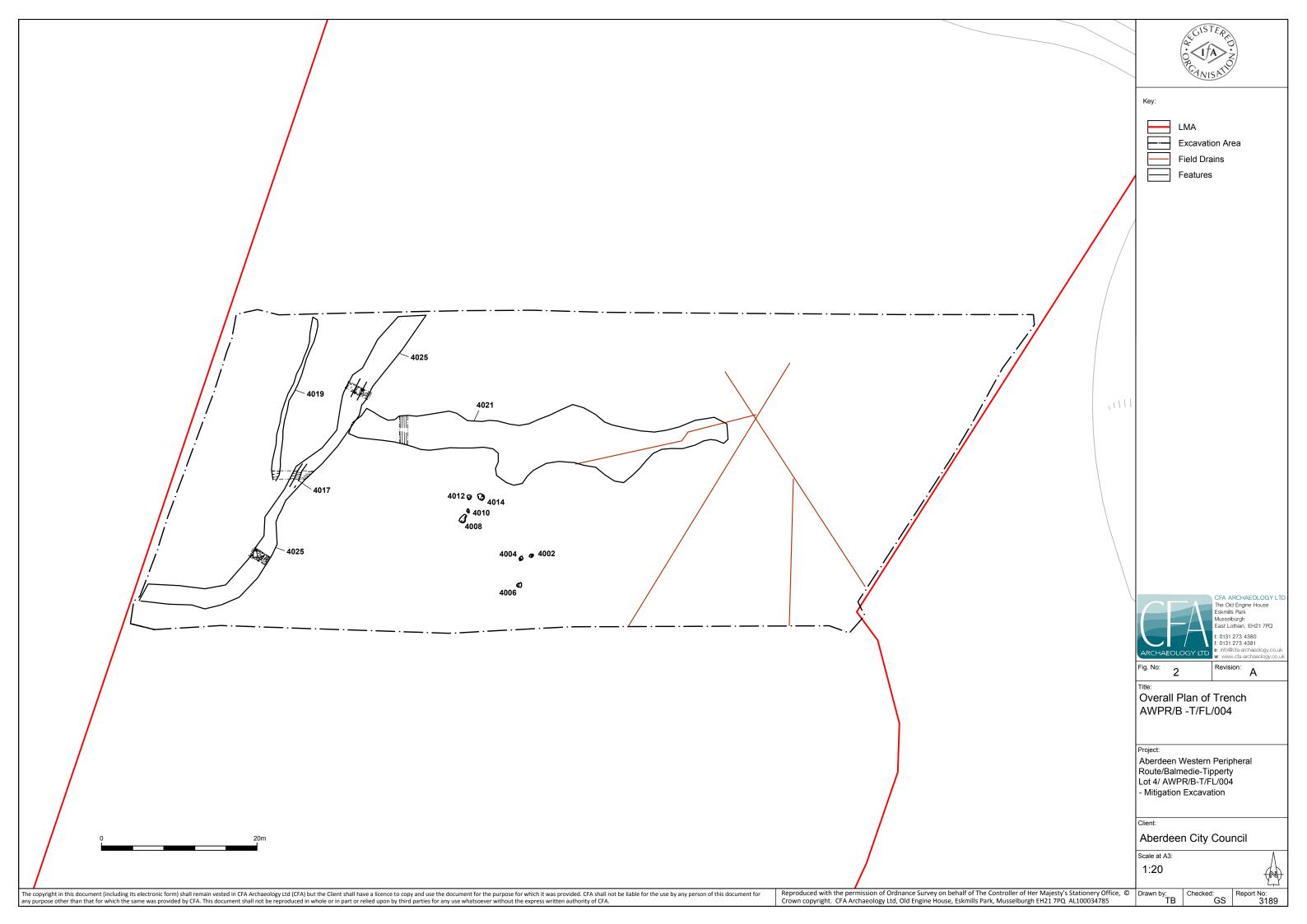
APPENDIX 6: Finds Register

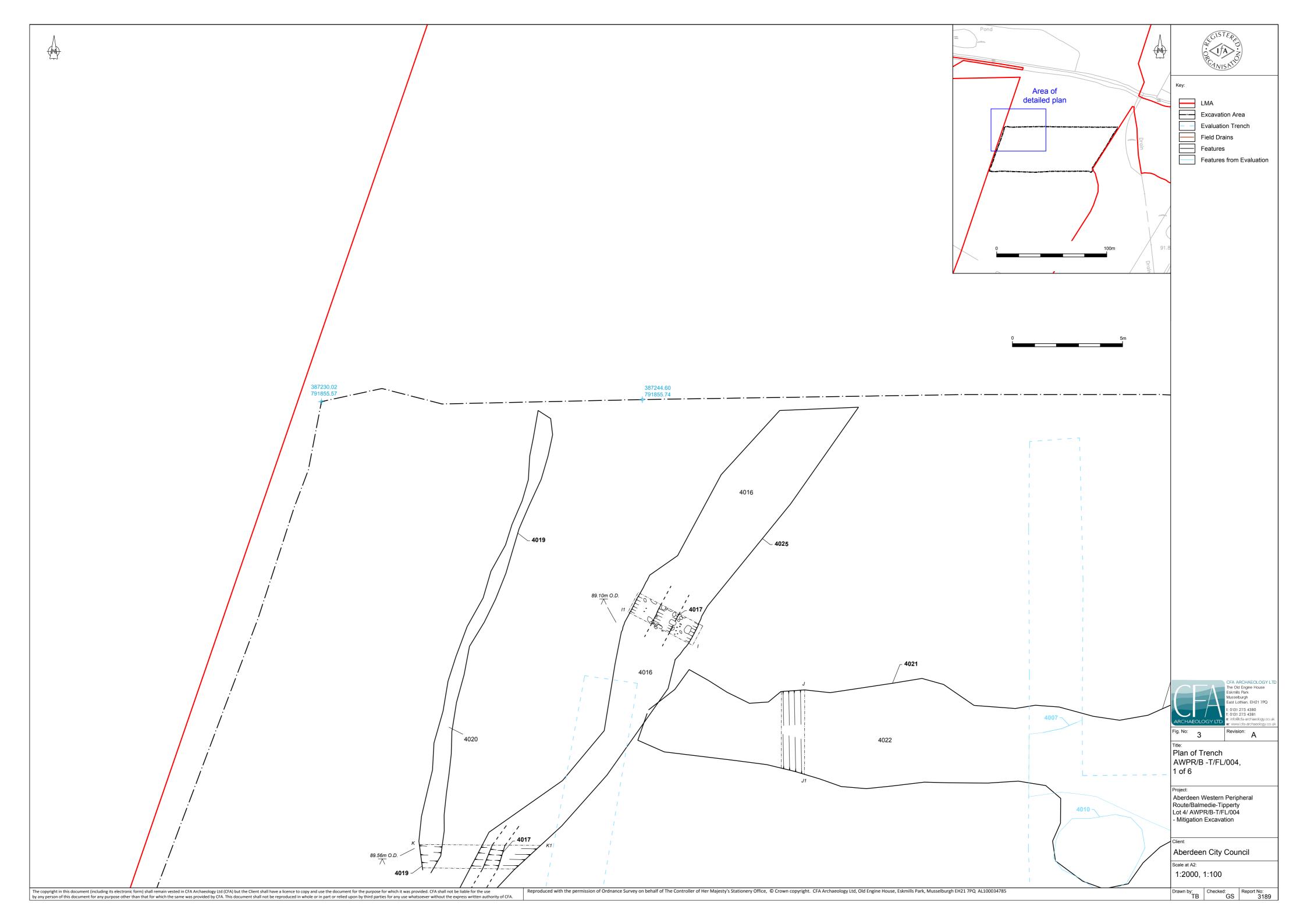
Context Sample		Find type	No.	Wt (g)	Notes	Spotdate			
4005	15	Pottery	1	1		Modern			
4015	22	Pottery	1	1		Modern			
4009	18	Burnt Animal Bone	1	1					
4015	22	Iron	1	1	Nail Shaft?	Modern			
4002	14	Slag	60	31					
4005	15	Slag	10	2					
4007	16	Slag	1	1					
4009	17	Slag	13	2					
4009	18	Slag	18	4					
4013	20	Slag	15	4					
4015	21	Slag	14	2					
4015	22	Slag	15	2					

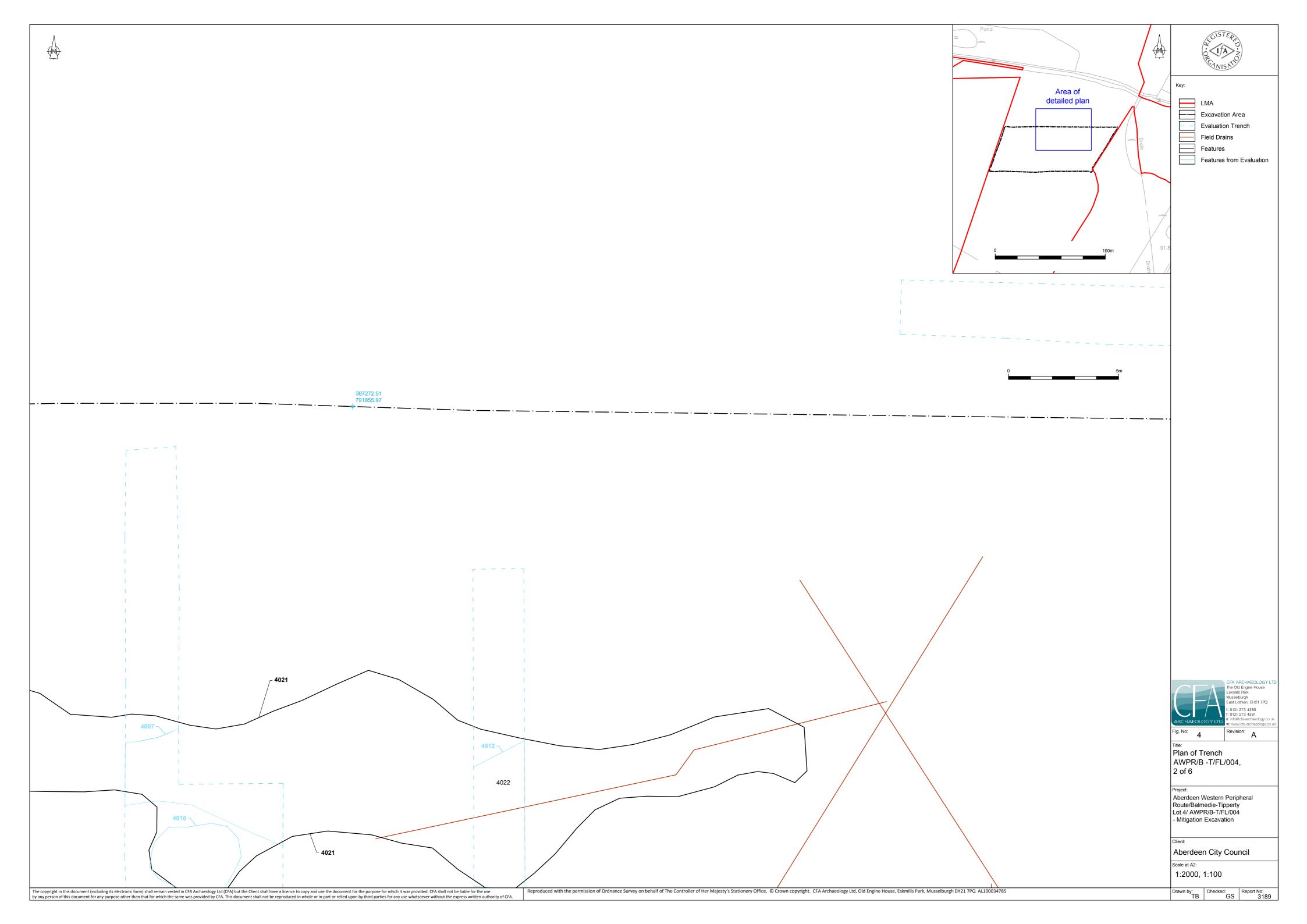
APPENDIX 7: Discovery and Excavation in Scotland Entry

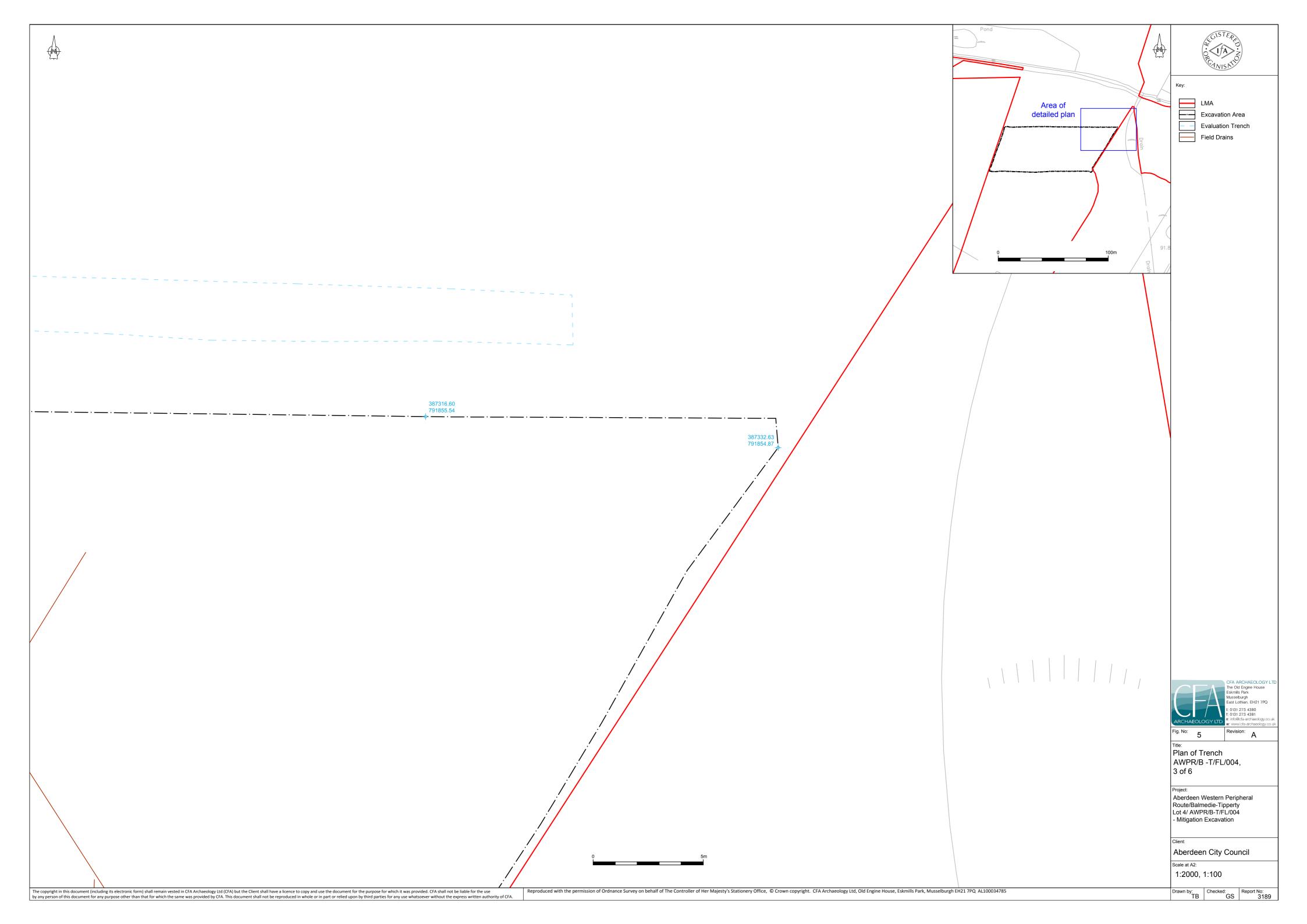
LOCAL AUTHORITY:	Aberdeenshire					
PROJECT TITLE/SITE NAME:	Aberdeen Western Peripheral Route/Balmedie-Tipperty, Lot 4 – Fastlink, Invasive Archaeological Investigations, Mitigation Excavation FL/004					
PROJECT CODE:	FAST					
PARISH:	Fetteresso					
NAME OF CONTRIBUTOR:	Ewan MacNeilage					
NAME OF ORGANISATION:	CFA Archaeology Ltd					
TYPE(S) OF PROJECT:	Strip and map, and mitigation excavation					
NMRS NO(S):	N/A					
SITE/MONUMENT TYPE(S):	N/A					
SIGNIFICANT FINDS:	N/A					
NGR (2 letters, 8 or 10 figures)	NO 8730 9188					
START DATE (this season)	June 2014					
END DATE (this season)	July 2014					
PREVIOUS WORK (incl. DES ref.)	N/A					
MAIN (NARRATIVE) DESCRIPTION:	The results of the investigations at site FL/004 near Hill of Muchalls uncovered seven pits which were interpreted to most probably originate from agricultural stone extraction due to their irregular shape and a fill which was very similar to topsoil. Shattered stone fragments found in the fill of some of the features supported this interpretation. An irregular meandering linear feature previously recorded during the evaluation was interpreted as a palaeochannel running roughly west to east through the trench. A further palaeochannel was cut by rubble field drains. Field drains were recorded during both phases of the work, indicating that the landscape has been intensively utilised during the post-medieval period.					
PROPOSED FUTURE WORK:	N/A					
CAPTION(S) FOR ILLUSTRS:	N/A					
SPONSOR OR FUNDING BODY:	Aberdeen City Council					
ADDRESS OF MAIN CONTRIBUTOR:	CFA Archaeology Ltd, Old Engine House, Eskmills Park, Musselburgh, EH21 7PQ					
EMAIL ADDRESS:	cfa@cfa-arcaheology.co.uk					
ARCHIVE LOCATION (intended/deposited)	Royal Commission on the Ancient and Historical Monuments of Scotland					
	Aberdeenshire Council Sites & Monuments Record					

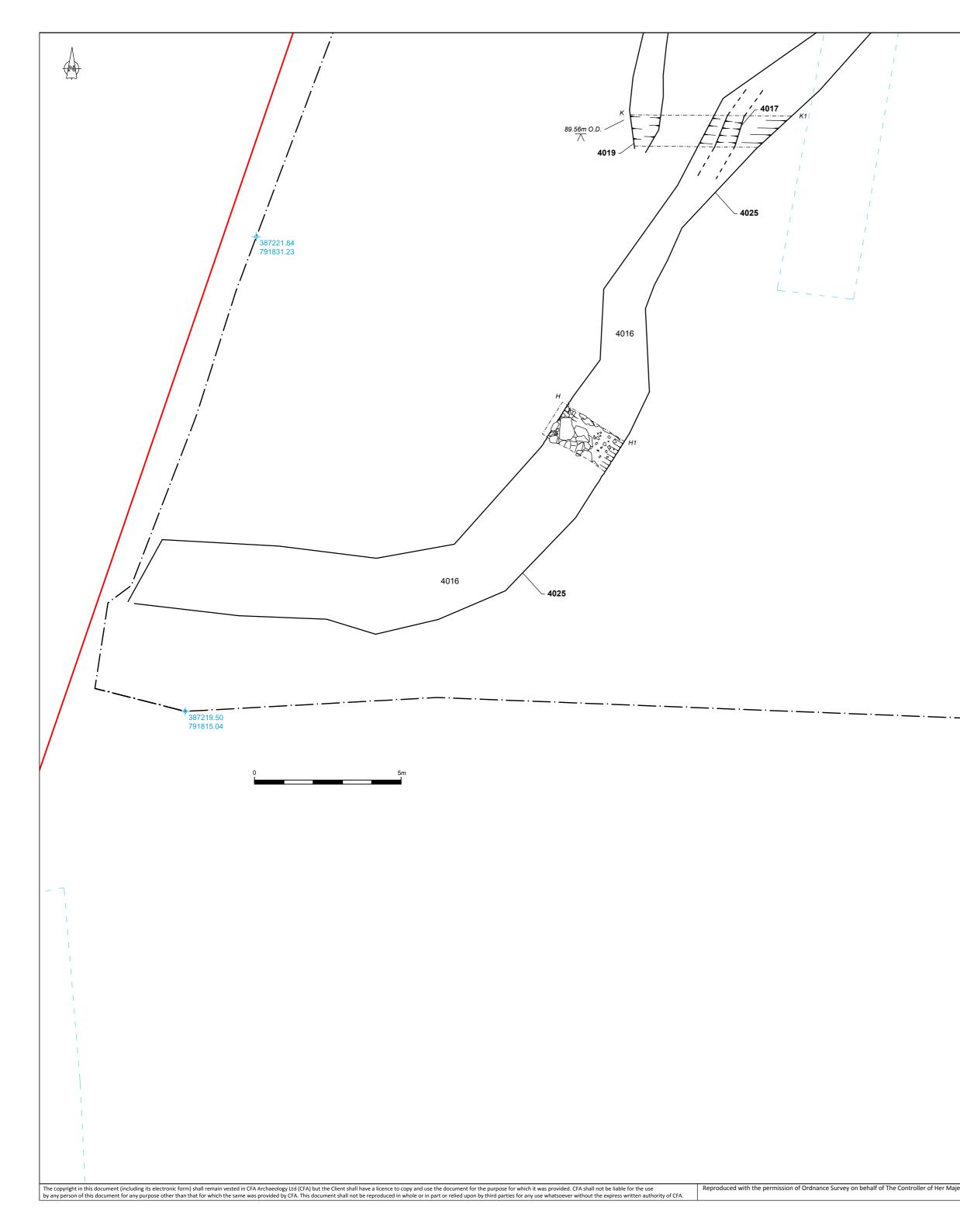


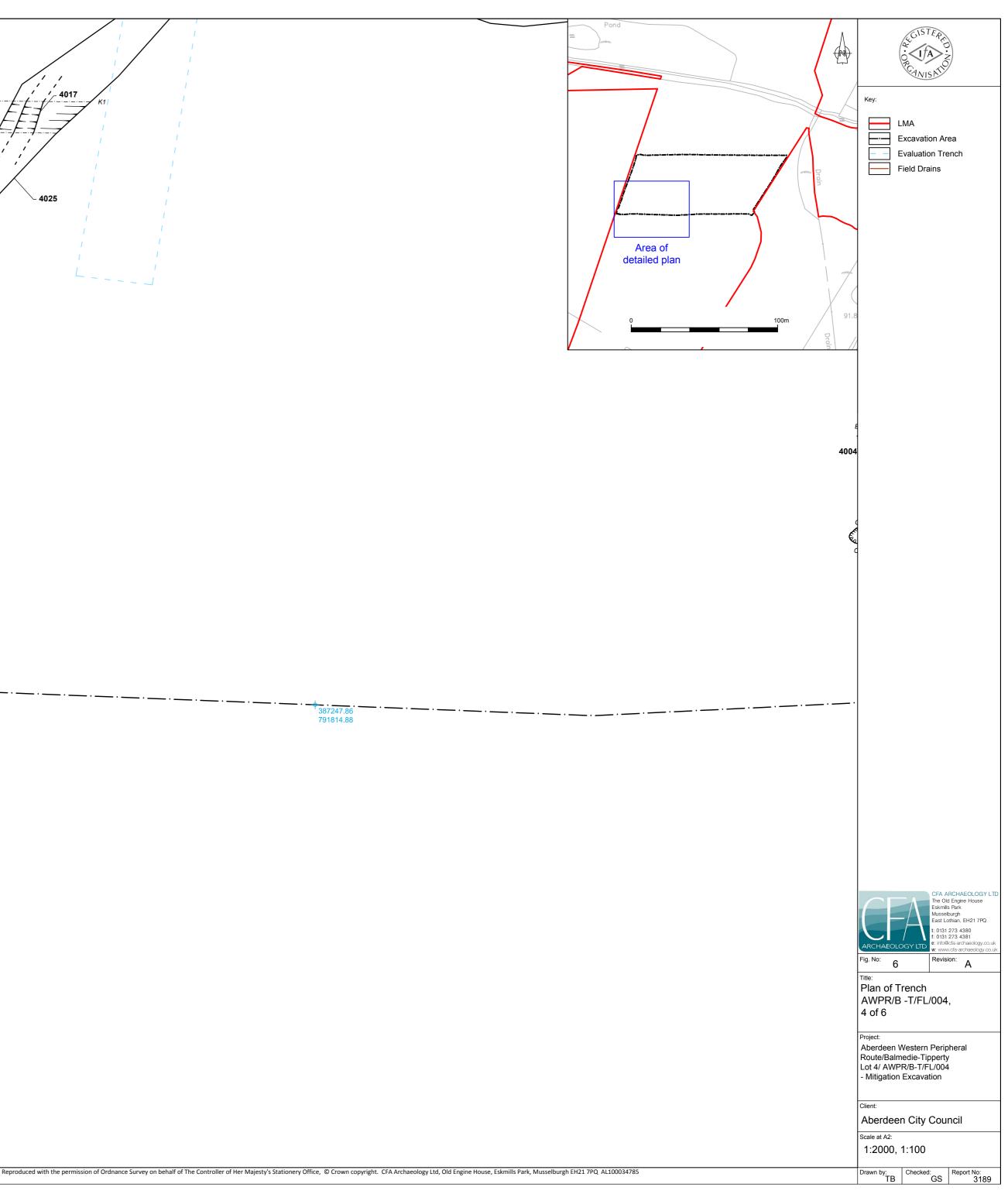


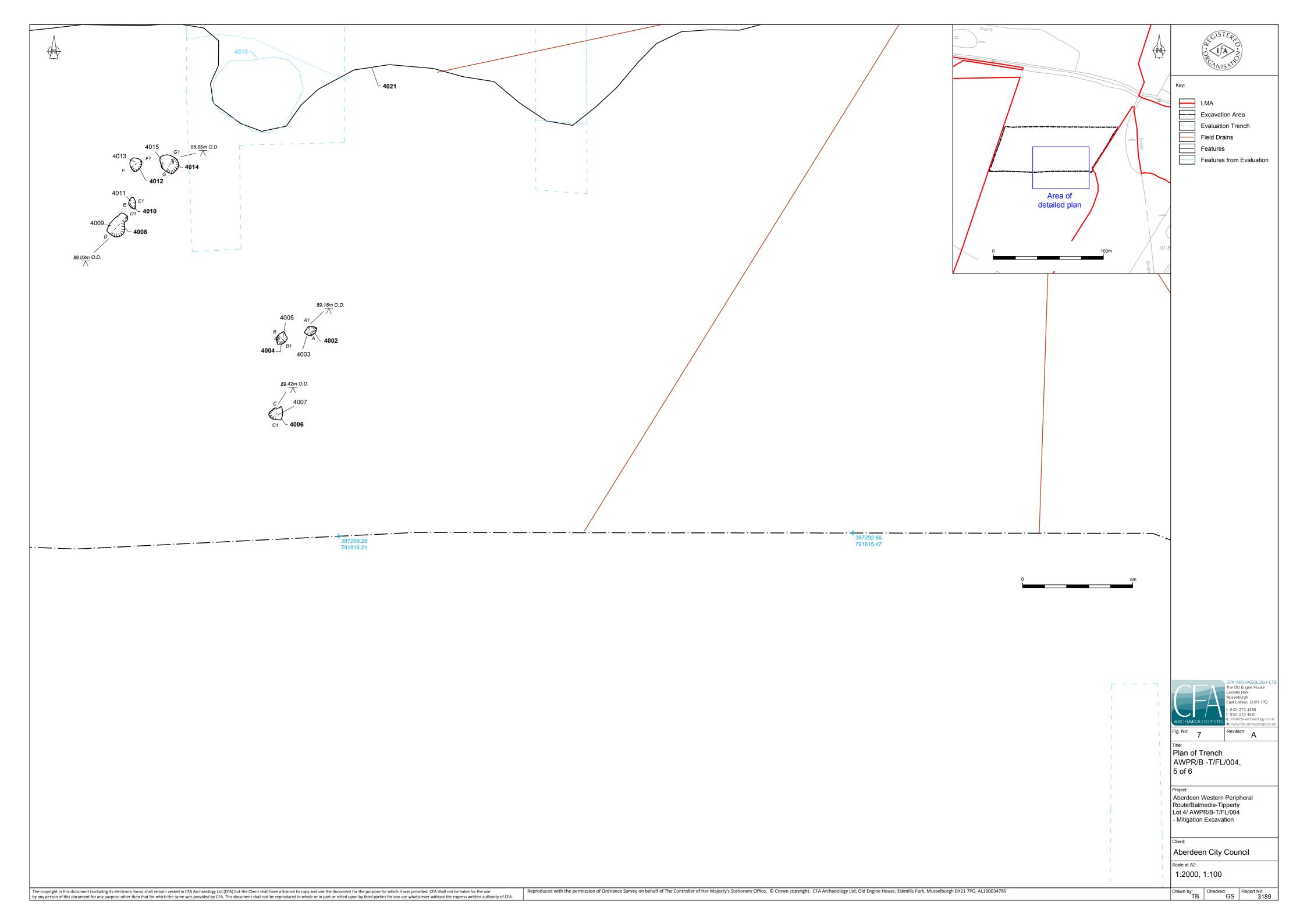


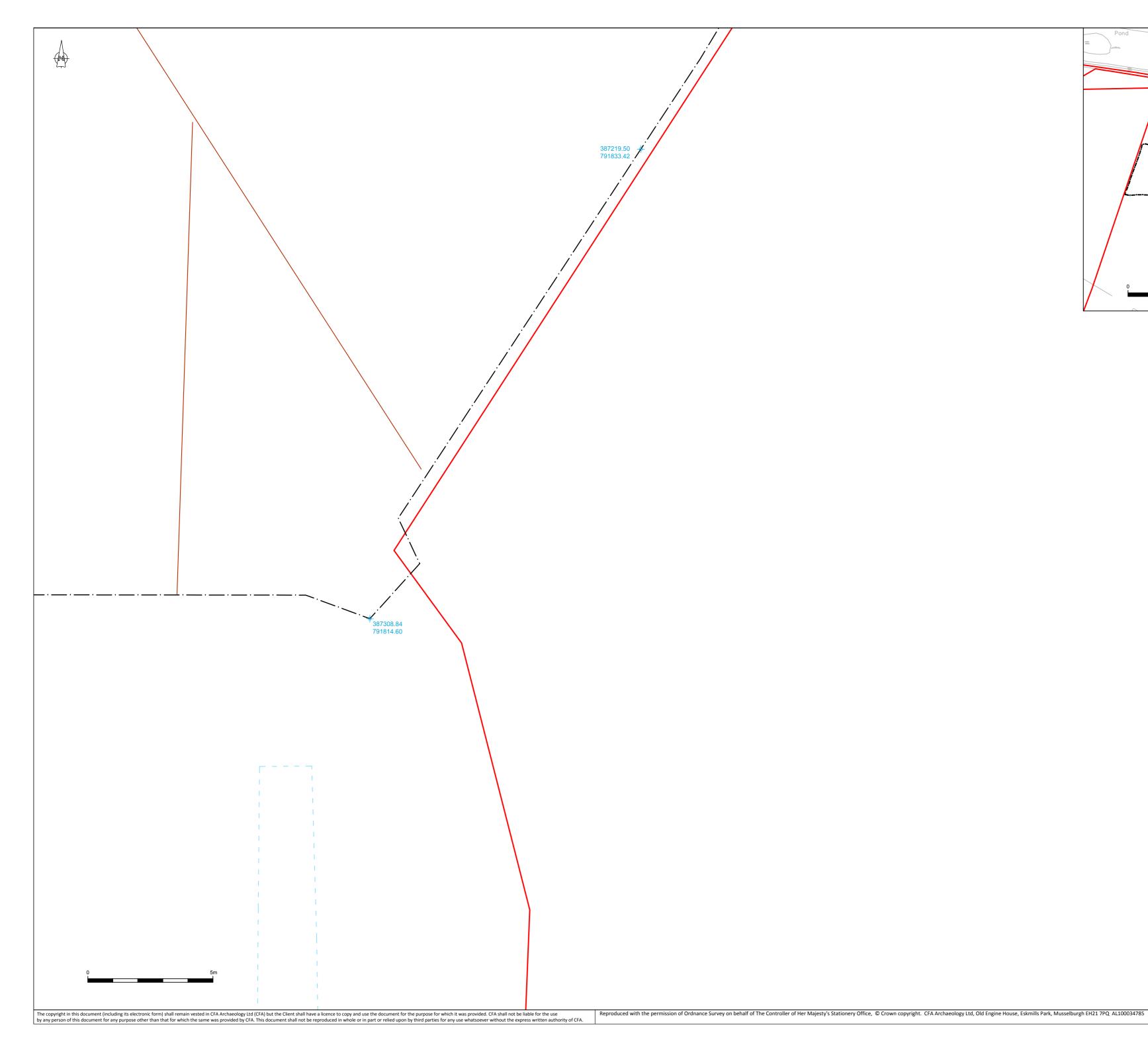


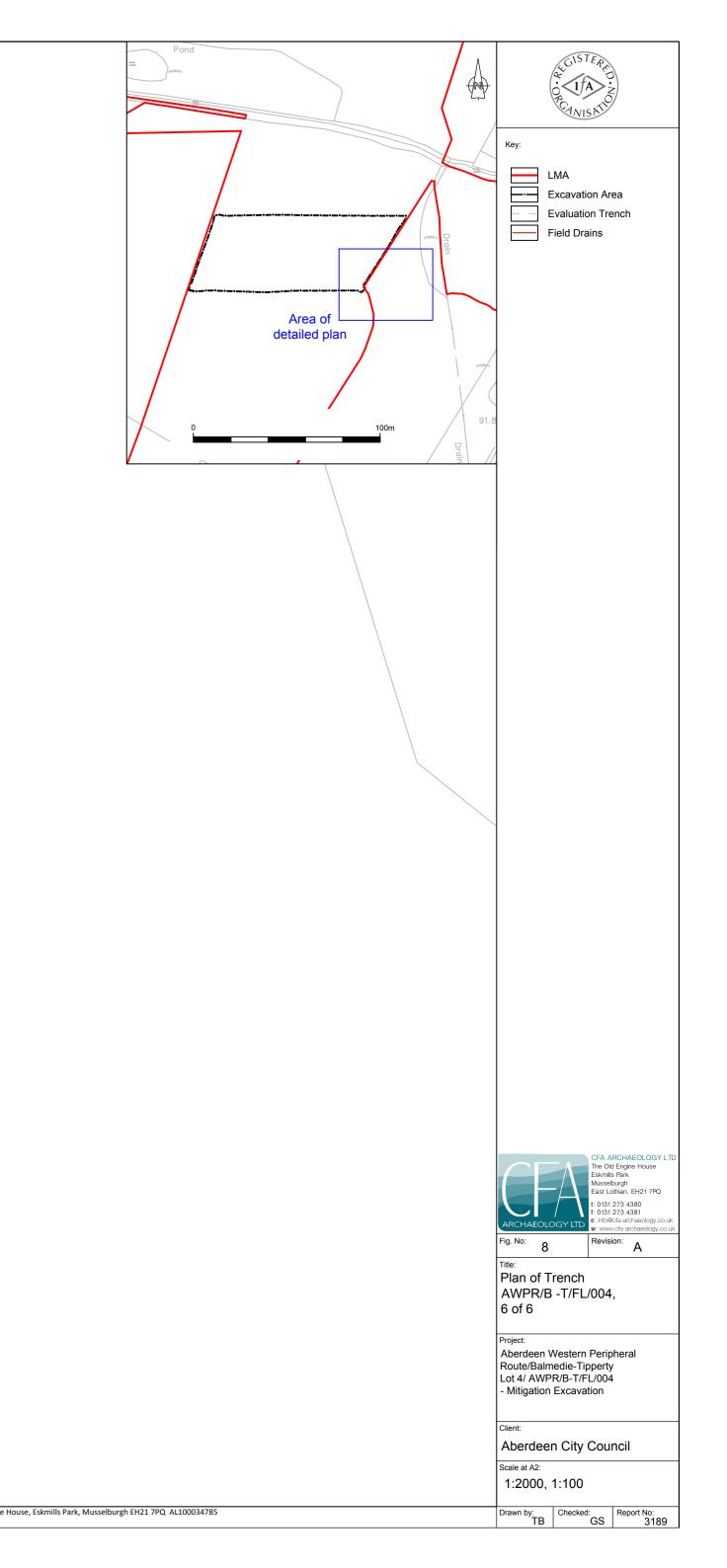


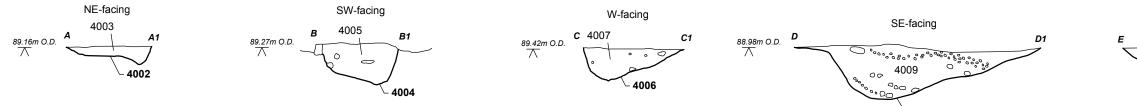


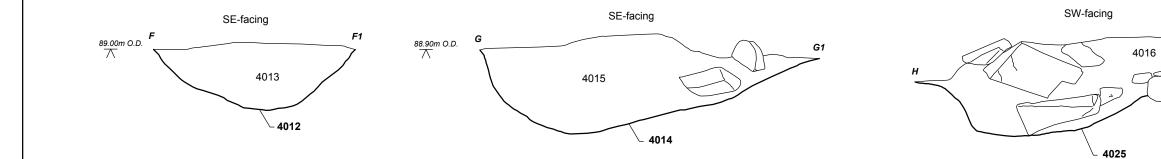


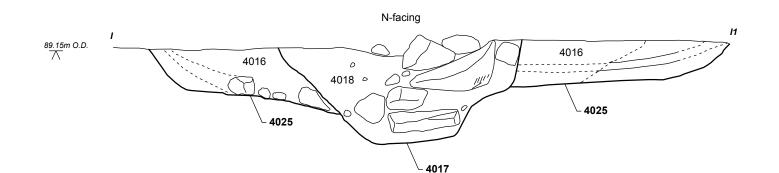










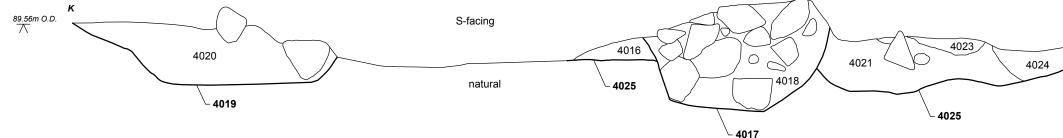




~ <u>)</u>____

- 4008

W-facing 4022 4021



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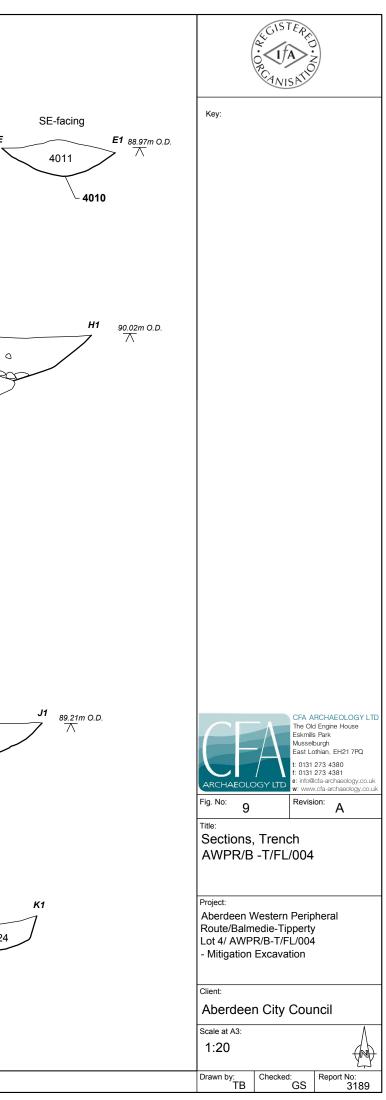




Fig. 10 - East-facing section of 4014



Fig. 11 - South-facing section, drains 4017 and 4019



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Fig. 12 - South-facing section, palaeochannel 4016

	CFA ARCHAEOLOGY LTD Old Engine House	Title: Selected photos	Fig.	12	Report:	3189	Drawn: TB	CKD:	GS	Date:	05/01/15
	Eskmills Park Musselburgh East Lothian, EH21 7PQ		Client: Aberdeen City Council								
	T: 0131 273 4380 F: 0131 273 4381 info@cfa-archaeology.co.uk www.cfa-archaeology.co.uk	Project: Aberdeen Western Peripheral Route/Balmedie-Tipperty Lot 4/ AWPR/B-T/FL/004 - Mitigation Excavation	Scal	e:							RCANISK
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