

# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement and  
Additional Provision 2 Environmental Statement

Volume 2 | Community forum area map book  
CFA16 | Ladbroke and Southam

July 2015

SES and AP2 ES 3.2.2.16



# **HIGH SPEED RAIL (LONDON - WEST MIDLANDS)**

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Department  
for Transport

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CT-06 – Proposed Scheme	These maps show permanent features, infrastructure, restored land, and areas for landscaping, screening and ecological mitigation associated with the Proposed Scheme. The base mapping shown on the maps is reflective of 2014 Ordnance Survey (OS) data.
SV-05 – Operational Airborne Noise and Vibration Impacts and Likely Significant Effects	SV-05 presents the direct operational noise impacts and likely significant effects of the scheme. The SV-05 figure series contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2.

# Mapping explanatory notes

## Structure of the HS2 Supplementary Environmental Statement and Additional Provision 2 Environmental Statement

The Supplementary Environmental Statement (SES) and Additional Provision 2 Environmental Statement (AP2 ES) comprises:

- Non-technical summary (NTS). This provides a summary in non-technical language of the SES (Part 1) and AP2 ES (Part 2) and of any likely significant environmental effects, both beneficial and adverse, which are new or different to those reported in the High Speed 2 (HS2) Phase One Environmental Statement (ES) submitted to Parliament in November 2013 in support of the hybrid Bill ('the Bill') for Phase One of HS2 (hereafter referred to as 'the main ES') and, where relevant, the AP ES submitted in September 2014 (hereafter referred to as 'the AP1 ES').
- Volume 1: Introduction to the SES and the AP2 ES. This introduces the supplementary environmental information and design changes included within the SES and amendments which have resulted in the need to amend the Bill within the AP2 ES. It also explains any changes to the scope, methodology, assumptions and limitations required for the environmental impact assessment.
- Volume 2: Community Forum Area (CFA) reports and Map Books. These describe the supplementary environmental information and design changes included within the SES (Part 1), amendments within the AP2 ES (Part 2) and report any new or different likely significant environmental effects arising from these changes in each CFA compared to those reported in the main ES and, where relevant, the AP1 ES. The main local alternatives that have been considered are described, where relevant.
- Volume 3: Route-wide effects. This reports new or different likely significant route-wide effects arising from the supplementary environmental information and design changes included within the SES (Part 1) and amendments within the AP2 ES (Part 2) compared to those reported in the main ES and, where relevant, the AP1 ES.
- Volume 4: Off-route effects. This reports new or different likely significant off-route effects arising from the supplementary environmental information and design changes included within the SES (Part 1) and amendments within the AP2 ES (Part 2) compared to those reported in the main ES and, where relevant, the AP1 ES.
- Volume 5: Appendices and Map Books. This contains supporting environmental information and associated maps in support of the CFA sections of Volume 2.
- Glossary of terms and list of abbreviations. This contains any new or different terms and abbreviations used throughout the SES and AP2 ES compared to those included in the main ES and AP1 ES.

## Copyright statements

Copyright statements are presented in the Data dictionary and definitions section at the front of the map book, due to limited space to include this on the individual maps themselves.

## Ordnance Survey data

All maps produced as part of the London-West Midlands Supplementary Environmental Statement (SES) and Additional Provision 2 Environmental Statement (AP2 ES) contain Ordnance Survey (OS) data. HS2 Ltd use the most up to date mapping available, where possible, supplied by the OS and as such, we cannot be held responsible for any inaccuracies within this data.

As part of our licence conditions, all digital maps carry a watermark.

## Chainage

Most of the maps presented as part of the SES and AP2 ES have a chainage value shown next to the alignment. Chainage is presented on the maps in black font, in the form of XX+YYY. E.g. 77+000 or 158+500.

Chainage (known as reference chainage) is referenced from Euston Station, which is 0+000, and the value presented is in metres. E.g. 77+000 refers to the point, 77,000m, or 77km, from Euston Station. Chainage values increase in intervals dependant on the map scale. For maps at 1:50,000 scale chainage is shown at 5km intervals. For maps at 1:25,000 scale chainage is shown at 2km intervals. For maps at 1:10,000, 1:5,000 and 1:2,500 scales, chainage is shown at 1km intervals.

Chainage has been included on the maps as a useful tool for comparing different map sets showing the different environmental themes or engineering plans, due to map sets having different scales and therefore showing differing amounts of alignment on the map.

## Map sheet layout

Each map in Volume 2 is presented twice, with the main ES map (published November 2013) on the left hand page and the SES and AP2 ES map on the right. For the CT-05 and CT-06 map series, the SES and AP2 ES map is annotated with different coloured clouds which highlight the areas of change. The coloured text box provides a brief description of the design change and amendment, and gives the SES and AP2 ES reference number. Only maps which have been amended as a result of the SES and AP2 ES are included within the map books. Other design changes which are within the existing limits of the Bill and do not result in new or different likely significant effects are also shown on the maps, but are not indicated by a cloud. The below table highlights the coloured clouds used, and their description.

Cloud / text box colour	Description
Blue	Design changes relating to the SES (Part 1 of each Volume 2 CFA report).
Red	Proposed amendments relating to AP2 (Part 2 of each Volume 2 CFA report).
Grey	Proposed amendments relating to AP1, as they appeared in the AP1 ES, provided for reference.

Each Volume 5 map is annotated to describe the change to a receptor or significant effect, and to give the SES and AP2 ES reference number. For more detailed information about the SES and AP2 ES annotation, refer to the map series legend. Only maps which have been amended as a result of the SES and AP2 ES are included within the map book.

## Map orientation

The majority of the maps presented in these map books are presented with the railway alignment running horizontally across the page. The direction of travel to London would be following the alignment to the right hand side of the page, and the West Midlands to the left.

The exception to this, are map series LV-03 and LV-04, which present the alignment running from bottom to top of the page. This is to allow more of the modelled outputs to be shown at the appropriate map scale. In this instance, the direction of travel to London would be to the bottom of the page, and the West Midlands to the top.

## Map books

In total there are 53 map books which make up the SES and AP2 ES, spread across volumes 2, 4 and 5. A list of the titles is provided below for reference.

Name	Name
Volume 2 Community forum area map book: CFA4 Kilburn (Brent) to Old Oak Common	Volume 5 Technical appendices map book: Ecology - London Metropolitan (CFA4-6)
Volume 2 Community forum area map book: CFA5 Northolt Corridor	Volume 5 Technical appendices map book: Ecology - CFA7 Colne Valley
Volume 2 Community forum area map book: CFA6 South Ruislip to Ickenham	Volume 5 Technical appendices map book: Ecology - CFA8 The Chalfonts and Amersham
Volume 2 Community forum area map book: CFA7 Colne Valley	Volume 5 Technical appendices map book: Ecology - CFA9 Central Chilterns
Volume 2 Community forum area map book: CFA9 Central Chilterns	Volume 5 Technical appendices map book: Ecology - CFA10 Dunsmore, Wendover and Halton
Volume 2 Community forum area map book: CFA10 Dunsmore, Wendover and Halton	Volume 5 Technical appendices map book: Ecology - CFA11 Stoke Mandeville and Aylesbury
Volume 2 Community forum area map book: CFA11 Stoke Mandeville and Aylesbury	Volume 5 Technical appendices map book: Ecology - CFA12 Waddesdon and Quainton
Volume 2 Community forum area map book: CFA12 Waddesdon and Quainton	Volume 5 Technical appendices map book: Ecology - CFA13 Calvert, Steeple Claydon, Twyford and Chetwode
Volume 2 Community forum area map book: CFA13 Calvert, Steeple Claydon, Twyford and Chetwode	Volume 5 Technical appendices map book: Ecology - CFA14 Newton Purcell to Brackley
Volume 2 Community forum area map book: CFA14 Newton Purcell to Brackley	Volume 5 Technical appendices map book: Ecology - CFA15 Greatworth to Lower Boddington
Volume 2 Community forum area map book: CFA15 Greatworth to Lower Boddington	Volume 5 Technical appendices map book: Ecology - CFA16 Ladbroke and Southam
Volume 2 Community forum area map book: CFA16 Ladbroke and Southam	Volume 5 Technical appendices map book: Ecology - CFA17 Offchurch and Cubbington
Volume 2 Community forum area map book: CFA17 Offchurch and Cubbington	Volume 5 Technical appendices map book: Ecology - CFA18 Stoneleigh, Kenilworth and Burton Green
Volume 2 Community forum area map book: CFA18 Stoneleigh, Kenilworth and Burton Green	Volume 5 Technical appendices map book: Ecology - CFA19 Coleshill Junction
Volume 2 Community forum area map book: CFA19 Coleshill Junction	Volume 5 Technical appendices map book: Ecology - CFA20 Curdworth to Middleton
Volume 2 Community forum area map book: CFA20 Curdworth to Middleton	Volume 5 Technical appendices map book: Ecology - CFA21 Drayton Bassett, Hints and Weeford
Volume 2 Community forum area map book: CFA21 Drayton Bassett, Hints and Weeford	Volume 5 Technical appendices map book: Ecology - CFA22 Whittington to Handsacre
Volume 2 Community forum area map book: CFA22 Whittington to Handsacre	Volume 5 Technical appendices map book: Ecology - West Midlands Metropolitan (CFA23-26)
Volume 2 Community forum area map book: CFA23 Balsall Common and Hampton-in-Arden	Volume 5 Technical appendices map book: Ecology - Off-route
Volume 2 Community forum area map book: CFA24 Birmingham Interchange and Chelmsley Wood	Volume 5 Technical appendices map book: Land quality
Volume 2 Community forum area map book: CFA25 Castle Bromwich and Bromford	Volume 5 Technical appendices map book: Landscape and visual
Volume 2 Community forum area map book: CFA26 Washwood Heath to Curzon Street	Volume 5 Technical appendices map book: Socio-economics
Volume 4 Off-route effects map book	Volume 5 Technical appendices map book: Sound, noise and vibration
Volume 5 Technical appendices map book: Agriculture, forestry and soils	Volume 5 Technical appendices map book: Traffic and transport
Volume 5 Technical appendices map book: Air quality	Volume 5 Technical appendices map book: Water resources
Volume 5 Technical appendices map book: Community	Volume 5 Technical appendices map book: Cross-topic appendix 1 - Committed developments
Volume 5 Technical appendices map book: Cultural heritage	

# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement and  
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Volume 2 | Data dictionary and definitions

## Data dictionary and definitions

Legend features	Definition	Source	Copyright
Airborne sound study area	This defines the area within which operational airborne sound impacts of the scheme have been quantitatively assessed. This area is defined as within 1km of surface sections of the route in rural areas and within 500m of surface sections of the route in urban areas.	High Speed Two (HS2) Ltd	
Balancing pond	The proposed location and extent of balancing ponds for drainage attenuation and infiltration. Outer boundary represents the perimeter.	High Speed Two (HS2) Ltd	
Chainage	<p>Chainage (known as reference chainage) is referenced from Euston Station, which is 0+000, and the value presented is in metres. E.g. 77+000 refers to the point, 77,000m, or 77km, from Euston Station. Chainage values increase in intervals dependant on the map scale. For maps at 1:50,000 scale chainage is shown at 5km intervals. For maps at 1:25,000 scale chainage is shown at 2km intervals. For maps at 1:10,000, 1:5,000 and 1:2,500 scale chainage is shown at 1km intervals.</p> <p>Chainage has been included on the maps as a useful tool for comparing different map sets showing the different environmental themes or engineering plans, due to map sets having different scales and therefore showing differing amounts of alignment on the map.</p>	High Speed Two (HS2) Ltd	
Committed developments	<p>This informs the assessment of the future baseline.</p> <p>Committed consents are unimplemented but committed developments or Local Plan development allocations that are likely to be largely built out prior to commencement of the Proposed Scheme.</p> <p>Cumulative development is unimplemented but committed developments or Local Plan development allocations that are likely to be largely built out during implementation of the Proposed Scheme and give rise to potential cumulative effects, when considered alongside the Proposed Scheme.</p>	High Speed Two (HS2) Ltd	© Crown copyright. Reproduced by permission of Ordnance Survey Licence Number 100049190. Year of Publication 2015.
Community forum boundary	The Environmental Statement has been split into 26 sections called Community Forum Areas.	High Speed Two (HS2) Ltd	© Crown copyright. Reproduced by permission of Ordnance Survey Licence Number 100049190. Year of Publication 2015.
Construction traffic route	Public highways which may be used for HGV construction traffic.	High Speed Two (HS2) Ltd	
County boundary	County boundaries from Ordnance Survey boundary mapping.	Ordnance Survey	© Crown copyright. Reproduced by permission of Ordnance Survey Licence Number 100049190. Year of Publication 2015.
Depot, station, headhouse or portal building	Extends to cover operational footprint of each depot and station and the footprint of each tunnel vent shaft and headhouse at surface level. Excludes any ancillary buildings associated with these structures.	High Speed Two (HS2) Ltd	
District/Borough boundary	Ordnance Survey local authority boundary mapping.	Ordnance Survey	© Crown copyright. Reproduced by permission of

Legend features	Definition	Source	Copyright
			Ordnance Survey Licence Number 100049190. Year of Publication 2015.
<b>Ditches – new</b>	<b>The proposed location and extent of drainage ditches.</b>	<b>High Speed Two (HS2) Ltd</b>	
Ecological mitigation pond	Ponds whose primary function is to provide ecological mitigation. This could be a standalone pond or part of a wider wetland habitat creation plan.	High Speed Two (HS2) Ltd	
Electricity substation	Includes all auto-transformers and feeder stations.	High Speed Two (HS2) Ltd	
Engineering earthworks	Engineering (structural) earthworks which include railway slopes and crossings (roads etc.).	High Speed Two (HS2) Ltd	
Envisaged mitigation to avoid / reduce significant noise effects	<p>Landscaping and/or fence barriers: These lines represent the envisaged mitigation provided specifically to reduce sound levels from the Proposed Scheme at sensitive receptors in order to reduce or remove likely operational significant noise effects. Examples include noise fence barriers or earth bunds (non-engineering earthworks) acting as noise barriers. These features are labelled with the height of the top of the barrier/bund above rail level.</p> <p>Engineering e.g. cuttings (green tunnels marked separately): These lines represent engineering features of the route which reduce sound levels from the Proposed Scheme at potentially significant sensitive receptors. These features, therefore, serve a material purpose in reducing or avoiding likely significant noise effects. Examples include engineering cuttings near to sensitive receptors. These features are labelled with the height of the top of the feature above rail level.</p>	High Speed Two (HS2) Ltd	
Envisaged mitigation further reducing noise effects	<p>Other environmental features e.g. landscaping: These lines represent environmental mitigation features provided for reasons other than noise mitigation which also reduce sound levels from the Proposed Scheme to the surrounding environment. These features are not placed specifically to reduce or remove a likely significant noise effect. Examples include landscaping and visual mitigation earthworks (non-engineering earthworks).</p> <p>Engineering e.g. cuttings: These lines represent engineering features which reduce sound levels from the Proposed Scheme to the surrounding environment but are not placed specifically to reduce or remove a likely significant noise effect. Examples include cuttings and safety barriers on viaducts which are not close to sensitive receptors.</p>	High Speed Two (HS2) Ltd	
Existing public right of way (PRoW)	See Public Rights of Way.	See Public Rights of Way.	See Public Rights of Way.
Existing watercourse	See Watercourse.	See Watercourse.	See Watercourse.
Grassed areas	Any other area grassed not included in landscaped earthworks or ecological habitat.	High Speed Two (HS2) Ltd	
Grassland habitat creation	Soft landscape design that can include any seeded areas for the purpose of creating grassland except for the engineering earthworks.	High Speed Two (HS2) Ltd	
Ground-borne sound & vibration study area (highly sensitive non-residential)	This defines the area within which direct operational ground-borne sound and vibration impacts of the scheme at highly	High Speed Two (HS2) Ltd	

Legend features	Definition	Source	Copyright
	sensitive non-residential receptors have been quantitatively assessed. This area is defined as within 200m of the route.		
Ground-borne sound & vibration study area (residential and non-residential)	This defines the area within which direct operational ground-borne sound and vibration impacts of the scheme at residential and non-residential receptors have been quantitatively assessed. This area is defined as within 85m of the route.	High Speed Two (HS2) Ltd	
Hedgerow habitat creation	Ecological mitigation to provide new hedgerow planting, connectivity enhancements to existing areas and areas for ecological management. This level does not include screening planting for visual mitigation purposes.	High Speed Two (HS2) Ltd	
HS2 Access road	Access road to HS2 infrastructure such as electricity substations, balancing ponds and maintenance access points to the railway.	High Speed Two (HS2) Ltd	
Land drainage area	Provision of land to attenuate or infiltrate overland flows at or beyond the HS2 railway boundaries; for example, where existing land drainage systems are altered by the HS2 works, where the existing landform is reshaped by landscape earthworks or where surface water from third party land is intercepted by the HS2 perimeter drainage system.	High Speed Two (HS2) Ltd	
Land potentially required during construction	Boundary defining the maximum possible extent of construction works required to build HS2 as far as the current level of design allows. This only covers surface works and includes all tunnel portals, vent shafts and headhouses, but does not apply to wholly tunnelled sections or to air rights. It also encompasses associated highway, access, drainage and utility works.	High Speed Two (HS2) Ltd	
Landscape earthworks	Landscape earthworks to provide permanent landscape, visual or acoustic mitigation.	High Speed Two (HS2) Ltd	
Landscape mitigation planting (scrub / woodland)	Screening planting, using woodland, for visual mitigation and landscape integration purposes.	High Speed Two (HS2) Ltd	
Main construction compound	Main Construction Compounds in which main contractors offices and welfare facilities will be located.	High Speed Two (HS2) Ltd	
Main utility works	Represents all new major utility installations (included in the hybrid Bill) and also modifications to existing utilities required to construct the scheme. Includes water, electricity, telecommunications and gas.	High Speed Two (HS2) Ltd	
Minor ground-borne noise or vibration impact	Buildings at which a minor operational ground-borne sound or vibration impact is predicted from the Proposed Scheme.	High Speed Two (HS2) Ltd	
New, diverted or realigned PRoW	New, realigned or diverted Public Rights of Way (PRoW).	High Speed Two (HS2) Ltd	
Noise fence barrier	Denotes fence-style barriers provided as part of the noise mitigation measures. Note that other noise barriers have also been included in the form of landscaping and engineering cuttings - see the SV map series for more detail on noise mitigation.	High Speed Two (HS2) Ltd	
Operational airborne sound impacts at buildings	The buildings shown on SV-02 and SV-05 are colour-coded according to the magnitude of the predicted noise impacts of the Proposed Scheme. Noise impacts are calculated by comparing the sound levels predicted if the Proposed Scheme did not go ahead with those if it did (details of this process can be found in Volume 5: Appendix SV001-000). Panel B on SV-02/SV-05 contains a key showing the colours used with the corresponding	High Speed Two (HS2) Ltd	

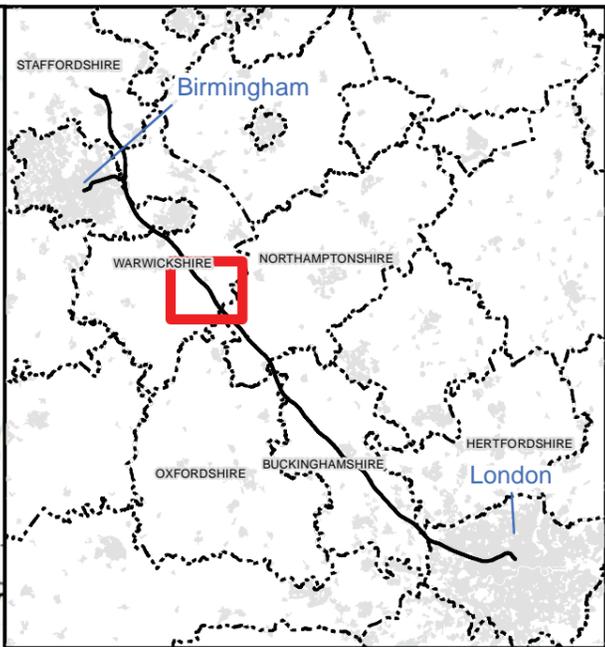
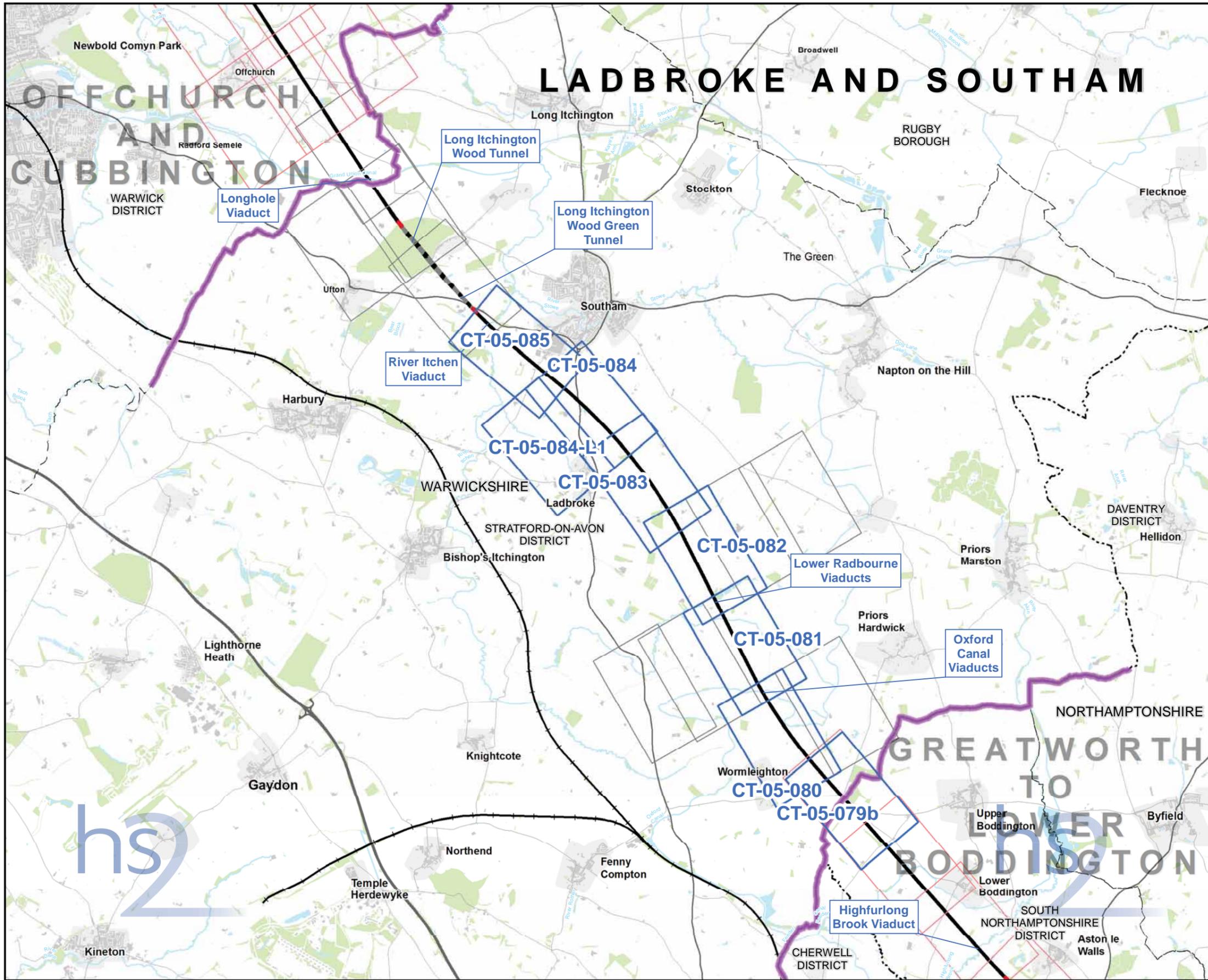
Legend features	Definition	Source	Copyright
	impact categories. The impacts presented are the greatest (i.e. worst-case) of the impacts predicted for daytime and night-time.		
Potential additional noise insulation (triggered by maximum sound levels at night)	This represents dwellings which would potentially be provided with noise insulation due maximum sound levels from the Proposed Scheme (further information regarding assessment criteria can be found in Volume 5 Appendix SV-001).	High Speed Two (HS2) Ltd	
Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)	This represents dwellings which would potentially be provided with noise insulation due to noise from the Proposed Scheme exceeding the World Health Organization (WHO) night noise guidelines interim target (further information regarding assessment criteria can be found in Volume 5 Appendix SV-001).	High Speed Two (HS2) Ltd	
Potential noise insulation (triggered by Noise Insulation Regulations 1996)	This represents dwellings which would potentially qualify for noise insulation under the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (further information regarding assessment criteria can be found in Volume 5 Appendix SV-001).	High Speed Two (HS2) Ltd	
Public realm/Replacement community facility	Public realm: Specifically provided to show areas to be used for public realm. This layer is mainly associated with station sites and is to be used to indicate general areas for designed soft and hard landscaping.  Replacement community facility: Area of land for the provision of a permanent replacement community facility, such as a playground, community centre or activity centre.	High Speed Two (HS2) Ltd	
Public Rights of Way	Public rights of way are highways which can be used for the following purposes: - Footpaths - pedestrians only - Bridleways - pedestrians, cyclists and equestrians - Restricted byways - as bridleways plus non-motorised vehicles - Byways open to all traffic. Definitive Map data supplied by surveying authorities (i.e. county councils, London Boroughs and metropolitan borough councils in the West Midlands).	Buckinghamshire County Council Birmingham City Council Coventry City Council City of Westminster Hertfordshire County Council London Borough of Brent London Borough of Camden London Borough of Ealing London Borough of Hammersmith & Fulham London Borough of Hillingdon Northamptonshire County Council Oxfordshire County Council Royal Borough of Kensington & Chelsea Solihull Metropolitan Borough Council Staffordshire County Council Warwickshire County Council	© Crown copyright. Reproduced by permission of Ordnance Survey Licence Number 100049190. Year of Publication 2015.  This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Buckinghamshire County Council Licence No. 100021529, 2012. Copyright Buckinghamshire County Council.  © Copyright Coventry City Council  © Northamptonshire County Council
Rail alignment	Longitudinal geometry of the tracks consisting of a series of straights and curves.	High Speed Two (HS2) Ltd	
Rail alignment formation	The space required to accommodate the railway infrastructure which typically includes the tracks, overhead line equipment, drainage, lineside access paths and cable routes for electrification	High Speed Two (HS2) Ltd	

Legend features	Definition	Source	Copyright
	and communication systems.		
Replacement floodplain storage	Provision of storage to replace floodplain occupied by the Proposed Scheme. Equivalent storage is provided for events up to the 1 in 100 (1%) annual probability event with an allowance for climate change.	High Speed Two (HS2) Ltd	
Returned to suitable development use	Post construction land will be reinstated to enable potential future development.	High Speed Two (HS2) Ltd	
Route in tunnel Route on surface	Represents the proposed route of HS2, split into route on surface and tunnelled sections.	High Speed Two (HS2) Ltd	
Satellite construction compound	Represents satellite construction compounds which serve local works for major construction elements within a main contract.	High Speed Two (HS2) Ltd	
Stopped-up PRoW	Public rights of way that will be closed due to construction of the scheme.	High Speed Two (HS2) Ltd	
Sustainable placement	Sustainable placement: the on-site placement for disposal of surplus excavated material to avoid causing environmental effects (e.g. transport) that would otherwise be associated with the off-site disposal of that material. "On-site" in this context means within the land required for the purposes of the Proposed Scheme and "off-site" means external land (or landfill site) which is not specifically required for the purposes of the Proposed Scheme.	High Speed Two (HS2) Ltd	
Temporary highway diversion / realignment	Indicative temporary highway diversion layouts during the construction phase.	High Speed Two (HS2) Ltd	
Temporary material stockpile	Represents temporary stockpiling of topsoil, subsoil and other excavated materials to be used for reinstatement purposes, and also stockpile areas for managing movement of excavated materials during construction.	High Speed Two (HS2) Ltd	
Temporary PRoW diversion / realignment	Indicative temporary diversions to public rights of way as a result of construction of the scheme. These will vary depending on construction phase and local conditions.	High Speed Two (HS2) Ltd	
Temporary replacement community facility	Area of land for the provision of a temporary replacement community facility, such as a playground, community centre or activity centre, whilst construction works are in progress.	High Speed Two (HS2) Ltd	
Tunnel portal	The footprint of a tunnel portal.	High Speed Two (HS2) Ltd	
Tunnels external extent	The external excavated extent of each tunnel bore.	High Speed Two (HS2) Ltd	
Watercourse	The Detailed River Network (DRN) is the only large-scale, accurate and fully attributed digital river centreline covering England and Wales.	Environment Agency	© Environment Agency copyright and/or database right 2015. All rights reserved.
Watercourse diversion	Includes rivers, streams, ditches and other open channels, diversions to these, together with any new culverts required.	High Speed Two (HS2) Ltd	
Wetland habitat creation	Ecological mitigation area to provide new wetland habitat creation, enhancements to existing areas and areas for ecological management. This level does not include screening planting for visual mitigation purposes.	High Speed Two (HS2) Ltd	
Woodland habitat creation	Ecological mitigation area to provide new woodland planting, connectivity enhancements to existing areas and areas for ecological management. This level does not include screening planting for visual mitigation purposes.	High Speed Two (HS2) Ltd	

# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement and  
Additional Provision 2 Environmental Statement

Volume 2 | CT-05 – Construction Phase  
CT-06 – Proposed Scheme



**Map Series Information:**

These plans show the land potentially required during construction, the construction features, access requirements and infrastructure associated with construction of the Proposed Scheme. The plans also show the construction phase arrangements for public access using Public Rights of Way.

The base mapping shown on the plans is reflective of 2014 Ordnance Survey (OS) data.

**Main Map Legend**

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community forum with amendment
- Map sheets included in this community forum with no amendment
- Map sheets not included in this community forum

Map Number **CT-05-INDEX-CFA16**

Map Name  
**Index Map of:  
 Construction Phase  
 SES and AP2 ES**  
 Community Forum Area CFA16:  
 Ladbroke and Southam

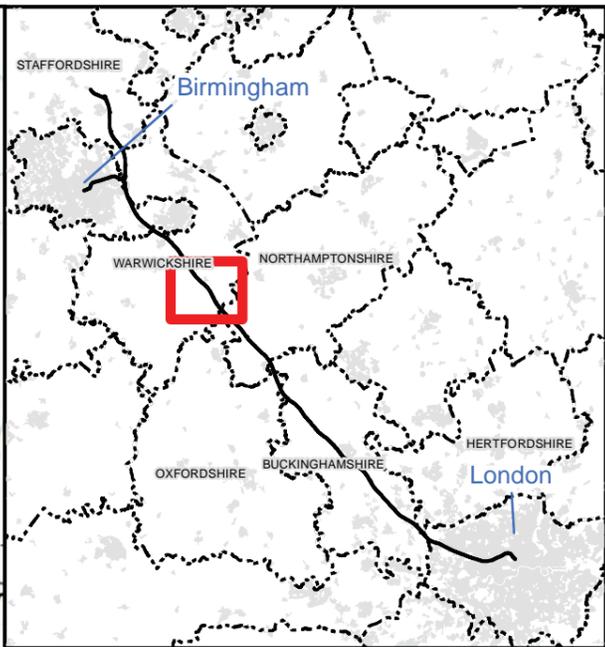
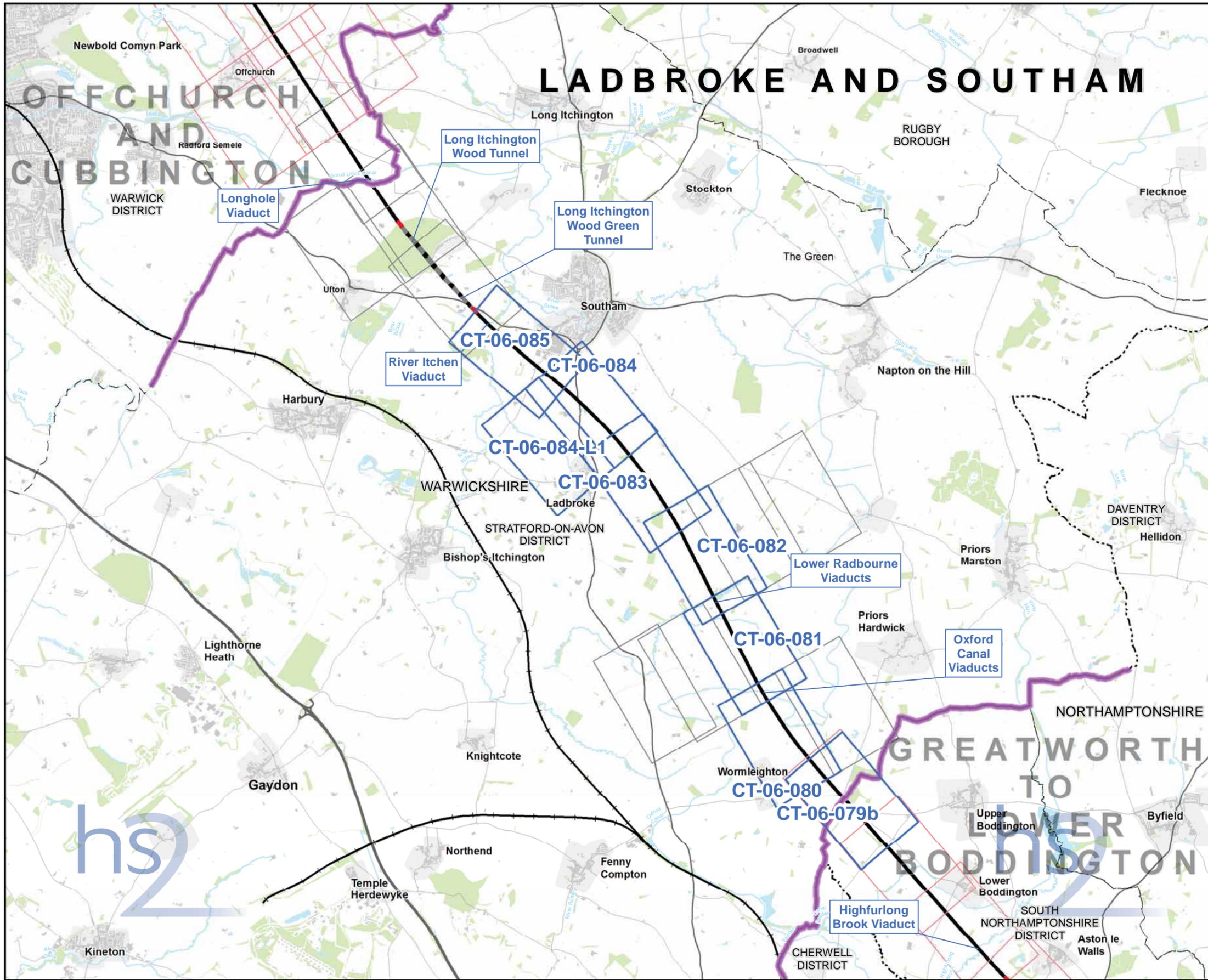
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**Map Series Information:**

These maps show permanent features, infrastructure, restored land, and areas for landscaping, screening and ecological mitigation associated with the Proposed Scheme.

The base mapping shown on the plans is reflective of 2014 Ordnance Survey (OS) data.

- Main Map Legend**
- Route in tunnel
  - Route on surface
  - Depot, station, headhouse or portal building
  - Community forum boundary
  - Existing railway station
  - County boundary
  - District/Borough boundary
  - Map sheets included in this community forum with amendment
  - Map sheets included in this community forum with no amendment
  - Map sheets not included in this community forum

Map Number **CT-06-INDEX-CFA16**

Map Name  
**Index Map of:  
 Proposed Scheme  
 SES and AP2 ES**  
 Community Forum Area CFA16:  
 Ladbroke and Southam

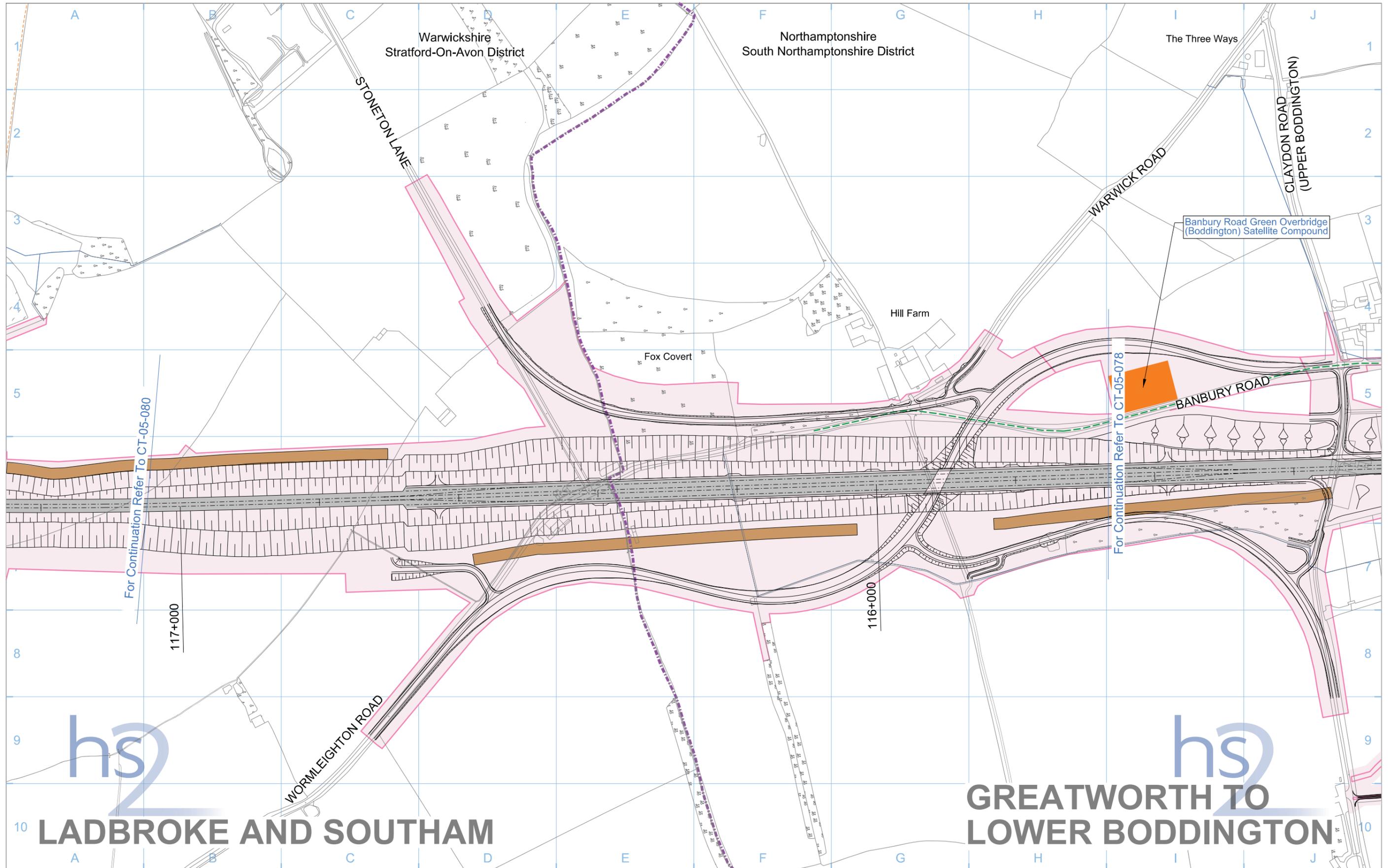
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**Doc Number:** C250-ARP-EV-MAP-000-001338-AP02 -P01 **Date:** 16/06/15



hs2  
**LADBROKE AND SOUTHAM**

hs2  
**GREATWORTH TO LOWER BODDINGTON**

Legend	
	Depot, station, headhouse or portal building
	Tunnel portal
	Main construction compound
	Satellite construction compound
	Temporary material stockpile
	Rail alignment formation
	Landscape earthworks
	Engineering earthworks
	County boundary
	Borough / District boundary
	Land potentially required during construction
	Community forum boundary
	Existing watercourse
	Tunnels external extent
	Construction traffic route
	Existing public right of way (PRoW)
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Temporary PRoW diversion / realignment
	Temporary highway diversion / realignment
	UT - Main utility works
	Chainage (e.g. 10+000)
	Rail alignment

Map Number	<b>CT-05-079b</b>
Map Name	<b>Construction Phase</b>
Community Forum Area	CFA16 Ladbroke and Southam

hs2

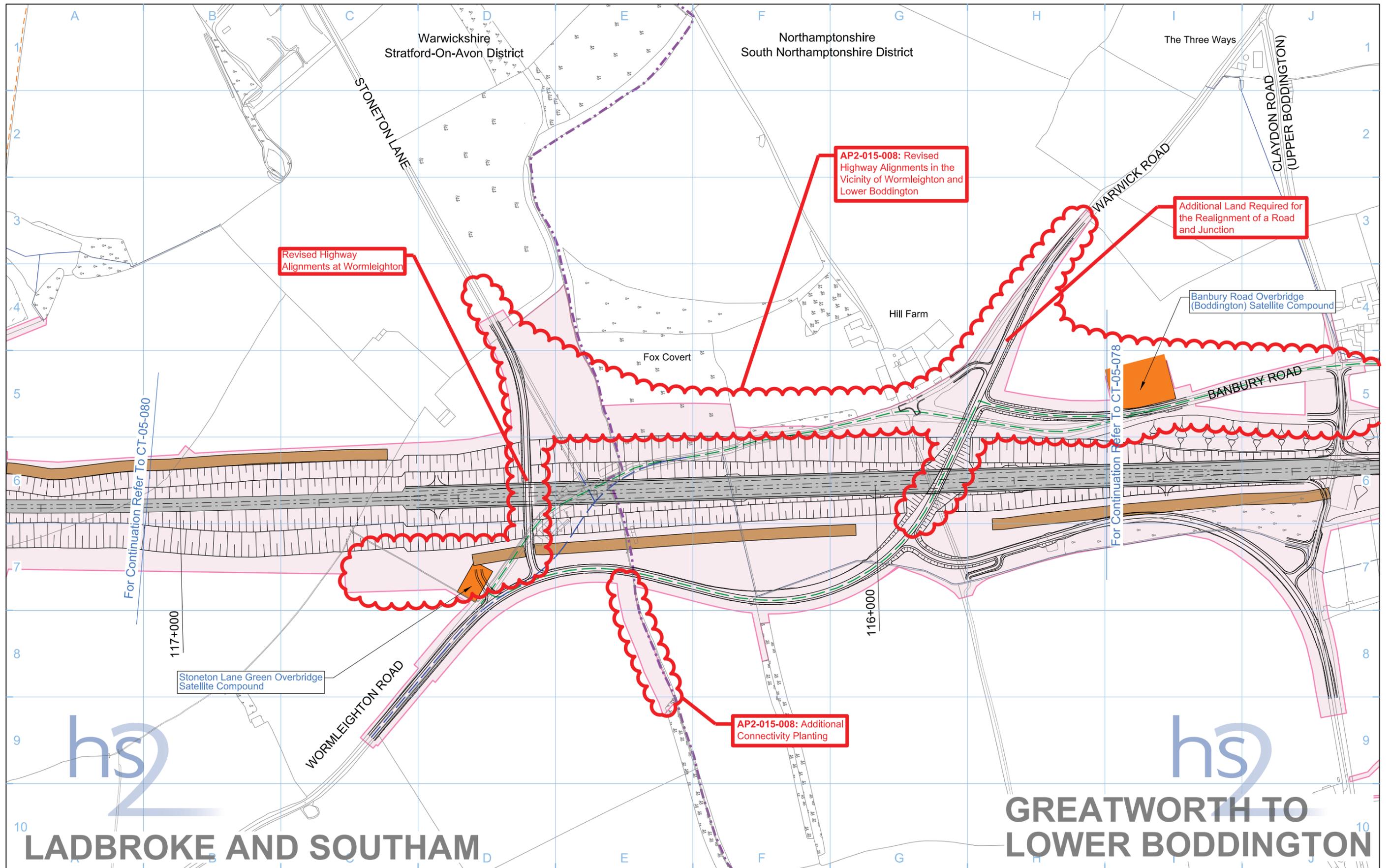
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hs2  
**LADBROKE AND SOUTHAM**

hs2  
**GREATWORTH TO LOWER BODDINGTON**

Legend	
Depot, station, headhouse or portal building	Rail alignment formation
Tunnel portal	Landscape earthworks
Main construction compound	Engineering earthworks
Satellite construction compound	County boundary
Temporary material stockpile	Borough / District boundary
Land potentially required during construction	Temporary replacement community facility
Existing watercourse	Community forum boundary
Tunnels external extent	Existing public right of way (PRoW)
Construction traffic route	New, diverted or realigned PRoW
Temporary highway diversion / realignment	Stopped-up PRoW
Main utility works	Temporary PRoW diversion / realignment

Map Number	<b>CT-05-079b</b>
Map Name	<b>Construction Phase SES and AP2 ES</b>
Community Forum Area	CFA16 Ladbroke and Southam

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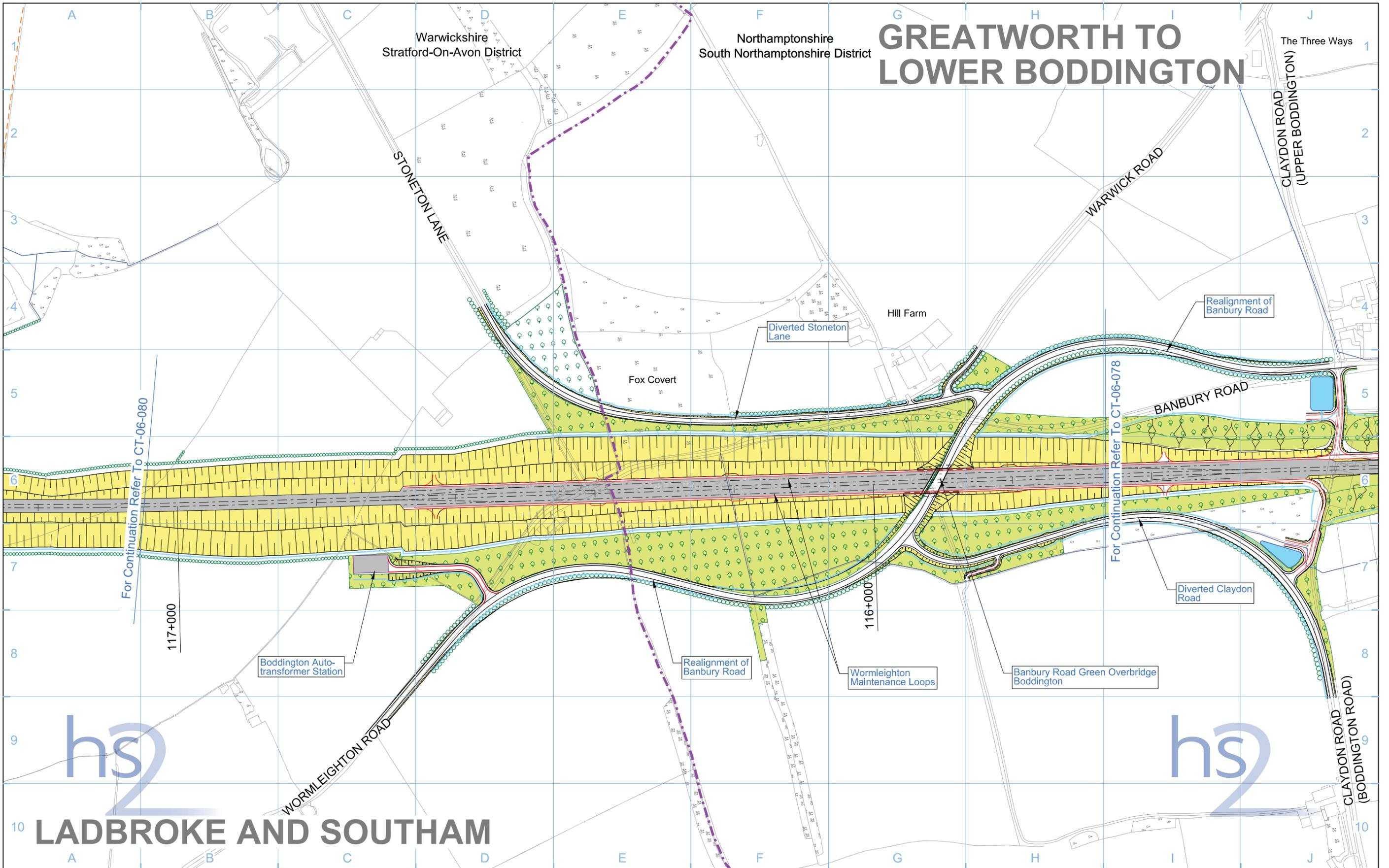
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0 50 100 150 200 250 Metres

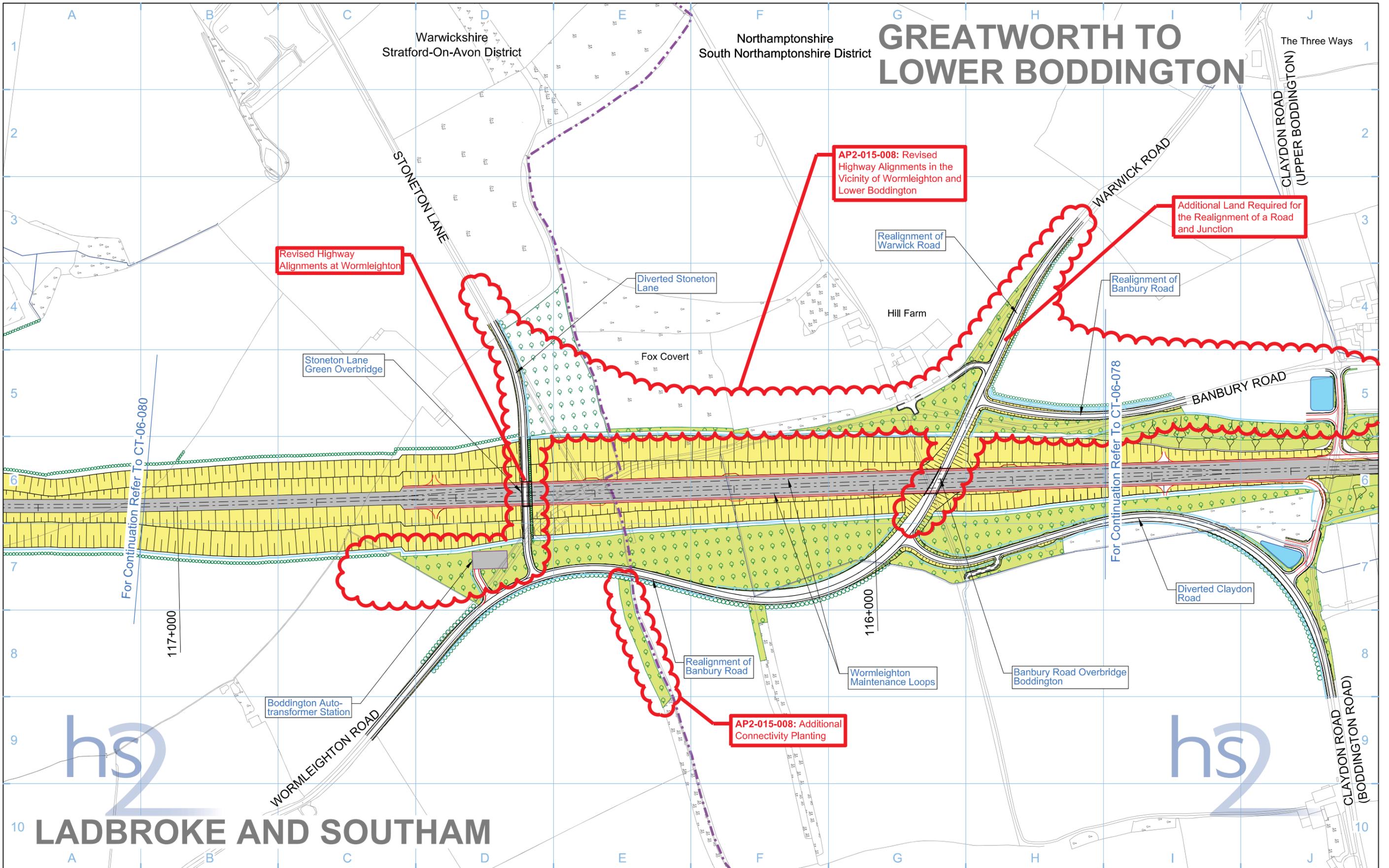
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Doc Number: C223-CSI-EV-DPL-030-515900-AP02 P03 Date: 21/05/15



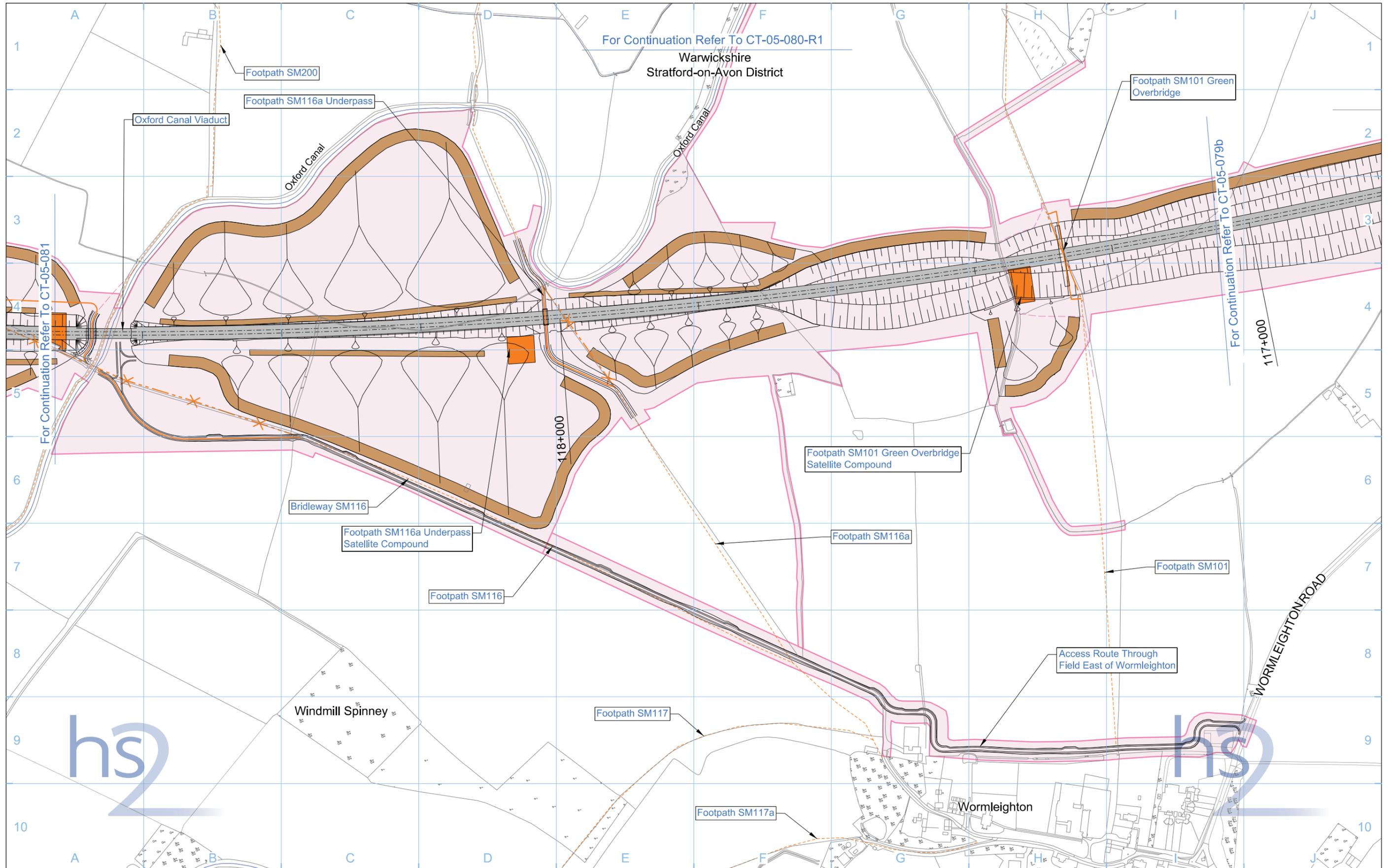
# GREATWORTH TO LOWER BODDINGTON

<b>Legend</b> <ul style="list-style-type: none"> <li>Depot, station, headhouse or portal building</li> <li>Tunnel portal</li> <li>Electricity substation</li> <li>Land drainage area</li> <li>Ecological mitigation pond</li> <li>Balancing pond</li> <li>Replacement floodplain storage</li> <li>Woodland habitat creation</li> <li>Wetland habitat creation</li> <li>Grassland habitat creation</li> <li>Landscape mitigation planting (scrub / woodland)</li> <li>Grassed areas</li> <li>Sustainable placement</li> <li>Public realm</li> <li>Engineering earthworks</li> <li>Landscape earthworks</li> <li>Rail alignment formation</li> <li>Returned to suitable development use</li> <li>County boundary</li> <li>Borough / District boundary</li> <li>Community forum boundary</li> <li>Watercourse diversion</li> <li>Existing watercourse</li> <li>Ditches - new</li> <li>Hedgerow habitat creation</li> <li>Main utility works</li> <li>Existing public right of way (PRoW)</li> <li>New, diverted or realigned PRoW</li> <li>Stopped-up PRoW</li> <li>Tunnels external extent</li> <li>Rail alignment</li> <li>HS2 Access road</li> <li>Noise fence barrier</li> <li>Chainage (e.g. 10+000)</li> </ul>		<b>Map Number</b> <b>CT-06-079b</b> <b>Map Name</b> <b>Proposed Scheme</b> <b>Community Forum Area</b> CFA16 Ladbroke and Southam	<p>HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way.</p> <p>Registered in England, Registration number 06791686          Registered office: Eland House, Bressenden Place, London SW1E 5DU</p> <p>Scale at A3: 1:5,000</p> <p>© Crown copyright and database rights 2013, Ordnance Survey Licence Number 100049190.</p> <p><b>Doc Number:</b> C223-CSI-EV-DPL-030-615900 <b>P05</b> <b>Date:</b> 29/10/13</p>
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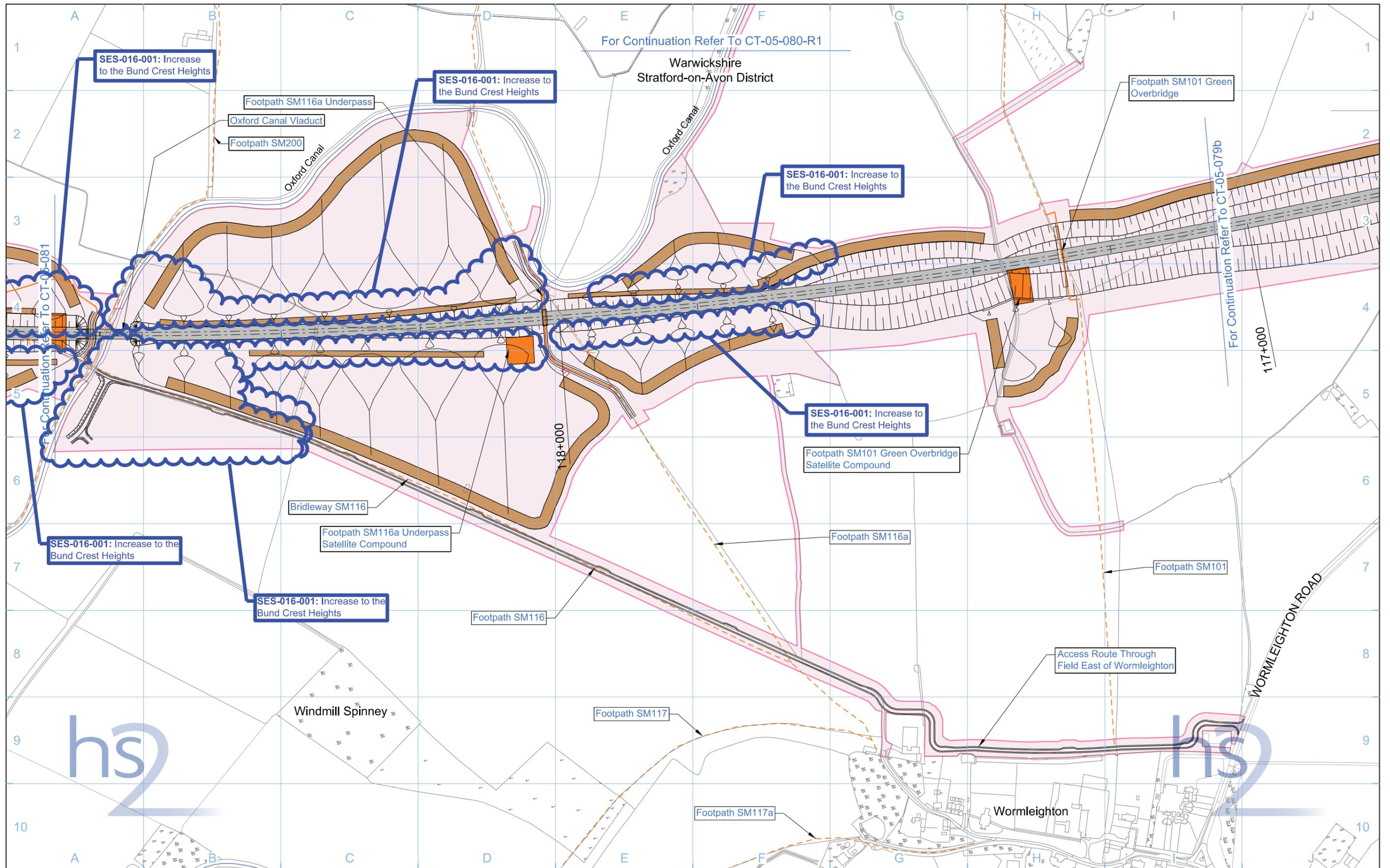


# GREATWORTH TO LOWER BODDINGTON

<b>Legend</b> <ul style="list-style-type: none"> <li>Depot, station, headhouse or portal building</li> <li>Tunnel portal</li> <li>Electricity substation</li> <li>Land drainage area</li> <li>Ecological mitigation pond</li> <li>Balancing pond</li> </ul>		<ul style="list-style-type: none"> <li>Replacement floodplain storage</li> <li>Woodland habitat creation</li> <li>Wetland habitat creation</li> <li>Grassland habitat creation</li> <li>Landscape mitigation planting (scrub / woodland)</li> <li>Grassed areas</li> <li>Sustainable placement</li> </ul>		<ul style="list-style-type: none"> <li>Public realm/Replacement community facility</li> <li>Engineering earthworks</li> <li>Landscape earthworks</li> <li>Rail alignment formation</li> <li>Returned to suitable development use</li> <li>County boundary</li> <li>Borough / District boundary</li> </ul>		<ul style="list-style-type: none"> <li>Community forum boundary</li> <li>Watercourse diversion</li> <li>Existing watercourse</li> <li>Ditches - new</li> <li>Hedgerow habitat creation</li> <li>Main utility works</li> <li>Existing public right of way (PRoW)</li> <li>New, diverted or realigned PRoW</li> </ul>		<ul style="list-style-type: none"> <li>Stopped-up PRoW</li> <li>Tunnels external extent</li> <li>Rail alignment</li> <li>HS2 Access road</li> <li>Noise fence barrier</li> <li>Chainage (e.g. 10+000)</li> </ul>		<b>Map Number</b> CT-06-079b  <b>Map Name</b> Proposed Scheme SES and AP2 ES  <b>Community Forum Area</b> CFA16 Ladbroke and Southam		<p>HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is Issued in part or Issued incomplete in any way.</p> <p>Registered in England, Registration number 06791686 Registered offices One Canada Square, London, E14 5AB</p> <p>Scale at A3: 1:5,000</p> <p>© Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190.</p> <p><b>Doc Number:</b> C223-CSI-EV-DPL-030-615900-AP02 P04 <b>Date:</b> 21/05/15</p>	
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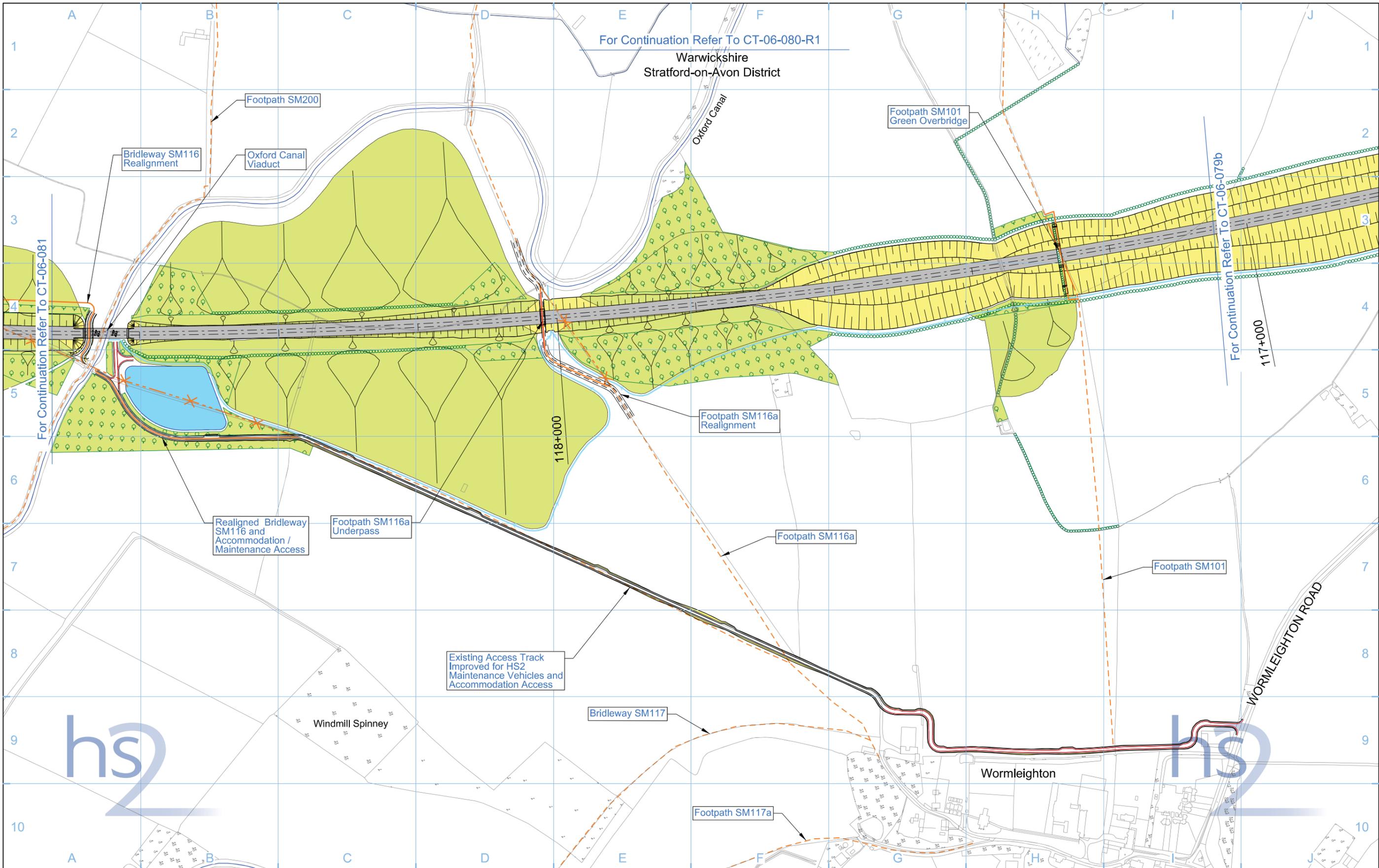
<b>Legend</b> 		<b>Map Information</b> Map Number: <b>CT-05-080</b> Map Name: <b>Construction Phase</b> Community Forum Area: CFA16 Ladbroke and Southam		 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered office: Eland House, Bressenden Place, London SW1E 5DU Scale at A3: 1:5,000 © Crown copyright and database rights 2013. Ordnance Survey Licence Number 100049190. Doc Number: C223-CSI-EV-DPL-030-516100 P05 Date: 29/10/13	
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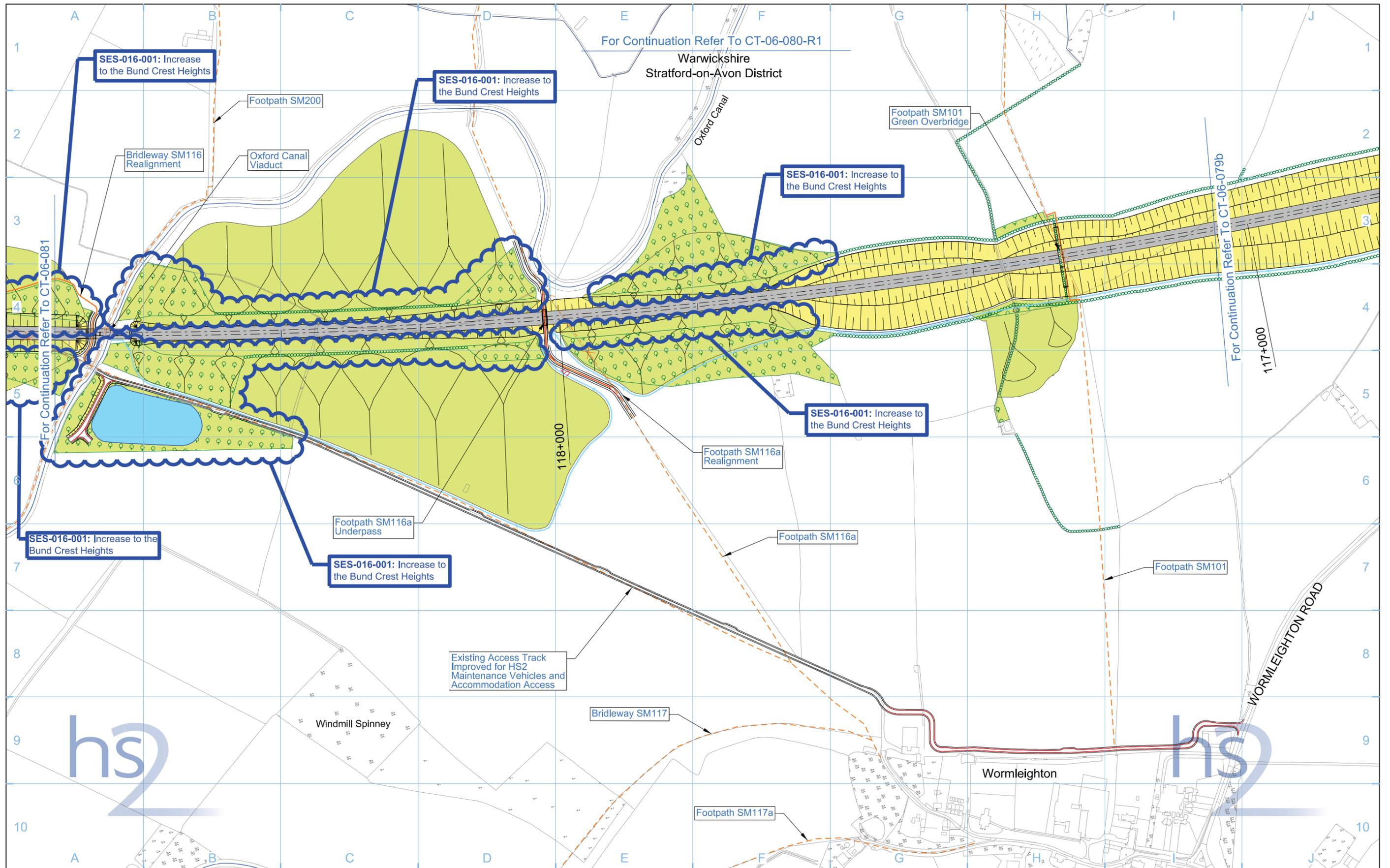
<b>Legend</b> 				<b>Map Number</b> <b>CT-05-080</b> <b>Map Name</b> <b>Construction Phase</b> <b>SES and AP2 ES</b> <b>Community Forum Area</b> CFA16 Ladbroke and Southam	 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered offices One Canada Square, London, E14 5AB Scale at A3: 1:5,000  © Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C223-CSI-EV-DPL-030-516100-AP02 <b>P04</b> <b>Date:</b> 18/06/15
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For Continuation Refer To CT-06-080-R1

Warwickshire  
Stratford-on-Avon District



<b>Legend</b> 		<b>Map Number</b> <b>CT-06-080</b> <b>Map Name</b> <b>Proposed Scheme</b> <b>Community Forum Area</b> CFA16 Ladbroke and Southam	 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered office: Eland House, Bressenden Place, London SW1E 5DU Scale at A3: 1:5,000 © Crown copyright and database rights 2013, Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C223-CSI-EV-DPL-030-616100 P04 <b>Date:</b> 29/10/13
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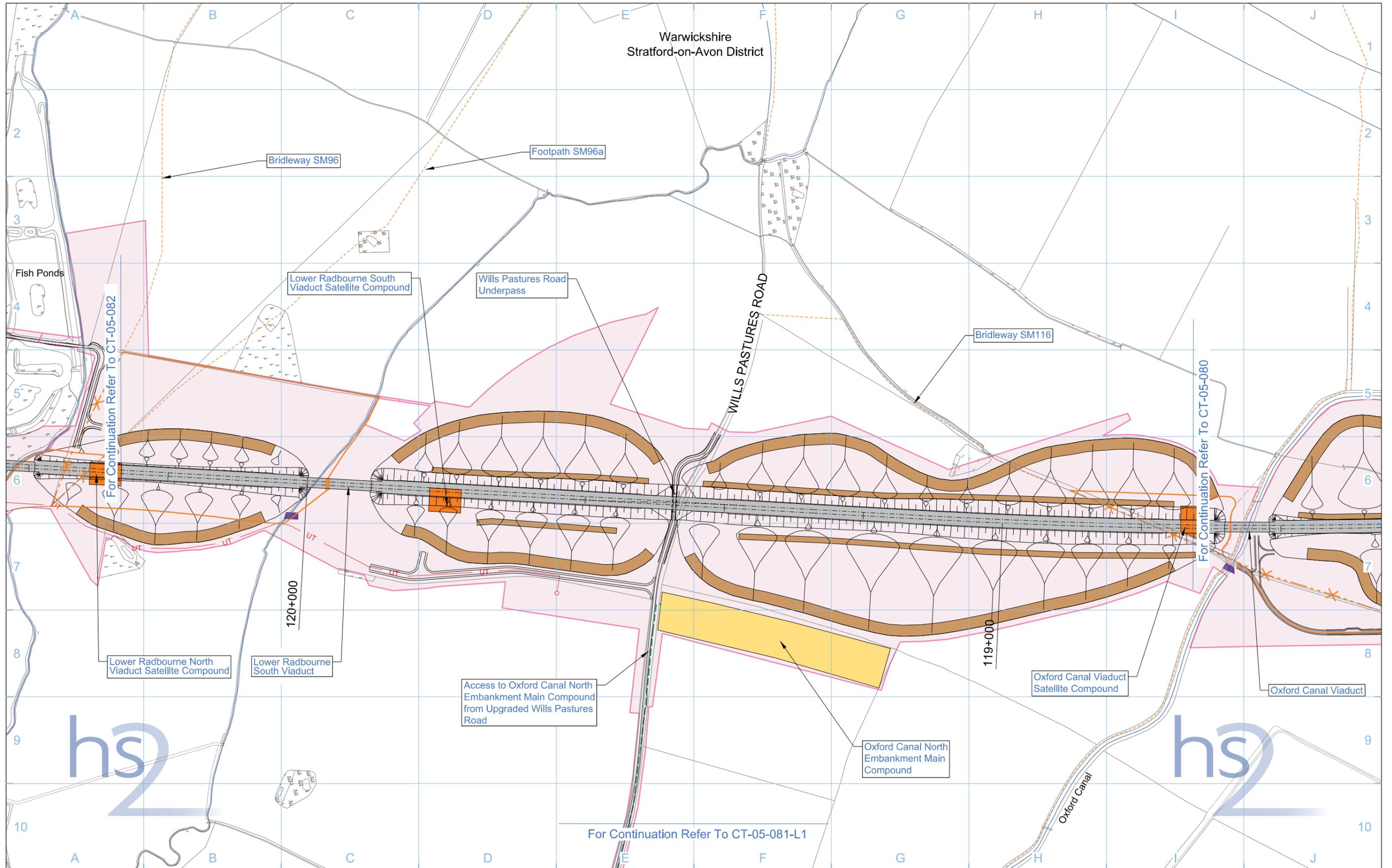
For Continuation Refer To CT-06-080-R1

Warwickshire  
Stratford-on-Avon District

For Continuation Refer To CT-06-079b

For Continuation Refer To CT-06-081

<b>Legend</b> 		<b>Map Number</b> <b>CT-06-080</b> <b>Map Name</b> <b>Proposed Scheme</b> <b>SES and AP2 ES</b> <b>Community Forum Area</b> CFA16 Ladbroke and Southam	 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered offices One Canada Square, London, E14 5AB Scale at A3: 1:5,000 0 50 100 150 200 250 Metres © Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C223-CSI-EV-DPL-030-616100-AP02 P05 <b>Date:</b> 18/06/15
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Legend	
	Depot, station, headhouse or portal building
	Tunnel portal
	Main construction compound
	Satellite construction compound
	Temporary material stockpile
	Rail alignment formation
	Landscape earthworks
	Engineering earthworks
	County boundary
	Borough / District boundary
	Land potentially required during construction
	Community forum boundary
	Existing watercourse
	Tunnels external extent
	Construction traffic route
	Existing public right of way (PRoW)
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Temporary PRoW diversion / realignment
	Temporary highway diversion / realignment
	UT - Main utility works
	Chainage (e.g. 10+000)
	Rail alignment

Map Number	<b>CT-05-081</b>
Map Name	<b>Construction Phase</b>
Community Forum Area	CFA16 Ladbroke and Southam

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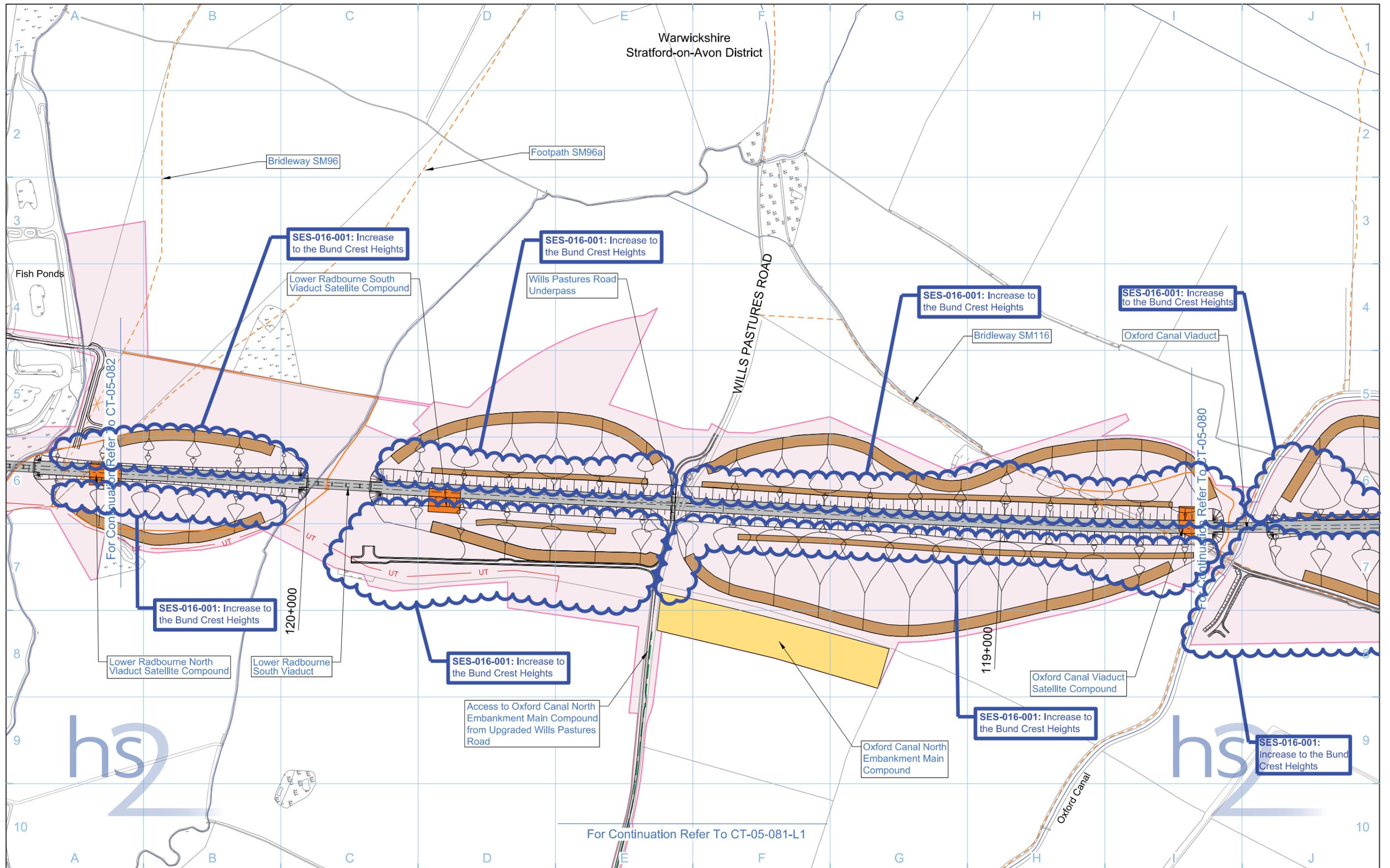
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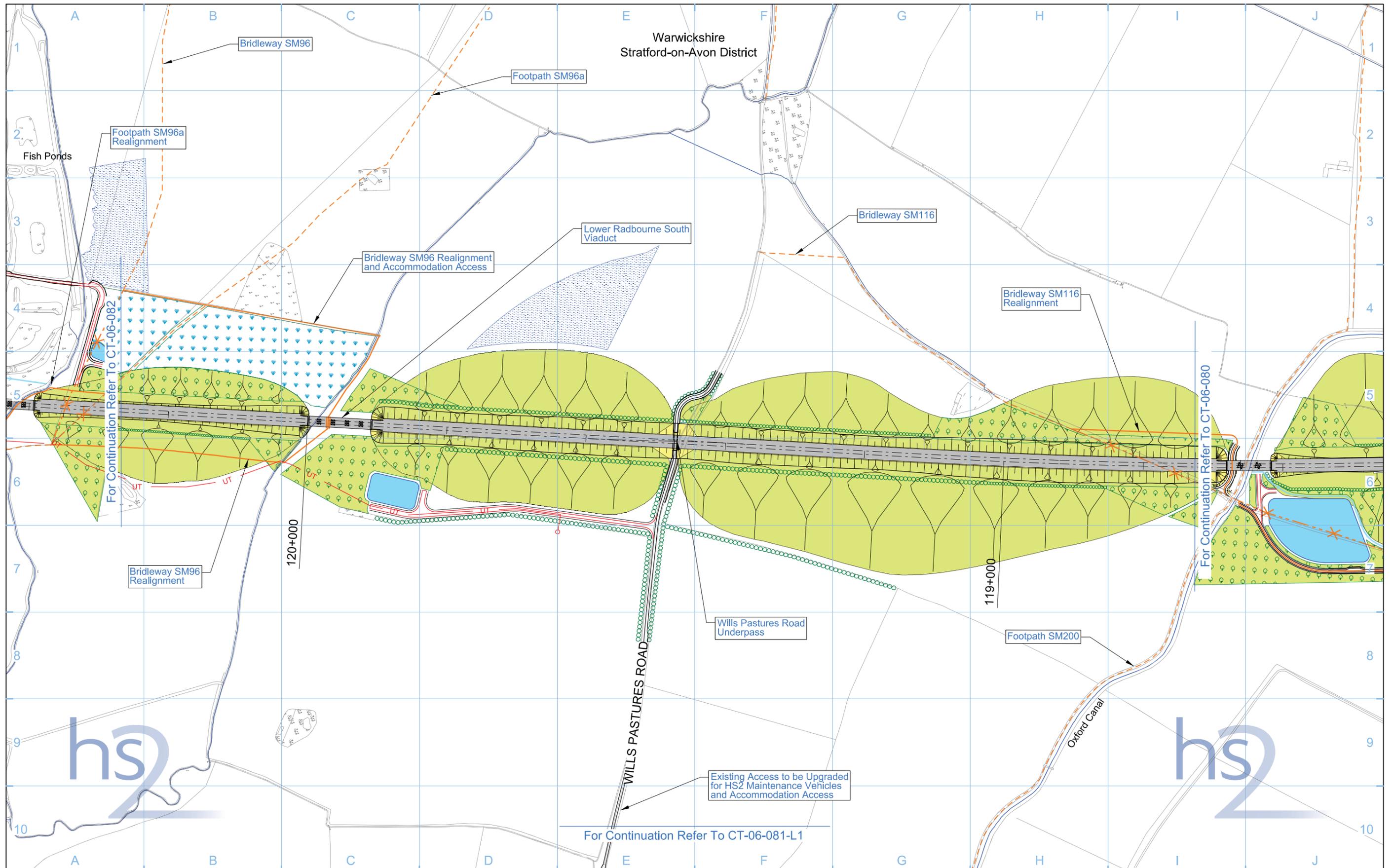
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<b>Legend</b> 				<b>Map Number</b> <b>CT-05-081</b> <b>Map Name</b> <b>Construction Phase</b> <b>SES and AP2 ES</b> <b>Community Forum Area</b> CFA16 Ladbroke and Southam	 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered offices One Canada Square, London, E14 5AB Scale at A3: 1:5,000  © Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C223-CSI-EV-DPL-030-516300-AP02 <b>P04</b> <b>Date:</b> 18/06/15
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Legend	
	Depot, station, headhouse or portal building
	Tunnel portal
	Electricity substation
	Land drainage area
	Ecological mitigation pond
	Balancing pond
	Replacement floodplain storage
	Woodland habitat creation
	Wetland habitat creation
	Grassland habitat creation
	Landscape mitigation planting (scrub / woodland)
	Grassed areas
	Sustainable placement
	Public realm
	Engineering earthworks
	Landscape earthworks
	Rail alignment formation
	Returned to suitable development use
	County boundary
	Borough / District boundary
	Community forum boundary
	Watercourse diversion
	Existing watercourse
	Ditches - new
	Hedgerow habitat creation
	Main utility works
	Existing public right of way (PRoW)
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Tunnels external extent
	Rail alignment
	HS2 Access road
	Noise fence barrier
	Chainage (e.g. 10+000)

Map Number	<b>CT-06-081</b>
Map Name	<b>Proposed Scheme</b>
Community Forum Area	CFA16 Ladbroke and Southam

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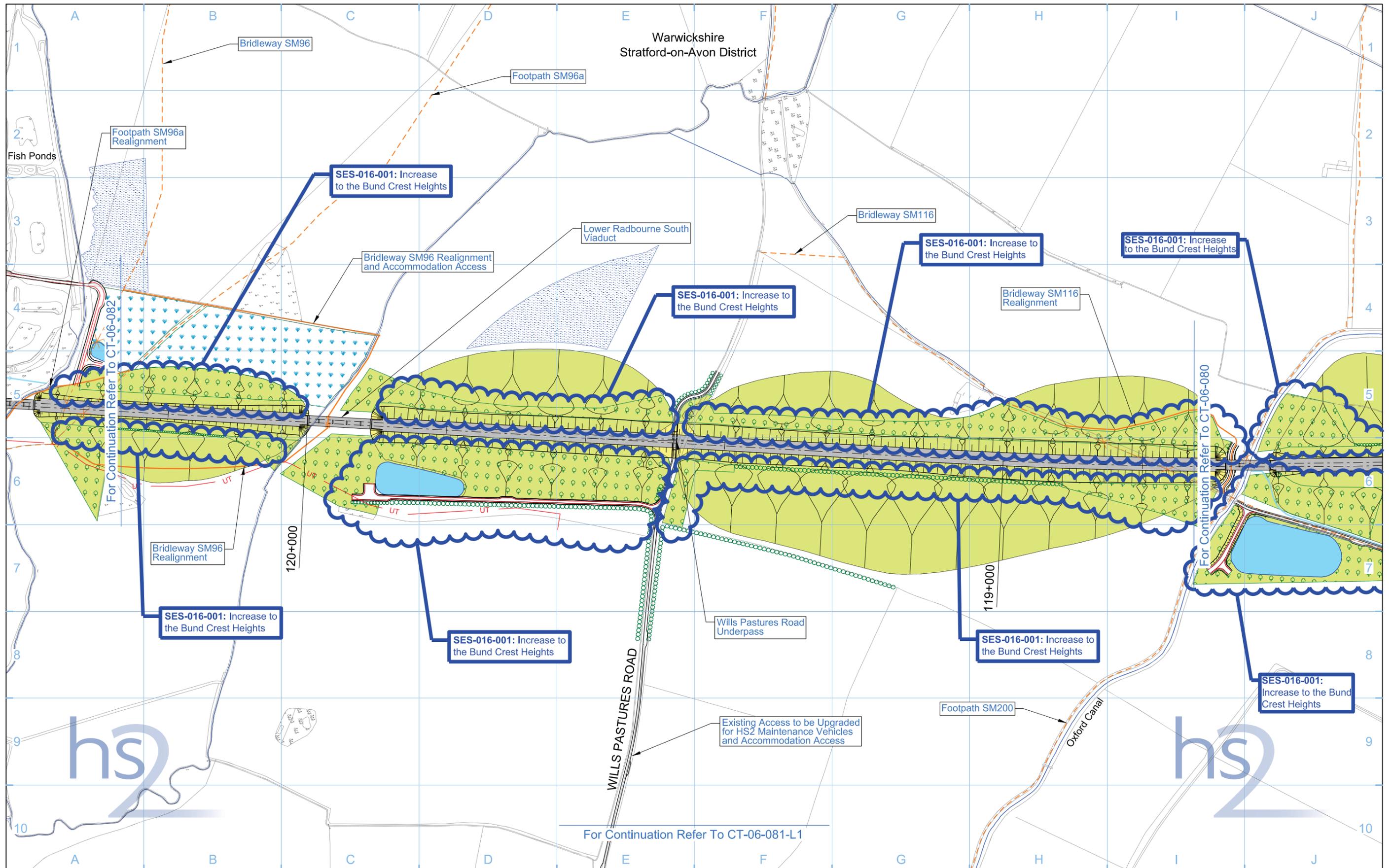
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Metres

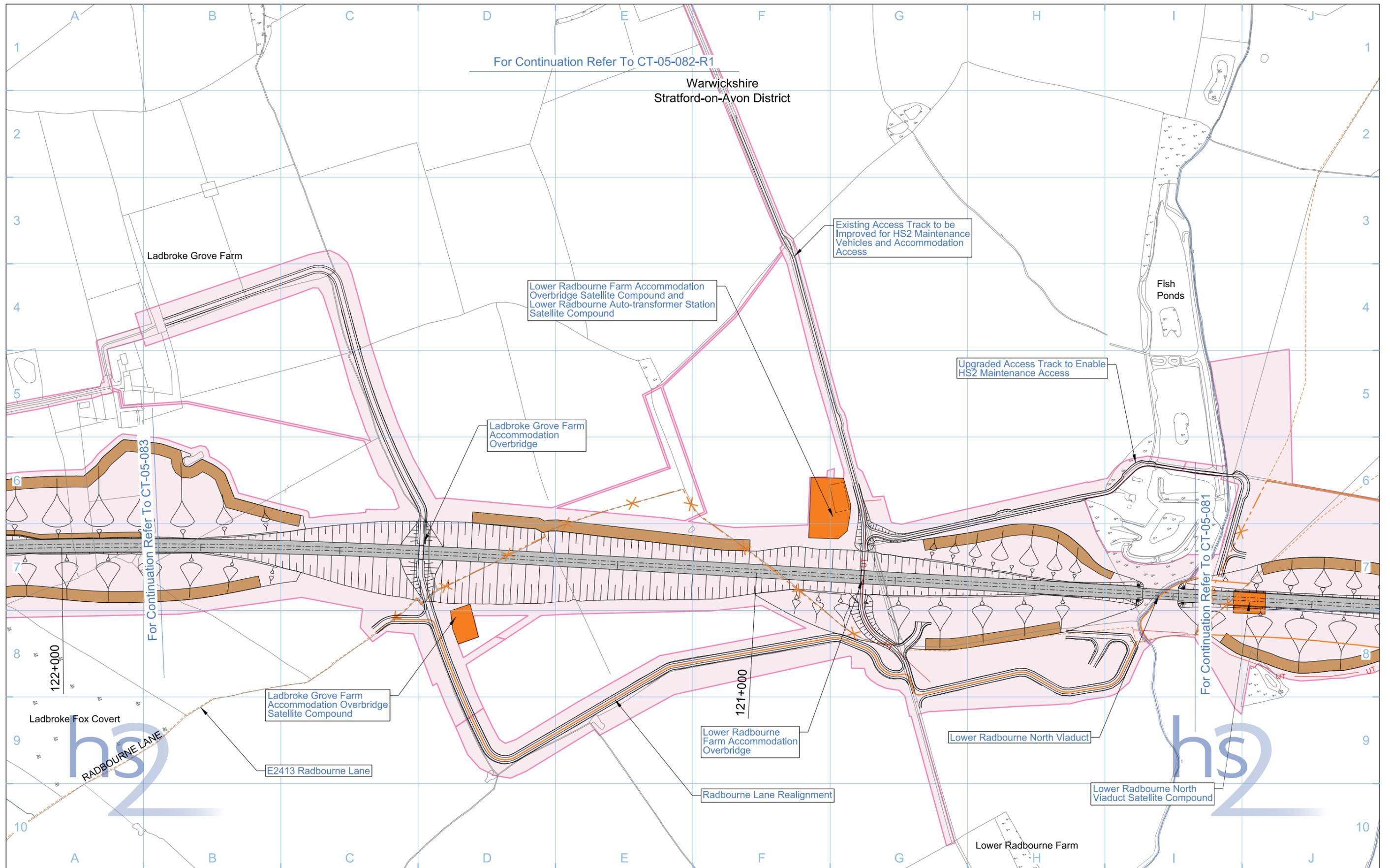
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<b>Map Name</b> <b>Proposed Scheme</b> <b>SES and AP2 ES</b>		<b>Community Forum Area</b> CFA16 Ladbroke and Southam		<b>Map Number</b> <b>CT-06-081</b>		<b>Map Name</b> <b>Proposed Scheme</b> <b>SES and AP2 ES</b>		<b>Community Forum Area</b> CFA16 Ladbroke and Southam			



For Continuation Refer To CT-05-082-R1

Warwickshire  
Stratford-on-Avon District

Ladbrooke Grove Farm

Existing Access Track to be Improved for HS2 Maintenance Vehicles and Accommodation Access

Lower Radbourne Farm Accommodation Overbridge Satellite Compound and Lower Radbourne Auto-transformer Station Satellite Compound

Fish Ponds

Upgraded Access Track to Enable HS2 Maintenance Access

Ladbrooke Grove Farm Accommodation Overbridge

For Continuation Refer To CT-05-083

For Continuation Refer To CT-05-081

122+000

121+000

Ladbrooke Fox Covert

Ladbrooke Grove Farm Accommodation Overbridge Satellite Compound

Lower Radbourne Farm Accommodation Overbridge

Lower Radbourne North Viaduct

hs2  
RADBOURNE LANE

E2413 Radbourne Lane

Radbourne Lane Realignment

Lower Radbourne North Viaduct Satellite Compound

hs2

Lower Radbourne Farm

Legend	
	Depot, station, headhouse or portal building
	Tunnel portal
	Main construction compound
	Satellite construction compound
	Temporary material stockpile
	Rail alignment formation
	Landscape earthworks
	Engineering earthworks
	County boundary
	Borough / District boundary
	Land potentially required during construction
	Community forum boundary
	Existing watercourse
	Tunnels external extent
	Construction traffic route
	Existing public right of way (PRoW)
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Temporary PRoW diversion / realignment
	Temporary highway diversion / realignment
	UT - Main utility works
	Chainage (e.g. 10+000)
	Rail alignment

Map Number	<b>CT-05-082</b>
Map Name	<b>Construction Phase</b>
Community Forum Area	CFA16 Ladbrooke and Southam

hs2

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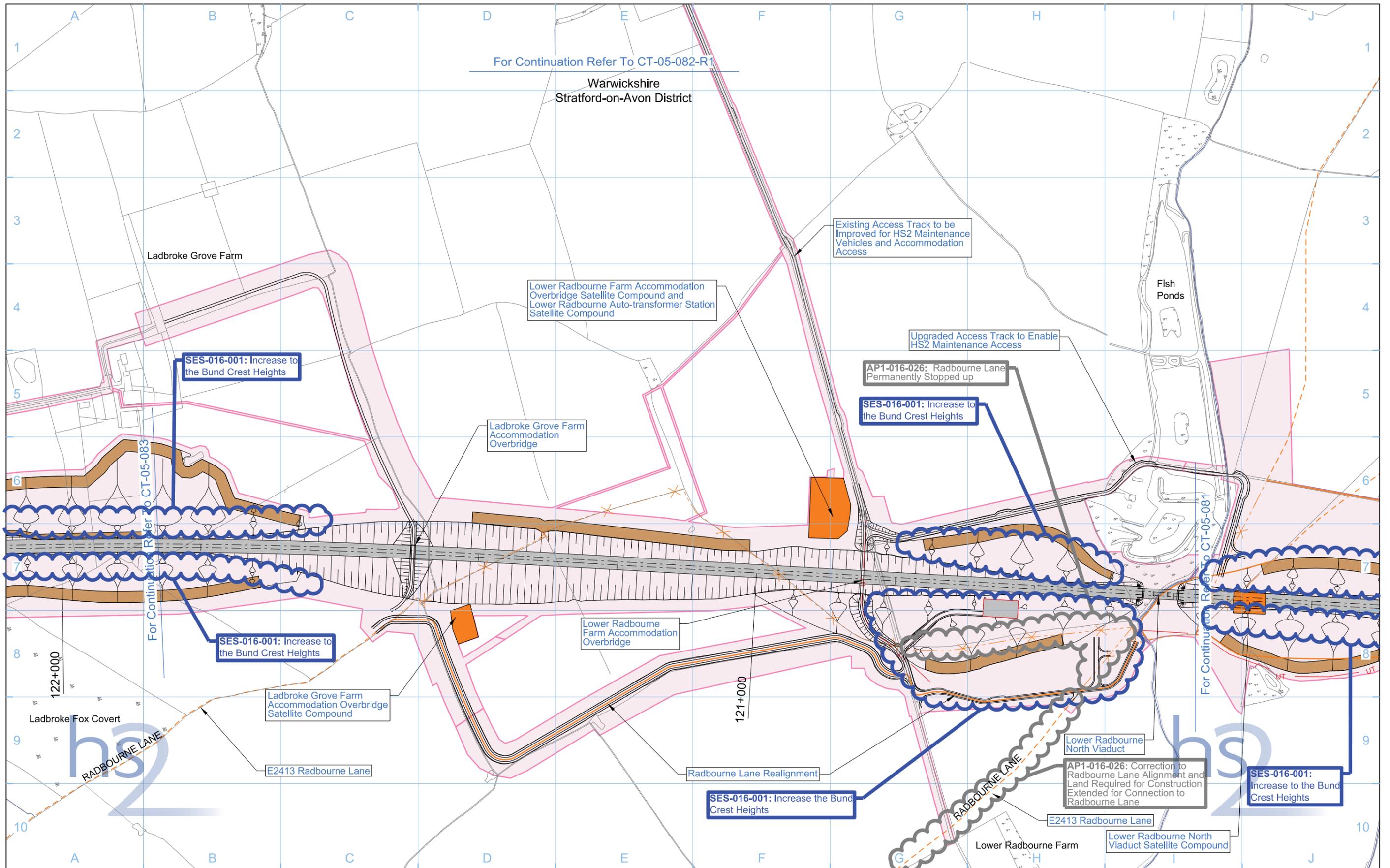
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For Continuation Refer To CT-05-082-R1  
 Warwickshire  
 Stratford-on-Avon District

Ladbroke Grove Farm

Lower Raddourne Farm Accommodation  
 Overbridge Satellite Compound and  
 Lower Raddourne Auto-transformer Station  
 Satellite Compound

Existing Access Track to be  
 Improved for HS2 Maintenance  
 Vehicles and Accommodation  
 Access

SES-016-001: Increase to  
 the Bund Crest Heights

Upgraded Access Track to Enable  
 HS2 Maintenance Access

AP1-016-026: Raddourne Lane  
 Permanently Stopped up

SES-016-001: Increase to  
 the Bund Crest Heights

Ladbroke Grove Farm  
 Accommodation  
 Overbridge

For Continuation Refer to CT-05-083

SES-016-001: Increase to  
 the Bund Crest Heights

Lower Raddourne  
 Farm Accommodation  
 Overbridge

For Continuation Refer to CT-05-081

Ladbroke Grove Farm  
 Accommodation Overbridge  
 Satellite Compound

Raddourne Lane Realignment

SES-016-001: Increase the Bund  
 Crest Heights

Lower Raddourne  
 North Viaduct

AP1-016-026: Correction to  
 Raddourne Lane Alignment and  
 Land Required for Construction  
 Extended for Connection to  
 Raddourne Lane

SES-016-001:  
 Increase to the Bund  
 Crest Heights

E2413 Raddourne Lane

Lower Raddourne North  
 Viaduct Satellite Compound

Lower Raddourne Farm

Ladbroke Fox Covert

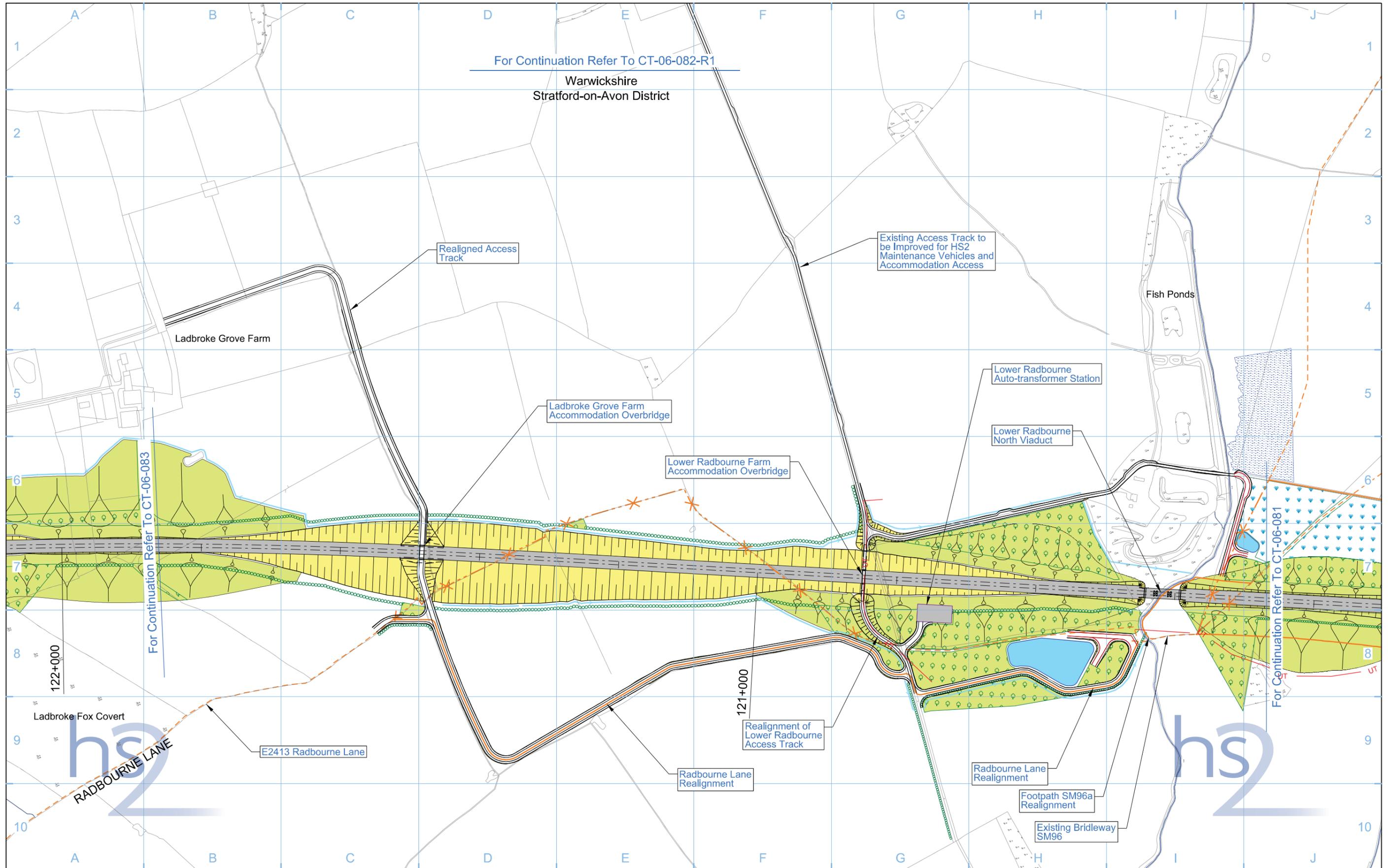
RADBOURNE LANE

E2413 Raddourne Lane

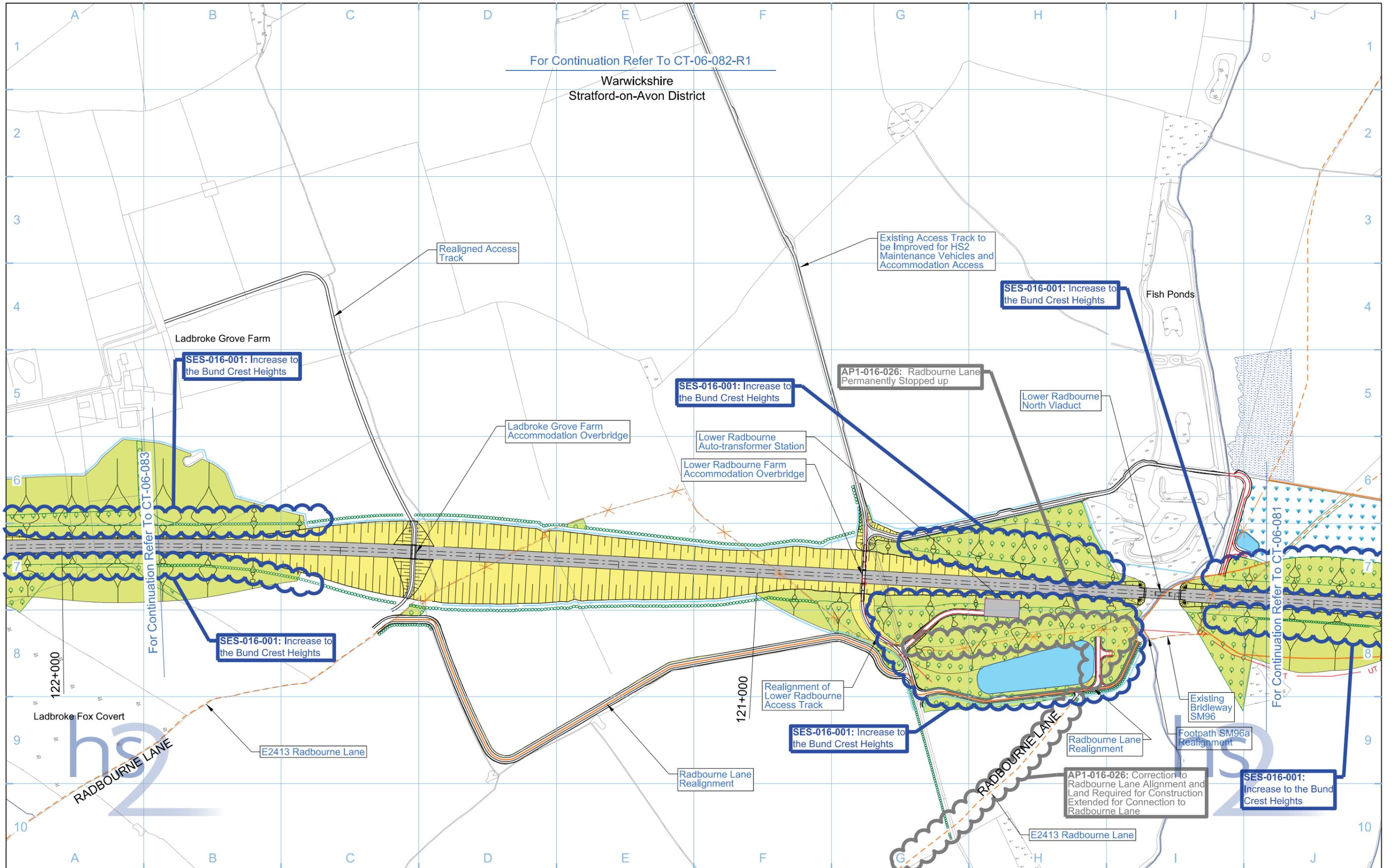
121+000

122+000

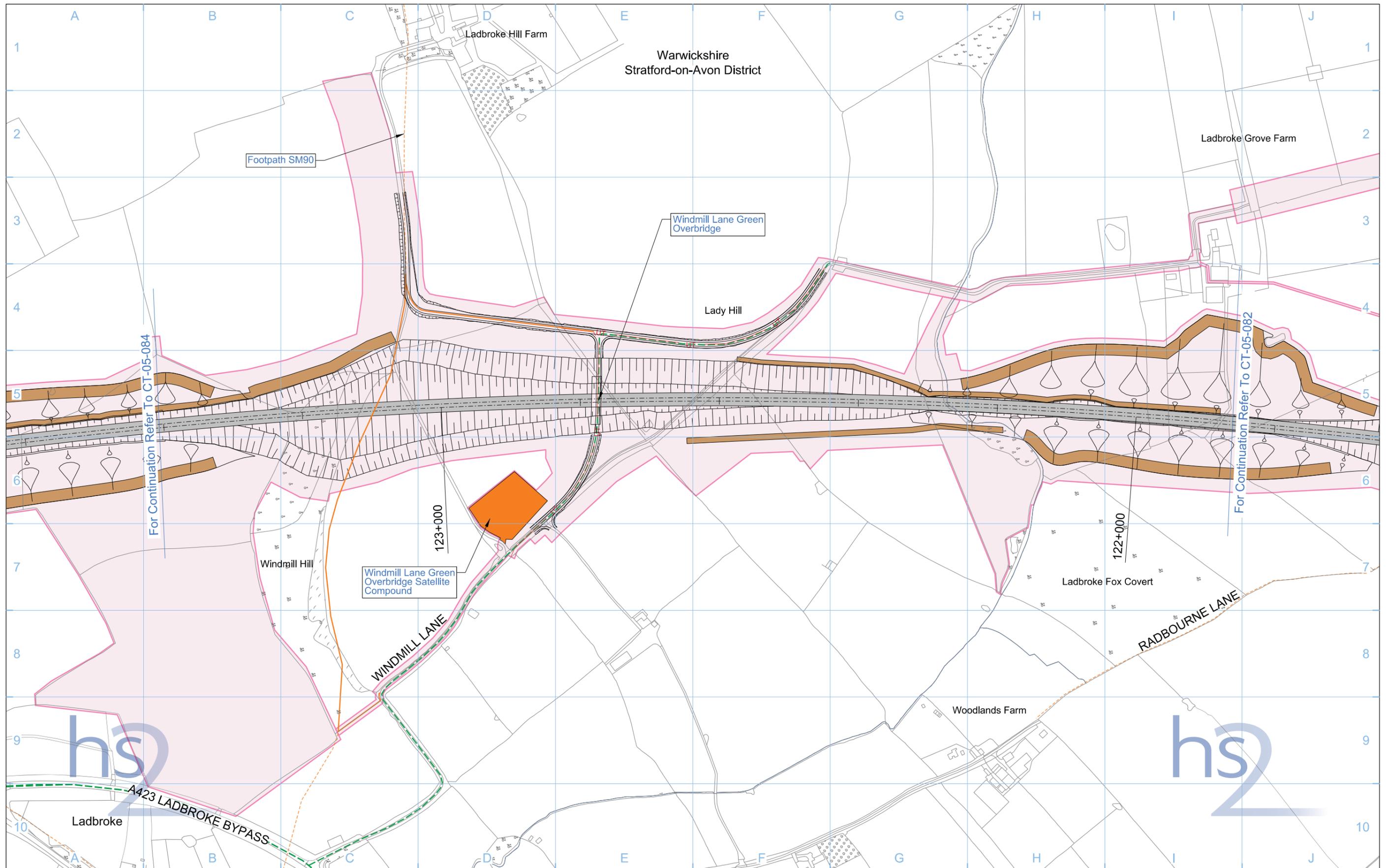
<b>Legend</b> 		<b>Map Number</b> <b>CT-05-082</b> <b>Map Name</b> <b>Construction Phase</b> <b>SES and AP2 ES</b> <b>Community Forum Area</b> CFA16 Ladbroke and Southam		 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered offices One Canada Square, London, E14 5AB Scale at A3: 1:5,000 0 50 100 150 200 250 Metres © Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C223-CSI-EV-DPL-030-516500-AP02 <b>P04</b> <b>Date:</b> 18/06/15	
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<b>Legend</b> 		<b>Map Number</b> <b>CT-06-082</b> <b>Map Name</b> <b>Proposed Scheme</b> <b>Community Forum Area</b> CFA16 Ladbroke and Southam	 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered office: Eland House, Bressenden Place, London SW1E 5DU Scale at A3: 1:5,000  © Crown copyright and database rights 2013, Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C223-CSI-EV-DPL-030-616500 P06 <b>Date:</b> 30/10/13
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<b>Legend</b> 		<b>Map Number</b> <b>CT-06-082</b> <b>Map Name</b> <b>Proposed Scheme</b> <b>SES and AP2 ES</b> <b>Community Forum Area</b> CFA16 Ladbroke and Southam	 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered offices One Canada Square, London, E14 5AB Scale at A3: 1:5,000 0 50 100 150 200 250 Metres © Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C223-CSI-EV-DPL-030-616500-AP02 P05 <b>Date:</b> 18/06/15
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Legend	
	Rail alignment formation
	Depot, station, headhouse or portal building
	Tunnel portal
	Main construction compound
	Satellite construction compound
	Temporary material stockpile
	Land potentially required during construction
	Landscape earthworks
	Engineering earthworks
	County boundary
	Borough / District boundary
	Community forum boundary
	Existing watercourse
	Tunnels external extent
	Construction traffic route
	Existing public right of way (PRoW)
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Temporary PRoW diversion / realignment
	Temporary highway diversion / realignment
	UT - Main utility works
	Chainage (e.g. 10+000)
	Rail alignment

Map Number	<b>CT-05-083</b>
Map Name	<b>Construction Phase</b>
Community Forum Area	CFA16 Ladbroke and Southam

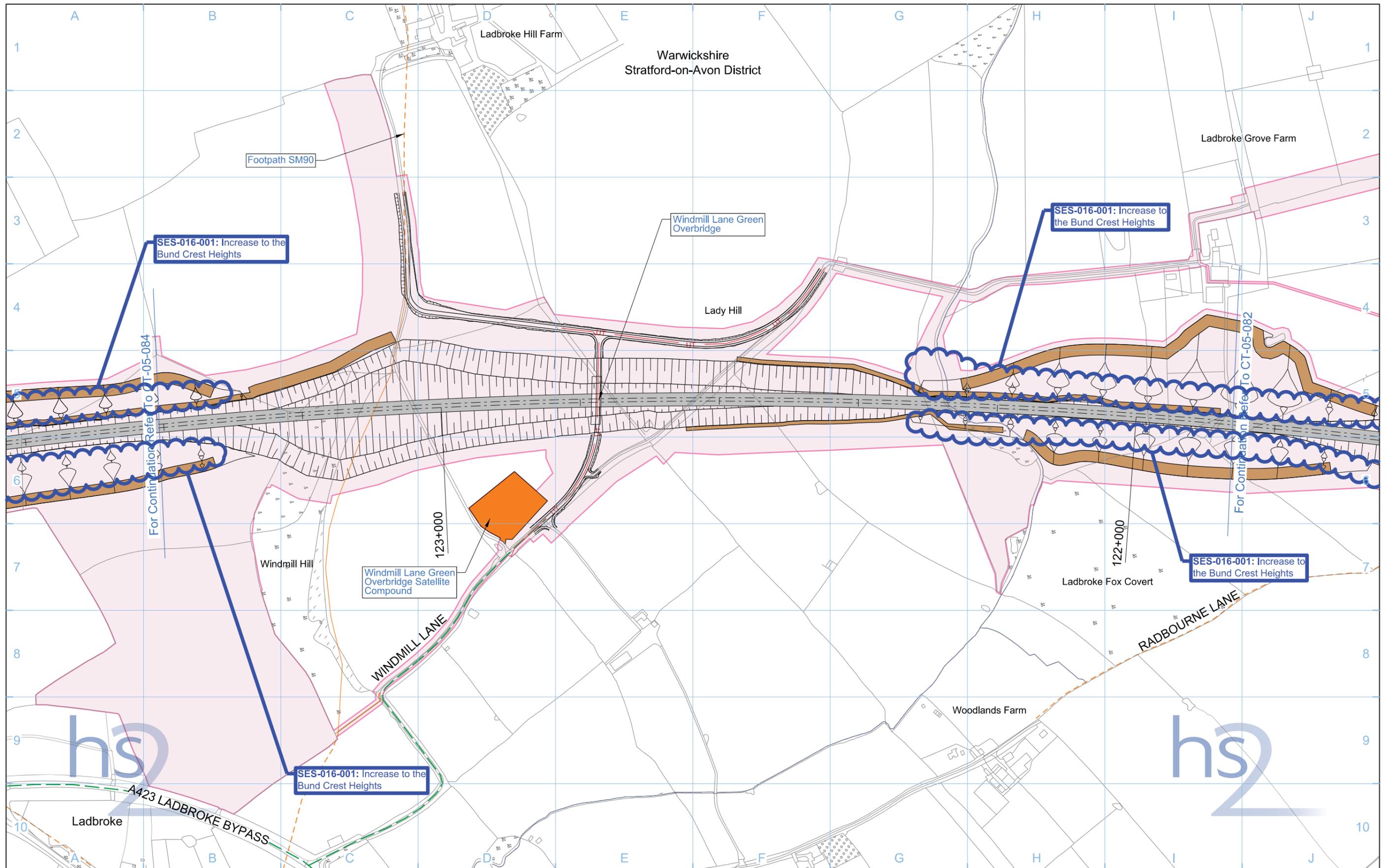
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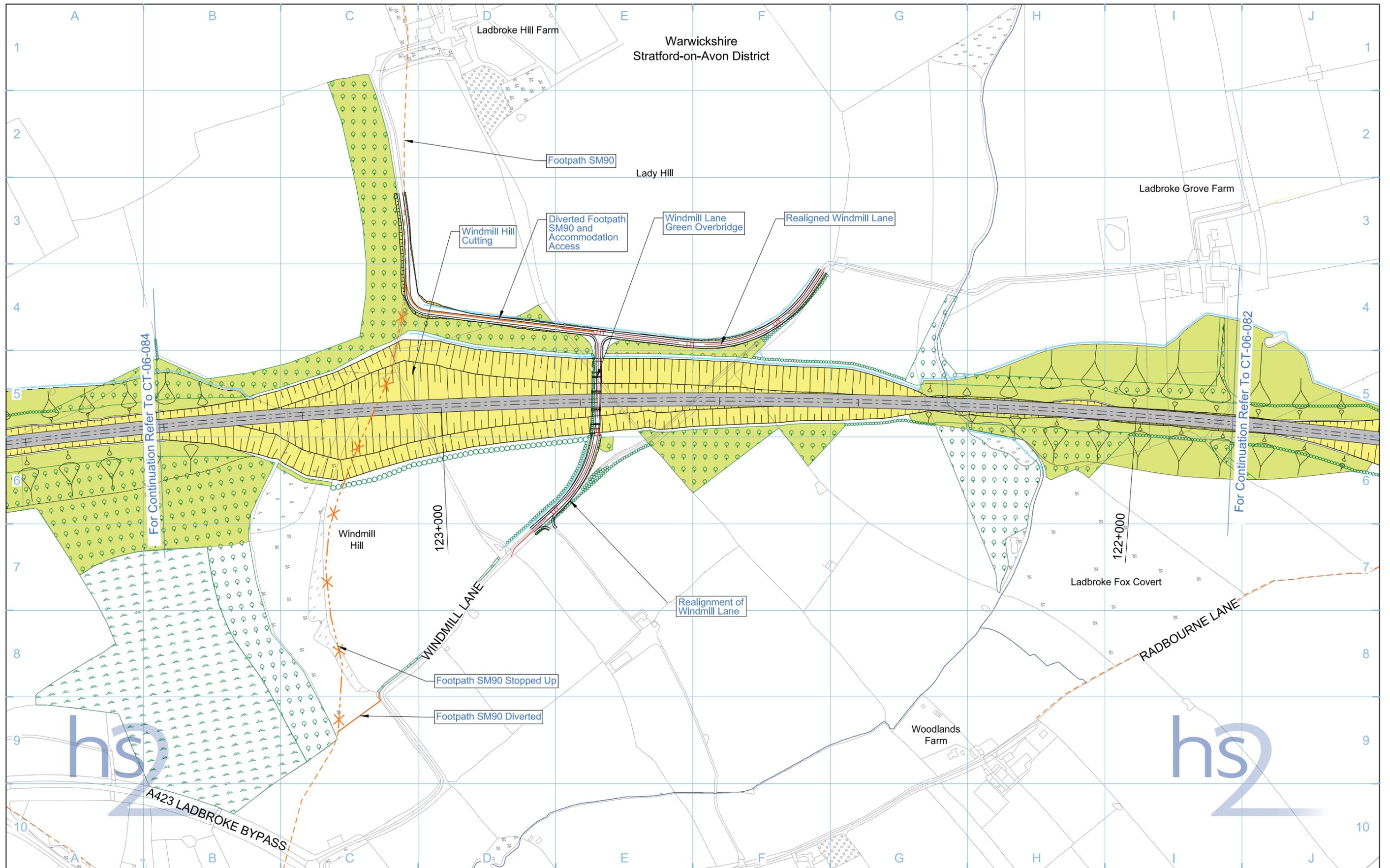
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**Doc Number:** C223-CSI-EV-DPL-030-516700    **P04**    **Date:** 29/10/13



<b>Legend</b> <ul style="list-style-type: none"> <li>Depot, station, headhouse or portal building</li> <li>Tunnel portal</li> <li>Main construction compound</li> <li>Satellite construction compound</li> <li>Temporary material stockpile</li> <li>Rail alignment formation</li> <li>Landscape earthworks</li> <li>Engineering earthworks</li> <li>County boundary</li> <li>Borough / District boundary</li> <li>Land potentially required during construction</li> <li>Temporary replacement community facility</li> <li>Community forum boundary</li> <li>Existing watercourse</li> <li>Tunnels external extent</li> <li>Construction traffic route</li> <li>Existing public right of way (PRoW)</li> </ul>		<ul style="list-style-type: none"> <li>New, diverted or realigned PRoW</li> <li>Stopped-up PRoW</li> <li>Temporary PRoW diversion / realignment</li> <li>Temporary highway diversion / realignment</li> <li>UT - Main utility works</li> </ul>		<ul style="list-style-type: none"> <li>Chainage (e.g. 10+000)</li> <li>Rail alignment</li> </ul>	
<b>Map Number</b> <b>CT-05-083</b>		<b>Map Name</b> <b>Construction Phase SES and AP2 ES</b>		<p>HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way.</p> <p>Registered in England, Registration number 06791686        Registered offices One Canada Square, London, E14 5AB</p> <p>Scale at A3: 1:5,000</p> <p>© Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190.</p> <p><b>Doc Number:</b> C223-CSI-EV-DPL-030-516700-AP02      <b>P04</b>      <b>Date:</b> 18/06/15</p>	
<b>Community Forum Area</b> CFA16 Ladbroke and Southam					



Legend	
	Depot, station, headhouse or portal building
	Tunnel portal
	Electricity substation
	Land drainage area
	Ecological mitigation pond
	Balancing pond
	Replacement floodplain storage
	Woodland habitat creation
	Wetland habitat creation
	Grassland habitat creation
	Landscape mitigation planting (scrub / woodland)
	Grassed areas
	Sustainable placement
	Public realm
	Engineering earthworks
	Landscape earthworks
	Rail alignment formation
	Returned to suitable development use
	County boundary
	Borough / District boundary
	Community forum boundary
	Watercourse diversion
	Existing watercourse
	Ditches - new
	Hedgerow habitat creation
	Main utility works
	Existing public right of way (PRoW)
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Tunnels external extent
	Rail alignment
	HS2 Access road
	Noise fence barrier
	Chainage (e.g. 10+000)

Map Number: **CT-06-083**

Map Name: **Proposed Scheme**

Community Forum Area: **CFA16**  
Ladbroke and Southam

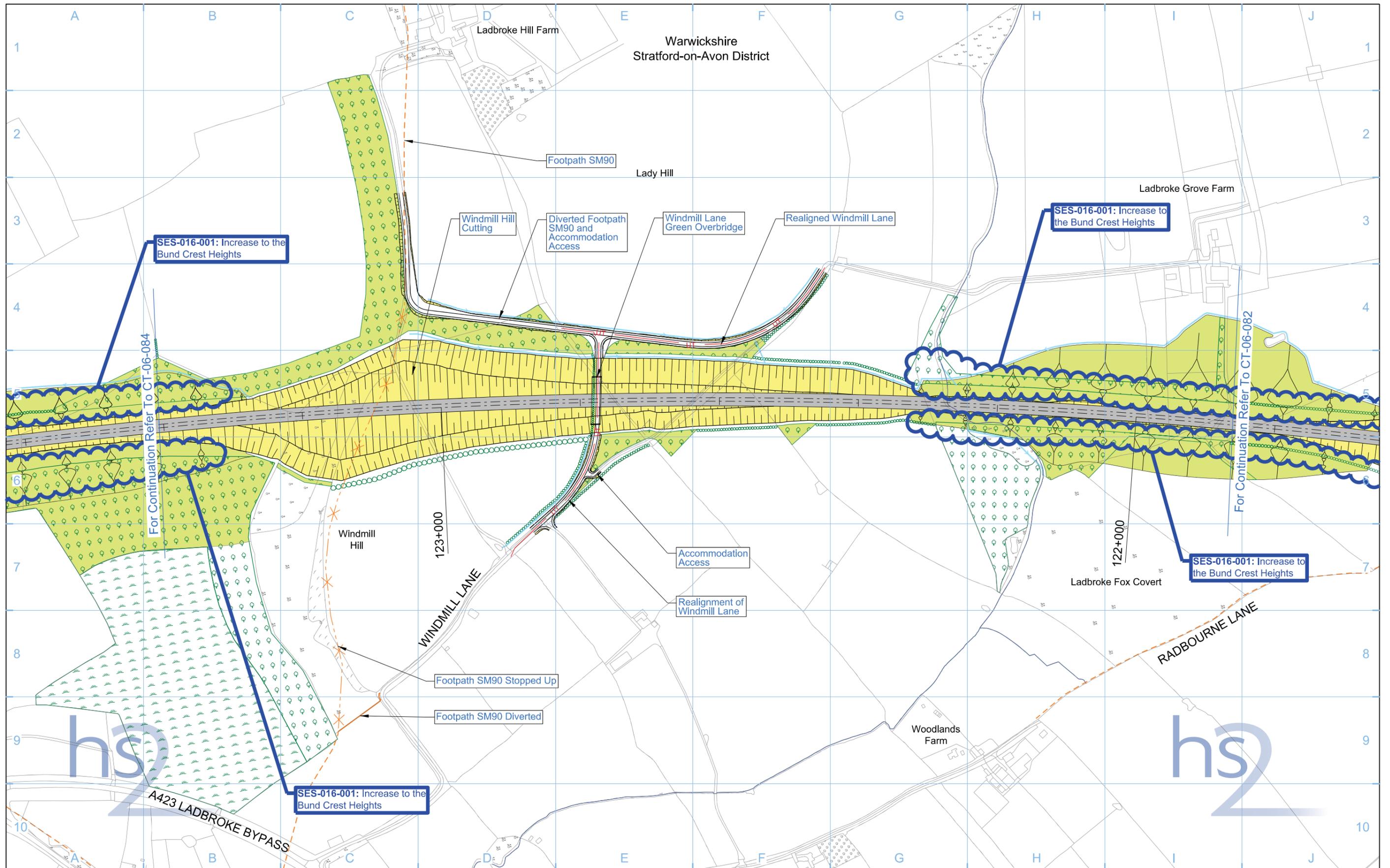
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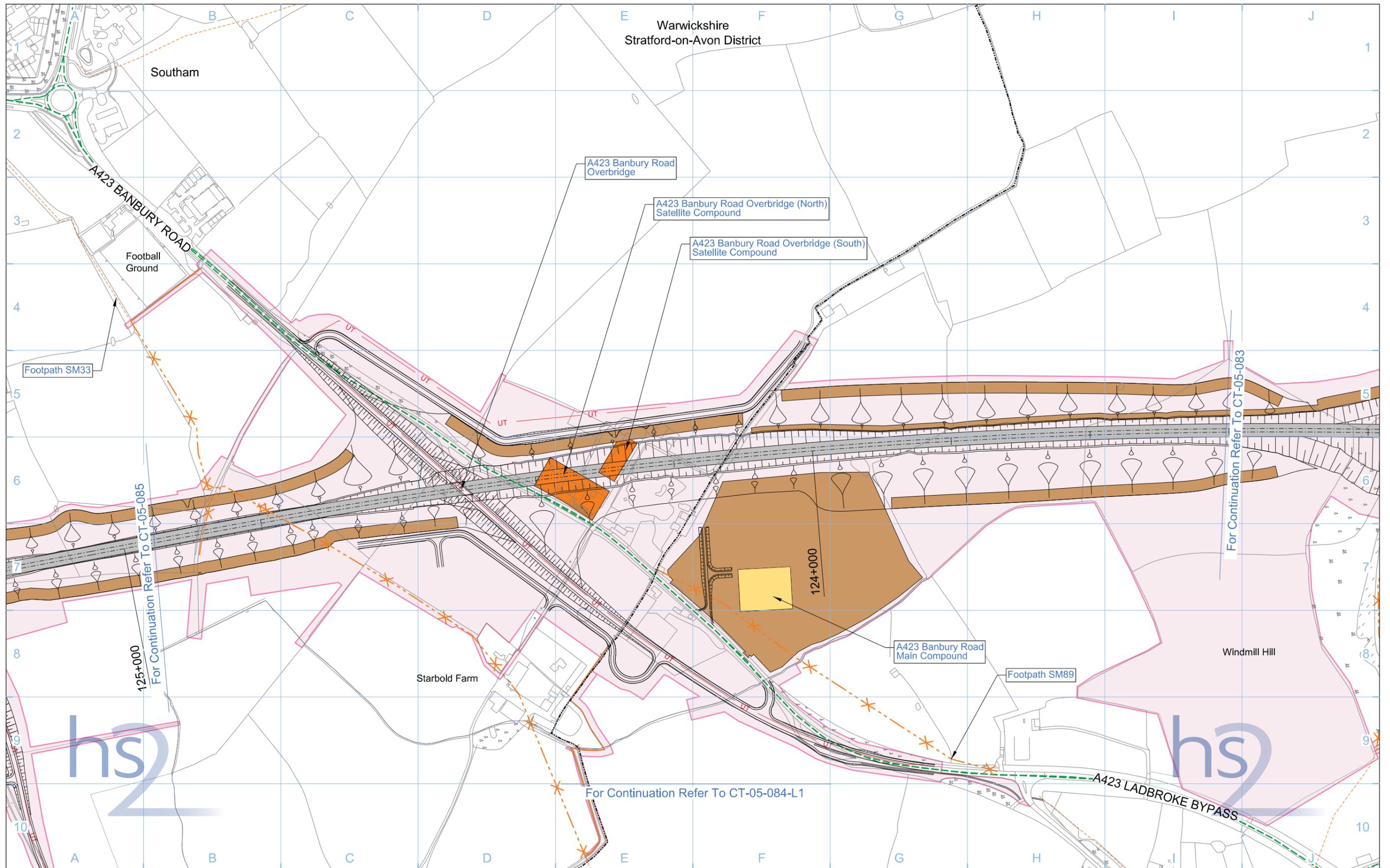
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<b>Legend</b> 		<b>Map Information</b> <b>Map Number:</b> CT-06-083 <b>Map Name:</b> Proposed Scheme SES and AP2 ES <b>Community Forum Area:</b> CFA16, Ladbroke and Southam		 <small>HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way.</small> <small>Registered in England, Registration number 06791686 Registered offices One Canada Square, London, E14 5AB</small> <b>Scale at A3: 1:5,000</b>  <small>© Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190.</small> <b>Doc Number:</b> C223-CSI-EV-DPL-030-616700-AP02 P05 <b>Date:</b> 18/06/15	
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Legend			
	Depot, station, headhouse or portal building		Community forum boundary
	Tunnel portal		Existing watercourse
	Main construction compound		Tunnels external extent
	Satellite construction compound		Construction traffic route
	Temporary material stockpile		Existing public right of way (PRoW)
	Rail alignment formation		Temporary PRoW diversion / realignment
	Landscape earthworks		Temporary highway diversion / realignment
	Engineering earthworks		UT - Main utility works
	County boundary		Stopped-up PRoW
	Borough / District boundary		Temporary PRoW diversion / realignment
	Land potentially required during construction		Temporary highway diversion / realignment
			Stopped-up PRoW
			Temporary PRoW diversion / realignment
			Temporary highway diversion / realignment
			UT - Main utility works

Map Number	<b>CT-05-084</b>
Map Name	<b>Construction Phase</b>
Community Forum Area	CFA16 Ladbroke and Southam

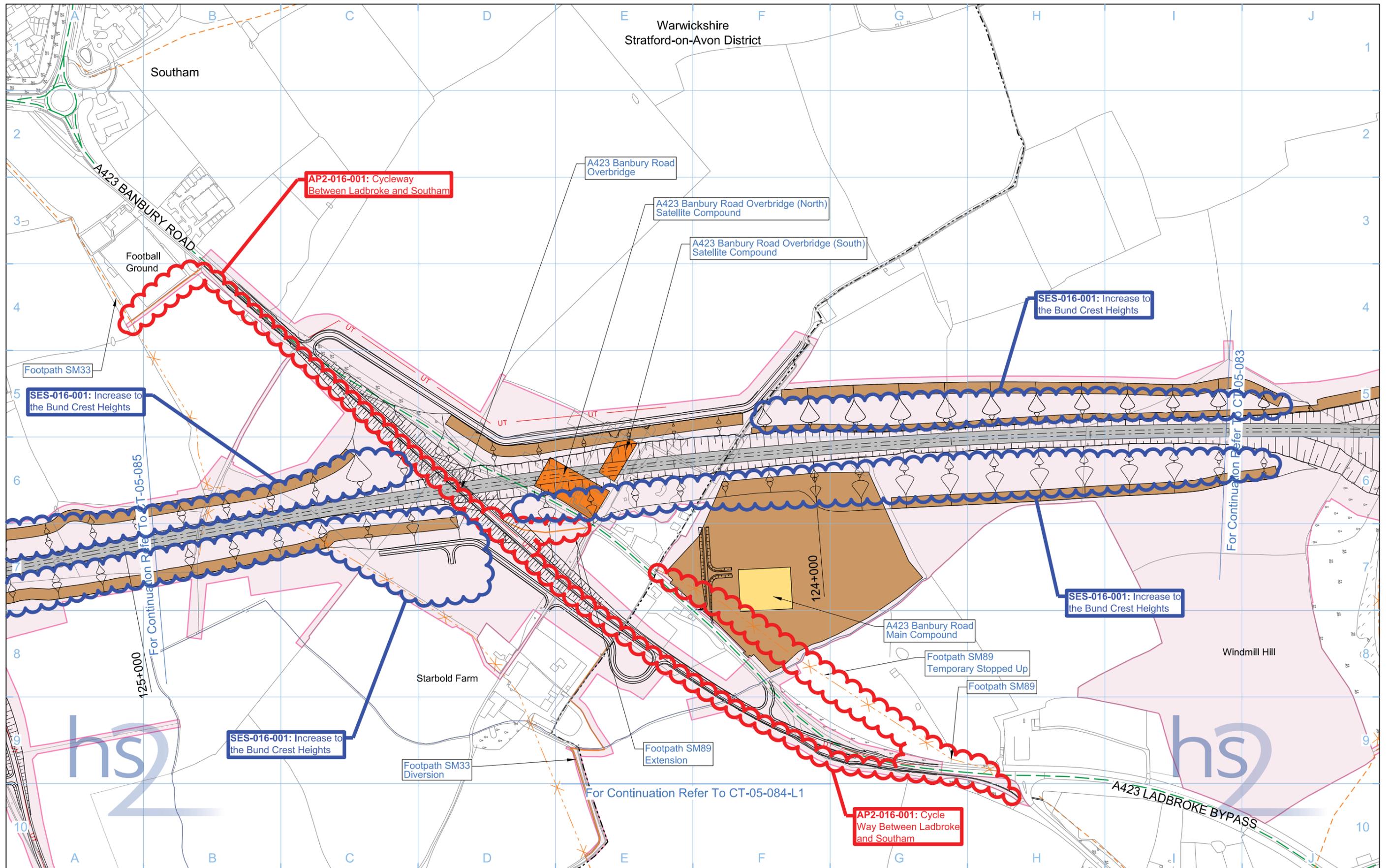
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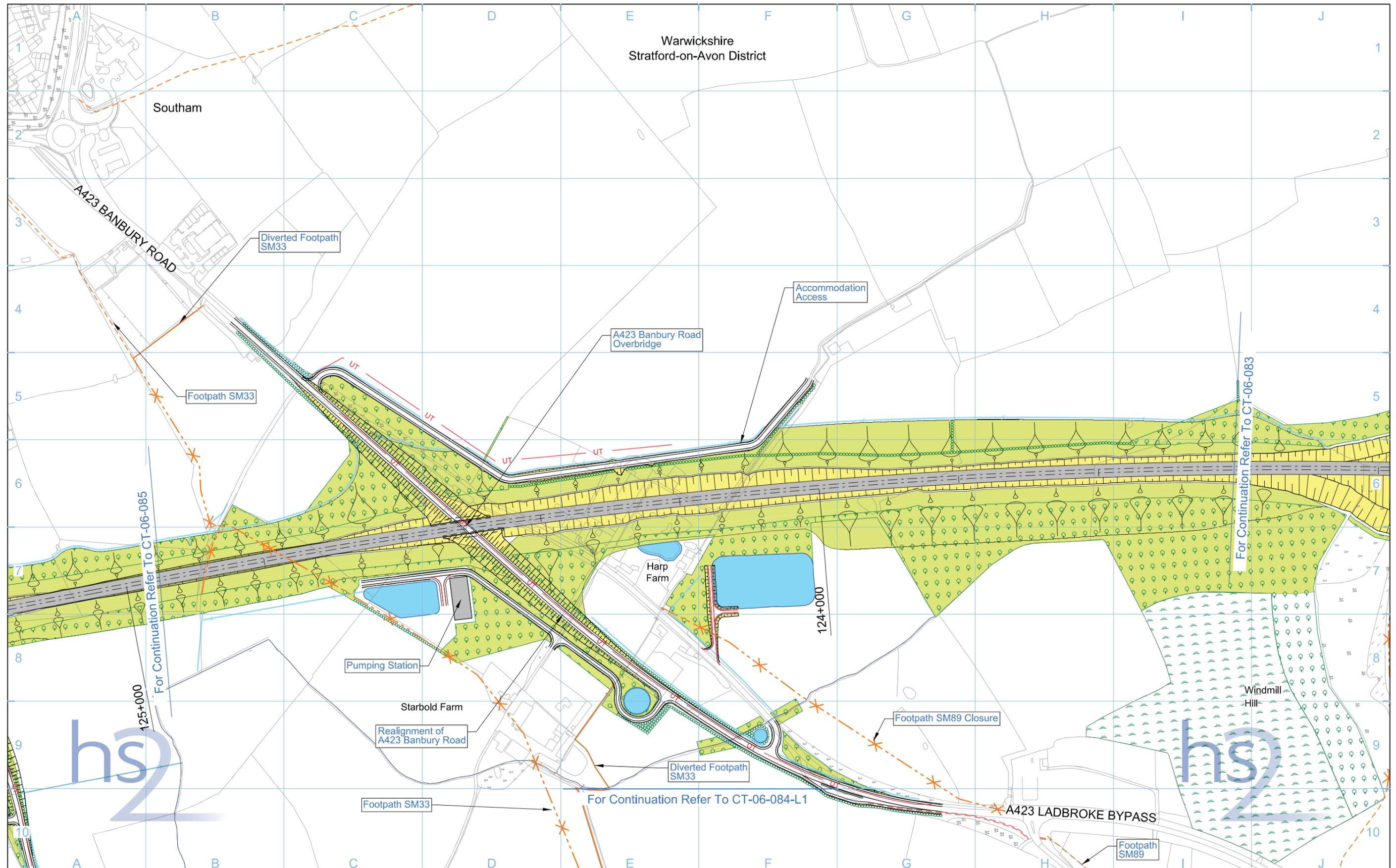
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<b>Legend</b> 		<b>Map Information</b> Map Number: <b>CT-05-084</b> Map Name: <b>Construction Phase SES and AP2 ES</b> Community Forum Area: CFA16 Ladbroke and Southam		 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered offices One Canada Square, London, E14 5AB Scale at A3: 1:5,000 0 50 100 150 200 250 Metres © Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190. Doc Number: C223-CSI-EV-DPL-030-516900-AP02 P06 Date: 23/06/15	
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Warwickshire  
Stratford-on-Avon District

Southam



For Continuation Refer To CT-06-085

For Continuation Refer To CT-06-083

For Continuation Refer To CT-06-084-L1

Legend	
	Depot, station, headhouse or portal building
	Tunnel portal
	Electricity substation
	Land drainage area
	Ecological mitigation pond
	Balancing pond
	Replacement floodplain storage
	Woodland habitat creation
	Wetland habitat creation
	Grassland habitat creation
	Landscape mitigation planting (scrub / woodland)
	Grassed areas
	Sustainable placement
	Public realm
	Engineering earthworks
	Landscape earthworks
	Rail alignment formation
	Returned to suitable development use
	County boundary
	Borough / District boundary
	Community forum boundary
	Watercourse diversion
	Existing watercourse
	Ditches - new
	Hedgerow habitat creation
	Main utility works
	Existing public right of way (PRoW)
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Tunnels external extent
	Rail alignment
	HS2 Access road
	Noise fence barrier
	Chainage (e.g. 10+000)

Map Number  
**CT-06-084**

Map Name  
**Proposed Scheme**

Community Forum Area  
CFA16  
Ladbroke and Southam

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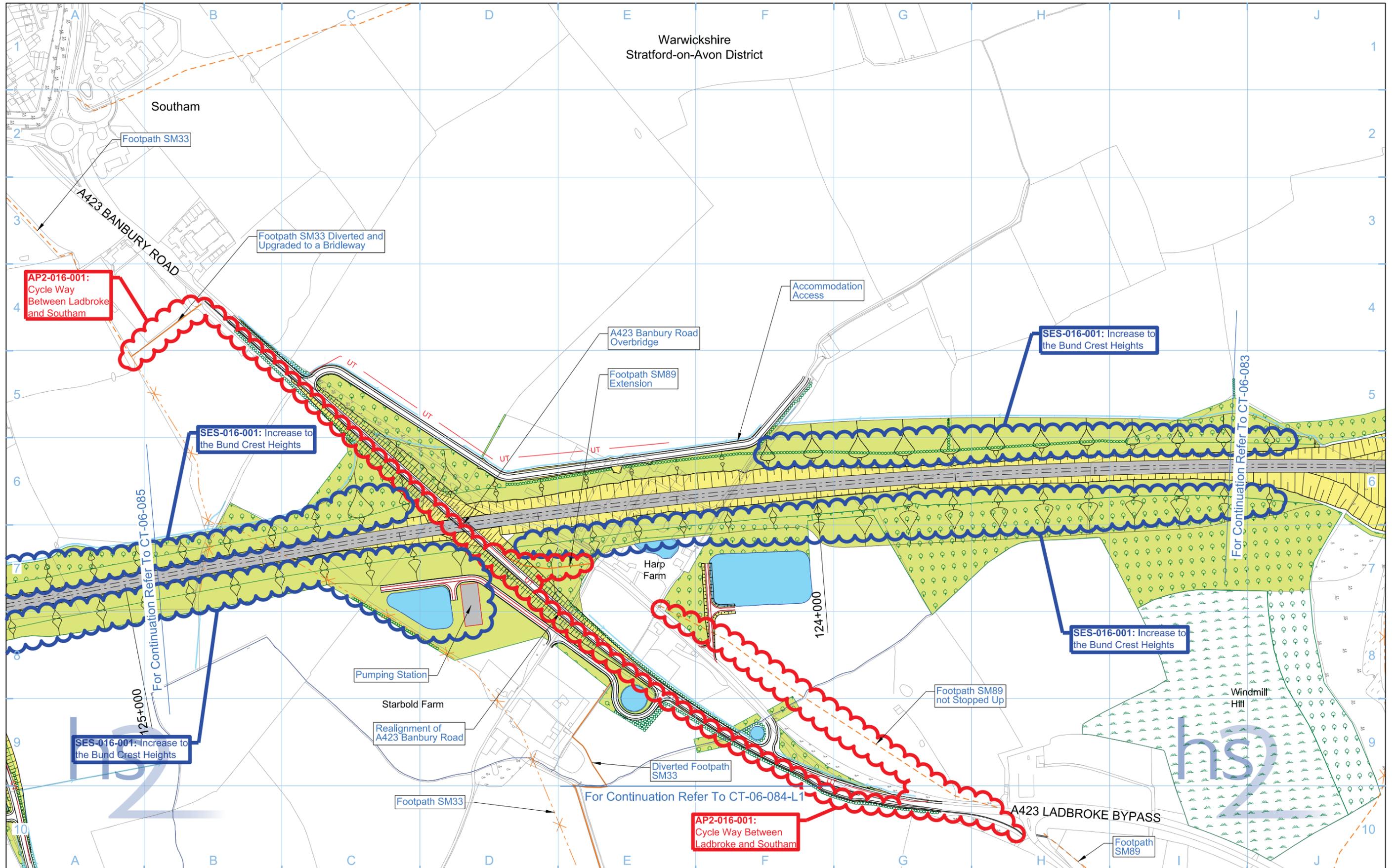
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Doc Number: C223-CSI-EV-DPL-030-616900 P06 Date: 30/10/13

Warwickshire  
Stratford-on-Avon District



Legend	
	Depot, station, headhouse or portal building
	Tunnel portal
	Electricity substation
	Land drainage area
	Ecological mitigation pond
	Balancing pond
	Replacement floodplain storage
	Woodland habitat creation
	Wetland habitat creation
	Grassland habitat creation
	Landscape mitigation planting (scrub / woodland)
	Grassed areas
	Sustainable placement
	Public realm/Replacement community facility
	Engineering earthworks
	Landscape earthworks
	Rail alignment formation
	Returned to suitable development use
	County boundary
	Borough / District boundary
	Community forum boundary
	Watercourse diversion
	Existing watercourse
	Ditches - new
	Hedgerow habitat creation
	Main utility works
	Existing public right of way (PRoW)
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Tunnels external extent
	Rail alignment
	HS2 Access road
	Noise fence barrier
	Chainage (e.g. 10+000)

Map Number  
**CT-06-084**

Map Name  
**Proposed Scheme  
SES and AP2 ES**

Community Forum Area  
CFA16  
Ladbroke and Southam

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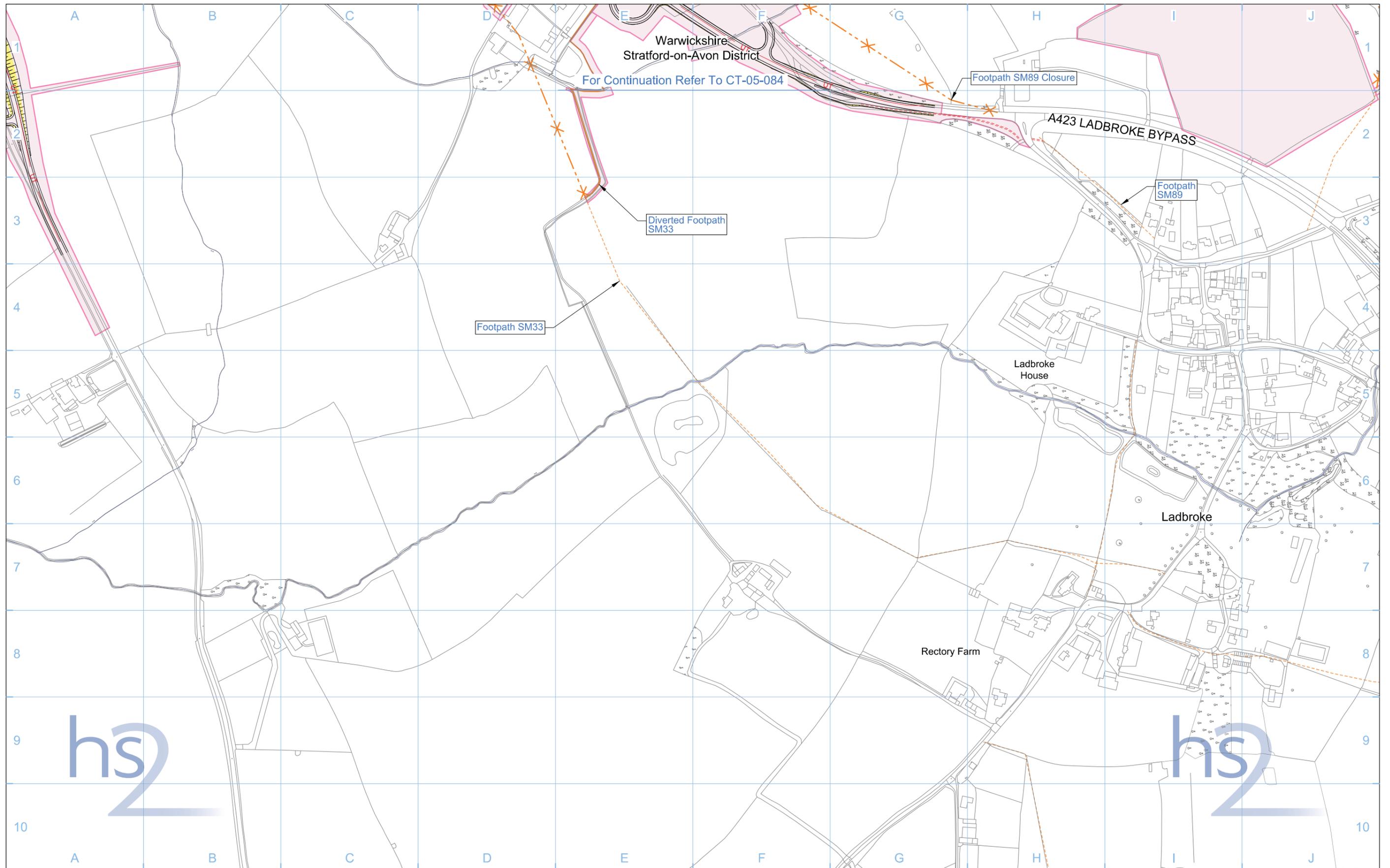
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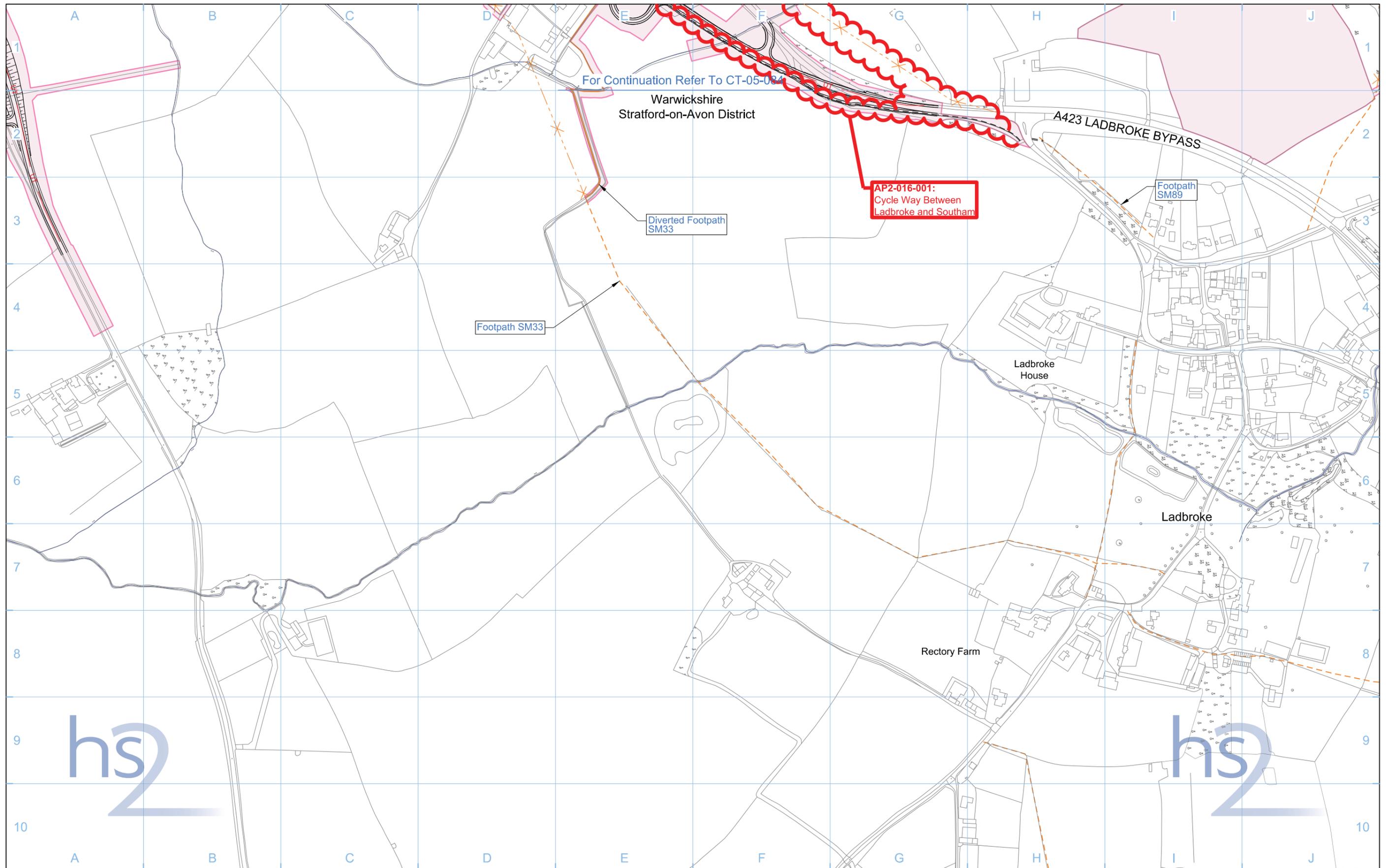
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Metres

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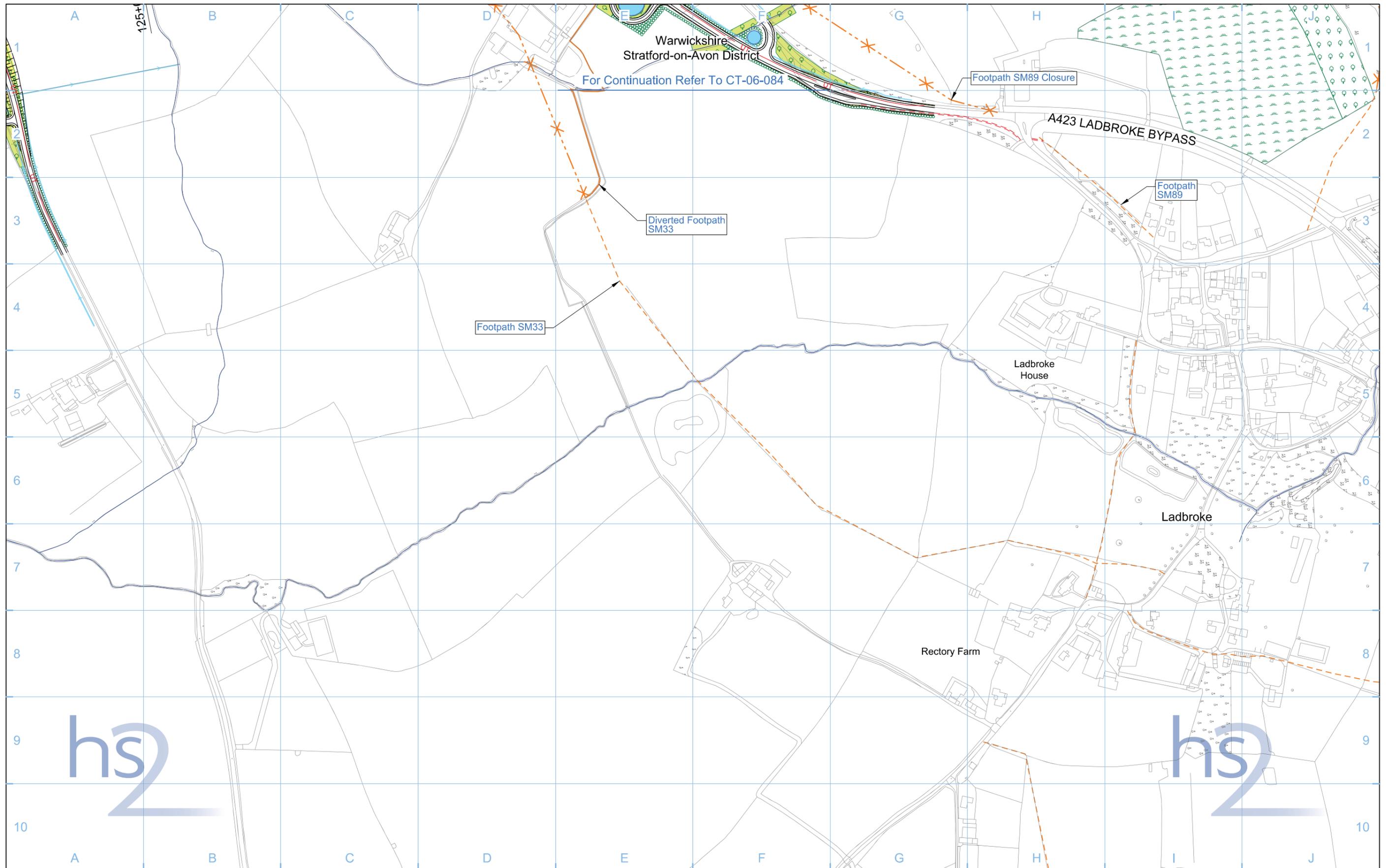
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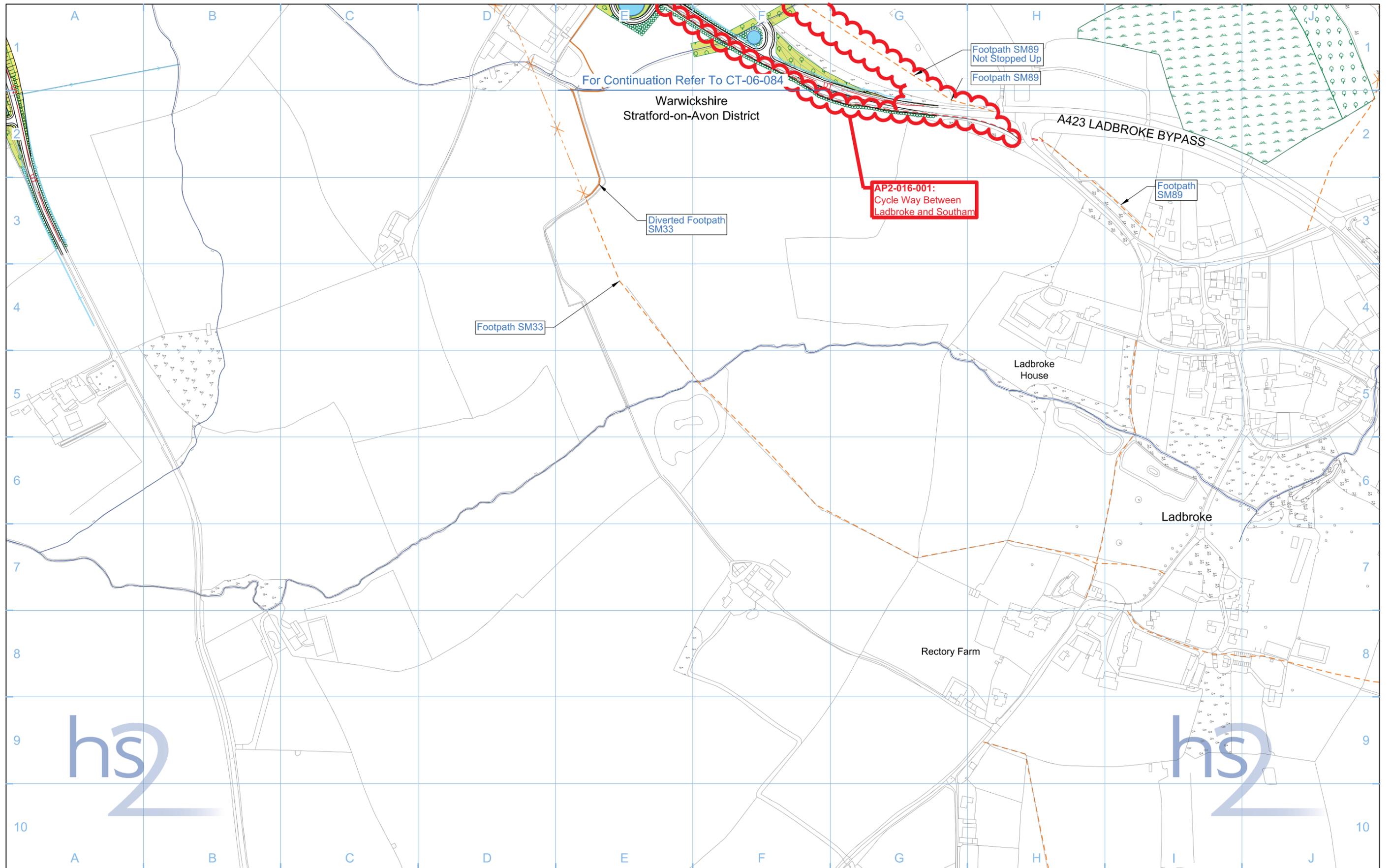
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<b>Map Name</b> <b>Construction Phase</b>		<b>Community Forum Area</b> CFA16 Ladbroke and Southam	



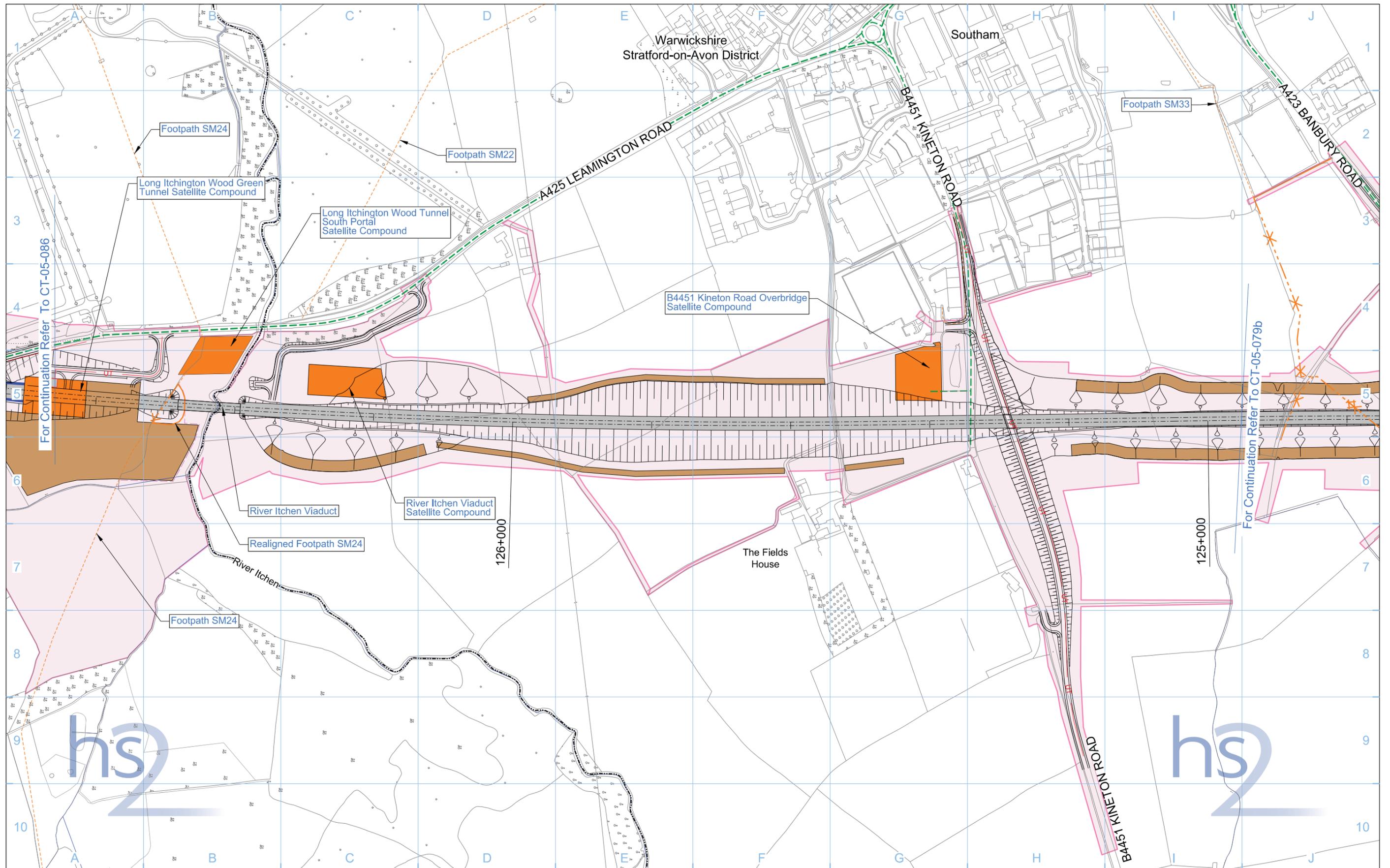
<b>Legend</b> 		<b>Map Number</b> <b>CT-05-084-L1</b> <b>Map Name</b> <b>Construction Phase</b> <b>SES and AP2 ES</b> <b>Community Forum Area</b> CFA16 Ladbroke and Southam		 HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way. Registered in England, Registration number 06791686 Registered offices One Canada Square, London, E14 5AB Scale at A3: 1:5,000 0 50 100 150 200 250 Metres © Crown copyright and database rights 2015, Ordnance Survey Licence Number 100049190. <b>Doc Number:</b> C223-CSI-EV-DPL-030-516901-AP02 <b>P02</b> <b>Date:</b> 21/05/15	
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<b>Map Name</b> <b>Proposed Scheme</b>		<b>Community Forum Area</b> CFA16 Ladbroke and Southam	
<b>Doc Number:</b> C223-CSI-EV-DPL-030-616901 <b>P06</b> <b>Date:</b> 30/10/13			



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<b>Map Name</b> <b>Proposed Scheme SES and AP2 ES</b>		<b>Community Forum Area</b> CFA16 Ladbroke and Southam	
<b>Doc Number:</b> C223-CSI-EV-DPL-030-616901-AP02 P03 <b>Date:</b> 21/05/15			



Legend			
	Depot, station, headhouse or portal building		Community forum boundary
	Tunnel portal		Existing watercourse
	Main construction compound		Tunnels external extent
	Satellite construction compound		Construction traffic route
	Temporary material stockpile		Existing public right of way (PRoW)
	Landscape earthworks		Temporary PRoW diversion / realignment
	Engineering earthworks		Temporary highway diversion / realignment
	County boundary		UT - Main utility works
	Borough / District boundary		Chainage (e.g. 10+000)
	Land potentially required during construction		Rail alignment
			Stopped-up PRoW
			Temporary PRoW diversion / realignment
			Temporary highway diversion / realignment
			UT - Main utility works

Map Number	<b>CT-05-085</b>
Map Name	<b>Construction Phase</b>
Community Forum Area	CFA16 Ladbroke and Southam

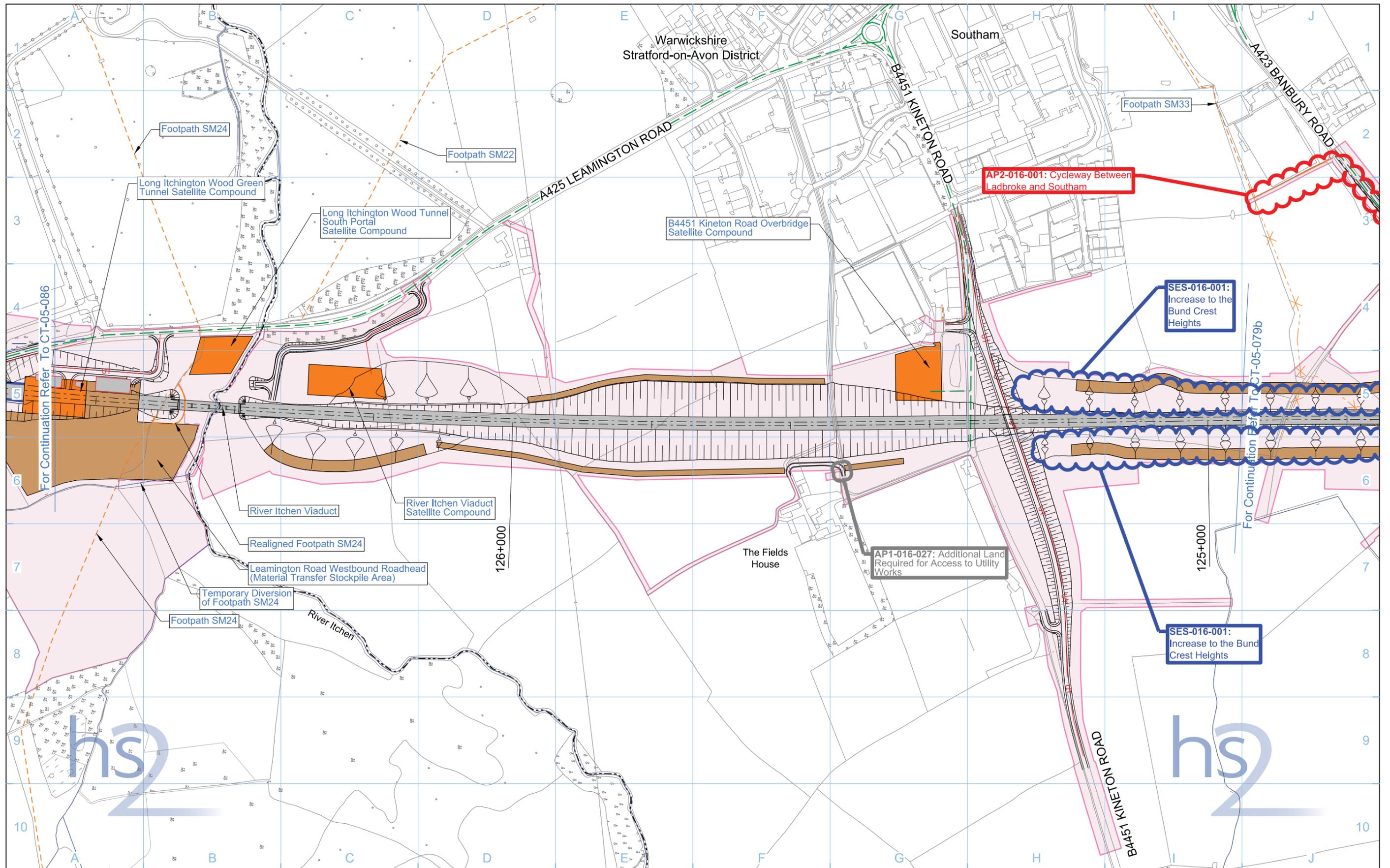
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Metres

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Doc Number: C223-CSI-EV-DPL-030-517100 P04 Date: 30/10/13



Legend	
	Rail alignment formation
	Depot, station, headhouse or portal building
	Tunnel portal
	Main construction compound
	Satellite construction compound
	Temporary material stockpile
	Temporary replacement community facility
	Community forum boundary
	Existing watercourse
	Tunnels external extent
	County boundary
	Borough / District boundary
	Land potentially required during construction
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Temporary PRoW diversion / realignment
	Temporary highway diversion / realignment
	UT - Main utility works
	Construction traffic route
	Existing public right of way (PRoW)
	Chainage (e.g. 10+000)
	Rail alignment
	Landscape earthworks
	Engineering earthworks

Map Number	<b>CT-05-085</b>
Map Name	<b>Construction Phase SES and AP2 ES</b>
Community Forum Area	CFA16 Ladbroke and Southam

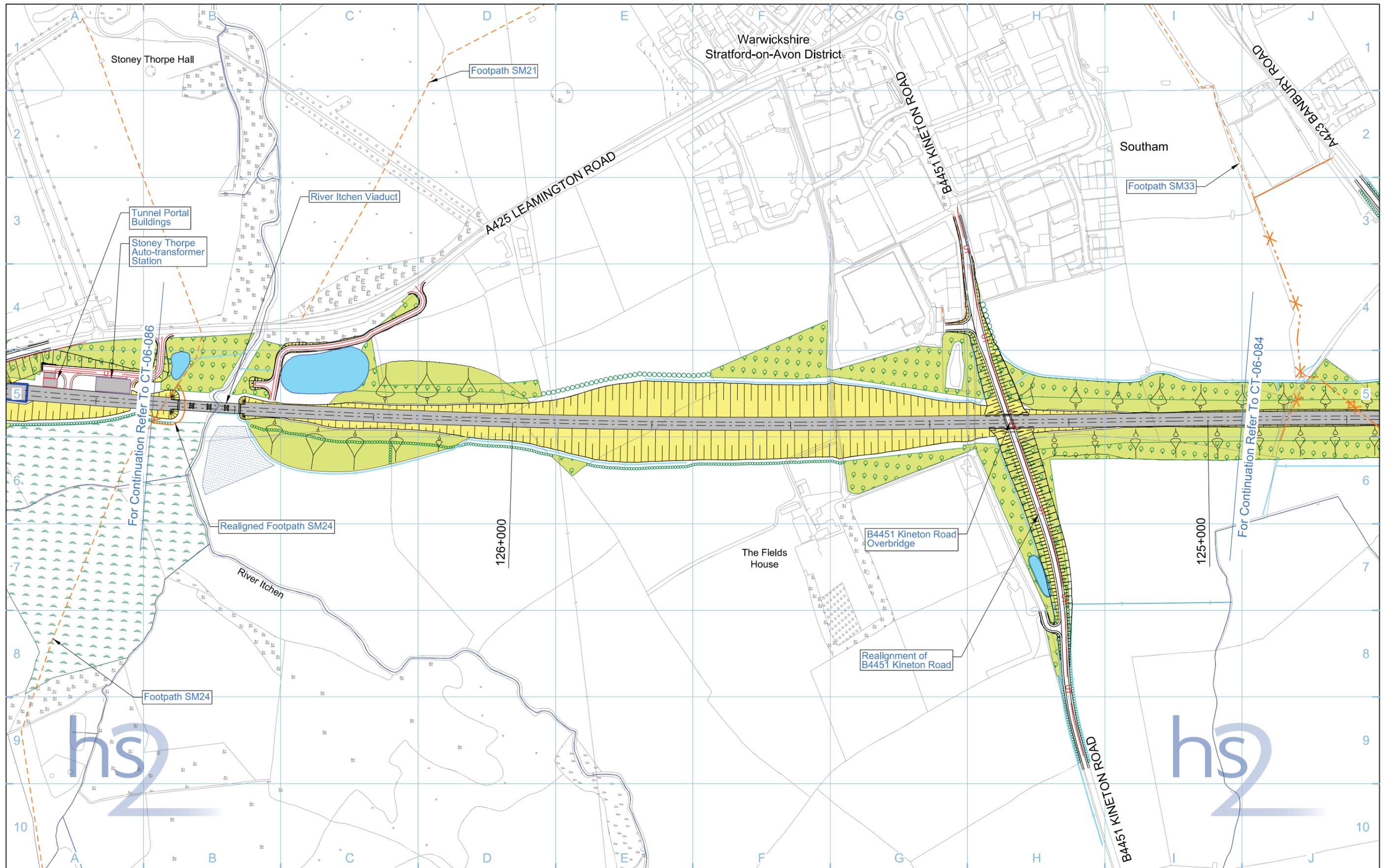
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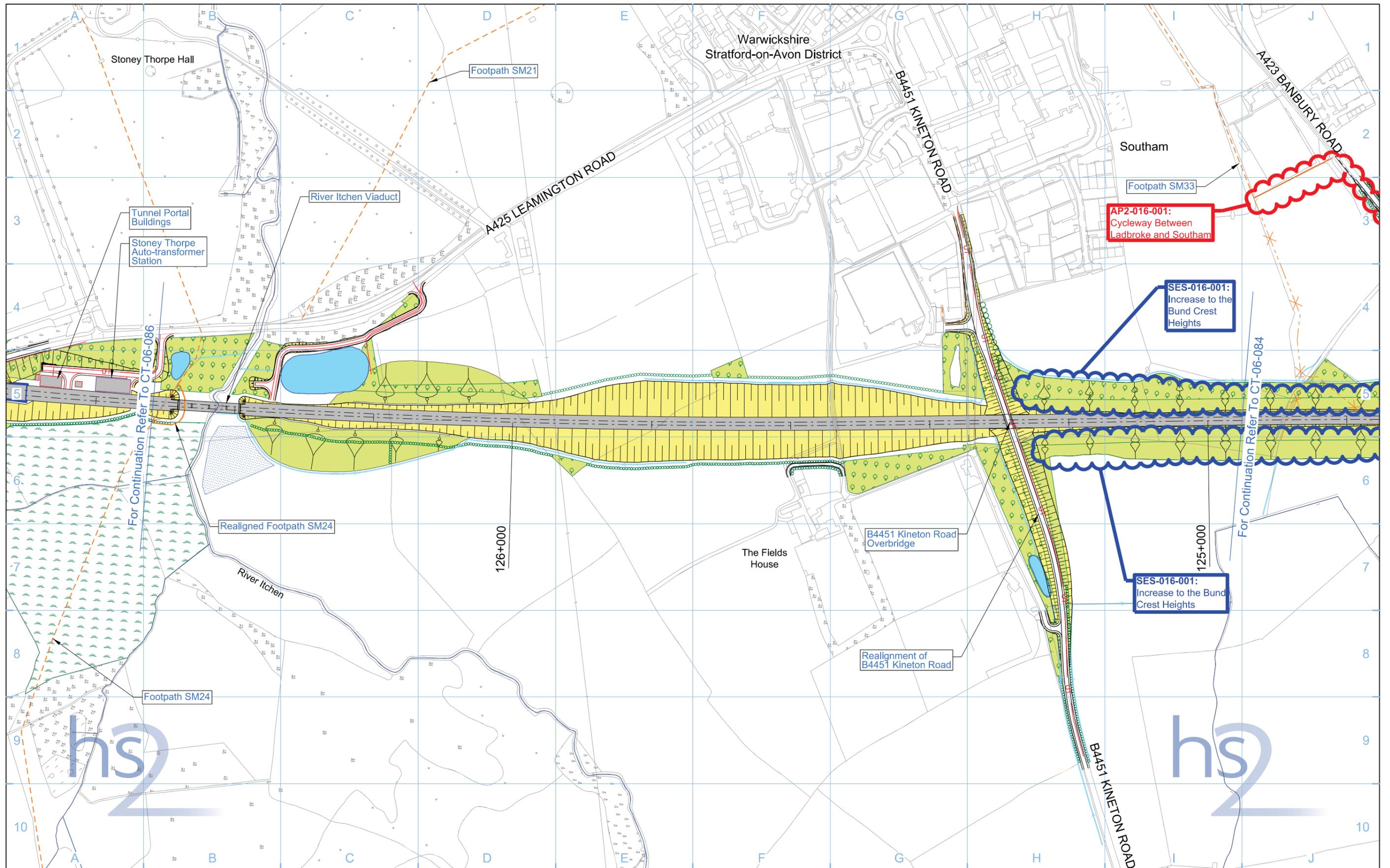
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<b>Legend</b> 		<b>Map Number</b> <b>CT-06-085</b>	 Scale at A3: 1:5,000 0 50 100 150 200 250 Metres Registered in England, Registration number 06791686 Registered office: Eland House, Bressenden Place, London SW1E 5DU © Crown copyright and database rights 2013, Ordnance Survey Licence Number 100049190.
<b>Map Name</b> <b>Proposed Scheme</b>		<b>Community Forum Area</b> CFA16 Ladbroke and Southam	
<b>Doc Number:</b> C223-CSI-EV-DPL-030-617100 <b>P05</b> <b>Date:</b> 29/10/13			



Legend	
	Depot, station, headhouse or portal building
	Tunnel portal
	Electricity substation
	Land drainage area
	Ecological mitigation pond
	Balancing pond
	Replacement floodplain storage
	Woodland habitat creation
	Wetland habitat creation
	Grassland habitat creation
	Landscape mitigation planting (scrub / woodland)
	Grassed areas
	Sustainable placement
	Public realm/Replacement community facility
	Engineering earthworks
	Landscape earthworks
	Rail alignment formation
	Returned to suitable development use
	County boundary
	Borough / District boundary
	Community forum boundary
	Watercourse diversion
	Existing watercourse
	Ditches - new
	Hedgerow habitat creation
	Main utility works (UT)
	Existing public right of way (PRoW)
	New, diverted or realigned PRoW
	Stopped-up PRoW
	Tunnels external extent
	Rail alignment
	HS2 Access road
	Noise fence barrier
	Chainage (e.g. 10+000)

Map Number	<b>CT-06-085</b>
Map Name	<b>Proposed Scheme SES and AP2 ES</b>
Community Forum Area	CFA16 Ladbroke and Southam

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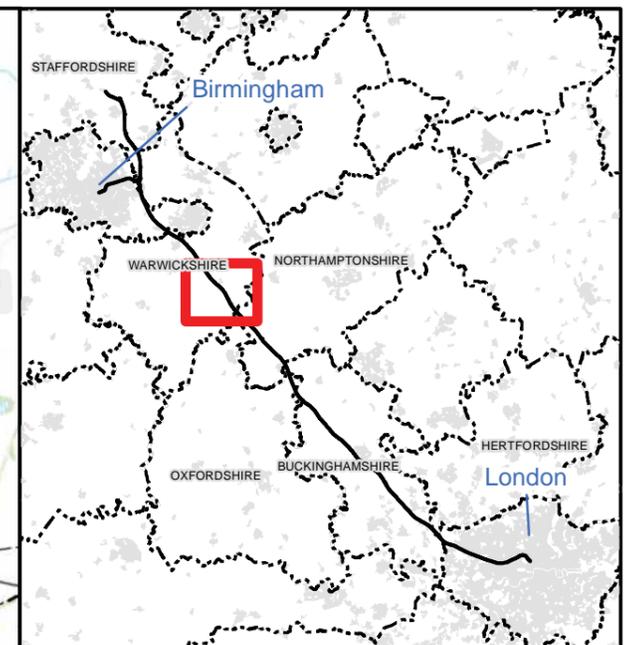
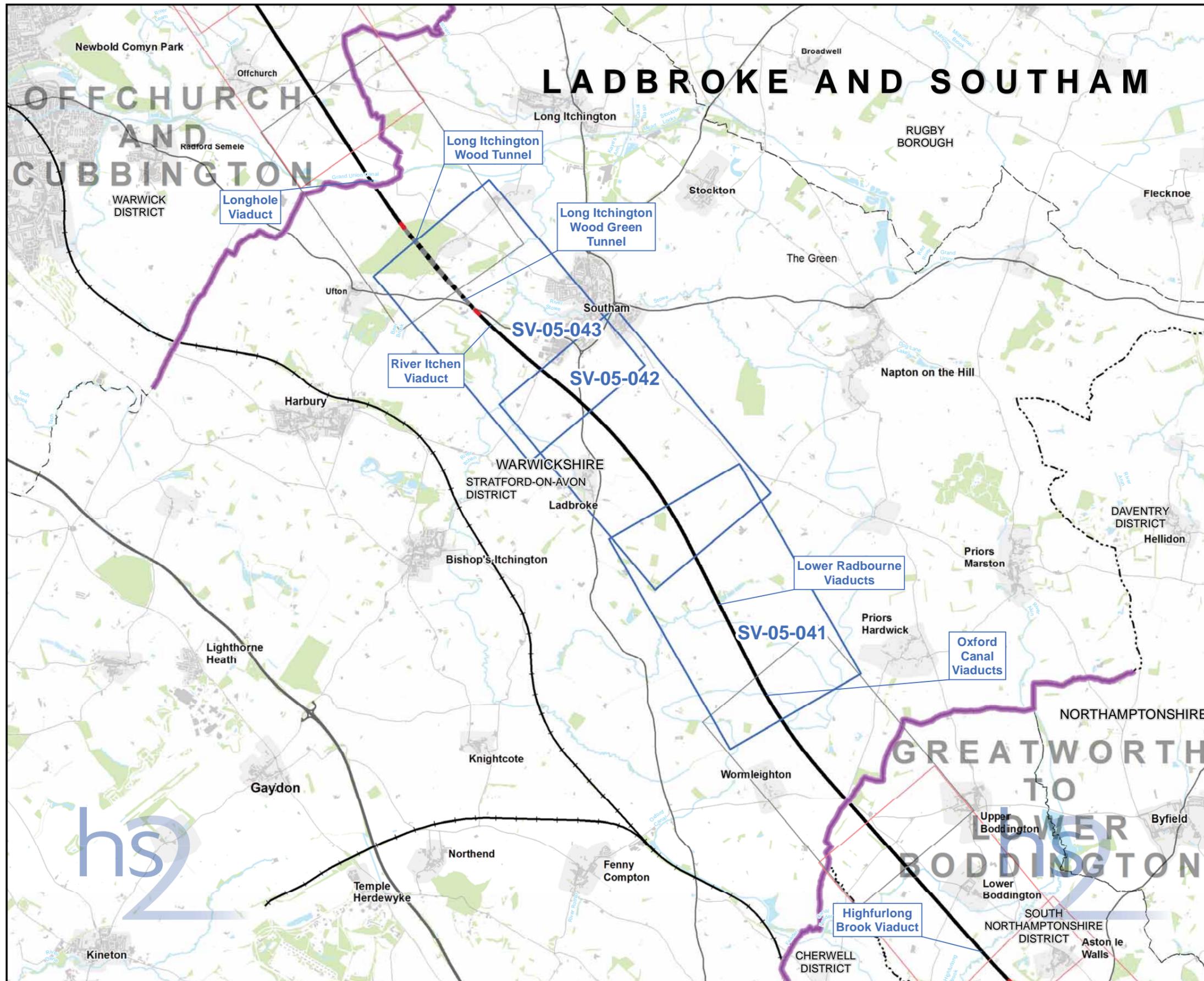
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# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement and  
Additional Provision 2 Environmental Statement

Volume 2 | SV-05 – Operational Sound and Vibration Impacts and Likely Significant Effects

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### Map Series Information:

SV-05 presents the direct operational noise impacts and likely significant effects of the scheme.

The SV-05 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2.

- Key items on the figure series include:
- the Proposed Scheme (the proposed railway alignments and surrounding associated earthworks/roads);
  - blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
  - the study areas, which indicate the areas within which direct operational sound and vibration impacts of the scheme have been quantitatively assessed;
  - the calculated scheme direct impacts, displayed as colour-coded buildings, and symbols representing buildings that would potentially qualify for noise insulation;
  - sound contours representing sound produced by the new railway (displayed in a simpler manner than on SV-01 in order not to obscure other features on the figure series); and
  - labels indicating where the likely residual direct noise and/or vibration significant effects have been identified.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend	
	Route in tunnel
	Route on surface
	Depot, station, headhouse or portal building
	Community forum boundary
	Existing railway station
	County boundary
	District/Borough boundary
	Map sheets included in this community forum with amendment
	Map sheets included in this community forum with no amendment
	Map sheets not included in this community forum

Map Number	SV-05-INDEX-CFA16
Map Name	Index Map of: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects SES and AP2 ES Community Forum Area CFA16: Ladbroke and Southam

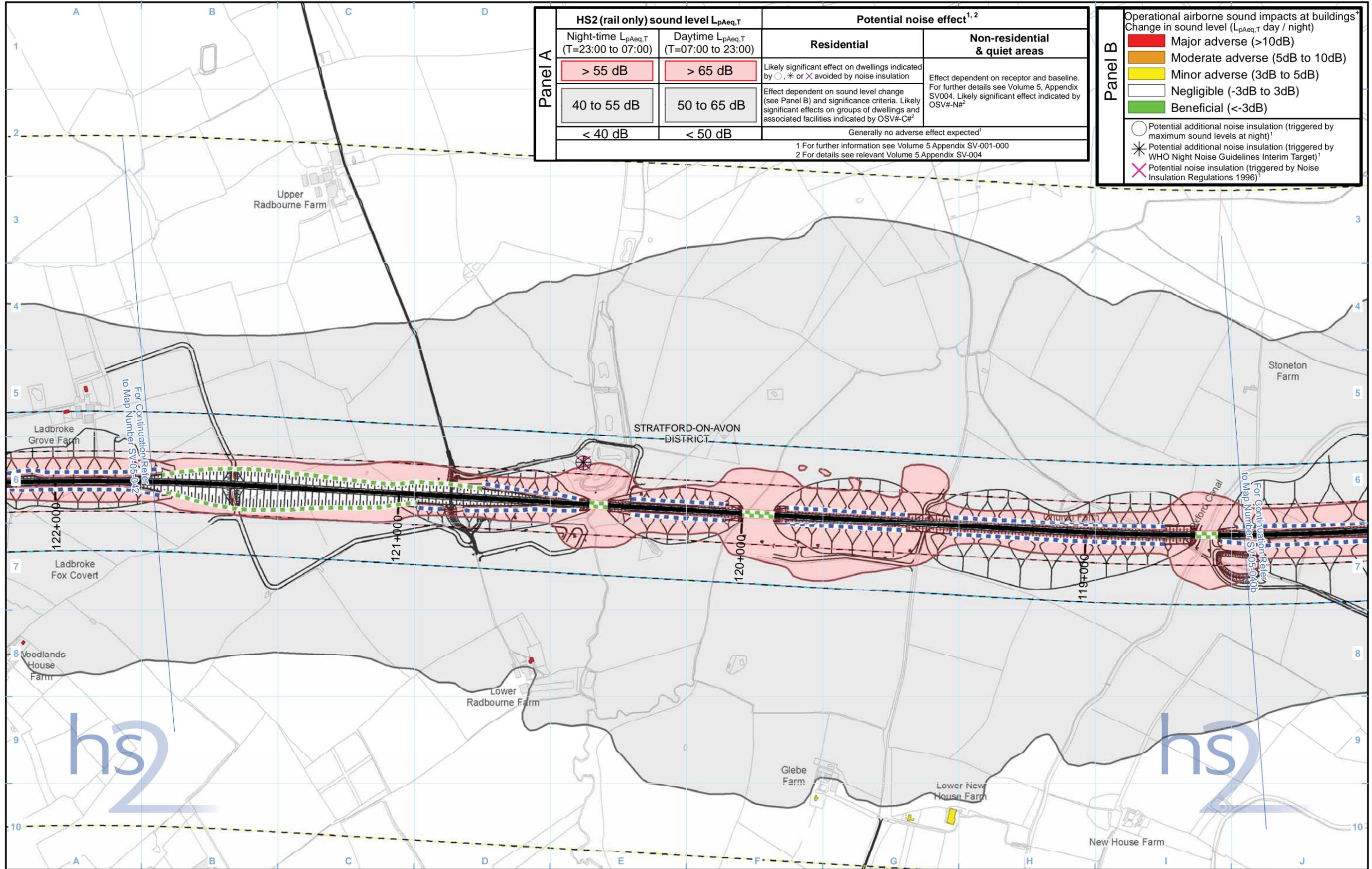
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Doc Number: C250-ARP-EV-MAP-000-001366-AP02 -P01 Date: 02/06/15



HS2 (rail only) sound level L <sub>pAeq,T</sub>		Potential noise effect <sup>1,2</sup>	
Night-time L <sub>pAeq,T</sub> (T=23:00 to 07:00)	Daytime L <sub>pAeq,T</sub> (T=07:00 to 23:00)	Residential	Non-residential & quiet areas
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ○, * or X avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV004. Likely significant effect indicated by OSV#-N# <sup>2</sup>
40 to 55 dB	50 to 65 dB	Effect dependent on sound level change (see Panel B) and significance criteria. Likely significant effects on groups of dwellings and associated facilities indicated by OSV#-C# <sup>2</sup>	
< 40 dB	< 50 dB	Generally no adverse effect expected <sup>1</sup>	

1 For further information see Volume 5 Appendix SV-001-000  
2 For details see relevant Volume 5 Appendix SV-004

Operational airborne sound impacts at buildings <sup>+</sup> Change in sound level (L <sub>pAeq,T</sub> day / night)	
<span style="color:red">■</span>	Major adverse (>10dB)
<span style="color:orange">■</span>	Moderate adverse (5dB to 10dB)
<span style="color:yellow">■</span>	Minor adverse (3dB to 5dB)
<span style="color:white">■</span>	Negligible (-3dB to 3dB)
<span style="color:green">■</span>	Beneficial (<-3dB)

○ Potential additional noise insulation (triggered by maximum sound levels at night)<sup>1</sup>  
\* Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)<sup>1</sup>  
X Potential noise insulation (triggered by Noise Insulation Regulations 1996)<sup>1</sup>

**Legend - General features**

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- District/Borough boundary
- County boundary

**Legend - Sound related features**

Engineering earthworks:	Non engineering earthworks:
Embankment	Embankment
Cutting	Cutting

\* Residential buildings only  
\* Labelled with total barrier height above rail level

**Legend - Sound related features**

- Committed developments (labelled as CFA#/#)
- Envisaged mitigation to avoid / reduce significant noise effects:
  - Landscaping and/or fence barriers\*
  - Engineering e.g. cuttings (green tunnels separately marked)
  - Envisaged measures further reducing noise effects:
    - Other environmental e.g. landscaping
    - Engineering e.g. cuttings

- Airborne sound study area
- Ground-borne sound & vibration study area (residential and non-residential)
- Ground-borne sound & vibration study area (highly sensitive non-residential)
- Minor ground-borne noise or vibration impact\*

Map Number: SV-05-041

Map Name: Operational Noise and Vibration Impacts and Likely Significant Effects

Community Forum Area CFA16: Ladbroke & Southam

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Scale at A3: 1:10,000

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Doc Number: C250-ARP-EV-MAP-000-004001

Date: 29/10/13

See text for full description and extent of significant effects. (\*) Where SES/AP is reason for significant effect.

Receptor/significant effect removed/added (as a result of amendment\*: AP2-XXX-YYY). — SES/AP change ref.

Significant effect descriptor

Reduced effect Increased effect

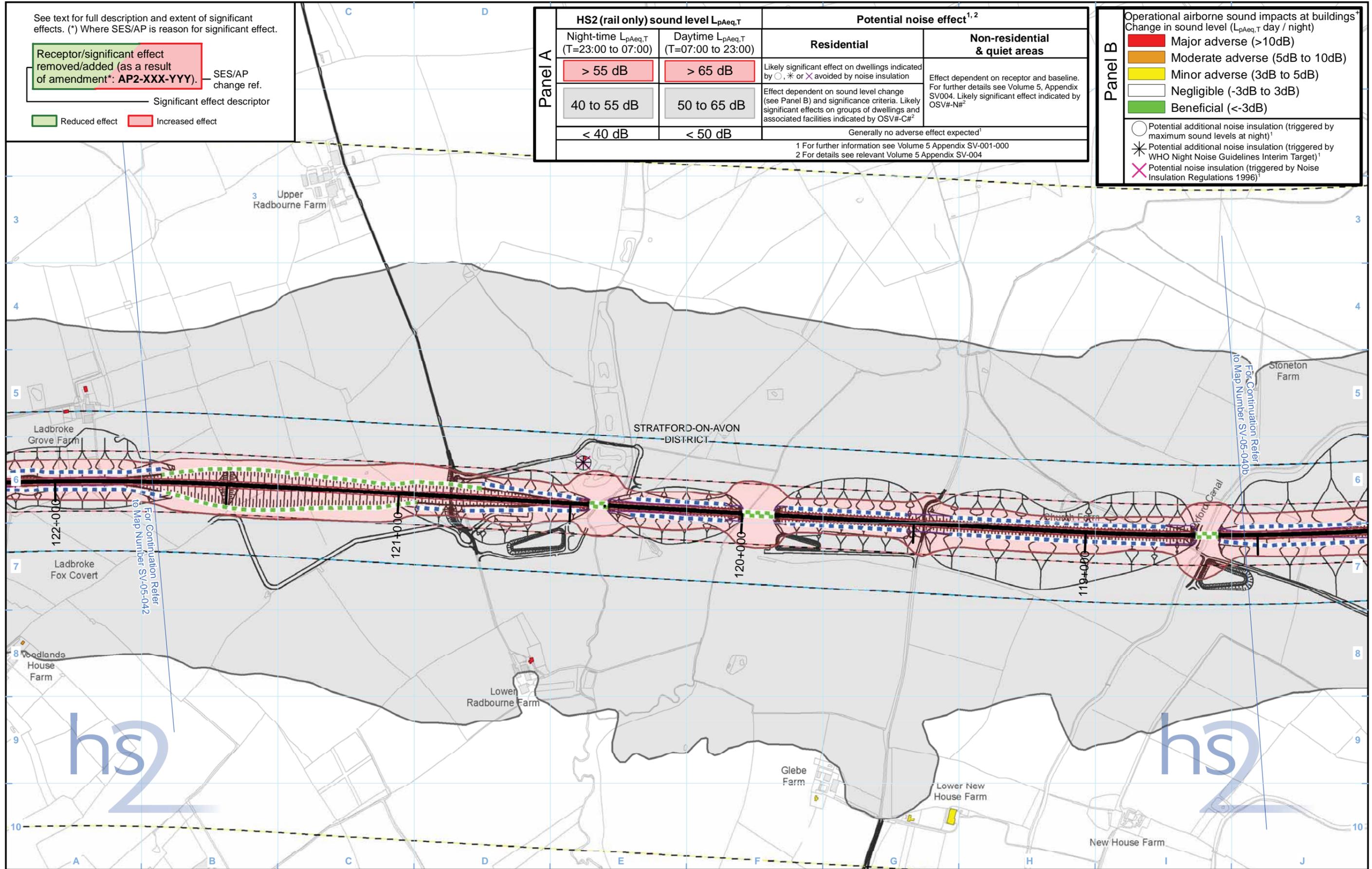
Panel A	HS2 (rail only) sound level L <sub>pAeq,T</sub>		Potential noise effect <sup>1,2</sup>	
	Night-time L <sub>pAeq,T</sub> (T=23:00 to 07:00)	Daytime L <sub>pAeq,T</sub> (T=07:00 to 23:00)	Residential	Non-residential & quiet areas
	> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ○, * or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV004. Likely significant effect indicated by OSV#-N# <sup>2</sup>
	40 to 55 dB	50 to 65 dB	Effect dependent on sound level change (see Panel B) and significance criteria. Likely significant effects on groups of dwellings and associated facilities indicated by OSV#-C# <sup>2</sup>	Generally no adverse effect expected <sup>1</sup>
< 40 dB	< 50 dB			

1 For further information see Volume 5 Appendix SV-001-000  
2 For details see relevant Volume 5 Appendix SV-004

Operational airborne sound impacts at buildings\*  
Change in sound level (L<sub>pAeq,T</sub> day / night)

Major adverse (>10dB)  
Moderate adverse (5dB to 10dB)  
Minor adverse (3dB to 5dB)  
Negligible (-3dB to 3dB)  
Beneficial (<-3dB)

Potential additional noise insulation (triggered by maximum sound levels at night)<sup>1</sup>  
Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)<sup>1</sup>  
Potential noise insulation (triggered by Noise Insulation Regulations 1996)<sup>1</sup>



**Legend - General features**

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- District/Borough boundary
- County boundary

**Engineering earthworks:**

- Embankment
- Cutting

**Non engineering earthworks:**

- Embankment
- Cutting

\* Residential buildings only  
\* Labelled with total barrier height above rail level

**Legend - Sound related features**

- Committed developments (labelled as CFA#/#)
- Envisaged mitigation to avoid / reduce significant noise effects:
  - Landscaping and/or fence barriers\*
  - Engineering e.g. cuttings (green tunnels separately marked)
  - Other environmental e.g. landscaping
  - Engineering e.g. cuttings
- Airborne sound study area
- Ground-borne sound & vibration study area (residential and non-residential)
- Ground-borne sound & vibration study area (highly sensitive non-residential)
- Minor ground-borne noise or vibration impact\*

Map Number: SV-05-041

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects SES and AP2 ES

Community Forum Area CFA16: Ladbroke & Southam

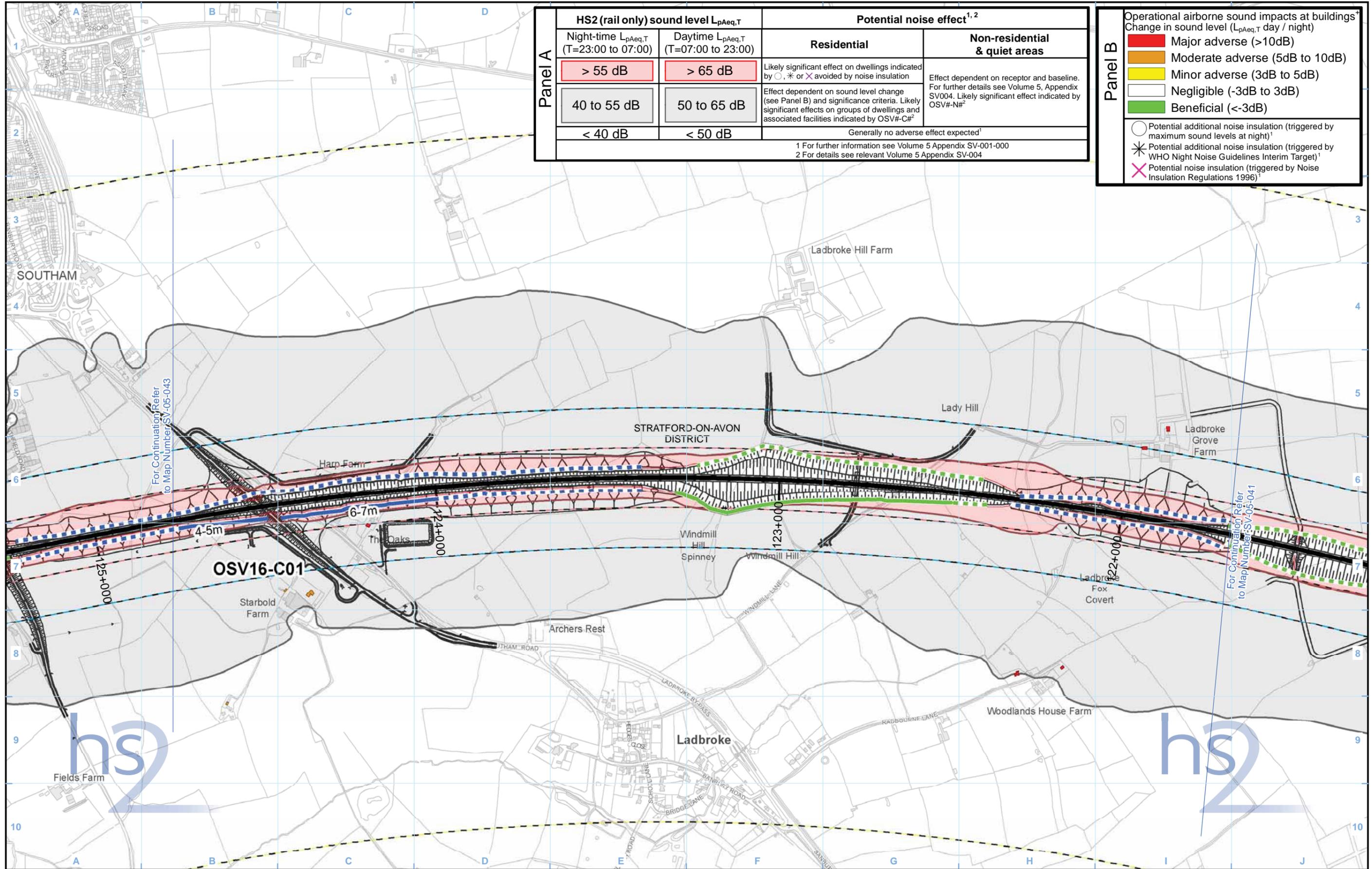
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Doc Number: C250-ARP-EV-MAP-000-001637-AP02-P01

Date: 15/06/15



Panel A	HS2 (rail only) sound level $L_{pAeq,T}$		Potential noise effect <sup>1,2</sup>	
	Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	Residential	Non-residential & quiet areas
	> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ○, * or X avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV004. Likely significant effect indicated by OSV#-N# <sup>2</sup>
	40 to 55 dB	50 to 65 dB	Effect dependent on sound level change (see Panel B) and significance criteria. Likely significant effects on groups of dwellings and associated facilities indicated by OSV#-C# <sup>2</sup>	Generally no adverse effect expected <sup>1</sup>
< 40 dB	< 50 dB			

1 For further information see Volume 5 Appendix SV-001-000  
2 For details see relevant Volume 5 Appendix SV-004

Panel B	Operational airborne sound impacts at buildings <sup>1</sup> Change in sound level ( $L_{pAeq,T}$ day / night)	
	<span style="display:inline-block; width:15px; height:15px; background-color:red; border:1px solid black;"></span>	Major adverse (>10dB)
<span style="display:inline-block; width:15px; height:15px; background-color:orange; border:1px solid black;"></span>	Moderate adverse (5dB to 10dB)	
<span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span>	Minor adverse (3dB to 5dB)	
<span style="display:inline-block; width:15px; height:15px; background-color:white; border:1px solid black;"></span>	Negligible (-3dB to 3dB)	
<span style="display:inline-block; width:15px; height:15px; background-color:green; border:1px solid black;"></span>	Beneficial (<-3dB)	

○ Potential additional noise insulation (triggered by maximum sound levels at night)<sup>1</sup>  
\* Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)<sup>1</sup>  
X Potential noise insulation (triggered by Noise Insulation Regulations 1996)<sup>1</sup>

- Legend - General features**
- Route in bored tunnel
  - Route in green tunnel
  - Route on surface
  - Depot, station, headhouse or portal building
  - Community forum boundary
  - District/Borough boundary
  - County boundary

- Legend - Sound related features**
- |                         |                             |
|-------------------------|-----------------------------|
| Engineering earthworks: | Non engineering earthworks: |
| Embankment              | Embankment                  |
| Cutting                 | Cutting                     |
- \* Residential buildings only  
\* Labelled with total barrier height above rail level

- Legend - Sound related features**
- Committed developments (labelled as CFA#/#)
  - Envisaged mitigation to avoid / reduce significant noise effects:
    - Landscaping and/or fence barriers\*
    - Engineering e.g. cuttings (green tunnels separately marked)
    - Envisaged measures further reducing noise effects:
      - Other environmental e.g. landscaping
      - Engineering e.g. cuttings

- Airborne sound study area
- Ground-borne sound & vibration study area (residential and non-residential)
- Ground-borne sound & vibration study area (highly sensitive non-residential)
- Minor ground-borne noise or vibration impact\*

Map Number: SV-05-042

Map Name: Operational Noise and Vibration Impacts and Likely Significant Effects

Community Forum Area CFA16: Ladbroke & Southam

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Doc Number: C250-ARP-EV-MAP-000-004002

Date: 29/10/13

See text for full description and extent of significant effects. (\*) Where SES/AP is reason for significant effect.

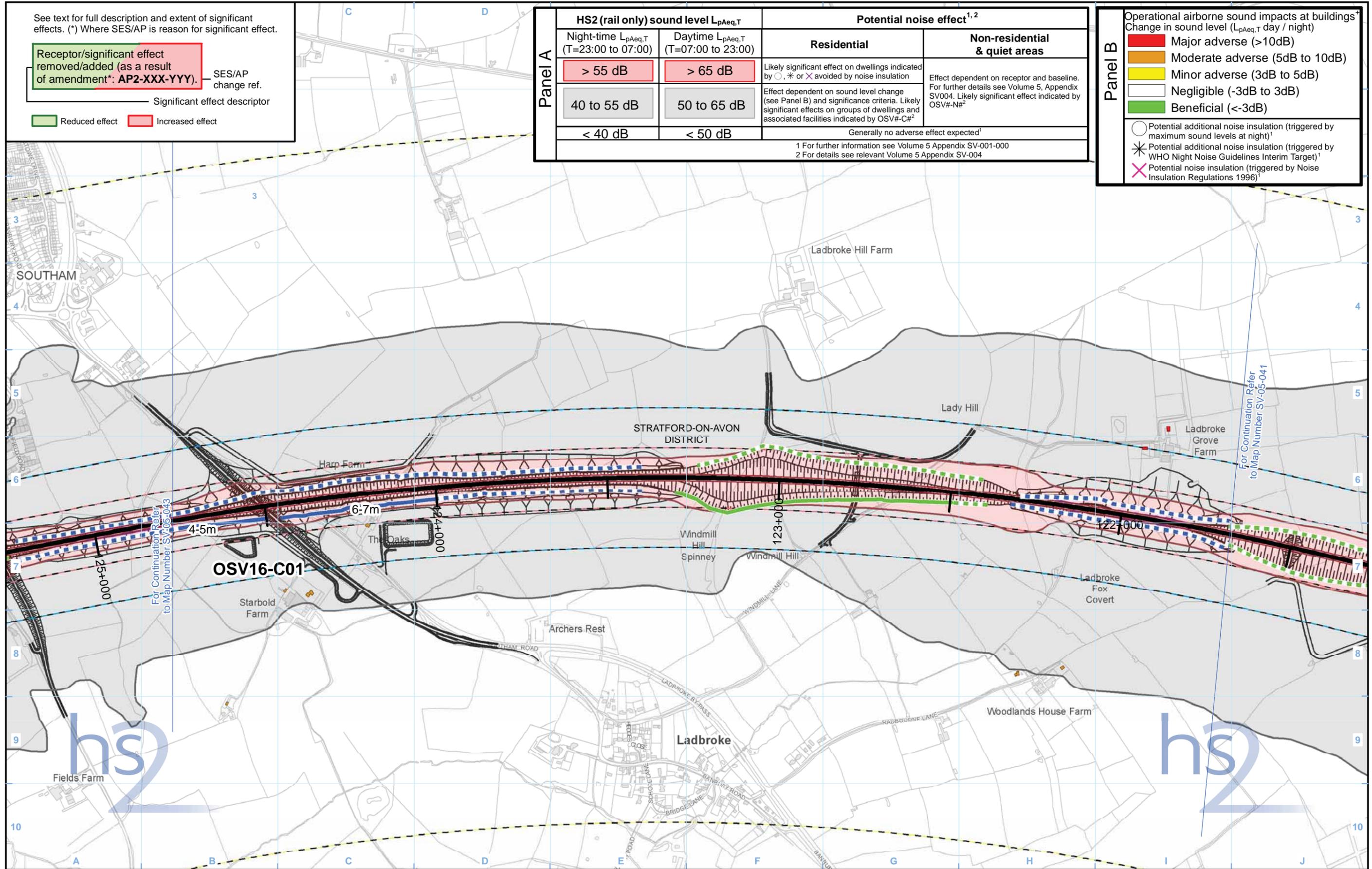
Receptor/significant effect removed/added (as a result of amendment\*: AP2-XXX-YYY). — SES/AP change ref.  
 Significant effect descriptor  
 Reduced effect Increased effect

Panel A	HS2 (rail only) sound level L <sub>pAeq,T</sub>		Potential noise effect <sup>1,2</sup>	
	Night-time L <sub>pAeq,T</sub> (T=23:00 to 07:00)	Daytime L <sub>pAeq,T</sub> (T=07:00 to 23:00)	Residential	Non-residential & quiet areas
	> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ○, * or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV004. Likely significant effect indicated by OSV#-N# <sup>2</sup>
	40 to 55 dB	50 to 65 dB	Effect dependent on sound level change (see Panel B) and significance criteria. Likely significant effects on groups of dwellings and associated facilities indicated by OSV#-C# <sup>2</sup>	Generally no adverse effect expected <sup>1</sup>
< 40 dB	< 50 dB			

1 For further information see Volume 5 Appendix SV-001-000  
 2 For details see relevant Volume 5 Appendix SV-004

Panel B	Operational airborne sound impacts at buildings* Change in sound level (L <sub>pAeq,T</sub> day / night)	
	Major adverse (>10dB)	Moderate adverse (5dB to 10dB)
Minor adverse (3dB to 5dB)	Negligible (-3dB to 3dB)	
Beneficial (<-3dB)		

○ Potential additional noise insulation (triggered by maximum sound levels at night)<sup>1</sup>  
 \* Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)<sup>1</sup>  
 ✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)<sup>1</sup>



**Legend - General features**

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- District/Borough boundary
- County boundary

**Engineering earthworks:**

- Embankment
- Cutting

**Non engineering earthworks:**

- Embankment
- Cutting

\* Residential buildings only  
 \* Labelled with total barrier height above rail level

**Legend - Sound related features**

- Committed developments (labelled as CFA##/##)
- Envisaged mitigation to avoid / reduce significant noise effects:
  - Landscaping and/or fence barriers\*
  - Engineering e.g. cuttings (green tunnels separately marked)
  - Envisaged measures further reducing noise effects:
    - Other environmental e.g. landscaping
    - Engineering e.g. cuttings
- Airborne sound study area
- Ground-borne sound & vibration study area (residential and non-residential)
- Ground-borne sound & vibration study area (highly sensitive non-residential)
- Minor ground-borne noise or vibration impact\*

Map Number: SV-05-042

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects SES and AP2 ES

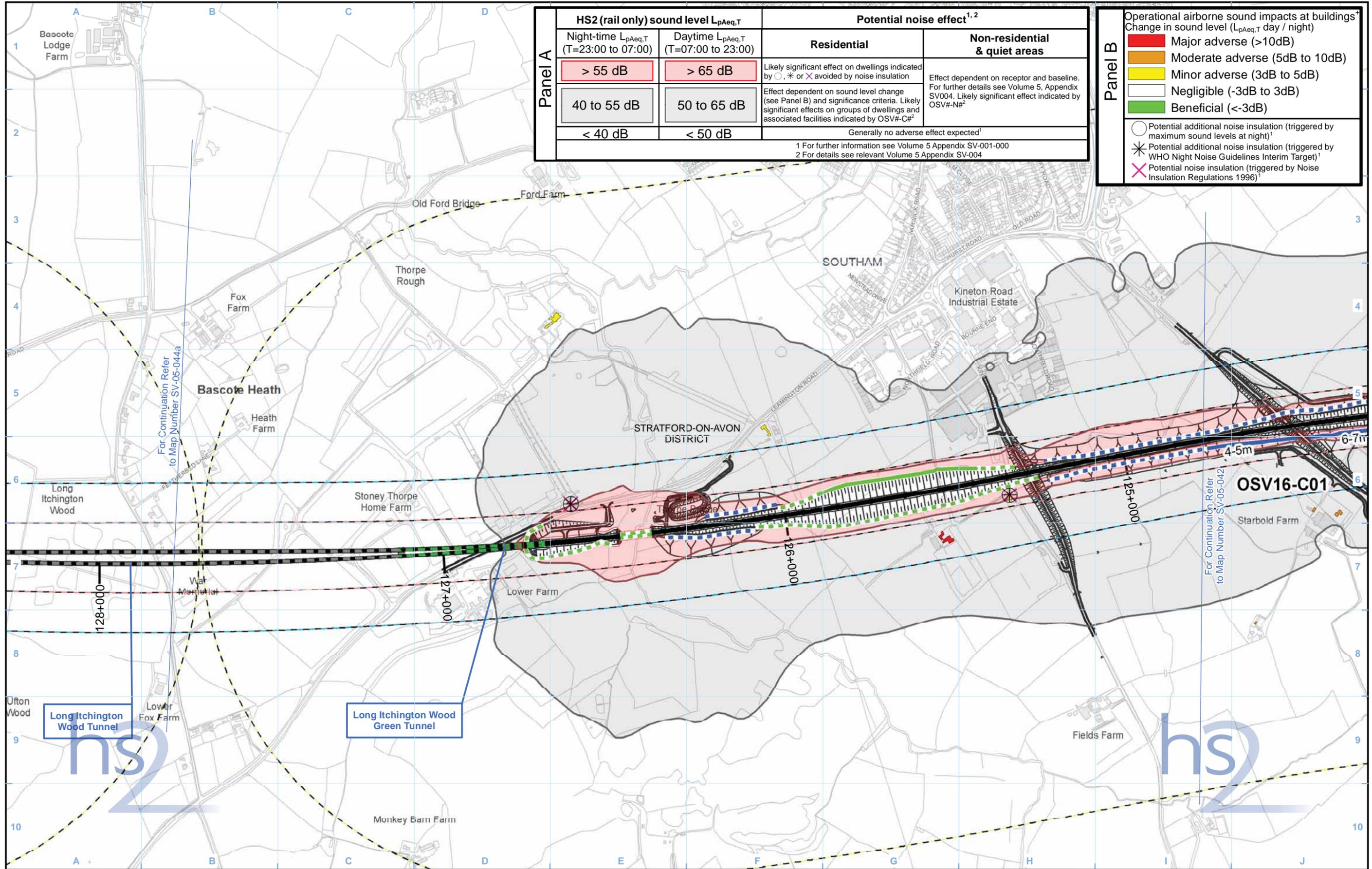
Community Forum Area CFA16: Ladbroke & Southam

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HS2 (rail only) sound level $L_{pAeq,T}$		Potential noise effect <sup>1,2</sup>	
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	Residential	Non-residential & quiet areas
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ○, * or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV004. Likely significant effect indicated by OSV#-N# <sup>2</sup>
40 to 55 dB	50 to 65 dB	Effect dependent on sound level change (see Panel B) and significance criteria. Likely significant effects on groups of dwellings and associated facilities indicated by OSV#-C# <sup>2</sup>	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV004. Likely significant effect indicated by OSV#-N# <sup>2</sup>
< 40 dB	< 50 dB	Generally no adverse effect expected <sup>1</sup>	

1 For further information see Volume 5 Appendix SV-001-000  
2 For details see relevant Volume 5 Appendix SV-004

Operational airborne sound impacts at buildings <sup>1</sup> Change in sound level ( $L_{pAeq,T}$ day / night)	
<span style="color: red;">■</span>	Major adverse (>10dB)
<span style="color: orange;">■</span>	Moderate adverse (5dB to 10dB)
<span style="color: yellow;">■</span>	Minor adverse (3dB to 5dB)
<span style="color: white;">■</span>	Negligible (-3dB to 3dB)
<span style="color: green;">■</span>	Beneficial (<-3dB)

○ Potential additional noise insulation (triggered by maximum sound levels at night)<sup>1</sup>  
\* Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)<sup>1</sup>  
✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)<sup>1</sup>

**Legend - General features**

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- District/Borough boundary
- County boundary

**Legend - Sound related features**

Engineering earthworks:

- Embankment
- Cutting

Non engineering earthworks:

- Embankment
- Cutting

\* Residential buildings only  
\* Labelled with total barrier height above rail level

**Legend - Sound related features**

- Committed developments (labelled as CFA#/#)
- Envisaged mitigation to avoid / reduce significant noise effects:
  - Landscaping and/or fence barriers\*
  - Engineering e.g. cuttings (green tunnels separately marked)
  - Envisaged measures further reducing noise effects:
    - Other environmental e.g. landscaping
    - Engineering e.g. cuttings

- Airborne sound study area
- Ground-borne sound & vibration study area (residential and non-residential)
- Ground-borne sound & vibration study area (highly sensitive non-residential)
- Minor ground-borne noise or vibration impact\*

Map Number: SV-05-043

Map Name: Operational Noise and Vibration Impacts and Likely Significant Effects

Community Forum Area CFA16:  
Ladbroke & Southam

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Date: 29/10/13

See text for full description and extent of significant effects. (\*) Where SES/AP is reason for significant effect.

Receptor/significant effect removed/added (as a result of amendment\*: AP2-XXX-YYY). — SES/AP change ref.

— Significant effect descriptor

Reduced effect Increased effect

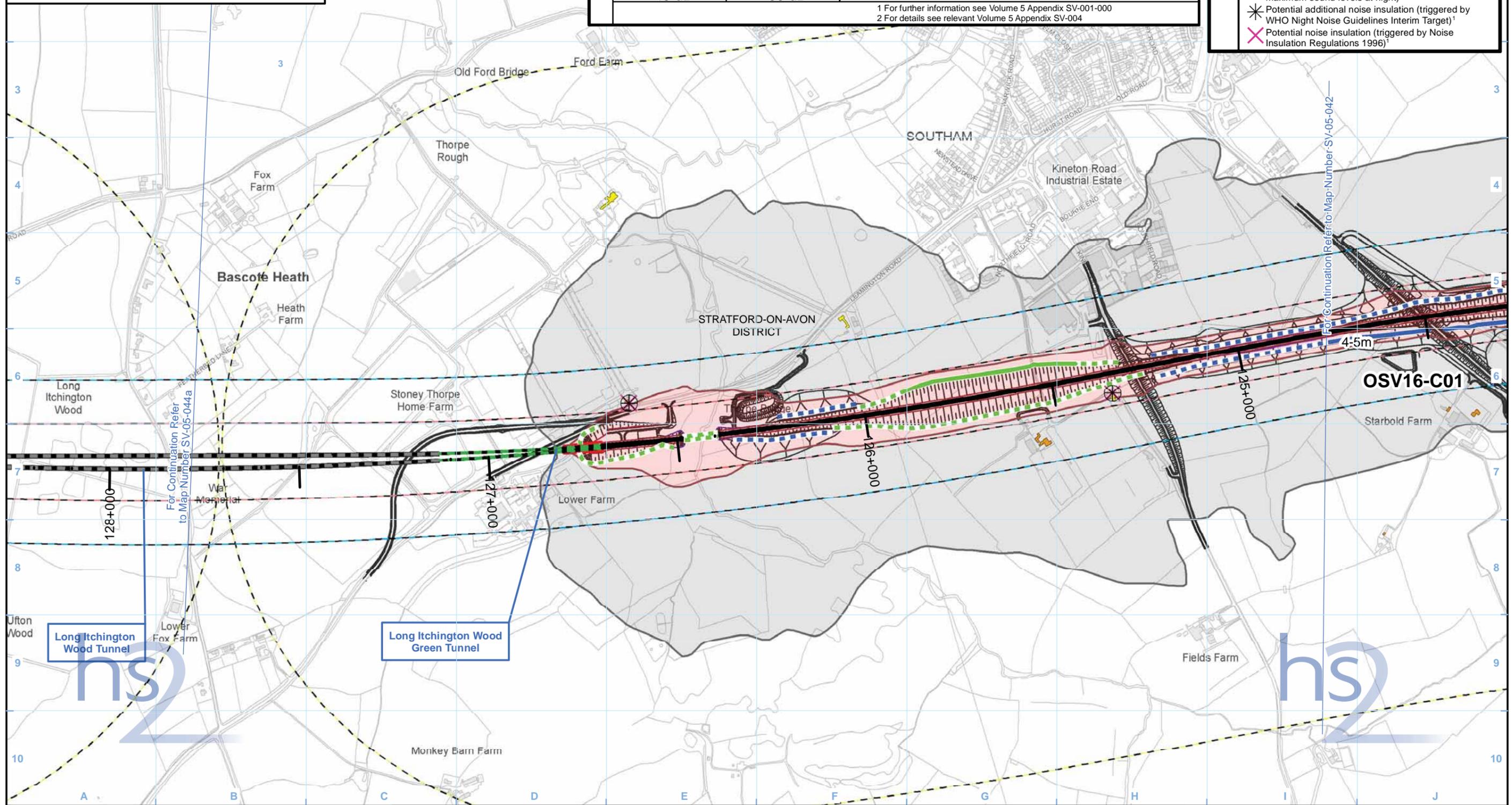
Panel A	HS2 (rail only) sound level L <sub>pAeq,T</sub>		Potential noise effect <sup>1,2</sup>	
	Night-time L <sub>pAeq,T</sub> (T=23:00 to 07:00)	Daytime L <sub>pAeq,T</sub> (T=07:00 to 23:00)	Residential	Non-residential & quiet areas
	> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ○, * or X avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV004. Likely significant effect indicated by OSV#-N# <sup>2</sup>
	40 to 55 dB	50 to 65 dB	Effect dependent on sound level change (see Panel B) and significance criteria. Likely significant effects on groups of dwellings and associated facilities indicated by OSV#-C# <sup>2</sup>	Generally no adverse effect expected <sup>1</sup>
< 40 dB	< 50 dB	Generally no adverse effect expected <sup>1</sup>		

1 For further information see Volume 5 Appendix SV-001-000  
2 For details see relevant Volume 5 Appendix SV-004

Operational airborne sound impacts at buildings\*  
Change in sound level (L<sub>pAeq,T</sub> day / night)

Major adverse (>10dB)  
Moderate adverse (5dB to 10dB)  
Minor adverse (3dB to 5dB)  
Negligible (-3dB to 3dB)  
Beneficial (<-3dB)

Potential additional noise insulation (triggered by maximum sound levels at night)<sup>1</sup>  
Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)<sup>1</sup>  
Potential noise insulation (triggered by Noise Insulation Regulations 1996)<sup>1</sup>



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- District/Borough boundary
- County boundary

Engineering earthworks:

- Embankment
- Cutting

Non engineering earthworks:

- Embankment
- Cutting

\* Residential buildings only  
\* Labelled with total barrier height above rail level

Legend - Sound related features

- Committed developments (labelled as CFA##/##)
- Envisaged mitigation to avoid / reduce significant noise effects:
  - Landscaping and/or fence barriers\*
  - Engineering e.g. cuttings (green tunnels separately marked)
  - Envisaged measures further reducing noise effects:
    - Other environmental e.g. landscaping
    - Engineering e.g. cuttings

- Airborne sound study area
- Ground-borne sound & vibration study area (residential and non-residential)
- Ground-borne sound & vibration study area (highly sensitive non-residential)
- Minor ground-borne noise or vibration impact\*

Map Number: SV-05-043

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects SES and AP2 ES

Community Forum Area CFA16: Ladbroke & Southam

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