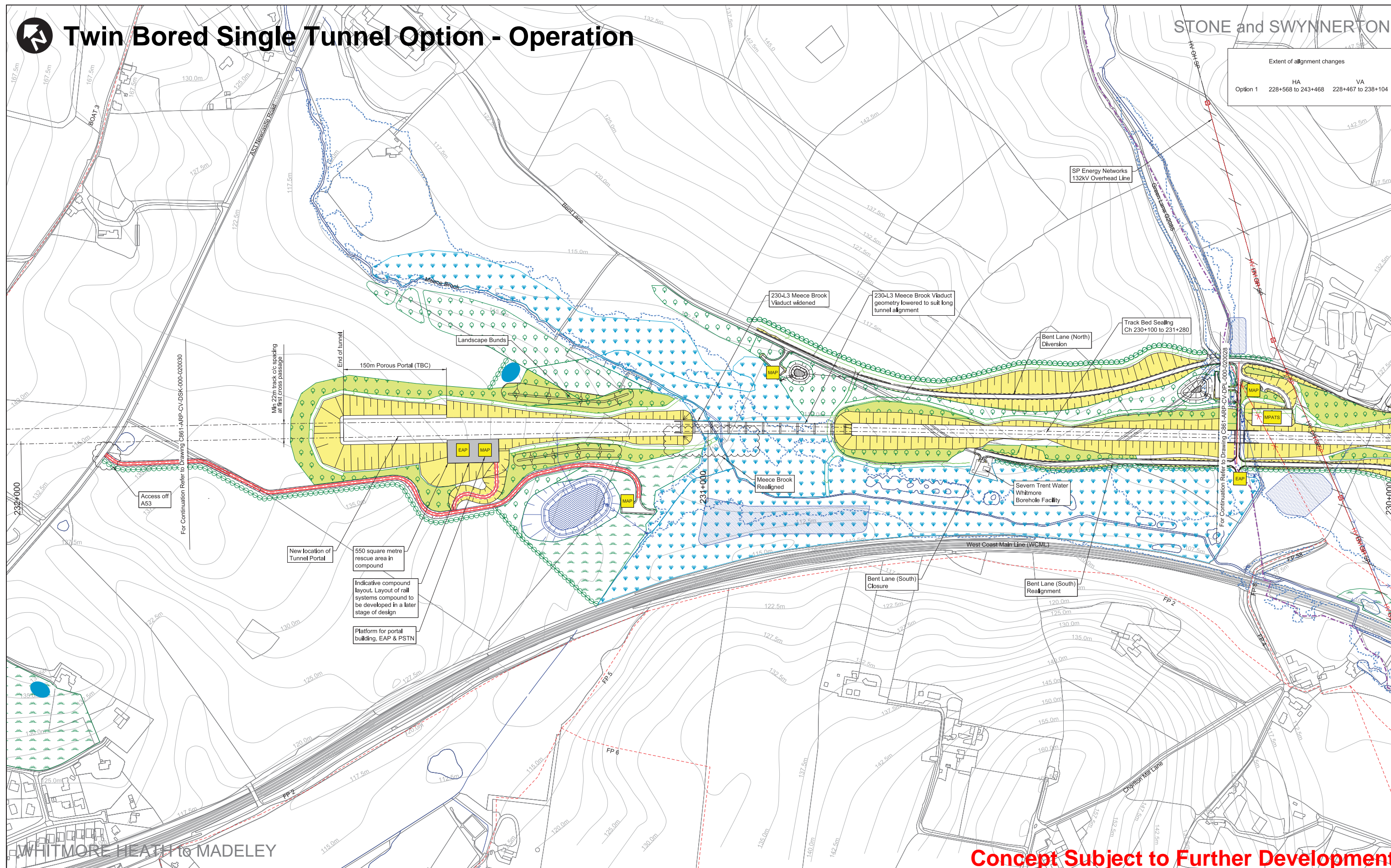


## Twin Bored Single Tunnel Option - Operation


STONE and SWYNNERTON

	Extent of alignment changes	
	HA	VA
Option 1	228+568 to 243+468	228+467 to 238+104



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METRES  
@ 1:2500

0 20 50 100 250

**Legends/Notes:**

- For legend refer to drawing no HS2-HS2-IM-DSC-000-000001



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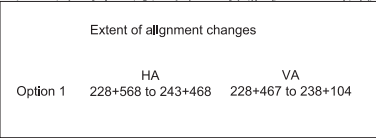
Ove Arup & Partners International Ltd

Zone	Project/Contract		
	<b>P2A Civils Design &amp; Environmental Services</b>		
Design Stage	Discipline/Function		
<b>Preliminary Concept</b>	<b>Civil</b>		
Drawing Title	Drawn	Checked	Approved
<b>Twin Bored Single Tunnel Option</b>	<b>MN</b>	<b>TE</b>	<b>TE</b>
Date	Scale	Size	
<b>13/07/2017</b>	<b>AS SHOWN</b>	<b>A1</b>	
<b>Sheet 29</b>			
Drawing No.	Rev.		
<b>C861-ARP-CV 000-000029</b>			<b>P03</b>


HOC/10006/000

000-020029 P03  
HOC/10006/0024





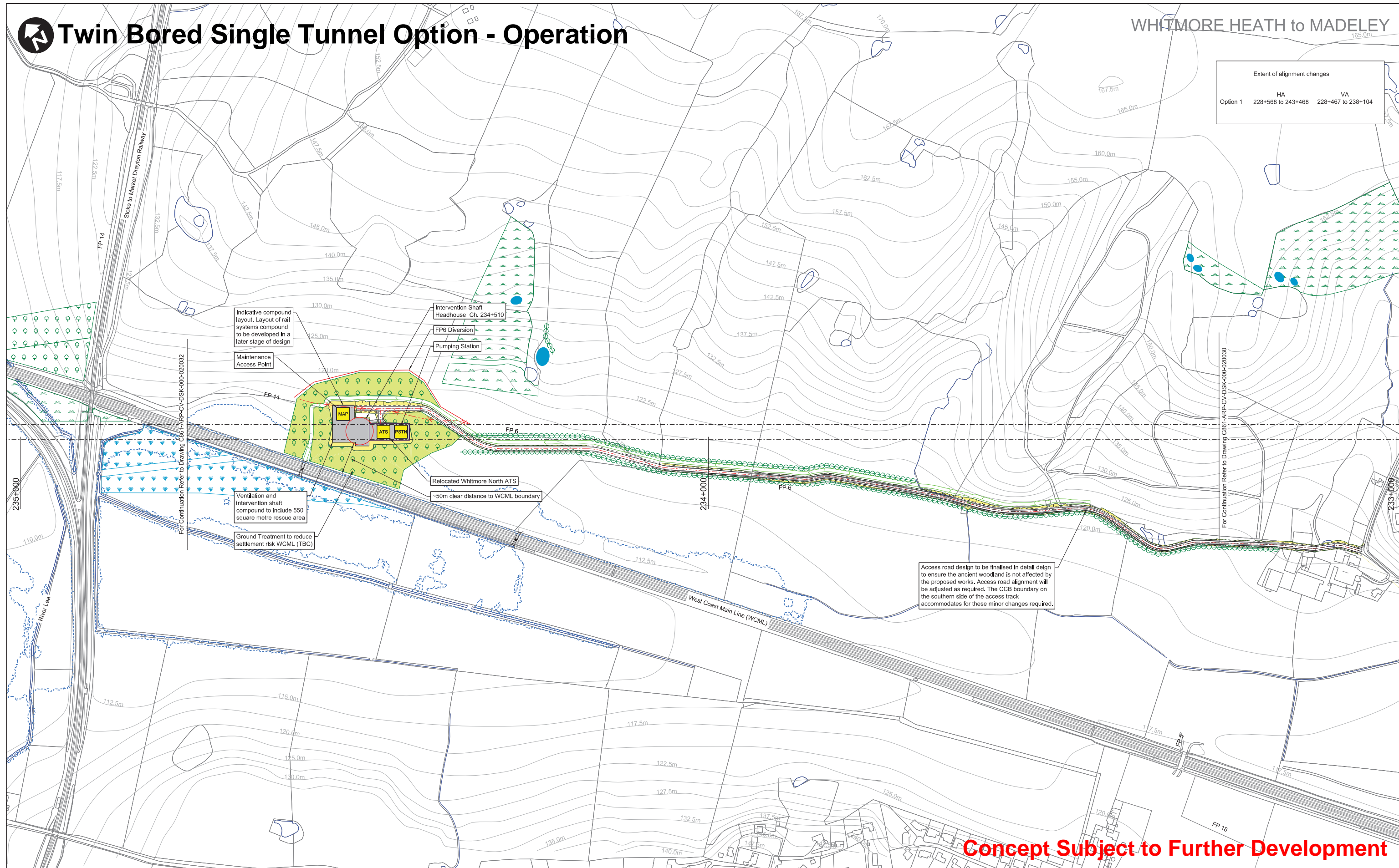
**Concept Subject to Further Development**

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P02	Minor Refinements	DS 28/02/2018	TE 28/02/2018	TE 28/02/2018		© Crown Copyright and database right 2017. All rights reserved. Ordnance Survey Licence number 100049190		Design Stage	Preliminary Concept			Discipline/Function			Civil		
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								Date	13/07/2017			Scale	AS SHOWN			Size	A1
									Preliminary Concept General Arrangement Plan								
									Sheet 30			Drawing No.	C861-ARP-CV-000-020030			Rev.	P03
							<div><div>METRES @ 1:2500</div><div><div>0</div><div>20</div><div>50</div><div>100</div><div>250</div></div></div> <div>Scale with caution as distortion can occur.</div>										



WHITMORE HEATH to MADELEY 165.0m

	HA	VA
Option 1	228+568 to 243+468	228+467 to 238+104



**Concept Subject to Further Development**

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Description		Drawn	Checked	Con App	HS2 App	

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Zone	Route Wide			Project/Contract		
Design Stage	Preliminary Concept			Discipline/Function		
Drawing Title	Twin Bored Single Tunnel Option			Civil		
Preliminary Concept General Arrangement Plan				Sheet 31		
Drawing No.				Rev.		
C861-ARP-CV-000-020031				P03		

HOC/10006/002



	HA	VA
Option 1	228+568 to 243+468	228+467 to 238+104



Legends/Notes:

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Design Stage	Preliminary Concept	Discipline/Function Civil		
Drawing Title	Twin Bored Single Tunnel Option	Drawn MN	Checked TE	Approved TE
Preliminary Concept General Arrangement Plan		Date 13/07/2017	Scale AS SHOWN	Size A1
Sheet 32		Drawing No. C861-ARP-CV 000-020032		Rev. P03



# WHITMORE HEATH to MADELEY

Extent of alignment changes		
	HA	VA
Option 1	228+568 to 243+468	228+467 to 238+104

WCML Modifications  
to Accommodate  
HS2 Connection  
(See Note 2)

Madeley Footpath 26  
Realignment

Madeley Footpath 24  
Diversions

Madeley Bridleway 5  
Re-alignment

Madeley Bridleway 1

A525 Bar Hill Road, re

For Continuation Refer to Drawing C861-ARP-CV-DPL-000-020133

## Concept Subject to Further Development

Legends/Notes:

1. For legend refer to drawing no HS2-HS2-IM-DSC-000-000001
2. For Network Rail on-network works to WCML refer to drawings C862-PBR-RT-DPL-WS09-100000 to 100009.



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Zone	Route Wide	Project/Contract P2A CIVILS Design & Environmental Services		
Design Stage	Preliminary Concept	Discipline/Function Civil		
Drawing Title	Twin Bored Single Tunnel Option  Preliminary Concept General Arrangement Plan	Drawn MN	Checked TE	Approved TE
		Date 13/07/2017	Scale AS SHOWN	Size A1
	Sheet 33	Drawing No. C861-ARP-CV-000-020033		Rev. P03

000-020033 P03  
HOC/10006/0028

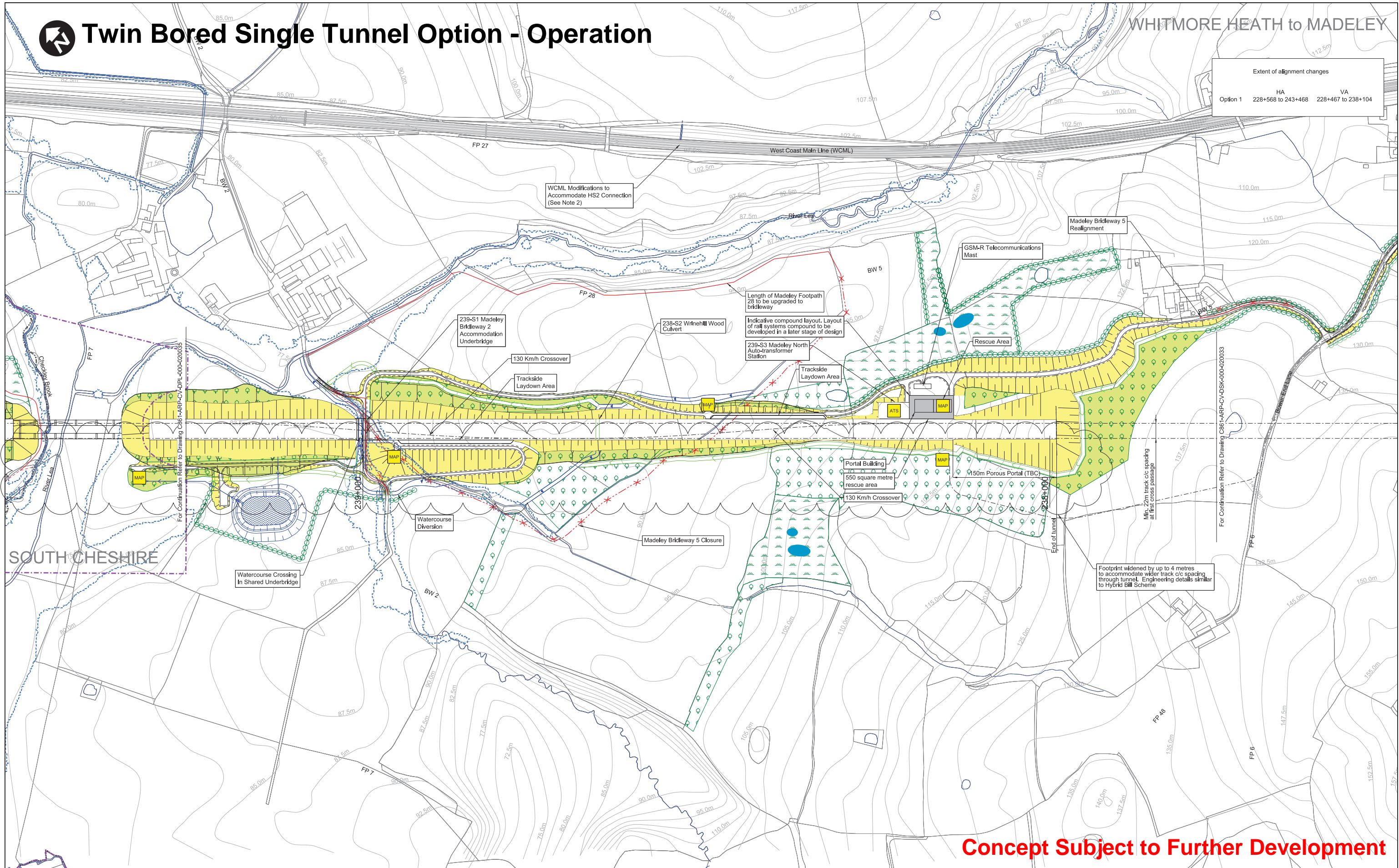




# Twin Bored Single Tunnel Option - Operation

WHITMORE HEATH to MADELEY

Extent of alignment changes		
	HA	VA
Option 1	228+568 to 243+468	228+467 to 238+104



**Concept Subject to Further Development**

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METRES @ 1:2500

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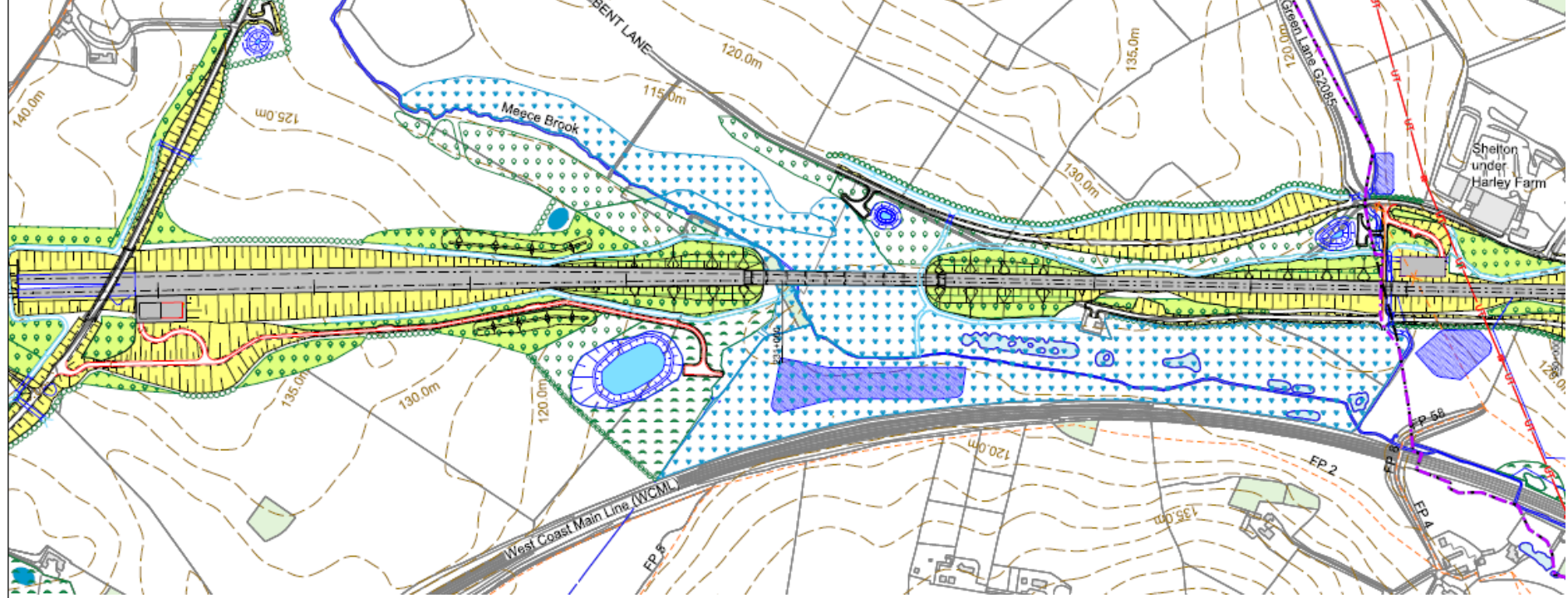
Zone	Route Wide		Project/Contract	
Design Stage	Preliminary Concept		P2A Civils Design & Environmental Services	
Drawing Title	Twin Bored Single Tunnel Option		Discipline/Function	
	Preliminary Concept General Arrangement Plan		Civil	
	Sheet 34		Drawn	Checked
			TE	TE
			Approved	TE
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			Drawing No.	Rev.
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HOC/10006/0029

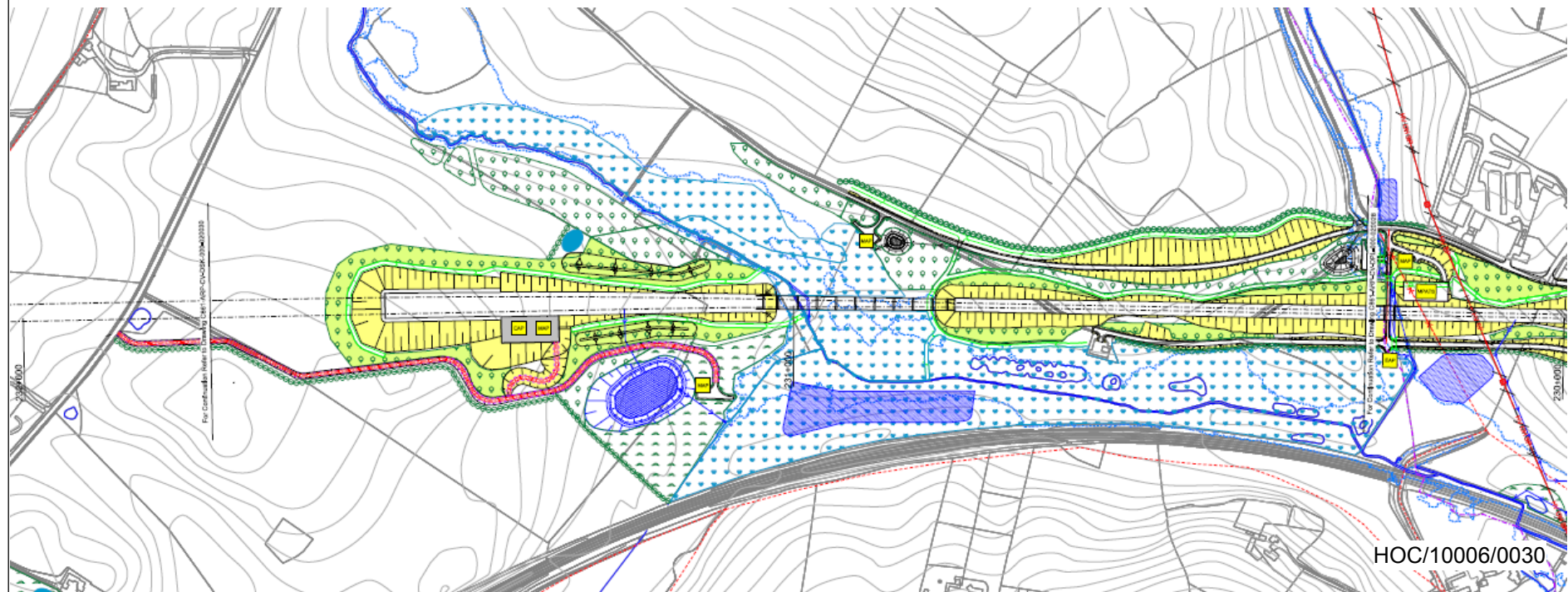


# Map CT-06-229

The Proposed Scheme



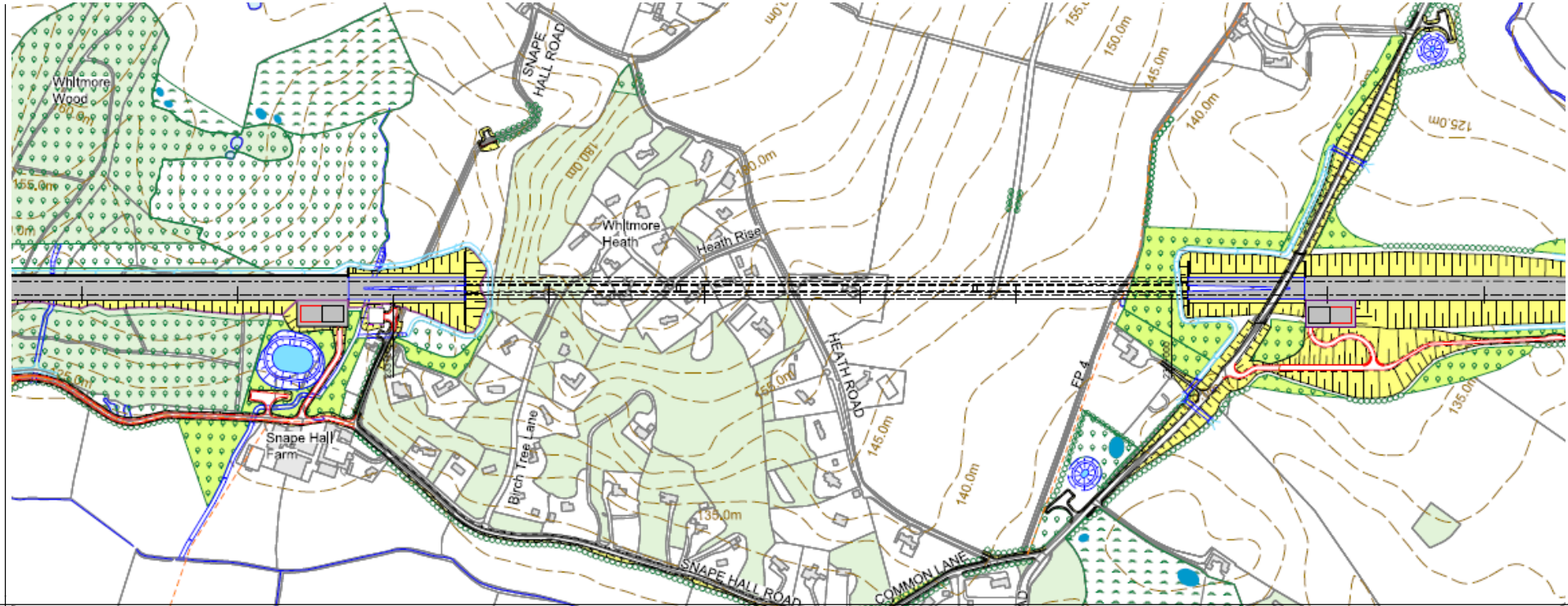
Twin Bored Single Tunnel Option



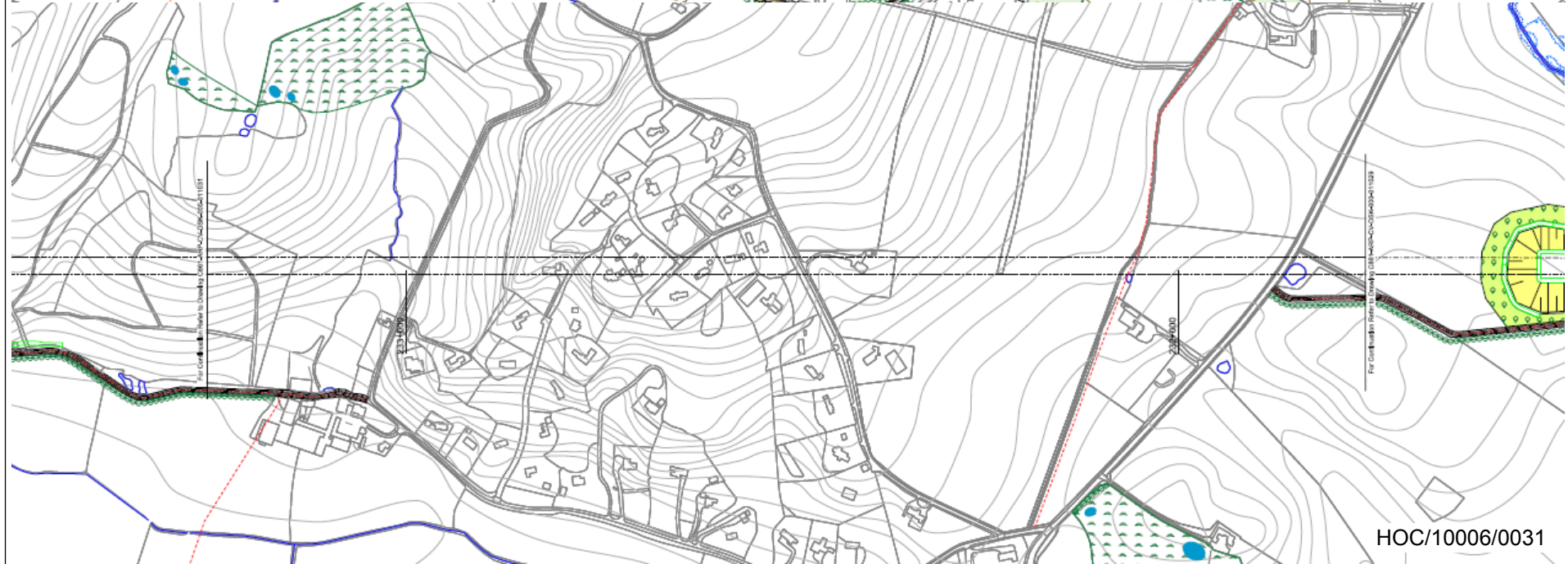


# Map CT-06-230

The Proposed Scheme



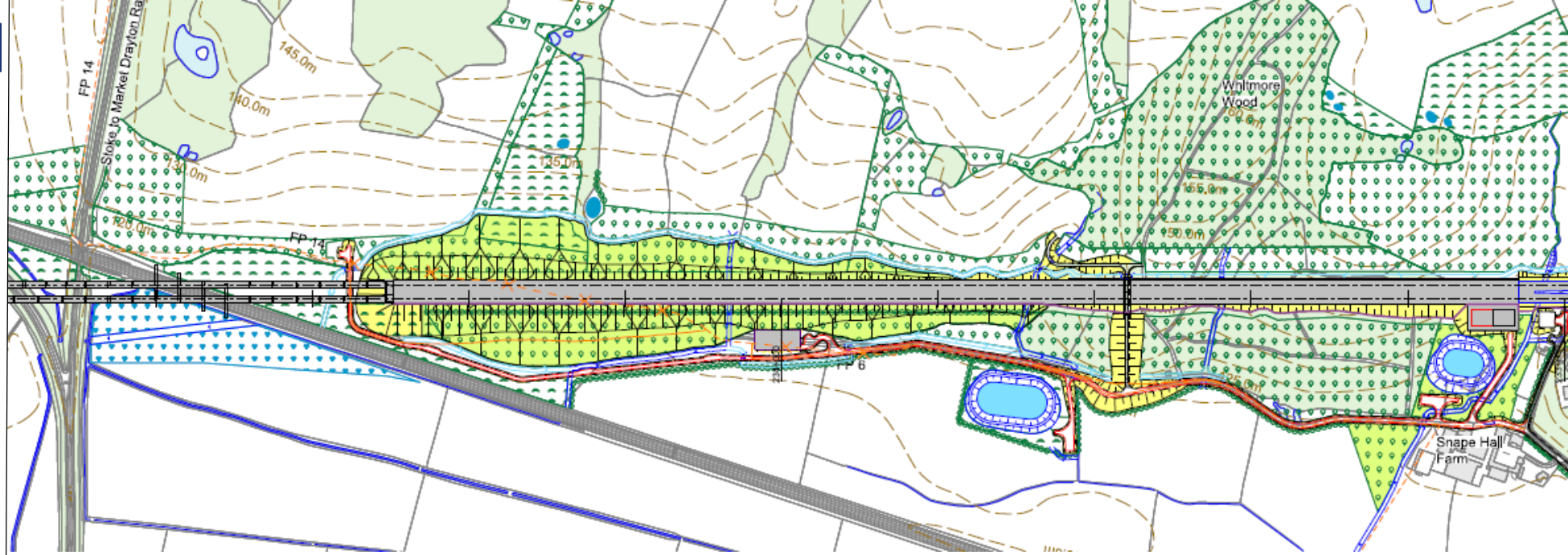
Twin Bored Single Tunnel Option



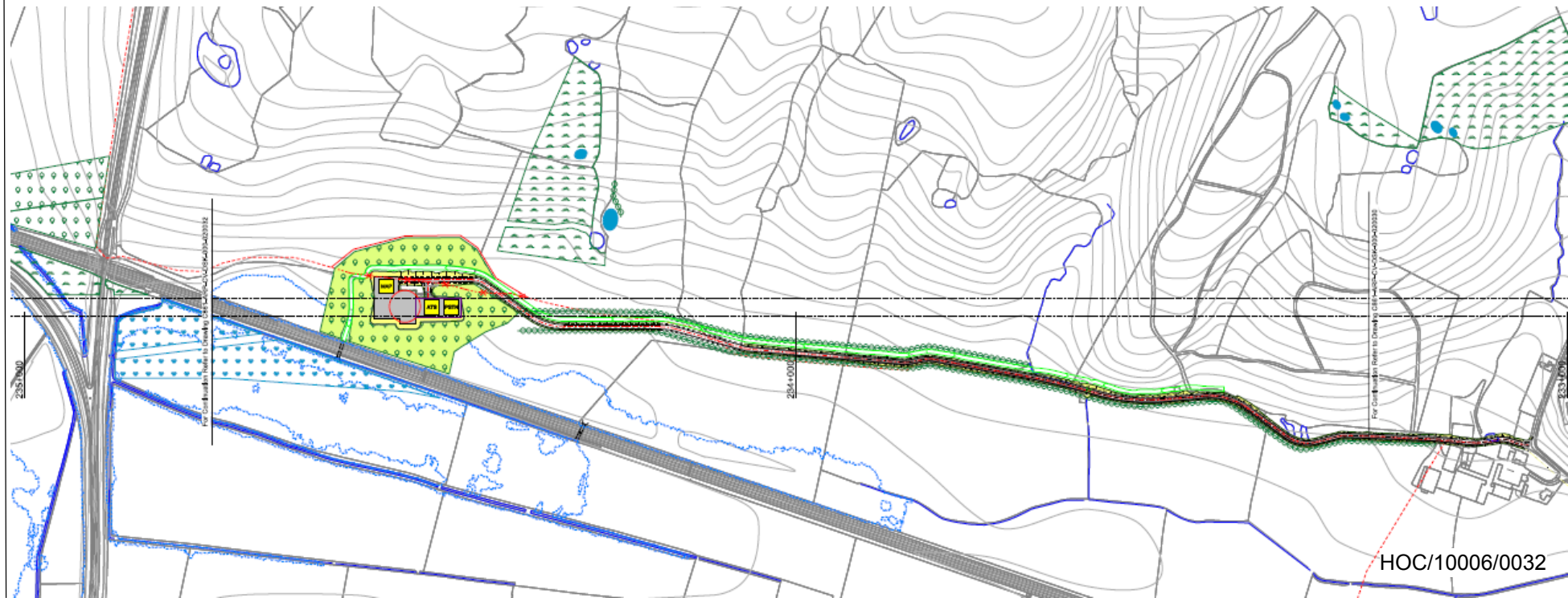


# Map CT-06-231

The Proposed Scheme



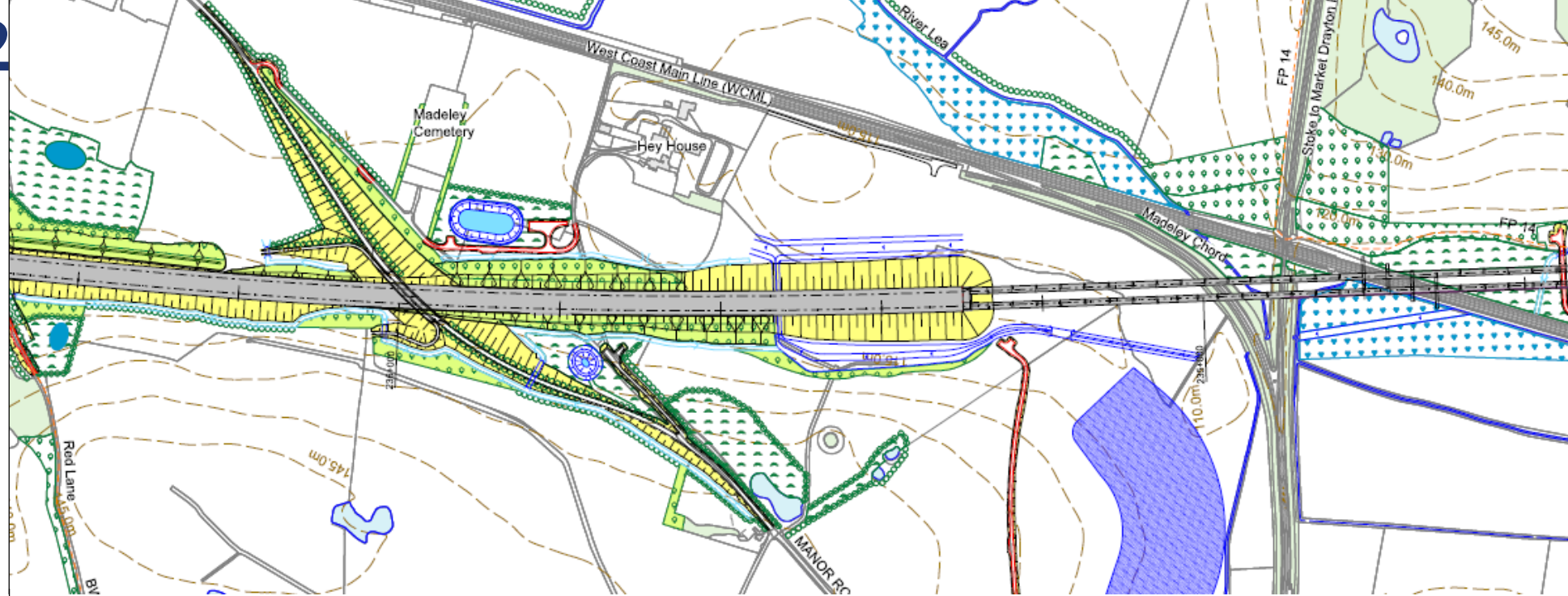
Twin Bored Single Tunnel Option



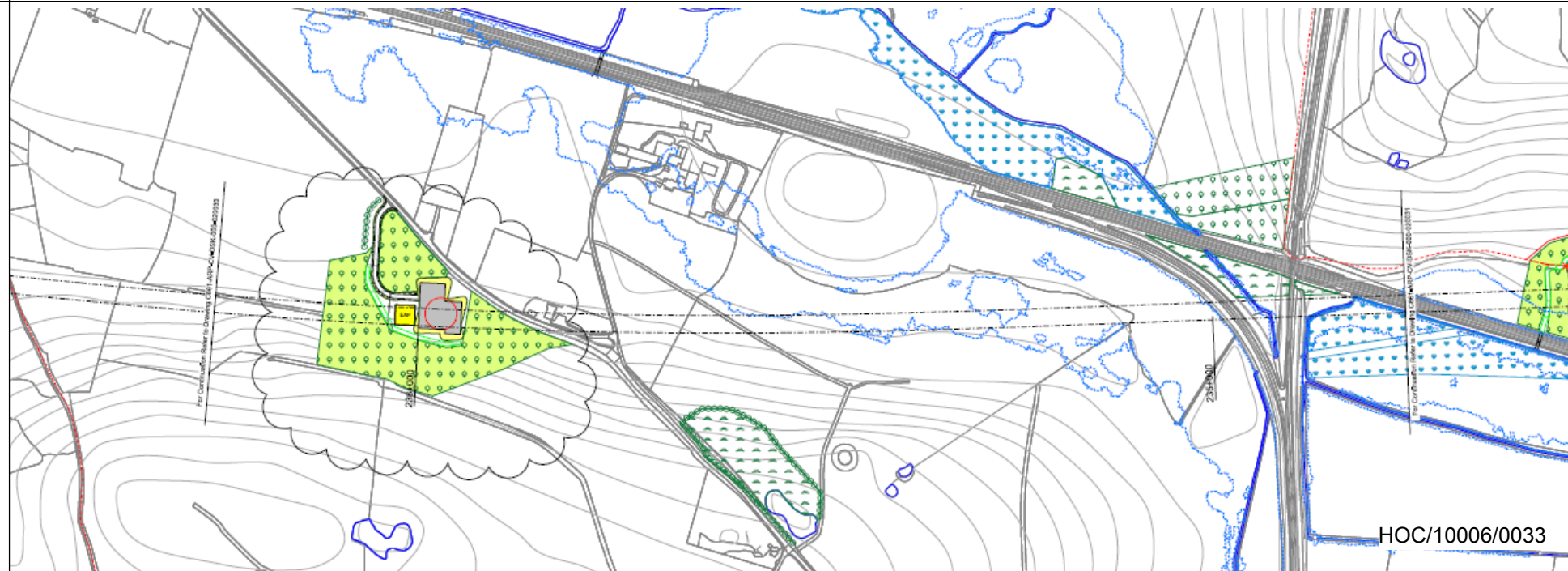


# Map CT-06-232

The Proposed Scheme



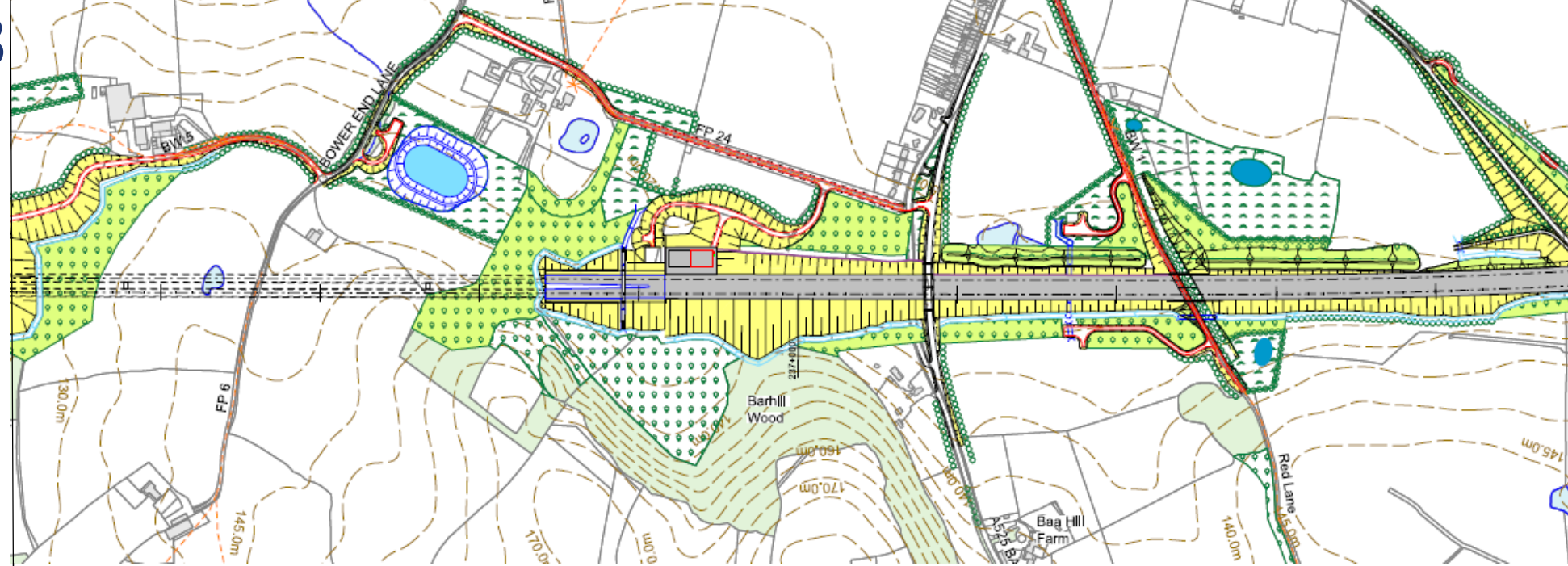
Twin Bored Single Tunnel Option



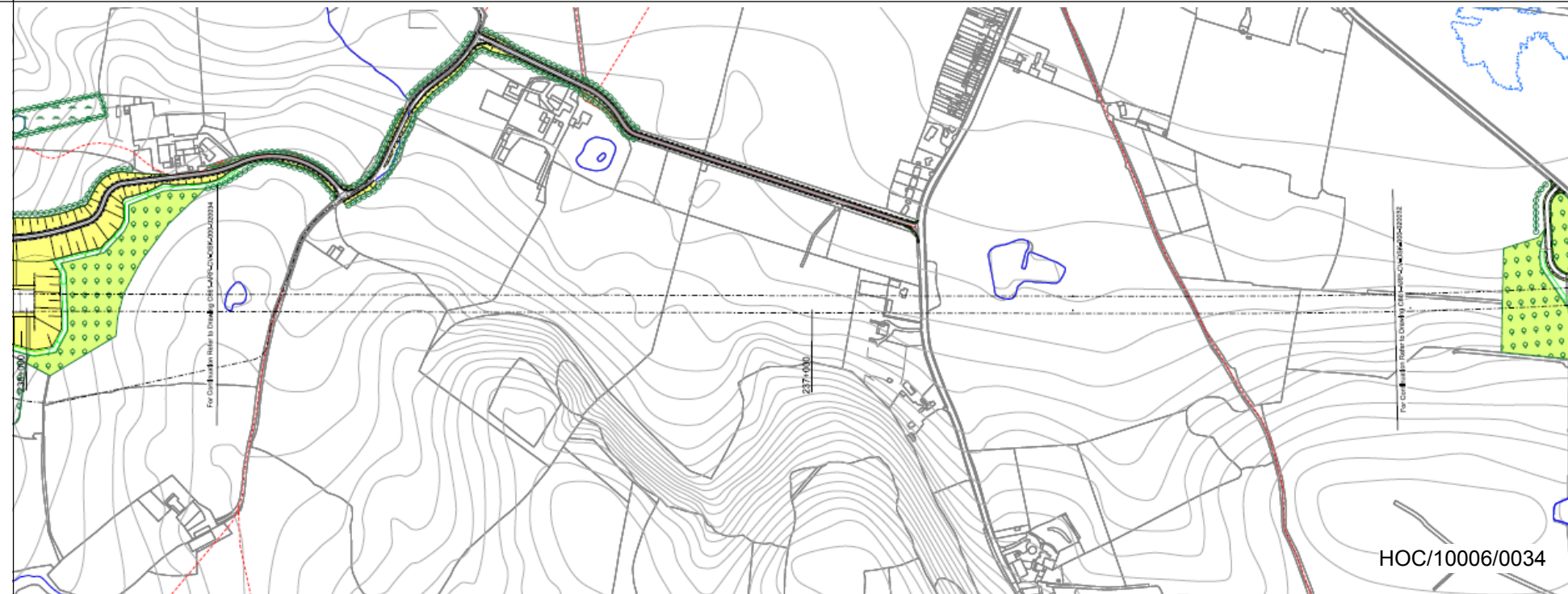


# Map CT-06-233

The Proposed Scheme



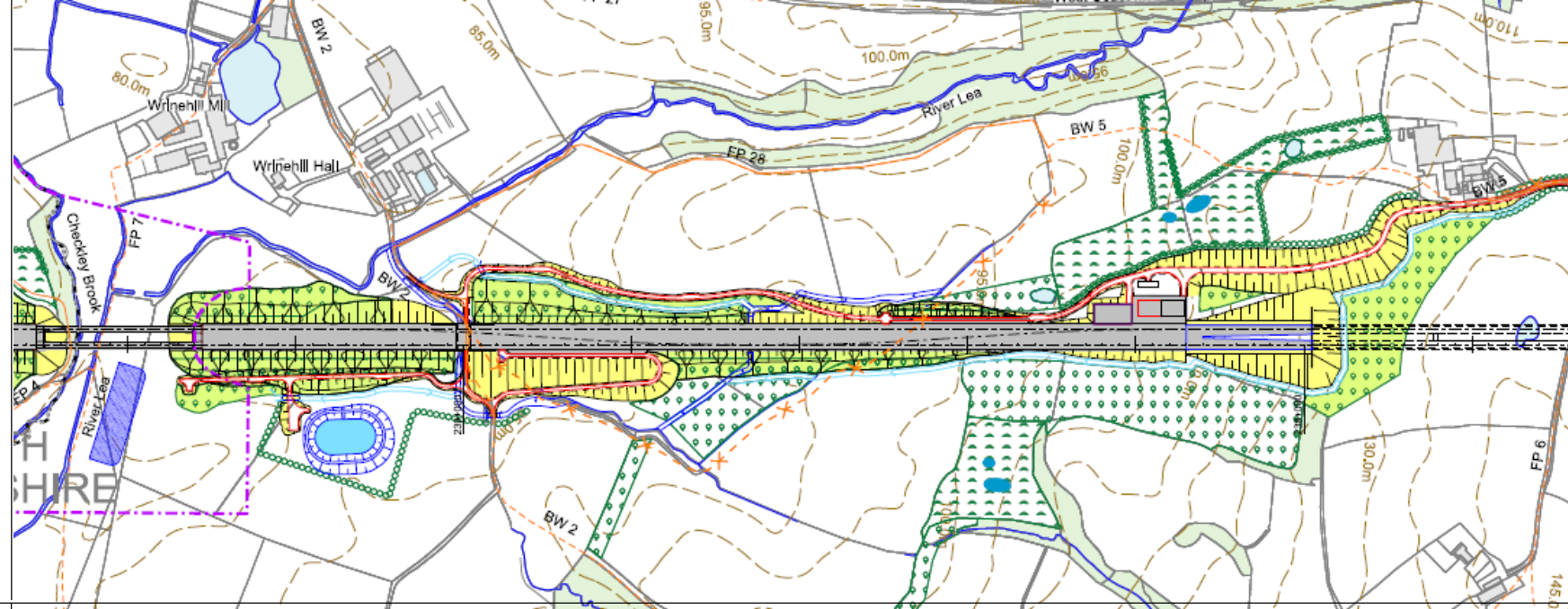
Twin Bored Single Tunnel Option



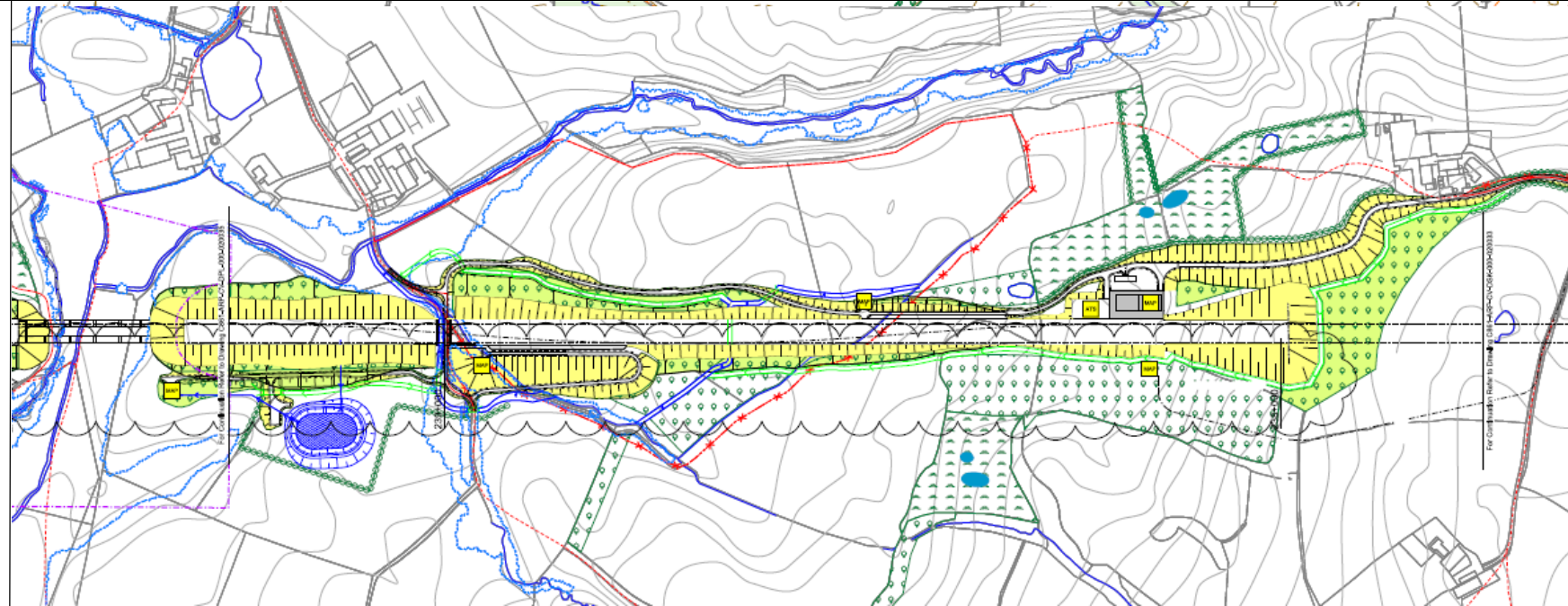


# Map CT-06-234

The Proposed Scheme



Twin Bored Single Tunnel Option



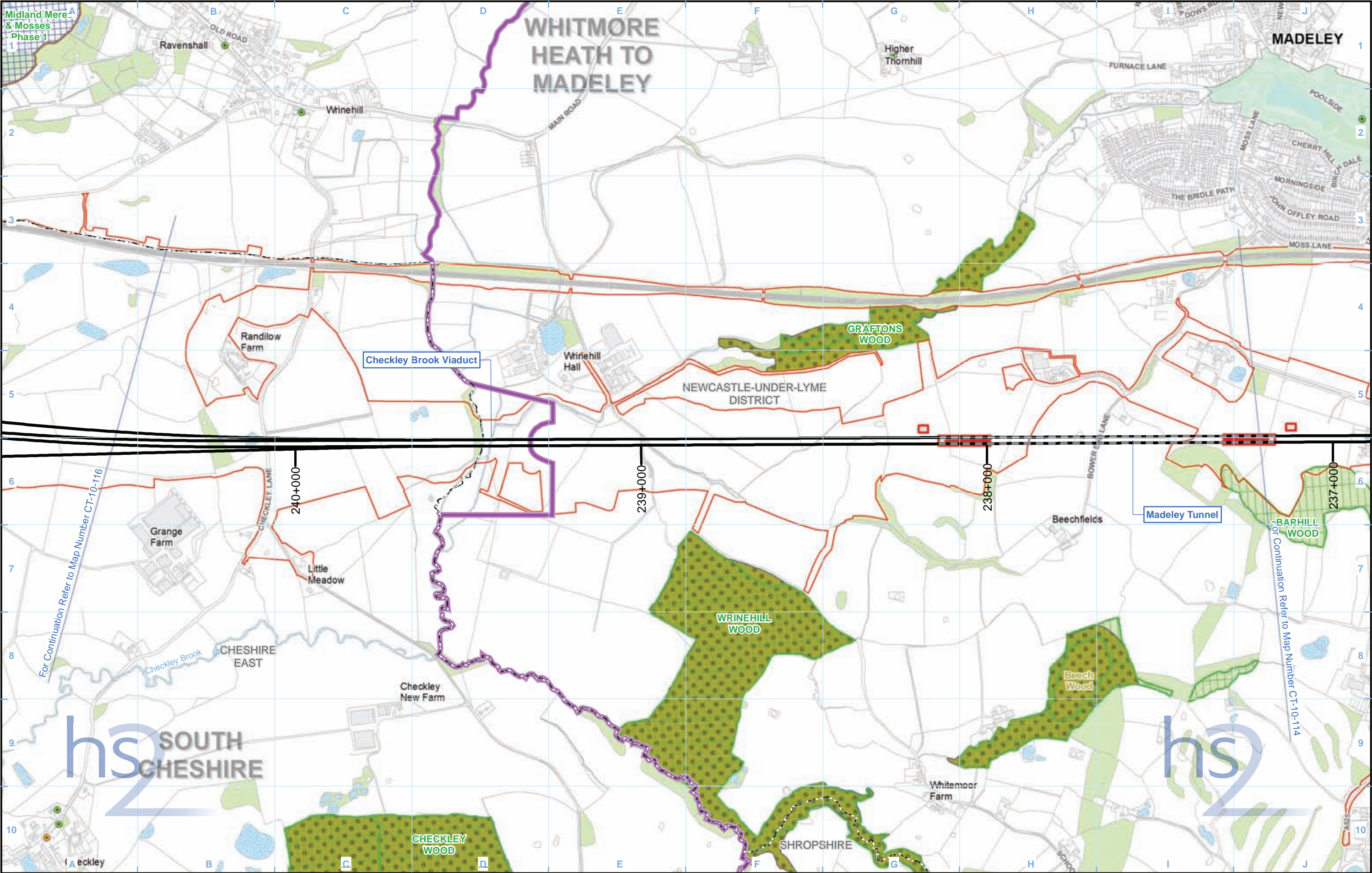












Legend

- |   |             |                           |   |
|---|-------------|---------------------------|---|
| Route in tunnel                               | Watercourse | Conservation areas        | Site of Special Scientific Interest (SSSI)        |
| Route on surface                              | Water body  | Scheduled monument        | Local Nature Reserve (LNR)                        |
| Depot, station, headhouse or portal building  | Woodland    | Listed building grade I   | Local Wildlife Site (LWS)                         |
| Land potentially required during construction |             | Listed building grade II* | Ancient Woodland Inventory Sites (AWIS)           |
| Community area boundary                       |             | Listed building grade II  | Ramsar Site - Wetland of International Importance |
| County boundary                               |             | Registered park or garden |   |
| District/Borough boundary                     |             |                           |   |

Map Number	CT-10-115a
Map Name	Environmental Baseline
Community Area 4: Whitmore Heath to Madeley	

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Doc Number: C861-ARP-EV-MAP-000-060215-P03	





## Whitmore Wood & Hey Sprink Compensation Planting

Description	
Area of direct loss of ancient woodland (ha)	6
Area of receptor site for ancient woodland soils (ha)	6
Area of new planting to be provided in response to the loss of ancient woodland (including ancient woodland soil receptor area) (ha)	36
Area of enhancement of existing ancient woodland (ha)	12.9

## Whitmore Wood & Hey Sprink Compensation Planting

## Woodland Enhancement to Cover Extent of Whitmore Wood

## Whitmore Wood Compensation Planting

## Whitmore Wood & Hey Sprink Compensation Planting















Whitmore Wood

## Whitmore Wood Enhancement

Area of woodland  
lost to  
construction

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3 (4)	Description	Drawn	Checked	Con App	HS2 App		Scale with caution as distortion can occur.

**Legends/Notes:**

	Balancing pond		Ditches - new
	Grassland habitat creation		Hedgerow habitat creation
	Landscaped mitigation planting (scrub / woodland)		Existing public right of way
	Grassed areas		Rail alignment
	Engineering earthworks		HS2 Access road
	Landscape earthworks		Ancient Woodland
	Rail alignment		
	Rail alignment formation		



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Zone	CA4	Project/Contract		
Design Stage	Designs for Petition	Discipline/Function		
Drawing Title	Whitmore Wood Exhibit Pack	Engineering		
Proposed Scheme: Woodland compensation		Drawn	Checked	Approved
		DW	AC	TE
		Date	Scale	Size
		15/04/2018	1:10000	A3
		Drawing No.		Rev.
		C861-ARP-EV-DSK-000-000120		P00.1

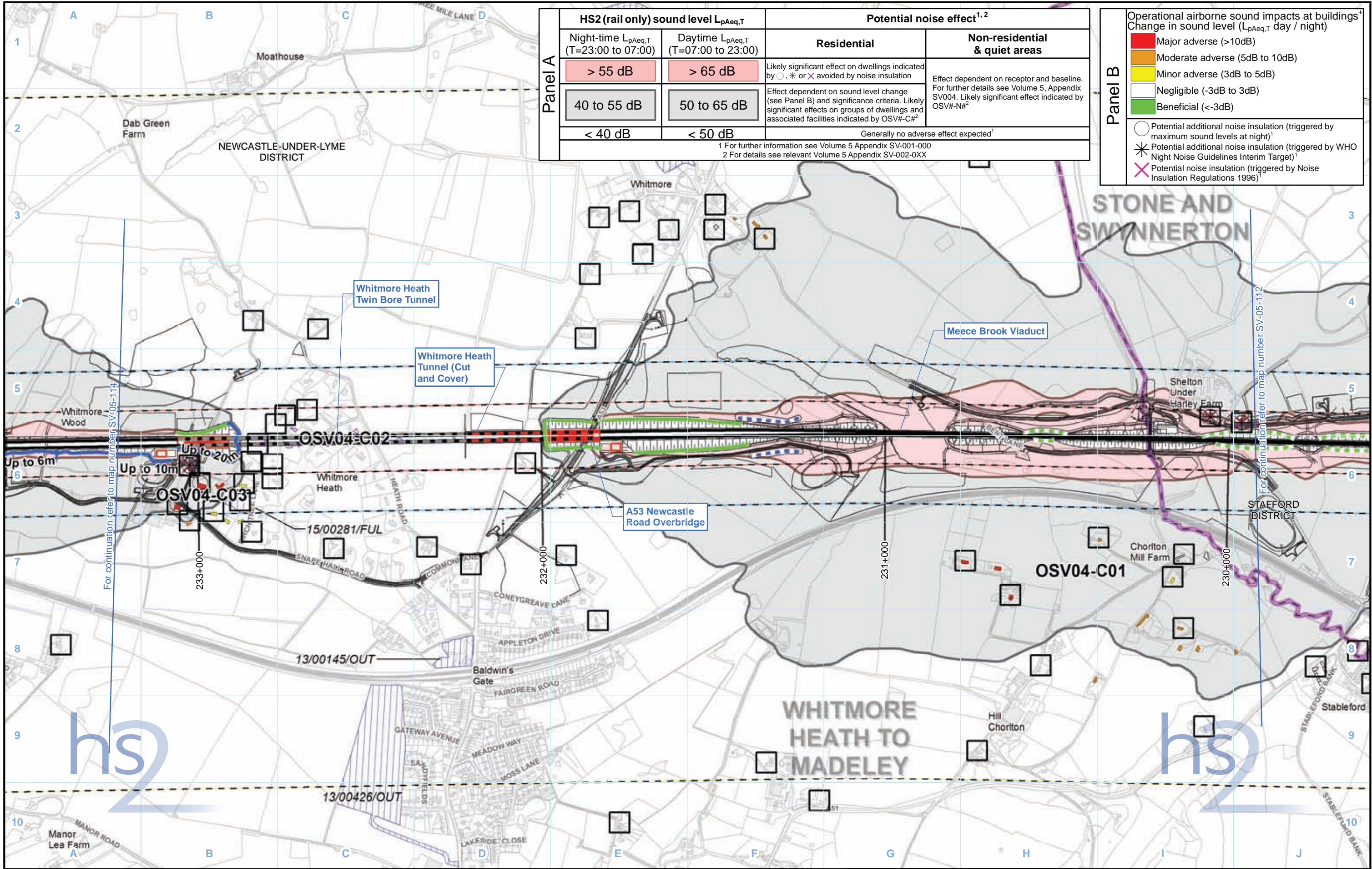


# Whitmore Wood Local Wildlife Site

- Whitmore Wood Local Wildlife Site covers an area of approximately 16.6ha, all of which plus an additional 1.3ha of woodland is listed as an Ancient Woodland Inventory Site.
- The Local Wildlife Site is designated for deciduous and ancient woodland:

*The canopy is dominated by downy birch with occasional rowan and hazel. The middle and the south-west corner sections of the woodland are dominated by coniferous plantations, such as larch and western red cedar. Eleven vascular plant species indicative of ancient woodland are also present, including yellow archangel and bluebell.*
- The area affected by construction of the Proposed Scheme (approximately 6ha in total) is mainly plantation on ancient woodland site (consisting of planted mature larch), but some areas of deciduous woodland are also affected.
- Species including badgers, bats and fallow deer are present in the local area and could potentially utilise the wood for foraging and breeding purposes.





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 ✕ 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>	

<sup>1</sup> For further information see Volume 5 Appendix SV-001-000  
<sup>2</sup> For details see relevant Volume 5 Appendix SV-002-0XX

**Panel B**

Operational airborne sound impacts at buildings<sup>1</sup>  
Change in sound level ( $L_{pAeq,T}$  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 cut and cover tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough 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  
\*\* HS2 train only  $L_{pAFmax} + 2.5dB$  façade correction

**Legend - Sound related features**

- Committed developments - SV Only
- 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
- 1km Airborne sound study area
- Ground-borne sound & vibration study area (residential and non-residential)
- Ground-borne sound & vibration study area (highly sensitive non-residential)
- Ground-borne noise or vibration impact\*
- $L_{pAFmax}$  exceeds 60dB façade\*\*

Map Number

SV-05-113b

Map Name

Operational Noise and Vibration Impacts and Likely Significant Effects

Community Area 4:  
Whitmore Heath to Madeley

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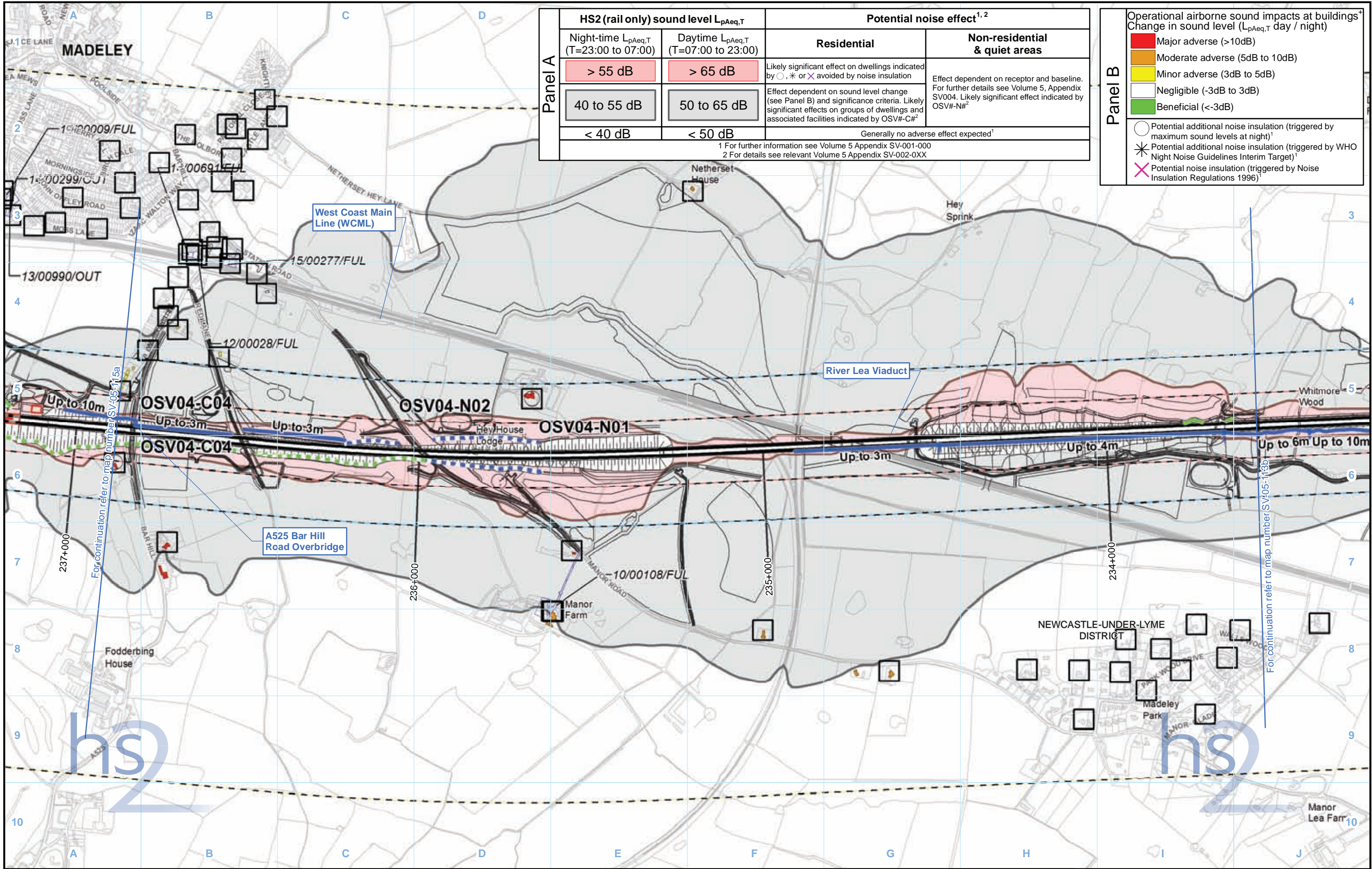
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THOC/10006/0041





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 ✕ 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-002-0XX			

Panel B	Operational airborne sound impacts at buildings <sup>1</sup> Change in sound level ( $L_{pAeq,T}$ 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 cut and cover tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough 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  
\*\* HS2 train only  $L_{pAFmax} + 2.5dB$  façade correction

**Legend - Sound related features**

- Committed developments - SV Only
- 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
- 1km Airborne sound study area
- Ground-borne sound & vibration study area (residential and non-residential)
- Ground-borne sound & vibration study area (highly sensitive non-residential)
- Ground-borne noise or vibration impact\*
- $L_{pAFmax}$  exceeds 60dB façade\*\*

Map Number: SV-05-114

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

Community Area 4: Whitmore Heath to Madeley

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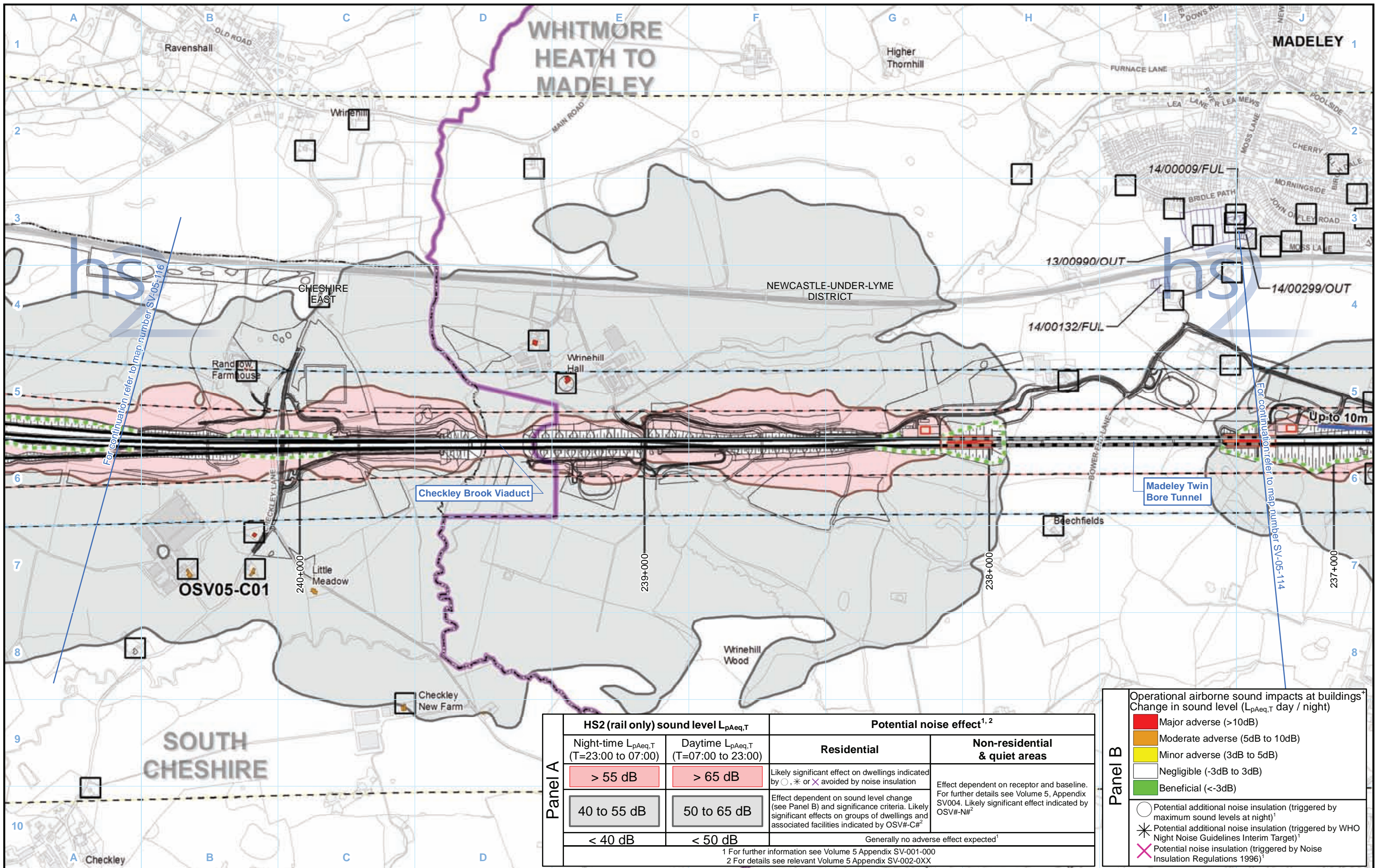
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Doc Number: C861-ARP-EV-MAP-000-135114-P03

THOC/10006/0042





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 ✕ 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-002-0XX				

**Panel B**

Operational airborne sound impacts at buildings<sup>+</sup>  
Change in sound level ( $L_{pAeq,T}$  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 cut and cover tunnel

Route on surface

Depot, station, headhouse or portal building

Community area boundary

County boundary

District/Borough 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

\*\* HS2 train only  $L_{pAFmax} + 2.5dB$  façade correction

Committed developments - SV Only

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

1km Airborne sound study area

Ground-borne sound & vibration study area (residential and non-residential)

Ground-borne sound & vibration study area (highly sensitive non-residential)

Ground-borne noise or vibration impact\*

$L_{pAFmax}$  exceeds 60dB façade\*\*

Map Number  
SV-05-115a

Map Name  
Operational Noise and Vibration Impacts and Likely Significant Effects

Community Area 4:  
Whitmore Heath to Madeley

hs

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Scale at A3: 1:10,000

0 100 200 300 400  
Metres

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tHOC/10006/0043



Panel B

Operational airborne sound impacts at buildings<sup>†</sup>  
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>

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>	
	< 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-002-0XX

Legend - General features

Route in bored tunnel

Route in cut and cover tunnel

Route on surface

Depot, station, headhouse or portal building

Community area boundary

County boundary

District/Borough boundary

Engineering earthworks:

Embankment

Cutting

L<sub>pA</sub>Fmax exceeds 60dB façade\*\*

Non engineering earthworks:

Embankment

Cutting

Legend - Sound related features

Committed developments - SV Only

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

1km Airborne sound study area

Ground-borne sound & vibration study area (residential and non-residential)

Ground-borne sound & vibration study area (highly sensitive non-residential)

Airborne sound assessment location

Ground-borne sound and vibration assessment location

Airborne sound, ground-borne sound and vibration assessment location

Ground-borne noise or vibration impact\*

Map Number

SV-02-113a

Map Name

Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Locations) SES and AP ES

Community Area 3: Stone and Swynnerton

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0

100

200

300

400

Metres

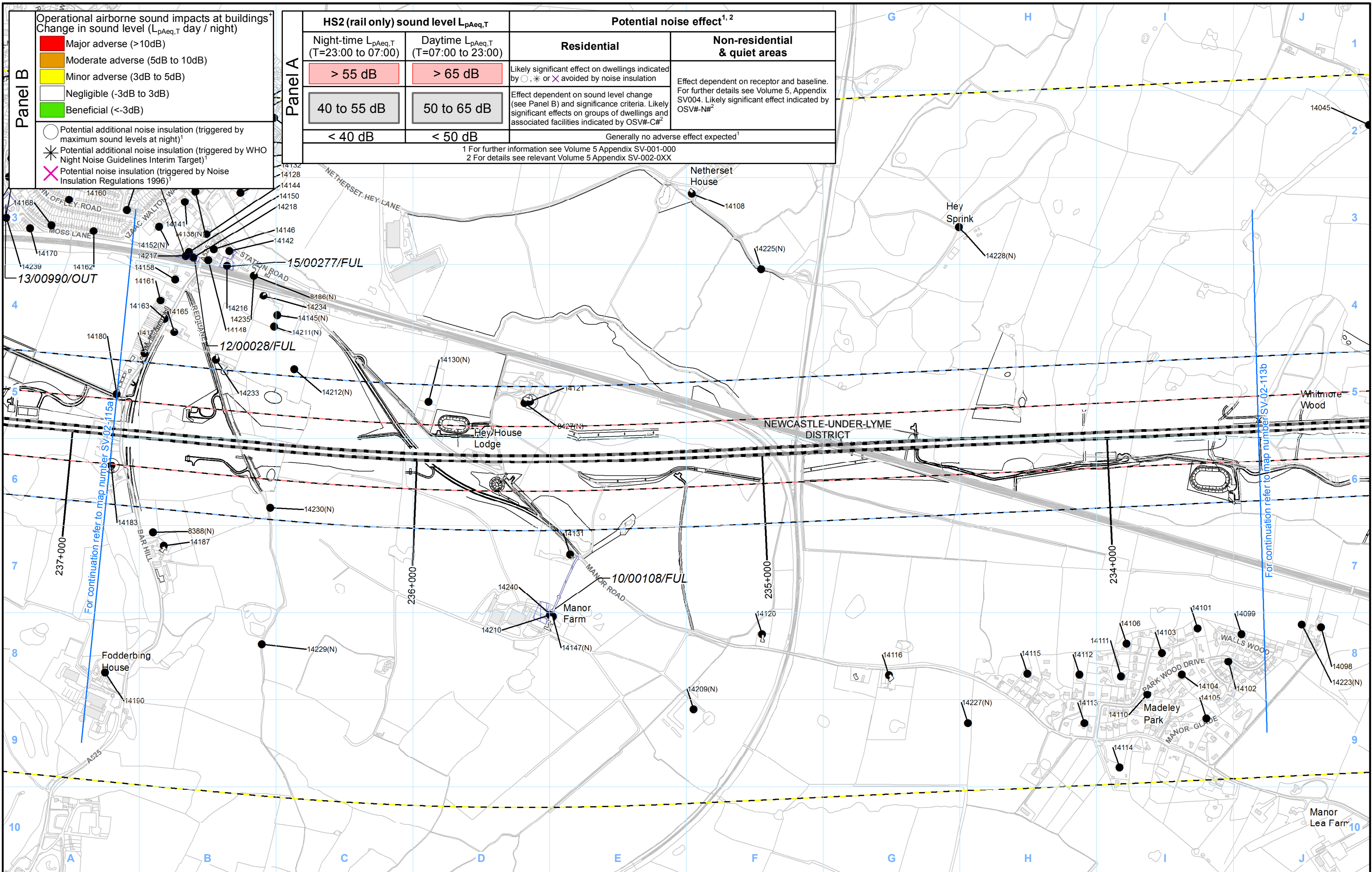
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P40 (4)





**Legend - General features**

- Route in bored tunnel
- Route in cut and cover tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Non engineering earthworks:

- Embankment
- Cutting
- L<sub>pA</sub>Fmax exceeds 60dB façade\*\*

\* Residential buildings only  
\* Labelled with total barrier height above rail level  
\*\* HS2 train only L<sub>pA</sub>Fmax + 2.5dB façade correction

**Legend - Sound related features**

- Committed developments - SV Only
- 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
    - 1km Airborne sound study area

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

Map Number  
**SV-02-114**

Map Name  
**Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Locations) SES and AP ES**

Community Area 4:  
Whitmore Heath to Madeley

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Panel B

Operational airborne sound impacts at buildings<sup>†</sup>  
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>

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>	
	< 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-002-0XX

**Legend - General features**

Route in bored tunnel

Route in cut and cover tunnel

Route on surface

Depot, station, headhouse or portal building

Community area boundary

County boundary

District/Borough boundary

**Engineering earthworks:**

Embankment

Cutting

L<sub>pAFmax</sub> exceeds 60dB façade\*\*

**Non engineering earthworks:**

Embankment

Cutting

**Legend - Sound related features**

Committed developments - SV Only

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

1km Airborne sound study area

Ground-borne sound & vibration study area (residential and non-residential)

Ground-borne sound & vibration study area (highly sensitive non-residential)

Airborne sound assessment location

Airborne sound and vibration assessment location

Ground-borne sound and/or vibration assessment location

Airborne sound, ground-borne sound and vibration assessment location

Ground-borne noise or vibration impact\*

Map Number

SV-02-115a

Map Name

Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Locations) SES and AP ES

Community Area 4:

Whitmore Heath to Madeley

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North Arrow

P40 (6)

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