Project Number:	6075	Document Number:	Appendix 7.1	Revision:	09
Project Name:	GLASHABOY FRS	Document Title:	PHOTOMONTAGES	Date:	07 March 2018

< 73.7° / 24mm	< 65.5° / 28mm	< 54.4° / 35mm	< 39.6° / 50mm	< 28.8° / 70mm	ANGLE OF VISION / LENS FOCAL LENGTH	70mm / 28.8° >	50mm / 39.6° >	35mm / 54.4° >	28mm / 65.5° >	24mm / 73.7° >

Figure: 7.1.4.1 **Rev: 06**

View 4 from L3010 approaching Riverstown Bridge

As Exisitng

BSM Est. 1968 Brady Shipman Martin. Built. Environment.

Project Number:	6075	Document Number:	Appendix 7.1	Revision:	09
Project Name:	GLASHABOY FRS	Document Title:	PHOTOMONTAGES	Date:	07 March 2018

< 73.7° / 24mm	< 65.5° / 28mm	< 54.4° / 35mm	< 39.6° / 50mm	< 28.8° / 70mm	ANGLE OF VISION / LENS FOCAL LENGTH	70mm / 28.8° >	50mm / 39.6° >	35mm / 54.4° >	28mm / 65.5° >	24mm / 73.7° >

Figure: 7.1.4.2 **Rev: 09**

View 4 from L3010 approaching Riverstown Bridge
As Proposed

BSM Est. 1968 Brady Shipman Martin. Built. Environment.

Project Number:	6075	Document Number:	Appendix 7.1	Revision:	09
Project Name:	GLASHABOY FRS	Document Title:	PHOTOMONTAGES	Date:	07 March 2018

< 73.7° / 24mm	< 65.5° / 28mm	< 54.4° / 35mm	< 39.6° / 50mm	< 28.8° / 70mm	ANGLE OF VISION / LENS FOCAL LENGTH	70mm / 28.8° >	50mm / 39.6° >	35mm / 54.4° >	28mm / 65.5° >	24mm / 73.7° >

Figure: 7.1.5.1 **Rev: 00**

View 5 from Brooklodge Grove
As Exisitng

BSM Est. 1968 Brady Shipman Martin. Built. Environment.

Project Number:	6075	Document Number:	Appendix 7.1	Revision:	09
Project Name:	GLASHABOY FRS	Document Title:	PHOTOMONTAGES	Date:	07 March 2018

< 73.7° / 24mm	< 65.5° / 28mm	< 54.4° / 35mm	< 39.6° / 50mm	< 28.8° / 70mm	ANGLE OF VISION / LENS FOCAL LENGTH	70mm / 28.8° >	50mm / 39.6° >	35mm / 54.4° >	28mm / 65.5° >	24mm / 73.7° >

Figure: 7.1.5.2 **Rev: 08**

View 5 from Brooklodge Grove
As Proposed

BSM Est. 1968 Brady Shipman Martin. Built. Environment.

Appendix 7.2

Summary of relevant observations and Planning Objectives from Cork Development Plan (2014) and Cobh Municipal District Local Area Plan (2017)

The following extracts, policies and objectives are listed from the Cork County Development Plan 2014, the Cobh Municipal District Local Area Plan 2017 for their relevance and implications of the Glashaboy River Drainage Scheme in relation to landscape, townscape and amenity concerns. Ecological, built heritage and amenity concerns are elaborated on in Chapters 6, 8 and 14.

County Development Plan

Objective GI 6-1: Landscape

a) *Protect the visual and scenic amenities of County Cork's built and natural environment.*

b) *Landscape issues will be an important factor in all land-use proposals, ensuring that a pro-active view of development is undertaken while maintain respect for the environment and heritage general in line with the principle of sustainability.*

c) *Ensure that new development meets high standards of siting and design*

d) *Discourage proposals necessitating the removal of extensive amounts of trees, hedgerows and historic walls or distinctive boundary treatments.*

Objective GI 6-2: Draft Landscape Strategy: *Ensure that the management of development throughout the county will have regard for the value of the landscape, its character, distinctiveness and sensitivity as recognised in the Cork County Draft Landscape Strategy and its recommendations, in order to minimise the visual and environmental impact of development, particularly in areas designated as High Value Landscapes where higher development standards (layout, design, landscaping, materials used) will be required.*

Objective GI 7-1: General Views and Prospects: *Preserve the character of all importance view and prospects, particularly sea views, river or lake views, views of unspoilt mountains, upland or coastal landscapes, views of historical or cultural significance (including buildings and townscapes) and views of natural beauty as recognised in the Draft Landscape Strategy.*

Objective G 7-3: Development on Scenic Routes:

a) *Require those seeking to carry out development in the environs of a scenic route and/or an area with important views and prospects, to demonstrate that there will be no adverse obstruction or degradation of the views towards and from vulnerable landscape features. In such areas, appropriateness of the design site layout, and landscaping of the proposed development must be demonstrated along with mitigation measures to prevent significant alterations to the appearance or character of the area.*

b) *Encourage appropriate landscaping and screen planting of developments along scenic routes which provides guidance in relation to landscaping.*

Objective GI 7-4: Development on the approaches to Towns and Villages: *Ensure that the approach roads to towns and villages are protected from inappropriate development, which would detract from the setting and historic character of these settlements.*

Cobh Municipal District Local Area Plan

***3**.3.3 "Glanmire is defined by steeply sloping fringes, some of which are developed, and pockets of woodland. The Glashaboy River is a significant feature to the south of the village where it opens into the upper reaches of Cork Harbour at Dunkettle. The settlement lies in the steep sided, wooded valley of the River Glashaboy. To the east, Glanmire is partially bounded by the N8 with only minimal industrial development east of this national route.'*

3.3.23 "Glanmire is located within a landscape type of national significance described in the Draft Landscape Strategy as City Harbour and Estuary. A very high landscape value is attributed to it in the Draft Strategy (scenic landscapes with highest natural and cultural value, areas with conservation interest and of national importance) and it's sensitivity is described as very high (extra vulnerable landscape…likely to be fragile and susceptible to change)".

3.3.24 "Parts of the (Glanmire) town are designated scenic landscape. Much of this landscape is associated with Glashaboy River and also included, to the north of the town, is a steeply sloping area of land which makes a significant contribution to the setting of Riverstown. Scenic route S41 traverses the town to the south."

3.3.30 "*Parts of Glanmire have been identified as being at risk of flooding. The areas at risk follow the path of the Glashaboy River, that runs to the south of the town and are illustrated on the settlement map. Those areas most directly affected include the Meadowbrook estate, lands to the north west of the town and open space and town centre zonings. In 2012 and again in 2015, the town was seriously affected by flooding and as a result of these flood events, the OPW have prepared a Glashaboy Flood Relief Scheme. The scheme is intended to be implemented within the lifetime of this Plan and will be used to inform the implementation of protective works in the area."*

Objective GM-GO-04 *"Support the implementation of the flood relief works within the town in accordance with the Glashaboy Flood Relief Scheme..."*

Objective GM-GO-10 *"Retain a substantial proportion of the existing landscape features, including field banks, hedgerows and treelines within zoned lands as well as species of biodiversity interest. The area of woodland along the Glashaboy and Butlerstown Rivers function as ecological corridors. Any development within these areas will need to be informed by ecological assessment that ensures the protection of the area and its associated habitat".*

3.2.18. "While the status of this section of the Glashaboy River is good, the South West River Basin Management Plan has identified that this area is at risk from future waste water and surface water discharges. This issue will need to be addressed if the current status is to be maintained".

3.3.13 *"Existing retail within Glanmire is located primarily at the Hazelwood shopping centre…The Hazelwood centre itself would benefit from some redevelopment to include enhanced provision for pedestrians."*

3.3.40 *"A key element of this strategy is the need to ensure appropriate pedestrian and cycling connectivity between those areas identified for town centre use… This can be achieved by paying particular attention to public realm enhancements in Hazelwood and by improving the quality of the streetscape in Riverstown".*

GM-T-01 ***"****It is an objective to consolidate the Hazelwood Shopping Centre and provide connectivity, both pedestrian and cycling, to the new Riverstown Town centre and town park. Particular attention to be given to public realm enhancements."*

GM-O-01 "*Open Space. This prominent slope makes a significant contribution to the setting of Glanmire… There is a presumption against development on these lands because of the importance of the hillside to the setting of the area".*

GM-O-04 *"Open space for informal recreation including the provision of an amenity walk. This open space contains the Town Park, an important community amenity."*

GM-U-02: "*Develop and maintain pedestrian walk through existing open space and extend through proposed open space (GM-O-04) along river bank"*

Appendix 13.1

Published Information in the Archaeological Inventory of Co Cork (Power 1994) and published files of the Archaeological Survey of Ireland

Appendix 13.1

Published information in Archaeological Inventory of Co Cork (Power 1994) and published files of the Archaeological Survey of Ireland

C064-044 Sarsfieldscourt Castle

In pasture, on S-facing slope. No visible surface trace; demolished in the 1950s after a collapse; some cut stone in nearby garden of landowner. According to Healy (1988, 68), the building consisted of 'a high tower containing a flight of steps and a bell tower', it was apparently 'a semi-fortified house' erected in the middle of the seventeenth century' by Sarsfield family (Power 1923, 205).

CO063-092 Knocknahorgan Ringfort

In pasture, on S-facing slope. Shown as circular enclosure (diam. c. 25m) on 1842 OS 6-inch map; field fences run off from N and S banks. Levelled; no visible surface trace.

CO063-093 Knocknahorgan Cloth mill

On S bank of Glashaboy River c. 1.5km N of Sallybrook. Remains of large complex shown on 1842 OS 6-inch map as 'Bleach and Cloth Mill'; on 1902 and 1935 OS 6-inch maps as 'Silversprings Starch Works'. Tall roofless gable-ended structure (ext. 10m E-W; int. 2.55m N-S); tall archway in E wall; raised platform (H 1.7m) at W end. Attached to N wall are low remains of structure (3.8m N-S; 9.65m E-W). At E side of complex is a 1-storey gable-ended structure; brick detail quoins and surrounds to opes with date stone '1897' on E gable. Late 19th/early 20th century residential house in centre of complex. Other wall fragments survive. Underground tunnel; indicated on 1842 OS 6-inch map running SW of complex to chimney, survives as partially collapsed brick-lined tunnel (H c. 0.5m; Wth c. 0.8m); leads uphill c. 100m to SW to an overgrown stone-built chimney (H c. 12m).

CO063-094 Riverstown Cloth mill

On E bank of Glashaboy river in Sallybrook. Shown on 1842 OS 6-inch map as 'Bleach and Cloth Mill', 1904 as 'Pike Mill (Dyeing)'; on 1935 as 'Glansillagh Mills (Waterproof Goods)'. In poor condition after fires in late 1980s. Mill complex consists of multiperiod 2-storey E-W range, wheel-pit on W side; roofless 2-storey 4-bay structure (long axis N-S) attached to SE corner; remains of other structures to SE. Wheel-pit (Wth 4.85m) has mid-19th century flat-roofed wheel house, N wall of which is an extension of structure to W; wide brick arch over head-race in N elevation. Tail race exits between two tall round-headed arches and flows underground to S. Structure to W of wheel house is 2-storey gable-ended (long axis N-S), with brick detail; key stone in S wall bears date 1851. Two-storey gable-ended projection at N end of W elevation; similar to early 19th century structure attached to N, both pedimented

on W gables with oculi. Mill pond immediately to N with head race flowing S from it. Access to interior of mill not gained.

CO063-069 Riverstown Paper mill

On E side of Glashaboy river. Named 'Paper Mill' on 1842 OS 6-inch map, 'Sallybrook Woollen Mill' on 1902 and 1936 OS 6-inch maps. Present structure is rectangular in plan (long axis E-W); 3-storey, 8-bay, gable-ended. According to local information mill wheel, removed c. 1968, positioned along E side of structure.

CO064-047 Hermitage Standing stone

In pasture on E-facing slope. Rectangular stone (H 2.26m; 0.82m x 0.2m), long axis N-S. Packing stones exposed at base. Some striations on N edge of stone. Standing stone (CO064-048---), similar in shape and size, c. 120m to S.

CO064-048 Hermitage Standing stone

In pasture, on E-facing slope. Rectangular stone (H 2.26m; 0.82m x 0.2m), long axis N-S. Packing stones exposed at base. Some striations on N side of stone. Standing stone (CO064-047---) of similar shape and size, c. 120m to N.

CO064-051 Riverstown Country house

An early 18th century house, enlarged and remodelled in 1730s into its present shape (Bence-Jones 1978, 242). Entrance front (W) 2 storey with 4 bays, off-centre doorway flanked by narrow windows; elevation extended to N by 1-bay, 3-storey addition. Double-geble ended elevation to S. Garden front (E) of 2 storeys over basement (basement hidden to front), 7 bays wide. Hipped bow-ended elevations to N. Interior rich in design and ornamentation with plasterwork by the Francini brothers 'probably their earliest work in Ireland and dating from ca. 1734' (Bence-Jones ibid.; see photos Lee 1927). Ornamental lake, known as the "Fairy Pond", to NW. House open to public.

CO064-111 Riverstown Poulacurry North Poulacurry South Bridge

Hump-backed road bridge (Wth 4.75m) over Glashaboy river. Five semicircular arches with roughly cut voussoirs; low pointed breakwaters.

CO064-142 Riverstown Lime kiln

Roadside, adjacent to Butlerstown river on estate of Riverstown House (CO064-051---). Front (L 3.12m) E-facing; blocked stone-arched recess (H 2m) spanning full width of wall;

small rectangular ope at base leads into funnel. Projecting end walls. Stone-lined funnel (diam. 4.66m), barrel-shaped in section. Ramp on S side.

CO074-071 Poulacurry South Mound

In pasture, on grounds of Castle Jane House. Oval grass-covered mound (5.5m x 8m; H 1.2m) locally regarded as ancient site.

CO074-104 Poulacurry South Church of Ireland church

In Glanmire village, St. Mary and All Saints C of I church. Built in 1784 on privately donated site (Lewis 1837, vol. 1, 654). Shown on 1842 OS 6-inch map as plain rectangle with small extension to W. Nave has pointed 1- and2- light windows on rendered N wall; aisle of uncoursed limestone blocks added to S with 2- and 3-light pointed windows. Short chancel, also of limestone blocks, has single pointed windows in N and S walls; central E window, 5 pointed lights divided by mullions. Vestry on S side of chancel. Rendered tower at W end; pointed arch entrance with traceried pointed fanlight on W face; blocked window on N face surmounted by clock; upper levels have octagonal belfry with slender spire.

CO075-001 Poulacurry South Cloth mill

On W bank of Glashaboy river 0.5km N of Glanmire. L-shaped complex shown on 1842 OS 6-inch map as Cloth mill; shown as Beetling mill on 1902 OS 6-inch map. Present L-shaped layout is constructed in two phases. Earliest structure (long axis N-S) on W side is of 4 storeys gable-ended with attic; stone-arched window opes. Attached to S end E wall is 4-storey, 7-bay mill (long axis E-W), with wheel-pit along E wall. Windows with brick surrounds with roof gabled to W, half hipped to E; date plaque (1796) on weatherslated S elevation. Smaller mid/late 19th century mill (long axis E-W) to N; decorated bargeboards along gable ends; wheel pit along E gable. Mill pond to N; two millraces flow S to power both mills. According to local information turbine installed 1929. Access to interior not gained. Functioned as saw-mill in recent past, now functions as furniture factory.

CO075-002001- Ballinglanna Corn mill

Indicated on 1842 OS 6-inch map as large complex on E bank of Glashaboy river. Rectangular mill (19.85m N-S; 12.5m E-W) survives; double gable-ended except for hipped E end of southern roof, with roof vent. W elevation of coursed limestone ashlar; two elliptically-headed doors at ground floorwith limestone surrounds, brick surrounds to rest of opes. Wheel-pit (Wth 4.1m) along E elevation; houses low breastshot iron waterwheel with pinion wheel attached to shrouding. Mill race still flowing approaching mill from N; remains of sluice-gate just N of wheel-pit. Five-bay extension from E elevation of mill survive; connected mill to large complex of buildings indicated to E of mill on 1842 and 1902 OS 6-inch maps but which no longer survive; straddling wheel-pit, burnt 1960 and subsequently rebuilt to present 1-storey height.

CO075-002002- Ballinglanna Lime kiln

In grounds of flour mill (CO075-00201-). Partially collapsed; front has arched recess (H 2.3m; Wth 2.9m); joist-holes above recess to support lean-to structure. Rear of kiln inaccessible.

CO075-003 Ballinglanna Distillery

In Riverstown, on S bank of Glashaboy river. Early/mid-19th century complex marked 'Distillery' on 1842 OS 6-inch map, of which only two buildings remain. Rectangular gable-ended structure built into slope, known locally as "the maltings". Four-storey N elevation, 11 bays. S elevation of 3 storeys; camber-headed brick-arched windows. Wide central doorway on each floor of W gable. Three-storey rectangular structure to NW (long axis E-W), adjacent to stream; elevation of 12 bays; now used as garage. Complex named' Brewery' on 1902 OS 6-inch map, indicating change in function.

CO075-069 Ballinglanna Coaching house

Late 18th/early 19th century 2-storey (over basement) coaching house of Glyntown House (in ruins) to SW. Hipped roof. Entrance front (S) of 5 bays; central 3-bay pedimented breakfront with wide arched doorway flanked by narrower arched door opes. Oval-shaped 1st floor windows with brick surrounds; oculus in pediment with brick surrounds. Brick string course between floors.

CO075-048 Ballinglanna Poulacurry South Bridge

Hump-backed road bridge (Wth 8.85m) over Glashaboy river. Three semicircular arches with dressed voussoirs; pointed breakwaters.

CO075-094001- Ballinglanna Architectural Fragment

The well is built into a slight S-facing slope in ground, in a field of pasture. Water from the spring flows out from it and thus creates a wet boggy area immediately to the front. The well has an apsidal stone-built surround, built into the sloping ground. The top of the vault stones are now exposed, probably due to erosion. The front of the wall has a built façade but this has been damaged and only the west side is now intact; only the two basal stones survive in situ on the east side. The stones from which this façade is built are mostly dressed and two are from the arch of a 15th century ogee-headed window light. They both have a deep outer chamfered edge and a shallow inner chamfer. Only one of these is still in place, the other is now lying loose beside the well. These window stones formed the upper end stones of the facade and are inscribed with the date “1788”. This is presumably the date when the surround of the well was built. The surviving arch stone of the well surround is also likely to be 15th century though it is not chamfered, and judging by the similarity of the dressing on the other

stones of the façade these are also likely to late-medieval as well. There is no tradition that this well was ever venerated and is likely to be a secular well. A short distance to the north is a folly building (CO075-094002-) which also contains reused 15th century dressed stone matching in style the well stones and it is likely the well surround and the folly building were built at the same time. These dressed stones must have come from a nearby tower house but there is no tradition or local information regarding this, nor is any castle marked in this location on the OS maps.

CO075-094002- Ballinglanna Architectural Fragment

This is a two-phased construction. At the west end is a lime kiln and onto the east side of this a folly castellated building has been added creating a façade which disguises the lime kiln as part of the folly. The front opening of the kiln has been blocked up but the funnel is still evident from above though the top of the kiln is partially covered by scrub and ivy. The folly building is now a shell and the top part of the front wall has fallen though it is clear that the top of the wall was battlemented- these survive where the wall still stands to full height though that part now covered by ivy. The building is built against a rock outcrop on its north side so that it is not a free-standing structure (typically lime kilns are built into sloping ground). The front façade consists of a central ground-floor door, flanked on its west side by the blocked-up kiln opening and on its east side by a star-shaped recess. On the first floor there is a window ope directly above the ground-floor door. This is flanked by two niches with bluntly-pointed arched heads. The inside of the door surround is a re-set 15th century two-centred pointed arched surround. The inwardly curve of the jamb stones show this to have been a doorway in a spiral stairs. There is a deep chamfered edge and on the east side a pyramidal stop-chamfer with a plain horizontal roll at its apex. Also of this date and matching both the door and the stones at the nearby well (CO075-094001-) is the surround of the single-light window directly above. The top of this is now covered by ivy but the ogee-head is clear as is a recessed spandrel (at last on the west side). These dressed stones must have come from a nearby tower house but there is no tradition or local information regarding this, nor is any castle marked in this location on the OS maps.

CO064-049 Hermitage Sweathouse

Built into natural slope on steep overgrown N bank of Butlerstown river. Mentioned by Power (1923, 204) as 'clochán-like structure, now very decayed....it was roofed on the beehive principal and was furnished with fireplace and chimney'. Remains of circular stone-built structure (int. H 1.6m; diam. 3.3m; wall thickness 0.63m); lintelled fireplace in W wall; break in wall to SE may be entrance. Only indication of corbelling is short section to N comprised of two courses of oversailing masonry.

CO064-052 Brooklodge Fulling mill

To E of Butlerstown river, c. 1.2km N of Riverstown. Remains of mill structure (long axis NE-SW; L 5.2m), SE end replaced by long (int. L 15.5m) mid/late 19th century addition. Wheel pit (Wth 2.5m) along NW wall which housed a low breastshot or poncelot wheel.

CO064-055 Brooklodge Castle

Shown on 1842 OS 6-inch map; by 1904 OS 6-inch map new road going through area of site. Immediately to E, 1842 map shows site of 'old fish pond'; this also probably destroyed when new road constructed. Possibly a castle of the Barrys (O Murchadha 1985, 30).

CO064-056 Brooklodge Fish pond

This pond is shown and named 'Old Fish Pond' on the 1842 OS 6-inch map in the townland of Brooklodge Upper (now known as Brooklodge townland). This fish-pond is referred to in the 'Archaeological Inventory of County Cork - vol. 2 East and South Cork' (1994, -209) under the entry (no. 5522) for an unclassified castle (CO064-055----). The fish-pond is mentioned as follows: 'Immediately to E, 1842 map shows site of 'old fish pond'; also probably destroyed when new road constructed…'.

CO074-026 Lotamore Country house

Overlooking Lee estuary to S and mouth of Glashaboy River to W, built 1765 to design of Davis Duckart. Central block 3-storey, 9-bay; prominent quoins and elaborately carved cornice. Central 3-bay breakfront with pedimenta bove Baroque porch; above porch four pilasters enclose 3 central bays, surmounted by urns on the parapet (Glin 1967, 739). Symmetrical arcaded wings extend from rear of W and E elevations to pyramidal-roofed pavilions. 'The interior has an elaborate, double-ramp mahogany staircase' (Glin ibid.). 18th century prints show a plainer house with string course between ground and 1st floors. Plaster window surrounds, string courses at base of 1st and 2nd floor windows and pediment over breakfront all added. Roof originally parapeted; raised to extend to upper edge parapet; gabled roofs of wings also raised and pavilions heavily altered. Now owned by Brothers of Charity.

Appendix 13.2

Wading and Metal Detection Survey at Glenmore Stream, Ballinglanna Riverstown Unnamed channel at sallybrook House, Riverstown an Bleach Hill stream, Sarsfieldcourt, Glanmire, Co Cork

Note - Appendix 13.2 and 13.3

Both **Appendix 13.2** (Wading Survey) and **Appendix 13.3** (Dive Survey) were carried out during the course of the compilation of the EIA as a direct response to consultations with the Underwater Archaeological Unit of the National Monuments Service. The design of the scheme had not been finalised in advance of either survey. Following the completion of both, design changes were implemented which are not reflected in the wading survey and dive survey reports. Full and final details of the scheme are included in **Chapter 13**.

Wading and Metal Detection Survey

at

Glenmore Stream, Ballinglanna & Riverstown

Unnamed channel at Sallybrook House, Riverstown

and Bleach Hill Stream, Sarsfieldscourt, Glanmire, Co Cork

Licence Number 16D0054 & 16R0082

Avril Purcell MA MIAI

July 2016

Lane Purcell Archaeology,

64 Fr Mathew Road,

Turner's Cross,

Cork.

on behalf of

Office of Public Works

1 Introduction

1.1 The Office of Public Works are undertaking the Glashaboy Flood Relief Scheme. The scheme will include works at a number of locations along the Glashaboy River and its tributaries including Bleach Hill Stream, Cois na Gleann Stream, Springmount Stream, Butlerstown Stream and Glenmore Stream (Figs. 1 and 2). An Environmental Impact Assessment (EIA) is currently being prepared on the scheme. As part of this EIA, the Underwater Archaeological Unit at the Department of Arts Heritage and the Gaeltacht were consulted and they recommended archaeological wading and metal detector surveys at a number of locations where works are proposed for the scheme in order to assess the archaeological potential of the watercourses and their environs.

1.2 The proposed scheme is designed to reduce the flood risk in the suburban villages of Sallybrook, Riverstown and Glanmire on the northern side of Cork city. Glanmire is north east of the city with Riverstown and Sallybrook located further north and upstream. The village of Glanmire marks the opening of the Glashaboy River into a wide tidal mud flat as it flows into the upper reaches of Cork harbour. Upstream of this the river is fast flowing and is crossed by numerous bridges which, in effect, mark the development of Glanmire from its industrial beginnings in the 19th century to its current phase as a commuter suburb to Cork city. The river and its tributaries are open and flow generally within their original channels in the suburban areas. Some sections remain culverted, since their use in the 19th century when they provided power to the various mills in the area.

1.3 The intertidal and metal detection surveys were carried out by the author on the 1st and 11th of July 2016 under licence numbers 16D54 and 16R82. The surveys were undertaken on sections of three watercourses, Bleach Hill Stream, Sarsfieldscourt; an unnamed channel at Sallybrook House in Riverstown townland; and the Glenmore Stream, Brooklodge Upper and Ballinglanna. There are no sites listed in the Record of Monuments and Places (RMP) for Co Cork on the watercourses. The nearest is a mill in

Riverstown (CO0063-069) which is 40m north of the unnamed channel at Sallybrook House.

1.4 This report was compiled by Avril Purcell, Lane Purcell Archaeology, 64 Fr Mathew Road, Turner's Cross, Cork on behalf of Arup, 15 Oliver Plunkett St, Cork.

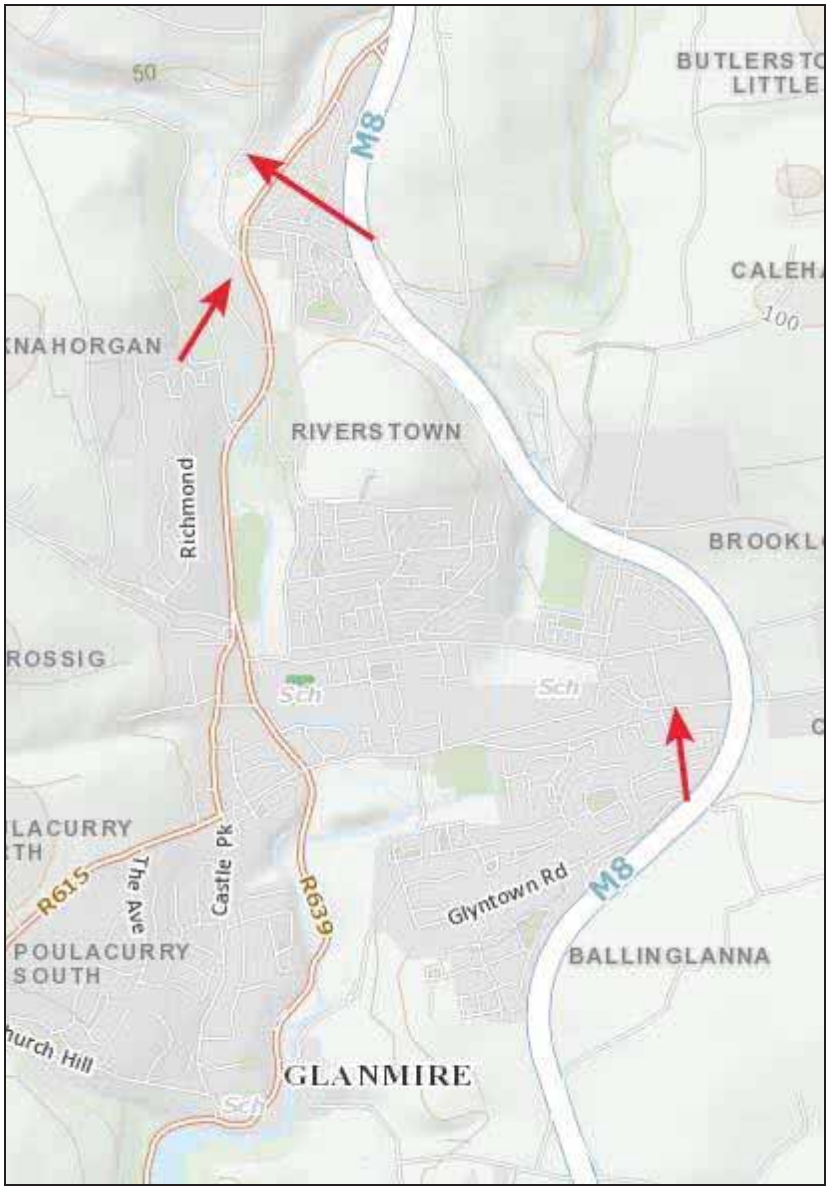

Figure 1: OSI map showing locations with red arrows where survey was carried out

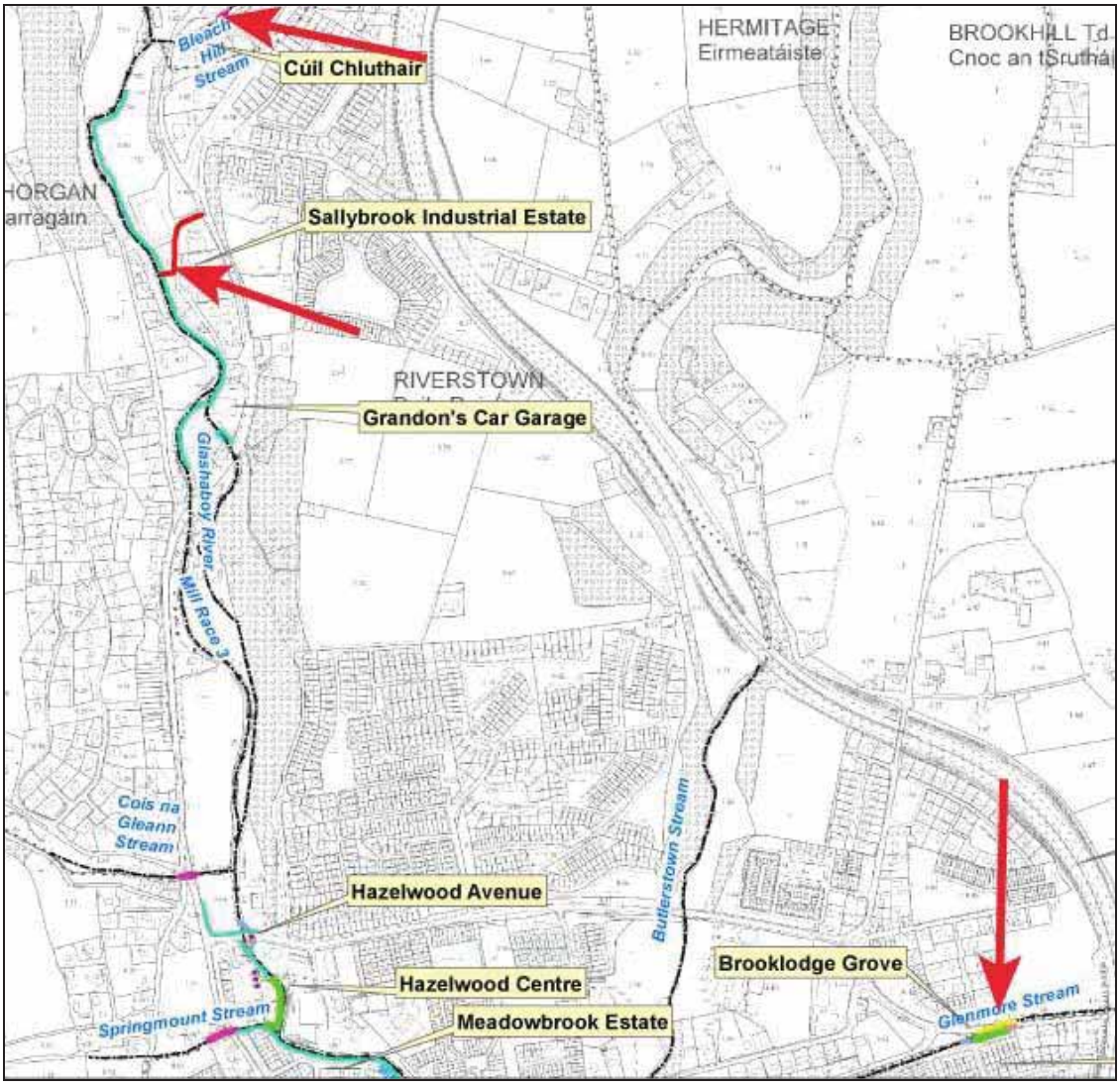

Figure 2: Areas of works for Glashaboy Flood Relief Scheme included in survey shown in red (after Arup)

2 Existing Site and Proposed Development

2.1 Flood relief works are proposed at a number of locations along the existing watercourses in Glanmire, Riverstown and Sallybrook. The wading and metal detector surveys focused on areas within the scheme which were possible to wade and where the original watercourses appear to survive despite some modifications. A dive survey of the Glashaboy River is being carried out under a separate licence. The areas of proposed works included in the wading and metal detector survey are as follows:

- *Bleach Hill Stream: Cúil Chluthair, Sarsfieldcourt townland (Figs. 3 and 4)*
  Works will comprise the replacement of the existing culvert under the road with a new 1.6m wide and 1.2m high rectangular culvert.
- *Unnamed channel south and east of Sallybrook House: Riverstown townland (Fig. 3)*
  Works will include culverting the existing open channel which will be cut off by the construction of the flood defences on the Glashaboy River.
- *Glenmore Stream at and near the entrance to Copper Valley Vue and Brooklodge Grove Road, Brooklodge Upper and Ballinglanna townlands (Fig. 5)*
  Works will comprise the replacement of the existing culvert at the entrance to Copper Valley Vue with a new wider culvert. The culvert approximately 50m to the east of the entrance under Brooklodge Grove Road will be replaced by a new deeper, wider culvert.

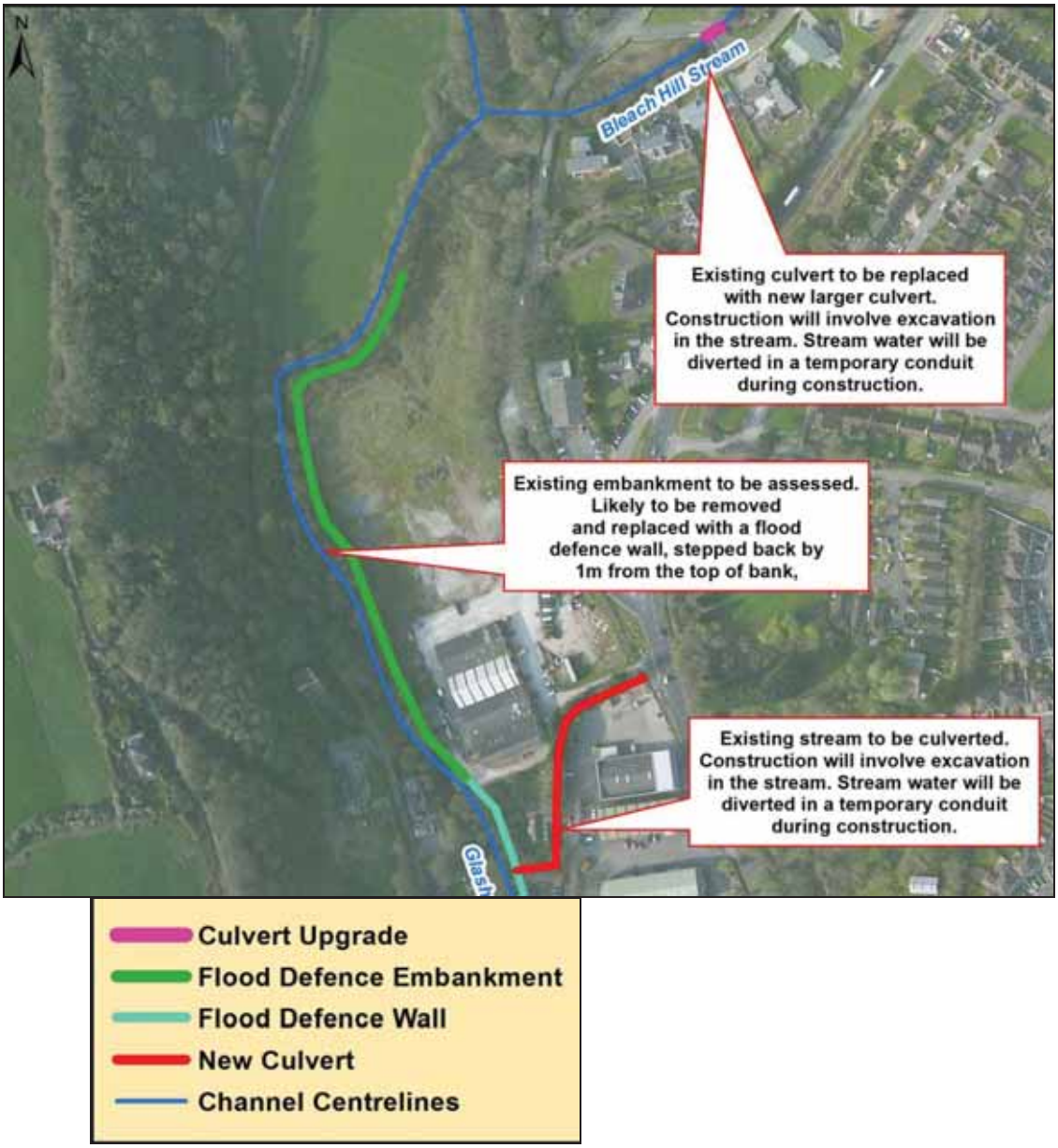

Figure 3: Proposed works to Bleach Hill Stream and unnamed channel at Sallybrook House in red (after Arup)

Interference Reference	Channel Chainage (m)	Proposed Works Chainage (m)	General Description of Proposed Works
C09_B01	-	0 to 9	Replace existing twin 0.9m diameter culverts with new 1.6m wide by 1.2m high rectangular culvert.

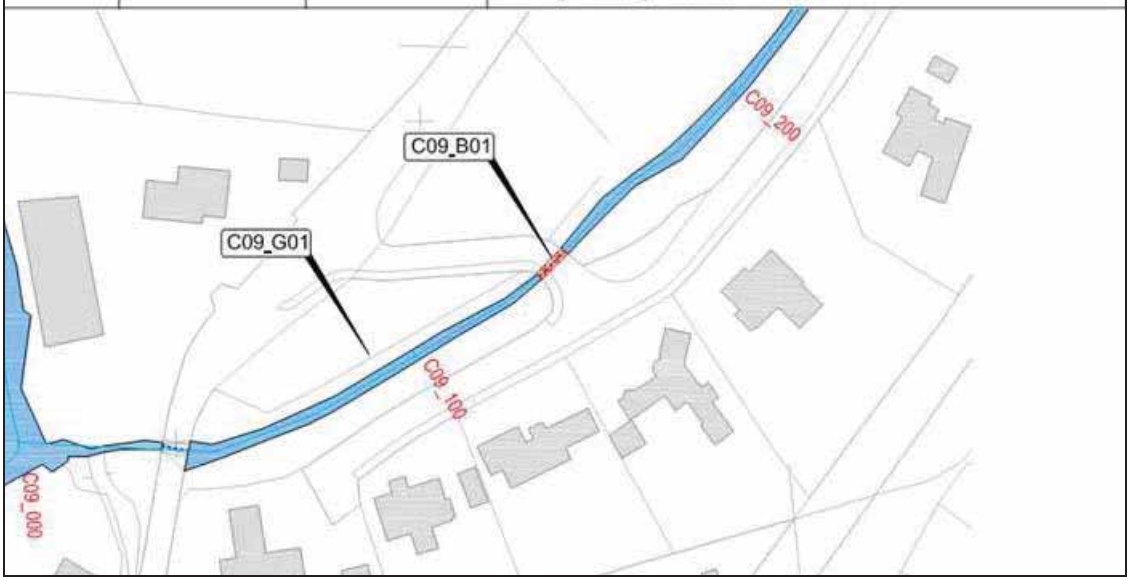

Figure 4: Proposed works to Bleach Hill Stream (after Arup)

Figure 5: Proposed works to Glenmore Stream at Copper Valley Vue and culvert under Brooklodge Grove Road (after Arup)

3 Historical Background

3.1 The Glashaboy River and it's tributaries were the focus of much of the industrial activity in the broader Glanmire area in the 18th and 19th centuries. Water power was harnessed to operate flour mills, a paper mill (which later became a woollen mill), a bleach and cloth mill, a pike mill and a distillery. Elements of the physical remains of many of these industries survive, albeit in an incomplete state. In the second half of the 20th century Glanmire expanded into a commuter town to Cork city located approximately 5km to the southwest. It has merged with the adjoining villages of Riverstown and Sallybrook to form a large, almost continuous, suburban settlement spanning both banks of the Glashaboy and its tributaries. The M8 Cork-Dublin motorway runs roughly north from Dunkettle and this has largely defined the eastern extent of the suburban expansion, while it is contained to the west by higher ground.

3.2 There are no recorded archaeological monuments listed in the Record of Monuments and Places (RMP) or the Sites and Monuments Record (SMR) database of the Archaeological Survey of Ireland within the area of the Bleach Hill Stream or the Glenmore Stream (Figs. 6 and 7). The archaeological potential of watercourse has, however, long been recognised. In prehistoric and historic times watercourses were a focus of ritual activity, habitation and industrial sites and as well as providing important transport links and routeways. The unnamed channel to the south and east of Sallybrook House may be an overflow channel to the mill race of a paper mill (CO063-069) approximately 40m to the north and on the eastern bank of the Glashaboy River (Fig. 6). The channel itself appears to have been constructed following the construction of an access road to Sallybrook Industrial Estate in the second half of the 20th century. The above mentioned mill was named as a paper mill on the 1842 Ordnance Survey (OS) 6-inch map (Fig. 8) and Sallybrook (Woollen) Mill on the 1902 OS 25-inch map (Fig. 9) and 1936 OS 6-inch map (not depicted). This was one of at least 11 paper mills in operation in Cork city and hinterland by the middle of the 19th century. The paper milling industry was focused on the catchment area of the Glashaboy River to the northeast of the city and was at the centre of the Munster paper industry during the

18th and 19th centuries (Rynne 2006, 307). Its surviving remains now comprise some of the buildings in Sallybrook Industrial Estate. The mill is included in the Archaeological Inventory of County Cork (Power 1994) as follows:

On E side of Glashaboy river. Named 'Paper Mill' on 1842 OS 6-inch map, 'Sallybrook Woollen Mill' on 1902 and 1936 OS 6-inch maps. Present structure is, rectangular in plan (long axis E-W); 3-storey, 8-bay, gable-ended. According to local information mill wheel, removed c. 1968, positioned along E side of structure.

Figure 6: Extract from OSI map showing recorded archaeological sites near Bleach Hill Stream. Sallybrook House is shown as a blue dot and the channel, which is not shown, lies to the south and east of the house as indicated by red arrow (www.archaeology.ie)

Sallybrook House (Ref. 20906332) is included in the National Inventory of Architectural Heritage (NIAH) and is described and appraised as follows:

Detached three-bay two-storey former miller's house built c. 1880, with flat-roofed single-bay two-storey extension and recent flat-roofed two-bay single-storey extension to rear (west) elevation. Now in use as house. Pitched slate roof with cast-iron rainwater goods and rendered chimneystacks. Rendered walls. Camber-headed openings with

concrete sills, moulded render surrounds with two-over-two pane timber sliding sash windows, one-over-one pane to north gable. Camber-headed window openings with two-over-two pane and one-over-one pane timber sliding sash windows to rear elevation and square-headed openings with steel casement windows to two-storey extension. Camber-headed opening with moulded render surround incorporating keystone detail, timber panelled half-glazed door and overlight. Timber footbridge over ditch to front of house.

Simple symmetrical façade enhanced by camber-headed windows with moulded render surrounds, evidence of conscious design and craftman's skill. Retention of timber sash windows and roof slates is significant.

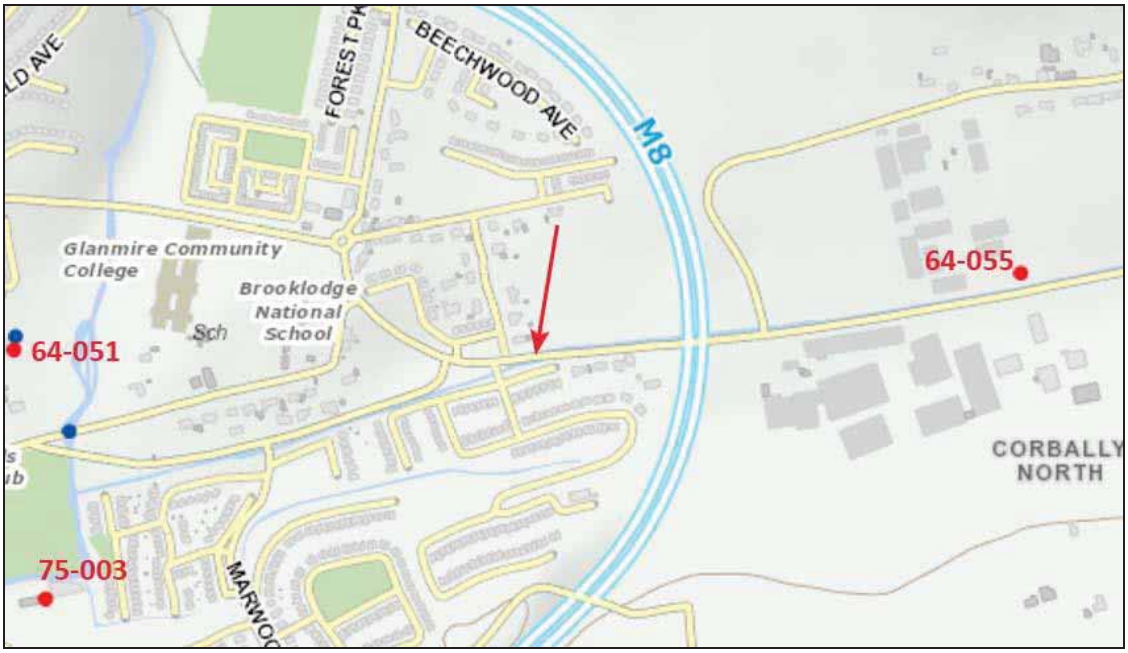

Figure 7: Extract from OSI map showing recorded archaeological sites near Glenmore Stream (www.archaeology.ie)

3.3 The unnamed channel around Sallybrook House is not shown or named on the 1842, 1902 or 1936 OS maps (Figs. 8 and 9). Instead a culverted channel is indicated running southwest from the mill to the northeast side of Sallybrook House and the 1902 map indicates this extending to the south of the house. This is then shown on the three maps as an open channel running south-southeast of Sallybrook House and converging with the river a short distance to the south. The access road to Glanmire Industrial Estate now runs largely along the line of this channel which may have been modified to facilitate the

construction of the road in the second half of the 20th century and it was probably at this time that the unnamed channel was constructed. No indication of a channel running to the east and south of Sallybrook House is shown on the 1842, 1902 or 1936 OS maps.

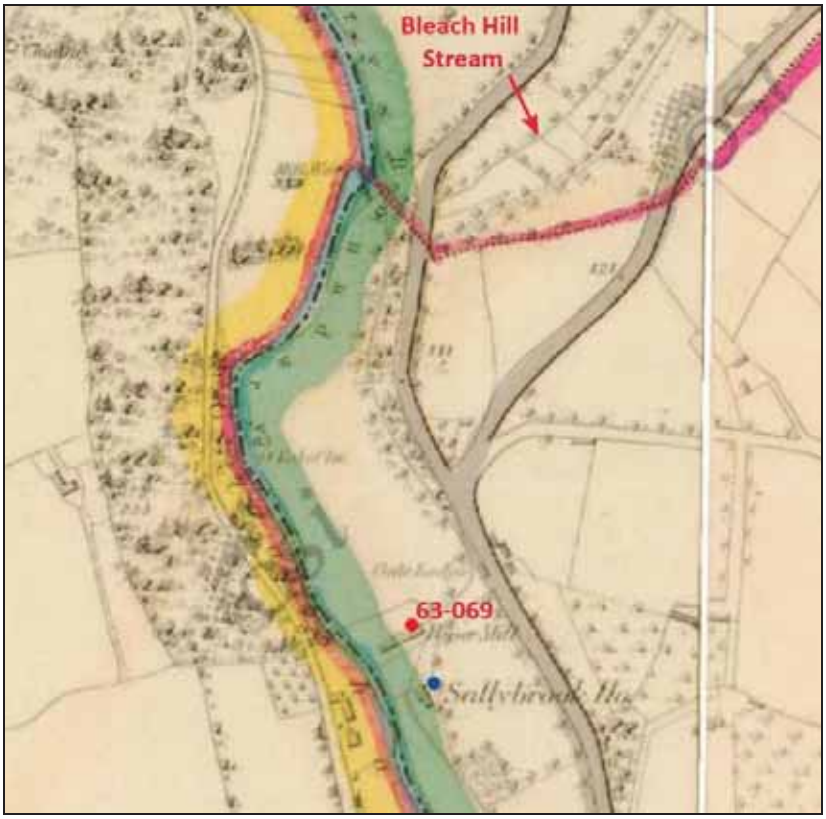

Figure 8: Extract from 6-inch OS map (1842) showing Sallybrook House and environs and route of Bleach Hill Stream (www.archaeology.ie)

3.4 The Bleach Hill Stream is a small watercourse which runs south into the Glashaboy River at Sarsfieldscourt. The nearest archaeological monument to the stream is the aforementioned paper mill in Riverstown (CO063-069) (Fig. 6). The stream is shown, but not named, on the 1842, 1902 and 1935 editions of the OS maps. The 1842 OS map shows the stream running into the Glashaboy River at the southern end of Sarsfieldcourt townland close to a mill weir named and depicted on the river. A mill race to the paper mill (CO063-069) runs south of the confluence of the Glashaboy and the Bleach Hill Stream parallel to the local road to the east (Fig. 8). The 1902 (not depicted) and 1936 map (Fig. 10) depict and name a sluice a short distance south of where the mill race begins. The 1936 map shows a bridge approximately 30m upstream of the existing Bleach Hill culvert, which provided access to an unnamed structure. A modern housing

estate called Cúil Chluthair was built on the eastern side of the stream in the early 2000s and a small part of the stream was culverted to provide access to this estate. It is on this culvert that works will take place.

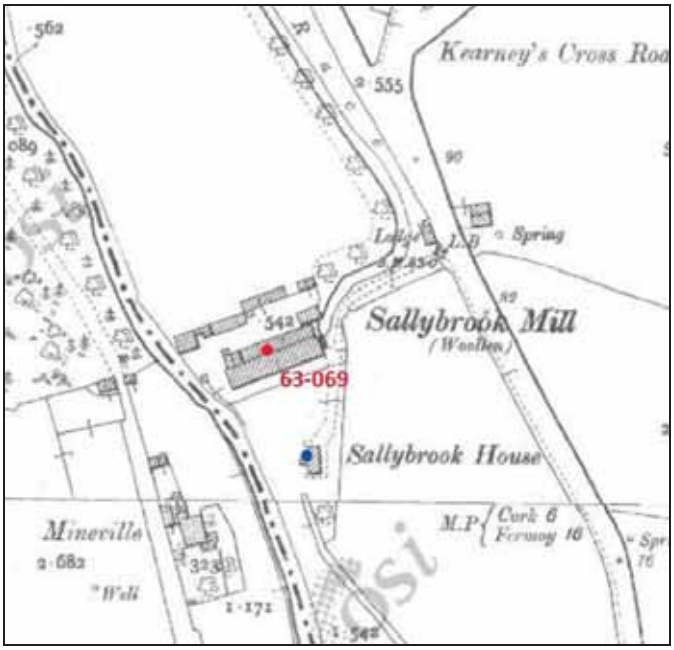

Figure 9: Extract from 25-inch (1902) OS map showing Sallybrook House, mill and environs (www.archaeology.ie)

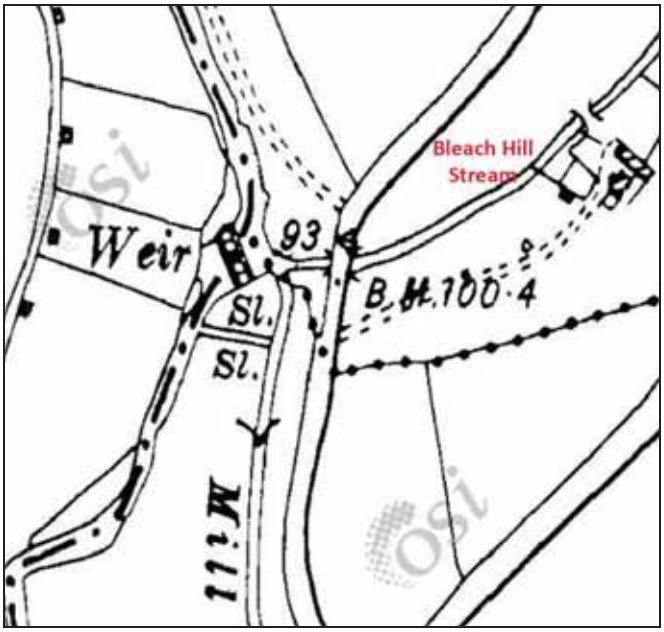

Fig. 10: Extract from 6-inch map (1936) showing Bleach Hill Stream and Glashaboy River (www.archaeology.ie)

3.5 The nearest recorded archaeological monuments to the Glenmore Stream are a castle in Brooklodge (CO064-055) approximately 700m to the east; Riverstown country house (CO064-051) approximately 700m to the west; and a distillery in Ballinglanna (CO075-003) approximately 750m to the west-southwest (Fig. 7). The stream itself forms the townland boundary between Ballinglanna and Riverstown and it is along this boundary that the proposed works are to take place. It is shown on the 1842 OS map (Fig. 11) as a west flowing stream discharging into the Butlerstown Stream several hundred metres further to the west. By 1902 (Fig. 12) a road, now called Brooklodge Grove Road but unnamed then, had been constructed beside the stream with the stream running on its northern side, crossing under the road in a culvert and continuing on its south side. The road layout remains the same and now there is an entrance to a modern housing estate, Copper Valley Vue, approximately 50m to the west.

3.6 The Underwater Archaeology Unit of the National Monuments Service maintains files on the Ports Piers and Harbours of Ireland and the Shipwreck Inventory of Ireland. There are no references in the files to the watercourses or settlements in the vicinity of the watercourses that are the subject of this report.

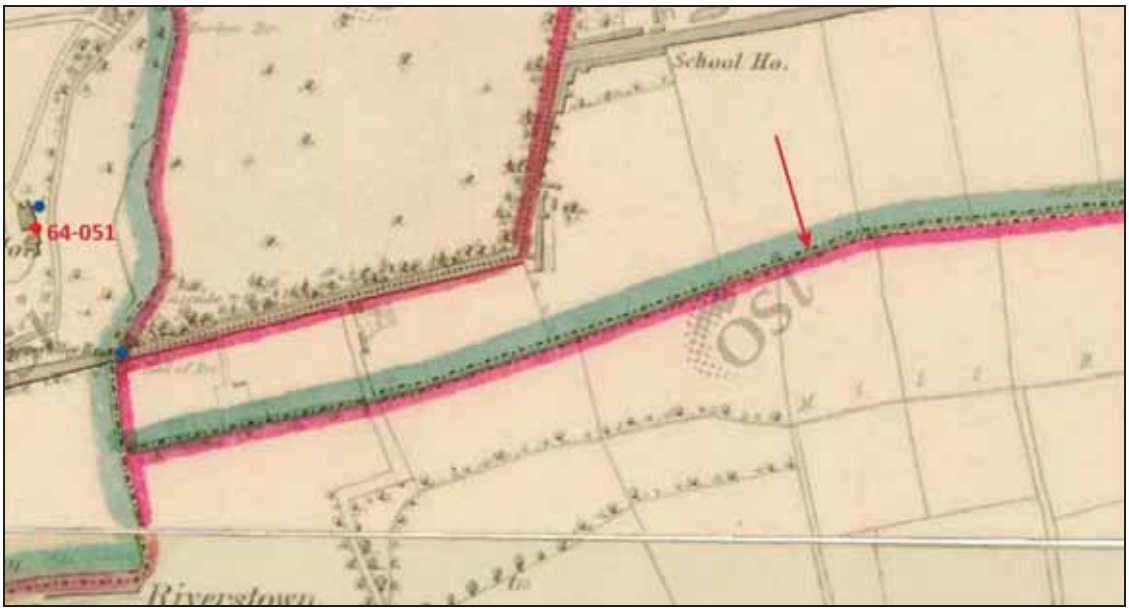

Fig. 11: Extract from 6-inch OS map (1842) showing the Glenmore Stream with arrow showing approximate works location (www.archaeology.ie)

Fig. 12: Extract from 25-inch (1902) OS map showing road constructed beside Glenmore Stream with arrow showing approximate works location (www.archaeology.ie)

3.7 The National Museum of Ireland maintains topographic files containing reports, including correspondence, present location and occasionally, illustrations of archaeological material recovered throughout the country. There are no records of finds from any of the townlands in the vicinity of the watercourses that are the subject of this report

3.8 One archaeological excavation has been undertaken several hundred metres northeast of the proposed works area for the Glenmore Stream when a corn drying kiln was excavated in advance of the construction of the Ballincollig Little Island gas pipeline in 1999 (Clinton 1999).

4 The Intertidal and Metal Detection Survey

4.1 Wading and metal detector surveys were carried out in the proposed flood relief works areas to assess their archaeological potential on the 1st and 11th July 2016. The surveys were undertaken by the author under licence numbers 16D54 and 16R82. Water levels were low at the time after a period of dry weather and conditions were favourable for inspecting the water channels. Each watercourse was waded and metal detected and the banks and beds visually inspected. Surrounding ground was inspected for any evidence of modifications to the channels or evidence of original channels.

4.2 The Watercourses

4.2.1 Bleach Hill Stream: Cúil Chluthair, Sarsfieldcourt townland (Plates 1 and 2)

The stream runs southwest within a natural earthen channel divided into two sections by a culverted portion which runs under the access road to Cúil Chluthair. The bed of the stream is very stoney as are the sides. The western bank is defined by a near vertical slope while the eastern bank slopes steeply. Material has been dumped on the high ground at the top of the eastern bank.

The stream was generally quite clean although some metal pipes and debris were identified during the metal detector survey, all were modern in nature. There is a large concrete man-hole on the eastern bank of the stream on the southern downstream section. Otherwise this section was more overgrown than the upstream northern section. No features or finds of archaeological potential were identified.

Plate 1: Bleach Hill Stream, looking southwest

Plate 2: Bleach Hill Stream, opening of culvert under road, looking southwest

4.2.2 Unnamed channel south at Sallybrook House: Riverstown townland (Plates 3 – 5)

The watercourse runs in an earth-cut, L-shaped channel around the southern and eastern sides of Sallybrook House and drains into the eastern side of the Glashaboy River approximately 20m southwest of the house. It is crossed by a modern timber foot-bridge which provides access to the house. The channel begins to the northeast of Sallybrook House where it emerges from a culvert running through the Pat O'Donnell & Co. property. It is culverted through all of this property except for a small open section of approximately 5m at the northeast where it emerges from under the R639 road into the Pat O'Donnell & Co property.

The channel bed is mostly stoney with some silty patches particularly where rubbish has built up. The rubbish is generally plastic and occasional modern metal objects were detected in the course of metal detecting. The sides are evenly cut and slope quite steeply and its appearance is consistent with a fairly recently constructed channel from the mid/late 20th century. Semi-mature trees have grown up around the channel. No features or finds of archaeological potential were identified.

Plate 3: Unnamed channel discharging into the Glashaboy River, looking west

Plate 4: Unnamed channel showing bridge to Sallybrook House, looking northeast

4.2.3 Glenmore Stream at entrance to Copper Valley Vue and Brooklodge Grove Road (Plates 5 – 10)

The stream runs west in two open sections divided by a large culverted section (comprising three separate culverts) running under Brooklodge Grove Road. The works will extend at the west end to the entrance to Copper Valley Vue. The eastern section runs at the southern end of a front garden of a detached house with the road immediately to the south. The channel is fenced off from the garden and at the east end is wide and earth cut with a stoney and silty bed. Approaching the culverts running under the road, random rubble walls define both sides and there is a small stone weir approximately 1.2m wide and 0.15m deep at the upstream end extending across the stream. The weir is of concrete construction and partially covered in vegetation. There are three channels extending under the road, the eastern one upstream of the weir and two western ones downstream of it. The eastern channel comprises a narrow, random rubble, segmental arch and its bed is heavily silted. The silting to the southern (downstream) side was such that there was no through flow of water (given the low water level at the time of the survey in July), however, on previous visits in April there was a shallow flow passing through this channel. The two western channels are rectangular in section and of concrete construction and both carry a steady flow of water.

To the south of the road and culverts the stream was quite wide and shallow with a stoney bed. The southern bank was earthen and most of the northern one was concrete with an open metal barrier above defining the southern side of Brooklodge Grove Road. A small section of the northern bank was earthen, approaching the access road to Copper Valley Vue. Mature trees line the southern bank and the western section of the northern one.

The eastern section of the stream was very clean with some modern pipes along the northern bank. The western section contained some modern rubbish including metal pipes and plastic rubbish. No archaeological features or finds were noted.

Plate 5: Glenmore Stream eastern section with garden to north (left) and Brooklodge Grove Road to south (right). Opening to the rectangular culverted channels are visible at bottom right, looking east

Plate 6: Eastern culvert opening, north-facing elevation

Plate 7: Eastern culvert opening, showing dry south-facing elevation

Plate 8: Western culvert openings, south-facing elevation

Plate 9: Glenmore Stream western section, looking east

Plate 10: Glenmore Stream western section, looking west

5 Conclusion and Recommendations

5.1 A licensed wading and metal detector survey on sections of 2 streams and an unnamed channel was carried out in July 2016 as part of the Glashaboy Flood Relief Scheme. The Bleach Hill Stream at Cúil Chluthair, Sarsfieldcourt, the Glenmore Stream at the entrance to Copper Valley Vue and Brooklodge Grove Road in Brooklodge Upper and Ballinglanna and the unnamed channel at Sallybrook House in Riverstown formed the basis for the survey. Each section was waded, metal detected and visually inspected to assess its archaeological potential.

5.2 No finds of archaeological potential were revealed. A number of modern metal objects were detected, none of which were of archaeological significance. Modern, generally plastic rubbish, was apparent in the Glenmore Stream and unnamed channel at Sallybrook House. A small stone weir was noted in the Glenmore Stream, this was approximately 1.2m wide and 0.15m deep at the upstream side and extended across the stream between three culverts. The weir and the segmental arched random rubble culvert, immediately downstream of it, probably relate to the construction of the adjoining Brooklodge Grove Road which is first shown on the 1902 25-inch map. No other features were noted in/on the banks, edges or surrounding ground.

5.3 Ground disturbance associated with the proposed works for the flood relief scheme include replacing existing culverts at Bleach Hill Stream and the Glenmore Stream and the culverting of the existing unnamed channel at Sallybrook House. There is evidence that all of these watercourses have been disturbed by earlier construction works; Bleach Hill Stream by the construction of the access road and culvert in the early 2000s, the Glenmore Stream was realigned when the road was built in the late 19th century and later when the access road was built to Copper Valley Vue in the early 2000s and the construction of the unnamed channel at Sallybrook House appears to date to second half of the 20th century. Notwithstanding the evidence of disturbance to these watercourses, however, archaeological monitoring of the construction works at Bleach Hill and Glenmore Streams is recommended. Both streams run largely along their

original course and the archaeological potential of such watercourses has long being recognised. The unnamed channel at Sallybrook House appears to date to the second half of the 20th century and does not appear to be on the line of an original watercourse, therefore its archaeological potential is considered low.

5.4 Works to the Glenmore Stream will comprise the replacement of the three existing culverts (two of concrete and one of random rubble) and construction of a single new larger one. Work will comprise excavation, temporary diversion of the stream and road re-grading to tie the new road over the new culvert back into the existing road levels. These works will impact the weir which is located between the culverts. The weir and the random rubble culvert date, probably, to the construction of the adjoining Brooklodge Grove Road at the turn of the 20th century. It is recommended that the weir and random rubble culvert will be recorded prior to works commencing at this location.

5.5 In the event that archaeological features are identified during archaeological monitoring, consultation will be undertaken with the National Monuments Service and the features will be fully resolved to professional standards of archaeological practice. Such material will be preserved *in situ* or preserved by record, as appropriate, as outlined in Policy and Guidelines on Archaeological Excavation – Department of Arts, Heritage, Gaeltacht and the Islands.

5.6 All recommendations are subject to the approval of the National Monuments Service and the planning authority.

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The Ports, Piers and Harbours Inventory of Ireland at the Archive Unit of the National Monuments Service, Department of Arts Heritage and the Gaeltacht

Appendix 13.3

Dive Survey of the Glashaboy River

Note - Appendix 13.2 and 13.3

Both **Appendix 13.2** (Wading Survey) and **Appendix 13.3** (Dive Survey) were carried out during the course of the compilation of the EIA as a direct response to consultations with the Underwater Archaeological Unit of the National Monuments Service. The design of the scheme had not been finalised in advance of either survey. Following the completion of both, design changes were implemented which are not reflected in the wading survey and dive survey reports. Full and final details of the scheme are included in **Chapter 13**.

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ARCHAEOLOGICAL SERVICES

Project: **Glashaboy Flood Relief Scheme**

Underwater Archaeological Impact Assessment Report

Prepared by: **Julianna O'Donoghue**

on behalf of Lane Purcell Archaeology

Date: **September 2016**

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1. Introduction

This underwater archaeological survey report was undertaken by Julianna O'Donoghue Archaeological Services as an appendix to the Cultural Heritage Section of the Glashaboy Flood Relief Scheme EIS. The primary objective of the study was to determine the cultural heritage resource / asset of the Glashaboy River in order to assess and mitigate the potential impacts of the proposed flood relief scheme on that cultural resource.

As this intra-riverine study constitutes an appendix to Cultural Heritage Chapter of the EIS it should be read in association with it. Consequently, this report only briefly references the wider cultural heritage resource, and its association with the significance of the Glashaboy River.

2. Location

The Glashaboy River (*An Ghlaise Bhuí* - the yellow stream) rises on the south-eastern limits of Bottle Hill *c.*6km north-east of the village of Carrignavar (*Carraig na bhFear* - rock of the men) in the townland of Glashaboy North. The river which gives its name to three townlands viz Glasaboy, North, South and East, flows in a general south-south-easterly direction through the villages of Carrignavar, Sallybrook and Glanmire before issuing into the estuary of the Lee River at Dunkettle in the inner reaches of Cork Harbour. Along its route the Glashaboy is joined by a myriad of rivulets and streams that collectively were harnessed to power what became one of the most important milling regions in County Cork during the 19th century (O'Flanagan 1993, 444-6). The assessment consisted of seven distinct sections of the Glashaboy River between Sally Brook and Glanmire.

3. Methodology

The study comprised desktop research and a licensed intra-riverine visual and metal detection survey. The study area was based on two designated maps supplied by Purcell Lane Archaeology titled Works Overview 1 & 2 (Figs.2 & 3).

3.1 Desktop Study

- The Record of Monuments and Places (RMP) compiled by the Archaeological Survey of Ireland comprises lists, classifications of monuments, and maps of all recorded monuments with known locations and zones of archaeological significance. The monument records are also accessible online from the National Monuments Service (NMS) of the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs at www.archaeology.ie. These were used to establish the archaeological context of the site.
- The Excavations Bulletin and its online database which contains summaries of all archaeological excavations carried out in Ireland, was also examined (www.excavations.ie).
- Cartography: Several historic maps and charts were examined (see references below for a full list).
- Aerial Photography: A variety of low and high altitude aerial photography was examined.
- Documentary sources: Several sources were examined, for a full list of all sources examined see References below.

3.2 Visual and metal detection survey

Seven areas of watercourse along the Glashaboy River were visited and examined by a team of three underwater archaeologists. A visual and metal detection survey was carried out under a licence (Licence Numbers 16E316, 16D0057, 16R0102) issued to Julianna O'Donoghue. Identified features were recorded photographed and GPS referenced.

3.3 Underwater Survey

Seven separate areas (Study Areas 1-7) were designated for inspection on the Works Overview Map 1 & 2 provided by Lane Purcell Archaeology. Cultural heritage sites recorded during the survey were assigned generic numbers commencing with CHS 1. A total of twenty cultural heritage sites were recorded along the entire study area.

4. Constraints and Technical Difficulties

Only preliminary location maps (Fig. 2 & 3) were provided for undertaking the survey as the design of the flood relief scheme was not finalised at that stage. Detailed drawings of the proposed flood defences were provided upon the completion of the fieldwork.

The extent of proposed channel clearance/dredging is not yet determined, therefore the impact of the dredging on the cultural heritage could not be fullly determined.

Figure 1: Site Location Map

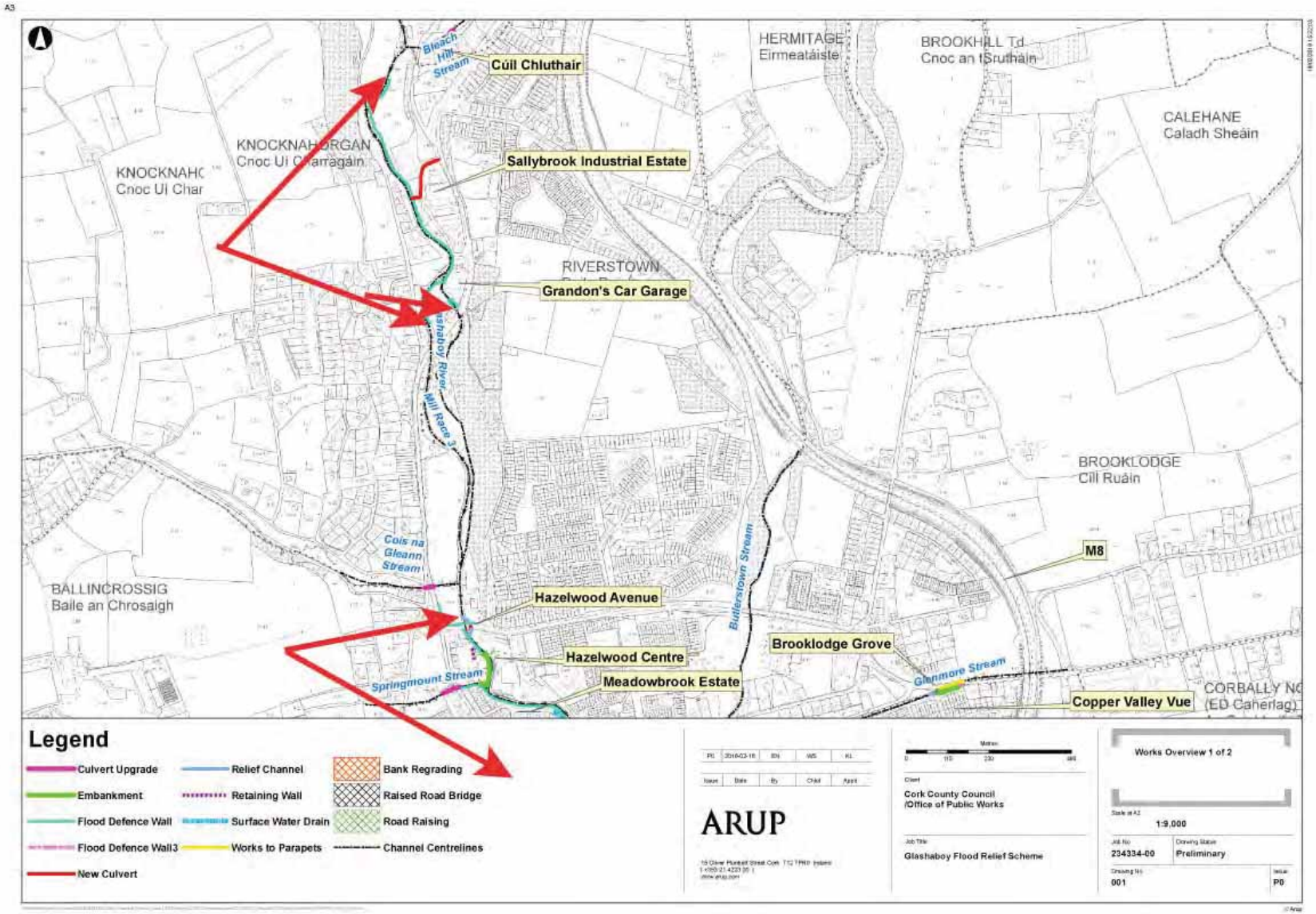


Figure 2: Works Overview Map 1 supplied by Lane Purcell Archaeology

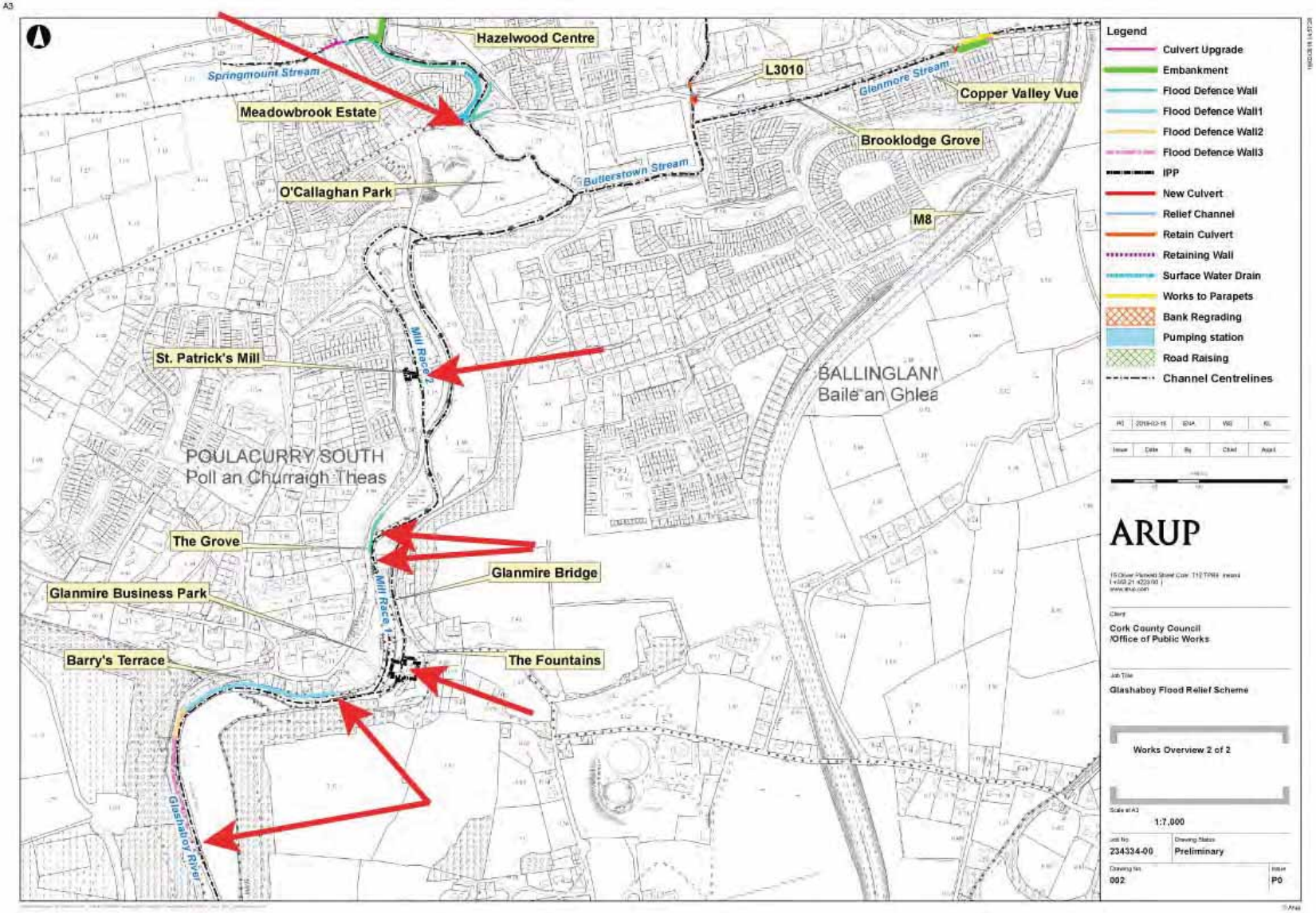


Figure 3: Works Overview Map 2 supplied by Lane Purcell Archaeology

5. Archaeological and Historical Context

5.1 Preamble

Archaeologically the Glashaboy River should be interpreted as an important cultural resource asset for this area of Cork as it would have served as strategic geographic link and conduit for prehistoric settlers and historic communities. The river was central to the establishment of Riverstown and Glanmire and contributed enormously to the local economy.

5.2 Mesolithic Period

Estuaries, rivers and their tributaries were and continue to be important route-ways for people throughout all the cultural periods. The earliest people to exploit the harbour area, along its estuaries, creeks and rivers, were Mesolithic hunter-gatherer-fisher groups. The rich riverine and marine resources provided a wealth and of fish, shell-fish, wild fowl and wild boar as well as a plethora of seasonal gathered fruits and edible roots and plants. The Irish Mesolithic (c. 8000-4000 BC) is particularly characterised by fishing and exploiting of coastal riverine resources as large mammals such as deer or wild cattle did not exist (O'Brien 2012, 32). Although Mesolithic sites are rare in Ireland, they are usually found in low-lying areas close to water, along the islands coastline, rivers and lakes; the waterways providing a means of movement through the landscape. The main indicators of Mesolithic activity in Ireland take the form of flint scatters and shell middens etc. which have been identified at several locations, especially along the coasts and river valleys. In Munster, the majority of the evidence (flint scatters) for Mesolithic occupation has 'come from the Blackwater valley in Co. Cork' (Woodman 1989, 116). Flint scatters were recorded in the townlands of Kilcummer Lower on the banks of the Blackwater, Ballynamona and Wallstown on the Awbeg River and at Goretore and Ballinglanna on the Funcheon River.

Despite the general under-representation of recorded Mesolithic sites in the surrounding hinterland of the Glashaboy River, this does not discount the possibility of Mesolithic activity in the area. The valley slopes overlooking the Glashaboy River and its tributaries may have been ideal locations for temporary settlement at certain times of the year for early Mesolithic hunter-gatherers. As a result, it is possible Mesolithic material culture could be retained with the river deposits and along adjacent river banks.

5.3 Neolithic Period

The first people to settle and farm the area date to the Neolithic period (c.4000BC–2400BC). These first farmers cleared space in the forests, built rectangular wooden houses, made pottery and shaped the land, and fished and migrated along the harbour, estuaries and rivers using dugout canoes. The excavated remains of their houses and tools have been found at a number of locations around Cork.

In prehistory and up to the advent of Christianity, rivers, lakes and ponds were often seen as 'liminal' places or locations 'between worlds', where spirits, gods or even ancestors could be communicated with. Many rivers both in Ireland and abroad are named after female goddesses e.g. the Boyne, Shannon Feale etc. This is evident from the numerous deliberate deposits of Neolithic stone axes and Late Bronze Age metalwork in some large rivers in Ireland. The stone axe is predominantly a diagnostic tool of the Neolithic period and an essential item for forest clearance. In recent years the total number of stone axes recorded in Ireland has risen from 16,000 specimens to over 20,000 (Cooney and Mandal 1998, 28). Of this total 45% have been recovered from riverbeds. While some of these were probably accidentally lost and some river finds may derive from riverside settlements,

others may represent deliberate ritual offerings. Although no such artefacts have thus far been recovered from the Glashaboy, it is possible that some locations along the river were selected for deliberate votive deposition in prehistory.

Neolithic farmers rendered major transformations in the Irish landscape – clearing dense woodlands with stone axes to create fields. Many Irish Neolithic houses are located on sheltered, south-facing slopes overlooking large lakes or rivers and estuaries (Grogan 1996, 57). This indicates that large freshwater sources were equally important during this period due to the importance of pastoral farming and the need for water to be available to cattle herds. At Gortore, North Cork, two Neolithic houses flanked both banks of the River Funshion, while two other houses at Ballinglanna North were situated adjacent to the Glencorra Stream.

The Neolithic is a period in which pyrotechnology became more sophisticated. Hearths and fire installations began to be used for different purposes other than for cooking and warmth. Fire, along with water, fuel and stone tempers were used in the production of pottery, while similar resources were also needed for pyrolithic water-boiling (Hawkes 2014). It is therefore possible that 'activity areas' close to rivers were chosen for specific actions requiring water and other raw materials such as woods and clays.

5.4 The Chalcolithic and Bronze Age

It is broadly accepted that there was an important transition period at the end of the Neolithic in Ireland that spanned the second half of the third millennium BC. This was marked by the introduction of an already developed copper metallurgy around 2500 BC, coincident with the first use of Beaker pottery, a new monument tradition and changed funerary practices. In the centuries that followed there was widespread production of copper objects and, to a lesser extent, goldwork, on a technological par with contemporary metalworking in Europe. This transition period ended around 2150–2000 BC, with a slow introduction of tin-bronze metallurgy and the declining use of Beaker pottery in favour of new ceramic traditions that marked the developed Bronze Age.

Bronze Age activity in the Glashaboy study area is indicated by the presence of standing stones and *fulachta fiadh*. Standing stones are generally thought to be of Bronze Age date, but may also be later extending into the Iron Age or historical period. A number of *fulachta fiadh* are also recorded in the vicinity of the Glashaboy River. *Fulachta fiadh,* also referred to as burnt mounds, are manifest by the presence of one or more low mounds or spreads of heat-shattered stone and charcoal, which often overlie a hearth feature and a pit used as a water trough. The burnt mound material was produced by the use of a pyrolithic technology, whereby hot stones from the hearth were immersed in the trough to heat water. After numerous firings these stones were eventually shattered by the sudden cooling process and casually discarded. Through time the discarded shattered stones gradually accumulated to form a low mound or spread also containing charcoal. They are usually situated in low-lying, poorly drained, marginal land close to a water source, such as a river, stream, spring, pond, lake, turlough bog or marshy area. While no *fulachta fiadh* are recorded along the banks of the Glashaboy, many are situated in the environs of the river, in wet marshy locations. Typically, burnt mounds in this part of Cork do not have a surface expression and therefore many could lie unrecorded closer to the Glashaboy itself. The mounds may have been levelled in the past or covered with alluvial silts from the river.

During excavations in 2000 at Killalough, *c.* 2km NE of the Glashaboy and on a tributary of it a Middle Bronze Age a possible dugout canoe was re-used as a trough in a *fulacht fiadh* (CO064-152), (Hanley and Hurley 2013, 128).

The advent of the discovery of bronze witnessed the manufacture of an expansive array of tools and weaponry (most notably in the Later Bronze Age). Much of the bronze weaponry has been recovered from water contexts. These bronzes were valuable commodities not lightly discarded and this, therefore, may well have been an elite ritual activity. Some finds may reflect the proximity of settlements and others may be the result of loss – for river systems, such as Glashaboy were undoubtedly important route-ways and they may have also provided suitable locations for barter and exchange. Again, while no Bronze Age artefacts have been recovered from the Glashaboy, the dense Bronze Age presence in this part of Cork would indicate that the Glashaboy River played an important role.

The dry ridges alongside rivers would have been the foci for settlement and river crossing-points would have been important locations for local communication needs. Knowledge of fording points were crucially important for communities and travellers for moving family and livestock and goods. As people were vulnerable at fording points, they were often attacked there with the loss of goods. Consequently, they are often productive as find spots for artefacts.

As well as functioning as an important communication network, rivers also served as important boundaries as population levels increased and landownership developed. The Glashaboy River functioned as part of the boundary between the ancient baronies of Cork and Barrymore and later as Parliamentary, Parish and townland boundaries.

5.5 The Iron Age

The Iron Age (600BC- AD400) is possibly the most obscure period in Irish prehistoric archaeology. In comparison to the Bronze Age, relatively little is known about the Iron Age in Munster. This is largely because of reduced archaeological visibility and a general absence of monuments and material culture characteristic of this period. One of the few upstanding Iron remains in Co. Cork is the Cliadh Dubh, a name given to three separate stretches of linear earthworks in County Cork.

Settlement evidence in the Iron Age is absent from the study area although recent excavations associated with roadwork construction have identified a number of round houses from the period near Ballincollig and Youghal and Mitchelstown (ibid 235). Evidence of Iron Age activity in the Cork Harbour area is best exemplified artefactually by a set of three bronze horns, known as the 'Cork Horns' that were found in mud dredged from the River Lee Channel in 1909 near Victoria Road Evidence of trade into Cork Harbour from the Roman Empire is shown by a hoard of ten Roman coins from Cuskinny, Cobh (ibid). In the late 1880's Roman coins ranging in date from Claudius Gothicus (AD 278-270) and the younger Constantine (AD 337) as well as coins from Chlorus and Constantine the Great were found as well as others from Ballyphehane in Cork City (O'Brien 2012 249-250).

5.6 The Early Medieval Period

The archaeology of the early medieval period in the study area is exemplified by ringforts. These monuments (generally known by their Irish names *Rath* and *Lios*) are the most obvious extant monuments in the landscape. These sites consist of circular or roughly circular enclosures with earthen banks and external ditches or fosses. Ringforts were essentially the dispersed rural farmsteads of the Early Medieval Period.

It is evident that the Glashaboy River served as an important source of power for mills during the eighteenth and nineteenth centuries. However, it is also possible that the river and its tributaries functioned in a similar way during the early medieval period, driving timber-built horizontal water mills. There is one horizontal wheeled mill (CO064-146) in Crushyriree in the central part of the Study Area. This was identified during drainage works in 1994 on a stream which flows into the Butlerstown River and was subsequently excavated and dated to approximatley AD 800 (Cotter 1994).

Horizontal wheeled mills are the earliest example of hydro-engineering known in Ireland and usually are revealed during drainage or land improvement works. The horizontal watermill was the preferred form in early medieval Ireland, probably because it was better suited to small, fast-flowing steams and, also, because of the absence of gears, it was comparatively simple and cheap to build. Typically, the horizontal mill was housed within a two-storey, rectangular structure consisting of an upper and a lower room. The upper room contained the grinding stones and the hopper mechanism for the grain, while a vertical shaft connected the upper grinding stone with a horizontal water-wheel, composed of paddles, in the chamber below. Water was channelled by means of a millrace and a chute so that it fell onto the horizontal wheel causing it to turn. Despite the ubiquity of watermills in early medieval Ireland, the grinding of grain by hand, using quern stones, remained commonplace. This changed after the Anglo-Norman invasion, when all grain had to be ground at designated mills. Such mills were a significant source of income for the ecclesiastical and territorial lords who monopolized the manufacture of flour until the close of the Middle Ages.

5.7 The High Medieval Period

In 1169 the first advance wave of Anglo-Normans, invaders arrived at Wexford. During the late twelfth and thirteenth centuries, the Anglo-Norman invasion and colonisation had a major impact on the Irish landscape. Nucleated settlements were established and a manorial / baronial economy introduced which led to increased woodland clearance, more emphasis on arable agriculture and a burgeoning economy in the intensely settled lands of the east. In terms of archaeological sites, the period is marked by the construction of mottes, moated sites, castles and churches, though many of the latter were probably built on the sites of earlier churches. Earthwork fortifications of this period are surprisingly rare in the East and North Cork areas, considering that the area was intensively settled by the Anglo-Normans.

In Cork the period was marked by the eastward advance of the MacCarthys to the extent that their lands eventually encircled Cork City, and by frequent dissention among the Anglo-Norman lords themselves.

Moated sites provide the earliest physical evidence for Anglo-Norman settlement in the country. These were manorial centres from which control was exerted over agricultural production in the surrounding landscape. They were most likely the homes of minor lords and well-to-do tenant farmers and would have formed the focal point of large agricultural estates. In some instance they may also have represented outlying grange farms associated with monastic establishments. They were often built on the outer edges of the Anglo-Norman colonies and it has been suggested that they may represent a second wave of settlement into more marginal land (Empey 1982). These areas came under increasing pressure from Irish attacks in the 13th and 14th centuries and this may have necessitated the construction of more defensive settlement types (see Barry 1987). Moated sites are normally defined by a large and deep ditch, with an internal bank of clay (the ditches are often no longer visible, having completely silted up). For added protection the bank would have been surmounted by a wooden palisade of stakes or planks. There are four moated sites in the Study Area and a further five possible examples, one of which was partially excavated at Ballinvinny in advance of the N8 Glanmire Watergrasshill by-pass. The Glashaboy River would have been an equally important route-way during this period and would have facilitated trade to moated sites, tower houses and religious houses.

There are a number of annalistic references to the use of boats on Irish lakes and rivers between 1100 and 1534. Several dug-out canoes dating to this period have been discovered in Irish rivers. Crafts such as these may have been commonplace on the Glashaboy River during the medieval period used by farmers and fishermen inhabiting areas close to the riverbanks and the southern slopes of the Glashaboy Valley.

5.8 The Post-Medieval and Modern Period

Archaeologically, this period can be characterised by the rapid large-scale reorganisation of the landscape, peaking in the late 18th/early 19th century, when the modern field systems of linear hedgerows began to emerge, almost completely erasing the former later medieval landscape of open countryside and clustered village strip fields. In many cases, such as in large swaths of County Cork, the 'big country house' of the typically Protestant landlord or head tenant eclipsed the later medieval village as the economic power centre in rural areas (Smyth 1993, 670). Expansive areas of former open countryside were enclosed, forming completely new field systems; new roads and trackways were constructed; quarries opened and limekilns produced lime for fertiliser and mortar; brick kilns provided building materials and mills helped process and output commodities at a more industrial scale. Those working the land—the typically Catholic cottiers, labourers and tenant farmers—eked out a modest existence in small cottage plots, applying what trades and skills they could, in the context of a greatly expanding population and the corresponding demand on resources that ensued.

During the post-medieval period the Glashaboy valley became a centre of industrial activity. There are a large number of mills of various types along its course. These include woollen mills, paper mills, cloth mills, spade mills, tuck mills and corn mills. All of these mills were strategically placed to harness the water power of the Glashaboy River. Manufactured goods and produce from the mills could be transported by water-carriage via the river to a quay at Glanmire Village. All of the mills are shown on the 1842 OS map and many are shown and named on subsequent editions, often after their use had been changed. During the period 1700-1900, the mills brought social and economic stability to areas along the Glashaboy. For instance, the Riverstown Paper Mill, established during the 1700s, produced 190 reams of brown paper per week for the local market during the early

1880s. As major employers, the mills provided an alternative to agricultural work, employing coopers, carpenters, blacksmiths, millwrights, fitters, labourers, spinners and weavers.

Most of these mills are situated on, and were powered from, the Glashaboy River except the paper mill in Ballycurreen known in 1842 as the Glenmore Paper Mill, which is on the Glenmore River and the Tuck Mill in Brooklodge, which is located on the Butlerstown River. Associated with many of the mills are mill ponds and mill races, and other associated buildings and structures. There is also a distillery recorded at Ballinglanna on the Glashaboy River. This was founded in 1820 by the Lyons family. With a workforce of 60, the distillery produced 180,000 gallons of whiskey every year. Coal and other resources for the distillery was transported from Cork by water-carriage via the Glashaboy River to the quay at Glanmire Village. The building was named 'Distillery' on the 1842 OS map and Brewery on the 1902 edition reflecting its change of use.

It is clear that the Glashaboy and its tributaries played an important role in the development of this area of Cork from its earliest times to the more recent past. Rivers have been used by humans for thousands of years – serving as important food, resources, route-ways, crossing points and as useful power sources. While the Glashaboy River Valleys more recent history is still quite evident along its course, earlier societies' impact and use of the river is less visible. However, it must be remembered that much of this archaeological evidence lies hidden either within the river itself or along its banks, floodplains and southern slopes.

6. Results

Survey Area 1

ITM Co-ordinates: E572498, N577136 to E572566, N576428
Townland: Riverstown / Knockhorgan
Figures: 4-6 **Plates:** 1 – 22

Survey Area 1 commenced in the Glashaboy River just south of the junction of three townlands, Sarsfieldscourt, Knocknahorgan and Riverstown beside the L2973 roadway. The end point for Survey Area 1 was to the south of a weir associated with Pike Mill.

Six features of cultural heritage were recorded in Survey Area 1. Two cultural heritage features are situated just outside the study area; a mill-weir and mill-race (headrace) associated with Sallybrook Mill (RMP CO063-069). The mill-weir and headrace are denoted on the 1st edition 6" OS map as integral elements of a paper mill complex associated with Sallybrook House immediately downriver. By the turn of the century the paper mill had been adapted as a Woollen Mill and two sluices provided to control water entering the headrace beside the weir. The substantial 377m headrace extends in a general southerly direction before making a sharp westerly turn into the mill structure. The headrace runs parallel to the driveway entrance to Sallybrook House. Sallybrook House (NIAH Reg. No. 20906332) was formerly the miller's house constructed *c*. 1880.

CHS No. 01

Within the river and close to the location of the sluice is a detached coherent *ex situ* mass of bonded redbrick on the western side partially exposed in the riverine gravels and cobbles. The redbrick feature measured 0.8m N-S by 1.5m E-W. As the overburden reached 0.7m in depth, its extent could not be fully uncovered (Plate 3). Some 20m downstream another *ex situ* block of bonded redbrick was discovered as well as several other individual red bricks strewn on the riverbed (Plate 4). One of the bricks lying on the riverbed was stamped 'Youghal Brick Co. Ltd. Youghal' (Plate 5). It may represent the remains of a collapsed wall or culvert.

Impact

No impact.

Mitigation

No mitigation required.

CHS No. 02 Boundary Wall

This is a robust boundary wall on a very steep sloping section of the west bank covered in vegetation (Plates 6 & 7). On the 1st and 2nd edition OS map a boundary is shown at this location marking the limits of Knocknahorgan Woods opposite Sallybrook Mill. The wall is orientated in an ENE-WSW direction. It is constructed of rubblestone built to courses and bonded with a gravel mortar. It is a substantial wall measuring 1.08m in thickness with a maximum height of 3.20m.

Impact

No impact.

Mitigation
No mitigation required.

CHS 03 Revetment wall on East bank
A revetment wall was recorded along the eastern bank between Sallybrook House and Sallybrook Industrial Estate (Fig. 4-6, Plates 8-10). The wall is constructed of uncoursed rubble sandstone (Plate 8). The stones generally measure between 0.3m x 0.20m x 0.20m and 0.60m x 0.40m x 0.30m. The best surviving section of the wall measures 1.6m in height. It evidently extended beyond its current limits but due to bank erosion and tree root action the wall is in a poor state of preservation (Plate 9). It was traced for a distance of 80m but it has collapsed in some sections. It is significantly undermined in places with the current riverbed level circa 0.6m below the base of the wall. The wall is obscured by sheets of corrugated iron at the southern end of Sallybrook Industrial Estate. Part of the wall has been replaced by rock armour and concrete to the rear of Grandon's Garage.

Given its location it appears to be part of the curtilage of the RPS Sallybrook House and Sallybrook Mill. However, there is no zone of notification associated with the recorded monument Sallybrook Mill (CO063-069) on the National Monuments Service on-line database.

Impact
Possibility of negative impact on sections of existing river revetment wall by proposed construction works.

Mitigation
Mitigation by archaeological record. Full archaeological recording should be undertaken of any sections of the original river revetment walling which will be impacted by the construction work.

CHS 04 Revetment wall on west bank
A revetment wall is located in the southern half of the Survey Area 1 on the western bank (Fig. 4-6, Plates 11-14). It is of random rubble construction and survives to a maximum height of 1.7m. The wall is very much eroded and only portions of it survive (Plates 11-14). It is undermined and disturbed by tree root activity and water erosion. This revetment wall appears to be strategically situated on a bend of the Glashaboy River to counter erosion from river action especially when it is spate.

Impact
No impact.

Mitigation
No mitigation required.

CHS 05 Tailrace Sallybrook Mill
This component of the recorded monument of Sallybrook Mill is cartographically indicated on the 1st and 2nd edition OS maps (Figures 5 & 6). Of interest is that the tailrace of Sallybrook formed the headrace of a second mill complex immediately downriver (see Pike Mill, CHS6 below). The eastern riverbank was examined for any surviving elements of the tailrace but no physical remains were

identified and it appears to have been backfilled. However, it is possible that sub-surface remains of tailrace may be preserved within the riverbank and grounds of Sallybrook Industrial Estate.

Impact

Potential discrete subsurface sections of the Sallybrook Mill tailrace may be impacted by the proposed construction works.

Mitigation

Licensed archaeological monitoring should be undertaken by an experienced underwater archaeologist.

CHS No. 06 Pike Mill weir and sluice

This weir and headrace is shown on the 1st and 2nd edition OS maps (Fig 6-7). The Pike Mill weir extends diagonally across the river in an NNW- SSE direction for a distance of 18.70m (Plates 16-22). The diagonally disposed weir thus creates a controlled head of water for release into the headrace. The river would have been widened and modified to create the weir originally. In profile the weir has low vertical sides and a moderately sloping 2.0m wide glacis. The northern elevation consists of nicely dressed limestone blocks set on edge between 1.63m and 2.02m in length and 0.15m in thickness. The northern elevation is currently 0.28m in height and a build-up of sediment was noted at its base. The glacis masonry is constructed of small tightly set well matched stones, averaging 0.35m x 0.10m, laid on edge at a 90˚ angle to the limestone blocks forming the north face. A small number of larger squared limestone blocks also form its surface.

The main channel flows on the eastern side of the weir. The NW corner of the weir connects to the western riverbank which is concealed beneath dense vegetation that restricted close inspection. The SE limit of the weir abuts the sluice which serviced Pike Mill. The latter corner has been impacted by inappropriate modifications to the bank including the pouring of concrete onto the weir structure where it ties into the headrace. The consequential damage to the weir has negatively impacted the wider cultural aesthetics of the site.

Impacts

- There will be no impact on the weir by the proposed works.
- Possibility of impact by the proposed works on a section of walling on the east bank that formed part of the feeder or training wall into the sluice of the mill race.

Mitigation

Mitigation by avoidance. Where possible, impact by the construction works on the existing sluice wall should be avoided. If unavoidable the proposed construction works should be faced with sympathetic material to minimise potential negative aesthetic visual impacts.

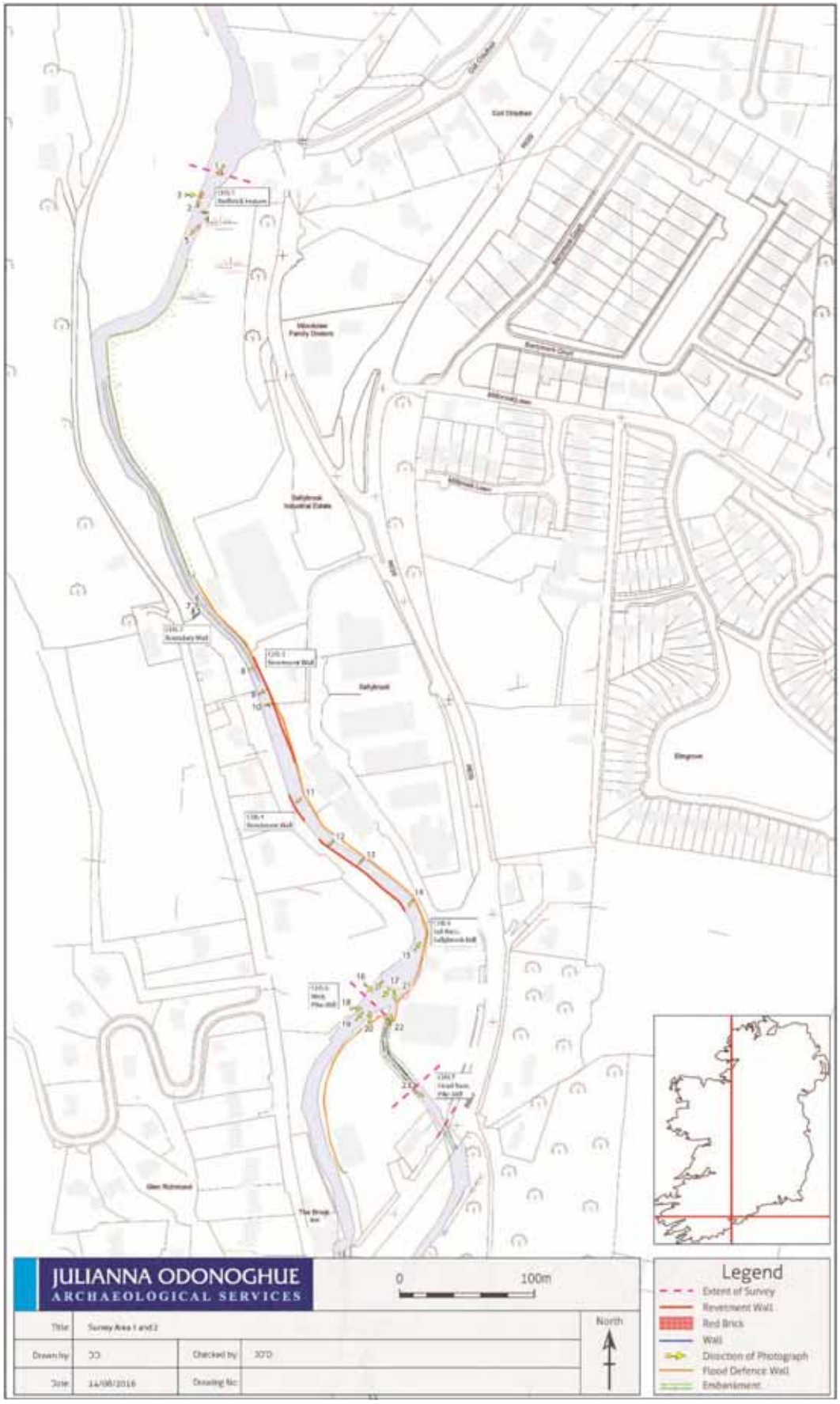
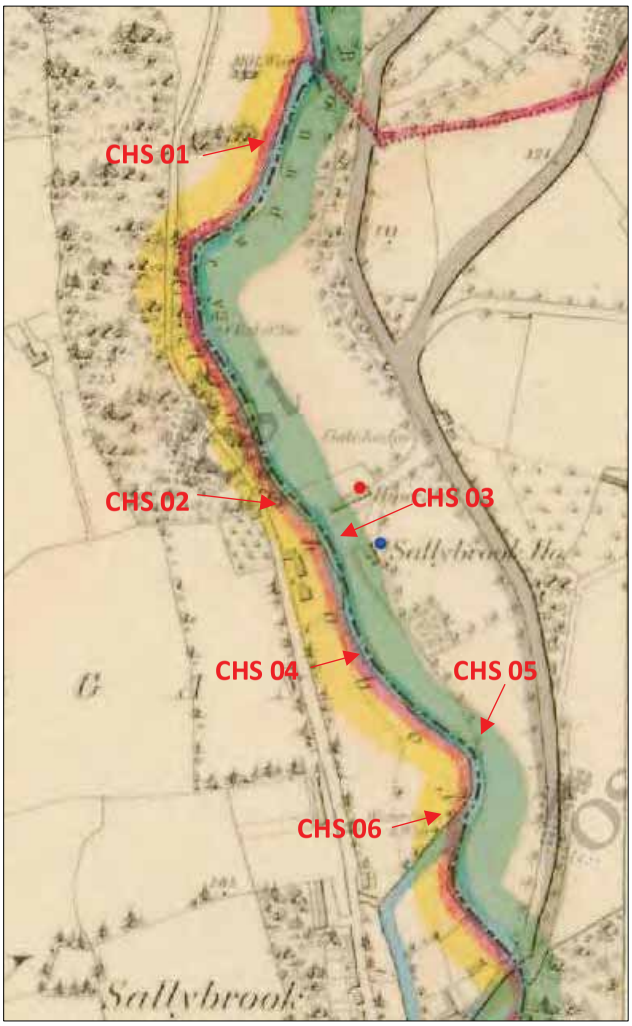
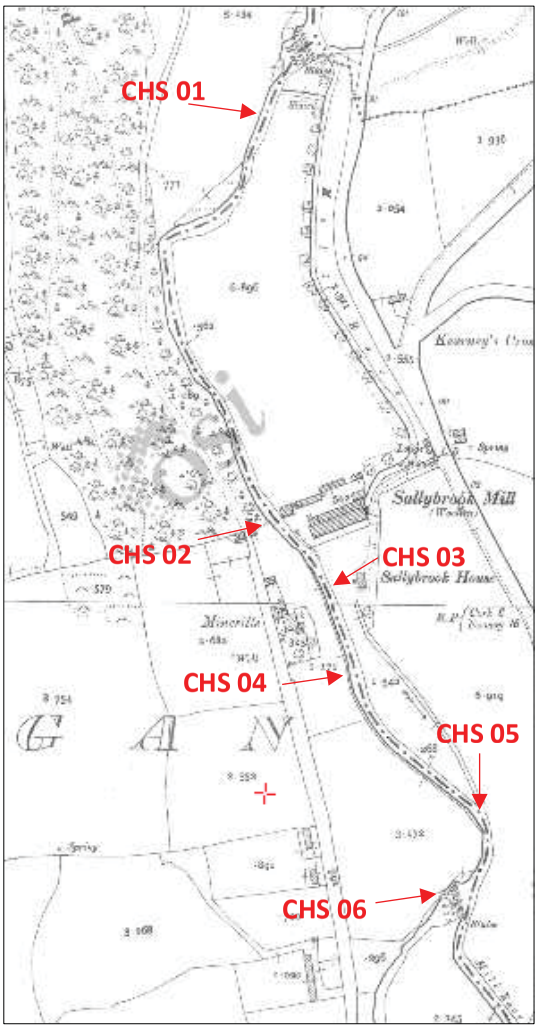


Figure 4: Site location Map, showing survey area 1, CHS 1-6 and proposed flood relief measures.





Top left Figure 5: Extract from 1st edition Ordnance Survey map, showing survey area 1, CHS 1-6

Top right Figure 6: Extract from 2nd edition Ordnance Survey map, showing survey area 1, CHS 1-6

Plate 1: View of Glashaboy River, looking downstream, taken at northern limit of survey

Plate 2: View of CHS 01, taken from south.

Plate 3: View of CHS 01, taken from west.

Plate 4: View of redbrick on east bank of river.

Plate 5: View of inscribed redbrick.

Plate 6: View of CHS 02 Boundary wall, taken from northeast.

Plate 7: View of CHS 02 Boundary wall, taken from northeast.

Plate 8: View of CHS 03, revetment wall, taken from west.

Plate 9: View of CHS 03, revetment wall, taken from west.

Plate 10: View of CHS 03, revetment wall, taken from west.

Plate 11: View of CHS 04 revetment wall, taken from northeast.

Plate 12: View of CHS 04 revetment wall, taken from northeast

Plate 13: View of CHS 04 revetment wall, taken from northeast.

Plate 14: View of CHS 04 revetment wall, taken from northeast

Plate 15: View of CHS 05 tailrace, Sallybrook Mill, taken from southwest.

Plate 16: View of CHS 06 weir, Pike Mill, taken from north-northwest.

Plate 17: View of CHS 06 weir, Pike Mill, taken from northeast.

Plate 18: View of CHS 06 weir, Pike Mill, taken from west-southwest

Plate 19: View of southeast side of CHS 06 weir, Pike Mill, taken from southwest.

Plate 20: View of CHS 06 weir, Pike Mill, taken from south.

Plate 21: View race/sluice, Pike Mill, taken from weir to north.

Plate 22: View of CHS 06 weir, Pike Mill, taken from south.

Survey Area 2

ITM Co-ordinates: 572650, 576448 to 572663, 576430
Townland: Riverstown
Figures: 5 **Plate:** 23

CHS 07 Headrace of Glansillagh Mills

This survey area comprised a short section of a headrace within the grounds of Grandon's Garage beside the R639 roadway. Water was channelled through this race from a weir on the Glashaboy River (CHS No. 06) to the mill pond associated with Pike Mill (CO063-094). The headrace is indicated on both the 1st and 2nd editions of the OS maps, sheet 63.

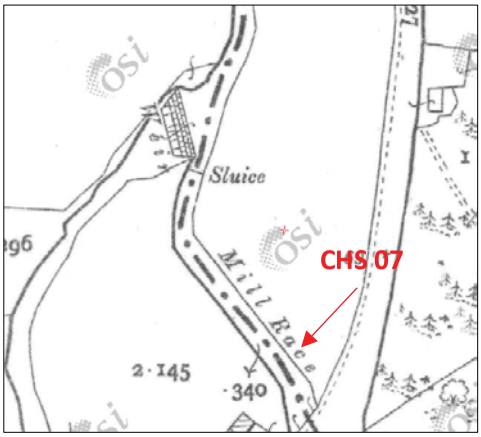
The banks/ side walls of the mill race have been significantly modified (Fig. 4,7 & 8; Plate 23). It now consists of gabion walls with boulders at the SE end. The original banks appear to have been removed or may be concealed behind the gabion walls.

Impact

No impact.

Mitigation

No mitigation required.



Above left Figure 7: Extract from 1st edition Ordnance Survey map, showing survey area 2, CHS 7

Above right Figure 8: Extract from 2nd edition Ordnance Survey map, showing survey area 2, CHS 7

Plate 23: View of CHS 07 head race Pike Mill, taken from northwest.

Survey Area 3

ITM Co-ordinates: 572681, 575580 to 572942, 575205
Townland: Riverstown, Ballincrossig and Poulacurry North
Figures: 9-11 **Plates:** 24-39

Survey Area 3 is located within the townlands of Riverstown, Ballincrossig and Poulacurry North. It extended from just north of the L2966 roadway beside Hazelwood Avenue to Riverstown Bridge (Fig. 9-11).

CHS 08 Revetment wall on east river bank

A riverbank revetment wall extends along most of Survey Area 3 (Fig. 9) albeit with sections missing in places exposing an earthen bank. In other sections it is replaced in an *ad hoc* fashion with various modern wall types including gabion walls, concrete walls or simply revetted with railway sleepers. It is of random rubble construction. An average height of 1.7m was recorded. At the northern limits of the survey a section of stone paving measuring 7.4m x 1.0m is present at the base of the wall (Plate 24 & 25).

Impact

There will be no impact by the proposed works on the revetment wall at the northern limits of Survey Area 3. However, there may be impacts by the construction of the flood wall on the surviving sections of revetment wall adjacent to Riverstown Bridge at the southernmost limits of Survey Area 3 (See CHS 12 below & Fig. 9).

Mitigation

- No mitigation required at the northern limits of CHS 8.
- Licensed archaeological monitoring should be undertaken by an experienced underwater archaeologist.

CHS 09 Revetment wall on west bank

Three sections of the revetment wall on the western bank survive within the study area. The wall is constructed of uncoursed rubble sandstone (Plate 29). It has a max. height of 1.5m. It is in a poor state of preservation with outward bulging and a scour of up to 0.4m noted beneath the wall.

Impact

No impact.

Mitigation

No mitigation required.

CHS 10 Tailrace

A tailrace issuing from a flour/corn mill at Spring Hill is visible on the western riverbank at ITM E572744 N575380. The mill race which is indicated on the 1st and 2nd edition OS Map also marks the townland boundary between Ballincrossig and Poulacurry North. At the time of the survey there

was no water flowing from the mill race. The race is c.4m wide. Its sides consist of overgrown earthen banks and no stone walling was recorded.

Impact

The proposed construction works including the embankment and relief wall COS_L01 on the west bank of the Glashaboy may affect potential discrete subsurface remains or features of the tailrace at Spring Hill.

Mitigation

Licensed archaeological monitoring should be undertaken by an experienced underwater archaeologist.

CHS 11 Weir & Headrace for Riverstown Mill

An east-west Weir is denoted on the 1st edition OS map of 1842 extending across a bend of the Glashaboy (Fig.9). Abutting the east terminus of the Weir is the remains of a headrace that fed into the Riverstown Flour Mill to the SE. The upstream approach section of the headrace consists of a substantial 3.0m high revetment wall (Plate 30) that runs in a NW-SE direction into the mill race, while the river sweeps around to the southwest. The millrace itself was not accessible as a large quantity of tree cuttings have been deposited on top of the structure in recent times.

A coherent section of intra-riverine feature comprising well set and matched stones set on edge was recorded immediately south of the Headrace (Fig. & Plates 31 & 32). The feature, possibly a river access slip or revetment, projects from the eastern bank into the river in a WSW- ENE direction and slopes from a maximum height of 1.0 m beside the race down to the level of the riverbed. The Weir is not denoted on the 2nd Edition OS map and it is likely that this feature is possibly the remains of the weir indicated on the 1st edition OS map.

Impacts

- The proposed flood defence wall (C01_L06) may impact on the approach section of the existing river revetment wall to the 19th century Headrace / Sluice.
- It is also possible that the proposed construction works may impact on the potential relict remains of the pre-famine Weir.

Mitigation

- Mitigation by avoidance. Where possible impact by the construction works on the existing approach Headrace / Sluice wall and pre-famine Weir should be avoided. If unavoidable the proposed construction works should be faced with sympathetic material to minimise potential negative aesthetic visual impacts.
- Licensed archaeological monitoring should be undertaken by an experienced underwater archaeologist.

CHS 12 Riverstown Bridge

Riverstown Bridge is a recorded archaeological monument (RMP No. CO064-111) and a protected recorded structure (RPS No. 2096415). It is a hump-backed road bridge built of rubble sandstone. The bridge has five arches; measuring from west-to-east 2.50m, 3.70 m, 4.25 m, 4.25m, and 3.70m. The westernmost and smallest arch is blocked up and contains a cast iron outfall pipe. All five arches display arch rings of undecorated voussoirs.

No foundations were visible at the base of the piers. The piers are protected on both elevations by rubble-stone pointed cutwaters projecting outwards by 0.9m, and 1.15m in height. The cutwaters are damaged as a result of erosion and vegetation. The modern concrete extension to facilitate a footpath has damaged the bridge and conceals much of the northern elevation. The parapet has vertically set copping.

Impacts

- The proposed flood defence wall and their drainage outfalls (C01-L05 & C01_L06) may impact on the existing sections of the river revetment wall on both sides of the river in close proximity to the upstream side of Riverstown Bridge.
- The proposed flood defence wall may impact on the eastern upstream limits of Riverstown Bridge.
- The proposed regrading works (C01_R02); and proposed concrete reinforced wall (C01_L07); and proposed pumping station C01_P01) also extend into the zone of notification (ZON) on the western side of the bridge.
- The proposed removal of the existing build-up of silt and vegetation from under the arch of the bridge (C01_C03 & C01_C04) may impact on the recorded structure.

Mitigation

- Licensed archaeological monitoring should be undertaken by an experienced underwater archaeologist with regard to the proposed construction works C01-L05 & C01_L06.
- Mitigation by licensed archaeological testing in advance of construction should be undertaken with regard to all proposed works within the ZON associated with Riverstown Bridge a recorded monument and a recorded protected structure, including: - C0_L06; C01-L07; C01_P01; C01_R02; C01_C03 & C01_C04.
- The recorded protected structure Riverstown Bridge should be fully surveyed archaeologically in advance of construction works.

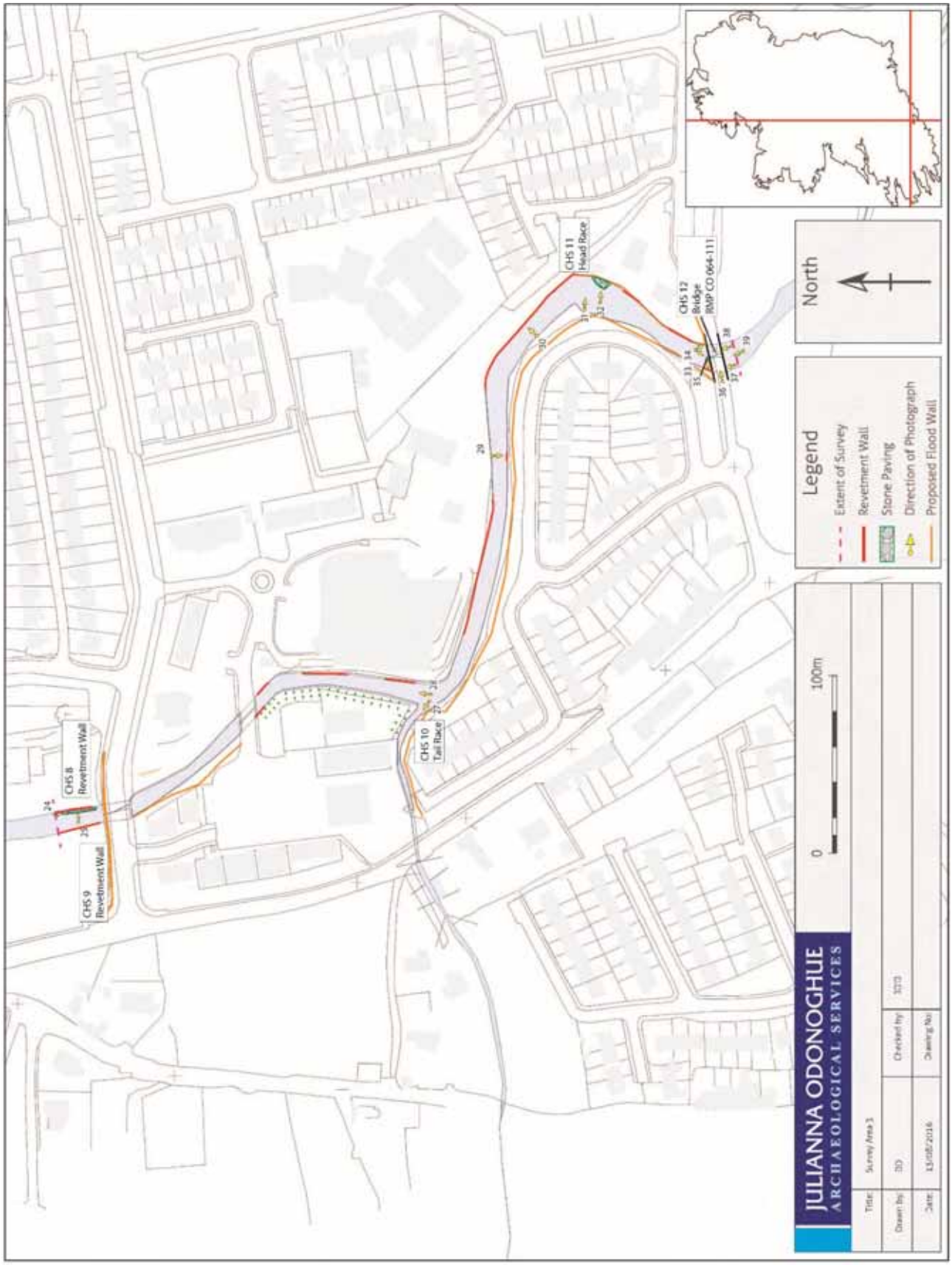


Figure 9: Site location Map, showing survey area 3, CHS 8-12 and proposed flood relief measures.

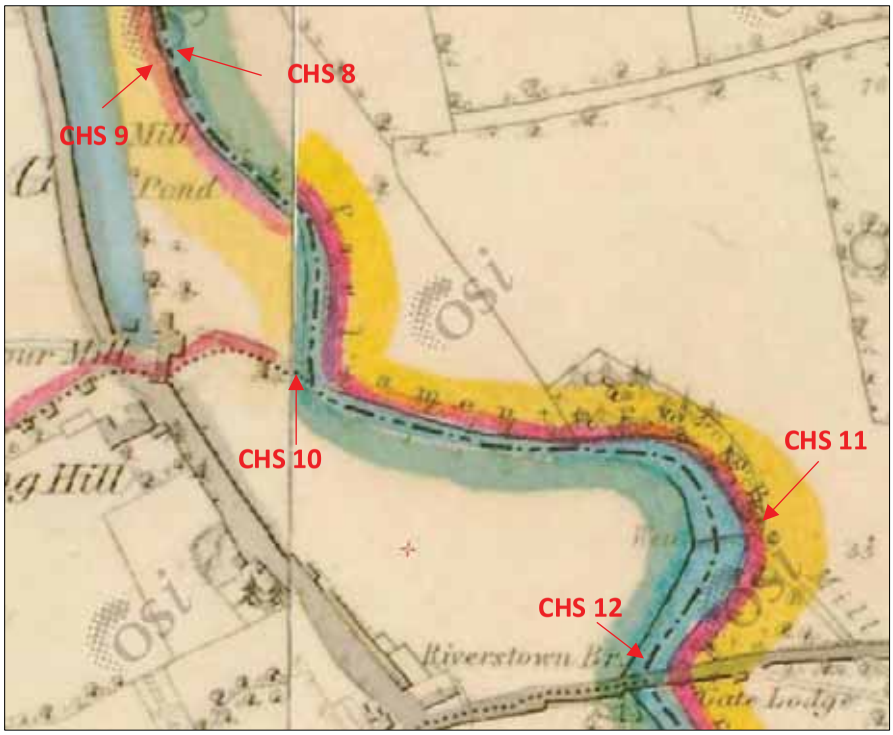


Figure 10: Extract from 1st edition Ordnance Survey map, showing survey area 3, CHS 8-12

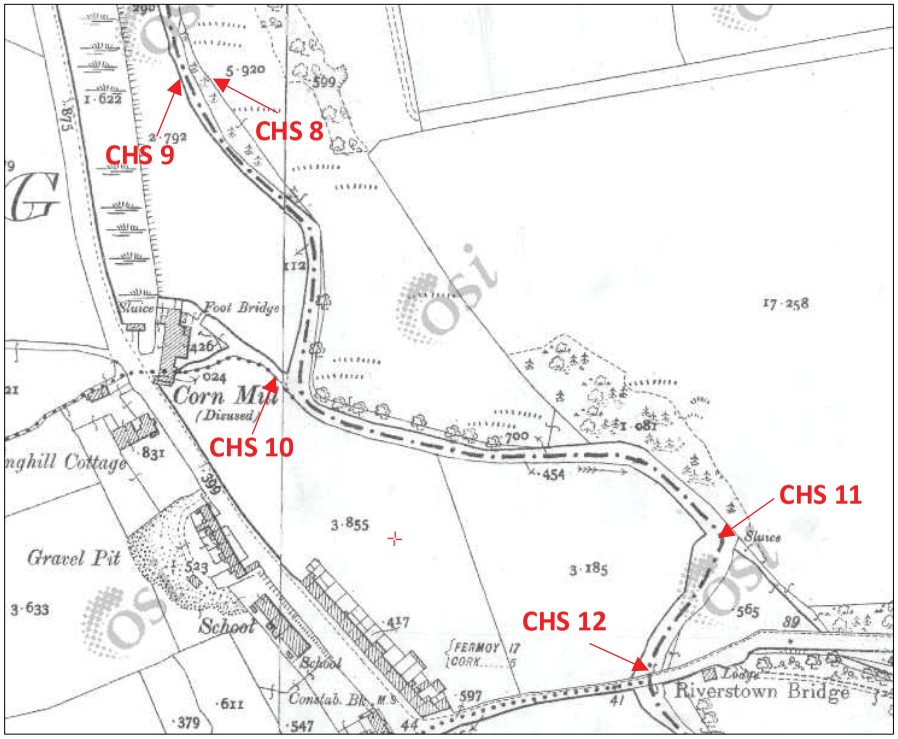


Figure 11: Extract from 2nd edition Ordnance Survey map, showing survey area 3, CHS 8-12

Plate 24: View of CHS 08, revetment wall taken from north.

Plate 25: View of CHS 08, revetment wall taken from west.

Plate 26: View of CHS 09, revetment wall taken from east.

Plate 27: View of CHS 10, tailrace, Spring Hill Mill, taken southeast.

Plate 28: View of Glashaboy River, looking upstream, taken from CHS10

Plate 29: View of CHS 09, taken from north.

Plate 30: View of revetment wall approaching headrace CHS 11.

Plate 31: View of headrace CHS 11, taken from west.

Plate 32: View of stone feature, possible remains of weir, taken from west

Plate 33: View of CHS 12, bridge taken from northeast

Plate 34: View of CHS 12, bridge with pedestrian bridge extension and recent earthen embankment to northeast..

Plate 35: View of CHS 12, bridge, blocked up arch on northwest.

Plate 36: View of CHS 12, bridge, carriageway.

Plate 37: View of CHS 12, bridge, western side of downstream elevation.

Plate 38: View of CHS 12, bridge, cutwater on downstream elevation.

Plate 39: View of CHS 12, bridge, downstream elevation.

Survey Area 4, St. Patrick's Mill

ITM Co-ordinates: E572838, N574634
Townland: Poulacurry South
Figures: 12-14 **Plates:** 40-43

Survey Area 4 is located at St. Patrick's Mill in the townland of Poulacurry South (*Poll an Churraigh*-pool of the marsh). The mill is denoted on the 1st and 2nd edition OS maps (fig 13-14).

The mill was established in the 18th century by a Cork merchant named Sadlier. In 1837 Lewis notes that St. Patrick's beetling-mills was operated by Messrs. Thorley & Son and employed over one hundred people. The site is a recorded monument (CO075-001), however there is no ZON encompassing it on the National Monuments Service on-line database. The mill complex is also a recorded protected structure (RPS), Reg. No. 20907504 constructed c. 1795-1800.

CHS 13 Tailrace of St. Patrick's Mill

The Tailrace was inspected but the enclosed section of the race running underground and into the mill complex was not investigated for Health & Safety considerations. Furthermore, the building itself was outside the remit of this survey. Two separate races exit the mill and converge into a single race which flows in a southerly direction for *c.*100m before crossing under the R639 roadway and into the Glashaboy River. The eastern race issues from the mill through a 2.5m wide semi-circular

arch of twenty-six voussoirs (Plate 40). To the west of this is a crudely constructed wooden bridge spanning the second race (Plate 41). This is a twin culvert constructed of random rubble stone capped with large stone lintels (plates 42 & 43). Modern repairs comprising concrete support propping have been inserted at the exit, and the eastern channel of the twin culvert has collapsed.

Impacts

There will be no impact by the proposed works C03_L01 on the Tailrace CHS 13.

Mitigation

No mitigation required.

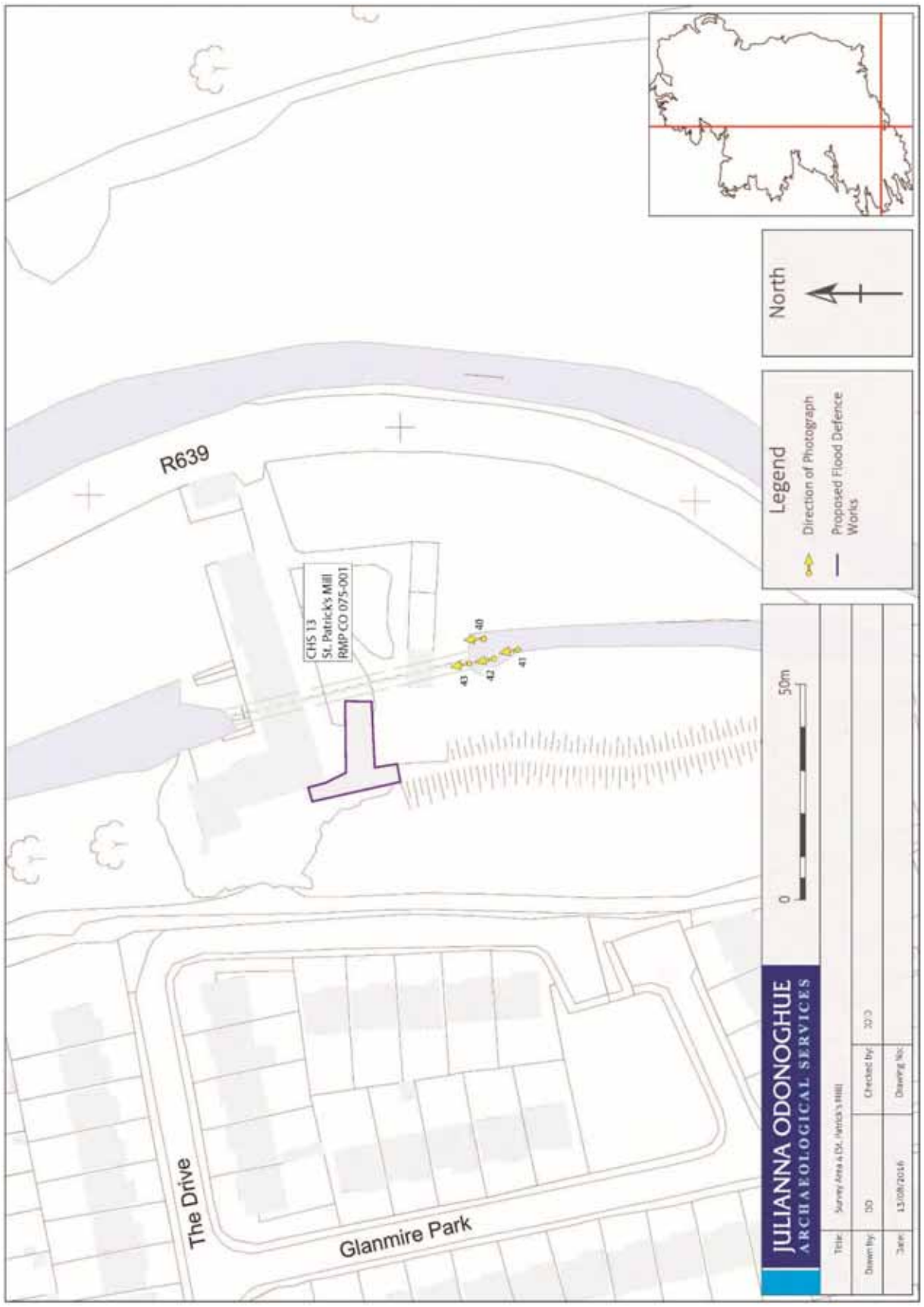


Figure 12: Site location Map, showing survey area 4, St Patricks Mill and proposed flood relief measures.

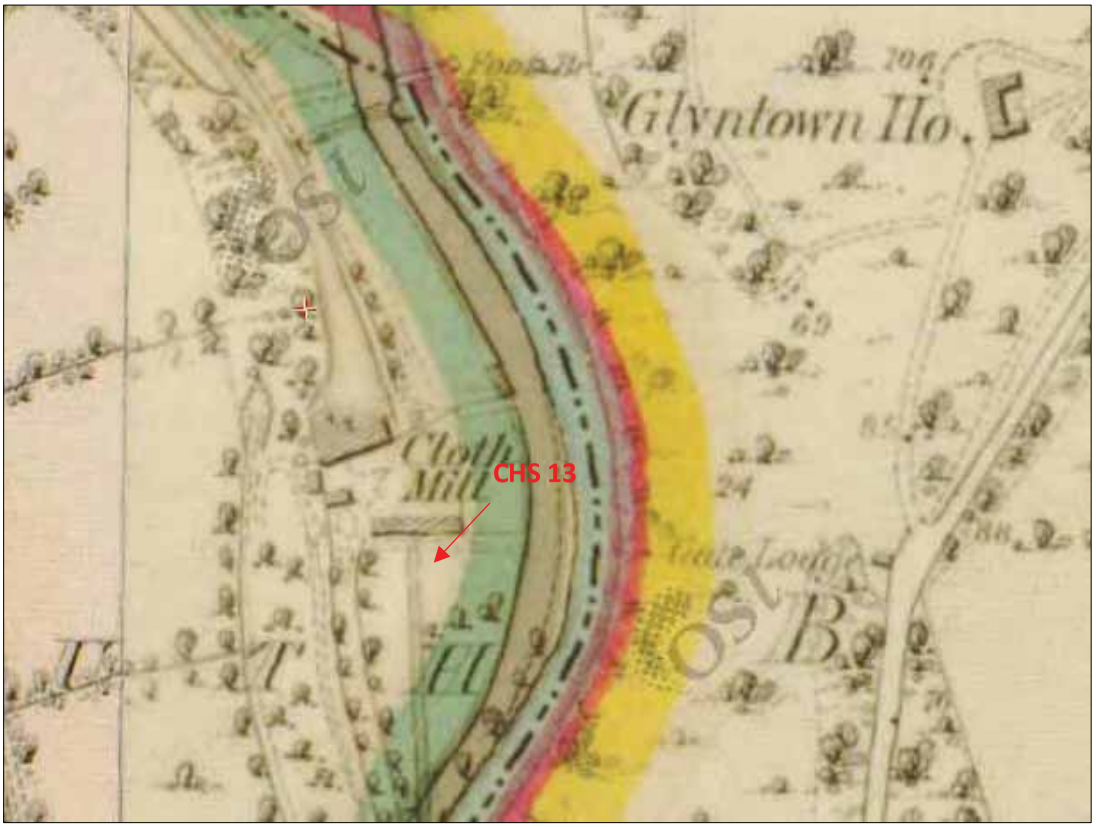


Figure 13: Extract from 1st edition Ordnance Survey map, showing survey area 4, CHS 13

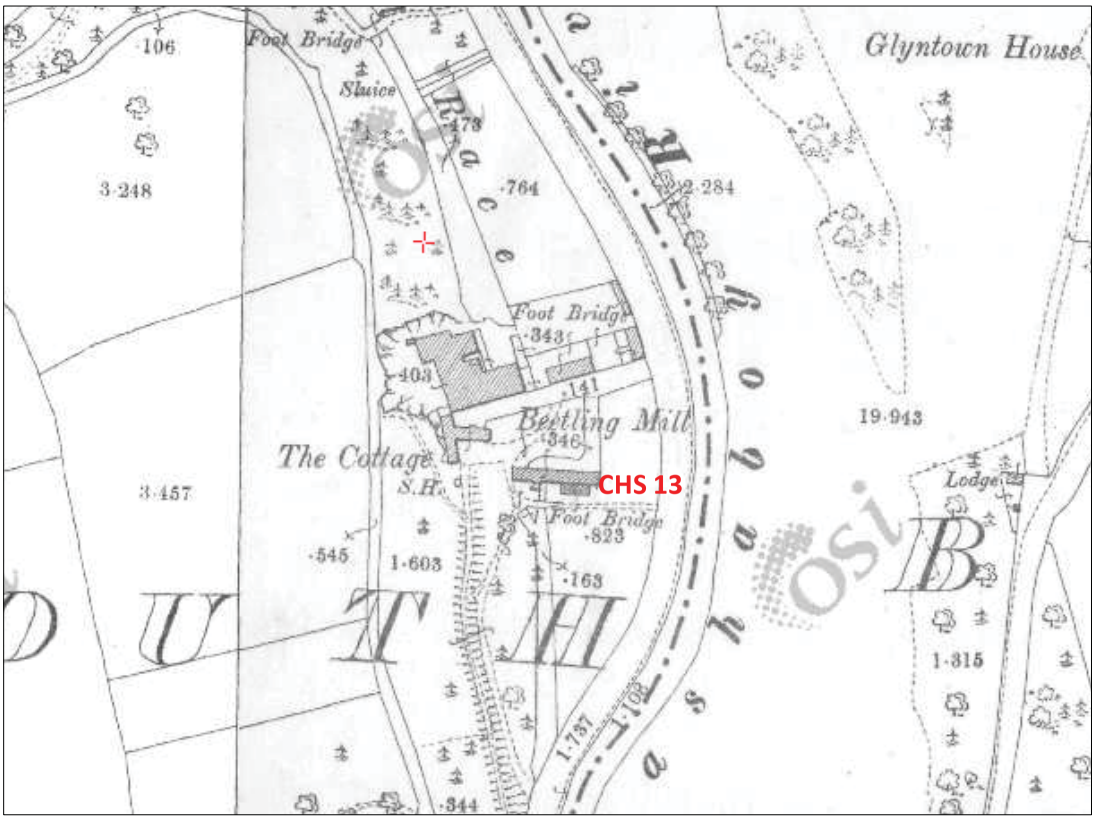


Figure 14: Extract from 2nd edition Ordnance Survey map, showing survey area 4, CHS 13

Plate 40: View of CHS 13, from south.

Plate 41: View of CHS 13, from south.

Plate 42: View of CHS 13, from south.

Plate 43: View of CHS 13, from south.

Survey Area 5, The Grove

ITM Co-ordinates: -E572759, N574321 to E572735, N574278

Townland: Poulacurry South

Figures: 16-17 **Plates:** 44

Survey Area 5 comprises of a short stretch of the Glashaboy River annotated *The Grove* on the Works Overview Map provided by Lane Purcell Archaeology. It is located downstream of a Mill Weir that denoted on the 1st Edition OS map of 1842 crossing the Glashaboy River in a NE-SW direction and connected to a headrace at its southern end that extended underneath the eastern side of Glanmire Bridge. The three-arch bridge which was built between 1770-1810 is a recorded monument (RMP CO075-048) and a recorded protected structure (RPS 00483).

The Mill Weir was outside the scope of this survey. It is situated at the maximum point of the tidal flow and serviced the Fountains (CO075-002001), a Flour Mill, situated 290m to the south in Ballinglanna. By the end of the 19th century the weir had been re-built in a NW-SE direction while the headrace had also been widened and re-aligned. From beneath Glanmire Bridge a Sluice controlled the flow to the mill complex that is also denoted on the 2nd Edition map and annotated as *The Fountains Flour Mill (Disused),* (See Survey Area 6 below*)*. The headrace for the mill runs to the east of this stretch of river and was not included in this survey.

CHS 14 Revetment wall on east bank

The intra-riverine survey noted a revetment wall manifest on the east bank of the river at the northern limits of Survey Area 5 (Fig.15). It is constructed of generally small uncoursed rubble sandstone that vary in size between 0.2m x 0.2m to 0.3m x 0.4. The revetment wall survives to a height of 1.3m and appears to have originally extended along the entire length of the survey area but has collapsed towards the southern limits.

Impacts

There will be no impact by the proposed works on the revetment wall CHS 14.

Mitigation

No mitigation required.

CHS 15 Revetment wall on west bank

A second 2.5m high random rubble stone revetment wall with mortar bonding extends beyond the limit of Survey Area 5 in each direction. The wall is collapsed in sections and damaged by tree root action and erosion. The gable end of a relict extant structure abuts the western riverbank (Fig. 15, Plate 44). It is denoted on all editions of the OS maps. Concrete repairs and underpinning works are visible along this section of the revetment wall which is adjacent to the R639 roadway.

Impact

The proposed works C01_L08 and possibly the pumping station C01-P02 may impact on the revetment wall feature CHS 15.

Mitigation

Licensed archaeological monitoring should be undertaken by an experienced underwater archaeologist with regard to the proposed construction works C01_L08 & C01-P02.

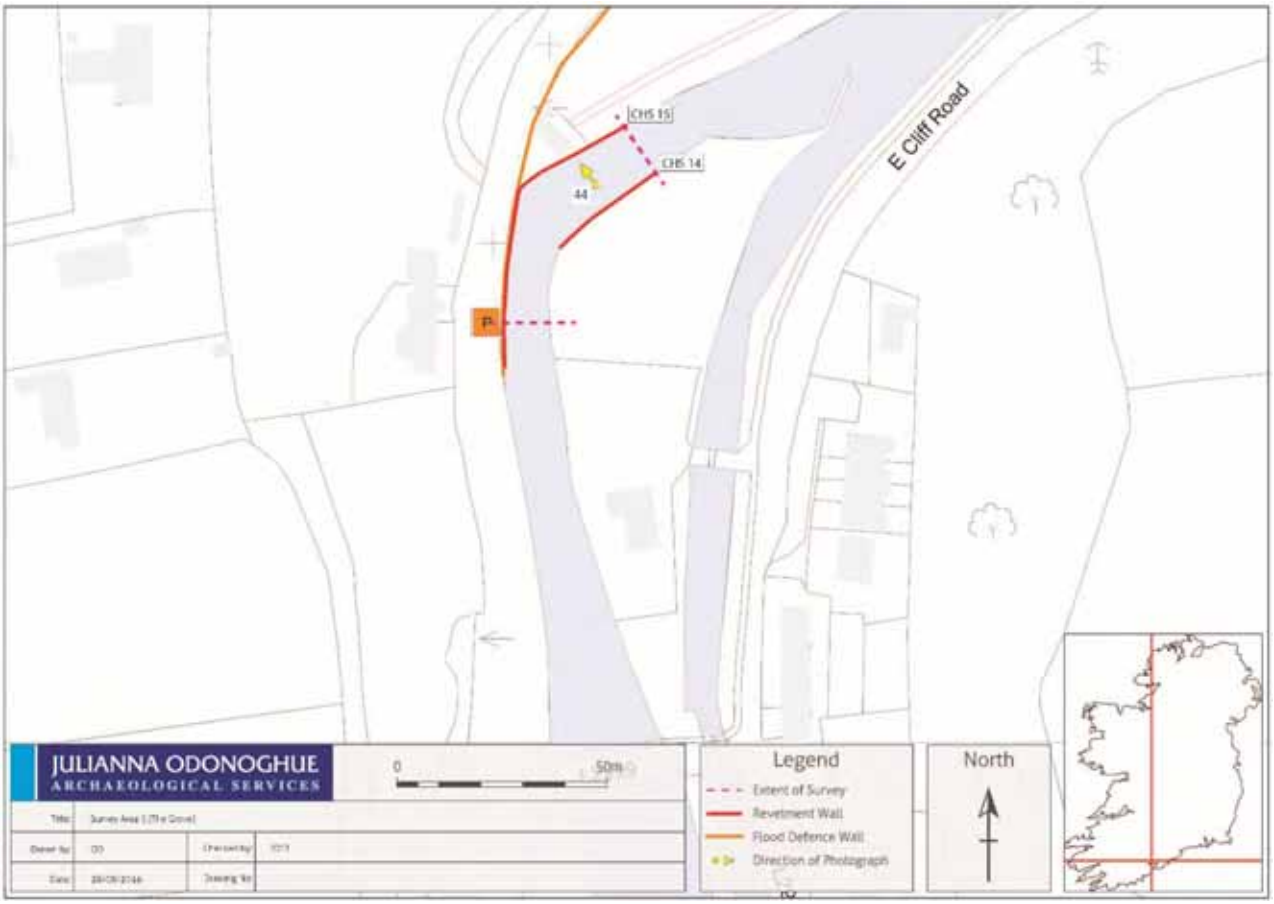


Figure 15: Site location Map, showing survey area 5; The Grove, and proposed flood relief measures.

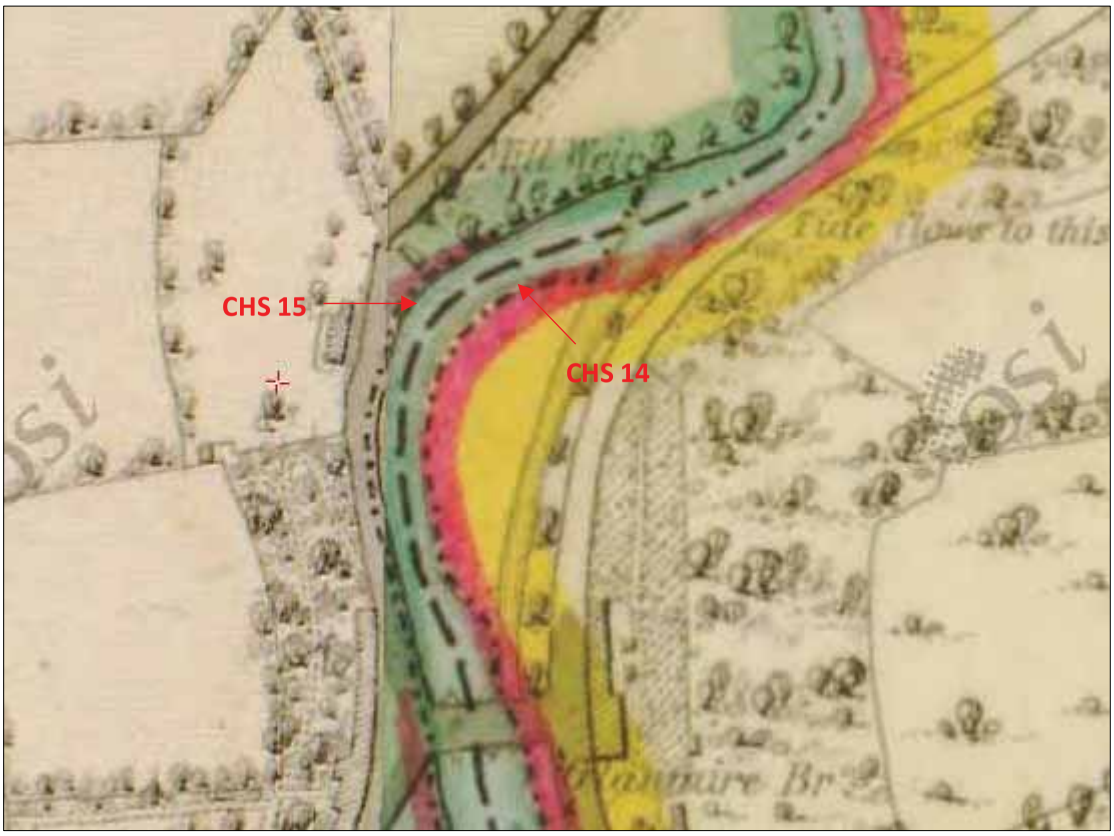


Figure 16: Extract from 1st edition Ordnance Survey map, showing survey area 5, CHS 14 & 15

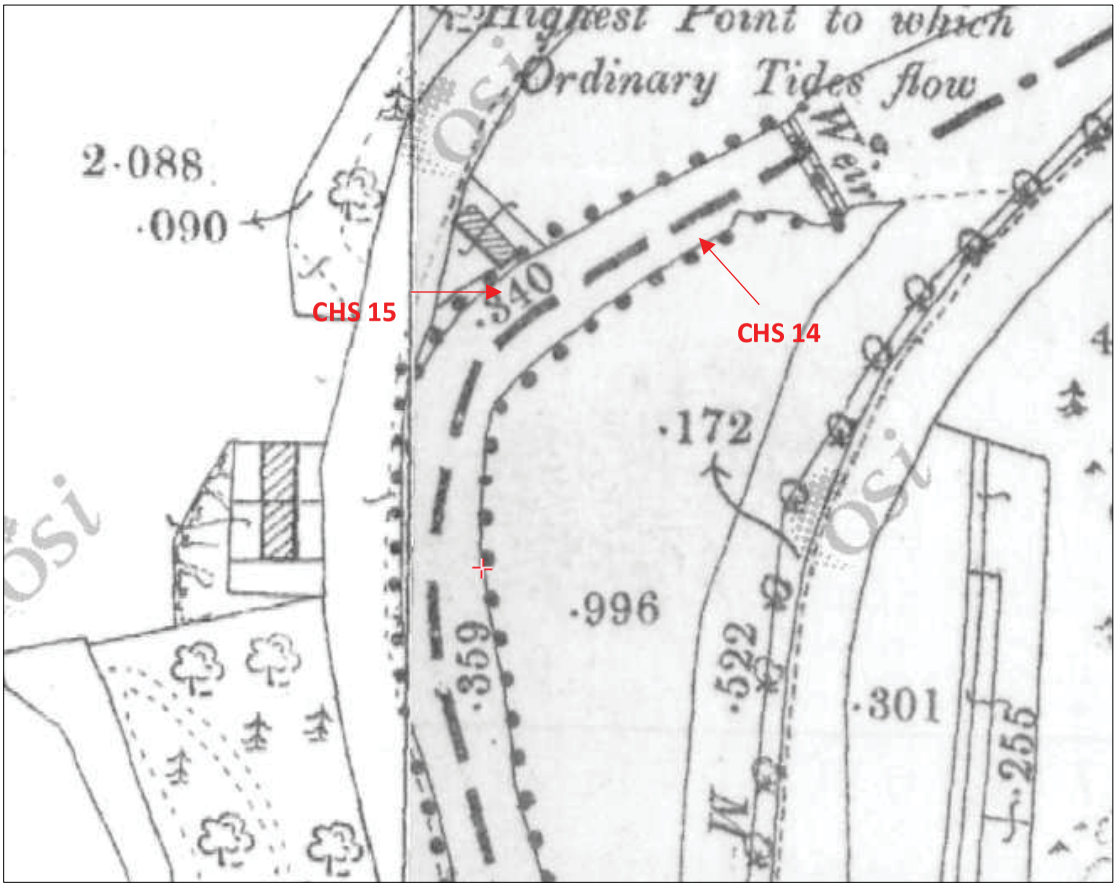


Figure 17: Extract from 2nd edition Ordnance Survey map, showing survey area 5, CHS 14 & 15

Plate 44: View of CHS 15, revetment wall, taken from southeast.

Survey Area 6, The Fountains (CO075-002001)

ITM Co-ordinates: -E572776, N574086 to E572721, N573970
Townland: Ballinglanna
Figures: 18-20 **Plates:** 44

Survey area 6 is located in the townland of Ballinglanna on the Glashaboy River adjacent to a large disused flour mill complex which is a recorded monument (CO075-002001). The NIAH have also a record entry for the protected structure, Reg. No. 20907510, who note that the flour bolting mill was founded in the mid-18th century by Samuel Pike. In the 1830's it was owned by the Shaw family who installed a steam engine and produced 25,000 barrels of flour per annum. The mill passed to the Punch family around 1920 and became disused following a fire in 1964 (www.askaboutireland.ie). The mill building was originally 5-storeys high but after the fire in 1964 it was rebuilt as a single storey structure (www.archaeology.ie).

The Fountains is denoted on the 1st Edition OS Map of 1842 as a large flour mill complex on the east bank of the river. The 2nd Edition OS Map illustrates an expanded mill complex and the addition of a boat house on the river bank at the exit point of the tail race. A lime-kiln (CO075-002002) is located to the south of the mill site. In 1922 George Punch established a shoe-polish factory in the building.

A shoal was noted on the riverbed directly opposite the mill building measuring, 20m NE-SW in length by 5.9m in width. The main channel flows to the east of the shoal.

CHS 16 Revetment wall on the west bank

A revetment wall extends along the western bank for the majority of Survey Area 6 (Fig. 18, Plate 45). It a roughly coursed sandstone wall, measuring up to 2.0m in height (Plate 45). The wall is constructed of large stones, the basal courses of which measure on average 0.5m x 0.3m. The mortar has been largely washed out.

Impacts

There will be no impact by the proposed works on the revetment wall CHS 16.

Mitigation

No mitigation required.

CHS 17 Revetment wall on east bank

A revetment wall is visible on the east bank between the mill building and the tail race (Fig. 18, Plate 46). Due to an accumulation of sediment and dense vegetation it was not possible to examine the northern limits of this wall. It is possible that the wall continues further upstream concealed behind collapsed bank material. The wall is a substantial structure measuring up to 3.0m in height. It is constructed of dressed limestone blocks measuring from 0.30m x 0.30m up to 1m x 0.6m. Mortar bonding is visible in places. Tree root damage is particularly noticeable resulting in portions of the wall having completely collapsed as a result (plate 47 & 48). Three sections of the wall, measuring between 3.8 and 4.5m in width have been repaired with concrete.

Impacts

There will be no impact by the proposed works on the revetment wall CHS 17.

Mitigation

No mitigation required.

CHS 18 Tailrace east bank

The tailrace for the Fountains Mill discharges into the river on a bend at the end of revetment wall CHS 17 (plate 49). The original exit point for the tailrace has been modified. A concrete slip supports /abuts the end of the revetment wall. The current concrete slip structure is most likely a replacement of an earlier 19th century slip. A Boat House shown on the 2nd Edition OS map, may have served the mill and indeed a nearby recorded Limekiln, CO075-002002. The south-eastern bank of the race has collapsed and now consists of mud with a large quantity of tumbled stone of which some are dressed limestone (Plate 50).

Impacts

There will be no impact by the proposed works on the revetment wall CHS 17.

Mitigation

No mitigation required.

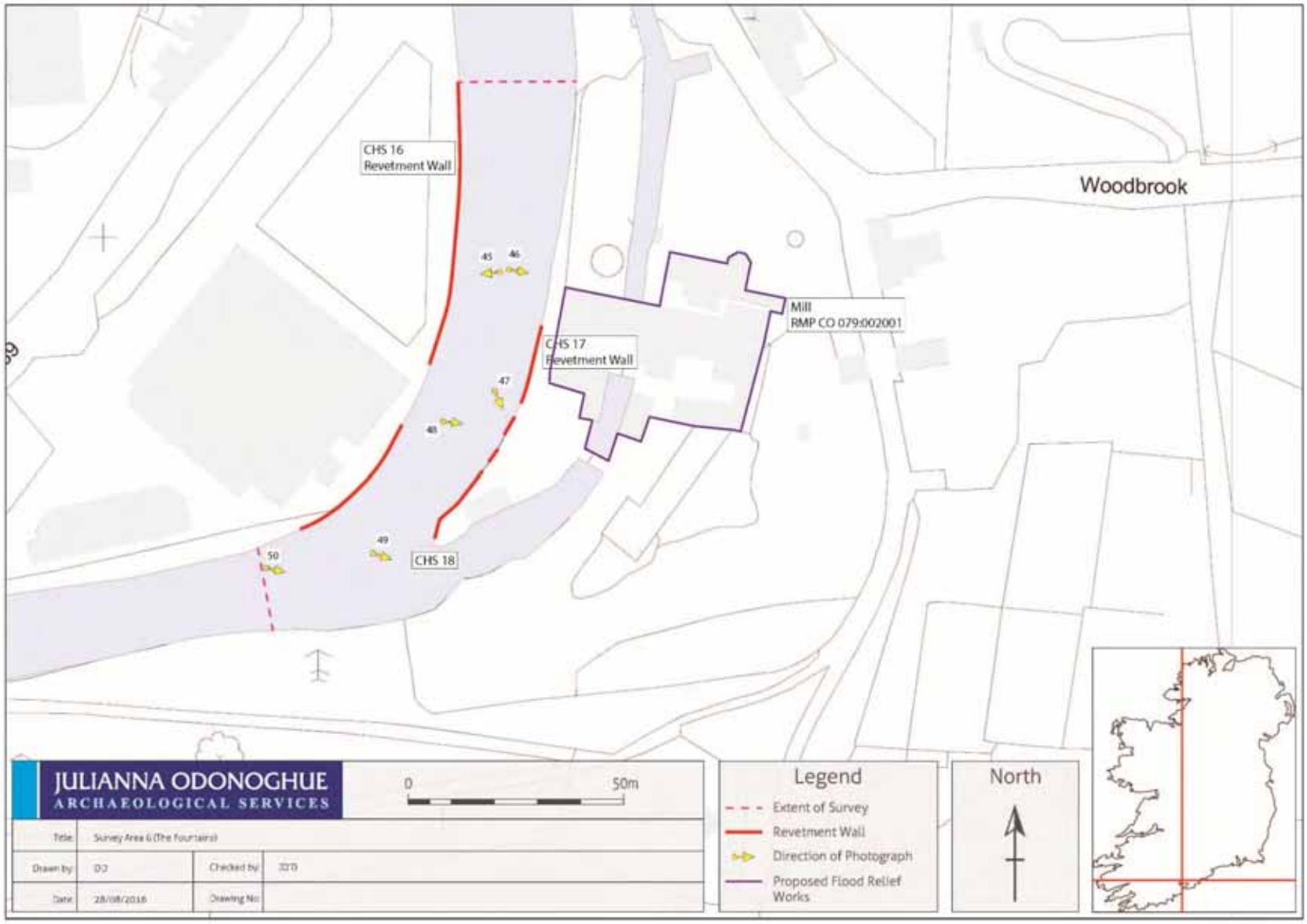


Figure 18: Site location Map, showing survey area 6, and proposed flood relief measures.

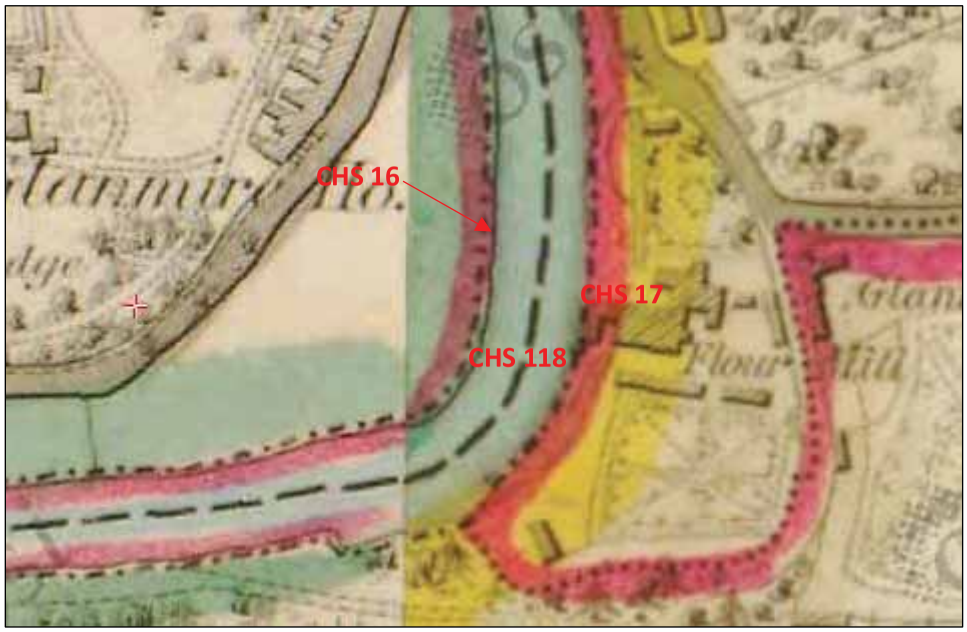


Figure 19: Extract from 1st edition Ordnance Survey map, showing survey area 6, CHS 16-18

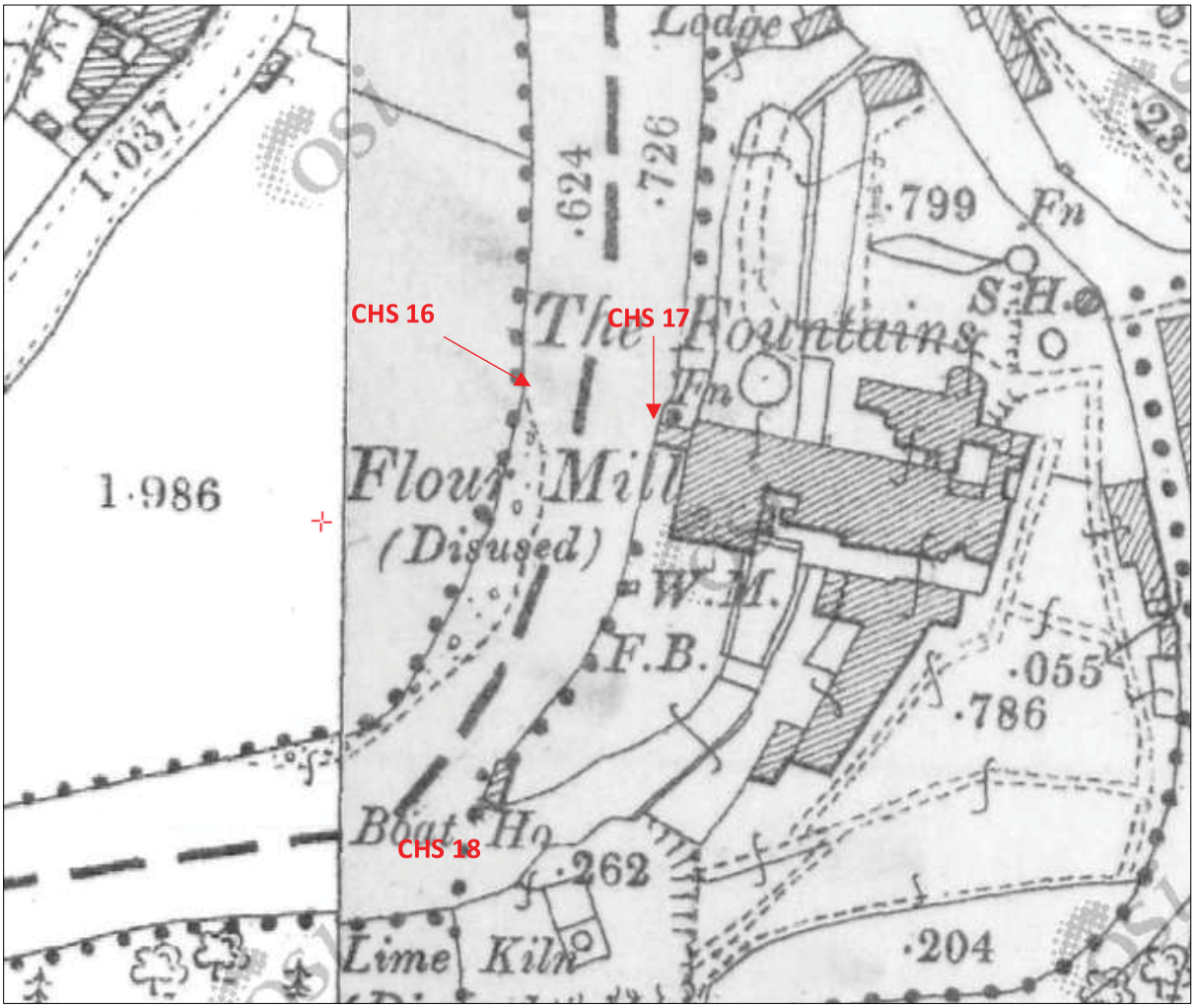


Figure 20: Extract from 2nd edition Ordnance Survey map, showing survey area 6, CHS 16-18

Plate 45: View of CHS 16, revetment wall, taken from east.

Plate 46: View of CHS 17, revetment wall, taken from west.

Plate 47: View of CHS 17, revetment wall, taken from northwest.

Plate 48: View of CHS 17, revetment wall, taken from west.

Plate 49: View of CHS 18, tailrace, taken from west.

Plate 50: View of CHS 18, tailrace taken from southwest.

Survey Area 7

ITM Co-ordinates: E572688, N573965 to E572379, N573667
Townland: Poulacurry South and Lotamore
Figures: 21-23 **Plates:** 51-54

Survey Area 7 comprises a narrow east-west section of the Glashaboy River that opens substantially into a large expansive river bend forming the northernmost limits of the Glashaboy Estuary beside Glanmire Village.

CHS 19 Revetment wall on eastern bank

CHS 19 comprises a revetment wall extending along the east bank (Figure 21, Plate 52). The wall is constructed of roughly coursed stone with the larger stones (0.5m x 0.30m) at the base and smaller stones forming the upper courses. The revetment wall survives to a reduced height of I.3m at the northern end and up to 4.0m in height in the southern end. Mature woodland extends along the eastern bank.

Impacts

There will be no impact by the proposed works on the revetment wall CHS 17.

Mitigation

No mitigation required.

CHS 20 Revetment wall on west bank.

The heavily vegetated revetment wall on the west bank survives intermittently exposing the earthen bank (Figure 21,). Some sections have been replaced with boulders and concrete walling. The original stone revetment wall survives to a height of 1.8m. However, the basal courses are concealed beneath estuarine mud / silts (Plate 51). The west side of riverbed is also strewn by large quantities of debris and branches or trees deposited on the mud, largely by tidal action.

Locally this section of the western riverbank is known as the Sand Quay. However, no features of a formal quay wall were recorded here. Apparently, vessels up to 40-tons burden transported goods to this quay which was also referred to as the Dock and the Arch near the old Post Office (NIAH Reg. No. 20860015) built *c.* 1820 (www.askaboutireland.ie). The 1st Edition OS map shows a linear narrow strip of ground that may reflect the original quay area. However, it is not annotated. Today there is a narrow strip of grassy verge, 3.0m wide between Barry's Terrace and the river *c.* 5.0m above the riverbed. Furthermore, a short section of stone wall, 1.6m in height is also visible at the northern end of Barry's Terrace. These features may possibly reflect the remains of an earlier quay but only speculatively.

It 1845 it was reported to the commissioners of that the Glanmire River was '*in a shockingly neglected state*'. It was also noted that '*the Glanmire river would be very useful, if properly cleared; there was still very important traffic in sand carried on in that country, and vessels of 100 tons used to sail up there*' (2nd report to the commissioners 1845). The Mayor also reported to the Commissioners that landed proprietors, from whom the grand jury was selected, neglected to do anything.

Impacts

- The proposed flood defence wall C01-L09 may impact on the existing sections of the river revetment wall CHS20 (Fig).
- The proposed flood defence wall C01-L09 may impact on the potential subsurface remains of the Sand Quay that existed in the vicinity of Barry's Terrace.

Mitigation

Licensed archaeological monitoring should be undertaken by an experienced underwater archaeologist with regard to the proposed construction works C01_L09.
Licensed archaeological testing should be undertaken at Sand Quay. Further mitigation may be required based on the results of this archaeological testing.

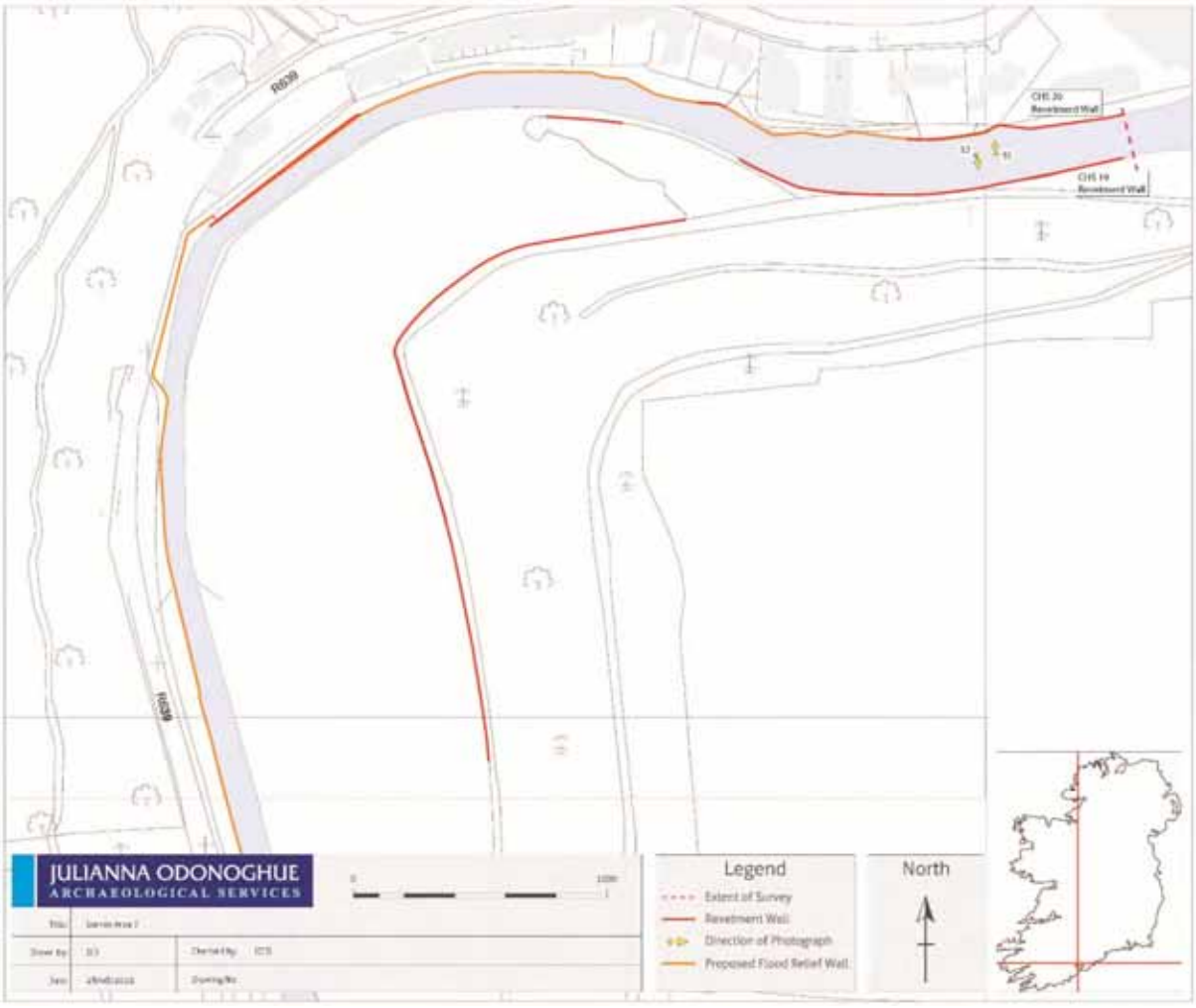


Figure 21 Site location Map, showing survey area 7, CHS 19, 20 &21, and proposed flood relief measures.

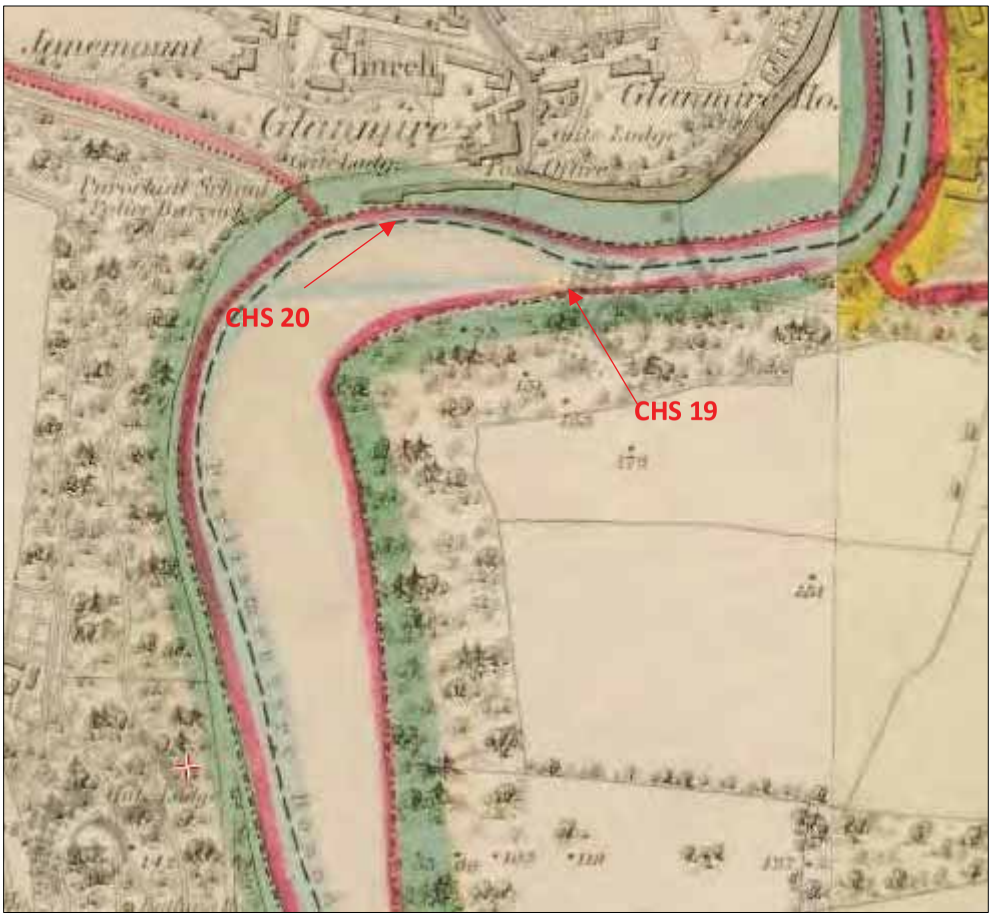


Figure 22: Extract from 1st edition Ordnance Survey map, showing survey area 7, CHS 19-21

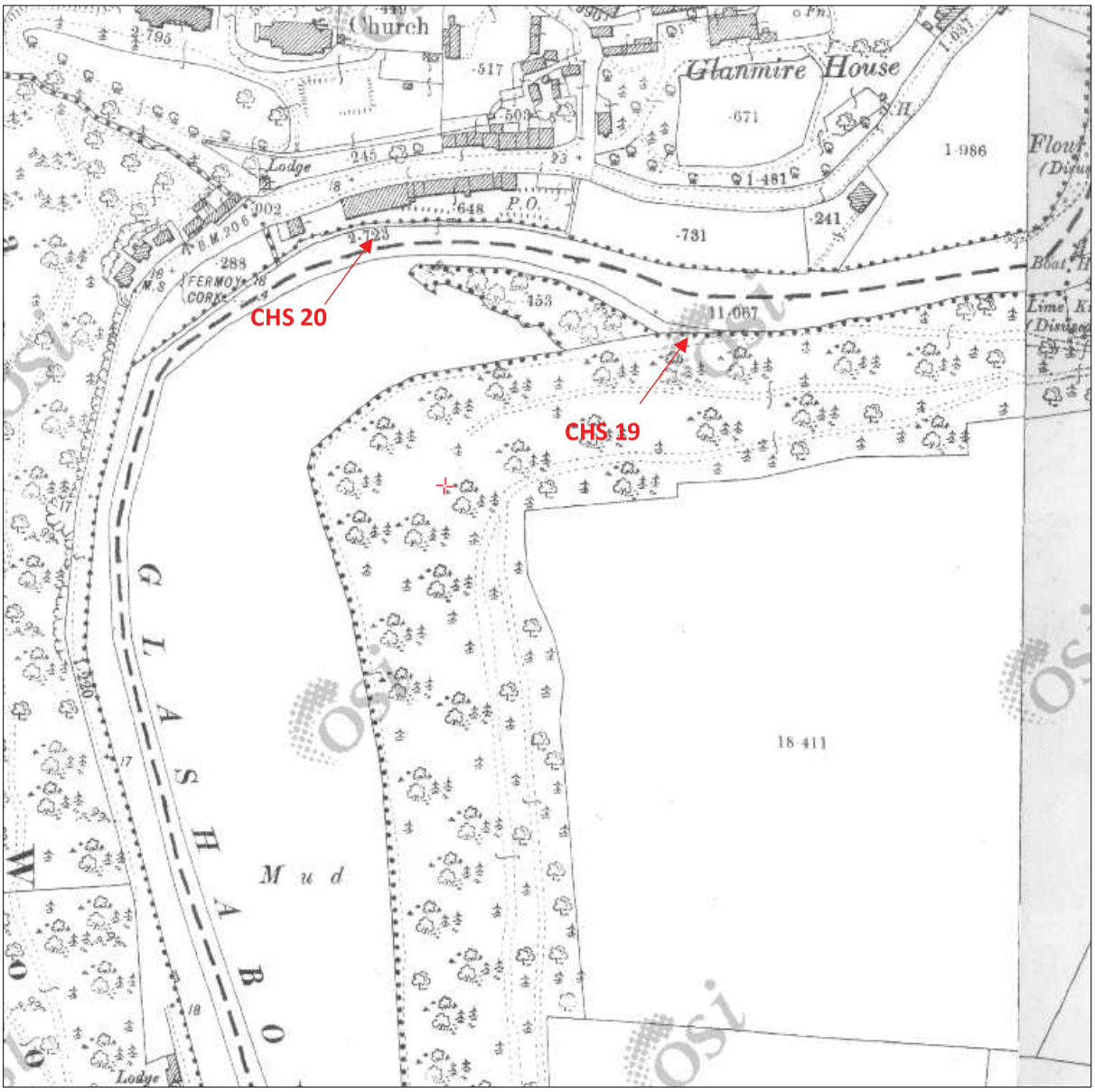


Figure 23: Extract from 2nd edition Ordnance Survey map, showing survey area 7, CHS 19-21

Plate 51: View of CHS 20, revetment wall, taken from south.

Plate 52: View of CHS 19, revetment wall, taken from north.

Plate 53: View of CHS 20 , Sand Quay.

Plate 54: View of Glashaboy Estuary.

Metal Detection Survey

All sections of the survey areas were subjected to metal detection also. Copious pieces of modern debris were recorded. However, nothing of archaeological interest was found.

7. Wider Impacts

The proposed channel maintenance that is to extend for over a distance of 4759m from the downstream end of the proposed defence wall at Barry's Terrace (C01-1056) to the confluence of the Bleach Hill Stream and Glashaboy River (C01-5815), may impact on existing cultural features as identified in this survey as well as potential unknown subsurface features and artefacts along its almost 5km extent.

8. Mitigation

Licensed archaeological monitoring should be undertaken by an experienced underwater archaeologist with regard to the proposed maintenance work.

9. References

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Appendix 13.4

Glashaboy River

Site Inspection -

Plates 1-54

Plate 1: Bleach Hill Stream, looking southwest

Plate 2: Bleach Hill Stream, entering culvert under road, looking southwest

Plate 3: Sallybrook Mill, south elevation

Plate 4: Sallybrook House, east elevation

Plate 5: The Glashaboy River to the west of Grandon's Garage with rock armour visible upstream, looking north

Plate 6: Mill race 3 opening in Grandon's Garage showing remains of sluice gate, before entering culvert, looking southeast

Plate 7: Mill race 3 in Grandon's Garage property, emerging from culvert, looking northwwest

Plate 8: Mill race 3 on the southern side of R639, north of Glansillagh Mill (CO063-094)

Plate 9: Unnamed channel around Sallybrook House entering the Glashaboy River, looking west

Plate 10: Cois na Gleann Stream, looking west

Plate 11: Stone lined well around Cois na Gleann Stream, looking south

Plate 12: Cois na Gleann Stream along the northern end of pasture field before converging with Glashaboy, looking east

Plate 13: Field adjoining R639

Plate 14: Wall along western side of field

Plate 15: Hazelwood Avenue Bridge and adjoining green area where relief channel will be constructed, looking north

Plate 16: Overgrown area to east of bridge where relief channel will be constructed, looking north

Plate 17: View downstream from Hazelwood Avenue bridge

Plate 18: View of earthen bank in Glanmire Shopping Centre, looking north

Plate 19: View of bridge in Glanmire Shopping Centre, looking south

Plate 20: View of gabions against eastern river bank at supervalu building, looking northeast

Plate 21: View of R639 where Springmount Stream is culverted. The stream re-emerges behind the hedgerow parallel to the road within the trees

Plate 22: Open channel of Springmount Stream north of Meadowbrook, looking north

Plate 23: Springmount Stream at convergence with Glashaboy River, looking northwest

Plate 24: View upriver from Riverstown Bridge, looking north

Plate 25: Western bank approaching Riverstown Bridge

Plate 26: Wall parallel to river in Meadowbrook

Plate 27: Path and green area to west of Riverstown Bridge

Plate 28: Wall to east of Riverstown Bridge

Plate 29: Western elevation of Glyntown Bridge at the confluence of the Butlerstown and Glashboy

Plate 30: Southern elevation of unnamed single arch road bridge over Butlerstown River

Plate 31: Northern elevation of Copperalley Bridge in grounds of Riverstown House

Plate 32: Lawn to the east of Riverstown House where embankment will be constructed and Riverstown House, looking northwest

Plate 33: Glenmore Stream eastern section with Brooklodge Grove Road to south (right). Opening to the rectangular culverted channels are visible at bottom right, looking east

Plate 34: Eastern culvert opening, north-facing elevation

Plate 35: Eastern culvert opening, showing dry south-facing elevation

Plate 36: Riverstown Bridge, southern elevation

Plate 37: The Glashaboy in John O'Callaghan Park, looking east

Plate 38: Stone faced bank, looking east

Plate 39: Confluence of the Butlerstown and Glashaboy, looking east

Plate 40: Weir at opening of St Patrick's Mill mill race, looking south

Plate 41: River Glashaboy bedside the R639 road, looking north

Plate 42: River Glashaboy from the local road running northwest to Riverstown, looking north

Plate 43: Glanmire Bridge, northern elevation

Plate 44: Western elevation of St Patricks mill race culvert emerging under the R639 road

Plate 45: St Patricks mill race downstream of R639 culvert, looking southwest

Plate 46: Mill race in St Patrick's Mill, looking south

Plate 47: St Patrick's Mill complex and mill house, looking west

Plate 48: The Fountains mill race, looking south

Plate 49: Low bank of stone restricting flow into The Fountains mill race

Plate 50: The Fountains northern elevation with mill building visible to the right (after Arup)

Plate 51: The Glashaboy to the rear of properties in Glanmire village, looking south

Plate 52: Glashaboy River at low tide behind properties in Glanmire village, looking northeast

Plate 53: Wall along R639 with river to right, looking north

Plate 54: Ruinous structure (CHS 23) on the western bank of the Glashaboy, a short distance upriver from Glanmire Bridge

Appendix 13.5

CHS, RMP sites and PS along the proposed Drainage Scheme

Figures 1- 8 (from N-S) showing CHS, RMP sites and PS along the proposed Drainage Scheme (Key to all drawings on Fig.1)

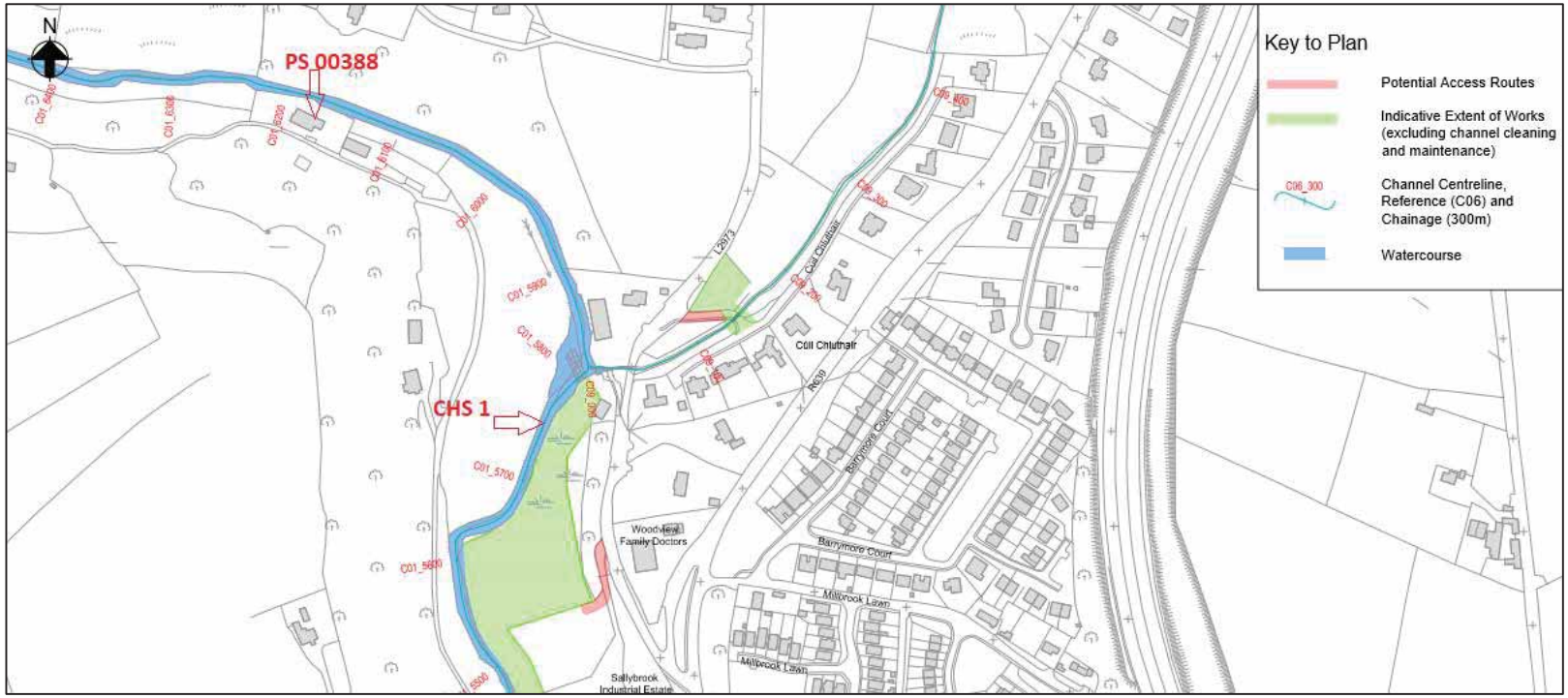

Figure 1: Northern end of the drainage scheme, depicting CHS 1 (OSI: Licence Number 2017/06/CCMA/CorkCountyCouncil)

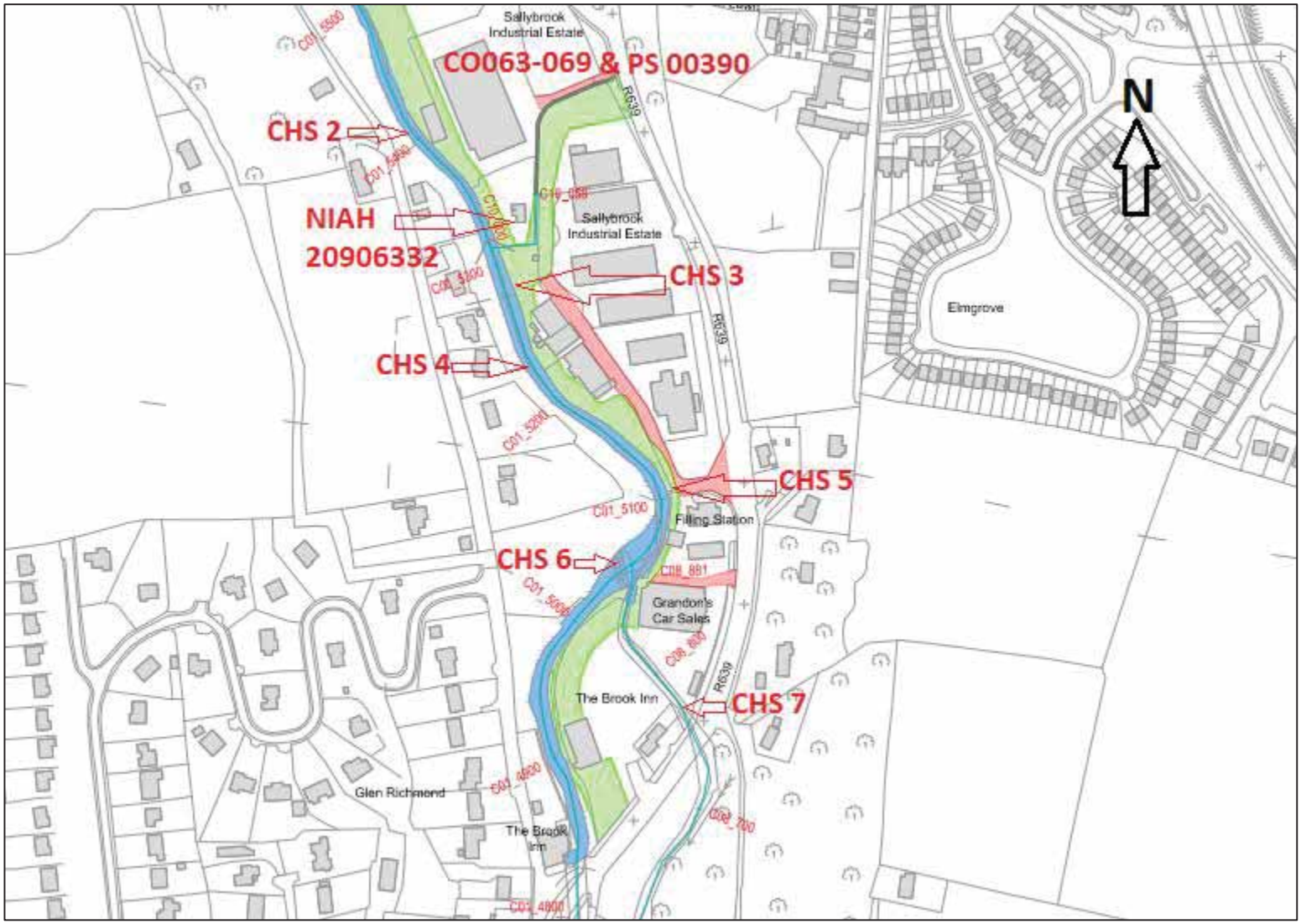

Figure 2: CHS 2-7 (OSI: Licence Number 2017/06/CCMA/CorkCountyCouncil)

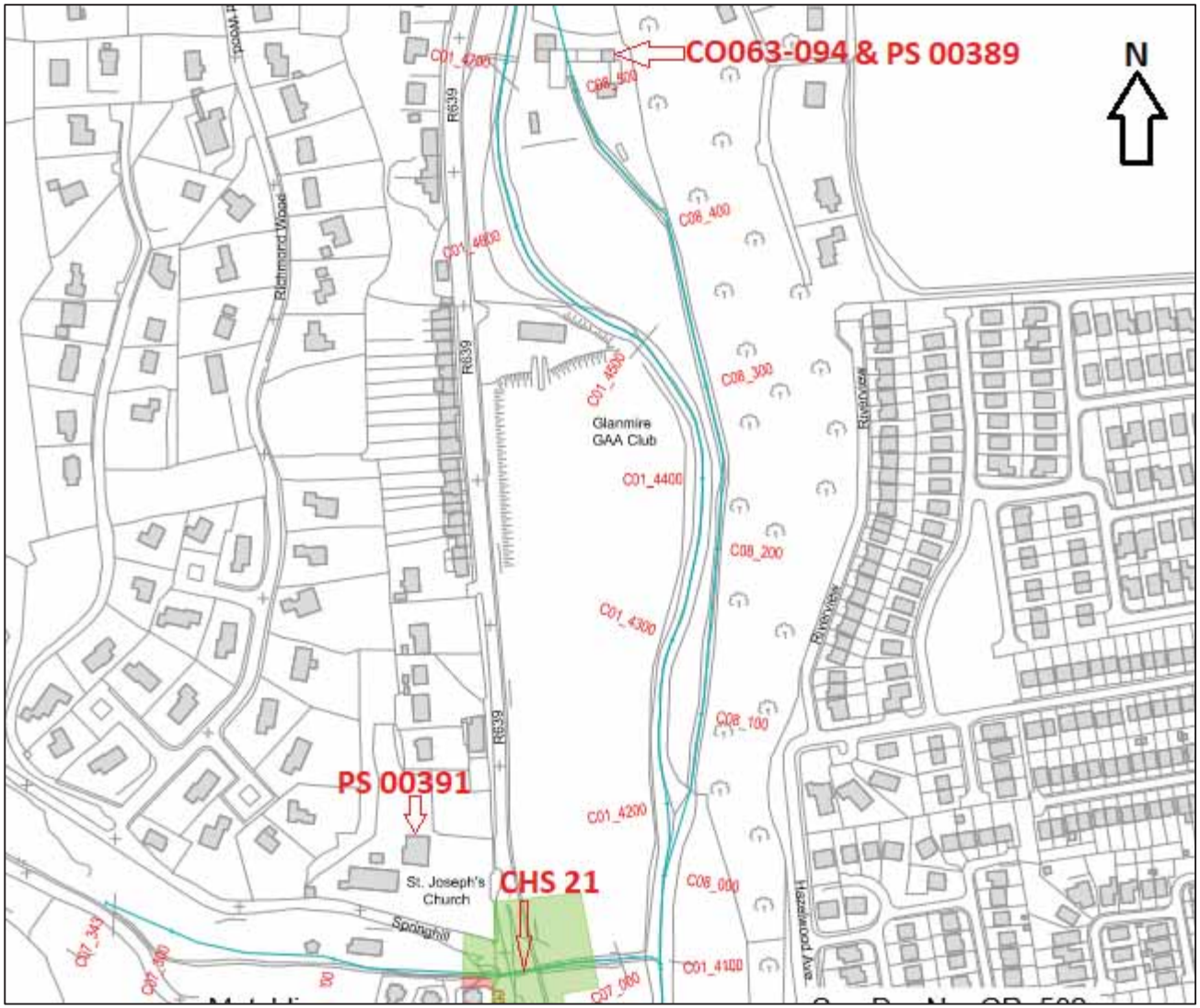

Figure 3: CHS 21 (OSI: Licence Number 2017/06/CCMA/CorkCountyCouncil)

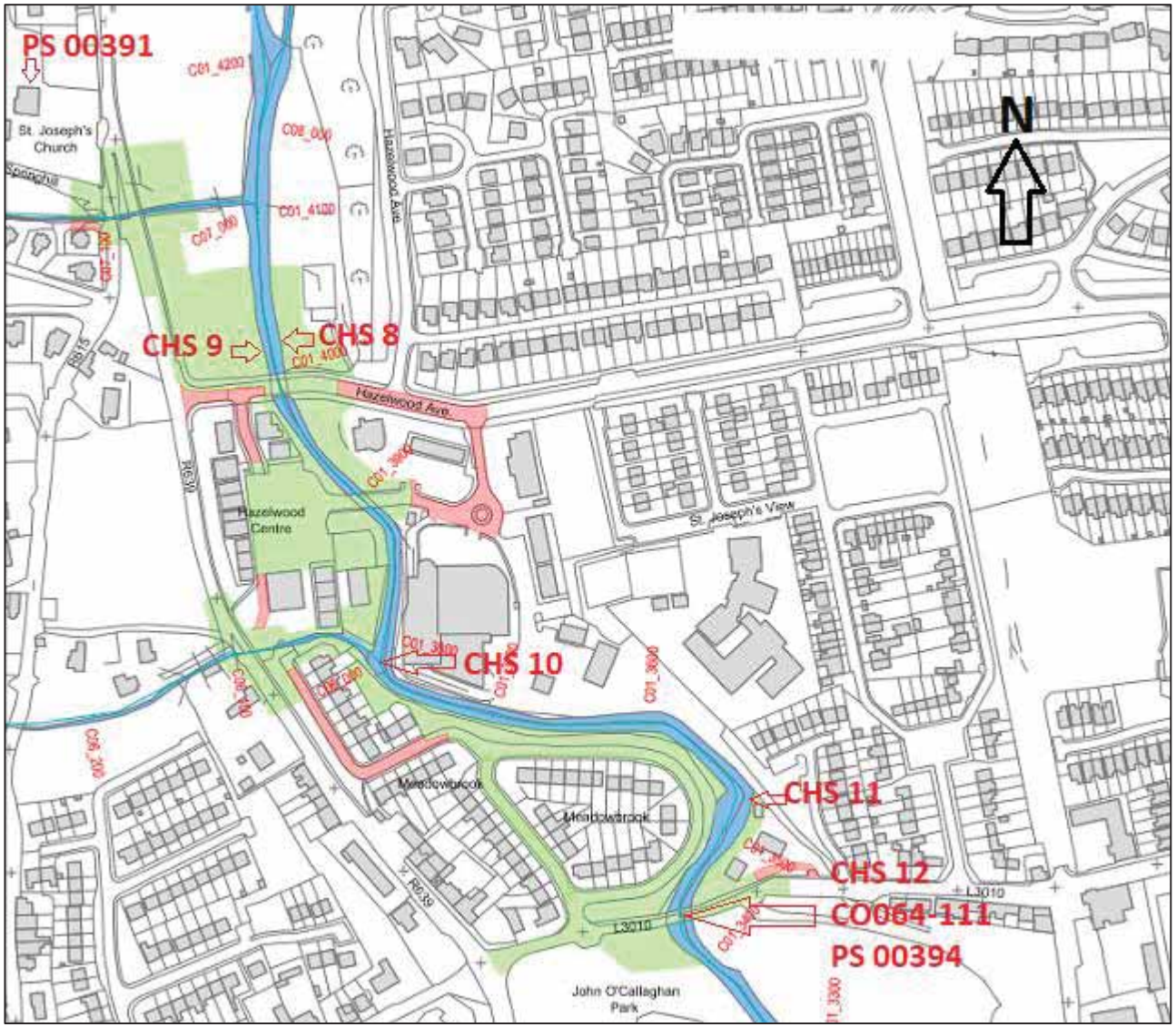

Figure 4: CHS 8-12 (OSI: Licence Number 2017/06/CCMA/CorkCountyCouncil)

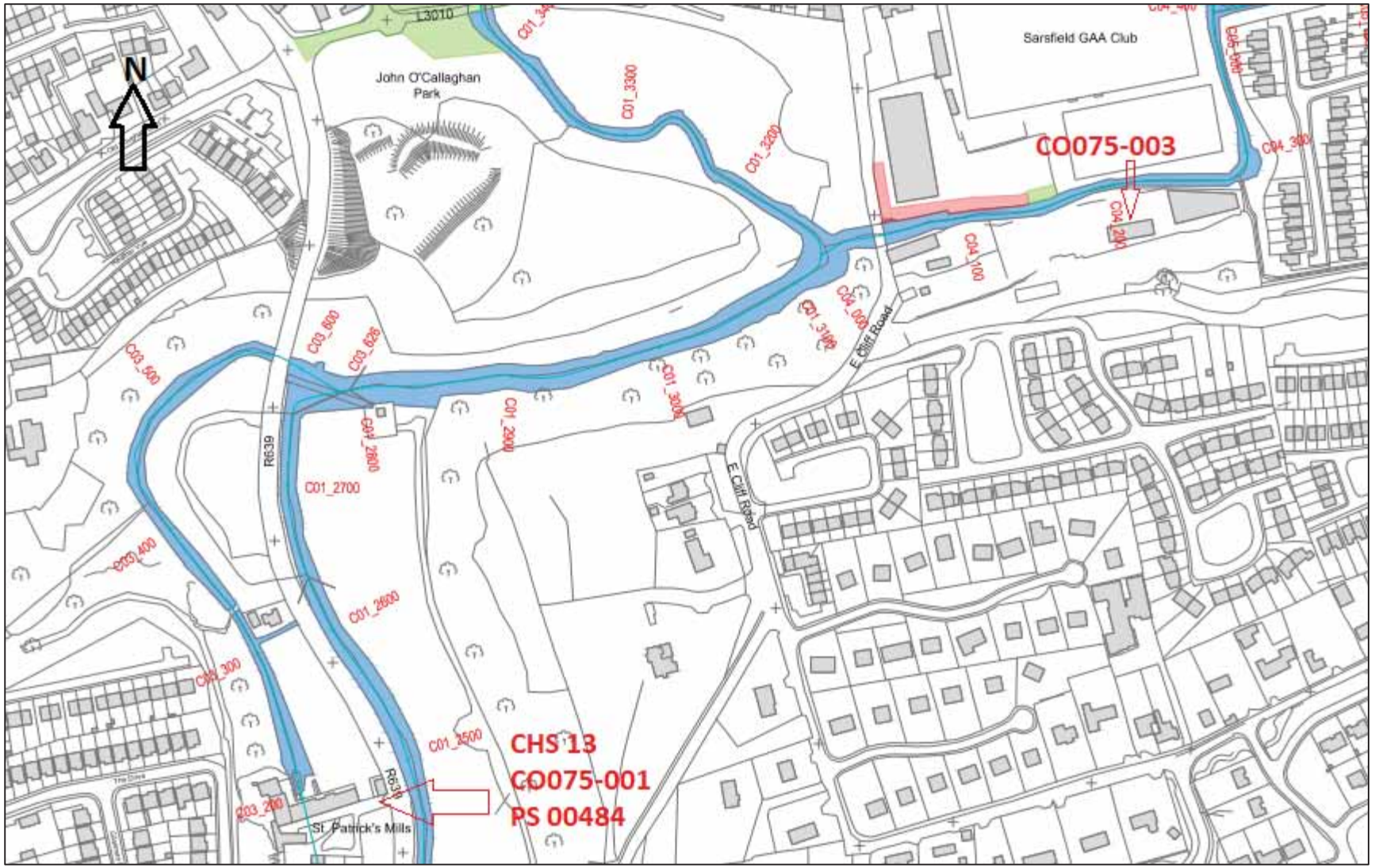

Figure 5: CHS 13 (OSI: Licence Number 2017/06/CCMA/CorkCountyCouncil)

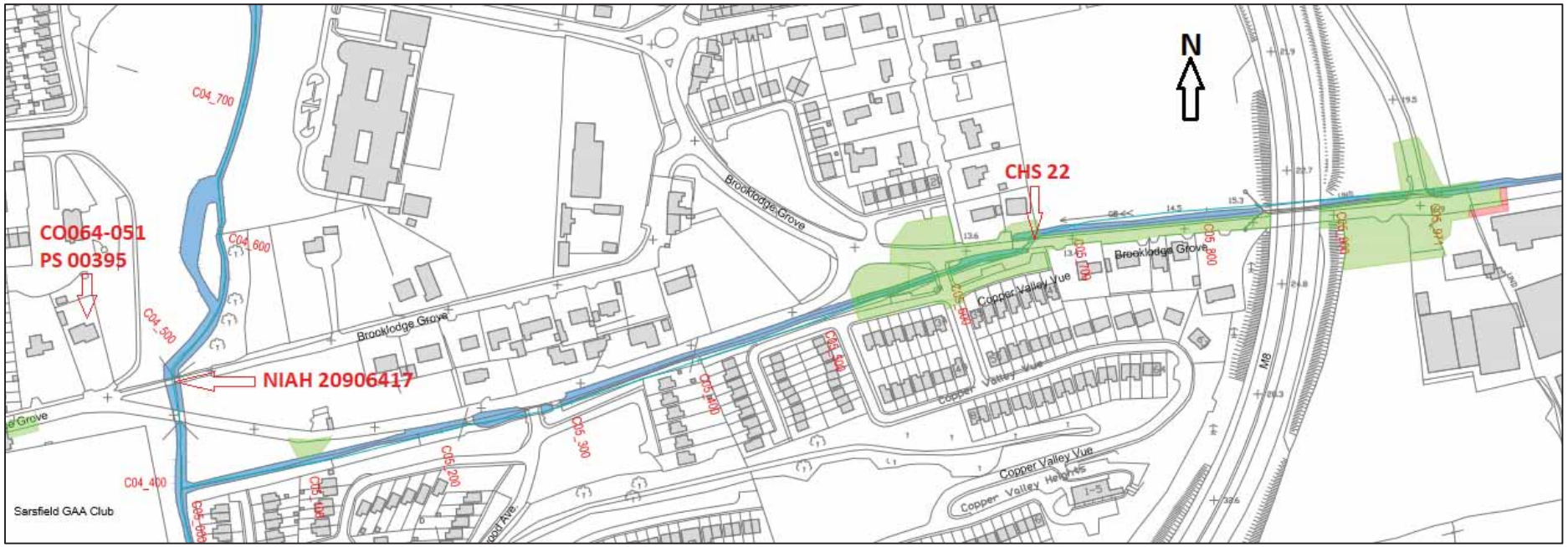

Figure 6: CHS 22 (OSI: Licence Number 2017/06/CCMA/CorkCountyCouncil)

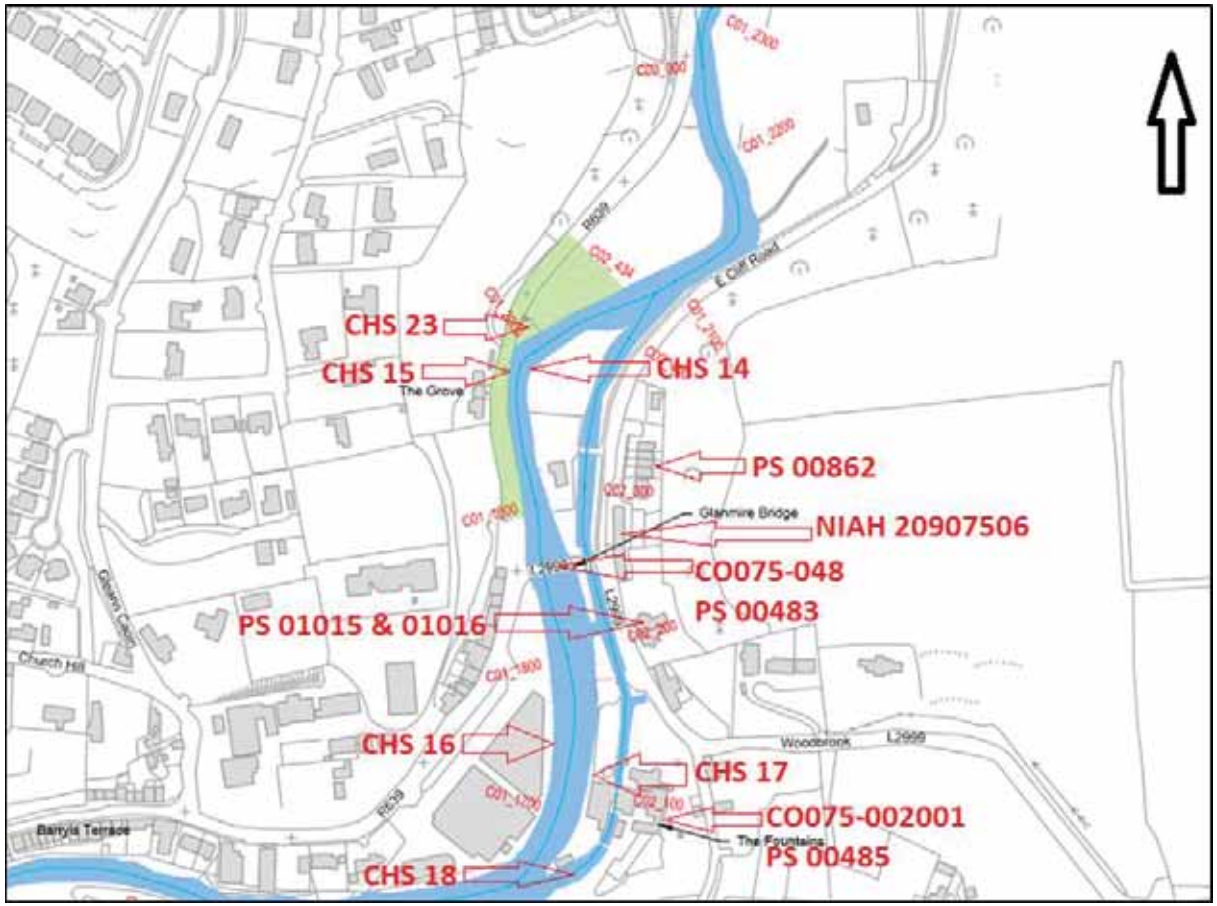

Figure 7: CHS 15-14-18 (OSI: Licence Number 2017/06/CCMA/CorkCountyCouncil)

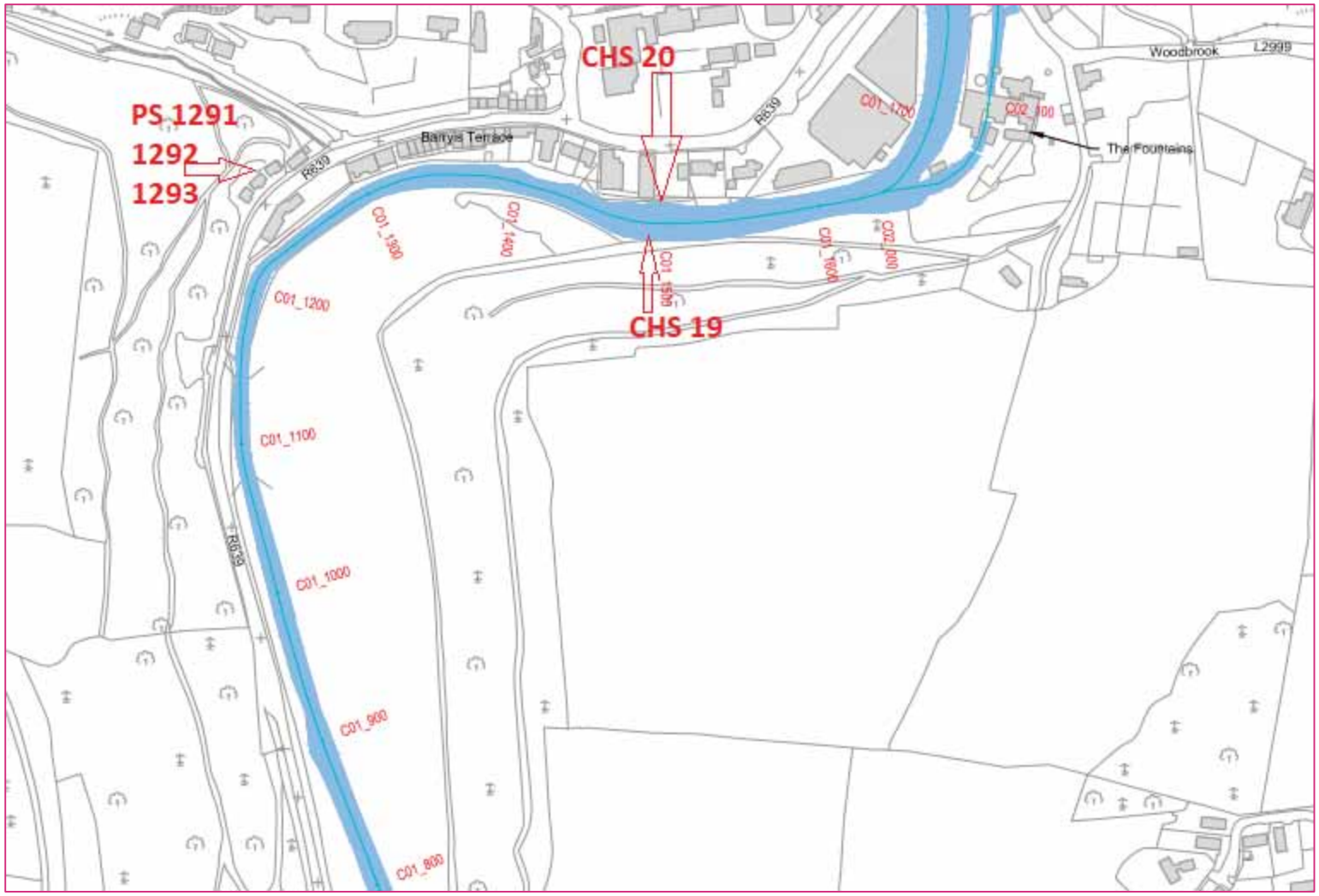

Figure 8: CHS 19 and 20 (OSI: Licence Number 2017/06/CCMA/CorkCountyCouncil)