

# DOLBENMAEN WATER TREATMENT WORKS

## Archaeological Evaluation Report



Ymddiriedolaeth Archaeolegol Gwynedd  
Gwynedd Archaeological Trust

# Dolbenmaen Water Treatment Works Dolbenmaen

## Archaeological Evaluation

Project No. G2293

Report No. 1123

Prepared for: Black & Veatch Limited

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## SUMMARY

*This report sets out the results of a programme of archaeological evaluation undertaken by Gwynedd Archaeological Trust (GAT) in advance of the proposed development of Dolbenmaen Water Treatment Works (WTW) (centred on SH 4963 4290) by Black & Veatch Limited on behalf of Dŵr Cymru Welsh Water (DCWW).*

*A total of fourteen trial trenches were excavated across the development site. Seven of the trenches revealed no evidence of any archaeological activity. Five linear boundary ditches relating to earlier field systems in the area were uncovered along with a probable roundhouse ditch, a possible pit, and two possible platforms. These features suggest there was at least small scale settlement in the area, however the extent and date of this settlement was not revealed during the evaluation.*

## 1 INTRODUCTION

This report was commissioned by Black & Veatch Limited on behalf of Dŵr Cymru Welsh Water (DCWW) and forms the report for the archaeological evaluation carried out prior to the proposed development of Dolbenmaen Water Treatment Works (WTW), Dolbenmaen (centred on SH 4963 4290) (hereafter referred to as 'the site'). See Figure 1.

A Project Design was prepared (Appendix I) which sets out the legislation framework and planning background in detail. The proposed development is a DCWW scheme, who have a Memorandum of Understanding with Gwynedd Archaeological Planning Service (GAPS). GAPS are the regional curator and specialist advisor to the local authority, and monitor work on behalf of the local planning authority (LPA). The work was carried out as part of a staged programme of archaeological works which included an archaeological assessment (GAT 2012a), an archaeological watching brief (GAT 2012b), and a magnetometer geophysical survey (Stratascan forthcoming) of the site.

A detailed brief has not been prepared for this stage of works by GAPS, however in response to the previous archaeological works carried out by Gwynedd Archaeological Trust (GAT), GAPS has stated that:

*The potential for discovering previously unidentified archaeological remains in this area is also high. The river location and the nature of nearby archaeological sites show that there is a significant risk that later prehistoric activity will be encountered within the development area, particularly late prehistoric activity settlement evidence, burnt mounds and other prehistoric features that have close associations with water courses. A geophysical survey (magnetometer survey) would be an appropriate first phase of evaluation to help inform a programme of targeted evaluation trenching. In accordance with Planning Policy Wales 2012 and Welsh Office Circular 60/96 the **evaluation work must be undertaken in advance of granting any planning***

**consent** in order that an appropriate mitigation strategy can be conditioned to any consent that might subsequently be granted (email correspondence dated 14/02/2013).

This report has been prepared in accordance with the *Standards and guidance for the collection, documentation, conservation, and research of archaeological materials* specified by the Institute of Field Archaeologists (IFA 2001), as well as the *standard and guidance for Archaeological Field Evaluation* specified by the Institute for Archaeologists (IfA 2008).

## 2 SITE LOCATION

The site is located to the west of the village of Dolbenmaen and consists of a series of fields of improved pasture lying to the southeast of the steep cliffs of Craig y Llan and the rising ground of Bryniau Ystumcegid to the south. It is bounded to the north and west by roads, to the south by the Afon Dwyfor, and by fields of improved pasture to the east. The geology of the area consists of glacial till over Ordovician extrusive rocks (British Geological Survey Mapping).

## 3 ARCHAEOLOGICAL BACKGROUND

The archaeological background has been discussed in full in the previous archaeological assessment (GAT 2012a), and the reader is referred to that document. However, a brief summary is presented here.

### 3.1 PREHISTORIC AND ROMAN SITES

The evidence for prehistoric occupation within the vicinity of the proposed site is slight. The nearest confirmed prehistoric sites are the hut groups PRN 145 and PRN 170, 450m to the northeast and southeast respectively. The Scheduled Ancient Monument of Craig-y-Tyddyn Camp (CN 046) lies approximately 715m to the southeast of the site.

The line of the proposed Roman Road from Segontium - Pen Llystyn - Tomen y Mur may lie under the present A487 although there is no direct evidence of occupation from the Roman period within the vicinity of the proposed site. The nearest confirmed Roman site is Pen Llystyn fort (PRN 144) approximately 2.3km to the northwest.

### 3.2 MEDIEVAL

The Scheduled Ancient Monument (CN 063) castle earthwork which marks the site of the medieval *llys* of Dolbenmaen, is approximately 830m to the west of the proposed site (PRN 161). The geological outcrop and associated earth mound

known as Pen Bryn yr Orsedd which is situated directly to the north, and within the same field as the development site, may have served as an assembly mound for the retinue of a peripatetic early medieval court. Pen Bryn yr Orsedd translates as 'The Seat on top of the Hill', and assembly mounds which have similar characteristics are known from England, Scotland, Ireland and the Isle of Man (Pantos and Semple (eds.) 2004). The name Pen Bryn yr Orsedd in reference to the rock outcrop is not recorded on the 1st Edition OS map but does appear on the 2nd Edition.

The place name 'Dol Pen Maen' is mentioned in the medieval story of 'Math and Mathonwy' as a point where hostages were exchanged between two high – status families (Evans and Evans 2001, 57). Dolbenmaen / Dol Pen Maen translates as 'The Meadow with the Rock at the Head', and the rock in this instance may be Pen Bryn yr Orsedd.

### **3.3 POST-MEDIEVAL AND MODERN**

An Exchequer survey dated 1589-90 shows that the boundary of the township of Dolbenmaen was almost exactly the same as the parish as given of the Tithe Map of 1838 (Gresham 1973). The development area is recorded by the 17<sup>th</sup> century as being part of a farm known as Tyddyn Rhwng y Ddwryd.

In 1637 the lands were demised to John Griffith of Cefn Amlwch by his father in law Sir Richard Trevor, by which time, or shortly after, the lands were purchased from the Crown. John Griffith's heir and brother sold the township in 1719 to Williams Brynker, son of James Brynker of Brynker. A rental of 1721 includes the farm of Plas Dolbenmaen, which is the earliest found reference of the farm under this name. William ran into financial problems, and the lands with the exception of Dolwgan, were sold to William Owen of Clennau and Brogyntyn in 1736, and so passed by marriage to the Ormesby (later Ormesby-Gore) family (GAT 2009).

### **3.4 PREVIOUS WORK**

The excavation of twelve geotechnical test pits was archaeologically monitored by GAT in 2012 (GAT 2012b). TPD01, TPD05 and TPD07 all contained river gravels in their lower levels. The presence of the gravel terraces suggests that these mark the limit of the north bank of the Afon Dwyfor during the creation of this part of the valley. Prehistoric settlement could occupy these gravel terraces given the proximity of prehistoric settlement on the opposite bank.

TPD06, TPD08 and TPD11 lie within an area which has been flooded and bioturbated in the past by the Afon Dwyfor. TPD03 and TPD12 were both cut into a natural rise in the ground, and neither revealed any archaeological evidence.

TPD02 was characterised by glacial till, as were TPD04, TPD09 and TPD10. No archaeological features were uncovered during the works and the natural geology was encountered between 0.5m and 0.6m below ground level in all of the test pits except TPD2 and TPD7 where it was encountered at 0.2m and 0.35m respectively.

## 4 AIMS AND OBJECTIVES

As specified in the Project Design (Appendix I) the objective of the archaeological evaluation was to:

- verify the efficacy of the geophysical survey for identifying archaeological remains within the site;
- establish the extent to which archaeological remains survive at the site;
- establish the date and nature of archaeological remains at the site and assess their implications for understanding the historical development of the area;
- establish the depth of archaeological remains and the quality, value and level of preservation of any deposits;
- and assess the level of risk any surviving remains may pose to development.

## 5 METHODOLOGY

All works were carried out in accordance with the Project Design for the works (Appendix I) and the GAT standard operating procedures as set out in the GAT fieldwork Manual (*in prep*)).

The trenches locations were based on information received from the preliminary Stratascan results and targeted specific anomalies (see below), and located by digital survey (Figure 2).

All the trenches were scanned with a CAT scanner prior to excavation by a 360° tracked excavator, fitted with a flat laded bucket. Topsoil and turf layers were removed separately, before the excavation of reduced levels.

All groundbreaking was undertaken under constant archaeological supervision. Any archaeological features encountered were recorded using standard pro-forma sheets and a running photographic record was maintained using a Nikon digital SLR camera set to maximum resolution.

All features were digitally surveyed using a Trimble TSC2 controlled GPS receiver (Trimble R6 Unit), with the results tied into the National Grid. All sections were drawn at a scale of 1:10.

### 5.1 STRATASCAN RESULTS AND TRENCH LOCATIONS

- **Trench 01:** investigating a positive anomaly, interpreted as a probable cut feature of archaeological origin
- **Trench 02:** investigating three anomalies: a positive anomaly, interpreted as a probable cut feature of archaeological origin, a negative anomaly, interpreted as a probable bank or earthwork of archaeological origin and a weak positive anomaly, interpreted as a probable cut feature of archaeological origin
- **Trench 03:** investigating two positive anomalies, interpreted as a probable cut features of archaeological origin



- **Trench 04:** investigating “possible archaeology”: an area of pit-like anomalies of a possible archaeological origin
- **Trench 05:** investigating a positive anomaly, interpreted as a probable cut feature of archaeological origin and a linear anomaly probably related to former field boundary
- **Trench 06:** investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin
- **Trench 07:** investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin and a negative anomaly/weak negative anomaly – possible bank or earthwork of archaeological origin
- **Trench 08:** investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin
- **Trench 09:** investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin
- **Trench 10:** investigating a curvilinear positive anomaly/weak positive anomaly - possible cut feature of archaeological origin and closely spaced parallel linear anomalies – probably related to agricultural activity such as ploughing
- **Trench 11:** investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin and a linear anomaly probably related to former field boundary
- **Trench 12:** investigating a positive anomaly, interpreted as a probable cut feature of archaeological origin
- **Trench 13:** investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin and a linear anomaly probably related to former field boundary
- **Trench 14:** investigating three anomalies: a positive anomaly, interpreted as a probable cut feature of archaeological origin, a negative anomaly, interpreted as a probable bank or earthwork of archaeological origin and a weak positive anomaly, interpreted as a probable cut feature of archaeological origin

## 6 ARCHAEOLOGICAL RESULTS

A total of fourteen trenches were excavated down to the natural geology during the archaeological evaluation of the site (Figure 2). All the trenches measured 20m by 2m, except for Trenches 01, 10, and 14 where extensions were excavated so as to aid understanding of the features encountered. A dark greyish brown sandy silt topsoil ranging from 0.15m to 0.6m in depth was located within all the trenches. Within trenches 01-03, 06-07, and 12, this sealed a brownish grey sandy silt subsoil, between 0.2m and 0.3m thick. No subsoil was revealed in the remaining trenches, with the topsoil directly overlying the natural geology which alternated between a light reddish brown sandy clay, bedrock, and gravel. Full details of the topsoil, subsoils and natural geology can be seen in Appendix II. All features uncovered were cut into the natural geology and sealed by the topsoil or subsoil unless stated otherwise.

Six of the trenches excavated (03-04, 08-09, and 12-13) revealed no evidence of any archaeological activity, while Trench 07 only revealed an animal burrow (**703**).

Patches of bioturbation were seen throughout the trenches, and evidence of ploughing was visible within Trench 08.

### 6.1 TRENCH 01

Trench 01 measured 20m by 2m with a 2m by 2m extension on its western side (Figure 3). A curvilinear ditch (**103**) (Figure 4, Plate 1) was revealed cutting into the natural geology (**102**), an orangey grey silty sand, along the western side of the trench. The ditch measured 1m in width with a maximum depth of 0.25m, and had steep sloping sides with a concave base. The basal fill of the ditch (**107**) consisted of a 0.04m thick layer of greyish brown clayey silt and charcoal which was sealed by a light whitish grey sandy clay, 0.03m thick. This in turn was sealed by a silted up layer of greyish brown clayey silt (**105**), 0.05m thick. The uppermost fill of the ditch consisted of a 0.15m thick concentration of sub-rounded stones within a greyish brown clayey silt (**104**) similar to (**105**). No finds were recovered from the fills of this ditch, and no other features were revealed within the trench.

### 6.2 TRENCH 02

A shallow circular pit (**203**), measuring approximately 0.9m in diameter and 0.1m in depth was uncovered within Trench 02 (Plate 2) cutting into the natural geology (**202**). It had shallow sides with a fairly flat base and was filled with a single silted up deposit consisting of a greyish brown clayey silt (**204**). No finds were recovered from this feature.

A concentration of loose sub-rounded stones, 0.2m thick and approximately 2m wide, was visible within the topsoil (**200**) at the western end of the trench. The stones were similar in size and shape as to those uncovered within the uppermost fill (**104**) of Ditch **103**. No other features were revealed within this trench.

### 6.3 TRENCH 05

Two parallel linear ditches (**502** and **504**), 1.5m apart and aligned ENE-WSW, were uncovered cutting into the natural geology (**501**) towards the middle of Trench 05 (Figure 5). Ditch **502** measured 1m in width, with a depth of 0.3m and had steep sloping sides and a concave base (Figure 6, Plate 3). It was filled with a single silted up deposit of greyish brown stony silt (**503**).

Ditch **504** (Plate 3) measured 0.6m in width with a depth of 0.1m and had uneven sides and an uneven base. It was filled with a single silted up deposit (**505**) comprising of a greyish brown stony silt. No finds were recovered from either of the ditches, and no other features were uncovered within the trench.

### 6.4 TRENCH 06

An approximately 2.1m wide linear feature (**603**) (Plate 4), aligned NNW-SSE, was uncovered towards the middle of Trench 06. The WSW side of the feature had a steeply sloping, 0.2m deep side which gave way to the natural slope of the natural geology (**602**). The ENE side was very ephemeral, which may have been due to

plough damage or that there was no other side and that the feature represents a platform, formed by cutting into the natural on one side and creating a levelled off area. No finds were recovered from this feature.

## 6.5 TRENCH 10

Trench 10 measured 20m by 2m, with a 5m by 5m extension on its northeastern side at its northwestern end (Figure 7). A large, stepped, linear feature (**1002**) was uncovered at the northwestern end of the trench, aligned northeast-southwest (Figure 8, Plate 5). It measured approximately 3.7m in width and consisted of two fairly steep cuts into the natural geology, forming two fairly flat platforms. The uppermost platform measured approximately 2.2m in width and had a depth of 0.32m, while the lower platform measured 1.5m in width with a depth of 0.2m. The upper platform was filled with a silted up deposit of greyish brown clayey silt (**1003**) similar to the subsoil (**1000**). A concentration of sub-rounded stones (**1004**) filled the lower platform, which may have been used as a border for the upper platform. No finds were recovered from the fills of either platform.

## 6.6 TRENCH 11

Two parallel linear ditches (**1102** and **1104**), 1.8m apart and aligned north-south, were uncovered cutting into the natural geology (**1101**) towards the middle of Trench 11 (Figure 9). Ditch **1102** measured 1.4m in width, with a depth of 0.2m. It had a concave base with a steep sloping side to the east, and a more gradual sloping side to the west (Figure 10, Plate 6). It was filled with a single silted up deposit of greyish brown gravelly clayey silt (**1103**).

Ditch **1104** (Figure 11, Plate 6) measured 1.2m in width with a depth of 0.37m and had steeply sloping sides with a V-shaped base. Its basal fill comprised of a reddish brown gravelly silt (**1106**), 0.1m thick, which was sealed by a 0.27m thick deposit of greyish brown gravelly clayey silt (**1105**). No finds were recovered from either of the ditches, and no other features were uncovered within the trench.

## 6.7 TRENCH 14

Trench 14 measure 20m by 2m with a 7m by 2m extension on its northern side at its eastern end. A shallow linear ditch, aligned roughly north-south, and measuring approximately 1.5m wide and 0.1m deep was located towards the middle of the trench (Plate 7). It was filled with a single silted up deposit comprising of a greyish brown clayey silt (**1403**). No finds were recovered from this feature.

# 7 DISCUSSION

The natural geology varied in nature across the site and was generally deeper (0.6m below ground level) towards the middle and southeastern areas of the site. To the south of the site, adjacent to the current water treatment works (within Trenches 04

and 05, and Test Pits 5 and 7), the natural geology consisted of river gravels, on average 0.3m below ground level, suggesting that the northern bank of the Afon Dwyfor was located in this area during the creation of this part of the valley. Natural gravels were also located within Trench 11 and Test Pit 1, however these are likely to be isolated patches of gravel as there was no evidence of the gravels continuing within any nearby test pits and trenches.

Outcrops of bedrock were encountered within Trench 8, the northwestern end of Trench 12, and Trench 13, at on average 0.3m below ground level. The bedrock around Trenches 12 and 13 rises to the north to the natural outcrop and mound Pen Bryn yr Orsedd, and given the close proximity of the bedrock to the current ground level, the survival of any archaeological remains in this area is unlikely. The bedrock located within Trench 08 represents another natural outcrop, although on a much smaller scale as it was not visible within Trenches 7, 9 and 11, to the north, west, and south respectively.

The remaining geology uncovered on site consisted of natural sandy clays, which were deeper (on average 0.6m below ground level) towards the east and south of the site (within Trenches 3, 6, 7, 9, 10, and the southeastern end of Trench 12), where the land was either sloping down or at the base of such a slope. Directly to the north of the water treatment works the natural sandy clays were present at between 0.3m and 0.4m below ground level, and this shallow depth may be due to the construction of the compound in this area for the building of the original water treatment works.

The natural topography of the site sloped generally downhill north to south or west to east, from approximately 96m AOD in the northwest to 89.5m AOD in the southeast.

A total of nine archaeological features were uncovered during the archaeological evaluation, all of which had been identified by the previous geophysical survey. Five of these features represent boundary ditches (**502**, **504**, **1102**, **1104**, and **1402**) relating to earlier field systems, however the date of these field systems is unknown as no finds were recovered from these ditches. The two sets of parallel ditches that were uncovered (**502**, **504**, and **1102**, **1104**) appear to run perpendicular to each other, and given their similar nature it is probable that they are contemporary and part of the same field system.

Two possible platforms were also uncovered during the evaluation (**603** and **1002**), both of which are located on ground that is visibly sloping down, to the east and southeast respectively. Platform **603** is not as well defined as Platform **1002** and it is possible that this represents a natural sloping of the ground rather than a manmade platform. The results of the geophysical survey suggest that this feature runs for approximately 40m before turning to the southwest and continuing for a further 9m (Figure 2), which is at least partially visible as a slope on the surface of the field.

Platform **1002** is shown on the geophysical results as a curvilinear feature running for approximately 55m (Figure 2), and this is visible on the ground as a slight slope. The concentration of stones on the lower platform of **1002** may represent a border to the upper platform, or may have been used as drainage since the natural geology in this area, a sandy clay (**1001**), does not drain well. The upper platform is fairly flat and narrow, and may have been used for crops as apart from being sheltered it was also south facing, which would have given it more direct sunlight.

A small pit mostly truncated either by ploughing or by the compound that was built in this area during the construction of the original water treatment works, was uncovered in Trench 02. The nature and date of the pit are unknown.

A curvilinear ditch (**103**), shown on the geophysical survey as two semi-circular features (Figure 2), was uncovered within Trench 01. This most likely represents a circular ditch for a roundhouse structure, indicating at least small scale settlement in this area. No finds were recovered from this feature.

The negative anomaly shown in the geophysical survey within Trench 02 was shown to be the result of a concentration of stones within the topsoil (**200**). This anomaly is shown to continue to the south and to the north through Trench 14, although no evidence of it was visible within this trench. The stones within Trench 02, located as they are within the topsoil, are most likely the result of clearance during the construction of the compound in this area.

No evidence of the probable cut features identified by the geophysical survey within Trenches 03 and 12 were revealed during the excavation. The feature within Trench 12 appears to follow the bottom of the slope of Pen Bryn yr Orsedd where the natural geology changes slightly, visible within Trench 12, and may be a result of this rather than a cut feature. The remaining anomalies that were shown on the geophysical survey and targeted by the evaluation, were shown to be the result of either bioturbation or animal burrows (Trench 07), bedrock (Trenches 08 and 13), or likely magnetic variations in the soils (Trenches 04, 09, and 12).

## 8 CONCLUSIONS AND RECOMMENDATIONS

The evaluation revealed a range of features spread throughout the development site showing evidence of land use and settlement in the area. The two sets of parallel boundary ditches (**502** and **504**, and **1102** and **1104**) show that division of the land has occurred at some point, with the V-shaped nature of ditch **1104** tentatively suggesting that this may date to the prehistoric period.

Further use of the land was visible from the platforms revealed in Trenches 06 (**603**) and 10 (**1002**). These platforms, located within the same area to the east of the current water treatment works, suggest that the natural slope of the ground in this

area was modified so as to provide flatter areas for the growing of crops. There is also the possibility that these platforms were used for settlement, although no evidence for this was uncovered during the evaluation. However settlements on south facing platforms are not uncommon, and evidence for this may survive outwith the evaluation area.

Directly to the north of the water treatment works settlement evidence was revealed in the form of a roundhouse ditch (**103**), a small pit (**203**), and a linear ditch (**1402**). The roundhouse is likely to be prehistoric in date, and carbon dating of charcoal recovered from the lower fill of the ditch (**107**) is recommended so that a definitive date can be assigned. It is possible that the ditch and pit are contemporary with the roundhouse, and form part of the same settlement, although no dating evidence was uncovered within any of the features. Given the roundhouse's ideal location close to a river it is likely that this is not an isolated feature, but rather it is part of a larger settlement, further evidence of which may still survive in this area in the form of further roundhouses, enclosures, and/ or associated features.

The anomalies that were recorded by the geophysical survey but not targeted by the evaluation may represent archaeological features given that evidence of activity throughout the site has been uncovered. However, given the amorphous nature of some of these anomalies (such as those in the southeastern and southwestern corners of the site), it is also possible that they represent natural features such as bioturbation or animal burrows.

Given the evidence for settlement activity uncovered during the evaluation, it is likely that further archaeological features may survive in the areas that showed no anomalies on the geophysical survey and were therefore not targeted by the evaluation. The absence of any anomalies may be a result of any remains being un-magnetic; the truncation of any features by ploughing (such as Pit **203**); the destruction of features by the building of the compound for the construction of the water treatment plant in this area (The concentration of stones located within the topsoil of Trench 02, similar as they are to those within the uppermost fill of the roundhouse ditch, may represent such destruction); or by the masking of features by the magnetic disturbance of nearby metal objects, such as in the areas directly to the west and north of the roundhouse (**103**).

The evaluation has uncovered a number of features which show that settlement of the site has taken place, most likely dating to the prehistoric period. The location of the site, adjacent to a river and between two known prehistoric hut groups would also suggest a prehistoric date for this settlement. Due to the unknown size of the settlement uncovered during the evaluation, and with archaeological features uncovered towards both the eastern and western extents of the development, it is recommended that a programme of stripping and mapping of the entire development site is carried out. This would allow for the full extent and nature of the settlement on the site to be known, as well as providing evidence for any truncation or destruction

of features. Further excavation and analysis of the known features and their fills, along with any further features revealed may also allow us to definitively date the settlement. Stripping and mapping of the site would also allow the full investigation of the anomalies shown on the geophysical survey but not targeted by the evaluation, and allow us to determine their true nature. The final decision as to the requirement for further work on the site rests with the Gwynedd Archaeological Planning Service.

## **9 ACKNOWLEDGEMENTS**

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**APPENDIX I: PROJECT DESIGN**

**DOLBENMAEN WATER TREATMENT WORKS**

**PROJECT DESIGN FOR  
PROJECT DESIGN FOR ARCHAEOLOGICAL  
EVALUATION:**

**Trial Trenching (G2293)**

***Prepared for***

**Black & Veatch Limited**

***March 2013***

**Ymddiriedolaeth Archaeolegol Gwynedd**

**Gwynedd Archaeological Trust**

# DOLBENMAEN WATER TREATMENT WORKS

## PROJECT DESIGN FOR ARCHAEOLOGICAL EVALUATION – TARGETED TRENCHING (G2293)

Prepared for Black & Veatch Limited, March 2013

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## 1.0 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by Black & Veatch Limited to provide a cost and project design for completing a programme of archaeological evaluation at the location of the proposed Dolbenmaen Water Treatment Works (WTW); centred on NGR **SH49634290**. The archaeological evaluation will comprise 14No 40m<sup>2</sup> trenches at targeted locations.

According to *Black and Veatch Ltd* drawing **174357-30-9000**, the proposed WTW site is located across three irregular shaped enclosed fields and will comprise the main WTW area within the central field (39,110m<sup>2</sup>) and two ancillary zones: Zone A (6,890m<sup>2</sup>) and Zone B (6,055m<sup>2</sup>), located to the west and east, respectively, of the proposed WTW. Based on current information, these two zones will function as compounds/ancillary areas during the construction of the WTW.

This design forms part of a larger archaeological programme of works: an archaeological assessment has already been completed, followed by a magnetometer geophysical survey by GAT and the results of the current stage will inform further archaeological evaluation and/or mitigation strategies.

A detailed brief has not been prepared for this stage by Gwynedd Archaeological Planning Service (GAPS). However GAPS, in response to Gwynedd Archaeological Trust Reports **1092** and **1098** (an archaeological assessment report and ground investigation watching brief report respectively), produced for the proposed Dolbenmaen Water Treatment Works, has stated that:

The potential for discovering previously unidentified archaeological remains in this area is also high. The river valley location and the nature of nearby archaeological sites show that there is a significant risk that later prehistoric activity will be encountered within the development area, particularly late prehistoric settlement evidence, burnt mounds and other later prehistoric features that have close associations with water courses. A geophysical survey (magnetometer survey) would be an appropriate first phase of evaluation to help inform a programme of targeted evaluation trenching. In accordance with Planning Policy Wales 2012 and Welsh Office Circular 60/96 the **evaluation work must be undertaken in advance of granting any planning consent** in order that an appropriate mitigation strategy can be conditioned to any consent that might subsequently be granted (email correspondence dated 14/02/2013)

The geophysical survey has been completed (*Stratascan* forthcoming) and the preliminary results have been used to locate the trenches.

*The current design conforms to the guidelines specified in the IFA Standard and Guidance for Archaeological Evaluation (Institute for Archaeologists, 1994, rev. 2001 & 2008.*

**Please Note: the project design and cost estimates are only valid for six months after the date of submission. After this period Gwynedd Archaeological Trust should be contacted for a revision.**

## **2.0 BACKGROUND**

GAT has completed an archaeological assessment report and ground investigation watching brief report in advance of the proposed works (Reports **1092** and **1098** respectively), along with a magnetometer geophysical survey of the area, completed by *Stratascan* for GAT (report forthcoming). The assessment identified characterised a study area within a rich archaeological landscape with thirty known sites of archaeological significance within a 500m radial zone. A large rock outcrop was identified in the Zone B field (cf. Figure 01), which appears from a combination of place name evidence and historic literature to have been used as an early medieval assembly mound. The remainder of the area was characterised by improved pasture separated by cloddiau (field boundaries) of post-medieval date. The archaeological and historical background is reproduced from report **1092** below. The ground investigation watching brief results and the magnetometer geophysical survey results are discussed below (paras. [2.4](#) and [2.5](#) respectively)

### **2.1 Prehistoric and Roman sites**

The evidence for prehistoric occupation within the vicinity of the proposed development area is slight. The nearest confirmed prehistoric sites are the hut groups (PRN 145 SH 4994 4345) and (PRN 170 SH 5019 4276) 450m NE and 450m SE respectively. The Scheduled Ancient Monument of Craig-y-Tyddyn Camp (CN 046; SH 50594271) lies approximately 715m to the south east of the assessment area. It is possible; therefore that evidence of prehistoric activity may survive below ground in the vicinity of the proposed development, occupying as it does the lower ground between these two hut groups, the later agricultural improvement of this land may well have truncated or obscured the evidence for earlier occupation of the landscape. The line of the proposed Roman Road from Segontium - Pen Llystyn - Tomen y Mur may lie under the present A487 (T) although there is no direct evidence of occupation from the Roman period within the vicinity of the proposed development area. The nearest confirmed Roman site is Pen Llystyn fort (PRN 144 SH 4809 4492), approximately 2.3 km to the NW. The sparseness of the evidence may reflect a lack of investigation rather than a lack of settlement activity relating to these periods.

### **2.2 Medieval**

Scheduled Ancient Monument (CN 063; SH50654307) castle earthwork which marks the site of the medieval llys of Dolbenmaen is approximately 830m to the west of the proposed development area (PRN 161 SH 50654037). The western boundary of the land which made up the llys complex comes within 350m of the eastern boundary of the proposed development (GAT Report 790: 09). The geological outcrop and associated earth mound known as Pen Bryn yr Orsedd which is situated in Field 02 may have served as an assembly mound for the retinue of a peripatetic early medieval court. Pen Bryn yr Orsedd translates as 'The Seat on top of the Hill', and assembly mounds which have similar characteristics are known from England, Scotland, Ireland and the Isle of Man (GAT Report 790: 09). An assembly mound near Llangollen is currently subject to a programme of archaeological work as part of 'Project Eliseg'. In the case of 'Project Eliseg', the mound is topped by the remains

of a stone cross, and academic work on the social context for the mound and the cross has recently been published (GAT Report 790: 09). The place name 'Dol Pen Maen' is mentioned in the medieval story of 'Math and Mathonwy' as a point where hostages were exchanged between two high – status families (GAT Report 790: 09). Dolbenmaen / Dol Pen Maen translates as 'The Meadow with the Rock at the Head', and the rock in this instance may be Pen Bryn yr Orsedd.

### *2.3 Post-Medieval and Modern*

An Exchequer survey dated 1589-90 shows that the boundary of the township of Dolbenmaen was almost exactly the same as the parish as given of the Tithe Map of 1838 (GAT Report 790: 09). The assessment area is recorded by the 17th century as being part of a farm known as Tyddyn Rhwng y Ddwryd. In 1637 the lands were demised to John Griffith of Cefn Amlwch by his father in law Sir Richard Trevor, by which time, or shortly after, the lands were purchased from the Crown. John Griffith's heir and brother sold the township in 1719 to Williams Brynker, son of James Brynker of Brynker. A rental of 1721 includes the farm of Plas Dolbenmaen, which is the earliest found reference of the farm under this name. William ran into financial problems, and the lands with the exception of Dolwgan, were sold to William Owen of Clenennau and Brogyntyn in 1736, and so passed by marriage to the Ormesby (later Ormesby-Gore) family (GAT Report 790: 09).

Between the production of the Tithe Map in 1839 (GAT Report 790: Figure 03) and the 3rd Edition of the Ordnance Survey Map in 1915 (GAT Report 790: Figure 06), the field system within the assessment area saw several changes through the planting and grubbing up of field boundaries. The name Pen Bryn yr Orsedd in reference to the rock outcrop is not recorded on the 1st Edition O.S. map but does appear on the 2nd Edition.

### *2.4 Environmental Remains and Soil Morphology: Ground Investigation Stage*

The topsoil within the assessment area is well drained, with some limited areas of waterlogging. GAT attended a Ground Investigation (GI) stage for Black and Veatch Ltd on the 10th and 11th of December 2012 and monitored the excavation of 12 trial pits (GAT Report **1098**). All 12 trial pits revealed a clay silt topsoil, more humic in character in TPD02, TPD04, TPD08, TPD11 and TPD12 and varying in depth between 0.10m (TPD03 and TPD06) and 0.30m (TPD09). TPD02, cut into the southern side of Pen Bryn yr Orsedd revealed that this side of the mound had not been modified and was entirely natural, composed of a grey silt over a very clean orange brown sandy clay. TPD01, TPD05, TPD07 and TPD11 revealed river gravel below their respective sub-soils of sandy clay (TPD01); orange-brown till derived material (TPD05); grey-brown through red-orange clay (TPD07) and orange-brown clay-silt (TPD11). TPD03, TPD04, TPD05, TPD08, TPD09 and TPD10 came down immediately below the topsoil onto a till or till derived material. Individual unabraded sherds of Post-Medieval pottery were recovered from the topsoil of TPD06 and TPD09.

### *2.5 Archaeological Evaluation: Geophysical Survey*

GAT commissioned *Stratascan* to undertake a geophysical survey (magnetometer) of an 8.4ha area incorporating the main WTW area within the central field and the two ancillary zones. The survey was completed in late February 2013 and the final results are

forthcoming. The preliminary results have been received by GAT and area reproduced as Figure 1. These preliminary results will be used for locating the 14No evaluation trenches and are discussed in para. [3.0](#) below.

The preliminary results and the geophysical evidence as a whole is insufficient to provide a definite interpretation on their own and in all cases it is possible that the anomalies are caused by more recent or non-archaeological factors. **Further physical information is recommended to allow definite interpretation via the current trial trenching stage.**

### **3.0 METHOD STATEMENT**

#### **3.1 Trial Trenching**

**Before trial trenching commences an agreed programme of excavation timing, siting, duration, surface re-instatement and health and safety protection measures will be agreed with the Client/Principal Contractor (Black & Veatch Limited).**

**All trench locations are based on information received from the preliminary *Stratascan* results and will target specific anomalies. For the location of individual trenches see [Figure 1](#).**

- Trench 01 – 20.0m (l) x 2.0m (w): investigating a positive anomaly, interpreted as a probable cut feature of archaeological origin; **NGR SH49844303**
- Trench 02 – 20.0m (l) x 2.0m (w): investigating three anomalies: a positive anomaly, interpreted as a probable cut feature of archaeological origin, a negative anomaly, interpreted as a probable bank or earthwork of archaeological origin and a weak positive anomaly, interpreted as a probable cut feature of archaeological origin; **NGR SH49844304**
- Trench 03 – 20.0m (l) x 2.0m (w): investigating two positive anomalies, interpreted as a probable cut features of archaeological origin; **NGR SH49894304**
- Trench 04 – 20.0m (l) x 2.0m (w): investigating “possible archaeology”: an area of pit-like anomalies of a possible archaeological origin; **NGR SH49954300**
- Trench 05 – 20.0m (l) x 2.0m (w): investigating a positive anomaly, interpreted as a probable cut feature of archaeological origin and a linear anomaly probably related to former field boundary; **NGR SH47194469**
- Trench 06 – 20.0m (l) x 2.0m (w): investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin; **NGR SH49954297**
- Trench 07 - 20.0m (l) x 2.0m (w): investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin and a negative anomaly/weak negative anomaly – possible bank or earthwork of archaeological origin; **NGR SH50064302**
- Trench 08 – 20.0m (l) x 2.0m (w): investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin; **NGR SH50044305**
- Trench 09 – 20.0m (l) x 2.0m (w): investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin; **NGR SH50014304**
- Trench 10 – 20.0m (l) x 2.0m (w): investigating a curvilinear positive anomaly/weak positive anomaly - possible cut feature of archaeological origin and closely spaced parallel linear anomalies – probably related to agricultural activity such as ploughing; **NGR SH49984304**
- Trench 11 – 20.0m (l) x 2.0m (w): investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin and a linear anomaly probably related to former field boundary; **NGR SH50034308**

- Trench 12 – 20.0m (l) x 2.0m (w): investigating a positive anomaly, interpreted as a probable cut feature of archaeological origin; **NGR SH49914306**
- Trench 13 – 20.0m (l) x 2.0m (w): investigating a positive anomaly/weak positive anomaly - possible cut feature of archaeological origin and a linear anomaly probably related to former field boundary; **NGR SH49914308**
- Trench 14 – 20.0m (l) x 2.0m (w): investigating three anomalies: a positive anomaly, interpreted as a probable cut feature of archaeological origin, a negative anomaly, interpreted as a probable bank or earthwork of archaeological origin and a weak positive anomaly, interpreted as a probable cut feature of archaeological origin; **NGR SH49834307**

Trenches 12, 13 and 14 will be located close the suspected assembly mound and, in particular, will be used to evaluate the potential for medieval activity.

### 3.1.1 Specific Methodology

- If significant archaeological deposits are identified they will be manually cleaned and examined to determine extent, function, date and relationship to adjacent features.
- The site will be planned to scale and trenches located via digital survey.
- A written record of the trench content and all identified features will be completed via GAT pro-formas
- Any subsurface remains will be recorded photographically, with detailed notations and a measured survey. The photographic record will be maintained, using a digital SLR camera set to maximum resolution. Photographic identification boards should also be used.
- All trenches will be opened with a tracked excavator fitted with a toothless bucket
- Any identified features will be temporarily cordoned with road pins/orange mesh fencing, for protection and to allow opportunity for Client/GAPS to attend/inspect.
- If any trenches are to remain open overnight and/or weekends; provision for fencing off using road pins/orange mesh will be sought

### 3.1.2 Evaluation Aims

The evaluation will aim to address the following:

- Verify the efficacy of the geophysical survey for identifying archaeological remains within the site
- Establish the extent to which archaeological remains survive at the site
- Establish the date and nature of archaeological remains at the site and assess their implications for understanding the historical development of the area
- Establish the depth of archaeological remains and the quality, value and level of preservation of any deposits
- Assess the level of risk any surviving remains may pose to development.

NB. All plant/welfare to be supplied by client. The client will be acting as principal contractor.

NB. No specific reinstatement instructions have been supplied by client.

NB. If significant archaeological activity is identified within any trench (e.g. extensive and/or complex features/artifacts/deposits), cf. [para. 4.0](#). Please note that based on the initial trench

results, further evaluation may be required to understand the provenance of recorded features. This may include extending existing trenches and/or trenching surrounding areas.

### *3.2 Report*

Following completion of the stages outlined above, a report will be produced that will include:

1. Introduction
2. Project Design
3. Methods and techniques
4. Archaeological Background
5. Results
6. Proposals for further mitigation
7. Summary and conclusions
8. List of sources consulted.

The report will include the following:

- a) a copy of the agreed specification
- b) a site location plan based on current OS mapping
- c) a trench location plan indicating trench positions relative to the site and fixed manmade or topographic features
- d) all identified features plotted on an appropriately scaled plan of the development site
- e) appropriately scaled trench plans and sections showing identified features and significant finds
- f) full dimensional and descriptive detail of all identified features

Provision will also be made for all archaeological work on site, including the post-excavation analysis, conservation of artefacts, any supplementary scientific analysis and for the subsequent publication of results in an appropriate journal.

The project will be monitored by Gwynedd Archaeological Planning Services

### *3.3 Archive*

A full archive including plans, photographs, written material and any other material resulting from the project will be prepared. All plans, photographs and descriptions will be labelled and cross-referenced, and lodged in an appropriate place (to be decided in consultation with the regional Historic Environment Record) within six months of the completion of the project.

- A paper report plus digital report and archive on optical disc will be provided to GAPS;
- A paper report will be provided to Historic Environment Record, Gwynedd Archaeological Trust (1 set);
- A paper report plus digital report and archive on optical disc will be provided to Royal Commission on Ancient and Historic Monuments, Wales (1 set).
- A paper report and/or digital report will be provided to the client (1 set)



## 4.0 FURTHER ARCHAEOLOGICAL WORKS

- **The identification of significant archaeological features during the evaluation stage may necessitate further archaeological works. This will require the submission of new cost estimates to the contractor and may be subject to a separate project design, to be agreed by the GAPS prior to implementation.**
- **This design does not include a methodology or cost for examination of, conservation of, or archiving of finds discovered during the evaluation, nor of any radiocarbon dates required, nor of examination of palaeoenvironmental samples associated with any peat deposits. The need for these will be identified in the post-fieldwork programme (if required), and a new design will be issued for approval by GAPS.**

## 5.0 ENVIRONMENTAL SAMPLES

If necessary, relevant archaeological deposits will be sampled by taking bulk samples (a minimum of 10.0 litres and maximum of 30.0 litres) for flotation of charred plant remains. Bulk samples will be taken from waterlogged deposits for macroscopic plant remains. Other bulk samples, for example from middens, may be taken for small animal bones and small artefacts.

**Specific palaeoenvironmental strategies for any peat deposits will be discussed with the Client and GAPS if encountered in the archaeological evaluation trenches and input from a specialist will be sought during the fieldwork on an appropriate sampling strategy.**

## 6.0 HUMAN REMAINS

Any finds of human remains will be left *in-situ*, covered and protected, and both the coroner and the GAPS Archaeologist informed. If removal is necessary it will take place under appropriate regulations and with due regard for health and safety issues. In order to excavate human remains, a licence is required under Section 25 of the Burials Act 1857 for the removal of any body or remains of any body from any place of burial. This will be applied for should human remains need to be investigated or moved.

## 7.0 SMALL FINDS

The vast majority of finds recovered from archaeological excavations comprise pottery fragments, bone, environmental and charcoal samples, and non-valuable metal items such as nails. Often many of these finds become unstable (i.e. they begin to disintegrate) when removed from the ground. All finds are the property of the landowner, however, it is Trust policy to recommend that all finds are donated to an appropriate museum where they can receive specialist treatment and study. Access to finds must be granted to the Trust for a reasonable period to allow for analysis and for study and publication as necessary. All finds would be treated according to advice provided within *First Aid for Finds* (Rescue 1999). Trust staff will undertake initial identification, but any additional advice would be sought from a wide range of consultants used by the Trust, including National Museums and Galleries of Wales at Cardiff, ARCUS at Sheffield and BAE at Birmingham.

### 7.1 Unexpected Discoveries: Treasure Trove

Treasure Trove law has been amended by the Treasure Act 1996. The following are Treasure under the Act:

- *Objects other than coins* any object other than a coin provided that it contains at least 10% gold or silver and is at least 300 years old when found.
- *Coins* all coins from the same find provided they are at least 300 years old when found (if the coins contain less than 10% gold or silver there must be at least 10. Any object or coin is part of the same find as another object or coin, if it is found in the same place as, or had previously been left together with, the other object. Finds may have become scattered since they were originally deposited in the ground. Single coin finds of gold or silver are not classed as treasure under the 1996 Treasure Act.
- *Associated objects* any object whatever it is made of, that is found in the same place as, or that had previously been left together with, another object that is treasure.
- *Objects that would have been treasure trove* any object that would previously have been treasure trove, but does not fall within the specific categories given above. These objects have to be made substantially of gold or silver, they have to be buried with the intention of recovery and their owner or his heirs cannot be traced.

The following types of finds are not treasure:

- Objects whose owners can be traced.
- Unworked natural objects, including human and animal remains, even if they are found in association with treasure.
- Objects from the foreshore which are not wreck.

All finds of treasure must be reported to the coroner for the district within fourteen days of discovery or identification of the items. Items declared Treasure Trove become the property of the Crown, on whose behalf the National Museums and Galleries of Wales acts as advisor on technical matters, and may be the recipient body for the objects.

The National Museums and Galleries of Wales will decide whether they or any other museum may wish to acquire the object. If no museum wishes to acquire the object, then the Secretary of State will be able to disclaim it. When this happens, the coroner will notify the occupier and landowner that he intends to return the object to the finder after 28 days unless he receives no objection. If the coroner receives an objection, the find will be retained until the dispute has been settled.

## **8.0 STAFF & TIMETABLE**

### **8.1 Staff**

The project will be supervised by John Roberts, Principal Archaeologist at GAT: Contracts. The work will be carried out by fully trained Project Archaeologists who are experienced in conducting project work and working with contractors and earth moving machinery. (Full CV's are available upon request).

### **8.2 Timetable**

The current GAT programme is:

- Fieldwork: 13/03/13 to 22/03/13
- Interim report (basic summary of results): 28/03/13
- Final report (draft) for client and GAPS review: April 2013.

*Please note these deadlines are subject to change based on results from the fieldwork stage.*

## **9.0 HEALTH AND SAFETY**

The Trust subscribes to the SCAUM (Standing Conference of Archaeological Unit Managers) Health and Safety Policy as defined in **Health and Safety in Field Archaeology** (1999).

GAT site agents to adhere to site specific RAMS and Black & Veatch Health and Safety systems.

## **10.0 INSURANCE**

*Liability Insurance - Aviva Policy 24765101CHC/00045*

- Employers' Liability: Limit of Indemnity £10m in any one occurrence
- Public Liability: Limit of Indemnity £5m in any one occurrence
- Hire-in Plant Insurance: £50,000.00 any one item;  
£250,000.00 any one claim

The current period expires 21/06/13

*Professional Indemnity Insurance – RSA Insurance Plc P8531NAECE/1028*

- Limit of Indemnity £5,000,000 any one claim

The current period expires 22/07/13

## **11.0 BIBLIOGRAPHY**

*Black & Veatch Ltd drawing number **174357-30-9000***

Institute for Archaeologists, 1994, rev. 2001 & 2008 *Standard and Guidance for Archaeological Evaluation*

Smith, S. 2012. Gwynedd Archaeological Report **1092** (DRAFT): *GARNDOLBENMAEN WATER TREATMENT WORKS - ARCHAEOLOGICAL ASSESSMENT (G2293)*

Smith, S. 2012. Gwynedd Archaeological Report **1098** (DRAFT): *GARNDOLBENMAEN WATER TREATMENT WORKS - ARCHAEOLOGICAL WATCHING BRIEF: GROUND INVESTIGATION WORKS (G2293)*

*Stratascan drawings P1/A and P1/B.*

## APPENDIX II: CONTEXT REGISTER

Context #	Area	Description
100	TR1	Topsoil: Dark greyish brown sandy silt, 0.15m deep
101	TR1	Subsoil: brownish grey sandy silt, 0.3m deep
102	TR1	Natural: Reddish brown sandy clay
103	TR1	Ring Ditch
104	TR1	Stone fill of ditch [103]
105	TR1	Greyish brown clayey silt F/O [103]
106	TR1	Light whitish grey sandy clay F/O [103]
107	TR1	Greyish brown clayey silt F/O [103]
200	TR2	Topsoil: Dark greyish brown sandy silt, 0.2 - 0.45m deep
201	TR2	Subsoil: Brownish grey sandy silt, 0.2 - 0.25m deep
202	TR2	Natural: Reddish brown sandy clay
203	TR2	Circular pit
204	TR2	Greyish brown clayey silt F/O [203]
300	TR3	Topsoil: Dark greyish brown sandy silt, 0.35m deep
301	TR3	Subsoil: Greyish brown sandy silt, 0.2m deep
302	TR3	Natural: Dark yellowish brown sandy clay
400	TR4	Topsoil: Dark greyish brown sandy silt, 0.3m deep
401	TR4	Natural: Mottled, grey, brown, reddish brown and yellowish brown sandy clay
500	TR5	Topsoil: Dark greyish brown sandy silt, 0.3m deep
501	TR5	Natural: Mottled sandy gravel and light yellowish brown sandy clay
502	TR5	Linear Ditch
503	TR5	Greyish brown stony silt F/O [502]
504	TR5	Linear Ditch
505	TR5	Greyish brown stony silt F/O [504]
600	TR6	Topsoil: Dark greyish brown sandy silt, 0.4m deep
601	TR6	Subsoil: Greyish brown sandy silt, 0.25m deep
602	TR6	Natural: Sandy gravel at ENE end, yellowish brown sandy clay at WSW
603	TR6	Possible Platform
604	TR6	Greyish brown clayey silt F/O [603]
700	TR7	Topsoil: Dark greyish brown sandy silt, 0.3m deep
701	TR7	Subsoil: Greyish brown sandy silt, 0.25m deep
702	TR7	Natural: Yellowish brown sandy clay
703	TR7	Animal Burrow
800	TR8	Topsoil: Dark greyish brown sandy silt, 0.2m deep
801	TR8	Natural: Sandy gravel
900	TR9	Topsoil: Dark greyish brown sandy silt, 0.2 - 0.4m deep
901	TR9	Natural: Mottled gravelly sandy clay
1000	TR10	Topsoil: Dark greyish brown sandy silt, 0.6m deep
1001	TR10	Natural: Sandy gravel at NNW end, rest yellowish brown sandy clay
1002	TR10	Possible Platform
1003	TR10	Greyish brown clayey silt and gravel F/O [1002]
1004	TR10	Greyish brown clayey silt and gravel F/O [1002]
1100	TR11	Topsoil: Dark greyish brown sandy silt, 0.2m deep
1101	TR11	Natural: Sandy gravel



1102	TR11	Linear Ditch
1103	TR11	Greyish brown stony silt F/O [1102]
1104	TR11	Linear Ditch
1105	TR11	Greyish brown stony silt F/O [1104]
1106	TR11	Reddish brown gravelly silt F/O [1104]
1200	TR12	Topsoil: Dark greyish brown sandy silt, 0.3m deep
1201	TR12	Subsoil: Greyish brown sandy silt, 0.2m deep
1202	TR12	Natural: Bedrock
1300	TR13	Topsoil: Dark greyish brown sandy silt, 0.3m deep
1301	TR13	Natural: Bedrock
1400	TR14	Topsoil: Dark greyish brown sandy silt, 0.3m deep
1401	TR14	Natural: Reddish brown sandy clay and gravel
1402	TR14	Linear Ditch
1403	TR14	Greyish brown clayey silt F/O [1402]

### APPENDIX III: PHOTOGRAPHIC REGISTER

Frame	Site Sub-division	Description	View from
1	TR1	Pre-ex TR1	NNW
2	TR1	Pre-ex TR1	NNW
3	TR1	Possible ditch [103]	NE
4	TR1	Stone concentration within [103]	NE
5	TR1	Post-ex of stones (104)	NE
6	TR1	Post-ex of stones (104)	NE
7	TR1	Post-ex of ditch [103]	SE
8	TR1	Post-ex of ditch [103]	SE
9	TR1	Post-ex of ditch [103]	NE
10	TR2	Pre-ex TR2	W
11	TR2	Pre-ex TR2	E
12	TR2	Pre-ex possible pit [203]	S
13	TR2	Bioturbation	S
14	TR2	Section of [203]	W
15	TR2	Stone concentration within topsoil (200)	S
16	TR2	Stone concentration within topsoil (200)	S
17	TR3	General shot of empty TR3	W
18	TR13	General shot of empty TR13	SW
19	TR13	General shot of empty TR13	NE
20	TR12	General shot of empty TR12	NW
21	TR12	General shot of empty TR12	SE
22	TR3	General shot of empty TR3	E
23	TR4	General shot of empty TR4	N
24	TR4	General shot of empty TR4	S
25	TR1	Ditch [103]	NE

26	TR1	Ditch [103]	NE
27	TR1	Ditch [103]	NE
28	TR1	Ditch [103]	NNW
29	TR1	Ditch [103]	NE
30	TR1	Ditch [103]	SE
31	TR1	Ditch [103]	N
32	TR1	Ditch [103]	NE
33	-	Backfilled trenches	-
34	-	Fenced off trenches	-
35	-	Fenced off trenches	-
36	-	Fenced off trenches	-
37	TR5	Ditch [502]	E
38	TR5	Ditch [502]	E
39	TR5	Ditch [502]	E
40	TR9	General shot of empty TR9	WSW
41	TR9	General shot of empty TR9	ENE
42	TR8	General shot of empty TR8	NNW
43	TR8	General shot of empty TR8	SSE
44	TR2	Bioturbation	S
45	TR2	Bioturbation	W
46	TR14	Ditch [1402]	S
47	TR14	General Trench Shot	W
48	TR5	Ditch [504]	ENE
49	TR5	Ditch [504]	ENE
50	TR5	Ditches [504] and [502]	ENE
51	TR5	Ditches [504] and [502]	SSE
52	TR6	Possible Platform [603]	NNE
53	TR6	Possible Platform [603]	ENE
54	TR10	Possible Platform [1002]	NE
55	TR10	Possible Platform [1002]	ESE
56	TR10	Possible Platform [1002]	NNE
57	TR11	Ditch [1102]	N
58	TR11	Ditch [1102]	N
59	TR11	Ditch [1104]	N
60	TR11	Ditch [1104]	N
61	TR11	Ditches [1102] and [1104]	W
62	TR11	Ditches [1102] and [1104]	NW
63	TR11	Ditches [1102] and [1104]	NE
64	TR7	Animal Burrow (703)	SE
65	TR7	Animal Burrow (703)	SE
66	TR7	Animal Burrow (703)	E
67	TR14	Trench extension, general shot	W
68	TR14	Ditch [1402]	N
69	TR14	Ditch [1402]	N
70	TR1	Ditch [103]	SE
71	TR1	Ditch [103]	SE

72	TR1	Ditch [103]	SE
73	TR10	Possible Platform [1002]	SE
74	TR10	Possible Platform [1002]	NE
75	TR10	Possible Platform [1002]	SW
76	TR10	Possible Platform [1002]	NE
77	TR10	Possible Platform [1002]	SE

## APPENDIX IV: DRAWING REGISTER

Drawing No	Sheet No	Location	Description	Scale
1	1	TR2	Stone concentration within topsoil (200)	1:10
2	1	TR2	WFS pit [203]	1:10
3	1	TR1	Section Trench 1	1:10
4	1	TR1	Partial section of Ditch [103]	1:10
5	1	TR7	Section of animal burrow (703)	1:10
6	2	TR5	Section of ditch [502]	1:10
7	2	TR5	Section of ditch [504]	1:10
8	2	TR6	Section of possible platform [603]	1:10
9	2	TR10	Section of possible platform [1002]	1:10
10	2	TR11	Section of ditch [1102]	1:10
11	2	TR11	Section of ditch [1104]	1:10
12	3	TR14	Section of ditch [1402]	1:10
13	3	TR1	Section of ditch [103]	1:10

## APPENDIX V: SAMPLE REGISTER

Sample No	Context No	Sample Size
01	107	<5%





**Fig. 1: Site Location**





Fig. 2: Trench Locations and Stratascan Results  
 (Reproduced from Figure B, Stratascan Job No 3297)



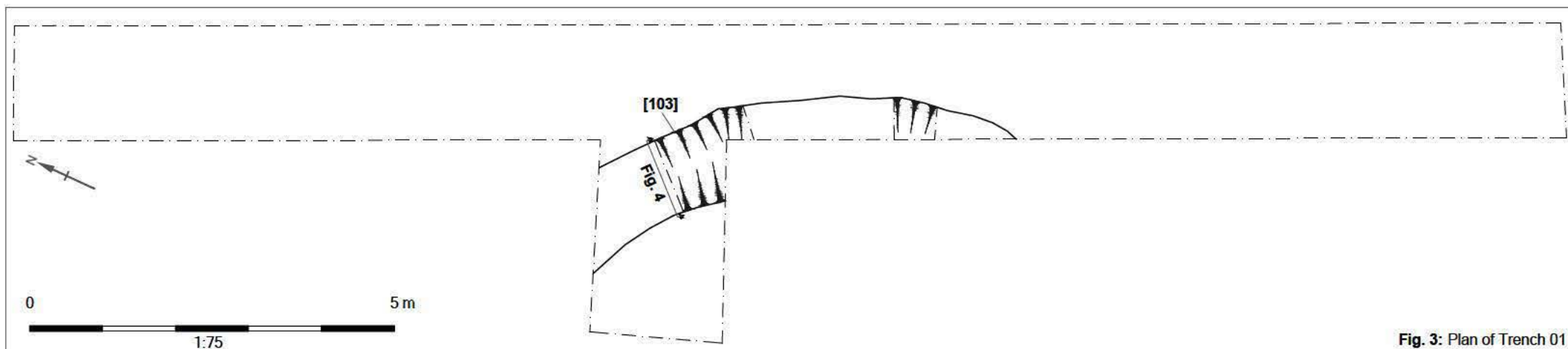


Fig. 3: Plan of Trench 01

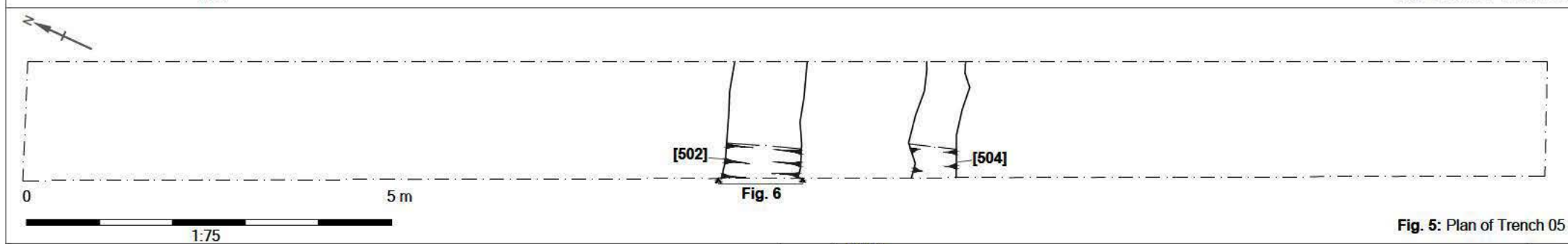


Fig. 5: Plan of Trench 05

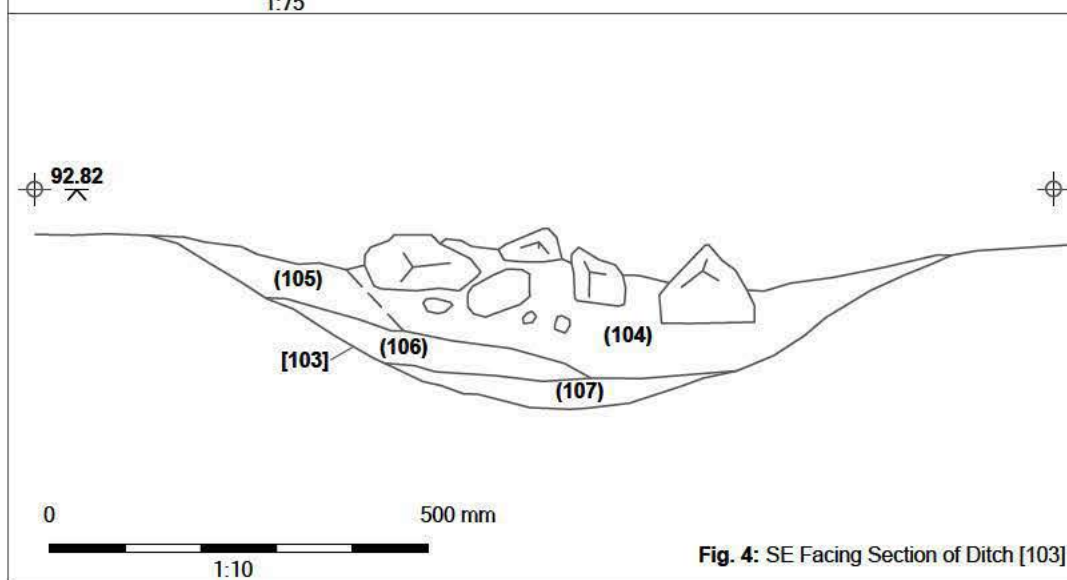


Fig. 4: SE Facing Section of Ditch [103]

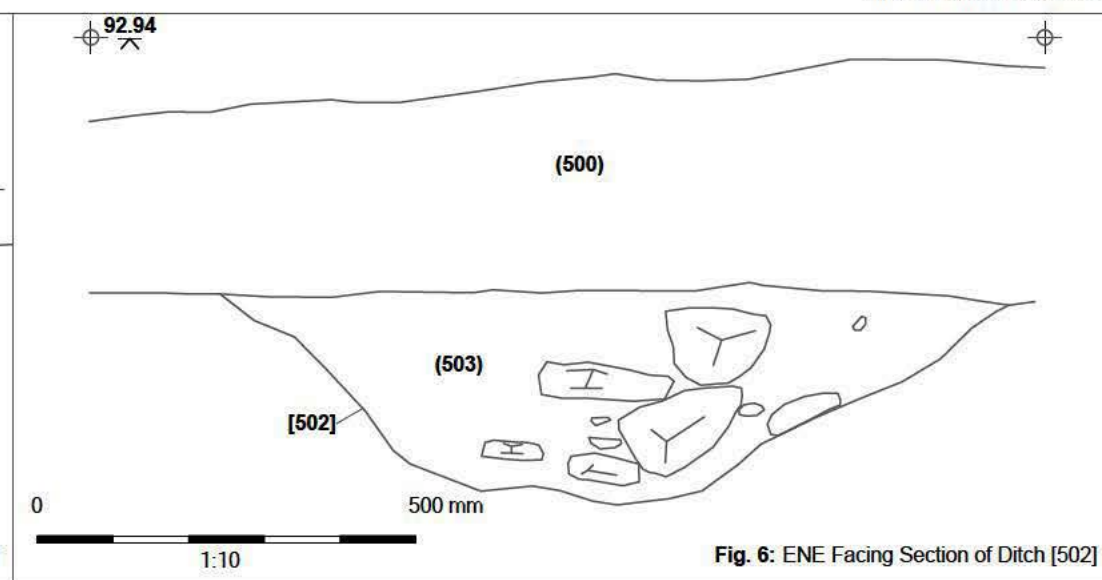


Fig. 6: ENE Facing Section of Ditch [502]

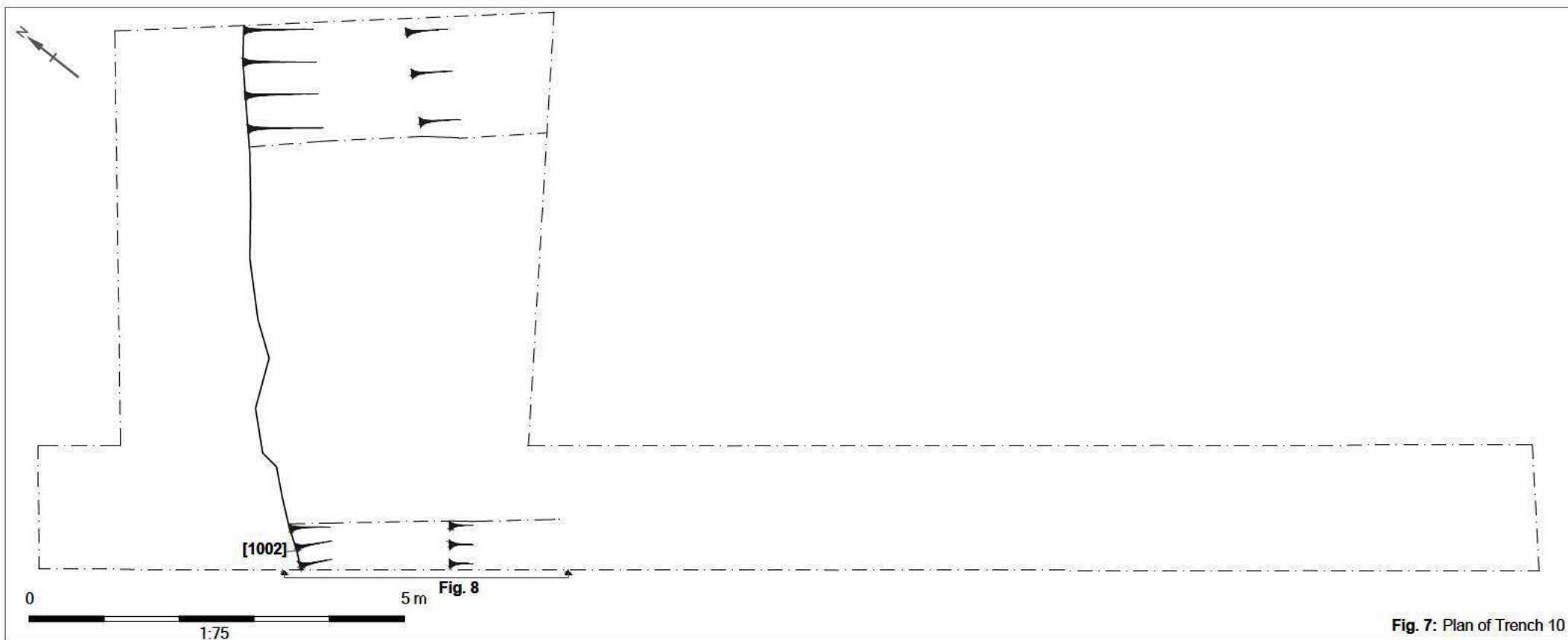


Fig. 7: Plan of Trench 10

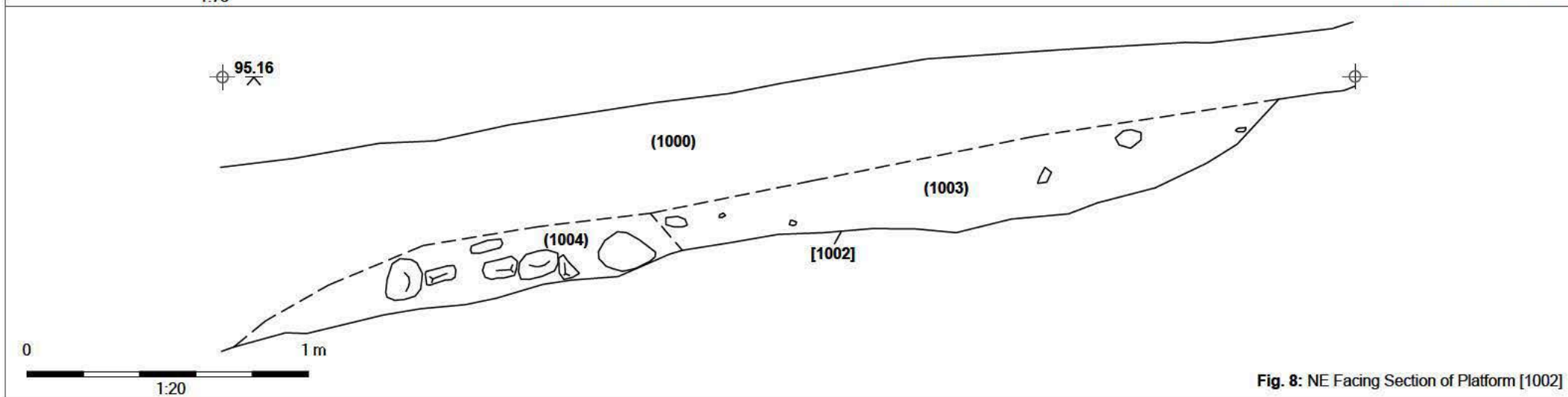


Fig. 8: NE Facing Section of Platform [1002]

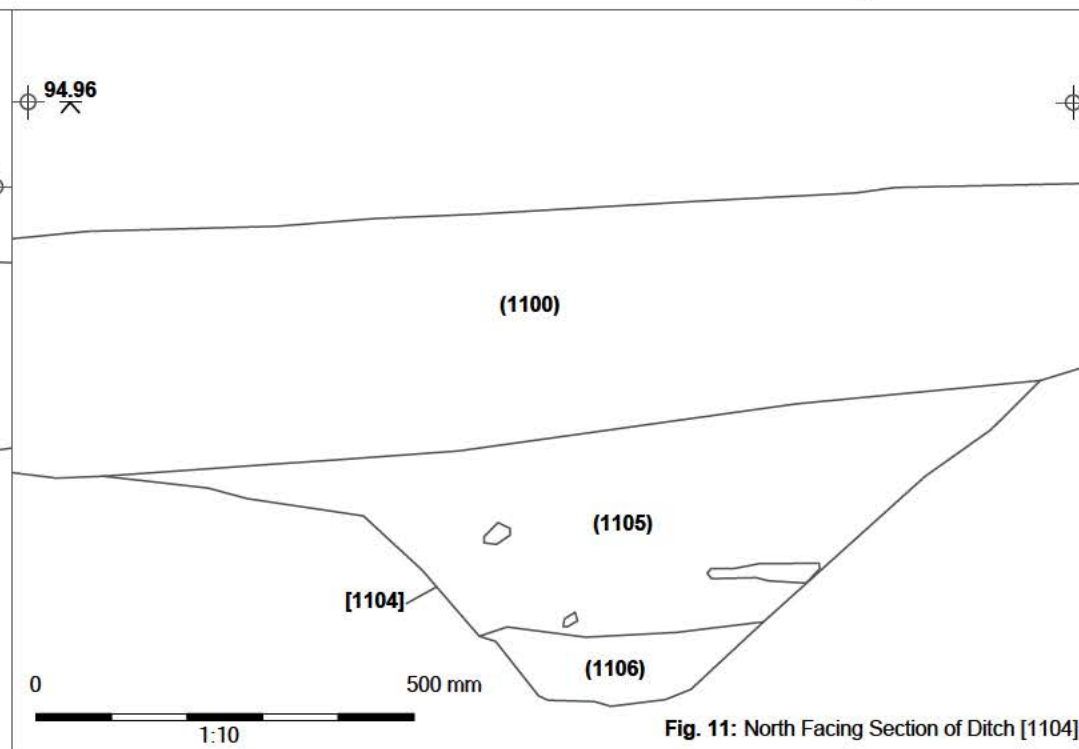
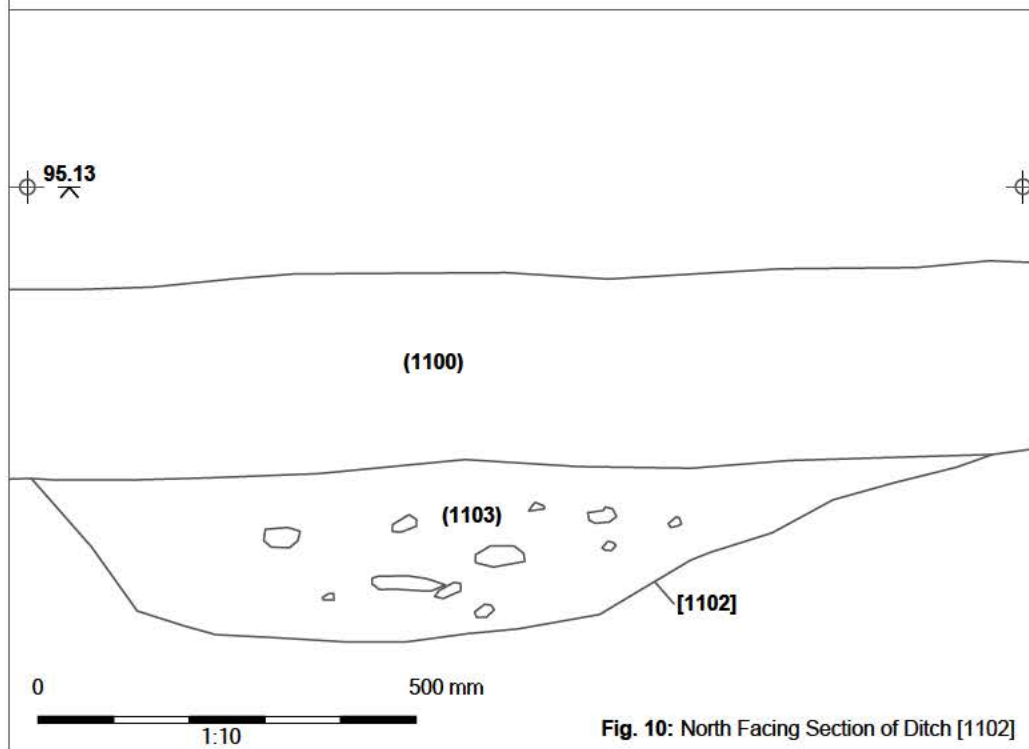
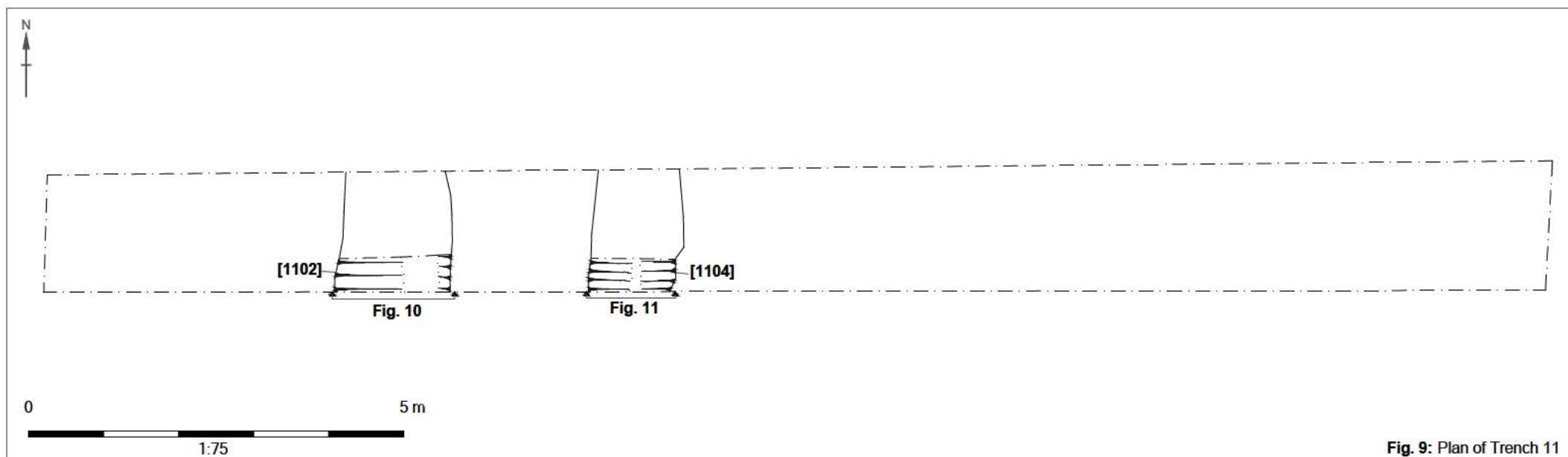






Plate 01: Ditch [103], View From SW



Plate 02: Possible Pit [203], View From West



Plate 03: Ditches [502] and [504], View From SSE





Plate 04: Possible Platform [603], View From NNE



Plate 06: Ditches [112] and [1104], View From NE



Plate 05: Platform [1002], View From ESE



Plate 07: Ditch [1402], View From North





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