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Repair Works to St Asaph Bridge, St Asaph, Denbighshire LL17 0LU

July 2023 v1.0



Archaeological Watching Brief

Project Code: A0400.1

Report no. 0411

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July 2023 v1.0

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Project Code: A0400.1
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1.0 NON-TECHNICAL SUMMARY

Comisiynwyd Aeon Archaeology gan G H James Cyf i gynnal brîff gwylio archeolegol yn ystod gwaith atgyweirio i Heneb Gofrestredig - St Asaph Bridge, Llanelwy, Sir Ddinbych LL17 0LU.

Roedd y brîff gwylio archeolegol yn canolbwyntio ar wyllo'r cloddio sy'n gysylltiedig â thynnu'r hen lwybr, o dan fwa'r bont, yn Llanelwy a'r cloddio sy'n gysylltiedig â gosod y llwybr newydd, ar linell newydd, a hefyd gwylio lleihau'r llwybr newydd. craith erydiad yr afon i'r dwyrain gyda chloddwr ar draciau.

Datgelodd y gwaith fod wyneb bloc calchfaen o gerrig "yn sefyll ar y pen", ac sydd wedi'u dehongli fel cerrig llaith, i leihau pŵer llif yr afon ar y lan orllewinol yn ystod cyfnodau o lifogydd. Nid oedd unrhyw berthynas stratigraffig i benderfynu a oedd y cerrig hyn "o oedran" â phont 1770, neu wedi'u hychwanegu yn ddiweddarach. Hefyd, daethpwyd o hyd i blinth carreg wedi'i osod a oedd yn sail i ategwaith y bont yn ogystal â chyfres o gyn-sailau rheiliau haearn.

Aeon Archaeology was commissioned by G H James Cyf to carry out an archaeological watching brief during repair work to the Scheduled Monument of St Asaph Bridge, St Asaph, Denbighshire LL17 0LU.

The archaeological watching brief concentrated on observing the groundworks associated with the removal of the existing pathway beneath the bridge arch in St Asaph and the excavations associated with the installation of the new pathway along a slightly different alignment, as well as the grading of the erosion scar to the east.

The works revealed a limestone block surface of stones set on-end and which have been interpreted as pitching stones to reduce the power of the river's flow on the western bank during times of flood. There was no stratigraphic relationship to determine whether these stones were contemporary with the 1770 bridge build or had been added at a later date. In addition a laid stone plinth was uncovered which constituted the footing for the bridge abutment as well as a series of former iron railing bases.

2.0 INTRODUCTION

Aeon Archaeology has been commissioned by G H James Cyf, hereafter ‘the Client,’ to carry out an archaeological watching brief during repair work to the Scheduled Monument of St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (centred on **NGR SJ 03518 74246**) (figures 01-04).

The development was undertaken as part of permitted development rights part 12 class A (works carried out by a local authority for a Council function etc) and therefore did not require formal planning permission. The proposed development did however require works to a Scheduled Monument (SM) (FL026) and as such Scheduled Monument Consent (SMC) was sought from Cadw by the Client, being granted on the 16th February 2022. The application for scheduled monument consent involved:

- (i) In situ preservation of the limestone block surface / scour stones exposed in 2017
- (ii) Archaeologically expose the remaining scour stones to c.3.6m from E side of second arch on W bank
- (iii) Remove existing asphalt footpath, reinstate footpath on new alignment and to new (lower) height, with concrete edge, granular sub base and asphalt finish
- (iv) Install slope comprising concrete bedding with grey/yellow limestone setts laid with 10mm mortar joints, between footpath to toe / tie in with original scour stones. Membrane will be used where concrete cast against original scour stones to ensure effective preservation.

The following conditions concerning archaeology were applied to the SMC:

- e) No works, including site clearance, shall commence until Cadw has been informed in writing of the name of an appropriately qualified archaeologist operating to CIfA published standards and guidance who will carry out an appropriate programme of archaeological mitigation works in accordance with a written scheme of investigation, which has been submitted to, and approved in writing by, Cadw. No work shall commence until Cadw has confirmed in writing that the proposed archaeologist and archaeological works are acceptable.
- f) A digital copy of the draft archaeological report shall be submitted to Cadw for approval within 8 weeks of the archaeological fieldwork being completed
- g) A digital copy of the approved archaeological report shall be submitted to the regional Historic Environment Record and National Monuments Record of Wales to be incorporated into these public records.
- h) Cadw shall be invited to attend a site meeting within the first 5 working days of commencement of the project to review the programme, submitted method statement and arrangements that have been established for archaeological mitigation.
- i) That upon completion of the project the applicant will produce a completion report including an annotated photographic record detailing the site before, during and after works took place and

including final versions of plans and elevations as built. The draft should be sent to Cadw in digital format for approval within 25 working days of the works being completed.

j) Any historic or archaeological features not previously identified which are revealed when carrying out the works shall be retained in situ and reported to Cadw within two working days. Works shall be halted in the area/part of the site affected until provision has been made for retention and/or recording of the feature by a suitably qualified archaeologist in accordance with details submitted to and approved in writing in advance by Cadw.

This design and all subsequent mitigation will conform to the guidelines specified in Historic England's '*Understanding Historic Buildings: a guide to good recording practice*' (2016) & *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* (Chartered Institute for Archaeologists, 2020).

A written scheme of investigation (WSI) was produced by Aeon Archaeology in February 2023 (Appendix I) and outlined the aims and objectives of the archaeological watching brief as well as the methods by which they would be met in order to address the spirit and intent of the SMC archaeological conditions.

This document reports on the results of the archaeological watching brief maintained between 16th and the 31st May 2023. It addresses all SMC archaeological conditions aside from (i) which will be address by the Client upon completion of the site works.

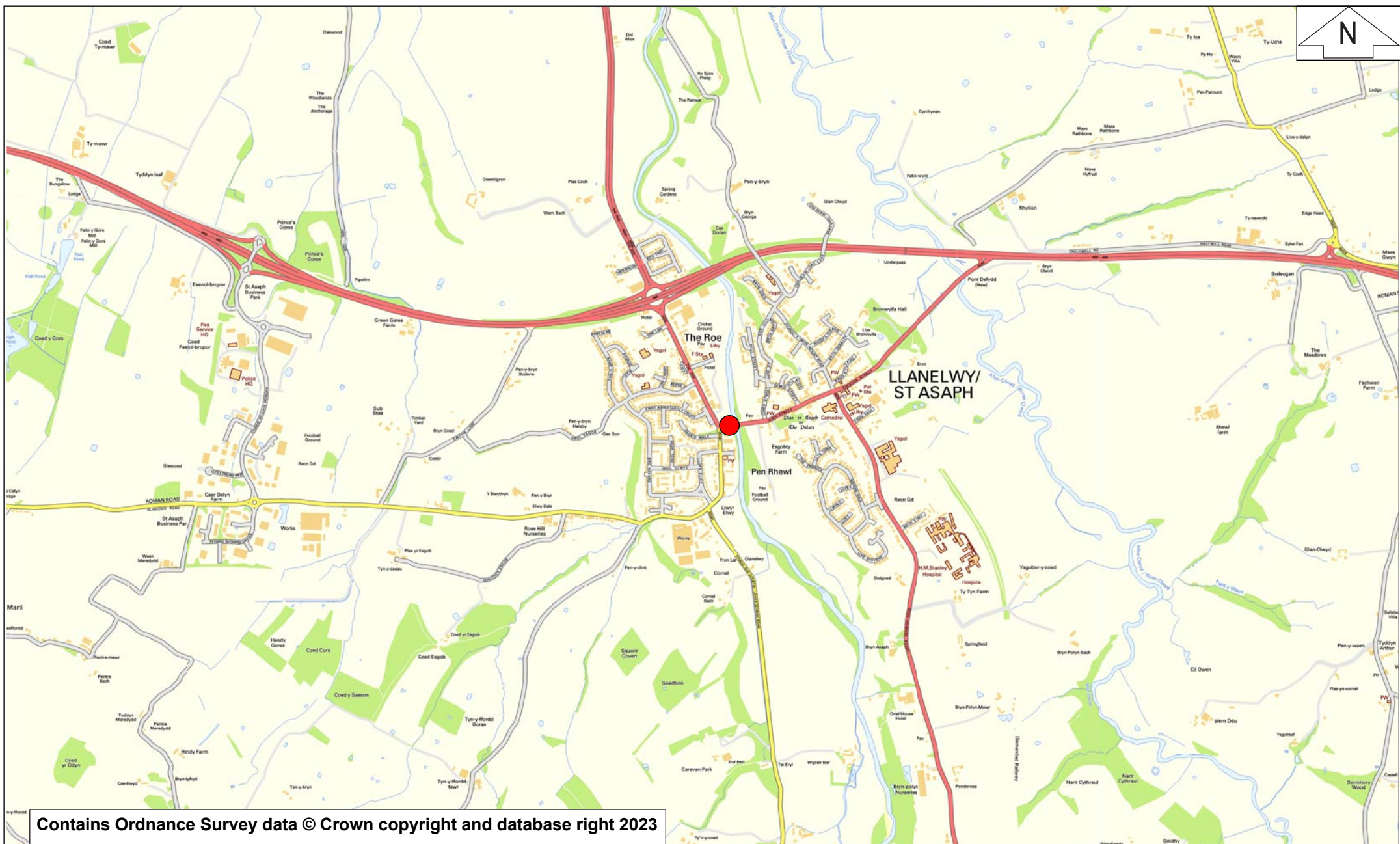


Figure 01: Location of proposed works to St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (SJ 03518 74246). Scale 1:20,000 at A4.



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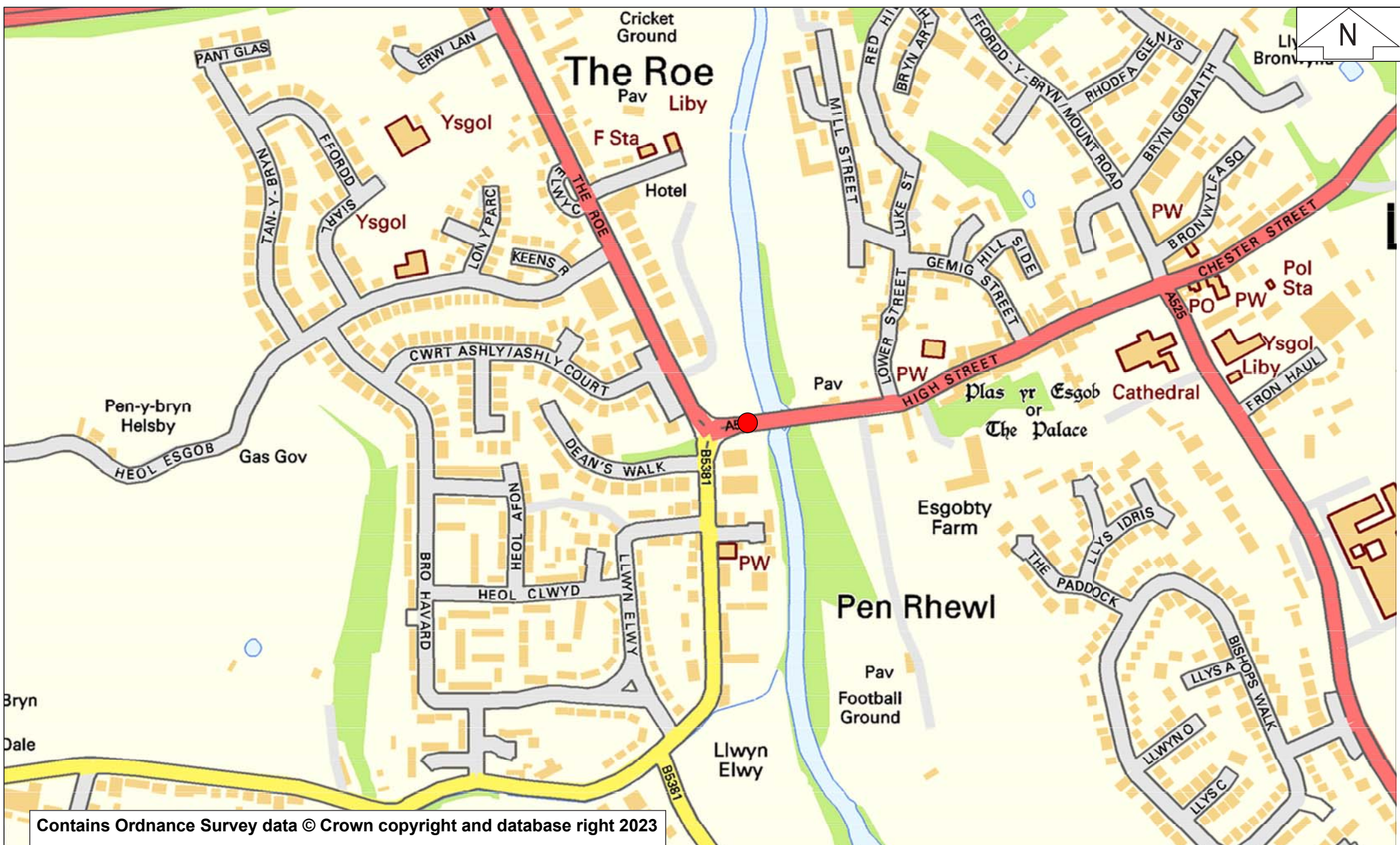


Figure 02: Location of proposed works to St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (SJ 03518 74246). Scale 1:5,000 at A4.



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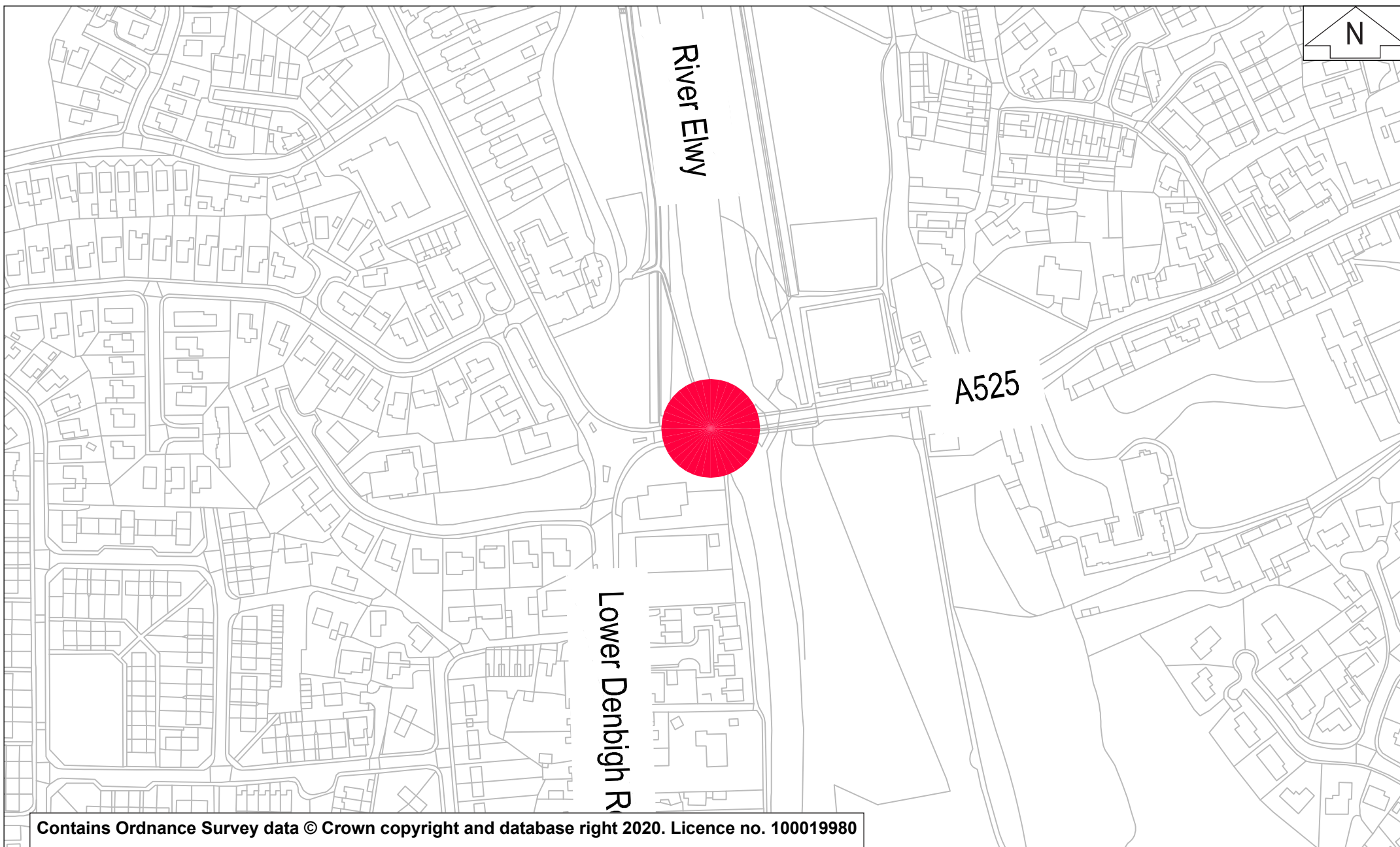


Figure 03: Location of proposed works to St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (SJ 03518 74246). Scale 1:2,500 at A4.

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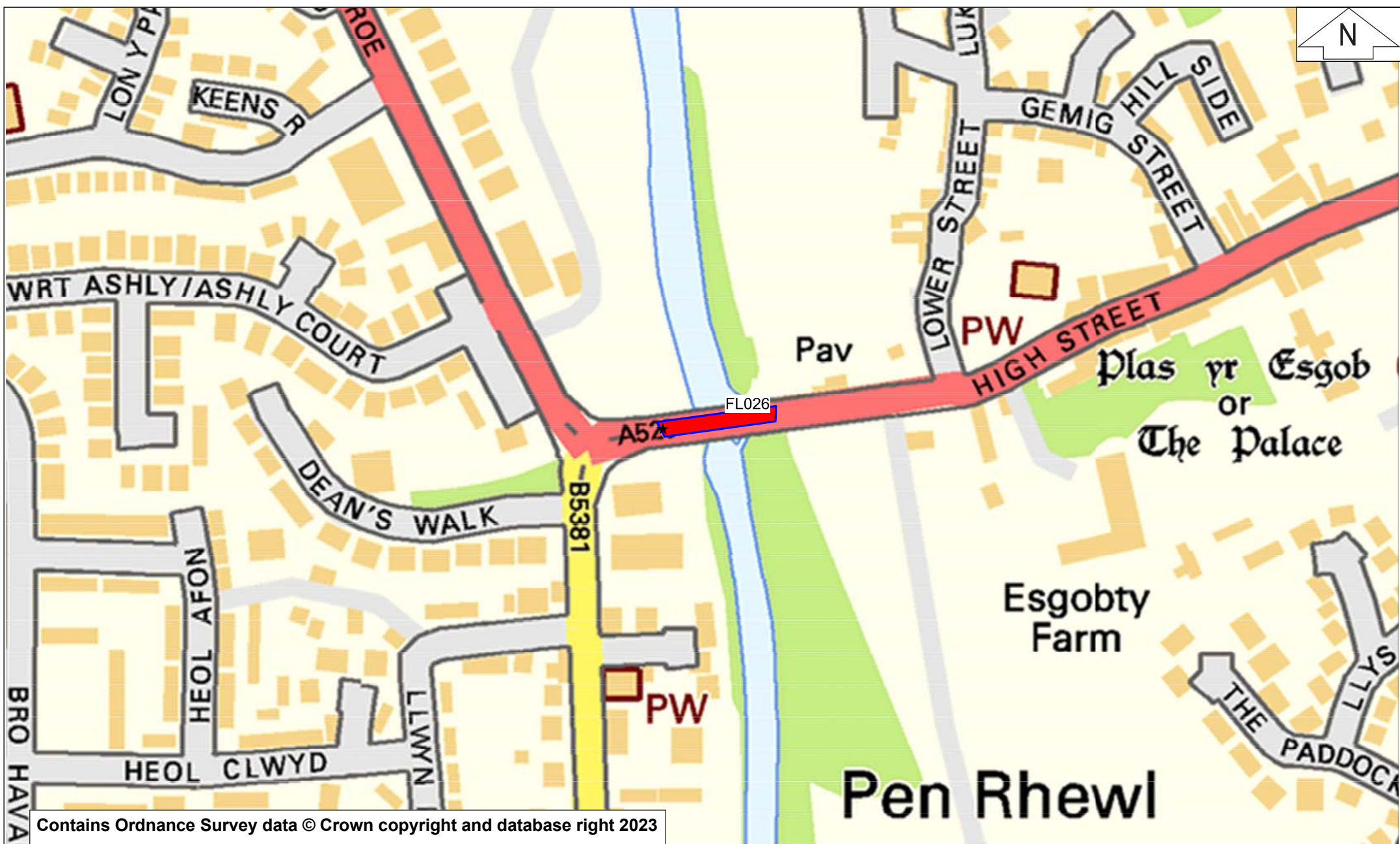


Figure 04: Location of proposed development site in relation to the St Asaph Bridge Scheduled Monument (FL026). Scale 1:2,500 at A4.

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3.0 POLICY CONTEXT

At an international level there are two principal agreements concerning the protection of the cultural heritage and archaeological resource – the UNESCO Convention Concerning the Protection of World Cultural and Natural Heritage and the European Convention on the Protection of the Archaeological Heritage, commonly known as the Valetta Convention. The latter was agreed by the Member States of the Council of Europe in 1992, and became law in 1992. It has been ratified by the UK, and responsibility for its implementation rests with Department for Culture Media and Sport.

The management and protection of the historic environment in Wales is set out within the following legislation:

- The Planning (Listed Buildings and Conservation Areas) Act 1990 (As amended)
- The Historic Environment (Wales) Act 2016
- The Town and County Planning Act 1990
- The Ancient Monuments and Archaeological Areas Act 1979
- The Town and Country Planning (General Permitted Development Order) 1995 (As amended)

The Historic Environment (Wales) Act is the most recent legislation for the management of the Historic Environment and amends two pieces of UK legislation — the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990. The new Act has three main aims:

- to give more effective protection to listed buildings and scheduled monuments;
- to improve the sustainable management of the historic environment; and
- to introduce greater transparency and accountability into decisions taken on the historic environment.

With respect to the cultural heritage of the built environment the Planning (Conservation Areas and Listed Buildings) Act 1990 applies. The Act sets out the legislative framework within which works and development affecting listed buildings and conservation areas must be considered. This states that: -

“In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses” (s66(1))

Other known sites of cultural heritage/archaeological significance can be entered onto county-based Historic Environment Records under the Town and Country Planning 1995.

Planning Policy Wales sets out the land use planning policies of the Welsh Government. Chapter 6 covers the historic environment and emphasises that the positive management of change in the historic environment is based on a full understanding of the nature and significance of historic assets and the recognition of the benefits that they can deliver in a vibrant culture and economy.

Various principles and policies related to cultural heritage and archaeology are set out in the Planning Policy Wales which guide local planning authorities with respect to the wider historic environment.

The following paragraphs from Planning Policy Wales are particularly relevant and are quoted in full:

Paragraph 6.1.5 concerns planning applications:

The planning system must take into account the Welsh Government's objectives to protect, conserve, promote and enhance the historic environment as a resource for the general well-being of present and future generations. The historic environment is a finite, non-renewable and shared resource and a vital and integral part of the historical and cultural identity of Wales. It contributes to economic vitality and culture, civic pride, local distinctiveness and the quality of Welsh life. The historic environment can only be maintained as a resource for future generations if the individual historic assets are protected and conserved. Cadw's published Conservation Principles highlights the need to base decisions on an understanding of the impact a proposal may have on the significance of an historic asset.

Planning Policy Wales is supplemented by a series of Technical Advice Notes (TAN). Technical Advice Note 24: The Historic Environment contains detailed guidance on how the planning system considers the historic environment during development plan, preparation and decision making on planning and listed building consent applications. TAN 24 replaces the following Welsh Office Circulars:

- 60/96 Planning and the Historic Environment: Archaeology
- 61/96 Planning and the Historic Environment: Historic Buildings and Conservation Areas
- 1/98 Planning and the Historic Environment: Directions by the Secretary of State for Wales

4.0 HISTORICAL BACKGROUND

The following report for St Asaph Bridge is provided by Cadw: The monument consists of the remains of a bridge, dating to the post-medieval period. St Asaph bridge is a restored late 17th century bridge over the River Elwy. It has five arches, with triangular buttresses either side of the central arch, and a moulded cornice below the parapet.

The monument is of national importance for its potential to enhance our knowledge of medieval or post-medieval construction techniques and transportation systems. It retains significant archaeological potential, with a strong probability of the presence of associated archaeological features and deposits. The structure itself may be expected to contain archaeological information concerning chronology and building techniques.

The scheduled area comprises the remains described and areas around them within which related evidence may be expected to survive.

5.0 PROJECT AIMS

The archaeological watching brief was maintained:

1. During all intrusive excavation.

The CIfA maintains a standard for archaeological watching brief which states that:

An archaeological watching brief will record the archaeological resource during development within a specified area using appropriate methods and practices. These will satisfy the stated aims of the project, and comply with the Code of conduct and other relevant by-laws of CIfA. An archaeological watching brief is defined by the CIfA as ‘a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons’ (CIfA 2020). The watching brief will take place within a specified area within the Site where there is a possibility that archaeological deposits may be disturbed or destroyed.

The CIfA further identifies the purpose of a watching brief ‘as allowing, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established in advance of development or other potentially disruptive works’ (ibid). It is also important to note that a watching brief provides an opportunity, if needed, for a signal to be made to all interested parties, before the destruction of the archaeological materials, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.

A watching brief is, therefore, not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

The aims of the watching brief were:

- To allow, within the resources available, the opportunity to gain information about and record the presence/absence, nature and date of archaeological remains on the Site affected by excavations and groundworks, the presence and nature of which could not be established with sufficient confidence in advance of works which may disturb them.
- To provide the facility to signal to the relevant authorities, before irreversible impact to remains that an archaeological and/or historic find has been made for which the resources allocated to the watching brief itself are inadequate to support their treatment to an adequate and satisfactory standard.

The specific objectives of the watching brief were:

- To observe and recover any artefacts of archaeological significance.
- To record the location, dimensions and nature of any deposits, features, structures or artefacts of archaeological significance.
- To recover samples of any deposits considered to have potential for analysis for palaeoenvironmental data should the opportunity arise.

6.0 METHODOLOGY – ARCHAEOLOGICAL WATCHING BRIEF

6.1 Archaeological Watching Brief

The methodology for the watching brief has been prepared with reference to the ClfA's document *The Standards and Guidance for Archaeological Watching Brief* (2020) and will be kept under constant review during the project, in order to see how far it is meeting the terms of the aims and objectives, and in order to adopt any new questions which may arise.

Curatorial monitoring of the archaeological work on behalf of the Council will be carried out by the Monuments Inspector at Cadw. To facilitate the curatorial monitoring, the officer shall be provided with a minimum of two weeks' notice of the start of the archaeological work.

A suitably qualified and experienced archaeologist(s) from Aeon Archaeology will be commissioned for the maintenance of the watching brief. On arrival on site, the archaeologist(s) will report to the site manager and conform to the arrangements for notification of entering and leaving site. The archaeologist(s) will keep a record of the date, time and duration of all attendances at site, the names and numbers of archaeologists deployed and any actions taken. The archaeologist will be provided with a Health & Safety Induction by the construction contractor and wear a safety helmet, safety footwear and high visibility jacket/vest at all times.

If deposits and or artefacts are exposed during excavations for the development which require recording and recovery, it may be necessary to delay works whilst the proper investigation and recording takes place. Watching brief recording can often be undertaken without delay to groundworks, depending upon the specific circumstances and flexibility of all the staff on site.

Within the constraints of the terms of the watching brief work, the archaeologist will not cause unreasonable disruption to the maintenance of the work schedules of other contractors on site. In the event of archaeological discoveries the treatment of which (either arising from the volume/quantity of material and/or the complexity/importance of the material) is beyond the resources deployed the Client will be notified and a site meeting/telephone consultation arranged with the Monuments Inspector at Cadw. The aim of the meeting will be to confirm that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard and identify measures which would be sufficient to support treatment to a satisfactory and proper standard prior to destruction of the material in question.

Any archaeological deposits, features and structures identified which can be investigated and recorded under the terms of the watching brief will be excavated manually in a controlled and stratigraphic manner sufficient to address the aims and objectives of the project – subject to the limitations on site access.

It may not be necessary to excavate the complete stratigraphic sequence to geologically lain deposits but the inter-relationships between archaeological deposits, features and structures will be investigated sufficient to address the aims and objectives of the project and the complete stratigraphic sequence to geologically lain deposits will be investigated where practicable.

The method of recording will follow the normal principles of stratigraphic excavation and the stratigraphy will be recorded in written descriptions even where no archaeological deposits have been

identified. The archaeologist will record archaeological deposits using proforma recording forms and locate them on a large-scale site plan related to the Ordnance Survey National Grid and Datum references.

The groundworks excavations shall be undertaken using a mechanical excavator fitted with a toothless ditching bucket.

The drawn record will comprise plans at scale 1:20 and sections at scale 1:10; proprietary electronic hardware and software to prepare site drawings may be used as appropriate.

The photographic record will be maintained throughout using a digital SLR camera (Canon 600D) set to maximum resolution (72 dpi) and all archaeological features will be recorded photographically with photographs taken in RAW format and later converted to TIFF format for long-term storage and JPEG format for presentation and inclusion in the archive. The standards for the digital archive will adhere to those set out in 'Guidelines for Digital Archaeological Archives' (RCAHMS, 2015).

The archive produced will be held at Aeon Archaeology under the project code **A0400.1**.

6.2 Watching brief report

6.2.1 Post-excavation Assessment

A report on the results of the watching brief, in accordance with the recommendations in *Management of Research Projects in the Historic Environment Project Manager's Guide* (English Heritage 2006; 2015), and in the Chartered Institute for Archaeologists *Standard and Guidance for an archaeological watching brief* (2020) will be required to be produced upon conclusion of the archaeological fieldwork. The report will be completed within a maximum of two months of completion of work on site and may include examination and quantification leading to the identification of function, form, date, method of manufacture, material/fabric type, source, parallels, attributes and condition of artefacts; of the exploitation of wild or domesticated resources; the reconstruction of environments; and the nature of human populations.

Full analysis of the results of the project, including: dating and interpretation of excavated features; pottery and other finds analysis; analysis of industrial residues by an appropriate specialist or specialists; analysis of samples for environmental data (including pollen, plant macrofossils and beetles) by an appropriate specialist or specialists; radiocarbon dating; discussion of the results in their local, regional and national context, including relating the excavated features and palaeoenvironmental data to evidence from nearby sites, and discussion of the results in their local, regional and national context may be required.

The scope of post-excavation assessment will be subject to a specification for approval by the Monuments Inspector at Cadw upon the conclusion of the fieldwork project and preliminary report.

7.0 DIGITAL DATA MANAGEMENT PLAN

7.1 Type of study

A watching brief during repair work to the Scheduled Monument of St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (centred on NGR SJ 03518 74246).

7.2 Type of study

Photographs, digital text, annotated plans.

7.3 Format and scale of the data

Photographs taken in *RAW* format and later converted to *TIF* format for long term archiving and *JPEG* format for use in the digital report, converted using *Adobe Photoshop*. All photographs renamed using *AF5* freeware with the prefix (*project code_frame number*) and a photographic metadata created using Microsoft Excel (*.xlsx*) or Access (*.accdb*). Written descriptions taken in digital *.txt* format and sent via email to ensure a digital backup copy at time of record.

Annotated plans scanned as *.PDF* files. As part of the recording work the following data was created:

- 72 digital photographs (TIF file)
- 1 photographic metadata file (.accdb file)
- 1 PDF report (PDF file)
- 1 Photographic Register (scanned as PDF file)
- 5 Day sheet Record (scanned as PDF file)

7.4 Methodologies for data collection / generation

Digital data will be collected / generated in line with recommendations made in the Chartered Institute for Archaeologists (CIfA) *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives* (2014. Rev 2020). Sections 3.3.1 and 3.3.3 are relevant:

3.3.1 Project specifications, research designs or similar documents should include a project specific Selection Strategy and a Data Management Plan.

3.3.3 Project designs or schedules of works etc should outline the methodology used in recording all information, in order to demonstrate that all aspects of archive creation will ensure consistency; for instance in terminologies and the application of codes in digital data sets, highlighting relevant data standards where appropriate

7.5 Data quality and standards

Consistency and quality of data collection / generation shall be controlled and documented through the use of standardised procedure as outlined in the WSI. This will include the use of standardised data capture file formats, digital proformas, data entry validation, peer review, and use of controlled vocabularies.

7.6 Managing, storing and curating data.

All digital data will be organised into Aeon Archaeology proforma project file systems and backed up to the cloud using *Digital River's Crashplan* with additional copies made to external physical hard drive.

7.7 Metadata standards and data documentation

Digital metadata created using Microsoft Excel (.xlsx) or Access (.accdb) of all photographic plates. Paper metadata created from Aeon Archaeology proformas for contexts, artefacts, environmental samples, watching brief day sheets, trench sheets, and basic record sheets and then scanned to create digital .PDF copies.

7.8 Data preservation strategy and standards

Long term data storage will be through the submission of digital (.PDF) reports to the regional Historic Environment Record (HER); submission of digital (.PDF) reports and a project completion form to the Royal Commission on the Ancient and Historic Monuments in Wales RCAHMW database; and retention of copies of all digital files at Aeon Archaeology on physical external hard drive and uploaded to the cloud.

7.9 Suitability for sharing

All digital data will be placed within the public realm (through the channels in 7.8) except for where project confidentiality restricts the sharing of data. All data sets will be selected / discriminated by the Senior Archaeologist at Aeon Archaeology and written permission will be sought from all project specific Clients prior to the sharing of data.

7.10 Discovery by potential users of the research data

Potential users of the generated digital data (outside of the organisation) will be able to source the data and identify whether it could be suitable for their research purposes through access granted via the RCAHMW website. Requests can also be made for data through the regional HER's and directly to Aeon Archaeology (info@aeonarchaeology.co.uk).

7.11 Governance of access

The decision to supply research data to potential new users will be via the associated website request (RCAHMW, HER) or via the Senior Archaeologist when made directly to Aeon Archaeology.

7.12 The study team's exclusive use of the data

Aeon Archaeology's requirement is for timely data sharing, with the understanding that a limited, defined period of exclusive use of data for primary research is reasonable according to the nature and value of the data, and that this restriction on sharing should be based on simple, clear principles. This time period is expected to be six months from completion of the project however Aeon Archaeology reserves the right to extend this period without notice if primary data research dictates.

7.13 Restrictions or delays to sharing, with planned actions to limit such restrictions

Restriction to data sharing may be due to participant confidentiality or consent agreements. Strategies to limit restrictions will include data being anonymised or aggregated; gaining participant consent for data sharing; and gaining copyright permissions. For prospective studies, consent procedures will include provision for data sharing to maximise the value of the data for wider research use, while providing adequate safeguards for participants.

7.14 Regulation of responsibilities of users

External users of the data will be bound by data sharing agreements provided by the relevant organisation or directly through Aeon Archaeology.

7.15 Responsibilities

Responsibility for study-wide data management, metadata creation, data security and quality assurance of data will be through the Senior Archaeologist (Richard Cooke BA MA MCIfA) at Aeon Archaeology when concerning data generation and early/mid-term storage. Upon deposition with digital depositories the study-wide data management, metadata creation, data security and quality assurance of data will be the responsibility of the specific organisations' themselves.

7.16 Organisational policies on data sharing and data security

The following Aeon Archaeology policies are relevant:

- Aeon Archaeology Archive Deposition Policy 2022
- Aeon Archaeology Quality Assurance Policy 2022
- Aeon Archaeology Conflict of Interest Policy 2022
- Aeon Archaeology Outreach Policy 2022
- Aeon Archaeology Digital Management Plan 2022

8.0 QUANTIFICATION OF RESULTS

8.1 The Documentary Archive

The following documentary records were created during the archaeological watching brief:

Context Sheets	4
Digital photographs	72
Watching Brief Day Sheets	5

8.2 Environmental Samples

No environmental samples were taken during the archaeological watching brief as no suitable deposits were encountered.

8.3 Artefacts

A single sherd comprising the base of a white glazed stoneware bottle and a single sherd from the body of a treacle glazed earthenware cup were retrieved from context (103) during the watching brief. Both of these sherds are of late 19th century date and most likely represent casual breakage / loss alongside the river bank. Both sherds have no further research potential and require no further analysis or conservation. As per Aeon Archaeology's artefact retention policy it is recommended that both sherds be discarded.

9.0 RESULTS OF THE ARCHAEOLOGICAL EVALUATION

9.1 Overview

(see Figures 05-07: Plates 01-33)

The archaeological watching brief was maintained by Richard Cooke BA MA MCIfA archaeological contractor at Aeon Archaeology from the 16th – 31st of May 2023. The weather conditions were bright, hot, and with sunshine throughout which yielded high contrast photography.

9.2 Watching Brief 16th-31st May 2023

Upon arrival on the 16th May pre-excavation photographs were taken of the existing path beneath the second bridge arch on the western bank of the river (plates 1-6). This included a photograph of the limestone block surface / scour stones exposed in 2017 and is referred to as context (101) below.

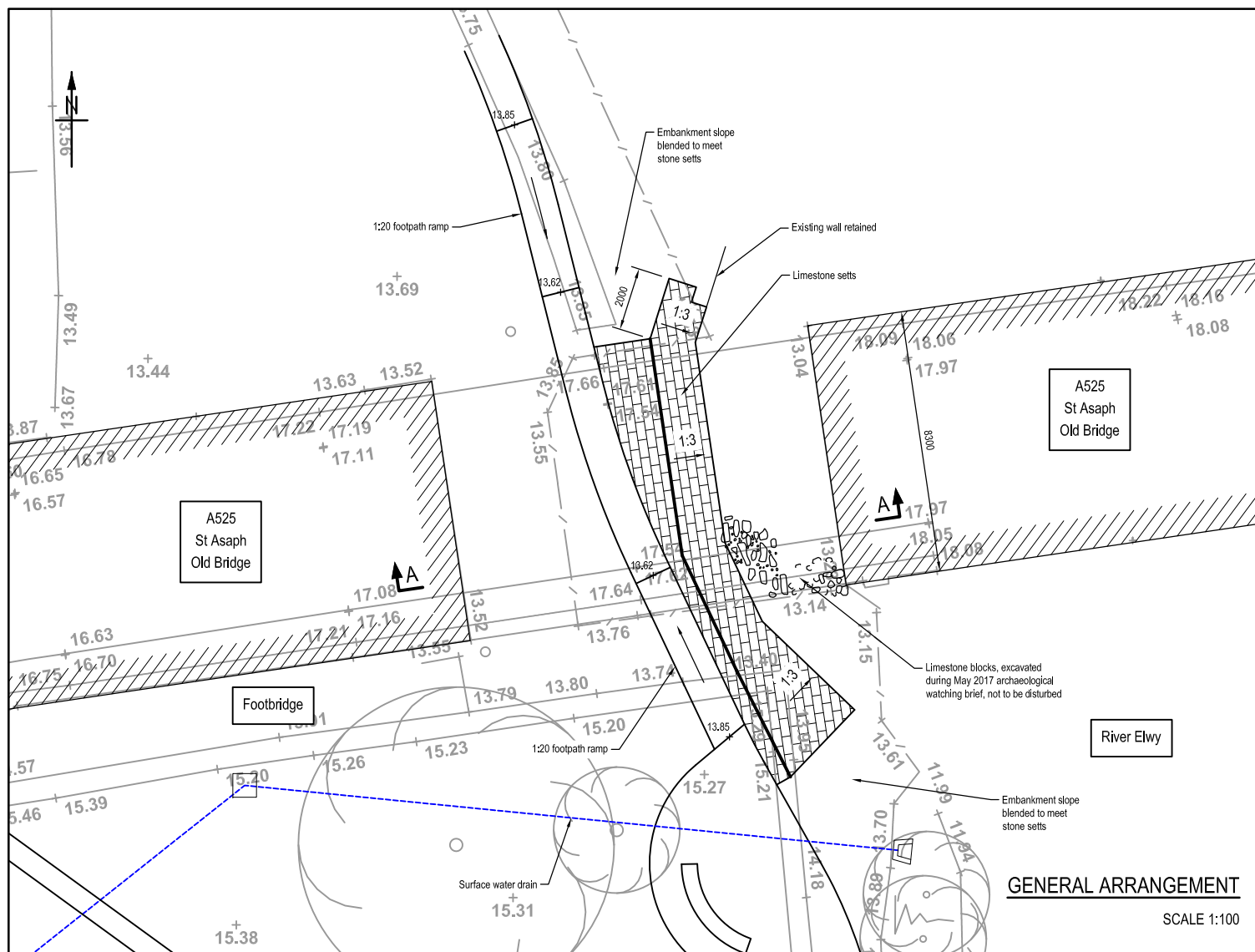
Initially the existing tarmacadam footpath and concrete kerb stones were removed using a mini-digger fitted with a toothless ditching bucket, however due to the strength of the concrete holding the kerb stones it was agreed with Cadw that a toothed bucket could be used for their removal. A length of the path measuring 20.4m was removed under archaeological supervision – the majority of which laid beneath the second bridge arch on the western bank of the river. Beneath the tarmacadam path and kerb stones an underlying white-grey substrate measuring 0.3m in depth was removed along the length of the path.

Beneath the existing pathway substrate a loose mid/light grey-brown silt (103) was encountered which represented the former soil surface prior to the installation of the existing path. This was reduced by c.0.5m across the length of the erosion scar on the eastern side of the existing path and sloped upward at 1:3 to the west to meet the surface level of the proposed new path. Context (103) produced two sherds of post-medieval ceramic of late 19th century date (stoneware and earthenware). As context (103) was partially removed it uncovered the limestone block surface / scour stones exposed in 2017 (101). These consisted of a linear spread measuring 6.35m in length by >2.0m in width and orientated north-south, continuing into the western and southern limits of excavation (LOE). The stones were of limestone and generally linear in form, set on-end into the natural glacial clay substrata and individually orientated north-south. The stones measured on average 0.4m in length by 0.2m in width and were overlaid by deposit (103). Stones (101) appeared to continue at ground level around the southern bridge abutment and up to the corner of the cutwake where they had been secured in concrete. At the northern end of the stones two concrete bases had been added which contained the cut off bases of iron railings.

Alongside the eastern wall of the bridge arch (western wall of the bridge abutment) a single course of granite stone sets (102) had been laid within a lime mortar / pebble aggregate. This formed a rectangular plinth orientated north-south and measuring 8.1m in length by 1.6m in width. The stones measured on average 0.75m by 0.35m and had been partially dressed, lying beneath deposit (103) as well as a coarse gravel at the northern end – both of which were cleaned away using the mini-digger and hand tools.

At the northern end of the site and immediately beyond the bridge arch the grass bank was graded at a 45 degree angle away from the new path location. This involved the removal of 0.05m depth of topsoil (soft, dark grey-brown silt-clay) for 7.0m either side of the path to a width of 0.5m-1.0m. To the immediate north of the bridge arch and at the eastern end a series of four former iron railing bases

were uncovered. These likely formed a former iron railing fence that connected with the two other observed iron rail bases to the south and inserted within stones (101).

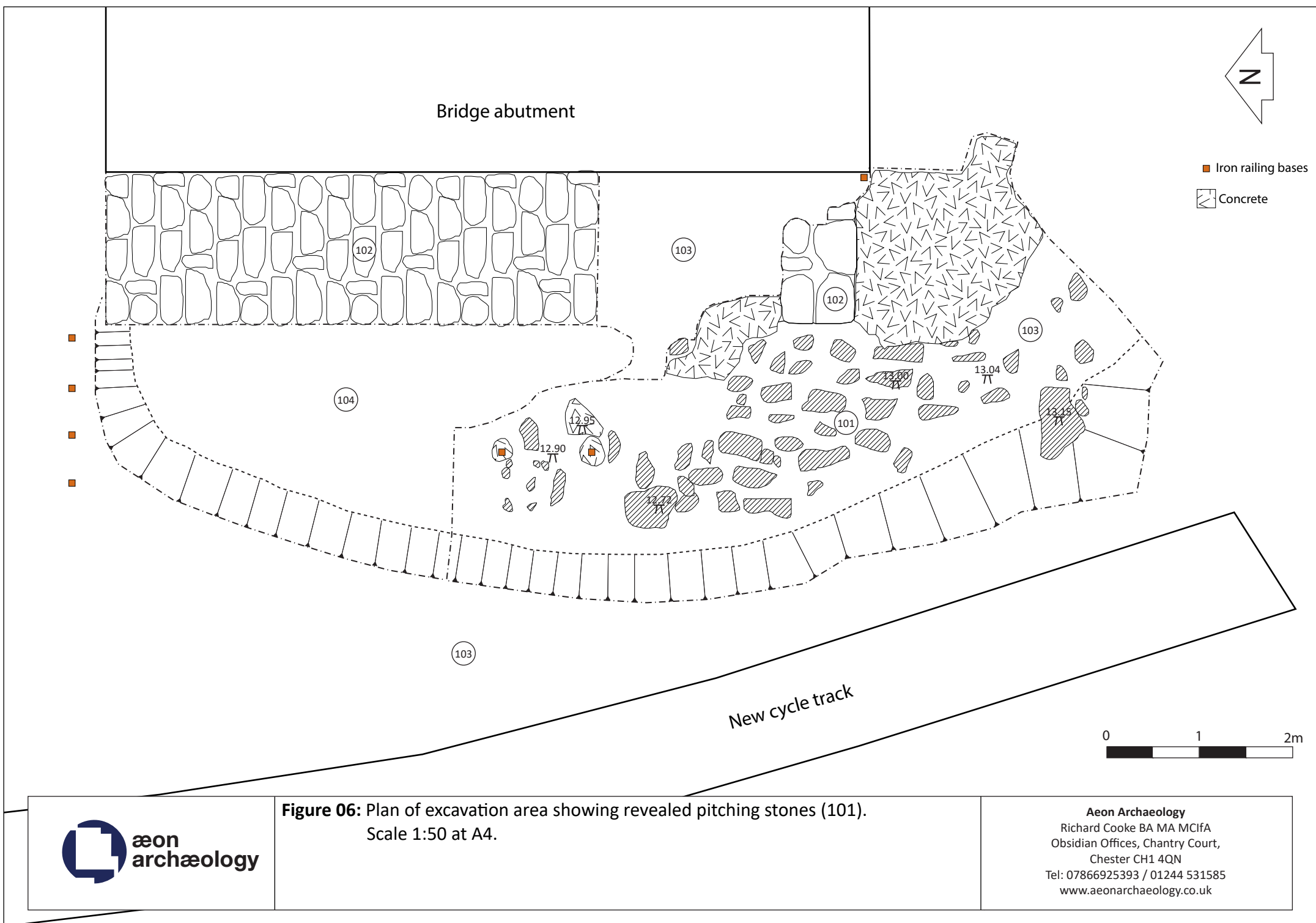


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Figure 05: General arrangement of works. Scale 1:200 at A4.

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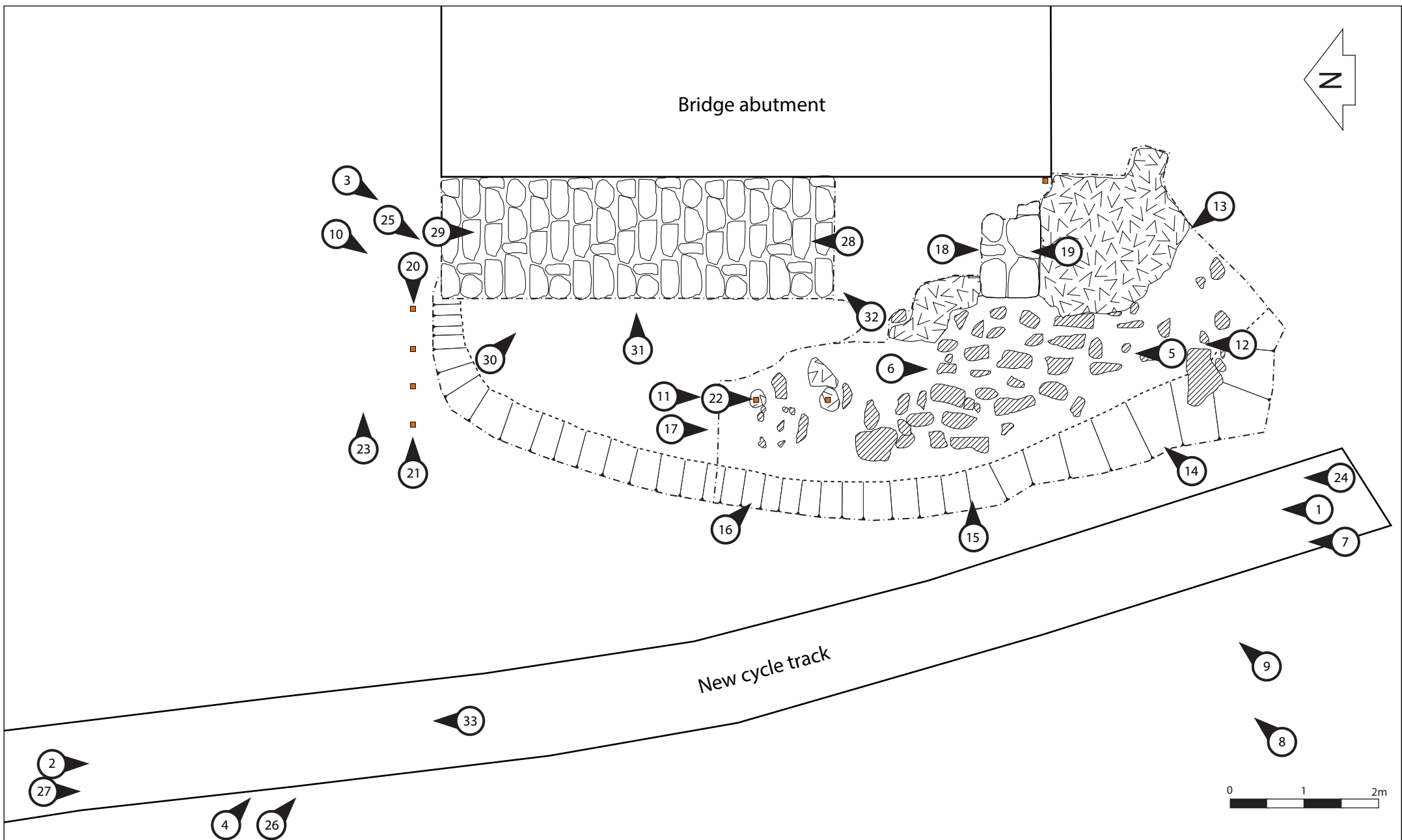


Figure 07: Location and orientation of photographic plates.



Plate 01: Pre-excitation photograph of existing pathway, from the south. Scale 0.5m.



Plate 02: Pre-excitation photograph of existing pathway, from the north. Scale 0.5m.



Plate 03: Pre-excitation photograph of existing pathway, from the northeast.



Plate 04: Pre-excitation photograph of existing pathway, from the northwest.



Plate 05: Pre-excavation photograph of pitching stones (101), from the south. Scale 0.5m.



Plate 06: Pre-excavation photograph of pitching stones (101), from the north. Scale 0.5m.



Plate 07: Removal of existing pathway, from the south. Scale 0.5m.



Plate 08: Removal of existing sub-base beneath pathway, from the southwest.



Plate 09: Removal of existing sub-base to east of pathway, from the southwest.



Plate 10: Removal of existing sub-base to east of pathway, from the northwest.



Plate 11: Removal of loose mid/light grey silt revealing pitching stones (101), from the north. Scale 1.0m.



Plate 12: Removal of loose mid/light grey silt revealing pitching stones (101), from the south.
Scale 1.0m.



Plate 13: Removal of loose mid/light grey silt revealing pitching stones (101), from the southeast. Scale 1.0m.



Plate 14: Removal of loose mid/light grey silt revealing pitching stones (101), from the southwest. Scale 1.0m.



Plate 15: Removal of loose mid/light grey silt revealing pitching stones (101), from the west. Scale 1.0m.



Plate 16: Removal of loose mid/light grey silt revealing pitching stones (101), from the northwest. Scale 1.0m.



Plate 17: Removal of loose mid/light grey silt revealing pitching stones (101), from the north.
Scale 1.0m.



Plate 18: Bridge plinth stones (102), from the north. Scale 1.0m.



Plate 19: Bridge plinth stones (102), from the south. Scale 1.0m.



Plate 20: Iron railing bases revealed to the immediate north of the bridge arch, from the east.
Scale 1.0m.



Plate 21: Iron railing bases revealed to the immediate north of the bridge arch, from the west.
Scale 1.0m.



Plate 22: Iron railing bases inserted into pitching stones (101), from the north.
Scale 0.5m.



Plate 23: West facing section of topsoil strip to north of bridge arch, from the west. Scale 0.5m.



Plate 24: Completion of existing trackway reduction and excavation of slope to the east, from the south. Scale 1.0m.



Plate 25: Completion of existing trackway reduction and excavation of slope to the east, from the northeast. Scale 1.0m.



Plate 26: Completion of existing trackway reduction and excavation of slope to the east, from the northwest. Scale 1.0m.



Plate 27: Removal of existing trackway and excavation of undelying sub-base and subsoil to the north of the bridge arch, from the north.
Scale 1.0m.



Plate 28: Removal of remaining silt exposing bridge plinth (102), from the south. Scale 1.0m.



Plate 29: Removal of remaining silt exposing bridge plinth (102), from the north. Scale 1.0m.



Plate 30: Removal of remaining silt exposing bridge plinth (102), from the northwest. Scale 1.0m.



Plate 31: Removal of remaining silt exposing bridge plinth (102), from the west. Scale 1.0m.



Plate 32: Removal of remaining silt exposing bridge plinth (102), from the southwest. Scale 1.0m.



Plate 33: Reduction of bank either side of new pathway to the north of the bridge, from the south. Scale 1.0m.

10.0 CONCLUSION

The archaeological watching brief concentrated on observing the groundworks associated with the removal of the existing pathway beneath the bridge arch in St Asaph and the excavations associated with the installation of the new pathway along a slightly different alignment, as well as the grading of the erosion scar to the east.

The works revealed more of the limestone block surface / scour stones (101) observed in 2017 during erosion from floodwater, which showed that it was a deliberately laid deposit measuring 6.35m in length by >2.0m in width and orientated north-south. The stones had been laid into the natural clay substrata on-end and all facing north-south. The stones appeared to continue around the southern end of the bridge abutment up to the cutwake, where they had been set within a hard concrete matrix.

Upon their discovery in 2017 it was initially thought that the stones may represent the earlier bridge, which predated the current structure which was built in 1770. The earlier bridge was however constructed from timber and lay further to the north of the current bridge. Upon examination of the stones and their N-S orientation it seems probable that they are pitching stones to reduce the flow and power of the floodwater on the western bank. There is no stratigraphic relationship with the bridge structure to determine whether they were contemporary or laid at a later date as part of a flood response.

The laid plinth stones (102) to the immediate west of the bridge abutment are almost certainly the footing plinth upon which the abutment stands. These stones continued beneath the bridge abutment and had clearly been constructed so that the weight of the bridge could be dissipated.

11.0 SOURCES

Chartered Institute for Archaeologists, (2020). *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures*.

English Heritage, (2016). *Understanding Historic Buildings: a guide to good recording practice*.



aeon archaeology

Repair Works to St Asaph Bridge, St Asaph, Denbighshire LL17 0LU

Written Scheme of Investigation for Archaeological Watching Brief

February 2023 v1.0



Project Code: A0400.1
Cadw Ref: FL026



Repair Works to St Asaph Bridge, St Asaph, Denbighshire LL17 0LU

February 2023 v1.0

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1.0 INTRODUCTION

Aeon Archaeology has been commissioned by G H James Cyf, hereafter ‘the Client’, to provide a written scheme of investigation (WSI) for carrying out an archaeological watching brief during repair work to the Scheduled Monument of St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (centred on **NGR SJ 03518 74246**) (figures 01-04).

The development is being undertaken as part of permitted development rights part 12 class A (works carried out by a local authority for a Council function etc) and therefore did not require formal planning application. The proposed development does however require works to a Scheduled Monument (SM) (FL026) and as such Scheduled Monument Consent (SMC) was sought from Cadw by the Client being granted on the 16th February 2022. This application for scheduled monument consent involves:

- (i) In situ preservation of the limestone block surface / scour stones exposed in 2017
- (ii) Archaeologically expose the remaining scour stones to c.3.6m from E side of second arch on W bank
- (iii) Remove existing asphalt footpath, reinstate footpath on new alignment and to new (lower) height, with concrete edge, granular sub base and asphalt finish
- (iv) Install slope comprising concrete bedding with grey/yellow limestone setts laid with 10mm mortar joints, between footpath to toe / tie in with original scour stones. Membrane will be used where concrete cast against original scour stones to ensure effective preservation.

The following conditions concerning archaeology were applied to the SMC:

- e) No works, including site clearance, shall commence until Cadw has been informed in writing of the name of an appropriately qualified archaeologist operating to CIfA published standards and guidance who will carry out an appropriate programme of archaeological mitigation works in accordance with a written scheme of investigation, which has been submitted to, and approved in writing by, Cadw. No work shall commence until Cadw has confirmed in writing that the proposed archaeologist and archaeological works are acceptable.
- f) A digital copy of the draft archaeological report shall be submitted to Cadw for approval within 8 weeks of the archaeological fieldwork being completed
- g) A digital copy of the approved archaeological report shall be submitted to the regional Historic Environment Record and National Monuments Record of Wales to be incorporated into these public records.
- h) Cadw shall be invited to attend a site meeting within the first 5 working days of commencement of the project to review the programme, submitted method statement and arrangements that have been established for archaeological mitigation.
- i) That upon completion of the project the applicant will produce a completion report including an annotated photographic record detailing the site before, during and after works took place and including final versions of plans and elevations as built. The draft should be sent to Cadw in digital format for approval within 25 working days of the works being completed.

j) Any historic or archaeological features not previously identified which are revealed when carrying out the works shall be retained in situ and reported to Cadw within two working days. Works shall be halted in the area/part of the site affected until provision has been made for retention and/or recording of the feature by a suitably qualified archaeologist in accordance with details submitted to and approved in writing in advance by Cadw.

This written scheme of investigation (WSI) details the aims and objectives of the project and the methods by which they will be met to meet the recommendations made by the Cadw Inspector.

The work will adhere to the guidelines specified in *The Standard and Guidance for Archaeological Watching Brief* (Chartered Institute for Archaeologists, 2020).

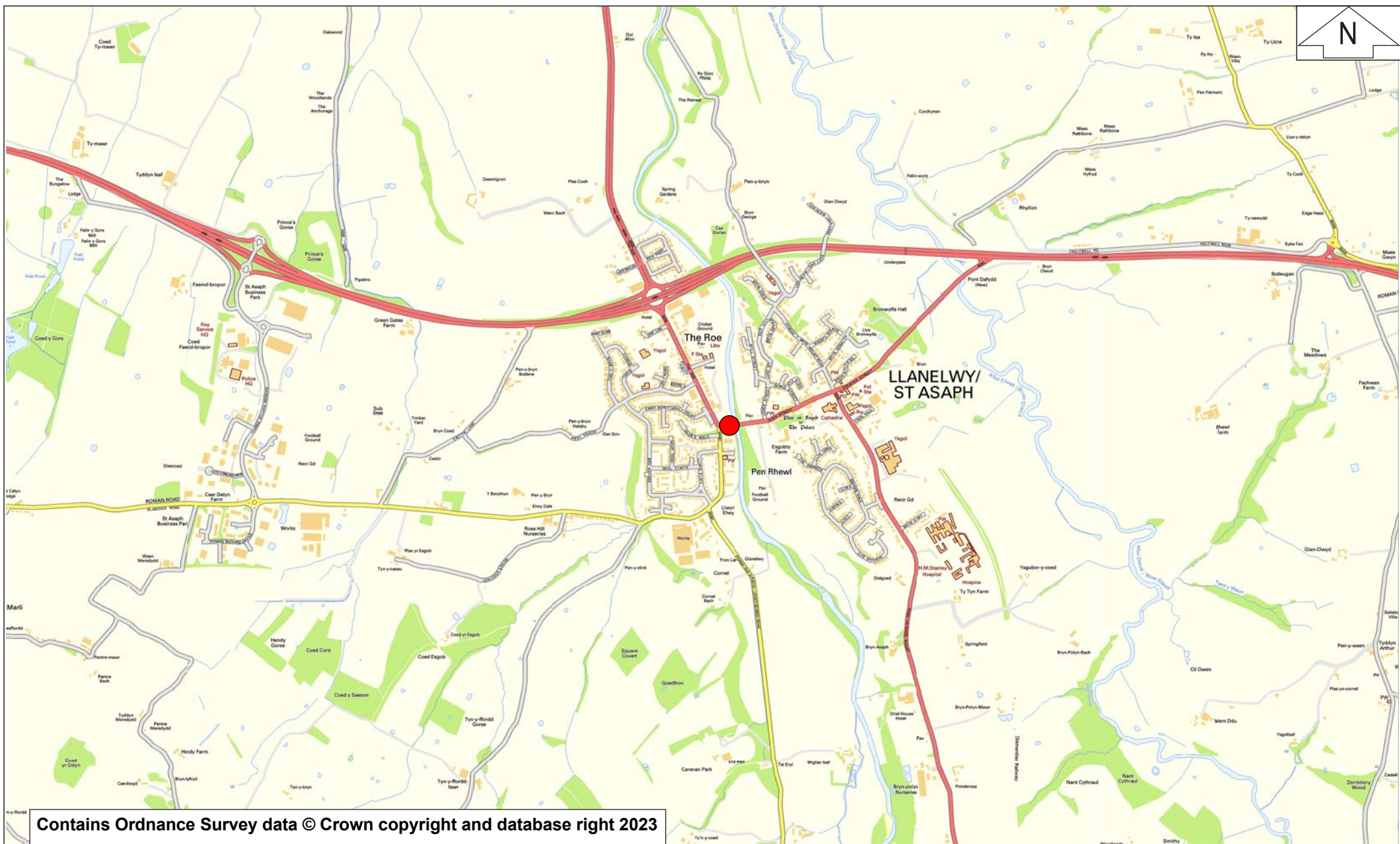


Figure 01: Location of proposed works to St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (SJ 03518 74246). Scale 1:20,000 at A4.



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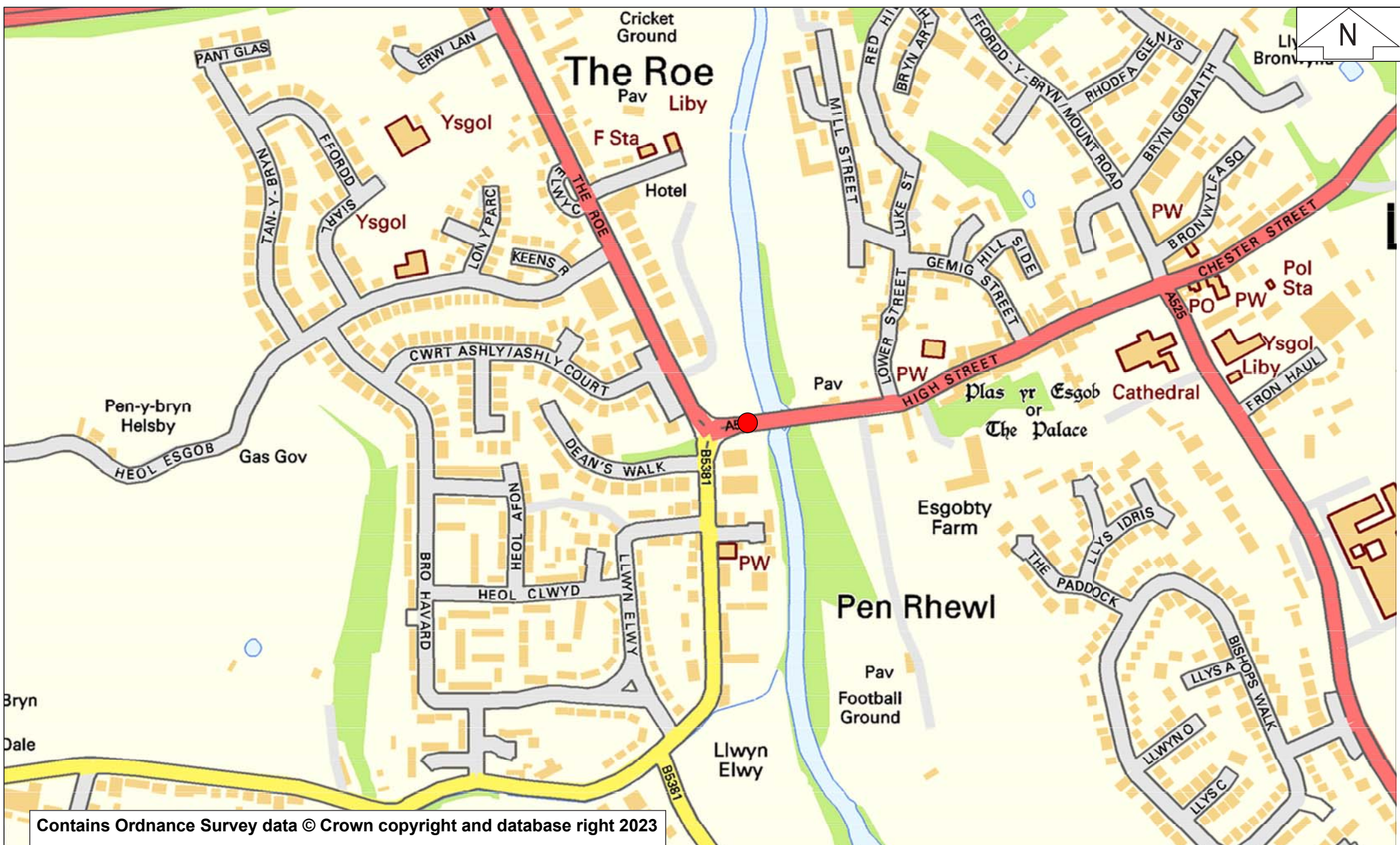


Figure 02: Location of proposed works to St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (SJ 03518 74246). Scale 1:5,000 at A4.



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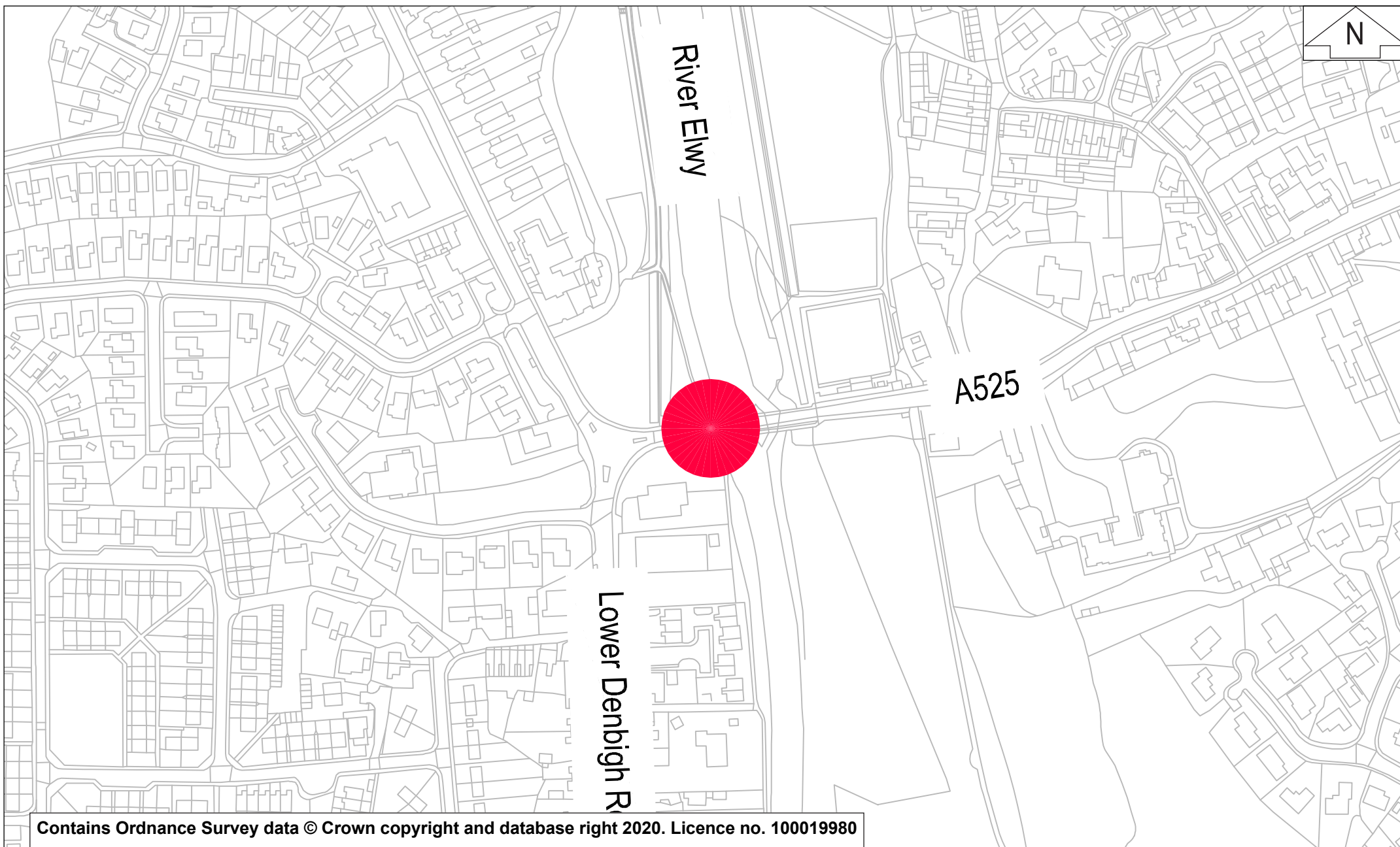


Figure 03: Location of proposed works to St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (SJ 03518 74246). Scale 1:2,500 at A4.

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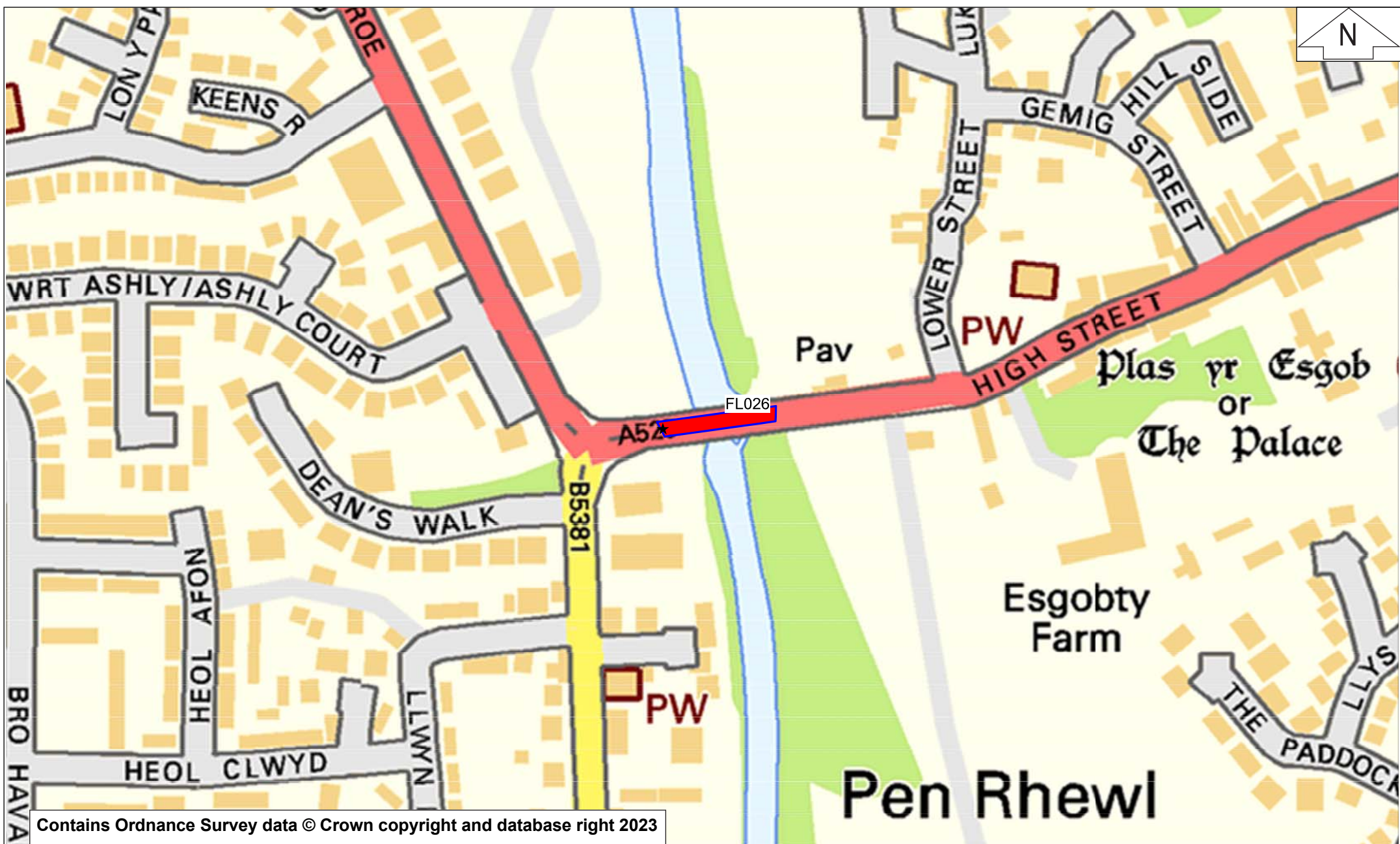


Figure 04: Location of proposed development site in relation to the St Asaph Bridge Scheduled Monument (FL026). Scale 1:2,500 at A4.

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2.0 POLICY CONTEXT

At an international level there are two principal agreements concerning the protection of the cultural heritage and archaeological resource – the UNESCO Convention Concerning the Protection of World Cultural and Natural Heritage and the European Convention on the Protection of the Archaeological Heritage, commonly known as the Valetta Convention. The latter was agreed by the Member States of the Council of Europe in 1992, and also became law in 1992. It has been ratified by the UK, and responsibility for its implementation rests with Department for Culture Media and Sport.

The management and protection of the historic environment in Wales is set out within the following legislation:

- The Planning (Listed Buildings and Conservation Areas) Act 1990 (As amended)
- The Historic Environment (Wales) Act 2016
- The Town and Country Planning Act 1990
- The Ancient Monuments and Archaeological Areas Act 1979
- The Town and Country Planning (General Permitted Development Order) 1995 (As amended)

The Historic Environment (Wales) Act is the most recent legislation for the management of the Historic Environment and amends two pieces of UK legislation — the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990. The new Act has three main aims:

- to give more effective protection to listed buildings and scheduled monuments;
- to improve the sustainable management of the historic environment; and
- to introduce greater transparency and accountability into decisions taken on the historic environment.

With respect to the cultural heritage of the built environment the Planning (Conservation Areas and Listed Buildings) Act 1990 applies. The Act sets out the legislative framework within which works and development affecting listed buildings and conservation areas must be considered. This states that:-

“In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses” (s66(1))

Other known sites of cultural heritage/archaeological significance can be entered onto county-based Historic Environment Records under the Town and Country Planning 1995.

Planning Policy Wales sets out the land use planning policies of the Welsh Government. Chapter 6 covers the historic environment and emphasises that the positive management of change in the historic environment is based on a full understanding of the nature and significance of historic assets and the recognition of the benefits that they can deliver in a vibrant culture and economy.

Various principles and policies related to cultural heritage and archaeology are set out in the Planning Policy Wales which guide local planning authorities with respect to the wider historic environment.

The following paragraphs from Planning Policy Wales are particularly relevant and are quoted in full:

Paragraph 6.1.5 concerns planning applications:

The planning system must take into account the Welsh Government's objectives to protect, conserve, promote and enhance the historic environment as a resource for the general well-being of present and future generations. The historic environment is a finite, non-renewable and shared resource and a vital and integral part of the historical and cultural identity of Wales. It contributes to economic vitality and culture, civic pride, local distinctiveness and the quality of Welsh life. The historic environment can only be maintained as a resource for future generations if the individual historic assets are protected and conserved. Cadw's published Conservation Principles highlights the need to base decisions on an understanding of the impact a proposal may have on the significance of an historic asset.

Planning Policy Wales is supplemented by a series of Technical Advice Notes (TAN). Technical Advice Note 24: The Historic Environment contains detailed guidance on how the planning system considers the historic environment during development plan, preparation and decision making on planning and listed building consent applications. TAN 24 replaces the following Welsh Office Circulars:

- 60/96 Planning and the Historic Environment: Archaeology
- 61/96 Planning and the Historic Environment: Historic Buildings and Conservation Areas
- 1/98 Planning and the Historic Environment: Directions by the Secretary of State for Wales

3.0 HISTORICAL BACKGROUND

The following report for St Asaph Bridge is provided by Cadw: The monument consists of the remains of a bridge, dating to the post-medieval period. St Asaph bridge is a restored late 17th century bridge over the River Elwy. It has five arches, with triangular buttresses either side of the central arch, and a moulded cornice below the parapet.

The monument is of national importance for its potential to enhance our knowledge of medieval or post-medieval construction techniques and transportation systems. It retains significant archaeological potential, with a strong probability of the presence of associated archaeological features and deposits. The structure itself may be expected to contain archaeological information concerning chronology and building techniques.

The scheduled area comprises the remains described and areas around them within which related evidence may be expected to survive.

4.0 WATCHING BRIEF - ARCHAEOLOGICAL AIMS

The archaeological watching brief shall be maintained:

1. During all intrusive excavation.

The CIfA maintains a standard for archaeological watching brief which states that:

An archaeological watching brief will record the archaeological resource during development within a specified area using appropriate methods and practices. These will satisfy the stated aims of the project, and comply with the Code of conduct and other relevant by-laws of CIfA.

An archaeological watching brief is defined by the CIfA as ‘a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons’ (CIfA 2020). The watching brief will take place within a specified area within the Site where there is a possibility that archaeological deposits may be disturbed or destroyed.

The CIfA further identifies the purpose of a watching brief ‘as allowing, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established in advance of development or other potentially disruptive works’ (ibid).

It is also important to note that a watching brief provides an opportunity, if needed, for a signal to be made to all interested parties, before the destruction of the archaeological materials, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.

A watching brief is, therefore, not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

The aims of the watching brief are:

- To allow, within the resources available, the opportunity to gain information about and record the presence/absence, nature and date of archaeological remains on the Site affected by excavations and groundworks, the presence and nature of which could not be established with sufficient confidence in advance of works which may disturb them.
- To provide the facility to signal to the relevant authorities, before irreversible impact to remains that an archaeological and/or historic find has been made for which the resources allocated to the watching brief itself are inadequate to support their treatment to an adequate and satisfactory standard.

The specific objectives of the watching brief are:

- To observe and recover any artefacts of archaeological significance.
- To record the location, dimensions and nature of any deposits, features, structures or artefacts of archaeological significance.
- To recover samples of any deposits considered to have potential for analysis for palaeoenvironmental data should the opportunity arise.

5.0 METHODOLOGY

5.1 Archaeological Watching Brief

The methodology for the watching brief has been prepared with reference to the CIfA's document *The Standards and Guidance for Archaeological Watching Brief* (2020) and will be kept under constant review during the project, in order to see how far it is meeting the terms of the aims and objectives, and in order to adopt any new questions which may arise.

Curatorial monitoring of the archaeological work on behalf of the Council will be carried out by the Monuments Inspector at Cadw. To facilitate the curatorial monitoring, the officer shall be provided with a minimum of two weeks' notice of the start of the archaeological work.

A suitably qualified and experienced archaeologist(s) from Aeon Archaeology will be commissioned for the maintenance of the watching brief. On arrival on site, the archaeologist(s) will report to the site manager and conform to the arrangements for notification of entering and leaving site. The archaeologist(s) will keep a record of the date, time and duration of all attendances at site, the names and numbers of archaeologists deployed and any actions taken. The archaeologist will be provided with a Health & Safety Induction by the construction contractor and wear a safety helmet, safety footwear and high visibility jacket/vest at all times.

If deposits and or artefacts are exposed during excavations for the development which require recording and recovery, it may be necessary to delay works whilst the proper investigation and recording takes place. Watching brief recording can often be undertaken without delay to groundworks, depending upon the specific circumstances and flexibility of all the staff on site.

Within the constraints of the terms of the watching brief work, the archaeologist will not cause unreasonable disruption to the maintenance of the work schedules of other contractors on site. In the event of archaeological discoveries the treatment of which (either arising from the volume/quantity of material and/or the complexity/importance of the material) is beyond the resources deployed the Client will be notified and a site meeting/telephone consultation arranged with the Monuments Inspector at Cadw. The aim of the meeting will be to confirm that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard and identify measures which would be sufficient to support treatment to a satisfactory and proper standard prior to destruction of the material in question.

Any archaeological deposits, features and structures identified which can be investigated and recorded under the terms of the watching brief will be excavated manually in a controlled and stratigraphic manner sufficient to address the aims and objectives of the project – subject to the limitations on site access.

It may not be necessary to excavate the complete stratigraphic sequence to geologically lain deposits but the inter-relationships between archaeological deposits, features and structures will be investigated sufficient to address the aims and objectives of the project and the complete stratigraphic sequence to geologically lain deposits will be investigated where practicable.

The method of recording will follow the normal principles of stratigraphic excavation and the stratigraphy will be recorded in written descriptions even where no archaeological deposits have been identified. The archaeologist will record archaeological deposits using proformae recording forms and locate them on a large-scale site plan related to the Ordnance Survey National Grid and Datum references.

The groundworks excavations shall be undertaken using a mechanical excavator fitted with a toothless ditching bucket.

The drawn record will comprise plans at scale 1:20 and sections at scale 1:10; propriety electronic hardware and software to prepare site drawings may be used as appropriate.

The photographic record will be maintained throughout using a digital SLR camera (Canon 600D) set to maximum resolution (72 dpi) and all archaeological features will be recorded photographically with photographs taken in RAW format and later converted to TIFF format for long-term storage and JPEG format for presentation and inclusion in the archive. The standards for the digital archive will adhere to those set out in '*Guidelines for Digital Archaeological Archives*' (RCAHMW, 2015).

The archive produced will be held at Aeon Archaeology under the project code **A0400.1**.

5.2 Watching brief report

5.2.1 Post-excavation Assessment

A report on the results of the watching brief, in accordance with the recommendations in *Management of Research Projects in the Historic Environment Project Manager's Guide* (English Heritage 2006; 2015), and in the Chartered Institute for Archaeologists *Standard and Guidance for an archaeological watching brief* (2020) will be required to be produced upon conclusion of the archaeological fieldwork. The report will be completed within a maximum of two months of completion of work on site and may include examination and quantification leading to the identification of function, form, date, method of manufacture, material/fabric type, source, parallels, attributes and condition of artefacts; of the exploitation of wild or domesticated resources; the reconstruction of environments; and the nature of human populations.

Full analysis of the results of the project, including: dating and interpretation of excavated features; pottery and other finds analysis; analysis of industrial residues by an appropriate specialist or specialists; analysis of samples for environmental data (including pollen, plant macrofossils and beetles) by an appropriate specialist or specialists; radiocarbon dating; discussion of the results in their local, regional and national context, including relating the excavated features and palaeoenvironmental data to evidence from nearby sites, and discussion of the results in their local, regional and national context may be required.

The scope of post-excavation assessment will subject to a specification for approval by the Monuments Inspector at Cadw upon the conclusion of the fieldwork project and preliminary report.

5.2.2 Post-excavation Report

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

- A non-technical summary.
- A table of contents.
- An introduction with acknowledgements, including a list of all those involved in the project and the location and description of the site.
- A statement of the project aims.
- An account of the project methodology undertaken, with an assessment of the same to include a statement on preservation bias and the means of data collection and sampling strategies.
- A factual summary of the history, development and use of the site.
- A statement setting out the nature, quantity and condition of the material archive (artefacts and ecofacts) including commentary on any bias observed due to collection and sampling strategies and commentary on long-term storage requirements.
- A statement setting out the nature and quantity of the documentary archive (notes, photographs, drawings, digital data).
- A general site plan indicating the position and size of the areas subject to watching brief and the locations of archaeological deposits identified and recorded during the works.
- Plans and sections at appropriate scales, augmented with appropriate photographs. All plans and sections will be related to the Ordnance Survey datum levels and to the National Grid.
- Other maps, plans, drawings, stratigraphic matrices and photographs as appropriate.
- Summary assessment reports on the artefact, bio-archaeological, dating and other assessments/analyses.
- A discussion of the location, extent, date, nature, condition, quality and significance of any archaeological deposits and finds identified during the project.
- A discussion of any research implications arising from the archaeological work.
- Notes on consultations with conservators and the nominated archive repository related to the immediate and long-term conservation and storage requirements for the data held in the site archive and recommendations of retention/discard of artefacts and ecofacts.
- A bibliography of sources consulted.
- Appendices to the report will include artefact catalogues, reports on assessments/analyses and an index to the project archive and a statement on its location/proposed repository.
- In addition the post-excavation report will summarise and draw together the findings of all of the phases of work.

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. Photographs of relevant sites and of the study area where appropriate will be included.

A draft copy of the report will be sent to the Monuments Inspector at Cadw for comment and approval prior to production of the final report.

6.0 DIGITAL DATA MANAGEMENT PLAN

6.1 Type of study

A watching brief during repair work to the Scheduled Monument of St Asaph Bridge, St Asaph, Denbighshire LL17 0LU (centred on NGR SJ 03518 74246).

6.2 Types of data

Photographs, photograph register, scaled drawings.

6.3 Format and scale of the data

Photographs taken in *RAW* format and later converted to *TIF* format for long term archiving and *JPEG* format for use in the digital report, converted using *Adobe Photoshop*. All photographs renamed using *AF5* freeware with the prefix (*project code_frame number*) and a photographic metadata created using Microsoft Excel (*.xlsx*) or Access (*.accdb*).

All written registers, pro-formas, and scaled drawings scanned as *.PDF* files.

6.4 Methodologies for data collection / generation

Digital data will be collected / generated in line with recommendations made in the Chartered Institute for Archaeologists (CIfA) *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives* (2014. Rev 2020). Sections 3.3.1 and 3.3.3 are relevant:

3.3.1 Project specifications, research designs or similar documents should include a project specific Selection Strategy and a Data Management Plan.

3.3.3 Project designs or schedules of works etc should outline the methodology used in recording all information, in order to demonstrate that all aspects of archive creation will ensure consistency; for instance in terminologies and the application of codes in digital data sets, highlighting relevant data standards where appropriate

6.5 Data quality and standards

Consistency and quality of data collection / generation shall be controlled and documented through the use of standardised procedure as outlined in the WSI. This will include the use of standardised data capture file formats, digital proformas, data entry validation, peer review, and use of controlled vocabularies.

6.6 Managing, storing and curating data.

All digital data will be organised into Aeon Archaeology proformae project file systems and backed up to the cloud using *Digital River's Crashplan* with additional copies made to external physical hard drive.

6.7 Metadata standards and data documentation

Digital metadata created using Microsoft Excel (*.xlsx*) or Access (*.accdb*) of all photographic plates.

Paper metadata created from Aeon Archaeology proformas for contexts, artefacts, environmental samples, watching brief day sheets, trench sheets, and basic record sheets and then scanned to create digital .PDF copies.

6.8 Data preservation strategy and standards

Long term data storage will be through the submission of digital (.PDF) reports to the regional Historic Environment Record (HER); submission of digital (.PDF) reports and a project completion form to the Oasis database; submission of the scanned (.PDF) archive, photographic plates (.TIF), and metadata (.xlsx) (.accdb) to the Archaeology Data Service (ADS); and retention of copies of all digital files at Aeon Archaeology on physical external hard drive and uploaded to the cloud.

6.9 Suitability for sharing

All digital data will be placed within the public realm (through the channels in 6.8) except for where project confidentiality restricts the sharing of data. All data sets will be selected / discriminated by the Senior Archaeologist at Aeon Archaeology and written permission will be sought from all project specific Clients prior to the sharing of data.

6.10 Discovery by potential users of the research data

Potential users of the generated digital data (outside of the organisation) will be able to source the data and identify whether it could be suitable for their research purposes through access granted via the ADS and RCAHMW websites. Requests can also be made for data through the regional HER's and directly to Aeon Archaeology (info@aeonarchaeology.co.uk).

6.11 Governance of access

The decision to supply research data to potential new users will be via the associated website request (ADS, RCAHMW, HER) or via the Senior Archaeologist when made directly to Aeon Archaeology.

6.12 The study team's exclusive use of the data

Aeon Archaeology's requirement is for timely data sharing, with the understanding that a limited, defined period of exclusive use of data for primary research is reasonable according to the nature and value of the data, and that this restriction on sharing should be based on simple, clear principles. This time period is expected to be six months from completion of the project however Aeon Archaeology reserves the right to extend this period without notice if primary data research dictates.

6.13 Restrictions or delays to sharing, with planned actions to limit such restrictions

Restriction to data sharing may be due to participant confidentiality or consent agreements. Strategies to limit restrictions will include data being anonymised or aggregated; gaining participant consent for data sharing; and gaining copyright permissions. For prospective studies, consent procedures will include provision for data sharing to maximise the value of the data for wider research use, while providing adequate safeguards for participants.

6.14 Regulation of responsibilities of users

External users of the data will be bound by data sharing agreements provided by the relevant organisation or directly through Aeon Archaeology.

6.15 Responsibilities

Responsibility for study-wide data management, metadata creation, data security and quality assurance of data will be through the Senior Archaeologist (Richard Cooke BA MA MCIfA) at Aeon Archaeology when concerning data generation and early/mid-term storage. Upon deposition with digital depositories the study-wide data management, metadata creation, data security and quality assurance of data will be the responsibility of the specific organisations' themselves.

6.16 Organisational policies on data sharing and data security

The following Aeon Archaeology policies are relevant:

- Aeon Archaeology Archive Deposition Policy 2022
- Aeon Archaeology Quality Assurance Policy 2022
- Aeon Archaeology Conflict of Interest Policy 2022
- Aeon Archaeology Outreach Policy 2022
- Aeon Archaeology Digital Management Plan 2022

7.0 FURTHER ARCHAEOLOGICAL WORKS DESIGNS (FAWDs)

The discovery of substantial archaeological remains and/or features during the archaeological works may result in the requirement for an extended programme of archaeological mitigation. This may require the submission of revised quotes to the client as well as a new specification which will be required to be approved by the Monuments Inspector at Cadw prior to implementation.

8.0 ENVIRONMENTAL SAMPLES

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

Bulk environmental samples will also be taken from any fills, deposits or structures which yield archaeological artefacts, charcoal flecks/ fragments, bone, or any other historic remains.

Advice and guidance regarding environmental samples and their suitability for radiocarbon dating, as well as the analysis of macrofossils (charcoal and wood), pollen, animal bones and molluscs will be obtained from Oxford Archaeology.

For guidance purposes the following volume criteria represent the minimum feature sampling requirements:

- 50% of each discrete feature (e.g. pits and postholes)
- 25% of the exposed areas of each linear feature and all terminals/intersections
- 50% of structural features (e.g. beamslots, ring-ditches)
- 50%-100% of domestic/industrial working features (e.g. hearths and ovens)

9.0 HUMAN REMAINS

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

10.0 ARTEFACTS

All artefacts and ecofacts will be retrieved for identification and recording and will be treated in accordance with CIfA 2008 Guidelines for the collection, documentation, conservation and research of archaeological materials (Chartered Institute for Archaeologists, 2014).

All artefacts are the property of the landowner but it is recommended that finds are deposited with the rest of the project archive within an appropriate museum. Furthermore, the client agrees to granting access to all artefacts recovered by Aeon Archaeology for analysis, study and publication as necessary. All finds would be treated according to advice provided within *First Aid for Finds* (Rescue 1999). Aeon Archaeology staff will undertake initial identification, but any additional advice would be sought from a wide range of consultants.

The recovery policy for archaeological finds will be kept under review throughout the archaeological works. Any changes in recovery priorities will be under guidance from an appropriate specialist and agreed with the DMA at CPAT and the Monuments Inspector at Cadw. There will be a presumption against the disposal of archaeological finds regardless of their apparent age or condition.

All finds will be collected and processed including those found within spoil tips. Their location and height will be plotted; finds numbers attributed, bagged and labelled as well any preliminary identification taking place on site. Where specialist advice is required provision will be made to do so at the earliest possible convenience.

After processing, artefacts which are suitable will be cleaned and conserved in-house. Artefacts requiring specialist cleaning and conservation will be sent to the relevant specialist. All artefacts will then be sent to a specialist for analysis, the results of which will then be assessed to ascertain the potential of the finds assemblage to meet the research aims of the project. The value of the finds will also be assessed in terms of the wider educational and academic contributions.

Depending upon the material of the remains the following experts will be consulted regarding the conservation of waterlogged material:

- Organic material: Mr Phil Parkes, Cardiff Conservation Services (tel: +44(0)29 2087 5628)
- Non-organic material: Mr Phil Parkes, Cardiff Conservation Services (tel: +44(0)29 2087 5628)

Depending upon the material of the remains the following experts will be consulted regarding the conservation and analysis of artefacts:

- Bone: Nora Bermingham
- Glass: Hilary Cool, Barbican Research Associates.
- Metal artefacts: Phil Parkes, Cardiff Conservation Services, Cardiff.
- Slag, burnt clay, hammerscale: Dr. Tim Young, Geoarch, Cardiff.
- Stone artefacts: George Smith, Gwynedd Archaeological Trust, Bangor.
- Wood artefacts: Jane Foley, Foley Conservation, Builth Wells.
- Leather: Quita Mould, Barbican Research Associates.
- Environmental Material: Dr Mike Allen, Allen Environmental Archaeology.
- Numismatics: Peter Guest, Barbican Research Associates.
- Ceramics: Leigh Dodd

If well preserved materials are found it may be necessary to employ additional staff. Furthermore, it may be necessary to suspend work within a specific region of the site, or across the whole site, while conservation and excavation/recording takes place. Aeon Archaeology accepts no responsibility for any costs incurred from delays as a result of unexpected archaeological finds.

11.0 UNEXPECTED DISCOVERIES: TREASURE TROVE

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

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

The following types of finds are not treasure:

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

All finds of treasure must be reported to the coroner for the district within fourteen days of discovery or identification of the items. Items declared Treasure Trove become the property of the Crown.

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

12.0 ARCHIVING

A full archive including plans, photographs, written material and any other material resulting from the project will be prepared. All plans, photographs and descriptions will be labelled, and cross-referenced, and lodged with the National Monument Record, RCAHMW within six months of the completion of the project.

A draft copy of the report will be produced within six months of the completion of the fieldwork and sent to the Monuments Inspector at Cadw for comment prior to finalisation of the report and dissemination. Bound copies of the report and an archive CD will be sent to the regional HER and to National Monument Record housed at the Royal Commission on the Ancient and Historic Monuments of Wales (RCAHMW) for long term archiving. Furthermore, a summary of the project will be sent to

Archaeology in Wales for publication. Copies of all digital files (inc. photos, report as PDF and Word, spreadsheets, databases, survey data etc) to be presented to each of above on optical disc (ie DVD).

The project report and archive will adhere to the Welsh Trusts' and Cadw's *Guidance for the Submission of Data to the Welsh Historic Environment Records (HERs)* (2018) including the translation of a non-technical summary into the medium of Welsh.

13.0 PERSONNEL

The work will be managed by Richard Cooke BA MA MCIfA, Archaeological Contractor and Consultant at Aeon Archaeology.

14.0 MONITORING AND LIAISON

Regular liaison and site monitoring meetings will take place during all stages of work. The Cadw Monument Inspector will be informed of the start date and of discreet subsequent stages.

15.0 HEALTH AND SAFETY

Aeon Archaeology has a Health and Safety Policy Statement which can be supplied upon request. Furthermore, site-specific Risk Assessments and Method Statements are compiled and distributed to every member of staff involved with the project prior to the commencement of works.

16.0 INSURANCE

Liability Insurance

Employers' Liability: Limit of Indemnity £10m in any one occurrence

Public Liability: Limit of Indemnity £2m in any one occurrence

Legal Defence Costs (Health and Safety at Work Act): £100,000

The current period expires 07/09/23

Professional Indemnity Insurance

Limit of Indemnity £500,000 any one claim

The current period expires 07/09/23

