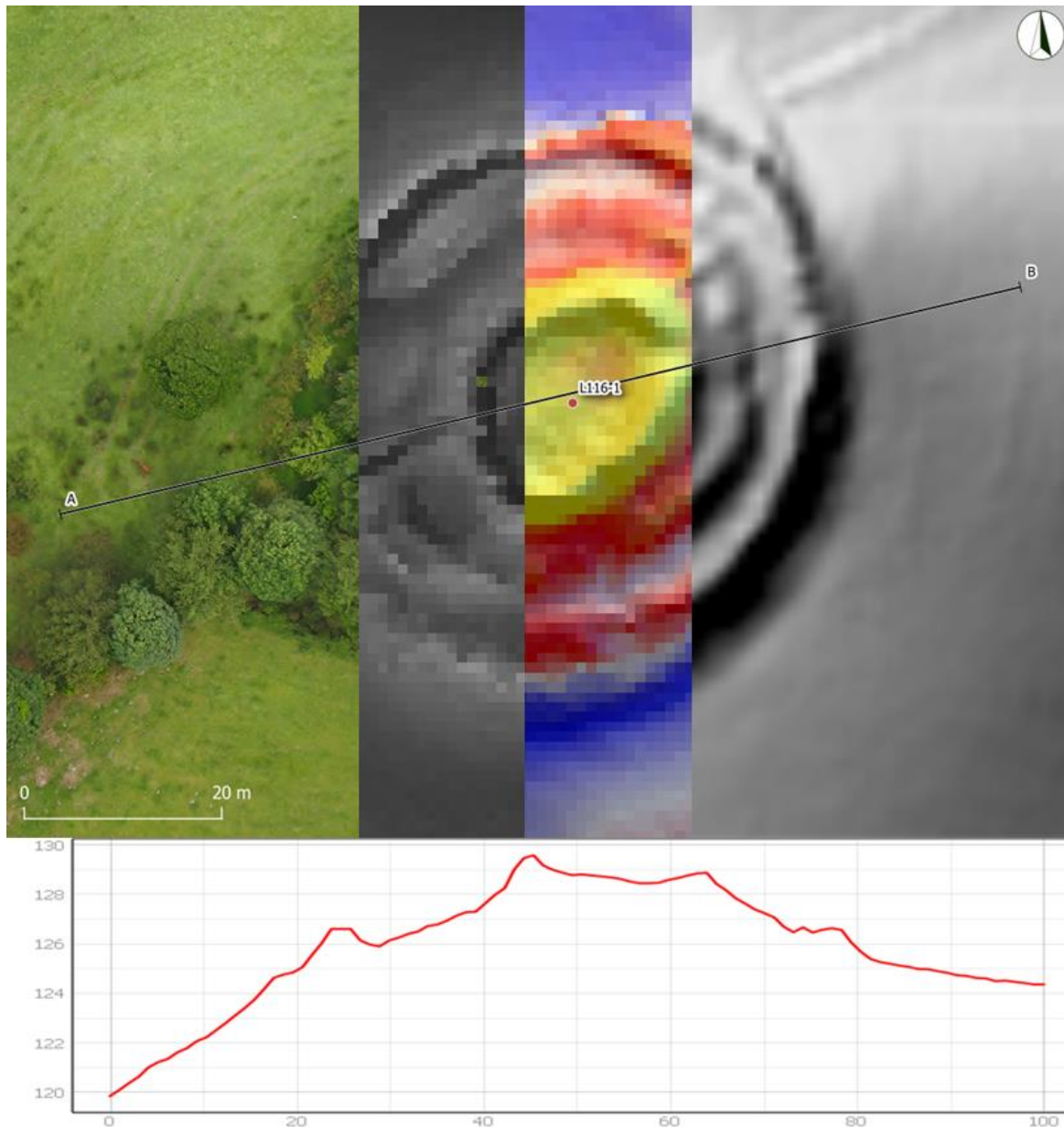


Appendix 17.04a

Archaeological LiDAR Assessment No. 1: Low Resolution LiDAR data

Report for the TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment No 1: Lower Resolution LiDAR data



Prepared for Donegal County Council and TII
By Dr Richard Clutterbuck, AMS
March 2020

Report for the TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment No 1: Lower Resolution LiDAR data

Client Name: Donegal County Council and TII

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Archaeological Assessment No 1: Lower Resolution LiDAR data

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Disclaimer

The results, conclusions and recommendations contained within this report are based on information available at the time of its preparation. Whilst every effort has been made to ensure that all relevant data has been collated, the author and AMS accept no responsibility for omissions and/or inconsistencies that may result from information becoming available subsequent to the report's completion.

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Executive Summary

This is the first of two reports outlining the results of the archaeological assessment of LiDAR data for the Ten-T Priority Route Improvement Project, Co. Donegal. This report analyses 127 tiles of low-resolution (1m) LiDAR data; a second report will analyse high-resolution (0.5m) LiDAR data when it is available. The LiDAR survey area is divided into three sections and contains 242 previously recorded cultural heritage sites of which 71 are listed on the Sites and Monuments Record (SMR).

The study used specialist software called Relief Visualization Toolbox (RVT) to produce three types of visualisation from the LiDAR data: simple local relief, multi-direction hillshading, and sky view factor models. These visualisations were then imported into a project in QGIS and systematically compared with each other and existing geospatial information for recorded cultural heritage, vector data for modern field boundaries and buildings provided by Donegal County Council, satellite images, aerial photographs, and Ordnance Survey of Ireland historical maps provided by Donegal County Council. Each LiDAR site, both previously recorded and newly identified, was digitised as a polygon vector layer and also saved as a point vector layer. Each site was given a unique number, described with dimensions, given location information including coordinates for its centre point, cross-referenced with the SMR, RMP, NIAH, and RPS, and sites identified in the Options Selection report. Notes were also made on whether each LiDAR site appears on historic OSI maps, and whether they intersect the preferred route option. Each LiDAR site was also given a confidence score describing its archaeological significance.

The archaeological assessment has identified 153 LiDAR sites in total, of which 74 are newly identified. This report describes the project area, including its topography, and known cultural heritage sites; it details the methodology for the LiDAR analysis, and describes the results for each of the three sections of the Ten-T Priority Route Improvement Project. The report is fully illustrated with location maps, maps of each section, and graphs and tables detailing the results for each section and grid. Appendices contain the image catalogue of LiDAR sites, the inventory of sites, a selection of profiles for significant sites, and a catalogue of images for each LiDAR grid tile.

The LiDAR visualisations and associated metadata, the image catalogue and vector data generated for this analysis is also provided to the client as a data archive.

All newly identified LiDAR sites can only be considered possible archaeological sites until confirmed by fieldwork.

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Abbreviations and Definitions

Abbreviation	Definition
AMS	Archaeological Management Solutions Ltd
CAD	Computer Aided Design
DSM	Digital Surface Model
DTM	Digital Terrain Model
GIS	Geographical Information Systems
GSD	Ground Sampling Distance
GPS	Global Positioning System
ITM	Irish Transverse Mercator
LiDAR	Light Detection and Ranging
Multi-HS	Multi-direction Hillshade Model (LiDAR visualisation)
NIAH	National Inventory of Architectural Heritage
NMI	National Museum of Ireland
NMS	National Monuments Service, Department of Culture, Heritage and the Gaeltacht
OD	Ordnance Datum
OSI	Ordnance Survey of Ireland
RMP	Record of Monuments and Places
RMSE	Root Mean Square Error
RPS	Record of Protected Structures
RVT	Relief Visualization Toolbox (program)
SVF	Sky View Factor (LiDAR visualisation)
SLRM	Simple Local Relief Model (LiDAR visualisation)
SMR	Sites and Monuments Record
WMS	Web Map Service

Coordinate System

All coordinates are in Irish Transverse Mercator (ITM)

Acknowledgements

Orlaith Egan, TII Archaeologist; David McLaughlin, Donegal County Council.

Introduction

Project Background

Donegal County Council is working to progress the TEN-T Priority Route Improvement Project (Ten-T Project). The preferred route corridor for the scheme has been established. The project will involve the construction of about 34km of new or upgraded road in three sections in east County Donegal: Ballybofey/ Stranorlar; Letterkenny to Manorcunningham; and Manorcunningham to Lifford/ Strabane.

Archaeological Management Solutions Ltd (AMS) have been commissioned by Donegal County Council (The Council) to undertake the archaeological assessment of LiDAR data for the Ten-T Project. The Council are seeking the analysis of two LiDAR datasets: a low-resolution (1m) dataset, and a high-resolution (0.5m) dataset. This report is the first of two and details the results of the low-resolution dataset analysis, consisting of visualising the data as a Simple Local Relief Model (SLRM), Sky-View Factor (SVF) and a Multi-Direction Hillshade Model (Multi-HS).

Report Structure

The purpose of this report is to present the results of the assessment of known and potential archaeological features represented in the low-resolution LiDAR survey of the Ten-T Project. The report sets out the scope of works, a summary description of the receiving environment, the methodology used to carry out the analysis and the results of the LiDAR analysis. It contains an image catalogue of identified sites and a table with details about each identified site. The appendices also contain a catalogue of profiles generated for the most significant archaeological features, as well as a catalogue of images for each grid or tile.

In addition to this report, the project output includes digital data in the form of geotiff raster images of LiDAR visualisations (SLRM, SVF and Multi-HS) for each tile, their corresponding metadata and a geodatabase containing vector files generated for this project.

Scope of Works

The aim of this project is to produce an archaeological assessment of a low-resolution LiDAR data available for the proposed Ten-T Project. This includes analysing the LiDAR survey data to identify, record the morphology, extent and condition of all sites along the proposed route including monuments and sites recorded in the SMR/RMP; sites previously identified as part of the route

selection, design and environmental assessment processes; and new sites identified from analysing the LiDAR data.

The results of this archaeological assessment of LiDAR data will assist with the route selection for the project and help to inform the nature and scope of any future pre-development archaeological investigations (e.g. geophysical survey, test excavation, etc.).

Receiving Environment

Location

The Ten-T project is located in east County Donegal. The area subject to LiDAR assessment is divided into three sections corresponding with the three sections of the Ten_T Project (Figure 1):

- Section 1 LiDAR Study Area – N15/ N13 Ballybofey/ Stranorlar Urban Region covering approximately 9km of new National roadway, with a LiDAR footprint of 2,335.4 Ha;
- Section 2 LiDAR Study Area – N56 / N13 Letterkenny in the west to Manorcunningham in the east, covering approximately 8km of new National roadway, with a LiDAR footprint of 1,541.6 Ha;
- Section 3 LiDAR Study Area – N14 Manorcunningham in the north to Lifford / Strabane / A5 Link in the south covering approximately 17km of new National roadway, with a footprint of 2,975.3 Ha.

Each Section contains a preferred route corridor c. 1km wide (Figure 2; Figure 3; Figure 4; Figure 5):

- Section 1 – the preferred route option is 729 Ha, or 31% of the LiDAR footprint;
- Section 2 – the preferred route option for Section 2 is 423.1 Ha or 27% of the LiDAR footprint;
- Section 3 – the preferred route option for Section 3 is 902.8 Ha, or 30% of the LiDAR footprint.

Topography

East county Donegal contains relatively low-lying gentle hills dominated by the catchments of the Rivers Swilly and Foyle and their tributaries.

The Section 1 LiDAR survey area ranges in elevation from 11m to 175m OD, within the catchments of the Rivers Finn and Deele, both of which flow east to the River Foyle.

The Section 2 LiDAR survey area ranges in elevation from 0m in areas of land reclamation around the River Swilly to 155m OD in the south of the section, and lies within the catchments of the Rivers Swilly, Corranagh Burn, Dooballagh Burn and Corkey, all flowing into Lough Swilly.

The Section 3 LiDAR survey area ranges in elevation from 1m beside the River Foyle to 137m on the lower slopes of Mongorry Hill and lies within the catchments of the Corkey River which flow north into Lough Swilly and the Swilly Burn, the Deele River and the River Foyle to the south.

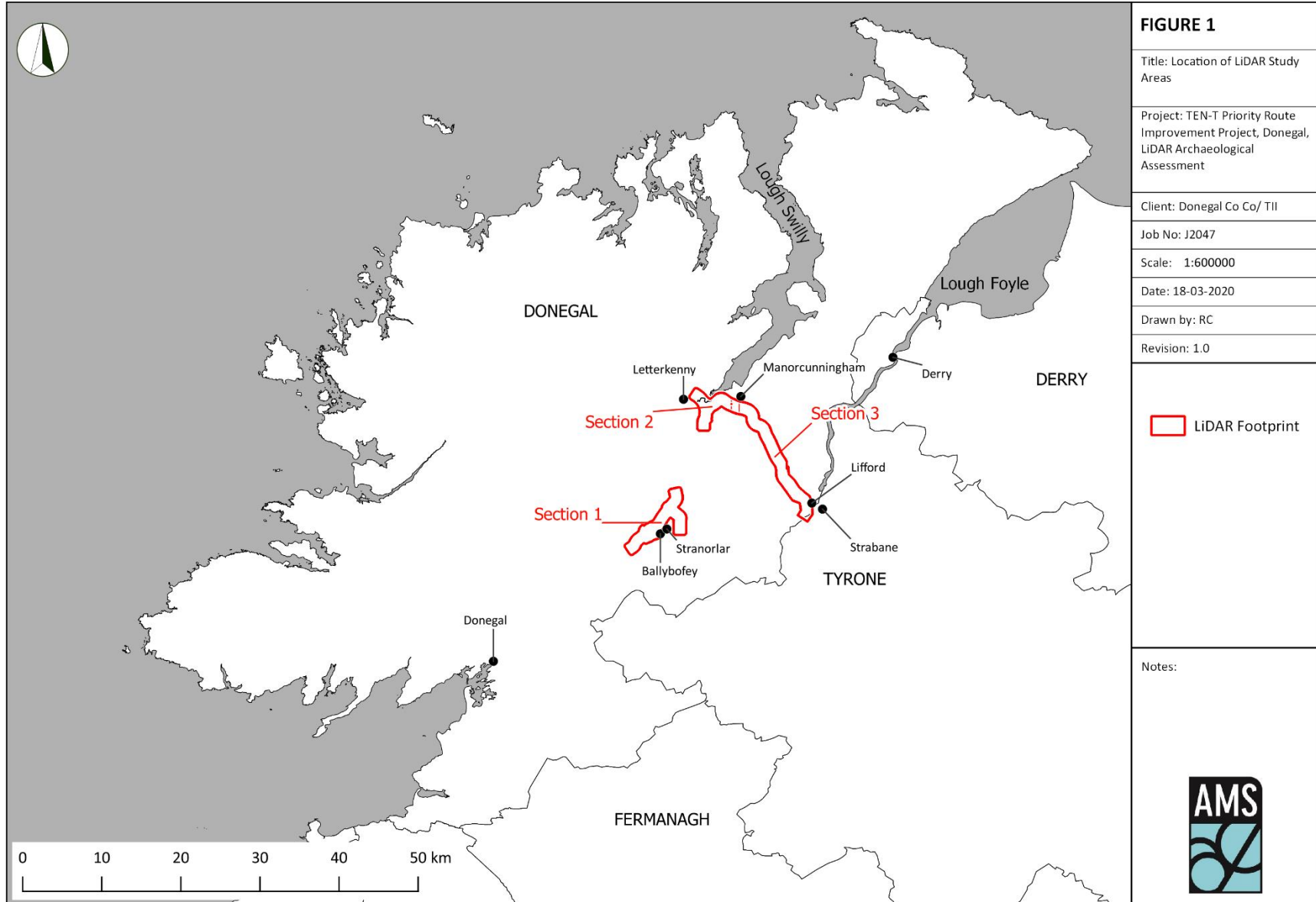


Figure 1: Location of LiDAR Study Areas

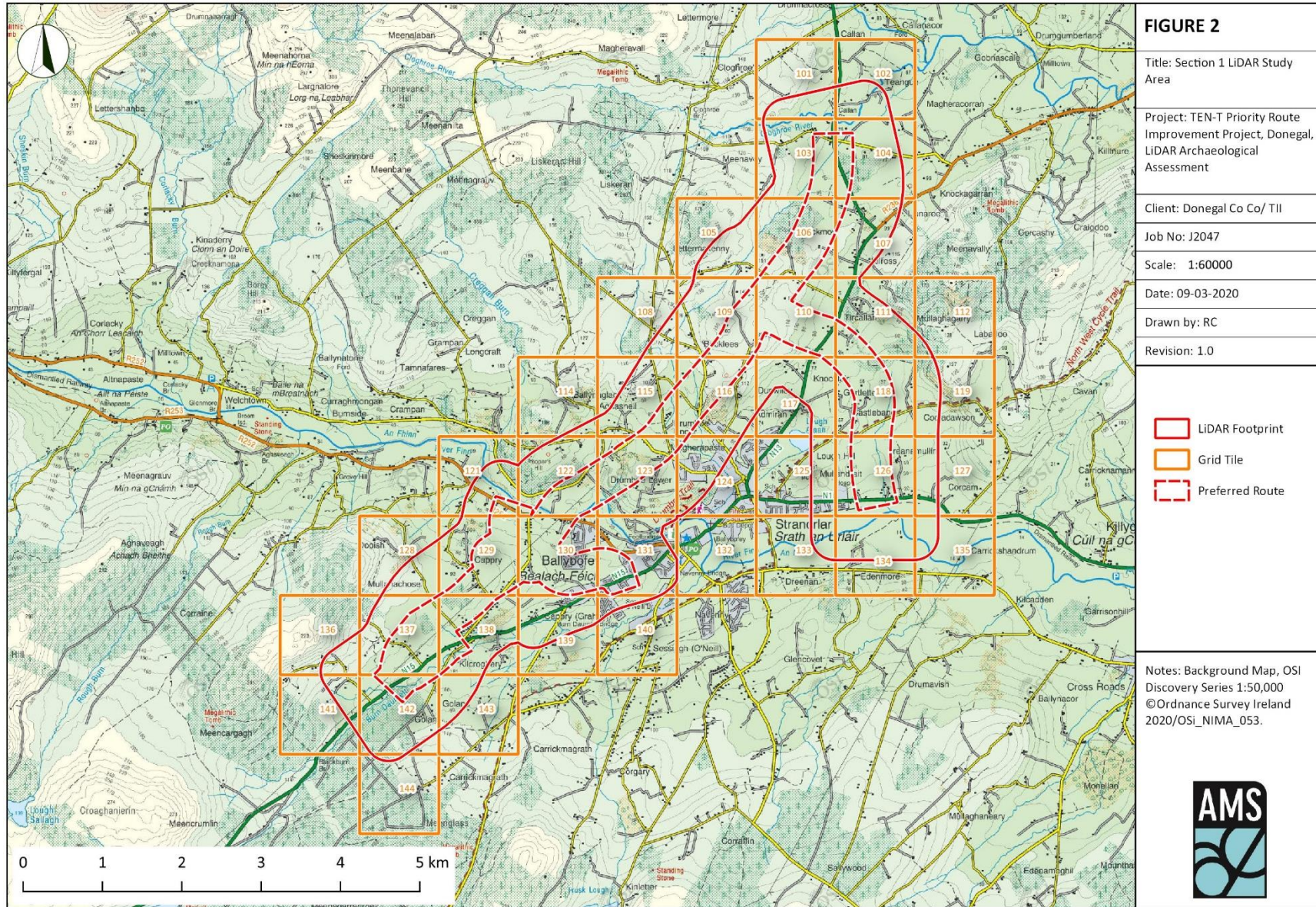


Figure 2: Section 1 survey location and grids

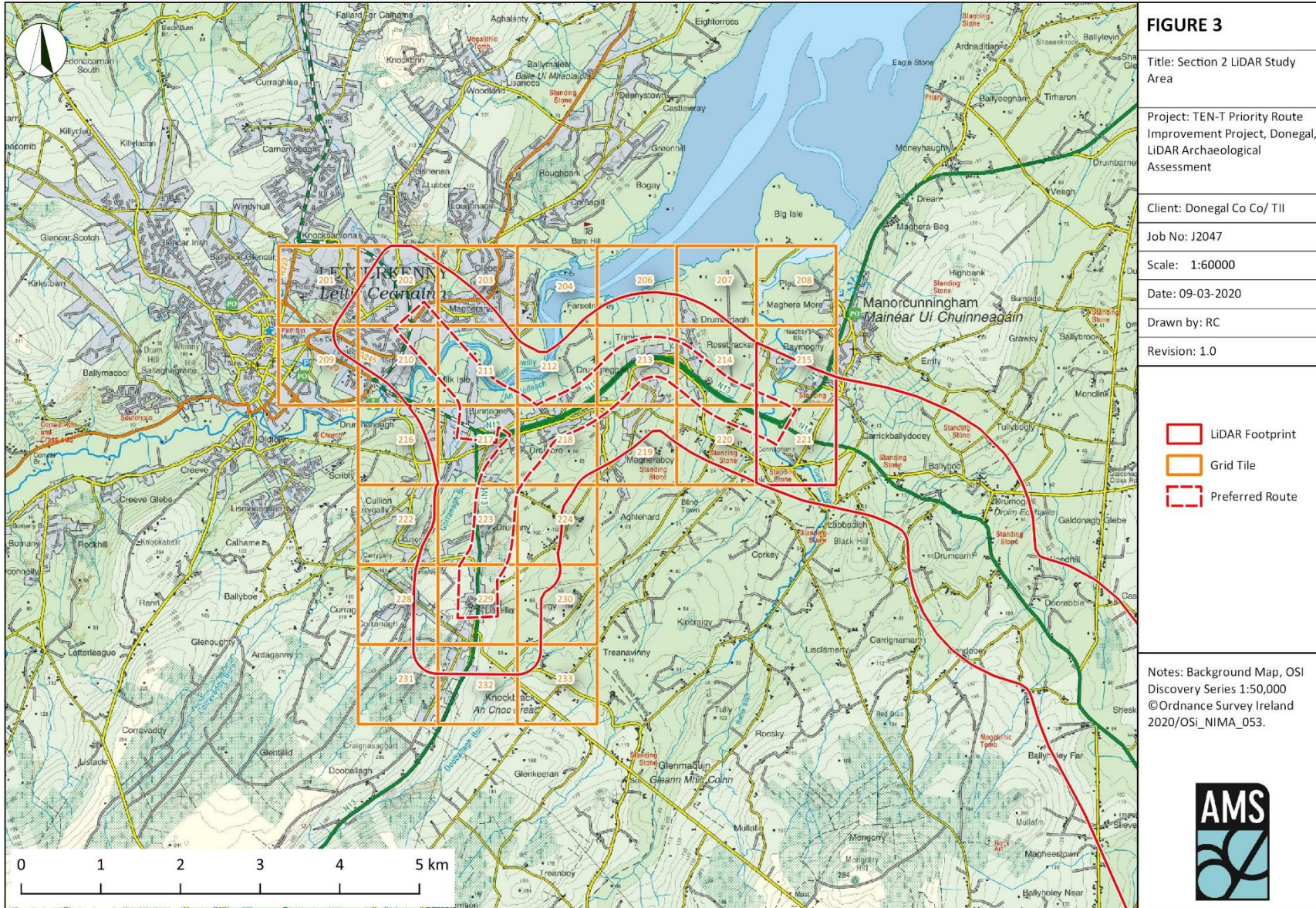


Figure 3: Section 2 survey location and grids

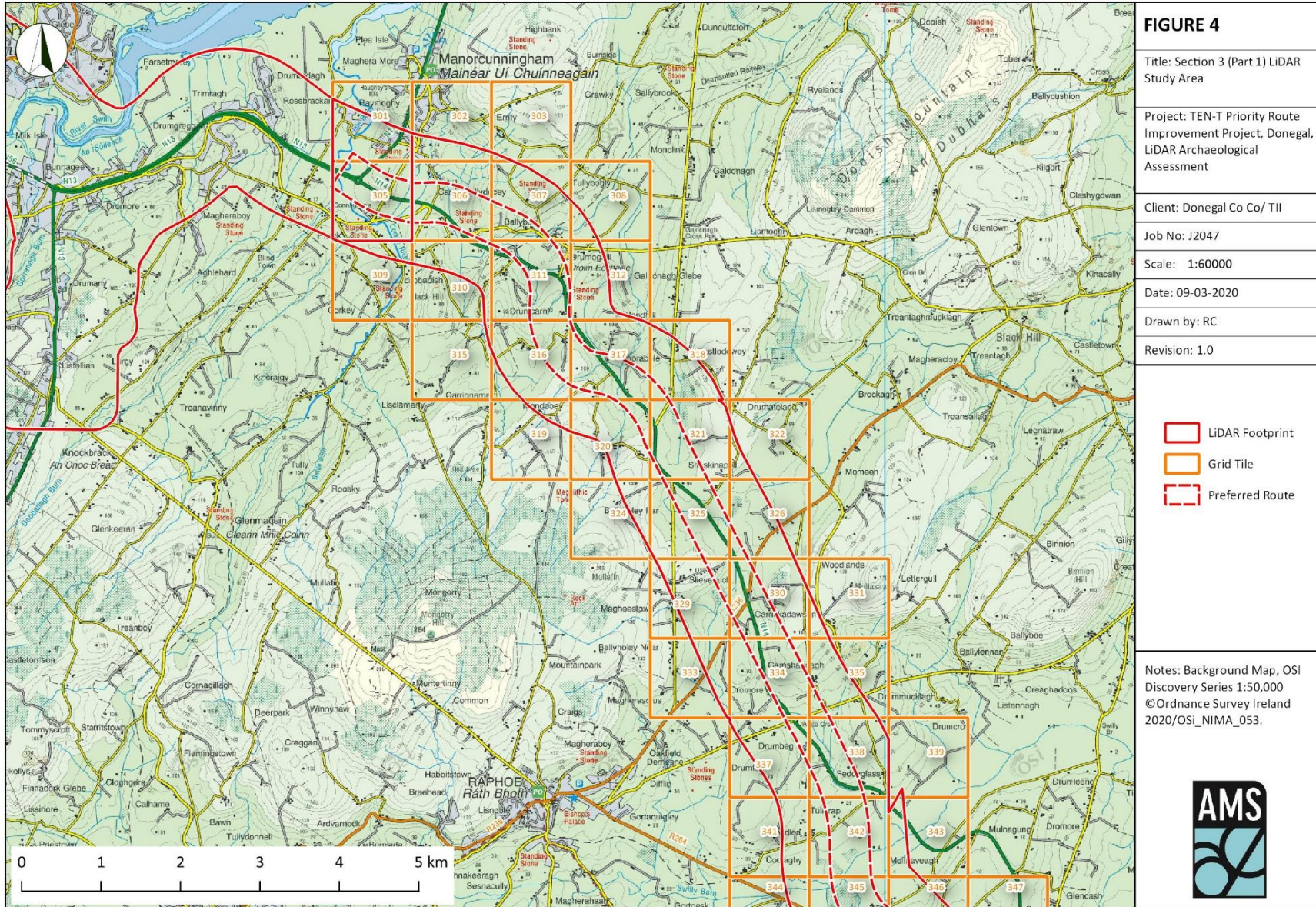


FIGURE 4

Title: Section 3 (Part 1) LiDAR Study Area

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:60000

Date: 09-03-2020

Drawn by: RC

Revision: 1.0

- LiDAR Footprint
- Grid Tile
- Preferred Route

Notes: Background Map, OSI Discovery Series 1:50,000 © Ordnance Survey Ireland 2020/OSI_NIMA_053.



Figure 4: Section 3 survey location and grids (1 of 2)

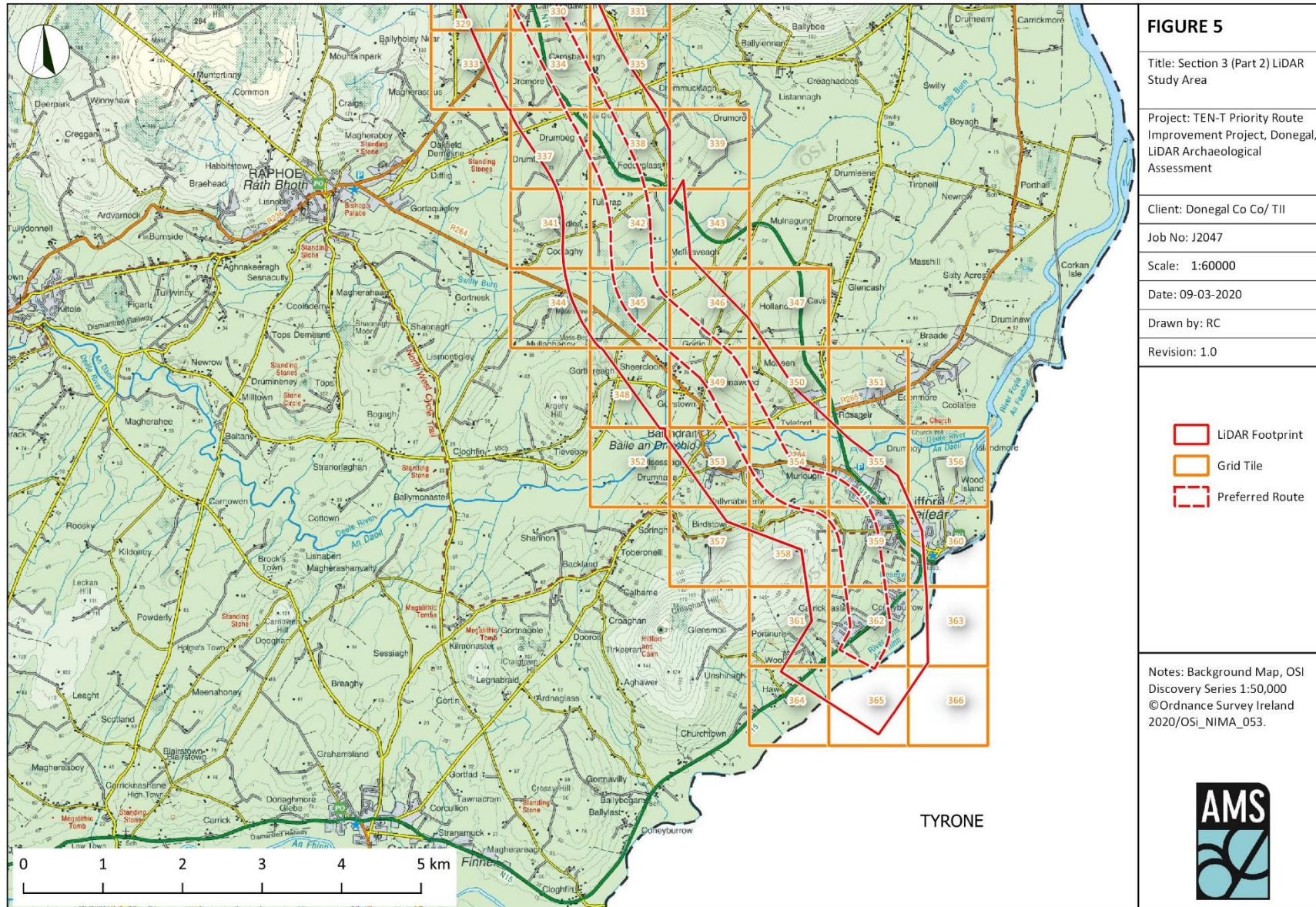


FIGURE 5

Title: Section 3 (Part 2) LiDAR Study Area

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:60000

Date: 09-03-2020

Drawn by: RC

Revision: 1.0

- LiDAR Footprint
- Grid Tile
- Preferred Route

Notes: Background Map, OSI Discovery Series 1:50,000 ©Ordnance Survey Ireland 2020/OSI_NIMA_053.



Figure 5: Section 3 survey location and grids (2 of 2)

Soils

Soils in the Section 1 LiDAR footprint consist primarily of mineral soils (80%), with the remaining being alluviums (8%), podsolised gley soils (5%), blanket peats (4%) and miscellaneous soils (i.e. made ground, 3%; Figure 6).

Soils in the Section 2 LiDAR footprint consist primarily of deep mineral soils (64%) and alluviums (22%), with the remaining being miscellaneous soils (i.e. made ground, 11%), podsolised soils, shallow well-drained mineral and blanket peats (each 1%; Figure 7).

Soils in the Section 3 LiDAR footprint consist primarily of mineral soils (82%) and alluviums (15%), with the remaining consisting of miscellaneous soils (made ground, 2%), and podsolised gley soils (1%; Figure 8 & Figure 9).

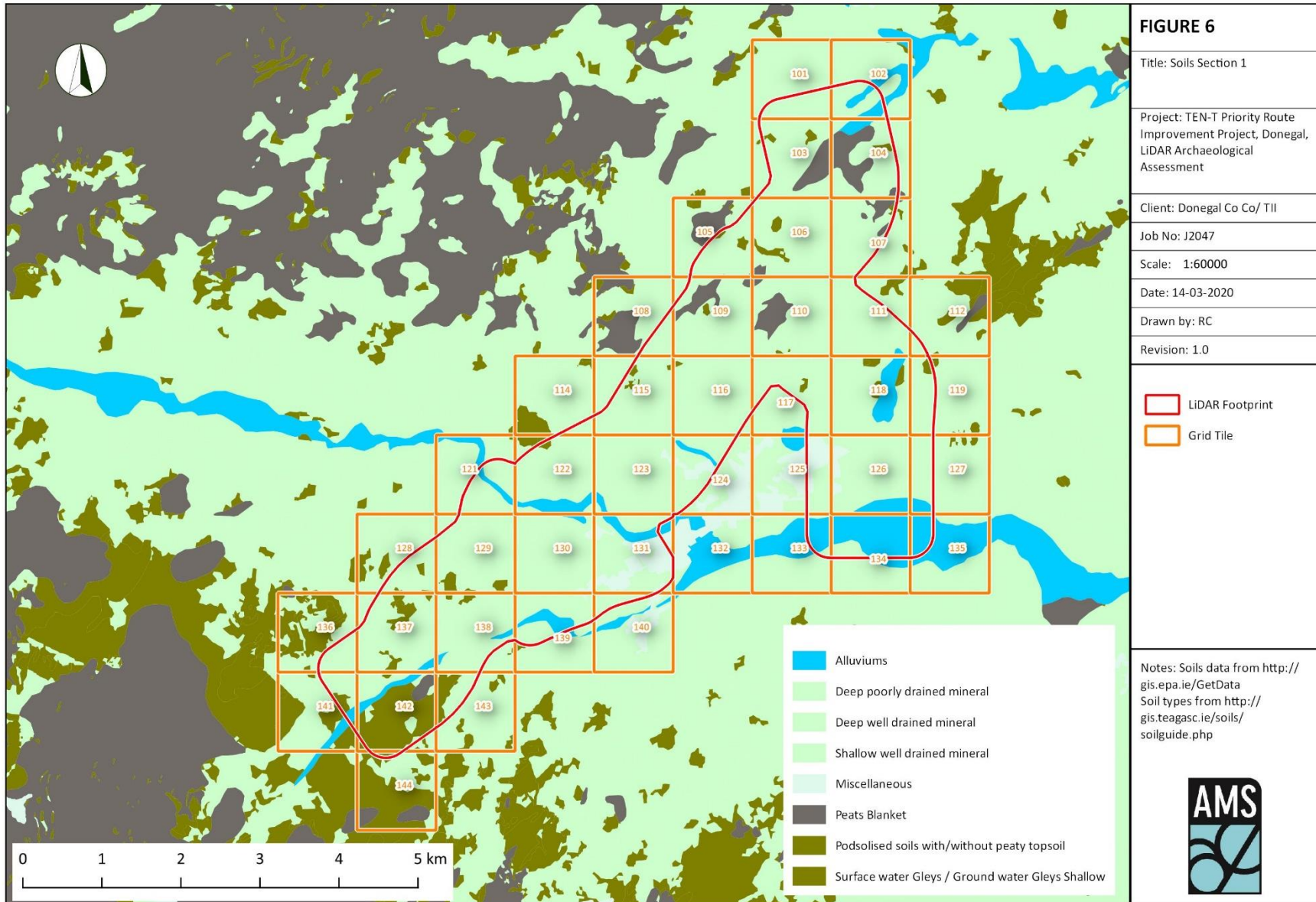


Figure 6: Soils in Section 1

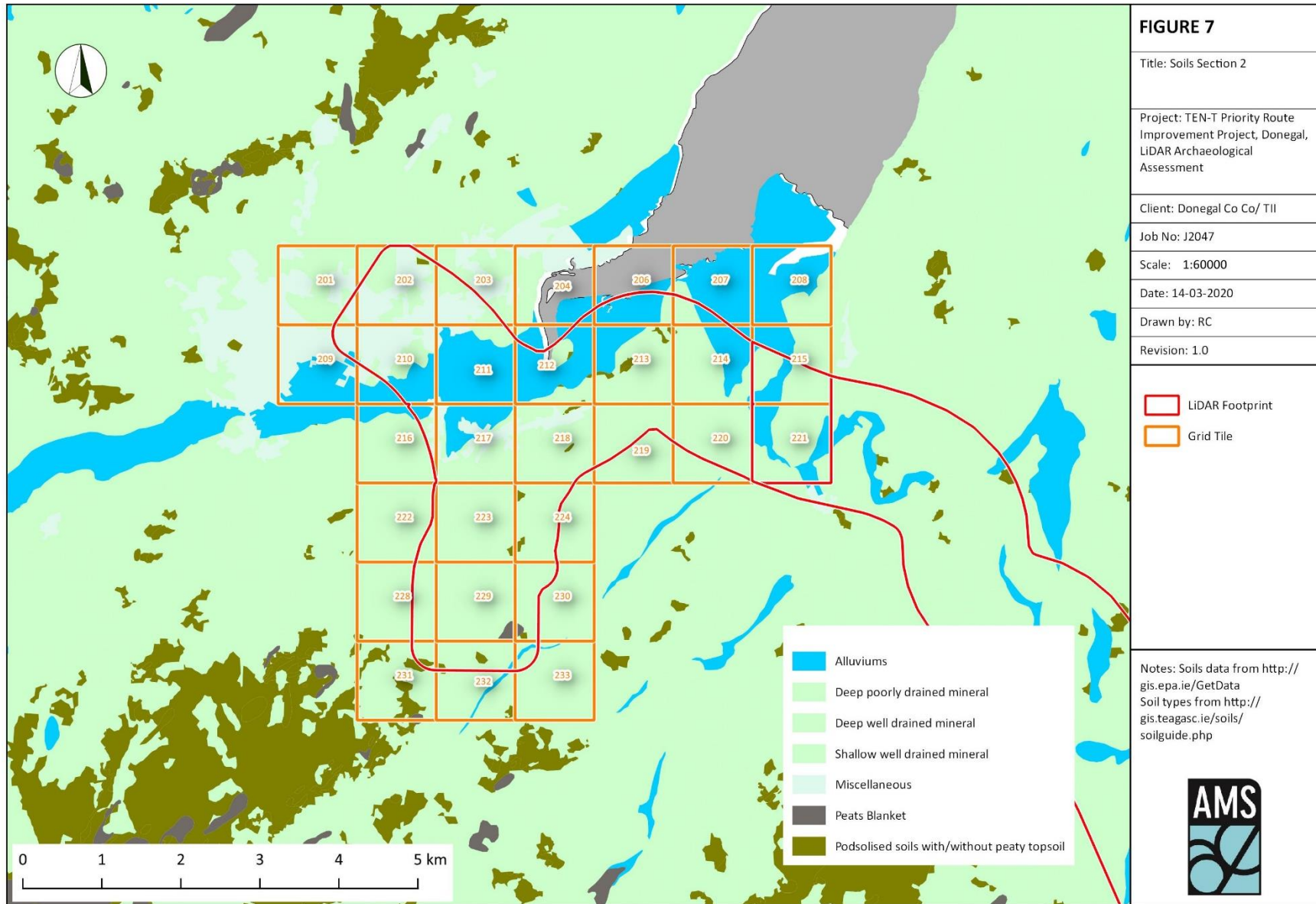


Figure 7: Soils in Section 2

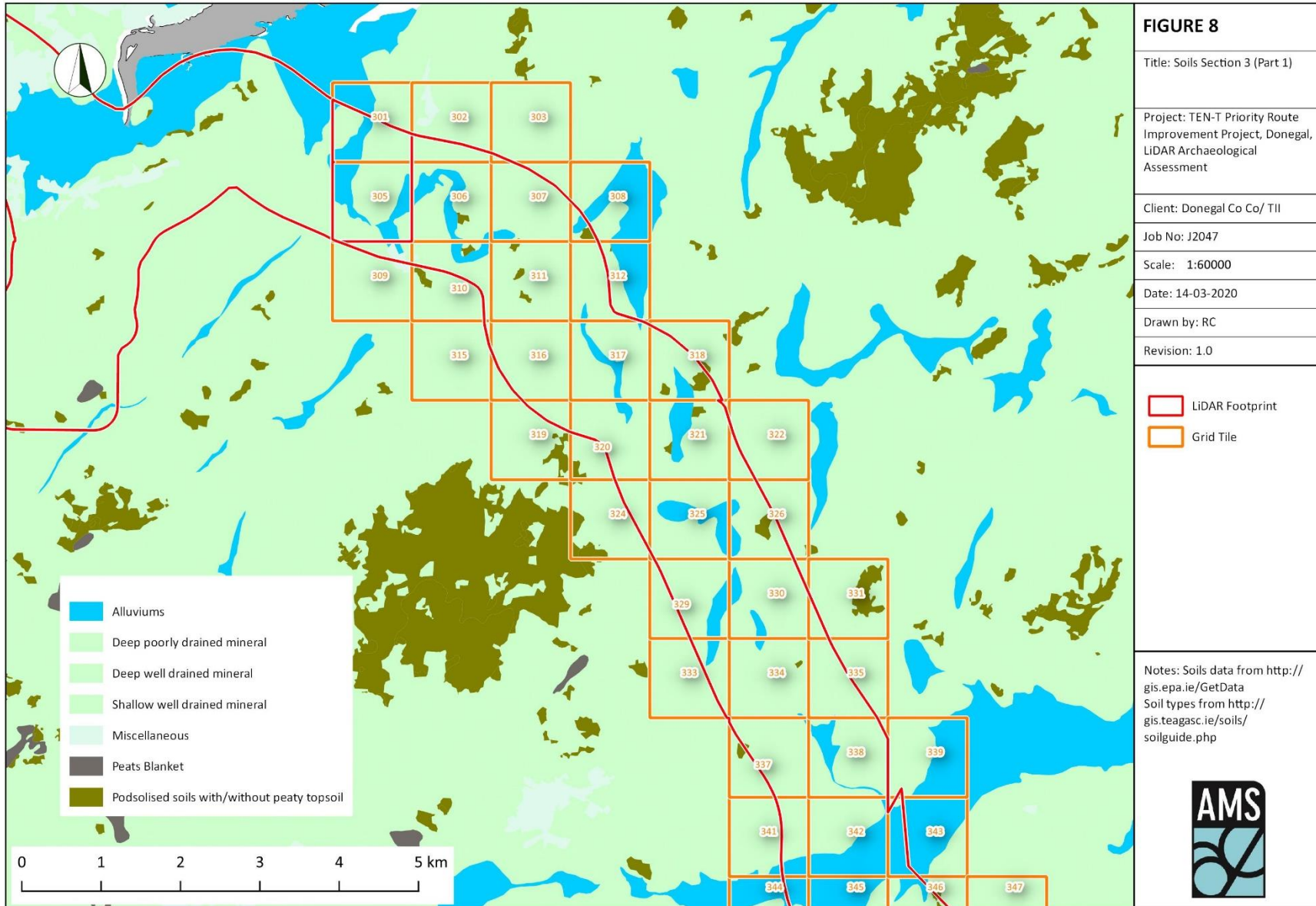


Figure 8: Soils in Section 3 (1 of 2)

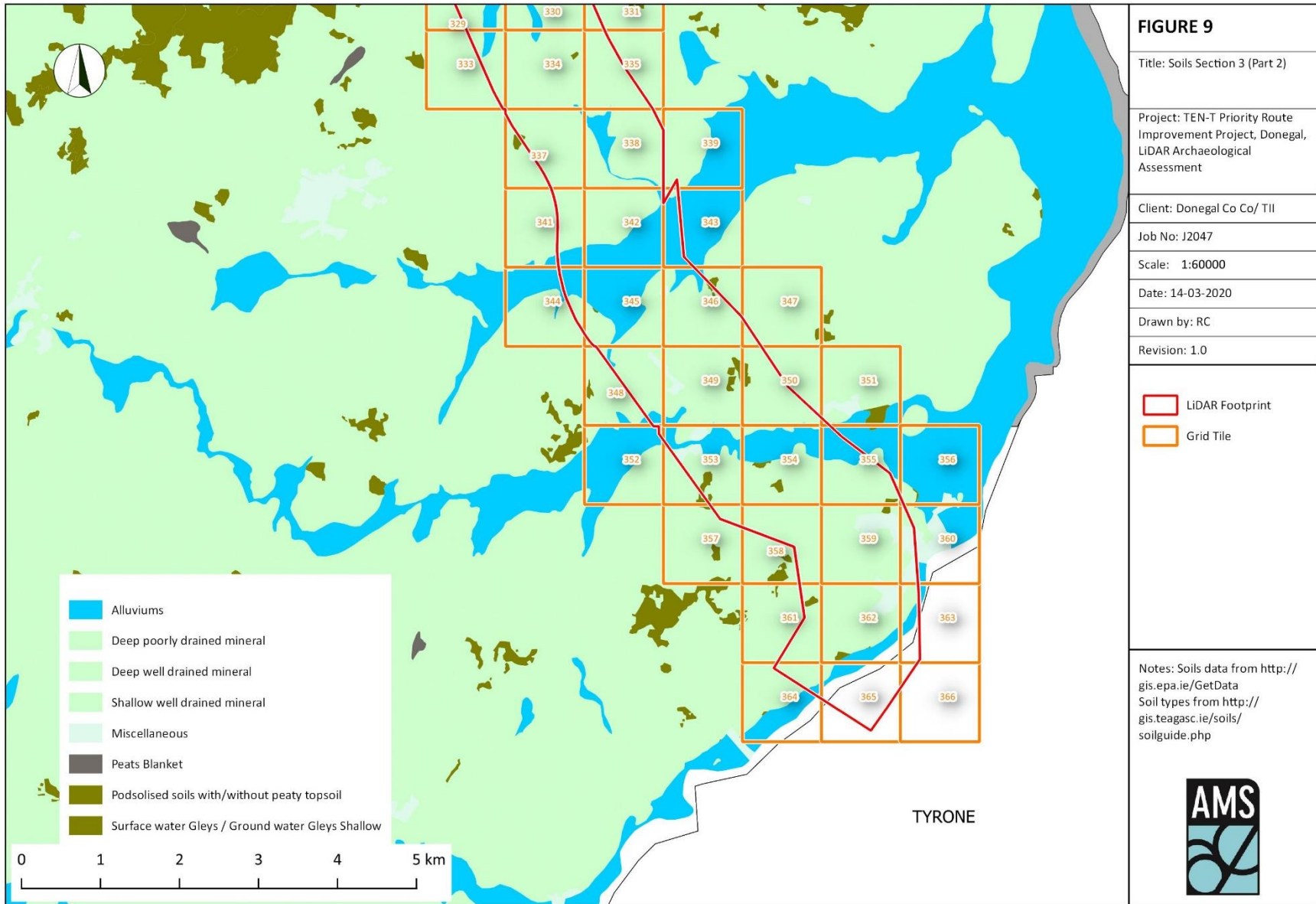


Figure 9: Soils in Section 3 (2 of 2)

Townlands, Parishes & Baronies

The Ten-T Project LiDAR study Sections 1, 2 and 3 intersect with 145 townlands: 142 in Co. Donegal and three in Co. Tyrone.¹ These townlands are located within 11 civil parishes and four baronies.

Section 1 LiDAR Study area intersects 44 townlands in three civil parishes, and one barony (Table 1; Figure 10).

Section 2 LiDAR Study area intersects 34 townlands in four civil parishes, in two baronies (Table 2; Figure 11).

Section 3 LiDAR Study area intersects 74 townlands, three of which are located in Co. Tyrone, in six civil parishes and two baronies (Table 3; Figure 12 & Figure 13).

Table 1: Townlands intersected by Section 1 LiDAR study area

Townland	Civil Parish	Barony
Admiran	Stranorlar	Raphoe South
Aghasheil	Stranorlar	Raphoe South
Backlees	Stranorlar	Raphoe South
Ballybofey	Stranorlar	Raphoe South
Ballynaglack	Stranorlar	Raphoe South
Callan	Convoy	Raphoe South
Cappry	Stranorlar	Raphoe South
Cappry (Graham)	Stranorlar	Raphoe South
Carn	Donaghmore	Raphoe South
Carrickmagrath	Donaghmore	Raphoe South
Castlebane	Stranorlar	Raphoe South
Cavan Lower	Donaghmore	Raphoe South
Cloghroe	Convoy	Raphoe South
Corcam	Stranorlar	Raphoe South
Creggan	Stranorlar	Raphoe South
Dooish	Stranorlar	Raphoe South
Dreenan	Donaghmore	Raphoe South
Drumboe Lower	Stranorlar	Raphoe South
Drumboe Upper	Stranorlar	Raphoe South
Dunwiley	Stranorlar	Raphoe South

¹ Townland geospatial layer was downloaded from townlands.ie, and cross-referenced with the OSI's list of townlands downloaded from data.gov.ie.

Edenmore	Donaghmore	Raphoe South
Glebe	Stranorlar	Raphoe South
Goland	Donaghmore	Raphoe South
Gortletteragh	Stranorlar	Raphoe South
Greenhills	Stranorlar	Raphoe South
Ironworks	Stranorlar	Raphoe South
Kilross	Stranorlar	Raphoe South
Knockfair	Stranorlar	Raphoe South
Lettermakenny	Stranorlar	Raphoe South
Lisnaree	Stranorlar	Raphoe South
Lisnaree	Convoy	Raphoe South
Lough Hill	Stranorlar	Raphoe South
Magheracorrán	Convoy	Raphoe South
Magherapaste	Stranorlar	Raphoe South
Meenavoy	Stranorlar	Raphoe South
Meencargagh	Stranorlar	Raphoe South
Mullaghagarry	Stranorlar	Raphoe South
Mullanachose	Stranorlar	Raphoe South
Mullandrait	Stranorlar	Raphoe South
Stranorlar	Stranorlar	Raphoe South
Teangue	Stranorlar	Raphoe South
Teevickmoy	Stranorlar	Raphoe South
Tircallan	Stranorlar	Raphoe South
Treanamullin	Stranorlar	Raphoe South

Table 2: Townlands intersected by Section 2 LiDAR study area

Townland	Civil Parish	Barony
Ballyboe Lisnenan	Aghanunshin	Kilmacrenan
Ballyraine	Conwal	Kilmacrenan
Bunnagee	Leck	Raphoe North
Carnamogagh Lower	Conwal	Kilmacrenan
Coaghmill	Leck	Raphoe North
Corkey	Raymoghy	Raphoe North
Corranagh	Leck	Raphoe North
Cullion	Leck	Raphoe North

Townland	Civil Parish	Barony
Dromore	Leck	Raphoe North
Drumany	Leck	Raphoe North
Drumardagh	Leck	Raphoe North
Drumgreggan	Leck	Raphoe North
Drumnahoagh	Leck	Raphoe North
Farsetmore	Leck	Raphoe North
Fycorranagh	Leck	Raphoe North
Glebe	Raymoghly	Raphoe North
Glebe	Aghanunshin	Kilmacrenan
Gortlee	Conwal	Kilmacrenan
Kiltyoy	Aghanunshin	Kilmacrenan
Knockbrack	Leck	Raphoe North
Labbadish	Raymoghly	Raphoe North
Letterkenny	Conwal	Kilmacrenan
Lisnenan	Conwal	Kilmacrenan
Listellian	Leck	Raphoe North
Lurgy	Leck	Raphoe North
Lurgybrack	Leck	Raphoe North
Magheraboy	Leck	Raphoe North
Magheranan	Aghanunshin	Kilmacrenan
Manorcunningham Churchland	Raymoghly	Raphoe North
Milk Isle	Conwal	Kilmacrenan
Pluck	Leck	Raphoe North
Raymoghly	Raymoghly	Raphoe North
Rossbrackan	Leck	Raphoe North
Trimragh	Leck	Raphoe North

Table 3: Townlands intersected by Section 3 LiDAR study area

Townland	Civil Parish	Barony
Ballindrait	Clonleigh	Raphoe North
Ballyboe	Raymoghly	Raphoe North
Ballyholey Far	Raphoe	Raphoe North
Ballyholey Near	Raphoe	Raphoe North
Ballynabreen	Clonleigh	Raphoe North

Townland	Civil Parish	Barony
Birdstown	Clonleigh	Raphoe North
Broadlea	Raphoe	Raphoe North
Carnshannagh	Taughboyne	Raphoe North
Carrickadawson	Taughboyne	Raphoe North
Carrickballydooley	Raymoghly	Raphoe North
Carrickballydooley Glebe	Raymoghly	Raphoe North
Carricklee (Co. Tyrone)	Urney	Strabane Lower
Carricknamart	Raymoghly	Raphoe North
Carricknaslate	Clonleigh	Raphoe North
Castledowey	Raymoghly	Raphoe North
Castletown (Co. Tyrone)	Urney	Strabane Lower
Cavanacor	Clonleigh	Raphoe North
Coneyburrow	Clonleigh	Raphoe North
Coolaghy	Raphoe	Raphoe North
Corkey	Raymoghly	Raphoe North
Curraghalane	Clonleigh	Raphoe North
Doorabble	Raphoe	Raphoe North
Dromore Big	Taughboyne	Raphoe North
Dromore Little	Taughboyne	Raphoe North
Drumatoland	Raymoghly	Raphoe North
Drumbeg	Taughboyne	Raphoe North
Drumboy	Clonleigh	Raphoe North
Drumcarn	Raymoghly	Raphoe North
Drumfad	Taughboyne	Raphoe North
Drummucklagh	Taughboyne	Raphoe North
Drumnaha	Clonleigh	Raphoe North
Drumoghill	Raymoghly	Raphoe North
Errity	Raymoghly	Raphoe North
Feddyglass	Taughboyne	Raphoe North
Glebe	Raymoghly	Raphoe North
Gortin North	Clonleigh	Raphoe North
Gortinreagh	Clonleigh	Raphoe North
Grawky Glebe	Raymoghly	Raphoe North
Guystown	Clonleigh	Raphoe North
Haw	Clonleigh	Raphoe North

Townland	Civil Parish	Barony
Hollands	Clonleigh	Raphoe North
Labbadish	Raymoghgy	Raphoe North
Leggandorragh	Clonleigh	Raphoe North
Lifford	Clonleigh	Raphoe North
Lifford Common	Clonleigh	Raphoe North
Magheestown	Raphoe	Raphoe North
Magirr (Co. Tyrone)	Urney	Strabane Lower
Manorcunningham Churchland	Raymoghgy	Raphoe North
Mass Beg	Clonleigh	Raphoe North
Mass More	Clonleigh	Raphoe North
Millsessiagh	Clonleigh	Raphoe North
Mondooney Lower	Raymoghgy	Raphoe North
Mondooney Middle	Raymoghgy	Raphoe North
Mondooney Upper	Raymoghgy	Raphoe North
Moneen	Clonleigh	Raphoe North
Mullaghanny	Clonleigh	Raphoe North
Mulnaveagh	Clonleigh	Raphoe North
Murlough	Clonleigh	Raphoe North
Pluck	Leck	Raphoe North
Portinure	Clonleigh	Raphoe North
Raymoghgy	Raymoghgy	Raphoe North
Rossbrackan	Leck	Raphoe North
Rossgeir	Clonleigh	Raphoe North
Sheercloon	Clonleigh	Raphoe North
Sheskinapoll	Raymoghgy	Raphoe North
Slievebuck	Raphoe	Raphoe North
Tamnawood	Clonleigh	Raphoe North
Townparks	Clonleigh	Raphoe North
Tullybogly	Raymoghgy	Raphoe North
Tullyrap	Taughboyne	Raphoe North
Tyleford	Clonleigh	Raphoe North
Wood	Clonleigh	Raphoe North
Woodhill	Raymoghgy	Raphoe North
Woodlands	Taughboyne	Raphoe North

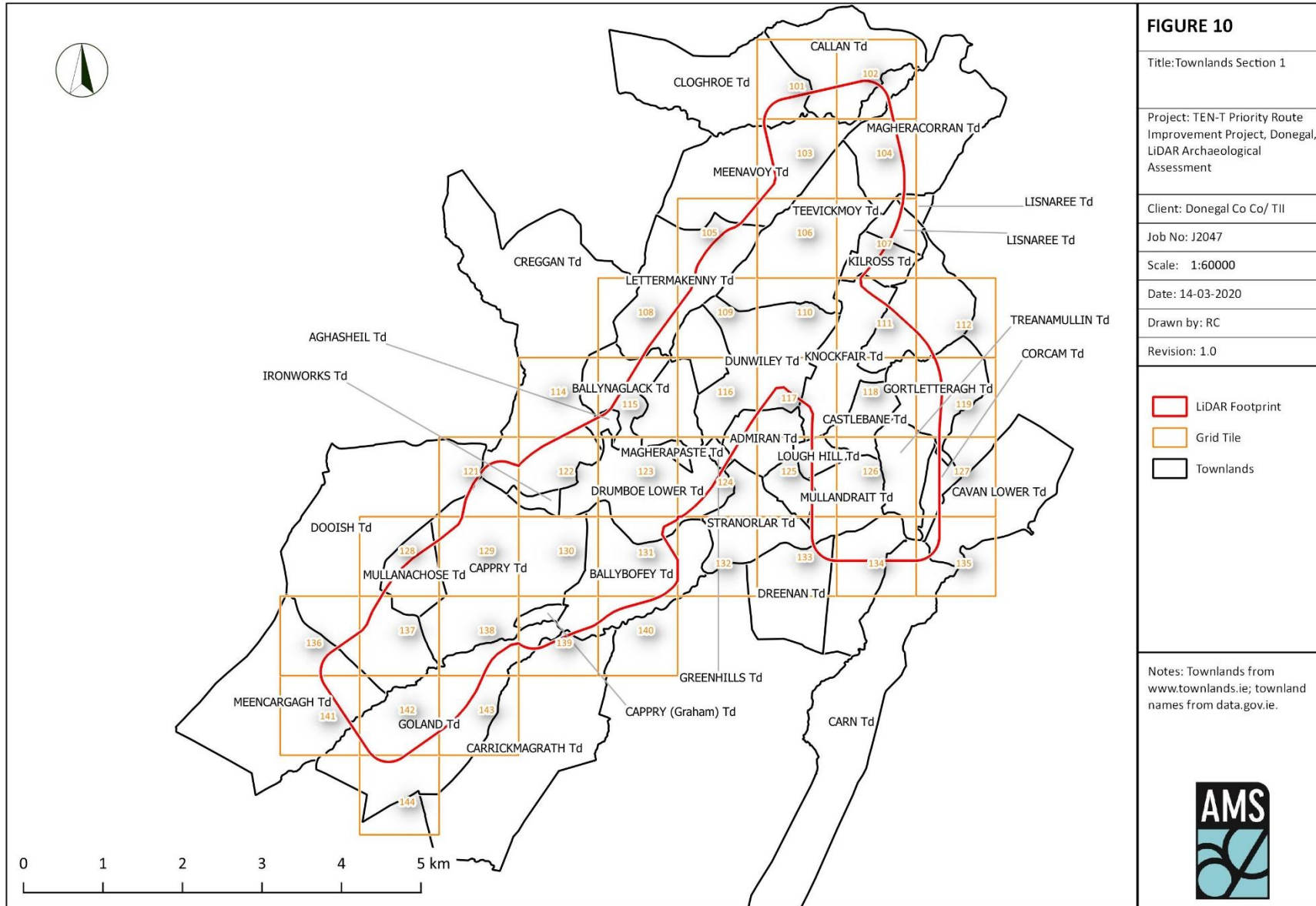


Figure 10: Townlands Section 1

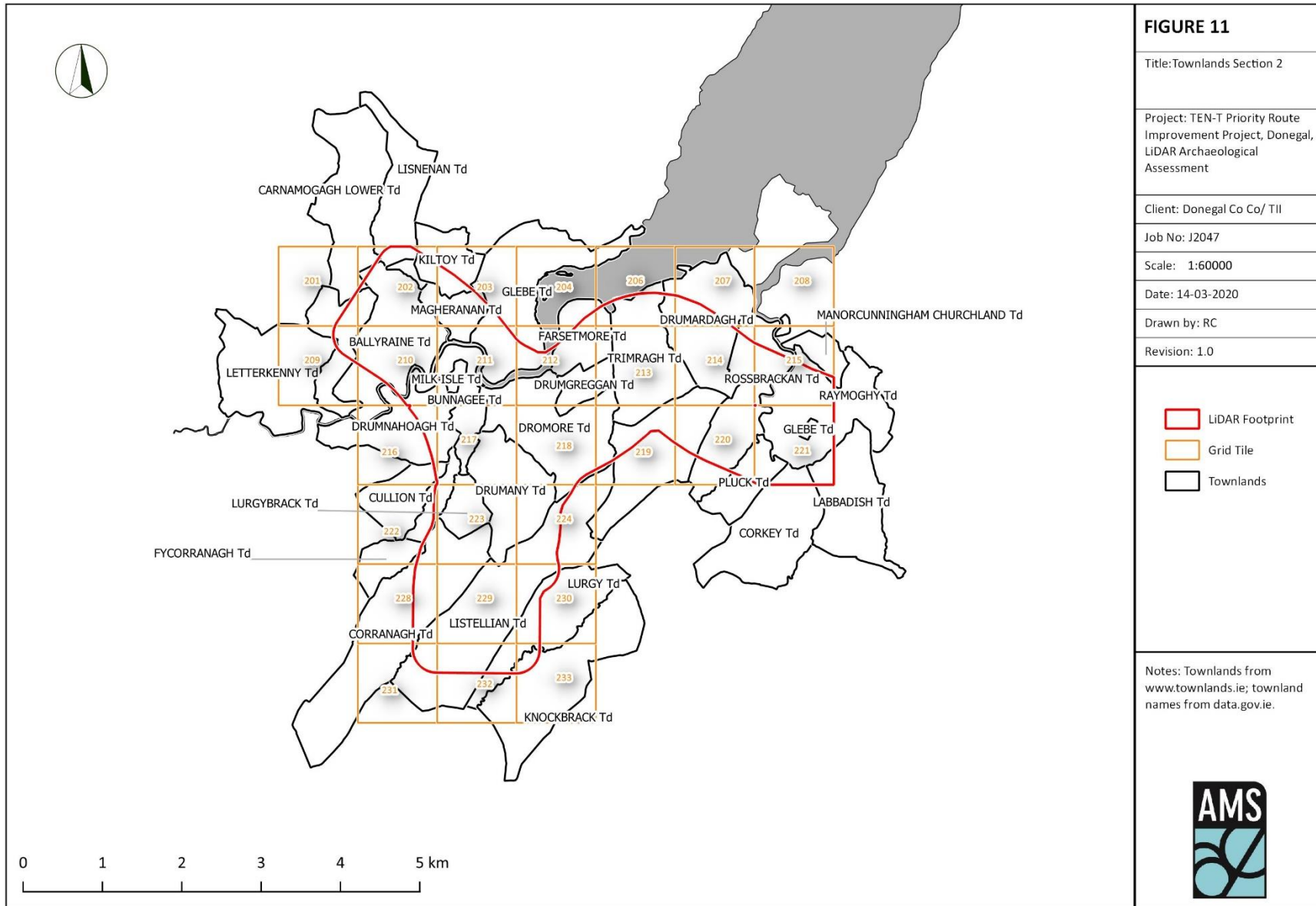


Figure 11: Townlands Section 2

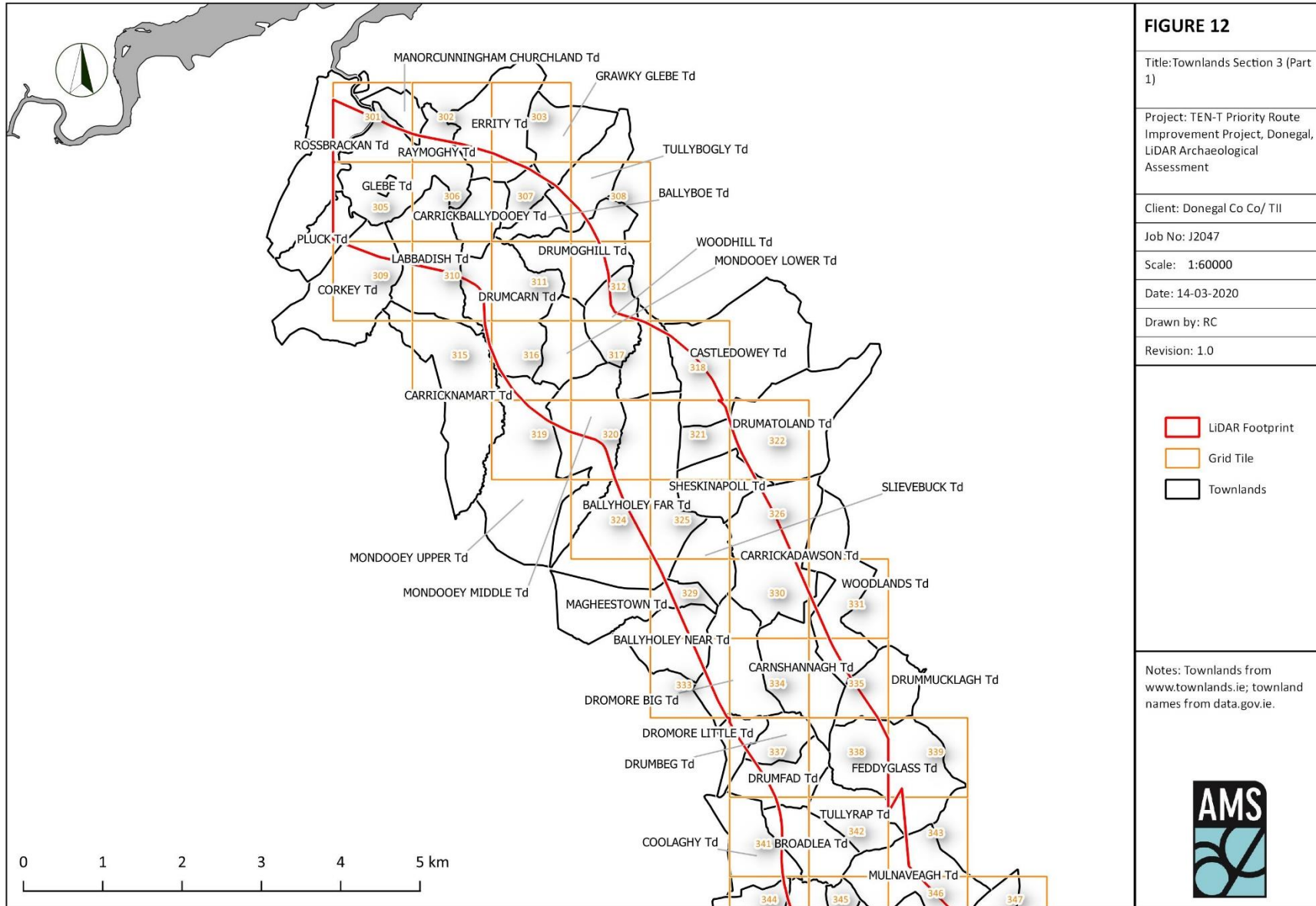


Figure 12: Townlands Section 3 (1 of 2)

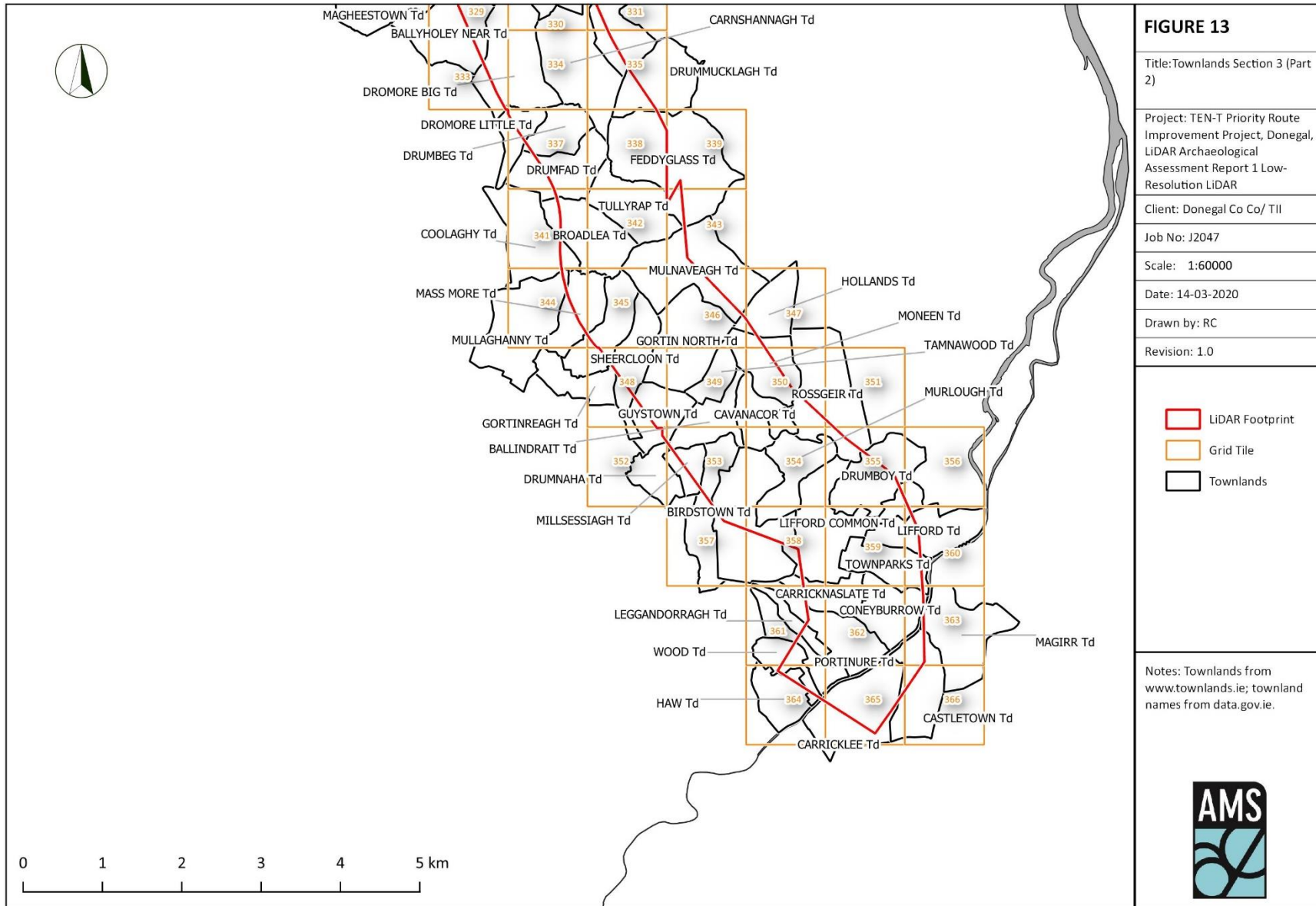


Figure 13: Townlands Section 3 (2 of 2)

Recorded Cultural Heritage

The Ten-T Project LiDAR Study Areas contains a total of 242 previously recorded cultural heritage sites (Table 4):

Table 4: Previously recorded Cultural Heritage

Records	No
SMR	71 ²
NIAH	151
RPS	8
Sites from Route Selection	12

The primary focus of the LiDAR analysis is to analyse recorded archaeology in the Sites and Monuments Record (SMR/RMP), additional sites identified in the Option Selection Reports (Route Selection) (RPS and Barry Transportation 2019a, 2019b, 2019c), and identify new sites not previously recorded. The total numbers of buildings recorded in the National Inventory of Architectural Heritage (NIAH) and Record of Protected Structures (RPS) for each LiDAR Study Area are also noted here, although buildings are not the primary focus of this study.³

Section 1 Recorded Cultural Heritage

In Section 1 of the LiDAR Survey area, there are 74 previously recorded cultural heritage sites:

Table 5: Previously recorded Cultural Heritage in Section 1

Records	No
SMR	23
NIAH	43
RPS	3
Route Selection	5

The most numerous previously recorded archaeological sites are ringforts: unclassified (6), cashels (4) and raths (3); the survey area also contains two souterrains, whilst there is one each of bullaun stone, church, enclosure, seventeenth-century house, megalithic tomb, holy well, standing stone, and two redundant records (Figure 14; Figure 17).

² For the purpose of this analysis the figures for previously recorded archaeological sites are calculated using the SMR only.

³ In general, the type of LiDAR analysis carried out for this project is not appropriate for describing built heritage; therefore, a site-by-site analysis was not carried out for recorded buildings. However, as specified in the works requirements, the NIAH and RPS register numbers were noted when they corresponded with sites identified in the LiDAR data.

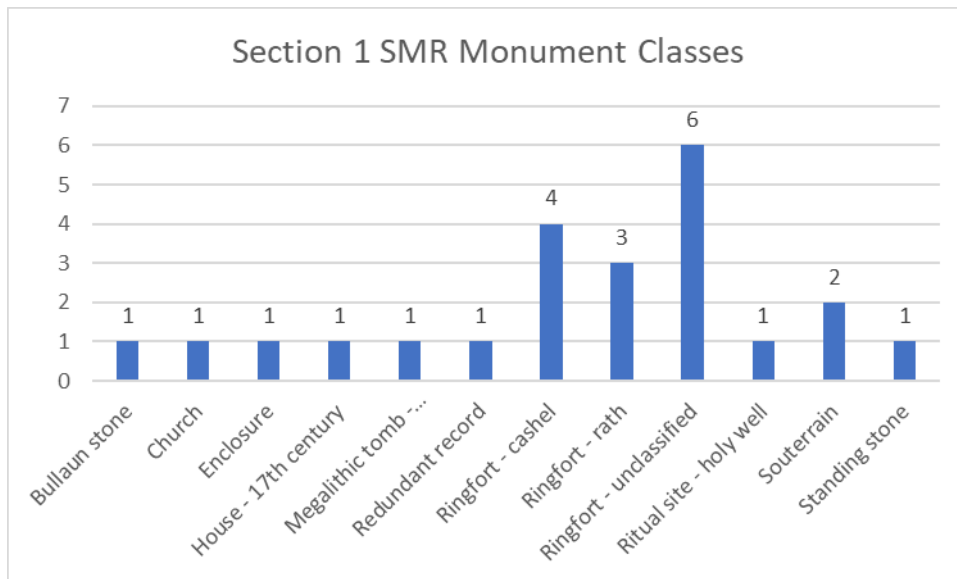


Figure 14: SMR site categories in Section 1 LiDAR Survey Area

The NIAH contains records for 43 sites within the Section 1 Study area (Table 6; Figure 17).

Table 6: NIAH Sites in Section 1

Building/Structure Type	No
country house	4
gates/railings/walls	2
graveyard/cemetery	2
house	18
hunting/fishing lodge; house	2
mill (water)	2
monument	2
office; house	2
outbuilding	8
outbuilding; coach house	1

Three of these buildings are included in Donegal's RPS: two houses and a hospital (Figure 17).

During the Route Selection process, five potentially archaeologically significant sites were also identified in the Section 1 LiDAR Study Area (Table 7; Figure 17):

Table 7: Sites identified during Route Selection, Section 1

Route Selection ID	Townland	Description	ITM_E	ITM_N
S1-AP01	Ballynaglack	AP Site – Possible ringfort/enclosure	613515	895915
S1-AP02	Mullanachose	Possible Enclosure	610907	894131

Route Selection ID	Townland	Description	ITM_E	ITM_N
S1-BH01	Creggan	C19th Farmstead	612778	895886
S1-BH02	Drumboe upper	Possible 18th C farmstead	613969	896215
S1-CH01	Drumboe lower	Holy Well Woods (well site)	613505	895748

Section 2 Recorded Cultural Heritage

In Section 2 of the LiDAR Survey Area, there were 44 previously recorded Cultural Heritage sites (Table 8):

Table 8: Previously recorded Cultural Heritage in Section 2

Records	No
SMR	16
NIAH	26
RPS	0
Route Selection	2

Standing stones (5) and rock art (4) made up the largest part of the recorded archaeology in the Section 2 LiDAR Study Area, which also included one each of a battlefield site, bullaun stone, church, graveyard, ringfort, souterrain, and a redundant record (Figure 15; Figure 18).

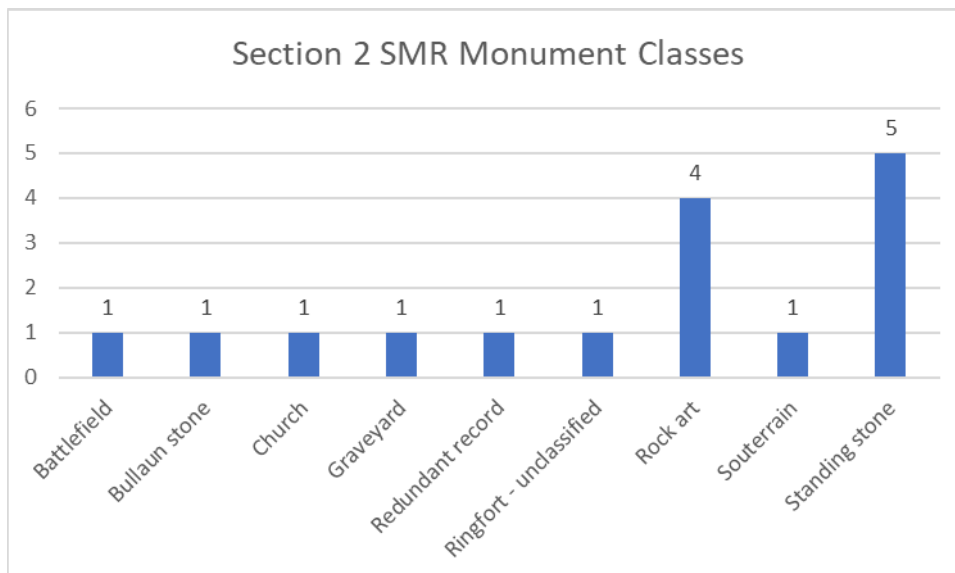


Figure 15: SMR sites in Section 2 LiDAR Survey Area

The NIAH contains records for 26 buildings and structures in the Section 2 LiDAR Study Area (Table 9; Figure 18), none of which are included in Donegal's RPS.

Table 9: NIAH Section 2

Building/Structure Type	No
bridge	5
church/chapel	5
house	6
manse	6
mill	2
rectory/glebe/vicarage/curate's house	2

All of the sites identified during Route Selection in the Section 2 LiDAR Survey Area relate to disused railways (Table 10; Figure 18).

Table 10: Sites identified during Route Selection, Section 2

Route Selection ID	Townland	Description	ITM_E	ITM_N
S2-BH02	Aghlehard	Disused Railway Line	622455	910267
S2-BH03	Dromore	Railway Bridge	621058	910501
S2-BH04	Dromore	Disused railway line	620307	910532

Section 3 Recorded Cultural Heritage

In Section 3 of the LiDAR Survey Area, there were 123 previously recorded archaeological sites and buildings (Table 11; Figure 19 & Figure 20):

Table 11: Previously recorded Cultural Heritage in Section 3

Records	No
SMR	32
NIAH	82
RPS	5
Route Selection	4

Standing stones are by far the largest number of the recorded archaeological sites (18) in Section 3. The study area contains two cists, two enclosures and two souterrains, an architectural fragment, bridge, church, cross-inscribed stone, graveyard, megalithic tomb, ringfort and a school (Figure 16; Figure 19 & Figure 20).

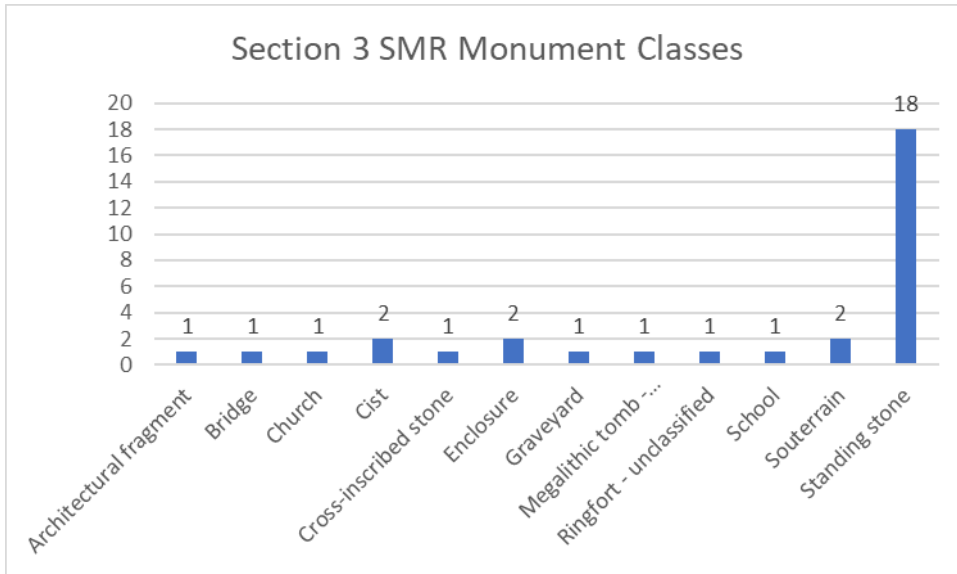


Figure 16: SMR sites in Section 3 LiDAR Study Area

The NIAH contains records for 82 buildings and structures in the Section 3 LiDAR Study Area (Table 12; Figure 19 & Figure 20).

Table 12: NIAH Section 3

Building/Structure Type	No
Bridge	7
building misc	1
charter school	1
church/chapel	6
church/chapel; graveyard/cemetery	1
country house	10
goods shed	1
hospital/infirmary	1
House	26
Kiln	1
Manse	9
mill (water)	1
mill (wind)	1
Outbuilding	8
railway station	2
School	2
water pump	1
worker's house; level crossing	1
worker's house; station master's house	2

Five buildings in Section 3 are recorded in the Donegal Record of Protected Structures: four houses and a church (Figure 19 & Figure 20).

Four sites identified in the Route Selection were identified from aerial photographs (Table 13; Figure 19 & Figure 20).

Table 13: Sites identified during Route Selection, Section 3

Route Selection ID	Townland	Description	ITM_E	ITM_N
S3-AP01	Carnshannagh	Possible enclosure	628627	904434
S3-AP02	Dromore Big	Possible bi-vallate enclosure	628376	904292
S3-AP03	Drumbeg	Possible burnt spread	628795	903751
S3-AP04	Lifford Common	Possible 18th/19th C farmstead	632162	898450

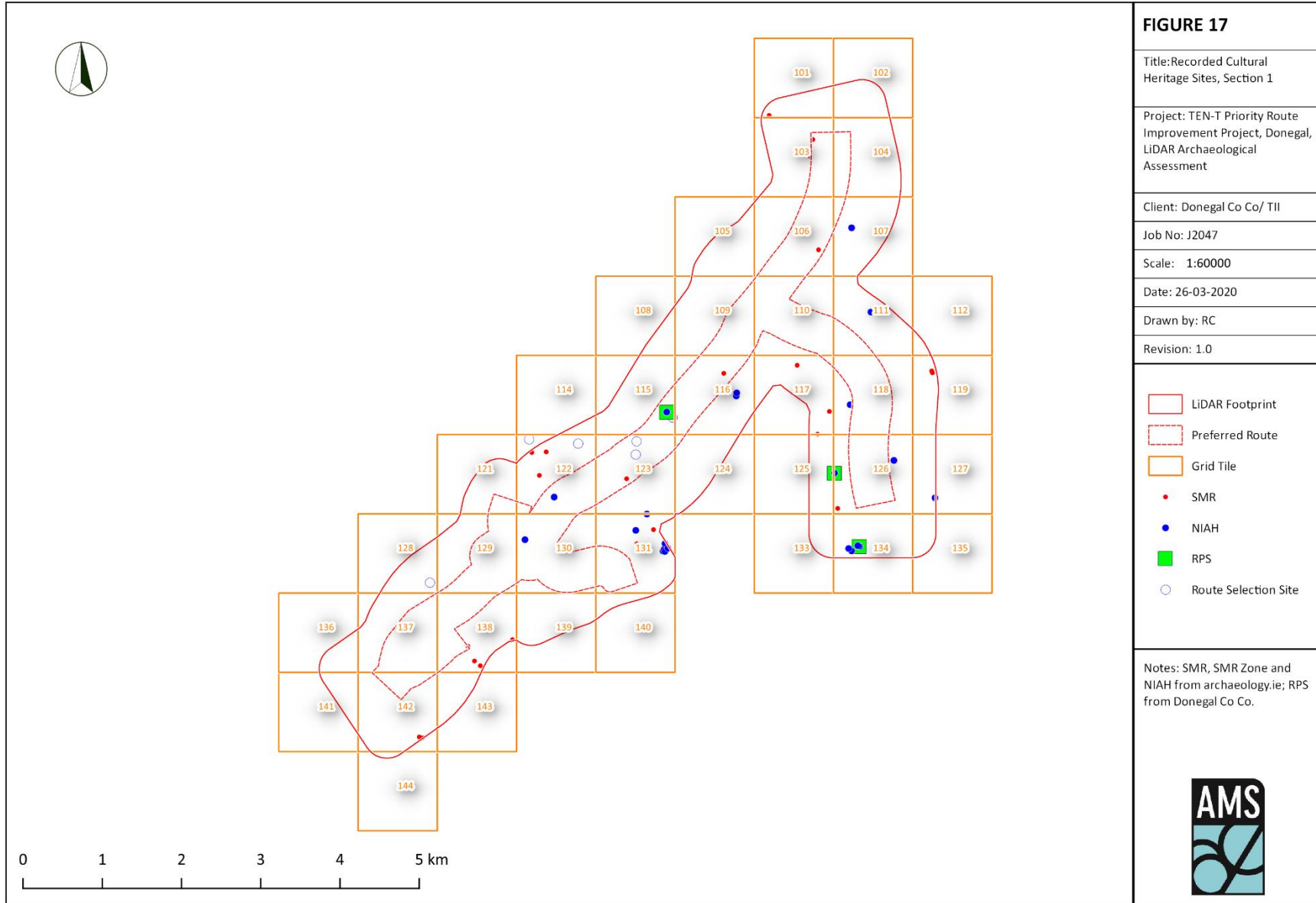


Figure 17: Recorded Cultural Heritage Section 1

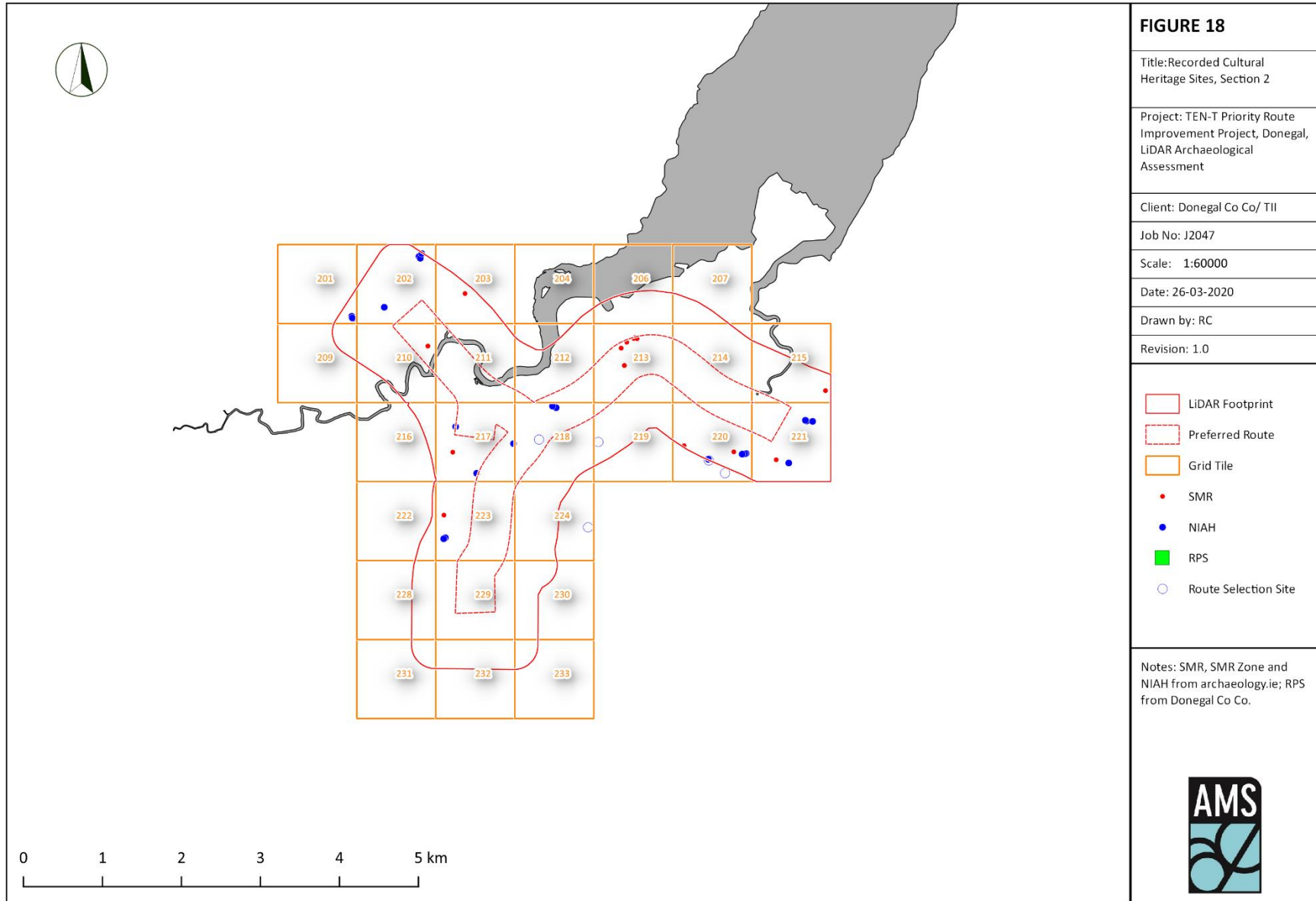


Figure 18: Recorded Cultural Heritage Section 2

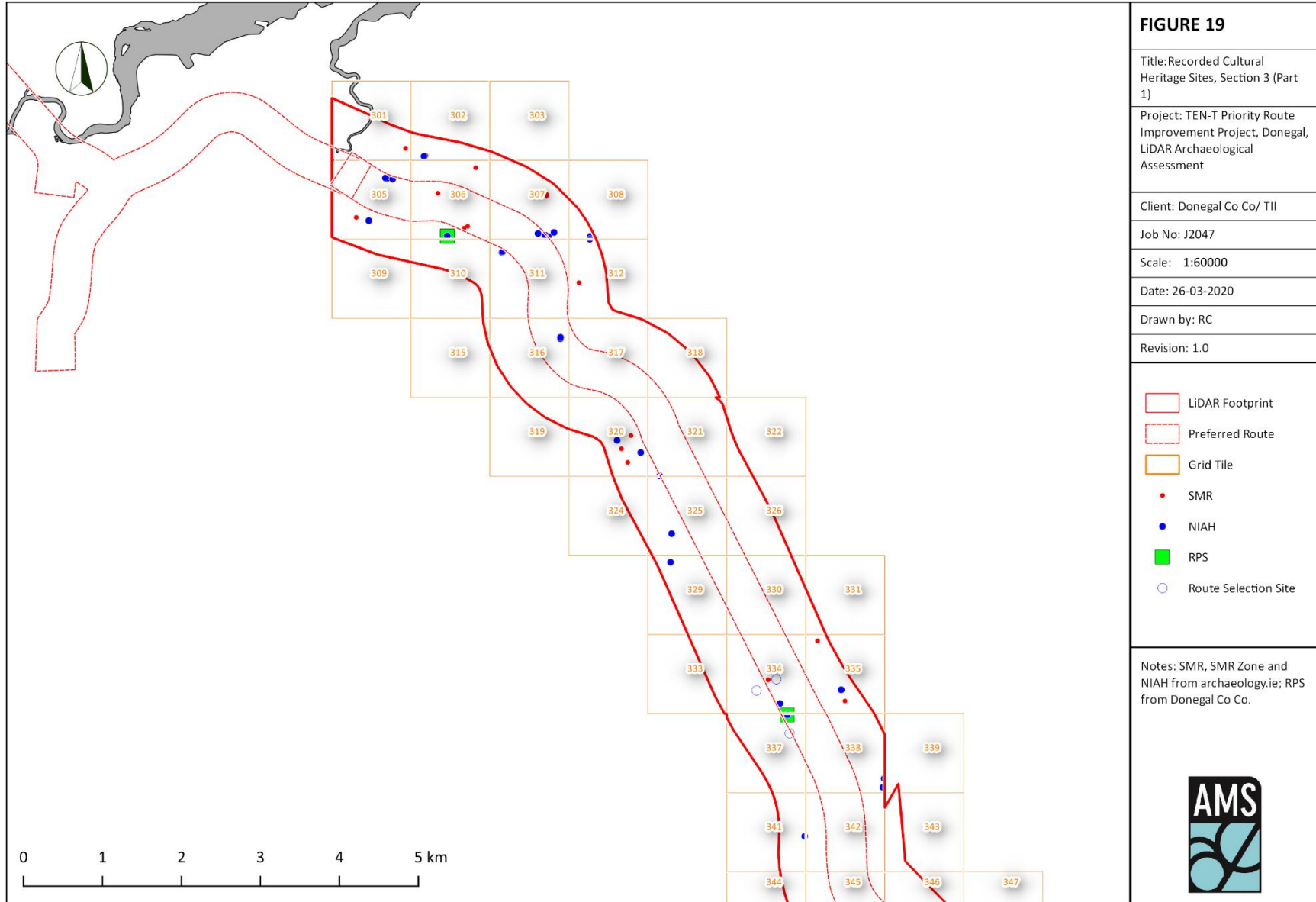


Figure 19: Recorded Cultural Heritage Section 3 (1 of 2)

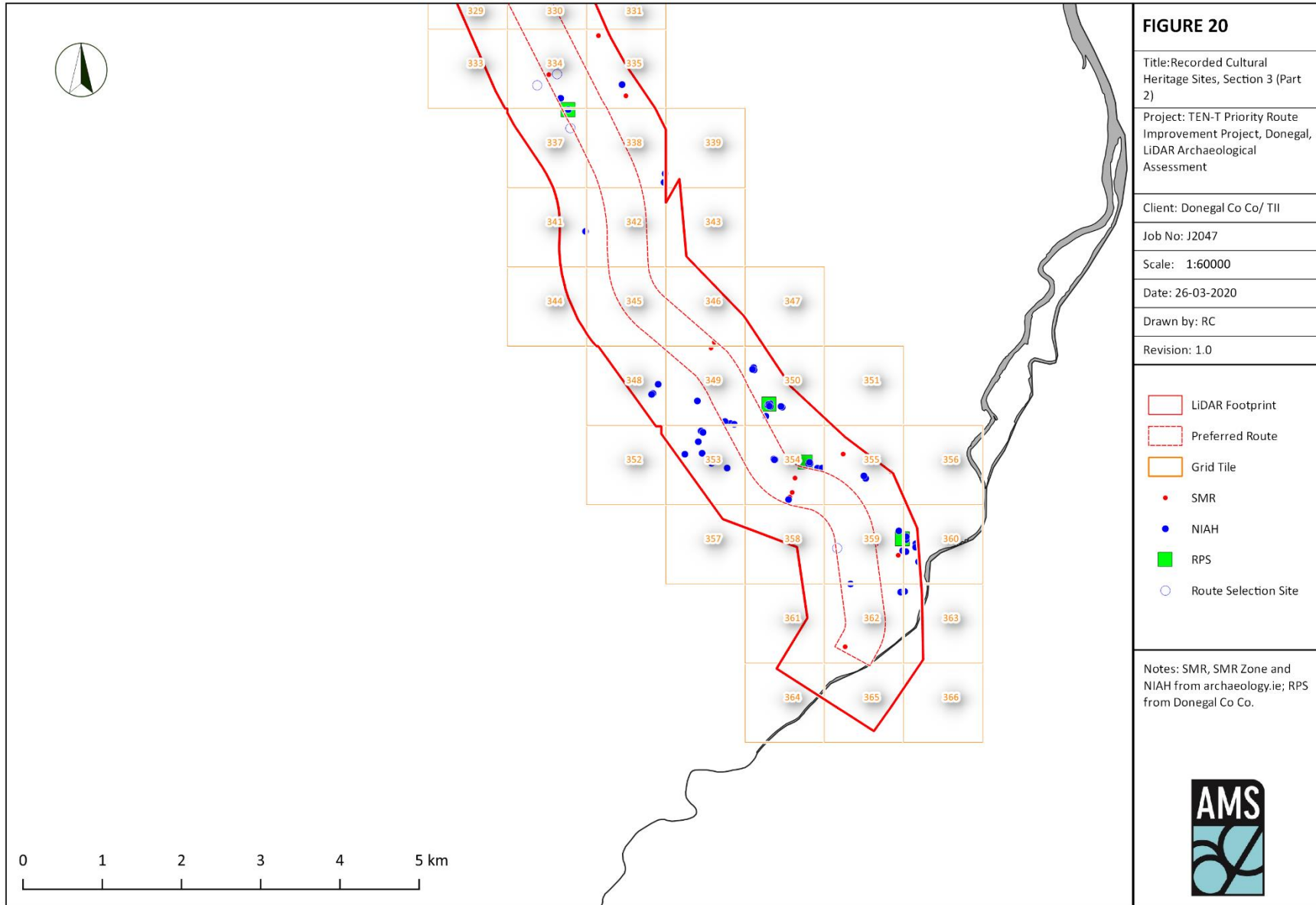


Figure 20: Recorded Cultural Heritage Section 3 (2 of 2)

Methodology

Overview

Archaeologists look for patterns in the ground surface to help identify and interpret archaeology. These patterns are often expressed as slight topographic variations that can take the form of circular banks and/or ditches for enclosures and/or barrows, linear banks/ditches for field boundaries, rectangular features for house platforms, etc., or any combination of the above. The surface expression of archaeological features, which can cover quite extensive areas, is sometimes almost imperceptible to the naked eye. LiDAR (Light Detection and Ranging) is a remote sensing technique used to generate high-resolution, three-dimensional models of the ground surface, and uses a variety of visualisation techniques to help identify, record and interpret low-profile archaeological features (English Heritage 2010; Kokalj and Hesse 2017).

The LiDAR data for the present project was captured from an airplane whose position was tracked by GPS. LiDAR works by emitting laser light and calculating the distance to the ground based on the return of the laser. Millions of returns build up a detailed map of the ground and its surface characteristics (landforms, built-structures, vegetation, etc.). The collated data produces a mass point cloud dataset consisting of x, y and z data points. The x and y points are given grid coordinates (in Irish Transverse Mercator), and the height or z axis is given a value relative to Ordnance Datum (OD). This dataset is then used to generate a Digital Surface Model (DSM) that can be manipulated to remove modern structures and vegetation (by reading the last returns). This leaves a so-called bare-earth or Digital Terrain Model (DTM), which is used to facilitate analysis and interpretation of recorded and potential archaeological features.

The brief for this project is to assess LiDAR-derived data to help identify and describe all archaeological features, including previously recorded archaeology. This is to be carried out in two reports. This first report assesses existing low-resolution (1m) LiDAR data available to Donegal County Council. The Council have commissioned the acquisition of high-resolution (0.5m) LiDAR data, which will be the subject of the second report.

Software

This project used the Relief Visualization Toolbox (RVT 2.2.1) to produce visualisations of the LiDAR-generated DTM data, and QGIS (version 3.10.3) as a Geographical Information System (GIS) for accessing and analysing these visualisations.

Relief Visualization Toolbox is simple software produced by ArchaeoLandscapes Europe project specifically for the generation of LiDAR visualisations.⁴

QGIS is an open-source GIS which can be used to create, edit, visualise, analyse and publish geospatial information.⁵ This project used the latest long-term release version of the software (3.10.3) as the basic platform to access, view and analyse the LiDAR visualisations produced with RVT. QGIS also allowed us to compare these visualisations with other relevant geospatial databases, record the analysis through digitising the position, extent, characteristics, dimensions of individual monuments, and output a table catalogue of this analysis and corresponding maps and profile images.

Data

The LiDAR data for the Ten-T Project was presented in the following formats:

- as 127 tiles of digital terrain model (DTM) in ASCII xyz format, cell size 1m. Of these 41 tiles cover the Section 1 LiDAR study area, 28 cover Section 2 and 58 cover Section 3;⁶
- as 127 tiles of digital surface model (DSM) in ASCII xyz format, cell size 1m, covering the same area as the DTM tiles.

The following datasets were also supplied by Donegal County Council:

- 313 tiles of RGB vertical digital imagery as an orthomosaic (.ecw) format: 73 covering 915.6 Ha of Section 1, and 240 tiles covering 1344.65 Ha of Sections 2 and 3. The orthographic images cover 33% of the full extent of the Low Resolution LiDAR survey;
- Polyline outline of buildings CAD file, converted to a polygons vector layer for GIS;⁷
- Polyline outline of fields and roads CAD file, converted to a polyline vector layer for GIS;⁸
- Polygon outline of Areas of Archaeological Potential (AAP): 14 areas covering 2928.5 Ha, 57% of which overlies the LiDAR Study Areas;
- Record of Protected Structures (RPS) vector points for County Donegal;
- Sites identified in Route Selection as vector points;
- Ordnance Survey of Ireland first-edition 6-inch⁹ and 25-inch maps¹⁰ as a licensed Web Map Service (WMS);
- Ordnance Survey of Ireland Cassini 6-inch maps as geotiff tiles.¹¹

⁴<https://iaps.zrc-sazu.si/en/rvt#v>

⁵ <https://www.qgis.org/en/site/>

⁶ Due to an overlap between Sections 2 and 3, three grid tiles overlap: Grid 215 = 301, 220 = 304, 221 = 305.

⁷ Note that not all recent buildings are included in this dataset.

⁸ Note not all recent buildings are included in this dataset.

⁹ The revised survey, 1845–52.

¹⁰ Surveyed 1900–05.

¹¹ Surveyed c.1949.

For the purposes of this project, the following datasets were also downloaded and used:

- Sites and Monuments Record (SMR) point and polygon vectors;¹²
- National Inventory of Architectural Heritage (NIAH) point vector;¹³
- Rivers and Lakes as a WMS;¹⁴
- National soils database as a vector layer;¹⁵
- Townlands vector layer.¹⁶

The following vector layers were generated for the project:

- Footprint outline of the LiDAR data received, generated from DTM tiles;
- Grid polygons corresponding with the LiDAR tiles received;
- 1m contours generated from a simplified model of the LiDAR DTM data;
- Profile lines for significant features.

LiDAR Visualisations

Multiple types of visualisation techniques can be used to help highlight low-relief or micro-topography in LiDAR data (Corns and Shaw 2009; Bennett et al. 2012; Bennett 2013; Opitz and Cowley (Eds) 2013; Kokalj and Hesse 2017). It was decided to employ three types of visualisation to the LiDAR data for this project as outlined below in Table 14: LiDAR visualisation techniques and geospatial data used as part of the present assessment.

LiDAR Analysis

In QGIS, a sequential numbering system was used to identify each 1km by 1km grid tile within each LiDAR section: 101 to 144 in Section 1 (Figure 21); 201 to 233 in Section 3 (Figure 22), and 301 to 366 in Section 3 (Figure 23 & Figure 24). Each LiDAR visualisation raster image, DTM and orthographic image was imported into QGIS. To improve the performance of QGIS, the raster image tiles were rendered as Virtual Raster layers. The analysis then proceeded on a grid-by-grid basis by comparing each of the LiDAR visualisations and the orthographic images to each other, to previously recorded archaeology, architecture and constraints assets, and historical OSI maps. A vector polygon layer¹⁷ recorded fields for each LiDAR site as listed in Table 15 & Appendix 2.

¹² Downloaded from www.archaeology.ie

¹³ Downloaded from www.archaeology.ie

¹⁴ <http://gis.epa.ie/geoserver/EPA/wms?SERVICE=WMS&>

¹⁵ <https://gis.epa.ie/GetData/Download>

¹⁶ Vector layer downloaded from www.townlands.ie; townland names confirmed against the OSI Townlands list from <https://data.gov.ie/dataset/townland>.

¹⁷ The vector layers were saved in a GeoPackage geodatabase.

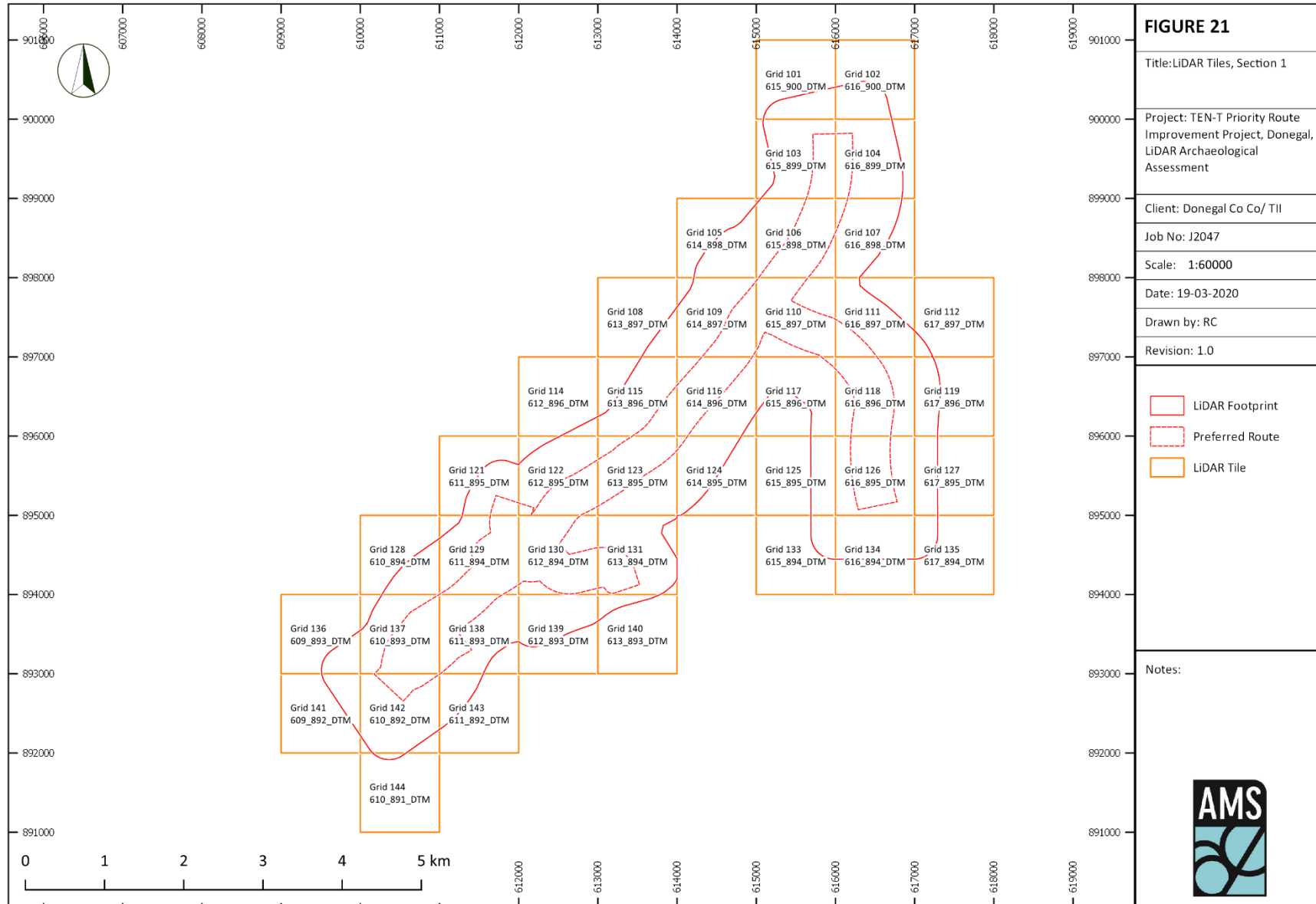


Figure 21: LiDAR Tiles, Section 1

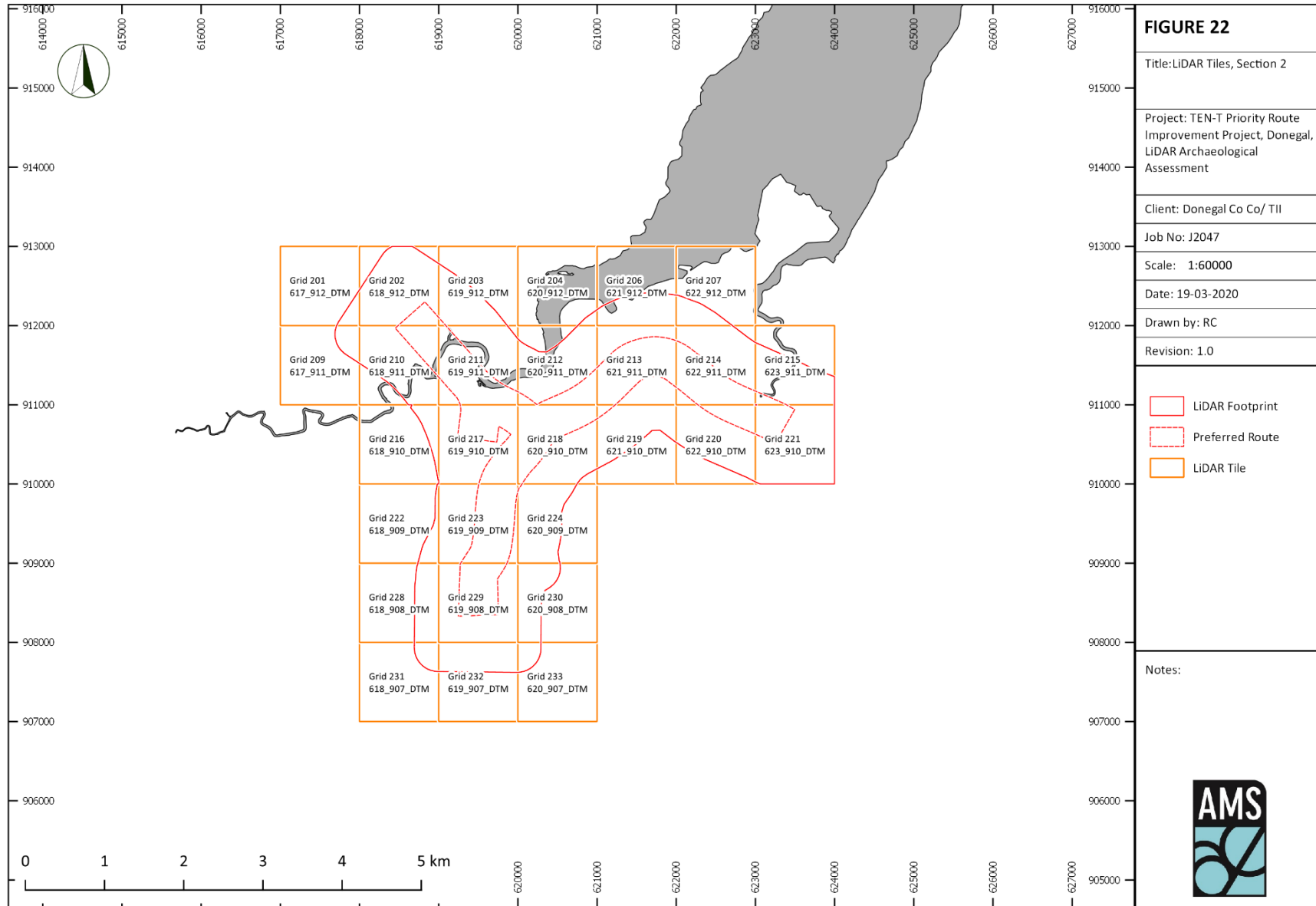


Figure 22: LiDAR Tiles, Section 2

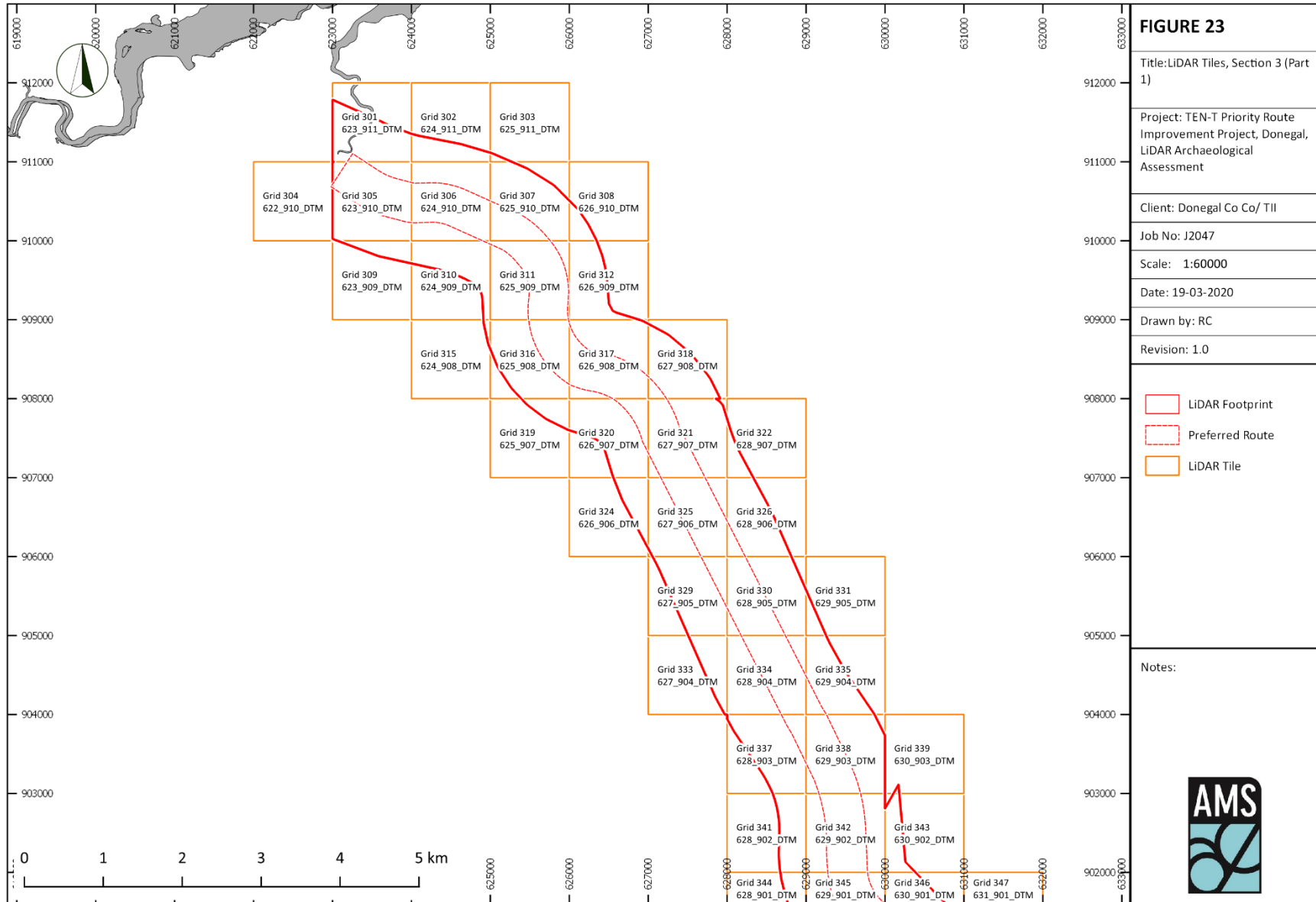


Figure 23: LiDAR Tiles, Section 3 (1 of 2)

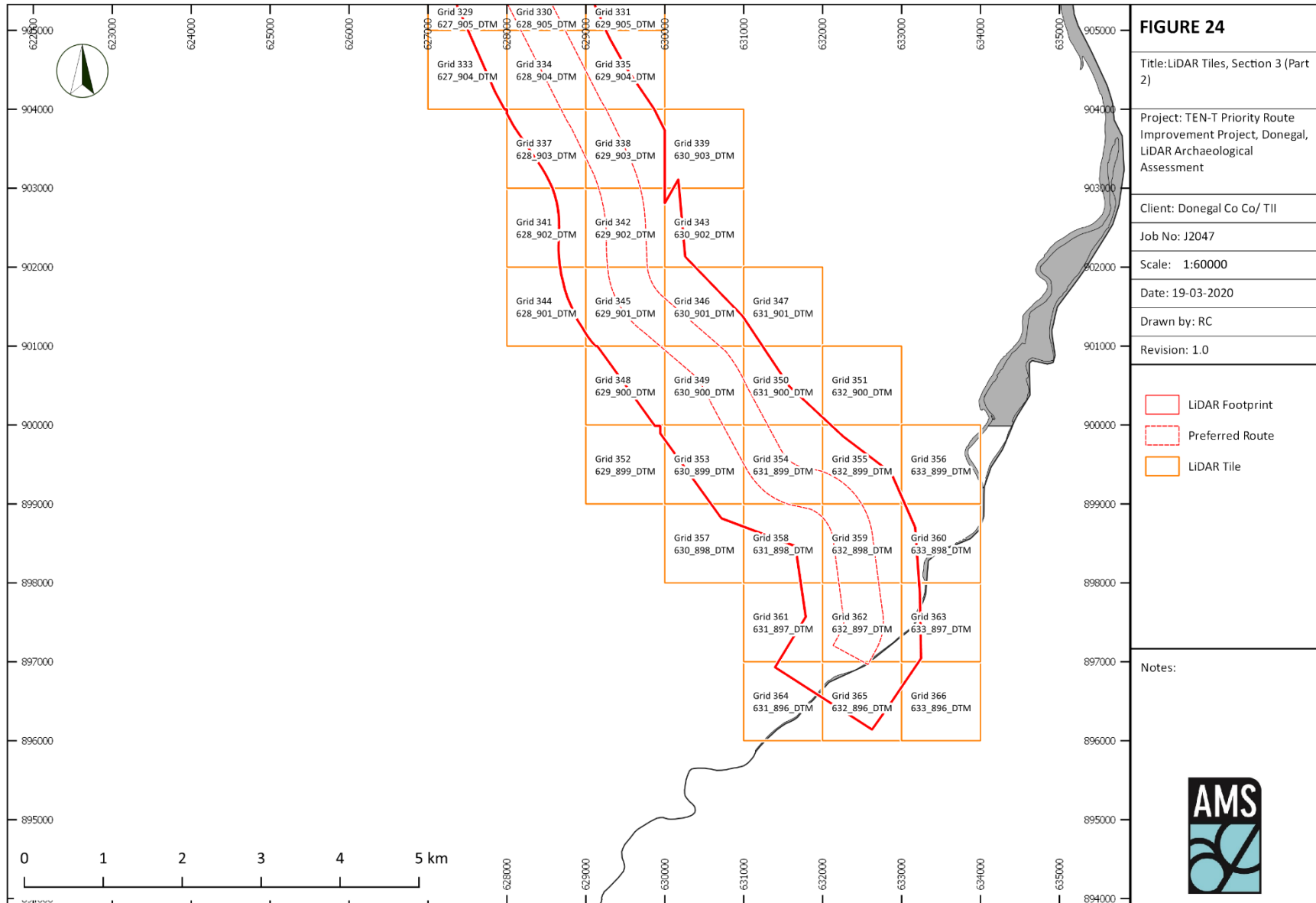
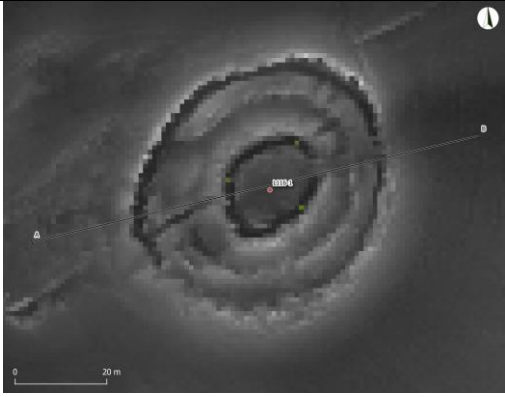
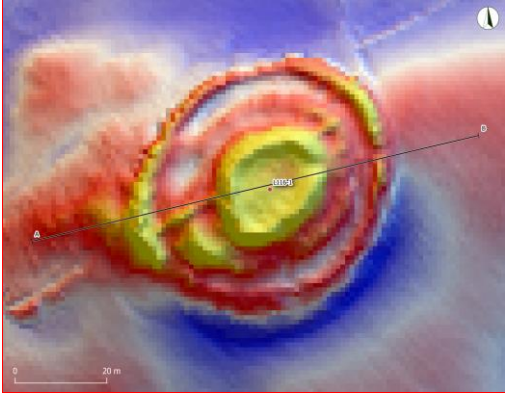



Figure 24: LiDAR Tiles, Section 3 (2 of 2)

Table 14: LiDAR visualisation techniques and geospatial data used as part of the present assessment¹⁸

<p>Sky View Factor (SVF) generated in RVT 2.2.1:</p> <p>This visualisation measures the portion of the sky visible above a certain point. In this way, flat terrain, ridges and earthworks which receive more illumination are highlighted and appear in light, while depressions appear dark because they receive less illumination. However, for this project better results were found by reversing the raster values to highlight depressions as light areas and flat areas as dark. To improve the visualisation the raster histogram was clipped between 0.44 and 0.99.</p>	
<p>Simple Local Relief Model (SLRM) generated in RVT 2.2.1:</p> <p>Simple Local Relief Model removes the large-scale topographical elements (hills, valleys, etc.) from the DTM data, revealing the micro-topography, including low-relief surface expressions of archaeological sites and landscape features. RVT calculates a simplified topography and subtracts this filtered model from the original DTM to create a local relief model. This is visualised in QGIS by clipping the raster cell z value between -2 and 2, and styling the raster values from blue (-2), representing hollows, to red (2), representing rising ground. This raster is then made 50% transparent and overlain on the multi-direction hillshade model, to make it easier to identify the low-relief features.</p>	
<p>Multi-Direction Hillshade Model (Multi-HS) generated in RVT 1.1.</p> <p>Analytical hillshade models create an artificial illumination from a set direction and height angle, to highlight surface changes such as upstanding features (mounds, walls, etc.) and sunken features (ditches etc.) by casting shadows. The significant disadvantage of this technique is that features parallel to the direction of illumination, or in the shadow of prominent features, will not be visible. This can be mitigated by calculating analytical hillshading in multiple directions (16 for this project), equally distributed between 0° and 360°, with a set height angle (35°). This provides greater illumination of low-relief features. The z axis was also exaggerated by 3 to further highlight micro-topographical features.</p>	

¹⁸ The example use here is L116-1, a multivallate ringfort (SMR DG078-003----)

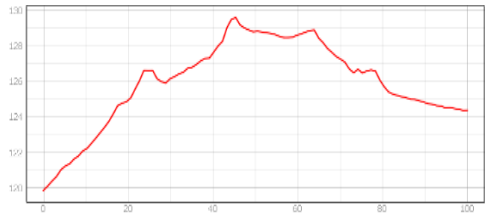
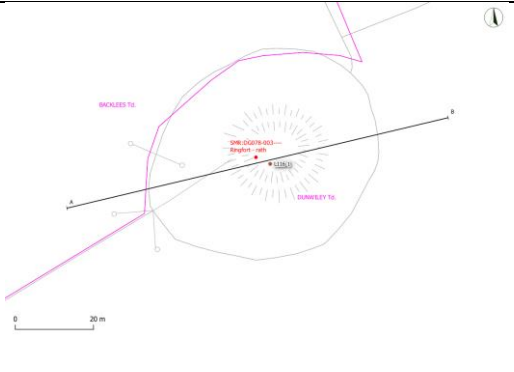
<p>Profiles</p> <p>Profiles of DTMs can be produced in QGIS as another way to visualise and understand the shape and landscape setting of sites using LiDAR DTM data.</p> <p>The vertical axis will generally be exaggerated to better illustrate the nature of the micro-topography. The figures on the vertical axis relate to the absolute height; on the horizontal axis the distance along the profile line. The profiles for each significant identified feature are included in Appendix 3.</p>	
<p>LiDAR interpretation</p> <p>Each site analysed by LiDAR is identified with a point and, where appropriate, a polygon, and mapped in relation to modern field boundaries and previously recorded archaeological sites. These are reproduced on a grid-by-grid basis in Appendix 4.</p>	

Table 15: Fields recorded for individual features identified through LiDAR analysis

Field Name	Description	Appendix 2 (yes/no) ¹⁹
SITE NUMBER	A unique identification number made up of the letter 'L' (for LiDAR), followed by the grid number and the number of the site within that grid. Site numbers were given to all recorded features, including known sites in the SMR and those identified during this LiDAR analysis	Y
SECTION	LiDAR Study Area Section 1, 2 or 3	N
GRID	LiDAR Grid Number	N
NUMBER	Number of site within grid	N
CATEGORY	The type of site	Y
DESCRIP	A brief description of the feature, including its type, SMR number, whether it appears on historical OSI maps, dimensions, morphology and brief interpretation	Y
CONFIDENCE	The confidence score (see Table 16)	Y
SMR_RMP	The RMP and SMR number(s) for this feature	Y
SMR_CLASS	The class description for the SMR site(s) corresponding with this feature	Y
SMR	1 = feature on the SMR	N

¹⁹ Those fields not included in Appendix 2 (N) are included in the geospatial dataset which accompanies this report.

Field Name	Description	Appendix 2 (yes/no) ¹⁹
RMP	1 = feature on the RMP	N
RPS	Record of Protected Structures register number	Y
NIAH	National Inventory of Architectural Heritage register number	Y
ROUTE SELECTION	Sites identified in the Route Selection study for the Ten-T Project	Y
OSI 1st 6 INCH	1 = depicted on the OSI's first-edition 6-inch map, revised survey 1845–52.	Y
OSI 25 INCH	1 = depicted on the OSI's 25-inch map, surveyed in 1900–05	Y
Cassini 6 INCH	1 = depicted on the OSI's Cassini 6-inch map, surveyed c.1949	Y
TD_PR_BR	Townland; civil parish; barony	Y
TD	Townland name	N
CP	Civil Parish name	N
BR	Barony name	N
CENTRE ITM E	ITM coordinate (easting) for the centre point of the feature (see column ITM Coords in Appendix 2)	Y
CENTRE ITM N	ITM coordinate (northing) for the centre point of the feature (see column ITM Coords in Appendix 2)	Y
DTM TILES	The name of the DTM tile(s) containing the feature.	Y
GRID TILES	The name of the grid(s) containing the feature.	Y
AREA Ha	The area enclosed by the LiDAR analysis polygon in hectares	Y
LENGTH	Length of identified sites in metres	N
WIDTH	Width of identified sites in metres	N
HEIGHT	Height of identified sites in relation to the local relief	N
DEPTH	Depth of identified sites in relation to the local relief	N
ENCLOSURE DIAMETER	Diameter of circular enclosure in metres	N
BANK HEIGHT	Height of enclosure bank in metres	N
BANK WIDTH	Width of enclosure bank in metres	N
DITCH WIDTH	Width of enclosure's external ditch in metres	N
DITCH DEPTH	Depth of enclosure's external ditch in metres	N
NOTE	Anything worth noting about the site	N
L_East	ITM coordinate for the label; this is an attribute for the layer style in GIS	N
L_North	ITM coordinate for the label; this is an attribute for the layer style in GIS	N

All sites, whether previously known or newly identified, were assigned a unique identifier number. The feature was also scored in terms of confidence (Table 16).

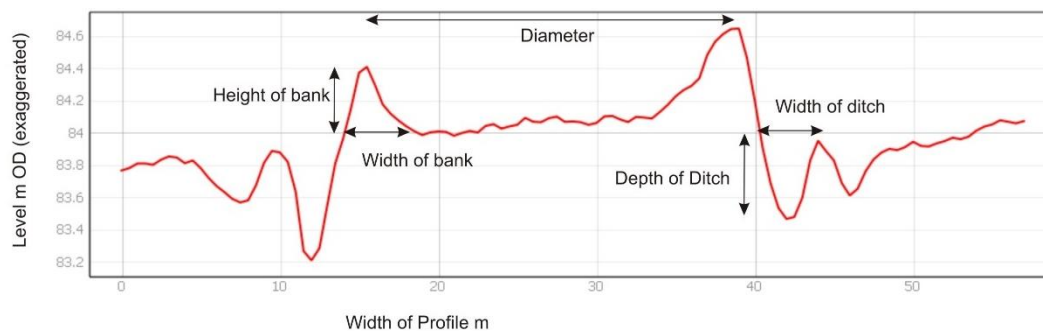
Table 16: Confidence scores for identified archaeological features

Score	Meaning
0	Not archaeologically significant
1	Possible archaeological site
2	Probable archaeological site
3	Highly probable archaeological site (previously recorded archaeological site)
4	Not apparent on LiDAR data (recorded site with no surface expression)

All newly identified archaeological sites were scored as either possible (1) or probable (2) archaeological features. These will have to be inspected in the field before a final determination of archaeological significance can be made.

The dimensions of individual features were calculated in QGIS using the profile and measure tools; the area in hectares was determined by calculating the size of the vector polygon used to define the feature. For enclosures and ringforts, measurements were taken from their most representative profiles for the site diameter (between the top of banks), the height and width of the defining bank, and the width and depth of the accompanying ditch (Figure 25). A catalogue of profiles of significant features can be found in Appendix 3.

Each identified site was digitised as a polygon to outline the site. Each site has ITM coordinates for the centre of the site, calculated in GIS as a centroid.

**Figure 25: Profile and dimensions of an enclosure**

Constraints

For low-resolution LiDAR data, in this case 1m resolution, fewer returns from the bare earth are used to produce the DTM, resulting in a coarser dataset. The accuracy of the LiDAR data on the horizontal (XY) axis is +/-1m RMSE (Root Mean Square Error); the accuracy on the vertical (z) axis is +/-1m RMSE. Some features beneath trees, hedges or crops may be less distinct in the resulting DTM than a higher-

resolution survey (English Heritage 2018, 28). The second report on archaeological assessment of LiDAR survey data for the Ten-T project will be based on higher-resolution (0.5m) data, to be specifically flown for this project.

The low-resolution data used for the analysis in this report has an accuracy on the XY axis of +/-1m Root Mean Square Error (RMSE).

Certain features were apparent in the LiDAR data which, on closer inspection and comparison with aerial orthographic images, were shown not to be archaeologically significant, such as circular marks surrounding electrical poles in fields, or possibly the marks left by cattle feeding around a round-bale feeder, both of which can look like barrows.²⁰ In the case of the electrical poles, these are generally visible on aerial imagery (Figure 26). Cattle feeders are moved often, sometimes resulting in groups of circular marks next to field gates or near farmyards. Often the feeder is not visible in the aerial images. Therefore, these features were included in the analysis, but with a confidence score of 1: possibly archaeologically significant.²¹

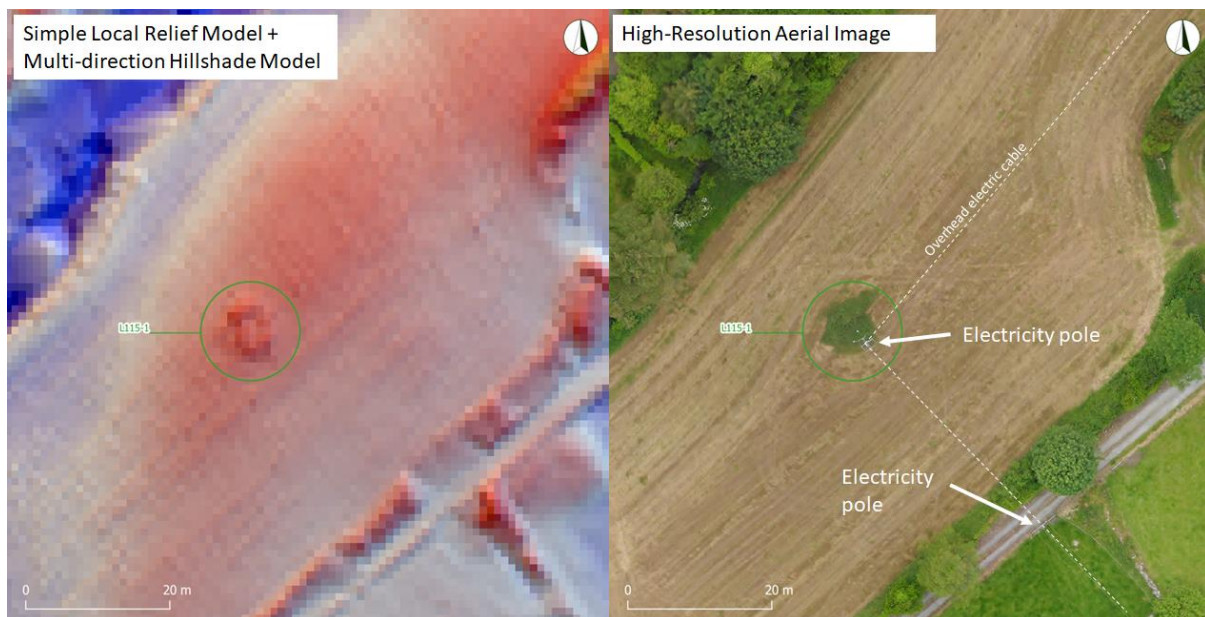


Figure 26: Possible barrow (L115-1) and electricity pole

²⁰ In three instances features have been given LiDAR site numbers during the initial analysis, but have been determined not to be archaeologically significant and have been given a confidence score of 0: L223-2, L302-1, & L321-2.

²¹ Sites of possible barrows, but possibly the result of cattle feeder marks: L102-1, L109-1, L110-1, L140-1, L330-1, & L345-1

Archaeological Assessment of LiDAR Data Visualisations

Overview

Analysis of the low-resolution LiDAR data for the Ten-T Project has identified and recorded 153 sites (Table 17):

Table 17: LiDAR Sites Overall Totals

Section	Total	SMR	Route Selection	New Sites
1	68	24	5	39
2	31	15	2	14
3	54	29	4	21
Totals	153	68	11	74

Of the 68 sites previously recorded in the SMR, the majority (49) did not have a surface expression visible in the LiDAR DTM data, and were therefore given a confidence score of 4 (Table 18).

Table 18: Summary of findings for LiDAR Sites recorded in the SMR

Section	SMR	Confidence				
		0	1	2	3	4
1	24	1	0	0	12	11
2	15	0	0	0	1	14
3	29	0	0	0	5	24
Totals	68	1	0	0	18	49

Of the sites identified at Route Selection, four were not apparent in the LiDAR data (confidence score 4). One was found to be possibly archaeologically significant (confidence score 1), and six were assessed as probably archaeologically significant (confidence score 2; Table 19). One site, a redundant record, has no surface expression and has been given a confidence score of 0.

Table 19: Summary of findings for LiDAR Sites identified in Route Selection

Section	Route Selection	Confidence				
		0	1	2	3	4
1	5	0	0	3	0	2
2	2	0	0	2	0	0
3	4	0	1	1	0	2
Totals	11	0	1	6	0	4

Of the 74 newly identified sites, 48 were determined to be probably archaeologically significant (confidence score 2), 23 possibly archaeologically significant (confidence score 1; Figure 27). Three features were initially noted as potentially archaeological, but which were ultimately deemed not to be archaeologically significant (confidence score 0; Table 20).

Table 20: Summary of findings for sites newly identified in the LiDAR data for the Ten-T Project

Section	New Sites	Confidence				
		0	1	2	3	4
1	39	0	13	26	0	0
2	14	1	6	7	0	0
3	21	2	4	15	0	0
Totals	74	3	23	48	0	0

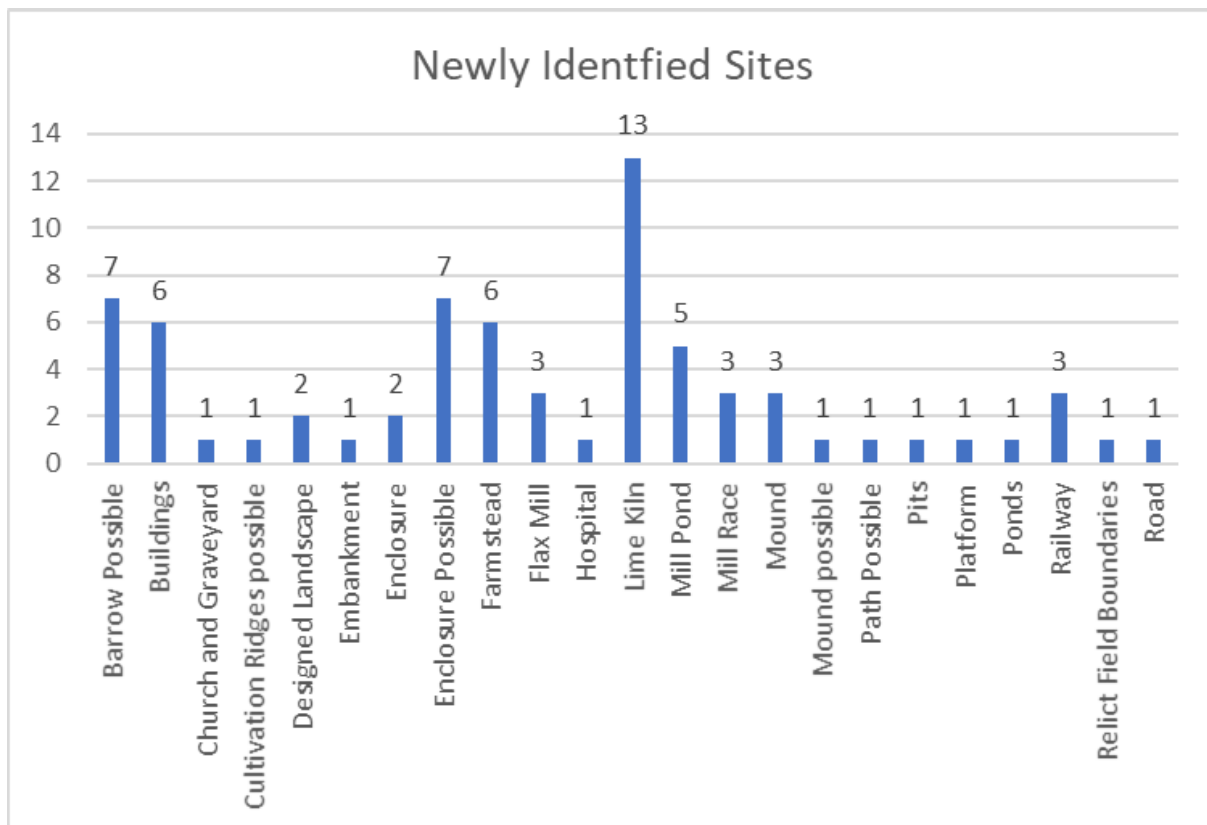


Figure 27: Categories of sites newly identified in the LiDAR data for the Ten-T Project²²

²² Graph of the 71 newly identified sites with a confidence score of 1 or 2.

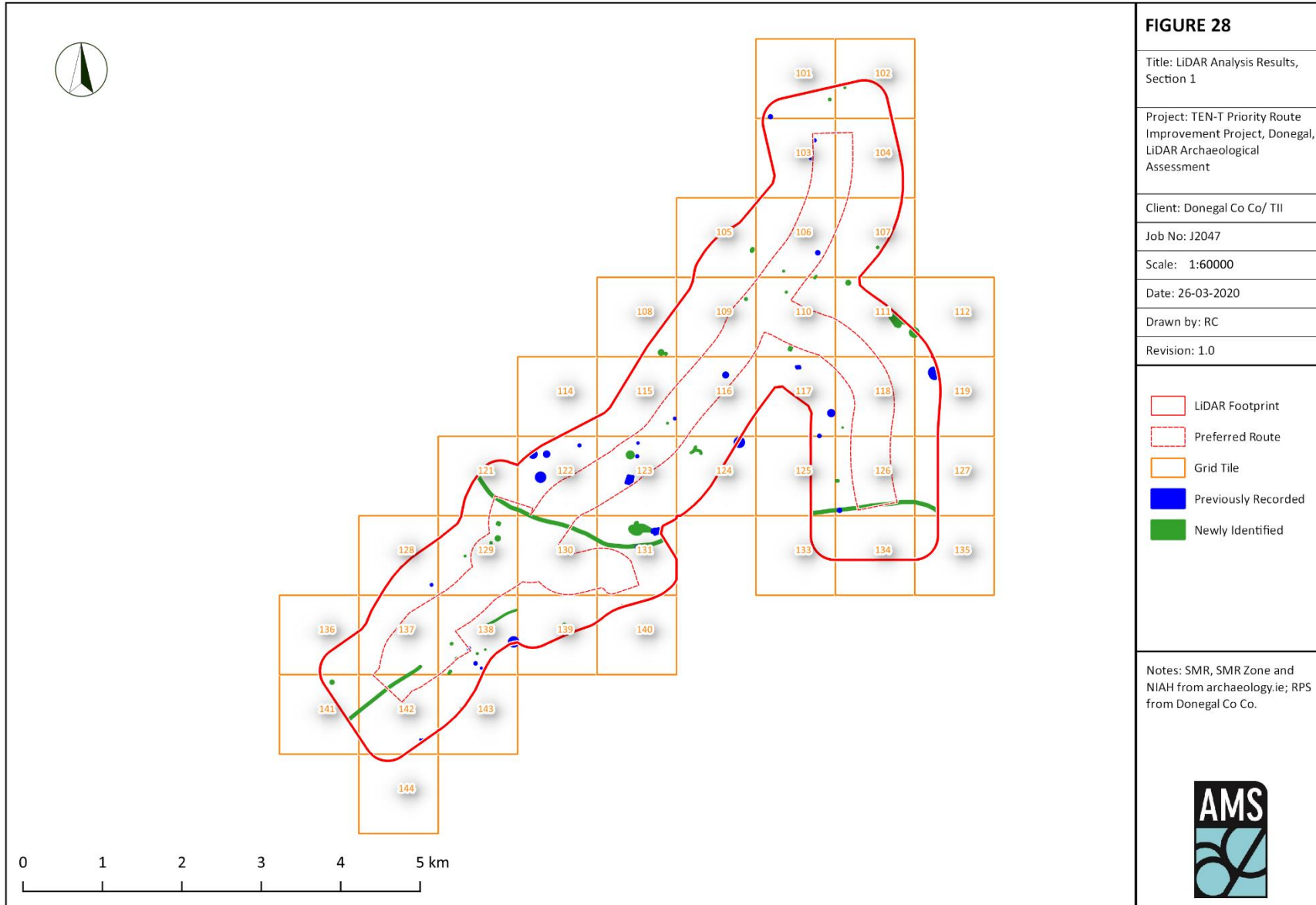


Figure 28: LiDAR analysis results, Section 1

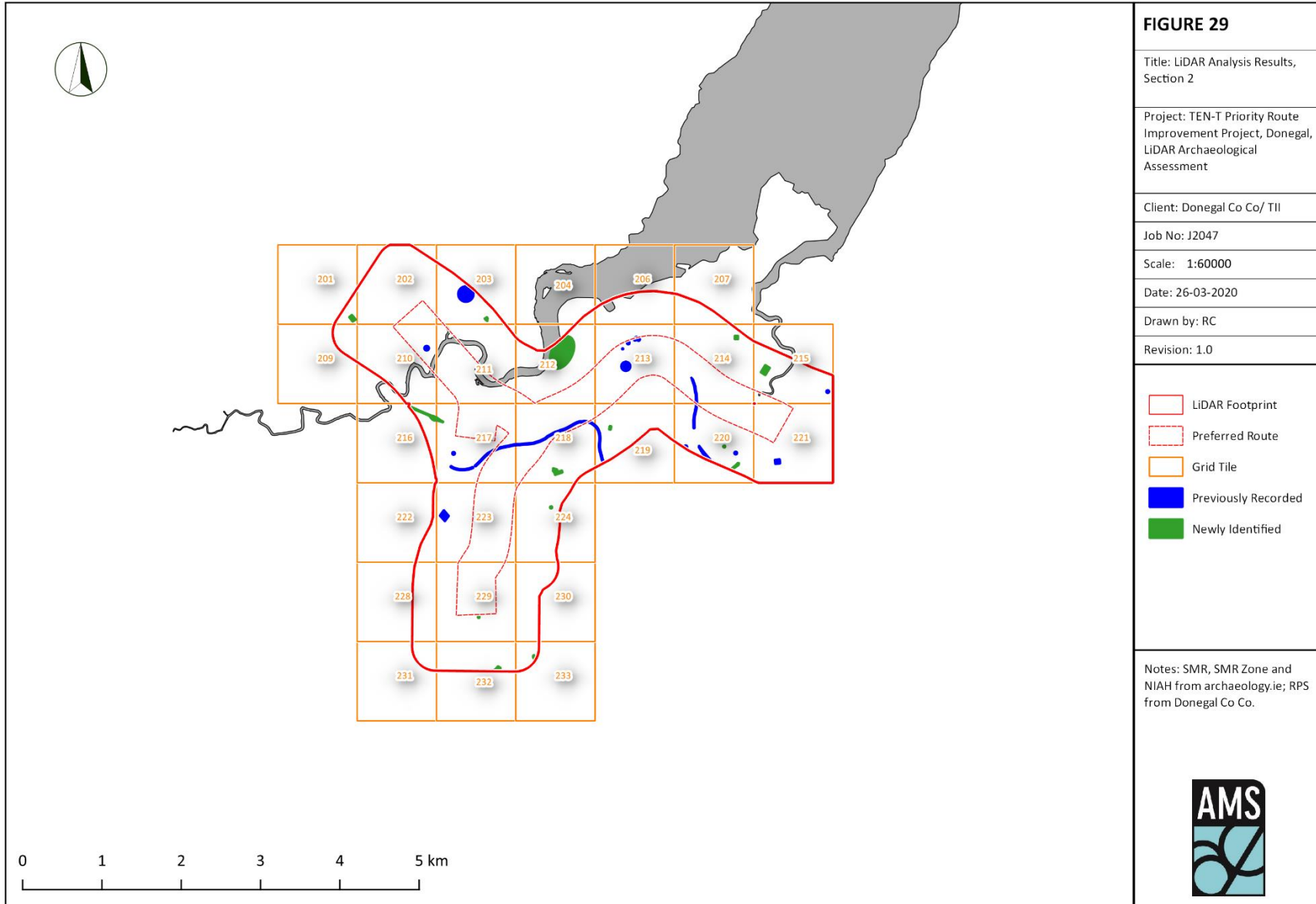


Figure 29: LiDAR analysis results, Section 2

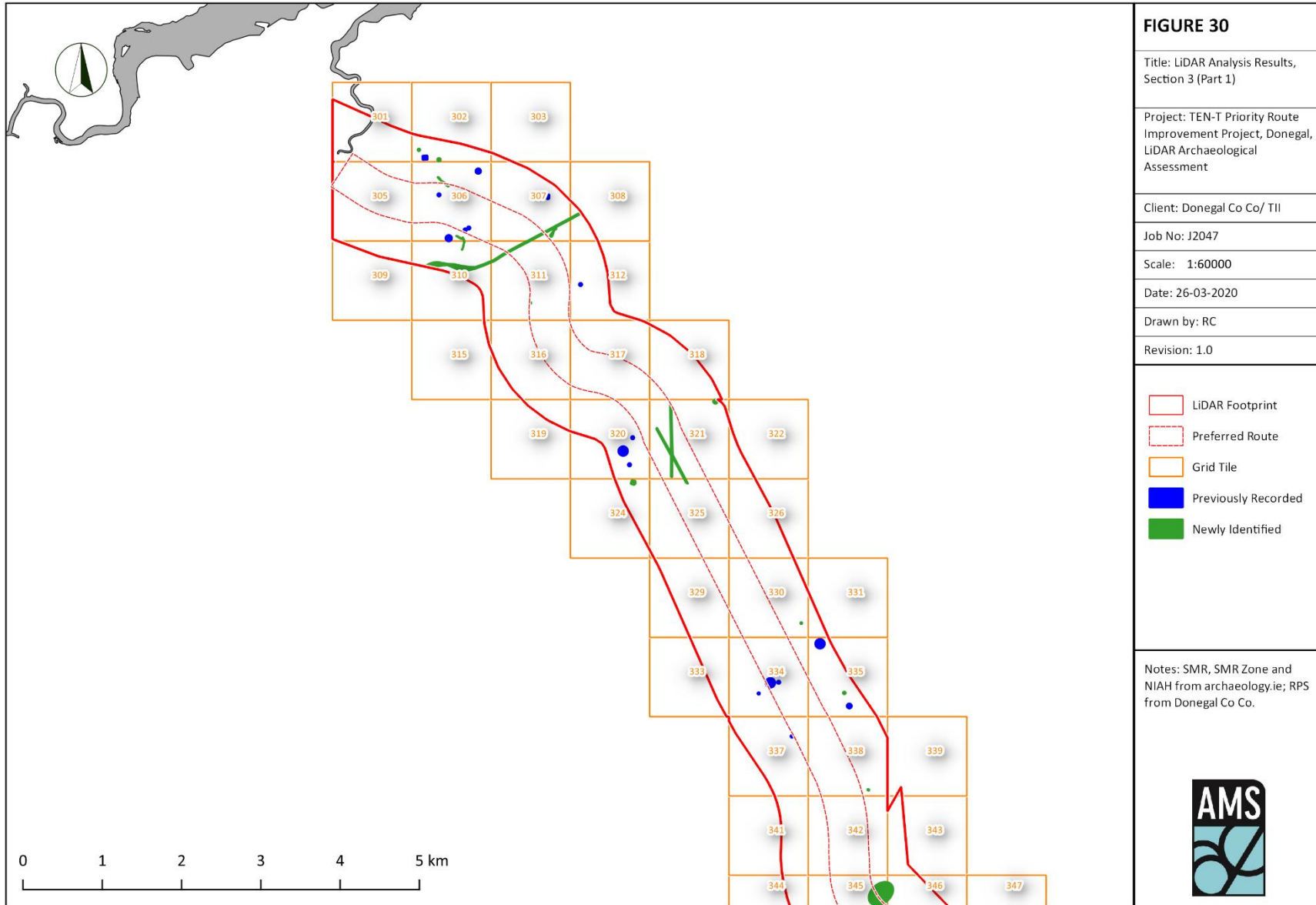


Figure 30: LiDAR analysis results, Section 3 (Part 1 of 2)

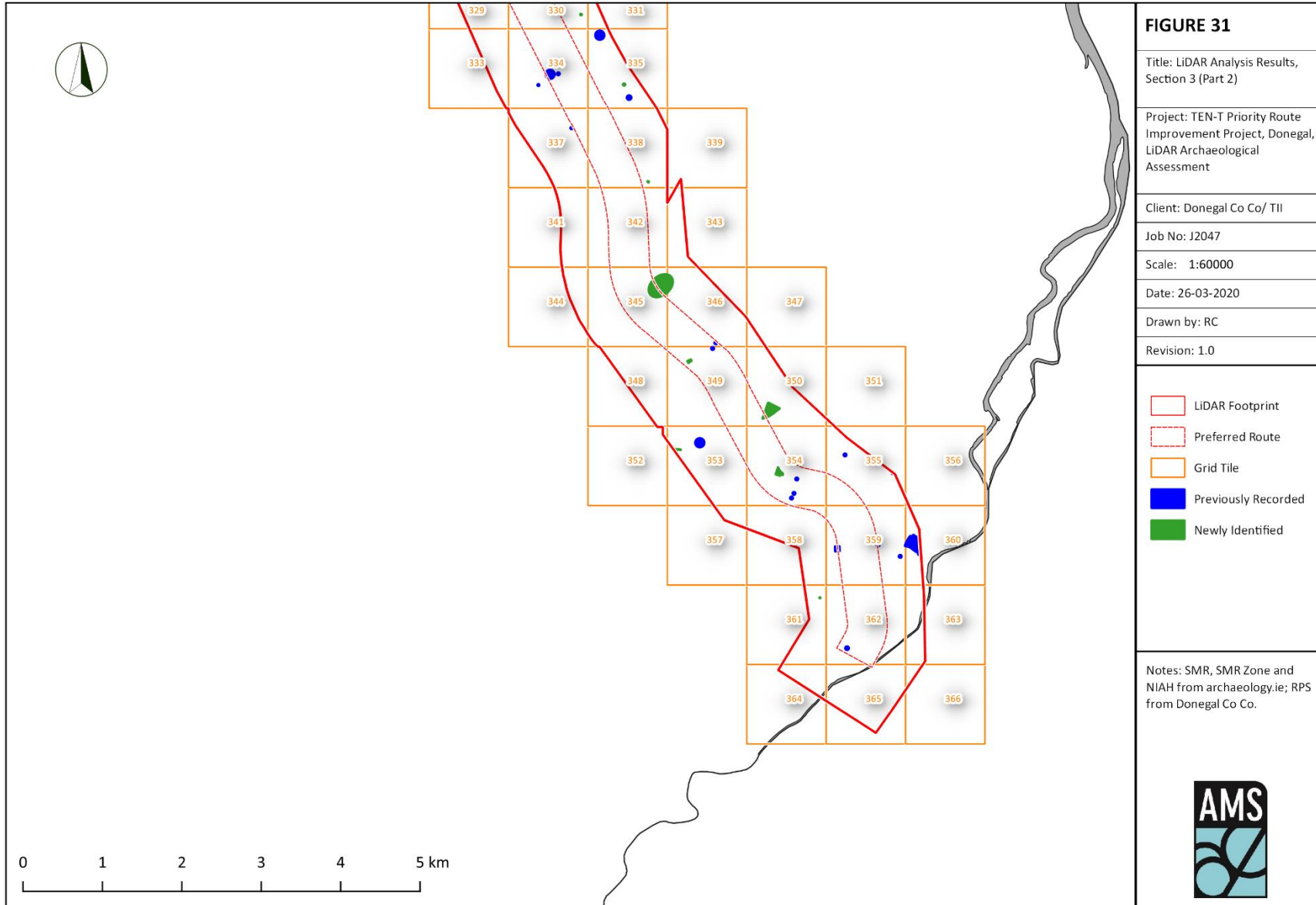


Figure 31: LiDAR analysis results, Section 3 (Part 2 of 2)

Section 1 Summary of Findings

Of the 41 tiles of LiDAR DTM data assessed for the Section 1 study area, 29 contained archaeological sites (Table 21).

Table 21: Summary of LiDAR Analysis for Grids in Section 1

Grid	Total	SMR	Route Selection	New Sites	Confidence				
					0	1	2	3	4
101	2	1	0	1	0	1	0	1	0
102	1	0	0	1	0	1	0	0	0
103	2	2	0	0	0	0	0	2	0
105	1	0	0	1	0	1	0	0	0
106	3	1	0	2	0	0	2	1	0
107	1	0	0	1	0	0	1	0	0
108	2	0	0	2	0	0	2	0	0
109	1	0	0	1	0	1	0	0	0
110	2	0	0	2	0	1	1	0	0
111	4	0	0	4	0	2	2	0	0
115	2	0	1	1	0	1	1	0	0
116	1	1	0	0	0	0	0	1	0
117	3	3	0	0	0	0	0	2	1
118	1	0	0	1	0	0	1	0	0
119	2	2	0	0	0	0	0	0	2
121	1	0	0	1	0	0	1	0	0
122	4	3	1	0	0	0	1	1	2
123	4	1	2	1	0	1	1	1	1
124	2	1	0	1	0	0	1	0	1
126	2	1	0	1	0	0	1	0	1
128	1	0	1	0	0	0	0	0	1
129	4	0	0	4	0	1	3	0	0
131	4	2	0	2	0	1	1	1	1
138	11	4	0	7	0	0	7	1	3
139	1	0	0	1	0	1	0	0	0
140	1	0	0	1	0	1	0	0	0
141	2	0	0	2	0	0	2	0	0
142	2	2	0	0	1	0	0	1	0
143	1	0	0	1	0	0	1	0	0
TOTALS	68	24	5	39	1	13	29	12	13

A total of 68 sites are identified and recorded in the LiDAR data for Section 1: 24 SMR sites, 5 sites in the Route Selection report, and 39 newly identified sites. One site recorded as a redundant record in the SMR is not apparent in the LiDAR data and is recorded as not archaeologically significant.²³

Five possible barrows are identified in Section 1, all newly identified from the LiDAR data, and ranging in size from 7.4m to 13m diameter and 0.05m to 0.5m high. These sites are noted as potential archaeology (with a confidence score of 1) because some may be associated with recent cattle feeders,²⁴ which can leave circular impression from cattle walking around the circular feeder; one possible barrow may be associated with an adjoining electric pole (Figure 26).²⁵

One megalithic tomb is also located in Section 1.²⁶ This is a previously recorded archaeological site, which is noted as destroyed in the SMR (DG078-044----); nothing archaeologically significant is apparent from the LiDAR data for the site or its immediate environs.

An oval mound is also noted in the LiDAR data,²⁷ newly identified, measuring 25.5m by 15.2m and 1m high.

The single standing stone noted in Section 1,²⁸ an SMR site, is not apparent on the LiDAR data.

Similarly, the single bullaun stone,²⁹ also an SMR site, is not apparent on the LiDAR survey data.

The church site in Drumboe townland,³⁰ which is only depicted on OSI 25-inch maps and is an SMR site, is apparent on the LiDAR data as a roughly rectangular enclosed area measuring 70m by 35m, with banks c.0.4m high and c.17m wide, and a possible annex feature (70m by 50m) to the north possibly representing an enclosed area such as a cemetery or precinct.

Of the three enclosures in Section 1, one is an SMR site,³¹ but it is not apparent in the LiDAR data. Two enclosures are newly identified in the LiDAR data.³² The first is a curving bank 5m wide and 0.4m high,³³ enclosing an area c.24.5m diameter around a house depicted on the OSI first-edition 6-inch map. The

²³ Redundant Record SMR: L142-1

²⁴ Barrow Possible: L140-1, L102-1, L110-1, L109-1

²⁵ Possible barrow beside an electricity pole in Drumboe Upper: L115-1.

²⁶ Megalithic Tomb: L117-1

²⁷ Mound: L111-1

²⁸ Standing Stone: L138-6

²⁹ Bullaun Stone: L103-1

³⁰ Church Site: L123-1

³¹ Enclosures, SMR: L122-4

³² Enclosures, newly identified: L143-1 & L111-2

³³ L143-1

second is a very low-relief circular feature measuring 36m diameter with ploughed-out banks c.12.5m wide and 0.3m high,³⁴ no external ditch, and with associated relict field boundaries.³⁵ The relict field boundaries consists of earthen banks spread over an area of c.1.9 ha, located on sloping ground, with banks typically measuring 10.5m wide and 0.2m high.

Thirteen ringforts are identified in Section 1, of which eleven are SMR sites;³⁶ seven of these have no expression in the LiDAR data.³⁷ Five ringforts consist of enclosures ranging from 20m to 54m diameter,³⁸ with banks from 4m to 10.5m wide and 0.1m to 0.9m high. One of these is a multivallate ringfort, an SMR site, with an overall diameter of 54m in diameter. It is defined by three enclosing banks and located on the summit of a small ridge.³⁹ One site recorded as a ringfort in the SMR appears in the LiDAR data as an oval mound 41m long and 24.6m wide, and 2.1m high, with no indication of a surrounding bank or ditch.⁴⁰

A single cashel is also located in Section 1.⁴¹ This was labelled as 'Fort' on OSI first-edition 6-inch map; on LiDAR it appears as a raised, trapezoidal-shaped enclosure measuring c.41.3m by 26m and 1.7m to 4.7m high, with banks measuring 5.1m wide and about 0.6m high.

Of the two souterrains in Section 1, one has no expression in the LiDAR data;⁴² the second site is located within an oval mound measuring 9m by 8m and c.2m high.⁴³

Seven possible enclosures are identified in Section 1: five from the LiDAR survey and two from Route Selection.⁴⁴ Neither of the possible enclosures identified in the route selection are apparent in the LiDAR data. Of the five possible enclosures newly identified in LiDAR, three encompass very large areas (0.62 Ha to 1.58 Ha),⁴⁵ and are generally oval and may be associated with agricultural enclosure rather than settlement sites. One possible enclosure appears to surround a farmstead with a subcircular bank

³⁴ L111-2

³⁵ Relict field boundaries: L111-3

³⁶ Ringforts: L101-1, L103-2, L106-1, L116-1, L119-1, L122-1, L122-2, L124-1, L126-2, L131-4, L138-4, L138-5, and L142-2

³⁷ Ringforts with no expression in LiDAR data: L119-1, L122-2, L124-1, L126-2, L131-4, L138-4, and L138-5

³⁸ Ringforts visible on the LiDAR data: L116-1, L142-2, L122-1, L106-1, & L101-1

³⁹ Multivallate ringfort (which also features on the front cover): L116-1

⁴⁰ Ringfort as oval mound: L103-2

⁴¹ Ringfort – Cashel: L117-3


⁴² Souterrain with no surface expression: L119-2

⁴³ Souterrain with surface expression: L138-2

⁴⁴ Possible enclosures from route selection: L123-2 & L128-1.

⁴⁵ Possible enclosures over large areas: L131-3, L111-4, & L123-4

measuring 45m in diameter, having a bank c.5m wide and 0.1m high.⁴⁶ The final possible enclosure is somewhat anomalous: it appears as an oval track-like depression measuring 20.5m by 49.6m, with a track 4m wide and 0.8m deep. This feature is located in overgrown, uneven scrubby ground and its archaeological significance is uncertain.

Two holy wells are in Section 1. The first, in Lough Hill townland, is on the SMR,⁴⁷ and appears on the LiDAR data as a roughly circular mound measuring 7.6m in diameter and 0.8m in height which lies within a rectangular enclosure c.20.6m by 16.2m, bounded by banks 0.1m high and 2.4m wide. The second holy well,  Drumboe Lower townland,⁴⁸ is visible in the LiDAR data as a faint circular enclosure measuring 21m in diameter and c.0.1m high in wooded area.

The remaining 29 sites date to the post-medieval period. Most of these are associated with agriculture and flax production.

Most farmsteads depicted on the historical OSI maps in the LiDAR study areas are still occupied. Three abandoned farmsteads are apparent in the LiDAR data.⁴⁹ One of these had been noted in Route Selection, and is still occupied by buildings.⁵⁰ Two are sites of farmsteads and appear on the LiDAR data: the first, in Dunwiley townland, appears as a rectangular raised area 23m by 13m and 0.7m high and located in a wooded area;⁵¹ the second, in Cappry townland, appears as a rectangular depression measuring 17m by 9m and up to 5m deep, with no remains of buildings apparent.⁵²

Seven sites of buildings are visible in the LiDAR data,⁵³ all corresponding with buildings depicted on historical OSI maps. These building sites range in size from 10m to 42m long, 6m to 15m wide, and 0.45m to 2m high. The largest building site, in Teevickmoy townland, measures 42m by 8m and 1.8m high.⁵⁴ The site of the seventeenth-century Drumboe Castle House is apparent as a depression measuring c. 22m by 15m and c.2m deep.⁵⁵ This building also had an associated garden and designed landscape measuring c. 220m by 72m.⁵⁶

⁴⁶ Possible enclosure around farmstead: L129-1

⁴⁷ Holy well on SMR: L117-2

⁴⁸ Holy well in Drumboe Lower: L123-3

⁴⁹ Farmsteads: L110-2, L122-3, and L129-3

⁵⁰ Farmstead from Route Selection: L122-3

⁵¹ Farmstead in Dunwiley: L110-2

⁵² Farmstead in Cappry: L129-3

⁵³ Sites of buildings: L106-3, L115-2, L118-1, L129-2, L131-1, L138-2, and L138-8

⁵⁴ Building in Teevickmoy: L106-3

⁵⁵ Building, Drumboe Castle: L131-1

⁵⁶ Designed landscape: L131-2

Nine sites of lime kilns are apparent on the LiDAR data,⁵⁷ although the historical OSI maps depict up to 178 kilns in Section 1. The lime kiln sites are visible in the LiDAR data as oval mounds between 5m and 30m diameter, averaging 15m; these kiln sites are between 0.2 and 3.3m high, with the average height at 1m.

The site of a flax mill is visible in the LiDAR data for Section 1;⁵⁸ this is the site only of the mill building, visible in the LiDAR data as a roughly rectangular depression measuring 11.1m by 7.6m and 0.24m deep sited on sloping ground beside a stream.

A mill pond for another flax mill is also apparent on the LiDAR.⁵⁹ This appears as a depression measuring 56m by 34m and 1.4m deep beside a watercourse. The remains of a second mill pond was visible on the LiDAR data only as an enclosing dam or bank measuring 91m long, c.10m wide and c.1.1m high. A bank c.7m wide and c.1.6m high flanked a channel running from this dam for a distance of c.100m;⁶⁰ the former mill site itself is outside the LiDAR study area.

A cluster of three ponds in Ballybofey townland is visible in the LiDAR data, each between 16 and 20m long, 7.5 to 8m wide, and c.0.8m deep, each 5m apart; these are depicted on historical OSI maps and are thought to possibly be the remains of retting pits for flax processing.⁶¹

The site of a 'hospital'⁶² depicted on the OSI 25-inch map and part of the Union Workhouse complex at Mullandrait outside Stranorlar is visible in the LiDAR data as a rectangular outline measuring 35m by 10m; and 0.3m high.

The remains of the disused Donegal Railway Company narrow gauge railway (1892–1960) also crossed Section 1. These remains ranged from cuts c.20m wide and 1.5m deep to embankments c.11m wide and 2m high, occasionally with external ditches c.4m wide and c.0.4m deep. The remains of this disused railway runs for about 4,273m in the Section 1 LiDAR study area.⁶³

A possible path was also apparent on the LiDAR data;⁶⁴ it partly follows the route of a path depicted on Cassini 6-inch map and consists of a track c.9m wide and c.1.9m high on sloping ground, with slight

⁵⁷ Lime kiln sites: L101-2, L106-2, L107-1, L129-4, L138-10, L138-3, L138-7, L138-9, and L141-1

⁵⁸ Flax mill site: L108-2

⁵⁹ Flax mill pond: L108-1

⁶⁰ Mill pond dam & head race: L124-2

⁶¹ Group of Ponds (X3) in Ballybofey: L139-1

⁶² Hospital: L126-1

⁶³ Railway (disused): L121-1

⁶⁴ Path: L138-1

indications of a ditch on the up-slope side c.3m wide and 0.2m deep; this path runs for 516m within the Section 1 LiDAR study area.

Finally, a c.1.1km section of the N15 road at the south end of the Section 1 study area in Dooish townland (where it extends outside the LiDAR study area) appears to be built on an embankment 25m wide and up to 2m higher than its surrounding fields.⁶⁵ This feature is depicted on the first-edition 6-inch map with the road gently meandering along its length. This embankment was built beside the Burn Daurnett river to carry the road and act as a flood defence for the fields to the north. It appears to date to the late eighteenth or early nineteenth century.

Table 22: Section 1 Summary of Site Categories

Category	Total	SMR/ RMP	Route Selection	New Sites	Confidence				
					0	1	2	3	4
Barrow Possible	5	0	0	5	0	5	0	0	0
Buildings	7	1	1	5	0	0	6	1	0
Bullaun Stone	1	1	0	0	0	0	0	1	0
Church Site	1	1	0	0	0	0	0	1	0
Designed Landscape	1	0	0	1	0	0	1	0	0
Embankment	1	0	0	1	0	0	1	0	0
Enclosure	4	2	0	2	0	0	2	0	2
Enclosure Possible	7	0	2	5	0	5	0	0	2
Farmstead	3	0	1	2	0	0	3	0	0
Flax Mill	1	0	0	1	0	0	1	0	0
Holy Well	2	1	1	0	0	0	1	1	0
Hospital	1	0	0	1	0	0	1	0	0
Lime Kiln	9	0	0	9	0	1	8	0	0
Megalithic Tomb	1	1	0	0	0	0	0	0	1
Mill Pond	2	0	0	2	0	0	2	0	0
Mound	1	0	0	1	0	1	0	0	0
Path Possible	1	0	0	1	0	0	1	0	0
Ponds	1	0	0	1	0	1	0	0	0
Railway	1	0	0	1	0	0	1	0	0
Redundant Record	1	1	0	0	1	0	0	0	0
Relict Field Boundaries	1	0	0	1	0	0	1	0	0
Ringfort	11	11	0	0	0	0	0	6	5
Ringfort – Cashel	1	1	0	0	0	0	0	1	0
Ringfort – unclassified	1	1	0	0	0	0	0	0	1

⁶⁵ Embankment in Dooish: L141-2

Category	Total	SMR/ RMP	Route Selection	New Sites	Confidence				
					0	1	2	3	4
Souterrain	2	2	0	0	0	0	0	1	1
Standing Stone	1	1	0	0	0	0	0	0	1
Grand Total	68	24	5	39	1	13	29	12	13

Section 2 Summary of Findings

Of the 28 LiDAR tiles covering Section 2 of the Ten-T project, 16 contained archaeological sites (Table 23).

Table 23: Summary of LiDAR Analysis for Grids Section 2

Grid	Total	SMR	Route Selection	New Sites	Confidence				
					0	1	2	3	4
201	2	1	0	1	0	0	1	1	0
203	2	1	0	1	0	0	1	0	1
212	1	0	0	1	0	0	1	0	0
213	6	6	0	0	0	0	0	0	6
214	2	0	1	1	0	1	1	0	0
215	2	1	0	1	0	1	0	0	1
216	1	0	0	1	0	0	1	0	0
217	2	1	1	0	0	0	1	0	1
218	1	0	0	1	0	0	1	0	0
219	1	0	0	1	0	1	0	0	0
220	5	3	0	2	0	2	0	0	3
221	1	1	0	0	0	0	0	0	1
223	2	1	0	1	1	0	0	0	1
224	1	0	0	1	0	1	0	0	0
229	1	0	0	1	0	0	1	0	0
232	1	0	0	1	0	0	1	0	0
Totals	31	15	2	14	1	6	9	1	14

A total of 31 sites were identified and recorded in Section 2: 15 SMR sites, 2 sites from the route selection, and 14 newly identified sites. Fourteen of the 15 SMR sites in Section 2 have no expression in the LiDAR data; this includes a battlefield,⁶⁶ bullaun stone,⁶⁷ church and graveyard at Trimragh which lies beneath the Letterkenny Branch of the Londonderry & Lough Swilly Railway (1883–1953), which

⁶⁶ Battlefield: L203-1

⁶⁷ Bullaun stone: L217-1

itself underlies part of the N13 road,⁶⁸ four sites of rock art,⁶⁹ a souterrain,⁷⁰ and five examples of standing stones.⁷¹ LiDAR is not the most appropriate means of visualising small features like bullaun stones, rock art and standing stones, but it can identify potentially significant associated earthworks. One SMR site recorded as a redundant record is not visible on the LiDAR data.⁷²

An oval mound visible on LiDAR in Listellian townland measures 18.3m long, 17.3m wide and 1.9m high;⁷³ this feature is depicted but not named on the first-edition 6-inch map. Another possible mound in Rossbrackan townland is apparent in the LiDAR data as a circular mound measuring c.16.7m diameter and c.0.9m high, sited on a locally prominent hill.⁷⁴

A large oval area in Farsetmore townland was identified as potentially archaeologically significant.⁷⁵ This was probably a former island surrounded by land reclaimed from the River Swilly; it measures 484m long, 250m wide and rises 12.2m over the surrounding flood plain for the Swilly, with enclosing banks to south 12m wide and 0.4m high; the interior is disturbed by a substantial quarry.

One ringfort, an SMR site, at Ballyraine townland,⁷⁶ is heavily disturbed by a modern golf course. The ringfort is sited on a ridge; an indistinct circular feature is apparent as raised area c.25m in diameter, but with no apparent enclosing bank or ditch.

The Presbyterian church and graveyard at Gortlee are apparent in the LiDAR data as a rectangular area measuring 81m by 52m, sited on sloping ground.⁷⁷

Two sites of farmsteads were apparent in the LiDAR. One in Glebe townland was depicted on the first-edition OSI 6-inch map and appears in the LiDAR data as an enclosed area c.40m by 60m with enclosing banks c.5.8m wide and 0.8m high. Inside, the rectangular outline of buildings 22m by 6.7m wide and c.0.3m high is visible.⁷⁸ The second farmstead was depicted on both the first-edition 6-inch and 25-inch maps, and is apparent on the LiDAR data as an irregular area c.96m by 105m and raised c.1m

⁶⁸ Church and graveyard at Timragh: L213-6

⁶⁹ Rock art: L213-2, L213-3, L213-4, and L213-5

⁷⁰ Souterrain: L223-1

⁷¹ Standing stones: L215-1, L220-1, L220-2, L220-5, and L221-1

⁷² Redundant record: L213-1

⁷³ Mound in Listellian: L224-1

⁷⁴ Possible mound in Rossbrackan: L220-3

⁷⁵ Enclosed area at Farsetmore: L212-1

⁷⁶ Ringfort in Ballyraine: L201-2

⁷⁷ Presbyterian church and graveyard at Gortlee: L201-1

⁷⁸ Farmstead Glebe: L203-2

high, straddling a stream between Drumany and Dromore townlands.⁷⁹ A curving enclosing bank was identified at another farm, enclosing a modern structure; this is not depicted on historical maps, and was determined not to be archaeologically significant.⁸⁰

One lime kiln site in Listellian townland depicted on the first-edition 6-inch OSI map was identified in the LiDAR data as a mound 26m diameter and 0.8m high.

Two mill ponds depicted on historical OSI maps are apparent in the LiDAR data. The first, in Pluck townland, is apparent as an irregular oval depression located next to River Dooballagh Burn. The depression measures 125m by 25m and c.2m deep;⁸¹ a bank, which separates the mill pond from the adjacent river, measures 5.5m wide and 1m high; the base of the millpond is c.0.9m higher than the adjacent river. The second mill pond in Lurgy townland extends outside the LiDAR survey footprint,⁸² but appears to be an embanked enclosure 67m by 65m with banks c.4m wide and 0.6m high.

A rectangular platform in the corner of a field in Rossbrackan townland is also visible in the LiDAR data. This feature measures 35m by 30m and 0.8m high, bounded by a field boundary ditch to south 4m wide and 1m deep. The purpose of this site is unknown; it is not depicted on historical OSI maps and so has been given a confidence score of 1 (possibly archaeologically significant).

A group of three pits in Dromore townland are depicted on historical OSI maps next to a stream in an area now covered by trees.⁸³ The LiDAR data revealed the outline of three roughly rectangular pits ranging in size from 12m to 21m long, 4.5m to 7m wide and 0.7m to 1.1m deep; these may be retting pits, and have been given a confidence score of 1 (possibly archaeologically significant).

Three sections of disused railway run through the Section 2 LiDAR study area. The first is part of the former Letterkenny Branch of the Londonderry & Lough Swilly Railway (1883–1953), including the site of Pluck Station,⁸⁴ this line was substantially reused by the N13 road; the intact segment measures 5m to 10.5m wide, with cuttings up to 1.5m deep, extending for a distance of 995m long in the Section 2 survey area. This railway reappears further to the west, where the track ranges from 15m wide and 0.2m high to 41m wide and 19m deep cutting into the side of a hill, for a distance of 480m.⁸⁵ The third railway line is a disused part of the narrow gauge Strabane and Letterkenny Railway (1909–1960), with

⁷⁹ Farmstead in Drumany and Dromore: L218-1

⁸⁰ Enclosure, not archaeologically significant: L223-2

⁸¹ Mill pond in Pluck Td.: L220-4

⁸² Mill pond in Lurgy Td.: L232-1

⁸³ Pits: L219-1

⁸⁴ Railway, disused: L214-2

⁸⁵ Railway disused: L216-1

embankments 22m wide at base to 4.2m wide at top, up to 5.4m high, with cuttings up to 22m wide and 7.2m deep, running for 2,474m in the Section 2 survey area.

The final site has been tentatively identified as potential cultivation ridges in Rossbrackan townland.⁸⁶ These appear as a rectangular area on a ridge overlooking the Corkey River to the south. The area measures 106m by 60m and consists of 8 ridges each c.7m wide, 7m apart and 0.1m high. Nothing is indicated on historical OSI maps for this area. The regular nature of the ridges suggests that they could relate to former cultivation, though the possibility that they are an artefact of LiDAR data acquisition, and therefore a false-positive, cannot be excluded. Consequentially, they have been given a confidence score of 1 (possibly archaeologically significant).

Table 24: Section 2 Summary of Site Categories

Category	Total	SMR/ RMP	Route Selection	New Sites	Confidence				
					0	1	2	3	4
Battlefield	1	1	0	0	0	0	0	0	1
Cultivation Ridges Possible	1	0	0	1	0	1	0	0	0
Bullaun Stone	1	1	0	0	0	0	0	0	1
Church and Graveyard	2	1	0	1	0	0	1	0	1
Enclosure	1	0	0	1	1	0	0	0	0
Enclosure possible	1	0	0	1	0	0	1	0	0
Farmstead	2	0	0	2	0	0	2	0	0
Lime Kiln	1	0	0	1	0	0	1	0	0
Mill Pond	2	0	0	2	0	1	1	0	0
Mound	1	0	0	1	0	1	0	0	0
Mound possible	1	0	0	1	0	1	0	0	0
Pits	1	0	0	1	0	1	0	0	0
Platform	1	0	0	1	0	1	0	0	0
Railway	3	0	2	1	0	0	3	0	0
Redundant Record (SMR)	1	1	0	0	0	0	0	0	1
Ringfort	1	1	0	0	0	0	0	1	0
Rock Art	4	4	0	0	0	0	0	0	4
Souterrain	1	1	0	0	0	0	0	0	1
Standing Stone	5	5	0	0	0	0	0	0	5
Grand Total	31	15	2	14	1	6	9	1	14

⁸⁶ Possible cultivation ridges: L215-2

Section 3 Summary of Findings

Of the 58 LiDAR tiles covering Section 3, 25 contained archaeological sites (Table 25).

Table 25: Summary of LiDAR Analysis for Grids Section 3

Grid	Total	SMR	Route Selection	New Sites	Confidence				
					0	1	2	3	4
302	3	1	0	2	1	1	0	1	0
306	8	5	0	3	0	0	3	1	4
307	3	2	0	1	0	0	1	0	2
310	1	0	0	1	0	0	1	0	0
311	1	0	0	1	0	0	1	0	0
312	1	1	0	0	0	0	0	0	1
320	3	3	0	0	0	0	0	0	3
321	2	0	0	2	1	0	1	0	0
324	1	0	0	1	0	0	1	0	0
330	1	0	0	1	0	1	0	0	0
334	3	1	2	0	0	1	0	1	1
335	3	2	0	1	0	0	1	1	1
337	1	0	1	0	0	0	0	0	1
338	1	0	0	1	0	0	1	0	0
345	2	0	0	2	0	2	0	0	0
346	1	1	0	0	0	0	0	0	1
349	2	1	0	1	0	0	1	0	1
350	1	0	0	1	0	0	1	0	0
353	2	1	0	1	0	0	1	0	1
354	4	3	0	1	0	0	1	0	3
355	2	2	0	0	0	0	0	0	2
359	5	4	1	0	0	0	1	0	4
360	1	1	0	0	0	0	0	0	1
361	1	0	0	1	0	0	1	0	0
362	1	1	0	0	0	0	0	1	0
Totals	54	29	4	21	2	5	16	5	26

A total of 54 sites have been identified and recorded in Section 3: 29 SMR sites, 4 sites in the Route Selection, and 21 newly identified sites. These include two apparent sites on the LiDAR were determined not to be archaeologically significant and have been given a confidence score of 0: one, a circular enclosure in Raymogy townland which appears to post-date buildings depicted on the OSI

25-inch maps;⁸⁷ the other, an apparent irregular enclosure in Castledowey townland which on closer inspection appears to be a product of the LiDAR data processing.⁸⁸

Twenty-six sites have no expression in the LiDAR data, including 24 SMR sites and two sites identified in Route Selection. These sites include a bridge,⁸⁹ possible burnt spread identified in Route Selection,⁹⁰ two cists,⁹¹ a cross-inscribed stone,⁹² a possible bi-vallate enclosure identified in Route Selection in Dromore Big townland,⁹³ a recorded ringfort in Woodlands townland,⁹⁴ a souterrain in Ballyholey townland,⁹⁵ the Zone of Archaeological Potential for the historic town of Lifford,⁹⁶ and a post-medieval school house in Labbadish townland.⁹⁷ Standing stones are by far the largest number of sites in Section 3 (16) with no discernible expression in the LiDAR data; all are recorded in the SMR.⁹⁸

Two possible barrow sites are newly identified in the LiDAR data: one a cluster of three oval depressions in Carnshannagh townland, each averaging c.7.5m by 5.5m and c.0.1m deep, each with a raised centre.⁹⁹ The second possible barrow in Mulnaveagh townland consisted of a single low-relief circular hollow c.10.1m diameter, 0.1m deep, with a slight raised centre c.0.05m.¹⁰⁰ These possible barrows also resemble the marks left by modern cattle feeders, and have been given a confidence score of 1 (possible archaeology).

The site of a megalithic tomb, an SMR site, is recorded in Errity townland. This is located on steeply sloping ground beside a tributary of the Corkey River.¹⁰¹ While LiDAR did not indicate a monument at this location, an oval mound 16m by 12m and 0.5m high is located some c.28m southeast of the recorded tomb site and it may be an associated feature.

⁸⁷ Circular feature in Raymoghy, not archaeologically significant: L302-1

⁸⁸ Apparent enclosure in Cstledowey townland, not archaeologically significant: L321-2

⁸⁹ Bridge: L353-2

⁹⁰ Burnt spread possible: L337-1

⁹¹ Cists: L306-2, & L306-8

⁹² Cross-inscribed stone: L306-3

⁹³ Bi-vallate enclosure in Dromore Big: L334-3

⁹⁴ Ringfort in Woorlands: L335-1

⁹⁵ Souterrain in Ballyholey: L320-3

⁹⁶ Historic town: L360-1

⁹⁷ School house in Labbadish: L306-7

⁹⁸ Standing stones: L307-1, L307-2, L312-1, L320-1, L320-2, L346-1, L349-1, L354-1, L354-2, L354-3, L355-1, L355-2, L359-1, L359-2, L359-3, & L359-4

⁹⁹ Possible barrow in Carnshannagh: L330-1

¹⁰⁰ Possible barrow in Mulnaveagh: L345-1

¹⁰¹ Megalithic tomb in Errity: L306-4

A tear-shaped mound named 'Herdgee Hill' on historical OSI maps in Raymoghly townland is identified as a possible archaeological site.¹⁰² This mound measures 46m by 33m and is 4.4m tall.

Two enclosures, both recorded in the SMR, are identified in the Section 3 study area. One, in Carnshannagh townland,¹⁰³ consists of oval area c.40m by 36m and 0.4m high, but with no evidence for a bank or ditch. However, this site is in a tillage field and crops may have partly obscured the low-relief features associated with this site. The second enclosure, in Drummucklagh townland,¹⁰⁴ is now levelled but appears as the site of a circular enclosure in the Cassini 6-inch maps. However, LiDAR data revealed a low-relief circular enclosure c.42m in diameter, with banks c.14m wide and 0.2m high, located c.34m southeast of the recorded site.

A possible enclosure was noted during Route Selection, and appears in the LiDAR data as a circular area c.30m diameter and c.0.2m high on sloping ground;¹⁰⁵ this site appears to be located in a tillage field, which may partly obscure low-relief features on low-resolution LiDAR. Another possible enclosure was noted in the townland of Mulnaveagh as a large oval area measuring 330m by 180m enclosing a hill c.7.6m high, with a possible curving outer bank to the north and west c.5m wide and c.0.2m high, and a curving ditch or stream to south 8m wide and 1.8m deep; this site has a possible barrow in its interior.¹⁰⁶

A souterrain is also located in the Section 3 study area in Curragalane townland.¹⁰⁷ Whilst the souterrain itself is not visible in the LiDAR DTM, the data does show a low-profile circular mound 35m in diameter, and 0.2m high at the site. However, this site is in an area of tillage which may partly obscure low-relief features on low-resolution LiDAR.

A church (ruined but upstanding), graveyard and architectural fragments (all SMR sites) located in Raymoghly townland in Section 3 appears in the LiDAR DTM data as a rectangular enclosure 55m by 36.4m and c.1.4m high, with central building, still upstanding, measuring 22.5m by 8.64m.¹⁰⁸

The remains of a designed landscape surrounding Cavanacor House appears in the LiDAR data as a triangular area 230m by 170m on an east-facing slope;¹⁰⁹ with surface irregularities from planting and

¹⁰² Mound in Raymoghly: L302-3

¹⁰³ Enclosure in Carnshannagh: L334-2

¹⁰⁴ Enclosure in Drummucklagh: L335-3

¹⁰⁵ Possible enclosure Carnshannagh:L334-1

¹⁰⁶ Possible barrow: L345-1

¹⁰⁷ Souterrain in Curragalane: L362-1

¹⁰⁸ Church and graveyard in Raymoghly: L302-2

¹⁰⁹ Designed landscape around Cavanacor House: L350-1

landscaping. The house appears to be still occupied, and the former designed landscape is now wooded gardens.

Three sites of farmsteads are visible in the LiDAR survey. The site of a farmstead in Ballynabreen townland beside the Cavanacor River is depicted on historical OSI maps,¹¹⁰ and appears in the LiDAR data as an irregular polygon 100m by 92m, containing a rectangular area measuring 20m by 12m and 0.4m high corresponding with buildings. The site of a second farmstead in Ballyhole Far townland was also depicted on historical OSI maps and appears as a polygonal area of uneven ground measuring c.57m by c.52m,¹¹¹ with no discernible outline of house remains. The third identified farmstead located in Lifford Common townland is visible in the LiDAR data as an enclosed area 44m by 35m with banks 0.2m to 0.4m high and 7m to 12m wide.¹¹²

Three sites of lime kilns depicted on historical OSI maps were identified in the LiDAR data.¹¹³ Two of these appear to be low-relief earthen mounds 15m to 16m diameter and 0.2m to 0.7m high. The third kiln, in Drummucklagh townland, is upstanding and recorded in the NIAH; LiDAR indicates it measures 15m by 12m and 5m high,¹¹⁴ and is located next to a quarry site. The site of a building in Gortin North townland depicted on historical OSI maps appears in the LiDAR data as a roughly rectangular mound 25m by 17m and 0.8m high.¹¹⁵

Two flax mill sites located in the Section 3 LiDAR study area and depicted on historical OSI maps are apparent in the LiDAR data. The first, in Carrickballydoeey townland,¹¹⁶ consists of a rectangular depression 13.4m by 9.4m and 0.5m deep; the level of the associated mill race¹¹⁷ suggests this mill had an overshot wheel. The second, in Tullyrap townland,¹¹⁸ appears as a rectangular depression 22m by 19m; and 1.5m deep.

A mill pond depicted on the 25-inch OSI map in Drumoghill townland appears in the LiDAR data as an enclosed area 128m by 24m; with an enclosing bank c.7m wide and 0.9m high; the pond is some c.3.8m higher than adjacent River Pluck; its associated flax mill and mill race do not survive.

¹¹⁰ Farmstead in Ballynabreen townland: L354-2

¹¹¹ Farmstead in Ballyhole Far townland: L324-1

¹¹² Farmstead in Lifford Common townland: L359-5

¹¹³ Lime kilns: L311-1, L335-2, & L361-1

¹¹⁴ Upstanding lime kiln in Drummucklagh: L335-2

¹¹⁵ Building in Gortin North: L349-2

¹¹⁶ Flax mill in Carrickballydoeey: L306-6

¹¹⁷ Mill race in Carrickballydoeey: L306-5

¹¹⁸ Flax mill in Tullyrap: L338-4

Three mill races are visible on the LiDAR data, corresponding with mill races depicted on historical OSI maps. The first mill race, in Raymoghly townland, appears as a linear depression parallel to the River Pluck,¹¹⁹ measuring 190m long, 13m wide, with a base 1.26m higher than the adjacent river, and an enclosing bank 2.5m wide and 0.1m high. The second, in Carrickballydooley townland,¹²⁰ appears in the LiDAR as a channel 3–6m wide and 0.3m to 1.5m deep, and 250m long. It fed a flax mill,¹²¹ with a 150m-long head race and 100m-long tail race running off the River Pluck. The third mill race, in Millsessiagh townland,¹²² was depicted on OSI 25-inch maps and appears in the LiDAR data as a channel 9m wide, 1.7m deep and 97m long (extending outside the LiDAR survey area) adjacent to the Deele River; this area has been substantially remodelled with flood defences in the twentieth century, which completely removed the former flax and corn mill building fed by the mill race.

A disused section of the Letterkenny Branch of the Londonderry & Lough Swilly Railway (1883–1953) runs through the Section 3 study area.¹²³ This appears in the LiDAR as a feature with an average width of 15m, with cuts up to 35m wide and 14m deep, to track 4m wide, and embankments up to 26m wide, 7m high with a track 5m wide; this disused railway runs for 2,135m in the Section 3 survey area.

Finally, the first-edition 6-inch map depicts crossing roads which are no longer extant.¹²⁴ These roads appear in the LiDAR data as a slightly raised track 9m wide, 0.2m high, with a total length of c.1,730m in total.

Table 26: Section 3 Summary of Site Categories

Category	Total	SMR	Route Selection	New Sites	Confidence				
					0	1	2	3	4
Barrow Possible	2	0	0	2	0	2	0	0	0
Bridge	1	1	0	0	0	0	0	0	1
Buildings	1	0	0	1	0	0	1	0	0
Burnt Spread Possible	1	0	1	0	0	0	0	0	1
Church and Graveyard	1	1	0	0	0	0	0	1	0
Circular Feature	1	0	0	1	1	0	0	0	0
Cist	2	2	0	0	0	0	0	0	2
Cross-inscribed Stone	1	1	0	0	0	0	0	0	1

¹¹⁹ Mill race in Raymoghly: L306-1

¹²⁰ Mill race in Carrickballydooley: L306-5

¹²¹ Flax mill in Carrickballydooley: L306-6

¹²² Mill race in Millsessiagh: L353-1

¹²³ Railway disused: L310-1

¹²⁴ Roads: L321-1

Category	Total	SMR	Route Selection	New Sites	Confidence				
					0	1	2	3	4
Designed Landscape	1	0	0	1	0	0	1	0	0
Enclosure	3	2	1	0	0	0	0	2	1
Enclosure Possible	2	0	1	1	0	2	0	0	0
Farmstead	3	0	1	2	0	0	3	0	0
Flax Mill	2	0	0	2	0	0	2	0	0
Historic Town	1	1	0	0	0	0	0	0	1
Lime Kiln	3	0	0	3	0	0	3	0	0
Megalithic Tomb	1	1	0	0	0	0	0	1	0
Mill Pond	1	0	0	1	0	0	1	0	0
Mill Race	3	0	0	3	0	0	3	0	0
Mound	1	0	0	1	0	1	0	0	0
Not archaeologically significant	1	0	0	1	1	0	0	0	0
Railway	1	0	0	1	0	0	1	0	0
Ringfort	1	1	0	0	0	0	0	0	1
Road	1	0	0	1	0	0	1	0	0
School	1	1	0	0	0	0	0	0	1
Souterrain	2	2	0	0	0	0	0	1	1
Standing Stone	16	16	0	0	0	0	0	0	16
Grand Total	54	29	4	21	2	5	16	5	26

Final Note

Please note that the 71¹²⁵ new potentially archaeologically significant features identified during this assessment of low-resolution LiDAR data for the Ten-T Project should be inspected on the ground before a final determination can be made as to their archaeological significance.

¹²⁵ 74 minus the three potential sites determined to be not archaeologically significant.

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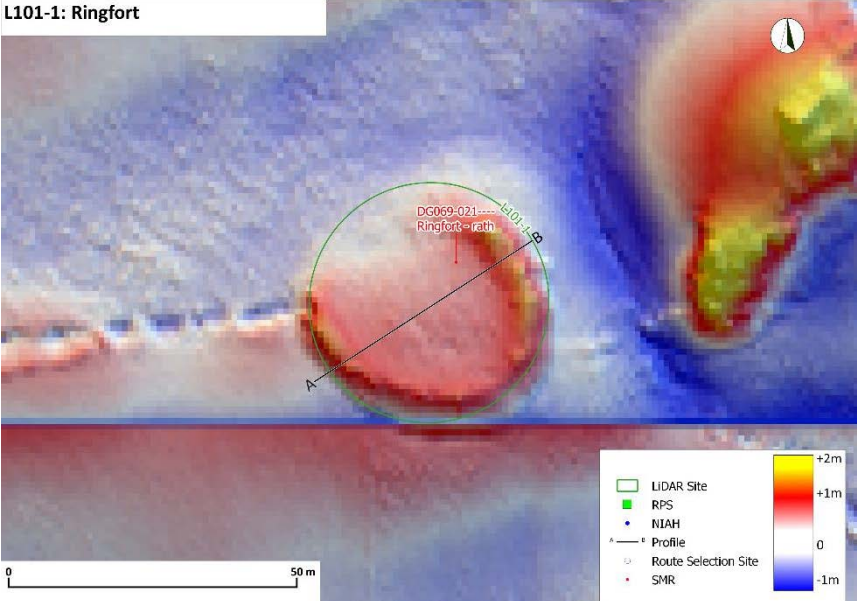
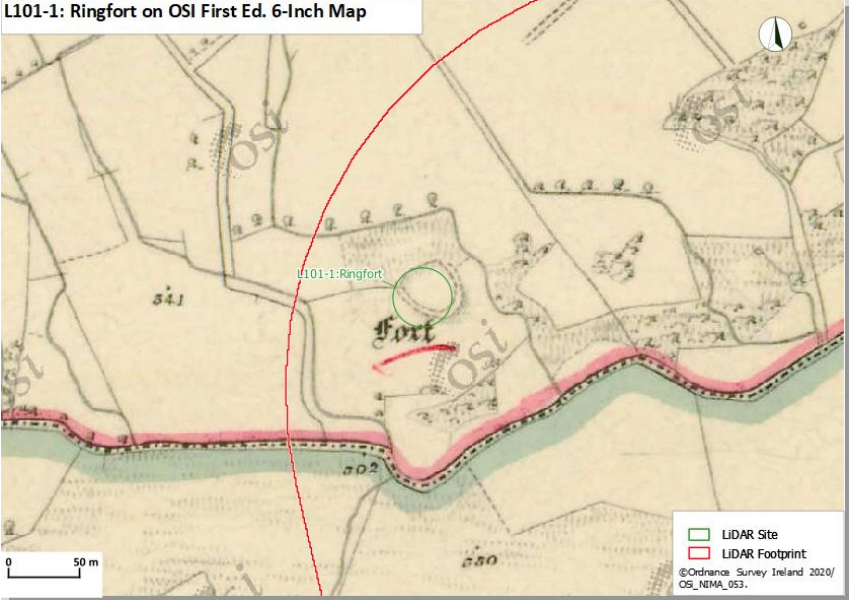
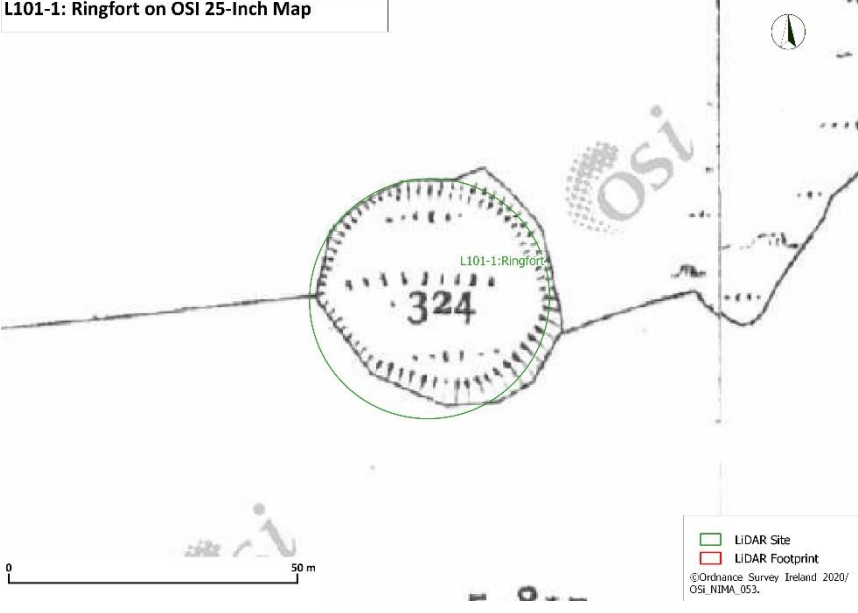
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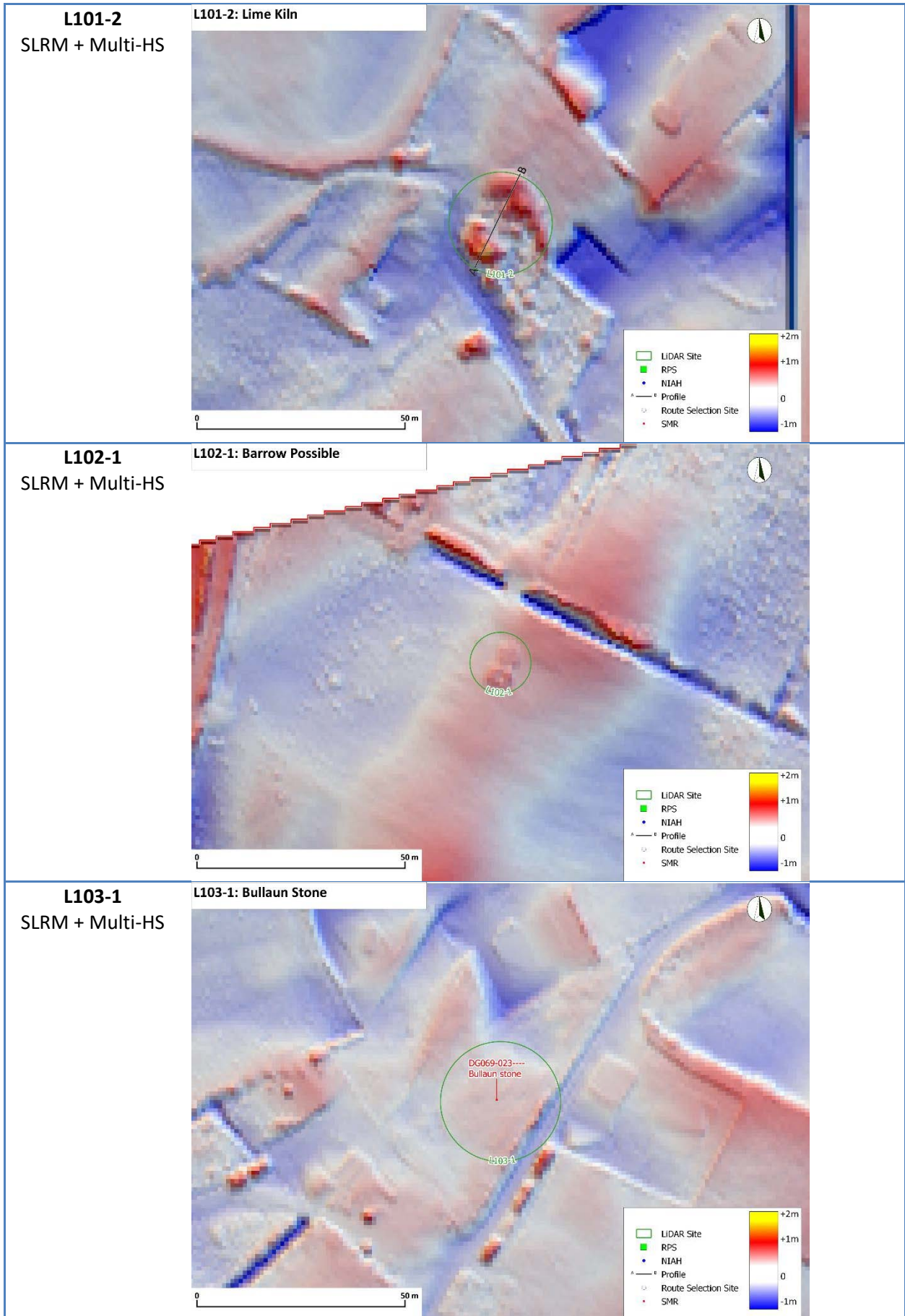
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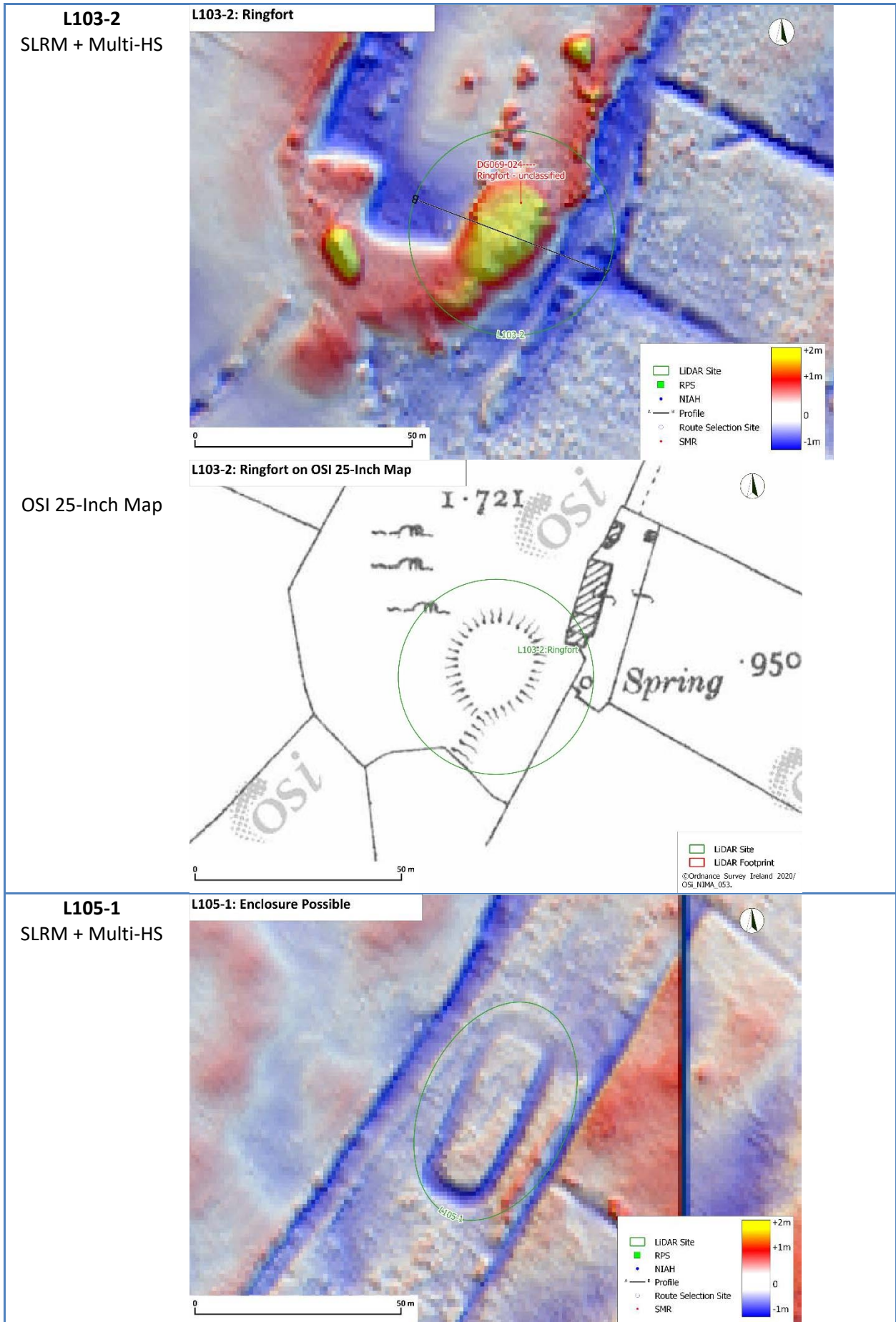
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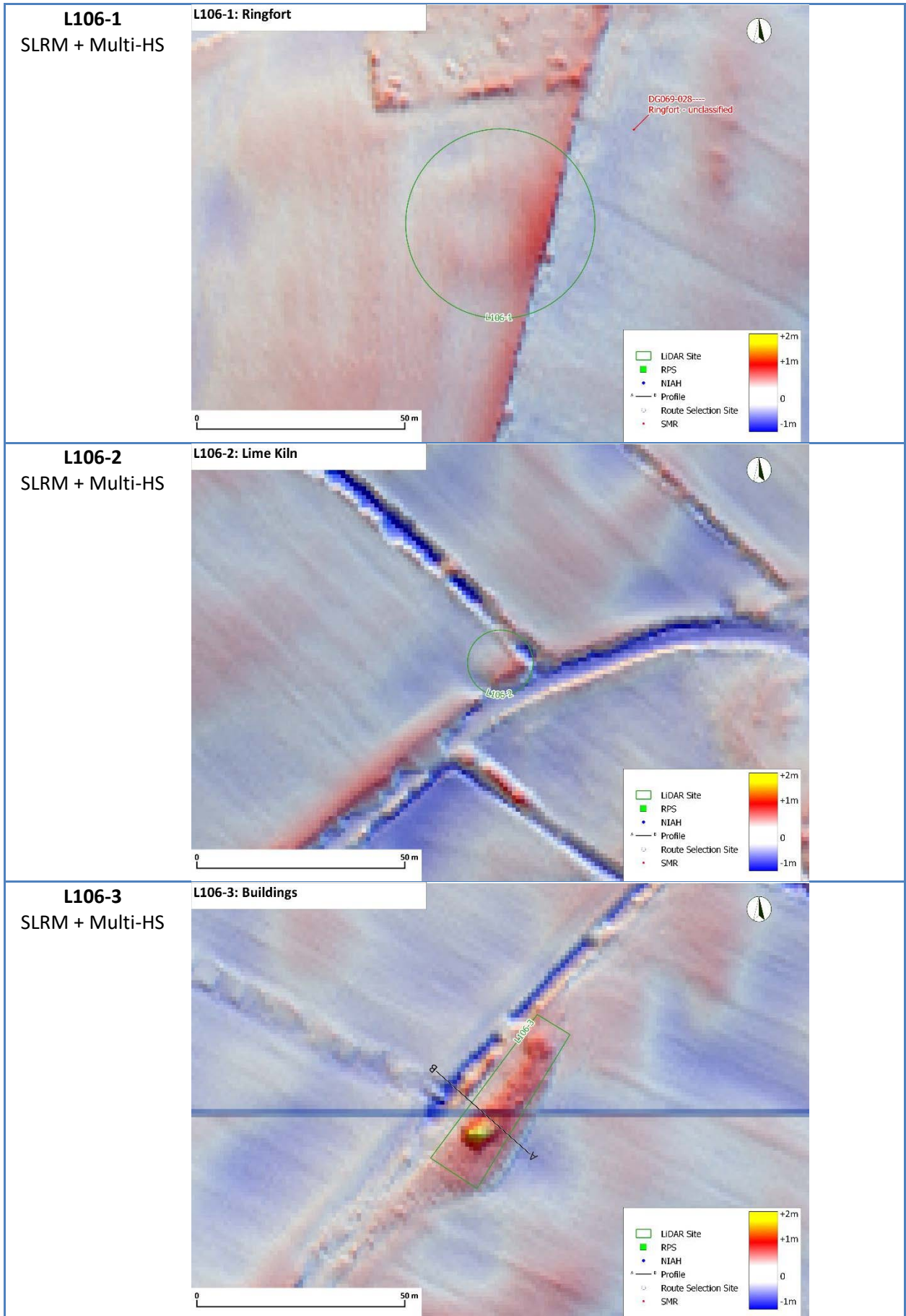
Appendix 1: LiDAR Site Visualisations

Section 1 LiDAR Sites

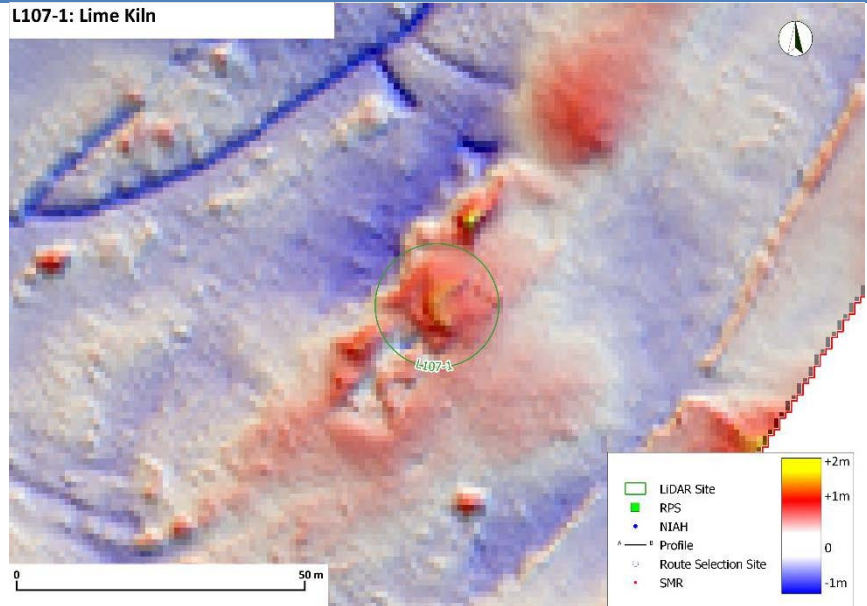
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<p>OSI 25-Inch Map</p>	<p>L101-1: Ringfort on OSI 25-Inch Map</p> 



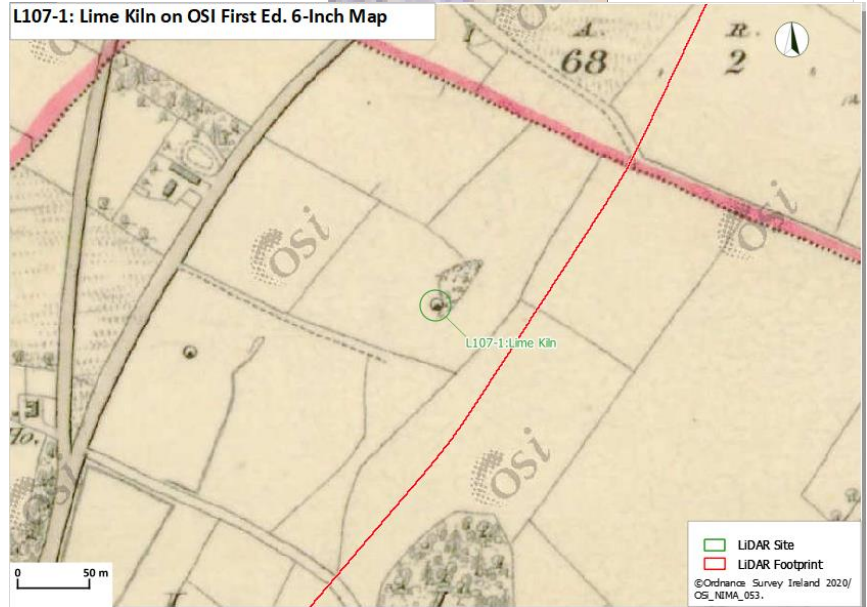




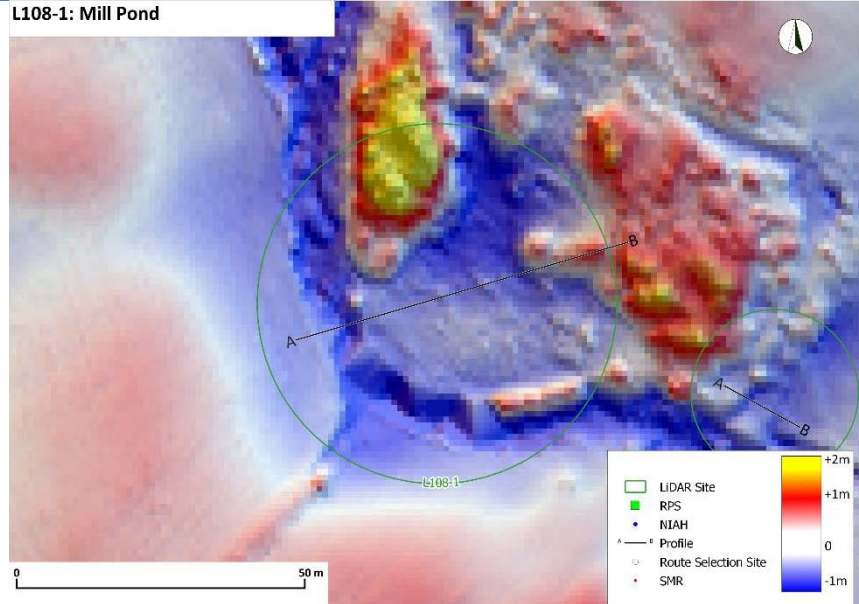
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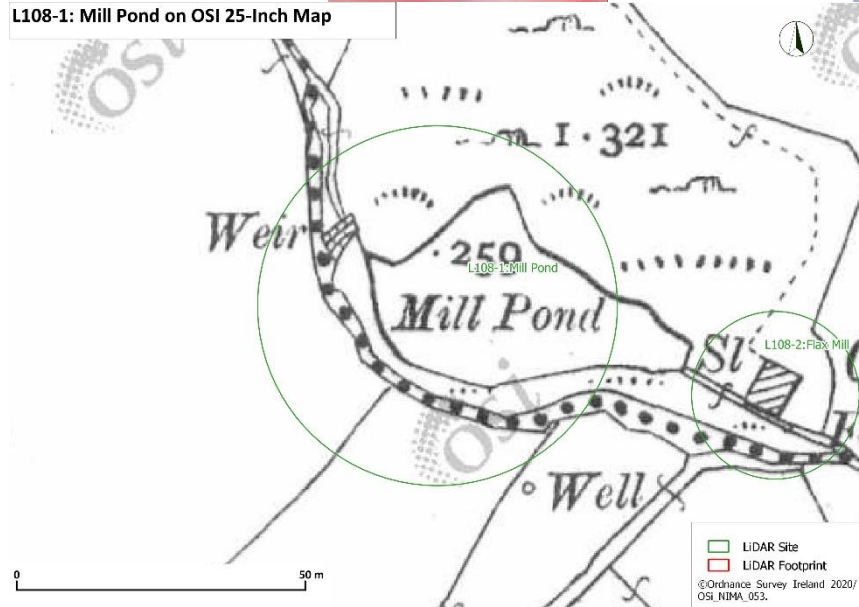
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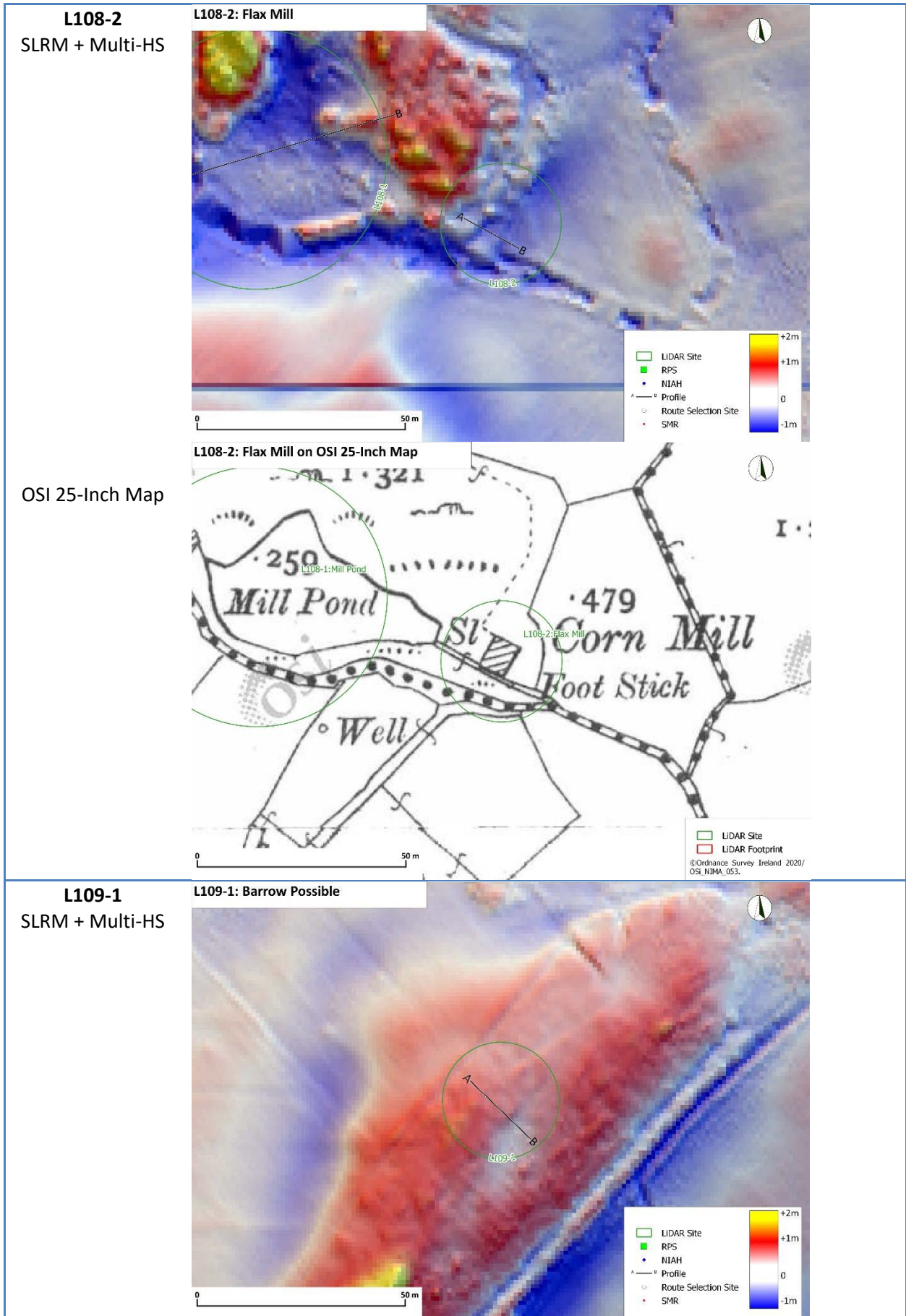


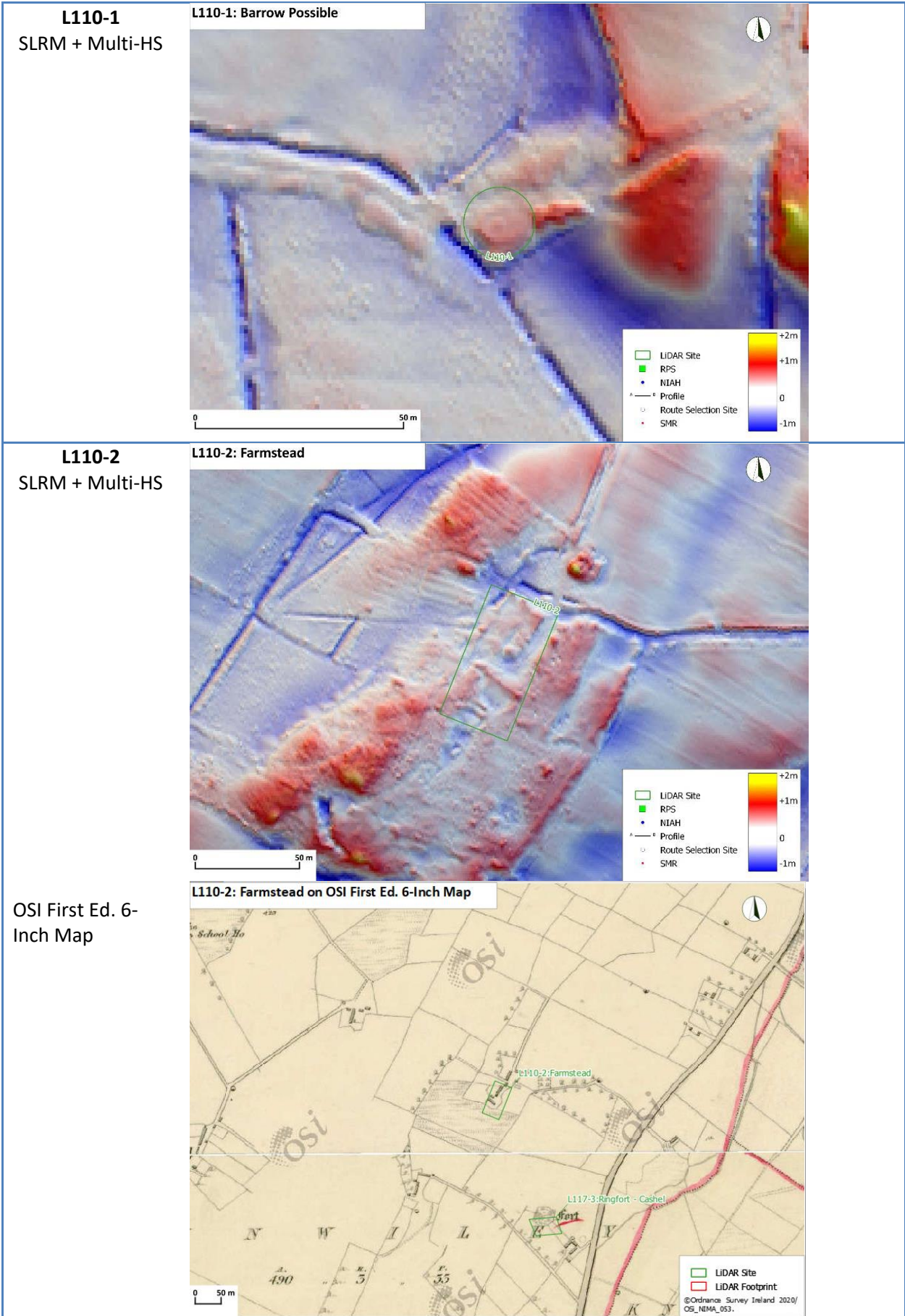
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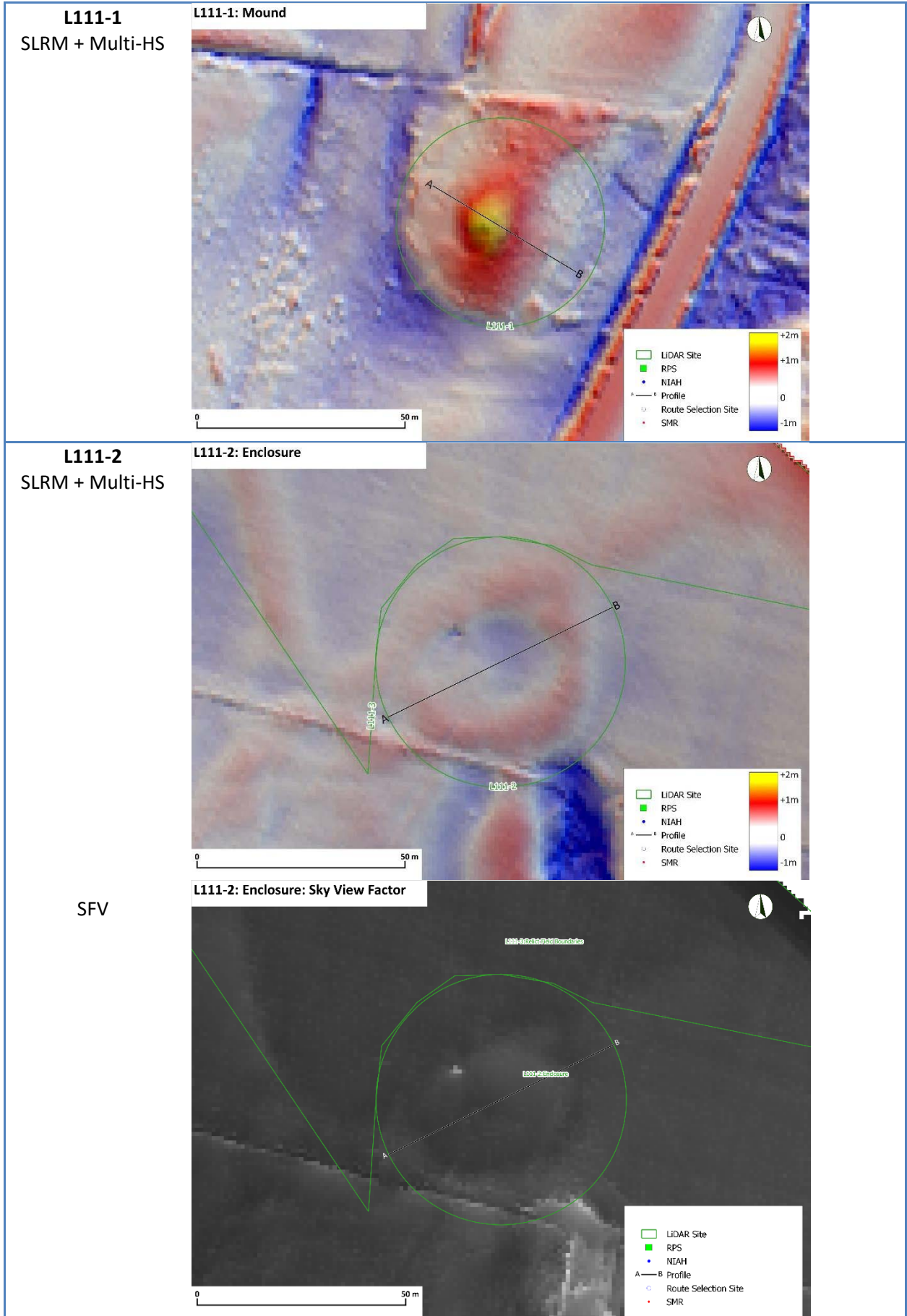


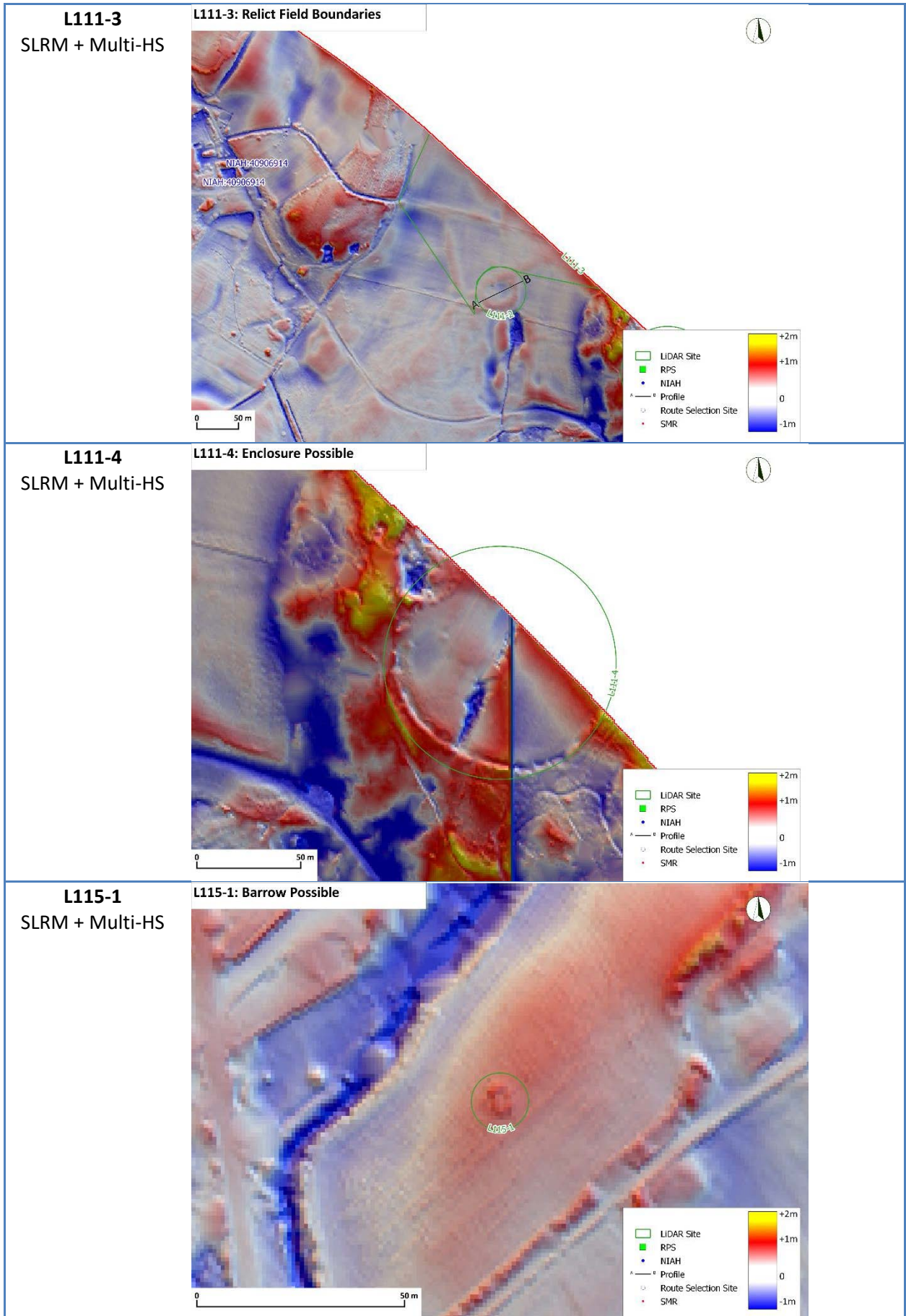
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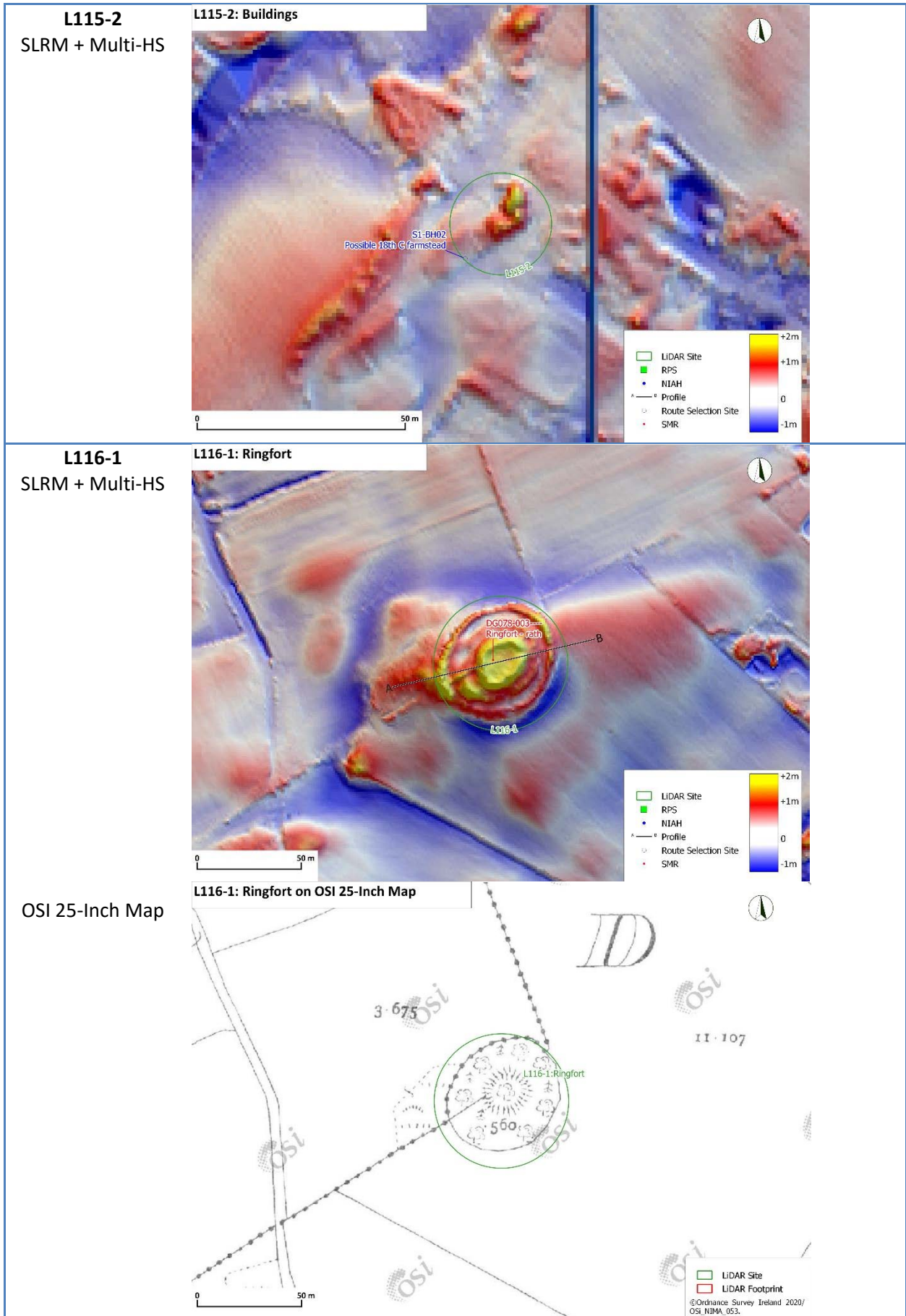


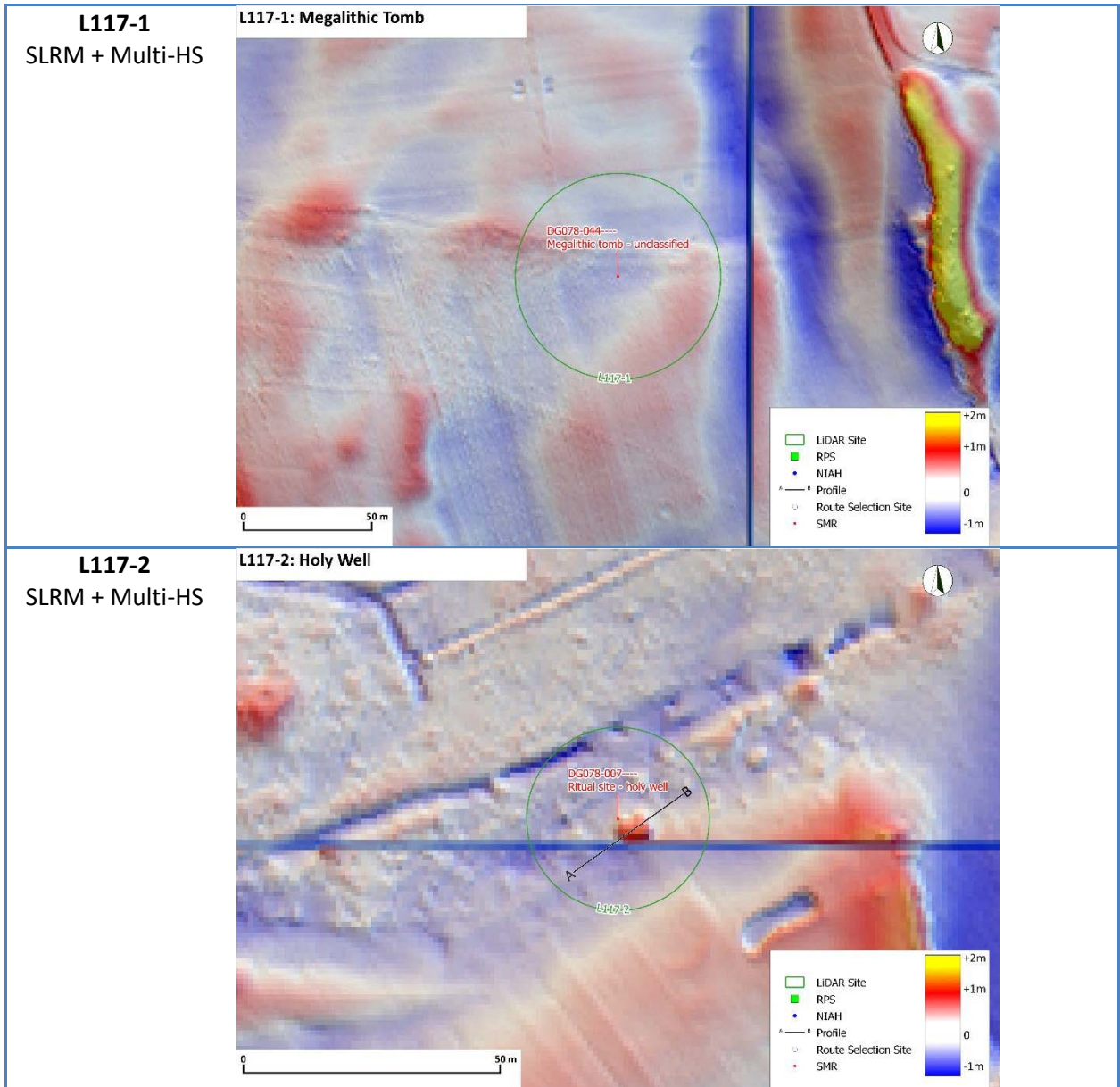




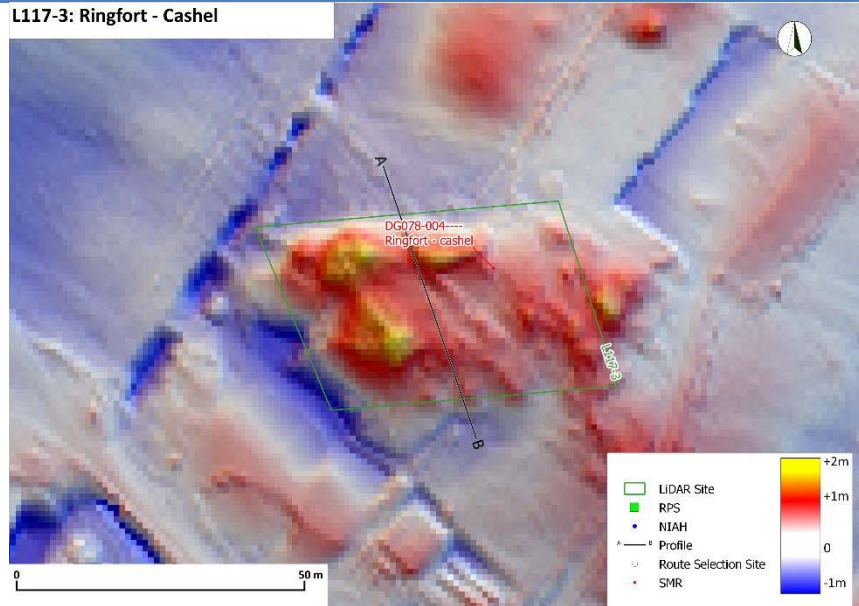




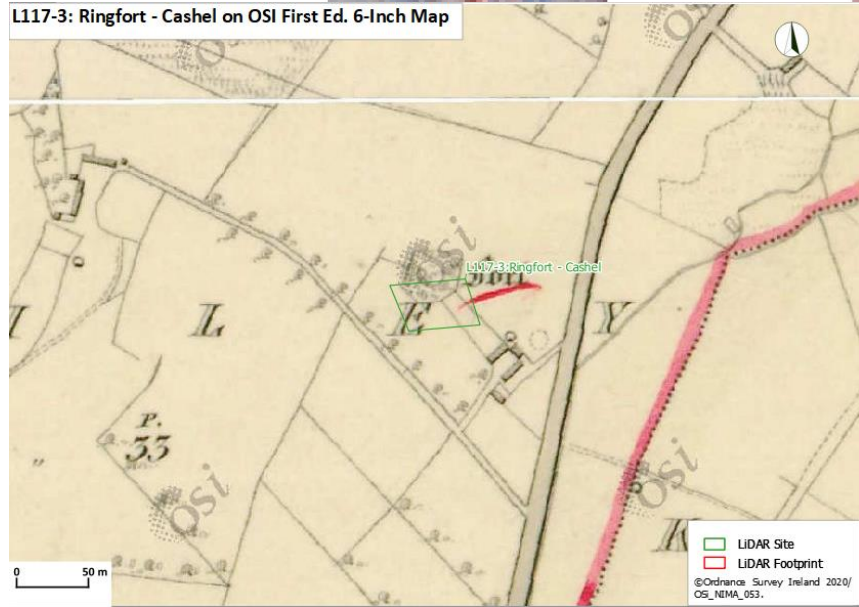




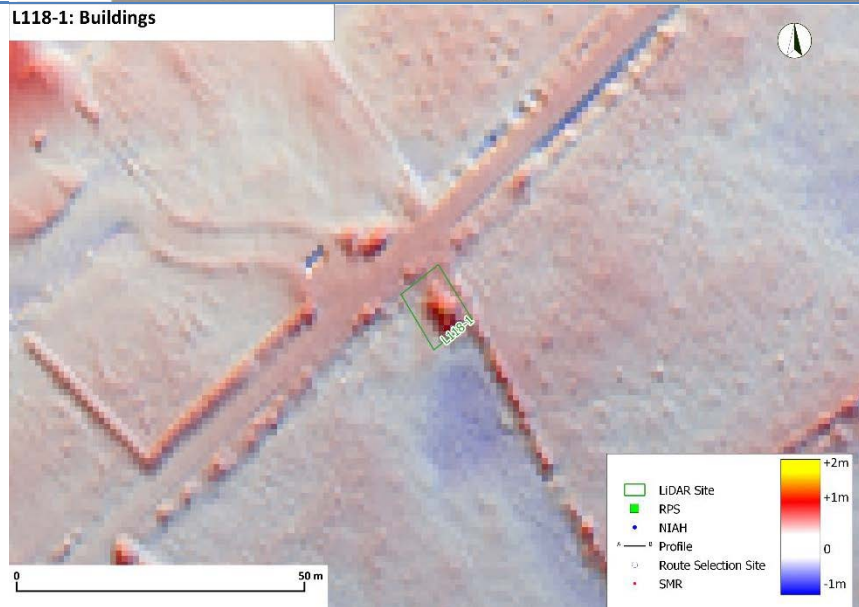
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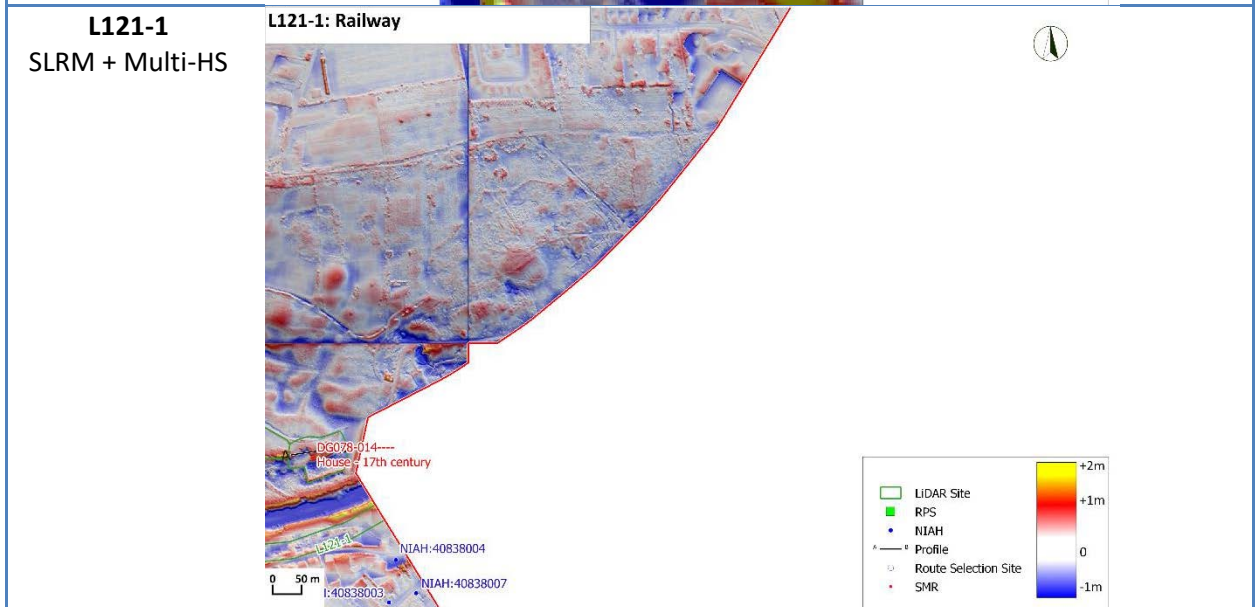
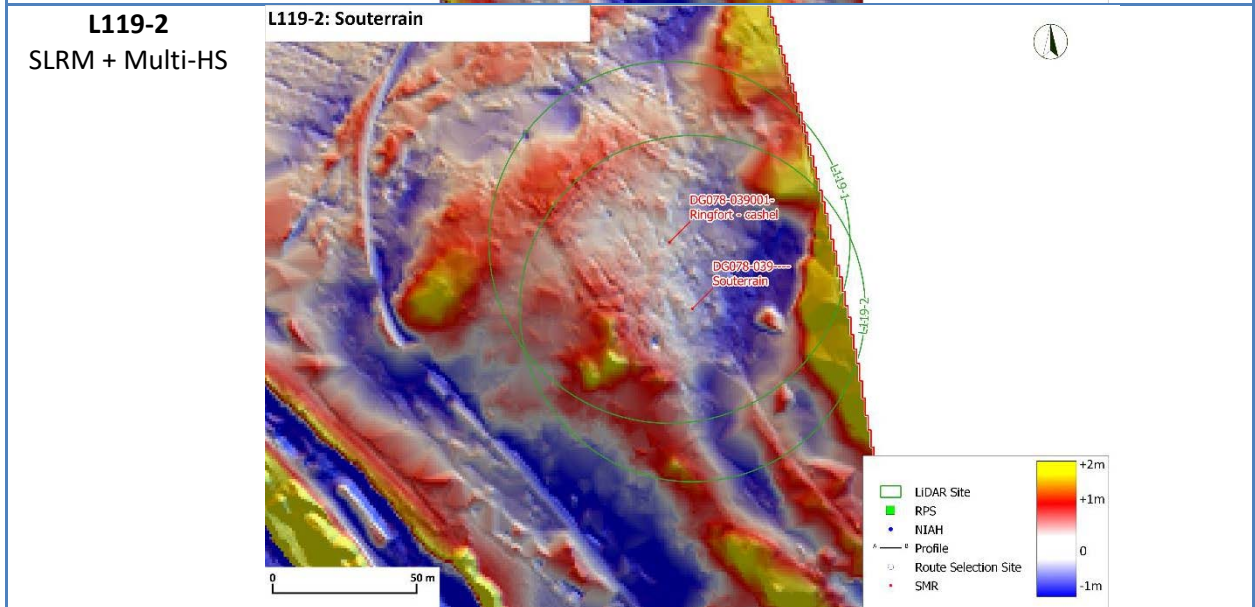
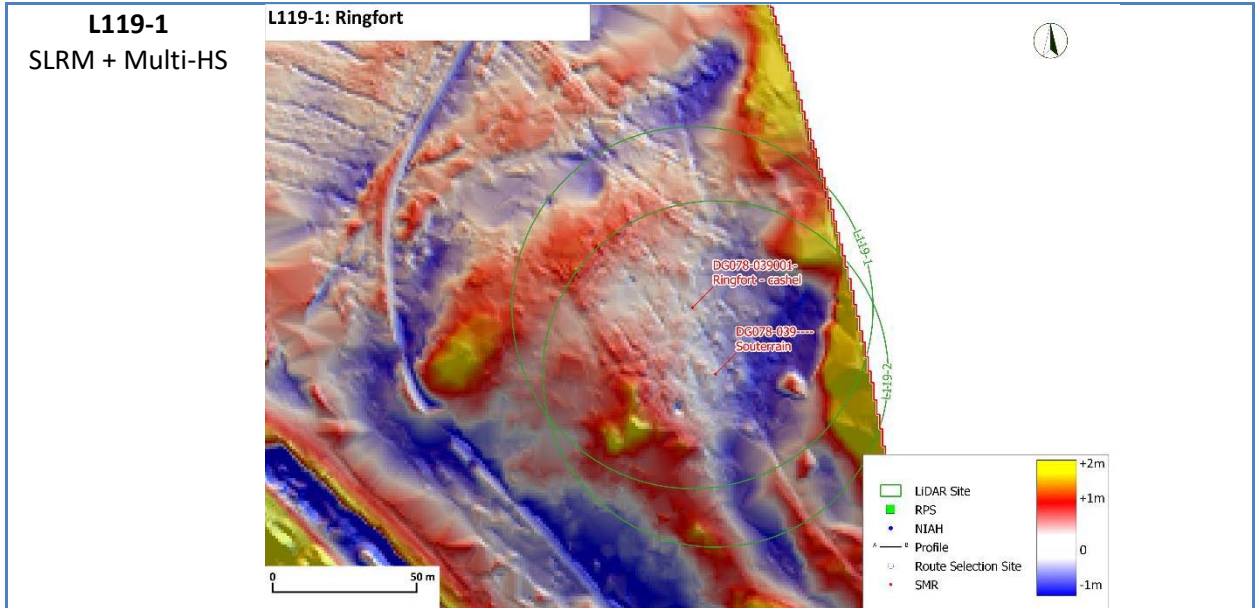


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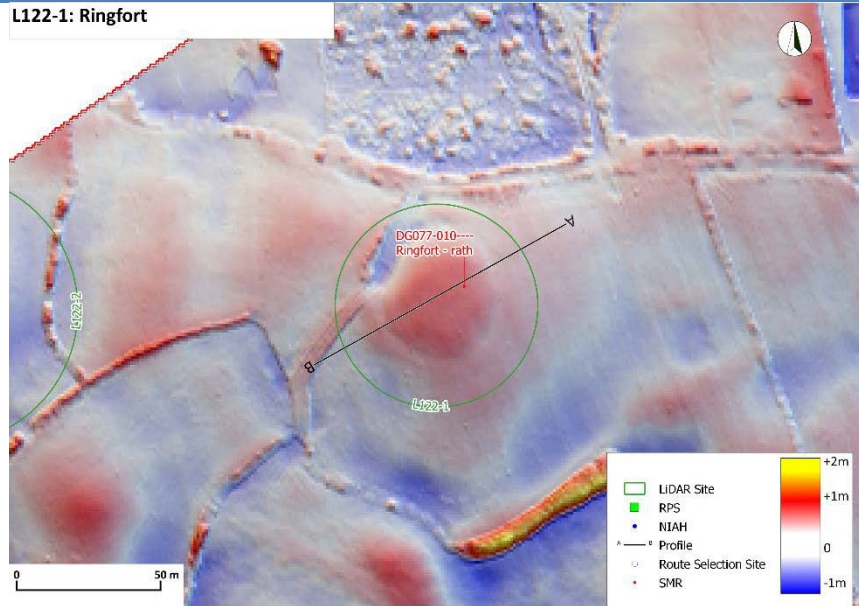


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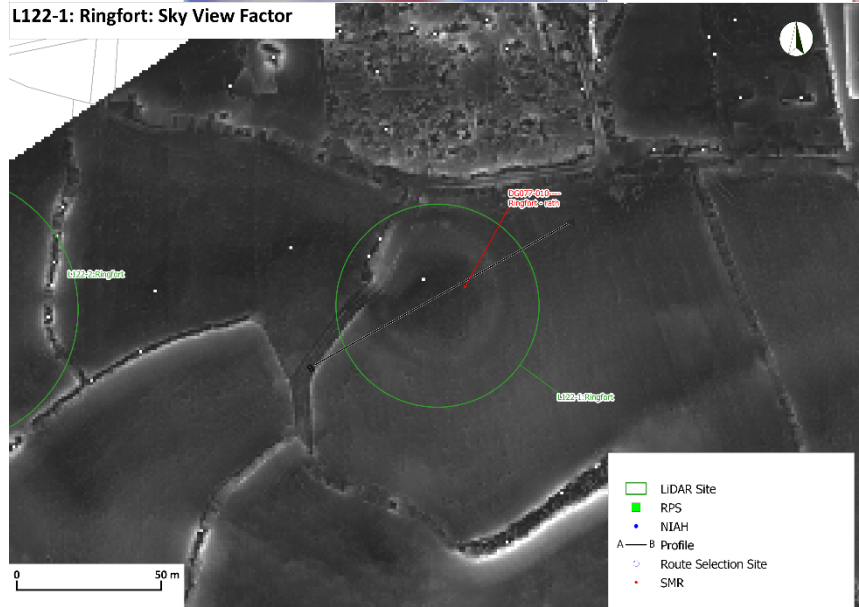




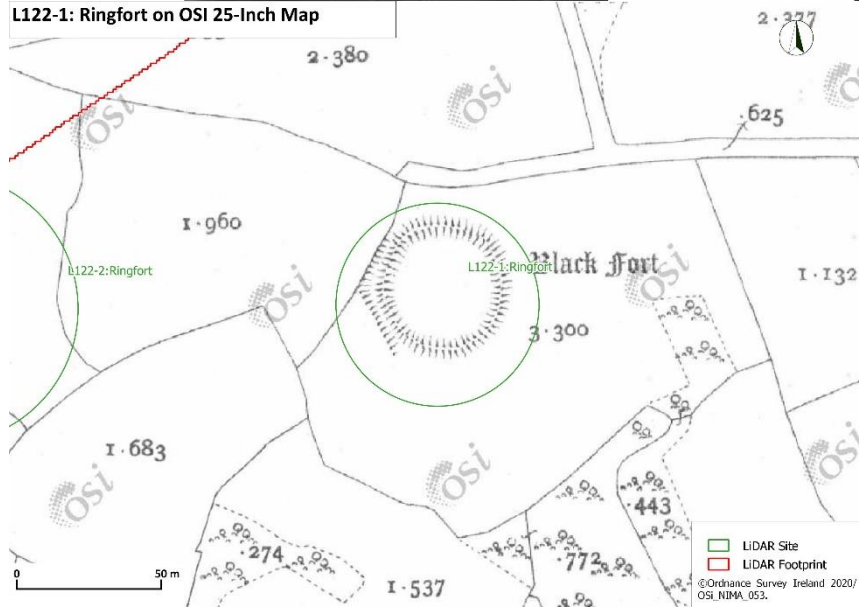
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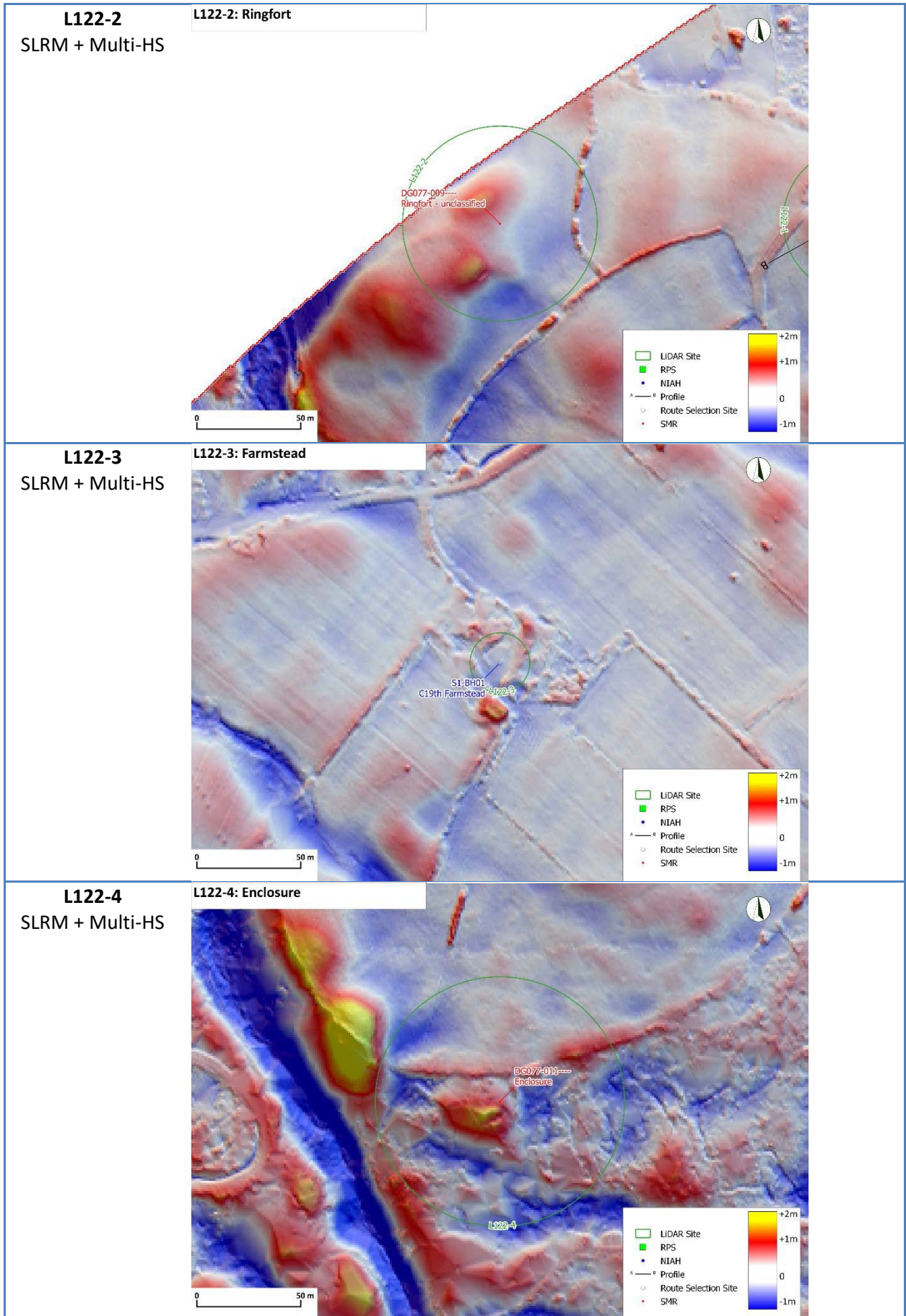
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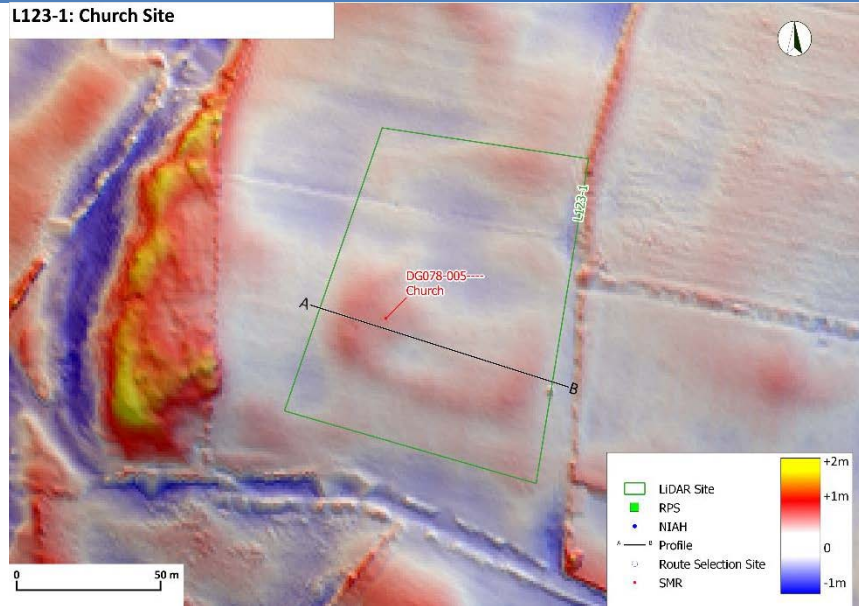
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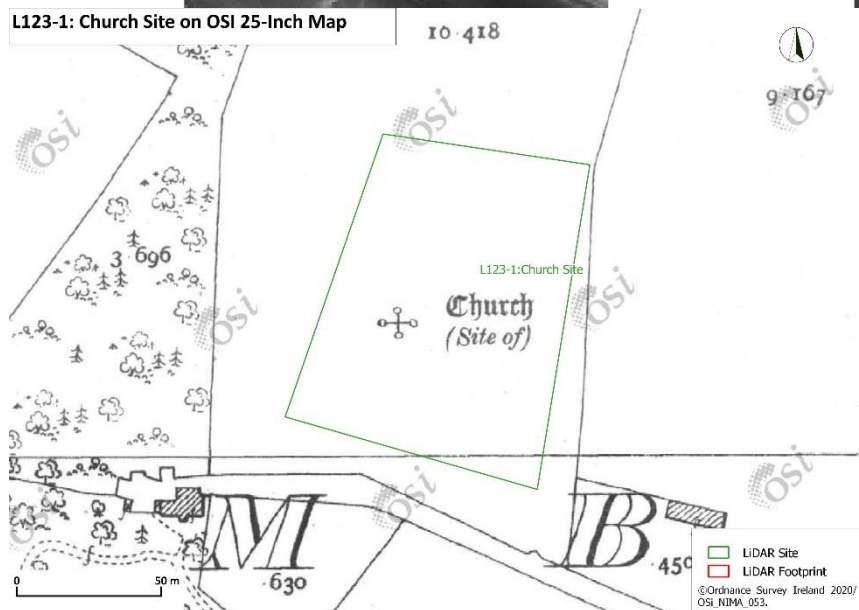
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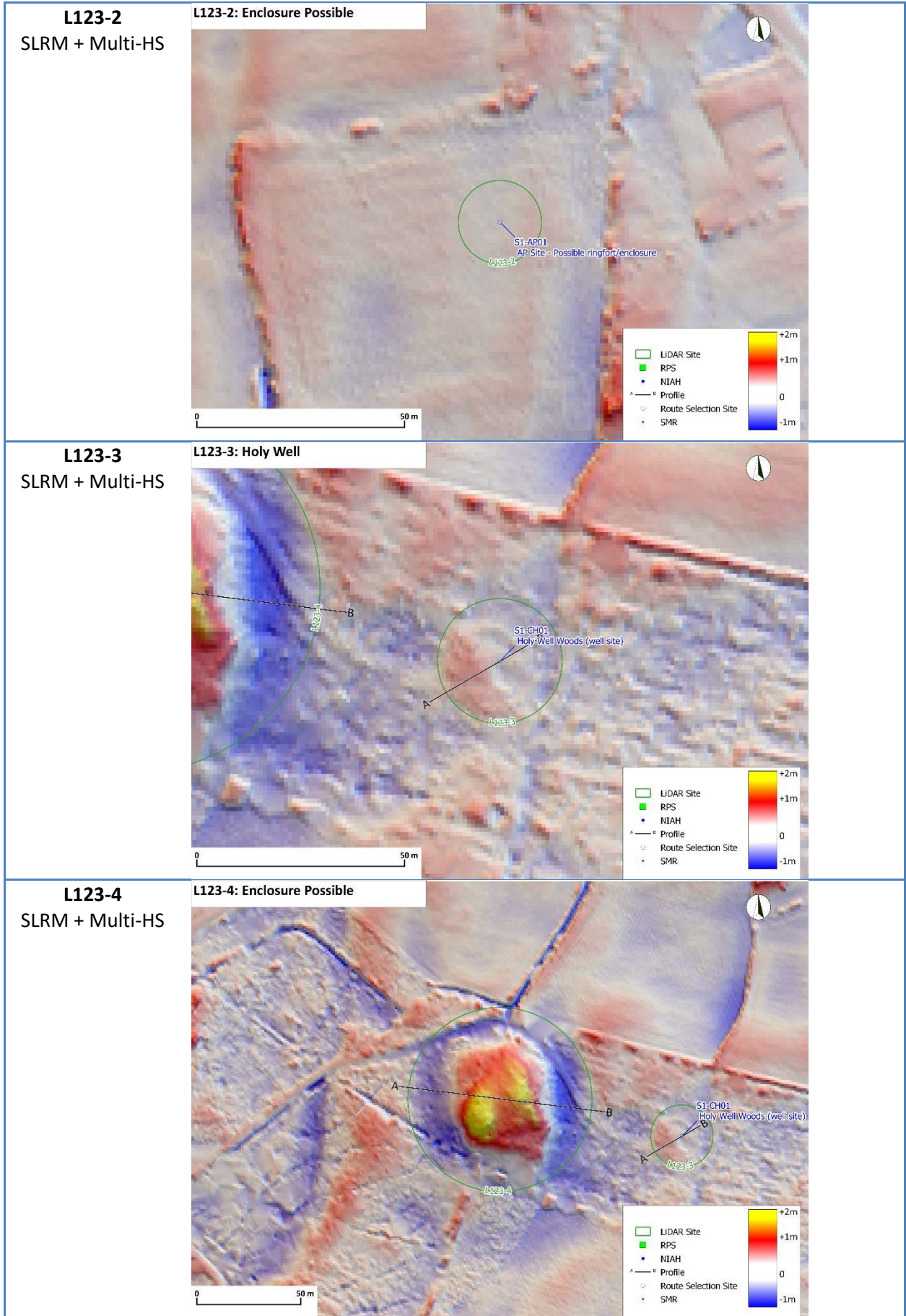


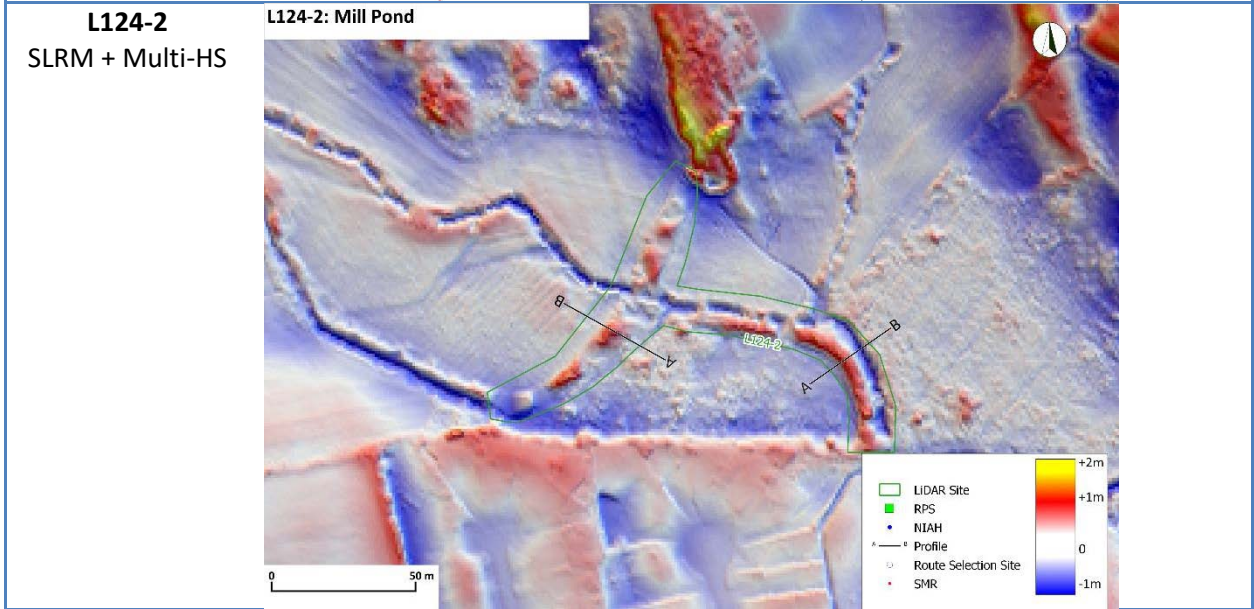
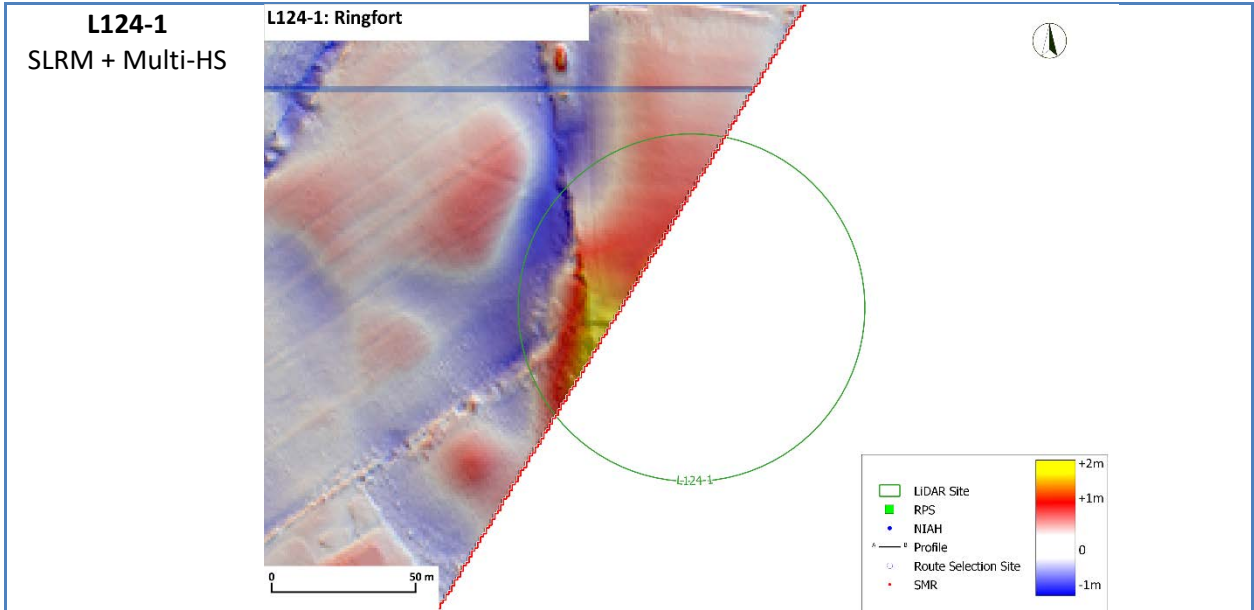
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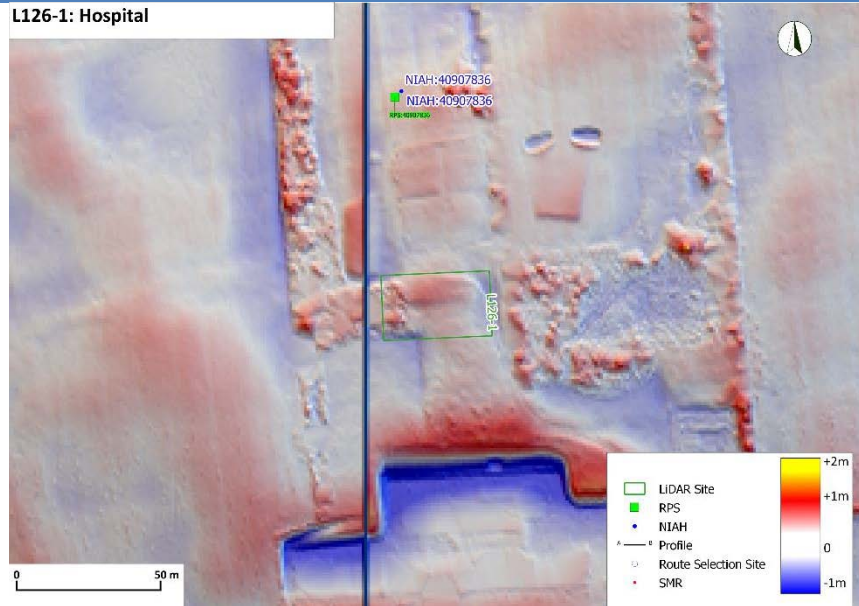
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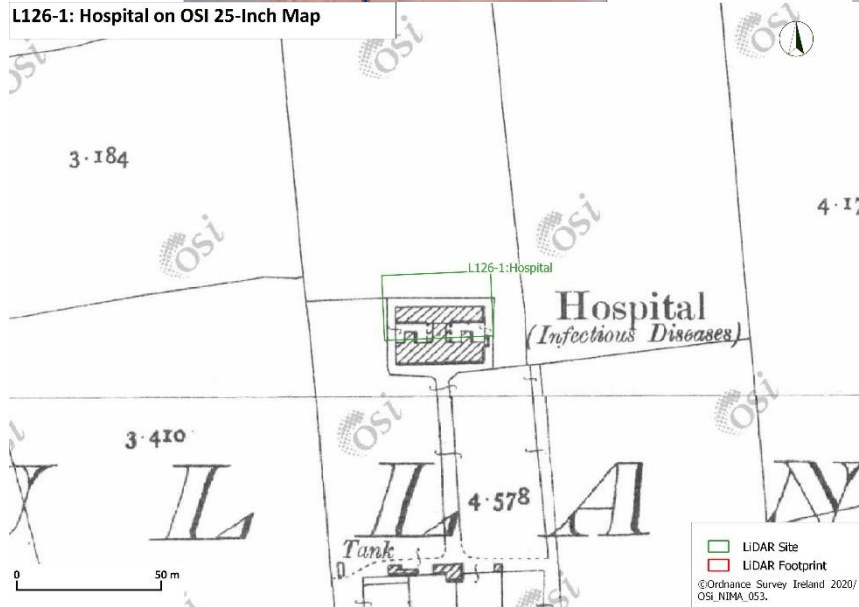




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SLRM + Multi-HS



OSI 25-Inch Map

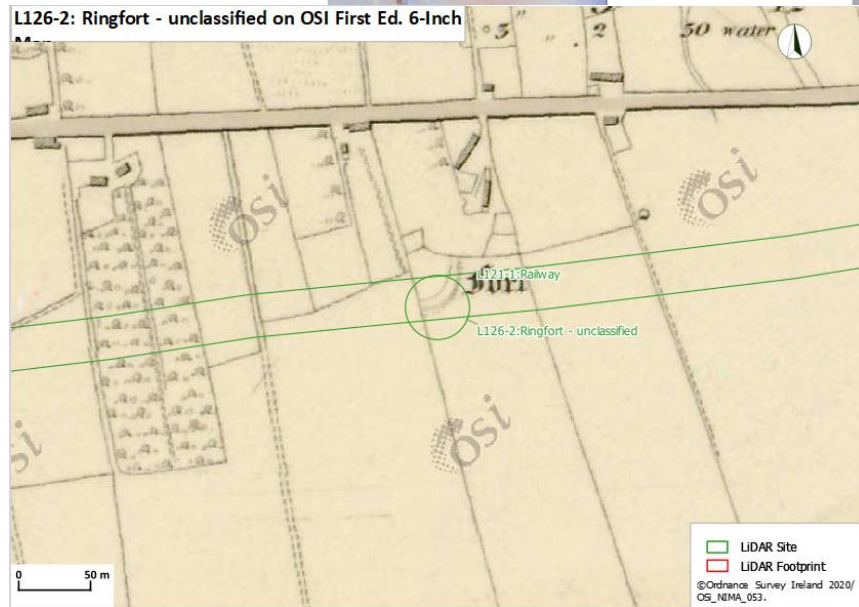


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OSI.NIMA_0153

L126-2
SLRM + Multi-HS



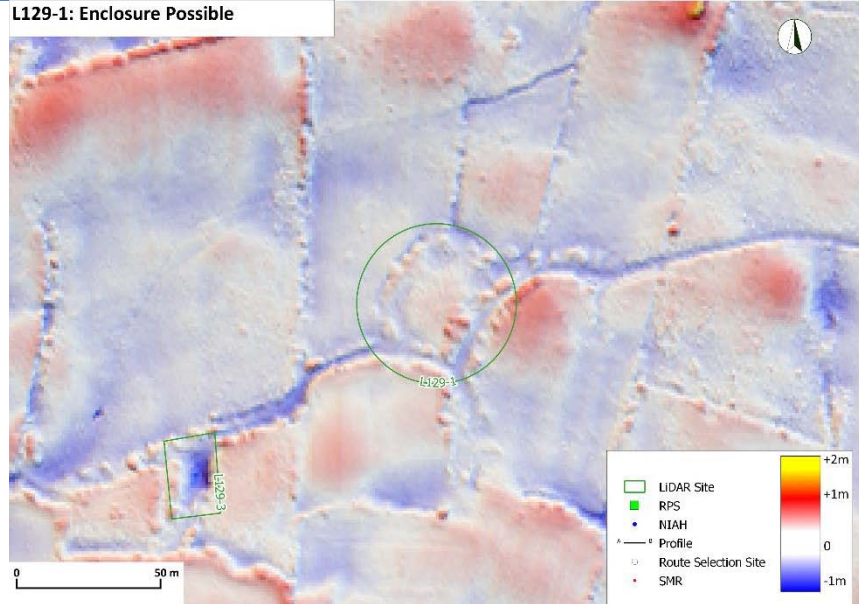
OSI First Ed. 6-Inch Map



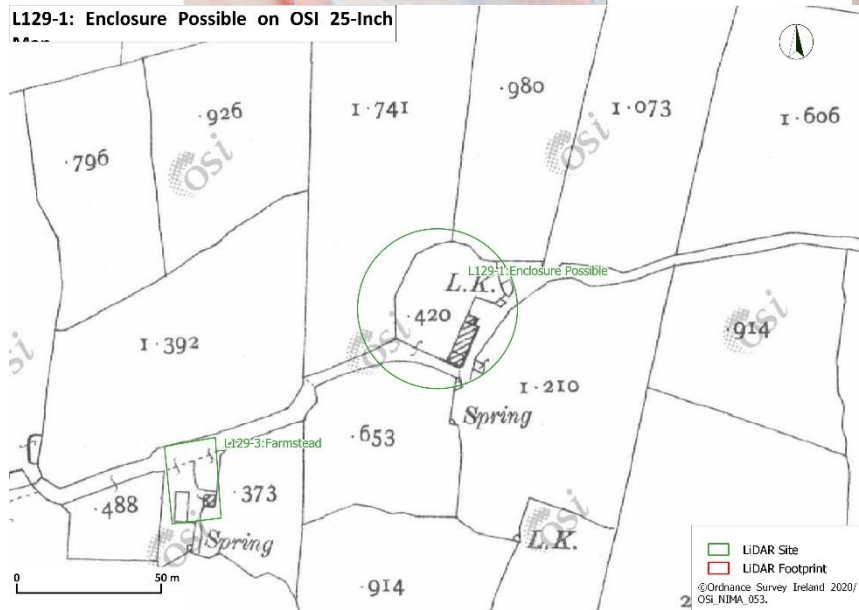
L128-1
SLRM + Multi-HS



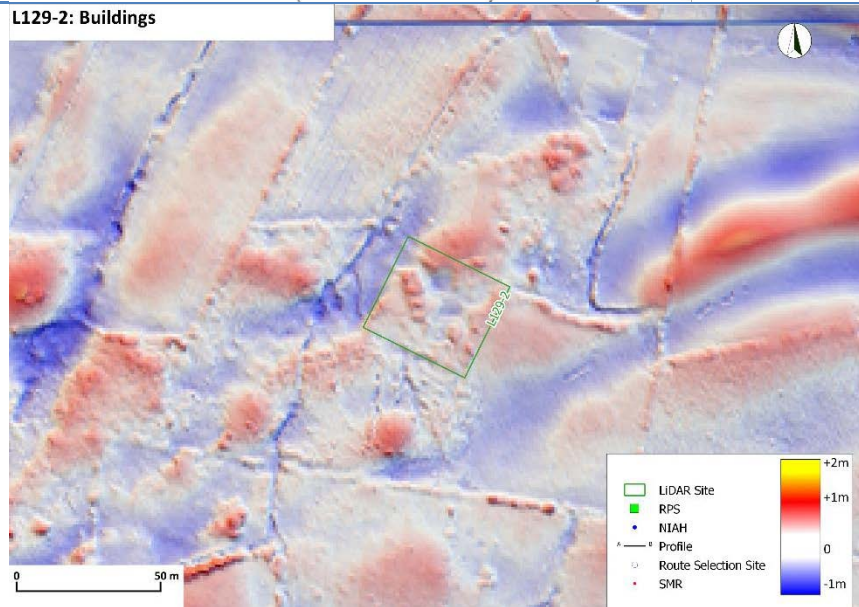
L129-1
SLRM + Multi-HS

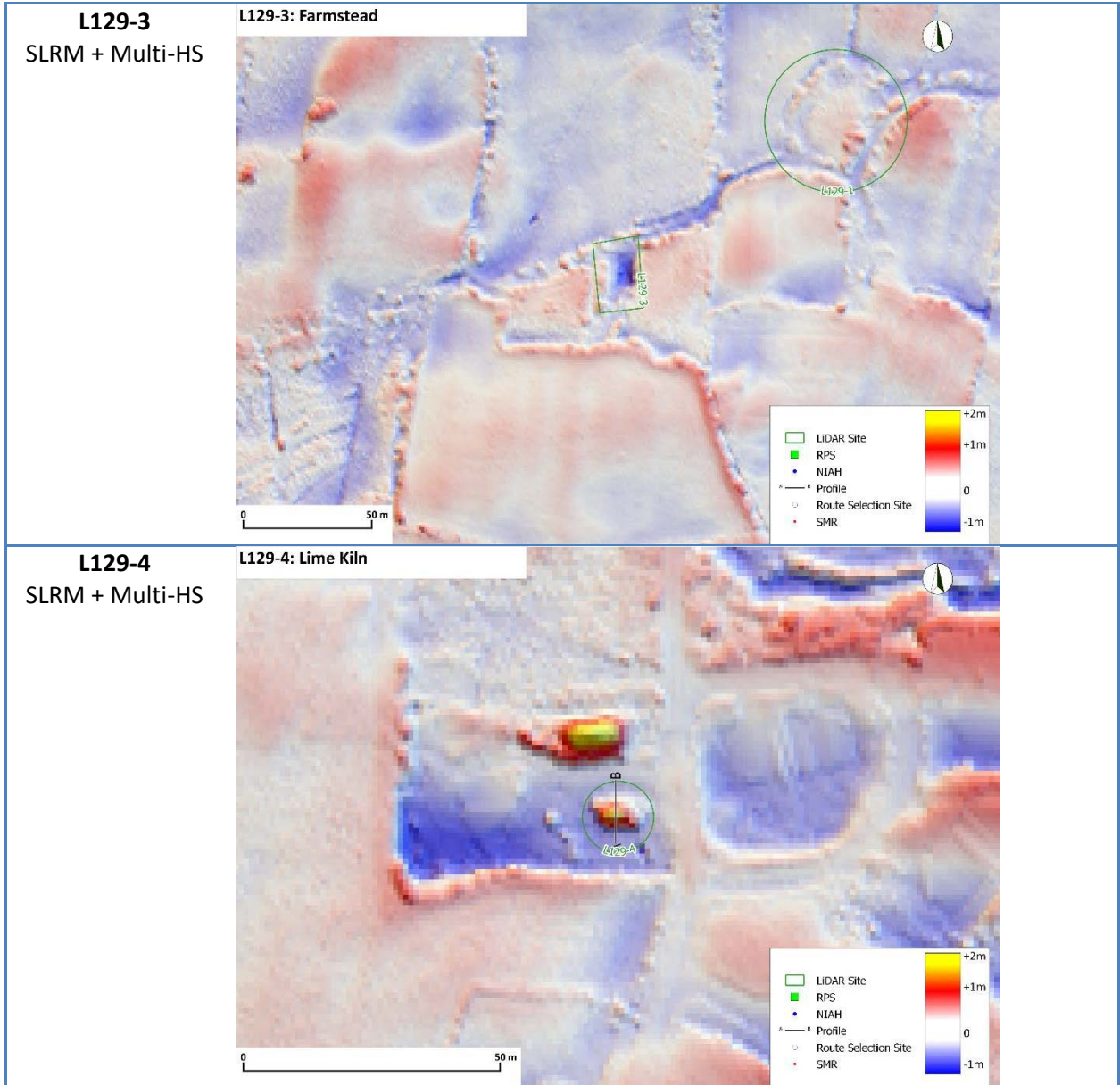


OSI 25-Inch Map

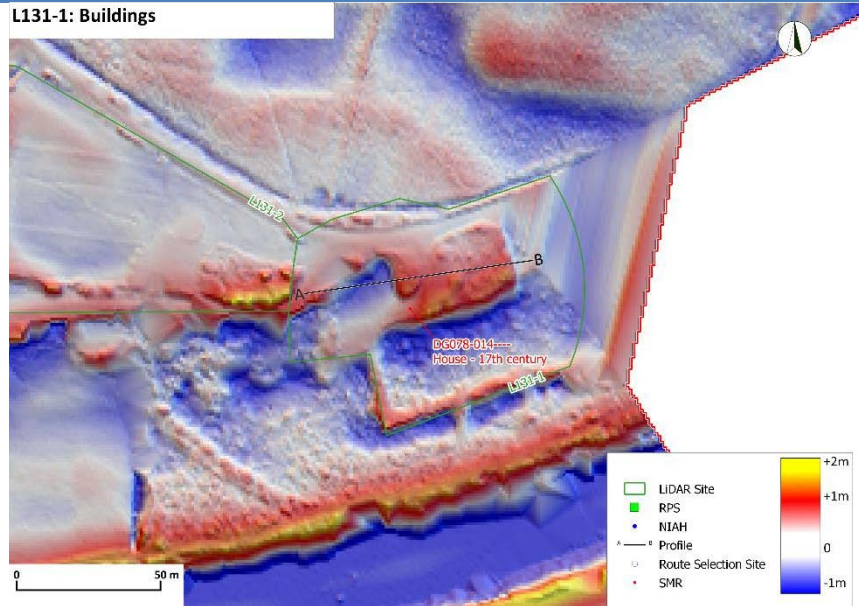


L129-2
SLRM + Multi-HS

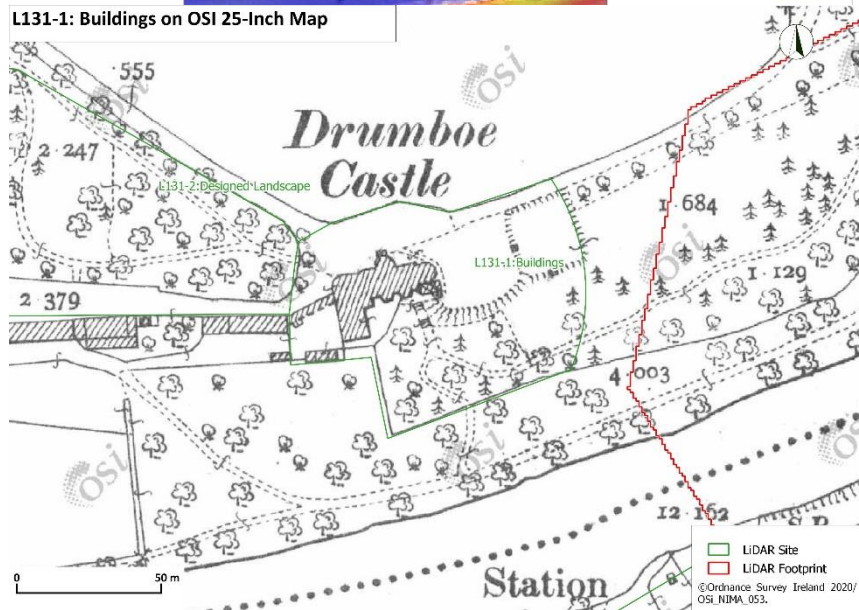




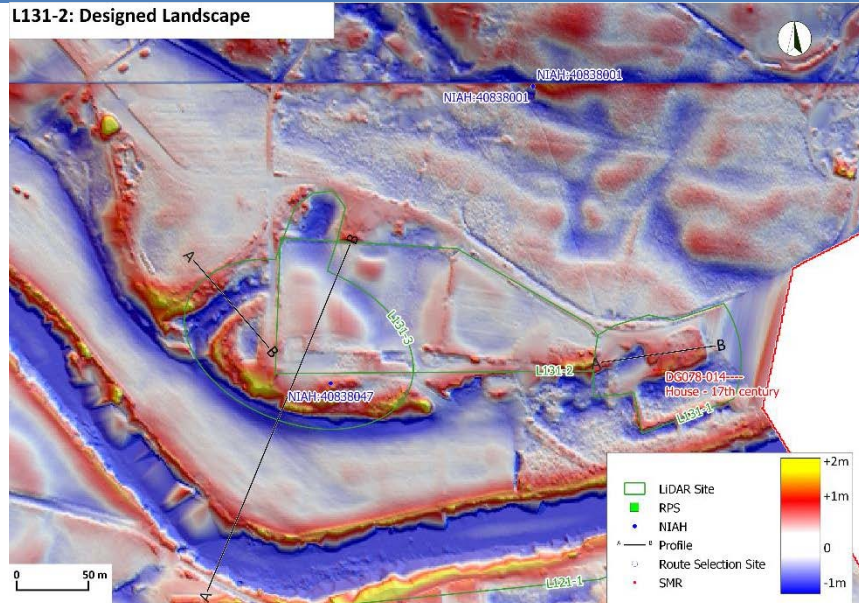
L131-1
SLRM + Multi-HS



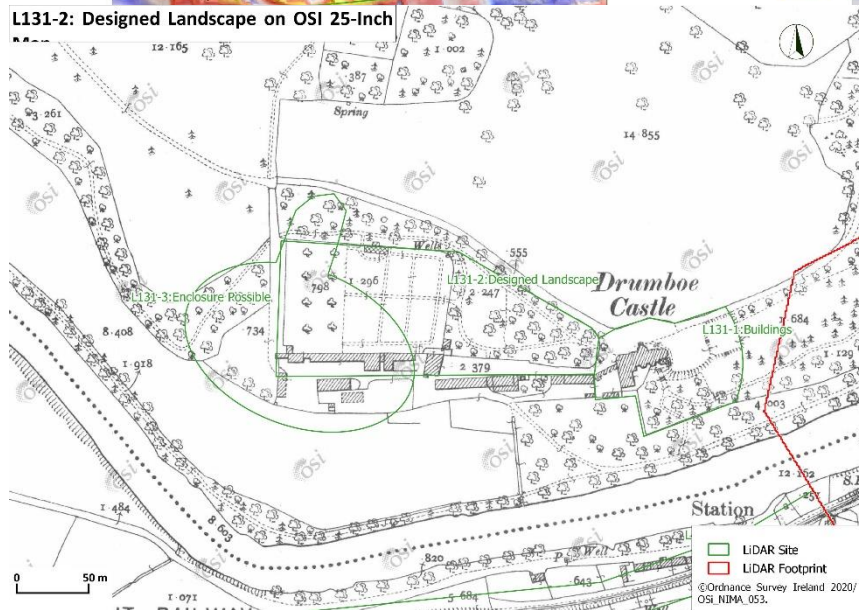
OSI 25-Inch Map



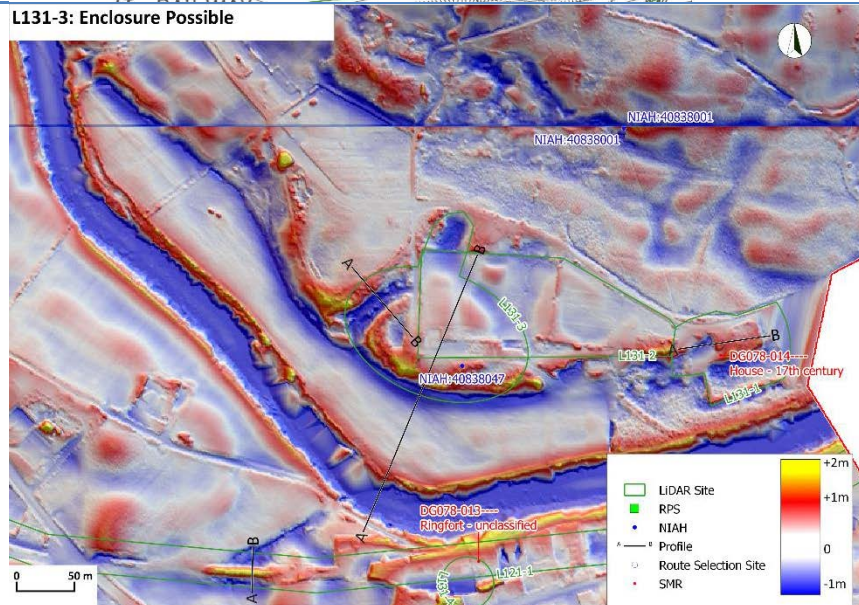
L131-2
SLRM + Multi-HS



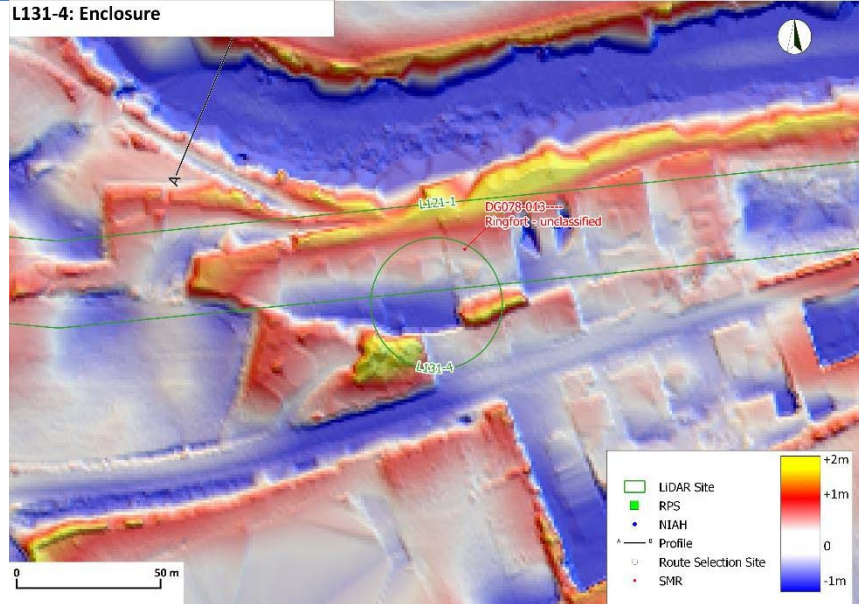
OSI 25-Inch Map



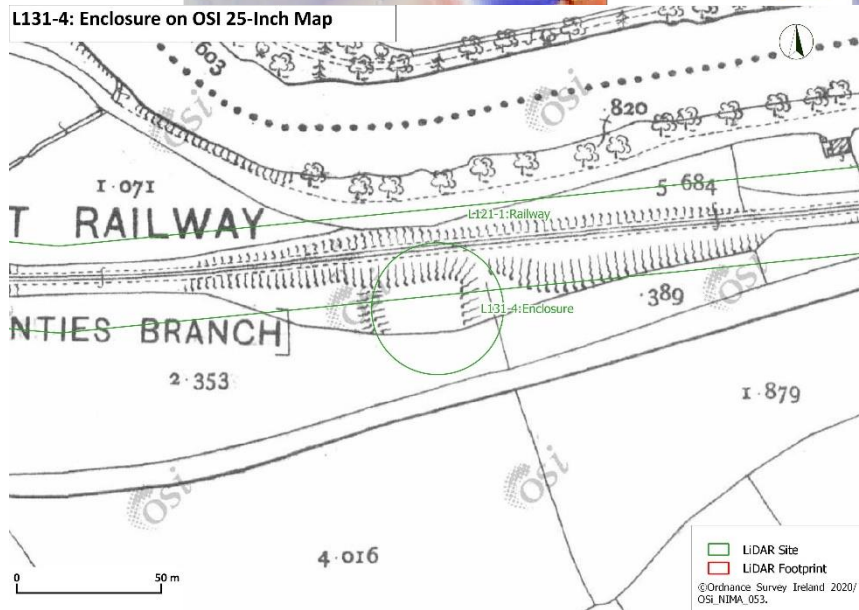
L131-3
SLRM + Multi-HS



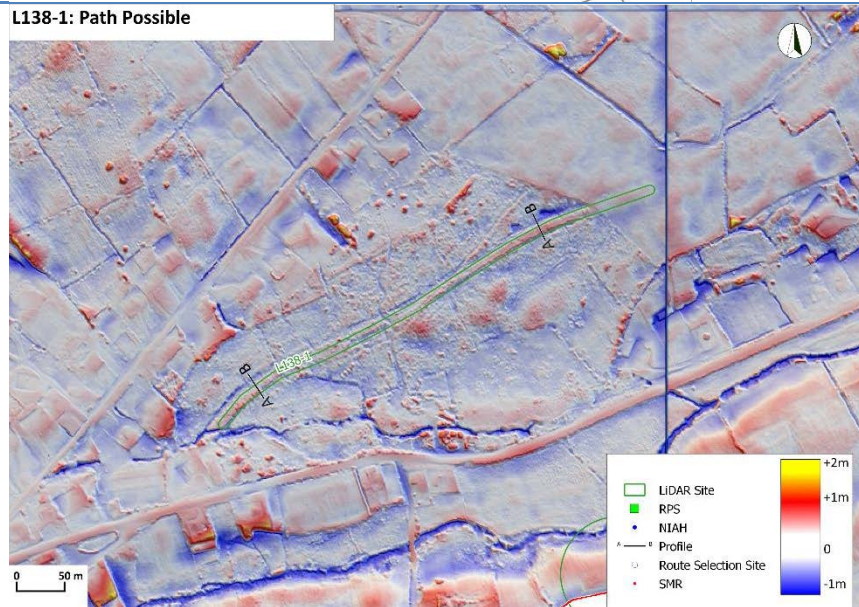
L131-4
SLRM + Multi-HS

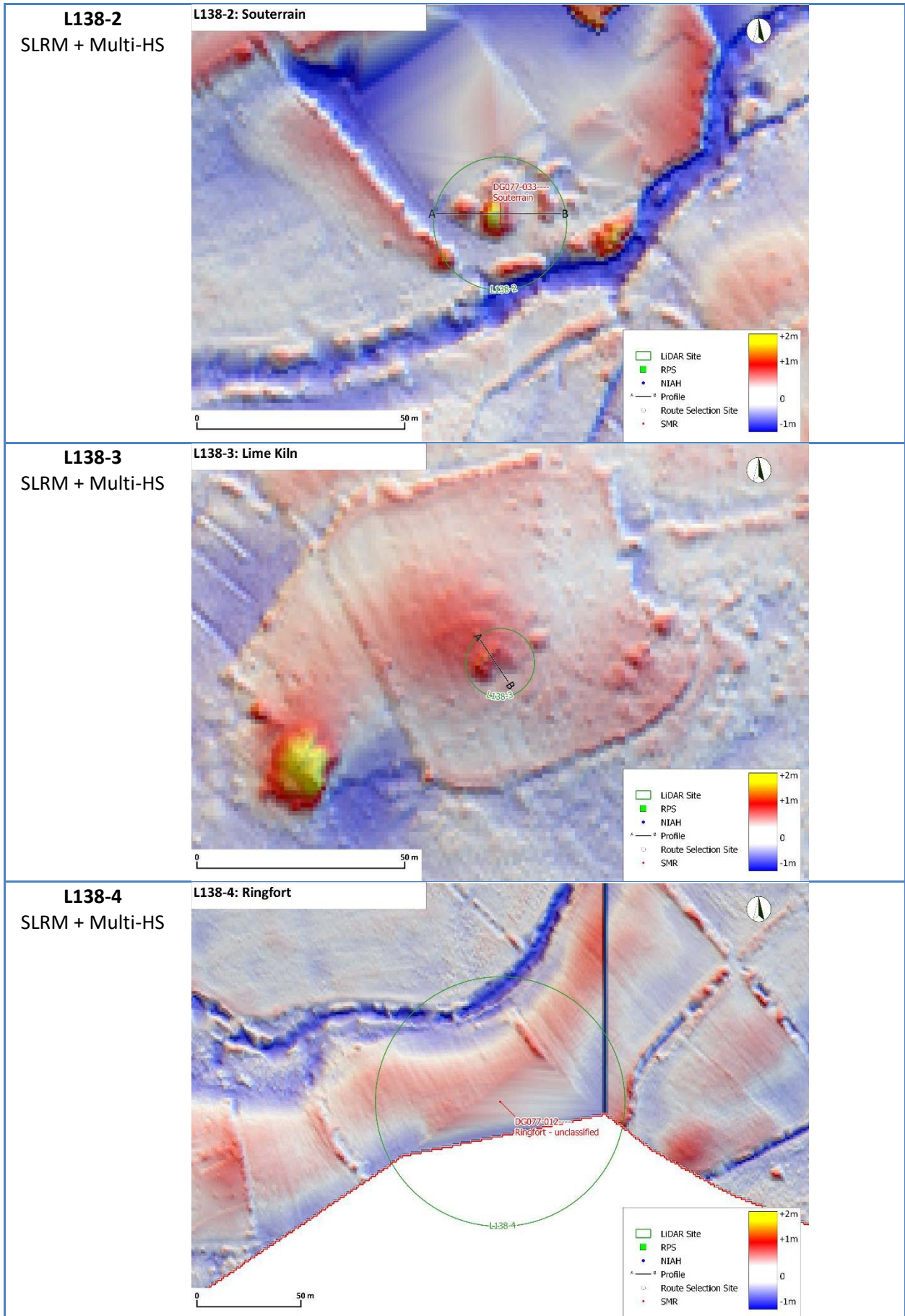


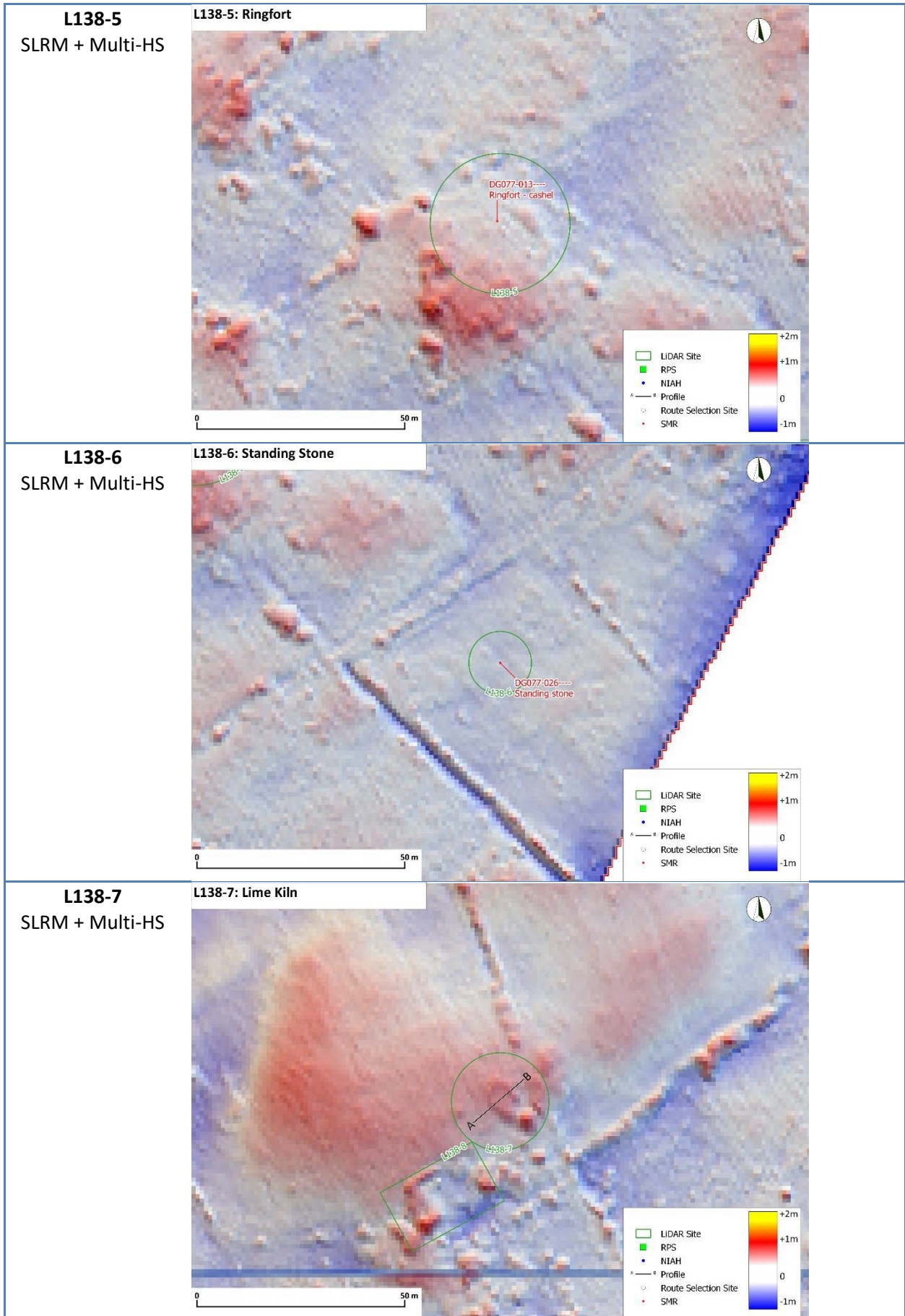
OSI 25-Inch Map

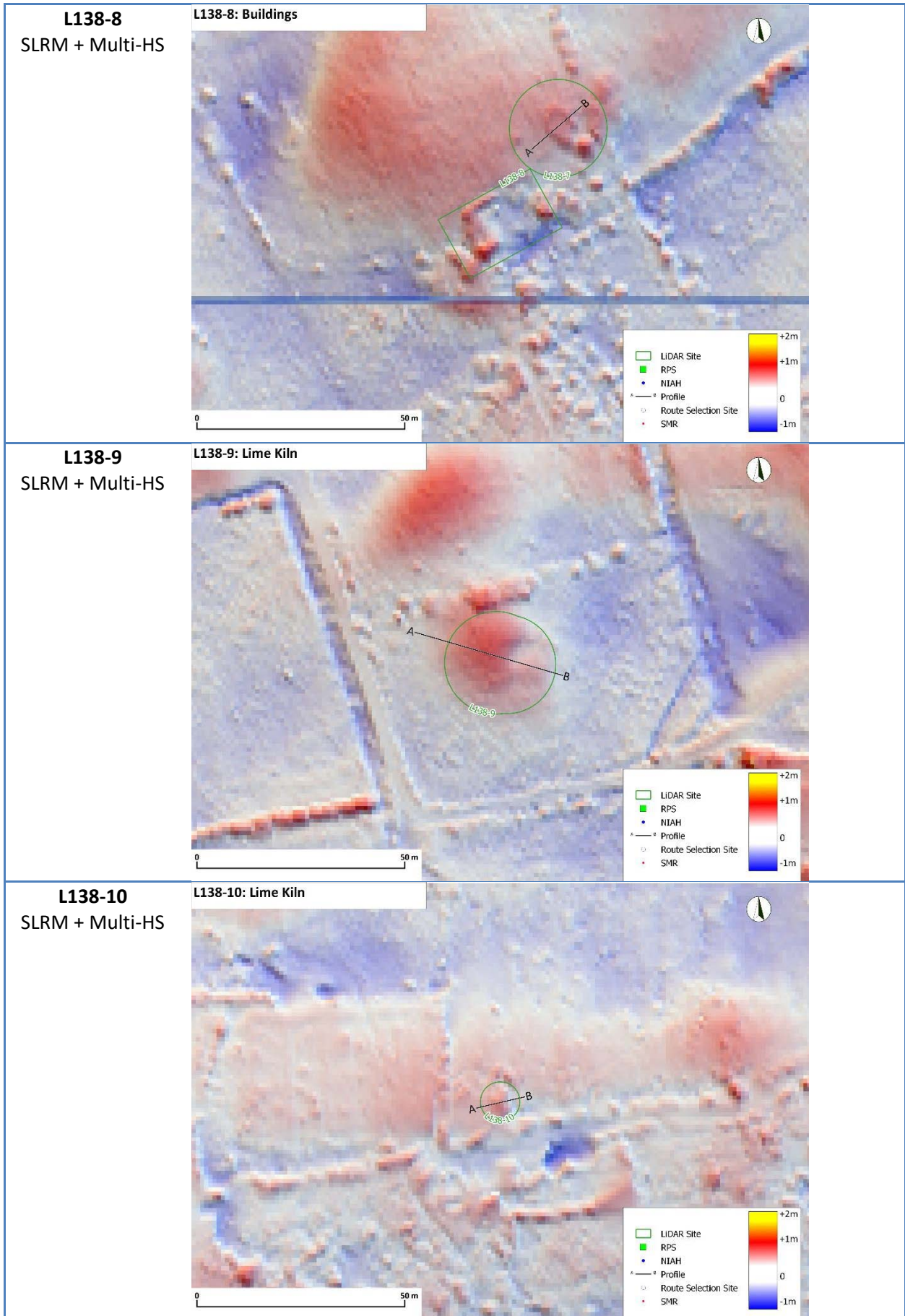


L138-1
SLRM + Multi-HS

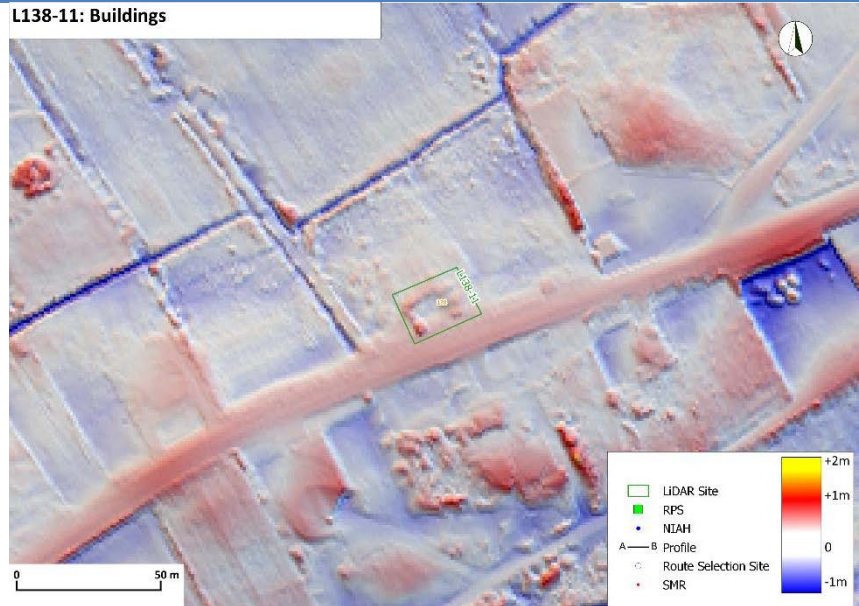




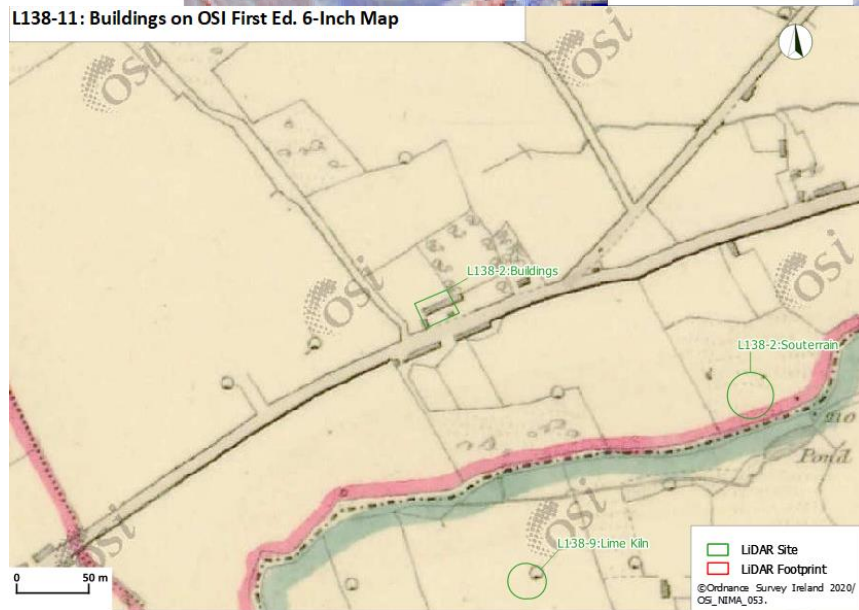




L138-11
SLRM + Multi-HS

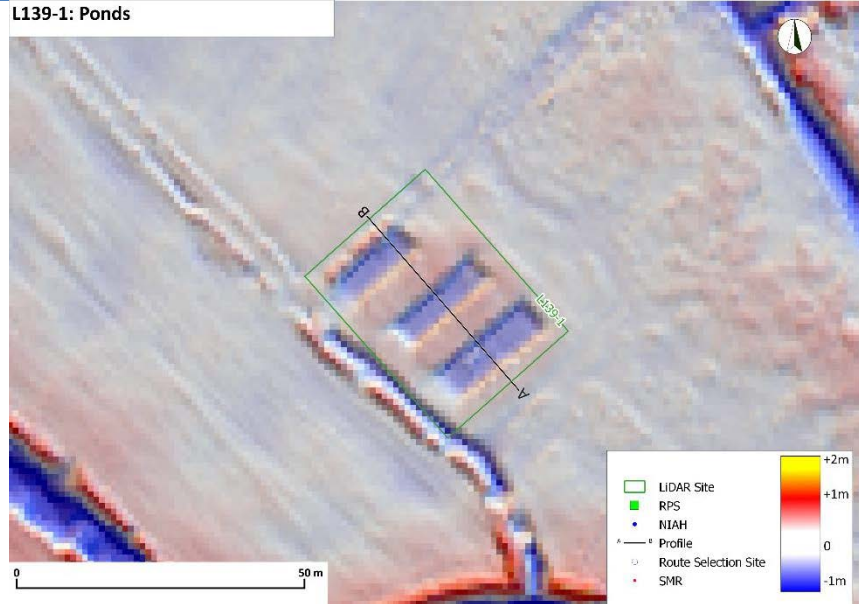


OSI First Ed. 6-Inch Map

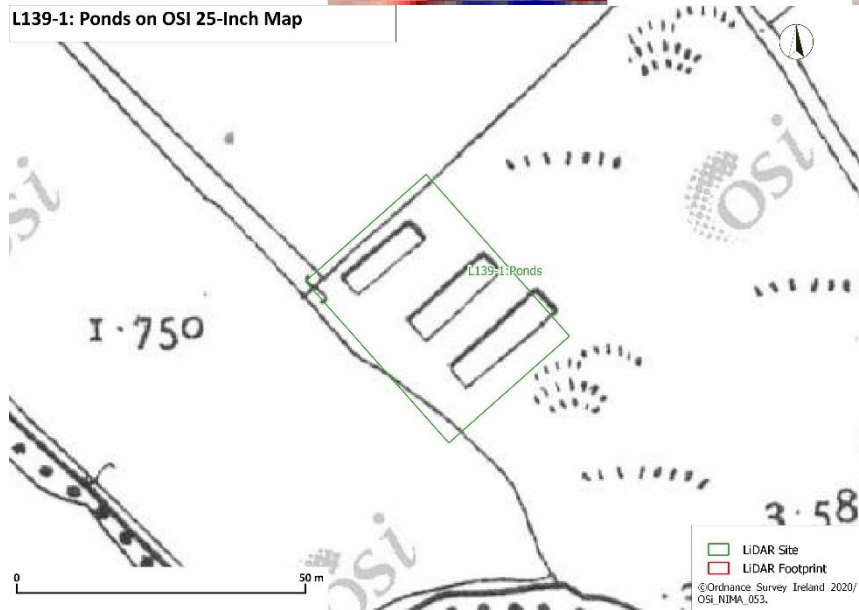


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OS_NIMA_053.

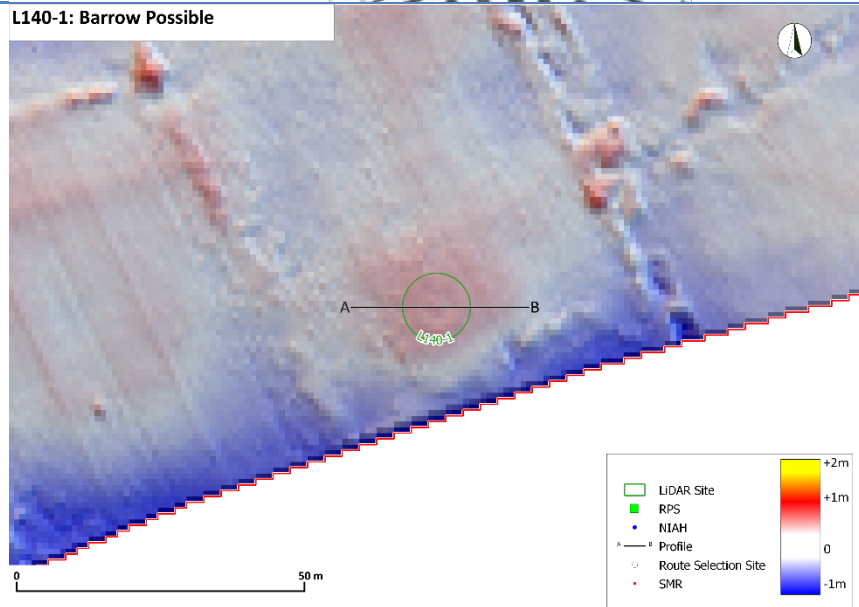
L139-1
SLRM + Multi-HS



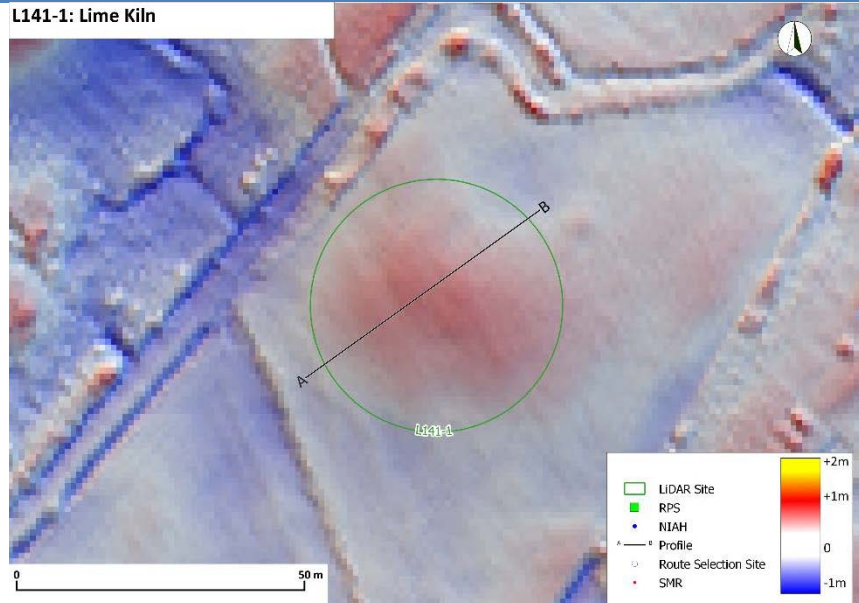
OSI 25-Inch Map



L140-1
SLRM + Multi-HS



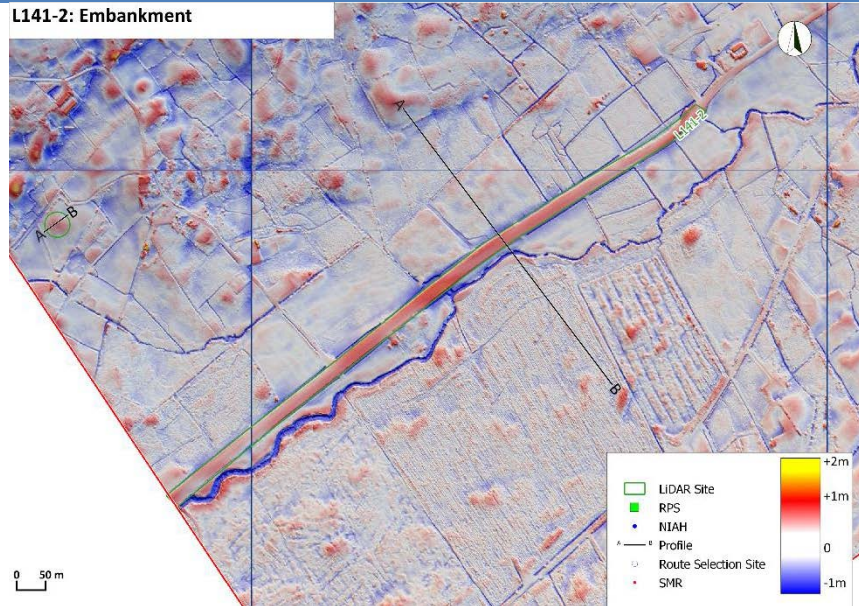
L141-1
SLRM + Multi-HS



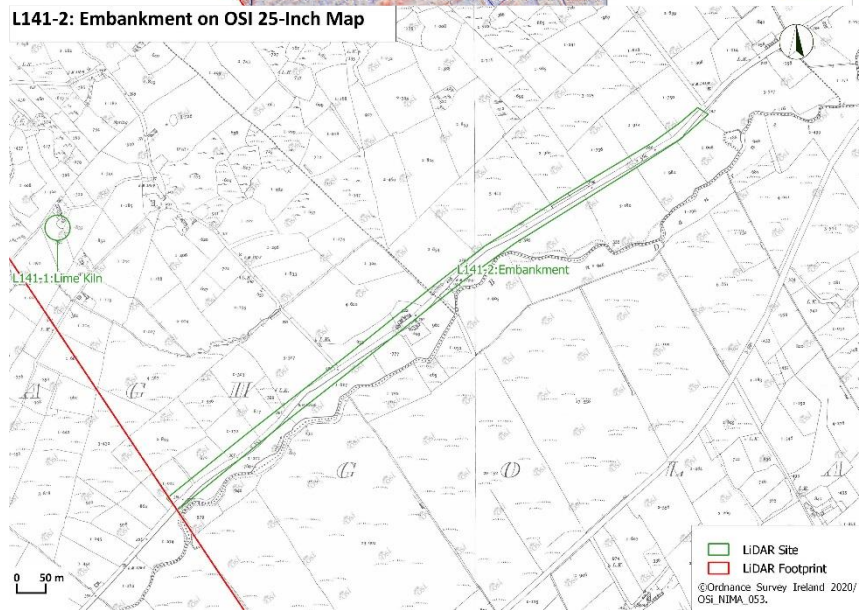
OSI First Ed. 6-Inch Map



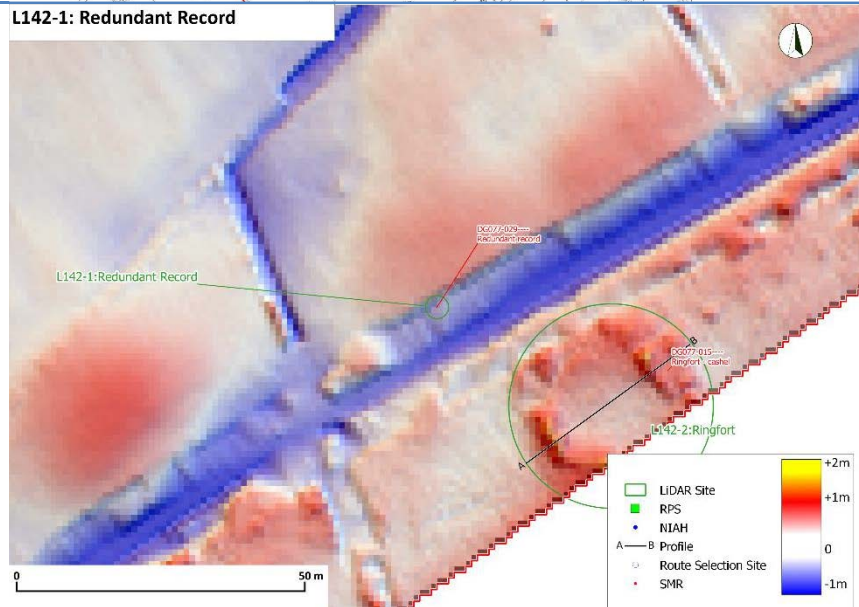
L141-2
SLRM + Multi-HS

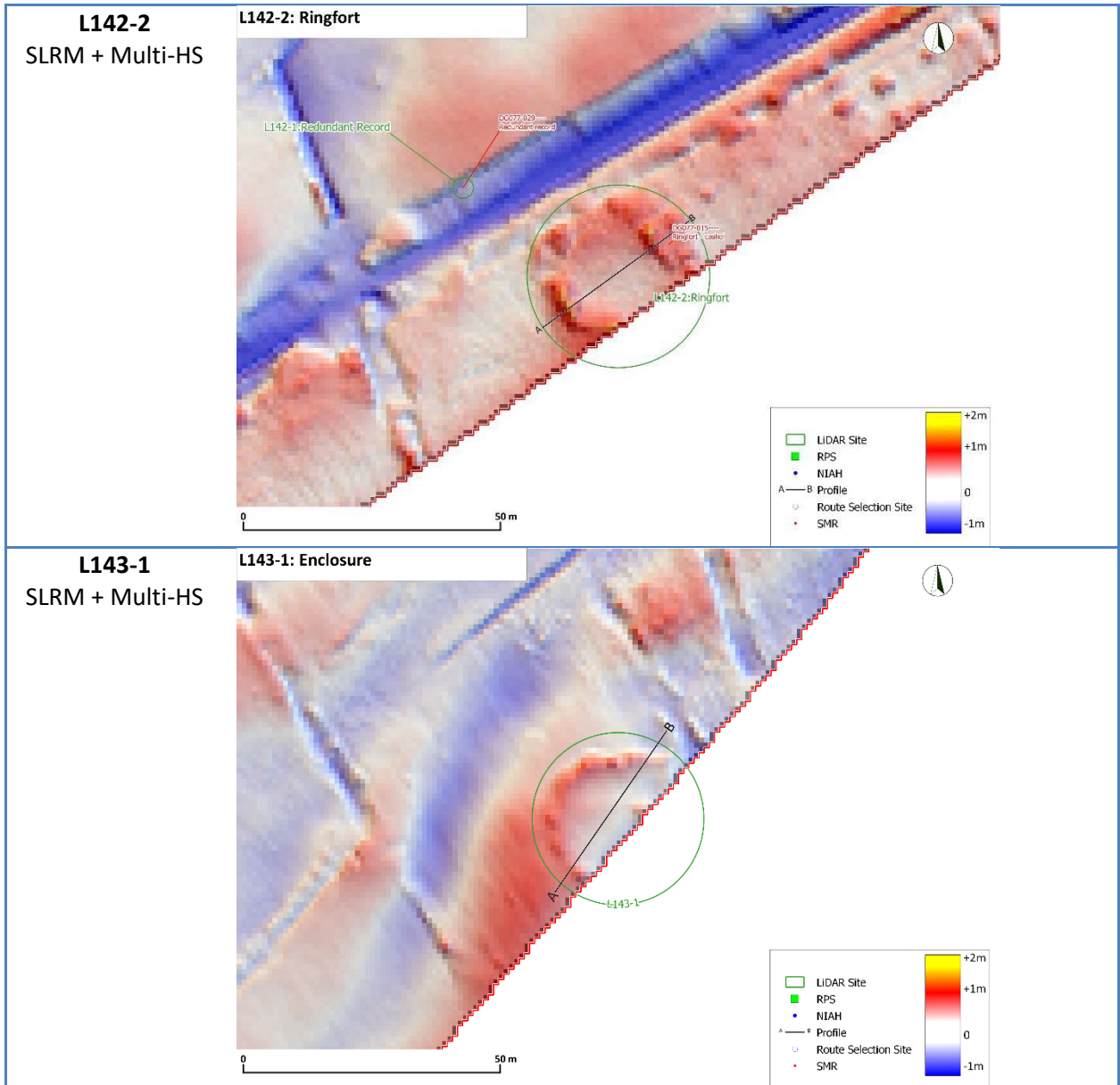


OSI 25-Inch Map

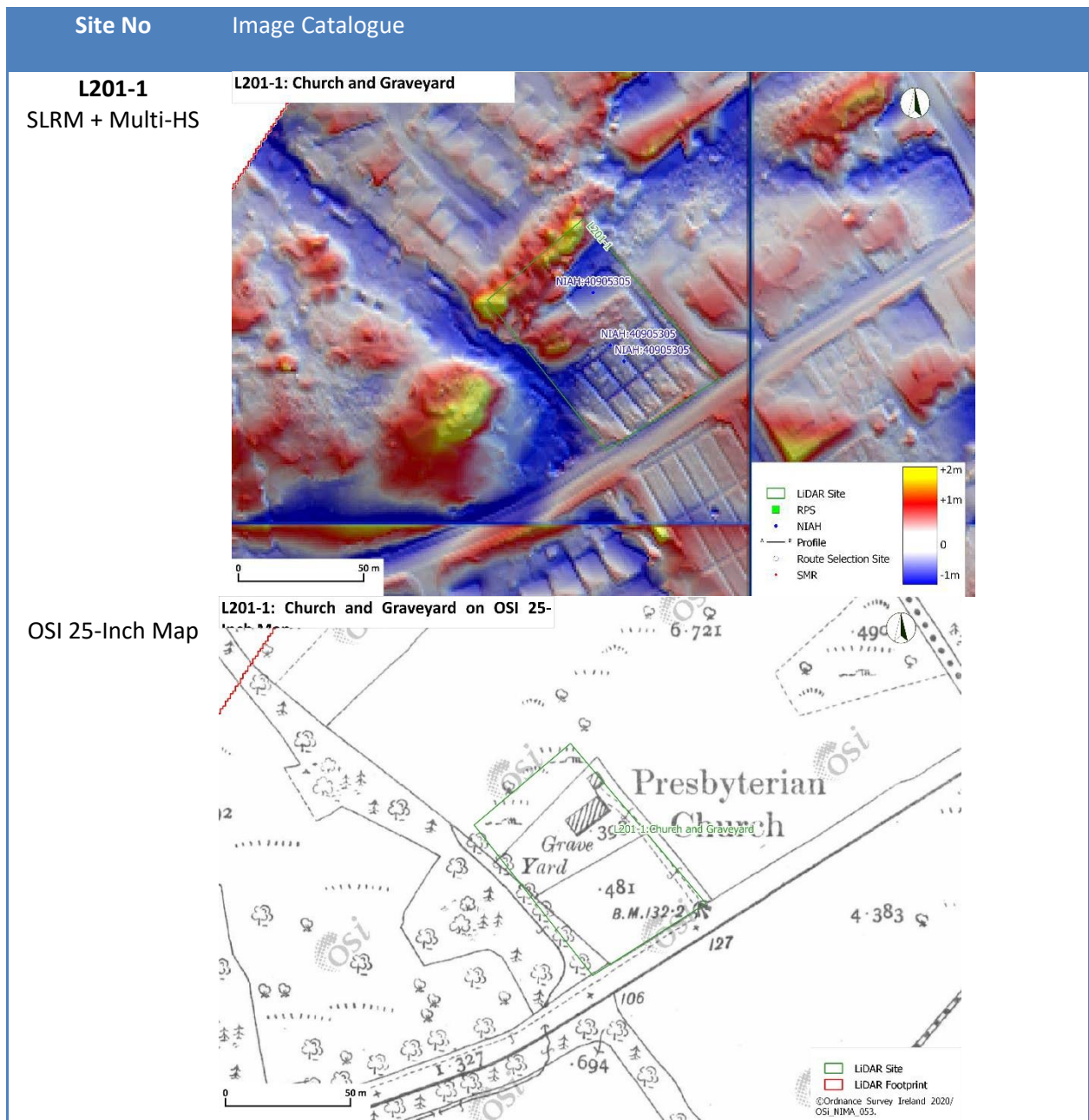


L142-1
SLRM + Multi-HS

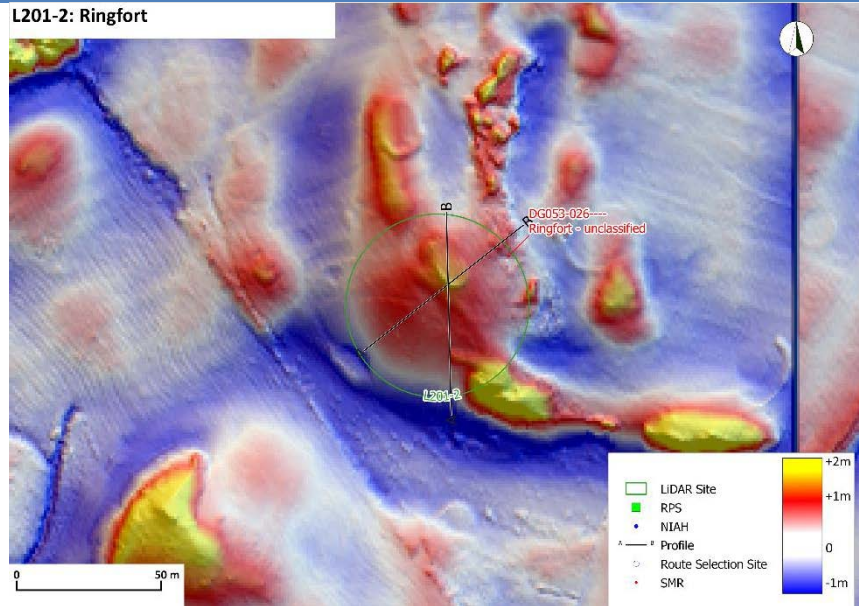




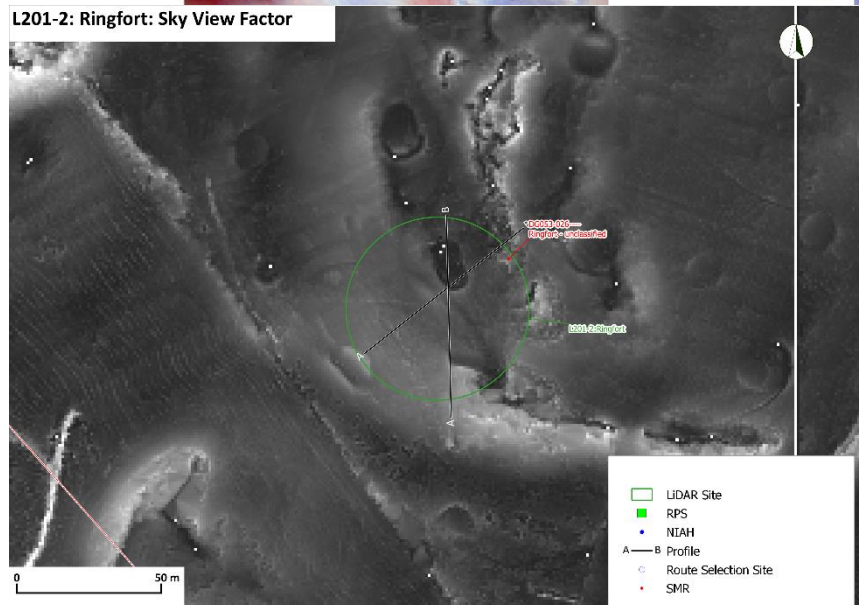
Section 2 LiDAR Sites



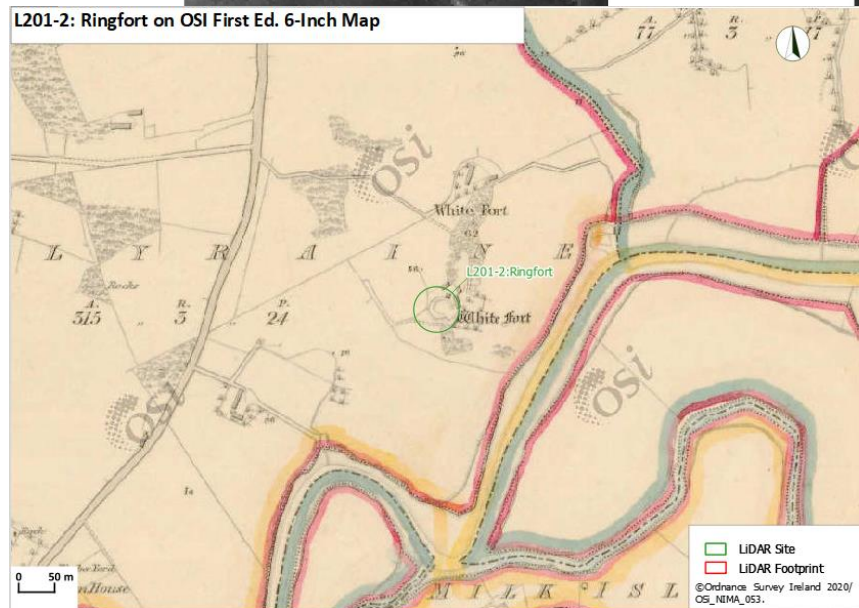
L201-2
SLRM + Multi-HS

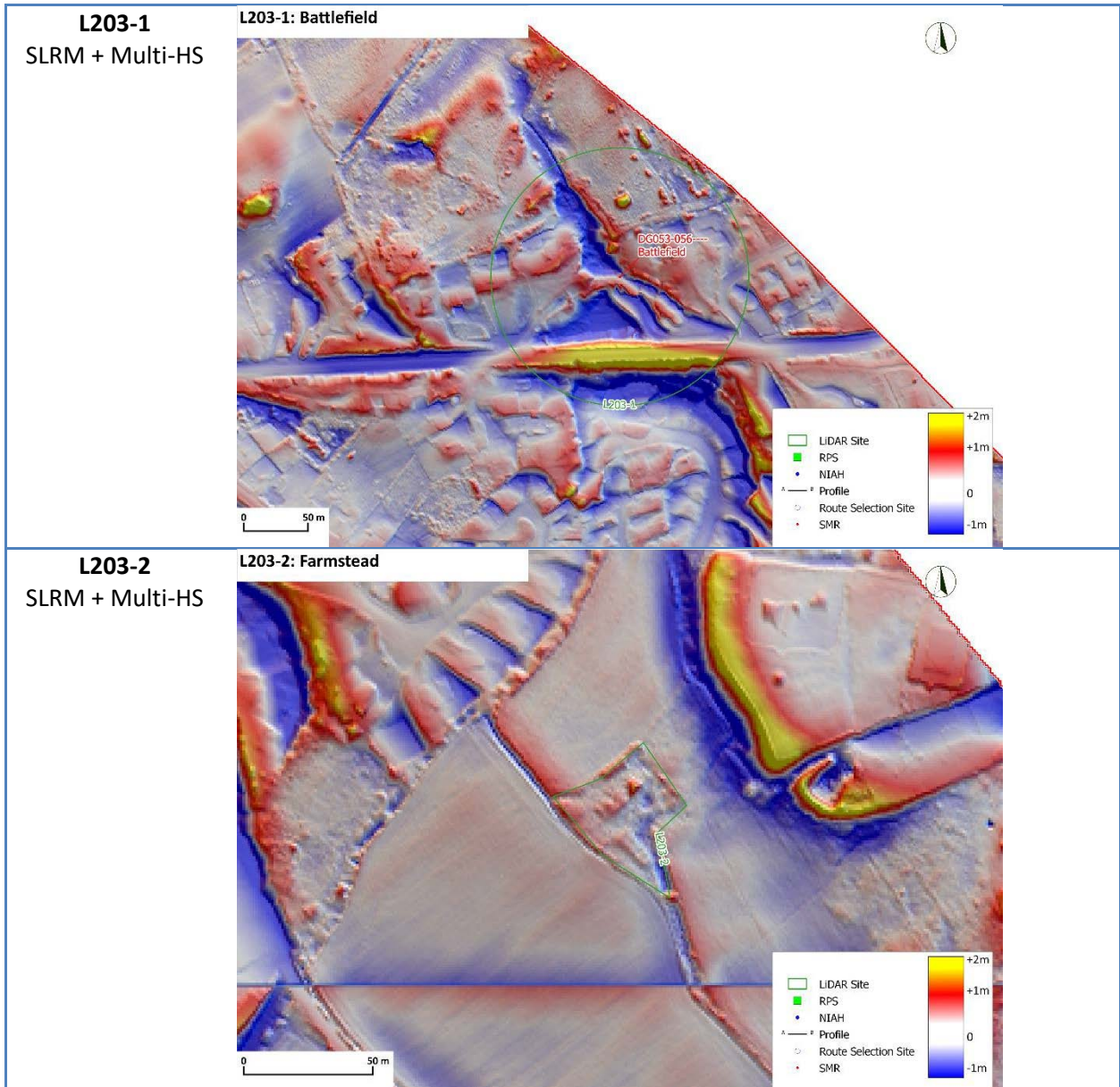


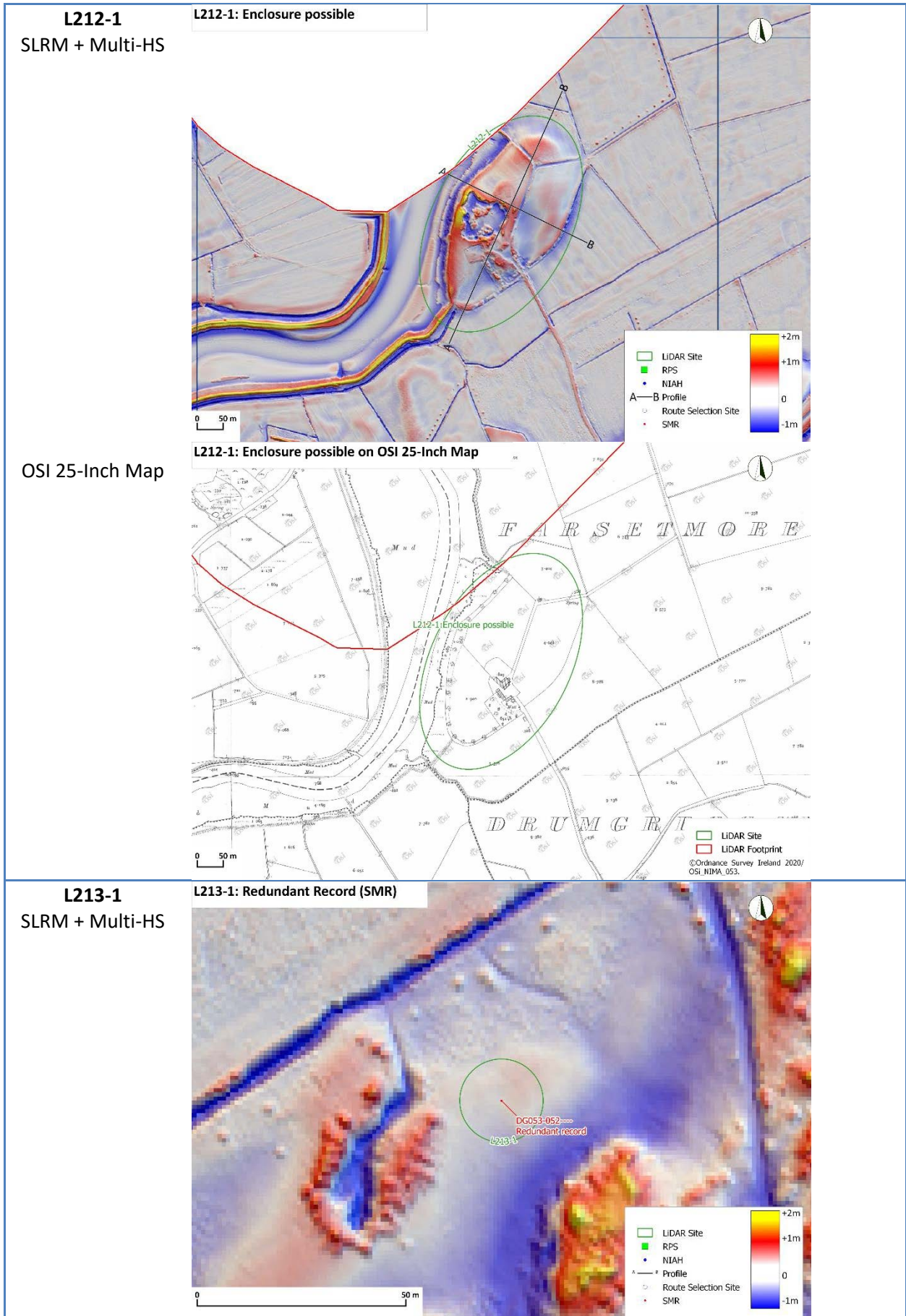
SVF

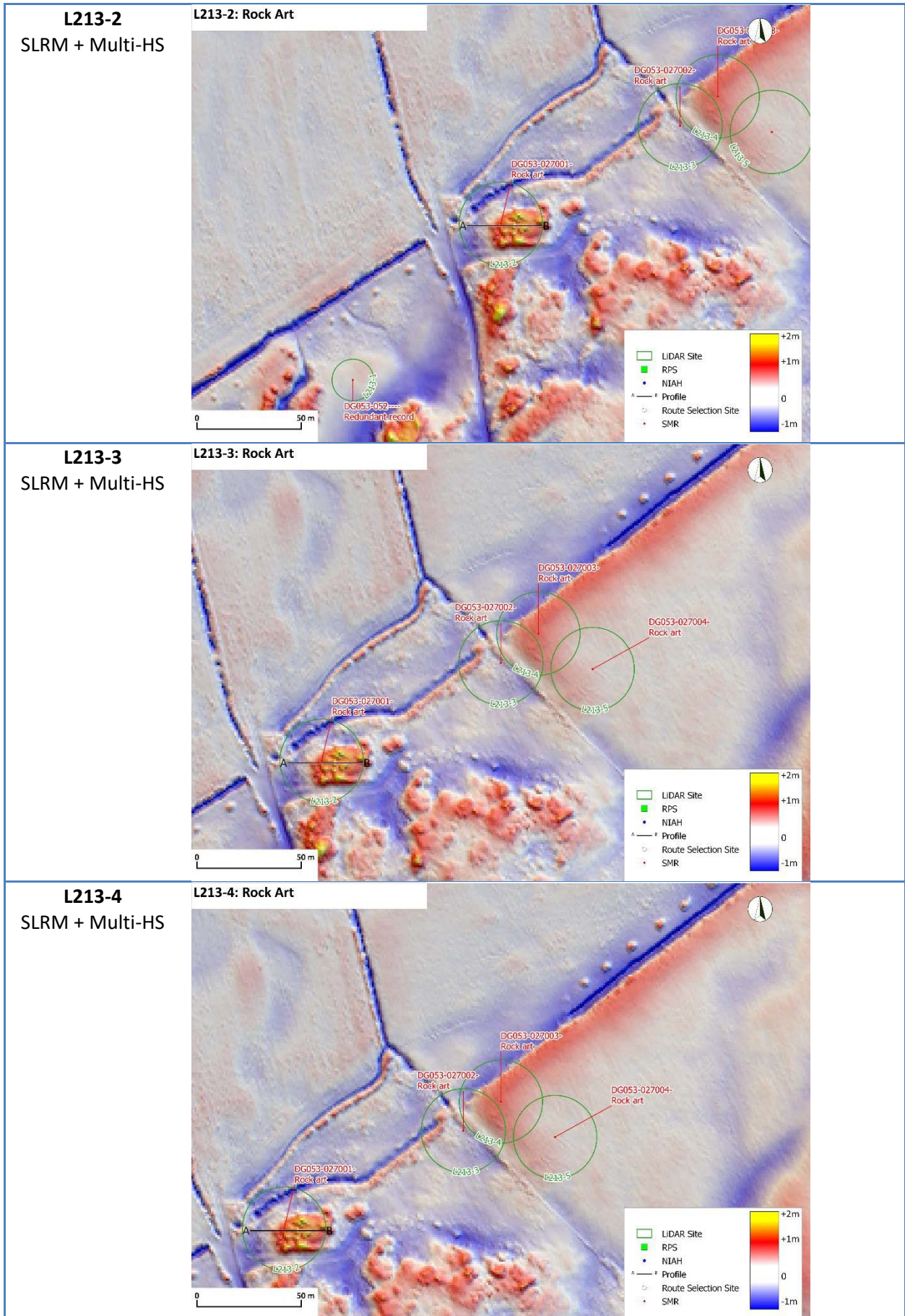


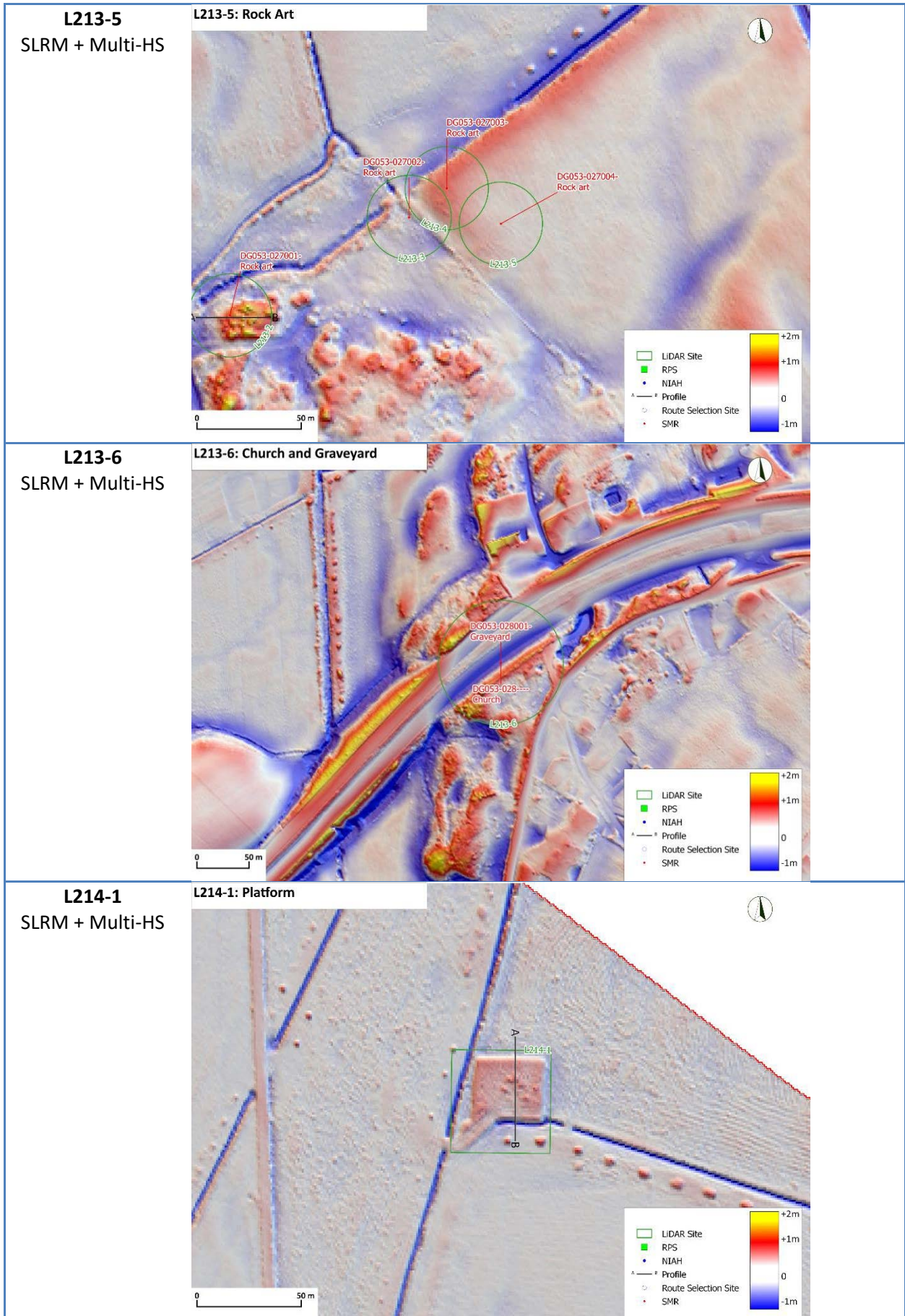
OSI First Ed. 6-Inch Map

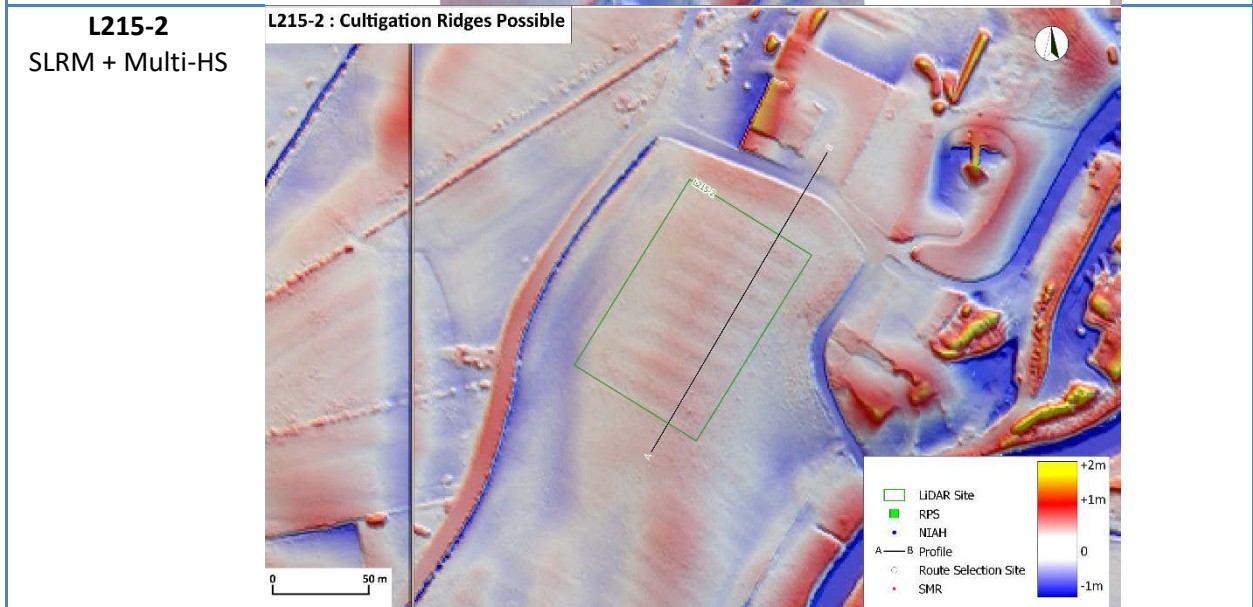
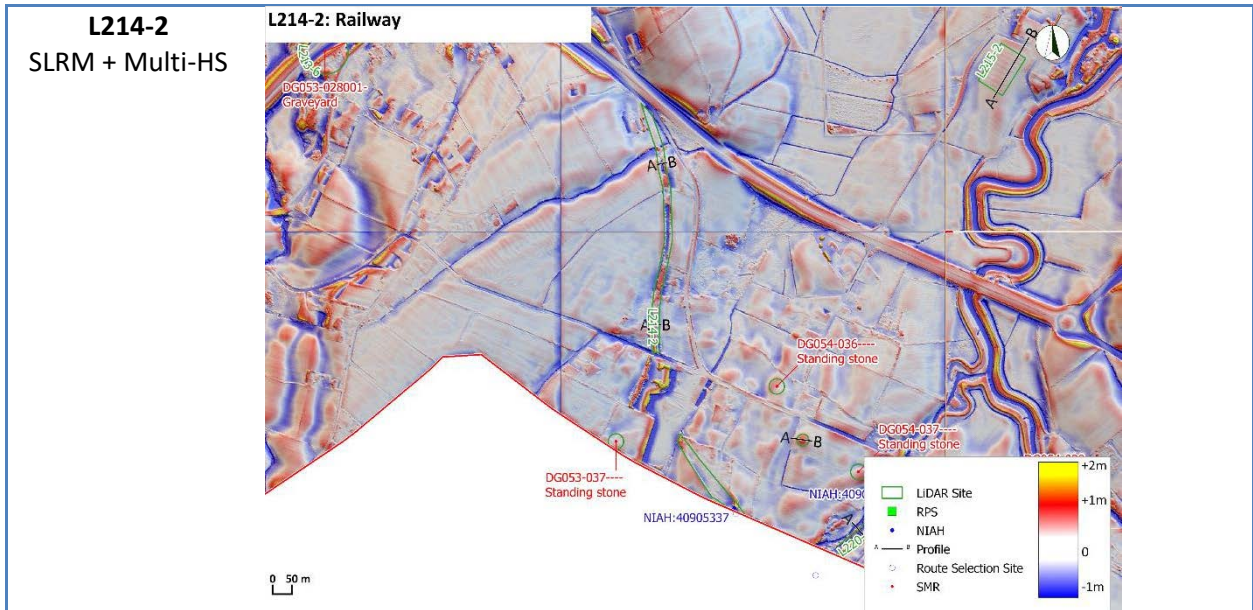


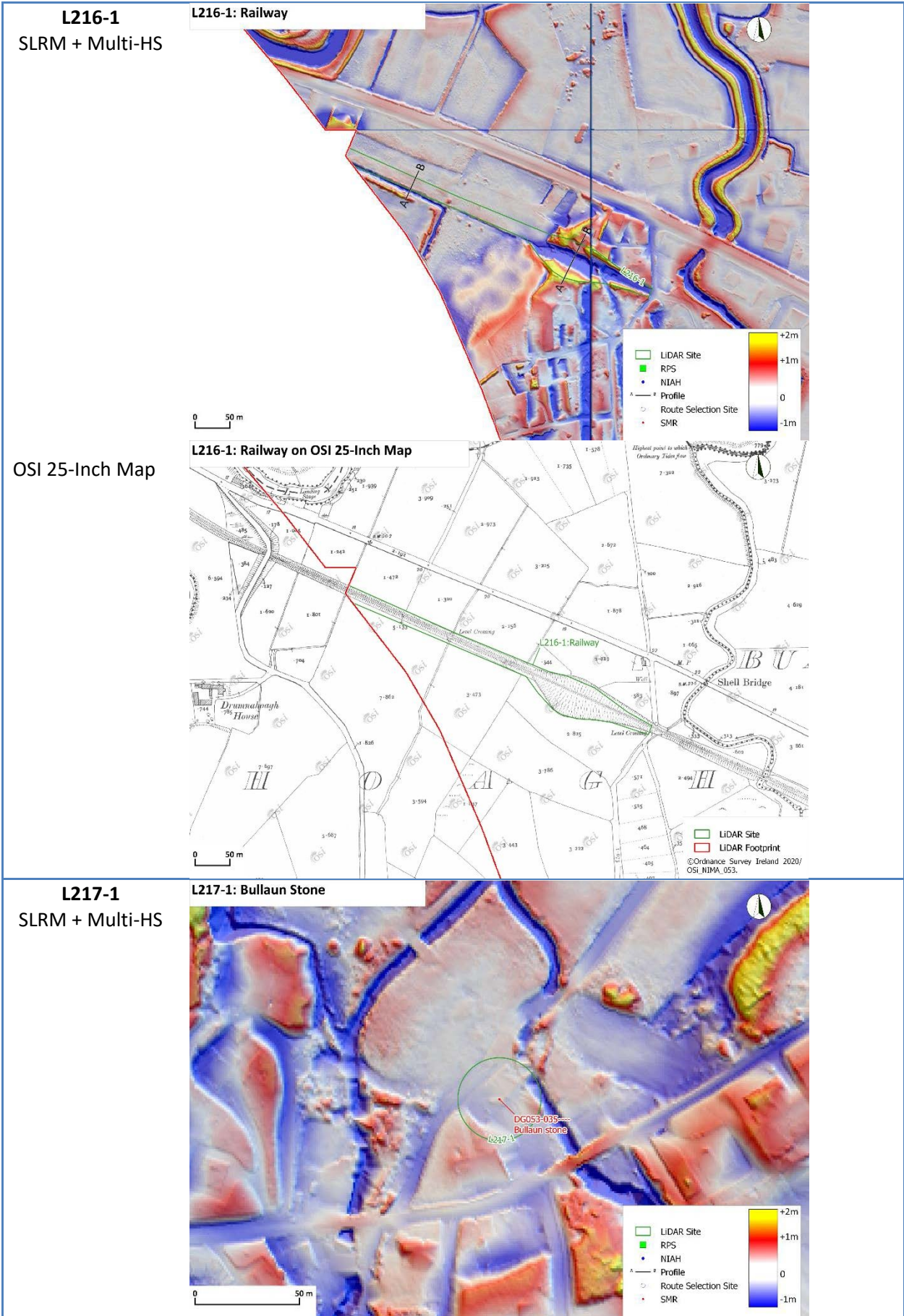




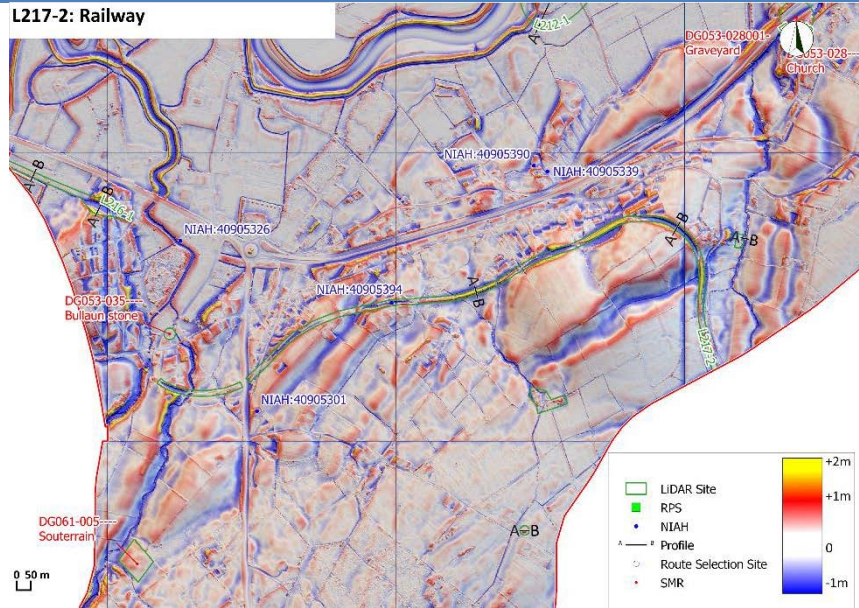




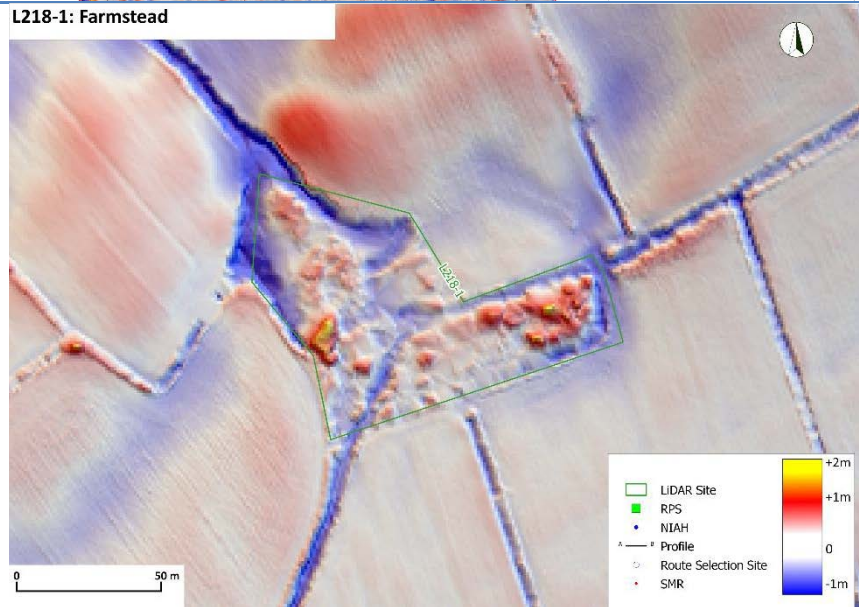




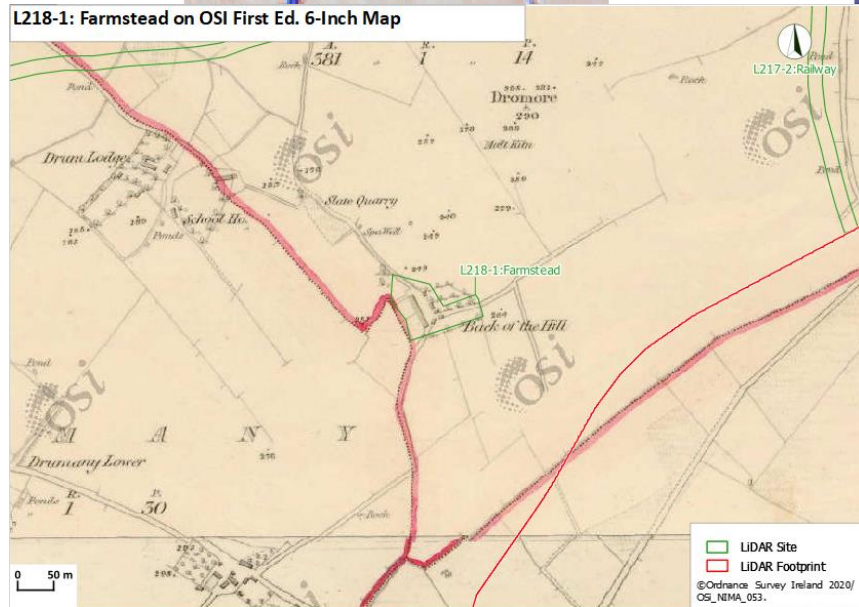
L217-2
SLRM + Multi-HS



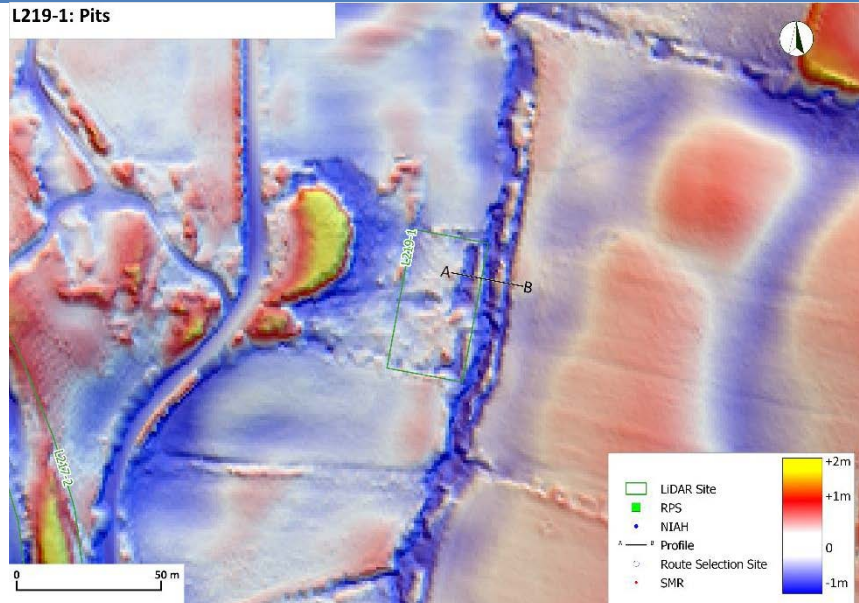
L218-1
SLRM + Multi-HS



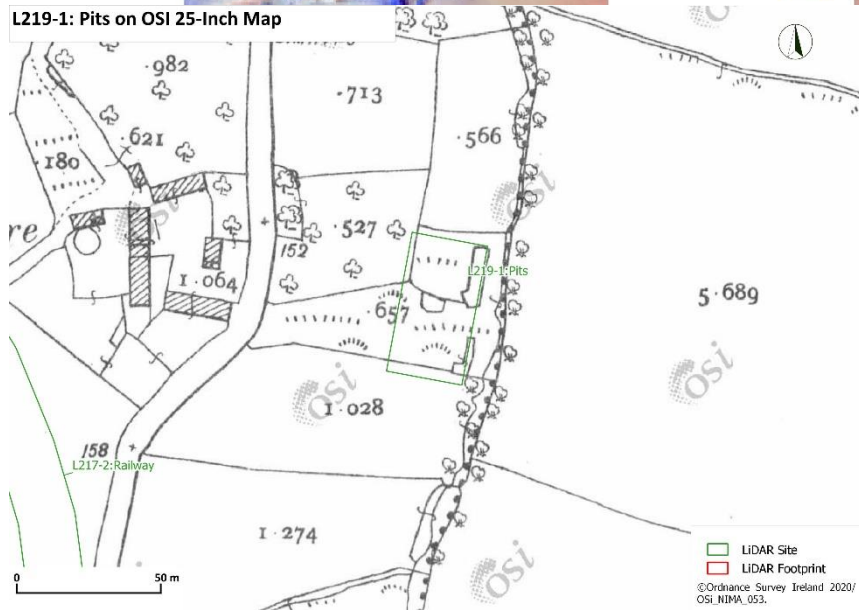
OSI First Ed. 6-
Inch Map



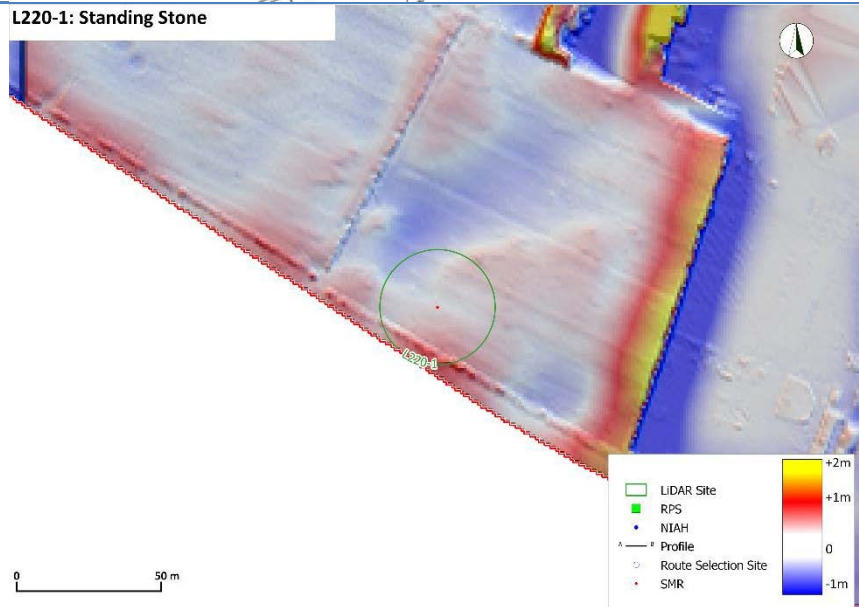
L219-1
SLRM + Multi-HS

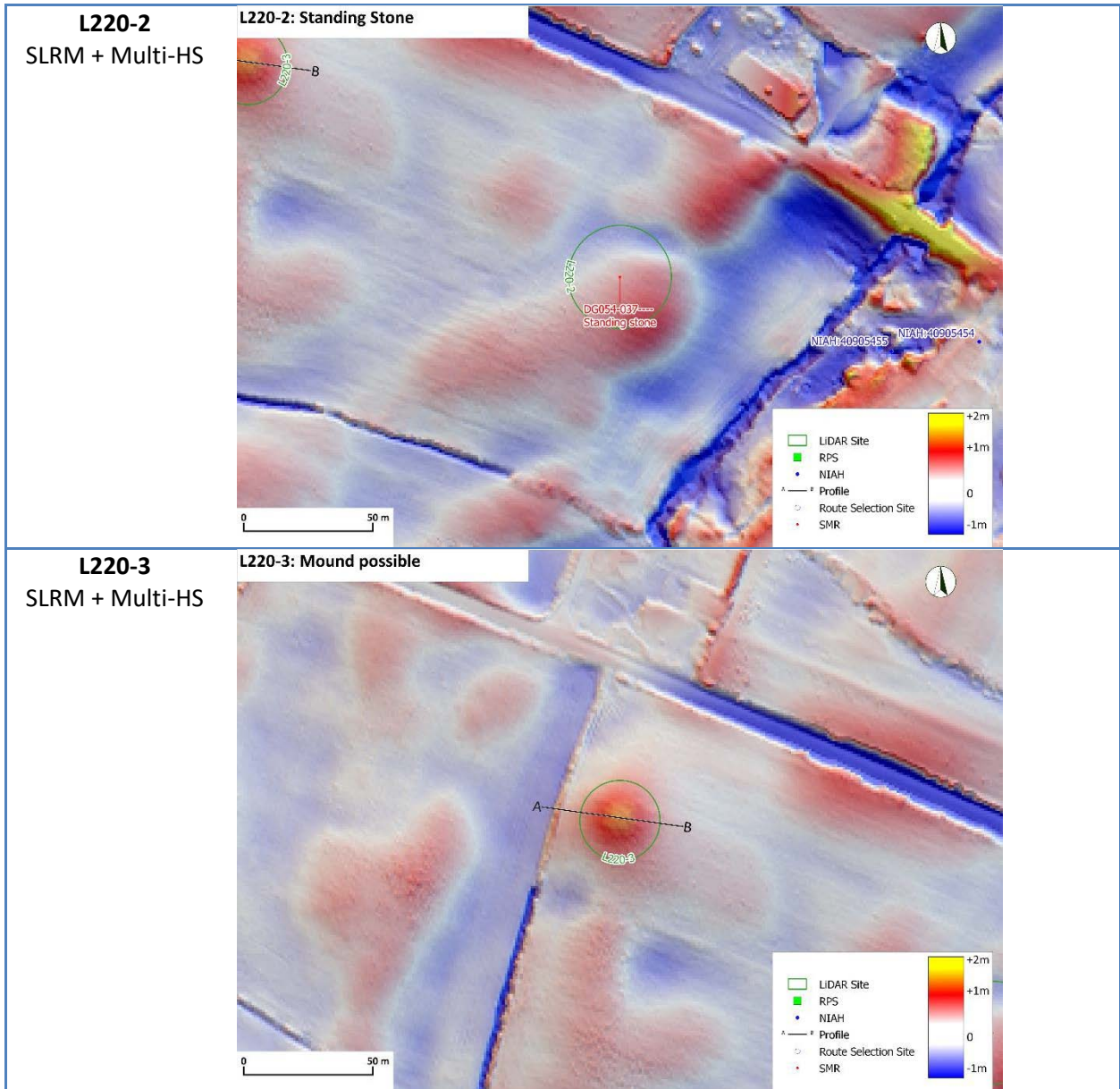


OSI 25-Inch Map

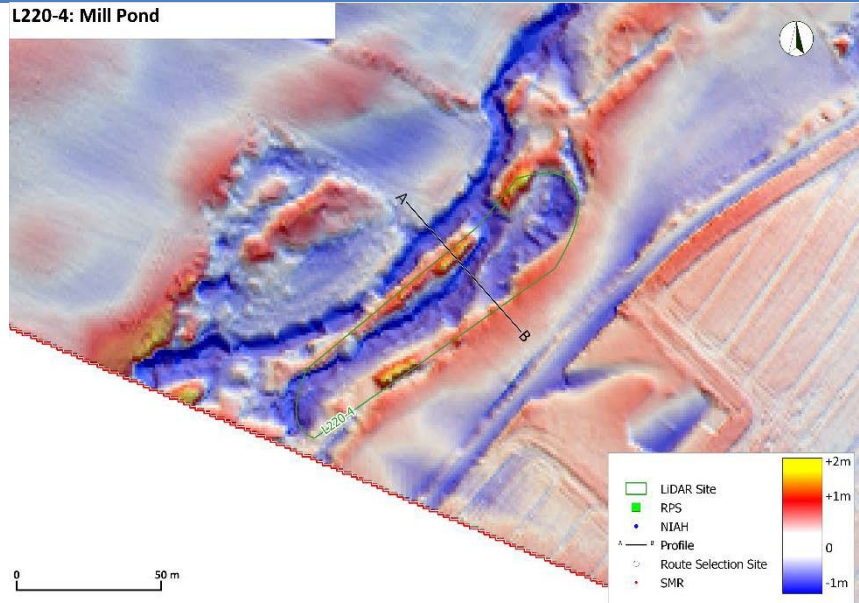


L220-1
SLRM + Multi-HS

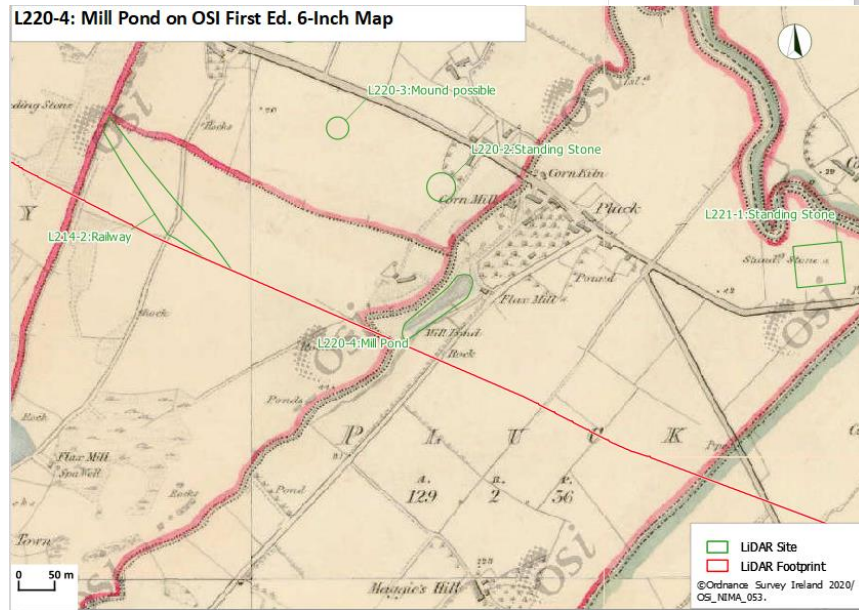




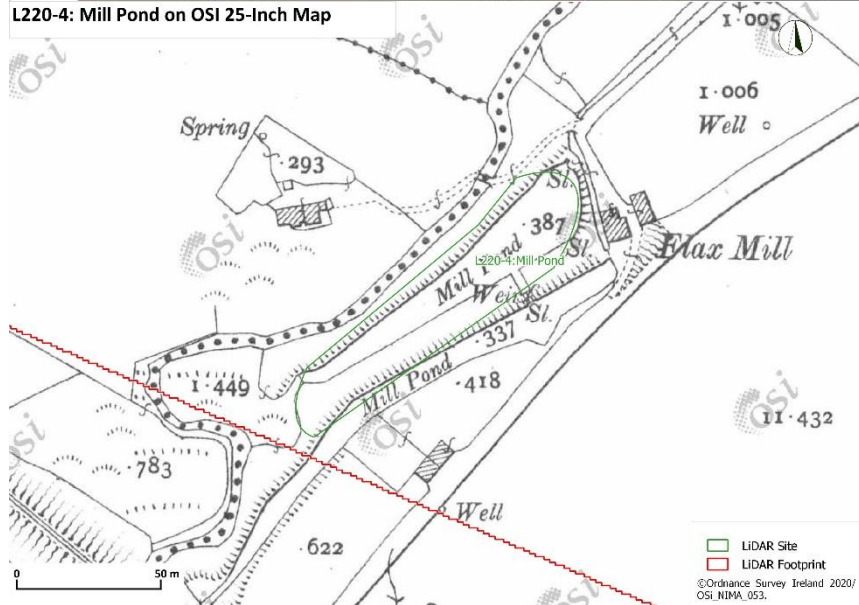
L220-4
SLRM + Multi-HS

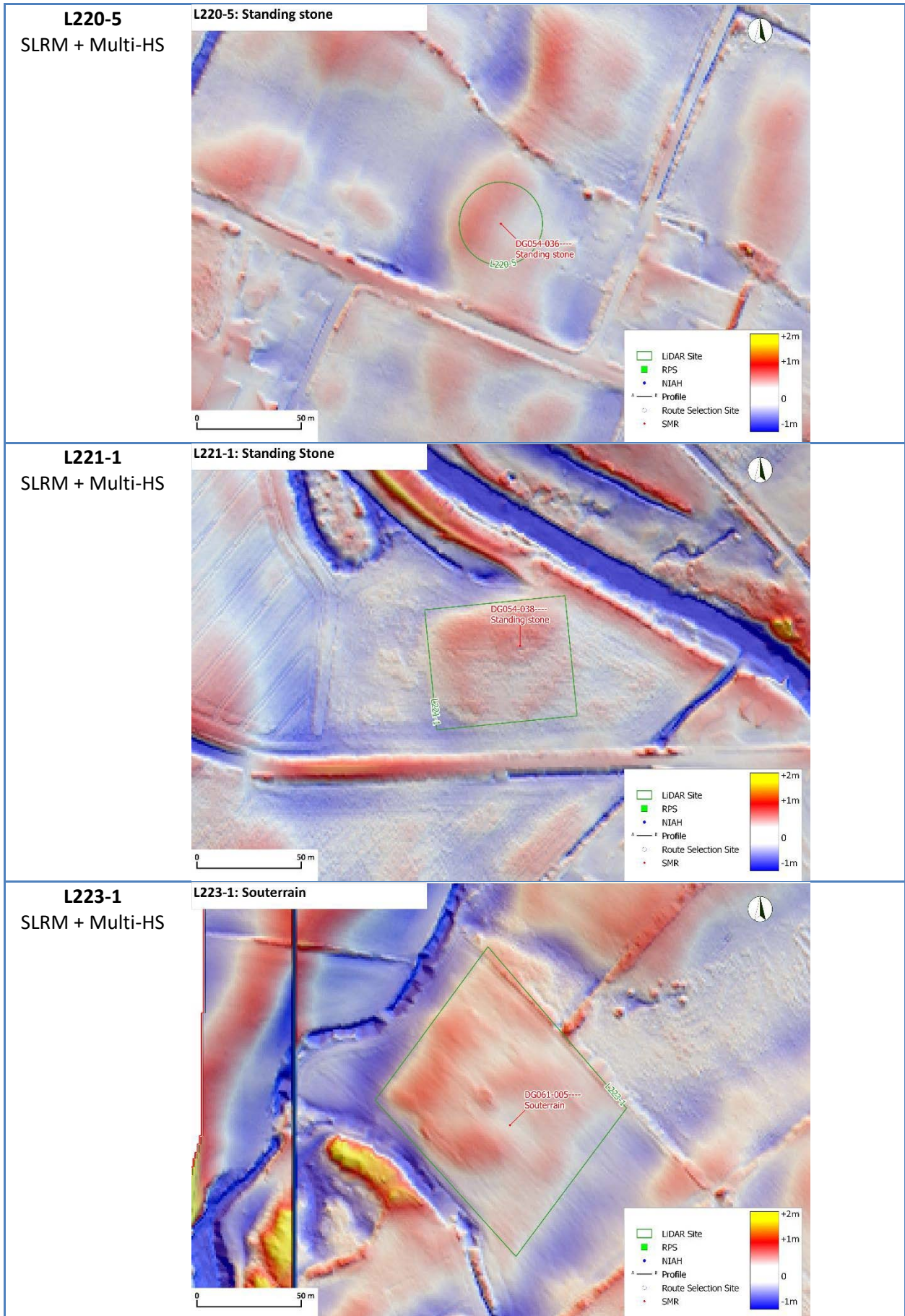


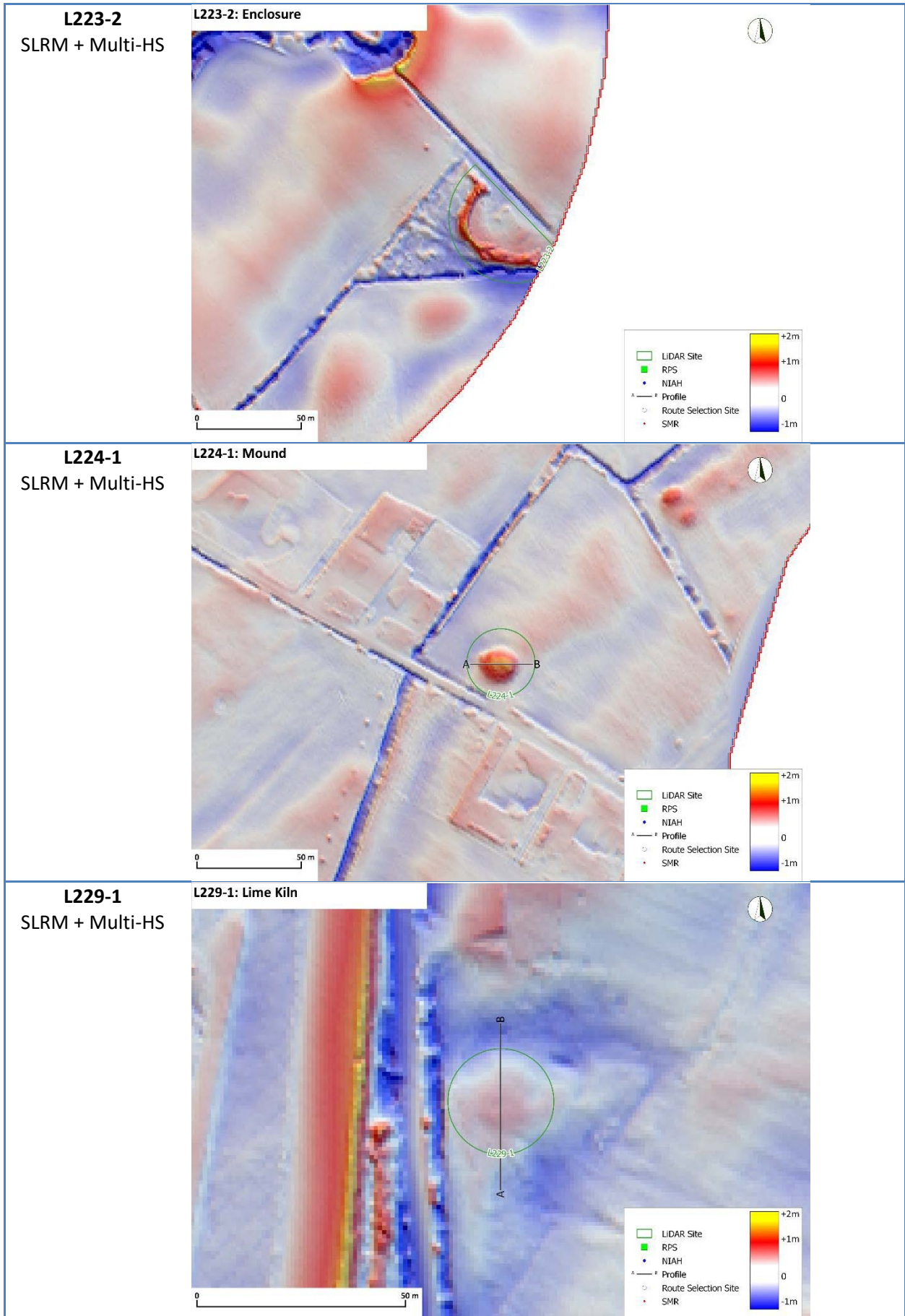
OSI First Ed. 6-Inch Map

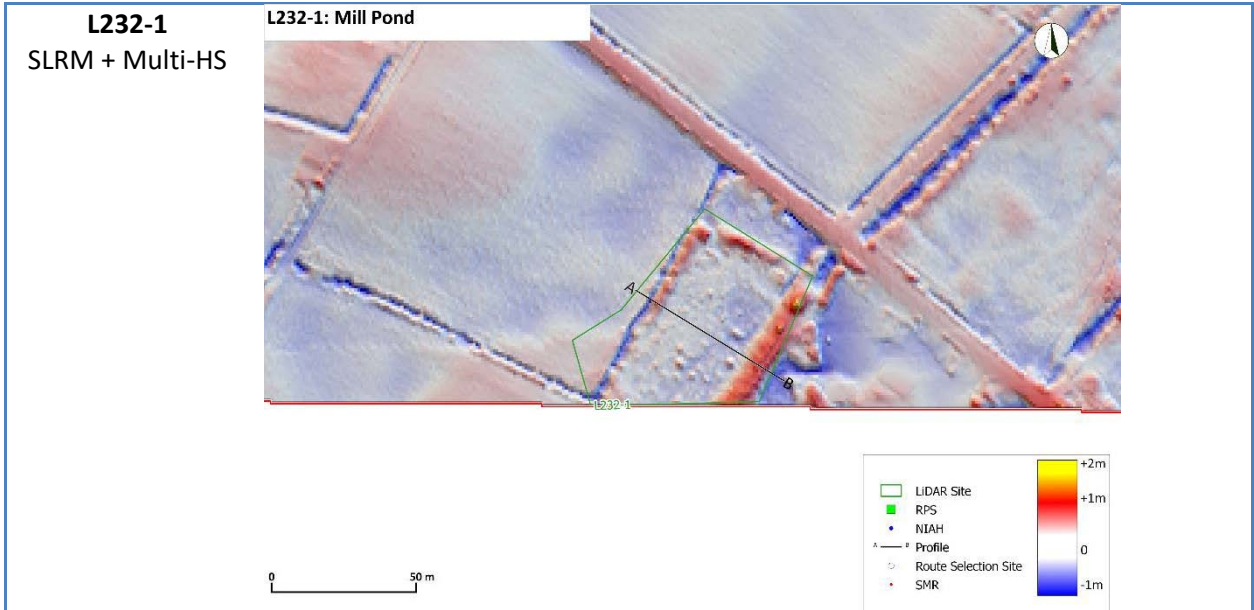


OSI 25-Inch Map

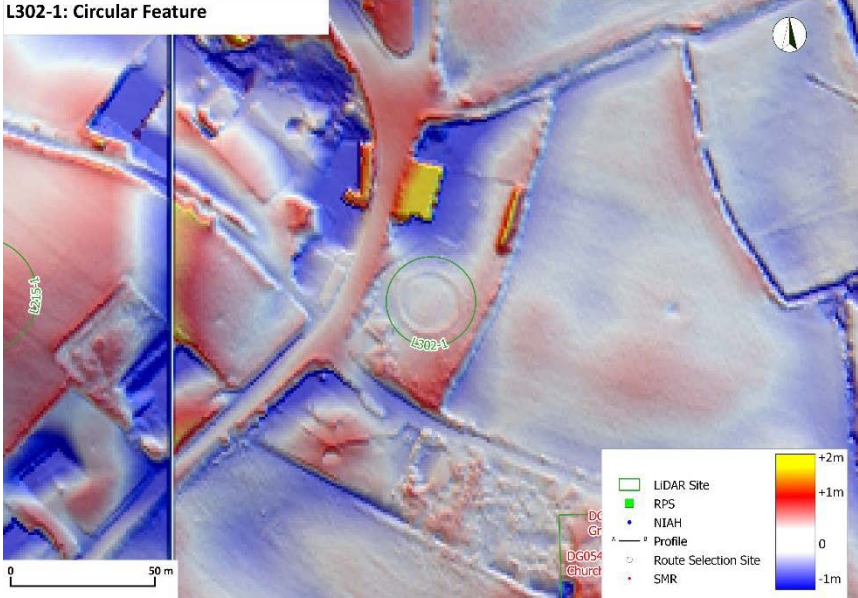





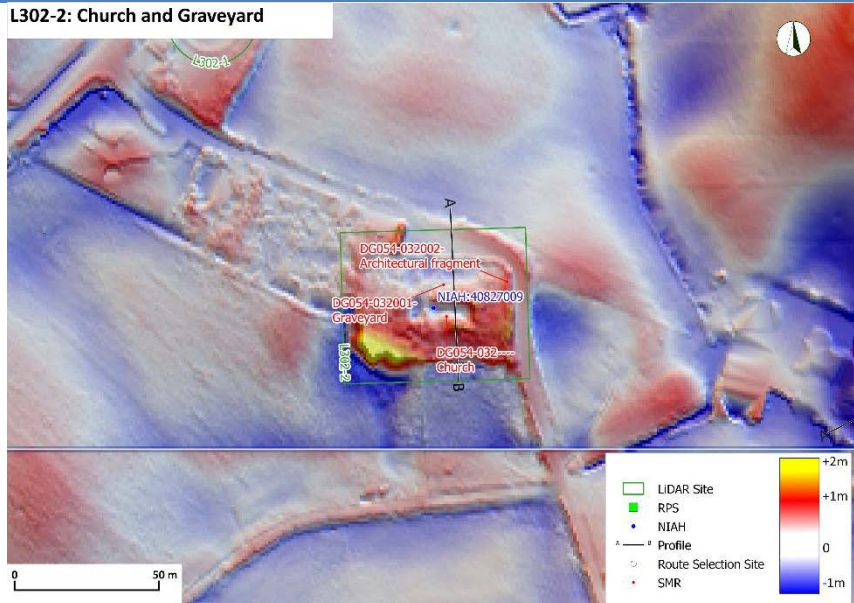




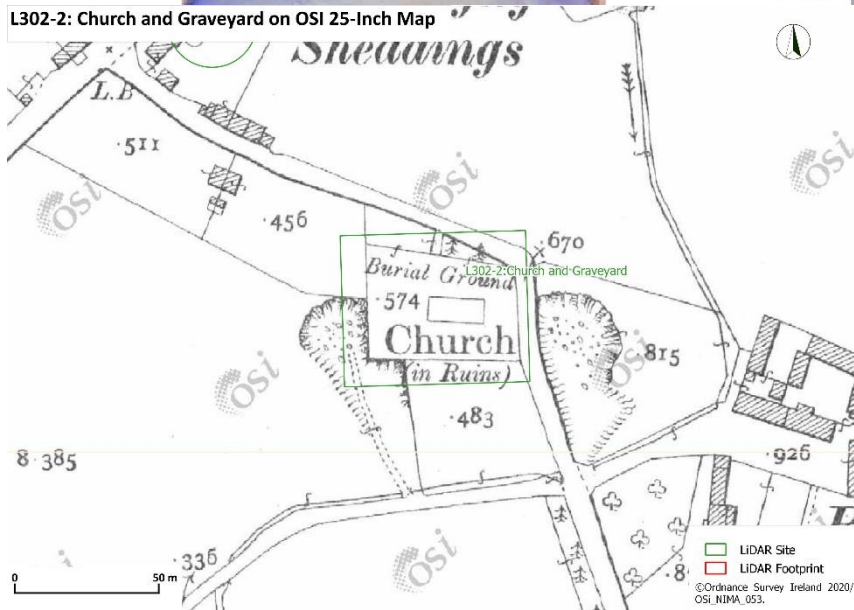
Section 3 LiDAR Sites

Site No	Image Catalogue
<p>L302-1 SLRM + Multi-HS</p>	<p>L302-1: Circular Feature</p> 
<p>OSI 25-Inch Map</p>	<p>L302-1: Circular Feature on OSI 25-Inch Map</p> 

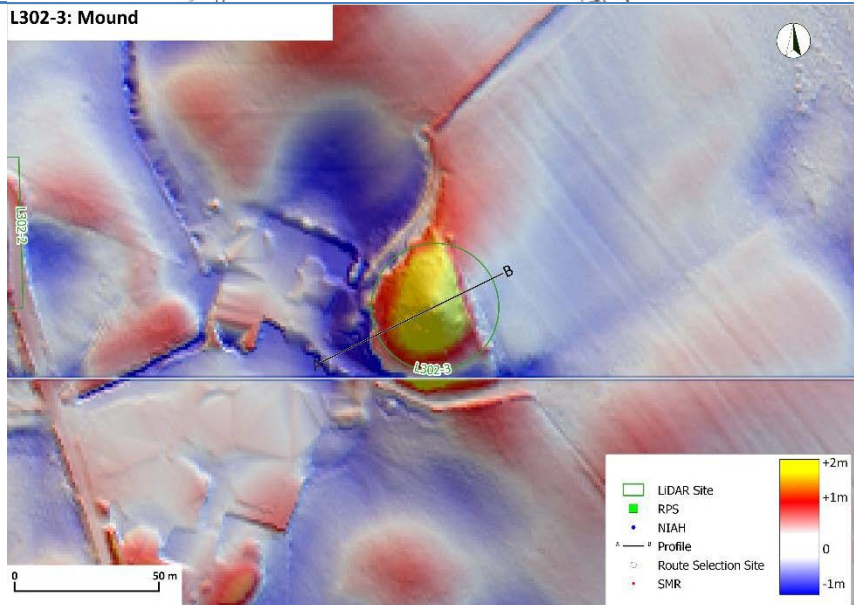
L302-2
SLRM + Multi-HS



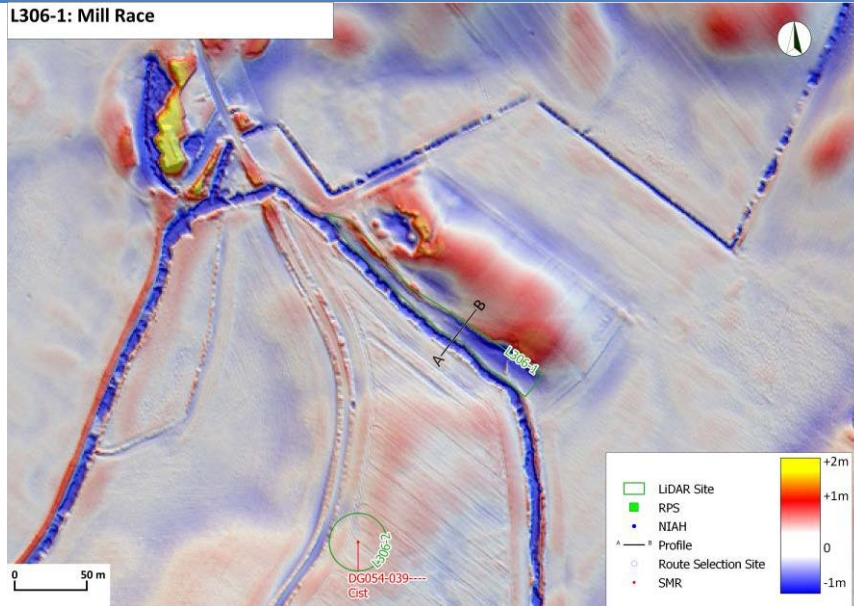
OSI 25-Inch Map



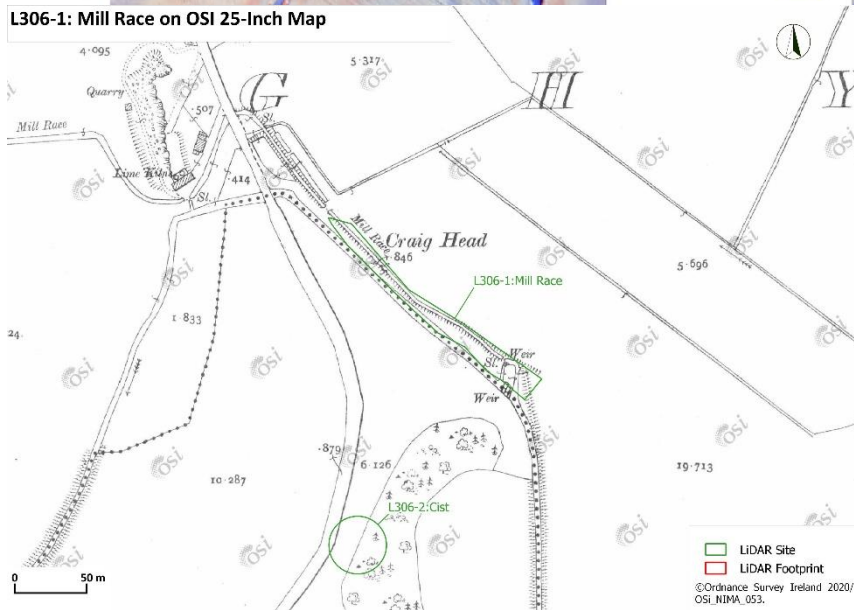
L302-3
SLRM + Multi-HS



L306-1
SLRM + Multi-HS

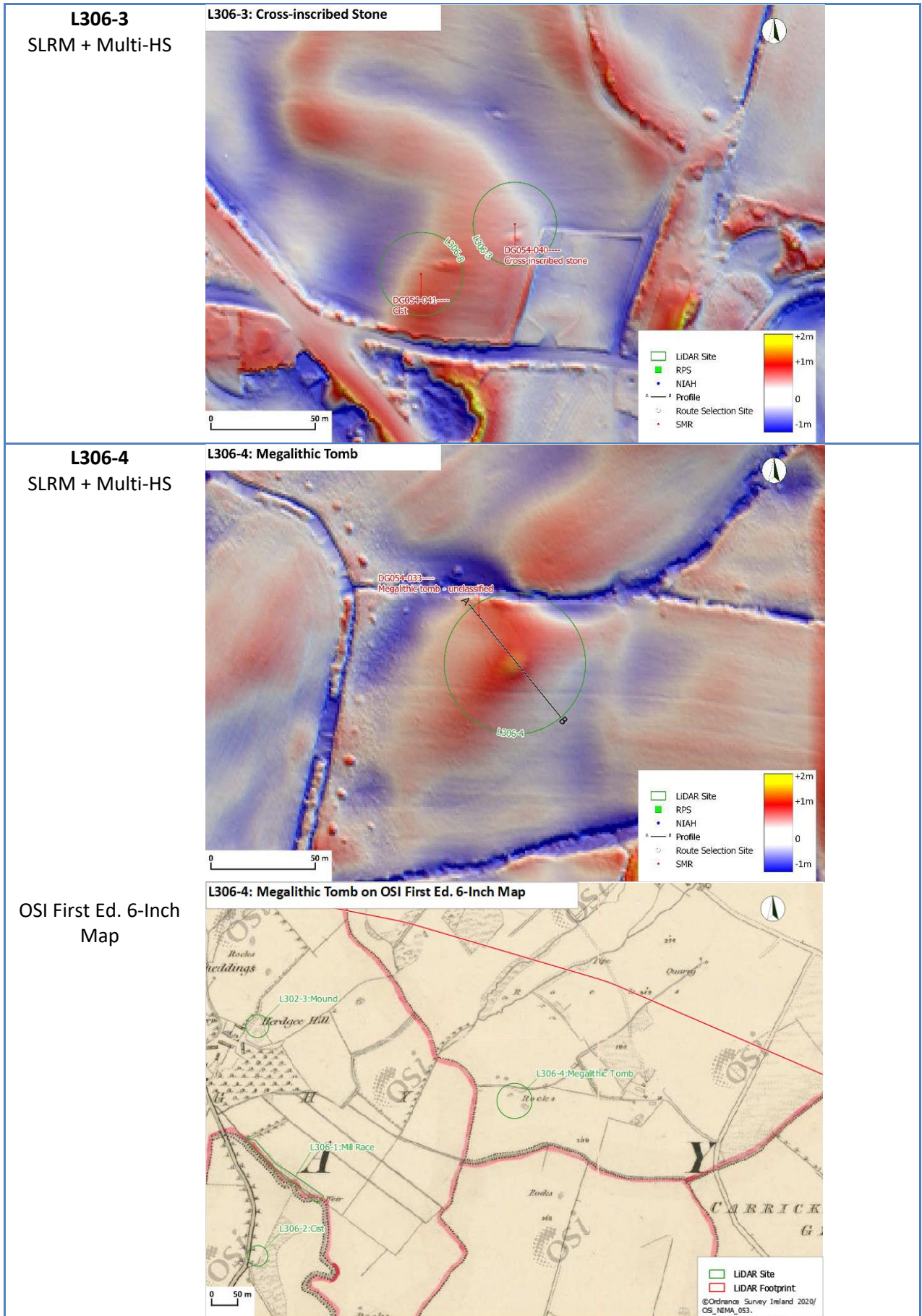


OSI 25-Inch Map

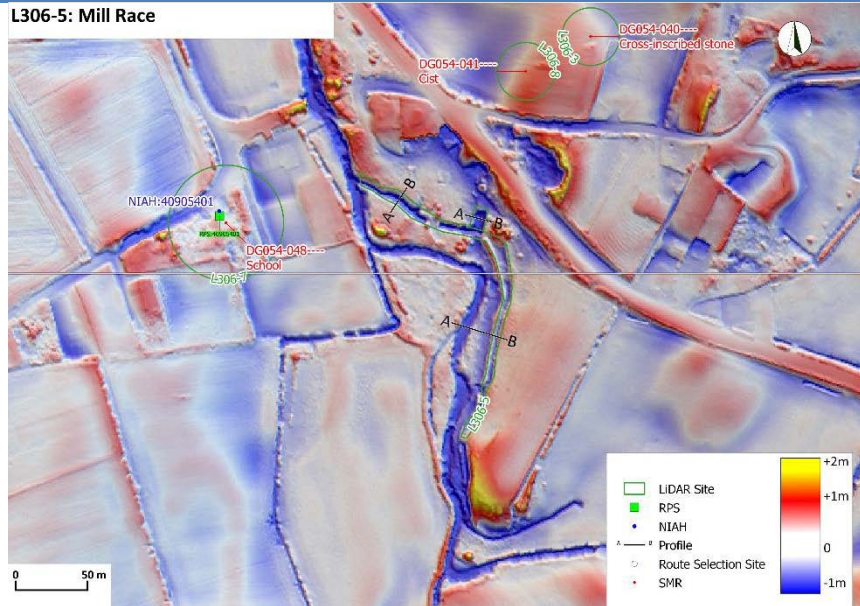


L306-2
SLRM + Multi-HS

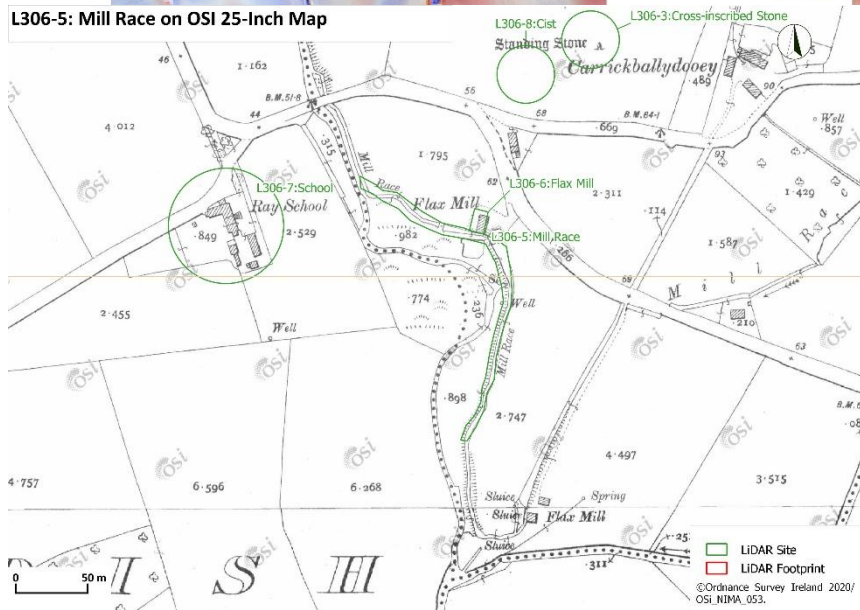




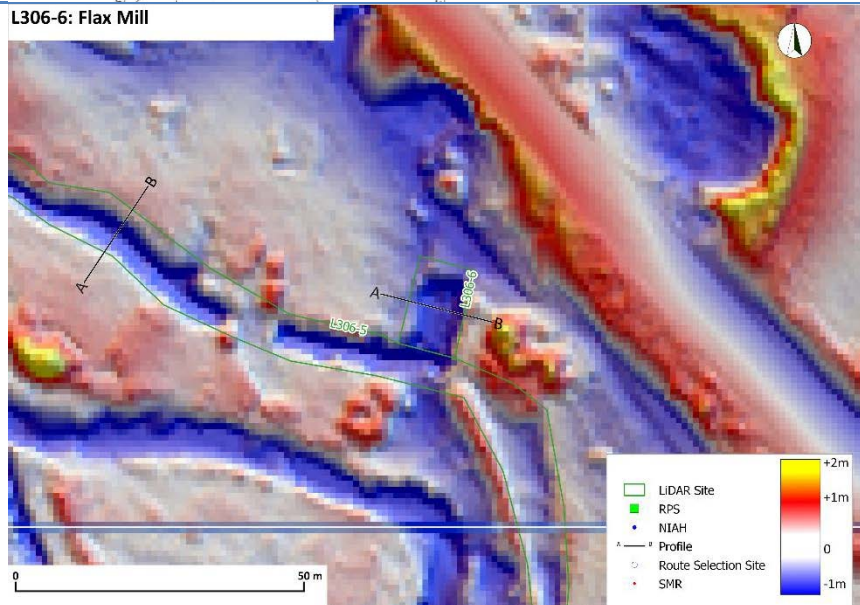
L306-5
SLRM + Multi-HS

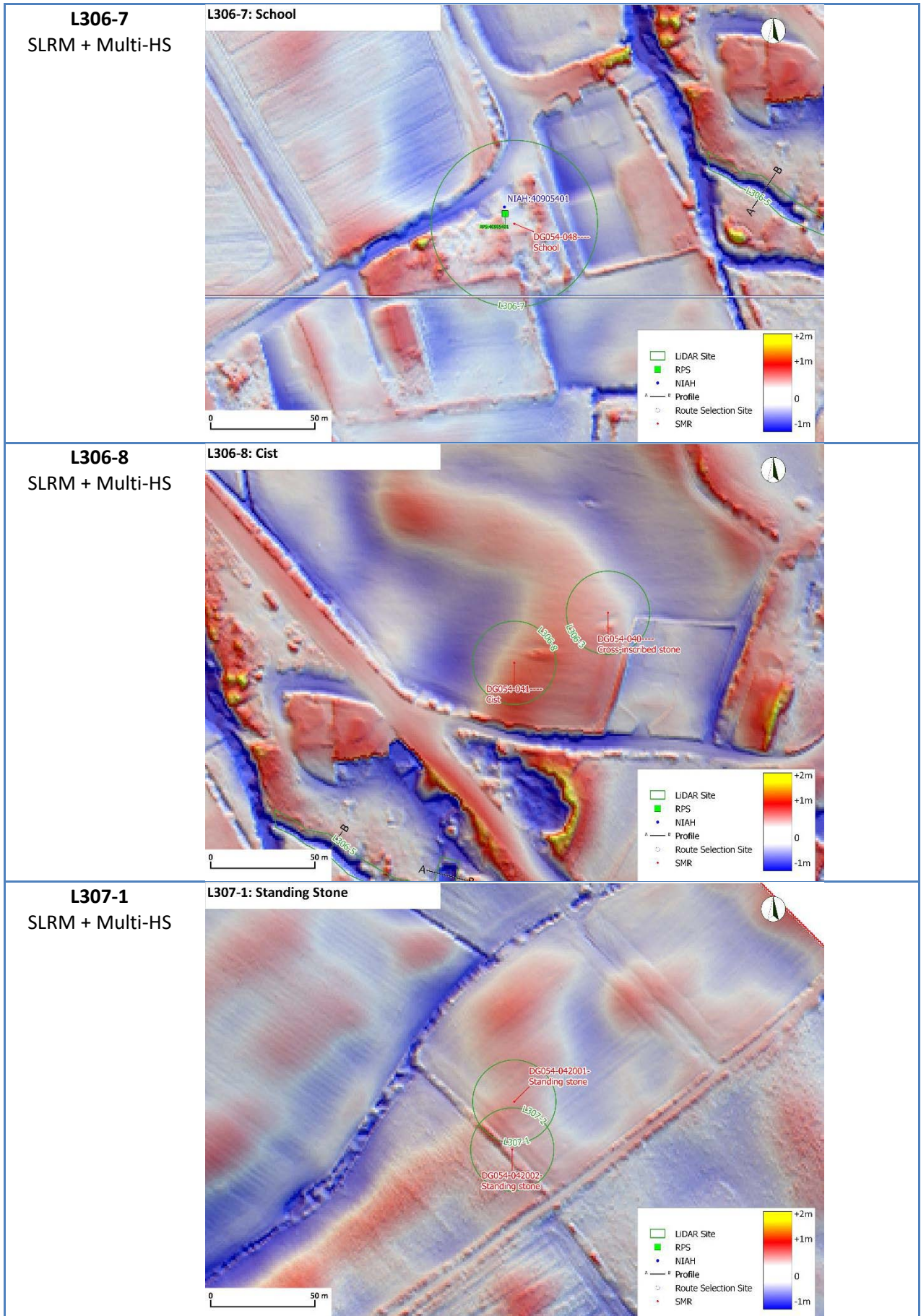


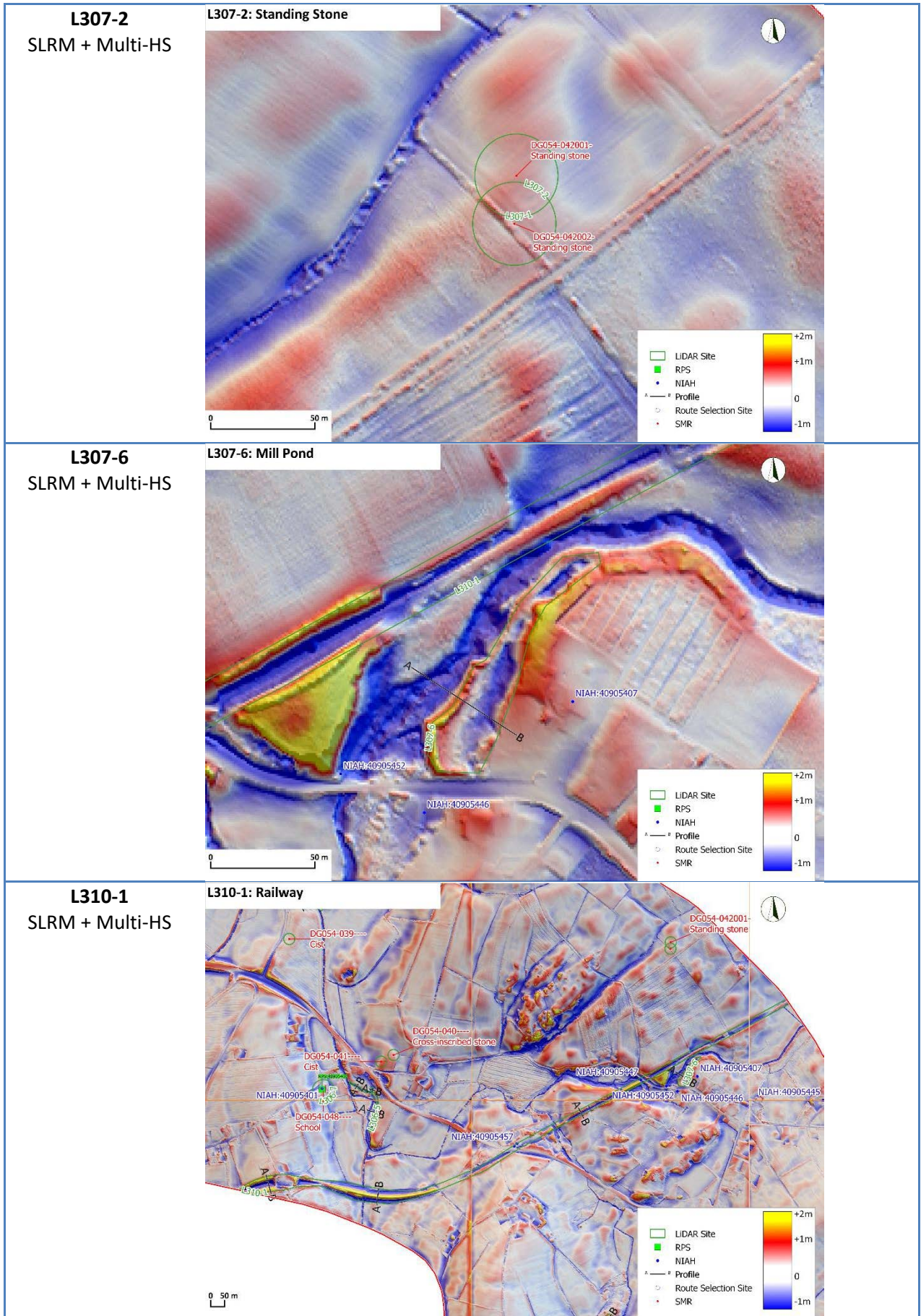
OSI 25-Inch Map

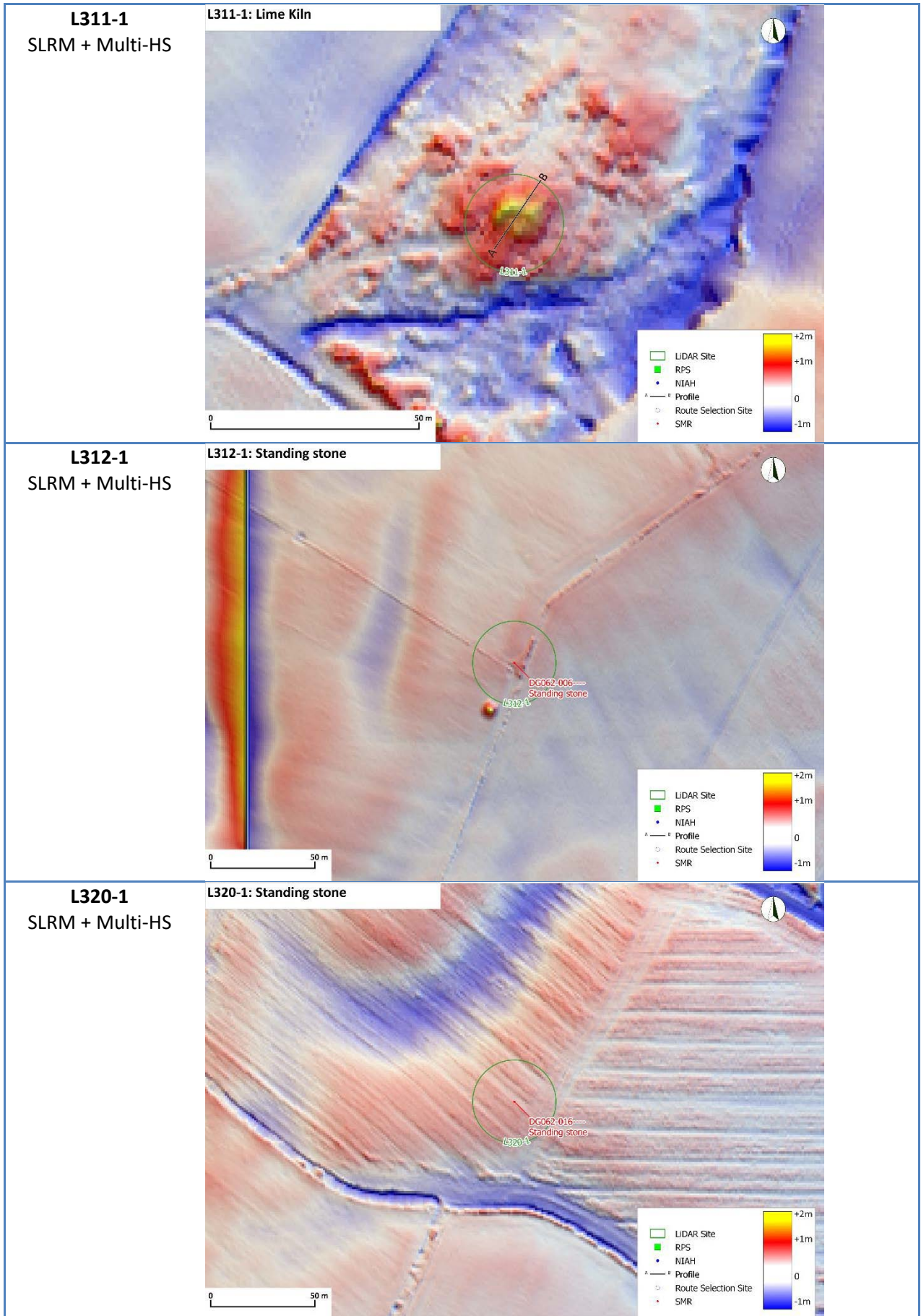


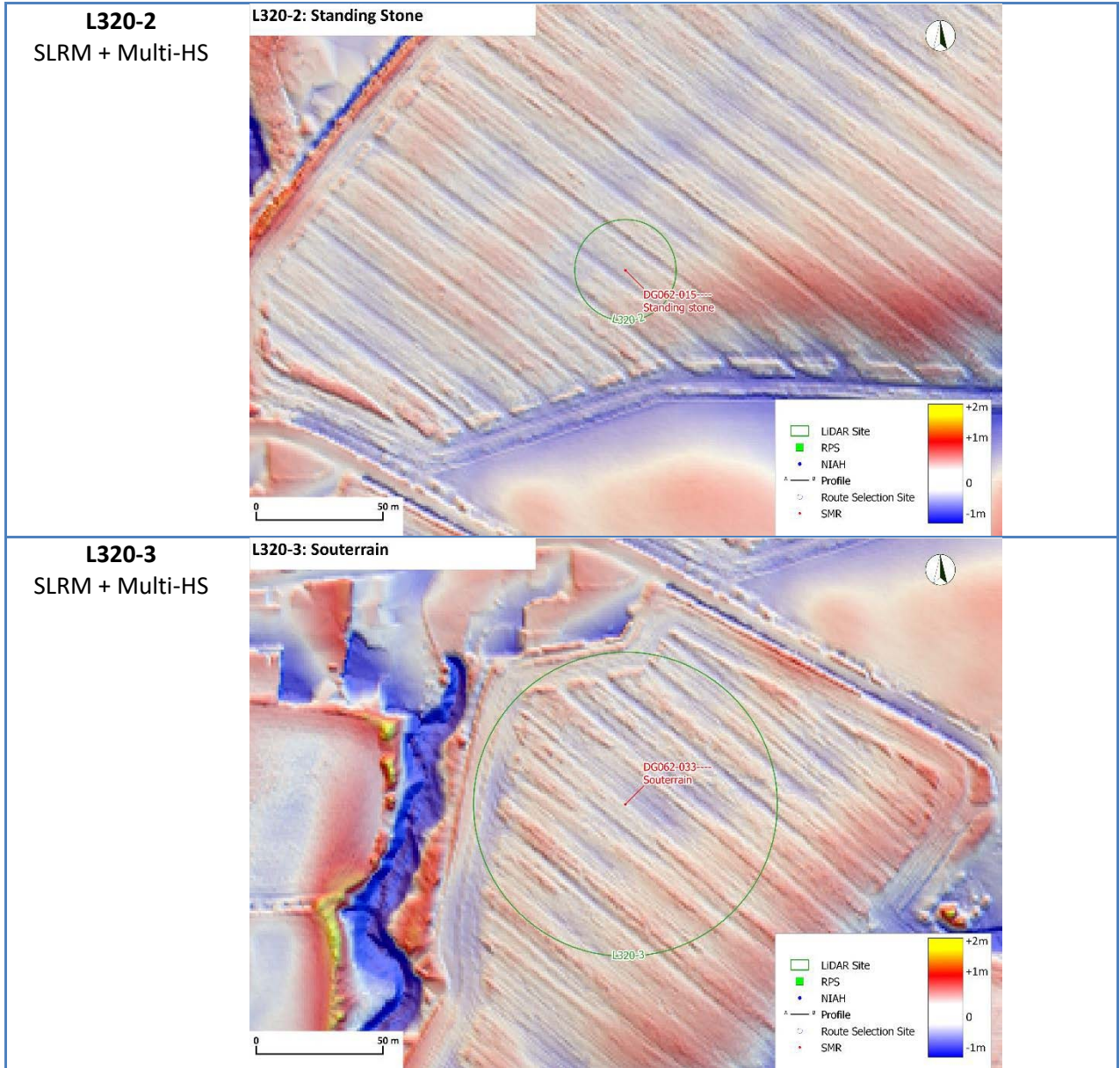
L306-6
SLRM + Multi-HS



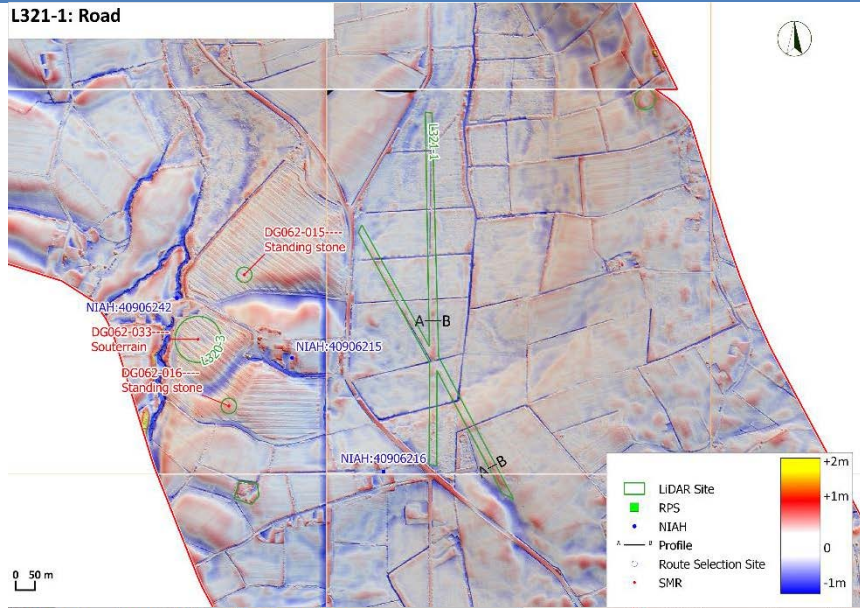




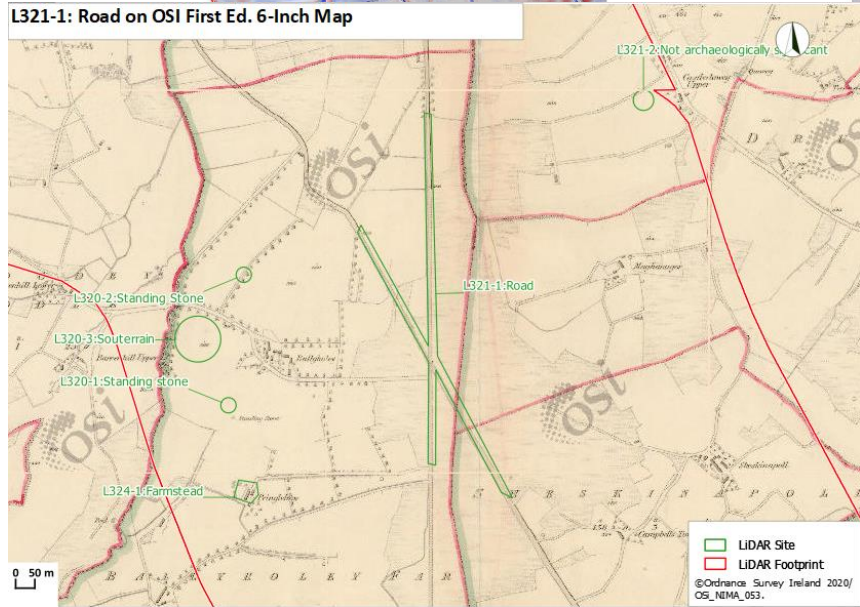




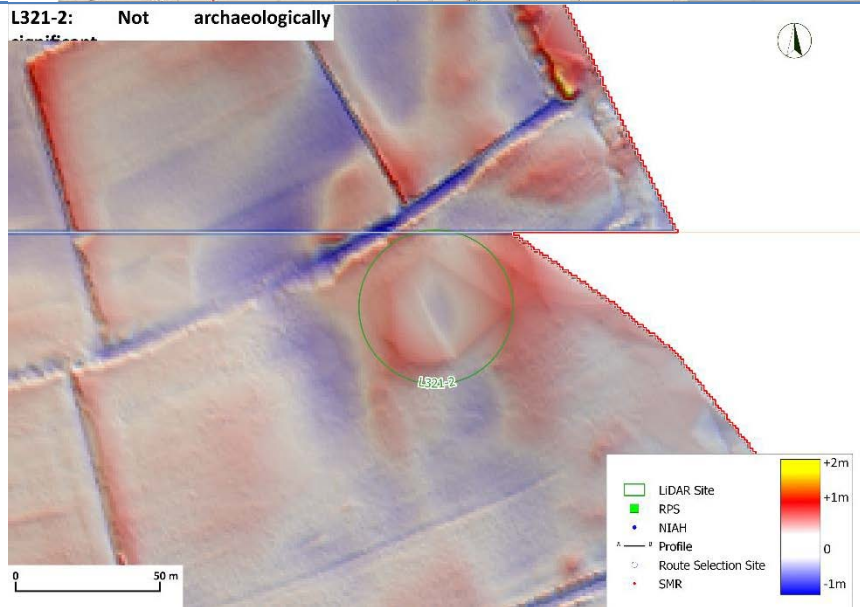
L321-1
SLRM + Multi-HS

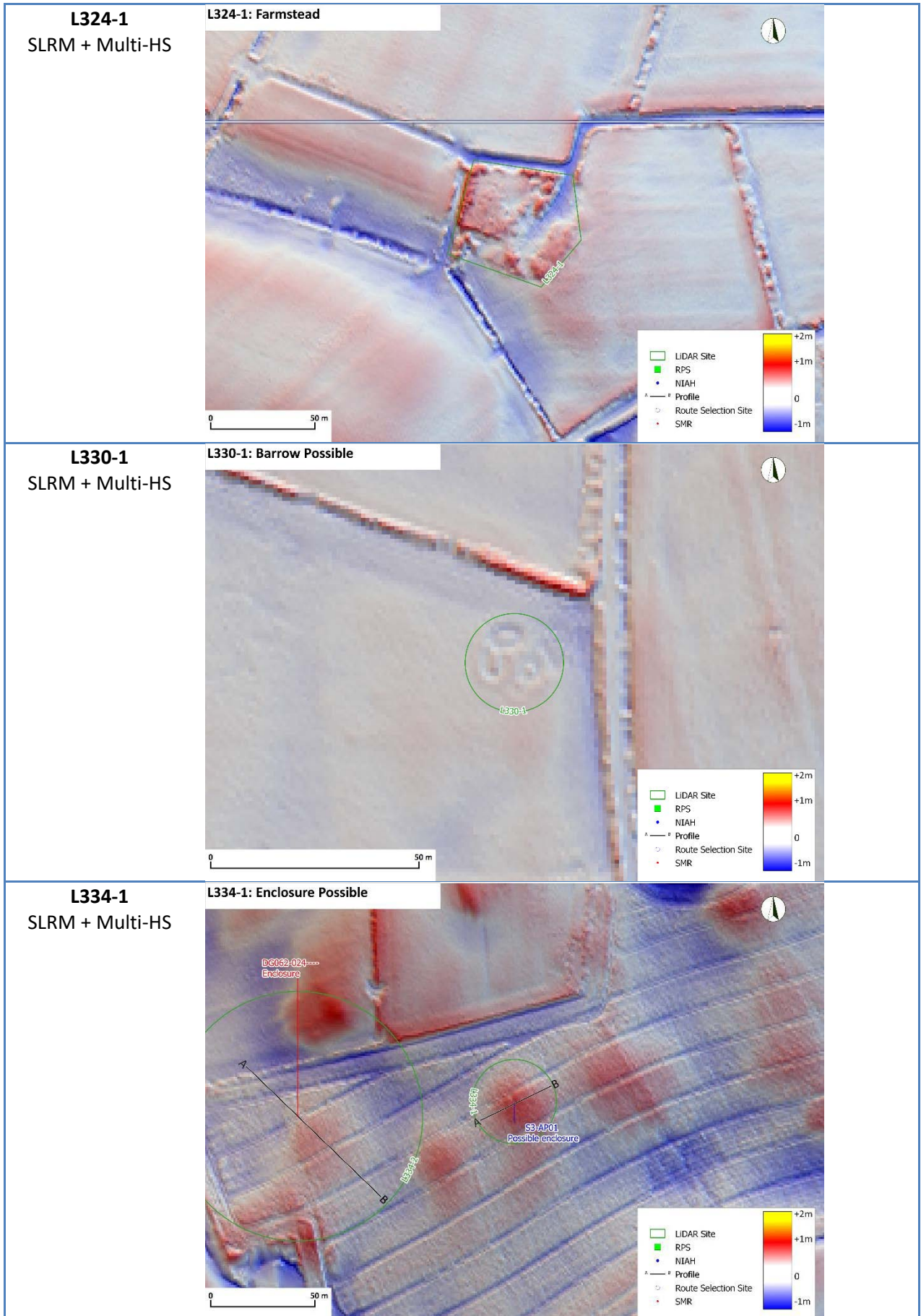


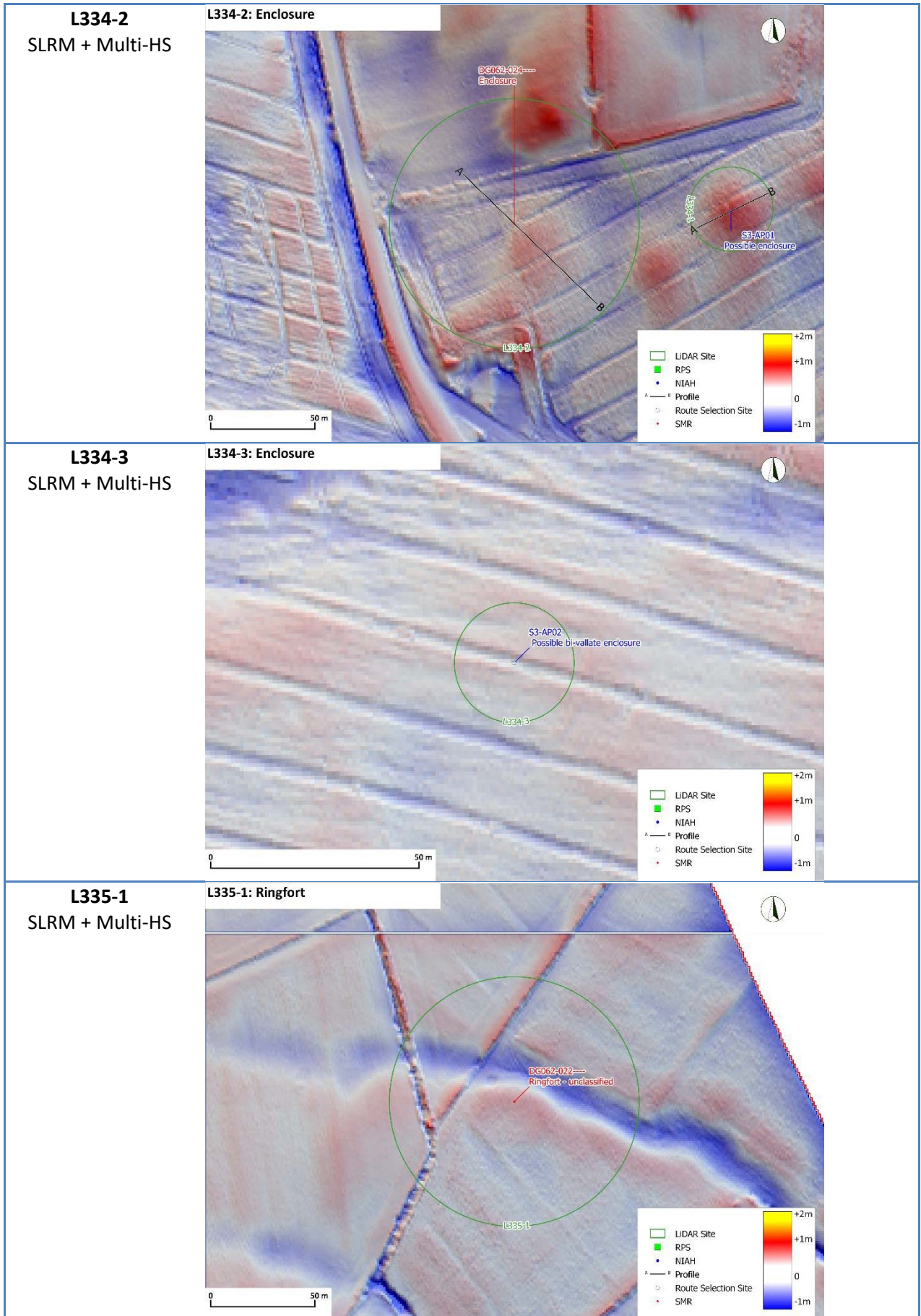
OSI First Ed. 6-Inch Map

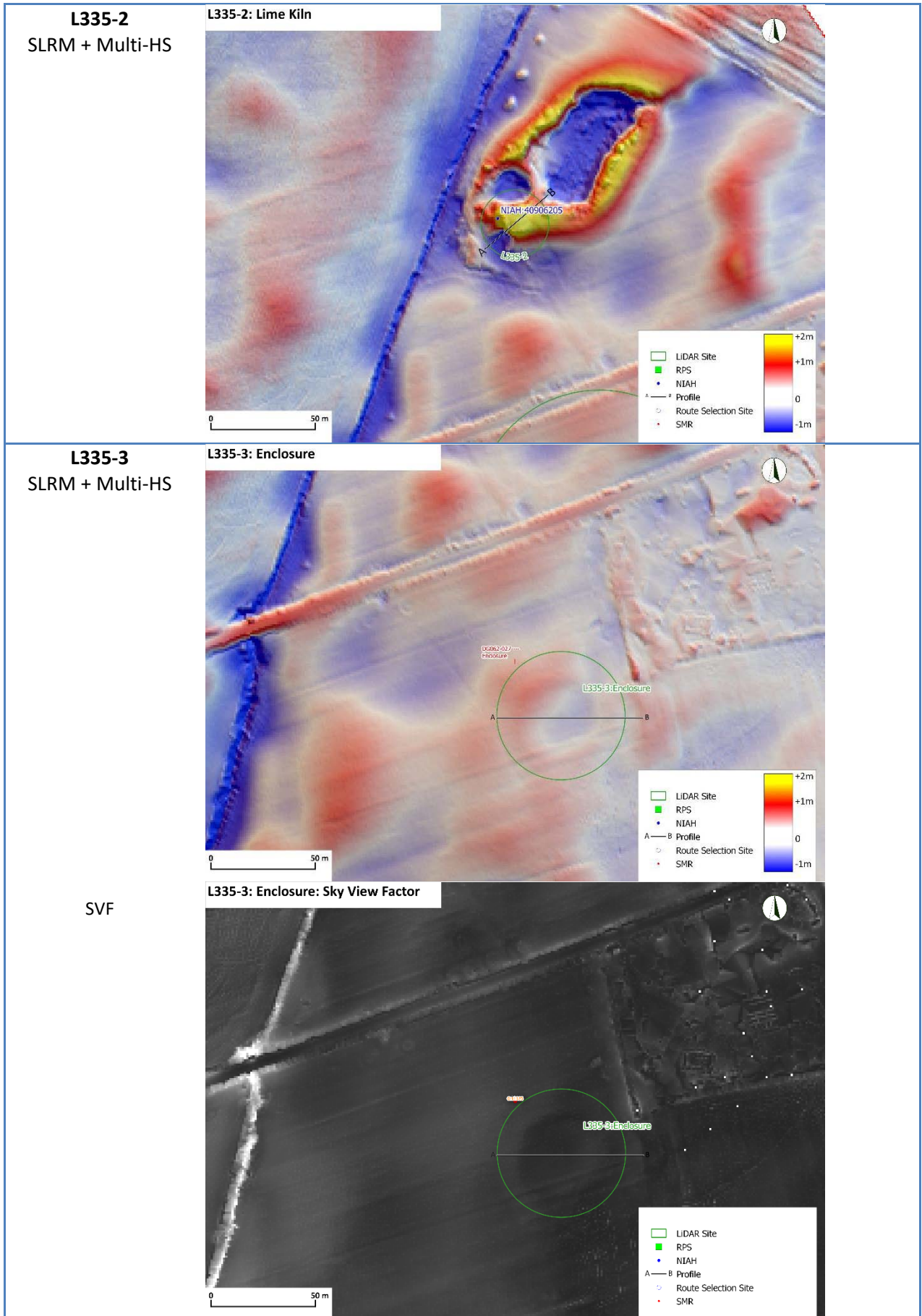


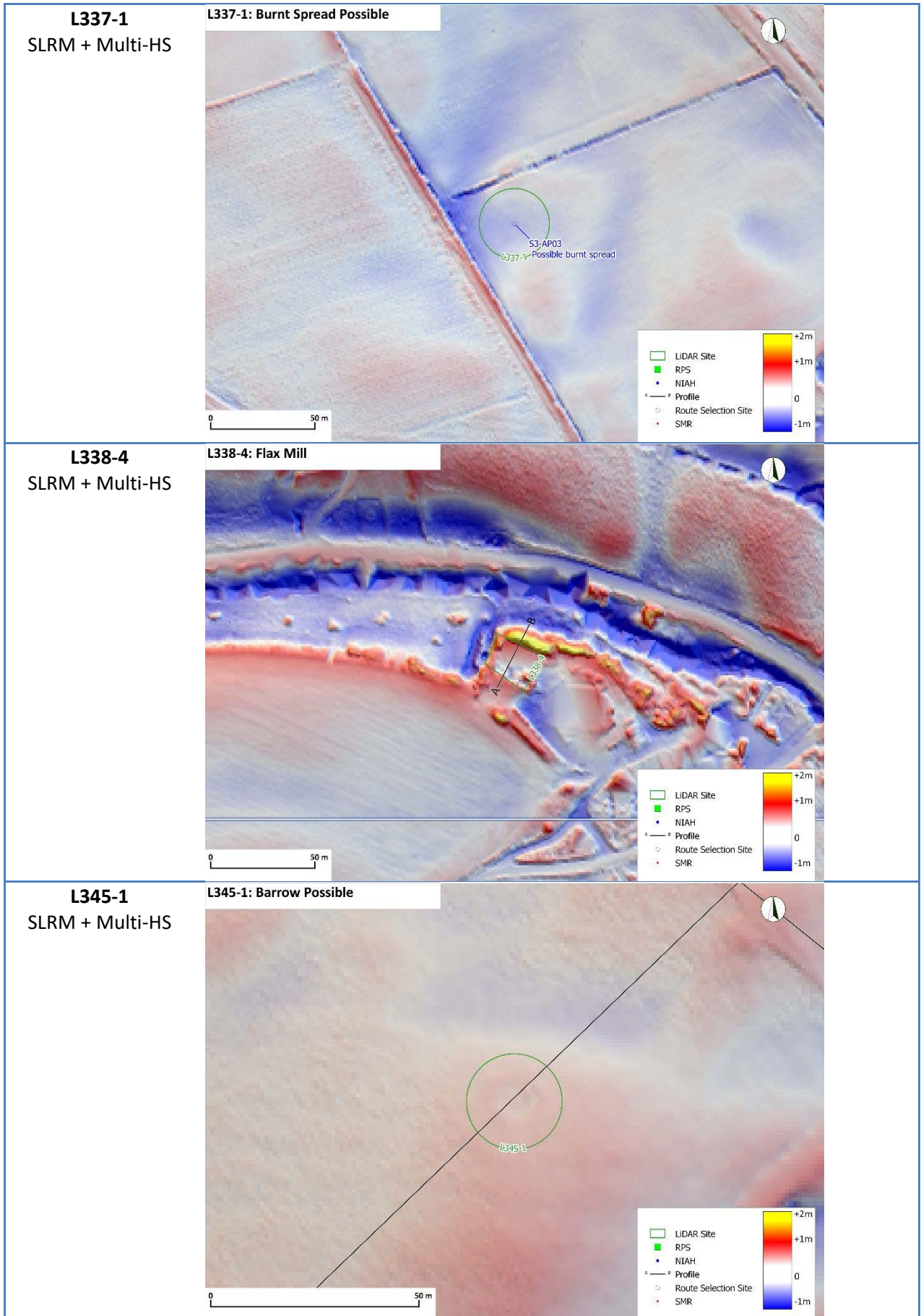
L321-2
SLRM + Multi-HS

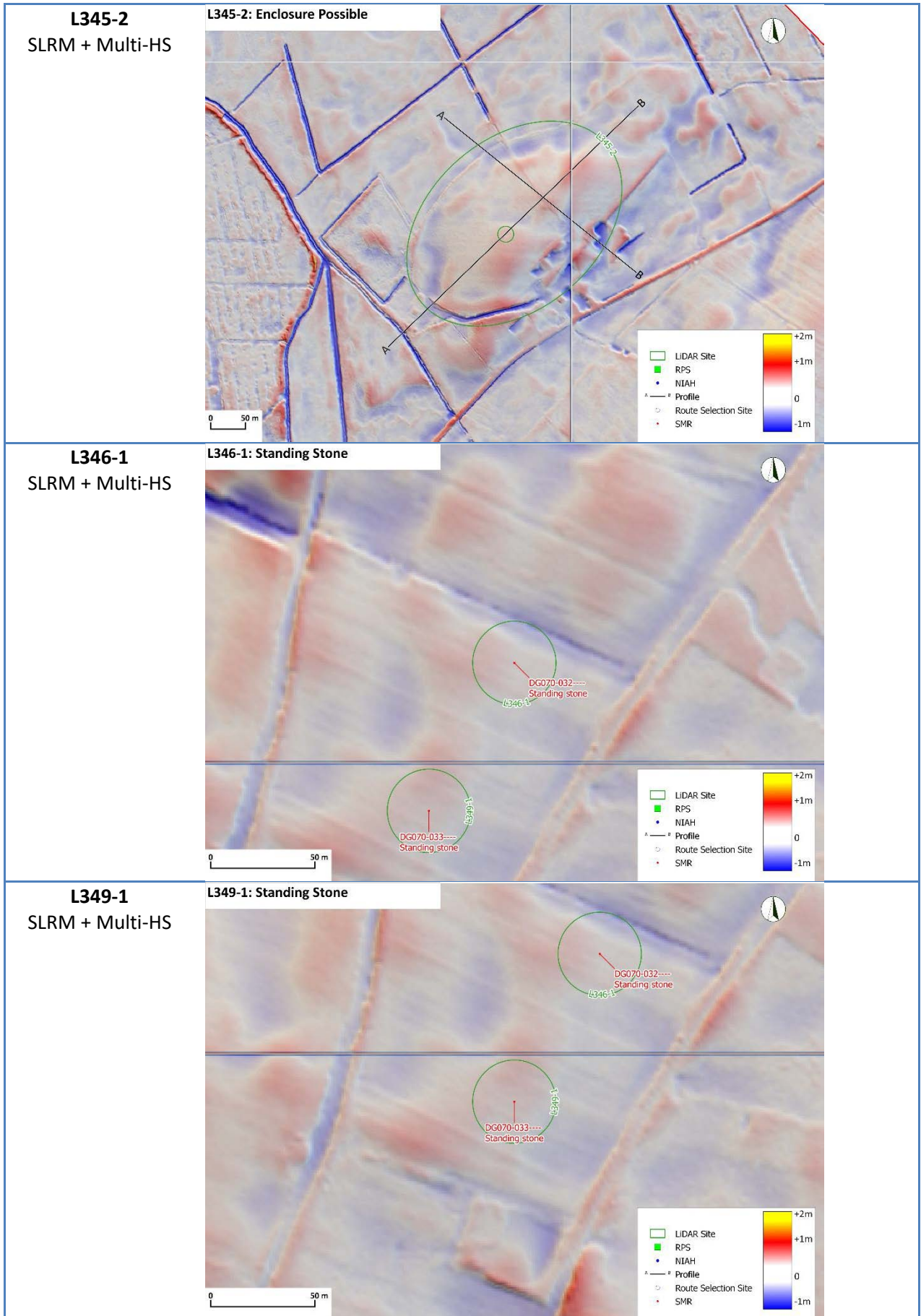


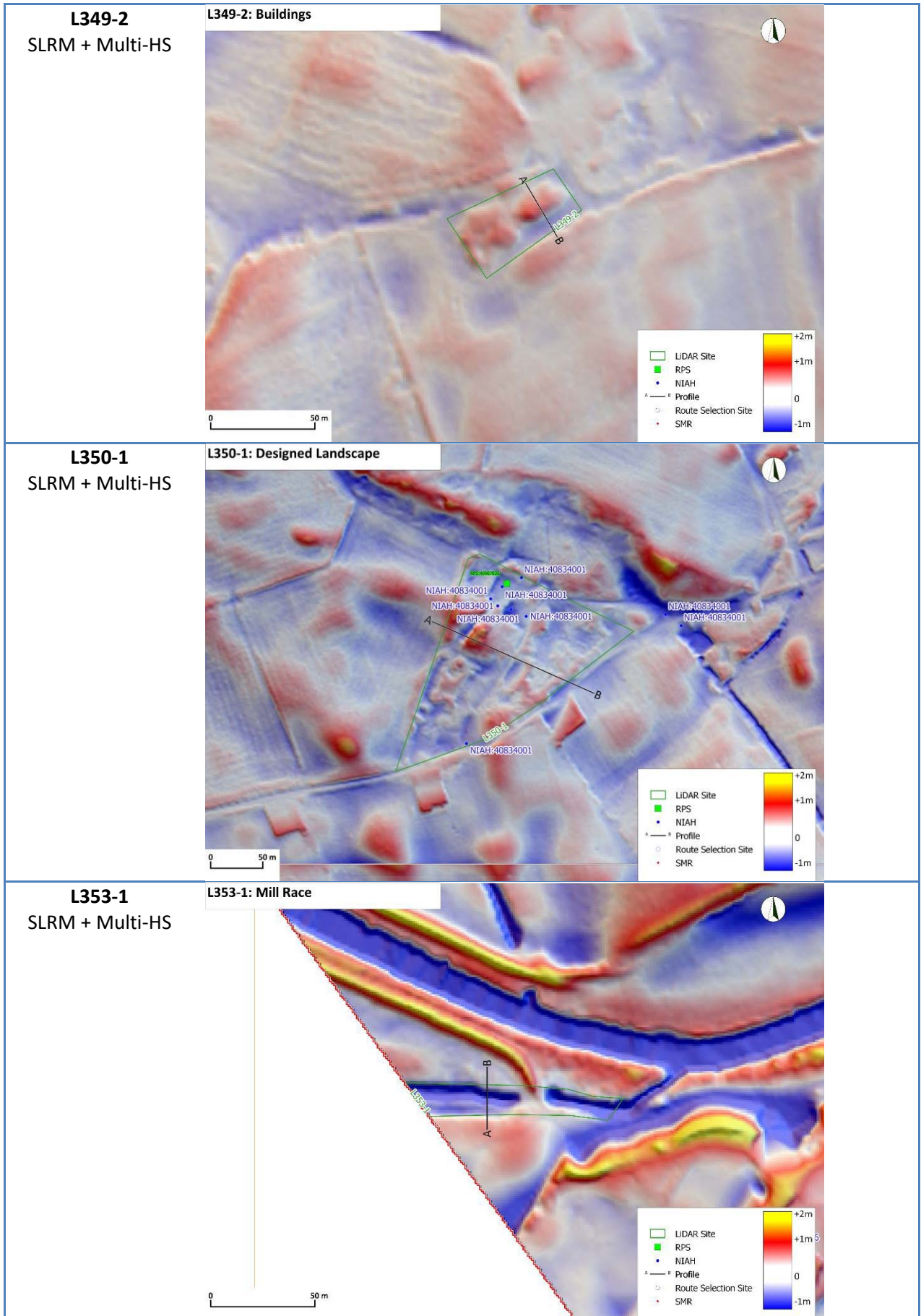


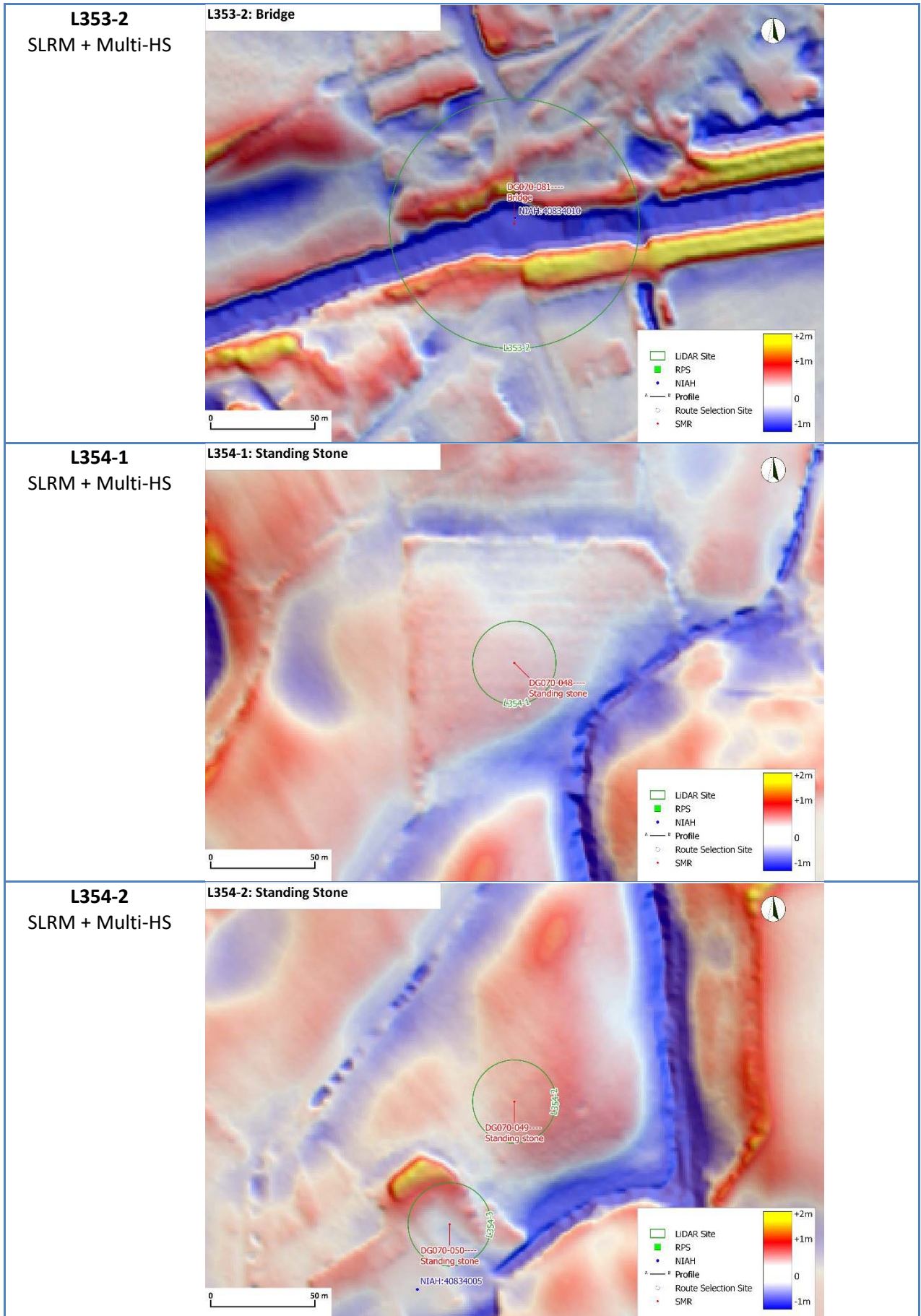


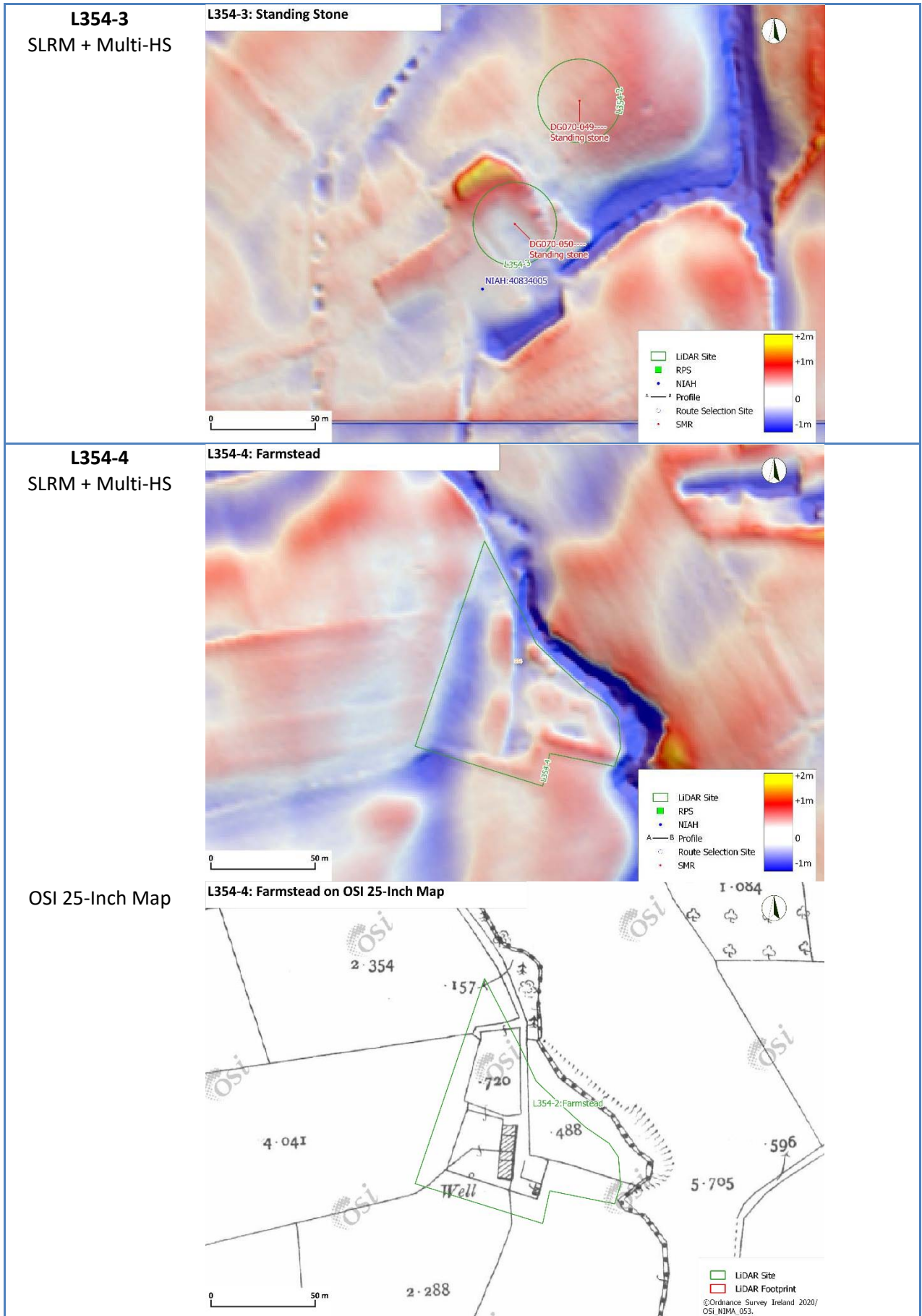


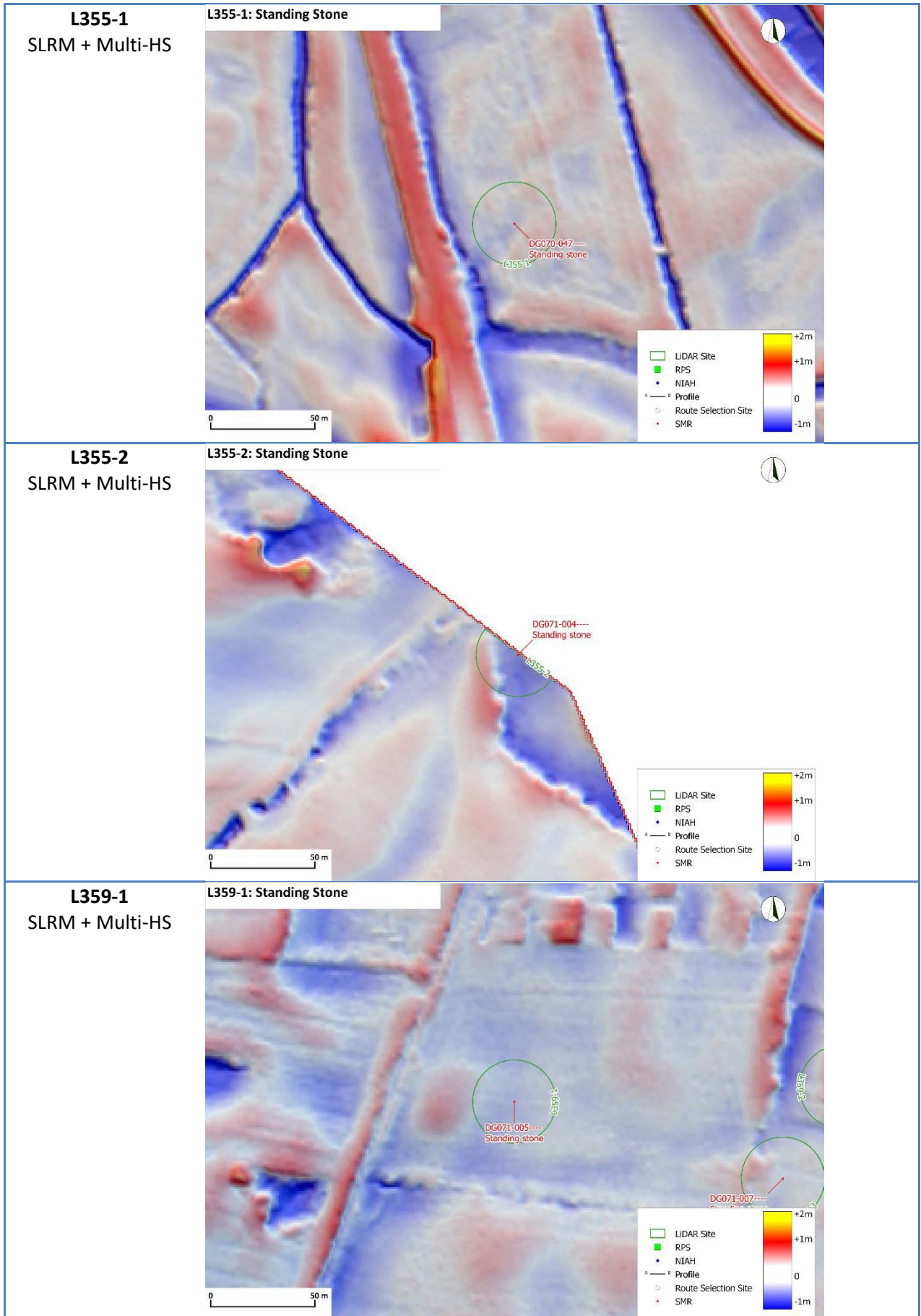


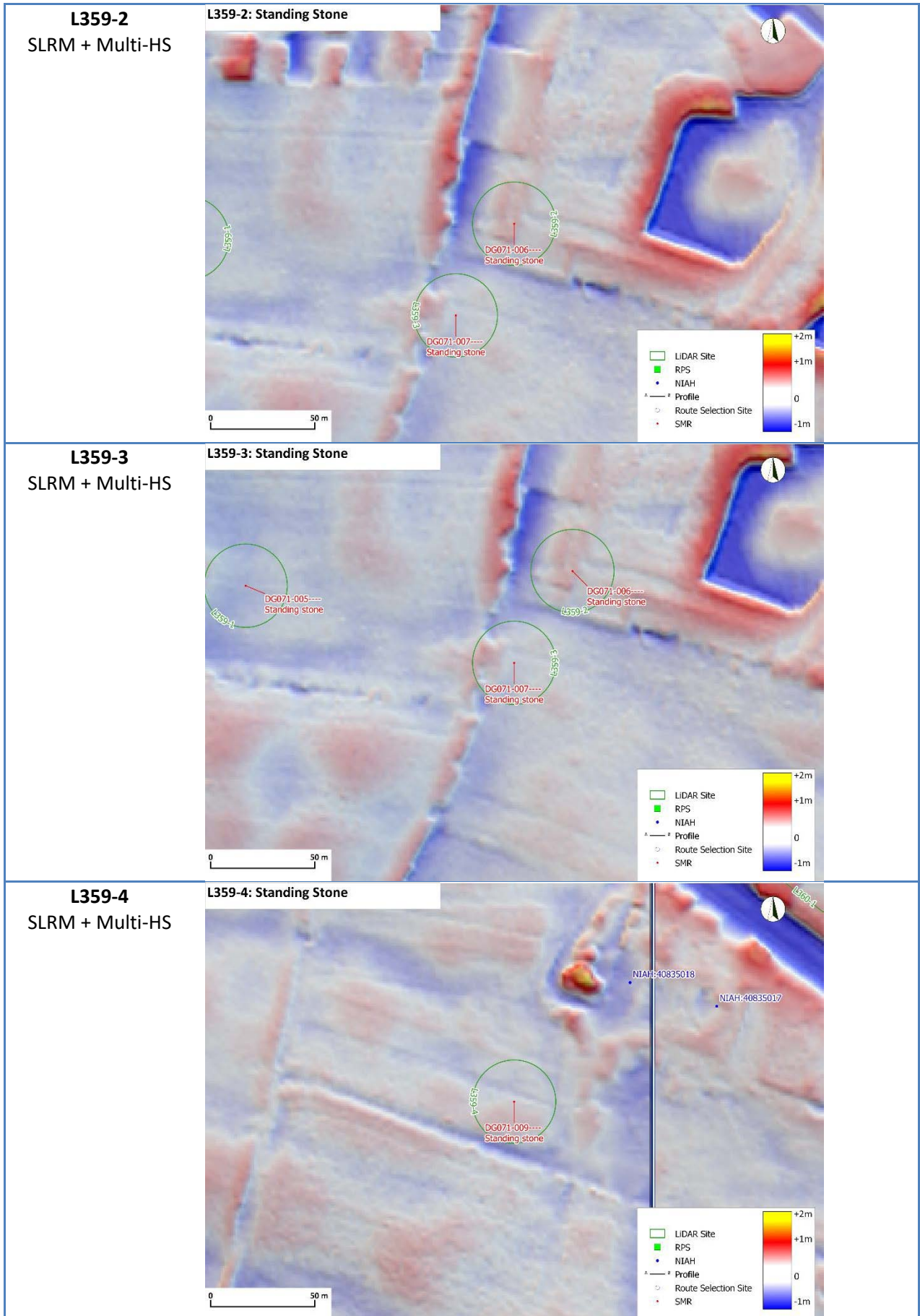


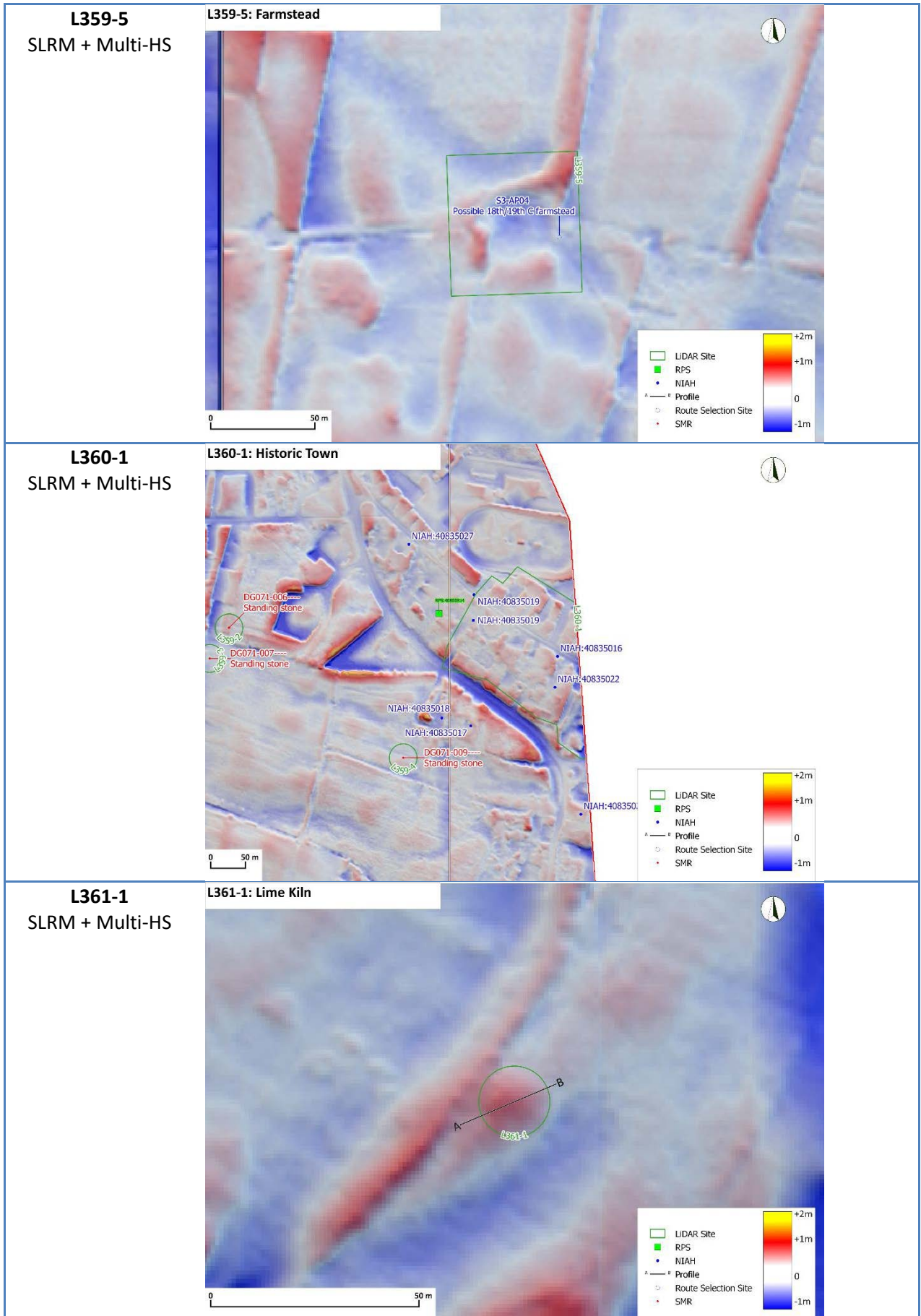


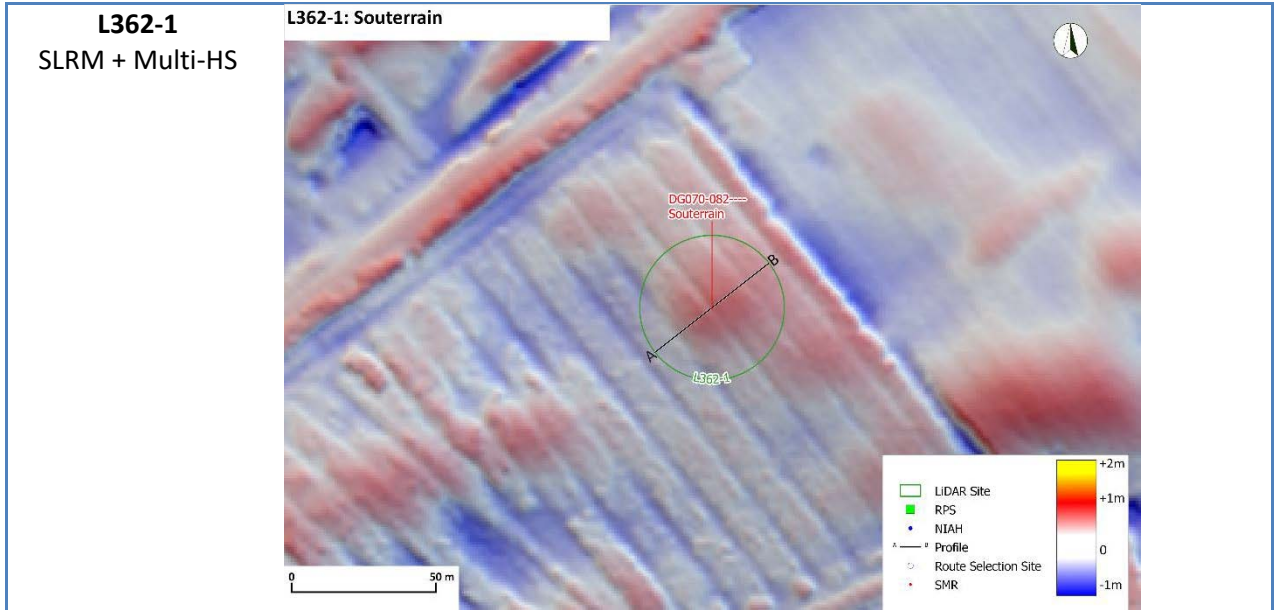












Appendix 2: Catalogue of LiDAR Sites

Section 1 LiDAR Sites

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
L101-1	Ringfort	Ringfort; enclosure 34m in diameter and raised c.1m above surrounding field; enclosing bank c.1.18m high and 9m wide; no ditch; bank removed to NW.	3	SMR: DG069- 021---- Ringfort - rath	0	1	1	0	Cloghroe Td.; Convoy Pr.; Raphoe South Br.	615183, 900021	101	615_900	0.14
L101-2	Lime Kiln	Lime Kiln site; depicted on first ed. 6 inch map to immediate NE; this appears to be its correct location. Apparent on LiDAR as a roughly circular earthwork c.23m in diameter; 1.43m high; with a hollow centre.	1		1	1	0	0	Callan Td.;Convoy Pr.;Raphoe South Br.	615930, 900238	101	615_900	0.05
L102-1	Barrow Possible	Two adjacent possible barrows: one a circular mound 7.4m diameter; 0.2m high; the second a circular mound measuring 9.6m diameter; 0.3m high; with a slight central hollow. Possibly marks	1		1	0	0	0	Callan Td.;Convoy Pr.;Raphoe South Br.	616120, 900387	102	616_900	0.02

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		left by modern cattle feeders.											
L103-1	Bullaun Stone	Bullaun stone; nothing archaeologically significant apparent on LiDAR, but located on a slightly irregular-shaped raised area; measuring 27.3m wide and c.0.23m high.	3	SMR: DG069- 023---- Bullaun stone	0	0	0	0	Meenavoy Td.; Stranorlar Pr.; Raphoe South Br.	615740, 899724	103	615_899	0.07
L103-2	Ringfort	Mound, recorded as a ringfort on the SMR; located on disturbed terrain and appears as an oval mound; measuring 41m in length and 24.6m in width. Stands about 2.1m high above the surrounding land.	3	SMR: DG069- 024---- Ringfort - unclassified	0	1	1	0	Meenavoy Td.; Stranorlar Pr.; Raphoe South Br.	615696, 899510	103	615_899	0.18
L105-1	Enclosure Possible	Oval track; apparent on LiDAR as a regular oval 'track' depression measuring 20.5m by 49.6m; with a track 4m wide and 0.8m deep. This feature is located in overgrown; uneven scrubby ground;	1		1	0	0	0	Teevickmoy Td.;Stranorlar Pr.;Raphoe South Br.	614954, 898345	105	614_898	0.16

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		archaeological significance uncertain.											
L106-1	Ringfort	Ringfort; depicted on the first ed. OS 6-inch map; but since levelled. The remains of the enclosure may be indicated in the LiDAR data by a potential bank (0.1m high by 10.5m wide) measuring c.21m in diameter.	3	SMR: DG069- 028---- Ringfort - unclassified	0	0	0	0	Teevickmoy Td.; Stranorlar Pr.; Raphoe South Br.	615779, 898309	106	615_898	0.16
L106-2	Lime Kiln	Lime kiln site; depicted on the first ed. 6 inch map; apparent on LiDAR as a slightly raised area in the corner of a field measuring 7.8m by 4.2m and 0.6m high.	2		1	1	0	0	Teevickmoy Td.;Stranorlar Pr.;Raphoe South Br.	615349, 898078	106	615_898	0.02
L106-3	Buildings	Building site; depicted on the first ed. 6 inch map; apparent as a rectangular raised area in the LiDAR; measuring 42m by 7.4m and max. c.1.8m high.	2		1	1	0	0	Teevickmoy Td.;Stranorlar Pr.;Raphoe South Br.	615750, 898004	106; 110	615_898; 615-897	0.05
L107-1	Lime Kiln	Lime Kiln site; depicted on historic maps; apparent LiDAR a roughly rectangular raised ground	2		1	1	1	0	Kilross Td.;Stranorlar Pr.;Raphoe South Br.	616533, 898376	107	616_898	0.04

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		c.15m by 10m; c.3.3m high; in a heavily disturbed area.											
L108-1	Mill Pond	Mill pond for flax mill; depicted on historic maps; apparent as depression measuring 56m by 34m and 1.4m deep beside a watercourse; disturbed ground.	2		1	1	1	0	Lettermakenny Td.;Stranorlar Pr.;Raphoe South Br.	613806, 897055	108	613_897	0.31
L108-2	Flax Mill	Flax mill site; depicted on the 25 inch map; roughly rectangular depression on sloping ground beside a stream; measuring 11.1m by 7.6m and 0.24m deep.	2		1	1	1	0	Lettermakenny Td.;Stranorlar Pr.;Raphoe South Br.	613865, 897039	108	613_897	0.07
L109-1	Barrow Possible	Barrow possible; circular raised feature c. 10.2m diameter located on the slope of a ridge of locally high ground; possibly mark of cattle feeders.	1		1	0	0	0	Teevickmoy Td.;Stranorlar Pr.;Raphoe South Br.	614875, 897727	109	614_897	0.06
L110-1	Barrow Possible	Barrow possible; circular raised area c.10.5m diameter; 0.5m high; located on the break of slope over low ground;	1		1	0	0	0	Teevickmoy Td.;Stranorlar Pr.;Raphoe South Br.	615382, 897813	110	615_897	0.02

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		possible the mark of a cattle feeder.											
L110-2	Farmstead	Farm buildings; depicted on historic maps; located in forested land; banks c.0.5m high and a rectangular raised areas 23m by 13m and 0.7m high.	2		1	1	1	0	Dunwiley Td.;Stranorlar Pr.;Raphoe South Br.	615437, 897113	110	615_897	0.23
L111-1	Mound	Mound; oval raised area measuring 25.5m by 15.2m and 1m high; located on a break of slope overlooking low ground.	1		1	0	0	0	Tircallan Td.;Stranorlar Pr.;Raphoe South Br.	616163, 897932	111	616_897	0.2
L111-2	Enclosure	Enclosure; circular enclosure measuring 36m diameter with banks c.12.5m wide and 0.3m high; no external ditch; associated relict field boundaries (L111-3).	2		1	0	0	0	Mullaghagarry Td.;Stranorlar Pr.;Raphoe South Br.	616793, 897404	111	616_897	0.28
L111-3	Relict Field Boundaries	Relict field boundaries; area of earthen banks over c. 1.9ha; located on sloping ground; with typical banks measuring 10.5m wide and 0.2m	2		1	0	0	0	Mullaghagarry Td.;Stranorlar Pr.;Raphoe South Br.	616747, 897497	111	616_897	1.92

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_ Ha
		high; associated with a previously unrecorded enclosure (L111-2).											
L111-4	Enclosure Possible	Enclosure; possible apparent as a curving ditch extending outside the footprint of the LiDAR; c.105m diameter; with an external bank 5.6m wide and 0.7m high; an internal ditch 6.7m wide and 0.4m deep; the interior is pasture.	1		1	0	0	0	Mullaghagarry Td.;Stranorlar Pr.;Raphoe South Br.	616994, 897306	111; 112	616_897; 617_897	0.98
L115-1	Barrow Possible	Barrow possible; circular raised area 13m diameter; and 0.3m high; located in a pasture field on a slight ridge; possible associated with a modern utility pole sited on the east boundary of the site.	1		1	0	0	0	Drumboe Upper Td.;Stranorlar Pr.;Raphoe South Br.	613886, 896164	115	613_896	0.01
L115-2	Buildings	Structure; possible 18th-century farmstead; farmstead still occupied; outline of building 15m by 8m and 1.4m high.	2	Route Select.: S1- BH02	0	1	1	0	Drumboe Upper Td.;Stranorlar Pr.;Raphoe South Br.	613978, 896223	115	613_896	0.05
L116-1	Ringfort	Trivallet ringfort; circular monument c.54m in	3	SMR: DG078-	0	1	1	1	Dunwiley; Macklees Td.;	614619, 896771	116	614_896	0.33

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		overall diameter sited on a natural ridge of high ground; inner enclosure c.8m above surrounding field; c.18m diameter with banks c.4m wide and 0.9m high; separated from a denuded middle enclosure by c.9m; consisting of a denuded bank c.3m wide and c.0.2m high; middle enclosure separated from outer enclosure by c.7m; consisting of a bank c.0.7m high and 1.9m wide; no external ditches apparent.		003---- Ringfort - rath					Stranorlar Pr.; Raphoe South Br.				
L117-1	Megalithic Tomb	Megalithic Tomb; nothing apparent on LiDAR.	4	SMR: DG078- 044---- Megalithic tomb - unclassified	0	0	0	0	Tircallan Td.; Stranorlar Pr.; Raphoe South Br.	615948, 896292	117	615_896	0.5
L117-2	Holy Well	Holy Well; on historic OSI maps; roughly circular mound; measuring 7.6m in diameter and 0.8m in height; the mound lies	3	SMR: DG078- 007---- Ritual site - holy well	0	1	1	0	Lough Hill; Knockfair Td.; Stranorlar Pr.; Raphoe South Br.	615799, 896005	117; 125	615_895; 615_896	0.1

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		within a rectangular enclosure (c.20.6m by 16.2m); bounded by banks 0.1m high and 2.4m wide.											
L117-3	Ringfort - Cashel	Cashel; labelled as 'Fort' on first ed. OS 6-inch map; raised; trapezoidal-shaped enclosure; c.41.3m by 26m and 1.7m to 4.7m high; with banks 5.1m wide and 0.6m high.	3	SMR: DG078-004--- Ringfort - Cashel	0	1	0	0	Dunwiley Td.; Stranorlar Pr.; Raphoe South Br.	615532, 896868	117	615_896	0.17
L118-1	Buildings	Buildings depicted on the first ed. six inch map; rectangular raised area measuring 10m by 6m and 1.3m high.	2		1	1	0	0	Castlebane Td.;Stranorlar Pr.;Raphoe South Br.	616092, 896110	118	616_896	0.01
L119-1	Ringfort	Ringfort; nothing apparent on LiDAR.	4	SMR: DG078-039001- Ringfort	0	0	0	0	Gortletteragh Td.; Stranorlar Pr.; Raphoe South Br.	617240, 896803	119	617_896	1.23
L119-2	Souterrain	Souterrain; nothing apparent on LiDAR.	4	SMR: DG078-039--- Souterrain	0	0	0	0	Gortletteragh Td.; Stranorlar Pr.; Raphoe South Br.	617248, 896780	119	617_896	1.13
L121-1	Railway	Railway line (disused); part of the Donegal Railway Company narrow	2		1	1	1	0	Ballybofey; Cappry; Cavan Lower; Corcam;	612015, 895069	121; 122;	611_895; 612_895;	12.8

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		gauge railway (1892-1960); ranging from cuts c.20m wide and 1.5m deep; to embankments c.11m wide and 2m high; occasional external ditches c.4m wide; 0.4m deep; 4273m long in survey area.							Dooish; Mullandrait; Treanamullin Td.;Donaghmore; Stranorlar Pr.;Raphoe South Br.	130; 131		612_894; 613_894	
L122-1	Ringfort	Ringfort; named 'Black Fort' on historic OSI maps; roughly circular enclosure; c.54m in diameter; surrounding a natural hill; interior rises c.1.5m over the enclosing bank (4.7m wide by 0.1m high)	3	SMR: DG077- 010---- Ringfort - rath	0	1	0	0	Creggan Td.; Stranorlar Pr.; Raphoe South Br.	612364, 895775	122	612_895	0.39
L122-2	Ringfort	Ringfort; indicated by a curving field boundary on historic OS maps; nothing apparent on LiDAR.	4	SMR: DG077- 009---- Ringfort - unclassified	0	0	0	0	Creggan Td.; Stranorlar Pr.; Raphoe South Br.	612193, 895774	122	612_895	0.69
L122-3	Farmstead	19th century farmstead; occupied site; surrounding farmstead apparent from LiDAR.	2	Route Select.: S1- BH01	0	0	0	0	Creggan Td.;Stranorlar Pr.;Raphoe South Br.	612778, 895886	122	612_895	0.07

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
L122-4	Enclosure	Enclosure; nothing apparent on LiDAR.	4	SMR: DG077-011--- Enclosure	0	1	1	0	Creggan Td.; Stranorlar Pr.; Raphoe South Br.	612288, 895485	122	612_895	1.13
L123-1	Church Site	Church Site; depicted on OSI 25-inch maps; roughly rectangular enclosed area; measuring 70m by 35m; with surrounding banks c.0.4m high and c.17m wide; possible annex feature (70m by 50m) on N.	3	SMR: DG078-005--- Church	0	0	0	0	Drumboe Lower Td.; Stranorlar Pr.; Raphoe South Br.	613411, 895455	123	613_895	0.88
L123-2	Enclosure Possible	Possible ringfort identified from aerial photos; nothing apparent on LiDAR.	4	Route Select.: S1-AP01	0	0	0	0	Ballynaglack Td.;Stranorlar Pr.;Raphoe South Br.	613515, 895915	123	613_895	0.03
L123-3	Holy Well	Holy well site; faint circular outline measuring 21m; and c.0.1m high; but this area is wooded.	2	Route Select.: S1-CH01	0	1	0	0	Drumboe Lower Td.;Stranorlar Pr.;Raphoe South Br.	613505, 895748	123	613_895	0.07
L123-4	Enclosure Possible	Possible enclosure; subcircular area of irregular high ground with faint outline of a possible enclosing ditch 15m wide and c.0.8m deep; possibly	1		1	1	0	0	Drumboe Lower Td.;Stranorlar Pr.;Raphoe South Br.	613417, 895766	123	613_895	0.62

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		also a natural geology outcrop.											
L124-1	Ringfort	Ringfort; site lies outside LiDAR mapping; though SMR buffer zone extends into LiDAR footprint; nothing apparent on LiDAR.	4	SMR: DG078-006---- Ringfort - rath	0	1	1	0	Admiran Td.; Stranorlar Pr.; Raphoe South Br.	614791, 895924	124	614_895	1.14
L124-2	Mill Pond	Mill pond dam and headrace; indicated on first ed. OSI map with millpond; 91m long; c. 10m wide and c.1.1m high; earthen bank flanking headrace c. 100m long; 7m wide and c. 1.6m high; millpond filled in; mill outside LiDAR footprint.	2		1	1	1	0	Greenhills; Magherapaste; Drumboe Lower Td.;Stranorlar Pr.;Raphoe South Br.	614245, 895828	124	614_895	0.36
L126-1	Hospital	Hospital building site; depicted on the 25 inch map; rectangular outline of building measuring 35m by 10m; and 0.3m high; sloping to the south.	2		1	1	1	0	Mullandrait Td.;Stranorlar Pr.;Raphoe South Br.	616024, 895439	126	616_895	0.08
L126-2	Ringfort	Ringfort; nothing apparent on LiDAR; site overlain by railway tracks.	4	SMR: DG078-018----	0	0	0	0	Mullandrait Td.; Stranorlar Pr.; Raphoe South Br.	616053, 895068	126	616_895	0.16

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
				Ringfort - unclassified									
L128-1	Enclosure Possible	Possible enclosure identified from aerial photos (Route Selection S1-AP02); nothing apparent on LiDAR.	4	Route Select.: S1-AP02	0	0	0	0	Mullanachose Td.;Stranorlar Pr.;Raphoe South Br.	610915, 894131	128	610_894	0.05
L129-1	Enclosure Possible	Enclosure possible: subcircular bank measuring 45m in diameter; with a bank c.5m wide and 0.1m high; enclosing a 19th century farmstead.	1		1	1	1	0	Cappry Td.;Stranorlar Pr.;Raphoe South Br.	611749, 894716	129	611_894	0.24
L129-2	Buildings	Buildings; farmstead depicted on historic OSI maps; rectangular outline of building 21m by 8m and 0.6m high; within a rectangular area c. 38m by 33m.	2		1	0	0	0	Cappry Td.;Stranorlar Pr.;Raphoe South Br.	611758, 894901	129	611_894	0.14
L129-3	Farmstead	Farmstead site; depicted on historic OSI maps; but now area of field boundaries and trees; rectangular depression 17m by 9m and up to 5m deep apparent on LiDAR;	2		1	0	0	0	Cappry Td.;Stranorlar Pr.;Raphoe South Br.	611665, 894656	129	611_894	0.05

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		remains of buildings no apparent.											
L129-4	Lime Kiln	Lime Kiln site depicted on the first ed. 6-inch map; oval mound 10m by 6m and 2m high.	2		1	0	0	0	Cappry Td.;Stranorlar Pr.;Raphoe South Br.	611338, 894493	129	611_894	0.02
L131-1	Buildings	Seventeenth-century house called Drumboe Castle; now demolished; site of former house measures 22m by 15m and c.2m deep; raised garden area (34m by 26m) abuts E of house site; with associated gardens and outbuildings (L131-2).	3	SMR: DG078- 014---- House - 17th century	0	0	0	0	Drumboe Lower Td.;Stranorlar Pr.;Raphoe South Br.	613738, 894803	131	613_894	0.64
L131-2	Designed Landscape	Gardens associated with 17th-century house (L131-1); enclosure and some internal features measuring 220m by 72m.	2		1	0	0	0	Drumboe Lower Td.;Stranorlar Pr.;Raphoe South Br.	613553, 894859	131	613_894	1.67
L131-3	Enclosure Possible	Enclosure possible; oval raised area measuring c. 134 by 83m with bank 8m wide and c. 0.8m high and with a ditch/channel to N & W c.21m wide and	1	NIAH: 40838047	1	1	1	0	Drumboe Lower Td.;Stranorlar Pr.;Raphoe South Br.	613473, 894843	131	613_894	1.58

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		1.9m deep emptying into River Finn floodplain; this appear to predate the gardens (L131-2).											
L131-4	Ringfort	Ringfort; marked on the first ed. OS 6-inch map; but severely impacted by construction of railway line in the early 20th century; nothing apparent on LiDAR.	4	SMR: DG078-013--- Ringfort - unclassified	0	1	1	0	Ballybofey Td.; Stranorlar Pr.; Raphoe South Br.	613509, 894603	131	613_894	0.16
L138-1	Path Possible	Possible road or path; depicted on second ed. 6 inch map; track c. 9m wide and c.1.9m high on sloping ground; with slight indication of a ditch on the up-slope side c.3m wide and 0.2m deep; c.516m long.	2		1	0	0	0	Cappry Td.;Stranorlar Pr.;Raphoe South Br.	611737, 893691	138	611_893	0.52
L138-10	Lime Kiln	Lime Kiln; depicted on the first ed. 6 inch maps; small raised circular mound 6.5m diameter and c.0.8m high; sited on a slope.	2		1	1	1	0	Goland Td.;Donaghmore Pr.;Raphoe South Br.	611592, 893317	138	611_893	0.01
L138-2	Buildings	Buildings; depicted on first ed. 6-inch map;	2		1	1	0	0	Cappry Td.;Stranorlar	611168, 893390	138	611_893	0.05

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		located in pasture field adjacent to road; rectangular outline 17.7m by 10.6m; made of earthen banks c.5m wide and 0.45m high.							Pr.;Raphoe South Br.				
L138-2	Souterrain	Souterrain; labelled 'Duggan's Cellar' on OS 25-inch maps; oval mound; measuring 9m by 8m and c.2m high.	3	SMR: DG077-033---- Souterrain	0	1	0	0	Cappry Td.; Stranorlar Pr.; Raphoe South Br.	611386, 893330	138	611_893	0.08
L138-3	Lime Kiln	Lime Kiln; depicted on the first ed. 6 inch maps; small raised horseshoe-shaped mound 10m by 7m and c.0.2m high; sited on a slope.	2		1	0	0	0	Goland Td.;Donaghmore Pr.;Raphoe South Br.	611492, 893266	138	611_893	0.02
L138-4	Ringfort	Ringfort; nothing apparent on LiDAR.	4	SMR: DG077-012---- Ringfort - unclassified	0	0	0	0	Goland Td.; Donaghmore Pr.; Raphoe South Br.	611949, 893413	138; 139	611_893; 612_893	1.13
L138-5	Ringfort	Ringfort; recorded on first ed. OS 6-inch maps as a small field enclosure and named 'Fort'; nothing apparent on LiDAR.	4	SMR: DG077-013---- Ringfort - cashel	0	1	1	0	Goland Td.; Donaghmore Pr.; Raphoe South Br.	611470, 893142	138	611_893	0.09

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
L138-6	Standing Stone	Standing stone; nothing apparent on LiDAR.	4	SMR: DG077-026---- Standing stone	0	1	0	0	Goland Td.; Donaghmore Pr.; Raphoe South Br.	611543, 893083	138	611_893	0.02
L138-7	Lime Kiln	Lime Kiln; depicted on historic OSI maps; apparent as a irregular oval mound 15m by 7m and 0.2m high; sited on a slope.	2		1	0	0	0	Goland Td.;Donaghmore Pr.;Raphoe South Br.	611151, 893041	138	611_893	0.04
L138-8	Buildings	Building site; depicted on the first ed. 6-inch map; raised rectangular outline in rough pasture field measuring 18m by 11m; with outline earthwork banks c. 8m wide and c. 0.5m high.	2		1	0	0	0	Goland Td.;Donaghmore Pr.;Raphoe South Br.	611137, 893018	138	611_893	0.04
L138-9	Lime Kiln	Lime Kiln; depicted on the first ed. 6-inch map; slight circular mound 23m diameter and 0.6m high; with a slight hollow to the SW quadrant; sited on sloping ground.	2		1	1	1	0	Goland Td.;Donaghmore Pr.;Raphoe South Br.	611231, 893201	138	611_893	0.05
L139-1	Ponds	Ponds (X3); depicted in the OSI 25 inch map;	1		1	0	0	0	Ballybofey Td.;Stranorlar	612593, 893625	139	612_893	0.1

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		three adjacent parallel rectangular pits on low-lying ground; ranging from 16-20m long; 7.5-8m wide; and c. 0.8m deep; each separated by 5m; possibly retting ponds.							Pr.;Raphoe South Br.				
L140-1	Barrow Possible	Barrow possible; circular raised area c.12m diameter and c.0.1m high; located on sloping ground; possibly the mark of a cattle feeder.	1		1	0	0	0	Ballybofey Td.;Stranorlar Pr.;Raphoe South Br.	613317, 893871	140	613_893	0.01
L141-1	Lime Kiln	Lime Kiln; depicted on the first ed. 6-inch map; apparent on LiDAR as a roughly oval area c.30m diameter and 0.3m high on sloping ground.	2		1	1	0	0	Meencargagh Td.;Stranorlar Pr.;Raphoe South Br.	609663, 892906	141	609_892	0.15
L141-2	Embankment	Embankment; raised ground c. 1.1km long; 25m wide; and up to 2m higher than fields; with road (N15) meandering along its top; flanking ditches; embankment presumably protect low-lying field from flooding	2		1	1	0	0	Dooish Td.;Stranorlar Pr.;Raphoe South Br.	610262, 892747	137; 141; 142	609_892; 610_892; 610_893	2.85

SITE NUMBER	CATEGORY	DESCRIPTION	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	Cassini 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		of the adjacent River Daurnett.											
L142-1	Redundant Record	Redundant Record (DG077-029----); recorded as a Standing Stone in the RMP; nothing archaeologically significant apparent on LiDAR.	0	SMR: DG077- 029---- Redundant Record	0	1	1	0	Goland Td; Donaghmore	610772, 892184	142	610_892	0
L142-2	Ringfort	Ringfort; circular enclosure c.20m in diameter with banks 6m wide and 1m high; no ditch; enclosure extends outside the footprint of LiDAR.	3	SMR: DG077- 015---- Ringfort - cashel	0	1	1	0	Goland Td.; Donaghmore Pr.; Raphoe South Br.	610802, 892167	142	610_892	0.1
L143-1	Enclosure	Enclosure; circular embanked enclosure visible on the LiDAR; site of a house on the first ed. 6 inch map; 24.5m diameter; banks 5m wide and 0.4m high; no ditch; feature extends outside the footprint of LiDAR.	2		1	1	1	0	Goland Td.;Donaghmore Pr.;Raphoe South Br.	611295, 892569	143	611_892	0.09

Section 2 LiDAR Sites

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
L201-1	Church and Graveyard	Presbyterian church and graveyard area measuring 81m by 52m sloping from NW to SE.	2	NIAH: 40905305	1	1	1	0	Gortlee Td.;Conwal Pr.;Kilmacrenan Br.	617940, 912074	201	617_912	0.42
L201-2	Ringfort	Ringfort; sited on a ridge; heavily disturbed by a golf course; indistinct enclosure c. 25m-diameter raised area with no apparent enclosing bank or ditch.	3	SMR: DG053- 026---- Ringfort - unclassified	0	1	1	0	Ballyraine Td.; Conwal Pr.; Kilmacrenan Br.	618875, 911698	201	617_912	0.32
L203-1	Battlefield	Battlefield; nothing apparent on LiDAR.	4	SMR: DG053- 056---- Battlefield	0	0	0	0	Magheranan; Kiltoy Td.;Aghanunshin Pr.; Kilmacrenan Br.	619370, 912380	203	619_912	3.14
L203-2	Farmstead	Farmstead depicted on the first ed. 6 inch maps; enclosed area c.40m by 60m; sloping to S; enclosing banks to N c.5.8m wide and 0.8m high; rectangular building outline 22m by 6.7m wide and c.0.3m high.	2		1	1	1	0	Glebe Td.;Aghanunshin Pr.;Kilmacrenan Br.	619627, 912064	203	619_912	0.14

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_ Ha
L212-1	Enclosure possible	Oval enclosed area; probably a former island surrounded by land reclaimed from the Swilly; 484m long; 250 wide and rising to 12.2m over the surrounding flood plain for the Swilly; enclosing bank to S 12m wide and 0.4m high; substantial quarrying inside.	2		1	0	1	1	Farsetmore Td.;Leck Pr.;Raphoe North Br.	620583, 911643	212	620_911	9.34
L213-1	Redundant Record (SMR)	Redundant record; nothing apparent on LiDAR.	4	SMR: DG053- 052---- Redundant record	0	0	0	0	Trimragh Td.; Leck Pr.; Raphoe North Br.	621347, 911689	213	621_911	0.03
L213-2	Rock Art	Rock art; nothing archaeologically significant apparent on LiDAR.	4	SMR: DG053- 027001- Rock art	0	1	0		Trimragh Td.; Leck Pr.; Raphoe North Br.	621418, 911764	213	621_911	0.13
L213-3	Rock Art	Rock Art; nothing archaeologically significant apparent on LiDAR.	4	SMR: DG053- 027002- Rock art	0	1	0		Trimragh Td.; Leck Pr.; Raphoe North Br.	621504, 911811	213	621_911	0.13
L213-4	Rock Art	Rock Art; nothing archaeologically	4	SMR: DG053-	0	1	0		Trimragh Td.; Leck Pr.; Raphoe North Br.	621522, 911825	213	621_911	0.13

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		significant apparent on LiDAR.		027003- Rock art									
L213-5	Rock Art	Rock Art; nothing archaeologically significant apparent on LiDAR.	4	SMR: DG053- 027004- Rock art	0	1	0		Trimragh Td.; Leck Pr.; Raphoe North Br.	621548, 911808	213	621_911	0.13
L213-6	Church and Graveyard	Church and Graveyard (DG053-028---- & DG053-028001-); site overlain by the Letterkenny Branch of the Londonderry & Lough Swilly Railway (1883-1953; reused as the N13); nothing archaeologically significant apparent on LiDAR.	4	SMR: DG053- 028---- & DG053- 028001- Church & Graveyard	0	0	1	1	Trimragh Td.; Leck Pr.; Raphoe North Br.	621387, 911469	213	621_911	1.13
L214-1	Platform	Rectangular platform; sited in corner of a field; 35m by 30m and 0.8m high; field boundary ditch to S 4m wide and 1m deep; purpose unknown; possibly modern.	1		1	0	0	0	Rossbrackan Td.;Leck Pr.;Raphoe North Br.	622782, 911832	214	622_911	0.24
L214-2	Railway	Railway line (disused; Route Selection S2-	2	NIAH: 40905337;	0	0	1	1	Trimragh Td.;Leck	622278, 911023	214; 220	622_911; 622_910	1.98

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		BH02); part of the Letterkenny Branch of the Londonderry & Lough Swilly Railway (1883-1953); including site of Pluck Station; 5m-10.5m wide; 1.5m deep in cutting; 995m long in survey area; partly reused by the N13; see also L310-1.		Route Select.: S2-BH02					Pr.;Raphoe North Br.				
L215-1	Standing Stone	Standing stone; nothing apparent on LiDAR.	4	SMR: DG054-031---- Standing stone	0	0	1	1	Raymoghly Td.; Raymoghly Pr.; Raphoe North Br.	623933, 911151	215	623_911	0.13
L215-2	Cultivation Ridges possible	Ridges on LiDAR data; possibly from cultivation or a brick clamp; rectangular area of ridges along ridge of a hill sloping S; overlooking Corkey River; measuring 106m by 60m; 8 ridges each c.7m wide; 7m apart; 60m long and 0.1m high; nothing indicated on historic OSI maps;	1		1	0	0	0	Rossbrackan Td.;Leck Pr.;Raphoe North Br.	623146, 911422	215	623_911	0.85

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		possibly an artefact of LiDAR data acquisition.											
L216-1	Railway	Railway line (disused); part of the Letterkenny Branch of the Londonderry & Lough Swilly Railway (1883-1953); track ranges from 15m wide and 0.2m high to 41m wide and 19m deep cutting into the side of a hill; 480m long in survey area.	2		1	0	1	1	Drumnahoagh Td.;Leck Pr.;Raphoe North Br.	618848, 910878	216; 217	618_910; 619_910	1.21
L217-1	Bullaun Stone	Bullaun Stone; nothing apparent on LiDAR.	4	SMR: DG053-035---- Bullaun stone	0	0	0	0	Coaghmill Td.; Leck Pr.; Raphoe North Br.	619215, 910372	217	619_910	0.12
L217-2	Railway	Railway line (disused; Route Selection S2-BH03 & S2-BH04); part of the Strabane and Letterkenny Railway (1909-1960) narrow gauge railway; embankment 22m wide at base to 4.2m wide at top; 5.4m high; cuttings 22m wide and 7.2m	2	NIAH: 40905394; Route Select.: S2-BH03; S2-BH04	0	0	0	1	Bunnagee; Drumany; Coaghmill; Dromore Td.;Leck Pr.;Raphoe North Br.	620158, 910495	217; 218; 219	619_910; 620_910; 621_910	4.95

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		deep; 2474m in survey area.											
L218-1	Farmstead	Farmstead depicted on the first ed. 6 inch map; irregular area c.96m by 105m and c.1m high; straddling a stream; no structural remains.	2		1	1	1		Drumany; Dromore Td.;Leck Pr.;Raphoe North Br.	620533, 910137	218	620_910	0.62
L219-1	Pits	Pits (X3); depicted on 6 inch and 25 inch OSI maps; located next to a stream; rectangular pits 12m to 21m long; 4.5m to 7m wide and 0.7m to 1.1m deep; possible retting pits.	1		1	0	1	1	Dromore Td.;Leck Pr.;Raphoe North Br.	621190, 910693	219	621_910	0.13
L220-1	Standing Stone	Standing stone; nothing apparent on LiDAR.	4	SMR: DG053- 037---- Standing stone	0	1	0		Magheraboy Td.; Leck Pr.; Raphoe North Br.	622143, 910455	220	622_910	0.13
L220-2	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG054- 037---- Standing stone	0	0	0	0	Rossbrackan Td.; Leck Pr.; Raphoe North Br.	622773, 910376	220	622_910	0.13
L220-3	Mound possible	Circular mound c.16.7m diameter and c.0.9m	1		1	0	0	0	Rossbrackan Td.;Leck	622629, 910458	220	622_910	0.08

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		high on a locally prominent hill.							Pr.;Raphoe North Br.				
L220-4	Mill Pond	Mill pond depicted on historic OSI maps; irregular oval depression next to River Dooballagh Burn; long depression 125m by 25m and c.2m deep; bank separating millpond from river 5.5m wide and 1m high; bed of millpond c. 0.9m higher than adjacent river.	1		1	1	1		Pluck Td.;Leck Pr.;Raphoe North Br.	622764, 910204	220	622_910	0.3
L220-5	Standing stone	Standing stone; labelled as 'Standing Stone' on OS 6-inch map; nothing apparent on LiDAR.	4	SMR: DG054-036---- Standing stone	0	1	0	0	Rossbrackan Td.; Leck Pr.; Raphoe North Br.	622561, 910598	220	622_910	0.13
L221-1	Standing Stone	Standing stone; sited on elevated part of field; nothing apparent on LiDAR.	4	SMR: DG054-038---- Standing stone	0	1	1		Pluck Td.; Leck Pr.; Raphoe North Br.	623300, 910268	221	623_910	0.39
L223-1	Souterrain	Souterrain; LiDAR indicates irregularities on the field surface; but	4	SMR: DG061-	0	1	0		Lurgybrack Td.; Leck Pr.; Raphoe North Br.	619099, 909585	223	619_909	0.89

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		nothing archaeologically significant apparent on LiDAR.		005---- Souterrain									
L223-2	Enclosure	Enclosure; semi-circular bank 6m wide and 0.8m high; enclosing a building depicted on the first ed. 6 inch map; modern feature; not archaeologically significant.	0		1	0	0	0	Knockbrack Td.;Leck Pr.;Raphoe North Br.	620234, 907807	223	619_909	0.17
L224-1	Mound	Mound; oval mound 18.3m long; 17.3m wide and 1.9m high; depicted but not named on the first ed. 6 inch map.	1		1	1	0		Listellian Td.;Leck Pr.;Raphoe North Br.	620445, 909691	224	620_909	0.08
L229-1	Lime Kiln	Lime Kiln; depicted on first ed. 6 inch map; mound 26m diameter and 0.8m high.	2		1	1	0	0	Listellian Td.;Leck Pr.;Raphoe North Br.	619532, 908307	229	619_908	0.05
L232-1	Mill Pond	Mill pond; depicted on historic OSI maps; embanked enclosure 67m by 65m (extending outside LiDAR area); with banks c.4m wide and 0.6m high.	2		1	1	1		Lurgy Td.;Leck Pr.;Raphoe North Br.	619780, 907663	232	619_907	0.35

Section 3 LiDAR Sites

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
L302-1	Circular Feature	Circular enclosed area 27.8m diameter and bank 2.5m; c.0.1m high; site of buildings on historic OSI maps; modern feature.	0		1	0	0	0	Raymoghly Td.;Raymoghly Pr.;Raphoe North Br.	624090, 911149	302	624_911	0.08
L302-2	Church and Graveyard	Church and graveyard; rectangular enclosure 55m by 36.4m and c.1.4m high; with central building, still upstanding, measuring 22.5m by 8.64m.	3	SMR: DG054-032---- Church; NIAH: 40827009	0	1	1		Raymoghly Td.; Raymoghly Pr.; Raphoe North Br.	624167, 911050	302	624_911	0.34
L302-3	Mound	Tear-drop shaped mound; recorded as Herdgee Hill on historic OSI maps; mound 46m by max. 33m; and 4.4m tall; sited on top of break of slope in natural topography.	1		1	1	1		Raymoghly Td.;Raymoghly Pr.;Raphoe North Br.	624343, 911025	302	624_911	0.15
L306-1	Mill Race	Mill race; depicted on historic OSI maps; linear depression parallel to river Pluck; 190m long; 13m wide; base 1.26m higher than adjacent	2		1	1	1		Raymoghly Td.;Raymoghly Pr.;Raphoe North Br.	624390, 910746	306	624_910	0.23

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		river; bank 2.5m wide and 0.1m high.											
L306-2	Cist	Cist; nothing apparent on LiDAR.	4	SMR: DG054- 039---- Cist	0	0	0	0	Labbadish Td.; Raymoghly Pr.; Raphoe North Br.	624343, 910582	306	624_910	0.13
L306-3	Cross-inscribed Stone	Cross-inscribed stone; labelled as 'Standing Stone' on historic OS maps. Sited on sloping terrain but nothing archaeologically significant apparent on LiDAR.	4	SMR: DG054- 040---- Cross- inscribed stone	0	1	1		Carrickballydoeey Td.; Raymoghly Pr.; Raphoe North Br.	624719, 910164	306	624_910	0.13
L306-4	Megalithic Tomb	Megalithic tomb; sited on steeply sloping ground beside stream tributary of the Corkey River; now destroyed; oval mound 16m by 12m and 0.5m high situated c.28m to SE of marked tomb site which may be an associated feature.	3	SMR: DG054- 033---- Megalithic tomb - unclassified	0	1	1		Errity Td.; Raymoghly Pr.; Raphoe North Br.	624838, 910881	306	624_910	0.36
L306-5	Mill Race	Mill race; depicted on 25 inch map; channel 3m-6m wide and 0.3m to 1.5m deep; 250m long; 150m head race and	2		1	1	1		Carrickballydoeey Td.;Raymoghly Pr.;Raphoe North Br.	624659, 909976	306; 310	624_910; 624_909	0.17

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		100m tailrace running off the River Pluck; associated flax mill site [L306-6].											
L306-6	Flax Mill	Flax mill site; recorded on historic OSI maps; rectangular depression 13.4m by 9.4m and 0.5m deep; level of associated mill race [L306-5] suggests this mill had an overshot wheel.	2		1	1	1		Carrickballydoeey Td.;Raymoghgy Pr.;Raphoe North Br.	624641, 910038	306	624_910	0.02
L306-7	School	School (SMRL DG054-048----); labelled 'Free School' on the first ed. OS 6-inch map and 'Ray School' on the OS 25 inch-maps; nothing archaeologically significant apparent on LiDAR.	4	SMR: DG054- 048---- School; RPS: 40905401; NIAH: 40905401	0	1	1	1	Labbadish Td.; Raymoghgy Pr.; Raphoe North Br.	624466, 910035	306	624_910	0.5
L306-8	Cist	Cist; nothing apparent on LiDAR.	4	SMR: DG054- 041---- Cist	0	0	0	0	Carrickballydoeey Td.; Raymoghgy Pr.; Raphoe North Br.	624674, 910140	306	624_910	0.13
L307-1	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG054- 042001-	0	0	1	1	Tullybogly Td.; Raymoghgy Pr.; Raphoe North Br.	625717, 910570	307	625_910	0.13

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
				Standing stone									
L307-2	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG054- 042002- Standing stone	0	1	1		Tullybogly Td.; Raymoghly Pr.; Raphoe North Br.	625716, 910547	307	625_910	0.13
L307-6	Mill Pond	Mill pond; depicted on 25 inch map; enclosed area 128m by 24m; with bank c.7m wide and 0.9m high; pond c.3.8m higher than adjacent River Pluck; associated corn mill not apparent on LiDAR.	2		1	0	1	0	Drumoghill Td.;Raymoghly Pr.;Raphoe North Br.	625778, 910105	307	625_910	0.23
L310-1	Railway	Railway line (disused); part of the Letterkenny Branch of the Londonderry & Lough Swilly Railway (1883-1953); average width 15m; cut up to 35m wide; 14m deep to track 4m wide; embankment up to 26m wide; 7m high to track 5m wide; 2135m long in survey area.	2	NIAH: 40905447 & 40905457	1	0	1	1	Ballyboe; Drumcarn; Drumoghill; Labbadish; Tullybogly Td.;Raymoghly Pr.;Raphoe North Br.	625422, 909973	307; 308; 310; 311	625_910; 626_910; 624_909; 625_909	5.8

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
L311-1	Lime Kiln	Lime kiln; depicted on 25 inch OSI map; mound 15m diameter; 0.7m high with hollow to S side.	2		1	0	1	0	Drumcarn Td.;Raymoghgy Pr.;Raphoe North Br.	625496, 909219	311	625_909	0.04
L312-1	Standing stone	Standing stone; nothing apparent on LiDAR.	4	SMR: DG062- 006---- Standing stone	0	0	1	1	Drumoghill Td.; Raymoghgy Pr.; Raphoe North Br.	626128, 909451	312	626_909	0.13
L320-1	Standing stone	Standing stone; nothing apparent on LiDAR.	4	SMR: DG062- 016---- Standing stone	0	0	1	1	Ballyholey Far Td.; Raphoe Pr.; Raphoe North Br.	626746, 907177	320	626_907	0.13
L320-2	Standing Stone	Standing Stone; nothing apparent on LiDAR; note field under tillage which may partly obscure low-relief features on low-resolution LiDAR.	4	SMR: DG062- 015---- Standing stone	0	0	1	1	Ballyholey Far Td.; Raphoe Pr.; Raphoe North Br.	626786, 907518	320	626_907	0.13
L320-3	Souterrain	Souterrain; nothing apparent on LiDAR; note field under tillage which may partly obscure low-relief features on low-resolution LiDAR.	4	SMR: DG062- 033---- Souterrain	0	0	0	0	Ballyholey Far Td.; Raphoe Pr.; Raphoe North Br.	626666, 907350	320	626_907	1.13
L321-1	Road	Road; cross-roads depicted on first ed. 6	2		1	1	0		Drumatoland Td.;Raymoghgy	627276, 907480	321; 325	627_907; 627_906	3.31

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		inch map; slightly raised track 9m wide; 0.2m high; c.1730m long in total.							Pr.;Raphoe North Br.				
L321-2	Not archaeologically significant	LiDAR DTM suggests a possible enclosure; this feature appears to be an anomaly in the LiDAR data.	0		1	0	0	0	Castledowey Td.;Raymoghly Pr.;Raphoe North Br.	627829, 907974	318; 321	627_908; 627_907	0.22
L324-1	Farmstead	Farmstead; depicted on historic OSI maps; polygonal area 57m by 52m; uneven ground; no discernible house remains.	2		1	1	1		Ballyholey Far Td.;Raphoe Pr.;Raphoe North Br.	626794, 906959	324	626_906	0.28
L330-1	Barrow Possible	Possible barrows (X 3); a cluster of three oval depressions c. 7.5m by 5.5m and c.0.1m deep with a raised centres; possibly modern features associated with feeding cattle.	1		1	0	0	0	Carnshannagh Td.;Taughboyne Pr.;Raphoe North Br.	628913, 905179	330	628_905	0.04
L334-1	Enclosure Possible	Possible enclosure (Route Selection S3-AP01); circular area c.30m diameter on sloping ground; c.0.2m high;	1	Route Select.: S3-AP01	0	0	0	0	Carnshannagh Td.;Taughboyne Pr.;Raphoe North Br.	628627, 904434	334	628_904	0.13

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		note field under tillage which may partly obscure low-relief features on low-resolution LiDAR.											
L334-2	Enclosure	Enclosure; nothing depicted on historic OSI maps; oval area c.40m by 36m and 0.4m high; no a bank or ditch; note field under tillage which may partly obscure low-relief features on low-resolution LiDAR.	3	SMR: DG062- 024---- Enclosure	0	0	0	0	Carnshannagh Td.; Taughboyne Pr.; Raphoe North Br.	628523, 904427	334	628_904	1.13
L334-3	Enclosure	Possible bi-vallate enclosure identified from aerial photos; nothing apparent on LiDAR.	4	Route Select.: A3- AP02	0	0	0	0	Dromore Big Td.; Taughboyne Pr.; Raphoe North Br.	628376, 904292	334	628_904	0.07
L335-1	Ringfort	Ringfort; nothing apparent on LiDAR.	4	SMR: DG062- 022---- Ringfort - unclassified	0	1	0		Woodlands Td.; Taughboyne Pr.; Raphoe North Br.	629149, 904919	335	629_904	1.13
L335-2	Lime Kiln	Lime Kiln (NIAH 40906205); sub rectangular structure c.15m by 12m and 4.98m high; adjacent to a quarry.	2	NIAH: 40906205	1	1	1		Drummucklagh Td.; Taughboyne Pr.; Raphoe North Br.	629455, 904299	335	629_904	0.08

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA _Ha
L335-3	Enclosure	Enclosure; visible as a low relief circular enclosure 42m in diameter, with banks c.14m wide and 0.2m high, and a central depression of c.0.2m, located c.34m SE of the recorded site.	3	SMR: DG062- 027---- Enclosure	0				Drummucklagh Td.; Taughboyne Pr.; Raphoe North Br.	629518, 904134	335	629_904	
L337-1	Burnt Spread Possible	Possible burnt spread identified from aerial photos (Route Selection S3-AP03); nothing apparent on LiDAR.	4	Route Select.: S3- AP03	0	0	0	0	Drumbeg Td.; Taughboyne Pr.; Raphoe North Br.	628795, 903751	337	628_903	0.09
L338-4	Flax Mill	Flax mill; depicted on historic OSI maps; rectangular depression 22.25m by 19.27m; and 1.55m deep; with apparent mill wheel pit to W 1.44m below level of mill.	2		1	1	1	1	Tullyrap Td.; Taughboyne Pr.; Raphoe North Br.	629759, 903077	338	629_903	0.04
L345-1	Barrow Possible	Barrow possible; very low-relief circular hollow c.10.1m diameter; 0.1m deep; slight raised centre c.0.05m; located on locally prominent hill [L345-2]; possibly feature	1		1	0	0	0	Mulnaveagh Td.; Clonleigh Pr.; Raphoe North Br.	629905, 901752	345	629_901	0.04

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		associated with feeding cattle.											
L345-2	Enclosure Possible	Oval enclosed area; 330m by 180m and rising to 7.6m high; with possible curving outer bank to the N and W c.5m wide and c.0.2m high; and a curving ditch or stream to S 8m wide and 1.8m deep; possible barrow [L345-1] on summit.	1		1	0	0	0	Mulnaveagh Td.;Clonleigh Pr.;Raphoe North Br.	629917, 901767	342; 343; 345; 346	629_902; 630_902; 629_901; 630_901	6.74
L346-1	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG070-032---- Standing stone	0	1	1		Gortin North Td.; Clonleigh Pr.; Raphoe North Br.	630611, 901048	346	630_901	0.13
L349-1	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG070-033---- Standing stone	0	1	1		Gortin North Td.; Clonleigh Pr.; Raphoe North Br.	630570, 900977	349	630_900	0.13
L349-2	Buildings	Buildings; depicted on historic OSI maps; roughly rectangular mound 25m by 17m and	2		1	1	1		Gortin North Td.;Clonleigh Pr.;Raphoe North Br.	630270, 900805	349	630_900	0.16

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
		0.8m high; sited next to a modern farmstead.											
L350-1	Designed Landscape	Designed landscape (Garden) surrounding Cavanacor House (RPS: 40907026; NIAH: 40834001); triangular area 230m by 170m on an E-facing slope; with surface irregularities from planting and landscaping.	2	RPS: 40907026; NIAH: 40834001	1	1	1		Cavanacor Td.;Clonleigh Pr.;Raphoe North Br.	631303, 900189	350	631_900	2.18
L353-1	Mill Race	Mill Race; depicted on 25 inch maps; channel 9m wide; 1.7m deep and 97m long extending outside LiDAR survey area; adjacent Deele River; area substantially remodelled with flood defences completely removing former flax and corn mill building.	2		1	0	1	1	Millsessiagh Td.;Clonleigh Pr.;Raphoe North Br.	630128, 899705	353	630_899	0.13
L353-2	Bridge	Bridge; nothing apparent on LiDAR DTM; DSM indicates the bridge is approximately 5.5m high and c.7m wide.	4	SMR: DG070- 081---- Bridge	0	1	1	1	Ballindrait Td.; Clonleigh Pr.; Raphoe North Br.	630409, 899791	353	630_899	1.13

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
L354-1	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG070- 048---- Standing stone	0	1	0		Murlough Td.; Clonleigh Pr.; Raphoe North Br.	631630, 899335	354	631_899	0.13
L354-2	Farmstead	Farmstead site; depicted on historic OSI maps; irregular polygon 100m by 92m; with a rectangular outline 20m by 12m and 0.4m high corresponding with buildings; sited in a hollow beside the Cavanacor River.	2		1	1	1		Ballynabreen Td.;Clonleigh Pr.;Raphoe North Br.	631399, 899435	354	631_899	0.56
L354-2	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG070- 049---- Standing stone	0	1	0	0	Murlough Td.; Clonleigh Pr.; Raphoe North Br.	631595, 899154	354	631_899	0.13
L354-3	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG070- 050---- Standing stone	0	0	0	0	Murlough Td.; Clonleigh Pr.; Raphoe North Br.	631564, 899095	354	631_899	0.13
L355-1	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG070- 047----	0	1	0		Rossgeir Td.; Clonleigh Pr.; Raphoe North Br.	632238, 899638	355	632_899	0.13

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
				Standing stone									
L355-2	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG071- 004---- Standing stone	0	1	0		Drumboy Td.; Clonleigh Pr.; Raphoe North Br.	632836, 899409	355	632_899	0.07
L359-1	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG071- 005---- Standing stone	0	1	0		Lifford Td.; Clonleigh Pr.; Raphoe North Br.	632525, 898541	359	632_898	0.13
L359-2	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG071- 006---- Standing stone	0	1	0		Lifford Td.; Clonleigh Pr.; Raphoe North Br.	632682, 898548	359	632_898	0.13
L359-3	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG071- 007---- Standing stone	0	1	0		Townparks Td.; Clonleigh Pr.; Raphoe North Br.	632654, 898504	359	632_898	0.13
L359-4	Standing Stone	Standing Stone; nothing apparent on LiDAR.	4	SMR: DG071- 009---- Standing stone	0	0	0	0	Townparks Td.; Clonleigh Pr.; Raphoe North Br.	632933, 898361	359	632_898	0.13

SITE NUMBER	CATEGORY	DESCRIP	CONFIDENCE	SMR/ RPS/ NIAH/ Route Selection	Newly Identified Site	1st Ed 6 Inch	25 Inch	2nd Ed 6 Inch	Townland; Civil Parish; Barony	ITM Coords	GRIDS	TILES	AREA_Ha
L359-5	Farmstead	Possible 18-19th century farmstead (Route Selection S3-AP04); enclosed area 44m by 35m with banks 0.2m to 0.4m high and 7m to 12m wide; sited on ground sloping to the E; no remains of buildings apparent.	2	Route Select.: S3-AP04	0	1	1		Lifford Common Td.;Clonleigh Pr.;Raphoe North Br.	632140, 898457	359	632_898	0.42
L360-1	Historic Town	Zone of Archaeological Potential for Lifford Town; nothing archaeologically significant apparent on LiDAR other than modern properties and building footprints.	4	SMR: DG071-008---- Historic town; NIAH: 40835019 & 40835022;	0	1	1		Lifford; Townparks Td.; Clonleigh Pr.; Raphoe North Br.	633090, 898507	359; 360	632_898; 633_898	3.14
L361-1	Lime Kiln	Lime kiln; depicted on the first ed. 6 inch map; very slight mound c. 16m diameter and c.0.2m high on ground sloping to E.	2		1	1	0		Carricknaslate Td.;Clonleigh Pr.;Raphoe North Br.	631922, 897840	361	631_897	0.02
L362-1	Souterrain	Souterrain, not apparent on LiDAR, but LiDAR does indicate a low profile circular mound 35m in diameter; 0.2m high;	3	SMR: DG070-082---- Souterrain	0	0	0	0	Curraghane Td.; Clonleigh Pr.; Raphoe North Br.	632263, 897206	362	632_897	0.2

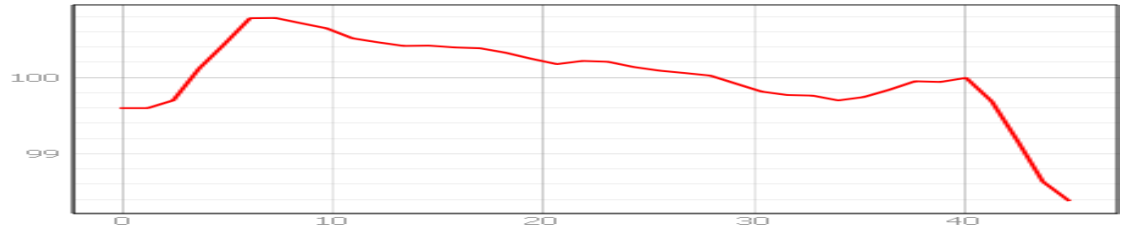
Appendix 3: Site Profiles

Section 1 Profiles of LiDAR sites

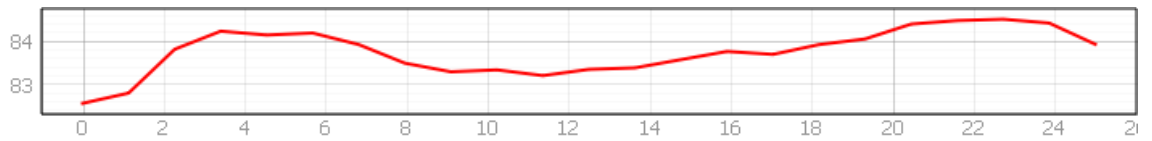
Site ID	Profile
	A B

SECTION 1 PROFILES

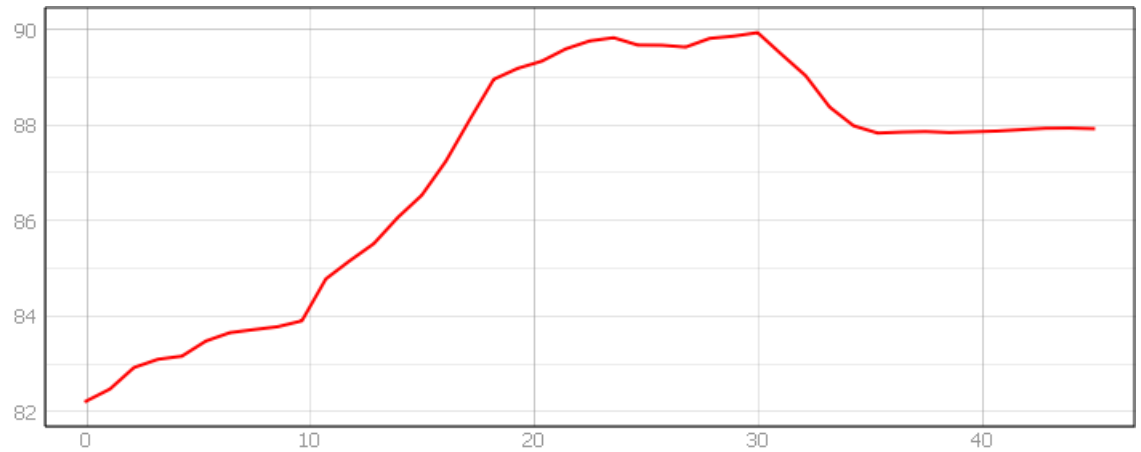
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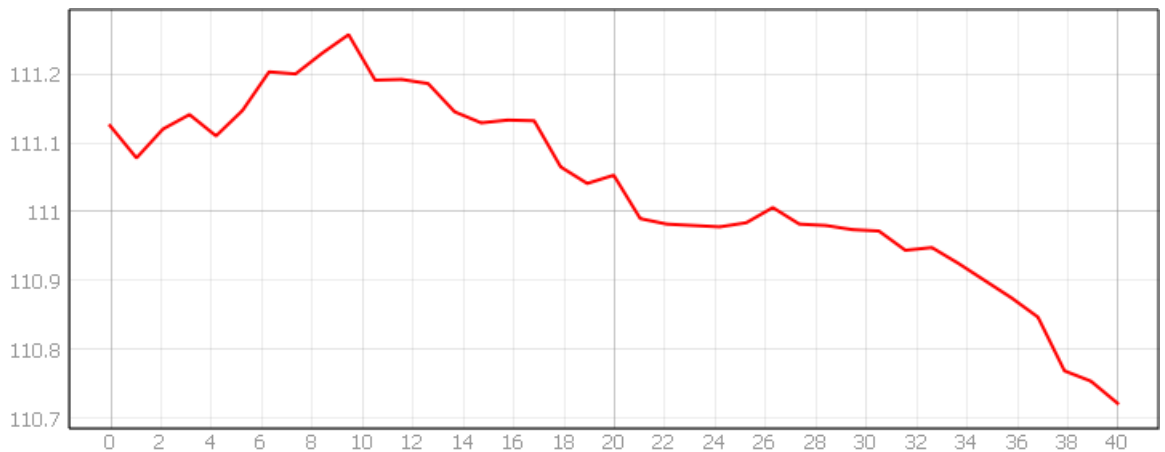
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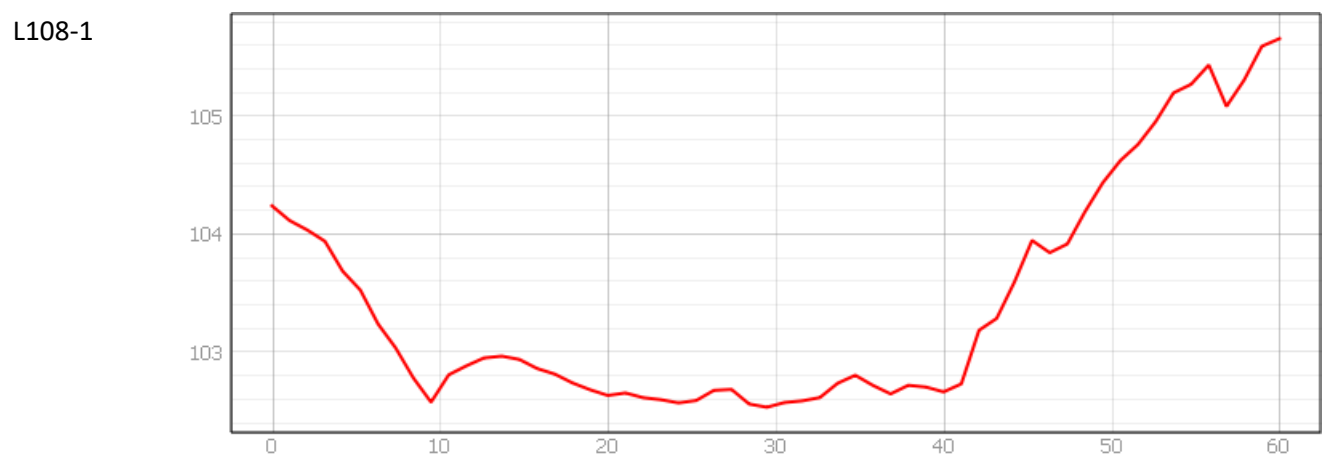
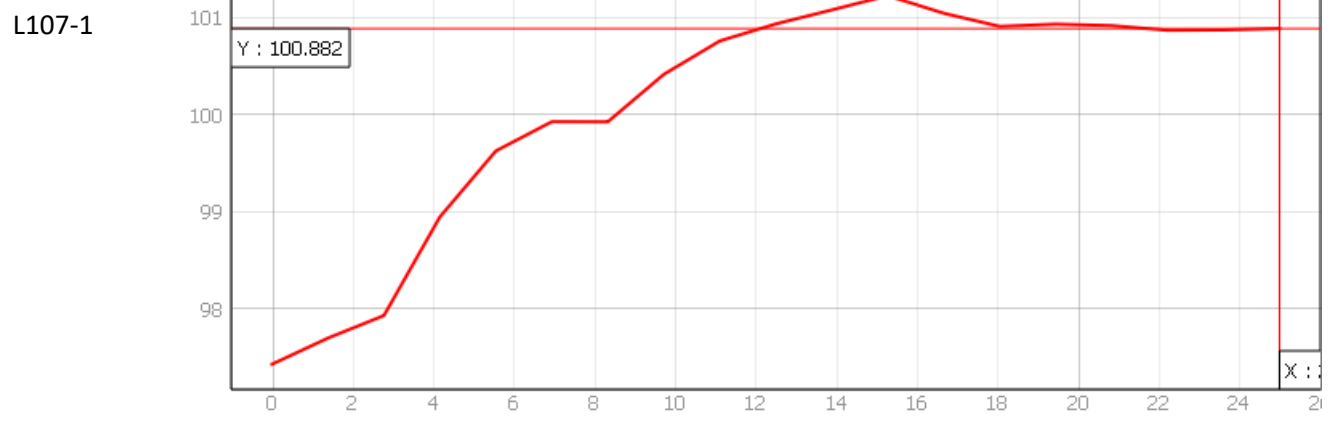
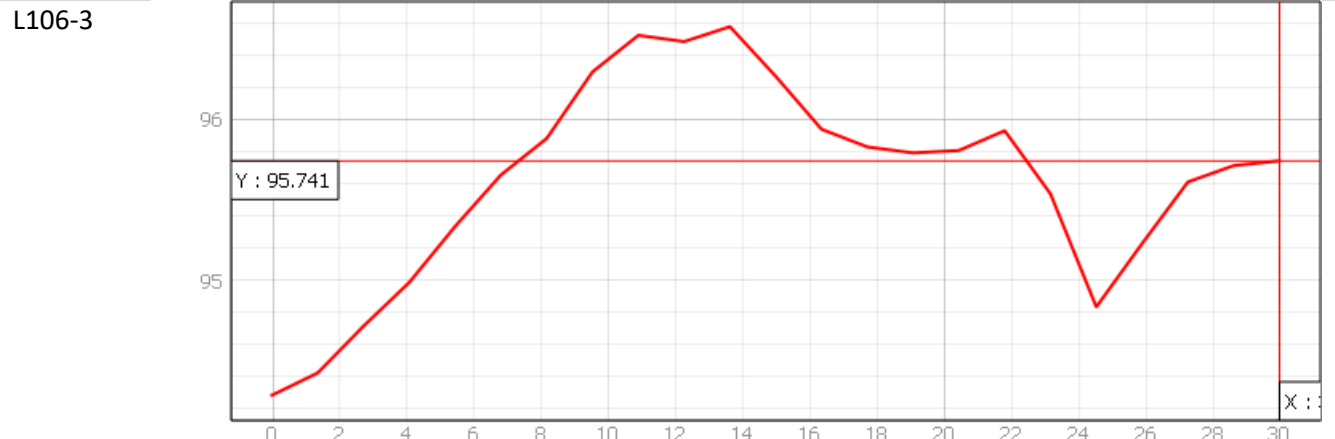
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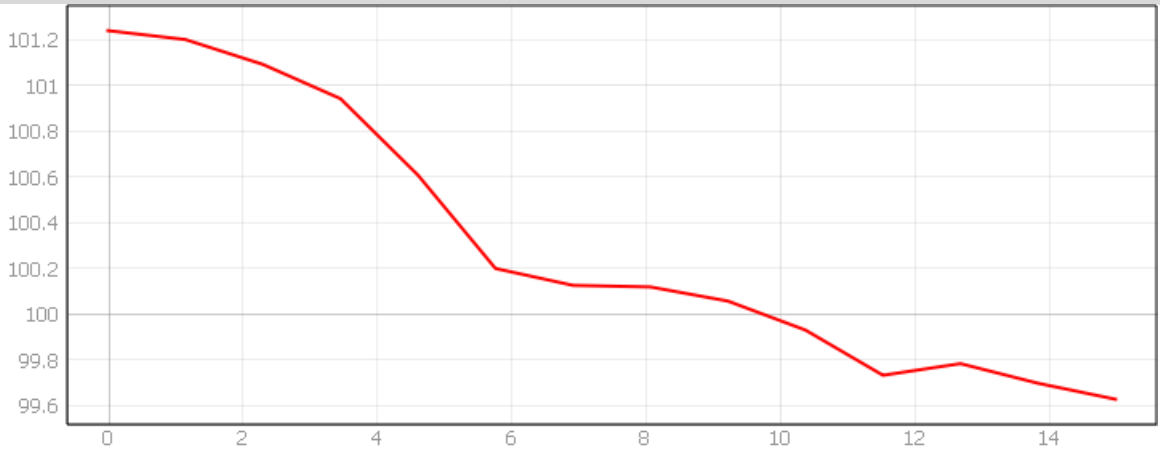


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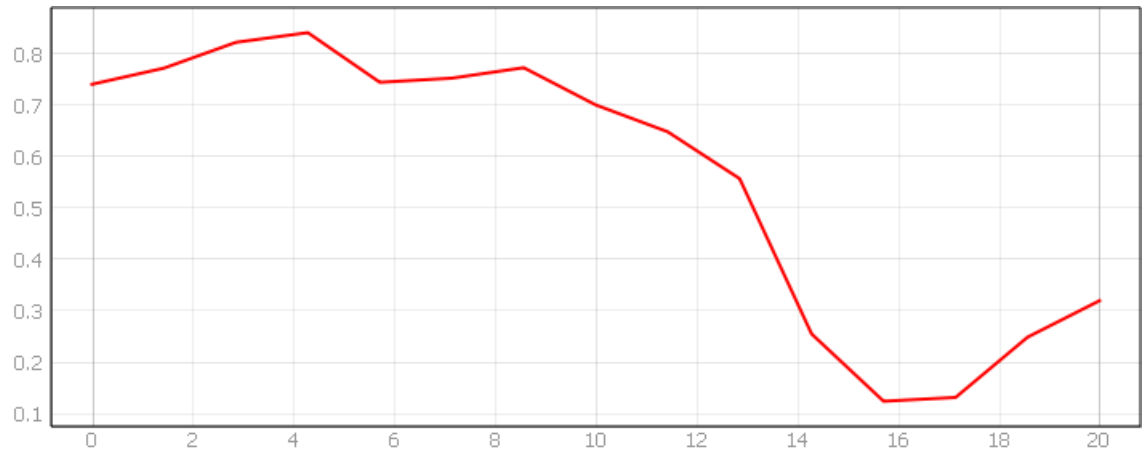


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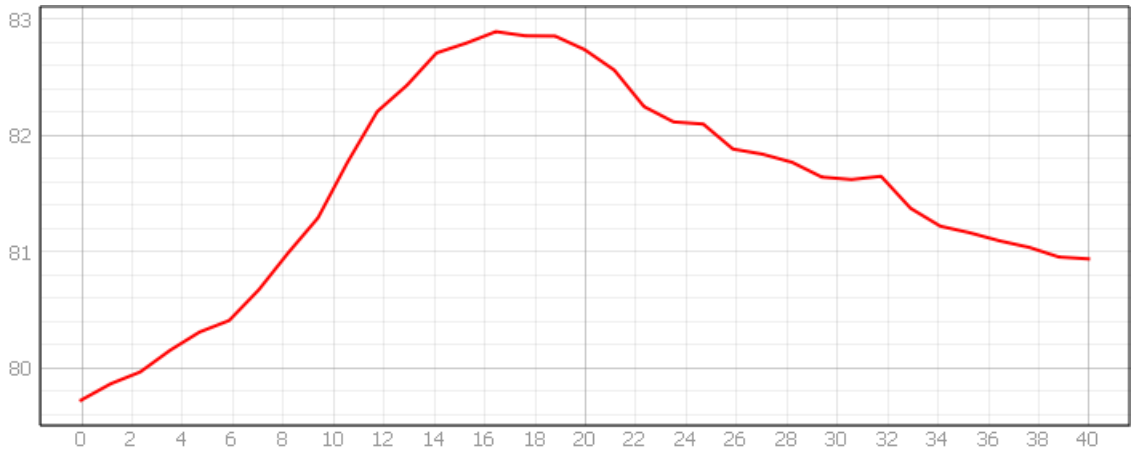
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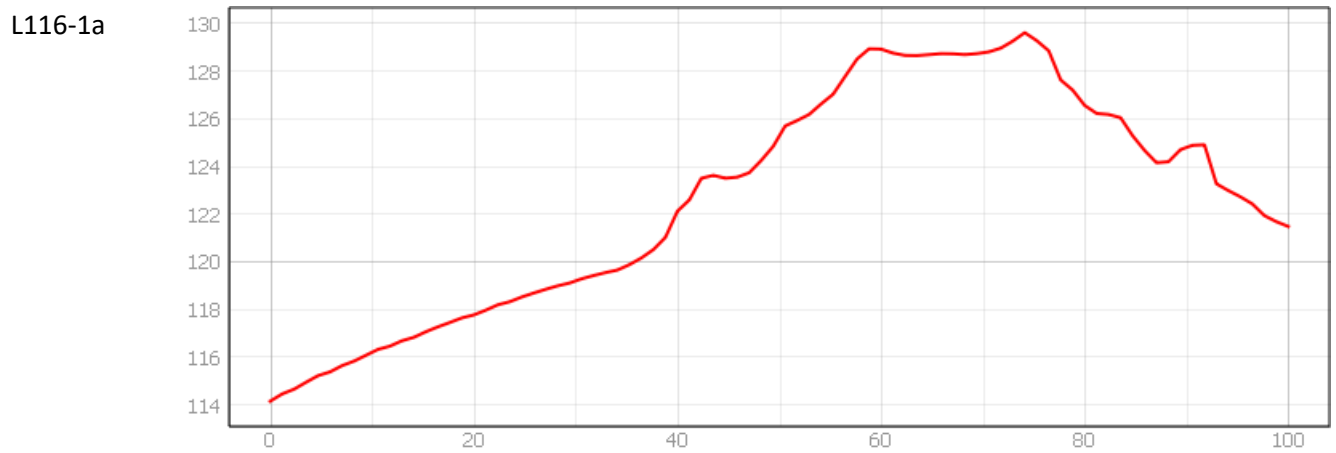
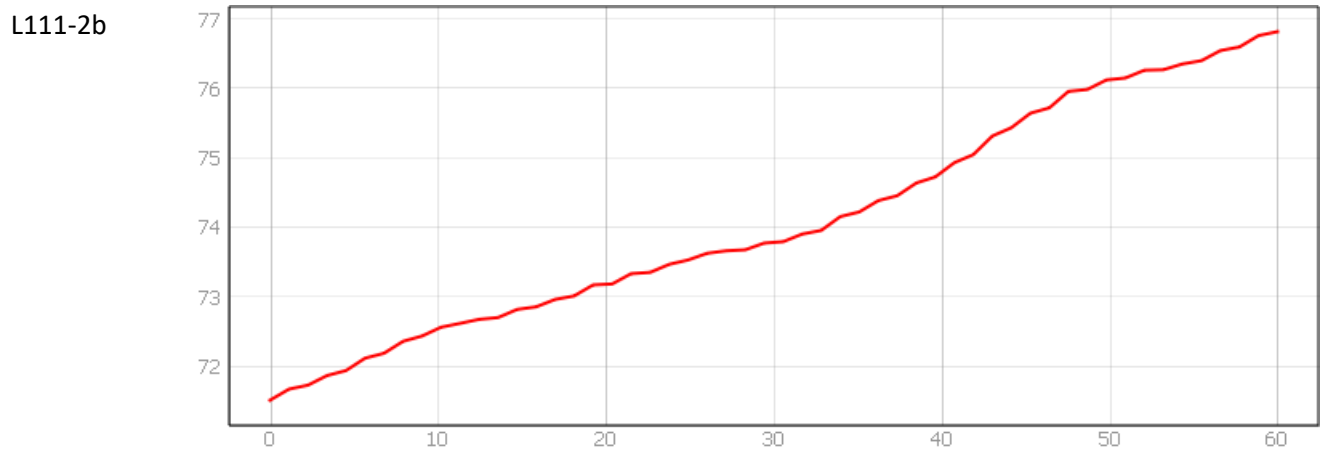
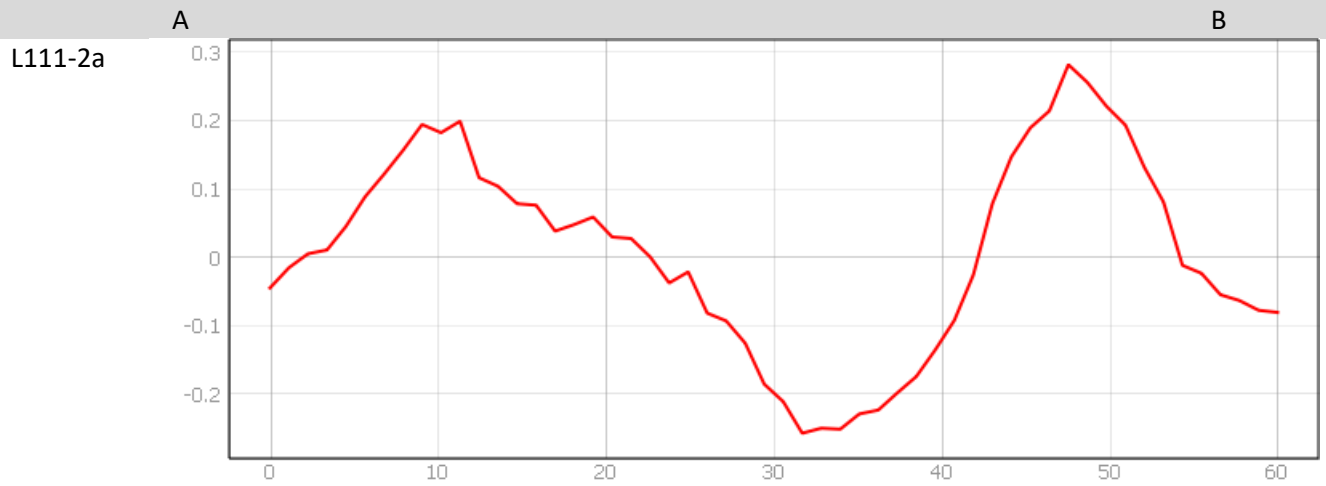
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L111-1



Site ID Profile



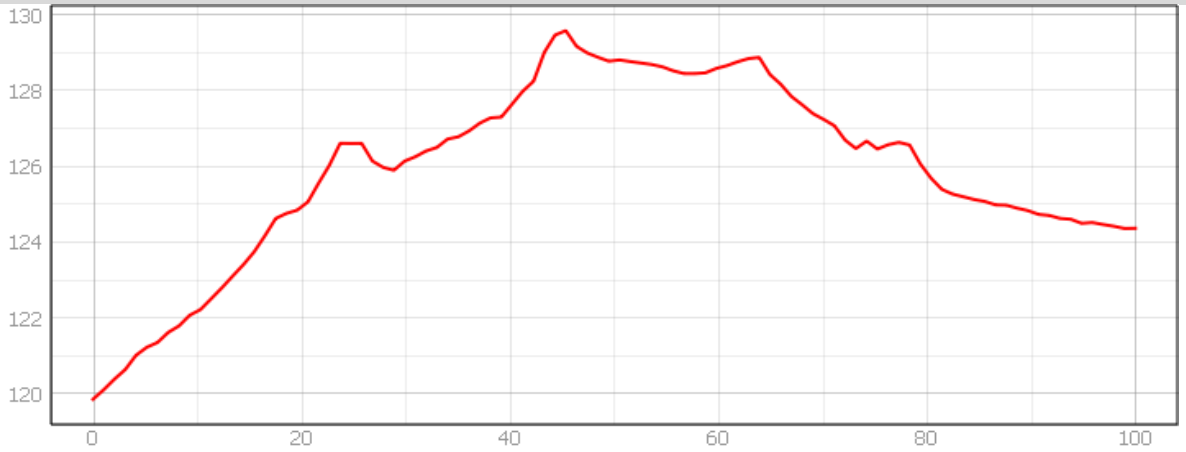
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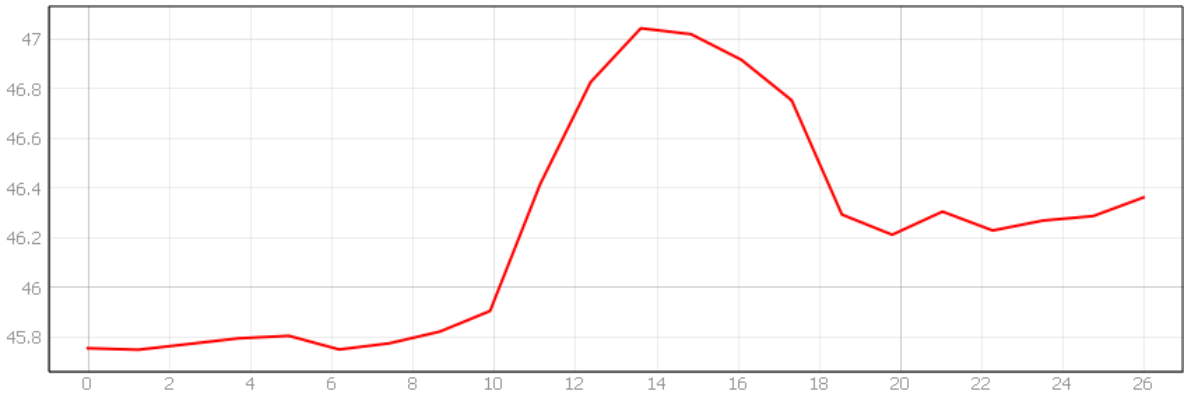
Profile

A

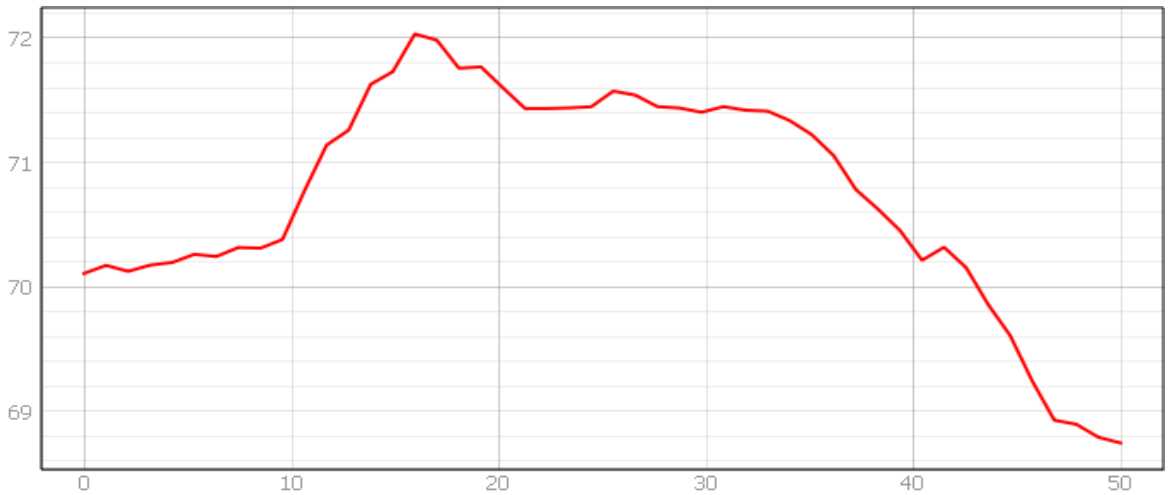
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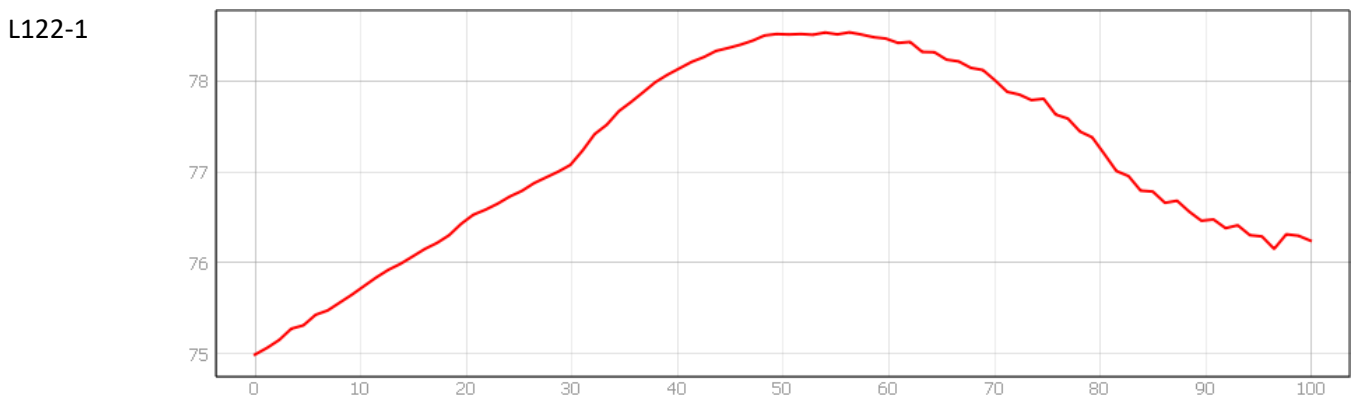
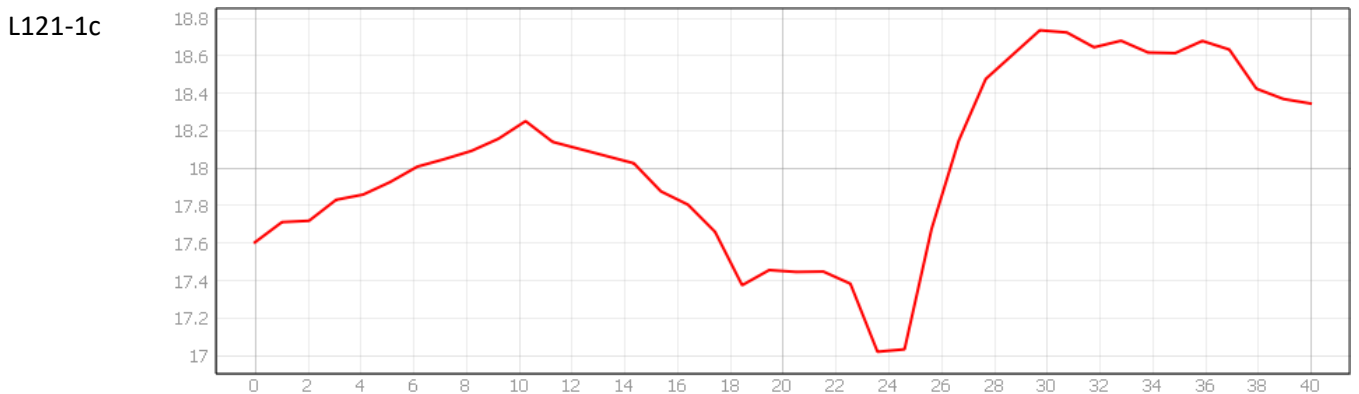
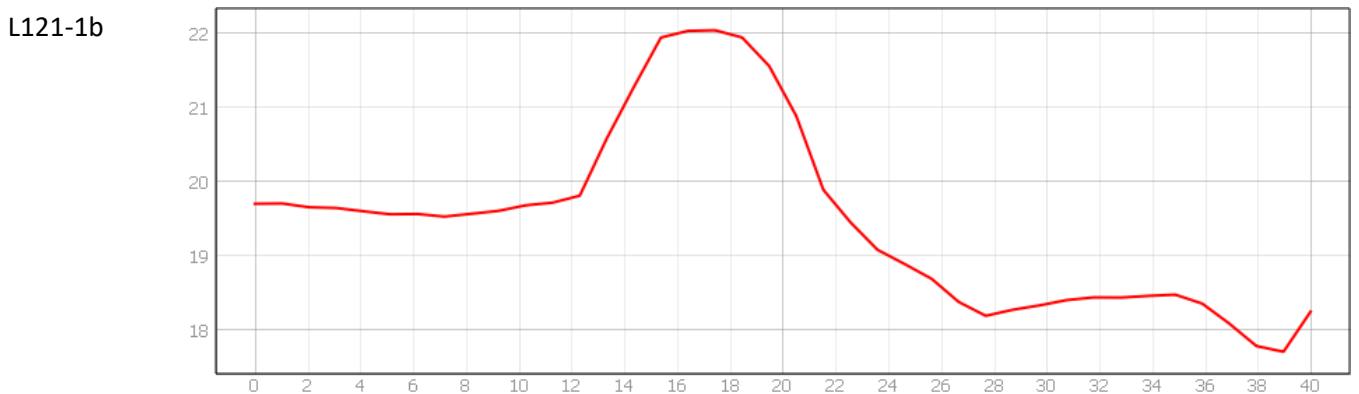
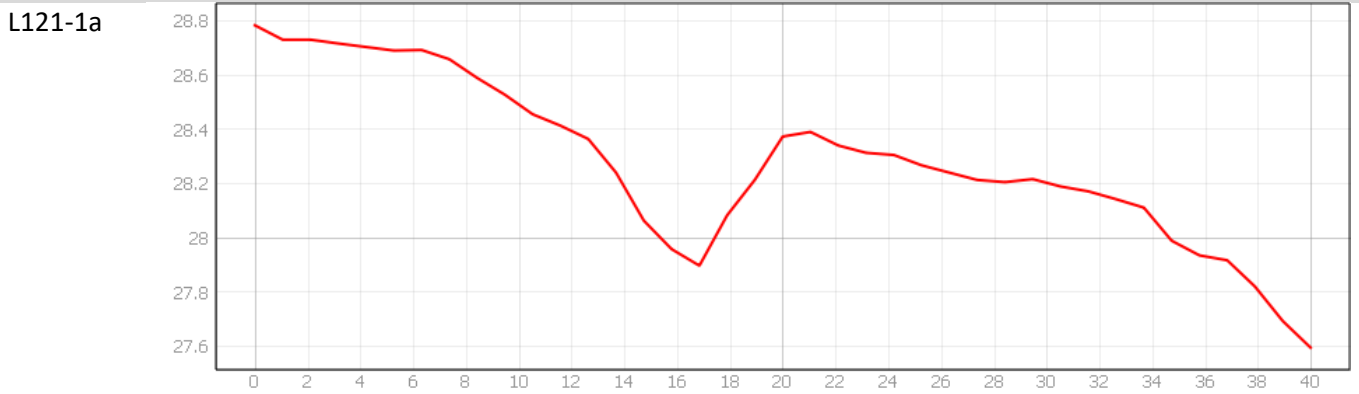
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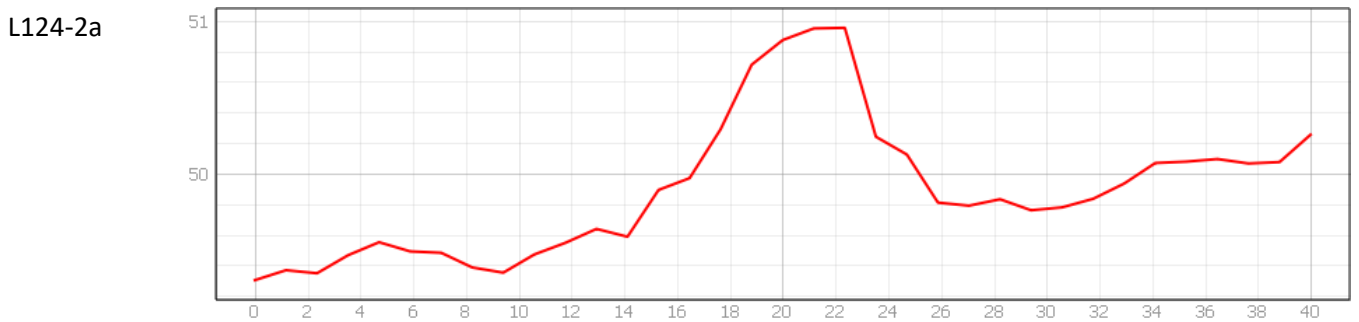
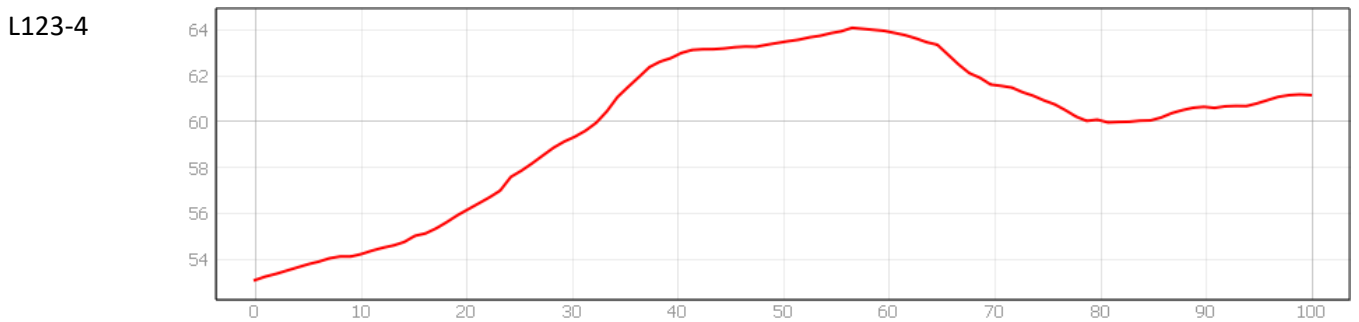
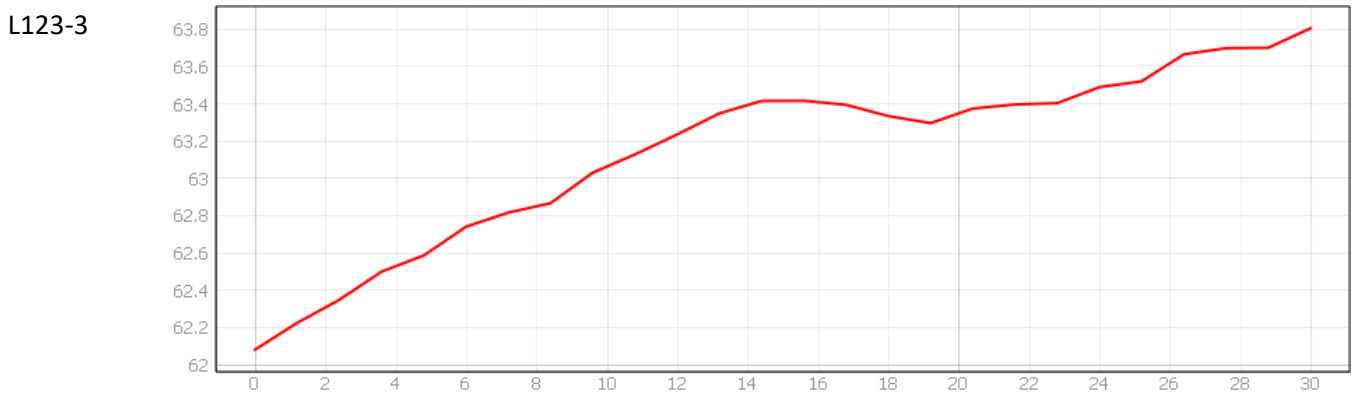
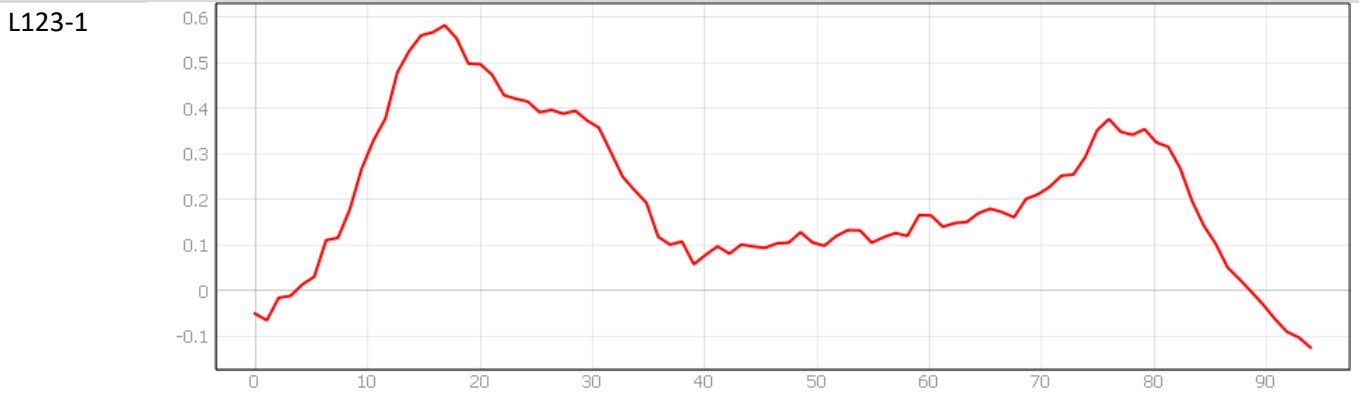
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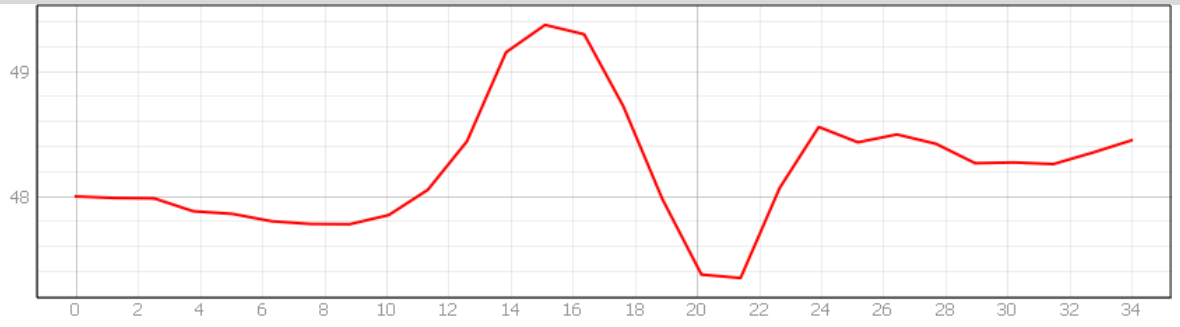


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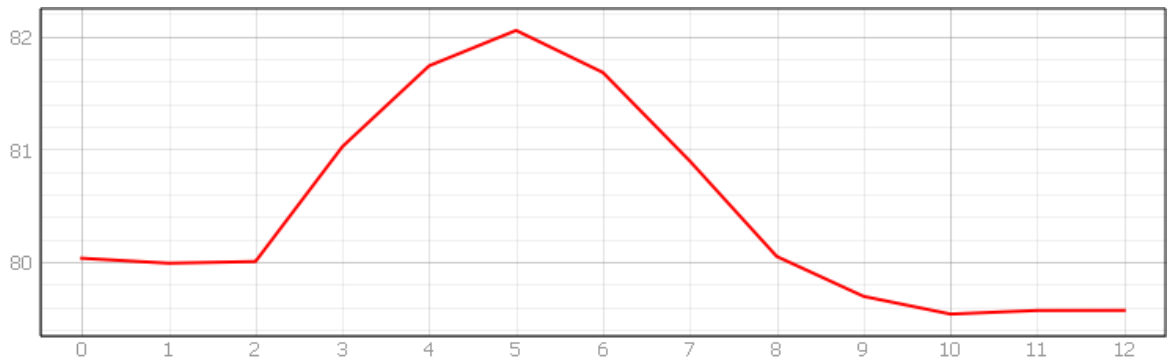


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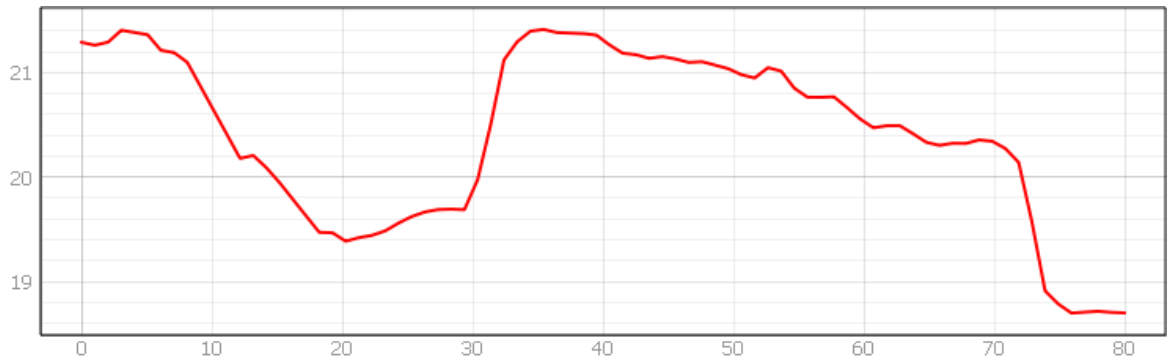
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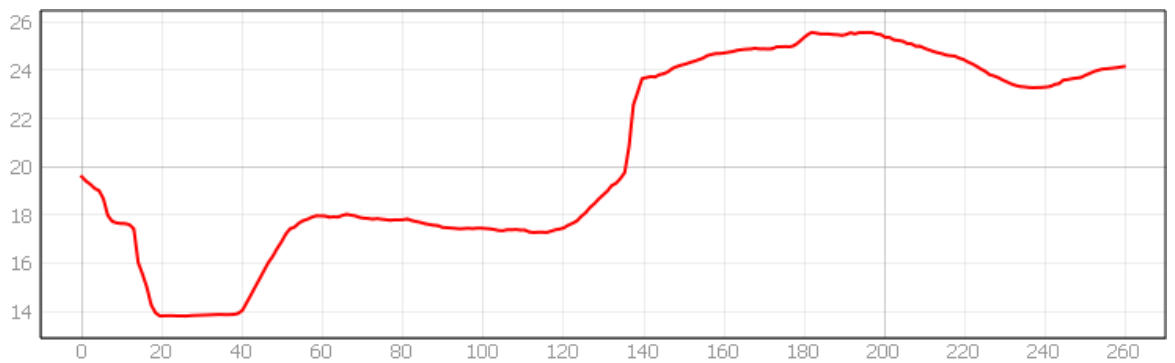
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L131-1

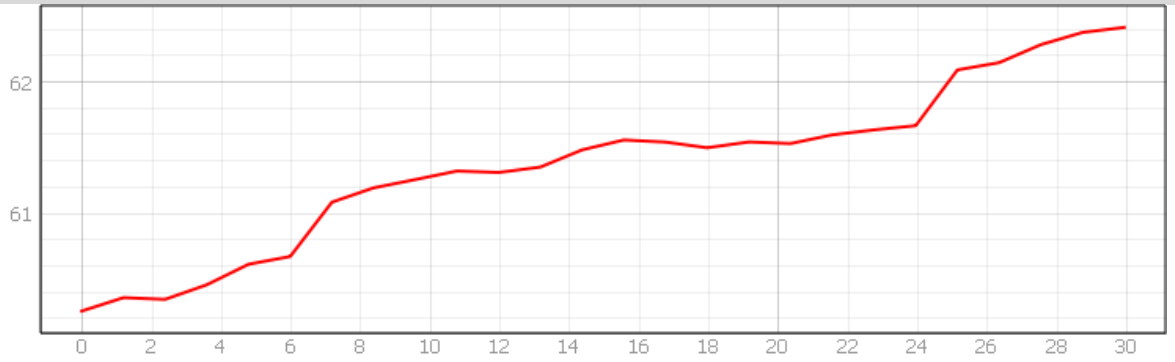


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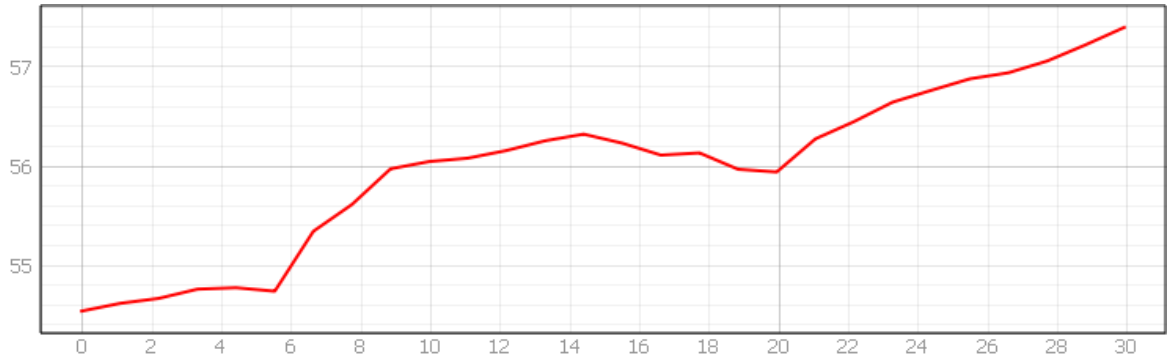


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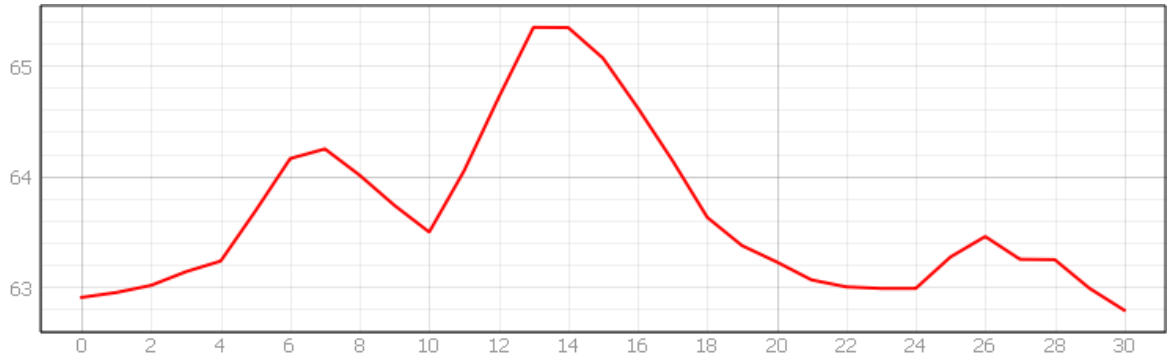
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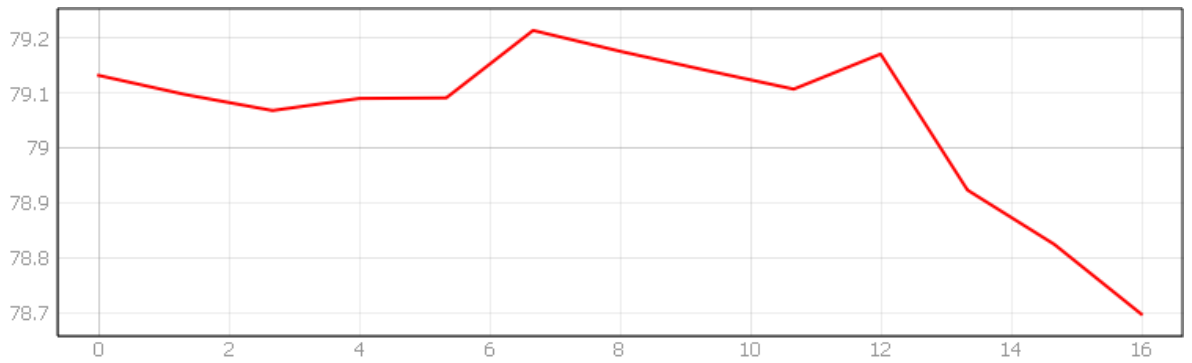
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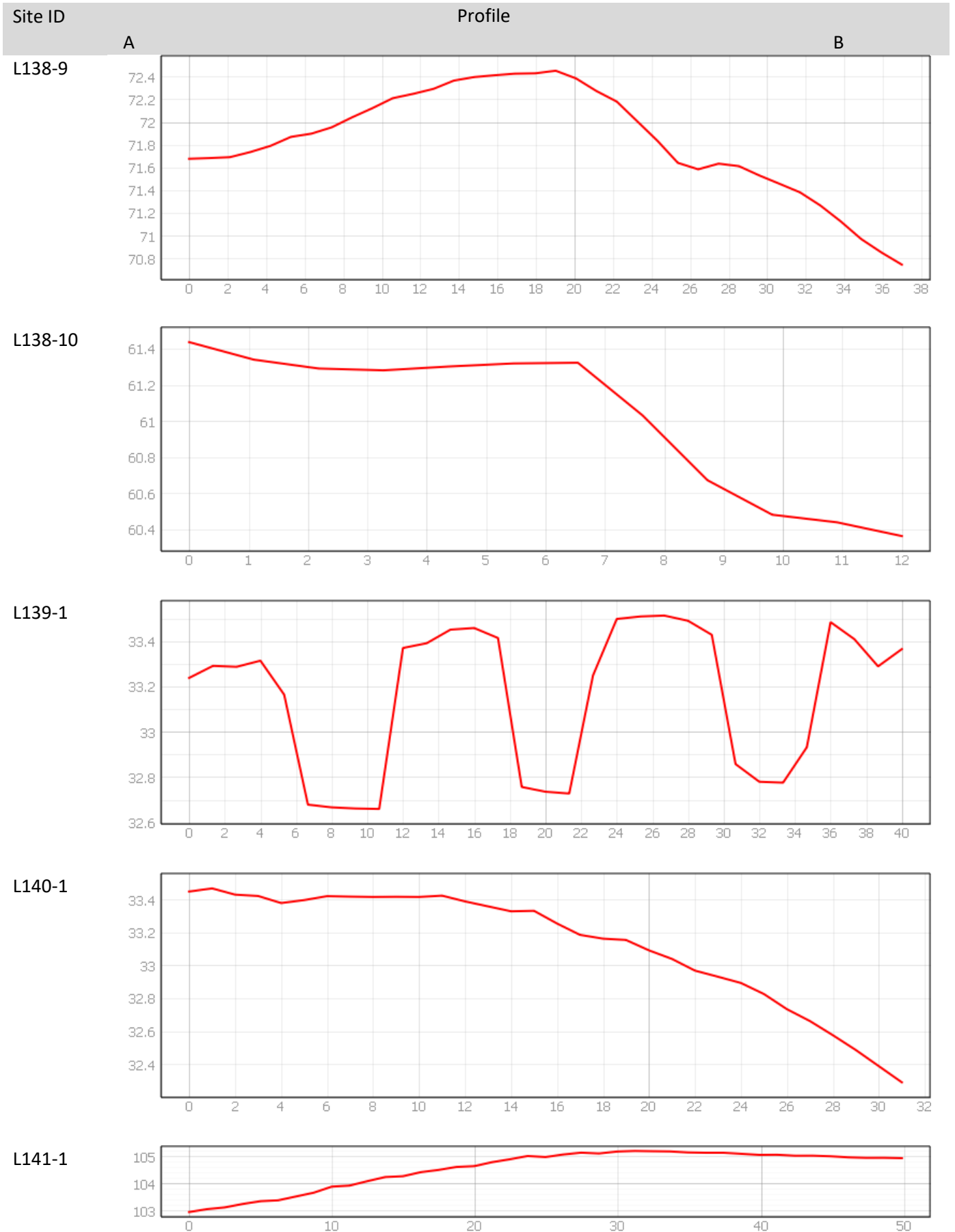


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L138-7



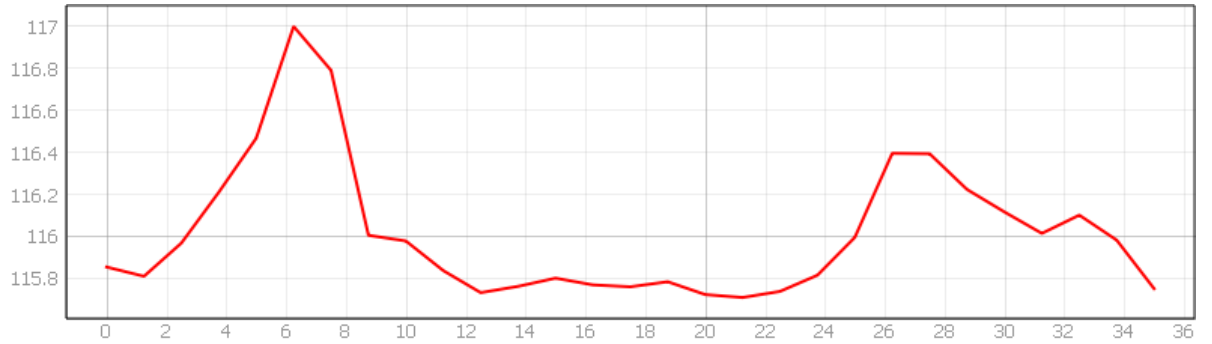


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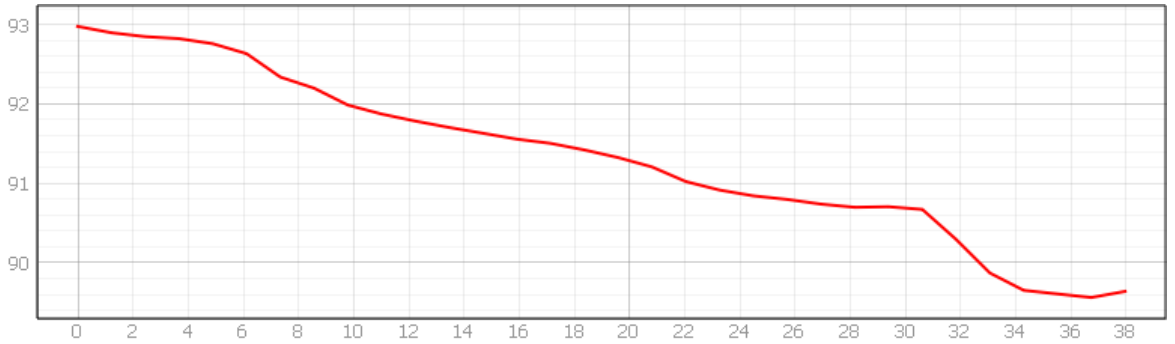
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L142-2



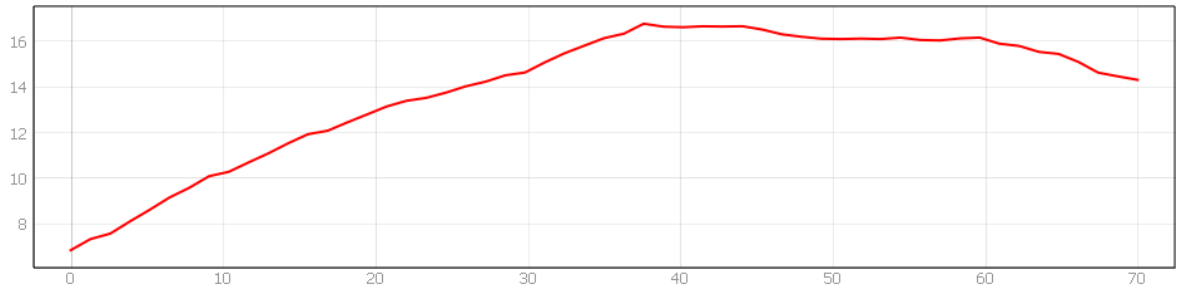
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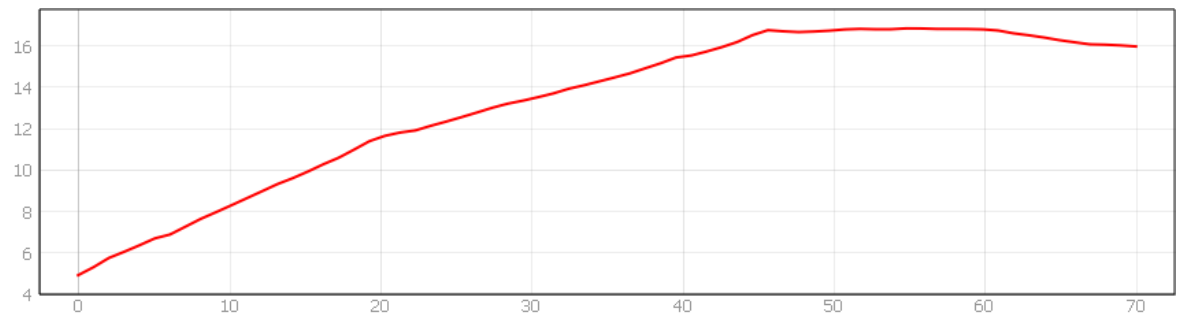
Site ID	Profile	B
	A	

Section 2 Profiles of LiDAR sites

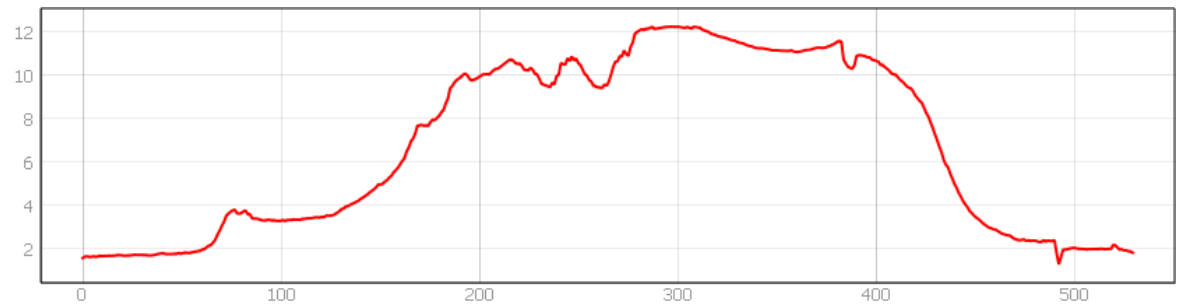
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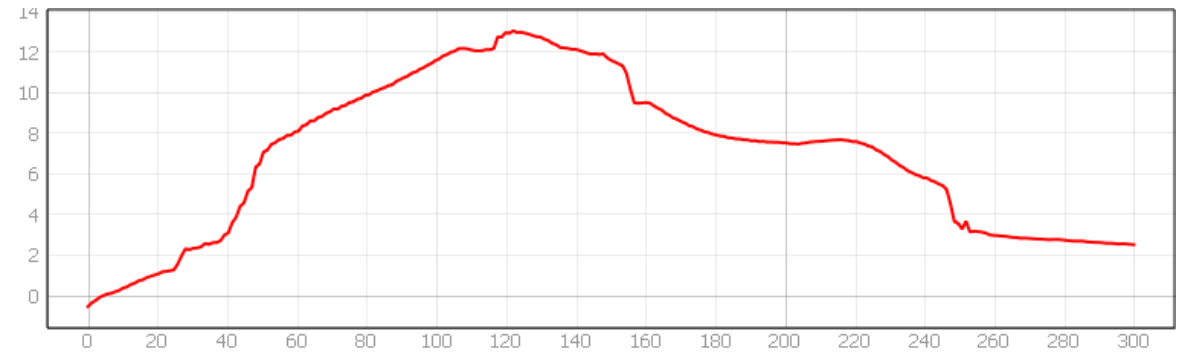
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L212-1a

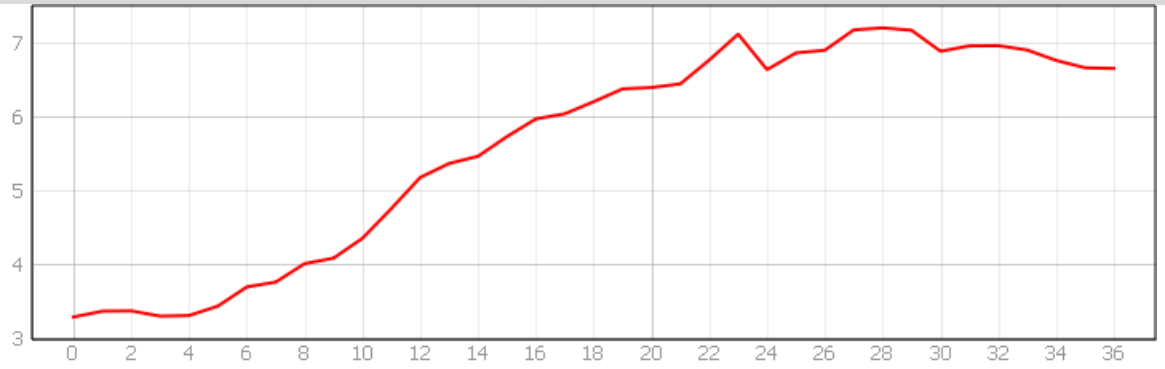


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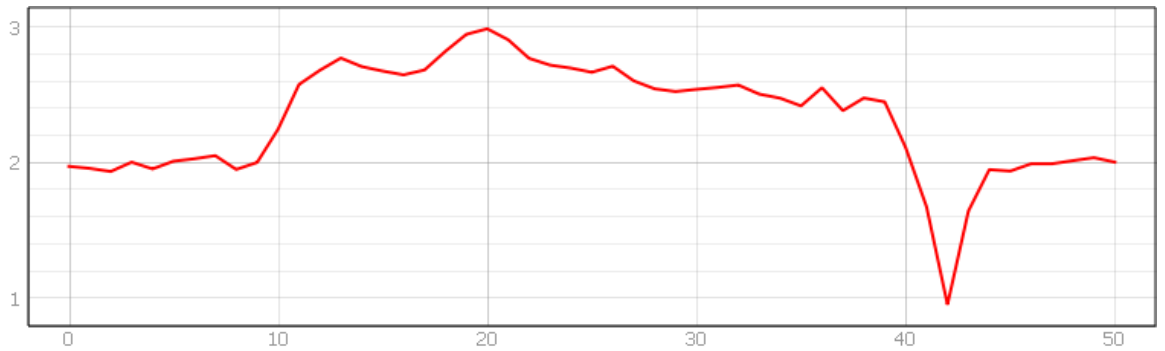


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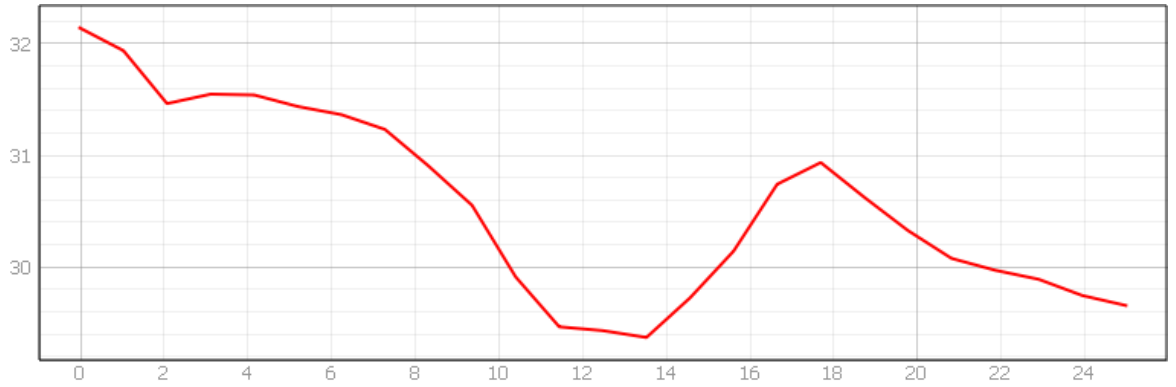
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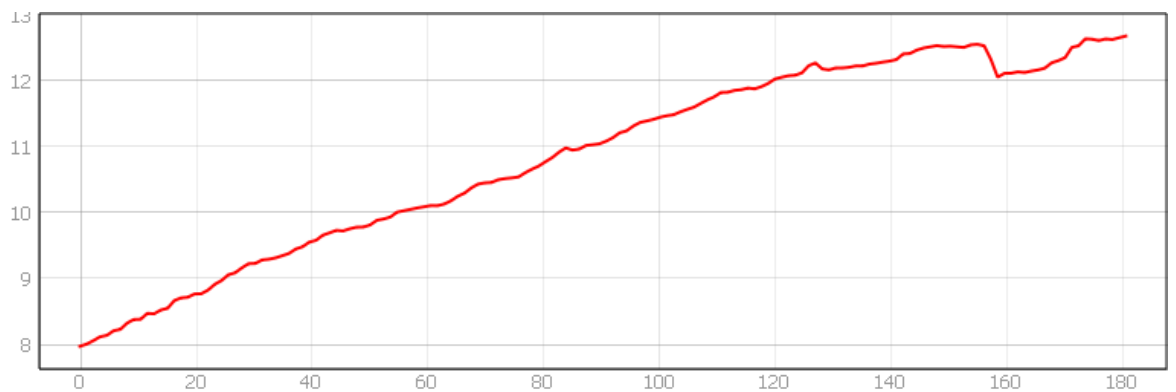
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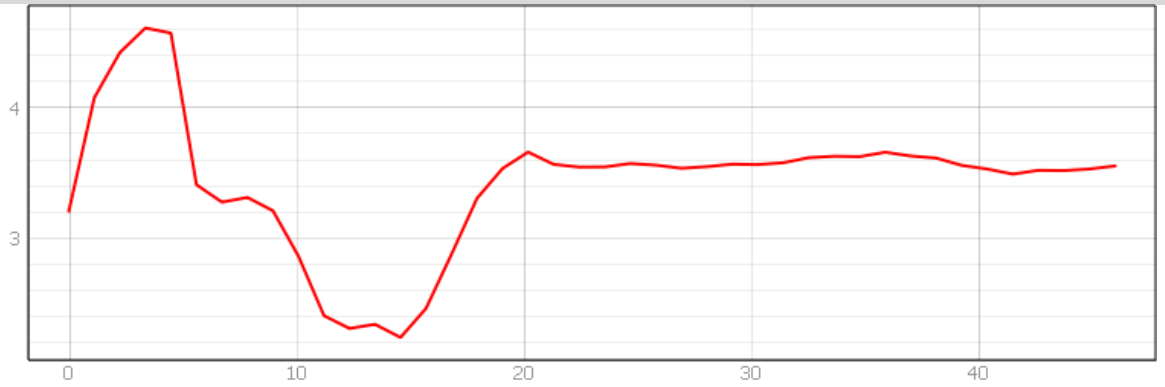


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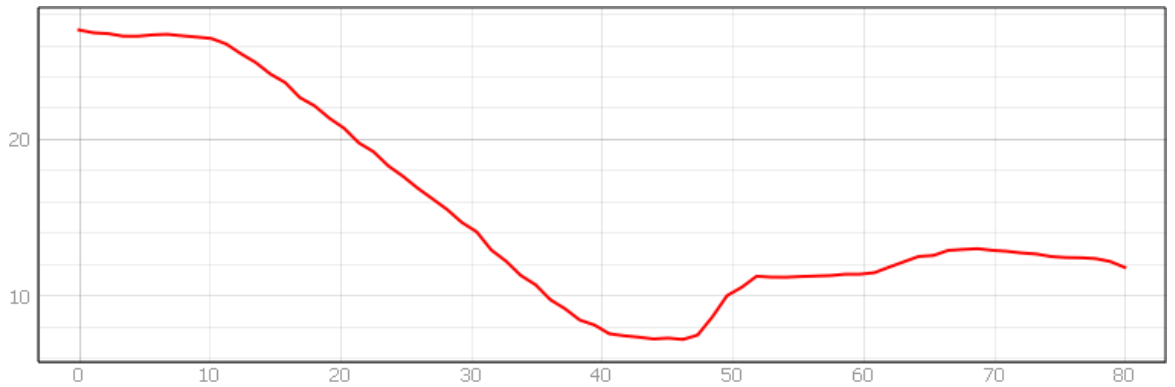


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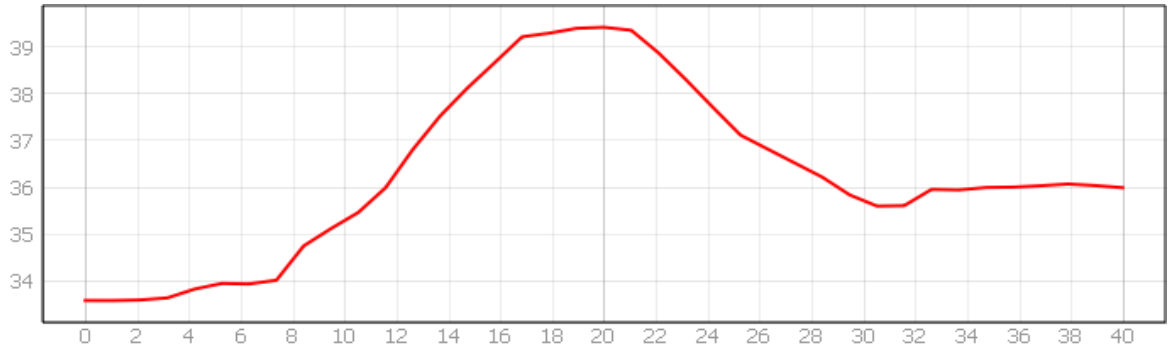
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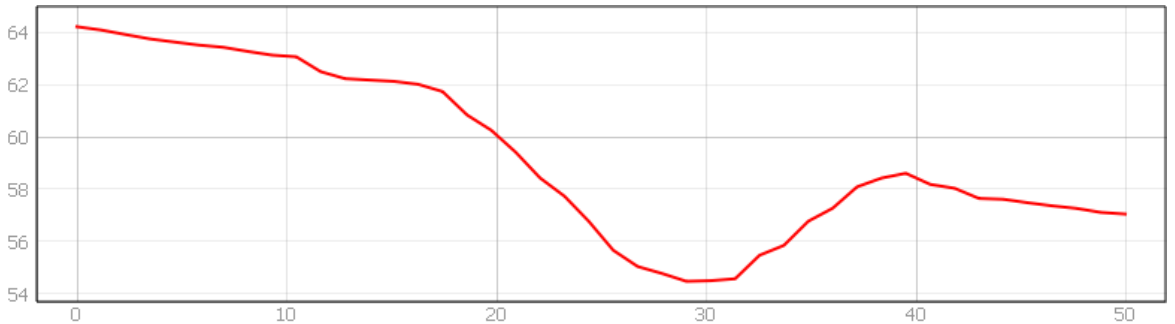
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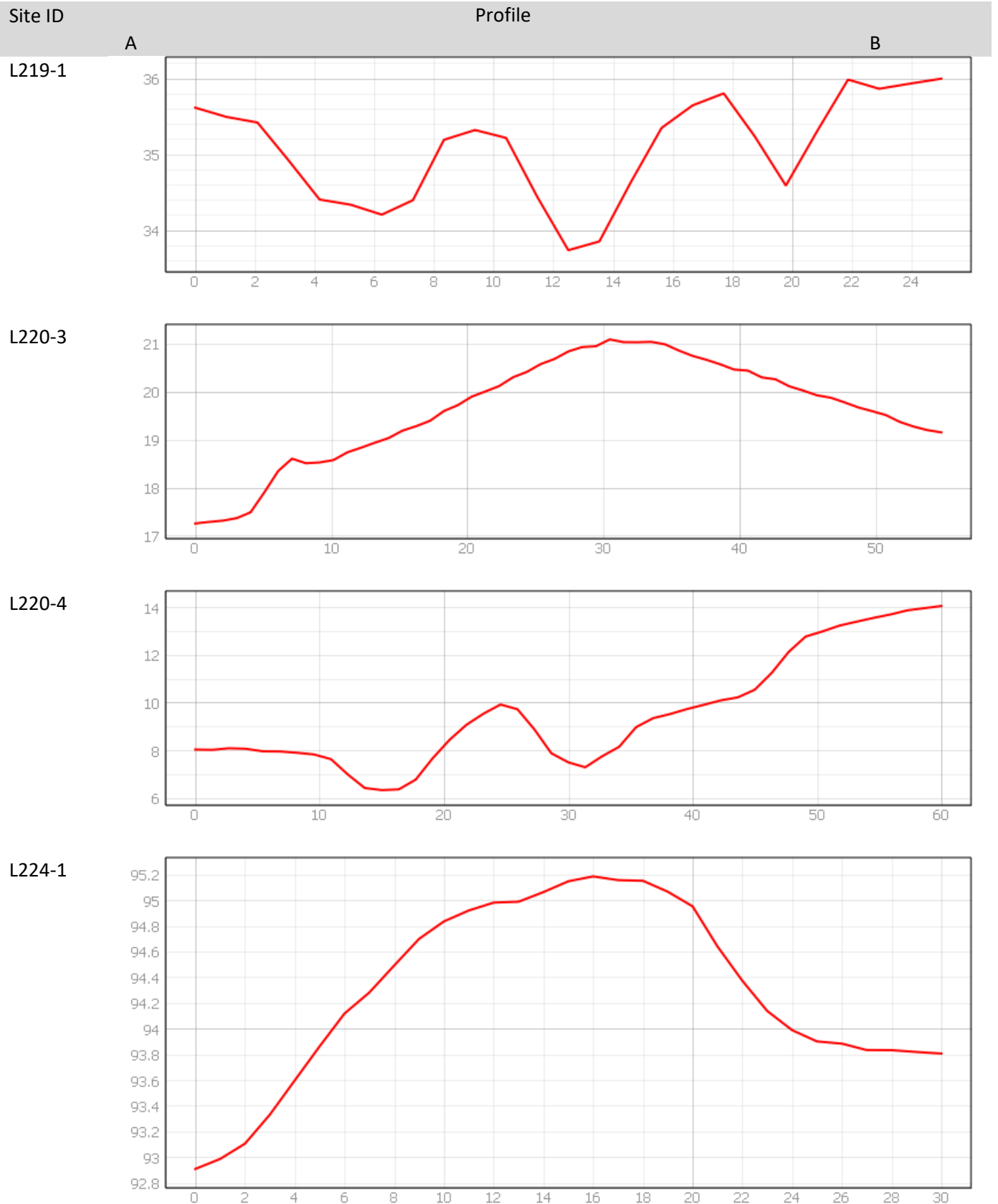


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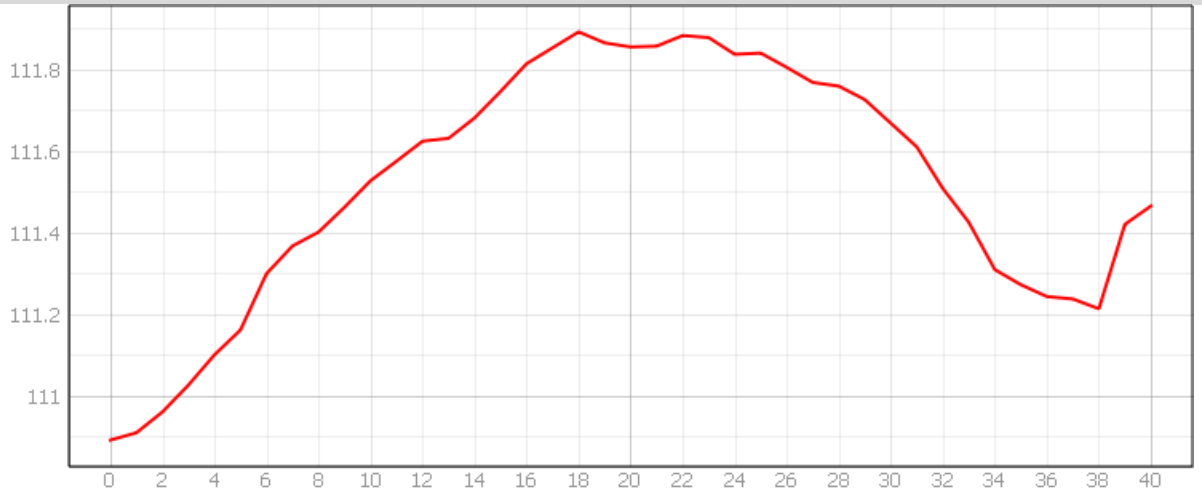
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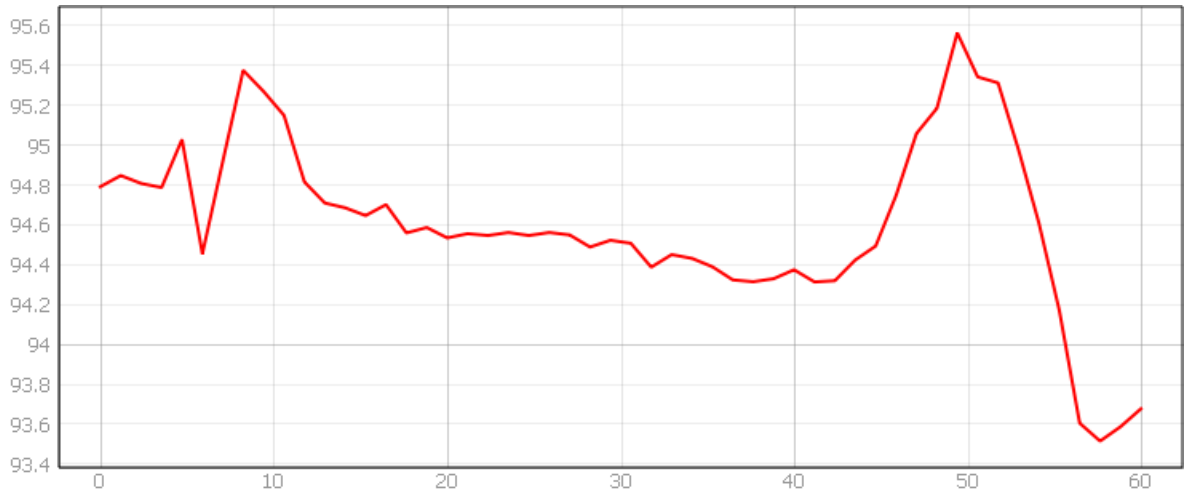


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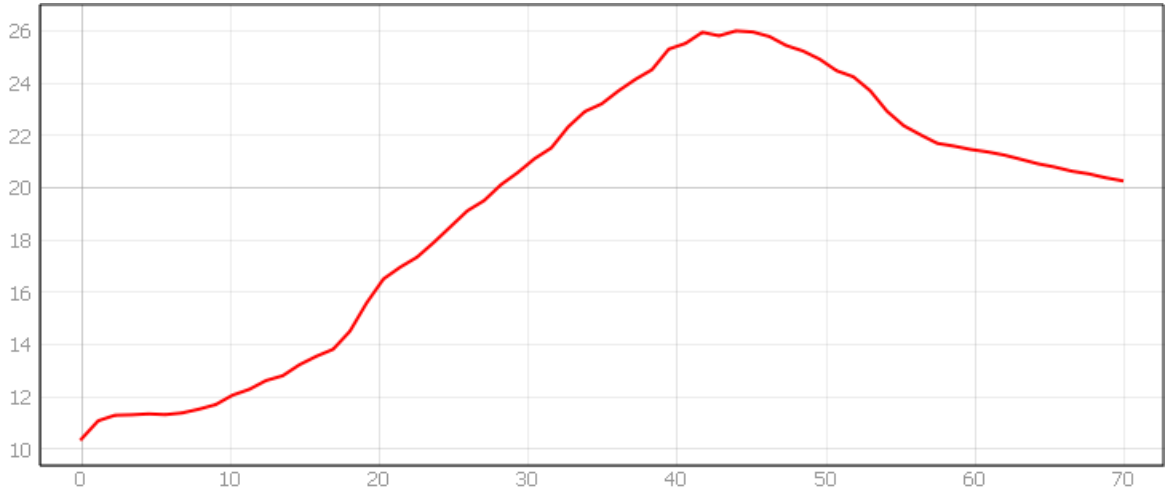
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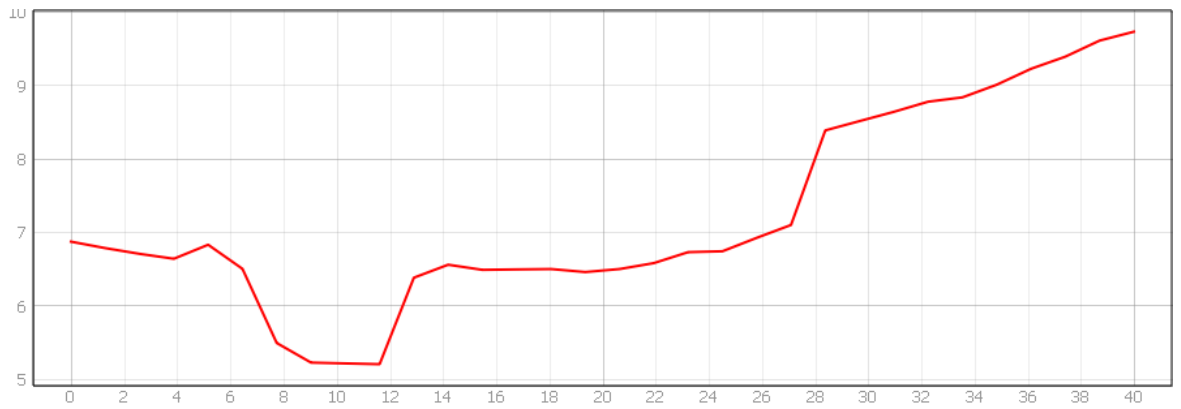
Site ID	Profile
A	B

Section 3 Profiles of LiDAR sites

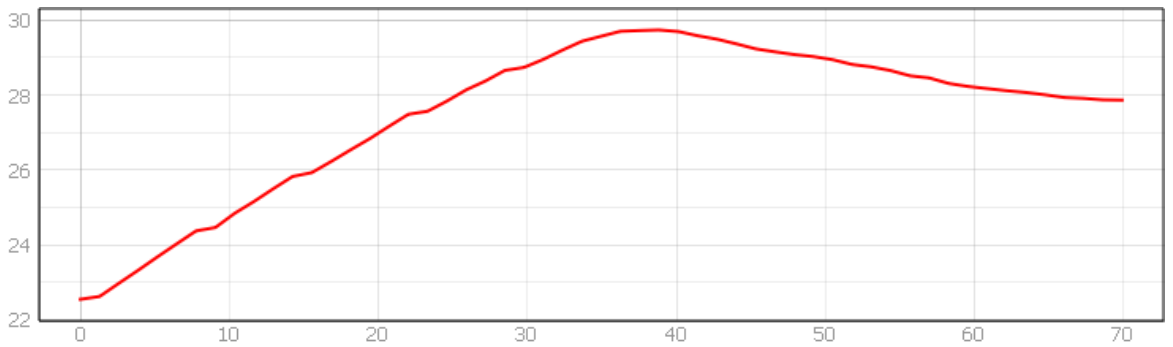
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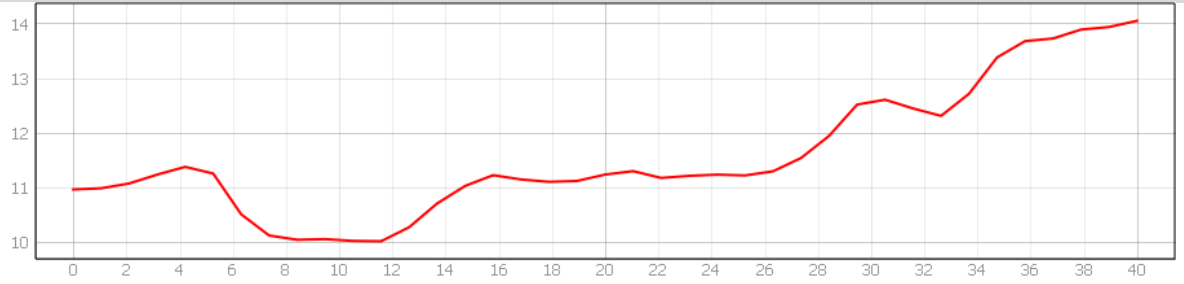


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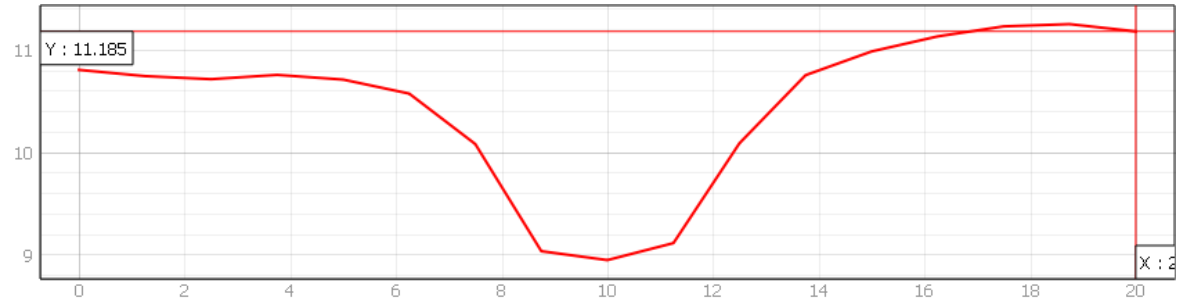


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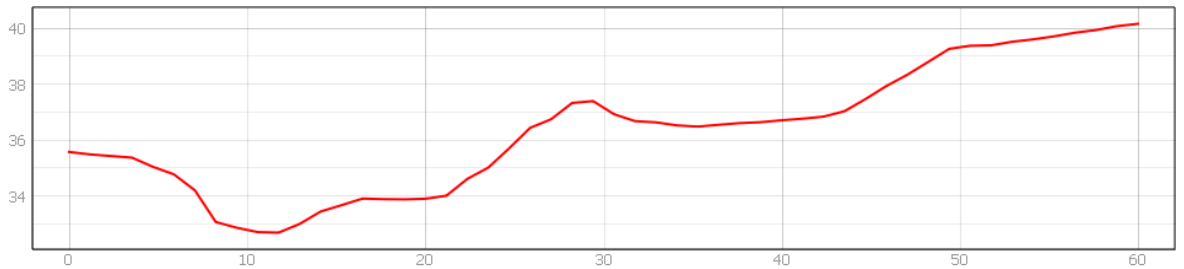
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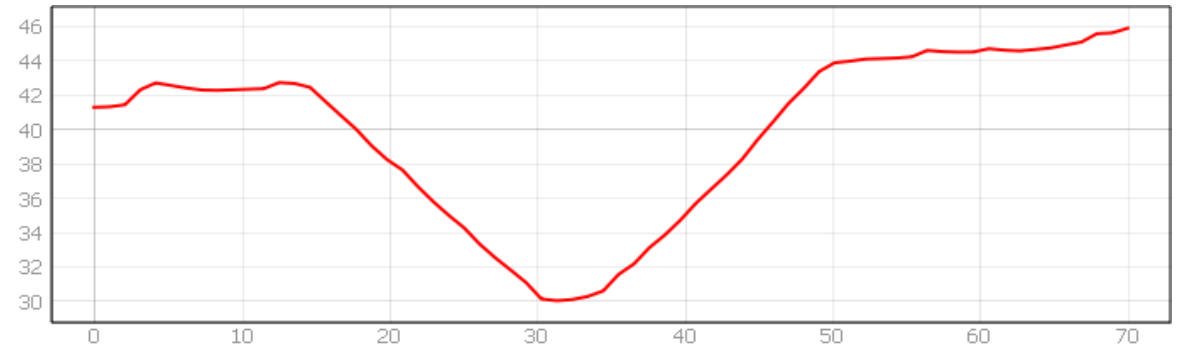
L306-5b



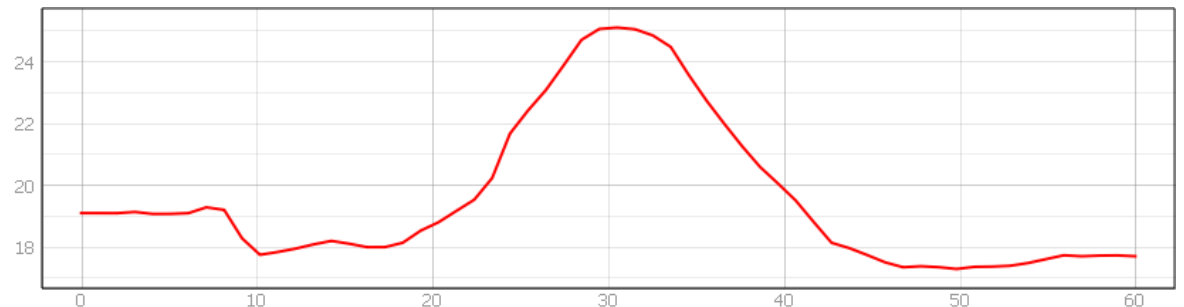
L307-6



L310-1a

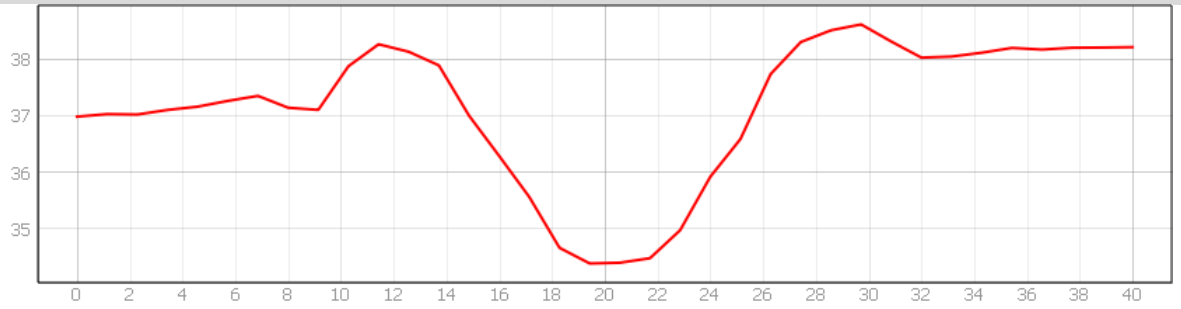


L310-1b

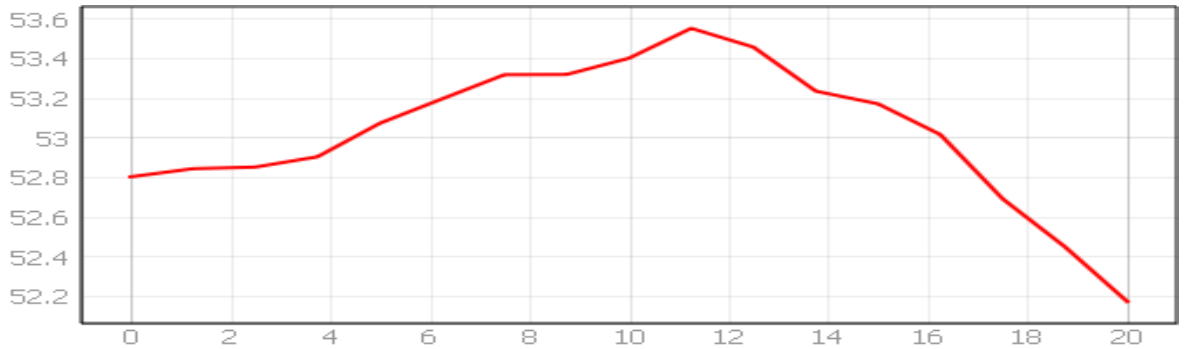


L310-1c

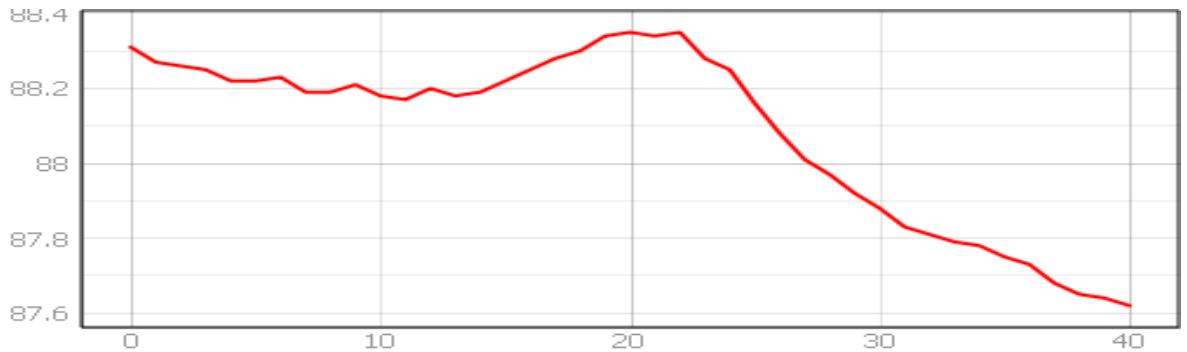
Site ID Profile A B



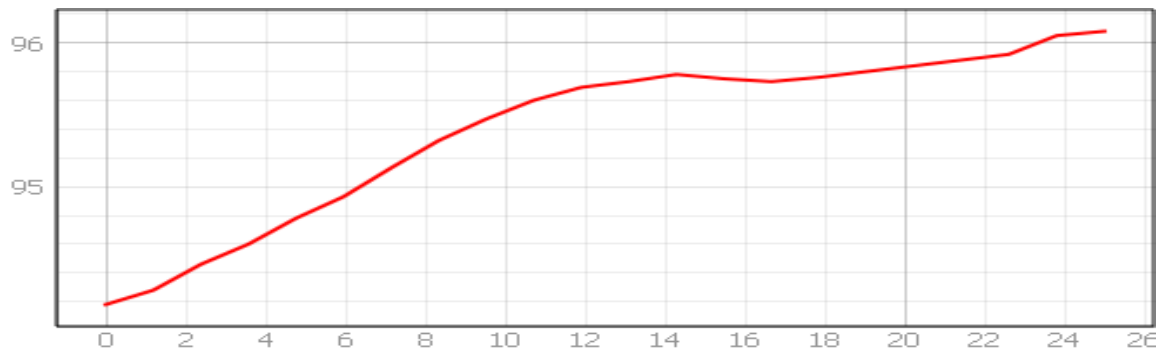
L311-1



L321-1a

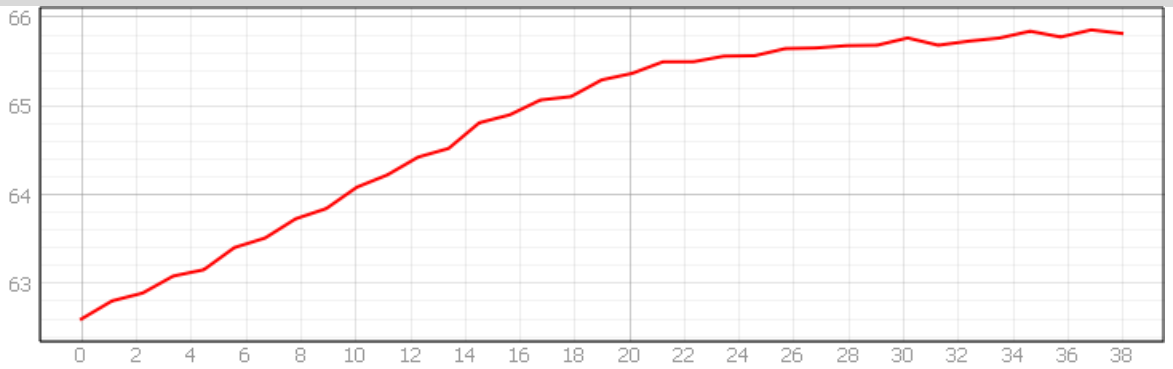


L321-1b

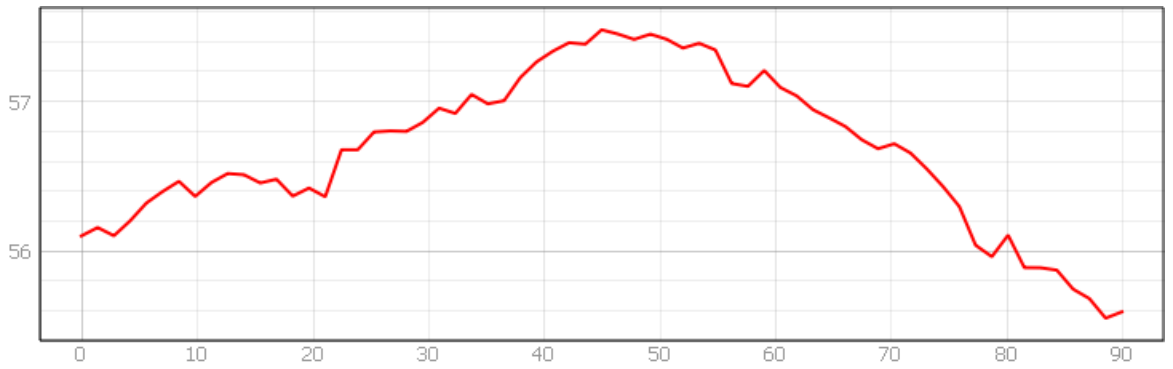


Site ID Profile A B

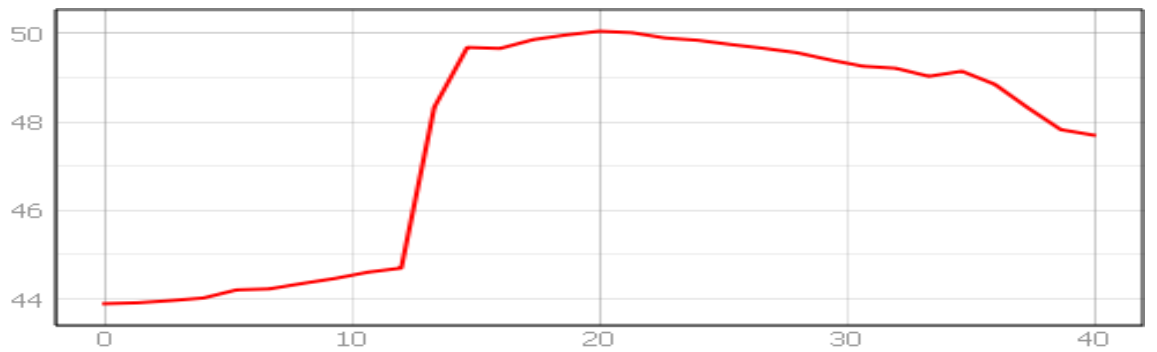
L334-1



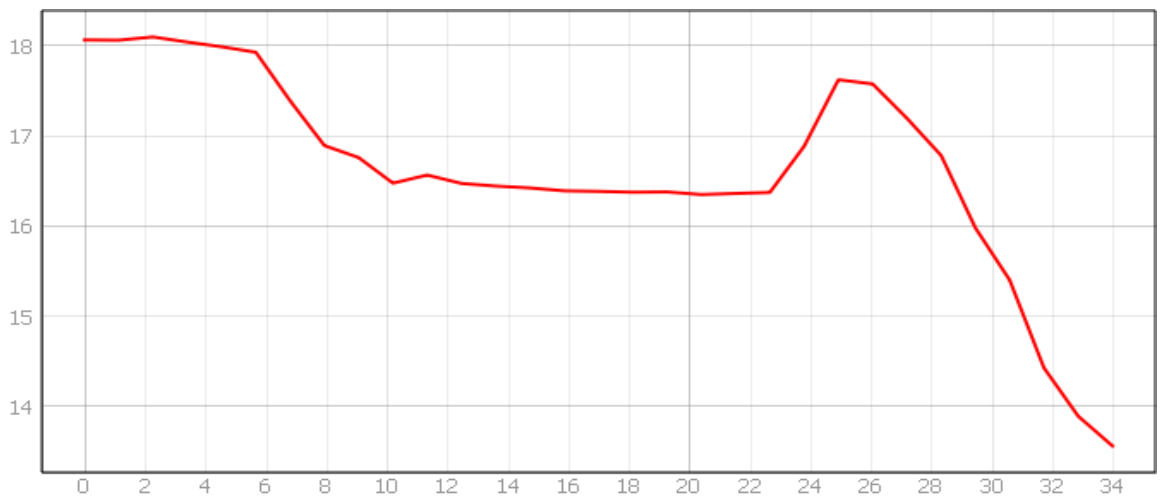
L334-2

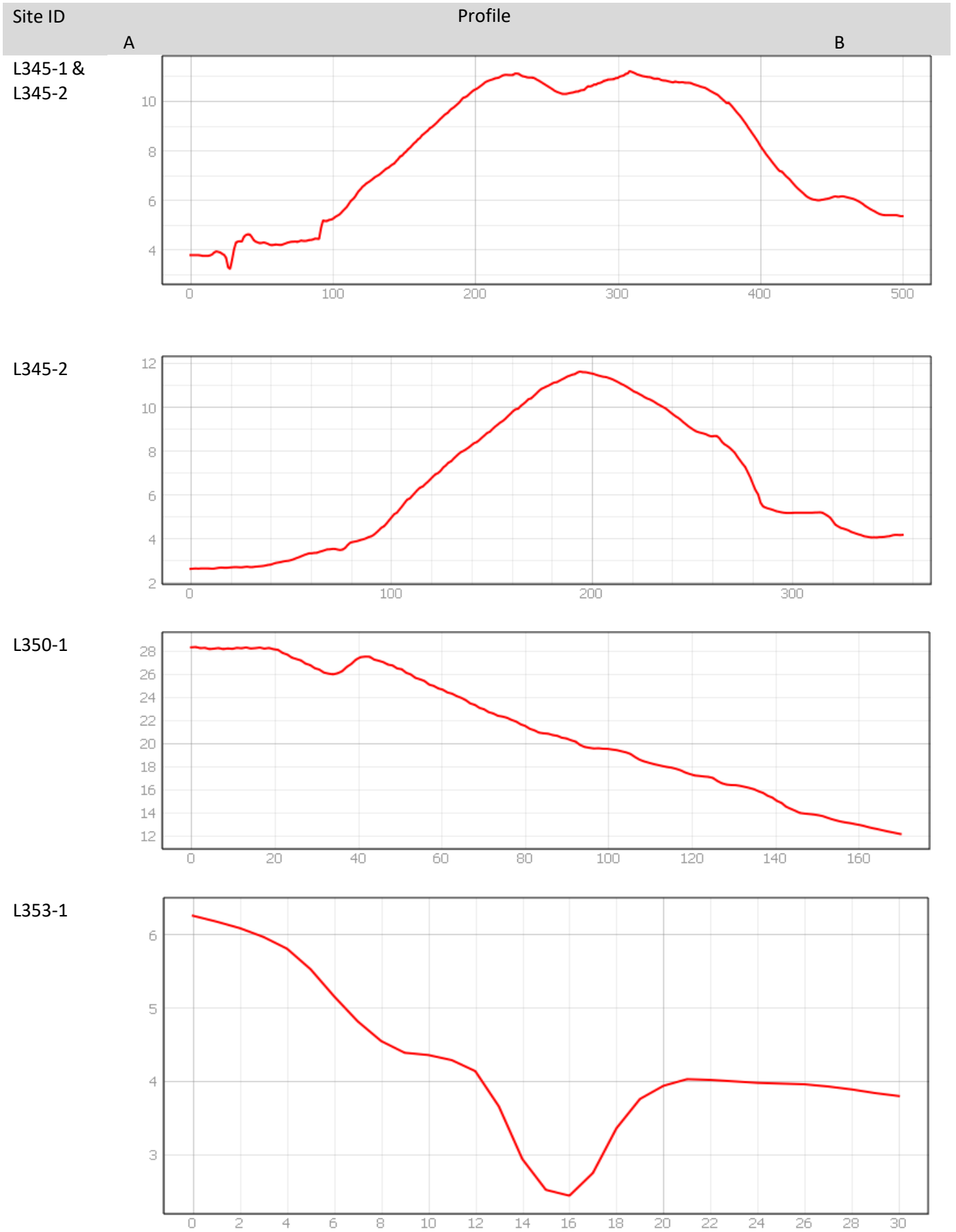


L335-2

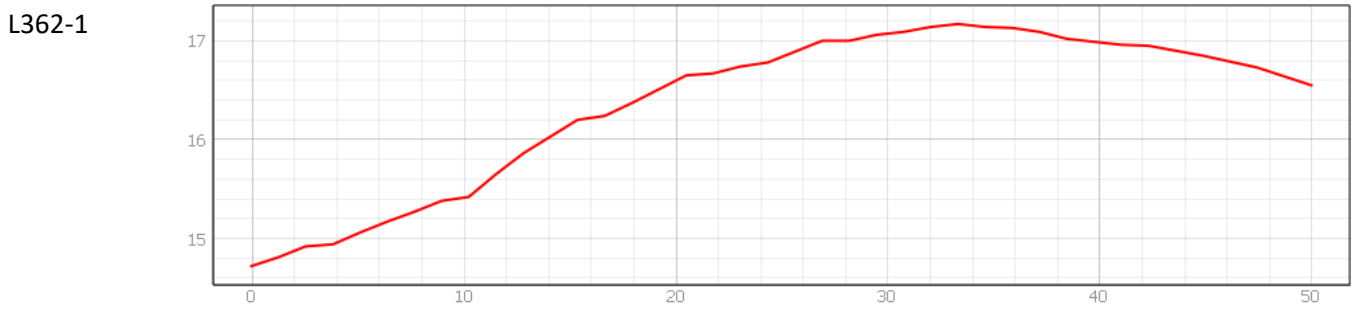
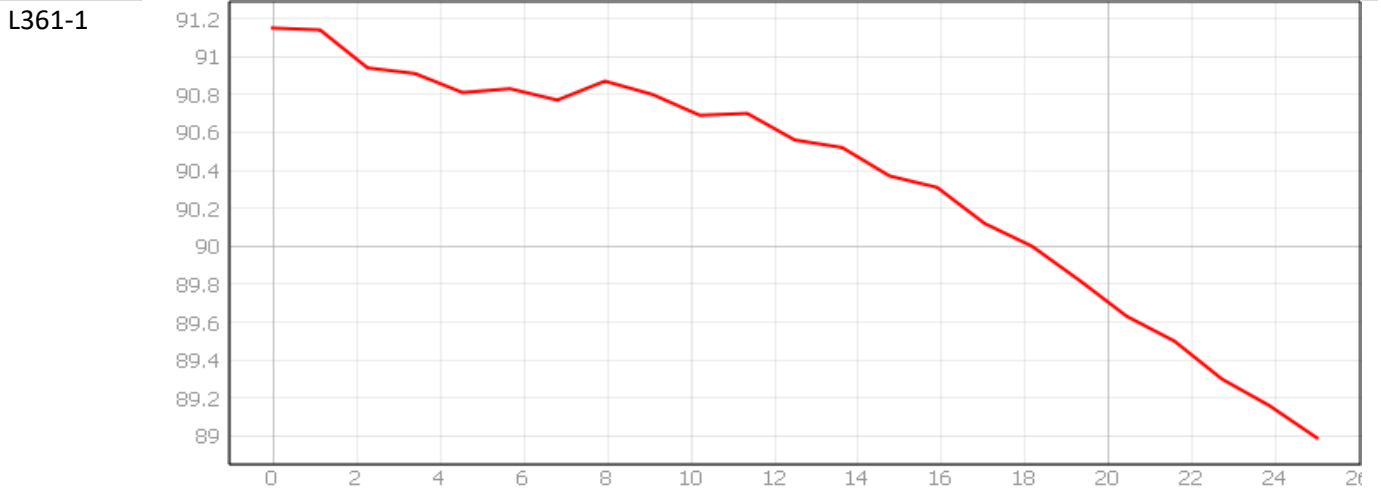


L338-4



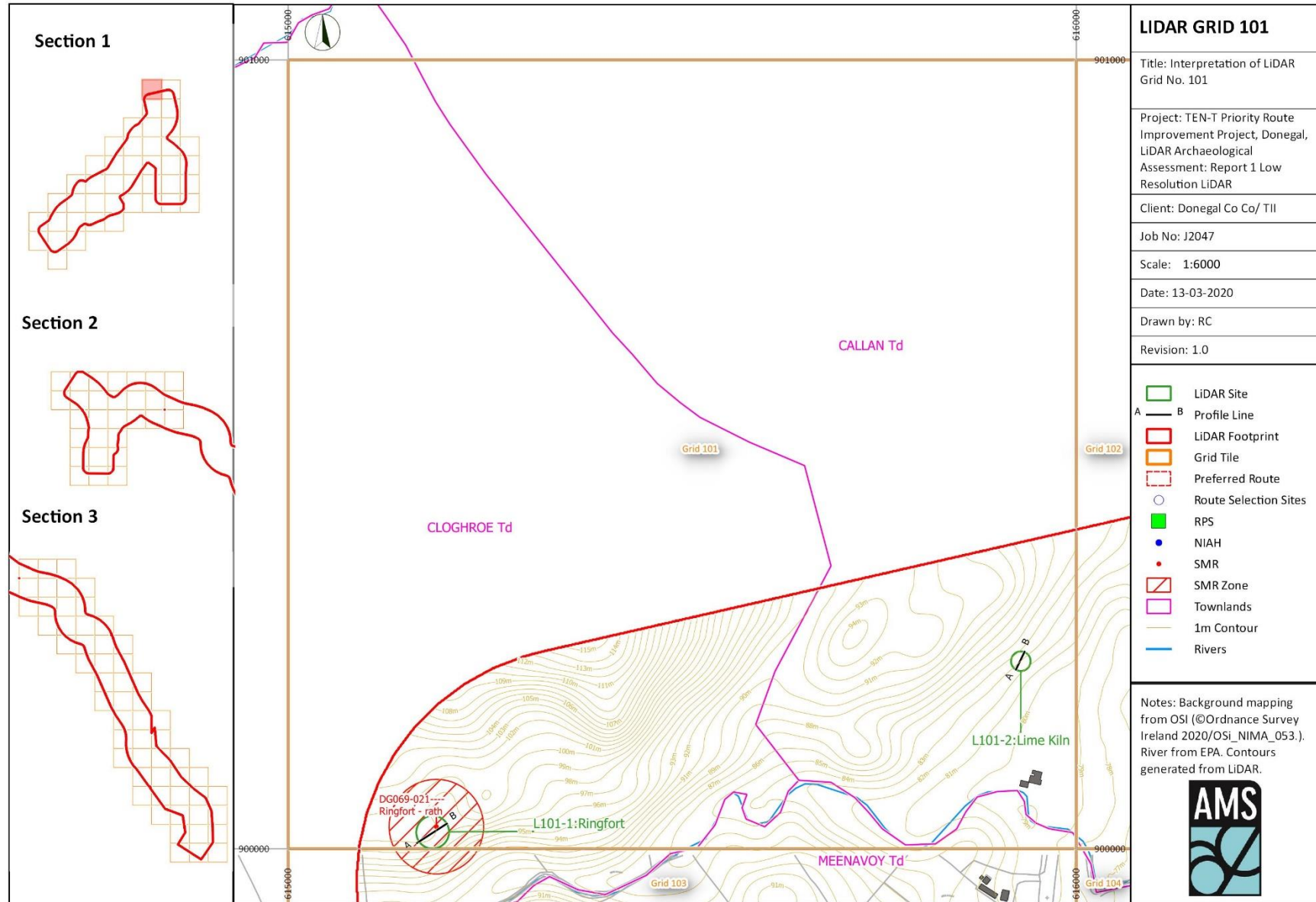


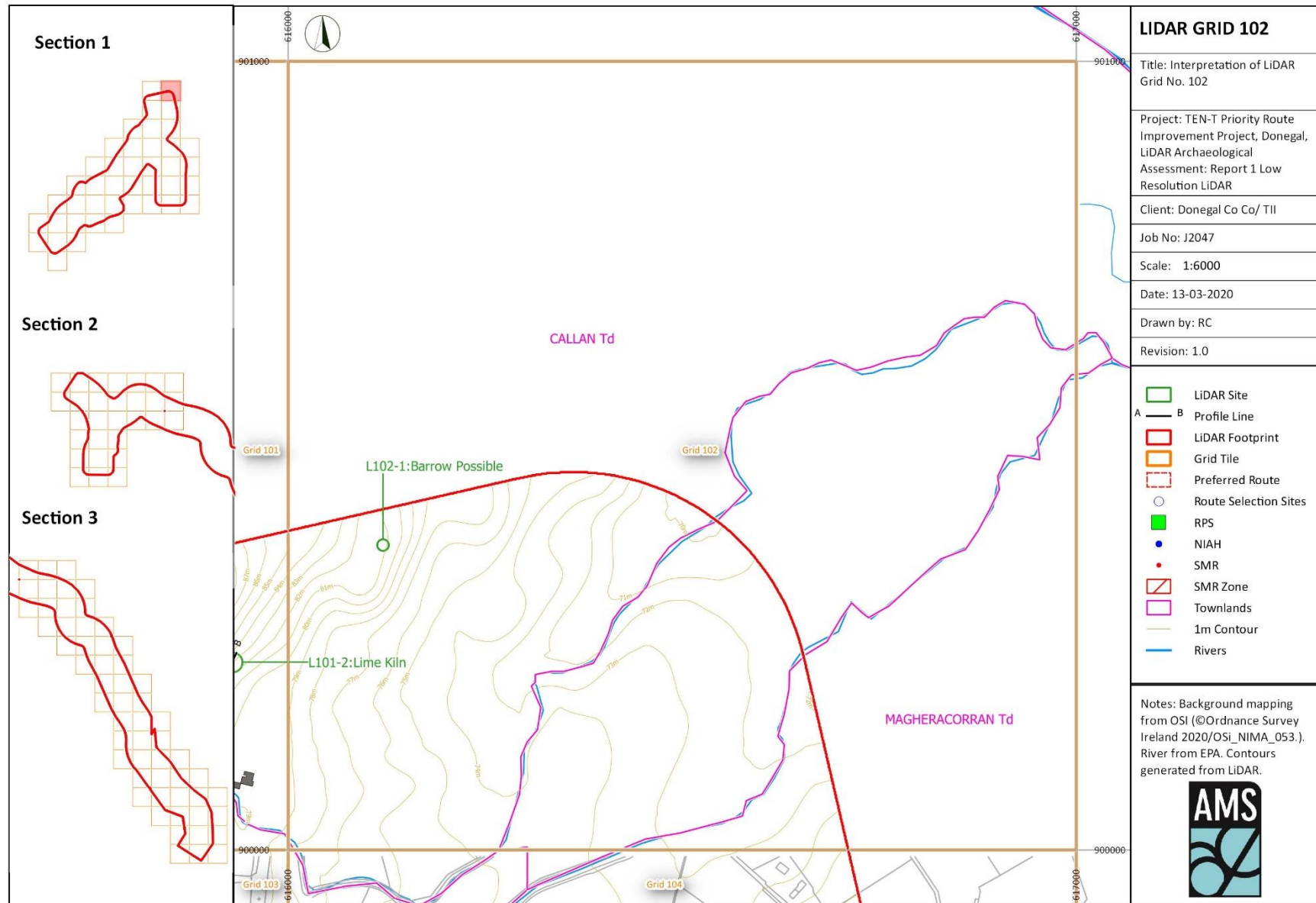
Site ID	Profile	
	A	B



Appendix 4: Catalogue of Grid Tiles

Section 1 Grid Tiles



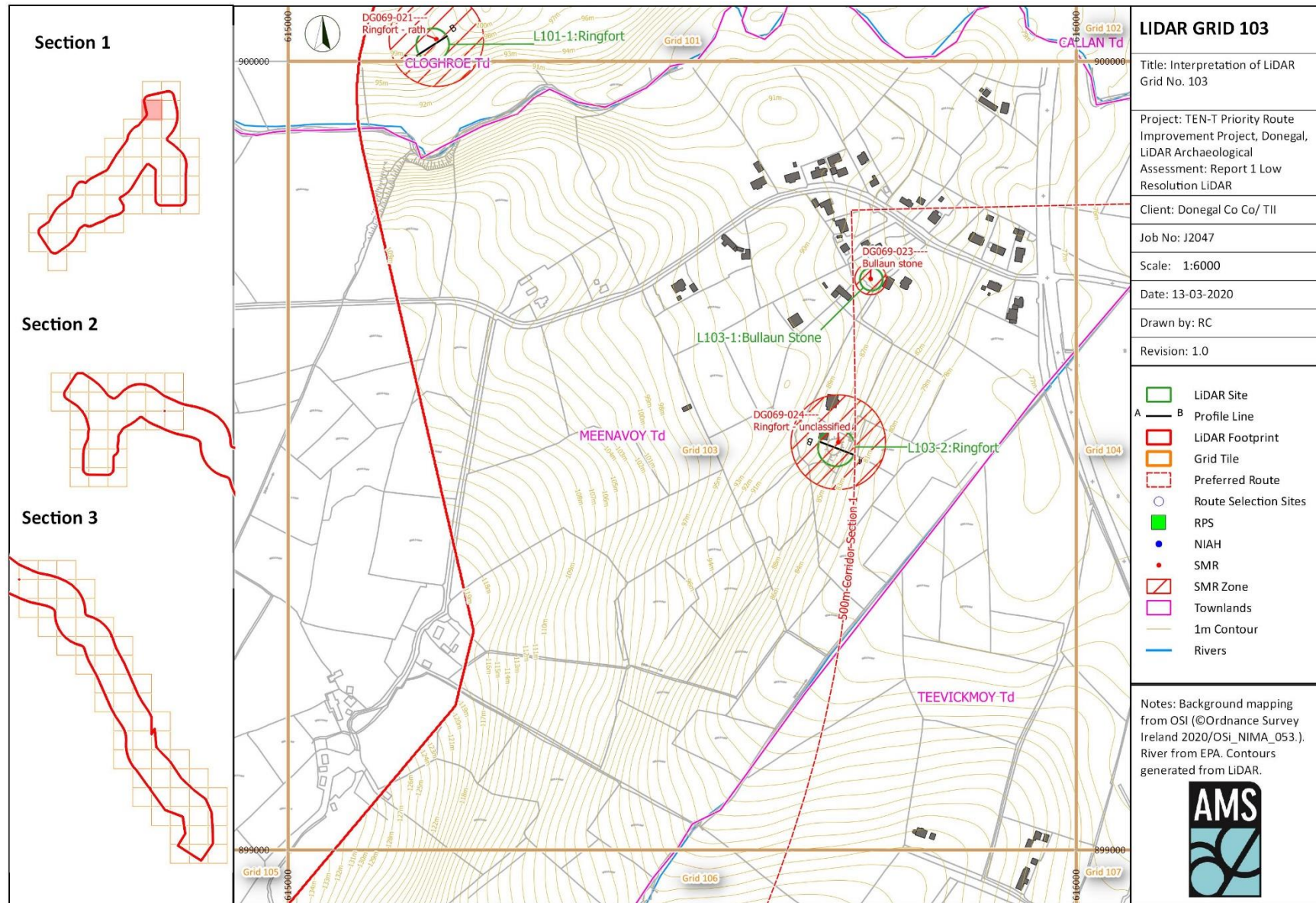


LIDAR GRID 102	
Title:	Interpretation of LiDAR Grid No. 102
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0

- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.



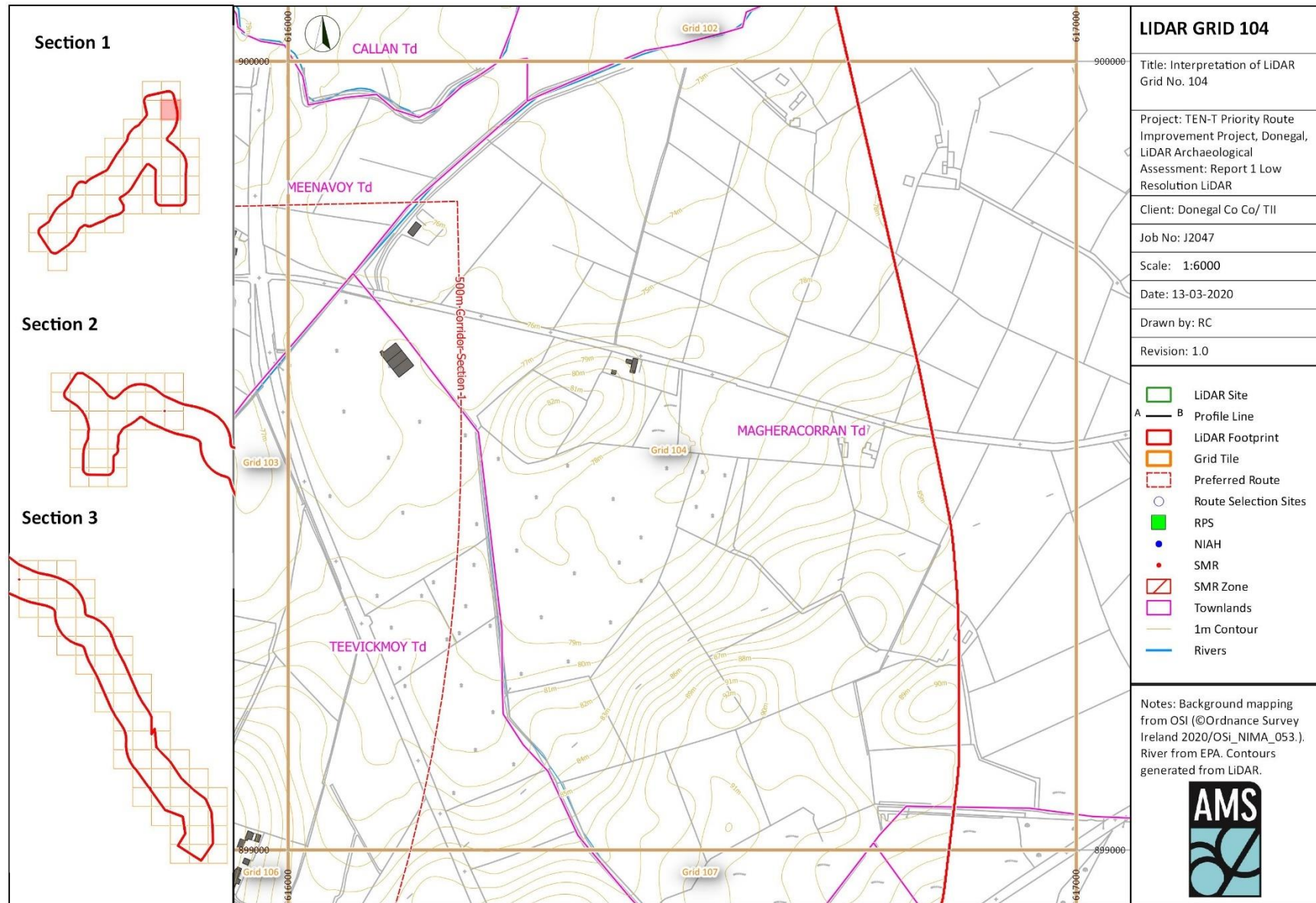


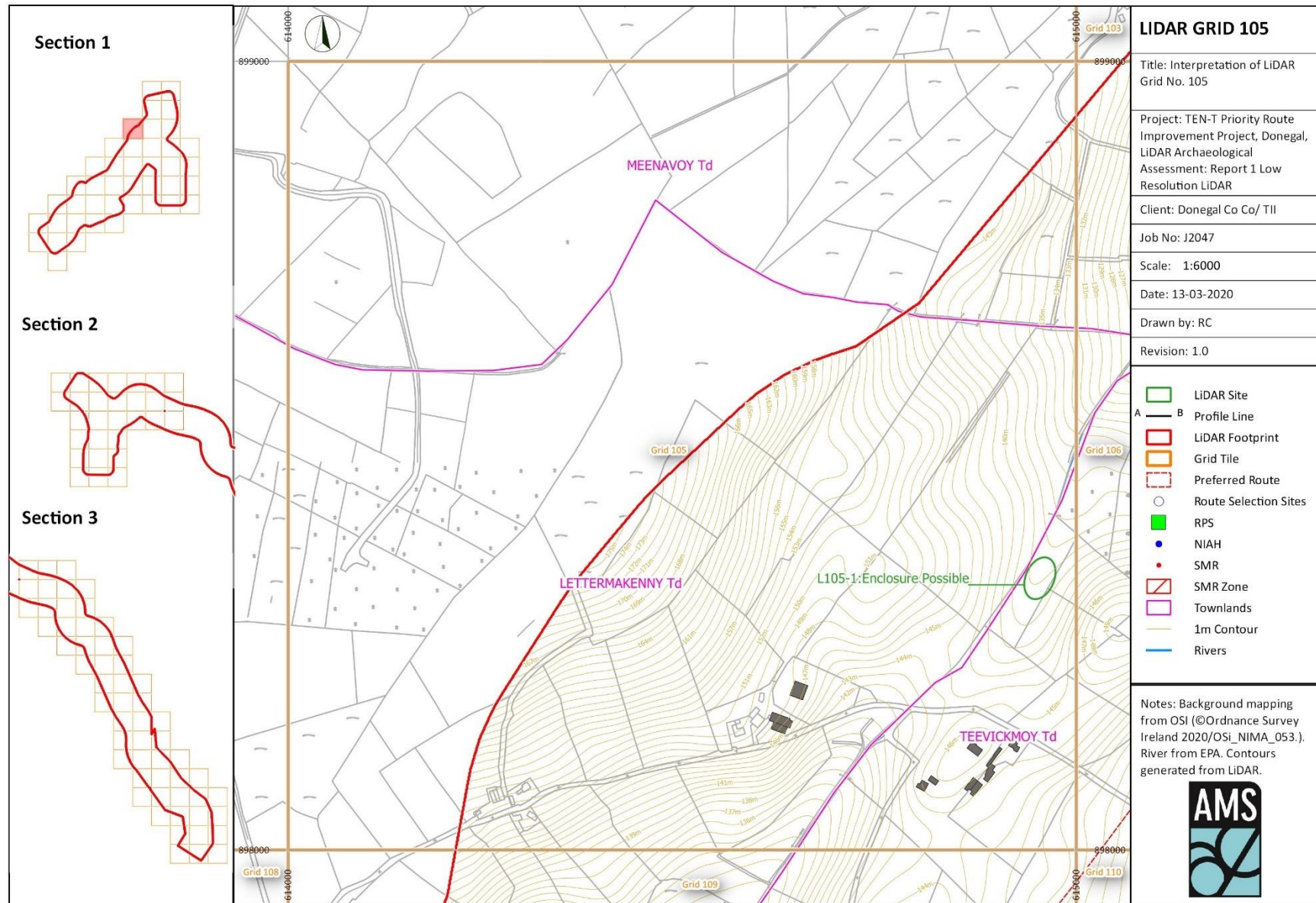
LIDAR GRID 103	
Title:	Interpretation of LiDAR Grid No. 103
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0

- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.





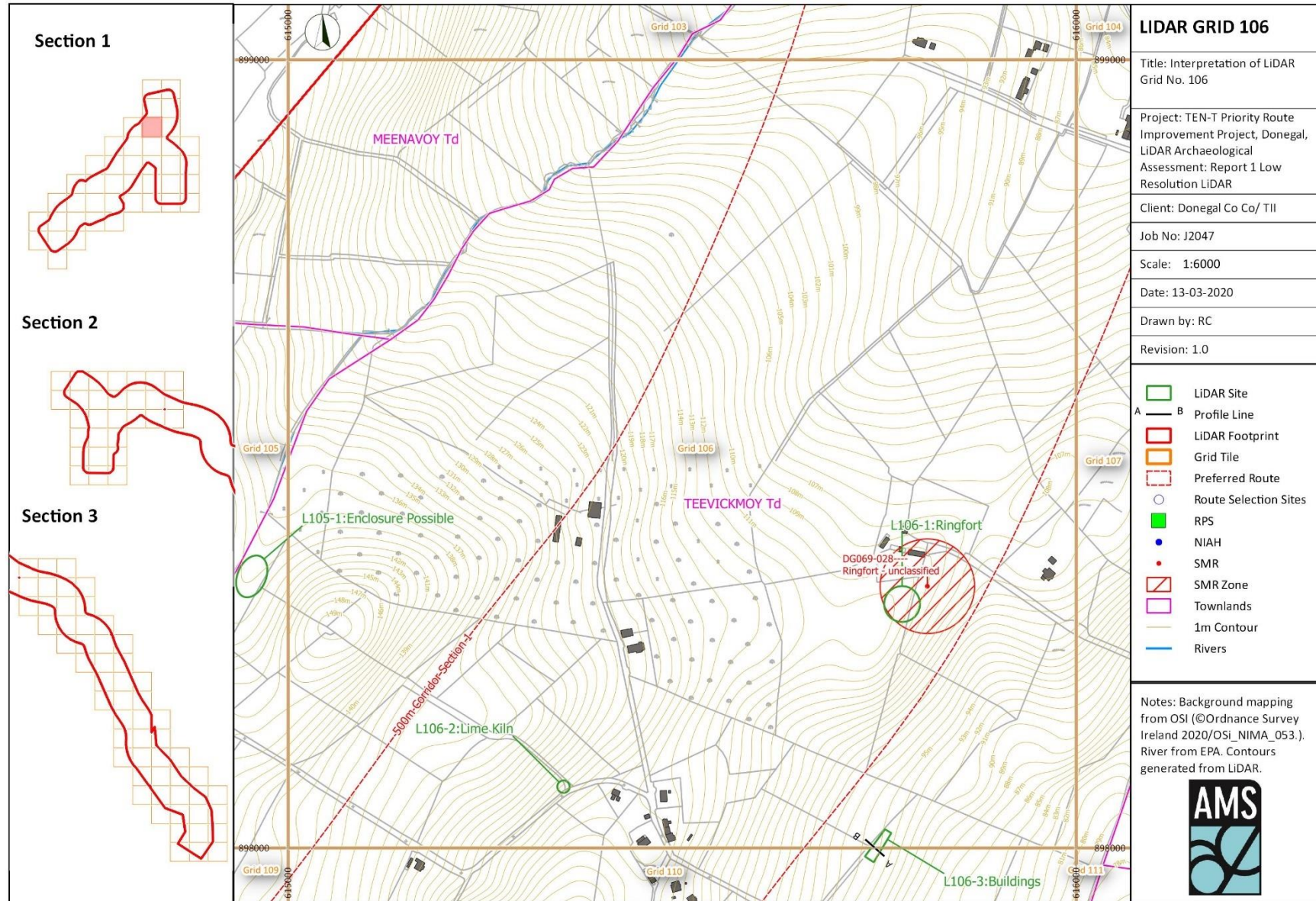


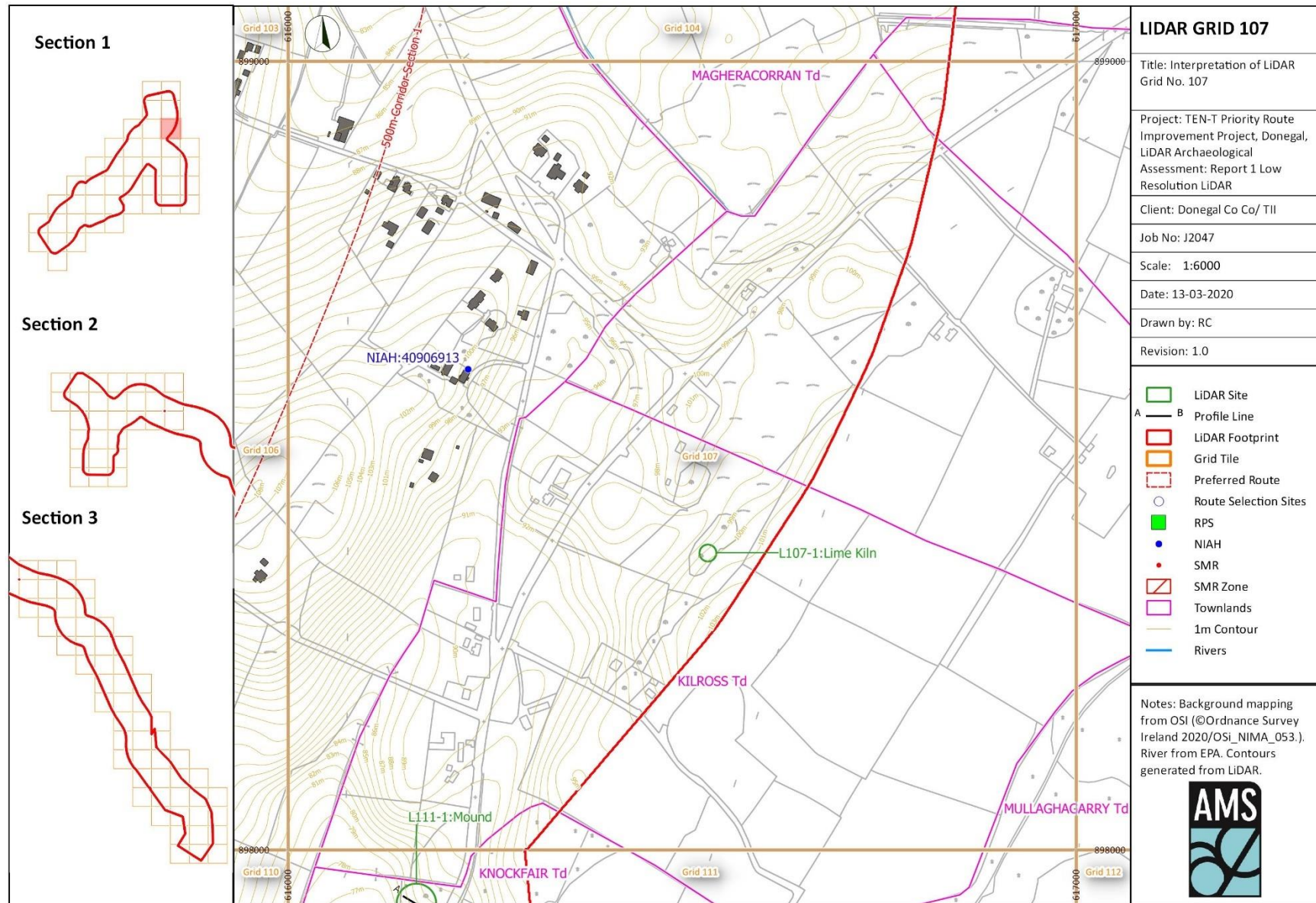
LiDAR GRID 105	
Title:	Interpretation of LiDAR Grid No. 105
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0

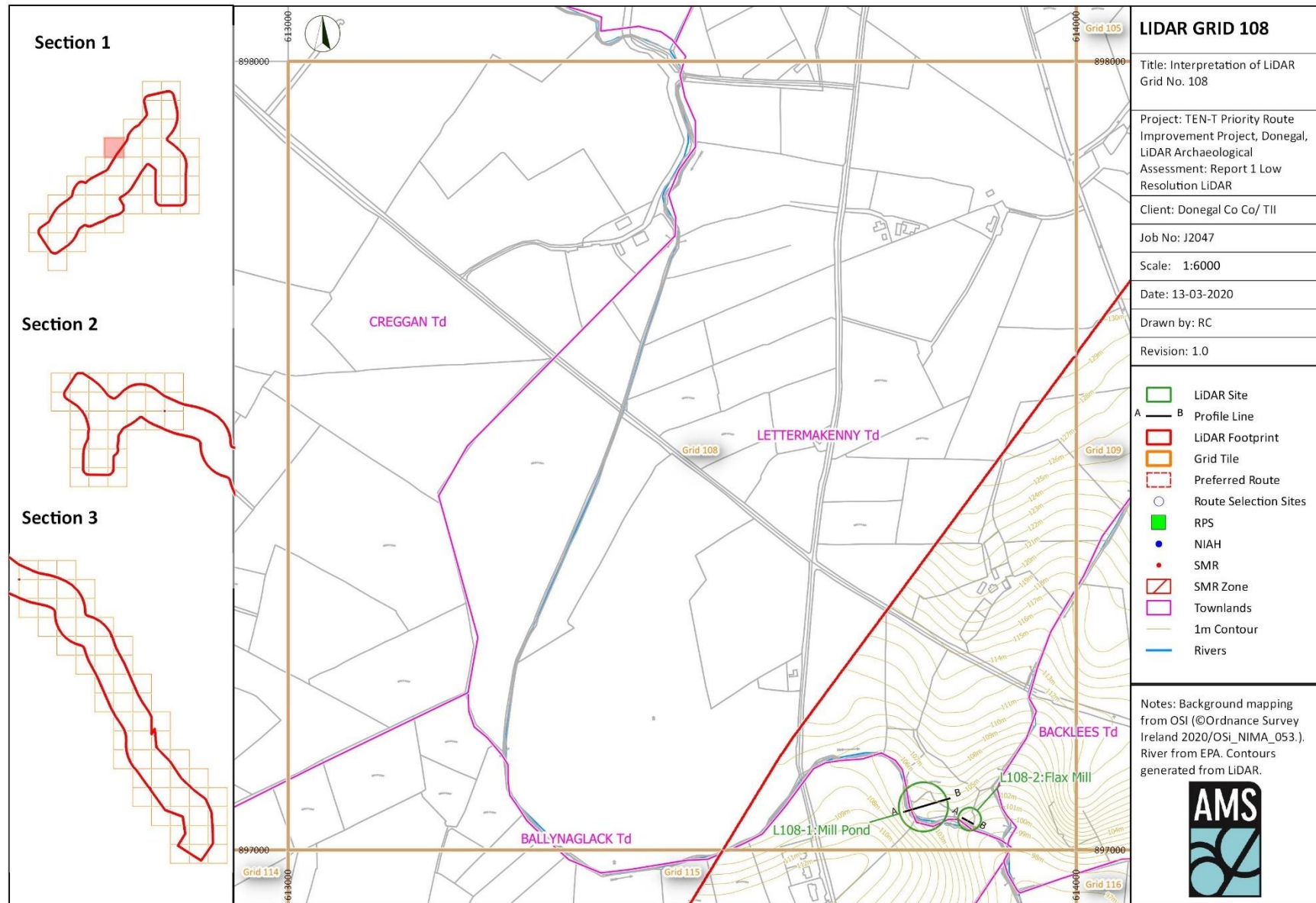
- LiDAR Site
- A Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

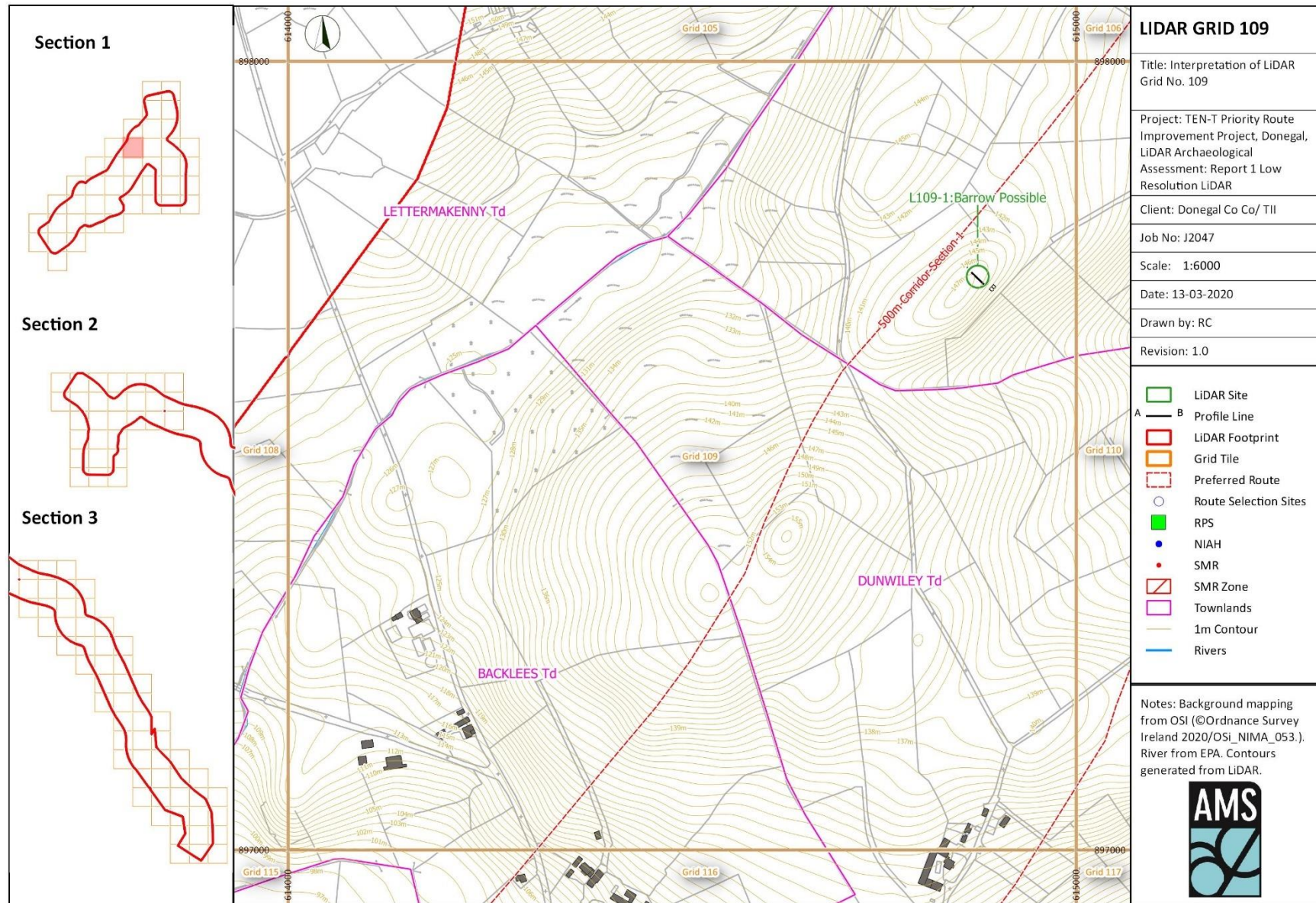
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

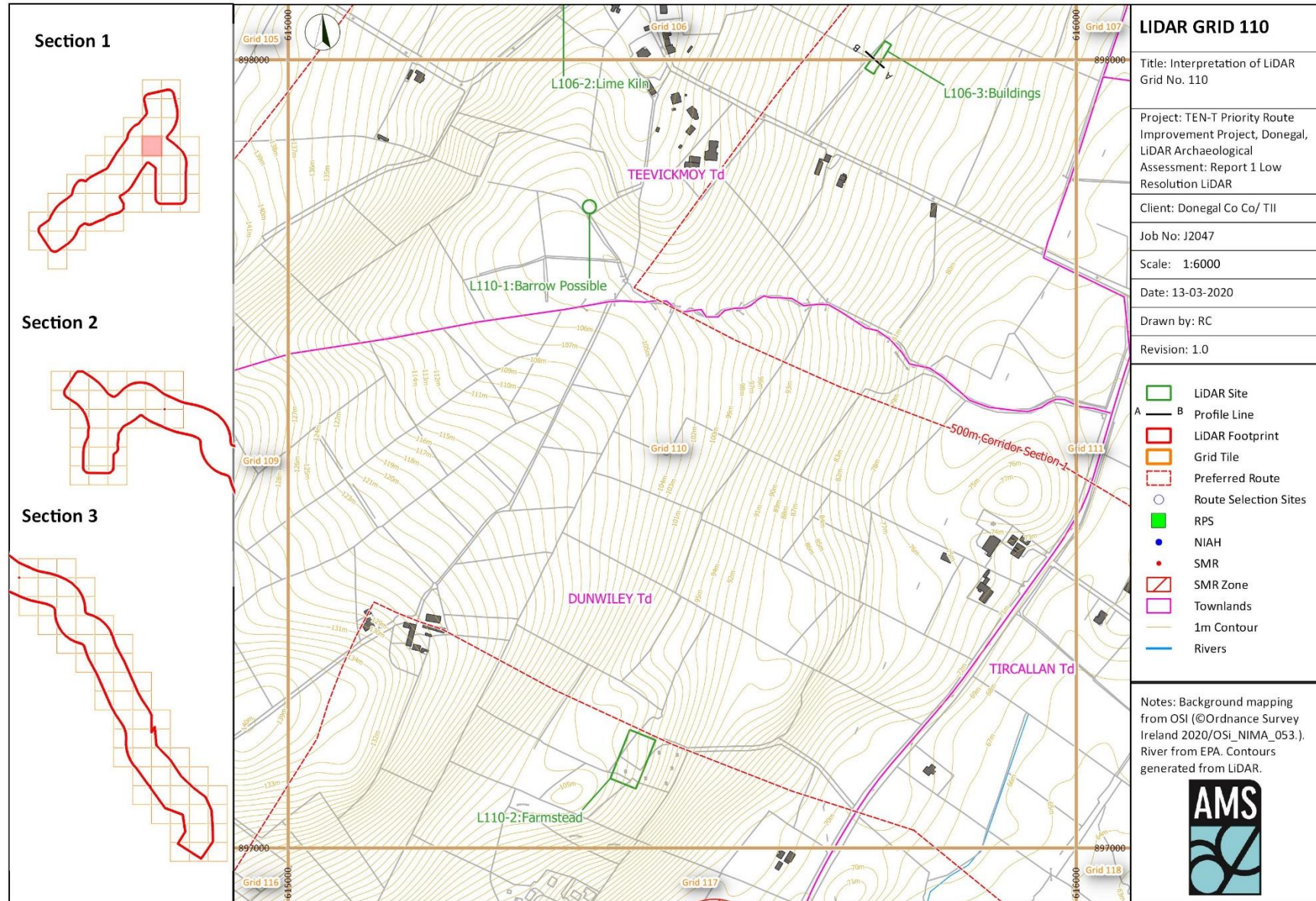


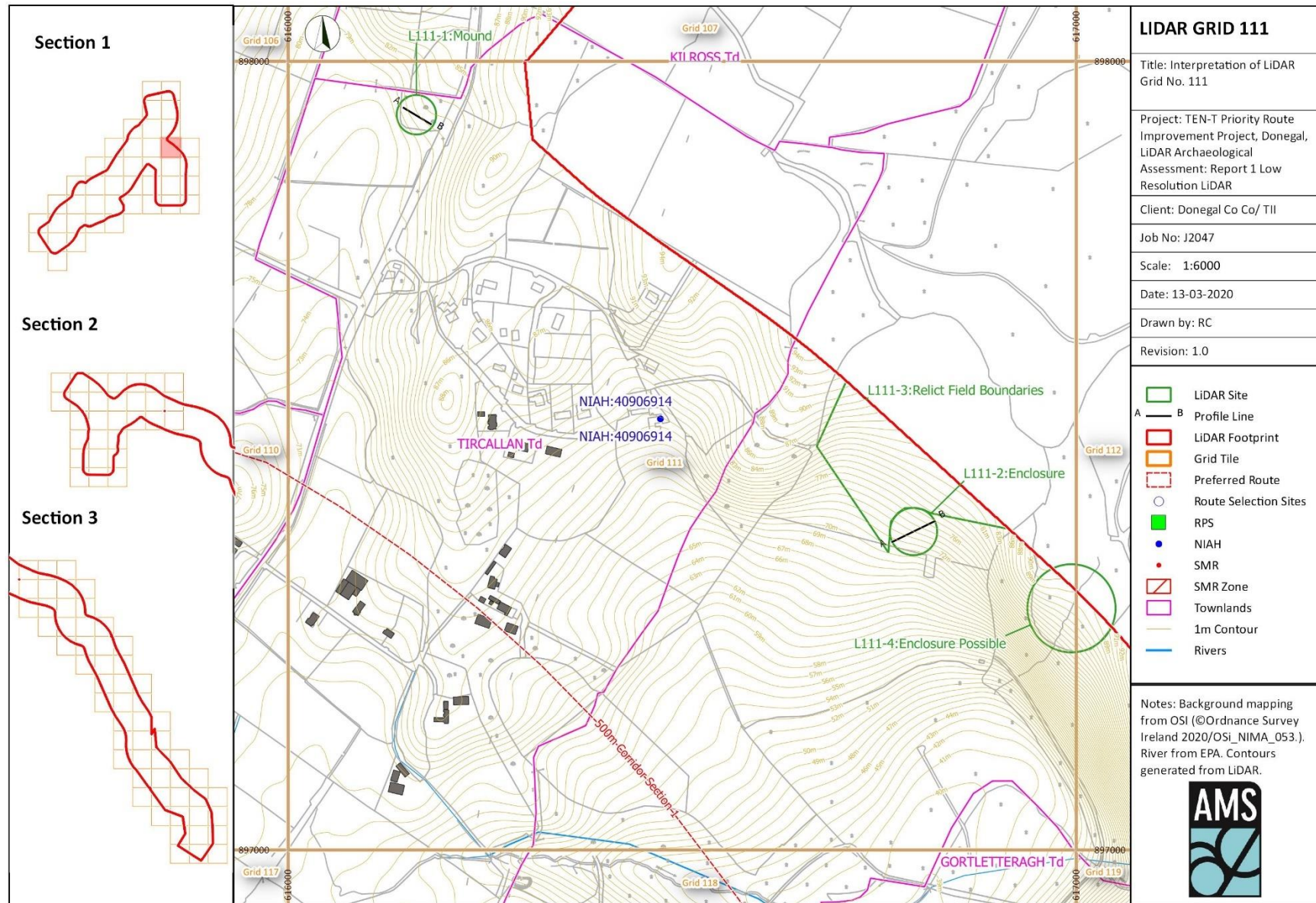


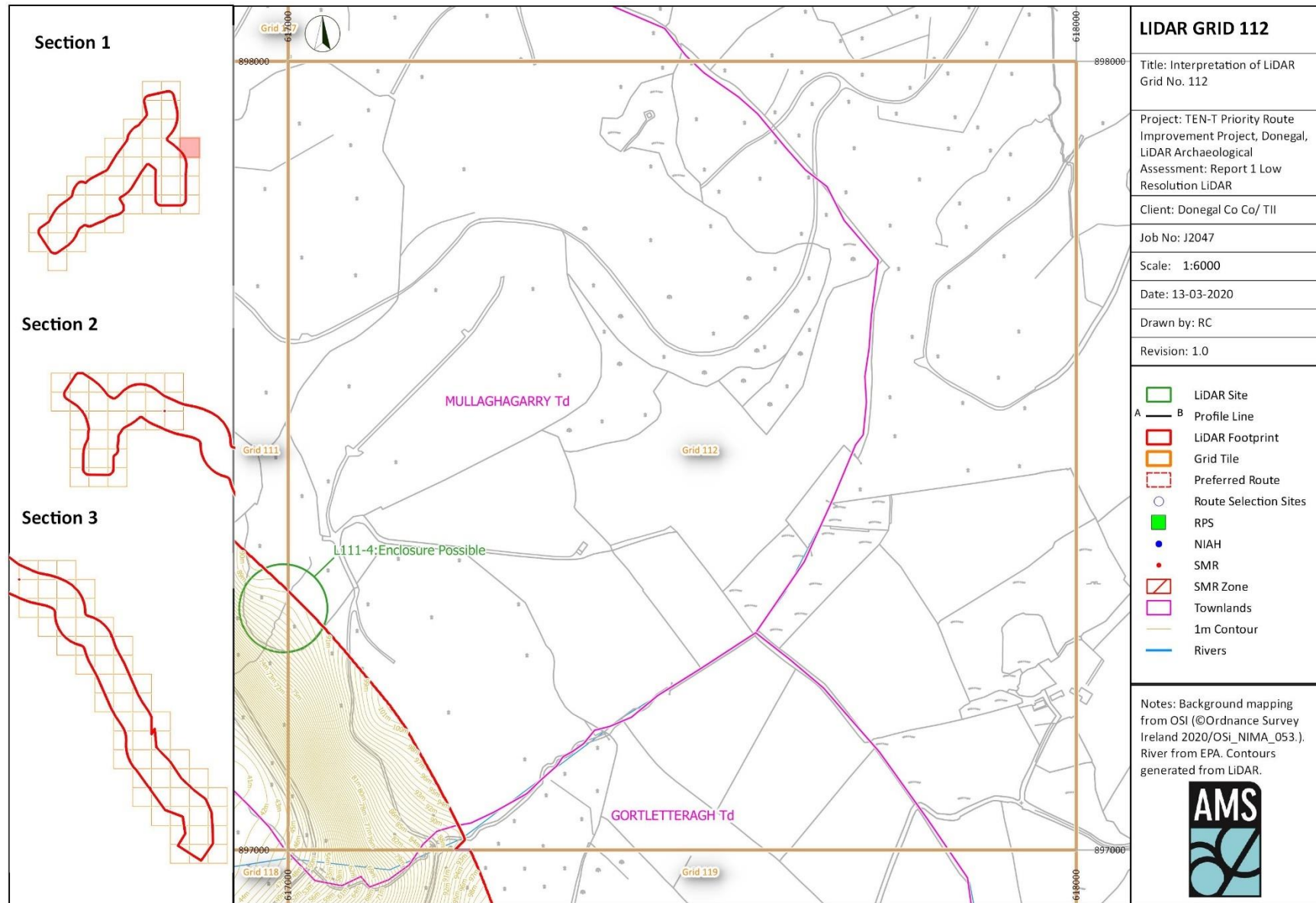




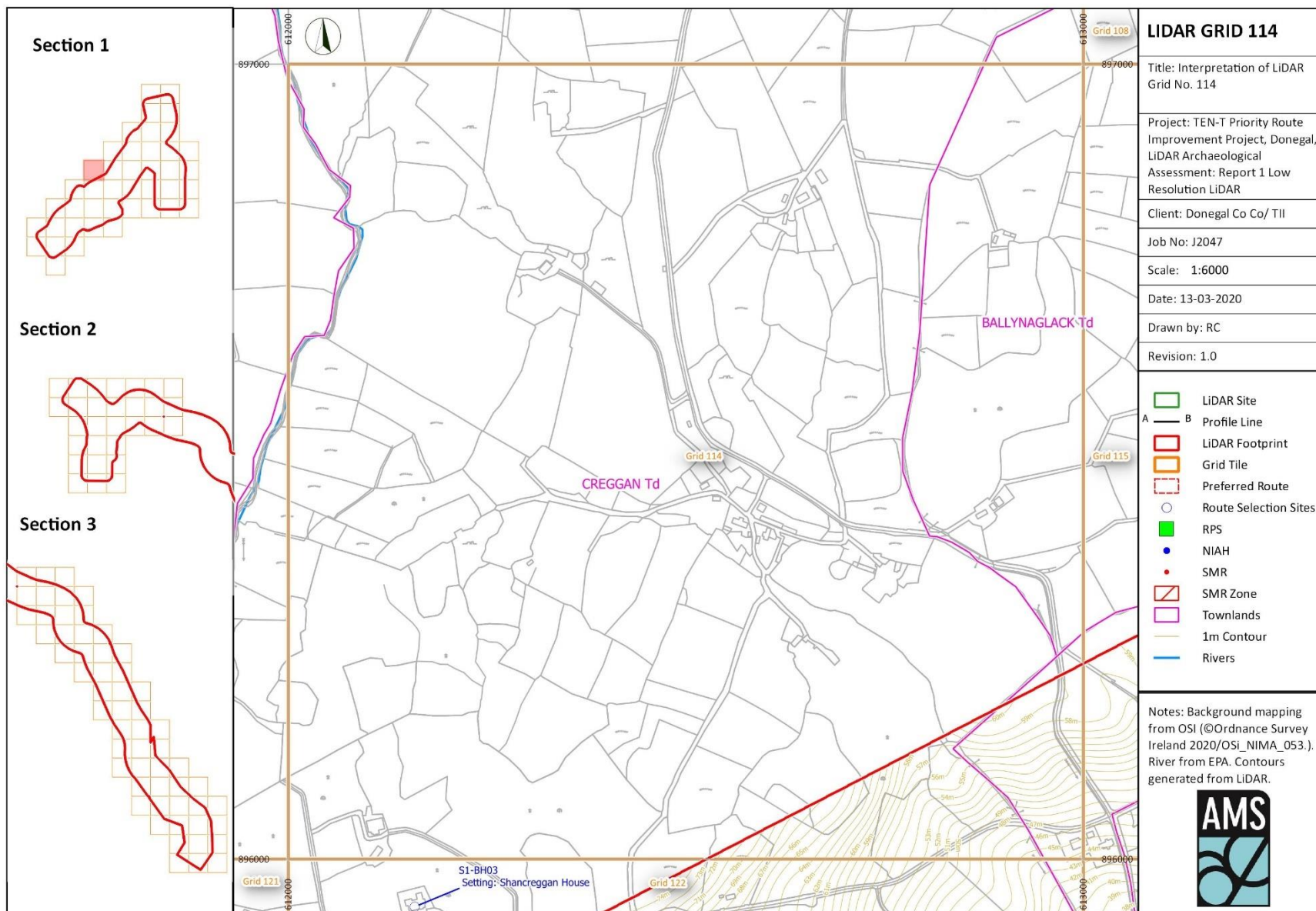


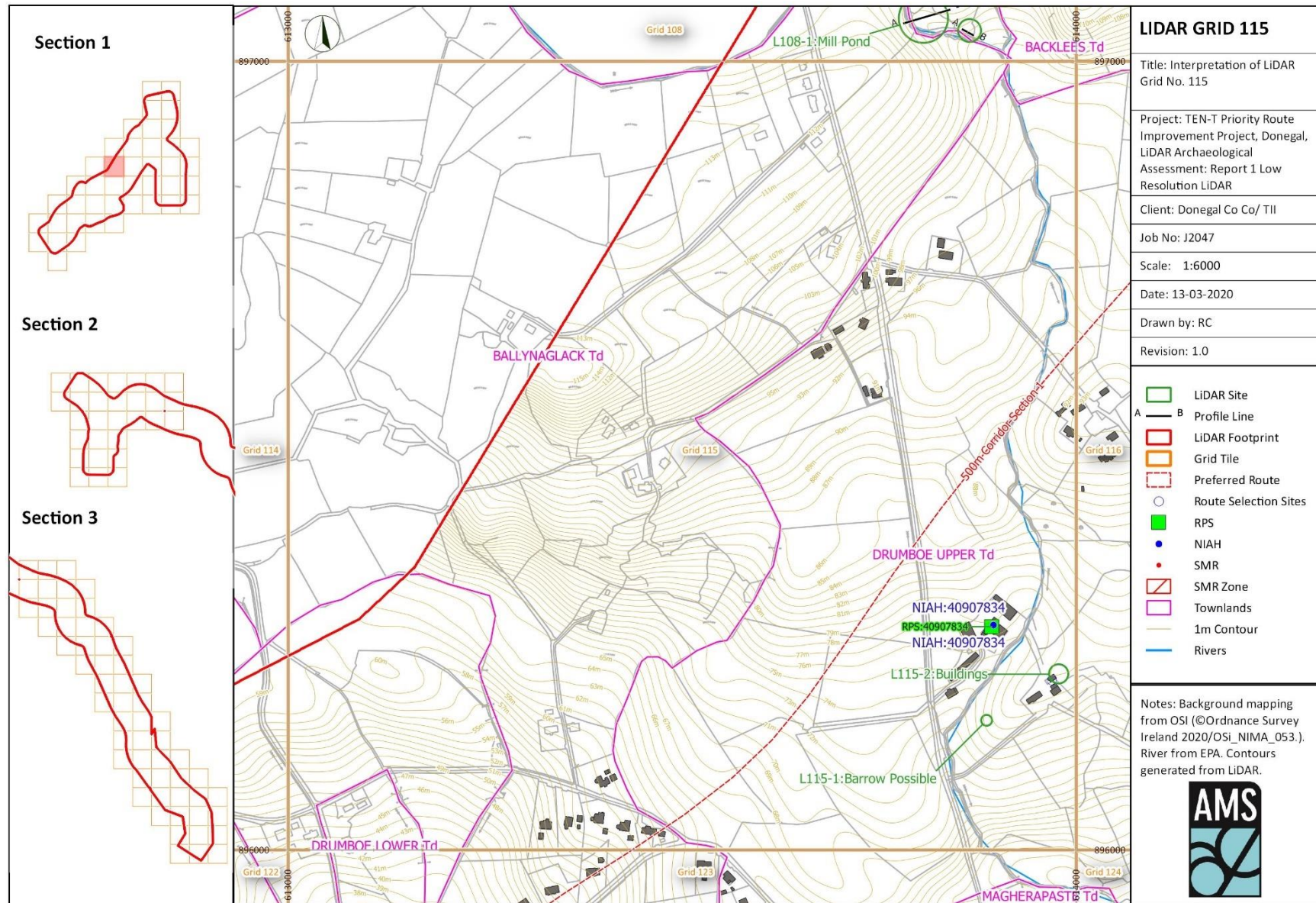


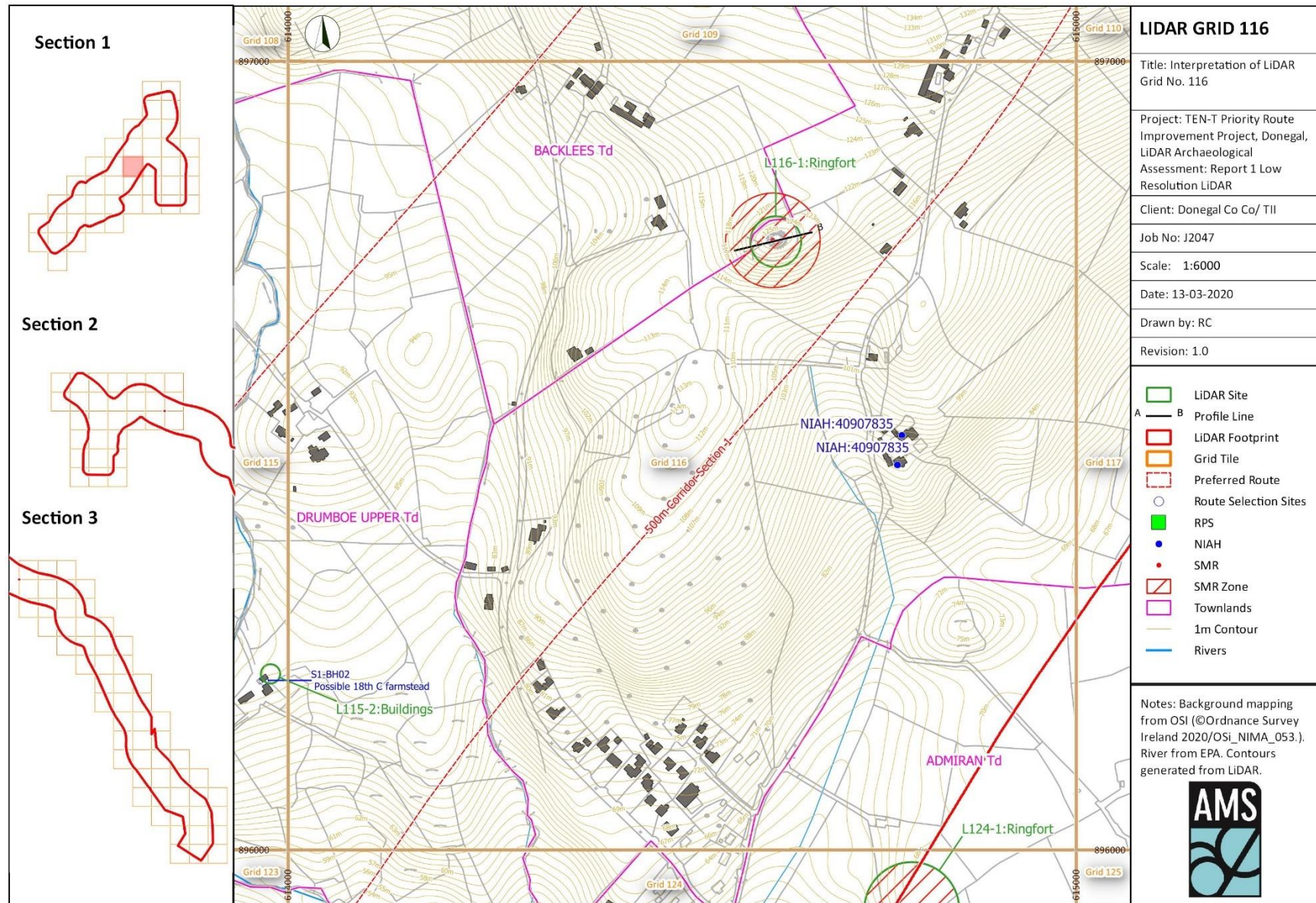




[No Grid 113]





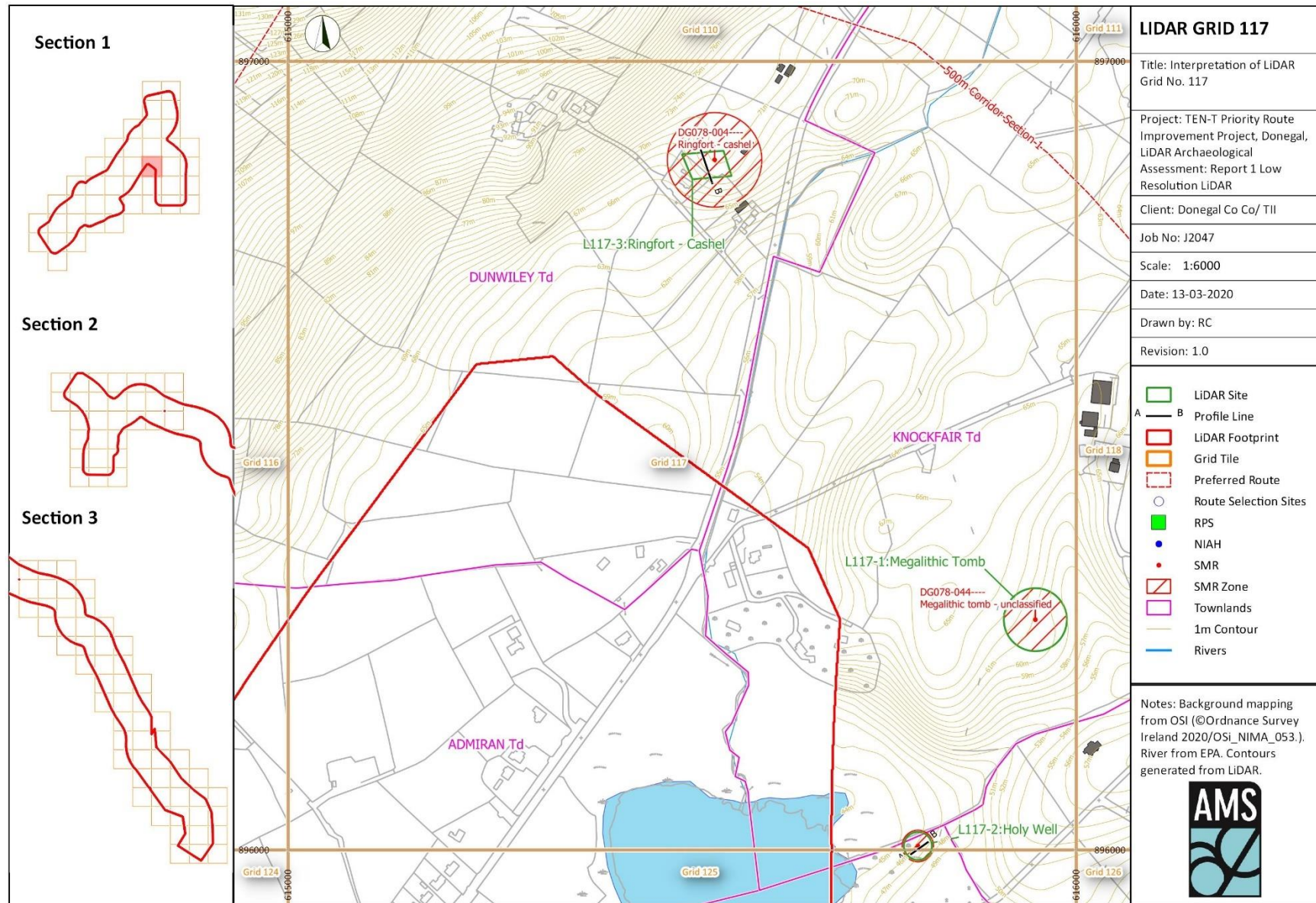


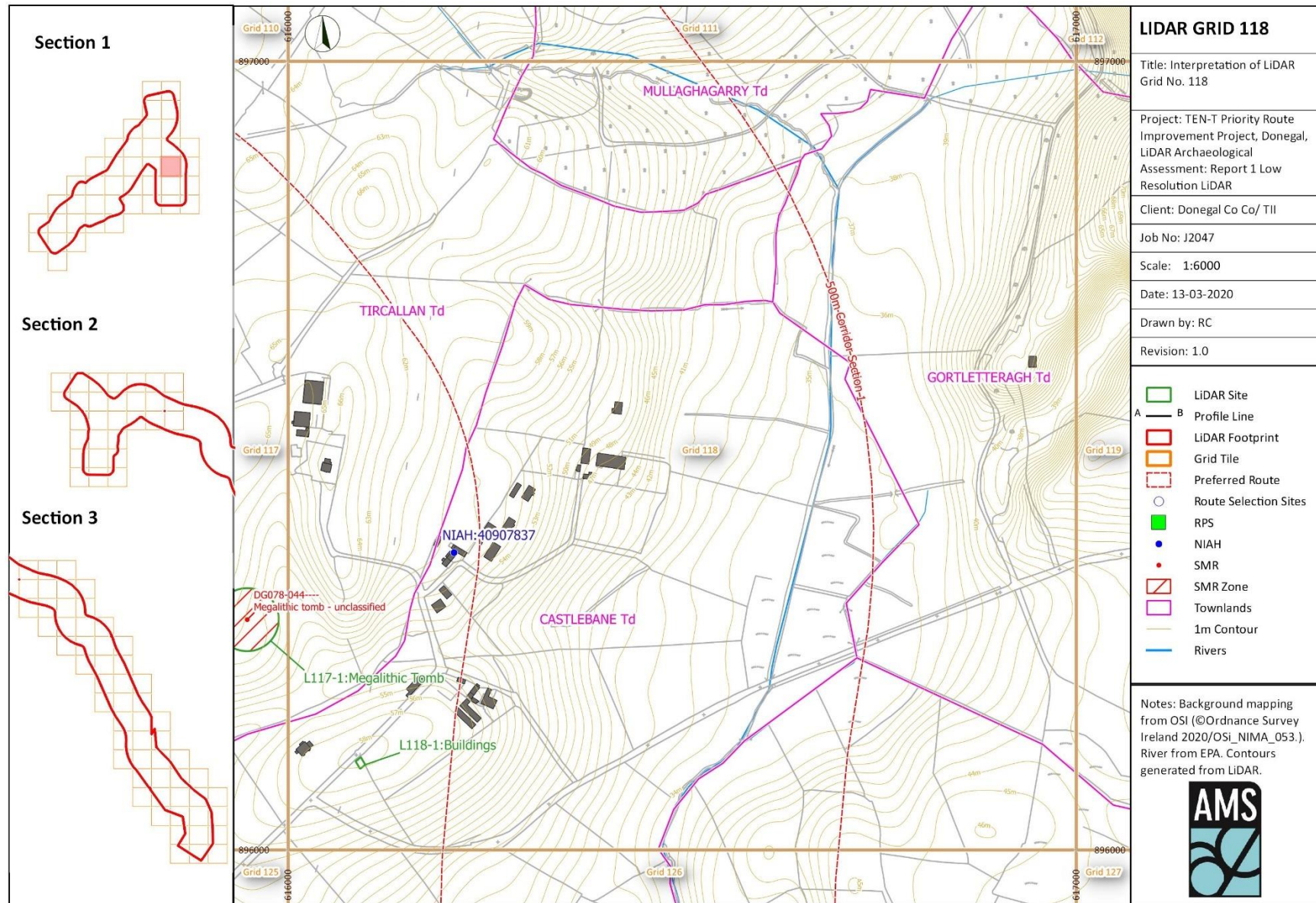
LIDAR GRID 116	
Title:	Interpretation of LiDAR Grid No. 116
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0

- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- - - Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- / / / SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.







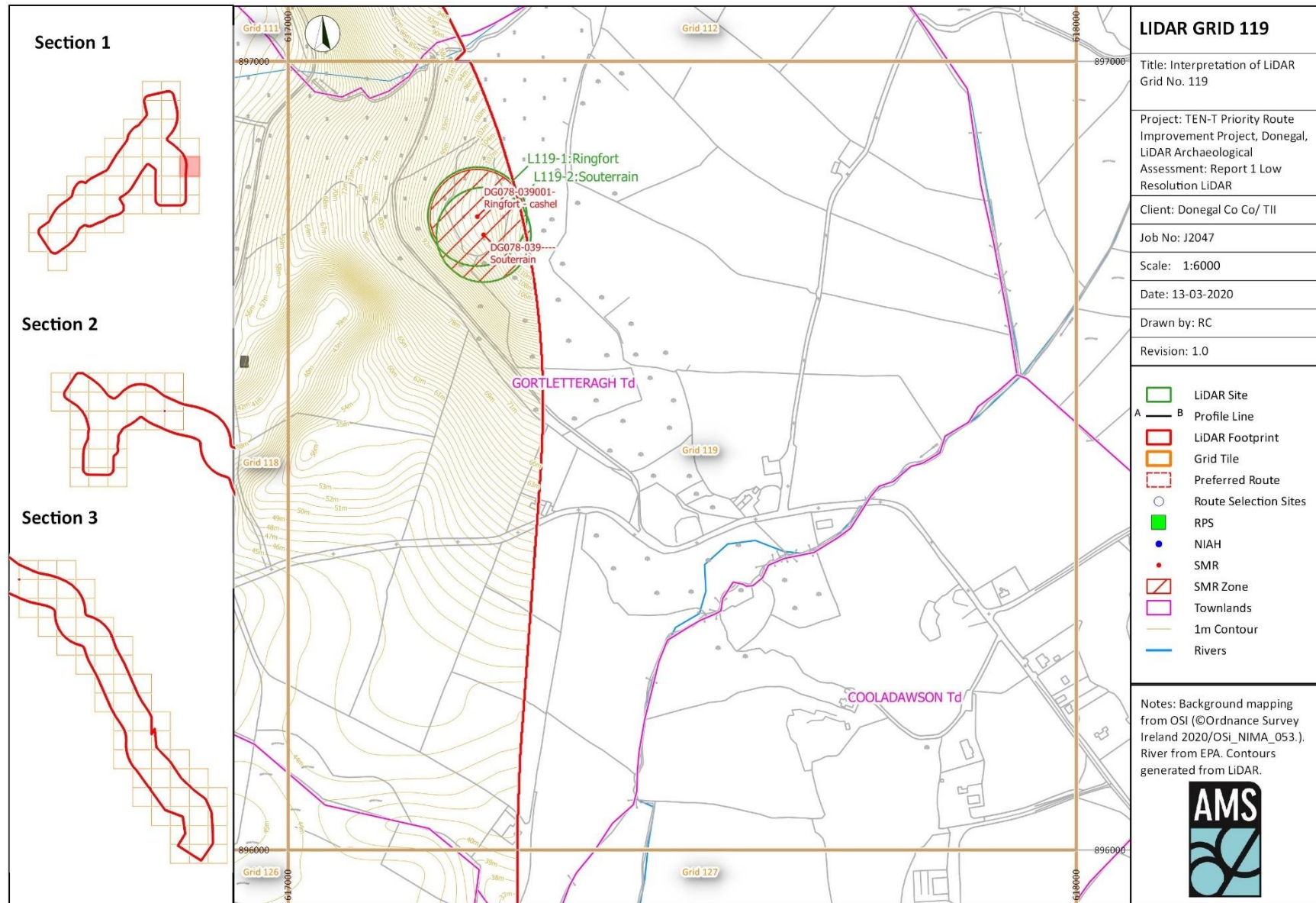
LIDAR GRID 118

Title: Interpretation of LiDAR Grid No. 118
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client: Donegal Co Co/ TII
Job No: J2047
Scale: 1:6000
Date: 13-03-2020
Drawn by: RC
Revision: 1.0

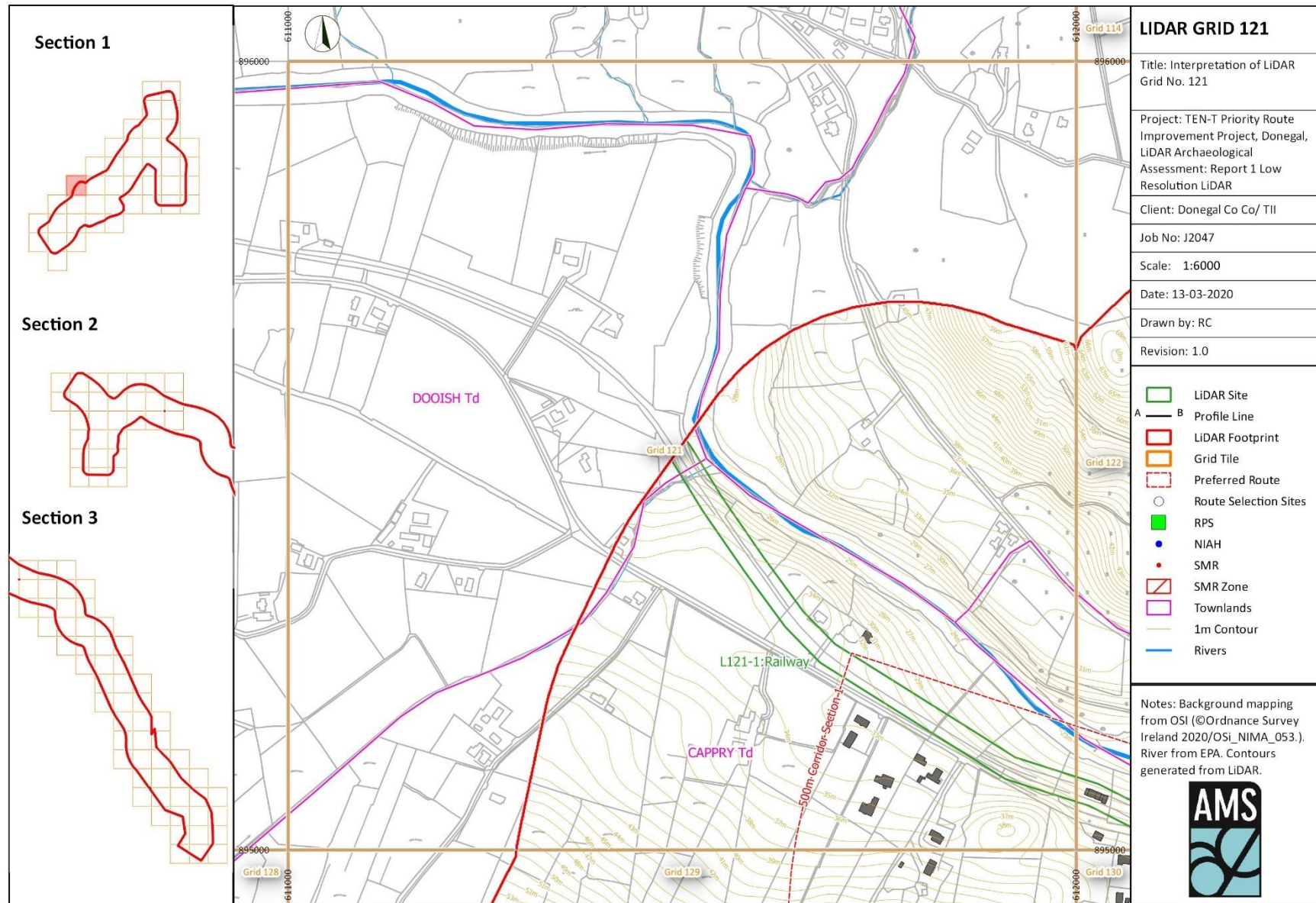
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

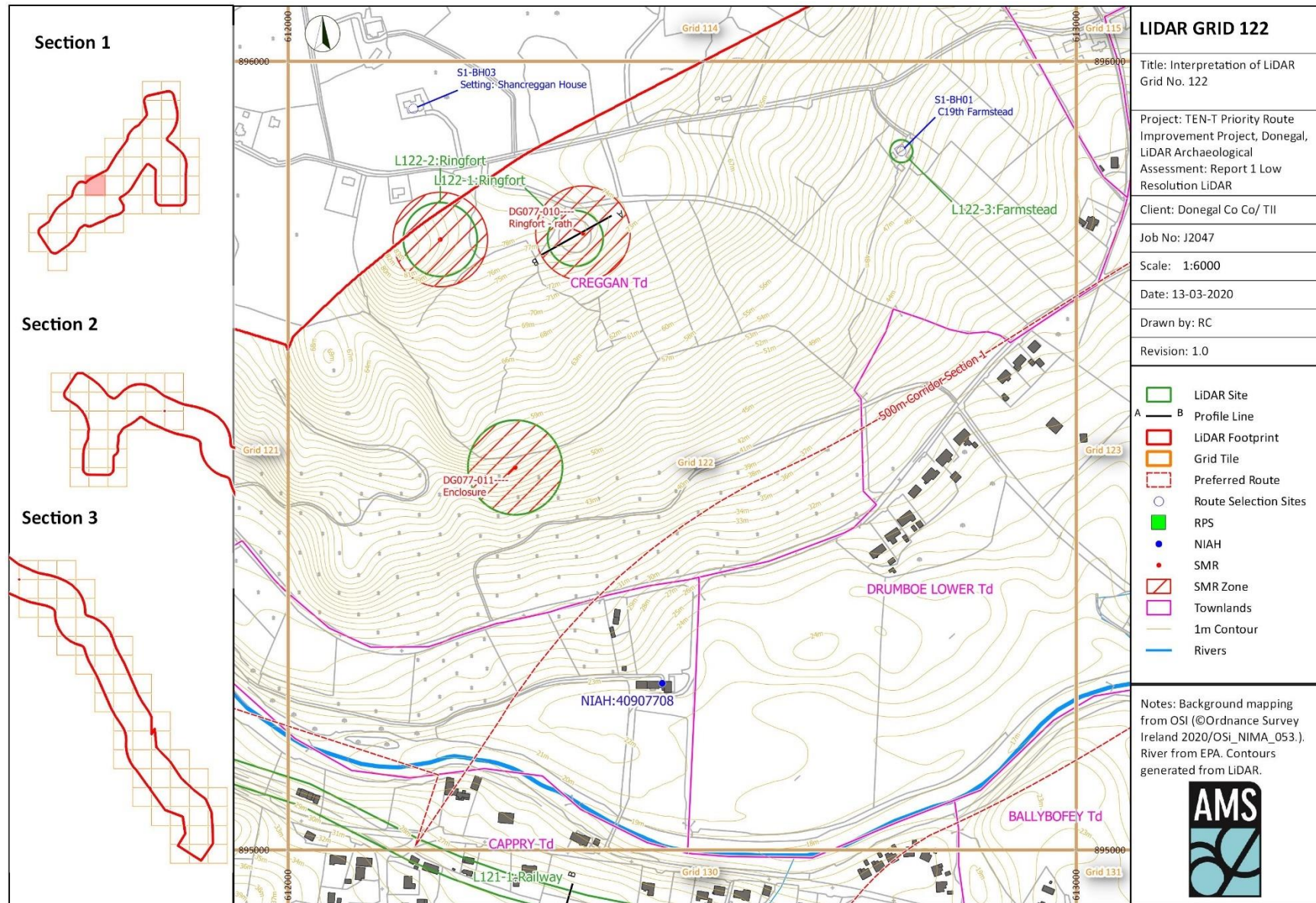
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

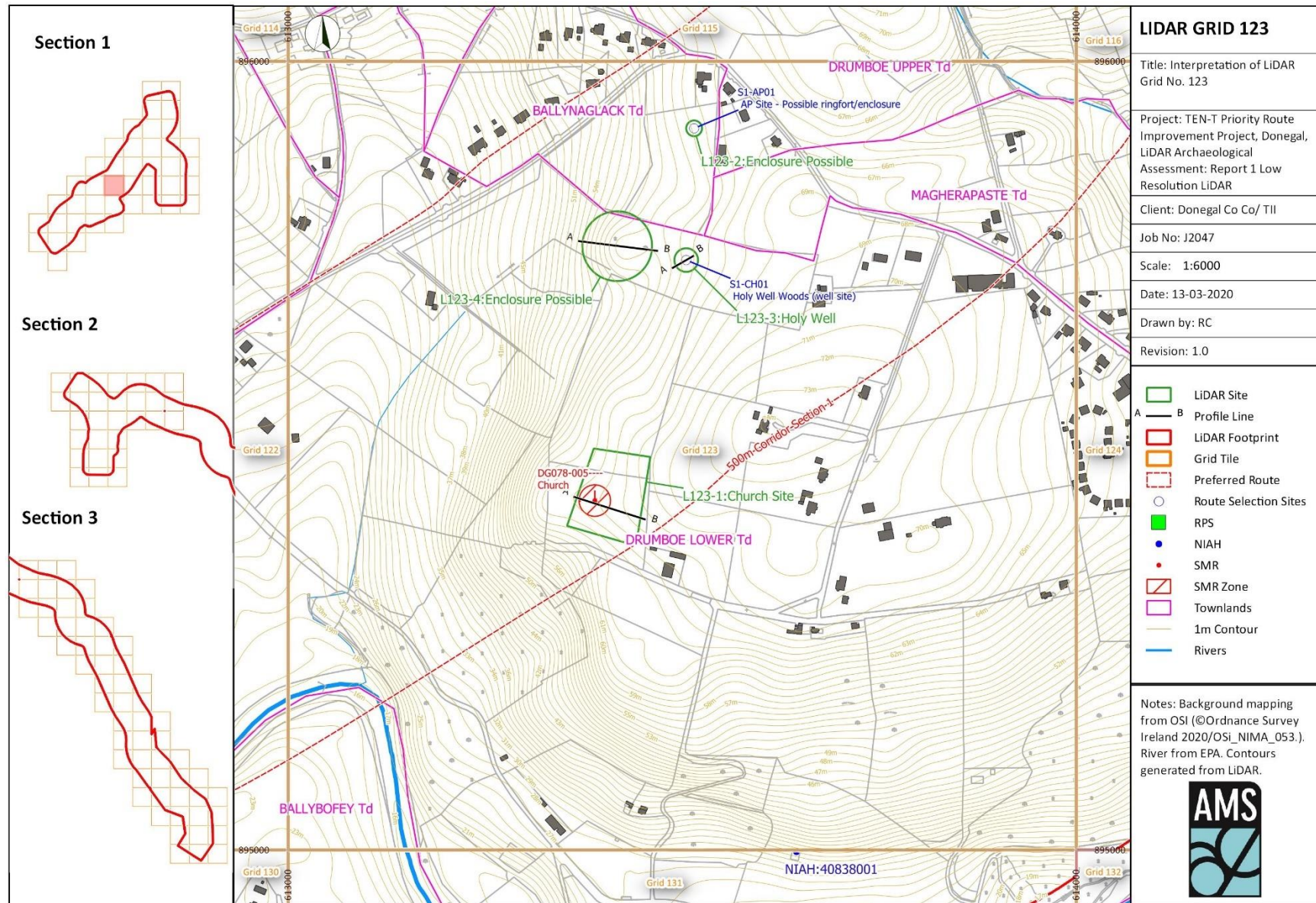




[No Grid 120]







Section 1

Section 2

Section 3

LIDAR GRID 123

Title: Interpretation of LiDAR Grid No. 123

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:6000

Date: 13-03-2020

Drawn by: RC

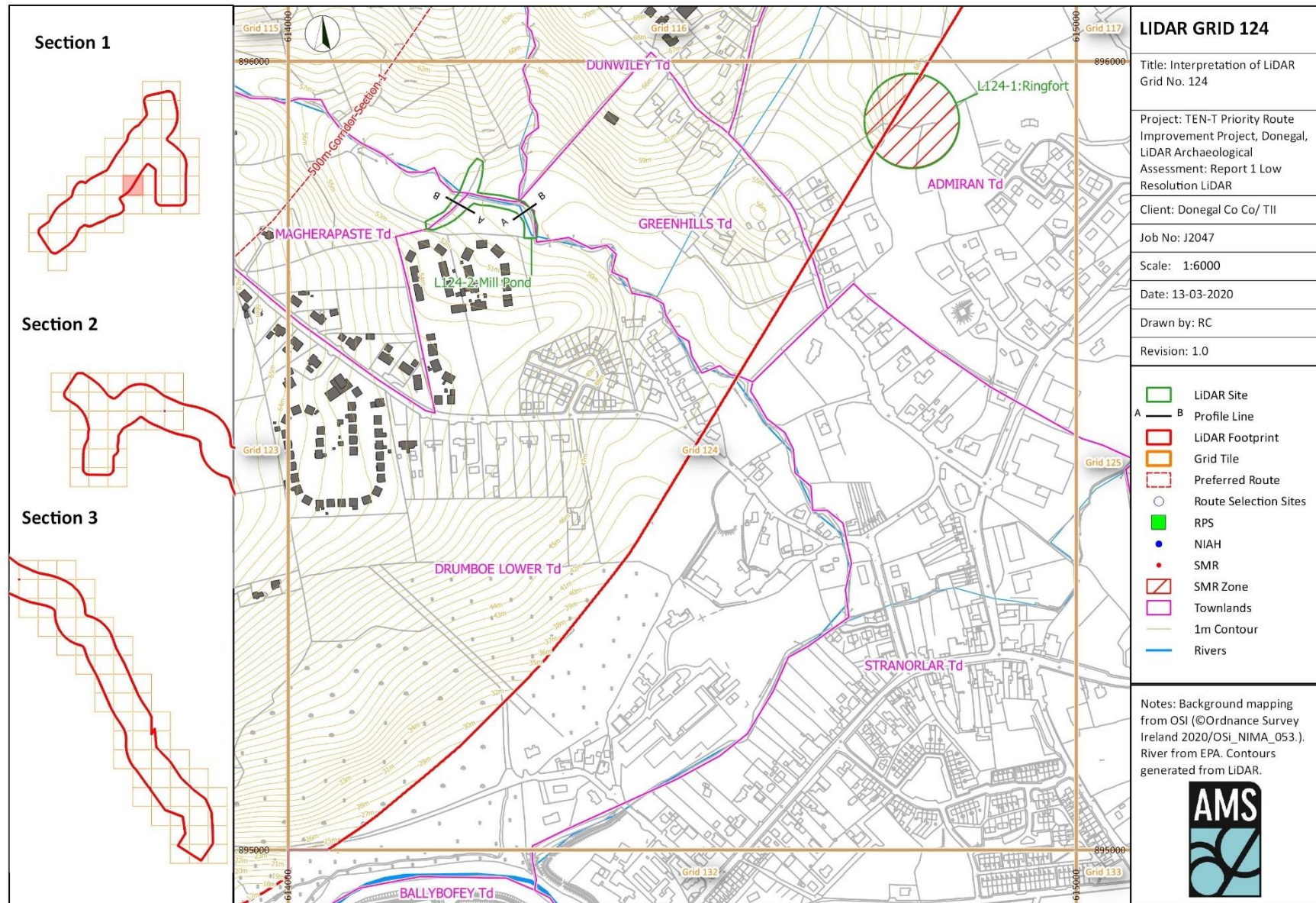
Revision: 1.0

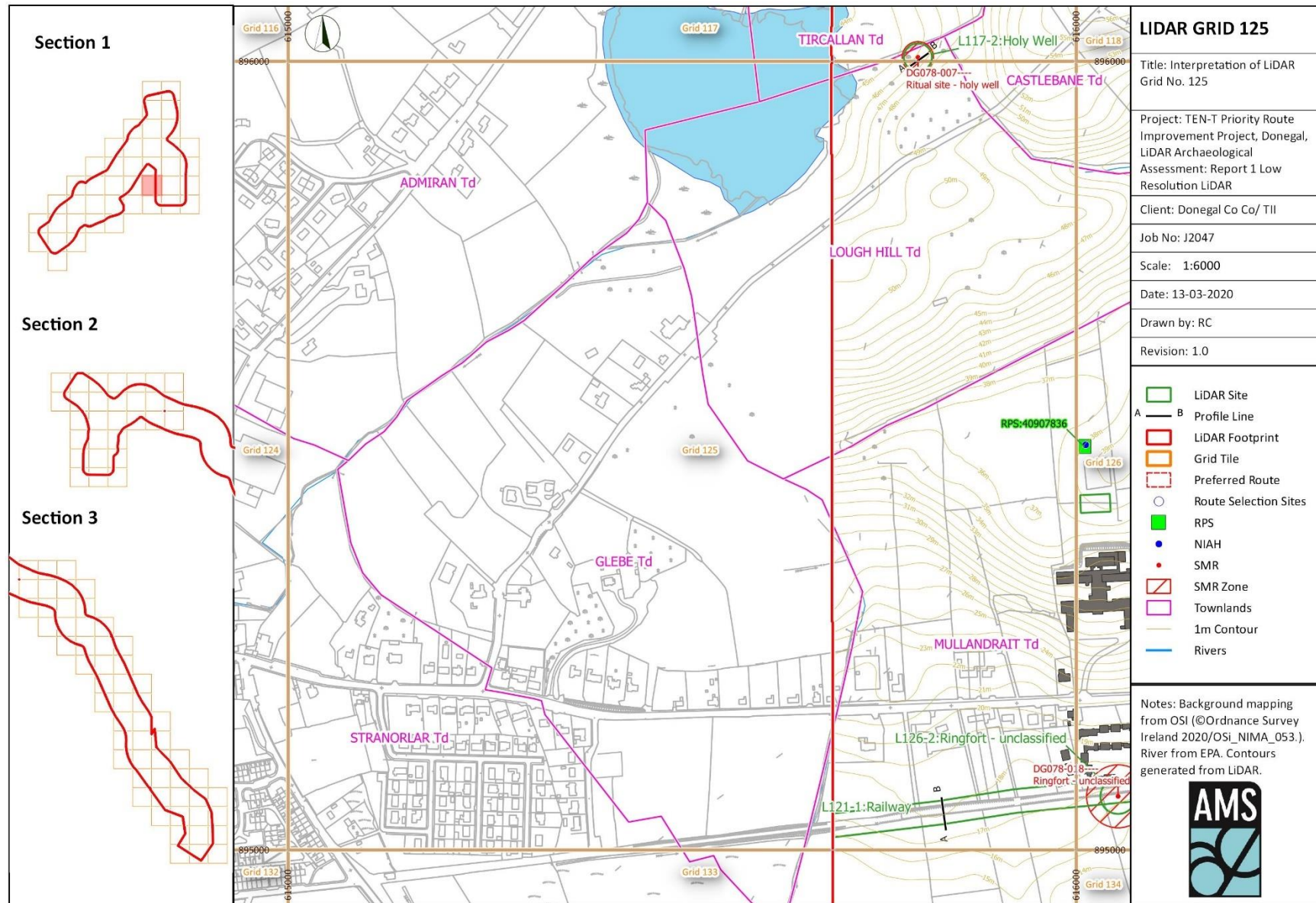
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.



NIAH:40838001





LIDAR GRID 125

Title: Interpretation of LiDAR Grid No. 125

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:6000


Date: 13-03-2020

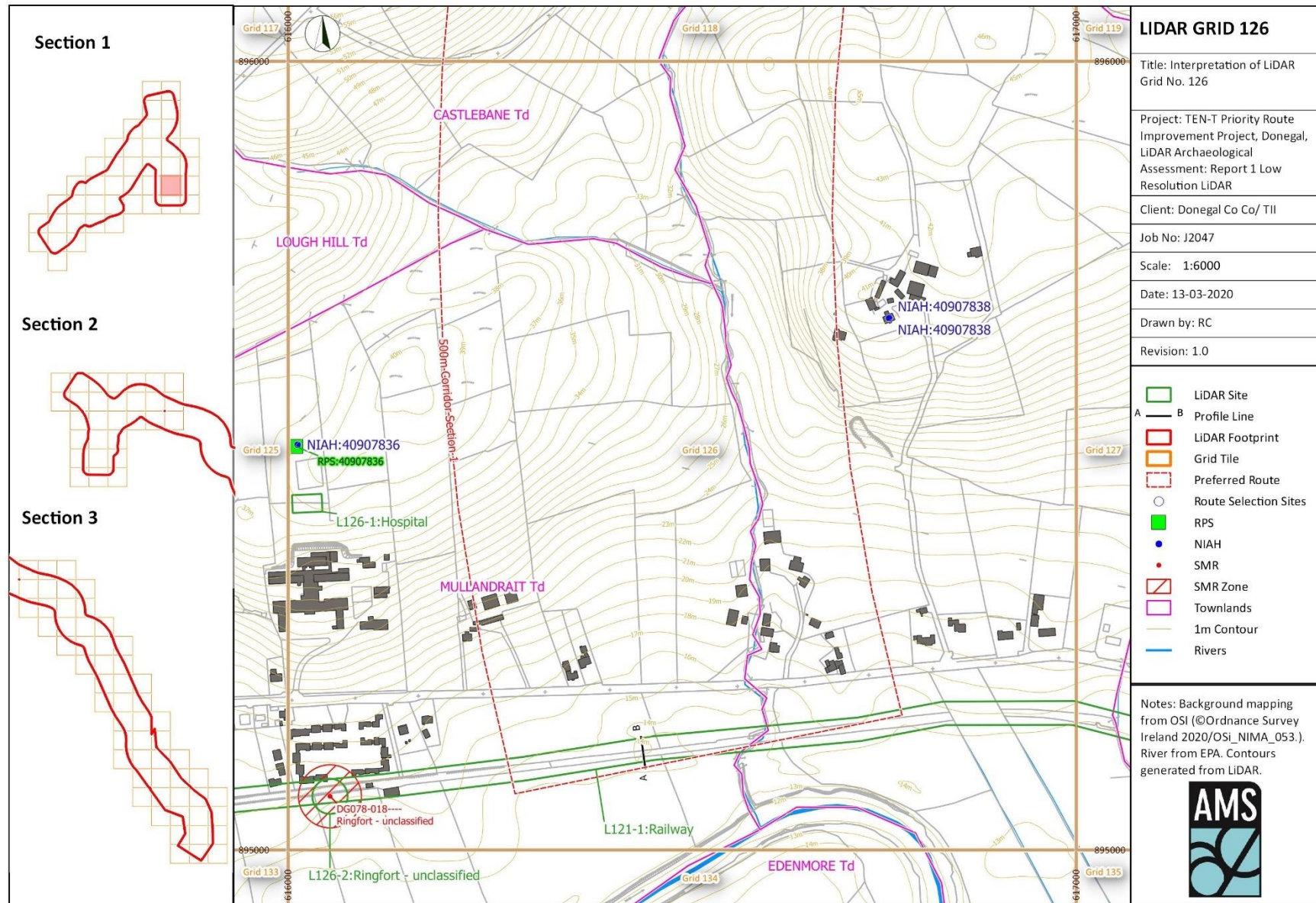
Drawn by: RC

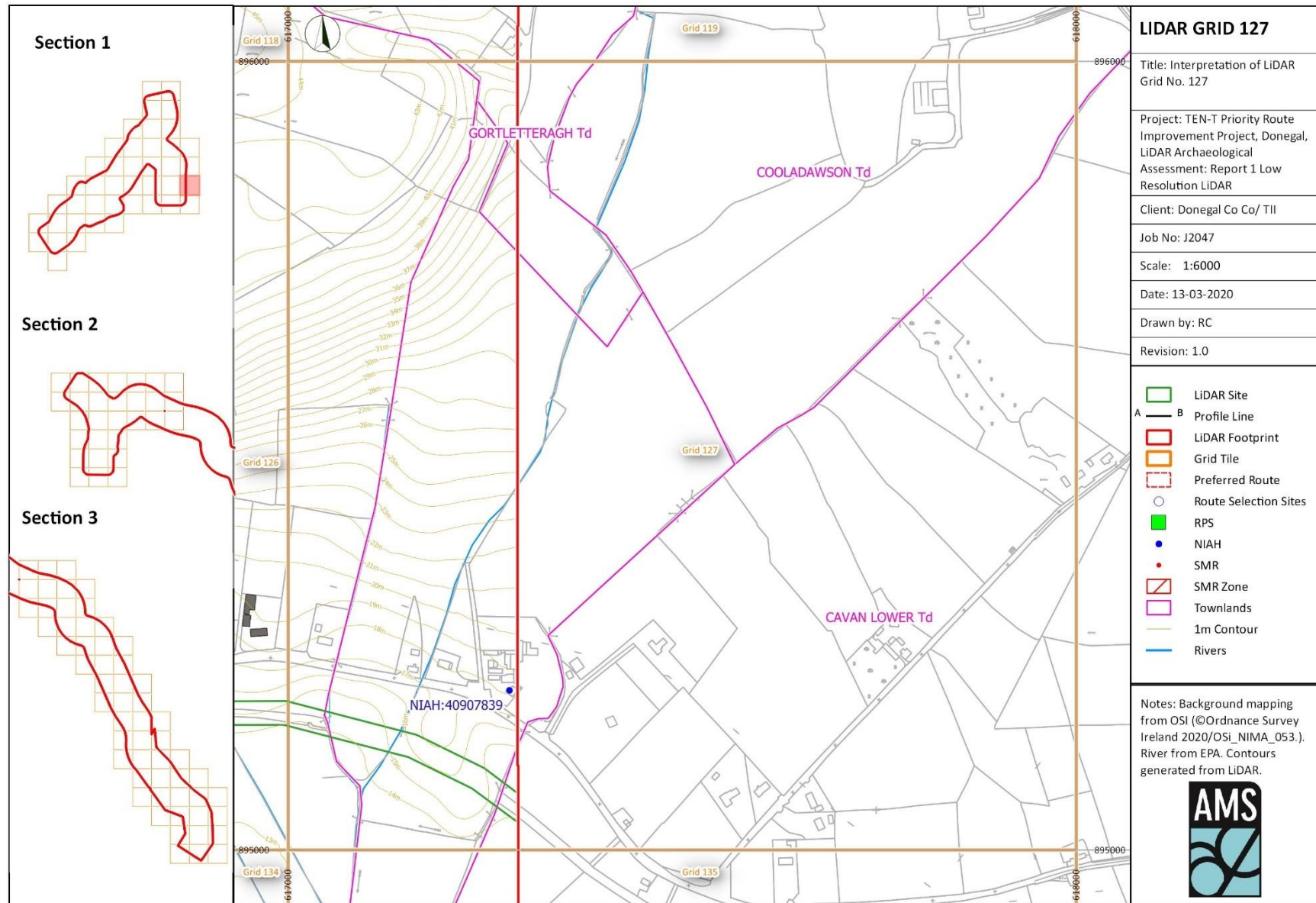
Revision: 1.0

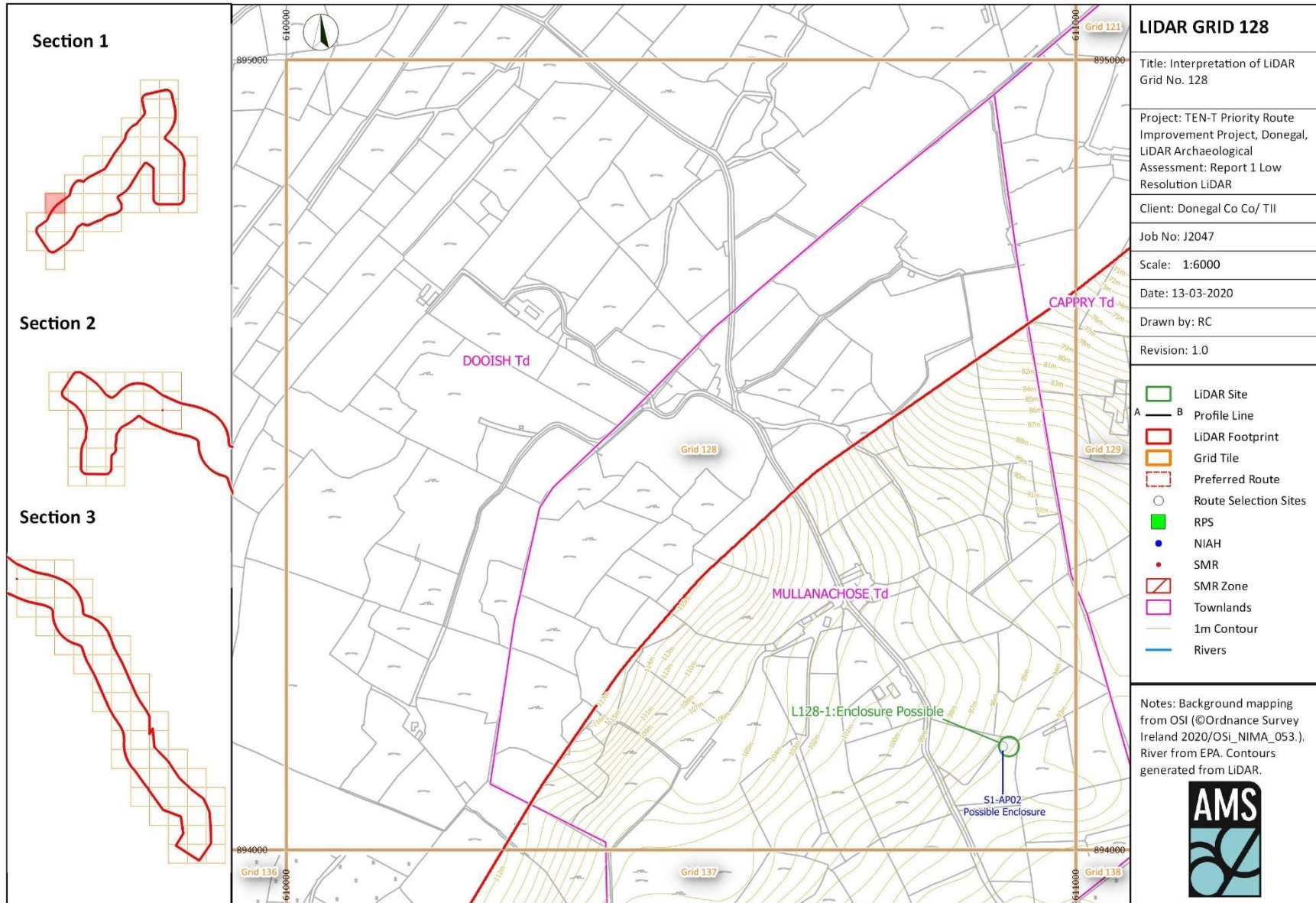
- LiDAR Site
- A — B Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

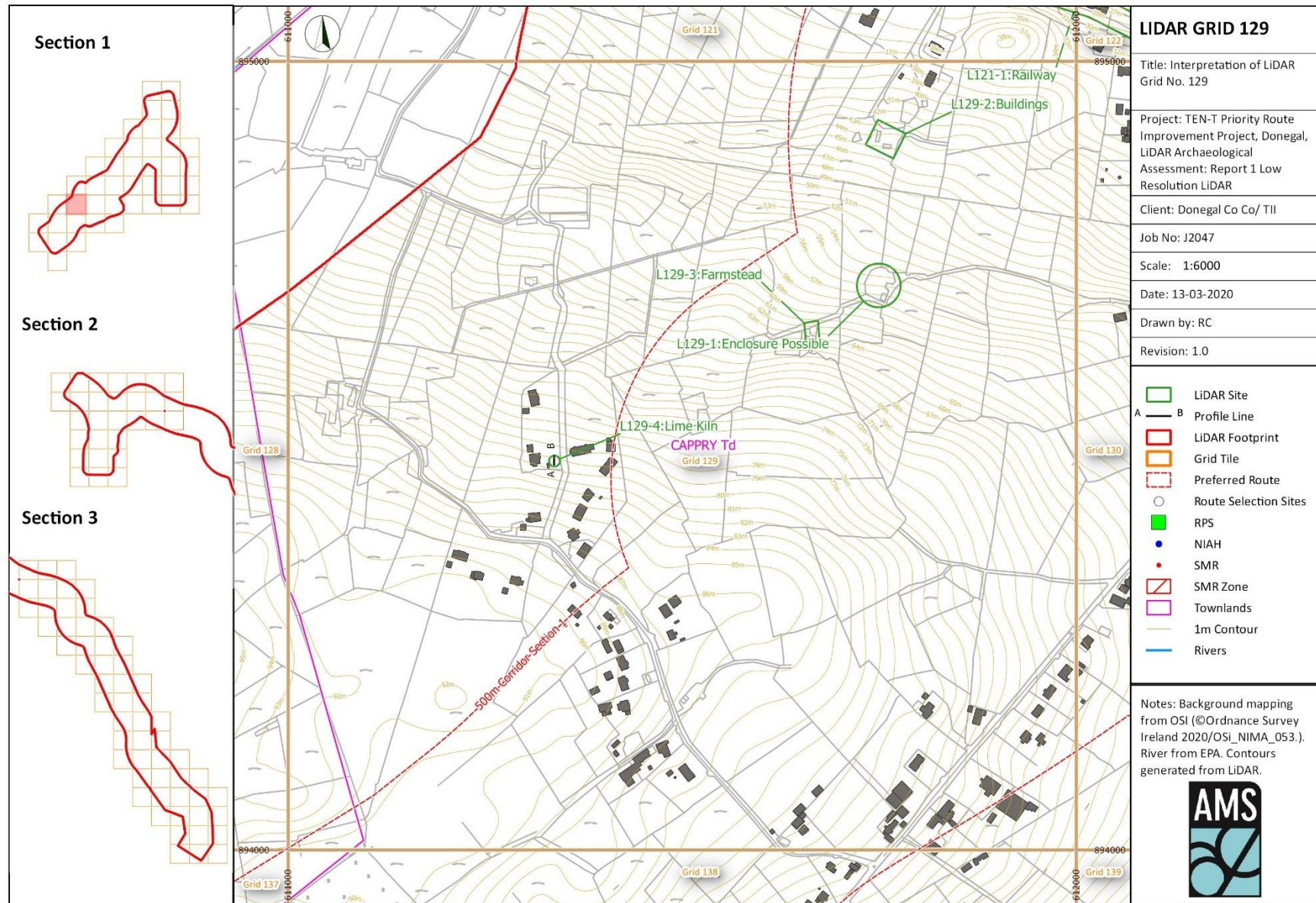
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053). River from EPA. Contours generated from LiDAR.

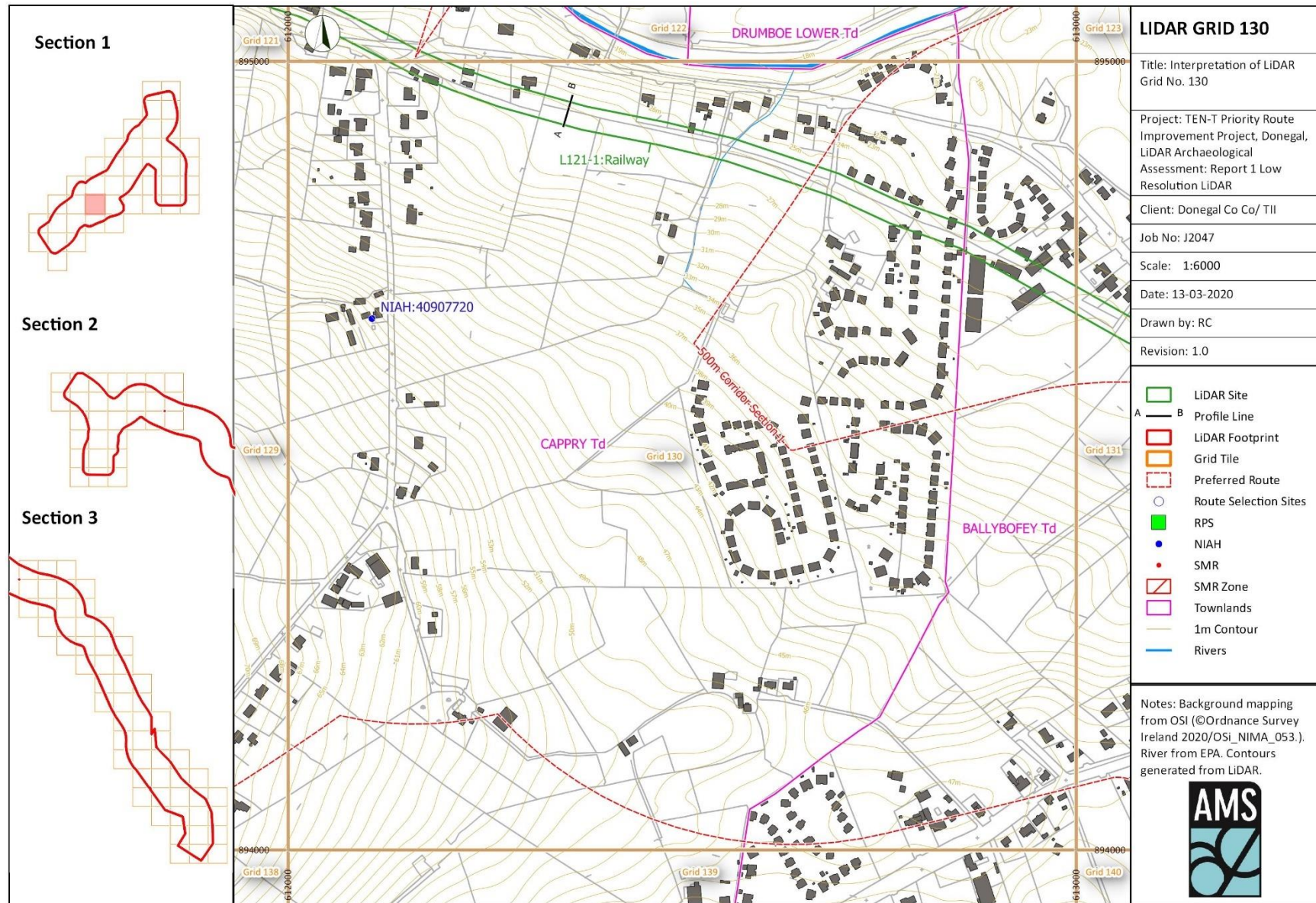


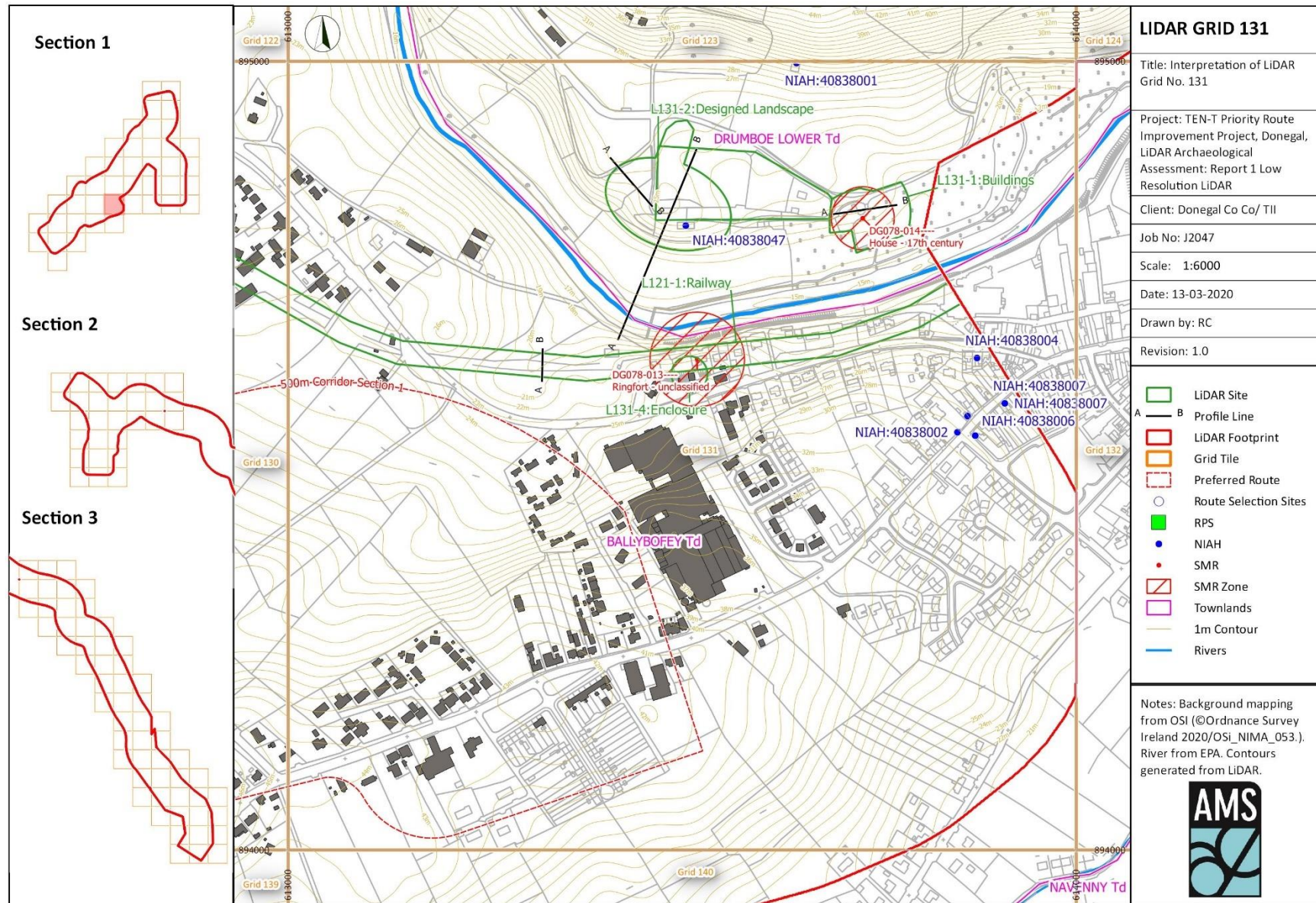










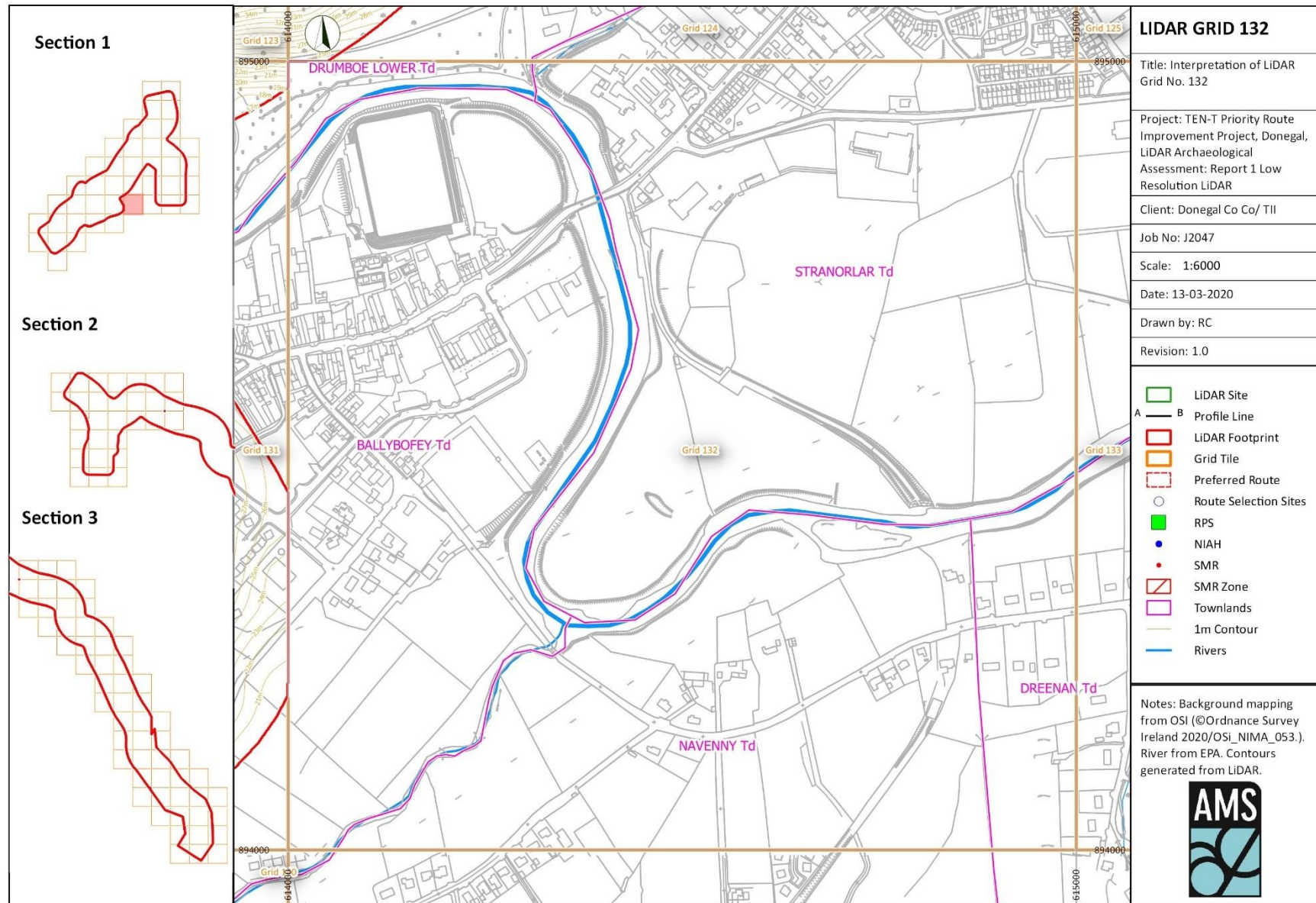


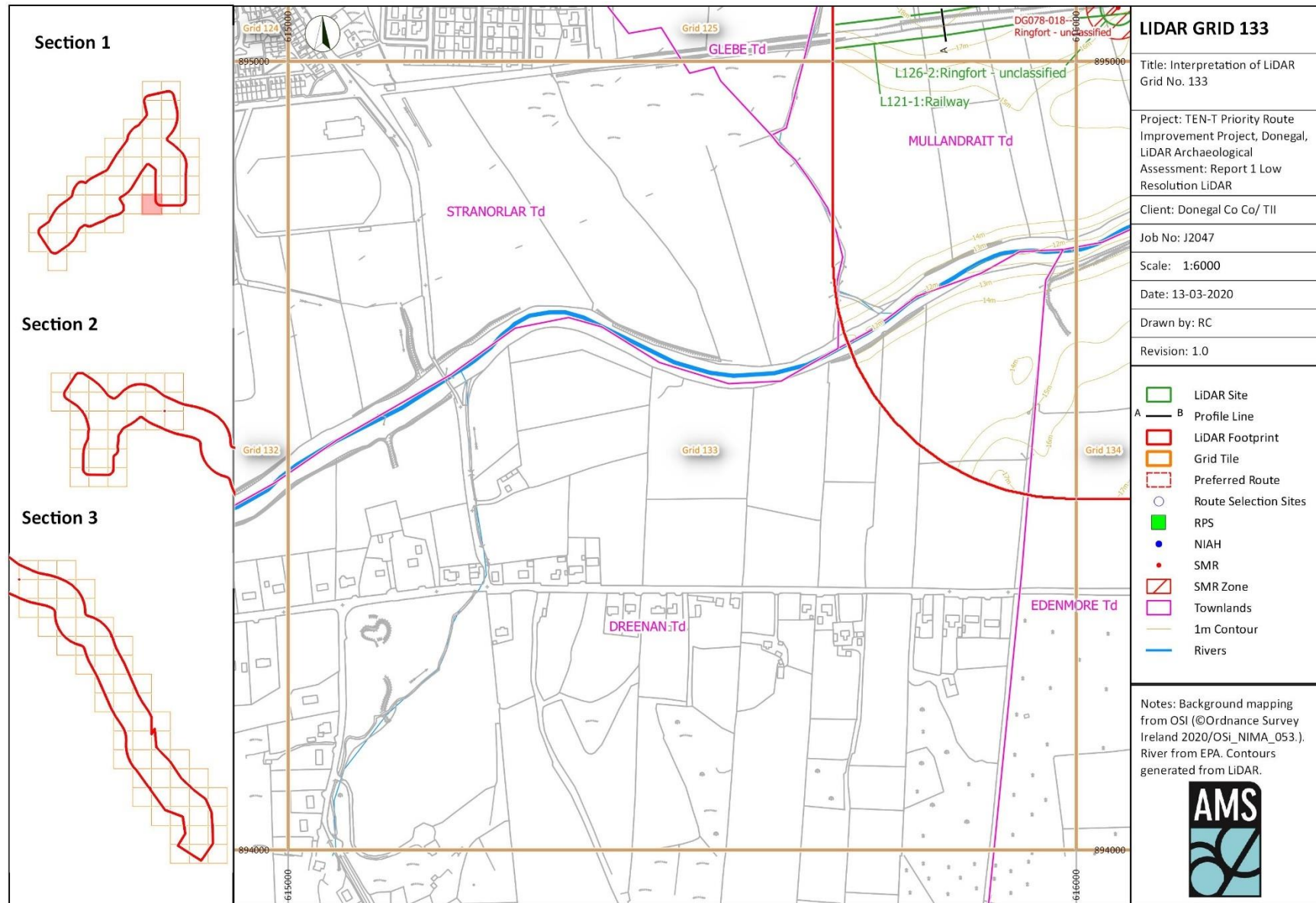
LIDAR GRID 131
Title: Interpretation of LiDAR Grid No. 131
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client: Donegal Co Co/ TII
Job No: J2047
Scale: 1:6000
Date: 13-03-2020
Drawn by: RC
Revision: 1.0

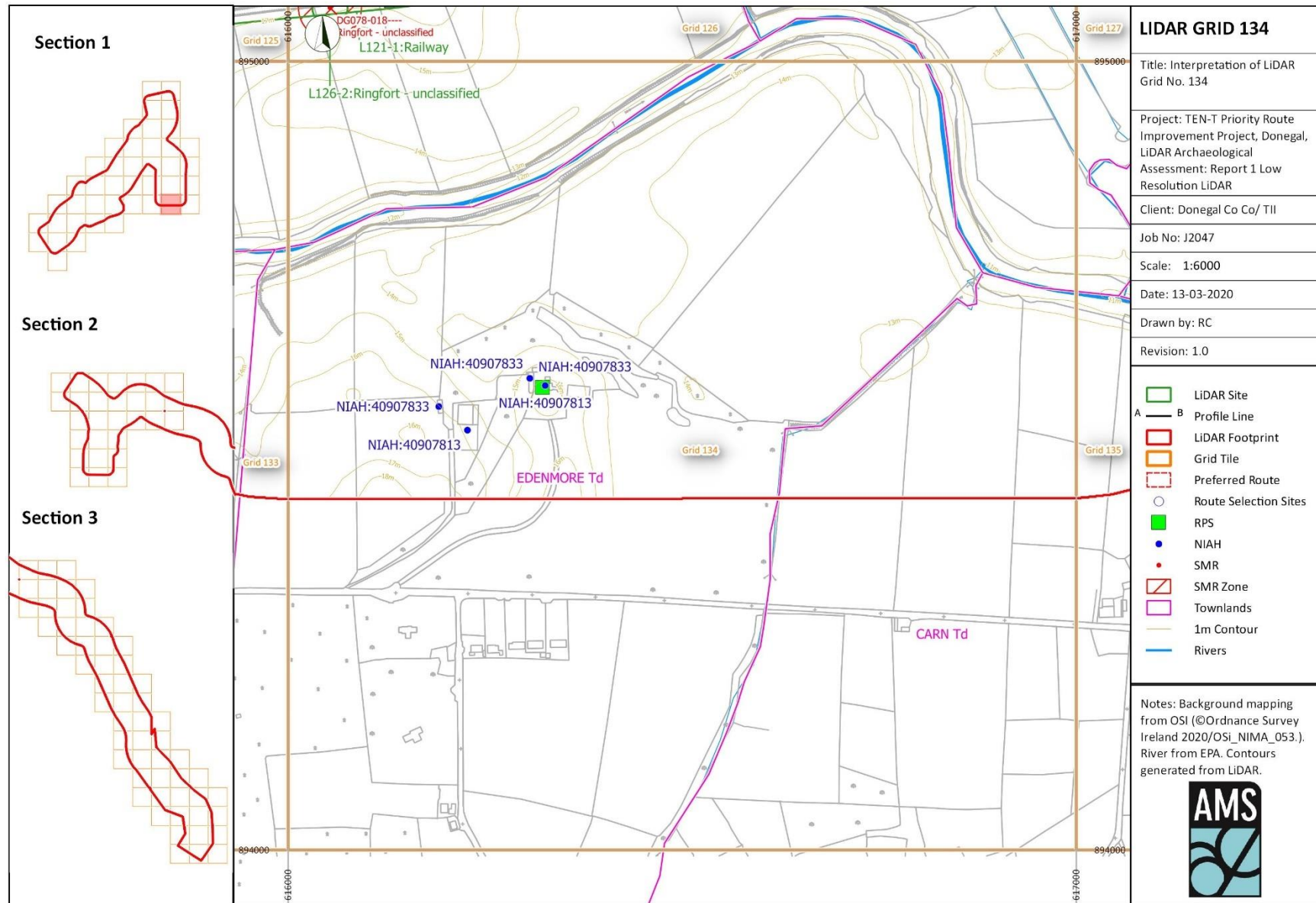
- LiDAR Site
- Profile Line (A-B)
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

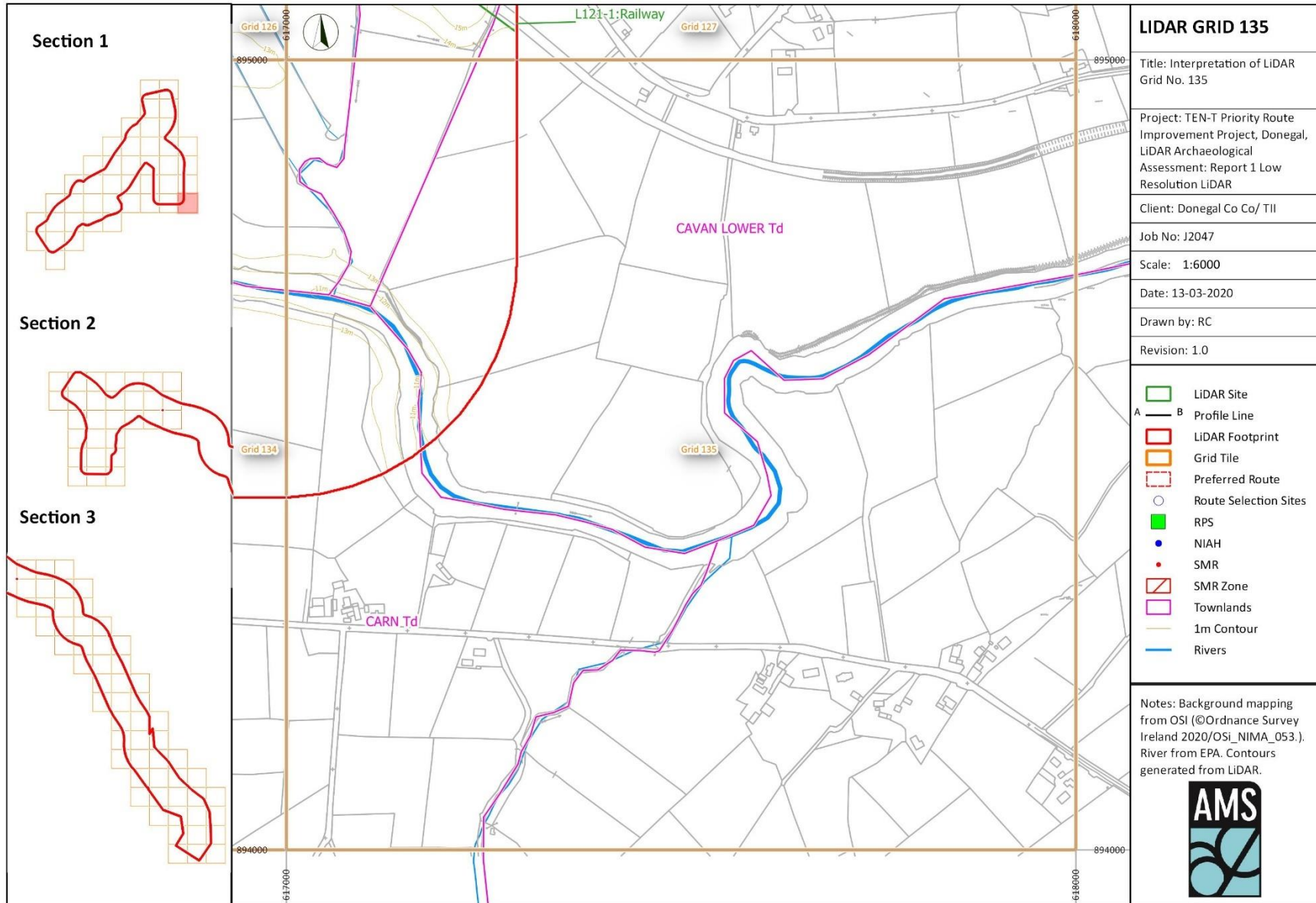
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

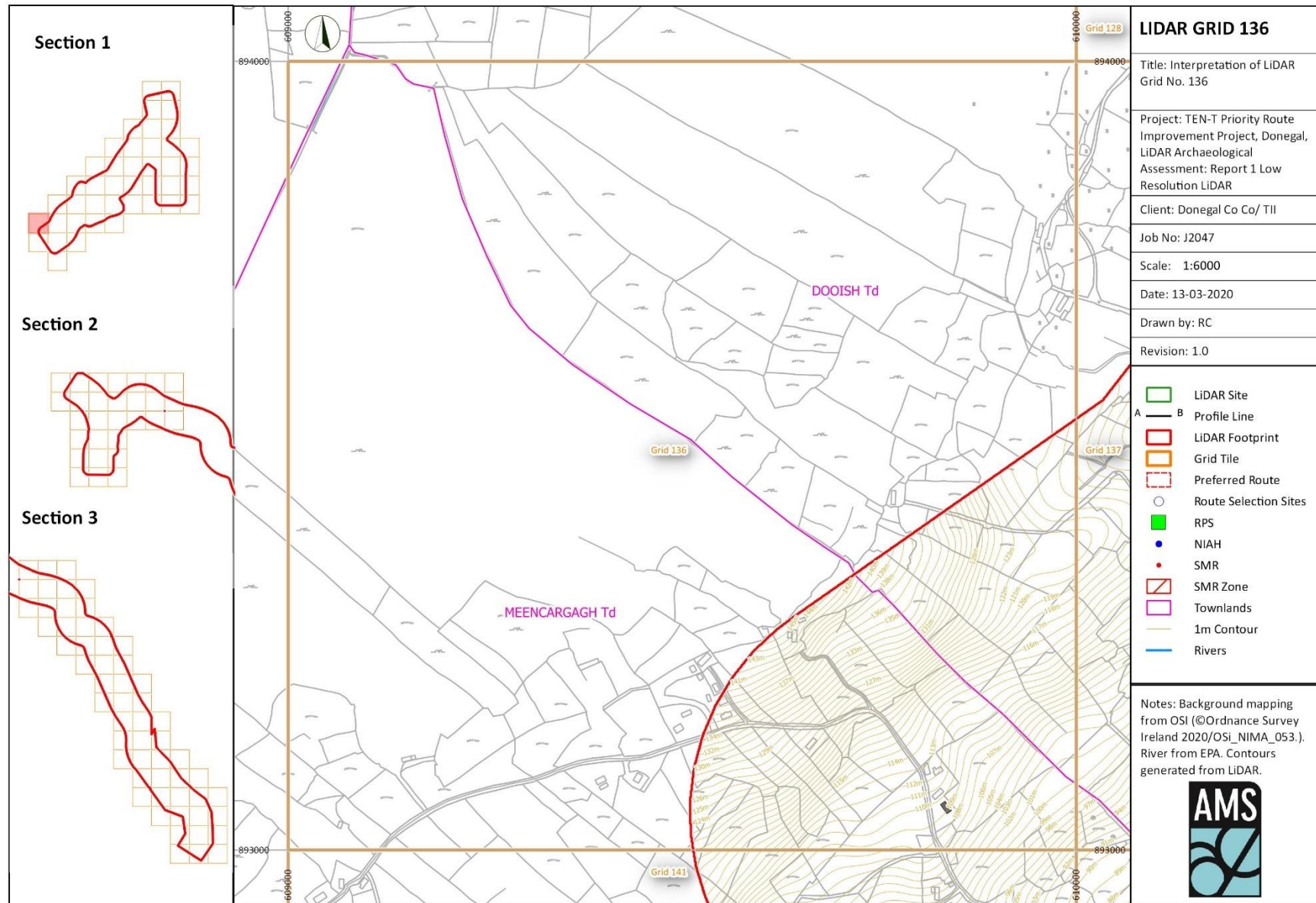


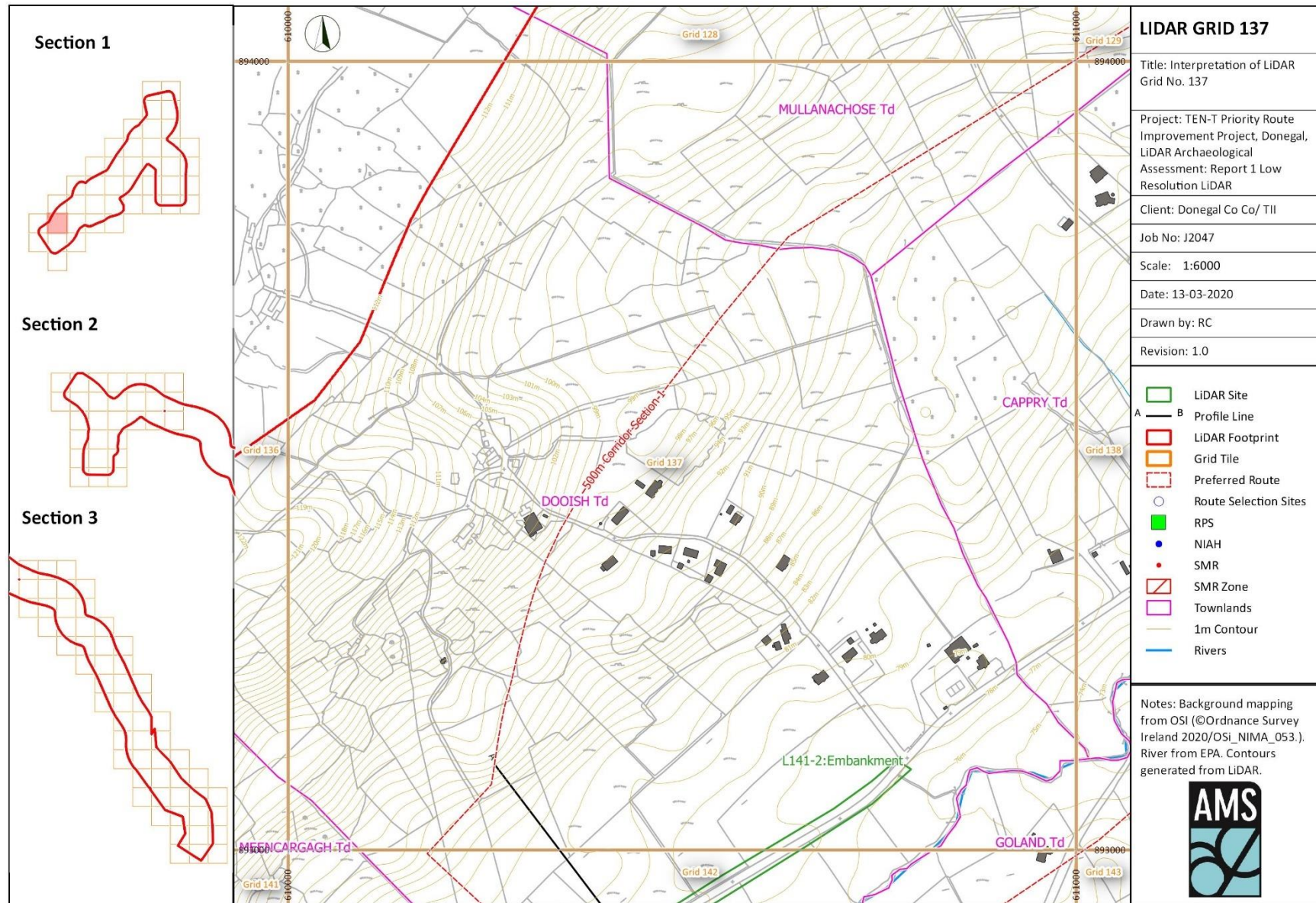










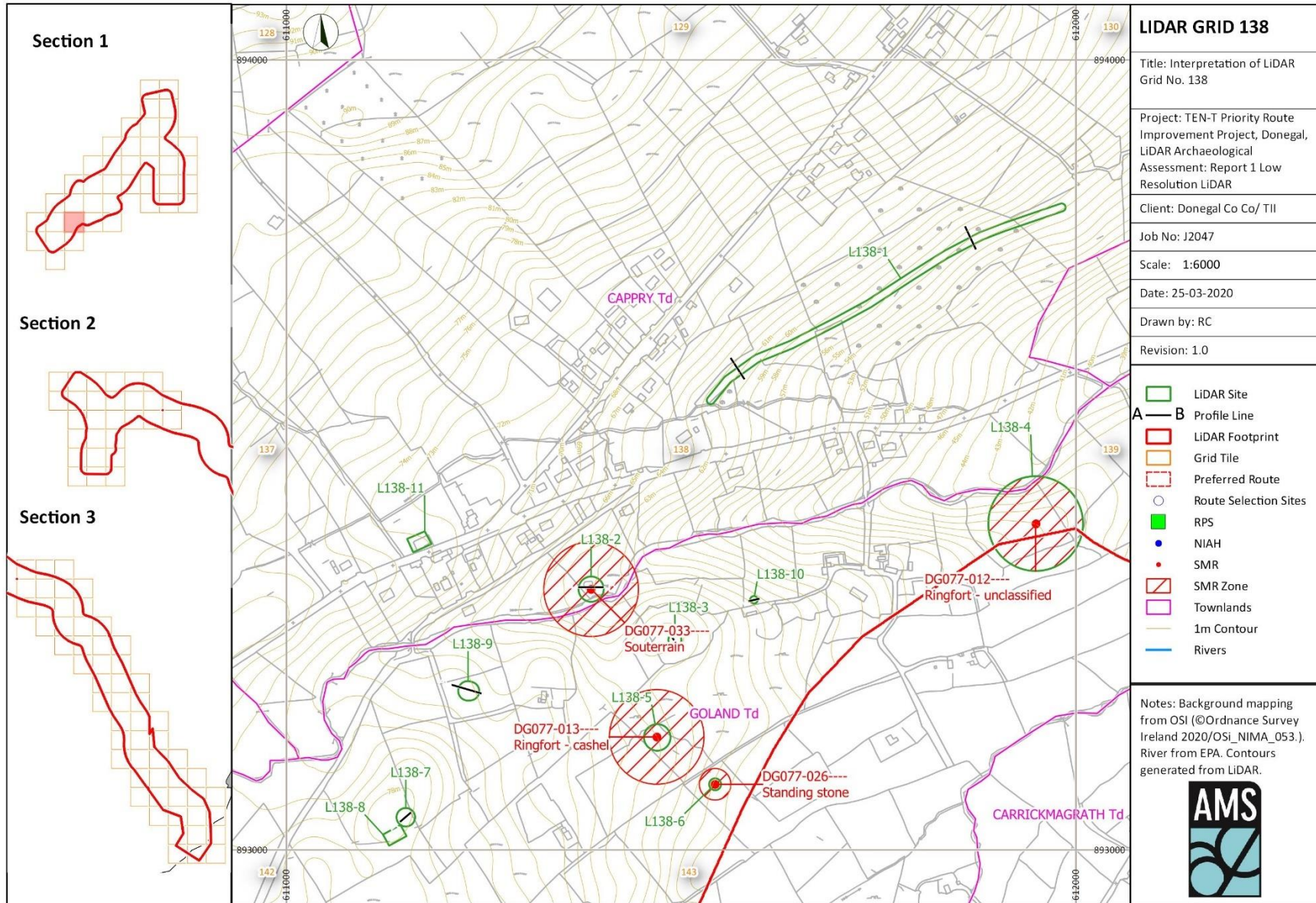


LIDAR GRID 137	
Title:	Interpretation of LiDAR Grid No. 137
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0

- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.





LIDAR GRID 138

Title: Interpretation of LiDAR Grid No. 138

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:6000

Date: 25-03-2020

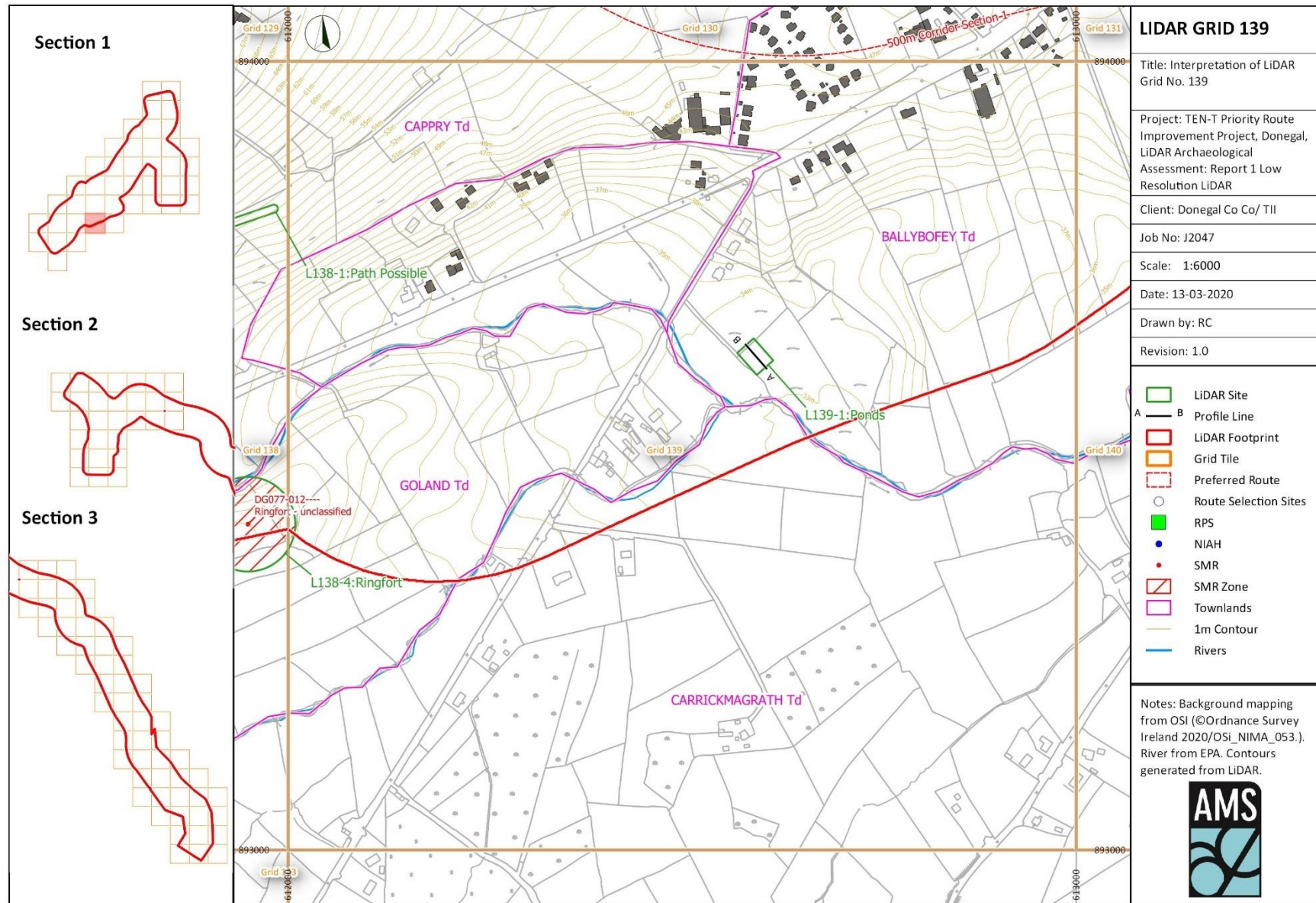
Drawn by: RC

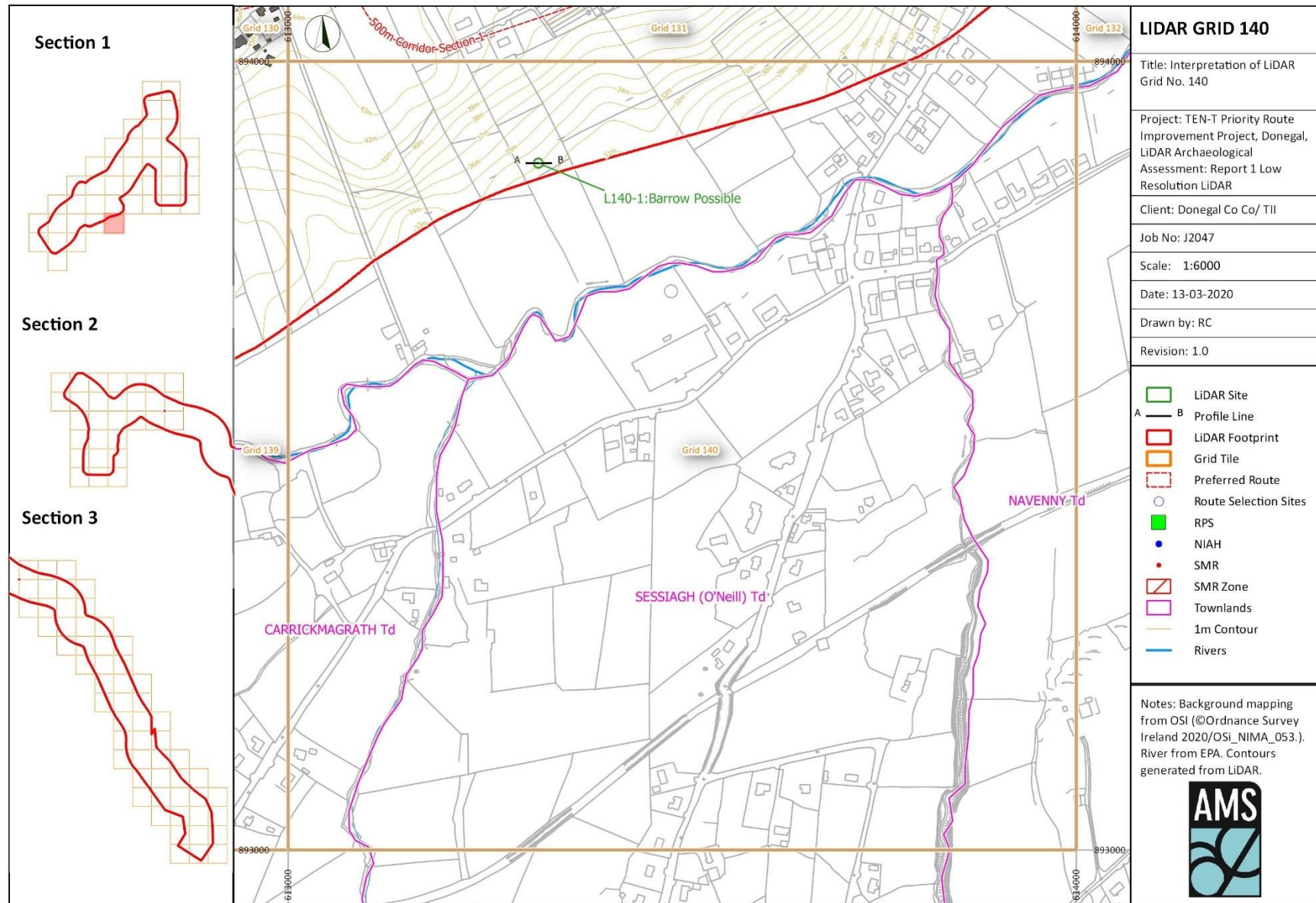
Revision: 1.0

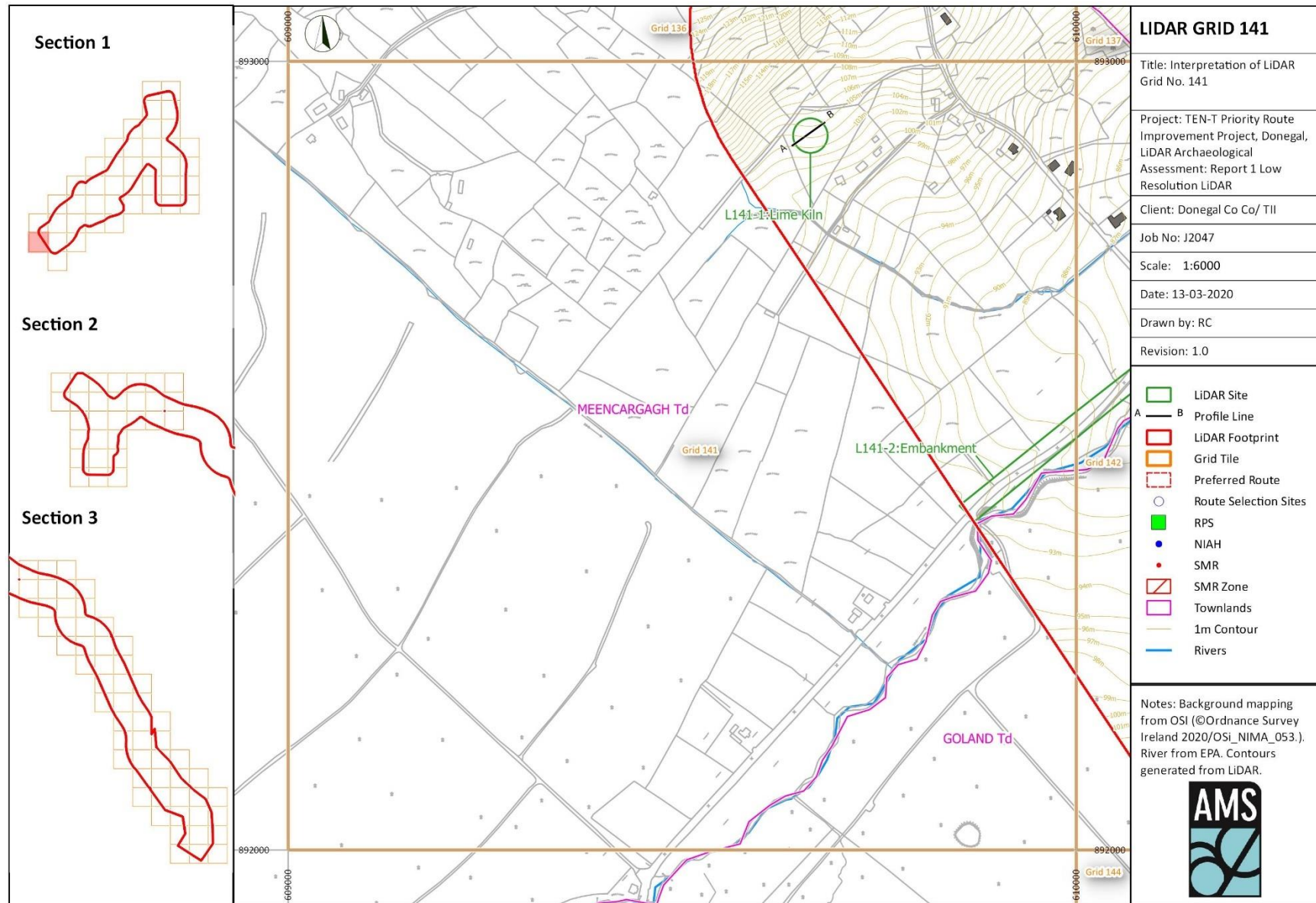
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

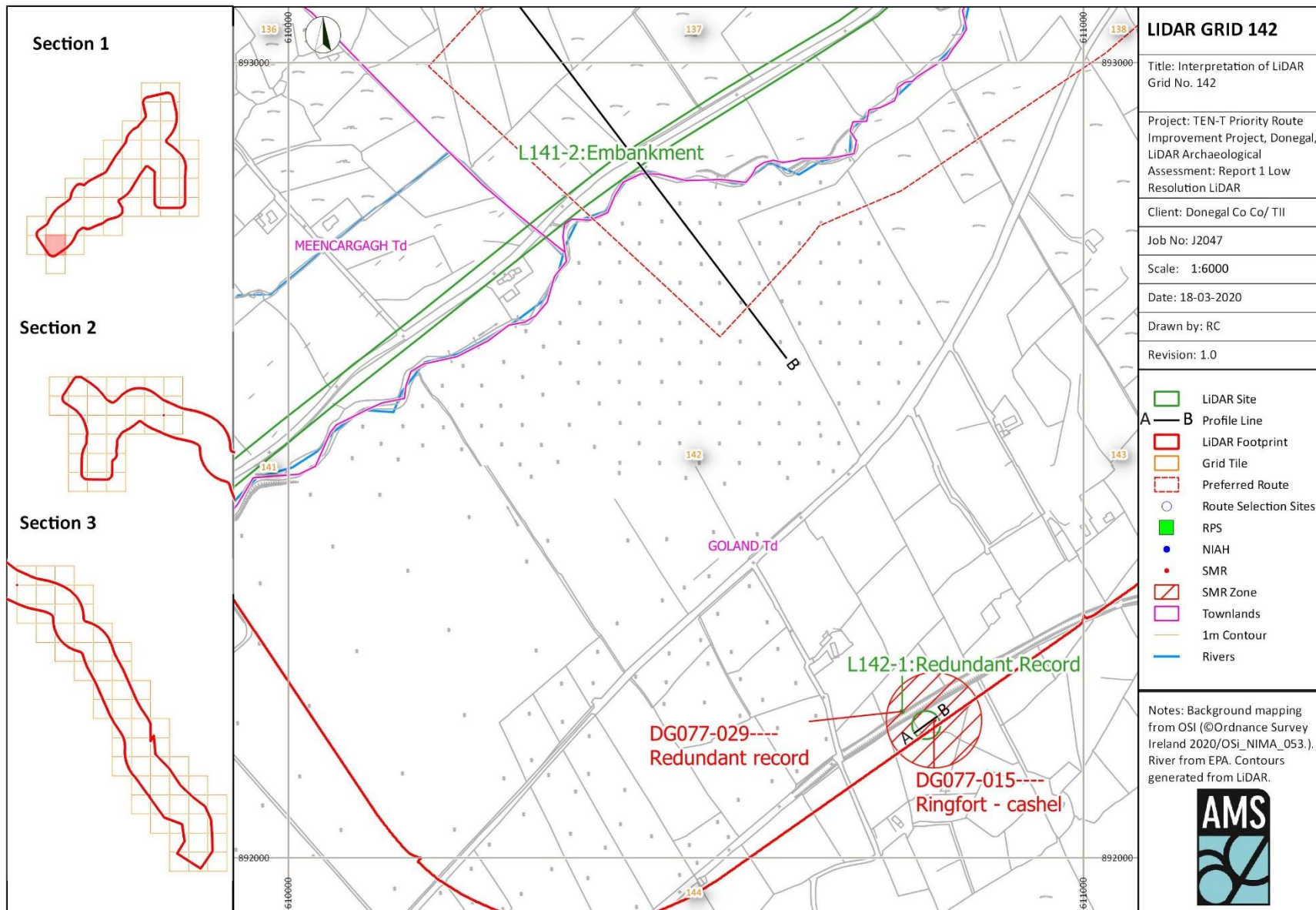
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

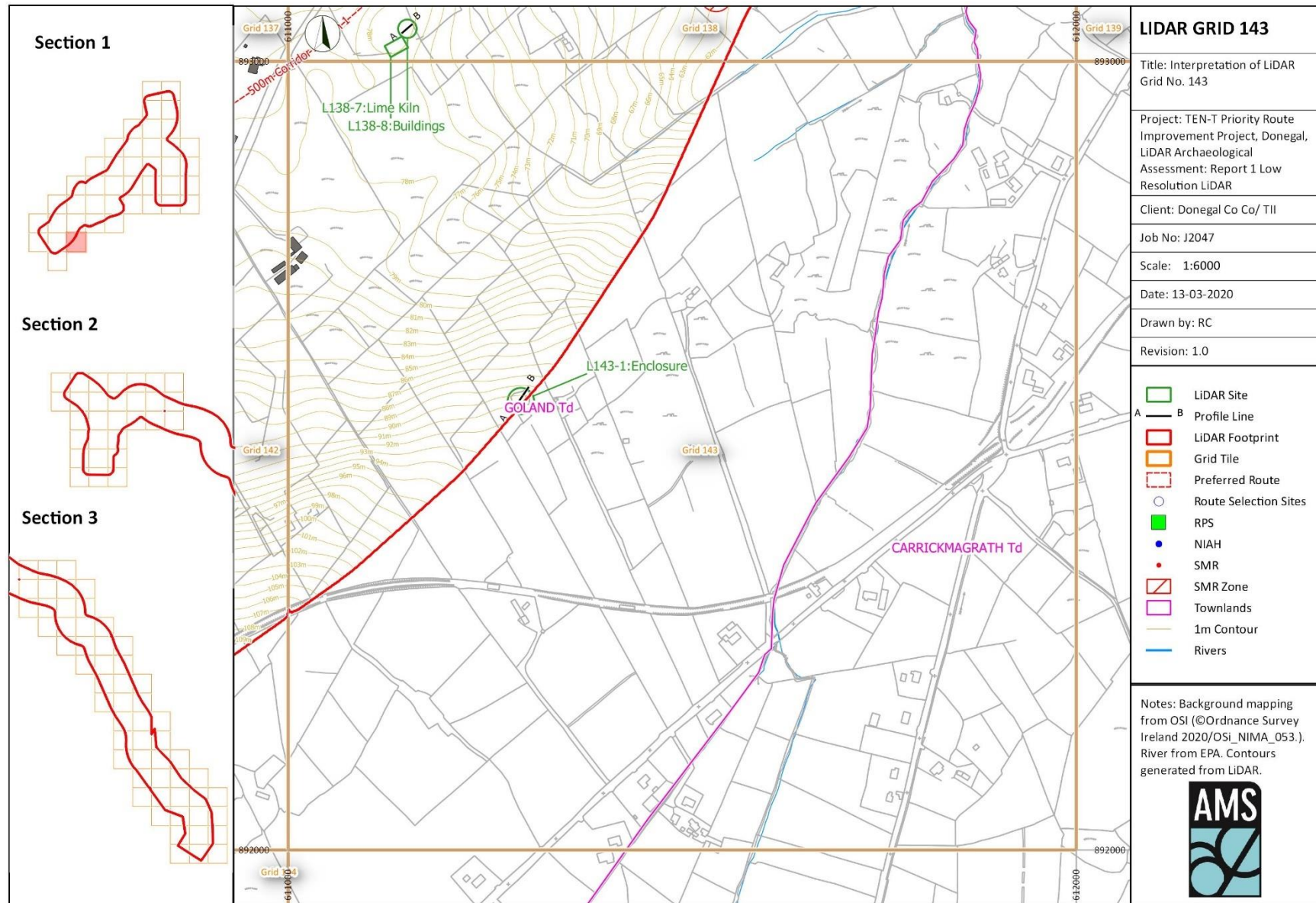


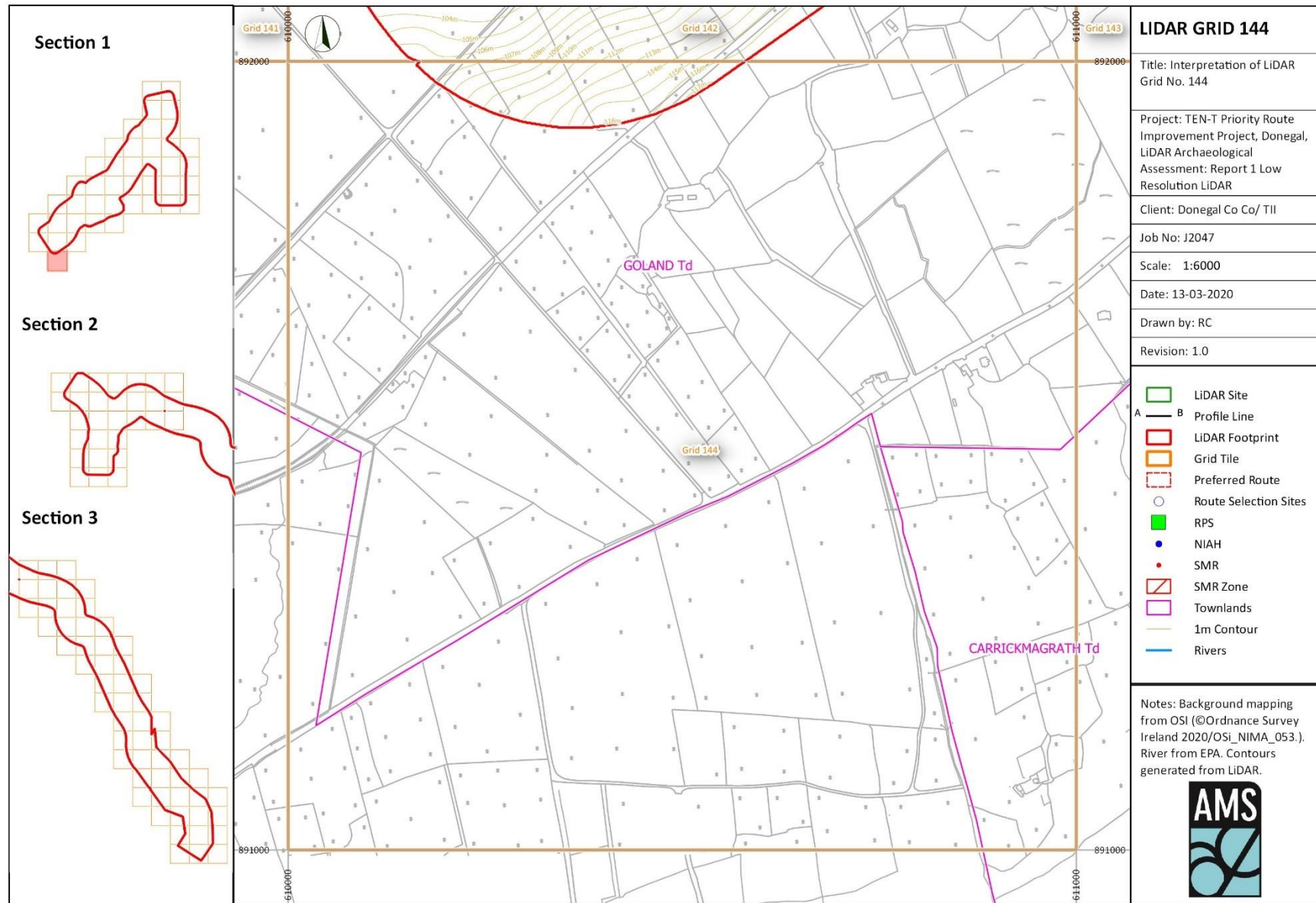




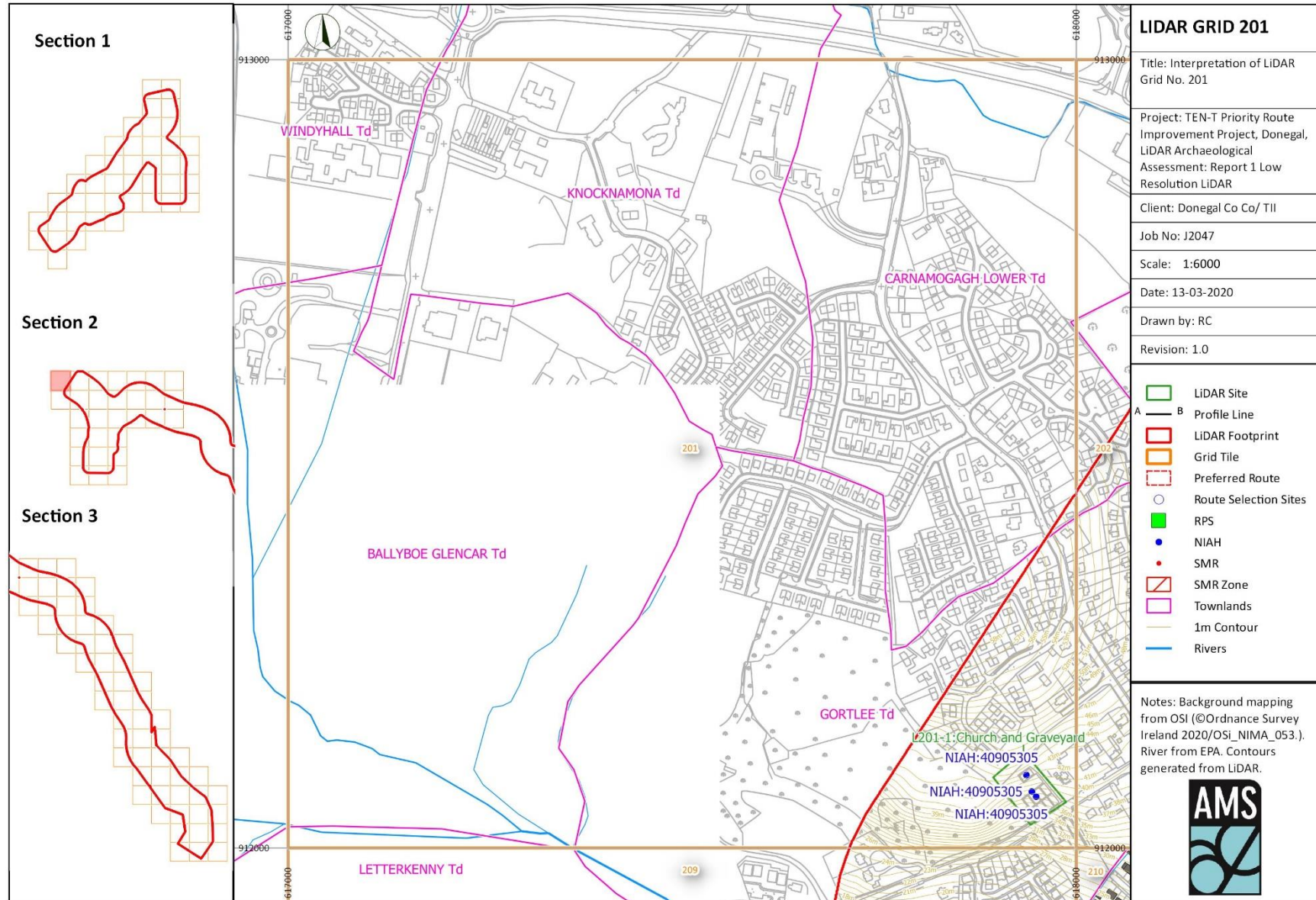


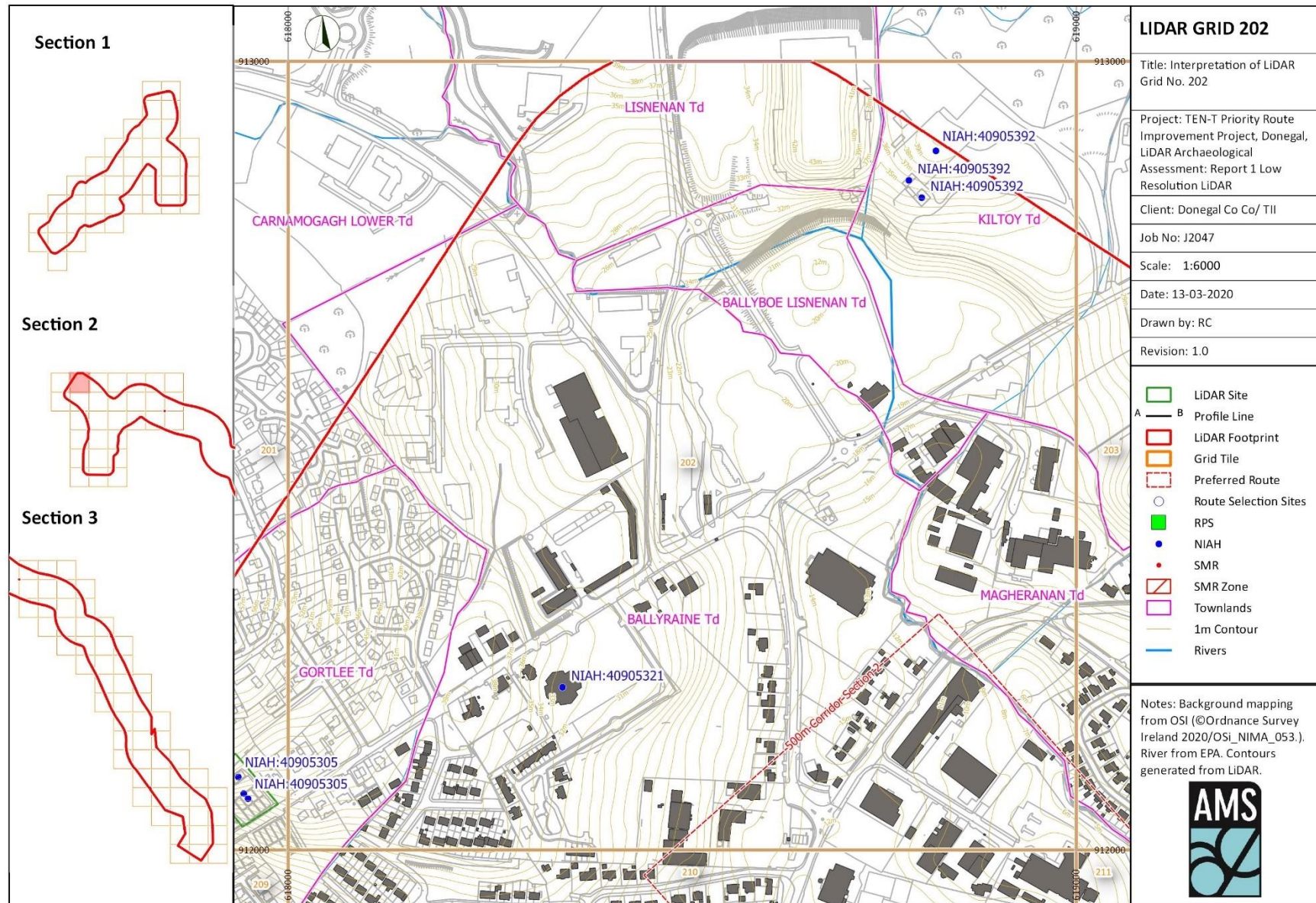






Section 2 Grid Tiles





LIDAR GRID 202

Title: Interpretation of LiDAR Grid No. 202

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:6000

Date: 13-03-2020

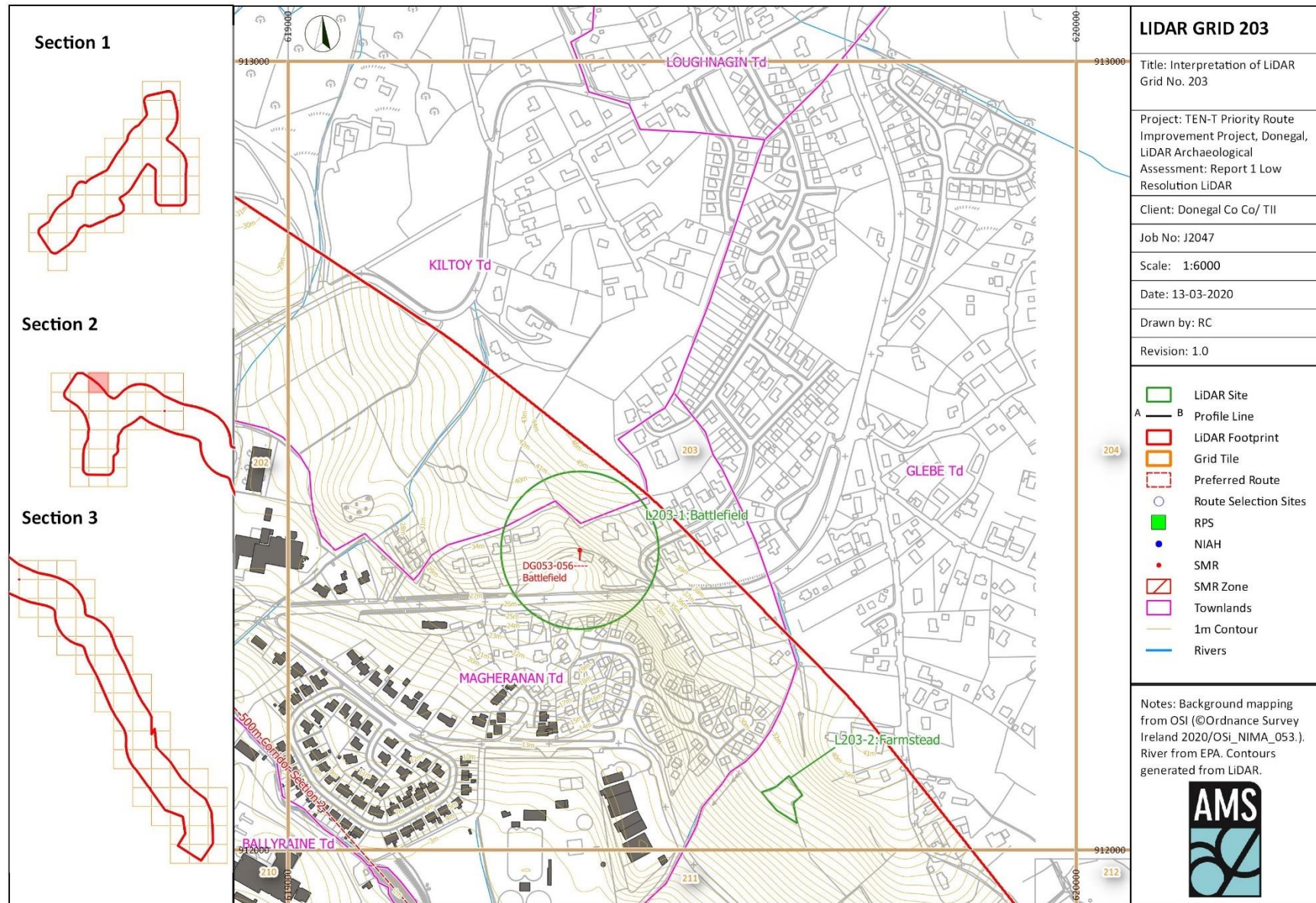
Drawn by: RC

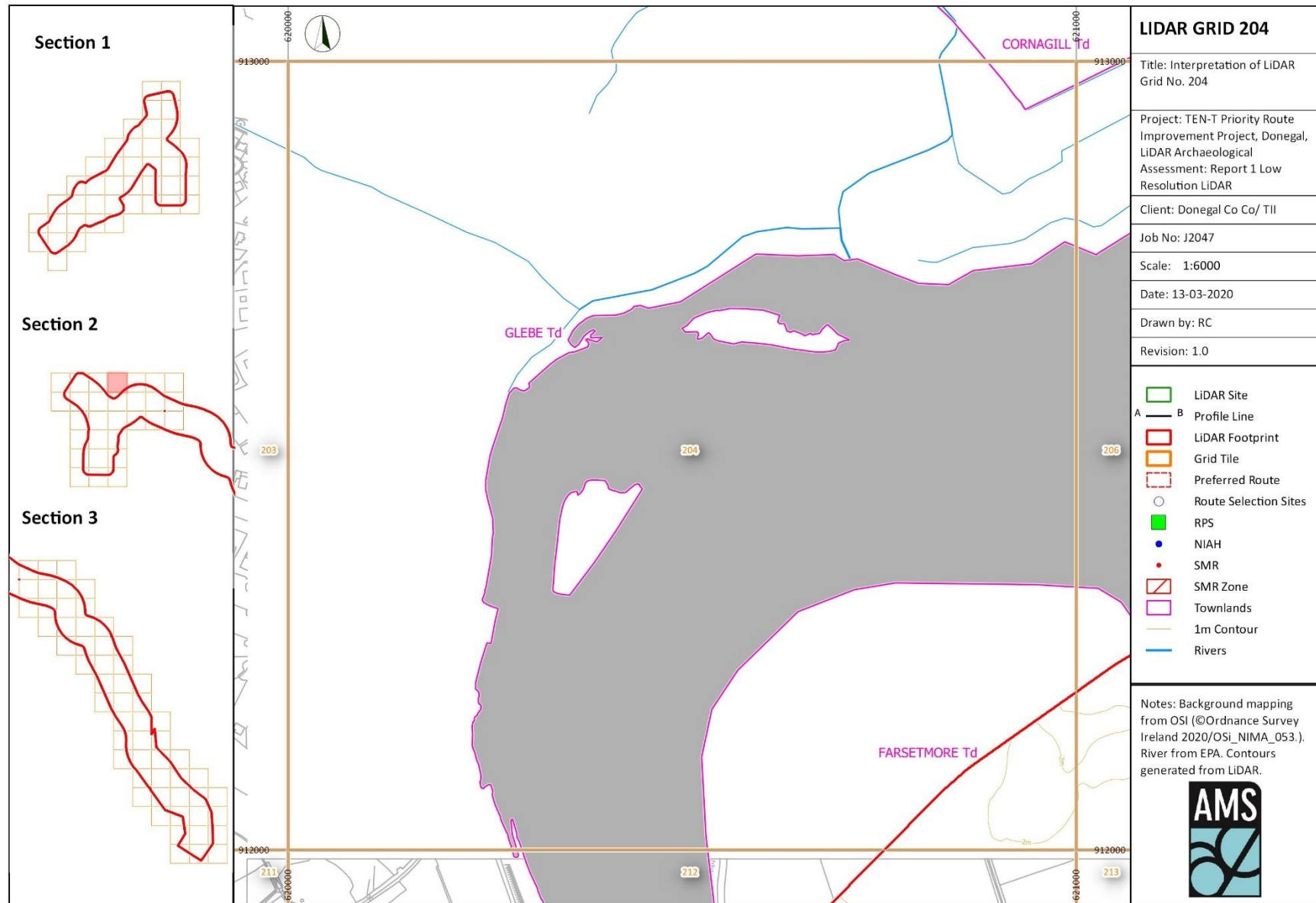
Revision: 1.0

- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

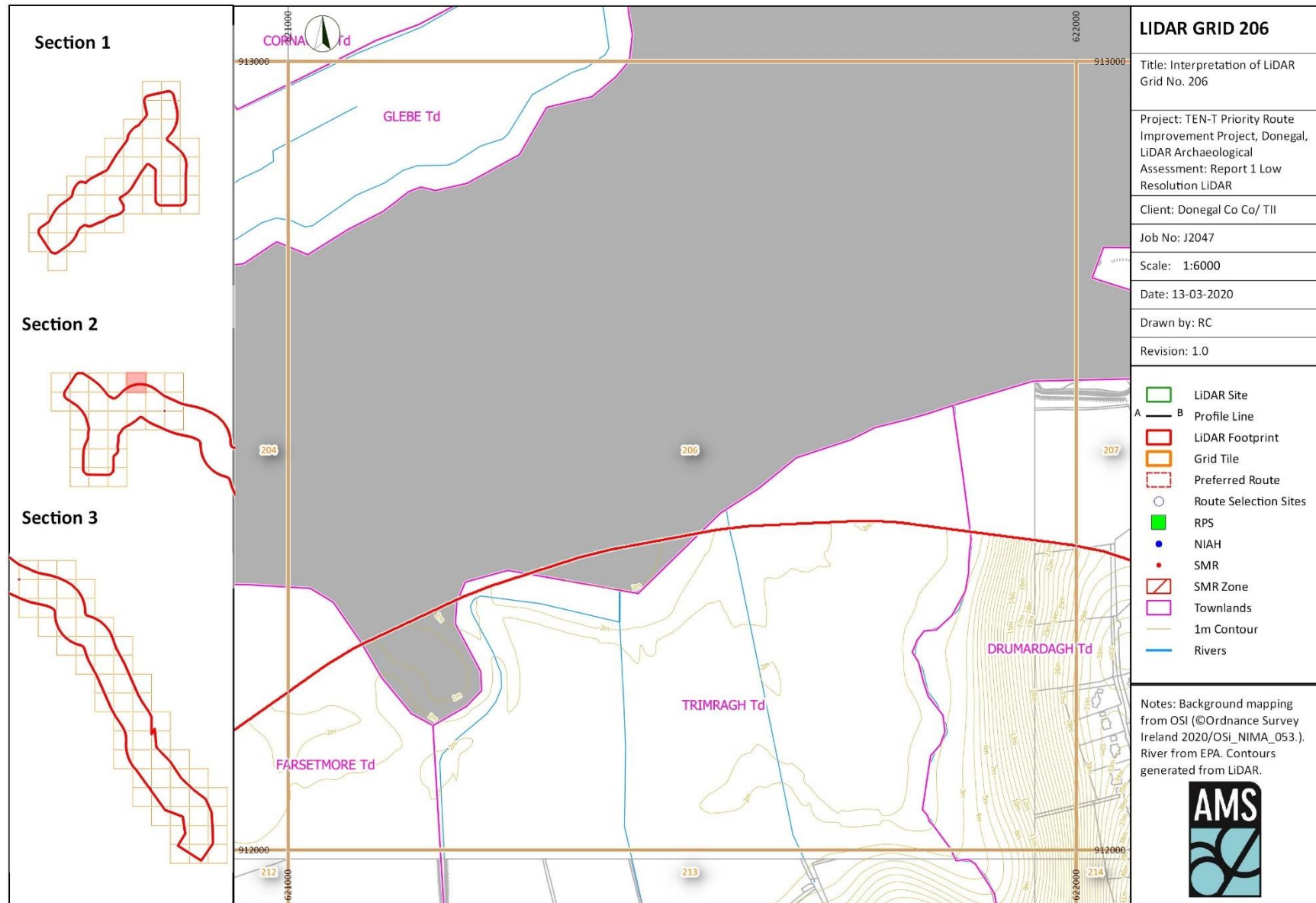
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

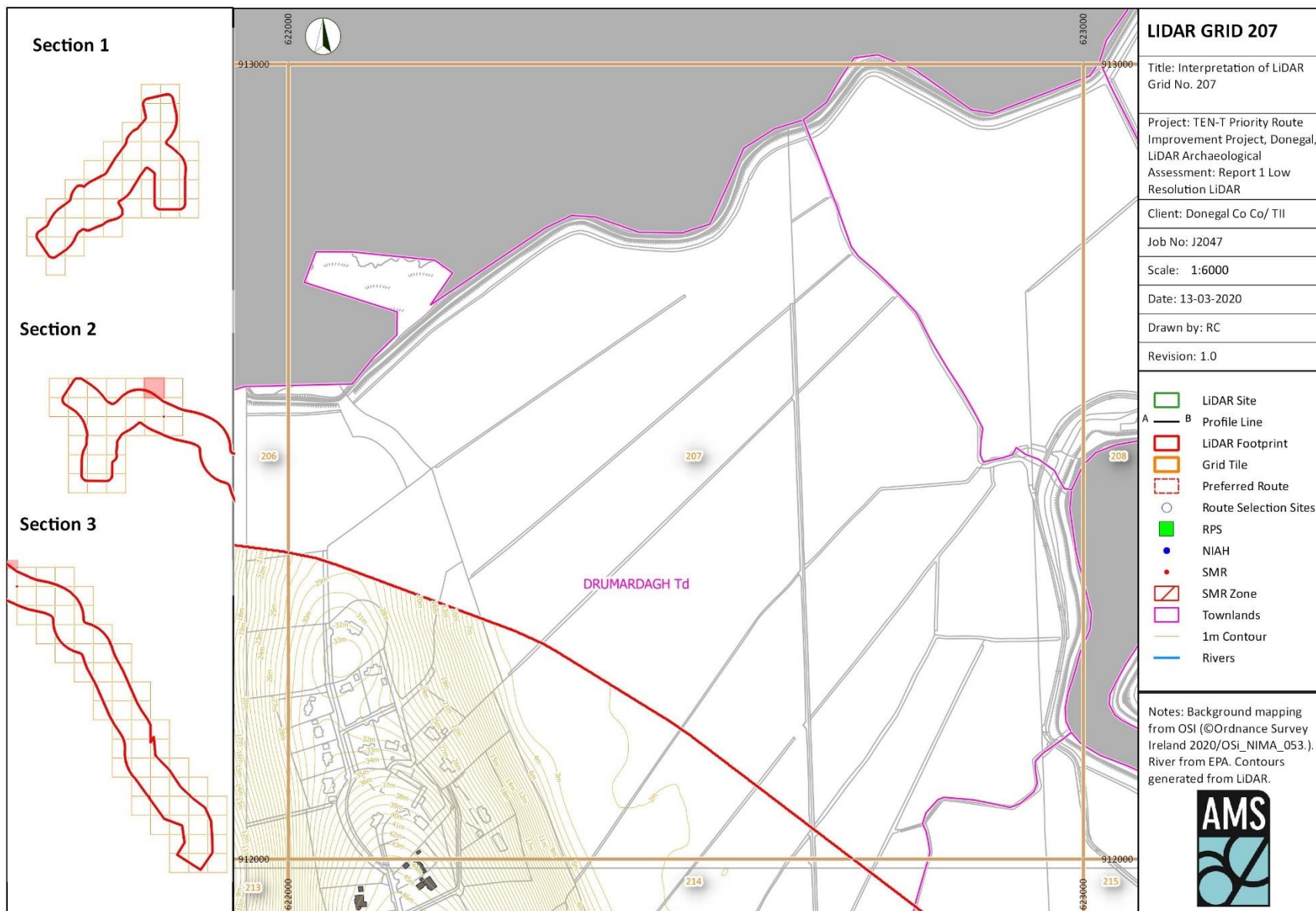


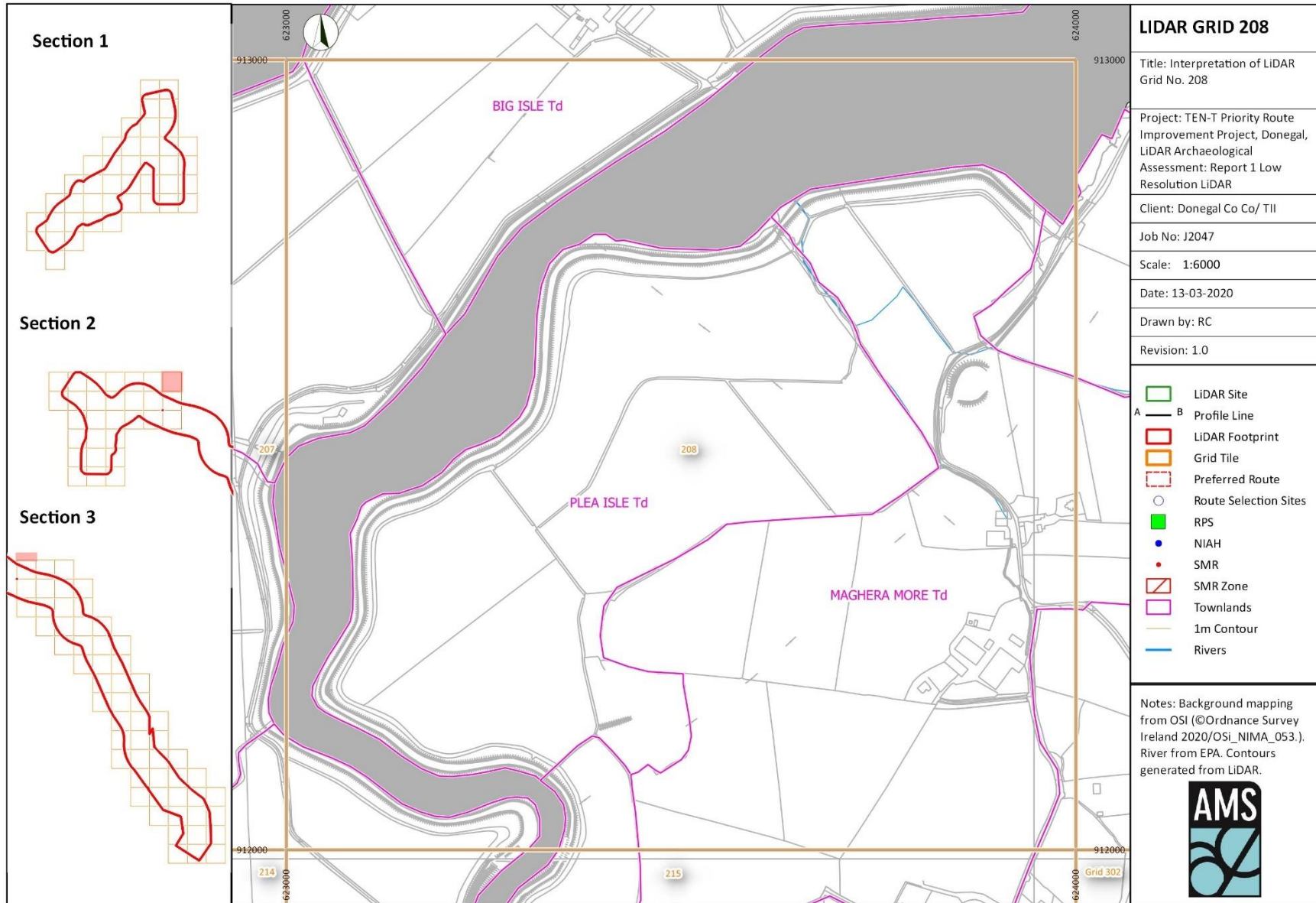


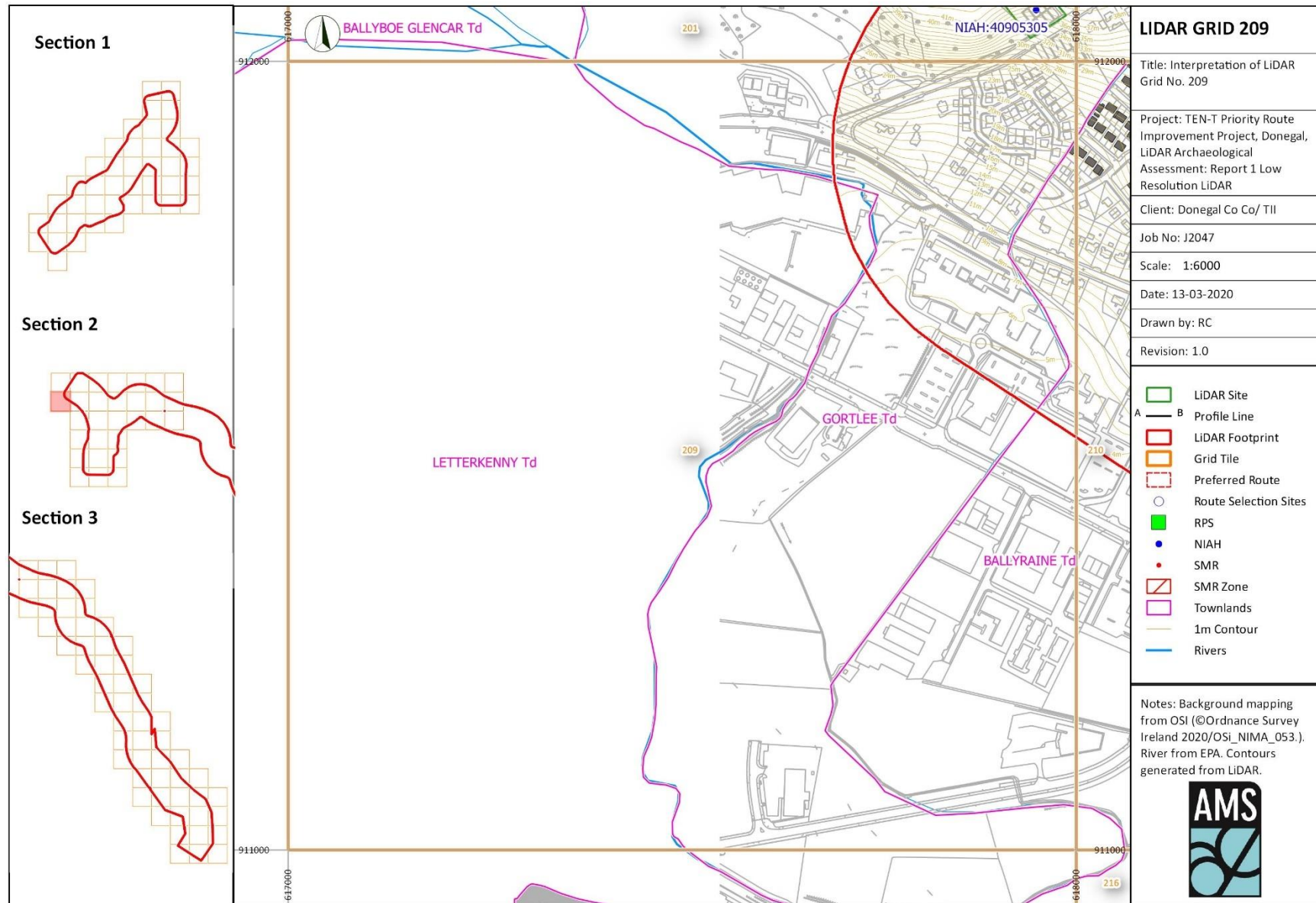


[NO GRID 205]







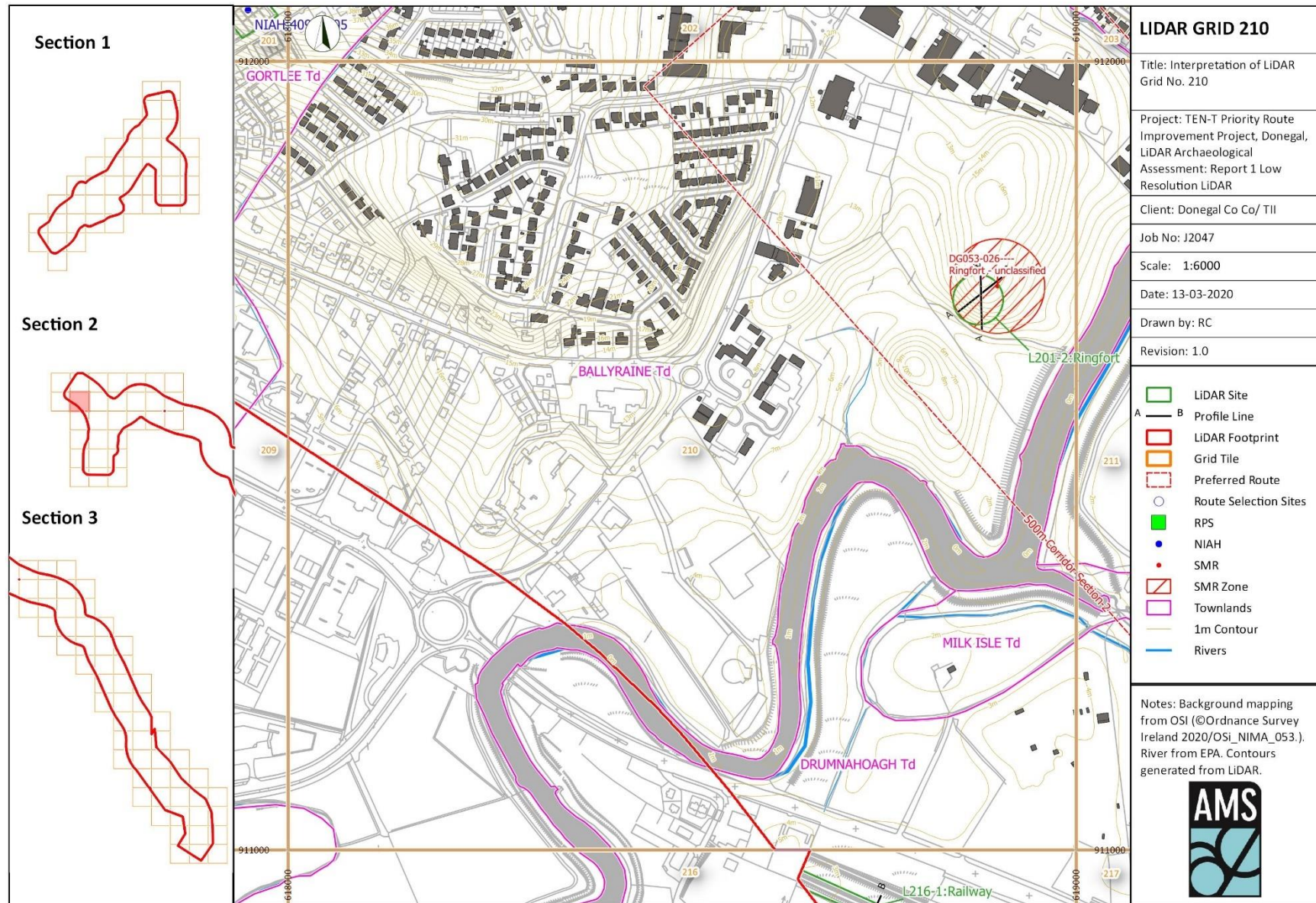


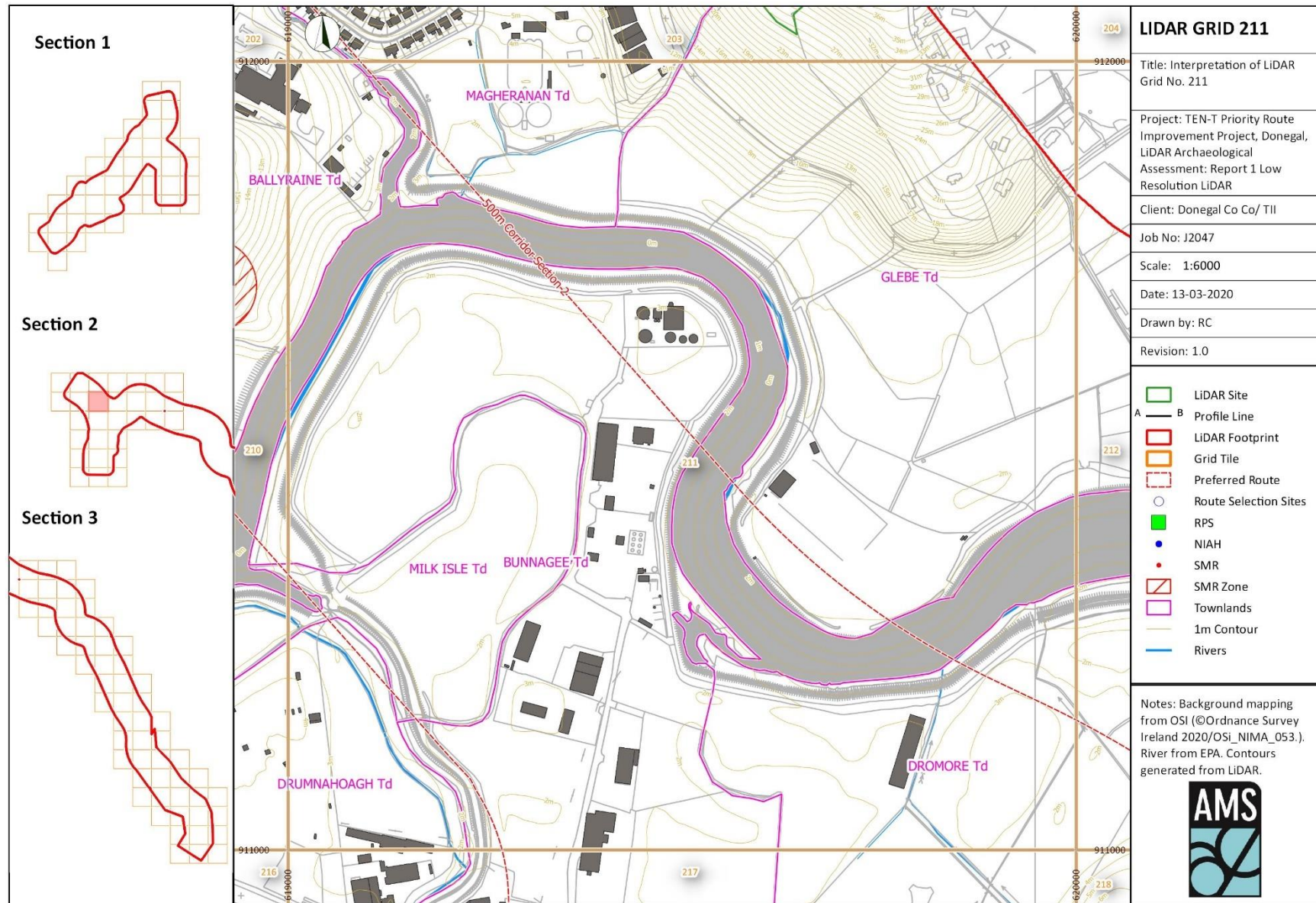
LIDAR GRID 209	
Title:	Interpretation of LiDAR Grid No. 209
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0

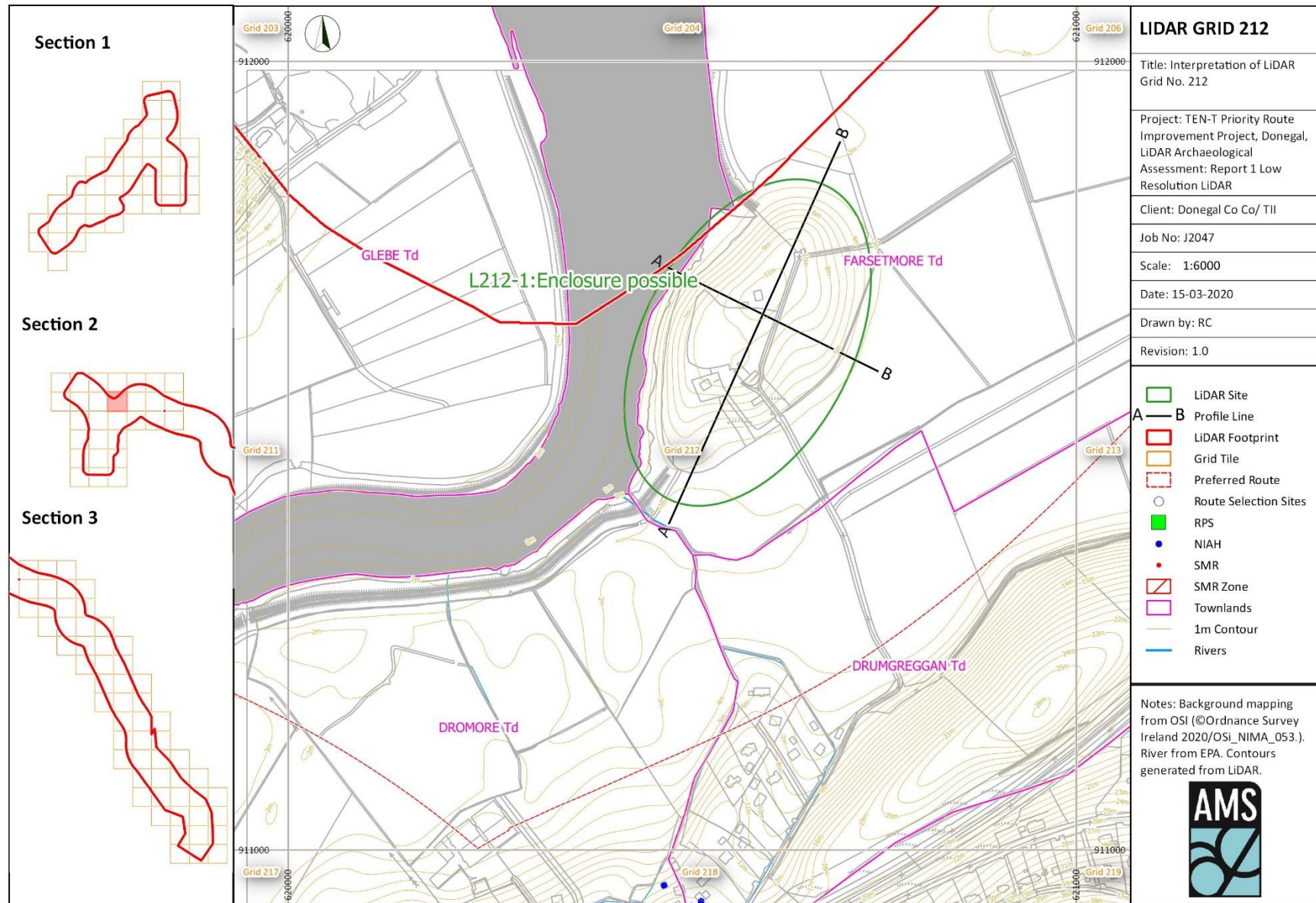
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

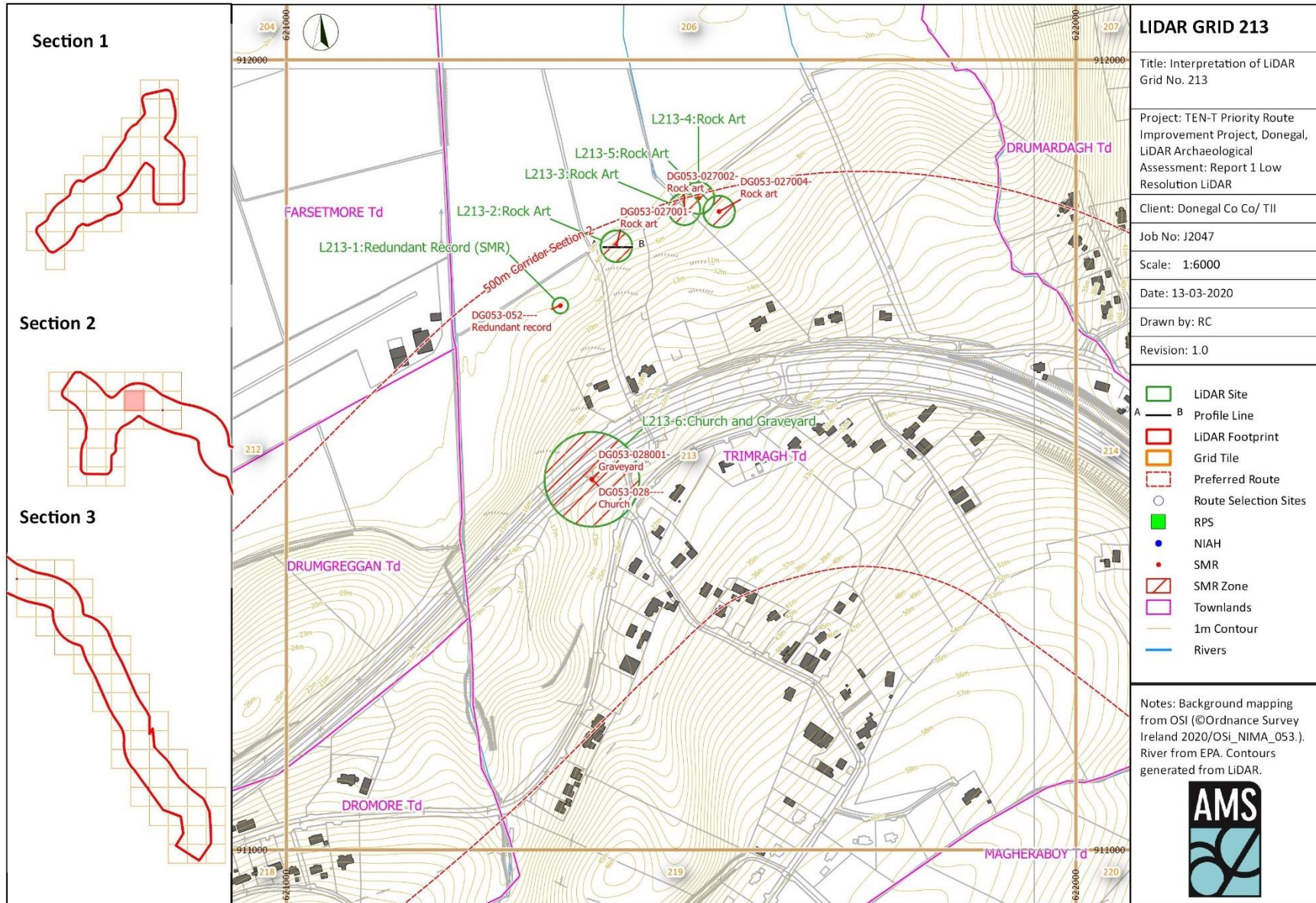
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

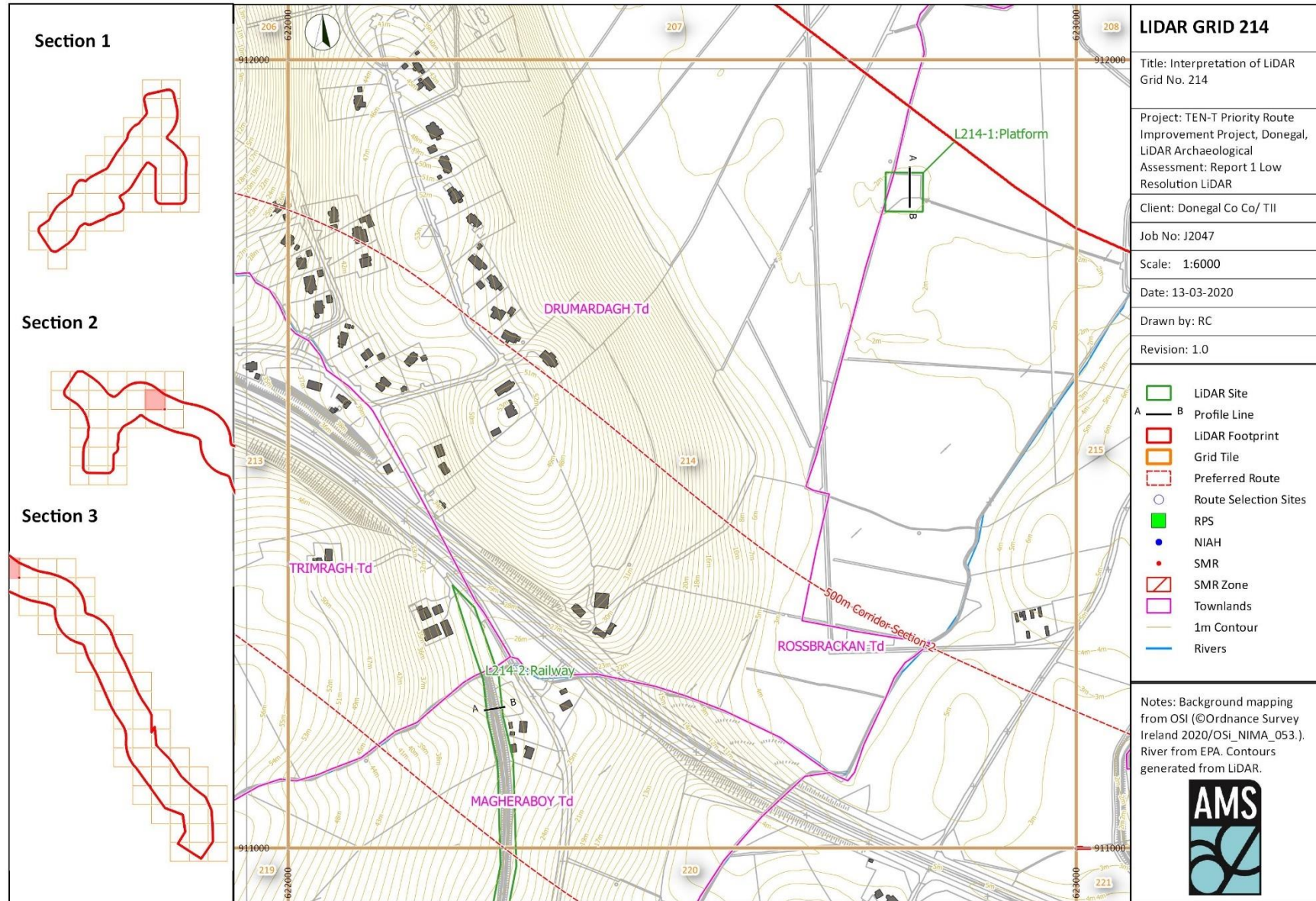


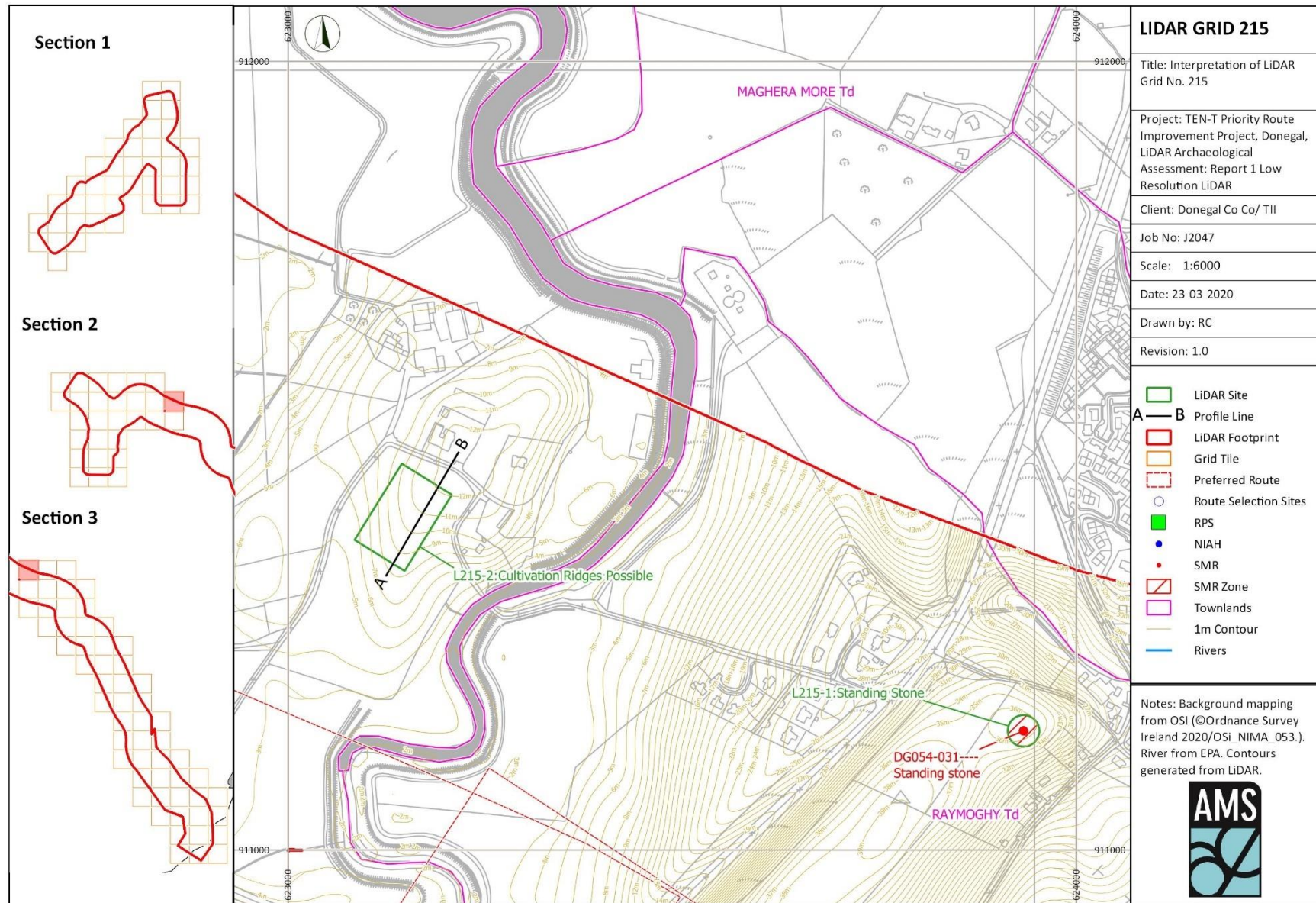


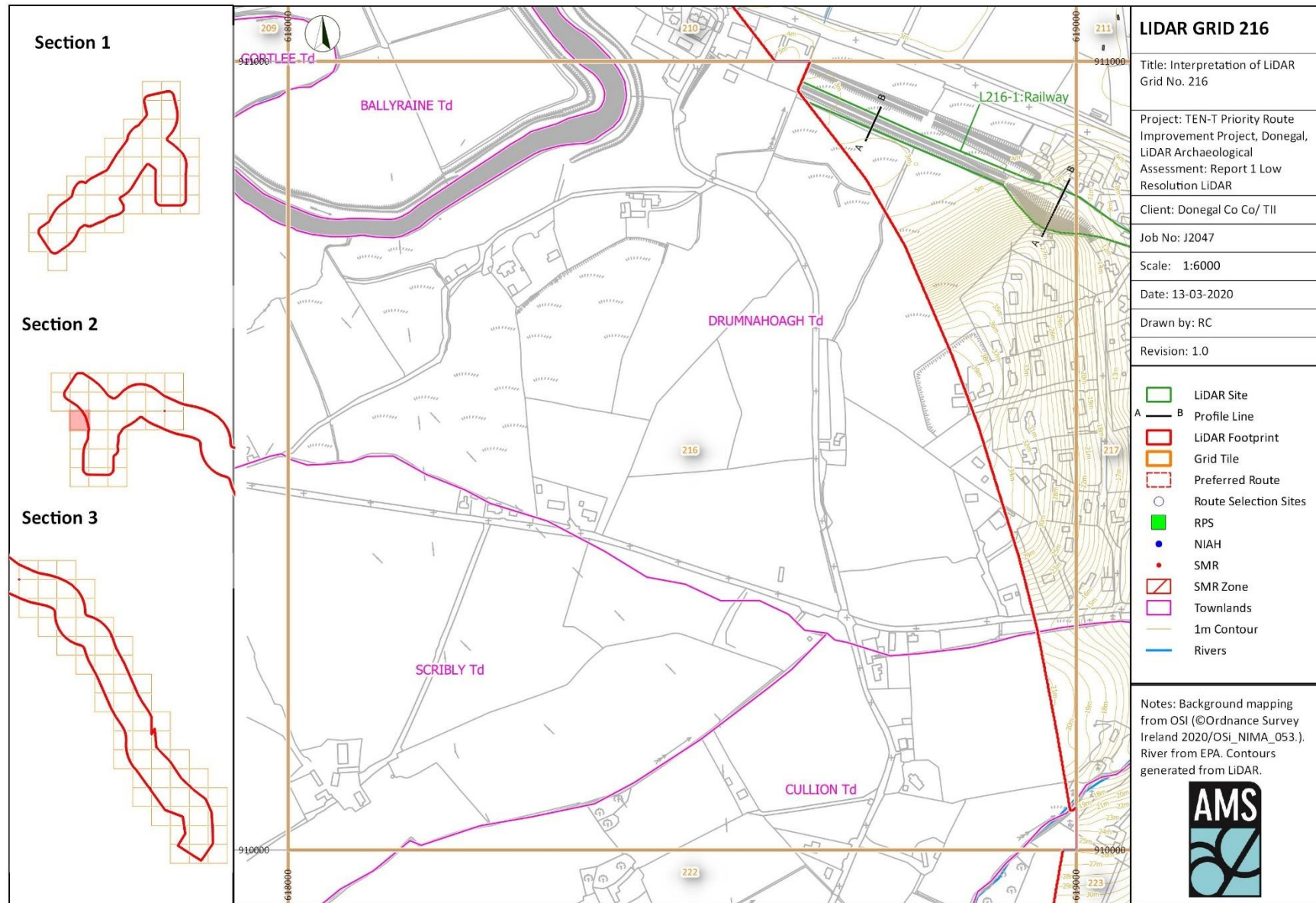


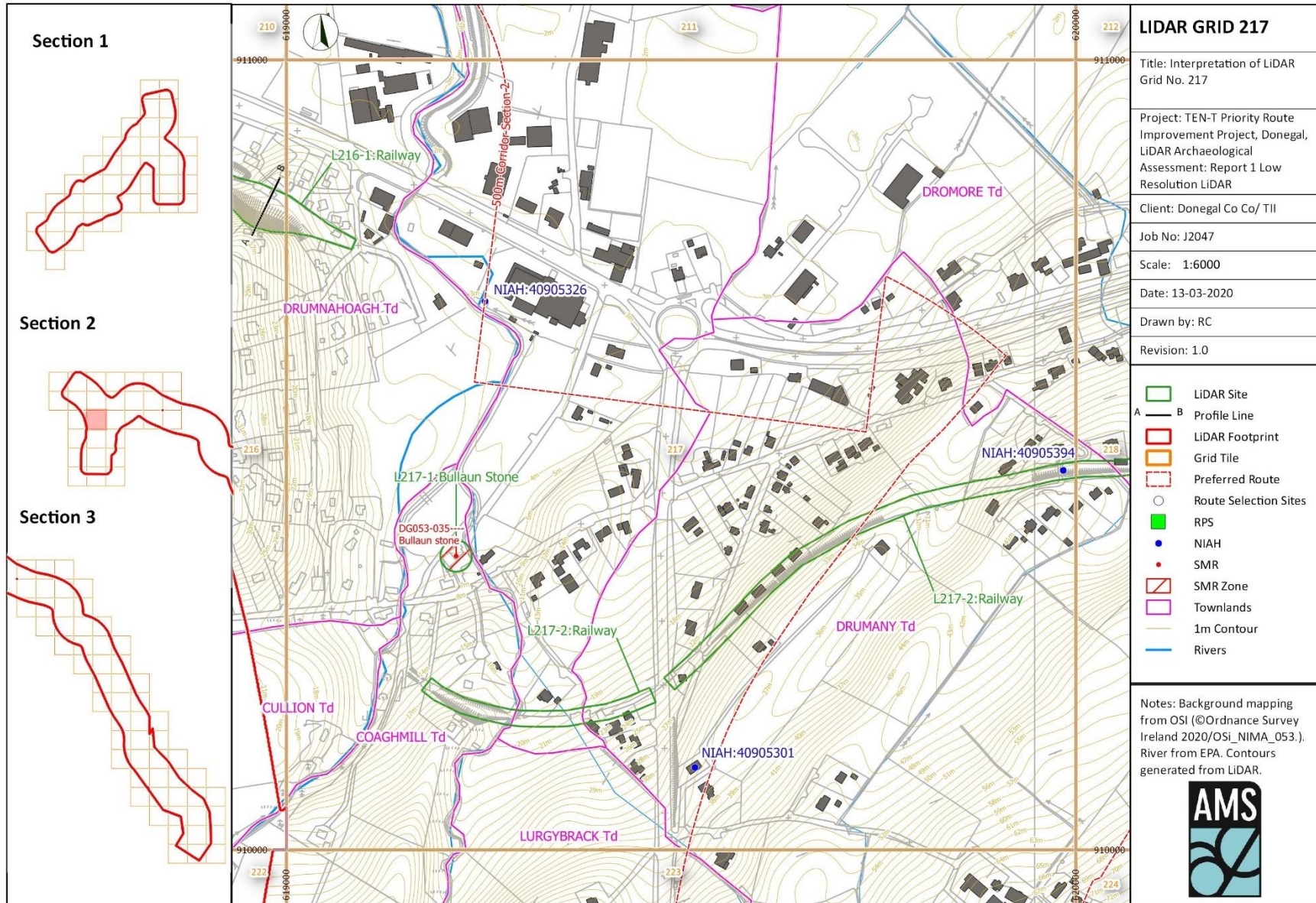


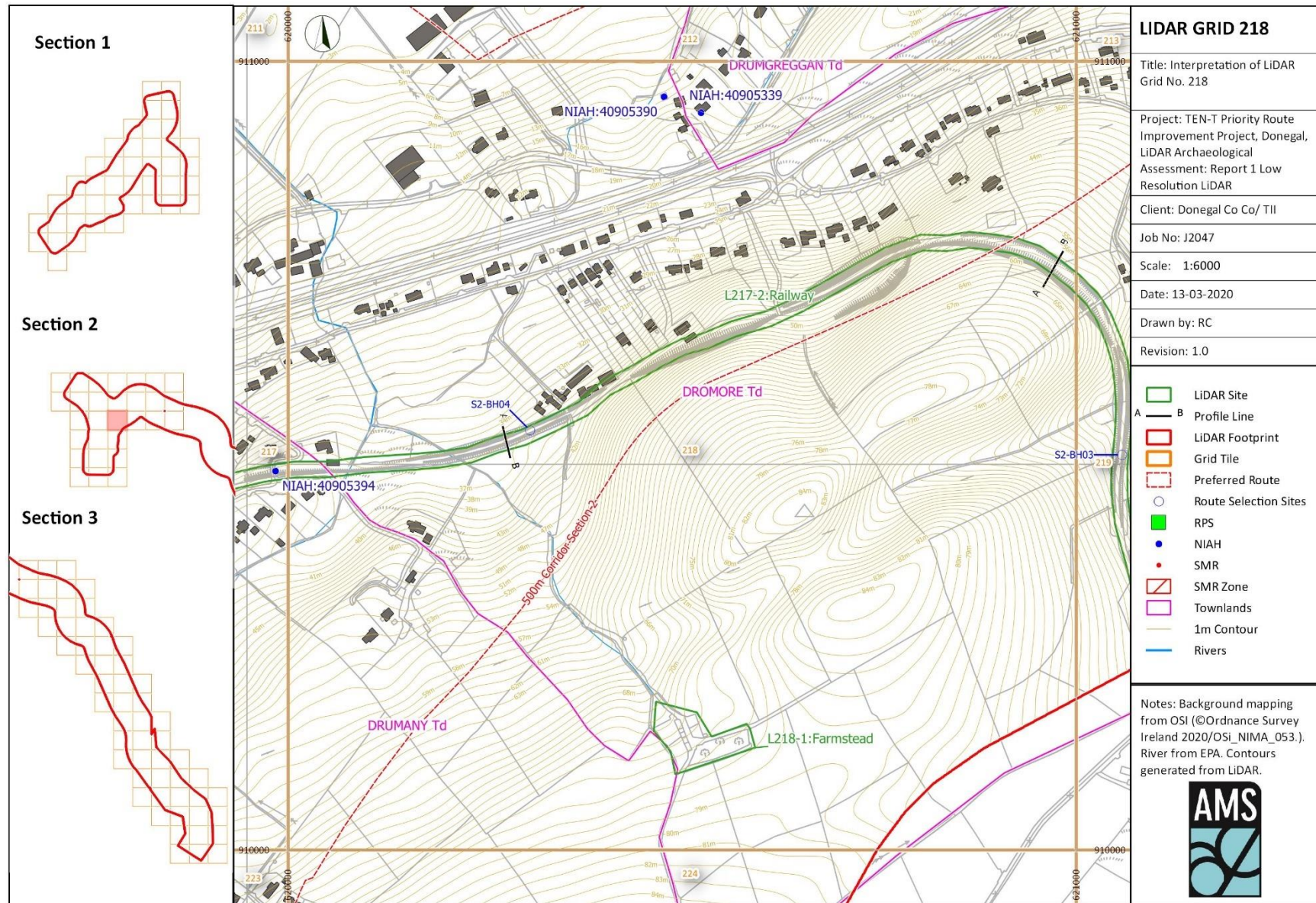












Section 1

Section 2

Section 3

LIDAR GRID 218

Title: Interpretation of LiDAR Grid No. 218

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:6000

Date: 13-03-2020

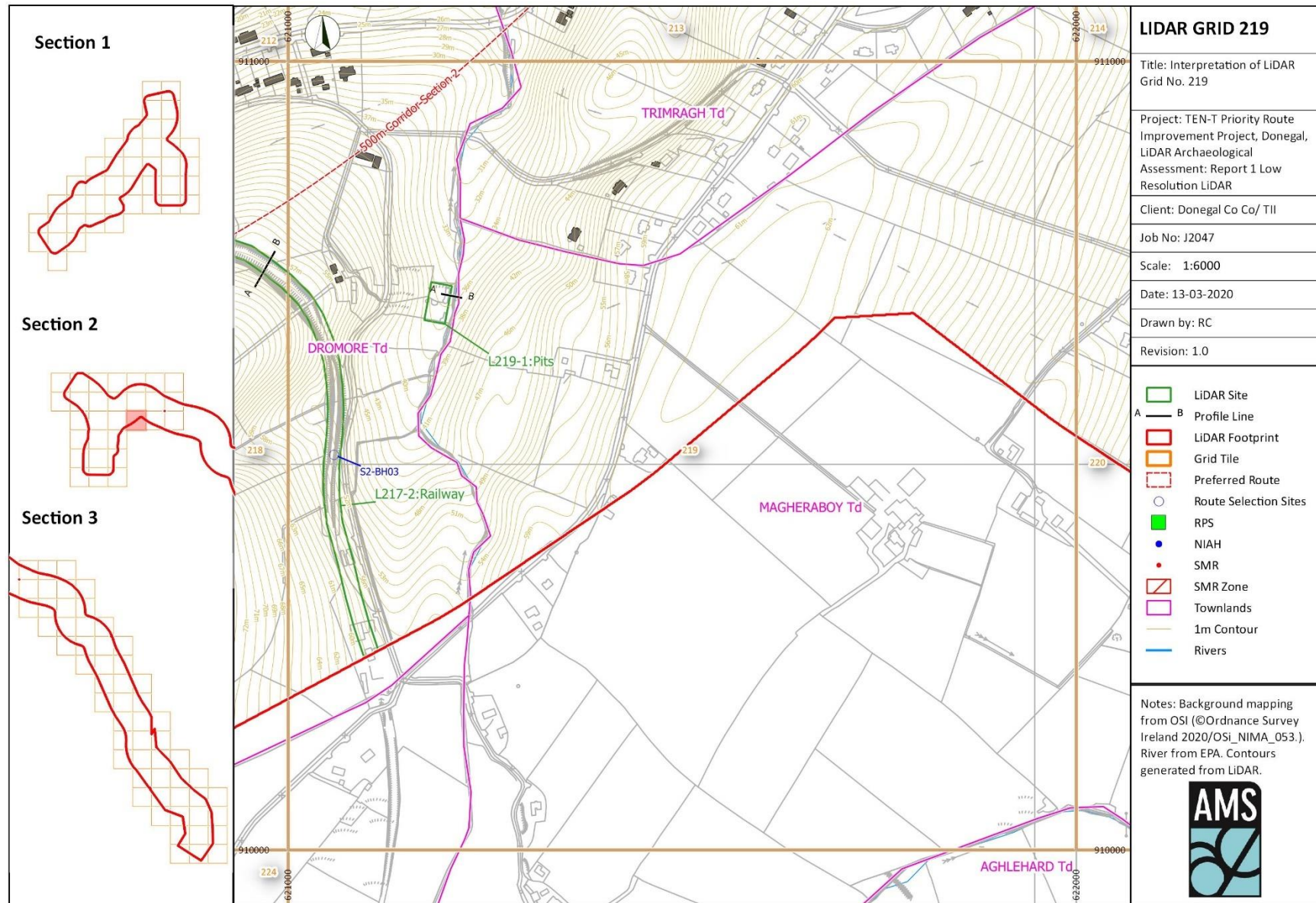
Drawn by: RC

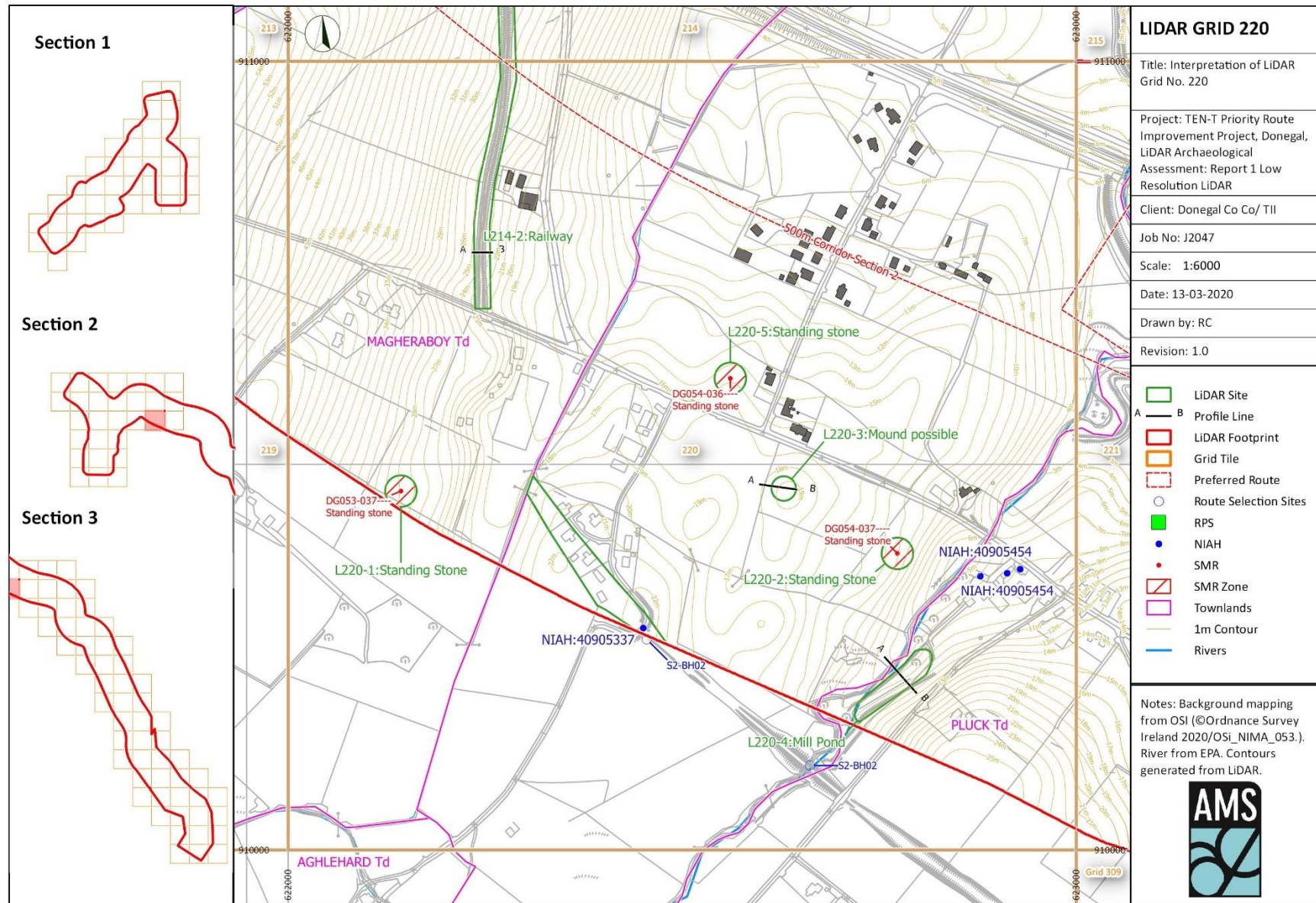
Revision: 1.0

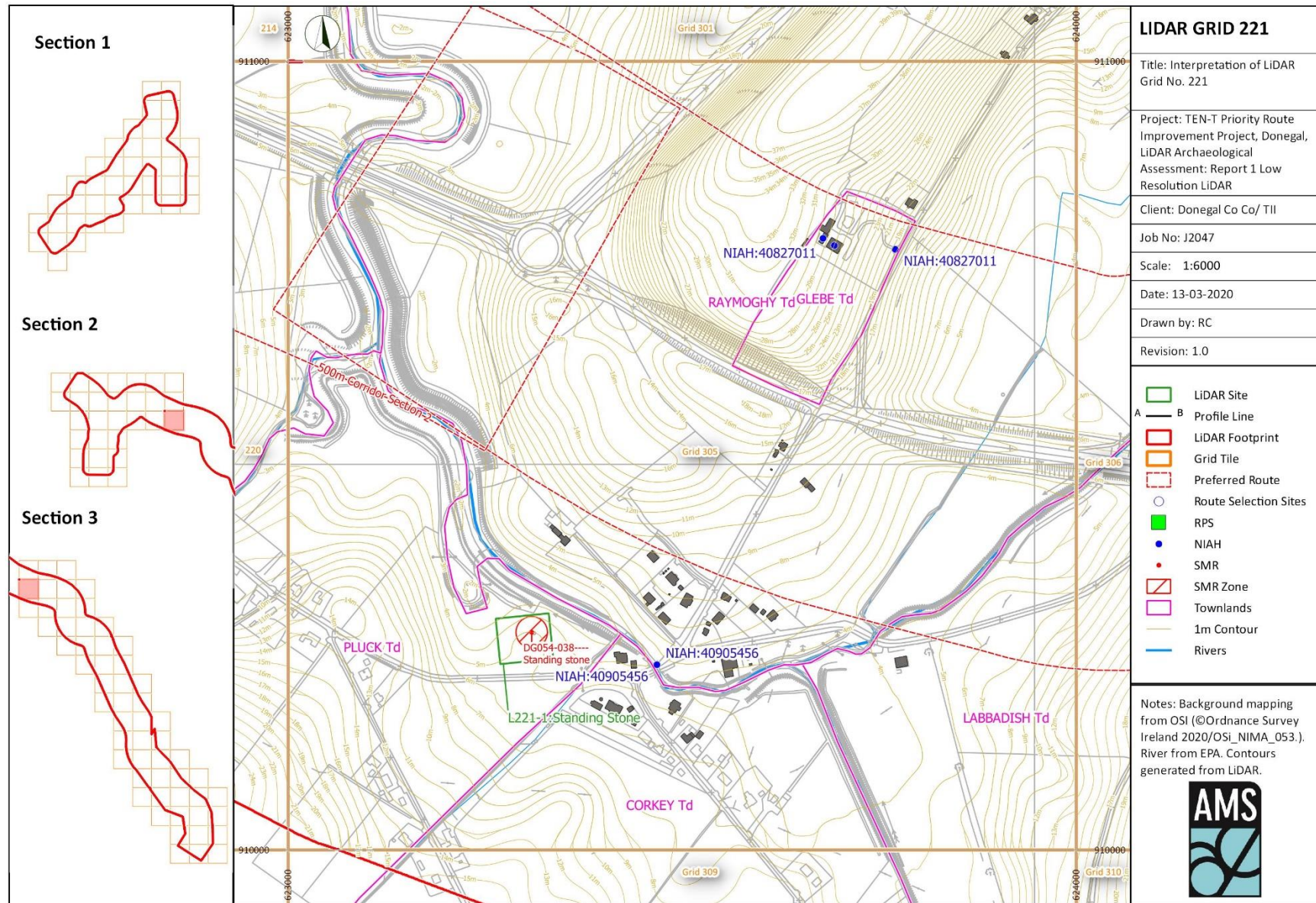
- LiDAR Site
- A — B Profile Line
- LiDAR Footprint
- Grid Tile
- - - Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- ▨ SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.





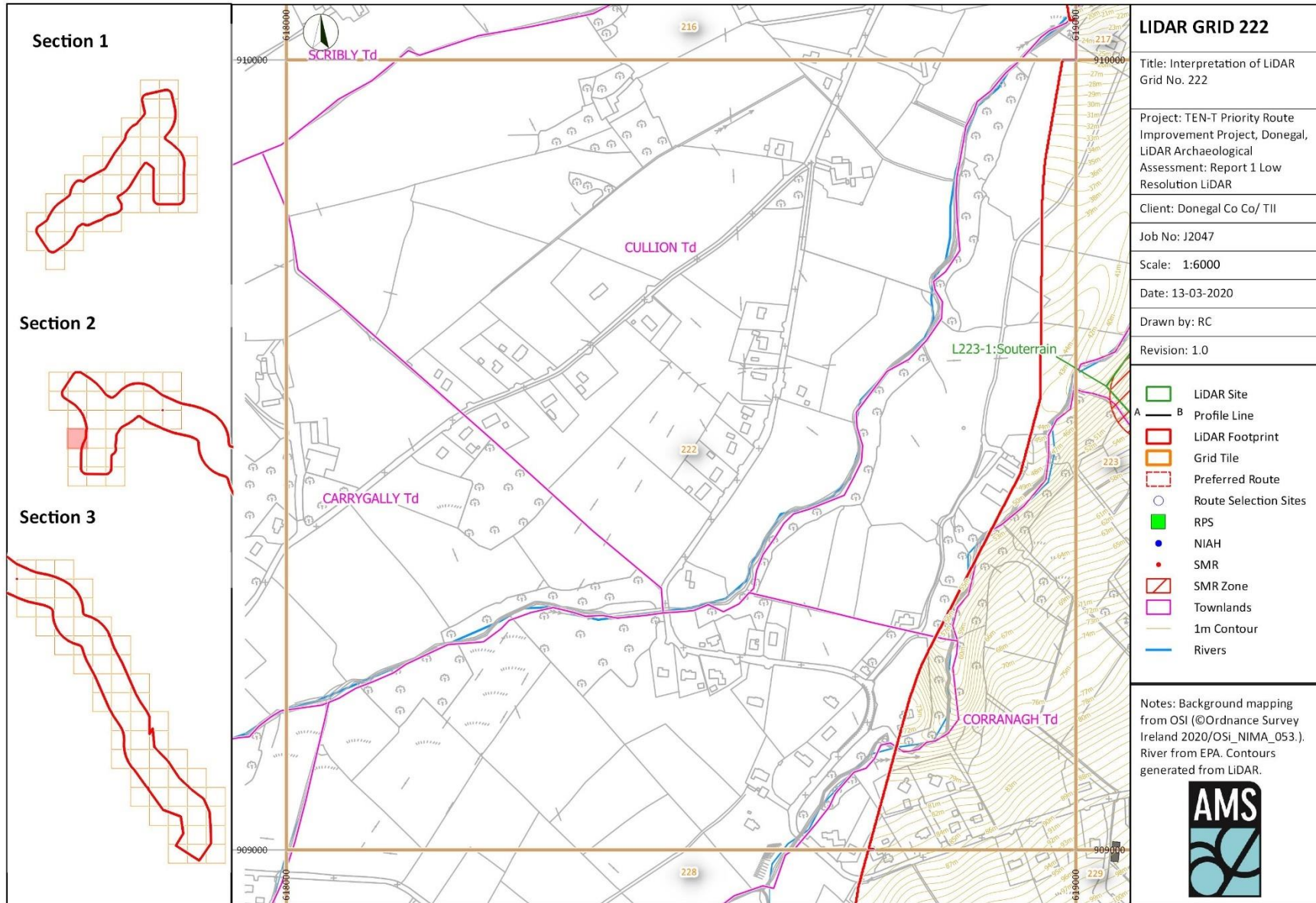


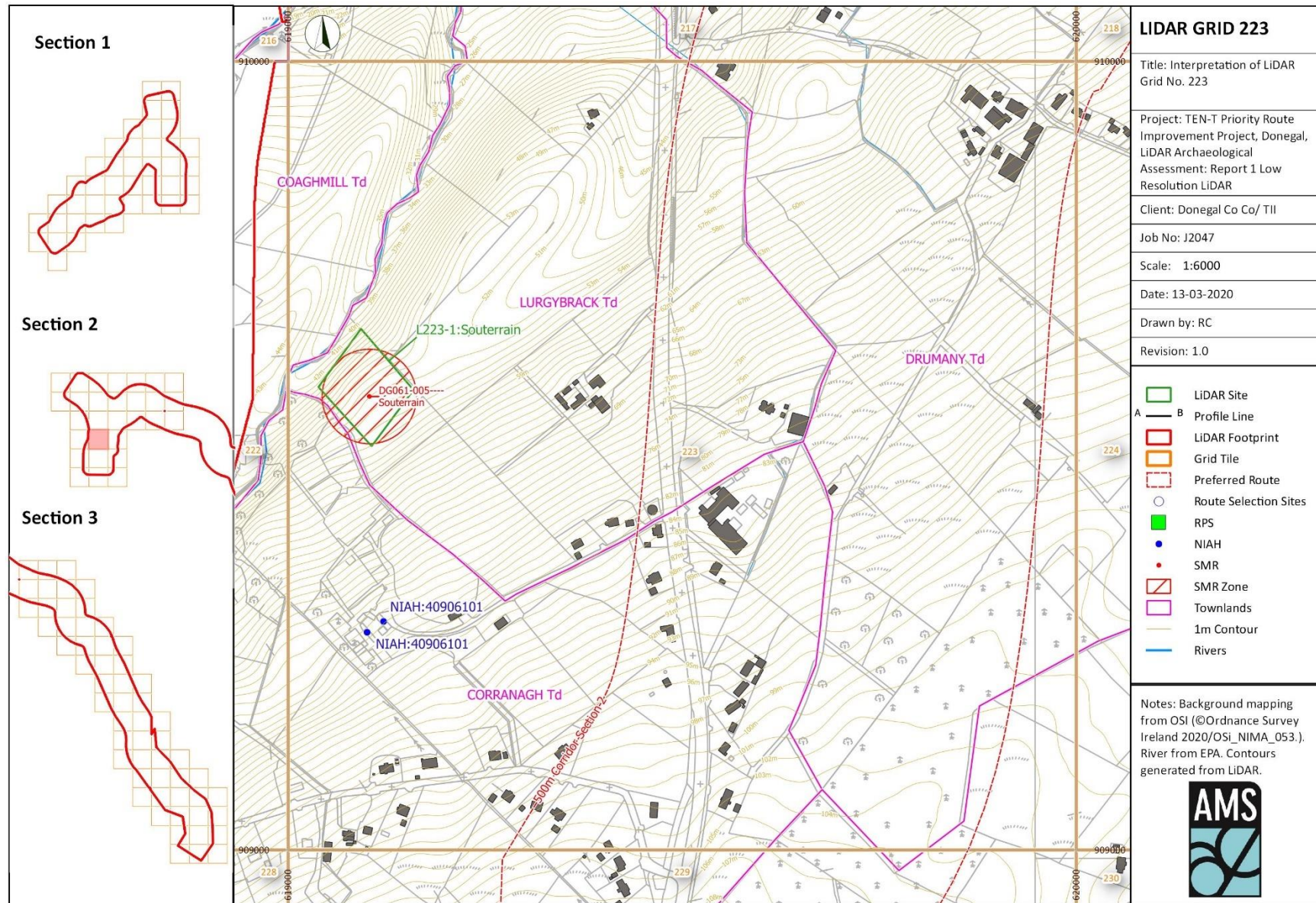


LIDAR GRID 221	
Title:	Interpretation of LiDAR Grid No. 221
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0
<ul style="list-style-type: none"> LiDAR Site Profile Line LiDAR Footprint Grid Tile Preferred Route Route Selection Sites RPS NIAH SMR SMR Zone Townlands 1m Contour Rivers 	

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.







Section 1

Section 2

Section 3

LIDAR GRID 223

Title: Interpretation of LiDAR Grid No. 223

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:6000

Date: 13-03-2020

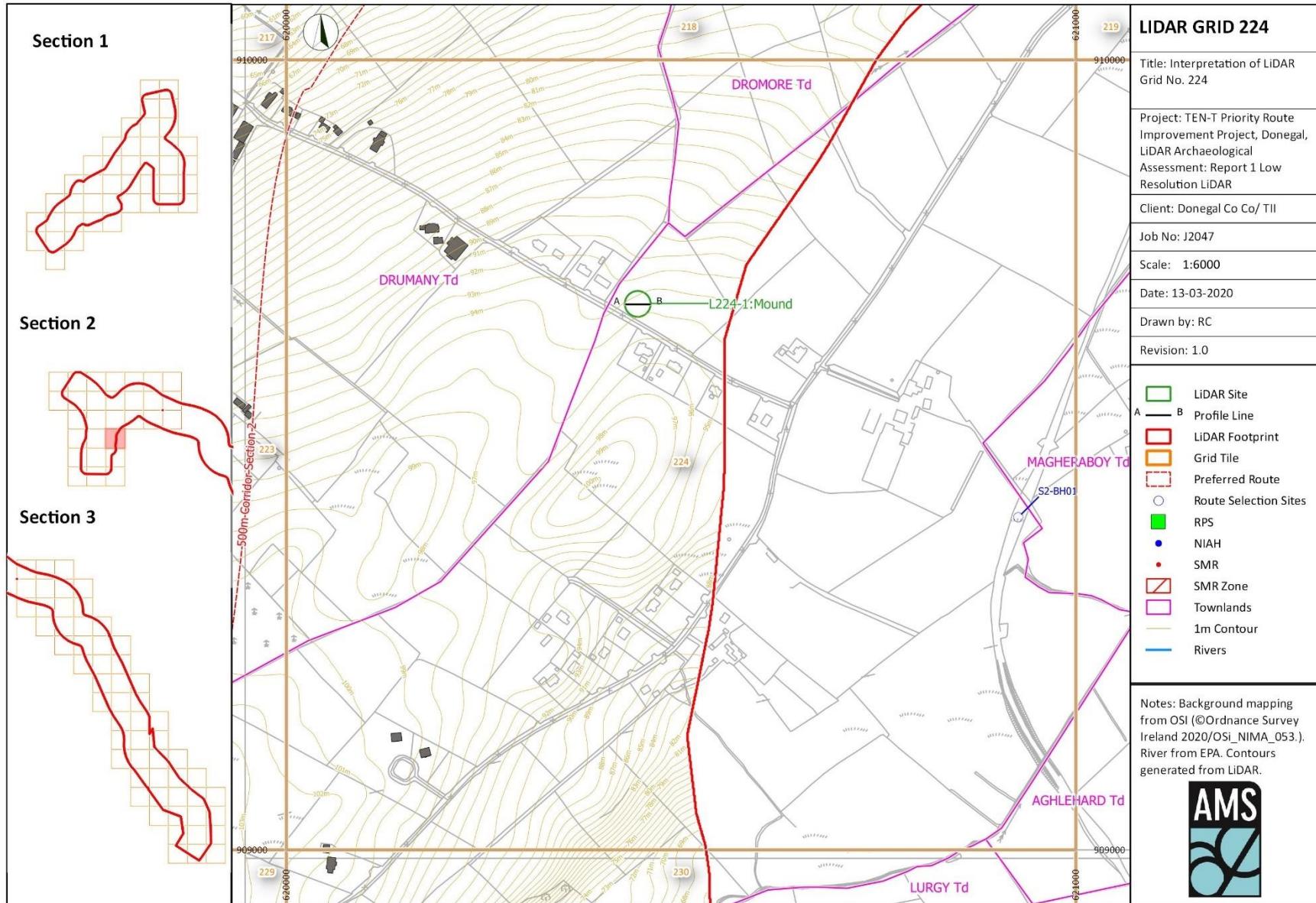
Drawn by: RC

Revision: 1.0

- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

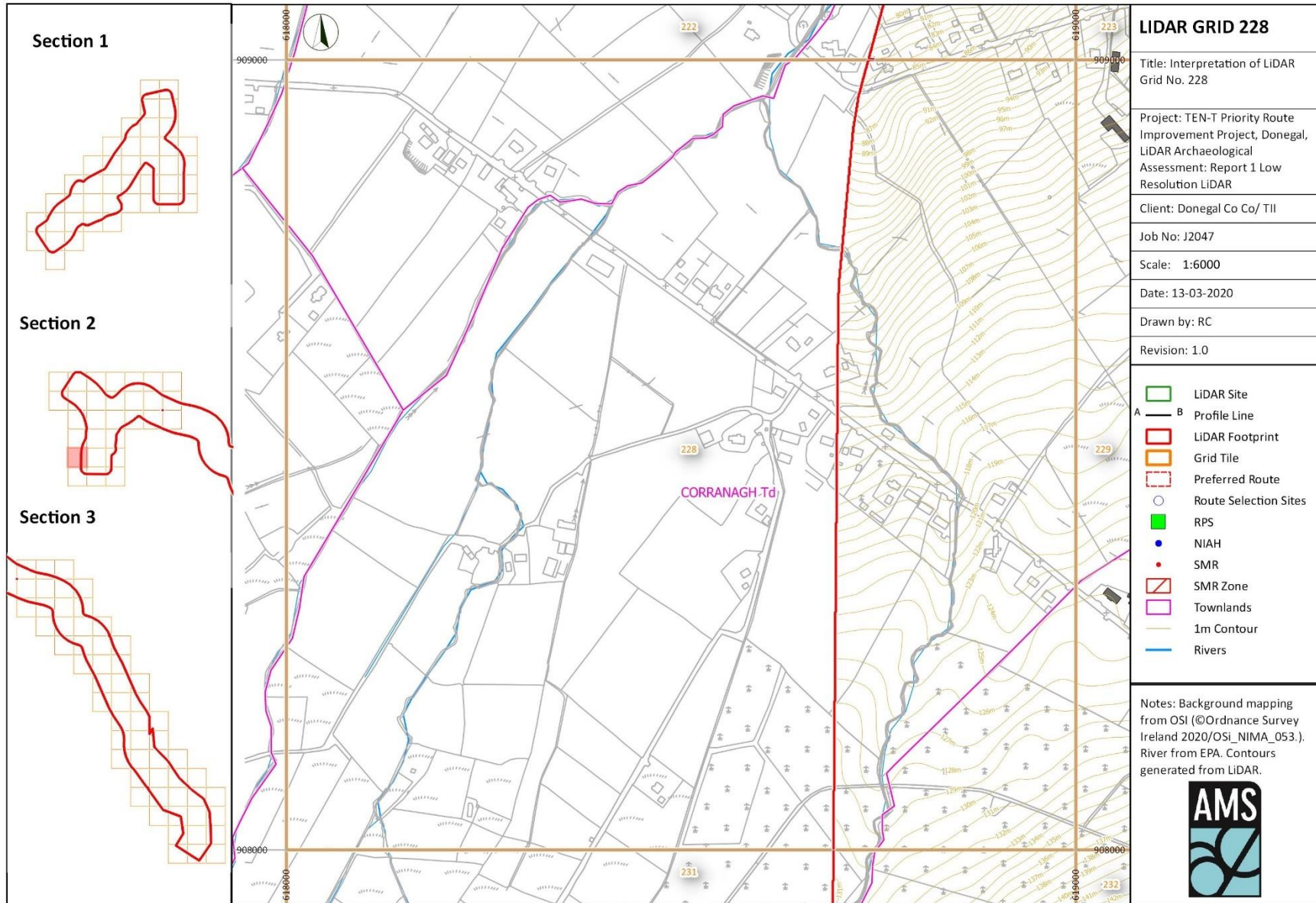


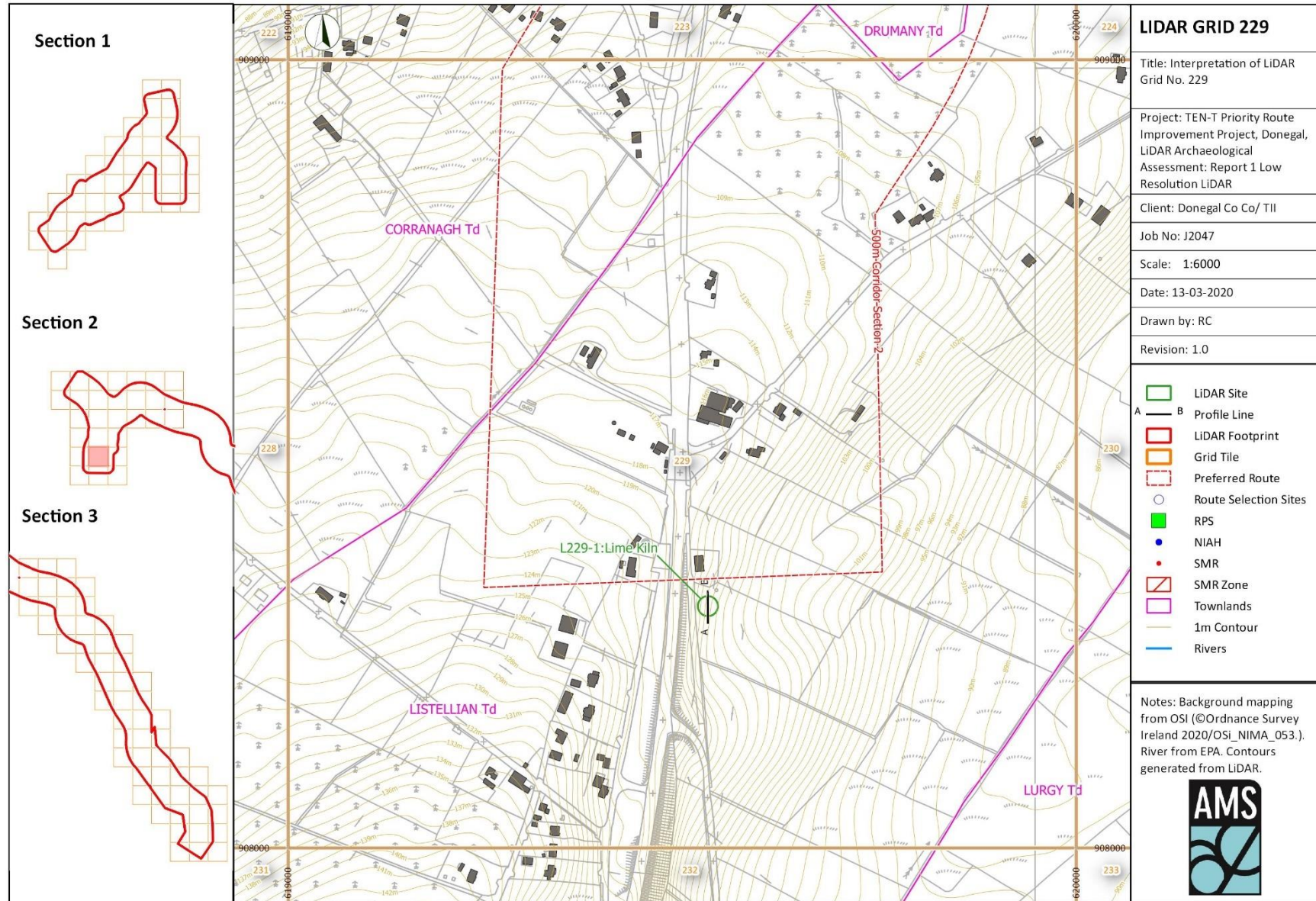


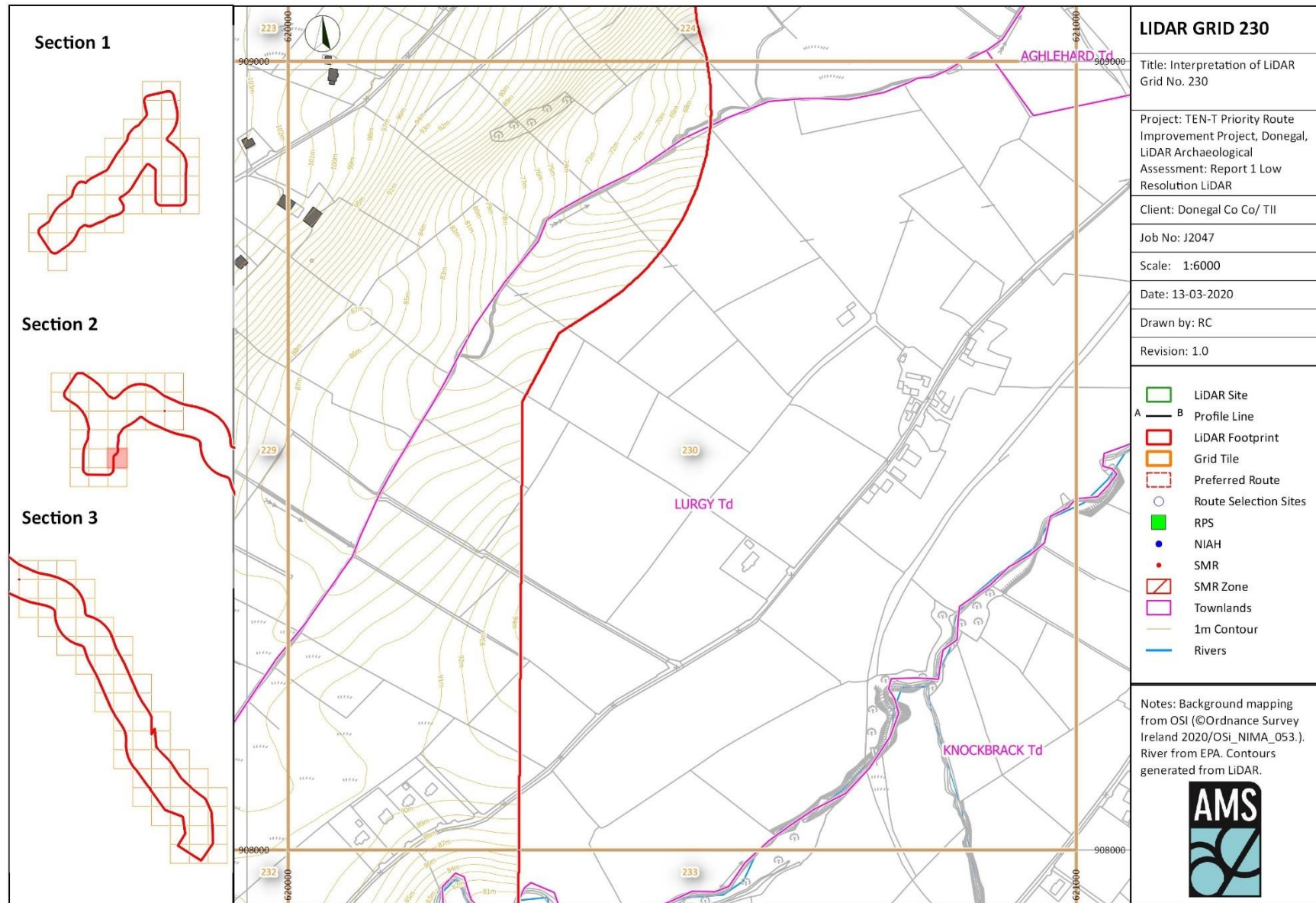
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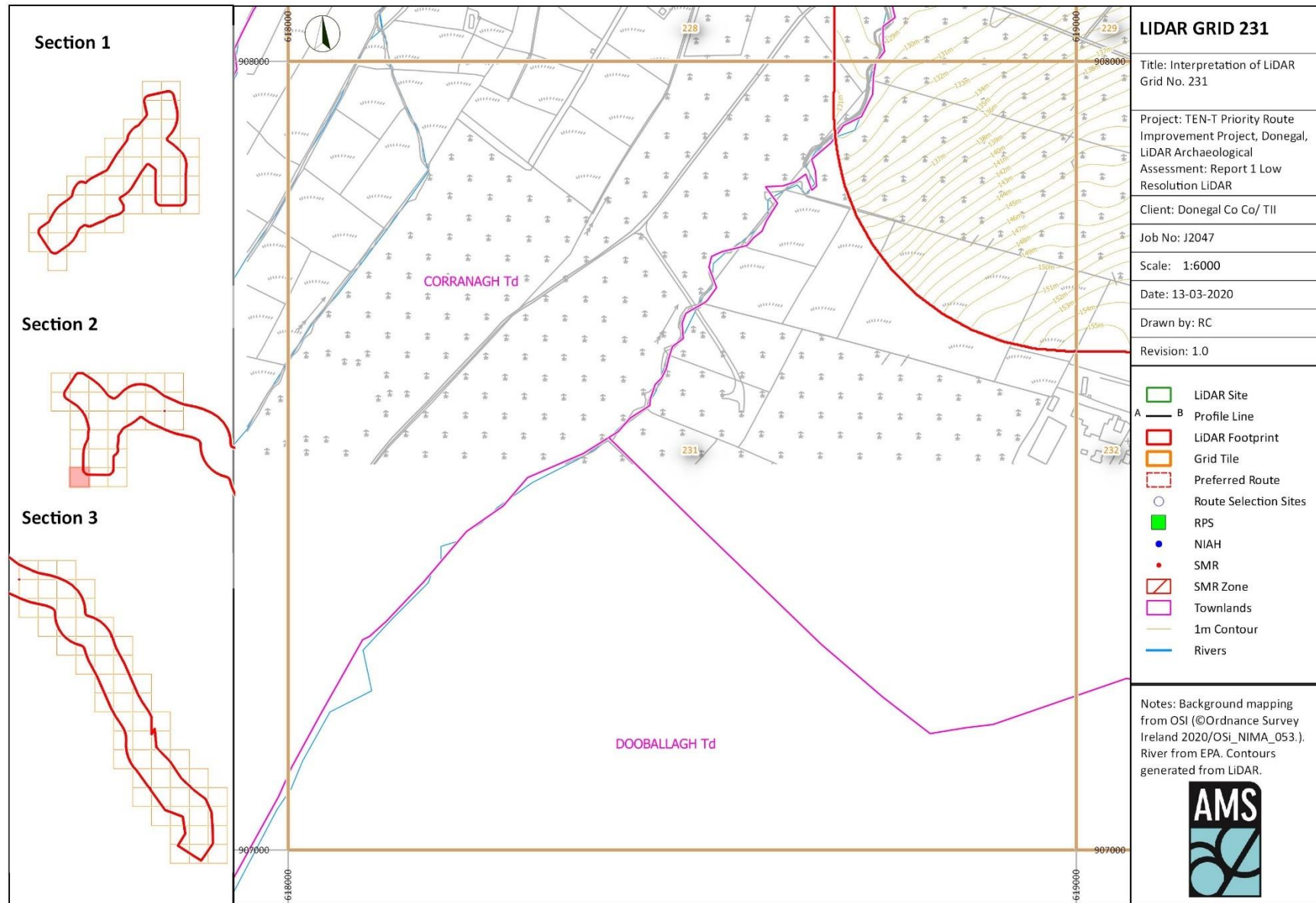
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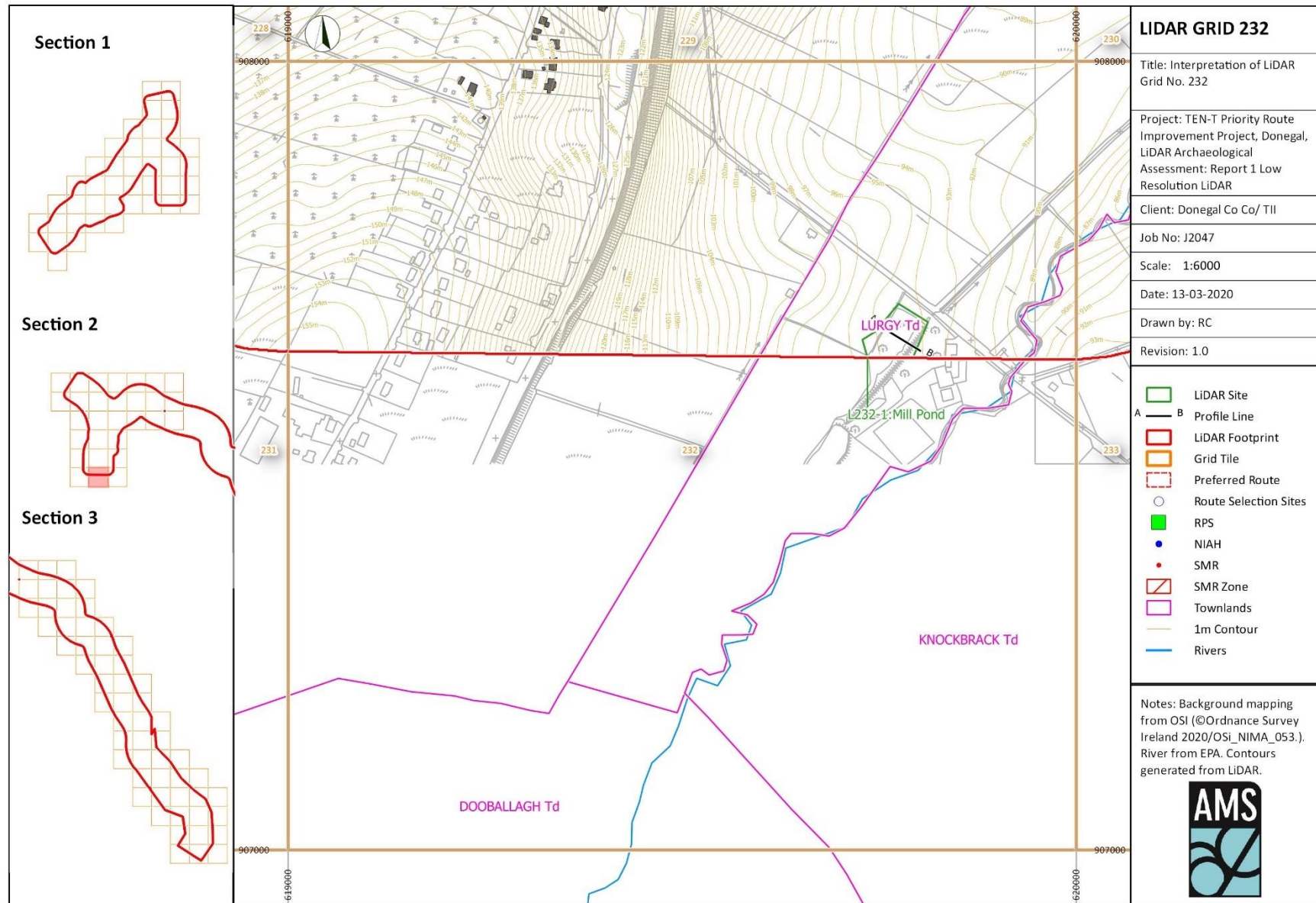
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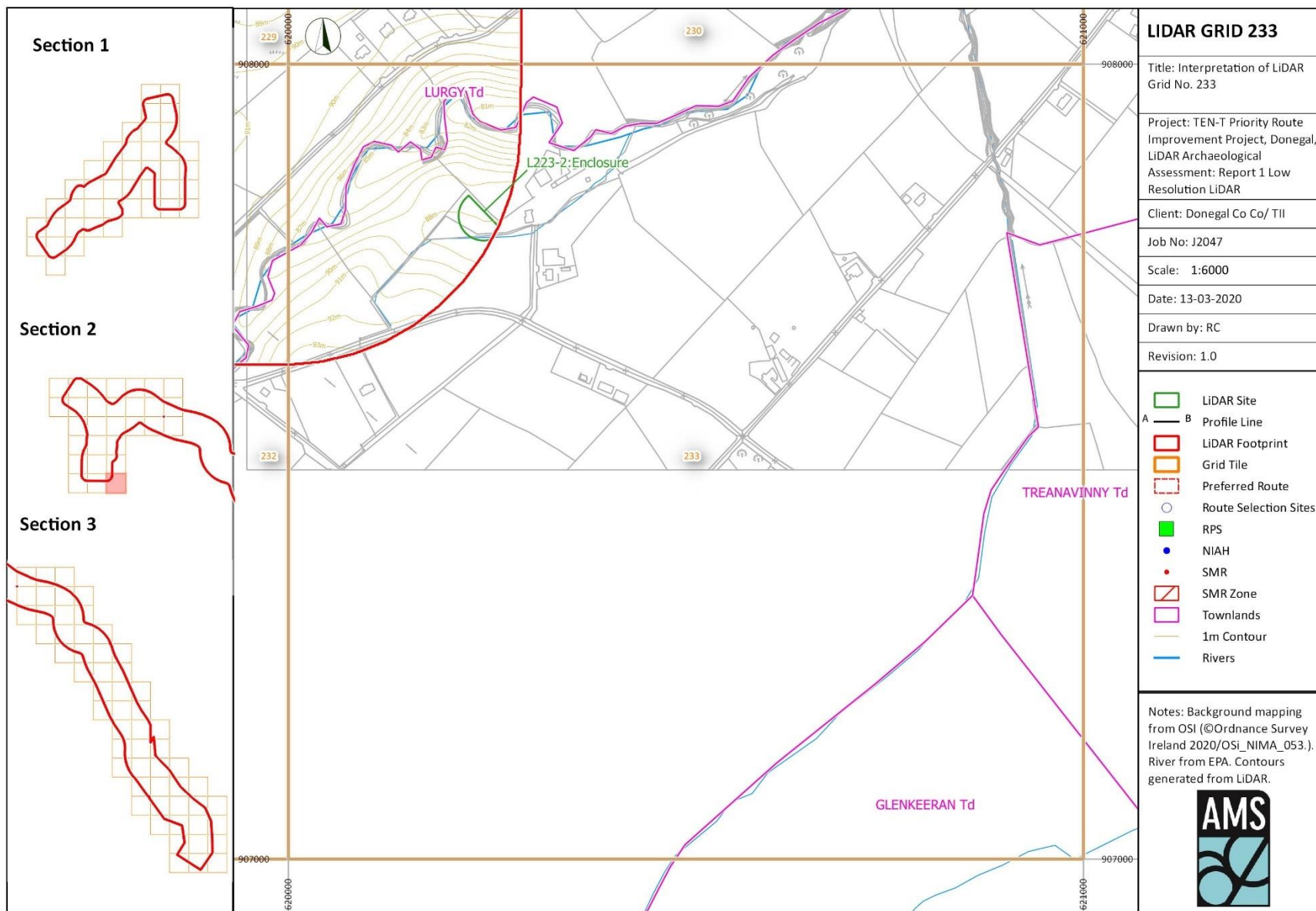




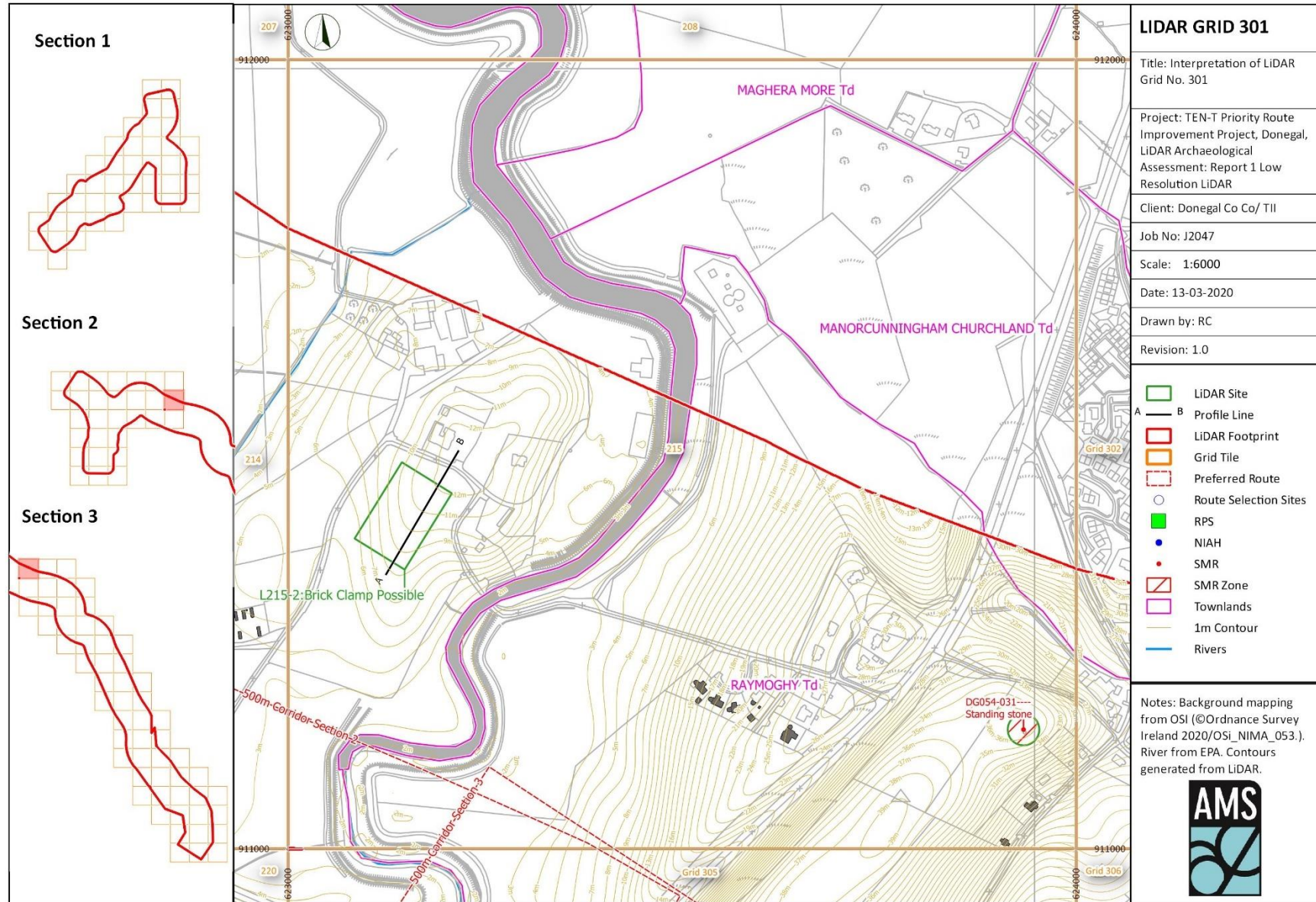


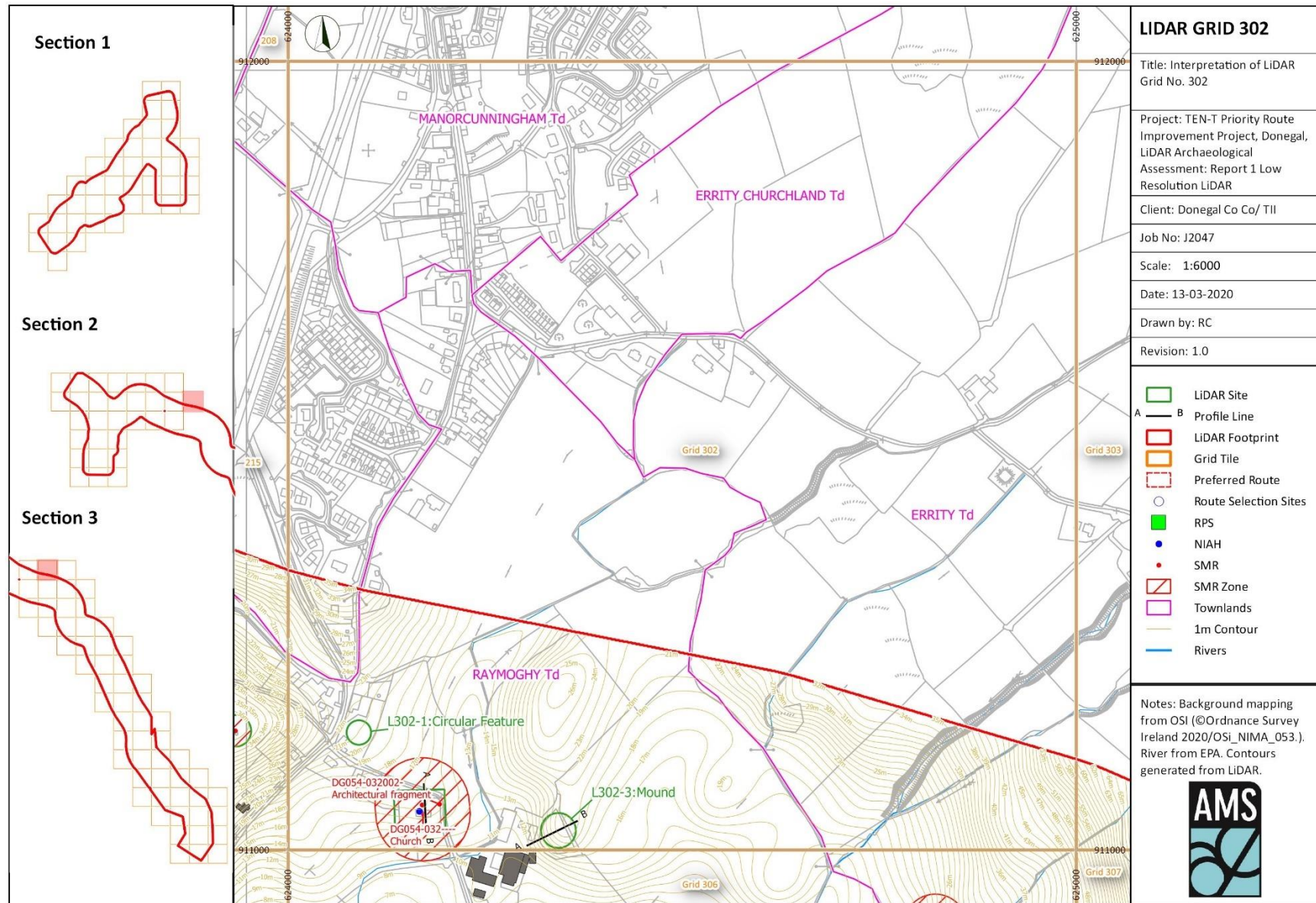


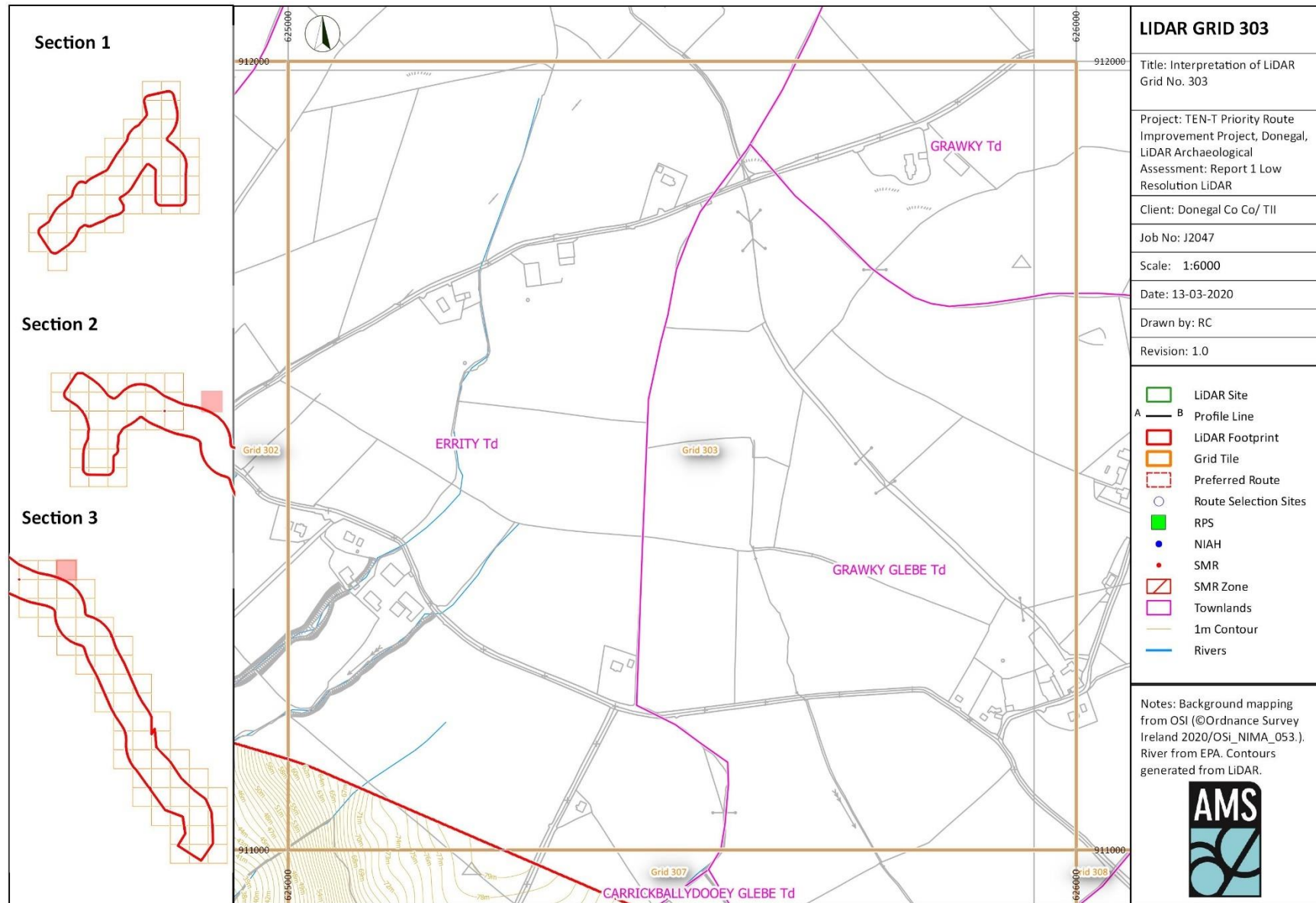




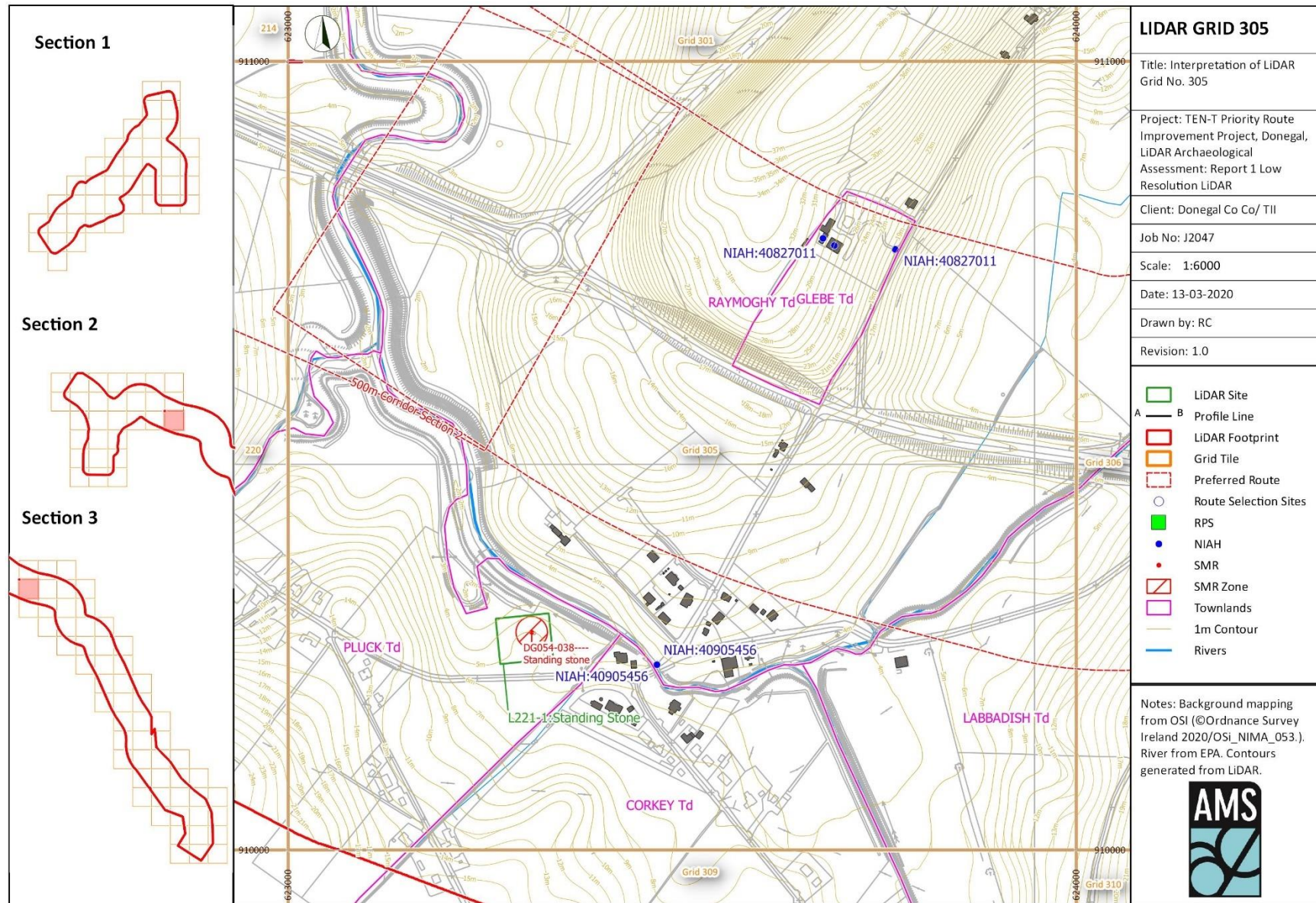
Section 3 Grid Tiles







[NO GRID 304]

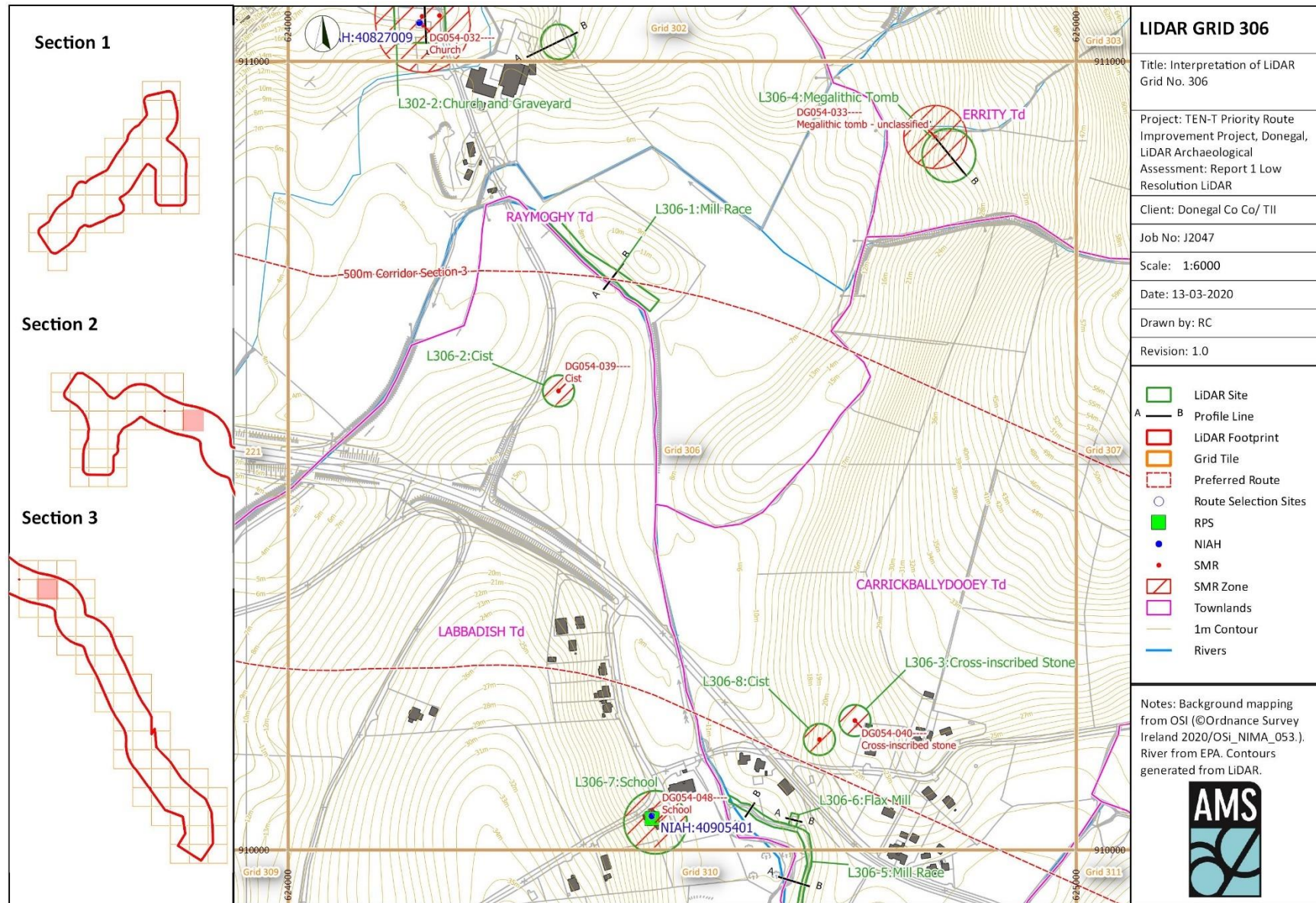


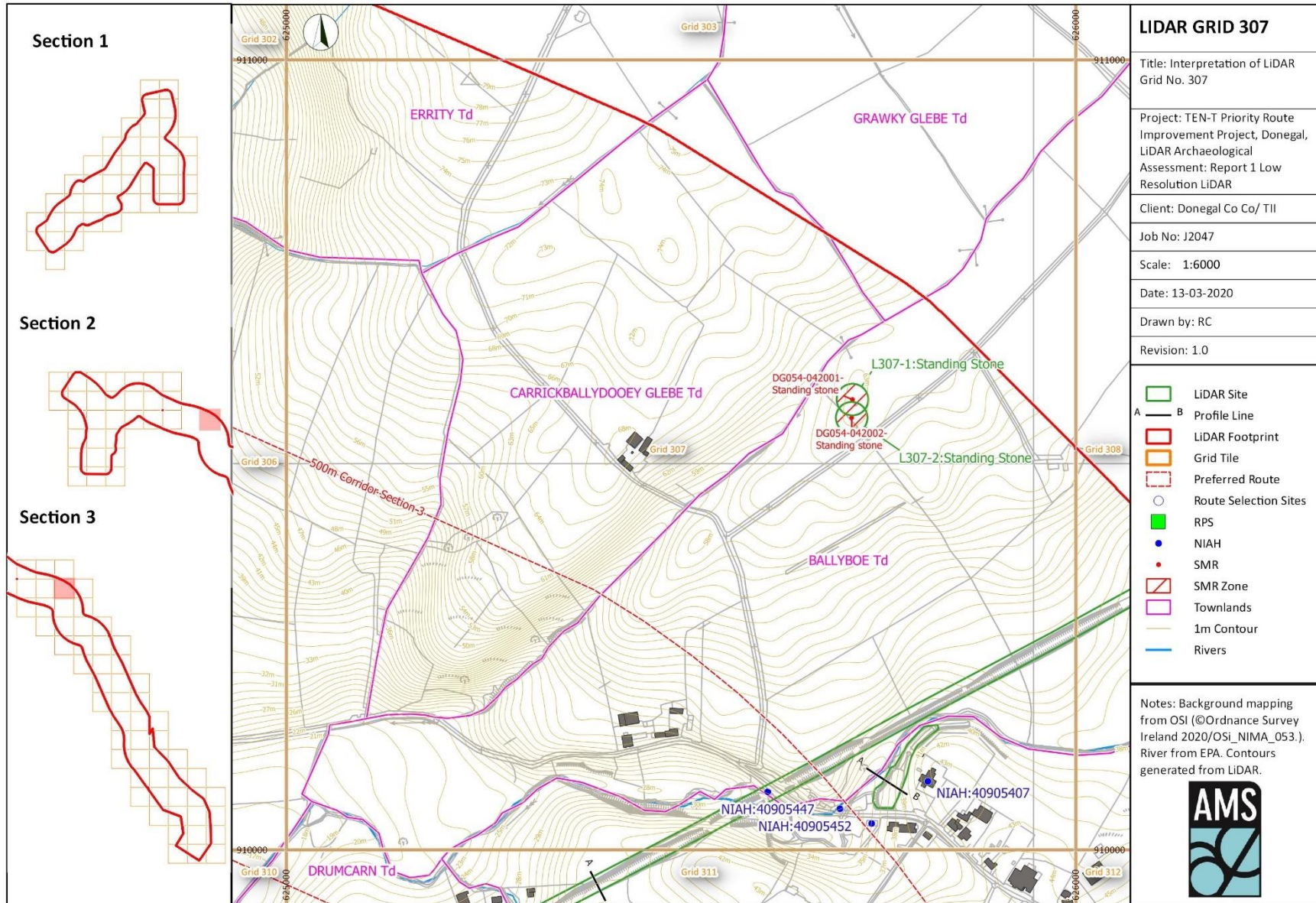
LIDAR GRID 305	
Title:	Interpretation of LiDAR Grid No. 305
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0

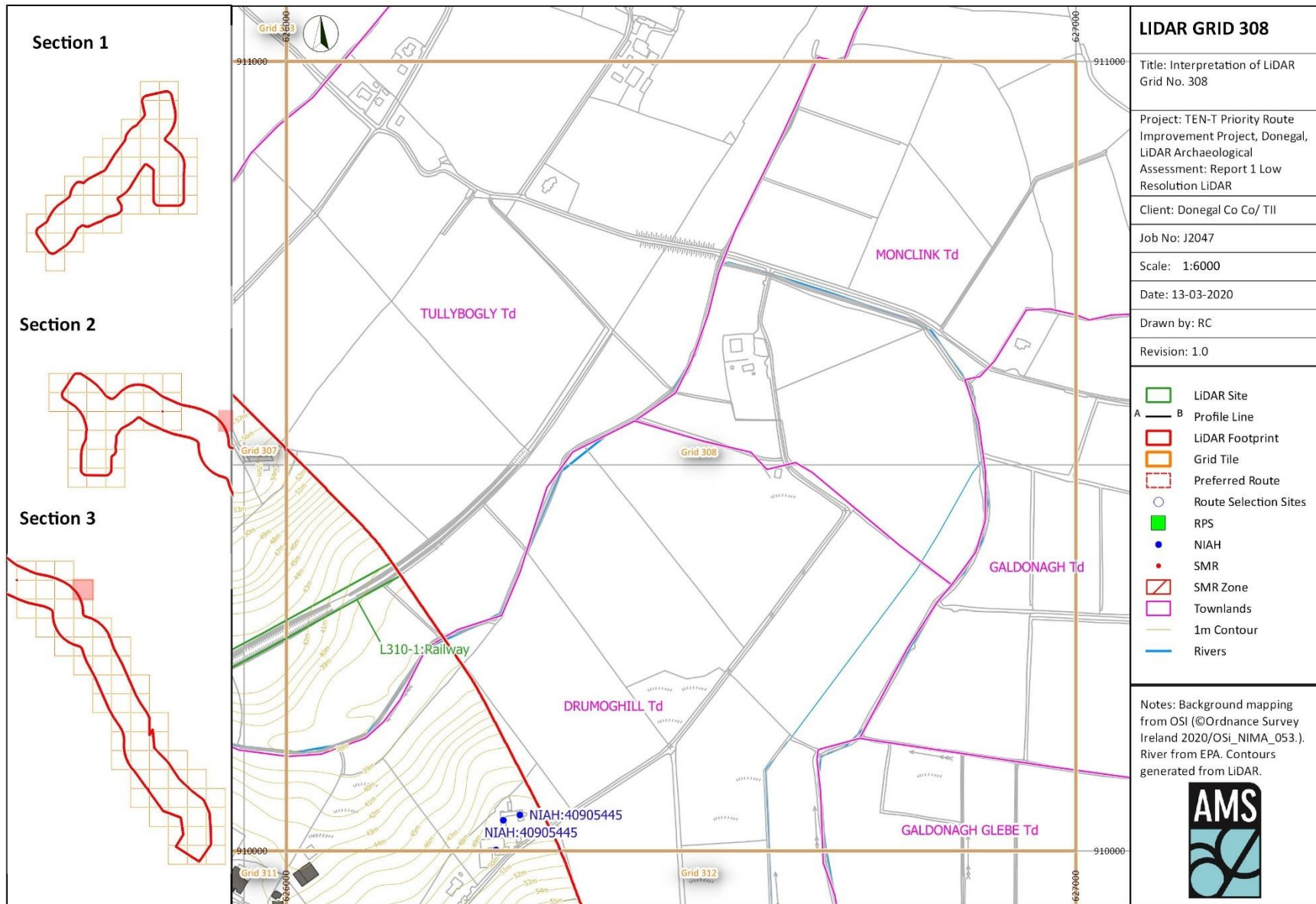
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- - - Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- ▨ SMR Zone
- ▭ Townlands
- 1m Contour
- Rivers

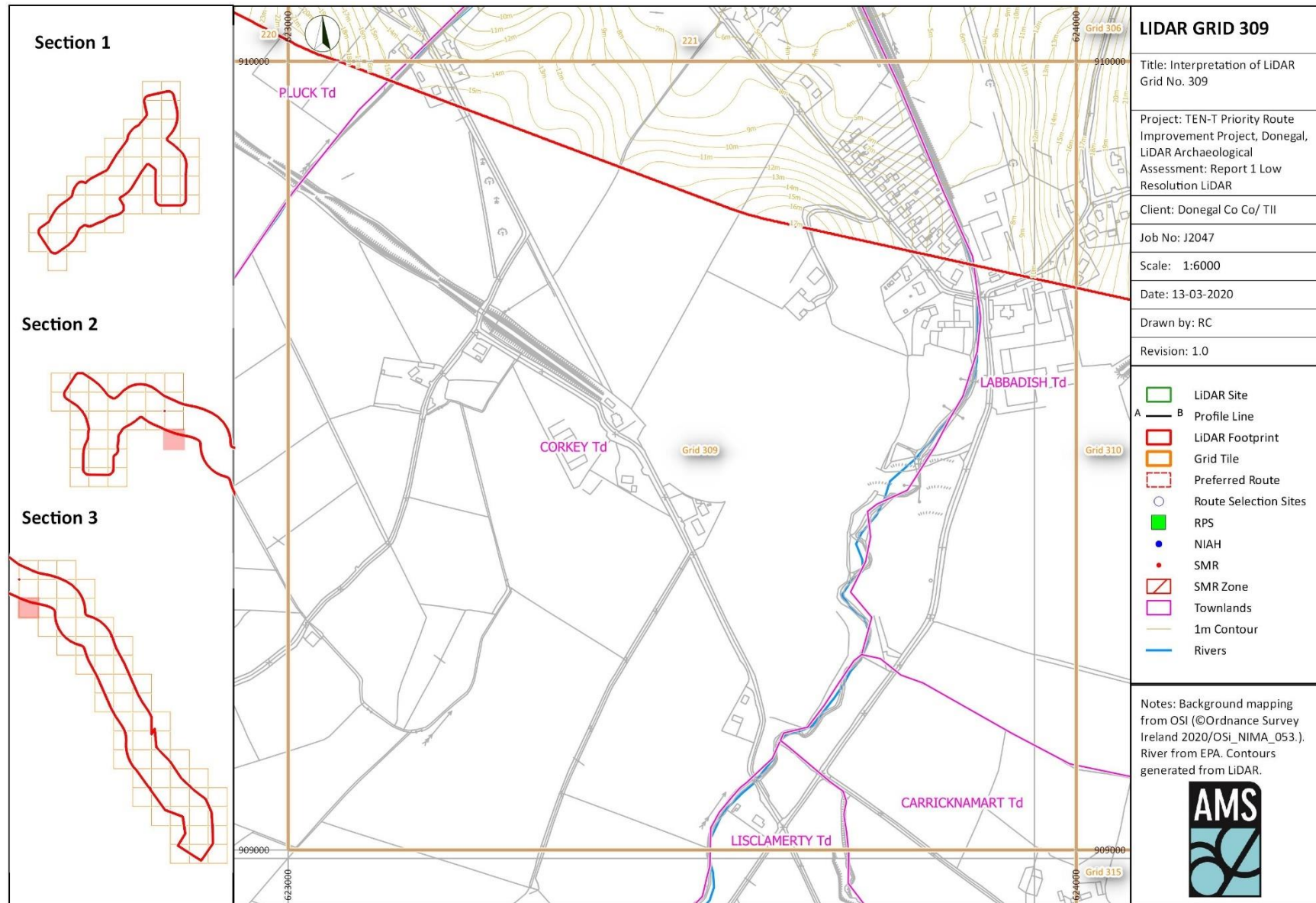
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

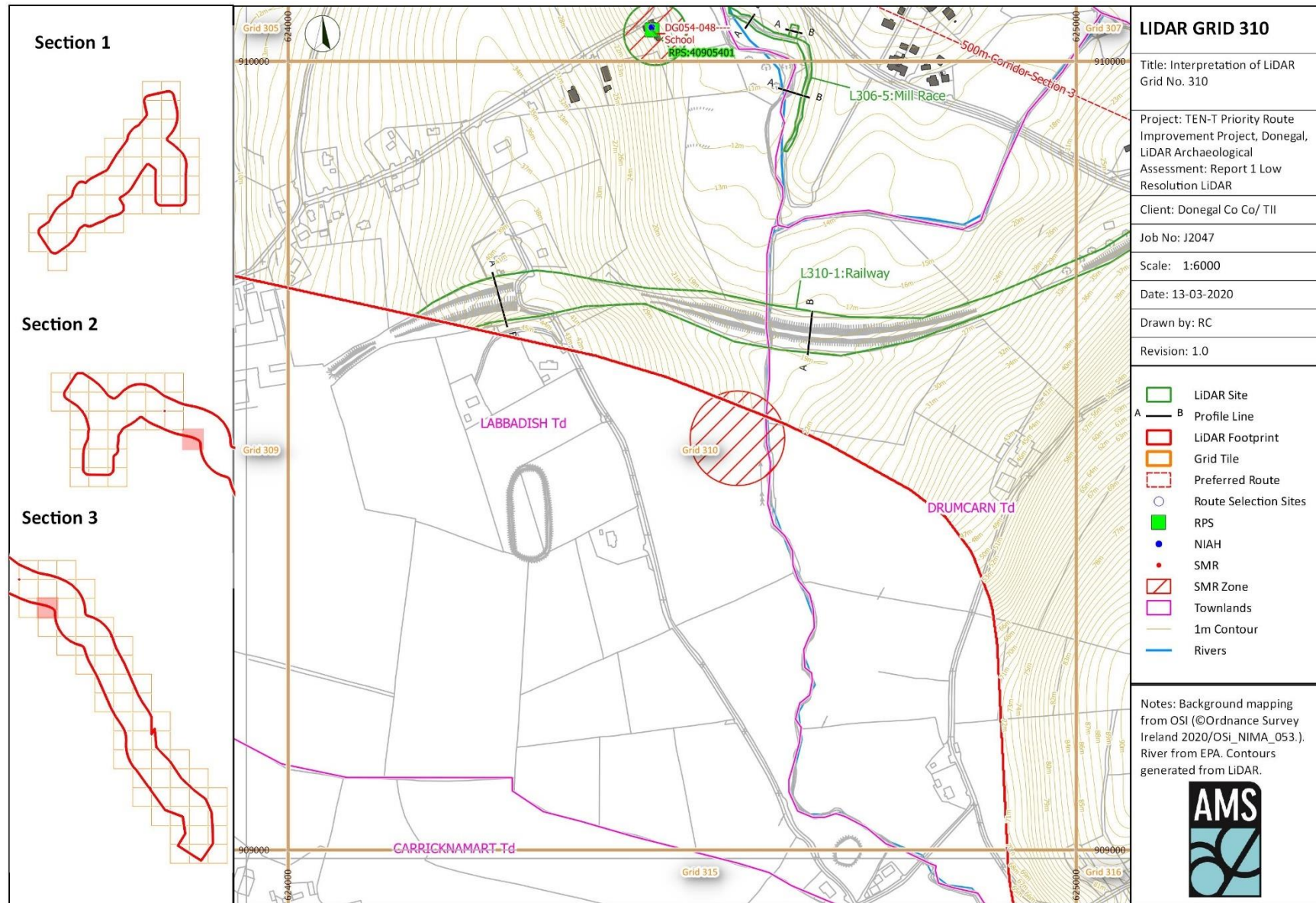










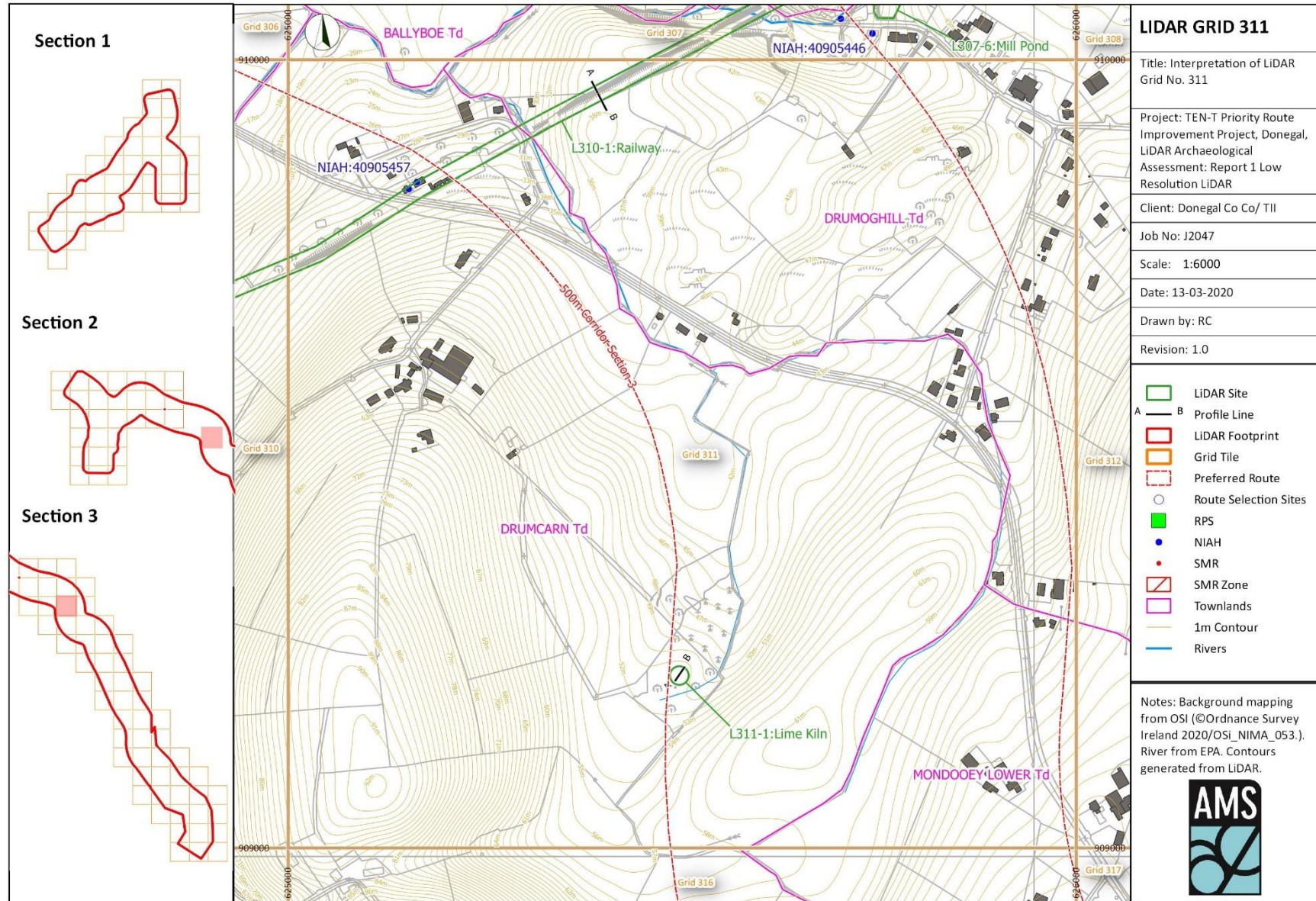


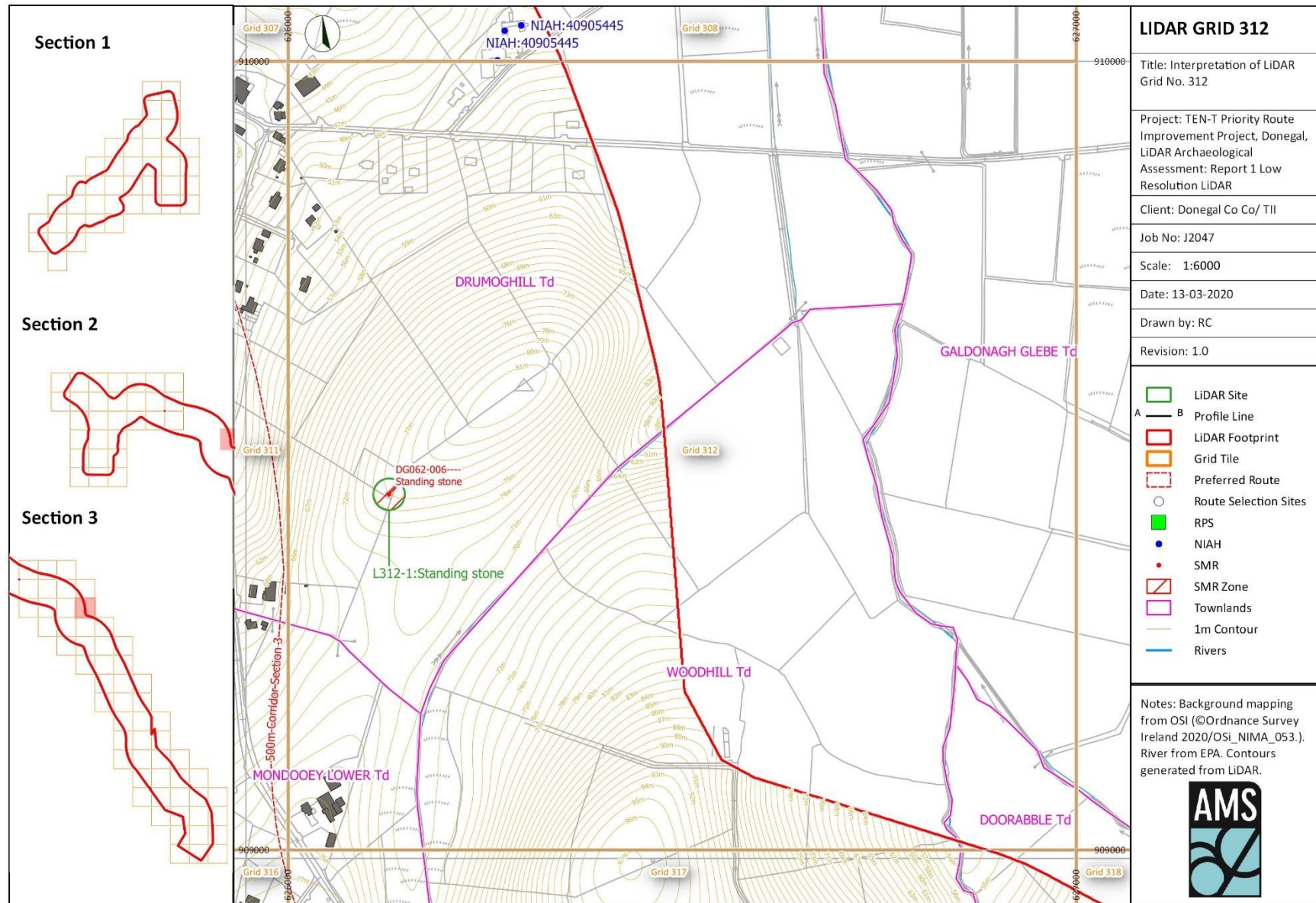
LIDAR GRID 310
Title: Interpretation of LiDAR Grid No. 310
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client: Donegal Co Co/ TII
Job No: J2047
Scale: 1:6000
Date: 13-03-2020
Drawn by: RC
Revision: 1.0

- LiDAR Site
- A — B Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.







LIDAR GRID 312	
Title:	Interpretation of LiDAR Grid No. 312
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0

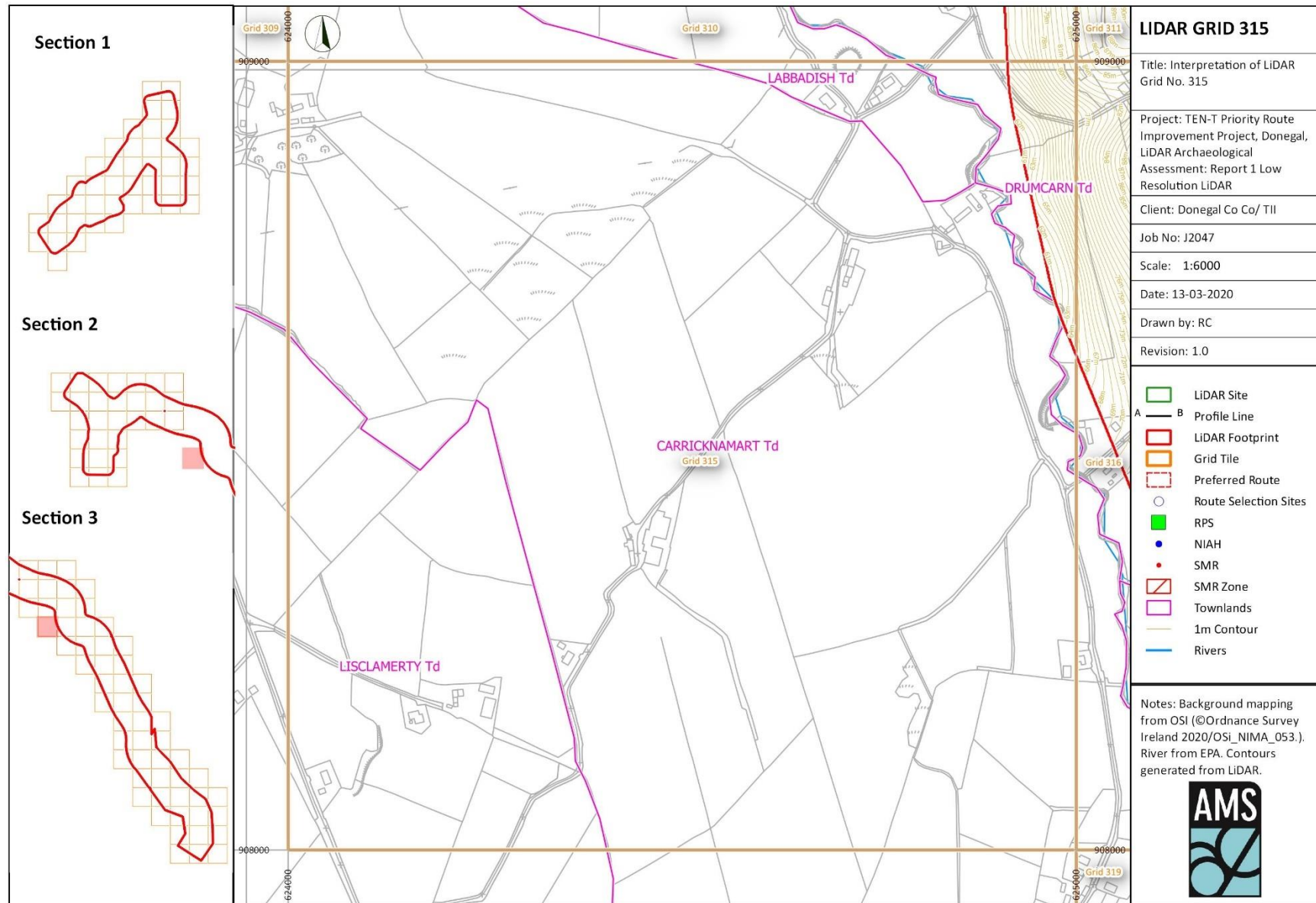
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers


Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

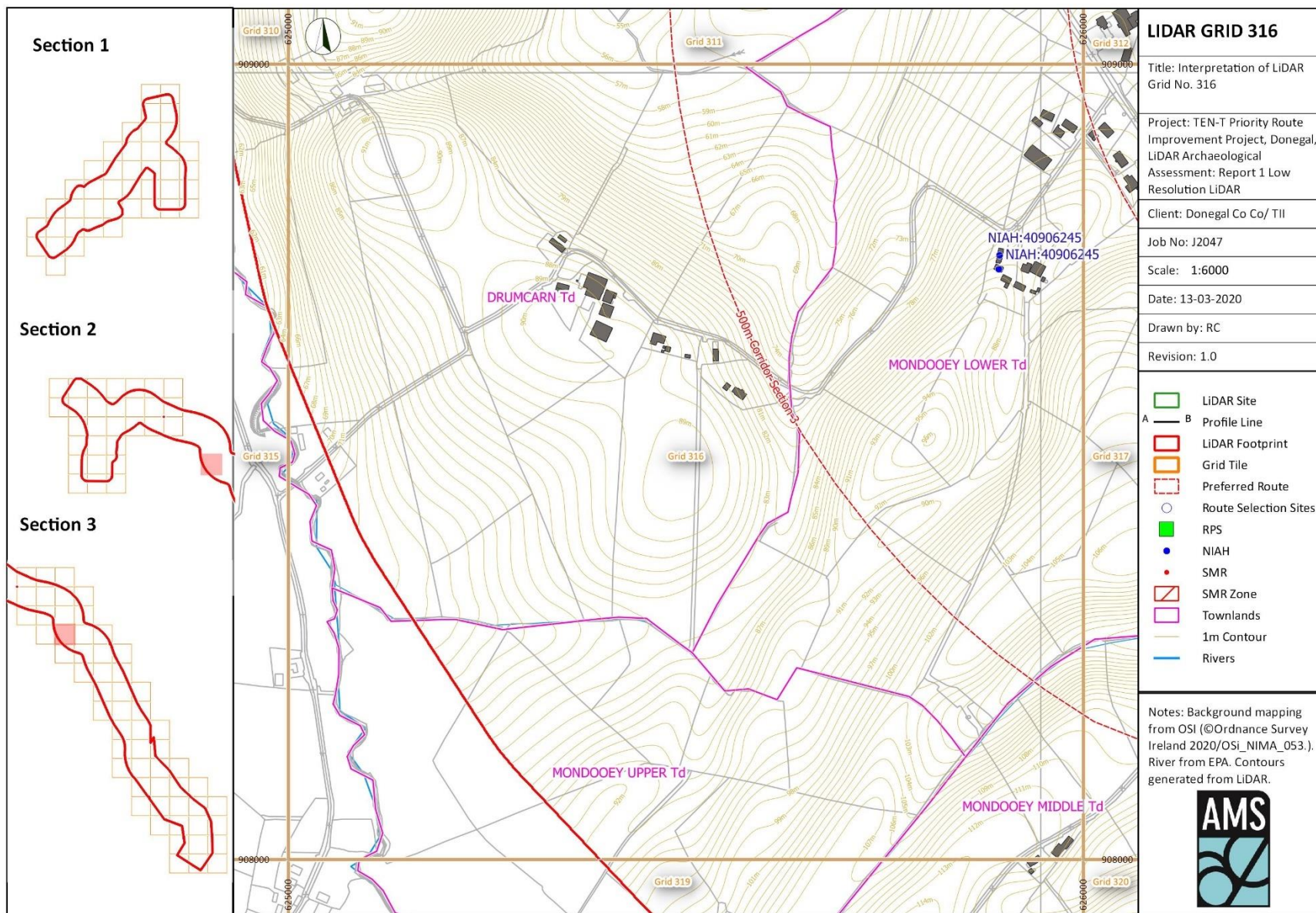


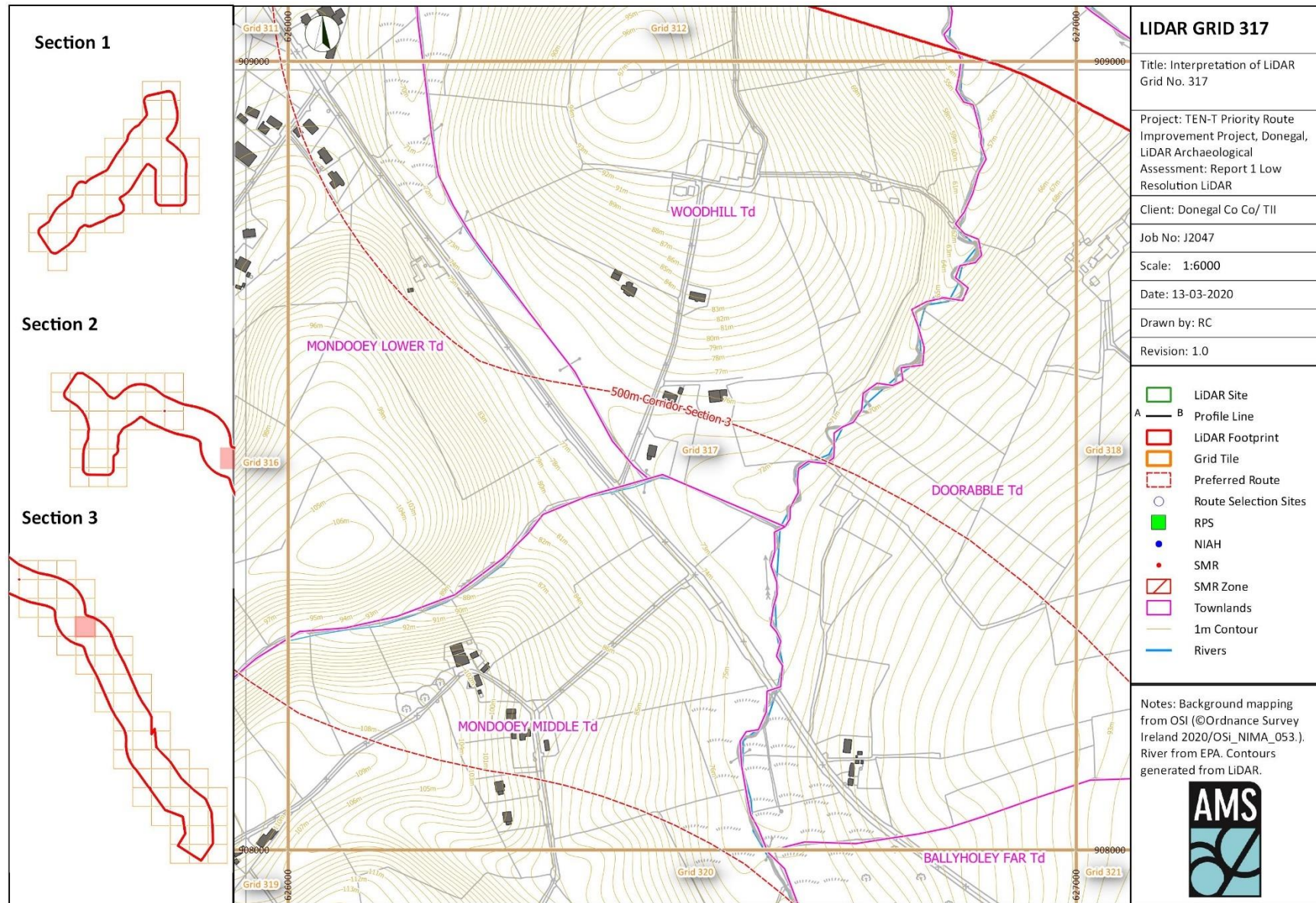
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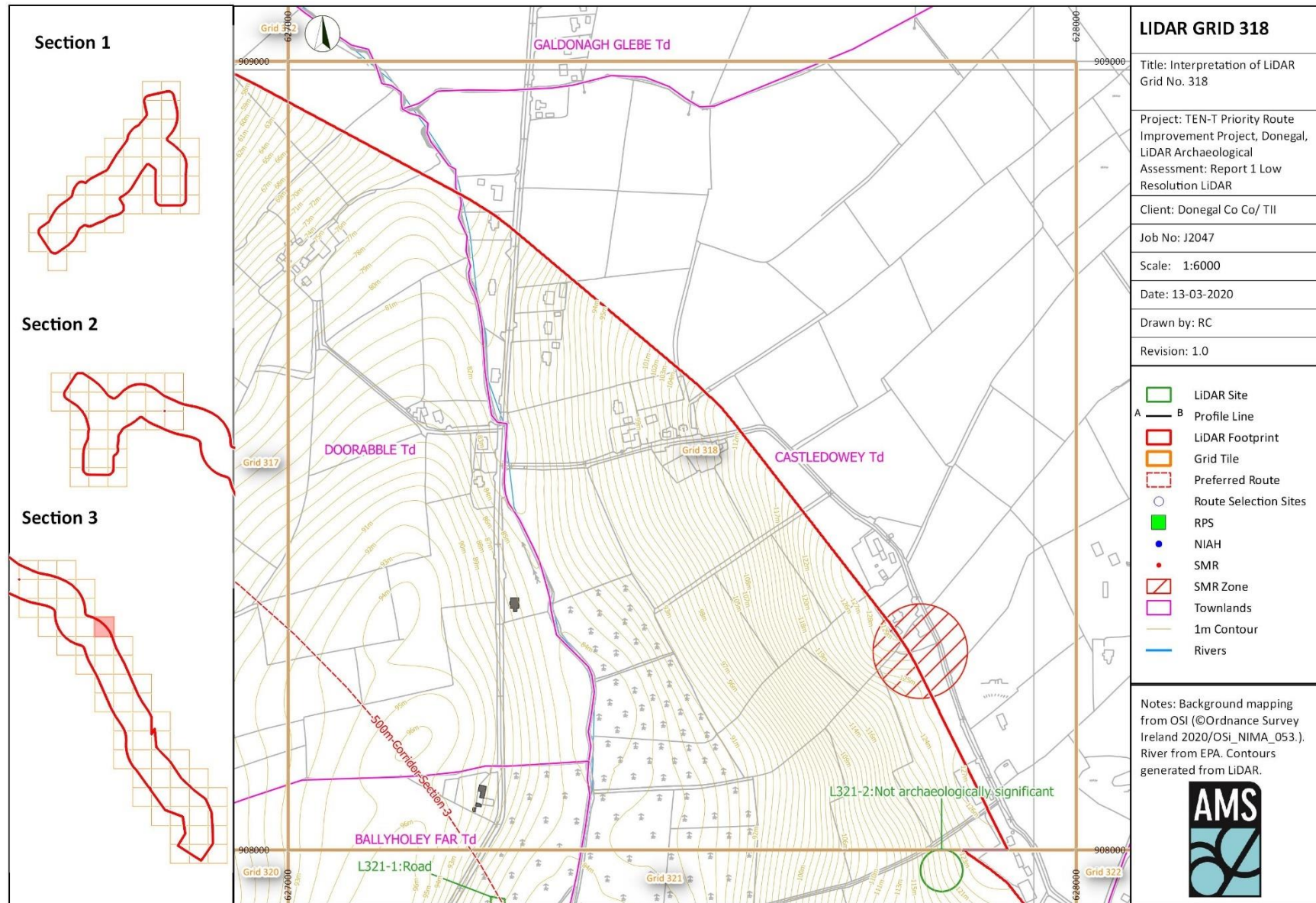
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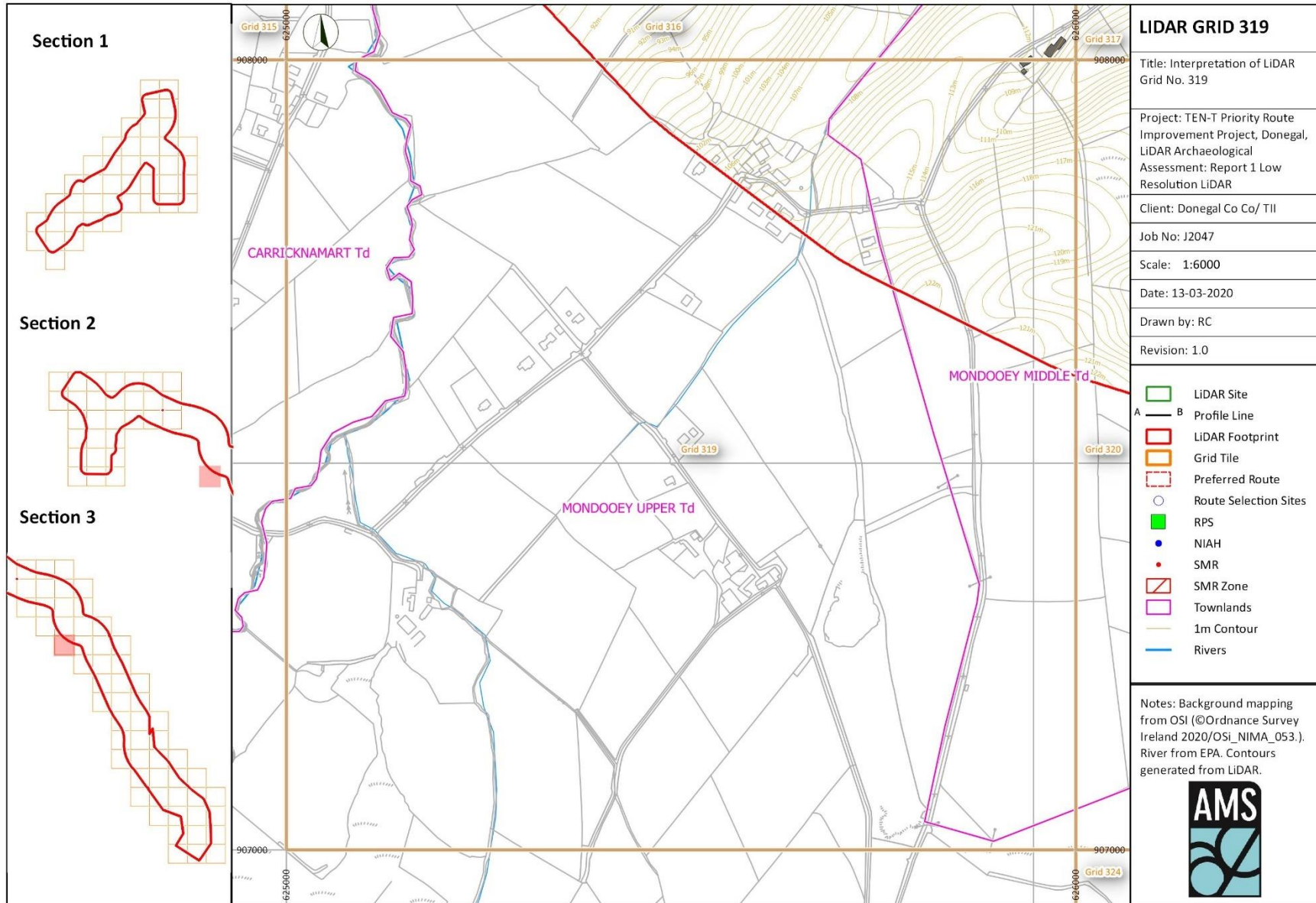


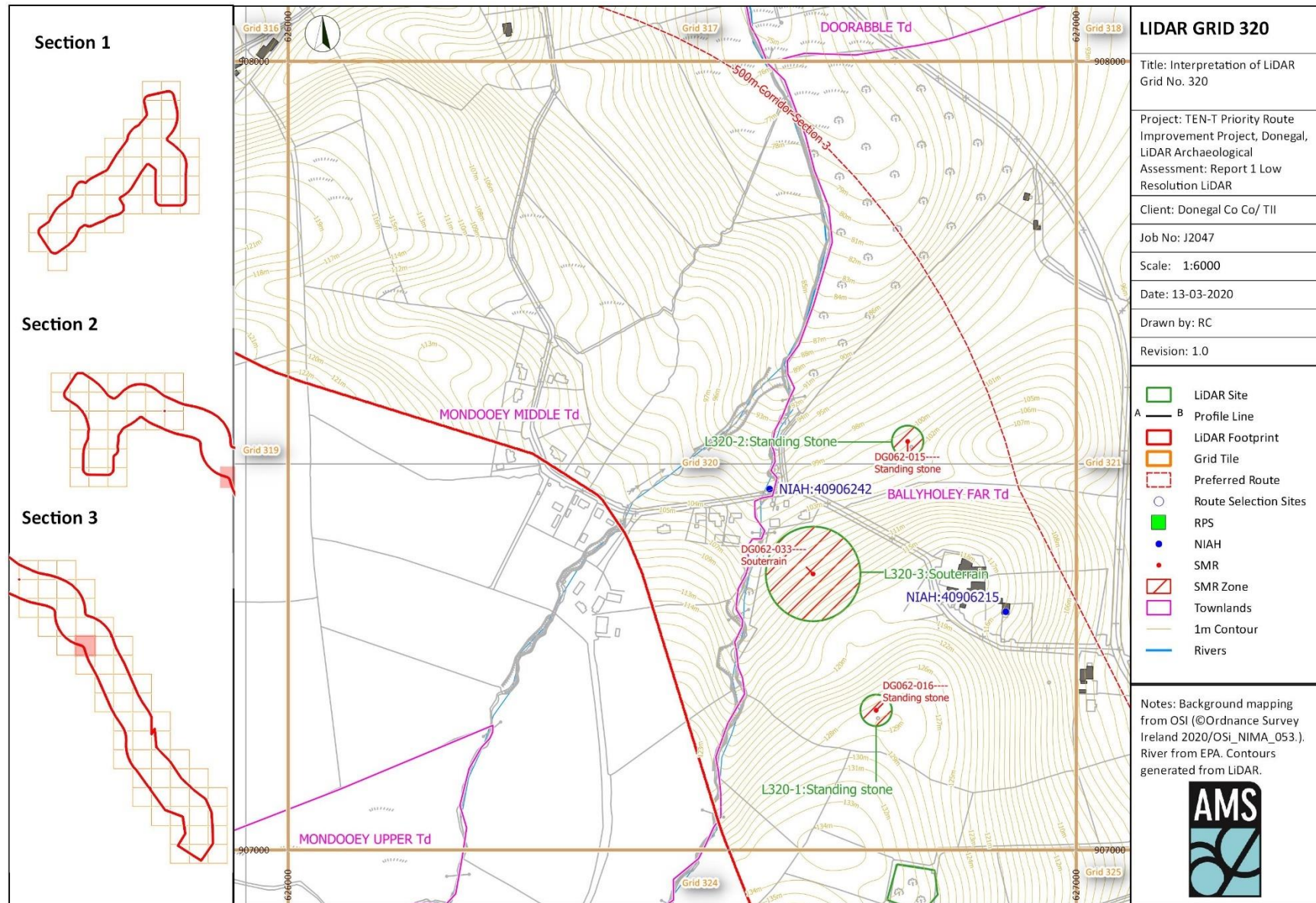
LIDAR GRID 315	
Title: Interpretation of LiDAR Grid No. 315	
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR	
Client: Donegal Co Co/ TII	
Job No: J2047	
Scale: 1:6000	
Date: 13-03-2020	
Drawn by: RC	
Revision: 1.0	
<ul style="list-style-type: none"> LiDAR Site Profile Line LiDAR Footprint Grid Tile Preferred Route Route Selection Sites RPS NIAH SMR SMR Zone Townlands 1m Contour Rivers 	<p>Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.</p> 

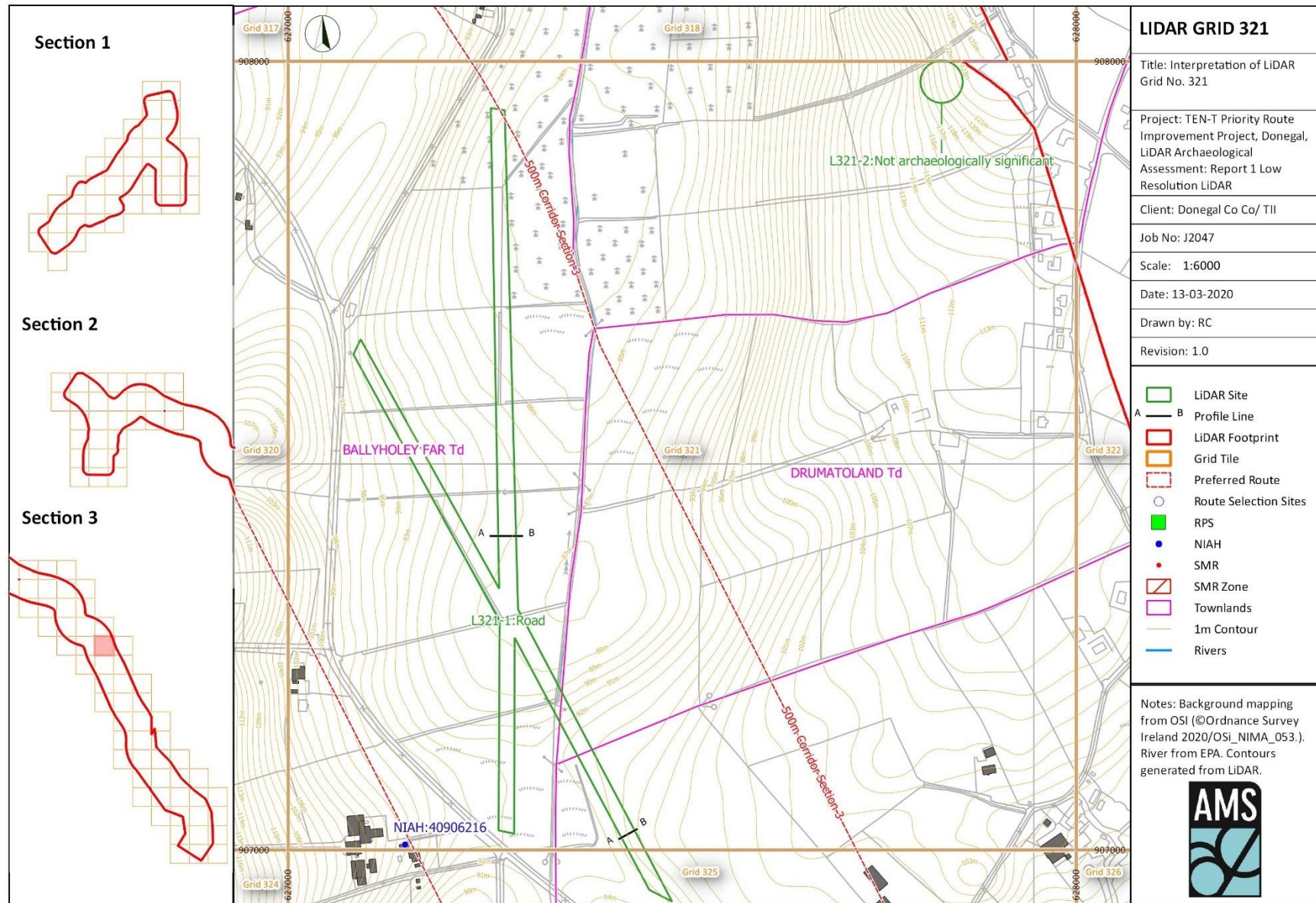










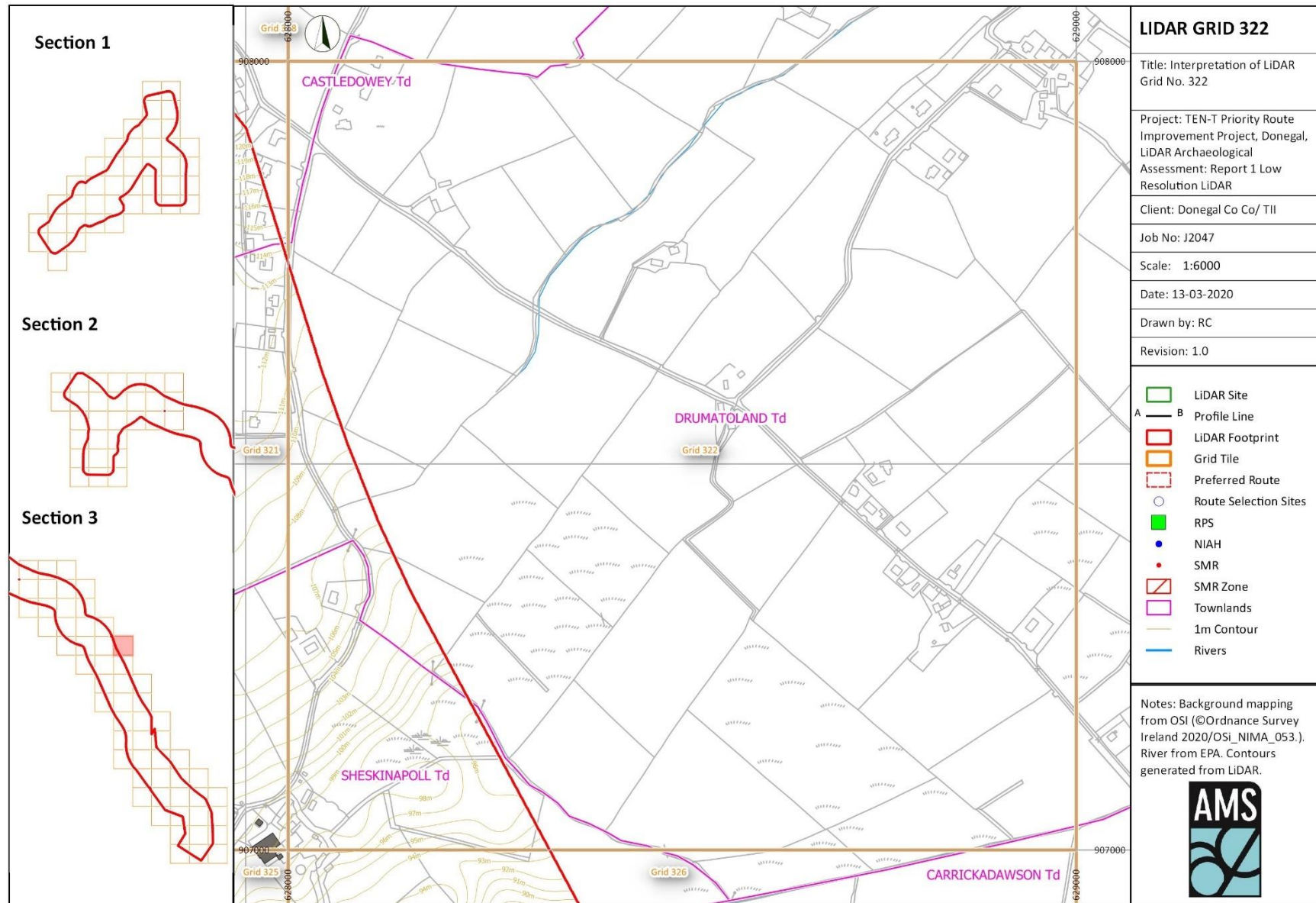



LIDAR GRID 321	
Title:	Interpretation of LiDAR Grid No. 321
Project:	TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client:	Donegal Co Co/ TII
Job No:	J2047
Scale:	1:6000
Date:	13-03-2020
Drawn by:	RC
Revision:	1.0

- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- ▨ SMR Zone
- Townlands
- 1m Contour
- Rivers

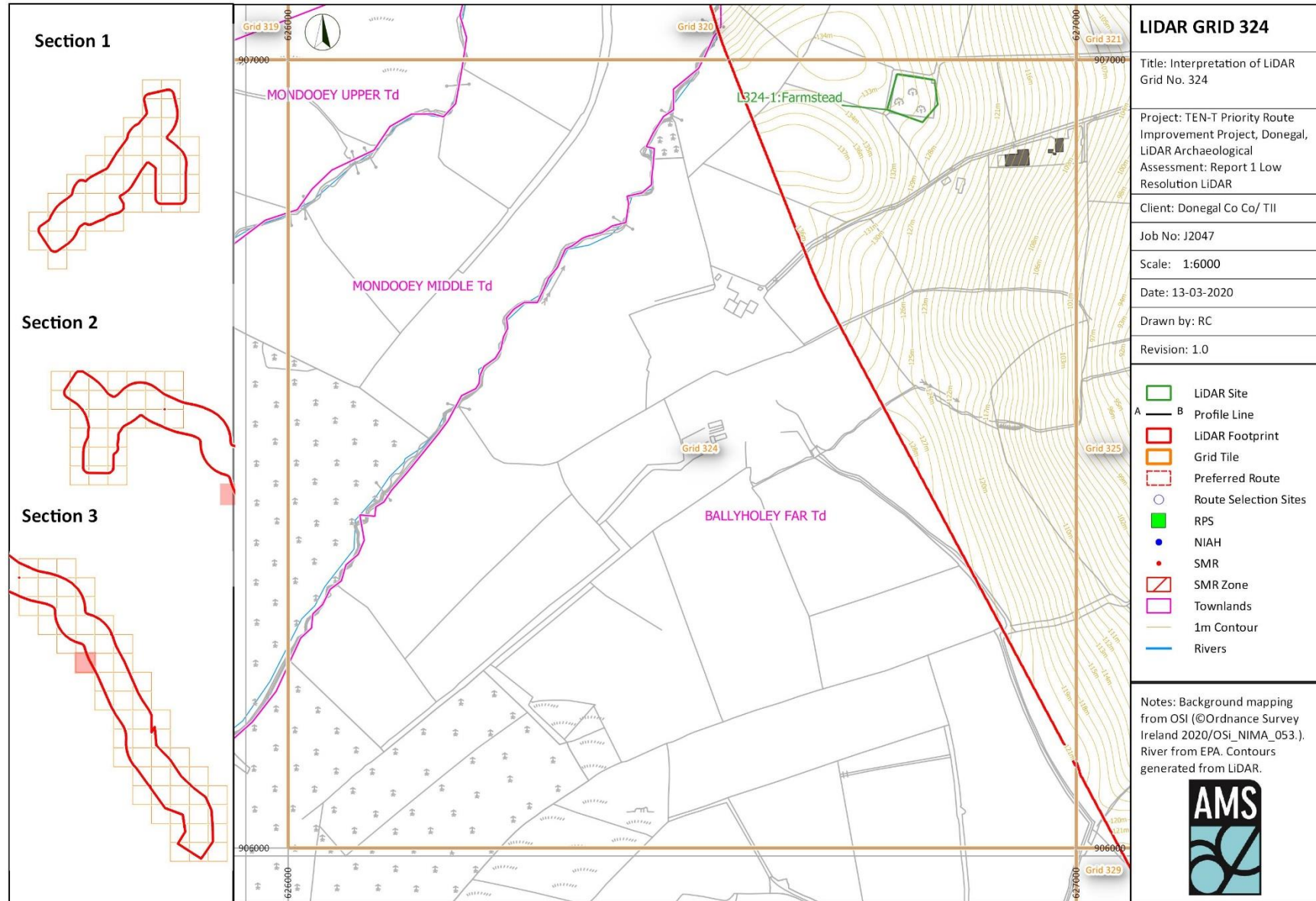
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.





LIDAR GRID 322	
Title: Interpretation of LiDAR Grid No. 322	
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR	
Client: Donegal Co Co/ TII	
Job No: J2047	
Scale: 1:6000	
Date: 13-03-2020	
Drawn by: RC	
Revision: 1.0	
<ul style="list-style-type: none"> LiDAR Site Profile Line LiDAR Footprint Grid Tile Preferred Route Route Selection Sites RPS NIAH SMR SMR Zone Townlands 1m Contour Rivers 	
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.	
	

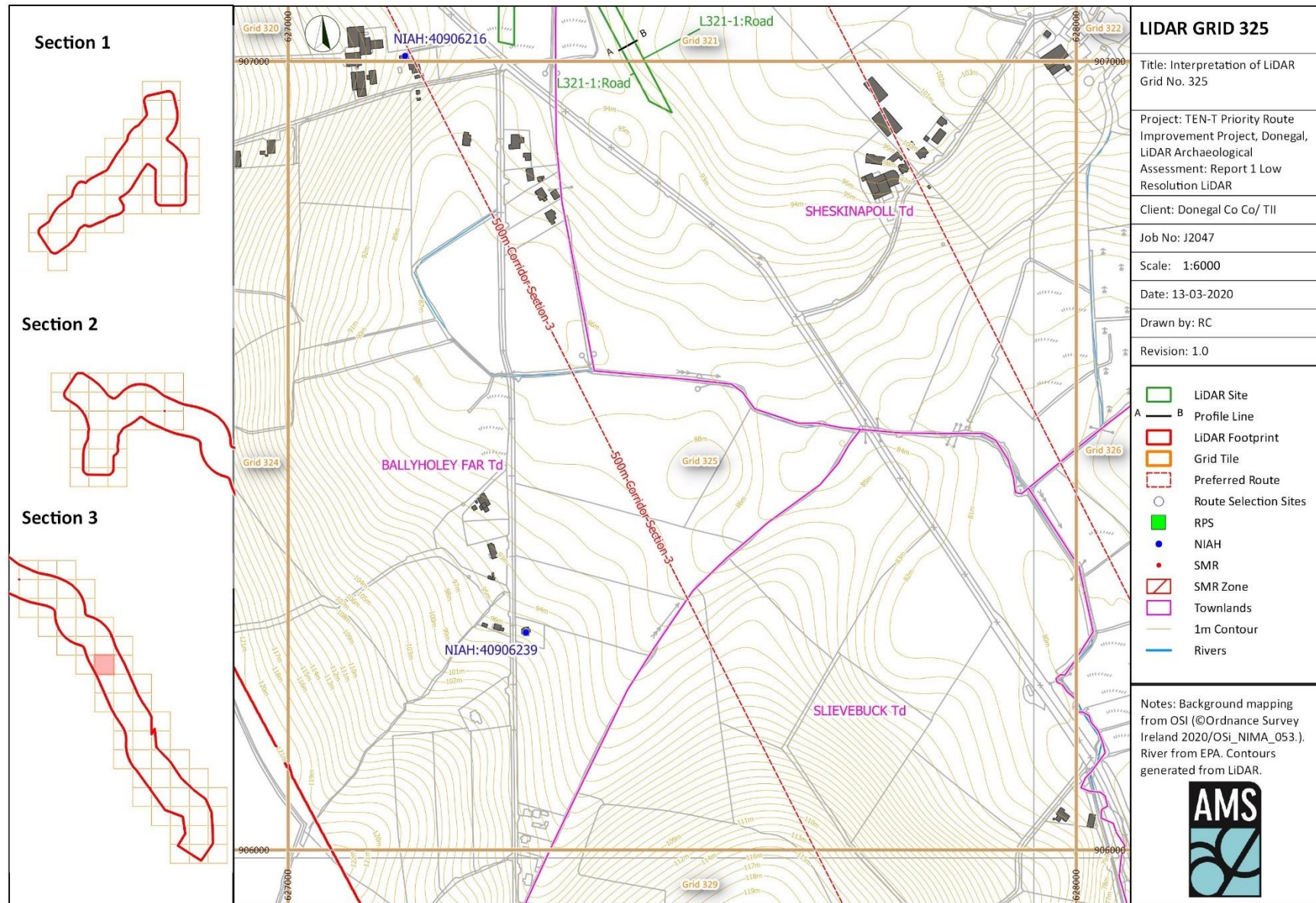
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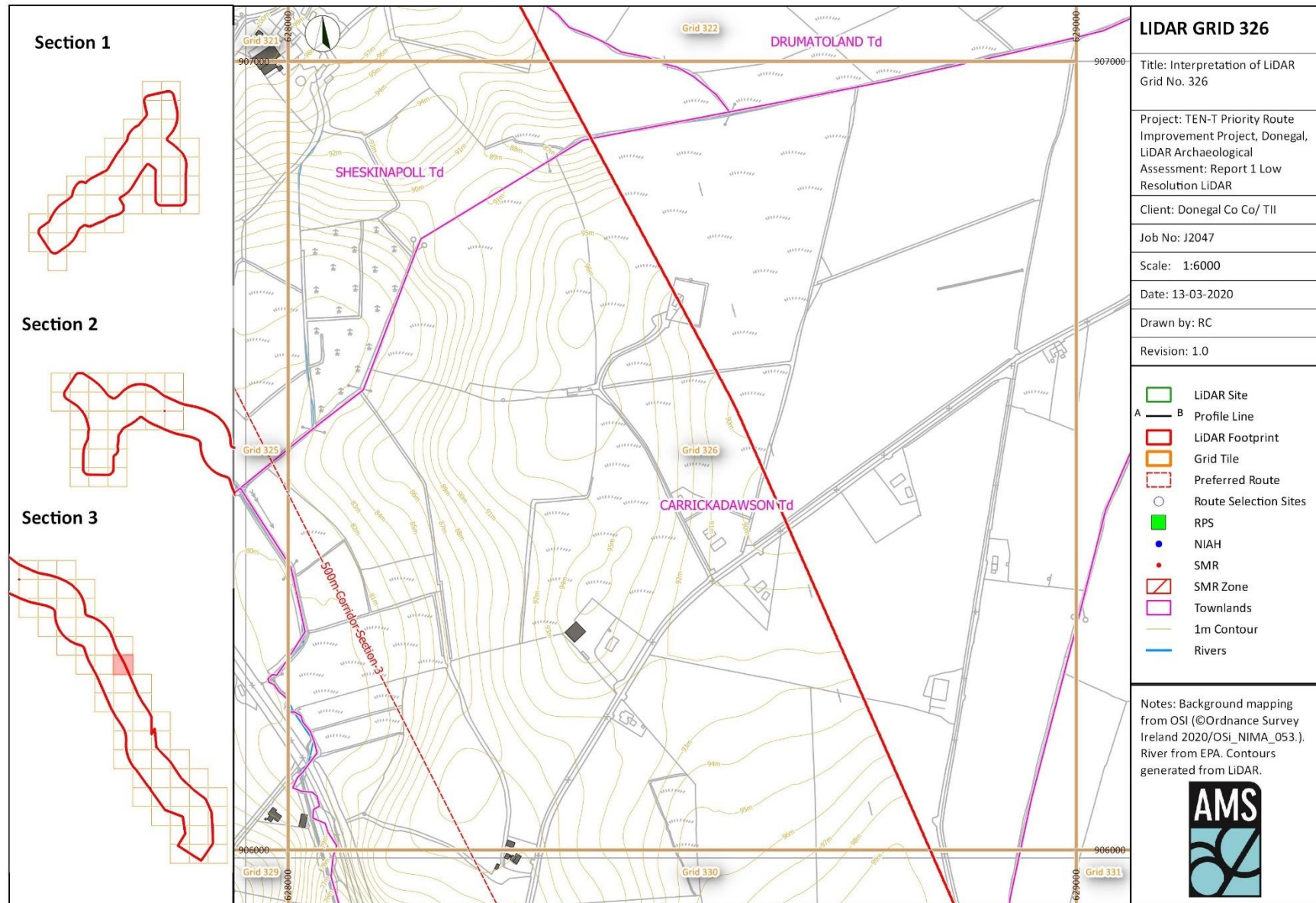


LIDAR GRID 324	
Title: Interpretation of LiDAR Grid No. 324	
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR	
Client: Donegal Co Co/ TII	
Job No: J2047	
Scale: 1:6000	
Date: 13-03-2020	
Drawn by: RC	
Revision: 1.0	
<ul style="list-style-type: none"> □ LiDAR Site — Profile Line □ LiDAR Footprint □ Grid Tile □ Preferred Route ○ Route Selection Sites ■ RPS ● NIAH ● SMR □ SMR Zone □ Townlands — 1m Contour — Rivers 	

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.

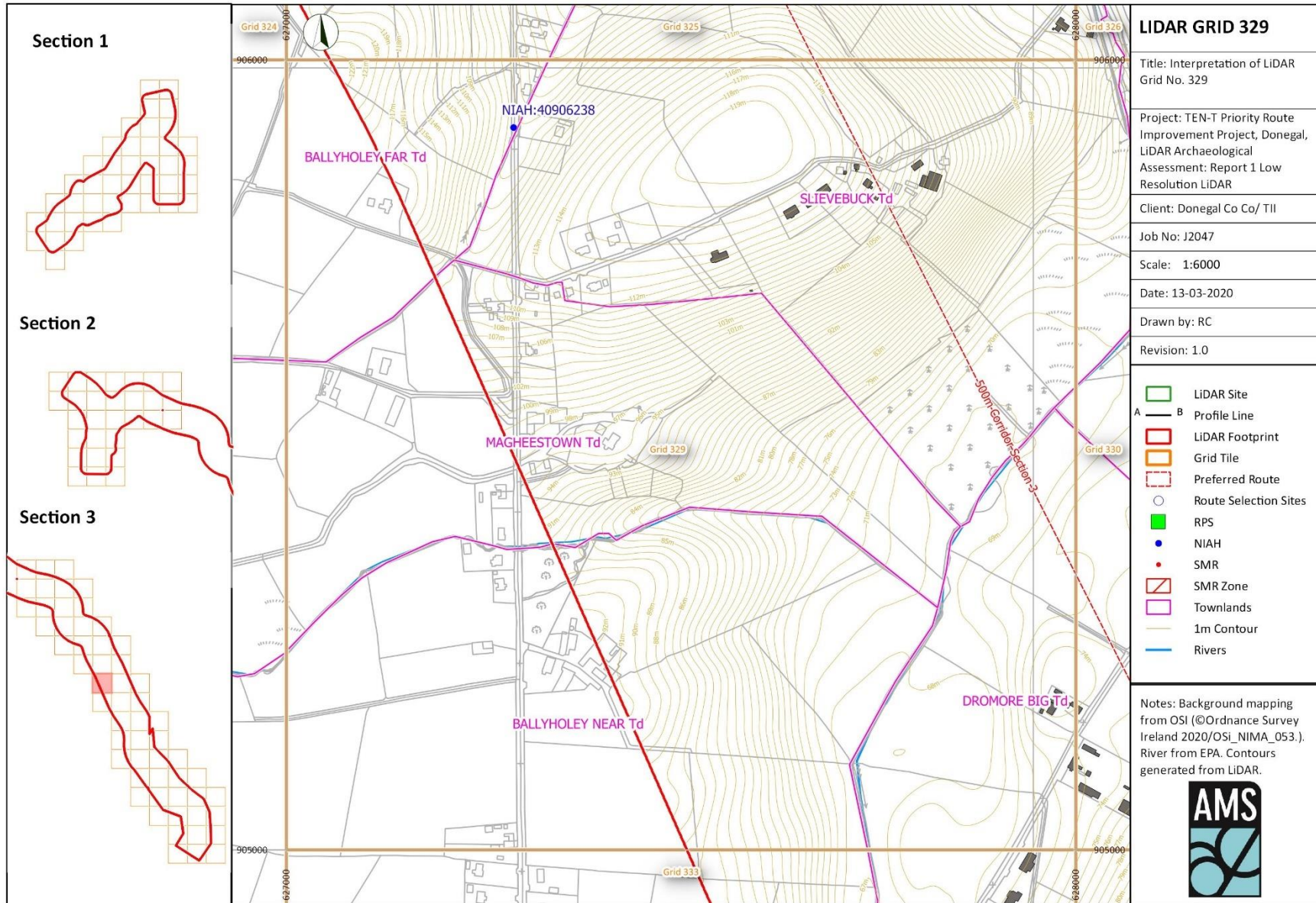


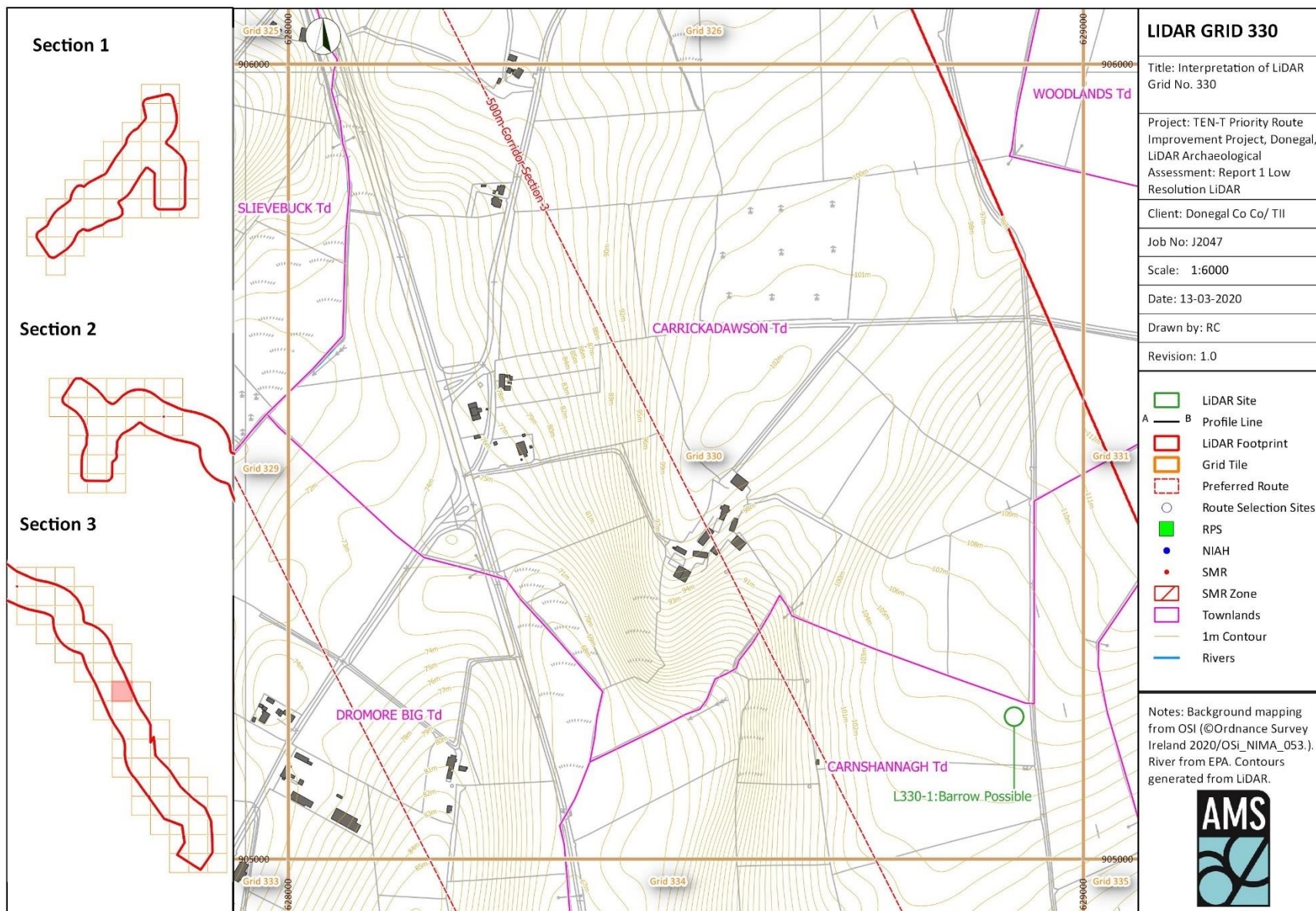


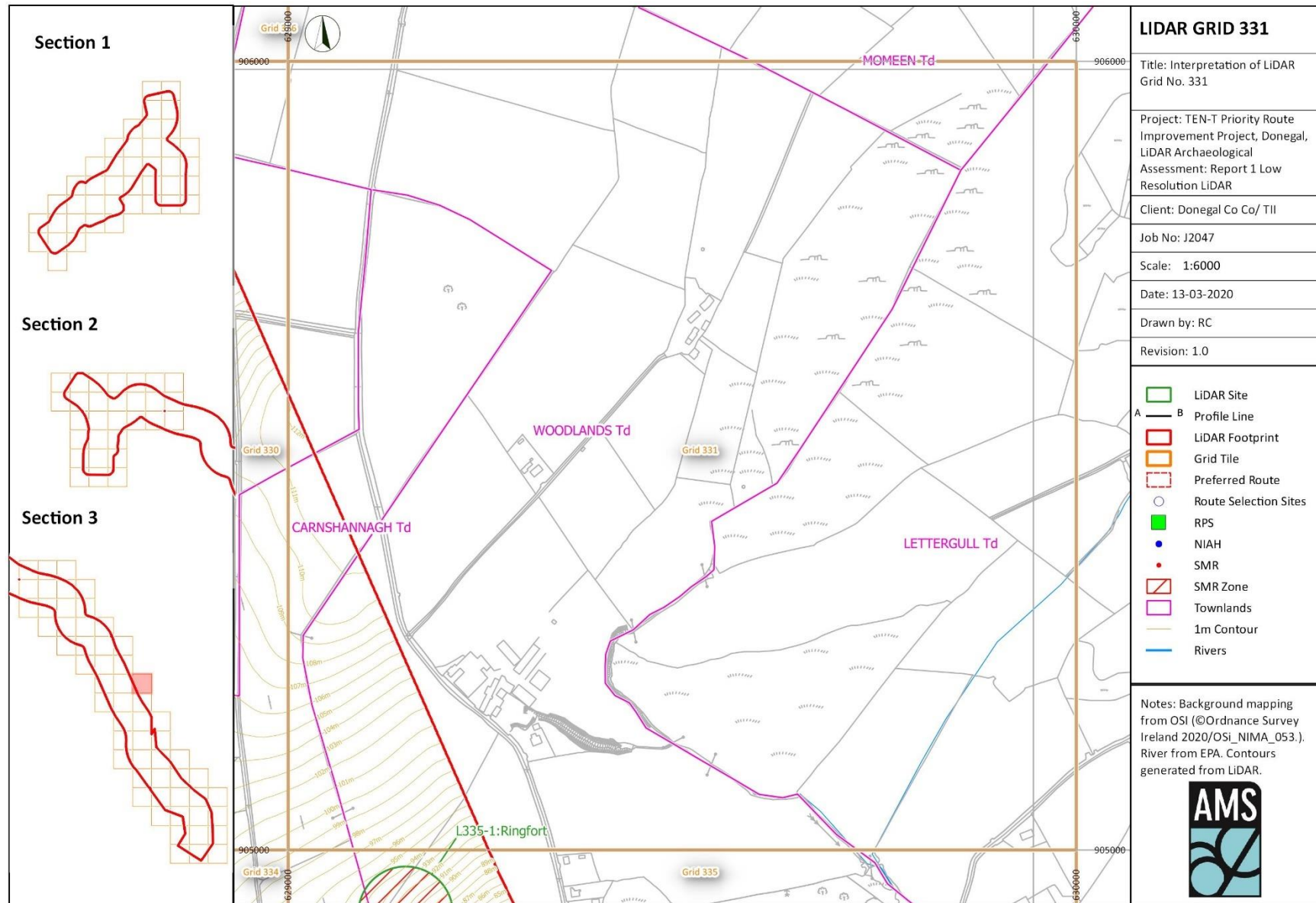


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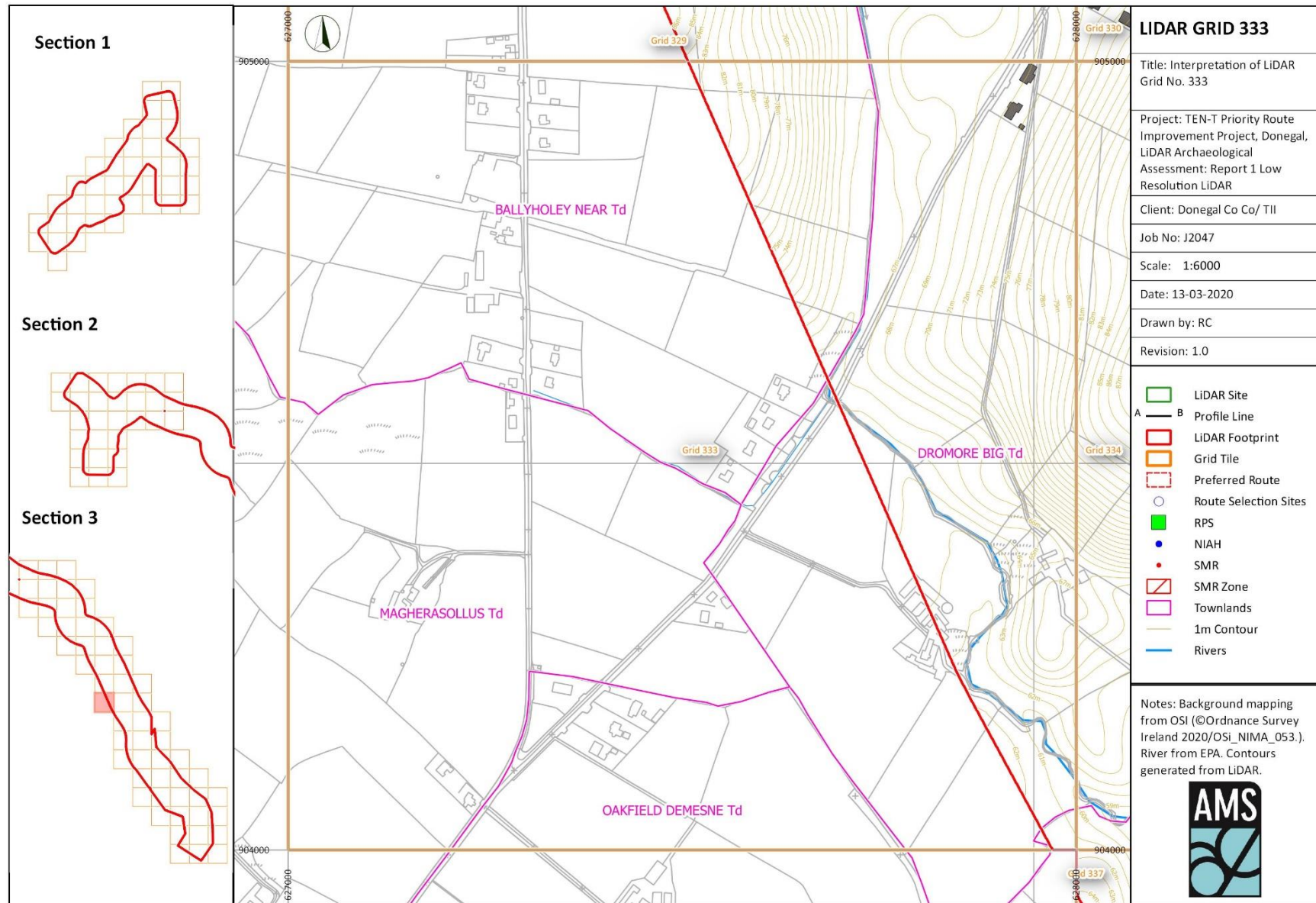
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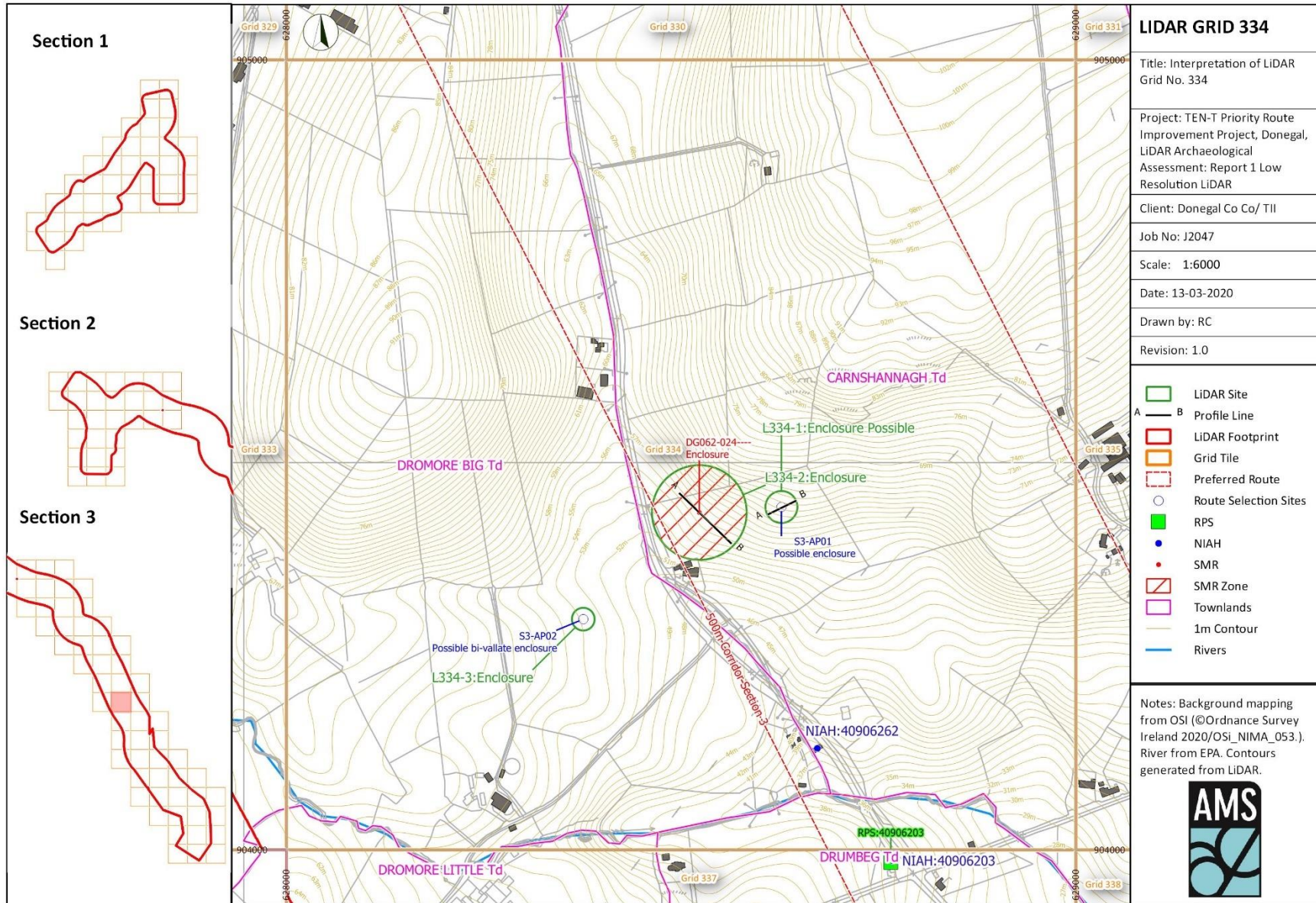




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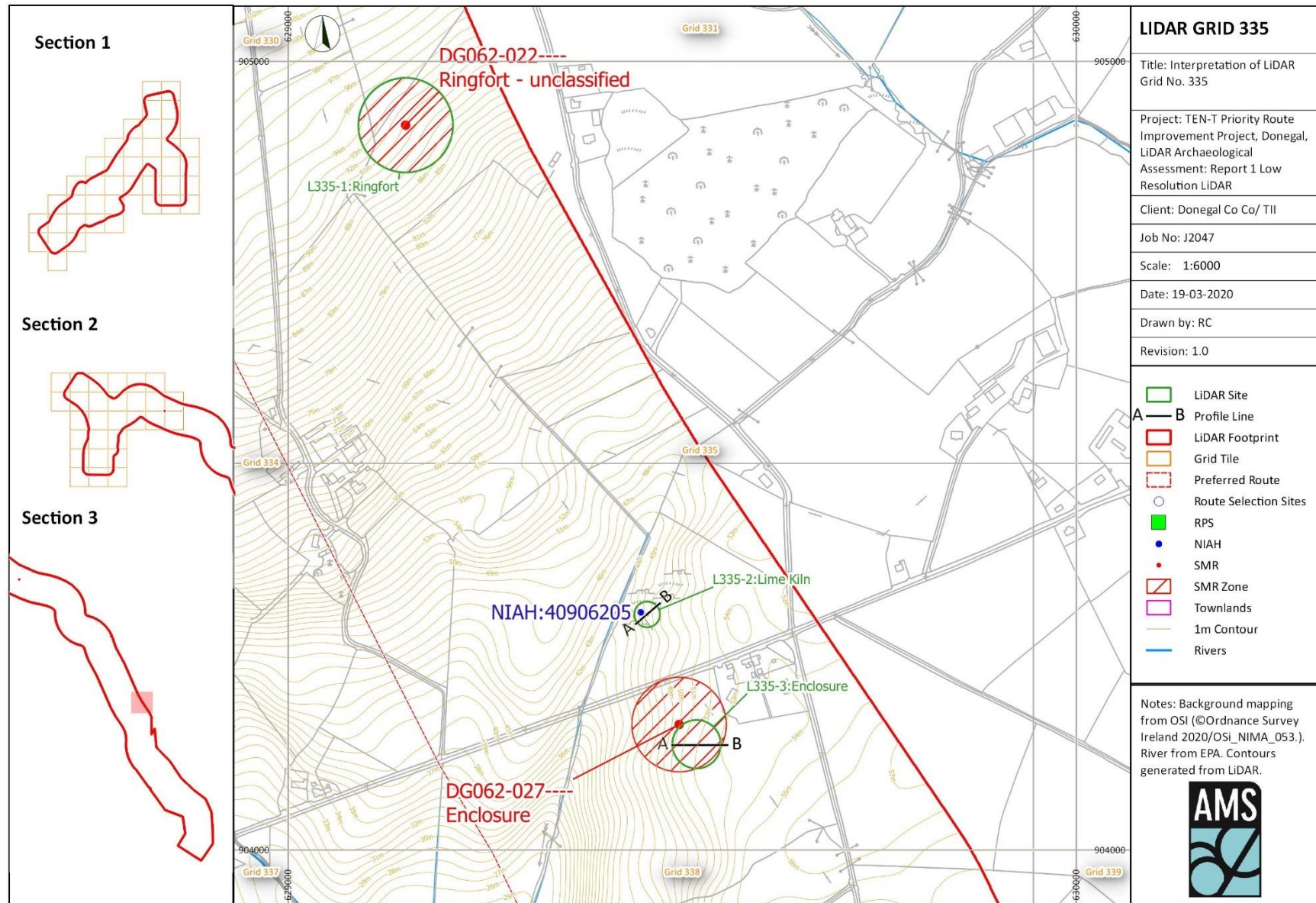
LIDAR GRID 333	
Title: Interpretation of LiDAR Grid No. 333	
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR	
Client: Donegal Co Co/ TII	
Job No: J2047	
Scale: 1:6000	
Date: 13-03-2020	
Drawn by: RC	
Revision: 1.0	
<ul style="list-style-type: none"> LiDAR Site Profile Line LiDAR Footprint Grid Tile Preferred Route Route Selection Sites RPS NIAH SMR SMR Zone Townlands 1m Contour Rivers 	<p>Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.</p> 



- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.





LIDAR GRID 335
 Title: Interpretation of LiDAR Grid No. 335

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:6000

Date: 19-03-2020

Drawn by: RC

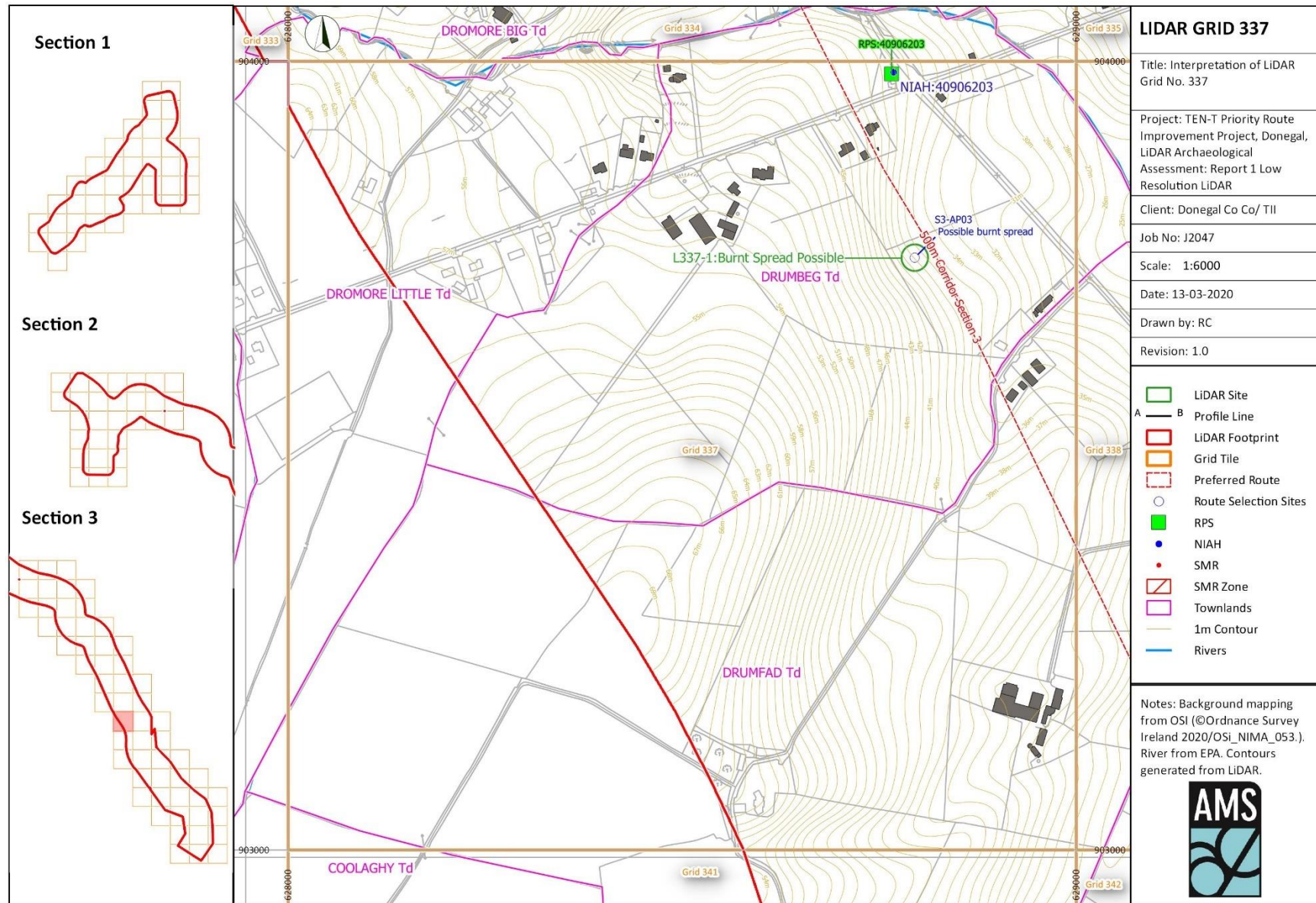
Revision: 1.0

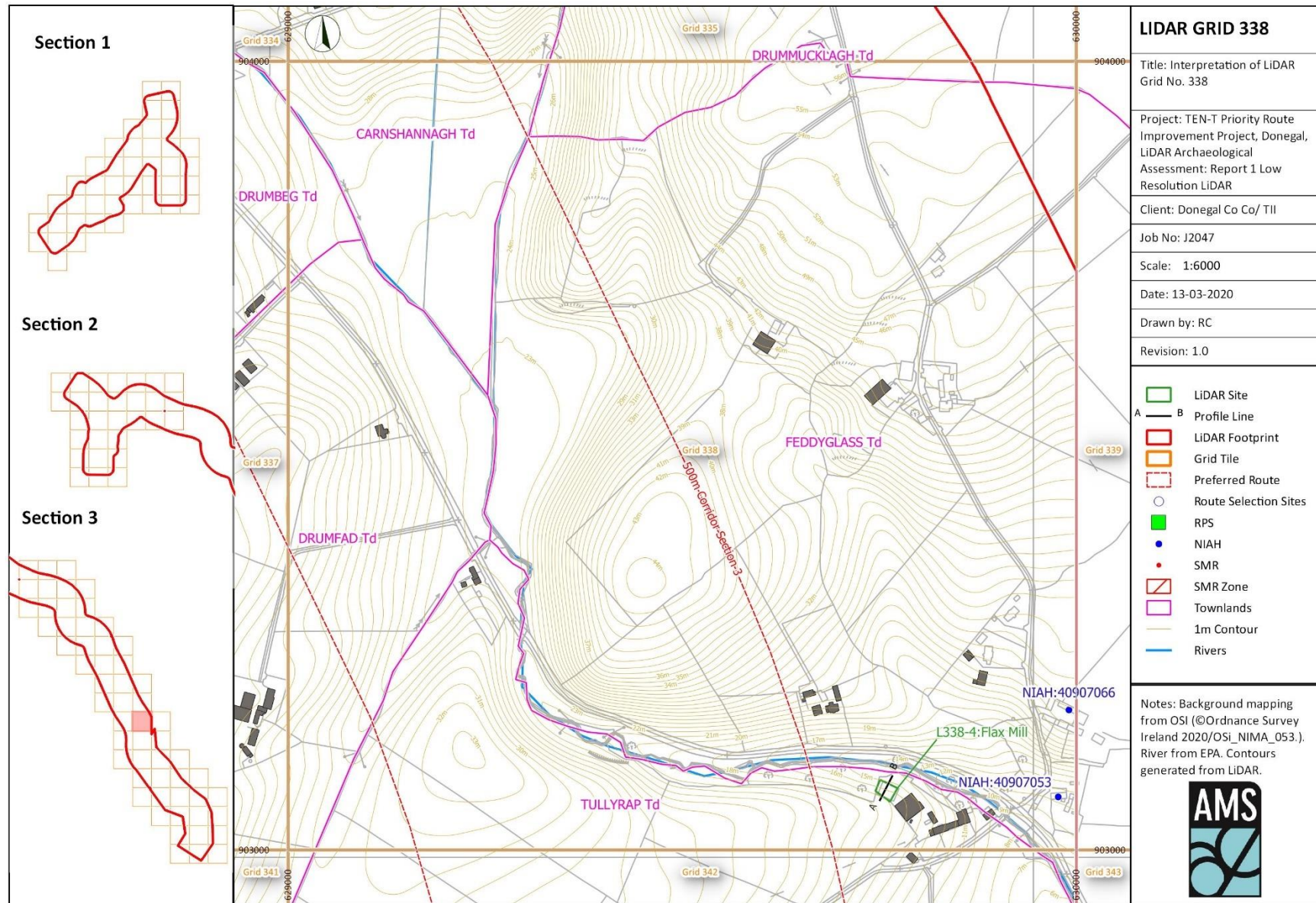
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

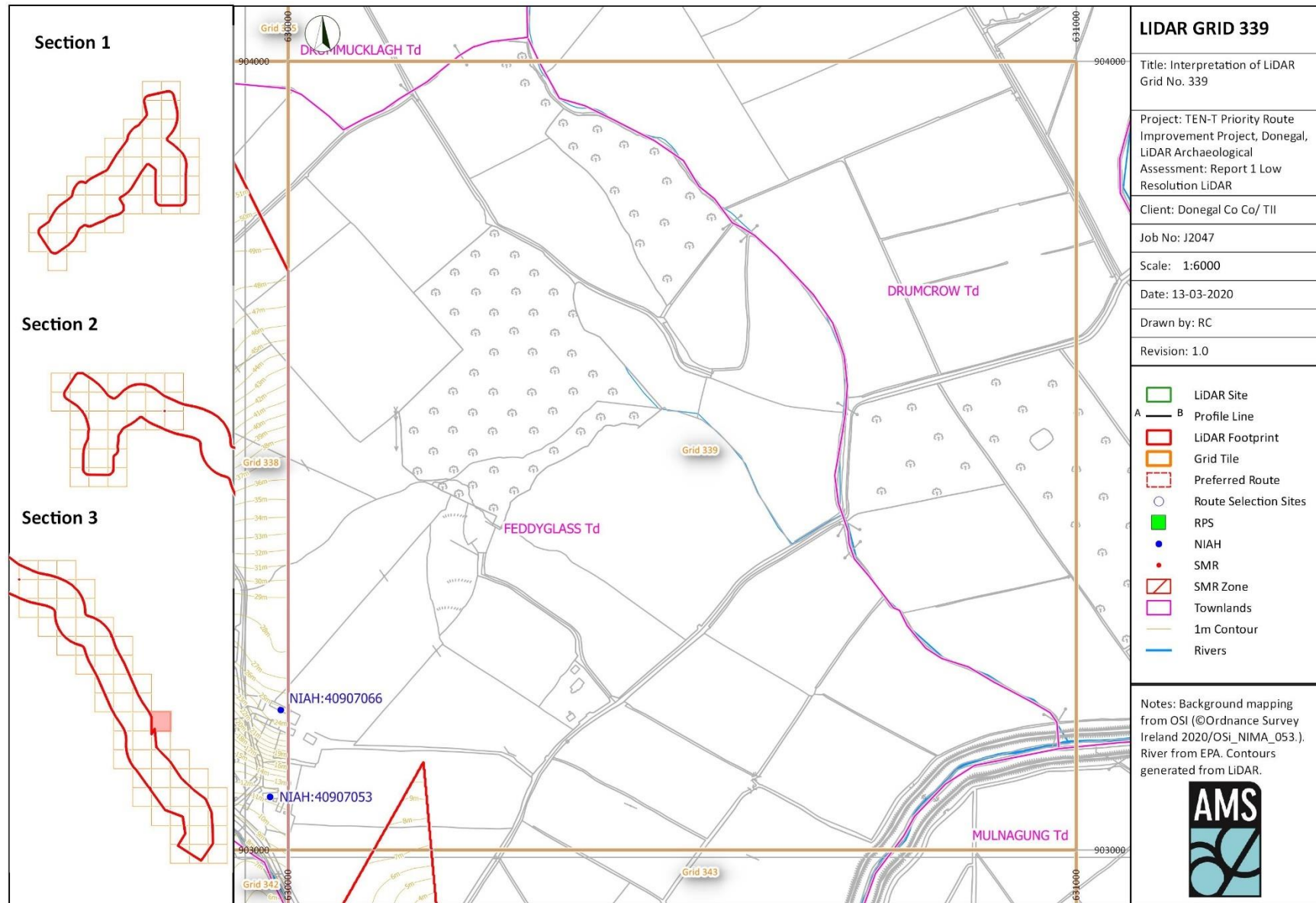
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.




[NO GRID 336]

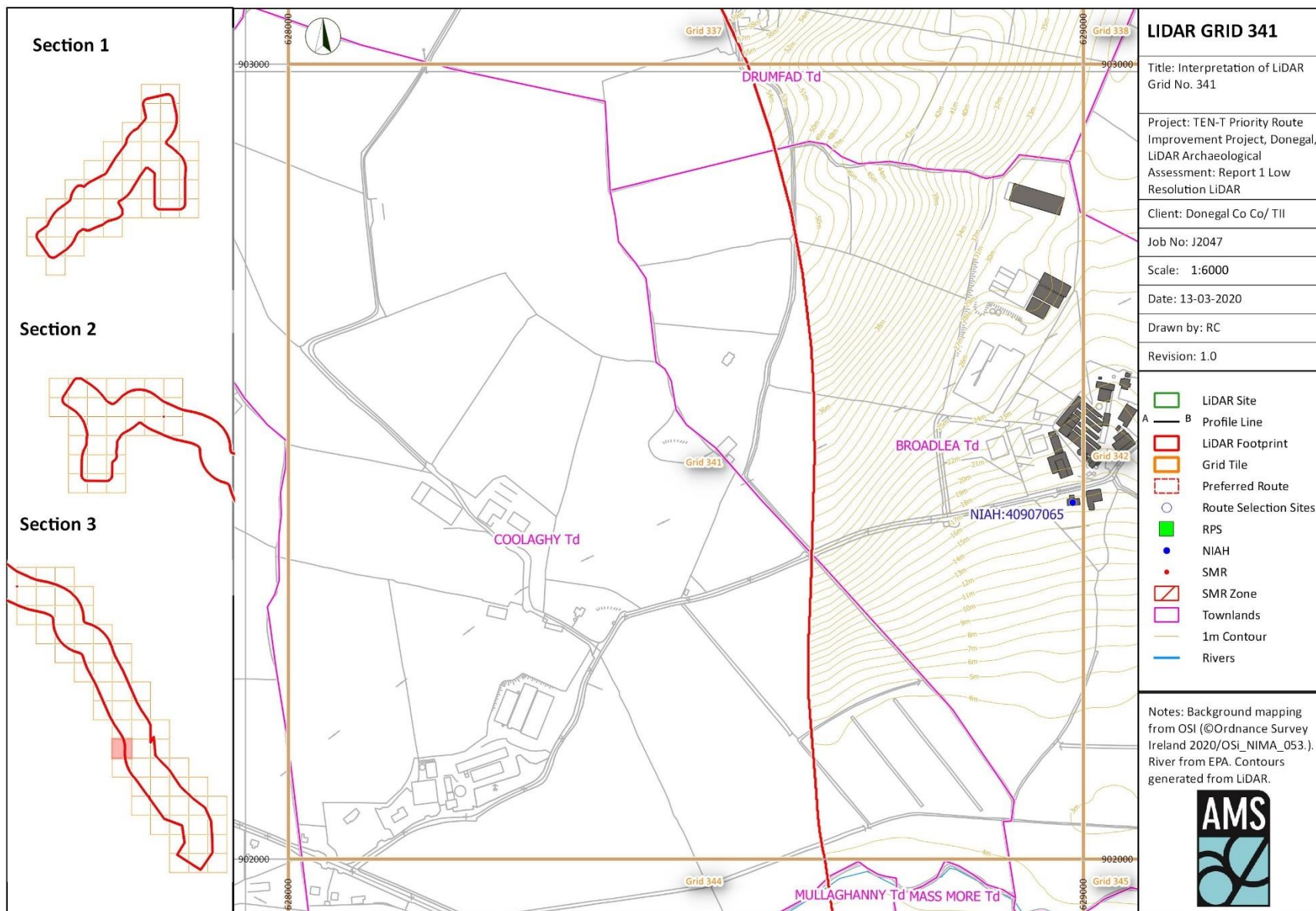


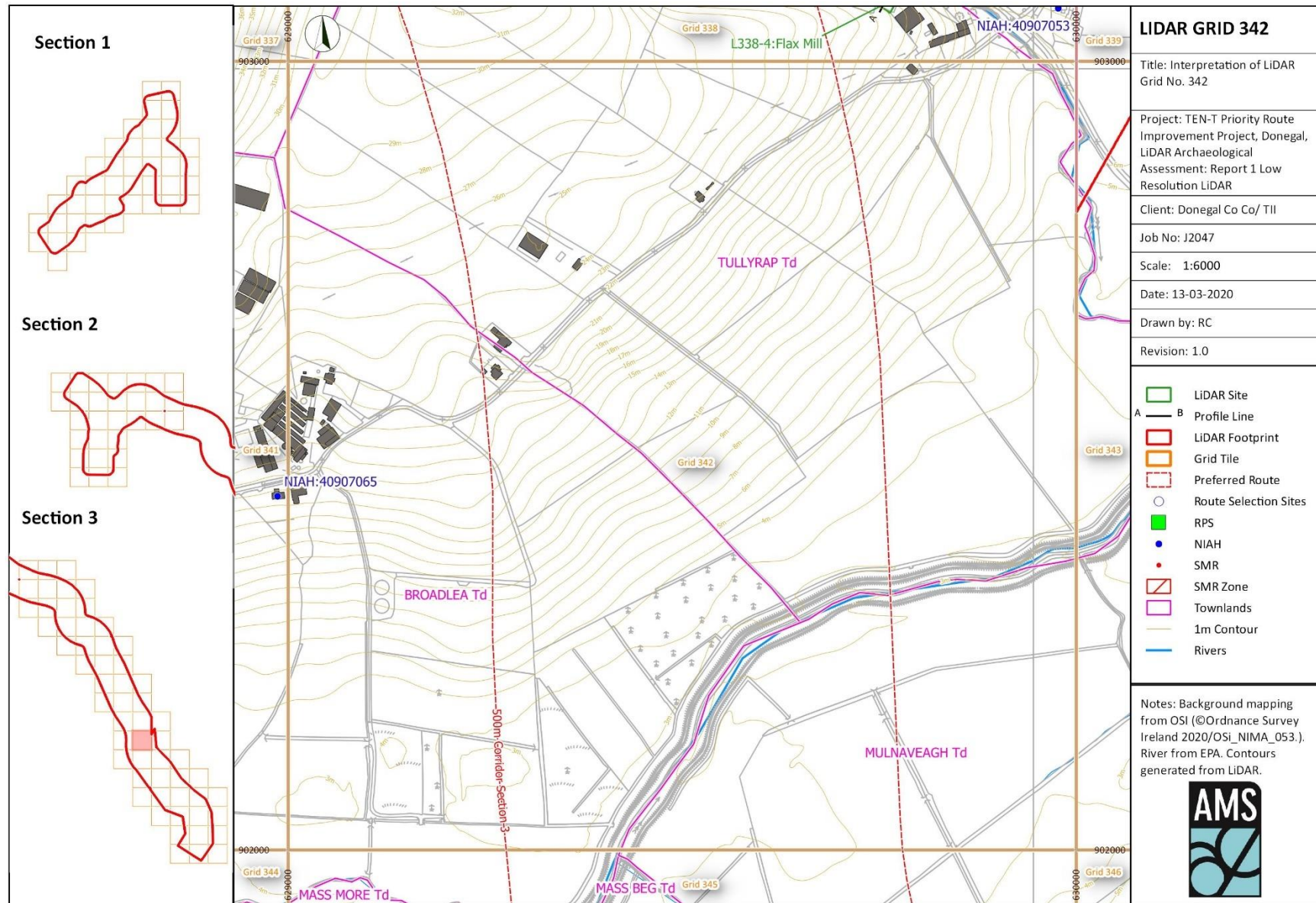


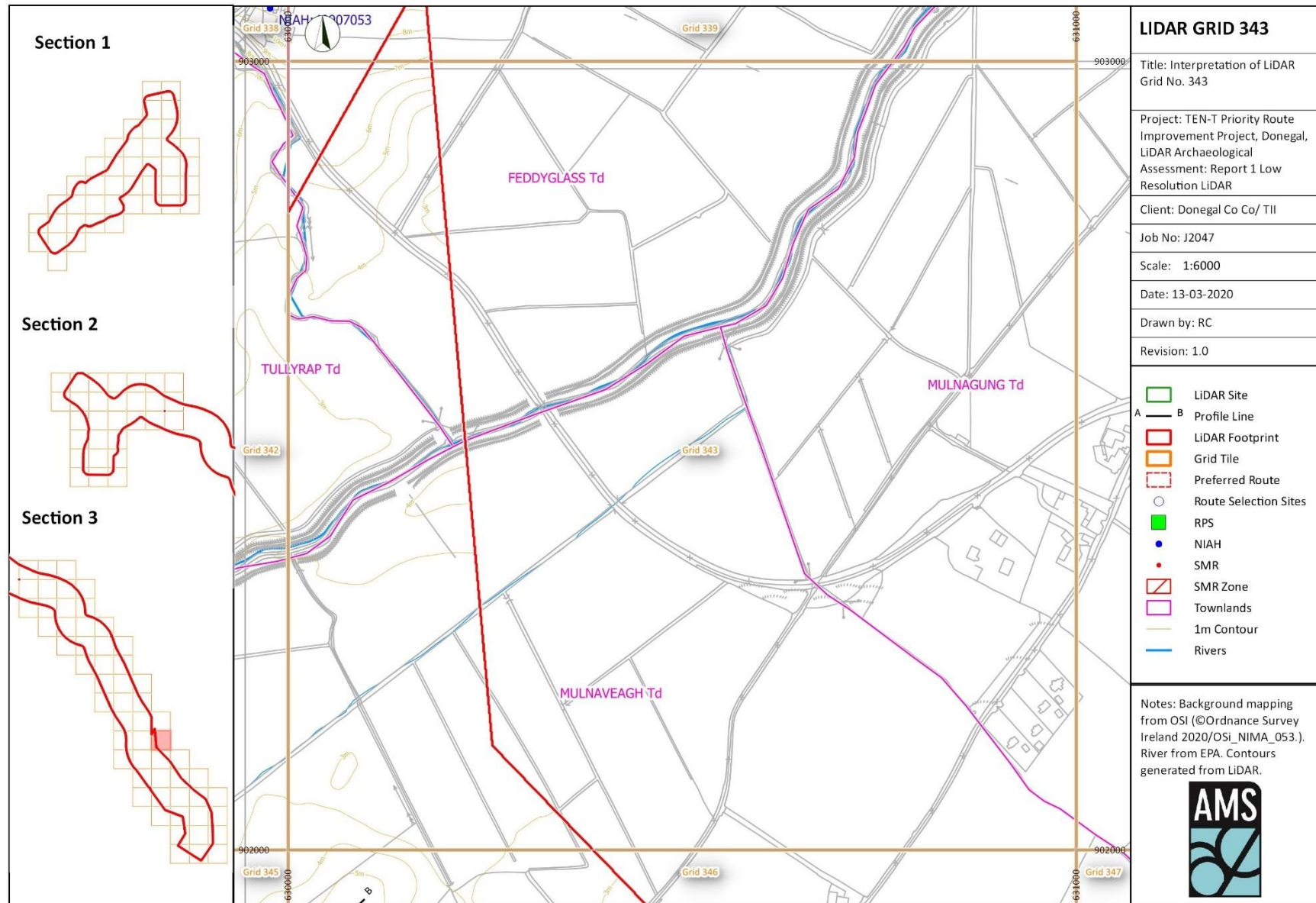


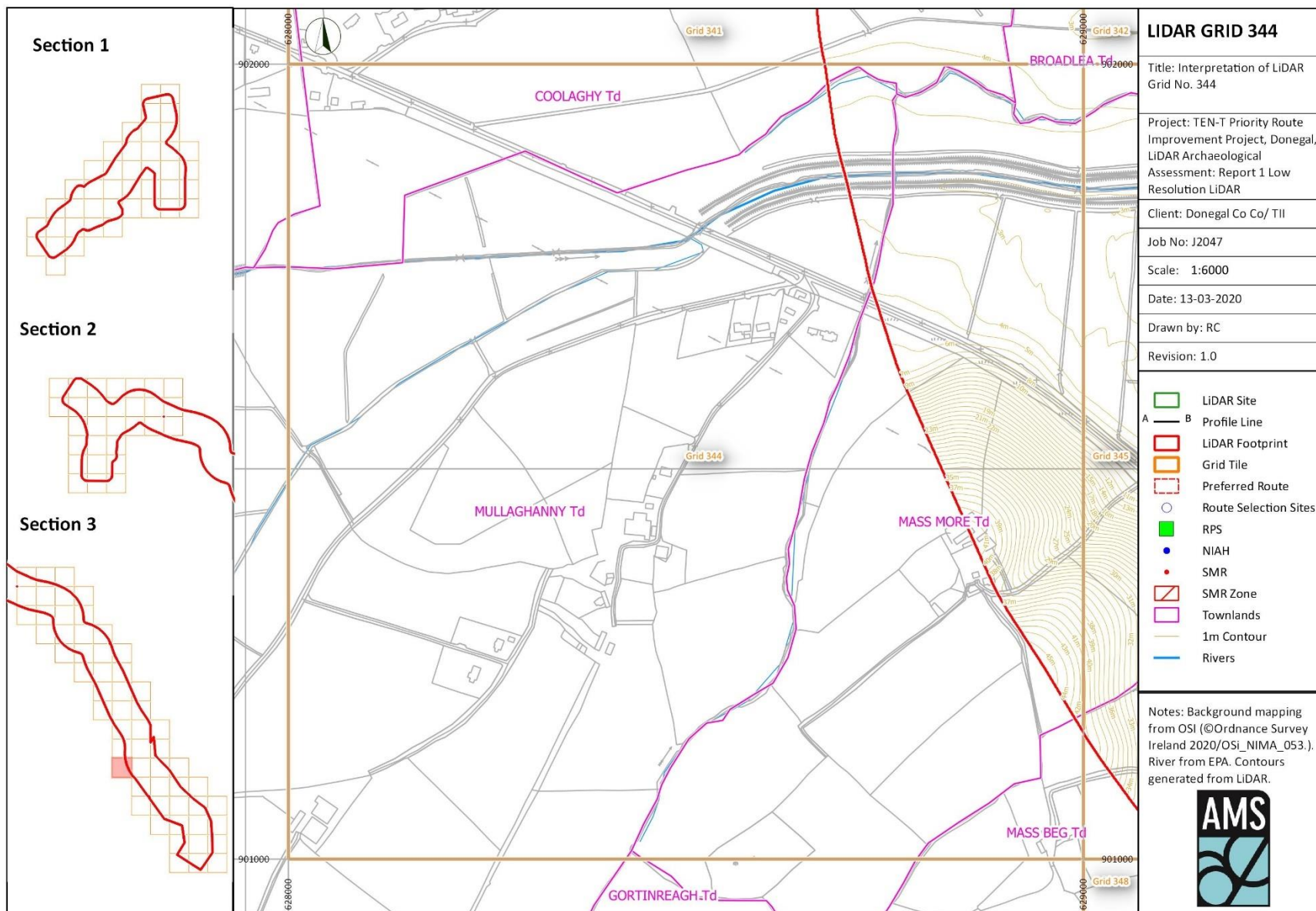
LIDAR GRID 339	
Title: Interpretation of LiDAR Grid No. 339	
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR	
Client: Donegal Co Co/ TII	
Job No: J2047	
Scale: 1:6000	
Date: 13-03-2020	
Drawn by: RC	
Revision: 1.0	
<ul style="list-style-type: none"> LiDAR Site Profile Line LiDAR Footprint Grid Tile Preferred Route Route Selection Sites RPS NIAH SMR SMR Zone Townlands 1m Contour Rivers 	
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.	
	

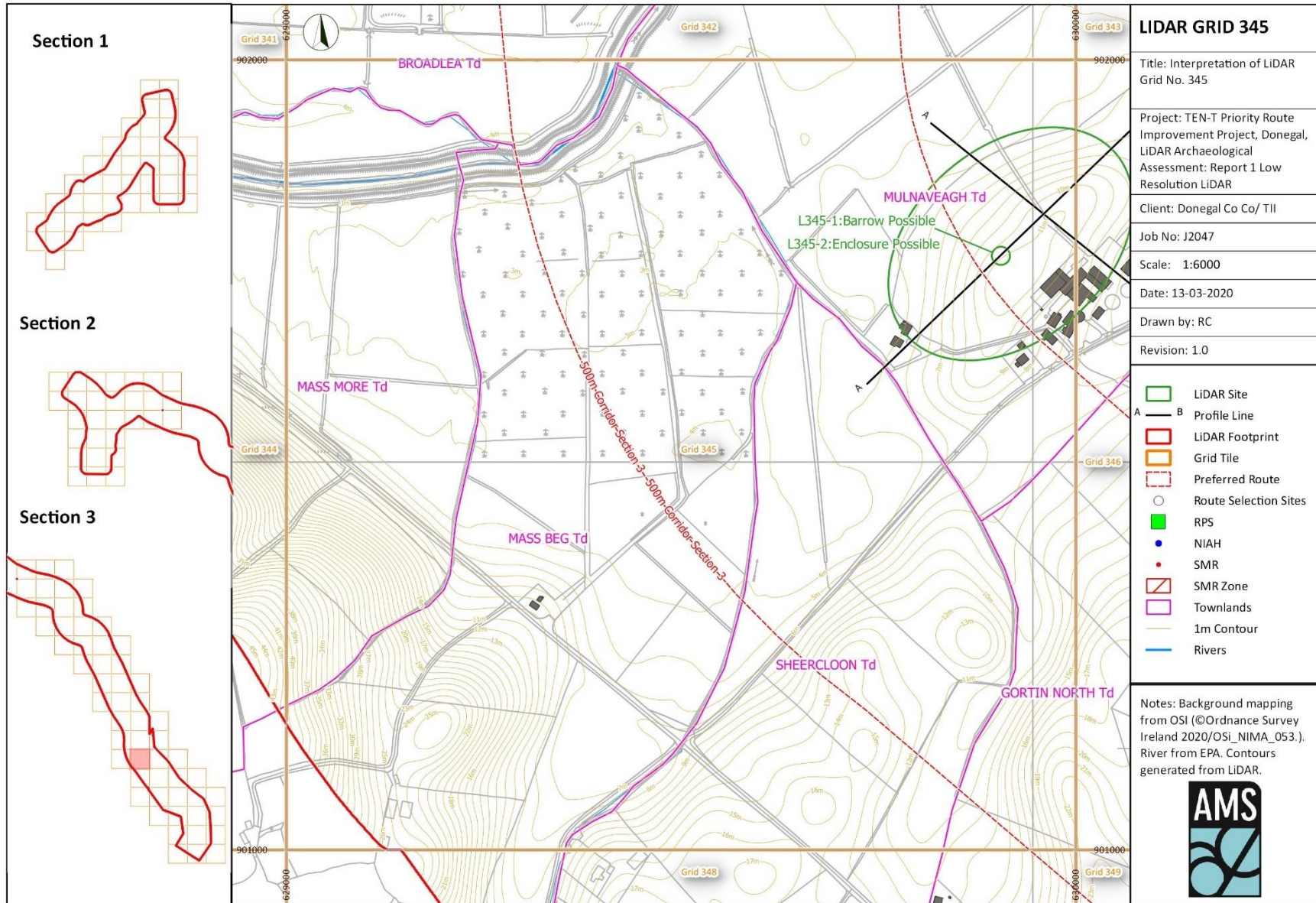
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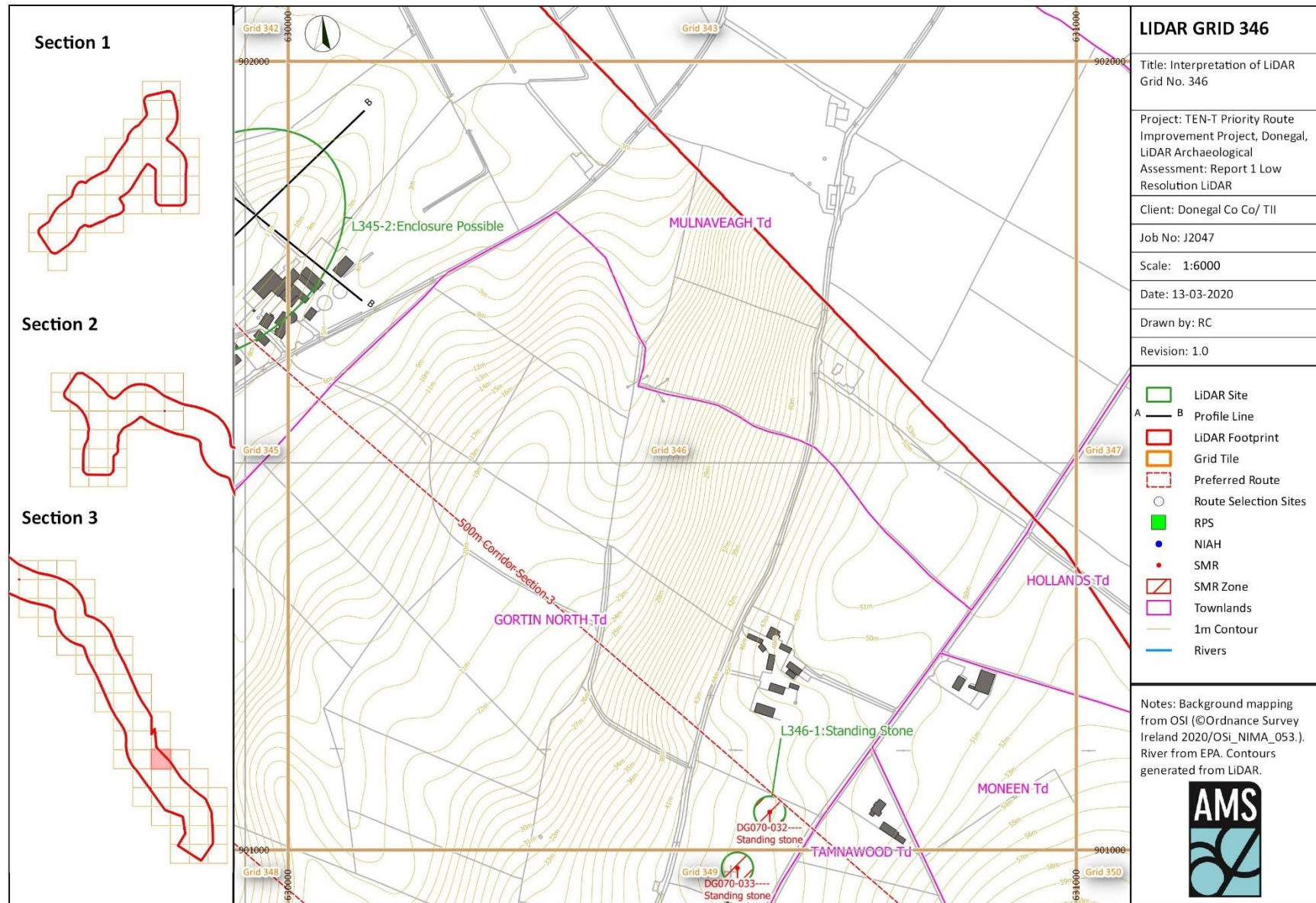


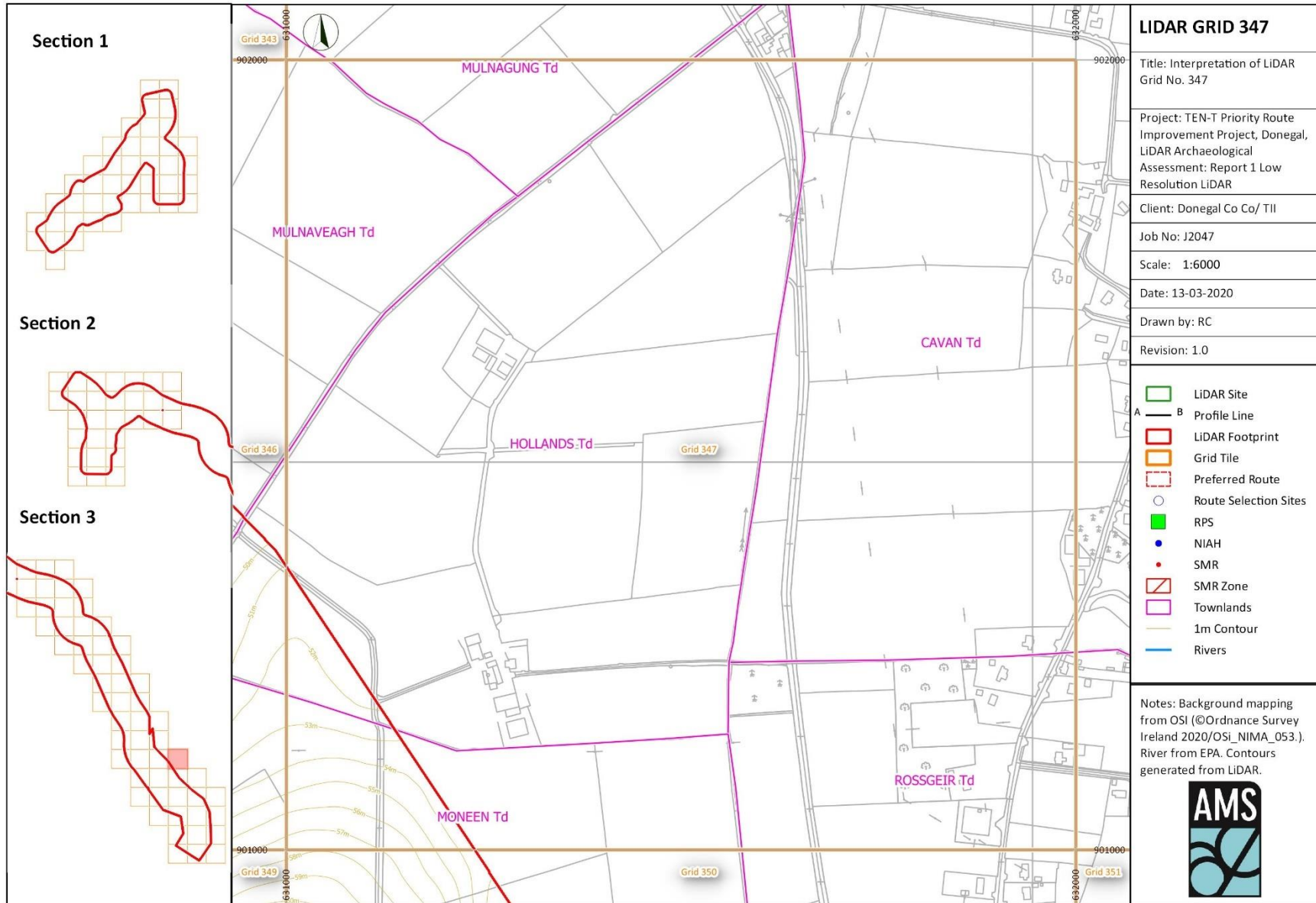


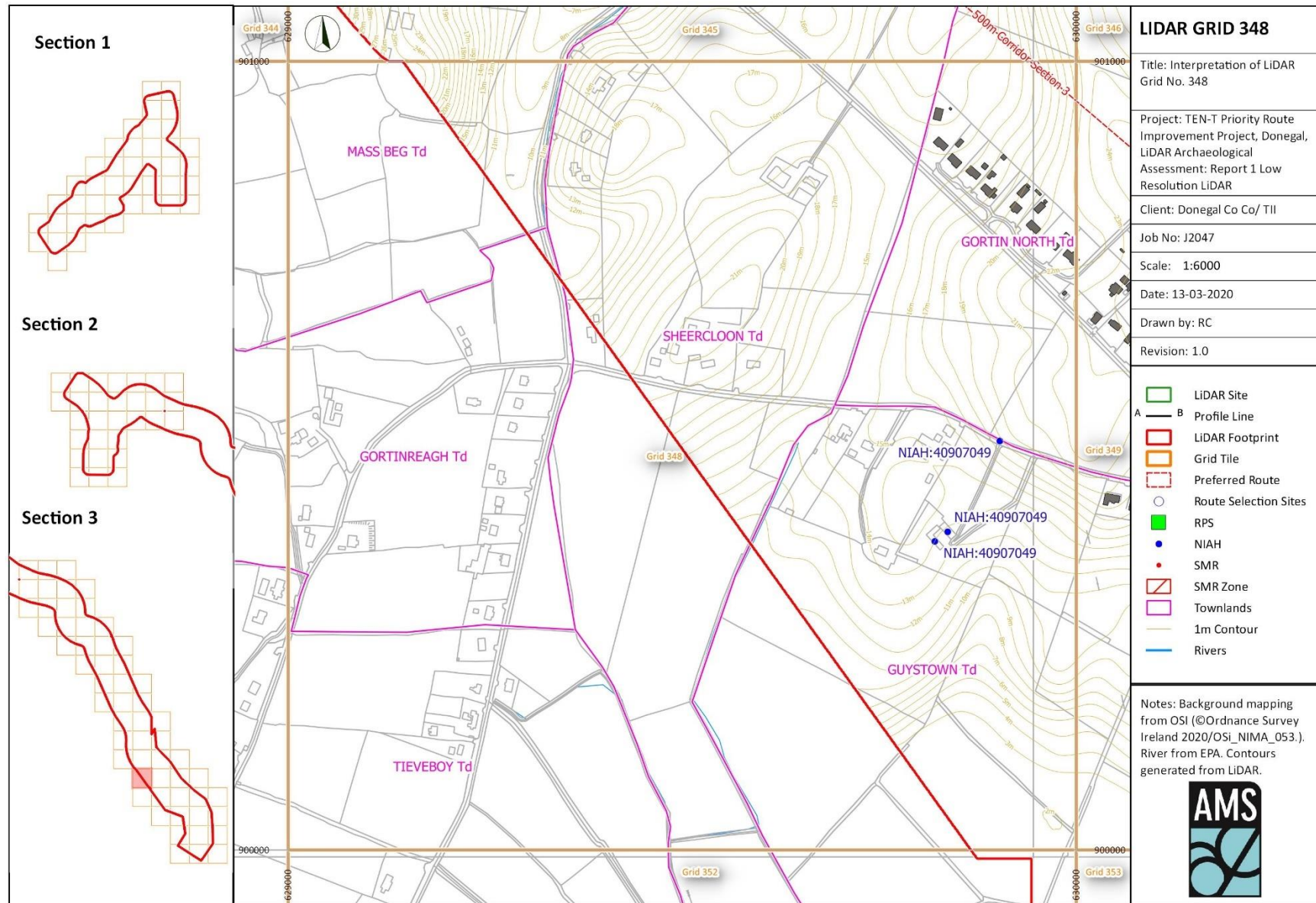


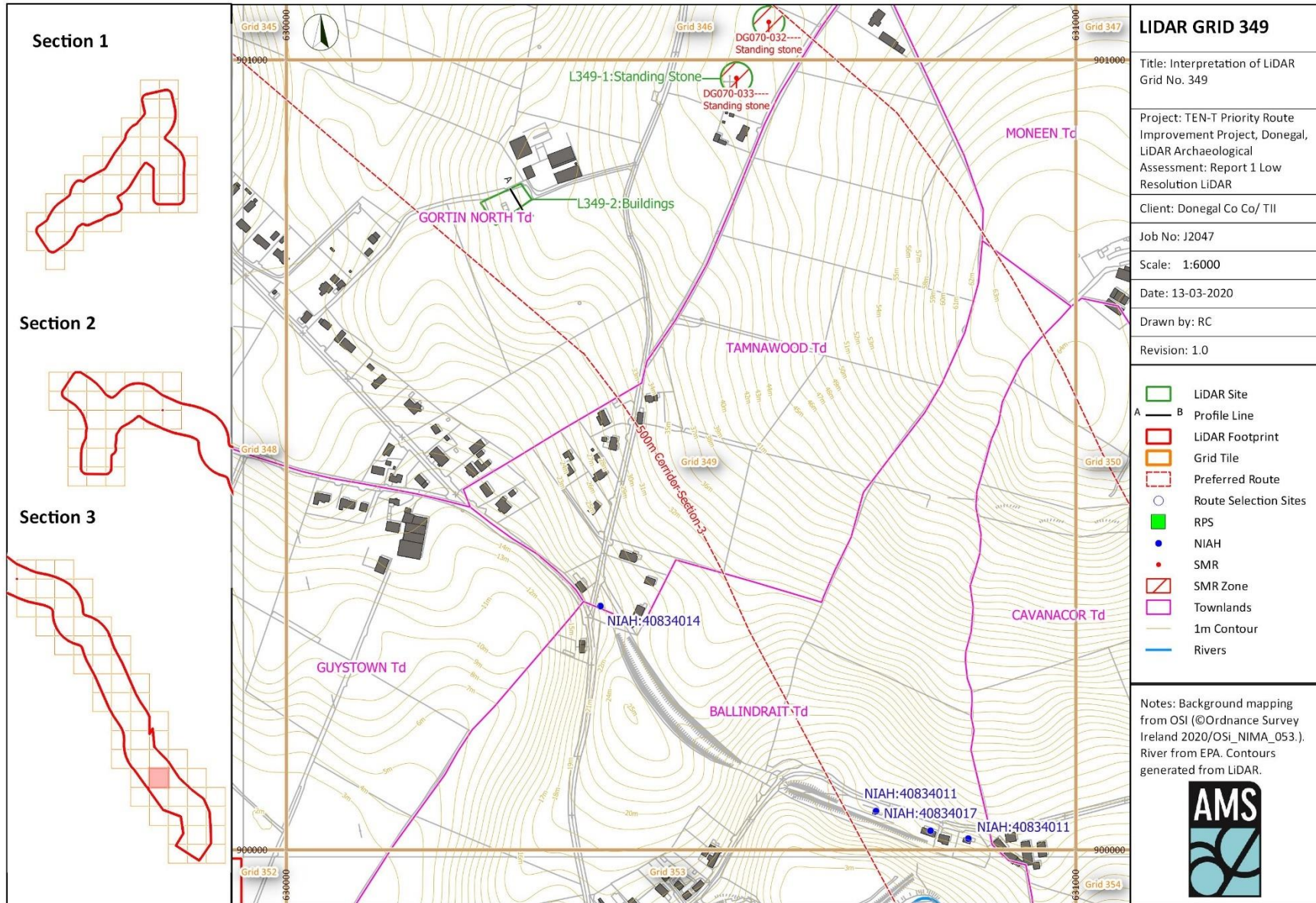


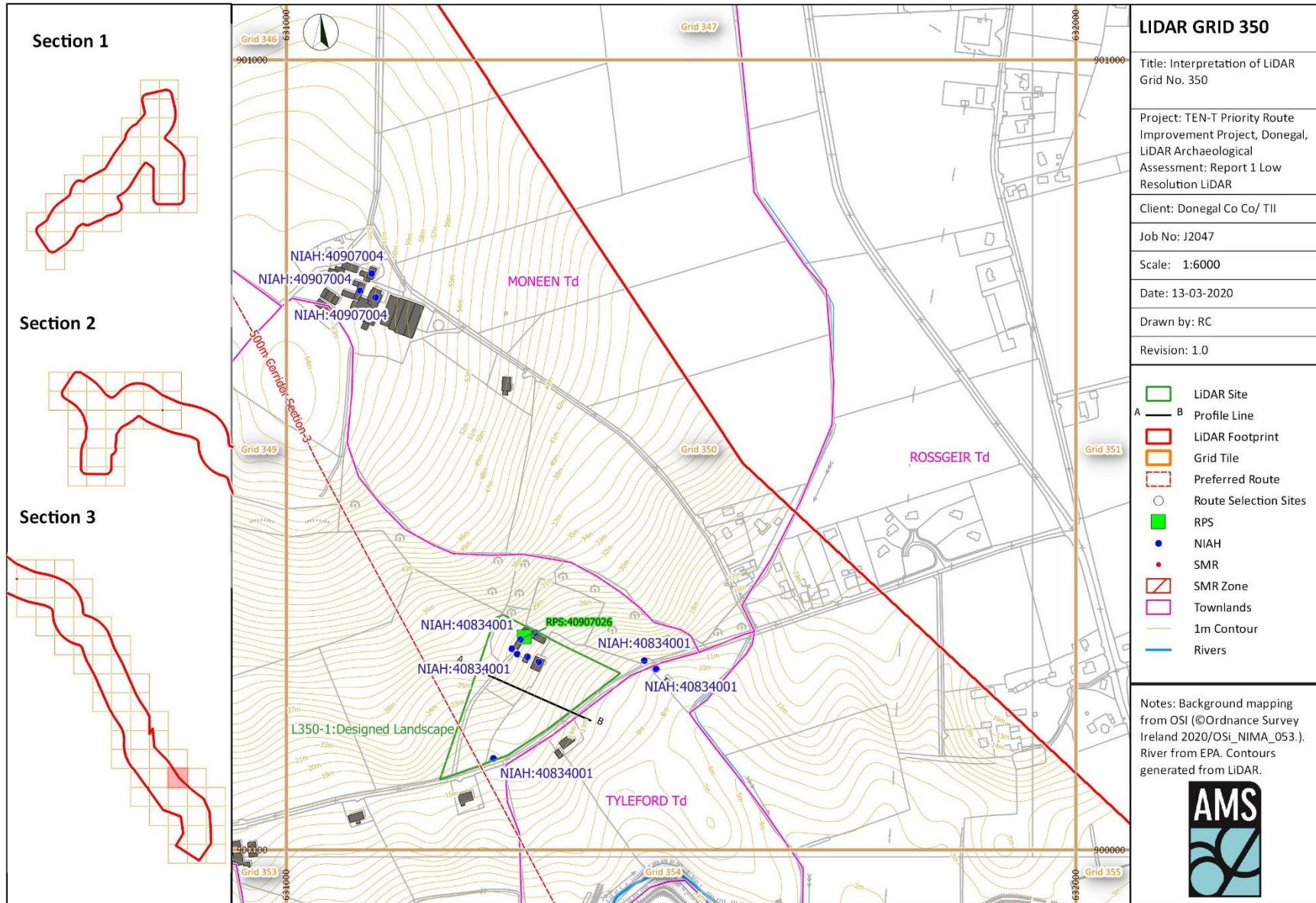










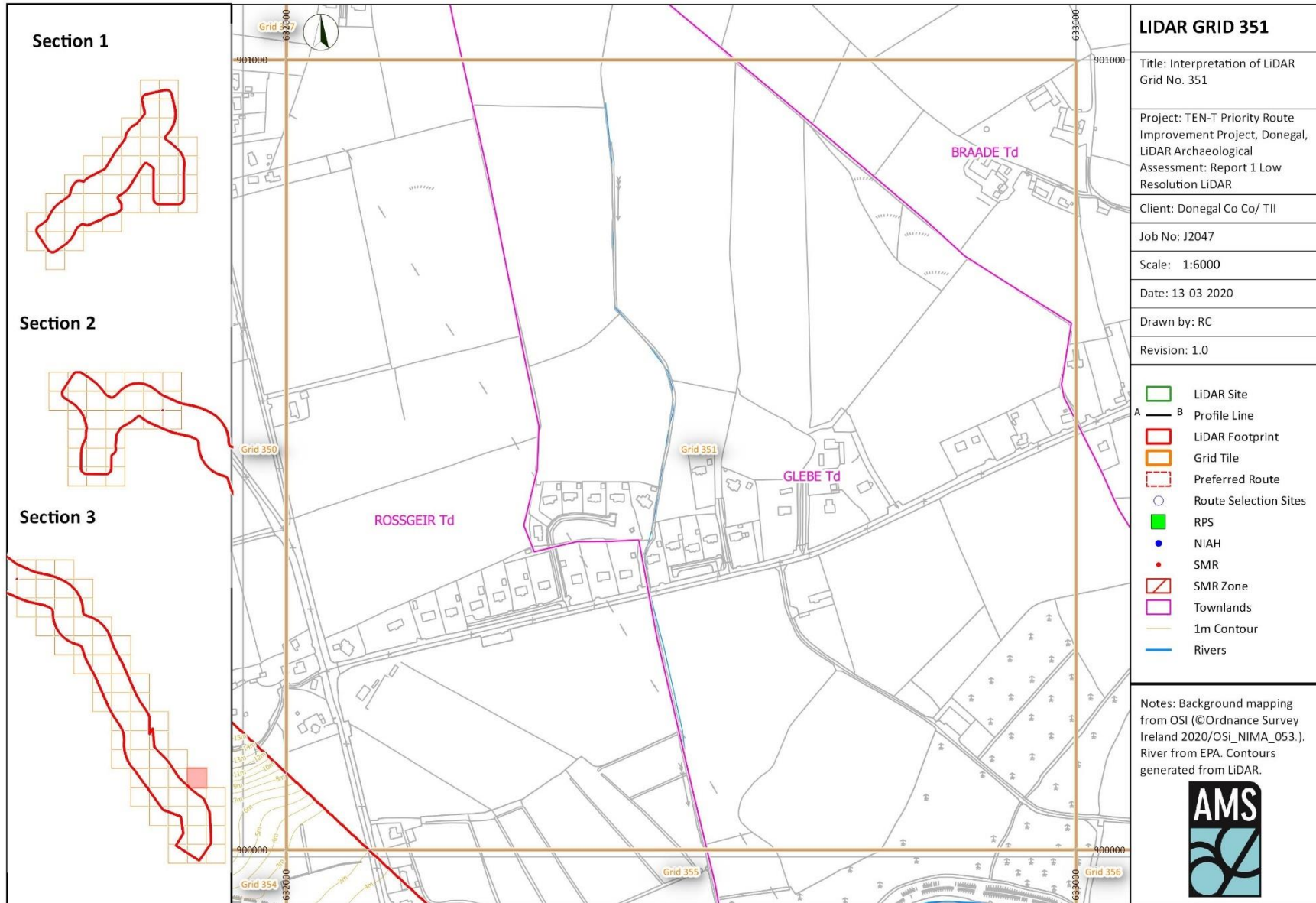


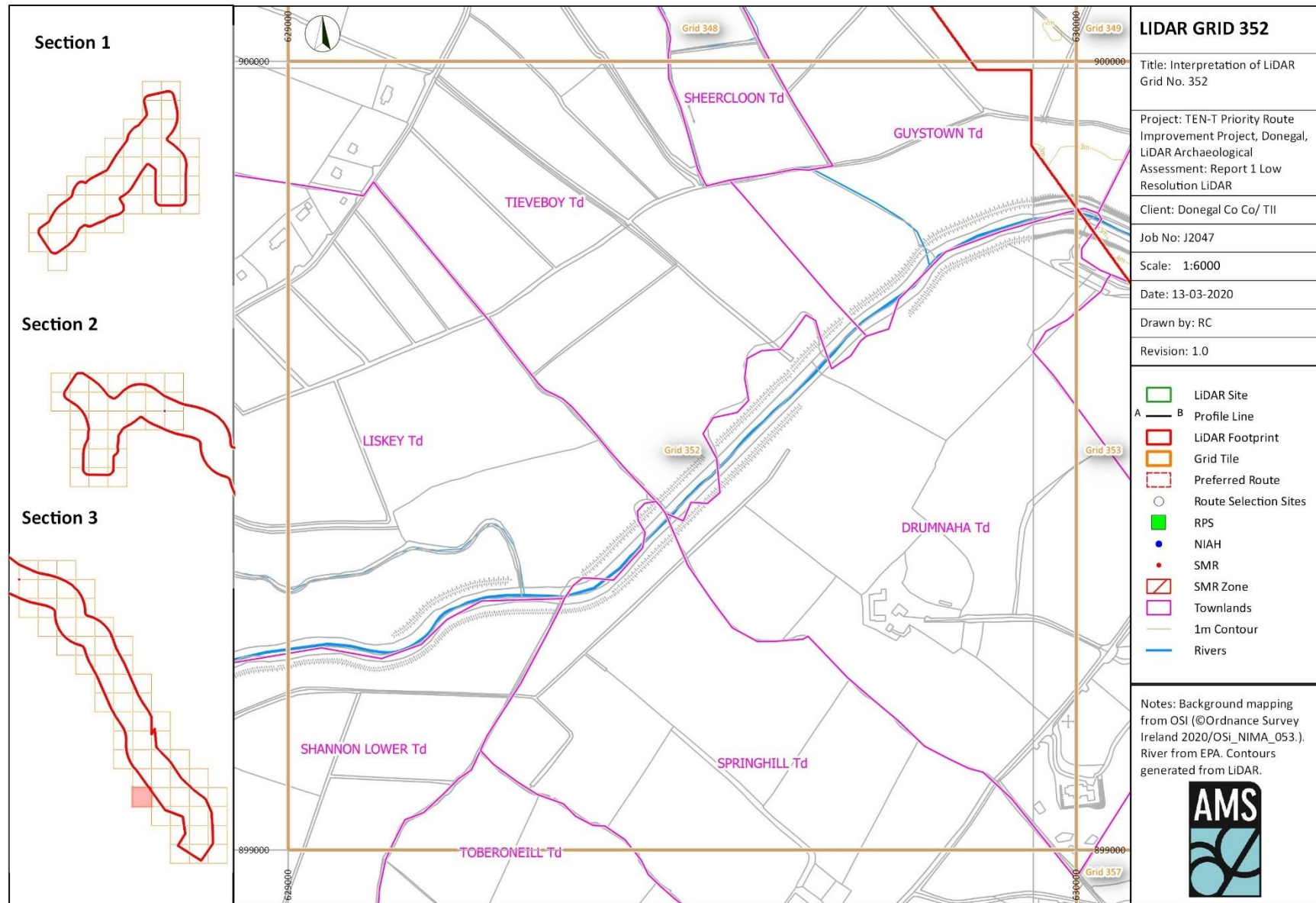
LIDAR GRID 350	
Title: Interpretation of LiDAR Grid No. 350	
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR	
Client: Donegal Co Co/ TII	
Job No: J2047	
Scale: 1:6000	
Date: 13-03-2020	
Drawn by: RC	
Revision: 1.0	

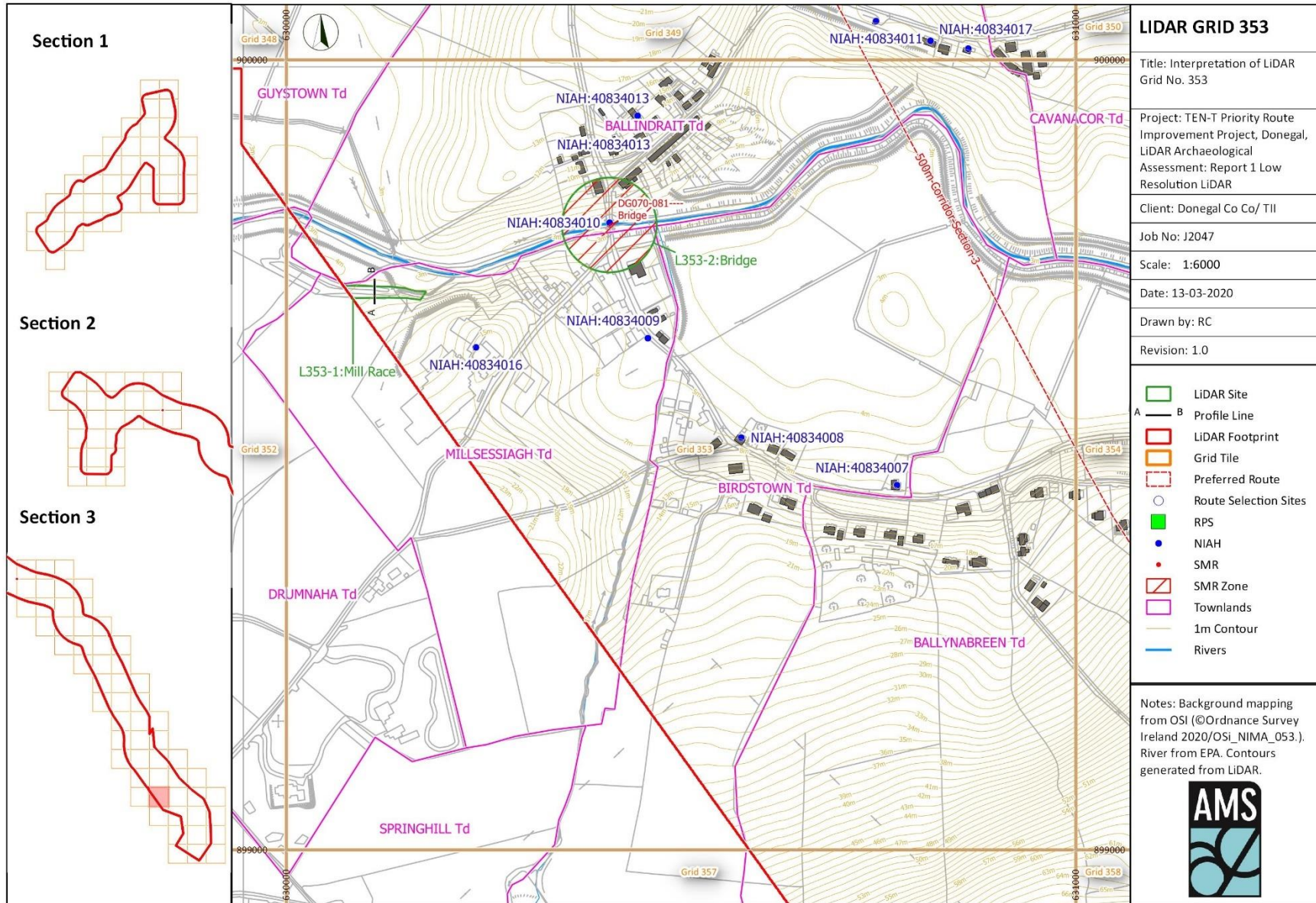
- LiDAR Site
- A — B Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

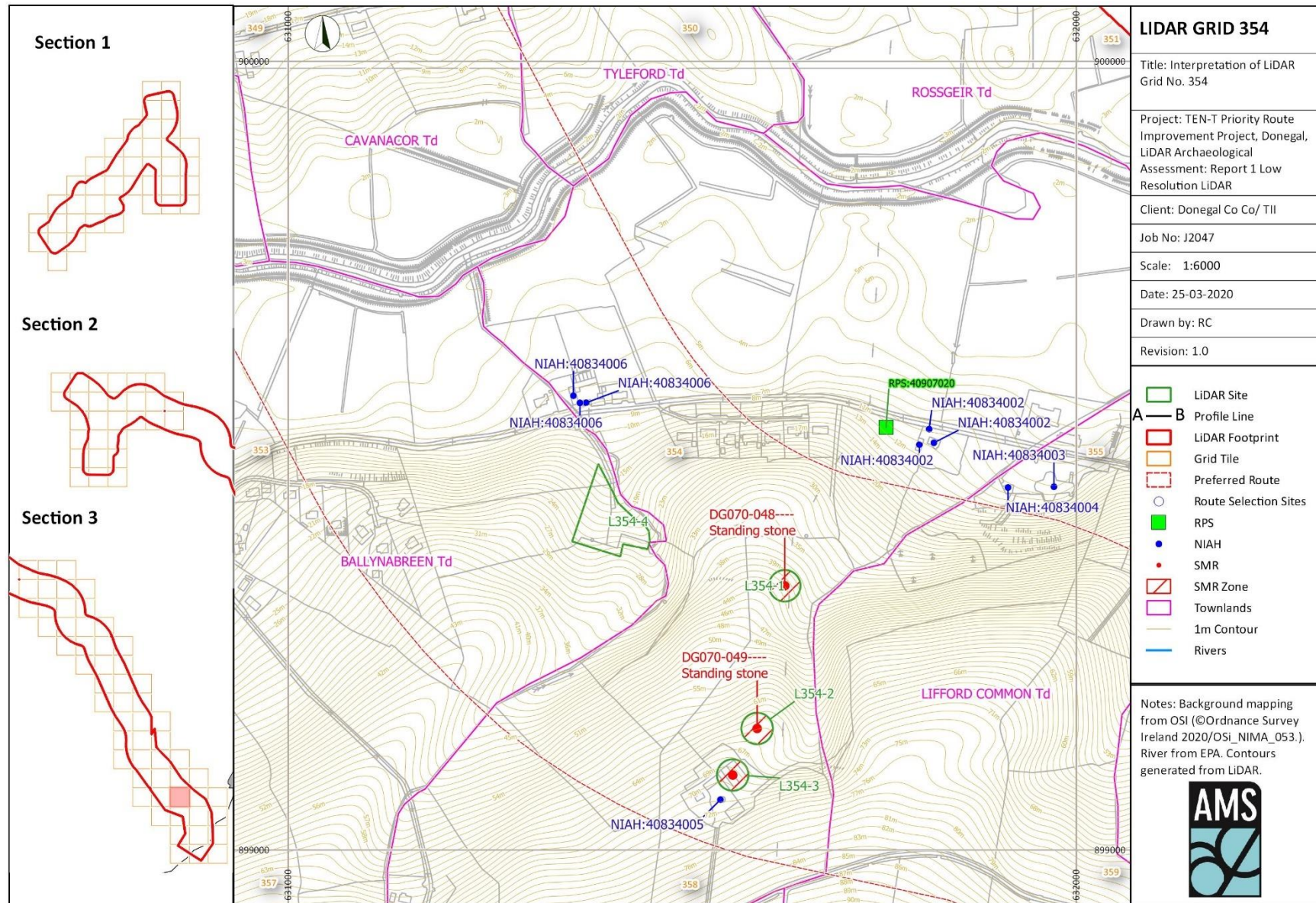
Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.









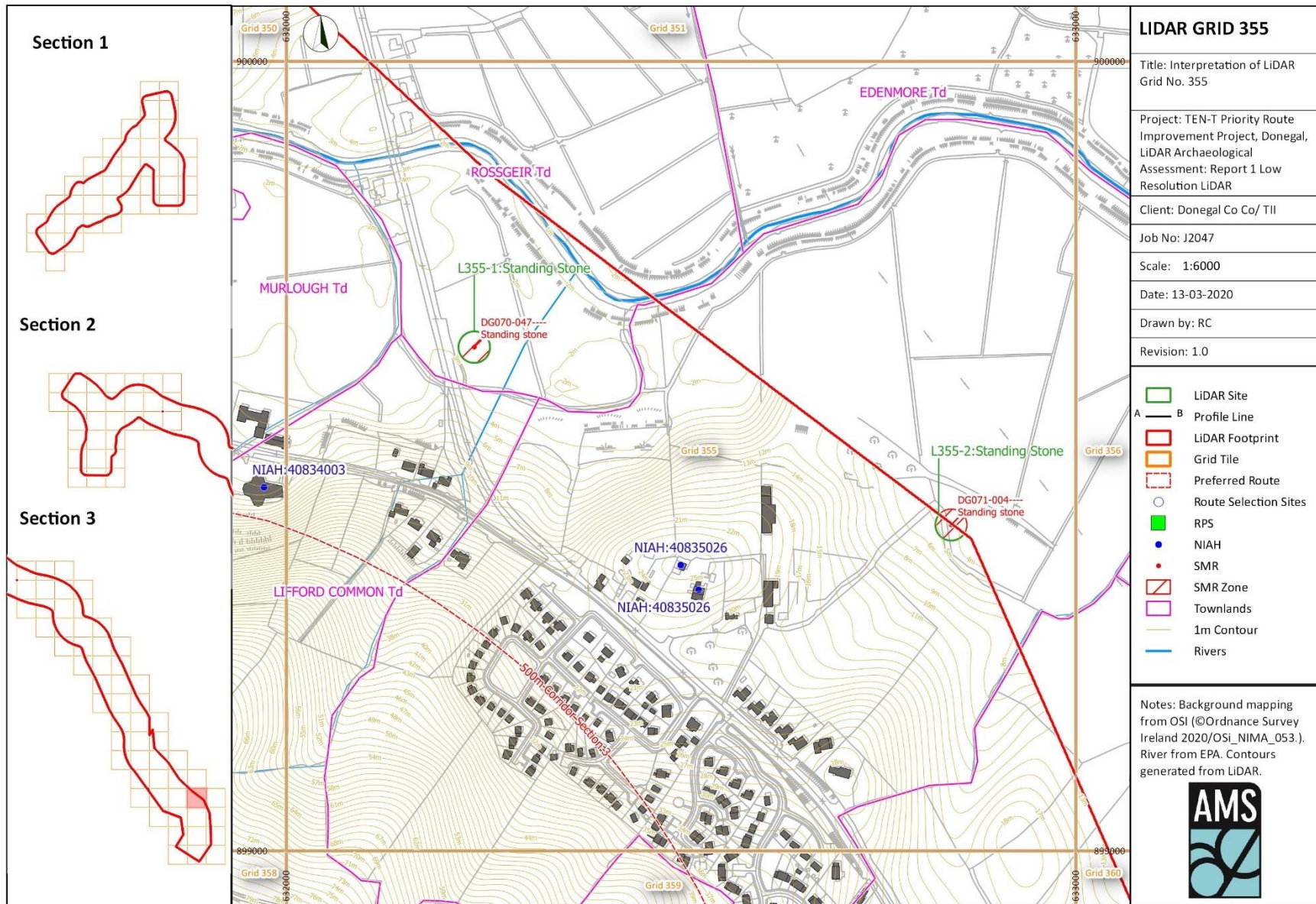


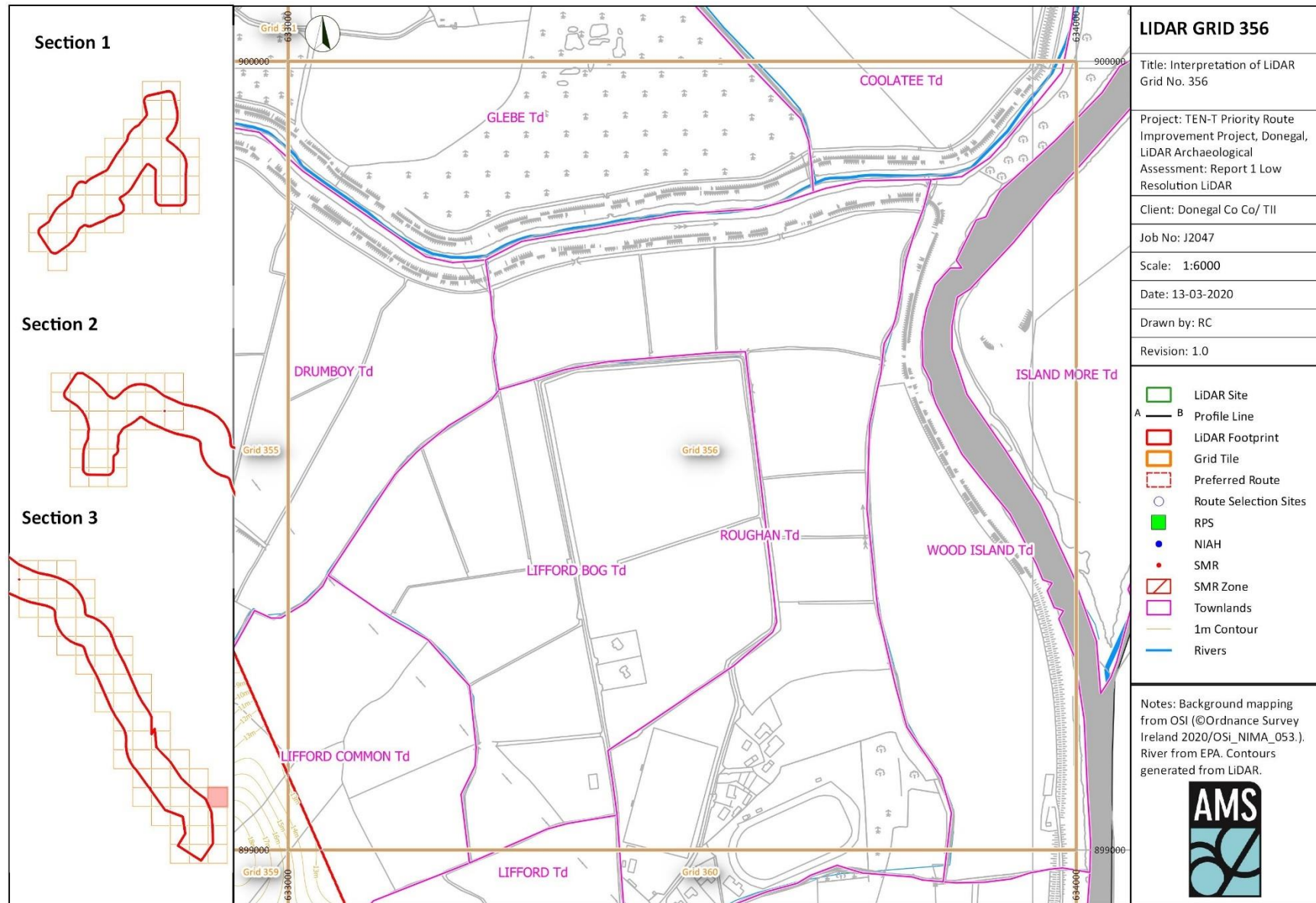
LIDAR GRID 354
Title: Interpretation of LiDAR Grid No. 354
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client: Donegal Co Co/ TII
Job No: J2047
Scale: 1:6000
Date: 25-03-2020
Drawn by: RC
Revision: 1.0

- LiDAR Site
- Profile Line
- ▭ LiDAR Footprint
- ▭ Grid Tile
- - - Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- ▭ SMR Zone
- ▭ Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.







LIDAR GRID 356

Title: Interpretation of LiDAR Grid No. 356

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:6000


Date: 13-03-2020

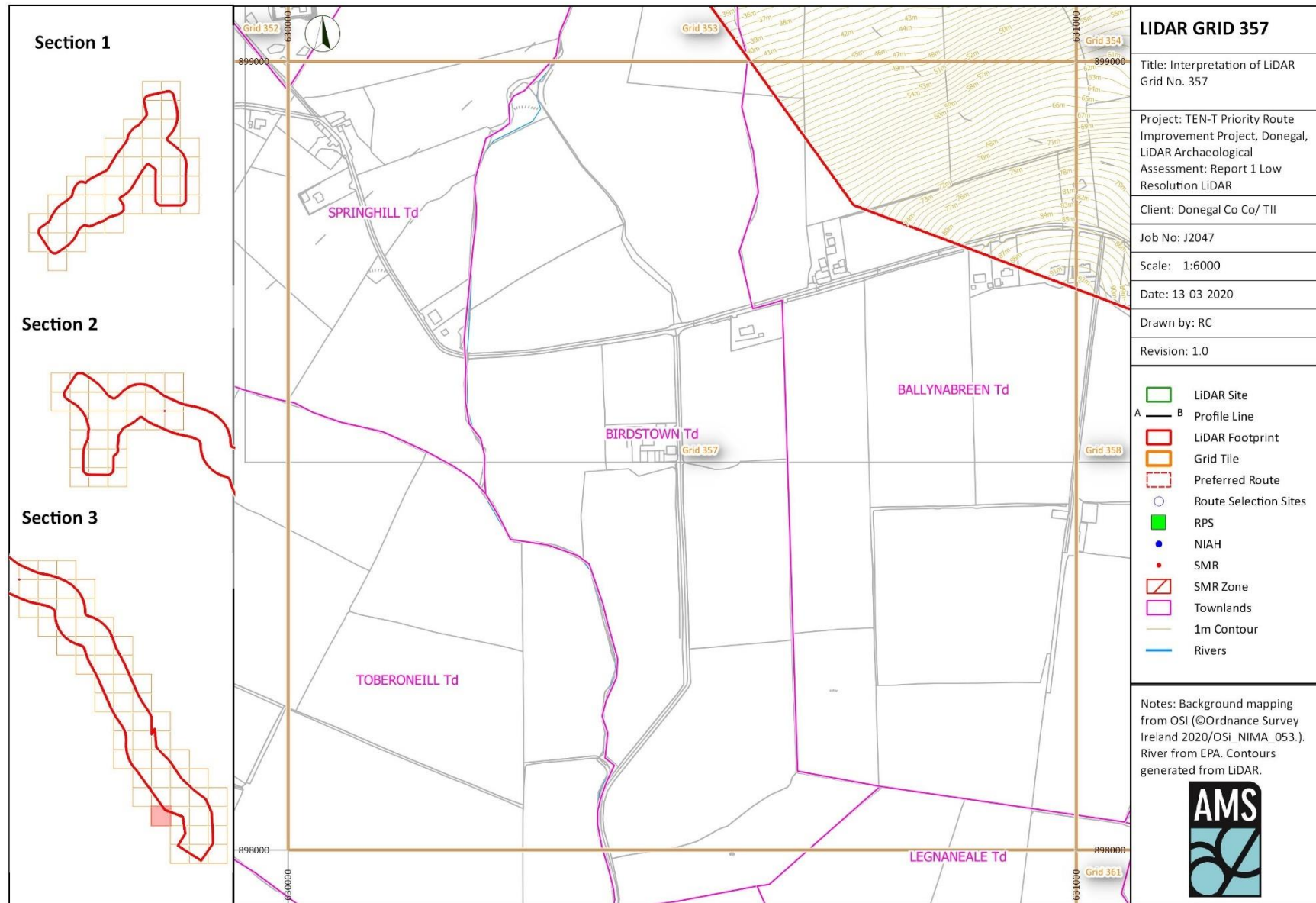
Drawn by: RC

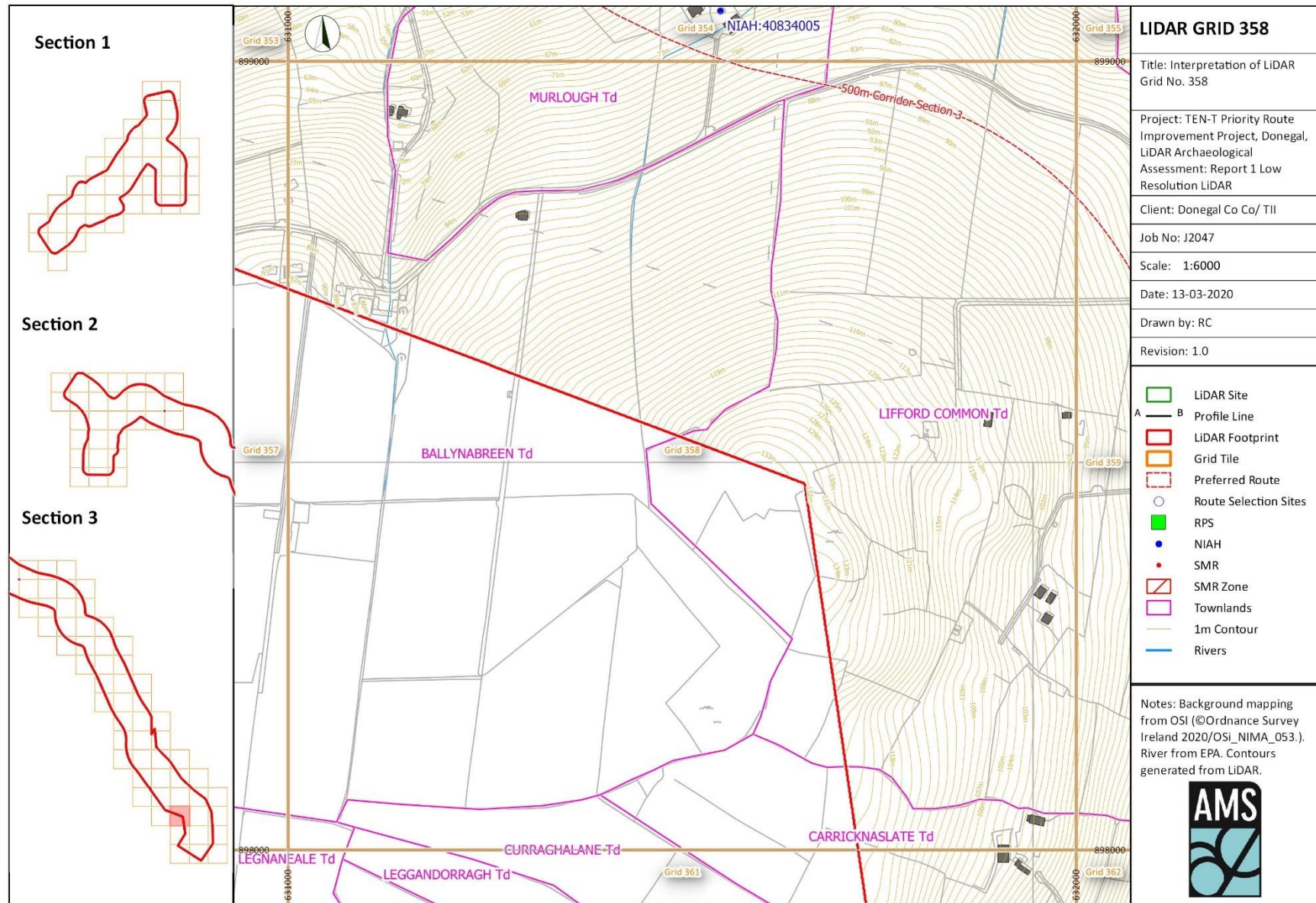
Revision: 1.0

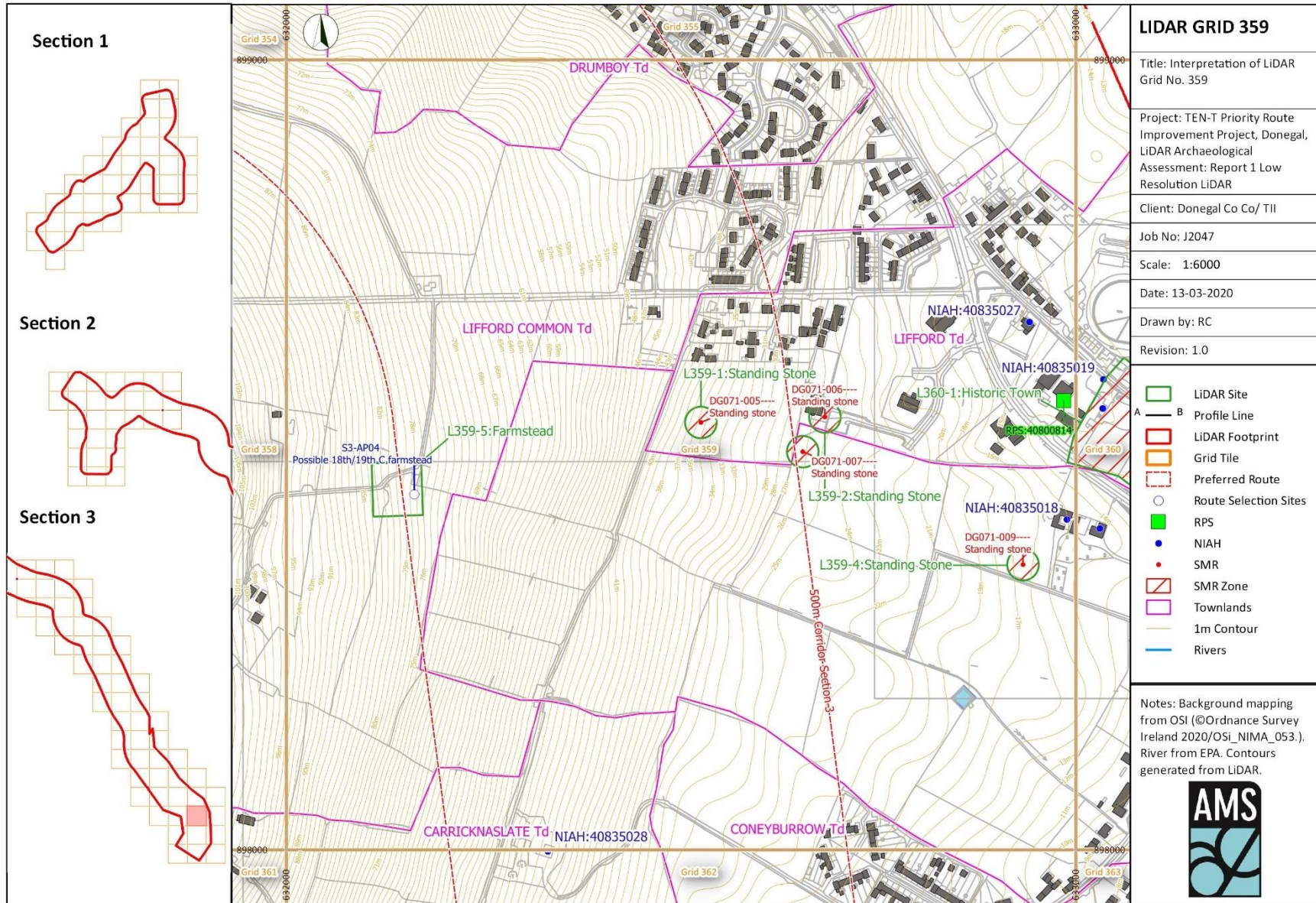
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.







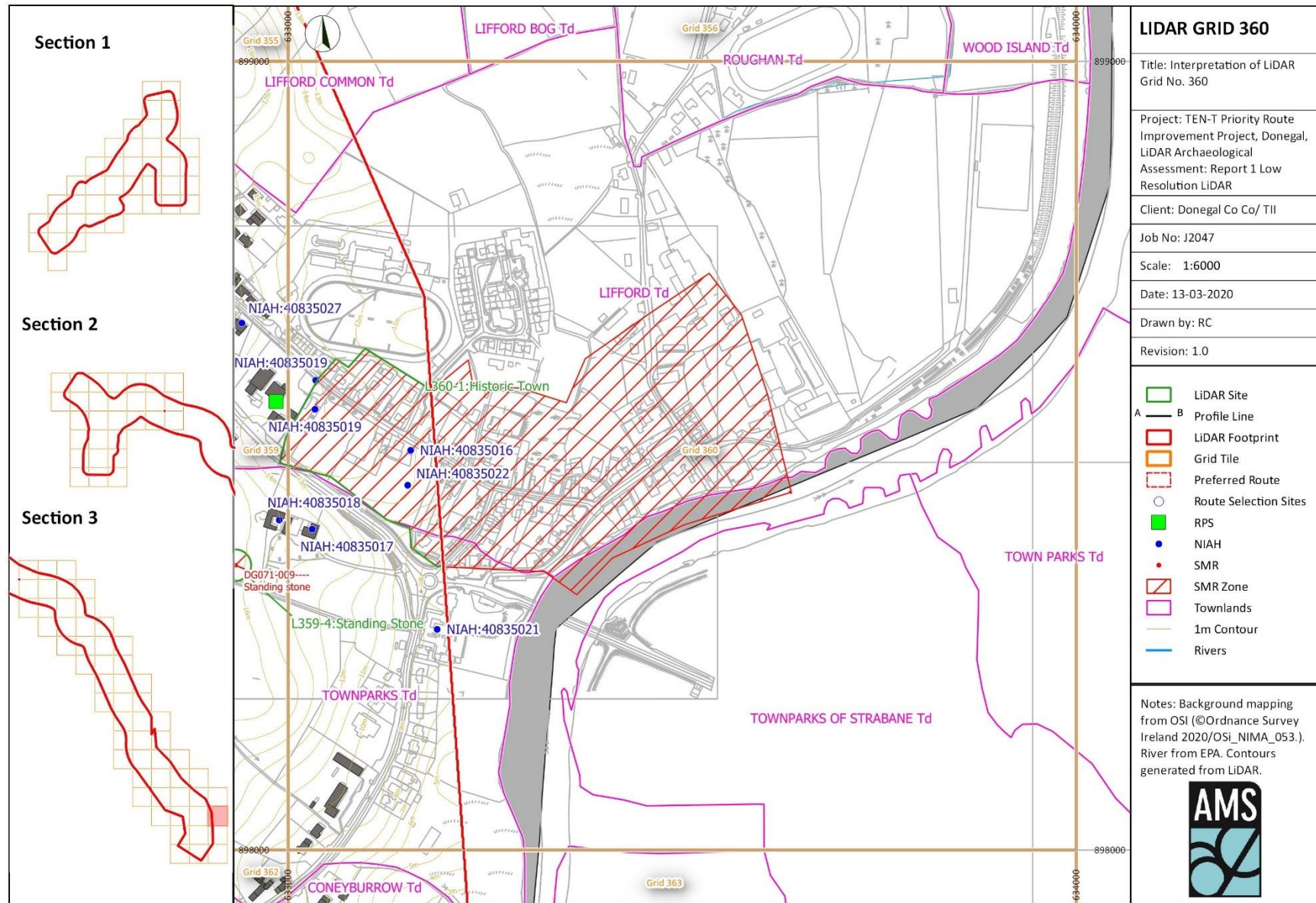


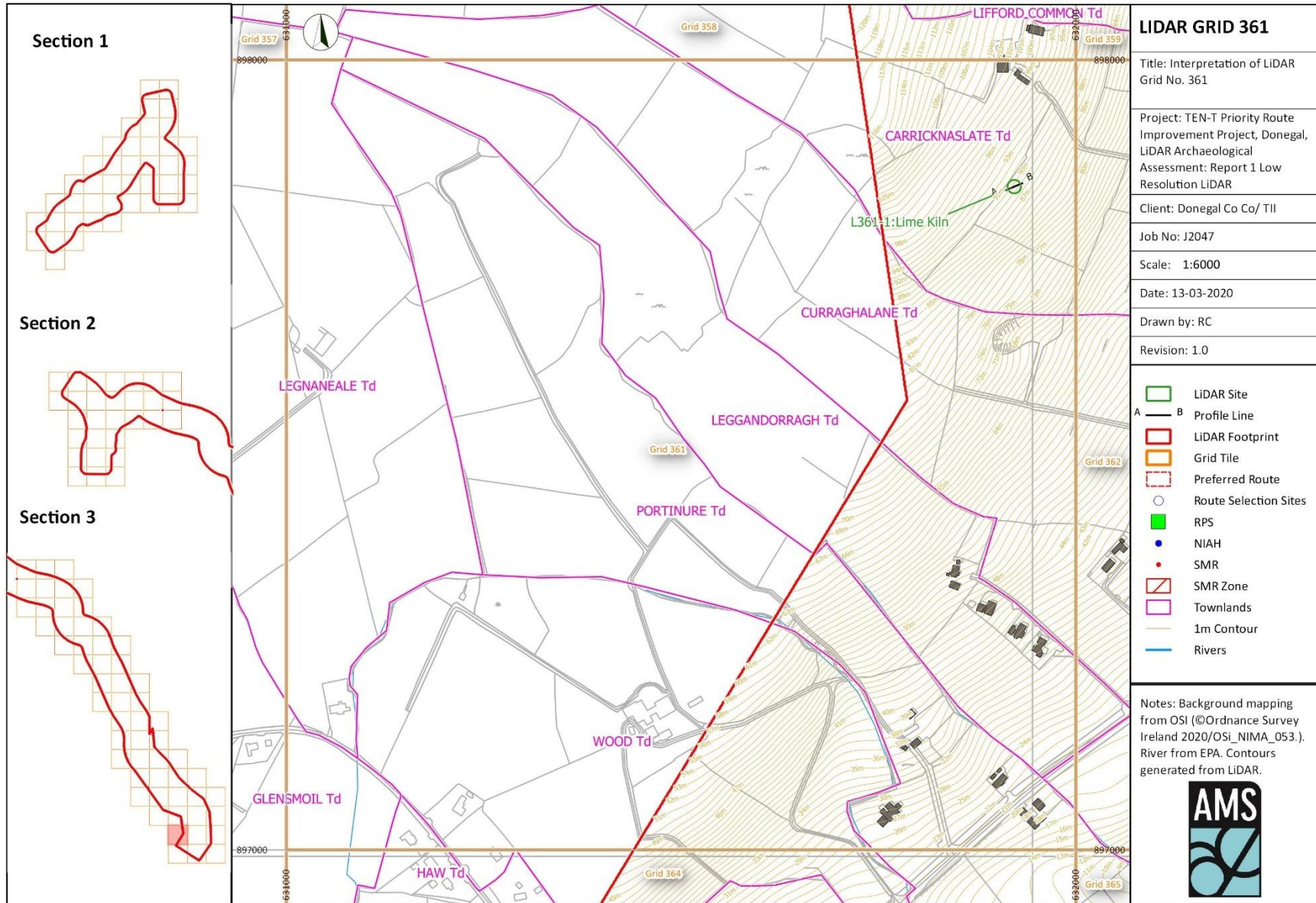
LIDAR GRID 359
Title: Interpretation of LiDAR Grid No. 359
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR
Client: Donegal Co Co/ TII
Job No: J2047
Scale: 1:6000
Date: 13-03-2020
Drawn by: RC
Revision: 1.0

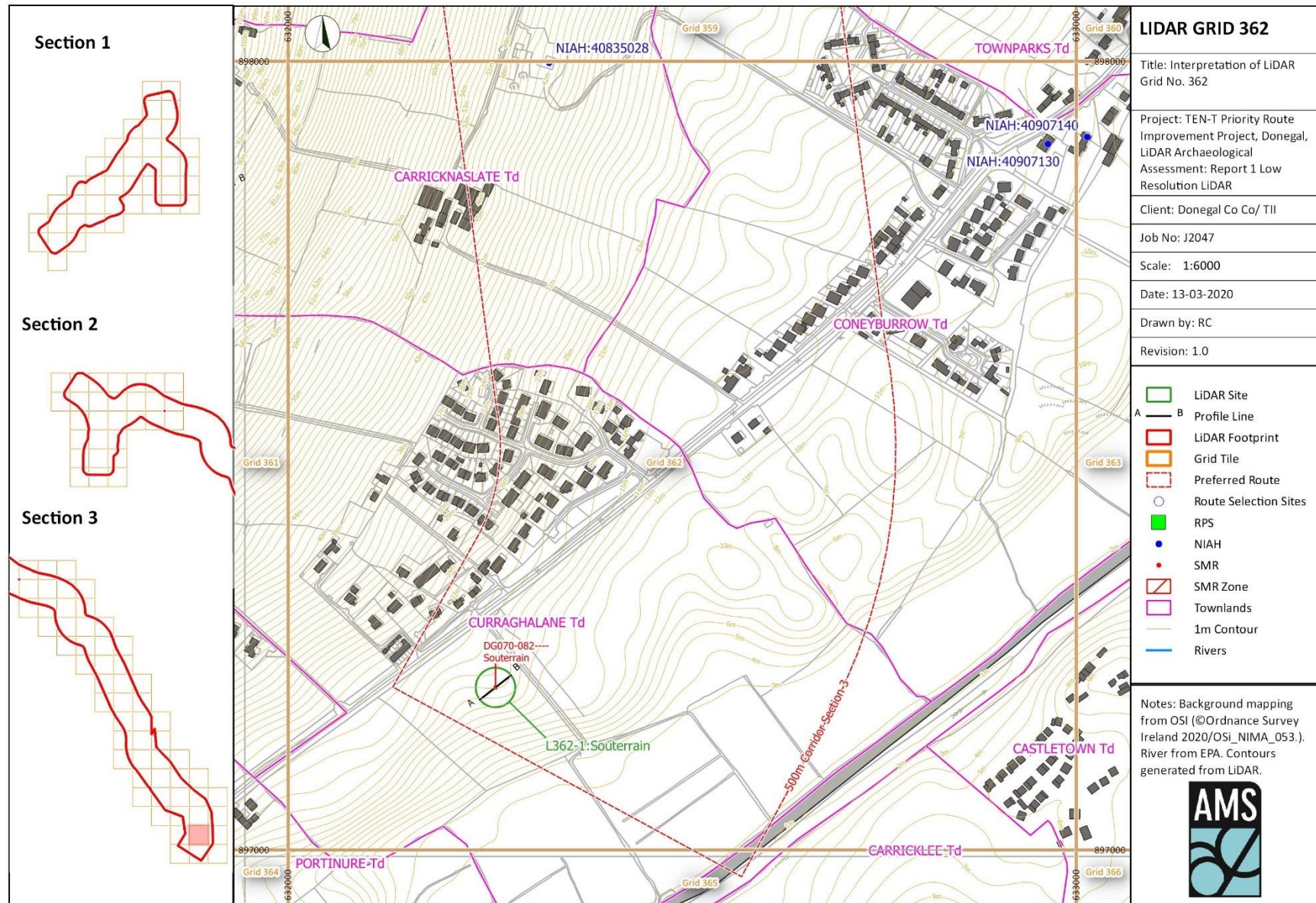
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- - - Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.









LIDAR GRID 362

Title: Interpretation of LiDAR Grid No. 362

Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR

Client: Donegal Co Co/ TII

Job No: J2047

Scale: 1:6000

Date: 13-03-2020

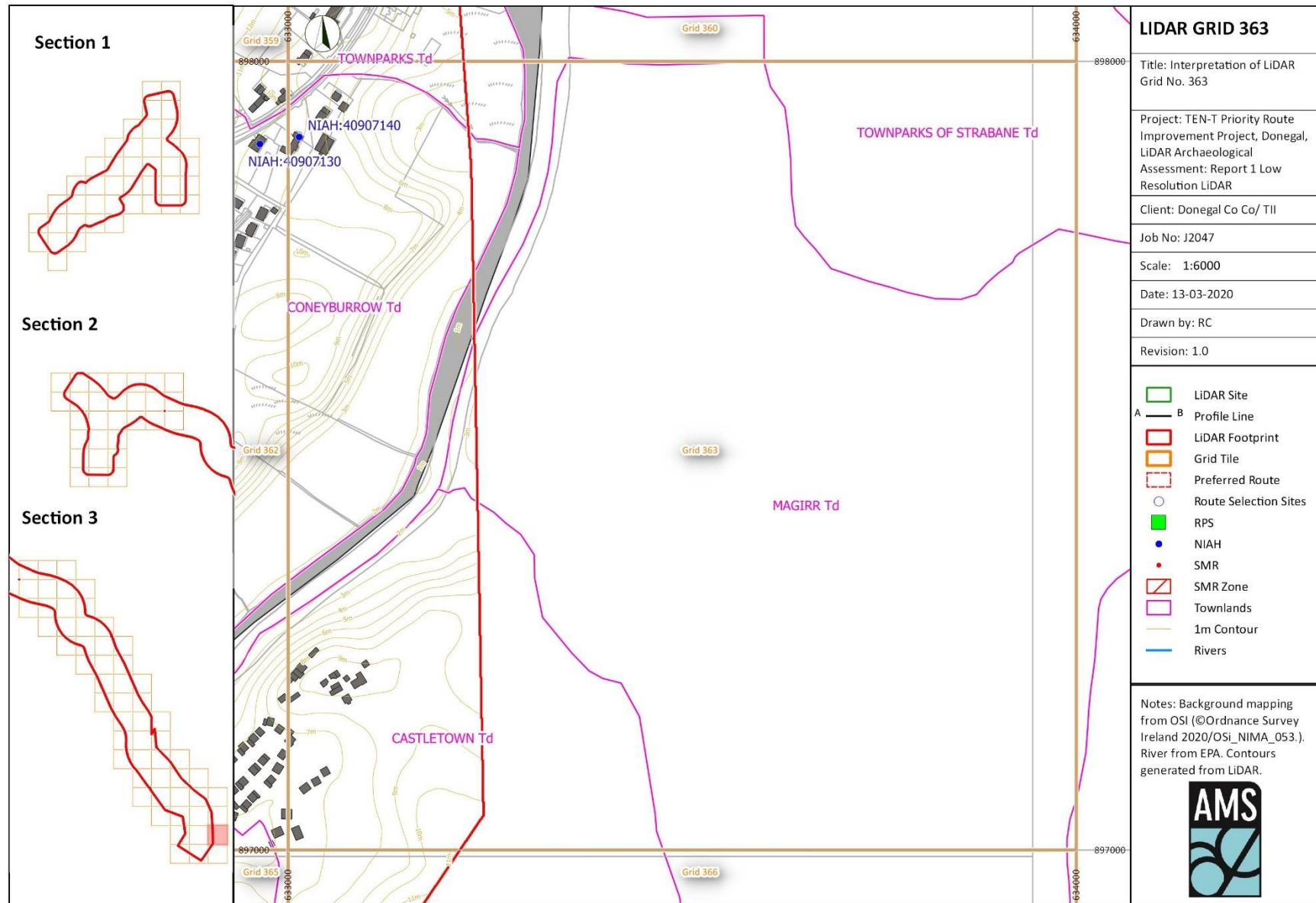
Drawn by: RC

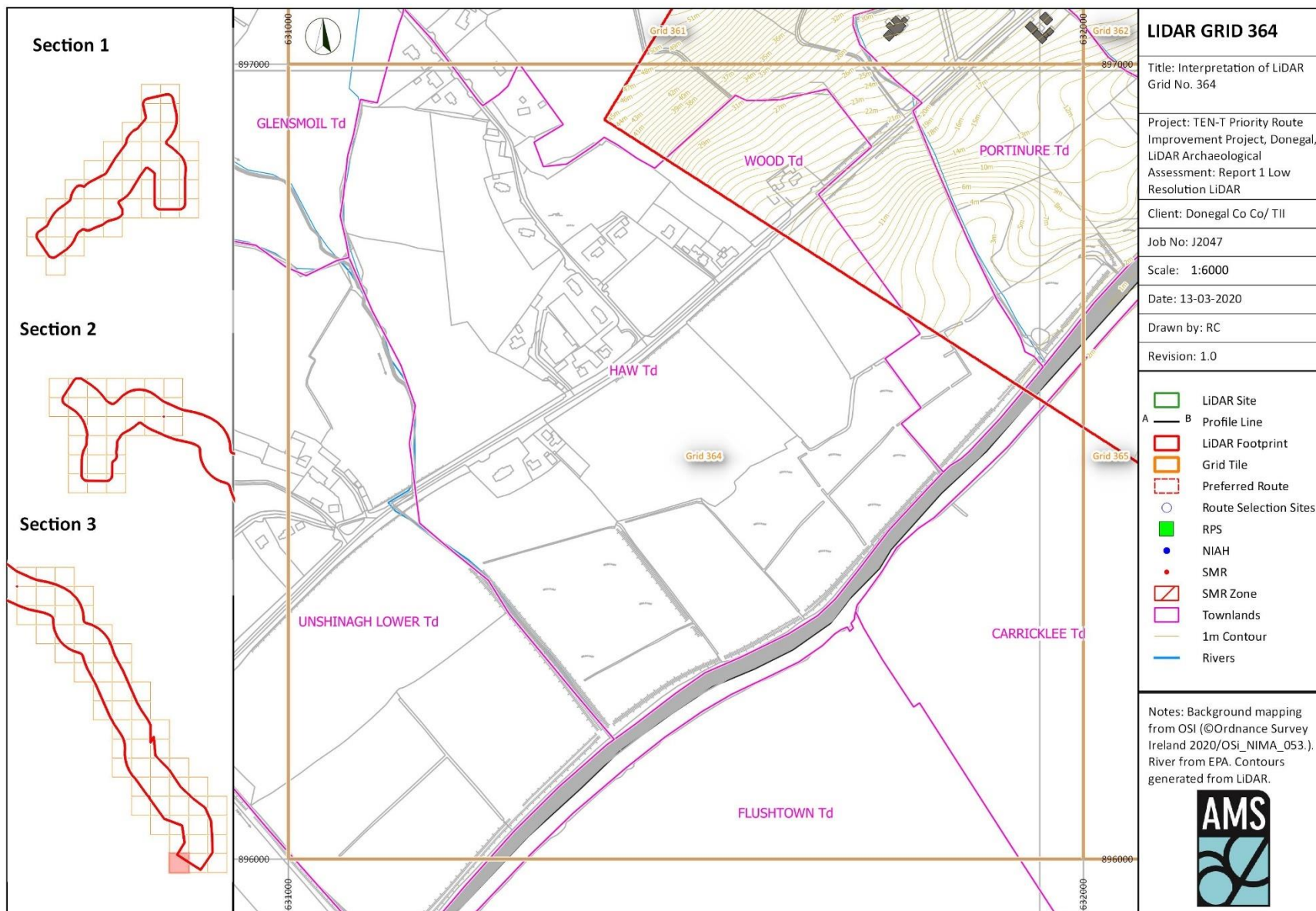
Revision: 1.0

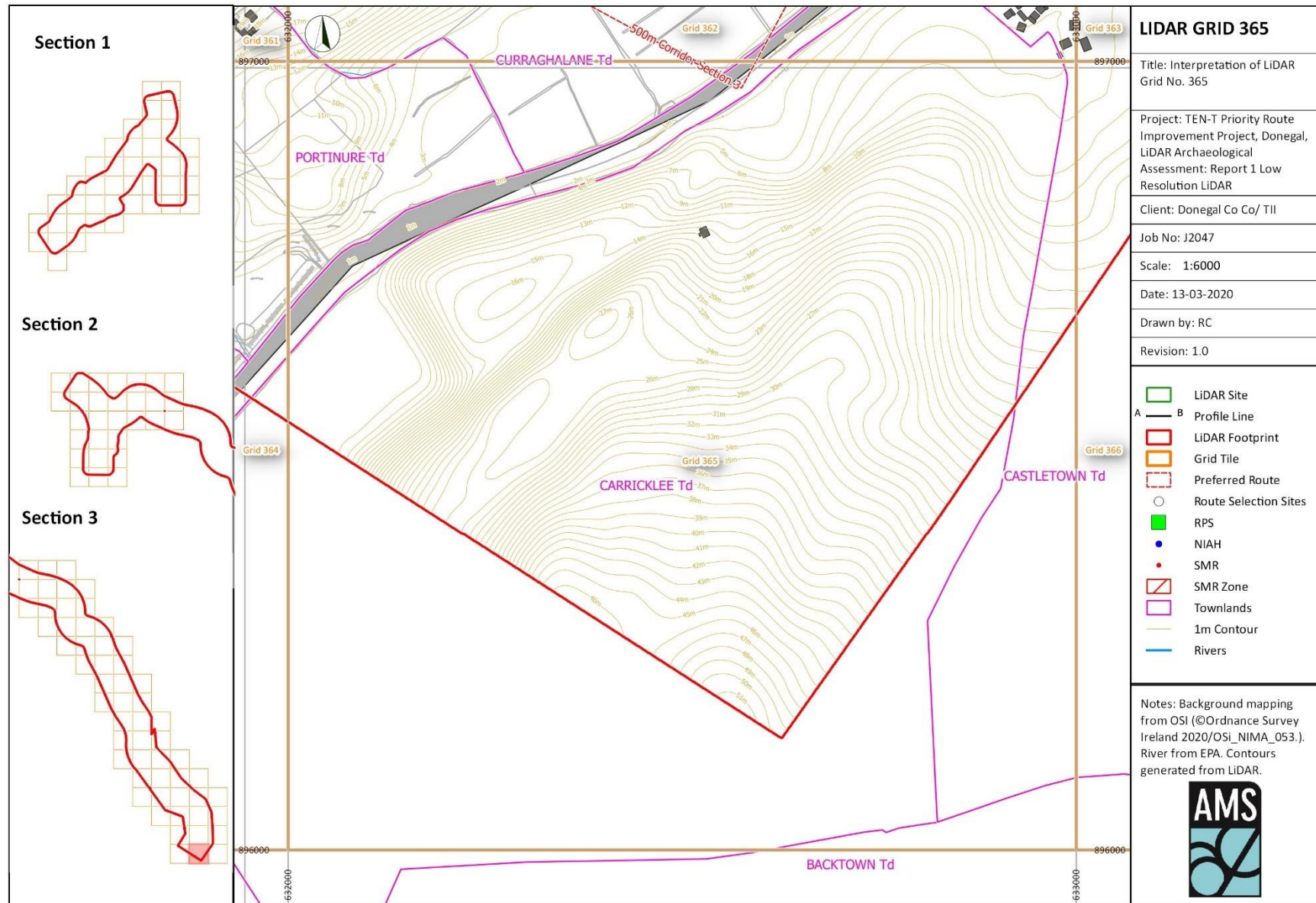
- LiDAR Site
- Profile Line
- LiDAR Footprint
- Grid Tile
- Preferred Route
- Route Selection Sites
- RPS
- NIAH
- SMR
- SMR Zone
- Townlands
- 1m Contour
- Rivers

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.









LIDAR GRID 365	
Title: Interpretation of LiDAR Grid No. 365	
Project: TEN-T Priority Route Improvement Project, Donegal, LiDAR Archaeological Assessment: Report 1 Low Resolution LiDAR	
Client: Donegal Co Co/ TII	
Job No: J2047	
Scale: 1:6000	
Date: 13-03-2020	
Drawn by: RC	
Revision: 1.0	
<ul style="list-style-type: none"> LiDAR Site A — B Profile Line LiDAR Footprint Grid Tile Preferred Route Route Selection Sites RPS NIAH SMR SMR Zone Townlands 1m Contour Rivers 	

Notes: Background mapping from OSI (©Ordnance Survey Ireland 2020/OSI_NIMA_053.). River from EPA. Contours generated from LiDAR.



