

High Speed Rail (Crewe – Manchester)

Background information and data

Historic environment

BID HE-005-0MA03

MA03: Pickmere to Agden and Hulseheath

Historic environment remote sensing report

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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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1 Introduction

- 1.1.1 This report presents the results of analysis of remote sensing data relating to the historic environment.
- 1.1.2 Baseline data have been collected for the Proposed Scheme in relation to the Pickmere to Agden and Hulseheath area (MA03).
- 1.1.3 All identified heritage assets discussed in this report are shown in the Volume 5, Historic environment Map Book, Map Series HE-01, HE-02, HE-03¹.
- 1.1.4 The historic environment detailed gazetteer is set out in Appendix A of the Historic environment baseline report (see Background Information and Data: BID HE-001-0MA03). It sets out Unique gazetteer identifier (UID) codes for the heritage assets considered in the baseline data; these are used for reference across all the historic environment reports and maps in the Environmental Statement (ES)² and BID reports.
- 1.1.5 The approach to assessing the archaeological potential of the landscape is outlined in the Historic environment summary gazetteer, impact assessment table and archaeological character areas report (HE-002-0MA03³). This breaks the study area down into areas of archaeological character; initially into broad Archaeological Character Areas (ACA), and then more narrowly defined Archaeological Sub-zones (ASZ).
- 1.1.6 The approach used for assessing historic landscape character (HLC) is described in the Historic environment Historic landscape character areas report (HE-003-0MA03⁴). The approach is used to determine Historic landscape character areas report (HLCA). HLCA are areas of coherent or distinctive historic landscape characteristics.
- 1.1.7 Within the historic environment reporting, various reference numbers have been used to provide a unique identifier to the heritage assets, HLCA, ACA/ASZ, geophysical survey anomalies and remote sensing features identified. These unique identifiers are referenced throughout the ES, BID reports and Map Books, and in summary are as follows:

¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Volume 5 Historic environment Map Book*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

² High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

³ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Pickmere to Agden and Hulseheath, Summary gazetteer, impact assessment table and archaeological character areas, Volume 5: Appendix HE-002-0MA03*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

⁴ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Pickmere to Agden and Hulseheath, Historic landscape character areas, Volume 5: Appendix HE-003-0MA03*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

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- heritage assets have been given a Unique gazetteer identifier (UID), for example MA03_0001. These have been allocated to all heritage assets within the gazetteer of heritage assets, provided in Volume 5: Appendix HE-002-0MA03 (summary gazetteer) and BID HE-001-0MA03 (detailed gazetteer);
- historic landscape character areas have been given a unique identifier, for example MA03_HLCA02. These have been allocated to all HLCA within the historic landscape character assessment, provided in Volume 5: Appendix HE-003-0MA03;
- archaeological character areas and archaeological sub-zones have been given a unique identifier, for example: archaeological character area MA03_AC01; and archaeological sub zone MA03_AC01.002. These have been allocated to all of the assessed archaeological character areas and archaeological sub-zones, provided in Volume 5: Appendix HE-002-0MA03;
- geophysical survey areas and features identified through the geophysical survey have been allocated a unique identifier, for example: geophysical survey area MA03_GP001, and geophysical survey feature MA03_GP001.001. These have been allocated to all of the identified geophysical survey areas and features, provided in BID HE-004-0MA03; and
- features identified through remote sensing have been allocated a unique identified, for example MA03_RS001. These have been allocated to all of the identified remote sensing features, provided in BID HE-005-0MA03.

2 Remote sensing

2.1 Introduction

- 2.1.1 This report sets out the results of a review, and the systematic mapping, recording, analysis and interpretation of potential archaeological sites from aerial photographs and LiDAR⁵ data within to the Pickmere to Agden and Hulseheath community area.
- 2.1.2 The remote sensing was undertaken in accordance with the guidance and standards set out in:
- the Historic England standards for aerial investigation and mapping (formerly known as the National Mapping Programme, NMP)⁶; and
 - the Forum on Information Standards in Heritage (FISH) vocabularies⁷.

2.2 Survey objectives

Aims of the survey

- 2.2.1 The aim was to accurately map and record the form and extent of archaeological features visible as cropmarks, soil marks, earthworks or structures in order to inform the assessment of baseline conditions for the historic environment.

Objectives of the survey

- 2.2.2 The results of the survey have been combined with data from other archaeological assessments carried out as part of the project, such as desk-top studies and geophysical surveys in order to help analyse the archaeological potential of the Proposed Scheme.

⁵ LiDAR (meaning 'light detection and ranging') is a surveying method that measures distance to a target by illuminating the target with pulsed laser light and measuring the reflected pulses with a sensor; this can be used to identify archaeological earthwork evidence.

⁶ Winton, H. (2018), *Standards for Aerial Investigation and Mapping projects*, Historic England internal document.

⁷ FISH, (2020), *Heritage Data; Linked Data Vocabularies for Cultural Heritage*. Available online at: <https://www.heritagedata.org/blog/vocabularies-provided/>.

2.3 Survey methodology

2.3.1 This section provides an overview of the survey methods. The aims and general method for the remote sensing assessment are set out in the Generic Written Scheme of Investigation (HE-006-00000⁸).

Data collection

2.3.2 The data collection phase of the survey took place between April 2017 and December 2018. The following sources were consulted:

- historic aerial photographs;
- online aerial and satellite-derived images;
- HS2 vertical aerial photographs;
- Environment Agency vertical aerial photographs;
- HS2 (BLOM Aerofilms) LiDAR data;
- Environment Agency LiDAR data;
- Historic Environment Record (HER) data;
- National Record of the Historic Environment (NRHE) data;
- National Heritage List for England (NHLE) data; and
- historic cartographic sources.

Data processing

2.3.3 The following processing steps have been carried out on the data used in this survey:

- all spatial data was collated and generated in GIS (Geographic Information System) ArcMap 10.5 using the British National Grid (EPSG: 2770) map projection;
- both the HS2 Ltd and Environment Agency LiDAR datasets were processed using the software Relief Visualisation Toolkit (RVT 1.3) to create eight different advanced visualisation models, prior to their import into GIS ArcMap 10.5;
- the HS2 Ltd and Environment Agency vertical aerial photographic cover was already georeferenced and required no further processing; and
- selected archive aerial photographs were orthorectified (processed to accurately fit the map and terrain) using the software Aerial 5.33 prior to their import into GIS.

⁸ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Generic written scheme of investigation for non-intrusive archaeological survey, Volume 5: Appendix HE-006-000000*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

Data presentation

- 2.3.4 A general location plan showing the survey area is shown on Figure 1 at a scale of 1:75,000. Details of sites or features transcribed during this project are presented at a scale of 1:5,000 on Figures 2 to 9 inclusive.
- 2.3.5 When interpreting the results, several factors are taken into consideration, including the nature of archaeological features being investigated, the local conditions at the site (geology, topography etc.). The identified features are categorised by their potential origin and divided into categories that are used in the graphical interpretation of the remote survey data:
- bank;
 - ditch;
 - levelled ridge and furrow;
 - extant ridge and furrow;
 - extent of area;
 - services;
 - structure; and
 - large cut feature.
- 2.3.6 The identified categories are subsequently discussed by the period in which they most likely originated.

Assumptions and limitations

- 2.3.7 The results and subsequent interpretation of data from remote sensing surveys should not be treated as an absolute representation of the underlying archaeological and non-archaeological remains. Confirmation of the presence or absence of archaeological remains can only be achieved by intrusive archaeological investigation of sub-surface deposits.
- 2.3.8 The HS2 Ltd purpose-flown LiDAR survey took place during the summer, when leaf canopies, foliage and crop growth created unfavourable conditions for the collection of bare earth points. As a result, the quality of the Digital Terrain Model (DTM) generated from this LiDAR data is of low quality for areas beneath tree cover and may not represent a true ground surface model in areas of crops or dense foliage. Where available, the use of Environment Agency LiDAR data of a lower resolution has partially mitigated this issue.
- 2.3.9 HER, NRHE and NHLE data was obtained in 2018. Any information added to these databases after that time will not have been available as a reference during the course of this survey.
- 2.3.10 The Cambridge University Collection of Aerial Photographs (CUCAP) archive of historic aerial photographs was closed for consultation at the time of this remote sensing survey. Although a small proportion of the collection was available online, the limited nature and low resolution of the images was inadequate for aerial analysis.

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- 2.3.11 Local collections of aerial photography, potentially held by the HERs, were not consulted for this remote sensing survey.

3 Remote sensing survey results

3.1 Survey location

- 3.1.1 The study area for this remote sensing survey covers the entire length of Pickmere to Agden Heath area, which falls within Cheshire East.
- 3.1.2 The study area generally comprised a 700m-wide strip centred on the route of the Proposed Scheme (350m either side). This provided a buffer to offer contextual information for all recorded sites. In total the archaeological remote sensing survey for the Pickmere to Agden and Hulseheath area covered an area of 7.6km².

3.2 Archaeological background

- 3.2.1 At the end of the last glaciation, the retreat of the ice sheet resulted in the deposition of glacial outwash of tills, sands and gravels. Archaeological evidence for human occupation and settlement within the Pickmere to Agden and Hulseheath area is sparse until the medieval period. Evidence of early prehistoric activity mostly consists of isolated find spots of flints and stone tools demonstrating exploitation of the newly formed wetlands called mosses⁹. Funerary monuments known as round barrows and occasional settlement and agricultural evidence are observed in the Bronze Age particularly around the North Cheshire Sandstone Ridge at Bucklow Hill, considered to be above 70 mAOD. During the Iron Age and Roman period archaeological evidence suggests that settlement pattern was rural, with some enclosed farmsteads. The Roman conquest and the introduction of the Roman road network included the Chester to Manchester (Margary 7a; MA03_0119) and The North Cheshire Ridge (Margary 70aa; MA03_0116). However, no evidence of roadside settlement has been identified within the study area.
- 3.2.2 In the early medieval period, the area continued to be sparsely populated. Patterns of settlement and agricultural field systems began to appear towards the end of the early medieval period. Settlements including Nether and Over Tabley, Mere, High Legh and Dunham Massey were established at this time. Deer parks, such as one at High Legh Park (MA03_0155), became popular for the wealthy elite. Farming typically involved mixed arable and pasture farming carried out on irregular field patterns. Evidence of this type of farming can be identified within the Pickmere to Agden and Hulseheath area in the form of historic field boundaries and ridge and furrow earthworks. The Tabley Historic landscape character area (MA03_HLCA02⁴) provides a good example of this kind of landscape. From the 18th century agricultural improvements and rationalisations continued to reshape field boundaries and the distribution of farms within the landscape. This removed many of the earlier field systems and replaced them with larger field systems. Increased wealth from

⁹ Mosses or mosslands are areas of wetland formed from peat.

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agriculture, commerce and industry led to the establishment of country houses set within large parklands. The parklands that accompanied these houses became important features within the landscape, occupying vast swathes of land and often drawing elements of the wider landscape into their design. Agden Hall (MA03_0106), constructed in 1903, was designed in the Arts and Crafts style by celebrated local architect Frank Dunkerley. The house was built on former agricultural land and sits within seven acres of landscaped gardens designed by Thomas Hayton Mawson, much of which survive (MA06_0144).

- 3.2.3 The study area survives as predominantly modern arable fields and earlier fields of pasture. The nature of settlement within the study area has changed little throughout the modern period. Modern settlement is on the edge of villages and occasionally located within the boundary of former parkland following the decline of the country house in the 20th century. The Second World War saw the creation of defence structures within rural locations, evidence of this includes a bombing decoy at Budworth (MA03_0114) and a site of anti-aircraft batteries and defence structures south of Budworth Road (MA03_0143).

3.3 Survey results

- 3.3.1 The results of this survey are summarised below by period. Since the data from the visualised LiDAR and the aerial photographs are mutually supporting the results have not been separated by source.
- 3.3.2 The remote sensing survey mapped 26 individual features, labelled from MA03_RS001 to MA03_RS026. These areas indicate the extent of sites, landscapes or parts of landscapes recorded. They are summarised in the gazetteer of identified features in Section 4 (Table 1).
- 3.3.3 No features of early prehistoric, Roman or early medieval date were identified from the remote sensing survey. It should be noted that later features may have origins in the early medieval period (i.e. some field boundaries, see below).

Medieval (1066 – 1540)

- 3.3.4 Most mapped features comprised of 22 grouped areas or fields with traces of medieval or post-medieval ridge and furrow cultivation. This was visible on the LiDAR and aerial photographs as either extant earthworks, or the cropmarks and soilmarks of the plough-levelled remains.

Post-medieval (1540 – 1901)

- 3.3.5 As discussed above, extant and levelled ridge and furrow and a group of features may be post-medieval in date.
- 3.3.6 A group of levelled, rectilinear banks and ditches (MA03_RS023 to MA03_RS025/MA03_0144) are visible on historic aerial photographs as cropmarks across two adjacent fields. These features lie just to the north of Agden Hall Farm, on the northern side of the M56. The group

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comprises what appears to be a substantial rectilinear banked enclosure, including possible subdivisions and annexes. A linear ditched feature, approaches and joins the main enclosure on a north-west to south-east alignment. These features are the remains of the former gardens at Agden Hall also identified during geophysical field survey (see BID HE-004-0MA03, MA03_GP008). They appear to lie on the northern boundary of the garden designer Edward Kemp's formal boundary and therefore likely to be associated garden features.

Modern (1901 – present)

- 3.3.7 Remains originating from the defence of the nation during the Second World War were also recorded within the study area (MA03_RS008/MA03_0143). Vertical aerial photographs of 1946 show the now-levelled remains of an anti-aircraft searchlight battery site. A circular bank would have enclosed the location of the anti-aircraft feature. Associated accommodation tracks were also visible, as well as banked mounds that may have represented shelters or other ancillary features. This was located on the north-western side of Waterless Brook Cottages, on the south-western side of Tabley Brook Farm.

3.4 Remote sensing survey conclusions

- 3.4.1 A total of 26 individual or grouped possible archaeological features were identified by the survey, none of which were previously recorded by the HER, NRHE or NHLE. These include:
- twenty-two areas of extant or levelled ridge and furrow relating to medieval and post-medieval agriculture;
 - a substantial rectilinear enclosure to the north of Agden Hall Farm, which are the remains of the former gardens at Agden Hall also identified during geophysical field survey (MA03_GP008). They appear to lie on the northern boundary of Kemp's formal boundary and therefore likely to be associated garden features; and
 - the now-levelled remains of a Second World War anti-aircraft searchlight battery site, which formed part of the wartime defences in Cheshire.
- 3.4.1 The ridge and furrow correspond with areas of historic landscape of planned and enclosed fields in Pickmere (see Volume 5, HE-002-0MA03, MA03_HLCA01), and ancient fields in Tabley (MA03_HLCA02). This supports the suggestion from the historic landscape character assessment that the area retains time depth of earlier field systems.
- 3.4.2 The features north of Agden Hall (MA03_0144) relate to the 19th century garden and parkland which are supported by geophysical survey and depicted on the 1881 Ordnance Survey map¹⁰. However, geophysical survey did not conclusively identify any anomalies related to the features identified by aerial investigation (see BID HE-004-0MA03). The garden features have some historic interest due to their connection with the noted garden designer

¹⁰ Ordnance Survey (1881), *Cheshire County Series, Map Sheet XXVI*, 2nd edition, Scale 1:10,560.

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Edward Kemp. The creation of formal gardens became important features within the landscape, occupying vast swathes of land and often drawing elements of the wider landscape into their design. This reflects the principal aspect of Agden Hall facing north over the River Bollin valley.

- 3.4.3 The anti-aircraft searchlight battery is located a long way from any distinct remains associated with the Second World War. The Second World War saw the creation of defence structures within rural locations. It may have acted as part of the wider defensive system on the Cheshire Plain protecting airfields located further south at RAF Cranage (MA02) and to the east in what is now Manchester Airport (MA06).

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4 Gazetteer of identified remote sensing features in MA03

4.1.1 The following gazetteer provides a summary of the identified features.

Table 1: Gazetteer of identified features in MA03

Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
MA03_RS001		Extant ridge and furrow Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of twelve areas of extant and levelled ridge and furrow observed within agricultural ground between Providence Farm and Linnards Lane, north of Leonard's Wood. In some areas the features have been truncated by modern utilities.	Figure 2	370520 376692
MA03_RS002		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of eight areas of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the east and south-east of B5391 Pickmere Lane, within the Cheshire Agricultural Showground, and to the south-west of Flittogate Lane.	Figure 2	370505 377437
MA03_RS003		Extant ridge and furrow Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Two adjacent areas of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the south of Clay House Farm and south-west of Flittogate Lane,	Figure 3	370961 377215

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Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
					within the Cheshire Agricultural Showground.		
MA03_RS004		Extant ridge and furrow Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of five areas of extant ridge and furrow observed within arable land to the south and south-east of Flittogate Farm, and to the north of the Cheshire Agricultural Showground. Historic aerial photographs shows this was part of larger field that continued to the south-west prior to truncation by a track constructed for the showground.	Figure 3	370754 377855
MA03_RS005		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of five areas of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the south and south-east of the B5391 Pickmere Lane, opposite Waterless Brook Cottage, and north of Flittogate Farm.	Figure 3	370770 378438
MA03_RS006		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of four areas of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the north-east of Common Farm, between B5391 Pickmere Lane to the south and Budworth Road to the north.	Figure 3	370421 378628

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Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
MA03_RS007		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Area of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the south of Budworth Road. A former field boundary dissects the plot into four. The plot contains asset MA03_RS009 within the historic township of Tabley Superior.	Figure 4	370684 378819
MA03_RS008	MA03_0143	Extent of Area	Anti-aircraft searchlight battery	Modern	Possible site of a Second World War anti-aircraft searchlight battery observed from historic aerial photographs within a field south of Budworth Road and east of Waterless Brook. Observed features appear to comprise a single defended site with surrounding apron and an entrance to north. A network of paths surrounding the site probably relate to accommodation tracks connecting the searchlight battery site and ancillary features.	Figure 4	370659 378830
MA03_RS009		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Area of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the north of Budworth Road, and around Heyrose Farm and Hollowood Farm.	Figure 4	370699 379717

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Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
MA03_RS010		Extant ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of twenty faint areas of extant ridge and furrow observed within enclosed agricultural ground surrounding the Grade II listed Winterbottom Farm (MA03_0040).	Figure 5	371025 380983
MA03_RS011		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of three areas of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the east of Oak Wood.	Figure 5	371575 381380
MA03_RS012		Extant ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of three areas of extant ridge and furrow observed within a wooded area known as Oak Wood. Probably a continuation of the ridge and furrow system recorded to the west (MA03_RS023).	Figure 5	371481 381570
MA03_RS013		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of eighteen areas of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground south of Hoogreen Lane and north-east of Winterbottom Farm, west of Oak Wood. The features have been partially truncated by the excavation of a utilities trench oriented north to south through	Figure 5	371362 381690

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Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
					the fields. The 1848 tithe map ¹¹ shows a field boundary historically crossing to the south of this field.		
MA03_RS014		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Area of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the south-west of Goodiersgreen Farm.	Figure 6	370957 381896
MA03_RS015		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of eight areas of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the west of Hoo Green, south of the A50 Warrington Road/Knutsford Road.	Figure 6	371314 382650
MA03_RS016		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Area of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground at The White Lodge, immediately north-east of the intersection of Wrenshot Lane and the A50 Warrington Road/Knutsford Road, which is referenced in the HER as the possible route of the North Cheshire Roman Road (MA03_0116). The plot is located to the east of the Grade II listed	Figure 7	371386 383146

¹¹ *Tithe Map of the Township of Mere in the Parish of Rostherne in the County of Chester*, held at; Cheshire Archives and Local Studies, Ref: EDT 269/2.

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Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
					Legh Cottage (MA03_0048), and west of the Grade II listed Mere Court Hotel (MA03_0047).		
MA03_RS017		Extant ridge and furrow Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group comprising one area of extant ridge and furrow and eight areas of levelled ridge and furrow. The extant ridge and furrow was observed within a former brickfield, located to the north-east of the former Highlegh Park and north of Wrenshot House. The earthworks appear to have survived the cutting and lowering of the ground level in association with the brickworks, and remain visible as small, raised areas to the north of the brickworks. The areas of levelled ridge and furrow were observed within an enlarged modern agricultural field, located to the north-east of former Highlegh Park, north of Wrenshot House, and north-east of scheduled Hough Hall moated site (MA03_0049).	Figure 7	371937 383650
MA03_RS018		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Area of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the east of Woodside Farm, north of Wrenshot Lane. The features have	Figure 7	371418 383769

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Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
					been partially truncated by excavation of a utilities trench aligned north to south through field.		
MA03_RS019		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of four areas of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground, to the south of Peacock Lane, and within now divided pasture at Little Moss Farm, to the north of Peacock Lane.	Figure 8	371678 384222
MA03_RS020		Extant ridge and furrow	Ridge and furrow	Medieval Post-medieval	Two adjacent areas of extant ridge and furrow observed within an enclosed agricultural field to the south of Back Lane. The earthworks have been truncated by a pond or pooling of water.	Figure 8	371972 384233
MA03_RS021		Extant ridge and furrow Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group of five areas of faintly extant and levelled ridge and furrow observed within now divided pasture and enclosed agricultural land surrounding Middlemoss Farm, to the west of Agden Lane. The two easternmost fields have been partially truncated by a utilities trench oriented north to south through the fields.	Figure 8	371730 384809

Background Information and Data
 Historic environment
 BID HE-005-0MA03
 MA03: Pickmere to Agden and Hulseheath
 Historic environment remote sensing report

Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
MA03_RS022		Extant ridge and furrow Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Group comprising one area of faint extant ridge and furrow observed on LiDAR and three areas of levelled ridge and furrow observed from historic aerial photographs. The extant area is within the eastern section of an enclosed agricultural field to the south-east of the A56 Chester Road, and south of Agdenbrook Farm. Historic aerial photographs show ridge and furrow in the western half of the field, but this has now been levelled. Two larger additional areas of levelled ridge and furrow were recorded within enclosed agricultural ground between Agden Hall (MA03_0106), to the south, and Agden Brook Farm, to the north.	Figure 9	371698 386008
MA03_RS023	MA03_0144	Bank	Ditch	Post-medieval	Areas of banked and ditched earthworks observed within historic aerial photographs and identified during Field Survey (MA03_GP008) in former parkland north of Agden Hall (MA03_0106). The features consist of a large rectilinear banked feature to the west, and a smaller partly rectilinear banked feature with a distinct 'F' shape to the east.	Figure 9	371520 385622

Background Information and Data
 Historic environment
 BID HE-005-0MA03
 MA03: Pickmere to Agden and Hulseheath
 Historic environment remote sensing report

Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
					<p>Although the two features appear to have a different alignment, they are probably associated. The features are interpreted as indicative of former garden features forming part of the northern gardens of Agden Hall. The interpretation is supported by geophysical survey at Agden Hall that has identified multiple anomalies that are considered to be related to garden features. A rectangular anomaly was recorded north of the hall and may represent a structural feature. To the east of Agden hall is a grid-pattern of linear anomalies aligned squarely to the orientation of the former garden and likely a series of cinder paths between planting beds. Various other anomalies identified relate to former garden features.</p>		
MA03_RS024	MA03_0144	Ditch	Ditch	Medieval Post-medieval	Linear ditch feature observed on historic aerial photographs, adjacent to the north-west of a large rectilinear banked feature (MA03_RS023). This ditch might be associated with the banked feature, although the precise relationship is not clear from the	Figure 9	371520 385622

Background Information and Data
 Historic environment
 BID HE-005-0MA03
 MA03: Pickmere to Agden and Hulseheath
 Historic environment remote sensing report

Reference	Asset UID	Feature category	Feature type	Period	Comment	Figure	NGR
					available evidence. The ditch appears to cut into the north-west edge of the bank and entirely cuts the south-west corner, so it is considered likely that it represents a later phase.		
MA03_RS025	MA03_0144	Ditch	Ditch	Medieval Post-medieval	Possible ditch or pathway observed on historic aerial photographs and located within the former parkland of Agden Hall (MA03_0106). The feature is aligned north-west to south-east and was probably connected with earthwork features recorded to the north of Agden Hall (MA03_RS023). The route suggests that it may be part of a formal pathway or similar feature.	Figure 9	371520 385622
MA03_RS026		Levelled ridge and furrow	Ridge and furrow	Medieval Post-medieval	Possible area of levelled ridge and furrow observed from historic aerial photographs within enclosed agricultural ground to the north-east of Agden Bridge.	Figure 9	371776 386735

5 List of acronyms

5.1.1 The following acronyms have been used in this report.

Table 2: List of acronyms

Acronym	Meaning
ACA	Archaeological Character Area
AOD	metres above Ordnance Datum
ASZ	Archaeological Sub-zone
BID	Background Information and Data
CUCAP	Cambridge University Collection of Aerial Photographs
DEFRA	Department for Environment, Food & Rural Affairs
GIS	Geographical Information System
HER	historic environment record
HLC/HLCA	historic landscape character/ Historic Landscape Character Areas
LiDAR	Light Detection and Ranging
NGR	National Grid Reference
NHLE	National Heritage List for England
NMP	National Mapping Programme
NRHE	National Record of the Historic Environment
RAF	Royal Air Force
RVT	Relief Visualisation Toolkit
UID	Unique gazetteer identifier

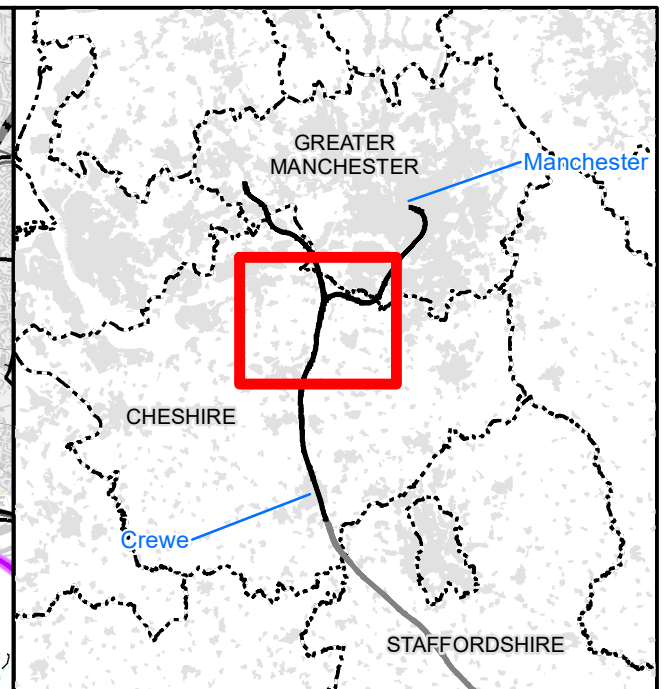
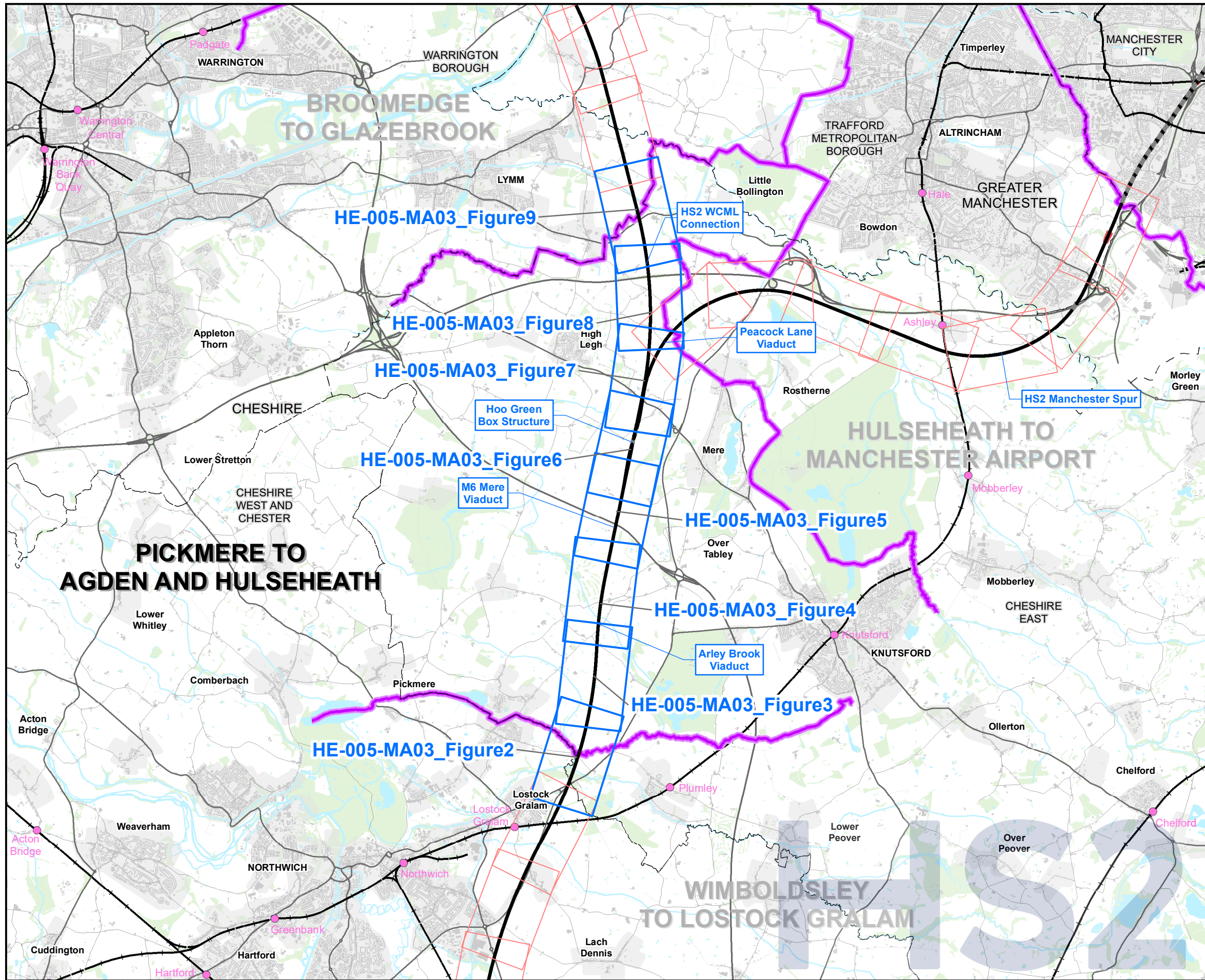
6 References

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High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement>.

Ordnance Survey, (1881), *Cheshire County Series, Map Sheet XXVI*, 2nd edition, Scale 1:10,560. *Tithe Map of the Township of Mere in the Parish of Rostherne in the County of Chester*, held at; Cheshire Archives and Local Studies, Ref: EDT 269/2.

Winton, H. (2018), *Standards for Aerial Investigation and Mapping projects*, Historic England internal document.



Map Series Information:

These maps show the results of the remote sensing surveys in relation to the land required for the construction of the Proposed Scheme.

- Main Map Legend**
- Route in tunnel
 - Route on surface
 - Depot, station, headhouse or portal building
 - Community area boundary
 - Existing railway station
 - County boundary
 - District/Borough boundary
 - Map sheets included in this community area
 - Map sheets not included in this community area

Map Number	HE-005_MA03_Figure1
Map Name	Remote Sensing Survey Index map
Community Area MA03: Pickmere to Agden and Hulseheath	

HS2

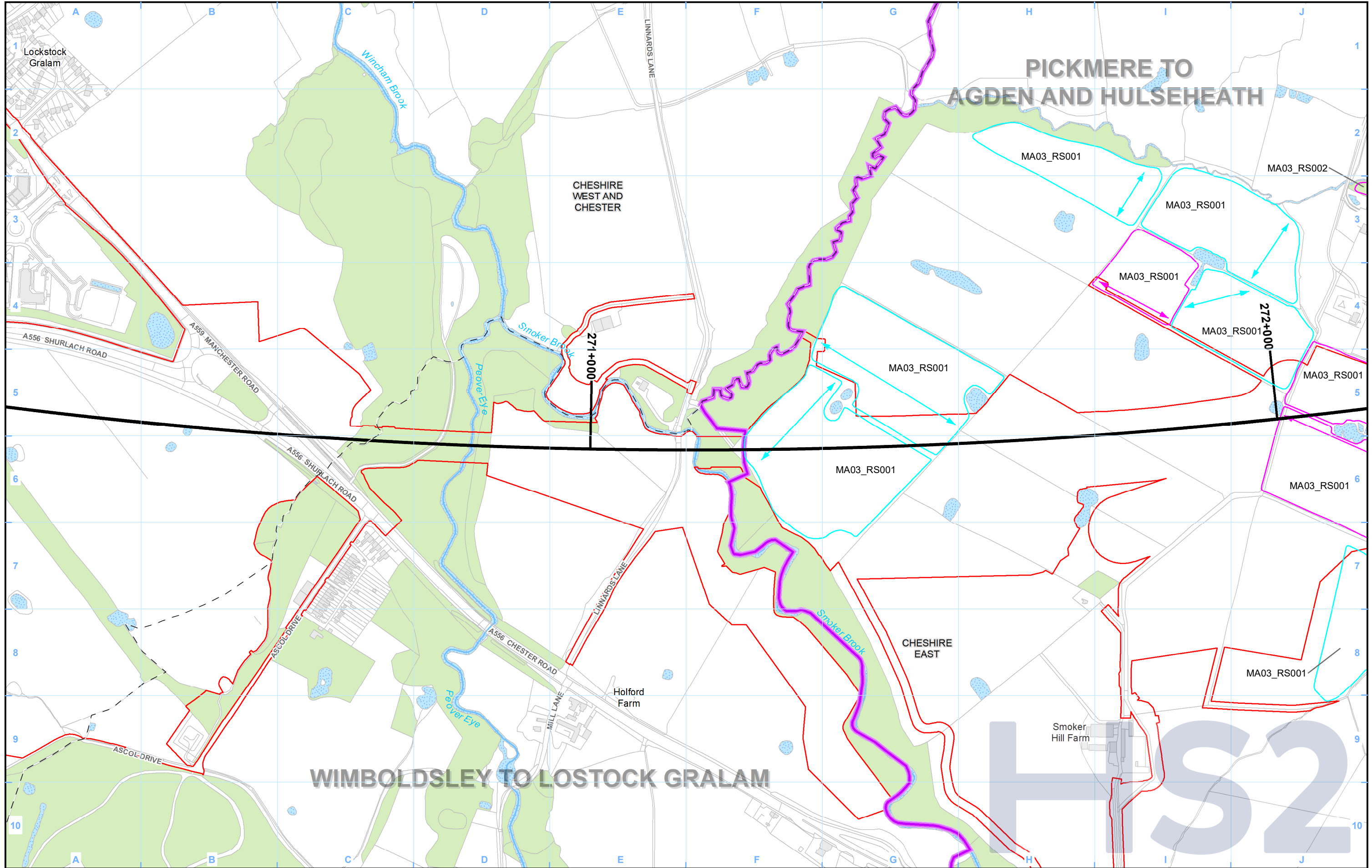
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PICKMERE TO AGDEN AND HULSEHEATH

WIMBOLDSLEY TO LOSTOCK GRALAM

Legend		
	Route in tunnel	
	Route on surface	
	Depot, station, headhouse or portal building	
	Land potentially required during construction	
	Community area boundary	
	County boundary	
	District/Borough boundary	
	Watercourse	
	Water body	
	Bank	
	Ditch	
	Levelled ridge and furrow area	
	Levelled ridge and furrow direction	
	Extant ridge and furrow area	
	Extant ridge and furrow direction	
	Extent of area	
	Large cut feature	
	Services	
	Structure	
	T-hachure	

Map Number: HE-005_MA03_Figure2

Map Name: Remote Sensing Survey Interpretation

Community Area MA03:
Pickmere to Agden and Hulseheath

HS2

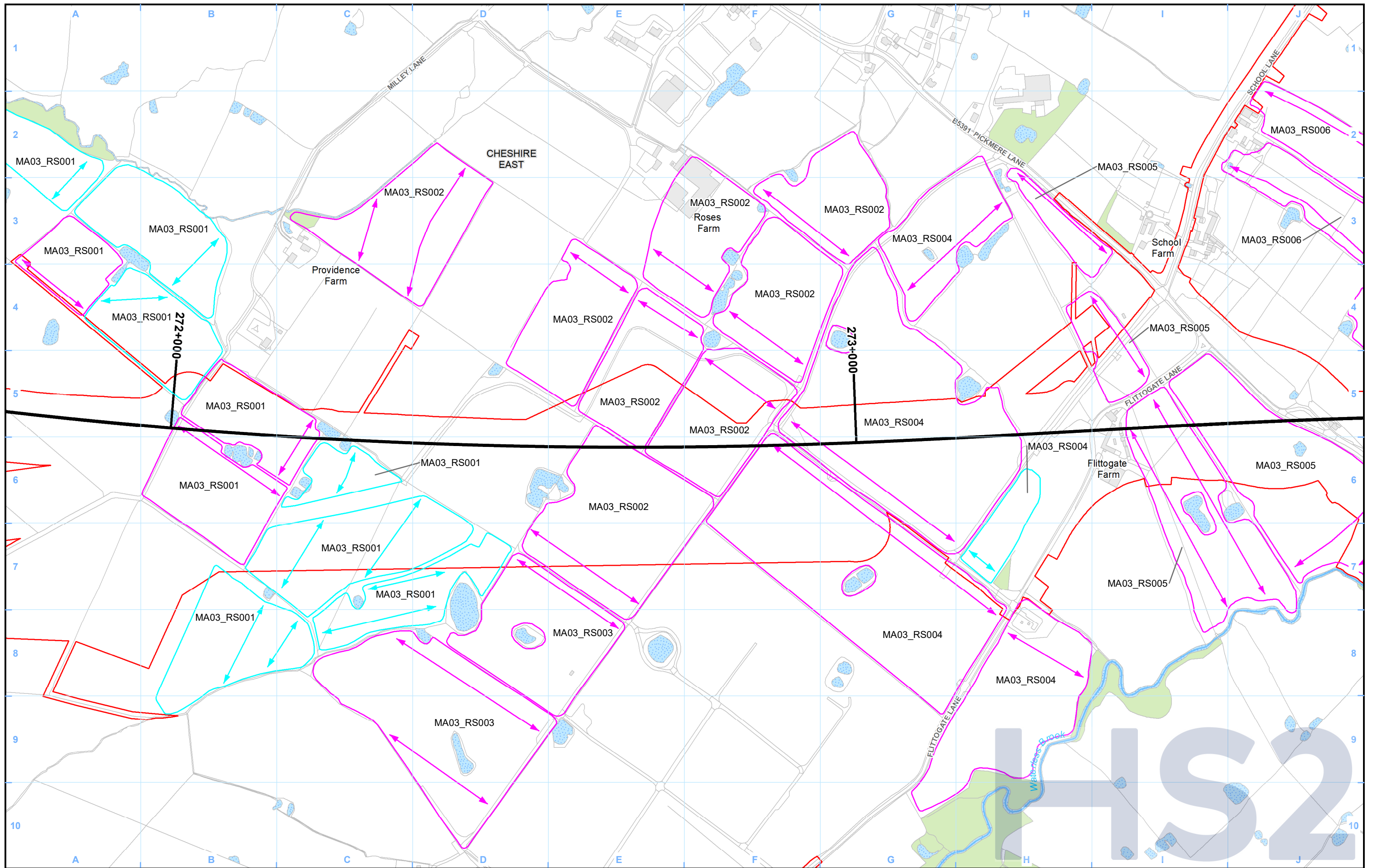
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Legend		
	Remote sensing feature type	

Map Number HE-005_MA03_Figure3

Map Name Remote Sensing Survey Interpretation

Community Area MA03:
Pickmere to Agden and Hulseheath

HS2

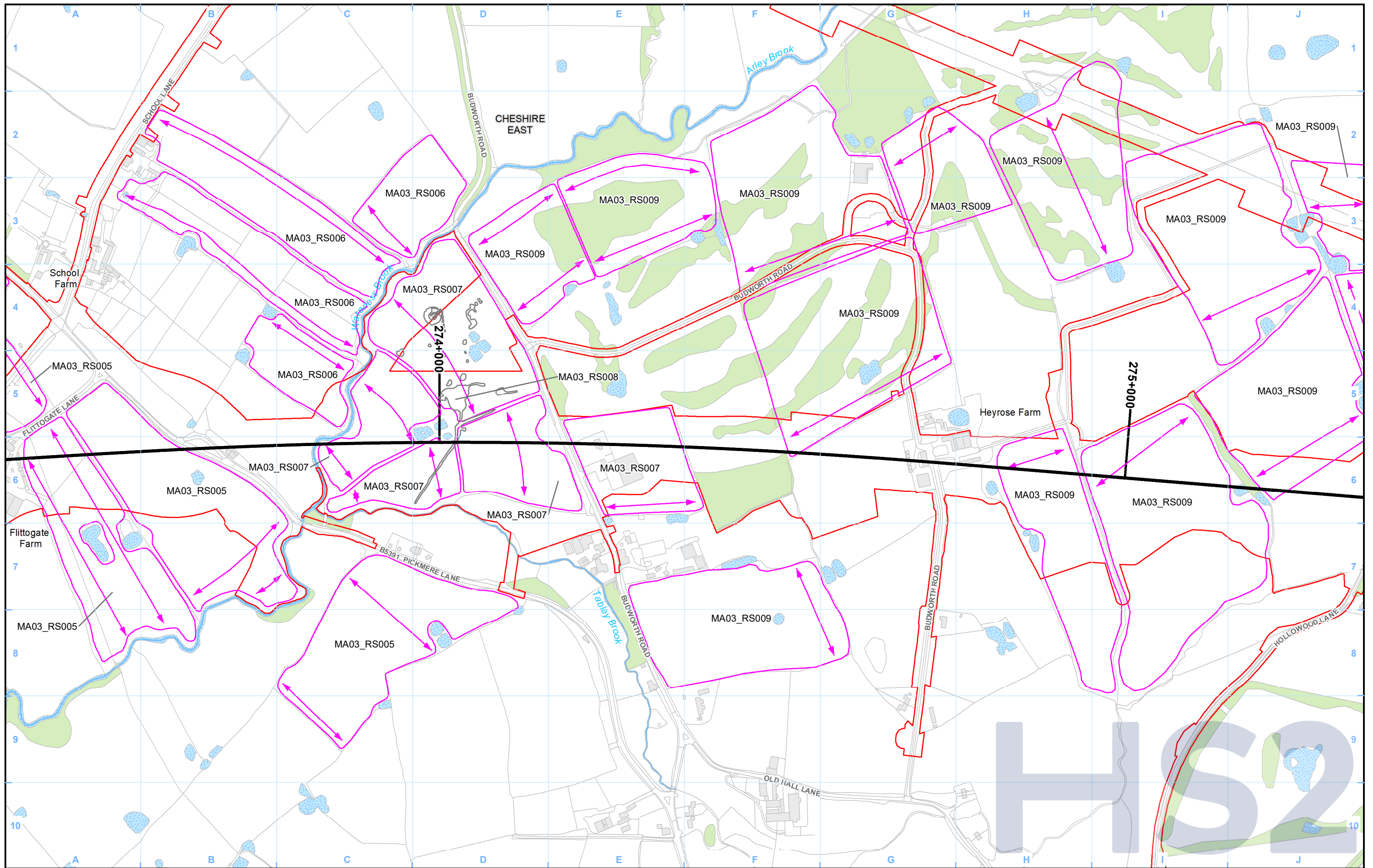
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Legend					
	Route in tunnel		Watercourse		Extant ridge and furrow area
	Route on surface		Water body		Extant ridge and furrow direction
	Depot, station, headhouse or portal building	Remote sensing feature type			Extent of area
	Land potentially required during construction		Bank		Large cut feature
	Community area boundary		Ditch		Services
	County boundary		Levelled ridge and furrow area		Structure
	District/Borough boundary		Levelled ridge and furrow direction		T-hachure

Map Number HE-005_MA03_Figure4

Map Name Remote Sensing Survey Interpretation

Community Area MA03:
Pickmere to Agden and Hulseheath

HS2

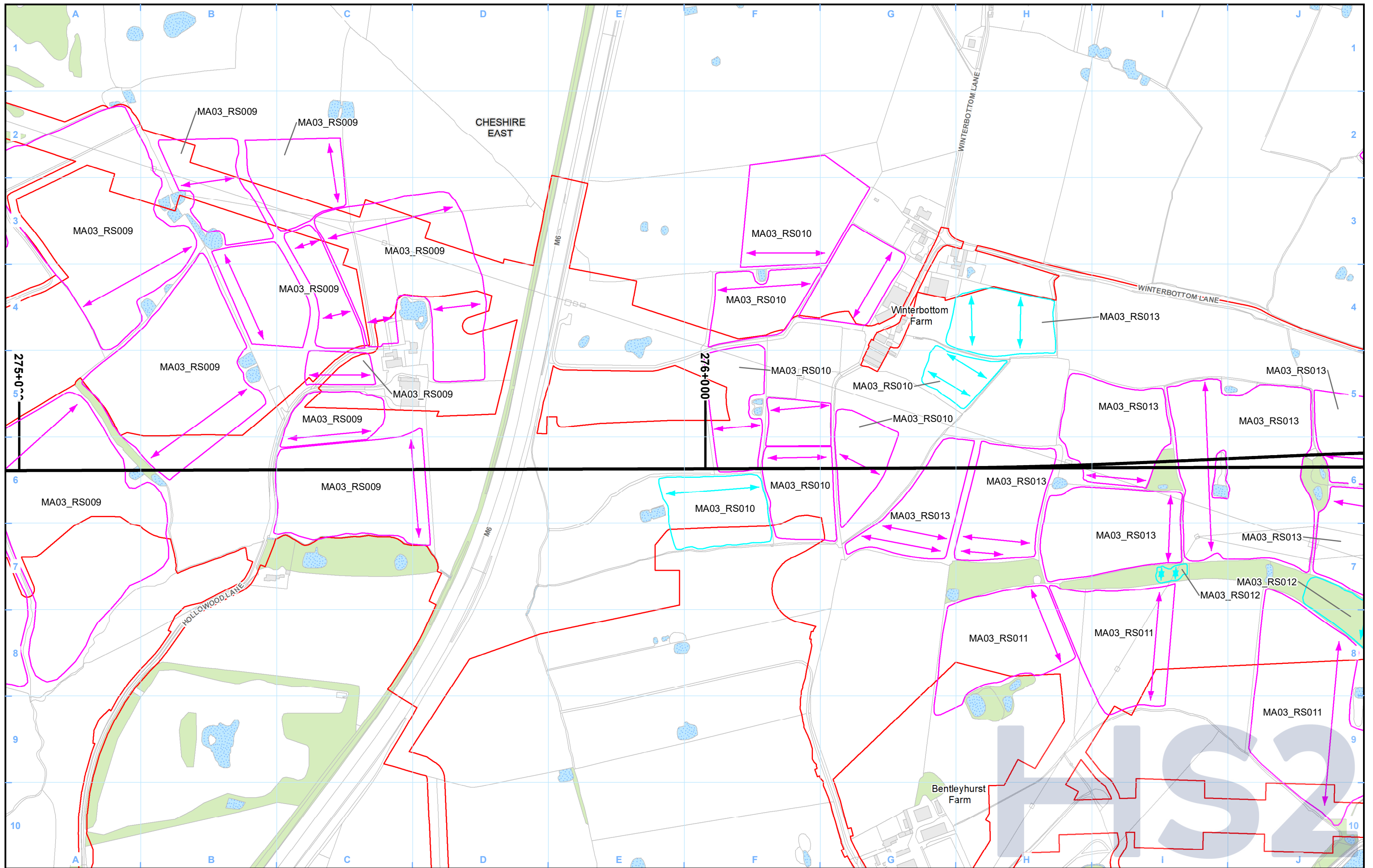
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Legend

Route in tunnel	Watercourse	Extant ridge and furrow area
Route on surface	Water body	Extant ridge and furrow direction
Depot, station, headhouse or portal building	Remote sensing feature type	Extent of area
Land potentially required during construction	Bank	Large cut feature
Community area boundary	Ditch	Services
County boundary	Levelled ridge and furrow area	Structure
District/Borough boundary	Levelled ridge and furrow direction	T-hachure

Map Number HE-005_MA03_Figure5

Map Name Remote Sensing Survey Interpretation

Community Area MA03:
Pickmere to Agden and Hulseheath

HS2

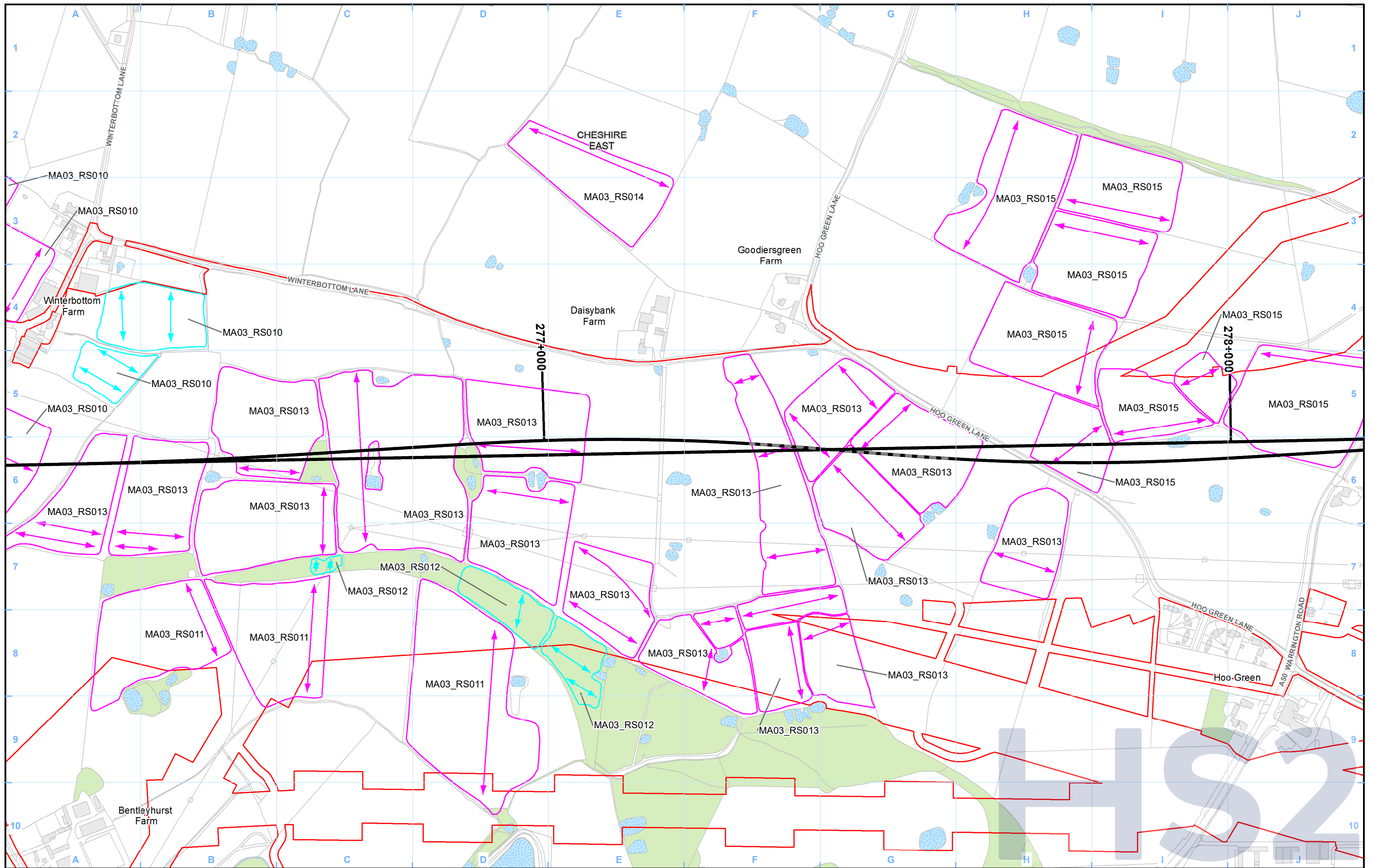
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Legend

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Map Number HE-005_MA03_Figure6

Map Name Remote Sensing Survey Interpretation

Community Area MA03:
Pickmere to Agden and Hulseheath

HS2

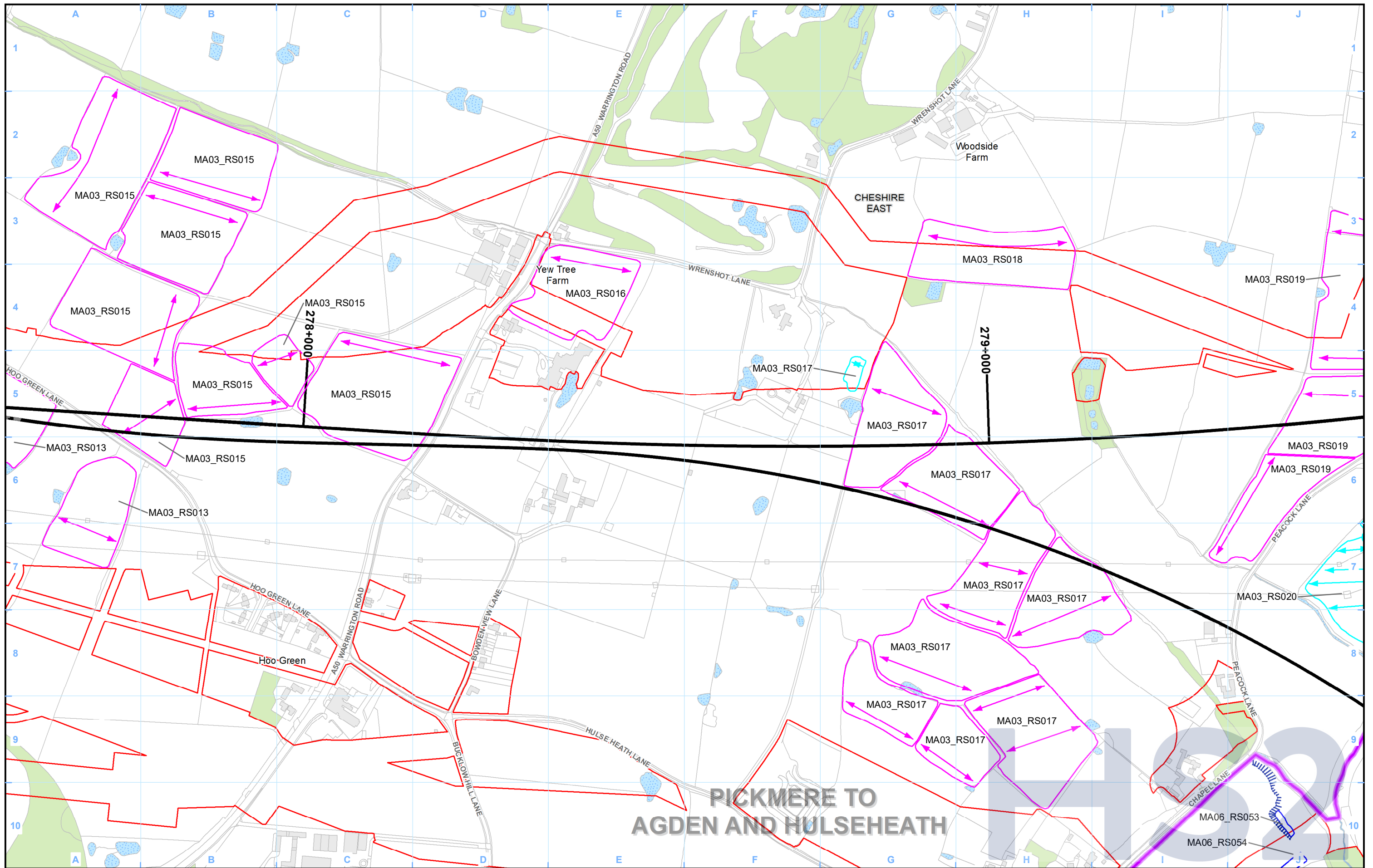
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PICKMERE TO AGDEN AND HULSEHEATH

Legend	
	Route in tunnel
	Route on surface
	Depot, station, headhouse or portal building
	Land potentially required during construction
	Community area boundary
	County boundary
	District/Borough boundary
	Watercourse
	Water body
	Remote sensing feature type
	Bank
	Ditch
	Levelled ridge and furrow area
	Levelled ridge and furrow direction
	Extant ridge and furrow area
	Extant ridge and furrow direction
	Extent of area
	Large cut feature
	Services
	Structure
	T-hachure

Map Number	HE-005_MA03_Figure7
Map Name	Remote Sensing Survey Interpretation
Community Area MA03: Pickmere to Agden and Hulseheath	

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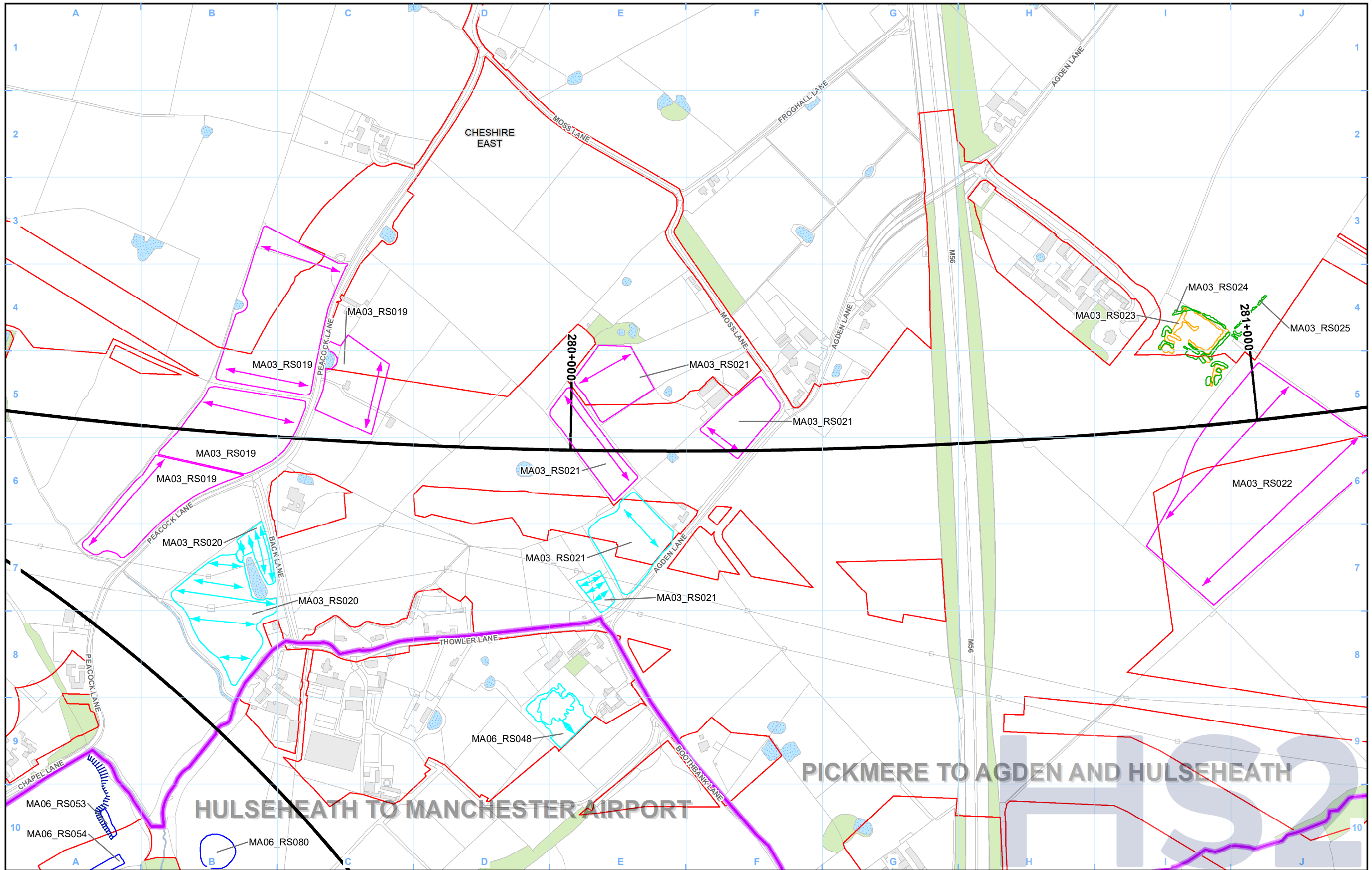
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Legend	
	Route in tunnel
	Route on surface
	Depot, station, headhouse or portal building
	Land potentially required during construction
	Community area boundary
	County boundary
	District/Borough boundary
	Watercourse
	Water body
	Remote sensing feature type
	Bank
	Ditch
	Levelled ridge and furrow area
	Levelled ridge and furrow direction
	Extant ridge and furrow area
	Extant ridge and furrow direction
	Extent of area
	Large cut feature
	Services
	Structure
	T-hachure

Map Number HE-005_MA03_Figure8

Map Name Remote Sensing Survey Interpretation

Community Area MA03:
Pickmere to Agden and Hulseheath

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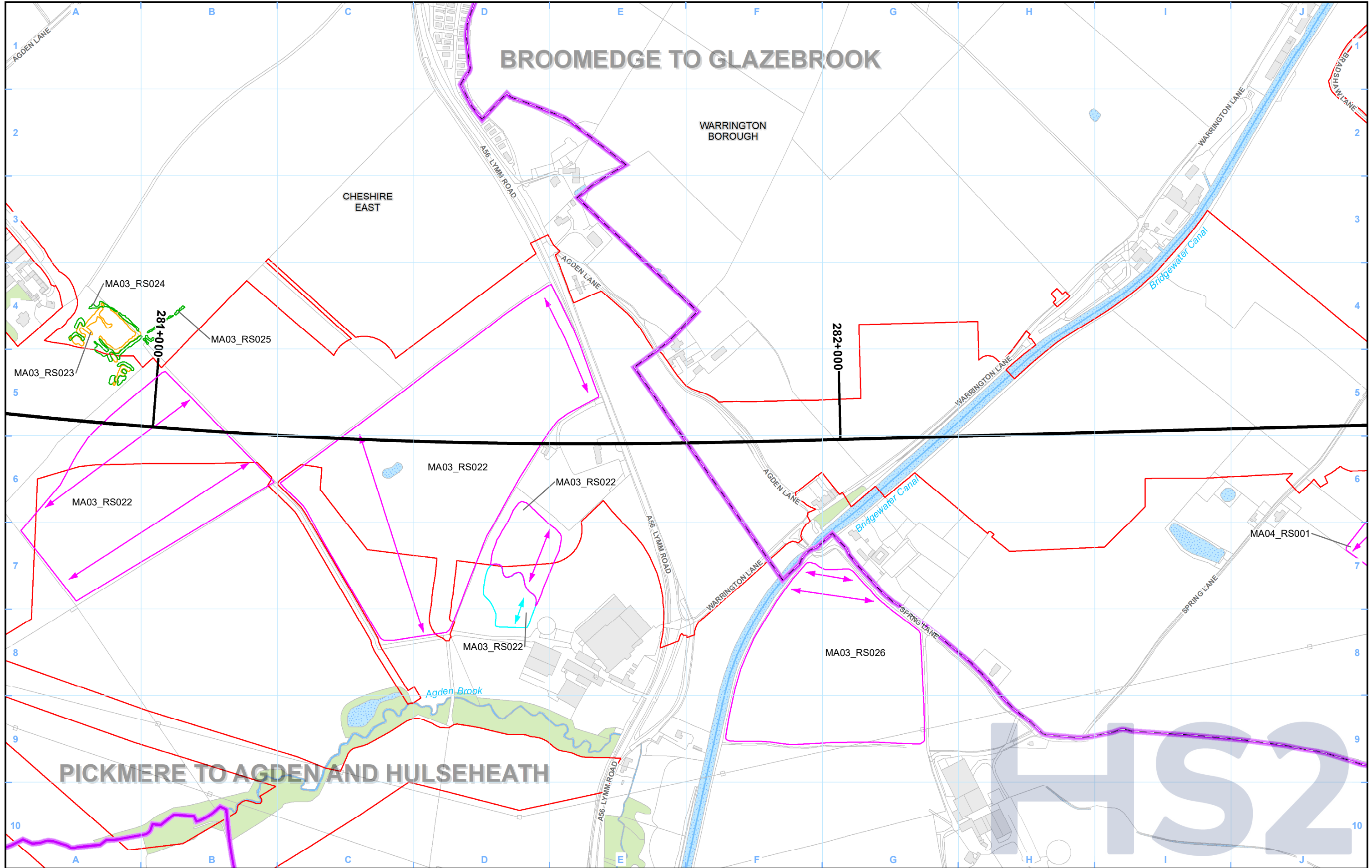
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BROOMEDGE TO GLAZE BROOK

WARRINGTON BOROUGH

CHESHIRE EAST

PICKMERE TO AGDEN AND HULSEHEATH



Legend					
	Route in tunnel		Watercourse		Extant ridge and furrow area
	Route on surface		Water body		Extant ridge and furrow direction
	Depot, station, headhouse or portal building		Remote sensing feature type		Extent of area
	Land potentially required during construction		Bank		Large cut feature
	Community area boundary		Ditch		Services
	County boundary		Levelled ridge and furrow area		Structure
	District/Borough boundary		Levelled ridge and furrow direction		T-hachure

Map Number	HE-005_MA03_Figure9
Map Name	Remote Sensing Survey Interpretation
	Community Area MA03: Pickmere to Agden and Hulseheath

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