

An Chomhairle Oidhreachta
The Heritage Council



The Hidden Bridges of the Mountain River and its Tributaries

by Francis Coady

1st November 2012

hiddenbridgesofcarlow@gmail.com

CONTENTS

Figure 1 Map of Mountain, Killedmond and Aughnabrisky Rivers.....	2
Figure 2 Map of Corries and Dinin Rivers.....	3
Introduction.....	4
Methodology.....	4
Timeframe.....	6
Rivers.....	6
Bridges.....	7
Condition.....	8
Mason Marks and Dates.....	8
Materials.....	9
Techniques.....	10
Summary.....	10
Acknowledgements.....	11
About the Author.....	12
Glossary.....	13
Figure 3 Schematic Drawing of Bridge with Architectural Detail.....	15
Appendix 1 - Bridge Recording Sheets.....	16
Mountain River.....	17
Killedmond River.....	54
Aughnabrisky River.....	66
Corries and Dinin Rivers.....	76
Appendix 2 - Additional Plates and Figures.....	120
References.....	127

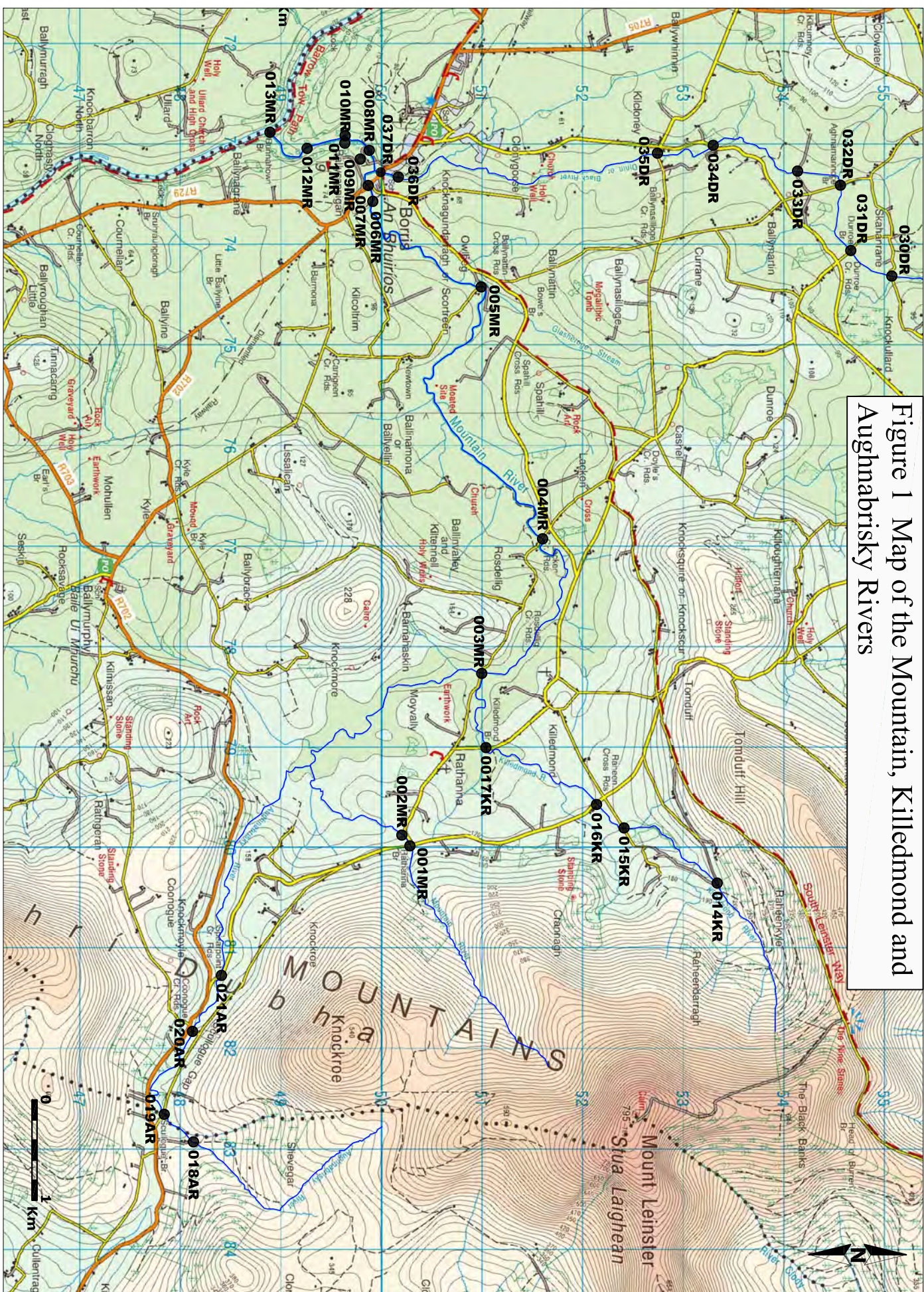


Figure 2 Map of the Corries and Dinin Rivers

INTRODUCTION

The aim of the survey was to record bridges, both architecturally and photographically, of the Mountain River and its tributaries, the Killedmond, Aughnabrisk, Corries and Dinin Rivers. There are many crossings over these rivers, some ancient, some more recent, and here 34 road bridges and 3 foot bridges are recorded and preserved in record. A look back through historical sources show the presence of foot bridges, fords and stepping stones, many of which, are no longer used in the 20th century as lines or routes of transport.

A bridge is described by the Oxford Dictionary as a noun and is defined as:

“A structure carrying a road, path, railway, etc. across a river, road, or other obstacle”.

Bridges that have been fording points or crossings are covered here but not relatively recent constructions which may be for private use only.

The attraction of these specific bridges and rivers is their obscurity, their sense of being 'hidden' or forgotten. Many of the bridges are not visible from the road, and may be crossed without the knowledge of the persons going about their daily business. Here the bridges lie, mute but full of history and heritage waiting to tell their own story. To view from underneath, is only to fully appreciate the splendour and craftsmanship of these bridges. These bridges, some over 200 years old, continue to carry modern loads they were never intended for, yet, the quality of design and execution of construction mean they are still functioning in the landscape today.

Many of these bridges provide the link between townlands, the most ancient and natural of boundaries in the landscape, which date as far back as the medieval period. These rivers were crossed at shallow points, which were accessible for the population, and, in turn would have become recognised fording points. Some were accompanied by foot bridges, of which a percentage were clapper bridges. Clapper bridges consisted of sections of upright stones with stone slabs that could accommodate foot traffic across the river. Few of these clapper bridges exist today.

Along with recording the architectural detail of the bridges, I have, in places accessed some of the rich oral history around these bridges. Here, I have learnt much about the industries, builders, materials and techniques that are connected to the rivers and also the bridges.

Methodology

The data for the survey was compiled through a range of activities and mediums.

- On site recording involved the photographing of the bridges and their architectural detail. The majority of bridges are represented by two photographs, while where more than two was required to fully display a bridge, this was done so. Here I attempt to take an overview or frontal view of the bridge and also a unique feature or detail of

that bridge. A digital camera (waterproof) was used for the collection of the photos, with, ranging rods (2 metres in length) used in some cases to provide scale.

- On site recording also involved the use of a Dictaphone, here the data was collected, stored and then transcribed to the recording sheet visible in the main body of the report. Along with recording the bridges, this Dictaphone was also used for occasional oral history recordings.
- Cartographic records, mainly the Ordnance Survey maps first and second Edition were studied to give an approximate date for the construction of the bridges. Mercator's map from the 16th century also proved a useful tool in obtaining historical data on the landscape.
- For the last section of the river, a 20 foot canoe was required to access the bridges of the lower Mountain River. The canoe was used from Borris, where all the rivers become one, to the point where the Mountain River enters the River Barrow.
- Each bridge is given a distinctive Project Identification code. While the numbers are in sequence, the code changes relate to the river.

MR - Mountain River

KR - Killedmond River

AR - Aughnabrisky River

CR - Corrie River

DR - Dinin River (also known as the Black River)

Example - 009MR is the 9th bridge of the survey, which may be found on the Mountain River, while 032DR is the 32nd bridge of the survey, which is located on the Dinin River.

- ITM (Irish Transverse Mercator), the most recent Irish coordinate system, are the coordinates used here.
- The report is divided into three sections
 1. The Introduction – gives a brief overview of the project
 2. Appendix 1 - includes the recording sheets and photographs from on site recording. They show the name and also a unique identification number which may be used as a tool for the map. The style, construction technique, dates, composition and any oral history collected along the way are recorded here.
 3. Appendix 2 - includes additional photographs, figures and references.

As part of the project, an event was staged in Rathanna School Hall for Heritage Week, which was attended by 35 people. A 40 minute presentation outlining the data compiled to date also included a photographic exhibition of the bridges. The event was a great success and produced lively debate about the names of some of the bridges and their stories associated to them.

I use the term project here, to emphasise the hope that discussion will continue around these rivers and bridges, and that the information will continually evolve much the way these bridges are continuing to gather history.

Timeframe

The on-site recording was undertaken between the mid May and mid October. The weather was generally good while recording though the summer months.

Rivers

These rivers have been carving out their place in the local landscape for centuries. They acted as natural boundaries within the landscape, boundaries that were later incorporated into divisions known as townlands since the Medieval times. Rivers by their very nature attract settlement and activities. The rivers were used for a multitude of activities, among them supplying energy for corn, woollen and saw mills, producing electricity, providing water where sheep could be washed prior to shearing, fishing and also recreational value in the form of swimming. The rivers themselves, sometimes fast and shallow, sometimes slow and deep, play an integral role in communities that live along their banks.

Bridges were recorded from the following rivers;

1. The Mountain River has its source on the western slopes of Mount Leinster, between the townlands of Rathanna and Crannagh, and, incorporates thirteen bridges. The river takes in a number of tributaries along its way west to the River Barrow. It is possible that the Mountain River is visible on Mercator's Map of 1575 and named as 'The Middel Water' (*Plate 97*).
2. The Killedmond River has its source on the north western slopes of Mount Leinster to where it meets the Mountain River due south of Killedmond, and incorporates four bridges.

The river was important enough to be included in Mercator's Map of 1575 and is thought to be that of 'Ranglorum Flu' (*Plate 97*).

Killedmond is noted on most of the early maps and judging from its layout, where four roads meet; it was an important townland.

3. The Aughnabrisk River has its source on the eastern slope of Mount Leinster in County Wexford. It proceeds through Sculloge Gap, which;

*“gets its name from scolog, the Gaelic word for a tenant farmer”
where*

“The tenant farmers on the grange lands in Co. Wexford crossed into Carlow through the gap, after the harvest, on their way to pay their rent to the monks in Duiske Abbey.” (Conry, 2006, pg 40)

It is highly probable that the Aughnabrisk River is that of the 'Kynnagh Flu' of Mercator's map of 1575 (*Plate 97*). It is also interesting to note that the present day

townland of Coonogue derives from the Irish cúnog, which means bend or nook (logainm.ie). On inspection of the path of the Aughnabrisk River, there is a distinctive turn in the river from its source through Scullogue gap before heading west.

4. Corries River has its source in the townland of Carrigbeg, east of Bagenalstown. It has eight recorded bridges within the survey.

5. Dinin / Black River

The Dinin / Black River seems to be a continuation of the Corries river, with the change of name to the Dinin or the Black River west of Corries Bridge. It has eight recorded bridges on the survey. The river flows south to Borris where it joins with the Mountain River in the Kavanagh Family Estate in Borris.

Many of the rivers named above have their own tributaries, but these lie outside the remit of this study.

Bridges

Ireland's road network is vast considering the size of the country. These roadways vary in size and quality, but the vast extent of the network meant many streams and rivers needed to be crossed frequently. Prior to the construction of bridges, many of these crossing points were fords, with some being accompanied by foot bridges. The presence of footbridges, stepping stones and mass paths were one time a common sight in the Irish landscape. In recent times these features have been wiped from the landscape but not from the memories of the people who viewed them as an integral part of daily life. These have also been preserved in record on the Ordnance Survey maps. These bridges played an important role in providing access for rural communities that were otherwise isolated.

The bridges of this survey come in many shapes and sizes, with marked variation in the dates, construction techniques and styles. There is a marked difference between the earlier bridges and the later ones, not only in style but also construction technique and materials. Some the bridges date to the 1700s, while a percentage date to the 1920s after the establishment of the Free State. Some of these later bridges may have incorporated features of an earlier bridge, some of which were that was destroyed during the Civil War.

The earlier bridges are constructed of arch rings. The true arch, segmental arch and basket handle arch may all be found among the earlier bridges. Arches require timber centring for their construction. The outline of these timber centrings may be found on the barrels of a considerable amount of the bridges. By its design, the weight of the arch, and anything above, is transferred down through the voussoirs of the arch and relieved to the abutments or piers. It is testament to the quality of craftsmanship employed in the construction of these bridges, that they still remain today, as many of them carry in excess of the loads that they were built for.

The newer bridges, especially from the 20th century onwards were constructed in a completely different fashion. They are generally of trabeated form, and constructed with varying sizes of steel beams, some of which were transported from Middleborough in England. Cement also replaced lime as the mortar and binder from the 20th century onwards. Formwork was employed to create the shape of the bridge, with cement being poured, with the formwork removed after the cement has set.

The increase in traffic and indeed the later change of mode of transport from the 20th century meant that the bridges needed to be bigger and wider. Also the large amount of labour needed for the construction of true arches was replaced by the relatively quick, although still labour intensive by modern standards, construction of concrete bridges.

Condition

The condition of these bridges vary in many different respects due to their location, materials used and how successful remedial works have been.

Although the earlier bridges of stone and lime are still intact, the lime mortar has perished, and as a result has lead to slippage of the arch and stones within some bridge barrels. One of the main causes of lime mortar failure is water penetration of the structure. Water penetrates these bridges from the road surface, through pooling and also from the grass verges at road level. Once the water has penetrated the structure, it leads to binder migration in the lime mortar: the calcite leaches from the lime and the mortar ultimately fails. As a result a considerable amount of the barrels are covered or 'caked' in calcite. Freeze thaw action also leads to the swelling of walls and ultimately, collapse. The heavy growth of ivy and trees also accelerates splitting of the structure, allowing more water into the structure.

The later, 20th century bridges are constructed of steel and concrete. The condition of the bridge depends on the quantity of cement that covers the reinforced steel. Once the steel becomes oxidised, it expands, which leads to spalling of the surface concrete.

Scouring of central piers and abutments from the river has also lead to slippage within the structures. This scouring has led to these components of the bridge being undermined and some are in danger of collapse.

The use of inappropriate remedial material, such as cement repointing in originally lime binder bridges, is a common feature. Generally the cement remedial works do not adhere properly to the stone substrate, and when they do, they inhibit the movement needed for the structure to stay intact.

Mason Marks and Dates

Very few mason marks or dates were observed at the bridges. There are a few possible reasons for this;

1. Granite is prevalent in the construction of the early bridges, and over the years it has been very receptive to the growth of lichen, making shallow mason marks on the stone difficult to see.
2. The growth of ivy and wildlife over the bridges, in some cases has completely engulfed sections of the bridge.
3. The possibility that some of these bridges were not marked.

The bridges vary in date, size, style and technique, and, are covered in Appendix 1.

Many of the bridges recorded do not contain dates, and therefore I have included reference to the 1st and 2nd Edition Ordnance Survey Maps (from here defined as OS). The 1st Edition OS map for Carlow dates to 1839, while the 2nd Edition OS map is dated to between 1897 and 1913, this has proved useful in giving an approximate date for the bridges. The earliest bridge are those at Rathanna (002MR), Bunnahown (013MR), Boley (033DR) and Kilclony (035DR), with the latest or most recent being that of Wards Bridge (018AR) in Wexford (one of two bridges recorded outside Carlow) dating to 2010.

Materials

Early bridge materials were predominantly of stone, with granite being the most available and thus most widely used stone identified during the survey. The stone itself may have come from quarries around the neighbouring land, but would also have been made available as a direct result of land clearance. This would also be the case for some of the sand used in their construction. During the course of the survey, a sand pit, now closed, was identified, as was one field known locally as the quarry field. Stone, due to its size and weight and thus difficulty involved in moving it was generally sourced as close as possible to the structure that was under construction.

The stone that was used varies in the amount it was dressed. Some of the more impressive bridges have finely dressed voussoirs, springing from ashlar masonry, with impressive bridge barrels, while others consist of random rubble or squared stone constructed with stone from nearby land clearance. Although, where stone bridges are recorded, they are predominately of granite; some of these bridges also contain a high percentage of shale.

Originally lime mortar was used as the binder in the construction of these bridges. Lime was sourced locally, from many of the lime kilns that would have been dotted around the county. Sadly many of these lime kilns are now no longer visible in the landscape.

Steel reinforced concrete replaced traditional building materials in bridge construction from the 1920s on. Many of the bridges that were dismantled or blown up during the War of Independence and Civil War were rebuilt with the use of concrete and steel. Concrete structures were easier to construct and also required less skilled labour. Cement was not produced locally and so it was in direct contrast to the production of lime. Steel beams from Middleborough in England are found in some of the 20th century bridges.

Techniques

As a result of different styles of bridges, there were different techniques also for constructing these bridges.

The earlier arched bridges were constructed with the aid of timber centring, which was later 'struck' or removed. In some cases the timber centring was supported by timber prop frames (Plate 98). These timber centrings were necessary to allow the arch to be constructed, it acted as a template for the shape of the arch and also for support while building (Plate 99 & 100). Once the arch was completed, the timber was removed or struck, with the arch maintaining its shape. Here the voussoirs bear the weight from above and transfer it to abutments through the haunch of the arch. In some cases, the remains of the timber centring may be seen on the underside of the barrel, where the timber has left an indent on the lime.

The construction of a single arch construction meant that some of the earlier bridges had a hump back shape, and in times of poor weather, they may have been impassable due to the steep gradient, also the transport of threshing machines could get caught on the hump. Many of these bridges had the hump back removed in the mid 20th century by the County Council.

To combat such high single arched bridges, some of the bridges consisted of multi arched spans. This allowed for a gentler gradient on the road surface, but it also meant there had to be at least one central pier. Cutwaters were generally placed on the upriver side of these arches to direct the water down either arch and avoid scouring of the pier itself.

The later, 20th century bridges were not constructed with this true arch design but were of a trabeated form. An abutment was constructed on either bank, of stone or concrete. These side abutments provided the platform for the river to be spanned by a steel beam or steel reinforced concrete. A series of steel mesh, and galvanised corrugated iron in some cases provided the base for the fill above which brought the bridge surface to the required height. These bridges were constructed using timber formwork, the outline of which may still be seen on the abutments and soffit of the bridge. Large mixers were employed on site with a considerable amount of manual labour needed. It is interesting to note, the strength of the concrete used today when compared with the earlier cement used. The earlier concrete had an approximate strength of 20 Newtons per square millimetre, while the later concrete being somewhere between 30 to 35 Newtons in compressive strength. It is therefore ironic that the earlier structures age better than the newer ones.

Summary

The survey involved the recording of 37 bridges on the Mountain River and its four main tributaries. Many of the present day bridges were predated by fords and associated stone and timber footbridges, with stepping stones dotted amongst the rivers. The early bridges were designed by the Grand Jury which was the precursor to the present day County Councils. Many of these bridges were built by local men, who were multi talented and basic all rounders.

While the bridge styles and techniques of construction have changed, the same principles remain: one of linking communities. Their construction meant an improvement for the lives of many rural communities, making travel somewhat less arduous.

Some of these bridges were standing when the United Irishmen rebelled in 1798; some were demolished during the course of the Civil War, and rebuilt as part of the new Free State. Others replaced fords and footbridges and showed the advancement in communications and wider transport.

A considerable amount of these bridges require small amounts of remedial works to guarantee they will remain in the landscape for future generations. Any remedial works should be on a like for like basis, as the introduction of incorrect material may be as detrimental as not taking action. This survey also aims to highlight the possibility of the gradual destruction of these bridges and maybe a lesson to this generation to value what it has, before it remains nothing more than a photo in a survey! It is hoped that this survey will lead to further discussion concerning these bridges, and their role and place in the local community.

Acknowledgements

I would like to thank the following people:

John Doran, Peg Ward, Eamonn Doyle, Jimmy and Mary Coady, , Dan Carroll, Mary White, Willie Quinn, Jim Kelly, John O' Leary, Mick Gorman, Tommie Kinsella, Mick Kinsella, Johnny Byrne, Paul O Neill, Michael Conry, Birdie Knowles, Áine Coady, Larry and Mary Doyle, JJ Cummins, John Doyle, Peter Rose, Morgan Kavanagh, Dearbhala Ledwidge, Dry Stone Conservancy with special thanks to Mick and Mary Heffernan, Ciss Doran, Anne and Larry Furlong, Joyces of Borris, Johnny Kane, Michael Reddy, Margaret Minchin and Raymond Knowles all of whom supplied background information on many bridges and various other help.

Also I would like to thank Dan McCarthy and Ron Cox, whom provided valuable academic assistance, Emmet Fennelly, Damien O' Reilly, Pdraig McCarthy and a special thanks to Noel Dowling, who provided on site assistance. A big thank you, to the landowners, who permitted me access the bridges through private property. To the staff the Carlow Volunteer Centre and Carlow County Council, especially Dermot Mulligan, and Local Studies for aiding any request for information and advice. The Rathanna Community Group who kindly supported me from the off, supplied a venue and helped in the smooth running of the Heritage Week Event.

And finally The Heritage Council, whose support and funding under the Heritage Education, Community and Outreach Grant Scheme 2012 made it all possible.

If I have omitted anyone above, please accept my apology.

About the Author

I graduated from University with a BA in History and Archaeology before working in field archaeology. Having a keen interest in dry stone walling, I then followed a career in traditional stone construction. I am currently undertaking Post Graduate Studies in Building Conservation.

Glossary

Abutment - The solid support of a bridge that enables it to resist the lateral thrust of an arch.

Barrel –The underside of the arch, visible only from underneath.

Basket Handle Arch - Three centred arch, the two side arches rising from the abutment are the same, while the central arch springs from below the springing point of the arch

Batter – Slope or inclination from a perpendicular wall, often seen in retaining walls.

Batwing keystone – Central keystone, sandwiched between two slightly smaller arch stones, which in turn are larger than the voussoirs of the arch.

Buttress - Additional support to combat lateral thrust, in this case from the arch

Centring – Timber formwork used during the construction of an arch, gives shape and support to the arch. It is removed once the arch is completed.

Clapper Bridge – Stone or timber slabs placed on upright stones to provide pedestrian access across water.

Coping – Capstones of a wall to shed water.

Crown – Highest part of an arch.

Cutwater – The outer limits of a pier, set on the upstream side of a structure to direct the water, usually triangular in shape.

Draft – Smooth margin along the outer perimeter of stone.

Dressing – The act of shaping a stone to the required dimension and shape.

Extradors – Outside surface of voussoirs of an arch.

Formwork – Timber support for concrete construction, later removed when cement has cured sufficiently to hold shape.

Haunch – Area of an arch between the springing point and the crown.

Intrados – Inside surface of voussoirs of an arch.

Jack Bridge – Bridge with a series of arched spans between horizontal beams.

Keystone – Voussoir at the centre of the crown of an arch which transfers pressure through the haunch of the arch.

Lateral Thrust - Pressure exerted in an sideways fashion

Lattice – Layers of material crossing each other at right angles

OS Maps - Ordnance Survey Maps, 1st Edition (date to 1839) and 2nd Edition (date between 1897 - 1913).

Parapet – Wall or barrier on an elevated structure to prevent risk of falling from structure.

Pier – A solid support between two openings from which an arch may spring.

Quoin – Any stone on the corner of a structure, gives strength and stability.

Reinforced concrete – Concrete that contains steel to aid tensile strength

River bed – Base of a river.

Segmental Arch – Arch with a shallower shape than a true / semi circular arch, basically the segment of a circle.

Scouring – The damaging effect water may have on central piers.

Soffit – Under side of a structure

Spalling – Outer surface breaking away from structure, as seen in reinforced concrete once metal becomes oxidised.

Spandrel – Area between the extrados, highest part of the crown and line from the springing point.

Springing Point – The point at which the arch begins from its support.

Striking – The act of removing the timber centring on completion of a true arch.

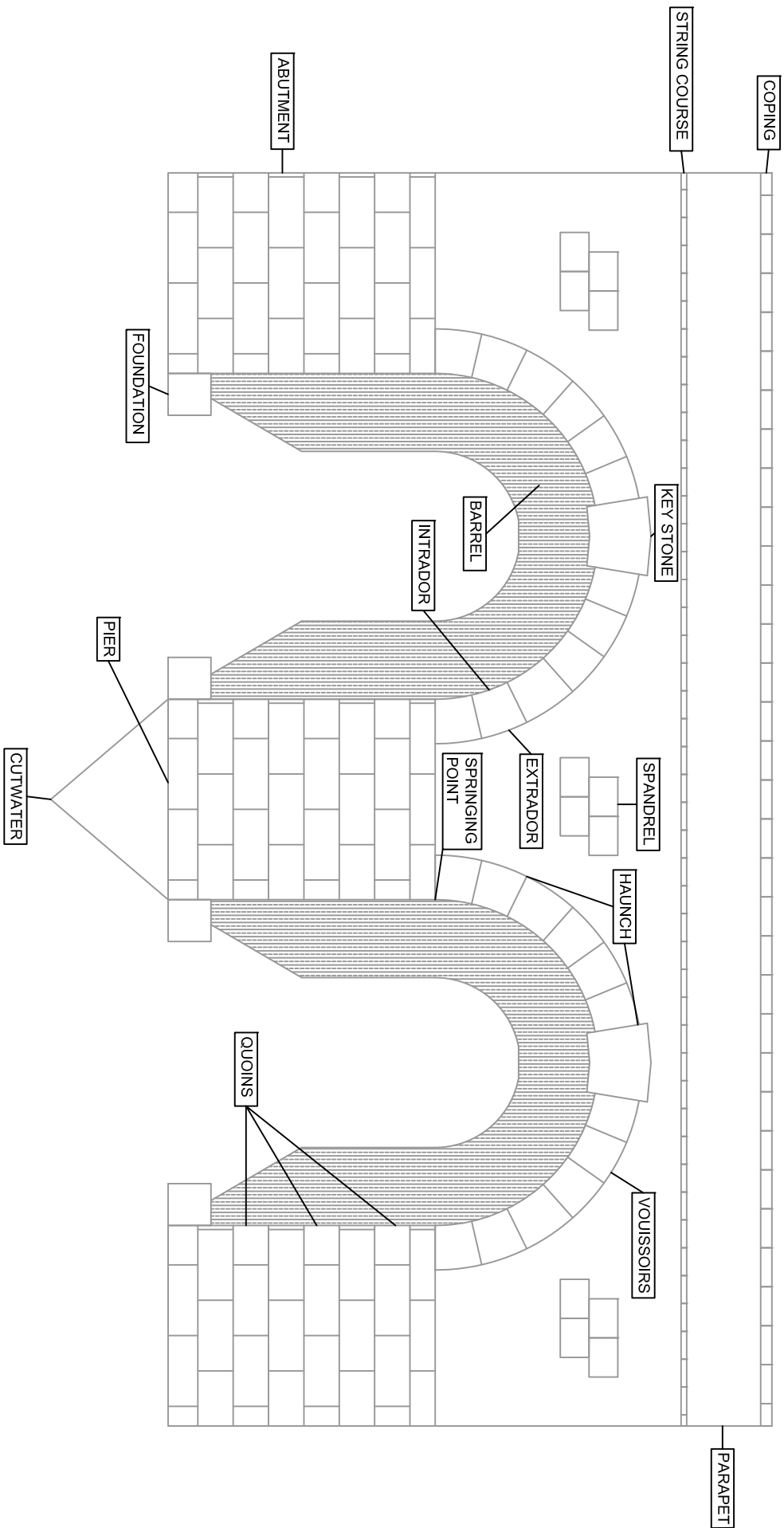
String course – Horizontal projecting course on the facade of a structure

Trabeated Arch – Lintels are supported by posts or uprights on either side of the span.

True Arch – Semi circular design, consisting of individual voussoirs which transfer the pressure through the haunch and to the base and abutment. Also known as a Roman Arch or semi-circular arch, opposite to a trabeated arch

Voussoirs – Individual sections, shaped like a wedge, makes up an arch

Figure 3 Schematic Drawing of Bridge with Architectural Detail



APPENDIX 1 - BRIDGE RECORDING SHEETS

Mountain River

Bridge Name and Number: Rathanna Bridge (001MR)

Local name of Bridge: Rathanna Bridge

Townland: Rathanna

National Grid Coordinates: (ITM) 679910 E, 650324 N

Style: A “basket handle arch” springing from four courses of dressed coursed granite. The bridge is constructed of squared granite built to courses, with random rubble granite stones used in the barrel of the arch.

Construction technique: The bridge was constructed using timber centring. The remains of the centring may be seen in the outlines left on the lime mortar of the barrel. The arch was built up from the springing point, with the dressed voussoirs on the facade of the arch, while the barrel consists of a mix of dressed and undressed stone. Once the voussoirs had reached the crown of the arch, a key stone was inserted which transferred the pressure from above the arch down through the adjacent haunch and to the abutment. Lime has been used in the construction of the bridge. There is a revetment wall on the eastern side of the bridge.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.74m	6.79m	5.32m	1

River bed / Base: Rough, natural base with boulders and stones

Composition / Material: Granite, shale and lime mortar

Mason marks / Dates: None visible. Present on 1st and 2nd Edition OS Map.

Condition: Moderate to good. Water ingress has led to binder migration in the mortar and damp patches on either side of the barrel show signs of black staining. Pointing is needed in places where the lime mortar has perished.

Parapet & Coping: Squared granite built to courses with soldier coping.

Comments: The bridge supersedes the original bridge some 100 metres downriver. The bridge is thought to have been built by local landowners, the Newton Butlers, who lived in Mount Leinster Lodge, in the late 19th or early 20th century. Newton Butler retained ownership of vast tracts of land until the Land Commission acquired it in 1931.

In the field to the east of the bridge, there is a Mass Rock found in a hollow close to the river bank. Another stone visible here was due to be used for the doorway of Johnston Castle, but upon splitting it, an impurity vein, known as a white horse was visible so the stone was never used. Sheep used to be washed in a pool above the bridge, prior to shearing.

Ivy, ferns, moss and other vegetation are found underneath the bridge.

Recorded by: FC

Date: 01/06/12



Plate 1 – Western elevation of Rathanna Bridge



Plate 2 – Outline of timber centring in barrel of Rathanna Bridge

Bridge Name and Number: Rathanna Bridge (002MR)

Local name of Bridge: Heffernan's Bridge/ Old Bridge of the Coach Road (Private property)

Townland: Rathanna

National Grid Coordinates: (ITM) 679780 E, 650263 N

Style: This bridge is a true arch constructed predominately of granite and shale, with slate and quartzite also present. The arch is made up of finely dressed granite voussoirs, while the barrel consists of a random rubble construction of shale and granite.

Construction technique: Timber centring was used to construct this bridge; the outline of which is still visible in the barrel. The lateral thrust of the bridge is resisted by a combination of soil at the base and abutment wall of granite random rubble. Lime mortar was used in the construction of the bridge.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
3.6m	6.37m	6.47m	1

River bed / Base: Natural river bed with large boulders.

Composition / Material: A mix of granite and shale, with slate and quartzite present.

Mason marks / Dates: None visible. Present on 1st and 2nd Edition OS map.

Condition: The surface path of the bridge is not sealed and as a result, water passes freely from the surface down through the bridge. This water penetration has led to binder migration in the lime mortar, and as a result some of the central keystones of the barrel are missing. There is a large crack on the western side of the barrel and this is connected to the area that lost the keystones approximately 60 years ago. The barrel of the arch is in poor condition.

Parapet & Coping: N/A

Comments: This bridge was built as the main road through Scullogue Gap to Killealy and was known as the Coach Road. A short distance from where the coach road would have met the new road was a place called Ha' penny Hill. It is reported locally that the gentry would have thrown pennies from their carriages to the poorer locals here.

The bridge supports ivy, brambles, lichen, moss and ferns. Two metal rods are visible on the west side of the bridge and would have been used to prevent livestock trespassing.

Recorded by: FC

Date: 01/06/12



Plate 3 – Western elevation of Heffernan's Bridge



Plate 4 – Random rubble construction of barrel and abutment

Bridge Name and Number: Moyvalley Bridge (003MR)

Local name of Bridge: Moyvalley Bridge

Townland: The bridge is located at the meeting of Moyvalley to the south-east, Rosdellig to the west and Killedmond to the north-east.

National Grid Coordinates: (ITM) 678176 E, 651053 N

Style: This bridge is a trabeated arched bridge constructed of steel and concrete. Two trabeated arches are supported by a central pier.

Construction technique: This steel and concrete construction was one of the new style of bridges constructed after the establishment of the Free State. The abutments on either bank, along with the central pier were constructed first. These were constructed though the use of timber formwork. The timber formwork created a casing for the cement to be poured into. The cement was mixed by hand on site using a large drum mixer. Once the concrete had set, the timber formwork was removed leaving the outline of the timber present. The central pier also has a triangular shaped cutwater on the upstream side. The abutments on both banks and the central pier support two sets of five steel beams, which create the arch. Over the steel beams a steel wire mesh is visible which would have taken the fill above and raised the bridge to the required height of the road.

Dimensions and Structural Information:

Height (Max)	Width	Span (Total)	Number of Eyes
2.28m	6.22m	13.45m	2

River bed / Base: Concrete river base.

Composition: Concrete, steel beams and mesh, with shale side walls, steel railings.

Mason marks / Dates: 1926

Condition: The bridge is in relatively good condition. Scouring has taken place on the central pier under the bridge. The steel beams are heavily oxidised, and the mesh above these beams has also oxidised leading to the cover of concrete spalling in places. As a result of water penetrating from the grass verges on the road surface calcite has leached from the concrete.

Parapet & Coping: The road surface has two shale walls (with pointed concrete capping) leading to the bridge on either side, with eight concrete piers with tubular steel railings between the piers. The railings and pier are similar to Cummins Bridge on the Dinin River (032DR).

Comments: There is a bridge visible here on the 2nd Edition OS map, with it being unclear whether there was one on the 1st Edition. This bridge was dismantled during the Civil War and replaced with the present one by the Free State in 1926.

The Killedmond River meets the Mountain River on the downriver side of the bridge, with stepping stones present on the Killdemon River not far from the meeting of the rivers. The steel beams that were used on the bridge are marked "Dorman Long and Co Ltd., Middleborough, England". The river slows down here depositing a considerable amount of

sand and silt. A man by the name of Eamonn Goss was involved in the construction of the bridge.

Moss, ivy, fern, briars all growing on the bridge, with the heaviest of these being found on the downriver side of the bridge. A nesting box for Kingfishers may be found underneath the bridge.

Recorded by: FC & ND

Date: 06/08/12



Plate 6 – Southern elevation of Moyvalley Bridge



Plate 7 – Concrete post and tubular steel parapet

Bridge Name and Number: Rosdellig Bridge (004MR)

Local name of Bridge: Rosdellig Bridge

Townland: This bridge connects Lacken to the north with Rosdellig to the south

National Grid Coordinates: (ITM) 676849 E, 651642 N

Style: Double true arched bridge with central pier. The abutment of the bridge consists of squared granite, built to courses but also random rubble, and later concrete shuttering poured wall. The arches spring from three or four courses of dressed granite, with the arch consisting of finely dressed voussoirs. The cutwater is of finely cut granite. A granite revetment may be seen on the upstream side of the bridge. The spandrel is made up of granite random rubble, also containing shale. The parapet is coursed random rubble, with the line visible where the hump back was taken out of the bridge in the 1950s (*Plate 102*)

Construction technique: The granite foundation of the abutment is visible. The central pier and abutment were constructed to the springing point, where the timber centring would have been placed to act as a template for the shape of the bridge. The barrel of the arch was constructed with red shale and this is in direct contrast to the granite abutments and piers. A timber formwork was used, as is evident from timber outlines on the soffit. Lime mortar was used in conjunction with granite and shale.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
4.5m	6.15m	13.75 m	2

The side arch in the south-eastern abutment wall consists of granite voussoirs. Here the abutment is of granite and shale random rubble. A later sloping concrete buttress has been placed against the abutment wall to counteract any outward movement. Dimensions are as follows;

Height	Width	Span	Number of Eyes
1.5m	6.5m	3m	1

River bed / Base: There is a rough river bed which is predominately of granite.

Composition / Material: Granite, shale, lime, cement

Mason marks / Dates: None visible, the bridge is present on the 2nd Edition OS map. Remedial works, which may have included removal of the hump in 1952.

Condition: Lime mortar has perished to the rear of the voussoirs. Within both barrels there are cracks that extend from the abutments into the barrel. Water penetration from road level has lead to moisture migration. Also, the lime mortar has perished on the eastern side of the abutment wall due to damp, shaded conditions, with this section of the wall having a large bow present. The side arch also has a considerable crack to the rear of the voussoirs.

Parapet & Coping: The parapet is granite coursed random rubble containing some squared stones, with a flat concrete coping.

Comments: The bridge was initially a hump back bridge, with the hump being taken out in the 1950s. This may have resulted in the construction of a new parapet wall, with cement

being used as the binder. PD 9/1/53 were found to the rear of the new parapet and would indicate Pat Doran. The following men worked on the bridge in the 1950s Liam O' Connell, Johnny Byrne, Willie Hayes, Pat Doran and Martin Kavanagh, (*Plate 101*).

Similar stones to those found in the central pier and abutment are visible in the nearby mill. It is thought that either this mill was never finished, or if it was, it was never worked. One story of events suggests the mill was being constructed in 1798, when a United Irishman was killed, and as a result the workers refused to complete the job. Other reports, suggest a man by the name of Leech owned it.

Further down river there was a mill race which generated electricity in the 1930s and 40s. Torch batteries for hunting were charged here, and there were cables that ran from here to O' Connells house to provide light until rural electrification in the 1950s.

There is a large amount of deposition on the inside of the river as it approaches the bridge on the upriver side, as result the bridge is not a right angle to the river. A bird box is also present. Ivy has encroached, from either side, into the barrel and spandrel of the bridge.

Recorded by: FC & ND

Date: 01/09/12



Plate 7 – South-western elevation of Rosdellig Bridge, overgrowth masks eastern span



Plate 8 – Granite pier and cutwater with shale barrel in background



Plate 9 – Outline of centring remains on the barrel of Rosdellig Bridge



Plate 10 - Arch and later concrete abutment on south-eastern elevation

Bridge Name and Number: Brooke Lodge (005MR)

Local name of Bridge: Brooke Lodge Bridge

Townland: The bridge connects Spahill to the north with Kilcoltrim to the south.

National Grid Coordinates: (ITM) 674352 E, 651040 N

Style: The bridge consists of 11 'vents' that allow the water to flow through, while also allowing the water to flow over the road in times of increased water due to the absence of a parapet wall. These bridges are known from medieval times (O'Keeffe, Simington 1991) and the style has been used to good effect by the Local Authority in this instance.

Construction technique: The initial development was the construction of a concrete base. The bridge consists of 11 'vents' that were created using steel barrels or corrugated iron as the formwork for the concrete. The bridge may have been built in two separate stages, to prevent any disruption to the flow of the river. There is a concrete revetment or apron walls on either side to combat the erosion of the river

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
0.7m	4.2m	Vents - average 0.55m Total span - 13.50m	11

River bed / Base: The river bed here is natural

Composition / Material: Concrete, steel railing, steel barrel and corrugated iron.

Mason marks / Dates: None visible. The bridge was built in 1968 / 69. Stepping stones are shown on the 1st Edition OS map, while stepping stones and ford are visible on the 2nd Edition OS map.

Condition: The railing is in a poor condition, rusted and bent in places. The concrete is in moderate condition.

Parapet & Coping: No coping, a steel railing parapet is present.

Comments: O'Keeffe and Simington term this type of bridge an "Irish Bridge". These types of structures, without parapet walls and a series of vents allow water to flow over the road in times of floods, while the river may still be crossed.

The river here is shallow and wide at this point, and as a result it has a fast flow. Some scouring has taken place on the western bank, with large stones positioned to combat this. The remains of stepping stones may be found upriver from the bridge. Up until the construction of this bridge, this part of the river was a fording point.

Recorded by: FC & ND

Date: 06/08/12



Plate 11 – Northern elevation of vents at Brooke Lodge



Plate 12 – Brooke Lodge with steel parapet

Bridge Name and Number: The Viaduct (006MR)

Local name of Bridge: Donnie Coadys, The Viaduct

Townland: This bridge connects Scortreen to the north with Kilcoltrim to the south.

National Grid Coordinates: (ITM) 673520 E, 649945 N

Style: Dressed granite ashlar with a rough face built to courses. The viaduct consists of 16 true arches which spring from enormous piers. The voussoirs contain a draft, with rough face.

Construction technique: The piers are built on a visible three tier foundation. The proud base of these piers tapers slightly, before being capped with a proud string course from which the arch springs. The stone in the arch and viaduct is of granite, with drafted edges and rough faces, save for the barrel which is smooth. Timber centring was used in the construction of the granite; an example of similar construction may be seen at Plate 100.

Dimensions and Structural Information:

Height (Average)	Width	Span	Number of Eyes
12.5m	6.25m	10.26m	16

River bed / Base: Rough river bed

Composition / Material: Granite, lime mortar

Mason marks / Dates: 1860

Condition: Excellent

Parapet & Coping: A small granite coursed parapet wall with pointed stone coping is visible on the railway level of the viaduct.

Comments: The viaduct in Borris is one of the most spectacular of its kind in Ireland. The chief engineer was William Le Fanu. It consists of 16 arches, constructed in 1860 and opened in 1862 to connect Dublin and Wexford. The initial railway line only reached Ballywilliam in Wexford before the project was bankrupted in 1864. Scheduled passenger journeys remained until 1931 with the line also used for goods, among them livestock and sugar beet (Feeley, J.M. & Sheehan, J) (*Plate 104*)

Some of the stones in the piers are up to 2m in length. A considerable amount of calcite has leached from water ingress above leading to black and white staining. The plug and feather marks are visible on some of these stones.

There are a number of stone structures in and round the piers of the viaduct. They taper from a broad base to a flat top, with the side having a crow stepped detail. The remains of 6 are present here but there may have been more, with the stone is good enough to be reused for building. Some have a return from the rear at right angles acting like a buttress of some sort.

Height	Width	Length
4.4m	2.15m	4.15m at base

Recorded by: FC & ND

Date: 01/09/12

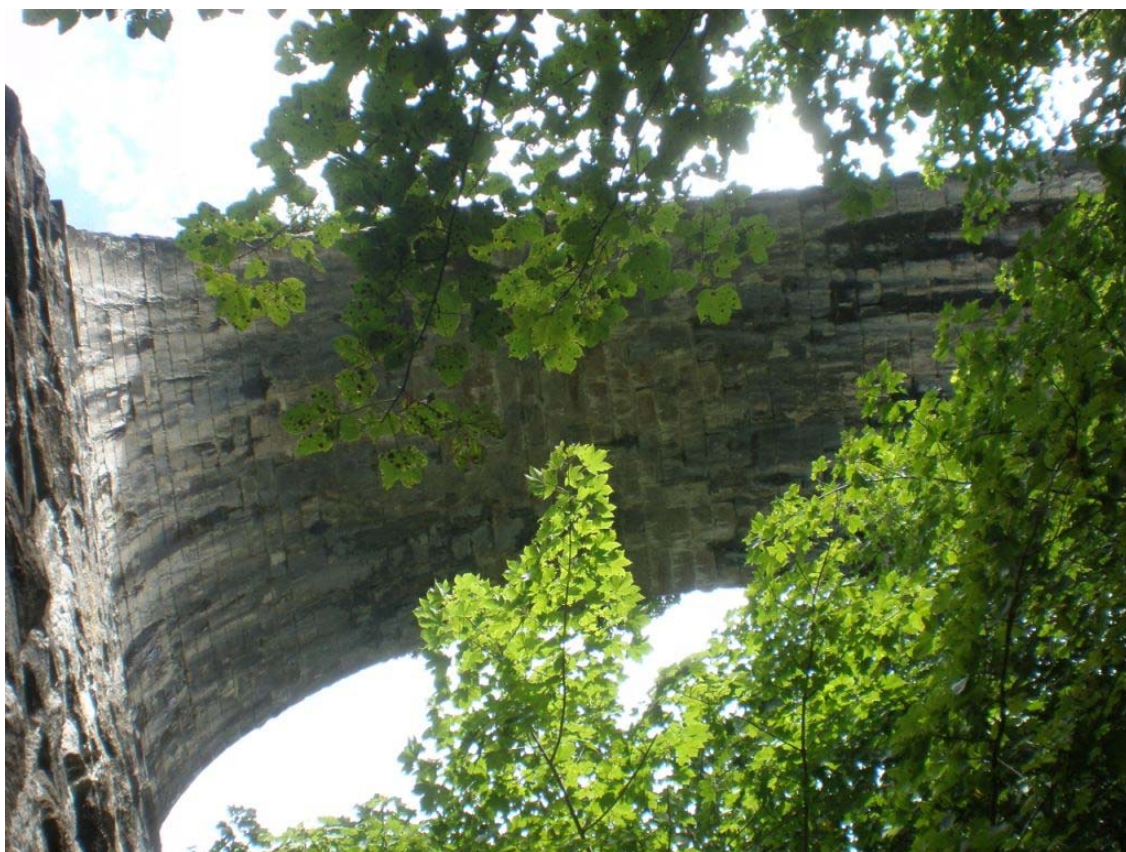


Plate 13 – Barrel of Viaduct, view from the Mountain River



Plate 14 – The viaduct; 16 arches remain



Plate 15 – Granite structures in close proximity to the Viaduct

Bridge Name and Number: Ballycoppigan Bridge (007MR)

Local name of Bridge: Ballycoppigan Bridge

Townland: Scortreen to the north, Kilcoltrim to the south-east and Ballycoppigan to the south-west all meet at this bridge

National Grid Coordinates: (ITM) 673354 E, 649937 N

Style: The bridge consists of a true arch constructed predominantly of granite. There are two styles visible here, on the upstream side of the bridge the barrel consists of small to medium sized random rubble, with the arch springing from random rubble uncoursed abutment.

On the west side, approximately 2 metres from the bridge facade, the barrel is made up of finely dressed stone, while the arch springs from two visible finely dressed ashlar granite courses. The voussoirs of the arch face on the downriver side are generally smooth with occasional rough faced stone present, all containing drafts. The parapet and abutment walls on the western side are of finely dressed coursed granite.

Construction technique: The bridge is constructed of granite. This bridge was constructed using timber centring. The abutments were built to the required height, with the arch springing from here. The voussoirs were laid on the centring, while the barrel was also built at the same time. Once the arch was complete the timber centring was struck and removed. The outline of the timber centring may be seen in the straight lines of the barrel. Lime mortar was used in the construction of the bridge.

The abutments on the east and west side of the road have been added to, at a later date with concrete buttresses to counteract lateral thrust. Original stone buttresses may also be found to the rear of the western and eastern abutment walls.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
5.12 m	8.05m	9m	1

There is another arch further south along the abutment wall. Here the abutments are finely cut stone with the barrel showing signs of timber centring construction in the lime. Its dimensions are as follows;

Height	Width	Span	Number of Eyes
3.37m	11m	3.35m	1

River bed / Base: The river bed is rough with a moderate amount of deposition present.

Composition / Material: Granite, lime, later concrete abutments and cement repointing.

Mason marks / Dates: None visible. Present on the 1st and 2nd Edition OS maps.

Condition: A considerable amount of leaching of calcite from the lime mortar used in the construction of the bridge may be seen on the barrel. This is due to water penetration from the road surface above, it has also led to black staining. Mortar has perished behind the voussoirs on the west side of the bridge. The joint that extends through the barrel from bank to bank has been widened in recent years due to water penetration from above.

Parapet & Coping: There is a couple of different styles leading into the parapet of the bridge, some sections of the surface wall of the abutment are of random rubble with convex concrete coping, while other parts are of finely dressed coursed stone with large soldier course stone as coping. The parapet wall of the bridge is made of random rubble granite stone with a flat stone coping.

Comments: Cement remedial works have taken place with the name D. Moore 1981 visible under the bridge, the remedial works may be seen on the barrel and the abutment, and also on the continuous break under the soffit, from springing point to springing point. A revetment wall may be seen on the western side of the bridge. It is possible that the addition to the west side of the bridge may have been a footpath that is visible on the 2nd Edition OS map. It is unsurprising that the former Borris Demesne side of the bridge (now the Golf Course) is of a higher quality work than the eastern side, as this was the side facing the estate.

To the south of the bridge, at the top of Ballycoppigan Hill, the original road would have continued straight on and was known as Bottle Lane.

There are many trees encroaching from the banks. Lots of overgrowth on the bridge, with ivy, fern, brambles, moss.

Recorded by: FC & PMcC

Date: 02/09/12



Plate 16 – Western elevation of Ballycoppigan Bridge



Plate 17 – Barrel of Ballycoppigan Bridge, note difference between east and west side

Bridge Name and Number: Saw Mills Bridge (008MR)

Local name of Bridge: Saw Mills Bridge (Private Property)

Townland: This bridge connects Borris to the north with Ballycoppigan to the south

National Grid Coordinates: (ITM) 673119 E, 649963 N

Style: A true arch. The arch itself is made up of finely dressed granite voussoirs. These voussoirs are extremely smooth, and are shaped with semi circular ends, while also being chamfered. The proud batwing keystone and revetments on either side of the river bank are in varying conditions. The arch springs from 4 courses of dressed granite, with the barrel of the arch consisting of random rubble.

Construction technique: Timber centring was used for the construction of the bridge. The dressed coursed abutments were first built to the required height for the arch to spring from. From the springing point the arch, consisting of finely dressed voussoirs with semi-circular design containing a chamfer, were built until the key stone was placed at the highest point to spread the weight of the arch. The abutments are of granite and contain a splay which acts a buttress to the bridge to combat the lateral thrust from the arch. These are positioned on the four corners of the bridge. Above the arch is a string course. The spandrel appears to be of dressed granite but heavy ivy growth makes it difficult to observe. The bridge was constructed with lime mortar. After the weir constructed to transport water to the saw mills, there is a revetment wall on the right and left side, consisting of cut granite built in courses.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
5.94m	3.17m	9.1m	1

River bed / Base: Natural and extremely uneven with boulders present.

Composition / Material: Granite, concrete and steel railings

Mason marks / Dates: None visible. Bridge present on 1st and 2nd Edition OS maps.

Condition: A considerable amount of binder migration has taken place over the years; this is a direct result of water penetration from the road surface above. As a result there are many areas where the lime mortar has perished. There is a large crack within the barrel. On the eastern (upriver) side of the bridge, a tree has taken root just above the keystone, and as a result is pushing the central pier of the surface up. The parapet on the road surface is in poor condition, and has fallen into disrepair in many places, while the abutment wall has very visibly swollen due to freeze thaw action.

Parapet & Coping: The road surface has a parapet wall extending the full length of the crossing. This parapet is made up of two to three courses of granite with a proud soldier course coping. On the eastern side of the bridge, there is a steel railing; it appears to be 20th century. The railing on the western side of the bridge is considerably more ornate but unfortunately its date is unknown. There are six piers consisting of concrete. These piers with the exception of the central pier on the eastern side all have granite capstones.

Comments: From an earlier photograph (National Library of Ireland); it appears there may have been stone balustrade parapet. There is a similar batwing keystone to that on the west

side of Whitneys Bridge. The detail and the craftsmanship of the bridges within Borris Demesne are noticeably of higher quality than those outside the estate.

There is another arch within the abutment wall to the north of the 008MR. The arch is a true arch and consists of finely dressed voussoirs. The abutment wall has a slight batter on it and is made up of coursed granite random rubble. The barrel consists of dressed granite stone. Quoins are visible on each side of the opening, but unusually one quoin stands proud of the corner.

Height	Width	Span	Number of Eyes
2.69m	5.16m	2.02m	1

The arch itself may have been used to accommodate excess water in times of flood or may have been used for a pedestrian route. It now accommodates a drain and has a concrete floor as its base. There are many cracks within the barrel of the arch and again it is due to water penetration from above. The lime mortar has perished in many areas and a considerable amount of calcite leaching has occurred. Later cement remedial works have been undertaken here but have been unsuccessful as they have not adhered to the stone.

This bridge and abutment wall is heavily covered in ivy, with tress also present.

Recorded by: FC & PMcC

Date: 08/09/12



Plate 18 – Eastern elevation of the Saw Mills Bridge in Borris Demesne

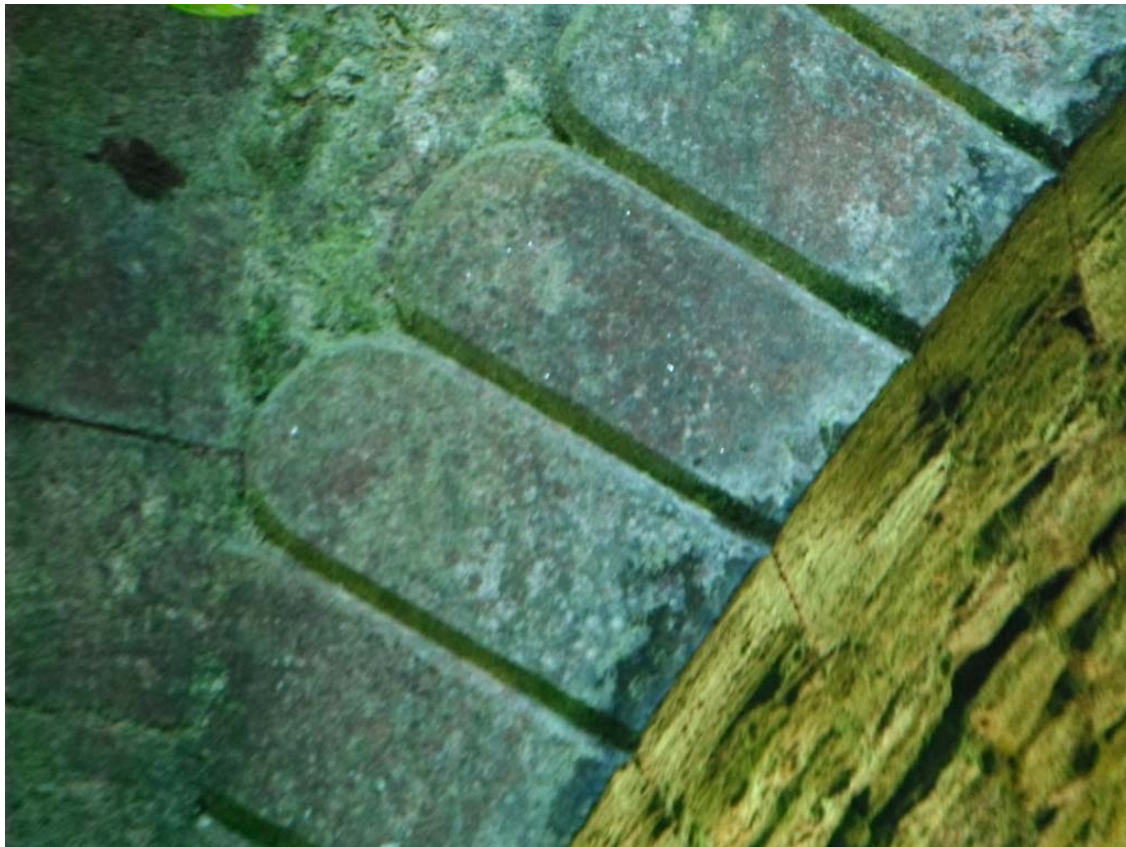


Plate 19 – Chamfered, curved voussoirs at Saw Mills Bridge



Plate 20 – Arch in abutment wall of Saw Mills Bridge, western elevation

Bridge Name and Number: Mill Race, Borris Demesne (009MR)

Local name of Bridge: Mill Race, Borris Demesne (Private Property)

Townland: Ballycoppigan

National Grid Coordinates: (ITM) 673129 E, 649934 N

Style: This bridge is built in a trabeated style. The abutment walls are constructed of squared rubble built to courses, with lime mortar as binder material. The bridge contains drafted quoins for the corners of the opening.

Construction technique: Trabeated bridges are constructed of two abutments either side of the water that act as the support for lintels positioned across the water. The bridge is then formed by laying a series of cut granite lintels across the opening from abutment to abutment. One lintel is missing and, this allows us to see how the core of the wall above is built, it has another series of lintels above placed at right angles, forming a lattice effect. The lintels in the bridge have the plug and feather marks visible in them.

The quoin stones contain prominent drafts along their corners, with rough faces. The abutments on the upriver side, have splayed walls to channel the water under the bridge, and, thus avoiding any scouring of the abutments. Concrete has been added here to combat under scouring at a later date.

The parapet wall over the arch is approximately 3.5 metres high and consists of dressed random rubble built to courses.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.2m	5.4m	2.22m	1

River bed / Base: Rough / natural, tree roots in the river bed

Composition / Material: The initial construction of the bridge is of lime and granite, with later sand cement repointing.

Mason marks / Dates: None visible. Bridge only present on 2nd Edition OS map

Condition: There is slight bulge in the eastern abutment wall due to water and freeze thaw action. Water ingress from above has led to binder migration and failure of the mortar in places; these have resulted in sand cement repointing remedial works. On inspection under the bridge there is a lintel missing.

Parapet & Coping: On the road surface, the parapet wall consist of two or three courses of granite (the same as 008MR), supporting a granite coping, which is occasionally arranged in cow and calf style. The parapet and coping are covered in a considerable amount of moss and are in relatively poor condition.

Comments: On the eastern side the remains of a timber sluice gate is still visible. There is a stile visible on the western side of the bridge. Water that was transported by this mill race may have been stored in a walled enclosure. There are two gates; one was to channel water for the turning the mill wheel for the Saw Mill, while the other was to act as a sluice gate to

release excess water back to the Mountain River. There is a dwelling on the site of the saw mill. There is a heavy amount of overgrowth here, which includes brambles, ivy, moss and laurel trees.

Recorded by: FC & DO'R

Date: 15/09/12



Plate 21 – Western elevation of Mill Race Bridge, note plug and feather marks on lintel



Plate 22 – Missing lintel in soffit, note the lattice style construction

Bridge Name and Number: Foot Bridge (010MR)

Local name of Bridge: Foot Bridge 1(on western side) (Private Property)

Townland: This bridge connects Ballycoppigan to the east with Borris to the west.

National Grid Coordinates: (ITM) 672808 E, 649653 N

Style: Trabeated wooden foot bridge.

Construction technique: Timber pole (remains of soft wood tree), steel frame under this consisting of three tubular bars in a pyramidal shape, with steel strap supports in between. The walkway is of timber, with chicken wire or mesh over for a non-slip surface. There is only one hand rail, on the lower side but that is incomplete. The bridge is supported by a stone and mortar abutment at either side, with random rubble dry stone revetment walls present also. Concrete has been added as a footing at either end of the bridge, to act as support. The bridge is supported on one side by a tree.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
3.6m	0.75m	9m	1

River bed / Base: Rough / natural, large boulders in the river bed with heavy tree growth on the banks

Composition / Material: Timber, steel, mesh

Mason marks / Dates: None visible. 1st Edition OS map shows Foot Bridge slightly further south. 2nd Edition OS map shows foot bridges present on same site as those today.

Condition: Poor condition, the timber is badly decayed leading to the bridge being unstable.

Parapet & Coping: Tubular hand rail on southern side.

Comments: Large amount of tree cover from the banks, added to the shaded nature of the area, leading to large amount of moss.

Recorded by: FC & DO'R

Date: 15/09/12



Plate 23 – Tree acting as support for Foot Bridge



Plate 24 – Tubular steel framework for bridge

Bridge Name and Number: Foot Bridge (011MR)

Local name of Bridge: Foot Bridge 2 (on the eastern side) (Private Property)

Townland: Ballycoppigan

National Grid Coordinates: (ITM) 672825 E, 649659 N

Style: Trabeated wooden foot bridge.

Construction technique: Similar to 010MR. Two timber poles (remains of soft wood tree) support a steel frame of three tubular bars in a pyramidal shape, with steel strap supports in between, which in turn provides the base for the timber walkway. The timber walkway has chicken wire or mesh over for a non-slip surface. The bridge is supported on two dry stone wall abutments consisting of large random rubble uncoursed wall. Concrete footings have been used at either side of the bridge on the surface for stability. There is no hand rail.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.9m	0.75m	6.05m	1

River bed / Base: Natural - the river bed is now completely dry, with the river passing under 010MR to the west.

Composition / Material: Timber, tubular steel, steel, mesh, concrete.

Mason marks / Dates: None visible. 1st Edition OS map shows Foot Bridge slightly further south. 2nd Edition OS map shows foot bridges present on same site as those today.

Condition: The tress supporting the tubular frame is in an advanced state of decay, while the steel tubular framework is corroding.

Parapet & Coping: Broken hand rail present

Comments: The timber and steel may be contemporary and all part of the one construction phase.

Recorded by: FC & DO'R

Date: 15/09/12



Plate 25 – Foot Bridge



Plate 26 – Tubular framework for Foot Bridge

Bridge Name and Number: Foot Bridge 012MR

Local name of Bridge: Foot Bridge 3 (Private Property)

Townland: This bridge connects Ballycoppigan to the east with Borris to the west.

National Grid Coordinates: (ITM) 672939 E, 649376 N

Style: Trabeated wooden foot bridge

Construction technique: Two large tarred wooden poles laid horizontally, with timber planks (soft wood) as surface. No handrails present.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.5m	1.05m	14.1m	1

River bed / Base: Rough, natural with boulders

Composition / Material: Tarred wooden poles with soft wood timber laths across.

Mason marks / Dates: None visible. No historical data for earlier bridge.

Condition: Bridge is lopsided half way across and is in moderate condition.

Parapet & Coping: N/A

Comments: There is no metal in this construction. There is a beech tree growing up though it.

Recorded by: FC & DO'R

Date: 15/ 09/12



Plate 27 – Footbridge spanning the Mountain River



Plate 28 – Southern elevation of Footbridge 3

Bridge Name and Number: Bunnahown Bridge (013MR)

Local name of Bridge: Bunahown Bridge (Partially on Private Property)

Townland: This bridge connects Borris to the north with Ballynagrane to the south

National Grid Coordinates: (ITM) 672820 E, 648921 N

Style: The bridge consists of three true arches. The arches spring from two abutments of coursed squared granite on either bank and, from two piers of finely dressed ashlar granite in the river. The voussoirs of the arch on the eastern side of the bridge are made of what appears to be karst limestone, containing holes and channels that resemble water weathering. Unlike the face of the voussoirs, the stone in the soffit of the arch consist of a smooth finish. There are two triangular, finely dressed ashlar granite cutwaters present on the eastern side.

The voussoirs on the western elevation (Barrow facing side) of the bridge are a much finer detail, consisting of dressed granite. One of the arches here contains large granite lintels presumably to widen the tow path slightly.

Construction technique: Timber centring was used in the construction of this three arched bridge. Stones are placed on the centring until the arch is complete, at which time the centring is struck or removed. The present day bridge is made up of two separate bridges, abutting each other. The division is noted from the vertical joint in the centre of the bridge piers and barrel. Granite is the main stone in the piers and the barrels, but there is a horizontal bed of shale within the western arch. Many of the stones in the piers are of considerable size, some being up to 2 metres in length. There is a granite revetment of squared stone, on both sides leading to the bridge further down river from the last weir. Lime mortar has been used in the construction of this bridge.

Dimensions and Structural Information:

Height (Max)	Width	Span (Total)	Number of Eyes
Side arches - 2.6m Central Arch 2.9m	8.6m	3.8	3

River bed / Base: Natural, due to the natural pool of water and its depth and considerable amount of river deposition is taking place here.

Composition / Material: Granite, limestone, lime, cement remedial repointing, steel railings.

Mason marks / Dates: NIAH - 1760 -1790, NIAH No.10302207

Condition: The bridge is in relatively good condition except for one of the cutwaters, which has started to break up. There is a considerable amount of calcite leaching from the core of the bridge, due to the surface above being unsealed. Cement remedial repointing has been undertaken in areas like the cutwater.

Parapet & Coping: N/A

Comments: The stone used in the construction of this bridge was taken from the Eva/Ava ship that was owned by Art McMurrough Kavanagh. The stone was used as the ballast for weighing down the ship on journeys without cargo. The ship was later shipwrecked.

This is the mouth of the Mountain River, after Bunahown Bridge the river joins the River Barrow. Bunnahown is derived from the Irish *Bun na hamhain* meaning the bottom of the river, an apt name. Due to the large natural pool after the rapids of the river above, one could imagine this place being one of relaxation and may have been used as a pleasure pool. There is a metal fence dividing the Barrow Tow path and Borris Demesne.

Recorded by: FC & PMcC

Date: 08/09/2012



Plate 29 – South-western elevation of Bunnahown Bridge



Plate 30 – Central arch with ashlar pier and dressed barrel



Plate 31 – Random rubble spandrel, with triangular cutwater



Plate 32 – Distinct line showing different phases of construction at Bunnahown Bridge

Killedmond River

Bridge Name and Number: Raheen Darragh / Raheen Kyle (014KR)

Local name of Bridge: Raheen Darragh / Raheen Kyle

Townland: This bridge connects Raheen Kyle to the north with Raheen Darragh to the south

National Grid Coordinates: (ITM) 680260 E, 653372 N

Style: The bridge is of a true arch of dressed granite voussoir facade. The higher section of the abutment is constructed of random rubble stone, with a horizontal course of shale indicating the commencement of the parapet walls. The bridge springs from a random rubble abutment. The barrel is random rubble with a considerable amount of calcite visible. The spandrel is again of random rubble with a string course of shale above.

Construction technique: True arches are constructed by the use of timber centring that act as a template for the shape and support of the arch while building. The outline of this centring may be seen on the barrel of the bridge. The abutment walls of the bridge are built directly on the shale rock outcrop visible under the bridge. The barrel was constructed by placing shale stone side by side on end, the remains of which may be seen on the surface of the road. Granite and shale are the main stone types in this bridge. Lime mortar was used in the construction of the bridge. The bridge is built into an embankment on either side, acting as support for the abutment walls.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.7m	3.77m	3.1m	1

River bed / Base: The river bed is of large shale outcrops.

Composition / Material: Granite, slate, shale and lime mortar as the binder.

Mason marks / Dates: None visible. Unclear whether bridge is present on 1st Edition OS map, but is visible on 2nd Edition.

Condition: While the parapet of the bridge is in extremely poor condition, the barrel underneath is in relatively good condition. The southern parapet of the bridge is almost completely gone, having been pushed or knocked into the river down through the years. More of the northern parapet remains but it is leaning perilously over to one side and is real danger of collapse.

Parapet &Coping: A random rubble parapet supports a soldier coping.

Comments: The river is known as the locally as the 'Inch River'. There are lichen, ferns, ivy, brambles, and ash saplings present.

Recorded by: FC

Date: 19/05/2012



Plate 33 – Eastern elevation of the first bridge on the Killedmond River

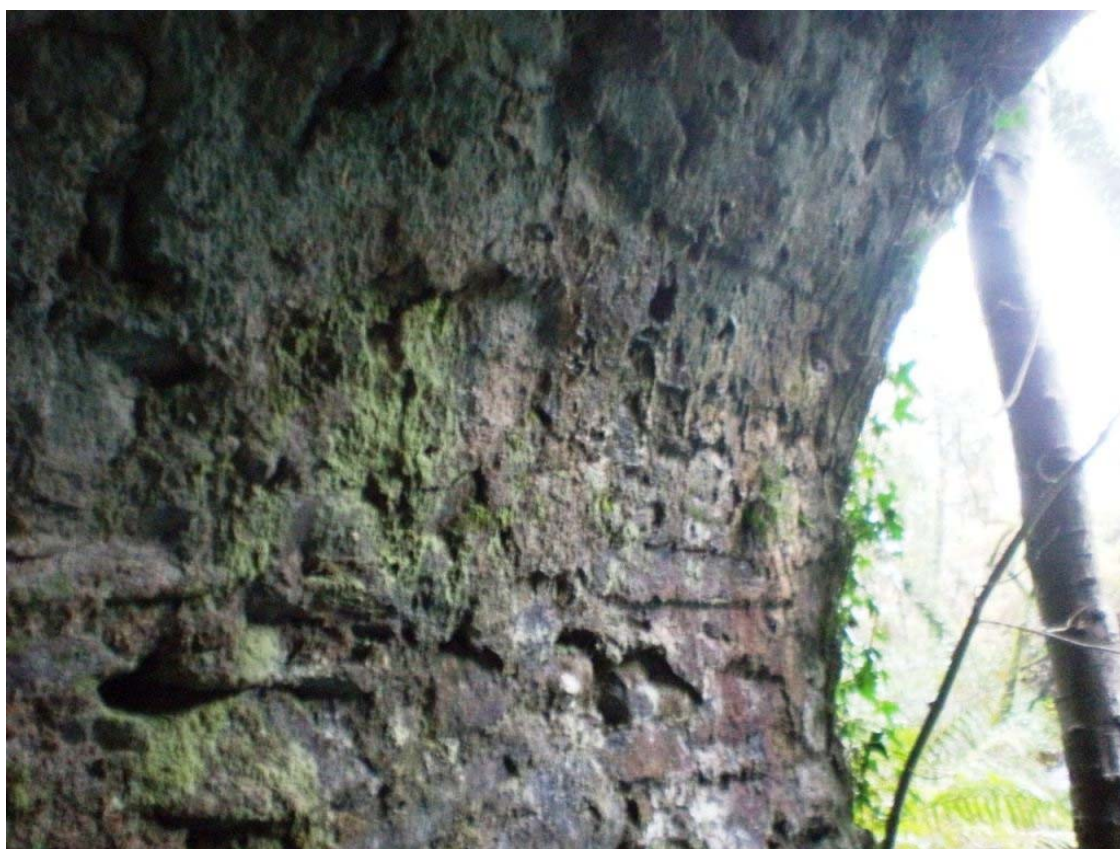


Plate 34 – Outline of timber centring still visible on the barrel of the bridge

Bridge Name and Number: Raheen Lane Bridge (015KR)

Local name of Bridge: Raheen Lane Bridge

Townland: This bridge connects Raheen Kyle to the north with Raheen Darragh to the south.

National Grid Coordinates: (ITM) 679729 E, 652455 N

Style: This is a Jack arch bridge. Finely dressed granite, stone abutments on either bank, support five horizontal steel beams, with semi circular corrugated iron found spanning these beams.

Construction technique: The bridge consists of a finely cut ashlar granite abutment on either side of the bank, which is spanned by five trabeated steel beams. Semi-circular corrugated iron / galvanised sheets are visible between these beams. Cement has been used in the building of the granite abutments. The use of rivets may be seen in the beams. The base of the river consists of finely dressed granite paving.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
1.55m	3.95m	6.44m	1

River bed / Base: The river bed has been paved with tightly fitting granite slabs.

Composition / Material: Steel, concrete, granite, cement mortar and aluminium railings.

Mason marks / Dates: None visible, but a mid 20th century date is suggested by locals

Condition: The bridge is in relatively good condition. The abutments and paving under the bridge are in good condition, but the steel beams and the corrugated iron, are badly corroded. The concrete pillars and aluminium railing on the road surface are broken and corroded in places.

Parapet & Coping: No coping present but a metal railing is found between four concrete pillars. The railing between the pillars is made up of tubular aluminium piping and steel posts.

Comments: This point of the river was marked as fording point, with stepping stones also visible on the 2nd Edition OS map. The 1st Edition map appears to show a bridge at this location. Locals have also told of cars driving through the river here. This may correlate with the paved base, making it easier to cross and less likely to be scoured or cut any deeper by the flow of the river. The stone for the bridge is said to have been quarried from a large rock in a nearby field to the east. The large stone is still present in the field. The bridge is of similar style to council built structures in the mid 20th century.

A considerable amount of ferns, brambles and moss are seen on the bridge.

Recorded by: FC

Date: 19/05/12



Plate 35 – North-western elevation of Raheen Lane Bridge



Plate 36 – Ashlar abutment, with steel beams and corrugated iron forming the Jack arch



Plate 37 – Granite paved river bed

Bridge Name and Number: Kelly's Bridge (016KR)

Local name of Bridge: Kelly's Bridge

Townland: On the 1st Edition OS map, this bridge connects Raheen Kyle to the north with Raheen Darragh to the south, but, on the 2nd Edition map the bridge is within the townland of Raheen Darragh

National Grid Coordinates: (ITM) 679492 E, 652184 N

Style: The bridge is a basket handle arch. Two stepped courses of foundation supports four finely dressed granite courses, from which the arch springs. The voussoirs consist of finely cut granite while the barrel is of dressed granite. There is no definitive keystone. The base of the river consists of cut granite paving, with a distinctively concave shape, providing the channel for the river.

Construction technique: The bridge was constructed with timber centring which may have been supported by the two proud, stepped foundation courses. The outline of the centring is visible in the barrel of the bridge. Granite and lime mortar were used as the original construction materials. The lateral thrust of the arch is combated by the large abutment wall of either side of the bridge.

A revetment wall of finely dressed ashlar granite may be found downriver of the bridge. Drafts on the stones are easily recognisable on these walls.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
3.8m	6.19m	7.28m	1

River bed / Base: Paved granite with concave shape. Four granite steps are found approximately six metres downriver from the bridge leading on to a rough river bed.

Composition / Material: Granite, shale and lime mortar

Mason marks / Dates: None visible. The bridge is visible on the 1st and 2nd ed. OS maps.

Condition: The bridge is in good condition. The barrel of the arch shows some signs of lime mortar failure through water penetration from the road surface above. Water penetration may be seen though the build up of calcite on the underside of the barrel. Cement remedial repointing has taken place over the years.

Parapet & Coping: Dressed granite with soldier coping with some coping stones protruding above the coping level. The parapet is covered in heavy growth and in places is in poor condition.

Comments: The arch bridges a significant drop in ground level; as a result the lead into the crossing starts a considerable way back from the bridge. The river is fast moving here.

The discrepancy of townland boundaries between the 1st and 2nd OS maps is interesting.

Recorded by: FC

Date: 02/06/12



Plate 38 – South-western elevation of Kelly’s Bridge, note the high springing point



Plate 39 – Concave, granite paved river bed



Plate 40 – Granite paving, foundation courses and abutment of Kelly's Bridge

Bridge Name and Number: Killedmond Bridge (017KR)

Local name of Bridge: Jack Carroll's Bridge

Townland: Killedmond

National Grid Coordinates: (ITM) 679939 E, 651081 N

Style: The bridge consists of two true arches. There are many different styles evident in this bridge. The eastern side of the bridge contains dressed voussoirs in the arch with a random rubble spandrel. The barrel is also made up of small random rubble granite. There is a cutwater on the upstream side of the bridge.

The western face of the arch has finely dressed voussoirs, with squared stone found in the spandrel and abutment wall. The barrel contains long dressed granite stones. The parapet here is also dressed granite built to courses, while the piers also have cut stone.

Construction technique: The construction of this bridge incorporated the use of timber centring to give the shape and support the construction needed. There are two different bridge construction phases here. The first may be seen on the upriver (eastern side) and consists of smaller random rubble construction, with a random rubble barrel. The cutwater was constructed at the same time as it is built into the pier. There is no definite key stone present in the arch here. The width of this earlier bridge is 2.4 metres.

The additional section of bridge was also constructed with the aid of timber centring. Although there is a distinct joint between the old and new bridges, the stitching of the old and new has remained effective. There is a proud key stone here on the western facade. There is distinct change between the old and the new bridge. The new section of bridge has finely cut voussoirs and finer, larger stone, while also having an abutment with a slight batter. The width of the new bridge is 3.36 meters.

Downstream there are two steps of finely cut granite, similar to Kelly's bridge upriver. There may be the remnants of a revetment on the right hand side looking upstream. There is a large volume of water present.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.39m	5.76m	7.41m	2

River bed / Base: The base of the river is of concave dressed granite.

Composition / Material: Granite and lime

Mason marks / Dates: None visible. The bridge is visible on the 1st and 2nd ed. OS maps.

Condition: Varying amounts of calcite are visible on the underside of the bridge. Later cement remedial repointing has taken place within the barrel of the bridge. Overall the bridge appears to be in good condition.

Parapet & Coping: Granite and later concrete. There is marked difference between the two parapets. The parapet on the west side consists of courses dressed stone (mainly granite) with large coping stones of granite, while the parapet on the east is of random rubble (granite,

marble, quartzite present). Here on the eastern side the remains of the earlier bridge parapet and coping are visible in the parapet wall of the later addition. The parapet walls of the abutments are of coursed random rubble, with a flat concrete coping.

Comments: Two large concrete buttresses were added at a later date to aid in resisting the lateral thrust from the arches. The later stone work is comparable to Rathanna Bridge (001MR). Later cement remedial repointing has taken place, dated to 1981 with D. Moore and P. Hynes. On the road surface, the sloping joint indicating a coursed stone is thought to have been that of the original coping stone of the earliest bridge, and contains the original coping stone which is much smaller than the present one.

Recorded by: FC & ND

Date: 05/08/12



Plate 41 – West elevation (addition) of Jack Carroll's Bridge



Plate 42 – Contrast of new and old abutment and barrel



Plate 43 – Original bridge coping (sloping line) within parapet wall of later extension

Aughnabrisky River

Bridge Name and Number: Wards Bridge (018AR)

Local name of Bridge: Wards Bridge (Private Property)

Townland: This bridge connects the Wexford townlands of and Slievegar to the north and Killealy to the south.

National Grid Coordinates: (ITM) 682828 E, 648203 N

Style: Modern trabeated concrete bridge.

Construction technique: Steel reinforced concrete beams are supported by concrete abutments on either side. The lack of outline of the formwork would indicate the bridge was pre-fabricated off site.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.87m	3.95m	8.55m	1

River bed / Base: Rough, natural boulders, stones, sand.

Composition / Material: Composite construction with reinforced concrete abutment and trabeated arch with aluminium handrails.

Mason marks / Dates: None visible. 2010. The area was a fording point on the 2nd ed. OS map

Condition: Good condition. Although the bridge is only two years old at the time of writing, significant scouring of the concrete abutment is visible on the eastern bank.

Parapet & Coping: Aluminium handrail present.

Comments: This bridge was built in 2010 due to large volumes of water the previous year scouring the river bed and banks. Prior to the construction of the bridge and floods, the river was crossed by tractor or jeep.

The river is substantial here considering this bridge it is not far from its source. There has been considerable scouring of the river bed. There was a story told where the river moved a boulder, that later was only moved by a JCB by breaking it into three sections.

Recorded by: FC

Date: 02/06/12



Plate 44 – South-western elevation of Wards Bridge, the first on the Aughnabrisky River



Plate 45 – Surface view of Wards Bridge, note deep scouring of the banks

Bridge Name and Number: Scullogue Bridge (019AR)

Local name of Bridge: Scullogue Bridge

Townland: The bridge connects the Carlow townland of Knockroe to the north and the Wexford townland of Killealy to the south.

National Grid Coordinates: (ITM) 682563 E, 647907 N

Style: Basket handle arch constructed of dressed voussoirs, springing from three visible dressed granite stone courses. The section of abutment closest to the arch is made of random rubble granite built to courses, while the abutment that raises the road level is of small random rubble uncoursed granite. The barrel consists of squared granite and shale.

Construction technique: This arch springs from three dressed granite courses. Timber centring would have been used as a template for the shape of the bridge. Once built, the centring is struck and removed. The long run in of the abutment wall on the eastern side would have been instrumental in combating the lateral thrust of the bridge. On the western side of the bridge, there is a large finely constructed buttress that stands proud of the bridge, and, again would have counteracted the lateral thrust from the arch. The voussoirs are made of finely cut granite, and the bridge, aside from the quoins, are made predominantly of coursed random rubble granite with shale also present. Lime mortar was used in the construction of this bridge.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.27m	6.53m	6.8m	1

River bed / Base: Natural river bed of small stones, boulders and sand.

Composition / Material: Predominately granite and shale, with lime mortar.

Mason marks / Dates: None visible. The bridge may be seen on the 1st and 2nd Editions of the OS map.

Condition: Overall the bridge is in good condition. Sections of the parapet coping on the south side have been removed or have fallen into the river. The lime pointing has failed in places and large sections need repointing. The presence of stalactites shows that water ingress is leading to leaching of calcite from the structure. The arch may have slightly slipped on the northern elevation due to settlement over the years.

Parapet & Coping: Soldier coping with section missing. The parapet consists of squared granite random rubble with a soldier coping of small granite stones on their edge. Sections of the coping and parapet wall are missing from the south elevation.

Comments: Ivy, brambles and fern are growing from the bridge.

Recorded by: FC

Date: 02/06/12



Plate 46 – South elevation of Scullogue Gap Bridge, with missing coping



Plate 47 – Northern elevation of abutment wall

Bridge Name and Number: Coonogue Bridge (020AR)

Local name of Bridge: Coonogue Bridge

Townland: The bridge connects Knockroe to the north and Coonogue to the south.

National Grid Coordinates: (ITM) 681755 E, 648174 N

Style: The bridge is a trabeated style arch. This style was commonly used in County Council constructed bridges of the mid-20th century.

Construction technique: The bridge is of a trabeated form. Abutments on either side of the bank are of concrete, which contain the outline of timber formwork used in their construction. The soffit of the arch contains the same timber outline of timber formwork used in its construction. Steel beams were placed horizontally from abutment to abutment, spanning the river, these were then encased with concrete with the aid of formwork. No foundation is visible. The side railings consist of three sections of railings with four concrete piers.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.52m	7.32m	6.12m	1

River bed / Base: Concrete.

Composition / Material: The bridge is of composite construction, with concrete abutment and steel reinforced concrete. The side railing on the road consists of steel and concrete pillars.

Mason marks / Dates: No date on the bridge, but local information states it was built in 1947, before 'the big snow of '47'. Fording point on the 1st Edition OS map, while on the 2nd Edition, there is ford and stepping stone present.

Condition: The concrete is in good condition with no spalling. The aluminium railings are rusted and in need of attention. The presence of calcite in the form of stalactites on the soffit of the bridge indicates some degree of binder migration from the structure.

Parapet & Coping: Tubular railing and concrete post parapet.

Comments: Downriver of the bridge, a stone revetment on the south side of the bank is visible. The men who built this bridge are as follows;

Paddy Ward (Coonogue), Mickie Murphy (Coonogue), Jim Cowman (Coonogue), John Sheehan (Rathanna), "Big" Tom Doyle (Crannagh), Louis Murphy (Tomduff), Mikie Byrne (Ballymurphy), John Lyons (Clashganny), Andrew Nolan (Knockroe Lane), Tommy Coleman (Knockroe), John Furlong (Knockroe). The overseer was Paddy Hickey (Rathgeran). The bridge took almost two years to build, with a hut being erected in Wards yard for the duration of construction.

Ivy, gorse, ferns all present.

Recorded by: FC

Date: 02/06/12



Plate 48 – Eastern elevation of Coonogue Bridge



Plate 49 – Tubular railing and concrete post parapet

Bridge Name and Number: Spearpoint Bridge (021AR)

Local name of Bridge: Spearpoint Bridge / New Line

Townland: The bridge connects Knockroe to the north and Coonogue to the south.

National Grid Coordinates: (ITM) 681219 E, 648442 N

Style: The bridge is a trabeated arch. It is made of dressed coursed granite abutments, steel reinforced concrete, with concrete balustrade on the road surface.

Construction technique: Trabeated style arch with abutments consisting of finely dressed ashlar stone granite stone with cement ribbon pointing. Six beams of steel reinforced concrete span the river from either abutment on either bank. Later concrete splays have been added to either side of the bridge to combat the scouring effect of the river. The parapet is of concrete casing or shuttering resembling a balustrade.

There are remains of a revetment downriver on the south western bank.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.37m	7.16m	5.45m	1

River bed / Base: Natural river bed, large boulders present.

Composition / Material: Granite, reinforced concrete, concrete.

Mason marks / Dates: The present bridge dates to 1925, the abutments may be from the remains of an earlier bridge. There is bridge present on the 2nd Edition OS map.

Condition: Moderate amount of spalling under the bridge. On the lower side there is a considerable amount of ivy engulfing the bridge. Some of the balustrades are cracked, possibly as a result of movement. Also calcite is visible on the soffit from road surface water.

Parapet & Coping: Concrete balustrade with flat coping, two pairs of granite parapet walls on either side of the balustrade, contain pointed concrete coping.

Comments: The bridge is built on the site of an earlier bridge which was blown up during the Civil War. The abutments may belong to that original bridge. Punch marks are still visible on the stone of the abutments. There is no trace of the bridge on the 1st Edition OS map as the road was not yet constructed.

Lots of overgrowth from trees in the river bed to ivy, moss, fern, brambles, algae and lichen present on the bridge. There is also a bird box present.

Recorded by: FC & ND

Date: 01/09/12



Plate 50 – Eastern elevation of Spear Point Bridge



Plate 51 – Finely dressed, granite ashlar abutment, with trabeated steel reinforced beams



Plate 52 – Concrete balustrade as parapet on the road

Corries and Dinin Rivers

Bridge Name and Number: Carrig Beg (022CR)

Local name of Bridge: Carrig Beg

Townland: The bridge is at the meeting of three townlands: Carrigbeg to the north of the bridge, Coolnapish to the south west, and Carrigpark to the south east.

National Grid Coordinates: (ITM) 674906 E, 660313 N

Style: Trabeated, dry stone granite bridge, a road culvert.

Construction technique: This is a trabeated arch in its simplest form. What appears to be a dry stone abutment on either side of the stream supports a series of granite lintels. The abutment consists of two courses of random rubble.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
0.55m	approx. 10 m +/- 0.5m	0.78m	1

River bed / Base: The bed is a natural one with silt, sand and small stones present.

Composition / Material: Granite dry stone, no mortar present.

Mason marks / Dates: None visible. The road is present on the 1st and 2nd Edition OS maps.

Condition: Relatively good. The first lintel on the downstream side is broken. On inspection, the route appears clear, with no rubble or blockages indicating all the lintels are still intact.

Parapet & Coping: There is no parapet wall present.

Comments: While the first bridge on the Corries River is an extremely impressive construction, the river here is little more than a stream. Due to the base of the river being approximately 1.5 / 2m below the road level, it is possible for this bridge to go completely unnoticed. Also, there is nothing to indicate this crossing on the road surface. There is a small random rubble stone revetment present on one side downstream. Plug and feather marks are visible on the lintels.

The channel is overgrown with trees and associated roots, ivy, ferns and various plants.

Recorded by: FC

Date: 04/06/12



Plate 53 – The first crossing on the Corries River



Plate 54 – Channel with granite abutments and lintels

Bridge Name and Number: Coolnacuppogue Bridge (023CR)

Local name of Bridge: Coolnacuppogue Bridge

Townland: Three townlands meet here, Ballynakill to the east, Coolnacuppogue to the west and Carrig More to the north.

National Grid Coordinates: (ITM) 675940 E, 658937 N

Style: A pointed arch springing from three granite courses of squared rubble.

Construction technique: The arch was constructed using a timber centring. Cement has been added to the abutments at either side due to the scouring of the river. The voussoirs are laid, with the highest point of the arch containing a keystone on the northern elevation.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
1.7m	7.45m	2.42m	1

River bed / Base: Rough river bed.

Composition / Material: Granite, lime mortar, later sand and cement remedial repointing.

Mason marks / Dates: None visible. The bridge is marked on both the 1st and 2nd Edition OS maps.

Condition: The arch is in poor to moderate condition. The southern side of the barrel contains a large crack, which manifests itself on the road surface by the parapet wall leaning to the south. This area of the barrel shows a considerable amount of algae and slime, and is direct result of water ingress from above. The northern side of the bridge is overgrown with much vegetation, with heavy scouring evident under the quoins, which is undermining the abutment here. The lime mortar has perished in many places, and has been replaced with a sand /cement mix as remedial work.

Parapet & Coping: On the road, the south side parapet is constructed of random rubble granite with sand and cement mortar, it also contains a soldier coping. This appears to be a later constructed parapet, and may have replaced the original one. On the northern side, the parapet consists of random rubble granite, built with original lime mortar, and a later concrete pointed coping.

Comments: There is a hole in the side wall that may have accommodated a gate. On the south side of the bridge, approximately one third of the arch seems to be taken up with a later random rubble granite revetment wall, which is the result of efforts to combat the scouring of the bank here, which supports a lane above. Close by an impressive Carlow Fence is visible.

A considerable amount of overgrowth is present making access difficult.

Recorded by: FC

Date: 10/06/12



Plate 55 – Over grown bridge at Coolnacuppogue



Plate 56 – Northern elevation of Coolnacuppogue bridge, with central keystone

Bridge Name and Number: Paul O'Neill's Bridge (024CR)

Local name of Bridge: Paul O'Neill's Bridge (Private Property)

Townland: The bridge connects Aghabeg in the west with Knockclonnagad to the east.

National Grid Coordinates: (ITM) 675965 E, 656893 N

Style: Doubled trabeated arch with central pier containing cutwater on the upriver side. Abutments of squared granite random rubble built to courses on either bank, with a central pier of dressed granite built to courses supporting two series of granite lintels.

Construction technique: The span from the abutment to the central pier is bridged by two series of cut granite lintels, with the pier acting as the centralised platform for the lintels. There is a cutwater on the eastern (upstream) side of the bridge only. The cutwater is made of dressed granite in a triangular shape. There is no need for heavy abutments here as the stress is one of compression, not lateral thrust. Lime mortar has been used in the construction.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
1.3m	4.29m	3.13m	2

River bed / Base: Rough, natural sand and silt.

Composition / Material: Granite stone, lime mortar, and later remedial cement.

Mason marks / Dates: None visible. There may have been a small bridge here on the 2nd Edition OS map.

Condition: Relatively good. There are two cracked lintels on one side, while the lime mortar has perished in many places. Water is moving freely between the two arches through excessive scouring of the central pier. Roots of large trees have perforated the side walls. Remedial treatment consisting of concrete shuttering and cement pointing under both arches has taken place.

Parapet & Coping: One or two partial courses of remaining

Comments: This bridge was constructed at the time when the access route to the farm dwelling was changed. A relation of Paul O'Neill's was involved in the construction of the bridge. The area is of historical merit, as there was a carved circular cross found on the land. Two large trees, and the remains of a third, may be found on the right hand side approaching the bridge from the main road. The roots of these trees are evident under the bridge. There are the remains of a possible revetment downstream of the bridge, it has collapsed in places, while upstream of the bridge, there is a stone revetment and a later concrete revetment. There is a visible increase in the volume of water here when compared to the previous bridge at Coolnacuppogue and may be as a result of land drainage. Lichen, brambles, ivy, etc all present.

Recorded by: FC

Date: 04/06/12



Plate 57 – Western elevation of bridge, note the plug and feather marks on the lintels



Plate 58 – Soffit of the arch, with individually dressed granite lintels

Bridge Name and Number: Aghline Bridge (025CR)

Local name of Bridge: Aughabeg Bridge

Townland: The Bridge connects Knockclonagad to the east with Currenree or Corry Beg to the west.

National Grid Coordinates: (ITM) 675784 E, 656774 N

Style: Three true arches make up this bridge. The central arch is sandwiched between two smaller side arches. The voussoirs are made of finely dressed granite and have a distinctive true (semi circular) arched shape. The barrels of both consist of random rubble. The spandrel above is made of granite random rubble.

Construction technique: The bridge contains three semi circular true arches. The three arches were built at the same time with a series of timber templates acting as centring. The two smaller side arches, both have a proud, foundation course which supports one to two courses of granite, from which the arch springs. Once the bridge was constructed the centring was struck.

The arch is supported by coursed random rubble abutments to the east and west. The western side is also supported by a proud random rubble buttress, containing dressed quoins. This buttress was built to combat the lateral thrust of the arches.

There are two cutwaters on the northern (upriver) side of the bridge. The cutwater and pier on the eastern side are of granite, while the cutwater on the western bank has cement remedial works carried out on it possibly as a result of excessive scouring. Both are triangular in shape.

The central arch is the main arch of the bridge and currently is the only one taking water. Like the two side arches, this arch is a true arch with dressed voussoirs. The barrel is also made of random rubble. Within the barrel of the bridge, there are five courses of dressed granite batter acting as a buttress internally within the barrel. There is a single dressed granite course from which the arch springs.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
Side Arches -1.79m Central – 2.95m	6.18m	9.28m	3

River bed / Base: Natural river bed with stones and sand.

Composition / Material: Granite stone, lime mortar and later sand cement remedial pointing

Mason marks / Dates: None visible. The bridge is on the 1st and 2nd Edition OS maps.

Condition: Water ingress from above in the western side arch has lead to failure of lime mortar. Cement repointing has taken place here. The barrel of the central arch contains staining from water ingress from above, with stone from the barrel missing. Cement remedial repointing is also visible in the central and eastern barrels.

Parapet & Coping: The main parapet wall of the bridge consists of two to three courses of squared stones and supports large granite coping stones arranged in a soldier course. The

parapet wall of the abutment, enroute to the bridge, is of squared random rubble supporting cow and calf coping stones.

Comments: Local sources recount that the bridge originally contained a hump, which was removed by the County Council. This may be verified by assessing the abutment wall, where there is a distinct line between the old random rubble construction and the new rubble built to courses. There is a stone revetment on the south-western side of the bridge.

The bridge is over grown with ivy, especially the central part, where the crown is hidden.

Recorded by: FC

Date: 04/06/12



Plate 59 – Northern elevation of Aughabeg Bridge showing the three true arch spans



Plate 60 – Dressed voussoirs of side arch



Plate 61 – Cow and calf coping of the abutment wall

Bridge Name and Number: Kinsella's Bridge (026CR)

Local name of Bridge: Kinsella's Bridge (Private Property)

Townland: Currenree / Corry Beg

National Grid Coordinates: (ITM) 675675 E, 656587 N

Style: Doubled trabeated arced bridge. The abutments consist of squared granite courses of random rubble. The cutwater on the upriver side is triangular in shape, with roughly dressed granite.

Construction technique: The bridge consists of an abutment on either bank with a central pier, with two sets of granite lintels spanning either side to the central pier. The granite lintels have all been individually shaped. Lime mortar has been used for the most part in the construction of the bridge, with some areas possibly having a lime and sand/cement mix.

Downstream, on the south western side, the bridge has been widened at a later date. This has lead to an increase in width of 1.2 metres of steel reinforced cement/concrete and also takes the form of a supportive buttress for the bridge.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
1.7m	5.60m	3.45m	2

River bed / Base: Natural river bed.

Composition / Material: Granite, lime mortar, cement repointing and concrete

Mason marks / Dates: None visible. There appears to be bridge on the 2nd Edition OS map, but it is unclear if there is one present on the 1st Edition OS map.

Condition: The granite cutwater on the north eastern (upstream) side is in good condition, as are the granite lintels. Remedial works of sand and cement have been carried out.

Parapet & Coping: Small concrete parapet on the north western side of the bridge.

Comments: On a private laneway. There is a revetment on either bank on both sides of the bridge in various states of repair. There is a considerable amount of ivy and over growth encroaching on this bridge.

Recorded by: FC

Date: 10/06/12



Plate 62 – North-eastern elevation of Kinsella's Bridge



Plate 63 – View from the river bed of one of the arches, note granite lintels

Bridge Name and Number: Currenree Lane Bridge (027CR)

Local name of Bridge: Old Currenree Lane Bridge

Townland: Currenree or Corry Beg

National Grid Coordinates: (ITM) 675246 E, 656377 N

Style: Double trabeated arched bridge. The abutment and central pier consist of roughly dressed granite built to courses, which support a series of granite lintels.

Construction technique: Coursed granite abutments are built on either bank, with a central pier constructed in the river. Two separate sets of lintels are placed from the abutments to the central pier, thus forming the bridge. The plug and feather marks are visible in the lintels.

Originally the bridge was constructed with lime mortar, with later remedial sand cement repointing. The central pier has a later addition of concrete, which may act as a cutwater to prevent scouring on the central pier. Gravel and fill would have brought the bridge surface up to the level of the road on either bank.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
1.38m	4.18m	3.73m	2

River bed / Base: Natural riverbed.

Composition / Material: Granite, lime mortar, with later cement remedial works.

Mason marks / Dates: None visible. The bridge is on the 1st and 2nd Edition OS map

Condition: Lime mortar has perished in places. Some lintels have been replaced in certain sections with concrete. Overall the bridge is in reasonable condition.

Parapet & Coping: Two coursed granite random rubble parapet with cement mortar.

Comments: There is a large amount of sand deposited under the bridge, indicating a slow, steady flow of the river here. Stones in the river bed may be formerly of the parapet. On the eastern side of the bridge (upriver), a granite revetment is visible on either bank, with the revetment on the western side in poorer repair.

There are small concrete features in the mouth of the bridge on the upriver side of the bridge; they may have been connected to damming the river, for washing sheep prior to shearing. Encroachment of fern, mosses, lots of moss, lichen, ivy and holly tree may be seen.

Recorded by: FC & EF

Date: 09/06/12



Plate 64 – Eastern elevation, note the concrete features for damming the river



Plate 65 – Surface view of bridge, with low parapet walls

Bridge Name and Number: Currenree Lane Bridge (028CR)

Local name of Bridge: New Currenree Lane Bridge

Townland: Corries / Corrymore.

National Grid Coordinates: (ITM) 675099 E, 656279 N

Style: Concrete trabeated bridge.

Construction technique: The bridge is a trabeated form. The outline of the timber formwork may be seen on the soffit of the bridge. The abutments were constructed first, and then a steel beam was laid which was encased in concrete with the aid of timber formwork. The parapet was constructed separately. The bridge would have been constructed on site with the use of drum mixers to mix the cement which was then poured. There are concrete revetments present to combat the scouring of the bank.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
1.08m	5.25m	3.88m	1

River bed / Base: The river bed under the bridge is concrete.

Composition / Material: Concrete and steel reinforced concrete.

Mason marks / Dates: No date visible, but mid 20th century the date given by locals. There is a fording point here on 1st and 2nd Edition OS maps.

Condition: The bridge is in good condition overall, with slight spalling at the corners of the abutments.

Parapet & Coping: The parapet consists of concrete with convex coping.

Comments: Before the construction of the present-day bridge, this point of the river was a fording point. Also there was a foot bridge here prior to the construction of the later bridge. It consisted of a series of stone lintels, with three eyes. The new bridge is slightly later than the construction of Knockullard Bridge (030DR)

The river here is joined by a river that comes through Corries House and as a result there is a steady flow on the river at this point. The bridge supports moss, lichen and ivy has begun to encroach on the parapet wall.

Recorded by: FC & EF

Date: 09/06/12



Plate 66 – Southern elevation, with concrete abutments and base evident



Plate 67 – Surface view of bridge with concrete parapets on either side

Bridge Name and Number: Corries Bridge (029CR)

Local name of Bridge: Corries Bridge / Johnny Byrne's Bridge

Townland: The bridge is where the townlands of Corries / Corrymore to the north meets Knockullard to the south.

National Grid Coordinates: (ITM) 674902 E, 655835 N

Style: The bridge consist of a segmental arch, constructed from finely dressed granite abutments, voussoirs, string course and parapet. The barrel is a combination of random rubble and dressed stone. The abutment is built in an ashlar style, with the parapet walls being of dressed granite built to courses.

Construction technique: The bridge springs from two granite abutments, which are constructed of finely cut ashlar. The abutments stand proud of the facade of the bridge, and support a segmental arch of finely dressed voussoirs. It was constructed using timber centring, the timber outline of which may still be seen on the barrel of the arch. This centring was removed or struck when the arch was complete. The weight was then transferred effectively to the substantial side abutments.

There is a string course over the arch, which projects past the face of the arch. The parapet wall consists of coursed dressed granite. Lime mortar has been used in the original construction of the bridge, while later remedial work of sand cement repointing is visible.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
1.9m	7.49m	6.57m	1

River bed / Base: Natural, with considerable deposition on the south-east side, where a stream from the east joins the Corries River.

Composition / Material: Granite, lime mortar with sand and cement remedial repointing.

Mason marks / Dates: None visible. Footbridge and ford on 1st Edition OS map and bridge present on 2nd Edition OS map.

Condition: Water penetration from above has lead to a considerable amount of calcite being leached from the lime mortar originally used in the construction of the bridge, with the presence of stalactites also visible. There is a slight dip in the centre of the arch, which may be the result of binder migration from the bridge. On the south west side of the bridge the lime behind the central keystone has perished.

Sand and cement remedial work in the form of repointing has taken place under the bridge.

Parapet & Coping: The parapet consists of three courses of dressed granite, which in turn support large coping stones, some up to 2 metres in length which display plug and feather marks on the stone. The coping of the abutment wall on the south eastern side of the bridge consist of soldier coping. There is a considerable amount of overgrowth here.

Comments: There is a large stream that runs from the east that joins the river on the upriver side of the bridge, which also has an impressive bridge and stile, not covered here. A large revetment wall may be seen here supporting the road above.

Local stories stated that an attempt was made to blow up the bridge during Civil War, which attempt failed as the powder became damp. Locals remember swimming here as children. Ivy may be seen encroaching on the north-western side. A bird box and metal bars, which may have acted as posts for fencing wires for livestock, are also visible under the bridge.

Recorded by: FC

Date: 09/06/12



Plate 68 – Corries Bridge, with finely dressed voussoirs, string course, parapet and coping



Plate 69 – Eastern elevation of dressed granite abutment and string course



Plate 70 – Large coping stone of parapet, 2 metres long

Bridge Name and Number: Knockullard bridge (030DR)

Local name of Bridge: Knockullard Bridge

Townland: The bridge connects Skahanrane to the west and Knockullard to the east.

National Grid Coordinates: (ITM) 674257 E, 655107 N

Style: Single trabeated arched bridge of steel reinforced concrete, with metal tubular railing.

Construction technique: A concrete abutment on either bank, constructed with timber formwork, the outlines of which are still visible is the first element of the bridge construction. Steel beams were then placed across the top of these abutments, with concrete that was mixed on site, being poured into the formwork, thus encasing the steel.

Approaching the bridge from both the east and west, two granite random rubble walls either side of the road are encountered. The bridge itself has four concrete piers and aluminium tubular railings in between. This bridge is similar in style to that at Coonogue (020AR). A coursed rubble granite revetment wall on either bank downriver of the bridge is visible.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
1.90m	6.14m	5.53m	1

River bed / Base: The river bed here is of concrete.

Composition / Material: Concrete, reinforced concrete and tubular aluminium pipes.

Mason marks / Dates: The bridge was built in the late 1950s by the County Council, with this spot indicated as a fording point on the 1st and 2nd Edition OS maps.

Condition: In good condition, apart from minor spalling to one of the piers on the road. The railings are heavily rusted.

Parapet & Coping: Concrete piers with tubular railings present.

Comments: The bridge was built in the late 1950s, with the following men working on it;

Pat Doran (Rathanna), Jim Mooney (Fenagh), Jack Fox (Fenagh) was the ganger, Dan Ryan (Fenagh), Mick Kane (Johnny's brother)

Johnny Kane remembers oil lamps containing wicks being lit, two either side of the bridge to warn oncoming traffic and pedestrians of the bridge. He remembers lighting them, and also bringing the lamps up to the sheds to fill with oil. This river was realigned the time of the construction of the new bridge; the river was directed to its present course. The new course was dug by manual labour.

Locals recount stories of swimming here at Knockullard Bridge, where fosset bags (similar to pulp bags) were filled with sand and placed in the river to create a dam and therefore a pool for swimming.

There have been a number of bridges predating the present one at this location. The first was a foot bridge, which had three eyes and consisted of a number of stone cliffs. Two of the

spans were of double stone cliffs / lintels, while the third was a single one, which meant a bike would have to be carried over the last one.

The second bridge was a County Council built structure, 6 feet wide with concrete parapet, a large flood of the 1940s / early 1950s and moved the abutments giving the bridge a skew shape; this in turn was replaced by the present day bridge.

To the north of the bridge, another tributary joins the Dinin River, and it contains a place known as “Black Stones”, so named due large stones in the middle of the river. These may be connected to the river also being known as the Black River.

Beech trees, ferns, gorse and ivy are all present here. A large stream from the east enters to the river here through a pipe. Two bird boxes may be found under the bridge.

Recorded by: FC

Date: 09/06/12



Plate 71 – Southern elevation of trabeated bridge at Knockullard



Plate 72 – Outline of timber formwork on abutment and soffit of Knockullard Bridge

Bridge Name and Number: Dunroe Bridge (031DR)

Local name of Bridge: Rooney's Bridge

Townland: This bridge connects Skahanrane to the north and Ballymartin to the south.

National GridCoordinates: (ITM) 674003 E, 654708 N

Style: A true arch construction with three spans and two piers containing cutwaters on the upriver side of the bridge, while on the down river side, the piers stand proud of the arches. The bridge is predominantly constructed of granite. The arches spring from abutments on both banks and two piers of three courses of dressed granite. The spandrel is constructed of squared random rubble.

Construction technique: The bridge is constructed from granite and consists of three true arched spans. Timber centring was employed here for the shape of the arches, with the voussoirs and spandrel built at the same time. The triangular cutwaters which consist of granite ashlar construction are built into the piers making them contemporary with the overall bridge construction. One granite course of the foundation is visible. Lime mortar was used in the construction of the bridge with later remedial works undertaken using sand and cement mix. The parapet wall was constructed at a later date than the bridge.

Dimensions and Structural Information:

Height (Max)	Width	Span (Total)	Number of Eyes
2.35m	6.49m	11.94m	3

River bed / Base: The river bed is rough with granite stones.

Composition / Material: Granite stone, lime mortar, later sand / cement remedial works.

Mason marks / Dates: None visible, the bridge appears on both the 1st and 2nd OS maps.

Condition: The cutwaters are in poor condition; one is breaking up while the other has considerable scouring underneath. There is a considerable amount of calcite visible on the barrel, and is direct result of water penetration and resultant binder migration from above. The grass verge on the bridge is allowing water to penetrate the structure. The south easterly arch has a stone missing from its barrel.

Parapet & Coping: The parapet from the road is made up of three granite courses of dressed granite, with no coping stone present. The parapet follows the incline of the bridge to the centre point and thus has a slight pointed appearance when viewed from the road. The parapet was constructed in the 1950s, and up until this date, there was no parapet present.

Comments: Traceys of Ballymartin built this bridge. The bridge was built without parapet walls and had no railings or safety features initially. Pat Doran and Mick Kane built the parapet walls here, shortly after the construction of Knockullard Bridge.

There is a quarry field beside the bridge, visible on the 2nd Edition OS map, which supplied the sand and gravel needed for construction in the area. Sand was quarried with the use of steam engine and also a large amount of manual labour. It should also be noted that a considerable amount of the building material for roads and bridges was supplied by land and boundary clearance.

Ferns, moss and other vegetation, including ivy and a sycamore tree have started to grow on the bridge. Steel rods which have also been found on similar bridges, which may have been to support wire for curtailing the movement of stock are also present.

Recorded by: FC & EF

Date: 28/07/12



Plate 73 – Three true arched bridge at Dunroe Bridge, with later parapet also visible



Plate 74 – Granite ashlar support on proud foundation course



Plate 75 – Later parapet wall constructed in the 1950s

Bridge Name and Number: Aghanamannoge Bridge (032DR)

Local name of Bridge: Cummins' Bridge

Townland: The bridge connects Skahanrane and Ballinkillin to the north with Ballymartin to the south.

National Grid Coordinates: (ITM) 673356 E, 654579 N

Style: The traditional true arch and trabeated arch are both represented here at this bridge. Both styles are indicative of early and late forms of bridge building.

Construction technique: Both bridges have different construction techniques.

The true arch represents the earliest structure. It may have been one arch of a three span bridge. True arches are constructed using timber centring, which act as support and shape for the arch. The abutments of the true arch are of dressed granite, with the voussoirs also of granite. This arch was constructed originally with lime mortar, with later cement ribbon pointing taking place on these abutments. Also the northern abutment wall here has been encased in concrete.

The trabeated span is of a later date. This section of the bridge consists of two large concrete abutments which were constructed on site with the use of timber formwork, the timber outline still visible. The foundation for the abutment on the south side of the span is still visible. Five steel beams spanned the river, with a mesh known as cover bond visible between the beams. This has been covered in a thin cement plaster layer which has spalled due to the oxidation of the mesh.

The presence of a concrete triangular cutwater may be found on the eastern (upriver) side of the bridge.

Dimensions and Structural Information:

Height (Max)	Width	Span (Total)	Number of Eyes
1.91m	6.52m	13.2m	2

River bed / Base: The river bed is natural. In the river bed there appears to be a straight line of stones that has a sharp edge. This may be connected to the remains of one of the spans of the earlier bridge.

Composition / Material: Granite, steel, concrete

Mason marks / Dates: None visible, the early bridge may be found on both the 1st and 2nd Edition OS maps, the later bridge was constructed in 1926.

Condition: The steel beams are rusted and in need of some attention but overall the bridge is in good condition. Spalling has occurred between the beams due to oxidation of the cover bond. The railings on the road are also rusting, with some of the concrete piers here showing signs of cracks. The grass verge on the road is allowing water to penetrate the structure and may lead to structural problems in the future.

Parapet & Coping: While the bridge contains railing and concrete posts, the abutment walls have a random rubble parapet with a mixture of flat and pointed concrete coping.

Comments: The true arch on the south side of the present bridge was part of an original bridge which was blown up during the Civil War. One of the Haydens of Raheen Darragh would have drawn the steel for the construction of the new bridge in the 1920s with a steam engine. On inspection of the 1st Edition OS map, it is evident that there was a mill on the site in the 19th century. It is identified as a corn mill, and had a mill race supplying water to it from as far upriver as Dunroe Bridge (031DR). There is no evidence of the mill or mill race visible in the landscape today. The mill was known as Quirkies or Doyles mills.

This new bridge is very similar to that of Moyvalley Bridge (003MR) on the Mountain River, and, it also has the same date.

One of the bars on the railing was bent by a large chestnut tree falling on it a number of years ago. The true arched section of the bridge and the parapet walls contain a considerable amount ivy and vegetation. There is a bird box present under the bridge.

Recorded by: FC, EF & ND

Date: 28/07/12



Plate 76 – Possible outline of pier from bridge destroyed during the Civil War



Plate 77 – New bridge, incorporating arch of original bridge, Mount Leinster visible in the background



Plate 78 – Concrete post and railing parapet on the road

Bridge Name and Number: Boley Bridge (033DR)

Local name of Bridge: Boley Bridge

Townland: Ballymartin

National Grid Coordinates: (ITM) 673219 E, 654165 N

Style: True arch, with finely dressed voussoirs and paved granite river bed. The spandrel here is of random rubble. The barrel consists of dressed granite built to courses.

Construction technique: The bridge was constructed with the aid of a timber centring, which was struck on completion of the bridge. The arch springs almost from river level and from one visible stone course. The paved river bed is of reddish hued granite. Lime mortar has been used in the construction of the bridge. The parapet wall is dated to 1943, and was made of concrete shuttering.

The spandrel stone is covered by moss, ferns etc. so the stone is not clearly visible but it appears to be random rubble constructed. The parapet is made from shuttered concrete, which is 1m high and contains a small convex coping. The bridge on the road surface has a defined central hump.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.2m	5.42m	4.64m	1

River bed / Base: The base of the river is made up of coarsely paved red hued granite and is slightly concave.

Composition / Material: Granite, lime mortar, and concrete parapet.

Mason marks / Dates: None visible. The bridge is on the 1st and 2nd Edition OS map. The later parapet was added by the County Council in 1943.

Condition: The lime mortar has perished in places, and has been replaced with cement remedial repointing. On the northern side of the barrel, a crack is visible behind the voussoirs. This is a direct result from water penetration from above, and binder migration from the lime mortar.

Parapet & Coping: The parapet is of concrete and is dated to 1943 and has a small 0.12 metre convex coping to shed rain water.

Comments: Originally the bridge was built to serve the main road to Borris. The bridge on the road surface has a hump, with the surface being of hardcore. The river here is quite slow moving and as a result a considerable amount of deposition has occurred in the form of sand and silt. The bridge is similar in shape to Rathanna Bridge (001MR) but considerably smaller. Ivy, ferns, moss and lichen are all found at and on the bridge.

Recorded by: FC & EF

Date: 28/07/12



Plate 79 – Perfect true arch and barrel at Boley Bridge, with dressed voussoirs



Plate 80 – Dressed granite within the barrel at Boley Bridge



Plate 81 – View from the road, with slight hump and later concrete parapet

Bridge Name and Number: New Line Bridge (034DR)

Local name of Bridge: New Line Bridge

Townland: This bridge connects Currane to the east with Kilcloney to the west.

National Grid Coordinates: (ITM) 672963 E, 653337 N

Style: The bridge is constructed in true arch fashion. The arch springs from three or four visible courses of dressed granite with punch marks on the face. The voussoirs are made up of finely dressed granite with the barrel being made of finely dressed stones built to courses. The spandrel and parapet consist of dressed granite random rubble. Along the abutment wall, in close proximity to the four springing points, are substantial granite buttresses.

Construction technique: This true arch was constructed using a timber centring which on completion was struck or removed. There is a distinctive proud keystone on the northern side of the bridge. The four buttresses to the rear of the springing points act to combat the lateral thrust of the bridge.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.25m	6.22m	6.13m	1

River bed / Base: The base of the river bed is similar to that of Boley Bridge upriver which has a similar red hue to the rough granite paving. The paving commences 0.5 to 1 metre before the arch of the bridge.

Composition / Material: Granite, lime mortar and later cement remedial repointing.

Mason marks / Dates: None visible. It appears on the 2nd Edition OS map only.

Condition: The parapet is in very poor condition. It is covered in growth and has been damaged by vehicles. A considerable amount of calcite has been washed from the structure and may be seen on the barrel of the bridge, this is prevalent on the northern side of the bridge where the majority of the water sits on the road above. Cement remedial works have taken place under the bridge.

Parapet & Coping: The parapet is of random rubble construction, has been painted black and yellow to identify the bridge to road users. The parapet walls are sandwiched between four granite piers with large cap stones. The coping is of large single soldier course.

Comments: This bridge was constructed as part of the “New Line” from the town of Borris and would have superseded the road and use of Boley Bridge (033DR). There was also an attempt to blow this bridge up during the Civil War, and the remains of hole in the barrel of the bridge, which was later filled with cement, may be testament to this. The remains of steel fixing can be seen on the northern side of the bridge and may have been to accommodate pipes across the river. There is a considerable amount of growth on the parapet wall and spandrel of the bridge.

Recorded by: FC & ND

Date: 29/09/12



Plate 82 – North-western elevation of 'New Line' Bridge



Plate 83 – Impressive, dressed granite barrel, supported by granite abutment



Plate 84 – Barrel of bridge, with later cement remedial work. Is this related to the attempted destruction of the bridge?

Bridge Name and Number: Kilclony Bridge (035DR)

Local name of Bridge: Doyle's of the Spout

Townland: The bridge links Kilclony in the west and to Ballynasillogue in the east.

National Grid Coordinates: (ITM) 673046 E, 652785 N

Style: True arch bridge of central span sandwiched between two smaller side arches. The abutment consists of granite random rubble construction. The facade of the arch, of dressed voussoirs, springs quite low, and, off one visible dressed granite course.

Construction technique: Three timber templates would have been used in the construction of the bridge, the timber outline of which may be seen in places of the barrel. The arches were constructed at the same time. The barrels of the arches are constructed of granite random rubble. Two cutwaters on the northern side of the bridge are built into the piers indicating a contemporary date. The construction of the bridge is uniform throughout and as a result all appear to be contemporary. The abutment wall is of granite random rubble.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
2.1m	6.6m	12.50m	3

River bed / Base: River bed is natural bedrock.

Composition / Material: Granite, lime mortar.

Mason marks / Dates: None visible. Appears on the 1st and 2nd Edition OS map.

Condition: The bridge is in relatively good condition, although the lime mortar has perished in places, notably on the rear of the voussoirs on the northern side of the bridge. Similar to other bridges, the grass verges on the road are allowing water to pool and penetrate the structure. Some remedial works in the form of sand cement mix have been carried out in places.

Parapet & Coping: The parapet consists of uncoursed squared granite, with small coping stones in a soldier coursed fashion. Cement remedial works have been undertaken on the southern parapet wall.

Comments: Originally there was a mill race which fed the mill adjacent to the bridge. In later years the mill wheel was used to charge torch batteries for locals who would have hunted rabbits, it was also responsible for providing electricity for Doyle's house until rural electrification in the late 1950s. The remains of the mill race, although it no longer takes water, may still be seen today.

The mill adjacent to the site was used for spinning and weaving (*Plate 103*) and also for the milling of corn. Weavers from the west of Ireland stopped here for a time to weave before moving on again. Blankets and socks were also made here. A story was told that the mill wheel was imported from Manchester to Dublin, from where it made its way to Borris by railway and then from Borris to Kilcloney by horse and cart. This spectacle apparently saw the gathering of many local people.

The bridge was used by the United Irishmen of 1798, as an escape route from Sculloge Gap. There is a field close by that was known as the sand pits, where some of the United Irishmen are thought to be buried.

A small concrete foot path with a concrete lip was used when the road flooded. Three small openings underneath this footpath were used as drainage.

The eastern arch no longer takes the river flow and is silted up as a result, although it may be used in times of flood.

Ivy, moss, lichen, ferns, lots of willow in the river bed, with some beech trees are all found either growing on or under the bridge.

Recorded by: FC & ND

Date: 06/08/12



Plate 85 – Northern elevation of Kilcloney's three arched bridge



Plate 86 – Random rubble and dressed stone of the barrel



Plate 87 – Mill adjacent to Kilcloney Bridge, with mill wheel visible



Plate 88 – The famous spout opposite Doyle's dwelling and mill

Bridge Name and Number: Embankment Bridge (036DR)

Local name of Bridge: Embankment Bridge, (Private Property)

Townland: The bridge connects Borris in the west and Knocknagundarragh or Scorteen in the east

National Grid Coordinates: (ITM) 673279 E, 650233 N

Style: A true arch constructed with finely dressed coursed granite ashlar stone. The voussoirs, quoins, spandrel, abutments and splaying buttresses are all of finely dressed granite.

Construction technique: The sheer size of this bridge must have taken a considerable amount of effort and time. The arch springs from a large projecting capstone which lies over four courses of finely dressed granite; this capstone is a chamfered flat stone that spreads the weight from the courses above. Once the timber centring was in place, the stone for the arch was placed side by side until the arch was complete; the centring was then removed or struck. The weight was then transferred effectively to the substantial side abutments.

The barrel of the arch consists of long, finely dressed, coursed lintels. The abutment walls are made up of finely dressed ashlar, and also contain splaying buttresses to the rear of the springing points. These buttresses contain coping stones to avoid water penetration. The bridge is capped with an impressive series of large granite stones, with an embankment leading to the railway line above.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
5.6m	34.95m	7.0m	1

River bed / Base: Rough river bed.

Composition / Material: Granite, lime.

Mason marks / Dates: None visible. The bridge is contemporary with the Viaduct - 1860 and visible on the 2nd Edition OS map.

Condition: The bridge is in good condition, although there are occasional cracks throughout the barrel. Calcite leaching from the lime mortar may be seen on the barrel of the bridge.

Parapet & Coping: Granite coping stones are found over the arch and spandrel.

Comments: The field on the upstream side of the bridge is known as the Quarry field. The lime kilns to the rear of the Borris Primary School may have been used for the construction of the viaduct and embankment bridge. The arch was built at the same time as the construction of the railway. The presence of the old mill race may be seen on the south side of the bridge. On the downriver side of the bridge, there are two streams flowing in through the side walls of the bridge. While the barrel of the arch is clear the face of the arch supports considerable amount of ivy, ferns, moss, brambles and a large tree from the northern side.

Recorded by: FC & ND

Date: 01/09/12



Plate 89 – North-eastern elevation, with all features of finely dressed granite



Plate 90 – Finely dressed granite barrel, built to courses



Plate 92 – Crown of mill race arch, now submerged but still taking water



Plate 93 – Mill wheel dated to 1898

Bridge Name and Number: Borris Bridge (037DR)

Local name of Bridge: Whitneys Bridge (Private Property)

Townland: The bridge connects Borris in the west and Knocknagundarragh or Scorteen in the east.

National Grid Coordinates: (ITM) 673226 E, 650028 N

Style: The bridge is constructed in a true style arch. The north and south facades of the bridge have two different styles.

The south facade contains extremely smooth, finely dressed voussoirs that culminate in a batwing keystone at the highest point of the arch. The voussoirs have chamfered edges. A string course is visible just above the highest point of the arch. The parapet and spandrel consist of finely dressed, coursed granite.

The north facade contains voussoirs of dressed granite, but not worked to the same high standard as those on the south side. The same applies to the parapet and spandrel. Both consist of roughly dressed squared random rubble granite. There are also splay buttresses made from granite on the northern side.

The barrel of the bridge is of finely dressed granite built to courses.

Construction technique: The arch springs from two visible finely dressed ashlar granite courses. From here the construction of the barrel was supported by timber centring, which on completion of the bridge was later struck or removed. The bridge has four buttresses supporting the abutment wall. Stone revetment on the left hand side is also present here. Lime mortar was used in the construction of this bridge.

Dimensions and Structural Information:

Height (Max)	Width	Span	Number of Eyes
3.6m	7.3m	6.64m	1

River bed / Base: There is a natural river bed here, with a lot of sand and silt indicating the slow moving nature of the river.

Composition / Material: Granite, lime mortar.

Mason marks / Dates: None visible. The bridge appears on the 1st and 2nd Edition OS map.

Condition: On the southern side of the barrel, there is a crack along the soffit approx 0.7m in from the southern bridge facade. Water has penetrated the structure from above, and has led to a failure in the lime mortar. Calcite is also visible here on the barrel of the bridge. Cement remedial work has taken place at a later date.

Parapet & Coping: The parapet, described above, has flat coping stone that sits prod of the parapet wall to accommodate water runoff.

Comments: The mill on O'Leary's land was known as Whitney's Mill, and would have at one time produced Whitney's Beer. The land here was also the site where concrete tiles would have been produced. An interesting toilet may be found within the mill. The remains

of the mill race that provided the water for the mill is still present today. The mill wheel is dated to 1898.

Recorded by: FC & ND

Date: 01/09/12



Plate 94 – North-eastern elevation of Whitney's Bridge



Plate 95 – Dressed granite barrel with lime mortar construction



Plate 96 – South-western elevation (Borris Demesne) note change in quality and style

APPENDIX 2 - ADDITIONAL PLATES AND FIGURES



Plate 97 – Mercators map of Idrone 1575



Plate 98 – Bridge construction using timber centring courtesy of <http://www.drystone.org/>



Plate 99 – Timber centring from above courtesy of <http://www.drystone.org/>



Plate 100 – Example of timber centring in bridge construction



Plate 101 – Workmen responsible for removing the hump from Rosdellig Bridge

*Left to right - Liam O' Connell, Johnny Byrne, Willie Hayes, Pat Doran, Martin Kavanagh,
unidentified lorry driver to the rear*



Plate 102 – Ned O' Connell and Tom Edgars seen here on Rosdellig Bridge before the removal of the hump from the bridge

**WOOLLEN
MILL
AT KILCLONEY.**

JAMES KEILY
Most respectfully announces to the Public, that in addition to his other Machinery of Carding Wool, he has got up a way of Spinning, Weaving, Colouring, Tucking, and Dressing

BLANKETS,
(of Broad and Narrow Breadths).
FRIEZES,
TWEEDS,
AND
FLANNELS.

Having employed a competent person to superintend the business, by which he can engage to give general satisfaction to every person that deals with him, and also to execute work on the most Moderate Terms.

KILCLONEY, MAY 12th, 1858.

Carlow: Printed by THOMAS EDWARDS at the Office of the "Weekly News."

Plate 103 – Poster advertising Kiely's, later Doyles Wollen Mills, Kilclony

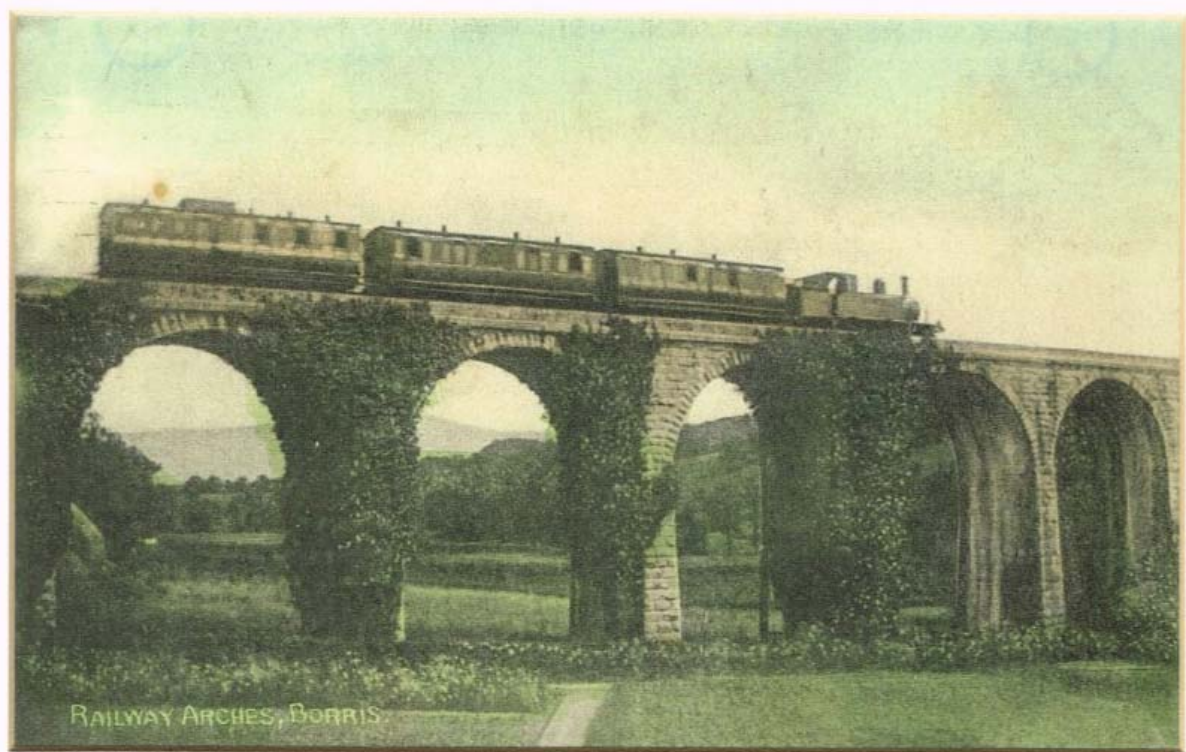


Plate 104 – Original image of train crossing the Borris Viaduct, courtesy of Joyces Pub, Borris, Co. Carlow

References

Conry, Michael J.(2006) Carlow Granite: Years of history written in stone, Chapelstown Press Ltd.

Duffy, John (2007) Barrow Bridges and related aspects, Grafton Litho Ltd.

Logainm, 2008 -2012, The department of Arts, Heritage and the Gaeltachta, DCU, Information on Coonogue Townland available at <http://www.logainm.ie/Viewer.aspx?text=coonogue&streets=yes>

McAfee, Patrick (2004) Stone Buildings, Conservation, Repair, Building, O'Brien Press Ltd

McBrearty, Patrick J. (2010) Bridging the Ages, The Winding Roads and Stone Bridges of Kilcar and Glencolmcille, Co. Donegal, Premier Print and Design Ltd.

National Library of Ireland, Image of Saw Mills Bridge, Borris Demesne, Available at <http://catalogue.nli.ie/Record/vtls000316785>

Ordnance Survey Ireland, 1st Edition 1839 & 2nd Edition 1897 - 1913 (Carlow) Available at www.maps.osi.ie/

O'Keefe, Peter & Simington, Tom (1991) Irish Stone Bridges: History and Heritage, Irish Academic Press

Oxford Dictionary available online at <http://oxforddictionaries.com/definition/english/bridge?q=bridge>

Ryan, Nicolas (2005) Stone Upon Stone: The Use of Stone in Irish Buildings, The Collins Press

Stevens Curl, James (2005) Dictionary of Architecture, Magpie Books

J.M.Feeley, J.M. & Sheehan, J. The Bagenalstown & Wexford Railway Revisited, available at <http://glasnost.itcarlow.ie/~feeleyjm/archaeology/bag-wex%20rail2.pdf> , Date unknown

I have also had many meetings and chats with landowners and members of the areas local to the bridges recorded, where stories around the bridges and the locality were recorded. Many of those listed in the acknowledgements have provided me with a considerable amount of material.