



## Chapter 12 – Archaeological, Architectural and Cultural Heritage

## TABLE OF CONTENTS

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<b>12. ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE</b>	<b>12-1</b>
<b>12.1 Introduction</b>	<b>12-1</b>
<b>12.2 Methodology</b>	<b>12-1</b>
12.2.1 Guidelines and Legislation	12-1
12.2.2 The Valletta Convention	12-1
12.2.3 Assessment Methodology	12-2
12.2.4 Baseline Survey	12-3
12.2.5 Field Survey	12-5
12.2.6 Geophysical Survey	12-5
12.2.7 Forecasting Methods and Difficulties Encountered	12-5
<b>12.3 Receiving Environment</b>	<b>12-5</b>
12.3.1 Archaeological, architectural and cultural heritage of the study area	12-5
12.3.2 Townland, barony and county boundaries	12-19
12.3.3 Watercourses	12-20
12.3.4 Areas of Archaeological Potential (AAPs)	12-21
12.3.5 Architectural Heritage	12-22
12.3.6 Field Survey	12-56
12.3.7 Geophysical Survey	12-65
<b>12.4 Characteristics of the Proposed Development</b>	<b>12-68</b>
12.4.1 Construction Phase	12-68
12.4.2 Operational Phase	12-69
<b>12.5 Potential Impacts of the Proposed Development</b>	<b>12-69</b>
12.5.1 Construction Phase	12-69
12.5.2 Operational Phase	12-69
<b>12.6 Mitigation Measures</b>	<b>12-69</b>
12.6.1 Construction Phase	12-69
12.6.2 Operational Phase	12-70
<b>12.7 Monitoring or Reinstatement Measures</b>	<b>12-70</b>
12.7.1 Construction Phase	12-70
12.7.2 Operational Phase	12-71
<b>12.8 Residual Effects of the Proposed Development</b>	<b>12-71</b>
12.8.1 Construction Phase	12-71
12.8.2 Operational Phase	12-71

## LIST OF TABLES

---

Table 12-1	Townlands in the study area (listed north to south)	12-6
Table 12-2	Recorded archaeological sites and monuments in the study area	12-8
Table 12-3	Recorded archaeological excavations in the study area	12-9
Table 12-4	Recorded architectural heritage sites the study area	12-9
Table 12-5	Townland, barony and county boundaries	12-19
Table 12-6	Watercourses	12-20
Table 12-7	Areas of Archaeological Potential (AAPs)	12-22
Table 12-8	Watercourse assessment	12-57
Table 12-9	Results of Geophysical Survey	12-66

## LIST OF FIGURES

---

Figure 12-1 Site location and Study Area: Archaeological Features Map (Sheet 1 of 4)	12-10
Figure 12-2 Site location and Study Area: Archaeological Features Map (Sheet 2 of 4)	12-11
Figure 12-3 Site location and Study Area: Archaeological Features Map (Sheet 3 of 4)	12-12
Figure 12-4 Site location and Study Area: Archaeological Features Map (Sheet 4 of 4)	12-13
Figure 12-5 Site Compounds and Study Area: Archaeological Features Map	12-14
Figure 12-6 1830s Ordnance Survey Historic six inch maps (Sheet 1 of 11).	12-25
Figure 12-7 1830s Ordnance Survey Historic six inch maps (Sheet 2 of 11).	12-26
Figure 12-8 1830s Ordnance Survey Historic six inch maps (Sheet 3 of 11).	12-27
Figure 12-9 1830s Ordnance Survey Historic six inch maps (Sheet 4 of 11).	12-28
Figure 12-10 1830s Ordnance Survey Historic six inch maps (Sheet 5 of 11).	12-29
Figure 12-11 1830s Ordnance Survey Historic six inch maps (Sheet 6 of 11).	12-30
Figure 12-12 1830s Ordnance Survey Historic six inch maps (Sheet 7 of 11).	12-31
Figure 12-13 1830s Ordnance Survey Historic six inch maps (Sheet 8 of 11).	12-32
Figure 12-14 1830s Ordnance Survey Historic six inch maps (Sheet 9 of 11).	12-33
Figure 12-15 1830s Ordnance Survey Historic six inch maps (Sheet 10 of 11).	12-34
Figure 12-16 1830s Ordnance Survey Historic six inch maps (Sheet 11 of 11).	12-35
Figure 12-17 1830s Ordnance Survey Historic six inch maps (off route compounds)	12-36
Figure 12-18 1910s Ordnance Survey Historic 25 inch maps (Sheet 1 of 11).	12-37
Figure 12-19 1910s Ordnance Survey Historic 25 inch maps (Sheet 2 of 11).	12-38
Figure 12-20 1910s Ordnance Survey Historic 25 inch maps (Sheet 3 of 11).	12-39
Figure 12-21 1910s Ordnance Survey Historic 25 inch maps (Sheet 4 of 11).	12-40
Figure 12-22 1910s Ordnance Survey Historic 25 inch maps (Sheet 5 of 11).	12-41
Figure 12-23 1910s Ordnance Survey Historic 25 inch maps (Sheet 6 of 11).	12-42
Figure 12-24 1910s Ordnance Survey Historic 25 inch maps (Sheet 7 of 11).	12-43
Figure 12-25 1910s Ordnance Survey Historic 25 inch maps (Sheet 8 of 11).	12-44
Figure 12-26 1910s Ordnance Survey Historic 25 inch maps (Sheet 9 of 11).	12-45

Figure 12-27 1910s Ordnance Survey Historic 25 inch maps (Sheet 10 of 11).	12-46
Figure 12-28 1910s Ordnance Survey Historic 25 inch maps (Sheet 11 of 11).	12-47
Figure 12-29 1910s Ordnance Survey Historic 25 inch maps (off route compounds)	12-48
Figure 12-30 Archaeological Environment (Sheet 1 of 6).	12-49
Figure 12-31 Archaeological Environment (Sheet 2 of 6).	12-50
Figure 12-32 Archaeological Environment (Sheet 3 of 6).	12-51
Figure 12-33 Archaeological Environment (Sheet 4 of 6).	12-52
Figure 12-34 Archaeological Environment (Sheet 5 of 6).	12-53
Figure 12-35 Archaeological Environment (Sheet 6 of 6).	12-54
Figure 12-36 Extract from Google maps Aerial Photography showing the off route compounds study areas.	12-55

## **12. ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE**

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### **12.1 Introduction**

This section assesses the predicted impacts of the Proposed Development on archaeological, architectural and cultural heritage. The Proposed Development traverses counties Meath and Offaly (see Figure 12-1 – Figure 12-4), and includes two off-route temporary construction compounds (see Figure 12-5). The Proposed Development is located in the following townlands (see Table 12-1): Aghnagillagh, Ardnamullan, Ballyboggan, Ballynakill, Castlejordan, Clongall, Harristown, Kilwarden, Park and Ticroghan (Co. Meath); and Ballykilleen, Clonmore, Drumcooly, Esker More, Lenamarran, Monasteroris, Mountwilson, Rathgreedan, Rathmore, Roosk, Shean and Thornwell (Co. Offaly).

This chapter is supported by figures contained in Volume 4 of this EIAR. While selected figures may be reproduced within the chapter for ease of reference, the full size and quality of those figures are provided in Volume 4. Annotated mark ups, diagrams and photographic records are excluded, as these are provided for illustrative or contextual purposes only and are not replicated at full presentation quality.

The relevant Volume 4 figures to this chapter include:

- ▶ Figure 12-1 to Fig 12.4 - Archaeological Features Map
- ▶ Figure 12-5 - Compound Archaeological Features
- ▶ Figure 12-6 to Fig 12.17 - 1830s Ordnance Survey
- ▶ Figure 12-18 to Fig 12.29 - 1910s Ordnance Survey
- ▶ Figure 12-30 to 12-35 Archaeological Environment
- ▶ Figure 12-36 Compound Archaeological Environment

### **12.2 Methodology**

Archaeological, architectural and cultural heritage have been assessed in line with best practice at a National and EU level, in line with the following:

#### **12.2.1 Guidelines and Legislation**

The following legislation, standards and guidelines were consulted as part of the assessment:

- ▶ The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023;
- ▶ The Planning and Development Act, 2000 (as amended);
- ▶ Heritage Act, 1995 (as amended);
- ▶ Draft Advice Notes on Current Practice (in the preparation of Environmental Impact Statements), 2015, EPA;
- ▶ Guidelines on the Information to be contained in Environmental Impact Assessment Report 2022, EPA;
- ▶ Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, (formerly) Department of Arts, Heritage, Gaeltacht, and Islands;
- ▶ Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 2000.
- ▶ Archaeology in the Planning Process; Office of the Planning Register Planning Leaflet 13 (Dept of Housing, Local Government and Heritage publication 2022)
- ▶ Code of Practice between Bord Gáis Ireland and the Department of the Environment, Heritage and Local Government.

#### **12.2.2 The Valletta Convention**

The Valletta Convention was adopted on 16 January 1992 in Valletta (Malta) and came into force on 25 May 1995 (Council of Europe Treaty Series no. 143). It is open for signature by member states of the

Council of Europe and other states party to the European Cultural Convention and for accession by non-member states and the European Community.

The Valletta Convention (The European Convention for the Protection of the Archaeological Heritage (revised)) replaced and updated the original London Convention of 1969. It reflected the change in the nature of threats to the archaeological heritage, which now came less from unauthorised excavations, as in the 1960s, and more from the major construction projects carried out all over Europe from 1980 onwards. The revised Convention drew on twenty-two years of experience in implementing the original Convention. It established a body of new basic legal standards for Europe, to be met by national policies for the protection of archaeological assets as sources of scientific and documentary evidence, in line with the principles of integrated conservation.

### **12.2.3 Assessment Methodology**

This chapter presents the Environmental Impact Assessment (EIA) of the Proposed Development in relation to Archaeological, Architectural and Cultural Heritage, undertaken in accordance with the Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022). The methodology applied is consistent with the overarching EIA framework described in Chapter 1 of this EIAR.

The assessment addresses the construction and operational phases of the Proposed Development and, where relevant, considers the potential for direct, indirect and residual effects on the receiving environment.

The impact assessment methodology applied within this chapter comprises the following stages:

#### ***12.2.3.1 Characterisation of receiving environment***

The receiving environment is described in Section 12.3 of this chapter based on desk based review of available sources, site visits, geophysical surveys, and published guidance.

A study area of approximately 500m from the Proposed Development centreline was assessed, with reference to important relevant findings farther afield. Whilst there is no professional standard for defining the extent of a study area when assessing the possible effects on archaeological, architectural, cultural or protected heritage remains, the study area was applied based on professional experience.

The study area was chosen in order to identify any archaeological architectural or cultural heritage constraints within the Planning Corridor, and furthermore to assess the potential for constraints to be uncovered as a result of the Proposed Development. To achieve this Proposed Development was assessed within its wider archaeological, architectural and cultural heritage landscape.

#### ***12.2.3.2 Identification of Potential Impacts and Significance***

The potential impacts arising from interactions between the Proposed Development are identified in Section 12.5 having regard to:

- ▶ the location, nature, scale and duration of the proposed works;
- ▶ the characteristics and sensitivity of identified receptors; and
- ▶ relevant guidance, standards and industry best practice (set out in Section 12.2.1).

The significance of each identified impact is evaluated using professional judgement, informed by the EPA Guidance (2022) descriptors defined in Table 1 5 of Chapter 1 of this EIAR.

### ***12.2.3.3 Definition of Mitigation and Monitoring***

Where potentially significant adverse effects are identified, mitigation measures are provided in Section 12.6 of this chapter to avoid or reduce those effects.

Monitoring or reinstatement measures are identified where relevant in Section 12.7 of this chapter

### ***12.2.3.4 Residual Effects Conclusion***

Residual effects (the effects after the implementation of the mitigation measures) on Archaeological, Architectural and Cultural Heritage are defined in Section 12.8 of this chapter.

The significance of each identified impact is evaluated using professional judgement, informed by the EPA Guidance (2022) descriptors defined in Table 1 5 of Chapter 1 of this EIAR.

## **12.2.4 Baseline Survey**

### ***12.2.4.1 Record of Monuments and Places***

The Record of Monuments and Places (RMP), comprising the results of the Archaeological Survey of Ireland, is a statutory list of all recorded archaeological monuments known to the National Monuments Service<sup>1</sup>. The relevant files for these sites contain details of documentary sources and aerial photographs, early maps, OS memoirs, the field notes of the Archaeological Survey of Ireland and other relevant publications. Sites recorded on the Record of Monuments and Places all receive statutory protection under the National Monuments Act 1994. The information contained within the RMP is derived from the earlier non-statutory Sites and Monuments Record (SMR); some entries, however, were not transferred to the statutory record as they refer to features that on inspection by the Archaeological Survey were found not to merit inclusion in that record or could not be located with sufficient accuracy to be included. Such sites however remain part of the SMR. The record is a dynamic one and is updated so as to take account of on-going research. The Record of Monuments and Places was consulted in the Archives of the Department of Arts, Heritage and the Gaeltacht. The recorded archaeological monuments in the study area are shown Figure 12-1 – Figure 12-5, detailed in Appendix 12.1 and listed in Table 12-2.

### ***12.2.4.2 Recorded Archaeological Objects***

The National Museum of Ireland's topographical files are a national archive of all known archaeological finds from Ireland. They relate primarily to artefacts but also include references to monuments and contain a unique archive of records of previous excavations. The topographical files were consulted to determine if any archaeological artefacts had been recorded from the area. Other published catalogues of prehistoric material were also studied: Iron Age antiquities<sup>2</sup>; bronze swords, Bronze Age hoards and goldwork<sup>3</sup>; bronze axes, halberds and daggers<sup>4</sup>. A list of finds is presented in Appendix 12.2.

### ***12.2.4.3 Recorded Archaeological Excavations***

The excavation bulletin website<sup>5</sup> was consulted to identify previous excavations that have been carried out within the study area. This database contains summary accounts of the vast majority of excavations carried out in Ireland from 1970 onwards. The study area has been subject to twelve development led

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<sup>1</sup> <https://archaeology.ie>

<sup>2</sup> Raftery, B., 1983. A catalogue of Irish iron age antiquities. Marburg.

<sup>3</sup> Eogan, G. 1965. A catalogue of Irish Bronze swords. Dublin: Stationery Office.; Eogan, G. 1983. Hoards of the Irish Later Bronze Age. Dublin: University College Dublin.; Eogan, G. 1994. The Accomplished Art, Gold and Gold working in Britain and Ireland during the Bronze Age. Oxford: Oxbrow Books.

<sup>4</sup> Harbison, P. 1968. Catalogue of Irish Early Bronze Age associated finds containing copper or bronze. Proceedings of the Royal Irish Academy 67C, 35-91.; Harbison, P. 1969a. The daggers and the halberds of the Early Bronze Age in Ireland. Prähistorische Bronzefunde, Abteilung VI, Band 1. C.H. Munich: Beck.; Harbison, P. 1969b. The axes of the Early Bronze Age in Ireland. Prähistorische Bronzefunde, Abteilung IX, Band 1. Munich.

<sup>5</sup> <https://excavations.ie>

licensed excavations, of which seven uncovered archaeological remains. Summaries of excavations within the study area are detailed in Appendix 12.3 (see also Table 12-3 and Figure 12-30 - Figure 12-36).

#### **12.2.4.4 Cartographic Sources**

**Down Survey** - Taken in the years 1656-1658, the Down Survey of Ireland is the first ever detailed land survey on a national scale anywhere in the world. The survey, led by William Petty, sought to measure all the land to be forfeited by the Catholic Irish in order to facilitate its redistribution to Merchant Adventurers and English soldiers<sup>6</sup>. The Down Survey map of Ireland is shown as Insert 12-1, portions of Offaly (King's) and Meath counties are shown in Insert 12-2 and portions of the parish of Monasteroris is shown in Insert 12-3.

**Ordnance Survey Early Editions** - Reference to cartographic sources provides information on the development of the area. Manuscript maps consulted included the Ordnance Survey first edition 6" (1829-41) and second edition 25" (1897-1913)<sup>7</sup> maps were also assessed (see Figure 12-6 – Figure 12-36).

#### **12.2.4.5 National Inventory of Architectural Heritage**

The National Inventory of Architectural Heritage (NIAH) is a systematic programme of identification, classification and evaluation of the architectural heritage of the State<sup>8</sup>. The Minister for Housing, Local Government and Heritage is currently using the Inventory as the basis for making recommendations for the inclusion of structures in the Record of Protected Structures (RPS). Sites within the study area are listed in Table 12-4 and shown in Figure 12-1 – Figure 12-4 (see Appendix 12.4 for site details).

#### **12.2.4.6 Aerial Photography**

Available online sources for aerial photography were consulted, including the Ordnance Survey and National Monuments Service collections, and images provided by the design team (see Figure 12-30 – Figure 12-35).

#### **12.2.4.7 Historical Research**

The baseline historical research utilised sources including Lewis' Topographical Dictionary of Ireland (1837) and local journals.

#### **12.2.4.8 County Development Plan**

The Meath Development Plan 2021 – 2027<sup>9</sup> and the Offaly Development Plan 2021 - 2027<sup>10</sup> were consulted. The plans include policy objectives for the protection of each county's archaeological and architectural heritage. Architectural heritage is protected through their inclusion in the Record of Protected Structures (RPS) or in Architectural Conservation Areas (ACA). The RPS is a list of every structure which is of special architectural, archaeological, artistic, cultural, scientific, social or technical interest within the council's functional area. No structures included in the RPS are located within the footprint of the Proposed Development (see Table 12-4 and Appendix 12.4).

#### **12.2.4.9 The National Folklore Collection**

The National Folklore Collection, based at University College Dublin, is dedicated to collecting, preserving, and sharing Ireland's oral traditions. It holds one of Western Europe's largest folklore archives, encompassing the Main Manuscript Collection, the Schools' Collection, and the Photographic Collection. The Main Manuscript Collection, compiled by the Irish Folklore Commission and its successors, documents

<sup>6</sup> <https://downsurvey.tchpc.tcd.ie/>

<sup>7</sup> <https://heritagemaps.ie>

<sup>8</sup> <https://archaeology.ie>; <https://buildingsofireland.ie>

<sup>9</sup> <https://www.meath.ie/council/council-services/planning-and-building/development-plans/meath-county-development-plan>

<sup>10</sup> <https://www.offaly.ie/c/county-development-plan/>

Ireland's oral heritage and material culture from all 32 counties, recorded in both Irish and English. The Schools' Collection, gathered between 1937 and 1939, comprises over 740,000 pages of folklore and local traditions collected by more than 50,000 pupils from 5,000 schools across the Irish Free State. Under the guidance of Séamus Ó Duilearga and Séan Ó Súilleabháin, children gathered stories, customs, crafts, and sayings from their communities. The Photographic Collection, containing around 80,000 photographs, visually records Irish folklore, rural life, and traditions, mainly captured by Commission staff between 1935 and 1970<sup>11</sup>. Although in excess of twenty stories are recorded from townlands along the Proposed Development corridor, none specifically refer to features that will be potentially impacted by it.

### **12.2.5 Field Survey**

Field survey was undertaken along the Proposed Development corridor of the areas identified during the desktop assessment as being of potential archaeological significance.

### **12.2.6 Geophysical Survey**

Five Areas of Archaeological Potential (AAPs) were subjected to geophysical survey by ACSU Ltd under license to the National Monuments Service (Detection licence no. 25R0348). The survey identified a number of potential sub-surface features. The report on findings is attached as Appendix 12.5 and is summarised below.

### **12.2.7 Forecasting Methods and Difficulties Encountered**

No difficulties were encountered during the study.

## **12.3 Receiving Environment**

The Proposed Development area is located in the southwestern portion of county Meath and the northeast portion of county Offaly. It traverses 21 townlands as follows: Aghnagillagh, Ardnamullan, Ballyboggan, Ballynakill, Castlejordan, Clongall, Harristown, Kilwarden, Park and Ticroghan (Co. Meath); and Ballykilleen, Clonmore, Drumcooly, Esker More, Lenamarran, Monasteroris, Mountwilson, Rathgreedan, Rathmore, Roosk, Shean and Thornwell (Co. Offaly).. The route traverses three Barony's: Upper Moyfenrath in Co. Meath and Coolestown and Warrenstown in Co. Offaly. The route traverses six parishes: Ballyboggan and Clonard, Co. Meath, Ballymacwilliam, Ballynakill and Manasteroris, Co. Offaly and Castlejordan, which is in both counties (see Table 12-1).

The desktop assessment identified 32 recorded archaeological sites in the study area (see Table 12-2 ), none of which are within the Proposed Development corridor. Twelve archaeological excavations have been undertaken in the study area (see Table 12-3 ), none of which are within the Proposed Development corridor. Seven architectural heritage sites were identified in the study area (see Table 12-4 ), none of which are within the Proposed Development corridor.

### **12.3.1 Archaeological, architectural and cultural heritage of the study area**

#### ***12.3.1.1 Pre-history (c. 8000 BCE – 400 AD)***

The earliest evidence of human habitation in the study area dates to the Neolithic (new stone age; c. 4,000 BCE – 2,500 BCE) in the form of three stone axeheads found in Ballynakill, Co. Meath (NMI P1953:0035) and Ticroghan, Co. Offaly (NMI R1852 & NMI R1855). Over 21,000 stone axeheads are known from Ireland<sup>12</sup>. They represent the 'single most numerous artefact type surviving from prehistory

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<sup>11</sup> <https://www.duchas.ie/en>

<sup>12</sup> Cooney, G. and Mandal, S 1998. Irish Stone Axe Project Monograph I. Dublin: Wordwell.; Sheridan, J.A., Cooney, G. and Grogan, E. 1992 Stone axe studies in Ireland. Proceedings of the Prehistoric Society 58, 389-416.

in Ireland<sup>13</sup>, with their production and usage noted as commencing in the early Mesolithic and continuing well into the Bronze Age (c. 2,500 BCE – 500 BCE)<sup>14</sup>. Since 1991 stone axeheads have been the focus of detailed research by the Irish Stone Axehead Project (ISAP). Stone axeheads were both a symbol of prestige and an ordinary working tool for people for thousands of years. They served a wide range of functions in early prehistoric Irish society, including use in woodworking, in burial and ceremonial contexts and as symbols of power. The Ballynakill axeheads is made from porcellanite, a material only available from two sources in Ireland, both of which lie to the north of the country, at Tievebulliagh, Co. Antrim, and on Rathlin Island, off the north coast of the county. Geochemical analysis of this axehead was undertaken by Mandal<sup>15</sup>, determining it to be from the Tievebulliagh source. A hammerstone found in Ballykilleen, Co. Offaly (NMI 1933:2759) and a saddle quern found in the bog at Drumcooly, Co. Offaly (NMI 2017:81) may also date to the Neolithic, but their use extended into the Bronze Age.

The earliest dated archaeological sites in the study area also date to the Neolithic. A survey by the Irish Archaeological Wetland Unit (IAWU) in 2002 of Cloncreen Bog, a Bord na Móna production bog, revealed a number of sites which were selected for excavation in the summer of 2003. These sites were identified as a primary togher, dated to 3630–3143 cal. BC, a possible tertiary togher orientated north-east/south-west incorporating a notched timber artefact, a tertiary togher orientated north-east/south-west, unworked wood in situ, a tertiary togher orientated north-south and another tertiary togher orientated north-south (see discussion below under AAP5).

**Table 12-1 Townlands in the study area (listed north to south)**

<b>Townland</b>	<b>Irish</b>	<b>Barony</b>	<b>Parish</b>	<b>County</b>	<b>Figure</b>
Aghnagillagh	-	Upper Moyfenrath	Clonard	Meath	Figure 12-1 - Figure 12-2
Ardnamullan		Upper Moyfenrath	Clonard	Meath	Figure 12-2
Ballyboggan	Baile Uí Bhogáin	Upper Moyfenrath	Ballyboggan	Meath	Figure 12-2
Ballycolgan	Bhaile Mhic Colgan	Coolestown	Ballynakill	Offaly	Figure 12-4
Ballykilleen	Baile an Chillín	Coolestown	Ballynakill	Offaly	Figure 12-4
Ballynakill	Bhaile na Coille	Upper Moyfenrath	Ballyboggan	Meath	Figure 12-2
Castlejordan	-	Upper Moyfenrath	Castlejordan	Meath	Figure 12-3
Clongall	-	Upper Moyfenrath	Castlejordan	Meath	Figure 12-3
Clonmore	Cluain Mór	Warrenstown	Castlejordan	Offaly	Figure 12-3
Drumcooly	Droim Cúile	Coolestown	Manasteroris	Offaly	Figure 12-4
Esker More	An Eiscir Mhór	Coolestown	Ballynakill	Offaly	Figure 12-5
Harristown	Bhaile Anraí	Upper Moyfenrath	Ballyboggan	Meath	Figure 12-2 - Figure 12-3
Kilwarden	Coill Bhardain	Upper Moyfenrath	Clonard	Meath	Figure 12-1
Lenamarran	Léana Murcháin	Warrenstown	Ballymacwilliam	Offaly	Figure 12-3
Monasteroris	Mainistir Fheorais	Coolestown	Manasteroris	Offaly	Figure 12-3 - Figure 12-4
Mountwilson	Moin Mhic Liam	Warrenstown	Ballymacwilliam	Offaly	Figure 12-3
Park	-	Upper Moyfenrath	?	Meath	Figure 12-2

<sup>13</sup> Cooney, G., S. Mandal and E. O’Keeffe 2011 The Irish Stone Axe Project: Reviewing progress, future prospects, in V. Davis and M. Edmonds (eds) *Stone Axe Studies III*, 427-441. Oxbow Books, Oxford.; Woodman, P.C., 1978. The Mesolithic in Ireland. Oxford: British Archaeological Reports, British Series 58.; Cooney, G. and Grogan, E. 1994. Irish Prehistory – A Social Perspective. Dublin: Wordwell.

<sup>14</sup> Cooney, G., S. Mandal and E. O’Keeffe 2011 The Irish Stone Axe Project: Reviewing progress, future prospects, in V. Davis and M. Edmonds (eds) *Stone Axe Studies III*, 427-441. Oxbow Books, Oxford.; Cooney, G. 2000 Landscapes of Neolithic Ireland. Routledge, London.

<sup>15</sup> Mandal, S. 1997 Striking the Balance: The Roles of Petrography and Geochemistry in Stone Axe Studies in Ireland, *Archaeometry* 39, 289-308.

<b>Townland</b>	<b>Irish</b>	<b>Barony</b>	<b>Parish</b>	<b>County</b>	<b>Figure</b>
Rathgreedan	Ráth Críodáin	Coolestown	Manasteroris	Offaly	Figure 12-4
Rathmore	An Ráth Mór	Coolestown	Manasteroris	Offaly	Figure 12-4
Roosk	Rúsc	Warrenstown	Ballymacwilliam	Offaly	Figure 12-3
Shean	An Sián	Coolestown	Manasteroris	Offaly	Figure 12-4
Thornwell	Tobar na Sceiche	Warrenstown	Ballymacwilliam	Offaly	Figure 12-3
Ticroghan	Teach Cruachain	Upper Moyfenrath	Clonard	Meath	Figure 12-2

**Table 12-2 Recorded archaeological sites and monuments in the study area**

<b>SMR No.</b>	<b>County</b>	<b>Townland</b>	<b>Classification</b>	<b>Figure</b>
KD002-006----	Kildare	Grange West	Ritual site - holy well	Figure 12-3
ME046-007----	Meath	Ardnamullan	Castle - tower house	Figure 12-2
ME046-008----	Meath	Ticroghan	Moated site	Figure 12-2
ME046-027----	Meath	Ardnamullan	Charcoal-making site	Figure 12-2
ME046-052----	Meath	Knockersally or Colehill	Structure - peatland	Figure 12-3
ME052-001----	Meath	Harristown	Ringfort - rath	Figure 12-3
OF011-007----	Offaly	Mountwilson, Thornwell	Burial mound	Figure 12-3
OF011-008----	Offaly	Monasteroris	Ritual site - holy well	Figure 12-3
OF011-009001-	Offaly	Monasteroris	Religious house - Franciscan friars	Figure 12-3
OF011-009002-	Offaly	Monasteroris	Graveyard	Figure 12-3
OF011-009003-	Offaly	Monasteroris	Headstone	Figure 12-3
OF011-009004-	Offaly	Monasteroris	Headstone	Figure 12-3
OF011-009005-	Offaly	Monasteroris	Headstone	Figure 12-3
OF011-009006-	Offaly	Monasteroris	Settlement deserted - medieval	Figure 12-3
OF011-009007-	Offaly	Monasteroris	Font	Figure 12-3
OF011-010001-	Offaly	Monasteroris	Castle - motte	Figure 12-3
OF011-010002-	Offaly	Monasteroris	Redundant record	Figure 12-3
OF011-010003-	Offaly	Monasteroris	Dovecote	Figure 12-3
OF011-024----	Offaly	Ballycolgan	Enclosure	Figure 12-4
OF011-025----	Offaly	Rathmore	Enclosure	Figure 12-4
OF011-035001-	Offaly	Ballykilleen	Ringfort - rath	Figure 12-4
OF011-035002-	Offaly	Ballykilleen	Designed landscape - tea house	Figure 12-4
OF011-067----	Offaly	Kinnafad	Earthwork	Figure 12-4
OF012-001----	Offaly	Monasteroris	Castle - unclassified	Figure 12-4
OF019-003----	Offaly	Ballykilleen	Enclosure	Figure 12-4
OF019-009----	Offaly	Ballykilleen	Road - unclassified togher	Figure 12-4
OF019-045----	Offaly	Ballykilleen	Structure - peatland	Figure 12-4
OF019-112----	Offaly	Ballykilleen	Structure - peatland	Figure 12-4
OF019-113----	Offaly	Ballykilleen	Road - class 3 togher	Figure 12-4
OF019-114----	Offaly	Ballykilleen	Structure - peatland	Figure 12-4
OF019-115----	Offaly	Ballykilleen	Structure - peatland	Figure 12-4
OF019-125----	Offaly	Ballykilleen	Structure - peatland	Figure 12-4

**Table 12-3 Recorded archaeological excavations in the study area**

<b>Licence No.</b>	<b>County</b>	<b>Townland</b>	<b>Site type</b>	<b>Period/Dating</b>	<b>Figure</b>
02E0018	Meath	Ballynakill	No archaeology found	N/A	Figure 12-32
02E0114	Meath	Ardnamullan	Charcoal-making site	Late Medieval	Figure 12-29
02E0868	Meath	Kilwarden	Metalworking site	Undetermined	Figure 12-29
02E1147	Meath	Ardnamullan	Metalworking site	Medieval	Figure 12-29
05E0173	Offaly	Rogerstown	No archaeology found	N/A	Figure 12-33 - Figure 12-34
07E0383	Offaly	Monasteroris	No archaeology found	N/A	Figure 12-34
07E0383 ext.	Offaly	Monasteroris	Pit	Undetermined	Figure 12-34
14E0255	Offaly	Ballykilleen	Structure – Peatland	—	Figure 12-35
03E0983	Offaly	Ballykilleen	Road - class 2 togher	Undetermined	Figure 12-35
03E0984	Offaly	Ballykilleen	Road - class 1 togher, Road - class 3 togher and Structure - peatland	Prehistoric (12700 BC-AD 400)	Figure 12-35
10E0168	Offaly	Monasteroris	Settlement deserted - medieval	Medieval (AD 400- AD 1600)	Figure 12-33 - Figure 12-34
17E0031	Offaly	Monasteroris	Earthwork	Medieval (AD 400- AD 1600)	Figure 12-34

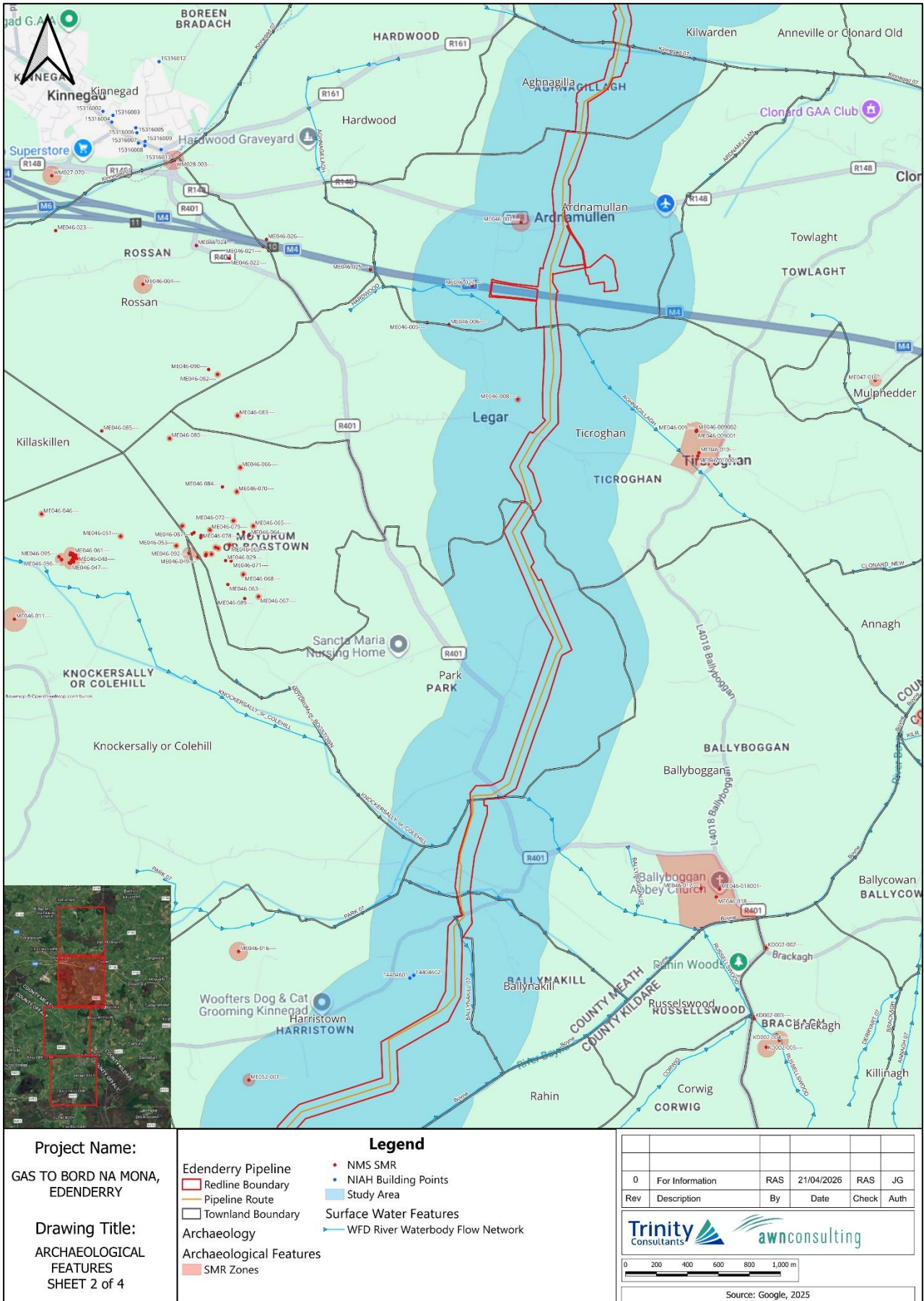
**Table 12-4 Recorded architectural heritage sites the study area**

<b>NIAH No.</b>	<b>RPS No.</b>	<b>County</b>	<b>Townland</b>	<b>Description</b>	<b>Figure</b>
14404601	91460	Meath	Harristown	Date: 1840-1860; Originally a Country House	Figure 12-2
14404602	91461	Meath	Harristown	Date: 1840-1860; Originally a Farmyard Complex	Figure 12-2
14911002	17-53	Offaly	Jonestown	Date: 1910-1920; Originally a Post Box	Figure 12-3
14911006	17-57	Offaly	Monasteroris	Date: 1760-1800; Originally a Country House	Figure 12-3
14911013	17-58	Offaly	Monasteroris	Date: 1760-1800; Originally an Icehouse	Figure 12-4
14911015	16-15	Offaly	Ballinla	Date: 1840-1845; Originally a Farm house	Figure 12-3
14911021	17-59	Offaly	Edenderry, Rath, Rathmore (Co. By.)	Date: 1790-1800; Originally a Bridge	Figure 12-4

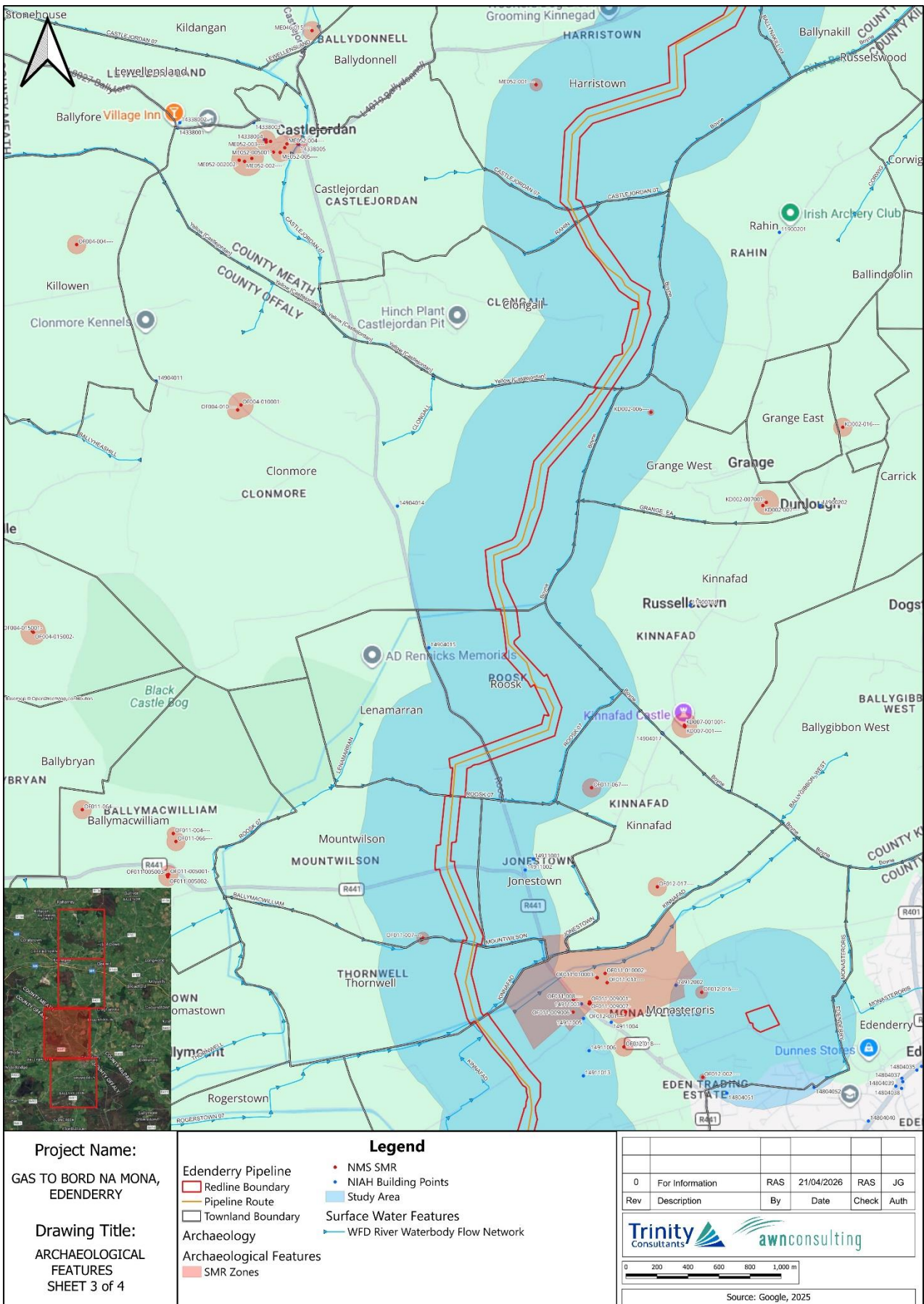
**Figure 12-1 Site location and Study Area: Archaeological Features Map (Sheet 1 of 4)**



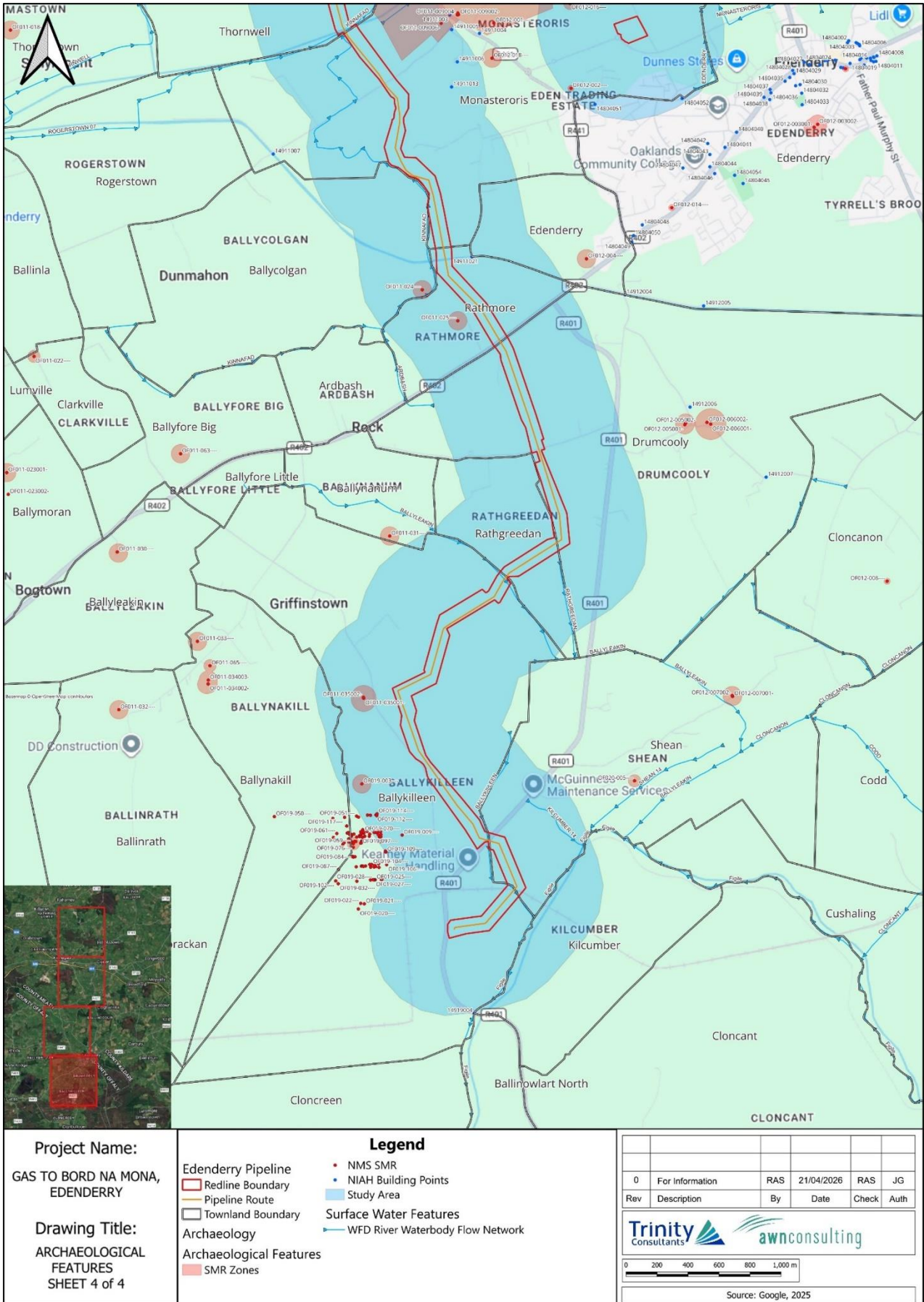
**Figure 12-2 Site location and Study Area: Archaeological Features Map (Sheet 2 of 4)**



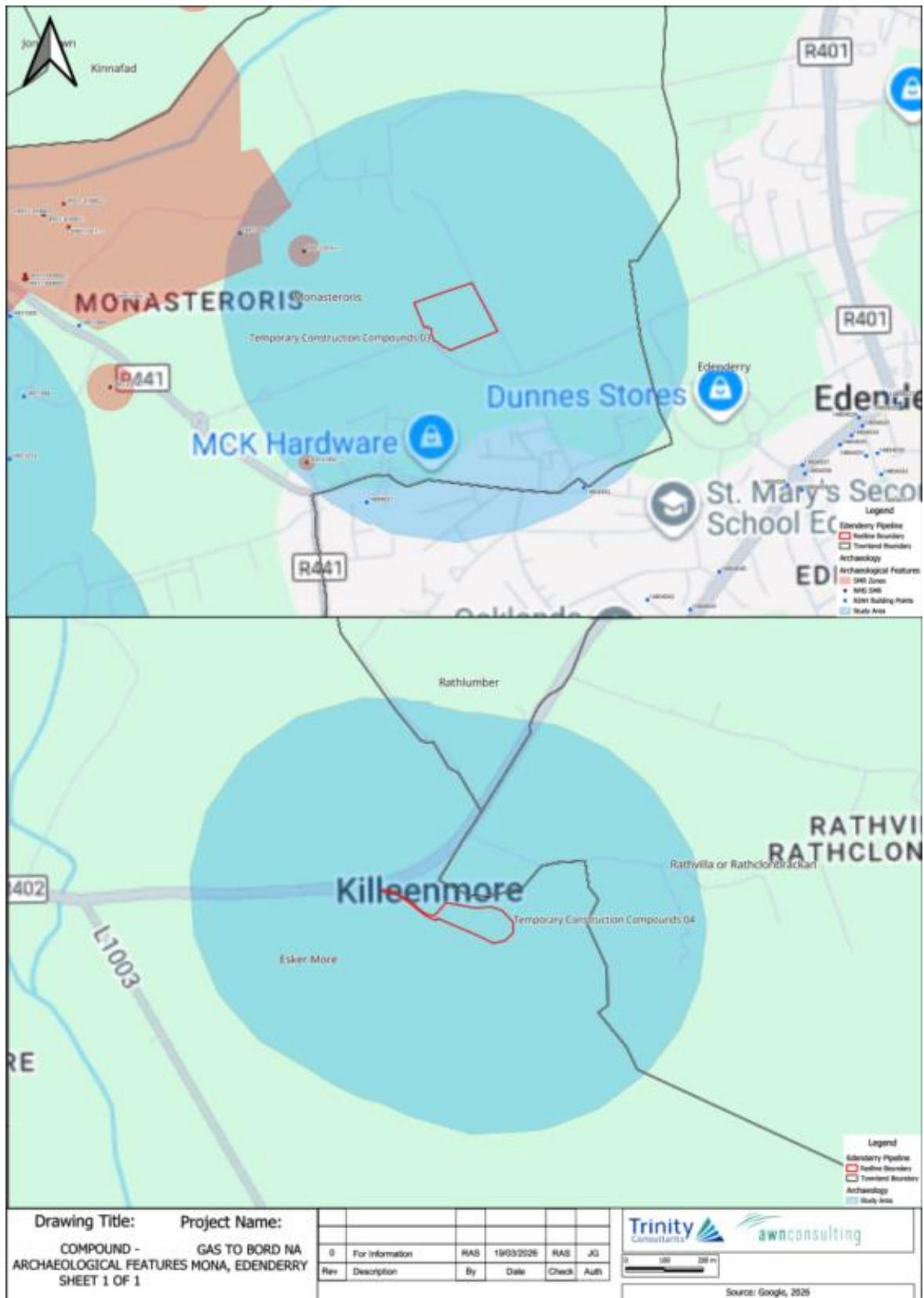
**Figure 12-3 Site location and Study Area: Archaeological Features Map (Sheet 3 of 4)**



**Figure 12-4 Site location and Study Area: Archaeological Features Map (Sheet 4 of 4)**



**Figure 12-5 Site Compounds and Study Area: Archaeological Features Map**



There is ample evidence of human settlement and activity in the study area dating to the Bronze Age (c. 2,500BC – 500BC), in the form of archaeological sites and artefacts. Radiocarbon dates from three peatland sites in the study area gave Bronze Age dates. At Knockersally (or Colehill), Co. Meath (ME046-052) a dense brushwood structure of up to six layers deep, measuring 2.64m wide and 0.14m deep was uncovered in advance of peat extraction works, yielding a date of cal. 1598-1416 BC. A togher found in the bog at Ballykilleen, Co. Offaly (OF019-113) yielded a date of cal. 1365-925 BC, and another structure found in the same bog consisted of possibly displaced east-west orientated timber, roundwood, and brushwood, as well as a single north-south orientated brushwood, that yielded a date of cal. 1929-1750 BC (OF019-125---). Artefactual evidence dating to the Bronze Age consist of a bronze axehead<sup>16</sup> and bronze sword (UMAC MC99.186)<sup>17</sup> from Ballymakilleen, Co. Offaly, a bronze pin (NMI 1974:41), copper alloy pins (NMI 1974:41.1 and NMI 1974:39) and chisel (NMI 1974:40) found at Park, Co. Meath and a bronze palstave (NMI 1966:148) and most impressively a gold lock ring (NMI 1953:45) found at Harristown, Co. Meath. The deposition of bronze and copper in hoards (such as at Park) has been described as deliberate, with no intention to recover, and that these depositions represent an active and changing phenomenon, with which geographical, contextual, cultural and chronological patterns have been identified<sup>18</sup>.

Continued activity, including deliberate deposition, through the Iron Age (c. 500BC – 400AD) is attested to through artefacts found in the study area. Most impressively, an iron sword was found in the River Boyne at Harristown, Co. Meath (NMI 1989:36), whilst an iron object was found at Ballykilleen Hill, Co. Offaly (NMI 1998:69).

### ***12.3.1.2 Early Medieval Period (c. 400 AD – 1100 AD)***

The spread of Christianity from the early fifth century AD marks the transition from the prehistoric to the medieval period. Ireland at this time was predominantly a rural society, with dispersed settlement. The presence of holy wells at Grange West, Co. Kildare (KD002-006---) and Monasteroris, Co. Offaly (OF011-008----) are perhaps subtle indicators of religious activity at this time in the study area.

During this period, defensive enclosures known as ringforts were constructed to protect farmsteads. These are one of the most frequently recorded archaeological site types and c. 50,000 examples are recorded in the Irish landscape. Ringforts are regarded as defended family homesteads and the dating evidence to date suggests they were primarily built between the seventh and ninth centuries AD<sup>19</sup>. There are two recorded ringforts within the study area, at Ballykilleen, Co. Offaly (OF011-035001-) and Harristown, Co. Meath (ME052-001----).

Many ringforts have been partially or completely destroyed since the 1960s and often the only indication of the former presence of a ringfort is preserved in townland name elements such as Dún, Rath, Cashel or Lios. The townland names of *Rathgreedan* and *Rathmore*, Co. Offaly, may signify the presence of a ringfort in the past. Furthermore, monuments which have experienced above-ground disturbance continue to be of archaeological interest due to the potential for subsurface remains to exist at their locations. The term 'enclosure' is applied to monuments that cannot be classified more accurately without archaeological assessment but were identified as enclosures during fieldwork or through the study of aerial photography or other sources. There are three recorded enclosures in the study area at Ballycolgan (OF011-024----), Rathmore (OF011-025----) and Ballykilleen (OF019-003----), Co. Offaly.

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<sup>16</sup> Harbison, P. 1969b. The axes of the Early Bronze Age in Ireland. *Prähistorische Bronzefunde, Abteilung IX, Band 1*. Munich.

<sup>17</sup> Eogan, G. 1983. *Hoards of the Irish Later Bronze Age*. Dublin: University College Dublin.

<sup>18</sup> O'Flaherty, R. 1995. An Analysis of Irish Early Bronze Age Hoards Containing Copper or Bronze Objects. *The Journal of the Royal Society of Antiquaries of Ireland*, 125, 10–45.

<sup>19</sup> Stout, M. 1997. *The Irish Ringfort*. Dublin: Four Courts Press.

### **12.3.1.3 Later Medieval Period (c. 1100 AD – 1650 AD)**

The Anglo-Norman's arrived in Ireland in 1169, to support the deposed king of Leinster, Diarmuid MacMurchadha. By the end of the twelfth century the Anglo-Normans had succeeded in gaining control over much of the country<sup>20</sup>. The Anglo-Norman tenurial system more or less appropriated the older established land units known as túath in the early medieval period but described the territories as manors<sup>21</sup>.

The earliest evidence of the presence of the Anglo-Norman invaders in the study area is the motte at Monasteroris (OF011-010001-). The site today comprises a low mound (max. H 5-6m, diam. base c. 35m E-W) with the remains of a later stone building (max. dims. 8.40m N-S, 8m E-W) on top marked as 'pigeon house' on early edition Ordnance Survey mapping (OF011-01003-). Mottes vary considerably in size in Ireland, where some 30% are accompanied by baileys (not in this example). Although they occur throughout Europe outside of the Anglo-Norman sphere, they are synonymous with the Anglo-Norman invasion of Ireland, as they could be built rapidly to defend a newly conquered area, out of earth and timber<sup>22</sup>.

There is a second (unclassified) castle at Monasteroris (OF012-001---). All that survives today are grass-covered foundations on high ground overlooking the surrounding countryside. Parts of the southwest and northeast walls remain. The 1550 survey of Offaly recorded that there were two castles at Monasteroris, 'one newlie builded and thother all runyose', in addition to the ruined walls of the friary 'burnyd and rasid' and a mill and orchard<sup>23</sup>.

The Franciscan friary of Monasteroris, also known as Castro Petre de Mortoto and Totmoy (Tuath muighe) was founded in 1325<sup>24</sup>. The record of its founding describes how the minister provincial and Friars Minor in Ireland accepted de Bermingham's invitation to build a chapel and dwellings in his town of 'Totemoy' in the diocese of Kildare (CPR, vol. 2, 1305-42, 245)<sup>25</sup>. The ruins of this former monastic settlement comprise a featureless late medieval parish church (ext. dims. c. 9m E-W, c. 26m N-S) built with limestone rubble, which may be part of the Franciscan friary that was later converted into a parish church. A font (OF011-009007-) and graveyard (OF011-009002-) are also recorded at the site. Finally, extensive earthworks survive which possibly are the remains of a deserted medieval village associated with the friary (OF011-009----). Two archaeological excavations have been recorded at Monasteroris (10E0168 and 17E0031). Two large ditches measuring 2.5m wide by 1.5m deep on average, and three oval/circular pits with an average diameter of 1m were found at Monasteroris during works in advance of a proposed new dwelling (10E0168). A sherd of medieval pottery was found in one of the pits. The ditches may be associated with the adjacent above mentioned medieval settlement (OF011-009006-). Excavation in advance of development works uncovered a series of linear ditches between 4m and 12m wide (17E0031), interpreted as relating to the above medieval settlement (OF011-009006-).

Elsewhere in the study area from this time period is a moated site (ME046-008----) at Ticroghan, Co. Meath.

### **12.3.1.4 Post-Medieval Period (c. 1650 AD – )**

In the mid-seventeenth century, the armies of the English Commonwealth, commanded by Oliver Cromwell, emerged victorious over the royalists, and immediately undertook an ambitious project of social engineering, underpinned by a massive transfer in landownership from Irish Catholics to English

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<sup>20</sup> Stout, G and Stout, M., 1997. Early landscapes: from prehistory to plantation. Atlas of the Irish Rural Landscape, Cork University Press, Cork.

<sup>21</sup> MacCotter, P. 2008. *Medieval Ireland: territorial, political and economic divisions*. Dublin: Four Courts Press.

<sup>22</sup> O'Keefe, T. 1990. The Archaeology of Norman Castles in Ireland: Part 1: Mottes and Ringworks. *Archaeology Ireland*, 4(3), 15–17.

<sup>23</sup> Fitzpatrick, E. and O'Brien, C. 1998. *The Medieval Churches of County Offaly*. Government of Ireland Publications. ISBN: 9780707650814.

<sup>24</sup> Gwynn, A. and Hadcock, R.N. 1970 (Reprint 1988) *Medieval religious houses of Ireland*. Dublin. Irish Academic Press.

<sup>25</sup> Fitzpatrick, E. and O'Brien, C. 1998. *The Medieval Churches of County Offaly*. Government of Ireland Publications. ISBN: 9780707650814.

Protestants. For this to happen, the land had to be accurately surveyed and mapped, a task overseen by the surgeon-general of the English army, William Petty.

Taken in the years 1656-1658, the Down Survey of Ireland is the first ever detailed land survey on a national scale anywhere in the world. The survey sought to measure all the land to be forfeited by the Catholic Irish in order to facilitate its redistribution to Merchant Adventurers and English soldiers. Copies of these maps have survived in dozens of libraries and archives throughout Ireland and Britain, as well as in the National Library of France<sup>26</sup>.

The Down Survey map of Ireland (Insert 12-1) is interesting as it depicts the River Boyne, Kinnegad, Castlejordan and Monasteroris, with castles depicted at Castlejordan and Monasteroris. The county maps of Meath and Offaly (King's County) depict the baronial layout and indicate good and bad lands (Insert 12-2). The Parish Map of Monasteroris is particularly interesting as it shows the significance of the settlement, with churches, castles and wider settlement shown (Insert 12-3).

The survey depicts the Barony of (Upper) Moyfenrath, Co. Meath as follows:

*The Barrony of Moyfenrath In the County of Eastmeath Is bounded on the East with the Barrony of Deece, on the South with the Barrony of Carbery in the County of Kildare, on the West and Northwest with the Kings County and the Barrony of Farbill in the County of Westmeath and on the North with the Baronys of Lune and Navan. The soyle of this Barony is generally good arable meadow and pasture but very little or no wood in it. There is store of turf for fireing in most places, no timber, some small quantity of shrubby and underwood which are described in their respective parrishes to which they belong. Most part of the South side of this Barrony is embraced by a plesant river called the Boyne which takes its rise out of the Barony of Carbery in the County of Kildare. It runs through the middle of this Barony and afterwards in the maner of a halfe figure of eight or capital Roman S, it surrounds part of the Northside of this Barony. In its current it is saluted by a very faire river called the Blackwater which receives its first birth out of the aforesaid Barony of Carbery in the County of Kildare and severall other springs, brooks and ruvuletts do the like homage to it by the addition of whose forces if any shower of rain falls it is expatiated to such a distance that it will appear to the eye to be a very faire navigable river. In the dry weather and summertime it is in most parts 60 foot broad, in some places very deep. As its taking farewell of the Northside of this Barony there is situated a pleasant walled town whose Cognomon (as is by the antients inhabitants reported) was formerly made as being the chiefest town in the County of Meath but after an invasion by the Walch whose leader was one Sir John de Lacy, who built the castle and repaired the town it bears the name of Trim from the English word Trim which is common Alte Placon signifies neat of decent. Many more remarkable perticulars there are in this town more largely expressed in its respective parrish that is to say what conveniences and comodityes belong to it as fairs and Markets.*

The survey depicts the Barony of Coolestown, Co. Offaly as follows:

*The Barony of Coolestowne in the Kings Countie Is bounded on the East and South with the County of Kildare, on the West with the Barrony of Phillipstowne and with the Barrony of Warrenstowne in the North. The quality of the soyle thereof is for the most part ffertile and shereing the industrious husbandsmans paines and expectations with plentious cropp, it consisting of arrable pasture and woodland, the timber standing thereupon being a convenient covert for cattle in extreimity of heate and cold, profitable to the adjacent inhabitants and at all times a decoration and ornament to the said Barony. It is watered with a notable river called Ihny on the South and Weste parte and with the no less famous River Boyne which abounds with Eales and Troutes, on the Northeast parte the which with some other small rivuletts smoothly glide through the hearte of this Barrony refreshing the islands with these pleasant streames and discharge themselves into the River Inny aforsaid. Some few red boggs there are but not any considerable. There are conteined within this Barony the parrishes of Monasteroris and Ballinekill, parte of the Parish of Rathangan called Moyligh and the Parish of Clonsast.*

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<sup>26</sup> <https://downsurvey.tchpc.tcd.ie/>

*There are noe townes corporate or other speciall or remarkable observations in the same save what are expressed in the descriptions of the aforesaid parrishes.*

The survey depicts the Barony of Warrenstown, Co. Offaly as follows:

*The Barony of Warrentowne in the Kings Countie Is bounded with parte of the countie of Eastmeath and the baronies of Athlone and Moyfenragh on the North, the Countie of Kildare lyeing on the East, the Barony of Phillipstowne west. The soile is generally fertile consisting of arable and good pasture haveing no bog or Logh therein and is comodiously watered with two rivers vizt: with the river Munny on the West North and Northeast partes and the River Boyne of the East parte. There are lyeing within it the parrishes of ballimackwilliam and parte of the Parrish of Balliboggan and there are scituate upon it three castle with the towne of Ballibrittain together with some other houses and many Crates, and conteynes the forfeited townelands of Ballibrittan, Ballimackwilliam, Thomastowne, Balliheshill, Rathbcobickin, Lennanamarrin and Toberdalagh. There are in it a large quantity of unforfeited lands belonging to Sir John Gifford and Mr Wakely and other which being not certainly knowne are not incerted.*

Three headstones (OF011-009003-, OF011-009004- and OF011-009005-) are fine examples of late 17<sup>th</sup> century styles and are further evidence of the continued significance of the settlement of Monasteroris at the time.

The first edition Ordnance Survey maps, dating to the 1830s, depicts the lands on which the Proposed Development is planned as predominantly agricultural land comprising a series of medium sized field with simple and in places substantial field boundaries (see Figure 12-6 - Figure 12-17). Notably, the Proposed Development corridor generally traverses relatively dry land, avoiding to a large degree the numerous bogs in the area. Exceptions are the north part of Ticroghan townland, Co. Meath (Figure 12-7) and a stretch of Roosk townland, Co. Offaly (Figure 12-12).

A number of other interesting features are traversed. In Kilwarden townland, Co. Meath (Figure 12-6), the Proposed Development corridor traverses a section of condemned canal 'Condemned line of Canal'. In Park townland, Co. Meath, the Proposed Development corridor traverses a demesne landscape of New Park (see Figure 12-8). It traverses gravel pits in the townland of Ballyboggan, Co. Meath (see Figure 12-9). At this point, there is also an interesting, curved enclosure defined by the road to the north and townland boundary to the south, measuring c. 170m north-south. Less than 150m to the south of this on the same map there is another curious curved section of field boundary – here the interpolated diameter of the 'enclosure' is c. 60m.

Relatively little changes in the intervening century until the issue of the 25 inch edition Ordnance Survey, dating to the 1910s (see Figure 12-18 - Figure 12-29). Of note is that the above mentioned condemned canal is no longer evident (Figure 12-20), and whilst the large enclosure in Ballybogan is present, the smaller one to the south is not as evident, with the field boundary straightened (Figure 12-21).

Available aerial photography images of the study area were assessed (from 1995 to the present day). Modern aerial photography indicates that the landscape of the study area has not significantly changed in the period after the production of the Ordnance Survey 25 inch maps in the 1910s, through the twentieth century and into the twenty-first century, with the land remaining in agricultural use in open pasture (Figure 12-30 - Figure 12-35). The exception is the southern extent of the study area in Shean and Ballykilleen townlands, Co. Offaly, where there has been substantial modern development (Figure 12-35), which commenced after the 1995 flown aerial photograph and by the 1996-2000 flown aerial photography.

A lone hawthorn tree was noted in Ticroghan townland (see Figure 12-31 and AAP2 below). Hawthorn trees are considered one of the sacred trees of pre-Christian Ireland. In medieval Irish sources, numerous references to noteworthy trees have inspired curiosity about the extent of a multi-faceted tradition of tree veneration in Ireland during the Middle Ages. Even in the twentieth century, folklorists have found traces

of superstitions about particularly old trees<sup>27</sup>. It is important to note that this tree is not noted on the early editions of the Ordnance Survey Maps (see Figure 12-7 and Figure 12-19; although this does not necessarily mean it was not there). A review of the National Folklore Collection, which has numerous stories relating to hawthorn trees and bushes as sacred trees throughout Ireland, does not refer to one in Ticroghan townland.

### 12.3.2 Townland, barony and county boundaries

There are in excess of 61,000 townlands in Ireland, ranging in size from approximately 1 acre to 7000 acres. All other territorial divisions are collections of townlands. The island of Ireland is divided into four provinces and 32 counties, and significantly 328 baronies<sup>28</sup>. Baronies are perhaps the most significant of these. Used to allocate lands to the invading Anglo-Norman army from the late twelfth century<sup>29</sup>, research indicates that baronies were essentially renamed tuath – the ancient territories of Ireland dating from the Iron Age and into the Bronze Age<sup>30</sup>.

The Proposed Development corridor crosses nineteen townland boundaries, of which one is also a county / barony boundary, and another is a barony boundary. It runs adjacent to another. The townlands boundaries are listed and described in Table 12-5.

**Table 12-5 Townland, barony and county boundaries**

No	Boundary	Figure
T1	Townlands: Kilwarden to the north, Aghnagillagh to the south	Figure 12-1, Figure 12-2
T2	Townlands: Aghnagillagh to the north, Ardmullan to the south	Figure 12-1, Figure 12-2
T3	Townlands: Ardmullan to the north, Ticroghan to the south	Figure 12-2
T4	Townlands: Ticroghan to the north, Park to the southwest	Figure 12-2
T5	Townlands: Park to the north, Ballybogan to the south	Figure 12-2
T6	Townlands: Ballybogan to the north, Ballynakill to the south and Harristown to the west	Figure 12-2
T7	Townlands: Harristown to the north, Castlejordan to the south	Figure 12-3
T8	Townlands: Castlejordan to the north, Clongall to the south	Figure 12-3
T9	Townlands: Clongall to the north, Clonmore to the south Baronies: Upper Moyfenrath to the north, Warrenstown to the south Counties: Meath to the north, Offaly to the south	Figure 12-3
T10	Townlands: Clonmore to the north, Roosk to the south	Figure 12-3
T11	Townlands: Roosk to the east, Lenamarran to the east	Figure 12-3
T12	Townlands: Lenamarran to the north, Mountwilson to the south	Figure 12-3
T13	Townlands: Mountwilson to the north, Thornwell to the south	Figure 12-3
T14	Townlands: Thornwell to the north, Monasteroris to the south Baronies: Warrenstown to the north, Coolestown to the south	Figure 12-3, Figure 12-4
T15	Townlands: Monasteroris to the north, Edenderry to the south Monasteroris to the east, Ballycolgan to the west Edenderry to the east, Ballycolgan to the west	Figure 12-4

<sup>27</sup> A. T. Lucas, 'The Sacred Trees of Ireland', *Journal of the Cork Historical and Archaeological Society* 68 (1963), pp. 16–54, cf. pp. 36–39.

<sup>28</sup> <https://www.townlands.ie/>

<sup>29</sup> O'Keefe, T. 1990. The Archaeology of Norman Castles in Ireland: Part 1: Mottes and Ringworks. *Archaeology Ireland*, 4(3), 15–17.

<sup>30</sup> Kelly, E.P. 2006. Kingship and Sacrifice: Iron Age bog bodies and boundaries. *Archaeology Ireland Heritage Guide* No. 35.

No	Boundary	Figure
	(note the route does traverse the townland of Ballycolgan, nor directly impact the townland boundary; it runs along a north-south stretch of it for approximately 750m)	
T16	Townlands: Rathmore to the northwest, Drumcooly to the southeast	Figure 12-4
T17	Townlands: Drumcooly to the east, Rathgreedan to the west	Figure 12-4
T18	Townlands: Rathgreedan to the northeast, Ballykilleen to the southwest	Figure 12-4
T19	Townlands: Ballykilleen to the west, Shean to the east	Figure 12-4
T20	Townlands: Shean to the northeast, Ballykilleen to the southwest	Figure 12-4

### 12.3.3 Watercourses

Watercourses are important sources of information for human activity in the past. It has long been recognised that since prehistoric times people have been depositing materials in rivers and lakes as well as bogs throughout Ireland<sup>31</sup>. In particular, rivers, streams and bogs often form the boundaries of territories that may have existed for over 2,500 years<sup>32</sup>.

The Proposed Development corridor traverses 32 watercourses (WCX) and rivers (denoted RVX) of varying sizes, as described in Table 12-6. As noted above, where watercourses represent townland boundaries are of particular interest. The majority of the remaining watercourses are drainage ditches which appear to have been introduced in the 19<sup>th</sup> and 20<sup>th</sup> centuries and therefore are not deemed as archaeologically sensitive.

**Table 12-6 Watercourses**

No	Watercourse	Figure
WCX01	Townland boundary (T2) between Aghnagillagh to the north and Ardmullan to the south	Figure 12-30
WCX02	Townland boundary (T3) between Ardmullan to the north and Ticroghan to the south	Figure 12-30, Figure 12-31
WCX03	20th century land drain	Figure 12-31
WCX04	Townland boundary (T5) between Park to the north and Ballybogan to the south	Figure 12-31
WCX05	Townland boundary (T6) between Ballybogan to the north and Ballynakill to the south and Harristown to the west; corresponds to curve in field boundary	Figure 12-31, Figure 12-32
WCX06	Townland boundary (T6) between Ballybogan to the north and Ballynakill to the south and Harristown to the west; corresponds to curve in field boundary	Figure 12-31, Figure 12-32
WCX07	20th century land drain	Figure 12-32
WCX08	20th century land drain	Figure 12-32
WCX09	20th century land drain	Figure 12-32
WCX10	20th century land drain	Figure 12-32
WCX11	Townland boundary (T7) between Harristown to the north and Castlejordan to the south	Figure 12-32
WCX12	Townland boundary (T8) between Castlejordan to the north and Clongall to the south	Figure 12-32
WCX13	20th century land drain	Figure 12-33
WCX14	Townland boundary (T10) between Clonmore to the north and Roosk to the south	Figure 12-33

<sup>31</sup> O'Connor, N. 1989. Underwater Archaeology. *Archaeology Ireland*, 3(1), 26–29.

<sup>32</sup> Kelly, E.P. 2006. Kingship and Sacrifice: Iron Age bog bodies and boundaries. *Archaeology Ireland Heritage Guide No. 35*.

No	Watercourse	Figure
WCX15	Modern land drain	Figure 12-33
WCX16	Townland boundary (T12) between Lenamarran to the north and Mountwilson to the south	Figure 12-33, Figure 12-34
WCX17	Townland boundary (T13) between Mountwilson to the north and Thornwell to the south	Figure 12-33, Figure 12-34
WCX18	20th century land drain	Figure 12-33, Figure 12-34
WCX19	Townland boundary (T14) between Thornwell to the north and Monasteroris to the south	Figure 12-34
WCX20	19th century land drain	Figure 12-34
WCX21	20th century land drain	Figure 12-34
WCX22	Modern land drain	Figure 12-34
WCX23	Grand Canal; Townland boundary (T16) between Edenderry to the north and Rathmore to the south (no direct impact as construction methodology is trenchless)	Figure 12-34
WCX24	Townland boundary (T19) between Rathgreedan to the northeast and Ballykilleen to the southwest	Figure 12-35
WCX25	20th century land drain	Figure 12-35
WCX26	20th century land drain	Figure 12-35
WCX27	20th century land drain	Figure 12-35
WCX28	20th century land drain	Figure 12-35
WCX29	Townland boundary (T20) between Ballykilleen to the west and Shean to the east (no direct impact as construction methodology is trenchless)	Figure 12-35
WCX30	Townland boundary (T21) between Shean to the northeast and Ballykilleen to the southwest	Figure 12-35
RVX01	Kilwarden River	Figure 12-30
RVX02	Yellow River	Figure 12-32, Figure 12-33

### 12.3.4 Areas of Archaeological Potential (AAPs)

As noted above, there are no recorded archaeological sites or archaeological excavations recorded from within the Proposed Development corridor.

An analysis of the archaeological, architectural, and cultural heritage constraints, coupled with an analysis of the natural landscape (e.g. water-crossings, terrain), identified during the assessment, resulted in the designation of five areas of archaeological potential (AAP1 – AAP5). These areas are deemed to have higher potential for previously unrecorded archaeological remains surviving below ground surface, based on their proximity to known archaeological sites, townland boundaries, watercourses or landscape features. Specific reasons for the designation are presented below in Table 12-7.

**Table 12-7 Areas of Archaeological Potential (AAPs)**

<b>AAP No</b>	<b>County</b>	<b>Townlands</b>	<b>Reason for Designation</b>	<b>Figure</b>
AAP1	Meath	Ardmullan	Proximity to castle – tower house (ME046-007----	Figure 12-30
AAP2	Meath	Ticroghan	Proximity to moated site (ME046-008----	Figure 12-30, Figure 12-31
AAP3	Offaly	Monasteroris, Mountwilson & Thornwell	Proximity to the deserted medieval settlement, monastic site and fortifications of Monasteroris. Sub-surface medieval archaeology relating to this complex have been found in recent development led archaeological investigations	Figure 12-33, Figure 12-34
AAP4	Offaly	Rathmore	Proximity to enclosure (OF011-025----); also name of townland 'rath'	Figure 12-34
AAP5	Offaly	Ballykilleen & Shean	Adjacent to Ballykilleen bog, in which more than 100 archaeological sites were identified in advance of Bord na Mona peat extraction, dating from the Neolithic Period through the Bronze and Iron Ages. Artefacts found in the bog / townland also attest to substantial multi-period human activity in the area.	Figure 12-35

### 12.3.5 Architectural Heritage

As noted above, there are no recorded architectural heritage sites within the Proposed Development corridor. There are seven within the study area, all of which are listed in the National Inventory of Architectural Heritage and the Record of Protected Structure of Counties Meath and Offaly (Table 12-4). A portion of the Proposed Development corridor will traverse demesne features associated with Park House, as depicted in the historic first edition Ordnance Survey map dating to the early 19<sup>th</sup> century (see Figure 12-8) and demesne features associated with Harristown House, as depicted on the historic 25 inch Ordnance Survey map dating to the late 19<sup>th</sup> / early 20<sup>th</sup> century (see Figure 12-21). Park House is not listed in the National Inventory of Architectural Heritage or the Record of Protected Structures for Co. Meath. Harristown House (NIAH No. 14404601; RPS No. 91460) and farmyard complex (NIAH No. 14404602; RPS No. 91461) are listed in the National Inventory of Architectural Heritage and the Record of Protected Structures for Co. Meath, but as noted above, are not within the Proposed Development corridor and will not be impacted, directly or indirectly, by the Proposed Development.





Figure 12-6 1830s Ordnance Survey Historic six inch maps (Sheet 1 of 11) (route (orange) indicative only).

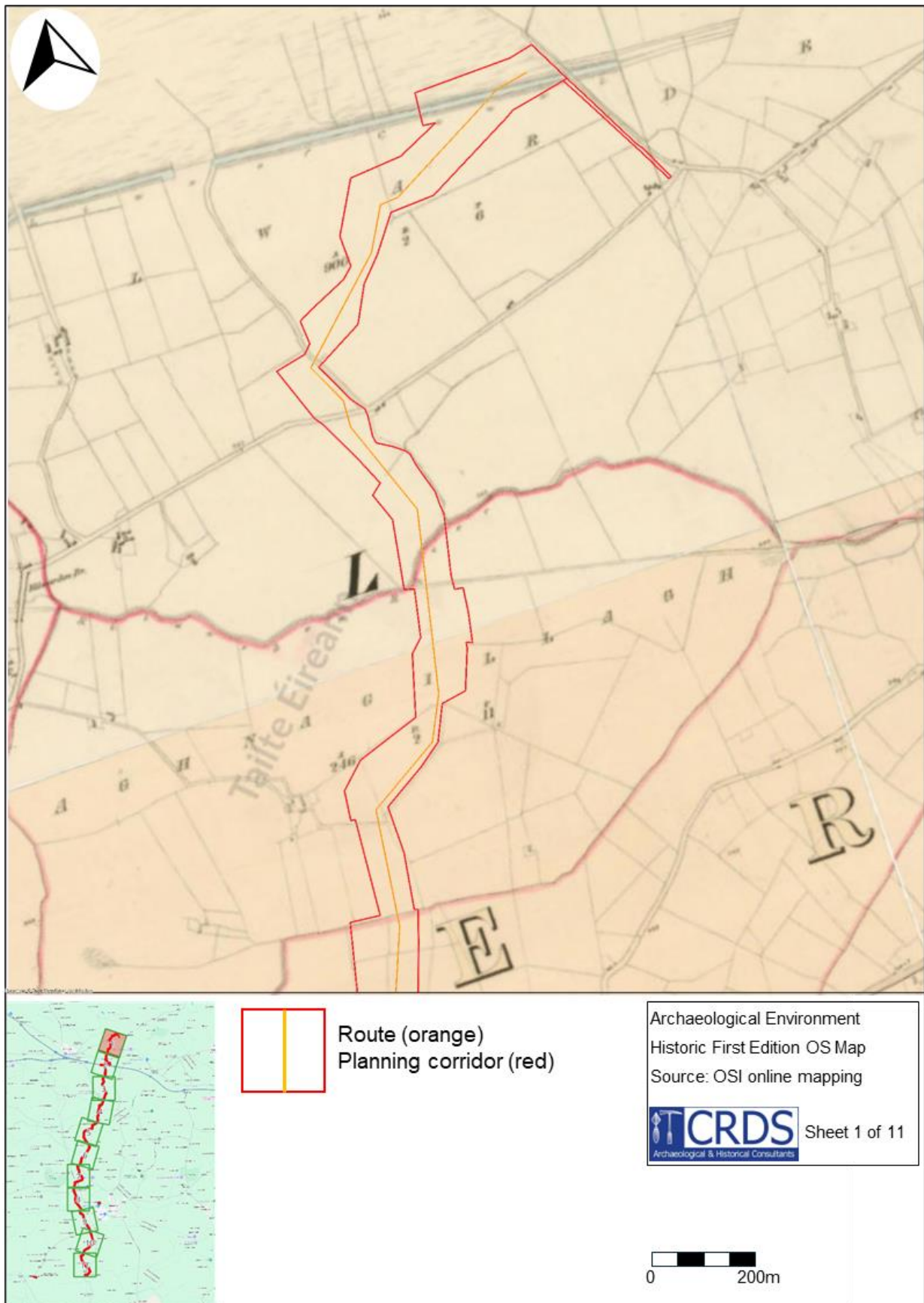


Figure 12-7 1830s Ordnance Survey Historic six inch maps (Sheet 2 of 11) (route (orange) indicative only).

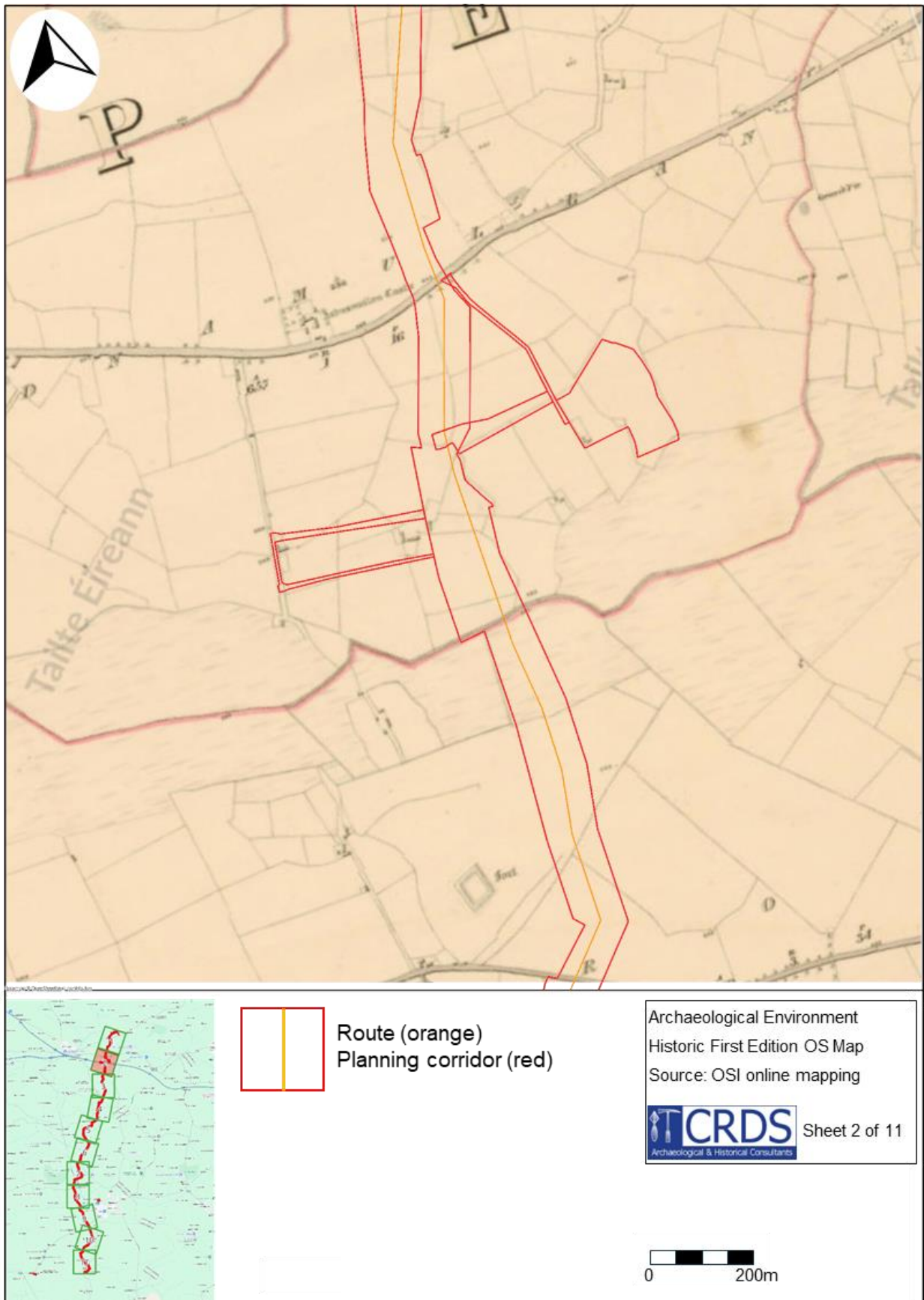


Figure 12-8 1830s Ordnance Survey Historic six inch maps (Sheet 3 of 11) (route (orange) indicative only).

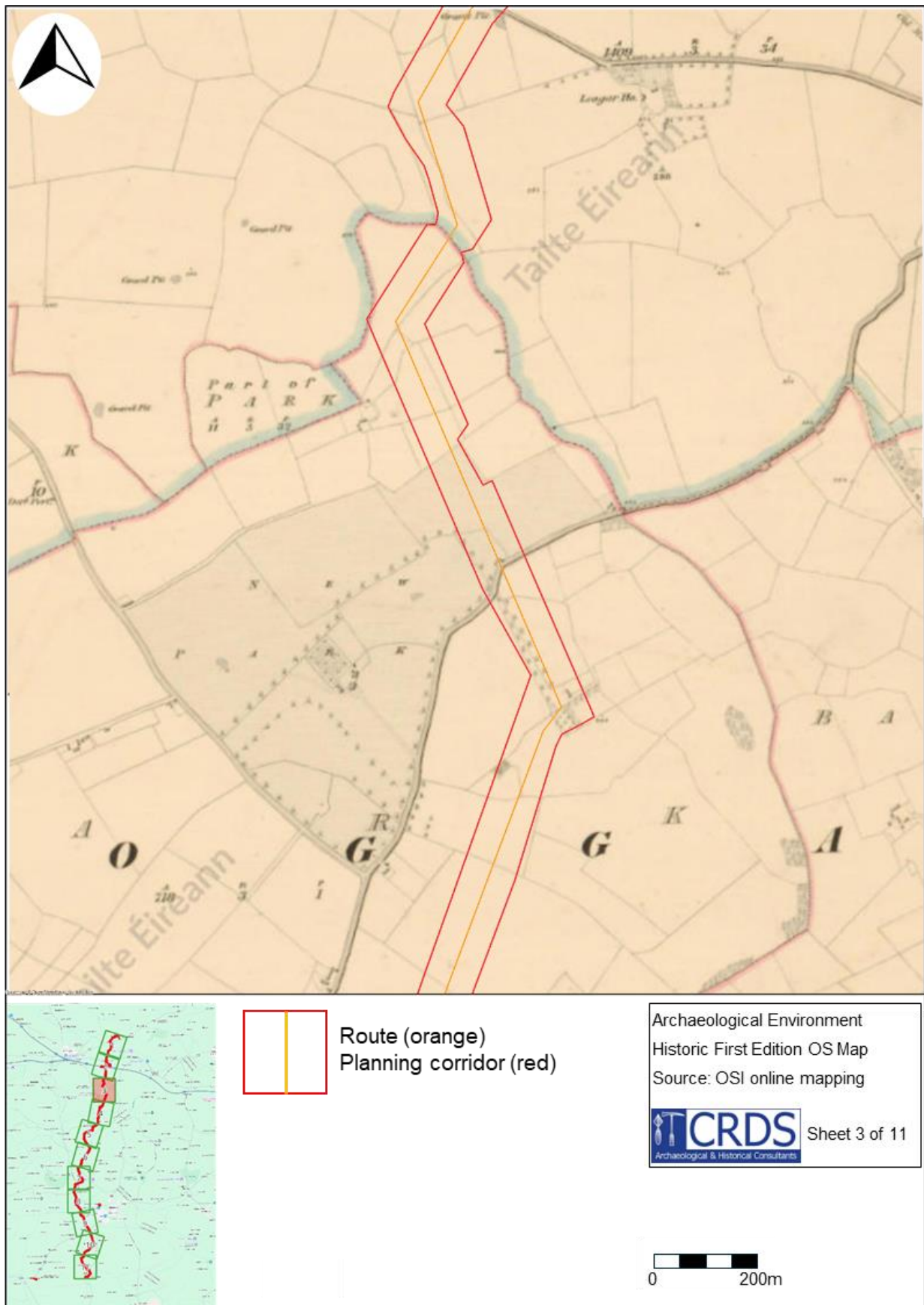
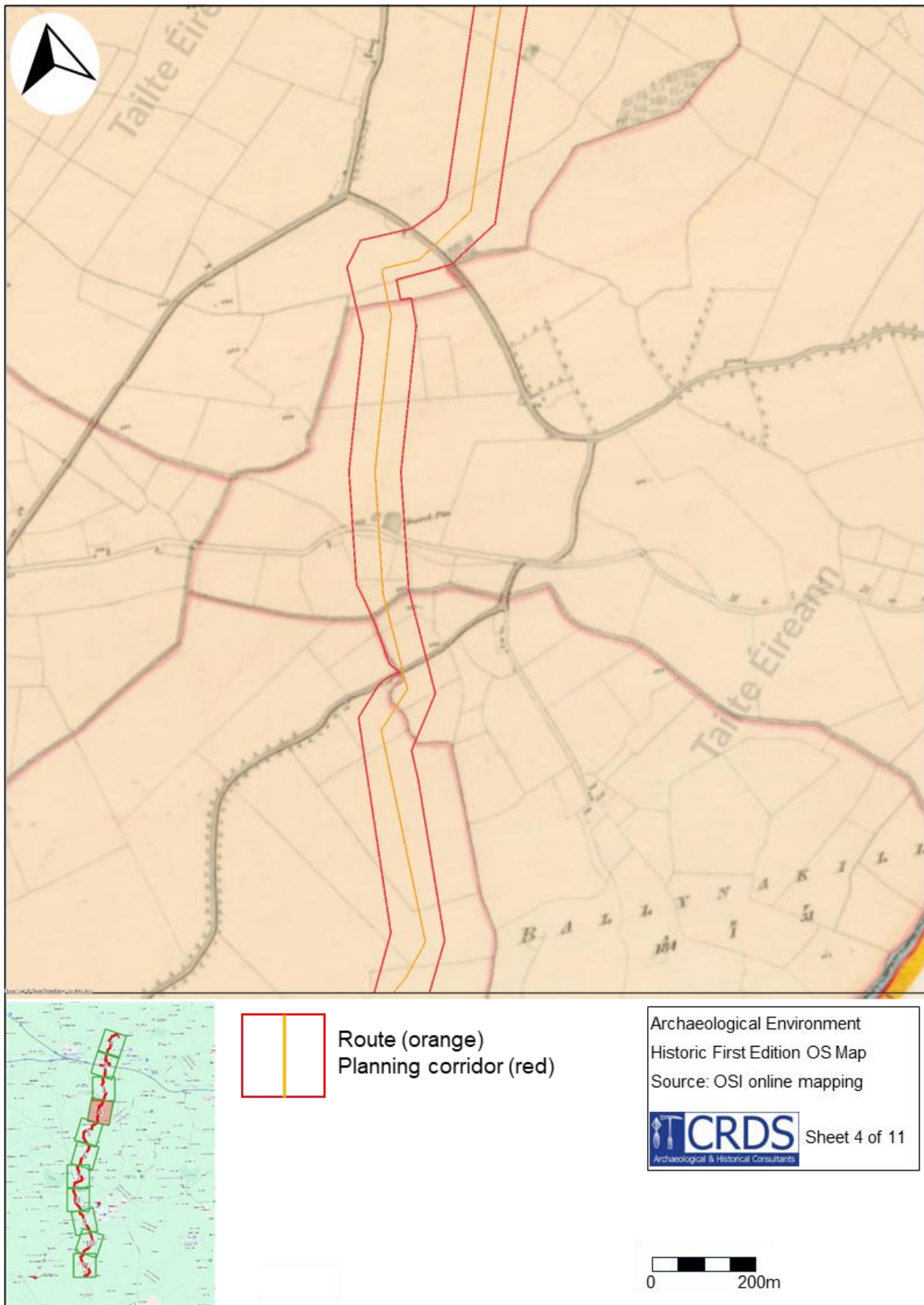


Figure 12-9 1830s Ordnance Survey Historic six inch maps (Sheet 4 of 11) (route (orange) indicative only).



**Figure 12-10 1830s Ordnance Survey Historic six inch maps (Sheet 5 of 11) (route (orange) indicative only).**

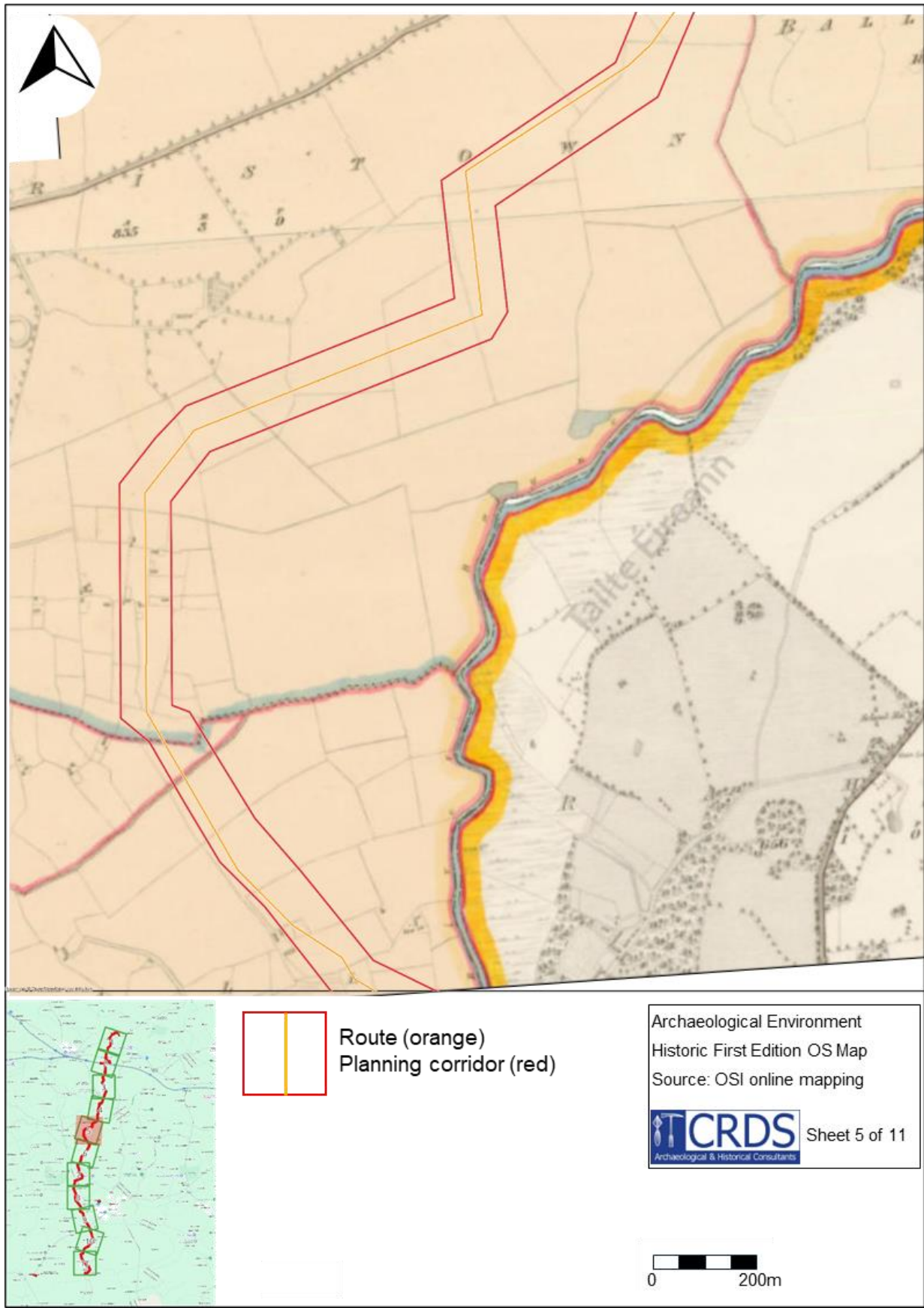


Figure 12-11 1830s Ordnance Survey Historic six inch maps (Sheet 6 of 11) (route (orange) indicative only).

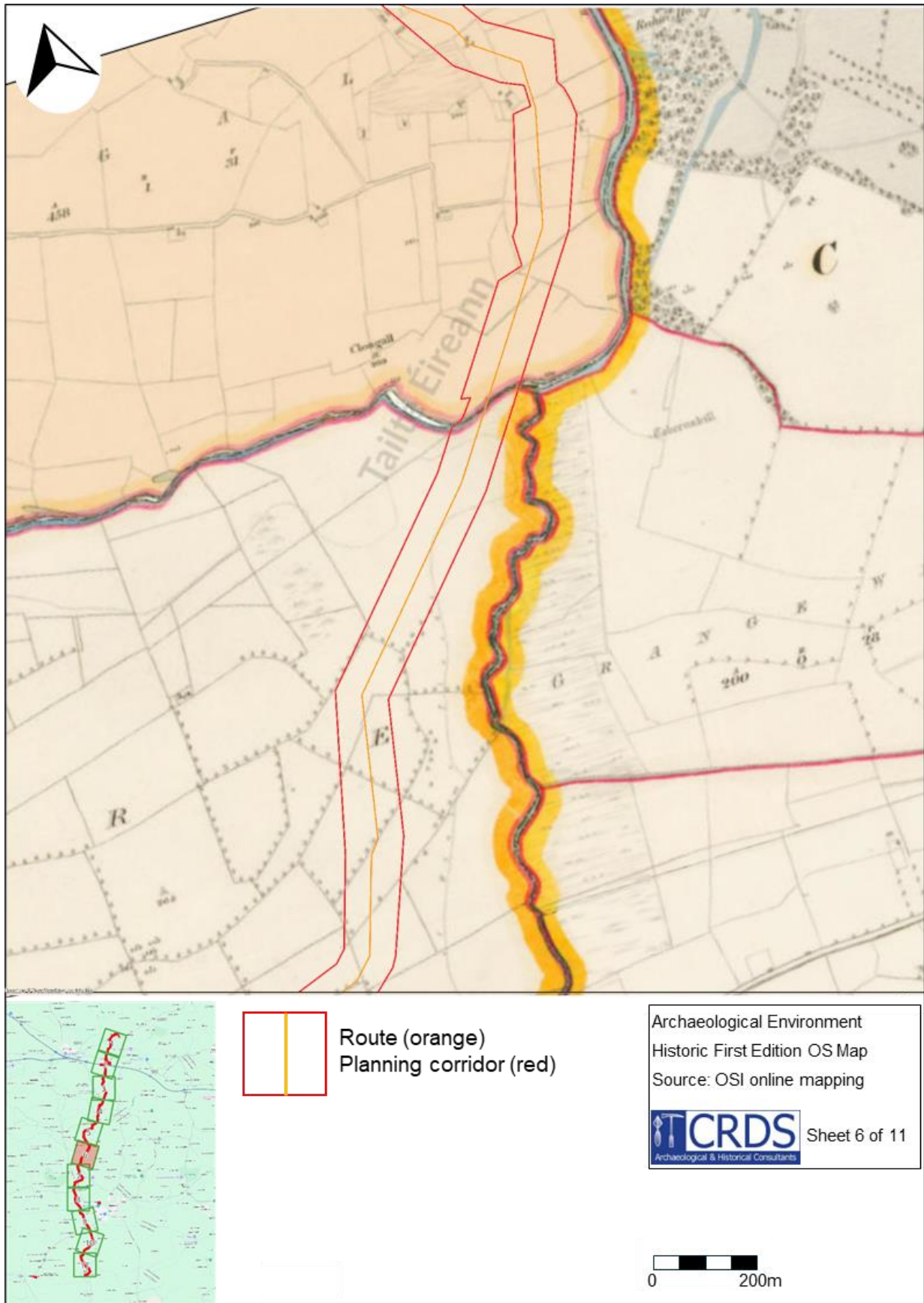


Figure 12-12 1830s Ordnance Survey Historic six inch maps (Sheet 7 of 11) (route (orange) indicative only).

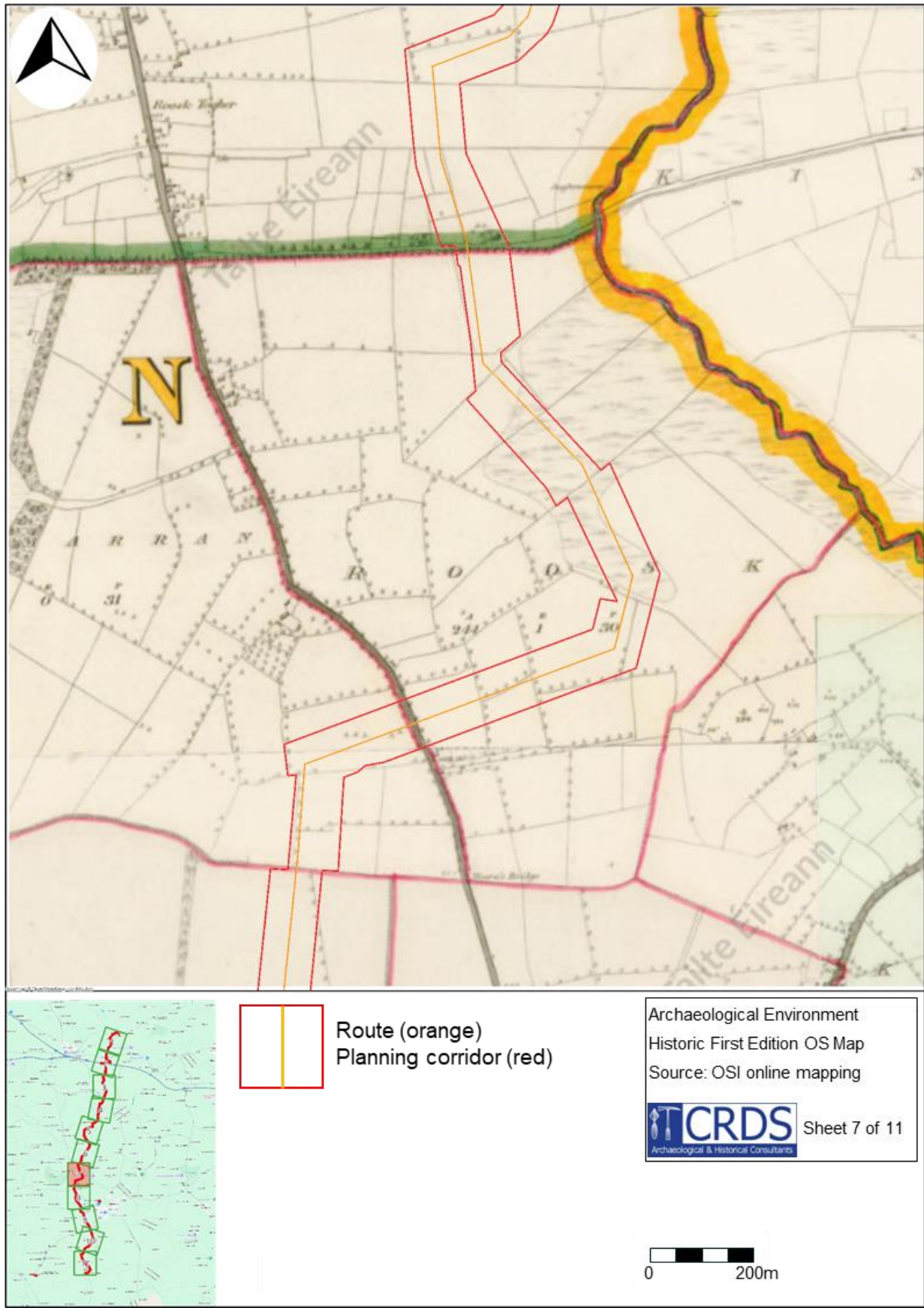


Figure 12-13 1830s Ordnance Survey Historic six inch maps (Sheet 8 of 11) (route (orange) indicative only).

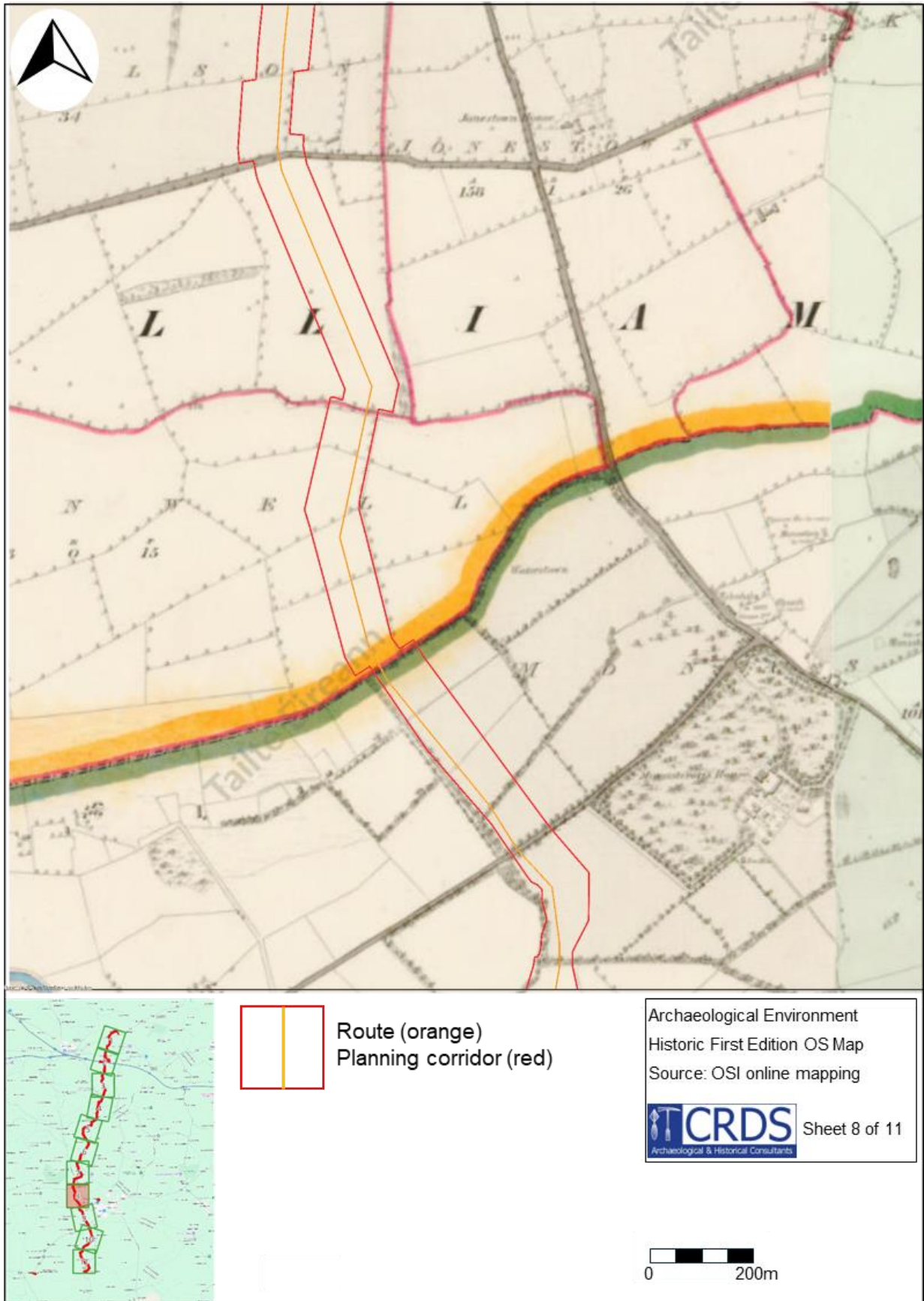
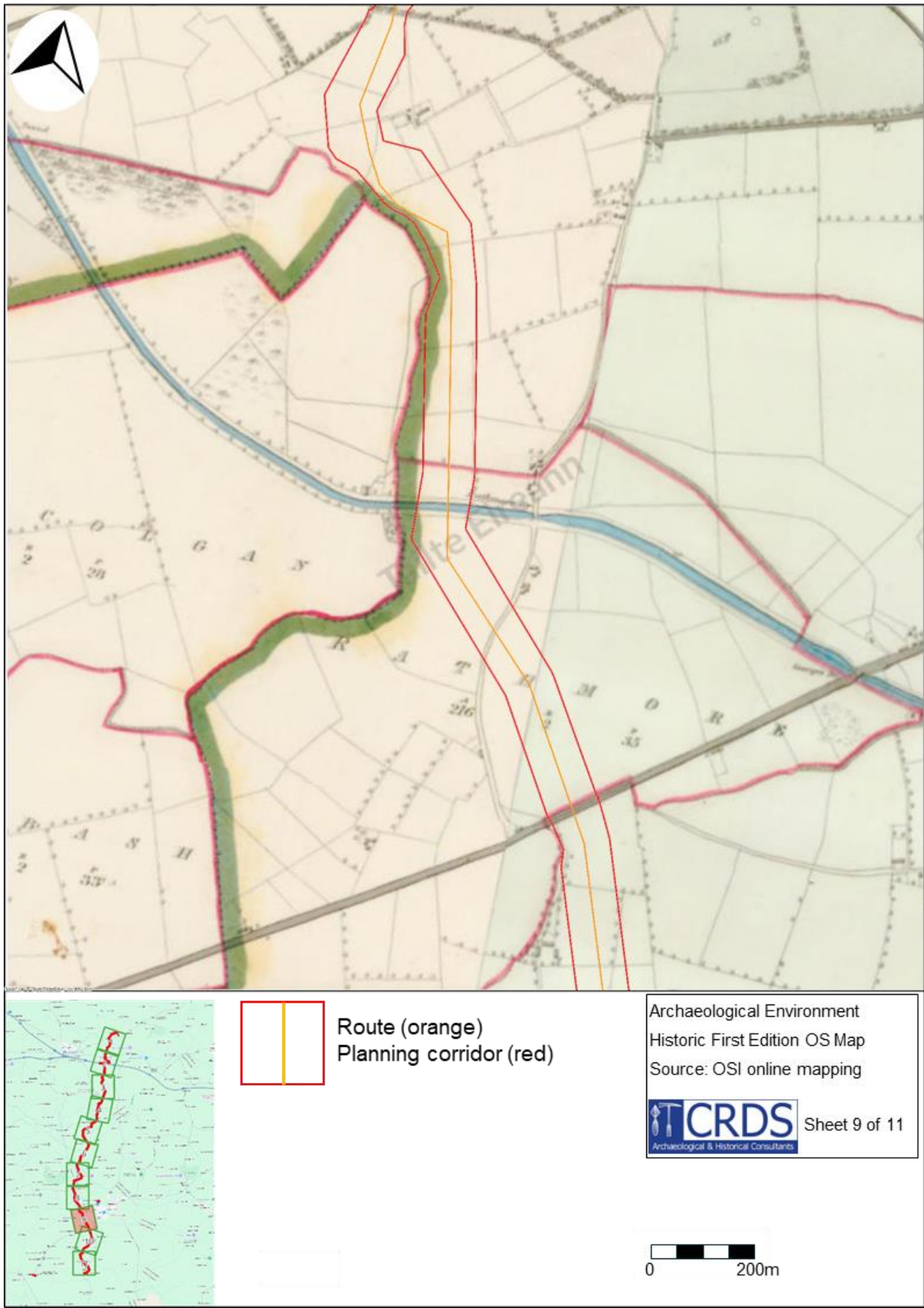
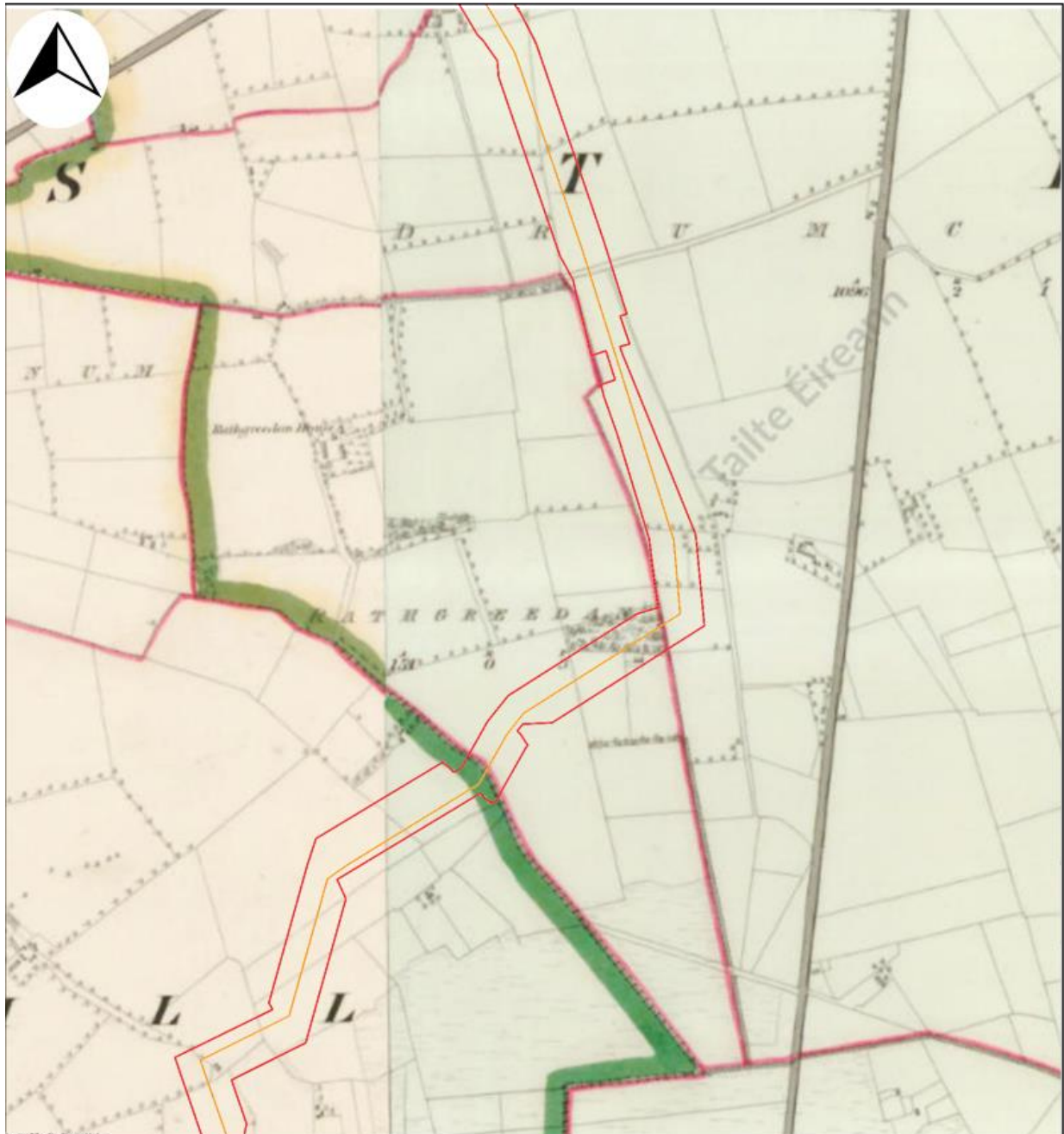


Figure 12-14 1830s Ordnance Survey Historic six inch maps (Sheet 9 of 11) (route (orange) indicative only).



**Figure 12-15 1830s Ordnance Survey Historic six inch maps (Sheet 10 of 11) (route (orange) indicative only).**



Route (orange)  
 Planning corridor (red)


Archaeological Environment  
 Historic First Edition OS Map  
 Source: OSI online mapping  
 Sheet 10 of 11



Figure 12-16 1830s Ordnance Survey Historic six inch maps (Sheet 11 of 11) (route (orange) indicative only).

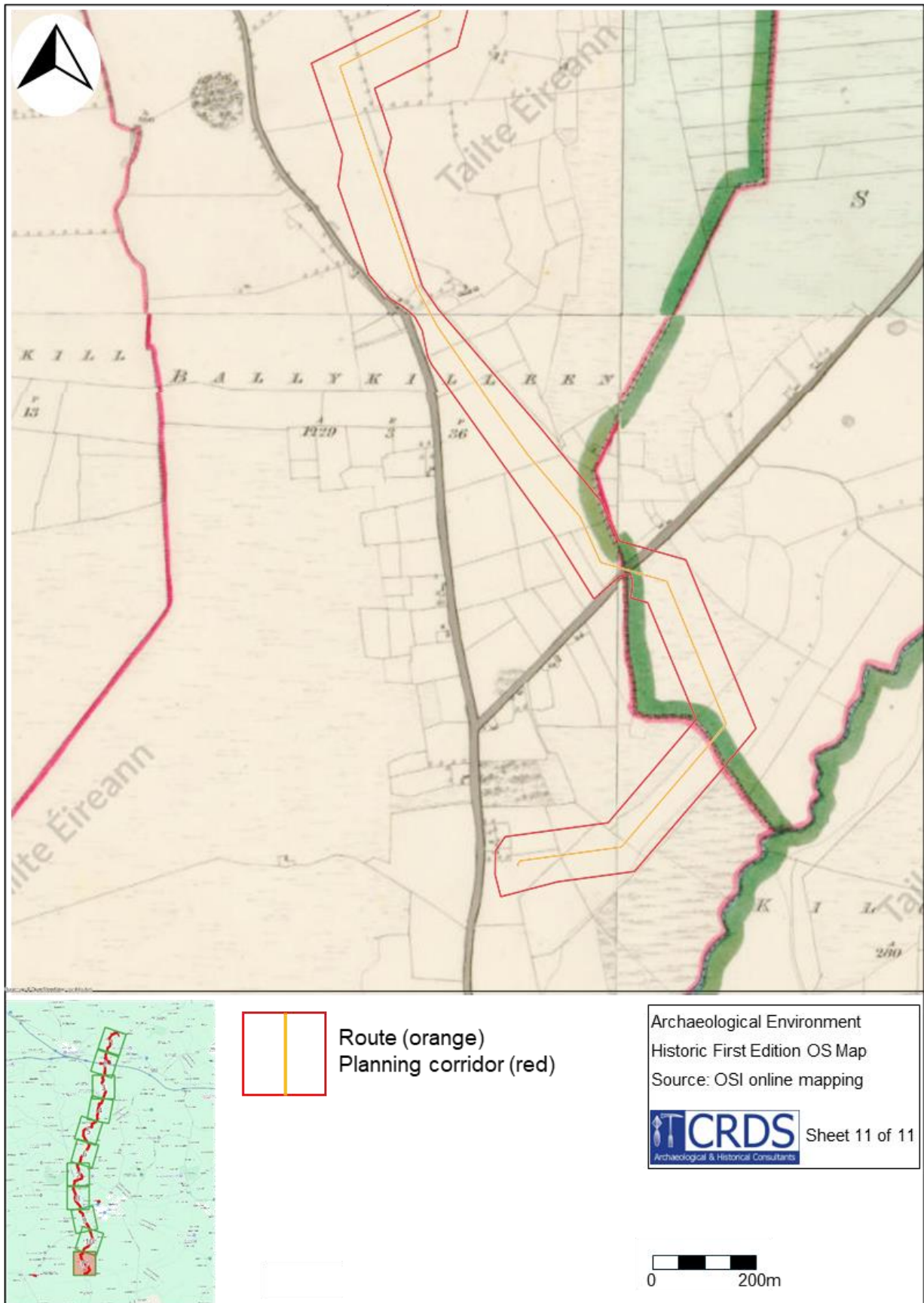


Figure 12-17 1830s Ordnance Survey Historic six inch maps (off route compounds)



Figure 12-18 1910s Ordnance Survey Historic 25 inch maps (Sheet 1 of 11) (route (orange) indicative only).

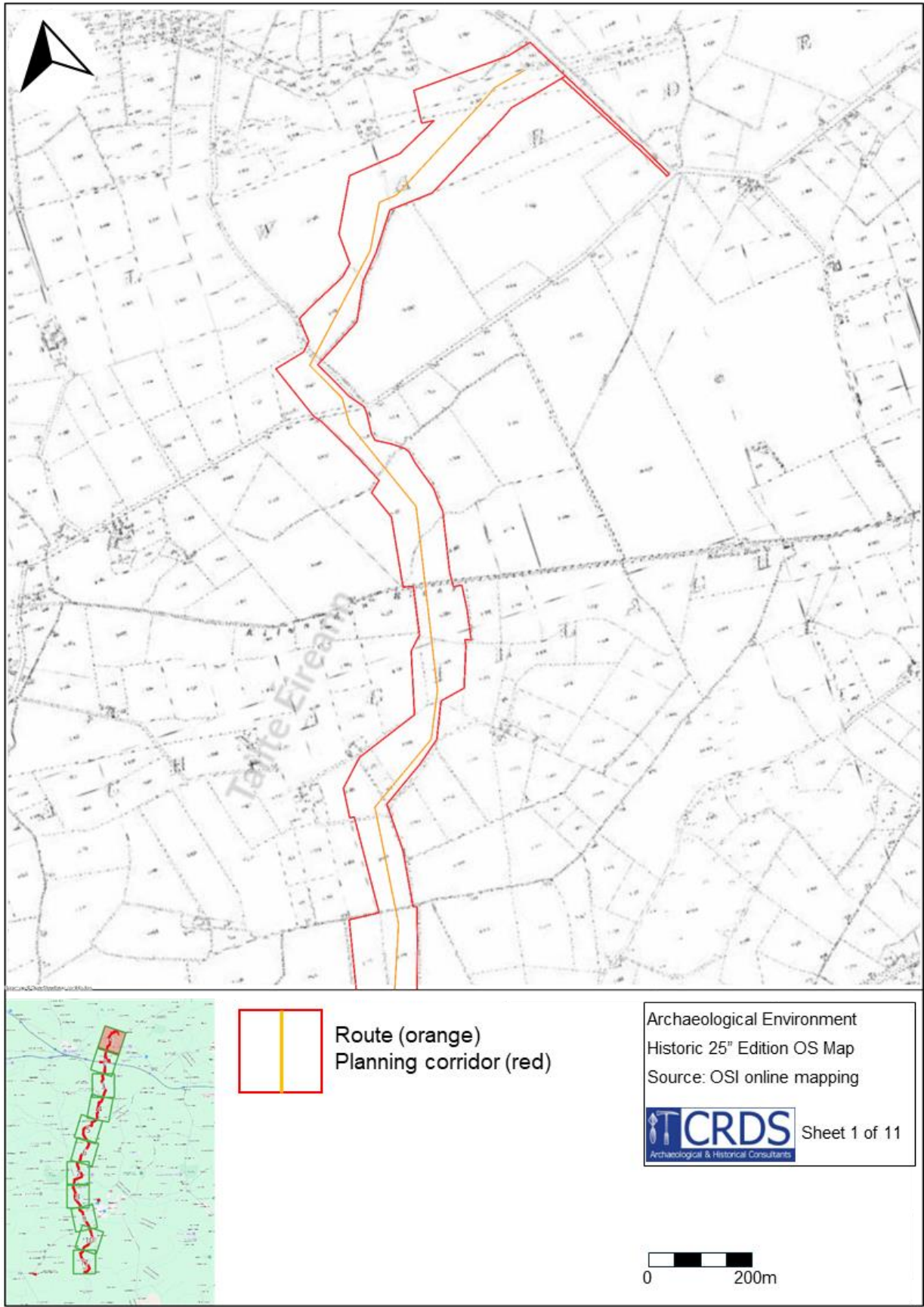


Figure 12-19 1910s Ordnance Survey Historic 25 inch maps (Sheet 2 of 11) (route (orange) indicative only).

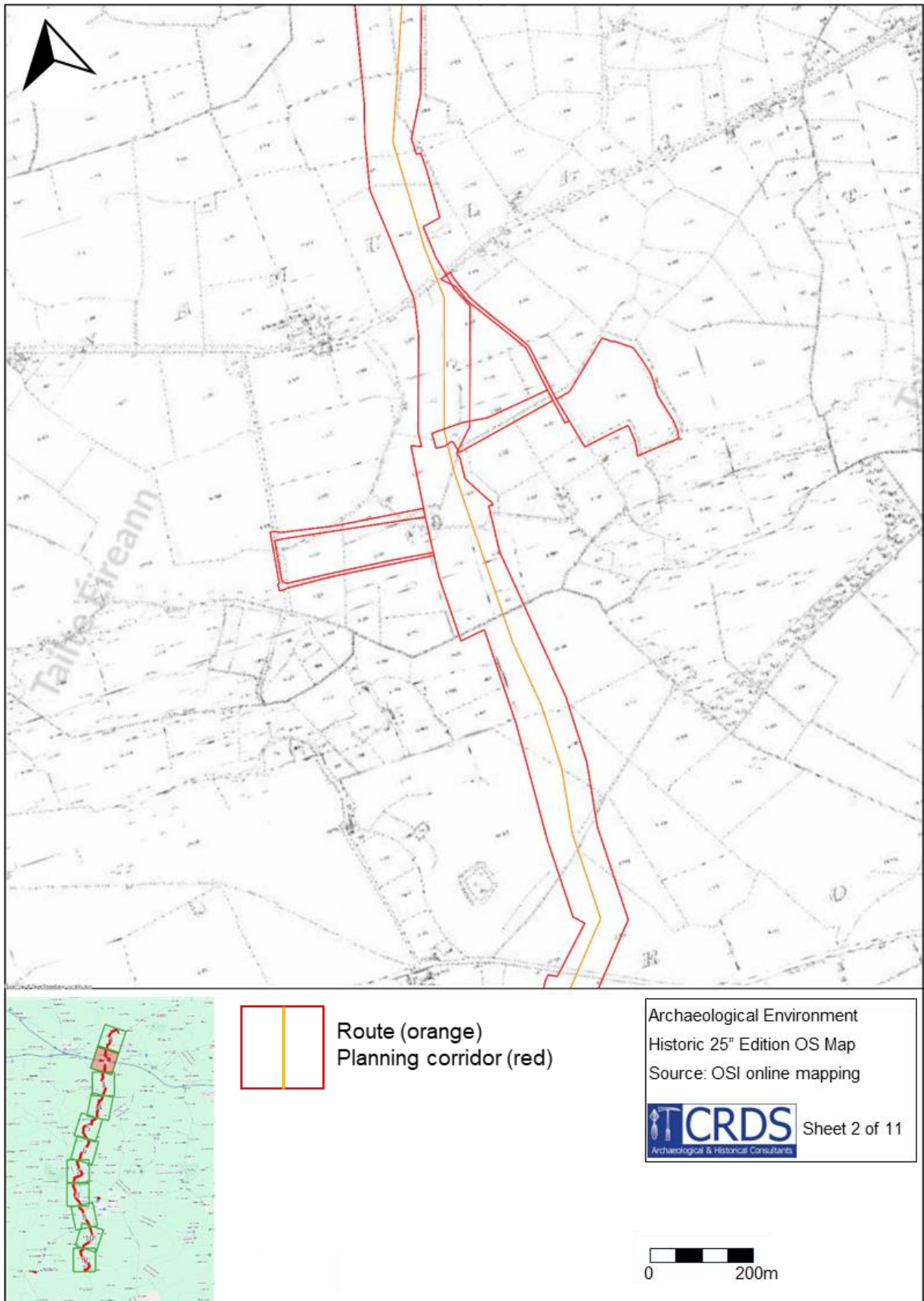


Figure 12-20 1910s Ordnance Survey Historic 25 inch maps (Sheet 3 of 11) (route (orange) indicative only).

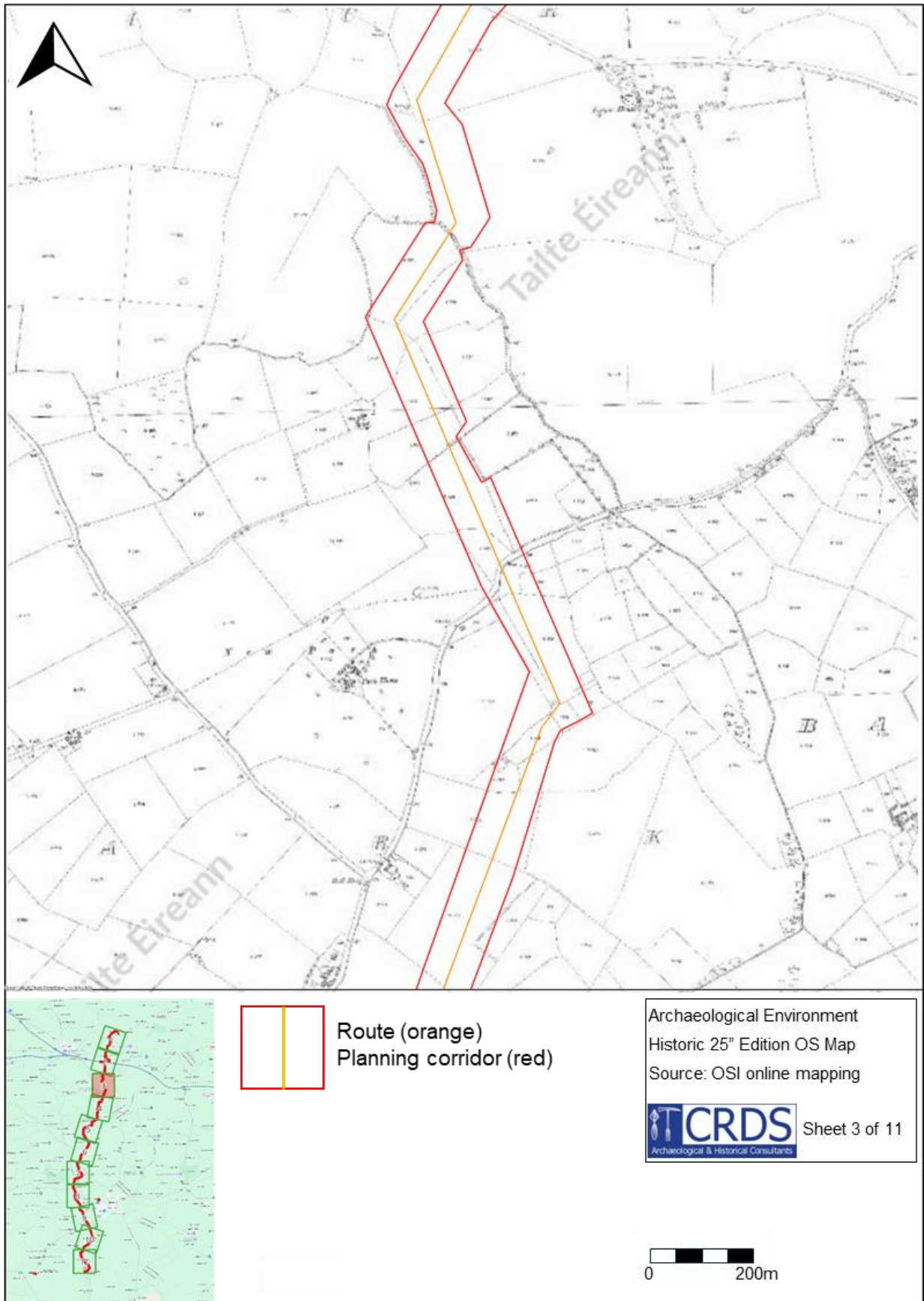


Figure 12-21 1910s Ordnance Survey Historic 25 inch maps (Sheet 4 of 11) (route (orange) indicative only).

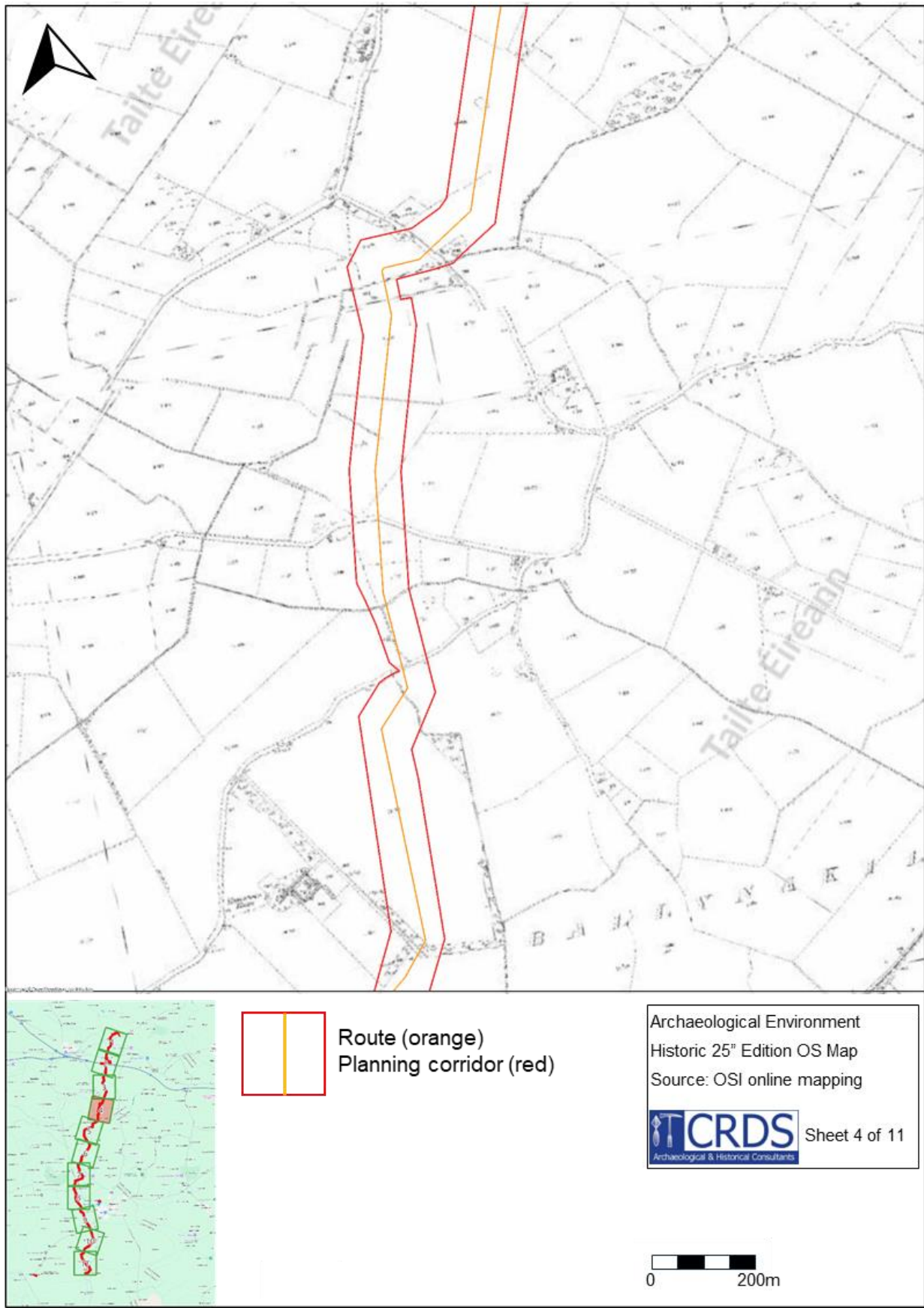


Figure 12-22 1910s Ordnance Survey Historic 25 inch maps (Sheet 5 of 11) (route (orange) indicative only).

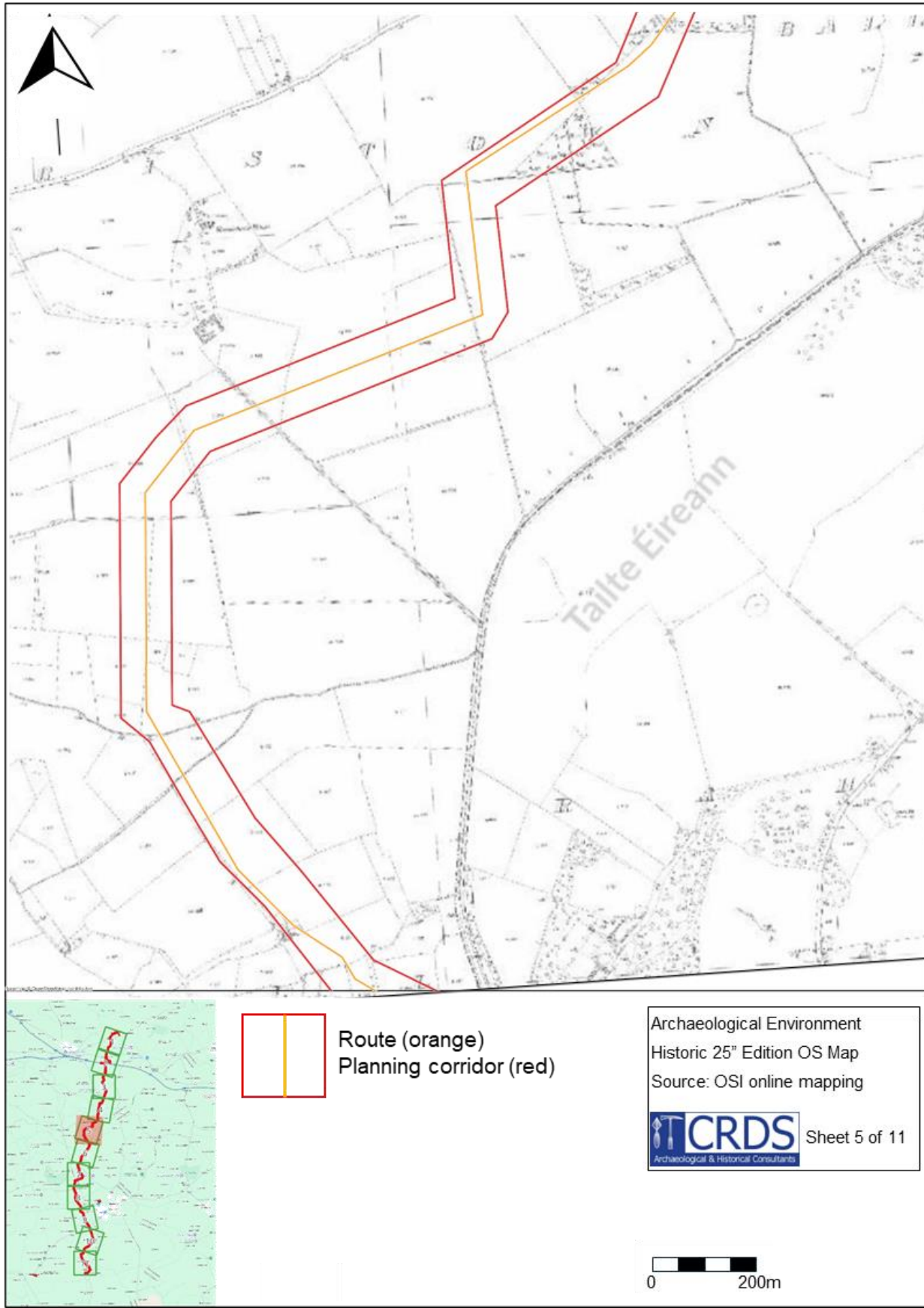


Figure 12-23 1910s Ordnance Survey Historic 25 inch maps (Sheet 6 of 11) (route (orange) indicative only).

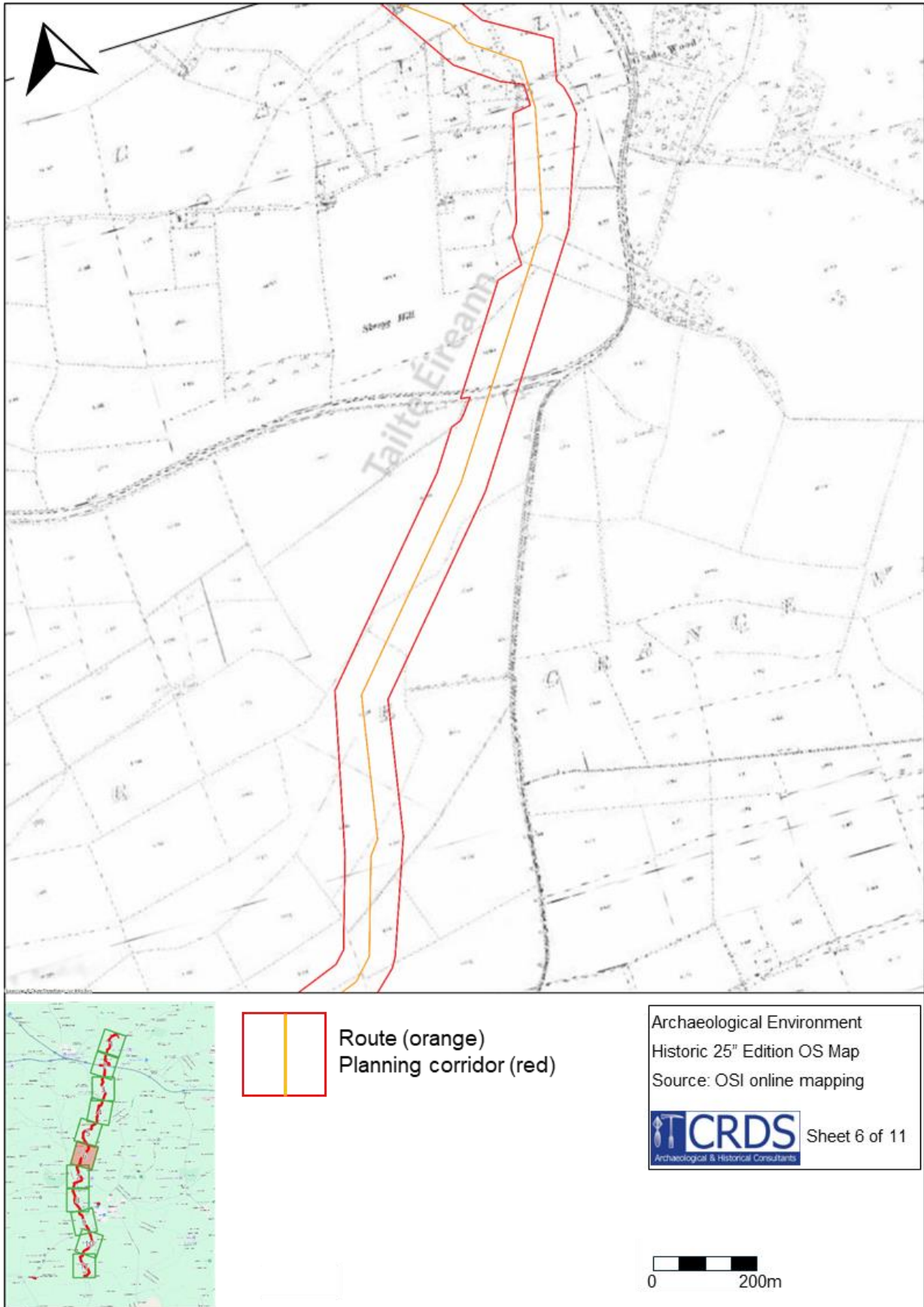


Figure 12-24 1910s Ordnance Survey Historic 25 inch maps (Sheet 7 of 11) (route (orange) indicative only).

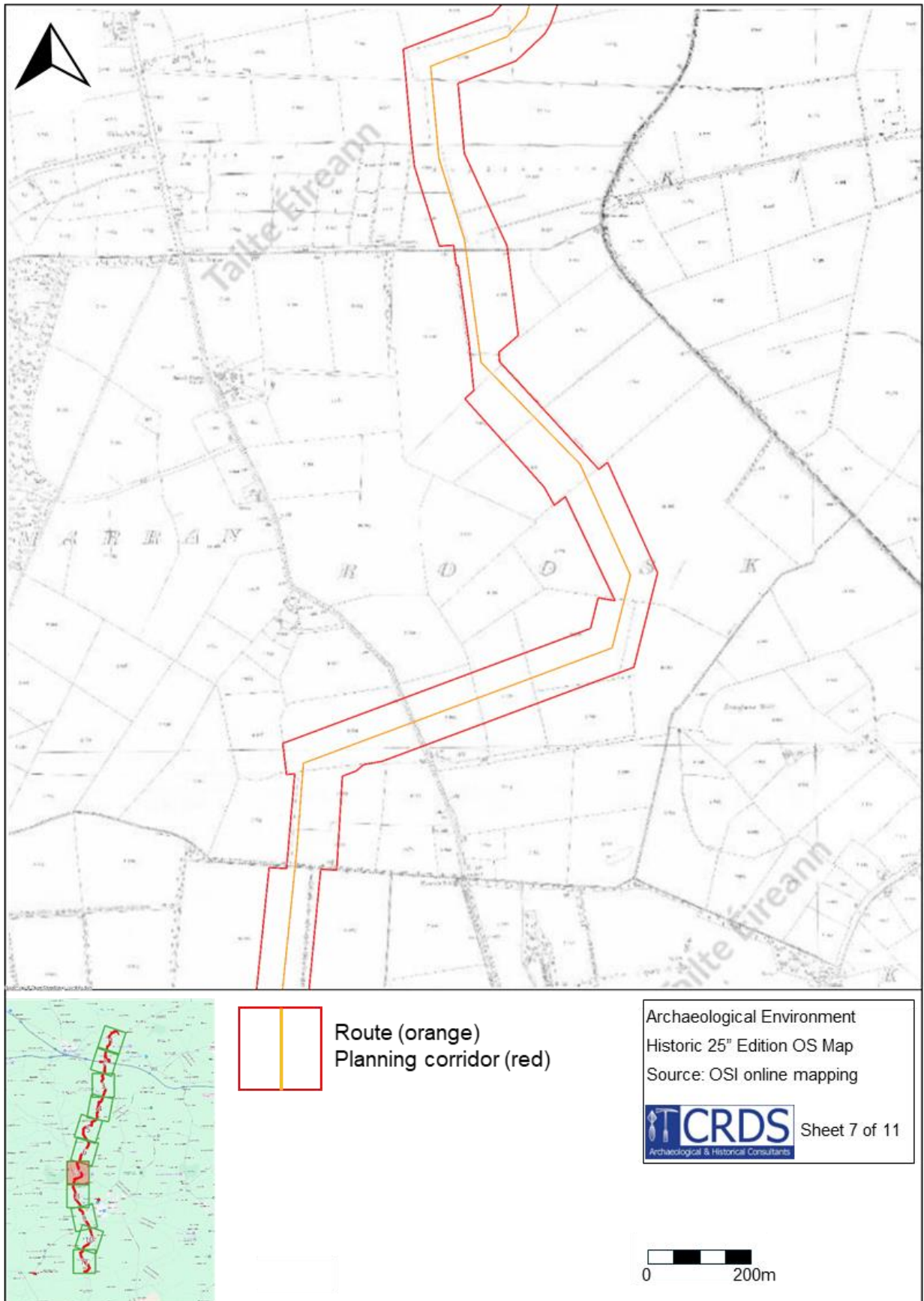


Figure 12-25 1910s Ordnance Survey Historic 25 inch maps (Sheet 8 of 11) (route (orange) indicative only).

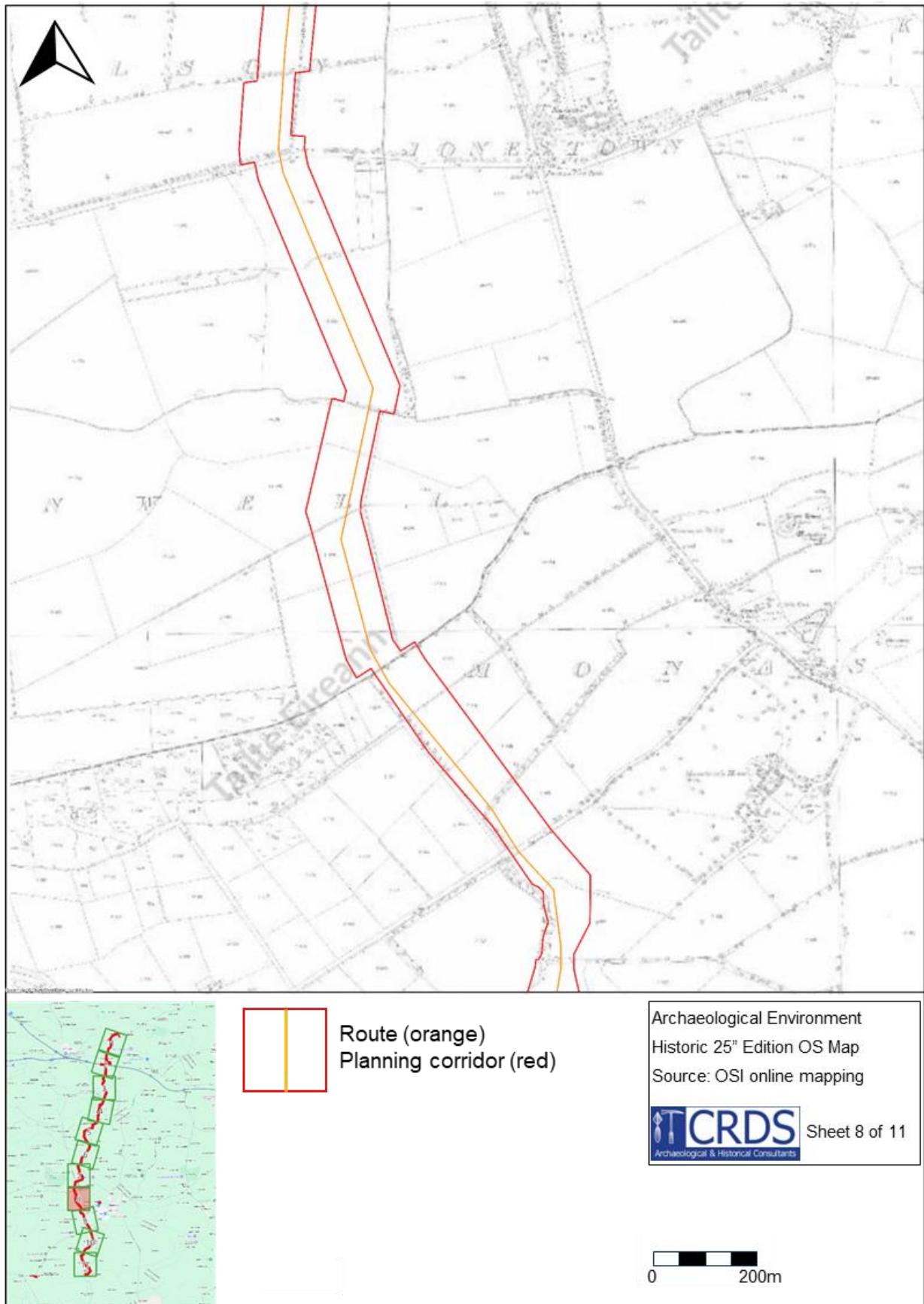


Figure 12-26 1910s Ordnance Survey Historic 25 inch maps (Sheet 9 of 11) (route (orange) indicative only).

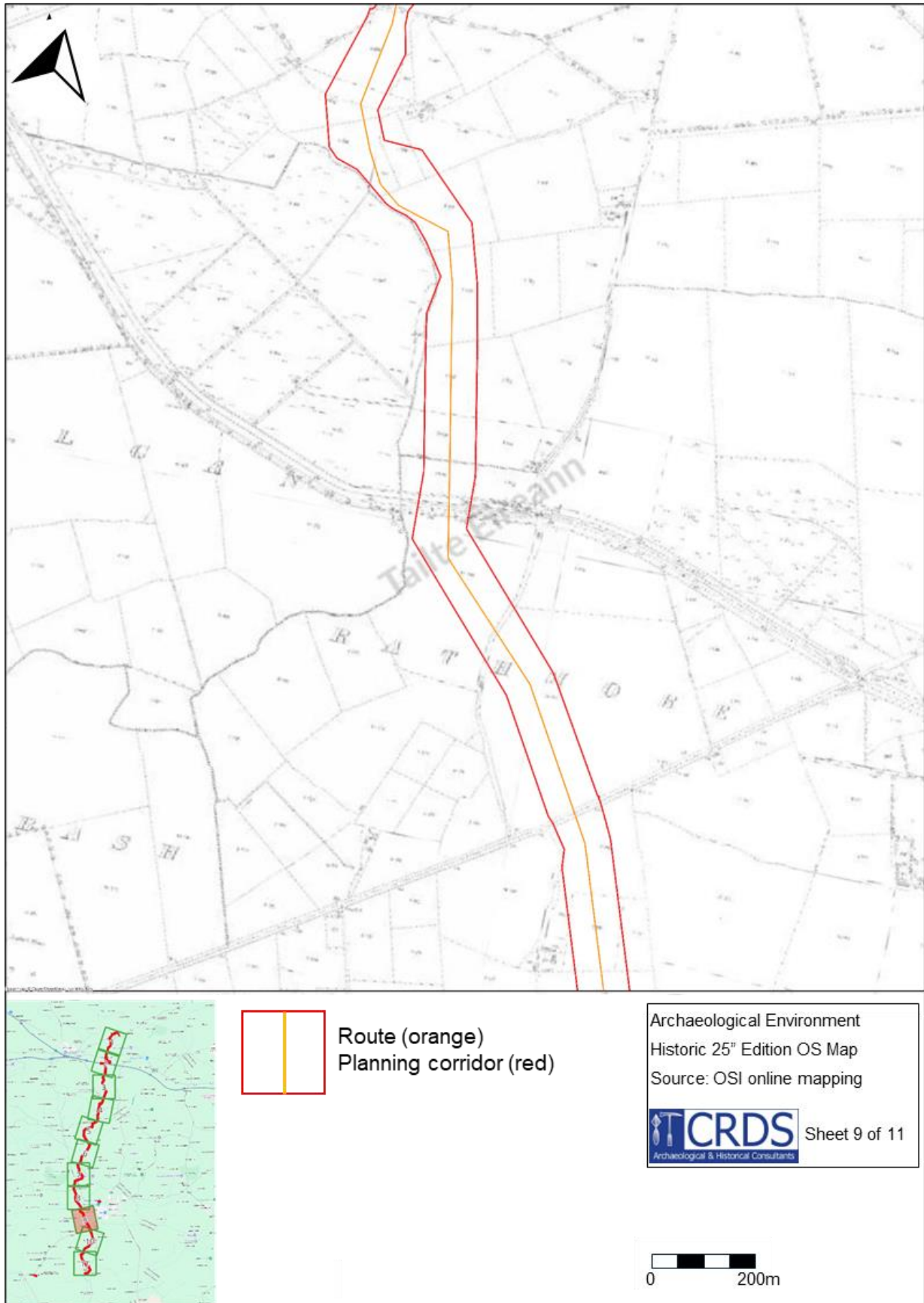
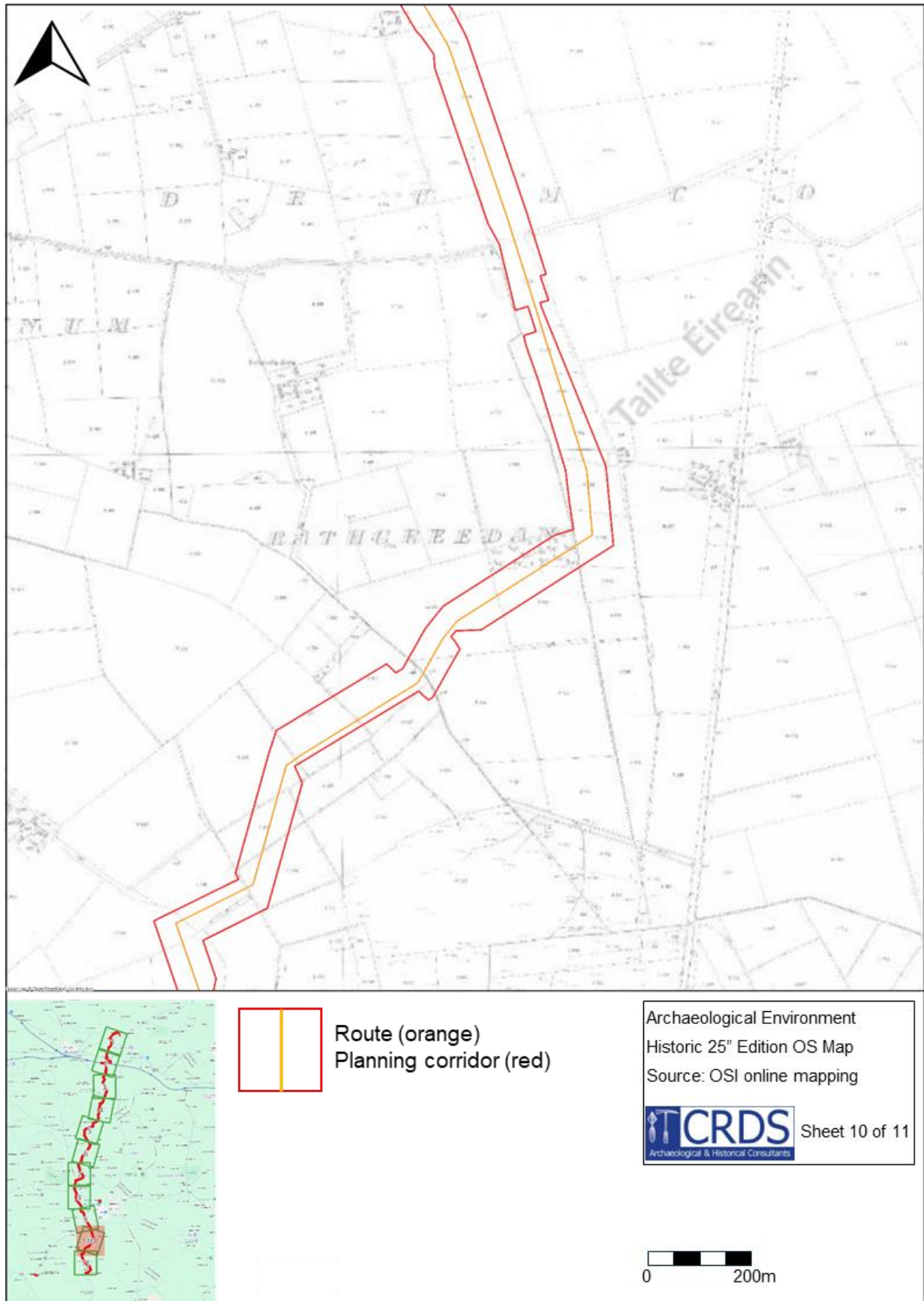


Figure 12-27 1910s Ordnance Survey Historic 25 inch maps (Sheet 10 of 11) (route (orange) indicative only).



**Figure 12-28 1910s Ordnance Survey Historic 25 inch maps (Sheet 11 of 11) (route (orange) indicative only).**

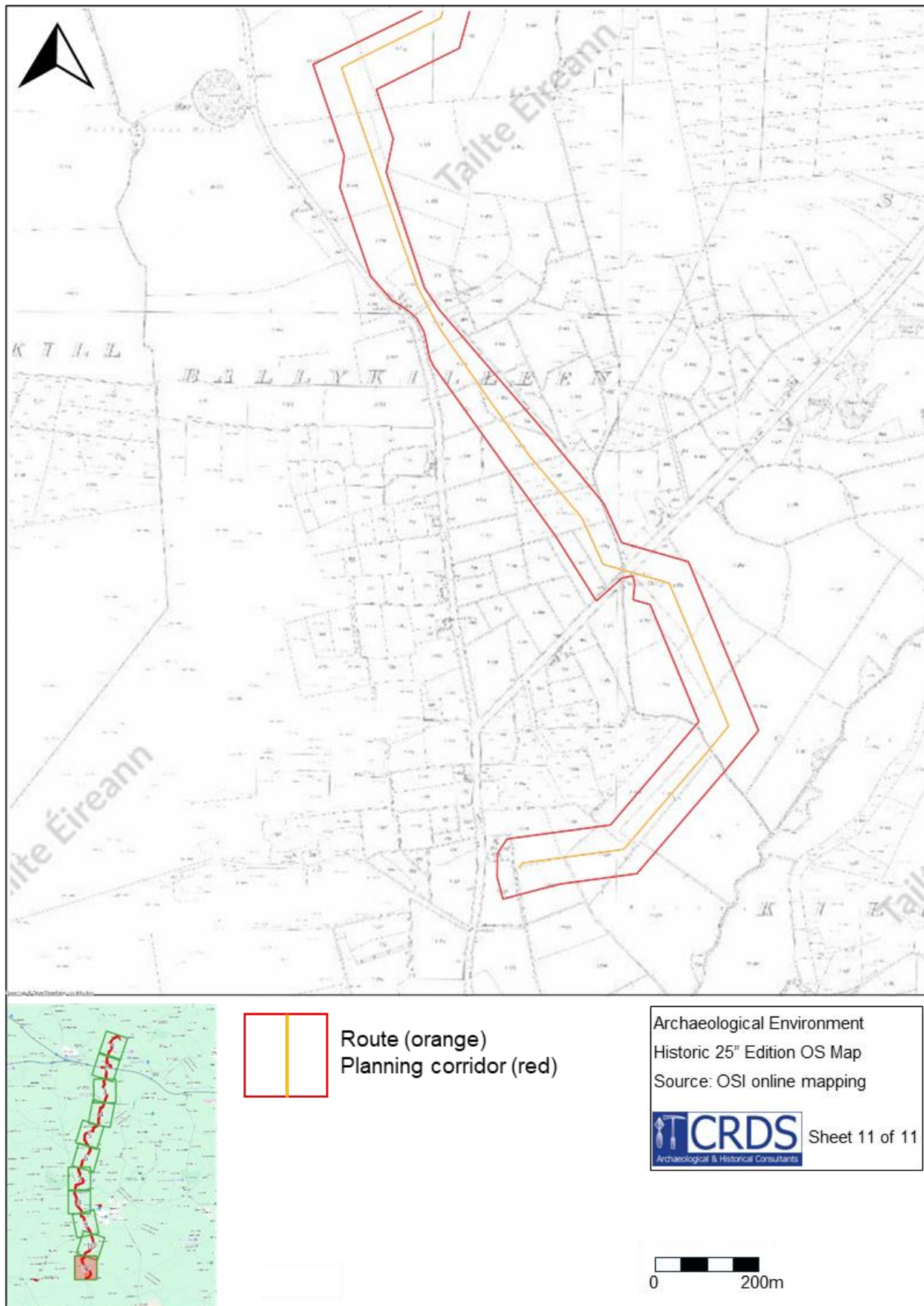


Figure 12-29 1910s Ordnance Survey Historic 25 inch maps (off route compounds)

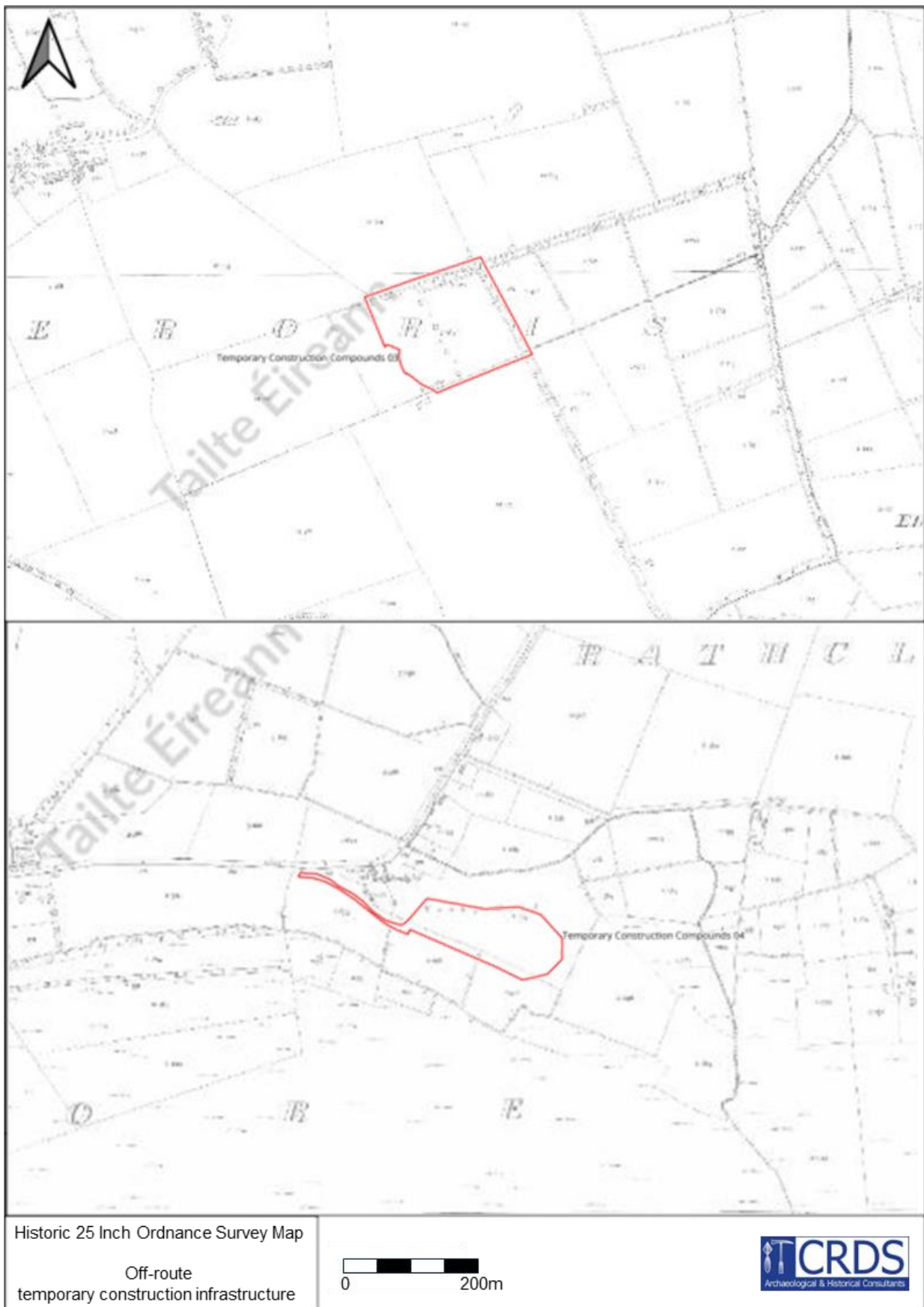


Figure 12-30 Archaeological Environment (Sheet 1 of 6).





Figure 12-32 Archaeological Environment (Sheet 3 of 6).



Figure 12-33 Archaeological Environment (Sheet 4 of 6).



Figure 12-34 Archaeological Environment (Sheet 5 of 6).



Figure 12-35 Archaeological Environment (Sheet 6 of 6).

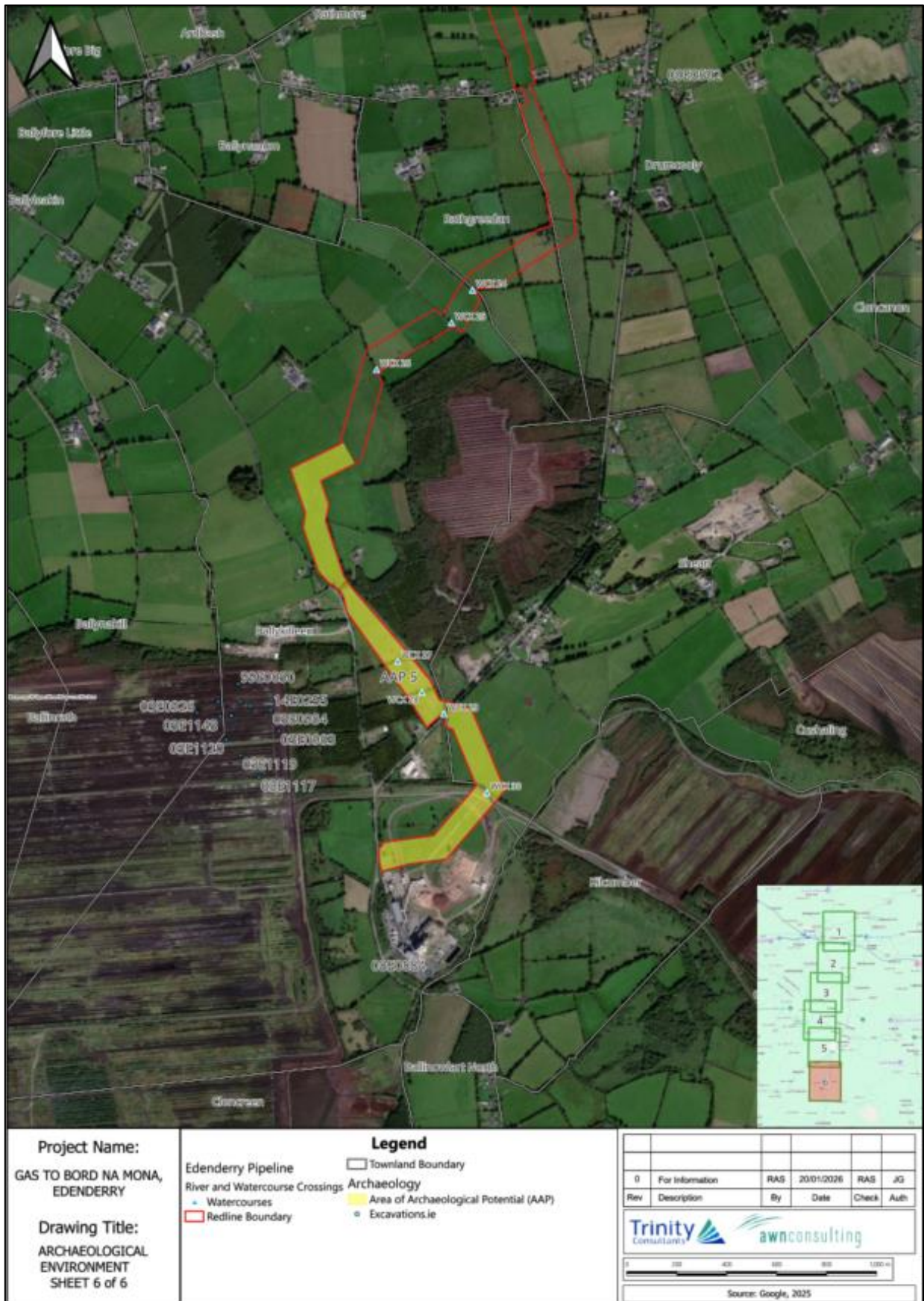


Figure 12-36 Extract from Google maps Aerial Photography showing the off route compounds study areas.



### **12.3.6 Field Survey**

Field survey was undertaken of the areas of archaeological potential along the Proposed Development corridor. The Areas of Archaeological Potential were walked as part of the geophysical survey undertaken by ACSU (as discussed below in Section 12.3.7). In addition to a general field walking survey of the landscape along the Proposed Development corridor, all water courses corresponding to townland boundaries were assessed.

#### ***12.3.6.1 General Landscape***

The land in which the Proposed Development corridor is sites principally comprises low lying, relative flat poorly drained land. The land is predominantly used for farming, grazing of cattle and sheep. The landscape consists of fields in open pasture surrounded by mature, dense hedgerow.

The bedrock under the Proposed Development corridor comprises Carboniferous Limestone, comprising the Lucan Formation of dark limestone and shale), the Waulsortian Limestones (massive unbedded lime-mudstone), the Ballysteen Formation (dark, muddy limestone and shale) and the Edenderry Oolite Member (oolitic limestone). The quaternary sediments consist principally of tills derived from limestone and peat, with alluvial sediments and gravels associated with rivers.

#### ***12.3.6.2 Areas of Archaeological Potential***

AAP1 is located in the townland of Ardnamullan, which consists of pasture and tillage fields with an elevation of 72-81m Ordnance Datum (OD).

AAP2 is located in the townland of Ticroghan, which consists of pasture fields with some areas of rough ground and has an elevation of 74-79m Ordnance Datum (OD).

AAP3 traverses three townlands: Mountwilson, Thornwell and Monasteroris, Co. Offaly, with a mixture of pasture and tillage fields. This section has an elevation of 72-78m Ordnance Datum (OD).

AAP4 consisted of three fields, in pasture, within the townland of Rathmore, Co. Offaly. This section has an elevation of 81-85m Ordnance Datum (OD).

AAP5 traverses two townlands, Ballykilleen and Shean, Co. Offaly. This section had an elevation of 68-86m Ordnance Datum (OD). The fields were predominantly in pasture, with rough ground conditions in some areas.

#### ***12.3.6.3 Watercourses / Townland Boundaries***

Townland boundaries identified as being marked by watercourses were assessed in heavy rain. It is important to note that all of the watercourses are part of managed farmland and have clearly been maintained as drainage features to facilitate farming poorly drained soils. All comprise a ditch and bank (of varying size) with mature hedgerow on one or both sides. It is important to note that the townland boundaries (and presumably the corresponding ditches and watercourses) have remained virtually unchanged in their location since the early 19<sup>th</sup> century at least. The results of the survey are given below in

Table 12-8.

**Table 12-8 Watercourse assessment**

<b>No</b>	<b>Watercourse</b>	<b>Figure</b>
WCX01	Deep, wide, water filled ditch which has been significantly re-dug in recent times, with dredged material stockpiled on the southern side. Landscape is flat-lying, water-logged poorly drained soil in open pasture	Plate 12-1
WCX02	Substantial well managed water-filled ditch. Landscape is gently rolling well-drained soils in pasture.	Plate 12-2
WCX04	Substantial stream and bank filled with running water.	Plate 12-3
WCX05	Substantial ditch and bank filled with water.	Plate 12-3
WCX06	Dry, shallow ditch at the time of survey. The landscape in this area (WCX04, 05 & 06) is gently rolling topography with poorly drained soils and standing water in low-lying hollows.	Plate 12-3
WCX11	Substantial steep sided ditch with shallow water.	Plate 12-4
WCX12	Substantial steep sided ditch with shallow water. The landscape in this area (WCX11 & 12) is flat lying poorly drained water-logged soil in open pasture.	Plate 12-4
WCX14	No accessible at time of survey. Based on cartographic evidence, this watercourse forms part of a land drainage effort in the 20 <sup>th</sup> century.	-
WCX16	Shallow ditch with shallow water. The landscape is poorly drained flat-lying pasture.	Plate 12-5
WCX17	Dry ditch at the time of survey, surrounded my mature trees.	Plate 12-6
WCX19	Very substantial stream with flowing water – deep and wide. The landscape in this area (WCX17 & 19) is gently undulating poorly drained farmland in open pasture.	Plate 12-6
WCX24	Shallow ditch with virtually no water. The landscape is flat lying, moderate-poorly drained in open pasture.	Plate 12-7
WCX30	Substantial ditch, water filled – but clearly has been altered in recent times relating to adjacent Bord na Mona works.	Plate 12-8

**Plate 12-1 Field Survey Photographs (Water Crossing 1).**

WCX01

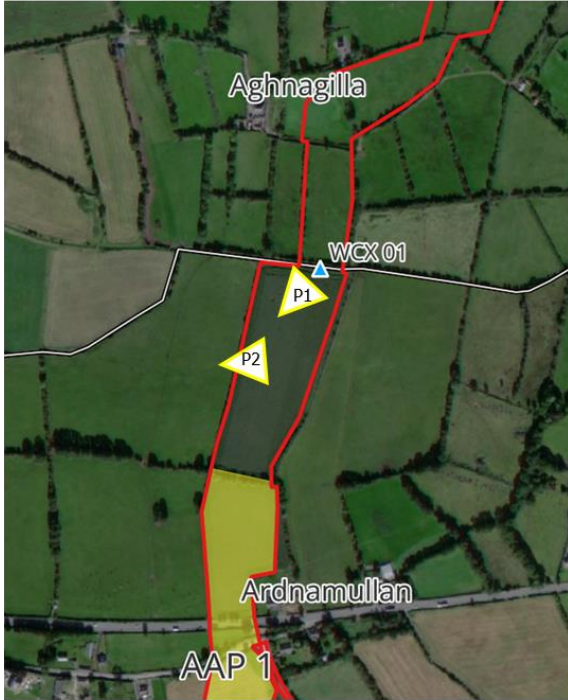
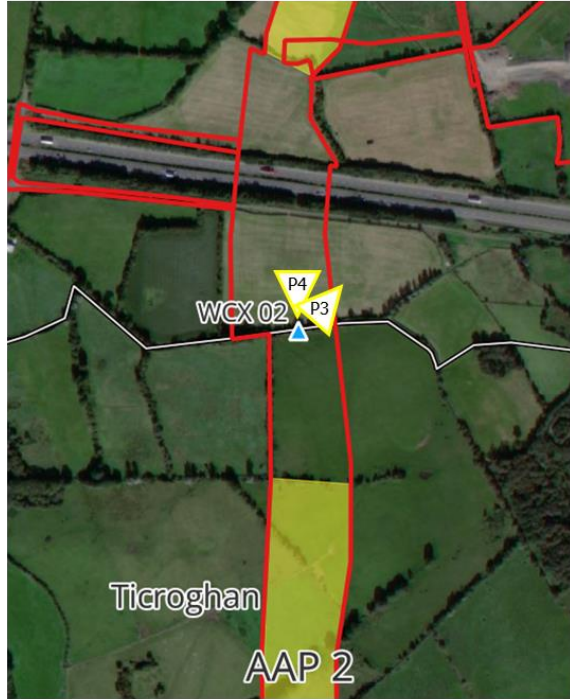


Plate 12-2 Field Survey Photographs (Water Crossing 2)

WCX02



**Plate 12-3 Field Survey Photographs (Water Crossings 4, 5 & 6).**



Plate 12-4 Field Survey Photographs (Water Crossings 11 & 12).

WCX11, WCX12



Plate 12-5 Field Survey Photographs (Water Crossing 16).

WCX16

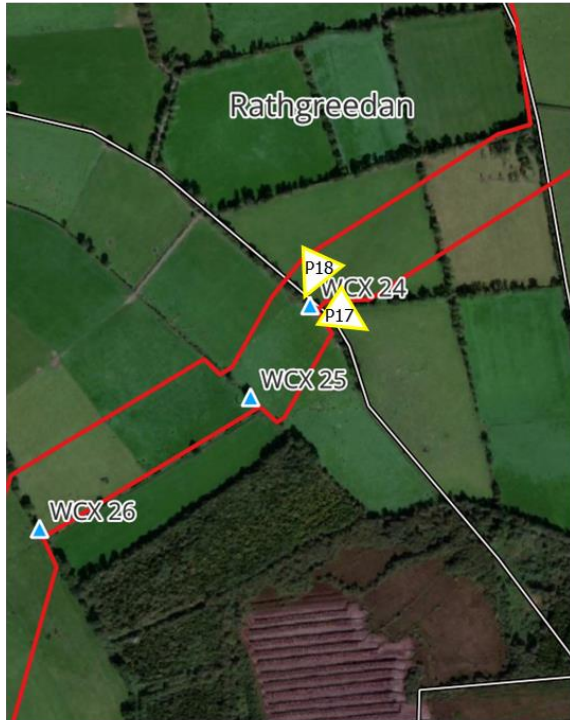


Plate 12-6 Field Survey Photographs (Water Crossings 17 & 19).



Plate 12-7 Field Survey Photographs (Water Crossing 24).

WCX24



## Plate 12-8 Field Survey Photographs (Water Crossing 30).



### 12.3.7 Geophysical Survey

A geophysical survey was undertaken by ACSU Ltd under license to the National Monuments Service (License no. 25R0348) focused on surveying five of the six identified areas of high archaeological potential (AAP1 – AAP5 (see Section 12.3.4)). The report is attached as Appendix 12.5 and summarised below and in Table 12-9.

A complete, detailed gradiometer survey was undertaken throughout the application area using a SENSYS MAGNETO MXV3 8-sensor fluxgate gradiometer cart system. Potential archaeological features were detected within AAP1 in the southern portion of Field 20 (Insert 12-4 (labelled M1 & M2)) that may represent enclosures and potential spread/pit remains of archaeological significance have been recorded throughout the areas surveyed. An archaeological interpretation for responses in these areas is highly tentative, and a natural soil or geological origin or recent land use for these anomalies should also be considered.

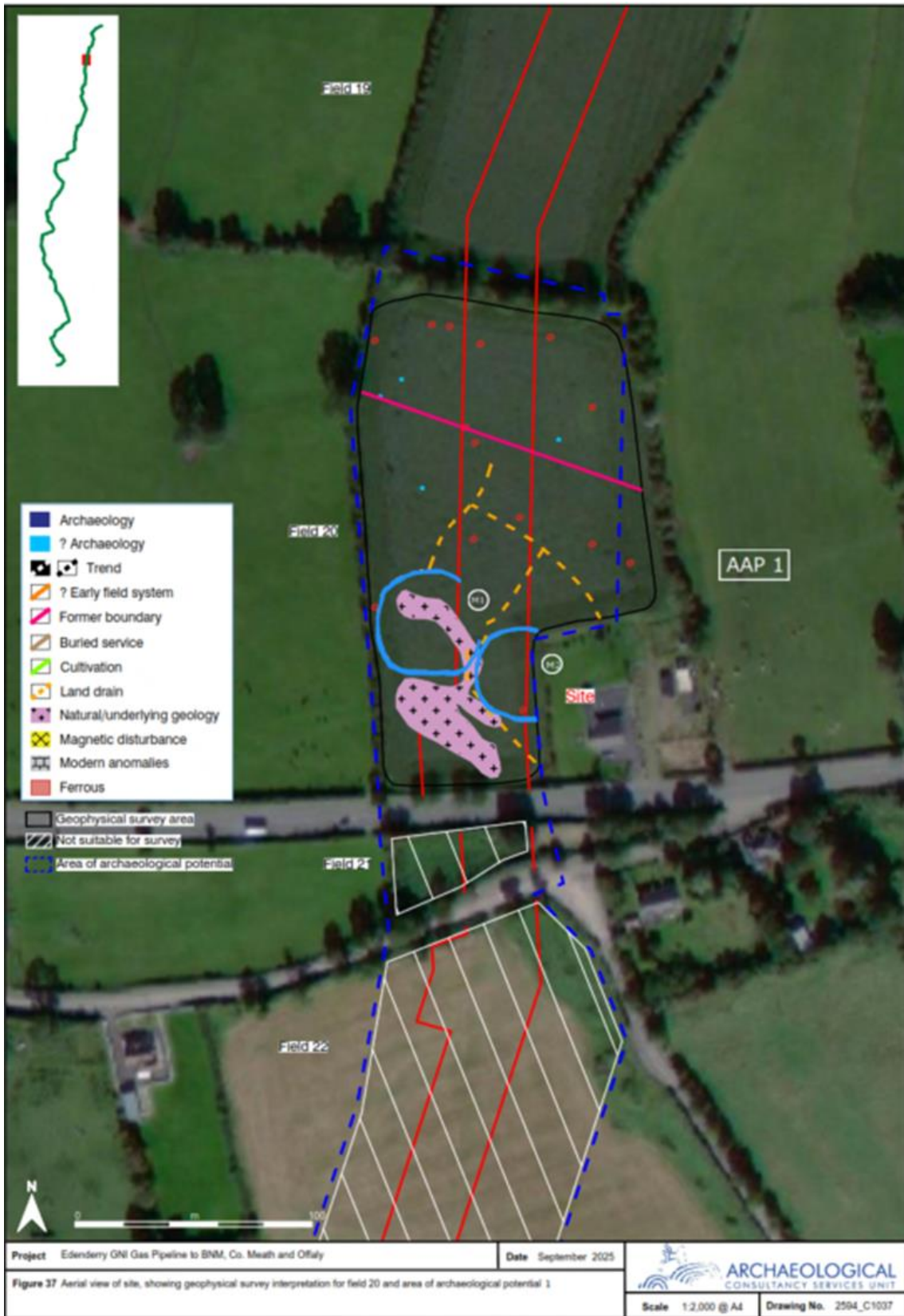
Other potential anomalies detected correlated with features depicted on the Ordnance Survey 6-inch map, surveyed 1835, and the third edition Ordnance Survey (OS) 25-inch map, surveyed 1910, such as former field boundaries. Linear anomalies that are not recorded field boundaries were also detected, which likely represent land drains, paths/access routes and cultivation furrows.

The report recommended that the anomalies identified be investigated and ground-proofed by a programme of archaeological test trenching programme, carried out under license to the National Monuments Service by a licence-eligible archaeologist prior to any groundworks taking place.

**Table 12-9 Results of Geophysical Survey**

<b>Anomaly No</b>	<b>Form/Nature of Anomaly</b>	<b>Possible Source(s) of Anomaly</b>	<b>Description</b>
M1	?Archaeology	Possible circular enclosure	A negative circular anomaly in the southern portion of Field 20 (AAP1), adjacent to M2. The anomaly measures c. 37m east-west by c. 47m north-south. There is a strong geological response in this area (Figures 21 & 37).
M2	?Archaeology	Possible semicircular enclosure	A negative semi-circular anomaly in the southern portion of Field 20 (AAP1), adjacent to M1 that extends outside the survey limits to the southeast. There is a strong geological response in this area (Figures 21 & 37).
-	?Archaeology	Small to medium anomalies: pits, posts, spreads, kilns, cut features	A series of positive anomalies occurs sporadically across the survey area. These might represent cut features such as pits, postholes, spreads, kilns, or other archaeological features. They may also be natural in origin.
-	Linear features	Former field boundaries	Positive linear anomalies that occur in AAP1, AAP2, AAP3 & AAP5 that correspond with former field boundaries depicted on the first edition Ordnance Survey (OS) 6-inch map, surveyed 1835, and the third edition Ordnance Survey (OS) 25-inch map, surveyed 1910.
-	Linear features	Early field systems?	Positive linear anomalies across the survey area that may represent former field divisions that are not depicted on OS mapping.
-	Curvilinear feature	Trend	Positive curvilinear trend occurring in Field 118 in AAP4 that may represent agricultural land use, such as drainage.
-	Linear feature	Trend	Negative linear trend occurring in Field 153 in AAP5 that may represent agricultural land use, such as drainage.
-	Ferrous	Magnetic disturbance from modern debris	Bipolar anomalies sporadically occurring throughout the survey area that are associated with magnetic interference from modern ferrous material, either in the topsoil or the surface of the survey area.
-	Natural/underlying geology	Natural/changes in the underlying geology	Broad band of positive and negative magnetism occurring in the southern portion of Field 20, Fields 100-101, Field 116 & Field 158 that likely depicts a change in the underlying geology.
	Magnetic disturbance	Fencing, boundaries and modern surfaces	Broad ferrous responses occur occasionally along field boundaries and access points associated with modern fencing/boundaries and surfaces/ground disturbance.
	Linear feature	Buried service	Faint negative linear anomaly aligned east-west in Field 98 that likely represents a buried service or land drain.
	Cultivation	Land use/furrows	A series of cultivation furrows occurs in the northern portion of AAP2, as well as sections of AAP3 & AAP4.

**Insert 12-4 Results of geophysical survey of AAP1 (ACSU 25R0348).**



## 12.4 Characteristics of the Proposed Development

The purpose of this section is to provide an overview of the key relevant details of the construction phase and operational phase of the Proposed Development. The information presented in this section is informed by the project design, but it is not a complete description of the Proposed Development. Therefore, it should be read in conjunction with the full development package.

For a more comprehensive understanding of the Proposed Development, please refer to Chapter 2 'Description of the Proposed Development' of the EIA Report. Chapter 2 provides a detailed overview of the lifecycle of the project, including reference to the drawings, plans, reports, and other relevant documents in order to define the Proposed Development.

### 12.4.1 Construction Phase

The Proposed Development comprises the construction, commissioning and operation of the GNI 143 Ballykilleen Pipeline, a c. 23.65 km underground gas transmission pipeline, together with associated above-ground installations, including the Kilwarden Offtake Installation and the Ballykilleen Above Ground Installation (AGI).

In addition to the linear pipeline, the Proposed Development includes temporary construction infrastructure within the red line boundary, comprising five Temporary Construction Compounds, temporary laydown areas (Type A and Type B), construction access points, and a temporary construction haul road or 'running track' along the pipeline route. Temporary Construction Compounds 03 (near Edenderry town) and 04 (located in the townland of Esker More, Co. Offaly) are located off the linear route but within the red line boundary. All other temporary works, including access, haul roads, laydown areas, and temporary watercourse crossings, are located along the pipeline route.

From an archaeological perspective, the key characteristics of the Proposed Development relate to ground disturbance for the laying of the pipeline, and critically, top-soil stripping for the temporary access and infrastructure required to support the Proposed Development.

The principal element of the Proposed Development is the GNI 143 Ballykilleen Pipeline, which will be installed predominantly within agricultural lands using open-cut trenching methods. The pipeline will generally be laid at a minimum depth of c. 1.2 m below existing ground level, with deeper excavations required at specific locations such as road, river and watercourse crossings. These works will necessitate the stripping of topsoil to a depth of 300mm along the working width, typically c. 30 m in greenfield areas, with localised widening at watercourse and road crossings and construction compounds.

The Proposed Development also includes a series of special crossings, including road crossings (RVX), watercourse crossings (WCX) and river crossings (RVX). While trenchless techniques significantly reduce surface disturbance at these locations, associated launch and reception pits, temporary working areas and construction access routes will still involve localised ground disturbance.

In addition to the linear pipeline works, the Proposed Development includes temporary construction compounds, laydown areas and access routes, required to facilitate construction activities, storage of materials, and movement of personnel and plant. These areas will involve short-term ground disturbance, including topsoil stripping.

Construction of the Kilwarden Offtake Installation and the Ballykilleen AGI will involve groundworks including excavation for foundations, installation of below-ground pipework and drainage, and formation of permanent hardstanding areas. The Proposed Development will include 5 no. temporary construction compounds, which will typically involve the stripping of topsoil to a depth of approximately 300 mm, with deeper impact for drainage and services. It is important to note that the two off-route compounds at Edenderry Business Campus and in the Esker More townland, Co. Offaly have been impacted to some degree by previous development works.

## 12.4.2 Operational Phase

There will be no ground disturbance relating to the operational phase of the Proposed Development. The gas transmission pipeline will be fully buried below ground level, and no excavation, topsoil stripping or subsurface works will be required.

## 12.5 Potential Impacts of the Proposed Development

### 12.5.1 Construction Phase

No recorded archaeological, architectural or cultural heritage sites will be directly impacted on by construction works within the Proposed Development corridor.

However, the baseline survey has indicated that the land through which the Proposed Development corridor traverses has been continuously inhabited from at least the Neolithic, with archaeological sites and / or artefacts recovered from within 500m of the Proposed Development corridor from all time periods.

Five Areas of Archaeological Potential were identified during the study based on proximity to known archaeological sites and findings, or relating to previously unrecorded potential features noted. Geophysical survey (License no. 25R0348) of these Areas identified a number of anomalies that might indicate the sub-surface survival of archaeological features, notably in Ardnamullan townland (AAP1).

The Proposed Development corridor traverses one county boundary, two barony boundaries, and nineteen townland boundaries, and runs adjacent to a further townland. These are considered to be of high archaeological potential.

The Proposed Development corridor traverses two rivers and 32 no. watercourses, but the two river crossings and two of the watercourse crossings will be trenchless. Thirteen of the remaining watercourses form one of the above townland boundaries. Watercourses, notably rivers and streams, particularly those at boundaries, are considered to be of high archaeological potential.

Potential impacts on archaeological and cultural heritage associated with the Proposed Development involves ground disturbance associated with the construction of the Proposed Development. Should archaeological remains survive below surface, then ground disturbance in these areas would remove sub-surface features.

Potential impacts on architectural heritage consist of the portions of the Proposed Development corridor that will traverse demesne features associated with Park House and Harristown House.

Should archaeological or architectural heritage features survive, then without mitigation, the impact will be **negative, moderate** and **permanent**.

### 12.5.2 Operational Phase

There are no potential impacts on archaeological, architectural and cultural heritage expected as a result of the operational phase of the Proposed Development.

## 12.6 Mitigation Measures

### 12.6.1 Construction Phase

The following mitigation strategy has been designed based on the principals of the Code of Practice between Bord Gáis Éireann and The Minister for Arts, Heritage, Gaeltacht and the Island (2002)<sup>33</sup>.

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<sup>33</sup> <https://www.archaeology.ie/app/uploads/2025/02/code-of-practice-bord-gais-eireann-EN.pdf>

A suitably qualified archaeological consultant will be appointed to oversee the project from design through to planning and construction phase.

The geophysical survey of the Proposed Development, under license to the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht, will be completed across the entire route planning corridor.

Given the cultural significance of sacred trees in Ireland, the hawthorn tree identified in Ticroghan townland will be avoided and fenced off for the duration of the construction phase to protect it, and its root bed, from harm.

Pre-development archaeological testing, under license to the National Monuments Service of the Department of Housing, Local Government and Heritage, will be undertaken in advance of construction, as follows:

- ▶ Trenches will largely target anomalies identified by the geophysical survey, as well as county / barony / townland boundaries. A number of trenches will also be excavated in areas where no features were highlighted (as per best practice guidelines; c. 10% of the Proposed Development corridor should be tested in total).
- ▶ Trenches will be dug by a tracked excavator equipped with a 1.8 m wide toothless ditching bucket. Each trench will be excavated to the surface of archaeological features, deposits or structures, or to the surface of the undisturbed natural soil or bedrock (typically less than 75cm). Topsoil will be removed from the test trenches in horizontal levels of not more than 0.20 m in thickness until sterile subsoil is reached.
- ▶ A suitably qualified underwater archaeology specialist will assess the following watercourses along the Proposed Development corridor (WCX02, WCX04, WCX05 and WCX19) and undertake a wade or dive survey as appropriate under license to the National Monuments Service of the Department of Housing, Local Government and Heritage.
- ▶ Should archaeological or architectural heritage features, deposits or structures be uncovered during survey will be cleaned by hand, investigated and recorded.
- ▶ Archaeological excavation of features, deposits or structured identified, will be undertaken in advance of construction, in consultation with and under license to the National Monuments Service of the Department of Housing, Local Government and Heritage.

Applying these mitigation measures will ensure that the effect on the archaeology and architectural heritage will be **permanent, neutral** and **imperceptible**.

***Please note that the mitigation strategy detailed here are subject to the approval of the National Monuments Service, Department of Housing, Local Government and Heritage.***

## 12.6.2 Operational Phase

As there are no potential impacts on archaeological, architectural and cultural heritage expected as a result of the operational phase of the Proposed Development, no mitigation is required.

## 12.7 Monitoring or Reinstatement Measures

### 12.7.1 Construction Phase

There are no additional requirements relating to archaeological, cultural or architectural heritage for ongoing monitoring or reinstatement at construction phase of the Proposed Development.

## 12.7.2 Operational Phase

There are no additional requirements relating to archaeological, cultural or architectural heritage for ongoing monitoring or reinstatement at operational phase of the Proposed Development.

## 12.8 Residual Effects of the Proposed Development

### 12.8.1 Construction Phase

There are no residual effects of the Proposed Development on archaeological, cultural or architectural heritage at construction phase of the Proposed Development, thus the residual effect can be deemed ***neutral, imperceptible, and short term.***

### 12.8.2 Operational Phase

There are no residual effects of the Proposed Development on archaeological, cultural or architectural heritage at operational phase of the Proposed Development, thus the residual effect can be deemed ***neutral, imperceptible, and long term.***