

Project name:

Gravel removal works, Galey River, Athea, Co. Limerick

Scope:

Underwater Archaeological Impact Assessment

Survey Registration No.:

21D0079 (Dive) & 21R0222 (Metal detection)

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Contents

Tables.....	i
Figures.....	i
Plates.....	i
Abstract.....	1
Acknowledgments.....	1
1. Introduction	2
1.1 General.....	2
1.2 Conventions, Legislation and Guidelines	2
1.3 Project Objectives	2
2. Receiving Environment	3
2.1 Location.....	3
2.2 Soils and Geology.....	4
3. Scope of Works	4
4. Methodology.....	6
4.1 Desktop Assessment	6
4.2 Wade and Metal Detection Survey.....	6
5. Desktop Assessment	7
5.1 Historical and archaeological overview	7
5.2 Cartographic Evidence	10
6. Survey Results.....	12
6.1 Wade and Metal Detection Survey.....	12
Bridge Summary.....	16
South Banks (Upstream of Athea Bridge)	18
North Banks (Downstream of Athea Bridge)	18
Riverbed.....	19
7. Discussion.....	20
8. Impacts and Mitigation Measures	20
9. Bibliography	21
9.1 Documentary Sources	21
9.2 Other Sources.....	22

Tables

Table 1: List of recorded archaeological monuments situated within 5km of survey area.....	9
Table 2: NIAH records within 1km of the survey area (NIAH).	10

Figures

Figure 1: General site location map with general survey area encircled in blue.....	3
Figure 2: Survey area focused around Athea Bridge.	4
Figure 3: Proposed gravel removal works location (blue) with townlands (grey).....	5
Figure 4: RMPs (red), NIAH listed structures (blue), and NMI Finds (green) in proximity to Athea.....	9
Figure 5: NIAH structures within Athea village (blue) in proximity to the survey area (red).	10
Figure 6: Map of Co. Limerick, Athea highlighted in red. (Simington 1938, ii).	11
Figure 7: First edition 6-inch OS map, 1836. Survey location encircled in red.	12
Figure 8: Second edition 25-inch OS map, 1905. Survey location encircled in red.	12
Figure 9 Approximate find locations for metal debris identified in the survey area.....	15
Figure 10 Approximate find locations of post-medieval pottery identified in survey area.....	16

Plates

Plate 1: Visual survey and bridge recording in progress, taken from southeast.	7
Plate 2: View of the survey area south of Athea Bridge, taken from the southeast. The scaffolding was present to facilitate cleaning works.	13
Plate 3: View of the survey area north of Athea Bridge, taken from the north. Note the gravel bank to the left.....	14
Plate 4: Selection of metal debris found in the Galey River.	14
Plate 5: Selection of post-medieval pottery found in the Galey River.	15
Plate 6: View of Athea Bridge northern elevation, taken from the north.....	17
Plate 7: Parapet wall of Athea Bridge, taken from east.....	18
Plate 8: Riverbed composition of the Galey River at Athea Bridge.	20

Abstract

Mizen Archaeology were engaged by Ryan Hanley to undertake an underwater archaeological impact assessment (UAIA) in connection with gravel removal works, in the Galey River, Athea, Co. Limerick in advance of a proposed Flood Relief Scheme (FRS) at Athea. The assessment included wade and metal detection survey of the Galey River in the vicinity of Athea Bridge. No new archaeological sites were discovered during the survey. Archaeological monitoring of ground works was recommended as a mitigation measure.

Acknowledgments

This report was written by Caitlyn Haskins. The survey team consisted of underwater archaeologists Julianna O'Donoghue, Caitlyn Haskins and Sarah Madden. The authors would like to thank John Olney, Project Archaeologist with Ryan Hanley for his assistance during the project.

1. Introduction

1.1 General

Mizen Archaeology were engaged by Ryan Hanley to undertake an underwater archaeological impact assessment (UAIA) in connection with gravel removal works, in the Galey River, Athea, Co. Limerick.

Limerick City and County Council (LCCC), in conjunction with the Office of Public Works (OPW), are progressing works to alleviate flooding in the area. Athea was flooded in 2005, 2008 and 2009 and 2015. The proposed gravel removal is an interim measure to alleviate flooding.

The assessment incorporated a wade and metal detection survey of the Galey River channel and the riverbanks to the immediate north and south of Athea Bridge.

1.2 Conventions, Legislation and Guidelines

The underwater archaeological impact assessment was undertaken with due regard to the following national and international protective conventions, legislation and guidelines:

- National Monument Act, 1930, amended 1954, 1987, 1994, and 2004
- Heritage Act, 1995
- National Cultural Institutions Act, 1997
- The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous) Provisions Act, 1999
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, Department of Arts, Heritage, Gaeltacht and the Islands
- Local Government (Planning and Development) Act, 2000
- European Convention on the Protection of the Archaeological Heritage (the 'Valletta Convention') ratified by Ireland in 1997
- Council of Europe Convention on the Protection of the Architectural Heritage of Europe (the 'Granada Convention') ratified by Ireland in 1997
- International Council on Monuments and Sites (ICOMOS), advisory body to UNESCO concerning protection of sites and recommendation of World Heritage sites ratified by Ireland in 1992.

1.3 Project Objectives

The aims and objectives of the UAIA were to:

- Ascertain the character, condition and extent of any archaeological areas, features or objects likely to be affected by the proposed works, including any associated with temporary works, and the likely impact of the proposed works on these remains;
- Accurately located these archaeological areas, features or objects and document the findings in map form;
- Describe the same and discuss their likely provenance;

- Recommend appropriate measures for the avoidance of these remains or, where this cannot be achieved;
- Recommend measures to mitigate the impact of the works;
- Incorporate all the above into a report

2. Receiving Environment

2.1 Location

Athea village is located in the townland of Athea in the parish of Rathronan in west Limerick (Figure 1). It is situated on low lying ground overlooked by hills to the north, south and east. The Listowel-Rathkeale R523 and Abeyfeale-Glin R524 intersect in the village. The surrounding land is drained by the River Galey which flows through the village. The Galey rises in the hills of Knockinisk and joins the River Feale outside Listowel exiting into the Mouth of the Shannon at Ballybunion, Co. Kerry.

The underwater survey area is centred around Athea Bridge (Figure 2).



Figure 1: General site location map with general survey area encircled in blue.

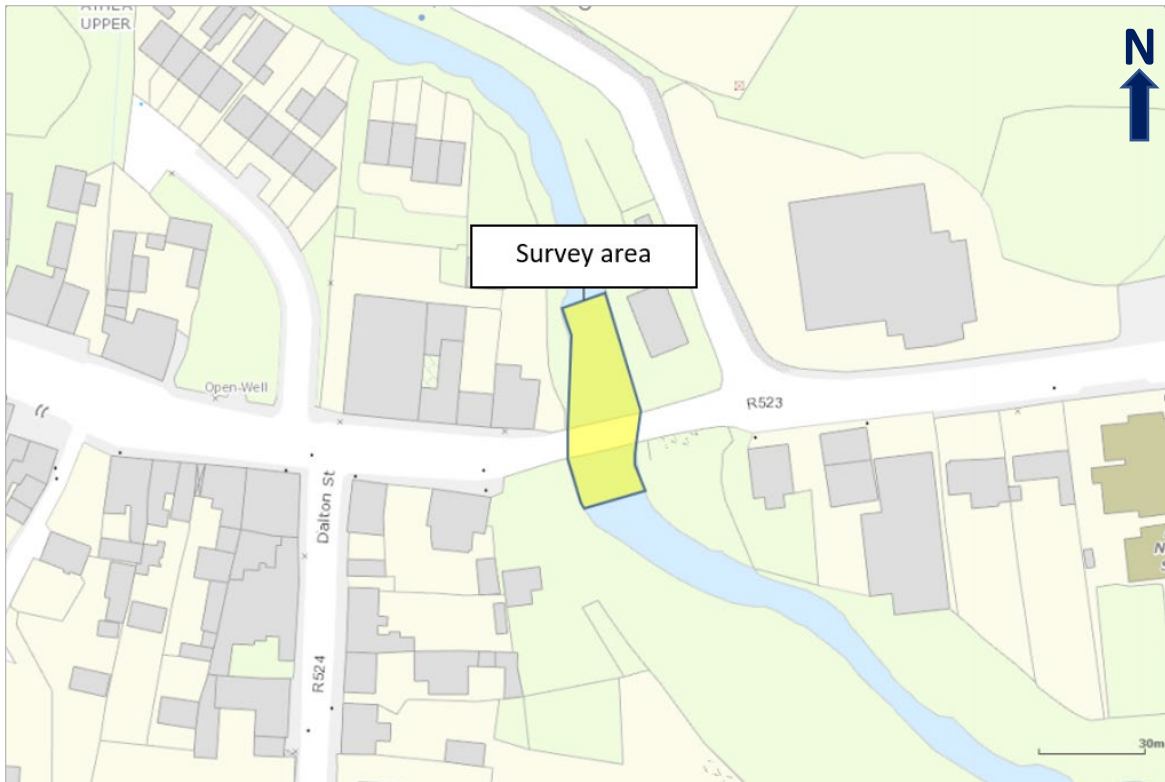


Figure 2: Survey area focused around Athea Bridge.

2.2 Soils and Geology

The predominant soil type in the area is acidic poorly drained peaty gleys. The parent material is non-calcareous shales and sandstones. The soil overlays Palaeozoic carboniferous bedrock which appears at the surface in places.

The proposed works comprise the removal of a gravel bank within the Galey River at Athea Bridge as an interim measure to alleviate flooding.

3. Scope of Works

Over time, gravel and sediment have deposited in and around the arches of Athea bridge, as the water velocity of the River Galey is not sufficient during low flows to carry a sediment load at this point.

It is proposed that the OPW will undertake the works on behalf of Limerick City and County Council (LCCC) to remove the silt and sediment deposit and associated vegetation from the effected arches of the bridge, and up- and downstream of the bridge. The proposal includes the removal of approximately 240m³ of silt, sand, and gravel deposits, as well as vegetation, from the River Galey to 300mm above summer-low water levels in the vicinity of Athea Bridge. The works are essential to

reduce the potential risk of flooding along the proposed section of river on an interim basis until more robust measures are put in place as part of the Athea FRS.

The proposed works will be undertaken by the OPW over a two-week period between July and September, dependent on suitable flow and weather conditions. A 6t excavator will be utilized to excavate gravel from the river channel to just above low flow levels and to load a waiting 6t dumper. Excavation will commence on the downstream extremity, leaving approximately 500mm of gravels between deposition and flowing channel to act as a buffer and to filter any run-off prior. This 500mm strip of gravels will be removed once all other gravel works have been completed.

A loaded 6t dumper will transport material to the upstream end of the bridge and tip at the foot of the riverbank at the green area, where a 14t excavator situated on the riverbank will load this material to an awaiting tractor-dump trailer for removal to an LCCC facility.

The excavator and site dumper will enter the works area from the right bank upstream of Athea bridge. To facilitate access, it is proposed to form a temporary access ramp from the existing gravel material, which will be removed once works are complete. All plant movement will take place along deposited material, where feasible and safe to do so, to minimise contact with flowing waters and prevent suspended solids entering the channel.



Figure 3: Proposed gravel removal works location (blue) with townlands (grey).

4. Methodology

4.1 Desktop Assessment

The following sources were consulted to complete the desktop study:

- The Record of Monuments and Places (RMP), compiled by the Archaeological Survey of Ireland, comprises lists, classifications of monuments and maps of all recorded monuments with known locations and zones of archaeological significance. The monument records are accessible online from the National Monuments Sections (NMS) of the Department of Arts, Heritage and Gaeltacht (DAHG) at www.archaeology.ie. These were used to establish the wider archaeological context of the site.
- OSI: Ordnance Survey Ireland historic and contemporary maps were examined to measure the changing landscape.
- The Excavations Bulletin online database (www.excavations.ie) which contains summaries of all archaeological excavations in Ireland, was consulted to review archaeological investigations done previously in the area.
- Wreck Inventory of Ireland Database (WIID) and Wreck Viewer: The information contained within the inventory was gathered from a broad range of cartographic, archaeological and documentary sources, and each entry in the Inventory gives information on the ship's name, type of vessel, port of origin, owner's name, cargo, date of loss and other relevant information where available.
- Cartography: Several historic maps and charts were examined (see references below for a full list).
- Aerial photography: A variety of low and high-altitude aerial photography was examined. (www.maps.archaeology.ie/historicenvironment/; www.osi.ie)
- Documentary sources: Several sources were examined. For a full list of all sources examined see Bibliography below.

4.2 Wade and Metal Detection Survey

A waded visual and metal detection survey of the area (Figure 2), as the water depth across the entirety of the area was less than 0.75m (the depth at which dive surveys are required). The waterway was between 0.05-0.45m deep at the time of survey, with an average depth of 0.15m.

The survey included a visual investigation of the riverbed, banks and attendant ground in an effort to identify upstanding or slightly submerged archaeological and architectural material (Plate 1). Any such material present was recorded and photographed.

Metal detection was undertaken using a Minelab Excalibur II metal detection device. The discrimination settings on the metal detector were set to 'pinpoint' to enable the detection of all metals. Targets were carefully investigated through hand excavation. Objects deemed non-archaeological were not retained.



Plate 1: Visual survey and bridge recording in progress, taken from southeast.

5.1 Historical and archaeological overview

Athea is located within the Barony of Shanid in the Civil Parish of Rathronan. The village derives its name from *Áth an tSléibhe* which means *the ford of the mountain* (Joyce 1990, 11). It is possible that it developed from an older form, *Áth Té*, from the influence of the townland name, *Teampall an tSléibhe* (Templethea) (www.logainm.ie).

The Civil Survey of 1654-1656 records that Colonel Francis Courtenay of Newcastle West held the townlands of Templethea, Dronada and Cratloe, while Athea, Knocknagornagh and Derivimore were owned by William Collume (Simington 1938, 319-320).

The village was relatively isolated before the 18th century, not appearing on the Taylor and Skinner maps of 1777. The Abbeyfeale to Glin road was completed in 1836 which improved patterns of movement along the Listowel-Rathkeale turnpike road. During the 1830s, a chapel was built and by the 1840s the village had a dispensary and police barracks (O'Connor 1987, 153).

By the 19th century Lord Courtenay was in possession of a majority of the lands in Limerick. In 1817 Thomas Goold of Cork City bought 11,000 acres including the townlands of Athea Upper, Clash North and South, Cool East and West, Cratloe East and West, Gortnagross and Tooradoo (Curtin, 2012).

Samuel Lewis mentions Athea as a parish with a chapel and two public schools in his *Topographical Dictionary of Ireland* (1837).

There are no monuments recorded in the Record of Monuments and Places within close proximity to Athea Bridge (Figures 4 and 5). The closest monuments are more than 1.2km from the survey area. There are seventeen known sites within 5km of the survey area (Table 1). An excavation in 1926 recorded a Bronze Age hoard at Toradoo which included a number of bronze rings (solid and hollow), penannular rings (gold and tin), amber beads and a lignite bead (Curtin 2012).

Several structures within Athea village are listed on the National Inventory of Architectural Heritage (NIAH) records, including Athea Bridge (Reg. 21834011) (Table 2). Athea Bridge was built in 1860 replacing a possible earlier wooden structure, according to local information (Curtin 2012, 23-26). It is also listed as a Protected Structure (Reg. No. 955) in the Limerick County Development Plan 2010-1016 (as extended). The NIAH (www.buildingsofireland.ie) records Athea Bridge as:

“Freestanding triple-arch road bridge, built c. 1820, comprising central primary camber-headed arch flanked by smaller camber-headed arches having rusticated limestone voussoirs with tooled limestone soffits springing from tooled limestone piers. Tooled limestone V-cutwaters to side (south) elevations have tooled limestone capping. Snecked rusticated limestone spandrels below roughly dressed stone parapet walls having tooled limestone coping and piers to termini with pyramidal tooled limestone capping. Rusticated stone-faced embankments to banks (east, west) flanking bridge having square-profile piers with rusticated stones coping and capping. Recent single-span iron girder footbridge, c. 2005, to south of bridge. Located at the east end of Athea.”

Table 1: List of recorded archaeological monuments situated within 5km of survey area.

SMR No.	Class	Townland	Location
KE011-005	Children's burial ground	Kilbaha South	E509270 N637148
KE011-011	Ritual site - holy well	Gortdromagownagh	E508431 N636083
KE011-030	Ringfort - rath	Lissaniska (Iraghticonnor By.)	E507841 N633303
KE011-050	Enclosure	Kilbaha West	E508566 N637182
KE012-001	Children's burial ground	Kilbaha Middle	E509587 N637324
KE012-002	Ringfort - rath	Kilbaha South	E509972 N636914
KE012-003	Ringfort - rath	Kilbaha South	E510038 N636930
LI034-001	Children's burial ground	Athea Upper	E510735 N634531
LI034-001001	Ringfort - rath	Athea Upper	E510735 N634531
LI034-002	Ringfort - rath	Gortnagross	E512326 N633741
LI034-003	Ritual site - holy well	Gortnagross	E512176 N633840
LI034-004001	Church	Templeathea West	E513429 N636155
LI034-004002	Graveyard	Templeathea West	E513420 N636149
LI034-005	Ritual site - holy well	Templeathea West	E513446 N636242
LI035-001	Ringfort - rath	Templeathea West	E514953 N635347
LI035-007	Causeway	Cool West	E514881 N633009
LI035-008	Causeway	Cool West	E514975 N633045

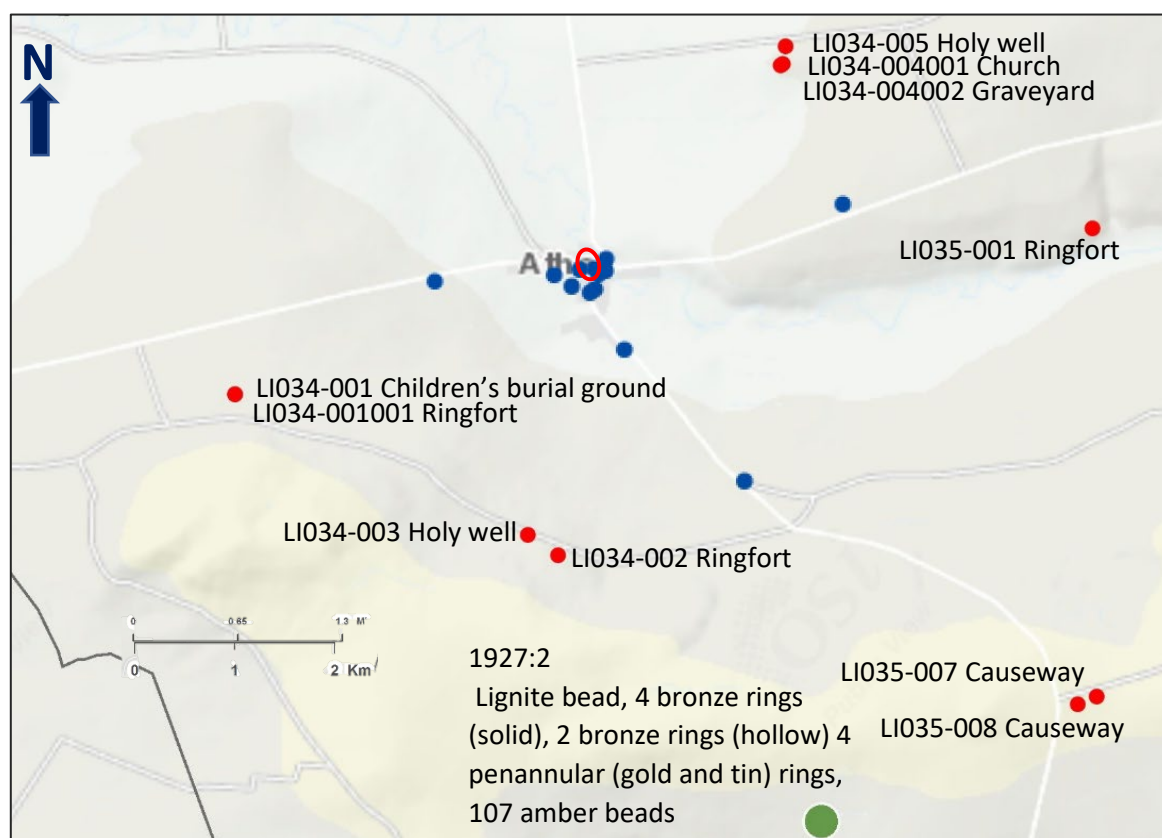


Figure 4: RMPs (red), NIAH listed structures (blue), and NMI Finds (green) in proximity to Athea.

Table 2: NIAH records within 1km of the survey area (NIAH).

Number	Type	Date	Location
21834001	Monument	1860-1865	E511717 N635085
21834003	Church	1830-1835	E512305 N635117
21834004	House	1840-1880	E512355 N635067
21834005	Guest house	1820-1860	E512500 N635149
21834006	House	1840-1880	E512521 N635120
21834007	Garda Station	1900-1940	E512511 N635056
21834008	Library	1915-1920	E512477 N635030
21834009	Water pump	1900-1940	E512646 N634754
21834010	Handball alley	1930-1970	E512561 N635196
21834011	Bridge	1800-1840	E512553 N635146
21834012	Water pump	1900-1940	E512429 N635146

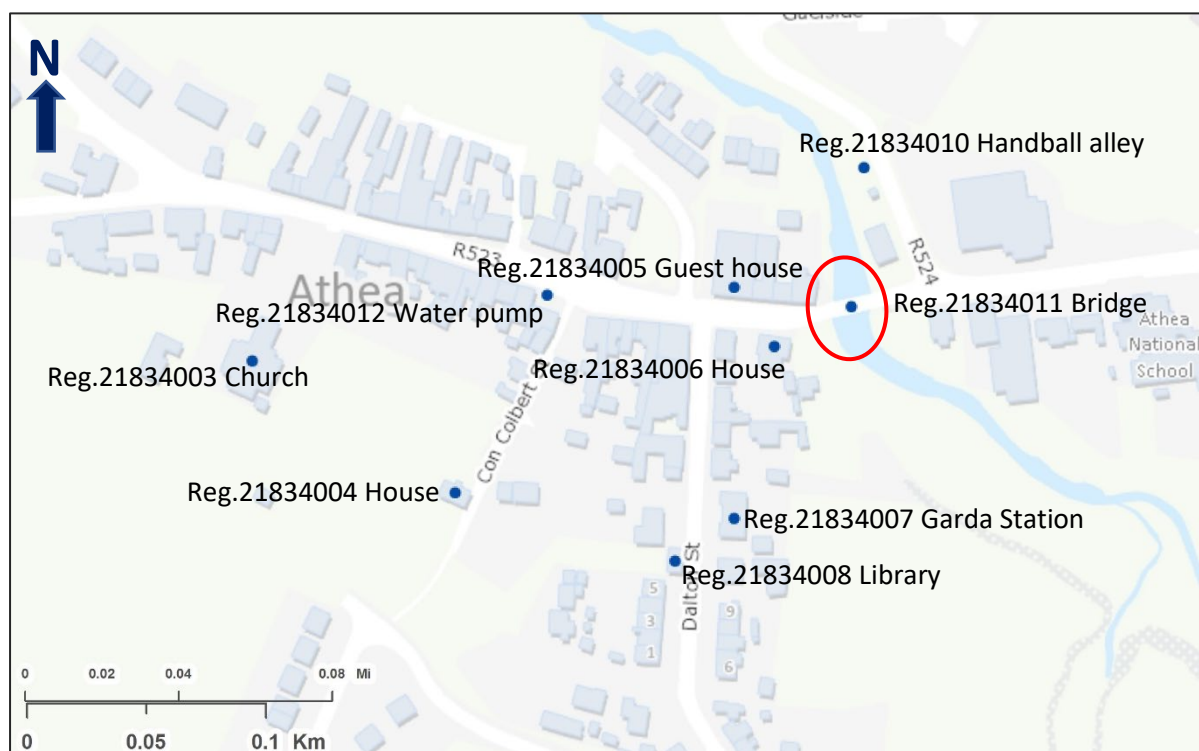


Figure 5: NIAH structures within Athea village (blue) in proximity to the survey area (red).

5.2 Cartographic Evidence

Athea appears on the ‘Baronies and Territories’ map of 1656-1657, completed for the Civil Survey of County Limerick for those years (Figure 6).

The village of Athea is represented on an estate map of 1710, although not enough detail to determine whether or not a bridge was in place at the time (O'Connor 1987). During the 1830s its prospects improved significantly when patterns of movement along the Listowel-Rathkeale turnpike road gelled with those emanating from the direction of Glin and Abbeyfeale. During the 1830s, a chapel was built and by the 1840s the village had a dispensary and police barracks (ibid, 153).

The village and bridge are visible on both the 1st edition 6-inch Ordnance Survey (OS) map (1841; Figure 7) and the 2nd edition 25-inch map (1919; Figure 8). The 1st edition 6-inch OS map shows a 'Pound' set back from the western riverbank, north of the bridge, by the 2nd edition OS map, the pound is no longer marked.



Figure 6: Map of Co. Limerick, Athea highlighted in red. (Simington 1938, ii).



Figure 7: First edition 6-inch OS map, 1836. Survey location encircled in red.



Figure 8: Second edition 25-inch OS map, 1905. Survey location encircled in red.

6. Survey Results

6.1 Wade and Metal Detection Survey

The wade and metal detection survey was carried out on 2nd of September 2021 in overcast, dry weather conditions, following a prolonged period of dry weather (Plates 2 & 3). The waterway was between 0.05- 0.45m deep at the time of the survey, with an average depth of 0.15m. Visibility in the

water was excellent with little flow south of the gravel bank and a moderate flow alongside the gravel bank.

The survey area encompassed the Galey River to c.20m to the south and c.35m to the north of Athea Bridge and included the bridge itself. The stream within the survey area flows south to north.

The metal detector survey identified frequent targets of modern metal debris and the visual survey similarly identified modern material including beer bottles, glasses, brick, and occasional post-medieval pottery (Plates 4 & 5). No archaeological material was identified. Non-archaeological material was disposed of.



Plate 2: View of the survey area south of Athea Bridge, taken from the southeast. The scaffolding was present to facilitate cleaning works.



Plate 3: View of the survey area north of Athea Bridge, taken from the north. Note the gravel bank to the left.



Plate 4: Selection of metal debris found in the Galey River.

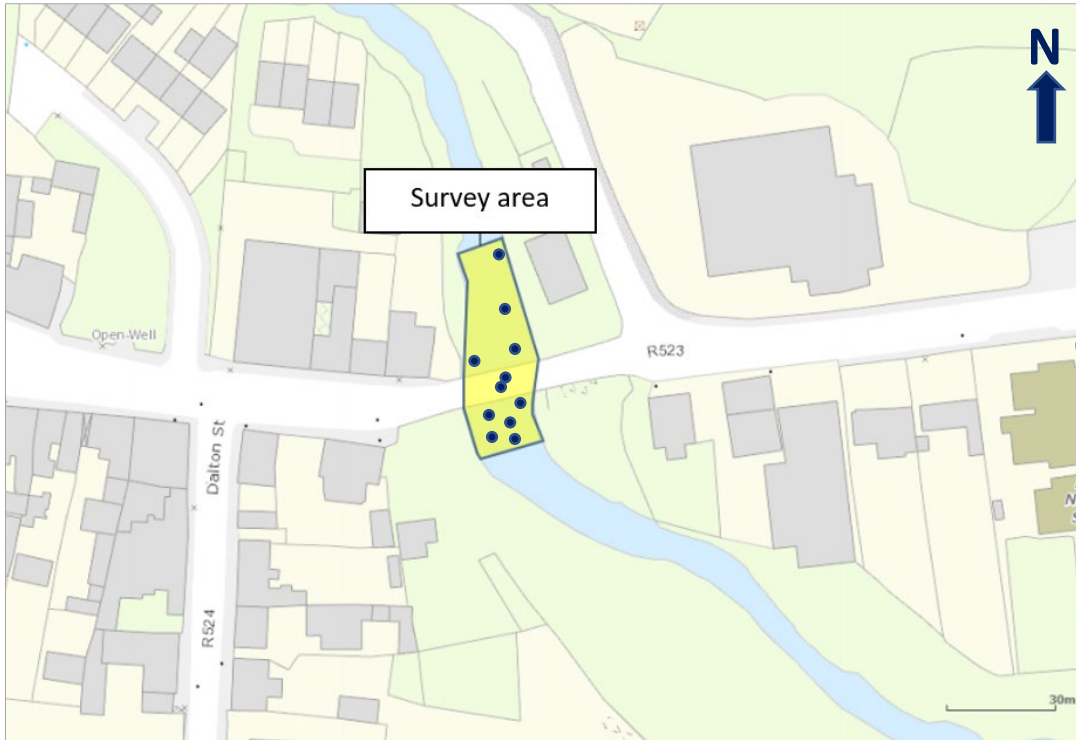


Figure 9 Approximate find locations for metal debris identified in the survey area.



Plate 5: Selection of post-medieval pottery found in the Galey River.

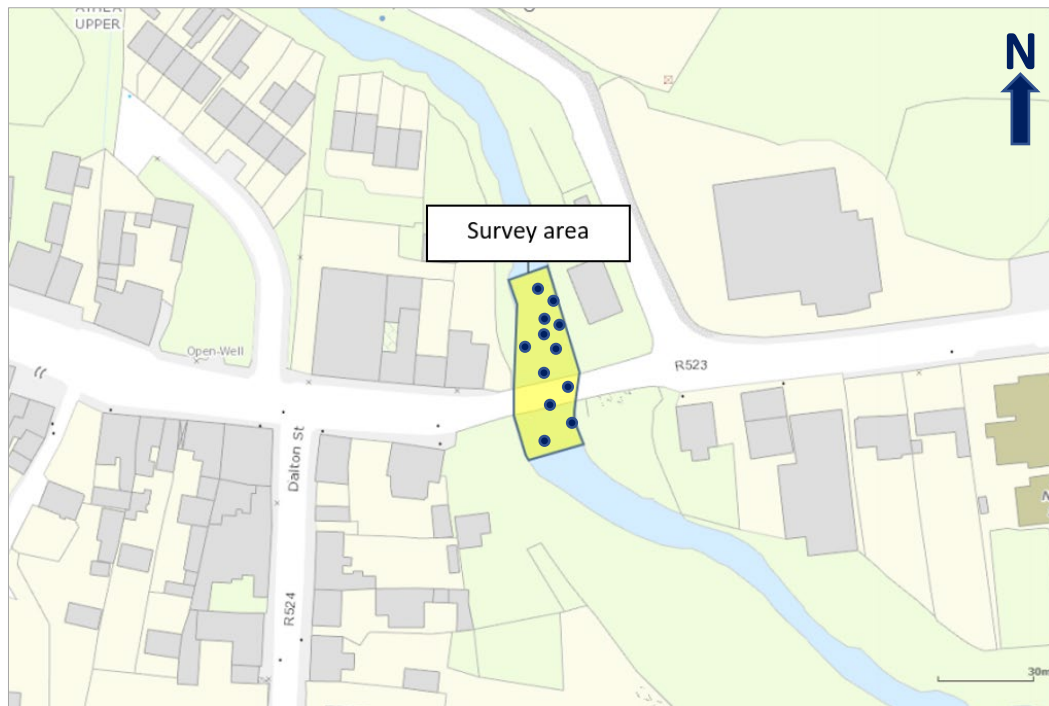


Figure 10 Approximate find locations of post-medieval pottery identified in survey area.

Bridge Summary

Athea Bridge carries the R523 roadway east to west over the River Galey. It is a triple span bridge with the central arch measuring 9.6m in width, and the side arches measuring 3.1m in width (Plate 6). The central arch-ring comprises 33 voussoirs of rusticated limestone, alternating in size between small (0.39m x 0.25m) and large (0.56m x 0.31m). The 13 voussoirs in the side arches are also of rusticated limestone, but alternate between a single large stone (0.39m x 0.25m) and two smaller stones (0.25m x 0.25m and 0.15m x 0.25m). The side arches have a rise of just 0.5m, springing from a level of 1.55m from the riverbed. The central arch has a rise of 1.5m.

Both elevations measure c.6m in height and 21.34m in width. The spandrels, piers, and parapet walls are all constructed of squared, rusticated sandstone not set to courses.

The parapet walls are 1.50m high, composed of sandstone with a flat, roughly dressed limestone coping and lime mortar bonding (Plate 7). The coping stones are 0.21m high x 1.02m long x 0.62m deep, while the stones of the parapet wall are between 0.03m x 0.09m and 0.20m x 0.28m. There are squat pyramidal terminus stones at the ends of the parapet coping, which measure 0.36m high x 1.76m long x 0.80m wide. The distance between the parapet walls is 6.75m. There are two stone drains, measuring 0.20m high x 0.15m wide in the base of the north parapet wall.

The abutments project at a right angle for a length of 4.6m and have a height of 4.75m to 2.0m. They are constructed of uncoursed, roughly dressed, squared sandstone with limestone copings and lime

mortar bonding. All four abutments end in a terminal pillar measuring 2.0m high by 0.60m wide. It has a capstone measuring 0.20m high by 0.84m wide. The abutment walls display a slight batter, making them flush with the face of the terminal pillar at the base. The upstream abutments are generally in good repair with occasional vegetation. The downstream abutments mirror those upstream. However, the coping and upper levels of the western abutment have been lost or displaced by a large tree stump. The wall is otherwise in fair condition, although much of the bonding is gone and occasional stones are missing. The eastern downstream abutment is in good condition with moderate vegetation. Two cutwaters protect the southern upstream elevation. These are constructed of ashlar limestone. They are triangular, 1.56m high with sides 1.13m long, and have pyramidal caps, an additional 0.78m high.



Plate 6: View of Athea Bridge northern elevation, taken from the north.



Plate 7: Parapet wall of Athea Bridge, taken from east.

South Banks (Upstream of Athea Bridge)

From the southern limit of the site, the grassy banks on either side are vertical and in places undercut as a result of erosion. The western bank averages 0.67m in height, while the eastern bank is slightly higher, averaging 0.85m. Both banks are composed of light greyish brown clayey silt with frequent sub-round to sub-angular cobbles and gravel beginning at c. 0.50m depth. Abutment walls extend from the southern bridge elevation for 4.60m to the south on either bank. To the west, the grassy bank begins immediately after the terminal pillar of the abutment wall, with a concrete wall running on top of the bank and off to the southwest. To the east, the abutment wall abuts the concrete foundation of a ramp which runs for 2.20m before giving way to the grassy bank. There is no trace on the eastern bank of the 'pound' illustrated on the 1st edition OS map.

North Banks (Downstream of Athea Bridge)

A concrete wall abuts the terminal pillar of the western abutment, which retains a section of stone wall with a stone drain at its base. The concrete wall is 1.80m high overall while the stone wall section reaches a maximum of 0.89m high, and ends 1.04m downstream of the abutment wall pillar. The wall section has five roughly squared stone courses bonded with lime mortar visible above the waterline. The stone drain is lined with slabs on the roof and base, with the lintel measuring 0.62m wide x 0.07m high x 0.25m deep. The sides of the drain are composed of roughly squared stones, similar to the

courses of the wall, with stones ranging from 0.08m wide x 0.03m high up to 0.35m wide x 0.10m high. The drain curves to the north west and survives for a length of at least 2.20m.

At a distance of 9.10m from the northern elevation of the bridge, there is an earthen bank in front of the concrete wall. It is overgrown and eroded at its southern end, being near-vertical and 1.60m high. As it continues to the north, it rises to a steep, grassy slope up to 2.20m in height. Large, irregularly shaped blocks of concrete and medium boulders visible in the face of the bank indicate that it may be composed, at least partly, of fill material.

The eastern abutment wall abuts a modern cement wall overtopped by a metal railing. This wall runs the remaining length of the survey area.

Riverbed

The riverbed throughout the survey area comprises silt mixed with cobbles (measuring from 0.08 x 0.05 x 0.03m to 0.48 x 0.22 x 0.10m) and gravels (Plate 8). At the time of the survey, a gravel bank barred the flow of water under the eastern arch and the eastern half of the central arch. The gravel bank upstream of the bridge is 16.15m long and 11.35m wide at a maximum. Downstream of the bridge, it extends for 32.20m and is a maximum of 11.37m wide. The downstream portion is also moderately vegetated.

The water was between 0.05m to 0.45m deep, averaging 0.15m deep. It was deepest on the western side of the channel immediately before and after the bridge. Under the bridge itself, the riverbed was protected from scour by large paving stones, overlaid with concrete.

The river is 11.37m wide at the southern end of the survey area, widening to 15.90m immediately south of the bridge. However, of the 15.90m, only 4.55m was part of the active watercourse at the time of survey, with the remaining area being dry gravel bank. Downstream of the bridge, the river is 18.43m wide, while the active stream was only 6.75m wide at the time of survey.



Plate 8: Riverbed composition of the Galey River at Athea Bridge.

7. Discussion

The wade and metal detection of the Galey River and banks to the north and south of Athea Bridge did not identify any structures or material of archaeological significance.

However, Athea Bridge is listed on the Record of Protected Structures (RPS) (Reg. No. 955) in the *Limerick County Development Plan 2010-2016 (as extended)*. In addition, the stone bridge reputedly replaced an earlier wooden structure, of which there may still be associated remains within the riverbed. It is possible that the area may have held significance as a fording point prior to the construction of even the wooden structure, as bridges frequently span the river at the site of earlier fords. Archaeological material is frequently recovered from works at similar fording points, sometimes representing materials lost or purposefully deposited in the stream.

The potential for uncovering archaeological material within the surveyed area is, therefore, low to moderate.

8. Impacts and Mitigation Measures

The proposed works would remove accumulated gravels, sediment, and vegetation, to 300mm above the summer low-water levels in the vicinity of Athea Bridge. It is believed that historically, the deposits

were removed as necessary by local landowners. More recently, starting in 2008, the OPW has visited Athea on several occasions to remove debris and free blockages from the bridge.

The proposed gravel removal works, including related ancillary in-channel ancillary works related to site access and egress, may have a negative impact on sub-surface archaeological remains in the riverbed and its banks. This includes any possible transient finds which may have been deposited along with the gravels and sediment, as well as any possible remains of an earlier wooden bridge. Monitoring of all groundworks and in-stream excavations by an experienced underwater archaeologist is recommended.

In addition, as the bridge is a protected structure, the methodology for removing gravel should be agreed with the contractor and archaeologist to avoid any accidental contact with the structure during the works. In accordance with the LCCC Conservation Officers request the following measures are also being taken to avoid impact on Athea bridge:

- All works in the vicinity of Athea Bridge will be supervised by a Conservation Architect accredited to Grade 2 by the Royal Institute of the Architects of Ireland.
- The fabric, fixtures and features of the Protected Structure will be protected against damage during the course of the works.
- Appropriate records of the works will be submitted to the Development Control Section of LCCC and the Conservation Officer upon completion of the project.

All mitigation measures are recommendations only. The ultimate decision rests with the National Monument Service of the Department of Housing, Local Government and Heritage in collaboration with the National Museum of Ireland.

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