FAIRBOURNE FLOOD ALLEVIATION SCHEME: Ground Investigation Programme



Archaeological Watching Brief

GAT Project No. 2127 Report No. 877 July2010

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Prepared for

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By

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FAIRBOURNE FLOOD ALLEVIATION SCHEME, GWYNEDD

ARCHAEOLOGICAL WATCHING BRIEF – Ground Investigation Programme

Summary

Gwynedd Archaeological Trust (GAT) was commissioned by the Environment Agency to complete an archaeological watching brief during ground investigation (GI) works associated with the proposed flood alleviation scheme along Fairbourne coastal plain, Fairbourne, Gwynedd (centred on NGR SH62091360).

A total of 22 trial pits were monitored. No archaeological activity was identified within the confines of any example. The GI programme did inform of the varying geological activity across the expanse of the estuary, including peat and shaley bedrock in the vicinity of TP 01-05. This recorded information may assist in the understanding of exposed stratigraphy during any future archaeological mitigation phases.

1.0 INTRODUCTION

The GI investigation area was located to the immediate east and south of the Aber Mawddach/Mawddach Estuary SSSI (SSSI ID: 1628/SSSI Code: 31WVS) and either side of the Cambrian Railway track where it runs through Fairbourne (centred on NGR SH62091360).

The GI works comprised:

- Window Samples WS01 to WS10 (not monitored)
- Test Pits TP01 to TP22
- Boreholes BH01 to BH18 (not monitored)

A mitigation brief was not prepared for this work by **Gwynedd Archaeological Planning Services** (GAPS)/ **Snowdonia National Park Authority** (SNPA) Archaeologist, but GAPS/(SNPA) archaeologist were informed of the GI works in their respective areas. Reference was made to the guidelines specified in Standard and Guidance for Archaeological Watching Brief (Institute for Archaeologists, 1994, rev. 2001).

2.0 BACKGROUND

Castlering Archaeology were commissioned by the Environment Agency to undertake an archaeological desk-based study on land at Fairbourne, Gwynedd in connection with a possible flood alleviation scheme (FAS) to be undertaken on land adjacent to the estuary of the River Mawddach (Castlering Archaeology Report **316**, April 2009). The desk-based study and site walk-over were undertaken to assess the potential impact that any future works in connection with the flood alleviation scheme could have on the archaeological resource and built heritage within the defined study area.

The study area was located on the south side of the estuary of the River Mawddach. The western boundary of the area was defined by the shingle beach fronting Barmouth Bay at Fairbourne; the southern boundary by the A493 trunk road; the eastern boundary by the inlet that extends north from Arthog into the Mawddach Estuary and the northern boundary by the estuary. The study area measured *c.*4.5km on a southwest to northeast axis with its width defined by the irregularity of the estuary and Penrhyn Point on the north side and the A493 on the south side, at the base of the wooded hillside. *The GI investigation was located within the confines of the study area.*

Within the study area, the assessment identified:

Scheduled Ancient Monument No. ME252:

Anti-invasion Defences comprising the line of 650 concrete cubes and the remains of 4 pillboxes extending for c.2.3km along the seafront at Fairbourne. The structures have statutory protection as a monument of National significance.

Historic Landscape Areas (HLAs); Mawddach Estuary (HLA09), Morfa Mawddach (HLA10) and Fairbourne (HLA11). The landscapes are recorded on the non-statutory *Register of Landscapes of Historic Interest in Wales* compiled as a joint initiative between Cadw: Welsh Historic Monuments, the Countryside Council for Wales (CCW) and the International Council on Monuments and Sites (ICOMOS), working in collaboration with GAT, RCAHMW and the Welsh unitary authorities in order to recognise and raise awareness of the importance and wealth of the historic fabric of the landscapes.

Site of Special Scientific Interest (SSSI); namely Mawddach Estuary which includes Arthog Bog (CCW ref.31 WVS). SSSIs have Parliamentary protection under the Wildlife and Countryside Act of 1981 (amended 1985); enhanced by the Countryside Rights of Way Act of 2000.

25 sites were identified in the report, sourced from the Regional Historic Environment Record (Gwynedd Archaeological Trust, Craig Beuno, Bangor, Gwynedd LL57 2RT; reproduced in Appendix I). 22 sites recorded by RCAHMW were identified within the study area (supplied by GAT Regional HER; reproduced in Appendix I. The majority of the features represented the post-medieval development of Fairbourne and the surrounding area and the nineteenth century improvements to transportation links and twentieth century military coastal defences. The identified features included scheduled WWII defences that fronted the shoreline at Fairbourne, a former WWII marines training camp (PRN 13918), the 1860s coastal railway that cuts through the area and crosses the estuary via Barmouth Bridge (PRNs 13919 to 13922), the disused Dolgellau branchline now utilised as the 'Mawddach Trail' and evidence of a former tramway system installed at the turn of the century by Solomon Andrews in the east side of the study area (PRN 13914), evidence of the former tramway installed by McDougall in the west (PRN 13910) which is perpetuated in the existing miniature railway at Fairbourne (NPRN 41312).

In addition to the information retained within the Regional HER and incorporated in the Castlering report, 3 archaeological sites were identified during the walk-over survey:

- a limekiln on the Fairbourne Embankment at SH 62601420;
- a stone building south of the embankment at SH 6260141
- a the limekiln near Arthog at SH 64201470

None of the identified archaeological features were directly affected by the GI programme, although Test Pits **TP15** to **TP17** were located close to PRNs **13910** & **13911** (McDougall Tramway trackbed/Brick and tile works respectively).

3.0 METHODOLOGY

3.1. Ground Investigation Works

 All attended test pits were excavated using a 2T 360 machine with a flat ditching bucket, of 0.60m width. The dimensions of all the test pits were 2.00m x 0.60m x 3.00m. All GI works were completed by White Young Green (WYG).

3.2 Archaeological Watching Brief

- A photographic record was maintained throughout, using a digital SLR camera set to maximum resolution.
- Notations were made of all subsurface deposits.
- The archive is be held by GAT under an appropriate project number (**G2127**).

4.0 RESULTS

The location of the individual trial pits monitored by GAT as an archaeological watching brief can be found in Figure 01, they were generally located running from South (TP01) to North (TP22). The results of the test pit excavations did not provide any archaeological features, or artefactual evidence,

although TP15-17 were relatively close to a brickworks and tramway dating to the 19thC (PRN **13910** & **13911**: McDougall Tramway trackbed/Brick and tile works respectively).

TP01

Size: 2.60m x 0.60m x 3.00m Orientation NW-SE

Description

Dark greyish brown topsoil with a depth of 0.15m, underlain by a brownish grey silty sand with very frequent inclusions of river cobbles and shales, depth of 0.45m. Mid brownish grey sandy, clayey silt with a similar amount of stone inclusions as the above, water seepage between these horizons, depth of 0.50m. Below was a layer of silt-sand, peat-rich with frequent organics and depth of 1.40m, a slightly more clayey deposit below, although generally quite similar.

Interpretation

Thin topsoil deposit identified here followed by some made up ground above the organic layer, followed by alluvial activity at the base. No archaeological activity within confines of the trial pit.

TP02

Size: 2.00m x 0.60m x 3.00m Orientation NE-SW

Description

Greyish brown topsoil, sandy silt with soft texture and containing shaley stone, depth of 0.20m. Subsoil a mid orangey grey silty sand with shaley stone and a depth of 0.60m. The lower layer was a silty grey clay containing some shaley stone, slightly orangey and organic.

Interpretation

No archaeological deposits. This test pit and TP04 are very close to an outcrop called Ynys y Bugail with the shaley deposits being the fragmented bedrock from this outcrop.

TP03

Size: 2.60m x 0.60m x 3.00m Orientation NW-SE

Description

Dark greyish brown topsoil with a depth of 0.25m, underlying subsoil an orangey grey silty sand with depth of 0.30m. The layer below was an organic mid greyish brown peaty sandy silt that became progressively more clayey with depth, depth of layer 1.50m. The bottom layer was a mid grey silty clay with orange flecking.

Interpretation

No archaeological activity was identified within the confines of the test pit.

TP04

Size: 2.60m x 0.60m x 3.00m Orientation NW-SE

Description

Upper layer was a mid greyish brown, soft sandy silt with a depth of 0.15m. Upper subsoil a mid brownish grey shaley sandy silt with a depth of 0.40m. Underlain by a dark greyish brown silty sand. All the above layers were fairly organic.

The lowest deposit in the test pit was a mid greyish brown with an orange tint, silty clay, containing large amounts of slatey or shaley fragmentary rock.

Interpretation

No archaeology, the fragmentary rock is bedrock from the outcrop Ynys y Bugail as previously mentioned in TP02.

TP05

Size: 2.00m x 0.60m x 3.00m Orientation NE-SW

Description

The topsoil was a mid greyish brown sandy silt with very occasional stone and depth of 0.25m. Upper subsoil of a mid orangey grey clayey silty sand with depth of 0.30m. The lower layer was a dark greyish brown and slightly organic peaty sandy silt, as the trench progressed the soil became more clayey with inclusions of fairly large shaley stone.

Interpretation

No archaeology. The organic deposit may have been material that had washed into this area from either or both the two wooded, rocky outcrops that are located either side of the trench, although test pits TP01-TP04 were also close to the outcrops and they produced significantly less organic material.

TP06

Size: 2.00m x 0.60m x 3.00m Orientation NE-SW

Description

Topsoil depth of 0.30m. Upper subsoil was a mid orangey grey sandy silt with a depth of 0.70m and containing very occasional stone, underlain by a mid grey slightly silty, plastic clay.

Interpretation

No archaeological activity within confines of trial pit.

TP07

Size: 2.20m x 0.60m x 3.00m Orientation N-S

Description

A light greyish brown loamy topsoil with very occasional stone inclusions, soft texture with a depth of 0.30m. Mid brownish orangey grey silty clay subsoil with depth of 0.80m. Lower deposit was a grey, plastic clay which very slightly silty.

Interpretation

No archaeological activity was identified within the confines of the trial pit.

TP08

Size: 2.20m x 0.60m x 3.00m Orientation NE-SW

Description

Mid greyish brown sandy silty topsoil with a depth of 0.24m. Mid brownish grey silty clay subsoil, depth 0.26m. Underlain by a mid orangey grey plastic silty clay, firm with a depth of 0.50m. The lower layer was a light grey clay, plastic. Depth > 1.60m. Water seepage in this trench at the 0.60m level.

Interpretation

No archaeological activity was identified within the confines of the trial pit.

TP09

Size: 2.10m x 0.60m x 3.00m Orientation SE-NW

Description

This trench was excavated roughly 3m to the SW of original location due to 2 steel water pipes (disused?) uncovered during original trenching. The upper layer consisted of a shaley hardcore of made up ground with depth of 0.30m. Below was a mid brownish grey sandy silty clay with very occasional stone. There was an intermediate layer of an orangey grey clay, slightly plastic. The lower layer was a mid grey clay, plastic and very firm.

Interpretation

No archaeological activity was identified within the confines of the trial pit.

TP10

Size: 2.20m x 0.60m x 3.00m Orientation N-S

Description

Very rooty dark greyish brown topsoil with depth of 0.20m, below which was a mid orangey grey silty clay with depth of 1.50m. The lower layer was a slightly orange grey clay, plastic. Water seepage at the top of this layer at the horizon with previous layer.

Interpretation

No features associated with this trench, excavated within the confines of a small caravan park.

TP11

Size: 2.00m x 0.60m x 3.00m Orientation NE-SW

Description

Mid greyish brown silty sandy topsoil with depth of 0.20m. Underlain by a mid orangey grey silty clay, plastic with depth of 1.00m. Water seepage between the 2 upper layers. Lower layer of a mid orangey grey clay.

Interpretation

No features associated with this trench, located within the caravan park.

TP12

Size: 2.50m x 0.60m x 3.00m Orientation NW-SE

Description

Mid greyish brown topsoil with depth of 0.20m. Underlain by a mid orangey grey silty clay with depth of 0.35m. Below this layer was a dark brown organic peaty silt, slightly orange with depth of 1.00m. The lower deposit was a mid orangey grey silty clay, plastic.

Interpretation

No archaeology in test pit, as with TP10 and TP12 this trench was within the caravan park.

TP13

Size: 2.00m x 0.60m x 3.00m

This trench was completed late in the day and not observed.

TP14

Size: 2.20m x 0.60m x 3.00m Orientation NE-SW

Description

Mid greyish brown topsoil with depth of 0.20m, below there was a mid orangey grey silty sand with root material with depth of 1.00m. The next layer was a mid orangey grey sandy clayey silt with depth of 0.80m. The lower layer in the trench was a mid grey sandy clay with a slight orangey tint.

Interpretation

No archaeology was found in this trench.

TP15

Size: 2.60m x 0.60m x 3.00m Orientation NE-SW

Description

Topsoil was a mid greyish brown sandy silt with depth of 0.15m, underlain by a mid orangey grey subsoil with depth of 1.35m. The lower layer within the trench was a mid grey silty sand with patches of silty clay.

Interpretation

No archaeology.

TP16 + TP17

Size: 2.20m x 0.60m x 3.00m Orientation NE-SW (both trenches)

Description

Test pits 15,16 and 17 were very similar in contents in respect of the excavated soils and clays, and grouped relatively close together. The description for TP15 will also cover TP16 and TP17.

TP18

Size: 2.00m x 0.60m x 3.00m Orientation NE-SW

Description

Very thin layer of a mid greyish brown upper soil with a depth of 0.10m. Subsoil was a mid orangey grey sandy clay with depth of 1.40m. The lower deposit was a narrow band of an organic peat which was slightly clayey in patches, depth of >0.30m.

Interpretation

No archaeology.

TP19

Size: 2.20m x 0.60m x 3.00m Orientation NE-SW

Description

Mid orangey grey silty sand with some clay content, depth of 0.25m. Orangey grey silty clayey sand, soft texture with a depth of 1.25m. The lower layer was an orangey grey silty clay, although less clay and more sandy as the trench progressed downwards.

Interpretation

No archaeology.

TP20

Size: 2.20m x 0.60m x 3.00m Orientation NW-SE

Description

The surface layer was a degraded mid brownish grey sandy silt with depth of 0.15m. Underlain by a mid orangey grey silty sand, soft texture with depth of 0.95m. The lower deposit was a soft, mid grey silty sand with a slight clay content.

Interpretation

No archaeology.

TP21

Size: 2.40m x 0.60m x 3.20m Orientation NW-SE

Description

Upper deposit of a mid greyish brown topsoil with depth of 0.15m, underlain by a mid orangey grey silty sand with depth of 0.55m. Lower layer of a mid grey silty clayey sand, all deposits had a soft texture.

Interpretation

No archaeology.

TP22

Size: 2.40m x 0.60m x 3.00m Orientation E-W

Description

Very degraded brownish grey sandy silt topsoil with a depth of 0.10m, underlain by a subsoil of a mid orangey grey silty sand with a soft texture and depth of 0.40m. The bottom layer in the trench was a dark grey sandy silt with a small clay content.

As access to the original location of this test pit to the south of the drainage ditch was difficult to obtain, the test pit was excavated to the north of the drainage ditch

Interpretation

No archaeology.

5.0 CONCLUSIONS

A total of 22 trial pits were monitored. No archaeological activity was identified within the confines of any example. The GI programme did inform us of the varying geological activity across the site, including the location of suitable materials that could be used for the formation of flood alleviation defences. The results also informed the location of made ground deposits (TP01) and the existence of peat within test pits TP01 to TP05. The peat deposits were located c.650.0m south of the peat cutting faces identified at NGR SH61501335 (PRN 17,217).

This information may assist in the understanding of exposed stratigraphy during any future archaeological mitigation phases.

6.0 BIBLIOGRAPHY and SOURCES

CASTLERING ARCHAEOLOGY REPORT 316

Client drawings B1362200/GI/100 (Rev.03) & B1362200/GI/101 (Rev.00)

Appendix I

25 sites were identified in the report, sourced form the Regional Historic Environment Record (Gwynedd Archaeological Trust, Craig Beuno, Bangor, Gwynedd LL57 2RT)

PRN

- 4139 TYDDYN Y GARREG STANDING STONE SH75401760
- 4218 CLEARANCE HEAP SH61111381
- 4880 NEOLITHIC POLISHED STONE AXE SH61401220
- 4883 BRONZE AGE PERFORATED AXE HAMMER (FRAGMENT OF) SH63001460
- 7272 MAWDDACH JUNCTION STATION SH62901410
- 7273 FAIRBOURNE TOWN SH61201300
- 7274 FAIRBOURNE RAILWAY SH61201300
- 7275 TANK DEFENCES AT FAIRBOURNE SH61041340
- 13910 MCDOUGALL TRAMWAY TRACKBED, FAIRBOURNE SH61801317
- 13911 MCDOUGALL BRICK AND TILE WORKS, FAIRBOURNE SH61751316
- 13912 ST. CYNON'S CHURCH, FAIRBOURNE SH61801276
- 13913 FAIRBOURNE WASTEWATER OUTFALL VENT PIPE SH61061360
- 13914 SOLOMON ANDREWS TRAMWAY TRACK BED, FAIRBOURNE SH63001370
- 13915 STOCK LOADING RAMP, FAIRBOURNE SH63021396
- 13916 CAMBRIAN RAILWAY PEDESTRIAN GATE, FAIRBOURNE SH63021410
- 13917 SENTRY BOXES, FEGLA FAWR SH63181466
- 13918 ROYAL MARINES TRAINING CAMP SH63201480
- 13919 CAMBRIAN RAILWAY TRACK BED AND EMBANKMENT SH63401400
- 13920 TRACKWAY, FAIRBOURNE SH63781440
- 13921 TRACKWAY, FAIRBOURNE SH63871446
- 13922 TRACKWAY AND TRAMWAY TRACK BED, FAIRBOURNE SH64141460
- 17216 CAMBRIAN RAILWAY CAST IRON GATEPOSTS, FAIRBOURNE SH62001335
- 17217 PEAT CUTTING FACES, FAIRBOURNE SH61501335
- 17218 STONE-BUILT FIELD DRAINS, FAIRBOURNE SH63101358
- 17219 SOLOMON ANDREWS TRAMWAY TRACK BED, FAIRBOURNE SH63001418
- 17220 STONE-BUILT FIELD DRAINS, FAIRBOURNE SH64401460

22 sites recorded by RCAHMW & supplied by GAT Regional HER

NPRN

- 740 FAIRBOURNE HOTEL; YNYSFAIG HALL HOTEL SH617126
- 8518 SEION CHAPEL (WELSH CALVINISTIC METHODIST), BONT, ARTHOG SH64391458
- 12026 ST CYNON'S CHURCH, FAIRBOURNE SH61801275
- 12027 SARON CHAPEL (CALVINISTIC METHODIST), FAIRBOURNE SH61631227
- 28383 FAIRBOURNE HOTEL, HOUSE SH61771273
- 28892 YNYS GYFFYLOG SH62941380
- 41292 ARTHOG STATION
- 41311 MODEL RAILWAY, BARMOUTH FERRY TERMINUS SH6172115015
- 41312 MODEL RAILWAY, FAIRBOURNE TERMINUS SH6155512797
- 41313 PASSING LOOP, FAIRBOURNE MODEL RAILWAY
- 41329 BARMOUTH JUNCTION SH62841417
- 265173 MIN-Y-DON, GARDEN, ARTHOG SH6399415449
- 268062 FAIRBOURNE SH614130
- 270353 ANTI TANK BLOCKS, LLANGELYNNIN SH61101201
- 270354 ANTI TANK BLOCK, LLANGELYNNIN SH61101300
- 270355 PILLBOX (TYPE FW3/24), LLANGELYNNIN SH61101213
- 270356 PILLBOX (TYPE FW3/24), LLANGELYNNIN SH61141253
- 270840 ANTI TANK BLOCK, LLANGELYNNIN SH61141231
- 270841 CUBE, BARMOUTH SH615150
- 301728 MORFA MAWDDACH PONDS SH626142

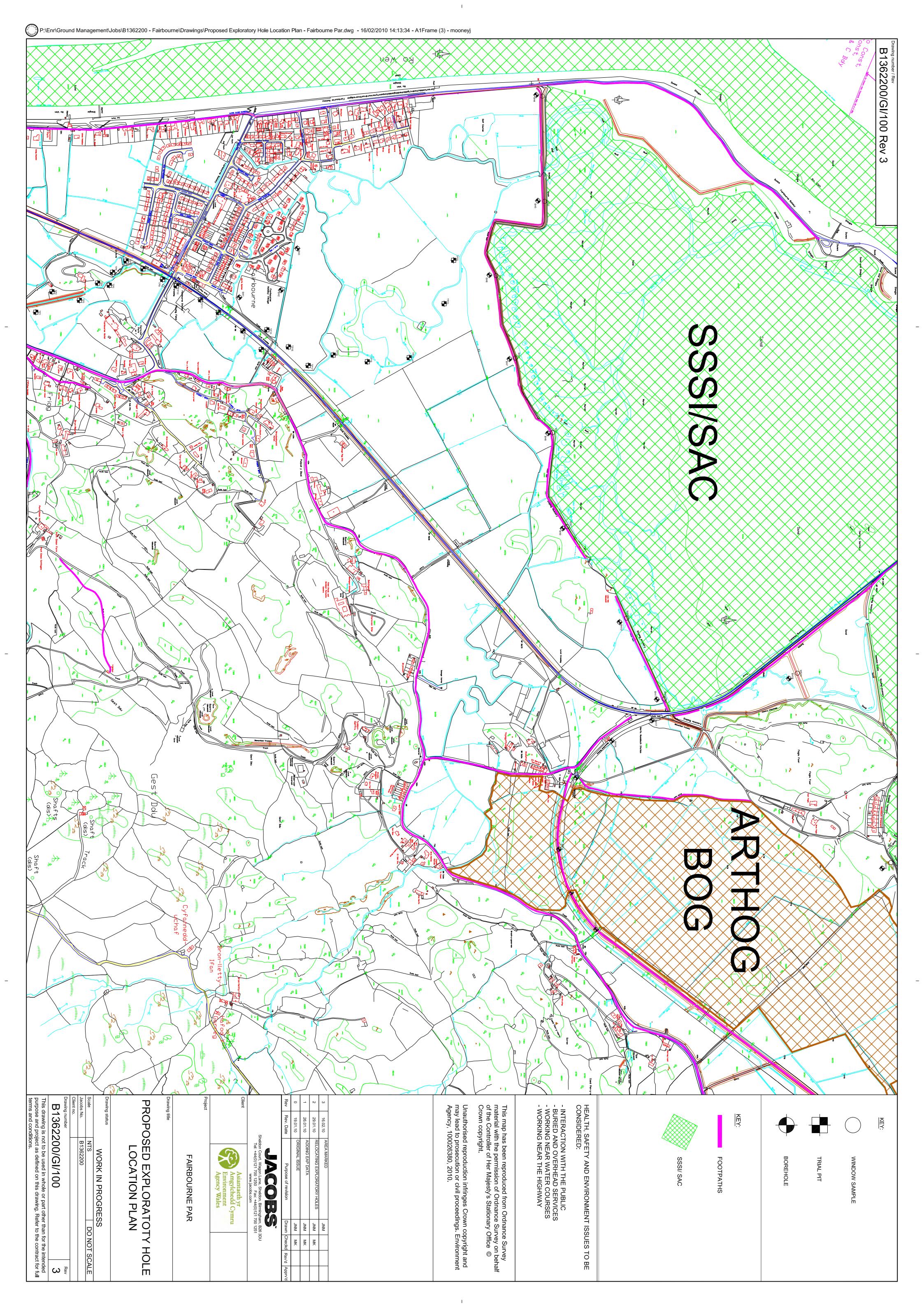




Plate 01 - General view of the location areas for TP01 to TP05: positioned along the flood plain from the building in the dis \Box outcrop with the house is called Ynys y Bugail. Photo taken from the NW



Plate 02 - General view of the location areas for TP06 to TP08, Ynys y Bugail can be seen to the left of the photo.

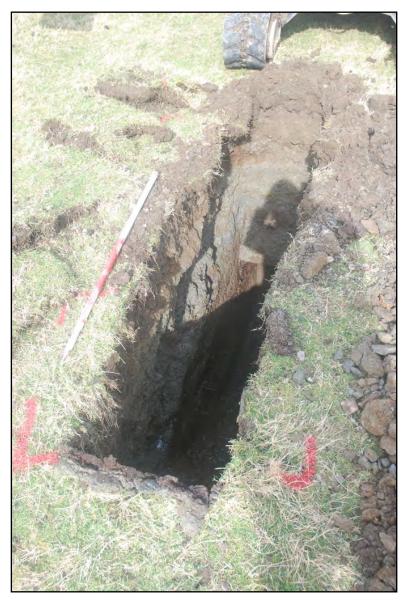


Plate 03 - test pit 01: exposed section on completion. A 0.40m thick layer of silt-sand, peat-rich with frequent organics was identified @1.00m below ground level



Plate \square deposit located beneath the peat-rich layer that continued to limit of excavation (3.00m below ground level)



Plate 05 - test pit 05 post-excavation, Similar to test pit 01, peat-rich organic deposits were identified @0.55m below ground level, continuing towards the limit of excavation where the deposit became clay-rich



Plate 06 - test pit 05 spoil heap detailing upcast material, including the peat-rich organic deposits also identified in test pit 01 (located c.190.0m to the south).



Plate 07 - location of test pit 04. The test pit included organic-rich deposits and shale fragments at the limit of excavation



Plate 08 - test pit 04: detail of limit of excavation. The orgnanic-rich deposits and the shale-rich deposit at the base of the test pit (3.00m below ground level), are visible



Plate 09 - test pit 10. Located on the southeastern outskirts of Fairbourne within a small caravan park., close to the fomer railway line



Plate 10 - test pit 10 on completion, detailing limit of excavation and water ingress @1.50m below ground level



Plate 11 - location of test pit 19, located to the northeast of Fairbourne within the coastal floodplain



Plate 12 - test pit 19 at limit of excavation, detailing a succession of sand-rich layers. No archaeological activity was identified within the confines of the test pit



Plate 13 - location of test pit 22, positioned within the coastal flood plain to the northeast of Fairbourne. Test pit 22 was the final test pit excavated as part of the GI programme.



Plat□ within the confines of the test pit

YMDDIRIEDOLAETH ARCHAEOLEGOL GWYNEDD



GWYNEDD ARCHAEOLOGICAL TRUST