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Light Detection and Ranging (LiDAR)
Survey and Satellite Image Analysis

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Archaeological Assessment of Aerial Survey Data

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Archaeological Assessment of Aerial Survey Data

Summary

Wessex Archaeology was commissioned by RPS for Costain Vinci Joint Venture, on behalf of the Welsh Government, to carry out an archaeological interpretation of Light Detection and Ranging (LiDAR), aerial survey-derived and satellite imagery data as part of an ongoing programme of cultural heritage assessment undertaken with regard to the proposed M4 Corridor around Newport (M4CaN) scheme.

The survey area, which encompasses 1664 hectares and stretches for approximately 25 km in length, is largely rural and low-lying, particularly on the Gwent Levels. It begins near Castleton in the west and runs eastwards through the northern Wentlooge Levels, Newport Docks and the Caldicot Levels, before passing the settlements of Magor and Undy to the north and finishing on Caldicot Moor in the east.

Interpretation of the data resulted in the recording of features across the study area. The majority of recorded features represent fields, boundaries and features related to the drainage system found on the Wentlooge and Caldicot Levels. In addition, a number of possible moated sites, enclosures and former farmsteads have been recorded, alongside palaeochannels and possible ring ditches.



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Acknowledgements

Wessex Archaeology was commissioned by RPS for Costain Vinci Joint Venture, on behalf of the Welsh Government, to carry out an archaeological interpretation of LiDAR and aerial survey-derived data as part of an ongoing programme of archaeological works being undertaken in advance of construction of the new M4 'Corridor around Newport' road scheme. The assistance of Mick Rawlings of RPS is gratefully acknowledged in this regard

Satellite imagery was processed by Crona Hodges and Osian Roberts of Geo Smart Decisions.

Richard Milwain processed and interpreted the data sets. The interpretations were quality controlled by Vicki Lambert and Paul Baggaley. Illustrations were prepared by Richard Milwain. The project was managed on behalf of Wessex Archaeology by Nick Cooke.

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Archaeological Assessment of Aerial Survey Data

1 INTRODUCTION

1.1 Project Background

- 1.1.1 Wessex Archaeology (WA) was commissioned by RPS for Costain Vinci Joint Venture (hereafter the Client), on behalf of the Welsh Government, to carry out an archaeological interpretation of LiDAR, aerial survey-derived and satellite imagery data as part of an ongoing programme of archaeological works being undertaken in advance of construction of the new M4 'Corridor around Newport' (CaN) road scheme. The survey area, hereafter referred to as 'the Study Area', is located between NGR 323700 183600 in the west and NGR 346500 186600 in the east.
- 1.1.2 The assessment was carried out in order to establish the location of archaeological features within the Study Area identifiable through the interrogation of various LiDAR and aerial survey-derived datasets.

1.2 The Study Area

- 1.2.1 The Study Area (**Figure 1**) is largely rural, encompassing a small number of villages and isolated farms. It begins near Castleton in the west and runs eastwards through the northern Wentlooge Levels, Newport Docks and the Caldicot Levels, before passing the settlements of Magor and Undy to the north and finishing on Caldicot Moor in the east. It measures 1664 hectares and stretches for approximately 25 km in length.
- 1.2.2 It is largely low-lying, particularly on the Wentlooge and Caldicot Levels (collectively known as the 'Gwent Levels'), with a mean elevation across the Study Area of c. 20 m AOD. In the west of the Study Area, elevated land lies immediately north of the M4 near Castleton, where the land rises northwards towards Pen-y-Lan Camp. In the east the land rises to the north of Magor and Undy.
- 1.2.3 It is punctuated by two notable north-south running watercourses – the Ebbw River and the River Usk – at Newport Docks. In addition to this are the large number of reens that help drain the land southwards. The former course of the Ebbw River can be traced using historic mapping into the early 20th century; this former course now lies beneath the Alexandra Docks at Newport.

1.3 Archaeological Background

- 1.3.1 The Study Area has been the subject of a number of studies and surveys in recent years, including geophysical surveys (WA 2008a; WA 2015, reproduced as Appendix 8.4 of this ES). A summary of the archaeological background of the Study Area can be found in the recent Archaeology and Cultural Heritage Baseline Assessment (Wessex Archaeology 2014) and also in the Desk-based Assessment presented as Appendix 8.2 of this ES.
- 1.3.2 WA have previously carried out LiDAR interpretation in the area (WA 2008b). The survey

highlighted the presence of a number of features within the Study Area, including palaeochannels, former field boundaries and drainage features and moated and enclosed sites. The study also examined the microtopography of the Levels, providing an examination of the pattern of drainage features in respect of changes in the landscape.

- 1.3.3 Landscape use can be seen to date back to the Mesolithic, as evidenced by the presence of deposits at Llandeenny and Magor. Later prehistoric remains have also been recovered from Magor. A standing stone with possible prehistoric origins lies to the east of Undy.
- 1.3.4 Roman fortresses in the surrounding area, including at Caerleon, were linked by a series of roads, a number of which pass through the Study Area.
- 1.3.5 The medieval and post-medieval periods saw the accelerated development of the drainage system present across the Gwent Levels, and the historic importance of the Gwent Levels is displayed through its designation as a Landscape of Outstanding Historic Interest in Wales.
- 1.3.6 Those areas of the Study Area within the Wentlooge and Caldicot Levels are covered with a large-scale drainage system consisting of 'ridge and vurnow', 'grips', field ditches and 'reens'. The ridge and vurnow and grips help to drain the fields, from which water is ultimately drained into larger watercourses, such as the River Usk and the Ebbw River, via the reens (Rippon 1996).
- 1.3.7 The process began, in places, during the medieval period and continues to this day through the management of the different elements of the system. Despite the longevity of the drainage system, some areas, such as Caldicot Moor, were first enclosed as late the mid-19th century.
- 1.3.8 Of a possible similar date are the moated sites and enclosures discovered during previous assessment of LiDAR data. Following their identification they were subject to a walkover survey. In addition to these sites is the scheduled moated site at Elm Farm, Undy.
- 1.3.9 The 20th century saw the development of the Alexandra Docks at Newport, resulting in changes in the landscape, including the diverting of the Ebbw River.

2 METHODOLOGY

- 2.1.1 The LiDAR survey for the Study Area (**Figures 2-6**) was undertaken by Network Mapping for Arup (Network Mapping 2015). The data were provided as ASCII XYZ and LAS files with a 0.025m vertical and horizontal precision. These came in both Digital Surface Model (DSM) and Digital Terrain Model (DTM) forms. The DTM was the preferred dataset, owing to being able to 'see beneath' the vegetation.
- 2.1.2 Photogrammetry data were acquired on the 28th and 29th September 2015 by Callen-Lenz in the Red Green Blue (RGB) and Near Infra-Red (NIR) spectral ranges using a Cessna 172 with a full frame Canon EOS 5DS R. Infra-Red data was captured using a 780 nm high pass filter.
- 2.1.3 The data were provided as TIFF files with a 0.2m horizontal resolution. Unlike the LiDAR DTM, the aerial survey-derived DSM (**Figures 7-11**) includes surface features such as buildings and vegetation. As such, the DSM cannot be used to see beneath features in the same way as LiDAR DTM and its derived datasets. Orthorectified full colour RGB and near-infrared (NIR) aerial imagery of the Study Area was also provided.

- 2.1.4 ArcGIS 10.3 was used to display and analyse the survey datasets and to record features. The Spatial Analyst extension was used as this provides additional tools that allow features within the datasets to be enhanced, making interpretation easier.
- 2.1.5 Slope maps of both the LiDAR DTM and the aerial survey-derived DSM were created and styled in a manner allowing changes in the height values between adjacent cells to be highlighted (English Heritage 2010: 10).
- 2.1.6 A series of hillshades of both the LiDAR DTM and aerial survey-derived DSM were created, with the position of the light source increasing at 45° intervals. The hillshaded images provided a means of emphasising slight changes in height in the two height models, helping to highlight the banks and ditches characteristic of archaeological features (English Heritage 2010: 37).
- 2.1.7 Principal Components Analysis (PCA) was then carried out on the two resulting sets of eight hillshades, creating a single dataset for both the LiDAR DTM and aerial survey-derived DSM in which common values across the eight datasets were retained, effectively creating a single hillshade dataset representative of the eight input hillshade models (English Heritage 2010: 23).
- 2.1.8 An additional Normalized Difference Vegetation Index (NDVI) of the aerial survey-derived dataset was created (**Figures 12-16**). A NDVI is a vegetation index that helps to highlight vegetation stress and, potentially, the presence of archaeological features (Parcak 2009: 92-93). The NDVI was created using the following equation, where R is the Red band of the RGB dataset:

$$NDVI = \frac{(NIR - R)}{(NIR + R)}$$

- 2.1.9 Alongside the height data and aerial survey-derived imagery, additional aerial imagery was also provided by Network Mapping and the Welsh Government.
- 2.1.10 Orthorectified satellite data was also acquired for the Study Area and was processed by Geo Smart Decisions. The three following datasets were processed and analysed: Pleiades, SPOT7 and WorldView 2. Datasets with low levels of vegetation cover were sourced.
- 2.1.11 Pleiades data was provided as TIFF files with a 2 m resolution. The data is comprised of four bands: Red, Green, Blue and NIR, alongside an additional panchromatic band.
- 2.1.12 SPOT7 data was provided as TIFF files with a 6 m resolution. The data is comprised of four bands: Red, Green, Blue and NIR, alongside an additional panchromatic band.
- 2.1.13 WorldView 2 was provided as TIFF files with a 2 m resolution. The data is comprised of eight bands: Coastal, Blue, Green, Yellow, Red, Red Edge, NIR1 and NIR2, alongside an additional panchromatic band.
- 2.1.14 Five datasets were derived from the three satellite datasets and took the form of two vegetation indices (Simple Ratio (SR) and NDVI (**Figures 17-31**) alongside PCA, a mosaiced dataset and albedo. The SR is calculated using the following equation, where R is the Red band of the RGB dataset:

$$SR = \frac{NIR}{R}$$

- 2.1.15 The datasets outlined above were used to digitise the archaeological interpretation in ArcGIS 10.3. Archaeological features were mapped in accordance with guidance developed by the National Mapping Programme (Aerial Survey and Investigation, Swindon 2010; Bishop and Oakey 2010; and National Mapping Programme 2010) and were recorded in a geodatabase that uses standard NMP forms and corresponding symbology to ensure compliance.
- 2.1.16 Each component of an archaeological feature was mapped and, once complete, was contained within a 'monument polygon'. Each monument polygon represents the full extent of the recorded feature (Bishop and Oakey 2010). A monument polygon can contain one feature (e.g. a ring ditch) or several associated features (e.g. a ditch and associated bank).
- 2.1.17 Monument polygons were assigned consecutive chronological numbers, starting with **1001**. A complete list of monument polygons, alongside descriptions of the transcribed features within, can be found in Appendix 1. The NGR is calculated as the centroid of the monument polygon.
- 2.1.18 The interpretation was complemented by the study of historic 1:2500 OS mapping, ranging in date from the 1880s (Epoch 1) to the post-war period (Epoch 5-9 composite). The OS map epochs referred to in the gazetteer in Appendix 1 date to the following:

Epoch	Survey date
Epoch 1	1875-1885
Epoch 2	1898-1900
Epoch 3	1919-1922
Epoch 4	1916-1940
Epoch 5-9	1940s-1990s

- 2.1.19 In addition to historic mapping, OS VectorMapLocal (VML), a modern 1:10000 scale dataset containing field boundaries, tracks and buildings, was also used throughout the assessment. Features mapped on the VML dataset were not recorded during the present study.
- 2.1.20 Locations of known archaeological features were provided with the inclusion of Cadw designated sites data (most notably Scheduled Ancient Monuments) and Glamorgan Gwent Archaeological Trust (GGAT) Historic Environment Record (HER) data. Where mapped features have a SAM number or GGAT HER reference then these are provided in the gazetteer in Appendix 1.
- 2.1.21 Where referred to in the text, the main archaeological periods are broadly defined by the following date ranges:

Prehistoric		Historic	
Palaeolithic	900,000 – 9500 BC	Romano-British	AD 43 - 410
Early Post-glacial	9500 – 8500 BC	Saxon	AD 410 – 1066

Prehistoric		Historic	
Mesolithic	8500 – 4000 BC	Medieval	AD 1066 – 1500
Neolithic	4000 – 2400 BC	Post-medieval	AD 1500 – 1800
Bronze Age	2400 – 700 BC	19th Century	AD 1800 – 1899
Iron Age	700 BC – AD 43	Modern	1900 – present day

3 RESULTS

3.1 Introduction

- 3.1.1 The interpretation resulted in the recording of 317 monument polygons, comprised of a total of 1220 components (**Figures 32-40**). Features were observed across the Study Area.
- 3.1.2 The majority of recorded features represent fields, boundaries and features related to the drainage system. These are present across both the Wentlooge and Caldicot Levels and represent the ‘ridge and vurnow’, ‘grips’ and ‘reens’ typical of the Gwent Levels.
- 3.1.3 In addition, a number of possible moated sites, enclosures and former farmsteads have been recorded. Many of these were recorded during the previous LiDAR survey, although a small number of new sites have been noted and additions to previously recorded sites made.
- 3.1.4 Additional features of note also include palaeochannels and possible ring ditches.

3.2 Moated sites

- 3.2.1 A number of ‘moated sites’ have been transcribed (**Figure 41**), the majority of which were recorded during the previous LiDAR survey. Their forms can often be traced beneath the alignment of modern field boundaries and drains, although several examples share boundaries with, or are aligned and contained within, the present pattern of fields. Their distribution is spread across the Study Area, although concentrations can be seen to exist on the Gwent Levels.
- 3.2.2 Their appearance in the LiDAR data takes the form of shallower yet wider ditches when compared with the later, sharper, drainage features. Some features recorded within these monument polygons are likely to represent ditches within the drainage system.
- 3.2.3 Two previously recorded sites (**1090** and **1091**) are located on the Wentlooge Level, separated by 70 m across Lighthouse Road. The sites take different forms; **1090** takes the form of a 17 m x 17 m ditch, while **1091** appears as two separate platforms. Despite this difference in form they share an alignment, suggesting possible contemporaneity.
- 3.2.4 Approximately 700 m to the north-east of **1090** and **1091** lie **1111** and **1112**. The southern site, **1111**, has not been previously recorded, but the ditch profile appears similar to **1112** to the north, suggesting they are possibly linked. **1112** is previously recorded and takes the form of a series of ditches either side of Pont-y-cwch Reen. An additional north-west extension has also been recorded during the present study.
- 3.2.5 On the Caldicot Levels lies **1137**, a previously recorded moated site to the south of Picked Lane. The features are contained within an area measuring 90 m x 30 m at the greatest

extent. A number of ditches lie on a slightly different alignment to the later drainage system (**1138**).

- 3.2.6 A larger complex of sites is located near Arch Farm. Central to these is **1161**, a series of ditches located across 2.8 hectares. The features have been previously recorded and help form a number of platforms. These ditches appear shallower and wider in form than the later drainage system (**1163**). Additional ditches form 'spurs' to the north-east, one of which appears to continue as **1160**. To the east of these lies **1162**, a further previously recorded site. Finally, to the south of Arch Farm lies **1166**, an 'L'-shaped section of ditch representing a further previously recorded site.
- 3.2.7 Approximately 600 m north-east of the Arch Farm complex lies **1178**, a series of ditches again representing a previously recorded moated site. The features are spread across 2.1 hectares. Further ditch features, similar in form and sharing an alignment, have also been recorded in addition to the previously recorded extents.
- 3.2.8 Previously recorded features at Moorbarn Farm (**1191**) have also been recorded. They are contained within an area measuring 1 hectare and take the form of a number of platforms.
- 3.2.9 An 'L'-shaped ditch 35 m in length (**1221**) can be seen in the corner of a field between North Row and Rush Wall. It represents a previously recorded moated site. 700 m to the north-east lies a further ditch feature (**1230**) which is possibly representative of a moated site, due to its similarities with sites such as **1221**.
- 3.2.10 The easternmost of the possible moated sites, **1271**, takes the form of a series of ditches to the north of Undy, spread across 1.6 hectares. They may also represent an earlier field pattern.
- 3.2.11 The scheduled moated site at Undy (**1291**) can be easily traced in all datasets. This site differs in form to many of the examples described above, although parallels can be drawn with **1086** and **1158** due to the overall square appearance of the features. A series of slight, parallel banks associated with the remains are likely to represent later, orchard-related features.
- 3.2.12 An additional possible enclosure site also requires attention. **1300** is formed of a series of ditches and lies to the north of Moor Ditch on the edge of Caldicot Moor. The ditches appear to represent an enclosure, although they differ in form to other moated sites in the area; in particular, the ditches are more pronounced in the LiDAR data. A circular mound of unknown function, 10 m in diameter, lies within the enclosed area.

3.3 Farmsteads

- 3.3.1 Remains associated with former farmsteads can be found within the western section of the Study Area, to the west of the B4239 (**Figure 42**). These take the form of short sections of bank and, occasionally, ditch. These farmsteads are all present on historic mapping.
- 3.3.2 To the east of Pant-rhiw-goch lie a series of remains associated with Pant-rhiw-goch-ganol (**1003**). Due to tree coverage these features are only visible in the LiDAR-derived datasets. Features can be traced across an area measuring 30 m x 15 m at their greatest extent. A former field boundary, **1001**, is visible to the west, forming a boundary between Pant-rhiw-goch-ganol and Pant-rhiw-goch.

- 3.3.3 Banks and structural remains relating to Great Pen-carn (**1046**), a manor house with 14th century origins, can be traced in a small area of woodland to the north of the Wentlooge Levels. The features are spread over 0.5 hectares and trace the walls of buildings and the locations of boundaries as present on historic mapping.
- 3.3.4 In addition to the western sites, further examples to the east may also represent remains associated with former farmsteads. The moated site **1090** may represent remains associated with Ty-hir, a farmstead also present on historic mapping. A 40 m long section of ditch associated with the former farmstead of Ty-pridd (**1194**) represents a further example of a field boundary associated with a former farmstead.
- 3.3.5 Although not representing a former farmstead, Ysgubor y Lan (**1031**) presents an example of a barn recorded on historic mapping. The remains are also marked on VML but are recorded here as their remains on the historic OS maps include a complete east-facing side. The remains are formed of a rectangular bank measuring 12 m x 6 m.

3.4 Drainage Systems

- 3.4.1 By far the most ubiquitous features present in the data relate to the drainage systems found across the Gwent Levels (**Figure 43**). Most are formed of regular, rectangular field ditches, within which lie ridge and vurnow and grips. A number of the recorded features are present on the historic OS maps.
- 3.4.2 The drainage system in the Wentlooge Levels follows a largely south-west to north-east alignment. The system is present and uninterrupted along a 3 km stretch of the Study Area, terminating on the bank of the Ebbw River. Typical examples include **1053**, **1066**, **1077** and **1114**. Remnants of now-lost drainage system features can also be traced on the diverted west bank of the Ebbw River (**1121**).
- 3.4.3 In the east, the alignment of the drainage system in the Caldicot Levels is slightly more disjointed, although with a general tendency towards north-west to south-east. Typical features include **1148**, **1185** and **1201**. Much like on the Wentlooge Levels, the system is largely uninterrupted.
- 3.4.4 The latest features in the Study Area, on Caldicot Moor at the far eastern end, are also the most geometrically precise. They are contained within a drainage system representing short-term, rather than piecemeal, development.

3.5 Other Archaeological Features

- 3.5.1 Protection from the sea is visible in the flood defences found along the northern bank of the River Usk (**1125**), where elements of the post-medieval sea wall can be traced intermittently over the course of 1 km.
- 3.5.2 Five possible ring ditches have been identified. **1224** is located to the south-west of Tonew Kennels in the north of the Caldicot Levels and takes the form of a circular feature 17 m in diameter. It is most prominent in NIR imagery. The path of the feature is interrupted slightly at its easternmost point, possibly by later drainage features (**1223**).
- 3.5.3 To the east of Undy lies **1293**, a feature visible in both the LiDAR data and NIR imagery. The feature lies 60 m to the west of **1292**, a scheduled standing stone with possible Bronze Age origins. A further three ring ditches lie in a group to the north-east of Llandevenny (**1259**). Their origins are unclear, and some or all may represent cattle feeders.

- 3.5.4 A short, 50 m long section of possible Roman road can be traced to the north of Magor (**1265**). Despite the presence of a number of putative Roman roads within the Study Area, this is the only section visible in the data.
- 3.5.5 Former quarrying is visible to the south-east of Knollbury in the form of a cut feature measuring 40 m x 15 m at its greatest extent (**1273**). The feature is marked as an 'Old Quarry' on historic mapping.
- 3.5.6 Away from the low-lying land of the Wentlooge and Caldicot Levels, the field system is more frequently defined by banks representing present and former hedgerows. To the north-east of Undy, a system of former field boundaries can be traced across 22 hectares (**1285**; **Figure 44**). A number are marked on historic mapping, with additional unmapped banks appearing on the same alignment. They are probably related to an area of possible ridge and furrow (**1286**), alongside similar boundaries on a shared alignment to the south (**1287**, 8.1 hectares) and east (**1288**, 17 hectares).
- 3.5.7 It is possible to trace further features to the north-west of Magor. Here, a series of banks located across 13 hectares (**1258**) bear similarities with the extensive complex of earthworks at Arch Farm but appear to instead represent plough headlands. They may also represent, in part, an earlier pattern of fields. Probably contemporaneous with **1258** is **1260**, three blocks of ridge and furrow fitting within the features. Additionally, **1262**, a series of ditches on a different alignment to **1258** and **1260**, is visible in the WorldView 2 dataset.

3.6 Palaeochannels

- 3.6.1 Evidence for palaeochannels can be seen across the Study Area. A number of features of similar form may be of a more recent date and represent run-off in the fields (for example, **1006**, **1107** and **1196**, where a series of channels run towards Middle Reen).
- 3.6.2 A series of channels are present on Green Moor (**Figure 45**). To the west, **1212** may also represent changes in topography. The central features on Green Moor are recorded within **1213**, and are represented by a series of channels spread across 28 hectares. These channels are present in both the LiDAR data and aerial imagery. To the south lies **1218**, comprised of a sinuous northern channel which forks to the south. Further channels can be traced 500 m to the east of the features on Green Moor (**1241**).
- 3.6.3 Caldicot Moor provides a further setting for palaeochannels on the Caldicot Levels (**1303**), where channels are present across 167 hectares. Although a number appear to represent recent run-off, the paths of many can be traced beneath the field system.

4 CONCLUSIONS

- 4.1.1 Through the study of a combination of LiDAR data, aerial survey-derived data and satellite imagery it has proved possible to rapidly capture a large number of features across a wide area (in this instance a 25 km long linear scheme). Recorded archaeological and historical features range in date from the later prehistoric to the modern, with the majority appearing to have post-medieval, 19th century and modern origins.
- 4.1.2 The recorded features range in form from moated sites, former farmsteads and earlier field patterns to palaeochannels and drainage system remains. Furthermore, these features help to highlight the differing forms of the landscapes present on the Gwent Levels and of those beyond the wetland-dryland interface.

- 4.1.3 Elements of the drainage system are undoubtedly the most frequently encountered features within the Study Area. Although many of these elements, in particular the ridge and vurnow and grips, are most likely to be modern in date, study of historic mapping suggests at least a 19th century origin for elements of the system, and so there is likely to be much re-use of channels.
- 4.1.4 The moated sites and enclosures recorded during the previous LiDAR survey have also been encountered here, with negligible change displayed in terms of the survival of these earthworks. Additional elements of some of these sites have also been recorded, as have further possible examples, based upon typology and their relationships with the surrounding drainage systems. Taken as a whole, the moated sites and the drainage systems help to provide an extensive picture of the recent history of the Gwent Levels.
- 4.1.5 In addition, the survey has allowed a small number of former farmsteads to be mapped. Additional sites of interest have also been recorded during the present study, including possible ring ditches, while evidence of agricultural activity away from the Gwent Levels can be seen to take the form of former field banks, plough headlands and associated ridge and furrow. Earlier flood defences are also present within the Study Area, most notably in the form of an intermittent bank on the eastern bank of the River Usk.
- 4.1.6 Palaeochannels, extensively recorded during the previous LiDAR survey, have also been encountered in the Study Area, although early Holocene deposits appear to be too deep across the Gwent Levels to be present within the datasets studied here. As a result, the majority of recorded palaeochannel features are likely to be relatively modern in date.
- 4.1.7 Ultimately, the present study has provided a means of identifying a large number of sites of archaeological and historical interest, while also allowing them to be recorded to a level of detail which provides a means of understanding the various components of the landscape.

5 REFERENCES

5.1 Bibliography

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6 APPENDICES

6.1 Appendix 1: Gazetteer of transcribed features

WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1001	A 150 m long bank in a field to the east of Pant-rhiw-goch. The feature marks the location of a field boundary marked on the Epoch 1-4 OS mapping.	Undated			324569	183797
1002	A slight, right-angled ditch, 105 m x 35 m at the greatest extent, visible in a field to the east of Pant-rhiw-goch. The field is unmarked on historic mapping and is not visible on aerial imagery but appears to represent a possible boundary.	Undated			324584	183832
1003	Features related to Pant-rhiw-goch-ganol, a small farmstead present on the Epoch 1-5 OS maps. The features are present as a series of slight banks in a lightly wooded area. The features cover 30 m x 15 m at their greatest extent.	Post-medieval		02497g	324652	183775
1004	A rectilinear ditch, covering a 60 m x 45 m area, to the north-east of Pant-rhiw-goch. The feature does not relate to the relate to the pattern of modern or historic fields but may be related to previous woodland use as depicted on Epoch 1 OS mapping.	Undated			324494	183900
1006	Ditch features visible in a field to the south-east of Reservoir House. The features may represent palaeochannels but are most likely to represent the paths of recent streams within the field. The western features measures 75 m in a NW-SE direction. The eastern feature measures 50 m in a north-south direction.	Undated			324495	184036
1005	Ditches in a field to the east of Pant-rhiw-goch, visible in the WorldView 2 NDVI dataset. The features take the form of two rectangular enclosures, measuring 80 m x 40 m.	Undated			324612	183942
1007	Two circular features joined by two short ditch sections to the west of Pwll Diwaelod. The features run north-south for 40 m.	Undated			324839	183905



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	The southernmost circular feature is also visible on aerial imagery and measures 7 m in diameter. They are both likely to represent animal feeders.					
1008	A large-cut feature to the west of Pwll Diwaelod. It is unmarked on mapping but appears to relate to drainage southwards from the motorway. The feature covers an area 0.7 hectares	Undated			324881	183840
1009	A section of north-south running bank in a field to the east of Pwll Diwaelod. It measures 65 m in length and runs north-south before dog-legging to the south-east. The feature matches a section of field boundary marked on the Epoch 1 OS mapping.	Undated			325037	183932
1010	A series of interconnected ditches, probably acting as drainage from the motorway southwards. Two ditches run north-south for 45 m and 35 m before abutting a SW-NE ditch which runs for 80 m.	Modern			325095	183969
1011	Three parallel north-south running ditches, possibly related to earlier agricultural activity on the site as the easternmost ditch abuts WA1009. The ditches run north-south for between 90 m and 50 m.	Undated			325024	183910
1012	A series of soilmarks are visible on NIR imagery in a field to the north-west of New Park Cottages. The features represent historic field boundaries as present on Epoch 1 OS mapping. The soilmarks are visible across 1.9 hectares of land.	Undated			324905	184169
1013	A 230 m long, north-south running ditch is present in a field to the east of New Park. The feature represents a field boundary present on the Epoch 1-3 OS mapping.	Undated			325417	184221
1014	Three sections of east-west running ridge-and-furrow-like features and a bank to the north of Gwaunshonbrown Farm. The features are intersected by a later field boundary and an unmarked bank. The features are possibly related to earlier woodland management, as depicted on the Epoch 1 OS map. The features are spread across 0.3 hectares.	Undated			326197	184510



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1015	Evidence of agricultural activity in a field to the south-west of Sea View. The features are located across 0.7 hectares and are probably modern in date.	Undated			325759	184413
1016	A sub-rectangular cut feature in a field to the south-west of Sea View, in the corner of the field recorded as WA1015. It measure 13 m x 10 m at its greatest extent.	Undated			325792	184383
1017	A slight, sub-circular mound in a field to the south-west of Sea View, measuring 11 m in diameter.	Undated			325864	184409
1018	A series of slight bank features to the south of Sea View. Sections represent tracks visible on aerial imagery, and it is possible that all features are tracks, hence they are probably modern features. They cover an area 45 m x 30 m at their greatest extent.	Modern			325870	184438
1019	An area of possible ridge and furrow to the north of Dan-y-graig. It covers an area 125 m x 30 m. Any possible extension to the north has been lost to the motorway.	Undated			326097	184119
1020	A series of banks and ditches in a field to the north of Spring Court. The banks represent historic field boundaries, as recorded on the Epoch 1-5 OS maps. The ditches follow the same alignment and appear to be related to drainage. The features are confined to an area of 2.2 hectares. The central spine of the features runs WWS-EEN, with the drains running perpendicular to this.	Undated			325794	183865
1021	A sinuous bank to the east of Spring Court, representing a field boundary marked on the Epoch 1-3 OS maps. It follows a general north-south alignment for 165 m.	Undated			326011	183785
1022	Two parallel, north-south running ditches in a field to the east of Spring Court. The features are related to drainage. They measure 115 m in length.	Undated			325951	183794
1023	A 70 m long ditch in a field to the south-west of The Old Rectory, probably related to drainage. It follows a NNW-SSE alignment.	Undated			326044	183851

WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1024	Three ditches in a field to the east of The Old Rectory, probably related to drainage. The two parallel southern ditches follow a north-south alignment and measure 50 m in length. A short section of a third ditch runs to the north for 25 m in an approximate NW-SE direction.	Undated			325991	183922
1025	A ditch and bank in a field to the west of The Cottage. The bank, running east-west for 40 m, is marked on the Epoch 1-5 OS maps as a field boundary. Although unrecorded, the north-south running ditch appears to form a further boundary. It may be a drain. It runs for 70 m in a NNW-SSE direction.	Undated			326150	183978
1026	A 100 m long, NNW-SSE running ditch in a field to the south of Danygraig Cottage. The feature represents a field boundary recorded on Epoch 1-5 OS mapping.	Undated			326234	183896
1027	Four parallel ditches in a field to the west of Spring Court, running on a NNW-SSE alignment for between 50 m and 80 m. The third from west marks the location of a field boundary recorded on the Epoch 1-3 OS mapping.	Undated			325587	183763
1028	Four parallel ditches in a field to the south of the A48, probably acting as drains. They measure approximately 90 m in length and run on a NNW-SSE alignment.	Undated			326647	184141
1029	A series of ditches in a field to the south of Ysgubor y Lan, representing former field boundaries recorded on the Epoch 1-3 OS maps. The ditches take the form of an east-west drain running for 190 m and three parallel ditches running perpendicular for 60 m, 40 m and 30 m.	Undated			326688	184421
1030	A 110 m long, north-west to south-east running ditch in a field to the south of Gwaunshonbrown Farm and representing a field boundary marked on the Epoch 1-3 OS maps.	Undated			326274	184412
1031	Features relating to Ysgubor y Lan, an old farmhouse recorded on both historic and present day mapping. The features are rectangular and cover an area of 12 m x 6 m.	Post-medieval			326446	184460
1032	An 85 m long ditch in a field to the south-west of Cefn Llogell. It	Undated			326806	184623



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	is unmarked on historic mapping but may represent an earlier field boundary or drainage feature.					
1033	A 110 m long, NNW-SSE running bank in a field to the west of Church Lane. The bank is unmarked on both historic and present-day mapping but clearly represents a field boundary in all datasets.	Undated			327228	184243
1034	A 70 m long, NNW-SSE running ditch in a field to the west of Church Lane. The feature is unmarked on historic mapping but appears to represent a historic field boundary.	Undated			327318	184334
1035	An area of ridged features in woodland to the east of Berryhill Farm, probably related to woodland management and hence probably modern in date, due to the lack of woodland present on historic mapping.	Undated			327172	184359
1036	A faint, 105 m long, SWW-NEE running ditch in a field to the west of Church Lane. The feature appears to represent a footpath marked on Epoch 1-3 OS mapping.	Undated			327333	184239
1037	A bank to the south of Ty'n-y-brwyn representing a former boundary at the edge of woodland as depicted on Epoch 1-3 OS mapping. The bank is formed of three sides on a SSW-NNE alignment and covers an area 90 m x 40 m at its greatest extent.	Undated			326751	183714
1038	A series of ditches across 0.6 hectares, representing drainage features.	Undated			327256	184138
1039	A 90 m long section of ditch in a field to the south-west of Berryhill Farm, appearing to represent a historic boundary as suggested by the Epoch 1 OS map. A parallel section, unmarked on mapping, is present to the west and appears to represent a further boundary. They follow a NNW-SSE alignment.	Undated			326872	184156
1040	Four ditches in a field to the east of Ty'n-y-brwyn, spread across 0.7 hectares and likely to be drainage-related.	Undated			326908	183885
1041	Three short 4 m wide banks are visible in a field to the north of	Undated			327640	183666



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	Coedkernew, representing remains from previous woodland management, as suggested by the Epoch 1 OS map. They measure 8 m, 15 m and 20 m in length and lie on a SSW-NNE alignment.					
1042	A number of ditches in a field to the north-west of Brook Cottage, appearing to represent drainage features. The features are present across 1.2 hectares.	Undated			327483	183715
1043	A 140 m x 60 m cut feature near Coedkernew, evidence of recent large-scale quarrying.	Modern			328007	183697
1044	A large cut feature near Coedkernew, evidence of recent large-scale quarrying. The feature covers 0.8 hectares.	Modern			327813	183839
1045	Two sub-circular mounds to the north of WA1043, one measuring 30 m in diameter and the eastern one 15 m in diameter. The features are likely to be related to recent quarrying.	Modern			328027	183758
1046	A series of banks and structural remains related to Great Pencarn, a manor house with 14th century origins. The features are spread over 0.5 hectares.	Medieval		00012g	328166	183676
1047	Three ditches to the north-east of The Stud Farm. The southern two are 35 m long and parallel and are also visible on aerial imagery. The northern ditch is 'L'-shaped and most clearly visible in the LiDAR dataset, although a section is present in the NIR imagery. It does not correspond to any features present on historic or present-day mapping; furthermore, it is on a different alignment to the pattern of fields. It may represent an earlier enclosure, boundary or drain. The ditches to the south follow the alignment of agricultural activity and the pattern of fields and appear more consistent with recent agricultural activity.	Undated			327811	183546
1048	A series of drainage features across fields to the east of Coedkernew, covering an area 3.8 hectares in extent. They are connected to drains recorded on historic and present-day OS	Undated			328008	183392



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	mapping and as such may have similar origins. However, they are likely to represent recent features.					
1049	Four parallel ditches, 205-230 m long on a NW-SE alignment, in a field to the west of Maerdy Farm, the easternmost ditch with an additional spur. The eastern ditches are present on Epoch 1-3 OS mapping as boundaries/drains.	Undated			328392	183312
1050	A series of ditches in a field to the north-east of Maerdy Farm, many of which are recorded on the Epoch 1-5 OS maps as drains. The drains are spread over an area measuring 11 hectares and largely follow a NW-SE alignment.	Undated			328661	183417
1051	A ditch feature to the south of Maerdy Farm, representing a section of drain marked on the Epoch 1-3 OS maps. It lies on a NW-SE alignment.	Undated			328542	183201
1052	A number of ditches in a field to the south of Maerdy Farm. The features are marked on the Epoch 1-5 OS maps as drains. They are spread over an area of 3.2 hectares.	Undated			328772	183079
1053	A series of drains within fields to the west of Green Lane, covering an area of 7 hectares. A number are recorded on the Epoch 1-5 OS maps. All are connected to drains marked on present-day OS mapping.	Undated			328994	183226
1054	A series of drains within fields to the east of Green Lane, covering an area of 2 hectares. One SWW-NEE running ditch is visible on the Epoch 1-3 OS maps. All are connected to drains marked on present-day OS mapping.	Undated			329165	183385
1055	Three short parallel ditches in woodland to the south of the railway, probably drainage-related. They run for 25 m on a NW-SE alignment.	Undated			329121	183486
1056	Features related to the recent removal of woodland and covering 0.5 hectares.	Modern			329047	183397
1057	A series of drains across several fields to the south-west of Fox Covert, covering an area of 4.5 hectares. The features fit within the field pattern present on both historic and present-day OS	Undated			328985	183558

WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	mapping, although the drains themselves are unmarked. They follow a general NW-SE alignment.					
1058	Two ditches in a field to the south of Percoed Reen. The features are unmarked on mapping but are related to drainage.	Undated			328828	183624
1059	Two ditches in a field to the between Percoed Reen and Fox Covert. The features are unmarked on mapping but related to drainage. One appears to represent an eastwards continuation of the southernmost ditch recorded under WA1062.	Undated			328941	183742
1060	A series of SW-NE running ditches in Fox Covert, probably related to woodland management. Their date may range from the 19th century through to the present day.	Undated			329134	183665
1061	Ditches in a field to the north of Fox Covert. The features are unmarked on mapping but related to drainage. Three larger ditches are visible on LiDAR data, with additional north-south ditches visible on NIR imagery only.	Undated			329096	183829
1062	A series of ditches in a field to the north-east of Green Lane. A number of ditches are recorded on the Epoch 1-3 OS maps as drains and are spread over an area of 3.2 hectares.	Undated			329264	183352
1063	A series of ditches in a field to the north-east of Green Lane, within an area measuring 1.6 hectares. The northernmost SWW-NEE running ditch is recorded on the Epoch 1-3 OS maps as a drain.	Undated			329447	183424
1064	Four ditches in a field to the east of WA1063. The features are unmarked on mapping but related to drainage. They lie on a general NEE-SWW alignment and measure 40 m in length.	Undated			329574	183464
1065	A series of ditches in a field measuring 2.2 hectares to the south of the railway line. The central SWW-NEE running ditch is recorded on the Epoch 1-5 OS maps as a drain.	Undated			329420	183510
1066	A series of ditches in a field measuring 1.3 hectares, located to the south of the railway line. The features are unmarked on mapping but related to drainage.	Undated			329358	183578
1067	A series of ditches spread across two fields to the north-east of	Undated			329401	183726



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	Fox Covert. The fields are split by the railway line and appear to predate it. A number of the features are marked as drains/boundaries on the Epoch 1-5 OS map. They are spread across an area measuring 7 hectares and follow a NWW-SEE alignment.					
1068	A series of ditches in a field to the north of the railway line. The features are unmarked on mapping but related to drainage. They are present over an area of 1.4 hectares and follow a NNW-SSW alignment.	Undated			329376	183871
1069	A series of ditches in a field to the north of the railway line. The central NW-SE running ditch is marked on the Epoch 1-3 OS maps as a drain. The features are present across 3.1 hectares.	Undated			329516	183895
1070	A series of ditches in a field to the north of the railway line. The western SW-NE running ditch is marked on the Epoch 1-3 OS maps as a drain. The features are present across 3.3 hectares.	Undated			329659	184056
1071	A series of ditches in a field to the south of the railway line. The eastern dog-legged NW-SE running ditch is marked on the Epoch 1-3 OS maps as a drain. They are present across 3.5 hectares.	Undated			329651	183576
1072	Ditches within a field to the south of the railway line, unmarked on mapping but visible on NIR imagery. The features are related to drainage. They take the form of a central, north-south running ditch intersected by four parallel east-west running ditches, spread across 0.7 hectares.	Undated			329623	183782
1073	A series of ditches in a field to the south of the railway line. The features are unmarked on mapping but related to drainage. An east-west running ditch forms a spine from which north-south running ditches run.	Undated			329734	183900
1074	A series of ditches in a field to the north of the railway line. The central NW-SE running ditch is marked on the Epoch 1-3 OS maps as a drain. A series of perpendicular parallel ditches, averaging 75 m in length, intersect it.	Undated			329829	184124

WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1075	A series of ditches in a field to the south of the railway line. The largest NW-SE running ditch is marked on the Epoch 1-5 OS maps as a drain. The ditches follow a general NW-SE alignment, with the additional of three perpendicular spurs to the east. The features are contained within an area of 1.1 hectares.	Undated			329877	184022
1076	A series of ditches in a field to the south of the railway line. The features are unmarked on mapping but related to drainage. A central spine runs in a NW-SE direction, with perpendicular spurs to the west and east. The features are contained within an area of 0.9 hectares.	Undated			329985	184102
1077	A series of ditches in a field to the west of Lighthouse Road. The large, central east-west running ditch is marked on the Epoch 1-5 OS maps a drain. Two drains lie parallel with this one - one to the north and one to the south. A large number of perpendicular ditches round from north to south. The features are contained within 3.4 hectares.	Undated			329927	183939
1078	Features within Tredegar Park, apparently related to woodland management. Their origins may be modern, although evidence of woodland exists in the area on the Epoch 1 OS map onwards. The features are contained within an area of 2.2 hectares.	Undated			329889	184365
1079	A series of ditches in a field to the south of Pencarn Lane. The large central NW-SE running ditch is marked on the Epoch 1-5 OS maps a drain. Parallel ditches exist to the north-east and south-west, alongside a number of perpendicular ditches running for the length of the field. The features are located within an area measuring 3.4 hectares.	Undated			329755	184242
1080	Two parallel, 55 m long, NWW-SEE running ditches in a field to the east of Lighthouse Road. The south-western ditch is located in the same position as a footpath marked on Epoch 1-5 OS maps. Despite this, both appear to be drainage-related.	Undated			330062	184415



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1081	A series of ditches in a field to the north-east of Whitecross Farm, a number of which are recorded on the Epoch 1-5 OS maps as drains. Their alignment continues into WA1108. They are contained within an area measuring 1.4 hectares.	Undated			330159	184347
1082	A series of ditches in a field to the east of Lighthouse Road. The features are unmarked on mapping but related to drainage. Most ditches lie on an east-west alignment, within evidence of additional north-south running ditches. The features are contained within 1.3 hectares.	Undated			330099	184178
1083	A series of ditches in a field to the east of Lighthouse Road. The features are unmarked on mapping but related to drainage. Two WWN-EES ditches appear to continue the alignment of two ditches in WA1082.	Undated			330204	184127
1084	A series of ditches in a field to the north of Fair Orchard Farm. The features are unmarked on mapping but related to drainage and contained within 0.4 hectares.	Undated			330120	183988
1085	A series of ditches in a field to the west of Lighthouse Road. The large central SW-NE running ditch and westernmost ditch are marked on the Epoch 1-3 OS maps as drains. Additional perpendicular ditches run north-west and south-east from the central ditch. They are contained within 1.4 hectares.	Undated			330019	183861
1086	A series of ditches in a field to the west of Lighthouse Road. The southern SWW-NEE running ditch is marked on the Epoch 1-3 OS maps as a drain. A series of perpendicular ditches run northwards from this. Additional ditches, averaging 25 m in length, exist to the south. They are contained within 1.4 hectares.	Undated			329914	183796
1087	A series of ditches in a field to the south of the railway line. A number are recorded on the OS Epoch 1-5 maps as drains. Two slightly different alignments are visible, suggesting two phases. They are contained within 4.8 hectares.	Undated			329772	183718
1088	Three short but deep ditches in a field to the west of	Undated			329913	183690



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	Lighthouse Road, unmarked on mapping but related to drainage. They follow a general north-south alignment and run for 65 m, 55 m and 40 m.					
1089	A series of ditches in a field to the west of Lighthouse Road. The large central SW-NE running ditch is marked on the Epoch 1-5 OS maps a drain. Perpendicular drains run north-westwards from this. They are contained within 1.3 hectares.	Undated			329913	183583
1090	A moated site visible as a ditch. The site was first recorded in the previous LiDAR survey and is possibly associated with the farmstead called 'Ty-hir' present on Epoch 1-5 OS mapping. It is square in form, measuring 17 m x 17 m. It is located within the same field as WA1089.	Medieval		10906g	329964	183591
1091	A moated site 100 m east of WA1090, visible as two rectangular ditch features. The site was first recorded in the previous LiDAR survey. The features measure 35 m x 25 m.	Medieval		10907g	330058	183592
1092	A series of parallel ditches in a field to the north of Dulce Domum. The features are unmarked on mapping but related to drainage. They follow a NNW-SSE alignment and are contained within an area measuring 0.5 hectares.	Undated			330118	183625
1093	A series of ditches in a field to the east of Dulce Domum. The features are unmarked on mapping but related to drainage. A central, 110 m long central ditch runs north-south, with additional ditches running to the west and east.	Undated			330119	183538
1094	A series of parallel ditches in a field to the east of Pear Tree Cottage. The features are unmarked on mapping but related to drainage. They run north-south and measure between 35 m and 55 m in length.	Undated			330106	183455
1095	A series of ditches in a field to the west of Lighthouse Road. The north-eastern ditch is marked on the Epoch 1-5 OS maps a boundary. The parallel NW-SE running ditches are related to drainage.	Undated			329941	183491
1096	A 150 m long, north-south running drain in a field to the west of	Undated			330009	183507



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	Lighthouse Road, marked on the Epoch 1-5 OS maps.					
1097	A series of parallel ditches in a field to the west of Lighthouse Road. The features are unmarked on mapping but related to drainage. They are contained within 0.8 hectares.	Undated			330019	183770
1098	A series of short (no longer than 10 m), parallel ditches located between Lighthouse Road and a drain to the west. The features are unmarked on mapping but related to drainage.	Undated			330078	183765
1099	A series of ditches in a field to the east of Lighthouse Road. The features are unmarked on mapping but related to drainage. They are contained within 2.8 hectares.	Undated			330208	183669
1100	A series of parallel, north-south running ditches in a field to the east of Dulce Domum. The features are unmarked on mapping but related to drainage. They are contained within an area of 1 hectare.	Undated			330288	183579
1101	Parallel ditches to the south of and following the same alignment as WA1100. The features are unmarked on mapping and are contained within an area measuring 0.9 hectares.	Undated			330242	183519
1102	A series of parallel, SW-NE running ditches in a field to the south-east of Fair Orchard Farm. The features are unmarked on mapping but related to drainage.	Undated			330322	183697
1103	A series of ditches in a field to the east of Fair Orchard Farm. The features are unmarked on mapping but related to drainage. Two central NWW-SEE ditches form a spine from which perpendicular ditches emanate. They are contained within 2.4 hectares.	Undated		08468g	330357	183849
1104	A series of ditches in a field to the north of Fair Orchard Farm. The features are unmarked on mapping but related to drainage. A central, WNW-EES ditch forms a spine which a number of perpendicular ditches intersect. They are contained within 1.2 hectares.	Undated			330253	184010
1105	A series of ditches in a field to the north-east of Fair Orchard Farm. The features are unmarked on mapping but related to	Undated			330385	183957



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	drainage. A NWW-SEE central ditch forms a spine through which a series of parallel, perpendicular ditches pass.					
1106	A series of ditches in a field to the south of Old Dairy Reen. The features are unmarked on mapping but related to drainage. They are contained within 0.8 hectares.	Undated			330327	184101
1107	Part of a possible palaeochannel in a field to the east of the railway track near Duffryn, running north-south for 110 m. The feature may be the result of more recent activity. The feature is not present on aerial imagery.	Undated			330170	184321
1108	A series of parallel, SSW-NNE running ditches in a field to the north of Old Dairy Reen. The features are unmarked on mapping but related to drainage. They are cut by a ditch representing a footpath marked on Epoch 1-5 OS mapping. All features are contained within 1.6 hectares.	Undated			330264	184276
1109	A series of ditches in a field to the north of Old Dairy Reen. The features are unmarked on mapping but related to drainage. They are cut by a ditch representing a footpath marked on Epoch 1-5 OS mapping. The footpath of is an extension of the one within WA1105. To the east the parallel ditches lie on a general NWW-SEE alignment. They are contained within 3 hectares.	Undated			330418	184143
1110	A series of parallel ditches in a field to the north of Old Dairy Farm. The features are unmarked on mapping but related to drainage. They are cut by a ditch representing a footpath marked on Epoch 1-5 OS mapping, running in a WWN-EES direction.	Undated			330633	184155
1111	A section of ditch, cut by a modern drain, to the south-west of Pont-y-cw cw Reen. The feature covers an area 120 m x 60 m at its greatest extent and, based on its form, appears similar to previously discovered moated sites in the area. It may have medieval or post-medieval origins, based upon type and its relationship with the later field alignment. It is present within	Undated			330411	184269



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	fields WA1105 and WA1110.					
1112	A series of ditches either side of Pont-y-cw cw Reen, representing the remains of a moated enclosure. The features are spread over an area 350 m x 165 m in size. The ditches follow previously recorded remains, with the addition of an extension in the north-west.	Medieval		10911g	330357	184522
1113	A series of ditches in a field to the south of Pon-y-cw Reen. The features are unmarked on mapping but related to drainage. There are four SSW-NNE running ditches, through which a number of parallel, perpendicular ditches pass. The SSW-NNE running ditch second from the east appears slightly different in form to the others - wider and more sinuous - and has a running to a drain to the south-east. This feature may represent an earlier episode of drainage.	Undated			330334	184408
1114	A series of ditches in a field to the south of Pon-y-cw Reen. The features are unmarked on mapping but related to drainage. The features form a lattice across 2.2 hectares.	Undated			330468	184278
1115	A series of parallel ditches in a field to the north of Pon-y-cw Reen, running on a general SW-NE alignment, although the ditches curve with the shape of the field to the west. The features are unmarked on mapping but related to drainage. They are contained within 3.1 hectares.	Undated			330541	184495
1116	A series of ditches in a field to the north of Heolpo nt-y-cwcw. The features are unmarked on mapping but related to drainage. All but one are parallel, running on a NWW-SEE alignment. An additional curved ditch is present in the south-east of the field. It continues into WA1119.	Undated			330812	184232
1117	A series of parallel, NWW-SEE running ditches in a field to the north of Heolpo nt-y-cwcw. The features are unmarked on mapping but related to drainage. They occur across 2 hectares.	Undated			330726	184300
1118	A series of ditches in a field to the west of the Ebbw River. The	Undated			330817	184425



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	features are unmarked on mapping but related to drainage. They are contained within 1.6 hectares.					
1119	A series of ditches in a field to the west of the Ebbw River, two of which - a 175 m long NWW-SEE running ditch to the south and a 100 m long SW-NE running central ditch - are marked as drains on the Epoch 1-5 OS maps.	Undated			330939	184267
1120	A series of ditches in a field to the west of the Ebbw River, marked as drains on the Epoch 1-5 OS maps. They are contained within an area measuring 2.3 hectares.	Undated			330777	184529
1121	Ditches on the bank of the Ebbw River, a sinuous 40 m long section and a 30 m long NW-SE running section of which can be traced on the Epoch 1 and 2 OS maps.	Undated			330978	184444
1122	A series of ditches in a field to the south of the Ebbw River. The features are unmarked on mapping but related to drainage. They are contained within a field measuring 2.1 hectares. Most drains are parallel and run on a WWN-EES alignment. Smaller section of perpendicular drain also exists.	Undated			330652	184601
1123	A large cut area to the north of the Ebbw River representing an area of present-day quarrying. It covers 8.2 hectares and probably represents the Newport Waste Disposal site	Modern			330856	184873
1124	Graving dock in Alexandra Docks, marked on Epoch 1-5 OS mapping, now disused according to aerial imagery. It measures 120 m x 25 m.	Undated			331944	185425
1125	Sea defences along the north shore of the River Usk, at Cold Harbour Reach. The features are intermittent but can be traced for 950 m overall.	Post-medieval		09580g	332817	185413
1126	A short section of ditch in woodland, representing the remnants of a stream recorded on Epoch 1 OS mapping. It runs for 30 m in an east-west direction.	Undated			333450	185162
1127	The extents of a modern sludge bed to the south-west of Picked Lane, present as a large cut feature and contained within 8.7 hectares.	Modern			333766	184916



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1128	Three parallel, 130 m long ditches in a field to the north-east of a wind turbine on the Caldicot Level. The features are unmarked on mapping but related to drainage. They run on a WWN-EES alignment.	Undated			334007	185424
1129	Three parallel ditches in a field to the west of Nash Road. The features are unmarked on mapping but related to drainage. They run on a SWW-NEE alignment and measure 100 m, 170 m and 200 m in length from north to south.	Undated			334177	185442
1130	A series of ditches in a field to the west of Nash Road, a number of which to the east are located within an area now covered by woodland. The features are unmarked on mapping but related to drainage. The features are spread over 3.2 hectares.	Undated			334131	185536
1131	A series of ditches across two fields to the east of a wind turbine on the Caldicot Level. The features are unmarked on mapping but related to drainage. A SE-NW running ditch runs intermittently across both fields. They are located over 3 hectares.	Undated			333981	185263
1132	A series of parallel, NWW-SEE running ditches in a field on Caldicot Level. The features are unmarked on mapping but related to drainage. They are contained within an area measuring 1 hectare.	Undated			334064	185266
1133	Four parallel ditches in a field on Caldicot Level, located immediately south of WA1132 but lying on a NNW-SSE alignment. The drains measure 35 m in length and are unmarked on mapping but related to drainage.	Undated			334082	185180
1134	Three ditches in a field, running in a SWW-NEE direction, to the north of Picked Lane. The features are unmarked on mapping but related to drainage. The features measure 70 m, 75 m and 110 m from north to south.	Undated			334145	185101
1135	A series of parallel ditches in a field to the west of Nash Road. The features are unmarked on mapping but related to	Undated			334205	185336



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	drainage. They run on a SSE-NNW alignment and are contained within 2.6 hectares.					
1136	A series of ditches in a field to the north of Picked Lane. A central, curved ditch runs on a SSW-NNE alignment. A number of perpendicular drains also exist.	Undated			334294	185235
1137	A series of ditches to the south of Picked Lane representing a previously recorded moated site covering 0.3 hectares. The features run on a different alignment to the drainage in WA1138 and are contained within an area measuring 90 m x 30 m at the greatest extent.	Medieval		10919g	334131	184947
1138	A series of ditches in a field to the south of Picked Road. The features are unmarked on mapping but related to drainage. The parallel ditches in the east of the field follow a SSW-NNE alignment, with additional ditches to the west (around WA1137) on a SSW-NNE alignment. They are contained within a field measuring 3.3 hectares.	Undated			334231	184932
1139	A series of parallel, east-west ditches in a field to the south-east of Hart Farm, measuring on average 30 m in length. The features are unmarked on mapping but related to drainage.	Undated			334356	184946
1140	A series of ditches to the west of Fair Orchard, located in woodland. The features are unmarked on mapping but are related to drainage and woodland management. They occur across 1.3 hectares.	Undated			334414	184936
1141	A series of parallel ditches to the south of Fair Orchard, a number in woodland. The features are unmarked on mapping but are related to drainage and woodland management. They all follow a SSW-NNE alignment and are contained within an area measuring 0.9 hectares.	Undated			334346	184789
1142	A series of ditches surrounding Fair Orchard. The features are unmarked on mapping but related to drainage. They are spread across 1.8 hectares.	Undated			334517	184854
1143	A series of ditches to the west of Nash Road, a number in	Undated			334460	185001



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	woodland. The features are unmarked on mapping but are related to drainage and woodland management. They follow a general east-west alignment and abut a north-south running drain to the east. They are contained within 0.9 hectares.					
1144	Two parallel, intermittent ditches in a field to the east of Nash Road, present only in height data. They can be traced for 160 m (west ditch) and 180 m (east ditch).	Undated			334565	184978
1145	A series of ditches in a field on Caldicot Level. The features are unmarked on mapping but related to drainage. They largely follow a SSW-NNE alignment and are contained within an area measuring 2.3 hectares.	Undated			334720	184925
1146	A series of ditches in a field to the south of Broad Street Common. The central north-south running ditch is marked as a drain on the Epoch 1 OS map. A series of perpendicular ditches run east and west from the central drain. They are contained within an area measuring 1.6 hectares.	Undated			334669	185063
1147	A series of parallel, SW-NW running ditches in a field to the north of Broad Street Common. The features are unmarked on mapping but related to drainage. They are contained within an area measuring 0.5 hectares.	Undated			334662	185176
1148	A series of ditches in a field to the north of Pye Corner Farm. The features are unmarked on mapping but related to drainage. A central, SW-NW running drain forms a spine to a series of perpendicular ditches. The features are contained within a field measuring 1.6 hectares.	Undated			334531	185264
1149	Ditches in a field to the north of Pye Corner Farm. The features are unmarked on mapping but related to drainage. An eastern ditch runs SSW-NNE for 35 m. A parallel ditch to the west is abutted by a perpendicular ditch measuring 40 m.	Undated			334545	185371
1150	A series of ditches in a field to the south of Tatton Road. The north-east ditch is marked as a drain on the Epoch 1-3 OS maps. The remainder are unmarked and are aligned	Undated			334769	185664



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	approximately north-south according to the curved drain to the south. They are contained within 2.2 hectares.					
1151	Four ditches in a field to the south of Tatton Road. The features are unmarked on mapping but related to drainage. The eastern three, measuring 150 m in length, are parallel on a SSE-NNW alignment. The western ditch follows a SSW-NNE alignment.	Undated			334930	185577
1152	Ditches in a field to the south of Tatton Road. The features are unmarked on mapping but related to drainage. A central north-south running ditch forms a spine to a series of perpendicular ditches. The features are present over 1.9 hectares.	Undated			334829	185461
1153	Three parallel ditches in a field to the west of Julian's Reen, following the same alignment as WA 1151 to the north. The features are unmarked on mapping but related to drainage.	Undated			334950	185433
1154	Ditches in a field to the east of Julian's Reen. The features are unmarked on mapping but related to drainage. They are spread over 1.8 hectares.	Undated			335086	185625
1155	A series of ditches in a field to the north of Julian's Reen. The features are unmarked on mapping but related to drainage. They are contained within an area measuring 2.2 hectares.	Undated			335103	185821
1156	Ditches in a field to the south of Tatton Farm, comprising of two SE-NW running ditches and a series of perpendicular ditches. The features are unmarked on mapping but related to drainage and are contained within an area measuring 2.3 hectares.	Undated			335223	185681
1157	Ditches in a field to the east of Julian's Reen. The features are unmarked on mapping but related to drainage. The features are comprised of a central SSW-NNE running ditch and three perpendicular intersecting ditches contained within 0.9 hectares.	Undated			335161	185555
1158	A series of parallel, north-south running ditches in a field to the east of Julian's Reen, located across 1.1 hectares. The features are unmarked on mapping but related to drainage.	Undated			335089	185470



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1159	A series of parallel ditches in a field to the east of Julian's Reen. The ditches run on a general east-west alignment and unmarked on mapping but related to drainage. They are contained within 1.1 hectares.	Undated			335100	185373
1160	A 75 m long section of ditch to the north-east of the moated site recorded under WA1161. The features are similar in form to other moated sites, including the adjacent sites WA1166 and WA1167. The ditch follows a similar alignment as WA1166 and appears to be a possible north-east extension.	Undated			335086	185323
1161	Ditches to the north-east of Arch Farm, representing a complex of previously recorded moated sites at Arch Farm located over 2.8 hectares. Additional features appear as north-eastern spurs and appear to link with WA1160.	Medieval		10920g	334983	185249
1162	A section of ditch to the east of Arch Farm representing a previously recorded moated site. The features are located either side of a modern drain and form a rectangular area measuring 40 m x 25 m.	Medieval		10921g	335148	185249
1163	A series of ditches to the north of Arch Farm. The features are unmarked on mapping but related to drainage. They share a similar alignment with the moated sites at WA1161. They are spread across 3.1 hectares.	Undated			335006	185244
1164	Ditches in a field to the north-west of Chapel Farm, running on a SW-NE alignment. The features are unmarked on mapping but related to drainage. A further ditch runs perpendicular in the north for 65 m. All features are contained within 1.1 hectares.	Undated			334923	184996
1165	A series of ditches adjacent to the disused camp site, Pye Corner. The features are unmarked on mapping but related to drainage. They are contained within an area measuring 1.4 hectares.	Undated			334802	185070
1166	An 'L'-shaped section of ditch to the south of Broad Street Common representing a previously recorded moated site. It	Medieval		10922g	334852	185075



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	encloses an area of 0.2 hectares.					
1167	A 100m long, east-west running track in woodland, acting as an extension to tracks mapped on present-day mapping and hence modern in date.	Modern			334677	185346
1168	Four parallel ditches, unmarked on mapping but related to drainage. They follow an EES-WWN alignment and are contained within an area measuring 0.6 hectares.	Undated			335189	185325
1169	Parallel ditches in a field on a SSW-NNE alignment, unmarked on mapping but related to drainage. They are spread over 1.2 hectares.	Undated			335225	185454
1170	Ditches in a field, unmarked on mapping but related to drainage. They are contained within an area measuring 1.2 hectares.	Undated			335358	185425
1171	Ditches in a field to the east of WA1170, unmarked on mapping but related to drainage. They are contained within an area measuring 2.6 hectares.	Undated			335502	185451
1172	Ditches in a field to the north of WA1170 and WA1171, unmarked on mapping but related to drainage. They cover an area 2.2 hectares in area.	Undated			335474	185580
1173	Two ditch sections of a possible enclosure, within the same field as WA1172. Possibly related to the electricity pylon. The sections help to partially form an oval shape and enclose an area of 0.2 hectares.	Undated			335468	185527
1174	Ditches in a field to the north-east of WA 1171, unmarked on mapping but related to drainage. The features are contained within a field measuring 2.2 hectares.	Undated			335644	185542
1175	Parallel ditches in a field to the south of Tatton Farm, unmarked on mapping but related to drainage. The drains lie on a SEE-NWW alignment. Each one measures 90 m in length.	Undated			335307	185553
1176	A series of ditches in a field to the east of Tatton Farm. The easternmost feature, measuring 90 m in length, is recorded on	Undated			335388	185711



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	the Epoch 1-3 OS maps as a drain. The features are located on a general SE-NW alignment.					
1177	Two parallel ditches in a field to the east of Tatton Farm, measuring 35 m (west) and 25 m (east). They are unmarked on mapping but related to drainage. They follow the same alignment as WA1176.	Undated			335306	185822
1178	A series of ditches to the north-east of Tatton Farm, representing a previously recorded moated site and located across 2.1 hectares. Additional ditch features, similar in form and sharing an alignment, have also been recorded.	Medieval		10927g	335424	185835
1179	Substantial ditch features to the east of Tatton Farm, probably representing additional features associated with WA1178. A sinuous 165 m long, east-west running ditch has a north-south spur towards the eastern end.	Undated			335363	185834
1180	Parallel, north-south running ditches in a field, unmarked on mapping but related to drainage.	Undated			335359	185875
1181	Parallel ditches in a field, unmarked on mapping but related to drainage. They follow the same alignment as WA1180 to the south. The drains average 40 m in length.	Undated			335383	185924
1182	A series of ditches in a field, located across 4.1 hectares. The central SWW-NEE running feature is recorded on the Epoch 1-5 OS maps as a drain. Parallel and perpendicular drains form an intermittent lattice pattern across the field.	Undated			335563	185830
1183	Ditches in a field, unmarked on mapping but related to drainage. They lie to the south of WA1182 and WA1183 and follow the same alignment. The features comprise a central ditch with a series of perpendicular drains across 0.5 hectares.	Undated			335733	185723
1184	Ditches in a field, unmarked on mapping but related to drainage. They lie to the south of WA1183. the SWW-NEE ditches share an alignment with the ditches to the north.	Undated			335803	185626
1185	A series of ditches in a field. The central SWW-NEE running feature is recorded on the Epoch 1-5 OS maps as a drain. The	Undated			335728	185901



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	features share an alignment with WA1182, and the mapped drain is a continuation of the mapped drain in that field.					
1186	A series of ditches in a field to the south of Queen's Way. The central NNW-SSE running ditch in the south is present on the Epoch 1-5 OS maps. The are present across 13.8 hectares.	Undated			335932	186023
1187	A circular mound visible in height data and NIR imagery, possibly representing spoil from the creation of drains. It has a diameter of 7 m.	Undated			335491	185844
1188	Ditches in a field on Caldicot Level, unmarked on mapping but related to drainage. They follow a SW-NE alignment and are present across 5 hectares.	Undated			336619	185707
1189	A section of ditch in a field to the east of Ellen Reen. The feature is recorded as a drain on the Epoch 1-5 OS maps. It runs for 95 m on a SWW-NEE alignment.	Undated			336503	185637
1190	A series of parallel ditches in a field to the north of Moorbarn Farm, unmarked on mapping but related to drainage. They average 170 m in length and lie on a SWW-NEE alignment.	Undated			336355	185529
1191	A series of ditches to the east of Moorbarn Farm, representing a previously recorded moated site. The features are located across 1 hectare.	Medieval		10933g	336475	185421
1192	Two drainage ditches between Broad Street Common and Black Wall. They are unmapped and measure 23 m in length.	Undated			336654	185517
1193	A series of ditches in a field to the south of Little Common. The northernmost features, forming an 'L'-shape rotated anticlockwise by 45°, are present on the Epoch 1 OS map. The remaining ditches follow the same alignment. All features are contained within an area measuring 1.6 hectares.	Undated			336842	185454
1194	A section of ditch associated with a boundary marked on the Epoch 1-5 OS maps, associated with the former farmstead of Ty-pridd. It is curved and measure 40 m in length.	Undated			336836	185592
1195	A section of ditch at Little Common. It appears to be modern but its use is unclear. Its sinuous path can be traced for 115 m.	Undated			336774	185560



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1196	Possible palaeochannels in two fields either side of Middle Reen. They flow towards Middle Reen and may be more recent in date. The features are spread over 5.3 hectares.	Undated			336681	185742
1197	Ditches in a field to the east of Middle Reen, unmarked on mapping but related to drainage. They are contained within an area measuring 2.3 hectares.	Undated			336771	185757
1198	Features relating to Llanwern steelworks, visible as a series of cut features, banks, ponds and structures across an area covering 190 hectares.	Modern			337719	186039
1199	A right-angled section of ditch near Llanwern steelworks, present on the Epoch 1-3 OS maps as a drain. The feature can be traced for 125 m.	Undated			337175	185868
1200	Ditches to the south of the Llanwern settling pond. They are unmarked on mapping but related to drainage. They form a 'V'-shape with a south-eastwards extension.	Undated			337009	185641
1201	Ditches to the east of the substation and to the north of Monkscroft Reen. The southernmost of the SW-NE running ditches is marked on the Epoch 1-3 OS maps as a drain. Ditches to the north run parallel with this and are cut by the later steelwork features. The drains to the south run on a perpendicular alignment. All features are contained within an area measuring 2.8 hectares.	Undated			337282	185533
1202	Parallel ditches in a field to the south of Parish Reen, running on a NW-SE alignment. They are unmarked on mapping but related to drainage.	Undated			337431	185362
1203	Parallel ditches in a field to the south of Parish Reen, sharing an alignment with WA1202. They are unmarked on mapping but related to drainage.	Undated			337527	185454
1204	Ditches in a field to the south of Parish Reen. Two of the SWW-NEE running ditches are recorded on Epoch 1-5 OS mapping. They are contained in an area covering 4.9 hectares.	Undated			337636	185351
1205	Ditches in a field to the east of Bowleaze Reen. They are	Undated			337808	185486



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	unmarked on mapping but related to drainage. They share an alignment with WA1204.					
1206	Ditches in a field to the east of Bowleaze Reen. The southernmost ditch is recorded on the Epoch 1 OS map as a drain. They share an alignment with WA1205 to the north.	Undated			337906	185390
1207	A series of parallel ditches in a field, unmarked on mapping but related to drainage. They share an alignment with other drainage features in the area, including WA1208 to the south.	Undated			337989	185500
1208	Ditches in a field, unmarked on mapping but related to drainage. They lie on a SE-NE alignment and are intersected by a SWW-NEE running ditch.	Undated			338084	185397
1209	A 120 m long, SWW-NEE running ditch in a field to the west of Elver Pill Reen, unmarked on mapping but related to drainage.	Undated			338456	185555
1210	75 m long ditch in a field to the east of Newcut Reen, marked on the Epoch 1-3 OS maps as a boundary.	Undated			339122	185467
1211	Parallel ditches lying on a SSE-NNW alignment and are contained within an area measuring 1.3 hectares.	Undated			339076	185601
1212	Two possible palaeochannels in a field to the south of Middle Road Reen. Contained within an area measuring 0.6 hectares.	Undated			339073	185614
1213	A number of possible palaeochannels on Green Moor, spread over 28 hectares. Some features may, however, represent more recent activity. Possible palaeochannel features can also be seen to the south at WA1218.	Undated			339927	185838
1214	Parallel ditches in a field on Green Moor, unmarked on mapping but related to drainage. The ditches measure 160 m in length and run on a SSE-NNW alignment. A perpendicular ditch lies in the north of the field.	Undated			339315	185705
1215	Ditches in a field on Green Moor, unmarked on mapping but related to drainage. They share an alignment with WA1216 and WA1221.	Undated			339522	185805
1216	Ditches in a field on Green Moor, unmarked on mapping but related to drainage. They share an alignment with WA1215 and	Undated			339338	185549



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	WA1217.					
1217	Ditches in a field on Green Moor, unmarked on mapping but related to drainage. They share an alignment with WA1215 and WA1216.	Undated			339531	185641
1218	Possible palaeochannels to the south of Rush Wall, comprised of a northern section which forks south-eastwards, The features are spread over 2.2 hectares.	Undated			339842	185413
1219	Two ditches in a field to the south of Rush Wall, unmarked on mapping but related to drainage. They measure 185 m (west) and 195 m (east) in length.	Undated			339816	185502
1220	A NNW-SSE running ditch on Green Moor, marked on the Epoch 1-3 OS maps as a drain. It measures 100 m in length.	Undated			339428	185960
1221	A 35 m long, 'L'-shaped section of ditch in the corner of a field between North Row and Rush Wall. It represents a previously recorded moated site.	Medieval		10949g	339840	185606
1222	Two parallel ditches in a field to the east of Cock Street Reen, the eastern one of which is marked on Epoch 1-5 OS mapping as a drain. They measure 160 m in length and run on a NNW-SSE alignment.	Undated			340144	185499
1223	Ditches to the south of Rush Wall, unmarked on mapping but related to drainage. They are contained within an area measuring 1.9 hectares.	Undated			339976	185599
1224	A circular feature, 17 m in diameter, visible in NIR imagery. The feature may represent the location of a ring ditch. The feature is interrupted at its eastern point, possibly by later drainage features.	Undated			340003	185590
1225	Ditches to the north of Rush Wall, unmarked on mapping but related to drainage. The features lie on a NNW-SSE alignment and measure between 7 m and 30 m in length.	Undated			339570	185533
1226	Ditches to the south of Tonew Kennels, unmarked on mapping but related to drainage. They are contained within an area measuring 0.7 hectares.	Undated			340091	185626



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1227	Two parallel ditches in a field to the east of Tonew Kennels, both marked on Epoch 1-3 OS maps as drains. They measure 150 m in length and lie on a SSE-NNW alignment.	Undated			340276	185747
1228	Parallel ditches in a field to the north of Rush Wall, the westernmost of which is marked on the Epoch 1-3 OS maps as a drain. They lie on a SSE-NNW alignment and are contained within an area measuring 2.6 hectares.	Undated			340285	185962
1229	Two ditches in a field to the east of Rush Wall, both marked on the Epoch 1-5 OS maps as drains. They measure 100 m in length and lie on a NNW-SSE alignment.	Undated			340650	186095
1230	A faint 110 m long right-angled ditch to the north of Rush Wall, representing a possible moated site due to the similarities between the ditch and other moated sites in the area. Its relationship with the easternmost ditch in 1213 is unclear, although it appears to postdate it.	Possibly medieval			340442	185988
1231	Two ditches in a field to the west of Longlands Lane. The east-west running ditch is marked on the Epoch 1-3 OS maps as a drain and measures 145 m in length. The north-south running ditch is 260 m in length.	Undated			340622	185850
1232	Ditches in a field to the east of Longlands Lane, unmarked on mapping but related to drainage. They are contained within an area measuring 2 hectares.	Undated			340727	185909
1233	Ditches in a field to the south of Rush Wall, unmarked on mapping but related to drainage. The field measures 0.7 hectares.	Undated			340878	185977
1234	Ditches in a field to the south of Rush Wall, unmarked on mapping but related to drainage. The field measures 1.6 hectares.	Undated			340931	185991
1235	Ditches in a field to the south of Rush Wall, unmarked on mapping but related to drainage. The field measures 1.6 hectares.	Undated			341005	186028
1236	Two parallel ditches in a field to the south of Rush Wall,	Undated			341056	186043



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	unmarked on mapping but related to drainage. The drains measure 190 m (west) and 200 m (east) in length.					
1237	Ditches in a field to the south of Rush Wall, unmarked on mapping but related to drainage. The features are contained within a field measuring 2.2 hectares.	Undated			341145	186078
1238	Ditches in a field to the north of Rush Wall, two of which are marked on the Epoch 1-5 OS maps as drains. The features form part of lattice and are located across 1.3 hectares.	Undated			340914	186207
1239	Parallel ditches in a field to the north of Rush Wall, unmarked on mapping but related to drainage. They lie on a SE-NW alignment and are on average 150 m in length.	Undated			340977	186241
1240	Three parallel ditches in a field to the north of Rush Wall, marked on the Epoch 1-3 OS maps as drains. They lie on a SE-NW alignment and measure 165 m - 180 m in length.	Undated			341099	186290
1241	Possible palaeochannels to the north of Rush Wall, located across 2.6 hectares.	Undated			340982	186268
1242	Ditches to the south of Stutwall Reen, unmarked on mapping but related to drainage. They are located across 3.1 hectares and follow a general SSE-NNW alignment.	Undated			340983	186482
1243	Parallel ditches in a field to the north of Rush Wall. The central, NNW-SSE feature is marked on Epoch 1-3 OS mapping as a drain.	Undated			341324	186368
1244	Parallel ditches in a field to the north of Rush Wall, unmarked on mapping but related to drainage. They follow a similar alignment to WA1238 and are located across 2 hectares.	Undated			341294	186523
1245	Ditches in a field to the south of Stutwall Reen. The central, east-west running ditch is marked on the Epoch 1 OS map as a drain. All other ditches are on a general north-south alignment. They are contained within an area measuring 2.1 hectares.	Undated			341500	186581
1246	Ditches in a field to the south of Stutwall Reen. The central north-south running ditch is marked on the Epoch 1 OS map as a drain.	Undated			341623	186581



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1247	Parallel ditches to the west of Well Cottages, possibly related to earlier woodland management. They are contained within an area measuring 0.2 hectares.	Undated			341073	186819
1248	Parallel ditches to the east of Manor Farm, possibly related to earlier woodland management as suggested by the Epoch 1 OS map. They are contained within an area measuring 20 m x 10 m.	Undated			341109	186965
1249	Two parallel ditches in a field to the west of Mead House, unmarked on mapping but related to drainage. They measure 95 m (west) and 85 m (east) in length and are on a north-south alignment.	Undated			341021	186846
1250	Parallel ditches to the south of Well Cottages, possibly related to earlier woodland management as suggested by the Epoch 1 OS map. They cover an area 0.15 hectares in size.	Undated			341121	186701
1251	Ditches to the north of Green Meadow Farm, the southern one of which is marked on the Epoch 1-5 OS maps as a boundary.	Undated			341171	186834
1252	Ditches to the west of Upper Cottage, partly marked on the Epoch 1-3 OS maps as a boundary. The mapped features are formed by a right-angled. A westwards spur is unmapped.	Undated			341037	187077
1253	A series of ditches to the south-east of Sycamore Farm, a number of which are recorded on the Epoch 1-3 OS maps as ditches and boundaries. The features are spread over 3.5 hectares.	Undated			341273	186784
1254	Parallel ditches in a field to the west of Barecroft Common, unmarked on mapping but related to drainage. They measure, on average 50 m in length and lie on a north-south alignment.	Undated			341559	186900
1255	Parallel ditches in a field to the west of Barecroft Common, unmarked on mapping but related to drainage. They follow a SSE-NNW alignment and are contained within 0.9 hectares.	Undated			341540	186804
1256	Parallel ditches to the south of Three Gates, two of which are recorded on the Epoch 1-5 OS maps as ditches and boundaries. They cover an area 2.1 hectares in extent and lie	Undated			341404	187066



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	on a NNW-SSE alignment.					
1257	Ditches in a field to the north of Green Moor Lane, unmarked on mapping but related to drainage. They follow a general east-west alignment and are contained within an area measuring 1.2 hectares.	Undated			341685	187150
1258	A series of banks to the west of Magor, representing a possible series of plough headlands and, possibly, field boundaries. The features are spread over 13 hectares and associated within WA1259.	Undated			341968	187497
1259	Three ring ditches in a field to the north of Green Moor Lane, possibly representing the past locations of cattle feeders. The features measure 3 m to 4 m in diameter.	Undated			341779	187340
1260	Possible ridge and furrow associated with plough headlands (WA1258), occurring over three fields.	Undated			342016	187542
1261	Ditches in a field to the south of the M4, unmarked on mapping but related to drainage. They are spread over 0.9 hectares.	Undated			341507	188056
1262	Ditches in the same field as, and intersecting, WA1258. The features are visible in the WorldView 2 NDVI dataset and lie on a different alignment to WA1266.	Undated			342020	187516
1263	Ditches in a field to the south of the M4, unmarked on mapping but related to drainage. They are spread over 0.8 hectares and follow a NW-SE alignment.	Undated			342276	187728
1264	Ditches to the south of the M4, unmarked on mapping but related to drainage.	Undated			342420	187711
1265	A 50 m long section of Roman road to the south of the M4, running in a NW-SE direction.	Possibly Romano-British		RRX80-02	342383	187722
1266	A series of ditches to the north of the M4, a small number of which are recorded on the Epoch 1-3 OS maps as drains. They are located over 9.1 hectares and their alignment follows the path of St Bride's Brook.	Undated			342324	188156

WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1267	An 80 m long bank to the north of the M4, possibly representing the location of a track.	Undated			342569	187922
1268	A slight circular mound, 18 m in diameter, to the west of Beeches Farm Caravan Park. Its function is unknown.	Undated			342641	187900
1269	A possible structure to the south of M4, measuring 20 m x 25 m at its greatest extent.	Undated			342706	187727
1270	Ditch in a field to the east of The Beeches, unmarked on mapping but related to drainage. It is 120 m long and lies on an east-west alignment.	Undated			343049	187920
1271	A series of ditches to thee north of Undy, representing a possible moated site or, more likely based on their form in comparison with other moated sites, an earlier field pattern. The features are spread over 1.6 hectares.	Undated			343251	187774
1272	A 145 m x 60 m mound to the north-west of Rockfield Farm, fitting in with the present field system and probably related to agricultural use.	Undated			343443	187814
1273	A cut feature representing a former quarry in woodland, marked on the Epoch 1-3 OS maps as an 'Old Quarry'. It measures 40 m x 15 m at its greatest extent.	Post-medieval			343652	188002
1274	Ditches in a field to the east of Knollbury Cottage, unmarked on mapping but related to drainage.	Undated			343242	188055
1275	Banks in a field to the north of the M4, unmarked on mapping. They possibly predate the field pattern marked on the Epoch 1 OS map. The banks total 230 m in length and run on a general SSE-NNW alignment.	Undated			343520	188093
1276	A slight, right-angled bank, present on the Epoch 1-5 OS maps as a field boundary. The bank measures 180 m in length.	Undated			343593	188233
1277	Parallel ditches in a field to the north of Rockfield Farm, unmarked on mapping but related to drainage. The features lie on a SSE-NNW alignment and are located over 1.8 hectares.	Undated			343550	187791
1278	A series of parallel ditches, unmarked on mapping but related to drainage. The lie on a SWW-NEE alignment and are	Undated			343692	188123



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	contained within 2.6 hectares.					
1279	A slight bank present on the Epoch 1-3 OS maps as a field boundary. It measures 160 m in length.	Undated			343661	188367
1280	A circular cut feature, 25 m in diameter. It is unmarked on mapping.	Undated			343711	188204
1281	A series of ditches in a field to the east of The Elms. A north-western feature, measuring 85 m in length and running on a SW-NE alignment, is marked on the Epoch 1-3 OS maps as a boundary. The features are spread over 3.7 hectares.	Undated			343894	187757
1282	A number of sinuous banks to the south-west of Rockfield Farm, possibly related to earlier woodland management as depicted on historic OS mapping as suggested by Epoch 1 OS mapping. The features are spread across 1.6 hectares.	Undated			343663	187674
1283	A series of parallel ditches in a field to the east of The Elms, unmarked on mapping but related to drainage. The lie on a NWW-SEE alignment and are contained within 2.1 hectares.	Undated			343885	187576
1284	A right-angled bank present on the Epoch 1-3 OS maps as a field boundary, measuring 105 m in length.	Undated			344170	187757
1285	A series of banks in fields to the north and south of Bencroft Lane, covering an area of 22 hectares. A number are former field boundaries marked on the Epoch 1-3 OS maps. Additional banks are unmapped but appear on the same alignment as the mapped banks, suggest they are also former field boundaries. Some features may represent plough headlands. They are probably related to WA1287 and WA1288.	Undated			344264	188215
1286	Possible ridge and furrow associated with WA1285, contained within 1.9 hectares.	Undated			344503	188184
1287	A series of banks between the M48 and B4245, unmarked on mapping but possibly a southern extension of WA1285. The features appear to be former field boundaries. Some features may represent plough headlands. They are located across 8.1 hectares.	Undated			344308	187636

WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1288	A series of banks in fields to the north of Llanfihangel, covering an area of 17 hectares. A number are former field boundaries marked on the Epoch 1-3 OS maps. Additional banks are unmapped but appear on the same alignment as the mapped banks, suggest they are also former field boundaries. They are probably related to WA1285 and WA1286. Some features may represent ploughed headlands.	Undated			344988	188150
1289	An area of possible ridge and furrow, spread over 2.2 hectares and associated with WA1287.	Undated			344399	187630
1290	Banks to the east of Green Farm representing a boundary marked on the Epoch 1-3 OS maps. The western bank runs for 60 m on a SSW-NNE alignment. The bank to the east is curved and measures 115 m in length.	Undated			345225	187968
1291	A medieval moated site near Undy. The site, which is scheduled, is comprised of banks and ditches. The moat measures 45 m x 40 m, with a 80 m long bank to the north. A series of slight, parallel, SW-NE running banks are likely to be related to a later orchard.	Medieval	MM198		343954	187388
1292	A standing stone to the south of the M4.	Prehistoric	MM068	00468g	344522	187762
1293	A sub-circular feature 10 m in diameter 60 m to the west of the standing stone (WA1292). It is formed of an outer bank and inner depression. Its function is unclear but may be a cattle feeder.	Undated			344456	187756
1294	A bank and ditch to the south of Red Barn which, with a natural drop in topography to the east, appear to form an enclosure. The bank is present on the Epoch 1 and 2 OS maps as a field boundary. It measures 60 m in length.	Undated			344945	187648
1295	A drain to the west of The Old Court, marked on the Epoch 1 OS map. It follows a broad SSW-NNE alignment for 185 m.	Undated			345054	187853
1296	A ditch marking a field boundary recorded on the Epoch 1 OS map, located to the south of the railway line. It measures 150 m in length and runs on a SSW-NNE alignment.	Undated			344787	187364

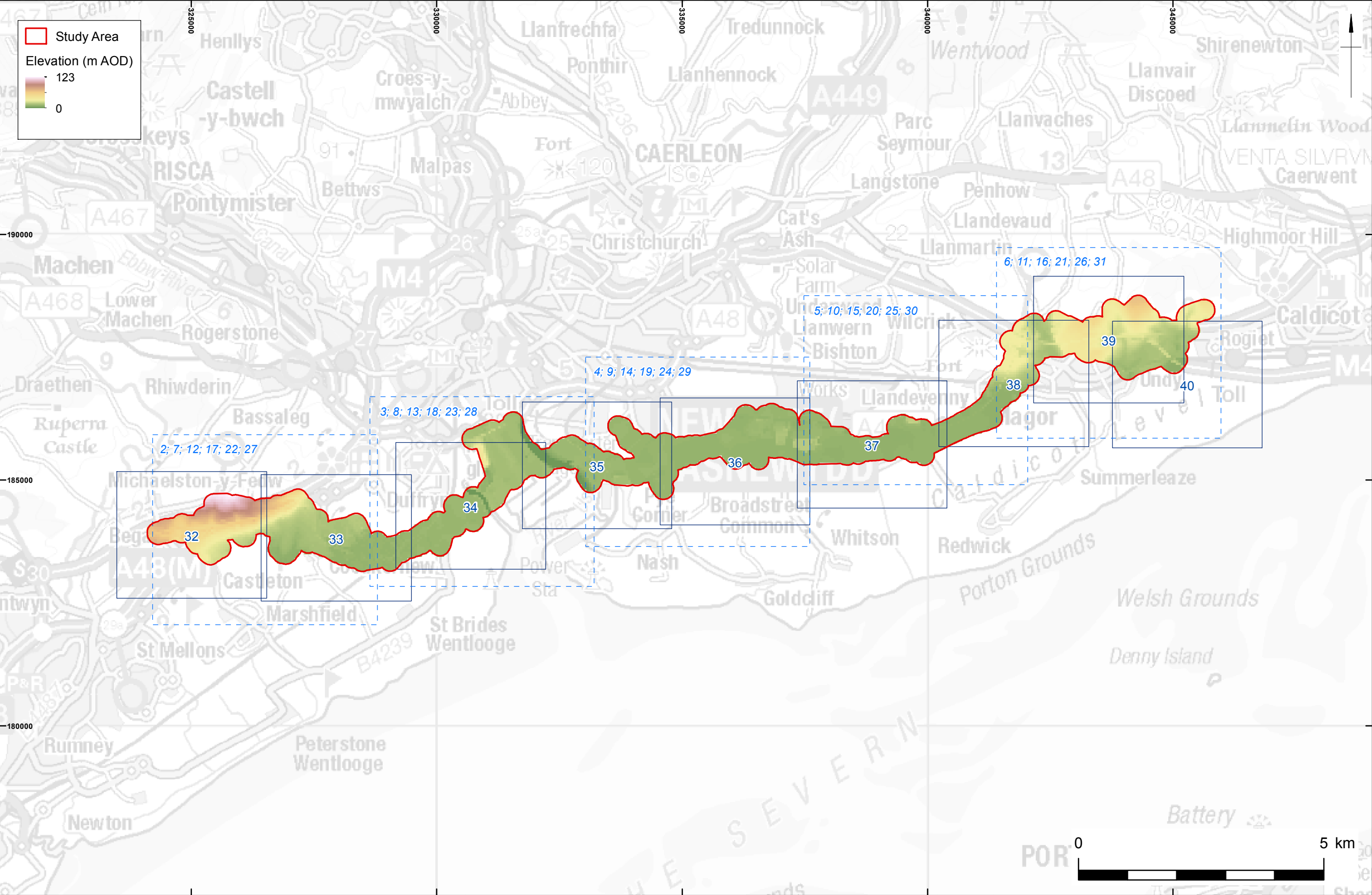
WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1297	Ridge and furrow extending as far south as WA1296 and likely to be of a similar date. The features are only present in LiDAR data. They are contained within an area measuring 0.9 hectares.	Undated			344752	187382
1298	Ditches located in a field between Moor Ditch and the M4, recorded on the Epoch 1-3 OS maps as drains. The SW-NE running feature is marked as 'Vurlong Reen'. Additional contemporary unmapped drains are also present, as is a circular cut feature, 10 m in diameter, which may represent an episode of extraction.	Undated			344925	187294
1299	Parallel ditches in a field to the north of Moor Ditch, unmarked on mapping but related to drainage. They lie on a SSE-NNW alignment and are contained within an area measuring 0.5 hectares.	Undated			344827	187095
1300	A series of ditches to the north of Moor Ditch. They appear to represent an enclosure, but appear different in form to other moated sites in the area. A circular mound, measuring 10 m in diameter, is present within the enclosed area but its function is unclear. the enclosed area measures 1.3 hectares.	Undated			344732	187127
1301	Ditches on Caldicot Moor, spread over 8.9 hectares. Two ditches (the longest SSE-NNW and the longest SWW-NEE) are present on Epoch 1-3 OS mapping.	Undated			345017	186887
1302	Banks and ditches to the south of the M4 tool booth, representing a drainage ditch marked on the Epoch 1-3 OS maps. The features are spread over 0.9 hectares.	Undated			346050	187040
1303	Palaeochannels on Caldicot Moor. A number of features represent recent activity. The channels are located across 167 hectares.	Undated			345442	186534
1304	Ditches in a field on Caldicot Moor representing drains marked on the Epoch 1-5 OS maps. They lie on a SWW-NEE alignment and are spread across 8.6 hectares.	Undated			345355	186857
1305	Ditches in a field on Caldicot Moor. The northern, east-west	Undated			345877	186878



WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
	running ditch represents a drain marked on the Epoch 1-5 OS maps. They lie on a SSE-NWW alignment and are spread across 5.7 hectares.					
1306	Ditches in a field on Caldicot Moor, unmarked on mapping but related to drainage. They are spread across 2.7 hectares.	Undated			345915	186681
1307	Ditches in a field on Caldicot Moor, unmarked on mapping but related to drainage. They are spread across 4.6 hectares.	Undated			346119	186687
1308	Parallel ditches in a field to the south of Towyn Pill Reen, unmarked on mapping but related to drainage. They lie on a SSW-NNW alignment and are spread across 1.2 hectares.	Undated			346452	186554
1309	Ditches in a field to the west of West Pill Reen, unmarked on mapping but related to drainage. They form a lattice across 7.7 hectares.	Undated			346313	186411
1310	Ditches in a field on Caldicot Moor, unmarked on mapping but related to drainage. They lie across 5.6 hectares.	Undated			346090	186317
1311	Parallel ditches in a field on Caldicot Moor, unmarked on mapping but related to drainage. They lie on a SWW-NEE alignment and are spread across 2.1 hectares.	Undated			345835	186327
1312	Two SWW-NEE running ditches on Caldicot Moor, marked on the Epoch 1-5 OS maps as drains. They measure 200 m in length.	Undated			345621	186314
1313	Ditches in a field on Caldicot Moor, unmarked on mapping but related to drainage. They are located across 3.8 hectares.	Undated			345226	186359
1314	Parallel ditches in a field on Caldicot Moor, unmarked on mapping but related to drainage. They lie on a SWW-NEE alignment and are spread across 2.9 hectares.	Undated			345005	186156
1315	Parallel ditches in a field on Caldicot Moor, unmarked on mapping but related to drainage. They lie on a SWW-NEE alignment and are spread across 2 hectares.	Undated			344907	186315
1316	Ditches in a field on Caldicot Moor. The 80 m long SSE-NNW running ditches are marked on the Epoch 1-5 OS maps as drains.	Undated			345092	186440



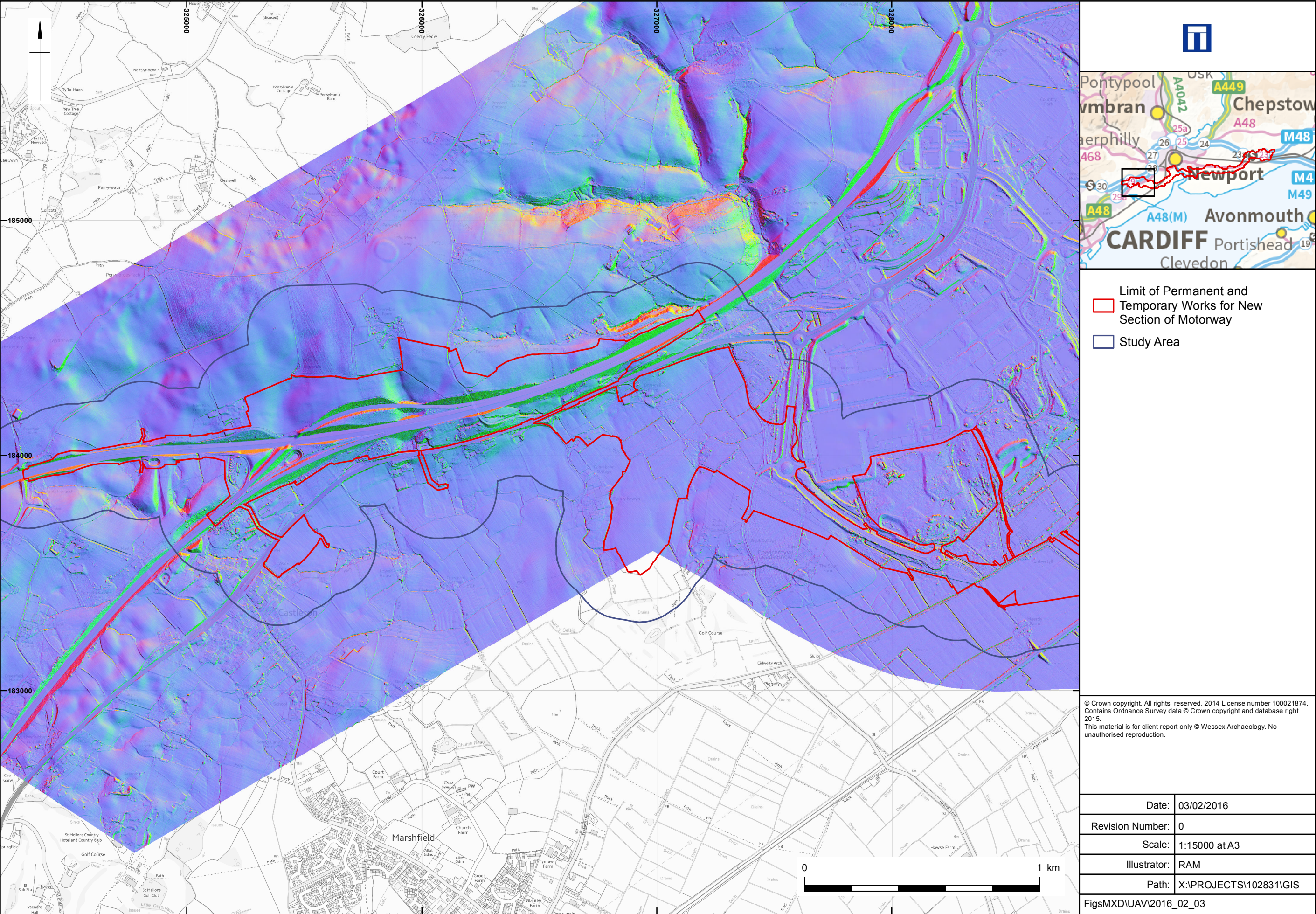
WAID	Description	Period	List Entry	GGHER ID	Easting	Northing
1317	Parallel ditches in a field on Caldicot Moor, unmarked on mapping but related to drainage. They measure 200 m in length and are spread across 2 hectares.	Undated			345263	186559



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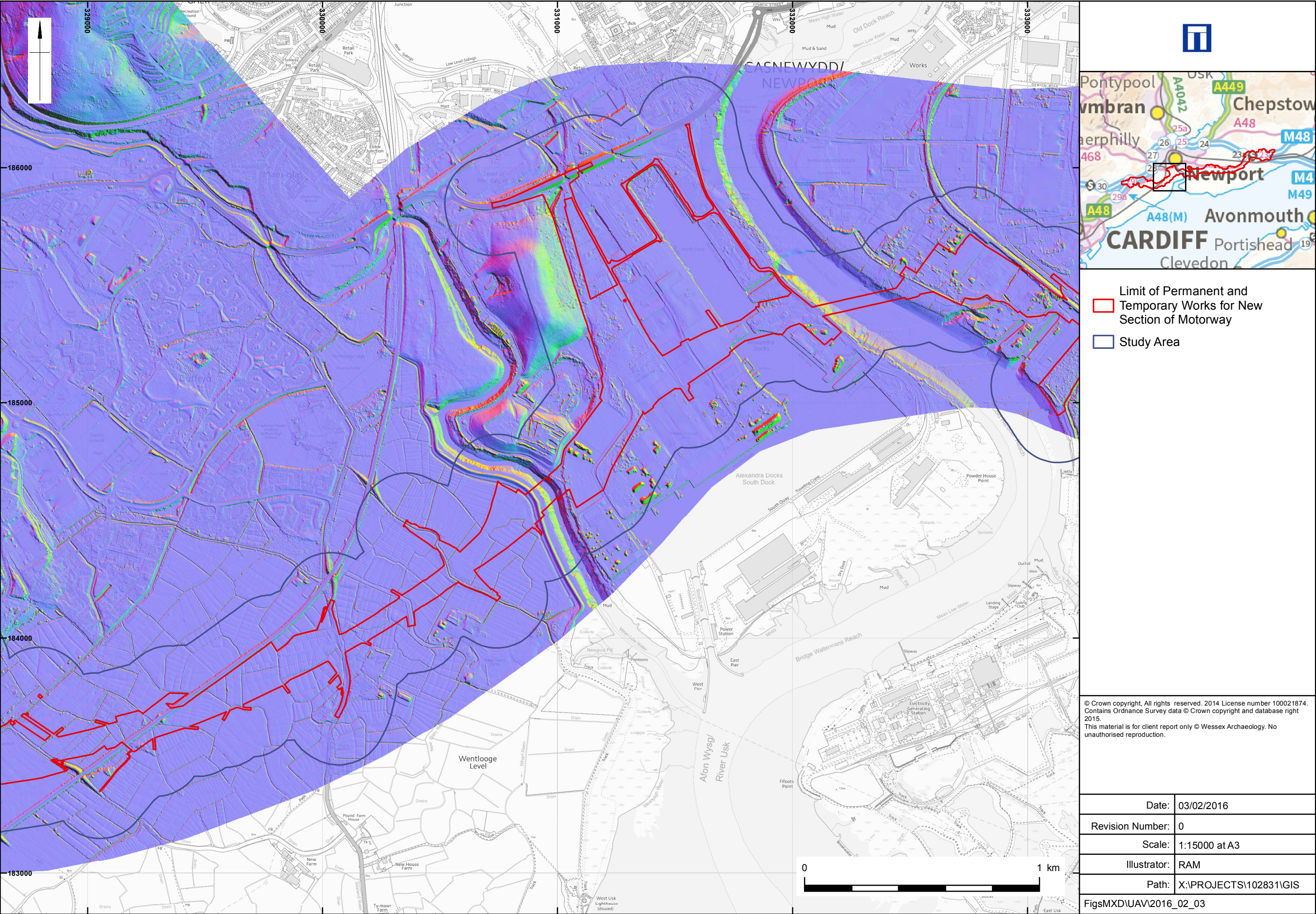
Study Area and Index of Imagery and Transcribed Sites Figures

Figure 1



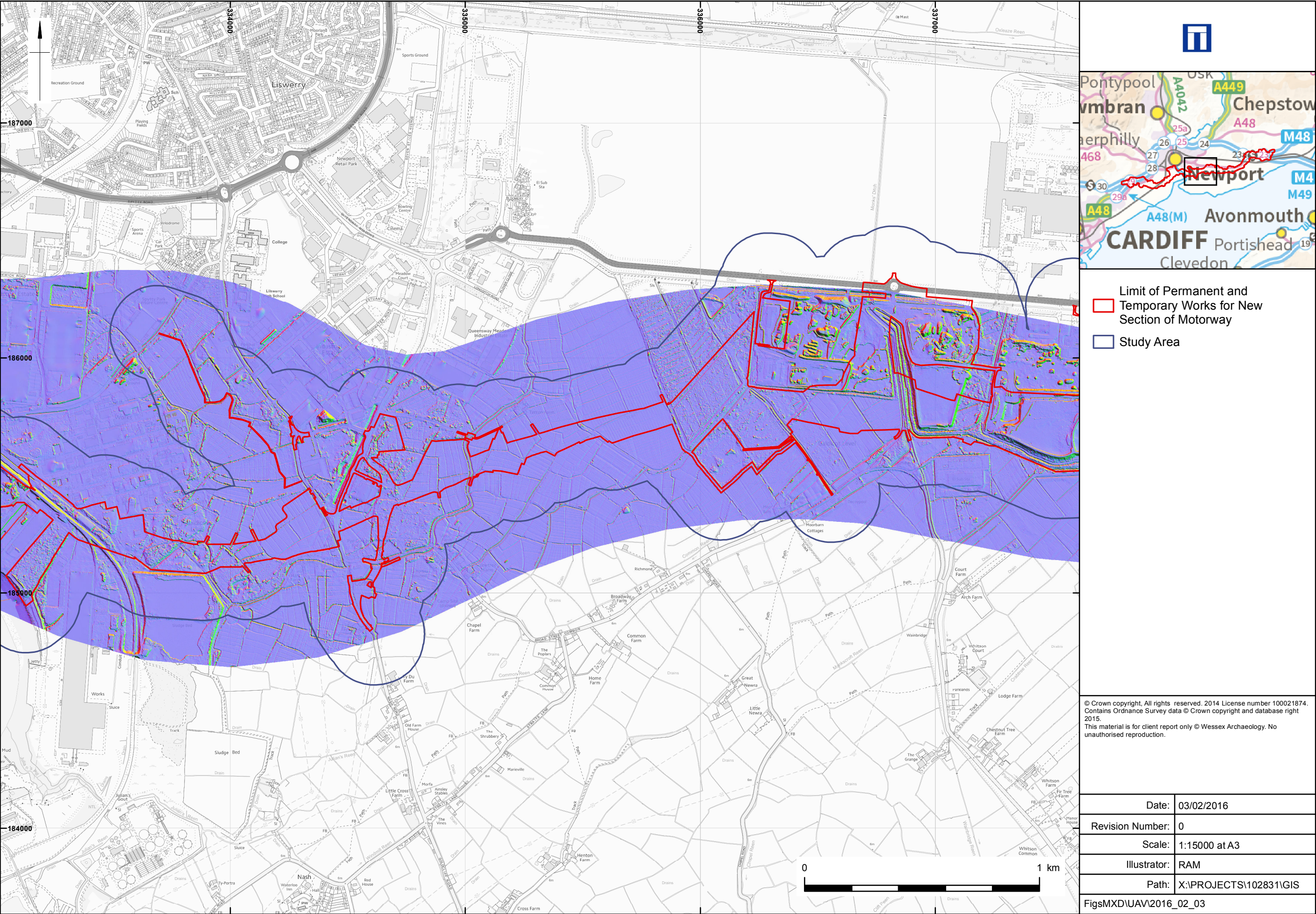
LiDAR PCA dataset (1)

Figure 2



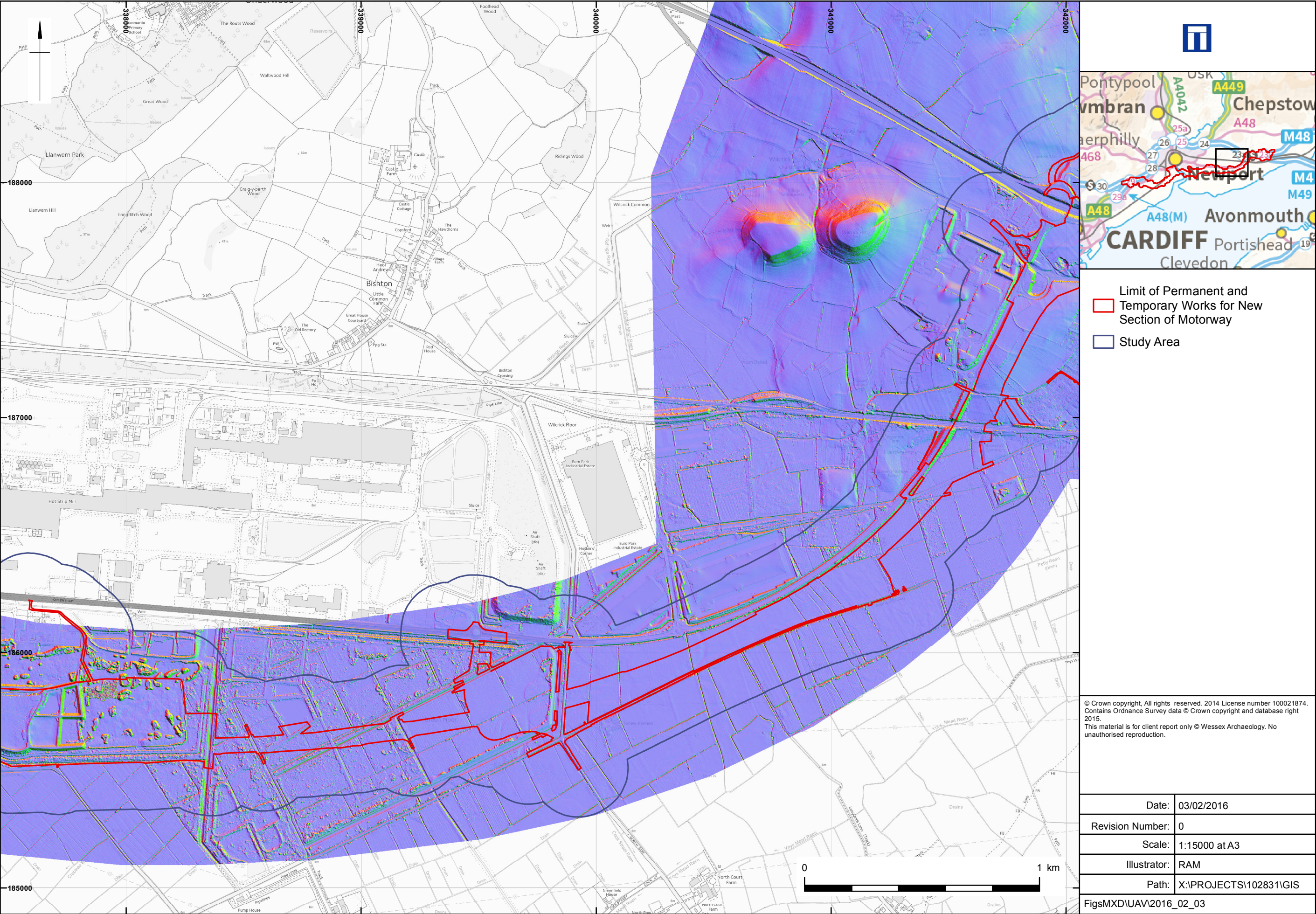
LiDAR PCA dataset (2)

Figure 3



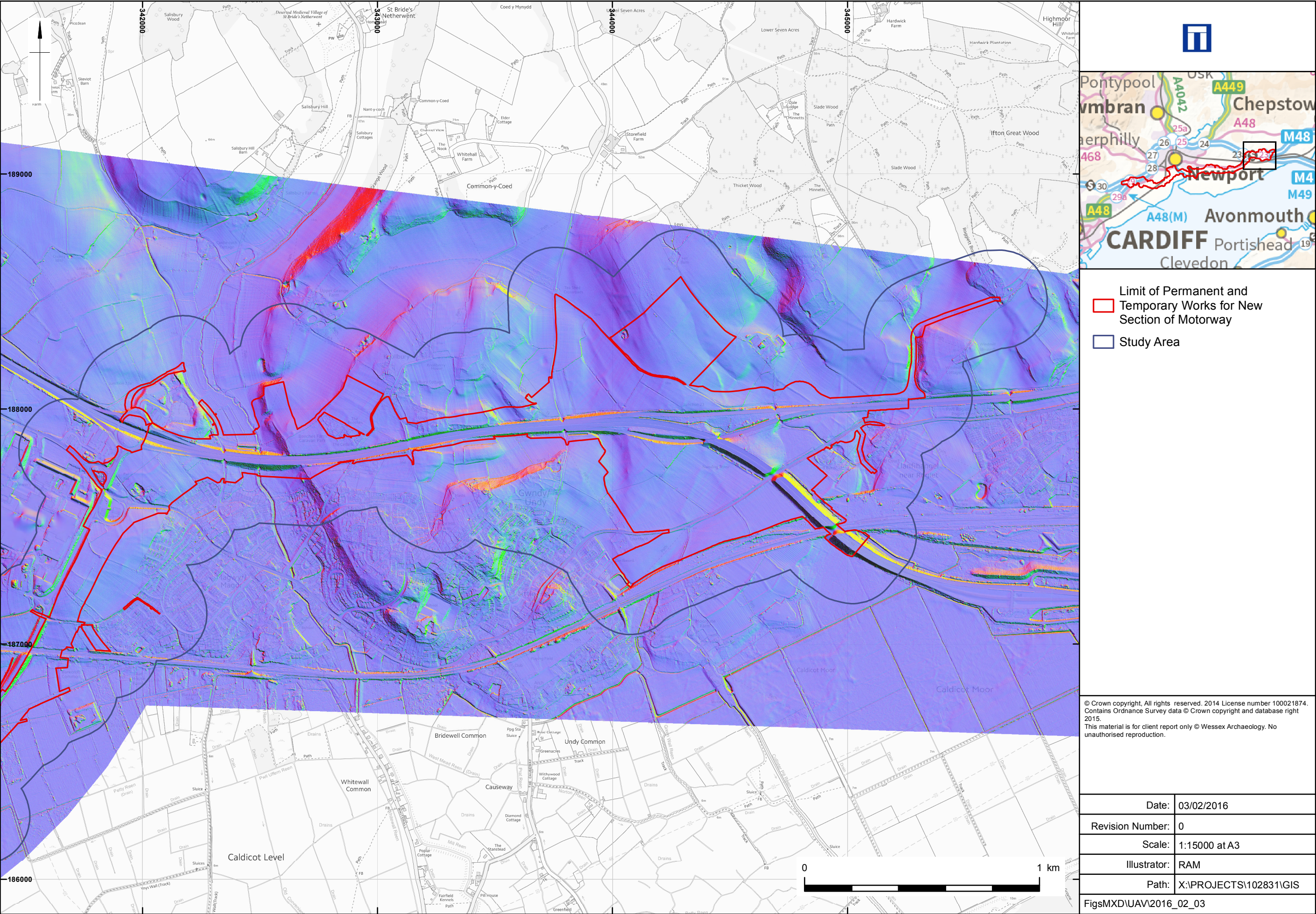
LiDAR PCA dataset (3)

Figure 4



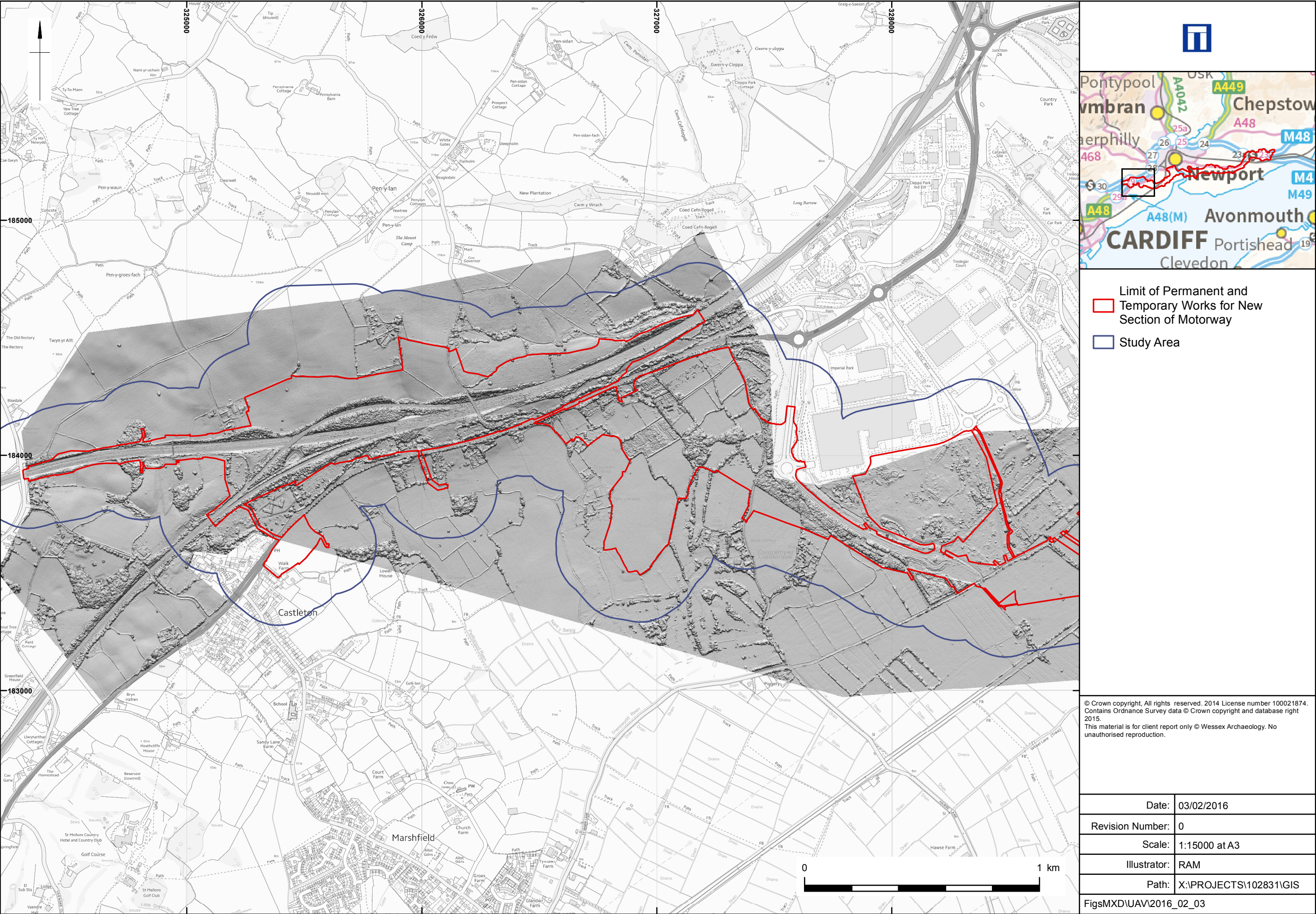
LiDAR PCA dataset (4)

Figure 5



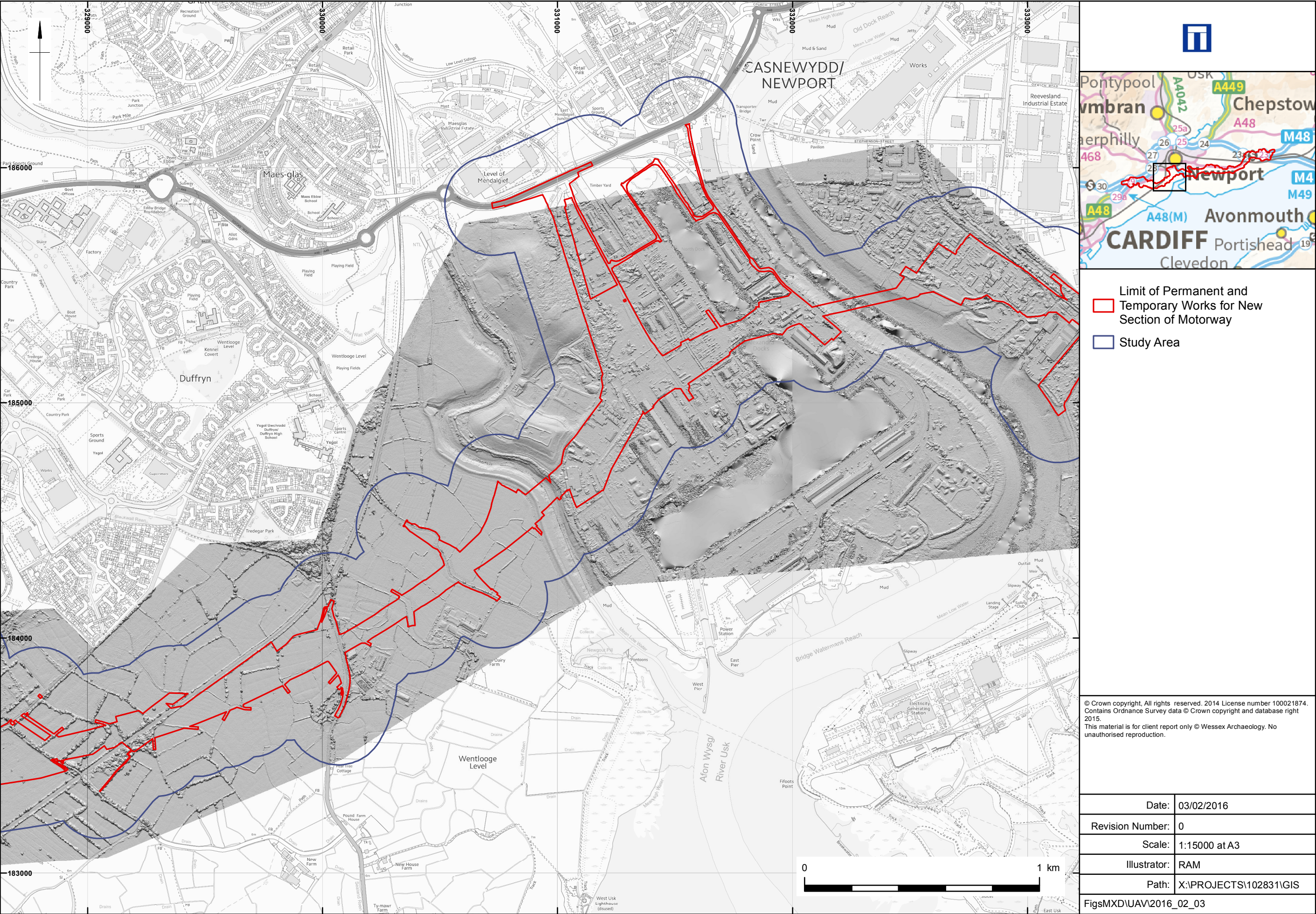
LiDAR PCA dataset (5)

Figure 6



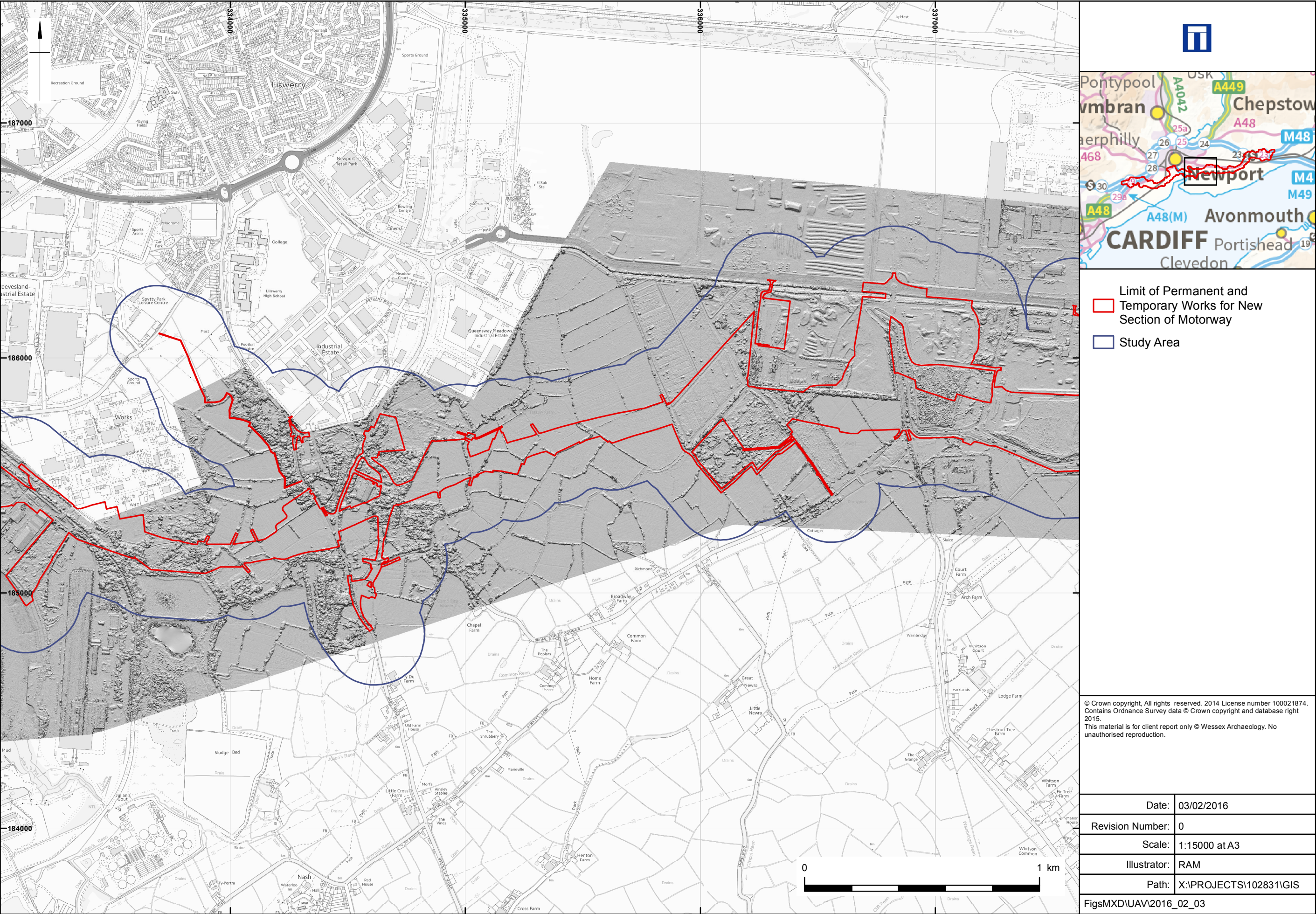
Aerial survey-derived DSM Hillshade (1)

Figure 7



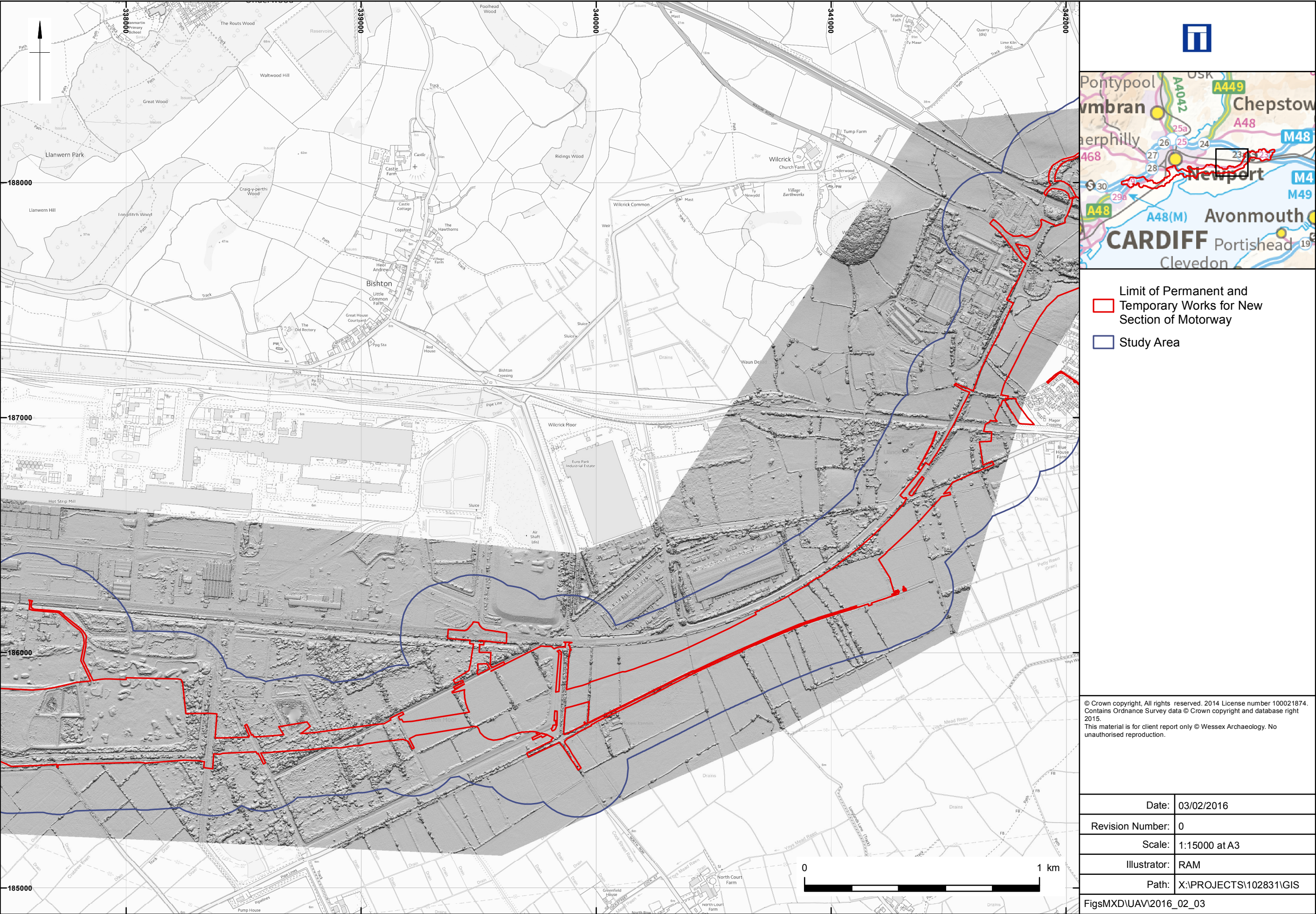
Aerial survey-derived DSM Hillshade (2)

Figure 8



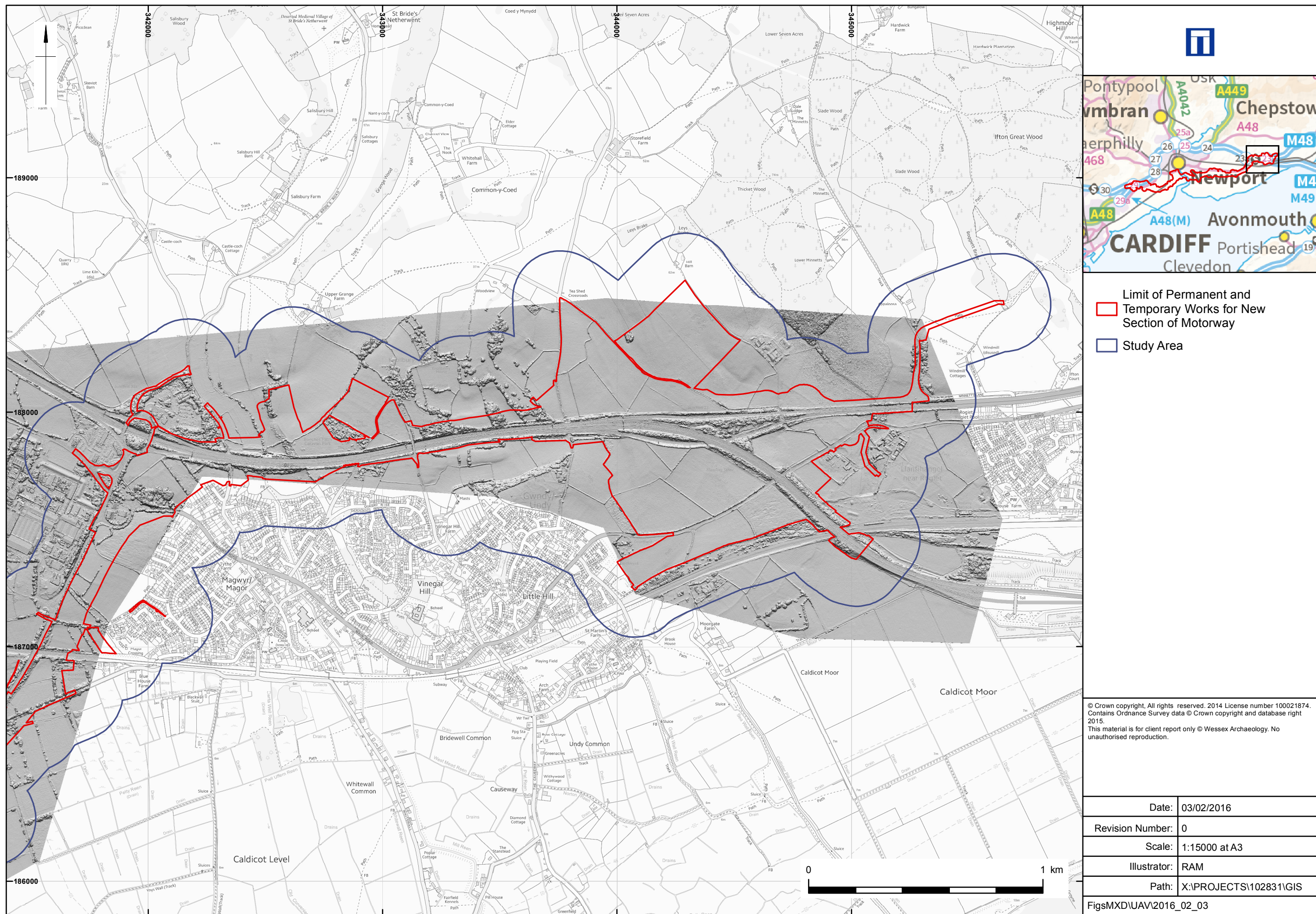
Aerial survey-derived DSM Hillshade (3)

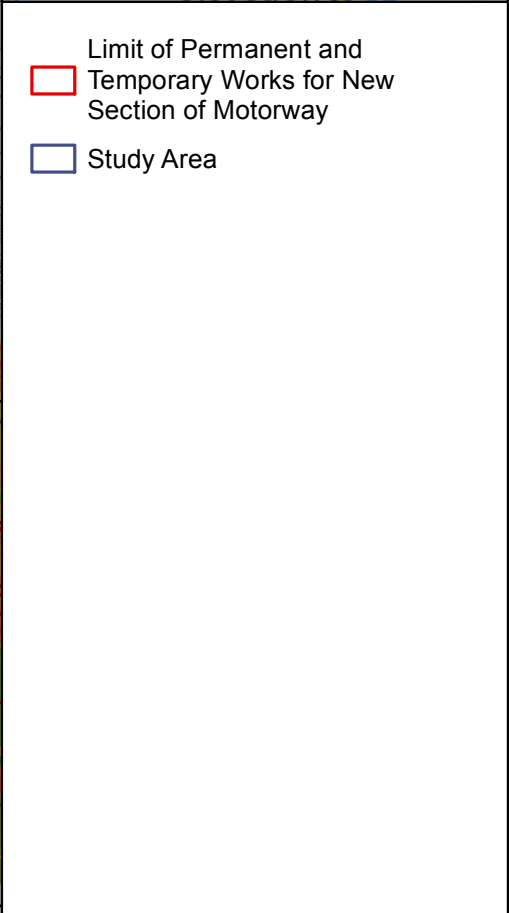
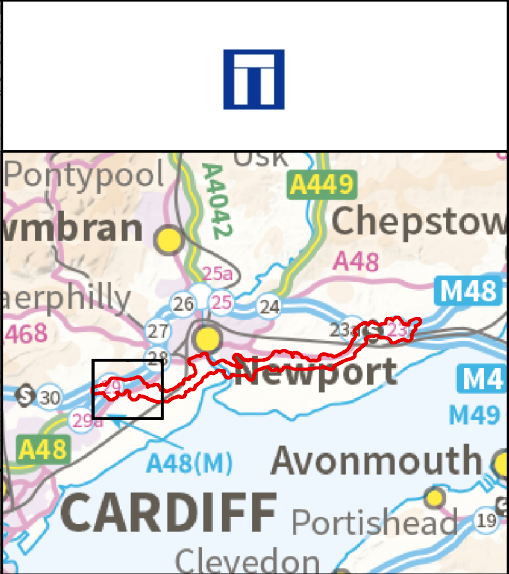
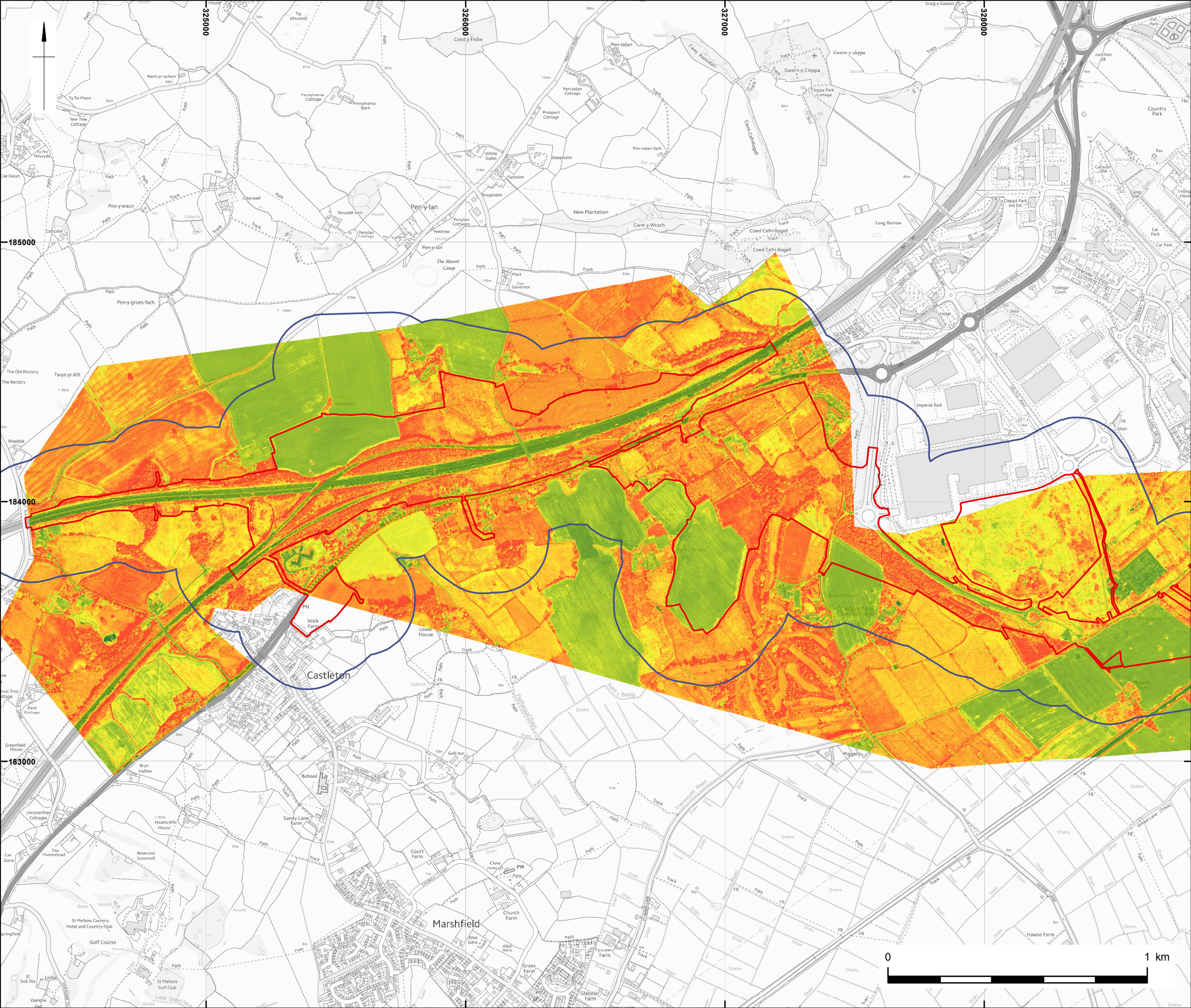
Figure 9



Aerial survey-derived DSM Hillshade (4)

Figure 10



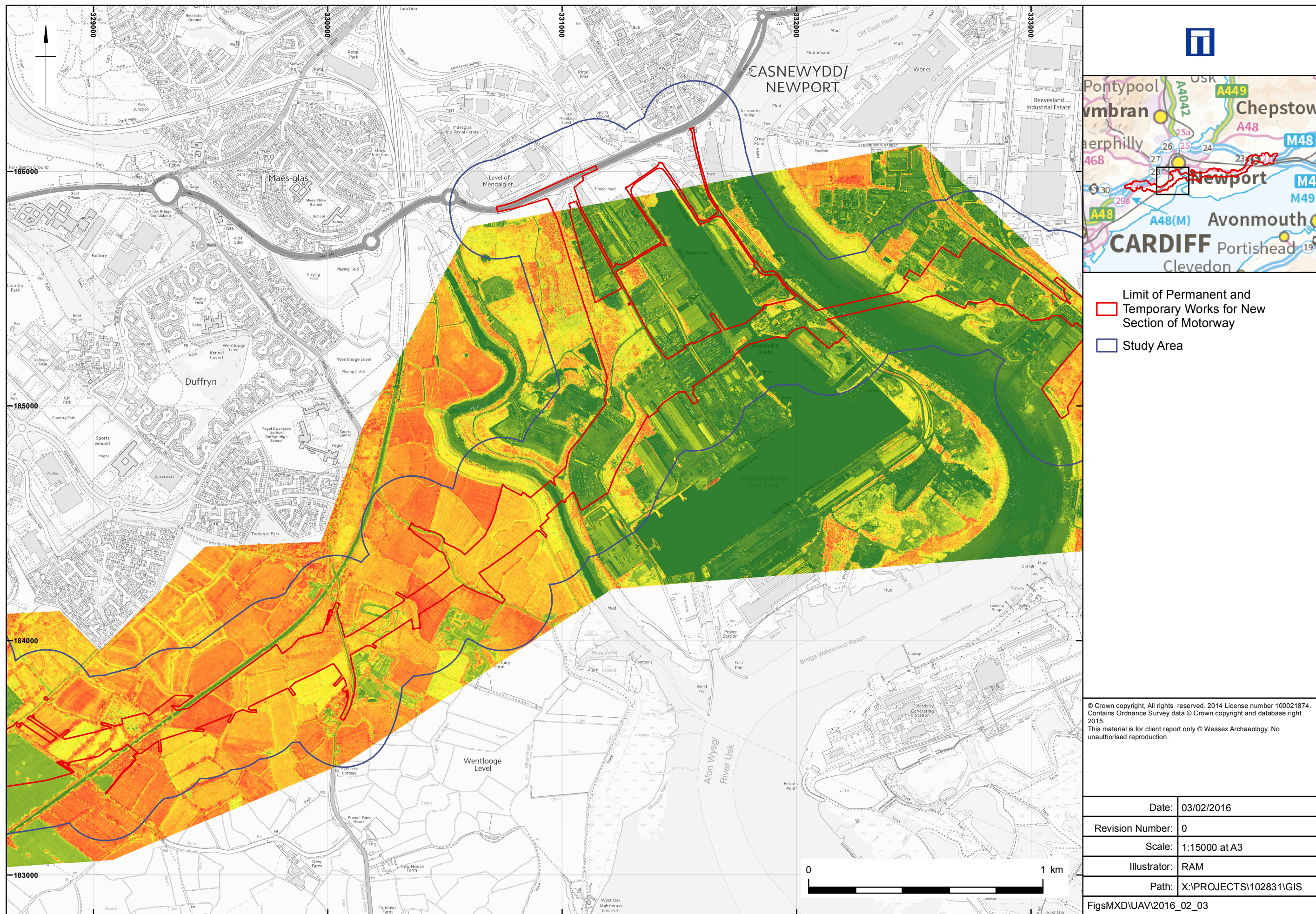


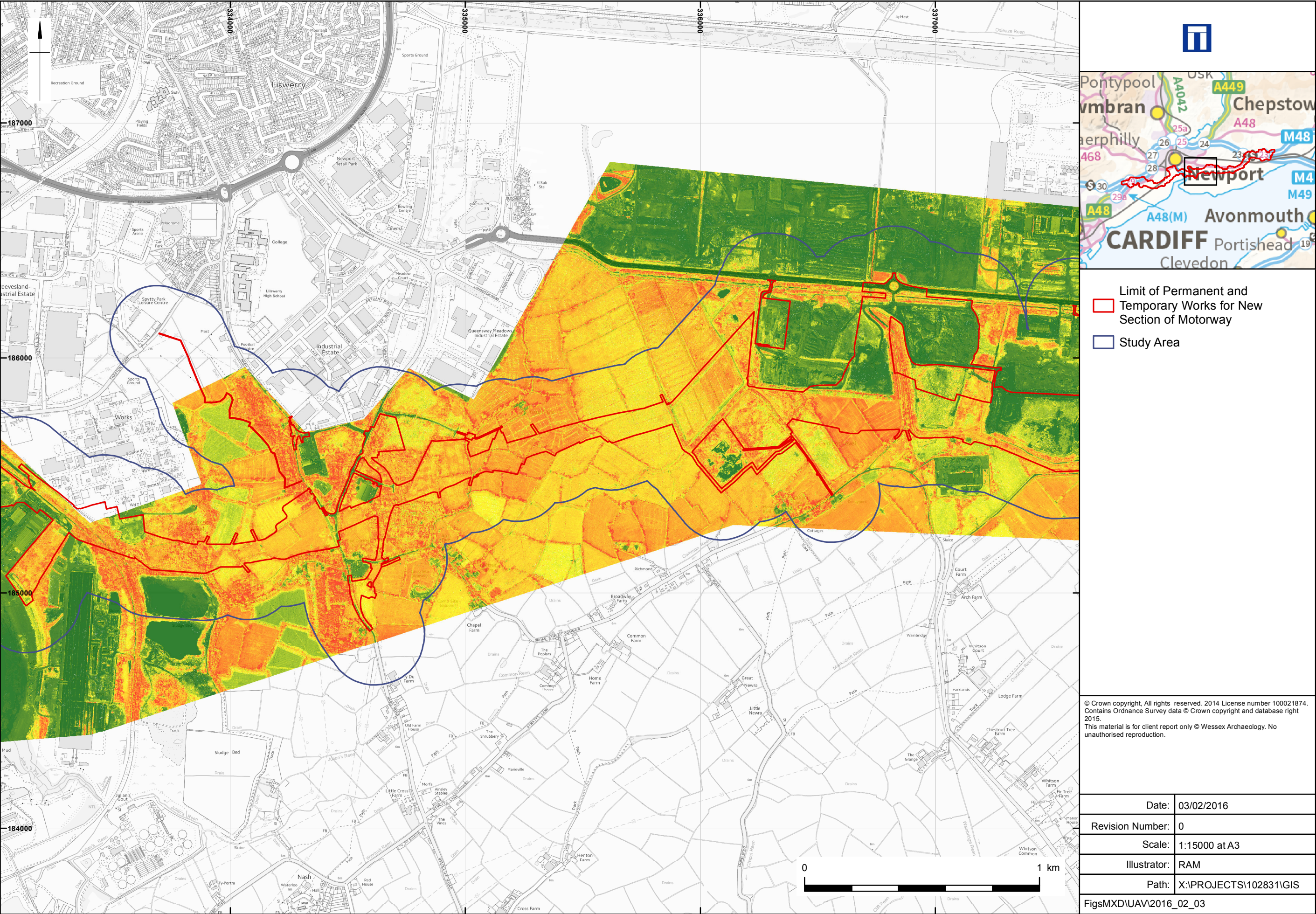
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Aerial survey-derived NDVI (1)

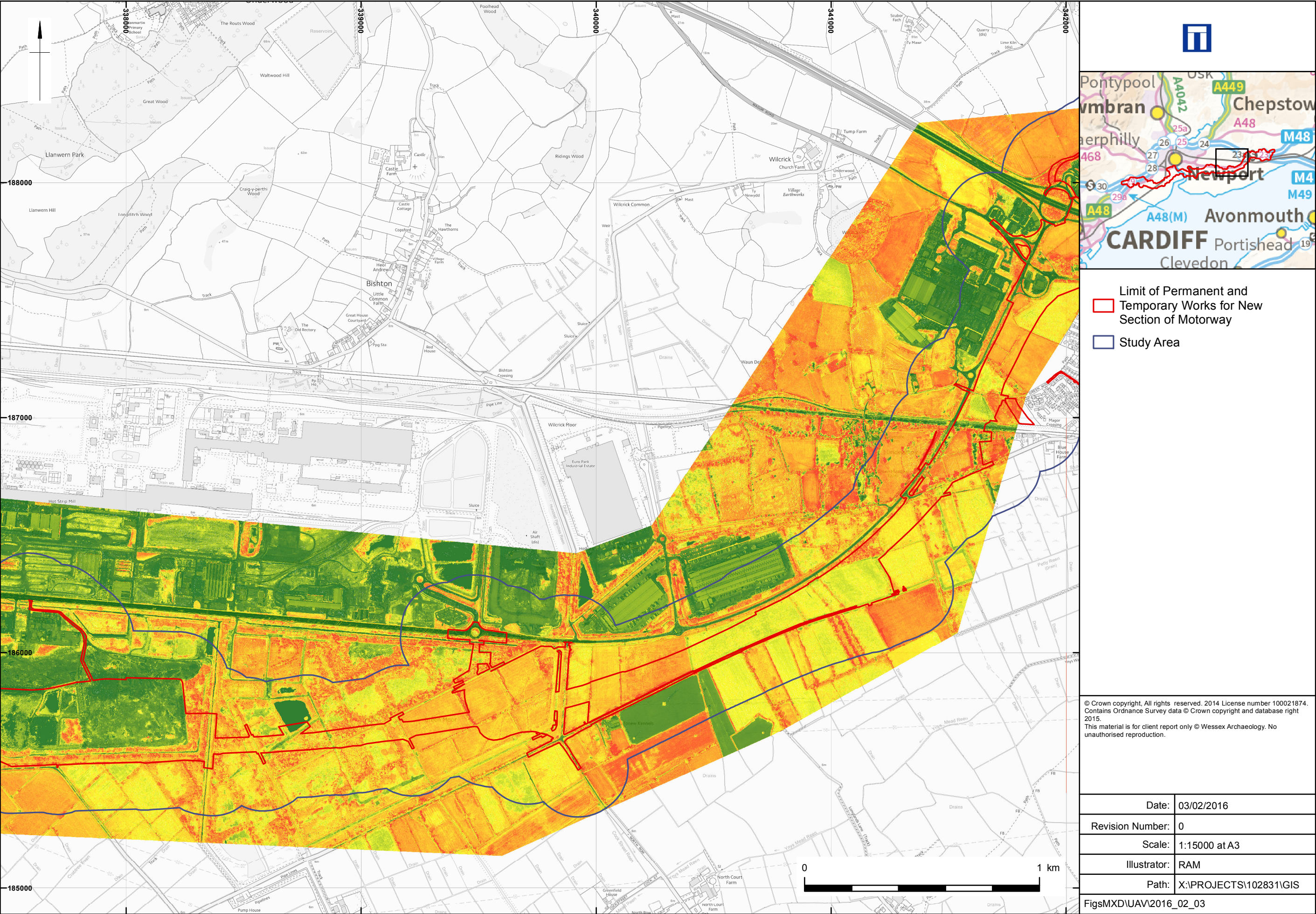
Figure 12





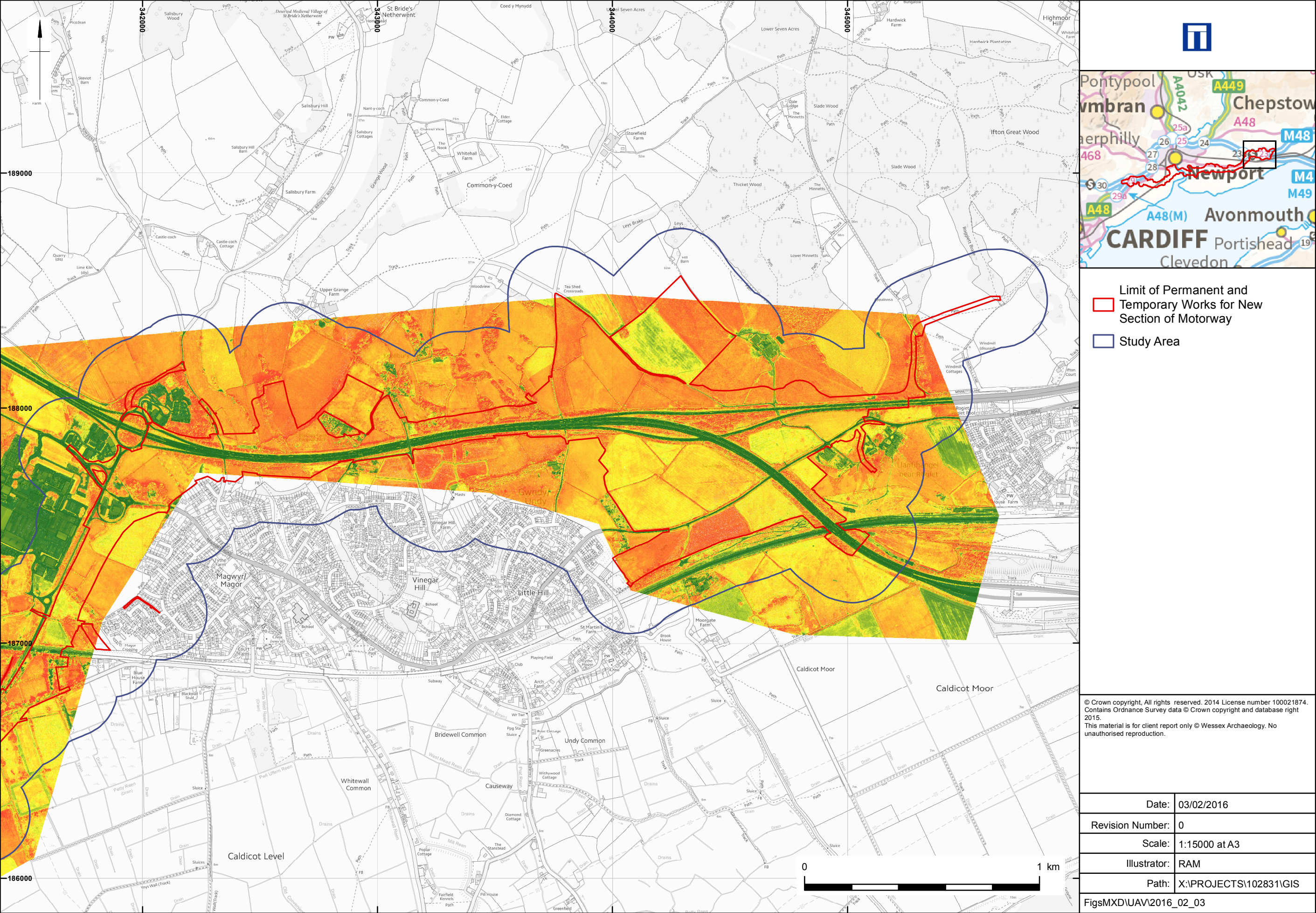
Aerial survey-derived NDVI (3)

Figure 14



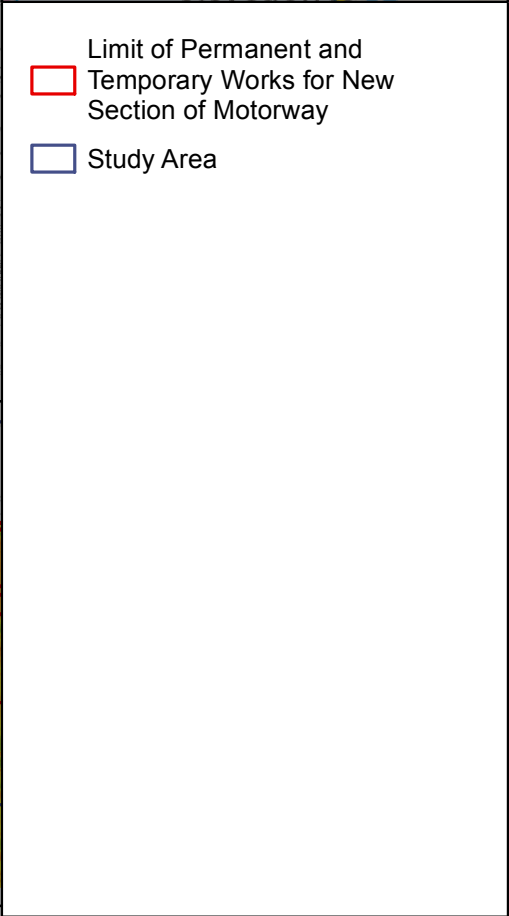
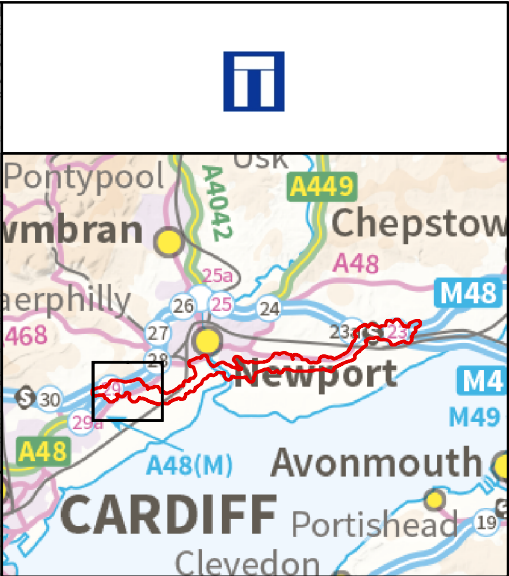
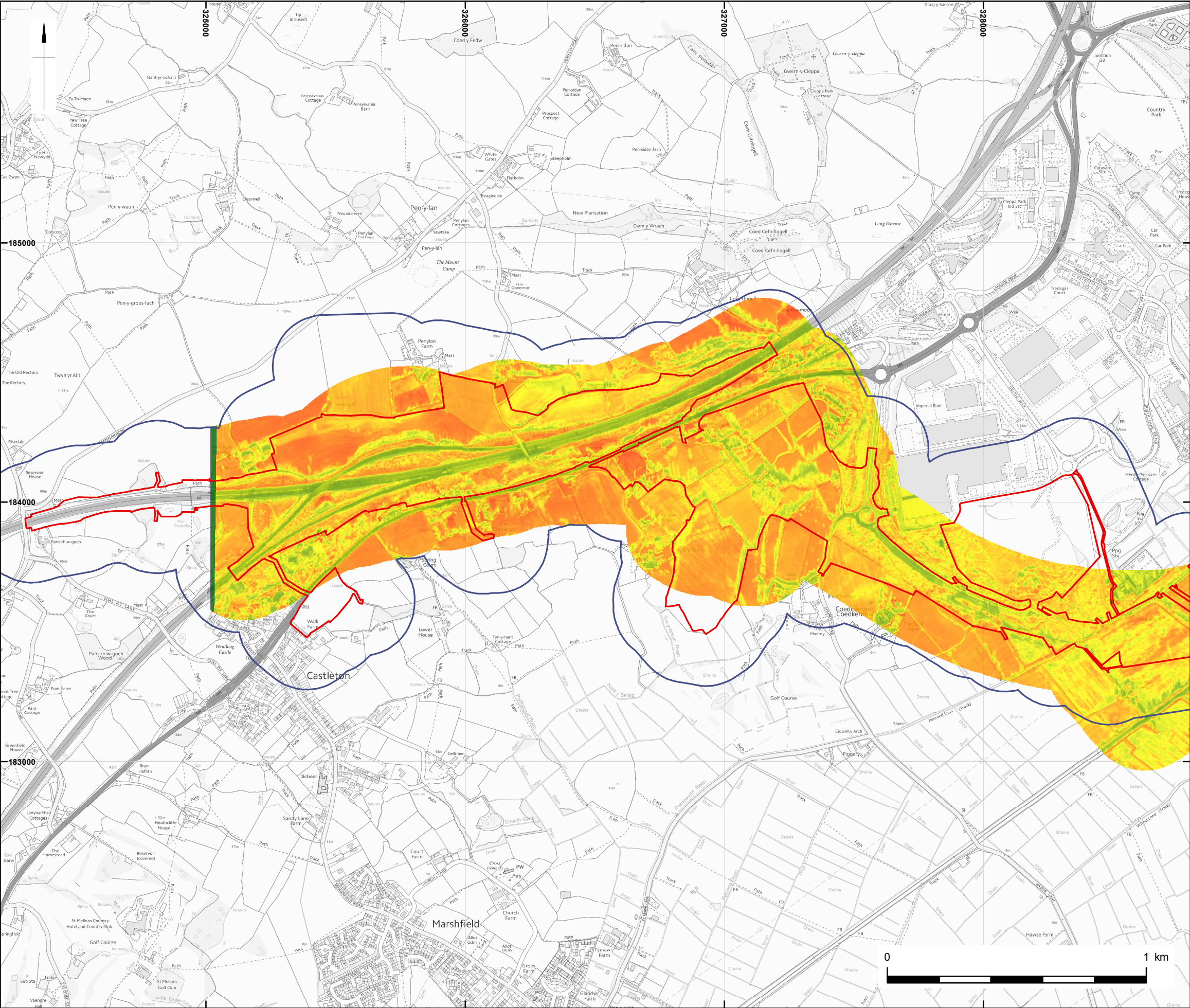
Aerial survey-derived NDVI (4)

Figure 15



Aerial survey-derived NDVI (5)

Figure 16

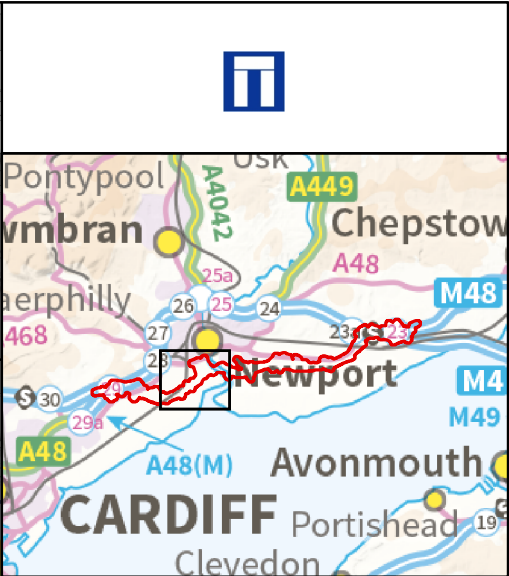
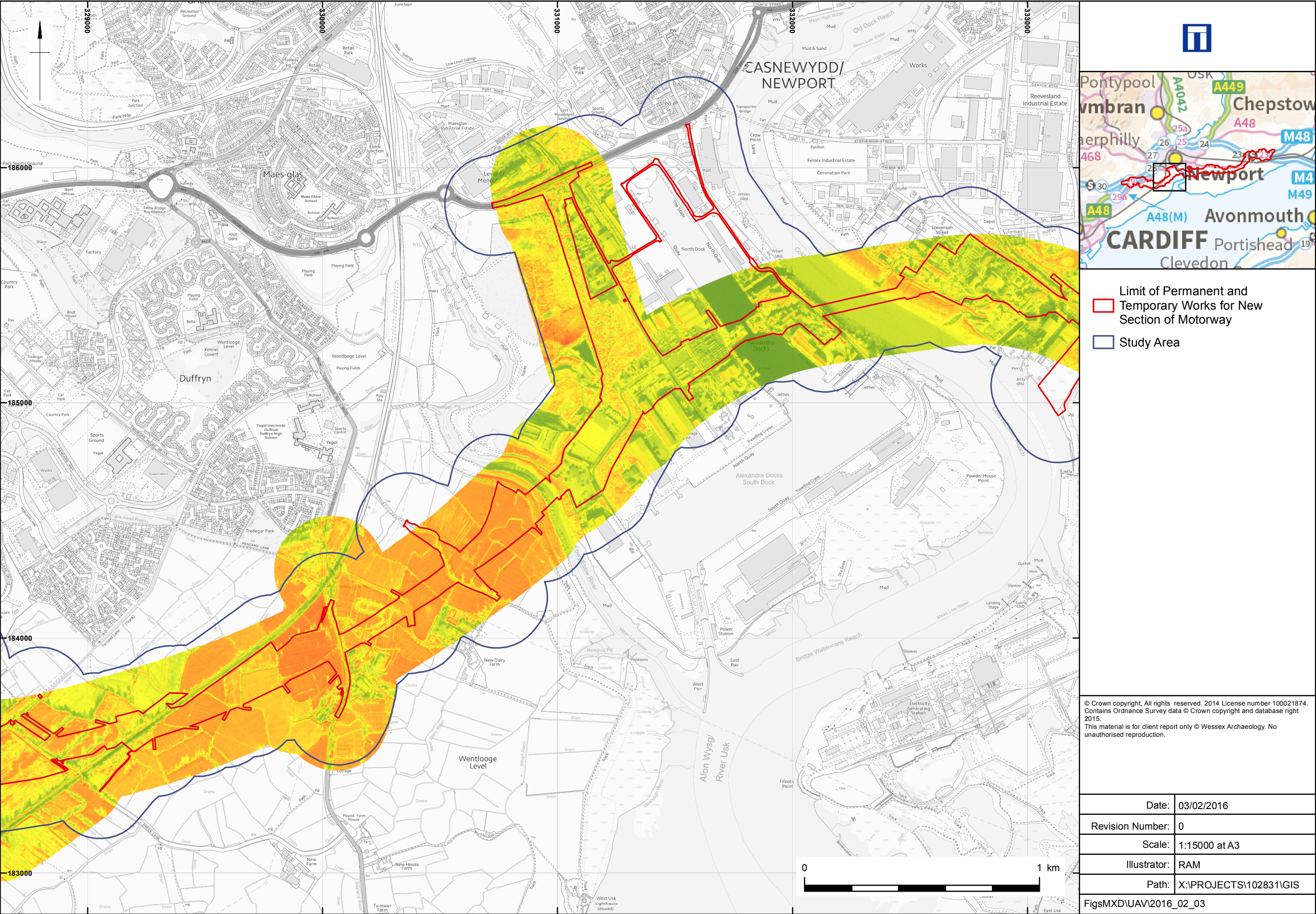


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Pleiades NDVI (1)

Figure 17



Limit of Permanent and Temporary Works for New Section of Motorway

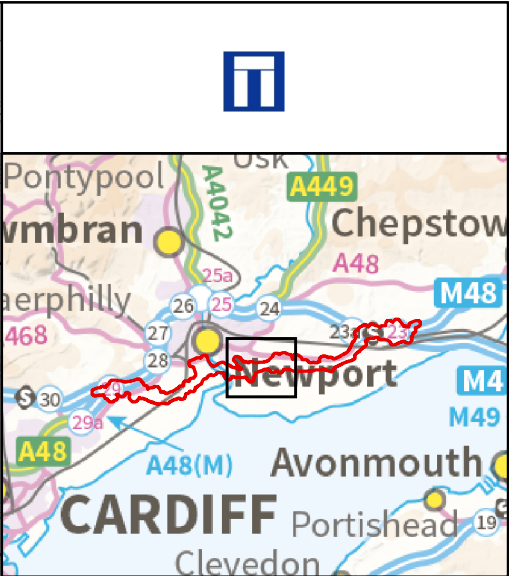
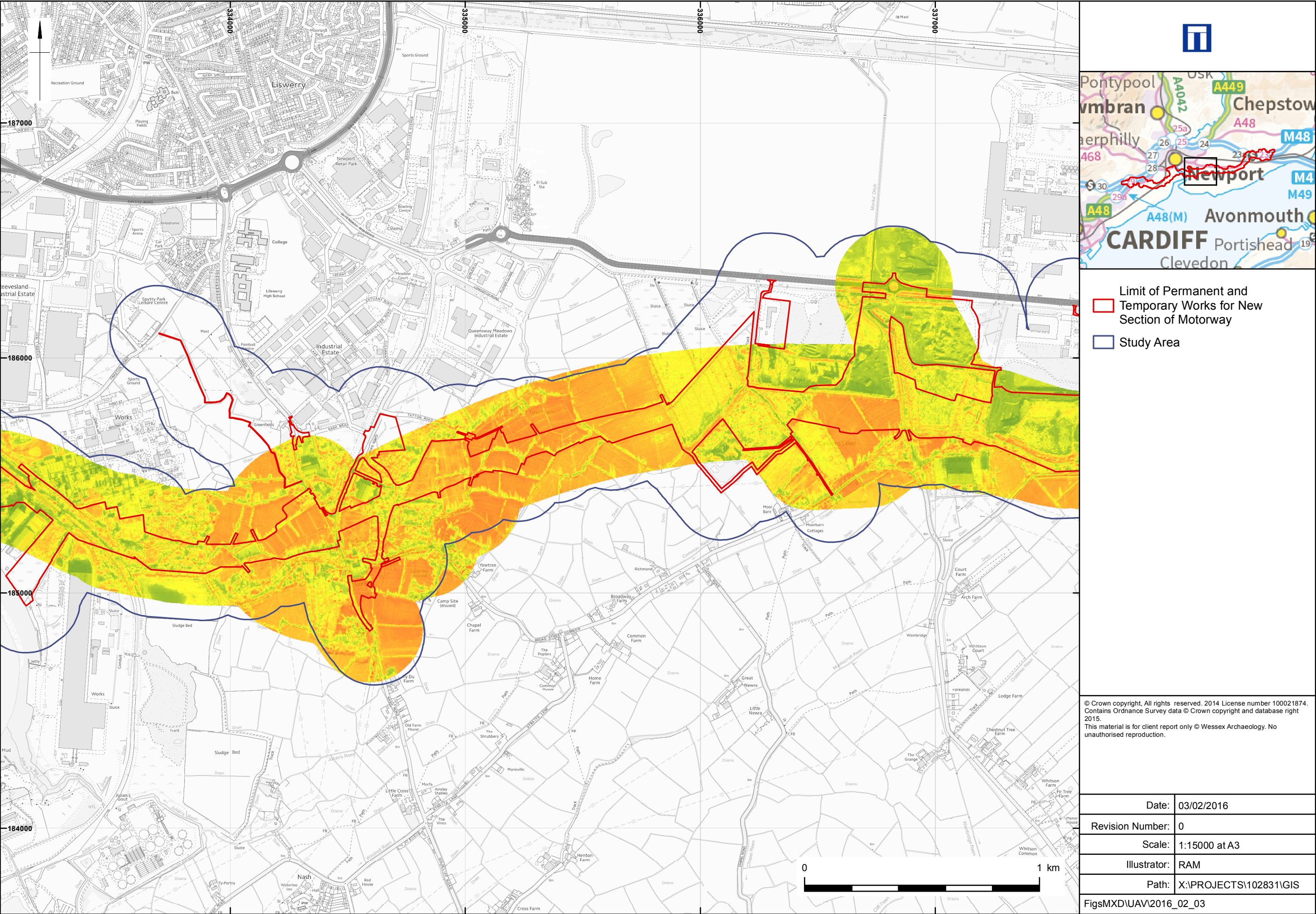
Study Area

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Pleiades NDVI (2)

Figure 18



Limit of Permanent and Temporary Works for New Section of Motorway

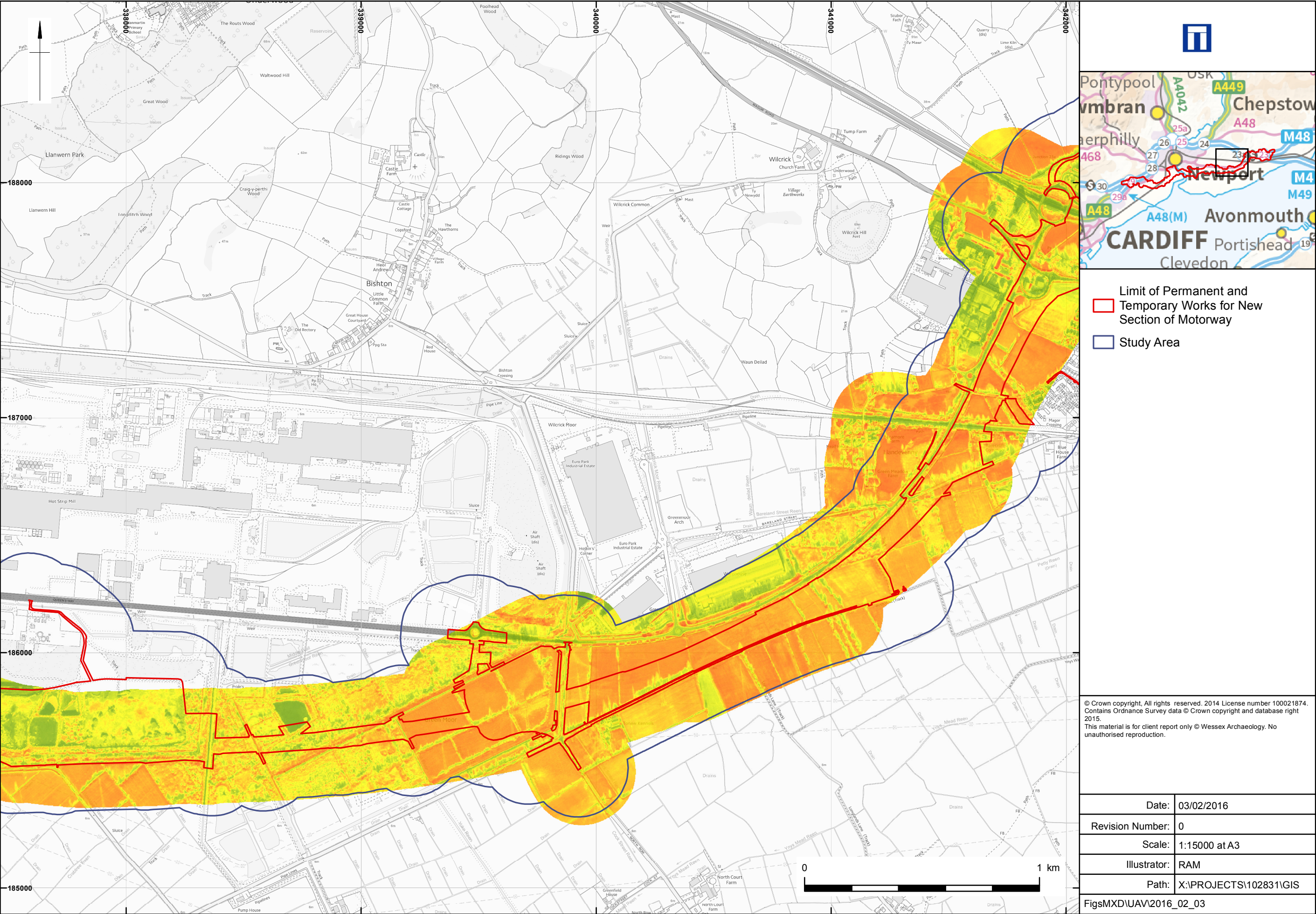
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Pleiades NDVI (3)

Figure 19



Limit of Permanent and
Temporary Works for New
Section of Motorway

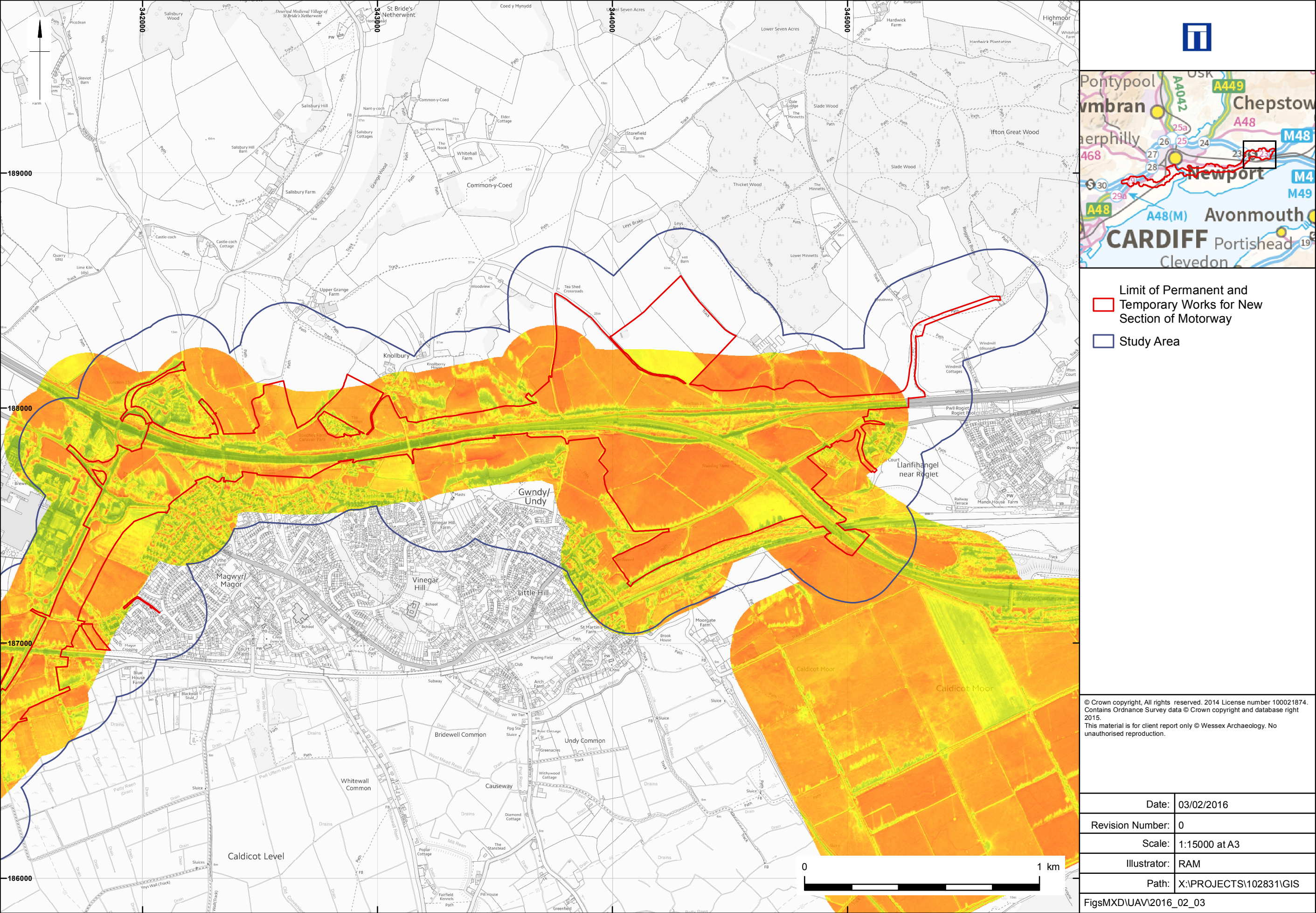
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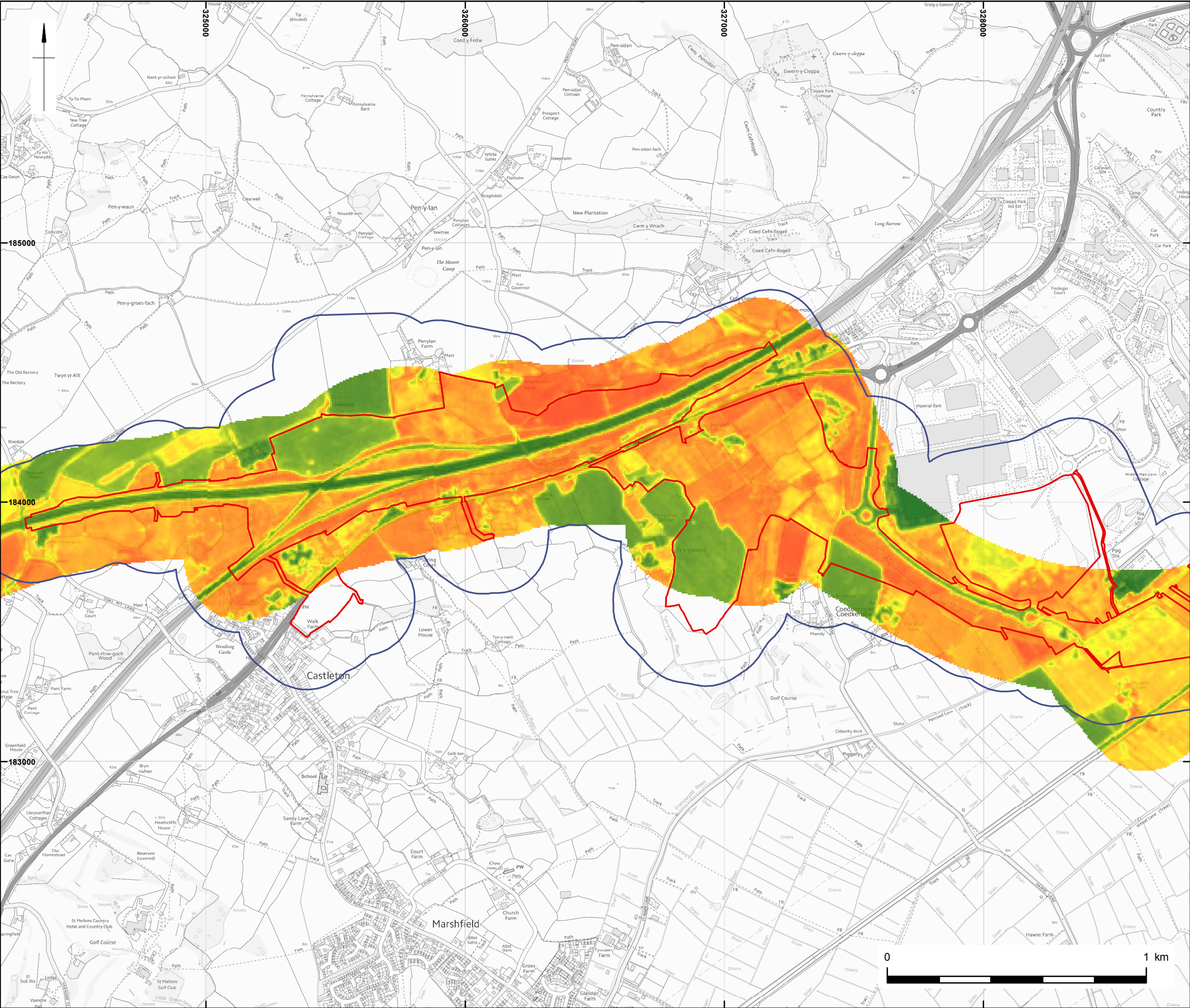
Pleiades NDVI (4)

Figure 20



Pleiades NDVI (5)

Figure 21



Limit of Permanent and Temporary Works for New Section of Motorway

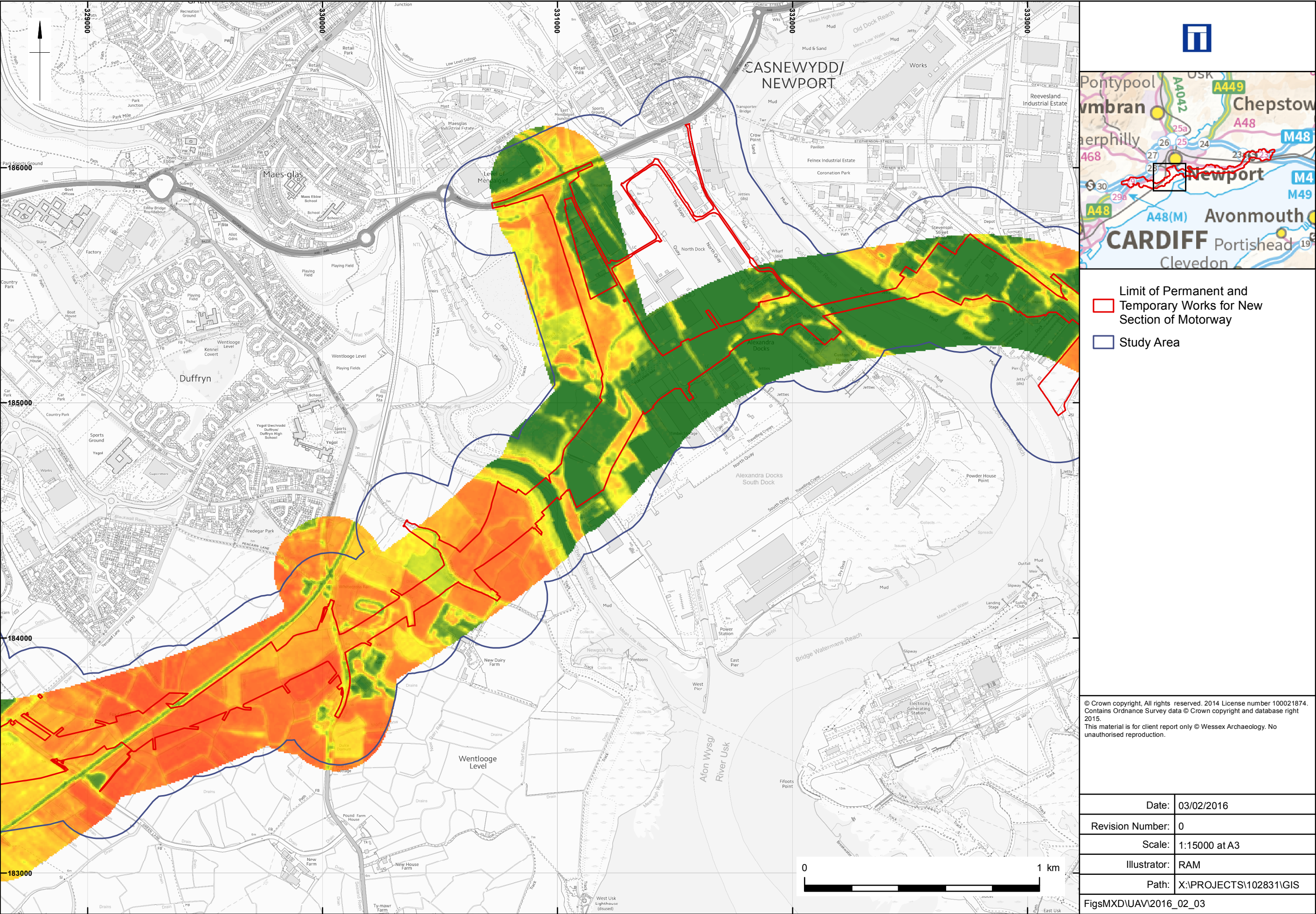
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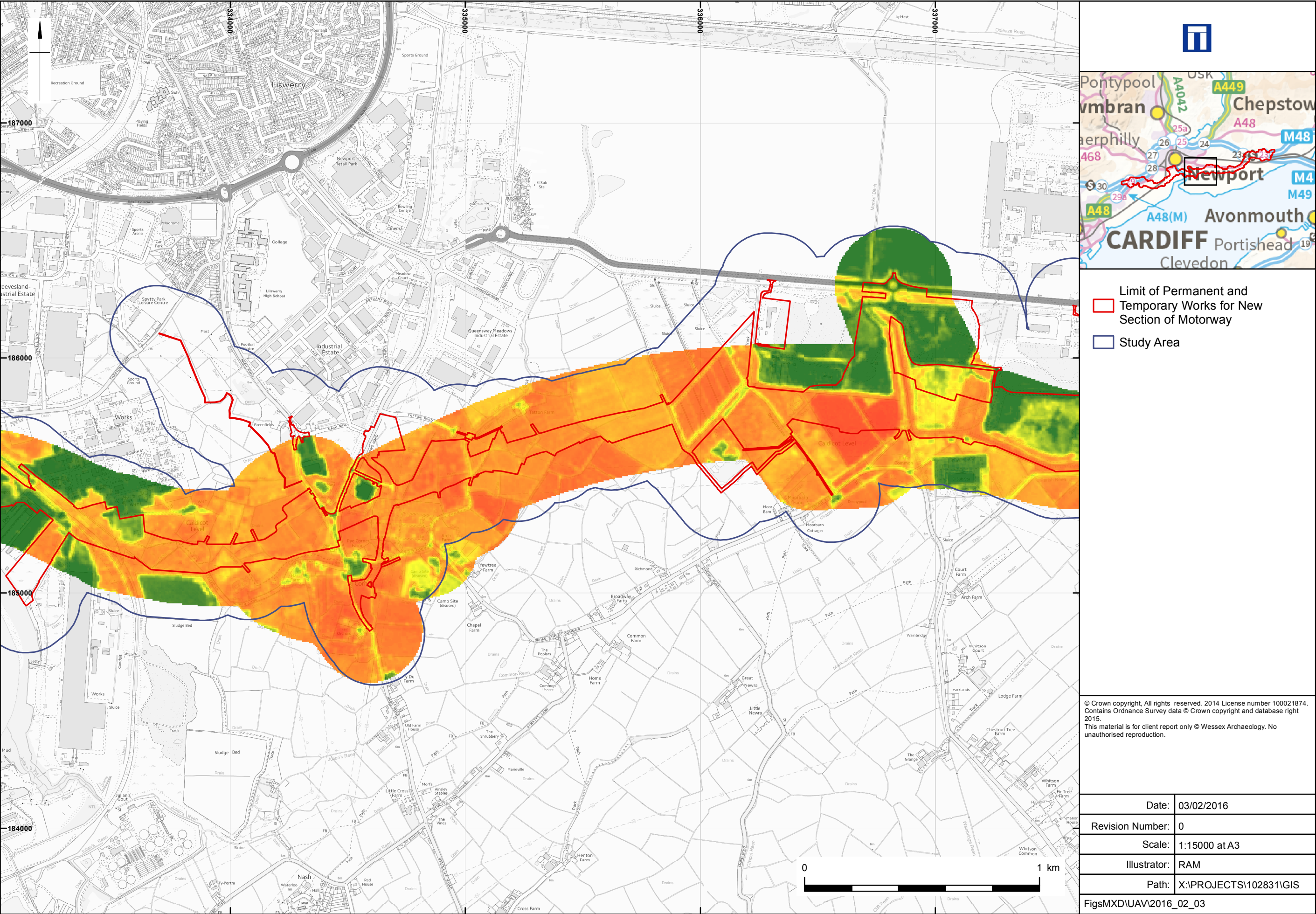
SPOT7 NDVI (1)

Figure 22



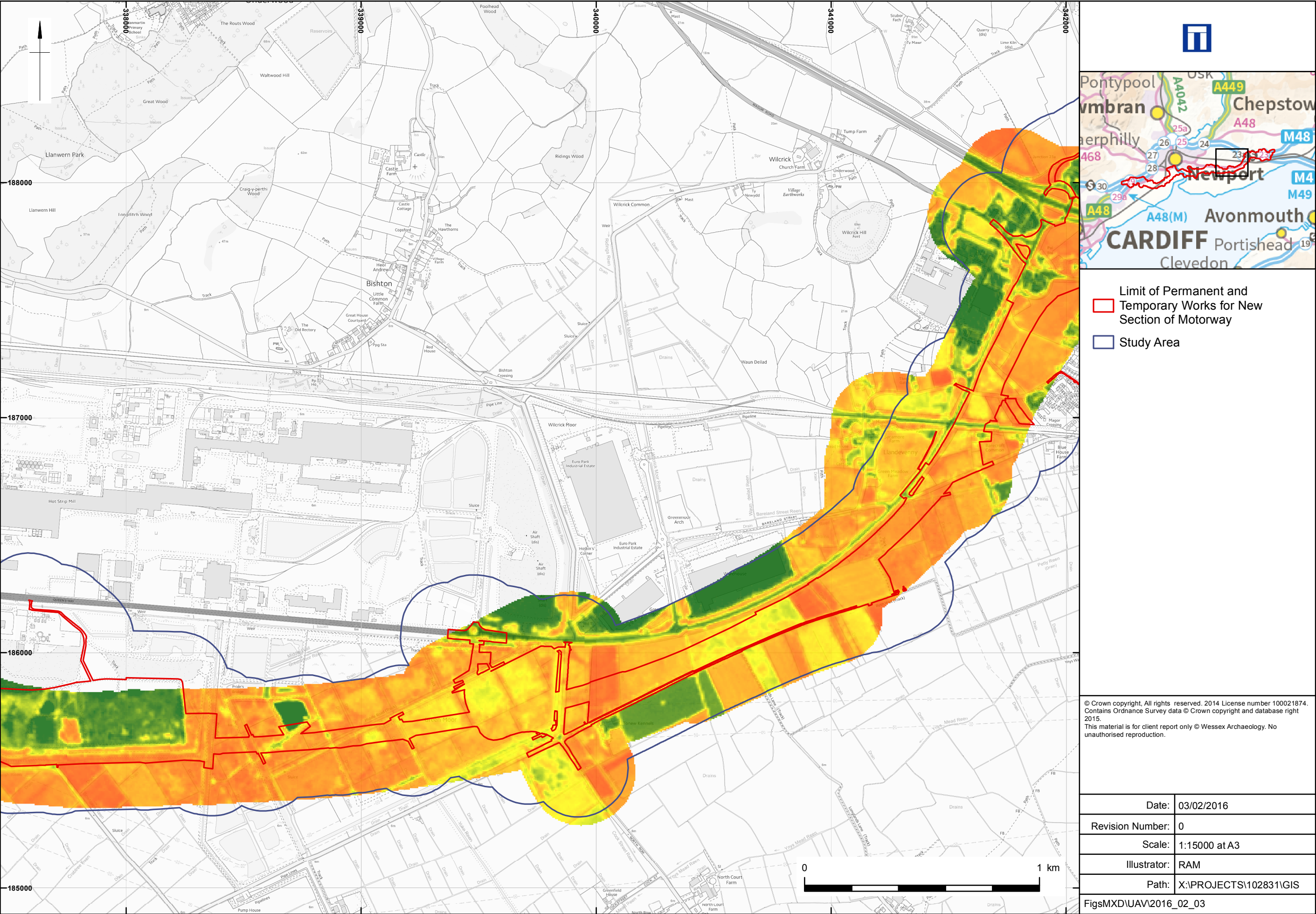
SPOT7 NDVI (2)

Figure 23



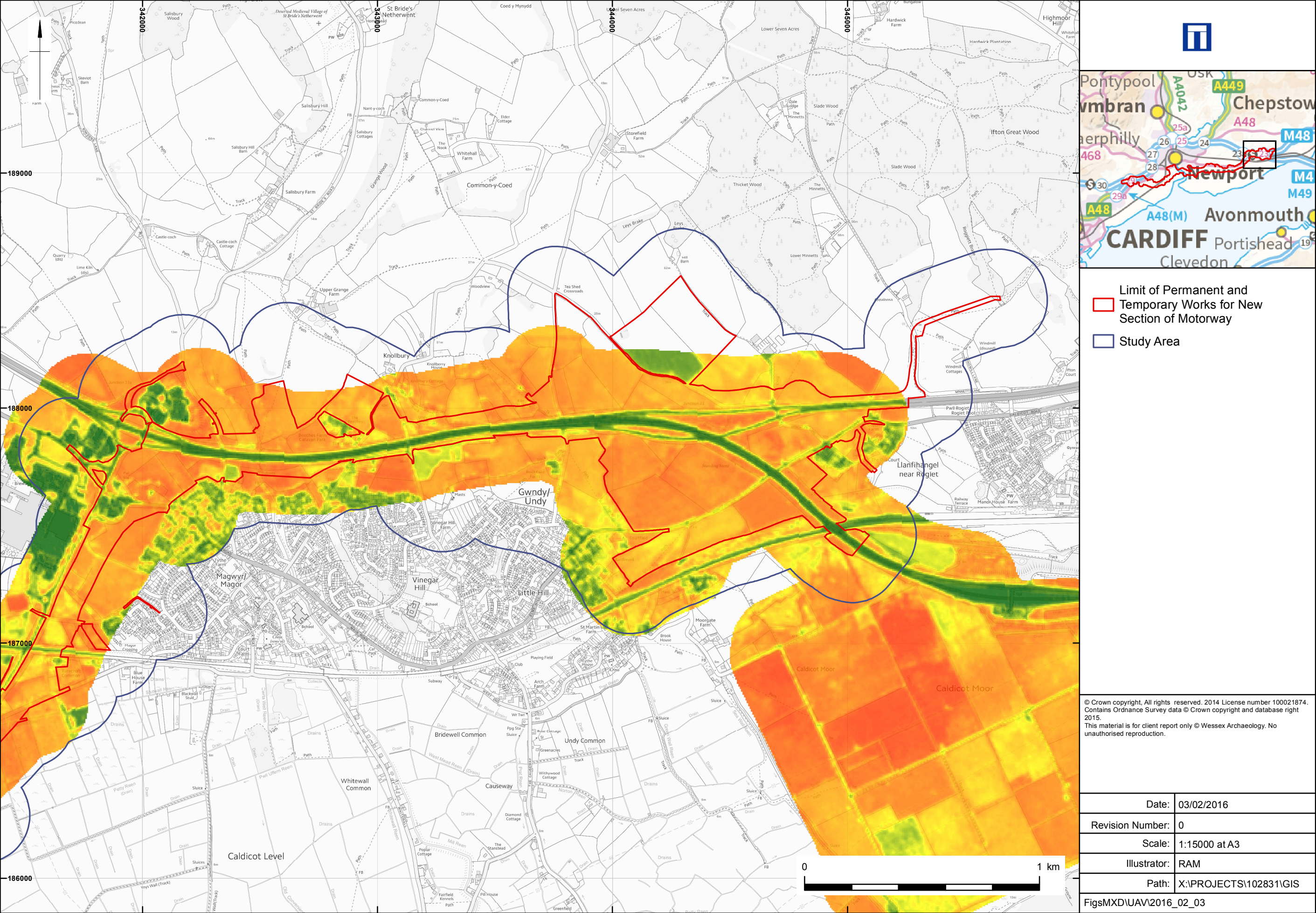
SPOT7 NDVI (3)

Figure 24



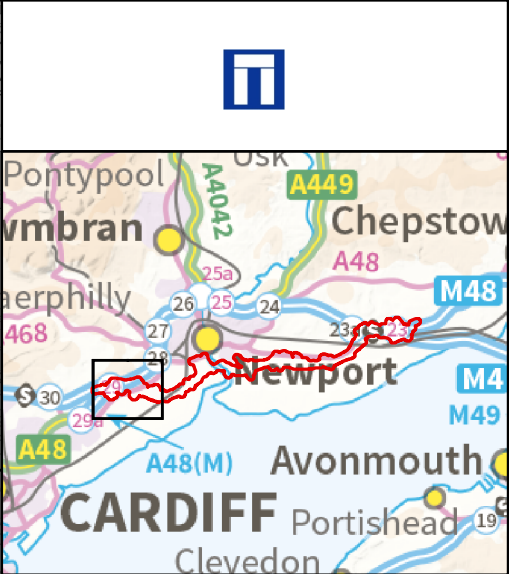
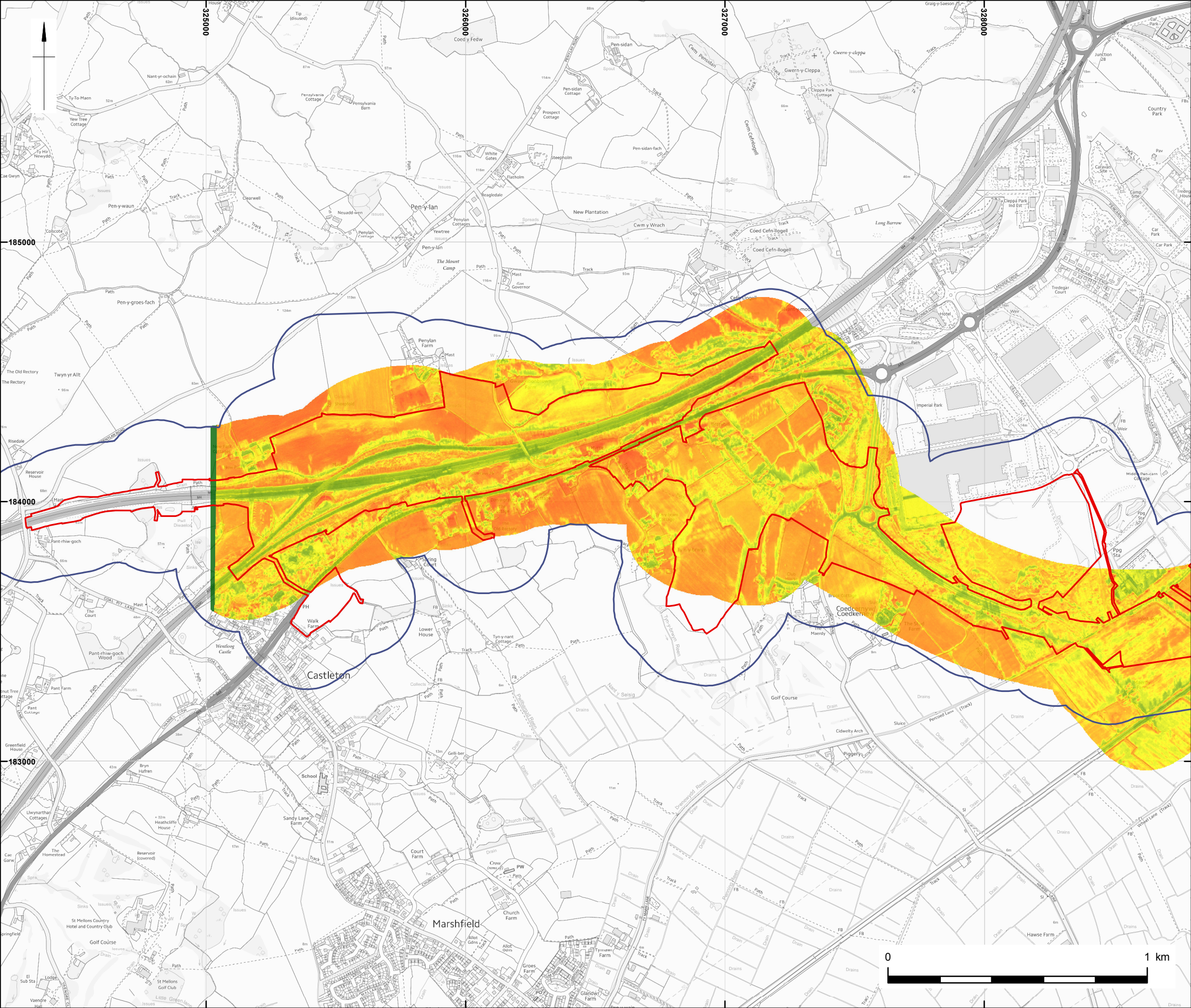
SPOT7 NDVI (4)

Figure 25



SPOT7 NDVI (5)

Figure 26



Limit of Permanent and Temporary Works for New Section of Motorway

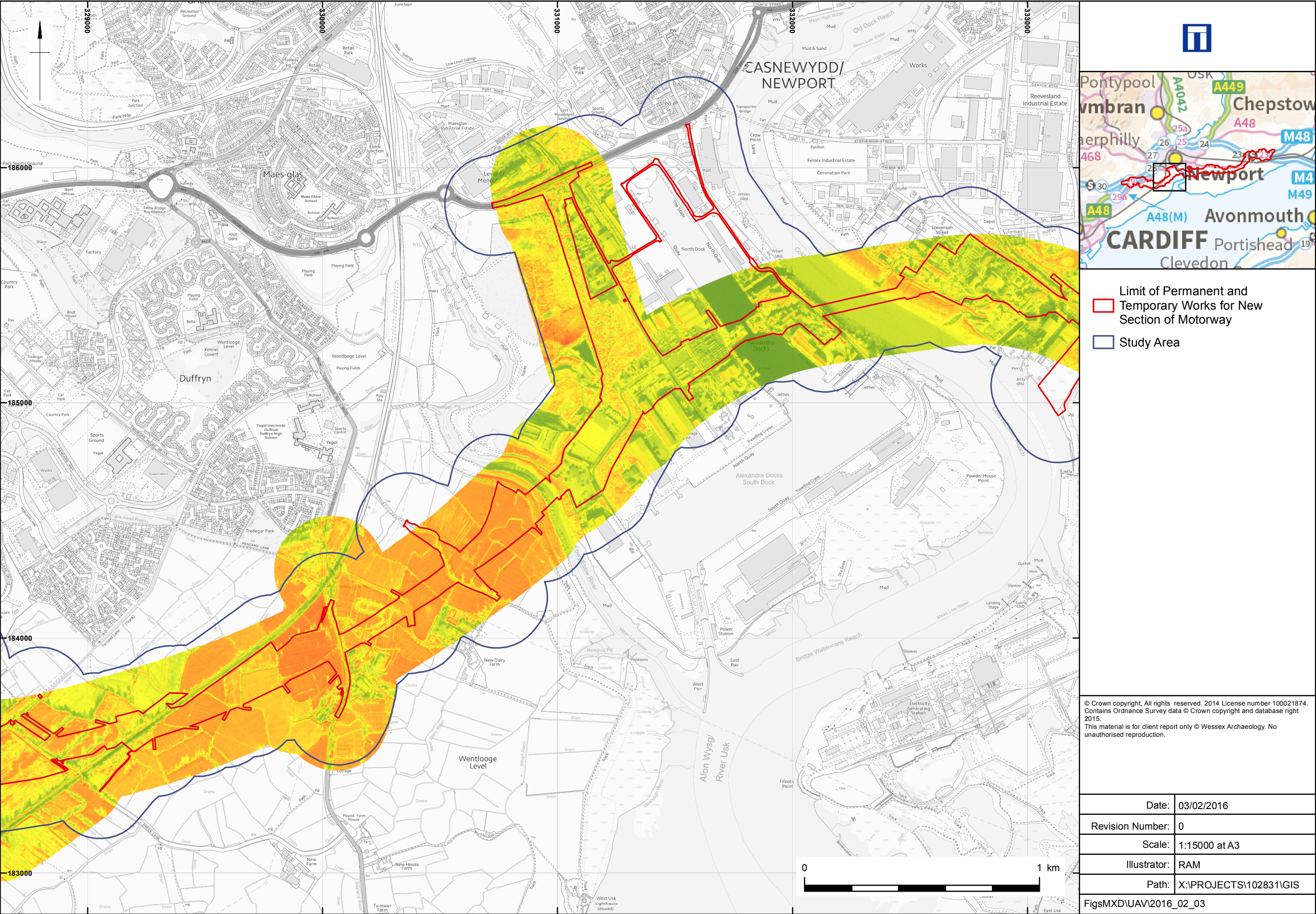
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WorldView 2 NDVI (1)

Figure 27

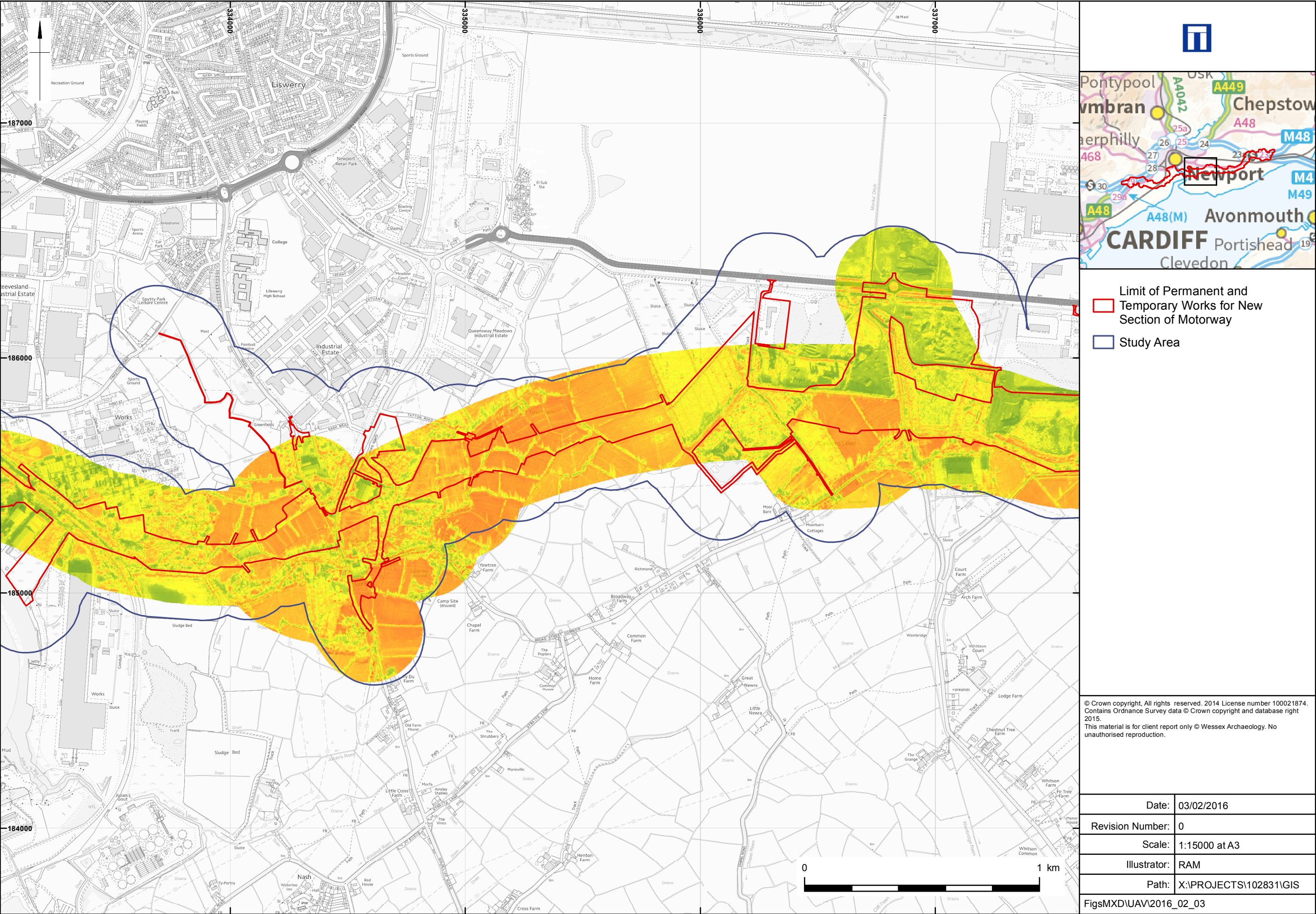


Limit of Permanent and
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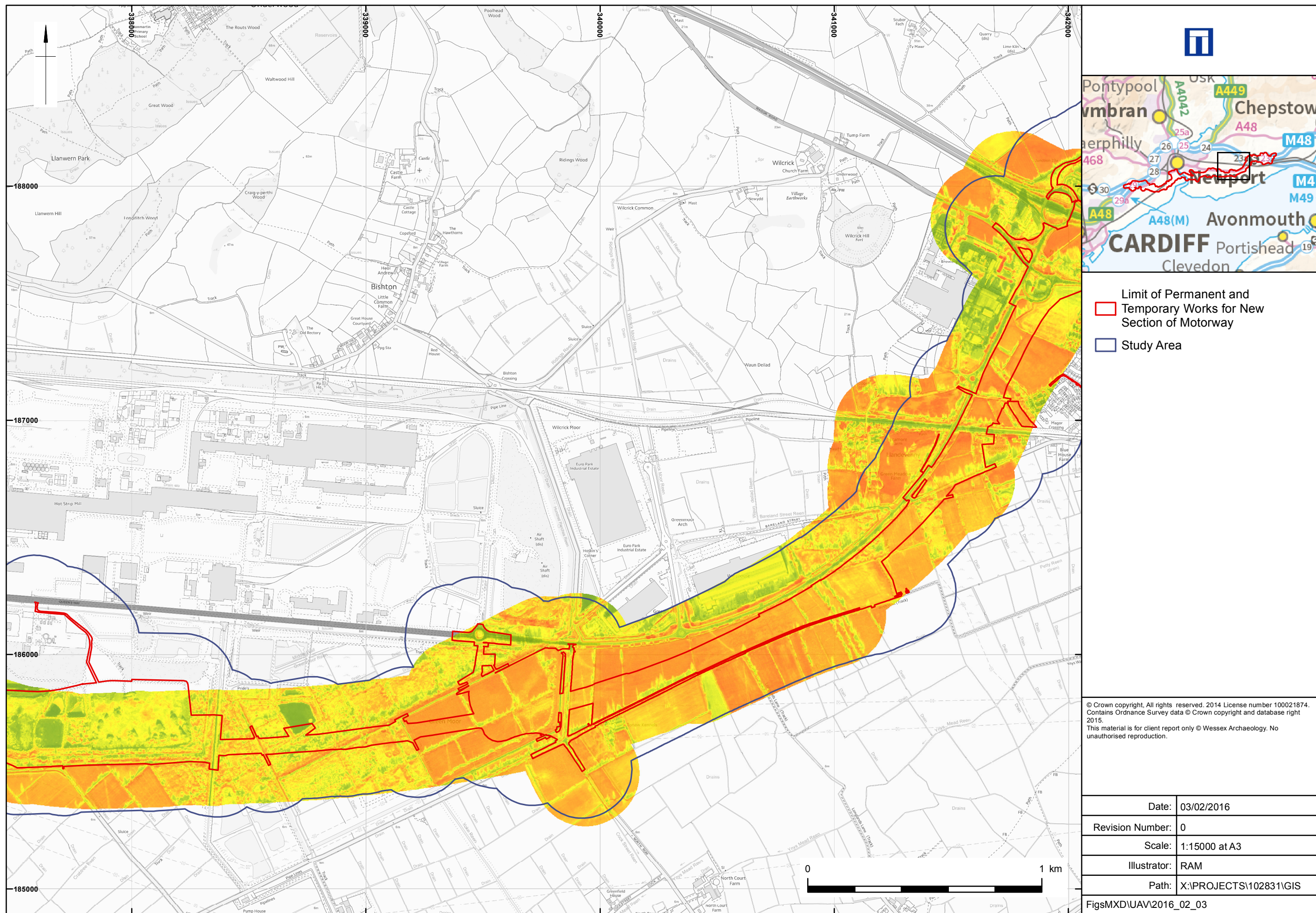
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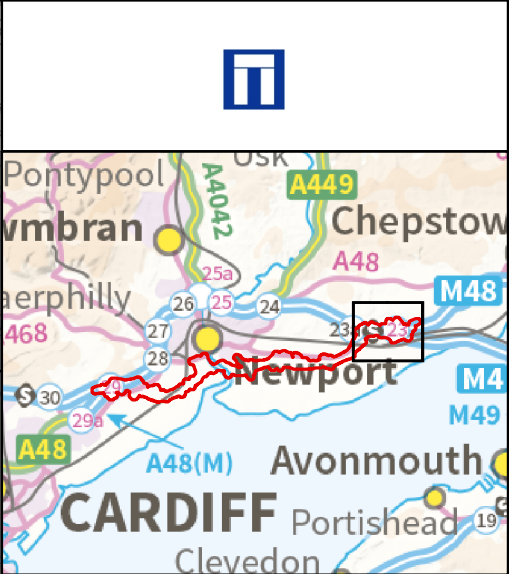
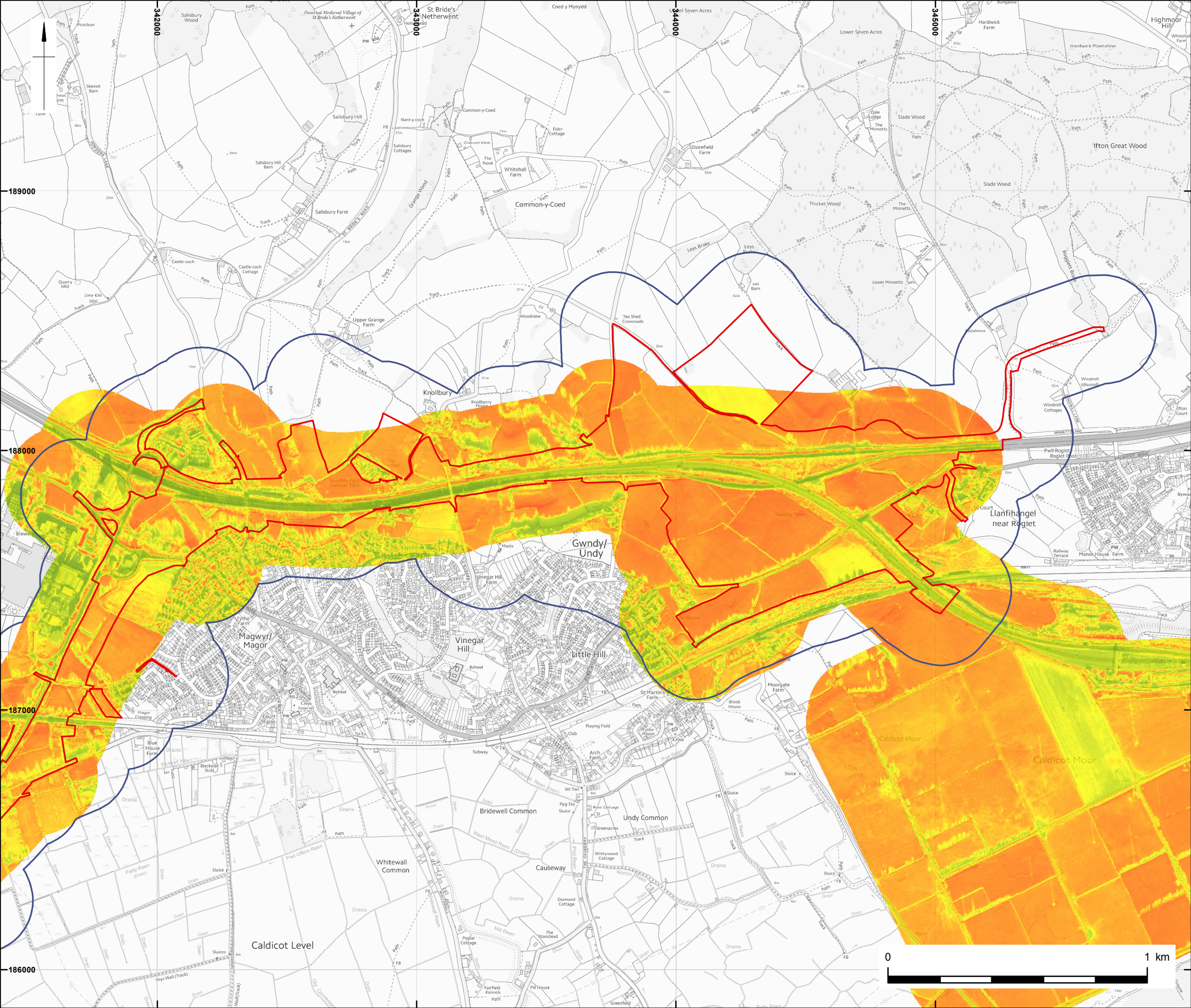


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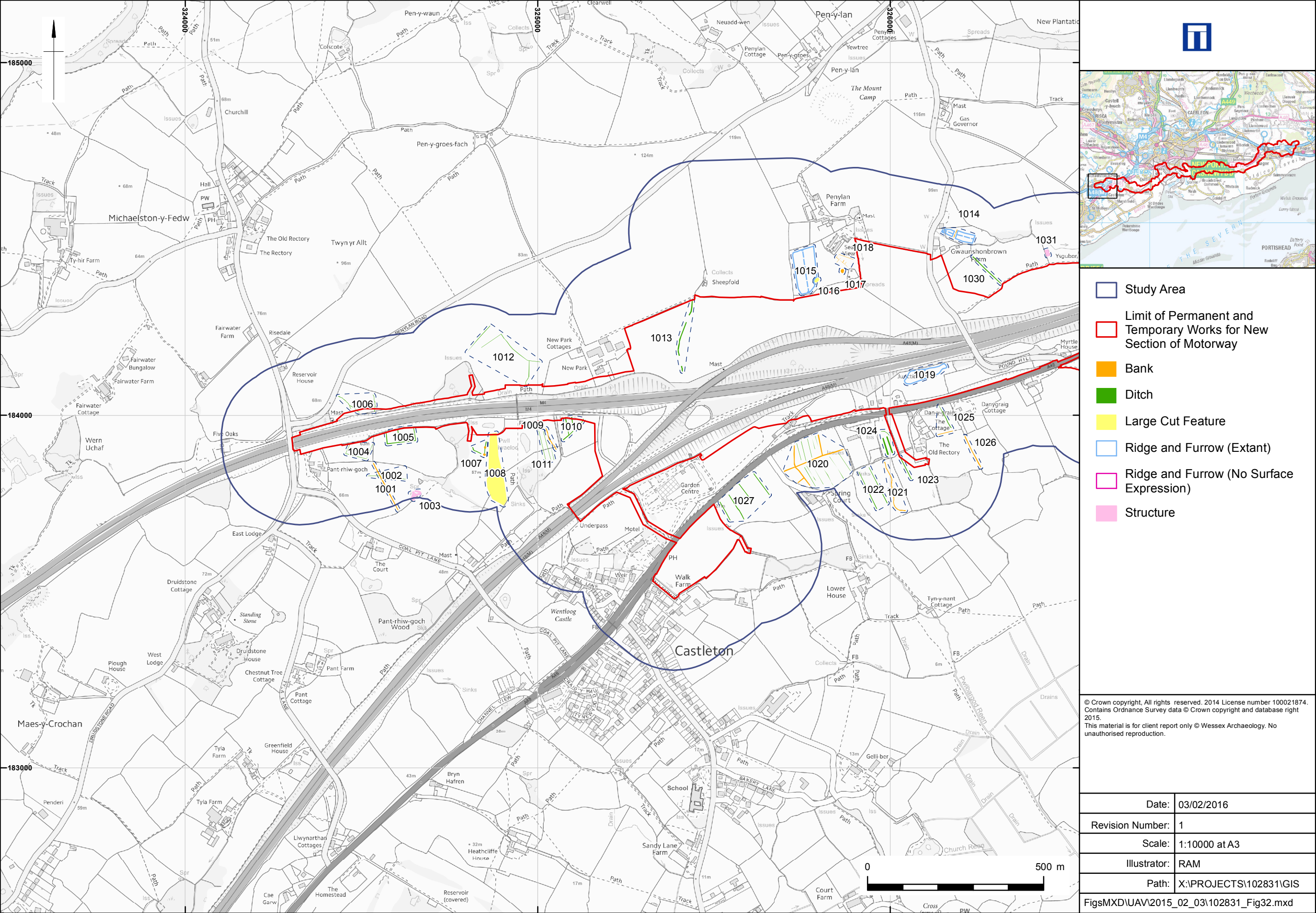


Limit of Permanent and Temporary Works for New Section of Motorway

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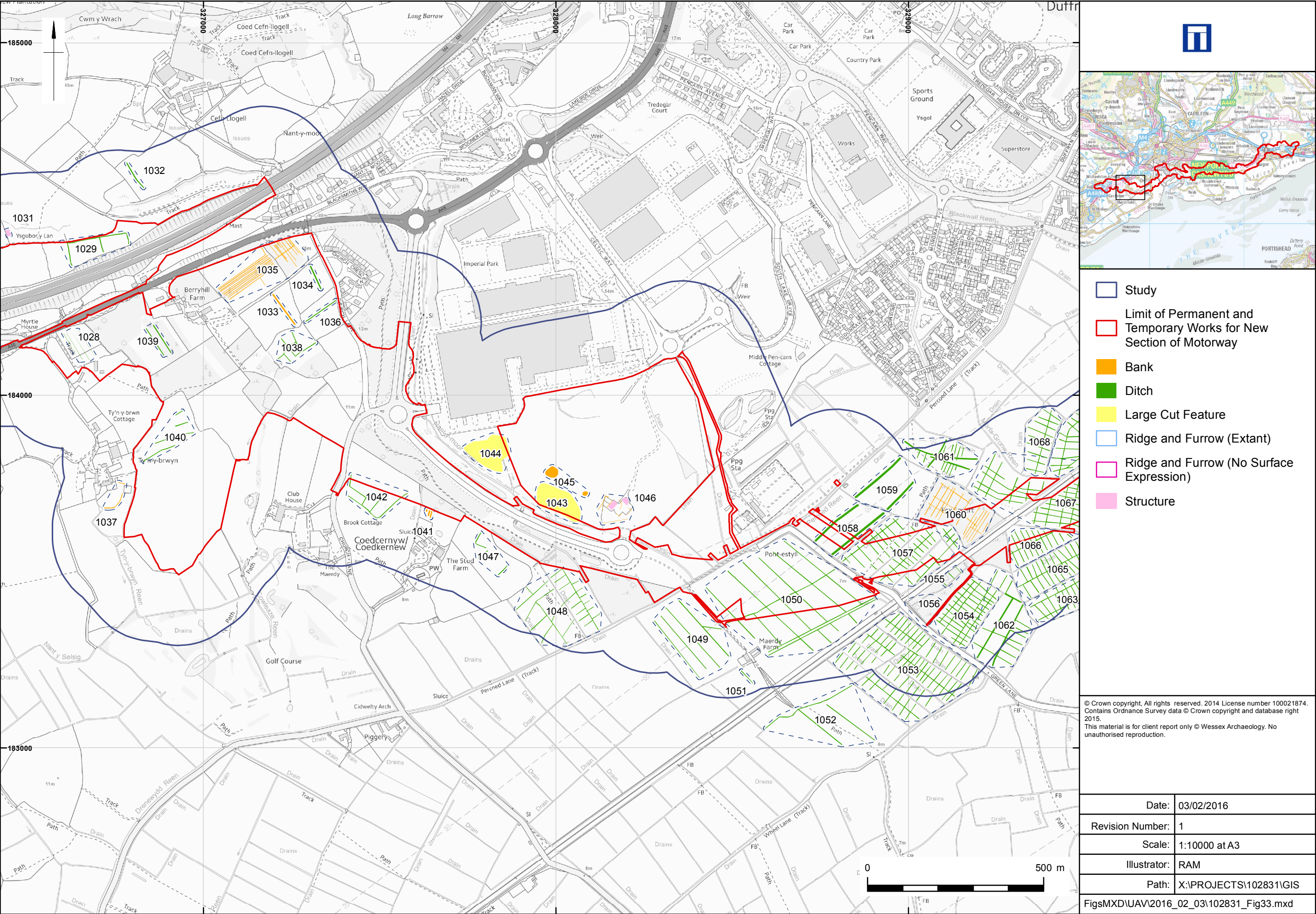
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Transcribed Sites (1)

Figure 32



Transcribed Sites (2)

Figure 33

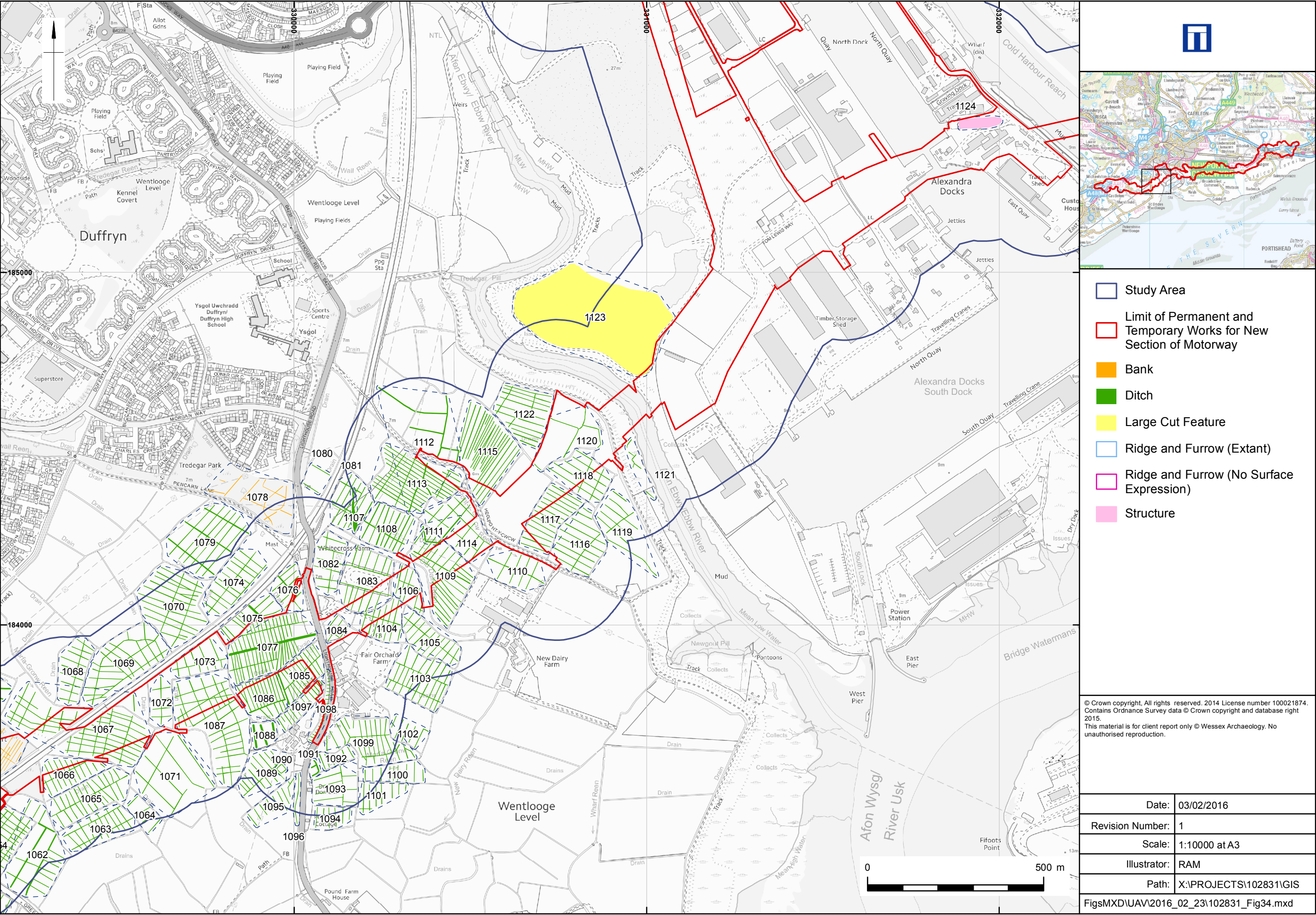
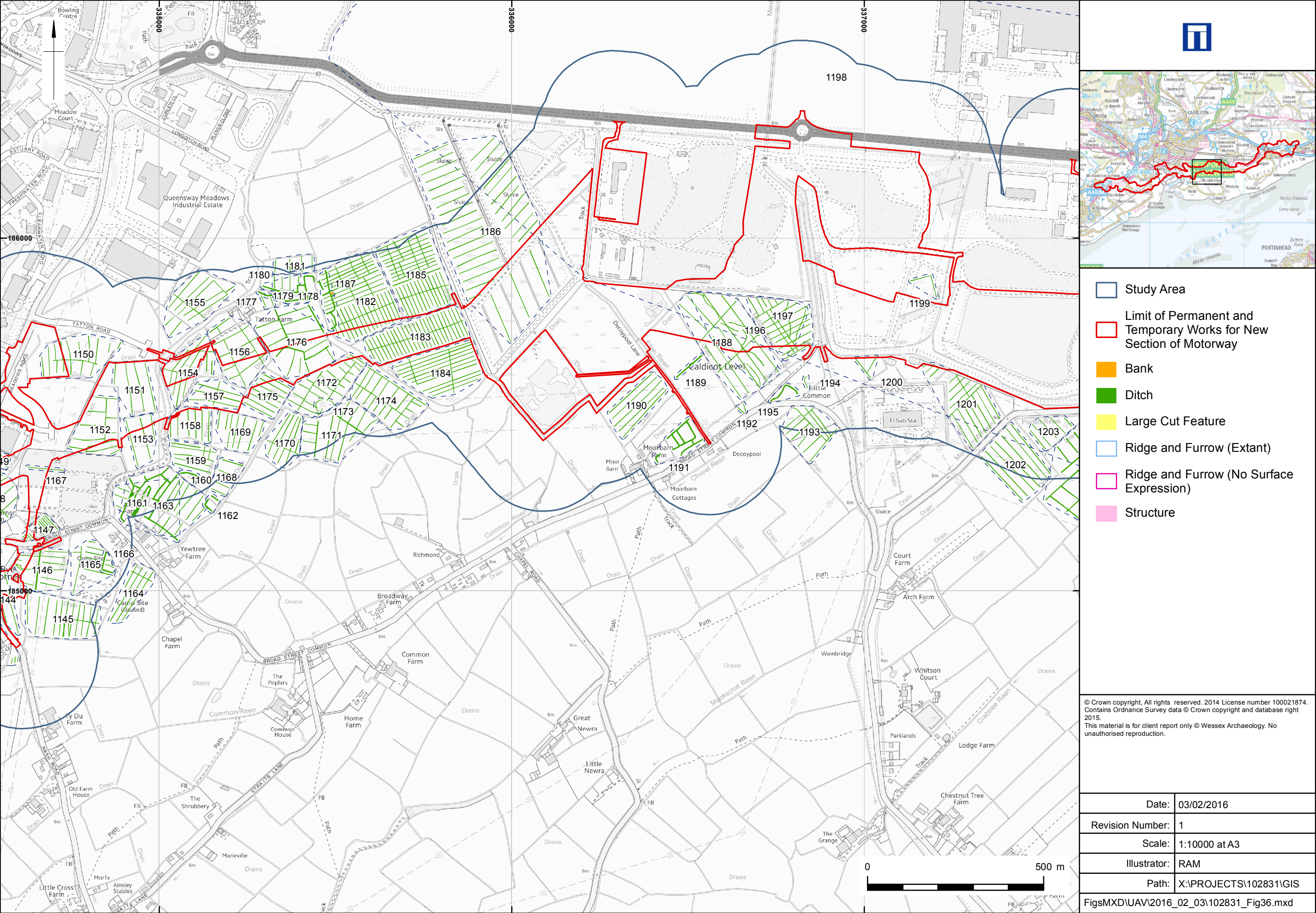
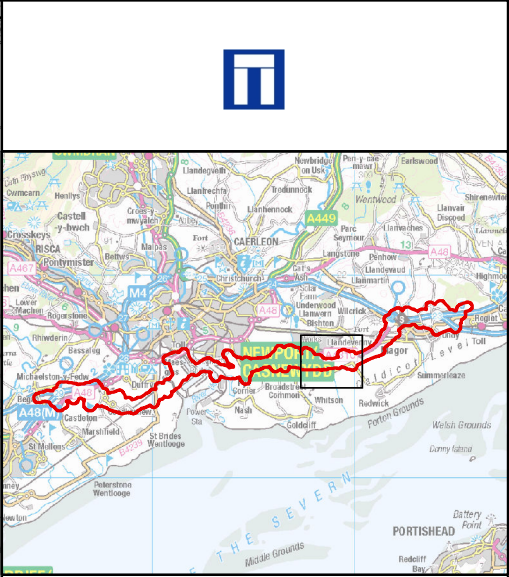
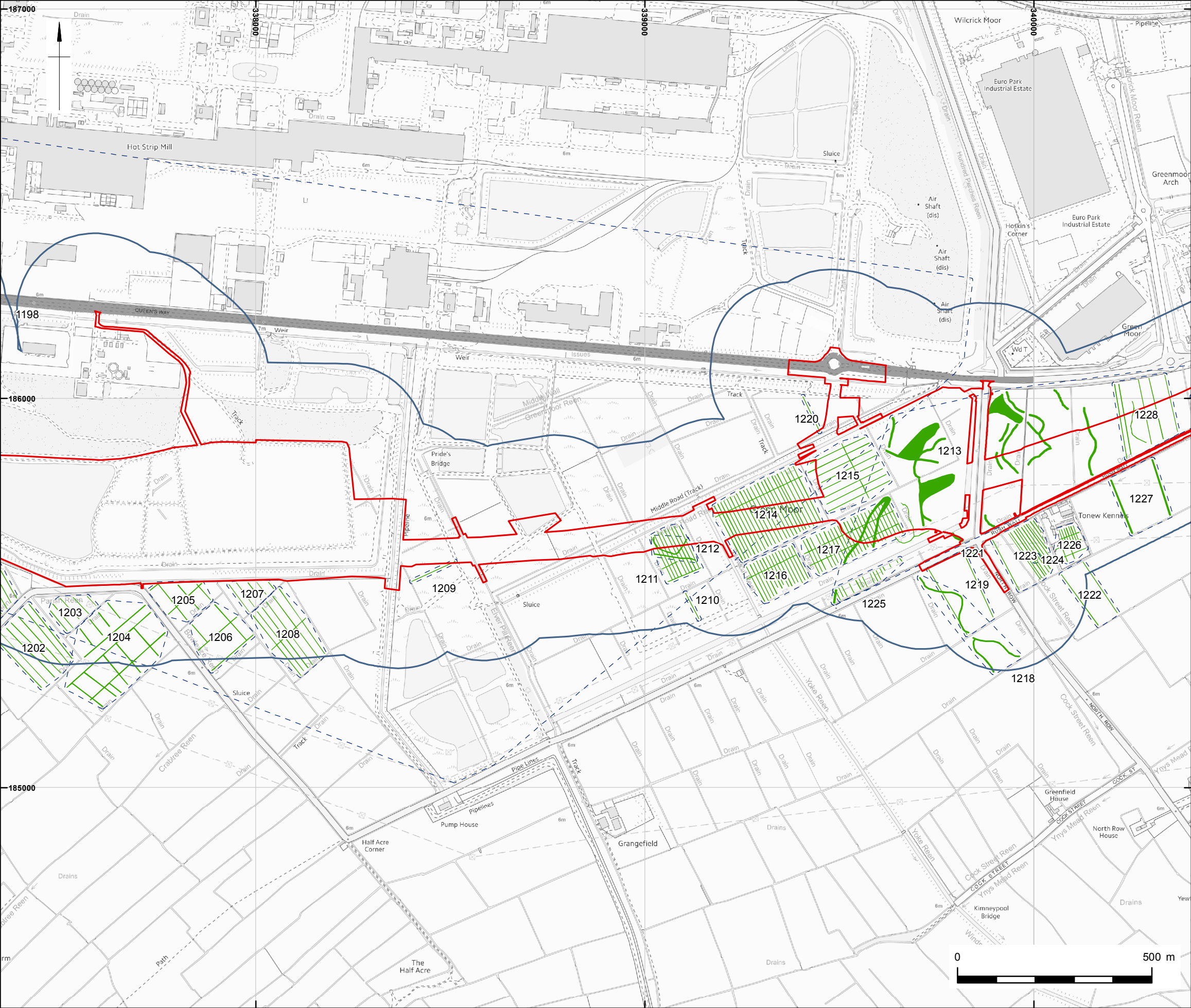


Figure 34



Transcribed Sites (5)

Figure 36



Study Area

Limit of Permanent and Temporary Works for New Section of Motorway

Bank

Ditch

Large Cut Feature

Ridge and Furrow (Extant)

Ridge and Furrow (No Surface Expression)

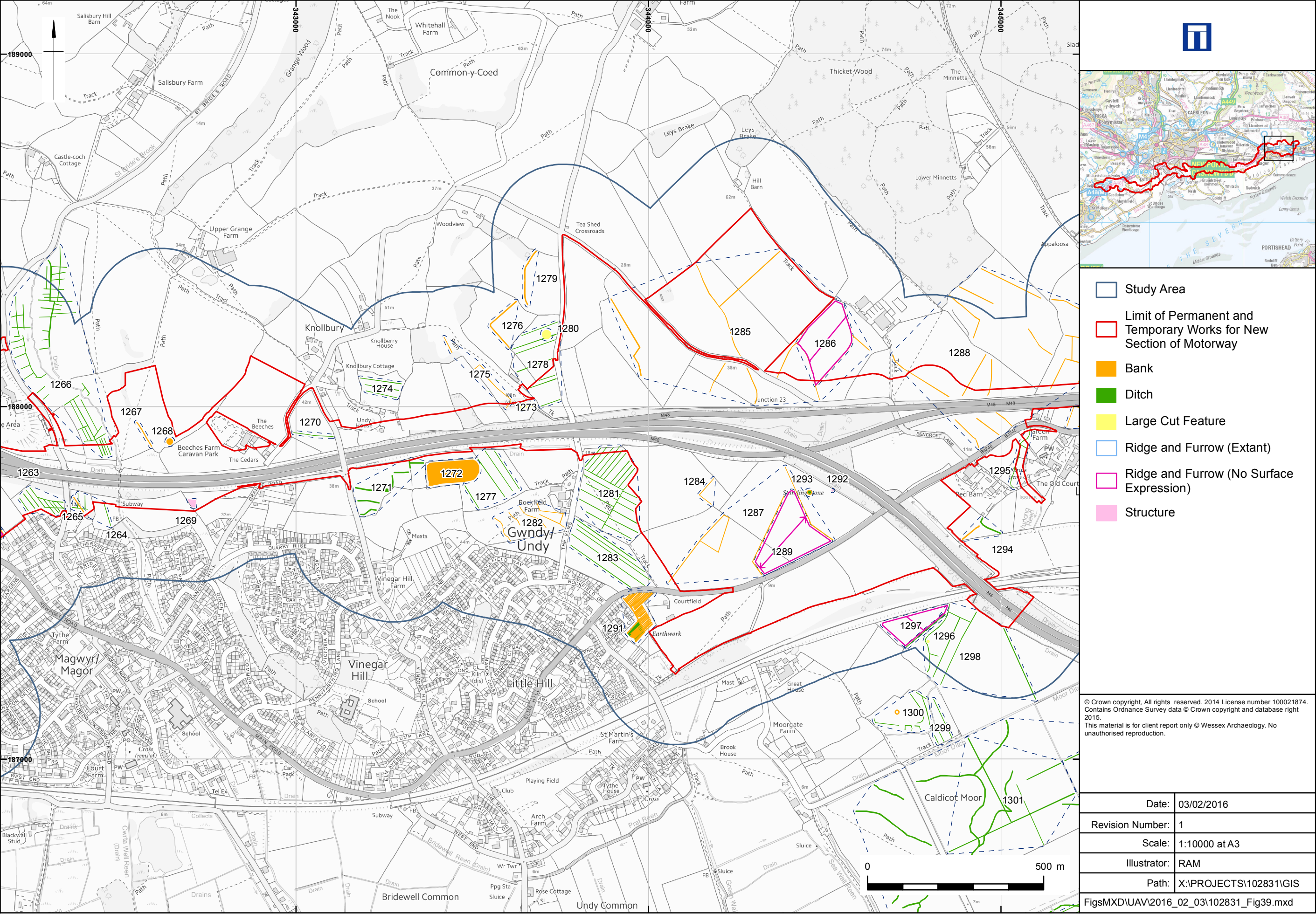
Structure

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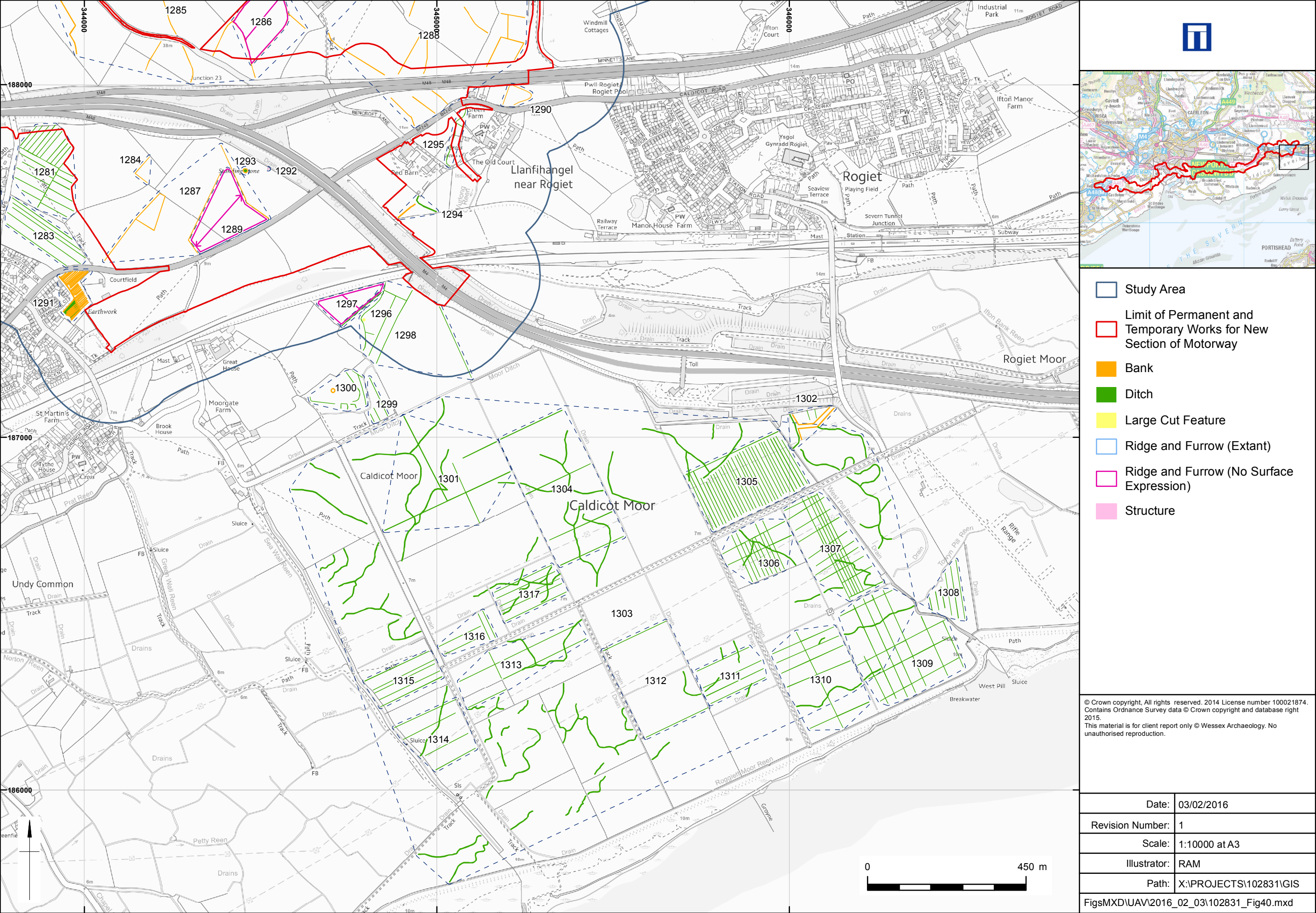
Transcribed Sites (6)

Figure 37



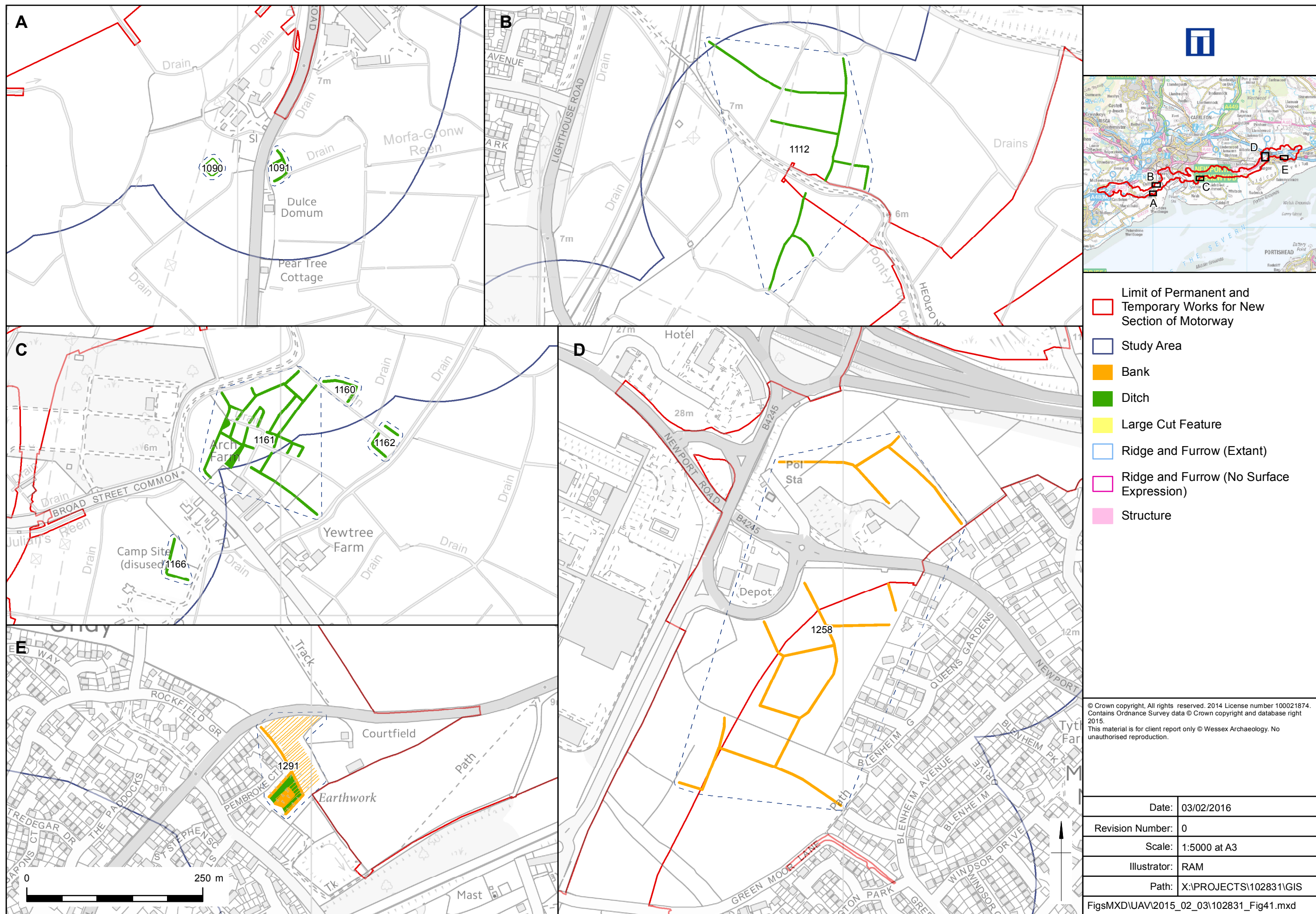
Transcribed Sites (8)

Figure 39



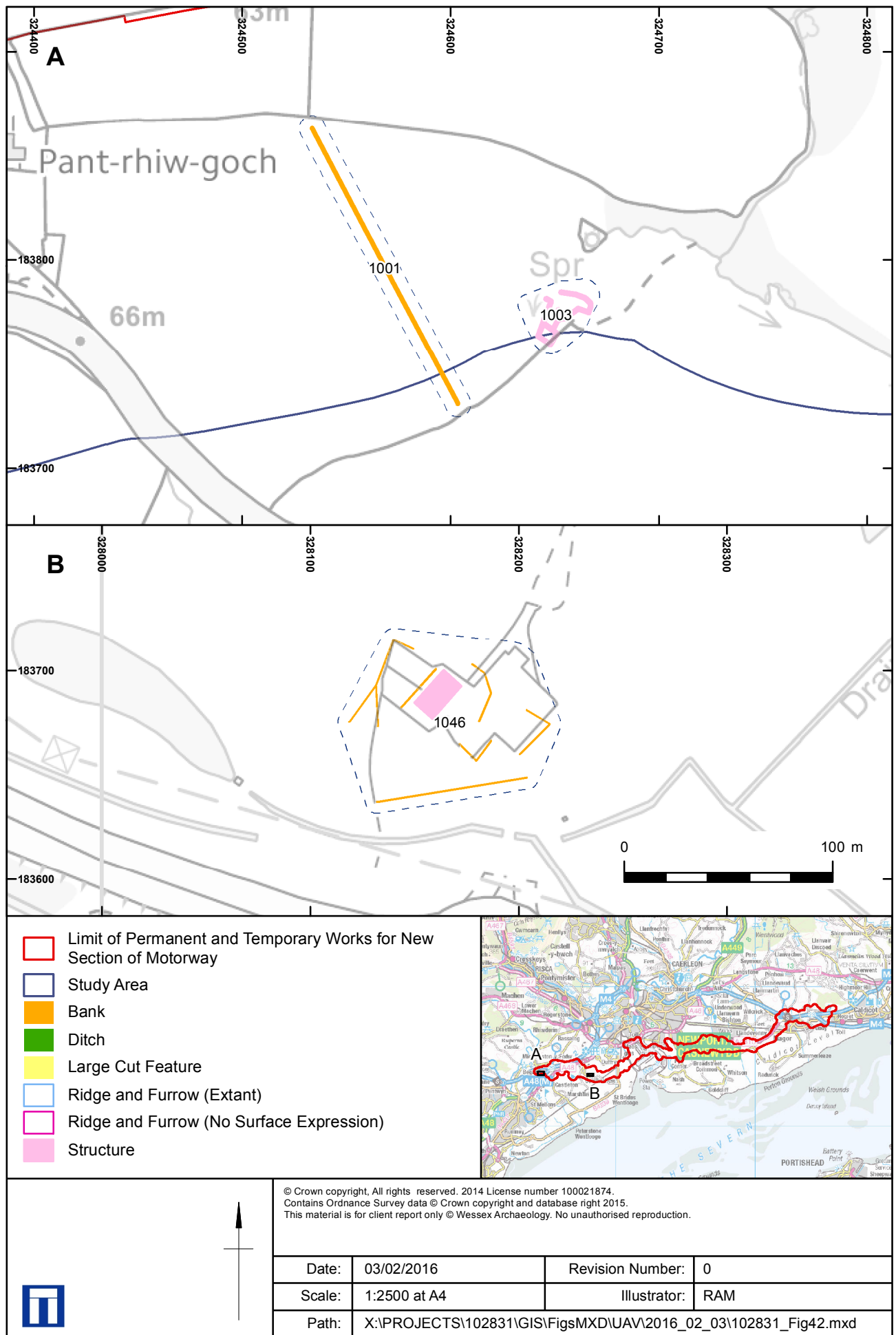
Transcribed Sites (9)

Figure 40



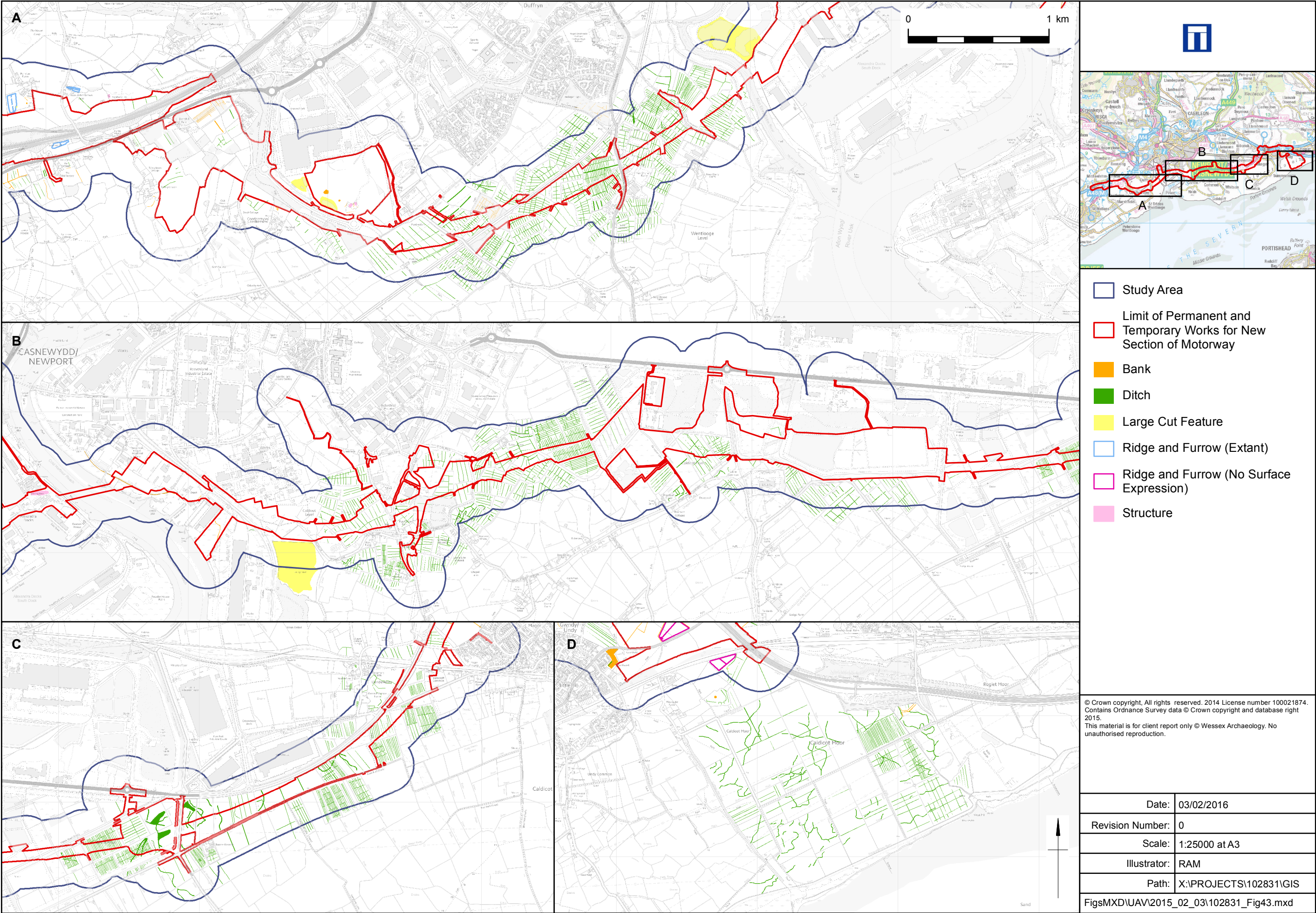
Moated Site Examples

Figure 41



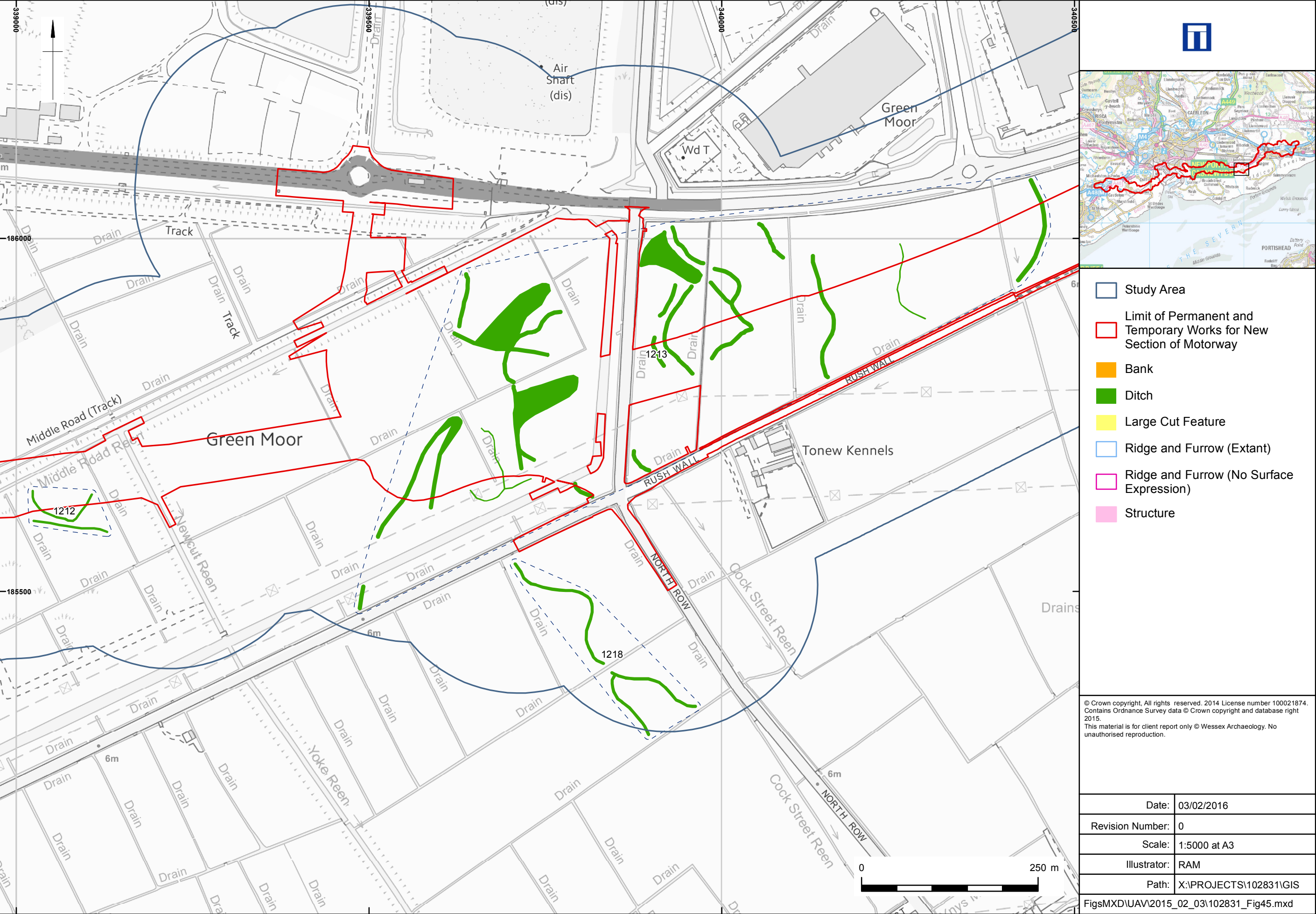
Farmstead Examples

Figure 42



Features on the Gwent Levels

Figure 43



Possible Palaeochannels on Green Moor

Figure 45