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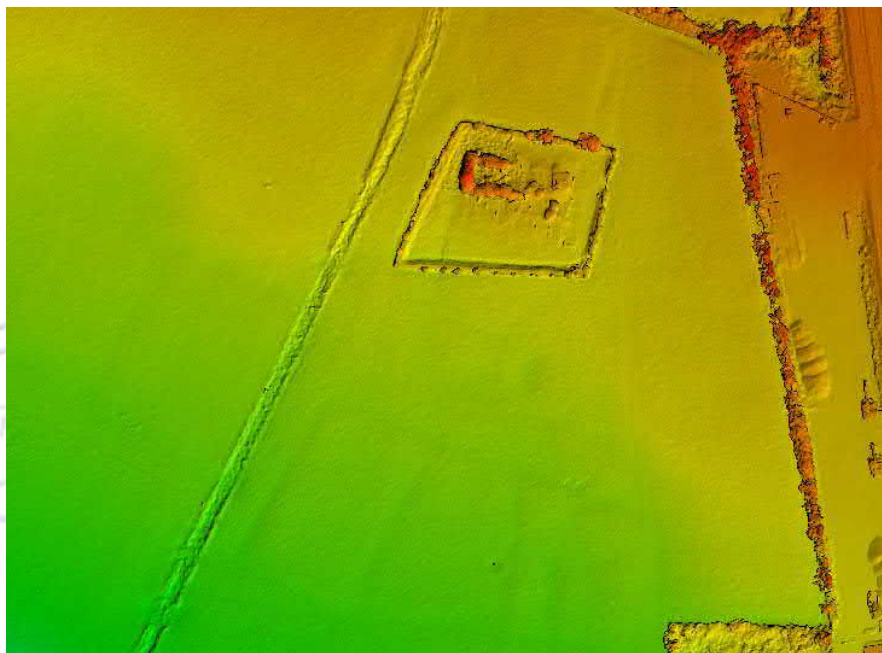


Cork Line Level Crossings Project – XC215

Imphrick, Co. Cork

Topographical Survey Report

ARCHAEOLOGICAL
CONSULTANCY
SERVICES UNIT



Prepared for Iarnród Éireann

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PROJECT DETAILS

Project	Cork Line Level Crossings Project – Topographical Survey at Imphrick
Townland(s)	County Cork: Imphrick
Site Type	Church and Graveyard
RMP No.	CO007-120001- and 002-
ITM Ref.	553491, 614648 (centrepoint)
Consultant	Archaeological Consultancy Services Unit, 21 Boyne Business Park, Greenhills, Drogheda, County Louth
Archaeologist	Donald Murphy & Ian Russell
Report Author	Donald Murphy
Client	Iamród Éireann
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EXECUTIVE SUMMARY

This report details the results of a topographical survey conducted in the townland of Imphrick, County Cork in the vicinity of the XC215 – Shinanagh level crossing (ITM 553491, 614648 - centrepoint). The topographical survey was carried out at a pre-planning stage to inform the preparation of an Environmental Impact Assessment Report (EIAR) in relation to the Cork Line Level Crossings Project.

The site is located in the immediate environs of three Recorded Monuments listed within the Record of Monuments and Places for County Cork (1998). These monuments consist of a Church (CO007-120002-) with an associated Graveyard (CO007-120001-) and Ritual site – holy well (CO007-121----). This parish church is probably late medieval in date (15th/16th century), would have been attached to the diocese of Cloyne and was reported as 'in ruins' in 1615. The SMR file notes that the Holmes family carried out some 'improvements' of the church in 1757 and an early 20th-century description mentions three different styles that can be observed in the structure of the church. This church may, however, be built on the foundation of an earlier church, as suggested by a listing in the Papal Taxation of 1291. It should be also mentioned that a Ritual site – holy well (CO007-121----), named Tobernadeecla, now located on the east side of the railway line, might be associated with the church and graveyard.

A series of earthworks are visible in the fields surrounding the graveyard and a topographical survey was required in order to make a record of existing upstanding elements within the survey area. The survey was carried out using a Trimble SX10 Laser Scanning Total Station with an accuracy of $\pm 2\text{mm}$ of the required survey area. The survey was complemented by the use of a DJI Phantom 4 Drone with RTK capability to add supplemental detail from the immediately surrounding area to provide further context and increase the size of the survey area in order to maximise the results. The outputs achieved include a Contour Survey, a Digital Surface Model and Interpretative Plan of the earthworks. In addition to this report, the information is also available as a CAD file and ESRI Shapefile in addition to other digital formats.

The topographical survey was carried out by Donald Murphy and Ian Russell of Archaeological Consultancy Services Unit Ltd. (ACSU) in November 2020. The earthworks visible in the survey at Imphrick are all located in the immediate vicinity of the medieval church and graveyard and for the most part represent ditches rather than field banks. At least three of the ditches in the northern field and one of the ditches in the southern field represent field boundaries illustrated on the first edition OS six inch map. The similar alignment of other ditches in the northern field suggest that they too may represent field boundaries of relatively modern date. In the southern field further relict field system ditches are evident. A modern access track is evident leading to the church and graveyard from the existing road and a short section of earthwork visible heading north from the northeast corner of the graveyard may also be associated with a 19th century field boundary.

Potential archaeological features include a raised natural plateau at the south end of the northern field which has been shown by testing to contain buried archaeological deposits associated with iron working. This plateau is surrounded on the north and west by a former palaeo-channel that was later converted into a drainage ditch and concrete culvert. A very shallow ditch was exposed at the base of the channel during testing but could be associated with a 19th century field boundary. Three linears aligned southwest-northeast are visible cut through the surface of the plateau and the most easterly of these produced archaeological material during test excavations. A small oval feature defined by a narrow ditch near the south end of the plateau also has the potential to represent archaeology. The combined results of the geophysical survey, topographical survey and test excavations carried out in this location would all seem to suggest the absence of a significant enclosure ditch surrounding this natural plateau.

In the southern field a potential sub-rectangular enclosure is visible south of the graveyard and may represent the remains of a demolished building or small ditched enclosure. It lies outside the footprint of the proposed development and will not be impacted.

Overall, the earthworks visible in the fields surrounding the church and graveyard are likely to be associated with relatively recent agricultural practices including field divisions with limited potential for representing earthworks of an archaeological nature.

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1. INTRODUCTION

This report details the results of a Topographical Survey carried out at Imphrick townland for the Cork Line Level Crossings Project (Figures 1, 2). Archaeological investigations in the form of standard test excavations, topographic (earthwork) survey and geophysical survey were all conducted to inform the Environmental Impact Assessment Report (EIAR) currently being prepared for the proposed Cork Line Level Crossings Project.

The Stage (i) – *Topographical (Earthwork) Survey* targeted a series of earthworks visible on the ground in the field to the south and north of the church and graveyard (RMP CO007-120001 and 002-) in the vicinity of XC215 – Shinanagh level crossing in County Cork, in the townland of Imphrick.

The site is located over 7 km south of Charleville and c. 5 km north of Buttevant and is located adjacent to and west of the existing Dublin-Cork railway line.

2. ENVIRONMENTAL AND HISTORIC CONTEXT

2.1 Topography

The area targeted for the survey encompasses two large relatively flat fields located north and south of Imphrick Church and Graveyard (CO007-12001 and CO007-12002). Situated immediately west of the Dublin-Cork rail line and the main Limerick-Cork road (N20), the survey area is currently in agricultural use (pasture) and is bounded by earthen banks topped by wire fences, hedges and trees, supplemented in places by drainage ditches. The southern part of the south field represents much wetter ground. A number of low-profile earthworks and depressions are visible in the field surrounding the church. These features may represent buried ditches, denuded earthen banks and/or other archaeological features. Some may be associated with the church site or settlement surrounding the medieval parish church.

2.2 Soils

The soils at Imphrick/Shinanagh are predominantly humic surface water gleys belonging to the Howardstown 760c association, with coarse-fine loamy drift and peat occurring locally (Irish National Soils Map 1:250,000k, V1b, 2014). Bedrock geology comprises of Ballysteen formation dark muddy limestone with yellow-red sandstone and green mudstone of the Kiltorcan formation at Shinanagh. (Geological Survey of Ireland Spatial Resources, Public Data Viewer Series).

2.3 Hydrology of the Site

The landscape is dominated by pasture based agricultural land separated by ditches and hedges. Areas of poorly drained grassland and scrub were also common. No watercourses listed on the EPA mapping database are within the proposed works areas and existing watercourses were separated from the survey area by field vegetation. A roadside drain was present along the road at the eastern side of the Shinanagh site. It is plausible that this flows into the River Awbeg (a tributary of the Blackwater) further south. Ground water sensitivity within the survey area is within the moderate to high sensitivity categories. The field was extremely wet at the time of the survey.

2.4 Recorded Monuments

There are two sites listed in the Record of Monuments and Places (RMP) that are within the topographical survey area. The two sites CO007-120001 (Graveyard) and CO007-120002 (Church) are described in detail below. Many additional Recorded Monuments are located within the surrounding area and together these sites provide a good indication of the archaeological potential of the region.

The following is a list of the nearest Recorded Monuments located within the surrounding area (Table 1). These descriptions are derived from the National Monuments Service Archaeological Survey Database (<http://webgis.archaeology.ie/historicenvironment/>).

Table 1: Recorded Monuments in the environs of the site

RMP/SMR No	Class/Site Type	Townland	Description
CO007-120001-	Graveyard	IMPHRICK	In pasture, c. 100m N of road. Subrectangular graveyard (c. 40m E-W; c. 30m N-S), enclosed by low earthen bank. Ruin of parish church of Imphrick (14424) in NW corner. Much of graveyard densely overgrown; earliest headstone noted, inside N wall of church, dated 1783; recent burial near entrance to E. Grove White (1905-25, vol. 3, 186) noted monument to Holmes, dated 1757- may be overgrown vault at E end of church. Burials dated 1762 and 1790 have also been recorded (Grove White 1913-16, 241).
CO007-120002-	Church	IMPHRICK	In NW corner of graveyard (14583). Ruin of rectangular church (int. greater than 17.3m E-W; int. 4.85m N-S), heavily ivy-clad. West gable with returns of N (int. L 8.3m) and S (int. L 8.3m) walls all that now stand. West gable crowned by bellcote (see photograph Grove White 1905-25, vol. 3, opp. 186). High up on gable is window with single flat-headed light high. Gap in N wall (With 1.4m), immediately E of W gable, may mark site of doorway. External projection at W end of S wall may be remains of annexe (church depicted on 1842 OS 6-inch map as irregular 'T-shaped' structure) or may mark buttress (see photograph, <i>ibid.</i>). Also in N wall is ruined doorway covered by segmental arch. Line of S wall continues to E of standing portion as overgrown rise; position of E gable probably marked by similar rise and burial vault, c. 9m E of standing portions of N and S walls. A 1906 account of church (<i>ibid.</i> , 186) describes 'three different styles...of architecture', two different in age but ancient, the third 'more recent improvements...executed by the Holmes family, whose monument [dated 1757]...is so conspicuous an object'. Adjoining and parallel to church on S side were 'the foundations and part of the walls of some structure...nearly 30 feet by about 12 feet...[which] appears to be quite as old as the main building itself (<i>ibid.</i>). Remains of parish church of Imphrick. Reported 'in ruins' in 1615 (Brady 1863, vol. 2, 306). A church here listed in Papal Taxation of 1291 (<i>ibid.</i>).
CO007-121----	Ritual site - holy well	Imphrick	Named 'Tobernadeecla' on 1842 OS 6-inch map. In small field on W side of road. Access to field by gate from road and to well area by stile. Rectangular well enclosed and partially covered by low stone surround. Votive offerings surround well and rags adorn over-hanging bush.
CO007-119002-	Excavation - miscellaneous	Ballynageragh	Discovered in 1986 during construction of Bruff-Mallow gas pipeline (Gowen 1988, 136-40). Occupation site, possibly related to Rathmore Castle (14287) c. 90m to W. Excavated area (7.5m x 4m) produced 23 features. Largest feature was shallow depression (F23) (4.6m x max. 1.2m; D 0.5m); this was filled with large burnt stones overlaid by black soil, possibly burnt in situ; three groups of

RMP/SMR No	Class/Site Type	Townland	Description
			stake and small post-holes just inside SE edge. Arc of four shallow pits (F6, 8, 10, 14) to E and NE of F23. Feature F14 (1.85m x 1.5m; D 0.54m), vertical-sided and flat-based, contained some charcoal and burnt clay in fill; F8, immediately to NW, was a sunken hearth (1.8m x 1.5m; D 0.3m); F10 and F6 to NW (both 2.4m x 0.7m; D c. 0.2m) had clean uniform fills. Pits cut by at least three phases of linear features at varying alignments which were mostly interpreted as agricultural in origin. Finds included fragment of rotary quern, and corroded bronze and iron.
CO007-119001-	Castle unclassified	Ballynageragh	On N-facing slope, c. 600m NE of Awbeg River. No visible surface trace of castle. According to local tradition (Grove White 1905–25, vol. 3, 186), 'stones of the old castle were used in building Castle Harrison house'. Castle of the Roches (Healy 1988, 305), reputedly destroyed in 17th century (<i>ibid.</i>).
CO007-131002-	Fulacht fia	Shinanagh	On low-lying, mostly level ground. Discovered during construction of Bruff–Mallow gas pipeline (Gowen 1988, 179). Spread of burnt material (L 14m; Wth 6–8m) adjacent to field fence which also contains burnt material. Low mound visible outside pipeline corridor to W. Second fulacht fiadh c. 17m to S.
CO007-131001-	Fulacht fia	Shinanagh	On low-lying, mostly level ground. Discovered during construction of Bruff–Mallow gas pipeline (Gowen 1988, 179). Semi-circular spread of burnt material (L 11.4m) extended 4m into pipeline corridor; main bulk of site, consisting of low, ill-defined mound, lay outside pipeline corridor to W. Second fulacht fiadh c. 17m to N.

2.5 Protected Structures and National Inventory of Architectural Heritage (NIAH)

The site contains no Protected Structures as listed in the *Cork County Development Plan 2013–2019*, and there are no protected structures or National Inventory of Architectural Heritage (NIAH) structures located in the immediate environs of the site (Figure 2).

2.6 Previous Archaeological Investigations

An examination into previously excavated sites in the vicinity of the proposed development area indicates that several archaeological investigations have been conducted within the wider area, many of which did not reveal any archaeological remains. The investigations carried out in the vicinity and to the west of the site, undertaken in relation to construction of the Bruff–Mallow gas pipeline, resulted in the discovery of three monuments – two *fulacht fia* (CO007-131001- and -02) and one Excavation – miscellaneous (CO007-119002-), all of which are described in Table 1 above. Assessment of the entire site in the form of geophysical survey (20R0016) was carried out earlier this year and produced interesting results, particularly within the southern part of the site, and these are outlined below.

The details of previous archaeological investigations in the area, derived from the Summary Accounts of Archaeological Excavations in Ireland (www.excavations.ie), are outlined below.

Table 2: Previous archaeological investigations in the environs of the site

Site	Licence No.	RMP/SMR No.	Site Type	Investigation type
Geophysical survey of lands at Imphrick and Ballynageragh	20R0016	CO007-12001, CO007-12002).	Environs of medieval church and graveyard.	Geophysical Survey.
2005:181 - Ballynageragh North	05E0158	CO007-119	No archaeological significance.	Monitoring.
2006:271 - Ballynageragh North	05E0158 ext.	CO007-119	No archaeological significance.	Monitoring.

The site was subject to two phases of geophysical survey. The first was carried out by AMS Ltd in February 2020 under licence 20R0016 (Dowling 2020). This work comprised a high-resolution magnetic gradiometer survey of approximately 0.62 hectares and resulted in the identification of a number of features of archaeological and potential archaeological significance at the southern end of the site in the vicinity of Imphrick church and graveyard. The anomalies identified consist of an array of previously unknown features, many of which are of clear archaeological potential and include three curving features to the east and south of the existing churchyard enclosure, which were interpreted as comprising of the remains of an early (monastic/church?) enclosure. The dense concentration of other features mapped by the survey likely represent multiperiod activity, perhaps involving settlement and/or agricultural activity. The second phase was carried out by Target Archaeological Geophysics GCV on behalf of AMS Ltd in June 2020 under the same detection licence (Nicholls 2020). This high-resolution magnetic gradiometer survey investigated much of the remaining area of the site, comprising an investigation corridor extending across two adjacent fields and covering 3.1 hectares. A concentration of linear anomalies, discrete positives and a large burnt/fired deposit in the southern portion of the investigation area suggested remnants of a probable ecclesiastical settlement associated with Imphrick church and graveyard. These anomalies correspond to surface visible earthworks and are probably a continuation of the linear remains recorded during the first phase of geophysical survey.

2.7 Cartographic Evidence

The Ordnance Survey maps of the area were examined in order to identify any possible archaeological features and to trace the development of the site during the 19th and early 20th centuries. The first edition Ordnance Survey (OS) 6-inch map, surveyed 1840 (Figure 3), shows the site as extending across a number of small fields within Ballynageragh and Imphrick townlands. A road roughly within the footprint of the current N20 is shown with houses along its sides, however, no buildings are depicted within the site. Within the southern extent of the site, Imphrick Church (in ruins) is labelled and depicted as a T-shaped structure, a roughly square area is depicted around it and labelled as 'Grave Yard', to the east, 'Tobernadeecla' is labelled representing the holy well. By the time of the OS 25-inch map, surveyed 1903 (Figure 4), the area is transformed, with a number of field boundaries removed and the extent of the site spread across fewer fields. The railway line is shown running roughly north-south and at the northern end of the site, Shinanagh Bridge over the railway line is now labelled. The remains of the church are now depicted as rectangular in shape, however, it is still labelled as 'Imphrick Church (in Ruins)' and shown located within a rectangular area noted as 'Grave Yd.'.

A number of the field boundaries depicted on the 1st edition six inch map are represented by some of the earthworks visible in the topographical survey.

2.8 Archaeological & Historical Background

The townland of Imphrick contains three Recorded Monuments, a 'Church (CO007-120002-)' and associated with it a 'Graveyard (CO007-120001-)' and a 'Ritual site – holy well (CO007-121----)'. This parish church is probably late medieval in date (15th/16th century), would have been attached to the diocese of Cloyne and was reported as 'in ruins' in 1615 (Power *et al.* 2000, 552, 561). It may, however, be built on the foundation of an earlier church, as suggested by a listing in the Papal Taxation of 1291 (*ibid.*, 561). The associated graveyard is enclosed by a low earthen bank but is densely overgrown, with the earliest recorded monument a vault dated 1757 (*ibid.*, 584). The holy well, now located on the opposite side of the railway track, is north-east of the church site and depicted as Tobernadeecla (St Declan's Well) on the first edition 6-inch OS map of 1844 (surveyed 1840) and the 25-inch OS map of 1905 (surveyed 1903). Locally this is known to cure sore eyes with a feast day on 24 July (<https://holywellsorkandkerry.com/gazeteer/>). The worship of holy wells is hard to date. It likely originates around the 7th century AD but some wells also retain pre-Christian characteristics, like the ones near Tara in County Meath. The springs of prehistory were likely transformed to holy wells with the introduction of Christianity, as part of a gradual process of transformation from paganism to Christianity. Wells often took their name after a saint, with St Patrick or St Brigid being most common, while here its Tobernadeecla or St Declan's Well. Holy wells can be found in isolation but are also often found in the proximity of early church sites (O'Sullivan & Downey 2006).

Earlier prehistoric period (c.8000–2200 BC)

From prehistoric times onwards, the areas around the Ballyhoura Hills have been significant. These represent a series of steep hills that reach a maximum height of 528 m OD at Seafin (Doody 2008). The areas of the proposed development extend along the westernmost side of these hills, through which the River Awbeg, a tributary of the River Blackwater, also flows.

County Cork and County Limerick were subject to human settlement since Mesolithic times (c. 8000–4000 BC) when early hunter-gatherer communities would have exploited the rivers, lakes and other natural resources around them. As there are no monuments associated with the Mesolithic period, and associated settlement sites can be difficult to locate in the landscape, establishing a detailed picture of the lifestyle of these Mesolithic people must often reply on scatters of diagnostic stone tools. At Kilcummer, Co. Cork, for example, the discovery of a scatter of microliths, overlooking the junction of the Rivers Blackwater and Awbeg, suggests an Early Mesolithic presence, although subsequent excavation did not reveal any significant in situ deposits (Woodman 2015, 205–6). A reappraisal of excavated material from a ring barrow at Rathjordan near Lough Gur in County Limerick also turned up some microliths, while both Earlier and Later Mesolithic human remains and artefacts were recovered from Killuragh Cave in County Limerick (*ibid.*, 79). The Neolithic period (c. 4000–2500 BC) saw the gradual spread of farming throughout Europe, which appears to have also brought with it the custom of communal burial in great stone structures known as megalithic tombs. The cultivation of crops and the husbandry of livestock brought necessary changes in the lifestyle of the people, including the development of more long-term dwellings and extensive woodland clearances for farmland. There are two megalithic structures (LI055-039---- and LI055-040----) recorded east of the Dublin–Cork Railway Line in the townland of Jamestown, on the northern slope of the Ballyhoura Hills. At Pepperhill, south-west of Buttevant, the remains of a possible Neolithic house (CO016-226001-) were excavated in 1986 during the construction of the Bruff-Mallow gas pipeline (Gowen 1988, 44–51).

Stone circles, stone alignments and standing stones were also markers of important locations during the early prehistoric period and there are several standing stones recorded in the surrounding townlands, including Curraghcloonabro East (CO002-085----);

Rathgoggan South (CO003-020----); Lisballyhay (CO008-071----); Walshestown (CO016-075001-); Bregoge (CO16-208----); Velvetstown (CO017-006002-); Kilcolman East (CO017-023----); Ballyellis (CO017-034----); Spital (CO017-118----); Rathclare (CO017-120---- and CO017-126----) and Ballynaboola (CO008-012002-). Many of these may date to the later Neolithic to earlier Bronze Age and are long understood to mark important places, including burials, boundaries and routeways. At Ballynaboola, for example, the standing stone was dislodged during forestry operations in the proximity to a cluster of three cist burials (CO008-012001-, 003- and 004-) containing cremated bones, although its original location is not known. That at Walshestown was nearly 10 m west of a burial ground (CO016-075002-) and that at Velvetstown was c. 50 m north-east of a possible earthwork (CO017-006001-).

Later prehistoric period (c.2200 BC–AD 400)

From the beginning of the Bronze Age (c. 2200–800 BC), inhumation and cremation burials were deposited in pits and stone-lined cists. Many of these burials were accompanied by food vessels and urns, and sometimes copper, bronze or worked stone objects. These sites are often represented by a single grave with no above-ground markers, but others were placed in mounds or barrows. At Rathgoggan South, a possible pit burial was discovered in 1986 during the construction of the Bruff-Mallow gas pipeline, comprising an oval pit filled with abundant charcoal and flecks of burnt bone (Gowen 1988, 179). As mentioned above, three cists were uncovered at Ballynaboola, north-west of Newtown, and although little information survives they appear to have contained cremated bone and may date to this period. A series of barrow monuments are also recorded in the surrounding townlands, including Gortskagh (CO002-016---); Ardnageehy (CO007-052----); Castlewrixon South (CO008-028---- and CO008-032----); Garrane (CO008-062----, -063---- and -064---) and Kilcolman West (CO017-037002-). Notably, the cluster of barrows at Garrane is just north of the three Ballynaboola cists. Several mounds and ring-ditches are also recorded in the area, some of which may also represent barrow monuments. While these monument types frequently date to the Bronze Age, barrow monuments also continued into the Iron Age (c. 800 BC–AD 400).

Burnt mounds (also known as *fulachtaí fia*) comprise the most commonly discovered evidence for prehistoric settlement across Ireland and represent the use of pyrolithic technology to boil water, with those noted close to a trough generally interpreted as cooking/industrial sites (Hawkes 2018). They generally consist of a low mound of charcoal-enriched soil mixed with an abundance of heat-shattered stones, commonly forming a horseshoe shape in proximity to a trough, and are found in low-lying marshy areas or close to streams, springs and other water sources. Often these sites have been ploughed out and survive as a spread of heat-shattered stones with no surface expression. Analysis of these sites indicates that the tradition originated in the Early Neolithic and continued intermittently until sometime on the mid-first millennium BC, with a concentration of use in the Middle and Late Bronze Age (*ibid.*, 115). A large number of burnt mounds are recorded in the surrounding townlands, including one (CO008-061----) directly beside the Garrane barrows and a cluster of six burnt mounds (CO017-037001-, 003-, 004-, 005-, 006-, 007-) surrounding the Kilcolman West barrow and another (CO008-031----) just south of one of the Castlewrixon South barrows. Many of these burnt mounds are known from on-site surveys, aerial photography and local information, but others have been excavated. Two examples at Rathgoggan South (CO003-015001- and 002-), just south-east of Charleville, and a further two sites at Shinanagh (CO007-131001- and 002-), comprised spreads of burnt mound material (Gowen 1988, 179). The latter two sites are north of one of the areas (XC215 Shinanagh) and highlight the possibility of similar sites being uncovered in this landscape.

Iron Age occupation has traditionally been difficult to identify in Ireland but recent excavations and research has greatly increased the number of sites and finds across the country (see Corlett & Potterton 2012). Alongside burnt mounds, roundhouses, cereal-drying kilns, metalworking sites and burials in ring-ditches and flat graves have also been increasingly discovered. For example, to the east of the development area, on the southern side of the Galty Mountains, an embanked ring-ditch associated with cremated bone and nine blue glass beads and two pieces of fused glass was dated to the Middle Iron Age, while a nearby circular structure with associated smithing

heath was similarly dated (McQuade & Molloy 2012). Both sites, in the townland of Knockcommane, Co. Limerick, were excavated in advance of the construction of the N8 Cashel–Mitchelstown Road Improvement Scheme.

Early Medieval (c. AD 400–1100)

It is suggested that from at least the fifth century AD, significant increases in population were brought about by new agricultural practices. Pollen records dated to this period suggest a huge upsurge in grasses and weeds associated with the development of pasture and arable farming (Aalen et al. 1997, 44). During this period, the development of new plough types and horizontal watermills were two innovations that would have provided farming communities with increased levels of agricultural production. This evidence for economic growth is best seen in the widespread distribution of early medieval (c. AD 400–1100) settlement sites, which occurred as dispersed defended homesteads on lakes (crannógs) and across the wider landscape as ‘ringforts’ or raths (O’Sullivan et al. 2013). A rath is generally defined by an earthen bank, formed by material thrown up from a fosse or ditch located immediately outside the bank. Comparable enclosures constructed of stone are referred to as cashels. Generally, raths vary in size from 25–50 m in diameter and are usually circular in plan but can also be oval or D-shaped. Some have more than one bank and ditch but such examples are rarer than the simpler or univallate type. Rath generally contain houses and ancillary buildings, with excavated examples revealing evidence for activities related to agriculture as well as small-scale craft and industry. Generally, the internal structures would have been made of perishable materials such as wood and straw, however, stone was also used, particularly in cashels. Rural settlement sites such as these were also positioned within wider agricultural landscapes, with many recent excavations uncovering evidence for field systems related to cultivated crops and livestock management, as well as ancillary activities such as processing cereals and iron-working practices (see Corlett & Potterton 2011).

There are a high number of recorded enclosures and raths in the surrounding townlands and in close proximity to the proposed development areas. In the environs of the site at Ballycoskery there is a number of such monuments (f. ex. CO008-033, CO008-034, CO008-005, CO008-039, CO008-040). According to local information, the eastern side of the ringfort (CO008-040----) was levelled in 1984 but related sub-surface features may remain preserved in situ. Geophysical survey (Licence no. 20R0017) undertaken in this area in 2020 resulted in identification of a number of features of archaeological and potential archaeological significance. The anomalies identified may be associated with the partially levelled ringfort and/or with other phases of settlement and agricultural activity within the site including remains of a possible avenue/droeway linking with a small circular enclosure. At Bregoge, Co. Cork, a ringfort – rath (CO016-211----) is just west of an area (XC219 Buttevant), and similarly, at Effin, Co. Limerick, an enclosure (LI047-045----) is directly east of the area (XC201 Thomastown). Both of these have the potential to identify associated archaeological features.

Overall, as the wider landscape is dominated by ringforts/raths, this is indicative of a strong early medieval presence in the area. It is notable, however, that in some areas, particularly the west of Ireland, ‘ringforts’ were also being built and occupied into the medieval period, while others have evidence for later re-used (FitzPatrick 2009), suggesting that some of these unexcavated enclosures could be later in date.

Late Medieval (c. AD 1100–1600) to Post-Medieval (c. AD 1600–1800)

Charleville, from the Irish Ráth Luirc or An Ráth, would have been extensively occupied during the early medieval period due to the rich agricultural land in this area, known as the Golden Vale. The old name for the area, Rathcogan or Ráth an Ghogánaigh, is reputed to relate to Miles de Cogan, who was granted lands here in 1177 following the Norman invasion (Binchy 1962). During the Elizabethan Munster Plantation, the present town was founded and named Charleville under Royal Charter in 1671 (Flynn 2011, 5). With his residence subsequently burnt in 1690 by the Irish under the command of the Duke of Berwick.

Buttevant was similarly founded during the Anglo-Norman period, with the name representing a corruption of a French word for outpost (Flynn 2011, 5). On the southern side of Buttevant, overlooking the River Awbeg to the east, is the remains of a 13th-century Anglo-Norman masonry castle (CO017-054001-) built by the de Barrys, who were also granted a fair and market at Buttevant in 1234 (Power et al. 2000, 517). There are also several mottes and moated sites within the surrounding townlands, both suggesting the remains of Anglo-Norman sites built in the late 12th/early 13th century and the late 13th/early 14th century respectively. A moated site (CO008-035----) at Ballycoskery, Co. Cork, for example, is directly south and west of an area (XC212 Ballycoskery) proposed for Geophysical Survey. It comprises a rectangular area measuring nearly 40 m by 30 m defined by an earthen bank with an external ditch (ibid., 493). At Ballynageragh, Co. Cork, the northern extent of an area of the proposed Geophysical Survey, is in close proximity to the site of a castle (CO007-119001-) situated on a north-facing slope 600 m north-east of the River Awbeg and known as Rathmore Castle. Although no surface trace remains it was reputedly a castle of the Roches that was destroyed in the 17th century (Power et al. 2000, 509). An excavation directly to the east in 1986 uncovered a deposit of burnt stone, stake- and post-holes, pits, a sunken hearth and agricultural furrows/drains, a fragment of a rotary quern stone and corroded bronze and iron objects, all probably related to the use of the castle (Gowen 1988, 136–40).

While there are no medieval monastic remains within the environs of the development sites, there is a church and graveyard (CO007-12001- and 002-), with a nearby holy well (CO007-121----), in the townland of Imphrick, adjacent the southern extent of an area (XC215 Shinanagh). This parish church is probably late medieval in date (15th/16th century), would have been attached to the diocese of Cloyne and was reported as 'in ruins' in 1615 (Power et al. 2000, 552, 561). It may, however, be built on the foundation of an earlier church, as suggested by a listing in the Papal Taxation of 1291 (ibid., 561). The associated graveyard is enclosed by a low earthen bank but is densely overgrown with the earliest recorded monument a vault dated 1757 (ibid., 584). The holy well, now located on the opposite side of the railway track, is north-east of the church site and depicted as Tobernadeecla (St Declan's Well) on the first edition 6-inch OS map of 1844 (surveyed 1840) and the 25-inch OS map of 1905 (surveyed 1903). Locally this is known to cure sore eyes with a feast day on 24 July (<https://holywells-cork-and-kerry.com/gazeteer/>).

The first railways were built in Ireland in the early 1880s, with the Great Southern & Western Railway (GS&WR) originally built to connect Dublin with Cashel but later extended to the city of Cork. Many of the associated railway stations and other buildings are an important part of the history of the railway in Ireland and, notably, one such structure, a store/warehouse built c. 1870 (NIAH Reg. No. 20803040), is located in the vicinity of an area of the proposed geophysical survey (XC219 Buttevant).

3. METHODS

3.1 Aims of Stage (i) Topographical Survey

The aim of the Stage (i)g Topographic (Earthwork) Survey Services was to make a record of existing upstanding elements within the survey area around Recorded Monuments, CO007-120001- (Church) and CO007-120002- (Graveyard). These are located within the townland of Imphrick, and were subject to a full topographical survey covering an area of approximately 7 Hectares.

3.2 Project Team

The Survey team comprised of two archaeologists, Donald Murphy and Ian Russell, both with extensive experience in GPS, drone surveying and laser scanning technology.

3.3 Conditions

Weather conditions during the survey period were dry but a prolonged period of wet weather in advance of the survey resulted in the fields being very wet with standing water in places, particularly along the south end of the south field. The weather conditions had no impact on the results of the survey.

3.4 Scale of Stage (i) services

The topographical survey was undertaken by ACSU under the direction of the Senior Archaeologist, Donald Murphy. An area measuring 7 Hectares in the vicinity of Imphrick Church and graveyard (CO007-120001- and 002-) was surveyed in order to record the upstanding earthworks.

The survey was carried out using a Trimble SX10 Laser Scanning Total Station with an accuracy of $\pm 2\text{mm}$ of the required survey area. The survey was complemented by the use of a DJI Phantom 4 Drone with RTK capability to add supplemental detail from the immediately surrounding area to provide further context and increase the size of the survey area in order to maximise the results. The outputs achieved include a Contour Survey (Figure 11), Digital Surface Model (Figures 3-6) and Interpretative Plan of the earthworks (Figures 7-8). In addition to this report, the information is also available as a CAD file and ESRI Shapefile in addition to other digital formats.

3.5 Constraints on Methods

There were no constraints on the methodology for the survey. The fields were extremely wet from a prolonged period of heavy rain in the weeks preceding the survey and though there was standing water in the lower parts of the fields this did not impact the results. The fields had also been grazed by cattle up until the survey took place which left the grass very short which was very beneficial for the survey and as a result the clarity of some very low level earthworks was excellent.

4. RESULTS

The outputs from the Topographical Survey include a contour survey (Figure 11), digital surface model (Figures 3-6) and interpretation drawing (Figures 7-8). The survey results are described here with reference to the South field which surrounds Imphrick Church & Graveyard and the North field which is located north of the graveyard. The remaining fields to the west also show some earthworks which are referenced but are effectively beyond the survey area. The railway line to the east, while visible on the survey results, is not described. Owing to the general undulating topography of the south field in particular the contour survey at 10cm intervals is less effective at revealing the low level earthworks but is made up for by the digital surface model (DSM). A second version of the DSM with the vertical scale exaggerated (Figures 4-5) brings excellent clarity to the low level earthworks, some of which are only barely discernible on the ground.

The survey indicates a number of very clear earthworks in the fields surrounding Imphrick Church and Graveyard which have been interpreted as follows (Figures 7-8).

4.1 South Field

In the field surrounding the churchyard a curving ditch feature is visible towards the south end of the field and appears to represent the south end of a sub-rectangular field system (A) on a roughly east west alignment (Figure 7). This field system appears inconsistent with the existing field boundaries and others shown on OS mapping and is cut by an east-west shallow ditch near its southern boundary (B) which aligns with a field boundary shown on the first edition 6 inch OS map (Figure 9) and was detected in the earlier geophysical survey carried out by AMS Ltd (Dowling 2020). The field system appears to be defined by a ditch which is curved along the south but more linear along the west and north sides and with rounded corners. It is defined to the east by the access track leading to the church and graveyard (E) and appears to be divided internally into three similar sized fields by two roughly north-south aligned ditches. Overall the field system measures 43m north south by 82m east-west. A trench excavated through the southerly curving ditch as part of the test excavations (Test Trench 20) revealed that it measured 2.5m in width and 1.10m in depth. The basal fill of the ditch contained a lot of stone that may suggest a drainage function (Russell 2020). No finds were recovered that would aid in the dating of the ditch and the fills were quite sterile.

The field system was defined on its east side by an access track (E) leading to the graveyard from the existing road (Figure 7). The track is just visible in the grassed surface of the field and does not appear to represent a buried metalled trackway but rather a simple flat pedestrian track between the two gates measuring 3.8m in width and 125m in length.

Between the relict field system at the south end of the field (A) and the graveyard is a possible sub-rectangular enclosure (C) defined by shallow ditches on all four sides and with a raised internal area measuring 24m east-west by 15m north-south (Figure 7). The earthwork here has the potential to represent natural geology but could also represent the remains of a rectangular building or small enclosure. There is a slight suggestion of a small ditch that may connect the southeast corner of the feature with the access track leading to the graveyard.

A double ditched linear or potential trackway (D) of unknown date runs north from the NE corner of the churchyard towards the northern field boundary (Figure 7). It measures 28m in length and 7m in width and could represent a former trackway heading north from the church. It runs along a north-south aligned field boundary shown on the first edition OS six inch map (Figure 9) so could also be of relatively modern date. In the field immediately west of the southern field a square shaped enclosure (F) measuring 35m east-west by 42m north-south is visible (Figure 7). Its alignment along the existing field boundary on the east suggests that it represents a former field.

The majority of the earthworks are outside the proposed road-take with the exception of the east and south-east part of the relict field system (A) at the south end of the field.

4.2 North Field

In the field to the north of the church a potential enclosure was evident in aerial photographs of the site near the south end of the field (I). It appears in the topographical survey more as a raised natural plateau (Figure 8) defined by a scarp on the west and north sides and cut by the modern field boundary to the south and the railway embankment to the east. The plateau appears to be defined to the north by an old palaeo-channel (J) which was later modified as a drainage channel running roughly east-west with a concrete culvert

still in situ along the east end. The plateau in general is about 0.60m to 1m above the base of the palaeo-channel and is cut by three narrow linear ditches aligned southwest-northeast (H) and varying in length from 20m to 25m. Test excavations on the plateau by Ian Russell in November 2020 confirmed that the most easterly linear was of archaeological significance, however, the test excavations did not give any indication that the area had been artificially scarped, and the raised plateau seems to be consistent with the natural topography of the area. The feature produced significant amounts of charcoal along with metallurgical waste fragments suggesting iron working activity on the site (Russell 2020). A possible oval shaped feature (G) measuring 6m by 10m and comprising a narrow and shallow ditch is visible along the south edge of the plateau.

The northern edge of the palaeo-channel/drainage channel was cut by two shallow linear ditches (K) aligned northwest-southeast (Figure 8). These are aligned with an old field boundary visible on the 1st edition OS six inch map (Figure 10) and is therefore unlikely to be of archaeological significance. Two further field boundary ditches that appear on the first edition OS 6 inch map are also present in the survey results (M & P) further north (Figures 8 & 10). Their alignment with ditches O, N & L in the survey suggests that these ditches could also represent former field boundaries of relatively modern date. In the field to the west a further series of relict field boundaries are also clearly visible in the survey (Q).

5. DISCUSSION

The earthworks visible in the survey at Imphrick are all located in the immediate vicinity of the medieval church and graveyard and for the most part represent ditches rather than field banks. At least three of the ditches (K, M, P) in the northern field and one of the ditches (B) in the southern field represent field boundaries illustrated on the first edition OS six inch map (Figures 9-10). The similar alignment of other ditches (L, N, O, Q) in the northern field suggests that they too may represent field boundaries of relatively modern date. In the southern field further relict field system ditches are evident at A and F. A modern access track (E) is evident leading to the church and graveyard from the existing road. A short section of earthwork (D) visible heading north from the northeast corner of the graveyard may also be associated with a 19th century field boundary (Figure 9).

Potential archaeological features include a raised natural plateau at the south end of the northern field (I) which has been shown by testing to contain buried archaeological deposits associated with iron working. This plateau is surrounded on the north and west by a former palaeo-channel that was later converted into a drainage ditch and concrete culvert. A very shallow ditch was exposed at the base of the channel during testing but could be associated with a 19th century field boundary (Figure 10). Three linears (H) aligned southwest-northeast are visible cut through the surface of the plateau and the most easterly of these produced archaeological material during test excavations. A small oval feature defined by a narrow ditch near the south end of the plateau (G) has the potential to represent archaeology. The combined results of the geophysical survey, topographical survey and test excavations carried out in this location would all seem to suggest the absence of a significant enclosure ditch surrounding this natural plateau.

In the southern field a potential sub-rectangular enclosure (C) is visible south of the graveyard and may represent the remains of a demolished building or small ditched enclosure. It lies outside the footprint of the proposed development and will not be impacted. Overall the earthworks visible in the fields surrounding the church and graveyard are likely to be associated with relatively recent agricultural practices including field divisions with limited potential for representing earthworks of an archaeological nature.

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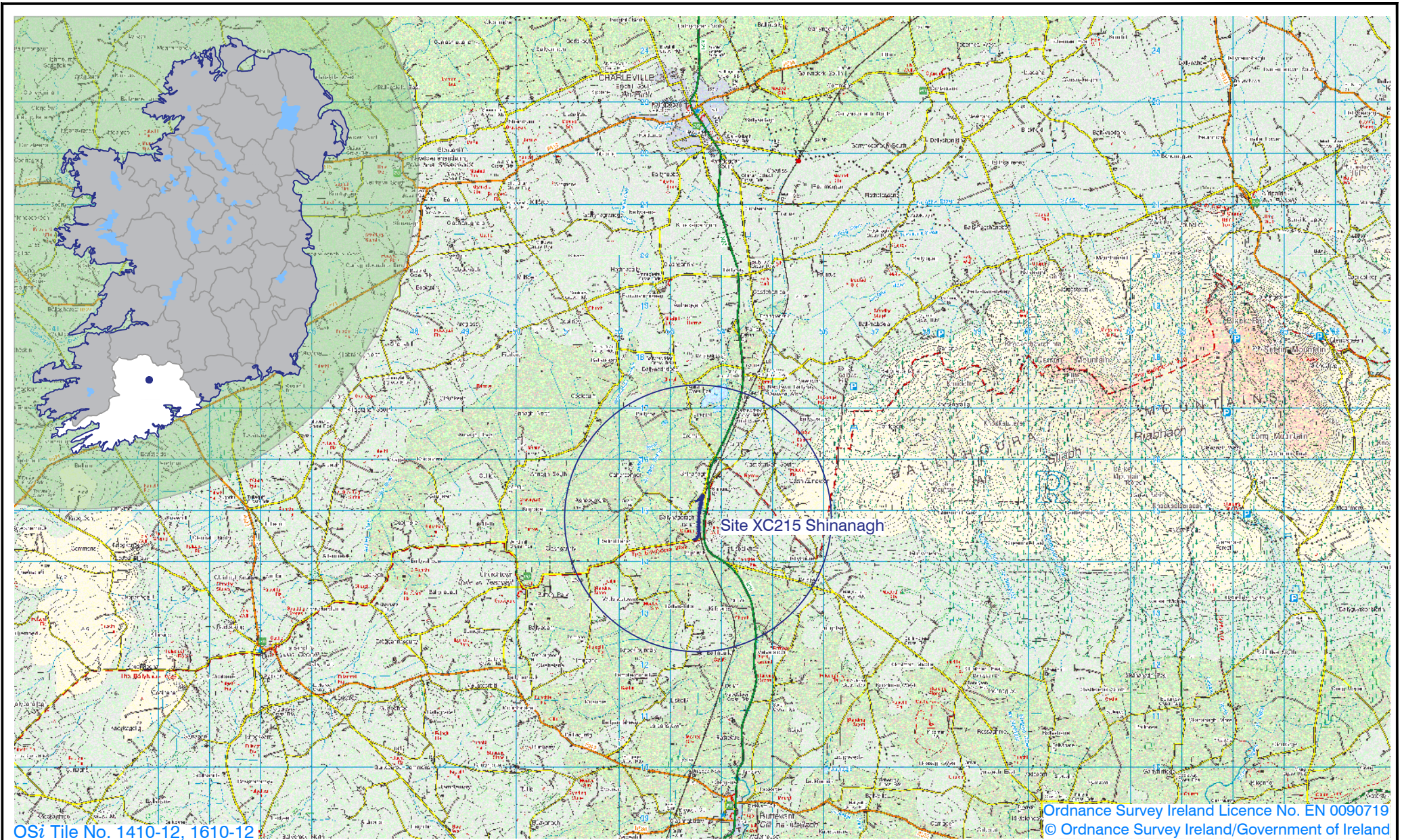
First edition Ordnance Survey (OS) 6-inch map (surveyed 1840 - published 1844).

Third edition Ordnance Survey (OS) 25-inch map (surveyed 1903 - published 1905).

List of Tables

Table 1 Recorded Monuments in the environs of the site

Table 2 Previous archaeological investigations in the environs of the site



5 km



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Site: Cork Line Level Crossings Project, Imphrick, Co. Cork
 Issued for: Topographical Survey Report
 Drawing number: 2058_C1081
 Date: December 2020 | Scale: 1:100,000 @A4

Figure 1: Location of site

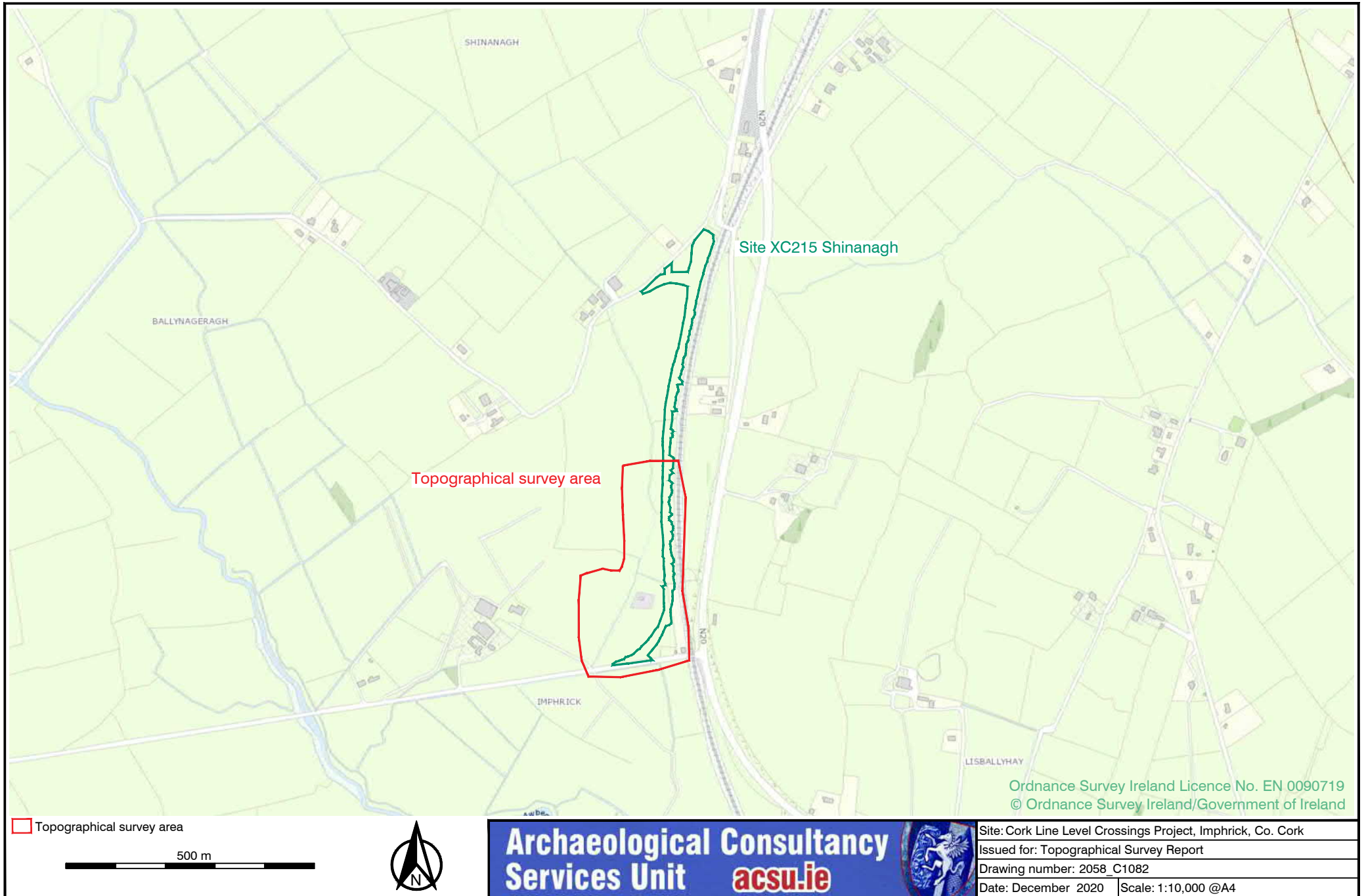
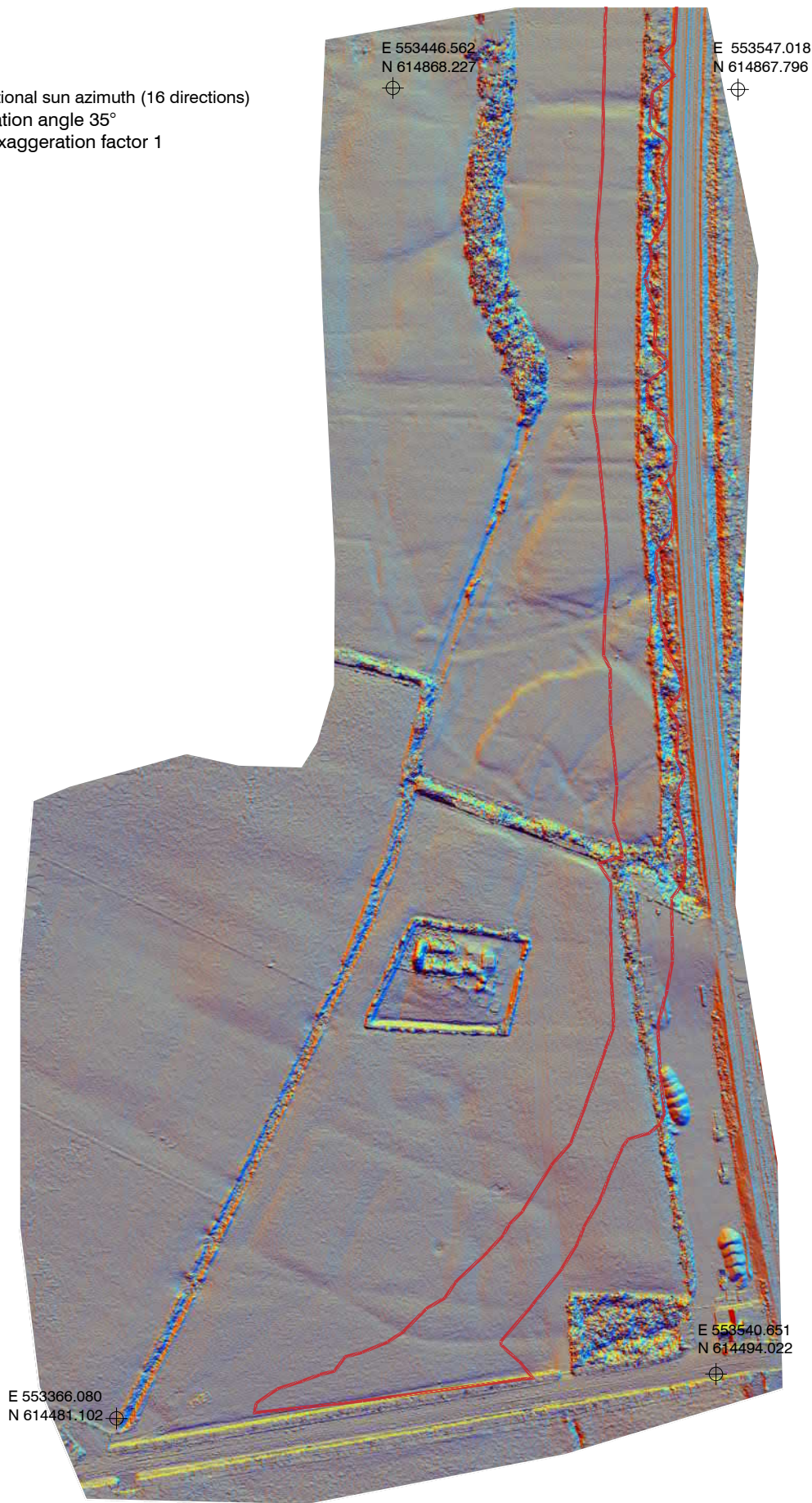


Figure 2: Extent of site, showing location of topographical survey area

Multidirectional sun azimuth (16 directions)
Sun elevation angle 35°
Vertical exaggeration factor 1



100 m



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Figure 3: Multi-hillshade image of surveyed area

Sun azimuth 315°
Sun elevation angle 35°
Vertical exaggeration factor 2



50 m



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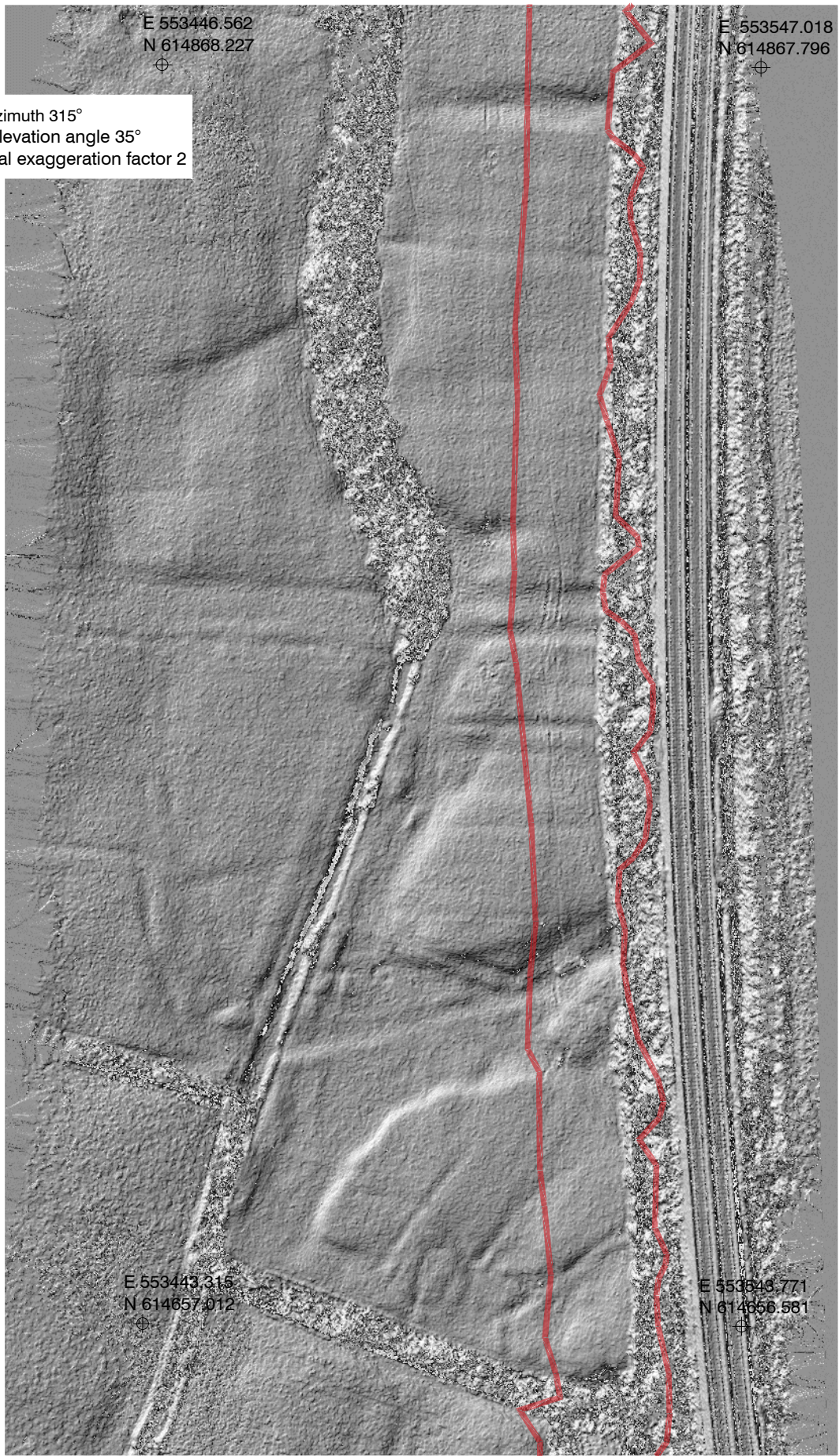
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Issued for: Topographical Survey Report

Drawing number: 2058_C1084

Date: December 2020 | Scale: 1:1,200 @A4

Figure 4: Hillshade image of southern field, vertical exaggeration factor 2



Sun azimuth 315°
Sun elevation angle 35°
Vertical exaggeration factor 2



50 m






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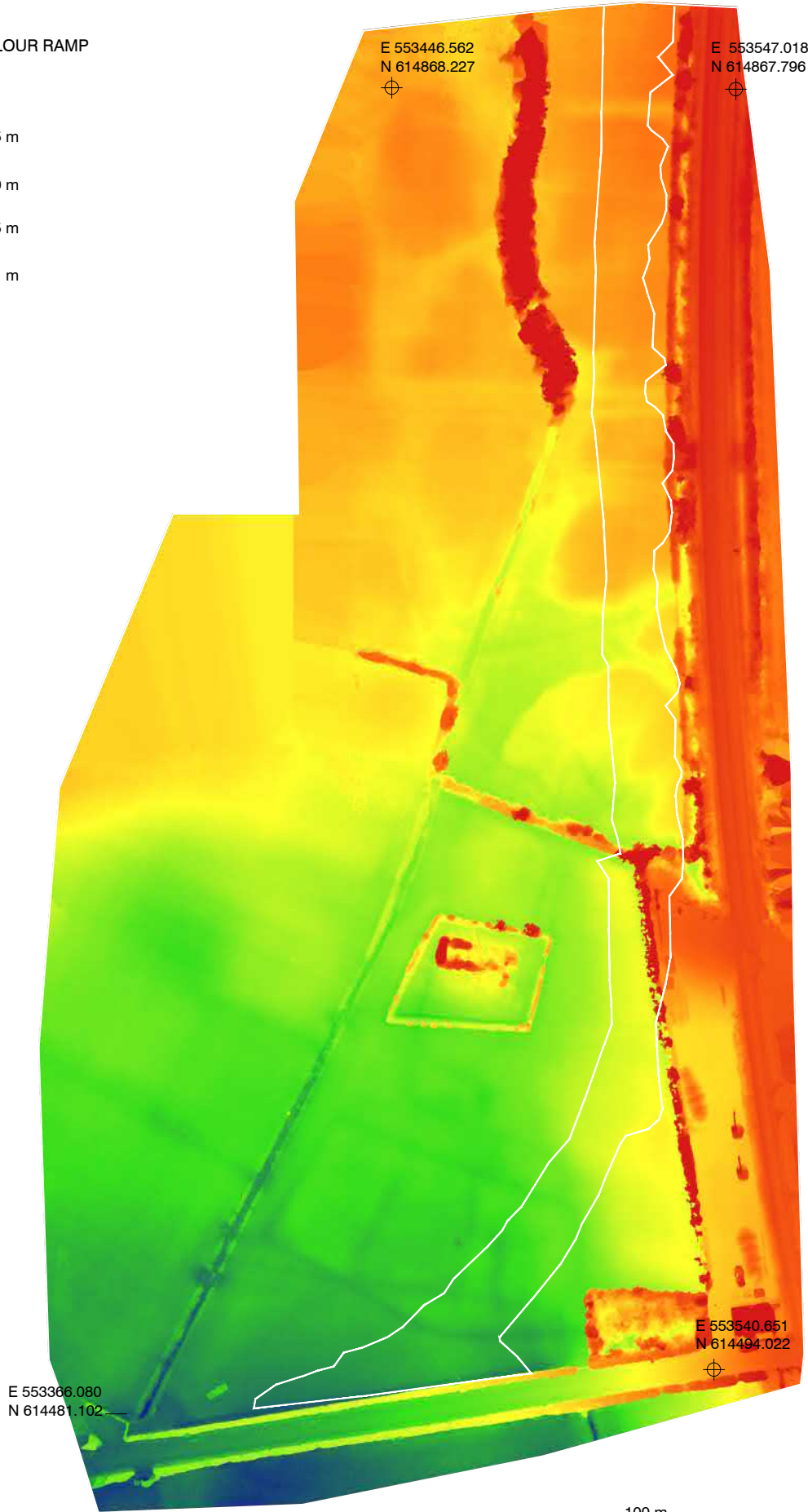


Site: Cork Line Level Crossings Project, Imphrick, Co. Cork
Issued for: Topographical Survey Report
Drawing number: 2058_C1085
Date: December 2020 | Scale: 1:1,000 @A4

Figure 5: Hillshade image of northern field, vertical exaggeration factor 2

ELEVATION COLOUR RAMP

-  97 m
-  94.995 m
-  92.990 m
-  90.985 m
-  88.981 m



100 m



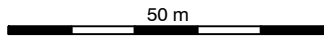
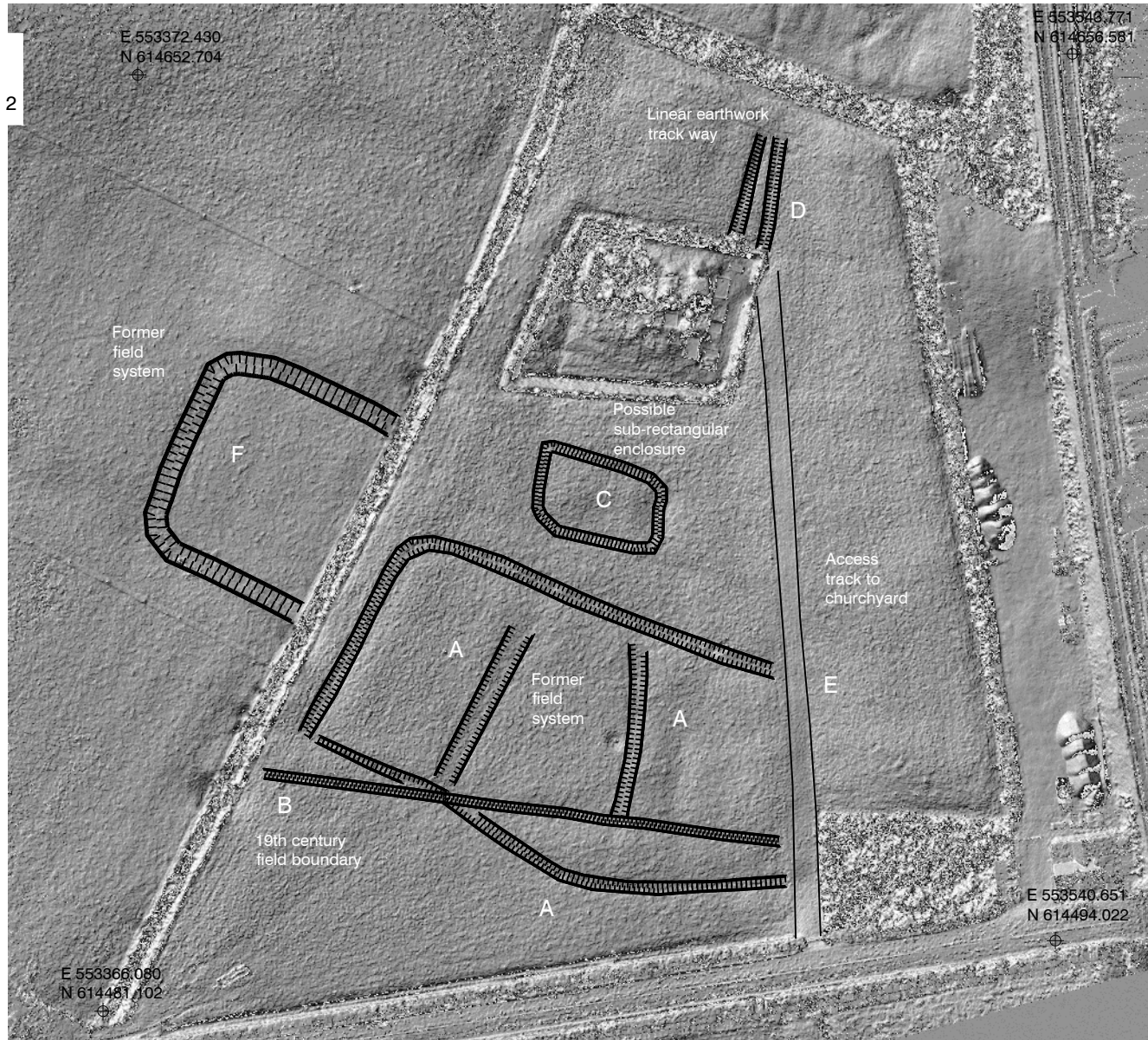
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Date: December 2020 | Scale: As scalebar

Figure 6: Colour gradient elevation map

Sun azimuth 315°
 Sun elevation angle 35°
 Vertical exaggeration factor 2



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Drawing number: 2058_C1087	
Date: December 2020	Scale: 1:1,200 @A4

Figure 7: Topographical survey interpretation, overlaid on hillshade image of southern field - vertical exaggeration factor 2

Sun azimuth 315°
Sun elevation angle 35°
Vertical exaggeration factor 2



50 m

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Site: Cork Line Level Crossings Project, Imphrick, Co. Cork
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Drawing number: 2058_C1088
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Figure 8: Topographical survey interpretation, overlaid on hillshade image of northern field - vertical exaggeration factor 2

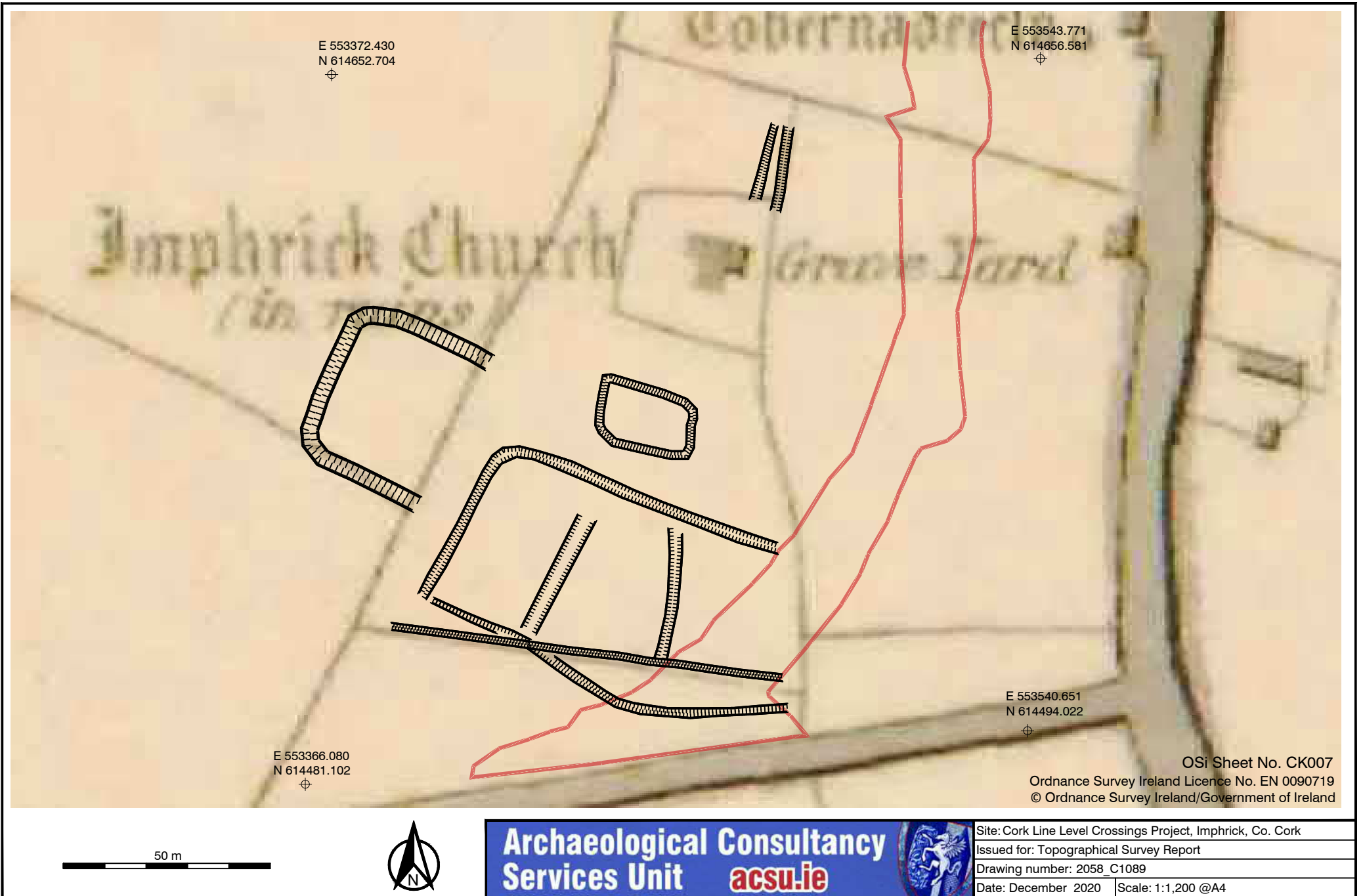
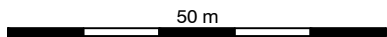
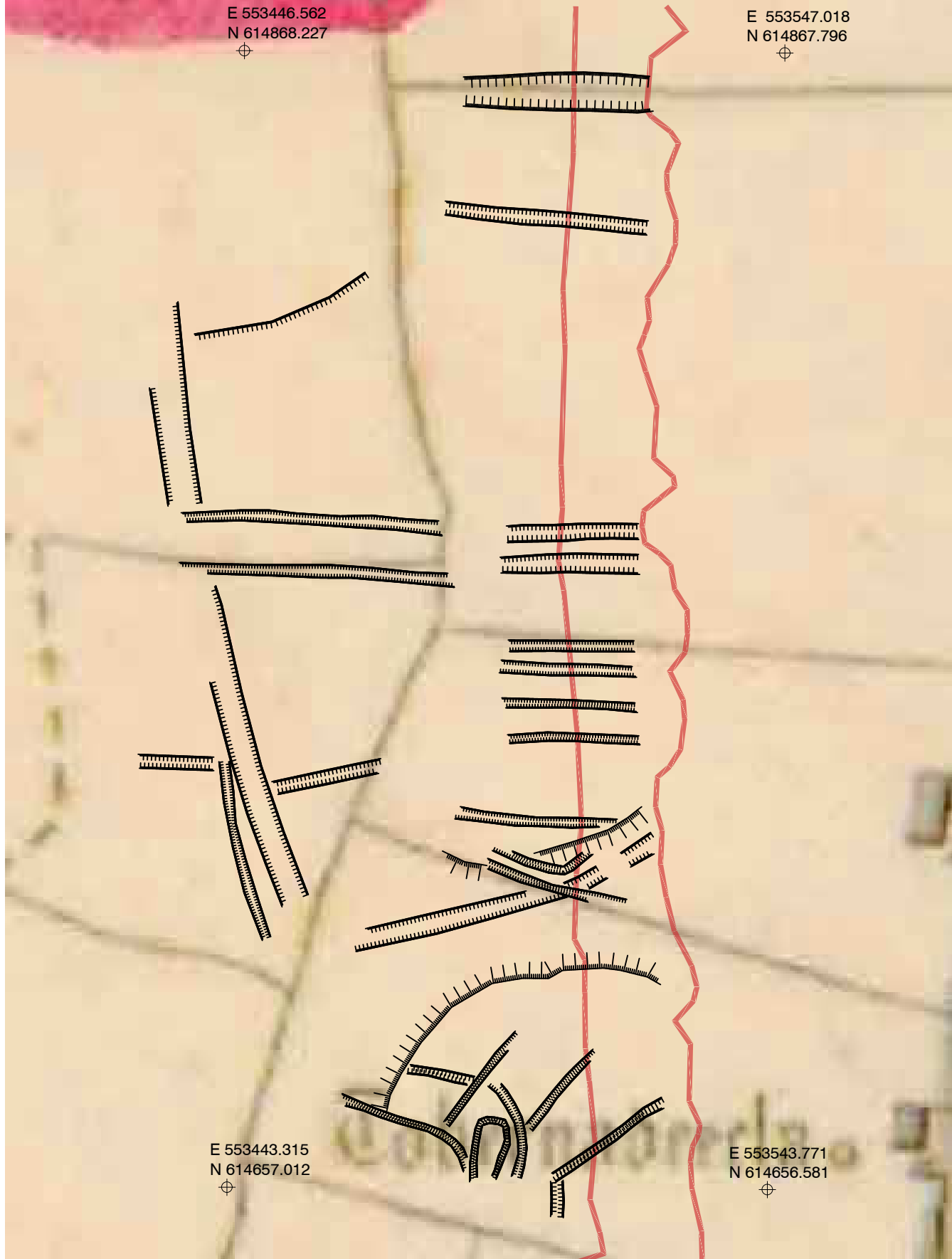


Figure 9: Topographical survey interpretation, overlaid on 1st edition Ordnance Survey (OS) 6-inch map (surveyed 1840 - published 1844)



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Figure 10: Topographical survey interpretation, overlaying 1st edition Ordnance Survey (OS) 6-inch map (surveyed 1840 - published 1844)



Figure 11: Topographical survey showing contour lines of surveyed area (0.10 m interval)