

# Marian Mawr, Dolgellau

## Archaeological Assessment





# Marian Mawr, Dolgellau

## Archaeological Assessment

Prosiect Rhif / Project No. G2457

Adroddiad Rhif / Report No. 1293

Prepared for: Black & Veatch Ltd

Written by: Robert Evans

Illustrations by: Robert Evans and Neil McGuinness

Cyhoeddwyd gan Ymddiriedolaeth Achaeolegol Gwynedd  
Ymddiriedolaeth Archaeolegol Gwynedd  
Craig Beuno, Ffordd y Garth,  
Bangor, Gwynedd, LL57 2RT




Published by Gwynedd Archaeological Trust  
Gwynedd Archaeological Trust  
Craig Beuno, Garth Road,  
Bangor, Gwynedd, LL57 2RT

Cadeiryddes/Chair - Yr Athro/Professor Nancy Edwards, B.A., PhD, F.S.A.  
Prif Archaeolegydd/Chief Archaeologist - Andrew Davidson, B.A., M.I.F.A.

Mae Ymddiriedolaeth Archaeolegol Gwynedd yn Gwmni Cyfyngedig (Ref Cof. 1180515) ac yn Elusen (Rhif Cof. 508849)  
Gwynedd Archaeological Trust is both a Limited Company (Reg No. 1180515) and a Charity (reg No. 508849)





Approvals Table				
	Role	Printed Name	Signature	Date
Originated by	Document Author	ROBERT EVANS		11/02/16
Reviewed by	Document Reviewer	JOHN ROBERTS		11/02/16
Approved by	Principal Archaeologist	JOHN ROBERTS		11/02/16

Revision History			
Rev No.	Summary of Changes	Ref Section	Purpose of Issue



# CONTENTS

NON-technical SUMMARY.....	3
1 INTRODUCTION.....	5
2 METHODOLOGY.....	9
2.1 Assessment (Desktop Study).....	9
2.2 Walkover Survey.....	10
3 RESULTS.....	11
3.1 Historic background.....	11
3.1.1 Prehistoric Background.....	11
3.1.2 Roman Background.....	14
3.1.3 Medieval Background.....	19
3.1.4 Post-Medieval Background.....	20
3.2 Site Visit and Walkover (Figures 02-03).....	22
3.2.1 Section A to B (Plates 01-04):.....	22
3.2.2 Section B to C (Plates 05-13):.....	22
3.2.3 Section C to D (Plates 14-15):.....	23
3.2.4 Section E to F (Plate 16):.....	23
3.2.5 Section G to H (Plate 20):.....	24
3.2.6 Section H to I (Plates 17-19):.....	24
3.2.7 Section J to K (Plates 22-23):.....	24
3.2.8 Section L to M:.....	25
4 SUMMARY OF ARCHAEOLOGICAL POTENTIAL.....	26
4.1 Location and Geological Summary.....	26
4.2 Statutory and Non Statutory Designations.....	26
4.3 Environmental Remains and Soil Morphology.....	28
4.4 Artefactual Potential.....	29
4.5 Aerial Reconnaissance.....	30
4.6 Gazetteer of Features.....	31
Feature 01 (PRN 61326).....	32
Feature 02 (PRN 61327).....	33
Feature 03 (PRN 61328).....	34
Feature 04 (PRN 61329).....	35
Feature 05 (PRN 61330).....	36
Feature 06 (PRN 61331).....	37
Feature 07 (PRN 61332).....	38
5 Conclusions and Recommendations.....	39
5.1 Introduction.....	39
5.2 Table of Sites and Recommendations.....	40
5.3 Discussion and Conclusion.....	42
6 Acknowledgements.....	43
7 SOURCES CONSULTED.....	44
7.1 Primary Sources.....	44
7.2 Secondary Sources.....	44
Appendix I.....	47
Reproduction of Gwynedd Archaeological Project Design for an archaeological assessment (January 2016).....	47
APPENDIX II.....	48
Photographic Metadata.....	48
APPENDIX III.....	49
Sites Listed on the Gwynedd HER.....	49
APPENDIX IV.....	50
Definition of Terms.....	50



## Figures

Figure 01 - Location Map denoting scheme route along with route sub-divisions A to M. Based on Ordnance Survey 1:10000 Series County Series Map Sheet SH71NW. Scale: 1 to 7500@A4.

Figure 02 - Reproduction of Dŵr Cymru drawing 5201-CD15110-N-D-01 with Gwynedd Archaeological Trust amendments to include the location of Sections A to M.

Figure 03 - Location Map denoting scheme route in red along sites located along the route or within a 50m buffer as well as sites recorded in the Historic Environment Record. The blue lines represent the Brithdir to Pennal and Tomen y Mur to Brithdir Roman Roads. Based on Ordnance Survey 1:10000 Series County Series Map Sheet SH71NW. Scale: 1 to 7500@A4.

Figure 04 - Reproduction of 1840 Dolgellau Parish Tithe Map, with scheme route along with route sub-divisions A to M. NOT TO SCALE (Source: Gwynedd Archives)

Figure 05 - Reproduction of 1889 First Edition 1" to 25-Mile County Series Map Sheets XXXIII.14, XXXIII.15, XXXVII.02 & XXXVII.03, with scheme route along with route sub-divisions A to M. Scale: 1 to 7500@A4 (Source: Historic Environment Record)



## Plates

Plate 01: Section A-B: View north towards water treatment works, with pipe route immediately to the west

Plate 02: Section A-B: View north of pipeline route across boggy field to the west of the WTW

Plate 03: Section A-B: View south from the north end of the scheme, showing gateway through which pipe will pass

Plate 04: Section A-B: View showing pipe route across the field to the north-west of the WTW

Plate 05: Section B-C: View southwest of drystone wall [Feature 2]

Plate 06: Section B-C: View west of point at which pipeline leaves road and crosses sloping field

Plate 07: Section B-C: View from the northwest along pipeline route across field

Plate 08: Section B-C: View north showing sinuous drystone wall [Feature 2]

Plate 09: Section B-C: View southwest of modern drainage channel [Feature 3]

Plate 10: Section B-C: View west along street showing pipeline route in pavement

Plate 11: Section B-C: View west along street showing pipeline route in pavement, showing point where route crosses sloping field

Plate 12: Section B-C: View west across low lying floodplain field showing pipe route

Plate 13: Section B-C: View northeast along rear gardens at Pandy'r Odyn

Plate 14: Section C-D: View east along street showing pipe route in pavement

Plate 15: Section C-D: View west along street showing pipe route in pavement, showing former entrance to Bryngwyn

Plate 16: Section D-E: View looking north through council works area

Plate 17: Section H-I: View north from the road up lane between houses along which pipeline route will run

Plate 18: Section H-I: View from the south along north-south lane between houses

Plate 19: Section H-I: View from the north along north-south lane between houses





Plate 20: Section G-H: View west along street at Colrg Meirion Dwyfor, with pipeline route under pavement

Plate 23: Section J-K: View northwest of route of new pipe route at Carreg Camu

Plate 21: Section G-H: View north of route of new pipe route at Carreg Camu

Plate 22: Section J-K: View northwest of route of new pipe route at Carreg Camu, showing raised wooded area



## **NON-TECHNICAL SUMMARY**

*Gwynedd Archaeological Trust (GAT) has been commissioned by Black & Veatch to complete an archaeological assessment in advance of a proposed water main renewal scheme in Dolgellau. The proposed scheme measures up to 5.6km in length and is located within the Marian Mawr floodplain and local rural and urban areas. The scheme is divided into eight sections of varied length and construction methodology; this includes short lengths of open cutting and longer lengths of pipebursting and sliplining, whereby wider or narrower replacement pipes are sent through the existing mains.*

*The walk over of the proposed route of a water mains renewal identified a rural and sub urban landscape on the west side of the town of Dolgellau, both to the north and south of the Afon Wnion. South of the river to the west the area was more open, and was generally located within the floodplain of the river. Some of the pipeline route lay within low lying boggy fields and some along the verge of the public road. To the north and west of the river the route crossed higher ground, particularly in the grounds of Cerrig Camu house where a wooded landscape was encountered. Further east, both north and south of the river the route passed through an increasingly built up landscape as the town of Dolgellau was entered, and mostly followed the route of existing public roads, although to the south east the route passed through an industrial estate, and the northern route passed along a small lane between houses to an open area beyond the suburban one to the north.*

*The assessment identified 19 existing sites within a 50m buffer zone surrounding the scheme route; a further seven additional sites were subsequently identified along the route during the walkover survey and desk based research. The existing sites were all buildings, and included houses, a school, a barn, a stable and a folly. These were all of post-medieval date and reflect the growth of the town in the 19<sup>th</sup> century to the north and west of the town's historic core. All the additional sites, consisting of a cottage, two boundary walls, two areas of drainage ditch, a boundary, and back gardens are also all of post-medieval or modern date. Four of these are recommended to be recorded during an archaeological watching brief carried out during the scheme groundworks, two of which are to be avoided, and one of which no further work is recommended.*

*Based on the results of the assessment and the proposed construction methodology, it is likely that the areas proposed for sliplining and pipebursting are of low risk to the known archaeology and an **intensive watching brief** is only proposed for any launching and*

receiving pits required. Within the areas of proposed open cut that require trenches to be excavated, it is recommended that an **intensive watching brief** is also maintained during intrusive groundworks particularly in the low lying open fields. **Basic field recording** is also recommended for specific field boundaries and drainage channels within the route.

# 1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been commissioned by *Black & Veatch* to complete an archaeological assessment in advance of a proposed water main renewal scheme in Dolgellau. The scheme measures up to 5.6km in length and is located within the Marian Mawr floodplain and local areas (NGR SH72001794).

The scheme route is defined on Dŵr Cymru drawing 5201-CD15110-N-D-01 (reproduced as Figure 01) and includes eight sections of varied length and methodology. For the purposes of the assessment, the sections have been designated as follows:

1. Section A to B: length 0.55km, located at the western end of the scheme, between the Llwybr Mawddach cycle trail (NGR SH71201841) and an access point off the A493 road leading into a sewage works (NGR SH71261819). This section will be completed as an open cut across an open field and the sewage works access road; the pipe will measure 180mm in width;
2. Section B to C: length 2km, located between an access point off the A493 road leading into a sewage works (NGR SH71261819) and the A493 road to the east (NGR SH72151779). The existing 3" asbestos cement main, installed in 1955, will be replaced by a new 180mm main on the same alignment using pipe bursting (a larger new main pulled through a narrower older main); the route will cross open fields as well as run along a portion of the A493. It is expected that the impact here will be limited to the launching and receiving pits for the new main, located at strategic points along the route;
3. Section C to D: length 0.8km, located along the A493 road between NGR SH72151779 and NGR SH72491766. The existing 3" asbestos cement main, installed in 1955, will be replaced by a new 180mm main on the same alignment using a combination of pipebursting and open cut. It is expected that the impact here will include launching and receiving pits for the new main, located at strategic points along the route, and open trenching;
4. Section E to F: length 0.3km, located between the A493 (NGR SH72421769) and the Marian Mawr recreation ground to the north (NGR SH72381783). The existing 180mm HPPE main, installed in 2009, will be replaced by a new 110mm main on the same alignment using sliplining (a narrower new main pulled through a larger older

main). It is expected that the impact here will be limited to the launching and receiving pits for the new main, located at strategic points along the route;

5. Section G to H: length 800m, located along a local road north of Coleg Meririon Dwyfor, between NGR SH71881808 and NGR SH72301809. The existing 4" cast iron main, installed in 1930, will be replaced by a new 110mm main on the same alignment using a combination of pipebursting and open cut. It is expected that the impact here will include launching and receiving pits for the new main, located at strategic points along the route, and open trenching;
6. Section H to I: length 600m, located from a local road north of Coleg Meririon Dwyfor, (NGR SH72301809), following a route due north to a local field boundary (NGR SH72301840). The existing 6" asbestos cement main, installed in 1958, will be replaced by a new 180mm main using pipebursting. It is expected that the impact here will be limited to launching and receiving pits for the new main, located at strategic points along the route;
7. Section J to K: length 300m, located from a local road (NGR SH72301809) to a stop tap at Cerrig Camu (NGR SH71651844). The existing 3" cast iron main, installed in 1955, will be replaced by a new 90mm main using pipebursting. It is expected that the impact here will be limited to launching and receiving pits for the new main, located at strategic points along the route; and
8. Section L to M: length 250m, located along a local road verge and across a local road between NGR SH72301809 and NGR SH71491857). The existing 3" cast iron main, installed in 1955, will be replaced by a new 90mm main using pipebursting. It is expected that the impact here will be limited to launching and receiving pits for the new main, located at strategic points along the route. This section will be completed as an open cut; the pipe will measure 63mm in width.

GAT undertook an archaeological watching brief as part of the 2010 site investigation programme for the Dolgellau Flood Risk Management Scheme (GAT report 876), to the east of the current assessment area. A total of 9 test pits were monitored within the Dolgellau floodplain that were characterised by shallow topsoil (maximum depth 0.15m), followed by alluvial deposits of river gravels and coarse and fine sand. No archaeological activity was identified within the confines of any example and no organic material was recorded.

Additional test pits for the Dolgellau Flood Risk Management Scheme were excavated in December 2013 (GAT Report G1157); Pit TP1 was located east of Afon Aran, within the floodplain, while Test Pit TP2 was positioned close to the mouth of the Afon Aran, at it flows into the Afon Wnion. Test Pit TP 1 was quite shallow with gravels and groundwater reached

at a depth of 1.20m, below 2 layers of natural clayey sand deposits as well as the topsoil. No archaeological features or artefactual material was found in this test pit. Test Pit TP 2 achieved a depth of 3.30m with the upper deposits below the grassed surface area mainly composed of late 19<sup>th</sup> and early 20<sup>th</sup> century deposits containing quite a large amount of broken glass bottles and pottery throughout. The upper levels of this deposit also contained more modern waste material that had been mixed into the final levelling of the topsoil for the playing areas. Beneath the modern deposit layer, at a depth of 1.80m below ground level, two layers of sandy clay were encountered before reaching gravel and water levels at 3.30m. Apart from the modern material no other archaeological deposits were found.

The assessment has been completed in accordance with the guidelines specified in the Chartered Institute for Archaeologists *Standard and Guidance for Historic Environment Desk-Based Assessment* (Chartered Institute for Archaeologists, 2014). Gwynedd Archaeological Trust is a Chartered Institute for Archaeologists *Registered Archaeological Organisation*. The format of this design corresponds to the requirements of section 2.3 of MoRPHE (English Heritage 2015) and to MAP2 (English Heritage, 1991, *Management of Archaeological Projects*). Submission of digital information to the Royal Commission on the Ancient and Historical Monuments of Wales will be undertaken in accordance with the Royal Commission on Ancient and Historical Monuments for Wales (RCAHMW) *Guidelines for Digital Archives Version 1* (2015). Digital information will include the photographic archive and associated metadata.

The assessment will be monitored by the Snowdonia National Park Authority Archaeologist (SNPA); the content of this report and all subsequent project output prepared by GAT must be approved by SNPA prior to final issue. A project design summarising the assessment methodology was prepared by GAT and submitted to SNPA in January 2016 prior to the start of the assessment (cf. [Appendix I](#)).





## **2 METHODOLOGY**

### **2.1 Assessment (Desktop Study)**

A desk-based assessment is defined as “a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage....Significance is to be judged in a local, regional, national or international context as appropriate” (ClfA 2014, 4).

The desk-based assessment included the study of the following resources:

1. The regional Historic Environment Register (HER, Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor, Gwynedd LL57 2RT) will be examined for information concerning the study area. This will include an examination of the core HER, the 1:2500 County Series Ordnance Survey maps and any secondary information held within the. A list of archaeological receptors will be prepared for the report using information from the HER; this will include information sourced from within a 50m assessment buffer to examine any potential impact. This information will be used to prepare a gazetteer and will include information from the walkover survey if any previously unidentified receptors are also located;
2. The National Monuments Record (NMR RCAHMW, National Monuments Record of Wales, Plas Crug, Aberystwyth SY23 1NJ) will be checked for sites additional to the HER, and if required additional supporting information will be examined at the NMR.
3. On-line catalogue search of the National Library of Wales; and
4. Archive data and historic maps will be consulted in the regional archives of the Gwynedd Archives Service (Meirionnydd Record Office, Gwynedd Archive Service, Gwynedd Council, Ffordd y Bala, Meirionnydd, Dolgellau, LL40 2YF).

## 2.2 Walkover Survey

Part of the assessment involved a walkover of the study area. The aims of this stage of the work were to:

- verify the results of the desktop study.
- identify any further archaeological sites which may exist as above ground features
- photograph and record the present condition of all sites noted.

The walkover survey was completed on 05/02/2016 and visited all eight sections of the route. A descriptive record was maintained on GAT *pro formas* along with a photographic record. A complete table of metadata with details of each image, including descriptions and directions of shot was produced using Microsoft Access; a total of 39 images were taken (archive ref. G2457\_001 to G2457\_039; cf. [Appendix II](#))

## 3 RESULTS

### 3.1 Historic background

#### 3.1.1 Prehistoric Background

In the earlier Neolithic several areas of concentrations of chambered tombs in north-west Wales demonstrate the presence of settlement nearby, but there are none close to Dolgellau, the nearest group being that in Ardudwy to the north-west. However, there are several finds of Neolithic stone axes along the valley of the Mawddach, showing that it was at least being visited, possibly exploited and settled in the Middle or later Neolithic and one such axe has been found here at Cefn Meulan, just north-east of Dolgellau.

Pollen studies of buried peat horizons in the uplands of Ardudwy show the first indications of human activity are from about 4000 BC but that there was much greater wide-scale clearance of forest in the Early Bronze Age, during the second millennium BC. This expansion of settlement is illustrated in the Dolgellau area by the presence of numerous funerary and ritual monuments of the second millennium BC, of which there are 15 in the immediate area and many more close by. The most important group in this area is that at Hafod Dywyll, Islaw'r Dref, where there are seven cairns close together and this group can be regarded as a communal cemetery. However, the settlement to which the cemetery belonged is unknown and may be at some distance because the cairn group lies at the top of a pass alongside a trackway that runs east-west. Further to the west this track passes another concentration of Early Bronze Age funerary and ritual monuments at Cregennan, Arthog, including cairns, a stone circle, several standing stones and several cup-marked stones. The Cregennan area can be regarded as a funerary and ritual complex and may have been a focal centre for a wide area around. The location of the funerary monuments does not, therefore, necessarily help to identify the whereabouts of the contemporary settlement, but certainly indicates an active population within the area.

The close relation between the Cregennan and Hafod Dywyll monuments and the trackway has a parallel with another trackway and a concentration of monuments around Hengwm, Ardudwy. Both tracks head east towards the Mawddach valley and it has been suggested that the northern track crossed the Mawddach close to where Dolgellau is now, joining the southern route to continue inland towards the Upper Dee (Bowen and Gresham 1967, 61-2, 116). This interpretation is not supported by the distribution of bronze artefacts such as palstaves, all of which have been found quite close to the coast in this area, only appearing

inland on the north side of Arduwy, in the land lying between the Vale of Ffestiniog and the Upper Dee. The probable prehistoric route south of the Mawddach may therefore have joined the northern route to continue northwards over the Arduwy uplands and if so the crossing of the Mawddach near Dolgellau may have been an important communication point, perhaps as the first easy crossing point on the estuary.

While the uplands in this period were cleared for pasture there is some evidence that the wealthiest settlement may have been in the areas of arable lowland. One of the largest known burial monuments of this period in North Wales is from the lowland close to Dolgellau at Pentre Farm near Cymer on the north side of the valley and so may reflect high status. The mound is about 22m diameter and 2.5m high and excavation in the 19<sup>th</sup> century suggested it was of complex construction and probably of several phases of re-use (Bowen and Gresham 1967, 93-40). There are also two high status finds of this period from close to Dolgellau, a stone battle-axe and a stone axe-hammer. Another high status object of the Middle Bronze Age has also been found, comprising a gold torc or neck-ring, from a hill south-west of Dolgellau. A bronze palstave axe-head has also been found close to the town. All these finds might suggest that there was some settlement nearby, but of direct evidence there is none and all the objects could be associated with trade routes.

The earliest known prehistoric settlement in this area is represented by several examples on the fringes of the upland above of Dolgellau, consisting of groups of small circular houses and attached fields. By analogy with other excavated examples in north-west Wales these belong to the last centuries of the first millennium BC and into the Roman period (Smith 1999). Their presence on the upland fringes may be a matter of survival and there may have been other, perhaps more affluent settlement on lower and better quality land, the remains of which have been removed by many centuries of agriculture. Possible remains of such settlement was found sealed beneath a Roman period building close to the Roman fortlet at Brithdir, 4km east of Dolgellau (White 1978, 36-8).

Other evidence of settlement here in the first millennium BC is in the form of four defended sites around the fringes of the area. These forts are set high up in strong natural defensive positions, between about 300m to 400m OD. Three lie to the north on the ridge between the Wnion and Mawddach valleys and one is to the south-west in Islaw'r Dref. There is also one lower-lying defended site on a promontory at Cymer, overlooking the Mawddach estuary. All are similar in having very prominent positions with wide viewpoints but relatively inaccessible as settlements. None have been excavated or otherwise dated and may all have been constructed not long before the Roman conquest. Only one fort, the largest, at Moel Offrwm,

has evidence of much actual settlement, two are suggested to have been deliberately demolished (Bowen and Gresham 1967, 142, 153) and one, that at Islaw'r Dref, is unfinished.

A univallate enclosure (PRN 4,120) north of Dolgellau at SH 285898 is an earthwork of prehistoric date, although little is known about it.

In the vicinity of Dolgellau a number of axe-hammers have been found. One was found in the late 1920s in the garden of Brynmarian, a house on the northern outskirts of Dolgellau standing on the slope above the Afon Wnion, about 200m from the right bank (PRN 4,121). It was made of Picrite dolerite. Another was found about 5.2km upstream of it, and about 600m from the Afon Wnion on the same side at Cae-Gwyn farm, and now in the National Museum in Cardiff (PRN 4,122). It is made of Greenstone, a form of dolerite and is of considerable size weighing about 4kg. An unidentified wooden object of prehistoric date (PRN 806) has also been found.

A Graiglwyd axe (PRN 4,116) has been found at Cefnmadan Farm, close to Dolgellau to the north-east at SH 370880.

### 3.1.2 Roman Background

The most visible Roman monuments in the landscape of Meirionnydd are a series of auxiliary forts belonging to the Flavian consolidation of Roman rule in North Wales in the late 70s AD. No evidence has yet emerged for the campaigns of Paulinus (as recorded by Tacitus) culminating in the attack on Anglesey in 60 AD.

The auxiliary forts are about 17-20 km apart and would have been linked by an all-weather road system. Dr Jeffrey Davies notes that 'the garrison posts would have been mutually supporting with any serious trouble being tackled by a concentration of auxiliary regiments' (Arnold and Davies 2000, 16). He also notes that well engineered roads would have opened up the country for trade and exploitation of mineral resources (*ibid.*, 35).

#### 3.1.2.1 Forts

The presence of a small Roman fort is noted at Brithdir, 4.8km east of Dolgellau (PRN 1546, NGR SH 77141890), on the south side of the Wnion valley. The site is on a broad natural shelf which provides a level and commanding position some 170m above sea level and about 100m above the bottom of the valley a mile to the north. The presence of a fort at Dolgellau has been suggested by several writers (e.g. Cambrian Archaeological Association 1949, 294 and Jones 1959, 208) but no hard evidence was ever uncovered and it is significant that they were all writing before the discovery of the fortlet at Brithdir (Hopewell 1997). Waddelove (1999, 190-2) suggests that these writers were correct and the street layout of Dolgellau follows the layout of a Roman fort. There is however no reason to suppose that the main streets in Dolgellau are anything other than post-medieval and Ellis (1928, ch 6) suggests an 11<sup>th</sup> century foundation. The persistence of the street plan of a Roman fort therefore seems unlikely. The recent discovery of a Roman site at Gwanas Fawr, near Cross Foxes is a most important discovery. It was recognised from the air by Bob Jones, a pilot from Welshpool Airport with long experience of archaeological aerial reconnaissance. This appears to be a hitherto unknown Roman fort at NGR SH77111645, 4km south-east of Dolgellau (Hopewell 2008). The site survives as a rectangular, bivallate earthwork, with rounded corners. The enclosure has external dimensions of 168m x 130m enclosing an area of 2.6ha. Jeffrey Davies (University of Wales, Aberystwyth) concluded that the site has all the hallmarks of a Roman auxiliary fort built of earth and timber.

### 3.1.2.2 Roman Roads

The Roman roads of north-west Wales have been the subject of a Cadw project which was initiated in 2002/03 and follows on from a study of Roman fort environs. This has resulted in the identification of previously unknown or only postulated sections of Roman road. Information about these discoveries in the Dolgellau area is given below. The names given to the roads and their classification are given in Hopewell (2006). The roads seem to centre on the area which is now Dolgellau, possibly suggesting that there was a Roman presence in the area.

Margary (1955) provided a numbering system for all of the Roman roads that he identified in Britain and subsequent discoveries have led to a refinement of this system. The Ordnance Survey (OS) and RCAHMW have added a series of prefixes to produce four series of numbers (RCAHMW 1974):

- Routes considered to be Roman by Margary are numbered in a series prefixed by RR;
- Routes considered to be Roman by the OS but not listed by Margary are prefixed with RRX;
- Routes considered to be Roman but not listed by Margary are prefixed RRN; and
- Miscellaneous records not covered by the above are prefixed RRZ.

There are four proposed Roman roads within the Dolgellau area:

#### Road RRN 51 and 52 – Brithdir Triangles (PRNs 17801 & 17802)

Rigg and Toller (1983, 11) proposed a road from Brithdir to Long Mountain RR50 which was later retracted by Toller (see below). Part of this route consisted of a link from RR66b to RRN50. The southern part of this link road was traced as a well-engineered terrace by Rigg & Toller. Subsequent aerial photographic evidence (Crew & Musson 1996, 31) revealed the presence of a well-preserved Roman road to the west of this just above Caer Tyddyn.

The southern part is visible as a low 4.5m wide *agger* with obvious quarry pits. This joins a more recent track, at the top of the slope. This can be traced for a little over 1km. It is still in use and quite eroded in places but its Roman origin is demonstrated by the continuation of the quarry pits identified alongside the first part. (PRN 17778). The later terraced road (PRN 17777) is characterised by a lack of comparable quarry pits. The track enters a forestry

plantation just to the north of an earthwork that has been tentatively interpreted as a Roman Signal Station (PRN 801). Occasional lengths of metalling are visible but the forestry has probably destroyed any quarry pits. Rigg & Toller also suggest a short cut from RRN51 to Brithdir. This was dismissed as being modern by Brown (1986, 23-4)

#### RRN58 Tomen y Mur to Dolgellau (PRN 17826)

This route runs to the west of RR69b ignoring the attested Roman road at Pen y Stryd and running to a proposed fort at Dolgellau. Waddelove justifies the ignoring of RR69b by suggesting that it only ran from Tomen y Mur to the kilns. This, as noted above would seem to be a remarkably inefficient pattern of road building when a simple 1.5km long link to the putative road to the west would have served to connect the kilns to the forts to both the north and south. It can be concluded that unless some convincing extant road is discovered along this line, that the route is unlikely.

#### Road RR69b Part 2 Brithdir to Pennal (PRN 3846)

There are several predicted road alignments around the fortlet at Brithdir, few of which have been verified. Some reflect the idea that Dolgellau was seen as the main node in the road system in this area, prior to the discovery of the fortlet at Brithdir. The excavations at Brithdir (Hopewell 1997, 310-33) confirmed that there was an east-west road that continued in use after the abandonment of the fortlet in AD 120. Both Jones (1959, 208-20) and Rigg & Toller (1983, 162-4) trace the road via a series of earthworks to the Wnion Valley and then to Dolgellau. At this point there are two suggested routes to Pennal, RR69b, favoured by Margary and RRX96 favoured by Jones (1959, 211-2), St. Joseph (1961, 129-30) and Bowen & Gresham (1967, 252-3).

Margary traces a fairly direct course from Brithdir along Cefn y Clawdd and then an old road across the highlands to the Llefenni Valley. The OS recorded that the route was very eroded and probably not Roman (John Rigg F.I. in OS linear RR69b 1977). Margary next traces the route through Corris and then along the Dovey Valley to Pennal. The OS concluded that there was no Roman road along an alignment to the east of Cader Idris and favoured the western route RRX96.

The route along Cefn y Clawdd was examined as part of the comparative survey in 2005 and found to be much changed from when recorded by Margery and the OS. The most recent line of the old track has mostly been superseded by a narrow asphalt road. Occasional



lengths of earlier road have survived and have not been affected by the recent upgrading of the road. This is in most cases in the form of a terrace with the modern road overlying part of it (PRN17723-4) although hollow ways also survive in places. At SH76071402 the modern track curves away from the earlier line. A 4m wide terrace and a possible *agger*, 5m wide follow the more direct route. At SH75911366, a 4m wide terrace is cut by a narrow hollow way. There was clearly a well-constructed road of some antiquity running along this route and Dodd (1925) does not record a turnpike here. The fragmentary remains make it difficult to confirm its Roman origins but this route should not be dismissed. Part of the possible road (PRN 17,727) is obscured by modern roadways. Probably the footpath going straight over the ridge between Llanelltyd and Dolgellau bridges (PRN 17,728-17,729) marks the course of the road.

#### Road RRX96 – Brithdir – Pennal W of Cader Idris (PRN 3846)

Jones (1959, 211-2) St. Joseph (1961, 129-30) and Bowen and Gresham (1967, 252-3) have all published papers dismissing the route of RR69b to the east of Cader Idris, based on unsuitable terrain and the siting strategy of the fortlet at Brithdir. Various possible courses are suggested following a more circuitous route to the west of the mountain, although none of the routes show any trace of Roman construction. Three variations were proposed, all initially running south-west from Brithdir along the old coach road, Ffordd Ddu. St. Joseph suggested a route extending as far west as the coast at Llwyngwriil. Bowen and Gresham traced an inland route along an old road to Llanegryn. A route between Llanegryn and Pennal is favoured by both St. Joseph and Bowen and Gresham, its historical importance in demonstrated by motte sitings at crossings of the Afon Dysynni and Afon Fathew. An alternative shorter route was also proposed by Bowen and Gresham running across the highlands via Abergynolwyn. The OS (linear file RRX96 1977) note that this road should be visible on the slopes of Mynydd Cefn Caer but there is nothing more than a narrow footpath at this point.

The 2 km of road to the west of Brithdir was field-walked at the same time as the conjoining part of PRN 3849. A 4 to 5m wide road, with many post-medieval features, can be traced following a fairly direct route to the Afon Wnion. The road immediately to the west of the fort (PRNs 17624-5) is largely lost within improved pasture although the former owner of Tyddyn Derwen reported that a parchmark was visible below the modern road in dry summer of 1976. The road to the west of this is visible as a 4 to 6 m wide hollow way bounded for much of its length by field walls (PRNs 17622-3). A well preserved 4m wide zigzag (PRN 17621) of Roman character marks the start of the descent toward Llwybr-y-torrent. Further zigzags

(PRNs 17620-1) mark the crossing of a steep-sided stream on the edge of Coed Dol-fawr. Masonry on the edge of the stream is all that remains of a built-up fort or culvert. This remains undated but is most likely to date from post-Roman improvements to the road.

The Roman road is visible as a terrace and agger (PRN 17,788) to the east of Dolgellau, although part of the route is under a modern road (PRN 17,789). A possible terrace for the Roman road survives in places (PRN 17,790).

### 3.1.2.3 Romano-British finds

Roman pottery (PRN 1,577) has been found at Bryn Mainan, Dolgellau, and tile at Maes Brith (PRN 1,578). The find of various Roman coins has been noted in the vicinity of Ffynnon Fair, Dolgellau (PRN 4,115). These are recorded by Edward Lhuyd in 1695 as having included coins of the Emperors Trajan and Hadrian (RCAHMMW 1921, 25).

### 3.1.3 Medieval Background

The town of Dolgellau is located at upper end of Mawddach estuary, between the Wnion river and the lower slopes of Cadair Idris. It is built on the floodplain at the junction of two rivers, the Wnion and the Aran, which joins it from the south. Several road systems converge on a bridge-head and river which was navigable by small boats. Its location on economic frontier between sheep and cattle farming countryside to north, and good arable lands in its vicinity, gave the town a strategic significance (Smith 2001, 233). Dolgellau appears to have developed as a town in the medieval period 'almost by stealth (Smith 2001), its urban characteristics not recognised by the authorities. Dolgellau was never a borough, and is one of the few county towns in wales which have never returned a Member of Parliament. The commercial importance of the town appears to have begun by the 14<sup>th</sup> century however, as there were references to a market and fairs by that time (*ibid.*).

The layout of the town seems to encapsulate its use as a market centre for the surrounding area, for which the town was claiming a monopoly from the mid fifteenth century (Alfrey 2009, 9). The one documented medieval building in the town was Cwrt Plas yn Dre, which originated as a timber-framed hall house, but the earliest surviving buildings are likely to be of 17<sup>th</sup> century date. The distinctively haphazard street layout of the town can probably be explained by encroachment beginning at around this time on common and waste land within it by enclosing parcels of land, creating small islands of building 'colonize meandering open spaces between discrete parcels of land' (*ibid.* 9).

Leland described Dolgellau in the 1530's as the 'best village in this commote'. By the late 16<sup>th</sup> century, if not earlier, Dolgellau, bolstered by the thriving woollen industry of its neighbourhood had commenced the development which would lead to its challenge to Harlech as the true economic hub of the county' (Smith 2001, 253).

### 3.1.4 Post-Medieval Background

The first reference to Dolgellau being classed as a market town appear in the 17<sup>th</sup> century when there are references to its being a market town or borough and to have tenements referred to as burgages (Smith 2001). By the close of the 18<sup>th</sup> century Dolgellau was a sizeable town of around 4,000. It contained a few factories and numerous operatives, such as weavers and carders. The main product was webs, though flannel and stockings were produced in considerable quantities.

The area around Dolgellau saw the greatest concentration of fulling mills between the mid-16<sup>th</sup> century and mid-19<sup>th</sup> century, many of which were situated south of the town. Tanning and the leather industry also prospered during that time (Cadw/ICOMOS 1998, 119).

Dolgellau church rebuilt 1716 in classical style, the tower altered in 1809 when clock and bells were inserted, and restoration work carried out in 1864 (Davidson 2001).

The town was described by Pennant in 1781 thus, 'The town is small; the streets disposed in a most irregular manner; but the situation is in a beautiful vale, fertile, well wooded, and embellished with numbers of seats, and watered by the river Wnion; over which, on account of its floods, is a bridge of several arches (Pennant, 1781).

Fenton in his tours of Wales between 1804 and 1813 states that 'the masonry at Dolgelly merits particular notice'. From time immemorial they have built with very large stones, even to the top, lifting the stones to the work from towards the middle course with an immense machine which takes above a day to erect, and worked by two men, every stone being of such a weight as to require a lever of that vast power. The lintels of doors and windows are generally of immense stones. When stones of a middling size are worked in regular courses and stones nearly of a size, they look well, as at Nanney in the new house. I am told that the stones rolled down from the top of Cader Idris, of various sided figures, and some of vast length, are found *detached*, but lying in all directions, like a forest that has been felled, and not in any regular strata, but across and along and in every way' (Fenton 1917, 94).

The town itself was largely rebuilt in the 19<sup>th</sup> century for English tourists who came to climb Cadair Idris. However the meandering, small streets must reflect its earlier unplanned development in medieval times.

The flood plain of the Afon Wnion, between the town and the river was known as Marian Mawr, and is shown in English as Dolgellau Green on estate maps of 1794 and 1820 (NLW MAP 7425; GAS ZM/3667). It has long been an area of recreation, as building upon it was historically impossibility owing to the flood risk, and included a bowling green from the 16<sup>th</sup> century. In 1811 the Enclosure Act for the Parishes of Dolgellley and Llangelynin stated that the Marian Mawr should be held in trust by the leading citizens of the town 'for the recreation of the public'. In the 20<sup>th</sup> century the town rugby and cricket clubs settled on it, and the area remains the town's recreation area, controlled by the Marian Trustees. Further areas of floodplain to the east of the town remain undeveloped also. The tithe map of 1840 (Figure 04), shows, albeit in a distorted form, that the area of the pipeline route was still substantially undeveloped by this time and that the town had not expanded much beyond its historic core. Field boundaries that have subsequently been lost can also be seen, although the lack of map accuracy means that it would be difficult to identify their former locations. It is highly unlikely that any evidence for them could still be encountered on the pipe route. This is still substantially the case by the time of the 1<sup>st</sup> edition 25 inch Ordnance Survey map of 1889, particularly north of the river (Figure 05). Substantial development of grand villas with grounds took place north of the Wnion in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, as a result of the towns increasing importance as a tourist destination and as a fashionable retreat.

## 3.2 Site Visit and Walkover (Figures 02-03)

### 3.2.1 Section A to B (Plates 01-04):

There are no previously known archaeological receptors within close proximity to the route; which consists of an area of low lying boggy wetland to the west of the sewage treatment works, through which the route passes north-south. A number of drainage channels were noted (Feature 7; Plates 21-27), which are of unknown date.

### 3.2.2 Section B to C (Plates 05-13):

Section B to C follows a route through low lying ground close to the south bank of the Afon Wnion. For much of its length the route follows the course of the public Tywyn Road, passing a row of cottages of possible 18<sup>th</sup> century date (Feature 1; Plate 11), but at various points it crosses open fields, at the western end through a north-east south-west sloping pasture grassland field crossing a sinuous drystone wall (Feature 2; Plate 08) and a modern drainage channel (Feature 3; Plate 09). The cottages are of three bays, with an asymmetrical doorway, built of rubble with gable ended chimneys and an extension to the east. The drystone wall will be crossed at NGR SH 71371805, and consists of a wall up to 0.7m high built of medium to large freestone rubble and is 0.5m wide. The drainage channel runs north-south with a pebble stone base, and debouches through an opening in the roadside wall flowing under the road to the south (Plate 09). It appears to have been dredged quite recently. West of Pont Pandy'r Odyn the route crosses a low lying field within the Wnion floodplain (Plate 12). This field is partly wooded, but no new features were identified with the exception of a modern field boundary (Feature 5). Beyond Pont Pandy'r Odyn the route passes through the rear gardens of the Pandy'r Odyn houses (Feature 6; Plate 13), ending where the route reaches the main road. The following archaeological receptors in this section, located on the Gwynedd Historic Environment Record, are noted below:

- Primary Reference Number (PRN) 12,314 - Bryn y Gwin, a post medieval Grade II listed building is located 52.7m southwest of the route (NGR SH71681785);
- PRN 5,360 – Bryn y Gwin Uchaf field bank, a low earthen bank of unknown period, located in a field next to Bryn y Gwin Uchaf house, c.75m south of the route (NGR SH71991780);
- PRN 57,859 – Post-medieval building to the ear of No.6 Pandy'r-Odyn Cottages, c.77m south of the route; and
- PRN 57,858 – Post-medieval building southeast of Bryn y Gwin Uchaf, c.177m south of the route;

### 3.2.3 Section C to D (Plates 14-15):

The route in this section follows the course of the main road into Dolgellau past residential development on both sides of the road. The provisional course of a Roman Road is thought to run close to this area (Hopewell 2013). No new archaeological features were identified, but that noted on the Gwynedd HER close to the pipe route is noted below:

- PRN 17,769 - Brithdir to Pennal Roman Road (RRX96); a 10.5km long provisional route that is located along the local road into Dolgellau running from the southwest. The provisional route is in close proximity to the endpoint of Section C to D (NGR SH72491766);

### 3.2.4 Section E to F (Plate 16):

This section of the pipe route crosses a depot area and council works yard, between the public road to the south with the Marian Mawr to the north (Plate 16). No new archaeological features were identified within this area, but the following sites are noted on the Gwynedd HER close to the route.

- PRN 12,454 – early 19<sup>th</sup> century police station located to the immediate east of the route at NGR SH72441775; and
- PRN 29,968 – Marian Mawr recreation ground, located on the southern bank of the Afon Wnion (centred at NGR SH72451795). Cartographic evidence shows no evidence of this area having been developed, presumably due to its potential to flood. It is probable that in the past it was used for grazing, though it was given in trust to the town in 1811 and has since been the focus of the town's leisure activities. A hollow in the grass in the cricket outfield reputedly marks the site of a cockpit (NPRN 32851). Marian Mawr is located to the immediate north of Section E to F; PRN 806 - Wooden object recovered during the digging of a shaft to accommodate a grit separator in the towns sewerage system; the object was recovered at a depth of 3-4m in alluvial and gravel deposits associated with Afon Wnion. Additional waterlogged timber was identified but not recovered from the same depth and included a storm damaged 5m long oak trunk that appeared to have been carried down by river water. The findspot is located 163m west of the endpoint of Section E to F at NGR SH72551784.

### 3.2.5 Section G to H (Plate 20):

This section of route follows the west-east road north of the Afon Wnion, past Coleg Merion Dwyfor, which lies to the south. At its eastern end at NGR SH72301809 the pipeline route heads north between the houses of Argoed and Bod Eryl. No new archaeological features were noted on this section of the route. Sites on the Gwynedd HER close to the pipe route are noted below:

- PRN 57,835 – site of a post-medieval building extant on historic Ordnance Survey mapping. Located 41m to the north of the route at NGR SH71951812;
- PRN 57,836 - site of a post-medieval well extant on historic Ordnance Survey mapping. Located 106m to the north of the route at NGR SH71991817;
- PRN 57,837 - site of a post-medieval building extant on historic Ordnance Survey mapping. Located 44m to the north of the route at NGR SH72081809;

### 3.2.6 Section H to I (Plates 17-19):

This section follows a northerly course along a lane between the properties of Argoed and Bod Eryl. The lane is to the south bounded by drystone property boundary walls that may be 19<sup>th</sup> century in date (Feature 4) which continue north past further properties and garden and yard boundary walls before opening out into open fields, with the boundary walls noted only on the eastern side. The walls are of 19<sup>th</sup> and 20<sup>th</sup> century dates, and up to 0.65m high and constructed of local freestone rubble. That to the west becomes a bonded wall and is entirely modern in character. The following site is noted on the Gwynedd HER close to the proposed pipe route:

- PRN 17,728 - Tomen y Mur to Brithdir Roman Road (RR69b); the route for the Roman Road follows a similar alignment to the local Pen y Cefn road. The provisional route located 146m to the east of Section G to H;

### 3.2.7 Section J to K (Plates 22-23):

This section of the pipe route leads from the entrance gateway to Cerrig Camu at the south across a raised woodland and scrub area to Cerrig Camu house. The area is wood and scrubland, clearly formerly being part of the formal grounds to the house (Plate 22). It is not possible to observe any features in this overgrown area, but it is thought unlikely that significant features are present. The site noted below is located on the Gwynedd HER close to the pipe route.



- PRN 11,604 - an 18<sup>th</sup> century recreational folly that is part of the Dol-rhyd House complex (PRN 4130) is located to the immediate north of the Section J to K endpoint at NGR SH71651844;

### 3.2.8 *Section L to M:*

This section is almost entirely located with a small access road and the verge of the main road, the ground of which appears to be entirely disturbed. The site noted below is recorded on the Gwynedd HER close to the proposed route

- PRN 6,365 - Ty-Eiddew, a post-medieval house located near the endpoint of Section L to M at NGR SH71501855.

## **4 SUMMARY OF ARCHAEOLOGICAL POTENTIAL**

### **4.1 Location and Geological Summary**

The scheme is located within Dolgellau to both the north and south of the Afon Wnion. It measures up to 5.6km in length and is located within the Marian Mawr floodplain and local areas, and is centred on NGR SH72001794.

The solid geology of the Dolgellau region consists of intrusive igneous formations and Cambrian imbedded pale grey quartzose siltstone and silty mudstone with Dolgellau black siltstone and mudstone of the Mawddach Group in the Wnion valley (BGS 1982). These are overlain by Quaternary glacial till and thick accumulations of alluvium (Allen and Jackson 1985).

The confluence of the Mawddach and Wnion river valleys forms a distinct natural basin situated between the southern ends of the Rhinog and Arenig Mountains and the northern flanks of Cader Idris. Above the basin floor, which is only just above sea level, the slopes rise steeply on all sides, reaching 629m above OD at the summit of Y Garn in the north-west, 400m above OD at the summit of Moel Offrwm in the north east, and 893m above OD at the summit of Cader Idris in the south. The latter dominates prospects of the basin from most directions. Between 100m and 200m above OD however, shelves of land with gentler gradients occur which have assisted communications and attracted settlement from the earliest times.

### **4.2 Statutory and Non Statutory Designations**

The proposed water main renewal lies entirely within the Snowdonia National Park. It is also situated within the Vale of Dolgellau Landscape of Outstanding Historic Interest in Wales (HLW (Gw) 13), which is described as *a natural basin at the confluence of two valleys situated between Cadair Idris, the Arenig and Rhinog mountains, containing diverse evidence of land use and exploitation from the prehistoric, medieval and recent periods. The area includes a group of Iron Age hillforts; a Roman fortlet and industrial complex; Cymer Abbey and motte, territorially succeeded by the Nannau Estate; Dolgellau town; 19<sup>th</sup> and 20<sup>th</sup> century gold and copper workings; historic associations with the Quaker movement* (Cadw/ICOMOS 1998, 119).

There are no Scheduled Ancient Monuments (SAMs) but nine Listed Buildings within the 50m buffer zone around the proposed pipeline route. The presence of listed buildings is a reflection of the fact that Dolgellau is a historic town with significant public and domestic buildings being constructed along the roads out of Dolgellau in the 19<sup>th</sup> century, some with architectural pretensions. These are Dol-rhyd House (Ref: 5128), Dolrhyd School, stable and barns (Ref: 5131), Music Room, Gazebo and Summerhouse at Dolrhyd (Ref: 5129), Llyndir (Ref: 5166; Feature 1), Nos 1-3, 5-6 Pandy'r Odyn Cottages (Refs: 5109-5114). These will not be affected by the pipe route, although it will pass by to the rear of Pandy'r Odyn Gardens (Feature 6).

Nine sites are listed on the RCAHMW National Monuments Record, and thirteen sites on the Gwynedd HER. None of these will be affected by the scheme, and they are all listed in Appendix III, and shown on Figure 03).

A Historic Landscape Characterisation (HLC) has been completed for this area by the Gwynedd Archaeological Trust (GAT 2005). The eastern part of the pipe route area lies within character areas *1 Dolgellau* 'the historic core of Dolgellau' and *2 Dolgellau (north)* 'imposing 19<sup>th</sup> century mansions set within large landscaped grounds' and the western part within *4 Fields and Woods west of Dolgellau* 'large area characterised by open ground, irregular fields and woodland' and *5 Fields and Woods north of Dolgellau* 'an area of woodlands and fields, set on a rolling series of hillslopes between the lower reaches of the Afon Mawddach and the estate land of Nannau'.

Sites noted on the Gwynedd HER are shown on Figure 03 and listed in Appendix III

### **4.3 Environmental Remains and Soil Morphology**

The potential for the survival of environmental remains on the site overall is considered to be fairly low, as much of the area of the proposed water main passes through ground that has been much disturbed during previous ground works, and valuable information is unlikely to be recovered in these areas. This is especially so where the ground impact of the works is limited, due to the 'sliplining' and 'pipe bursting' techniques employed during the construction works. The value of environmental remains in previously undisturbed ground that will be open cut is unknown, however it is considered that the likely value of any environmental remains may be moderate, since the open cut areas of the work are likely to be where the route crosses low lying wet areas in the river floodplain, where preservation of plant macrofossils and peat is more likely. If much in the way of peat deposits is encountered, then a sampling strategy will be required to deal with this. The likelihood of this is highest in the open cut section A-B.

A wooden object (PRN 806; NGR SH72551784) was recovered 163m west of the endpoint of Section E to F during the digging of a shaft in the late 20<sup>th</sup> century to accommodate a grit separator in the towns sewerage system; the object was recovered at a depth of 3-4m in alluvial and gravel deposits associated with Afon Wnion. Additional waterlogged timber was identified but not recovered from the same depth and included a storm damaged 5m long oak trunk that appeared to have been carried down by river water. It is not expected that these depths will be required for the current scheme, due to the much shallower depths required for the open cut. However, the potential for identifying such remains should still be considered.

#### **4.4 Artefactual Potential**

There is considered to be some potential for the survival of artefactual remain from the site from the prehistoric to post-medieval periods. Whilst early archaeology has not been located within the immediate landscape of the water main renewal route, evidence from the surrounding area has revealed a certain amount of prehistoric and particularly Roman archaeology, so prehistoric and Roman artefacts may be recovered. Medieval settlement and ritual activity from early medieval is known from the wider area around the route, and evidence of development from medieval times onwards is noted within the town of Dolgellau, therefore the recovery of medieval and post medieval artefacts has to be considered possible, however the limited amount of significant intrusive groundworks may significantly reduce the likelihood of this.

## 4.5 Aerial Reconnaissance

Two RAF aerial photographs covering the Marian Mawr pipeline route were examined one taken on 4<sup>th</sup> May 1948 (RAF 106G UK 1468 frame 4182) and one taken on 6<sup>th</sup> June 1962 (RAF 58/5165 F2.1 frame 0174). The 1948 image was reasonably clear, and showed the wider area with significantly less development than is currently present. There is evidence that the field systems were more extensive than is currently the case and a little more of the route was under grassland than is currently the case, however no new sites were identified within the buffer zone of the pipeline route.

The 1962 image was a very clear one, with all features clearly visible. No additional information was noted on it relevant to the pipeline route, with the exception that feature 5 was shown not to be present. This indicates that this field boundary is of a very modern date.

*Lidar* 2014 data was also consulted. Despite being very clear, this revealed no new information about any sites along the pipeline route.

## 4.6 Gazetteer of Features

The features listed below (located on Figure 03) were identified during the desk based assessment and the walk over at Marian Mawr, Dolgellau, with recommendations for further assessment and mitigatory measures, where appropriate. They are located within the 50m buffer zone either side of the proposed water main renewal route. Definitions of the categories used and impact assessments are given in [Appendix IV](#).

*NB: The archaeological recommendations reflect the information currently provided by the client; any change to the route of the proposed mains renewal may require the recommendations to be reconsidered.*

## **FEATURE 01 (PRN 61326)**

**Site Name:** Llyndir, Tywyn Road (Cadw LB II Ref: 5166)

**Grid reference:** SH 71591798

**Period:** Post-medieval

**Category:** B

**Impact:** Unlikely – the water main route will avoid this site

**Route Section:** B-C

**Description:** An 18<sup>th</sup> century cottage, three bay with an asymmetrical door. It is rubble built and gable ended with an eastwards extension.

**Recommendations for further assessment:** None

**Recommendations for mitigatory measures:** Avoidance



## **FEATURE 02 (PRN 61327)**

**Site Name:** Drystone Wall Field Boundary

**Grid Reference:** SH 71371813 C

**Period:** Post-Medieval

**Category:** C

**Impact:** Slight – the water main will cross the drystone wall

**Route Section:** B-C

**Description:** A well-built drystone wall field boundary crossed by the pipe route at SH 71371805. The wall is up to 0.7m high and 0.5m wide, and built of medium to large freestone rubble. It is sinuous in nature and there are gaps in the wall, which may be as a result of recent activity. It could be of 18<sup>th</sup> or 19<sup>th</sup> century date. It is shown on the 1<sup>st</sup> edition Ordnance Survey map of 1889 (Figure 05) and the tithe map of 1840 (Figure 04), so must predate 1840.

**Recommendations for further assessment:** None

**Recommendations for mitigatory measures:** Basic record during watching brief.

## **FEATURE 03 (PRN 61328)**

**Site Name:** North-South drainage channel

**Grid Reference:** SH 71481804

**Period:** Modern

**Category:** D

**Impact:** Likely- the water main crosses this feature

**Route Section:** B-C

**Description:** A north-south drainage channel through a field. It has a base of pebble stones and debouches through an opening in the roadside boundary wall to the south, flowing under the road to the river to the south. It appears to have been dredged fairly recently.

**Recommendations for further assessment:** None

**Recommendations for mitigatory measures:** Basic Record during Watching Brief

## **FEATURE 04 (PRN 61329)**

**Site Name:** Boundary Walls

**Grid Reference:** SH 72291825

**Period:** Post-medieval

**Category:** D

**Impact:** Unlikely – the water main will avoid this site

**Route Section:** H-I

**Description:** Two walls bounding a north-south trackway between the properties of Bod Eryl and Argoed. That to the west is a modern mortar bonded one about 0.6m high and the one to the east appears to be older in date and is not bonded. Further north the wall bounds a yard and back garden area, is of drystone wall construction, and seems entirely modern in character.

**Recommendations for further assessment:** None

**Recommendations for mitigatory measures:** Avoidance

## **FEATURE 05 (PRN 61330)**

**Site Name:** Boundary Fence

**Grid Reference:** SH 71891786

**Period:** Modern

**Category:** D

**Impact:** Slight – the water main trench will cross this feature

**Route Section:** B-C

**Description:** A post and wire fence bounding a wooded area to the west. A 1962 aerial photographic image (RAF 106G UK 1468 frame 4182) shows that Feature 5 was not present.

This indicates that this field boundary is of a very modern date.

**Recommendations for further assessment:** None

**Recommendations for mitigatory measures:** None

## **FEATURE 06 (PRN 61331)**

**Site Name:** Back Gardens to the rear of Pandy'r Odyn

**Grid Reference:** SH 72111786

**Period:** Post-medieval

**Category:** C

**Impact:** Slight – the water main trench will cross this feature

**Route Section:** B-C

**Description:** A garden area to the rear of Pandy'r Odyn cottages, through which the pipe route will pass.

**Recommendations for further assessment:** None

**Recommendations for mitigatory measures:** Basic photographic record during watching brief if launch/receiving pits are located in any examples, prior to disturbance.

## **FEATURE 07 (PRN 61332)**

**Site Name:** Drainage channels within field to the west of the Sewage Treatment Works

**Grid Reference:** SH 71201831 C

**Period:** Post-medieval

**Category:** D

**Impact:** Slight – the water main trench will cross these features

**Route Section:** A-B

**Description:** Multiple Drainage channels within the low lying boggy field to the west of the sewage treatment works

**Recommendations for further assessment:** None

**Recommendations for mitigatory measures:** Record during Watching Brief

## **5 CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

The walkover survey of the proposed route of a water mains renewal identified a sub-urban landscape on the west side of the town of Dolgellau, both to the north and south of the Afon Wnion. South of the river to the west the area was more open, and was generally located within the floodplain of the river. Some of the pipeline route lay within low lying boggy fields (Section A-B and parts of B-C) and some along the public road (Section L-M). To the north and west of the river the route crossed higher ground, particularly in the grounds of Cerrig Camu house where a wooded landscape was encountered (Section J-K). Further east, both north and south of the river the route passed through an increasingly built up landscape as the town of Dolgellau was entered (Sections G-H, C-D, E-F), and mostly followed the route of existing public roads, with private houses and gardens bounding the road, although to the south east the route passed through an industrial estate, and the northern route passed along a small lane between houses to an open area beyond the suburban one to the north (Section H-I).

**5.2 Table of Sites and Recommendations**



<b>No.</b>	<b>PRN</b>	<b>Name</b>	<b>Impact</b>	<b>Recommendations for Further Assessment</b>	<b>Recommendations for Mitigatory Measures</b>
1	61326	Llyndir, 18 <sup>th</sup> century cottage	Unlikely	None	Avoidance
2	61327	Drystone wall field boundary	Slight	None	Basic record during watching brief
3	61328	North-South drainage channel	Likely	None	Basic record during watching brief
4	61329	Boundary walls	Unlikely	None	Avoidance
5	61330	Boundary Fence	Slight	None	None
6	61331	Back Gardens to rear of Pandy'r Odyn	Slight	None	Basic photographic record during watching brief if launch/receiving pits are located in any examples.
7	61332	Drainage channels within the field to the west of the Sewage Treatment Works	Slight	None	Basic record during watching brief

### 5.3 Discussion and Conclusion

In addition to the nineteen sites recorded on the Gwynedd HER and nine Listed Buildings within a 50m buffer zone around the proposed pipeline route (Figure 03; Appendix II), all of which will be avoided, seven features were identified along the route. These are noted in the gazetteer (section 4.6) along with recommendations for their mitigation, to be carried out during the pipeline works. These sites are all of post-medieval or modern date, four of which it is recommended are recorded during an archaeological watching brief carried out during the scheme groundworks, two of which are to be avoided, and one of which no further work is recommended.

The 'sliplining' and 'pipe-bursting' techniques to be employed during the renewal of the water main, and the fact only previously disturbed ground is likely to be affected along much of the route, means that the risk to any archaeology present in this area has to be considered to be low. Along much of the route (Sections C-D, E-F, G-H, M-L, parts of B-C and H-I) the route follows public roads and tracks, and is bounded by numerous private properties. These cannot be examined in detail, but they will not be disturbed by the main renewal works. Assuming that there are no stripped easements or other additional intrusive groundworks, it is not proposed that any archaeological evaluation be carried out. It is however necessary that an **intensive watching brief** be carried out during all significant intrusive groundworks associated with the 'sliplining' and 'pipe-bursting', and during the open cut lengths of new trenching, particularly in the low lying open field stretches on section A-B. This is to be carried out to ensure that any archaeological remains are identified and recorded. If any are encountered then appropriate time will need to be allowed for their proper recording.

During the watching brief, it is also recommended that basic recording is completed for Features 2, 3, 6 and 7 in advance of any potential disturbance.

## **6 ACKNOWLEDGEMENTS**

The author would like to thank Black & Veatch for commissioning the work and the assistance of the SNPA is also acknowledged. The walkover survey was carried out by Robert Evans of GAT.

## 7 SOURCES CONSULTED

### 7.1 Primary Sources

Ordnance Survey 1:10000 Series County Series Map Sheet SH71NW

Dolgellau Parish Tithe Map, 1840 (Gwynedd Archives Service)

*Lidar* 2014 surface model 1m data

Llwyn Estate survey of 1820 (ZM/86; Gwynedd Archives Service)

Ordnance Survey First Edition 1" to 25-Mile County Series Map Sheets XXXIII.14, XXXIII.15, XXXVII.02 & XXXVII.03, 1889

Ordnance Survey Second Edition 1" to 25-Mile County Series Map Sheets XXXIII.14, XXXIII.15, XXXVII.02 & XXXVII.03, 1901

[Aerial Photographs, Welsh Assembly Government Photographic Archive](#)

RAF 106G UK 1468 frame 4182 taken 4<sup>th</sup> May 1948

RAF 58/5165 F2.1 frame 0174 taken 6<sup>th</sup> June 1962

### 7.2 Secondary Sources

Alfrey, J. 2009 *Dolgellau: Understanding Urban Character*

Allen, P.M. and Jackson, A.A. 1985 *Geological excursions in the Harlech Dome* (BGS, London)

Arnold C J and Davies J L, 2000 *Roman and Early Medieval Wales*

Bowen, E.G. and Gresham, C.A. 1967. *History of Merioneth* (Dolgellau)

British Geological Survey 1982 *Harlech-Sheet 135*

Browne D, 1986 'Some Observations on a Supposed Roman Road from the Long Mountain to Dolgellau Proposed by John Rigg and Hugh Toller in *Britannia XIV*' *Arch in Wales* 26

Cadw/ICOMOS 1998 *Landscapes of Historic Interest in Wales Part 2.1: Landscapes of Outstanding Historic Interest*

Crew P and Musson C, 1996 *Snowdonia from the Air, Patterns in the Landscape*

Davidson, A. 2001 *Gazetteer of Churches in Gwynedd*. Unpublished GAT Report.

Dŵr Cymru drawing 5201-CD15110-N-D-01

English Heritage, 2015, *Management of Research Projects in the Historic Environment (MoRPHE)*.

English Heritage, 1991, *Management of Archaeological Projects*

Ellis T P, 1928 *The Story of Two Parishes Dolgellau and Llanelltyd*

Evans, R and Owen, K. 2010. *Afon Wnion Ground Investigation Works: Dolgellau, Gwynedd*. Gwynedd Archaeological Trust Report **876**

GAT 2005 *Historic Landscape Characterisation-Vale of Dolgellau*. Unpublished Gwynedd Archaeological Trust Report No. **537**

Hopewell, D. 1997 'Archaeological Survey and Excavations at Brithdir', *Journal of the Merioneth Historical and Record Society* XII, Part IV, 310-333.

Hopewell, D. 2006 *Roman roads in north-west Wales (G1632)* Unpublished GAT Report

Hopewell, D. 2008 *Gwanas Fawr Possible Roman Fort: Geophysical Survey (G1944)* Unpublished GAT Report No. 735.

Hopewell, D. 2013 *Roman Roads in North-West Wales*

Jones G D B, 1959 'Roman Merionethshire: The Roman Road West of Caer Gai' *BBCS XVIII Pt II*

Margary I D, 1955/57 *Roman Roads in Britain* revised ed. 1967

Owen, K. December 2013. *Afon Wnion, Dolgellau Extended Site Scope Investigation, Gwynedd*. Gwynedd Archaeological Trust Report **1157**

Pennant, T., 1781 *Journey to Snowdon*

Rigg J and Toller H, 1983 'A Roman Road from the Long Mountain to Dolgellau and Some Branches' *Britannia* XIV

RCAHMW 1921 *Inventory of the County of Merioneth*

Royal Commission on Ancient and Historic Monuments of Wales 2015 *Guidelines for digital archives*

Soulsby, I., *The Towns of Medieval Wales* (Chichester: Phillimore, 1983).

Smith, J. B. & Smith L. B. (ed), 2001 *History of Merioneth, Vol 2: The Middle Ages*.

*Standard and Guidance for Historic Environment Desk-Based Assessment* (Chartered Institute for Archaeologists, 2014).

St Joseph J K S, 1961 'Air reconnaissance in Roman Britain', 1958-60 *Journal of Roman Studies LI*

Waddelove E, 1999 *The Roman Roads of North Wales, Recent Discoveries*

White, R.B. 1978. 'Excavations at Brithdir, near Dolgellau, 1974'. In George C. Boon, ed. *Monographs and Collections I. Roman Sites*, Camb. Arch. Assoc., Cardiff.



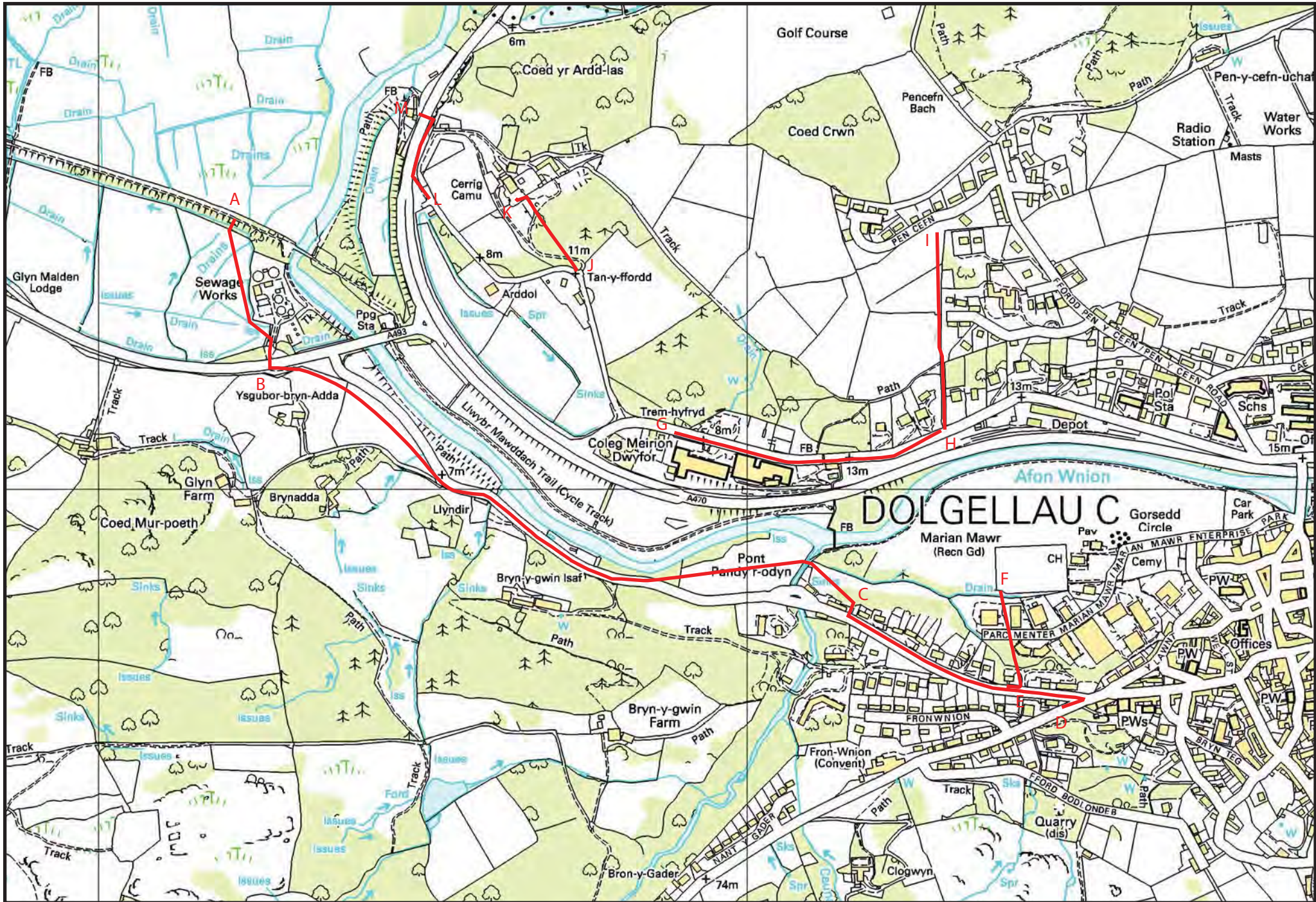
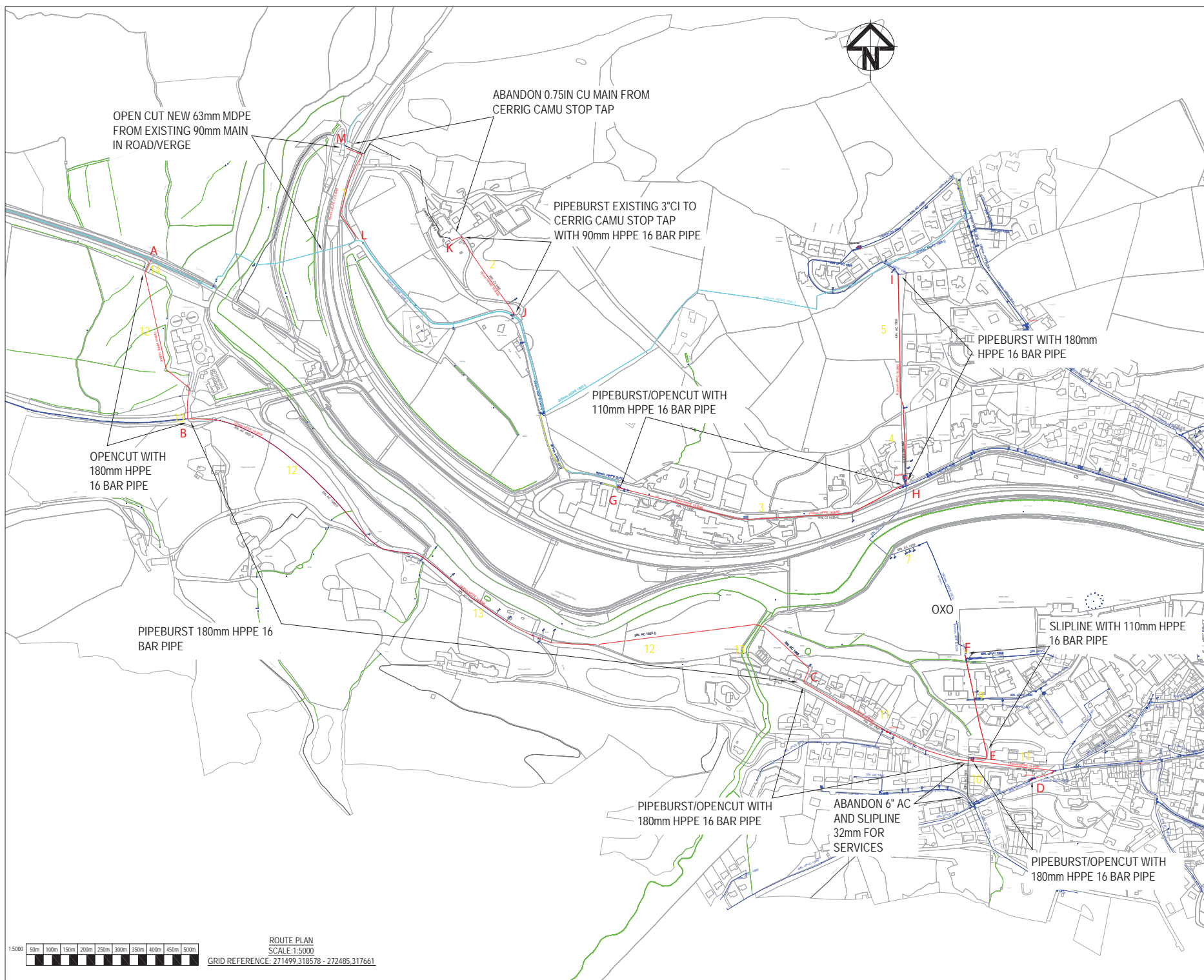


Figure 01 - Location Map denoting scheme route along with route sub-divisions A to M. Based on Ordnance Survey 1:10000 Series County Series Map Sheet SH71NW. Scale: 1 to 7500@A4. Crown Copyright. All Rights Reserved. License number AL100020895.





- NOTES:**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DCWW SPECIFICATIONS:
  - THE CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY REVISION 6 (CESM17)
  - ALL FLANGES TO BE NP16 RATED
  - ALL PROFUSE PIPE AND FITTING TO BE SDR 11 BAR RATED
  - ALL MOPE PIPES AND FITTINGS TO BE 15 BAR RATED
  - REFER TO DRAWING TD101 FOR THE FOLLOWING DETAILS: FIRE HYDRANT, AIR VALVE, SLUICE VALVE AND PRV CHAMBER DETAILS
  - THREE POST STOCK PROOF FENCE DETAIL INDICATOR AND MARKER POST DETAIL TYPICAL THRUST BLOCK DETAILS
  - TRENCH DETAILS/REINSTATEMENT TO BE AS DRAWING TD102 FOR WORK IN GRASSLAND, UNMADE TRACK, ROAD VERGE AND HIGHWAY
  - NO HEDGEROWS ARE TO BE REMOVED ON THIS PROJECT. IF HEDGEROW REMOVAL IS FOUND TO BE UNAVOIDABLE, THE CONTRACTOR IS TO CONTACT THE DESIGNER IN ADVANCE FOR FURTHER GUIDANCE. ALSO, DISTURBANCE TO HEDGEROWS IS TO BE AVOIDED DURING THE BIRD NESTING SEASON OF MARCH TO JULY
  - THE DEPTH AND LINE OF THE NEW MAIN IS TO BE SUPPLIED BY THE CONTRACTOR AT 50M INTERVALS FOR ALL DIRECTIONAL DRILLING WORK. ALL NEW DIRECTIONAL DRILL MAINS TO BE INSTALLED A MINIMUM DISTANCE OF METRES FROM THE EXISTING WATER MAINS
  - SERVICE TRANSFERS - THE CONTRACTOR IS TO ALLOW FOR THE TRANSFER OF ALL SERVICE CONNECTIONS FROM THE EXISTING MAINS TO THE PROPOSED MAIN. NEW PIPES TO BE 150mm MDPE TO BE INSTALLED BY OPEN CUT, MOUND OR SLIP LINING AS APPROPRIATE. ESTIMATED NUMBER OF RESIDENTIAL TRANSFERS - (PLUS FIELD CONNECTIONS) LOCATION OF CONNECTIONS TO BE DETERMINED BY THE CONTRACTOR ON SITE
  - CAUTION - CABLES, OVERHEAD CABLES ARE PRESENT WITHIN THE WORKING AREA. CONTRACTOR TO REFER TO HSE GUIDANCE NOTE CS5: 'AVOIDANCE OF DANGER FROM OVERHEAD LINES'. UNDERGROUND CABLES ARE ALSO PRESENT ON SITE. CONTRACTOR TO CONSULT UTILITY DRAWINGS AND IDENTIFY ALL UNDERGROUND SERVICES PRIOR TO COMMENCEMENT OF WORK
  - WORKING PRESSURE ON THIS PROJECT IS 16 BAR. TEST PRESSURE IS 20 BAR AT THE LOWEST POINT
  - CAUTION - NO CHLORINATED/CONTAMINATED WATER OR DRILLING FLUIDS ARE ALLOWED TO ENTER ANY WATER COURSE OR STORM DRAIN. CONTRACTOR TO REFER TO GUIDELINES ON POLLUTION PREVENTION AND INSTRUCTIONS IN CASE OF EMERGENCY
  - THIS DRAWING NEEDS TO BE READ IN CONJUNCTION WITH THE UTILITY INFORMATION PROVIDED SEPARATELY BY THE INDIVIDUAL UNDERTAKERS
  - TRIAL HOLES MAY BE REQUIRED TO ESTABLISH EXACT LOCATION OF UTILITIES
  - DETAILS ARE GUIDES ONLY. ALL PIPES, FITTINGS AND ASSOCIATED MATERIALS TO COMPLETE THE JOB ARE TO BE PROVIDED BY CONTRACTOR
  - CONTRACTOR TO BE AWARE THAT WATER MAINS MATERIALS MAY NOT BE MARKED OR MARKED INCORRECTLY TO WHAT IS INDICATED. IT IS THEREFORE ADVISABLE THAT THE POSSIBLE PRESENCE OF ASBESTOS (AC) OR PITCH FIBRE (PF) BE ANTICIPATED AND INCLUDED IN RAMS.

- EXISTING WATER MAIN
  - ABANDONED WATER MAIN
  - WATER MAIN TO BE ABANDONED
  - PROPOSED WATER MAIN - OPEN CUT
  - PROPOSED WATER MAIN - DIRECTIONAL DRILL
  - PROPOSED WATER MAIN - PIPEBURST
  - PROPOSED WATER MAIN - SLIPLINE
  - PROPOSED COMMUNICATION PIPE
  - TRIAL HOLE POSITION
  - SSSI, SCHEDULED ANCIENT MONUMENT
  - ▨ CONTAMINATED LAND
  - GREAT CRESTED NEWT RESTRICTIONS
  - ▨ ARCHAEOLOGICAL RESTRICTIONS
  - BADGER SETTS
  - MINE SHAFTS
- SAP ID                      POST CODE LL40 2SP

P01	12.10.15	JP	Preliminary Issue			12.10.15
Rev.	Date	Dim.	Description	Rev.	Chkd.	Apprd.
 <b>Capital Delivery Alliance</b> Cynghair Cyflawni Cyfawr						
Ty Awen, Spooner Close, Coed Kermis, Newport, NP10 8FZ						
Project Name: MARIAN MAWR PLAYING FIELDS (INCLUDING DOLGELLAU COLLEGE AND TALRAFON PH2)						
Drawing Title: ROUTE PLAN AND PIPE WORK DETAILS						
<b>PRELIMINARY</b>						
Checked:		Approved:		Date:		
				OCT 15		
Scale:		Designer:		Rev.:		
1:1250		J. PROUT		P01		
Drawing Number: 5201-CD15110-N-D-01						









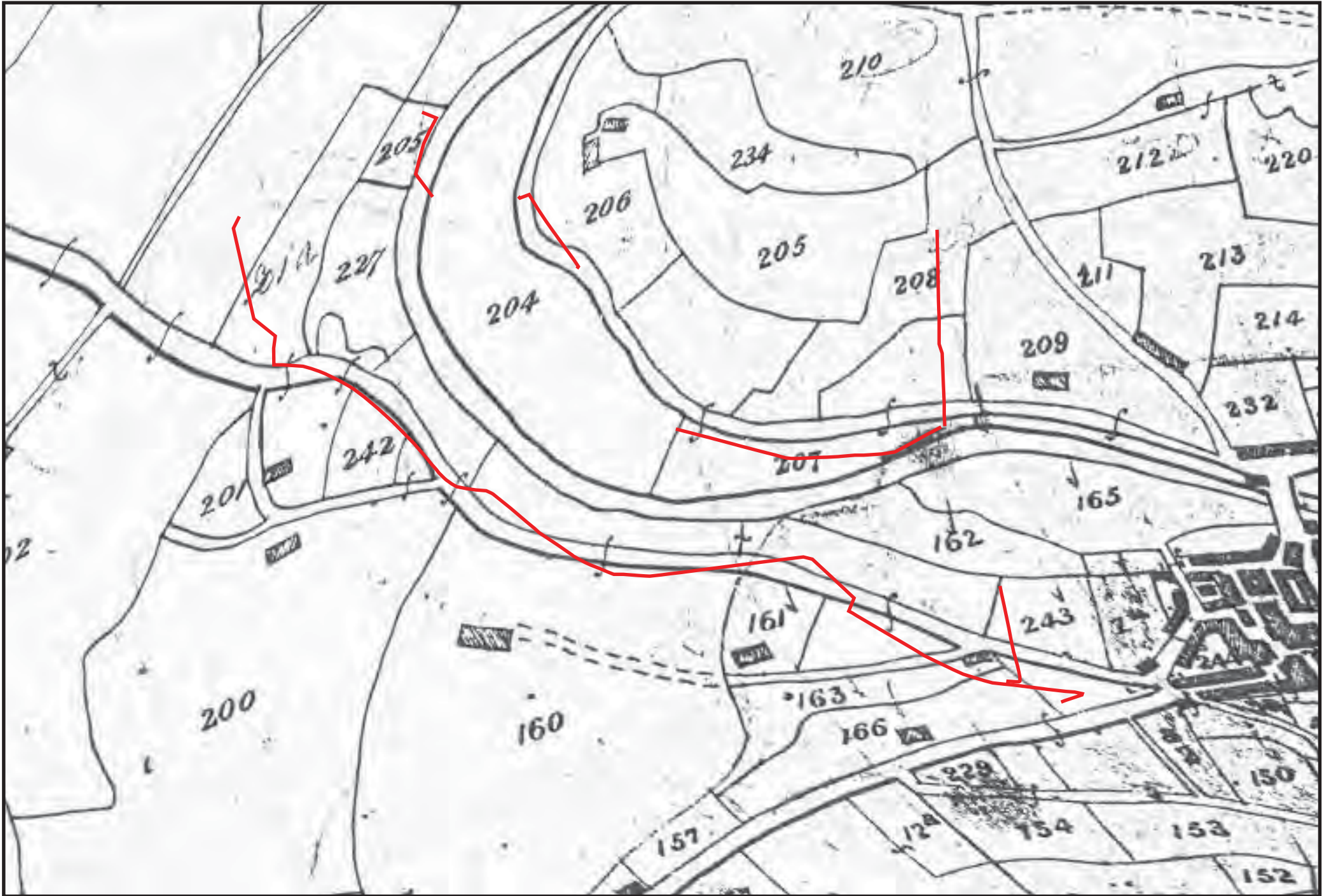


Figure 04 - Reproduction of 1840 Dolgellau Parish Tithe Map, with scheme route along with route sub-divisions A to M. NOT TO SCALE (Source: Gwynedd Archives)



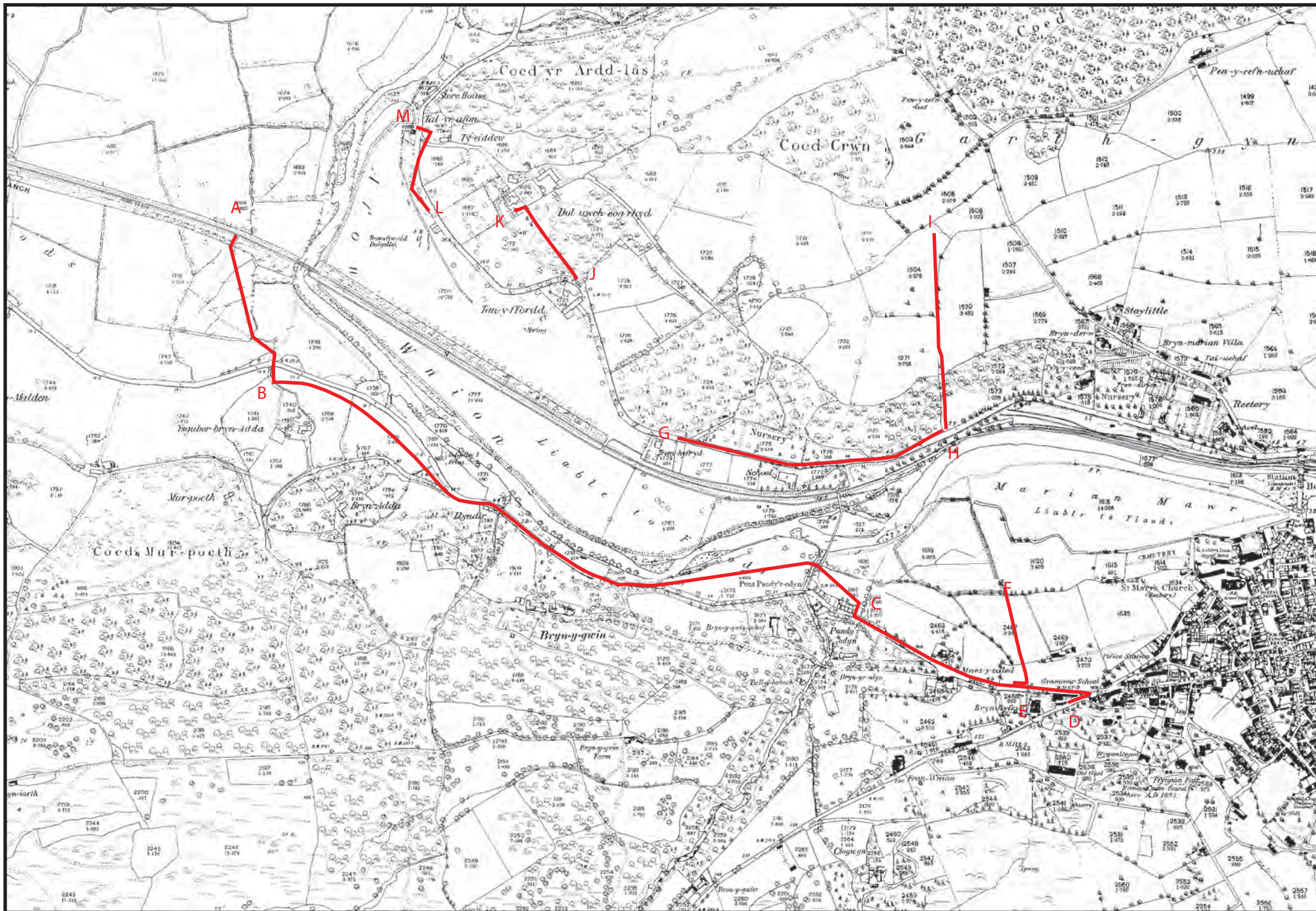


Figure 05 - Reproduction of 1889 First Edition 1" to 25-Mile County Series Map Sheets XXXIII.14, XXXIII.15, XXXVII.02 & XXXVII.03, with scheme route along with route sub-divisions A to M. Scale: 1 to 7500@A4 (Source: Historic Environment Record)





Plate 01: Section A-B: View north towards water treatment works, with pipe route immediately to the west



Plate 02: Section A-B: View north of pipeline route across boggy field to the west of the WTW





Plate 03: Section A-B: View south from the north end of the scheme, showing gateway through which pipe will pass



Plate 04: Section A-B: View showing pipe route across the field to the north-west of the WTW





Plate 05: Section B-C: View southwest of drystone wall [Feature 2]



Plate 06: Section B-C: View west of point at which pipeline leaves road and crosses sloping field





Plate 07: Section B-C: View from the northwest along pipeline route across field



Plate 08: Section B-C: View north showing sinuous drystone wall [Feature 2]





Plate 09: Section B-C: View southwest of modern drainage channel [Feature 3]



Plate 10: Section B-C: View west along street showing pipeline route in pavement





Plate 11: Section B-C: View west along street showing pipeline route in pavement, showing point where route crosses sloping field



Plate 12: Section B-C: View west across low lying floodplain field showing pipe route





Plate 13: Section B-C: View northeast along rear gardens at Pandy'r Odyn



Plate 14: Section C-D: View east along street showing pipe route in pavement



Plate 15: Section C-D: View west along street showing pipe route in pavement, showing former entrance to Bryngwyn





Plate 16: Section D-E: View looking north through council works area





Plate 17: Section H-I: View north from the road up lane between houses along which pipeline route will run



Plate 18: Section H-I: View from the south along north-south lane between houses





Plate 19: Section H-I: View from the north along north-south lane between houses



Plate 20: Section G-H: View west along street at Colrg Meirion Dwyfor, with pipeline route under pavement





Plate 21: Section G-H: View north of route of new pipe route at Carreg Camu





Plate 22: Section J-K: View northwest of route of new pipe route at Carreg Camu, showing raised wooded area



Plate 23: Section J-K: View northwest of route of new pipe route at Carreg Camu



## **APPENDIX I**

**Reproduction of Gwynedd Archaeological Project Design for an archaeological assessment (January 2016)**

# MARIAN MAWR PLAYING FIELDS (G2457)

## PROJECT DESIGN FOR ARCHAEOLOGICAL ASSESSMENT

*Prepared for*

*Black & Veatch*

***January 2016***

Ymddiriedolaeth Archaeolegol Gwynedd  
Gwynedd Archaeological Trust

**DOLGELLAU SPORTS CENTRE TO CWM 12” SCHEME (G2457)**

**PROJECT DESIGN FOR ARCHAEOLOGICAL ASSESSMENT**

Prepared for *Black & Veatch*, November 2015

**CONTENTS**

- 1 INTRODUCTION ..... 4
- 2 Archaeological and historical background ..... 6
  - 2.1 Historic Environment Record ..... 6
    - 2.1.1 Section A to B: ..... 6
    - 2.1.2 Section B to C: ..... 6
    - 2.1.3 Section C to D: ..... 6
    - 2.1.4 Section E to F: ..... 6
    - 2.1.5 Section G to H: ..... 7
    - 2.1.6 Section H to I: ..... 7
    - 2.1.7 Section J to K: ..... 7
    - 2.1.8 Section L to M: ..... 7
  - 2.2 Previous Archaeological Work ..... 8
- 3 METHODOLOGY ..... 9
  - 3.1 Assessment (Desktop Study) ..... 9
  - 3.2 Data processing and report compilation ..... 11
- 4 PERSONNEL ..... 12
- 5 HEALTH AND SAFETY ..... 13
- 6 INSURANCE ..... 14
- 7 SOURCES CONSULTED ..... 15
- FIGURE 01 ..... 16
  - Reproduction of Dŵr Cymru drawing 5201-CD15110-N-D-01 with Gwynedd Archaeological Trust amendments to include the location of Sections A to M ..... 16

# 1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by *Black & Veatch* to prepare a project design for an archaeological assessment in advance of a proposed water main renewal scheme in Dolgellau. The scheme measures up to 5.6km in length and is located within the Marian Mawr floodplain and local areas (NGR SH72001794).

The scheme route is defined on Dŵr Cymru drawing 5201-CD15110-N-D-01 (reproduced as Figure 01) and includes eight sections of varied length and methodology. For the purposes of the assessment, the sections have been designated as follows:

1. Section A to B: length 0.55km, located at the western end of the scheme, between the Llwybr Mawddach cycle trail (NGR SH71201841) and an access point off the A493 road leading into a sewage works (NGR SH71261819). This section will be completed as an open cut across an open field and the sewage works access road; the pipe will measure 180mm in width;
2. Section B to C: length 2km, located between an access point off the A493 road leading into a sewage works (NGR SH71261819) and the A493 road to the east (NGR SH72151779). The existing 3" asbestos cement main, installed in 1955, will be replaced by a new 180mm main on the same alignment using pipebursting (a larger new main pulled through a narrower older main); the route will cross open fields as well as run along a portion of the A493. It is expected that the impact here will be limited to the launching and receiving pits for the new main, located at strategic points along the route;
3. Section C to D: length 0.8km, located along the A493 road between NGR SH72151779 and NGR SH72491766. The existing 3" asbestos cement main, installed in 1955, will be replaced by a new 180mm main on the same alignment using a combination of pipebursting and open cut. It is expected that the impact here will include launching and receiving pits for the new main, located at strategic points along the route, and open trenching;
4. Section E to F: length 0.3km, located between the A493 (NGR SH72421769) and the Marian Mawr recreation ground to the north (NGR SH72381783). The existing 180mm HPPE main, installed in 2009, will be replaced by a new 110mm main on the same alignment using sliplining (a narrower new main pulled through a larger older main). It is expected that the impact here will be limited to the launching and receiving pits for the new main, located at strategic points along the route;

5. Section G to H: length 800m, located along a local road north of Coleg Meririon Dwyfor, between NGR SH71881808 and NGR SH72301809. The existing 4" cast iron main, installed in 1930, will be replaced by a new 110mm main on the same alignment using a combination of pipebursting and open cut. It is expected that the impact here will include launching and receiving pits for the new main, located at strategic points along the route, and open trenching;
6. Section H to I: length 600m, located from a local road north of Coleg Meririon Dwyfor, (NGR SH72301809), following a route due north to a local field boundary (NGR SH72301840). The existing 6" asbestos cement main, installed in 1958, will be replaced by a new 180mm main using pipebursting. It is expected that the impact here will be limited to launching and receiving pits for the new main, located at strategic points along the route;
7. Section J to K: length 300m, located from a local road (NGR SH72301809) to a stop tap at Cerrig Camu (NGR SH71651844). The existing 3" cast iron main, installed in 1955, will be replaced by a new 90mm main using pipebursting. It is expected that the impact here will be limited to launching and receiving pits for the new main, located at strategic points along the route; and
8. Section L to M: length 250m, located along a local road verge and across a local road between NGR SH72301809 and NGR SH71491857). The existing 3" cast iron main, installed in 1955, will be replaced by a new 90mm main using pipebursting. It is expected that the impact here will be limited to launching and receiving pits for the new main, located at strategic points along the route. This section will be completed as an open cut; the pipe will measure 63mm in width.

The assessment will be completed by mid-February 2016 and using the methodology specified in [para. 3](#).

The assessment will conform to the guidelines specified in the Chartered Institute for Archaeologists *Standard and Guidance for Historic Environment Desk-Based Assessment* (Chartered Institute for Archaeologists, 2014). Gwynedd Archaeological Trust is a Chartered Institute for Archaeologists *Registered Archaeological Organisation*. The format of this design corresponds to the requirements of section 2.3 of MoRPHE (English Heritage 2015) and to MAP2 (English Heritage, 1991, *Management of Archaeological Projects*).

The assessment will be monitored by the Snowdonia National Park Authority Archaeologist (SNPA); the content of this design and all subsequent reporting by GAT must be approved by SNPA prior to final issue.

## 2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

A brief examination of the regional Historic Environment Record has confirmed that there are known archaeological receptors within proximity to the proposed scheme route. A general summary is produced below.

### 2.1 Historic Environment Record

#### 2.1.1 Section A to B:

- no known archaeological receptors within close proximity to the route;

#### 2.1.2 Section B to C:

- Primary Reference Number (PRN) 12,314 - Bryn y Gwin, a post medieval Grade II listed building is located 52.7m southwest of the route (NGR SH71681785);
- PRN 5,360 – Bryn y Gwin Uchaf field bank, a low earthen bank of unknown period, located in a field next to Bryn y Gwin Uchaf house, c.75m south of the route (NGR SH71991780);
- PRN 57,859 – Post-medieval building to the east of No.6 Pandy'r-Odyn Cottages, c.77m south of the route (NGR SH72101780);
- PRN 57,858 – Post-medieval building southeast of Bryn y Gwin Uchaf, c.177m south of the route (NGR SH72041776);

#### 2.1.3 Section C to D:

- PRN 17,769 - Brithir to Pennal Roman Road (RRX96); a 10.5km long provisional route that is located along the local road into Dolgellau running from the southwest. The provisional route is in close proximity to the endpoint of Section C to D (NGR SH72491766);

#### 2.1.4 Section E to F:

- PRN 12,454 – early 19<sup>th</sup> century police station located to the immediate east of the route at NGR SH72441775;
- PRN 29,968 – Marian Mawr recreation ground, located on the southern bank of the Afon Wnion (centred at NGR SH72451795). Cartographic evidence shows no evidence of this area having been developed, presumably due to its

potential to flood. It is probable that in the past it was used for grazing, though it was given in trust to the town in 1811 and has since been the focus of the town's leisure activities. A hollow in the grass in the cricket outfield reputedly marks the site of a cockpit (NPRN 32851). Marian Mawr is located to the immediate north of Section E to F;

- PRN 806 - Wooden object recovered during the digging of a shaft to accommodate a grit separator in the towns sewerage system; the object was recovered at a depth of 3-4m in alluvial and gravel deposits associated with Afon Wnion. Additional waterlogged timber was identified but not recovered from the same depth and included a storm damaged 5m long oak trunk that appeared to have been carried down by river water. The findspot is located 163m west of the endpoint of Section E to F at NGR SH72551784.

#### 2.1.5 Section G to H:

- PRN 57,835 – site of a post-medieval building extant on historic Ordnance Survey mapping. Located 41m to the north of the route at NGR SH71951812;
- PRN 57,836 - site of a post-medieval well extant on historic Ordnance Survey mapping. Located 106m to the north of the route at NGR SH71991817;
- PRN 57,837 - site of a post-medieval building extant on historic Ordnance Survey mapping. Located 44m to the north of the route at NGR SH72081809;

#### 2.1.6 Section H to I:

- PRN 17,728 - Tomen y Mur to Brithdir Roman Road (RR69b); the route for the Roman Road follows a similar alignment to the local Pen y Cefn road. The provisional route located 146m to the east of Section G to H;

#### 2.1.7 Section J to K:

- PRN 11,604 - an 18<sup>th</sup> century recreational folly that is part of the Dol-rhyd House complex (PRN 4130) is located to the immediate north of the Section J to K endpoint at NGR SH71651844;

#### 2.1.8 Section L to M:

- PRN 6,365 - Ty-eiddew, a post-medieval house located near the endpoint of Section L to M at NGR SH71501855.



## **2.2 Previous Archaeological Work**

GAT undertook an archaeological watching brief as part of the 2010 site investigation programme for the Dolgellau Flood Risk Management Scheme (GAT report 876), to the east of the current assessment area. A total of 9 test pits were monitored within the Dolgellau floodplain that were characterised by shallow topsoil (maximum depth 0.15m), followed by alluvial deposits of river gravels and coarse and fine sand. No archaeological activity was identified within the confines of any example and no organic material was recorded.

Additional test pits for the Dolgellau Flood Risk Management Scheme were excavated in December 2013 (GAT Report G1157); Pit TP1 was located east of Afon Aran, within the floodplain, while Test Pit TP2 was positioned close to the mouth of the Afon Aran, at it flows into the Afon Wnion. Test Pit TP 1 was quite shallow with gravels and groundwater reached at a depth of 1.20m, below 2 layers of natural clayey sand deposits as well as the topsoil. No archaeological features or artefactual material was found in this test pit. Test Pit TP 2 achieved a depth of 3.30m with the upper deposits below the grassed surface area mainly composed of late 19<sup>th</sup> and early 20<sup>th</sup> century deposits containing quite a large amount of broken glass bottles and pottery throughout. The upper levels of this deposit also contained more modern waste material that had been mixed into the final levelling of the topsoil for the playing areas. Beneath the modern deposit layer, at a depth of 1.80m below ground level, two layers of sandy clay were encountered before reaching gravel and water levels at 3.30m. Apart from the modern material no other archaeological deposits were found.

## **3 METHODOLOGY**

### **3.1 Assessment (Desktop Study)**

A desk-based assessment is defined as “a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage....Significance is to be judged in a local, regional, national or international context as appropriate” (ClfA 2014, 4).

The desk-based assessment will involve a study of the following resources:

1. The regional Historic Environment Register (HER, Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor, Gwynedd LL57 2RT) will be examined for information concerning the study area. This will include an examination of the core HER, the 1:2500 County Series Ordnance Survey maps and any secondary information held within the. A list of archaeological receptors will be prepared for the report using information from the HER; this will include information sourced from within a 50m assessment buffer to examine any potential impact. This information will be used to prepare a gazetteer and will include information from the walkover survey if any previously unidentified receptors are also located;
2. The National Monuments Record (NMR RCAHMW, National Monuments Record of Wales, Plas Crug, Aberystwyth SY23 1NJ) will be checked for sites additional to the HER, and if required additional supporting information will be examined at the NMR.
3. On-line catalogue search of the National Library of Wales; and
4. Archive data and historic maps will be consulted in the regional archives of the Gwynedd Archives Service (Meirionnydd Record Office, Gwynedd Archive Service, Gwynedd Council, Ffordd y Bala, Meirionnydd, Dolgellau, LL40 2YF).

Part of the assessment will involve a walkover of the study; the aim of this stage of the work is to:

- verify the results of the desktop study.
- identify any further archaeological sites which may exist as above ground features
- photograph and record the present condition of all sites noted.

The walkover survey will follow the route of the water main renewal and will visit the four sections identified in para. 1.0. Any inaccessible areas will be noted during the walkover and in the assessment report. A photographic record will be maintained in RAW format using a digital SLR set to maximum resolution (Nikon D3000; resolution: 3,872 × 2,592 [10.2 effective megapixels]) and photographic metadata table will be completed and included in the report. Photographic images will be archived in TIFF format. The walkover survey will be completed in early February 2016.

A gazetteer will be compiled for any identified sites within and within proximity to the specified route based on information sourced from the regional HER and the walkover survey; the gazetteer will include:

1. Feature Number
2. Site name
3. PRN number
4. Grid reference
5. Period
6. Site type
7. Assessment category
8. Description
9. Impact
10. Recommendation for further assessment/evaluation
11. Recommendation for mitigatory measures

## **3.2 Data processing and report compilation**

Following completion of the stages outlined above, a report will be produced incorporating the following:

1. A non-technical summary
2. The results of the desk top analysis
3. Copies of historic maps where copyright restrictions allow
4. Results of the walk over survey
5. A map locating all recorded features and the extent of the walk over survey
6. An assessment of the impact of the development on the known or potential archaeological resource
7. Recommendations for further assessment/evaluation and/or mitigation measures
8. Conclusions
9. Sources
10. A gazetteer of all sites and features
11. Approved Project Design (Appendix I)
12. Photographic index (Appendix II)

Illustrations will include plans of the location of the study area and archaeological sites. Historical maps, when appropriate and if copyright permissions allow, will be included.

A draft copy of the report will be sent to Snowdownia National Park Authority Archaeologist and Black & Veatch. Once approved, a copy of the report will be submitted to Snowdownia National Park Authority Archaeologist and Black & Veatch and to the Historic Environment Record located at the Gwynedd Archaeological Trust. Submission of digital information to the Royal Commission on the Ancient and Historical Monuments of Wales will be undertaken in accordance with the RCAHMW Guidelines for Digital Archives Version 1 (2015). Digital information will include the photographic archive and associated metadata.

## **4 PERSONNEL**

The project will be managed by John Roberts, Principal Archaeologist GAT Contracts Section. The assessment will be completed by a project archaeologist who will have responsibility for completing the desk based assessment, completing the walkover survey, maintaining the site archive, liaising with SNPA and Black & Veatch and submitting the draft report and final report. The project manager will be responsible for reviewing and approving the report prior to submission.

## **5 HEALTH AND SAFETY**

The GAT project archaeologists will be CSCS certified. A site specific risk assessment will be prepared prior to the start of fieldwork. The project archaeologists will be issued with required personal safety equipment appropriate for the walkover survey.

## **6 INSURANCE**

### **Public Liability**

Limit of Indemnity- £5,000,000 any one event in respect of Public Liability

INSURER Aviva Insurance Limited

POLICY TYPE Public Liability

POLICY NUMBER 24765101CHC/000405

EXPIRY DATE 22/06/2016

### **Employers Liability**

Limit of Indemnity- £10,000,000 any one occurrence.

The cover has been issued on the insurers standard policy form and is subject to their usual terms and conditions. A copy of the policy wording is available on request.

INSURER Aviva Insurance Limited

POLICY TYPE Employers Liability

POLICY NUMBER 24765101CHC/000405

EXPIRY DATE 22/06/2016

### **Professional Indemnity**

Limit of Indemnity- £5,000,000 in respect of each and every claim

INSURER Hiscox Insurance Company Limited

POLICY TYPE Professional Indemnity

POLICY NUMBER

HU PI 9129989/1208

EXPIRY DATE 23/07/2016

## 7 SOURCES CONSULTED

Dŵr Cymru drawing 5201-CD15110-N-D-01

English Heritage, 2015, *Management of Research Projects in the Historic Environment (MoRPHE)*.

English Heritage, 1991, *Management of Archaeological Projects*

Evans, R and Owen, K. 2010. *Afon Wnion Ground Investigation Works: Dolgellau, Gwynedd*. Gwynedd Archaeological Trust Report **876**

Owen, K. December 2013. *Afon Wnion, Dolgellau Extended Site Scope Investigation, Gwynedd*. Gwynedd Archaeological Trust Report **1157**

Royal Commission on Ancient and Historic Monuments of Wales 2015 *Guidelines for digital archives*

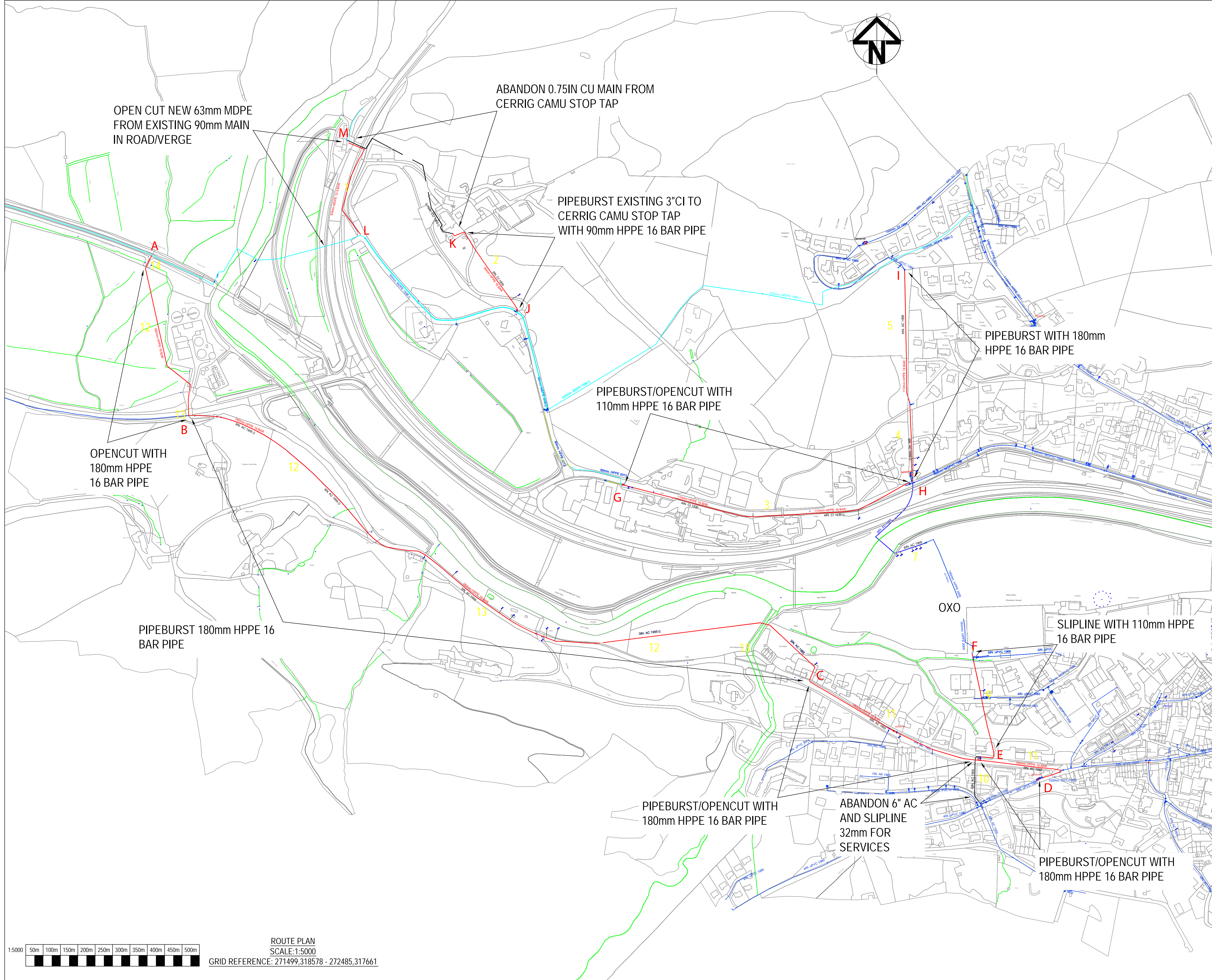
*Standard and Guidance for Historic Environment Desk-Based Assessment* (Chartered Institute for Archaeologists, 2014).



## **FIGURE 01**

**Reproduction of Dŵr Cymru drawing 5201-CD15110-N-D-01 with  
Gwynedd Archaeological Trust amendments to include the location of  
Sections A to M**





- NOTES:**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE FOLLOWING DCWW SPECIFICATIONS:
  - THE CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY REVISION 6 (CESW 7)
  - ALL FLANGES TO BE NP16 RATED
  - ALL PRODUCE PIPE AND FITTING TO BE SDR 35 BAR RATED
  - ALL MDPE PIPES AND FITTINGS TO BE 12.5 BAR RATED
  - REFER TO DRAWING TD101 FOR THE FOLLOWING DETAILS: FIRE HYDRANT, AIR VALVE, SLUICE VALVE AND PRV CHAMBER DETAILS
  - TIMBER POST STOCK PROOF FENCE DETAIL
  - INDICATOR AND MARKER POST DETAIL
  - TYPICAL THRUST BLOCK DETAILS
  - TRENCH DETAILS / REINSTATEMENT TO BE AS DRAWING TD102 FOR WORK IN GRASSLAND, UNMADE TRACK, ROAD VERGE AND HIGHWAY
  - NO HEDGEROWS ARE TO BE REMOVED ON THIS PROJECT. IF HEDGEROW REMOVAL IS FOUND TO BE UNAVOIDABLE, THE CONTRACTOR IS TO CONTACT THE DESIGNER IN ADVANCE FOR FURTHER GUIDANCE. ALSO, DISTURBANCE TO HEDGEROWS IS TO BE AVOIDED DURING THE BIRD NESTING SEASON OF MARCH TO JULY
  - THE DEPTH AND LINE OF THE NEW MAIN IS TO BE SUPPLIED BY THE CONTRACTOR AT 50M INTERVALS FOR ALL DIRECTIONAL DRILLING WORK. ALL NEW DIRECTIONAL DRILL MAINS TO BE INSTALLED A MINIMUM DISTANCE OF 1 METRE FROM THE EXISTING WATER MAINS
  - SERVICE TRANSFERS: THE CONTRACTOR IS TO ALLOW FOR THE TRANSFER OF ALL SERVICE CONNECTIONS FROM THE EXISTING MAINS TO THE PROPOSED MAIN. NEW PIPES TO BE 110mm MDPE, TO BE INSTALLED BY OPEN CUT, MOLING OR SLIP LINING AS APPROPRIATE. ESTIMATED NUMBER OF RESIDENTIAL TRANSFERS - (PLUS FIELD CONNECTIONS) LOCATION OF CONNECTIONS TO BE DETERMINED BY THE CONTRACTOR ON SITE
  - CAUTION - CABLES OVERHEAD CABLES ARE PRESENT WITHIN THE WORKING AREA. CONTRACTOR TO REFER TO HSE GUIDANCE NOTE GS6 "AVOIDANCE OF DANGER FROM OVERHEAD LINES". UNDERGROUND CABLES ARE ALSO PRESENT ON SITE. CONTRACTOR TO CONSULT UTILITY DRAWINGS AND IDENTIFY ALL UNDERGROUND SERVICES PRIOR TO COMMENCEMENT OF WORK
  - WORKING PRESSURE ON THIS PROJECT IS 12.5 BAR. TEST PRESSURE IS 18 BAR AT THE LOWEST POINT
  - CAUTION! - NO CHLORINATED / CONTAMINATED WATER OR DRILLING FLUIDS ARE ALLOWED TO ENTER ANY WATER COURSE OR STORM DRAIN. CONTRACTOR TO REFER TO GUIDELINES ON POLLUTION PREVENTION AND INSTRUCTIONS IN CASE OF EMERGENCY
  - THIS DRAWING NEEDS TO BE READ IN CONJUNCTION WITH THE UTILITY INFORMATION PROVIDED SEPARATELY BY THE INDIVIDUAL UNDERTAKERS
  - TRIAL HOLES MAY BE REQUIRED TO ESTABLISH EXACT LOCATION OF UTILITIES
  - DETAILS ARE GUIDES ONLY. ALL PIPES, FITTINGS AND ASSOCIATED MATERIALS TO COMPLETE THE JOB ARE TO BE PROVIDED BY CONTRACTOR
  - CONTRACTOR TO BE AWARE THAT WATER MAINS MATERIALS MAY NOT BE MARKED OR MARKED INCORRECTLY TO WHAT IS INDICATED. IT IS THEREFORE ADVISABLE THAT THE POSSIBLE PRESENCE OF ASBESTOS (AC) OR PITCH FIBRE (PF) BE ANTICIPATED AND INCLUDED IN RAMS.

- EXISTING WATER MAIN
  - - - ABANDONED WATER MAIN
  - - - WATER MAIN TO BE ABANDONED
  - PROPOSED WATER MAIN - OPENCUT
  - - - PROPOSED WATER MAIN - DIRECTIONAL DRILL
  - - - PROPOSED WATER MAIN - PIPEBURST
  - - - PROPOSED WATER MAIN - SLIPLINE
  - - - PROPOSED COMMUNICATION PIPE
  - + TRIAL HOLE POSITION
  - SSSI, SCHEDULED ANCIENT MONUMENT
  - CONTAMINATED LAND
  - GREAT CRESTED NEWT RESTRICTIONS
  - ARCHAEOLOGICAL RESTRICTIONS
  - BADGER SETTS
  - MINE SHAFTS
- SAP ID                      POST CODE LL40 2SP

P01	12.10.15	JP	Preliminary Issue				12.10.15
Rev.	Date	Dr.	Description	Rvd	Chkd	Appd	Date

**Capital Delivery Alliance**  
**Cynghair Cyflawni Cyfalaf**

Ty Awen, Spooner Close, Coed Kernew, Newport, NP108FZ

Project Name: MARIAN MAWR PLAYING FIELDS (INCLUDING DOLGELLAU COLLEGE AND TALRAFON PH2)

Drawing Title: ROUTE PLAN AND PIPE WORK DETAILS

Drawing Status: PRELIMINARY

Checked:                      Approved:                      Date: OCT '15

Scale: 1:1250                      Designer: J. PROUT                      Rev: P01

Drawing Number: 5201-CD15110-N-D-01

1:5000 50m 100m 150m 200m 250m 300m 350m 400m 450m 500m

ROUTE PLAN SCALE: 1:5000

GRID REFERENCE: 271499,318578 - 272485,317661



## **APPENDIX II**

### **Photographic Metadata**

<b>File reference</b>	<b>Project name</b>	<b>Section</b>	<b>Description</b>	<b>View from</b>	<b>Type</b>	<b>Date</b>	<b>Originating person</b>	<b>Originating organisation</b>	<b>GAT Report 1293 Plate No.</b>
G2457_001	Marian Mawr	E-F	View across council works area through which pipeline will pass	NNW	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_002	Marian Mawr	B-C	View along rear gardens at Pandy'r Odyn	WNW	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 13
G2457_003	Marian Mawr	B-C	View between properties on street where water main meets the road	SSW	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_004	Marian Mawr	C-D	View along street showing pipe route in pavement	W	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 14
G2457_005	Marian Mawr	C-D	View along street showing pipe route in pavement	W	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_006	Marian Mawr	C-D	View along street showing pipe route in pavement, showing former entrance to Bryngwyn	E	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 15
G2457_007	Marian Mawr	D	View along street at the road junction to the Cadair Idris road, pipeline is in the pavement	E	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_008	Marian Mawr	E	View looking north through council works area	S	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 16
G2457_009	Marian Mawr	B-C	View across low lying floodplain field showing pipe route	E	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 12

<b>File reference</b>	<b>Project name</b>	<b>Section</b>	<b>Description</b>	<b>View from</b>	<b>Type</b>	<b>Date</b>	<b>Originating person</b>	<b>Originating organisation</b>	<b>GAT Report 1293 Plate No.</b>
G2457_010	Marian Mawr	B-C	View across low lying floodplain field showing pipe route	W	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_011	Marian Mawr	B-C	View along street showing pipeline route in pavement	W	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_012	Marian Mawr	B-C	View along street showing pipeline route in pavement	E	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 10
G2457_013	Marian Mawr	B-C	View along street showing pipeline route in pavement, showing point where route crosses sloping field	E	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 11
G2457_014	Marian Mawr	B-C	View along street showing pipeline route in pavement	W	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_015	Marian Mawr	B-C	Point at which pipeline leaves road and crosses sloping field	E	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 06
G2457_016	Marian Mawr	B-C	View looking along pipeline route across field	ESE	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 07
G2457_017	Marian Mawr	B-C	View showing sinuous drystone wall [Feature 2]	S	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 08
G2457_018	Marian Mawr	B-C	Modern drainage channel [Feature 3] debouching into watercourse by the road	ENE	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 09
G2457_019	Marian Mawr	B-C	View of drystone wall [Feature 2]	NNE	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 05

<b>File reference</b>	<b>Project name</b>	<b>Section</b>	<b>Description</b>	<b>View from</b>	<b>Type</b>	<b>Date</b>	<b>Originating person</b>	<b>Originating organisation</b>	<b>GAT Report 1293 Plate No.</b>
G2457_020	Marian Mawr	B-C	View along road showing the crossing point of the pipeline route	E	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_021	Marian Mawr	A-B	View towards water treatment works, with pipe route immediately to the west	S	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 01
G2457_022	Marian Mawr	A-B	View of pipeline route across boggy field to the west of the WTW	S	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 02
G2457_023	Marian Mawr	B-C	View of pipeline route across boggy field to the west of the WTW	SXSE	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_024	Marian Mawr	B-C	General view showing Drystone wall [Feature 2]	N	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_025	Marian Mawr	B-C	General view from river crossing	N	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_026	Marian Mawr	A-B	View from the north end of the scheme, showing gateway through which pipe will pass	N	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 03
G2457_027	Marian Mawr	A-B	View showing pipe route across the field to the north-west of the WTW	SE	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 04
G2457_028	Marian Mawr	M-J	View of pipeline route in small access road	SE	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	

<b>File reference</b>	<b>Project name</b>	<b>Section</b>	<b>Description</b>	<b>View from</b>	<b>Type</b>	<b>Date</b>	<b>Originating person</b>	<b>Originating organisation</b>	<b>GAT Report 1293 Plate No.</b>
G2457_029	Marian Mawr	J-K	View of route of new pipe route at Carreg Camu	SE	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 23
G2457_030	Marian Mawr	J-K	View of route of new pipe route at Carreg Camu, showing raised wooded area	SSE	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 22
G2457_031	Marian Mawr	J-K	View of route of new pipe route at Carreg Camu, showing saplings in woodland	S	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_032	Marian Mawr	G-H	View of route of new pipe route at Carreg Camu	S	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 21
G2457_033	Marian Mawr	G-H	View along street at Colrg Meirion Dwyfor, with pipeline route under pavement	E	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 20
G2457_034	Marian Mawr	H-I	View along the street	E	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_035	Marian Mawr	H-I	View from the road up lane between houses along which pipeline route will run	S	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 17
G2457_036	Marian Mawr	H-I	View along the street from the east	ENE	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_037	Marian Mawr	H-I	View from the south along north-south lane between houses	S	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 18

<b>File reference</b>	<b>Project name</b>	<b>Section</b>	<b>Description</b>	<b>View from</b>	<b>Type</b>	<b>Date</b>	<b>Originating person</b>	<b>Originating organisation</b>	<b>GAT Report 1293 Plate No.</b>
G2457_038	Marian Mawr	H-I	View from the south along north-south lane between houses	S	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	
G2457_039	Marian Mawr	H-I	View from the north along north-south lane between houses	N	Photograph	05/02/2016	Robert Evans	Gwynedd Archaeological Trust	Plate 19



## **APPENDIX III**

### **Sites Listed on the Gwynedd HER**

<b>Designation</b>	<b>Description</b>	<b>Location</b>	<b>Type</b>	<b>Date</b>	<b>Source</b>
PRN 4130; PRN 943; NPRN 28350; CADW LB 5128	Dol-rhyd - House	SH71631846	House	Post-medieval	Gwynedd HER; RCAHMW; CADW LB
PRN 11845; NPRN 41647; CADW LB 5130; CADW LB 5131	Dolrhyd School, Stables and Barns	SH71681849	Stable	Post-medieval	Gwynedd HER; RCAHMW; CADW LB
PRN 11604; NPRN 23095; CADW LB 5129	Music-room-dol'rhyd;gazebo, Summerhouse	SH71631841	Folly	Post-medieval	Gwynedd HER; RCAHMW; CADW LB
NPRN 41733	Tan-y-ffordd, Barn	SH71731830	Barn	Post-medieval	RCAHMW
PRN 6365; NPRN 28804	Ty-eiddew, Dolgellau	SH71531856	House	Post-medieval	Gwynedd HER; RCAHMW
NPRN 409504	Tal-yr-afon; Talrafon, Dolgellau	SH71481858	House	Post-medieval	RCAHMW
PRN 57835	Building, N of Coleg Meirion Dwyfor	SH71951812	Building	Post-medieval	Gwynedd HER
PRN 57837	Building, NE of Coleg Meirion Dwyfor	SH72081809	Building	Post-medieval	Gwynedd HER
NPRN 419541	Coleg Meirion Dwyfor, Bloc Idris; Former Dr Williams School For Girls, Dolgellau	SH72051802	College; School	19th Century	RCAHMW
NPRN 409503	Y Bryn, Dolgellau	SH72241810	House	20th Century	RCAHMW
CADW LB 5166	Llyndir, Towyn Road	SH71591798	House	?	CADW LB
NPRN 265181	Bryn Y Gwin	SH71711785	Garden	Post-medieval	RCAHMW
NPRN 28749	Tal-y-bont Cottage	SH72091784	House	Post-medieval	RCAHMW
PRN 57859	Building, to the Rear (SW) of No.6 Pandy'r-odyn Cottages, Towyn Road	SH72101780	Building	Post-medieval	Gwynedd HER
NPRN 28612; CADW LB 5110	No.6 Pandy'r-Odyn Cottages, Towyn Road	SH72111780	Cottage	Post-medieval	RCAHMW; CADW LB

<b>Designation</b>	<b>Description</b>	<b>Location</b>	<b>Type</b>	<b>Date</b>	<b>Source</b>
NPRN 28612; CADW LB 5109	No.5 Pandy'r-Odyn Cottages,Towyn Road	SH72121780	Cottage	Post-medieval	RCAHMW; CADW LB
CADW LB 5114	No.3 Pandy'r-Odyn Cottages,Towyn Road	SH72131782	Cottage	Post-medieval	CADW LB
CADW LB 5113	No.2 Pandy'r-Odyn Cottages,Towyn Road	SH72131781	Cottage	Post-medieval	CADW LB
CADW LB 5112	No.1 Pandy'r-Odyn Cottages,Towyn Road	SH72141781	Cottage	Post-medieval	CADW LB

## **APPENDIX IV**

### **Definition of Terms**

## **Categories of importance**

The following categories were used to define the importance of the archaeological resource.

### *Category A - Sites of National Importance.*

Scheduled Ancient Monuments, Listed Buildings of grade II\* and above, as well as those that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both.

Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

### *Category B - Sites of regional or county importance.*

Grade II listed buildings and sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region.

Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

### *Category C - Sites of district or local importance.*

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened.

Category C sites nevertheless merit adequate recording in advance of damage or destruction.

### *Category D - Minor and damaged sites.*

Sites that are of minor importance or are so badly damaged that too little remains to justify their inclusion in a higher category.

For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

### *Category E - Sites needing further investigation.*

Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further evaluation. In this report several sites of unknown potential have been allocated to this category.

## **Definition of Impact**

The impact of the proposed development on each feature was estimated. The impact is defined as *none, slight, unlikely, likely, significant, considerable or unknown* as follows:

### *None:*

There is no construction impact on this particular site.

### *Slight:*

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the feature, e.g. part of a trackway or field bank.

*Unlikely:*

This category indicates sites that fall within the band of interest but are unlikely to be directly affected. This includes sites such as standing and occupied buildings at the margins of the band of interest.

*Likely:*

Sites towards the edges of the study area, which may not be directly affected, but are likely to be damaged in some way by the construction activity.

*Significant:*

The partial removal of a site affecting its overall integrity. Sites falling into this category may be linear features such as roads or tramways where the removal of part of the feature could make overall interpretation problematic.

*Considerable:*

The total removal of a feature or its partial removal which would effectively destroy the remainder of the site.

*Unknown:*

This is used when the location of the site is unknown, but thought to be in the vicinity of the proposed works.

### **Definition of field evaluation techniques**

Field evaluation is necessary to fully understand and assess most class E sites and to allow the evaluation of areas of land where there are no visible features but for which there is potential for sites to exist. Two principal techniques can be used for carrying out the evaluation: geophysical survey and trial trenching. Topographic survey may also be employed where sites are thought to survive as earthworks.

Geophysical survey most often involves the use of a magnetometer, which allows detection of some underground features, depending on their composition and the nature of the subsoil. Other forms of geophysical survey, including resistivity survey and ground penetrating radar might also be of use.

Trial trenching allows a representative sample of the development area to be investigated at depth. Trenches of appropriate size can also be excavated to evaluate category E sites. Trenching is typically carried out with trenches of between 20 to 30m length and 2m width. The topsoil is removed by machine and the resulting surface is cleaned by hand, recording features. Depending on the stratigraphy encountered the machine may be used to remove stratigraphy to deeper levels.

### **Definition of Mitigatory Recommendations**

Below are the measures that may be recommended to mitigate the impact of the development on the archaeology.

*None:*

No impact so no requirement for mitigatory measures.

*Detailed recording:*

This requires a full photographic record and measured survey prior to commencement of works.

Archaeological excavation may also be required depending on the particular feature and the extent and effect of the impact.

*Basic recording:*

Requiring a photographic record and full description prior to commencement of works.

*Strip, Map and Sample:*

The technique of Strip, Map and Sample involves the examination of machine-stripped surfaces to identify archaeological remains. The stripping is undertaken under the supervision of an archaeologist. Stripping and removal of the overburden is undertaken in such a manner as to ensure damage does not take place to surfaces that have already been stripped, nor to archaeological surfaces that have not yet been revealed.

Stripping is undertaken in as careful a manner as possible, to allow for good identification of archaeological features. A small team of archaeologists will be responsible for subsequently further cleaning defined areas where necessary. Complex sites which cannot be avoided will need to be fully excavated.

*Watching brief:*

This is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

*Avoidance:*

Features, which may be affected directly by the scheme, or during the construction, should be avoided. Occasionally a minor change to the proposed plan is recommended, but more usually it refers to the need for care to be taken during construction to avoid accidental damage to a feature. This is often best achieved by clearly marking features prior to the start of work.

*Reinstatement:*

The feature should be re-instated with archaeological advice and supervision.



Gwynedd Archaeological Trust  
Ymddiriedolaeth Archaeolegol Gwynedd

Craig Beuno, Ffordd y Garth, Bangor, Gwynedd. LL57 2RT  
Ffon: 01248 352535. Ffacs: 01248 370925. email: [gat@heneb.co.uk](mailto:gat@heneb.co.uk)

