High Speed Rail: Consultation on the route from the West Midlands to Manchester, Leeds and beyond

## **Sustainability Statement**

**Volume 2: maps** 

A report by Temple-ERM for HS2 Ltd







### **Contents**

Data dictionary & definitions

Western Leg - Manchester:

15 Map windows each with 3 environmental features maps (set 1 to 3)

4 Individual Station and Depot environmental features maps

Residential Airborne Noise Appraisal without and with additional mitigation maps (set 1 to 2)

#### Eastern Leg - Leeds:

20 Map windows each with 3 environmental features maps (set 1 to 3)

5 Individual Station and Depot environmental features maps

Residential Airborne Noise Appraisal without and with additional mitigation maps (set 1 to 2)





# **Data Dictionary and Definitions**



### **Data Dictionary and Definitions for Environmental Features and Airborne Noise Maps**

Legend Features	Definition	Source	Copyright
Agricultural Land Grade 1 and 2	Agricultural land is classified into five grades. Grade 1 is best quality and Grade 5 is poorest quality. A number of consistent criteria are used for assessment which include climate (temperature, rainfall, aspect, exposure, frost risk), site (gradient, micro-relief, flood risk) and soil (depth, texture, stoniness). Grades 1 and 2 are only displayed as is consistent with the methodology. The maps show Agricultural Land Grade 1 and Grade 2.	Supplied by Natural England	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS">http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS</a> tcm6-30743.pdf
Ancient Woodland	Ancient Woodland Inventory. Ancient Woodland is land that has had continuous woodland cover since at least 1600AD.	Supplied by Natural England	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS">http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS</a> tcm6-30743.pdf
Area of Outstanding Natural Beauty	An Area of Outstanding Natural Beauty (AONB) is an area of high scenic quality which has statutory protection in order to conserve and enhance the natural beauty of its landscape. AONB landscapes range from rugged coastline to water meadows to gentle lowland and upland moors.  Natural England has a statutory power to designate land as Areas of Outstanding Natural Beauty under the Countryside and Rights of Way Act 2000.	Supplied by Natural England	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf">http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf</a>
Areas where dwellings are potentially eligible for noise insulation	Indicates where dwellings could potentially qualify for noise insulation under The Noise Insulation (Railway) Regulations (NIRR 1996) due to noise from operation of the High Speed 2 Phase Two scheme.	High Speed Two Ltd	
Areas where dwellings potentially experience a noticeable noise increase	Indicates where dwellings could potentially be exposed to a noticeable (though not necessarily significant) increase in 'average' daytime railway noise levels due to noise from operation of the High Speed 2 Phase Two scheme. A noticeable noise increase is defined as a total rail noise level of greater than or equal to 50 dB L <sub>Aeq,18hr</sub> with an increase in rail noise of at least 3 dB L <sub>Aeq,18hr</sub> .	High Speed Two Ltd	
Areas where dwellings potentially experience high noise levels	Indicates where dwellings could potentially be exposed to high noise levels associated with operation of the High Speed 2 Phase Two scheme. High noise level exposure is defined as a free field noise level greater than or equal to 73 dB L <sub>Aeq,18hr</sub> .	High Speed Two Ltd	



Legend Features	Definition	Source	Copyright
Conservation Area	Areas considered worthy of preservation or enhancement because of their special architectural or historic interest.	High Speed Two Ltd.  Conservation Areas have been captured and digitised from desktop based studies using publically available local authority information. Accuracy of the data is dependent upon that of the individual data source and areas are provided as indicative site boundaries only.	
Country Park	Natural England recognises Country Parks as significant places that contribute to England's accessible natural greenspace. Country Parks were established as a result of the 1968 Countryside Act and there are currently more than 400 sites that call themselves Country Parks in England. They are visited by over 70 million visitors a year.	Supplied by Natural England	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021.
County boundary	County boundaries	Ordnance survey boundary mapping	© Crown Copyright and database rights 2013 Ordnance Survey Licence Number 100049190.
District/Borough boundary	Local Authority boundaries	Ordnance survey boundary mapping	© Crown Copyright and database rights 2013 Ordnance Survey Licence Number 100049190.
Flood Zone 2	National Flood Zone 2 (FZ2). Land assessed, ignoring the presence of flood defences, as having between a 1% and 0.1% annual probability of fluvial flooding or between a 0.5% and 0.1% annual probability of tidal flooding in any year.	Supplied by The Environment Agency	Contains Environment Agency information © Environment Agency and database right.
Flood Zone 3	National Flood Zone 3 (FZ3). Land assessed, ignoring the presence of flood defences, as having a 1% or greater annual probability of fluvial flooding or a 0.5% or greater annual probability of tidal flooding.	Supplied by The Environment Agency	Contains Environment Agency information © Environment Agency and database right.
Green belt	The Government's fundamental aim of green belt policy is to prevent urban sprawl by keeping land permanently open. The National Planning Policy Framework states that that the construction of new buildings should be regarded as "inappropriate" for the green belt, although there are some exceptions, which are listed.	DCLG	© Crown Copyright 2012
	It is for local authorities to define and maintain green belt land in their local areas. The Government expects local planning authorities with green belts to establish green belt boundaries in their Local Plans. Green belt boundaries can be altered as part of the Local Plan review process		



Legend Features	Definition	Source	Copyright
Groundwater Source Protection Zone: (Zones 1 & 2)	Source Protection Zones (SPZs) have been defined for 2000 groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk. The maps show two main zones: inner – SPZ1 and outer – SPZ2.	Supplied by The Environment Agency	Contains Environment Agency information © Environment Agency and database right.
Landfill Site (Active)	An active landfill site is one which is currently accepting waste for disposal. This may be inert, hazardous or non-hazardous waste. To operate under the current legislative regime, planning permission must be provided by the local authority and a permit obtained from the Environment Agency.	Supplied By The Environment Agency	Contains Environment Agency information © Environment Agency and database right.
Landfill Site (Disused)	A disused landfill site is one which is not accepting waste for disposal. Recently closed landfill sites may have on-going monitoring and environmental protection measures. Disused landfills however may pre-date environmental legislation, have little record of disposed material and delineation of their extent.	Supplied By The Environment Agency	Contains Environment Agency information © Environment Agency and database right.
Listed Building (Grades I, II* and II)	Buildings and structures in England of special architectural or historic interest. In some instances the source data for individual buildings is grouped under a single grid reference, in these instances the data may have been interrogated further to identify addresses of individual buildings with Listed Building status so that these can be displayed individually on the map.	Supplied by English Heritage  The Listed Building data consists of approximately 375,000 standing structures. The information has been converted from paper records georeferenced to digital mapping. A small percentage of the data was manually located. The data is subject to continuous review and regularly updated as new structures are designated and positional accuracy improves.	Contains, or is based upon, English Heritage's National Heritage List for England data © English Heritage.
Local Nature Reserve (LNR)	A Local Nature Reserve (LNR) is a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949 by principal local authorities. Data supplied has the status of "Declared". The boundaries are interpreted from material gathered from the local authorities and does not currently cover all LNRs.	Supplied by Natural England  This national dataset is "indicative" not "definitive". Definitive information can only be provided by individual local authorities and you should refer directly to their information for all purposes that require the most up to date and complete dataset.	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. http://www.naturalengland.org.uk/Images/open-government-licence-NE-OS tcm6-30743.pdf
Major Development Site	Major proposals for all types of development, including residential development of 100 or more dwellings or a site area of one or more hectare; other developments with floorspace of 5,000 m <sup>2</sup> or more, or a site area of one hectare or more; major infrastructure schemes, including highways schemes; and major minerals and waste management sites (including both new and extended sites).	High Speed Two Ltd  Major Development Sites have been captured and digitised from desktop based studies using publically available local authority information. Accuracy of the data is dependent upon that of the individual data source and areas are provided as indicative site boundaries only.	
National Nature Reserve (NNR)	A National Nature Reserve (NNR) is the land declared under the National Parks and Access to the Countryside Act 1949 or Wildlife and Countryside Act (1981) as amended.	Supplied by Natural England  The accuracy of the data will, in general, match that of the primary source material, OS MasterMap.  English Nature received a complete set of OS MasterMap data extracted on 8 August 2002. No further updates have been applied.	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf">http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf</a>



Legend Features	Definition	Source	Copyright
National Park	England's National Parks are extensive tracts of countryside designated by Natural England (or its predecessor bodies) under the provisions of The National Parks and Access to the Countryside Act, 1949, and have two statutory purposes:  1) To conserve and enhance their natural beauty, wildlife and cultural heritage.  2) To promote opportunities for the public understanding and	Supplied by Natural England	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS">http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS</a> tcm6-30743.pdf
	enjoyment of these special qualities.		
National Trails	National Trails are long distance routes for walking, cycling and horse riding through the finest landscapes in England and Wales.	Supplied by Natural England	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-">http://www.naturalengland.org.uk/lmages/open-government-</a>
	They have all been created by linking existing local footpaths, bridleways and minor roads and by developing new ones where there were gaps.		licence-NE-OS tcm6-30743.pdf
	There are 15 National Trails in England and Wales.		
Preliminary candidate areas for mitigation	Areas where additional mitigation, such as noise barriers or earth bunds, would potentially have the greatest benefit to reducing the overall number of noise impacts. For the purposes of modelling the scheme 'including additional indicative mitigation' it has been assumed that mitigation at these locations would achieve a noise reduction equivalent to that achieved by use of 3m high noise barriers (or bund) or, at viaducts, by 2m high barriers with noise-absorbent materials used throughout.  Note that the scheme 'including additional indicative mitigation' also assumes that there would be a 3 dB reduction in noise emissions at source based on the anticipated noise control improvements in the next generation of high speed rolling	High Speed Two Ltd	
	stock.		
Ramsar Site	A Ramsar Site is the land listed as a Wetland of International Importance under the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (the Ramsar Convention) 1973. Data supplied has the status of "Listed".	Supplied by Natural England	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS">http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS</a> tcm6-30743.pdf
Registered Battlefield	A Registered Battlefield is a battlefield that is considered to be sufficiently important to be worth identifying by their inclusion on the Register.	Supplied by English Heritage  All 43 Registered Battlefield sites are captured against the 1:10000 Raster product	Based on, English Heritage's National Heritage List for England data © English Heritage.
Registered Park and Garden	Parks and Gardens of special historic interest	Supplied by English Heritage  Of the 1,590 Registered Parks and Gardens, over 91% were captured against the 1:10,000 Ordnance Survey Raster product. 135 records are potentially subject to movement under Positional Accuracy Improvement (PAI) improvements.	Contains, or is based upon, English Heritage's National Heritage List for England data © English Heritage.



Legend Features	Definition	Source	Copyright
Route Alignment	Sections of the High Speed Two route shown by type	High Speed Two Ltd	
Scheduled Monument	A schedule has been kept since 1882 of monuments considered to be of national importance by the government. The current legislation, the Ancient Monuments and Archaeological Areas Act 1979, supports a formal system of Scheduled Monument Consent for any work to a designated monument.	Supplied by English Heritage  The Scheduled Monument layer consists of approximately 22,380 monuments tied into the Ordnance Survey. The majority of these are fixed; however, a small number of records may be updated as digital positional accuracy improves. The data is subject to continuous review and regularly updated as new monuments are designated.	Contains, or is based upon, English Heritage's National Heritage List for England data © English Heritage.
Site of Special Scientific Interest (SSSI)	A Site of Special Scientific Interest (SSSI) is the land notified as an SSSI under the Wildlife and Countryside Act (1981), as amended.	Supplied by Natural England  The accuracy of the data will, in general, match that of the primary source material, OS MasterMap.  English Nature provided a complete set of OS MasterMap data extracted on 8 August 2002. No further updates have been applied.	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf">http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf</a>
Special Area of Conservation (SAC)	A Special Area of Conservation (SAC) is the land designated under Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.	Supplied by Natural England  The accuracy of the data will, in general, match that of the primary source material, OS MasterMap.  English Nature provided a complete set of OS MasterMap data extracted on 8 August 2002. No further updates have been applied.	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf">http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf</a>
Special Protection Area (SPA)	A Special Protection Area (SPA) is the land classified under Directive 79/409 for the Conservation of Wild Birds.	Supplied by Natural England  The accuracy of the data will, in general, match that of the primary source material, OS MasterMap.  English Nature provided a complete set of OS MasterMap data extracted on 8 August 2002. No further updates have been applied.	© Natural England copyright 2013 Contains Ordnance Survey data © Crown copyright and database right 2013. All rights reserved. Ordnance Survey Licence number 100022021. <a href="http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf">http://www.naturalengland.org.uk/lmages/open-government-licence-NE-OS_tcm6-30743.pdf</a>
World Heritage Site	A site on a list of properties maintained by the World Heritage Committee of UNESCO and called the World Heritage List "forming part of the cultural heritage and natural heritagewhich it considers as having outstanding universal value in terms of such criteria as it shall have established".	Supplied by English Heritage  There are 17 World Heritage Sites of which 15 are captured against the 1:10,000 Raster product. The remaining two sites are potentially subject to change under Positional Accuracy Improvement (PAI) improvements.	Contains, or is based upon, English Heritage's National Heritage List for England data © English Heritage.

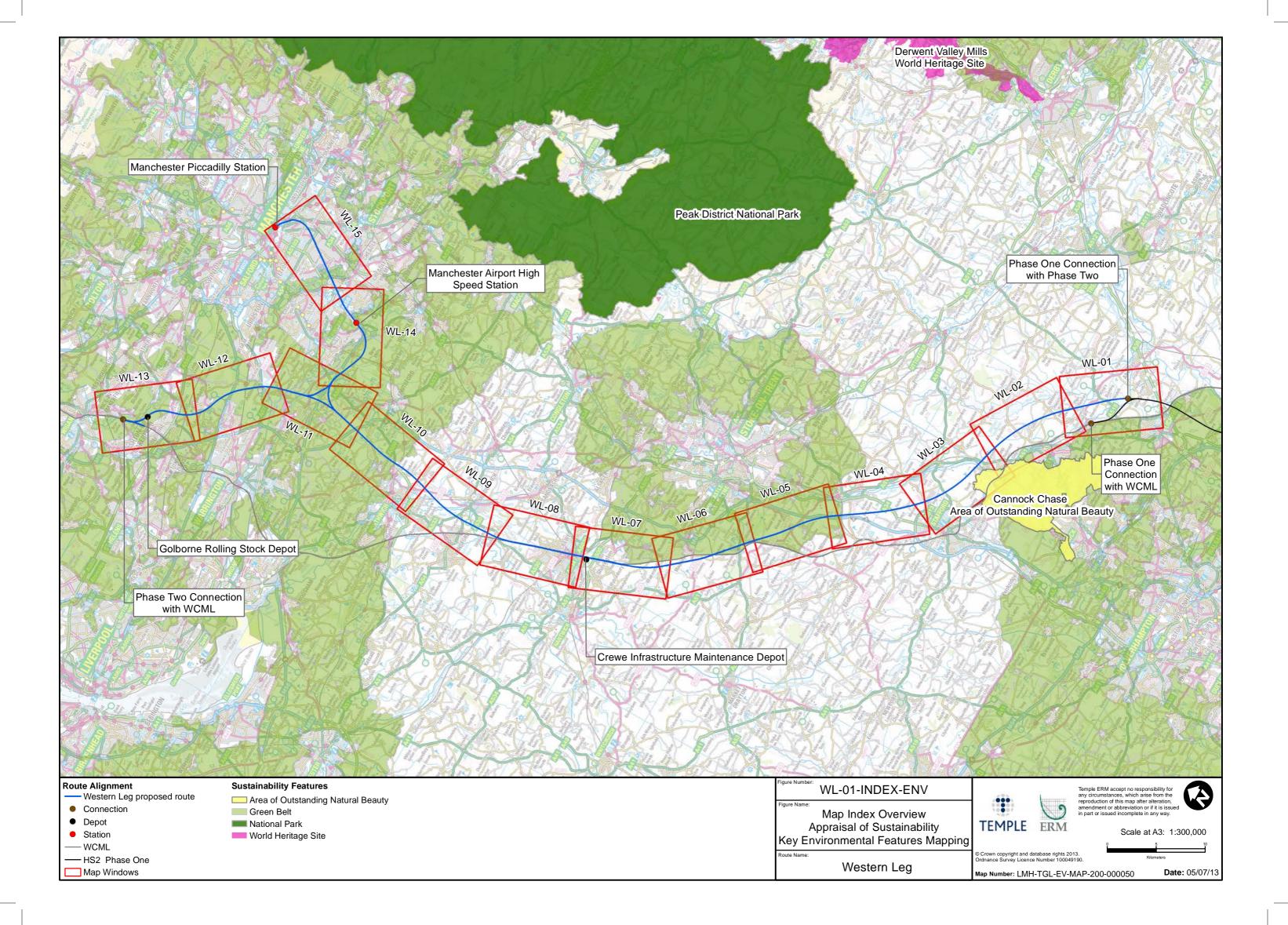


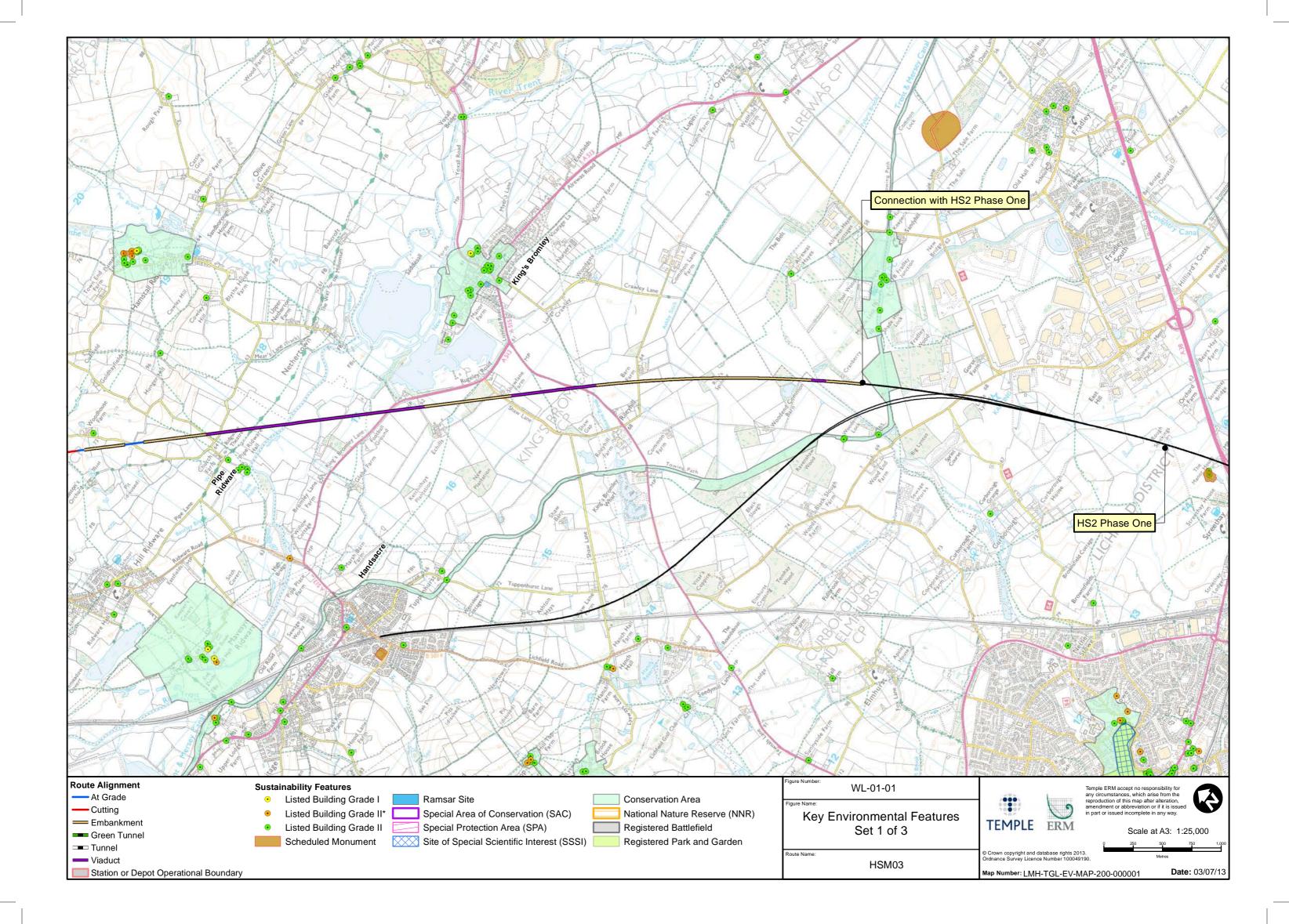
Western Leg – Manchester

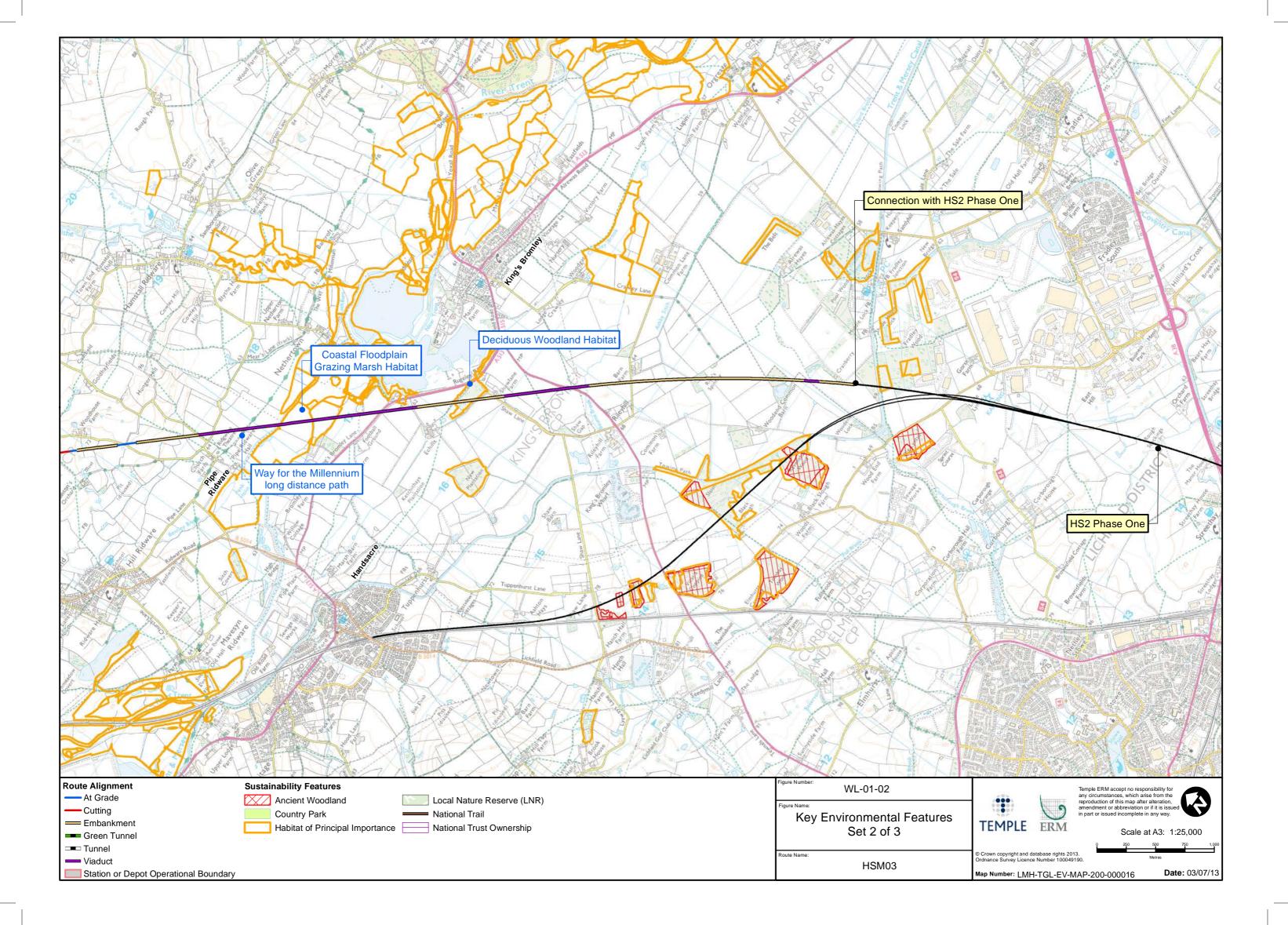


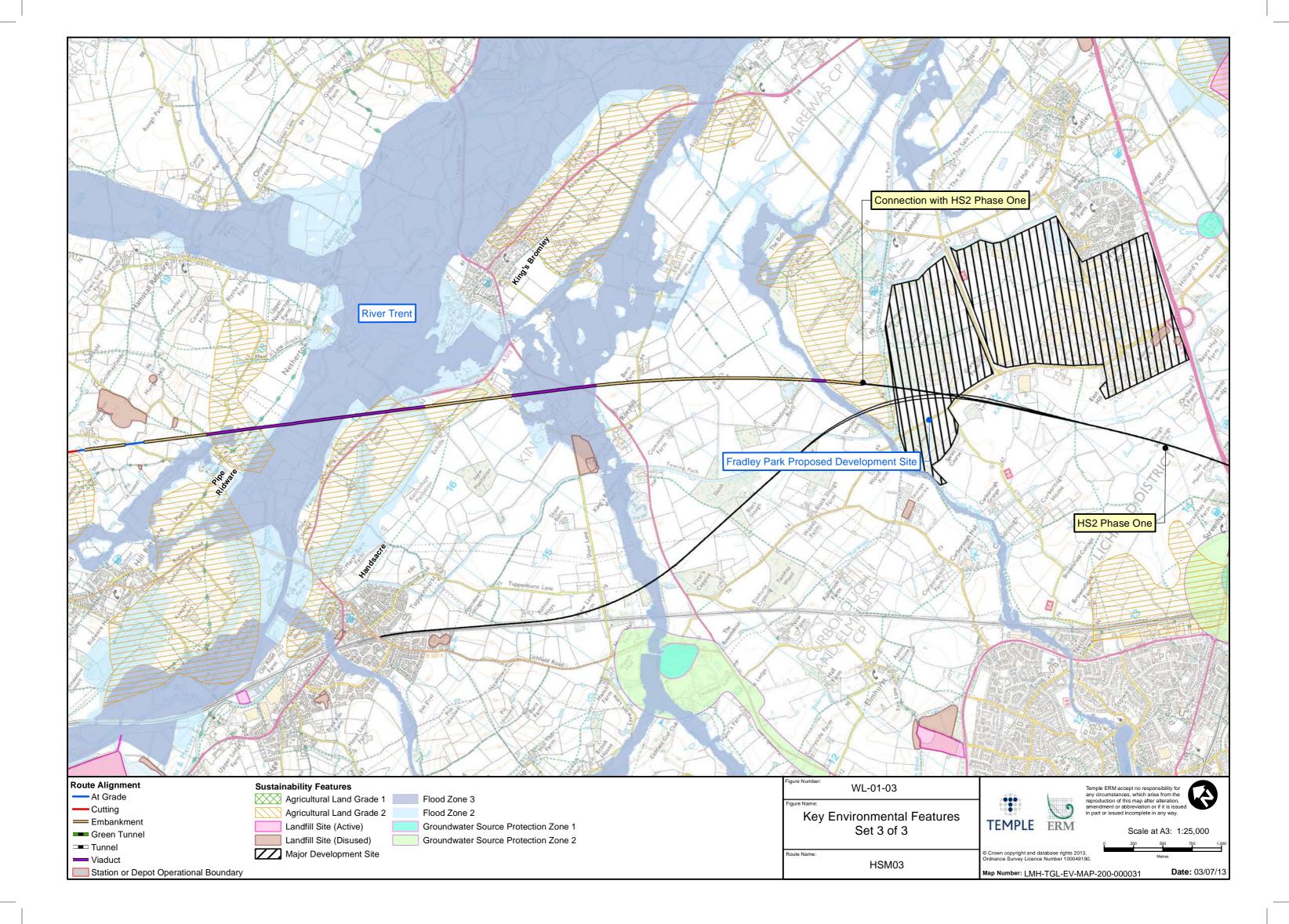


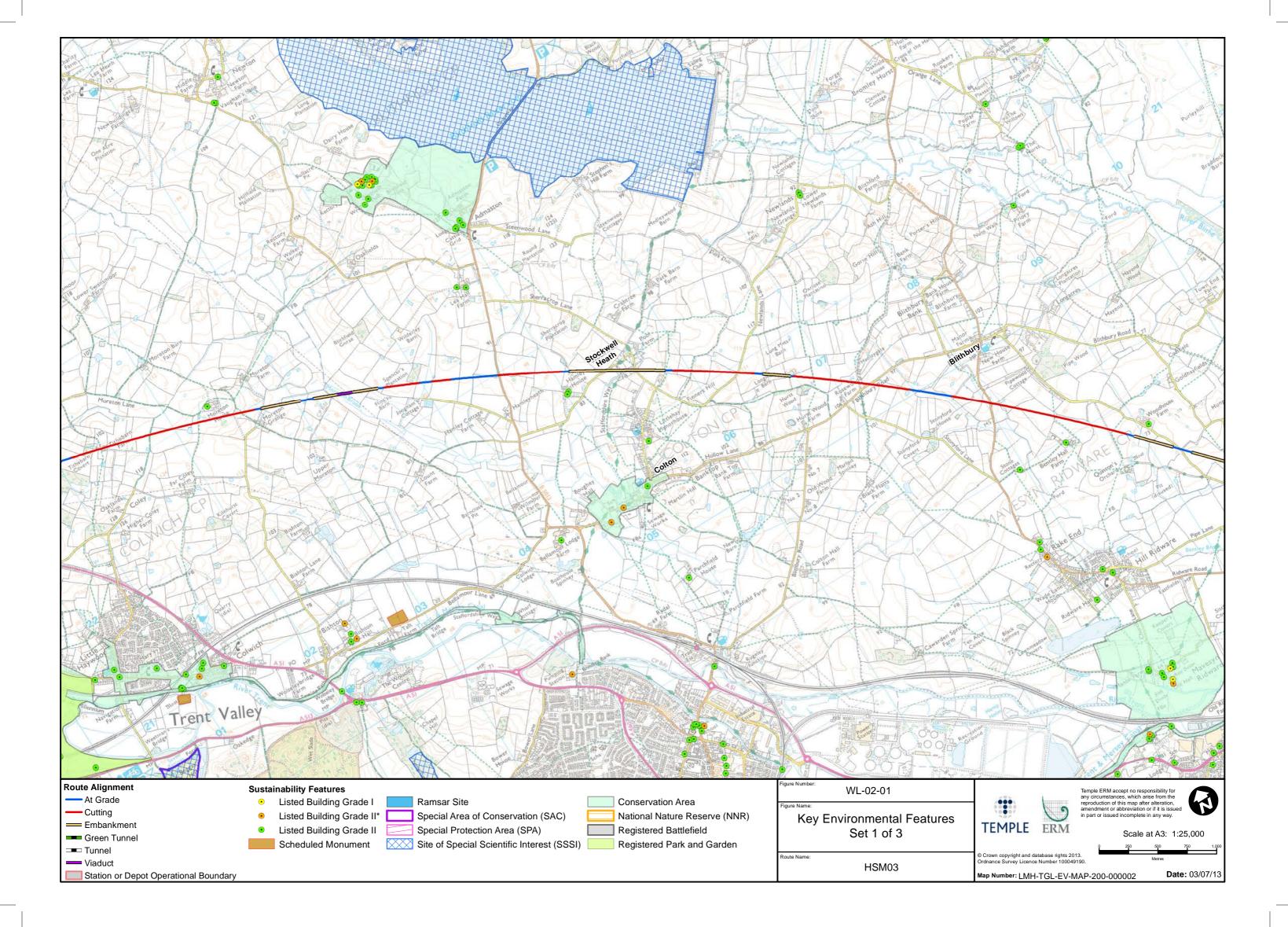
# Western Leg - Manchester Environmental Features Mapping Set 1 to 3

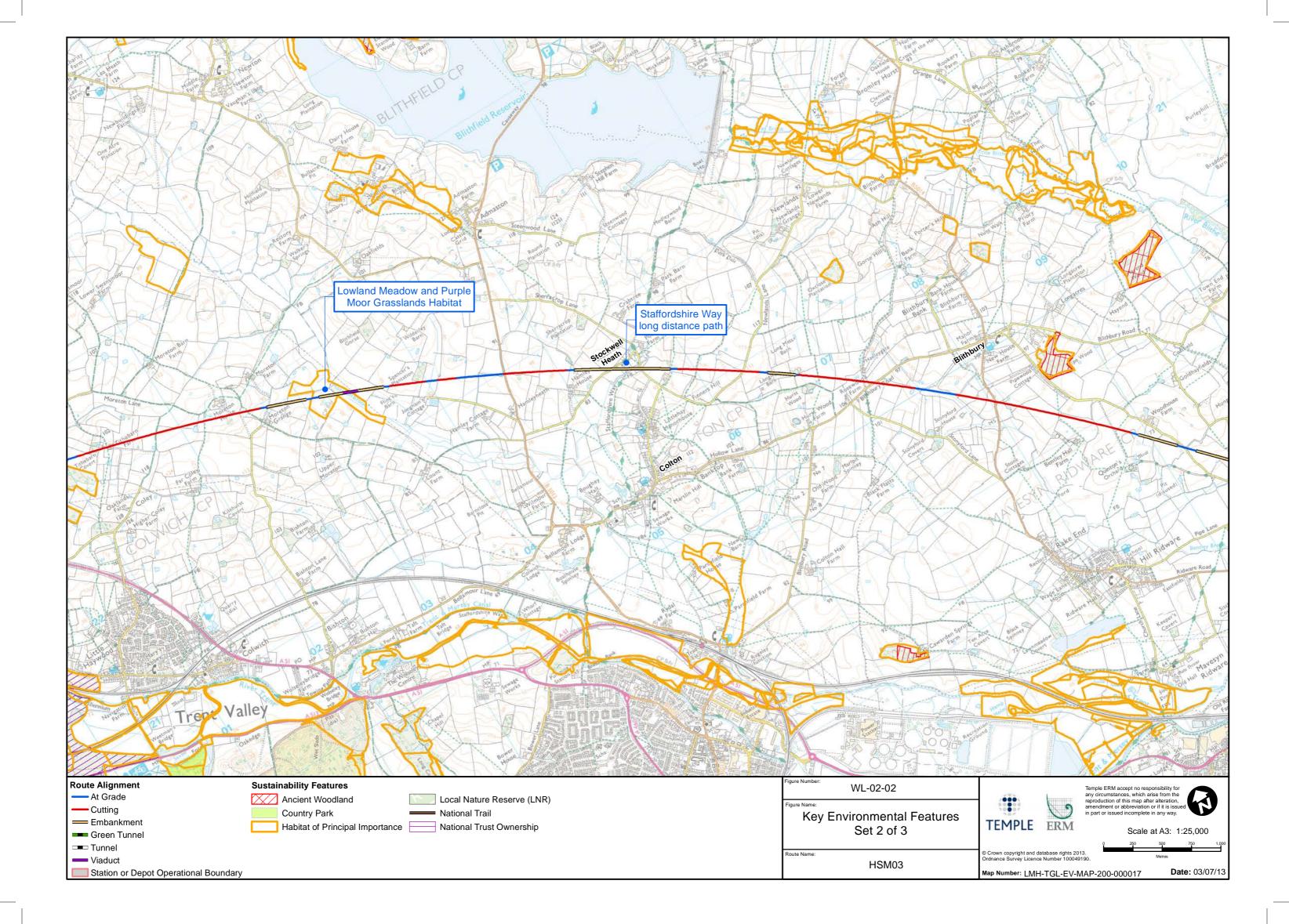


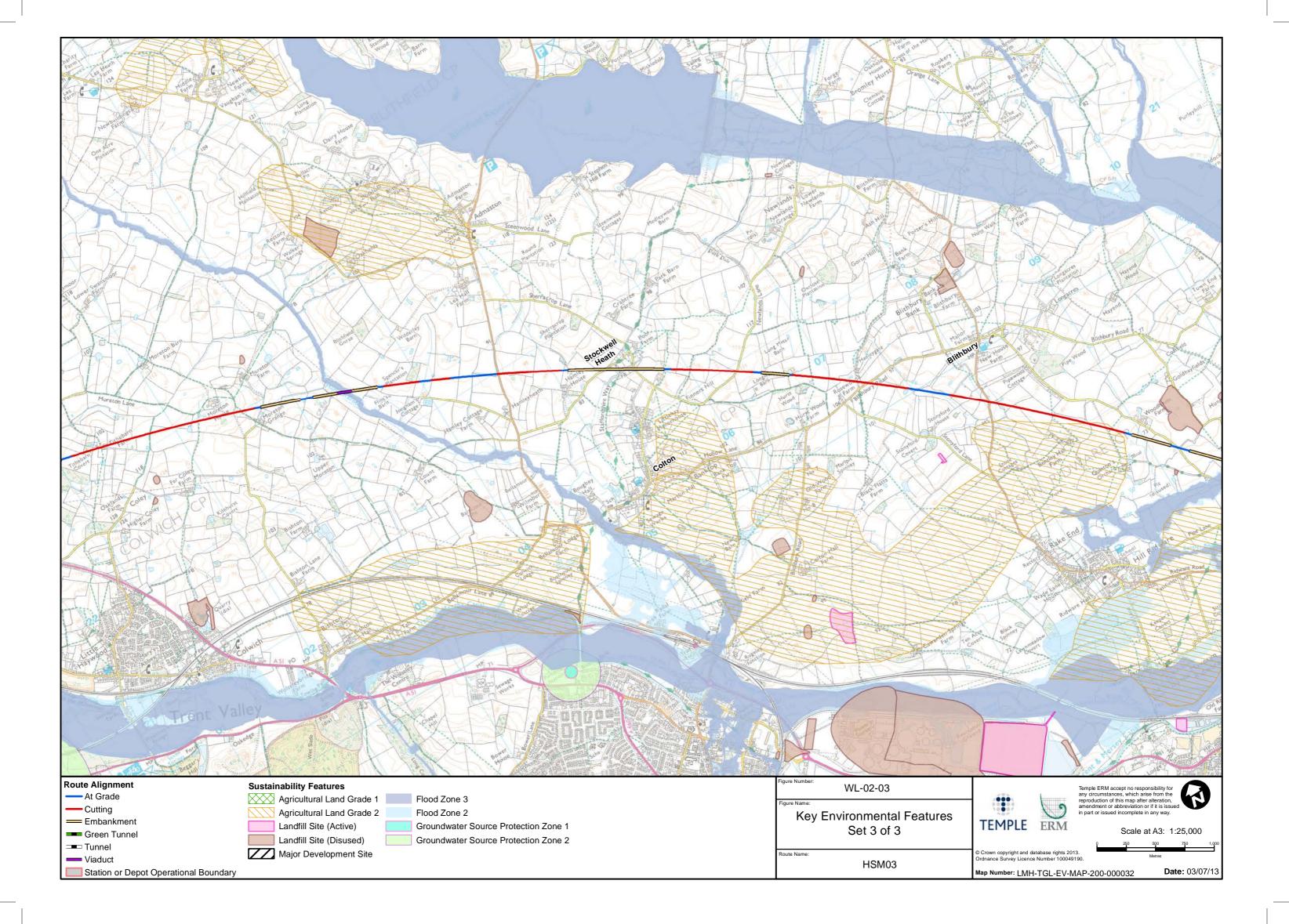


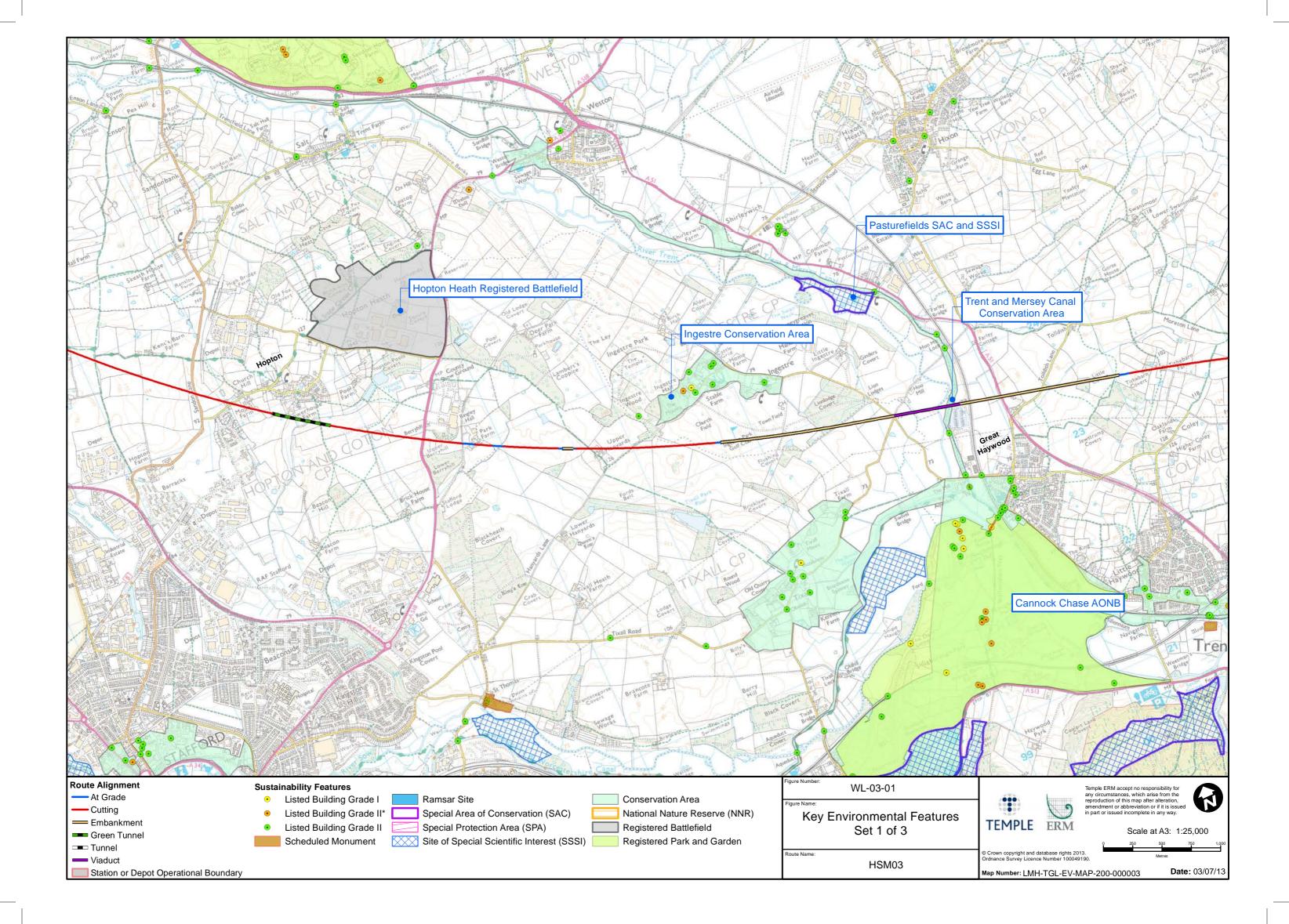


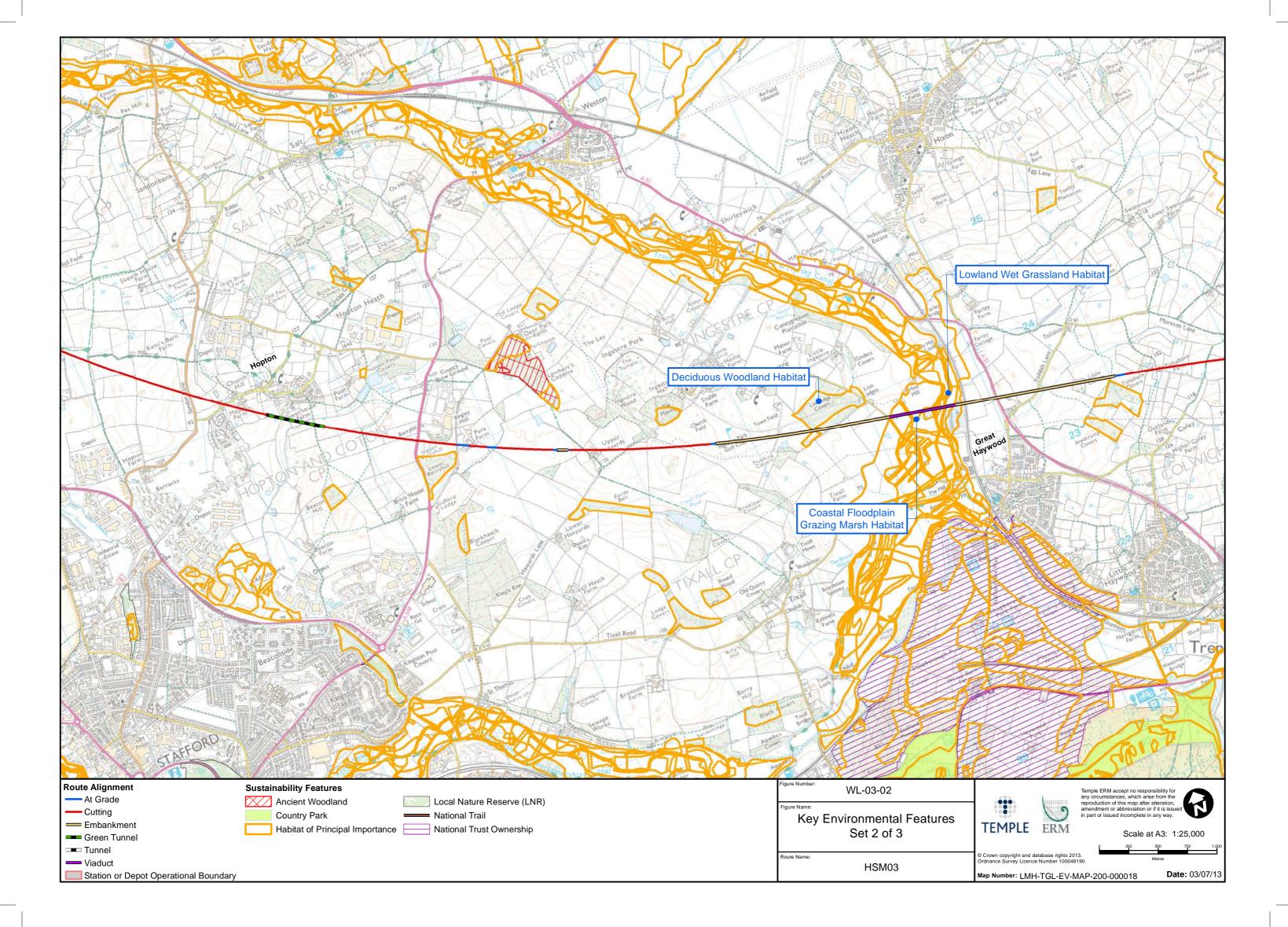


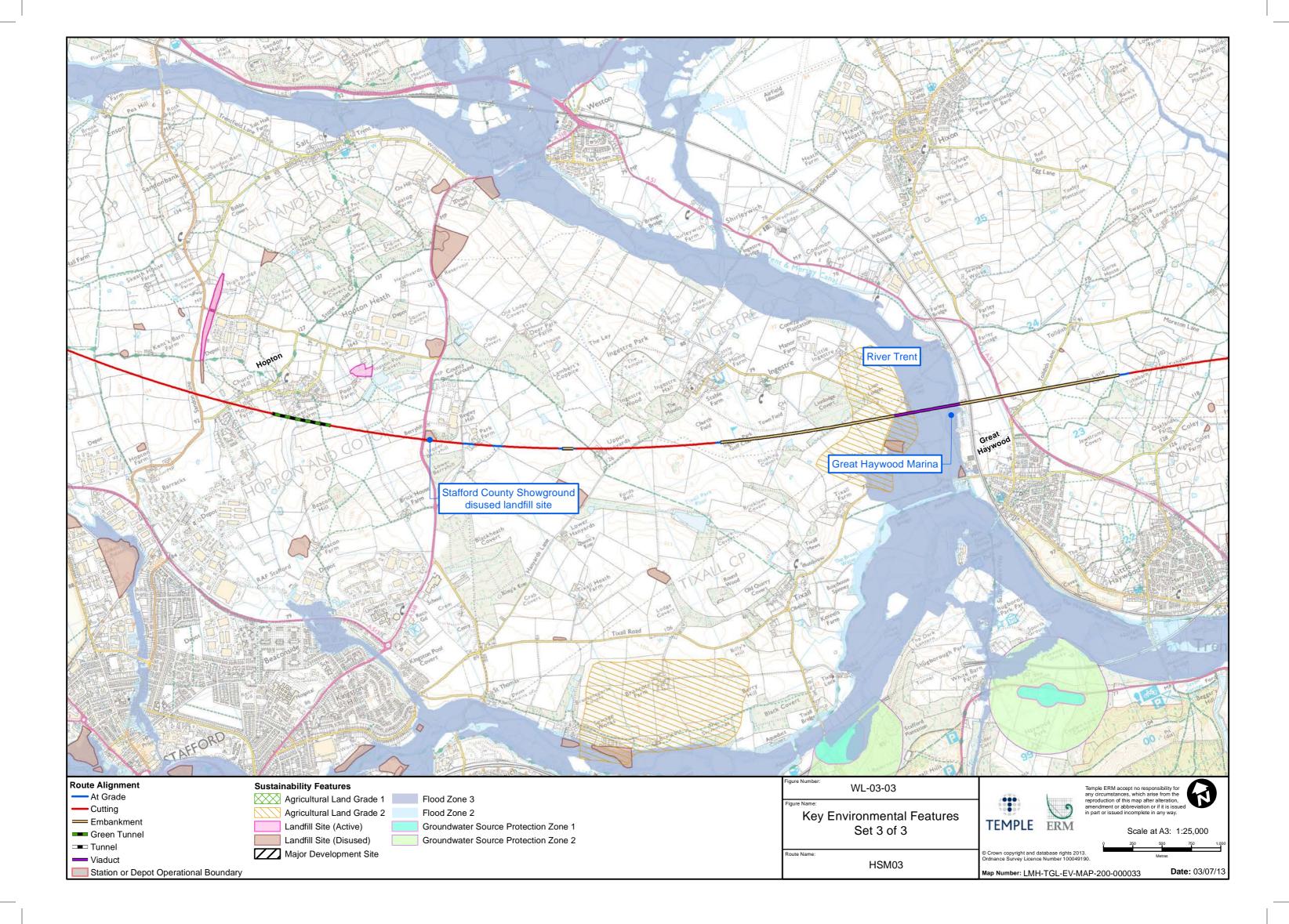


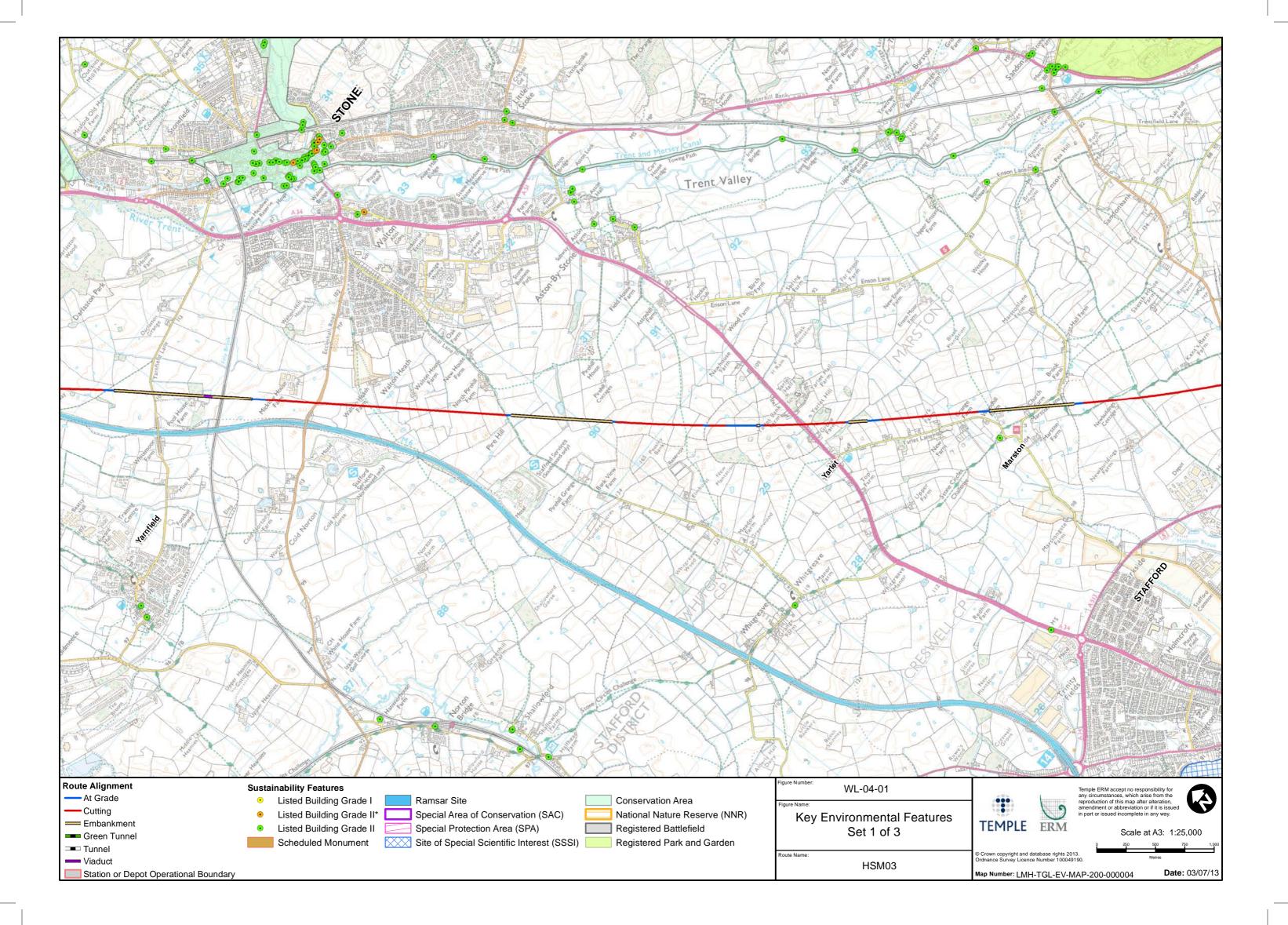


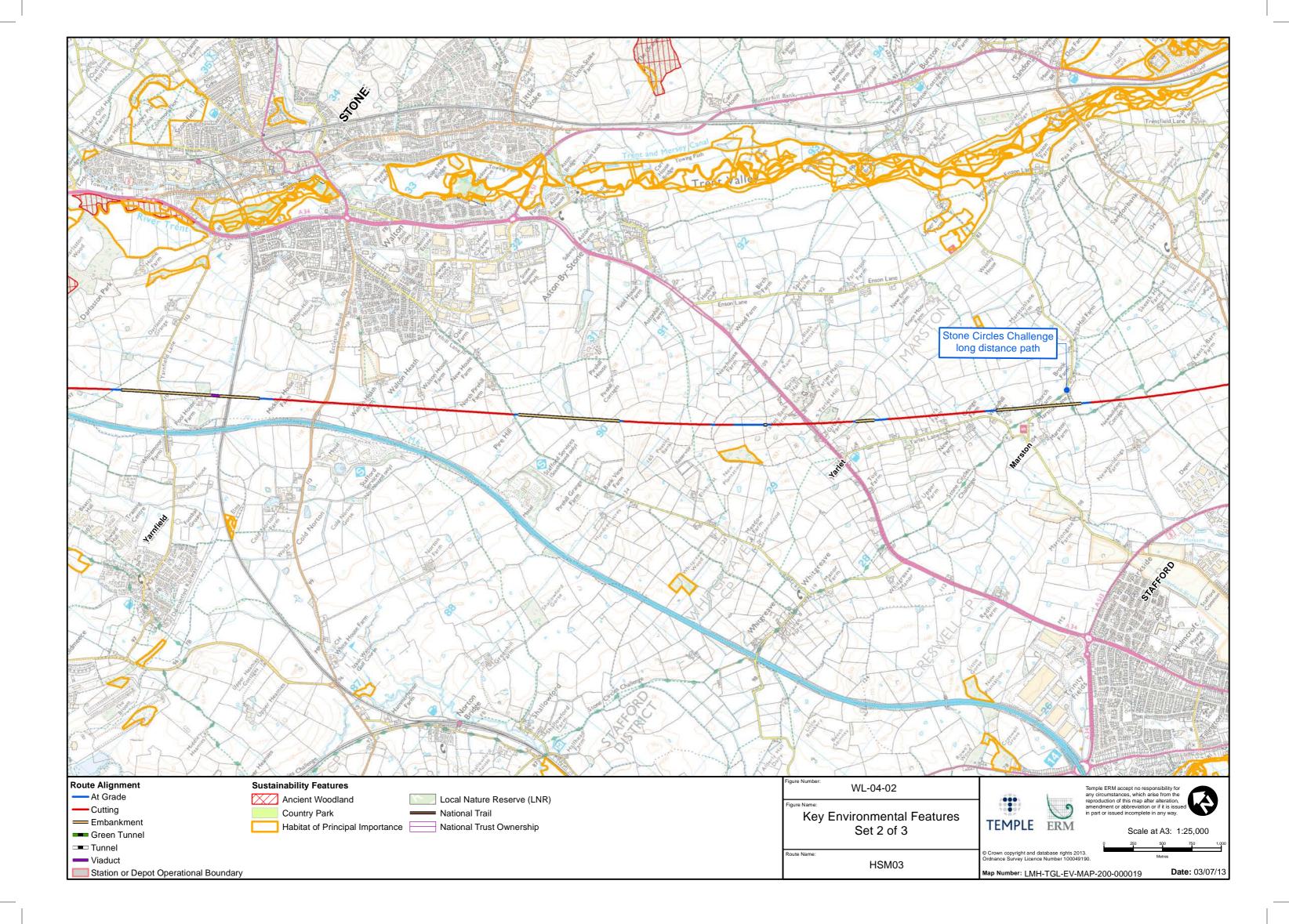


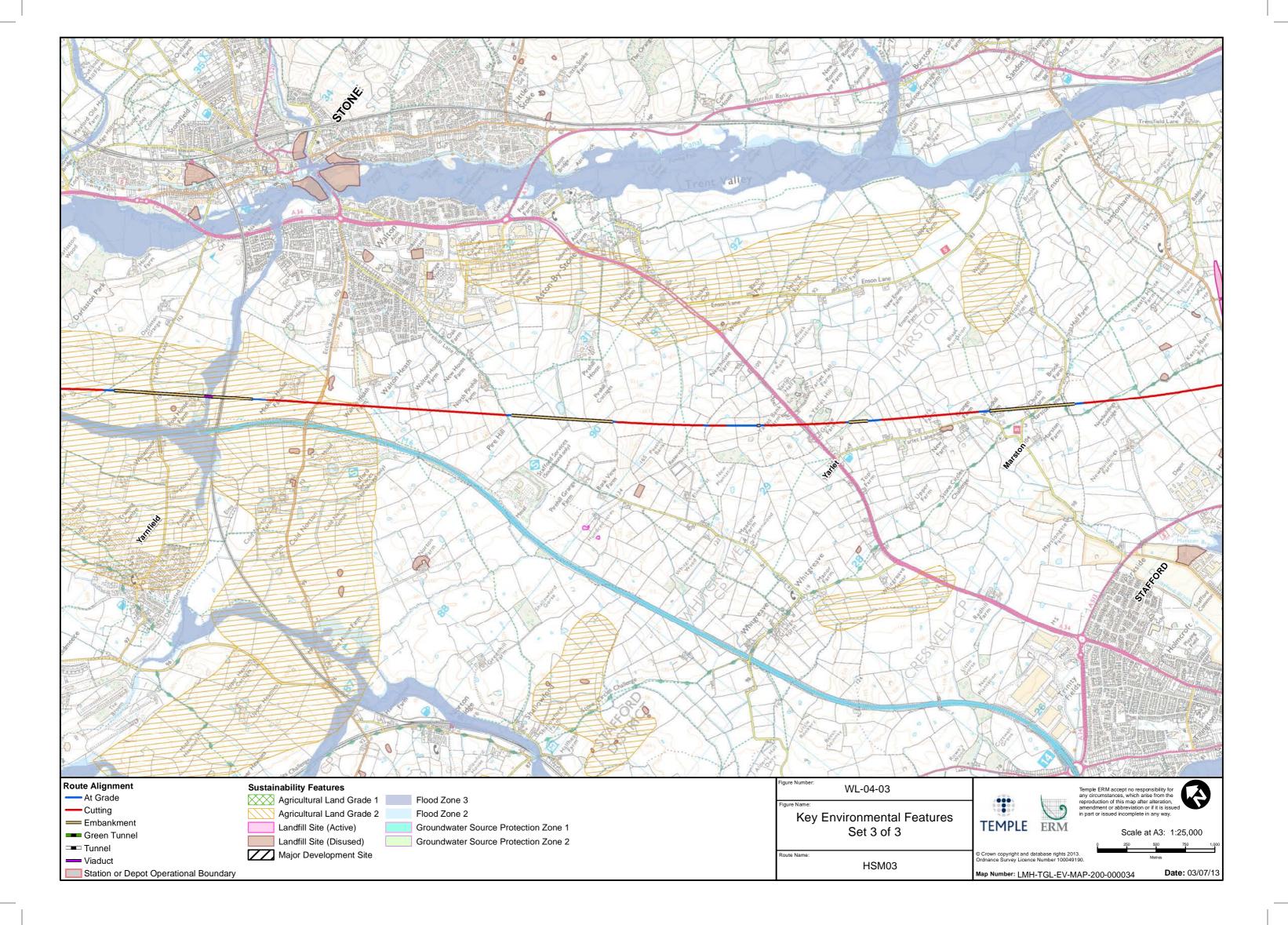


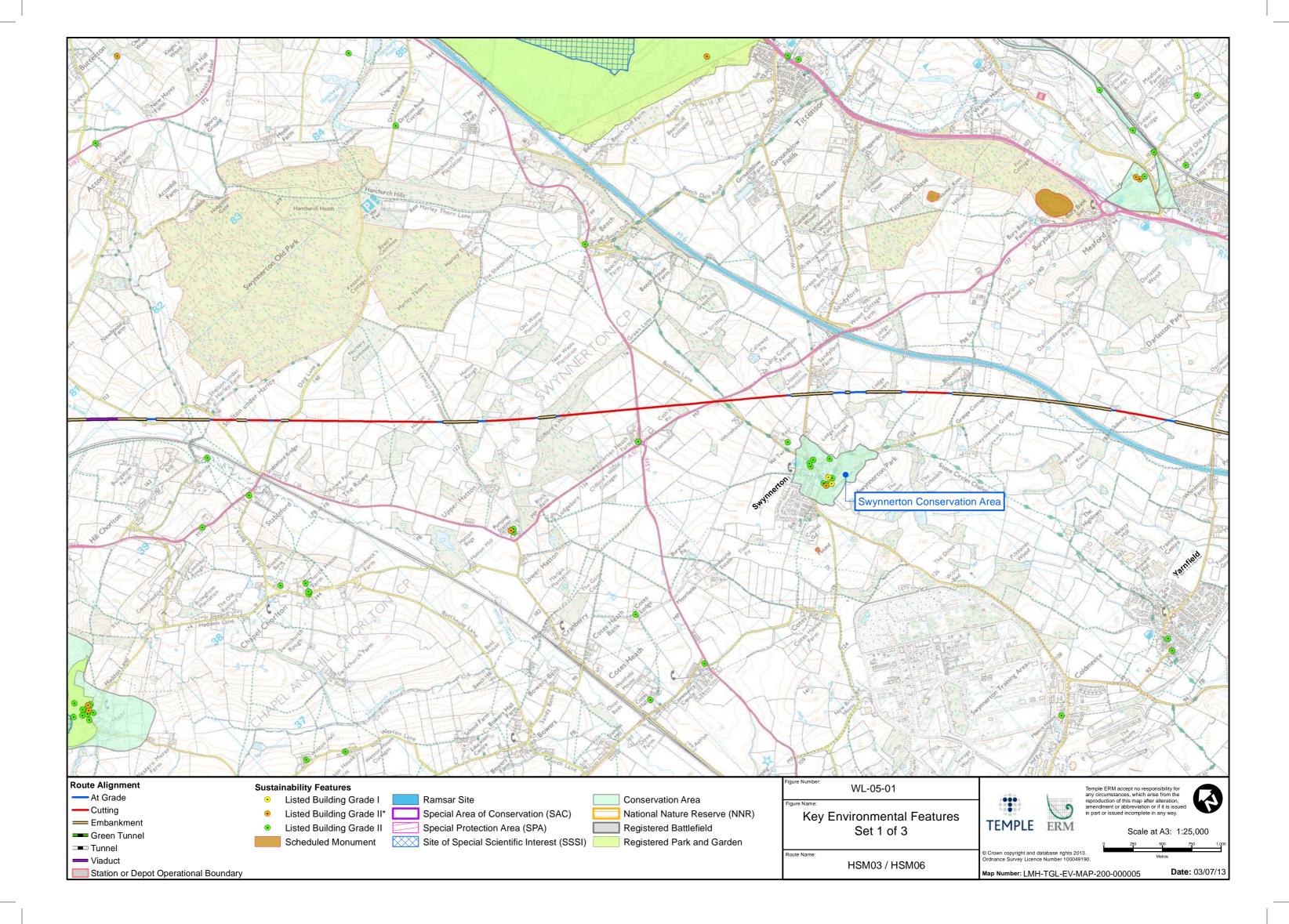


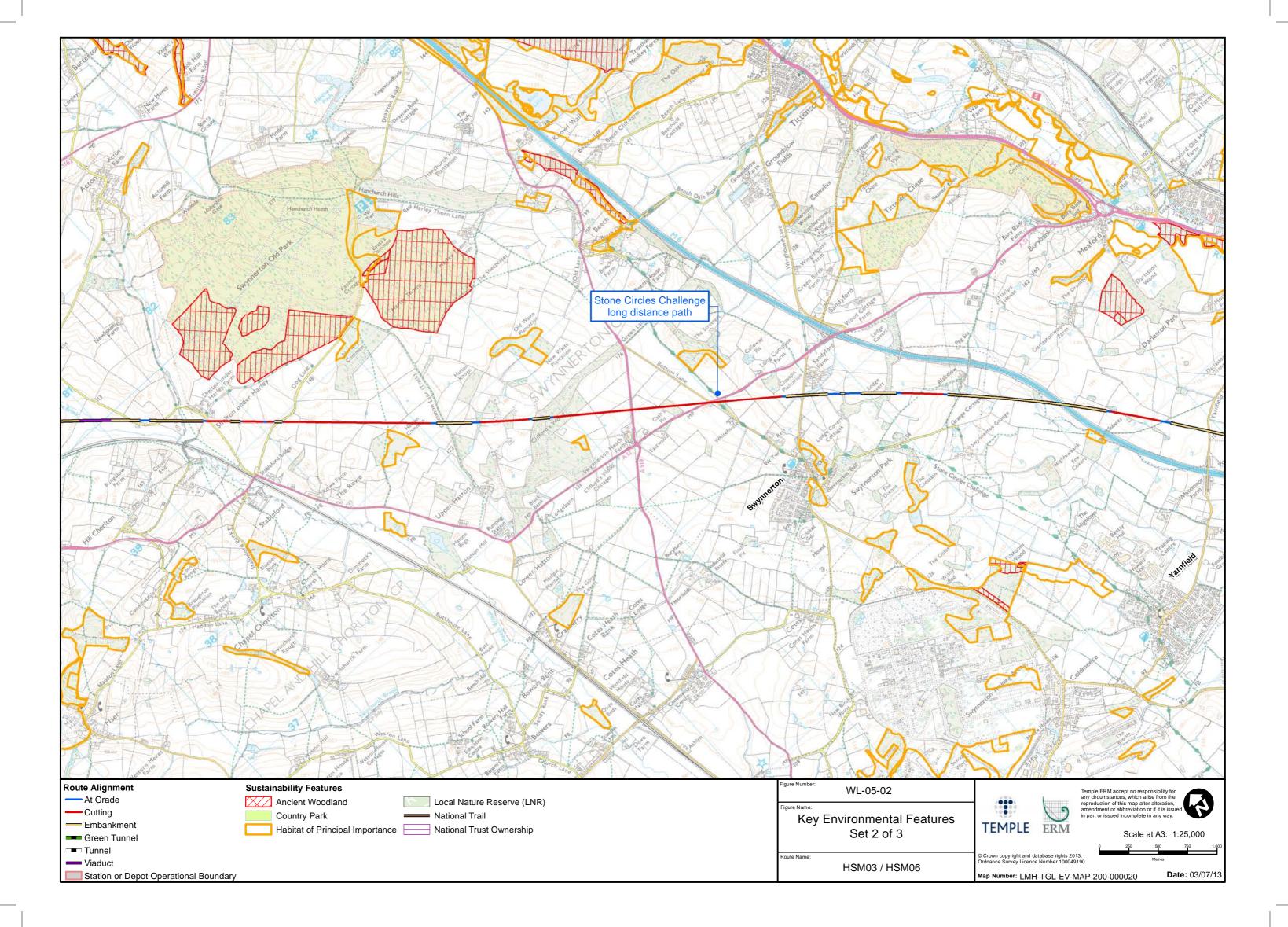


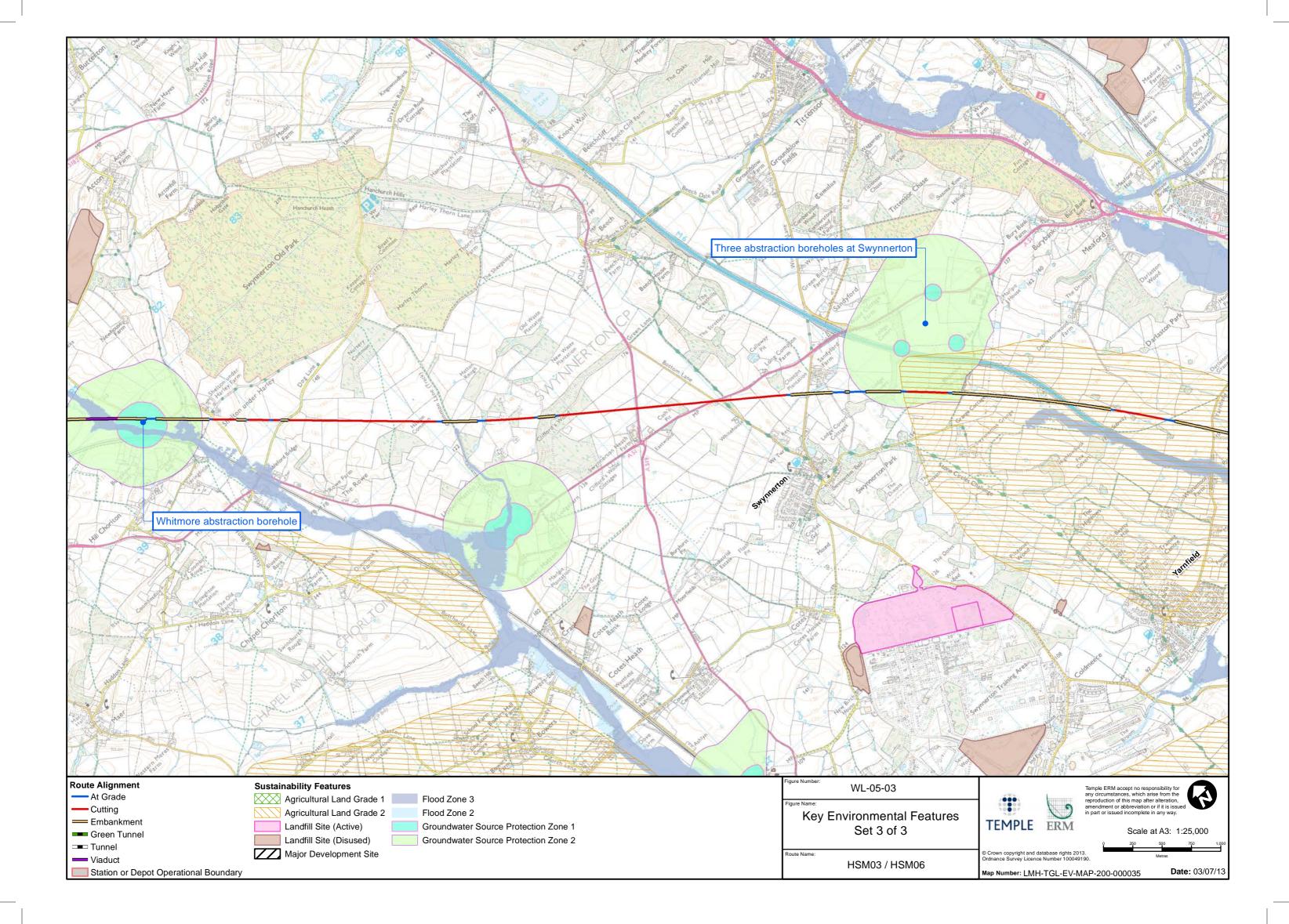


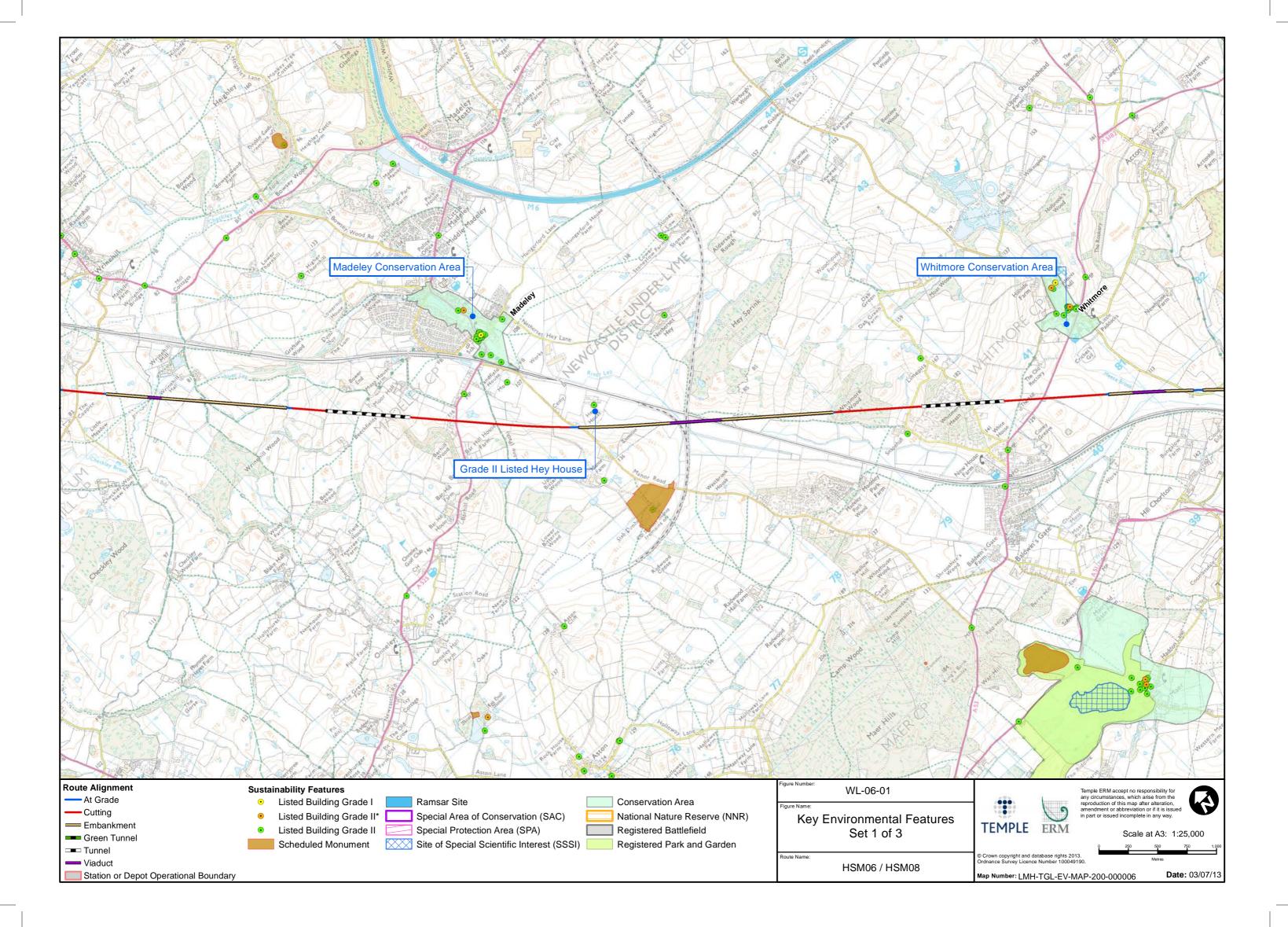


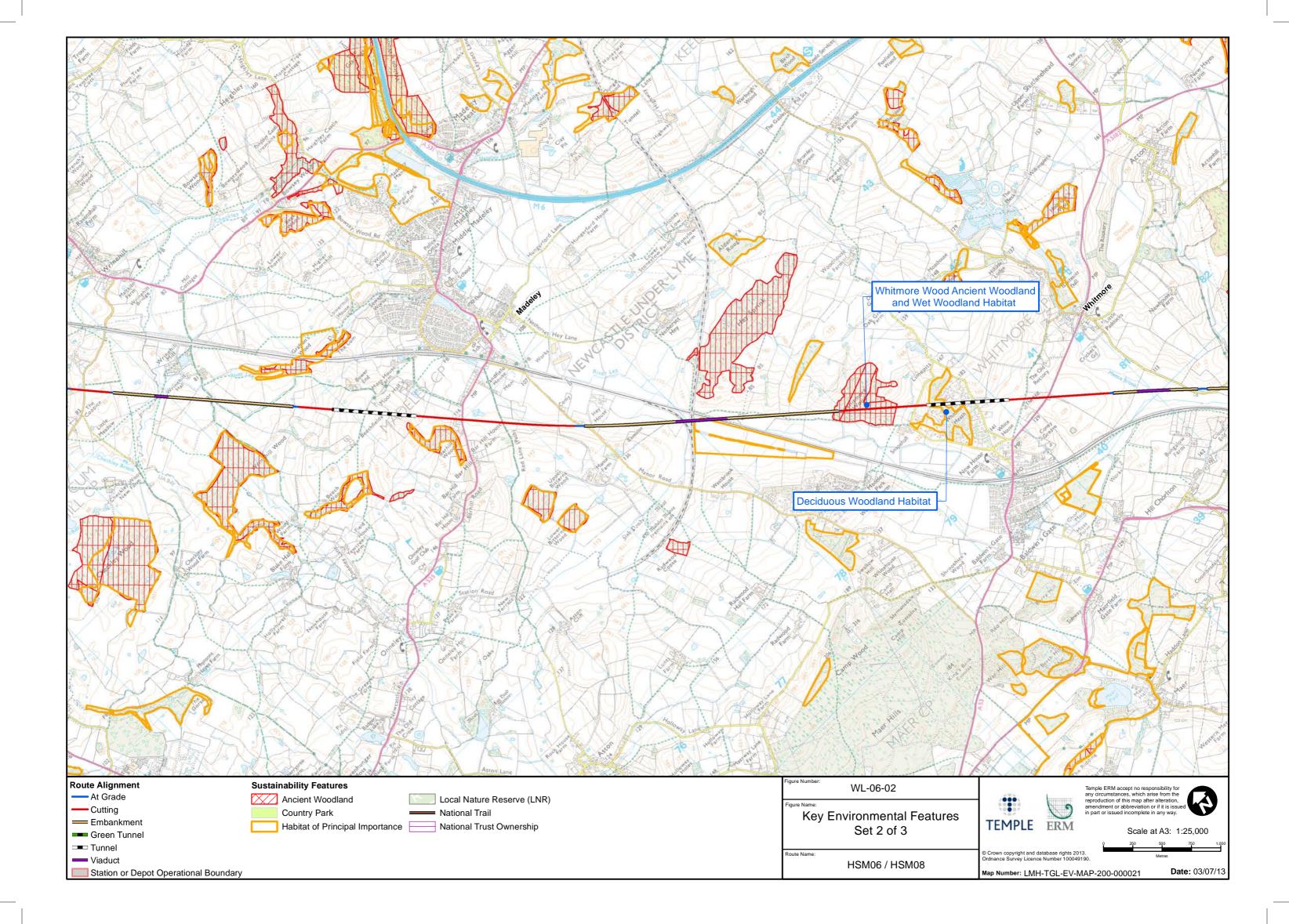


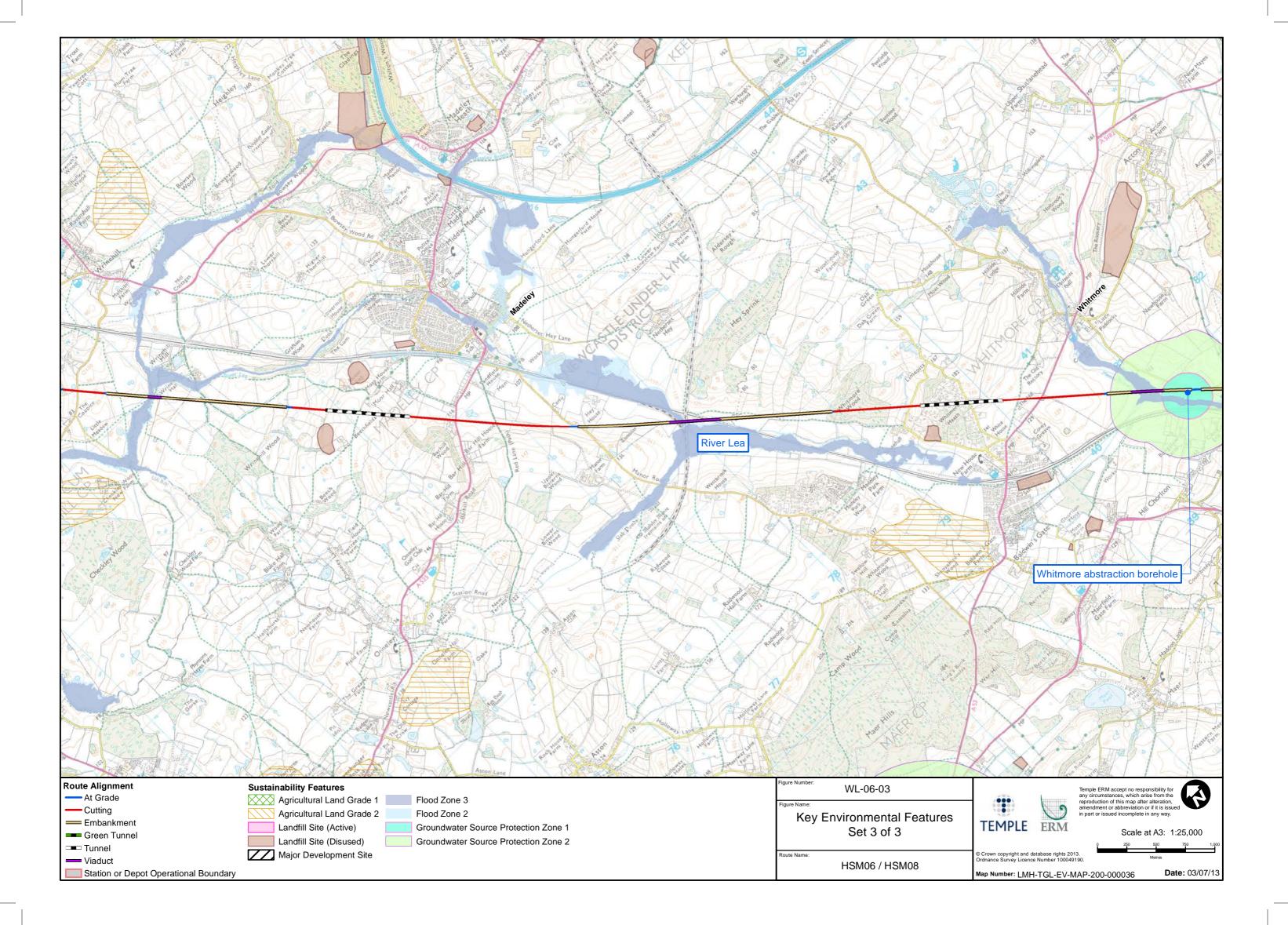


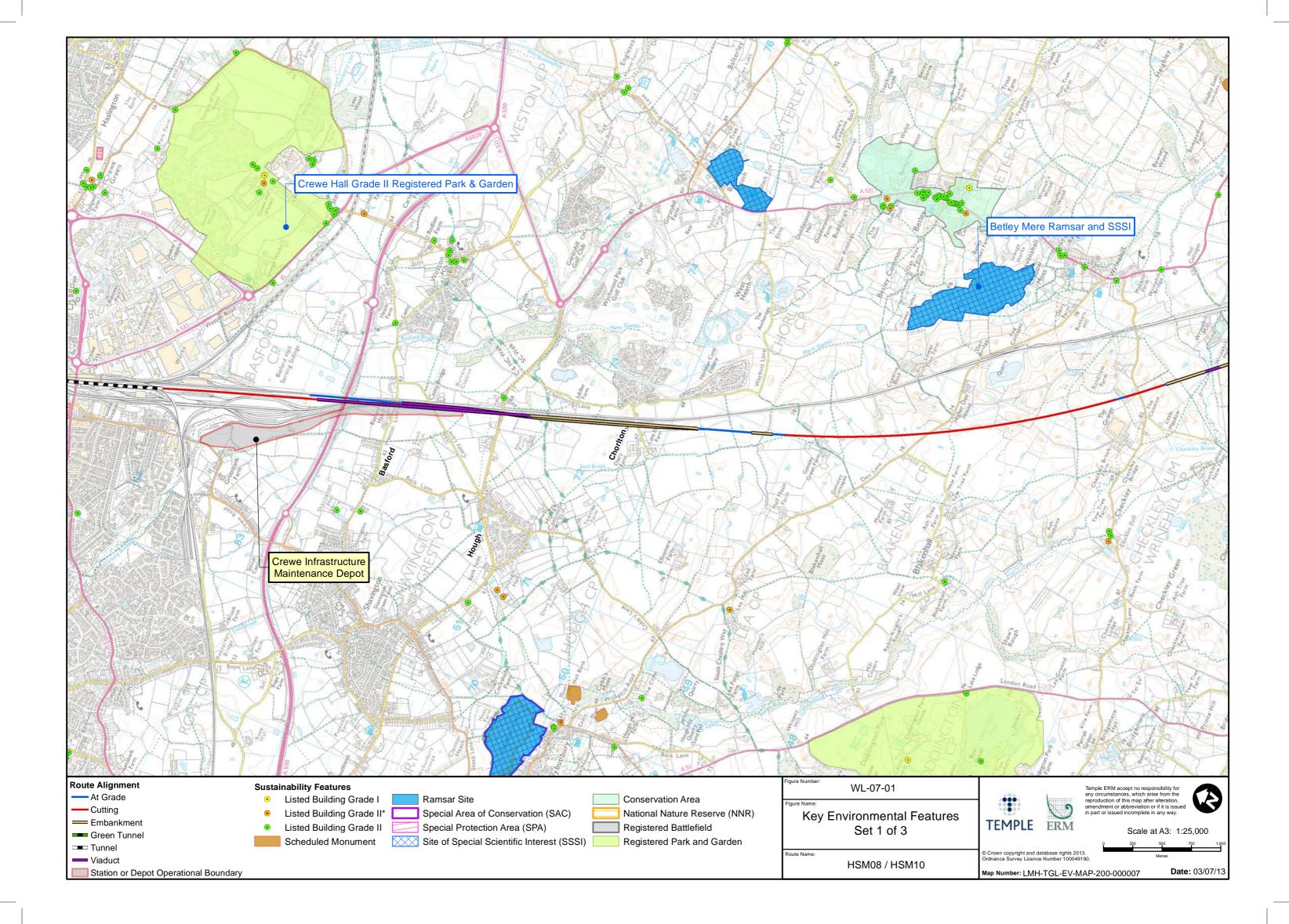


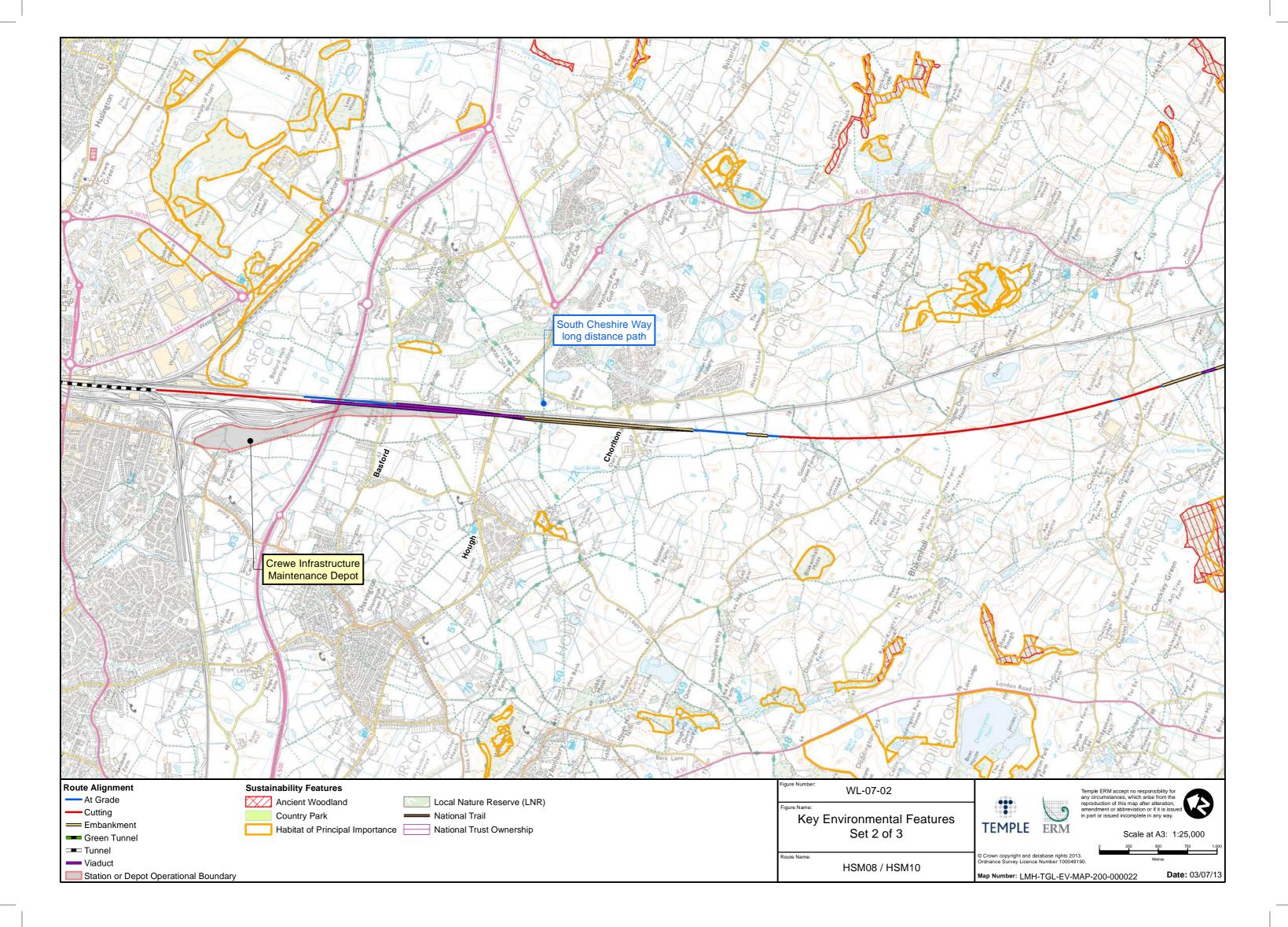


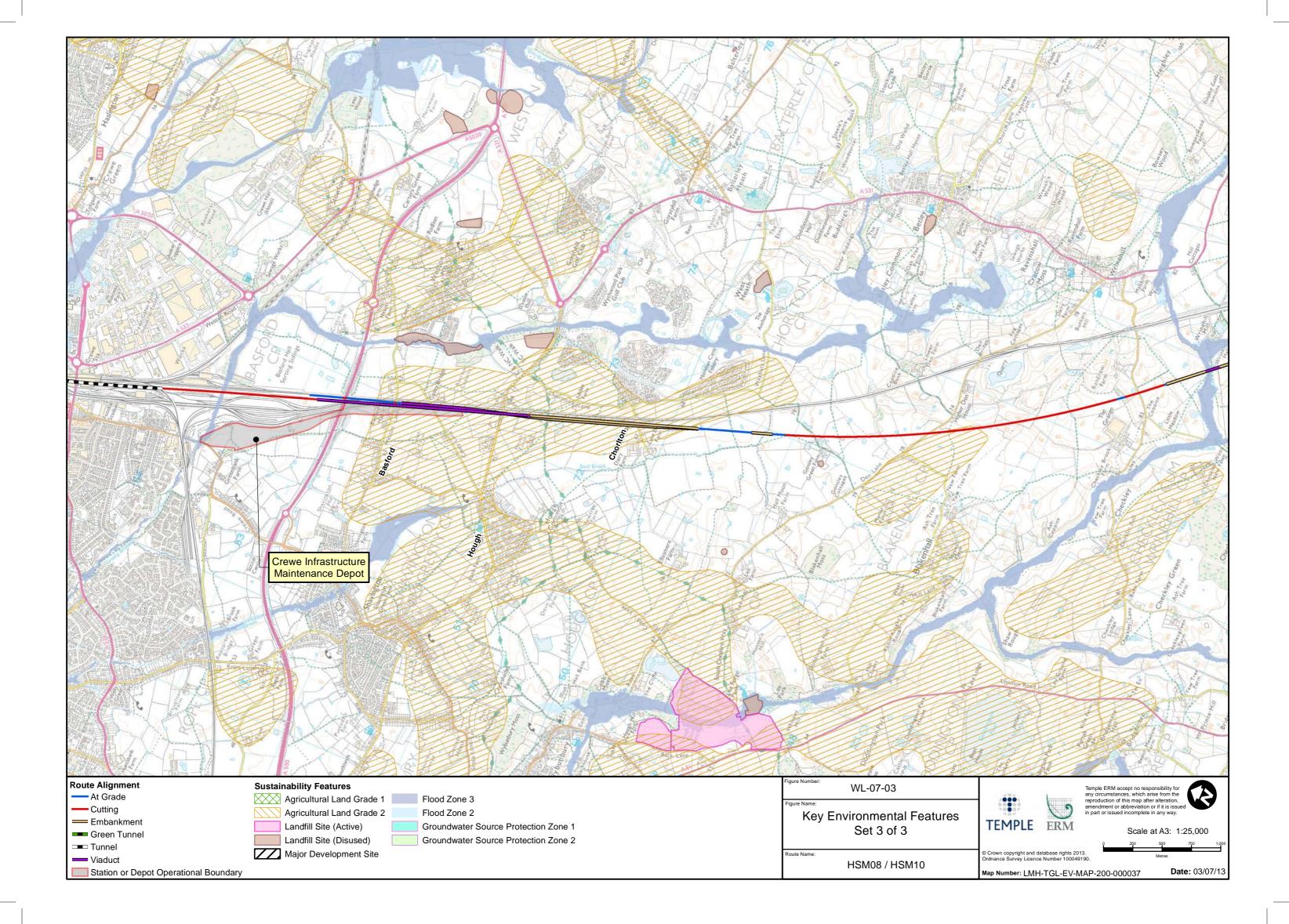


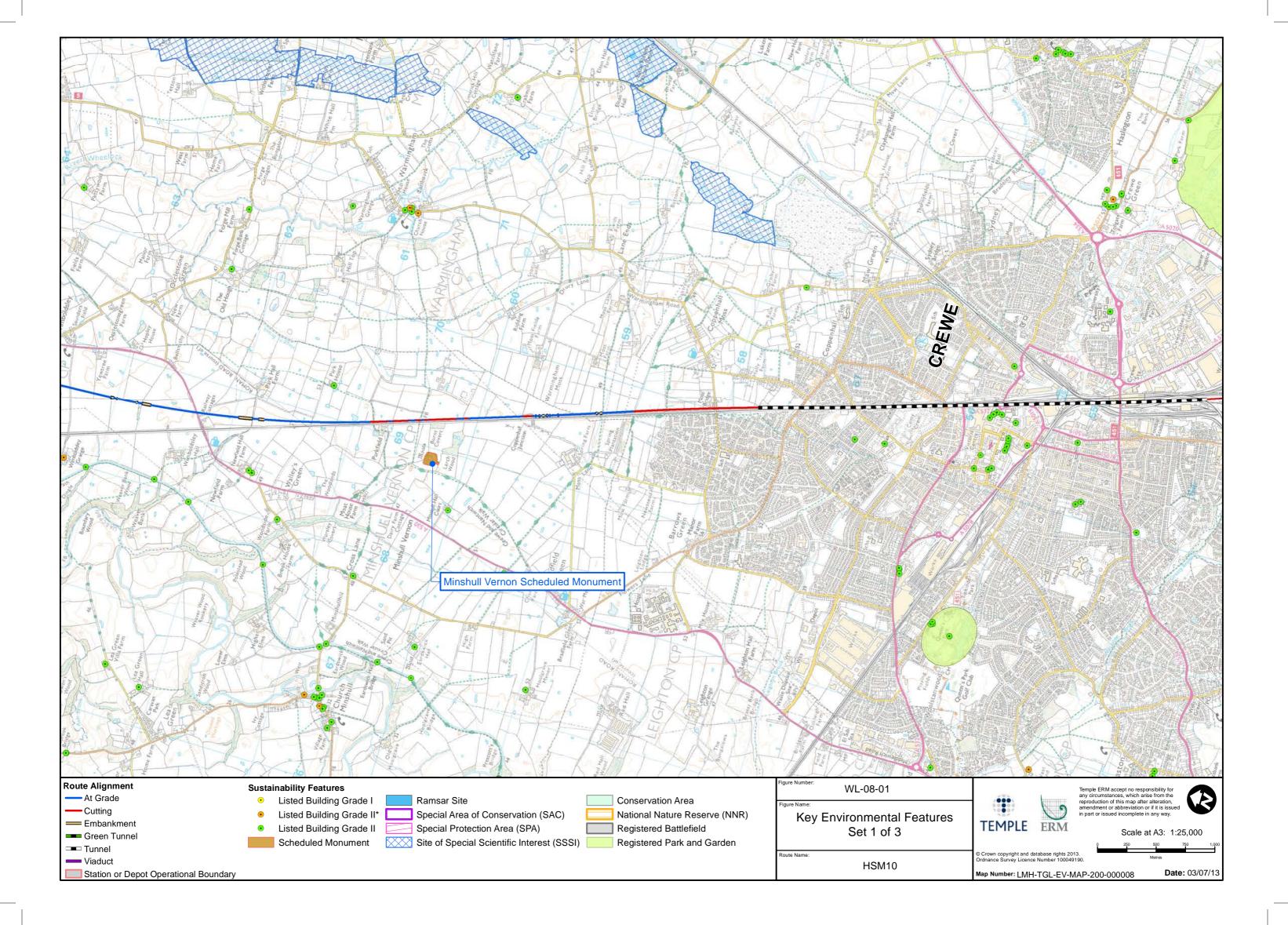


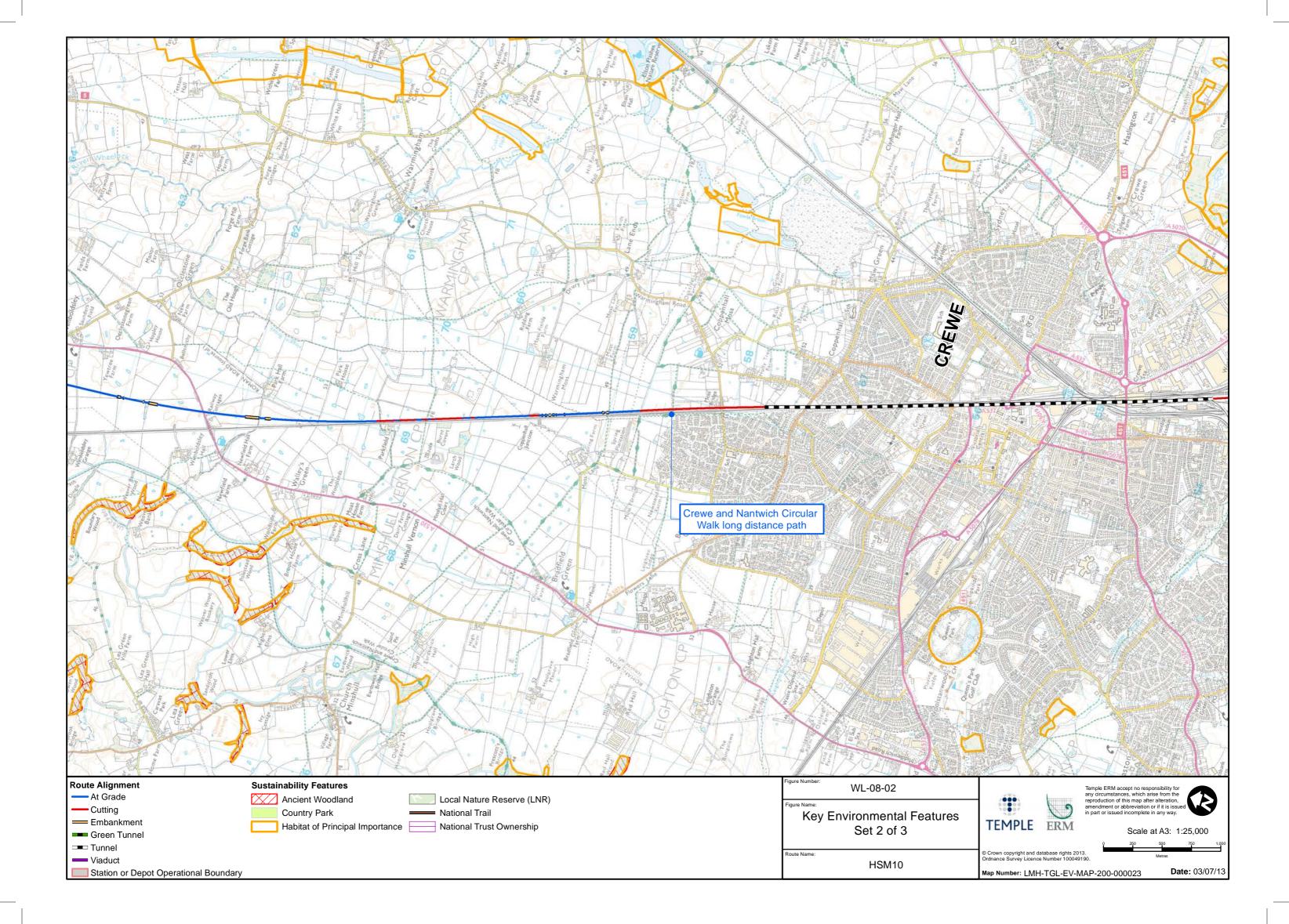


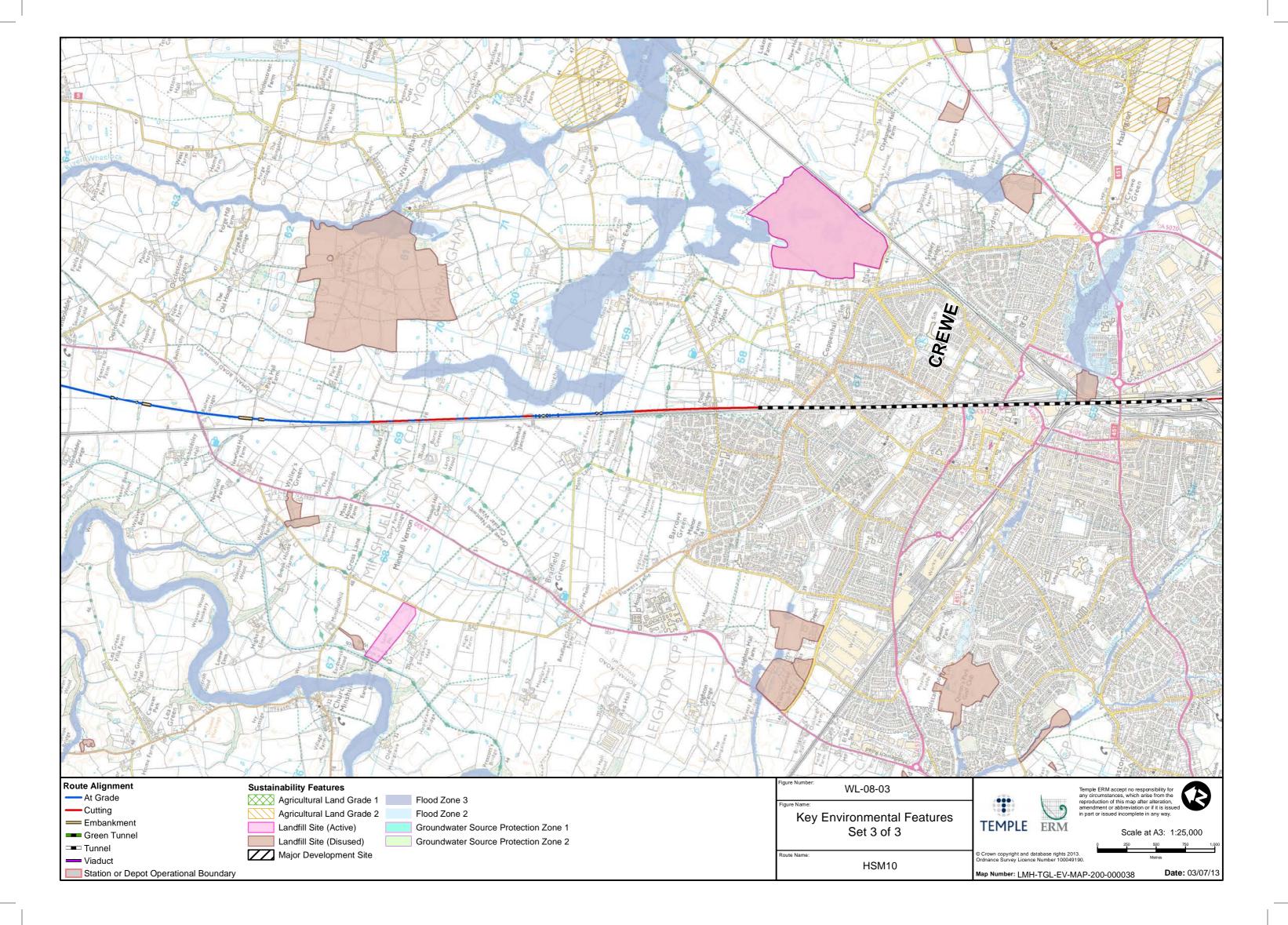


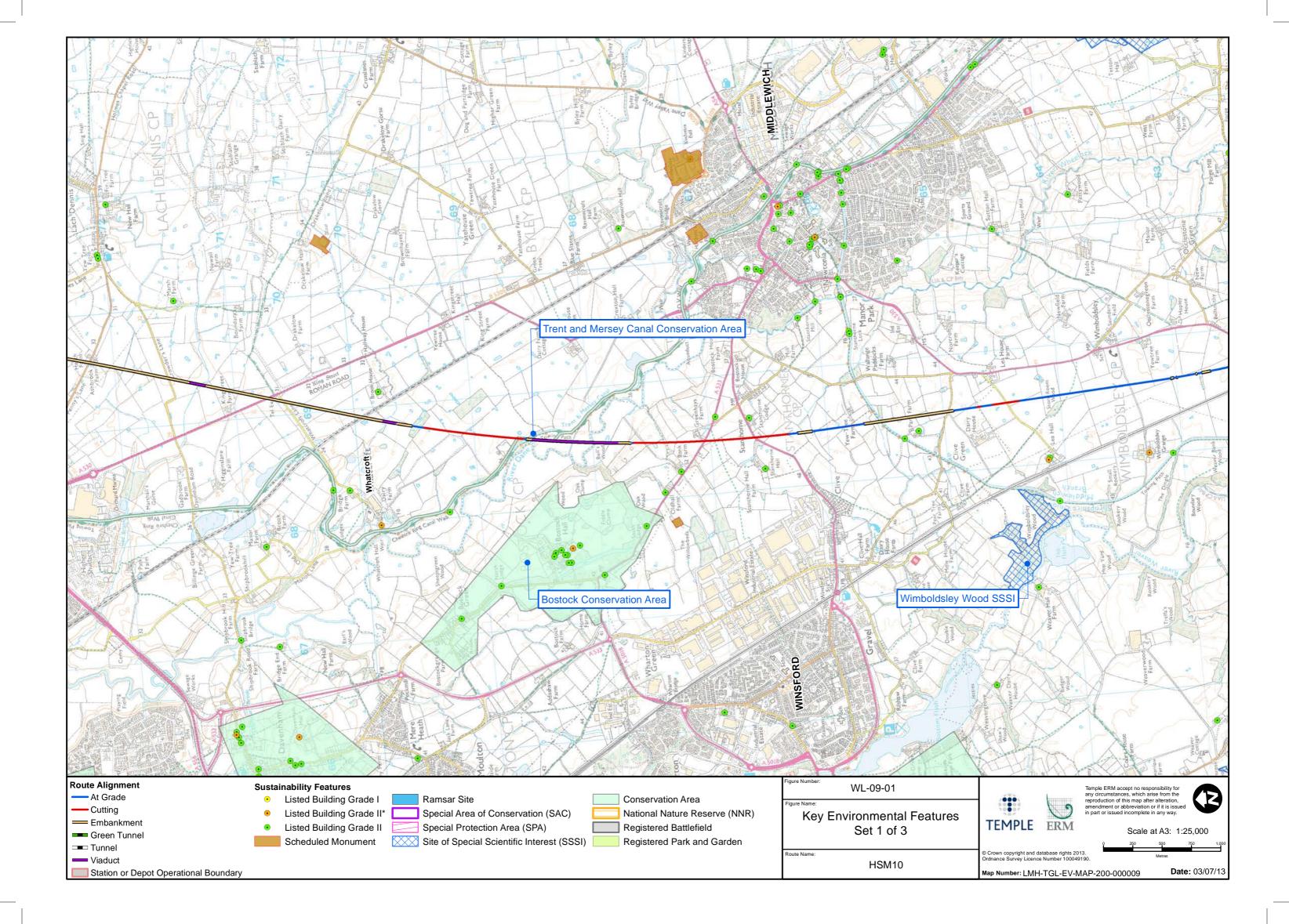


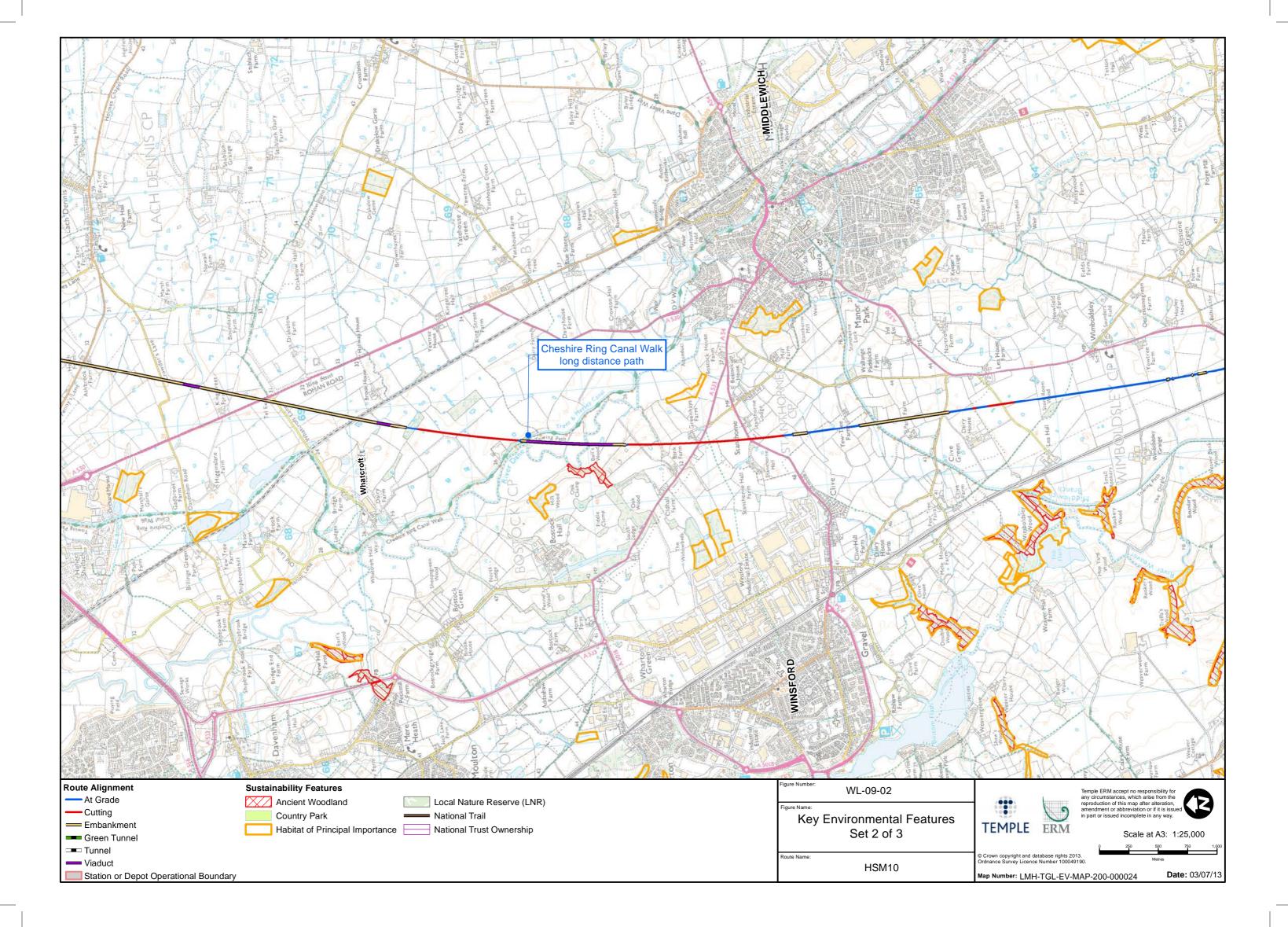


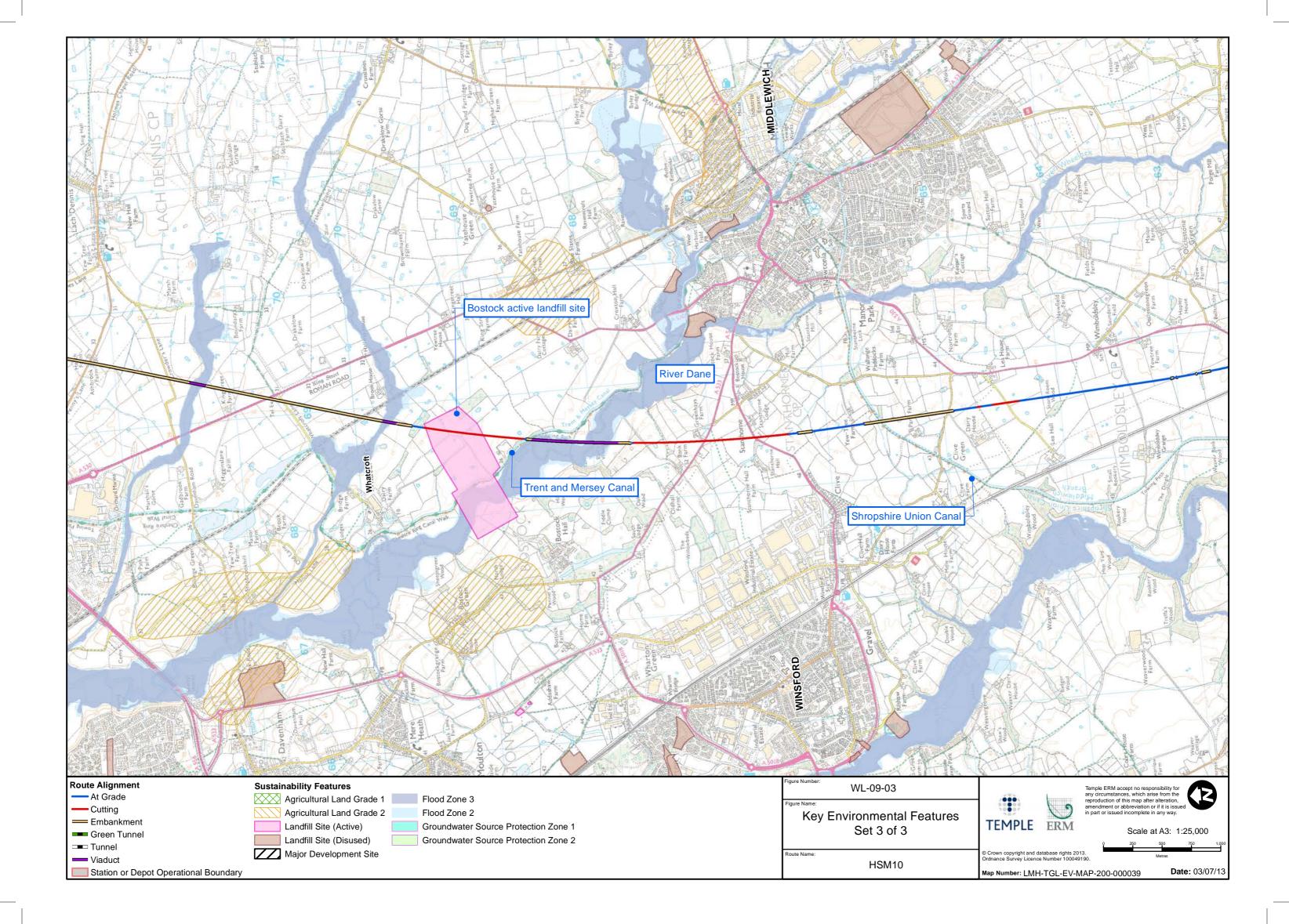


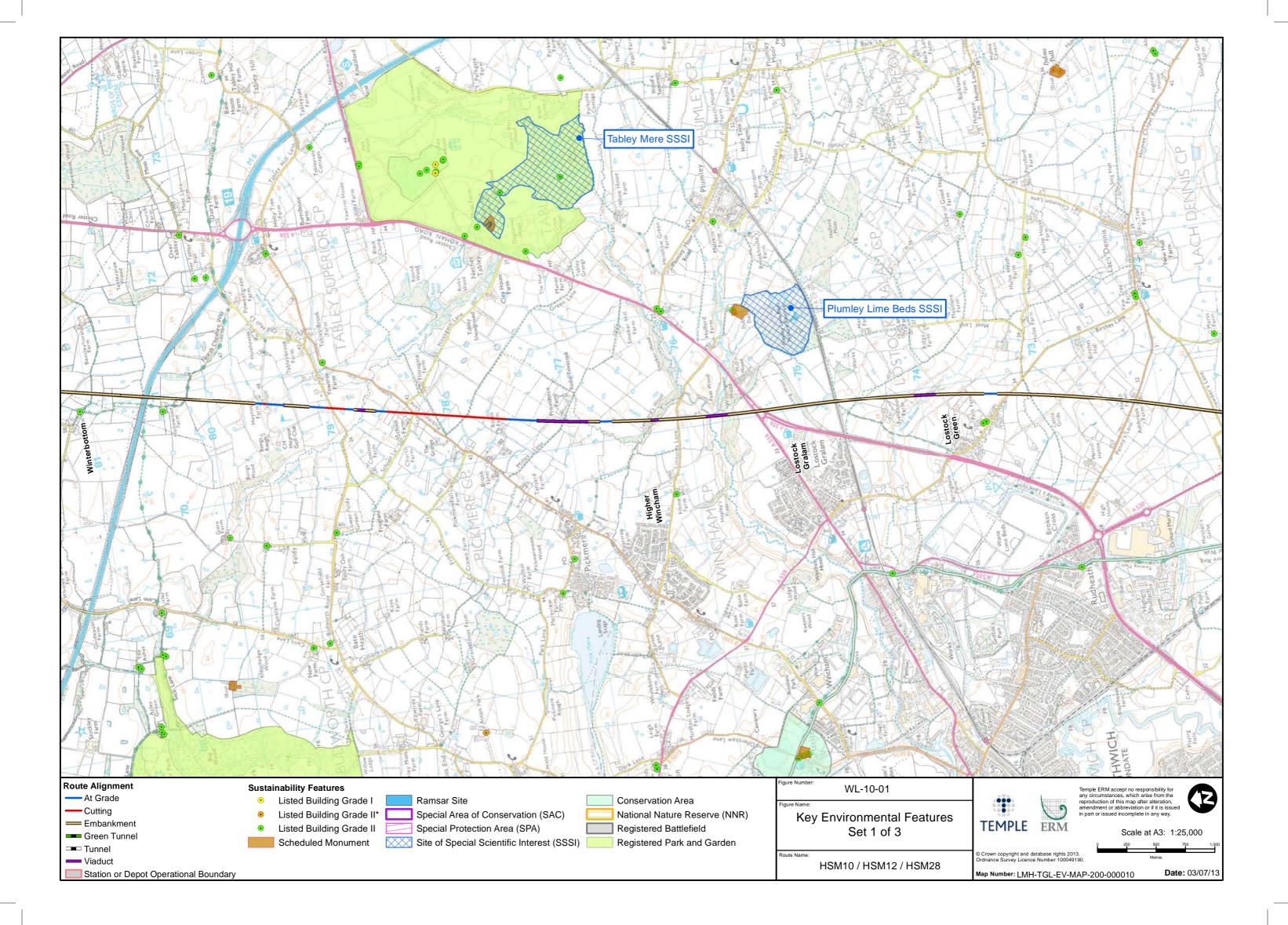


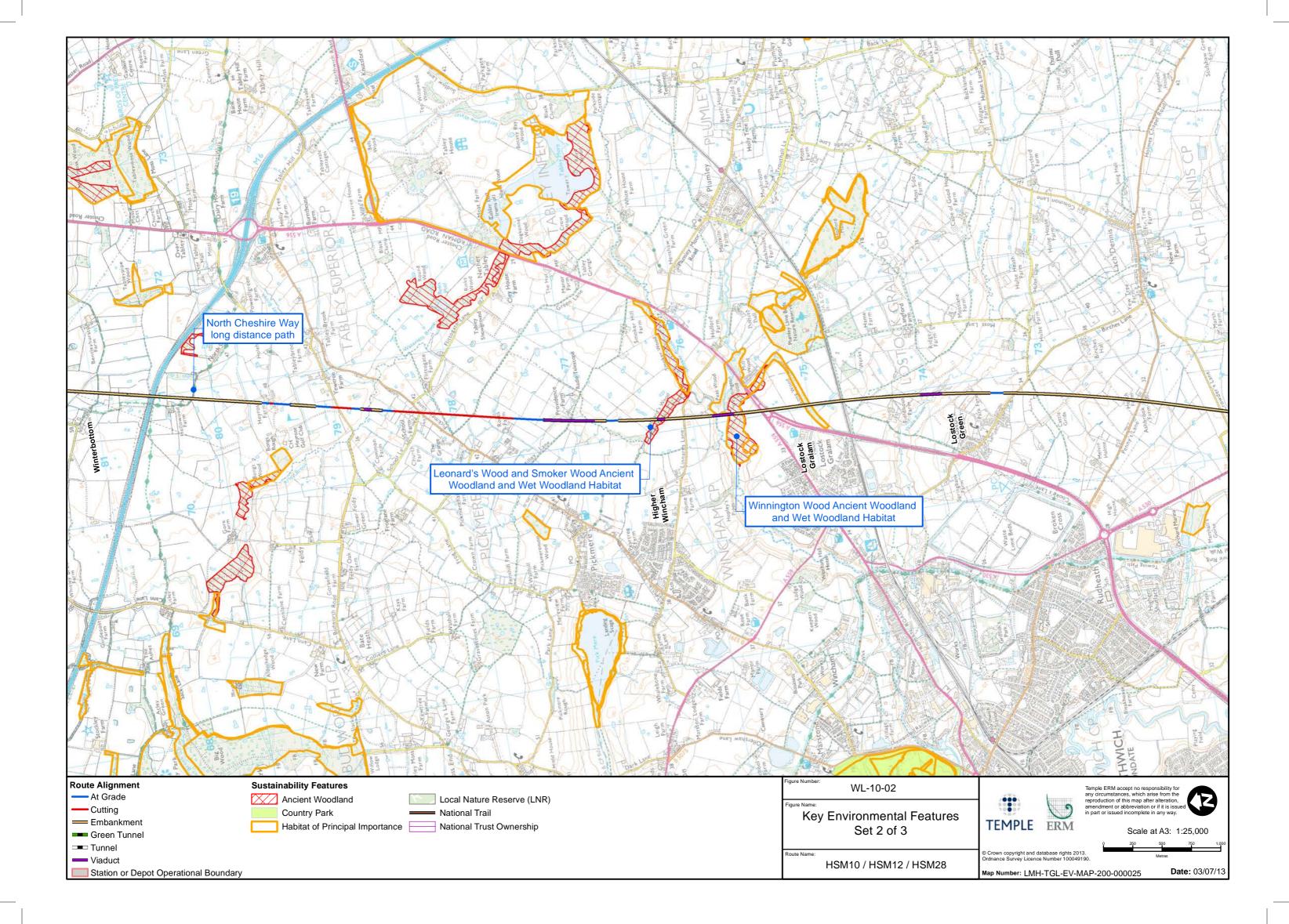


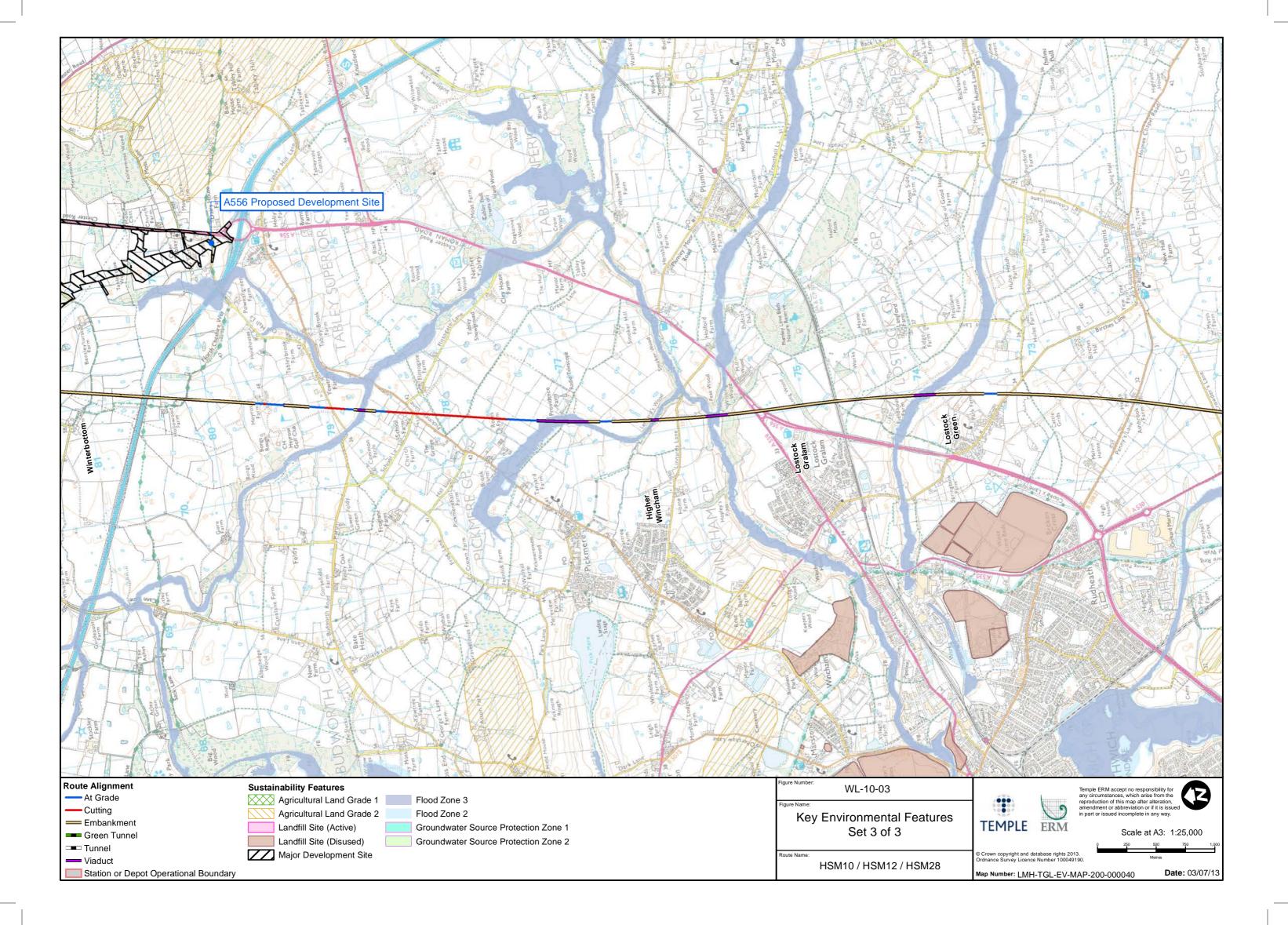


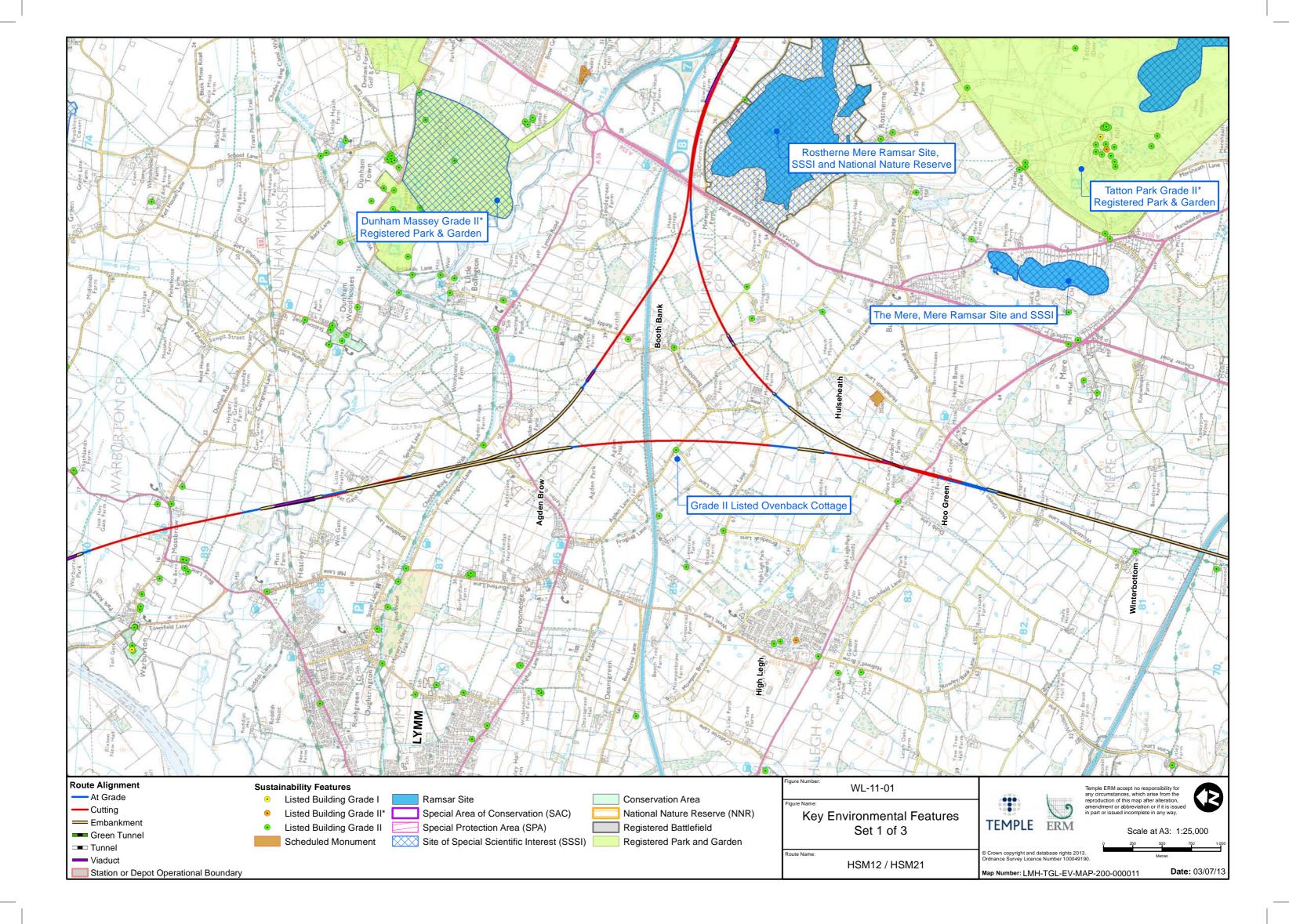


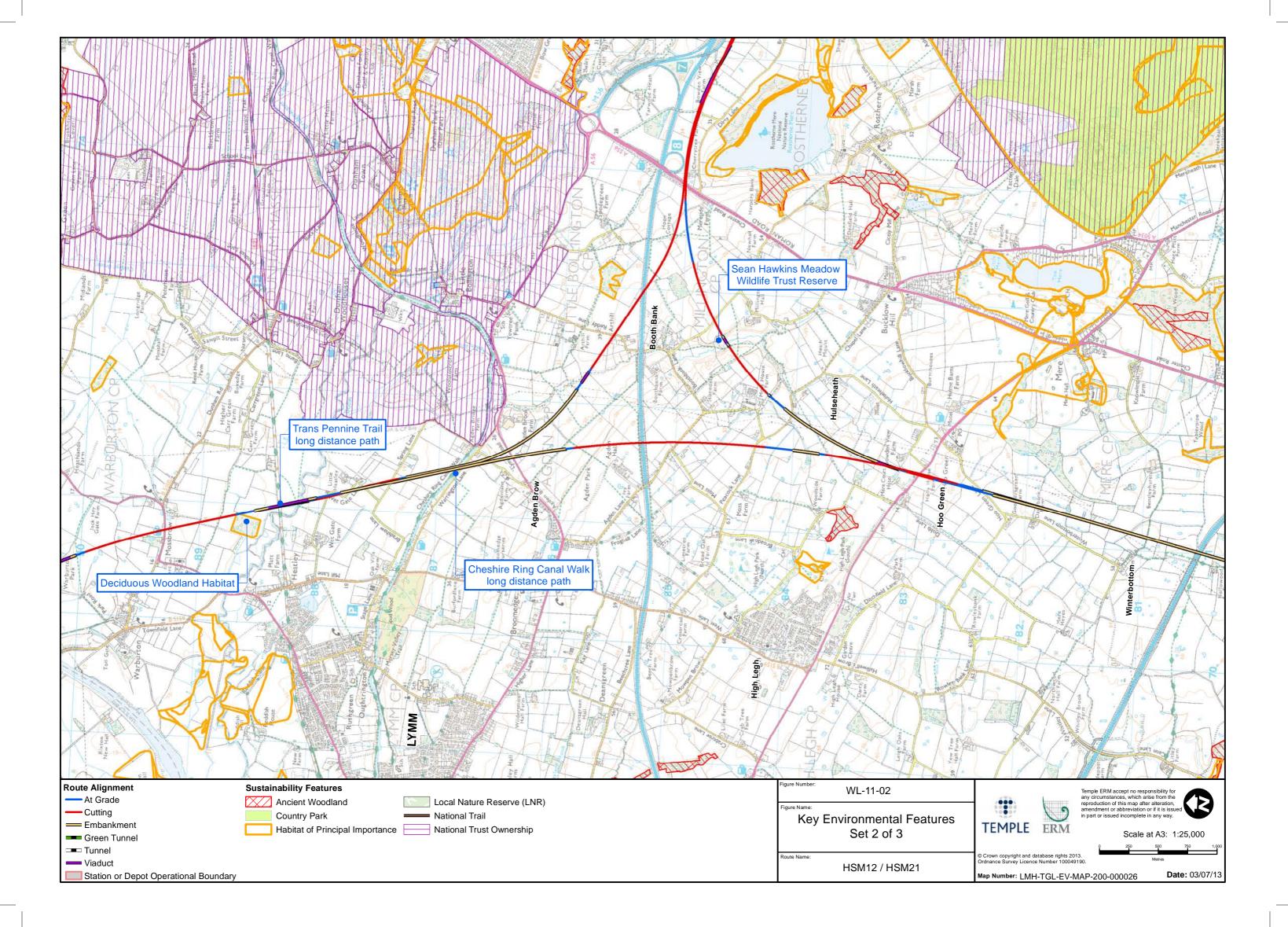


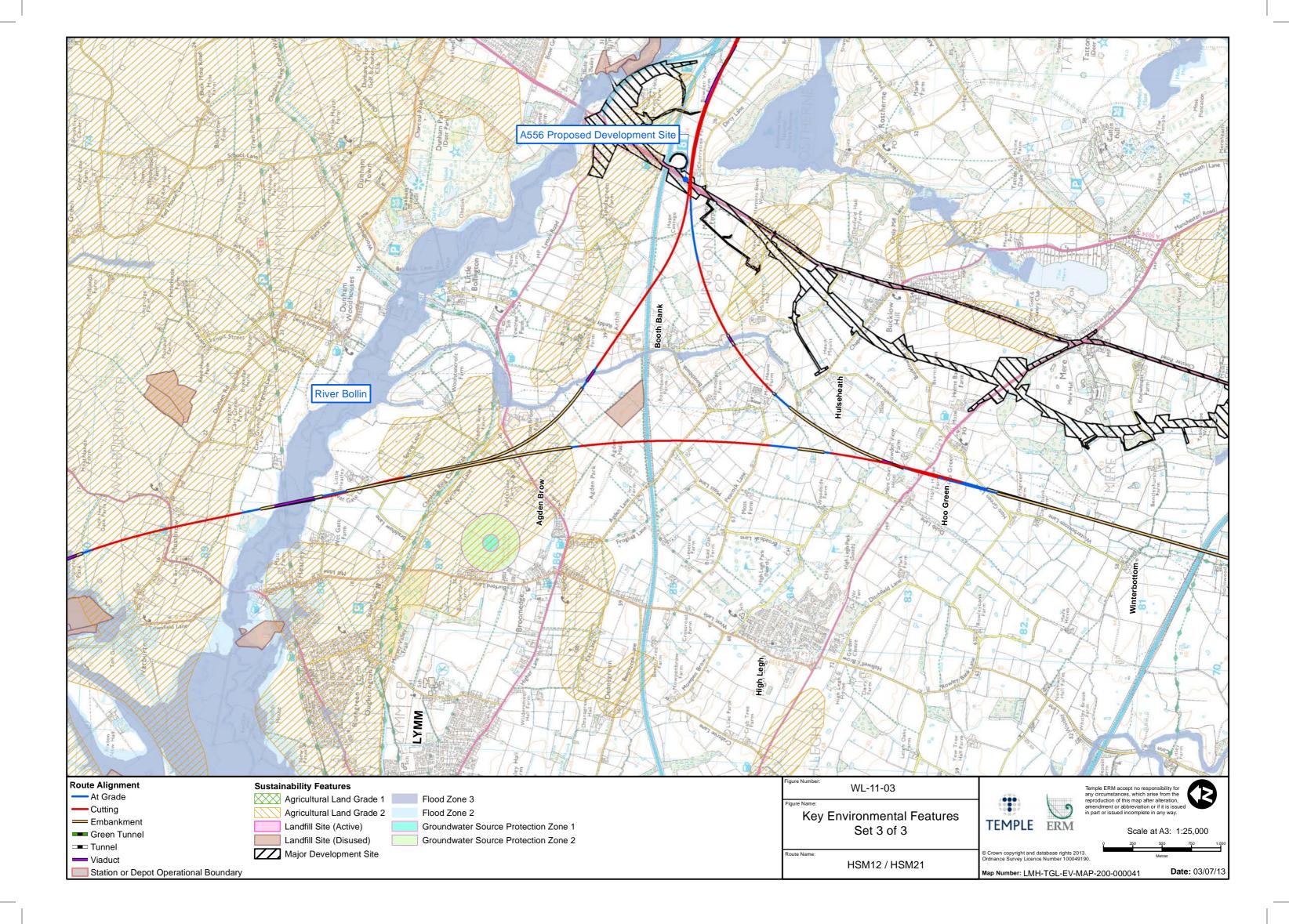


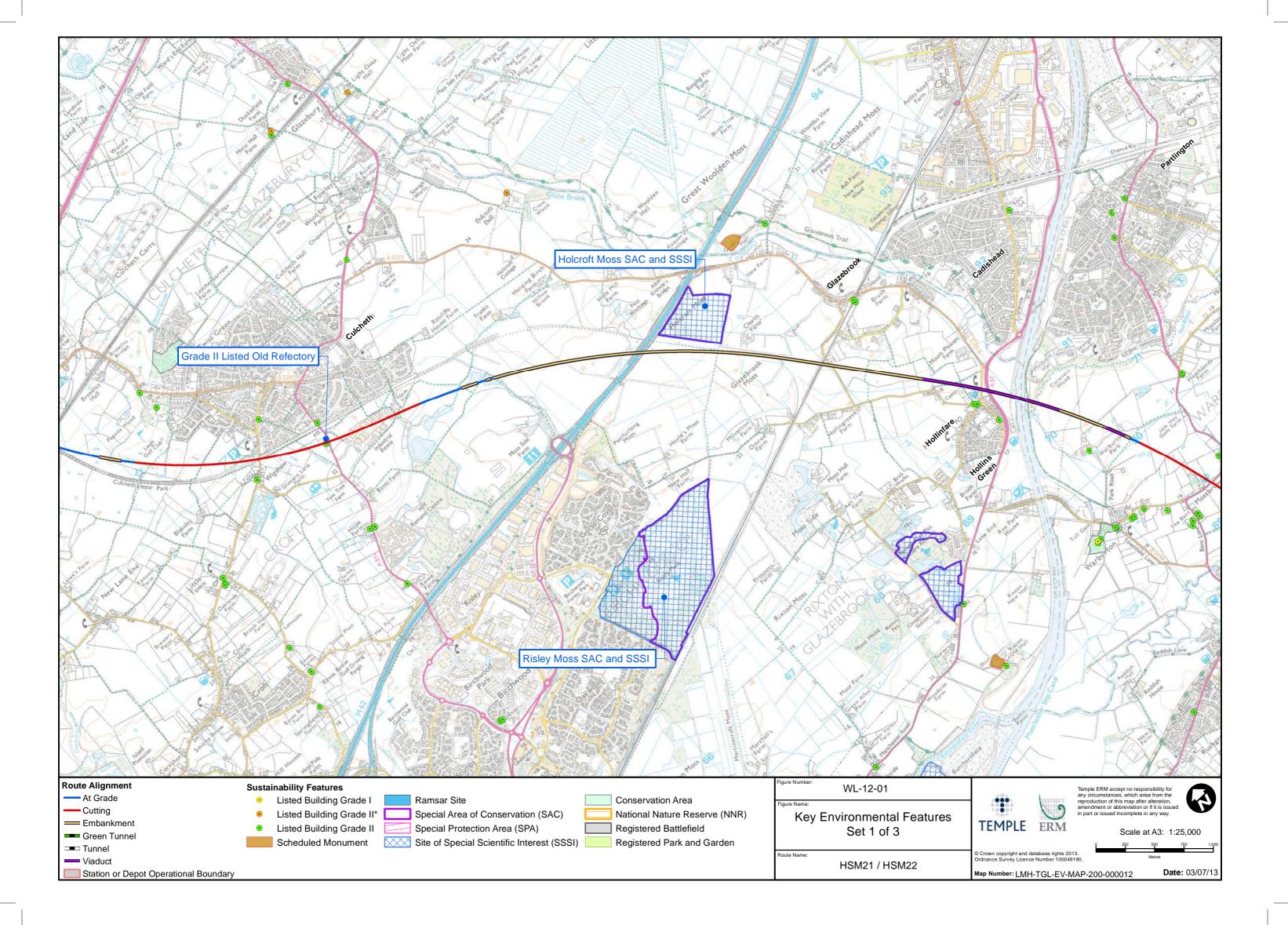


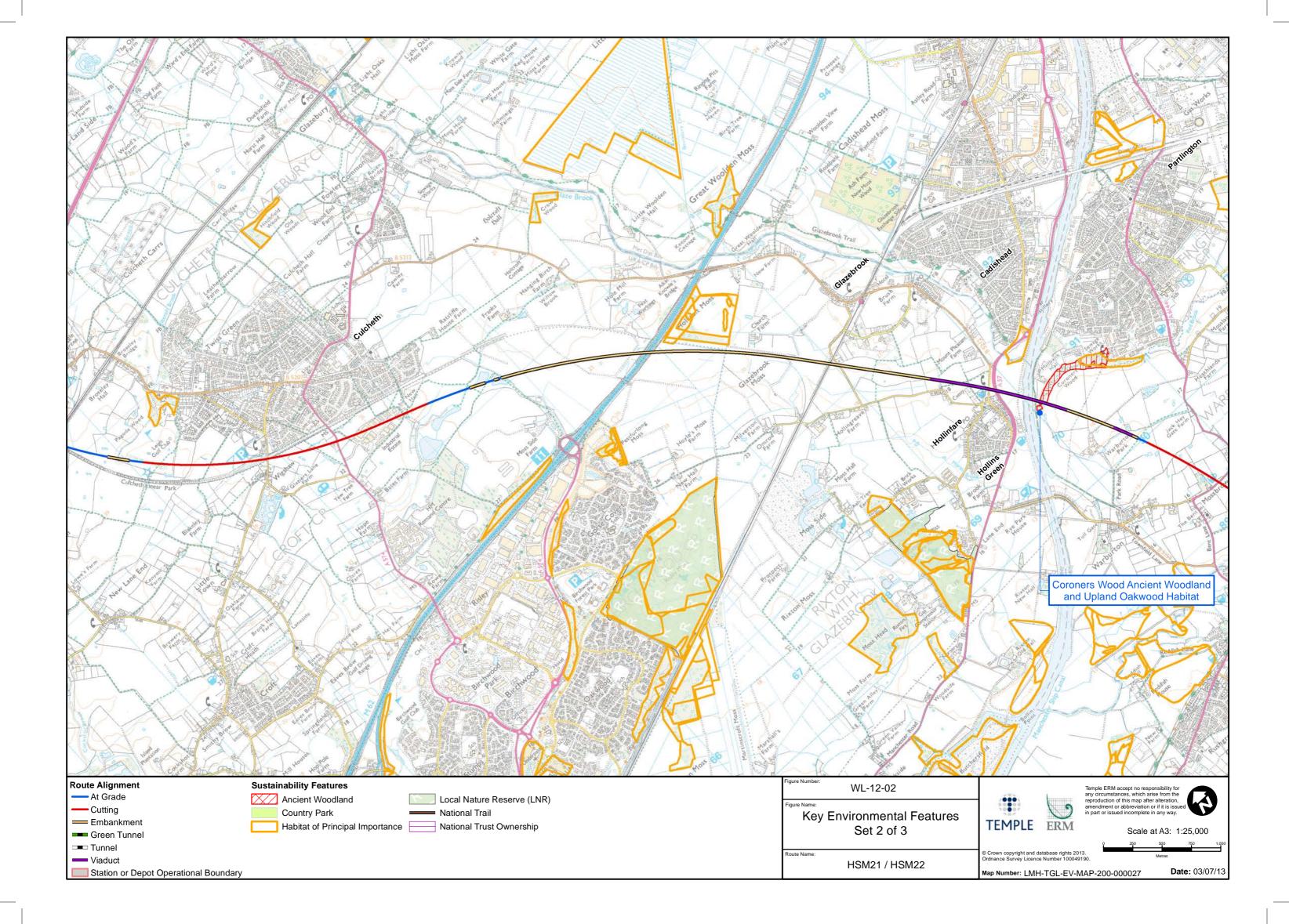


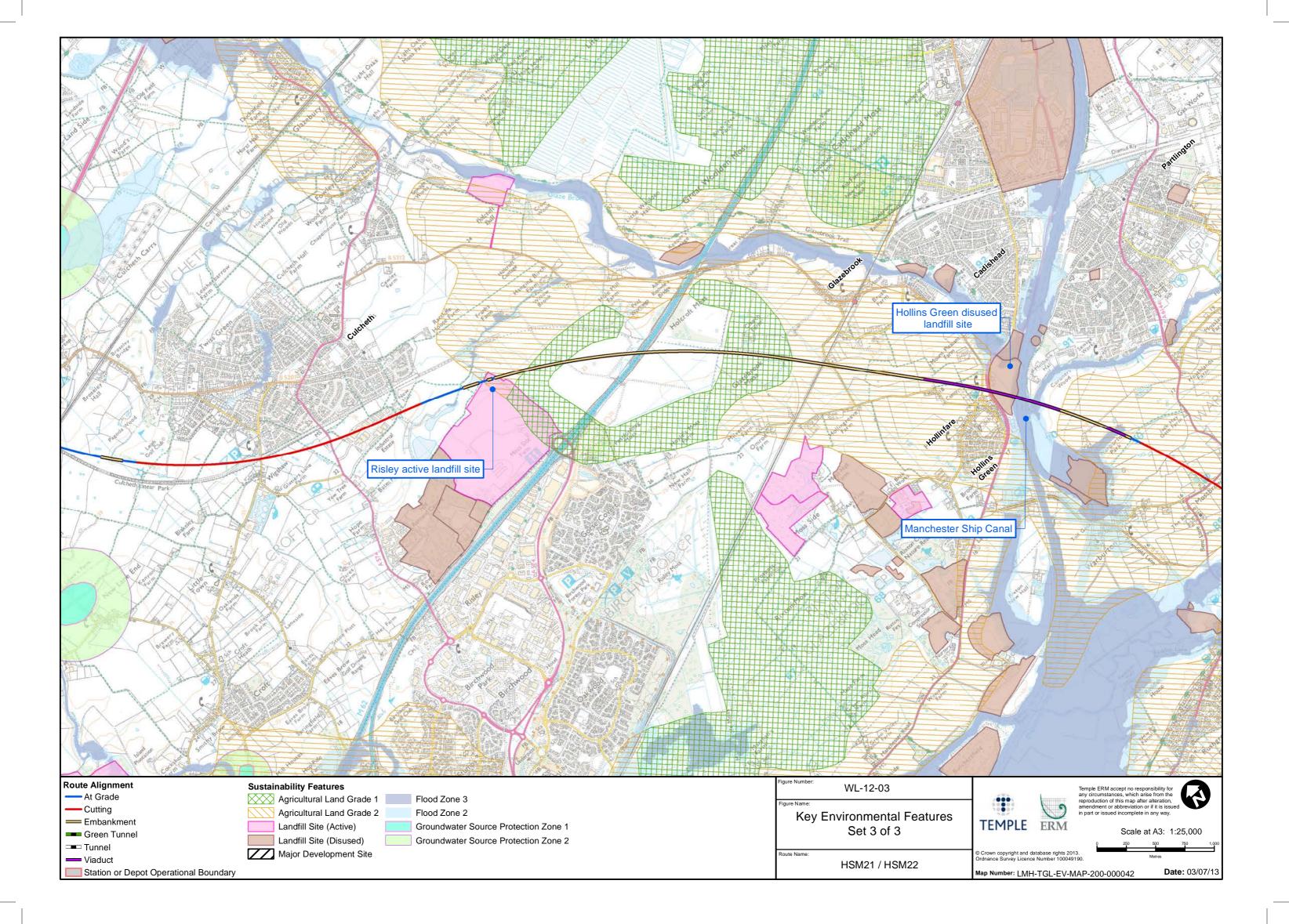


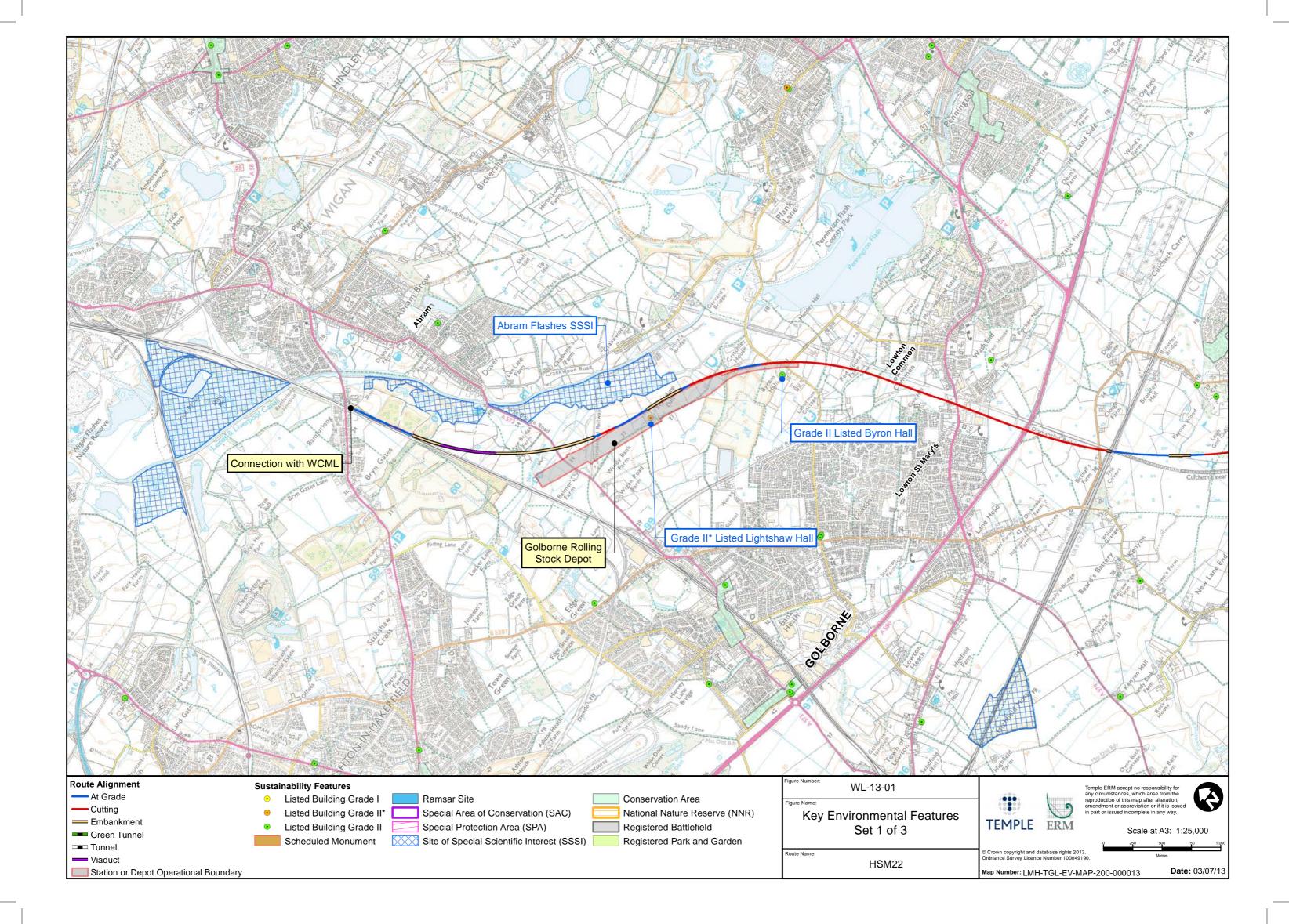


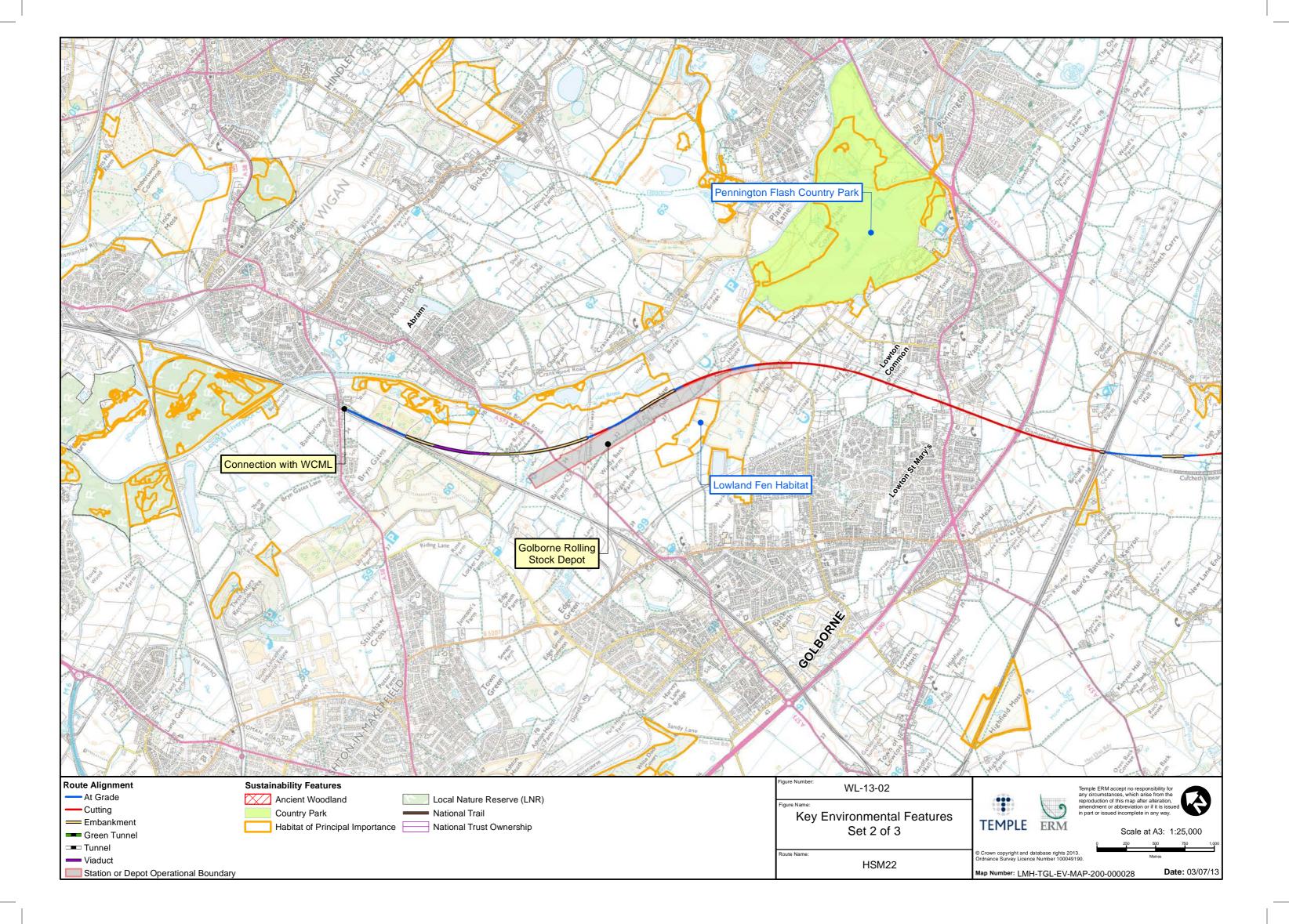


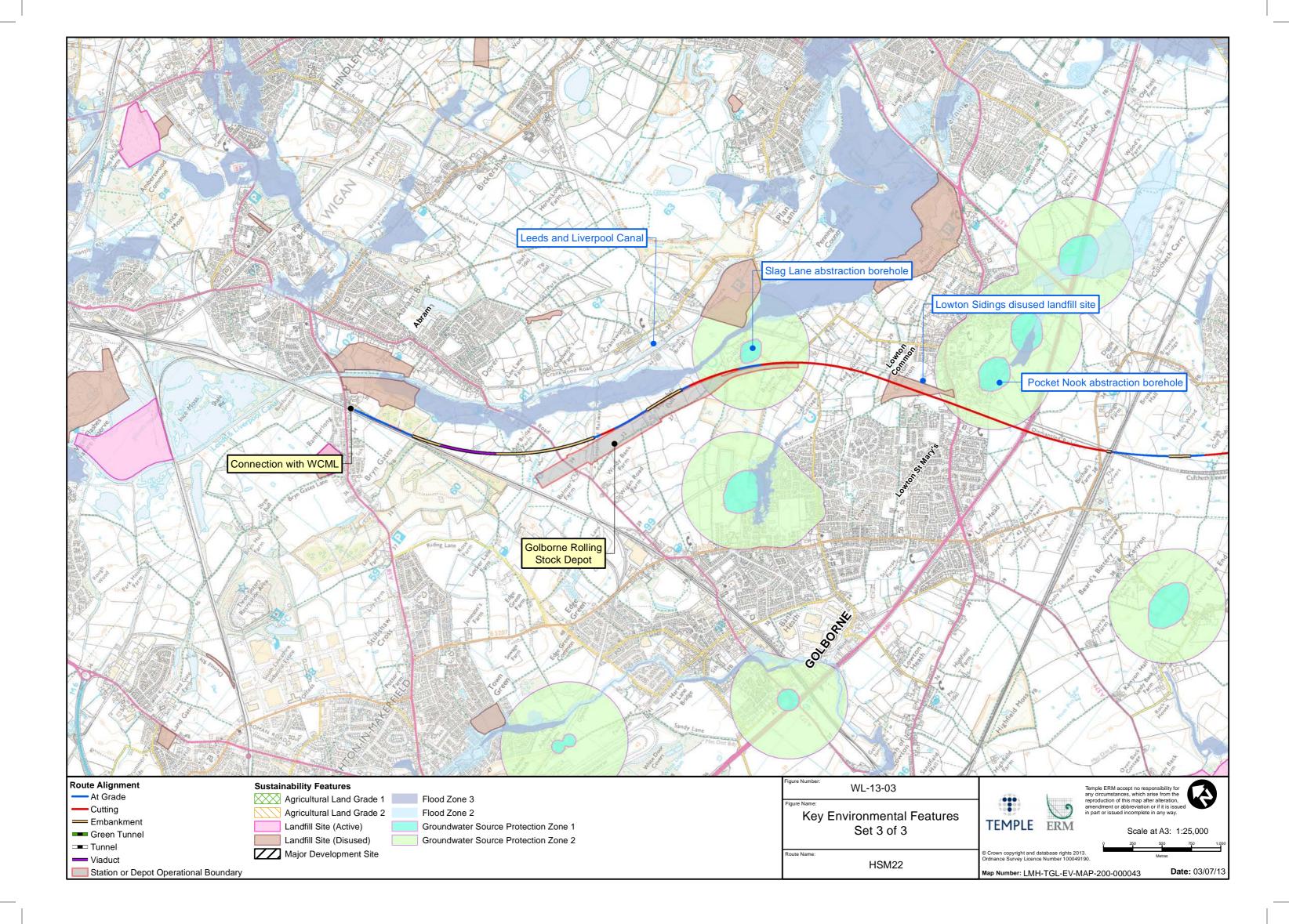


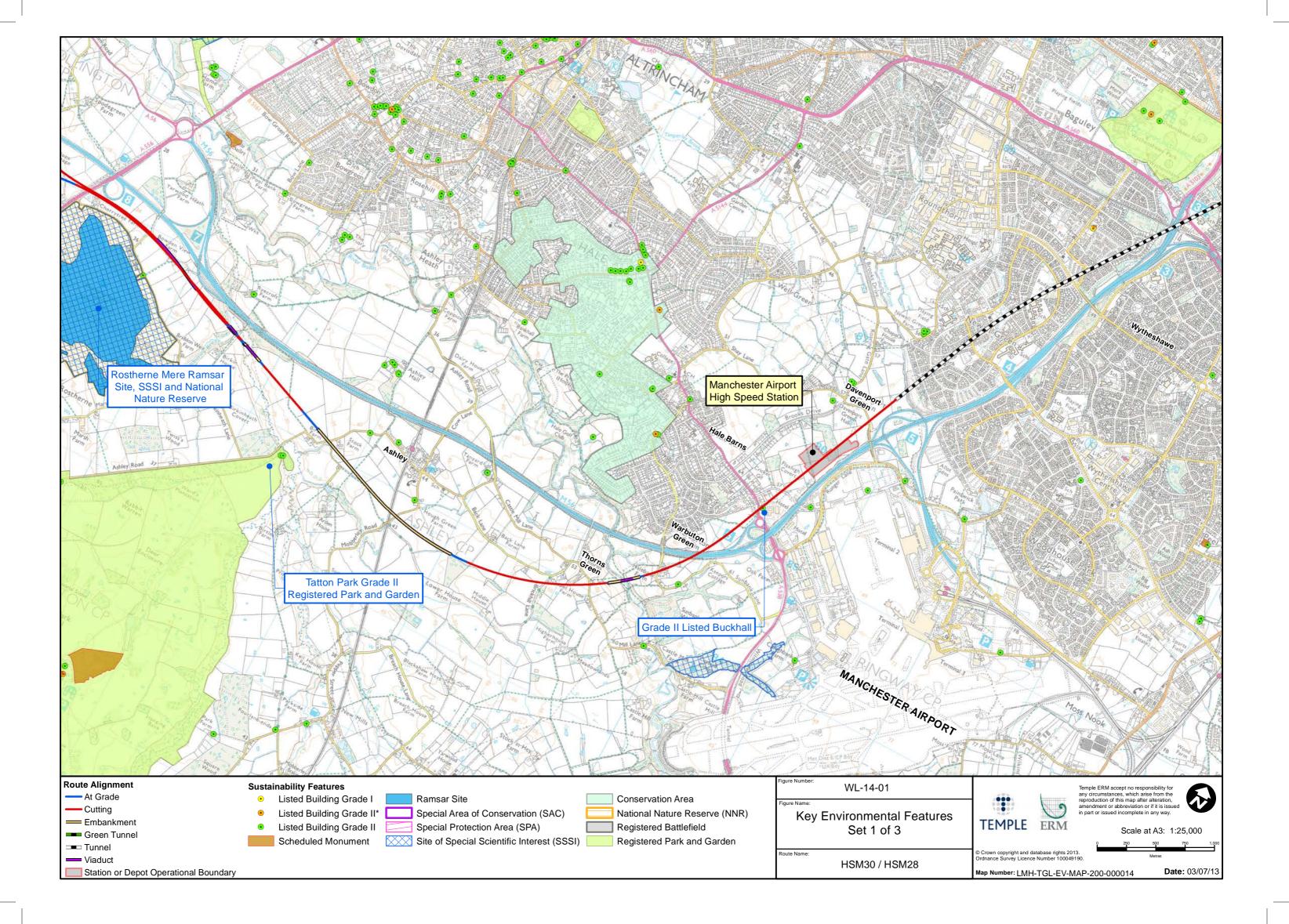


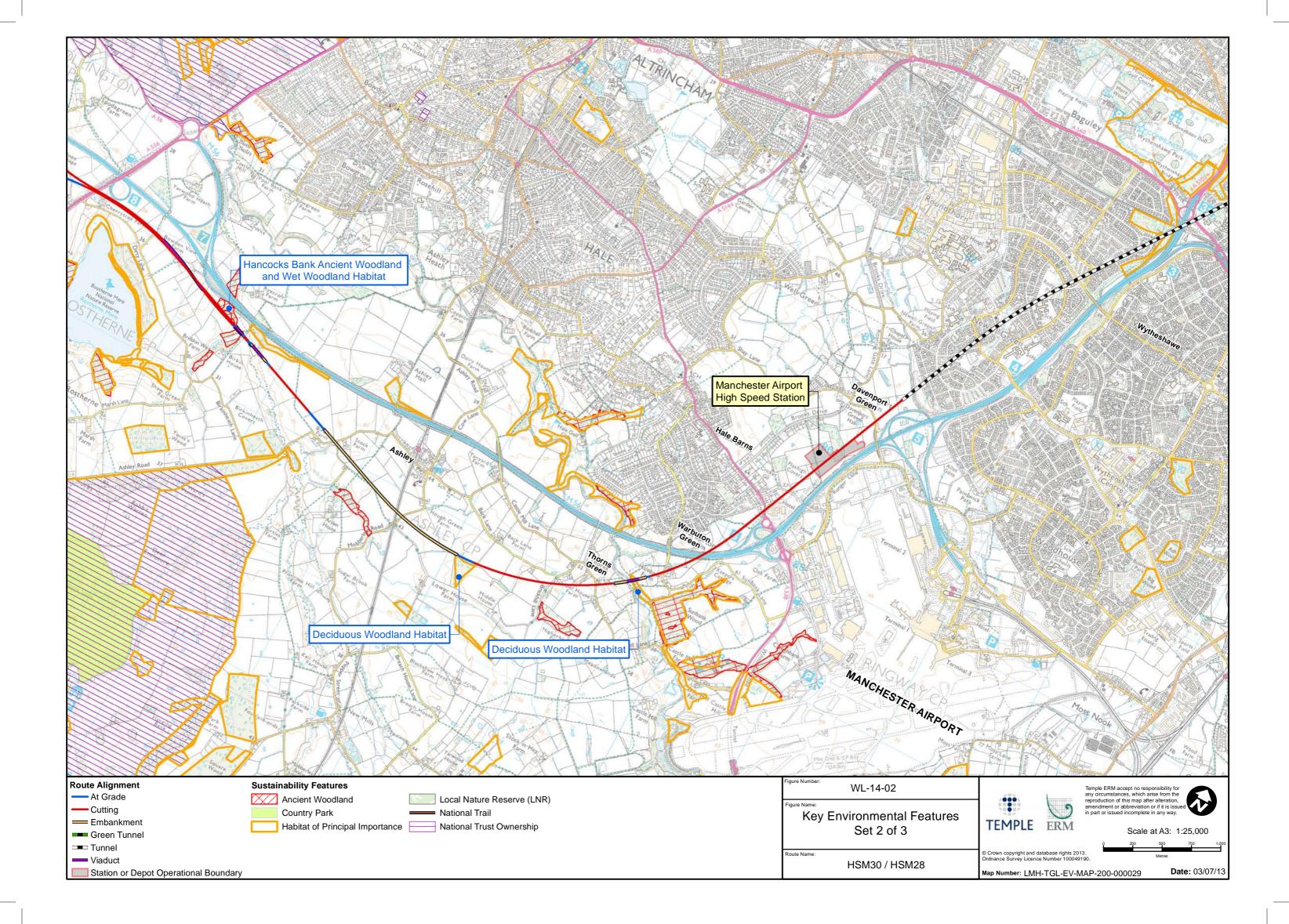


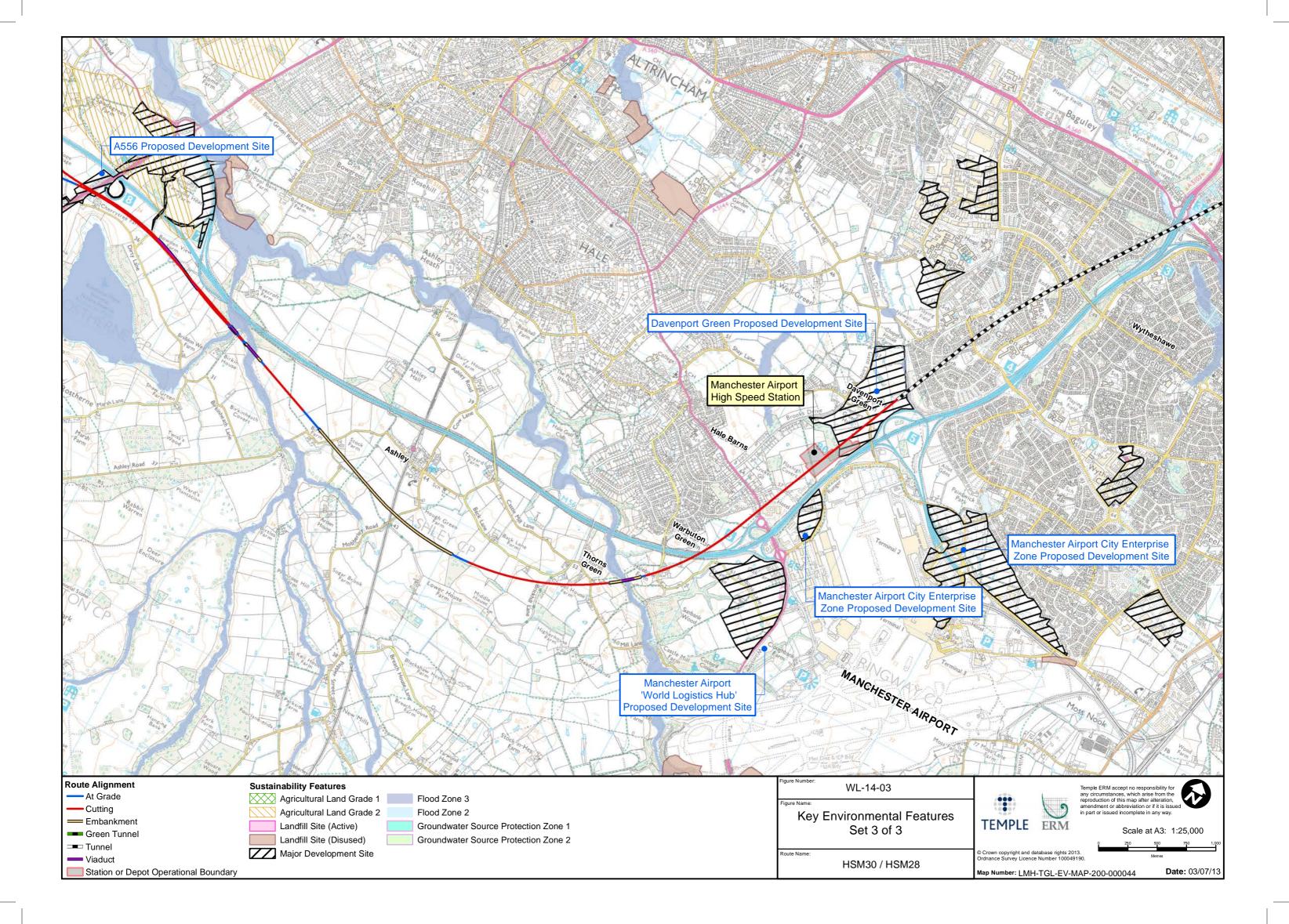


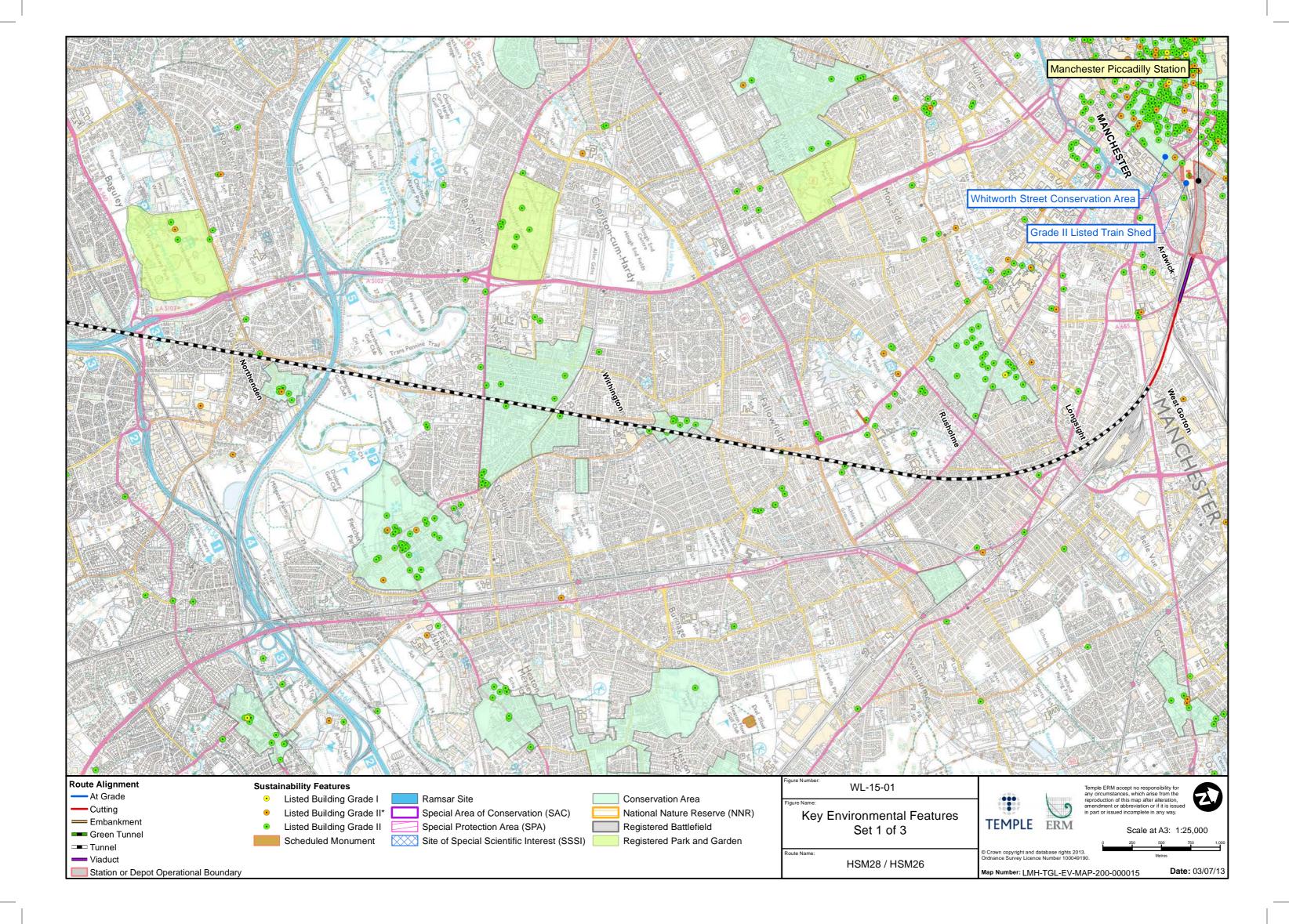


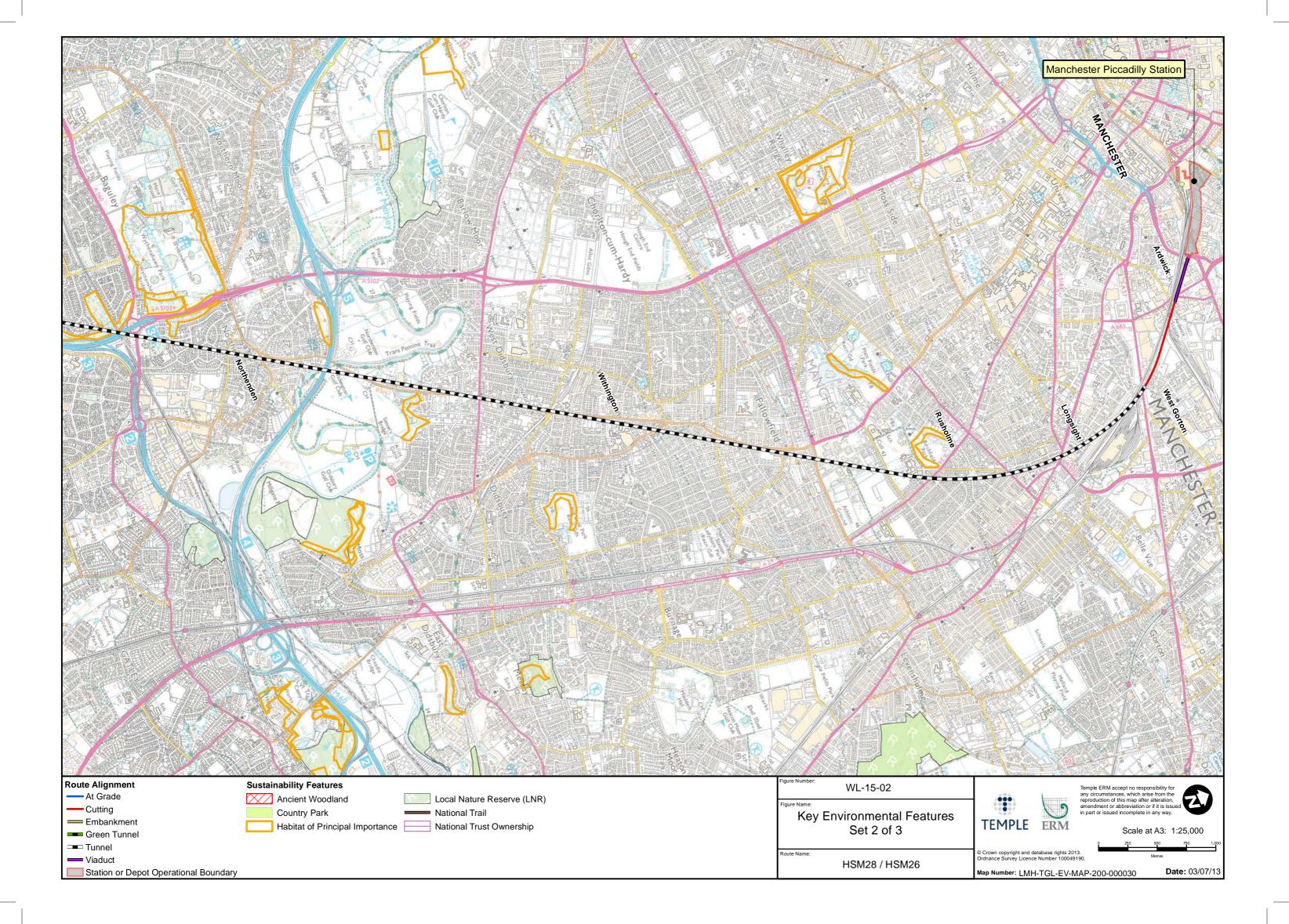


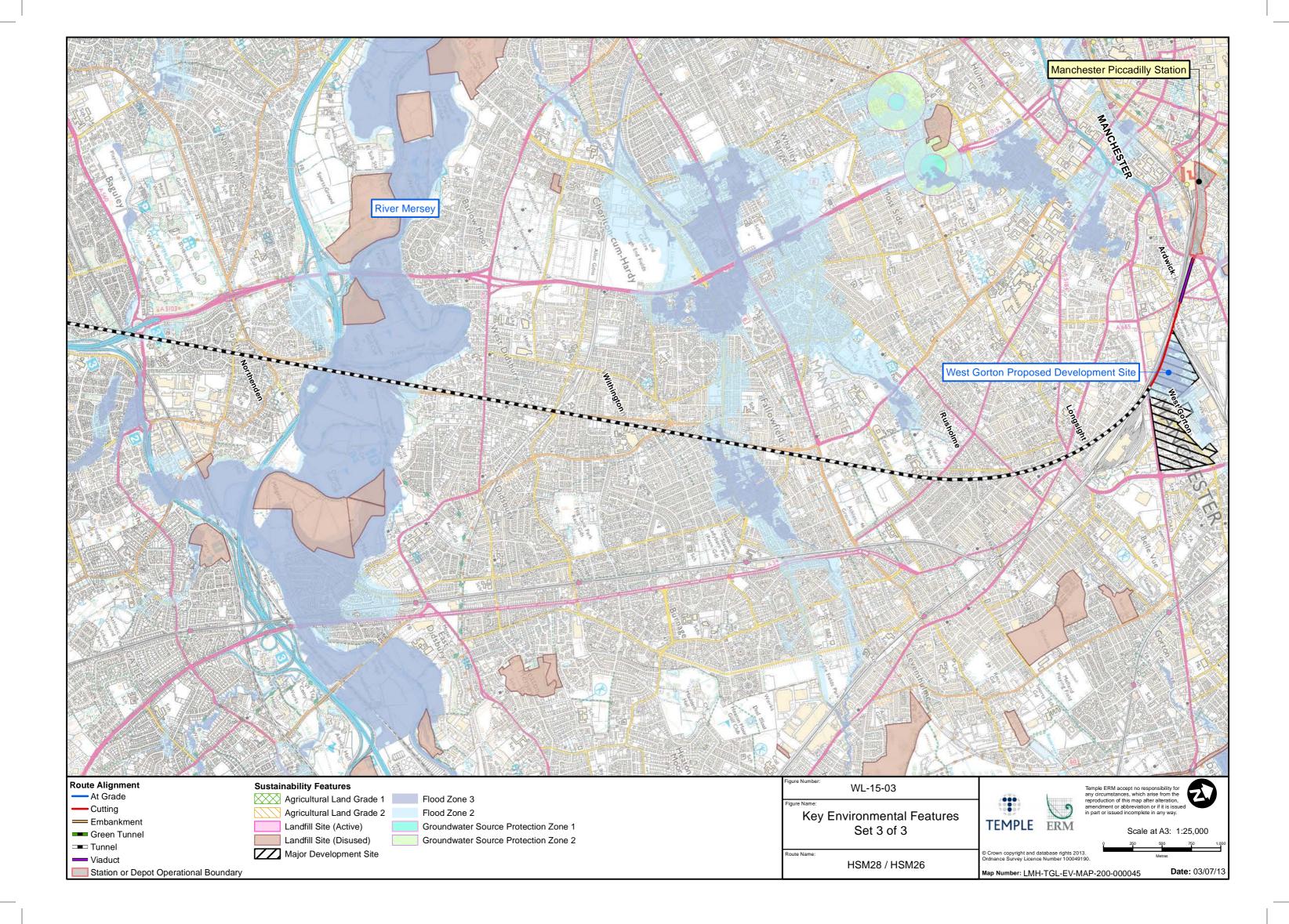


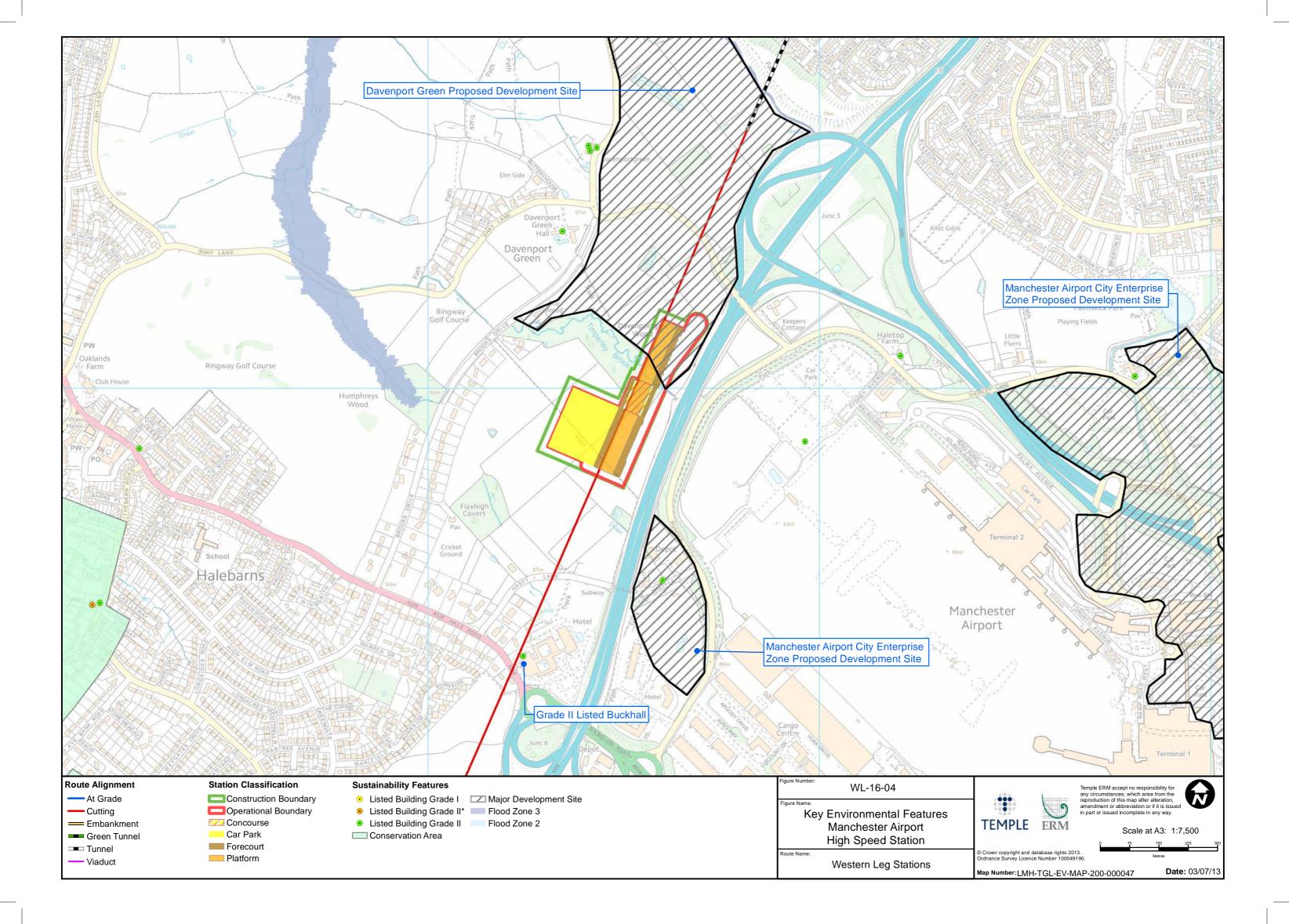


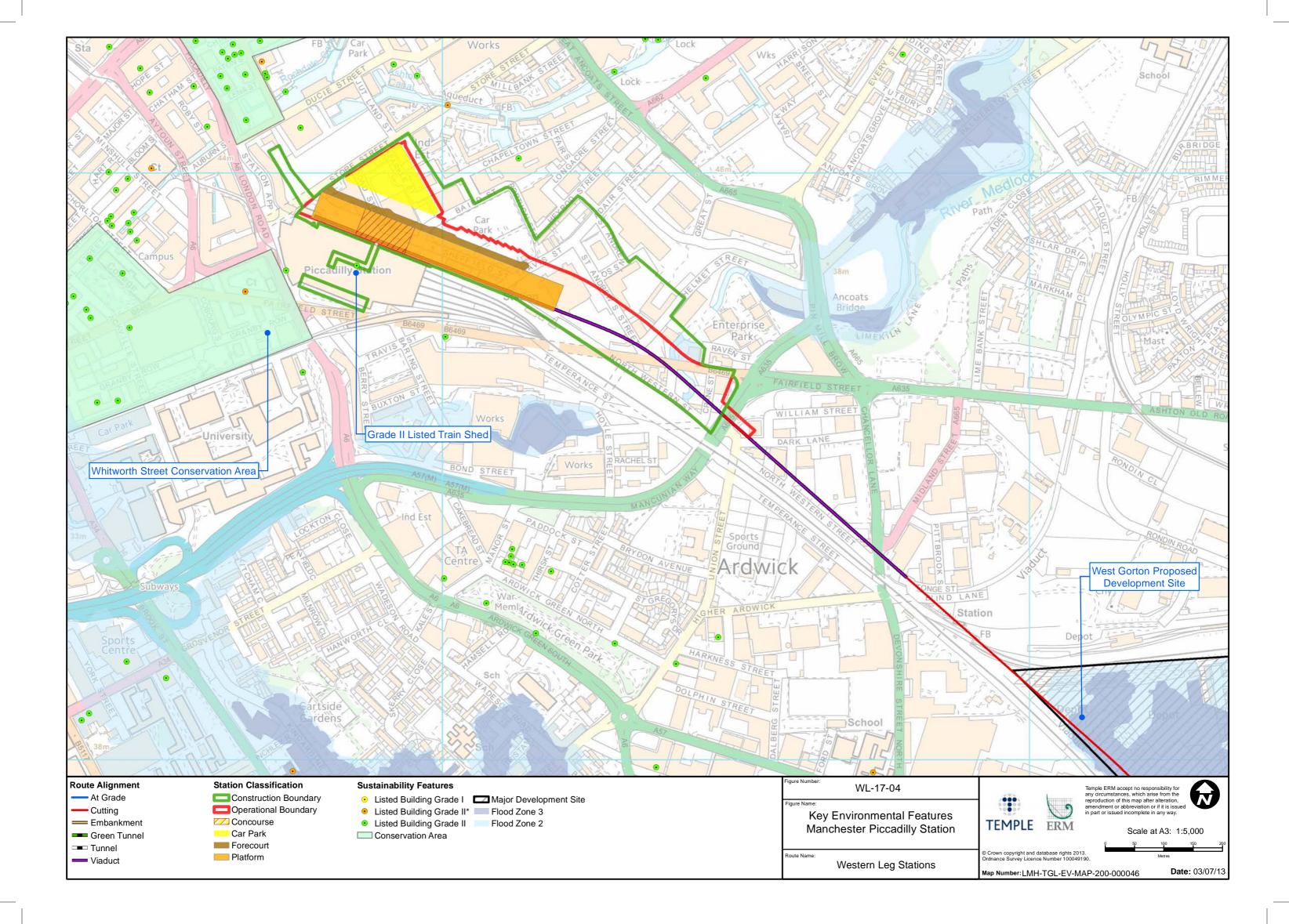


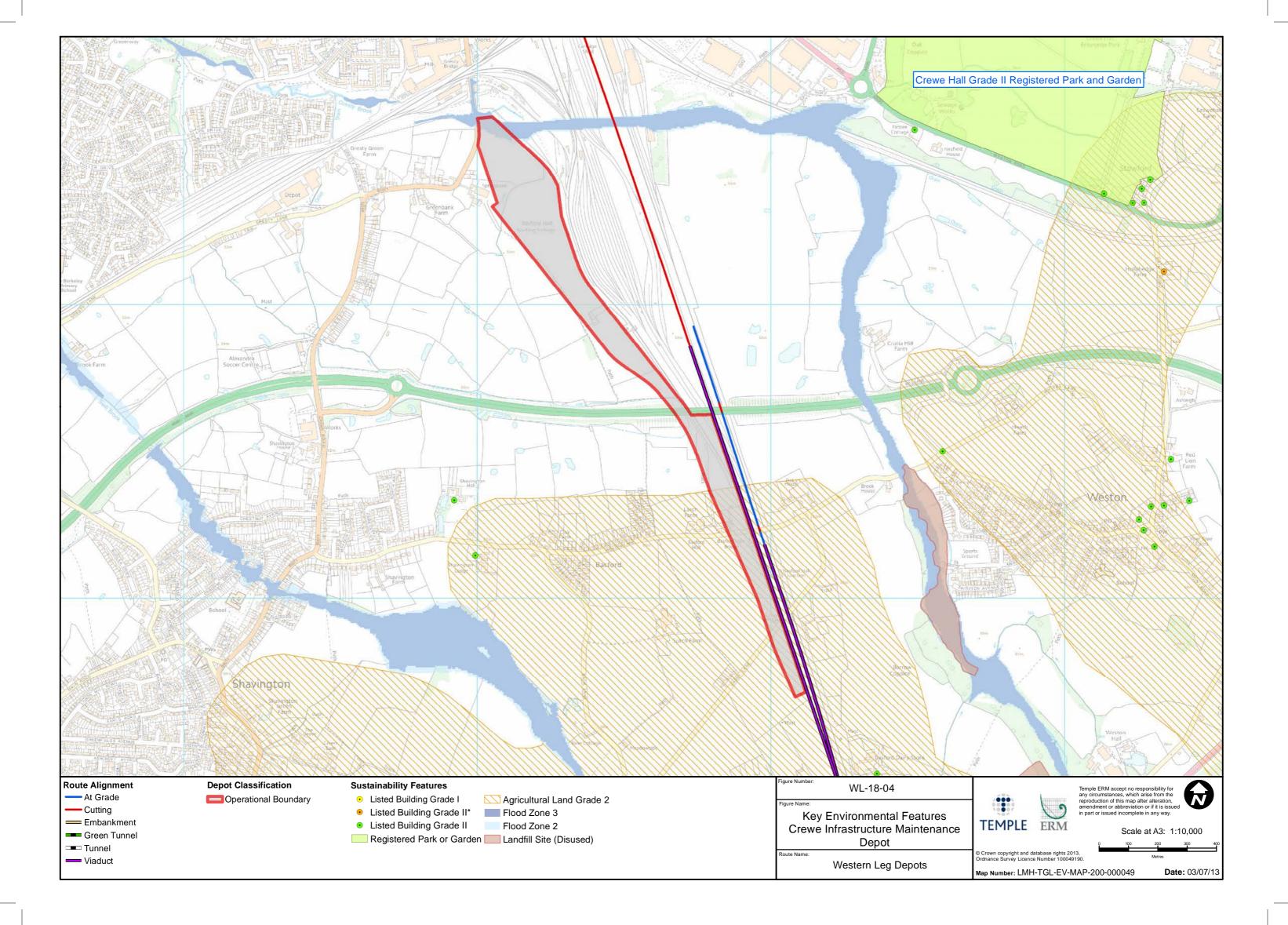


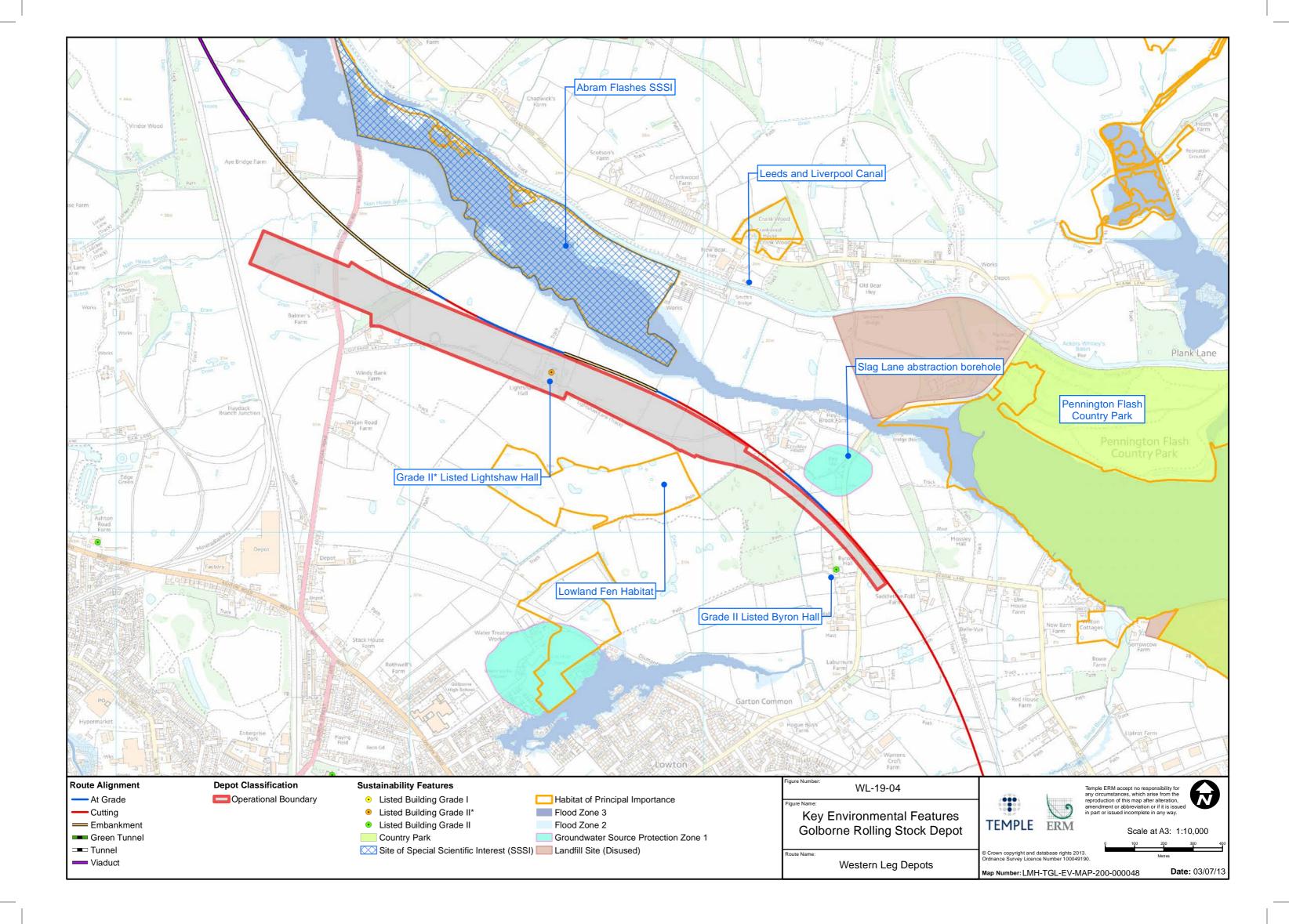












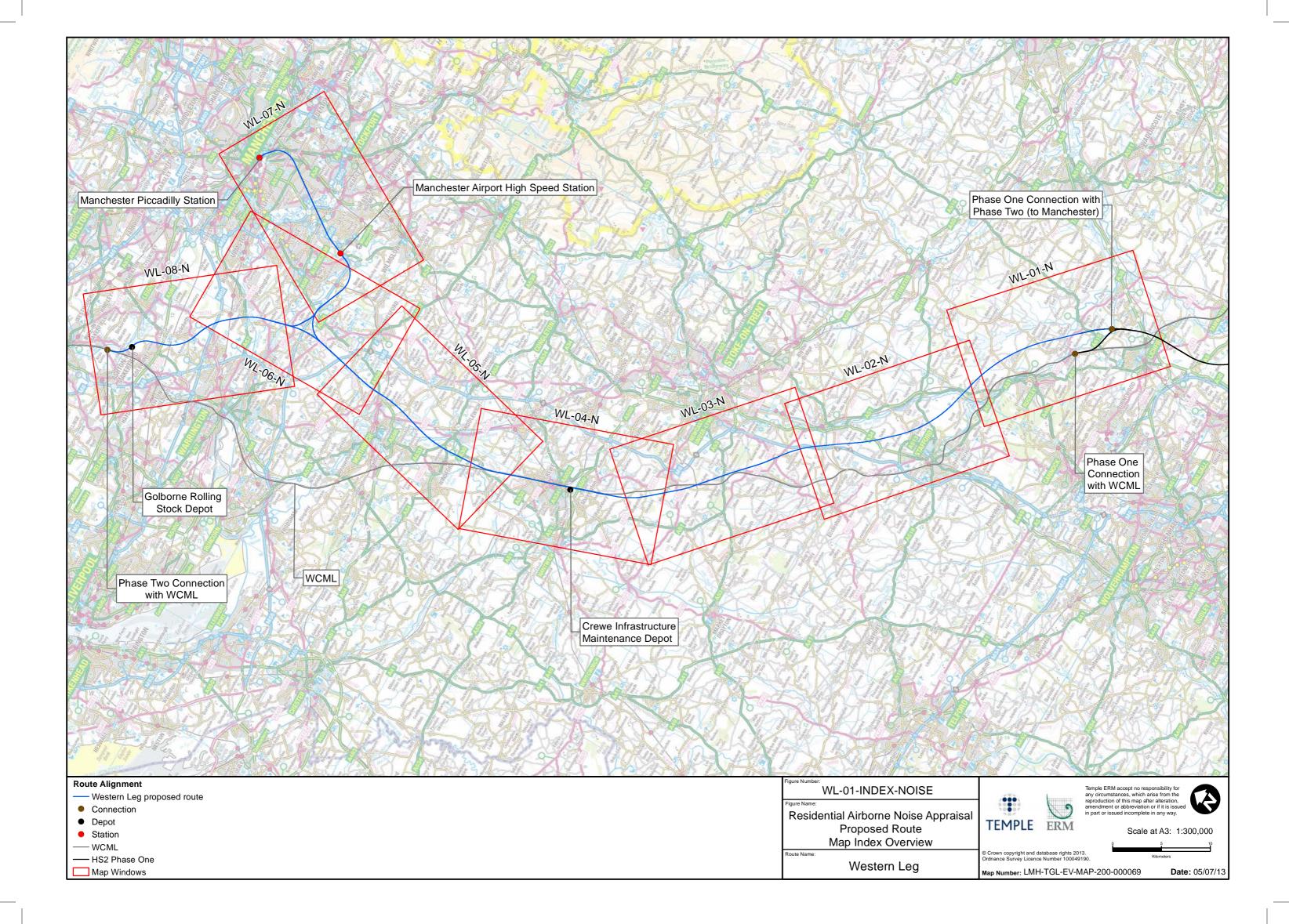


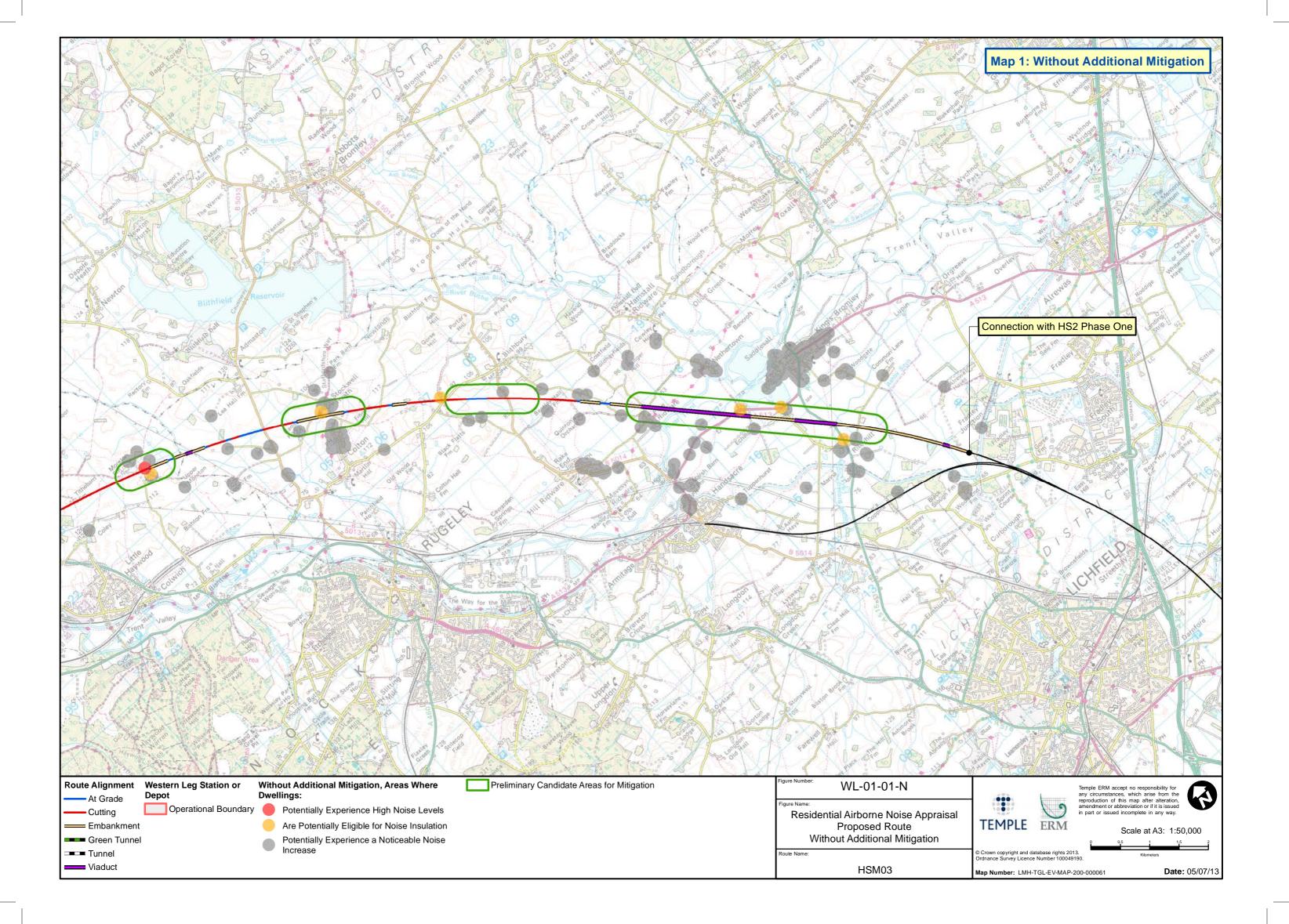


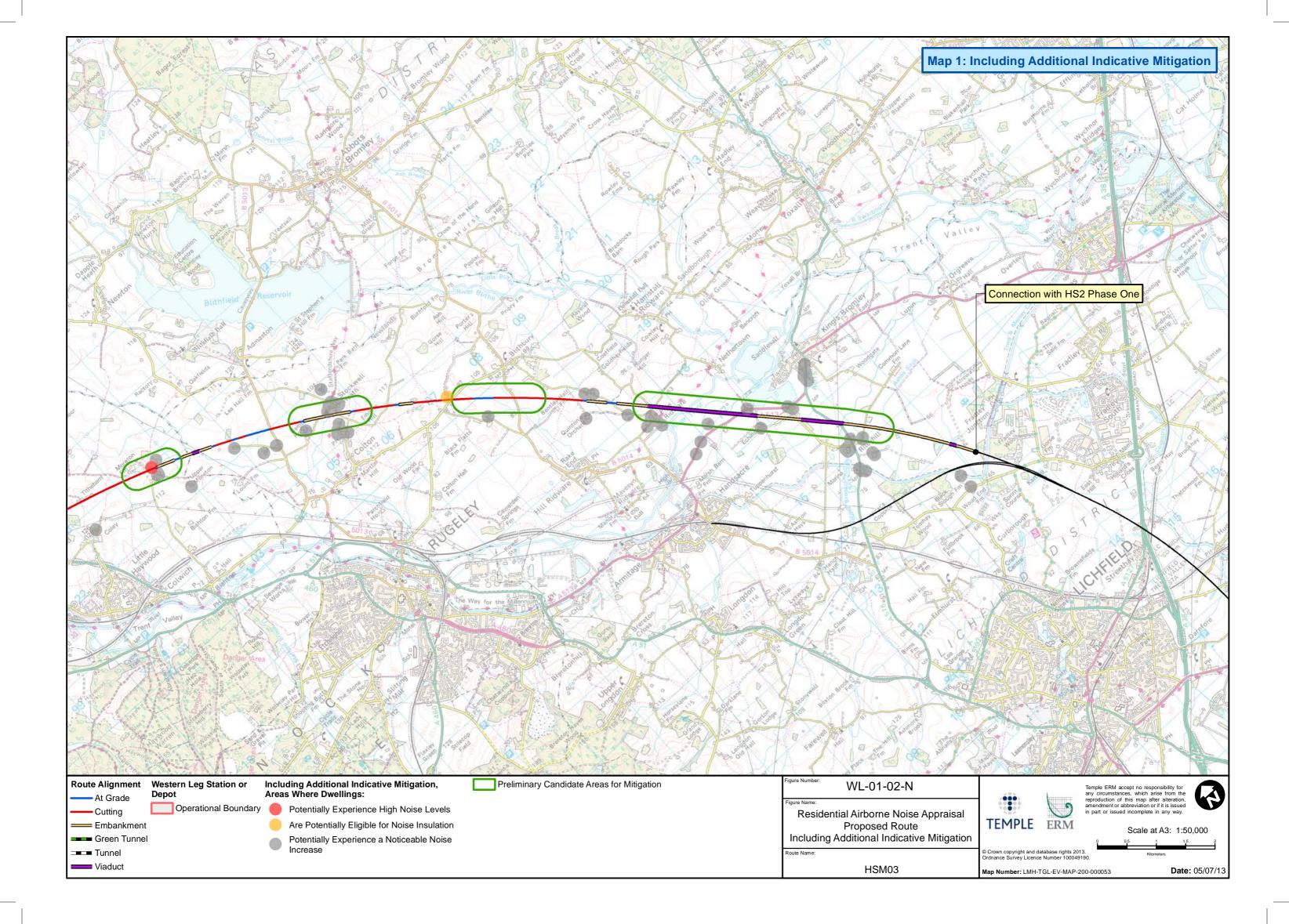
## Western Leg - Manchester Residential Airborne Noise Mapping

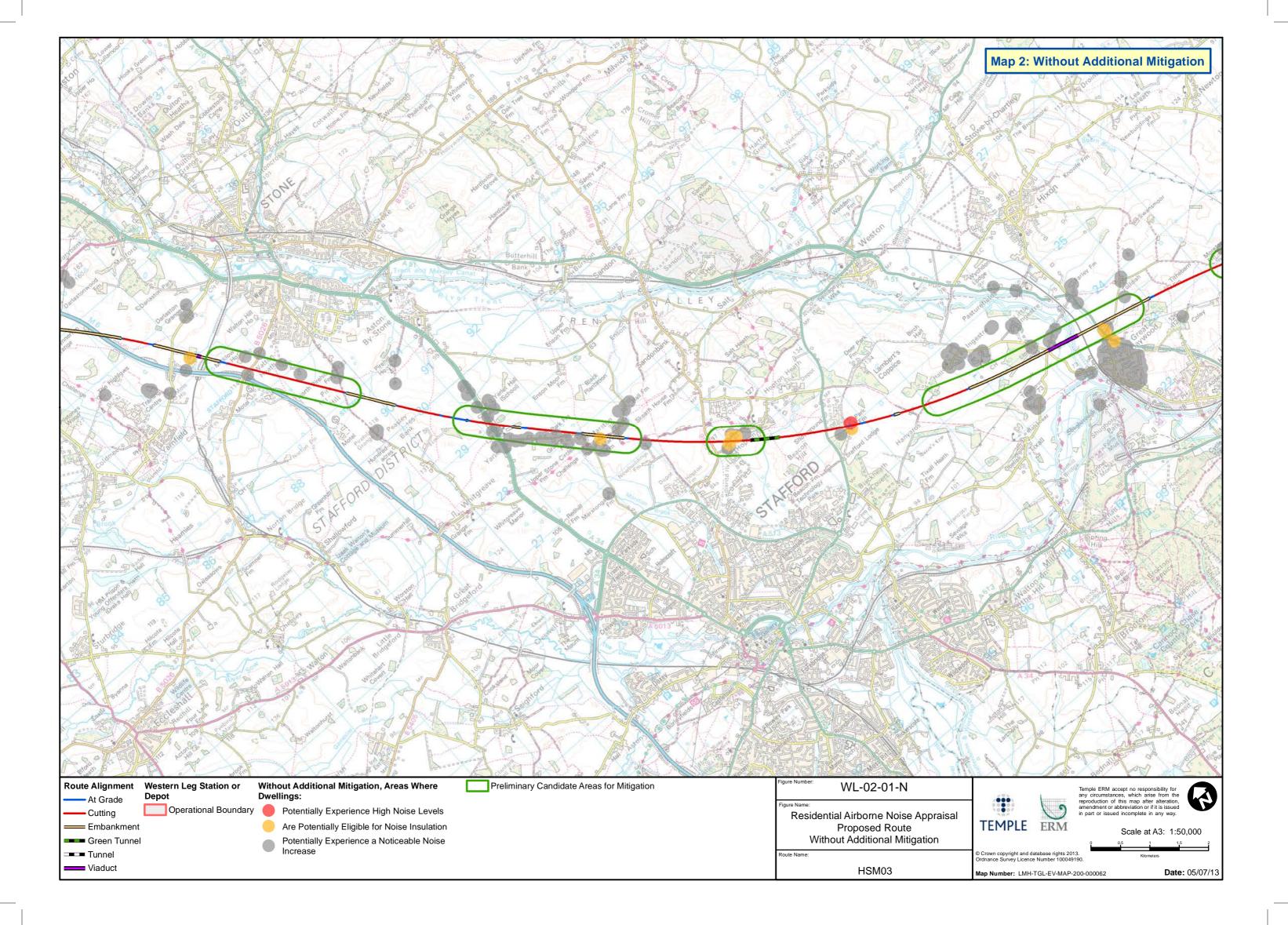
Set 1 to 2: without and with additional mitigation

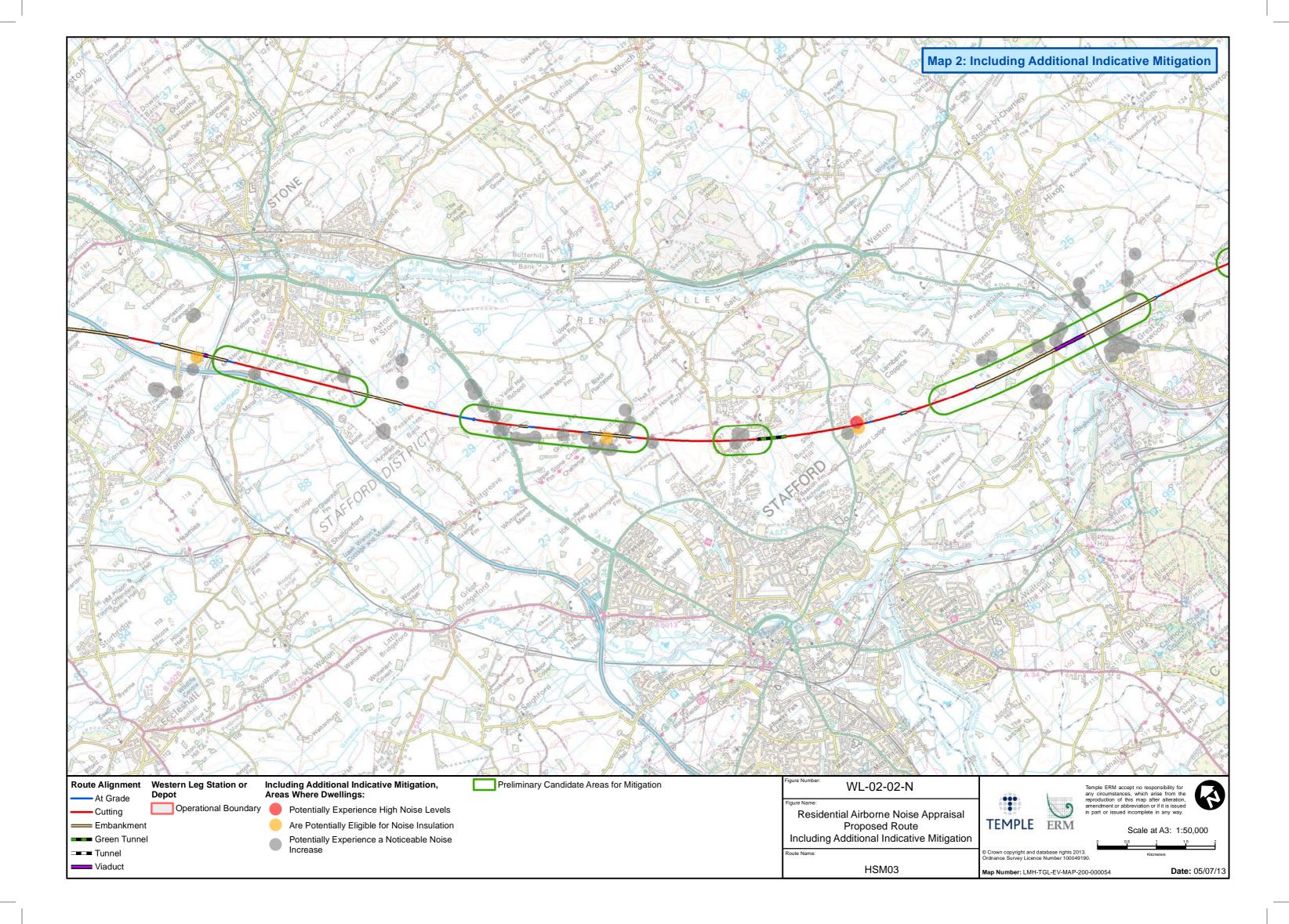


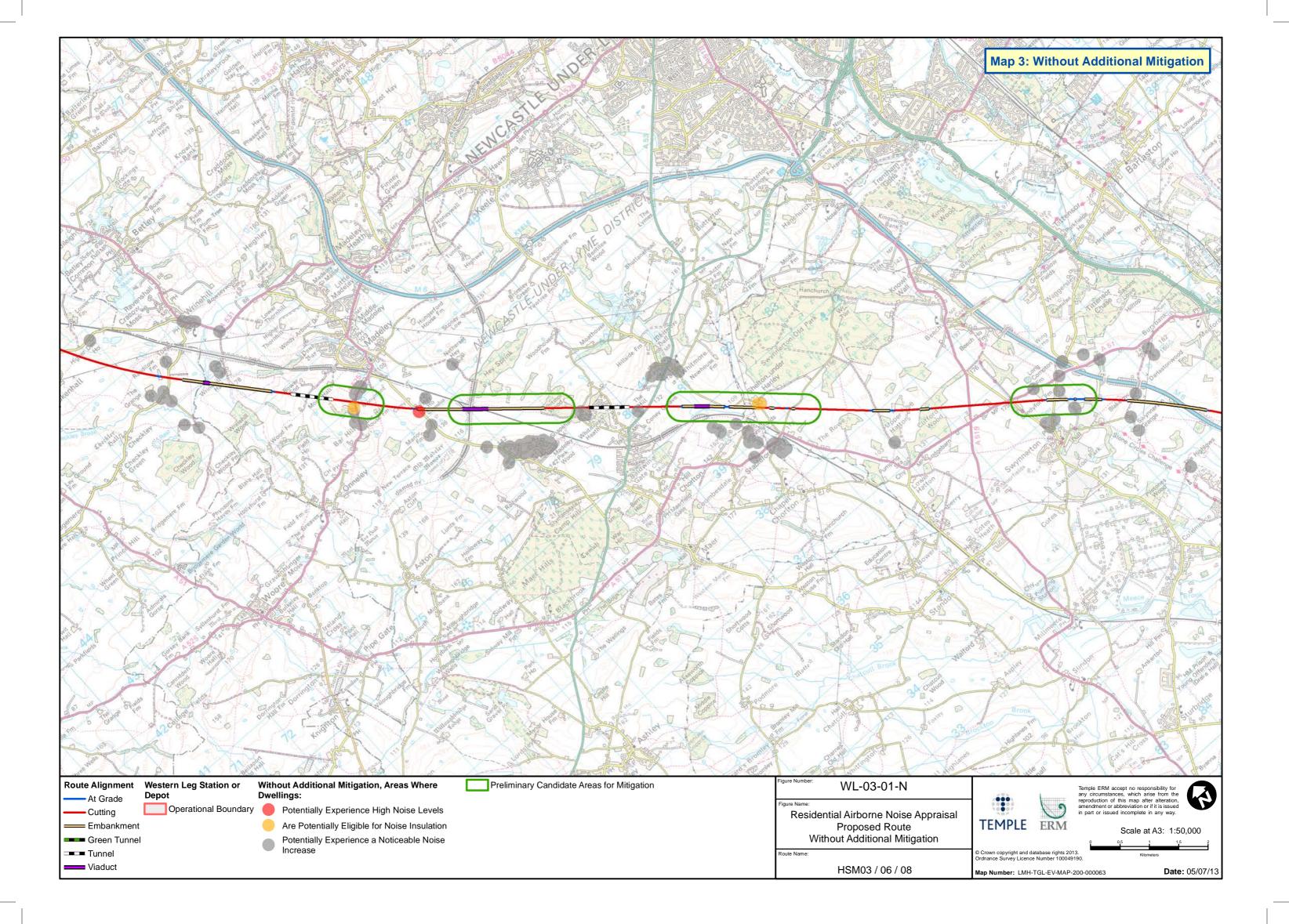


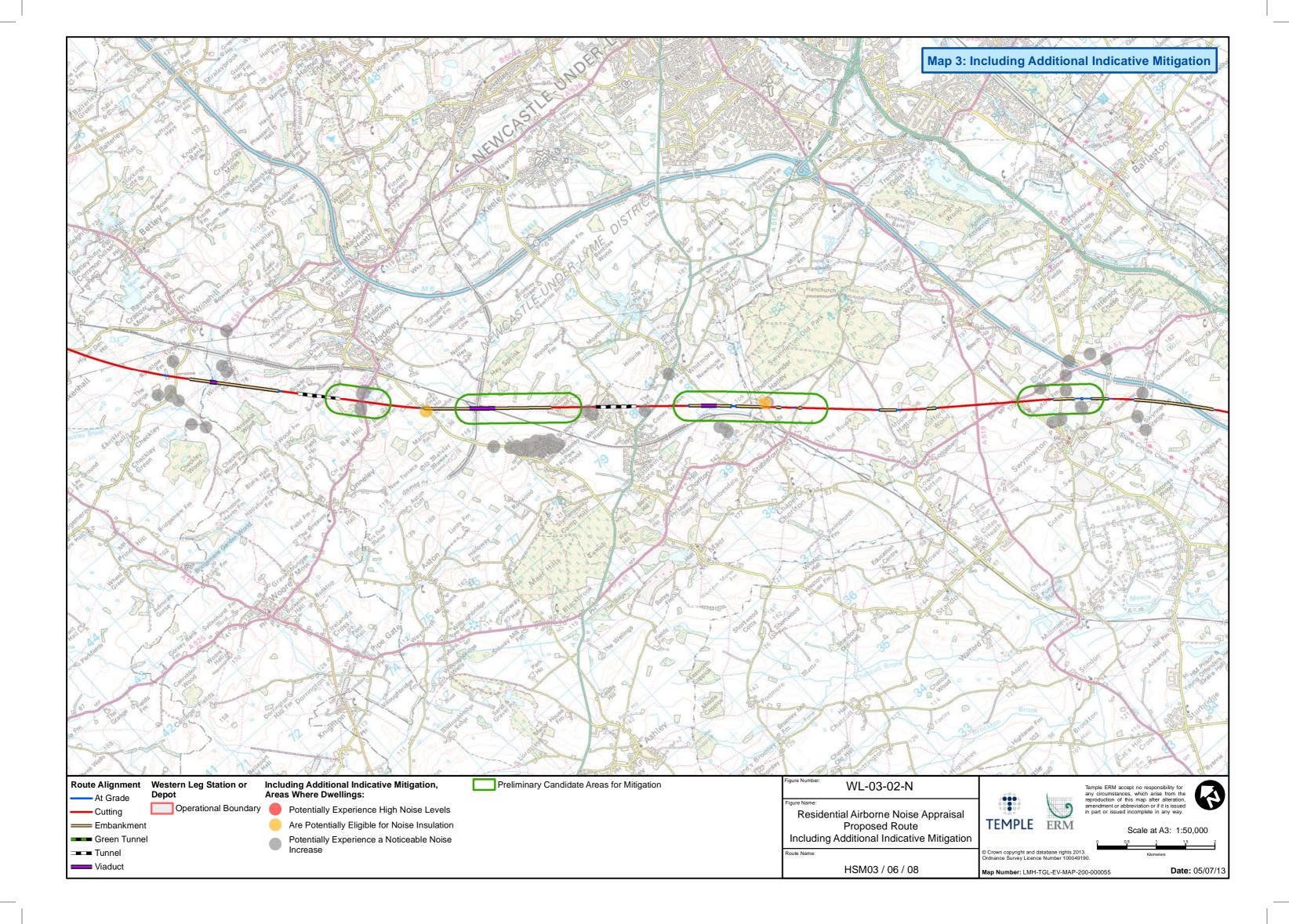


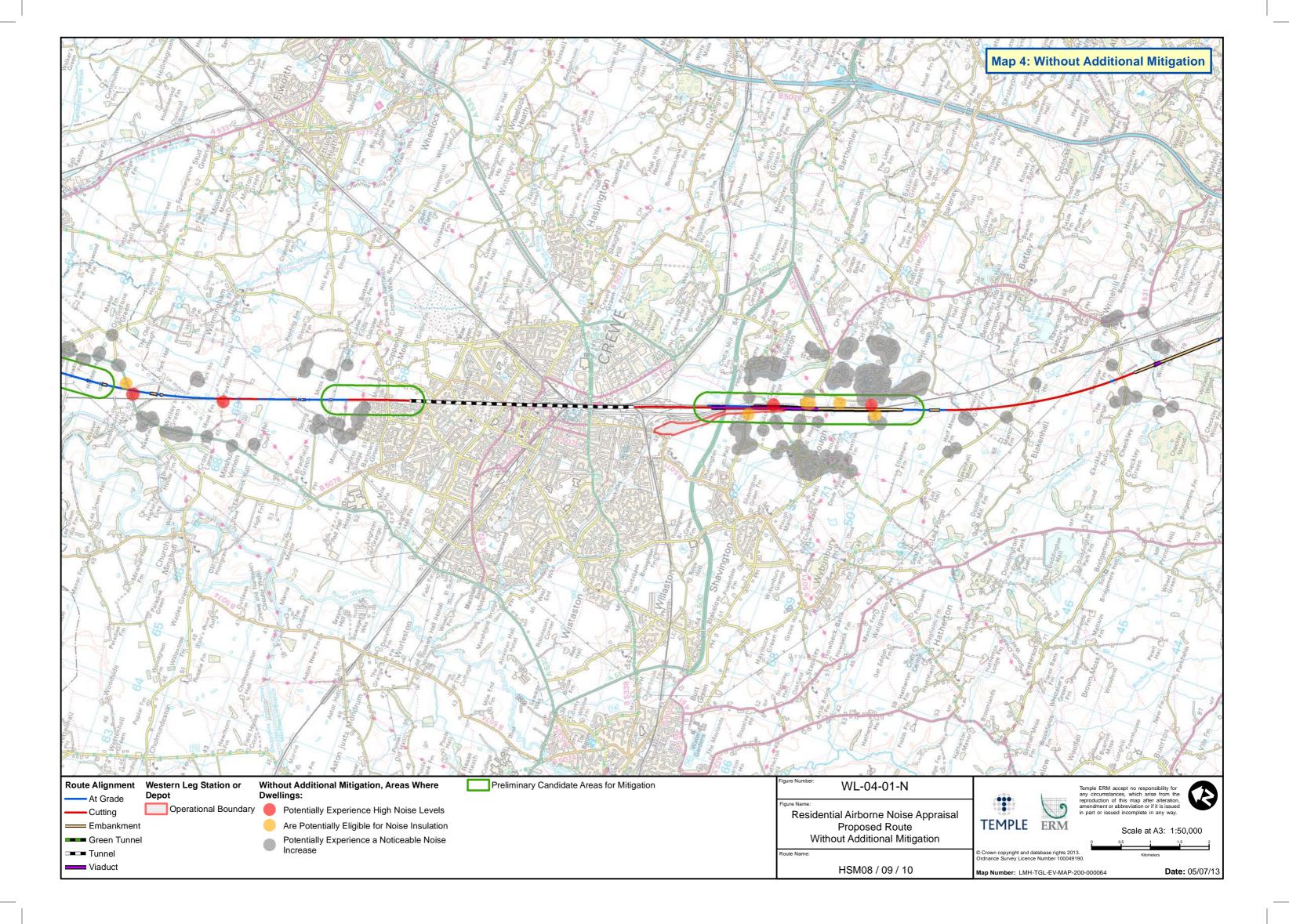


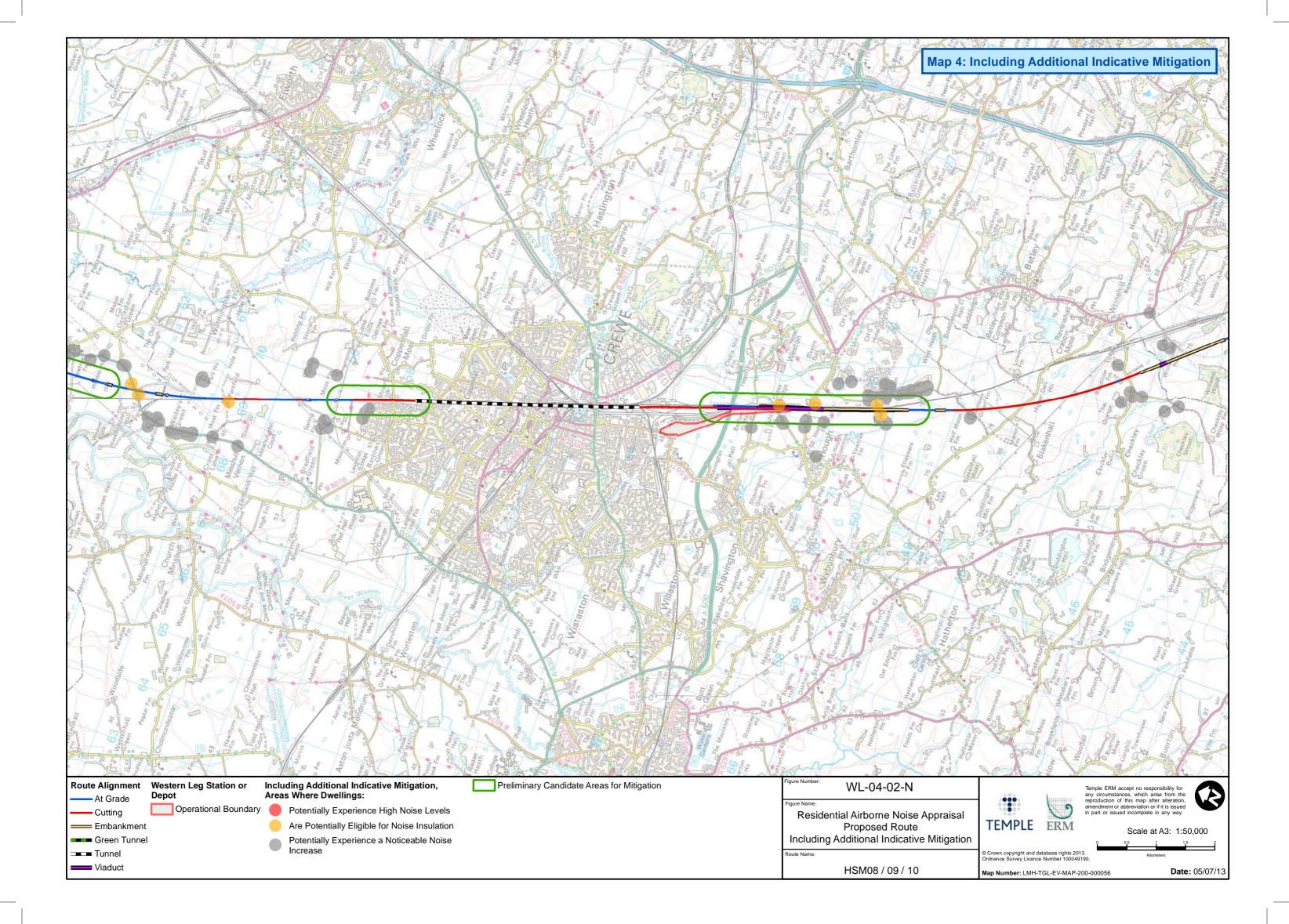


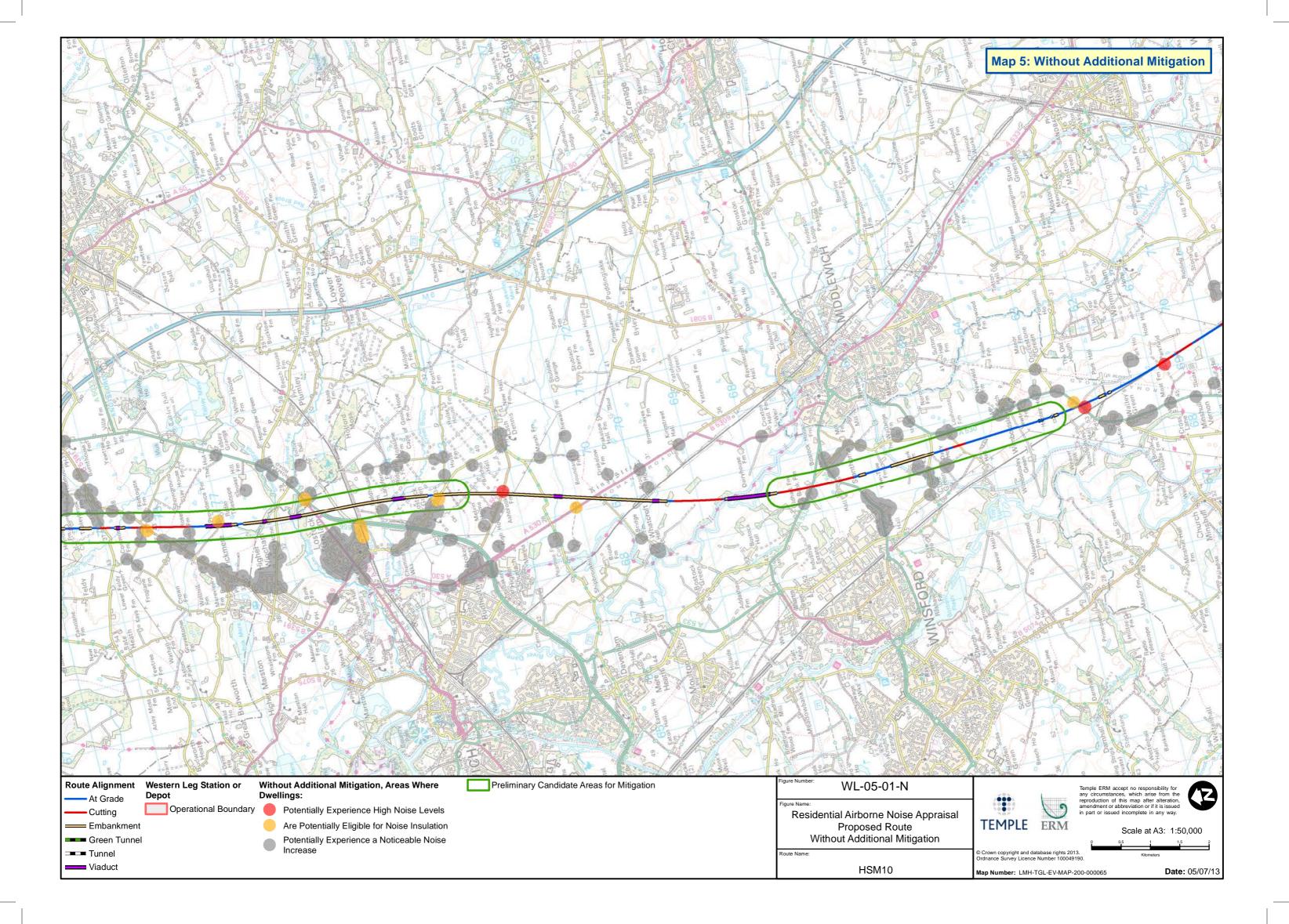


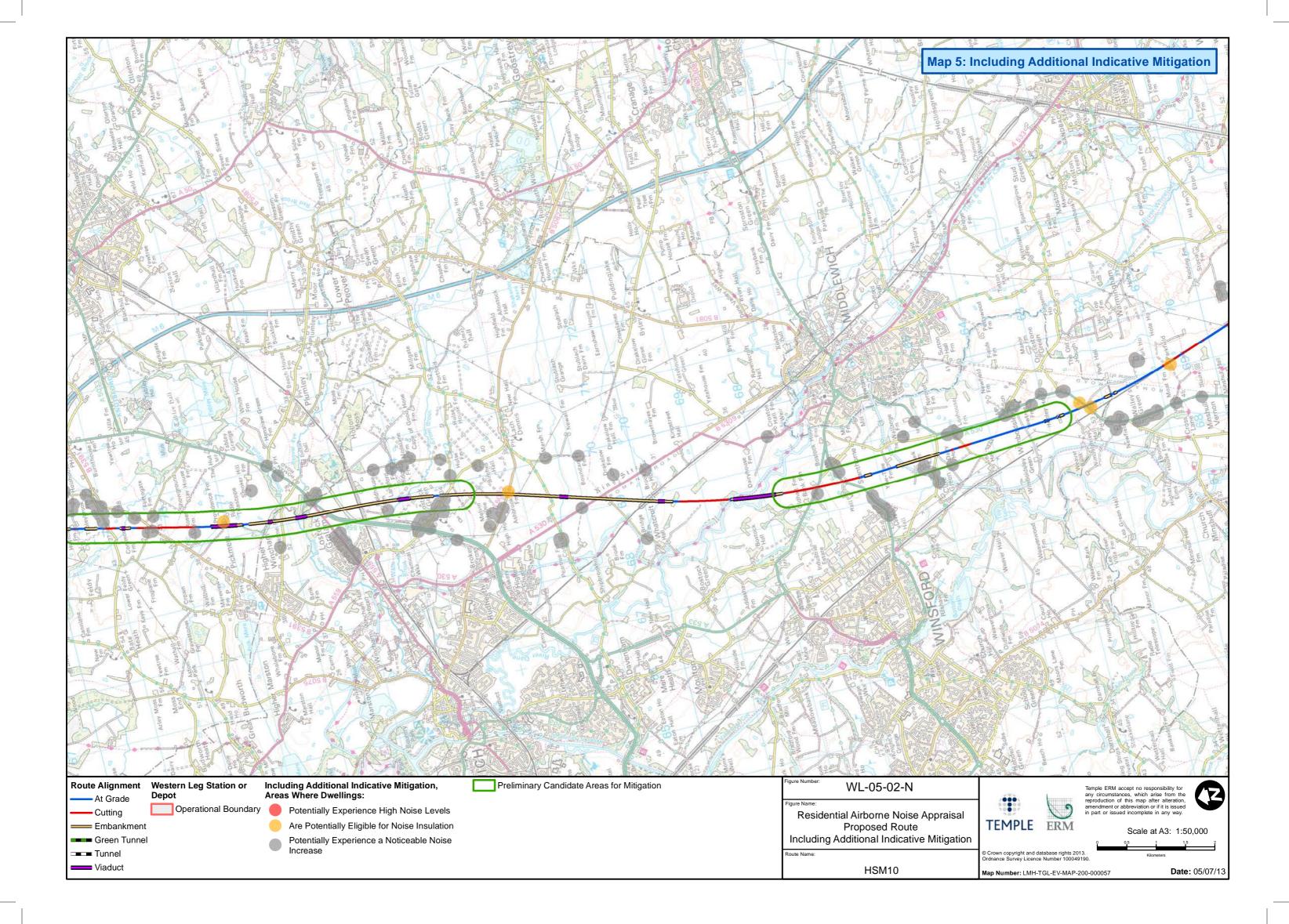


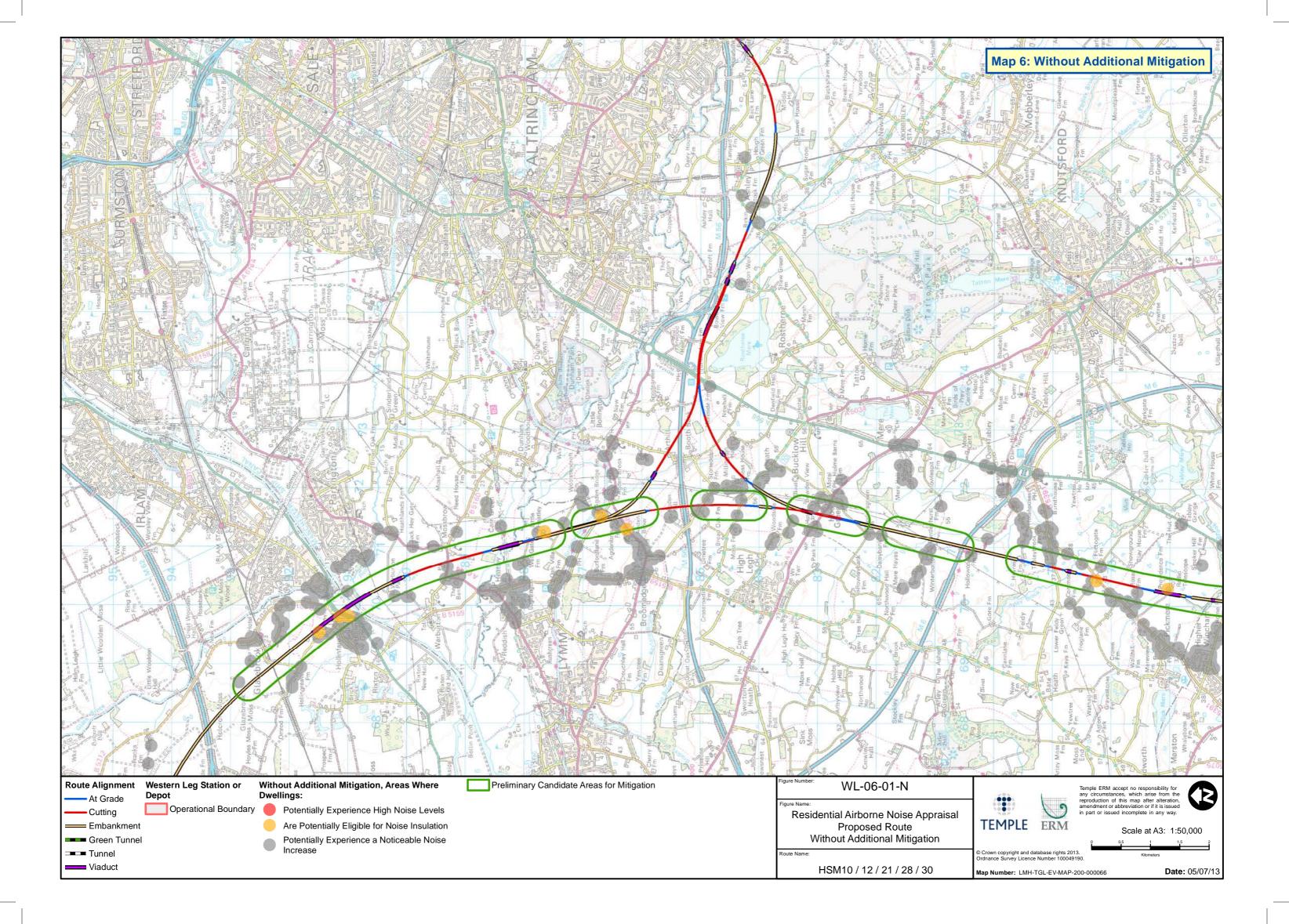


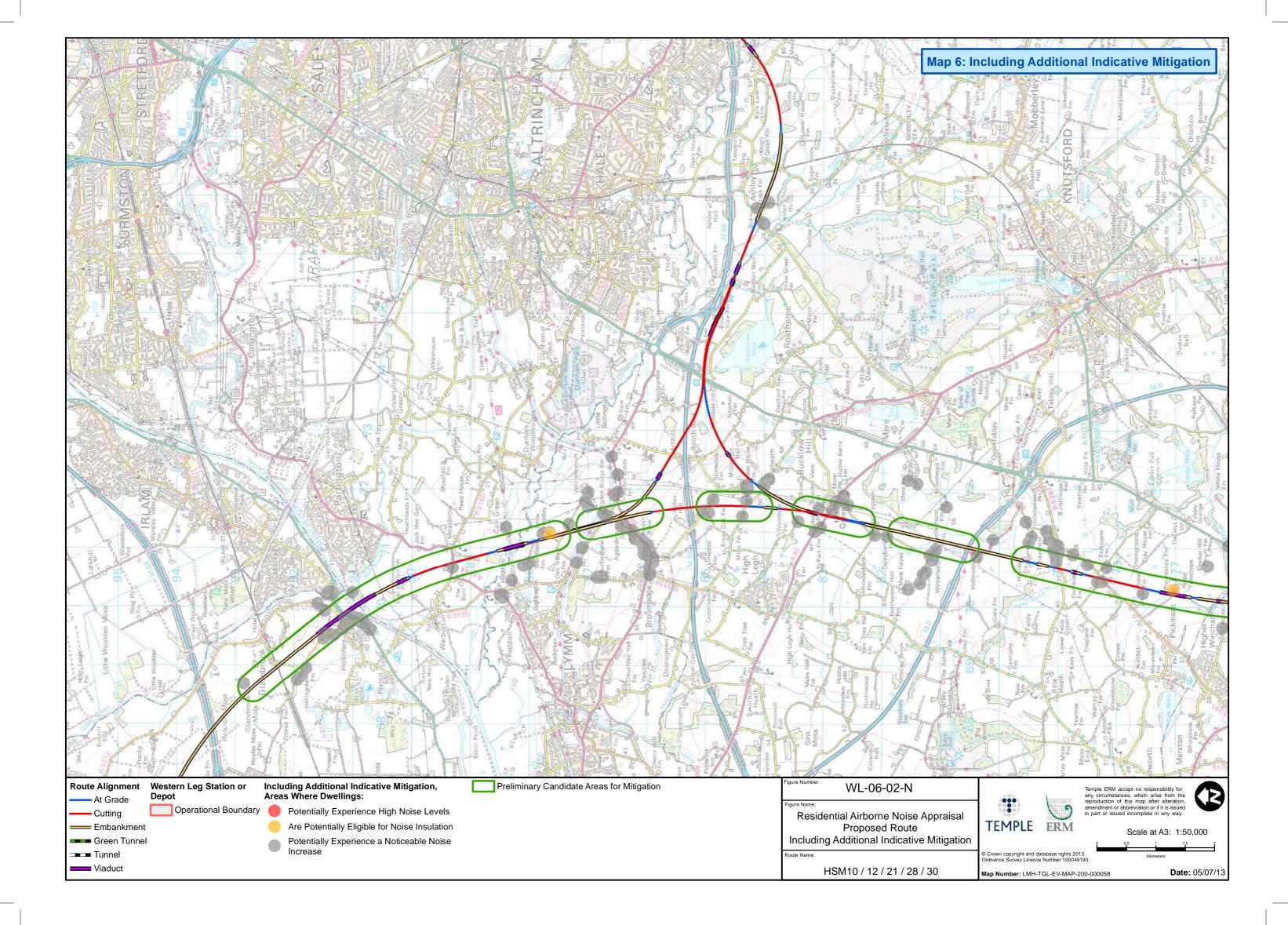


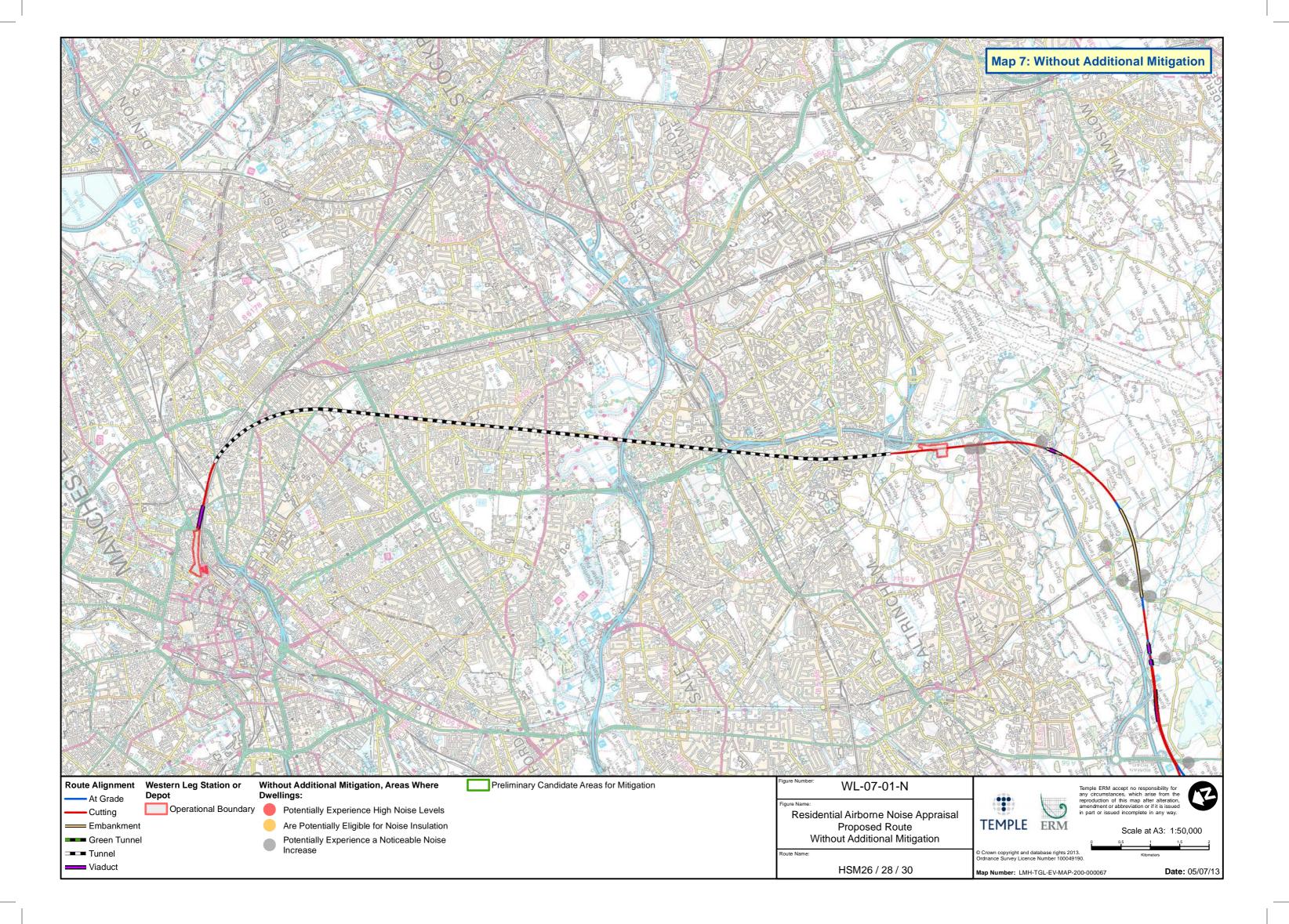


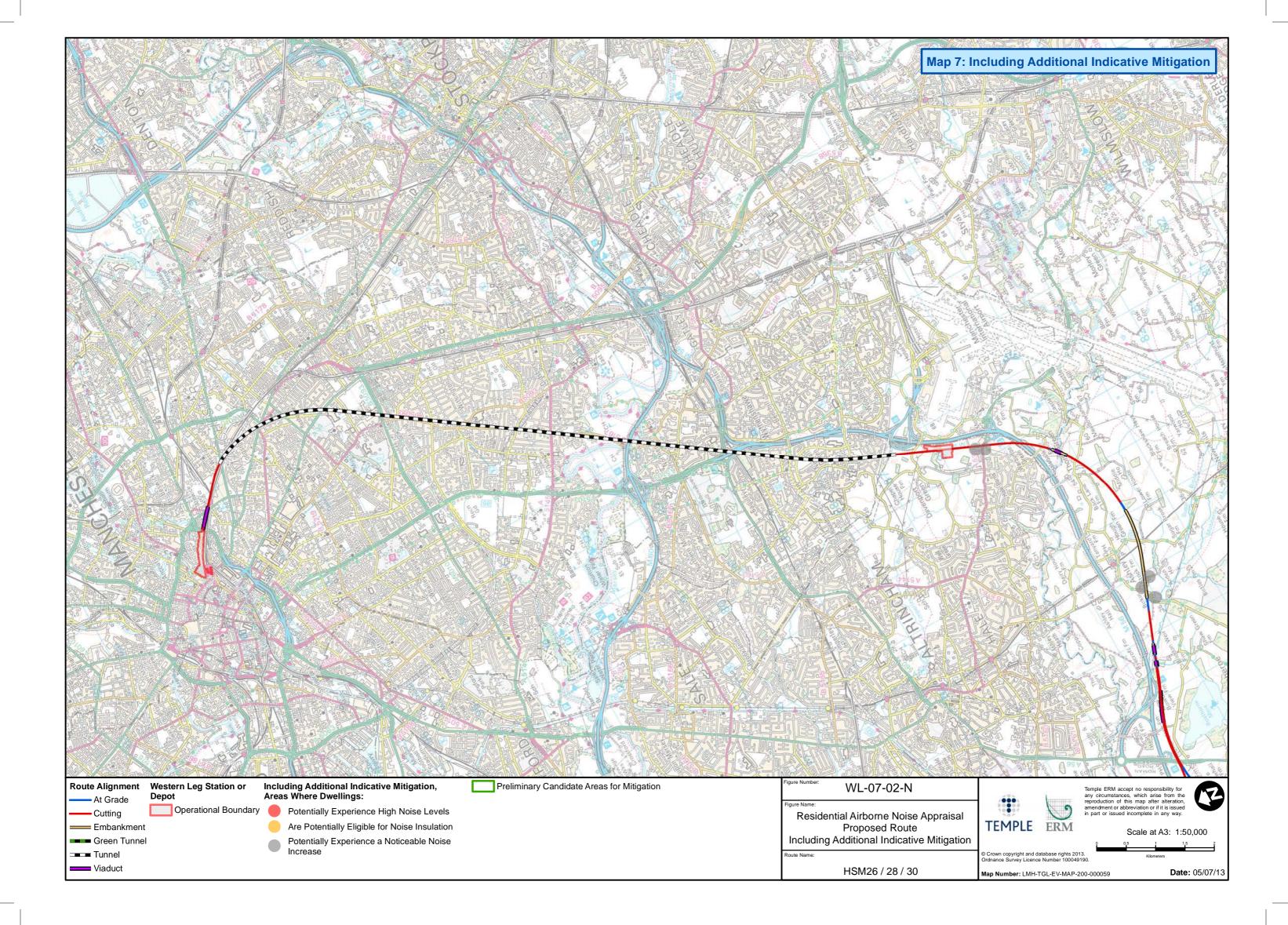


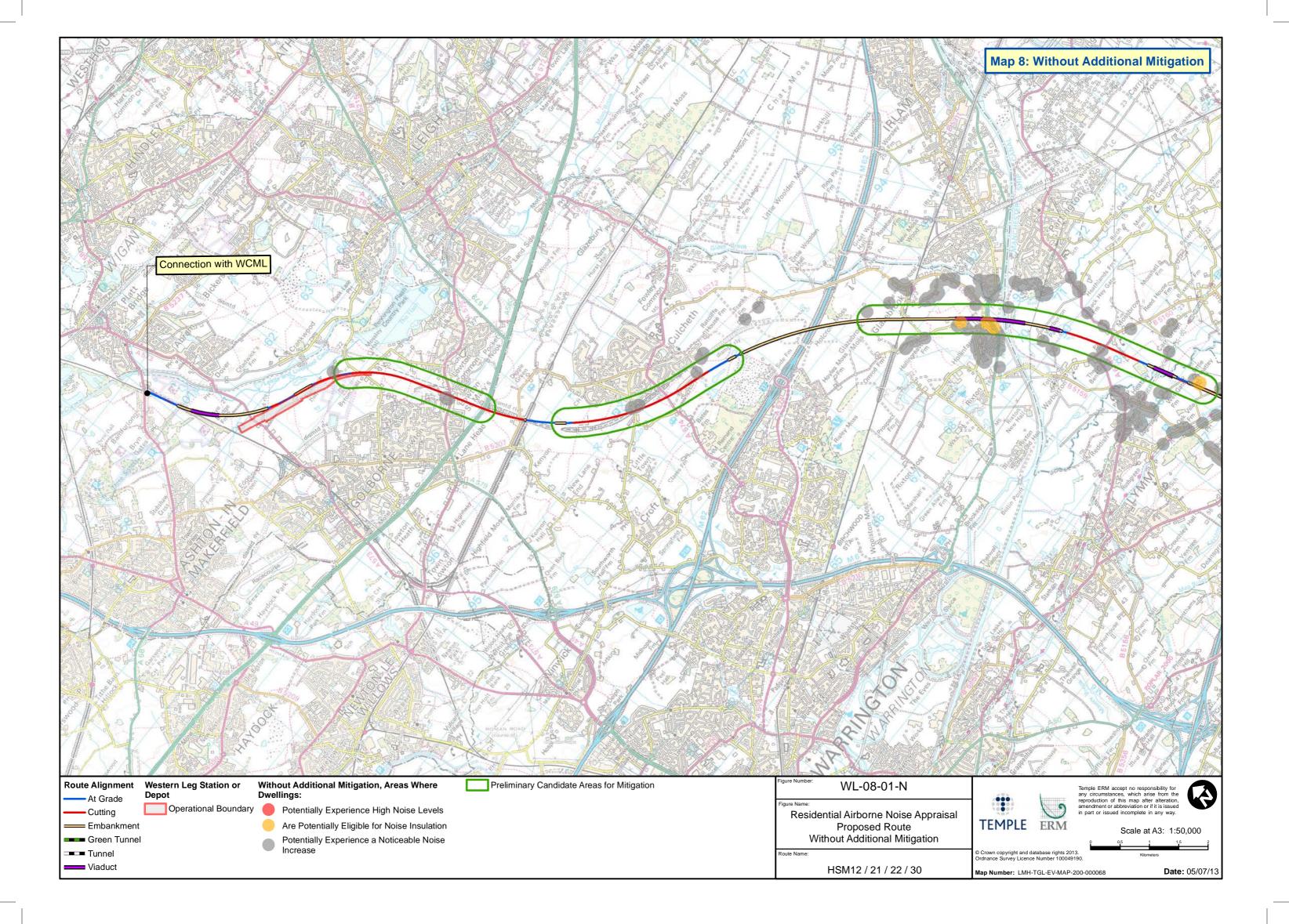


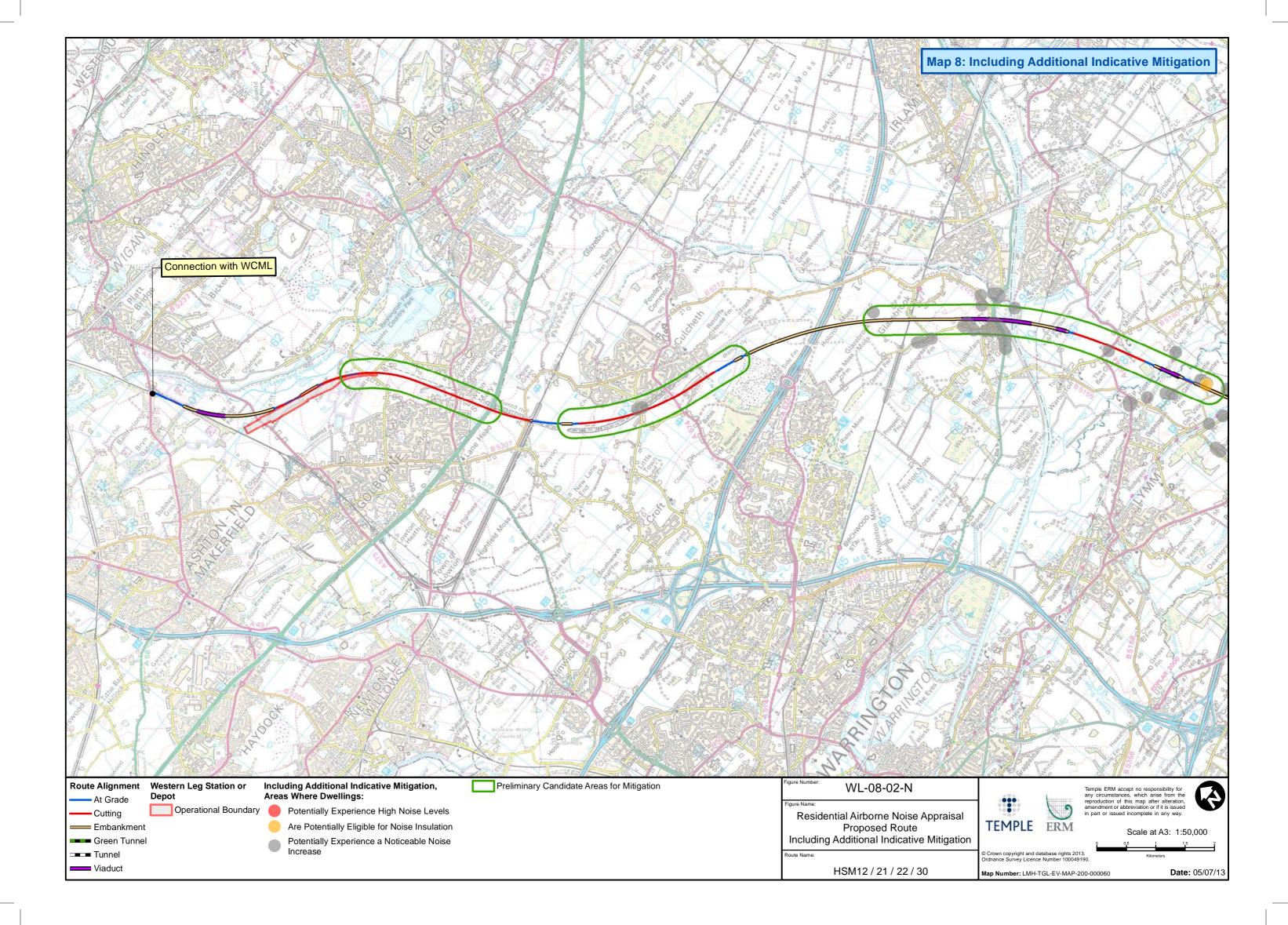














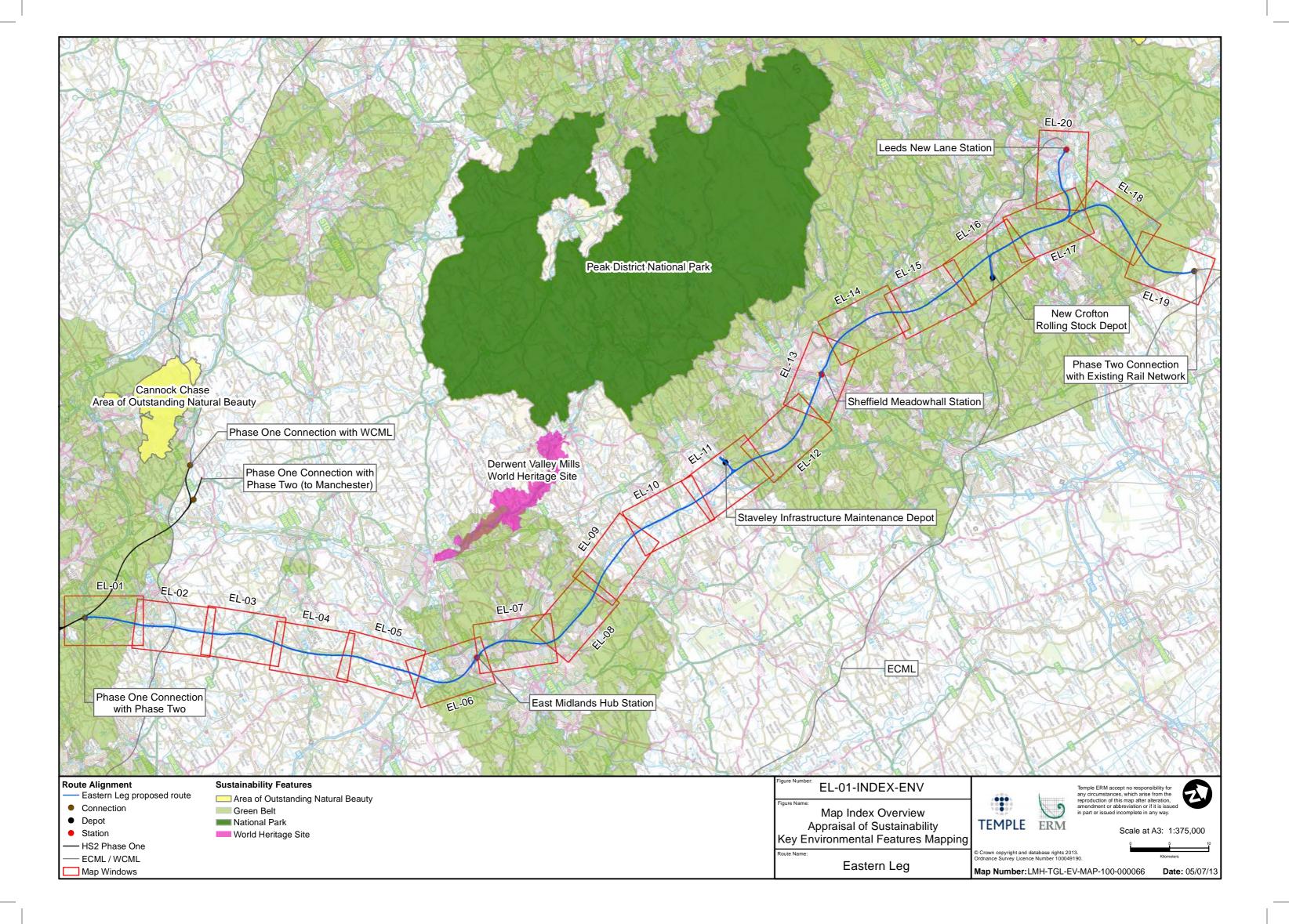


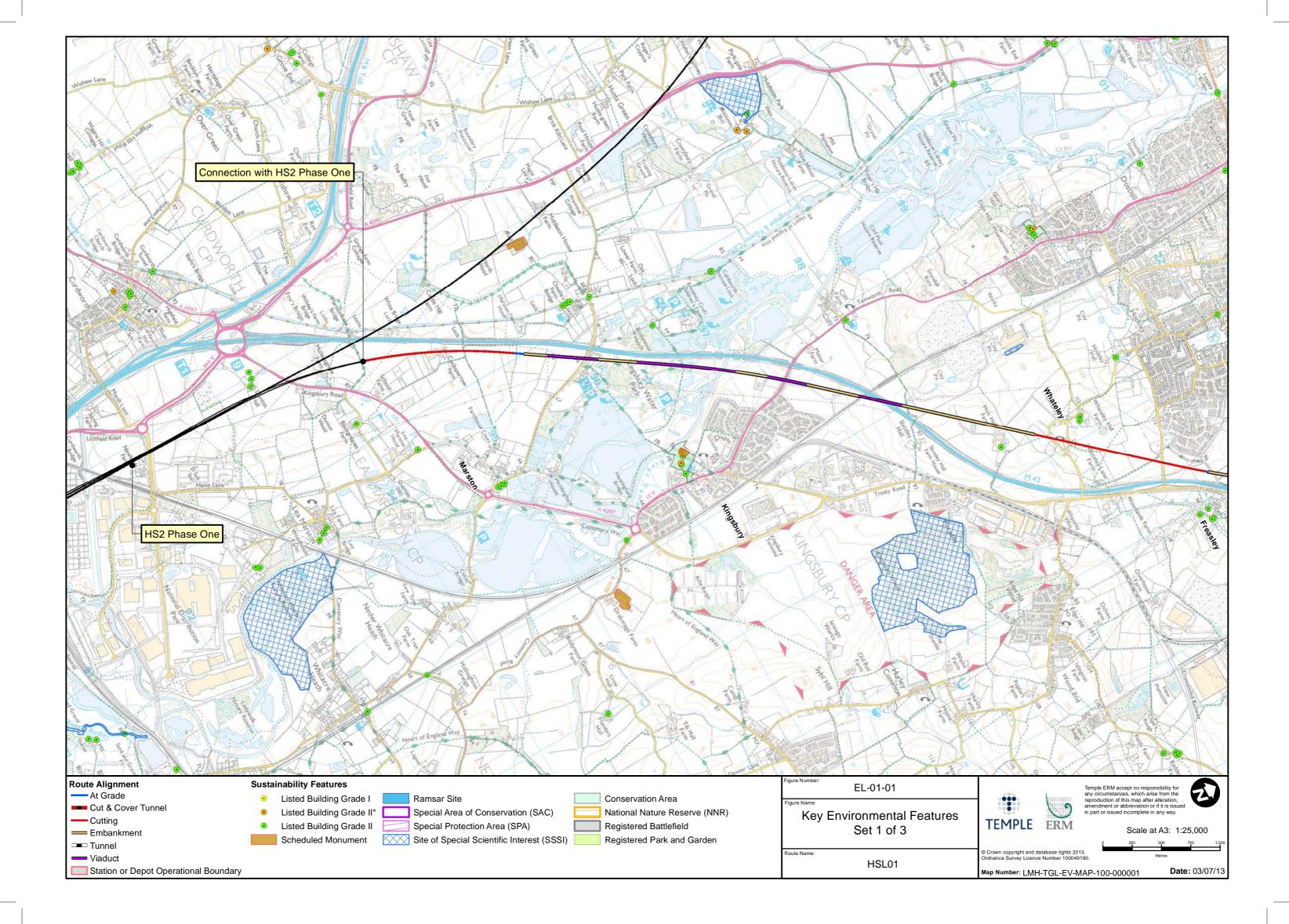
Eastern Leg – Leeds

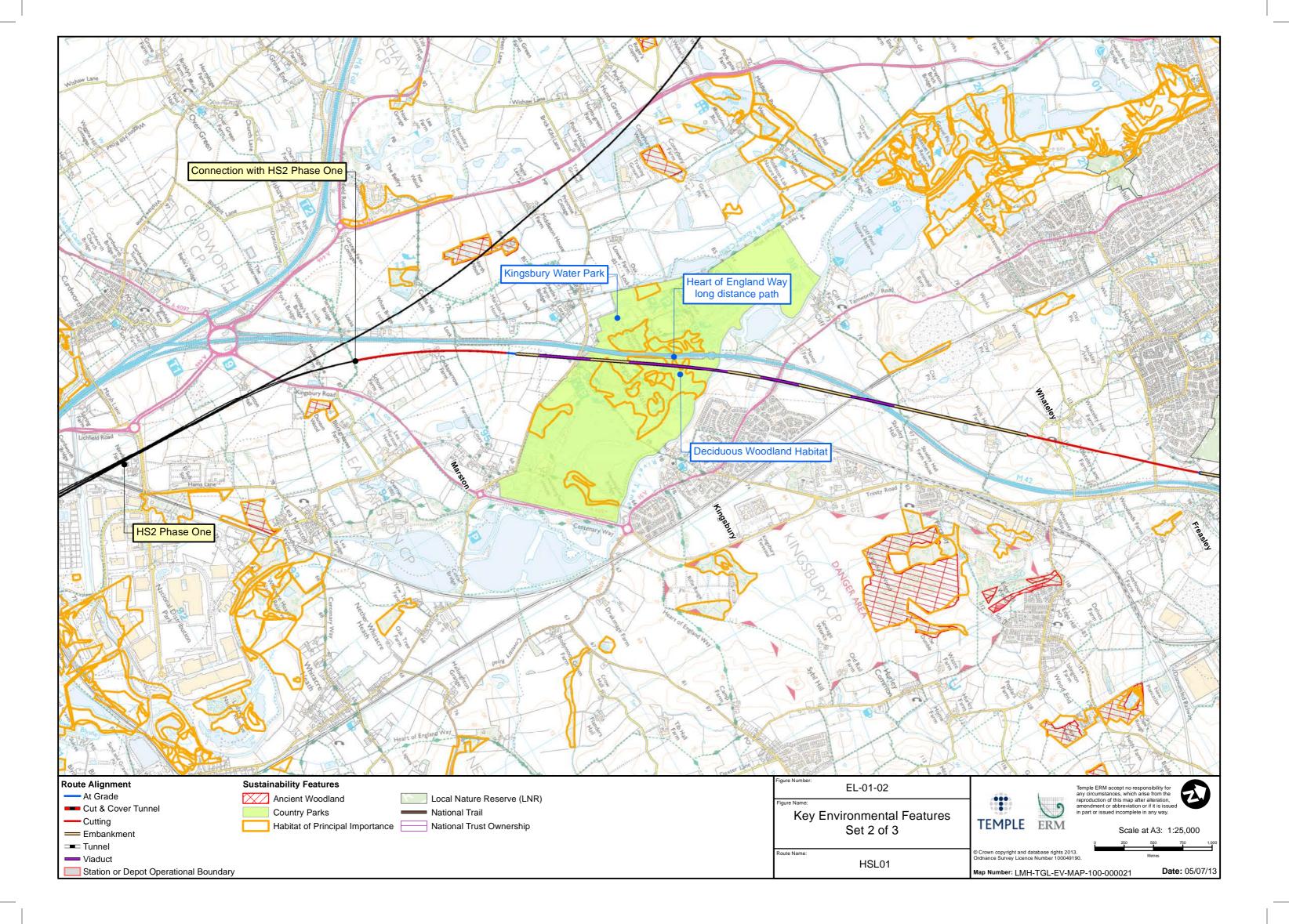


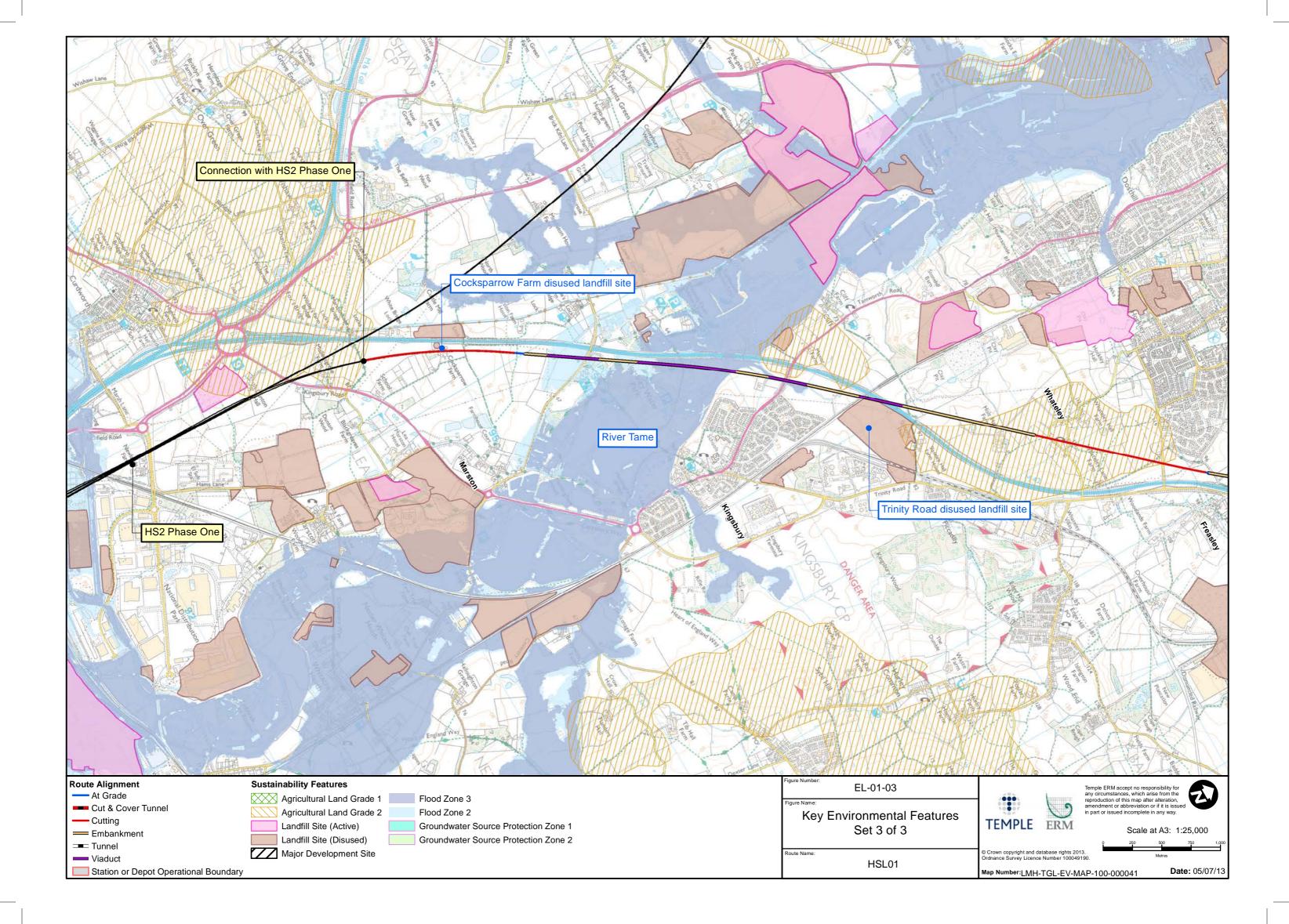


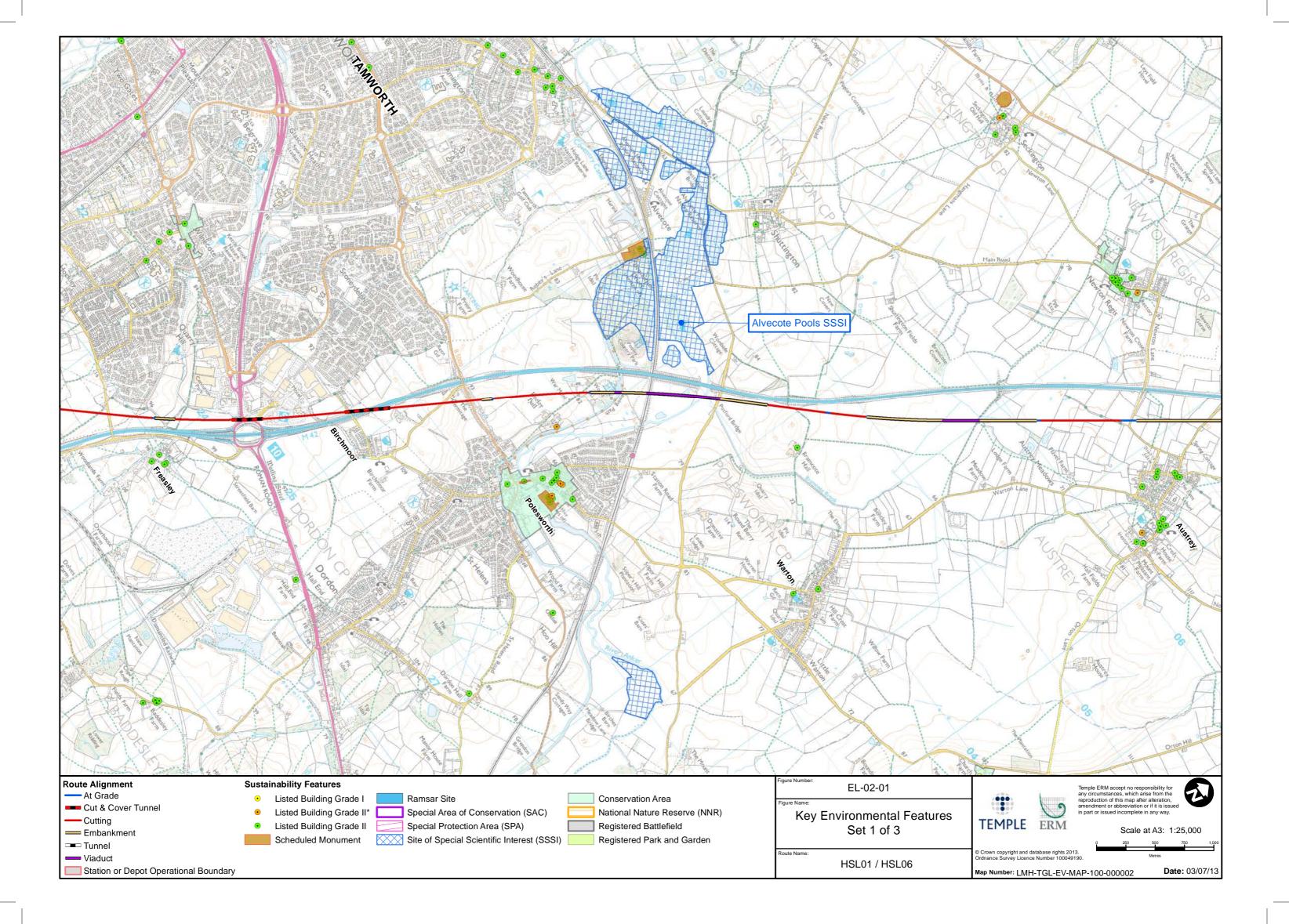
## Eastern Leg - Leeds Environmental Features Mapping Set 1 to 3

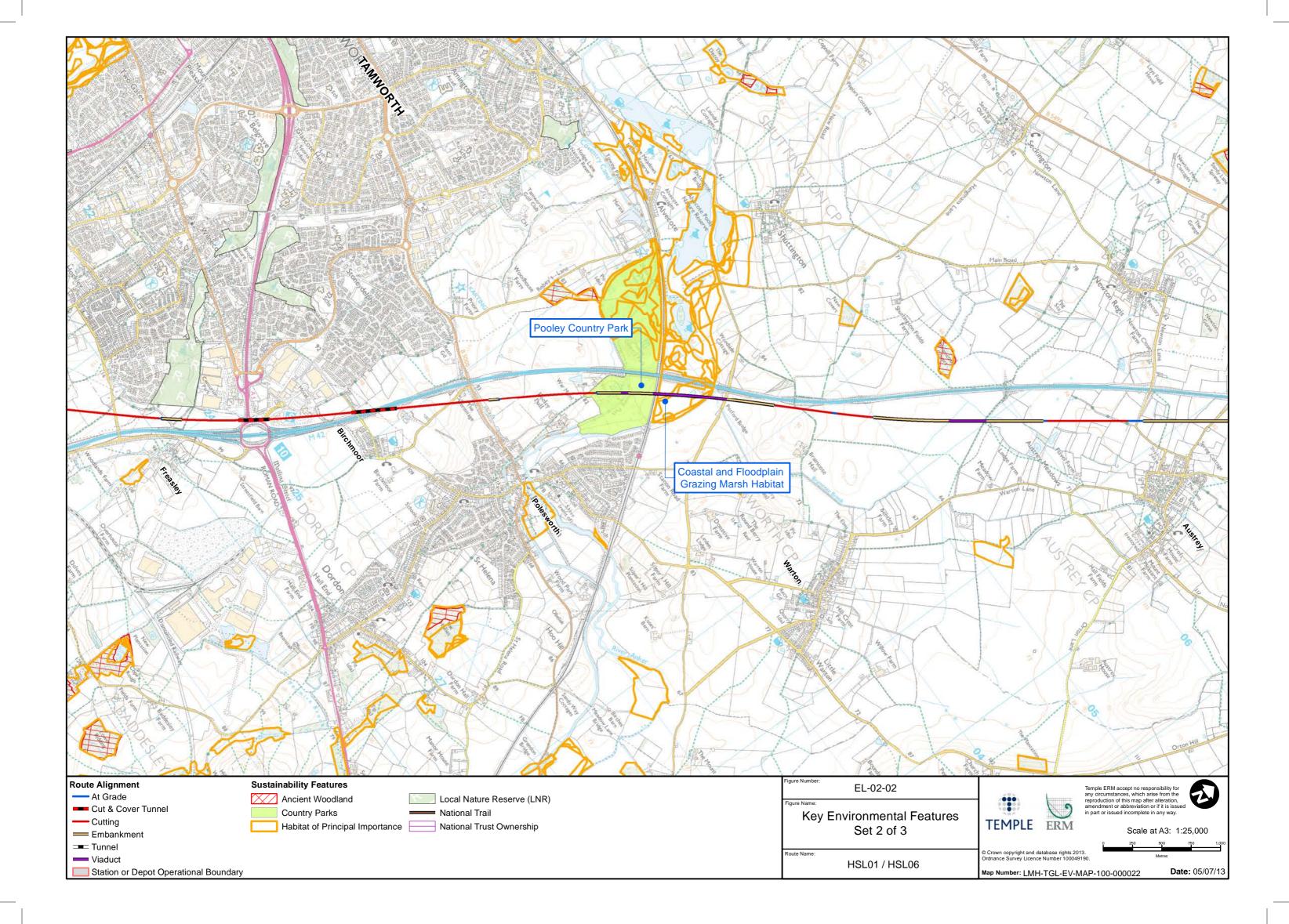


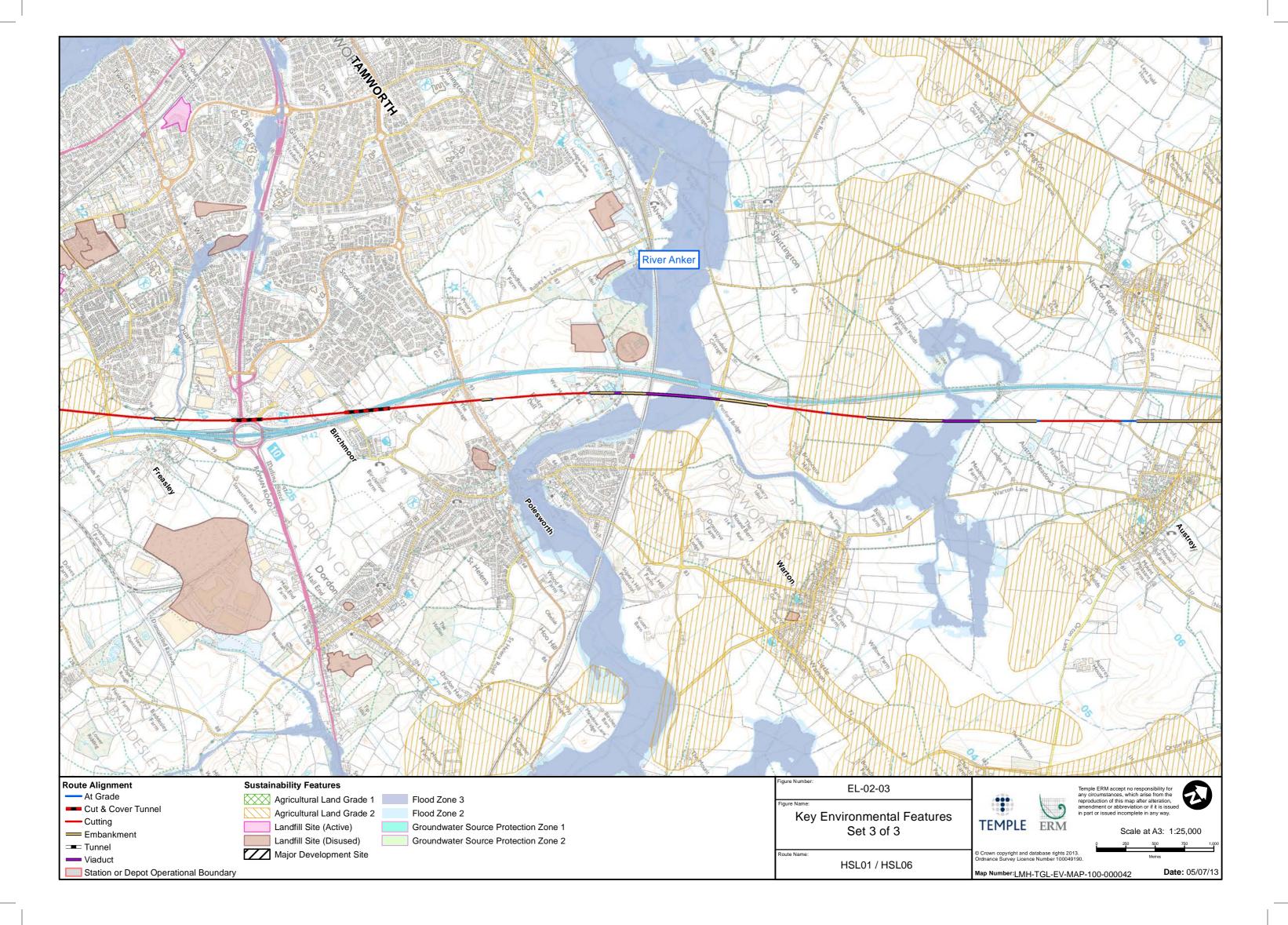


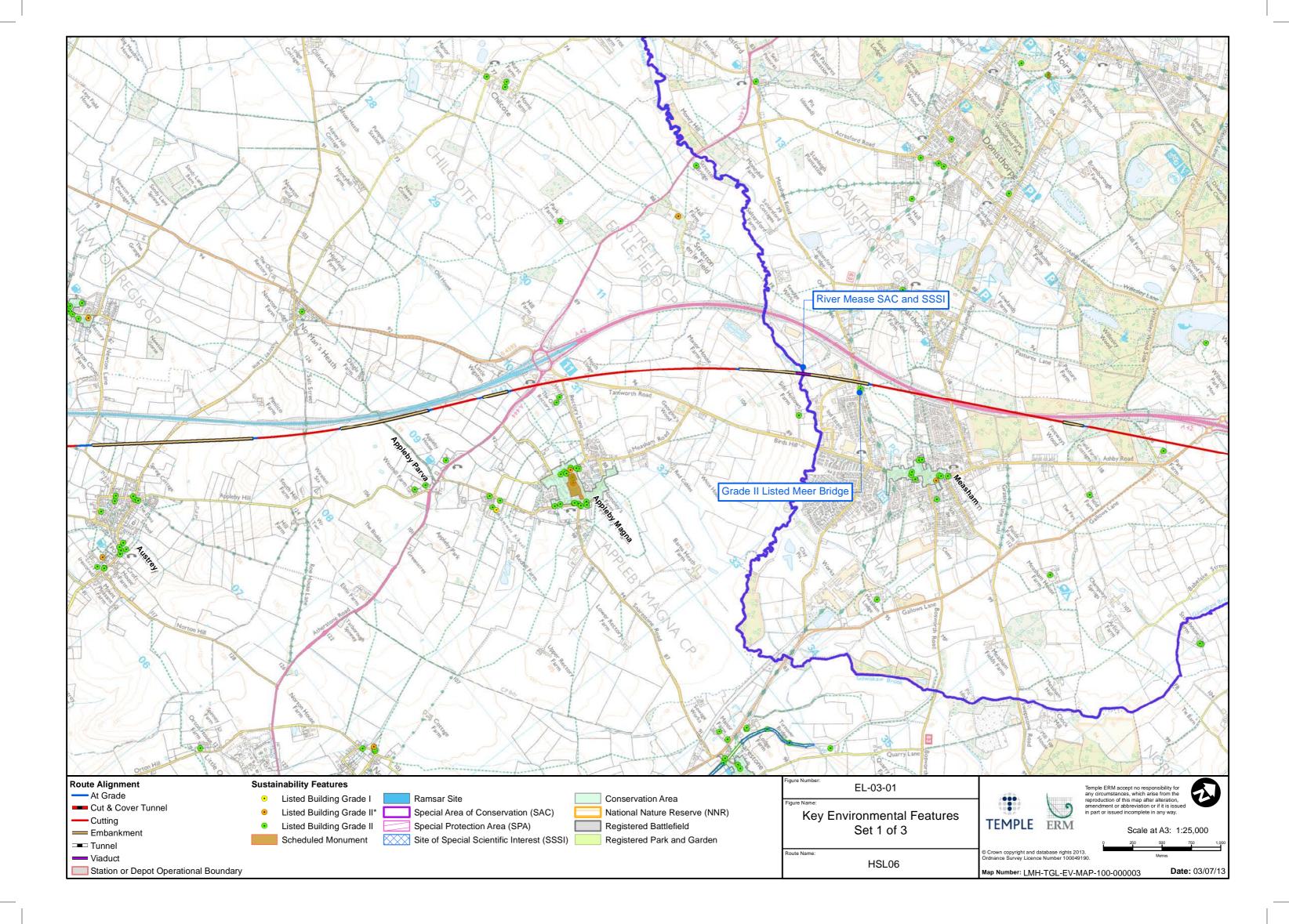


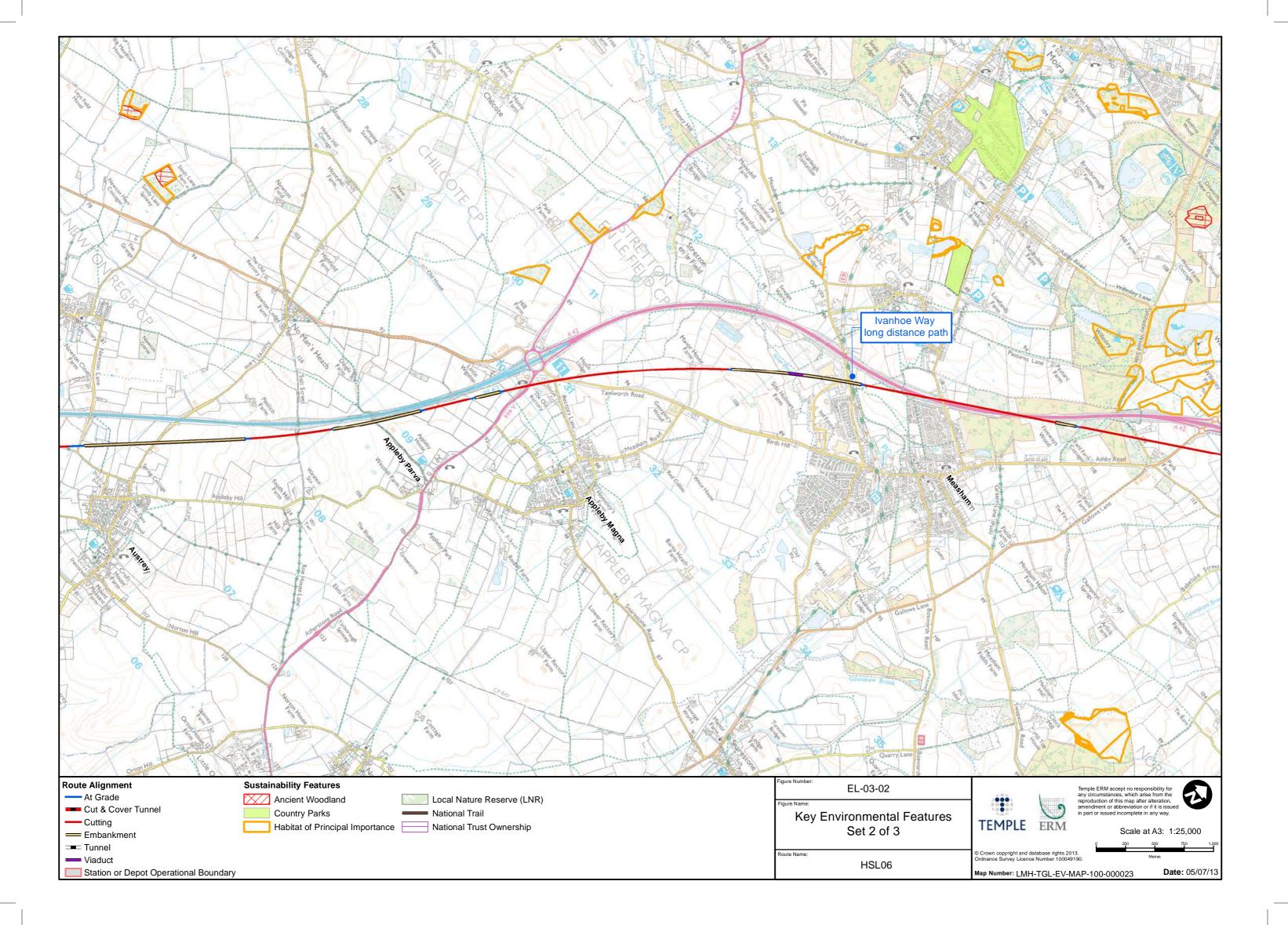


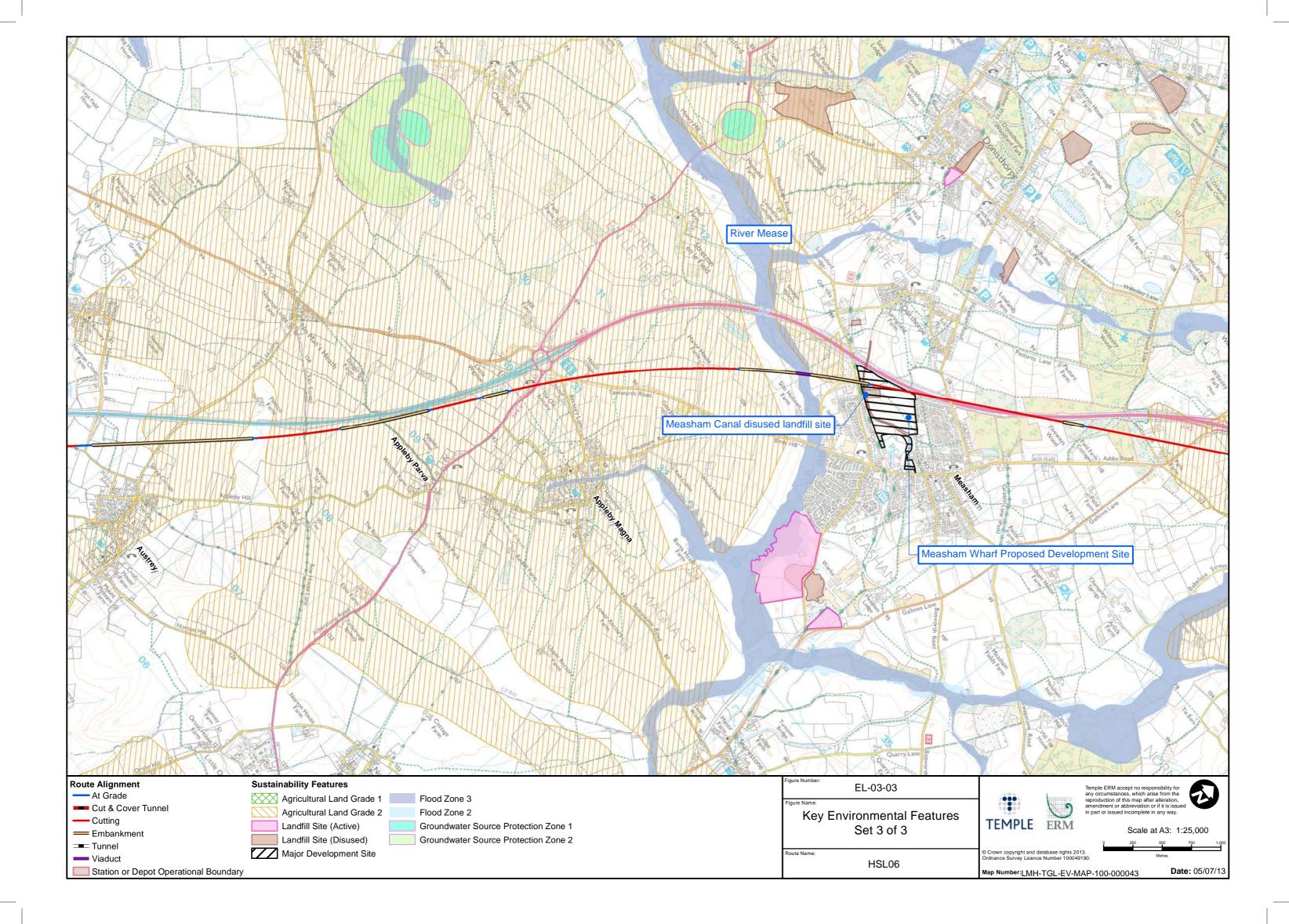


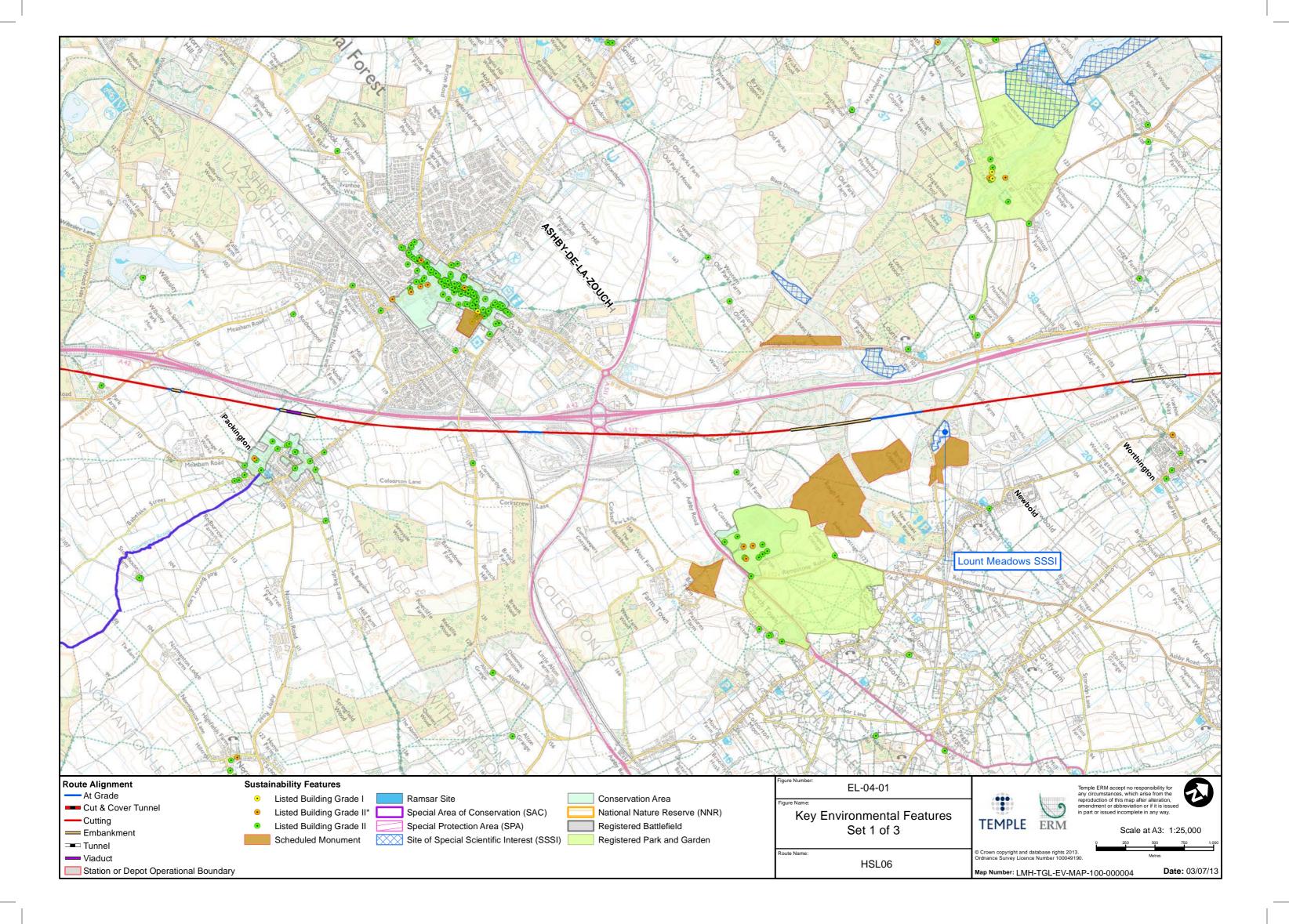


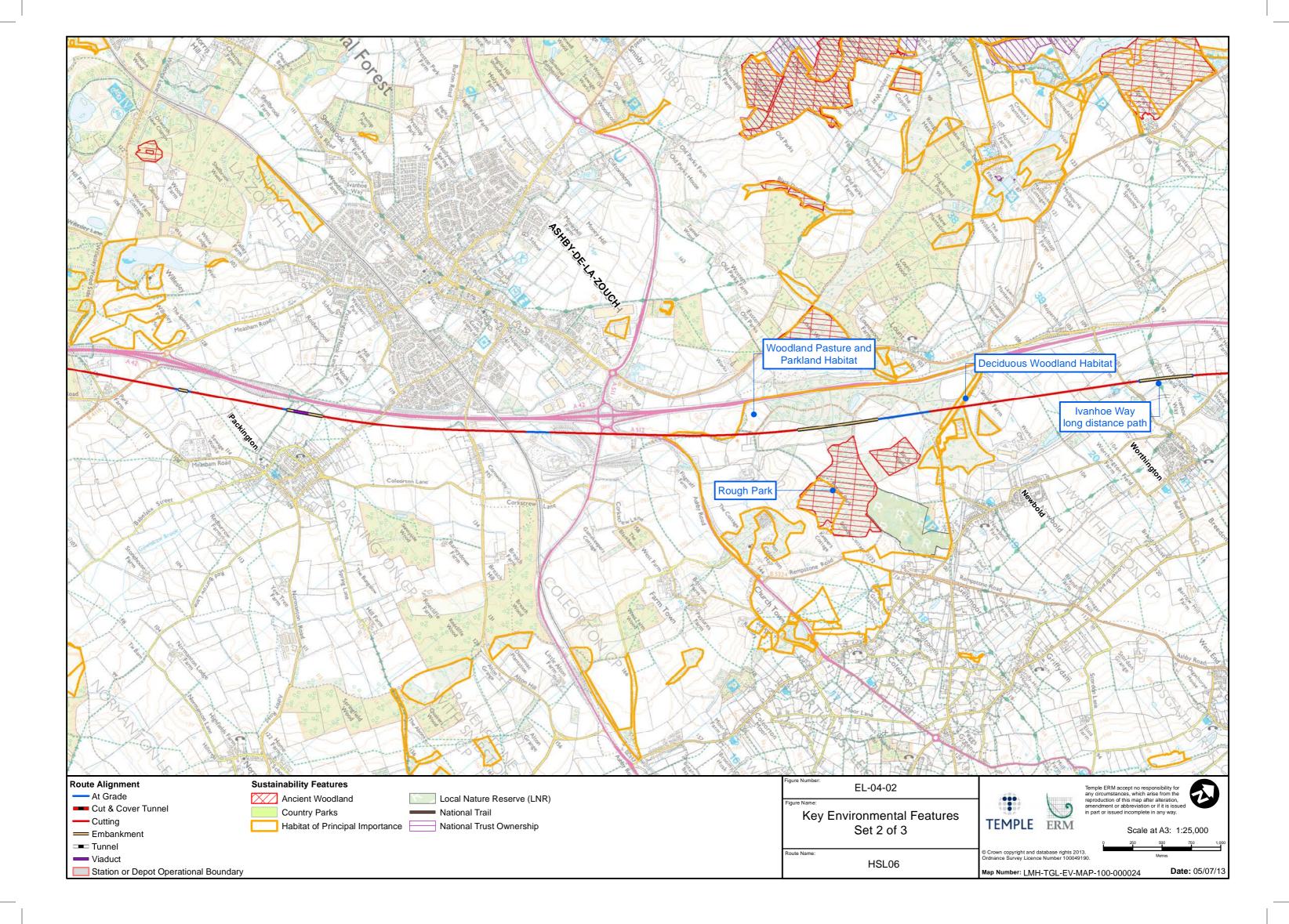


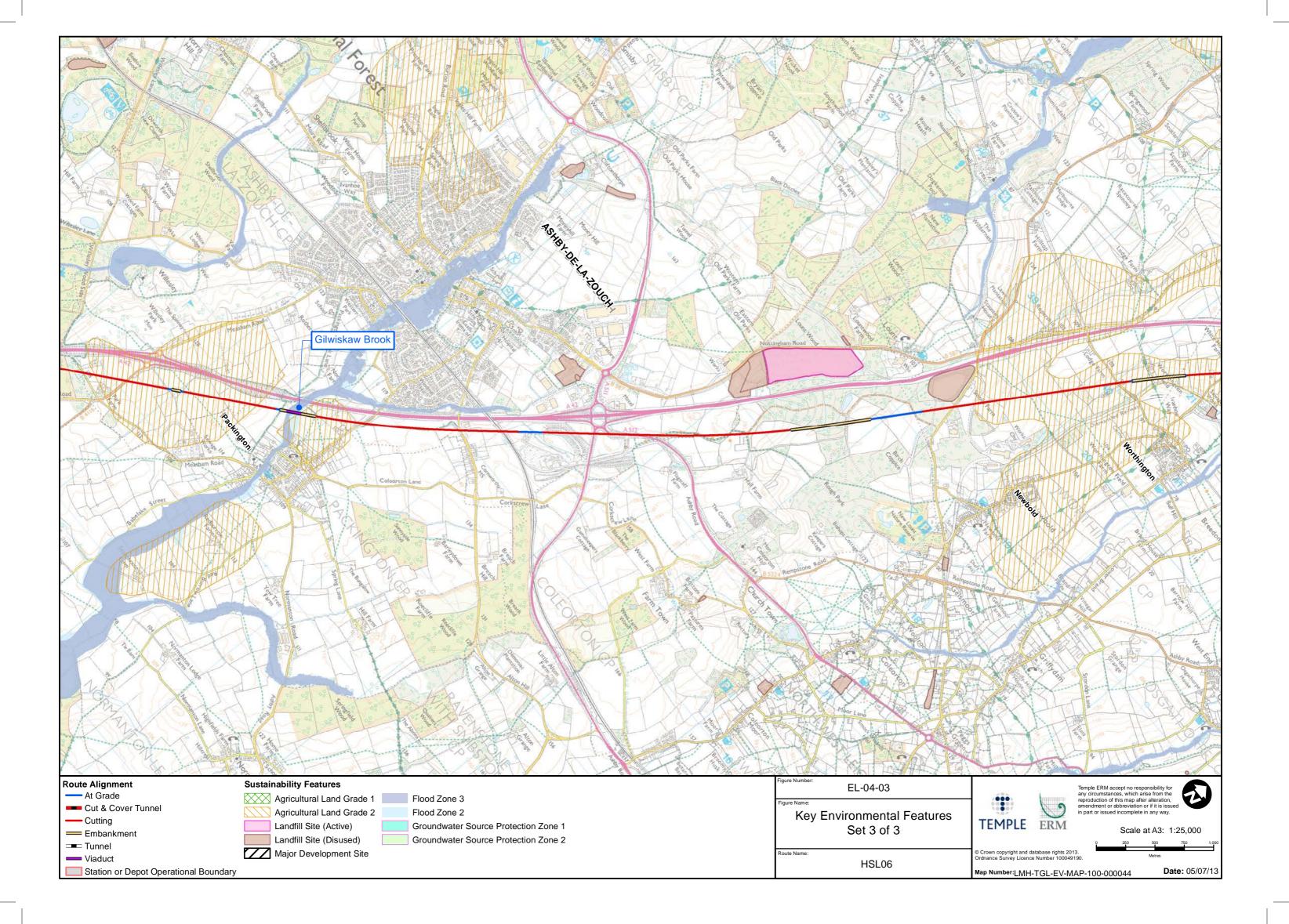


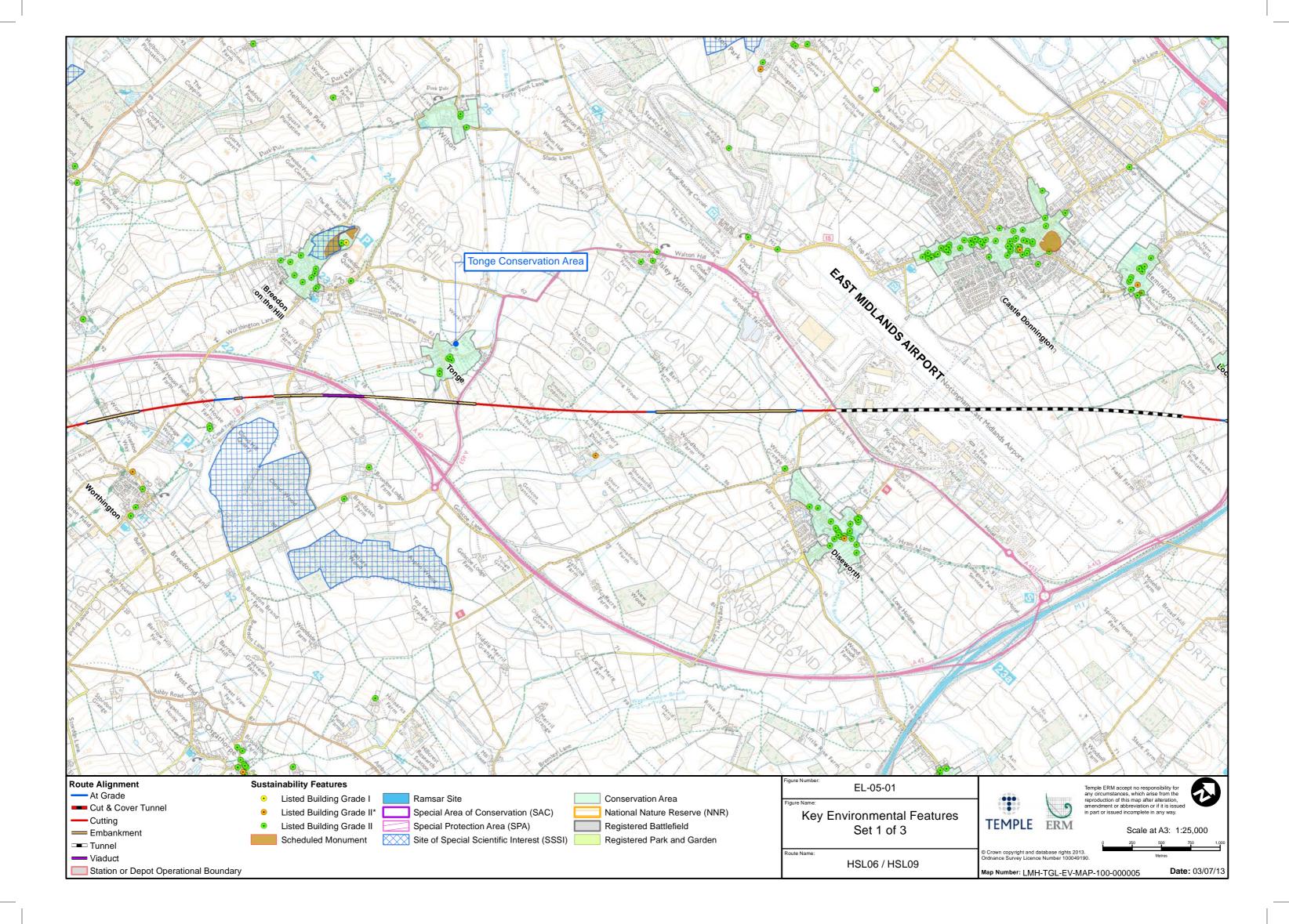


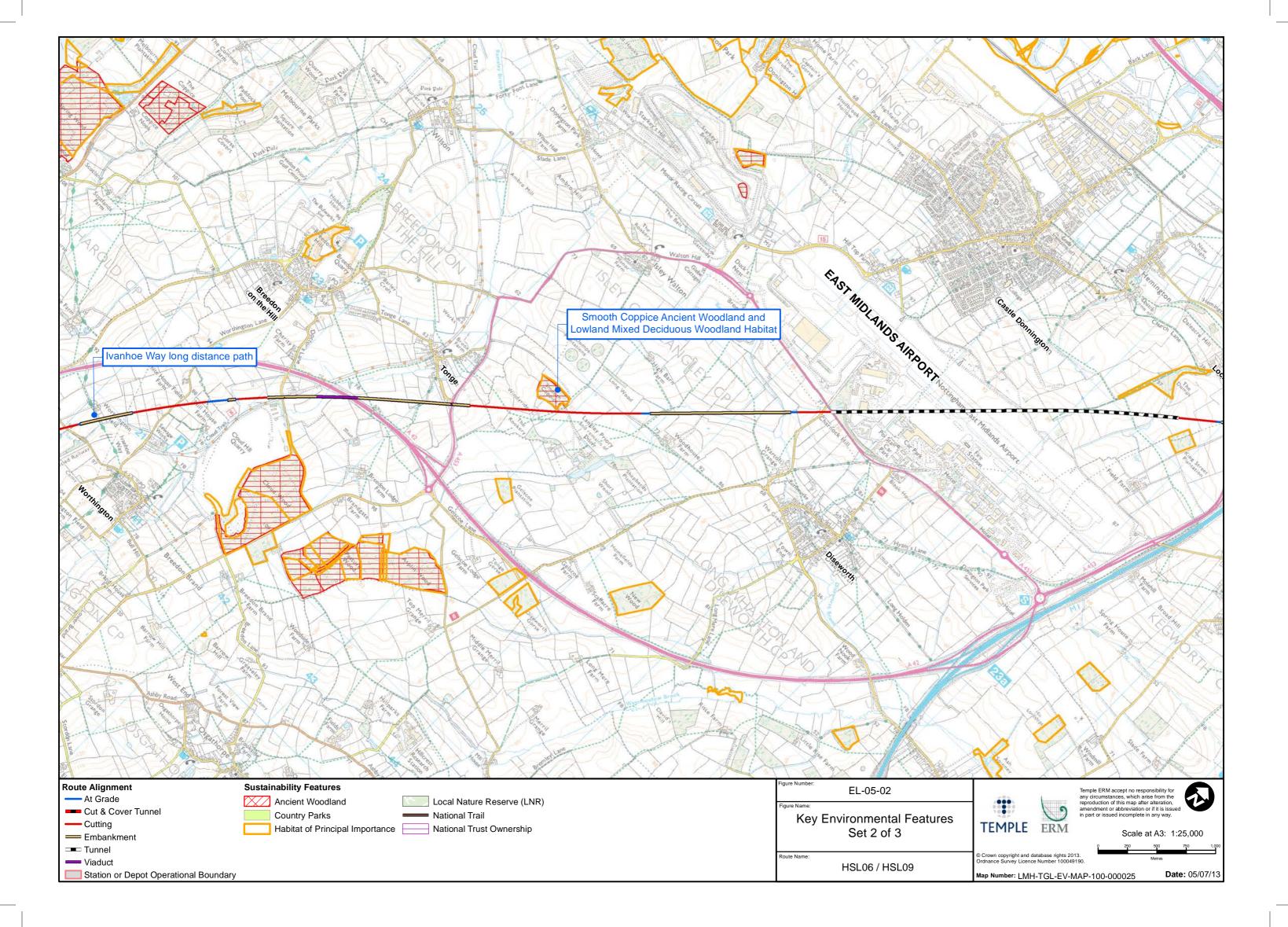


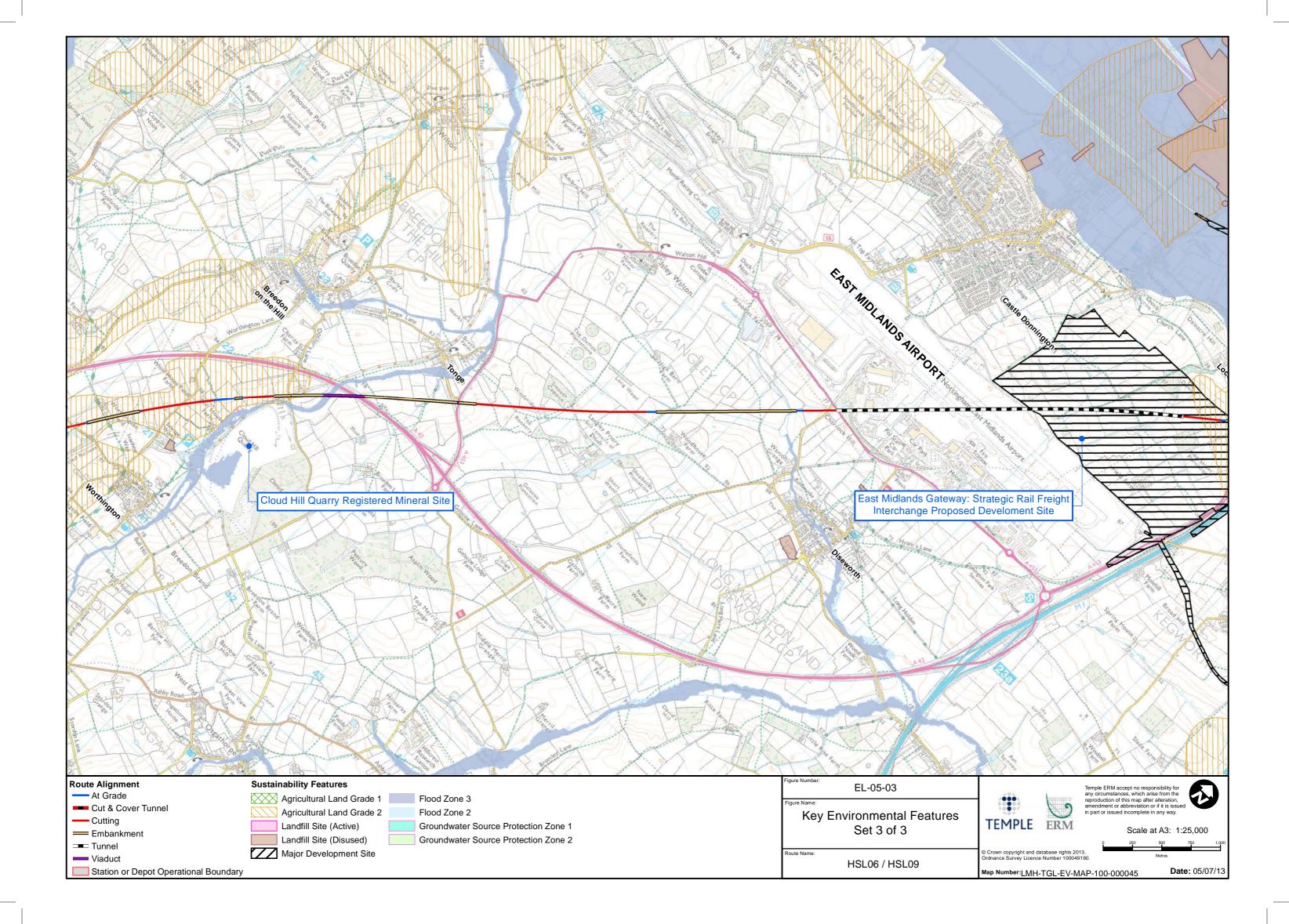


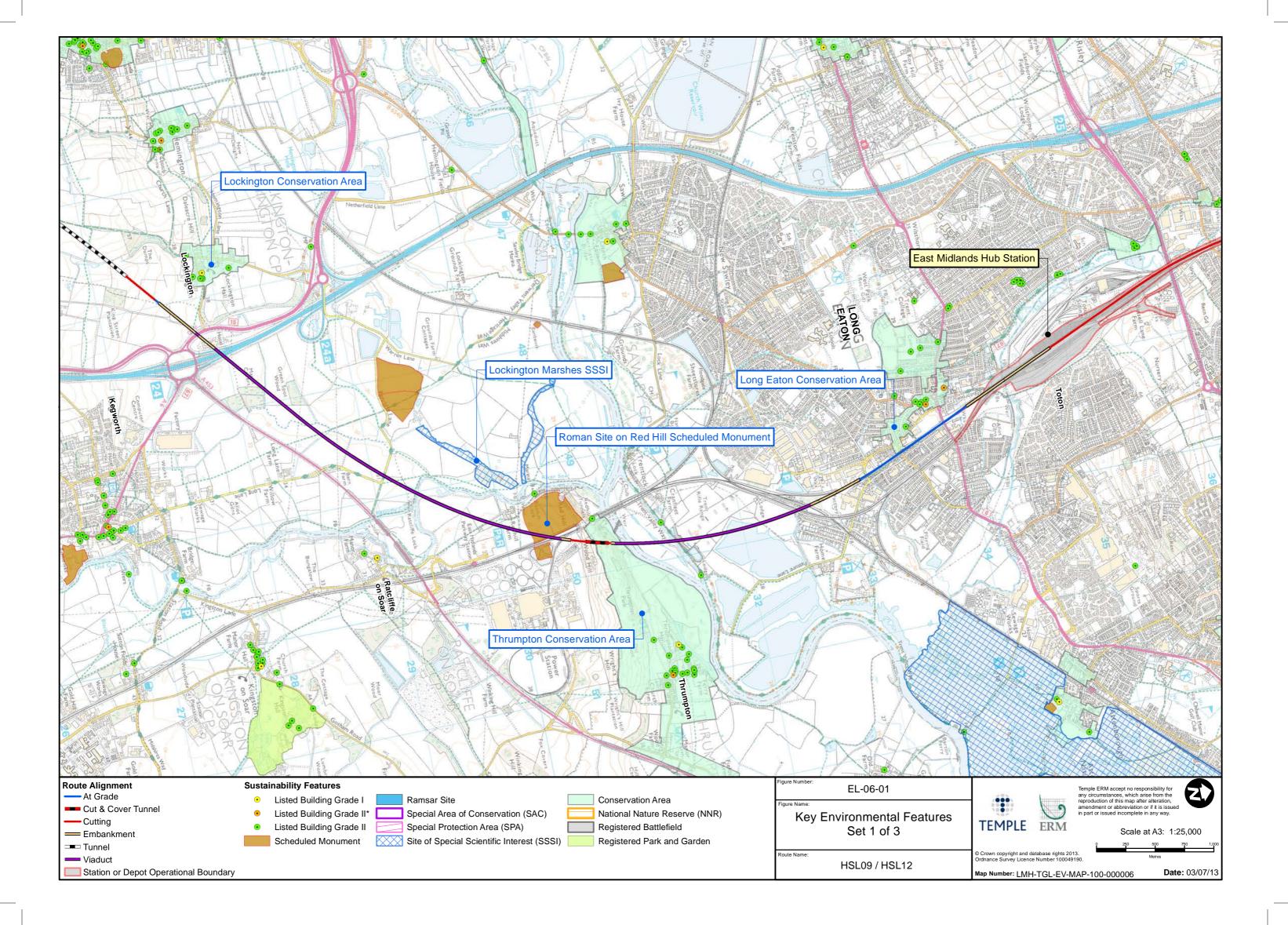


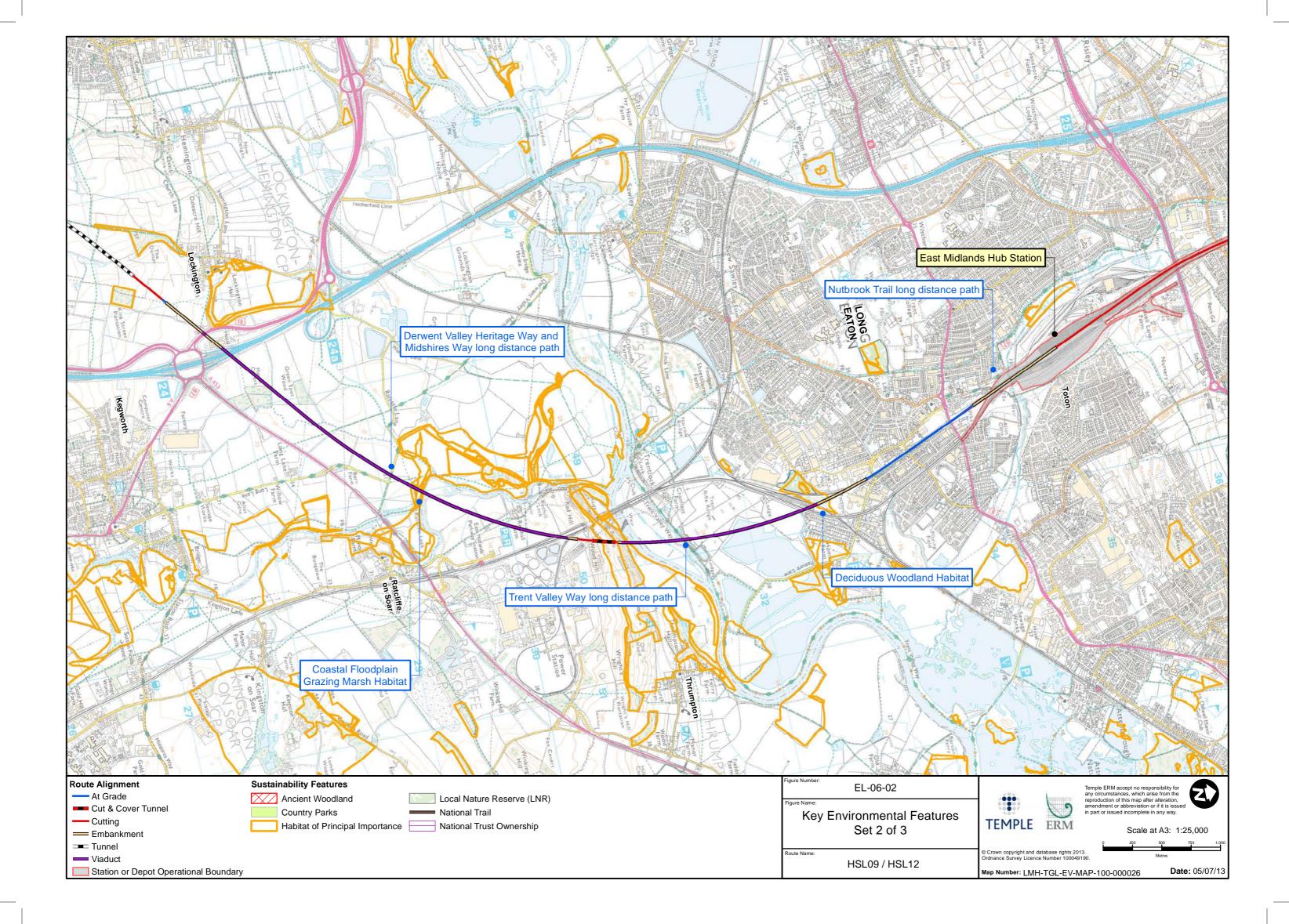


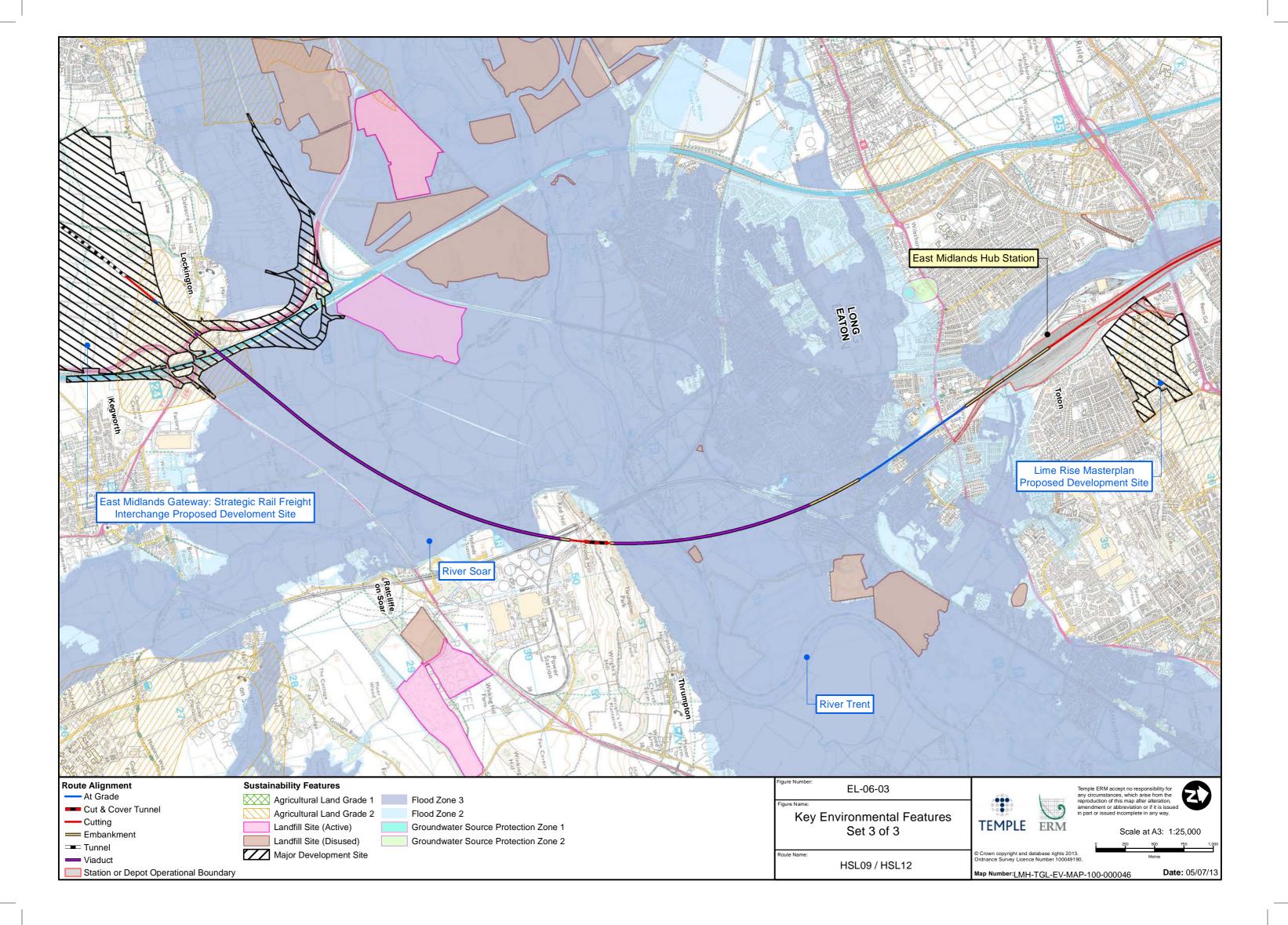


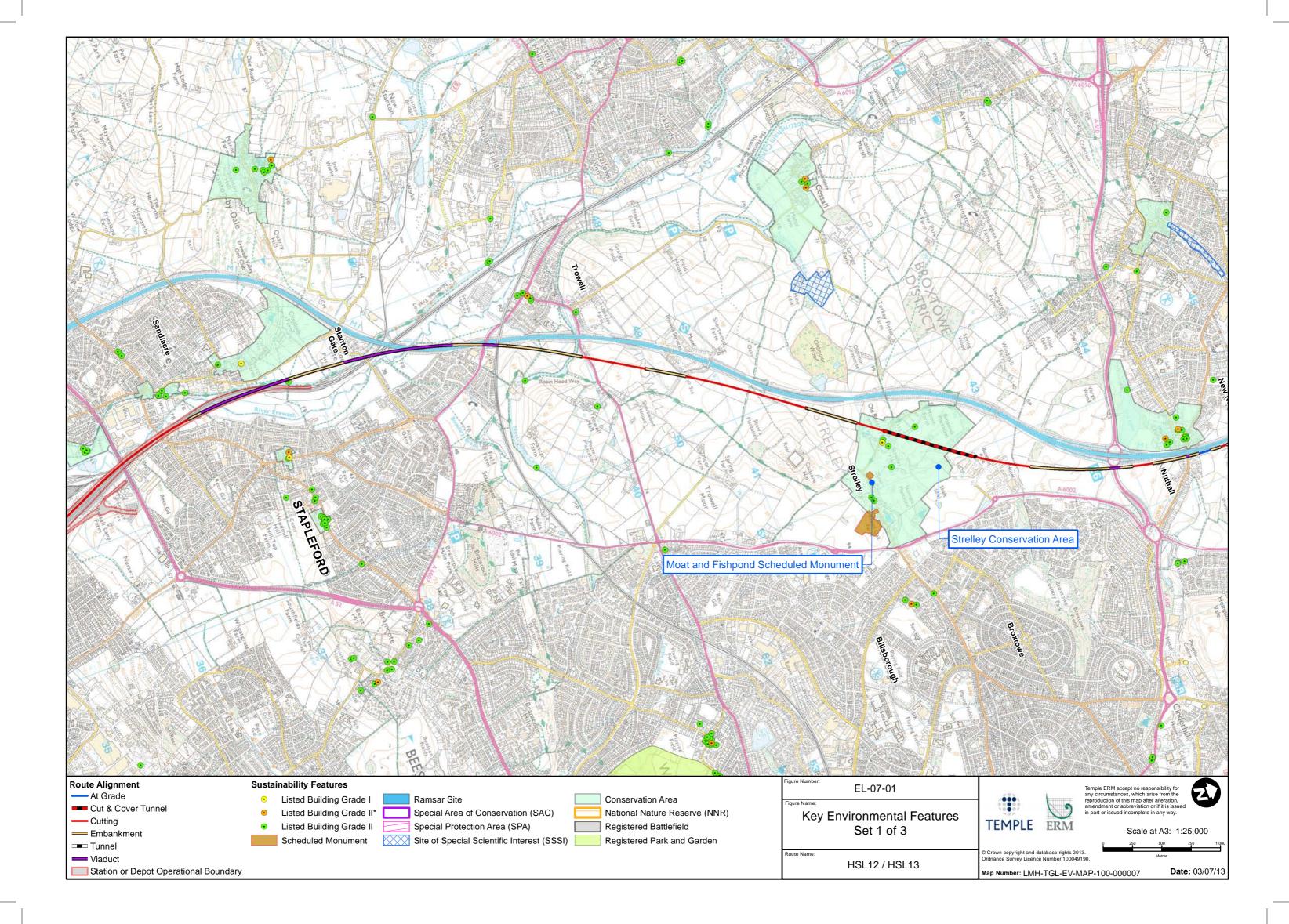


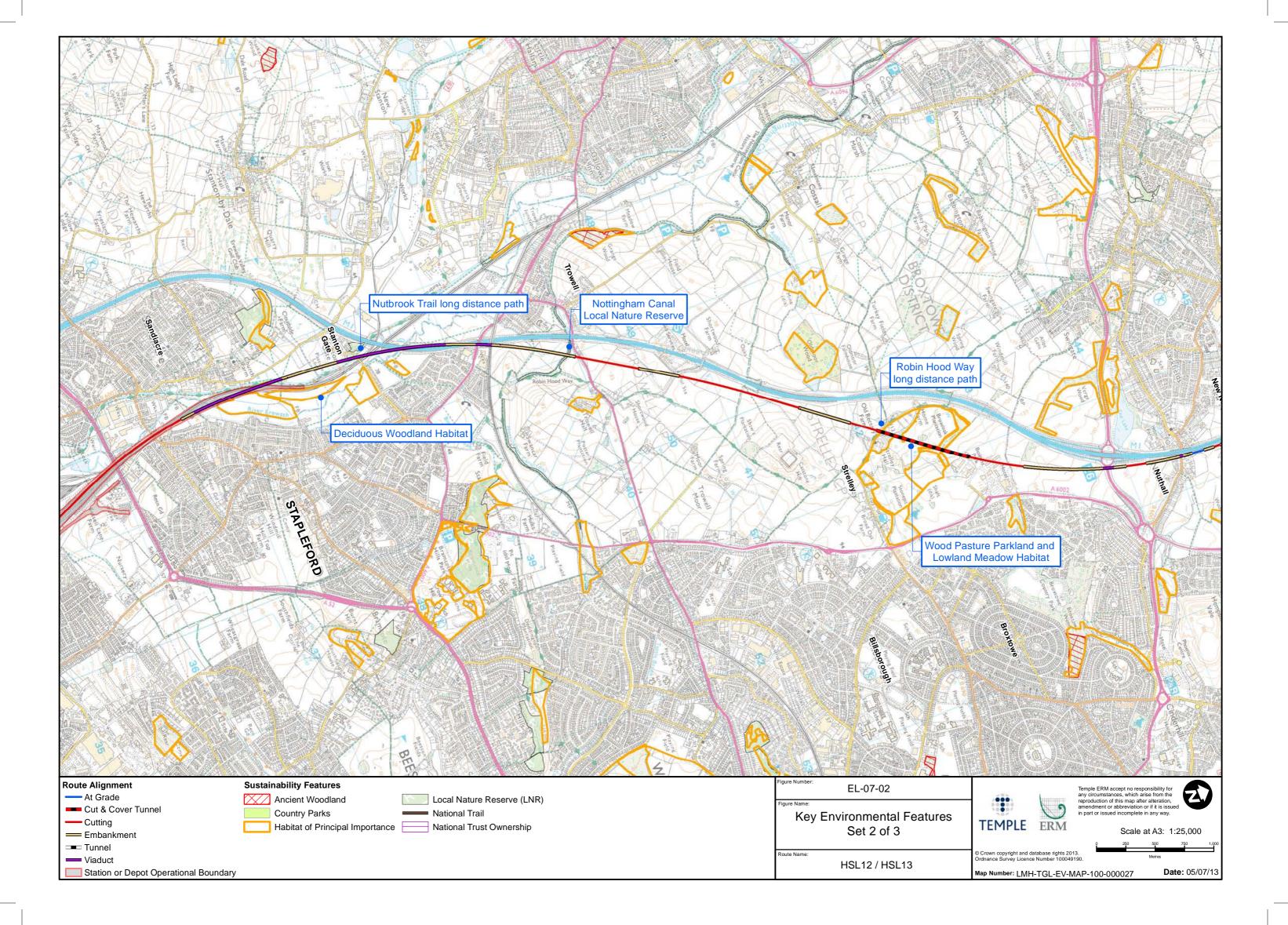


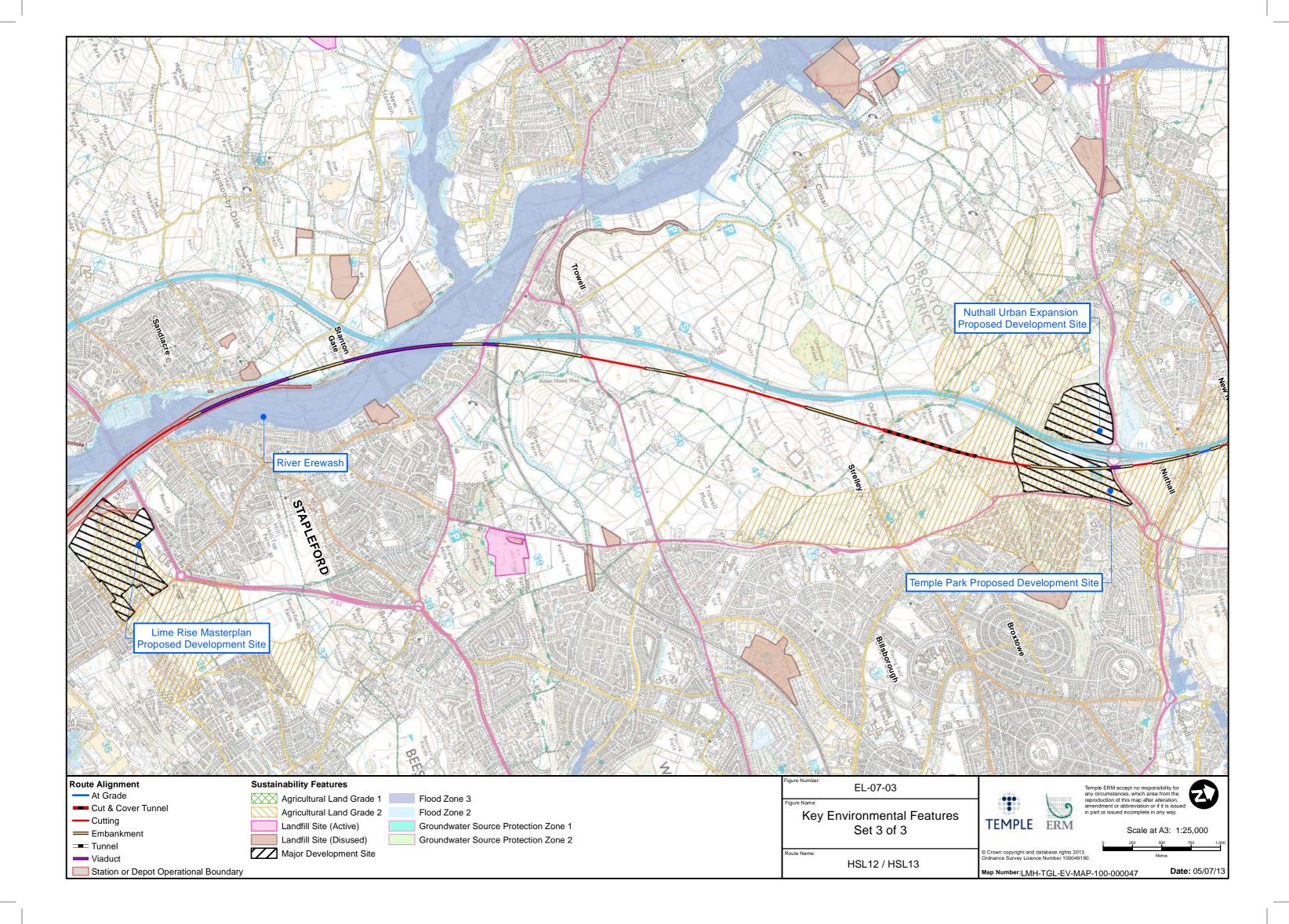


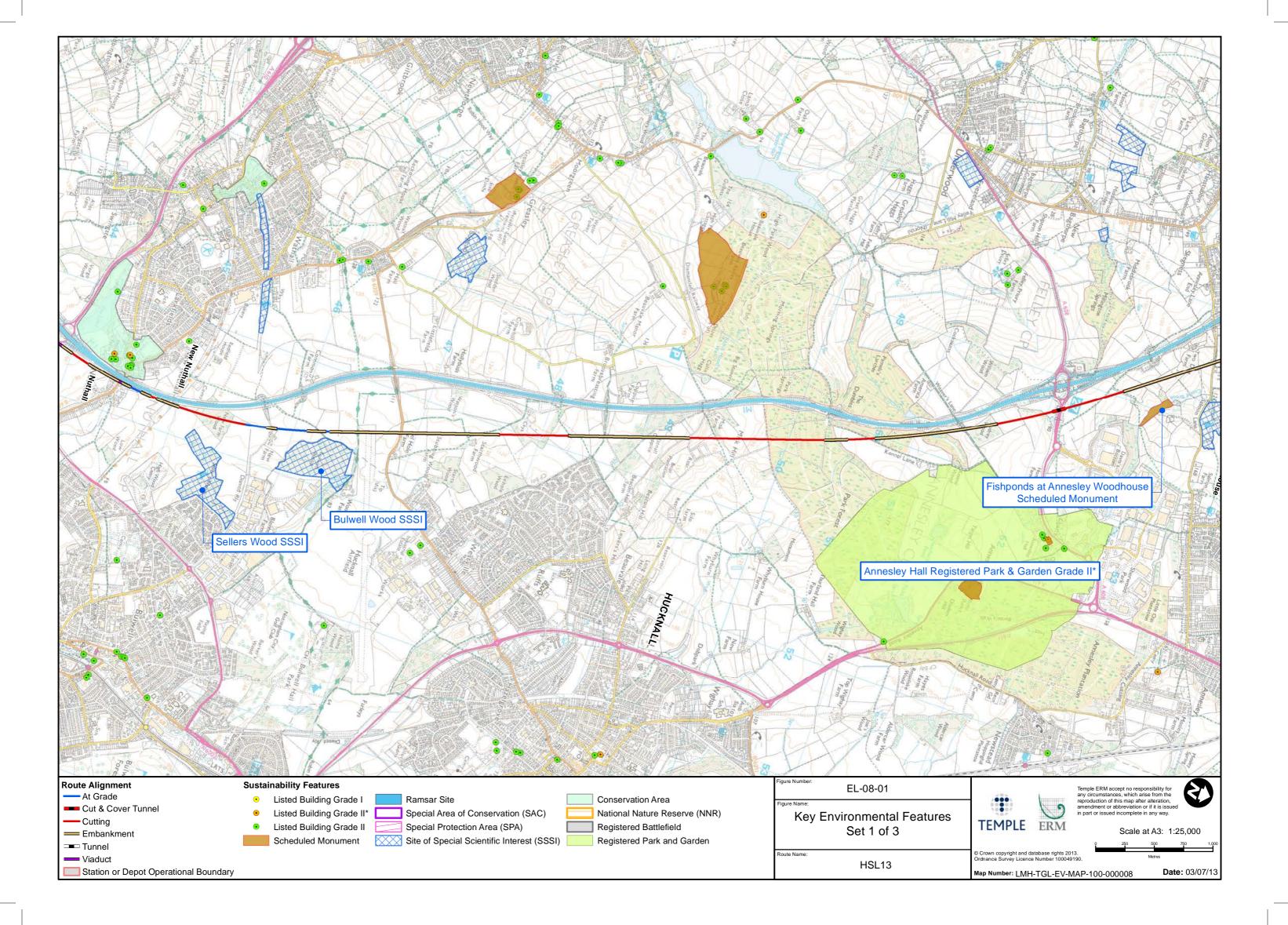


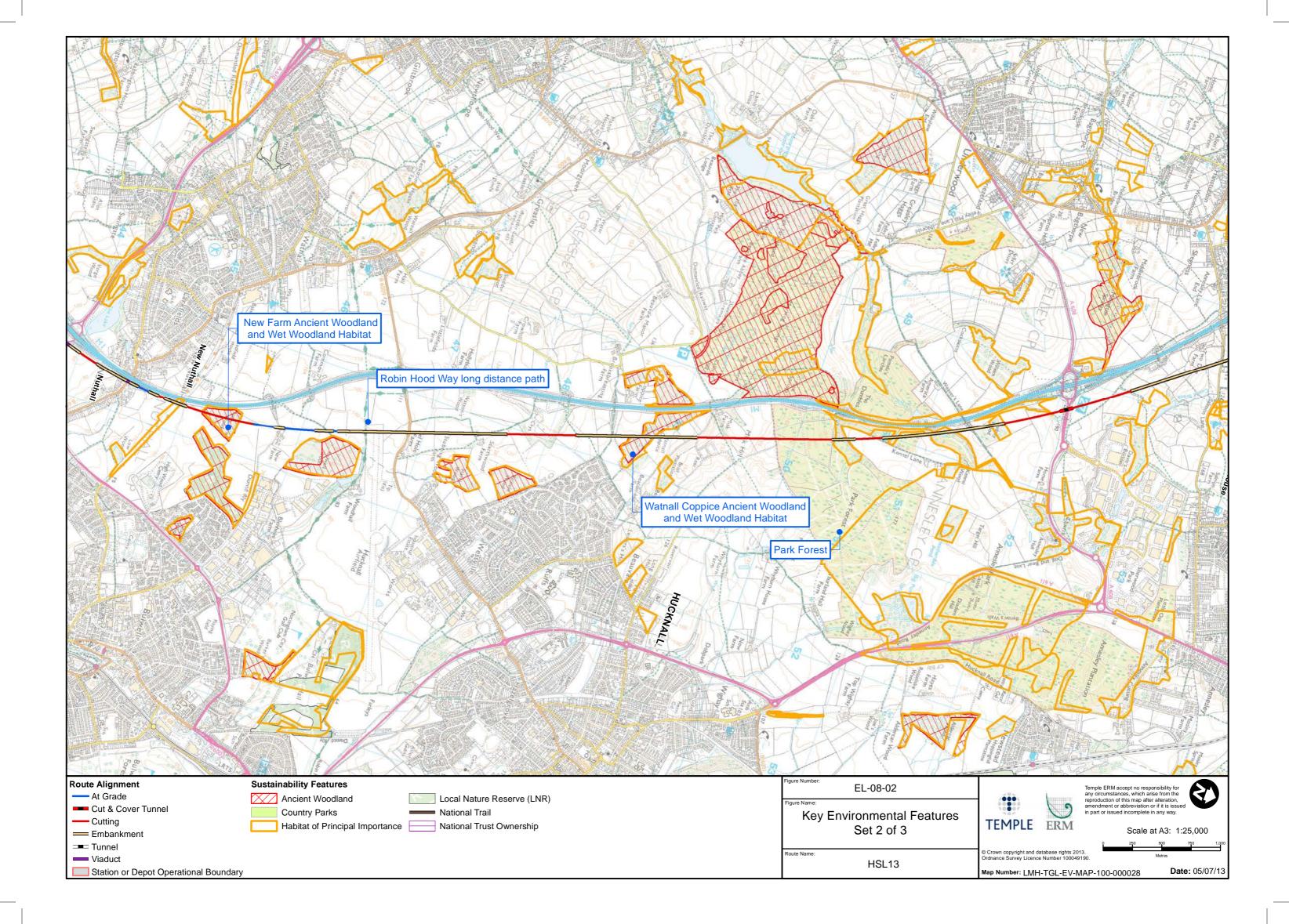


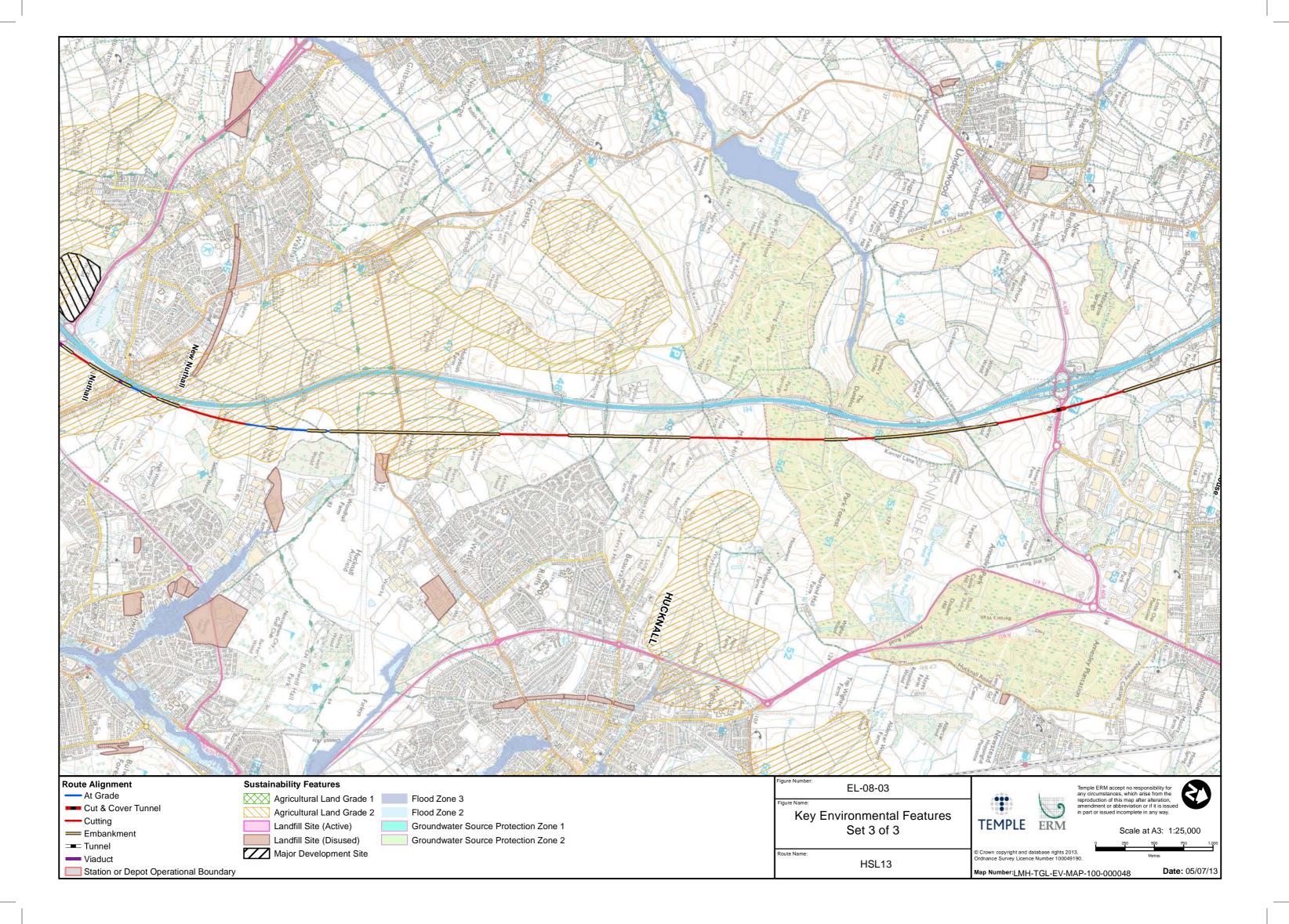


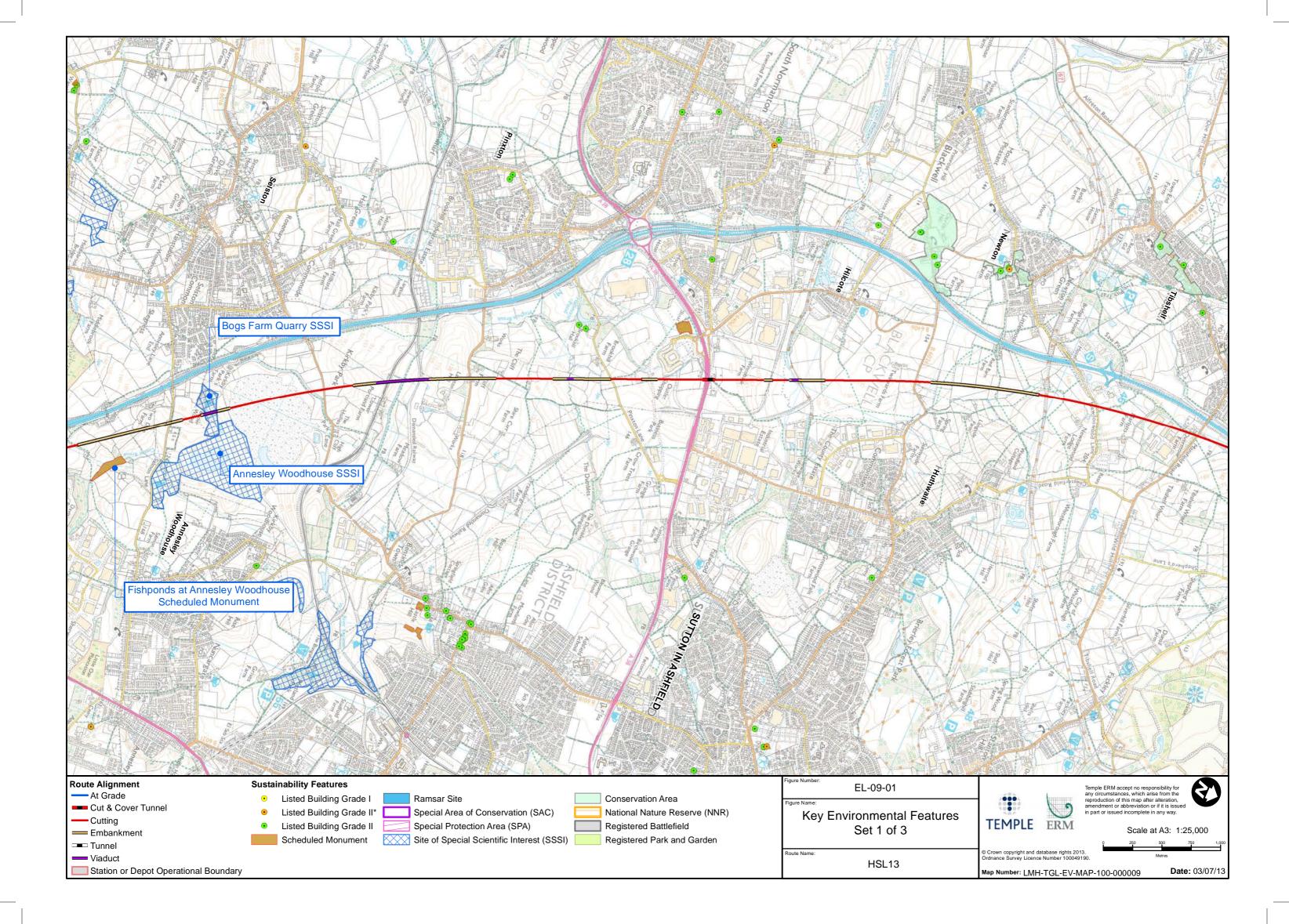


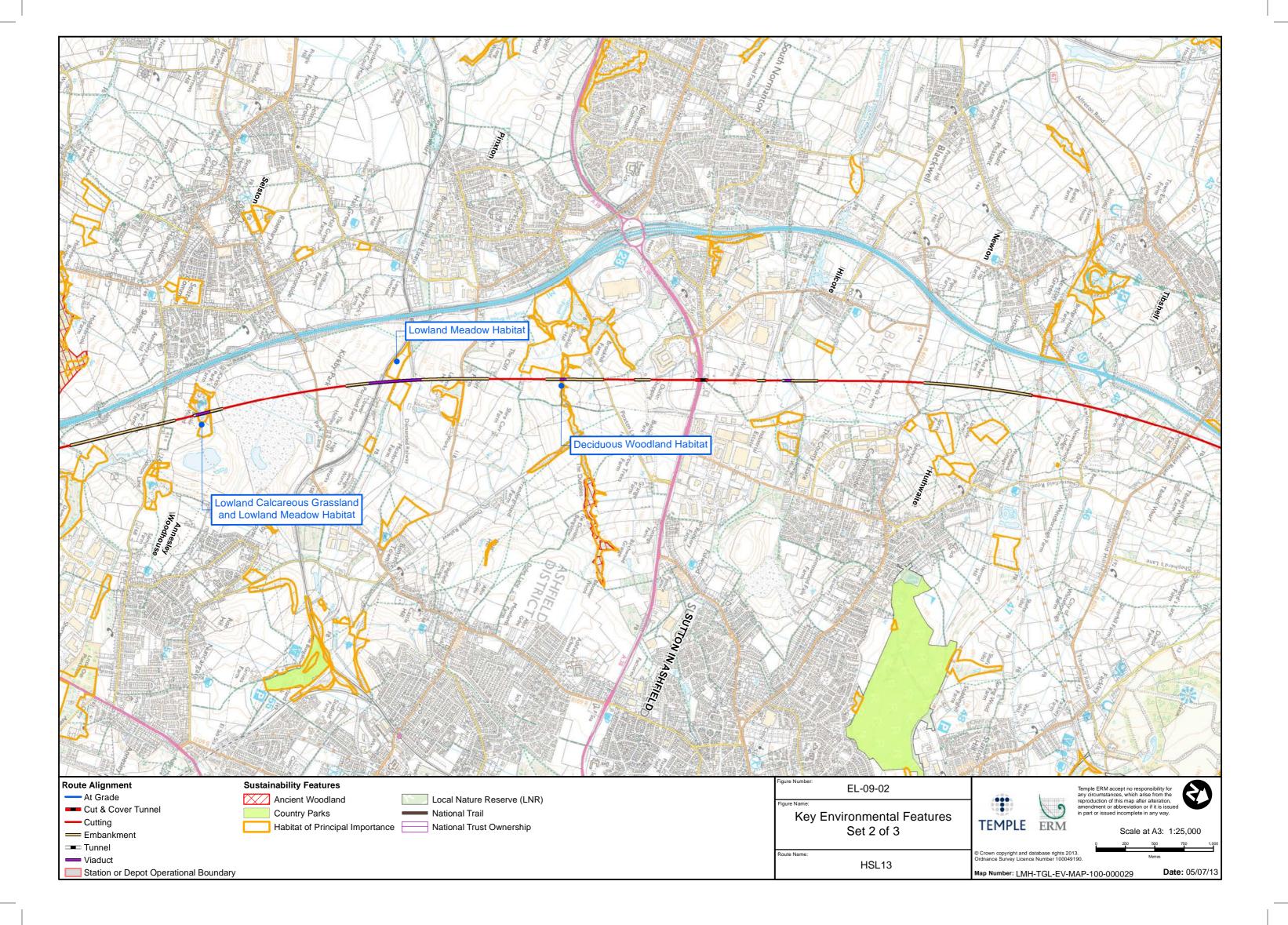


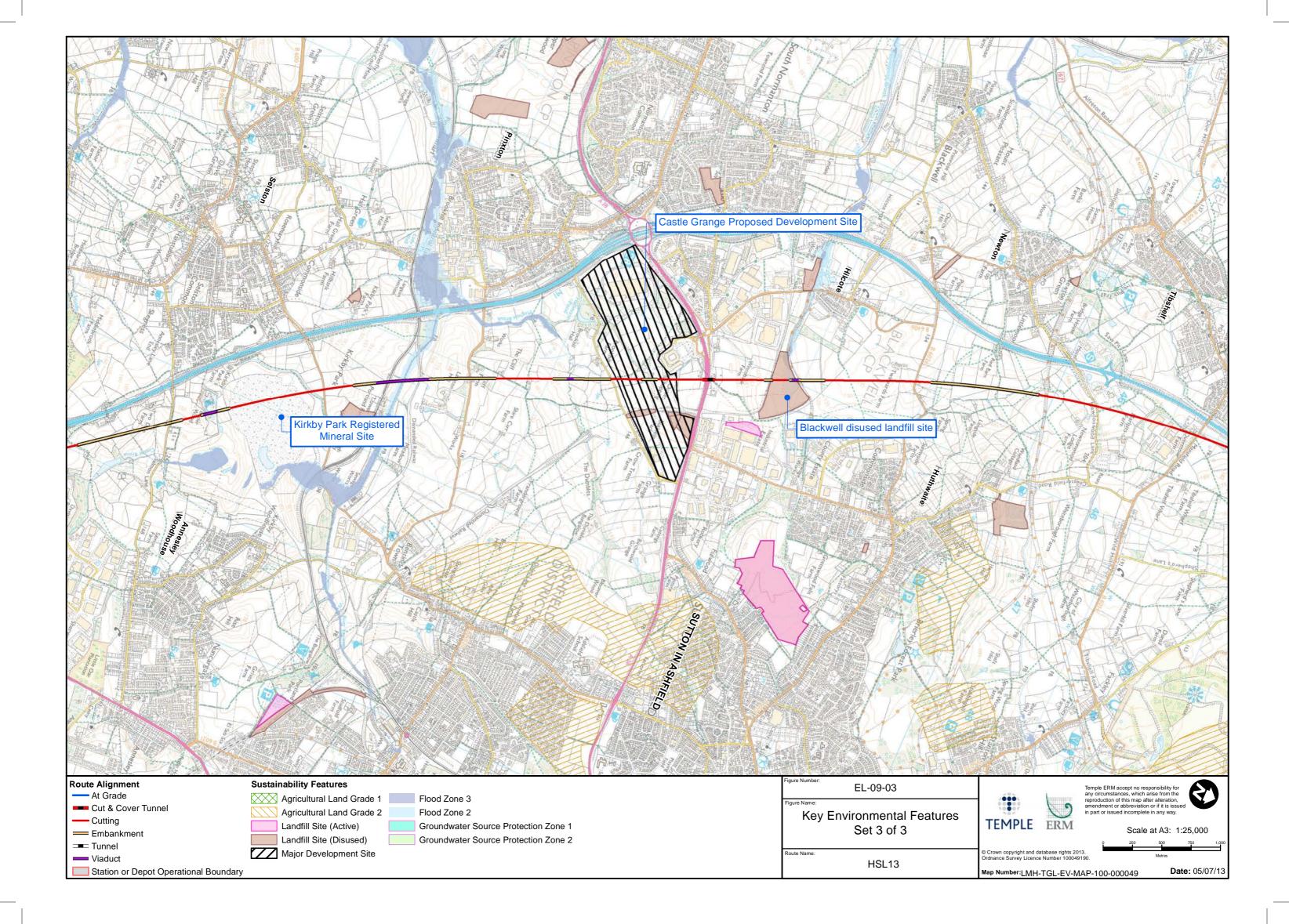


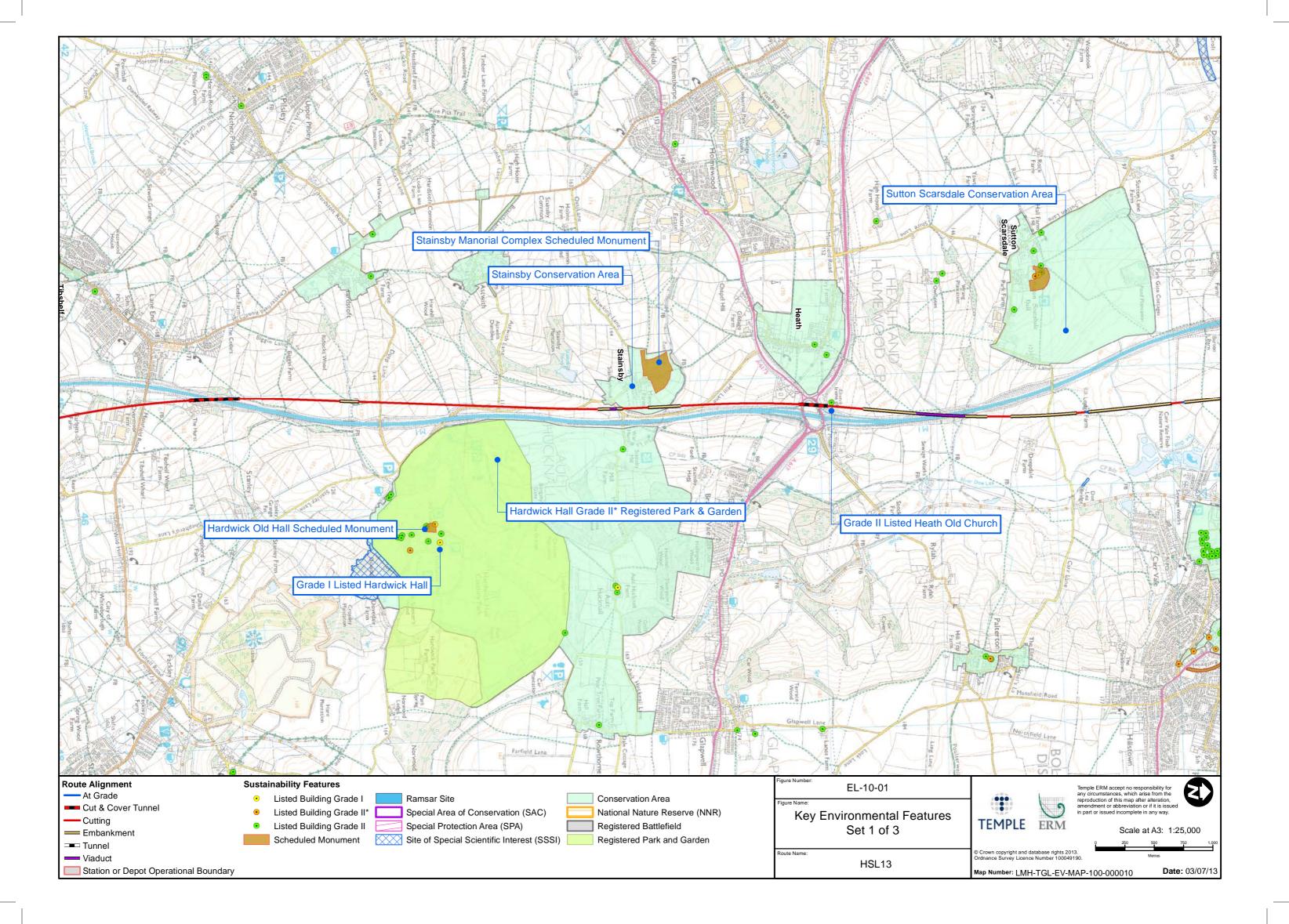


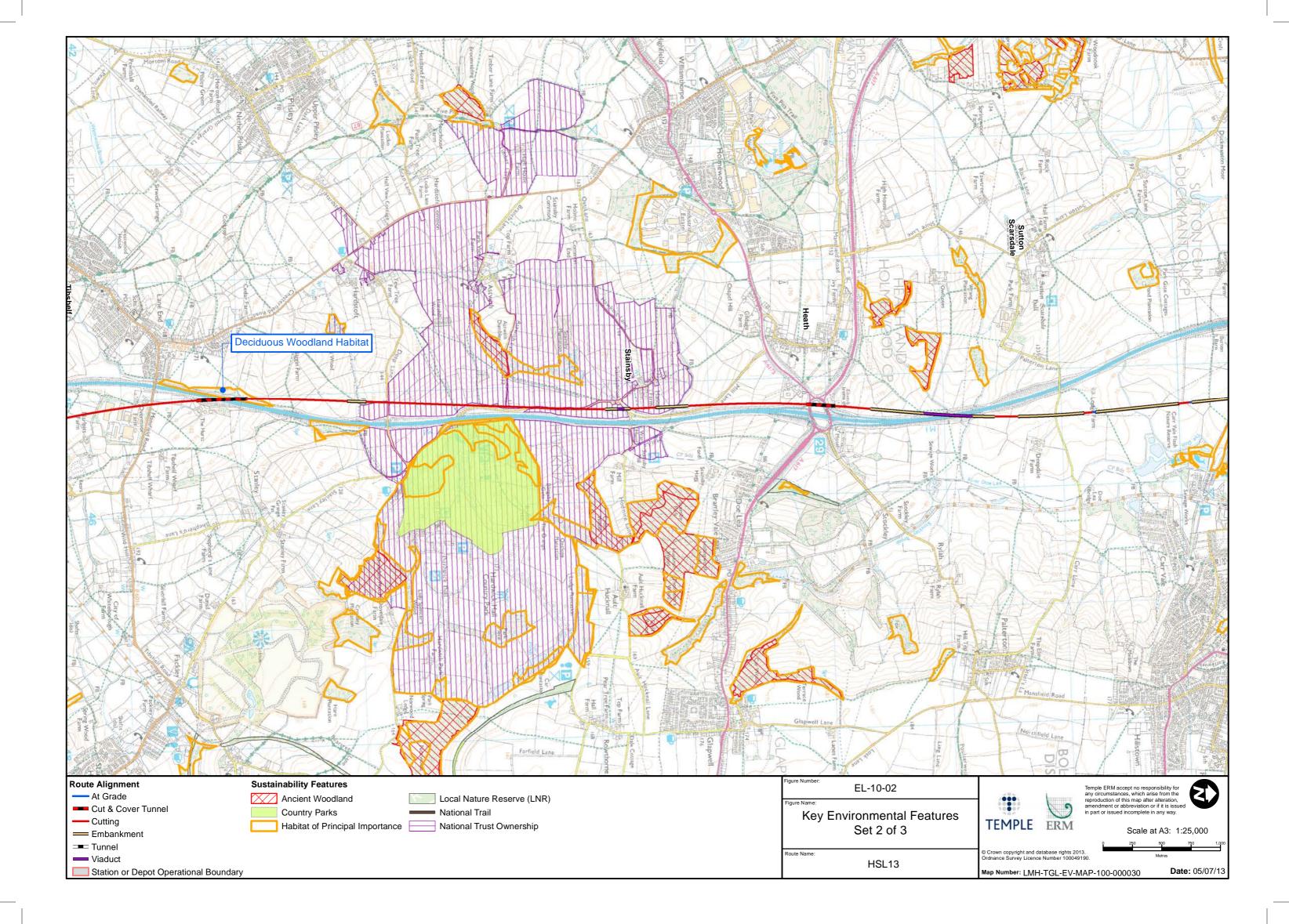


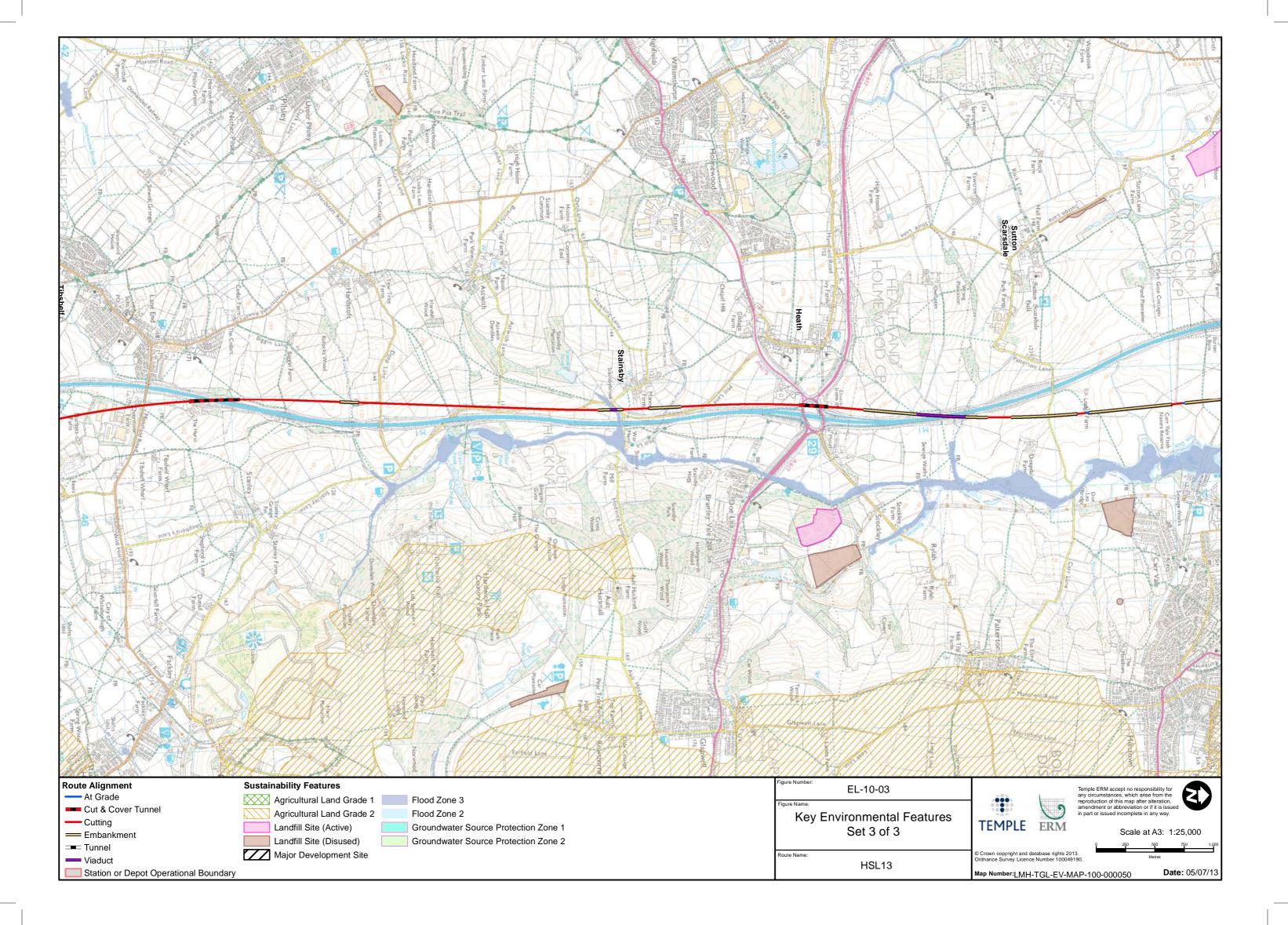


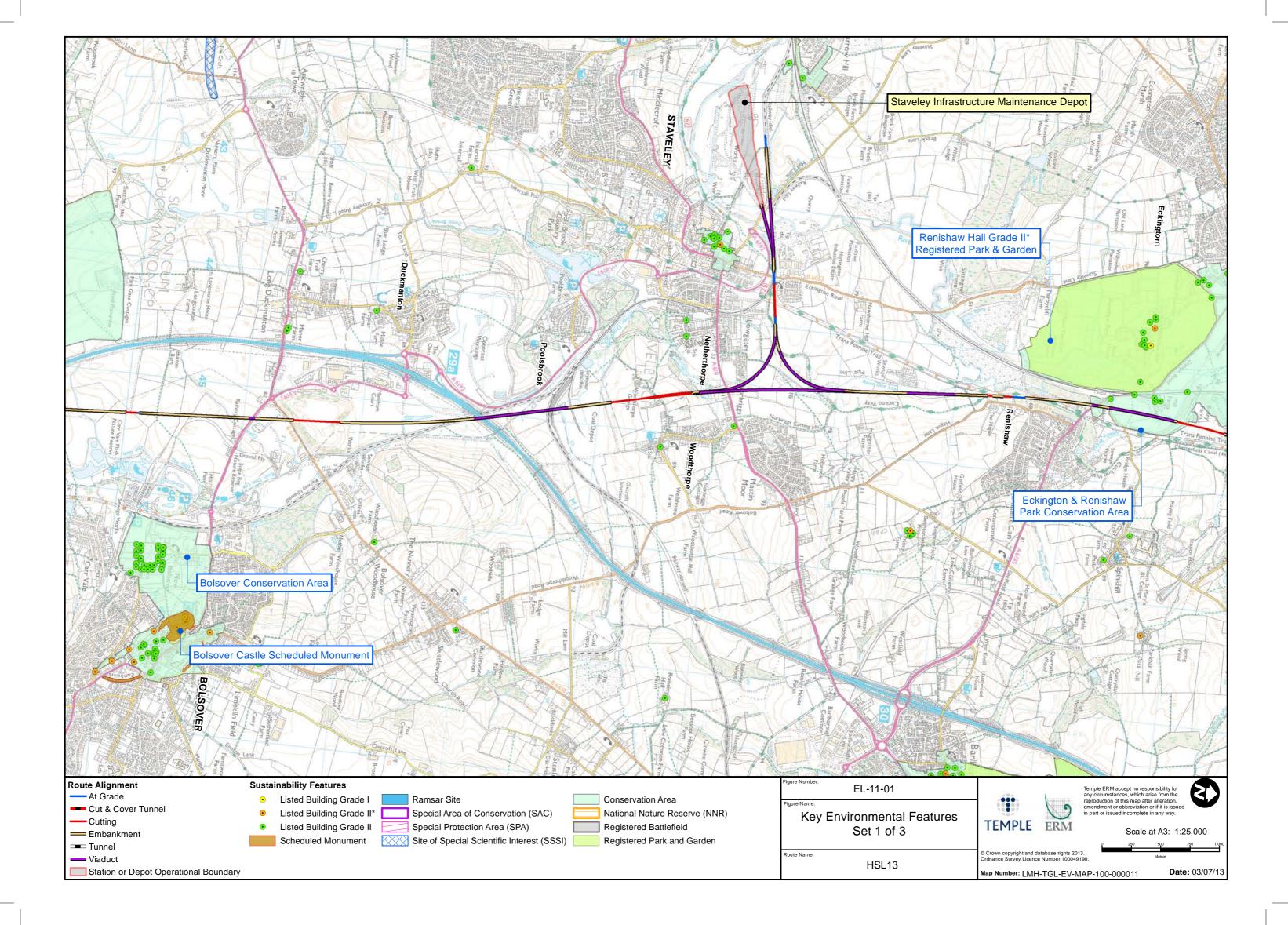


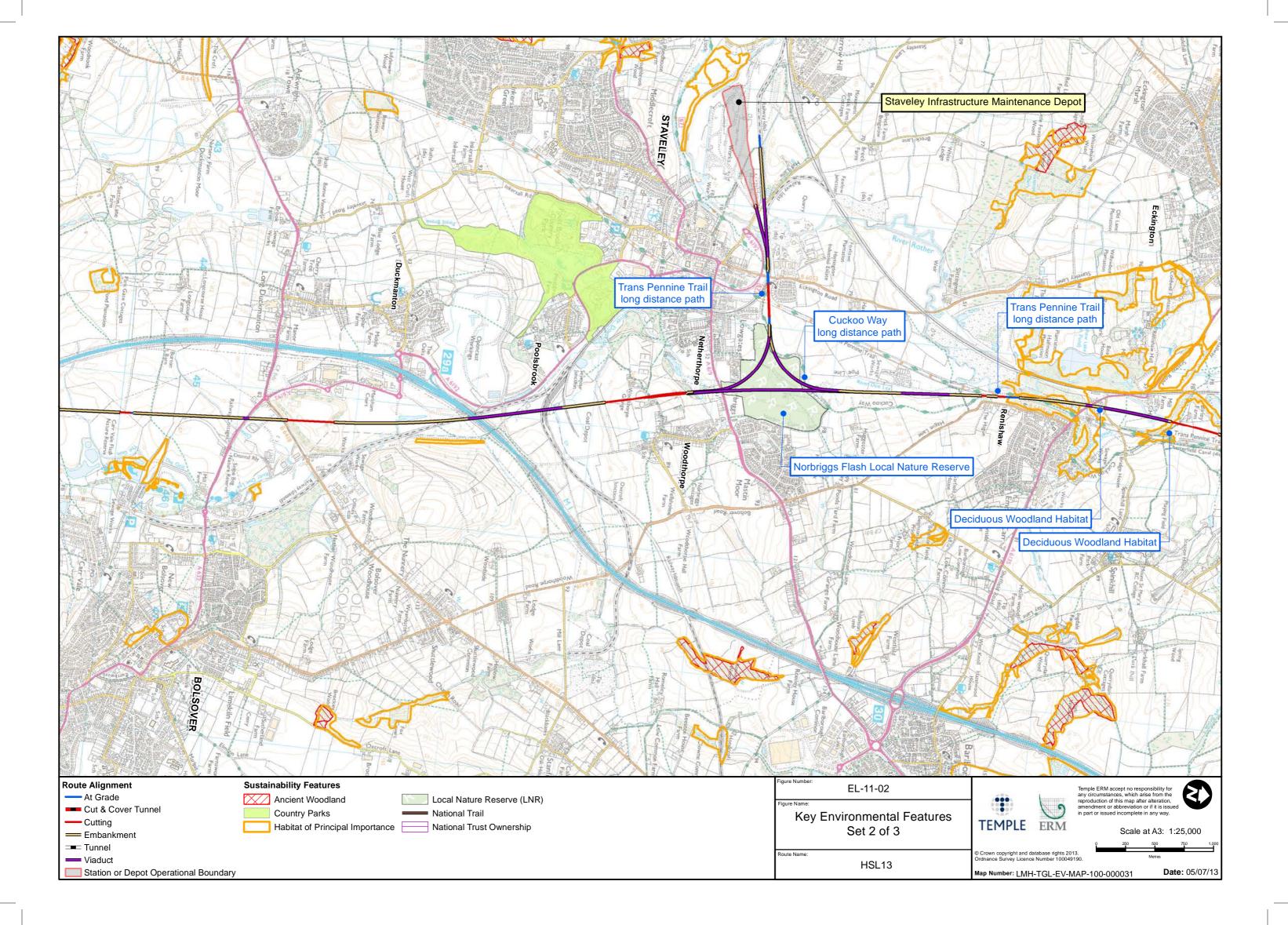


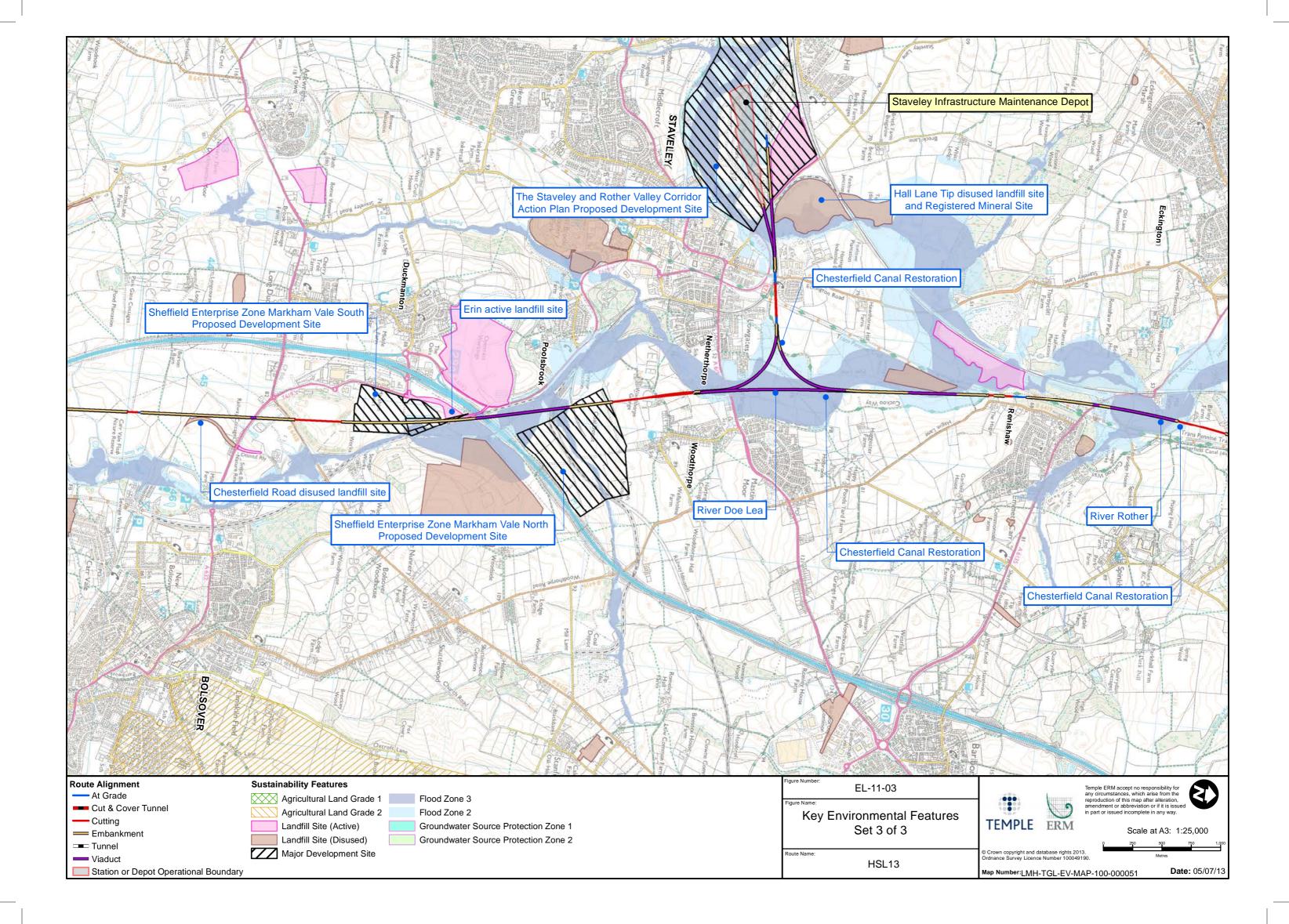


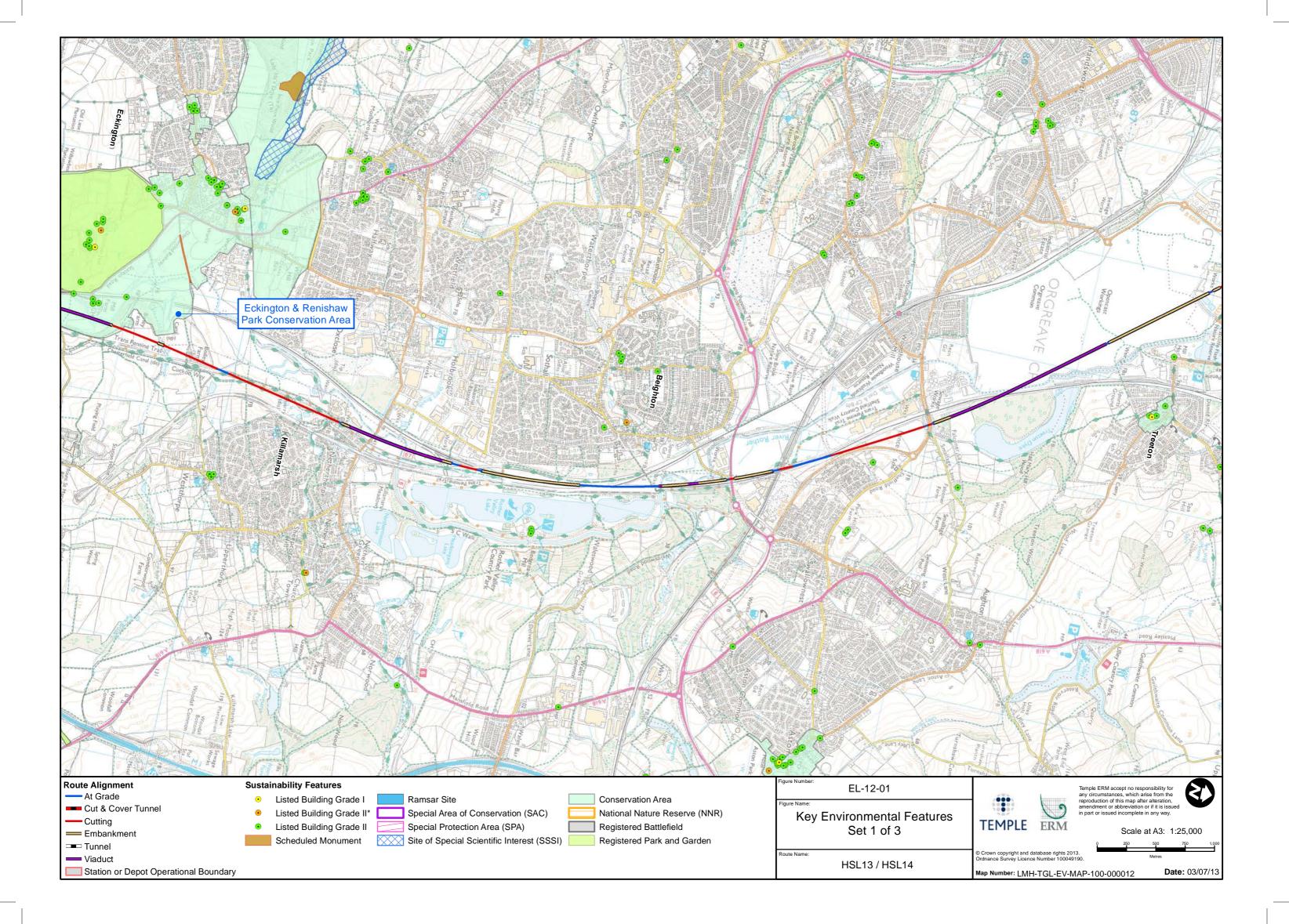


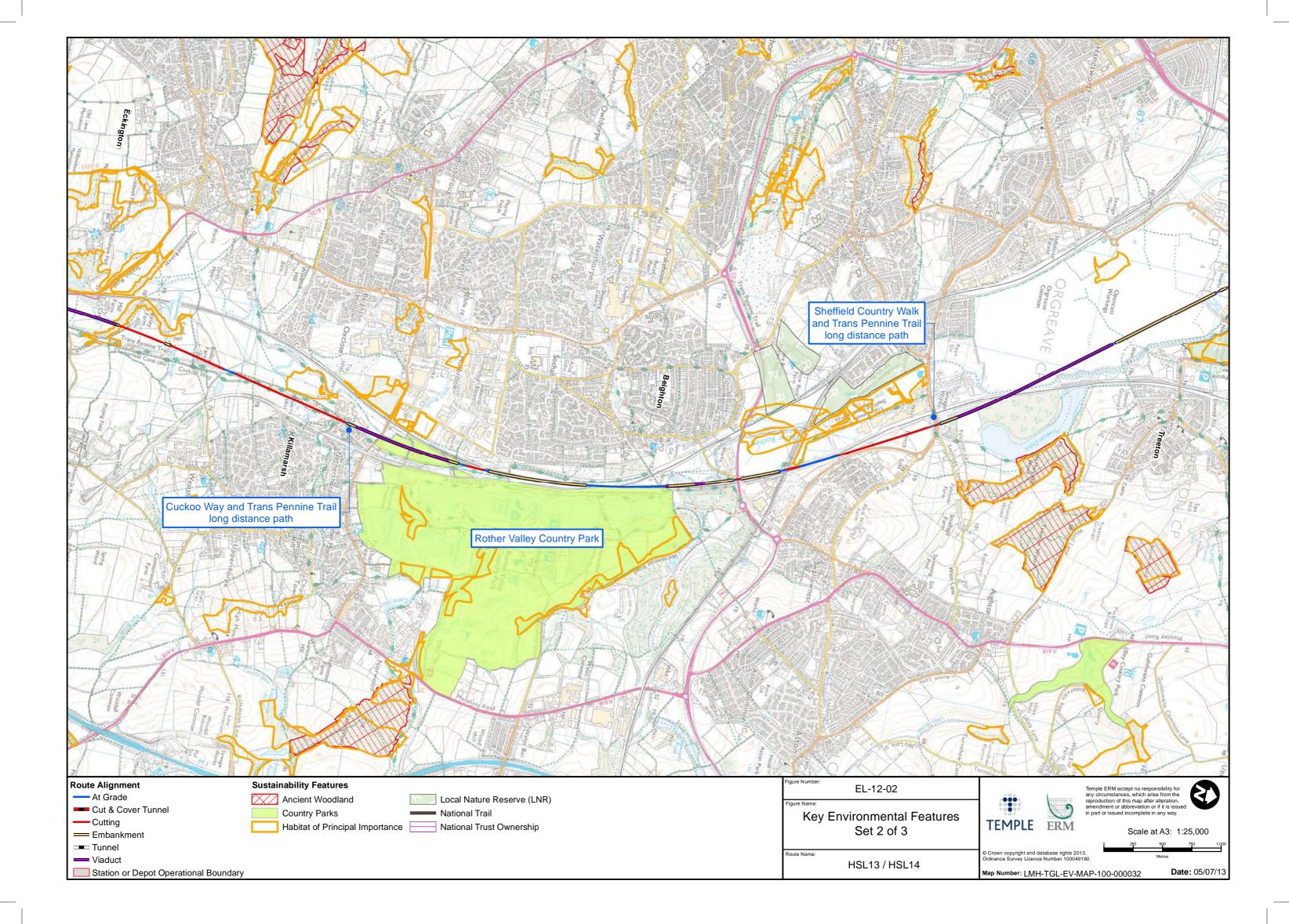


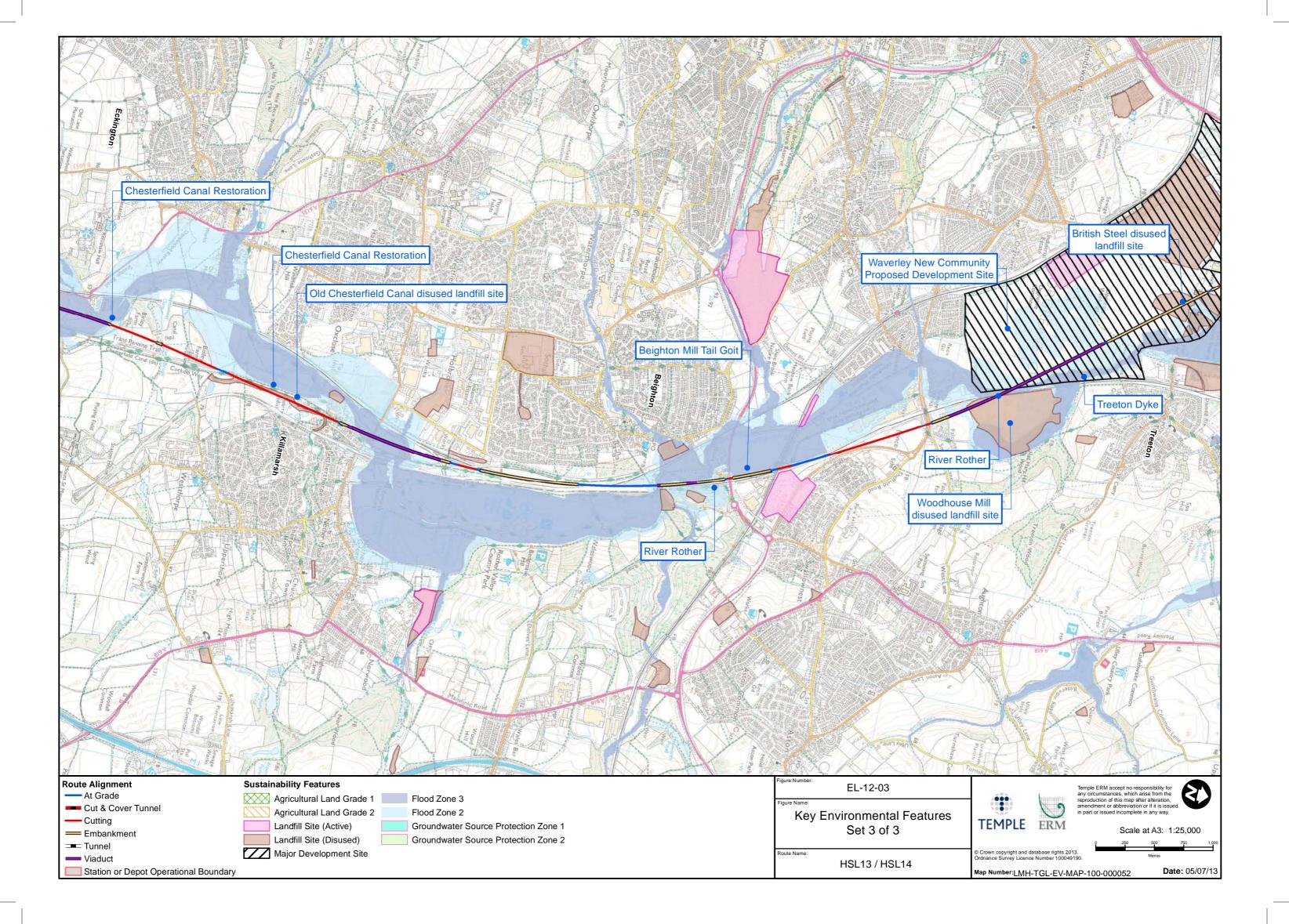


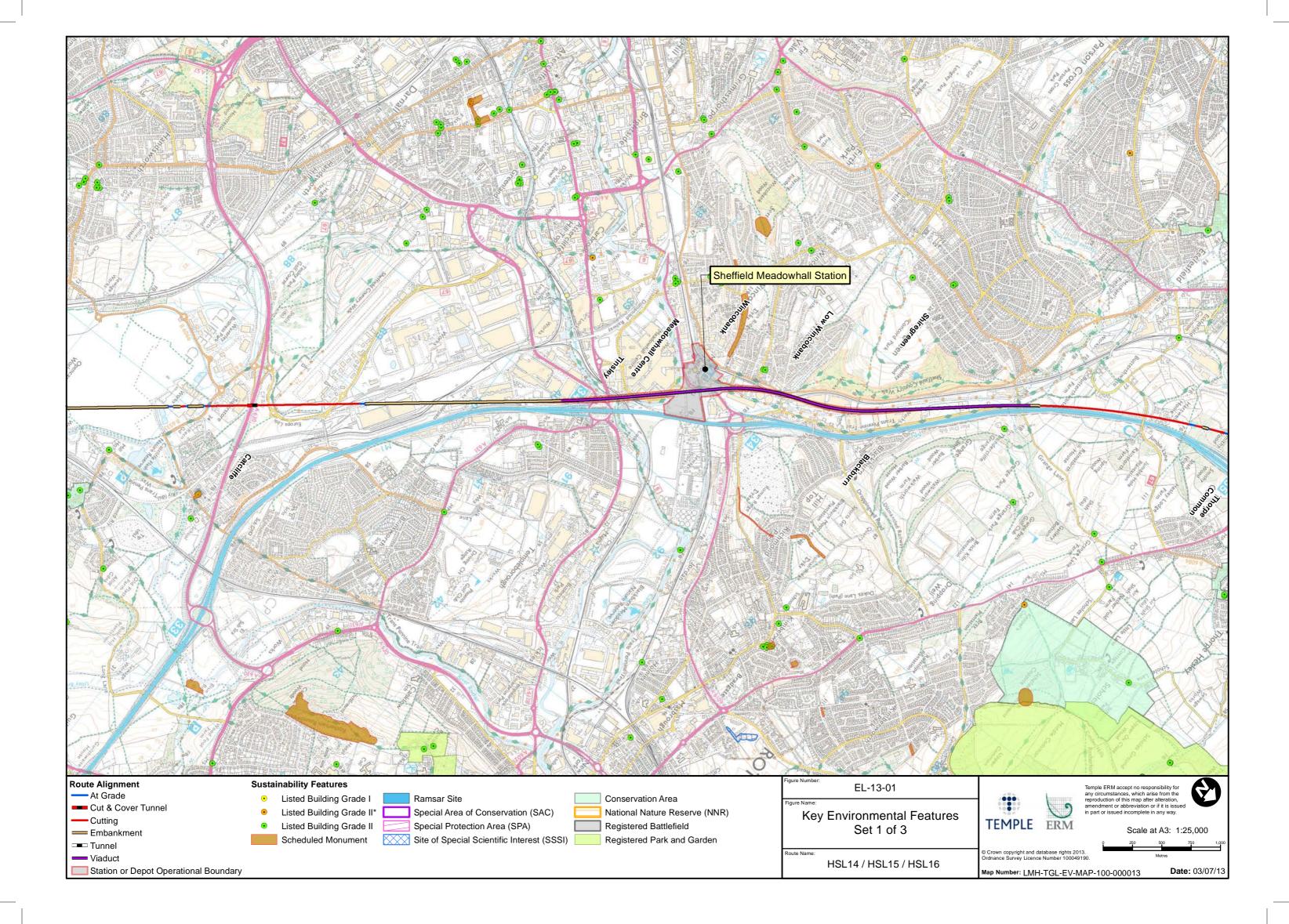


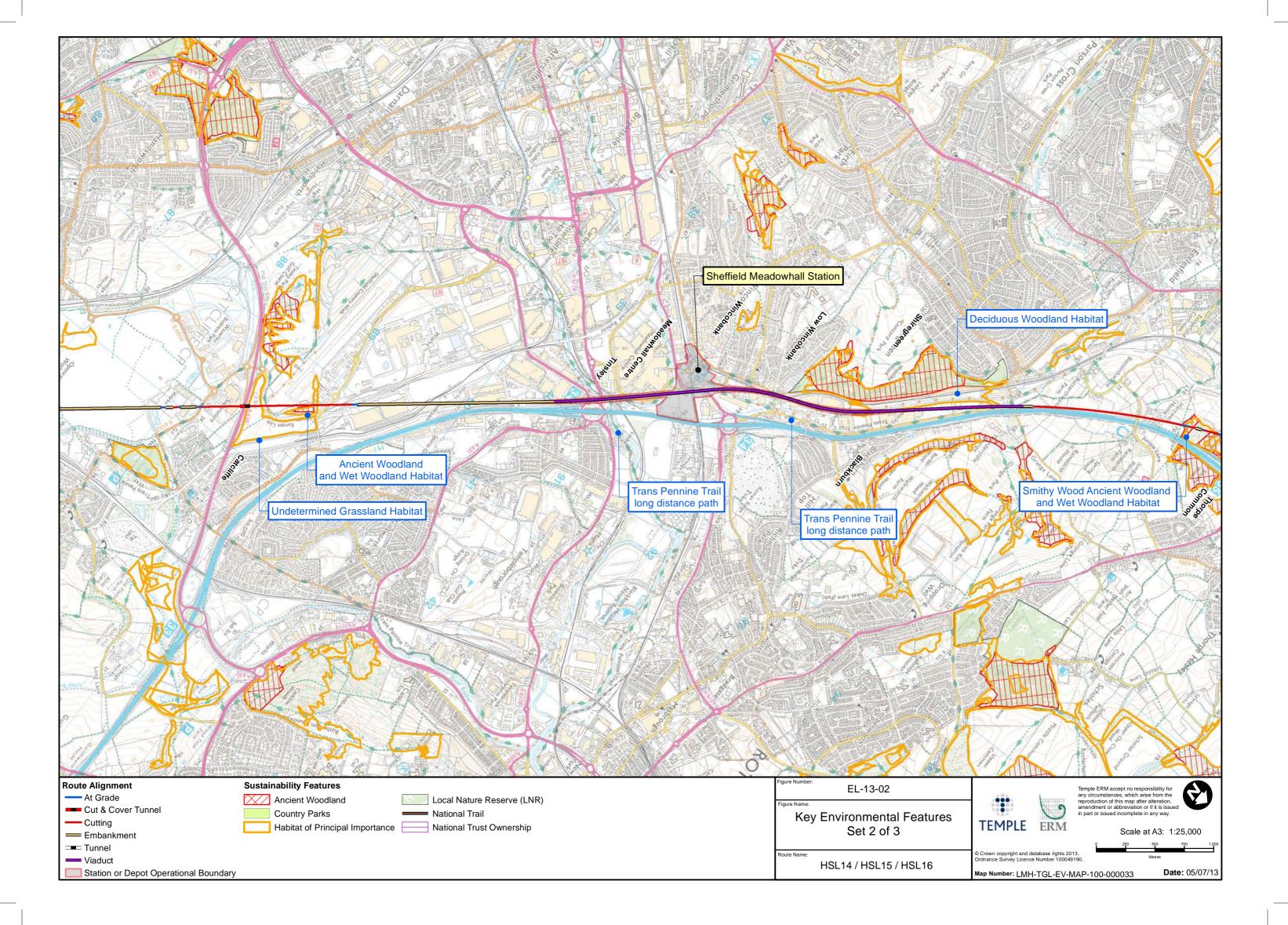


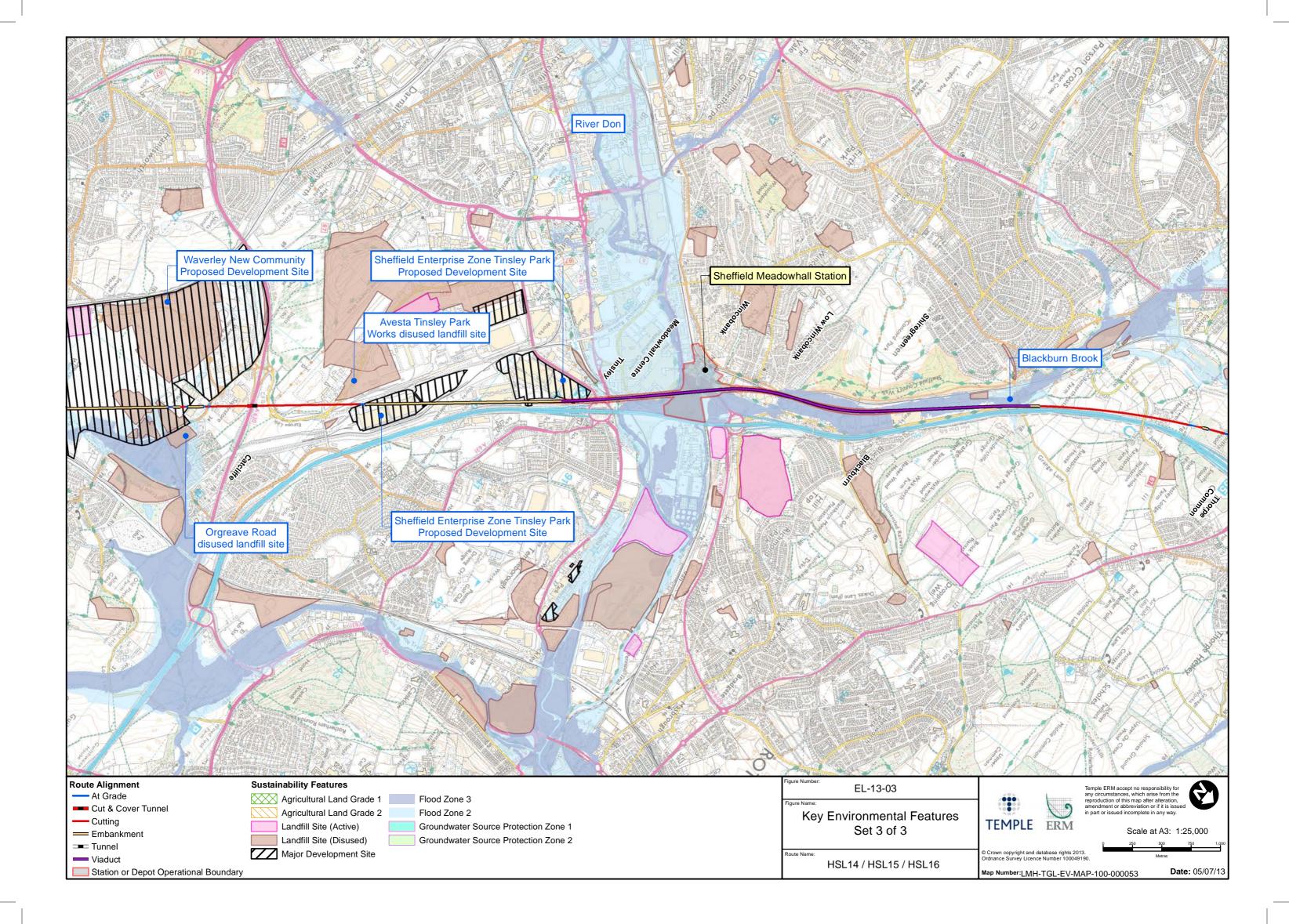


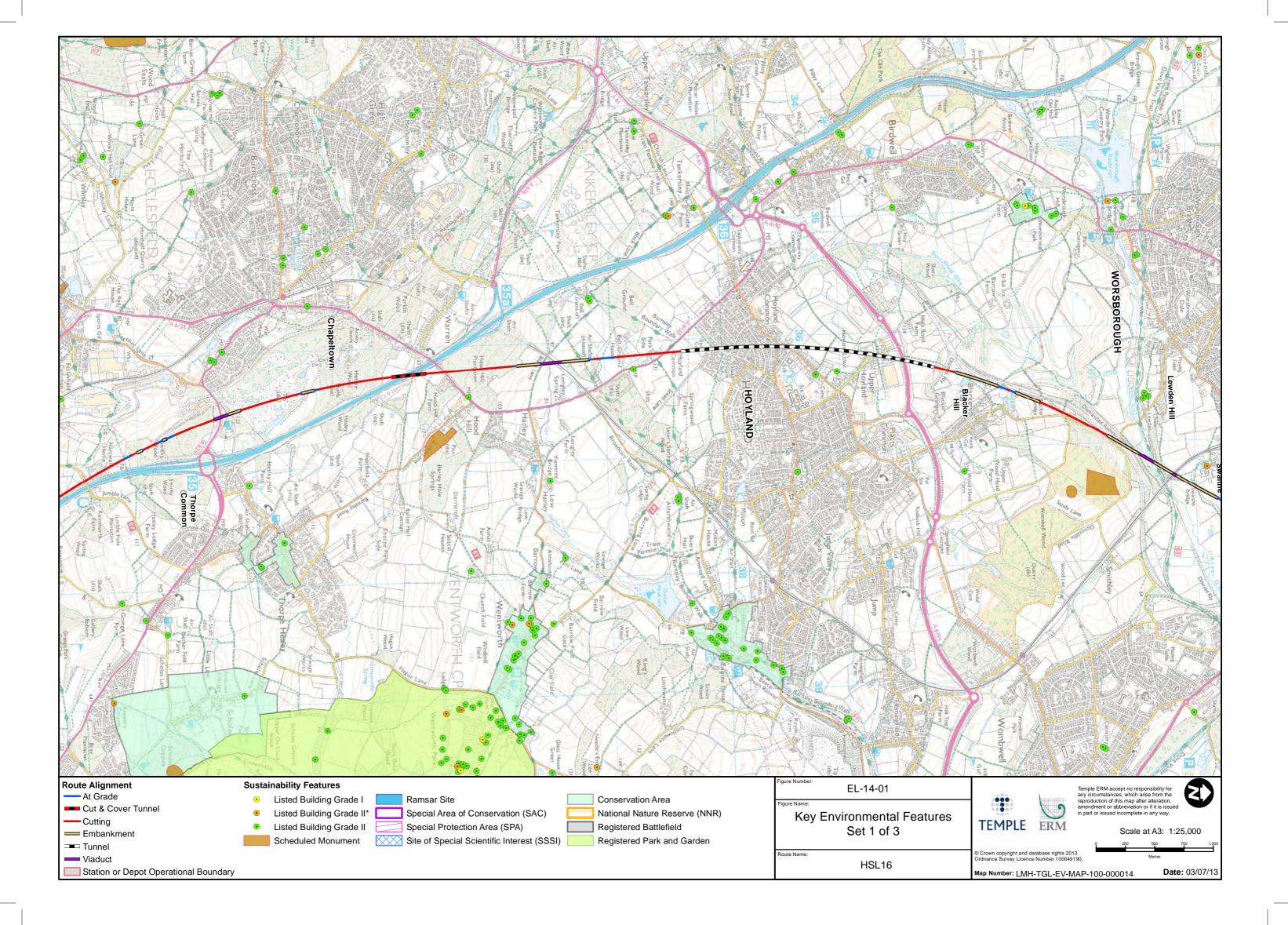


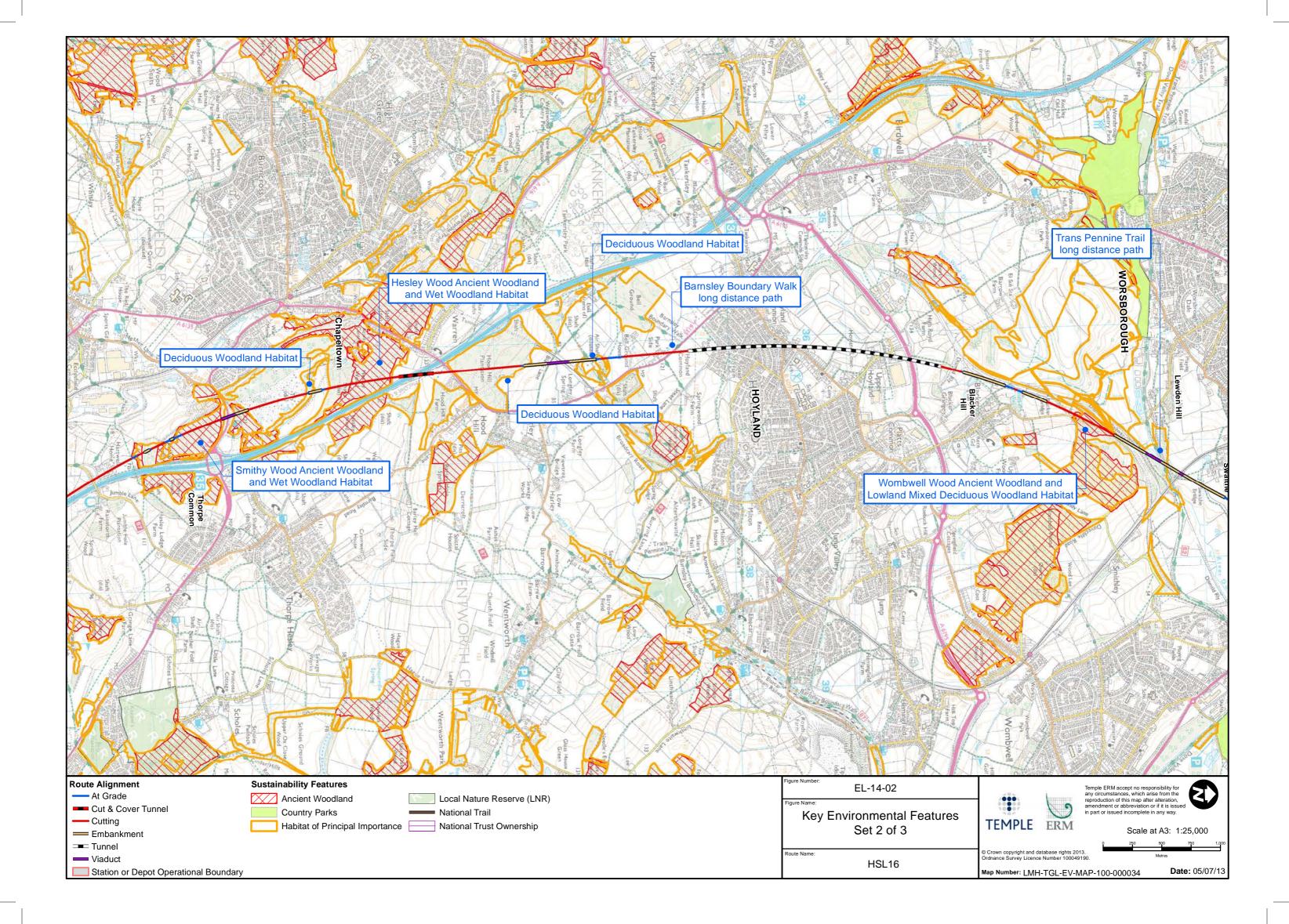


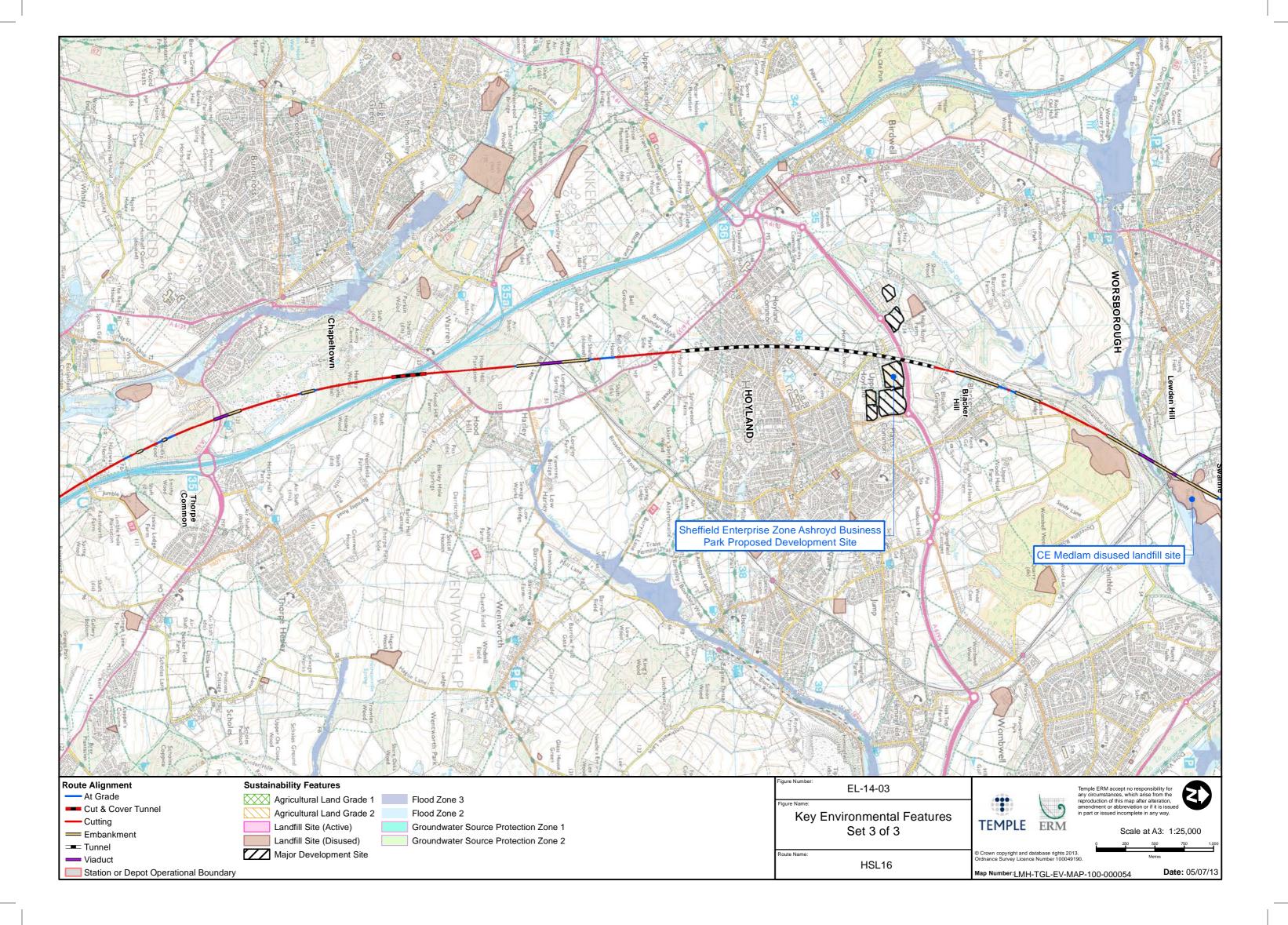


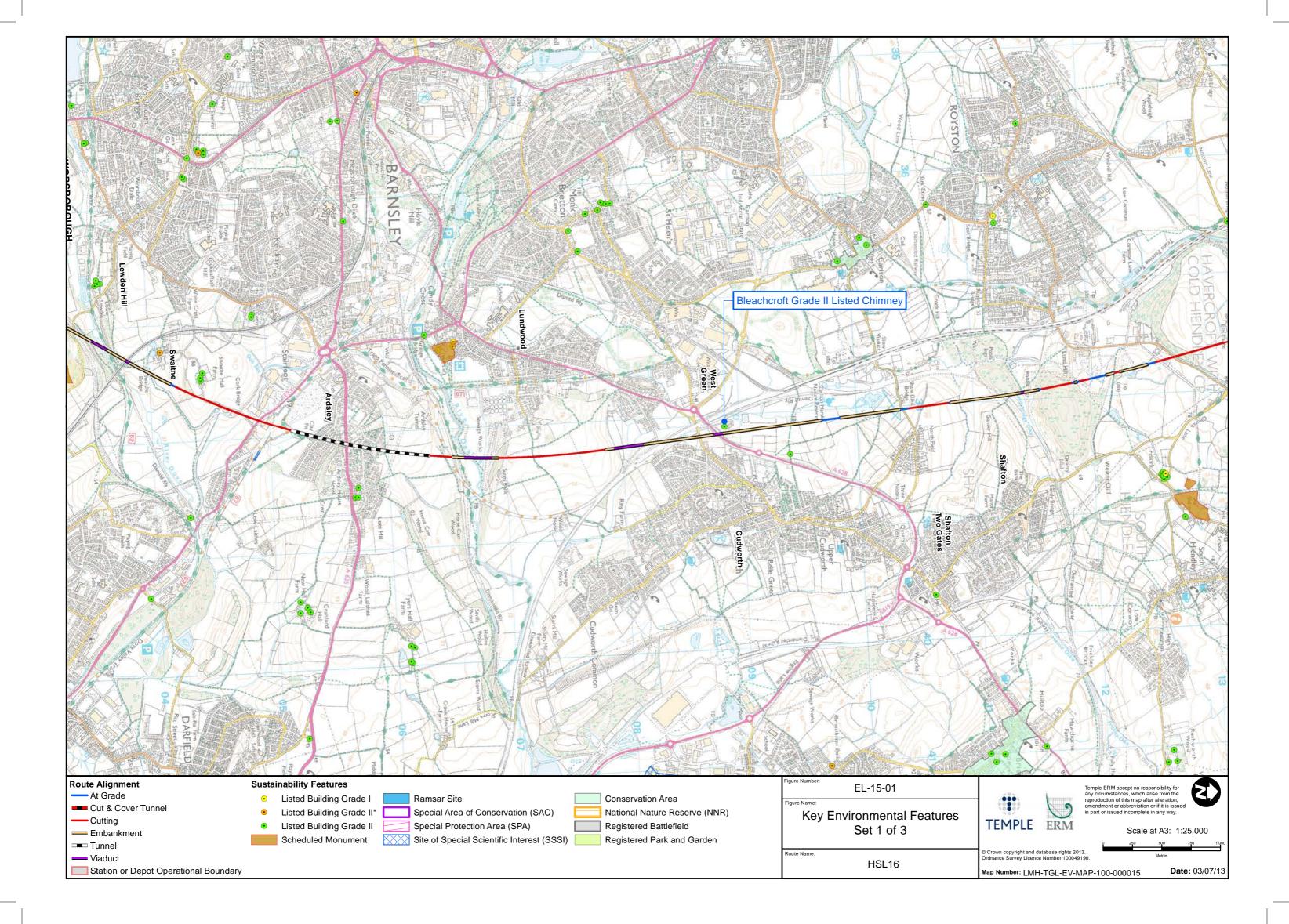


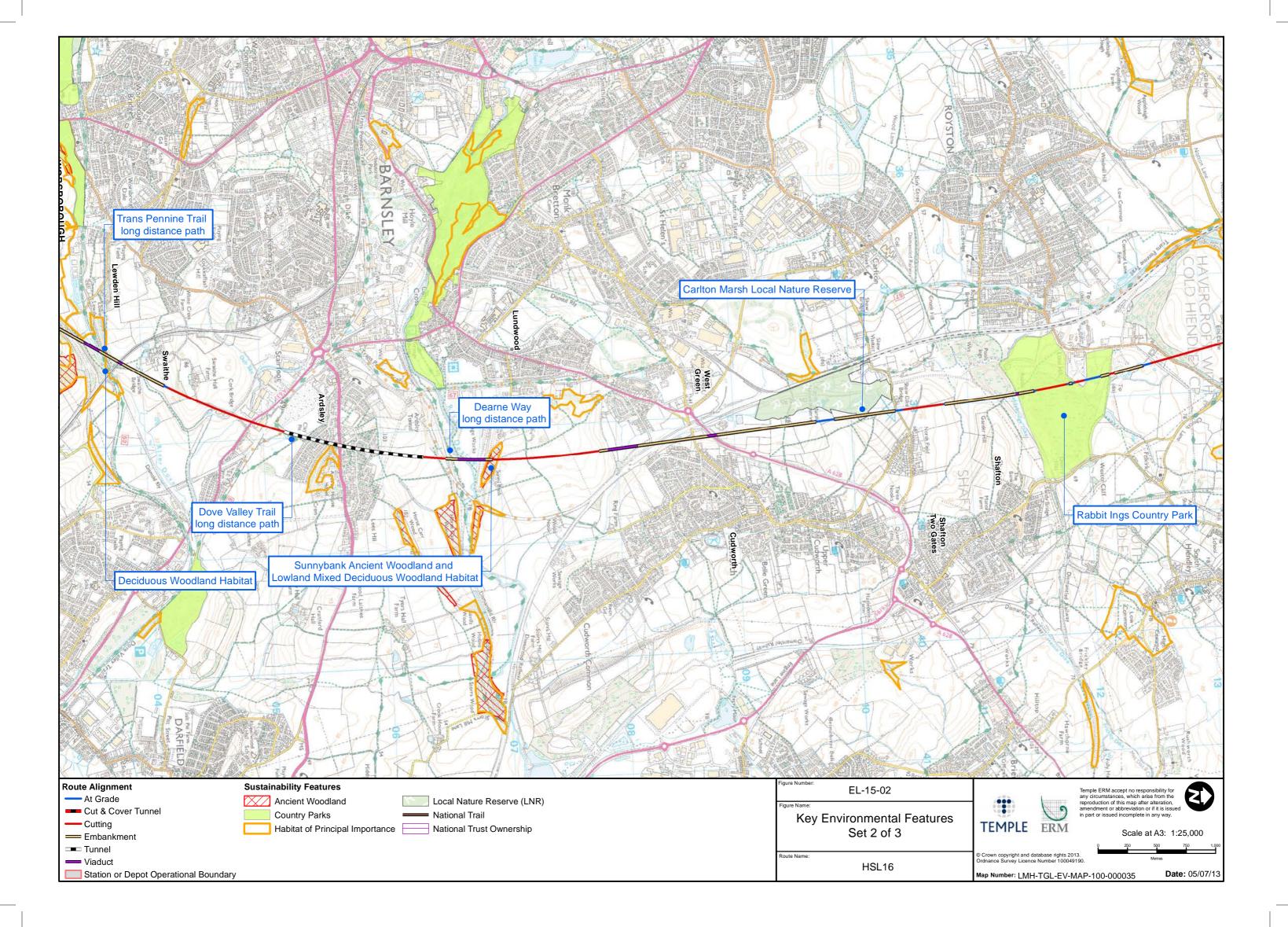


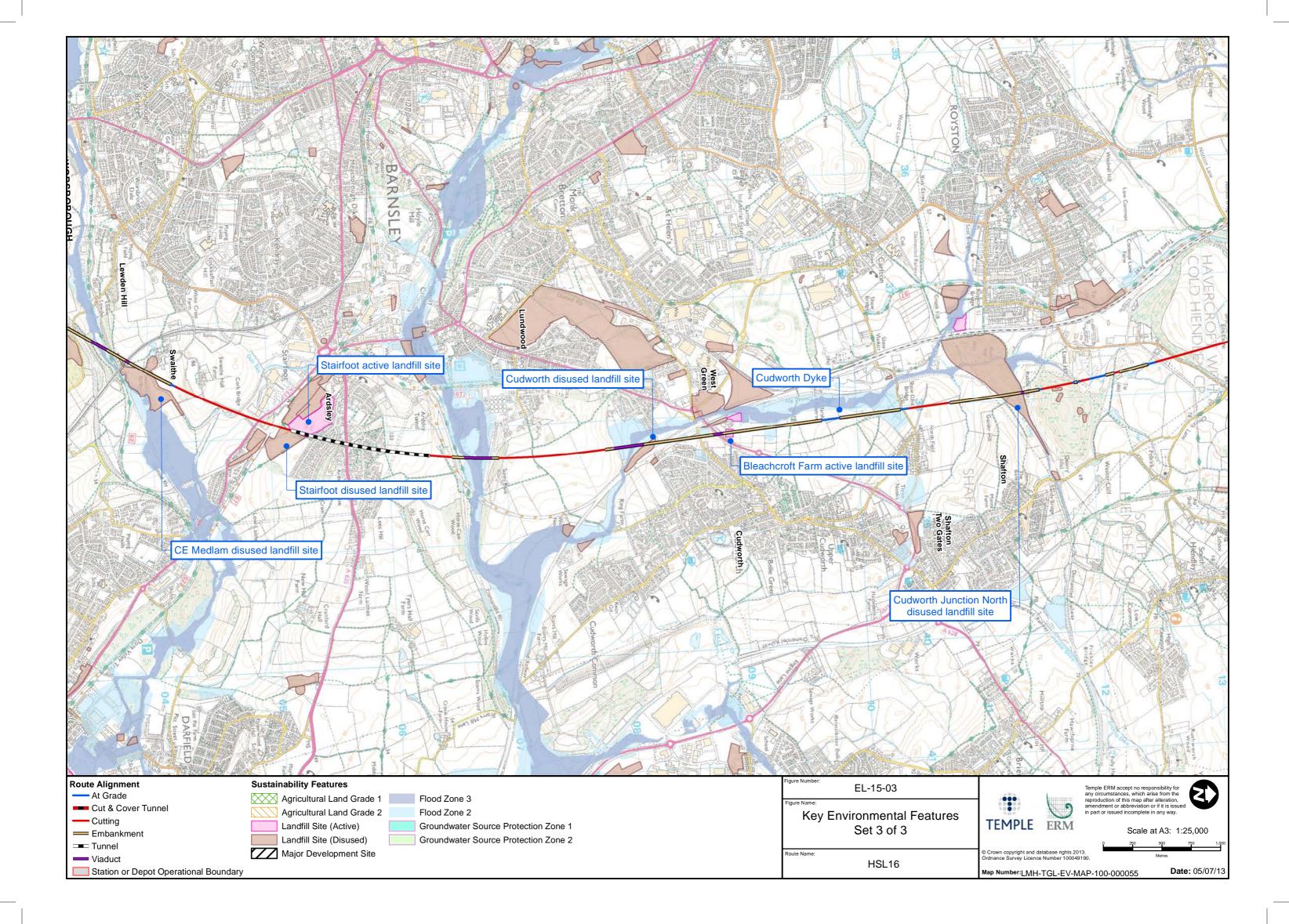


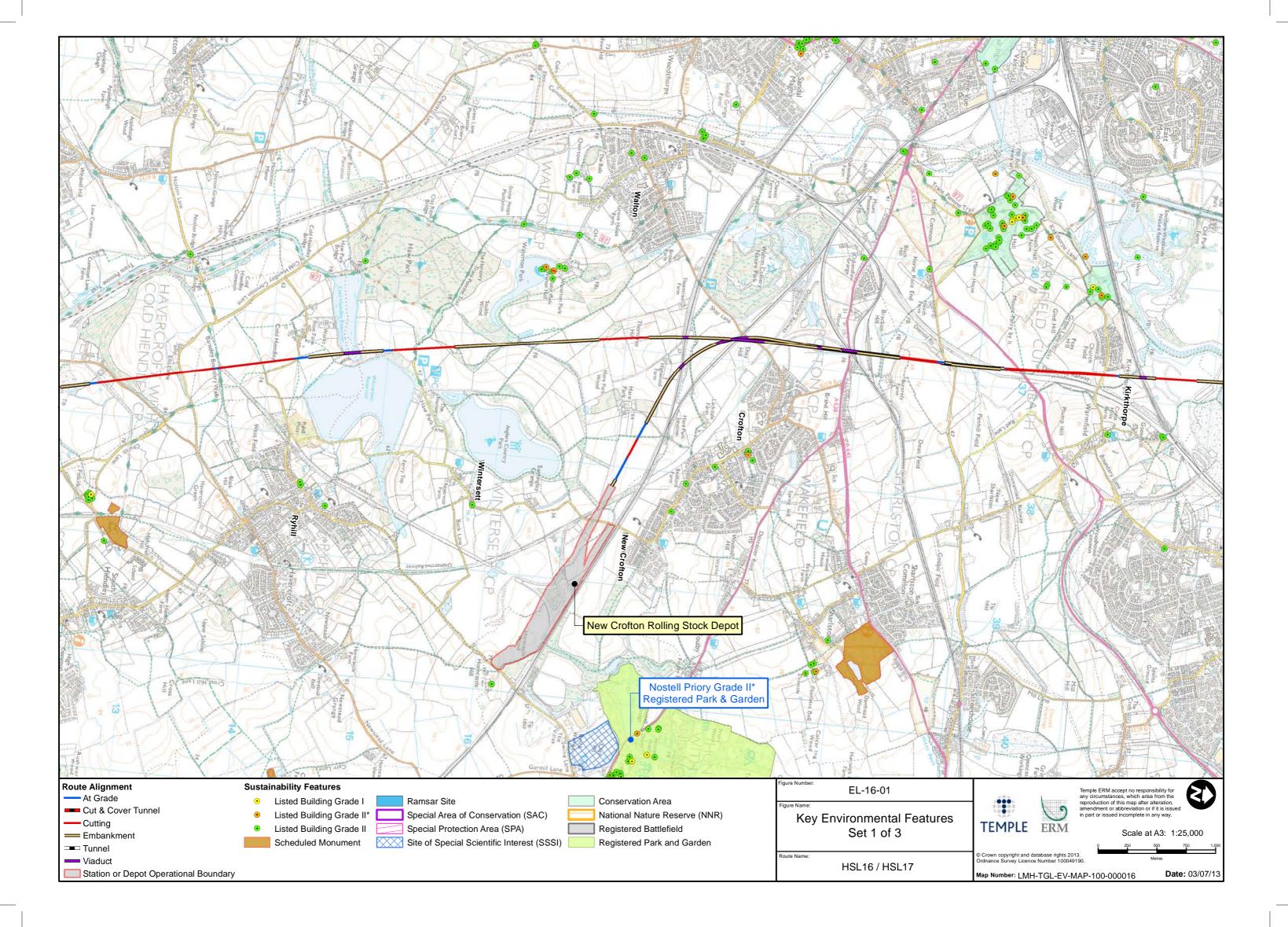


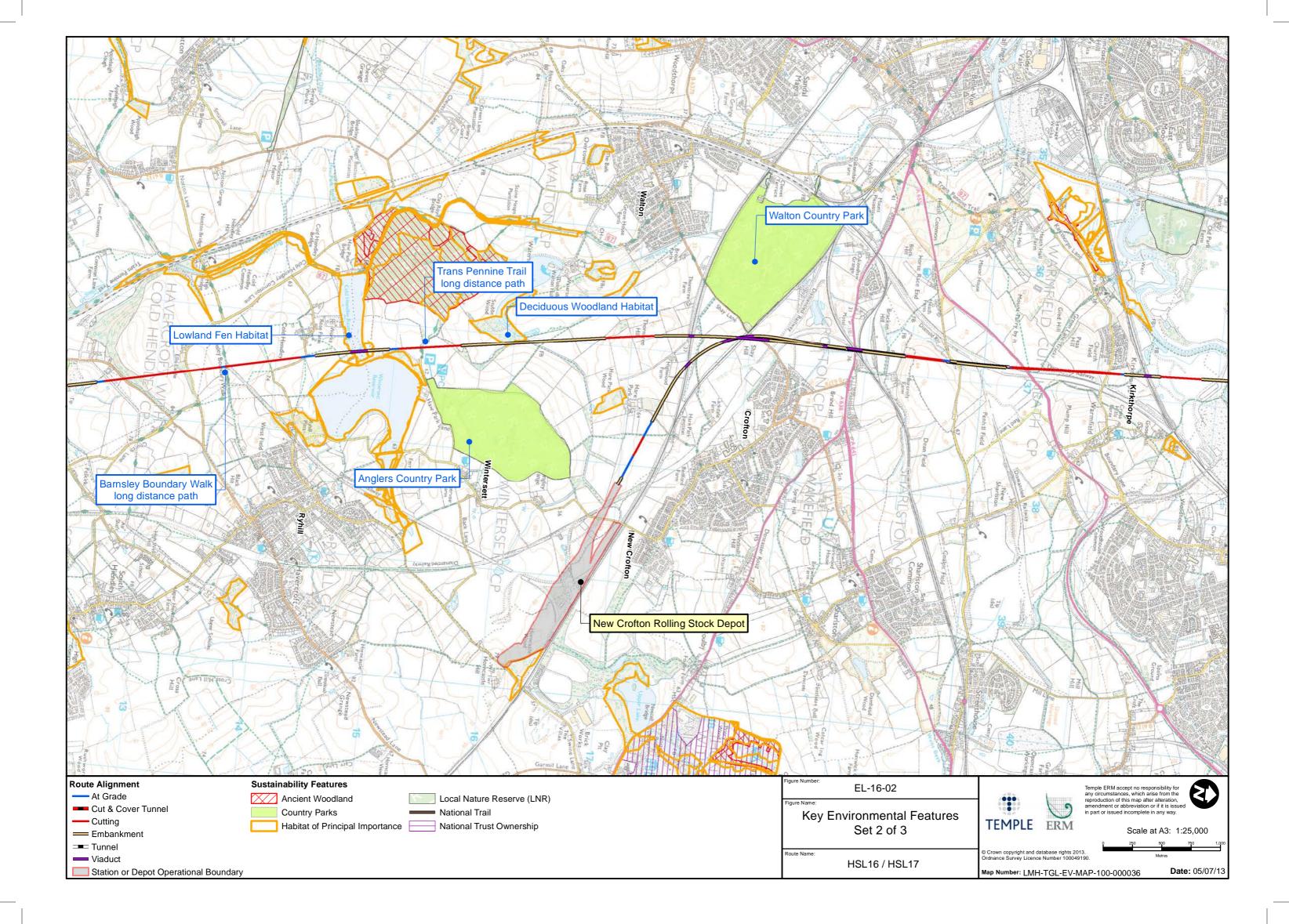


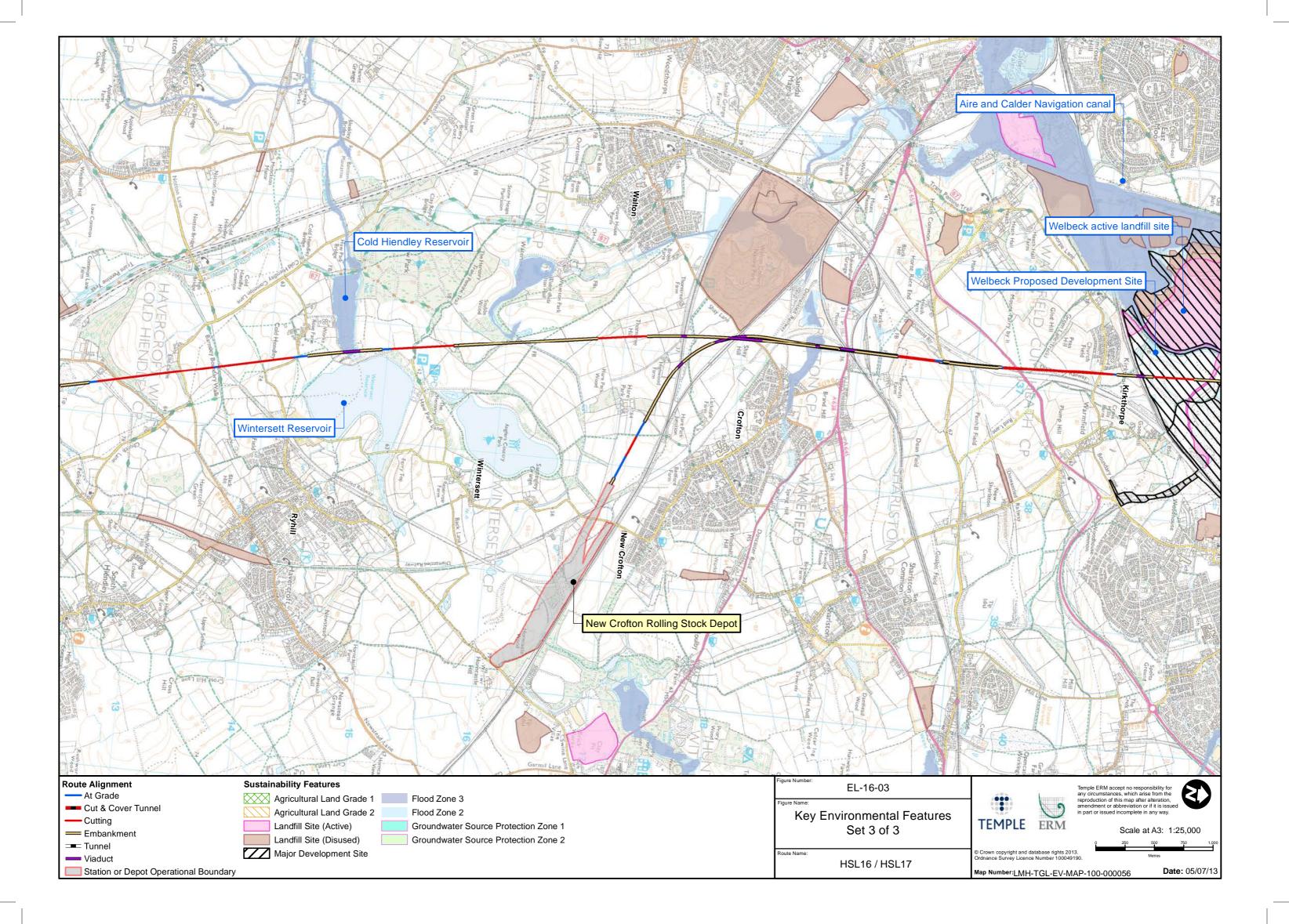


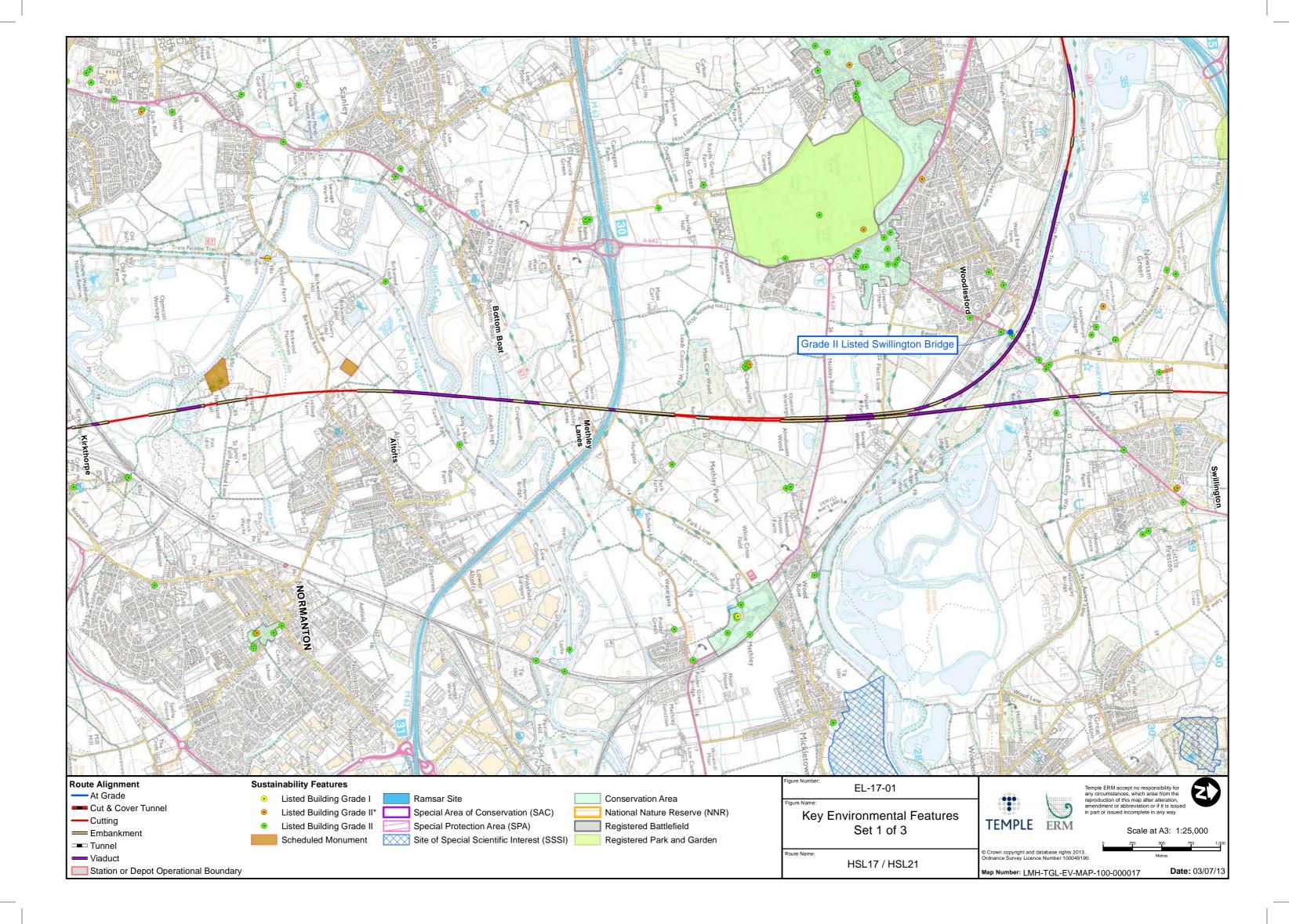


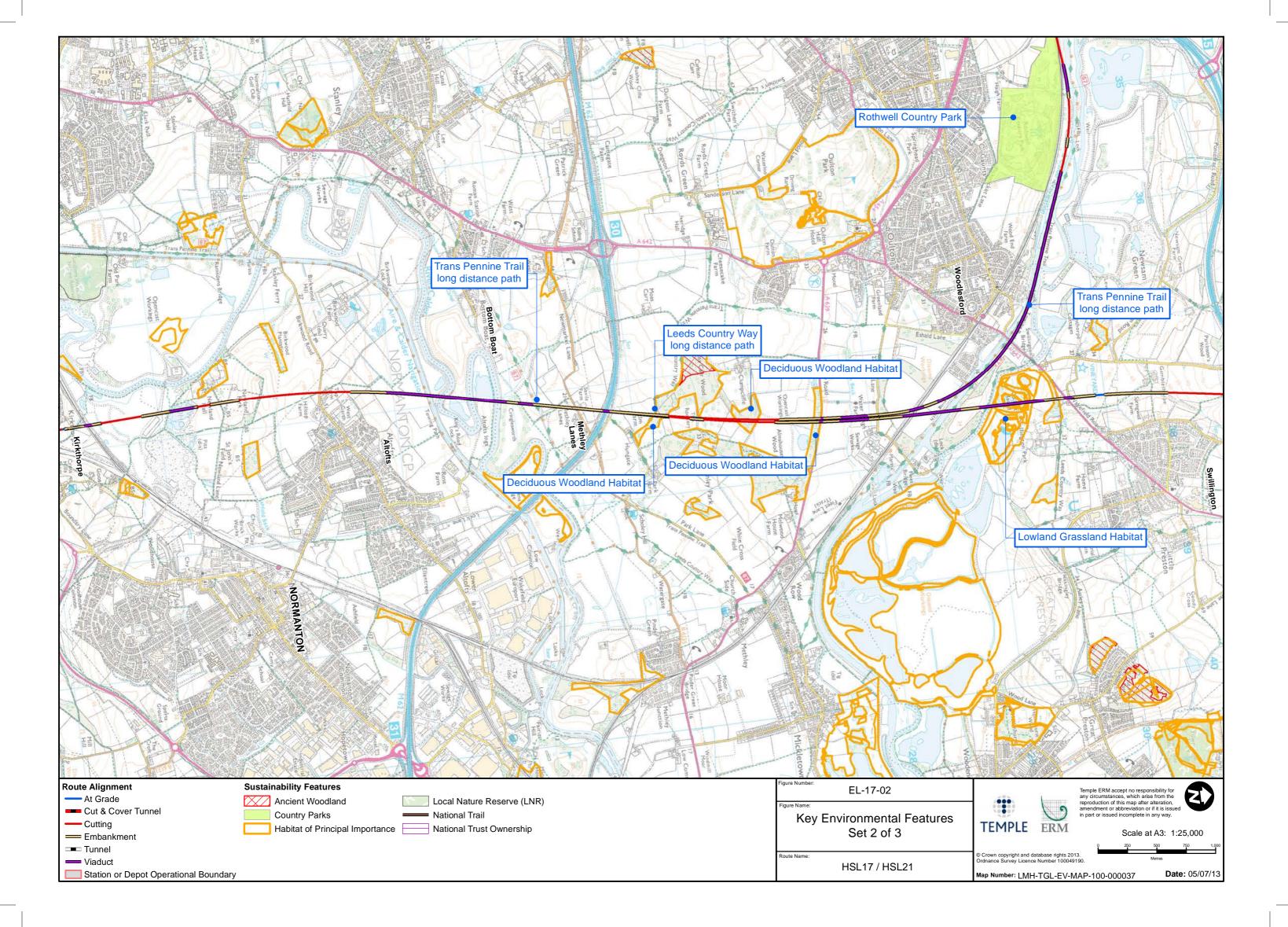


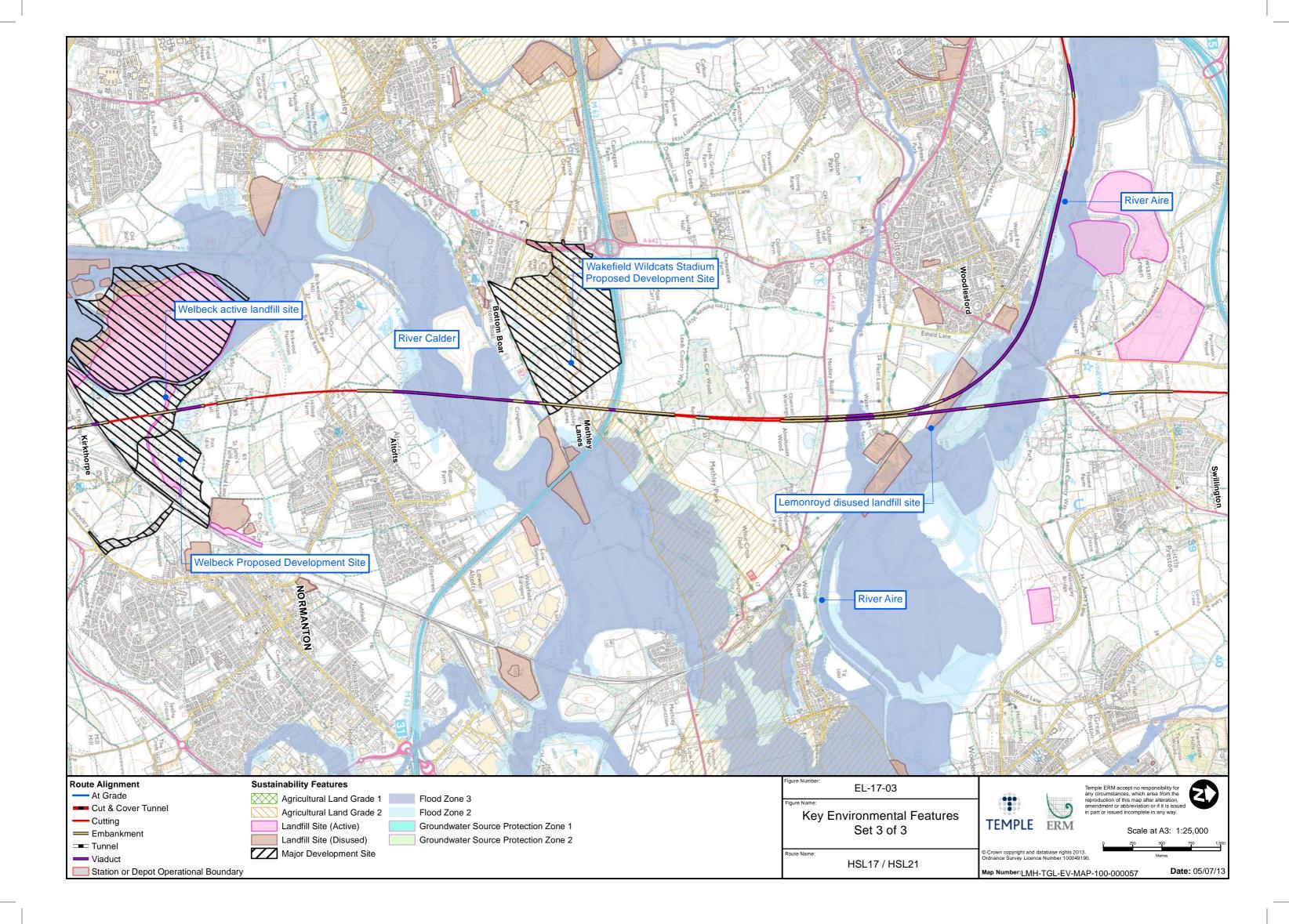


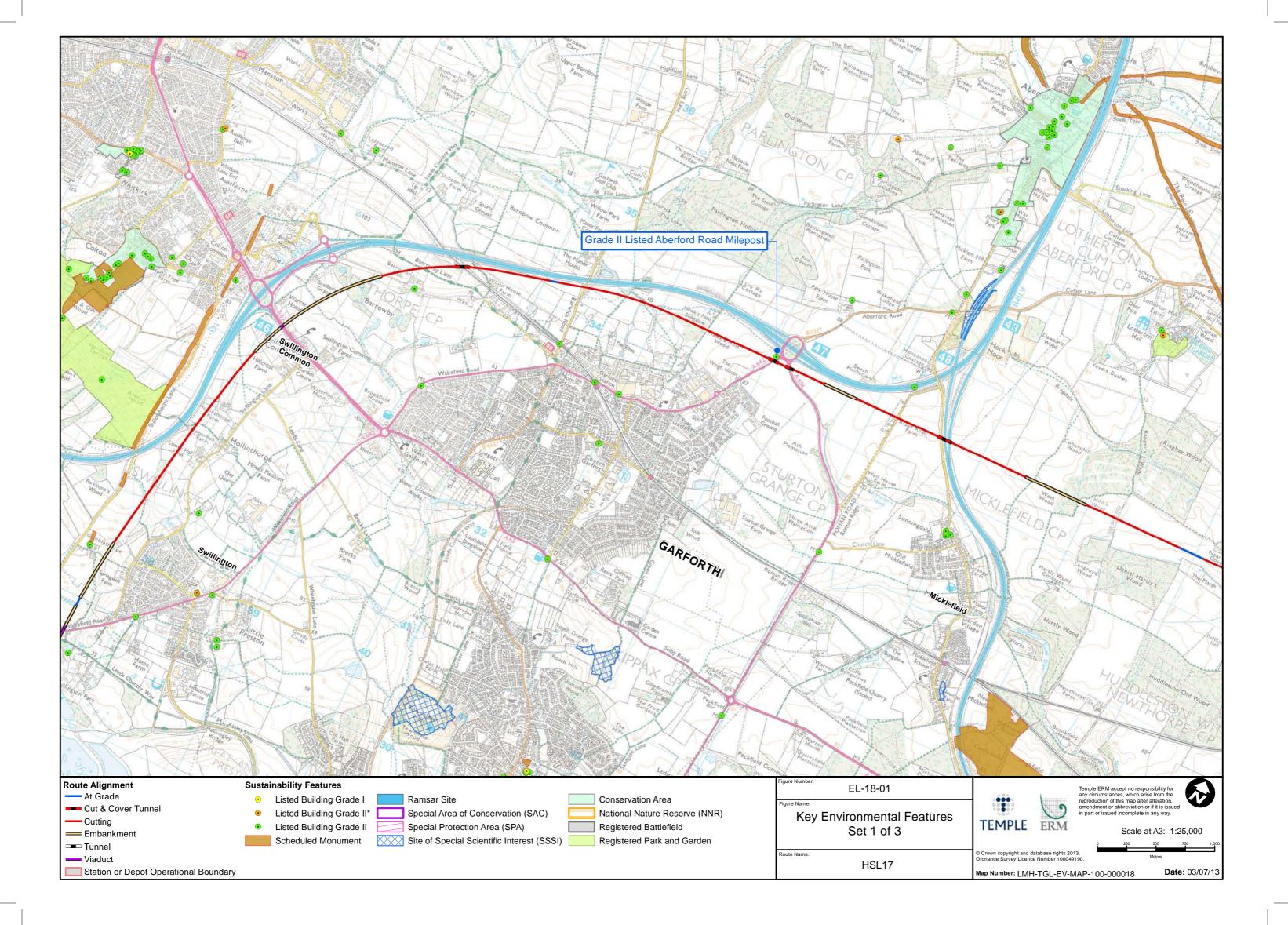


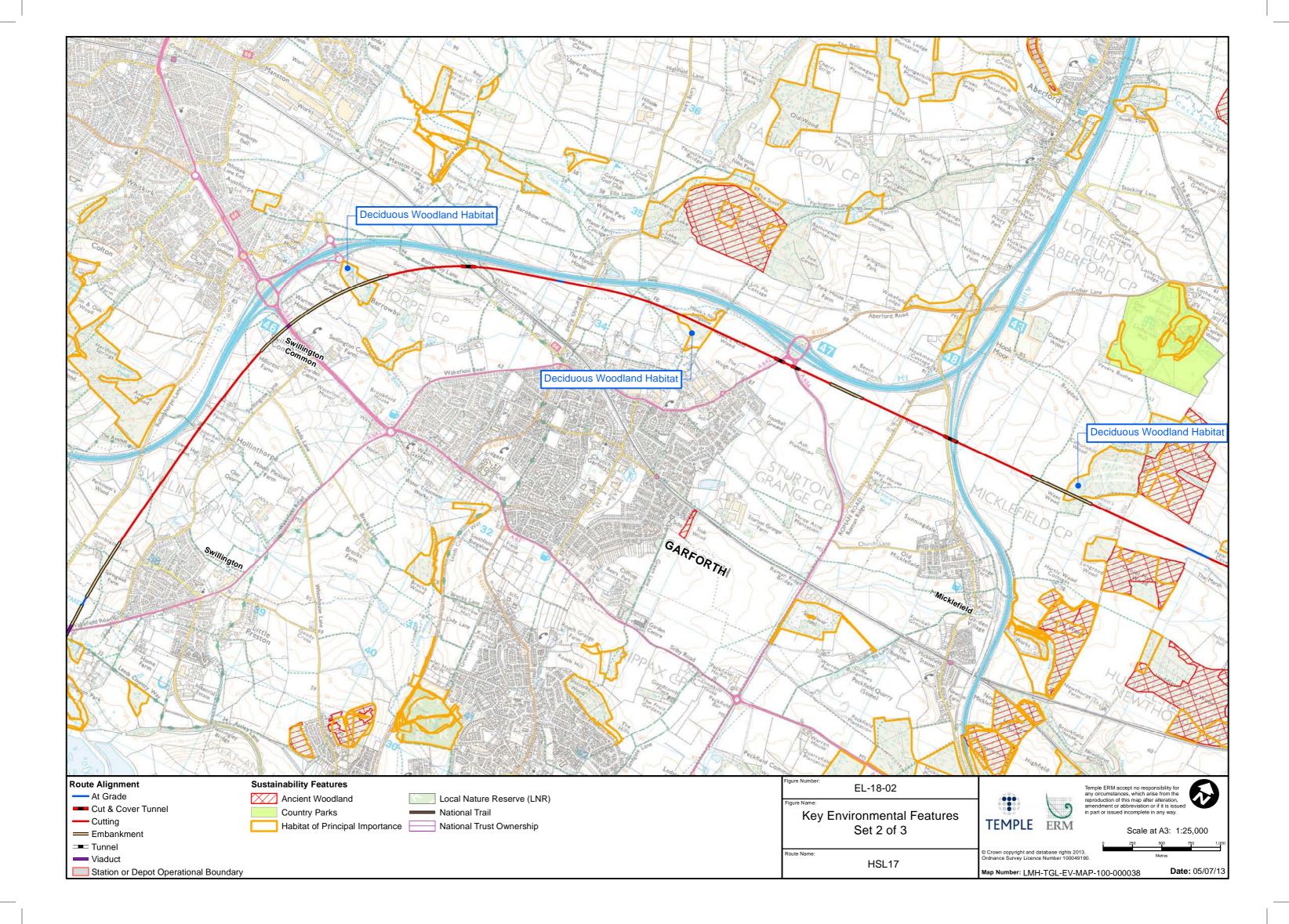


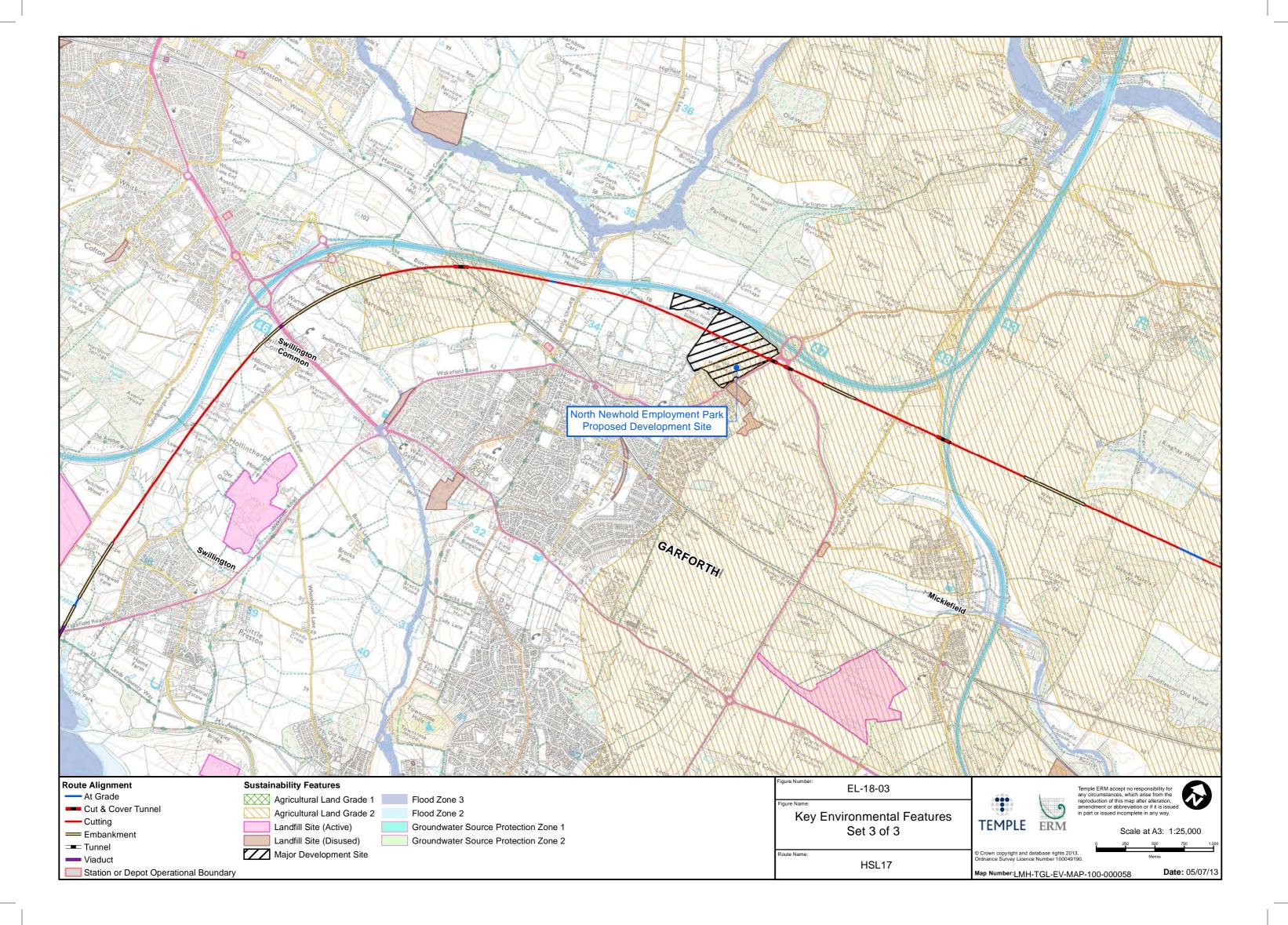


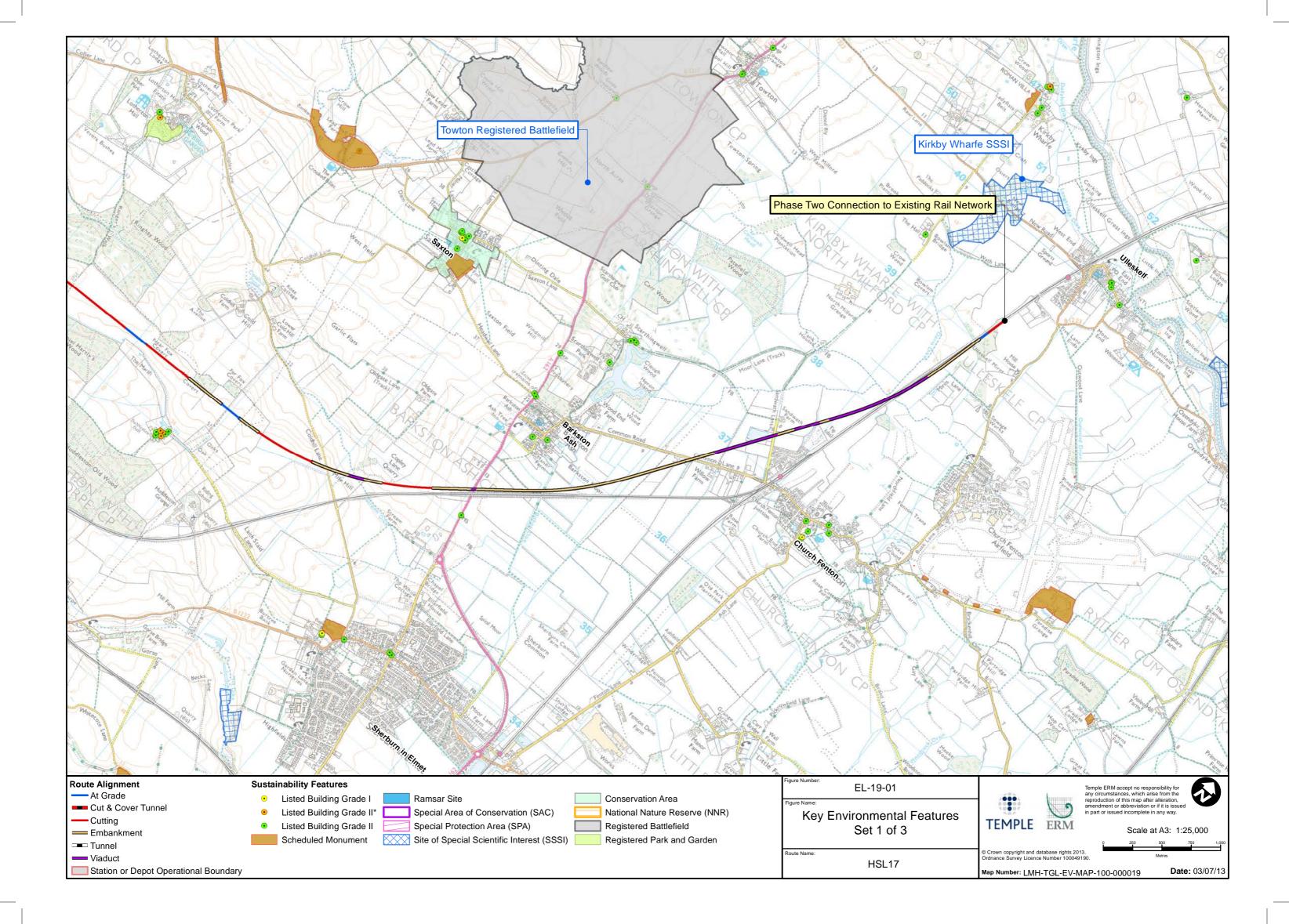


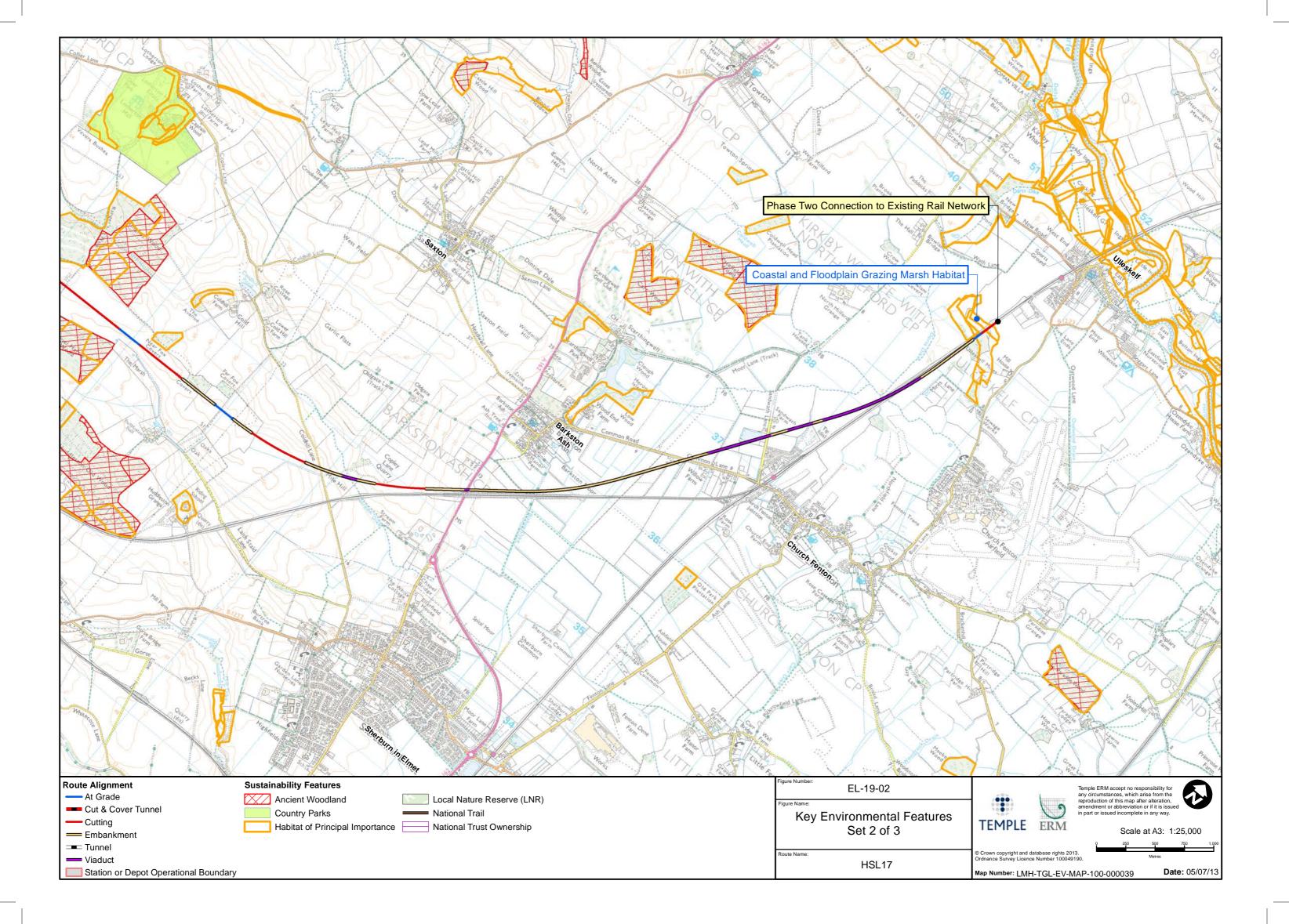


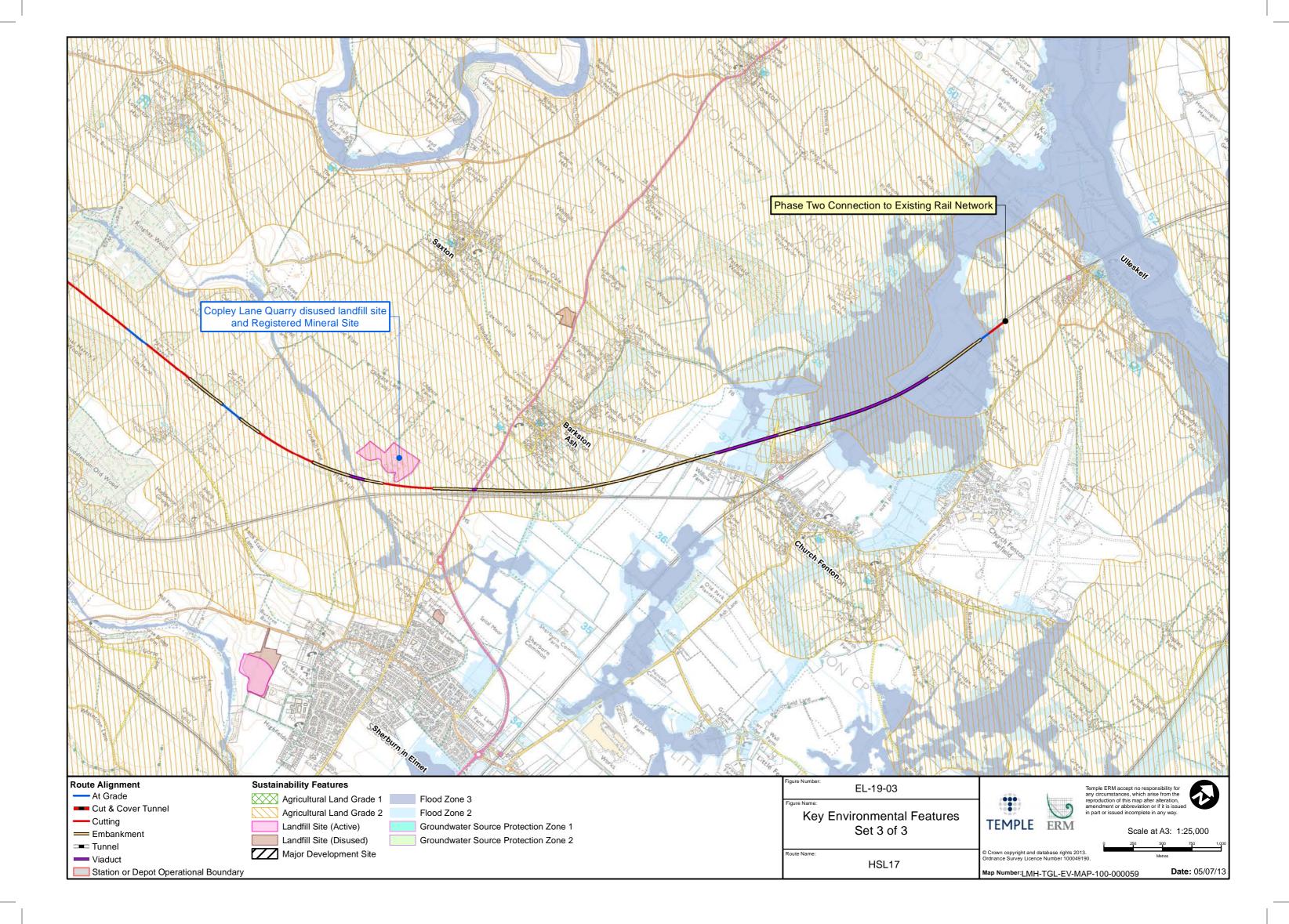


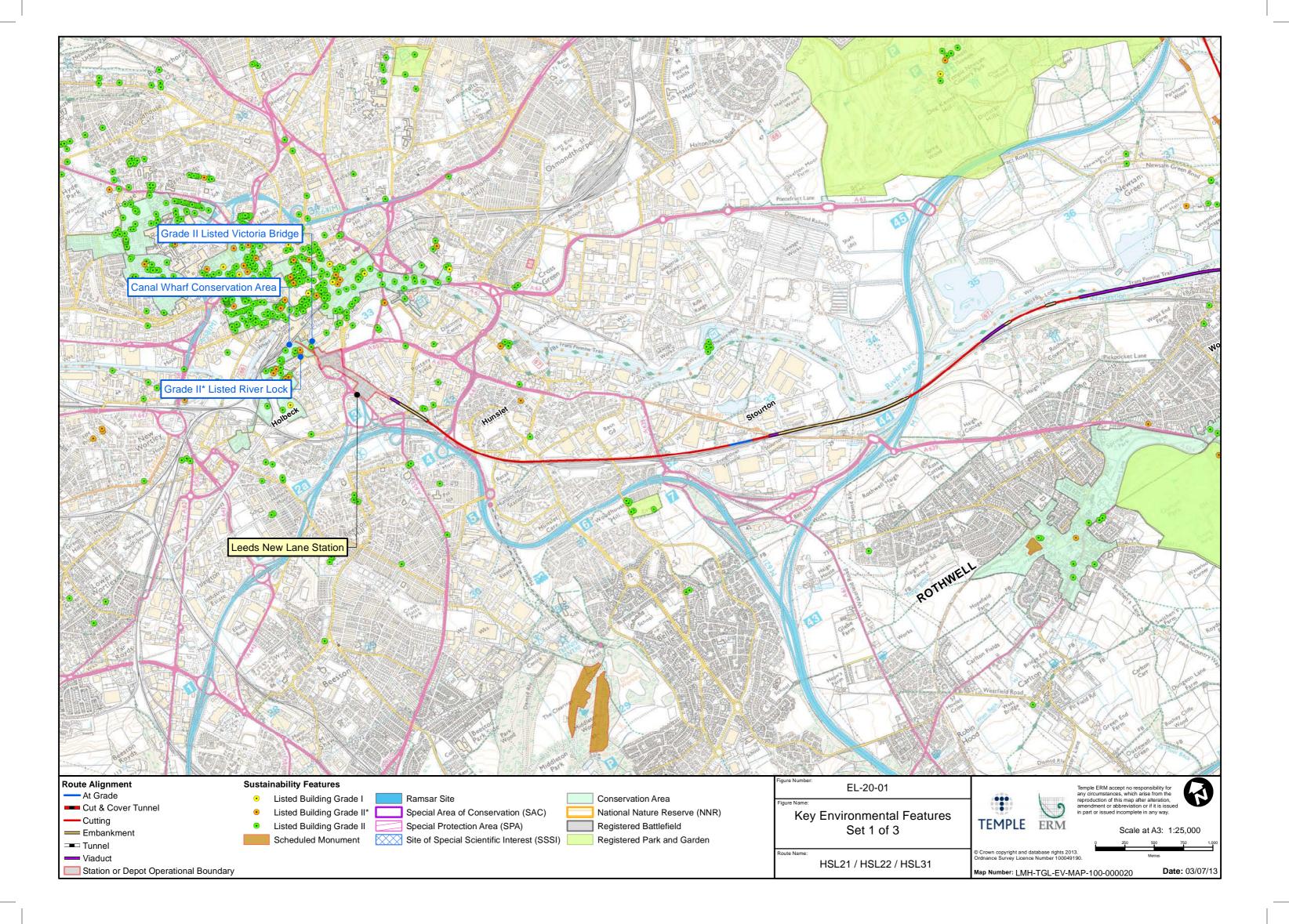


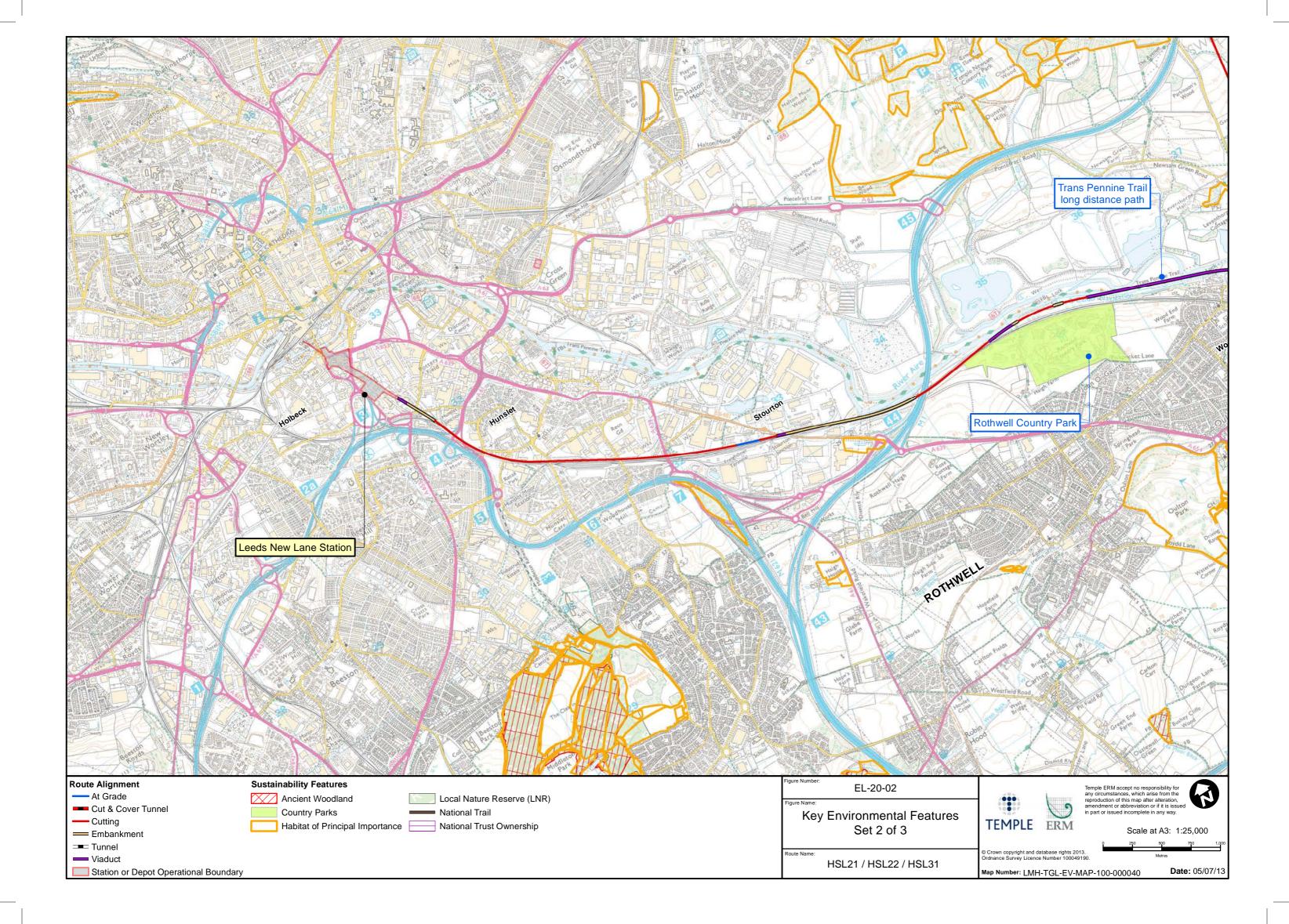


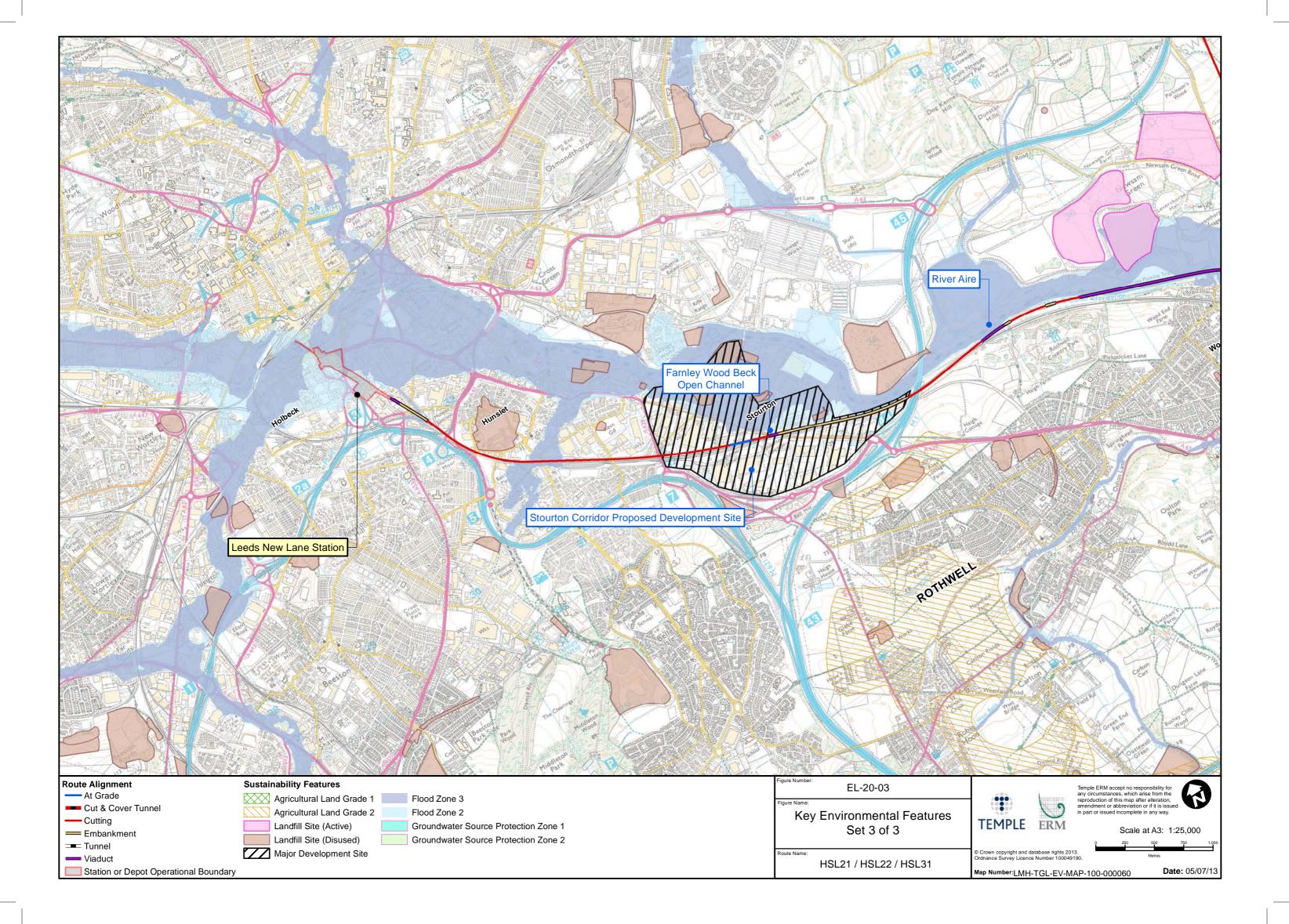


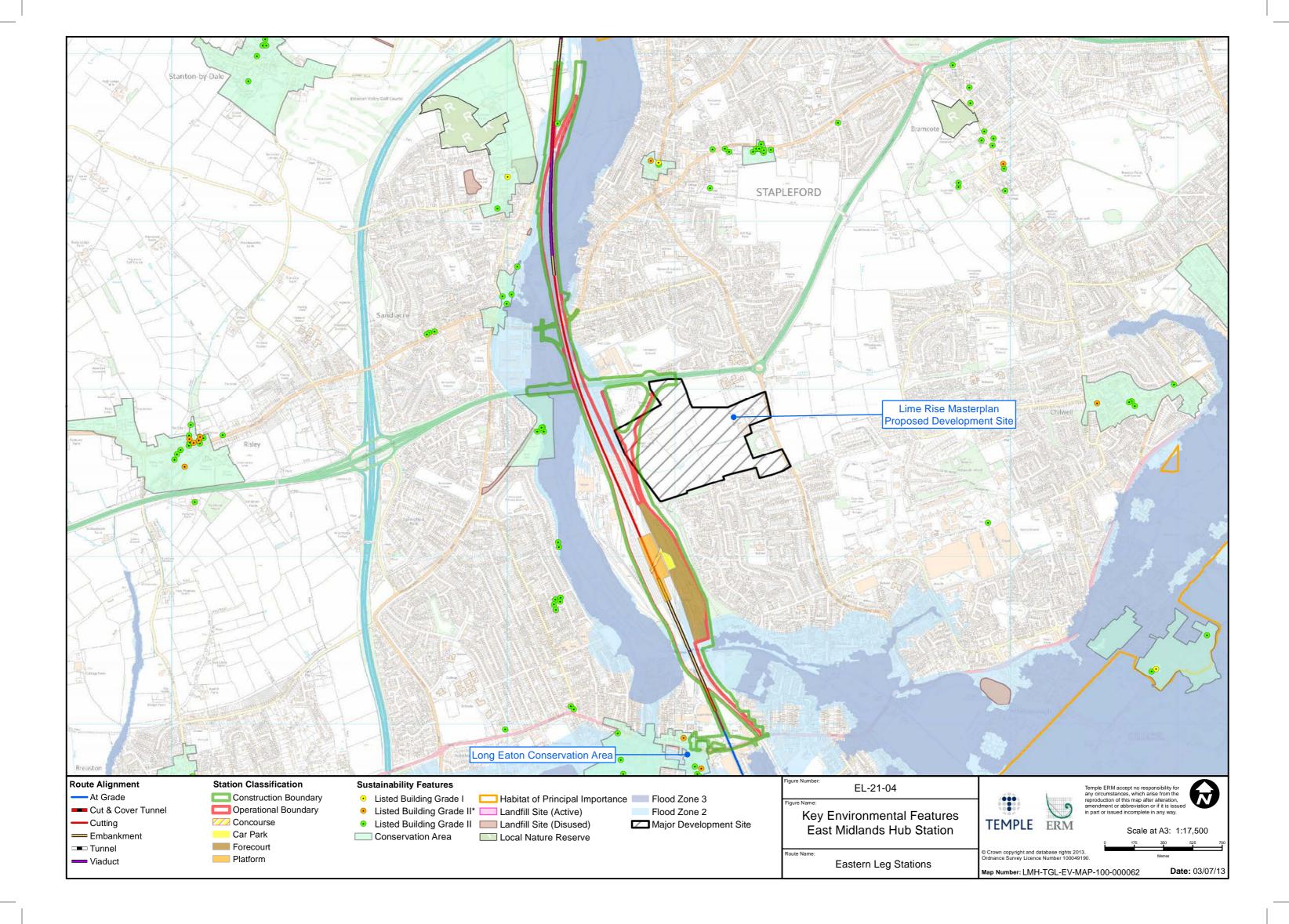


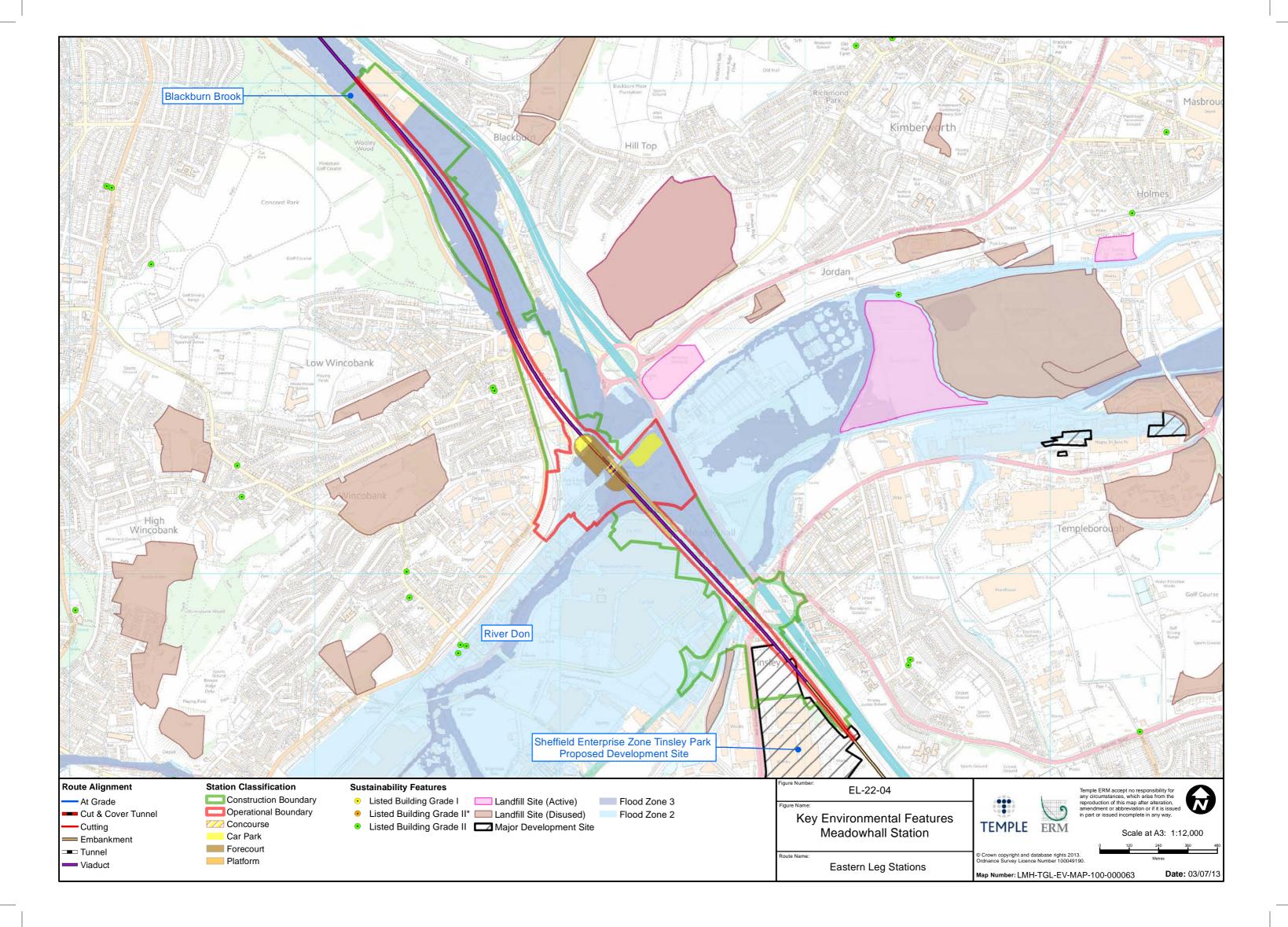


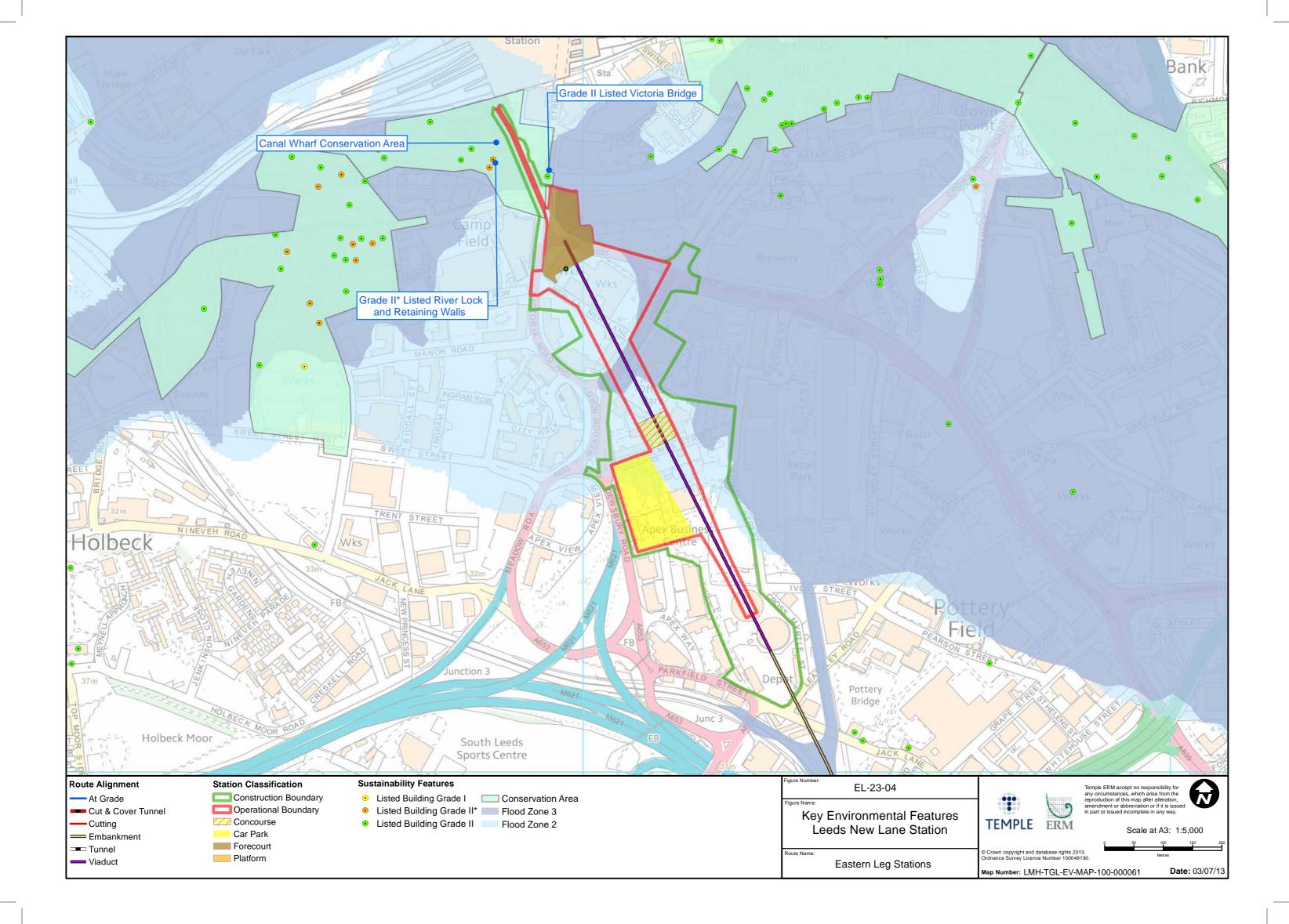


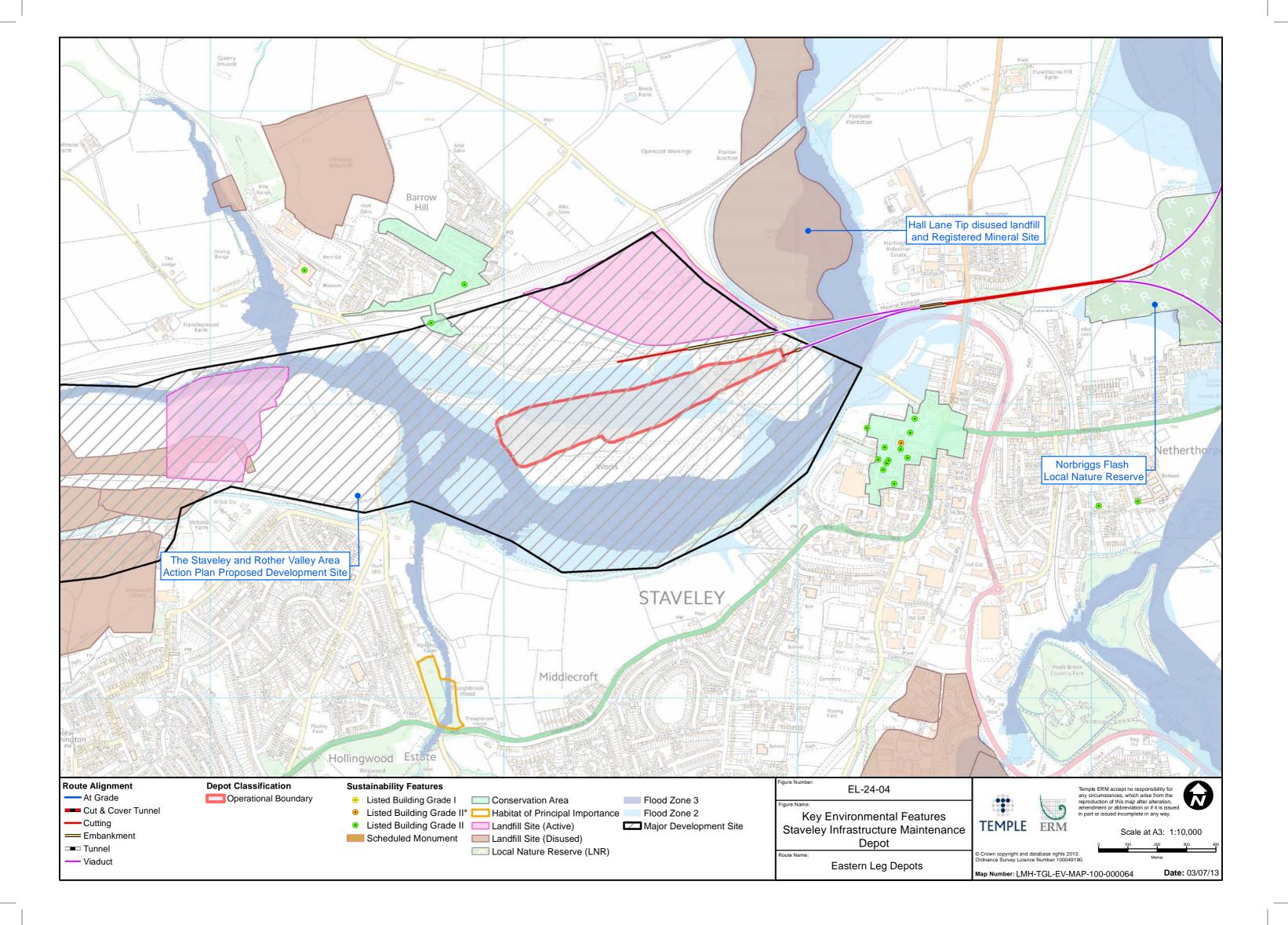


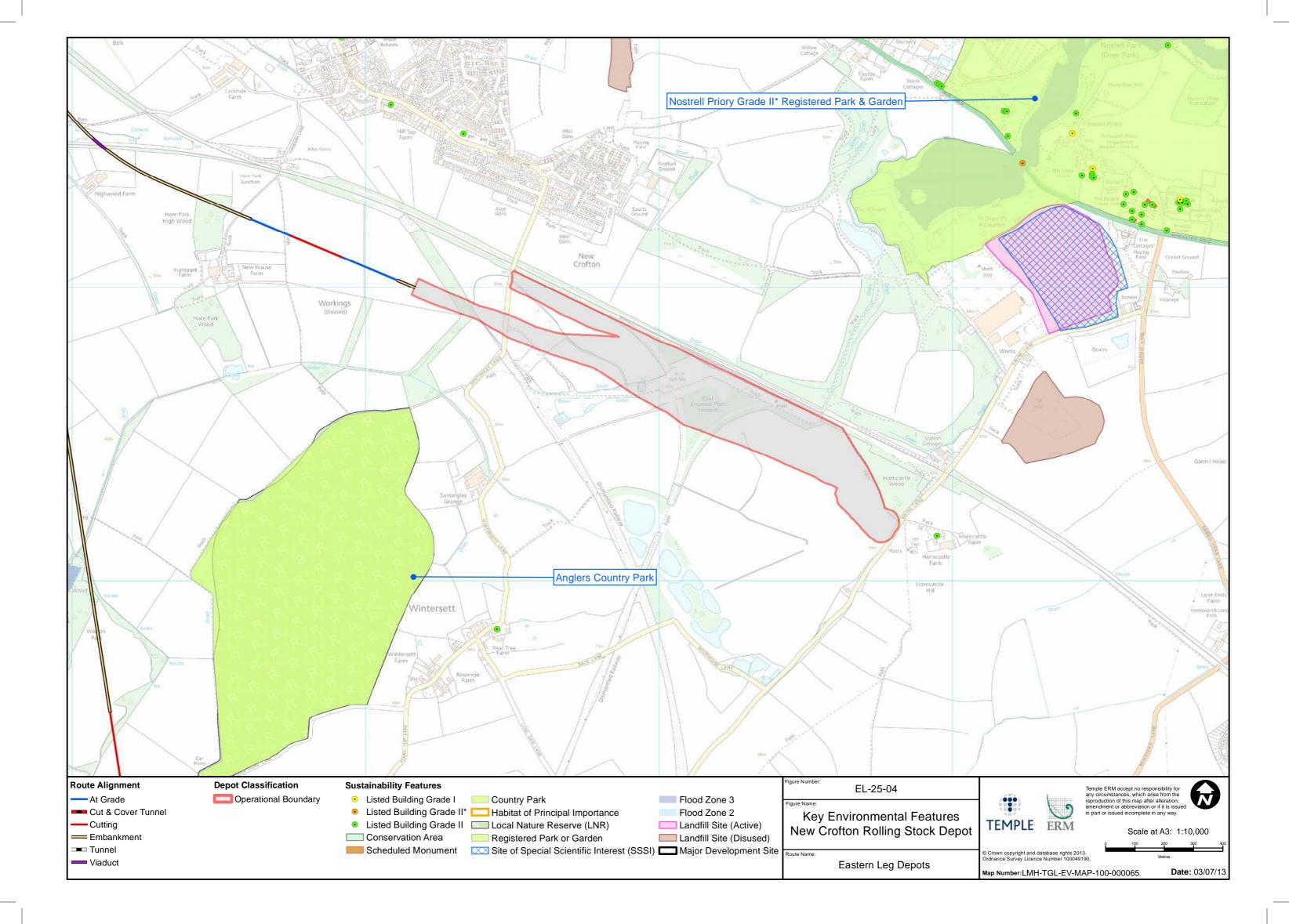
















## **Eastern Leg - Leeds Residential Airborne Noise Mapping**

Set 1 to 2: without and with additional mitigation



